



CONSTRUCTION PROJECT

INVITATION TO BID (ITB) NO. 1001-2023-2024

ENHANCED SECURITY PROJECT

PURCHASING/MAINTENANCE/TRANSPORTATION SITES

**PURCHASING DEPARTMENT
2845 SE DIXIE HWY
STUART, FLORIDA, 34997
TEL (772) 219-1255
EMAIL bids@martinschools.org**

ADVERTISEMENT PUBLICATION

Martin County School Board
1939 SE Federal Highway
Stuart, FL 34994

ITB# 1001-2023-2024 ENHANCED SECURITY PROJECT

The Martin County School District (hereinafter referred to as "District") is soliciting a Licensed General Contractor to enhance security construction services at the existing Purchasing, Maintenance, and Transportation work sites located at 2845 SE Dixie Highway, Stuart, FL 34997, in accordance with the project manual specifications and plan drawings.

Solicitation Documents may be obtained by registering with www.DemandStar.com or www.vendorregistry.com. The District is not responsible for the content of any submittal package received through any 3rd party service or any other source.

A **Mandatory Pre-bid** meeting followed by a site visit will be held at the Purchasing Warehouse Building #7, 2845 SE Dixie Highway, Stuart, FL 34997, on October 25, 2023, at 10:00AM. A Public Notice will be posted on www.demandstar.com and <https://www.martinschools.org/page/public-notices>.

A Bid Bond in the amount of five percent (5%) of the total amount projected is required and must be included with their bid submittal.

Contractors desiring to provide the services described, herein, shall submit one (1) complete electronic submittal, contained in one (1) file, Portable Document Format (PDF) preferred, submitted electronically through www.DemandStar.com or bids@martinschools.org containing all of the required information **no later than 2:00pm, November 15, 2023.**

Questions: Email bids@martinschools.org by no later than **2:00 pm eastern time on November 8, 2023.**

Martin County School District Website: <https://www.martinschools.org/page/public-notices>

DemandStar: <https://network.demandstar.com/>

Vendor Registry: <http://www.vendorregistry.com/>

Publish Dates: 10/5/23, 10/11/23, and 10/18/23.

**NOTICE OF
INVITATION TO BID**

Solicitation Documents may be obtained by registering with www.demandstar.com, <http://www.vendorregistry.com>, or the School District's Website: <https://www.martinschools.org/page/information-for-vendors>.

Bidders who obtain solicitation documents from any other source are cautioned that the solicitation package may be incomplete. Furthermore, all addenda issued will be posted and disseminated by DemandStar and Vendor Registry to planholders/members.

Bid documents must be submitted electronically through www.demandstar.com or bids@martinschools.org by responding no later than the designated deadline date and time. A Bidder's failure to submit as required before the deadline shall cause their bid to be disqualified. It is the sole responsibility of the Bidder to assure their submittal is received as required. The District shall in no way whatsoever be responsible for any delays caused by power outages or failures: email delivery or internet. Hard copies, mailed, or facsimile shall not be accepted. No exceptions will be considered.

The following dates are subject to change according to the needs of the District.

ITB Number:	1001-2023-2024
ITB Name:	Enhanced Security Project: Purchasing/Maintenance/Transportation Sites
ITB Publish Dates:	10/5/23, 10/11/23 & 10/18/23
Mandatory Prebid Meeting: <i>10/25/23 at 10:00 AM</i>	A Mandatory Pre-Bid Meeting will be held on 10/25/23 at 10:00 AM followed by a Site Visit at the existing School District Purchasing/Maintenance/Transportation Site located at 2845 SE Dixie Highway, Stuart, FL, 34997. Failure to attend the Mandatory Prebid Meeting shall be cause for disqualification of Bidder's submittal. Bidders must sign the attendance log prior to 10:00am, and the attendance log shall act as proof of attendance. Meeting will start promptly at 10:00am. Bidders that arrive after 10:00am will be considered late and shall not be permitted to sign the attendance log. A site visit shall follow the mandatory Prebid meeting.
Site Visit:	Contractor shall visit the facility and thoroughly familiarize themselves with existing conditions. No extra charge or compensation will be allowed by the School District because of differences between actual materials and labor, unless by reason of unforeseeable causes beyond his control and without fault or negligence, including, but not restricted to acts of God or neglect of any other Contractor. Contractors shall address their questions in writing to the bids@martinschools.org . Any requests for modifications shall be presented in writing as possible addenda to the "Invitation to Bid" in accordance with the Instructions to Bidders. Oral explanation given before the bid opening will not be binding. Contractors interested in attending must bring their own equipment to view the existing conditions.
Questions Deadline: <i>11/8/23 by no later than 2:00PM eastern time.</i>	The Purchasing Department will receive written requests for clarification and inquiries concerning the meaning or interpretation of this ITB by 11/8/23 by no later than 2:00PM eastern time. Questions shall be emailed to bids@martinschools.org with reference to the ITB number in the subject for faster recognition. Only questions answered by formal written Addenda issued by the MCSD Purchasing Department shall be binding. Oral and other interpretations or clarifications shall be without legal effect. The School District shall record its responses to inquiries and any supplemental instructions in the form of a written addendum. If addenda are issued, the School District shall make every attempt to issue such addenda at least seven (7) calendar days before the date fixed for receiving the bid submittals.

Bid Bond	A Bid Bond in the amount of five percent (5%) of the total amount projected is required and must be included with their bid submittal. The Bid Surety may be in the form of a Surety Bond with a carrier duly licensed and authorized to do business in the State of Florida, Cashier's Check or Certified Check (checks made payable to School Board of Martin County, Florida).
ITB Closing Date/Time: 11/15/23 by no later than 2:00PM	Firms desiring to provide the goods and services described above shall submit one complete electronic submittal, contained in one (1) file, PDF format preferred, submitted electronically through www.DemandStar.com or bids@martinschools.org containing all of the required information on the proper forms as identified in Section VII, including the 5% Bid Bond. Bids will be opened and read aloud via Zoom teleconference. It is the sole responsibility of the Bidder to assure that bids are received by no later than 2:00PM eastern time, on 11/15/23.
Contact Information:	Email: bids@martinschools.org
Email Notifications:	Start all email subject lines with the ITB number for faster recognition.
ITB Scope of Work:	The Martin County School District (hereinafter referred to as "District") is soliciting a Licensed General Contractor to submit bids for an Enhanced Security Construction Project at the Purchasing, Maintenance, and Transportation work sites located at 2845 SE Dixie Highway, Stuart, FL 34997, in accordance with the MCSD Project Manual specifications and plan drawings. Engineers Estimate of Probable Cost is \$806,800.00.

Bidders may not withdraw their bid submittal for a period of ninety (90) calendar days after the day set for the opening of bids.

The District reserves the right to waive any informalities or irregularities, reject any and all bids that are incomplete, conditional, non-responsive, or which contain additions not allowed for; to reject any or all bids in whole or in part with or without cause; to award in whole or in part to one or more Bidders, and to accept the bid which best serves the District.

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SECTION I

DEFINITIONS, ABBREVIATIONS, & ACRONYMS

Wherever used in the Contract Documents the following terms have the meanings indicated in the industry which are applicable to both the singular and plural thereof:

1.1. **Acceptance:** By the DISTRICT'S PROJECT MANAGER of the Work as being fully complete in accordance with the Contract Documents.

1.2. **Addenda:** Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract

1.3. **Application for Payment:** The form accepted by the CONSULTANT which is to be used by CONTRACTOR to request progress payments or final payment and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

1.4. **Bid:** The formal firm price offer of the BIDDER submitted on the prescribed form setting forth the prices for the WORK in response to the Invitation to Bid.

1.5. **Bidder:** Any person, firm or corporation submitting a Bid for the Work directly to the DISTRICT. As used in this Invitation to Bid, the words proposer and Contractor may be used interchangeably to mean Bidder.

1.6. **Bid Documents:** Includes the Invitation to Bid, Instructions to Bidders, Bid Form, and proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

1.7. **Bonds:** Bid security/guarantee, performance, and payment bonds and other instruments of security, furnished by the CONTRACTOR and his surety in accordance with the Contract Documents and in accordance with the law of the place of the project.

1.8. **Cable:** An assembly of one or more insulated conductors or optical fibers, within an enveloping sheath

1.9. **Change Order:** A written order to the CONTRACTOR executed by the DISTRICT, CONSULTANT, and CONTRACTOR authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Contract.

1.10. **Consultant/Engineer of Record:** The Architect or Engineer, also referred to as **EOR (Engineer or Record)**, firm or corporation named as such in the Contract Documents that acts as the District's authorized agent within the scope of work entrusted to them by the District.

1.11. **Consultant's Representative:** An authorized representative of the Consultant assigned to observe the work performed and materials furnished by the CONTRACTOR.

1.12. **Contract:** The written agreement between DISTRICT and CONTRACTOR covering the WORK to be performed.

1.13. **Contract Documents:** The Contract Documents establish the rights and obligations of the parties. The Notice of Tentative Award, including the contract is directed for signature as acceptance of offer by the Contractor, prior to Board approval for award. Once approved, a notice of award requesting the bonds and insurance are requested. The executed contract documents, including exhibits (solicitation/submittal), bonds, and insurance are provided to the Contractor. CONSULTANT'S written interpretations and clarifications issued on or after the Effective Date of the Contract.

Please review Section IX, Sample Contract, and note any objections, or revisions that would be required within the submittal. Should no revisions be noted, the District will assume the Contractor agrees that the terms and conditions of agreement Section I

are acceptable. This Agreement does not authorize the performance of any work.

Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by DISTRICT to CONTRACTOR are not Contract Documents.

1.14. **Contract Price:** The total monies payable by the DISTRICT to the CONTRACTOR under the terms and conditions of the Contract Document.

1.15. **Contract Time:** The number or numbers of successive days or dates stated in the Contract Documents for the completion of the WORK.

1.16. **CONTRACTOR:** The individual, partnership, corporation, joint-venture, or other legal entity with whom the DISTRICT has entered into the Contract. Can be used interchangeably with the term bidder and / or vendor.

1.17. **Day:** A calendar day of 24 hours measured from midnight to the next midnight.

1.18. **Defective Work:** WORK that is unsatisfactory, faulty, or deficient; or that does not conform to the Contract Documents; or that does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents; or WORK that has been damaged prior to the CONSULTANT'S recommendation of final payment.

1.19. **District:** The Martin District School District, Florida, a Florida school district, its authorized and legal representatives, the public entity with whom the Contractor has entered into the Contract and for whom the WORK is to be provided.

1.20. **District Representative:** The person or persons designated by the DISTRICT'S PROJECT MANAGER. This may include the CONSULTANT/EOR.

1.21. **DP:** Dead pairs: Unused copper pairs terminating within splice case, but without being splices to outgoing cable.

1.22. **Drawings:** The drawings, plans, maps, profiles, diagrams, and other graphic representations which show character, location, nature, extent, and scope of the WORK, which have been prepared or approved by CONSULTANT and are included and/or referred to in the Contract Documents. Shop Drawings are not Drawings as so defined.

1.23. **Effective Date of the Contract:** The date indicated in the Contract, but if no such date is indicated it means the date on which the Contract is signed by the last of the two parties to sign the Contract.

1.24. **F.S.:** Refers to Florida Statutes

1.25. **Field Order:** A written order issued by the DISTRICT'S PROJECT MANAGER or by the CONSULTANT which clarifies or interprets the Contract Documents in accordance with Article 9.4 or orders minor changes in the Work in accordance with Article 10.1 of Supplementary Conditions

1.26. **GEC:** Grounding electrode conductor: Conductor used to connect grounding electrode to equipment grounding conductor, or to grounded conductor of circuit at service equipment, or at source of separately derived system.

1.27.**GP**: Grounding electrode: Conductor (rod, pipe or plate or group of conductors) in direct contact with earth for purpose of providing low-impedance connection to earth.

1.28.**General Requirements**: See Special Conditions and Division 1 of the Technical Specifications.

1.29.**Handbox**: Rectangular or square underground pathway element similar to small maintenance hole, which cannot be fully entered, that allows for pulling point or splice point in power, security or communications pathway.

1.30.**Handhole**: A round underground pathway element similar to a handbox, which cannot be fully entered, that allows for a pulling point in a pathway.

1.31.**ICP**: Inside Cable Plant: Part of Information Transport System running within buildings. ICP elements include workstation outlet assembly, cabling to the workstation from network rooms, backbone cabling within building, backbone cabling running between physically contiguous buildings, network racks and hardware (routers, switches, hubs, firewalls, etc.), patch panels, punch blocks, fiber distribution panels, patch cords, and cross-connect cables/wires.

1.32.**Identifier**: An item of information that links a specific element of the Information Transport System infrastructure with its corresponding record.

1.33.**Infrastructure (Information Transport System)**: A collection of those Information Transport System components, excluding equipment, that together provides the basic support for the distribution of all information within a building or campus.

1.34.**Irregular Bids**: Irregular Bids are defined as those containing serious omissions, unauthorized alternative Bids, incomplete Bids, or unbalanced Bids.

1.35.**ITS**: Information Transport System: Copper cabling or optical fiber for transmission of information on School District property. Transmission includes data, video, voice, fire alarm, security, access control, and other low-voltage networks. Information Transport System is not limited to School District-owned cabling, but includes copper and optical fiber, and equipment owned by outside providers carrying School District's information. Pathways are not limited by School District's ownership but include those owned by any third party. Information Transport System may be referred to as "the network" within project documents.

1.36.**Laws and Regulations**: Laws, rules, codes, regulations, ordinances and/or orders promulgated by a lawfully constituted body authorized to issue such Laws and Regulations.

1.37.**Linkage**: A connection between a record and an identifier or between records.

1.38.**Maintenance (man) holes**: Underground pathway element large enough for person to fully enter work, used to provide access to underground cable to pull, splice, and maintain.

1.39.**Media (Information Transport System)**: Wire, cable, or conductors used for Information Transport System.

1.40.**Notice to Proceed**: The written notice issued by the DISTRICT, or it's agents, to the CONTRACTOR authorizing the CONTRACTOR to proceed with the WORK and establishing the date of commencement of the Contract Time and the date the Contract WORK is to be completed.

1.41.**Notice of Tentative (or Intent) Award**: The official written notice by the DISTRICT to the apparent successful BIDDER giving authorization to enter into an agreement, stating that upon compliance and Board approval with the condition's precedent enumerated therein within the time specified, and receipt of accepted offer.

1.42.**OB**: Outlet box: Metallic or nonmetallic box used to hold Information Transport System outlets/connectors or transition devices

1.43.**OCP**: Outside Cable Plant: Part of Information Transport System running between buildings, from building to definable exterior point, between definable exterior points, or from non-School District source to School District building or definable exterior point. OCP includes termination punch blocks, fiber distribution panels, interior splices for outside to inside optical fiber transition, and other initial device into which outside cable attaches. OCP does not include backbone cable running between physically contiguous buildings unless cabling enters OSP pathway element (e.g., OSP conduits, maintenance holes, etc.). OCP includes underground cabling and aerial cabling.

1.44.**Outlet (Connector) (Information Transport System)**: Connecting device in work area on which horizontal cable or outlet cable terminates.

1.45.**Partial Utilization**: Placing a portion of the WORK in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the WORK.

1.46.**Pathway**: Facility for the placement of Information Transport System cable.

1.47.**Project**: The total construction of which the WORK to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.48.**Record**: Collection of detailed information related to specific element of Information Transport System infrastructure

1.49.**Report**: Presentation of collection of information from various records.

1.50.**Resident Project Representative (RPR)**: The authorized representative of the CONSULTANT who is assigned to the Site or any part thereof.

1.51.**Responsible Bidder, Offeror, Quoter, Or Respondent** means an individual or business which has submitted a bid, offer, proposal, quotation, or response, which has the capability in all respects to perform fully the contract requirements, and the integrity and reliability which will give reasonable assurance of good faith and performance.

1.52.**Responsive Bidder, Offeror, Quoter, Or Respondent, Vendor, Contractor** means an individual or business which has submitted a bid, offer, proposal, quotation, or response, which conforms in all material respects to the solicitation, including, but not limited to compliance with any M/WBE requirements contained within the solicitation.

1.53.**Shop Drawings**: All drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by or for the CONTRACTOR, a subcontractor, manufacturer, supplier or distributor and which illustrate the equipment, material or some portion of the Work and as required by the Contract Documents. Shop Drawings are not part of the Contract Documents and failure of the CONSULTANT or the COUNTY or any of his representatives to take exception to any product, material, system or installation depicted on Shop Drawings that are not in conformance with the requirements of the Contract Documents shall not constitute a Field Order or Change Order or any other Modification of the Contract Documents and shall not relieve the CONTRACTOR from complying with any portion of the Contract Documents.

1.53.**Safety Data Sheet**: The manufacturer, importer, or distributor of a toxic substance will provide a safety data sheet with his/her offer.

1.54.**Safety Precautions**: The Contractor shall be responsible

for the provision of adequate and proper safety precautions for the workmen and all persons in or around the work area.

1.55. **Space (Information Transport System):** Area used for housing installation and termination of Information Transport System equipment and cable, e.g., equipment rooms, network rooms, work areas, and maintenance holes/handboxes/handholes

1.56. **Special Conditions:** When included as a part of the Contract Documents, Special Conditions refer only to the Work under this Contract. Special Conditions take precedent over the General Conditions.

1.57. **Specifications:** Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the WORK and certain administrative details applicable thereto.

1.58. **Splice:** Joining conductors in splice closure, meant to be permanent.

1.59. **Splice Box:** Box, located in pathway run, intended to house cable splice.

1.60. **Splice Closure:** Device used to protect splice.

1.61. **Sub-Bidder:** One who submits a Bid to a Bidder.

1.62. **Subcontractor:** An individual, firm, or corporation having a direct contract with the CONTRACTOR or with any other Subcontractor for the performance of a part of the WORK at the Site.

1.63. **Submittal Construction:** Submittal items include schedules, performance specifications, meeting minutes, product data, shop drawings, test data, product samples, warranties, operations and maintenance data.

1.64. **Substantial Completion:** For purposes of this Contract, and for compliance of those procedures, duties and obligations as set forth in Florida Statutes §218.70 and §218.735, the term Substantial Completion shall be as follows, in lieu of any other definition:

- A. "Substantial Completion" is defined as that point where the District is able to enjoy beneficial occupancy of the Work and where the Work has achieved that level of completion such that District is able to utilize the entire Project for its intended purposes, including but not limited to the completion of all specified systems and items relating to life safety and regulatory use, with the exception of incidental or incomplete items except where a lack of completion of such incidental or incomplete items of Work shall adversely affect the complete operation of other areas of the Work.
- B. Additional conditions (if any) needed to achieve Substantial Completion of the Work, and which are project specific are as set forth in attached Technical Specifications.
- C. When the entire Project is considered Substantially Complete, this does not constitute Final Acceptance or Final Completion of the entire Project.

1.65. **Successful Bidder:** The lowest, qualified, responsible, and responsive Bidder to whom District (on basis of District's evaluation as hereinafter provided) makes an award.

1.66. **Supplementary Conditions:** The part of the Contract Documents which amends or supplements these General Terms and Conditions.

1.67. **Supplier:** A manufacturer, fabricator, supplier, distributor, materialman or vendor.

1.68. **Surety:** The corporate body which is bound with the CONTRACTOR, and which engages to be responsible for the CONTRACTOR and his acceptable performance of the Work.

1.69. **Termination position:** Discrete element of termination hardware where information Transport System conductors are terminated.

1.70. **Unbalanced Bids:**

- A. **Mathematically Unbalanced Bid** means a bid containing lump sum or unit bid items which do not reflect reasonable actual costs plus a reasonable proportionate share of the bidder's anticipated profit, overhead costs, and other indirect costs.
- B. **Materially Unbalanced Bid** means a bid which generates a reasonable doubt that award to the bidder submitting a mathematically unbalanced bid will result in the lowest ultimate cost to the City; or which is so mathematically unbalanced as to result in an advance payment.

1.71. **Unit Price Work:** WORK to be paid for on the basis of unit prices.

1.72. **Utilities:** All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground or above ground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water supply or distribution, sewage and drainage removal, traffic or other control systems.

1.73. **Work:** All obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by Contractor under the Contract Documents, including all labor, materials, equipment and other incidentals, and the furnished thereof.

1.74. **Work Area (workstation):** Building space where occupants interact with Information Transport System terminal equipment.

1.75. **Work Change Directive:** A written directive to Contractor, issued on or after the Effective Date of the Contract and signed by the District and recommended by the Consultant/EOR, ordering an addition, deletion, or revision in the WORK, or which references an emergency or unforeseen physical conditions under which the WORK is to be performed. A Work Change Directive may not change the Contract Price or the Contract Time but is evidence that the parties expect that the change directed or documented by a Work Change Directive shall be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Time.

1.76. **Written Amendment:** A written amendment of the Contract Documents, signed by the DISTRICT and CONTRACTOR on or after the Effective Date of the Contract and normally dealing with the non-engineering or non-technical rather than strictly Work-related aspects of the Contract Documents.

1.76. **Intent of Certain Terms:**

- A. **Furnish, Install, Perform, Provide**
 - 1) The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 - 2) The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 - 3) The words "perform," or "provide," when used in connection with services, materials, or equipment, shall

mean to furnish and install said services, materials or equipment complete and ready for intended use.

- B. When "furnish," "install," "perform," or "provide," is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.
- C. Unless stated otherwise in the contract documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the contract documents in accordance with such recognized meaning.

1.77. Abbreviations, Acronyms, and Symbols:

Reference, Design Standards and Abbreviations: Any reference to published specifications or standards of any organization or association or as noted in Florida Building Code, Chapter 2, and Florida Fire Prevention Code are applicable; and shall comply with the requirements of the specification or standard which is current on the date of Advertisement for Bids. In case of a conflict between the referenced specifications or standards, the one having the more stringent requirements shall govern.

Documents listed shall be standard references currently in effect at project commencement.

In case of conflict between the referenced specifications or standards and the Contract Documents, the Contract Documents shall govern.

A. ABBREVIATIONS, REFERENCE STANDARDS, AND ACRONYMS

AA	Aluminum Association
AAA	American Arbitration Association
AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers Association
AASHO	American Association of State Highway Officials
ABA	American Bar Association
ABMA	American Boiler Manufacturers Association
ABPA	Acoustical and Board Products Association
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
ACR	Attenuation-to-Crosstalk Ratio
ADA	Americans with Disabilities Act
AEIC	Association of Edison Illuminating Companies
AFBMA	Anti-Friction Bearing Manufacturers Assoc.
AFF	Above finished floor
AGA	American Gas Association
AGC	Associated General Contractors of America
AGMA	American Gear Manufacturers Association
AHA	American Hardboard Association
AI	The Asphalt Institute
AIA	American Institute of Architects
AIA	American Insurance Association
AIMA	Acoustical and Insulating Materials Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Condition Association
ANSI	American National Standard Institute
ANSI/UL263	Fire Tests of Building Construction and Materials.
ANSI/UL723	Surface Burning Characteristics of Building Materials.
ANSI/UL1479	Fire Tests of Through Penetration Firestops.
ANSI/UL2079	Tests for Fire Resistance of Building Joint Systems.
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
AREA	American Railway Engineering Association

ARI	American Refrigeration Institute
ASA	American Standards Association (Now ANSI)
ASAHC	American Society of Architectural Hardware Consultants
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSCBC	American Standard Safety Code for Building Construction
ASSHTO	American Association of State Highway Transportation Officials
ASTM	American Society for Testing and Materials
ASTM/D16	Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products for interpretation of terms used herein.
ASTM/D4442	Test Method for Moisture Content of Wood.
ASTM/E-84	Surface Burning Characteristics of Building Materials.
ASTM/E119	Fire Tests of Building Construction & Materials
ASTM/E814	Fire Tests of Through Penetration Fire Stops,
ASTM/E1966	Test Method for Fire Resistive Joint Systems.
ASTM/E1399	Test Method for Cyclic Movement & Measuring Minimum & Maximum Joint Widths of Architectural Joint Systems
AWG	American Wire Gauge
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWPB	American Wood Preservers Bureau
AWPI	American Wood Preserves Institute
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Institute of America (formerly SCPI)
BD	Building distributor (replacing main-cross connect and MDF as "building service" room identifiers).
BICSI®	Building Industry Consulting Service International, Inc.
BTU	British Thermal Unit.
CATV	Community Antenna Television (cable television).
CD	Campus distributor (replacing main-cross connect and MDF as "campus-wide service" room identifiers). Also, compact disk for storage of audio or video information.
dB	Decibel.
CDA	Copper Development Association
CFS	Cubic Feet Per Second
CMAA	Crane Manufacturers Association of America
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard
DHI	Door and Hardware Institute
DIPRA	Ductile Iron Pipe Association
DOT Spec	Standard Specification for Road and Bridge Construction Florida Department of Transportation, 1982
E/A	Engineer and/or Architect
EDA	Economic Development Association
EEI	Edison Electric Institute
EF	Entrance Facility
EIA	Electronic Industries Alliance
ELFEXT	Equal Level Far-End Crosstalk
EMC	Electromagnetic Compatibility.
EMI	Electromagnetic Interference.
EMT	Electrical metallic tubing.
ENT	Electrical nonmetallic tubing.
EPA	Environmental Protection Agency
EPDM	Ethylene-polypropylene-diene membrane
ER	Equipment Room. Replacing "TR"
FCC	Federal Communications Commission

FCI	Fluid Control Institute	OSHA	U.S. Department of Labor, Occupational Safety and Health Administration
FD	Floor distributor (replacing network room, intermediate and horizontal cross-connect, and telecommunications as "building service" room identifiers). Also, Floor Drain as part of building plumbing system	OCP	Outside Cable Plant.
FDDI	Fiber Distribution Data Interface.	OTDR	Optical Time Domain Reflectometer
FDER	Florida Department of Environmental Regulation	PCA	Portland Cement Association
FDOT	Florida Department of Transportation	PCI	Prestressed Concrete Institute
Fed Spec	Federal Specification	PR	Pair
FEXT	Far-End Crosstalk	PS	United States Products Standards
FMC	Flexible metallic conduit	PSI	Pounds per Square Inch
FOTP	Fiber Optic Test Procedure	PSIA	Pounds per Square Inch Atmosphere
FPL	Florida Power and Light	PSIG	Pounds Per Square Inch Gauge
FPS	Feet Per Second	RCDD® :	Registered Communications Distribution Designer
Freq	Frequency	RPM	Revolutions Per Minute
FS	Federal Standards	RFI:	Radio Frequency Interference
GA	Gypsum Association	RH	Relative Humidity.
GE	Grounding Equalizer	RNC	Rigid nonmetallic conduit.
Gnd	Ground	SAE	Society of Automotive Engineers
GPM	Gallons Per Minute	SDI	Steel Decks Institute
HB	Handbox. Also, hose bibb for water supply part of plumbing system.	SIGMA	Sealed Insulating Glass Manufacturer's Association
HC	Horizontal Cross-Connect (replaced by floor distributor "FD")	SJI	Steel Joists Institute
HH	Handhole	SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
HMI	Hoist Manufacturers Institute	SM	Single Mode
HP	Horsepower	SSI	Scaffolding and Shoring Institute
HSBII	Hartford Steam Boiler Inspection and Insurance Co.	SSPC	Steel Structures Painting Council
HVAC	Heating, Ventilation, and Air Conditioning	SSPC	Structural Steel Painting Council
Hz	Hertz	STA	Station (100 feet)
IC	Intermediate Cross-Connect (replaced by building distributor "BD").	TAS	Technical Aid Series
ID	Inside Diameter	TBB	Telecommunication Bonding Backbone
IDC	Insulation Displacement Connectors	TCA	Tile Council America
IEEE	Institute of Electrical and Electronic Engineers	TDH	Total Dynamic Head
IFI	Industrial Fasteners Institute	TE	Telephone Equipment (Wall Mounted Equipment Rack)
IMC	Intermediate metal conduit	TGB	Telecommunications Grounding Buss Bar
IPCEA	Insulated Power Cable Engineers Association	TH	Total Head
IPS	Iron Pipe Size	TIA	Telecommunications Industry Association.
ISO	International Organization for Standardization	TMGB	Telecommunications Main Grounding Buss Bar
ISP	Inside Cable Plant	UBC	Uniform Building Code
LFMC	Liquidtight flexible metal conduit	UL	Underwriter's Laboratories, Inc.
LFNC	Liquidtight flexible nonmetallic conduit	UOM	Units of Measure-Weights and Measures shall be as identified by Weights and Measures Division, NIST, U. S. Department of Commerce, 100 Bureau Dr., Stop 2600, Gaithersburg, MD 20899-2600.
Mbps	Megabits per second.	UPS	Uninterruptible Power Supply
MER	Main Equipment Room	USASI	United States of American Standards Institute
MF	Factory Mutual System	WAO	Work Area Outlet
MGD	Million Gallons Per Day		
MH	Maintenance Hole		
MHI	Materials Handling Institute		
MIL	Military Specification		
MMA	Monorail Manufacturers Association		
MHz	Megahertz		
NBFU	National Board of Fire Underwriters		
NBHA	National Builders' Hardware Association		
NBR	Acrylonitrile-butadiene rubber		
NBS	National Bureau of Standards		
NCSA	National Crushed Stone Association		
NCSPA	National Corrugated Steel Pipe Assoc		
NEC	National Electrical Code		
NECA	National Electrical Contractors' Assoc		
NEMA	National Electrical Manufacturers' Association		
NESC	National Electric Safety Code, C2-1997.		
NFPA	National Fire Protection Association		
NLA	National Lime Association		
NPC	National Plumbing Code		
NPT	National Pipe Threads		
NR	Network Room		
NRTL	National Recognized Testing Laboratory		
NSC	National Safety Council		
NSF	National Sanitation Foundation		
OD	Outside Diameter		

B. ITSA/WARNOCK-HERSEY - PRODUCT DIRECTORY

NFPA 101: Life Safety Code - National Fire Protection Association (NFPA).

NFPA 70: National Electrical Code - National Fire Protection Association (NFPA).

ANSI/NECA/BICSI-568-2001 "Installing Commercial Building Telecommunications Cabling".

ANSI/TIA/EIA-568-B.1 and addenda "Commercial Building, Telecommunications Cabling Standard - Part 1: General Requirements".

ANSI/TIA/EIA-568-B.2 and addenda "Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted-Pair".

ANSI/TIA/EIA-568-B.3 and addenda "Commercial Building Telecommunications Cabling Standard - Part 3: Optical Fiber Cabling and Components Standard".

ANSI/TIA/EIA-569-B and Addenda "Commercial Building Standard for Telecommunications Pathways and Spaces".

ANSI/TIA/EIA-606-A and Addenda "Administration Standard for Telecommunications Infrastructure of Commercial Buildings".

ANSI-J-STD-607-A and Addenda "Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications".

ANSI/TIA/EIA-526-7 and Addenda "Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant".

ANSI/TIA/EIA-526-14A and Addenda "Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant".

ANSI/TIA/EIA-758 "Customer Owned Outside Plant Telecommunications Cabling Standard".

IEC/TR3 61000-5-2 - Ed. 1.0 and amendments. "Electromagnetic compatibility (EMC) - Part 5: Installation and mitigation guidelines – Section Earthing and cabling".

ANSI/NFPA 70 National Electrical Code, 2008 Edition.

BICSI Telecommunications Distribution Methods Manual (TDMM).

BICSI Telecommunications Cabling Installation Manual (TCIM).

BICSI Customer-Owned Outside Plant Design Manual, 3rd Edition (CO-OSP).

Applicable Martin County Codes and Regulations.

Underwriters Laboratories (UL).

FCC -Federal Communications Commission.

Occupational Safety and Health Regulations (OSHA).

Florida Fire Protection Code (including NFPA 101 Life Safety Code).

Applicable Florida Statutes and Administrative Rules.

Manufacturers Training Manuals (Design and Installation).

NACE (National Association of Corrosion Engineers) - Industrial Maintenance Painting.

NPCA (National Paint and Coatings Association) - Guide to U.S. Government Paint Specifications.

PDCA (Painting and Decorating Contractors of America) - Painting - Architectural Specifications Manual.

SSPC (Steel Structures Painting Council) - Steel Structures Painting Manual.

- SSPC-SP 1 – Solvent Cleaning.
- SSPC-SP 2 – Hand Tool Cleaning.
- SSPC-SP 3 – Power Tool Cleaning.
- SSPC-SP 13 – Nace No 6 Surface Preparation for Concrete.

UL Underwriters Laboratories Fire Resistance Directory.

Note: Additional abbreviations and symbols are shown on the Drawings.



SECTION II

INSTRUCTIONS TO BIDDERS

1. **REQUIREMENTS FOR PERSONNEL ENTERING DISTRICT PROPERTY:** Possession of firearms will not be tolerated in or near school buildings. Nor will violations of Federal or State Laws and any applicable District policy regarding Drug Free Workplace be tolerated. Violators shall be subject to immediate termination. "Firearm" means any weapon (including a starter gun or antique firearm) which will, is designed to, or may readily be converted to expel a projectile by the action of an explosive; the frame or receiver of any such weapon; any destructive device; or any machine gun.

No person who has a firearm in their vehicle may park their vehicle on District property. Furthermore, no person may possess or bring a firearm on District property.

If any employee of an awarded Contractor or Subcontractor is found to have a firearm on District property, said employee shall be terminated from the project. If the awarded Contractor or Subcontractor fails to ensure that said employee is restricted from the project may result in contract cancellation and/or termination.

Bidders are advised that they are responsible to ensure that no employee, agent, or representative of their company who has been convicted or who is currently under investigation for a crime against children in accordance with any [Disqualifying Offenses](#), F.S. 435.04 shall not enter any school site.

Possession/use and/or being under the influence of any illegal mind-altering substances, such as, but not limited to alcohol and/or substances delineated in Chapter 893, Florida Statutes, by Contractors' employees/independent Contractors or its Subcontractors' employees/independent Contractors will not be tolerated on School Board property. If any employee/independent Contractor is found to have brought and/or used or is under the influence of any illegal mind-altering substances as described above on School Board property, said employee/independent Contractor shall be removed and terminated from the project by the Contractor. If a Subcontractor fails to terminate said employee/independent Contractor, the Contractor shall terminate its agreement with the Subcontractor for the project. If the Contractor fails to terminate said employee/independent Contractor or fails to terminate the agreement with the Subcontractor who fails to terminate said employee/independent Contractor, this Contract may be terminated by the School Board.
2. **FINGERPRINTING, JESSICA LUNSFORD ACT:** Contractor, his Subcontractors, vendors, and suppliers who are permitted access to school grounds while students are present, have direct contact with students, or have access to or control of school funds shall obtain Level 2 background screening in accord with F.S. 1012.465/F.S.1012.467 Jessica Lunsford Act.
 - 2.1 Level 2 screening excludes personnel working on school district property where students are present who have criminal records that include sexual offender, sexual misconduct with developmentally disabled or mental health patients, terrorism, murder, kidnapping, lewd, lascivious, or indecent acts or exposure, incest, child abuse or neglect.
 - 2.2 Persons screened as noted above with other types of criminal history may be allowed on school grounds provided under following conditions:
 - 2.3 Contractor, Subcontractors, vendors, and suppliers shall be under continuous direct supervision of school district employee or Level 2 screened and cleared employee as noted above.
 - 2.4 Contractor, Subcontractors, vendors, and suppliers may be allowed on student occupied site if area of construction is isolated from students by continuous six-foot-high chain link fence separating work area and school.
- 2.5 Persons with current Level 2 clearance who are subsequently arrested for disqualifying offenses shall be disqualified from access to school sites and shall immediately surrender their Photo ID Badge to their employer who shall be responsible for returning badge to Martin County School District's Department of Human Resources within 48 hours of arrest or notice of arrest or criminal offense.
- 2.6 Persons failing to notify their employer and Martin County School District's Department of Human Resources within 48 hours of arrest will be charged with 3rd degree felony, punishable by up to five years imprisonment and \$1,000 fine.
- 2.7 Employers of persons having been arrested for disqualifying offenses who subsequently allow said employee to continue working on school property may also be charged with 3rd degree felony, punishable by up to five years imprisonment and \$1,000 fine.
- 2.8 Contractor, his Subcontractors, vendors, and suppliers working on school board sites shall be fingerprinted and obtain work badges.
- 2.9 Questions regarding fingerprinting or identification badge processing may be directed to District Personnel Department at (772) 219-1255, Ext. 30249, <https://www.martinschools.org/page/vendor-information>.
- 2.10 The fingerprint screening must be completed in advance of the awarded Bidder providing any services. The awarded Proposer shall bear the cost of acquiring the background screening required by F.S. 1012.32, and any fee imposed by the Florida Department of Law Enforcement to maintain the fingerprints provided with respect to the awarded Bidder and its employees. Awarded Bidder shall provide District with a list of its employees. Awarded Bidder shall update these lists if any new employees are added and awarded Bidder agrees that new employees shall be fingerprinted. Awarded Bidder agrees that in the event any employee is convicted of a criminal offense, the awarded Bidder shall notify the District within forty-eight (48) hours.
- 2.11 The parties agree if the awarded Bidder fails to perform any of the duties described in the above paragraph, this shall constitute a breach of the contract entitling the District to terminate immediately with no further responsibility to make payment or perform any other duties under this contract. Awarded Bidder agrees to indemnify and hold harmless the District, its officers and employees from any liability whatsoever resulting from awarded Bidder's failure to comply with the requirements of this paragraph or Fla. Stat. 1012.32 and 1012.465.
3. **QUALIFICATIONS OF BIDDERS:** To demonstrate qualifications to perform the Work, each Bidder must be prepared to submit within five (5) calendar days of District's request written evidence acceptable to the District documentary evidence demonstrating, financial data/fiscal responsibilities, previous experience, present commitments, and other such data as may be called for to meet all of the Bidder's obligations set forth in the Bid documents. Each Bid must contain evidence of Bidder's qualifications to do business in the State of Florida or obtain such qualification prior to award of the contract.

The District reserves the right to contact any of the firms listed by Bidders in any sections as references or any additional firms or individuals to review Bidder's qualifications. Bids that do not comply with these requirements may be rejected at the option of the District.

The project shall be constructed by a firm with the primary qualifying agent licensed as a Contractor pursuant to and as



defined by Florida Statute 489 and shall have been employed full time by the construction firm for at least one year prior to this project's bid date.

4. **ANNUAL APPROPRIATION:** This Bid is conditional upon the District having funding to implement the Contract.
5. **DEFINED TERMS:** Terms used in these Instructions to Bidders, have the meanings assigned to them in the Industry involved in the subject matter of the Bid, in the Martin County School District, Standard General Conditions of the Construction Contract.
6. **COST OF BID:** Costs, either direct or indirect, incurred by the Bidder in the preparation, presentation, demonstration, delivery or for any other reason associated with the submittal of this bid is solely the responsibility of the Bidder and not the District, and are not to be charged to the District.
7. **BACKGROUND INVESTIGATION:** As a part of the Bid evaluation process, the District may conduct a background investigation, including a criminal record check of Bidder's officers and/or employees, by the Sheriff's Office to establish the competency, responsibility, qualifications, and financial ability of the Bidders, proposed Subcontractors and other persons and organizations to do the work in accordance with the Contract Documents to the District's satisfaction within the prescribed time. The Board reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the District's satisfaction.

The Bidder's signature on the Bid Form constitutes acknowledgement of and consent to such investigation. The District shall be the sole judge in determining the Bidder's qualifications.

8. **FACILITIES:** The District reserves the right to inspect the Bidder's facilities at any reasonable time, prior to award of the Bid, during normal working hours, with prior notice to determine that it has a bona fide place of business and is a responsible Bidder.

The District also reserves the right to inspect all facilities of any Subcontractor to make determination as to the foregoing. The subcontractor shall be equally responsible for meeting all requirements specified in the Invitation to Bid.

9. **INQUIRIES/AVAILABILITY:** Inquiries concerning this ITB should be made in writing. The District will respond to written inquiries, if received at least seven (7) calendar days prior to the date scheduled for opening the bids. The District shall record its responses to inquiries and any supplemental instructions in the form of a written addendum. If addenda are issued, the District **shall make every attempt to issue such** addenda at least seven (7) calendar days before the date fixed for receiving the bid. **Written addenda shall be disseminated via DemandStar.** No interpretation shall be considered binding unless provided in writing to the Martin County School District Purchasing Department. **It is the sole responsibility of the Bidder to ensure all addenda are received.**

CONTACT WITH MARTIN COUNTY SCHOOL DISTRICT PERSONNEL OTHER THAN PURCHASING STAFF OR A DESIGNATED REPRESENTATIVE REGARDING THIS INVITATION TO BID SHALL BE GROUNDS FOR ELIMINATION FROM THE PROCESS.

10. **INTERPRETATIONS AND ADDENDA:** All Bidders shall carefully examine the Bid Documents. Any ambiguities or inconsistencies should be brought to the attention of the Purchasing Department through written communication prior to opening of the bids. Failure to do so on the part of the Bidder shall constitute an acceptance by the Bidder of any subsequent decision by the District. The District will receive written requests for clarification concerning the meaning or interpretation of this ITB by issuance

of addenda via DemandStar and Vendor Registry, until (7) days prior to the bid opening date. Questions shall be emailed to bids@martinschools.org with reference to the ITB number in the subject for faster recognition only questions answered by formal written Addenda issued by the MCSD Purchasing Department shall be binding. Oral and other interpretations or clarifications shall be without legal effect.

It is the sole responsibility of the Bidder to ascertain whether any addenda to this Invitation to Bid has been issued, and to submit all such addenda properly acknowledged with the Bid response.

The District may delay scheduled due dates if it is to the advantage of the District. The District shall notify Bidders of all changes in scheduled dates by written addenda.

11. **BID DOCUMENTS:** Solicitation Documents may be obtained by registering at www.demandstar.com or <http://www.vendorregistry.com>, to receive all required documents and notification of addenda. Bidders who obtain solicitation documents from any other source are cautioned that the solicitation package may be incomplete.

Complete sets of Bid Documents shall be used in preparing Bids. Neither District nor EOR assumes, and each disclaims any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bid Documents.

District and EOR in making copies of Bid Documents available on the above terms do so only for the purpose of obtaining bids on the Work and do not confer a license or grant for any other use.

12. **UNIT PRICES:** Where a discrepancy between unit price and total price is indicated on a Bidder's submitted Schedule of ITB Prices or Bid Form, the unit prices shall prevail.
13. **IRREGULARITIES:** Bids not meeting stated minimum terms and qualifications may be rejected by the District as non-responsive or irregular. However, the District reserves the right to waive any irregularities, technicalities, or informalities in any bid. The District reserves the right to allow for the clarification of questionable entries and for the correction of typographical and mathematical errors.
14. **BID SUBMISSION:** Bidder should complete all required documents contained in one (1) file portable document format (PDF) indicating Bidder's name and address, ITB Number and Project Name, time and date of the ITB opening/due date. Bids shall be submitted electronically through www.DemandStar.com or bids@martinschools.org. A Bidder's failure to submit as required before the deadline shall cause their bid to be disqualified. It is the sole responsibility of the Bidder to assure their submittal is received as required. The District shall in no way whatsoever be responsible for any delays caused by power outages or failures: email delivery or internet. Hard copies, mailed, or facsimile shall not be accepted. No exceptions will be considered.

14.1 The Bidder can only view/submit his/her Electronic Submittal and will not have access to any other Bidder's submittals. The Bidder's Electronic Submittal may be changed at the Bidder's discretion until the ITB Due Date and Time is reached. The Bidder will no longer be allowed to change or have access to the electronic submittal after the ITB Due Date and Time as the District will open all bids on said date. Any Bidder who is submitting an Electronic Submittal for the first time is strongly encouraged to contact DemandStar by e-mailing questions to demandstar@demandstar.com.

14.2 Bids, once opened, become the property of the District and shall not be returned to the Bidders. Upon opening, bids become "public records" and shall be subject to public disclosure in accordance with Chapter 119, Florida Statutes.

14.3 Offers by facsimile, telegram, or telephone are **not** acceptable. All Bidders and their representatives are invited



to attend. Bid tabulations are posted online at www.demandstar.com.

14.4 Bids will be opened and read aloud publicly at the time and place indicated in the Invitation to Bid. Submittal of a Bid in response to this Invitation to Bid constitutes an offer by the Bidder.

14.5 Should there be a tie on either the unit price (if awarded on a per item basis), sections of the solicitation (i.e.: building contracts, or solicitations awarded by section) or the whole solicitation ("all or none" solicitations or service solicitations), the deadlock will be decided upon using the following order:

- a. Companies who certify they are a drug-free workplace.
- b. Companies located in Martin County, Florida.
- c. Companies located in Florida.
- d. The company receiving the larger dollar award on other items within the solicitation.
- e. All else being equal, a coin toss will be made to decide the award.

This does not preclude the possibility of splitting an order if it is in the best interest of the School Board.

14.6 All Bids shall remain subject to acceptance for ninety (90) calendar days after the day of the Bid opening, but the District may, at the sole discretion of the District, release any Bid and return the Bid Security prior to that date.

14.7 It is the sole responsibility of the Bidder to assure that his or her submittal is uploaded to DemandStar or bids@martinschools.org on or before the ITB Due Date and Time. The District shall in no way whatsoever be responsible for any delays caused by power outages or failures: email delivery or internet. Hard copies, mailed, or facsimile shall not be accepted. No exceptions will be considered.

15. **MODIFICATION OF BIDS:** Bids may only be modified by an appropriate document duly executed, prior to the solicitation closing date and time. The Bidder must present certification to assure that they are indeed an authorized representative of the Bidder's firm at the time modification to the Bid is presented.

16. **BID FORM:** Bids must be submitted on the prescribed form; all blank spaces must be filled in as noted, in ink or typed with amounts extended and totaled. Where indicated on the Bid Form, items shall be stated in numbers. Bidders are required to bid on all items to be considered. Bidder should not reference the words "No charge, N/A, included, etc." on any of the line items. Vendor must identify a monetary amount for each line item. If vendor is not providing a bid price for an item, zero (0) must be designated on that line item. Failure to identify a monetary amount for each item may cause Bidder's bid response to be considered non-responsive and rejected.

The District reserves the right to accept any Bid or combination of Bid alternates, reject any and all Bids, waive any and all informalities, minor irregularities, to accept any item or group of items unless qualified by Bidder; to acquire additional quantities at prices quoted on the Invitation to Bid unless additional quantities are not acceptable, in which case the bid sheets must be noted "BID IS FOR SPECIFIED QUANTITY ONLY, and the right to disregard all nonconforming, non-responsive, unbalanced or conditional Bids or counter-proposals. In addition, the District reserves the right to make a multiple award if it is in the best interest of the District.

Failure to provide all the information required to accompany the Bid, Bid Form and Specifications shall be considered a serious omission, which may result in the bid being rejected as non-conforming.

The Bid shall contain acknowledgment of receipt of all addenda (copies of which shall be attached to the Bid Form).

17. **BID TABULATION:** Bid tabulations shall be posted on www.DemandStar.com and Vendor Registry within ten (10) days after the bid opening.

18. **EVALUATION FACTORS:** The District reserves the right to reject the Bid of a non-responsible Bidder that the District determines is of doubtful financial ability or fails to meet any other pertinent standard or criteria established by the District. Further, A Bidder must be, at the time of the Bid opening, a fully authorized agent or representative of the product or service Bid, and capable of producing, providing, or installing the items Bid, and so certify upon request.

The District shall consider the firm's qualifications, compliance of requirements, and time of completion as evaluation factors. In addition, the District may require the apparent successful Bidder to submit a Schedule of Values priced in line-item format including time frames (not dated) for staff to review prior to staff's actual award recommendation being submitted to the District Board.

Any inconsistencies shall be brought to the attention of the intended awardee for adjustment prior to award and acceptance of said schedule. An unbalanced Schedule of Values may result in rejection of the bid as non-responsible. Failure to produce said Schedule of Values within four (4) business days of the District's request may result in the bid being rejected as non-responsive.

The District may consider the qualifications and experience of subcontractors and other persons and organizations (including those who are to furnish the principal items or material, services, or equipment) proposed for those portions of the work as to which the identity of subcontractors and other persons and organizations must be submitted.

The District may also consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Tentative Award.

19. **AWARD OF CONTRACT:** The District reserves the right to award item by item, and/or group by group or on an all or none basis to the lowest responsive, responsible Bidder that provides the best value to the District.

NO AWARD RECOMMENDATION SHALL BE BROUGHT BEFORE THE BOARD FOR CONSIDERATION TO AWARD UNTIL THE CONTRACTOR/BIDDER HAS PRESENTED A SIGNED ORIGINAL OF THE CONTRACT OR PURCHASE ORDER ALONG WITH ANY OTHER REQUIRED DOCUMENTS TO THE PURCHASING DEPARTMENT.

NO AWARD SHALL BE DEEMED FINAL AND SHALL BE DEEMED CONDITIONAL, UNTIL THE PARTIES HAVE FULLY EXECUTED THE AGREEMENT(S) OR A PURCHASE ORDER HAS BEEN ISSUED BY THE BOARD TO THE BIDDER. THE BOARD RESERVES THE RIGHT TO REVOKE ANY AWARD MADE HEREUNDER, WITHOUT PENALTY, PREMIUM OR OBLIGATION, AT ANY TIME PRIOR TO THE DELIVERY OF THE FULLY EXECUTED AGREEMENT(S) OR PURCHASE ORDER. NO BIDDER SHALL BE ENTITLED TO RELY ON ANY ANNOUNCEMENT OF AN AWARD, AND THE BOARD SHALL IN NO WAY BE ESTOPED IN THE REVOCATION OF AN AWARD PREVIOUSLY GRANTED.

F.S.119.071(1)(b)2., provides an exemption for "sealed bids, proposals, or replies received by an agency pursuant to a competitive solicitation" until such time as the agency provides notice of an intended decision or until 30 days after opening "the bids, proposals, or final replies," whichever is earlier.

20. **DIRECT MATERIAL PURCHASES:** The District reserves the right to issue purchase orders for materials to either the Contractor's or the District's suppliers for construction related materials.

21. **CONTRACTUAL AGREEMENT:** The submission of your Bid constitutes a firm offer by the Bidder. Upon acceptance by the



Board, the Purchasing Department shall issue a notice of award and purchase order(s) and/ or contract for any supplies, equipment and/or services as a result of this bid. The Invitation to Bid and the corresponding purchase order(s) and /or contract shall constitute the complete agreement between the successful Bidder and the Board. Unless otherwise stipulated in the bid documents or agreed to in writing by both parties, no other contract documents shall be issued or accepted.

The District may attach as a part of this solicitation a Sample Contract document. Bidders shall be responsible for complying with all the terms and conditions of the Sample Contract document, except where variant or conflicting language may be included in any Special Conditions contained herein. Bidders shall note any deviation or variance with the Sample Contract document at the time of bid submission. Should no revisions be noted, the District will assume, and the Contractor agrees that the terms and conditions of agreement are acceptable.

22. **CONTRACT TERMS:**

- a. A contract resulting from this document shall be governed in all respects as to validity, construction, capacity, performance, or otherwise by the laws of the State of Florida.
- b. Contractors providing service under this contract assure the School Board that they are conforming to and otherwise complying with the following, as applicable:
 - The Civil Rights Act of 1964, as amended.
 - Clean Air and Water Pollution Acts, 42 U.S.C. 7401-7671q.
 - Federal Water Pollution Control Act, 33 U.S.C. 1251-1387.
 - Executive Order 11738.
 - EPA Regulation, 40 CFR Part 15, which prohibits the use under non-exempt federal contracts, grants or loans of facilities included on the EPA list of violating facilities.
 - Federal, state and local laws and regulations, including the Davis-Bacon Act, pertaining to wages, hours and conditions of employment and 2CFR 200.317 – 200.326, if applicable.
 - Energy Policy and Conservation Act, 42 U.S.C. 6201.
 - Funding Agreement (Rights to Inventions) 37 CFR Part 401.
 - Recovered Materials Section 6002 of Environmental Protection Agency (EPA) at 40 CFR Part 247.
 - Equal Employment Opportunity, 41 CFR Part 60.
 - Copeland "Anti-Kickback" Act, 40 U.S.C. 3145, as supplemented by the Department of Labor Regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by loans or grants from the United States".)
 - Contract Work Hours and Safety Standards Act, 40 USC 3702 and 3704, as supplemented by Department of Labor Regulations (29 CFR Part 5), as applicable.

23. **SIGNING OF CONTRACT:** The Notice of Tentative Award will be presented to the Successful Bidder. The Legal Department shall issue the contract within ten (10) calendar days thereafter, the Successful Bidder shall sign and deliver the required number of counterparts of the Construction Contract to District. Upon Board approval, the District shall request the required bonds and insurance certificates. The aforementioned documents must be submitted to the District prior to any WORK being performed. After receipt of requested documents, the executed contract, purchase order, and notice to proceed will be presented to the Awarded Bidder. Each counterpart is to be accompanied by a complete set of the Drawings. By signing this contract, the Contractor certifies compliance with, and/or will comply with, the

terms specifically mentioned, as well as all other municipal, county, state and federal requirements and regulations.

24. **CONTRACT DEFAULT:** In the event the Contractor fails to enter a contract with the School Board based on the submittal, such action shall constitute a default of this agreement. Further default may be declared by the School Board if the Contractor violates the terms of the submitted document in any manner. Upon default of this agreement and/or any agreement resulting from this agreement, the School Board shall be entitled to pursue all remedies available at law and/or in equity, including, but not limited to, the recovery of damages equaling the difference of the submitted price and the price the School Board subsequently pays to secure performance from other sources. Damages may be assessed and deducted against any funds due and owing to the Contractor.

In the event any litigation occurs between the parties as a result of the contract, the prevailing party shall be entitled to recover reasonable attorney's fees and court costs for any such action.

At the discretion of the School Board, any Contractor found in default of this agreement and/or any agreement resulting from this agreement, shall be removed from the Contractor list for a period of up to three (3) years from the date of said default. Default under this agreement and/or any other agreement(s) in which the School Board has contracted with the Contractor, may also, at the discretion of the School Board, result in termination of any other such agreement(s).

25. **TERMINATION OF CONTRACT:** This contract may be terminated without liability to the School Board in whole or in part when it is deemed to be in the best interest of the School Board to so act. Notification of termination must be in writing and issued by the Director of Materials Management or designee. This contract may be terminated upon 30 days' written notice. Further, at the discretion of the School Board, the contract may be terminated in a period of less than 30 days in the event of poor performance or violation of these terms. The Contractor shall have a period of time, as determined by the School Board, to remedy any noncompliance with the offered terms and specifications. The School Board, upon termination, shall exercise its discretion to complete the balance of the contract consistent with the best interest of the School Board. The School Board delegates the authority to terminate the contract to the Superintendent or designee. At the discretion of the School Board, the Contractor may be removed from future solicitation opportunities for a period up to three (3) years.

26. **REJECTION / DISQUALIFICATION OF BIDDER:** The Board, at its sole discretion, reserves the right to reject all bids, accept any bid or any combination of bids or waive any minor irregularity or technicality in bids received, when in its sole judgment, it shall best serve public interest. The right is reserved to reject all Bids or to accept the one deemed by the DISTRICT to be the most advantageous. Contractor's bid shall be rejected as non-responsive if any of the following exist (this list is not all inclusive):

- More than one Bid from an individual, firm, partnership, corporation, or association under the same or different names shall not be considered.
- The District reserves the right to reject the bid of any Bidder in arrears or in default upon any debt or contract to the District or who has failed to perform faithfully any previous contract with the District or with other governmental jurisdictions.
- If there is reason to believe that collusion exists between Bidders.
- Bids that are judged to be mathematically or materially unbalanced shall be rejected.



- The Bid Package is found to have concealed or contained false and/or misleading information.
- Executed requested Attachments/Affidavits are not completed or submitted.
- Incomplete execution of documents, Bidder signature page, and Bid submittal form.
- Not licensed to perform the required work or provide the required product.
- Not eligible to bid due to violations listed under, Public Entity Crimes.
- Submission of irregular bids. Failure to fill out forms completely, indicating compliance or deviation for each item may be used as reason for rejection.
- Non-compliance with applicable laws or contains any unauthorized additions or deletions or contains irregularities of any kind is considered incomplete, indefinite, or ambiguous as to its meaning.

27. **EXECUTION OF BID:** Bidders shall submit their bid response electronically as described above. For this purpose, all references herein to signing requirements or other required acknowledgments hereby include either a manual signature in blue ink or by electronic digital signature by an authorized officer of the proposing firm who is legally authorized to enter a contractual relationship in the name of the Bidder. Bid must be typed or legibly printed in ink. Use of erasable ink is not permitted. All corrections made by Bidder to any part of the Bid document must be initialed in ink. The respondent agrees that the action of electronically submitting its response constitutes the following:

- An electronic signature on the responses.
- An electronic signature on any form or section specifically calling for a signature and
- An affirmative agreement to any statement contained in the solicitation that requires a definite confirmation or acknowledgement.
- Compliance with electronic signatures as specified in F.S. Chapter 668.

The bid submittal of a Statement of Bid by the Bidder shall be considered by the District as constituting an Offer by the Bidder to perform the required services.

Bids by corporations must be executed in the corporate name by the President or Vice President (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal shall be affixed and attested by the Secretary or Assistant Secretary. The corporate address and State of Incorporation shall be shown below the signature.

Bids by partnership must be executed in the partnership name and signed by a general partner, his title must appear under his signature and the official address of the partnership must be shown below the signature.

All names of persons signing documents must be typed or printed below the signature.

28. **NO BID:** If not submitting a Bid, please respond no later than the Bid opening date and time, by returning the acknowledgment, noting the reason for declining. An addendum may be issued to remedy providing the circumstances are determined reasonable.

29. **WITHDRAWAL OF BIDS:** All Bids shall be irrevocable unless the Bid is withdrawn as provided herein. All Bids may be withdrawn only by written communication delivered to the Purchasing Department prior to the solicitation closing date and time. The Bidder must present certification to assure that they are

indeed an authorized representative of the Bidder's firm at the time such communication to withdraw the Bid is presented. A District representative shall verify this information prior to return of the Bid and Bid Security.

However, within twenty-four (24) hours after Bids are opened, any Bidder files a duly signed written notice with the District and successfully demonstrates that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid Security will be returned. Bidder shall be disqualified from further bidding on the WORK to be provided under the Bid Documents.

30. **CONFLICT OF INTEREST:** All Bidders must disclose with their Bid the name of each of its employees, agents, or relatives who are employees of the DISTRICT. The Bidder represents and warrants to the District the following:

- No officer, employee, or agent of the District has any interest, either directly or indirectly, in the business of the Bidder to be conducted hereunder.
- Bidder has not employed or retained any company or person, other than a bona fide employee working solely for the Bidder, to solicit or secure this contract, and that it has not paid, or agreed to pay any person, company, corporation, individual, or firm, other than bona fide Personnel working solely for the Bidder any fee, commission, percentage, gift or other consideration, contingent upon, or resulting from the award or making of this contract.
- Bidder acknowledges that it has not agreed as an expressed or implied condition for obtaining this contract, to employ or retain the services of any person, company, individual or firm in connection with carrying out this contract.
- Bidder represents that it presently has no interest, either direct or indirect, while performing the services required by this contract, which would conflict in any manner with Florida Statutes
- Bidder represents that no person having any such interest shall be employed during the term of this contract, including any officer, employee, or agent of the District.
- Bidder represents and warrants that it has no current contracts with any entity that would create any conflict of interest in the Bidder's ability to provide the services required by this contract. Further, the Contractor represents and warrants that throughout the term of this contract, it will not undertake any work that would create such a conflict in interest.

It is understood and agreed by the Bidder that, upon the breach or violation of this Section, the District shall have the right to terminate the contract without liability and at its sole discretion, and to deduct from the contract price, or to otherwise recover, the full amount of such fee, commission, percentage, gift, or consideration paid by the Bidder.

The Bidder shall promptly notify the District in writing by certified mail or electronic mail of all potential conflicts of interest for any prospective business association, interest or other circumstance that may influence or appear to influence the Bidder's judgment or quality of services being provided hereunder. Such written notification shall identify the prospective business association, interest or circumstance, the nature of work that the Bidder may undertake and request an opinion of the District as to whether the association, interest or circumstance would, in the opinion of the District, constitute a conflict of interest if entered by the Bidder. If, in the opinion of the District, the prospective business association, interest or circumstance would not constitute a conflict of interest



by the Bidder, the District shall so state in the notification and the Bidder shall, at its option, enter into such association, interest or circumstance and it shall be deemed not in conflict of interest with respect to services provided to the District by the Bidder under the terms of this Contract.

31. **NON-COLLUSION:** By submitting a bid, the Bidder certifies that it has not divulged discussed or compared its Bid with other Bidders and has not colluded with any other Bidder or parties to a Bid whatsoever. No employee of the School Board has or shall benefit financially or materially from such solicitation or subsequent contract. Any contract issued as a result of this solicitation may be terminated at such time as it is determined that gratuities of any kind were either offered or received by any of the aforementioned persons. (Note: Premiums, rebates or gratuities are not permitted with, prior to, or after any delivery of material.) Any such violation shall result in the cancellation and/or return of materials (as applicable) as being non-conforming.

32. **PUBLIC ENTITY CRIMES:** The Bidder certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by the State of Florida or Federal Government. Further, Bidder certifies that it has divulged, in its bid response, information regarding any of these actions or proposed actions with other governmental agencies.

Pursuant to Section F.S. 287.133, FS as amended: a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid on a Contract to provide any goods or services to a public entity, may not submit a Bid on a Contract with a public entity for the construction or repair of a public building or public work, may not submit Bids on leases of real property to a public entity, may not be awarded or perform work as a Vendor, supplier, subvendor, or consultant under a Contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in F.S. 287.017 for CATEGORY TWO or higher for a period of 36 months from the date of being placed on the convicted vendor list.

The awarded Bidder or any subcontractor shall not employ any persons with multiple felonies and / or crimes against children. The awarded Bidder must provide documented proof of efforts to comply with this requirement. The Owner may declare any non-compliance or lack of diligent effort by the awarded Bidder to comply as a breach of contract and immediately terminate the services of the awarded Bidder.

Any employees involved in any F.S. Chapter 435, Florida Statutes offenses are precluded from continuing to work on a project and must be replaced. Failure to comply may result in the immediate termination of the awarded Bidder's contract at the sole discretion of the District. Lack of knowledge by the Bidder shall in no way be a cause for relief from responsibility.

33. **PUBLIC RECORDS:** Any material submitted in response to this Invitation to Bid shall become a public document pursuant to F.S. 119.. This includes material that the responding BIDDER might consider to be confidential or a trade secret. Any claim of confidentiality is waived upon submission, effective after opening of Bids.

If the Contractor has questions regarding the application of chapter 119, Florida statutes, to the Contractor's duty to provide public records relating to this

contract, contact the custodian of public records at 772. 219.1200, ext. 30178, 1939 SE Federal Highway, Stuart, Florida 34994 or click [here](#).

In compliance with F.S. 119.0701 the Contractor shall:

- Keep and maintain public records required by the public agency to perform the service.
- Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.
- Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the Contractor does not transfer the records to the public agency.
- Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the Contractor or keep and maintain public records required by the public agency to perform the service. If the Contractor transfers all public records to the public agency upon completion of the contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from the public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.
- A request to inspect or copy public records relating to a public agency's contract for services must be made directly to the public agency. If the public agency does not possess the requested records, the public agency shall immediately notify the Contractor of the request, and the Contractor must provide the records to the public agency or allow the records to be inspected or copied within a reasonable time.
- If a Contractor does not comply with the public agency's request for records, the public agency shall enforce the contract provisions in accordance with the contract.
- A Contractor who fails to provide the public records to the public agency within a reasonable time may be subject to penalties under F.S. 119.10.
- If a civil action is filed against a Contractor to compel production of public records relating to a public agency's contract for services, the court shall assess and award against the Contractor the reasonable costs of enforcement, including reasonable attorney fees, if:
 1. The court determines that the Contractor unlawfully refused to comply with the public records request within a reasonable time; and
 2. At least eight (8) business days before filing the action, the plaintiff provided written notice of the public records



request, including a statement that the Contractor has not complied with the request, to the public agency and to the Contractor.

enterprises for participation as associates, joint ventures, prime Contractors, and subcontractors in contracting opportunities.

- A notice complies with subparagraph 2 above if it is sent to the public agency's custodian of public records and to the Contractor at the Contractor's address listed on its contract with the public agency or to the Contractor's registered agent. Such notices must be sent by common carrier delivery service or by registered, Global Express Guaranteed, or certified mail, with postage or shipping paid by the sender and with evidence of delivery, which may be in an electronic format.
- A Contractor who complies with a public records request within eight (8) business days after the notice is sent is not liable for the reasonable costs of enforcement.

34 **LICENSES:** Bidders, both corporate and individual, must be fully licensed and certified for the type of work to be performed in the State of Florida at the time of receipt. The submittal of any bid from a Contractor that is not fully licensed and/or certified shall be rejected.

35 **PERMITS:** The Bidder(s) shall be responsible for obtaining any necessary permits and shall comply with laws, rules, and regulations whether state or federal and with all local codes and ordinances without additional cost to the District.

36 **SUNBIZ:** Bidders, both corporate and individual, must provide proof that their firm is registered with the Division of Corporations for the State of Florida.

37 **BUSINESS TAX RECEIPT:** Bidder shall comply with Business Tax Receipt requirements for their business location, if applicable. A copy of the business tax receipt or proof of exemption must be included with the submittal package, if applicable.

38 **BIDDER MAILING ADDRESS:** It is the responsibility of every Bidder to register and maintain their current registration information. Bidders that have received the ITB from DemandStar.com must maintain their information on the DemandStar database. Bidders that have received the ITB documents from Vendor Registry must maintain their information on their database. The information used by the Purchasing Department is maintained at <http://www.demandstar.com>. DemandStar shall be used to make notice of ITBs and other information to Bidders.

39 **ANTI-DISCRIMINATION:** The Bidder certifies that they are in compliance with the non-discrimination clause contained in Section 202, Executive Order 11246, as amended by Executive Order 11375 relative to equal employment opportunity for all persons without regard to race, color, religion, sex or national origin. The provisions of the ADA Act of 1990 pertaining to employment shall also be applicable.

The Bidder shall not discriminate based on race, gender, gender identity or expression, religion, national origin, ethnicity, sexual orientation, age or disability in the solicitation, selection, hiring, or treatment of sub-Contractors, vendors, suppliers, or commercial customers. Bidder shall provide equal opportunity for sub-Contractors to participate in all its public sector and private sector sub-contracting opportunities. Bidder understands and agrees

that violation of this clause is a material breach of the contract and may result in contract termination, debarment, or other sanctions.

40 **MINORITY BUSINESS PARTICIPATION:** The District strongly encourages the use of Minority/Woman owned business

41 **JOINT BIDS:** In the event multiple proposers submit a joint Bid in response to the BID, a single proposer shall be identified as the Prime Vendor. If offering a joint Bid, Prime Vendor must include the name and address of all parties of the joint Bid. Prime Vendor shall provide all bonding and insurance requirements, execute any Contract, complete the **REQUIRED RESPONSE FORM** shown herein, and have overall and complete accountability to resolve any dispute arising within this contract. Only a single contract with one bidder shall be acceptable. Prime Vendor responsibilities shall include, but not be limited to, performing of overall contract administration, preside over other proposers participating or present at District meetings, oversee preparation of reports and presentations, and file any notice of protest and final protest as described herein. The Prime Vendor shall also prepare and present a consolidated invoice(s) for services performed. The District shall issue only one check for each consolidated invoice to the Prime Vendor for services performed. The Prime Vendor shall remain responsible for performing services associated with response to this BID.

42 **LOBBYING:** Contractors are hereby advised that they are not to lobby with any district personnel or board members related to or involved with this solicitation. Lobbying is defined as any action taken by an individual, firm, association, joint venture, partnership, syndicate, corporation, and all other groups who seek to influence the governmental decision of Board member or District personnel after advertisement and prior to the posted recommendation on the award of the Contract.

Bidders are hereby advised; they are not to lobby with any District personnel or board members related to or involved with this bid until recommendation for award. All oral or written inquiries must be directed through the Purchasing Department.

Any Bidder or any individuals that lobby on behalf of Bidder during the time specified shall result in rejection / disqualification of said bid.

43 **BYRD ANTI-LOBBYING AMENDMENT:** Contractors that apply or propose for an award of \$100,000 or more must file the required certifications. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress with or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier, up to the non-Federal award.

44 **KICKBACKS:** Any Contractor giving or offering to any employee and/or official of the School Board, either directly or indirectly, any rebate, percentage of contract, money or other things of value as an inducement or intended inducement, in the procurement of this or any other solicitation, shall be deemed in violation of this agreement, in addition to being in violation of any other municipal, county, state and federal laws and/or ordinances.

45 **CONE OF SILENCE:** A cone of silence is hereby established for all competitive selection processes for the provision of goods and services. The cone of silence is designed to protect the integrity of the procurement process by shielding it from undue influences prior to the recommendation of contract award. This cone of silence shall be imposed on these procurements after advertisement of same.



The cone of silence prohibits any communication regarding a competitive solicitation process. The cone of silence commences after the advertisement of the competitive solicitations. Competitive procurements are advertised on the purchasing department's web page or in a newspaper of general circulation.

The cone of silence terminates at the time the School Board acts on a written recommendation from the purchasing department or planning and construction department regarding contract award; provided, however, that communications are permitted when the School Board receives public comment at the meeting when the recommendation is presented.

F.S.119.071(1)(b)2., provides an exemption for "sealed bids, proposals, or replies received by an agency pursuant to a competitive solicitation" until such time as the agency provides notice of an intended decision or until 30 days after opening "the bids, proposals, or final replies," whichever is earlier.

The purchasing department and planning and construction department shall ensure that all solicitations include provisions describing the requirements and prohibitions of the cone of silence, including how a potential vendor, service provider, Bidder, lobbyist, or consultant may communicate with District personnel.

Any person, whether employed by the District or not, who knowingly violates a provision of this policy shall be prohibited from serving on a District competitive selection committee.

Violation of this policy by a particular Bidder, proposer, respondent, and/or representative may, at the discretion of the District, result in rejection of said Bidder, proposer, respondent, and/or representative's bid, proposal, or offer and may render any contract award to said Bidder, proposer, or respondent voidable.

In addition to any other penalty provided by law, violation of this policy by a District employee shall subject said employee to disciplinary action up to and including dismissal from service.

46. **ASSIGNMENT:** The successful Bidder shall not assign, transfer, convey, sublet, or otherwise dispose of the contract, or of any or all of its rights, title, or interest therein, or its power to execute such contract to any person, firm, or corporation without prior written consent of the District.

47. **SUBCONTRACTING:** If an awarded Bidder intends to subcontract any portion of the Contract for any reason, the name and address of the subcontracting firm must be submitted along with the Bidder's bid or prior to work for approval. The Purchasing Department reserves the right to reject a subcontractor who previously failed in the proper performance of a contract or failed to deliver on-time contracts of a similar nature, or who, the DISTRICT has determined in its sole discretion, is not in the position to perform the contract due to the subcontractor's size, experience, or resources.

In addition, the awarded Bidder's subcontractors shall comply with all requirements of F.S. 1012.32 and 1012.465 by completing the fingerprint screening required of the awarded Bidder and all its employees /subcontractors who provide services under this contract.

If requested by the District or EOR, Contractor shall provide an experience statement with pertinent information regarding similar projects and other evidence of qualification for each subcontractor, Supplier, person, or organization. If the District or EOR after due investigation has reasonable objection to any proposed subcontractor, Supplier, other person or organization, either may, before the Notice of Tentative Award is given, request the apparent Successful Bidder to submit an acceptable substitute without an increase in Bid price.

If the apparent Successful Bidder declines to make any such substitution, the District may award the contract to the next lowest Bidder that proposes to use acceptable subcontractors, Suppliers and other persons and organizations. The decline to make requested substitutions **shall constitute grounds** for sacrificing the Bid Security of any Bidder. Any subcontractor, Supplier, other person or organization listed and to whom the District or EOR does not make written objection prior to the giving of the Notice of Tentative Award will be deemed acceptable to the District and EOR subject to revocation of such acceptance after the Effective Date of the Contract as provided in Section 6.5 of the Supplementary Conditions. subcontractors shall not be changed without the approval of the District and the EOR. No acceptance by the District or EOR of any such subcontractor, Supplier or other person or organization shall constitute a waiver of any right of the District or EOR to reject defective Work or materials not conforming to these specifications.

In contracts where the Contract Price is based on Cost-of-the-Work Plus a Fee, the apparent Successful Bidder, prior to the Notice of Tentative Award, shall identify in writing to the District those portions of the Work that such Bidder proposes to subcontract and after the Notice of Tentative Award the Successful Bidder may only subcontract other portions of the Work with the District's written consent.

No BIDDER shall be required to employ any subcontractor, other person or organization against which Bidder has reasonable objection.

- 48. **REPRESENTATIVE:** At all times during the term of the contract, the successful Contractor shall act as an independent Contractor and at no time shall be considered an agent or partner of the District.
- 49. **BONDING GUARANTY/EVIDENCE:** The Bid submittal **must** be accompanied by a notarized letter from your firm's Surety guaranteeing that if your firm is awarded a contract, the Surety will issue a letter of credit that attests to the bonding capacity (the maximum amount of surety credit a surety company) will provide to a Contractor, contingent upon a top-notch organization, strong financial presentation, and experience. The Surety shall also guarantee your firm by issuing Performance and Payment bonds as required by the District. Failure to submit the Surety Guaranty letter with your Bid shall cause your bid to be rejected as non-responsive. The District shall be the sole judge in determining Bonding Capacity.
- 50. **PROPOSAL AS PUBLIC DOMAIN:** All documents and other materials made or received in conjunction with this project will be subject to public disclosure requirements of chapter 119, Florida Statutes. This includes material that the responding Proposer might consider to be confidential or a trade secret. The proposal will become part of the public domain upon opening. **Respondents shall not submit pages marked "proprietary" or otherwise "restricted".**



SECTION III
GENERAL TERMS AND CONDITIONS

These general terms and conditions apply to all offers made to the Martin County School District by all prospective Bidders, including but not limited to, Request for Quotes, Invitations to Bid, and Request for Proposals. As such the words "RFP", "Bid", and "Proposal" are used interchangeably in reference to all offers submitted by prospective Bidders.

Where there appears to be variances or conflicts between the General Terms and Conditions, Supplementary Conditions, and the Special Conditions and/or Detailed Specifications outlined in this ITB, Section III, General Terms and Conditions, Item #2, Order of Precedence shall prevail.

1. **ADVERTISING:** In submitting a Bid, Bidder agrees not to use the results there as a part of any commercial advertising.
2. **ORDER OF PRECEDENCE:** In resolving conflicts resulting from errors or discrepancies in any of the ITB or Contract Documents, the order of precedence (lower number item controls) shall be as follows:
 - Amendment
 - Change Order
 - Contract/Agreement or Purchase Order
 - Addenda
 - Bid Form, if applicable
 - Technical Specifications/Attachments
 - Special Conditions
 - Supplementary Conditions
 - General Terms and Conditions
 - Instructions to Bidders
 - Invitation to Bid

3. **BID SECURITY:** When required by the Bid documents each Bid must be accompanied by a Bid security made payable to the Martin County School District in an amount of five percent (5%) of the Bidder's maximum Bid price and in the form of a certified check or cashier's check drawn upon any State or National Bank of Florida or a Bid Bond issued by a Surety that must have a "Best" rating of "A", and be authorized to do business in Florida.

Said check or Bid Bond shall be made payable to the Martin County School District and shall be given as a guarantee that Bidder, upon receipt of Notice of Tentative Award of the purchase order or contract, shall enter into the Contract or accept the purchaser order with the District, and furnish the necessary documents including, but not limited to: insurance certificates, other required Bonds, each of the said Bonds to be in the amount stated on the Invitation to Bid.

The Attorney-in-Fact who signs the bond must file with the bond a current certificate of proof of appointment as Attorney-In-Fact.

The Bid Security of the Successful Bidder shall be retained until such Bidder has been awarded a binding Contract or Purchase Order or Contract security whereupon the Bid security shall be returned. If the apparent Successful Bidder fails to execute and deliver the Purchase Order or Contract and furnish the required contract security within ten (10) calendar days after the Notice of Award, which is issued prior to the District's award of Purchase Order or Contract, the District may annul the Notice of Award, and the bid security of that Bidder shall be forfeited and retained by the District. The District may then recommend to the Board to accept the Bid of the next lowest responding Bidder or re-advertise for bids. If the Bid of the next lowest Bidder is accepted, this acceptance shall bind such Bidder as though it was the original Successful Bidder.

There shall be no binding contract until such time as the Board or designee executes the Contract or issues the Purchase Order as the final award of the contract. The Bid Security of other Bidders whom District believes to have a reasonable chance of receiving the award may be retained by the District until the earlier of the seventh day after the effective date of the Purchase Order or Contract or the ninety-first day after the Bid opening, whereupon Bid security furnished by such Bidders shall be returned. Bid security with Bids which are not competitive or responsive shall be returned upon award of the Bid.

4. **EXAMINATION OF BID DOCUMENTS & SITE:** Pursuant to Article 4, Supplementary Conditions, Bidder must satisfy itself by personal and thorough examination of the location of the proposed Work, Bid Documents, requirements of the Work and the accuracy of the estimate of the quantities of the Work to be done; and Bidder shall not at any time after the submission of a Bid dispute or complain of such estimate nor the nature or amount of Work to be done.

By submission of its Bid, Bidder affirms that it has, at its own expense, made or obtained any additional examinations, investigations, explorations, tests, and studies and obtained any additional information and data which pertain to the physical conditions (surface, subsurface, and Underground Utilities) at or contiguous to the site or otherwise, prior to bidding which may affect cost, progress, or performance of the Work and which Bidder deems necessary to determine its Bid for performing the Work in accordance with the time, price, and other terms and conditions of the Bid Documents and/or Bidder has satisfied itself with respect to such conditions and it shall make no claims against the District or the EOR if on carrying out the Work it finds that the actual conditions do not conform to those indicated.

On request, the District will provide Bidder with access to the site to conduct such investigations and tests, as Bidder deems necessary for submission of its Bid. Bidder shall schedule such access in advance with the District.

Upon completion of such additional field investigations and tests, Bidder shall completely restore disturbed areas.

5. **ADJUSTMENTS/CHANGES/DEVIATIONS:** No adjustments, changes, or deviations shall be accepted on any item unless conditions or Specifications of a Bid are expressly provided. All adjustments, changes or deviations shall require prior written approval and shall be binding **ONLY** if issued through the District's Purchasing Office.
6. **BID EXEMPT:** Purchases shall not include any items or services available at lower prices on other public entity or



State of Florida Contract. The District reserves the right to Bid separately any item or service if deemed to be in the best interest of the District.

7. **PROMOTIONAL PRICING:** In addition, Bidder shall offer to the District, during the Contract period, any item(s) offered on a "promotional" basis from the manufacturer. It shall be the successful Bidder's responsibility to monitor said item(s) and report any that are or shall be offered at lower price.
8. **CONTRACT SECURITY/INSURANCE:** When required by the specification herein, the successful Bidder shall furnish, a Performance Bond, Payment bond, and/or Warranty bond, and insurance certificates as stated on the cover page of this solicitation, on the District's forms, within ten (10) calendar days after notification of award. Failure to furnish the required bonds within the time specified may be cause for rejection of the bid and any bid deposit may be retained by the District as liquidated damages and not as a penalty. Said sum shall be a fair estimate of the amount of damages the District would sustain due to Bidder's failure to furnish said bonds.
9. **PRICES:** Bid prices shall be fixed and firm to the extent required under Special Conditions. In the absence of a reference in the Special Conditions, bid prices shall be fixed and firm for a period of ninety (90) calendar days. Give both unit price and extend total. Prices must be stated in units of quantity specified in the bid specifications. In case of a discrepancy in computing the amount of the bid, the UNIT PRICE quoted shall govern. All prices FOB destination, freight prepaid (unless otherwise stated in special conditions). Each item must be bid separately, and no attempt is to be made to tie any item or items in with any other item or items. Payment shall be made only after receipt and acceptance of materials/services. Cash discounts may be offered for prompt payment; however, such discounts shall not be considered in determining the lowest net cost for bid evaluation.

All payments shall be governed by the *Local Government Prompt Payment Act*, F.S. Chapter 218.

10. **DELIVERY:** All items shall be delivered F.O.B. destination to a specific District address. All delivery costs and charges must be included in the bid price. The District reserves the right to cancel orders or any part thereof, without obligation if delivery is not made at the time specified in the bid.

Unless actual date of delivery is specified, show number of days required to make delivery after receipt of purchase order in space provided. Delivery time may become a basis for making an award.

NOTE TO VENDORS DELIVERING TO MARTIN COUNTY SCHOOLS WAREHOUSE: Normal receiving hours are Monday through Friday (excluding holidays) 7:00 A.M. to 2:30 P.M. Summer receiving hours, typically mid-June to early August, are 6:30 AM to 3:30 PM, Monday through Thursday. This warehouse is located at 2845 SE Dixie Highway, Building #7, Stuart, Florida 34997.

11. **MISTAKES:** Bidders are expected to examine the Specifications, Plans, Delivery Schedule, Bid prices, Extensions and all Instructions pertaining to supplies and services. **FAILURE TO DO SO SHALL BE AT THE BIDDER'S RISK.** In the event of extension error(s), the unit price shall prevail, and the Bidder's total offer shall be corrected accordingly. Erasures or corrections on Bids must be initialed in ink by the Bidder.

Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the unit price.

Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

12. **INVOICING AND PAYMENT:** Payment for all invoice(s) that may arise as a result of a Contract or Purchase Order issued pursuant to this Bid Specification shall minimally meet the following conditions to be considered as a valid payment request. **If progress payments are applied for, all invoicing and payments shall be as stipulated under the Special Conditions section titled "Progress Payments".**

Timely submission of a property certified invoice(s) in strict accordance with the price(s) and delivery elements as stipulated in the Contract document should be submitted to:

Martin County School District
 Attn: Accounts Payable Department
 1939 SE Federal Highway
 Stuart, FL., 34994
invoices@martinschools.org

All invoices shall be based upon and submitted with an approved Schedule of Values. Said Schedule of Values shall also contain a percentage breakdown of the supplies and services completed for which payment is requested in comparison to the total contract.

All invoices submitted shall consist of an original and one (1) copy.

- clearly referenced the subject Contract or Purchase Order number.
- provide a sufficient salient description to identify the goods or services for which payment is requested.
- contain date of delivery.
- original or legible copy of a signed delivery receipt including both manual signature and printed name of a designated District employee or authorized agent; be clearly marked as "partial", "complete" or "final" invoice. The District shall accept partial deliveries.

The invoice shall contain the Bidder's Federal Employer Identification number.

The District's terms of payment, unless otherwise stated in the Contract or Purchase Order documents, are "Net 30 Days" after acceptance of goods or services and receipt of an acceptable invoice as described herein. Any other items of payment must have been previously approved by the District and appear on the Contract or Purchase Order document to be binding on the District.

Should the District return an invoice for correction, the Vendor shall resubmit a corrected invoice to the District for processing.

Payment will be made after the goods/services from the awarded Proposer have been received/completed; inspected and found to comply with negotiated contract, free of damage or defect; and a properly billed invoice is received and processed in the Accounting Services Department.

13. **ESTIMATED QUANTITIES:** The estimate of the various quantities of work or goods applicable to unit price items as shown on the Bid Form is approximate and is intended solely to provide the basis of comparison upon which the Award of Contract is made. Final payment shall be made based on the actual quantities received.

The District reserves the right to reduce the quantities of Work to be done and to eliminate any items of the work listed in the Bid Form in order that the work can be completed within the amount of available funds.



14. **SUBSTITUTE or "OR EQUAL ITEMS":** The Contract, if awarded, will be based on material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by Successful Bidder if acceptable to District, application for such acceptance must be made fifteen (15) calendar days prior to the Bid opening date, or such application will not be considered by District. The procedure for submittal of any such application, including those applications made after award of the Construction Contract by Successful Bidder for consideration by EOR, is set forth in Section 6.4 of the Supplementary Conditions which may be supplemented in the General Requirements.
15. **UNBALANCED BIDS:** Bids that are judged to be mathematically or materially unbalanced shall be cause for the bid to be rejected as non-responsive.
16. **ESTIMATED DOLLAR VALUE:** No guarantee of the dollar amount of this Bid is implied or given.
17. **INCORRECT PRICING/INVOICES:** Any pricing on invoices that are incorrect and were not included on the original Purchase Order, must be brought to the attention of the Purchasing Agent and corrected prior to the shipment(s) of goods or initiation of services. Additional costs that were not brought to the District's attention and did not receive written approval via a Change Order issued by the Purchasing Agent shall not be honored.
18. **DISTRICT PURCHASING CARD:** The School District has authorized the use of a Purchasing Card to expedite small dollar purchases for materials, supplies, and other items needed for daily operations. Awarded Bidders may be presented with these credit cards by authorized School District personnel for the above-mentioned purchases. Bidder (except for travel). Purchase orders are strongly discouraged for purchasing materials and supplies under \$1,000.
19. **CHANGE ORDERS:** Any addition(s) to the Statement of Work or to a Purchase Order as a result of the ITB award that adds additional costs must be brought to the School Districts attention and approved by the Purchasing Department prior to commencement of additional work, shipment of goods or the addition of unauthorized freight charges. Once approved, a Change Order shall be issued to include the additional costs and work may commence and/or shipment of goods can begin. Additional costs that were not brought to the district's attention and did not result in a Change Order approved by the Purchasing Department shall not be honored.
20. **DISPUTES:** In case of any doubt or difference of opinion as to the services to be furnished hereunder, the decision of the District shall be final and binding on both parties.
21. **BID PROTEST:** Failure to file a protest within the time prescribed in Section 120.57(3), Florida Statutes, shall constitute a waiver of proceedings under Chapter 120, Florida Statutes.
- 21.1 Any person who is adversely affected by the agency decision or intended decision shall file with the agency a notice of protest in writing within 72 hours after the posting of the notice of decision or intended decision.
- 21.2 With respect to a protest of the terms, conditions, and specifications contained in a solicitation, including any provisions governing the methods for ranking proposals, or replies, awarding contracts, reserving rights of further negotiation, or modifying or amending any contract, the notice of protest shall be filed in writing within 72 hours after the advertisement of the solicitation.
- 21.3 The formal written protest shall be filed within 10 days after the date the notice of protest is filed. Failure to file a notice of protest or failure to file a formal written protest shall constitute a waiver of proceedings under this chapter. The formal written protest shall state with particularity the facts and law upon which the protest is based. Saturdays, Sundays, and state holidays shall be excluded in the computation of the 72-hour time periods provided by this paragraph.
- 21.4 In order for the District to consider the protest, the protesting party shall deliver with the formal written protest to the District a "protest bond" in the amount as follows:
- 21.4.1 Twenty-five thousand dollars (\$25,000) or 2 percent (2%) of the lowest accepted proposal, whichever is greater, for projects valued over \$500,000; and
- 21.4.2 Five percent (5%) of the lowest accepted proposal for all other projects, conditioned upon payment of all costs and fees which may be adjudged against the protestor in the administrative hearing.
- 21.4.3 If at the hearing the agency prevails, it shall recover all costs and attorney's fees from the protestor; if the protestor prevails, the protestor shall recover from the agency all costs and attorney's fees.
- 21.4.4 If the protest (with respect to 21.2 above) the protest bond shall be the same as 21.4.1 and 21.4.2, except that the protest bond amount shall be calculated against the budgeted amount of the project.
22. **DEBARMENT:** The Board shall have the authority to debar a person / corporation for cause for consideration or award of future contracts. The debarment shall be for a period commensurate with the seriousness of the causes, generally not to exceed three (3) years. When the offense is willful or blatant, a longer term of debarment may be imposed, up to an indefinite period.
23. **FEDERAL DEBARMENT CERTIFICATION:** Certification regarding debarment, suspension, ineligibility and voluntary exclusion as required by Executive Order 12549, Debarment and Suspension, and implemented at 34 CFR, Part 85, as defined at 34 CFR Part 85, Sections 85.105 and 85.110-(ED80-0013).
- a. The prospective lower tier participant certifies, by submission and signature of this submittal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.
- b. Where the prospective lower tier participant is unable to certify any of the statements in this certification, such prospective participant shall attach an explanation to this solicitation.
24. **DELETION/OVERSIGHT/MISSTATEMENT:** Any deletion, oversight or misstatement of the Specifications shall not release the Bidder from the responsibility of completing the project within the agreed upon time frame.



25. **SCRUTINIZED COMPANIES:** Pursuant to Sections 287.135, 215.4725, and 215.473, of the Florida Statutes which prohibits agencies from contracting with any company, principals, or owners on the Scrutinized Companies with Activities in Sudan List, participation in the Boycott of Israel, the Scrutinized Companies with Activities in the Iran Petroleum Energy List, and is not engaged in business operations in Cuba or Syria are prohibited from contracting for goods or services in any amount at the time of submitting to this solicitation through the term of this contract, including renewals or extensions.
- Acceptance of an offer certifies Contractor attests that firm is not on any list, engaged in any business operations, or participates in activities as specified in this section. If firm is found negligent, contract shall be terminated; and submission of a false certification may subject firm to civil penalties, attorney's fees, and/or costs.
26. **DEMONSTRATIONS/SAMPLES/MOCKUPS:** The District may request a full demonstration of any product or service before the award of a contract. All demonstrations will be done at the expense of the Bidder.
- When requested, samples are to be furnished free of charge to the District. If a sample is requested, it must be delivered within seven (7) days of the request unless otherwise stated in the bid documents. Each sample must be marked with the following:
- The Bidder's name, the bid item and the manufacturer's number.
 - Samples shall not be returned unless the Bidder requests it when samples are delivered.
 - Samples must be a complete pack, box, bag, etc. of the required items(s), packaged as specified in the bid document.
 - Failure to provide samples packaged as required by the bid specifications shall result in the item(s) and/ or the bid being rejected as nonconforming.
 - Items may be tested for compliance with specifications under the direction of the Florida Department of Agriculture and Consumer Services, or an independent testing laboratory. Bidders shall assume full responsibility for payment for all charges for testing and analysis of any materials offered or delivered that **do not conform** to the minimum required specifications. Bidder's disposition of all items delivered in this category must be at no expense to the District.
- The DISTRICT may request a full demonstration of any product or service before the award of a contract. All demonstrations shall be done at the expense of the BIDDER.
- Mockups must be approved prior to work beginning. The mockup shall be the basis for the quality of work and the work's acceptance.
27. **COPYRIGHTS OR PATENT RIGHTS:** The Bidder warrants that there has been no violation of copyrights or patent rights in the manufacturing, producing, or selling the goods shipped or ordered as a result of this ITB. The seller agrees to hold the District harmless from all liability, loss or expense occasioned by any such violation.
28. **DEFAULT:** In case of default by the Bidder, the Board may procure the articles or services from other sources and hold the Bidder responsible for any excess costs incurred released.
29. **EMPLOYEES:** Employees of the awarded Bidder shall always be under its sole direction and not an employee or agent of the District. The Awarded Bidder shall supply competent and physically capable employees. The District may require the Awarded Bidder to remove an employee it deems careless, incompetent, insubordinate or otherwise objectionable. Awarded Bidder shall be responsible to the District for the acts and omissions of all employees working under its directions.
30. **NON-DISCRIMINATION & EQUAL OPPORTUNITY EMPLOYMENT:** The Bidder certifies that they are in compliance with the non-discrimination clause contained in Section 202, Executive Order 11246, as amended by Executive Order 11375 relative to equal employment opportunity for all persons without regard to race, color, religion, sex or national origin. The provisions of the ADA Act of 1990 pertaining to employment shall also be applicable.
- 30.1 During the performance of the Contract, the awarded Bidder shall not discriminate against any employee or applicant for employment because of race, gender, gender identity or expression, religion, national origin, ethnicity, sexual orientation, marital status, political affiliation, familial status, age or disability in the solicitation, selection, hiring, or treatment of sub-Contractors, vendors, suppliers, or commercial customers.
- 30.2 The awarded Bidder will take affirmative action to ensure that employees are treated during employment, without regard to their race, religion, color, gender or national original, or disability. Such actions must include, but not be limited to, employment, promotion; demotion or transfer; recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- 30.3 The awarded Bidder shall agree to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
- 30.4 The awarded Bidder further agrees that he/she will ensure that subcontractors, if any, will be made aware of and will comply with this nondiscrimination clause. Bidder shall provide equal opportunity for sub-Contractors to participate in all of its public sector and private sector sub-contracting opportunities.
- 30.5 Bidder understands and agrees that violation of this clause is a material breach of the contract and may result in contract termination, debarment, or other sanctions.
31. **TAXES:** The District is exempt from all Federal, State, and Local taxes. An exemption certificate will be provided.
32. **SALES TAX:** All materials and supplies necessary for completion of this contract are subject to Florida Sales and Use Tax in accordance with Florida Statutes and shall be included in the Contract Price stated by the Contractor.
33. **DIRECT MATERIAL PURCHASES:** The District reserves the right to issue purchase orders for materials to either the Contractor's or the District's suppliers for construction related materials.
34. **EXCLUSIVE RIGHTS-USE OF OTHER CONTRACTS:** The right to provide the commodities and services granted under this contract shall not be exclusive. The District reserves the right to utilize any other District contract, any State of Florida Contract, any contract awarded by any other city or county governmental agencies, any other school board, any other community college/state university system cooperative ITB



agreement, or to directly negotiate/purchase per School Board policy and/or State Board Rule 6A-1.012(6) in lieu of any offer received or award made as a result of this ITB, if it is in the best interest to do so. The District also reserves the right to separately ITB any single order or to purchase any item on this ITB if it is in its best interest to do so.

35. **RIGHTS TO BID DOCUMENTS:** All copies and contents of any bid, attachment, and explanation thereof submitted in response to this ITB (except copyright material), shall become the property of the School District of Martin County, Florida. The School District reserves the right to use, at its discretion, and in any manner, it deems appropriate, any concept, idea, technique or suggestion contained therein. All copyright and industrial/commercial proprietary, confidential and/or privileged information such as financial records, must be clearly identified, as such confidentiality is protected until award of contract, in accordance with Chapter 119, F.S. Said material shall be returned to the Bidders prior to award of contract to preserve the proprietary and confidential nature of its contents.

36. **SEVERABILITY:** Indulgence by the District on any non-compliance by the Bidder does not constitute a waiver of any rights under this ITB. If any term or provision of this ITB or resulting Contract, or the application thereof to any person or circumstances shall, to any extent, be held invalid or unenforceable, the remainder of this ITB or Contract, or the application of such terms or provisions to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected, and every other term provision of this Bid/Contract shall be deemed valid and enforceable to the extent permitted by law.

37. **VENUE:** All contracts shall be governed by the laws of the State of Florida and venue shall be in Martin County, Florida. The venue of any legal action resulting from this Proposal shall be Martin County, Florida.

38. **EXPENSES:** Neither the DISTRICT nor its representatives shall be liable for any expenses incurred in connection with preparation of a response to this ITB. All expenses in the preparation of this ITB are the sole responsibility of the Bidder. All Submittals should be prepared to provide a straightforward and concise description of the respondents' qualifications and ability to meet the requirements of the ITB.

39. **SOVEREIGN IMMUNITY:** No Waiver of Sovereign Immunity: Nothing contained herein is intended to serve as a waiver of sovereign immunity by any agency or political subdivision to which sovereign immunity may be applicable or as a waiver of limits to liability or rights existing under Section 768.28, Florida Statutes.

40. **VERIFICATION OF EMPLOYMENT (E-VERIFY):** The District shall not intentionally award contracts to any Contractor who knowingly employs unauthorized alien workers, constituting a violation of the employment provisions of the Immigration and Nationality Act ("INA"). The District shall consider the employment by the Contractor of unauthorized aliens a violation of 8 U.S.C. Section 1324a(e) [Section 274A(e) of the INA]. The Contractor agrees that such violation by the Contractor shall be grounds for the unilateral cancellation of this Contract by the District.

a. Pursuant to Section 448.095, Florida Statutes, Contractor shall register with and use the U.S. Department of Homeland Security's E-Verify system to verify the work authorization status of all employees hired during the term of this Agreement and must, upon request, provide evidence of compliance with this provision.

b. Subcontractors

(i) Contractor shall also require all subcontractors performing work under this Agreement to use the E-Verify system for any employees they may hire during the term of this Agreement.

(ii) Subcontractors shall provide Contractor with an affidavit stating the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, as stated in Section 448.095, Florida Statutes.

(iii) Contractor shall provide a copy of such affidavit to the School Board upon receipt and shall maintain a copy for the duration of the Agreement.

c. Failure to comply with this provision is a material breach of the Agreement, and School Board may choose to terminate the Agreement at its sole discretion. Contractor may be liable for all costs associated with School Board securing the same services, inclusive, but not limited to, higher costs for the same services and rebidding costs (if necessary).

41. **DAVIS-BACON & LABOR STANDARDS**

Contractor agrees to comply with the requirements of the Secretary of Labor in accordance with the Davis-Bacon Act as amended, the provisions of Contract Work Hours and Safety Standards Act (40 U.S.C. 327 et seq.) and all other applicable Federal, state and local laws and regulations pertaining to labor standards insofar as those acts apply to the performance of this project. The Contractor agrees to comply with the Copeland Anti-Kick Back Act (18 U.S.C. 874 et seq.) and its implementing regulations of the U.S. Department of Labor at 29 CFR Part 5. Contractor shall provide documentation that demonstrates compliance with hour and wage requirements of this part. Such documentation shall be made available to the District for review upon request.

42. **FLORIDA PREFERENCE:** Pursuant to Florida Statute 287.084, award recommendations shall make appropriate adjustments to pricing when considering bids from bidders having a principal place of business outside the State of Florida. If applicable, all bidders must complete and submit the Bidder's Statement of Principal Place of Business form with the response to this solicitation. Failure to comply shall render a bid non-responsive to the terms of this solicitation. This preference does not apply to purchases using Federal Funds.

43. **THE U.S. DEPARTMENT OF AGRICULTURE'S "BUY AMERICAN" PROVISION:** Section 104(d) of the William F. Goodling Child Nutrition Reauthorization Act of 1998 requires schools and institutions participating in the National School Lunch Program (NSLP) and School Breakfast Program (SBP) in the contiguous United States to purchase, to the maximum extent practicable, domestic commodities or products for use in meals served under the programs. The legislation defines "domestic commodity or product" as one that is produced in the United States and is processed in the United States, **substantially** using agriculture commodities that are produced in the United States.

The word "substantially" is defined as over 51 percent of the final processed product consists of agricultural commodities that were grown domestically.

44. **PERSONAL INJURY AND PROPERTY DAMAGE:** The Contractor assumes all risk of personal injury and property damage attributable to the willful or negligent acts or omissions of the Contractor and the officers, employees, and agents thereof. The Contractor also assumes such risk with respect to the willful or negligent acts or omissions of



persons subcontracting with the Contractor or otherwise acting or engaged to act at the instance of the Contractor in furtherance of this Contractor fulfilling the Contractor's obligations under this contract.

45. **TRADE-NAMED ITEMS:** When an item appearing in the solicitation document is listed by a registered trade name and the wording "no substitute", "spec only" or "only" is indicated, only that trade-named item will be considered. The district reserves the right to reject products that are listed as approved and waive formalities. Should a vendor wish to have products evaluated for future solicitation

consideration, please contact in writing, the Director of Purchasing. If the wording "no substitute", "spec only" or "only" does not appear with the trade name, offerors may submit prices on their trade-named item, providing they attach a descriptive label of their product to this solicitation. Sample merchandise offered hereunder as "offered equal" may be required to be submitted to the purchaser in advance of the solicitation award. Substitutions for items solicited, awarded, and ordered are prohibited except as may be approved by the Director of Purchasing.



SECTION IV
SUPPLEMENTARY CONDITIONS
BY ARTICLES FOR
THE CONSTRUCTION CONTRACT

(ARTICLE 1- Definitions are identified and incorporated in Section I, Definitions, Abbreviations, and Acronyms)

ARTICLE 2 – PRELIMINARY MATTERS

2.1 DELIVERY OF BONDS AND INSURANCE CERTIFICATES:

2.1.1 After Board approval for award, the CONTRACTOR shall deliver to the DISTRICT such Bonds and Insurance Policies, Certificates or other documents as the CONTRACTOR may be required to furnish in accordance with the Contract Documents. The aforementioned documents must be submitted to the DISTRICT prior to any WORK being performed.

2.2 COPIES OF DOCUMENTS:

2.2.1 The DISTRICT shall furnish to CONTRACTOR ONE (1) copy (unless additional copies exist) of the Contract Documents for the execution of the WORK. CONTRACTOR shall be responsible for procuring additional copies.

2.3 NOTICE TO PROCEED:

2.3.1 The Contract Times shall commence to run on the date stated in the Notice to Proceed.

2.4 STARTING THE WORK:

2.4.1 CONTRACTOR shall begin to perform the WORK on the commencement date stated in the Notice to Proceed, but no WORK shall be done at the Site prior to said commencement date.

1.4.2 CONTRACTOR'S Review of Contract Documents: Before undertaking each part of the WORK, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to EOR any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from EOR before proceeding with any WORK affected thereby; however, CONTRACTOR shall not be liable to DISTRICT or EOR for failure to report any conflict, error, ambiguity or discrepancy in the Contract Documents, unless CONTRACTOR knew or reasonably should have known thereof.

2.4.3 INTERIOR INSPECTION FORM: Prior to beginning work, inspect with Owner's Representative or Architect, building interior(s). Log conditions of ceiling tiles, lights, walls, and flooring materials using the Interior Inspection Form attached at the end of this Section. Confirmation of existing conditions shall be made and recorded onto a video disk.

Submit two copies of the form signed by the Contractor, Owner's Representative or Architect and one copy of video disk.

2.4.4 EXTERIOR INSPECTION FORM: Prior to beginning work, inspect with Owner's Representative or Architect, existing building exterior(s) and site conditions. Log, as required, conditions of exterior walls, building attachments, sidewalks, miscellaneous paving and landscaping using the Exterior Inspection Form attached at the end of this Section. Confirmation of existing conditions shall be recorded onto a video.

Submit two copies of form signed by the Contractor, Owner's Representative or Architect and one copy of video disk.

2.5. PRECONSTRUCTION CONFERENCE:

2.5.1 The CONTRACTOR is required to attend a preconstruction conference within twenty (20) days after award. This conference shall be attended by the DISTRICT, CONSULTANT, and others as appropriate in order to discuss the WORK.

2.5.2 The CONTRACTOR'S initial schedule for shop drawings submittals, obtaining permits and Plan of Operation and CPM Schedule shall be reviewed and finalized. As a minimum, the CONTRACTOR'S representatives should include its project manager and schedule expert. If the submittals are not finalized at the end of the meeting, additional meetings shall be held so that the submittals can be finalized prior to the submittal of the first Application for Payment. No Application for Payment shall be processed prior to receiving acceptable initial submittals from the CONTRACTOR.

2.5.3 DISTRICT shall schedule preconstruction conference.

2.5.3.1 Attendance Required: District's Project Manager, EOR, and Contractor/CM Project Manager and Superintendent.

2.5.3.2 Agenda:

Distribution of Contract Documents.

Confirmation of prior submission (during bid process) of list of SubContractors, list of Products, Schedule of Values, and Progress Schedule.

2.5.3.3 Designation of personnel representing the parties in Contract, and the EOR.

2.5.3.4 Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders and Contract closeout procedures.

Scheduling.

2.5.3.5 Scheduling activities of a Geotechnical Engineer.

2.5.3.6 Issuance of Notice to Proceed.

2.5.3.7 Record minutes and distribute copies within two days after meeting participants, with copies to EOR, DISTRICT, participants, and those affected by decisions made.

2.6 SITE MOBILIZATION MEETING

2.6.1 DISTRICT will schedule a meeting at the Project site prior to Contractor occupancy.

2.6.2 Attendance Required: DISTRICT, EOR, Special Consultants, and Contractor, Contractor's Superintendent, and major subcontractors.

2.6.3 Agenda:

2.6.3.1 Use of premises by DISTRICT and Contractor.

2.6.3.2 DISTRICT's requirements and partial occupancy.



2.6.3.3 Construction facilities and controls provided by DISTRICT.

2.6.3.4 Temporary utilities provided by DISTRICT.

2.6.3.5 Survey and building layout.

2.6.3.6 Security and housekeeping procedures.

2.3.3.7 Schedules.

2.6.3.8 Application for payment procedures.

2.6.3.9 Procedures for testing.

2.6.3.10 Procedures for maintaining record documents.

2.6.3.11 Requirements for start-up of equipment.

2.6.3.12 Inspection and acceptance of equipment put into service during construction period.

2.6.3.13 Record minutes and distribute copies within two days after meeting to participants, with copies to CONSULTANT, DISTRICT, participants, and those affected by decisions made.

2.7 PROGRESS MEETINGS

2.7.1 Schedule and administer meetings throughout progress of the work at maximum monthly intervals.

Make arrangements for meetings, prepare agenda with copies for participants, and preside over meetings.

2.7.2 Attendance Required: Job superintendent, major SubContractors and suppliers, DISTRICT, EOR, as appropriate to agenda topics for each meeting.

2.7.3 Agenda:

2.7.3.1 Review minutes of previous meetings.

2.7.3.2 Review of Work progress.

2.7.3.3 Field observations, problems, and decisions.

2.7.3.4 Identification of problems that impede planned progress.

2.7.3.5 Review of submittals schedule and status of submittals.

2.7.3.6 Review of off-site fabrication and delivery schedules.

2.7.3.7 Maintenance of progress schedule.

2.7.3.8 Corrective measures to regain projected schedules.

2.7.3.9 Planned progress during succeeding work period.

2.7.3.10 Coordination of projected progress.

2.7.3.11 Maintenance of quality and work standards.

2.7.3.12 Effect of proposed changes on progress schedule and coordination.

2.7.3.13 Other business relating to work.

2.7.3.14 Record minutes and distribute copies within two days after meeting to participants, with copies to EOR, DISTRICT, participants, and those affected by decisions made.

2.8 PREINSTALLATION MEETING

2.8.1 When required in individual specification section, convene a pre-installation meeting at the site prior to commencing work of the section.

2.8.2 Require attendance of parties directly affecting, or affected by, work of the specific section.

2.8.3 Notify DISTRICT and EOR five (5) working days in advance of meeting date.

2.8.4 Prepare agenda and preside at meeting:

2.8.5 Review conditions of installation, preparation and installation procedures.

2.8.6 Review coordination with related work.

2.8.7 Record minutes and distribute copies within two days after meeting to participants, with copies to EOR, DISTRICT, participants, and those affected by decisions made.

2.9 FINALIZING SCHEDULES:

2.9.1 Within ten (10) days of receiving the Notice to Proceed the CONTRACTOR shall submit the final schedule approved by the DISTRICT and EOR. The finalized progress schedule shall be acceptable to the DISTRICT as providing an orderly progression of the WORK to completion within the Contract Time, but such acceptance shall neither impose on the DISTRICT responsibility for the progress or scheduling of the WORK nor relieve CONTRACTOR from full responsibility thereof. The finalized schedule of Shop Drawing submissions shall be acceptable to the DISTRICT as providing a workable arrangement for processing the submissions. The finalized Schedule of Values shall be acceptable to the DISTRICT as to form and substance.

2.10 SUBMITTAL PROCEDURES

2.10.1 SCOPE OF WORK

Administrative and procedural requirements for processing submittals during construction process. Submittals may include the following:

- Proposed Products Lists.
- Proposed Vendor List.
- Product Data.
- Shop Drawings.
- Samples.
- Design Data.
- Field Test Reporting.
- Quality Control Reporting.
- Certificates.
- Manufacturer's Installation, Handling and Storage Instructions.
- Manufacturer's Field Reports.
- Erection Drawings.
- Closeout Documents
- Warranties.
- Scheduling of Work
- Construction Progress Schedule.
- Submittals Schedule.
- Survey and Layout Data.
- Construction Progress Reporting.
- Periodic Work Observation.
- Photographic Documentation.
- Purchase Order Tracking.
- Operation and Maintenance Documentation

2.10.2 RELATED SECTIONS

- A. Payment Procedures.
- B. Project Coordination.
- C. References.
- D. Quality Control.
- E. Product Storage and Handling Requirements.
- F. Closeout Submittals.



2.10.2.1 SEE 2.10.2 RELATED SECTIONS AND SUBMITTAL SECTIONS 2.10.1 FOR INDIVIDUAL SUBMITTAL PROCEDURES.

2.10.3 SUBMITTAL PROCEDURES-GENERAL

2.10.3.1 Submittal Procedures shall be in conformance with General Conditions of the Contract and as amended by District.

2.10.3.2 Transmit each submittal with District's Standard Transmittal form.

2.10.3.3 Sequentially number each transmittal forms. Revise submittals with original number and a sequential alphabetic suffix.

2.10.3.4 Identify project, Contractor, subcontractor or supplier pertinent drawing and detail number, and specification section number, as appropriate.

2.10.3.5 Apply Contractor's stamp signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information are in accord with requirements of the work and contract documents.

2.10.3.6 Schedule submittals to expedite the project and deliver to Consultant and District at business address. Coordinate submission of related items.

2.10.3.7 For each submittal for review, allow 10 days excluding delivery time to and from the Contractor.

2.10.3.8 Identify variations from contract documents and product or system limitations, which may be detrimental to successful performance of the completed work.

2.10.3.9 Provide space for Contractor and EOR review stamps.

2.10.3.10 When revised for resubmission, identify all changes made since previous submission.

2.10.3.11 Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

2.10.3.12 Submittals not requested will not be recognized or processed.

2.10.4 PRODUCT DATA

2.10.4.1 Product Data for Review:

2.10.4.1.1 Submit to EOR for review for purpose of checking for conformance with information given and design concept expressed in Contract Documents.

2.10.4.1.2 After review, provide copies and distribute per Submittal Procedures article above and for record documents purposes described in Section 01 78 00 – Closeout Submittals.

2.10.4.2 Product Data for Information:

2.10.4.2.1 Submittal for EOR'S knowledge as contract administrator or for District.

2.10.4.3 Product Data for Project Close-out:

2.10.4.3.1 Submit for District's benefit during and after project completion.

2.10.4.4 Submit number of copies, which Contractor/CM requires, plus two copies for Consultant.

2.10.4.5 Mark each copy to identify applicable products, models, options, and other data.

2.10.4.6 Supplement manufacturers' standard data to provide information unique to project.

2.10.4.7 Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

2.10.4.8 After review, distribute in accord with Submittal Procedures article above and provide copies for record documents described in Section 6.37 Closeout Submittals.

2.10.5 CONSTRUCTION SUBMITTALS

2.10.5.1 Submit one copy of Building Permit, Site Permits, Environmental Permits, or other permits required for construction work.

2.10.5.2 Submit Payment Applications to Consultant for review for purpose of checking conformance with information given and design concept expressed in Contract Documents.

2.10.5.3 Certificates:

2.10.5.3.1 When specified, submit certification by manufacturer, installation/application subcontractor, or Contractor to Consultant, in quantities specified for Product Data.

2.10.5.3.2 Indicate material or Product conforms to or exceeds specified requirements.

2.10.5.3.3 Submit supporting reference date, affidavits, and certifications as appropriate.

2.10.5.3.4 Certificates may be recent or previous test results on material or Product but must be acceptable to Consultant.

2.10.5.4 Manufacturer's Instructions:

2.10.5.4.1 When specified, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Consultant for delivery to District in quantities specified for Product Data.

2.10.5.4.2 Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

2.10.5.4.3 Refer to Quality Control and Warranty sections for quality assurance requirements.

2.10.5.5 Manufacturer's Field Reports:

2.10.5.5.1 Submit reports to EOR and District's Project Manager.

2.10.5.5.2 Submit report within 5 days of observation to EOR.

2.10.5.5.3 Submit information for purpose of assessing conformance with information given and design concept expressed in Documents.

2.10.5.6 Erection Drawings:

2.10.5.6.1 Submit drawings to Consultant and District's Project Manager .

2.10.5.6.2 Submit information for purpose of assessing conformance with information given and design concept expressed in Documents.

2.10.5.6.3 Data indicating inappropriate or unacceptable work is subject to rejection by EOR or District.



ARTICLE 3 – USE OF CONTRACT DOCUMENTS

3.1 INTENT:

3.1.1 The Contract Documents comprise the entire agreement between the DISTRICT and CONTRACTOR concerning the WORK. The Contract Documents are complementary: what is called for by one is as binding as if called for by all. The Contract Documents shall be construed in accordance with the laws of the State of Florida with venue in Martin County, Florida.

3.1.2 It is the intent of the Contract Documents to describe the WORK, functionally complete, to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result shall be provided whether or not specifically called for.

3.2 REFERENCE TO STANDARDS:

3.2.1 Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or Laws or Regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties or responsibilities of the DISTRICT, CONTRACTOR or EOR or any of their agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to DISTRICT, EOR OR EOR'S agents or employees, any duty or authority to supervise or direct the furnishing or performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of the Contract Documents.

3.3. REVIEW OF CONTRACT DOCUMENTS

3.3.1 The Contract Documents which comprise the Contract between the DISTRICT and the Contractor are attached hereto and made part hereof and consist of the following:

- 3.3.1.1 The Purchase Order.
- 3.3.1.2 Contractor's Bid and Bid Bonds
- 3.3.1.3 Bid Documents, consisting of:
 - 3.3.1.4 Invitation to Bid and Instructions to Bidders.
 - 3.3.1.5 General Terms & Conditions.
 - 3.3.1.6 Supplementary Conditions
 - 3.3.1.7 Special Conditions.
 - 3.3.1.8 Technical Provisions.
 - 3.3.1.9 All Plans.
 - 3.3.1.10 All Addenda.
 - 3.3.1.11 Recorded Public Construction Performance and Payment Bond in a form supplied by the DISTRICT, which shall be provided to the DISTRICT by the Contractor, along with the return of an executed Purchase Order. The Contractor shall be responsible for recording the Public Construction Bond.

3.3.1.12 Insurance Certificates which shall be provided by the Contractor, along with the return of an executed copy of this Contract.

3.3.1.13 Any Modifications, including change orders, duly delivered after execution of this Contract.

3.3.1.14 Executed Notice of Intent to Award.

3.3.1.15 Executed Notice to Proceed

3.3.2 Except for duly authorized and executed Modifications including but not limited to change orders and contract amendments, any conflict between the terms and conditions of this Contract and the terms and conditions of any of the other contract documents shall be interpreted in favor of this Contract.

3.3.3 If, during the performance of the WORK, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so notify the CONSULTANT, in writing, at once and before proceeding with the WORK affected thereby shall obtain a written interpretation or clarification, except in an emergency as authorized by paragraph 6.13.

3.4 ORDER OF PRECEDENCE OF CONTRACT DOCUMENTS

3.4.1 In resolving conflicts resulting from errors or discrepancies in any of the Contract Documents, the order of precedence shall be as follows:

1. Amendment
2. Change Order
3. Construction Contract or Purchase Order
4. Addenda, with later date having greater priority
5. Bid Form
6. Special Conditions
7. Supplementary Conditions
8. Invitation to Bid
9. Instructions to Bidders
10. General Terms & Conditions
11. Technical Specifications
12. Contract Drawings

The captions or subtitles of the several articles and divisions of these Contract Documents constitute no part of the context and hereof but are only labels to assist in locating and reading the provisions hereof.

3.4.2 With reference to the Drawings, the order of precedence is as follows:

1. Figures govern over scaled dimensions
2. Detail drawings govern over general drawings
3. Addenda/Change Order drawings govern over any other drawings
4. Drawings govern over standard drawings

3.4.3 Except as otherwise specifically stated in the Contract Documents or as may be provided by amendment or supplement thereto issued by one of the methods indicated in paragraph 3.5, (Amending of Contract Documents) the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and:

1. The provisions of any such standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
2. The provisions of any such Laws or Regulations applicable to the performance of the WORK (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

No provision of any such standard, specification, manual, code or instruction shall be effective to change the duties and responsibilities of DISTRICT, CONTRACTOR or CONSULTANT, or any of their subcontractors, agents or employees from those



set forth in the Contract Documents, no shall it be effective to assign to DISTRICT, EOR'S or any of EOR's agents or employees any duty or authority to supervise or direct the furnishing or performance of the WORK or any duty or authority to undertake responsibility inconsistent with the provisions of paragraph 9.10, (Limitations on EOR) or any other provision of the Contract Documents.

3.5 AMENDING CONTRACT DOCUMENTS:

3.5.1 The Contract Documents may be amended to provide for additions, deletions and revisions in the WORK or to modify the terms and conditions thereof by a Change Order (pursuant to Article 10, Changes in the Work).

3.5.2 Additionally, the requirements of the Contract Documents may be supplemented and minor variations and deviations in the WORK may be authorized, in one or more of the following ways:

3.5.2.1 A Field Order (pursuant to paragraph 9.5, Changes in the Work)

3.5.2.2 EOR'S approval of a Shop Drawing or sample (pursuant to paragraphs 6.11, Shop Drawings and Samples), or

3.5.2.3 EOR'S written interpretation or clarification (pursuant to paragraph 9.4 Clarifications and Interpretations).

3.6 REUSE OF DOCUMENTS:

3.6.1 Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the WORK under a direct or indirect contract with the DISTRICT shall have or acquire any title to or ownership rights in any of the Contract Documents, drawings, technical specifications or other documents used on the WORK; and, they shall not reuse any of them on extensions of the Project or any other project without prior written consent of the DISTRICT and EOR.

ARTICLE 4 – SITE OF THE WORK

4.1 AVAILABILITY OF LANDS:

4.1.1 The DISTRICT shall furnish, as indicated in the Contract Documents, the lands upon which the WORK is to be performed, rights-of-way and easements for access thereto and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities shall be obtained and paid for by the DISTRICT, unless otherwise provided in the Contract Documents. Nothing contained in the Contract Documents shall be interpreted as giving the CONTRACTOR exclusive occupancy of the lands or rights-of-way provided. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.1.2 Occupying Private Land: The Contractor shall not enter upon nor use any property not under the control of the DISTRICT until a written temporary construction easement agreement has been executed by the CONTRACTOR and the property owner, and a copy of said easement furnished to the DISTRICT and EOR prior to said use; and, neither the DISTRICT nor the EOR shall be liable for any claims or damages resulting from the CONTRACTOR'S trespass on or use of any such properties. The CONTRACTOR shall provide the DISTRICT with a signed release from the property owner confirming that the lands have been satisfactorily restored upon completion of the WORK.

4.1.3 WORK in State, County and DISTRICT Rights-of-Way and Easements: When the WORK involves the installation of sanitary sewers, storm sewers, drains, water mains, manholes, underground structures, or other disturbances of existing features in or across streets, rights-of-way, easements, or

other property, the CONTRACTOR shall (as the WORK progresses) promptly back-fill, compact, grade and otherwise restore the disturbed area to a basic condition which shall permit resumption of pedestrian or vehicular traffic and any other critical activity or function consistent with the original use of the land. Unsightly mounds of earth, large stones, boulders, and debris shall be removed so that the site presents a neat appearance as part of the contract.

4.1.4 WORK Adjacent to Telephone, Power, Cable TV and Gas Company Structures: In all cases where WORK is to be performed near telephone, power, water, sewer, drainage, cable TV, or gas company facilities, the Contractor shall provide written notification to the respective companies of the areas of which WORK is to be performed, prior to the actual performance of any WORK in these areas.

4.1.5 Use of Public Streets: The use of public streets and alleys shall be such as to provide a minimum of inconvenience to the public and to other vehicular and non-vehicular traffic. The CONTRACTOR shall remove any earth or excavated materials spilled from trucks and clean the streets to the satisfaction of the DISTRICT, the EOR, the Florida Department of Transportation, or other agency or governmental entity having jurisdiction, as applicable.

4.2 REPORTS OF PHYSICAL CONDITIONS:

4.2.1 Subsurface Explorations: Where applicable, reference is made in the technical specifications for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by EOR in preparation of the Contract Documents.

4.2.2 Existing Structures: Where applicable, reference is made to the technical specifications, for identification of those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities referred to in paragraph 4.3 herein) which are at or contiguous to the site that have been utilized by EOR in preparation of the Contract Documents.

4.2.3 Neither the DISTRICT nor EOR makes any representation as to the completeness of the reports or drawings referred to in Paragraph 4.2.1. Subsurface Explorations or 4.2.2. Existing Structures above or the accuracy of any data or information contained therein. CONTRACTOR may rely upon the general accuracy of the technical data contained in such reports and drawings but not for the completeness thereof for CONTRACTOR'S purposes including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto. However, the CONTRACTOR may not rely upon any interpretation of such technical data, including any interpolation or extrapolation thereof, or any non-technical data, interpretations, and opinions contained therein.

4.2.4 Where the dimensions and locations of existing structures are of critical importance in the installation or connection of new WORK, the CONTRACTOR shall verify such dimensions and locations in the field before the fabrication of any materials or equipment which is dependent on the correctness of such information. There shall be no additional cost to the DISTRICT for CONTRACTOR'S failure to verify such dimensions and locations, or for inaccurate verifications by CONTRACTOR.

4.3 PHYSICAL CONDITIONS -- UNDERGROUND FACILITIES:

4.3.1 Indicated: The information and data indicated in the Contract Documents with respect to existing Underground Utilities at or contiguous to the site is based on information and data furnished to the DISTRICT or EOR by the owners of such Underground Utilities or by others.



4.3.1.1 The DISTRICT and EOR shall not be responsible for the accuracy or completeness of any such information or data; and,

4.3.1.2 The CONTRACTOR shall notify the Underground Service Alert (USA) System, Phone No. 1-800-227-2600, and Sunshine State One Call Services (1-800-432-4770) at least 48 hours in advance of the commencement of WORK at any site to allow the member utilities to examine the construction site and mark the location of the utilities' respective facilities.

4.3.1.3 The CONTRACTOR acknowledges that some (or all) of the utility companies with facilities shown on the drawings may not be members of the USA System or Sunshine State One Call Services; and, therefore, not automatically contacted by the above referenced telephone number. The CONTRACTOR shall be responsible for making itself aware of utility company facilities not reported by the USA System or Sunshine State One Call Services and shall be liable for any and all damages stemming from repair or delay costs or any other expenses resulting from the unanticipated discovery of underground utilities. The CONTRACTOR shall be responsible for notifying all of the utilities at least 48 hours in advance of the commencement of WORK at any site to allow the utilities to examine the construction site and mark the location of the utilities' respective facilities. The CONTRACTOR shall also be responsible for verifying that each utility has responsibly responded to such notification.

4.3.1.4 CONTRACTOR shall have full responsibility for reviewing and checking all such information and data. Further, the CONTRACTOR shall be responsible for locating all Underground Facilities whether or not shown or indicated in the Contract Documents, for coordination of the WORK with the owners of such Underground Facilities during construction, for the safety and protection thereof as provided in paragraph 6.10, and repairing any damage thereto resulting from the WORK, the cost of all of which shall be considered as having been included in the Contract Price.

4.3.1.5 All water pipes, sanitary sewers, storm drains, force mains, gas mains, or other pipe, telephone or power cables or conduits, pipe or conduit casings, curbs, sidewalks, service lines and all other obstructions, whether or not shown, shall be temporarily removed from or supported across utility line excavations. Where it is necessary to temporarily interrupt services, the CONTRACTOR shall notify the DISTRICT or occupant of such facilities both 48 hours before the interruption and again immediately before service is resumed. Before disconnecting any pipes or cables, the CONTRACTOR shall obtain permission from the DISTRICT or occupant or shall make suitable arrangements for their disconnection by the DISTRICT or occupant. The CONTRACTOR shall be responsible for any damage to any such pipes, conduits, or cables, and shall restore them to service promptly, as part of the work as soon as the WORK has progressed past the point involved. Approximate locations of known water, sanitary, drainage, natural gas, power, telephone, and cable TV installations along the route of new pipelines or in the vicinity of new WORK are shown but are to be verified in the field by the Contractor prior to performing the WORK. The CONTRACTOR shall uncover these pipes, ducts, cables, etc., carefully, by hand prior to installing his WORK. Any discrepancies or differences found shall be immediately brought to the attention of the EOR in order that necessary changes may be made to permit installation of the WORK.

4.3.2 Not Indicated: If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown, nor located by the facilities DISTRICT and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any WORK affected thereby (except in an emergency as permitted by paragraph 6.10), identify to the DISTRICT of such Underground Facility and give written notice

thereof to that owner and to the DISTRICT and the CONSULTANT. The CONSULTANT shall promptly review the Underground Facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents shall be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility as provided in paragraph 6.13.

4.4 DIFFERING SITE CONDITIONS

4.4.1 The CONTRACTOR shall notify the EOR in writing, of the following unforeseen conditions, hereinafter called differing Site conditions, promptly upon their discovery (but in no event later than 14 days after their discovery) and before they are disturbed:

4.4.1.1 Subsurface or latent physical conditions at the Site of the WORK differing materially from those indicated, described, or delineated in the Contract Documents, including those reports discussed in Paragraph 4.2 and 4.3; (Physical Conditions, Underground facilities) and

4.4.2.2 Any unknown physical conditions and the Site of the WORK of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents, including those reports and documents discussed in Paragraph 4.2 and 4.3.

4.4.2 EOR shall promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise the DISTRICT in writing (with a copy to the CONTRACTOR) of EOR'S findings and conclusions.

4.4.3 If EOR concludes that because of newly discovered conditions a change in the Contract Documents is required, a Change Order shall be issued as provided in Article 10 (Changes in the Work) to reflect and document the consequences of the difference.

4.4.4 In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, shall be allowable to the extent that they are attributable to any such inaccuracy or difference. If the DISTRICT and CONTRACTOR are unable to agree as to the amount or length thereof, a claim may be made therefor as provided in Article 11, Change of Contract Price, and Article 12, Change of Contract Time.

4.4.5 The CONTRACTOR'S failure to give notice of differing Site conditions within seven (7) days of their discovery and before they are disturbed shall constitute a waiver of all claims in connection therewith, whether direct or consequential in nature.

4.5 REFERENCE POINTS:

4.5.1 The DISTRICT shall provide, if available, engineering surveys to establish reference points for construction, which in EOR'S judgment are necessary to enable CONTRACTOR to proceed with the WORK.

4.5.2 CONTRACTOR shall be responsible for laying out the WORK (unless otherwise specified in the General Requirements), shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of the DISTRICT. The CONTRACTOR shall report to the EOR whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.



Contract Amount	Best Key Rating
Under \$500,000	Class IX A or better
\$500,000 to \$2,499,999.99	Class XI A or better
Over \$2,500,000	Class XIV A or better

ARTICLE 5 – BONDS AND INSURANCE

5.1 BONDS:

5.1.1 CONTRACTOR shall upon receipt of the notice of award furnish Performance and Payment Bonds, each in an amount at least ONE HUNDRED PERCENT (100%) of the Contract Price as security for the faithful performance and payment of all CONTRACTOR'S obligations under the Contract Documents. Said bonds must be provided to the DISTRICT within ten (10) business days of the Notice of Award or delivery of a Purchase Order. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as otherwise provided by Law or Regulation or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. Each Bond shall be furnished in an amount equal to ONE HUNDRED PERCENT 100% of the amount of the Contract award and recorded in the public records of the county where the improvement is located. The form and conditions of the Bonds and the Surety shall be as specified in the solicitation.

5.1.2 If requested by the District, the CONTRACTOR shall provide a Maintenance and Guaranty Bond in the amount of 50% of the Performance and Payment Bonds to provide a guarantee against defects in the WORK occurring during the year following the one-year correction period. The Bond shall be payable to the DISTRICT and be at the sole cost of the CONTRACTOR. The form and conditions of the Bonds and the Surety shall be as specified and supplied by the DISTRICT in the Bid Documents.

5.1.3 The Surety shall be a nationally recognized Surety Company acceptable to the DISTRICT, listed on the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Government Financial Operations, U.S. Treasury Department, and meet the other requirements of Florida Statutes Section 287.0935 (1989).

For projects exceeding five hundred thousand dollars, all bonds shall be placed with sureties with Best Ratings as stated below. The name, address and telephone number of the surety and its agent must be listed on the bond.

5.1.4 For contracts up to \$499,999.99 the surety shall have twice the minimum surplus and capital required by the Florida Insurance Code at the time the bid is issued for the Work, otherwise the surety shall have the following minimum ratings:

5.1.5 The Bond shall specifically incorporate and acknowledge the Surety's responsibility for liquidated damages.

5.1.6 Bonds shall be executed and issued by a resident agent, licensed and having an office in Palm Beach, Dade, Broward, St. Lucie, Indian River and Martin Counties, Florida, representing such corporate sureties.

5.1.7 If the CONTRACTOR is a partnership, the Bond shall be signed by each of the individuals who are partners; if a corporation, the Bond shall be signed in the correct corporate name by duly authorized officer, agent or attorney-in-fact. There

shall be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts in the Contract. Each executed bond shall be accompanied by (a) appropriate acknowledgment of the respective parties; (b) appropriate duly certified copy of Power-of-Attorney or other certification of authority where bond is executed by agent, officer or other representative of Contractor or Surety; (c) duly certified extract from by-laws or resolutions of Surety under which Power-of-Attorney, or other certificate of Authority of its agent, officer or representative was issued.

5.1.8 If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in the state of Florida or it ceases to meet the requirements of paragraph 5.1.3 and 5.1.4, CONTRACTOR shall within five days thereafter substitute another Bond and Surety, both of which must be in conformance with paragraph 5.1.3 and 5.1.4. **Under no circumstances shall the successful CONTRACTOR begin WORK until he/she has supplied the DISTRICT Performance and Payment Bonds and Affidavit for Bond using the DISTRICT form, and the DISTRICT has approved the bond. Contractor shall execute and record all bonds in the public records of the county where the improvement is located prior to delivering the bonds to the owner. Non-registered bonds shall be rejected.**

5.2 INSURANCE: (Please refer to Section VI)

5.2.1 The CONTRACTOR agrees to, in the performance of work and services under this Agreement, comply with all Federal, state, and local laws and regulations now in effect, or hereinafter enacted during the term of this agreement that are applicable to the CONTRACTOR, its employees, agents, or subcontractors, if any, with respect to the work and services described herein. The CONTRACTOR shall obtain at CONTRACTOR's expense all necessary insurance in such form and amount as required by the District's Risk & Safety Officer before beginning work under this Agreement. The CONTRACTOR shall maintain such insurance in full force and effect during the life of this Agreement. The CONTRACTOR shall provide to the District's Risk & Safety Officer certificates of all insurance required under this section prior to beginning any work under this Agreement. The CONTRACTOR shall indemnify and save the District harmless from any damage resulting to it for failure of either CONTRACTOR or any subcontractor to obtain or maintain such insurance. The following are required types and minimum limits of insurance coverage, which the CONTRACTOR agrees to maintain during the term of this contract:

Professional Liability	\$1,000,000	\$2,000,000
Line of Business/ Coverage	Occurrence	Aggregate
Commercial General Liability	\$1,000,000	\$2,000,000
Including:		
Premises/ Operations		
Contractual Liability		
Personal Injury		
Explosion, Collapse, Underground Hazard		
Products/Completed Operations		
Broad Form Property Damage		
Cross Liability and Severability of Interest Clause		



Automobile Liability **\$1,000,000** **\$2,000,000**
**(including owned, non-
owned and hired)**

Workers' Compensation & **Statutory limits**
Employer's Liability \$500,000 per each disease;
 \$500,000 per each accident;
 and \$500,000 each employee.

5.2.2 The District reserves the right to require higher limits depending upon the scope of work under this Agreement.

5.2.3 Neither the CONTRACTOR nor any subcontractor shall commence work under this contract until they have obtained all insurance required under this section and have supplied the District with evidence of such coverage in the form of an insurance certificate and endorsement. The CONTRACTOR shall ensure that all subcontractors shall comply with the above guidelines and shall maintain the necessary coverage throughout the term of this Agreement.

5.2.4 All insurance carriers shall be rated at least A-VII per A.M. Best's Key Rating Guide and be licensed to do business in Florida. Policies shall be "Occurrence" form. Each carrier shall give the District sixty (60) days' notice prior to cancellation.

5.2.5 The CONTRACTOR's general and automobile liability insurance policies shall be endorsed to add the Martin County School District, its board, employees, officers, and agents as an "additional insured". The CONTRACTOR's Worker's Compensation carrier shall provide a Waiver of Subrogation to the District. The CONTRACTOR shall be responsible for the payment of all deductibles and self-insured retentions.

5.2.6 The District may require that the CONTRACTOR purchase a contract or performance bond equal to the cost of the project. If the CONTRACTOR is to provide professional services under this Agreement, the CONTRACTOR must provide the District with evidence of Professional Liability insurance with, at a minimum, a limit of \$1,000,000 per occurrence and \$2,000,000 in the aggregate. "Claims-Made" forms are acceptable for Professional Liability insurance.

5.2.7 The District may require higher limits for Professional Liability depending on the size of the project. In any event, the Bidder shall maintain such Professional Liability insurance in effect three (3) years after the completion of the project.

5.2.8 Should the District require the Bidder to carry Builders Risk insurance for the project, it must be in the amount equal to the full replacement cost of the project.

5.2.9 Fulfillment by the Bidder of the insurance provisions does not limit the Bidder's liability to the amount of the policy limits.

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.1 CONTRACTOR STATUS:

6.1.1 The Contractor is an independent Contractor and is not an employee or agent of the DISTRICT. Nothing in this Contract shall be interpreted to establish any relationship other than that of an independent Contractor, between the DISTRICT and the Contractor, its employees, agents, subcontractors, or assigns, during or after the performance of this Contract. The Contractor shall take the whole responsibility for the means, methods, techniques, sequences, and production of the Work.

6.2 CONTRACTOR RISK:

6.2.1 The Contractor shall bear all losses resulting to him, or its, on account of the amount or character of the Work, or because of the nature of the ground beneath, in or on which the Work is done is different from what was assumed or expected, or because of bad weather, or because of errors or omissions in his or its bid on the Contract price, or except as otherwise provided in the Contract Documents because of any other causes whatsoever. Execution of this Contract by the Contractor is a representation that the Contractor has visited the site, has conducted a sufficient investigation of the surface and sub-surface conditions to submit its bid, has become familiar with the local conditions under which the Work is to be performed, and correlated personal observations with the requirements of the Contract Documents.

6.2.2 The Contractor shall protect the entire Work, all materials under the Contract and the DISTRICT's property (including machinery and equipment) in, on, or adjacent to the site of the Work until final completion and Work, from the action of the elements, acts of other Contractors, or except as otherwise provided in the Contract Documents, and from any other causes whatsoever; should any damage occur by reason of any of the foregoing, the Contractor shall repair at his, or its, own expenses to the satisfaction of the DISTRICT or its Project Manager. Neither the DISTRICT nor its officers, employees or agents assume any responsibility for collection of indemnities or damages from any person or persons causing injury to the Work of the Contractor.

6.2.3 At his, or its expense, the Contractor shall take all necessary precautions (including without limitation) the furnishing of guards, fences, warnings signs, walks, flags, cables and lights for the safety of and the prevention of injury, loss and damage to persons and property (including without limitation) in the term persons, members of the public, the DISTRICT and its employees and agents, the Project Manager and his employees, Contractor's employees, his or its subcontractors and their respective employees, other Contractors, their subcontractors and respective employees, on, about or adjacent to the premises where said Work is being performed, and shall comply with all applicable provisions of safety laws, rules, ordinances, regulations and orders of duly constituted public authorities and building codes.

6.2.4 The Contractor assumes all risk of loss, damage and destruction to all of his or its materials, tools appliances and property of every description and that of his or its subcontractors and of their respective employees or agents, and injury to or death of the Contractor, his or its employees, subcontractors or their respective employees or agents, including legal fees, court costs or other legal expenses, arising out of or in connection with the performance of this Contract.

6.3 SUPERVISION AND SUPERINTENDENCE:

6.3.1 The CONTRACTOR shall supervise and direct the Work. He shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The CONTRACTOR shall employ and maintain on the Work a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall always be present on the site as required to perform adequate supervision and coordination of the Work. (Copies of written communications given to the Superintendent shall be mailed to the Contractor's home office.)

6.4 LABOR, MATERIALS AND EQUIPMENT: CONDITIONS, SUBSTITUTIONS

Related Article: 6.40; Product Substitution Requirements and Procedures



6.4.1 The CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. He shall always maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and CONTRACTOR shall not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday, observed by the DISTRICT, without the DISTRICT'S PROJECT MANAGER 's written consent.

6.4.2 Materials and Equipment: The CONTRACTOR shall furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation and completion of the Work. All material stored on the job site shall remain the responsibility of the CONTRACTOR until incorporated into the work. The DISTRICT shall not reimburse the CONTRACTOR for materials lost, stolen, or damaged while stored on the job site.

6.4.3 Condition of Materials: All materials and products supplied by the Bidder in conjunction with this bid shall be new, warranted for their merchantability, fit for a particular purpose, free from defects and consistent with industry standards. The products shall be delivered to the District in excellent condition. When special makes or grades of material which are normally packaged by the supplier or manufacturer are specified or approved, such materials shall be delivered to the site in their original packages or container with seals unbroken and labels intact. If any of the products supplied to the District are found to be defective or do not conform to the specifications, the District reserves the right to return the product to the Bidder at no cost to the District.

6.4.4 Installation / Assembly: All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the instructions of the applicable manufacturer, fabricator or processors, except as otherwise provided in the Contract Documents.

6.4.5 Materials, Equipment, Products, and Substitutions: Materials, equipment and products incorporated in the Work must be approved for use before being purchased by the CONTRACTOR. The CONTRACTOR shall submit to the EOR and the DISTRICT'S PROJECT MANAGER a list of proposed materials, equipment or products, together with such samples as may be necessary for him to determine their acceptability and obtain his approval, per Section III General Terms and Conditions if prior to award, or after award, within ten (10) calendar days after the CONTRACTOR should have been aware of the need for substitution, unless otherwise stipulated in the Special Conditions. No request for payment for "or equal" equipment shall be approved until this list has been received and approved by the EOR. The District may require the CONTRACTOR to furnish at CONTRACTOR'S expense a special performance guarantee or other surety with respect to any substitute.

6.4.6 Should any work or materials, equipment or products not conform with requirements of the Drawings and Specifications or become damaged during the progress of the Work, such Work or materials shall be removed and replaced, together with any work disarranged by such alterations, at any time before completion and acceptance of the Project. All such work shall be done at the expense of the CONTRACTOR.

6.4.7 No materials or supplies for the Work shall be purchased by the CONTRACTOR or by any subcontractor subject to any chattel mortgage or under a conditional sale or

other agreement by which an interest is retained by the Seller. The CONTRACTOR warrants that he has good title to all materials and supplies used by him in the Work.

6.4.8 If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction if acceptable to the DISTRICT and EOR, if CONTRACTOR submits sufficient information to allow DISTRICT and EOR to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by DISTRICT and EOR shall be similar to that provided in paragraph 6.4.5 (Materials, Equipment, Products and Substitutions) as applied by EOR and as may be supplemented in the Technical Specifications.

6.4.9 Any two (2) or more pieces of material or equipment of the same kind, type or classification, and being used for identical types of service, shall be made by the same manufacturer.

6.4.10 The successful CONTRACTOR shall furnish all guarantees and warranties to the Purchasing Department prior to final acceptance and payment. The warranty period shall commence upon final acceptance of the product.

6.5 CONCERNING SUBCONTRACTORS:

6.5.1 The CONTRACTOR shall not employ any subcontractor, other person or organization (whether initially or as a substitute) against whom the DISTRICT or the EOR may have reasonable objection, nor shall the CONTRACTOR be required to employ any subcontractor against whom he has reasonable objection. The CONTRACTOR shall not make any substitution for any subcontractor who has been accepted by the DISTRICT'S PROJECT MANAGER and the EOR, unless the EOR determines that there is good cause for doing so. If after bid opening and prior to the award of the contract, the DISTRICT objects to certain suppliers or subcontractors, the DISTRICT may permit CONTRACTOR to submit an acceptable substitute so long as there is no change in the contract price or contract time. If the contract price or contract time is increased, the DISTRICT may return the bid bond and award the contract to the next qualified, competent BIDDER. If after the award of the contract, the DISTRICT objects to certain suppliers or subcontractors, the DISTRICT shall permit CONTRACTOR to make an appropriate and acceptable substitution which is also acceptable to the DISTRICT. No acceptance by the DISTRICT or the EOR of any such subcontractor, supplier or other person or organization shall constitute a waiver of any right of the DISTRICT or EOR to reject defective WORK.

6.5.2 Responsibility: The CONTRACTOR shall be fully responsible for all acts and omissions of his subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create any contractual relationship between DISTRICT or EOR and any subcontractor or other person or organization having a direct contract with CONTRACTOR, nor shall it create any obligation on the part of DISTRICT or EOR to pay or to see to the payment of any moneys due any subcontractor or other person or organization, except as may otherwise be required by law. DISTRICT or EOR may furnish to any subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific Work done in accordance with the schedule of values.

6.5.3 Division of Work: The divisions and sections of the Specifications and the identifications of any Drawings shall not



control the CONTRACTOR in dividing the Work among subcontractors or delineating the Work to be performed by any specific trade.

6.5.4 Terms and Conditions: The CONTRACTOR agrees to bind specifically every subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the DISTRICT.

6.5.5 Agreement: All Work performed for the CONTRACTOR by a subcontractor shall be pursuant to any appropriate agreement between the CONTRACTOR and the subcontractor.

6.5.6 Responsibility: The CONTRACTOR shall be responsible for the coordination of the trades, subcontractors and material men engaged upon His Work.

6.5.7 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind subcontractors to the CONTRACTOR by the terms of these General Conditions and other Contract Documents insofar as applicable to the Work of subcontractors, and to give the CONTRACTOR the same power as regards terminating any subcontract that the DISTRICT may exercise over the CONTRACTOR under any provisions of the Contract Documents.

6.5.8 The DISTRICT or EOR shall not undertake to settle any differences between the CONTRACTOR and his subcontractors or between subcontractors.

6.5.9 If in the opinion of the DISTRICT'S PROJECT MANAGER or EOR, any subcontractor on the Project proves to be incompetent or otherwise unsatisfactory, he shall be replaced if and when directed in writing.

6.5.10 CONTRACTOR shall also:

6.5.10.1 Observe work of each subcontractor to monitor compliance with schedule.

6.5.10.2 Verify that labor and equipment are adequate for the work and the schedule.

6.5.10.3 Verify that product procurement schedules are adequate.

6.5.10.4 Verify that product deliveries are adequate to maintain schedule.

6.5.10.5 Report noncompliance to EOR, with recommendation for changes.

6.6 PATENT, FEES AND ROYALTIES:

6.6.1 The CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use of any invention, design, process or device which is the subject of patent rights or copyrights held by others. He shall indemnify and hold harmless the DISTRICT and EOR and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorney's fees) arising out of any infringement of such rights during or after completion of the Work and shall defend all such claims in connection with any alleged infringement of such rights.

6.6.2 Patent Rights: The CONTRACTOR shall be responsible for determining the application of patent rights and royalties on materials, appliances, articles, or systems prior to bidding. However, he shall not be responsible for such determination on systems which do not involve purchase by him of materials, appliances and articles.

6.7 PERMITS, LAWS, AND REGULATIONS:

6.7.1 Permits: The CONTRACTOR shall secure and pay for all construction permits and licenses and shall pay all governmental charges and inspection fees necessary for the

prosecution of the Work, which are applicable at the time of his Bid. The DISTRICT shall assist the CONTRACTOR, when necessary, in obtaining such permits and licenses. The DISTRICT shall be invoiced at actual cost without markup.

6.7.2 The CONTRACTOR shall also pay all public utility charges. The Contractor shall be responsible for obtaining dewatering permits as required. CONTRACTOR shall be responsible for complying with the South Florida Water Management District, Florida Department of Environmental Regulation, United States Environmental Protection Agency and any other regulatory agency requirements including financial responsibility (fines, etc.).

6.7.2 Laws and Regulations: The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations applicable to the Work. If the CONTRACTOR observes that the Specifications or Drawings are at variance therewith, he shall give the EOR prompt written notice thereof, and any necessary changes shall be adjusted by an appropriate Modification. If the CONTRACTOR performs any Work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to the EOR, he shall bear all costs arising therefrom; however, it shall not be his primary responsibility to make certain that the Drawings and Specifications are in accordance with such laws, ordinances, rules and regulations.

6.8 TAXES:

6.8.1 Cost of all sales and other taxes for which the CONTRACTOR is liable under the Contract shall be included in the Contract Price stated by the CONTRACTOR.

6.9 RECORD DOCUMENTS/RIGHT TO AUDIT:

6.9.1 The CONTRACTOR shall keep in a safe place one recorded copy of all Specifications, Drawings, Addenda, Modifications, and Shop Drawings at the site in good order and annotated to show all changes made during the construction process. These shall be available to the EOR and shall be delivered to him for the DISTRICT upon completion of the project. It shall be used for this purpose only. Final acceptance of the project shall be withheld until approval of the documents is made by the DISTRICT'S PROJECT MANAGER.

6.9.2 The awarded CONTRACTOR shall maintain during the term of the contract all books, reports, and records in accordance with generally accepted accounting practices and standards for records directly related to this contract. The form of all records and reports shall be subject to the approval of the District's Auditor. The awarded CONTRACTOR agrees to make available to the District's Auditor, during normal business hours all books of account, reports and records relating to this contract for the duration of the contract and retain them for a minimum period of three (3) years beyond the last day of the contract term.

6.9.3 If the CONTRACTOR submits a claim to the DISTRICT for additional compensation, the DISTRICT shall have the right, as a condition to considering the claim, and as a basis for evaluation of the claim, and until the claim has been settled, to audit the CONTRACTOR'S books to the extent they are relevant. This right shall include the right to examine books, records, documents, and other evidence and accounting procedures and practices, sufficient to discover and verify all direct and indirect costs of whatever nature claimed to have been incurred or anticipated to be incurred and for which claim has been submitted. The right to audit shall include the right to inspect the CONTRACTOR'S plants, or such parts thereof, as may be or have been engaged in the performance of the WORK. The CONTRACTOR further agrees that the right to audit encompasses all subcontracts and is binding upon all subcontractors. The rights to examine and inspect herein provided for shall be exercisable through such representatives as the DISTRICT deems desirable during the CONTRACTOR'S



normal business hours at the office of the CONTRACTOR. The accounting records and documents, and other financial data, and upon request, shall submit true copies of requested records to the DISTRICT.

6.10 SAFETY, PROTECTION, STORAGE AND EMERGENCIES:

Related Articles:

- 6.2-Contractor Risk and Work Protection
- 6.21-Protection of Existing Property Improvements
- 6.38-Temporary barriers and Enclosures
- 6.39-Security

6.10.1 CONTRACTOR shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the WORK. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

6.10.1.1 All employees on the Work and other persons who may be affected thereby,

6.10.1.2 All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and

6.10.1.3 Store and protect Products in accordance with manufacturers' instructions, with seals and labels intact and legible.

6.10.1.4 Store sensitive Products in weather tight, climate-controlled enclosures.

6.10.1.5 For exterior storage of fabricated Products, place on sloped supports, above ground.

6.10.1.6 Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of Product.

6.10.1.7 Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

6.10.1.8 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

6.10.2. CONTRACTOR shall comply with all applicable laws, ordinances, rules, and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss on or off the WORK and shall erect and maintain all necessary safeguards for such safety and protection.

6.10.3 CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the WORK may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

6.10.4 All damage, injury or loss to any property referred to in paragraph 6.10.1.2. or 6.10.1.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any subcontractor, supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the WORK for anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of the DISTRICT or the EOR or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR).

6.10.5 CONTRACTOR'S duties and responsibilities for the safety and protection of the WORK shall continue until such time as all the WORK is completed and EOR has issued a notice to the DISTRICT and CONTRACTOR in accordance with paragraph 14.6.(Substantial Completion) that the WORK is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.10.6 The safety provisions of applicable laws and building and construction codes shall be observed and the Contractor shall take or cause to be taken such additional safety and health measures as the Local Public Agency involved may determine to be reasonably necessary. Machinery, equipment and all hazards shall be guarded in accordance with the safety provisions of the "Manual of Accident Prevention in Construction" as published by the Associated General Contractors of America, Inc., to the extent that such provisions are not in conflict with applicable laws.

6.10.7 The Contractor shall maintain an accurate record of all cases of death, occupational disease, or injury requiring medical attention or causing loss of time from WORK, arising out of an and in the course of employment on WORK under the Contract. The Contractor shall promptly furnish the Local Public Agency with reports concerning these matters.

6.10.8 SAFETY REPRESENTATIVE: CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR'S superintendent unless otherwise designated in writing by CONTRACTOR to the DISTRICT.

6.10.9 HAZARD COMMUNICATION PROGRAMS: CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employees at the Site in accordance with Laws and Regulations.

6.10.10 SUPERINTENDENT: The CONTRACTOR shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the CONTRACTOR'S superintendent unless otherwise designated in writing by the CONTRACTOR to the DISTRICT'S PROJECT MANAGER.

6.10.11 EMERGENCIES: In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the EOR or the DISTRICT'S PROJECT MANAGER, is obligated to act, at his discretion, to prevent threatened damage, injury or loss.

6.10.11.1 CONTRACTOR shall give DISTRICT PROJECT Representative and EOR prompt written notice if CONTRACTOR believes that any significant changes in the WORK or variations to the Contract Documents have been caused thereby. If EOR determines that a change in the Contract Documents is required because of the action taken in response to an emergency or Change Order shall be issued to document the consequences of the changes or variations.

6.10.11.2 During adverse weather, and against the possibility thereof, the CONTRACTOR shall take all necessary precautions to ensure that the WORK shall be done in a good and workmanlike condition and is satisfactory in all respects. When required, protection shall be provided using tarpaulins, wood and building paper shelters, or other acceptable means. The CONTRACTOR shall be responsible for all changes caused by adverse weather, including unusually high winds and water levels and he shall take such precautions and procure such additional insurance as he deems prudent. The EOR may suspend construction operations at any time when, in his



judgment, the conditions are unsuitable, or the proper precautions are not being taken, whatever the weather or water level conditions may be, in any season.

6.10.11.3 If the CONTRACTOR believes that additional work done by him in an emergency which arose from causes beyond his control entitles him to an increase in the Contract Price or an extension of the Contract Time, he may make a claim therefore as provided in Articles 11 (Change in Contract Price) and 12, (Change in Contract Time).

6.10.12. **NATIONAL EMERGENCY:** In the event the DISTRICT is prevented from proceeding with any or all of this WORK as stated in this Contract, due to a declaration of war, or national emergency by the United States government, whereas the construction of the type contracted for herein is specifically prohibited by statute or governmental edict, or due to the stoppage of construction caused by any governmental agency, State, DISTRICT, Town, or County regulations, orders, restrictions, or due to circumstances beyond the DISTRICT'S control, then the DISTRICT herein reserves the right to either suspend the WORK to be done for an indefinite period of time or to cancel this Contract outright by giving notice by registered mail of such intention to the CONTRACTOR herein. In the event of any conditions above mentioned occurring after the WORK herein has already been commenced, then the DISTRICT herein shall be liable for only the cancellation or suspension without the addition of prospective profits or other changes whatsoever.

6.11 SHOP DRAWINGS AND SAMPLES:

Related Article 6.41: Field Samples and Mockups

6.11.1 SHOP DRAWINGS: After checking and verifying all field measurements, the CONTRACTOR shall submit to the CONSULTANT and the DISTRICT'S PROJECT MANAGER for review, in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.9) copies (or at the CONSULTANT'S option, one reproducible copy) of all Shop Drawings, which shall have been checked by and stamped with the approval of the CONTRACTOR. The data shown on the Shop Drawings shall be complete with respect to dimensions, design criteria, materials of construction and the like to enable the EOR to review the information as required.

Shop drawings shall include, but not be limited to the following information:

- 6.11.1.2 Fabrication and installation Drawings and details.
- 6.11.1.3 Template placement diagrams.
- 6.11.1.4 Manufacturer's installation instructions.
- 6.11.1.5 Product patterns and colors.
- 6.11.1.6 Coordination Drawings.
- 6.11.1.7 Schedules.
- 6.11.1.8 Product mix formulae.
- 6.11.1.9 Product design or engineering calculations.
- 6.11.1.10 Other information as required by project.

After review, produce copies and distribute per Submittal Procedures article above and for record documents purposes described in Section 6.37 Closeout Submittals.

Submit to EOR for purpose of checking conformance with information given and design concept and District's Project Manager.

6.11.2 SAMPLES: The CONTRACTOR shall also submit to the EOR for review, with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples shall have been checked by and stamped with the

approval of the CONTRACTOR, identified clearly as to material, manufacturer, any pertinent catalog numbers, and the use for which intended.

Contractor shall submit to Consultant for purpose of checking conformance with information given and design concept expressed in the documents.

After review, Consultant shall submit color board to District's Project Manager per Submittal Procedures. Samples shall also conform to the following:

6.11.2.1 Sample finishes and colors shall be from full range of manufactures' standard colors, textures, and patterns for Consultant's selection and preparation of color board for District's approval.

6.11.2.2 After review and approval by District, provide duplicates and distribute per Submittal Procedures.

6.11.2.3 Submit samples to illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

6.11.2.4 Include identification on each sample, with full project information.

6.11.2.5 Submit number of samples specified in specification, one of which Consultant shall retain.

Reviewed samples may be used in work, if indicated.

6.11.3 DEVIATIONS: At the time of each submission, the CONTRACTOR shall in writing call the EOR'S attention to any deviations that the Shop Drawings or sample may have from the requirements of the Contract Documents.

6.11.4 CONFORMANCE REVIEW: The EOR shall review within ten (10) days or as extended by District Shop Drawings and samples, but his review shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents. The review of a separate item as such shall not indicate review of the assembly in which the item functions. The CONTRACTOR shall make any corrections required by the EOR at CONTRACTOR'S expense and shall return the required number of corrected copies of Shop Drawings and resubmit new samples until the review is satisfactory to the EOR. The CONTRACTOR shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections called for by the CONSULTANT on previous submissions. The CONTRACTOR'S stamp of approval on any Shop Drawings or sample shall constitute a representation to the DISTRICT and the EOR that the CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, materials, catalogue numbers and similar data or he assumes full responsibility for doing so, and that he has reviewed or coordinated each Shop Drawing or sample with the requirements of the Work and the Contract Documents. Shop Drawings submitted without the CONTRACTOR'S stamp or specific written indication shall be returned without action. Shop Drawings and submittal data shall be reviewed two times, thereafter all further review time shall be charged to the CONTRACTOR.

6.11.5 APPROVAL: No work requiring a Shop Drawing or sample submission shall be commenced until the submission has been reviewed and approved by the EORT. A copy of each Shop Drawing and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the EOR.

6.11.6 SPECIFIC DEVIATIONS: The EOR'S review of Shop Drawings or samples shall not relieve the CONTRACTOR from his responsibility for any deviations from the requirements of the Contract Documents unless the CONTRACTOR has in writing



called the EOR'S attention to such deviation at the time of submission and the EOR has given written approval to the specific deviation, nor shall any review by the EOR relieve the CONTRACTOR from responsibility for errors or omissions in the Shop Drawings.

6.11.7 Where a Shop Drawing or sample is required by the Specifications, any related WORK performed prior to EOR'S review and acceptance of the pertinent submission shall be the sole expense and responsibility of CONTRACTOR.

6.12 SITE CLEAN UP:

6.12.1 SITE: The CONTRACTOR shall clean up behind the Work as much as is reasonably possible as the Work progresses. Upon completion of the Work, and before acceptance of and final payment for the Project by the DISTRICT, the CONTRACTOR shall remove all his surplus and discarded materials, excavated material and rubbish from the roadways, sidewalks, parking areas, lawns and all adjacent property; shall clean his portion of Work involved in any building under this Contract, so that no further cleaning by the DISTRICT is necessary prior to his occupancy; shall restore all property, both public and private, which has been disturbed or damaged during the prosecution of the Work; and shall leave the whole in a neat and presentable condition.

6.12.2 BUILDING CLEAN-UP: Clean-up operations shall consistently be carried on by the CONTRACTOR at all times to keep the premises free from accumulation of waste materials and rubbish. Upon completion of the Work he shall remove all rubbish, tools, scaffolding, surplus materials, etc., from the building and shall leave his work "broom clean", or its equivalent, unless more exactly specified elsewhere in the Contract. The CONTRACTOR shall do the following special cleaning for all trades upon completion of the Work:

6.12.2.1 Remove putty stains and paint from and wash and polish all glass. Do not scratch or otherwise damage glass.

6.12.2.2 Remove all marks, stains, fingerprints and other soil and dirt from painted, stained and decorated work.

6.12.2.3 Remove all temporary protections and clean and polish floors.

6.12.2.4 Clean and polish all hardware for all trades; this shall include removal of all stains, dust, dirt, paint, etc.

6.12.2.5 General: In case of dispute, the DISTRICT may remove the rubbish and charge the cost to the CONTRACTOR.

6.13 PUBLIC CONVENIENCE AND SAFETY:

6.13.1 Convenience: The CONTRACTOR shall, always, conduct the Work in such a manner as to insure the least practicable obstruction to public travel. The convenience of the general public and of the residents along and adjacent to the area of the Work shall be provided for in a satisfactory manner, consistent with the operation and local conditions.

6.13.2 Safety: "Street Closed" signs shall be placed immediately adjacent to the Work, in a conspicuous position, at such locations as traffic demands. At any time that streets are required to be closed, Contractor shall obtain approval to close the street from the appropriate regulatory agencies having jurisdiction. The CONTRACTOR shall notify law enforcement agencies, fire departments, and parties operating emergency vehicles before the street is closed and again as soon as it is opened. Approval from the DISTRICT shall be coordinated through the office of the Director of Facilities including notification of the news media and affected property owners. Access to fire hydrants and other fire extinguishing equipment shall be provided and always maintained. Traffic paths shall be maintained for local traffic.

6.14 SANITARY PROVISIONS:

6.14.1 The CONTRACTOR shall furnish necessary toilet conveniences, secluded from public observation, for use of all personnel on the Work, whether in his employ. They shall be kept in a clean and sanitary condition and shall comply with the requirements and regulations of the Public Authorities having jurisdiction. He shall commit no public nuisance. Temporary sanitary facilities shall be removed upon completion of the Work and the premises shall be left clean.

6.15 INDEMNIFICATION:

6.15.1 CONTRACTOR agrees to protect, defend, indemnify, and hold harmless the District, its employees, representatives, and elected officials from any and all claims and liabilities including all attorney's fees and court costs, including appeals, for which the District, its employees, representatives, and elected officials can or may be held liable as a result of injury (including death) to persons or damage to property occurring by reason of any negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR, its employees, or agents, arising out of or connected with this Agreement. The CONTRACTOR shall not be required to indemnify the District or its agents, employees, representatives, or elected officials when an occurrence results solely from the wrongful acts or omissions of the District, or its agents, employees, or representatives.

6.15.2 The CONTRACTOR, without exemption, shall indemnify and hold harmless, the District, its employees, representatives, and elected officials from liability of any nature or kind, including cost and expenses for or on account of any copyrighted, service marked, trademarked patented or unpatented invention, process, or any other intellectual property right or item manufactured by the CONTRACTOR. Further, if such a claim is made, or is pending, the CONTRACTOR may, at its option and expense, procure for the District the right to use, replace, or modify the item to render it non-infringing. If none of the alternatives are reasonably available, the District agrees to return the article on request to the CONTRACTOR and receive reimbursement from the CONTRACTOR. If the CONTRACTOR used any design, device or materials covered by letters, patent or copyright, it is mutually agreed and understood, without exception, that the Bid prices shall include all royalties or cost arising from the use of such design, device or materials in any way involved in the work. This article shall survive the termination of any contract with the School District.

6.15.3 The parties agree that Ten Dollars (\$10.00) of the total compensation paid to the Bidder for performance of this Agreement shall represent the specific consideration for the Bidder's indemnification of the Owner.

6.15.4 The District reserves the right to select its own legal counsel to conduct any defense in any such proceeding and all costs and fees associated therewith shall be the responsibility of CONTRACTOR under the indemnification agreement.

6.15.5 It is the specific intent of the parties hereto that the foregoing indemnification complies with F.S. 725.06 (Chapter 725). It is further the specific intent and agreement of the parties that all the Contract Documents on this Project are hereby amended to include the foregoing indemnification and the "Specific Consideration" therefore.

6.15.6 Nothing contained herein is intended nor shall be construed to waive District's rights and immunities under the common law or Florida Statutes 768.28, as amended from time to time.

6.16 CLAIMS:

6.16.1 In any and all claims against the DISTRICT or the EOR or any of their agents or employees, by any employee of the CONTRACTOR, any subcontractor, anyone directly or indirectly



employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.15 (Indemnification) shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any subcontractor under worker's compensation acts, disability benefit acts or other employee benefit acts.

6.16.2 Obligation: The obligations of the CONTRACTOR under paragraph 6.13 shall not extend to the liability of the EOR'S negligent acts, errors, or omissions or those of his employees or agents.

6.17 RESPONSIBILITY FOR CONNECTING TO EXISTING WORK:

6.17.1 It shall be the express responsibility of the CONTRACTOR to connect his Work to each part of the existing work or work previously installed as required by the Drawings and Specifications to provide a complete installation.

618 WORK IN STREET, HIGHWAY AND OTHER RIGHTS-OF-WAY: (move to 4.1 section)

6.18.1 Excavation, grading, fill, storm drainage, paving and any other construction or installations in rights-of-way of streets, highways, public carrier lines, utility lines (either aerial, surface or subsurface), etc., shall be done in accordance with requirements of these Specifications and authorities having jurisdiction. The CONTRACTOR shall be responsible for obtaining all permits necessary for the work. Upon completion of the Work, CONTRACTOR shall present to EOR certificates, in triplicate, from the proper authorities stating that the Work has been done in accordance with their requirements.

6.18.2 The DISTRICT shall cooperate with the CONTRACTOR in obtaining action from any utilities or public authorities involved in the above requirements.

6.19 COOPERATION WITH GOVERNMENTAL DEPARTMENTS, PUBLIC UTILITIES, ETC.:

6.19.1 The CONTRACTOR shall be responsible for making all necessary arrangements with governmental departments, public utilities, public carriers, service companies and corporations owning or controlling roadways, railways, water, sewer, gas, electrical, cable television, telephone, and telegraph facilities such as pavements, tracks, piping, wires, cables, conduits, poles, guys, etc., including incidental structures connected therewith, that are encountered in the Work in order that such items may be properly shored, supported and protected, or the CONTRACTOR may relocate them with Utility Owner's approval, if he so desires.

6.19.2 NOTICES: The CONTRACTOR shall give all proper notices, shall comply with requirements of such parties in the performance of his Work, shall permit entrance of such parties on the Project in order that they may perform their necessary work, and shall pay all charges and fees made by such parties for this work.

6.19.3 GOVERNMENT AGENCY CAUSED DELAYS: The CONTRACTOR'S attention is called to the fact that there may be delays on the Project due to work to be done by governmental departments, public utilities, and others in repairing or moving poles, conduits, etc. The CONTRACTOR shall cooperate with the above parties, in every way possible, so that the construction can be completed in the least possible time.

6.19.4 CODES, LAWS, ORDINANCES AND REGULATIONS: The CONTRACTOR shall have made himself familiar with all codes, laws, ordinances, and regulations which in any manner affect those engaged in the Work, or materials and equipment used in or upon the Work, or in any way affect the

conduct of the Work, and no plea of misunderstanding shall be considered on account of his ignorance thereof.

6.20 USE OF PREMISES: (move to Contractor responsibilities)

6.20.1 CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the project site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by laws, ordinances, and regulations, rights-of-way, permits, easements, and directions of the DISTRICT'S REPRESENTATIVE, and shall not reasonably encumber the premises with construction equipment or other materials or equipment.

6.20.2 CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the DISTRICT or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the WORK. Should any claim be made against the DISTRICT or EOR by any such owner or occupant because of the performance of the WORK, CONTRACTOR shall promptly attempt to settle with such other party by Contract or otherwise resolve the claim. CONTRACTOR shall, to the fullest extent permitted by laws and regulations, indemnify and hold the DISTRICT and EOR harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against the DISTRICT or EOR to the extent based on a claim arising out of CONTRACTOR'S performance of the WORK.

6.20.3. During the progress of the WORK, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other and other debris resulting from the WORK. At the completion of the WORK CONTRACTOR shall remove all waste materials, rubbish, and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by the DISTRICT. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

6.20.4 CONTRACTOR shall not overload or permit any part of any structure to be loaded with such weight as to endanger its safety, nor shall he subject any part of the Work to stresses or pressures that shall endanger it.

6.20.5 CONTRACTOR shall enforce the DISTRICT'S PROJECT MANAGER 's instructions in connection with signs, advertisements, fires, and smoking.

6.20.6 CONTRACTOR shall arrange and cooperate with DISTRICT in routing and parking of automobiles of his employees, subcontractors, and other personnel, and in routing material delivery trucks and other vehicles to the Project site.

6.21 PROTECTION OF EXISTING PROPERTY IMPROVEMENTS:

Related Articles:

- 6.2- Contractor Risk and Work Protection
- 6.10-Safety, Protection, Storage, and emergencies
- 6.38-Temporary barriers and Enclosures
- 6.39-Security

6.21.2 Any existing surface or subsurface improvements, such as pavements, curbs, sidewalks, pipes or utilities, footings, or structures (including portions thereof), trees and shrubbery, not indicated on the Drawings or noted in the Specifications as being removed or altered shall be protected from damage during construction of the Project. Any such improvements damaged



during construction of the Project, whether such improvements appear on the drawings, shall be restored to a condition equal, or better, to that existing at time of award of Contract. Such restoration or repair shall be at the sole expense of the Contractor, and no claim for an increase in the Contract Price under paragraph 6.21 or under Article 10 shall be allowed.

6.22 TEMPORARY HEAT:

6.22.1 The CONTRACTOR shall provide heat, fuel, and services as necessary to protect all work and materials, within all habitable areas of permanent building construction, for all contracts against injury from dampness and cold until final acceptance of all work and materials for the Project, unless building is fully occupied by the DISTRICT prior to such acceptance, in which case the DISTRICT shall assume all expenses of heating from date of full occupancy. Unless otherwise specifically permitted by Special Conditions, the permanent heating system shall not be used to provide temporary heat. CONTRACTOR'S proposed methods of heating shall be submitted for approval.

6.23. SCHEDULE

6.23.1 CONTRACTOR shall submit to EOR for review and comment (to the extent indicated in paragraph 2.6.Finalizing Schedule) proposed adjustments in the progress schedule to reflect the impact thereon of new developments; these shall conform generally to the progress schedule then in effect and additionally shall comply with any provisions of the General Requirements applicable thereto. All approved changes shall be memorialized as change orders.

6.24 CONTINUING THE WORK:

6.24.1 CONTRACTOR shall carry on the WORK and adhere to the progress schedule during all disputes or disagreements with the DISTRICT. No WORK shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Article 15 (Suspension and termination of Work) or as CONTRACTOR and the DISTRICT may otherwise agree in writing.

6.25 CONTRACTOR'S GENERAL WARRANTY AND GUARANTEE:

Related Articles: Warranties Attachment 14.4, Contractor's Warranty of Title

6.25.1 CONTRACTOR warrants and guarantees to DISTRICT and EOR that all work shall be in accordance with the Contract Documents and shall not be *defective*. That Contractor guarantees to repair, replace, or otherwise make good to the satisfaction of the DISTRICT any defect in workmanship or material appearing in the Work; and further guarantees the successful performance of the Work for the service intended.

Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

6.25.1.1 Abuse, modification or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors or Suppliers; or.

6.25.1.2 Normal wear and tear under normal usage.

6.25.2 Contractor's obligation to perform and complete the WORK in accordance with the Contract Documents shall be absolute. None of the following shall constitute an acceptance of WORK that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the WORK in accordance with the Contract Documents:

6.25.2.1 Observations by EOR;

6.25.2.2 Recommendation of any progress or final payment by EOR;

Section IV

6.16.2.3 The issuance of a certificate of Substantial Completion or any payment by DISTRICT to CONTRACTOR under the Contract Documents.

6.25.2.4 Use or occupancy of the WORK or any part thereof by DISTRICT.

6.25.2.5 Any acceptance by DISTRICT or any failure to do so.

6.25.2.6 Any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by EOR pursuant to paragraph 14.10.

6.26 DELETION/OVERSIGHT/MISSTATEMENT:

6.26.1 Any deletion, oversight or misstatement of the Specifications shall not release the Bidder from the responsibility of completing the project within the agreed upon time frame.

6.26.2 The cost of incidental work described in these Contract Requirements, for which there are no specific Contract Items, shall be considered as part of the general cost of doing the work and shall be included in the prices for the various Contract Items. No additional payment will be made, therefore.

6.27 EXCEPTIONS TO SPECIFICATIONS:

6.27.1 Any exceptions to the Specifications and/or drawings must be brought to the attention of the Purchasing Department in writing prior to the expiration of the Bid question period. Failure to list any exceptions with the Purchasing Department in writing prior to the end of the Bid question period means the Bidder is complying 100% with the Specifications. All materials may be inspected by the District upon delivery for compliance with the Specifications. Deviations from the specifications shall cause the bid to be rejected as non-responsive unless the deviation was approved prior to the submittal of bids.

6.27.2 Any deletion, oversight or misstatement of these Specifications shall not release the Bidder from full responsibility for unsatisfactory workmanship and /or materials, together with all appurtenances necessary for unrestricted operation, as determined by the District in its sole discretion.

6.28 SILENCE OF SPECIFICATIONS:

6.28.1 The apparent Silence of any Specification as to any details, or the omission from the specifications of a detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail and that materials of the first quality and correct type, size and design are to be used. All workmanship is to be of first quality.

6.28.1.1 Work not specified in the Specifications but involved in carrying out their intent or in the complete and proper execution of the work, is required and shall be performed by the Contractor as though it were specifically delineated or described.

6.29 QUALITY

6.29.1 Items delivered as a result of award from this bid shall be free of defects. Any item(s) not meeting this specification shall be picked up by the awarded Bidder for immediate replacement at no additional charge to the District.

6.30 TRANSPORTATION AND HANDLING:

6.30.1 Transport and handle Products in accordance with manufacturer's instructions.

6.30.2 Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.

6.30.3 Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.



6.31 DISPOSAL:

6.31.1 Before the Contractor disposes of any existing improvements or equipment which is to be removed as a portion of the work, and for which disposition is not specifically provided for elsewhere in these Specifications, he shall contact the DISTRICT and determine if the removal items are to be salvaged. Items to be salvaged by the DISTRICT shall be neatly stockpiled or stored in a neat and acceptable manner at the construction site easily accessible to the DISTRICT. Equipment and materials which shall not be salvaged by the DISTRICT shall become the property of the Contractor to be removed from the site and disposed of in an acceptable manner.

6.32 OCCUPATIONAL HEALTH AND SAFETY:

6.32.1 The CONTRACTOR, as a result of award of the bid, delivering any toxic substances item as defined in Code of Federal Regulation Chapter 29, shall furnish to the Purchasing Department, a Material Safety Data Sheet (MSDS). The material safety data sheet shall be provided with initial shipment and shall be revised on a timely basis as appropriate. The MSDS must include the following information:

6.32.2 The chemical name and the common name of the toxic substance.

6.32.3 The hazards or other risks in the use of the toxic substance, including:

6.32.3.1 The potential for fire, explosion, corrosion and reactivity;

6.32.3.2 The known acute and chronic health effects of risks from exposure, including the medical conditions which are generally recognized as being aggravated by exposure to the toxic substance; and

6.32.3.3 The primary routes of entry and symptoms of overexposure.

6.32.4 The proper precautions, handling practices, necessary personal protective equipment, and other safety precautions in the use of or exposure to the toxic substances including appropriate emergency treatment in case of overexposure.

6.32.5 The emergency procedure for spills, fire, disposal and first aid.

6.32.6 A description in lay terms of the known specific potential health risks posed by the toxic substance intended to alert any person reading this information.

6.32.7 The year and month, if available, that the information was compiled and the name, address, and emergency telephone number of the manufacturer responsible for preparing the information. Any questions regarding this requirement should be directed to: Department of Labor and Employment Security, Bureau of Industrial Safety and Health, Toxic Waste Information Center, 2551 Executive Center Circle West, Tallahassee, FL 32301-5014, Telephone 1800-367-4378.

6.33 OSHA:

6.33.1 The CONTRACTOR warrants that the product/services supplied to the District shall conform in all respects to the standards set forth in the Occupational Safety and Health Act 1970, as amended, and the failure to comply with this condition shall be considered as a breach of contract.

6.34 CONDITIONS AND PACKAGING:

Related Article: 6.4 Labor, Materials And Equipment: Conditions, Substitutions

6.34.1 It is understood and agreed that any item offered or shipped as a result of this bid shall be new (current production model at the time of the bid). All containers shall be suitable for storage or shipment, and all prices shall include standard commercial packaging.

6.35 UNDERWRITERS' LABORATORIES:

6.35.1 Unless otherwise stipulated in the bid, all manufactured items and fabricated assemblies shall be UL listed or re-examination testing where such has been established by UL for the items offered and furnished.

6.36 ASBESTOS:

6.36.1 Contractor shall not use any asbestos or asbestos-based fiber materials in the Work performed under this Contract.

6.36.2 If the CONTRACTOR during the course of the WORK observes the existence of asbestos in any structure, building or facility, the CONTRACTOR shall promptly notify the DISTRICT and the EOR. The DISTRICT shall consult with the EOR regarding removal or encapsulation of the asbestos material and the CONTRACTOR shall not perform any WORK pertinent to the asbestos material prior to receipt of special instructions from the DISTRICT through the EOR.

6.37 CLOSEOUT SUBMITTALS:

PART 1 GENERAL

6.37.1 SCOPE OF WORK

6.37.1.1 Closeout procedures.

6.37.1.2 Final cleaning.

6.37.1.3 Adjusting.

6.37.1.4 Project record documents.

6.37.1.5 As-built survey.

6.37.1.6 Operation and maintenance data.

6.37.1.7 Spare parts and maintenance Products.

6.37.1.8 Warranties and bonds.

6.37.1.9 Maintenance service.

6.37.2 RELATED SECTIONS

Payment Procedures.

Submittal Procedures.

Commissioning.

Testing, Adjusting and Balancing of HVAC.

Commissioning of HVAC.

6.37.3 CLOSEOUT PROCEDURES

6.37.3.1 Submit written certification that contract documents were reviewed, work inspected, and that work is complete in accordance with contract documents and ready for District's Project Manager and EOR'S review.

6.37.3.2 Provide submittals to EORT and District's Project Manager that are required by governing or other authorities.

Submit final application for payment identifying total adjusted contract sum, previous payments, and sum remaining due.

DISTRICT may opt to occupy or portions of completed facilities upon substantial completion of those portions of work.

Contractor/CM shall provide punch list to EOR identifying items remaining to be completed.

EOR shall inspect project to determine completion of punch list and project compliance with Contract Documents.



6.37.4 FINAL CLEANING

6.37.4.1 Execute final cleaning prior to final project assessment.

6.37.4.2 Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, wax, clean and polish transparent and glossy surfaces, vacuum carpet and soft surfaces.

6.37.4.3 Clean equipment and fixtures to sanitary condition with cleaning materials per manufacturer's written recommendations.

6.37.4.4 Replace filters of operating equipment.

6.37.4.5 Clean debris from roofs, gutters, downspouts, and drainage systems.

6.37.4.6 Clean site; sweep paved areas, rake clean landscaped surfaces.

6.37.4.7 Remove waste and surplus materials, rubbish, and construction facilities from the site.

6.37.4.8 Clean and sanitize water fountains (coolers).

6.37.4.9 Clean ledges countertops and shelves with all-purpose non-abrasive cleaner leaving no residue.

6.37.5 ADJUSTING

6.37.5.1 Adjust operating products and equipment to ensure smooth and unhindered operation.

6.37.6 PROJECT RECORD DOCUMENTS

6.37.6.1 Maintain on site one set of record documents, recording accurate field revisions to contract documents to include:

- Drawings/specifications and addenda.
- Change orders and other modifications to work.
- Reviewed shop drawings, product data, and samples.
- Manufacturer's instruction for assembly, installation, and adjusting.

6.37.6.2 Ensure entries are complete and accurate, enabling ready access and reference by District's Project Manager .

6.37.6.3 Store record documents separate from documents used for construction.

6.37.6.4 Record information concurrent with construction progress.

6.37.6.5 Specifications shall be legibly marked and recorded for each product used indicating the following:

- Manufacturer's name, product model and number.
- Product substitutions or alternates utilized.
- Changes made by addenda and modifications.

6.37.6.6 Record drawings and shop drawings shall be legibly marked with each item recorded to indicate actual construction as follows:

1. Measured depths of foundations in relation to finish first floor datum.
2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the work.
4. Field changes of dimension and details.
5. Details not on original contract drawings.

6.37.6.7 As-built survey: Upon completion of site construction improvements, provide EOR and District's Project Manager with complete and accurate field survey prepared, signed and sealed by Florida registered surveyor.

6.37.6.8 Provide exact horizontal and vertical location relative to property lines and NGVD of buildings, concrete and asphalt surfaces and all drainage features including lakes, detention areas, berms, embankments, swales drainage inlets, storm-water outfalls, storm and sewer manholes and water shut off valve locations.

6.37.6.9 Provide actual grades of spot elevations shown on paving and drainage plans.

6.37.6.10 Provide sufficient information indicating a true representation of constructed grade conditions for areas where grading between two elevation points is not constructed at uniform slope.

6.37.6.11 Survey shall include cross sections elevations at 50' stations of swales, lakes, and drainage retention areas including banks, berms, bottoms and transitions constructed or improved.

Elevations shown shall be accurate to the nearest tenth of a foot.

6.37.6.12 Upon project completion, transfer project record drawing information and recording of building and site survey information to AutoCAD (2008 or later format) files and provide two copies of CD's to EOR for review and transmitted to DISTRICT, prior to claim for final Application for Payment.

Contractor/CM shall also submit hard copies of record drawings and project manual maintained during project to District's Project Manager .

DISTRICT will be responsible for making prints from CD's and for their distribution to DISTRICT's user groups.

6.37.6.13 Submit one additional CD in AutoCAD to DISTRICT for distribution to Sheriff's Department with following information:

Provide Site Plan on black background indicating the following site information and in colors and layers indicated.

- | | |
|---|---------|
| a. Roads and Driveways into and on-site | White |
| b. Backflow and PIV Valves | Cyan |
| c. Valves for Fire Lines | Magenta |
| d. Fire Hydrants | White |
| e. Emergency Generator | Cyan |
| f. Flammable Storage Buildings | Red |
| g. Gas Tanks | Red |

Provide separate drawing files for each floor plan along with mechanical mezzanines and roof access locations showing following systems and in colors and layers indicated.

- | | |
|---|---------|
| a. Intercom Panel | Yellow |
| b. Fire Alarm Panel | Red |
| c. Electrical Panels | Magenta |
| d. HVAC Control Panels | White |
| e. Roof Access Panels | Cyan |
| f. Flammable Storage Spaces | Red |
| g. Custodial Storage | Orange |
| h. Walls, windows, room names and numbers | Gray |

6.37.7 OPERATION AND MAINTENANCE DATA

6.37.7.1 Submit documentation as noted in individual product specifications and as noted herein.



6.37.8 SPARE PARTS AND MAINTENANCE PRODUCTS

6.37.8.1 Provide spare parts, maintenance, and extra products in quantities specified in specification.

6.37.8.2 Deliver to DISTRICT; obtain receipt prior to final payment.

6.37.9 WARRANTIES

6.37.9.1 Submit documentation as noted in individual product specifications and as noted herein.

6.37.9.2 Provide duplicate notarized copies.

6.37.9.3 Execute and assemble transferable warranty documents from subcontractors, suppliers, and manufacturers.

6.37.9.4 Provide Table of Contents and assemble in D-side 3-ring white binders with typed title sheet of contents inside durable plastic front cover.

6.37.9.5 Submit prior to final application for payment.

6.37.9.6 For items of work delayed beyond date of substantial completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

6.37.10 MAINTENANCE SERVICE

6.37.10.1 Furnish service and maintenance of components indicated in specification sections for one-year from date of substantial completion.

6.37.10.2 Examine, clean, adjust, and lubricate system components as required for reliable operation.

6.37.10.3 Include systematic examination, adjustment, and lubrication of components repairing or replacing parts as required with parts produced by the manufacturer of the original component.

6.37.10.4 DISTRICT shall approve in writing of transfers or reassignments of maintenance service tasks.

6.37.11 ASBESTOS CERTIFICATION

6.37.11.1 Provide notarized letter from Contractor/CM certifying that "to the best of his/her knowledge no asbestos containing building materials were used as a building material in the project", per FS 255.40.

6.37.12 PRODUCTS

6.37.12.1 APPROVED PRODUCTS Use only cleaning and maintenance products approved for use in Florida Educational Facilities.

6.38 TEMPORARY BARRIERS AND ENCLOSURES

6.38.1 GENERAL

Related Articles:

6.2- Contractor Risk and Work Protection

6.10-Safety, Protection, Storage, and emergencies

6.21 Protection of Existing Property Improvements

6.38-Temporary barriers and Enclosures

6.39-Security

6.38.1.1 SCOPE OF WORK

6.38.1.2 Temporary barriers and enclosures to provide construction work areas separate from Owner's on-going school operations.

6.38.1.3 Protection of new work, existing facilities and grounds from damage, theft, vandalism, and unauthorized entry.

6.38.1.4 Six (6) foot high chain link fencing surrounding and separating areas under construction including area for Contractor's mobilization and parking separate from existing school facilities and on-going school activities.

6.38.1.5 Demising walls and other barriers as required to separate building areas under construction that permits safe and unobstructed exiting of partially Owner-occupied buildings.

6.38.1.6 Safety of construction workers and students, faculty and visitors located in areas of school facilities not under renovation or construction.

6.38.1.7 Control dust, erosion and sediment, noise, pollution, rodent and environmental control.

6.38.2 RELATED DOCUMENTS

Project Management and Coordination.

Security Procedures.

Submittal Procedures.

6.38.3 ENTRY CONTROL

6.38.3.3 Restrict entrance of persons and vehicles into Project site and existing facilities in accordance with Section 01 35 33 – Security Procedures.

6.38.3.4 Prior to project commencement, Contractor's on-site personnel shall meet with Owner's Project Manager and School staff for renovation and new construction to delineate areas for Contractor's operations to include storage and office trailers, parking, material storage lay-down areas.

6.38.3.5 Material deliveries shall be coordinated with school staff to ensure safe transit of students and staff across delivery routes.

6.38.3.6 Interruption of preapproved entry controls shall be coordinated with Owner's Project Manager and School staff prior to proposed interruption.

6.38.3.7 Allow entrance only to authorized persons with proper identification.

6.38.3.8 Contractor/CM shall post "No Trespassing" and "Hard Hat Area" signs along project perimeter and at construction access points.

1. No Trespassing sign shall include statutory language that area is construction site and that trespassing, and theft are felonies and violators will be prosecuted.

2. No Trespassing sign shall include name of Contractor/CM.

3. No Trespassing signs shall not be larger than 24"(600mm) by 24"(600mm).

4. Hard Hat Area sign shall not be larger than 12" (300mm) by 12"(300mm).

6.38.4 DEMISING WALLS

6.38.4.1 Where location of construction is contiguous to or within existing school, Provide demising walls to physically separate new or renovation work from existing on-going school operations.

6.38.4.2 Demising walls shall be continuous plywood with vapor barrier and wood framing to prevent unauthorized entrance, dust or debris from entering occupied portion of school.

6.38.4.3 Where construction is overhead, provide safe and secure method of access through or adjacent to work with



system of scaffolding, plywood, or wood planking overhead to prevent falling debris or materials from interrupting safe passage through construction area.

6.38.5 FENCING

6.38.5.1 Areas under construction including area for Contractor's mobilization and parking shall be separated from existing school facilities and on-going school activities with fencing.

6.38.5.2 Provide 6' high chain link fencing along construction zone boundaries not facing existing buildings.

6.38.5.3 Provide 6' high chain link fencing with visual fabric covering along construction zone boundaries greater than 20' of existing buildings not in construction zone.

6.38.5.4 Provide 6' high chain link fencing with plywood covering along construction zone boundaries greater less than 20' of existing buildings not in construction zone.

6.38.5.5 Fencing shall be designed to resist winds up to 74 miles per hour.

6.38.5.6 Contractor (CM) shall have option of providing fencing designed to withstand 140 miles per hour or be completely removed 24 hours prior to occurrence of anticipated high wind event.

6.38.5.7 Provide access gates required by code for ingress and egress and for Owner's and Contractor/CM's access to Owner's access to occupied portion of site and for construction access.

6.38.6 ENVIRONMENTAL CONTROLS

6.38.6.1 Protect existing buildings and adjacent property from dust produced by construction operations. Use encapsulating or wetting devices to control moisture content of traffic and construction areas.

6.38.6.2 Control surface drainage to prevent off site discharge of pollutants and prevent erosion and sedimentation.

6.38.6.3 Provide berms, dikes or drains to divert water flow away from new or existing structures into storm water retention areas.

6.38.6.4 Provide methods necessary to prevent mud and debris from entering storm water system.

6.38.6.5 Provide methods necessary to prevent excessive noise on site.

1. Comply with OSHA and Owner's noise requirements.

2. Coordinate with Owner's Construction Manager for construction activities to limit or cease construction activities creating any noise associated with construction on active school sites when FCAT testing occurs for one week in March of each year.

6.38.6.6 Provide methods necessary to prevent pests and insects from damaging the work.

6.38.6.7 Provide methods necessary to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances or pollutants from construction operations.

6.38.7 SUBMITTALS

6.38.7.1 Comply with Section "Submittal Procedures."

6.38.7.2 Submit site plan and floor plans indicating locations and material construction of proposed protective structures.

6.38.8 TEMPORARY FENCING

6.38.8.1 Six (6) foot high, minimum 10 gage aluminum or galvanized steel fabric.

6.38.8.2 Fencing shall have six-foot-high visual fabric cover to block visual access to construction activities.

6.38.8.3 5/8" C/D plywood sheets, pressure treated or other means of weather protection, with 2 x 4 wood framing at edges and 24" maximum vertical spacing.

6.38.9 TEMPORARY WALLS

6.38.9.1 Demising Wall: 5/8" C/D plywood sheets, 2 x 4 wood framing at 24" maximum spacing, and 10 mil black polyethylene vapor barrier covering with sealed joints.

6.38.9.2 Overhead Protection: Metal scaffolding with 3/4" B/C plywood or 2" x 12" wood planking.

6.38.10 EXECUTION/ 1 INSTALLATION AND REMOVAL

6.38.10.1 Temporary fencing shall be installed prior to start of vertical construction and removed upon completion of work.

6.38.10.2 Demising walls shall be installed prior to start of renovations or building additions and removed work

6.38.10.3 Walls shall be protected or removed during storm events where winds are anticipated to exceed 74 miles per hour.

6.39 SECURITY PROCEDURES

6.39.1 SCOPE OF WORK

6.39.1.1 Development of site security program, project entry control procedures, personnel screening and identification in compliance with Florida Statute FS1012.465 – Jessica Lunsford Act for vendors, and Contractor/CM's.

6.39.1.2 RELATED SECTIONS

Project Management and Coordination.

Submittal Procedures.

Temporary Barriers and Enclosures.

6.39.1.3 JESSICA LUNSFORD ACT

1. Contractor/CM, his subcontractors, vendors and suppliers who are to be permitted access to school grounds while students are present or have direct contact with students or have access to or control of school funds shall obtain Level 2 background screening in accord with Florida Statute FS1012.465 – Jessica Lunsford Act.

2. Level 2 screening excludes personnel working on school district property where students are present who have criminal records that include sexual offender, sexual misconduct with developmentally disabled or mental health patients, terrorism, murder, kidnapping, lewd, lascivious, or indecent acts or exposure, incest, child abuse or neglect.

3. Persons screened as noted above with other types of criminal history may be allowed on school grounds provided under following conditions:

4. Contractor/CM, subcontractors, vendors and suppliers shall be under continuous direct supervision of school district employee or Level 2 screened and cleared employee as noted above.

5. Contractor/CM, subcontractors, vendors and suppliers may be allowed on a student occupied site if area of construction is isolated from students by continuous six foot high chain link fence separating work area and school.

6. Persons with current Level 2 clearance who are subsequently arrested for disqualifying offenses shall be disqualified from access to school sites and shall immediately surrender their Photo ID Badge to their employer who shall be responsible for



returning badge to Martin County School District's Department of Human Resources with 48 hours of arrest or notice of arrest or criminal offense.

7. Persons failing to notify their employer and Martin County School District's Department of Human Resources within 48 hours of arrest will be charged with 3rd degree felony, punishable by up to five years imprisonment and \$1,000 fine.

8. Employers of persons having been arrested for disqualifying offenses who subsequently allow said employee to continue working on school property may also be charged with 3rd degree felony, punishable by up to five years imprisonment and \$1,000 fine.

9. Contractor/CM, his subcontractors, vendors, and suppliers working on school board sites shall be fingerprinted and obtain work badges.

10. Contractor/CM, his subcontractors, vendors, and suppliers have worked and obtained in other school districts must be screened to obtain new badges.

11. Questions regarding fingerprinting or identification badge processing may be directed to District Personnel Department at (772)219-1200, Ext. 30296.

12. Fingerprinting services are provided by private vendor through Florida Dept. of Education. DOE sponsored website will direct individuals to nearest fingerprinting location.

Cost of fingerprinting is \$83.25 per person and shall be prepaid either by money order to Fieldprint or by credit card payment via Internet. Website is <https://www.martinschools.org/page/vendor-information>. For information, telephone (877)357-7456.

13. After fingerprinting and criminal background check is complete, individuals shall make appointment for photo ID's by making appointments at Martin County School District Human Resources Office located at 1939 SE Federal Highway Stuart, FL 34994.

Appointments for ID photo badges shall be made after completion of fingerprinting with Martin County School District Human Resources Department by phone at (772) 219-1200, Ext. 30296.

Cost of Photo ID's is \$10.00. Payment may be made with company check, money order or personal check.

6.39.2 SECURITY PROGRAM

6.39.2.1 Protect new work, existing facilities and grounds from damage, theft, vandalism, and unauthorized entry.

6.39.2.2 Initiate security program in coordination with Owner's existing security system at time of project mobilization to ensure safety of students, faculty, and visitors to the unaffected portions of the school facilities.

6.39.2.3 No student contact is permitted between the Contractor's personnel and students. Any breach of this requirement will result in the immediate removal of the personnel from the job site upon direction by the Owner.

6.39.2.4 Smoking is not allowed on School Board property. Any breach of this restriction will result in immediate removal of personnel from the site upon direction by Owner's Project Manager.

6.39.2.5 Maintain security program throughout construction period until Owner's project acceptance.

6.39.3 ENTRY CONTROL

6.39.3.1 Restrict entrance of persons and vehicles into Project site and existing facilities as indicated by Owner approved security plan.

6.39.3.2 Allow entrance only to authorized persons with proper identification.

Maintain log of workers and visitors, make available to Owner on request.

Coordinate access of Owner's personnel to site in coordination with Owner's security forces.

6.39.4 PERSONNEL IDENTIFICATION

6.39.4.1 Contractor/CM on-site staff, subcontractors and vendors on site shall wear identification badges at all times on site.

6.39.4.2 Identification badges shall be current at time of project and shall be reverified and reissued yearly if project extends past original badge expiration date.

6.39.5 SUBMITTALS

6.39.5.1 Comply with Section Submittal Procedures.

6.39.5.2 Provide list of personnel proposed to be used on project for fingerprinting and background checks (only required for existing school projects).

6.39.5.3 Contractor/CM shall submit initial list of accredited persons and provide monthly updated lists to Owner.

6.39.5.4 Provide security plan to Owner indicating how construction site is to be secured and separated from existing school and its operations including normal and emergency egress and exiting from the operational portion of school and for new additions and existing portion under construction.

6.40 PRODUCT SUBSTITUTION REQUIREMENTS AND PROCEDURES

6.40.1 SCOPE OF WORK

6.40.1.1 Administrative and procedural requirements for consideration of request for substitution during the design and construction phases.

6.40.2 REFERENCES

Submittal Procedures.

References.

Quality Control.

Closeout Submittals.

6.40.3 REQUIREMENTS

6.40.3.1 Whenever a material, article or piece of equipment is identified on the Drawings or Specifications by reference to brand name or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements, and that other products of equal capacities, quality and function may be considered. The CONTRACTOR may request the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the Contract Documents by reference to brand name or catalogue number, and if, in the opinion of the EOR and DISTRICT, such material, article, or piece of equipment is of equal substance and function to that specified, the EOR with concurrence of the DISTRICT'S PROJECT MANAGER may approve its substitution and use by the CONTRACTOR

6.40.3.2 A request constitutes a representation that the Contractor or Bidder:

6.40.3.2.1 Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.

6.40.3.2.2 Will provide the same warranty for the Substitution as for the specified Product.



6.40.3.2.3 Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.

6.40.3.2.4 Waives claims for additional costs or time extension which may subsequently become apparent.

6.40.3.2.5 Will reimburse Owner and Consultant for review or redesign services associated with substitution.

6.40.3.3 The application shall state that the evaluation and acceptance of the proposed substitute shall not prejudice CONTRACTOR'S achievement of Substantial Completion on time, whether or not acceptance of the substitute for use in the WORK shall require a change in any of the Contract Documents (or in the provisions of any other direct contract with the DISTRICT for WORK on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the WORK is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified shall be identified in the application and available maintenance, repair and replacement service shall be indicated.

6.40.3.4 The application shall also contain an itemized estimate of all costs and cost savings that shall result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other Contractors affected by the resulting change, all of which shall be considered by EOR in evaluating the proposed substitute. EOR may require CONTRACTOR to furnish at CONTRACTOR'S expense additional data about the proposed substitute.

6.40.3.5 Incidental changes or extra component parts required to accommodate the substitute shall be made by the CONTRACTOR without an increase in the Contract Price or Contract Time. The CONTRACTOR shall reimburse the DISTRICT for charges of the EOR and EOR'S consultants for review evaluating each proposed substitution. These costs shall include transportation to operating installation at factories, etc.

6.40.3.6 No substitute shall be ordered or installed without the written approval of the EOR with the DISTRICT'S PROJECT MANAGER 's concurrence. The District may require the CONTRACTOR to furnish at CONTRACTOR'S expense a special performance guarantee or other surety with respect to any substitute.

6.40.3.7 Delay caused by obtaining approvals for substitute materials or installations shall not be considered justifiable grounds for an extension of construction time.

6.40.4 SUBMITTAL PROCEDURES

6.40.4.1 Transmit three (3) copies of each substitution request on company letterhead with completed Product Substitution Request Form in the Sample Forms Section of the Document.

6.40.4.2 During bidding phase, substitution requests shall be directed to the DISTRICT.

6.40.4.3 During construction phase substitution requests shall be directed to the District.

6.40.4.4 Substitution Form shall identify project, Contractor/CM and EOR during bidding phase plus subcontractor or supplier during construction phase indicating Specification Section and Paragraph number of specified material and pertinent drawing and detail numbers, as appropriate.

Include complete information as required in the Substitution Form. Incomplete information will result in automatic rejection of the substitution request.

6.40.4.5 Apply Contractor's stamp signed or initialed certifying that review, approval, verification of products required, field

dimensions, adjacent construction work, and coordination of information are in accordance with the requirements of the work and contract documents.

6.40.4.6 Schedule submittals to expedite the project, and deliver to EOR or Contractor/CM at business address. Coordinate submission of related items.

6.40.4.7 For each submittal for review, allow five (5) work days excluding delivery time to and from the EOR or CM/Contractor.

6.40.4.8 Identify variations from contract documents and product or system limitations, which may be detrimental to successful performance of the completed work.

6.40.4.9 Provide space for Contractor/CM and EOR review stamps.

6.40.4.10 When revised for resubmission, identify all changes made since previous submission.

6.40.4.11 Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

6.40.4.12 Submittals not requested will not be recognized or processed.

6.40.4.13 Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.

6.40.4.14 The Consultant will notify Contractor in writing of decision to accept or reject request.

6.40.5 SUBSTITUTION REQUESTS

Requests for substitutions shall be made not later than ten (10) calendar days prior to bid date. Any requests received after the above dates may not be considered.

6.41 FIELD SAMPLES AND MOCKUPS

6.41.1 SCOPE OF WORK

Administrative and procedural requirements for assure quality of construction before and during construction.

General requirements for mockups and field samples, constructed, applied, or assembled at the site for reviewed for use as a quality standard.

6.41.2 RELATED SECTIONS

6.11: Shop Drawings and Samples

Payment Procedures

Submittal Procedures.

References.

Quality Control.

Project Storage and Handling Requirements.

Closeout Submittals.

6.41.3 COORDINATION AND PROJECT CONDITIONS

6.41.3.1 Coordinate scheduling, submittals, and work to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

6.41.3.2 Verify utility requirements and characteristics of operating equipment are compatible with building utilities.

6.41.3.3 Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.



6.41.3.4 Coordinate space requirements, support and installation of mechanical and electrical work that is indicated diagrammatically on Drawings.

6.41.3.5 Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

6.41.3.6 In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

6.41.3.7 Coordinate completion and cleanup of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for DISTRICT's partial occupancy.

6.41.3.8 After DISTRICT occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of DISTRICT's activities.

6.41.3.9 DISTRICT change orders for extra work required by Contractor/CM due to poor coordination with subtrades will not be considered.

6.41.4 FIELD ENGINEERING

Employ Land Surveyor registered in State of Florida approved by DISTRICT from DISTRICT's continuing services providers. Obtain list from District's Project Manager.

6.41.4.1 Contractor shall locate and protect survey control and reference points.

6.41.4.2 Control datum for survey is that established by DISTRICT provided survey.

6.41.1.3 Verify setbacks and easements; confirm drawing dimensions and elevations.

6.41.4.4 Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.

6.41.4.5 Submit copy of site drawing and certificate signed by the Land Surveyor that the elevations and locations of the Work are in conformance with the Contract Documents.

6.41.5 MOCKUP REQUIREMENTS

6.41.5.1 Tests will be performed under provisions identified in this section and identified in respective product specification sections.

6.41.5.2 Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

6.41.5.3 Accepted mock-ups shall be comparison standard for remaining Work.

6.41.5.4 Where mock-up has been accepted by Architect/Engineer and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so by Architect/Engineer.

ARTICLE 7 – OTHER WORK

7.1. RELATED WORK AT SITE:

7.1.1 The DISTRICT may perform other WORK related to the Project at the site by the DISTRICT'S own forces, let other direct contracts therefor which shall contain General Conditions similar to these. If the fact that such other WORK is to be performed was not noted in the Contract Documents, written notice thereof shall be given to CONTRACTOR prior to starting Section IV

any such other WORK; and, if CONTRACTOR believes that such performance shall involve additional time and the parties are unable to agree as to the extent thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 (Change in Contract Price) and Article 12 (Change in Contract Time). If the performance of additional WORK by other Contractor or the DISTRICT is noted in the Contract Documents, no additional adjustment of time or compensation shall be considered.

7.1.2 CONTRACTOR shall afford the DISTRICT and other Contractors who are a party to such a direct contract (or the DISTRICT, if the DISTRICT is performing the additional WORK with the DISTRICT'S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such WORK and shall properly connect.

7.1.2 CONTRACTOR shall afford the DISTRICT and other Contractors who are a party to such a direct contract (or the DISTRICT, if the DISTRICT is performing the additional WORK with the DISTRICT'S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such WORK and shall properly connect and coordinate the WORK with theirs. CONTRACTOR shall do all cutting, fitting and patching of the WORK that may be required to make its several parts come together properly and integrate with such other WORK. CONTRACTOR shall not endanger any WORK of others by cutting, excavating or otherwise altering their WORK and shall only cut or alter their WORK with the written consent of the DISTRICT, EOR, and others whose WORK shall be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of the DISTRICT and other Contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between the DISTRICT and other Contractors.

7.1.3 If any part of CONTRACTOR'S WORK depends for proper execution or results upon the WORK of any such other Contractor other than CONTRACTOR'S OWN SUBCONTRACTOR, (or the DISTRICT), CONTRACTOR shall inspect and promptly report to CONSULTANT in writing any delays, defects or deficiencies in such other WORK that render it unavailable or unsuitable for such proper execution and results of CONTRACTOR'S WORK. CONTRACTOR'S failure to report shall constitute an acceptance of the other WORK as fit and proper for integration with CONTRACTOR'S WORK except for latent defects and deficiencies in the other WORK.

7.2. COORDINATION:

7.2.1. If the DISTRICT contracts with others for the performance of other WORK on the Project at the site, the person or organization who shall have authority and responsibility for coordination of the activities among the various prime Contractors shall be identified in the Technical Specifications and the specific matters to be covered by such authority and responsibility shall be itemized, and the extent of such authority and responsibilities shall be provided in the Technical Specifications. Unless otherwise provided in the Technical Specifications, neither the DISTRICT nor the EOR shall have any authority or responsibility in respect of such coordination.

ARTICLE 8 – DISTRICT'S RESPONSIBILITIES

8.1 COMMUNICATIONS TO CONTRACTOR:

8.1.1 DISTRICT shall issue all communications to CONTRACTOR, copy to EOR.

8.2 FURNISH DATA:

8.2.1 DISTRICT shall promptly furnish the data required of the DISTRICT under the Contract Documents.



8.3. PAYMENTS:

8.3.1 DISTRICT shall make payments to CONTRACTOR promptly when they are due as provided in Sections 14.5 (Review of Application for Progress payment), and 14.10, (Final Payment and Acceptance).

8.4 LANDS, EASEMENTS: REPORTS AND TESTS:

8.4.1 The DISTRICT'S duties in respect of providing lands and easements and providing engineering surveys, if available, to establish reference points are set forth in paragraphs 4.1.1(Availability of Land) and 4.5.1 (Reference Points).

8.4.2 The DISTRICT shall identify and make available to CONTRACTOR copies of reports of physical conditions at the Site and drawings of existing structures that have been utilized in preparing the Contract Documents as set forth in Paragraph 4.2, (Report of Physical Conditions).

8.5 CHANGE ORDERS

8.5.1 The DISTRICT is obligated to execute Change Orders as indicated in Article 10, (Changes in the Work).

8.6 SUSPENSION OF WORK

8.6.1 In connection with the DISTRICT'S right to stop WORK or suspend WORK see paragraph 13.5 (District May Stop Work) and 15.1 District May Suspend Work). Paragraph 15.2 (District May Terminate for Cause) and 15.3 (District May terminate Without Cause) deals with the DISTRICT'S right to terminate services of CONTRACTOR.

8.7 ESTIMATED DOLLAR VALUE:

8.7.1 No guarantee of the dollar amount of this bid is implied or given.

8.8 QUANTITIES:

8.8.1 Quantities shown are estimates only. No guarantee or warranty is given or implied by the District as to the total amount that may or may not be purchased from any resulting contract. The District reserves the right to decrease or increase quantities or add or delete any item from the contract if it is determined that it best serves the interests of the District. Orders shall be placed as needed by individual locations during the contract period. The CONTRACTOR agrees that the price(s) offered shall be maintained irrespective of the quantity actually purchased.

8.9 ADDITIONAL TERMS AND CONDITIONS:

8.9.1 No additional terms and conditions included with the Bid response shall be evaluated or considered, have any force or effect, and are inapplicable to this Bid. It is understood and agreed that the conditions in these Bid Documents are the only conditions applicable to this Bid and the Contractor's authorized signature on the Bid Form attests to this.

ARTICLE 9 – CONSULTANT'S (EOR) STATUS DURING CONSTRUCTION

9.1 DISTRICT'S REPRESENTATIVE:

9.1.1 The EOR (if specifically designated), or a specifically designated employee of the DISTRICT, shall act as the DISTRICT'S REPRESENTATIVE during the construction period. The duties and responsibilities and the limitations of authority of the EOR as one of the DISTRICT'S REPRESENTATIVES during construction are set forth in Articles 1 through 17 of these Supplementary Conditions and shall not be extended without written consent of the DISTRICT'S PROJECT MANAGER and the EOR.

9.1.2 The EOR's decision with the consent of the DISTRICT'S PROJECT MANAGER in matters relating to aesthetics, shall be final, if within the terms of the Contract Documents.

9.1.3 EOR shall work with the DISTRICT to

9.1.3.1 Establish on-site lines of authority and communications:

9.1.3.2 Schedule and conduct pre-construction meeting and progress meetings.

9.1.4 EOR shall also work with the DISTRICT to Establish procedures for:

9.1.4.1 Submittals

9.1.4.2 Reports and records

9.1.4.3 Recommendations

9.1.4.4 Coordination of drawings

9.1.4.5 Schedules

9.1.4.6 Resolution of conflicts

9.1.5 EOR shall also

9.1.5.1 Interpret Contract Specifications and Drawings

9.1.5.2 Transmit written interpretations to Contractor, and to other concerned parties.

9.1.5.3 Assist in Obtaining permits and approvals.

9.1.5.4 Verify that Contractor and Subcontractors have obtained inspections for Work and for temporary facilities.

9.1.5.5 Assist DISTRICT to control the use of Site:

9.2 VISITS TO SITE:

9.2.1 After written notice to proceed with the WORK, the EOR shall make visits to the site at intervals appropriate to the various stages of construction or as per EOR'S contract with DISTRICT to observe the progress and quality of the executed WORK and to determine, in general, if the WORK is proceeding in accordance with the Contract Documents. Based on his on-site observations, as an experienced and qualified design professional, he shall keep the DISTRICT informed of the progress of the WORK, shall endeavor to guard the DISTRICT against defects and deficiencies in the WORK of the Contractor.

9.3 PROJECT REPRESENTATION:

9.3.1 The Martin County School District or its authorized agents, inspectors or representatives acting within the scope of duties entrusted to them by the DISTRICT.

9.4 CLARIFICATIONS AND INTERPRETATIONS:

9.4.1 The EOR shall issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as the DISTRICT may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If Contractor believes that a written clarification of interpretation justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 (Change in Contract Price) and Article 12 (Change in Contract Time).

9.5 MEASUREMENTS:

9.5.1 MEASUREMENTS: All Work completed under the Contract shall be measured by the EOR'S or DISTRICT'S REPRESENTATIVE or PROJECT REPRESENTATIVE according to the United States Standard Measures. All linear surface measurements shall be made horizontally or vertically as required by the item measured.

9.6 REJECTING DEFECTIVE WORK



9.6.1 The EOR, DISTRICT'S REPRESENTATIVE or PROJECT REPRESENTATIVE shall have authority to disapprove or reject Work which is "defective" (which term is hereinafter used to describe Work that is unsatisfactory, faulty, or defective, or does not conform to the requirements of the Contract Documents or does not meet the requirements of any inspection, test or approval referred to in the Contract Documents, or has been damaged prior to final acceptance). They shall also have authority to require special inspection or testing of the Work as they may individually or severally deem necessary, whether the Work is fabricated, installed or completed.

9.6.2 Mockups must be approved prior to work beginning. The mockup shall be the basis for the quality of work and the work's acceptance.

9.7 SHOP DRAWINGS, CHANGE ORDERS AND PAYMENTS:

9.7.1 In connection with EOR'S responsibility for Shop Drawings and samples, see Sections 6.11 (Shop Drawings and Samples).

9.7.2 In connection with EOR'S responsibilities as to Change Orders see Article 10, (Changes in the Work), Articles 11 (Change in Contract Price) and Article 12 (Change in Contract Time).

9.7.3 In connection with EOR'S responsibilities in respect of Applications for Payment, etc., see Article 14, (Payments to Contractor and Completion).

9.8 DETERMINATIONS FOR UNIT PRICES:

9.8.1 The DISTRICT PROJECT MANAGER and EOR shall determine the actual quantities and classifications of Unit Price WORK performed by CONTRACTOR. The DISTRICT PROJECT MANAGER and EOR shall review with CONTRACTOR EOR'S preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). The DISTRICT PROJECT MANAGER'S written decisions thereon shall be final and binding upon the DISTRICT and CONTRACTOR unless, within ten days after the date of any such decision, the CONTRACTOR delivers to the DISTRICT and to EOR written notice of intention to appeal from such a decision.

9.9 DECISIONS ON DISPUTES:

9.9.1 The DISTRICT PROJECT MANAGER with the input of the CONSULTANT shall be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the WORK thereunder. Claims, disputes and other matters relating to the acceptability of the WORK or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the WORK and claims under Articles 11 (Change in Contract Price) and Article 12 (Change in Contract Time) in respect of changes in the Contract Price or Contract Time shall be referred initially to EOR in writing with a request for a formal decision in accordance with this paragraph, which EOR with the consent of the District Project Director shall render in writing within a reasonable time. Written notice of each such claim, dispute and other matter shall be delivered by the claimant to The DISTRICT PROJECT MANAGER and EOR and the other party to the Contract promptly (but in no event later than ten (10) days) after the start of the occurrence or event giving rise thereto, and written supporting data shall be submitted to The DISTRICT PROJECT MANAGER and EOR within ten (10) days after such occurrence unless CONSULTANT with the consent of the District Project Director allows an additional period of time to ascertain more accurate data in support of such claim, dispute or other matter.

9.9.2 The DISTRICT PROJECT MANAGER and EOR shall

submit any response to the claimant within ten (10) days after receipt of the claimant's last submittal (unless The DISTRICT PROJECT MANAGER and EOR allow additional time). EOR, with the consent of the District Project Director shall render a formal decision in writing thirty days after receipt of the opposing party's submittal, if any, in accordance with this paragraph. The DISTRICT PROJECT MANAGER'S written decision, on such claim, dispute or other matter shall be final and binding upon CONTRACTOR unless:

(i) an appeal from DISTRICT/ EOR's decision is taken within the time limits and in accordance with the procedures set forth pursuant to Article 16, (Dispute Resolution) or

(ii) a written notice of intention to appeal from The DISTRICT PROJECT MANAGER and EOR's written decision is delivered by CONTRACTOR to the DISTRICT PROJECT MANAGER and EOR within ten (10) days after the date of such decision and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction to exercise such rights or remedies as the appealing party may have with respect to such claim, dispute or other matter in accordance with applicable Laws and Regulations within thirty (30) days of the date of such decision, unless otherwise agreed in writing by DISTRICT and CONTRACTOR.

9.9.3 The rendering of a decision by The DISTRICT PROJECT MANAGER pursuant to paragraphs 9.8.1, (Determinations for Unit Prices), 9.9.1 and 9.9.2 (Dispute Resolution) with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.11 Waiver of Claims) shall be a condition precedent to any exercise by CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute or other matter pursuant to Article 16.

9.10 INSPECTION AND TESTING:

9.10.1 EOR shall inspect work to assure performance in accord with requirements of Contract Documents as follows:

9.10.1.1 Administer special testing and inspections of suspect Work.

9.10.1.2 Reject Work, which does not comply with requirements of Contract Documents.

9.10.2 Coordinate Testing Laboratory Services:

9.10.2.1 Verify that required laboratory personnel are present.

9.10.2.2 Verify that tests are done in accordance with specified standards.

9.10.2.3 Review test reports for compliance with specified criteria.

9.10.2.4 Recommend and administer any required re-testing.

9.11 LIMITATIONS ON EOR:

9.11.1 Neither EOR'S authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by EOR either to exercise or not exercise such authority shall give rise to any duty or responsibility of EOR to CONTRACTOR, any subcontractor, any Supplier, or any other person or organization performing any of the WORK, or to any surety for any of them.

9.11.2 Whenever in the Contract Documents the term "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory"



or adjectives of the like effect or import are used to describe a requirement, direction, review or judgment of EOR as to the WORK, it is intended that such requirement, direction, review or judgment shall be solely to evaluate the WORK for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to EOR any duty or authority to supervise or direct the furnishing or performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.11.3 or 9.11.4.

9.11.3 EOR shall not be responsible for CONTRACTOR'S means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and EOR shall not be responsible to CONTRACTOR for CONTRACTOR'S failure to perform or furnish the WORK in accordance with the Contract Documents.

9.11.4 EOR shall not be responsible for the acts or omissions of CONTRACTOR or of any subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the WORK.

ARTICLE 10 – CHANGES IN THE WORK

10.1 AUTHORIZED CHANGES IN THE WORK

10.1.1 Without invalidating the Contract and without notice to any surety, the DISTRICT may, at any time or from time to time, order additions, deletions, or revisions in the WORK; these shall be authorized by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the WORK involved that shall be performed under the applicable conditions of the Contract Documents, except as otherwise specifically provided.

10.1.2 If the DISTRICT and CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Work Change Directive, a claim may be made therefore as provided in Articles 11 (Change in Contract Price) and Article 12 (Change in Contract Time).

10.2 UNAUTHORIZED CHANGES IN THE WORK

10.2.1 CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any WORK performed that is not required by the Contract Documents as amended, modified and supplemented as provided in Section 3.2, (References to Standards) except in the case of an emergency as provided in paragraph 6.10.11 (Emergencies) and except in the case of uncovering WORK as provided in paragraph 13.4.2, (Uncovering Work).

10.3 EXECUTION OF CHANGE ORDERS

10.3.1 The DISTRICT and CONTRACTOR shall execute appropriate Change Orders (or Written Amendments) covering:

10.3.1.1 Changes in the WORK, which are ordered by the DISTRICT pursuant to paragraph 10.1.1, (Changes in the Work) are required because of acceptance of *defective* WORK under paragraph 13.8 or correcting *defective* WORK under paragraph 13.9 or are agreed to by the parties.

10.3.1.2 Changes in the Contract Price or Contract time which the parties agree to.

10.3.1.3 Changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by EOR pursuant to paragraph 9.9.1; (Decisions on Disputes) provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provision of the Contract Documents and applicable Laws and Regulations, but during any such appeal,

CONTRACTOR shall carry on the WORK and adhere to the progress schedule as provided in paragraph 6.24.1.

10.3.2 Surety. It is distinctly agreed and understood that any changes made in the Contract Documents for this WORK (whether such changes increase or decrease the amount thereof) or any change in the manner or time of payments or time of performance made by the DISTRICT to the CONTRACTOR shall in no way annul, release, or affect the liability and surety on the Bonds given by the CONTRACTOR. If notice of any change affecting the general scope of the WORK or the provisions of the Contract Documents (including, but not limited to, Contract Price or contract Time) is required by the provisions of any bond to be given to a Surety, the giving of any such notice shall be CONTRACTOR'S responsibility, and the amount of each applicable Bond shall be adjusted accordingly.

10.3.3 Notwithstanding, anything to the contrary contained within the contract documents, all change orders involving additional cost or extensions of time, shall be governed by the ordinances of the DISTRICT.

ARTICLE 11 – CHANGE OF CONTRACT PRICE

11.1 GENERAL

11.1.1 The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the WORK. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.1.2 The Contract Price may only be changed by a Change Order or by a Written Amendment. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to EOR promptly (but in no event later than ten (10) days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within thirty (30) days after such occurrence (unless EOR allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect and consequential) to which the claimant is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Price shall be determined by DISTRICT and EOR in accordance with paragraph 9.9.1 if the DISTRICT and CONTRACTOR cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price shall be valid if not submitted in accordance with this paragraph 11.1.2.

11.1.3 The value of any WORK covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.1.3.1 Where the WORK involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of Section 11.5 (Unit Price Work) inclusive).

11.1.3.2 By mutual acceptance of a lump sum (which shall include an allowance for overhead and profit in accordance with paragraph 11.3.1.2.a Contractor's Fee).

11.1.3.3 On the basis of the Cost of the WORK (determined as provided in Section 11.2, inclusive) plus a CONTRACTOR'S Fee for overhead and profit (determined as provided in Section 11.3, Contractor's Fee, inclusive).

11.2 COST OF THE WORK:

11.2.1 General. The term Cost of the WORK means the sum of all costs necessary incurred and paid by CONTRACTOR in the proper performance of the WORK. Except as otherwise may be agreed to in writing by the DISTRICT, such costs shall be in amounts no higher than those prevailing in the locality of the



Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.2.2: (Exclusions to Cost of the Work).

11.2.1.1 Labor. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the WORK under schedules of job classification agreed upon by the DISTRICT and CONTRACTOR. Payroll costs for employees not employed full time on the WORK shall be apportioned based on their time spent on the WORK. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, sick leave, vacation, and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing WORK after regular working hours, on Saturday, Sunday or legal holidays shall be included in the above to the extent authorized by the DISTRICT.

11.2.1.2 Materials and Equipment. Cost of all materials and equipment furnished and incorporated in the WORK, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless the DISTRICT deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to the DISTRICT. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to the DISTRICT, and CONTRACTOR shall make provisions so that they may be obtained.

11.2.1.3 Subcontractor. Payments made by CONTRACTOR to the subcontractors for WORK performed by SubContractors. If required by the DISTRICT, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to CONTRACTOR and shall deliver such bids to the DISTRICT who shall then determine, with the advice of the EOR, which bids shall be accepted. If a subcontract provides that the subcontractor is to be paid on the basis of Cost of the WORK Plus a Fee, the Subcontractor's Cost of the WORK shall be determined in the same manner as CONTRACTOR'S Cost of WORK. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.2.1.4 Costs of Special Consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to WORK.

11.2.1.5 Supplemental costs include the following:

a. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and tools not owned by the workers, which are consumed in the performance of WORK, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

b. Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by the DISTRICT with the advice of EOR, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof--all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the WORK. For special equipment and machinery such as power-driven pumps, concrete mixers, trucks, front end loaders, backhoes, and tractors, or other equipment, required for the economic performance of the authorized WORK, the CONTRACTOR shall receive payment based on the weekly rate divided by 40 to arrive at an hourly cost. The weekly rate shall be from the latest edition of the Rental Rate blue book for

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Construction Equipment, published by Equipment Guidebook Co., reduced by 25 percent. Equipment cost shall be calculated based upon the actual time the equipment is used in the WORK. If said WORK required the use of machinery not on the WORK or not to be used on the WORK, the cost of transportation, not exceeding a distance of one hundred (100) miles of such machinery to and from the WORK shall be added to the fair rental rate; provided, however, that this shall not apply to machinery or equipment already required to be furnished under the terms of the Contract.

c. Sales, consumer, use or similar taxes related to the WORK and for which CONTRACTOR is liable, imposed by laws and regulations.

d. Royalty payments and fees for permits and licenses.

e. The site costs utilities, fuel and sanitary facilities.

f. Cost of premiums for additional bonds and insurance required because of changes in the WORK.

11.2.2 Exclusions to Cost of the Work: The term Cost of the WORK shall not include any of the following:

11.2.2.1 Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR'S principal or a branch office for general administration of the WORK and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.2.1.1 or specifically covered by paragraph 11.2.1.4 -- all of which are to be considered administrative costs covered by the CONTRACTOR'S Fee.

11.2.2.2 Expenses of CONTRACTOR'S principal and branch offices other than CONTRACTOR'S office at the site.

11.2.2.3 Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the WORK and charges against CONTRACTOR for delinquent payments.

11.2.2.4 Cost of premiums for all Bonds and for all Insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 11.2.1.5f above).

11.2.2.5 Costs due to the negligence or intentional acts of the CONTRACTOR, any subcontractor, or anyone whose acts any of them may be liable, including but not limited to, the correction of *defective* WORK, disposal of materials or equipment wrongly supplied and making good any damage to property.

11.2.2.6 Costs associated with fringe benefits that are greater than actual costs, i.e., where worker hours exceed a typical 8-hour day and 40-hour workweek.

11.2.2.7 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Section 11.2.

11.3 CONTRACTOR'S FEE:

11.3.1 The CONTRACTOR'S Fee for overhead and profits shall be determined as follows:

11.3.1.1 A mutually acceptable fixed fee; or if none can be agreed upon,

11.3.1.2 A fee based on the following percentages of the various portions of the Cost of the WORK:



a. For costs incurred under paragraphs 11.2.1.1 (Labor) and 11.2.1.2, (Materials and Equipment) the CONTRACTOR'S Fee shall be five (5%) percent.

b. For costs incurred under paragraph 11.2.1.3, (Subcontractors) the CONTRACTOR'S Fee shall be five percent; and if a subcontract is on the basis of Cost of the WORK Plus a Fee, the maximum allowable to CONTRACTOR on account of overhead and profit of all Subcontractors shall be five (5%) percent;

c. No fee shall be payable based on costs itemized under paragraphs 11.2.1.4, (Cost of EORs) 11.2.1.5 (Supplemental Costs) and 11.2.2; (Exclusions)

d. The amount of credit to be allowed by CONTRACTOR to the DISTRICT for any such change which results in a net decrease in cost shall be the amount of the actual net decrease plus a deduction in CONTRACTOR'S Fee by an amount equal to ten percent of the net decrease; and

e. When both additions and credits are involved in any one change, the adjustment in CONTRACTOR'S Fee shall be computed based on the net change in accordance with paragraphs 11.3.1.2a through 11.3.1.2d, inclusive.

11.3.2 Whenever the cost of any WORK is to be determined pursuant to paragraph 11.2.1 (General) or 11.2.2, (Exclusions), CONTRACTOR shall submit in form acceptable to EOR an itemized cost breakdown together with supporting data.

11.4 CASH ALLOWANCES:

11.4.1 It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the WORK so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to the DISTRICT, CONTRACTOR agrees that:

11.4.1.1 The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

11.4.1.2 CONTRACTOR'S costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof shall be valid.

11.4.1.3 Prior to final payment, an appropriate Change order shall be issued as recommended by EOR to reflect actual amounts due CONTRACTOR on account of WORK covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.5 UNIT PRICE WORK:

11.5.1 Where the Contract Documents provide that all or part of the WORK is to be Unit Price WORK, initially the Contract Price shall be deemed to include for all Unit Price WORK an amount equal to the sum of the established unit prices for each separately identified item of Unit Price WORK times the estimated quantity of each item as indicated in the Contract. The estimated quantities of items of Unit Price WORK are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price WORK performed by CONTRACTOR shall be made by EOR DISTRICT in accordance with Paragraph 9.8, Determinations for Unit Prices.

11.5.2 Each unit price shall be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR'S overhead and profit for each separately identified item.

11.5.3 Where the quantity of any item of Unit Price WORK performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Contract and there is no corresponding adjustment with respect to any other item of WORK and if CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof, CONTRACTOR may make a claim for an increase in the Contract Price in accordance with Article 11 Change of Contract Price, if the parties are unable to agree as to the amount of any such increase.

11.5.4 Where the quantity of any item of Unit Price WORK performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Contract and there is no corresponding adjustment with respect to any other item of WORK and if DISTRICT believes that CONTRACTOR has incurred reduced expense as a result thereof, DISTRICT may make a claim for a decrease in the Contract Price in accordance with Article 11 Change of Contract Price if the parties are unable to agree as to the amount of any such decrease.

11.6 OMITTED WORK:

11.6.1 The DISTRICT may at any time, by written order, without Notice to the Sureties, require omission of such contract WORK as it may find necessary or desirable. An order for omission of WORK shall be valid only by an executable change order. All WORK so ordered must be omitted by the CONTRACTOR. The amount by which the contract price shall be reduced shall be determined as follows:

11.6.1.1 By such applicable unit prices, or rates for WORK of a similar nature or character as set forth in the contract; or,

11.6.1.2. By the appropriate lump sum price set forth in the Contract; or,

11.6.1.3. By the reasonable and fair estimated cost of such omitted WORK and profit percentage as determined by the CONTRACTOR and the EOR and approved by the DISTRICT.

ARTICLE 12 – CHANGE OF CONTRACT TIME

12.1 GENERAL

12.1.1 The Contract Time may only be changed by a Change Order or Written Amendment. Any claim for an extension or shortening of the Contract time shall be based on written notice delivered by the party making the claim to the other party and to EOR promptly (but in no event later than ten days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within ten (10) days after such occurrence (unless EOR allows an additional period to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. Claims made beyond these time limits shall be null and void.

12.1.2 Requests for extension of time shall be fully documented and shall include copies of daily logs, letters, shipping orders, delivery tickets, and other supporting information. In case of a continuing cause of delay only one (1) claim is necessary. Normal working weeks are based on a five (5) day week. All claims for adjustment of the Contract Time shall be determined by the DISTRICT with input from the EOR. No claim for an adjustment in the Contract Time shall be valid if not submitted in accordance with the requirements of this paragraph 12.1.1.



12.1.3 All time limits stated in the Contract Documents are of the essence of the Contract.

12.1.4 Where CONTRACTOR is prevented from completing any part of the WORK within the Contract Times (or Milestones) that, in the sole judgment of the DISTRICT whose decision shall be binding upon CONTRACTOR are due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) shall be extended in an amount equal to the time lost due to such delay if a claim is made therefore as provided in paragraph 12.1.1.

12.1.5 Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by DISTRICT, acts or neglect of utility owners or other Contractors performing other work as contemplated by Article 7, (Related Work at Sight) fires, floods, epidemics, or acts of God.

12.1.6 The CONTRACTOR must mitigate any loss of time by performing but not be limited to just performing ancillary WORK as is applicable to the project.

12.1.7 Claims for delay due to inclement weather (i.e., beyond the 10 years mean average) shall be made by the 10th day of the month following the month of the delay.

12.1.8 Delays attributable to and within the control of a subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.1.9 Where CONTRACTOR IS prevented from completing any part of the WORK within the Contract Times (or Milestones) due to delay beyond the control of both DISTRICT and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay. In no event shall DISTRICT be liable to CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety or employee or agent of any of them, for damages arising out of or resulting from (i) delays caused by or within the control of CONTRACTOR, or (ii) delays beyond the control of both parties including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God or acts of neglect by utility owners or other Contractors performing other work as contemplated by Article 7, (Related work at Sight).

12.2 LIQUIDATED DAMAGES.

12.2.1 The DISTRICT and CONTRACTOR recognize and acknowledge that time is of the essence of this Contract and that the DISTRICT shall suffer financial loss if the WORK is not completed within the times specified in paragraph 2.3 of the Supplementary Conditions and the Notice To Proceed, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. Each of the parties acknowledges that it has attempted to quantify the damages which would be suffered by DISTRICT in the event of the failure of CONTRACTOR to perform in a timely manner, but neither one has been capable of ascertaining such damages with a certainty. DISTRICT and CONTRACTOR also recognize and acknowledge the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by the DISTRICT if the WORK is not completed on time. Accordingly, instead of requiring any such proof, the DISTRICT and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay the DISTRICT:

Base Bid Liquidated Damages Per Day	(\$ Dollar Amt
\$1000 to \$20,000	100
20,001 to 75,000	500
75,001 to 150,000	200
150,000 to 350,000	750
350,001 to 750,000	800
750,001 to 1,000,000	1,000

1,000,001 to 2,000,000	1,200
2,000,001 to 3,000,000	1,500
3,000,001 to 4,000,000	1,600
4,000,001 to 5,000,000	1,700
5,000,001 to 6,000,000	1,800
6,000,001 to 7,000,000	1,900
7,000,001 to 8,000,000	2,000
8,000,001 to 9,000,000	2,100
9,000,001 to 10,000,000	2,200
10,000,001 to 11,000,000	2,300
11,000,001 to 12,000,000	2,400
12,000,001 and over	2,500

for each day that expires after the time specified in paragraph 2.3 of the Supplementary Conditions, and the NOTICE TO PROCEED for substantial completion.

12.2.2 After Substantial Completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining WORK within the Contract Time or any proper extension thereof granted by the DISTRICT, CONTRACTOR shall pay DISTRICT.

Base Bid Liquidated Damages Per Day

\$1000 to \$20,000	\$25.00
20,001 to 75,000	50.00
75,001 to 150,000	125.00
150,000 to 350,000	187.50
350,001 to 750,000	200.00
750,001 to 1,000,000	250.00
1,000,001 to 2,000,000	300.00
2,000,001 to 3,000,000	370.00
3,000,001 to 4,000,000	400.00
4,000,001 to 5,000,000	425.00
5,000,001 to 6,000,000	450.00
6,000,001 to 7,000,000	475.00
7,000,001 to 8,000,000	500.00
8,000,001 to 9,000,000	525.00
9,000,001 to 10,000,000	550.00
10,000,001 to 11,000,000	575.00
11,000,001 to 12,000,000	600.00
12,000,001 and over	625.00

for each day that expires after the time specified in paragraph 2.3 of the Supplementary Conditions and as stated in the NOTICE TO PROCEED.

12.2.3 This sum is not a penalty, being the liquidated damages, the DISTRICT shall have sustained in event of such default by the Contractor. The DISTRICT reserves the right to additionally recover direct job site expenses incurred during the period of any delay. The Contractor shall be liable for liquidated damages even if the Contract is terminated by the DISTRICT for cause or if the Contractor abandons the Work. The liability of the Contractor and its surety or sureties for damages provided by this Article is joint and several.

12.3 REIMBURSEMENT OF CONSULTANT EXPENSES:

12.3.1 Should the completion of this Contract be delayed beyond the specified or adjusted time limit; CONTRACTOR shall reimburse the DISTRICT for all expenses of consulting and inspection incurred by the DISTRICT during the period between said specified or adjusted time and the actual date of final completion. All such expenses for consulting and inspection incurred by the DISTRICT shall be charged to CONTRACTOR and be deducted from payments due CONTRACTOR as provided by this Contract. Said expenses shall be further defined as EOR charges associated with the construction contract administration, including resident project representative costs.



ARTICLE 13 – TESTS AND INSPECTIONS, CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.1 NOTICE OF DEFECTS:

13.1.1 Prompt notice of all defects for which DISTRICT or EOR have actual knowledge shall be given to CONTRACTOR. All defective WORK, whether or not in place, may be rejected, corrected or accepted as provided in Article 13, Test and Inspections: Correction, Removal or Acceptance of Defective Work.

13.1.2 Unremedied defects identified for correction during the guarantee period but remaining after its expiration shall be considered as part of the obligations of the guarantee. Defects in material, workmanship or equipment, which are remedied as a result of obligations of the guarantee, shall subject the remedied portion of the WORK to an extended guarantee period of one year after the defect has been remedied. The Surety shall be bound with and for the Contractor in the Contractor's faithful observance of the guarantee.

13.2 ACCESS TO WORK:

13.2.1 EOR'S and EOR'S representatives, other representatives of the DISTRICT, testing agencies and governmental agencies with jurisdictional interests shall have access to the WORK at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

13.3 TESTS AND INSPECTIONS:

13.3.1 CONTRACTOR shall give EOR timely notice of readiness of the WORK for all required inspections, tests or approvals.

13.3.2 If Laws or Regulations of any public body having jurisdiction require any WORK (or part thereof) to specifically be inspected, tested, or approved, CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish EOR the required certificates of inspection, testing or approval. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with the DISTRICT'S or EOR'S acceptance of a Supplier of materials or equipment proposed to be incorporated in the WORK, or of materials or equipment submitted for approval prior to CONTRACTOR'S purchase thereof for incorporation in the WORK.

13.3.3 All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to the DISTRICT (or by EOR if so specified).

13.3.4 If any WORK (including the WORK of others) that is to be inspected, tested, or approved is covered without written concurrence of EOR, it must, if requested by EOR, be uncovered for observation. Such uncovering shall be at CONTRACTOR'S expense unless CONTRACTOR has given EOR timely notice of CONTRACTOR'S intention to cover the same and EOR has not acted with reasonable promptness in response to such notice.

13.3.5 Neither observations by EOR nor inspections, tests or approvals by others shall relieve CONTRACTOR from CONTRACTOR'S obligations to perform the WORK in accordance with the Contract Documents.

13.3.6 General: For tests specified to be made by the Contractor, the testing personnel shall make the necessary inspections and tests and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Contract Documents. Five (5) copies of the reports shall be submitted, and authoritative certification thereof must be furnished

to the Consultant as a prerequisite for the acceptance of any material or equipment.

13.3.6.1 If, in the making of any test of any material or equipment, it is ascertained by the EOR that the material or equipment does not comply with the Contract Documents, the Contractor will be notified thereof and he will be directed to refrain from delivering said material or equipment, or to remove it promptly from the site or from the work and replace it with acceptable material, without cost to the DISTRICT.

13.3.6.2 Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with the recognized test codes.

13.3.7 Costs: All inspection and testing of materials furnished under this Contract will be provided by the Contractor, unless otherwise expressly specified.

13.3.7.1 Materials and equipment submitted by the Contractor as the equivalent to those specifically named in the Contract may be tested by the DISTRICT for compliance. The Contractor shall reimburse the DISTRICT for the expenditures incurred in making such tests of materials and equipment which are rejected for non-compliance.

13.3.8 Certificate of Manufacture: Contractor shall furnish Consultant authoritative evidence in the form of Certificate of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Contract Documents.

13.3.8.1 These certificates shall be notarized and shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

13.3.9 Start up Tests: As soon as conditions permit, the Contractor shall furnish all labor, materials, and instruments and shall make start-up tests of equipment.

13.3.9.1 If the start-up tests disclose any equipment furnished under this Contract which does not comply with the requirements of the Contract Documents, the Contractor shall, prior to demonstration tests, make all changes, adjustments and replacements required. The furnishing Contractor shall assist in the start-up tests as applicable.

13.4 TESTING AND INSPECTIONS SPECIFIC RESPONSIBILITIES

13.4.1 The independent firm will perform tests, inspections and other services specified in individual specification sections and as may be required by Owner.

13.4.1.1 Laboratory: Authorized to operate at Project location.

13.4.1.2 Laboratory Staff: Maintain full-time specialist on staff to review services.

13.4.1.3 Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.

13.4.2 Testing, inspections and source quality control may occur on or off project site. Perform off-site testing as required by Architect/Engineer or Owner.

13.4.3 Reports will be submitted by independent firm to Architect/Engineer, Contractor, and authority having jurisdiction, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents. Submit final report indicating correction of Work previously reported as non-compliant.



13.4.4 Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.

13.4.4.1 Notify Owner, Architect/Engineer, and independent firm [24] hours prior to expected time for operations requiring services.

13.4.4.2 Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.

13.4.5 Testing and employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

13.4.6 Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same independent firm on instructions by Architect/Engineer. Payment for re-testing or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.

13.4.7 Testing Agency Responsibilities:

13.4.7.1 Test samples of mixes submitted by Contractor.

13.4.7.2 Provide qualified personnel on site.

13.4.7.3 Cooperate with Owner, Architect/Engineer, and Contractor in performance of services.

13.4.7.4 Perform specified sampling and testing of products in accordance with specified standards.

13.4.7.5 Ascertain compliance of materials and mixes with requirements of Contract Documents.

13.4.7.6 Promptly notify Owner, Architect/Engineer and Contractor of observed irregularities or non-conformance of Work or products.

13.4.7.7 Perform additional tests required by Architect/Engineer.

13.4.8 Testing Agency Reports

After each test, promptly submit five (5) copies of report to Architect/Engineer, Contractor, and authority having jurisdiction. When requested by Architect/Engineer, provide interpretation of test results. Include the following:

13.4.8.1 Date issued.

13.4.8.2 Project title and number.

13.4.8.3 Name of inspector.

13.4.8.4 Date and time of sampling or inspection.

13.4.8.5 Identification of product and specifications section.

13.4.8.6 Location in Project.

13.4.8.7 Type of inspection or test.

13.4.8.8 Date of test.

13.4.8.9 Results of tests.

13.4.8.10 Conformance with Contract Documents

13.4.9 Limits On Testing Authority:

13.4.9.1 Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.

13.4.9.2 Agency or laboratory may not approve or accept any portion of the Work.

13.4.9.3 Agency or laboratory may not assume duties of Contractor.

13.4.9.4 Agency or laboratory has no authority to stop the Work.
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13.5 MANUFACTURERS' FIELD SERVICES

13.5.1 When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, as applicable, and to initiate instructions when necessary.

13.5.2 Submit qualifications of observer to Architect/Engineer [30] days in advance of required observations.

13.5.3 Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

13.6. UNCOVERING WORK:

13.6.1. If any WORK is covered contrary to the request of EOR, it must, if requested by EOR, be uncovered for EOR'S observation and replaced, at CONTRACTOR'S expense.

13.6.2. If EOR considers it necessary or advisable that covered WORK be observed by EOR or inspected or tested by others, CONTRACTOR, at EOR'S request shall uncover, expose, or otherwise make available for observation, inspection or testing as EOR may require, that portion of the WORK in question, furnishing all necessary labor, material, and equipment. If it is found that such WORK is *defective*, CONTRACTOR shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, (including but not limited to fees and charges of engineers, architects, attorneys and other professionals), and the DISTRICT shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefor as provided in Article 11. If, however, such WORK is not found to be *defective*, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction; and if the parties are unable to agree as to the amount or extent thereof. CONTRACTOR may make a claim therefor as provided in Article 11 Change of Contract Price and Article 12, Change of Contract Time.

13.7 DISTRICT MAY STOP THE WORK:

13.7.1 If the WORK is *defective*, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the WORK in such a way that the completed WORK shall conform to the Contract Documents, the DISTRICT may order CONTRACTOR to stop the WORK, or any portion thereof, until the cause for such order has been eliminated; however, this right of the DISTRICT to stop the WORK shall not give rise to any duty on the part of the DISTRICT to exercise this right for the benefit of CONTRACTOR or any other party.

13.8 CORRECTION OR REMOVAL OF DEFECTIVE WORK:

13.8.1 If required by EOR, CONTRACTOR shall promptly, as directed, either correct all *defective* WORK, whether or not fabricated, installed or completed, or, if the WORK has been rejected by EOR, remove it from the site and replace it with non-*defective* WORK. CONTRACTOR shall bear all direct, indirect, and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals) made necessary thereby.

13.8.2 If the Contractor refuses to comply, the DISTRICT has the right to do either (or more) of the following:

13.8.3 The DISTRICT has the right to correct any work so performed by the CONTRACTOR and deduct the expenses for doing so from the final payment due the CONTRACTOR, or



13.8.4 The DISTRICT shall hold back final payment due CONTRACTOR until such time as the work is completed to the satisfaction of the DISTRICT'S PROJECT MANAGER and in compliance with the DISTRICT'S specifications. The DISTRICT'S PROJECT MANAGER shall have the sole discretion to determine if the work is satisfactory and in compliance with specifications.

13.8.5 The remedies contained herein are not exclusive and the OWNER reserves the right to pursue all other remedies it deems applicable.

13.9 ONE-YEAR CORRECTION PERIOD:

13.9.1 If within one year after the date of Acceptance of WORK or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any WORK is found to be *defective*, CONTRACTOR shall promptly, without cost to the DISTRICT and in accordance with the DISTRICT'S written instructions, either correct such *defective* WORK, or, if it has been rejected by the DISTRICT, remove it from the site and replace it with non-*defective* WORK.

13.9.2 If CONTRACTOR does not promptly comply with the terms of such instructions or in an emergency where delay would cause serious risk of loss or damage, the DISTRICT may have the *defective* WORK corrected or the rejected WORK removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) shall be paid by CONTRACTOR.

13.9.3 In special circumstances where a particular item of equipment is placed in continuous service before Final Acceptance of all the WORK, the correction period for that item may start to run from an earlier date if so, provided in the Specifications or by Written Amendment.

13.9.4 Nothing herein shall be deemed a waiver of the statute of limitations as provided in Florida Law.

13.9.5 Where *defective* WORK (and damage to other WORK resulting therefrom) has been corrected, removed, or replaced under this paragraph 13.7., the correction period hereunder with respect to such WORK shall be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

13.10 ACCEPTANCE OF DEFFECTIVE WORK:

13.10.1 If, instead of requiring correction or removal and replacement of *defective* WORK, DISTRICT (and, prior to EOR's recommendation of final payment, also EOR) prefers to accept it, DISTRICT may do so. CONTRACTOR shall pay all claims, costs, losses, and damages attributable to DISTRICT'S evaluation of and determination to accept such *defective* WORK (such costs to be approved by EOR as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals).

13.10.2 If any such acceptance occurs prior to CONSULTANT'S recommendation of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents with respect to the WORK; and the DISTRICT shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, the DISTRICT may make a claim therefor as provided in Article 11, Change of Contract Price. If the acceptance occurs after such recommendation, CONTRACTOR shall pay an appropriate amount to the DISTRICT.

13.11 DISTRICT MAY CORRECT DEFECTIVE WORK:

13.11.1 If CONTRACTOR fails within thirty days (30) after written notice of EOR to proceed to correct and to correct Section IV

defective WORK or to remove and replace rejected WORK as required by CONSULTANT in accordance with paragraph 13.7.1, or if CONTRACTOR fails to perform the WORK in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, the DISTRICT may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

13.11.2 In exercising the rights and remedies under this paragraph the DISTRICT shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, the DISTRICT may exclude CONTRACTOR from all or part of the site, take possession of all or part of the WORK, and suspend CONTRACTOR'S services related thereto, take possession of CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and incorporate in the WORK all materials and equipment stored at the site or for which the DISTRICT has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow the DISTRICT, the DISTRICT'S representative, agents and employees to access the site as may be necessary to enable the DISTRICT to exercise the rights and remedies under this paragraph.

13.11.3. All direct, indirect and consequential costs of the DISTRICT in exercising such rights and remedies shall be charged against CONTRACTOR by DISTRICT and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents with respect to the WORK; and the DISTRICT shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, the DISTRICT may make a claim therefor as provided in Article 11, Change of Contract Price. Such direct, indirect and consequential costs shall include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court costs and all costs of repair and/or replacement of WORK of others destroyed or damaged by correction, removal or replacement of CONTRACTOR'S *defective* WORK. Contractor shall also be responsible for restoring any other sites affected by such repairs or remedial work at no cost to DISTRICT. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the WORK attributable to the exercise by the DISTRICT of the DISTRICT'S rights and remedies hereunder.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 SCHEDULE OF VALUES

14.1.1 The schedule of values established as provided in paragraph 2.6., Finalizing Schedules, shall serve as the basis for progress payments and shall be incorporated into a form of Application for Payment acceptable to EOR.

14.2 UNIT PRICE BID SCHEDULE

14.2.1 Progress payments on account of Unit Price WORK shall be based on the number of units completed.

14.2.2 The quantities for payment under this Contract shall be determined by actual measurement of the completed items, in place, ready for service and accepted by the DISTRICT, in accordance with the applicable method of measurement therefore contained herein.

14.2.3 The Contractor shall receive and accept the compensation provided in the Bid and the Contract as full payment for furnishing all materials, labor, tools and equipment, for performing all operations necessary to complete the work under the Contract, and also in full payment for all loss or damages arising from the nature of the work, or from any discrepancy between the actual quantities of work and quantities herein estimated by the EOR, or from the action of the elements



or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the DISTRICT.

14.2.4 The prices stated in the Bid include all costs and expenses for taxes, labor, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspection, together with all other costs and expenses for performing and completing the work as shown on the Drawings and specified herein. The basis of payment for an item at the unit price shown in the bid shall be in accordance with the description of that item.

14.3 APPLICATION FOR PROGRESS PAYMENTS:

14.3.1 Unless otherwise prescribed by law, at the end of each month, the CONTRACTOR shall submit to the EOR for review, an Application for Progress Payment filled out and signed by the CONTRACTOR covering the WORK completed as of the date of the Application and accomplished by such supporting documentation as is required by the Contract Documents.

14.3.2 The Application for Progress Payment shall identify, as a subtotal, the amount of the CONTRACTOR'S Total Earnings to Date, plus the Value of Materials Stored which have not yet been incorporated in the WORK, less a deductive adjustment for materials stored which have been installed which were not previously incorporated in the WORK, but for which payment was allowed.

14.3.3 The Net Payment Due to the CONTRACTOR shall be the above-mentioned subtotal from which shall be deducted the amount of retainage specified in the Contract, and the total amount of all previous approved Applications for Progress Payment submitted by the CONTRACTOR. Retainage shall be calculated based upon the above-mentioned subtotal.

The above calculation in tabular form is as follows:

Total Earnings to Date	\$
Value of Materials Stored	\$
Less Value of Materials Stored for which payment was allowed and which have been installed	(\$)
Sub Total	\$
Less Retainage (based on sub total)	(\$)
Less total of all previous approved Applications for Progress Payment	(\$)
NET PAYMENT DUE	\$

21.3.4 The Value of Materials Stored shall be an amount equal to the specified percent of the value of same as set forth in the Contract or Schedule of Values. Said amount shall be based upon the value of all acceptable materials and equipment not incorporated in the WORK but delivered and suitably stored at the site or at another location agreed to in writing; provided, each such individual item has a value of more than \$5,000 and shall become a permanent part of the WORK and is planned for installation within the following thirty (30) days. The Application for Progress Payment shall also be accompanied by a Bill of Sale, paid invoice, or other documentation warranting that the DISTRICT has received the materials and equipment free and clear of all liens, charges, security interests, and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect the DISTRICT'S interest therein, all of which shall be satisfactory to the DISTRICT.

14.3.5 List each Change Order executed prior to date of submission, at the end of the continuation sheets. List by Change Order Number, and description, as for an original component item of work.

14.3.6 As provided for in the "Application for Payment" form, the Contractor shall certify, for each current pay request, that all previous progress payments received from the DISTRICT, under this Contract, have been applied by the Contractor to discharge in full all obligations of the Contractor in connection with Work covered by prior Applications for Payment, and all materials and equipment incorporated into the Work are free and clear of all liens, claims, security interest and encumbrances. Contractor shall attach to each Application for Payment like affidavits by all subcontractors.

14.4 CONTRACTOR'S WARRANTY OF TITLE:

14.4.1 The CONTRACTOR warrants and guarantees that title to all Work and equipment covered by an Application for Payment, whether incorporated in the Project or not, shall have passed to the DISTRICT prior to the making of the Application for Payment, free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens"); and that no work or equipment covered by an Application for Payment shall have been acquired by the CONTRACTOR or by any other person performing the Work at the site or furnishing equipment for the Project, subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the CONTRACTOR or such other person.

14.5 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT:

14.5.1 EOR shall, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to the DISTRICT or return the Application to CONTRACTOR indicating in writing EOR'S reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make necessary corrections and resubmit the Application. Thirty days after receipt of the Application for Payment by the DISTRICT with EOR'S recommendation, the amount recommended shall (subject to the provisions of the last sentence of paragraph 14.5.4) become due and when due shall be paid by the DISTRICT to CONTRACTOR.

14.5.2 EORS recommendation of any payment requested in the application for payment shall not prohibit the DISTRICT from withholding payment or prohibit the DISTRICT from paying additional sums regarding other matters or issues between the parties.

14.5.3 EOR'S recommendation of final payment shall constitute an additional representation by EOR to the DISTRICT that the conditions precedent to CONTRACTOR'S being entitled to final payment as set forth in paragraph 14.10, Final Payment, and Acceptance, have been fulfilled.

14.5.4. EOR may refuse to recommend the whole or any part of any payment if, in EOR'S opinion, it would be incorrect to make such representations to the DISTRICT. The EOR may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in EOR'S opinion to protect the DISTRICT from loss, including but not limited to:

14.5.4.1 The WORK is defective, or completed WORK has been damaged requiring correction or replacement.

14.5.4.2 The Contract Price has been reduced by a Written Amendment or Change Order.

14.5.4.3 The DISTRICT has been required to correct defective WORK or complete WORK in accordance with paragraph 13.9, or

14.5.4.4 Of EOR'S actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1.1 through 15.2.1.9 inclusive (District May Terminate).



14.5.5 The DISTRICT may refuse to make payment of the full amount recommended by the EOR because claims have been made against the DISTRICT on account of CONTRACTOR'S performance or furnishing of the WORK, or there are other items entitling the DISTRICT to credit against the amount recommended, but the DISTRICT must give CONTRACTOR written notice (with a copy to EOR) stating the reasons for such action.

14.5.6 The Work for which payment is requested cannot be verified,

14.5.7 Claims or Liens have been filed or there is reasonable evidence indicating the probable filing thereof,

14.5.8 Of unsatisfactory prosecution of the Work, including failure to clean up as required.

14.5.9 Of persistent failure to cooperate with other Contractors on the Project and persistent failure to carry out the Work in accordance with the Contract Documents,

14.5.10 Of liquidated damages payable by the CONTRACTOR, or

14.5.11 Of any other violation of, or failure to comply with, the provisions of the Contract Documents.

14.6 SUBSTANTIAL COMPLETION:

14.6.1 When the CONTRACTOR considers the entire WORK ready for its intended use, the CONTRACTOR shall notify the DISTRICT and the EOR in writing that the WORK is substantially complete and request that the EOR prepare a Certificate of Substantial Completion

14.6.2 For construction projects having an estimated cost of less than \$10 million, the DISTRICT, the EOR and the CONTRACTOR shall inspect the WORK within thirty (30) calendar days after the notice from the CONTRACTOR that the work is substantially complete to determine the status of completion.

14.6.3 For construction projects having an estimated cost of more than \$10 million, the DISTRICT, the EOR and the CONTRACTOR shall inspect the WORK within thirty (30) calendar days unless otherwise extended by contract not to exceed sixty (60) calendar days after notice from the CONTRACTOR that the work is substantially complete to determine the status of completion. If the EOR does not consider the WORK substantially complete, the EOR shall notify the CONTRACTOR in writing giving the reasons, therefore. If the EOR considers the WORK to be substantially complete, the EOR shall prepare and deliver to the DISTRICT for its execution and recordation the Certificate of Substantial Completion signed by the EOR and CONTRACTOR, which shall fix the Date of Substantial Completion.

14.6.4 The DISTRICT shall have the right to exclude CONTRACTOR from the WORK after the date of Substantial Completion, but the DISTRICT shall allow CONTRACTOR reasonable access to complete or correct items on the "punch list".

14.7 PARTIAL UTILIZATION:

14.7.1 The DISTRICT shall have the right to enter the premises for the purpose of doing work not covered by the Contract Documents. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the Work, or the restoration of any damaged Work except such as may be caused by agent or employees of the DISTRICT.

14.7.2 Prior to Substantial Completion, the DISTRICT, with the approval of the EOR and with the concurrence of the

CONTRACTOR, may use any completed or substantially completed portion of the Work. Such use shall not constitute an acceptance of such portions of the Work.

14.7.3 Use by the DISTRICT of any finished part of the WORK, which has specifically been identified in the Contract Documents, or which the DISTRICT, EOR and CONTRACTOR agree constitutes a separately functioning and useable part of the WORK that can be used by the DISTRICT without significant interference with CONTRACTOR'S performance of the remainder of the WORK, may be accomplished prior to Substantial Completion of all WORK subject to the following:

14.7.4 The DISTRICT at any time may request CONTRACTOR in writing to permit the DISTRICT to use any such part of the WORK which the DISTRICT believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees, CONTRACTOR shall certify to the DISTRICT and EOR that said part of the WORK is substantially complete and request CONSULTANT to issue a certificate of Substantial Completion for that part of the WORK. CONTRACTOR at any time may notify the DISTRICT and EOR in writing that CONTRACTOR considers any such part of the WORK ready for its intended use and substantially complete and request EOR to issue a certificate of Substantial Completion for that part of the WORK. Within a reasonable time after either such request, the DISTRICT, CONTRACTOR and EOR shall inspect that part of WORK to determine its status of completion. If CONSULTANT does not consider that part of the WORK to be substantially complete, EOR shall notify the DISTRICT and CONTRACTOR in writing giving the reasons therefore. If EOR considers that part of the WORK to be substantially complete, the provisions of paragraphs 14.6.1 and 14.6.2 shall apply with respect to certification of Substantial Completion of that part of the WORK and the division of responsibility in respect thereof and access thereto.

14.7.5 The DISTRICT may at any time request CONTRACTOR in writing to permit the DISTRICT to take over operation of any such part of the WORK although it is not substantially complete. A copy of such request shall be sent to EOR and within a reasonable time thereafter the DISTRICT, CONTRACTOR and EOR shall inspect that part of the WORK to determine its status of completion and shall prepare a list of items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not object in writing to the DISTRICT and EOR that such part of the WORK is not ready for separate operation by the DISTRICT, EOR shall finalize the list of items to be completed or corrected and shall deliver such list to the DISTRICT and CONTRACTOR together with a written recommendation as to the division of responsibilities pending final judgment between the DISTRICT and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance, warranties and guarantees for that part of the WORK which shall become binding upon the DISTRICT and CONTRACTOR at the time when the DISTRICT takes over such operation (unless they shall have otherwise agreed in writing and so informed EOR). During such operation and prior to Substantial Completion of such part of the WORK, the DISTRICT shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related WORK.

14.8. FINAL INSPECTION:

14.8.1 Upon written notice from CONTRACTOR that the entire WORK or an agreed portion thereof is complete, EOR shall make a final inspection with the DISTRICT and CONTRACTOR and shall notify CONTRACTOR in writing of all particulars in which this inspection reveals that the WORK is incomplete, defective, or not in accordance with the Contract Documents. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

14.9 FINAL APPLICATION FOR PAYMENT:



14.9.1 After CONTRACTOR has completed in writing all such corrections to the satisfaction of EOR and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in paragraph 14.6, Substantial Completion) and other documents--all as required by the Contract Documents, and after EOR has indicated in writing that the WORK is acceptable and has been completed in conformance with the drawings and specifications and any approved changes thereto, CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required, (ii) consent of the surety, if any, to final payment, and (iii) complete and legally effective releases or waivers (satisfactory to DISTRICT) of all Liens arising out of or filed in connection with the WORK.

14.10 FINAL PAYMENT AND ACCEPTANCE:

14.10.1 Upon receipt of written notice from the Contractor that the WORK has been completed in conformity with the Drawings and Specifications and any approved changes thereto, and receipt of the Final Application for Payment, Final Receipt and Release of Lien and accompanying documentation, the DISTRICT'S EOR shall promptly examine the WORK and, making such tests as he may deem proper and using all of the care and judgment normally exercised in the examination of completed WORK by a properly qualified and experienced Professional EOR, shall satisfy himself that the CONTRACTOR'S statement appears to be correct and the CONTRACTOR'S other obligations under the Contract Documents have been fulfilled. He shall then inform the DISTRICT in writing that he has examined the WORK and that it appears, to the best of his knowledge and belief, to conform to the Contract Drawings, Specifications, and any approved Change Orders, that the CONTRACTOR'S other obligations under the Contract Documents have been fulfilled, and that he therefore recommends acceptance of the WORK for ownership and Final Payment to the CONTRACTOR. However, it is agreed by the DISTRICT and the CONTRACTOR that such statement by the DISTRICT'S EOR does not in any way relieve the CONTRACTOR from his responsibility to deliver a fully completed job in a good and workmanlike condition and does not render the EOR or the DISTRICT liable for any faulty WORK done or defective materials or equipment used by the CONTRACTOR.

14.10.2 The EOR shall then make a final estimate of the value of all WORK done and shall deduct all previous payments which have been made. The EOR shall report such estimate to the DISTRICT together with his recommendation as to the acceptance of the WORK or his findings as to any deficiencies therein. After receipt and acceptance by the DISTRICT of the properly executed Final Warranty of Title and after approval of the EOR'S estimate and recommendation to the DISTRICT, the DISTRICT shall make final payment to the CONTRACTOR of the Amount remaining after deducting all prior payments and all amounts to be kept or retained under the provisions of the Contract Documents, or as may be lawfully retained, including, but not limited to, Liquidated Damages, as applicable. Title passes and warranty begins at final acceptance.

14.10.3. All prior estimates are subject to correction in the final estimate. Thirty days after approval by the DISTRICT of the application for final payment, the amount recommended by EOR shall become due and shall be paid to Contractor.

14.11 WAIVER OF CLAIMS:

14.11.1 The making and acceptance of final payment shall constitute:

14.11.1.1 A waiver of all claims by DISTRICT against CONTRACTOR, except claims arising from unsettled Liens, from defective WORK appearing after final inspection pursuant to

paragraph 14.8, Final Inspection, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR'S continuing obligations under the Contract Documents or the Public Construction Bond and Payment Bonds; and

14.11.1.2 a waiver of all claims by CONTRACTOR against DISTRICT other than those previously made in writing and still unsettled.

14.12 PUNCHLIST PROCEDURES:

For Contracts over \$10,000,000.00: Further to §218.735(7)(a)(ii) Florida Statutes, punchlist procedures to render the Work complete, satisfactory and acceptable are established as follows:

14.12.1 Within twenty (20) days of Substantial Completion of the construction services purchased as defined in the Contract, Contractor shall schedule a walkthrough with DISTRICT AND EOR ("Initial Walkthrough" a/k/a "IW"). The purpose of the IW is to develop a preliminary checklist ("Checklist") of items to be performed by the Contractor, based upon observations made jointly between the Contractor, EOR and DISTRICT during the IW. The IW is to occur within twenty (20) days of Substantial Completion of the Work as defined by the Contract, again predicated upon the Contractor's timely initiation of a request for the IW. At its option, DISTRICT may conduct the IW with its EOR.

14.12.2 Contractor shall endeavor to address and complete as many items as possible noted on the Checklist either during the IW itself, or thereafter for a period of forty-five (45) days from the date of the IW.

14.12.3 No later than forty-five (45) days following the scheduled IW, Contractor shall again initiate and request a second walkthrough of the Project with DISTRICT. The purpose of this second walkthrough is to identify which items remain to be performed from the IW Checklist and to supplement that list as necessary (based, for example, upon work which may have been damaged as a result of the Contractor's performance of completion of items contained on the IW Checklist) and for the purpose of developing a joint Final Punchlist.

14.12.4 The intent of this section is for DISTRICT and the Contractor to cooperate to develop a Final Punchlist to be completed no later than forty-five (45) days from the date of reaching Substantial Completion of the construction services purchase as defined in the Contract.

14.12.5 In no event may the Contractor request payment of final retainage under §218.735(7)(d) Florida Statutes until the Contractor considers the Final Punch list to be 100% complete.

14.12.6 Contractor agrees to complete the Final Punchlist items within sixty (60) days of the date of its issuance by DISTRICT.

14.12.7 Contractor acknowledges and agrees that no item contained on the Final Punchlist shall be considered a warranty item until such time as (a) the Final Punchlist is 100% complete, and (b) DISTRICT has been able to operate or utilize the affected punchlist item for an additional period of fifteen (15) days.

14.12.8 Contractor acknowledges and agrees that DISTRICT may, at its option, during performance of the Work and prior to Substantial Completion, issue lists of identified non-conforming or corrective work for the Contractor to address. The intent of any such DISTRICT generated lists prior to Substantial Completion is to attempt to streamline the punchlist process upon achieving Substantial Completion, and to allow for the Contractor to address needed areas of corrective work as they may be observed by DISTRICT during performance of the Work.

14.12.9 Contractor acknowledges and agrees that in calculating 150% of the amount which may be withheld by



DISTRICT as to any Final Punchlist item for which a good faith basis exists as to it being complete, as provided for by §218.735(7)(d) Florida Statutes, DISTRICT may include within such percentage calculation its total costs for completing such item of work, including its administrative costs as well as costs to address other services needed or areas of work which may be affected in order to achieve full completion of the Final Punchlist item. Such percentage shall in no event relate to the schedule of value associated with such Work activity, but rather total costs are based upon the value (i.e. cost) of completing such Work activity based upon market conditions at the time of Final Punchlist completion.

For Contracts between \$200,000.00 and \$10,000,000.00: Further to §218.735(7)(a)(ii) Florida Statutes, punchlist procedures to render the Work complete, satisfactory and acceptable are established as follows:

14.12.10 Within five (5) days of Substantial Completion of the construction services purchased as defined in the Contract, Contractor shall schedule a walkthrough with DISTRICT ("Initial Walkthrough" a/k/a "IW"). The purpose of the IW is to develop a preliminary checklist ("Checklist") of items to be performed by the Contractor, based upon observations made jointly between the Contractor and DISTRICT during the IW. The IW is to occur within ten (10) days of Substantial Completion of the Work as defined by the Contract, again predicated upon the Contractor's timely initiation of a request for the IW. At its option, DISTRICT may conduct the IW with its Field Inspector.

14.12.11 Contractor shall endeavor to address and complete as many items as possible noted on the Checklist either during the IW itself, or thereafter for a period of fifteen (15) days from the date of the IW.

14.12.12 No later than fifteen (15) days following the scheduled IW, Contractor shall again initiate and request a second walkthrough of the Project with DISTRICT. The purpose of this second walkthrough is to identify which items remain to be performed from the IW Checklist and to supplement that list as necessary (based, for example, upon work which may have been damaged as a result of the Contractor's performance of completion of items contained on the IW Checklist) and for the purpose of developing a joint Final Punchlist.

14.12.13 The intent of this section is for DISTRICT and the Contractor to cooperate to develop a Final Punchlist to be completed no later than thirty (30) days from the date of reaching Substantial Completion of the construction services purchase as defined in the Contract.

14.12.14 In no event may the Contractor request payment of final retainage under §218.735(7)(d) Florida Statutes until the Contractor considers the Final Punch list to be 100% complete.

14.12.15 Contractor agrees to complete the Final Punchlist items within forty-five (45) days of the date of its issuance by DISTRICT.

14.12.16 Contractor acknowledges and agrees that no item contained on the Final Punchlist shall be considered a warranty item until such time as (a) the Final Punchlist is 100% complete, and (b) DISTRICT has been able to operate or utilize the affected punchlist item for an additional period of fifteen (15) days.

14.12.17 Contractor acknowledges and agrees that DISTRICT may, at its option, during performance of the Work and prior to Substantial Completion, issue lists of identified non-conforming or corrective work for the Contractor to address. The intent of any such DISTRICT generated lists prior to Substantial Completion is to attempt to streamline the punchlist process upon achieving Substantial Completion, and to allow for the Contractor to address needed areas of corrective work as they may be observed by DISTRICT during performance of the Work.

14.12.18 Contractor acknowledges and agrees that in calculating 150% of the amount which may be withheld by DISTRICT as to any Final Punchlist item for which a good faith basis exists as to it being complete, as provided for by §218.735(7)(d) Florida Statutes, DISTRICT may include within such percentage calculation its total costs for completing such item of work, including its administrative costs as well as costs to address other services needed or areas of work which may be affected in order to achieve full completion of the Final Punchlist item. Such percentage shall in no event relate to the schedule of value associated with such Work activity, but rather total costs are based upon the value (i.e. cost) of completing such Work activity based upon market conditions at the time of Final Punchlist completion.

14.13 REDUCTION OF RETAINAGE PROCEDURES:

14.13.1 Contractor may request a reduction of retainage as provided for by §218.735(7)(8) Florida Statutes. The term "Fifty Percent Completion" as contained in §218.735(7)(8)(b) Florida Statutes shall be defined as follows, in lieu of any other definition:

14.13.2 "Fifty Percent Completion" of the Work is defined as that point in time where 50% of the overall value of Work items incorporated and which shall remain in place subsequent to final completion of the Work have been completed, based upon the schedule of values contained in the Contract. As such, and by way of example, the value of Contractors mobilization, general conditions, supervision or like items which do not involve permanent incorporation of Work do not apply to the determination of "Fifty Percent Completion" of the Work for purposes of establishing entitlement to a reduction of retainage.

14.13.3 With regard to any contract for construction services, a local governmental entity may withhold from each progress payment made to the Contractor an amount not exceeding 10 percent of the payment as retainage until 50-percent completion of such services.

14.13.4 After 50-percent completion of the construction services purchased pursuant to the contract, the local governmental entity must reduce to 5 percent the amount of retainage withheld from each subsequent progress payment made to the Contractor. For purposes of this subsection, the term "50-percent completion" has the meaning set forth in the contract between the local governmental entity and the Contractor or, if not defined in the contract, the point at which the local governmental entity has expended 50 percent of the total cost of the construction services purchased as identified in the contract together with all costs associated with existing change orders and other additions or modifications to the construction services provided for in the contract. However, notwithstanding this subsection, a municipality having a population of 25,000 or fewer, or a county having a population of 100,000 or fewer, may withhold retainage in an amount not exceeding 10 percent of each progress payment made to the Contractor until final completion and acceptance of the project by the local governmental entity.

14.13.5 After 50-percent completion of the construction services purchased pursuant to the contract, the Contractor may elect to withhold retainage from payments to its subcontractors at a rate higher than 5 percent. The specific amount to be withheld must be determined on a case-by-case basis and must be based on the Contractor's assessment of the subcontractor's past performance, the likelihood that such performance will continue, and the Contractor's ability to rely on other safeguards. The Contractor shall notify the subcontractor, in writing, of its determination to withhold more than 5 percent of the progress payment and the reasons for making that determination, and the Contractor may not request the release of such retained funds from the local governmental entity.

14.13.6 After 50-percent completion of the construction services purchased pursuant to the contract, the Contractor may



present to the local governmental entity a payment request for up to one-half of the retainage held by the local governmental entity. The local governmental entity shall promptly make payment to the Contractor, unless the local governmental entity has grounds, pursuant to paragraph (f), for withholding the payment of retainage. If the local governmental entity makes payment of retainage to the Contractor under this paragraph which is attributable to the labor, services, or materials supplied by one or more subcontractors or suppliers, the Contractor shall timely remit payment of such retainage to those subcontractors and suppliers.

14.13.7 This section does not prohibit a local governmental entity from withholding retainage at a rate less than 10 percent of each progress payment, from incrementally reducing the rate of retainage pursuant to a schedule provided for in the contract, or from releasing at any point all or a portion of any retainage withheld by the local governmental entity which is attributable to the labor, services, or materials supplied by the Contractor or by one or more subcontractors or suppliers. If a local governmental entity makes any payment of retainage to the Contractor which is attributable to the labor, services, or materials supplied by one or more subcontractors or suppliers, the Contractor shall timely remit payment of such retainage to those subcontractors and suppliers.

14.13.8 This section does not require the local governmental entity to pay or release any amounts that are the subject of a good faith dispute, the subject of a claim brought pursuant to s. [255.05](#), or otherwise the subject of a claim or demand by the local governmental entity or Contractor.

14.13.9 The time limitations set forth in this section for payment of payment requests apply to any payment request for retainage made pursuant to this section.

14.13.10 Paragraphs 14.13.3 through 14.13.6 do not apply to construction services purchased by a local governmental entity which are paid for, in whole or in part,

with federal funds and are subject to federal grantor laws and regulations or requirements that are contrary to any provision of the Local Government Prompt Payment Act.

14.13.11 This subsection does not apply to any construction services purchased by a local governmental entity if the total cost of the construction services purchased as identified in the contract is \$200,000 or less.

14.13.12 All payments due under this section and not made within the time periods specified by this section shall bear interest at the rate of 1 percent per month, or the rate specified by contract, whichever is greater.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.1 DISTRICT MAY SUSPEND/STOP WORK:

15.1.1 The DISTRICT may, at any time and without cause, suspend the WORK or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and EOR which shall fix the date on which WORK shall be resumed. CONTRACTOR shall resume the WORK on the date so fixed. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefore as provided in Articles 11 (Change of Contract Price) and 12, (Change of Contract Time).

15.1.2 THE DISTRICT MAY STOP WORK: The DISTRICT REPRESENTATIVE may stop the Work or any portion thereof when it has been determined that the Contractor is not complying with the Drawings or Specifications or the intent thereof. The Stop Work order may be verbal, and the CONTRACTOR shall cease work immediately except for leaving the Work area in a safe and acceptable condition. A verbal Stop Work order shall be

confirmed in writing. The CONTRACTOR shall not be allowed an increase in the contract price or an extension of the Contract time during the Stop Work period. A Start Work order may be verbal and shall be confirmed in writing.

15.2 DISTRICT MAY TERMINATE FOR CAUSE:

15.2.1 Upon the occurrence of any one or more of the following events:

15.2.1.1 If CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such timing relating to the bankruptcy or insolvency.

15.2.1.2 If a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

15.2.1.3 If CONTRACTOR makes a general assignment for the benefit of creditors.

15.2.1.4 If a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR'S creditors.

15.2.1.5. If CONTRACTOR admits in writing an inability to pay its debts generally as they become due.

15.2.1.6 If CONTRACTOR fails to perform the WORK in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.6 as revised from time to time);

15.2.1.7 If CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction.

15.2.1.8 If CONTRACTOR disregards the authority of EOR; or

15.2.1.9 If CONTRACTOR otherwise violates any provisions of the Contract Documents.

15.2.1.10 In the event of termination, the DISTRICT may take possession of the premises and all materials, tools, and appliances, thereon and finish the Work by whatever method it may deem expedient. In such cases, the Contractor shall only be entitled to receive payment for Work satisfactorily completed prior to the termination date, subject to any setoffs due to the DISTRICT in completing the Project and for reimbursement of damages incurred. The DISTRICT may take possession of and use any materials, plant, tools, equipment, and property of any kind furnished by Contractor to complete the Work. In such case CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the expense incurred by the DISTRICT to finish the Work (including additional managerial and administrative services, plus the DISTRICT'S direct, indirect, and consequential losses), exceeds the unpaid balance on this Contract, the Contractor or the Surety shall pay the difference to the DISTRICT promptly on demand. The expense incurred by the DISTRICT as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Project Manager. The Contractor shall be responsible for both liquidated damages attributable to delay and for excess completion costs. The liability of the Contractor and its surety or sureties for such damages and costs is joint and several. The obligations of the Contractor and



his surety with respect to the warranty and maintenance shall remain in full force and effect for the portion of the Work completed by the Contractor and shall not expire until the expiration of the prescribed period measured from the final acceptance of the project in its entirety. These clauses shall survive the termination of this Contract. If the DISTRICT makes a determination pursuant to this Contract to hold the Contractor in default and terminate the Contract for cause and it is subsequently determined that any such determination was improper, unwarranted, or wrongful, then any such termination shall be deemed for all purposes as a termination without cause as described below. The Contractor agrees that it shall be entitled to no damages, allowances, or expenses of any kind other than as provided in this Agreement in connection with such termination, and does expressly waive, in the event of termination, any and all claims for consequential damages, loss of bonding capability, destruction of business, unabsorbed home office overhead, lost profit and the like.

15.2.2 Where CONTRACTOR'S services have been terminated by the DISTRICT, the termination shall not affect any rights or remedies of the DISTRICT against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by the DISTRICT shall not release CONTRACTOR from liability.

15.3 DISTRICT MAY TERMINATE WITHOUT CAUSE:

15.3.1 The DISTRICT may terminate this Contract without cause by giving seven (7) days prior written notice to the Contractor, and in such event, the DISTRICT shall pay the CONTRACTOR for that portion of the Contract Sum, less the aggregate of previous payments, allocable to the WORK completed as of the Date of Termination, plus reasonable termination expenses. The DISTRICT also shall reimburse the CONTRACTOR for all costs necessarily incurred for organizing and carrying out the stoppage of the WORK and paid directly by the CONTRACTOR, not including overhead, general expenses or profit. The DISTRICT shall not be responsible to reimburse the CONTRACTOR for any continuing contractual commitments to subcontractors or material men or for penalties or damages for canceling such contractual commitments, (with the exception that the DISTRICT shall reimburse the CONTRACTOR for major materials or equipment purchased before termination if the CONTRACTOR can show proof of said purchases prior to notice of termination) inasmuch as the CONTRACTOR shall make all subcontracts and other commitments subject to this provision. In the event of termination by the DISTRICT, the DISTRICT may require the CONTRACTOR promptly to assign to it all or some subcontracts, construction, plant, materials, tools, equipment, appliances, rental agreements, and other commitments which the DISTRICT, in its sole discretion, chooses to take by assignment, and in such event the CONTRACTOR shall promptly execute and deliver to the DISTRICT written assignments of the same.

15.4 REMOVAL OF EQUIPMENT DUE TO TERMINATION:

15.4.1 Removal of Equipment: In the case of termination of this Contract before completion, for any cause whatever, the CONTRACTOR, if notified to do so by the DISTRICT'S PROJECT MANAGER, shall promptly remove any part or all of this equipment and supplies from the property of the DISTRICT. Should the CONTRACTOR not remove such equipment and supplies, the DISTRICT shall have the right to remove them at the expense of the CONTRACTOR. Equipment and supplies shall not be construed to include such items for which the CONTRACTOR has been paid in whole or in part.

15.5 CONTRACTOR MAY STOP WORK OR TERMINATE:

15.5.1 If, through no act or fault of CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the DISTRICT or under an order of court or other public authority, or EOR fails to act on any Application for Payment within thirty

(30) days after it is submitted, or the DISTRICT fails for sixty (60) days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven (7) days written notice to the DISTRICT and EOR, terminate the Contract and the DISTRICT shall pay the CONTRACTOR for that portion of the Contract Sum, less the aggregate of previous payments, allocable to the WORK completed as of the Date of Termination plus reasonable termination expenses. The DISTRICT shall not be responsible to reimburse the CONTRACTOR for any continuing contractual commitments for canceling such contractual commitments inasmuch as the CONTRACTOR shall make all subcontracts and other commitments subject to this provision. The DISTRICT may require the CONTRACTOR promptly to assign to it all or some subcontracts, construction, plant, materials, tools, equipment, appliances, rental agreements, and any other commitments which the DISTRICT, in its sole discretion, chooses to take by assignment, and in such event the CONTRACTOR shall promptly execute and deliver to the DISTRICT written assignments of the same. In addition, and in lieu of terminating the Contract, if EOR has failed to act on an Application for Payment or the DISTRICT has failed to make any payment as aforesaid, CONTRACTOR may upon seven days written notice to the DISTRICT and EOR stop the WORK until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 6.24, Continuing the Work, to carry on the WORK in accordance with the progress schedule and without delay during disputes and disagreements with the DISTRICT.

ARTICLE 16 – DISPUTE RESOLUTION

16.1 GOOD FAITH EFFORT:

16.1.1 Any disputes relating to interpretation of the terms of this Contract or a question of fact or arising under this Contract shall be resolved through good faith efforts on the part of the CONTRACTOR and the DISTRICT or its Project Manager. At all times, the CONTRACTOR shall carry on the work and maintain its progress schedule in accordance with the requirements of the Contract and the determination of the DISTRICT or its representatives, pending a final resolution of the dispute, including, if necessary, any determination by a Court of competent jurisdiction. Any dispute which is not resolved by mutual agreement of CONTRACTOR and DISTRICT Project Manager shall be decided by the DISTRICT Superintendent or designee who shall reduce the decision to writing. The decision of the DISTRICT shall be final and conclusive unless determined by a court of competent jurisdiction to be fraudulent, capricious, arbitrary, so grossly erroneous as to necessarily imply bad faith, or not be supported by substantial evidence.

16.2 MEDIATION:

16.2.1 Prior to initiating any litigation concerning this Contract, the DISTRICT reserves the right to submit the disputed issue or issues to a mediator for non-binding mediation. The parties shall agree on a mediator chosen from a list of certified mediators available from the Clerk of Court for Martin County. The fee of the mediator shall be shared equally by the parties. To the extent allowed by law, the mediation process shall be confidential and the results of the mediation or any testimony or argument introduced at the mediation shall not be admissible as evidence in any subsequent proceeding concerning the disputed issue.

ARTICLE 17 – MISCELLANEOUS

17.1 GIVING NOTICE:

17.1.1 All notices, requests, consents, and other communications required or permitted under this Contract shall be in writing and shall be (as elected by the person giving such notice) hand delivered by messenger or courier service, telecommunicated, electronically communicated, or mailed by



registered or certified mail (postage prepaid) return receipt requested, addressed to:

<u>As To DISTRICT:</u>	<u>With A Copy To:</u>	<u>CONTRACTOR:</u>
Director of Facilities Martin County School District 1050 East 10 th St. Stuart, Fl., 34996	Director of Purchasing Martin County School District 2845 S.E. Dixie Hwy, Bldg 7 Stuart, Fl., 34997	Individual or to a member of the firm or to an officer of the corporation for whom it is intended

17.2 COMPUTATION OF TIME:

17.2.1 When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day shall be omitted from the computation.

17.3 NOTICE OF CLAIM:

17.3.1 Should DISTRICT or CONTRACTOR suffer injury or damage to person or property because of any error, omission, or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim shall be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 17.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

17.4 CUMULATIVE REMEDIES:

17.4.1 The duties and obligations imposed by these General Terms & Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by Sections 6, Contractor's Responsibilities, Section 13, Test and Inspections, Correction, Removal or Acceptance of Defective Work, Section 14, Payments to Contractor and Completion, and Section 15, Suspension of work and Termination and all of the rights and remedies available to the DISTRICT and EOR thereunder, are in addition to , and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph shall be as effective as if repeated specifically in the Contract Documents in connection with each particular duty obligation, right and remedy to which they apply. All representations warranties and guarantees made in the Contract Documents shall survive final payment and termination or completion of the Contract.

17.5 ACCIDENT AND PREVENTION:

17.5.1 The safety provisions of applicable laws and building and construction codes shall be observed and the Contractor shall take or cause to be taken such additional safety and health measures as the Local Public Agency involved may determine to be reasonably necessary. Machinery, equipment and all hazards shall be guarded in accordance with the safety provisions of the "Manual of Accident Prevention in Construction" as published by the Associated General Contractors of America, Inc. to the extent that such provisions are not in conflict with applicable laws. The Contractor shall maintain an accurate record of all cases of death, occupational disease, or injury requiring medical attention or causing loss of time from WORK, arising out of and in the course of employment on WORK under the Contract. The Contractor shall promptly furnish the Local Public Agency with reports concerning these matters.

17.6 FLORIDA PRODUCTS AND LABOR:

17.6.1 The CONTRACTOR'S attention is called to Section 255.04, Florida Statutes, which requires that on public building contracts, Florida products and labor shall be used wherever price and quality are equal.

17.6.2 255.099 Preference to State Residents. —

(1) Each contract for construction that **is funded by state funds** must contain a provision requiring the Contractor to give preference to the employment of state residents in the performance of the work on the project if state residents have substantially equal qualifications to those of nonresidents. A contract for construction funded by local funds may contain such a provision.

(a) As used in this section, the term "substantially equal qualifications" means the qualifications of two or more persons among whom the employer cannot make a reasonable determination that the qualifications held by one person are better suited for the position than the qualifications held by the other person or persons.

(b) A Contractor required to employ state residents must contact the Department of Economic Opportunity to post the Contractor's employment needs in the state's job bank system.

(2) No contract shall be let to any person refusing to execute an agreement containing the provisions required by this section. However, in work involving the expenditure of federal aid funds, this section may not be enforced in such a manner as to conflict with or be contrary to federal law prescribing a labor preference to honorably discharged soldiers, sailors, or marines, or prohibiting as unlawful any other preference or discrimination among the citizens of the United States.

17.6.3 255.0991 Contracts For Construction Services; Prohibited Local Government Preferences.—

(1) For purposes of this section, the term:

(a) "Competitive solicitation" has the same meaning as in s. 255.248.

(b) "State-appropriated funds" means all funds appropriated in the General Appropriations Act, excluding federal funds.

(2) For a competitive solicitation for construction services in which 50 percent or more of the cost will be paid from state-appropriated funds which have been appropriated at the time of the competitive solicitation, a state college, county, municipality, school district, or other political subdivision of the state **may not use a local ordinance** or regulation that provides a preference based upon:

(a) The Contractor's maintaining an office or place of business within a particular local jurisdiction.

(b) The Contractor's hiring employees or subcontractors from within a particular local jurisdiction; or

(c) The Contractor's prior payment of local taxes, assessments, or duties within a particular local jurisdiction.

(3) For any competitive solicitation that meets the criteria in subsection (2), a state college, county, municipality, school district, or other political subdivision of the state shall disclose in the solicitation document that any applicable local ordinance or regulation does not include any preference that is prohibited by subsection (2).

(4) Except as provided in subsection (2), this section does not prevent a state college, county, municipality, school district, or other political subdivision of the state from awarding a contract to a Contractor in accordance with applicable state laws or local ordinances or regulations.



17.6.4 255.20 Specification of State-Produced Lumber.

(3)(a) All county officials, boards of county commissioners, school boards, city councils, city commissioners, and all other public officers of state boards or commissions that are charged with the letting of contracts for public work, for the construction of public bridges, buildings, and other structures must specify in the contract lumber, timber, and other forest products produced and manufactured in this state, if wood is a component of the public work, and if such products are available and their price, fitness, and quality are equal.

(b) This subsection does not apply:

1. To plywood specified for monolithic concrete forms.
2. If the structural or service requirements for timber for a particular job cannot be supplied by native species.
3. If the construction is financed in whole or in part from federal funds with the requirement that there be no restrictions as to species or place of manufacture.

17.7 EMPLOYEES:

17.7.1 All labor described in these specifications or indicated on the Drawings and the WORK specified or indicated shall be executed in a thoroughly substantial and workmanlike manner by mechanics skilled in the applicable trades.

17.7.2 Any person employed on the WORK who fails, refuses or neglects to obey the instructions of the CONTRACTOR in anything relating to this WORK or who appears to the DISTRICT to be disorderly, intoxicated, insubordinate, or incompetent, shall upon the order of the DISTRICT, be at once discharged and not again employed in any part of the WORK. Any interference with, or abuse or threatening conduct toward the DISTRICT, EOR or their inspectors by the CONTRACTOR or his employees or agents, shall be authority for the DISTRICT to annul the Contract and re-let the WORK. No intoxicating substance shall be allowed on the WORK site.

17.8 NON-DISCRIMINATION:

17.8.1 The CONTRACTOR shall not discriminate against employees or applicants for employment because of race, creed, color, religion, sex, age, handicapped status, disabilities, or national origin. The CONTRACTOR shall endeavor to ensure that applicants are employed and that employees are treated during employment, without regard to their race, creed, color, religion, sex, age, handicapped status, or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including apprenticeship. The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. These provisions apply to all subcontractors and it is the responsibility of the subcontractor compliance.

17.9 DRUG-FREE WORKPLACE:

17.9.1 The DISTRICT requires all prospective Contractors to maintain a drug free work place and have their Drug Free Workplace policy posted in their offices and available for inspection by the DISTRICT.

17.10 PUBLIC ENTITY CRIMES:

17.10.1 Pursuant to F.S. 287.133, as amended: a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid on a Contract to provide any goods or services to a public entity, may not submit a Bid on a Contract with a public entity for the construction or repair of a public building or public work, may not submit Bids on leases of real property to a public entity, may

not be awarded or perform work as a Contractor, supplier, subcontractor, or EOR under a Contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in F.S. 287.017 for CATEGORY TWO or higher for a period of 36 months from the date of being placed on the convicted vendor list.

The DISTRICT shall not intentionally award publicly funded contracts to any Contractor who knowingly employs unauthorized alien workers, constituting a violation of the employment provisions contained in U.S.C. Section 1324a(e) [Section 274A9e) of the Immigration and Nationality Act (AINA@)]. The DISTRICT shall consider the employment by any Contractor of unauthorized aliens a violation of Section 274A(e) of the INA. Such a violation by the Recipient of the employment provisions contained in Section 274A(e) of the INA shall be grounds for unilateral cancellation of this Agreement by the DISTRICT.

17.11 ASSIGNMENT:

17.11.1 This Contract, nor any monies due hereunder, or any part thereof, shall not be assigned, or transferred, by CONTRACTOR, nor shall the DISTRICT be liable to any assignee or transferee, without the written consent of the DISTRICT, to the assignment, or transfer. The DISTRICT shall not release or discharge CONTRACTOR from any obligation hereunder. The DISTRICT shall not approve an assignment or transfer unless the Surety on the Contract Performance and Payment Bonds has informed the DISTRICT in writing that it consents to the assignment or transfer.

17.12 VENUE:

17.12.1 This Contract shall be interpreted as a whole unit and section headings are for convenience only. All interpretations shall be governed by the laws of the State of Florida. In the event it is necessary for either party to initiate legal action regarding this Contract, venue shall be exclusively in the Nineteenth Judicial Circuit for Martin County, Florida, for claims under state law and the Southern District of Florida for any claims which are justiciable in Federal court.

17.13 FUNDING OUT:

17.13.1 Florida School Laws prohibit the Board or its designee from creating obligations in anticipation of budgeted revenues from one fiscal year to another without year-to-year extension provisions in the contracts. It is necessary that fiscal funding out provisions be included in all bids in which the terms are for periods of longer than one year. Therefore, the following funding out provisions are an integral part of this Invitation to Bid and must be agreed to by all CONTRACTORS:

17.13.2 The Board or its designee may, during the contract period, terminate or discontinue the items covered in this bid for lack of appropriated funds upon the same terms and conditions.

17.13.3 Such prior written notice shall state that the lack of appropriated funds is the reason for termination, and

17.13.4 Board agrees not to replace the equipment or services being terminated with equipment and services with

functions similar to those performed by the equipment covered in this bid from another awarded CONTRACTOR in the succeeding funding period.

17.14 DISTRICT PURCHASING CARD:

17.14.1 The School District has authorized the use of a Purchasing Card to expedite small dollar purchases for materials, supplies, and other items needed for daily operations. CONTRACTOR may be presented these credit cards by authorized School District personnel for the above-mentioned purchases.



17.14.2 Additionally, The District reserves the right to use the Purchasing Card as an optional method to pay invoices for the project WORK submitted by the CONTRACTOR.

17.15 DEBARMENT:

17.15.1 The Board shall have the authority to debar a person / corporation for cause for consideration or award of future contracts. The debarment shall be for a period commensurate with the seriousness of the causes, generally not to exceed three (3) years. When the offense is shellful or blatant, a longer term of debarment may be imposed, up to an indefinite period.

17.16 REQUIREMENTS FOR PERSONNEL ENTERING DISTRICT PROPERTY:

17.16.1 Possession of firearms shall not be tolerated in or near school buildings. Nor shall violations of Federal or State Laws and any applicable District policy regarding Drug Free Workplace be tolerated. Violators shall be subject to immediate termination.

17.16.2 "Firearm" means any weapon (including a starter gun or antique firearm) which shall, is designed to, or may readily be converted to expel a projectile by the action of an explosive; the frame or receiver of any such weapon; any destructive device; or any machine gun.

17.16.3 No person who has a firearm in their vehicle may park their vehicle on District property. Furthermore, no person may possess or bring a firearm on District property.

17.16.4 If any employee of an independent awarded CONTRACTOR or subcontractor is found to have brought a firearm on District property, said employee must be terminated from the Board project by the independent awarded CONTRACTOR or subcontractor. If the subcontractor fails to terminate said employee, the subcontractor's agreement with the independent awarded CONTRACTOR for the District project shall be terminated. If the independent awarded CONTRACTOR fails to terminate said employee or fails to terminate the agreement with the subcontractor, who fails to terminate said employee, the independent awarded CONTRACTOR's agreement with the District shall be terminated.

17.16.5 CONTRACTORS are advised that they are responsible to ensure that no employee, agent or representative of their company who has been convicted or who is currently under investigation for a crime against children in accordance with section 435.04, Florida Statutes shall enter any school site.

17.17 BACKGROUND INVESTIGATION:

17.17.1 As a part of the Bid evaluation process, the District may conduct a background investigation including a criminal record check of CONTRACTOR's officers and/or employees, by the Sheriff's Office. The CONTRACTOR's submission of a bid constitutes acknowledgement of and consent to such investigation. The District shall be the sole judge in determining the CONTRACTOR's qualifications.

17.18 PRODUCT RECALL:

17.18.1 In the event the awarded CONTRACTOR receives notice that a product delivered by the awarded CONTRACTOR to the District has been recalled, seized or embargoed, and/or has been determined to be misbranded, adulterated, or found to be unfit for human consumption by a packer, processor, subcontractor, retailer, manufacturer, or by any State or Federal regulatory agency, the awarded CONTRACTOR shall notify the District's Purchasing Department within two business days of receiving such notice. The District's acceptance or failure to reject the affected product as non-conforming shall not in any way impact, negate, or diminish the awarded CONTRACTOR's duty to notify the District's Purchasing Department that the affected product has been recalled, seized, or embargoed, and/or has

been determined to be misbranded, adulterated, or found to be unfit for human consumption. The form and content of such notice to the District shall include the name and description of the affected product; the approximate date the affected product was delivered to the District; the bid number; and relevant information relating to the proper handling of the affected product and/or proper disposition of the affected product by the District, if necessary to protect the health, welfare, and safety of District students or employees; and any health hazards known to the awarded CONTRACTOR which may be caused or created by the affected product.

17.18.2 The awarded CONTRACTOR shall, at the option of the Purchasing Department, either reimburse the purchase price or provide an equivalent replacement product at no additional cost to the District. Unless it was necessary for the District to dispose of the affected product, the awarded CONTRACTOR shall be responsible for removal and/or replacement of the affected product within the time specified by the District, without causing significant inconvenience to the District.

17.18.3 At the option of the District, the awarded CONTRACTOR may be required to reimburse storage, disposal and/or handling fees to be calculated from time of delivery and acceptance to actual removal or disposal. The awarded CONTRACTOR shall bear all costs associated with the removal and proper disposal of the affected product. The failure to reimburse the purchase price and storage and/or handling fees or to remove and/or replace the affected product with an equivalent replacement within the time specified by the District, without causing significant inconvenience to the District shall be considered a default.

SECTION V SCOPE OF WORK

5.1 WORK OBJECTIVE

The Martin County School District (hereinafter referred to as "District") is soliciting a Licensed General Contractor, registered with the State of Florida DBPR Construction Industry Licensing Board, to enhance security construction services at the existing Purchasing, Maintenance, and Transportation work sites located at 2845 SE Dixie Highway, Stuart, FL 34997, in accordance with the project manual specifications and plan drawings.

The project consists of installation of perimeter anti-climbing fencing, relocation, and installation of vehicular and pedestrian gates (some gates will be automated), a new roadway access within the site, improved lighting throughout the site, access control, call boxes and card readers as shown, and the relocation of the dumpster enclosure. and per any manufacturer's recommended installation requirements. All areas, regardless of location, will be required to be repaired if disturbed by installation of the scope of work. Contractor to review all as-built documents before commencing construction and attend the site visit to recognize the areas within the scope of work.

5.2 INTENT AND INFORMATION

- A. It is the intent of the bid and construction documents to have a finished project at completion of construction. Thus, the Bidder shall include all costs associated with the construction documents to ensure a full and complete bid for the construction and associated site work. If a specific bid quantity is not listed in the construction and bid documents, it is the Contractor's responsibility to include such items in like or in associated bid items.
- B. All work shall be performed in a professional manner and shall conform to all applicable District, County, State and Federal Regulations and/or Codes. The Bidder/Contractor shall also be responsible for obtaining all permits and licenses required to begin work.
- C. **Inspection of Facilities:** It is the bidder's responsibility to become fully informed as to the nature and extent of the work required and its relation to any other work in the area, including possible interference from other site activities. Thereby, Contractor is responsible for confirming actual site conditions prior to starting construction and assures that the construction project produced will be completed as specified. **Any oral explanation provided prior to the bid opening will not be binding.**
- D. **Measurements:** Awarded bidder will be responsible for their own measurements and must submit a firm price accordingly. There will be no adjustments, for increase or decrease of measurements required for this job. Therefore, the "Total Offer" must be based on accurate measurements by bidders during inspection. Failure to do so will be at the bidder's risk.
- E. **Inspection and Direction:** The work will be conducted under the general direction of the Facilities Department and is subject to inspection by an appointed inspector to insure compliance with the terms of the bid. No inspector is authorized to change any provision of the specifications without written authorization from the Project Manager, nor shall the presence or absence of an inspector relieve the Contractor of any requirements of the bid. Appointments for the final inspection shall be made three (3) days in advance.
- F. **Schedule of Values:** All work for this project, including but not limited to, all profit and overhead, incidentals, all labor, mobilization/demobilization, supervision, testing, machinery, equipment, tools, materials, coordination with utility companies, cleanup, and other means of construction necessary to complete the described work in accordance with the specifications, and other contract documents.
- G. **Warranty:** The successful bidder shall warranty all workmanship/labor for a period of 12 months from date of completion and final acceptance by the Facilities Department designee. Should any defect in workmanship, excepting ordinary wear and tear, appear during the above stated warranty period, the successful bidder shall repair or replace same at no cost to the District, immediately upon written notice from the Facilities Department Designee.

- H. **Start of Work and Time for Completion:** It is hereby understood and mutually agreed by and between parties hereto that the time of completion is an essential condition of this contract. By submitting a bid response, successful bidder agrees to start the work within 10 days of issuance of the Notice to Proceed. Awarded Contractor is to prosecute the work uninterrupted in such a manner, with sufficient labor, equipment and/or materials to insure its completion not to exceed 240 days from issuance of the Notice to Proceed.
- I. The construction documents (specifications and plan drawings) for this project are prepared by Harvard Jolly Associates (HJA).

5.3 **CONTRACTOR RESPONSIBILITIES**

- The Contractor is responsible for construction means and methods.
- The Contractor will be working on fully active School District office site & building(s).
- The Contractor is responsible for coordinating all work with School District Facilities Staff.
- To obtain all permits and licenses required to perform work.
- Due to standardization, all Camera Systems and Access Control per the Construction Documents for this project are to be provided by Convergent Technologies LLC: Contact Danelo Fernandez, Account Executive – State, Local, Education, Defense | Convergent, PH. 561-843-4489, email Danelo.Fernandez@Convergent.com.
- All areas, regardless of location, will be required to be repaired, if disturbed by the installation of the scope of work.
- Review all as-built documents before commencing construction and visit the site to recognize the areas within the scope of work.
- Manage the construction site and provide administration and supervision of the Project.
- Provide temporary public restroom facilities with daily maintenance.
- Maintain competent staff at the Project site and/or its office to coordinate and direct the work and subcontractors: One or more of Construction Team (CT) shall be at the jobsite, at all times, while work is being performed.
- Provide continuous monitoring and inspection of work to determine progress and conformance. Establish and maintain project/construction schedule, including identifying variances, delays or early completion of tasks, and the maintenance of the schedule.
- Maintain written project progress records and provide written reports of project progress and status relating to budget, progress payments, change orders, performance, and schedule adherence, including progress photos, job meeting notes, and status of applications for payment.
- Protection of property in the areas in the adjacent vicinity of the project; and for the protection of his own equipment, supplies, materials, and work, against any damage resulting from the elements (such as flooding, rainstorms, wind damage, or other acts of God) or vandalism. Ensure the security of the project area, equipment, and materials. Provide jobsite safety in accordance with OSHA requirements and jobsite security; Conduct a safety meeting with Construction staff, sub- contractors, School District staff and EOR prior to starting work on site.
- Provide all signs, barricades and take all necessary precautions to protect buildings and personnel. All work shall be complete in every respect and accomplished in a satisfactory, workmanlike manner and contractor shall provide for timely removal of all debris from School District properties.
- At all times guard against damage or loss to the property of the School District or that of other vendors or contractors and shall be held responsible for replacing or repairing any such loss or damage. The School District may withhold payment or make such deductions, as deemed necessary, to ensure reimbursement or replacement for loss or damage to property through negligence of the successful bidder or their agents.

- In coordination with the Facilities Director or designee maintain a daily log containing a record of weather, sub-contractors working on the site, number of workers, work accomplished, problems encountered and other similar relevant data as the School District may reasonably require.
- Schedule and coordinate all required inspections with appropriate disciplines and governing authorities including the School District, School District Building Official, Fire Inspector, and etc. Perform or cause to be performed, all required remedial work identified through the inspection process.
- Monitor small business participation to ensure compliance with the established goal.
- Develop plan, coordinate, and assist in the start-up testing and certification of any systems and equipment, replaced and/or affected by the construction.
- Prepare shop drawings, RFI's and other documents necessary to accomplish the work.
- Establish and enforce job rules governing parking, use of facilities, clean-up, and worker discipline.
- Manage the change order process, payment application process, through project close out coordination. Provide Certificate of Completion and all documents of record to PMT for archiving
- Ensure compliance with all applicable Federal, State laws, County and School District ordinances, including but not limited to the Americans with Disabilities Act, State Requirements for Educational Facilities, and OSHA.

5.4 **BOND REQUIREMENTS**

The Successful Contractor shall be required to submit the following Bond requirements on a per project basis based upon method of award.

- Bonding Capacity:** The awarded Contractor shall provide evidence of bondability, and a Letter of Credit from Surety within their submittal response that demonstrates the firm's capacity and credibility. **Capacity** is defined as the maximum output that a **business** can produce in a given period with the available resources, and the volume and aptitude of experienced personnel to simultaneously complete the work on all four schools in a timely manner.
- Bid Bond:** The bond shall be in an amount equal to five percent (5%) of the total amount. The guarantee may be in the form of a Surety Bond with a carrier duly licensed and authorized to do business in the State of Florida, a Cashier's Check or a Certified Check (checks made payable to District). Purpose of the Bid Bond/Guarantee is to assure the apparent low, responsive and responsible bidder will enter into a contract to provide the described services. Should the Bidder not enter into a contract the Bid Bond/Guarantee shall be retained by the District to defray the additional costs of either awarding to the second low, responsive and responsible Bidder or re-advertise and re-solicit the project.
- Payment & Performance Bonds:** Provide evidence confirming the firm's ability to obtain Payment and Performance Bonds for the construction project as detailed herein. The successful Bidder will be required to furnish payment and performance bonds with a carrier duly licensed and authorized to do business in the State of Florida, equal to one hundred percent (100%) of the total amount of the contract to assure faithful performance and timely payments to all persons providing labor, materials or supplies used in the performance of the work.

5.5 **PROJECT SCHEDULE**

It is hereby understood and mutually agreed by and between parties hereto that the time of completion is an essential condition of this contract. By submitting a bid response, successful bidder agrees to start the work within 10 days of issuance of the Notice to Proceed. Awarded Contractor is to prosecute the work uninterrupted in such a manner, with sufficient labor, equipment and/or materials to insure its completion by no later than **240** days from notice to proceed as indicated below:

- **180** Calendar Days From Notice to Proceed to Substantial Completion
- **60** Calendar Days From Substantial Completion To Final Completion

SECTION VI
MINIMUM INSURANCE REQUIREMENTS

NOTE: SECTION VI INSURANCE LIMITS SUPERCEDES SECTION IV, ARTICLE 5.2 & A101-2017 EXHIBIT A

Contractor shall procure and maintain for the duration of the contract, *and during any performance and payment tenures, thereafter*, insurance against claims for injuries to persons or damages to property which may, arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees, or subcontractors.

6.1 GENERAL LIABILITY

- A. Commercial General Liability -\$3,000,000 per occurrence, \$5,000,000 aggregate For Bodily Injury, Personal and Advertising Injury, and Property Damage, including Blanket Contractual Liability, Products Liability, and Completed Operations

If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to the project/location or the general aggregate limit shall be twice the required occurrence limit.

Coverage should be at least as broad as Insurance Services Office Commercial General Liability coverage (occurrence Form CG 00 01 IO 93) or Insurance Services Office Form (CG 00 09 11 88 Owners and Contractor's Protective Liability Coverage Form -Coverage for Operations of Designated Contractor).

- B. Contractor's insurance to be primary and non-contributory
- C. 30-day notice of intent to cancel, non-renew, or make material change in coverage
- D. The School Board of Martin County, its trustees, officers, employees, and agents to be named as "Additional Insured" by separate endorsement
- E. Coverage shall not exclude the perils of explosion, collapse, or underground (XCU) or sudden and accidental pollution.
- F. Executed Indemnity and Hold Harmless Agreement or substantially similar provisions should be included in the bid specifications or contract.

6.2 COMMERCIAL AUTOMOBILE LIABILITY

- A. \$1,000,000 per accident for Bodily Injury and Property Damage
- B. Coverage to include "Owned, Non-Owned, and Hired" automobiles ("Any Autos")
- C. 30-day notice of intent to cancel, non-renew, or make material change in coverage

Coverage should be at least as broad as Insurance Services Office Form Number CA 00 01 06 92 covering Automobile Liability, Symbol 1 ("Any Autos")

6.3 WORKERS' COMPENSATION/EMPLOYERS LIABILITY

- A. Certificate of Insurance indicating "statutory" limits, as required by the State of Florida.
- B. Employer's Liability-\$1,000,000 each accident for bodily injury by accident; \$ 1,000,000 each employee for bodily injury by disease; \$1,000,000 coverage period aggregate.
- C. 30-day notice of intent to cancel, non-renew, or make material change in coverage.

6.4 PROFESSIONAL LIABILITY

- A. \$2,000,000 per occurrence, \$2,000,000 aggregate -Errors & Omissions/Professional Liability
- B. Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the Contractor, his agents, representatives, employees or subcontractors. With respect to General Liability, Errors & Omissions, Contractor's Pollution Liability and/or Asbestos Pollution Liability, claims-made

coverage should be maintained for a minimum of three (3) years after contract completion or be purchased with a minimum, prepaid three-year extended reporting period.

6.5 INSTALLATION FLOATERS

Installation Floaters are designed to cover damage to material and equipment to be installed in an "existing building." Installation Floaters are required from contractors performing a specialized job on an existing building or installing equipment or materials that are not included in a construction project contract.

6.6 INDEMNIFICATION

To the fullest extent permitted by Florida law, Contractor shall indemnify, defend and hold harmless the School Board of Martin County, its trustees, employees, consultants, volunteers, and agents ("indemnified parties") from and against any and all claims, damages, losses, suits, verdicts, judgements, costs and liability of any nature or kind, including attorneys' fees, arising from or in any way connected with the conduct of Contractor's business or operations or from any activity, work or things done, permitted or suffered by Facility User ("Claims") unless such Claims are caused solely by the negligence or willful misconduct of indemnified parties. If any Claims be brought against indemnified parties, Contractor shall defend indemnified parties at Contractor's expense, provided that indemnified parties promptly notify Contractor of any such claim, judgment or proceeding in writing and tenders its defense to Contractor. The School Board of Martin County shall have the right to accept or reject any legal representation Contractor proposes to defend the indemnified parties. The School Board of Martin County agrees to cooperate with Contractor as may be reasonably necessary in settlement or defense of any such claim, judgment or proceeding.

The School Board of Martin County recognizes its respective liability for certain tortious acts of their agents, officers, employees and invitees to the extent and limits provided in Section 768.28 Florida Statutes. This provision shall not be construed as a waiver of any right or defense that the School Board of Martin County has under said statute.

6.7 SURETY BONDS

Contractor shall furnish bonds covering the faithful performance of the contract and payment of all obligations in the following amounts:

Bid Bond:	5% of the contract value
Performance Bond:	100% of the contract value, including change orders
Payment Bond:	100% of the contract value, including change orders

**SECTION VII
FORMS**

- 7.1 BID COVER PAGE CHECKLIST/BID FORM
- 7.2 BID FORMS
- 7.3 BID BOND
- 7.4 BIDDER'S QUALIFICATIONS STATEMENT
- 7.5 SUBCONTRACTOR LIST
- 7.6 TRENCH SAFETY ACT COMPLIANCE
- 7.7 WARRANTIES
- 7.8 REFERENCE QUESTIONNAIRE
- 7.9 NON-COLLUSIVE AFFIDAVIT
- 7.10 CONFLICT OF INTEREST
- 7.11 DRUG FREE WORKPLACE
- 7.12 PUBLIC ENTITY CRIMES
- 7.13 NO BID

BID FORM: BID COVER PAGE CHECKLIST

THIS SHOULD BE THE FIRST PAGE OF YOUR BID SUBMITTAL

BID NAME: _____

BID NO: _____

COMPANY NAME: _____

PHONE NO: _____

- 1. Submit one (1) complete electronic submittal, contained in one (1) file, PDF format preferred, submitted electronically through www.DemandStar.com or bids@martinschools.org containing all of the required information **prior to the Bid deadline**. Bids submitted after the bid deadline shall be retained unopened and deemed non-responsive.
- 2. **Bid Bond:** Include a five percent (5%) Bid Bond. **Failure to provide a Bid guarantee will result in automatic rejection of your Bid.** All required Bonds must be submitted on the DISTRICT'S Bond forms, included in this document. *Failure to properly complete and submit this document using the form provided shall cause the Bid submittal to be rejected as non-responsive.*
- 3. Bid Form/Bid Submittal Certification: **Carefully read all Bid Documents, and properly complete the Bid Form and execute the certification.** *(Failure to properly complete and sign this document shall cause the Bid submittal to be rejected as non-responsive.)*
- 4. Bonding Guaranty Letter: **Failure to submit the notarized letter with your bid may cause it to be rejected as non-responsive.**
- 5. Bidder's Qualification Statement: **Complete and sign the Bidder's Qualification Statement.** *(Failure to properly complete and sign this document shall cause the Bid submittal to be rejected as non-responsive.)*
- 6. Subcontractor List: **Complete the form.**
- 7. Warranties: **Complete and sign the Warranties form**
- 8. References: **Complete and submit three references on the designated Form.**
- 9. Non-Collusion Affidavit: Sign the Non-Collusion Affidavit and have it notarized.
- 10. Conflict of Interest: Complete and sign the form.
- 11. Drug Free WorkPlace Form: **Sign the Drug Free WorkPlace Form.**
- 12. Public Entity Crime Statement: Sign the Public Entity Crime Statement and have it notarized.
- 13. Material List: **Complete the form.**
- 14. Proof of Insurance: Include proof of insurance containing ***a provision or endorsement that the coverage afforded will not be canceled, reduced in coverage, or renewal refused until at least 30 days' prior written notice has been given to the DISTRICT and additional insured by certified mail. All such insurance required herein (except for worker's compensation and employer's liability) shall name the DISTRICT, and their officers, directors, agents, and employees as "additional insured".*** Attach to the back of your submittal.
- 15. Licenses: **Attach certificate of competency, state registration and any other applicable licenses.** Attach to the back of your submittal.
- 16. **Proof that firm is registered with Florida Division of Corporations (Sunbiz) and Business Tax Receipt, if applicable.**
- 17. **IF "NO BID" is offered, please complete the last section in the Bid Form and return it to the Purchasing Department.**

Contact Person _____
Business Address _____
City, State, Zip Code _____
Business Phone Number _____
Fax Number _____
Cell Phone Number _____

7. Other pertinent information is as follows:

License Number
(Please Attach Copy) _____
Federal Tax ID# _____
Federal Employment ID # _____

SCHEDULE OF BID PRICES

The District reserves the right to award on an all or none basis to the lowest and best responsive responsible Bidder. Thus, all work shall be in accordance with the bid documents, drawings, and specifications. The cost of incidental work described in these Contract Requirements, for which there are no specific line items, shall be considered as part of the general cost of doing the work and shall be included in the prices for the various Contract Items. No additional payment will be allowed.

The District intends to award a contract to the lowest Responsive and Responsible bidder as a basis for award. Items include all profit and overhead, incidentals, all labor, supervision, testing, machinery, equipment, tools, materials, cleanup, and other means of construction to successfully complete the project in accordance with specifications and construction documents herein.

ITEM NO.	DESCRIPTION	TOTAL BID PRICE
1	Mobilization / Demobilization	\$
2	Camera Systems	\$
3	Access Controls	\$
4	Furnish & Install Electrical & Low Voltage Systems	\$
5	Demolition and Removal Services	\$
6	Furnish & Install materials, including Door Hardware, as required for all work	\$
7	Painting, Priming, associated materials, and patching & repairing existing as required for all work & materials	\$
8	Signage, including Parking and Traffic	\$
9	Furnish & Insall Communications	\$
10	Site Clearing and Vegetation Removal	\$
11	Furnish & Install Concrete Sidewalks	\$
12	Furnish & Install Pavement Markings	\$
13	Furnish & Install Chain-link fencing and Gates	\$
14	Furnish & Install Gate Operators	\$
15	Furnish & Install Decorative Steel Dumpster	\$
SUBTOTAL (ADD ITEM #'S 1- 15)		\$

Company Name:

16	All associated work & materials required to provide a complete project not listed above.	\$
GRANDTOTAL (ADD ITEM #'S 1- 16)		\$

ALL LINE ITEMS MUST ADD UP TO THE TOTAL COST OF THAT SECTION AND TOTAL COST OF THE BID SUBMITTAL

The undersigned bidder has not divulged to, discussed with, or compared this bid with the other bidders, and has not colluded with any other bidder or parties to a bid whatsoever. Further, the undersigned guarantees the truth and accuracy of all statements and answers contained in this proposal. The undersigned bidder hereby certifies that the invitation to bid has not been altered in any manner; and that bidder has received all the Addenda listed below and has incorporated them into his Bid listed herein. Failure to acknowledge the above requirements will render the bid non-responsive and no further evaluation of the bid will occur. The undersigned bidder hereby proposes to begin work within the time specified after the Facilities Director or designee has given notice and to complete the work.

The undersigned bidder certifies that as a condition of bidding he will hold good his bid prices for a minimum period of ninety (90) calendar days from the date bids are opened.

The undersigned bidder acknowledges that he may be required to furnish additional information as deemed necessary by the Procurement Director, to update their records should he be awarded the project described herein.

The undersigned bidder affirms that he has or will obtain all equipment necessary to complete the work described, that he has or will obtain and pay for all required permits and licenses from the appropriate agencies, and that his firm is authorized to do business in the State of Florida.

Submitted on this ____ day of _____, 2023.

- a. (If an individual, partnership, or non-incorporated organization)

Signature of BIDDER _____

By _____

- b. (If a corporation)

(Affix Seal)

Signature of BIDDER _____

By _____

Attested by Secretary _____

Incorporated under the laws of the State of _____.

BID PRICES WITHOUT THE SIGNATURE OF AN AUTHORIZED AGENT OF THE BIDDER SHALL BE REJECTED AS NON-RESPONSIVE, NON-CONFORMING AND INELGIBLE FOR AWARD.

CERTIFICATE
(For Partnership)

I HEREBY CERTIFY that a meeting of the partners of _____, a Partnership under the laws of the State of _____ held on _____, 2023, the following resolution was duly passed and adopted:

"RESOLVED, that _____ as _____ of the Partnership, is hereby authorized to execute the Bid Form dated _____, 2023, between the Martin County School District, Florida, and this Partnership, and that the execution thereof, attested by the _____ of the Partnership be the official act and deed of this Partnership."

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this ___ day of _____, 2023.

(Signature)

(Title)

STATE OF FLORIDA

COUNTY OF _____

Sworn to and subscribed before me on this _____ day of _____, 2023 by _____ who is personally known to me or who has presented the following type of identification: _____.

Signature of Notary Public, State of Florida

Notary seal (stamped in black ink)

OR

Printed, typed or stamped name of Notary and Commission Number

CERTIFICATE
(For Corporation)

I HEREBY CERTIFY that a meeting of the Board of Directors of _____, a corporation under the laws of the State of _____ held on _____, 2023, the following resolution was duly passed and adopted:

"RESOLVED, that _____, as _____ of the Corporation, is hereby authorized to execute the Bid Form dated _____, 2023, between the Martin County School District, Florida, and this Corporation, and that the execution thereof, attested by the Secretary of the Corporation and with corporate seal affixed, shall be the official act and deed of this Corporation".

I further certify that said resolution is now in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this ___ day of _____, 2023.

Secretary

STATE OF FLORIDA

COUNTY OF _____

Sworn to and subscribed before me on this _____ day of _____, 2023 by _____ who is personally known to me or who has presented the following type of identification: _____.

Signature of Notary Public, State of Florida

Notary seal (stamped in black ink)
OR
Printed, typed or stamped name of Notary and
Commission Number

BID BOND

STATE OF _____

COUNTY OF _____

KNOW ALL MY BY THESE PRESENTS that _____ as Principal, hereinafter called BIDDER and _____ as Surety, are held and firmly bound unto the Martin County School District, hereinafter called the DISTRICT in the penal sum of:

_____ Dollars \$ _____

lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that whereas the BIDDER has submitted the accompanying Bid, dated _____, 2023, for:

PROJECT NAME _____

BID NO: _____

NOW, THEREFORE,

1. It is a condition precedent to the submission of said Bid that a certified check, cashiers check or bid bond in the amount of five percent (5%) of the base Bid be submitted with said Bid as a guarantee that BIDDER will, if awarded the contract, enter into a written contract with DISTRICT.
2. If the BIDDER shall not withdraw said bond within ninety (90) days after date of the same, and shall within fifteen (15) days after the prescribed forms are presented to him for signature, enter into a written contract with the DISTRICT in accordance with the Bid as accepted, and give bonds with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such contract, then the above obligation shall be void and of no effect, otherwise the sum herein stated shall be due and payable to DISTRICT and the Surety herein agrees to pay said sum immediately upon demand of the DISTRICT in good and lawful money of the United States of America as liquidated damages for failure thereof of said BIDDER.

IN WITNESS WHEREOF, the above bounded parties executed this instrument under their several seals, this _____ day of _____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

WITNESS: (If Sole Ownership or Partnership, two (2) Witnesses required. If Corporation, Secretary Only will attest and affix seal.)

WITNESSES:

(AFFIX SEAL)

BIDDER

By (Signature & Title)

Typed Name & Title signed above

ATTEST:

Secretary

CORPORATE SURETY (Affix Seal)

By (Signature & Title)

Typed Name & Title signed above

ATTEST:

Secretary

Attorney in Fact (Affix Seal)

Business Phone

Business Address

DISTRICT State

Name of Local Insurance Agency

(AFFIX SEAL)

CERTIFICATE AND AFFIDAVIT FOR BONDS (MUST BE SUBMITTED WITH ALL BONDS)

TO: THE MARTIN COUNTY SCHOOL DISTRICT BOARD

RE: Bid Number: _____

Bidder: _____

Name: _____

Address: _____

City/ State: _____ ZIP: _____

Phone: _____

Bond Amount: _____

SURETY BOND COMPANY:

Name: _____

Address: _____

City/ State: _____ ZIP: _____

Phone: _____

This is to certify that in accordance with Chapter 85-104, Laws of Florida (HB 1266) the insurer named above:

1. Holds a certificate of authority authorizing it to write surety bonds in the state of Florida;
2. Has twice the minimum surplus and capital required by the Florida Insurance Code; and
3. Holds a current valid certificate of authority issued by the United States Department of Treasury under Sections 9304 to 9308 of Title 31 of the United States Code.

Date

Agent and Attorney-in-Fact

BIDDER'S QUALIFICATIONS STATEMENT

THE UNDERSIGNED GUARANTEES THE TRUTH AND ACCURACY OF ALL STATEMENTS AND ANSWERS HEREIN CONTAINED:

BIDDER'S GENERAL INFORMATION: BIDDER shall provide the following information. Failure to comply with this requirement will render Bid non-responsive and shall cause its rejection. **Additional sheets can be attached as required.**

1. BIDDER'S Name, Principal Address, Phone Number, Fax Number, and email address as follows:

BIDDER'S Name and Principal Address: _____

Contact Person's Name and Title: _____

BIDDER'S Telephone, _____ Fax Number: _____

BIDDER'S Email address: _____

BIDDER'S License Number: _____
(Please attach certificate of status, competency, and/or state registration.)

Certification: MBE SFDB MWBE DVBE SBA Other
(Please attach certificate)

BIDDER'S Federal Identification Number: _____

2. Number of years as a Contractor in this type of work: _____

Number of years under your present business name?

3. How many years under a previous business name? List name(s) below.

4. Type of Business:

Sole Proprietorship Partnership Corporation Joint Venture

If a Corporation, answer this: _____

If a Partnership or Individual Proprietorship, answer this: _____

Date of incorporation: _____

Date of organization: _____

In what State: _____

If a partnership, state whether partnership is general, limited association: _____

5. Names and titles of all officers, partners or individuals doing business under trade name:

Name of Officers _____

Name and Address of Partners: _____

President: _____

Vice President: _____

Vice President: _____

Secretary: _____

Treasurer: _____

**SUBSIDIARY OR AFFILIATED COMPANIES
IN WHICH PRINCIPALS HAVE FINANCIAL INTEREST**

NAME AND ADDRESS OF SUBSIDIARY OR
AFFILIATED COMPANIES

EXPLAIN IN DETAIL THE PRINCIPAL'S INTEREST IN
THIS COMPANY AND NATURE OF BUSINESS

6. Business Structure – Corporation, Joint Venture, or Partnership. Applicants submitting applications as joint ventures shall submit a copy of their joint venture agreement. If a joint venture or prime/subcontractor arrangement of two (2) firms, indicate how the work will be distributed between the partners.

Business Structure	Indicate By (X)	Copy of Joint Venture Agreement Attached (Y/N)	If applicable, how will work be distributed between partners?
Corporation			
Joint Venture			
Partnership			

Length of time in business for separate Firms of a Joint Venture

Firm(s) Name	Length of Time in Business

7. Principal Office Location – Location of principal office, which will be responsible for implementation of this contract. Please list telephone number (s), facsimile number (s) and email address (s).

_____	_____
_____	_____
_____	_____

8. Other Office Locations – Location of other offices from which resources may be drawn.

9. Firm is a certified Minority Business Enterprise as defined in Florida Statute 287.09431, and proof is attached.
Yes No

10. Have you, in the previous five years, been denied a contract award on which you submitted the low bid in competitive bidding, or been refused prequalification? If so, please list and describe

11. Within the previous 5 years has your organization or predecessor organizations ever failed to complete a project? If so, state name of organization and reason thereof.

12. Within the previous 5 years has your organization been involved in litigation? _____. If so, please list and explain nature and current status or resolution

13. Within the last 10 years has your organization been convicted of a Public Entity Crime? If so, please explain.

14. Is your organization currently pre-qualified with any governmental agency? _____ If so, please list.

15. Name, address, and telephone number of surety company and agent who will provide the required bonds on this contract:

16. What is the last project of this nature that you have completed?

17. Have the Surety Company who will provide your bonds (said Surety Company must have an AM Best rating of Class XI A or better per the Supplementary Conditions, Section IV), provide you with written verification showing that your firm will be bonded for the amount of the contract. This must be submitted with your bid.

18. Have you personally inspected the proposed WORK and do you have a complete plan for its performance?

19. List three SIGNIFICANT SIMILAR PROJECTS (in scope and complexity) successfully completed within the past five (5) years.

Project No. 1	Location:	Your \$	\$	Date Completed:
		Subcontract Amount:	\$	

Contracting Agency:	Contact Person:	Email:
		Tel:
		Fax:

Project No. 2	Location:	Your \$	\$	Date Completed:
		Subcontract Amount:	\$	

Contracting Agency:	Contact Person:	Email:
		Tel:
		Fax:

Project No. 3	Location:	Your \$	\$	Date Completed:
		Subcontract Amount:	\$	

Contracting Agency:	Contact Person:	Email:
		Tel:
		Fax:

20. Give full information about all of your present contracts. In Column C insert "S" if a Subcontractor or "P" if a prime Contractor, whether in progress or awarded but not yet begun; and regardless of with whom contracted.

A Project Description Location, Owner, Phone, Fax, email	B Design Architect And/Or Design Engineer	C Total Amount of Your Contract Or Subcontract)	D Amount In Column C Sublet To Others	E Uncompleted Amount of Contract
Total	Total	Total	Total	Total

21. List the pertinent experience of the key individuals of your organization assigned to this project.(continue on insert sheet, if necessary).

PRINCIPAL'S NAME	TITLE	YEARS OF CONSTRUCTION EXPERIENCE	IN WHAT CAPACITY AND WITH WHOM

SUPERVISORY PERSONNEL	TITLE	YEARS OF CONSTRUCTION EXPERIENCE	IN WHAT CAPACITY AND WITH WHOM

22. List your firm, licensing, type of work licensed for, and also the licensing and types of work the individual who will have personal supervision of the work is licensed for.

Name	License#	Type of Work

23. Will you sublet any part of this WORK? If so, give details.

24. What equipment do you own that is available for the WORK? (Attach additional sheets as necessary)

25. What equipment will you purchase for the proposed WORK? (Attach additional sheets as necessary)

26. What equipment will you rent for the proposed WORK? (Attach additional sheets as necessary)

27. List and describe all bankruptcy petitions (voluntary or involuntary) which have been filed by or against Proposer, its parent or subsidiaries or predecessor organizations during the past five (5) years. Include in the description the disposition of each such petition.

28. List and describe all successful Bond claims made to your surety (ies) during the last five (5) years. The list and descriptions should include claims against the bond of the Proposer and its predecessor organization(s).

29. List all claims, arbitrations, administrative hearings and lawsuits brought by or against the Bidder or its predecessor organizations(s) during the three (3) years. The list shall include all case names; case, arbitration or hearing identification case or file numbers; the name of the engagement over which the dispute arose; and a description of the subject matter of the dispute, and the status or disposition of the reported action. For joint venture or team Bidders, submit the requested information for each member of the joint venture or team. Use additional paper if necessary.

30. List and describe all criminal proceedings or hearings concerning business related offenses in which the Bidder, its principals or officers or predecessor organization(s) were defendants.

31. Has the Bidder, its principals, officers or predecessor organization(s) ever filed for bankruptcy? If so, provide details.

32. Principal Materials Manufacturer and Subcontractors. The BIDDER who proposes to perform WORK specified and shown on the Drawings is submitting this Bid Form. The Schedule of Bid Prices shown on the preceding pages(s) has been calculated and tabulated using basic material prices. The following is a list of material manufacturers and subcontractors whose materials and services said BIDDER proposes to furnish and utilize if awarded a CONTRACT for the WORK specified herein and shown on the Plans. It is understood that the following list is not complete but includes the names of manufacturers of the principal components and subcontractors supplying principal services to said project. It is also understood that if awarded a Contract, the BIDDER will furnish the materials of the manufacturers and utilize the services of the subcontractors stated herein and that if for any reason whatsoever BIDDER wishes to substitute materials or subcontractors BIDDER shall request permission in writing from the DISTRICT stating fully the reason for making such a request prior to ordering same.

All manufacturers or their authorized vendors have been made aware of all the appropriate portions of the Bid Documents and agree that their materials will meet all of the requirements stated therein and deliveries will be scheduled so as not to impede the progress of the WORK.

Materials:

<u>Item</u>	:	<u>Manufacturer</u>
_____	:	_____
_____	:	_____
_____	:	_____
_____	:	_____
_____	:	_____
_____	:	_____

The Bidder acknowledges and understands that the information contained in response to this Qualification Statement shall be relied upon by DISTRICT in awarding the contract and such information is warranted by Bidder to be true. The discovery of any omission or misstatement that materially affects the Bidder's qualifications to perform under the contract shall cause the DISTRICT to reject the Bid, and if after the award, to cancel and terminate the award and/or contract.

Print Name/Title

Date:

Signature

Email:

The BIDDER acknowledges and understands that the information contained in response to this Qualification's Statement shall be relied upon by DISTRICT in awarding the contract and such information is warranted by BIDDER to be true. The discovery of any omission or misstatement that materially affects the BIDDER'S qualifications to perform under the contract shall cause the DISTRICT to reject the Bid, and if after the award, to cancel and terminate the award and/or contract.

The BIDDER also acknowledges that all information listed above may be checked by the DISTRICT and authorizes all entities or persons listed above to answer any and all questions. BIDDER hereby indemnifies the DISTRICT and persons or entities listed above and hold them harmless from any claim arising from such authorization or the exercise thereof, including the dissemination of information requested above.

By _____
(Signature)

Date _____

TRENCH SAFETY ACT COMPLIANCE

Contractor acknowledges that the Florida Trench Safety Act, Section 553.60 et. seq., which became effective October 1, 1990, shall be in effect during the period of construction of the project. The Contractor by signing and submitting the Bid is, in writing, assuring that it will perform any trench excavation in accordance with the applicable trench safety standards. The Contractor further identifies the following separate item of cost of compliance with the applicable trench safety standards as well as the method of compliance.

Method of Compliance	Cost
	\$
	\$
	\$
	\$
	\$
	\$
	\$
	\$
	\$
	\$

Contractor acknowledges that this cost is included in the applicable items of the Bid Form and in the Grand Total Bid Price. Failure to complete the above and sign below may result in the bid being declared non-responsive.

The Contractor is, and the District and EOR are not, responsible to review or assess District's safety precautions, programs or costs, or the means, methods, techniques or technique adequacy, reasonableness of cost, sequences or procedures of any safety precaution, program or cost, including but not limited to, compliance with any and all requirements of Florida Statute Section 553.60 et. seq. cited as the "Trench Safety Act". Contractor is, and the District and EOR are not, responsible for determining if any safety or safety related standards apply to the project, including, but not limited to, the "Trench Safety Act".

By _____
Signature

(Print or Type Name)

Date _____



WARRANTIES

In consideration of, and to induce the Award of **THE MARTIN COUNTY SCHOOL DISTRICT**, Construction Contract described in these Bid Documents, the Contractor represents and warrants to the Martin County School District:

1. The Contractor is financially solvent and sufficiently experienced and competent to perform all of the work required of the Contractor in the Construction Contract; and
2. That the facts stated in the Contractor's Bid and information given the Contractor pursuant to the request or proposal for Bids, instructions to Contractors and Specifications are true and correct in all respects; and
3. That the Contractor has read and complied with all of the requirements set forth in the request for Bids, instructions to Contractors and Specifications; and
4. That the Contractor warrants all materials supplied by it under the terms of the Construction Contract are delivered to the Martin County School District, free from any security interest, and other lien, and that the Contractor is a lawful owner having the right to sell the same and will defend the conveyance to the Martin County School District, against all persons claiming the whole or any part thereof; and
5. That the materials supplied to the Martin County School District, under the Construction Contract are free from the rightful claims of any persons whomsoever, by way of patent or trademark infringement or the like; and
6. That the materials supplied under the Construction Contract are merchantable within the meaning of the Uniform Commercial Code Section 2-314; and
7. That the materials supplied under the Construction Contract are free from defects in materials and workmanship under normal use and service and that any such materials found to be defective shall be replaced by the Contractor as per the attached Warranty.
8. That the materials supplied pursuant to the Construction Contract are fit for the purposes for which they are intended to be used; that under normal use and maintenance the material will continue to be fit for such purposes for the warranty period after delivery, provided that the District shall give the Contractor notice that the materials failed to fulfill the warranty; such notice shall state in what respect the materials have failed to fulfill the warranty, where upon the Contractor shall be allowed a reasonable time after receipt of such notice to correct the defect and the District agrees to cooperate in this regard. If the materials cannot be made to fulfill the Contract within the warranty period the Contractor will either furnish duplicate materials, or at its option refund the amount paid, which shall constitute a settlement in full for all damages occasioned by reason at this warranty of fitness; and
9. That this Warranty is included in exposures for which the Contractor has products liability and completed operations insurance, in minimum amounts of One Hundred Thousand (\$100,000.00) Dollars for property damage and Three Hundred Thousand (\$300,000.00) Dollars for personal injury as shown on the Certificates of such Insurance attached hereto, and the Contractor agrees to keep such insurance coverage during the period of this Warranty; and
10. That it is an express condition of this Warranty that the item(s) hereby warranted shall be operated and maintained by the District in accordance with the manufacturer's recommendations as to those portions of the item(s) that are not fabricated by the Contractor, and in accordance with the Contractor's recommendations, a copy of which has either been supplied to the District should maintain complete and accurate records made at the time of performance of maintenance showing compliance with such instructions, and by acceptance of this Warranty, the Martin County School District, agrees to present such records to the Contractor upon request in the event of a claim hereunder by the District;
11. The foregoing Warranties apply as a minimum and are supplemental to other Warranties offered. They are not substituted, but in addition to, any other Warranties offered; and



12. That it is agreed and understood by the Contractor that the Martin County School District, is induced to enter the Construction Contract in reliance upon this Warranty.

SIGNED, sealed and delivered on this _____ day of _____, 2023.

(SEAL)

CONTRACTOR:

By _____

ATTEST:

Secretary



REFERENCE CHECK QUESTIONNAIRE

PROJECT NO & NAME: _____

BIDDER's FIRM NAME: _____

BIDDERS COMPLETE THE FOLLOWING COMPANY INFORMATION IN TRIPLE-3 DIFFERENT FIRMS

Company Name: _____	Reference Contact: _____
Telephone: _____	Fax: _____
Email: _____	

Please complete the following questionnaire below regarding services provided by the above listed firm and email to the Purchasing Department at bids@martinschools.org within 24 hours.

No.	Questions	Rating	Comments
1.	Was the Project completed within the promised time frame? If not, why?		
2.	Were change orders requested, what type, and were they granted, refused, and why?		
3.	Did the Contractor provide enough labor to maintain the schedule?		
4.	Did the Contractor provide on site supervision, and how much supervision was provided on a daily basis?		
5.	Did the Contractor move his labor to other jobs and not work on your site during the course of the work?		
6.	What types of problems did you encounter, and how were they handled by the Contractor?		
7.	Did they communicate well with staff?		
8.	Were pay requests timely, accurate, easy to read, and contain all required backup information?		
9.	Was the punchlist, and work required for substantial and full completion done efficiently? Were there any responsibility issues?		
10.	Would you consider using this firm again?		
11.	Any other comments you would like to make about the Firm		
Rating: 1=Poor 2=Fair 3=Average 4=Good 5=Excellent			

For internal use only (Staff Reviewer) _____



NON-COLLUSIVE AFFIDAVIT

STATE OF FLORIDA

COUNTY OF _____

_____ being first duly sworn, deposes and says that:

BIDDER is the _____,
(Owner, Partner, Officer, Representative or Agent)

BIDDER is fully informed respecting the preparation and contents of the attached BID and of all pertinent circumstances respecting such BID;

Such BID is genuine and is not a collusive or sham BID;

Neither the said BIDDER nor any of its officers, partners, owners, agents, representative, employees or parties in interest, including this affidavit, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other BIDDER, firm or person to submit a collusive or sham BID in connection with the Contract for which the attached BID has been submitted; or to refrain from bidding in connection with such Contract; or have in any manner, directly or indirectly, sought by agreement or collusion, or communications, or conference with any BIDDER, firm, or person to fix the price or prices in the attached BID or any other BIDDER, or to fix any overhead, profit, or cost element of the BID Price or the BID Price of any other BIDDER, or to secure through any collusion conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Contract;

The price of items quoted in the attached BID are fair and proper and are not tainted by collusion, conspiracy, connivance, or unlawful agreement on the part of the BIDDER or any other of its agents, representatives, owners, employees or parties in interest, including this affidavit.

By _____

Subscribed and sworn to before me this _____ day of _____, 20____ by _____ who
 is personally known to me or who has presented the following type of identification: _____.

SEAL

Notary Public (Signature), State of Florida

My Commission Expires: _____



DISCLOSURE OF POTENTIAL CONFLICT OF INTEREST AND CONFLICTING EMPLOYMENT OR CONTRACTUAL RELATIONSHIP

In accordance with Instructions to Bidder's, each BIDDER must disclose, in its submittal, the names of any employees who are employed by BIDDER who are also an employee of MCSB. Persons identified below may have obligations and restrictions applicable to them under Chapter 112, Florida Statutes.

Name of Bidder's Employee	MCSB Title or Position of Bidder's Employee	MCSB Department/ School of Bidder's Employee
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Check one of the following and sign:

- I hereby affirm that there are no known persons employed by BIDDER who are also an employee of MCSB.
- I hereby affirm that all known persons who are employed by BIDDER, who are also an employee of MCSB, have been identified above.

Signature

Company Name

Name, Title of Official

Business Address, City, State, Zip Code



DRUG FREE WORKPLACE CERTIFICATION

IDENTICAL TIE RFPS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids which are equal with respect to price, quantity, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, an ITB received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie ITBs will be followed if none of the tied vendors have a drug-free workplace program (Florida Statutes Section 287.087). To have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, and available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under ITB a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under ITB, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Signature

(Print or Type Name)



SWORN STATEMENT ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

- 1. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with any agency or political subdivision of any other state or with the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
- 2. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of the public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
- 3. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:
 - a. A predecessor or successor of a person convicted of a public entity crime; or
 - b. An entity under the control of any person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one controls another person. A person who knowingly enters a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
- 4. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.
- 5. Based on information and belief, the statement that I have marked below is true in relation to the entity submitting this sworn statement. (Indicate which statement applies.)

- Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.
- The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.
- The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of



Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. (Attach a copy of the final order)

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

(Signature)

STATE OF FLORIDA
COUNTY OF _____

Sworn to and subscribed before me on this ____ day of _____, 20____ by _____ who is personally known to me or who has presented the following type of identification: _____.

Signature of Notary Public, State of Florida

Notary seal (stamped in black ink)
OR
Printed, typed or stamped name of Notary and Commission Number



STATEMENT OF NO BID

Please complete and return this form prior to ITB opening date.

ITB NAME: _____

ITB NO: _____

COMPANY NAME: _____

PHONE NO: _____

We have declined to submit on this solicitation for the following reasons:

Specifications too "restrictive", i.e., geared toward one brand or manufacturer (Please explain below)

Insufficient time to respond to solicitation

We do not offer this product/service or equivalent

Our project schedule would not permit us to perform

Unable to meet specifications, please explain _____

Unable to meet requirements, please explain _____

Specifications unclear, please explain _____

Other, please specify _____

REMARKS:

WE UNDERSTAND THAT IF THE "NO BID" LETTER IS NOT EXECUTED AND RETURNED; OUR NAME MAY BE DELETED FROM THE LIST OF QUALIFIED BIDDERS FOR THE MCSB FOR FUTURE PROJECTS.

Typed Name

Title

Signature

Date



SECTION VIII
MCSD PROJECT MANUAL SPECIFICATIONS & PLAN DRAWINGS

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- AD-101 DEMOLITION SITE PLAN
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- E-203 ENLARGED ELECTRICAL PLAN
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NO SECTIONS IN THIS DIVISION

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NO SECTIONS IN THIS DIVISION



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NO SECTIONS IN THIS DIVISION

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NO SECTIONS IN THIS DIVISION

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NO SECTIONS IN THIS DIVISION

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NO SECTIONS IN THIS DIVISION

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NO SECTIONS IN THIS DIVISION

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NO SECTIONS IN THIS DIVISION

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NO SECTIONS IN THIS DIVISION

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NO SECTIONS IN THIS DIVISION

**PROJECT MANUAL
SPECIFICATIONS**



OWNER:
**MARTIN COUNTY SCHOOL
DISTRICT**

**Purchasing/Maintenance/Transportation Department
Enhanced Security Project A2**
12845 SE Dixie Highway, Stuart, Florida 34994

HJ COMM. NO: 16025.12

DATE OF ISSUE: February 2, 2022

HARVARD JOLLY, INC.
2047 VISTA PARKWAY, SUITE 100
WEST PALM BEACH, FLORIDA 33411
561-478-4457

HARVARD • JOLLY
ARCHITECTURE

PROJECT MANUAL SPECIFICATIONS

Martin County School District

Purchasing/Maintenance/Transportation Department
Enhanced Security Project A2
12845 SE Dixie Highway, Stuart, Florida 34994

HJ PROJECT. NO: 16025.12

DATE OF ISSUE: February 2, 2022

ARCHITECT:

HARVARD JOLLY ARCHITECTURE

2047 Vista Parkway, Suite 100
West Palm Beach, Florida 33411
Phone: 561-478-4457

MECHANICAL/ELECTRICAL/PLUMBING/FIRE PROTECTION ENGINEERS:

JOHNSON, LEVINSON, RAGAN, DAVILA, INC.

1450 Centrepark Blvd., Suite 350
West Palm Beach, Florida 33401
Phone: 561-689-2303

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NO SECTIONS IN THIS DIVISION		0
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NO SECTIONS IN THIS DIVISION		0
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NO SECTIONS IN THIS DIVISION		0
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NO SECTIONS IN THIS DIVISION		0
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DIVISION 33: UTILITIES

NO SECTIONS IN THIS DIVISION		0
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SECTION 01 25 13
PRODUCT SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Administrative and procedural requirements for consideration of request for substitution during the design and construction phases.
- B. Substitution Request Form.

1.2 REFERENCES

- A. Section 01 33 00 – Submittal Procedures.
- B. Section 01 42 00 – References.
- C. Section 01 45 00 – Quality Control.
- D. Section 01 78 00 – Closeout Submittals.

1.3 SUBMITTAL PROCEDURES

- A. Transmit each substitution request on company letterhead with completed Form 01 25 00 A. Form is as indicated in Para. 3.02.
 - 1. During bidding phase, substitution requests shall be directed to Project Architect.
 - 2. During construction phase substitution requests shall be directed to Contractor/CM.
- B. Substitution Form shall identify project, Contractor/CM and Architect during bidding phase plus Subcontractor or supplier during construction phase indicating Specification Section and Paragraph number of specified material and pertinent drawing and detail numbers, as appropriate.
- C. Include complete information as required in the Substitution Form. Incomplete information will result in automatic rejection of the substitution request.
- D. Apply contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information are in accordance with the requirements of the work and contract documents.
- E. Schedule submittals to expedite the project, and deliver to Architect or Contractor/CM at business address. Coordinate submission of related items.
- F. For each submittal for review, allow 15 days excluding delivery time to and from Architect or CM/Contractor.
 - 1. Identify variations from contract documents and product or system limitations, which may be detrimental to successful performance of the completed work.
 - 2. Provide space for Contractor/CM and Architect review stamps.
 - 3. When revised for resubmission, identify all changes made since previous submission.
 - 4. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
 - 5. Submittals not requested will not be recognized or processed.

1.4 SUBSTITUTION REQUESTS

- A. Requests for substitutions shall be made not later than ten (10) calendar days prior to bid date by prospective bidders, or time set by Owner for receipt of GMP (Guaranteed Maximum Price) from CM. Requests received after the above dates may not be considered.

PART 2 PRODUCTS

2.1 Not Used.

PART 3 EXECUTION

3.1 FORM EXECUTION

- A. Contractor/CM shall submit Product Substitution Request on Form 01 25 00A on following page with transmittal letter and self-addressed stamped envelope for Architect's use in returning response to substitution request.

3.2 SUBSTITUTION FORM 01 25 13A - PRODUCT SUBSTITUTION REQUEST

A. Specified Product _____

B. Sheet No./Specification Section and Paragraph _____

C. Contractor/CM has reviewed and approved proposed substitution?

Yes _____ No _____

D. Requested Product Substitution: _____

E. Does Product Meet or Exceed Specified Product Requirements? Yes ___ No ___
(If answer is no, explain.) _____

F. Does Product Substitution affect dimensions shown on Drawings? Yes ___ No ___
(If answer is no, explain.) _____

G. Reason for Requested
Substitution: _____

H. Cost Difference between Product Specified and Product Proposed:
Add \$ _____ Subtract \$ _____

I. Electrical Requirements equal to Specified Product: Yes ___ No ___ N/A ___
(If No or N/A,
explain): _____

J. Plumbing Requirements equal to Specified Product: Yes ___ No ___ N/A ___
(If No or N/A,
explain): _____

K. Mechanical Requirements equal to Specified Product: Yes ___ No ___ N/A ___
(If No or N/A,
explain): _____

L. Does the Product Substitution have any effect on other trades? Yes ___ No ___
(If yes, explain): _____

M. Contractor/CM agrees to pay for changes in building design, including engineering and
detailing costs, caused by requested product substitution. Yes ___ No ___

N. Signature of Bidder/Contractor/CM shall indicate function, appearance and quality of proposed
substitution is equivalent or superior to specified item.

O. Contractor/CM assumes responsibility for delay or claims arising from review and evaluation of
requested product substitution.

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P. Approval of proposed substitution shall have no effect on coordination and installation of work in accord with contract documents.

<u>Submitted by:</u>	<u>For Use by the Architect and Owner:</u>	
_____	<input type="checkbox"/> Received Too Late	
Contractor/CM	<input type="checkbox"/> Not Accepted	
_____	<input type="checkbox"/> Approved As Noted	
Firm	<input type="checkbox"/> Approved For Bidding Only, Final Approval Contingent Upon Address	

Submittal of Information in Accord with this Section		
_____	_____	_____
Date	Architect	Date
	_____	_____
	Owner	Date

END OF SECTION

SECTION 01 29 00
PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Procedures for preparation and submittal of Applications for Payment.
- B. Unit pricing shall be in conformance with 2007 Edition of AIA A201 General Conditions of the Contract and as amended by Owner on July 13, 2009. Copy is included in Division 1, Section 00 72 00 – General Conditions.

1.2 RELATED SECTIONS

- A. Section 01 22 00 – Unit Prices.
- B. Section 01 33 00 – Submittal Procedures.
- C. Section 01 78 00 – Closeout Submittals.

1.3 FORMAT

- A. Payment format shall in accord with AIA G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheets.
- B. Contractor/CM's AIA G702/703 equivalent forms including continuation sheets may be substituted for AIA Payment Forms if preapproved by Owner's Project Manager.

1.4 PREPARATION OF APPLICATIONS

- A. Present handwritten pre-application draft payment forms to Owner for review before submitting applications for payment.
- B. After revising draft payment forms, prepare and submit six typewritten copies or on electronic media printout Pay Application as preapproved by Owner.
- C. Execute certification by signature of authorized officer.
- D. Use data from Owner preapproved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- E. List each authorized Change Order as extension on AIA G703 - Continuation Sheet, listing Change Order number and dollar amount as for original item of Work.
- F. Prepare Application for Final Payment as specified in Section 01 78 00 – Closeout Submittals.

1.5 SUBMITTAL PROCEDURES

- A. Submit six copies of each Application for Payment.
- B. Submit an updated construction schedule with each Application for Payment.
- C. Payment Period: Submit at monthly intervals not later than the fifteenth of the month unless otherwise stipulated in the Agreement.
- D. Submit Release of Liens waivers with each Application for Payment.

1.6 SUBSTANTIATING DATA

- A. When Architect or Owner requires substantiating information, submit data justifying dollar amounts.
- B. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.
- C. Include following data with application.
 - 1. Partial release of liens from major subcontractors and vendors.
 - 2. Affidavits attesting to off-site stored products.
 - 3. Construction progress schedule, revised and corrected to reflect project status at time of payment application.

1.7 PAYMENTS

- A. Payments may be made for materials stored off-site if preapproved by Owner's Project Manager and off-site facility is insured and bonded air conditioned warehouse, and only if project site doesn't allow storage or protection for equipment and supplies.
- B. Payments will normally be made to Contractor/CM by 10th of each month, if copies are preapproved by Owner's Project Manager and received by 25th of previous month, unless otherwise stipulated in Agreement.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Project management, coordination of construction activities, interface with Owner's staff for existing facilities and project conditions related to project for new and existing facilities.
- B. Meetings for field engineering and project coordination, preconstruction, construction procedures, pay application and progress meetings, pre installation and project closeout meetings.
- C. Site mobilization, materials and equipment storage, site cleanup and demobilization.

1.2 RELATED SECTIONS

- A. Section 01 25 13 – Product Substitution Procedures.
- B. Section 01 29 00 – Payment Procedures.
- C. Section 01 33 00 – Submittal Procedures.
- D. Section 01 35 53 – Security.
- D. Section 01 42 00 – References.
- E. Section 01 45 00 – Quality Control.
- F. Section 01 66 00 – Project Storage and Handling Requirements.
- G. Section 01 78 00 – Closeout Submittals.
- H. Section 01 91 00 – Commissioning.

1.3 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating Owner's occupancy of completed portions of project or existing building on site, and items to be furnished or installed by Owner.
- B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements, supports and installation of mechanical and electrical work that is indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- E. In finished areas with exposed ceilings, piping and conduits shall either concealed or be run at right angles and be attached to underside of floor or deck above. Wiring shall not be exposed. Exposed ductwork shall be painted spiral duct.
- E. Coordinate completion and clean up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner's partial occupancy.
- F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accord with Contract Documents, to minimize disruption of Owner's activities.

- G. Owner will not consider change orders for extra work required by Contractor due to his inadequate coordination.

1.4 FIELD ENGINEERING FOR PROJECT LAYOUT

- A. Employ Land Surveyor registered in State of Florida acceptable to Owner's Project Manager.
- B. Locate and protect survey control and reference points.
- C. Control datum for survey is that established by Owner's provided survey.
- D. Verify setbacks and easements; confirm drawing dimensions and elevations.
- E. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.
- F. Submit copy of site drawing and certificate signed by Land Surveyor that elevations and locations of Work are in accord with Contract Documents.

1.5 FLOOR SLAB VERIFICATION SURVEY

- A. Separate from Field Engineering noted above, Contractor/CM shall provide topographic survey of building floor slabs on grade to indicate that finish floor elevations and slab locations are per contract documents, water management and building department requirements.
- B. Survey shall be submitted upon completion of slabs on grade. Remaining work shall not proceed until Owner's Project Manager has reviewed survey information and verified that floor slabs are constructed at proper elevation and locations.
- C. Survey shall be prepared, signed and sealed by Florida licensed surveyor, other than the surveyor noted in Para. 1.04 Field Engineering.
- D. Surveyor shall be selected from one of Owner's annual surveying vendors. List may be obtained from Owner's Project Manager.

1.6 PRECONSTRUCTION MEETING

- A. Owner's Project Manager will schedule pre construction conference after Notice to Proceed.
- B. Attendance Required: Owner, Architect, and Contractor/CM.
- C. Agenda:
 - 1. Execution of Owner-Contractor Agreement, if not executed.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
 - 5. Designation of personnel representing the parties in Contract, and Architect.
 - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders and Contract closeout procedures.
 - 7. Scheduling.
 - 8. Scheduling activities of Geotechnical Engineer.
 - 9. Issuance of Notice to Proceed.
- D. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

1.7 SITE MOBILIZATION MEETING

- A. Owner will schedule meeting at Project site prior to Contractors start of work.

- B. Attendance Required: Owner, Architect, Special Consultants, and Contractor, Contractor's Superintendent, and major Subcontractors.
- C. Agenda:
 - 1. Use of premises by Owner and Contractor.
 - 2. Owner's requirements and partial occupancy.
 - 3. Construction facilities and controls provided by Owner.
 - 4. Temporary utilities provided by Owner.
 - 5. Survey and building layout.
 - 6. Security and housekeeping procedures.
 - 7. Schedules.
 - 8. Application for payment procedures.
 - 9. Procedures for testing.
 - 10. Procedures for maintaining record documents.
 - 11. Requirements for start-up of equipment.
 - 12. Inspection and acceptance of equipment put into service during construction period.
- D. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

1.8 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of work at weekly intervals. Less frequent meetings may be requested for projects or work stages if requested in writing to the Owner's Project Manager.
- B. Make arrangements for meetings, prepare agenda with copies for participants, and preside meetings.
- C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner's Project Manager, Architect, as appropriate to agenda topics for each meeting.
- D. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review previous Work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems that impede planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Review of off-site fabrication and delivery schedules.
 - 7. Maintenance of progress schedule.
 - 8. Corrective measures to regain projected schedules.
 - 9. Planned progress schedule during succeeding work period.
 - 10. Coordination of projected progress.
 - 11. Maintenance of quality and work standards.
 - 12. Effect of proposed changes on progress schedule and coordination.
 - 13. Other business relating to work.
- E. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

1.9 PREINSTALLATION MEETINGS

- A. When required in individual specification section, convene pre-installation meeting at site prior to commencing work of section.
- B. Require attendance of parties directly affecting, or affected by, work of specific section.
- C. Notify Owner and Architect five working days in advance of meeting date.

- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of installation, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

PART 2 PRODUCTS

2.1 EQUIPMENT ELECTRICAL CHARACTERISTICS AND COMPONENTS

- A. Motors: Refer to Electrical Sections for specific motor types.
- B. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Size terminal lugs to NFPA 70, include lugs for terminal box.
- C. Cord and Plug: Provide minimum 6' cord and plug including grounding connector for connection to electric wiring system. Cord of longer length is specified in individual specification sections.

PART 3 EXECUTION

3.1 EXISTING BUILDING PROJECT PROCEDURES

- A. Materials: As specified in Product sections; match existing Products and work for patching and extending work.
- B. Employ skilled and experienced installer to perform alteration work.
- C. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- D. Remove, cut and patch Work in manner to minimize damage and to provide means of restoring Products and finishes to original or specified condition.
- E. Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes.
- F. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- G. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at natural line of division and submit recommendation to Architect for review.
- H. Where change of plane of 1/4" or more occurs, submit recommendation for providing a smooth transition to Architect for review.
- I. Patch or replace portions of existing surfaces, which are damaged, lifted, discolored, or showing other imperfections.
- J. Work that penetrates fire or smoke rated partitions or floors shall be repaired to provide original fire or smoke rating.
- K. Finish surfaces as specified in individual Product Specification Sections.

END OF SECTION

SECTION 01 32 16
CONSTRUCTION PROJECT SCHEDULE

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Preparation of preliminary Construction Schedule, Contractor's/CM/GC final master Construction Schedule, hereinafter called the Construction Schedule, Short Interval Schedules (look ahead), and monthly updates.
- B. Scope of work and project completion are as indicated. Bidders shall include with their bid, a proposed project schedule indicating each item of work in CSI numbering format showing each work division in CPM (Critical Path Method) work sequencing. Schedule shall base critical path on Owner's providing pre purchase of long lead items, and assuming that those products and services are delivered to the Contractor/CM on time for meeting proposed project schedule.

1.2 SUBMITTALS

- A. Submit schedule in accord with Section 01 33 00 – Submittal Procedures.
- B. Preliminary Project Schedule:
 - 1. Purpose of preliminary schedule is to determine Bidder's intent as to how work can be prosecuted to allow project completion in specified time frame.
 - 2. Bidder's shall comply with "The Use of CPM in Construction – A Manual for General Contractors" published by Associated General Contractors of America, Inc. Schedules shall utilize nationally recognized scheduling format such as Primavera or Microsoft Project. Software version selected shall be compatible with Owner's Microsoft Word or Office software so that schedule can be reviewed and saved in Owner's computer system.
 - 3. Schedule shall be on 11" x17" paper indicating project activities, duration, start and finish dates of each activity, float or slack time, critical path, and total number of days for project.
 - 4. Include float or slack time in Schedule. Float is defined as amount of time between earliest start date and latest start date or days between earliest end date and latest end date.
 - 5. Construction schedule shall begin based on Owner's intent to issue Notice to Proceed Letter to Contractor/CM and be completed within "x" Calendar Days from NTP. Substantial Completion is "date", with "x" calendar days to Final Completion or "date".
 - 6. Preliminary Project Schedule shall be submitted with Bid Proposal. Failure to do so will be grounds for rejection of the Bid Proposal.

1.3 COORDINATION AND PROJECT CONDITIONS

- A. Bidders are responsible for verification of existing conditions to the extent that they are observable and can be inferred by visual inspection.
- B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

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- C. Coordinate space requirements, supports and installation of mechanical and electrical work that is indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- E. In finished areas with exposed ceilings, piping and conduits shall either concealed or painted and be run at right angles, and attached to underside of floor or deck above. Wiring shall not be exposed. Exposed ductwork shall be painted.
- F. Coordinate scheduling to allow time for submittals, Owner's approval, Building Dept. review, permitting and inspections to ensure efficient and orderly sequence of installation of interdependent construction elements. Schedule shall provide for accommodating Owner's occupancy of other buildings on site, and items to be furnished or installed by Owner.
- G. Owner will not consider change orders for extra work required by Contractor due to his inadequate coordination.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Administrative and procedural requirements for processing of submittals during construction process. Submittals may include the following:
 - 1. Proposed Products Lists.
 - 2. Proposed Vendor List.
 - 3. Product Data.
 - 4. Shop Drawings.
 - 5. Samples.
 - 6. Design Data.
 - 7. Field Test Reporting.
 - 8. Quality Control Reporting.
 - 9. Certificates.
 - 10. Manufacturer's Installation, Handling and Storage Instructions.
 - 11. Manufacturer's Field Reports.
 - 12. Erection Drawings.
 - 13. Closeout Documents
 - 14. Warranties.
 - 15. Scheduling of Work.
 - 16. Construction Progress Schedule.
 - 17. Submittals Schedule.
 - 18. Survey and Layout Data.
 - 19. Construction Progress Reporting.
 - 20. Periodic Work Observation.
 - 21. Photographic Documentation.
 - 22. Purchase Order Tracking.
 - 23. Operation and Maintenance Documentation.

1.2 RELATED SECTIONS

- A. Section 01 29 00 – Payment Procedures.
- B. Section 01 31 12 – Project Coordination.
- C. Section 01 42 00 – References.
- D. Section 01 45 00 – Quality Control.
- E. Section 01 66 00 – Product Storage and Handling Requirements.
- F. Section 01 78 00 – Closeout Submittals.

1.3 SUBMITTAL PROCEDURES

- A. Submittal Procedures shall be in conformance with AIA A201 General Conditions of the Contract and as amended by Owner on July 13, 2009. Copy is included in Division 1, Section 00 72 00 – General Conditions.
- B. Transmit each submittal with AIA Form G810-2001 or Owner's Standard Transmittal form.
- C. Sequentially number each transmittal forms. Revise submittals with original number and a sequential alphabetic suffix.

- D. Identify project, Contractor/CM, subcontractor or supplier pertinent drawing and detail number, and specification section number, as appropriate.
- E. Apply Contractor/CM's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information are in accord with requirements of the work and contract documents.
- F. Schedule submittals to expedite the project and deliver to Engineer and Contractor/CM at business address. Coordinate submission of related items.
- G. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor/CM.
- H. Identify variations from contract documents and product or system limitations, which may be detrimental to successful performance of the completed work.
- I. Provide space for Contractor/CM and Engineer review stamps.
- J. When revised for resubmission, identify all changes made since previous submission.
- K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- L. Submittals not requested will not be recognized or processed.

1.4 PROPOSED PRODUCTS LIST

- A. Within 15 work days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.5 PRODUCT DATA

- A. Product Data for Review:
 - 1. Submit to Engineer for review for purpose of checking for conformance with information given and design concept expressed in Contract Documents.
 - 2. After review, provide copies and distribute per Submittal Procedures article above and for record documents purposes described in Section 01 78 00 – Closeout Submittals.
- B. Product Data for Information:
 - 1. Submittal for Engineer's knowledge as contract administrator or for Owner.
- C. Product Data for Project Close-out:
 - 1. Submit for Owner's benefit during and after project completion.
- D. Submit number of copies required by Contractor/CM plus two copies for transmittal to Engineer and two copies for transmittal to Owner's Project Manager.
- E. Mark each copy to identify applicable products, models, options, and other data.
- G. Supplement manufacturers' standard data to provide information unique to project.
- H. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- I. After review, distribute in accord with Submittal Procedures article above and provide copies for record documents described in Section 01 78 00 - Closeout Documents.

1.6 CONSTRUCTION SUBMITTALS

- A. Submit one copy of Building Permit, Site Permits, Environmental Permits, or other permits required for construction of work.
- B. Submit Payment Applications to Engineer for review for purpose of checking conformance with information given and design concept expressed in Contract Documents.

- C. Shop Drawings: Provide following information:
 - 1. Fabrication and installation Drawings and details.
 - 2. Template placement diagrams.
 - 3. Manufacturer's installation instructions.
 - 4. Product patterns and colors.
 - 5. Coordination Drawings.
 - 6. Schedules.
 - 7. Product mix formulae.
 - 8. Product design or engineering calculations.
 - 9. Other information as required by project.
 - 10. After review, produce copies and distribute per Submittal Procedures article above and for record documents purposes described in Section 01 78 00 – Closeout Submittals.
 - 11. Submit to Engineer for purpose of checking conformance with information given and design concept and Owner's Project Manager.
- D. Project Closeout Documents:
 - 1. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
 - 2. Submit number of copies required by Contractor, plus one copy for Engineer and two copies for Owner.
 - 3. Submit to Engineer for Owner's benefit during and after project completion.
 - a. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
 - b. Submit one copy and one reproducible copy required by Contractor/CM, plus one copy for Engineer and two copies for Owner.
- E. Product Samples
 - 1. Submit to Engineer for purpose of checking conformance with information given and design concept expressed in the documents.
 - 2. After review, Engineer shall submit color board to Owner's Project Manager per Submittal Procedures.
 - 3. Sample finishes and colors shall be from full range of manufactures' standard colors, textures, and patterns for Engineer's selection and preparation of color board for Owner's approval.
 - 4. After review and approval by Owner, provide duplicates and distribute per Submittal Procedures.
 - 5. Submit samples to illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 6. Include identification on each sample, with full project information.
 - a. Submit number of samples specified in specification, one of which Engineer shall retain.
 - b. Reviewed samples may be used in work, if indicated.
- F. Product Design Data and Test Reports:
 - 1. Submit to Engineer as contract administrator and for Owner's Project Manager for purpose of checking conformance with information given and completed work on project.
- G. Certificates:
 - 1. When specified, submit certification by manufacturer, installation/application subcontractor, or contractor to Engineer, in quantities specified for Product Data.
 - 2. Indicate material or Product conforms to or exceeds specified requirements.
 - 3. Submit supporting reference date, affidavits, and certifications as appropriate.
 - 4. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

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H. Manufacturer's Instructions:

1. When specified, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer for delivery to Owner in quantities specified for Product Data.
2. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
3. Refer to Section 01 45 00 – Quality Control for quality assurance requirements.

J. Manufacturer's Field Reports:

1. Submit reports to Engineer and Owner's Project Manager.
2. Submit report within 30 days of observation to Engineer.
3. Submit for information for purpose of assessing conformance with information given and design concept expressed in Documents.

K. Erection Drawings:

1. Submit drawings to Engineer and Owner's Project Manager.
2. Submit for information for purpose of assessing conformance with information given and design concept expressed in Documents.
3. Data indicating inappropriate or unacceptable work is subject to rejection by Engineer or Owner.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01 35 53
SECURITY PROCEDURES

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Development of site security program, project entry control procedures, personnel screening and identification in compliance with Florida Statute FS1012.465 – Jessica Lunsford Act for vendors, and Contractor/CM's.

1.2 RELATED SECTIONS

- A. Section 01 31 00 – Project Management and Coordination.
- B. Section 01 33 00 – Submittal Procedures.
- C. Section 01 56 00 – Temporary Barriers and Enclosures.

1.3 JESSICA LUNSFORD ACT

- A. Contractor/CM, his subcontractors, vendors and suppliers who are to be permitted access to school grounds while students are present, or have direct contact with students or have access to or control of school funds shall obtain Level 2 background screening in accord with Florida Statute FS1012.465 – Jessica Lunsford Act.
 - 1. Level 2 screening excludes personnel working on school district property where students are present who have criminal records that include sexual offender, sexual misconduct with developmentally disabled or mental health patients, terrorism, murder, kidnapping, lewd, lascivious or indecent acts or exposure, incest, child abuse or neglect.
 - 2. Persons screened as noted above with other types of criminal history may be allowed on school grounds provided under following conditions:
 - a. Contractor/CM, subcontractors, vendors and suppliers shall be under continuous direct supervision of school district employee or Level 2 screened and cleared employee as noted above.
 - b. Contractor/CM, subcontractors, vendors and suppliers may be allowed on a student occupied site if area of construction is isolated from students by continuous six foot high chain link fence separating work area and school.
 - c. Persons with current Level 2 clearance who are subsequently arrested for disqualifying offenses shall be disqualified from access to school sites and shall immediately surrender their Photo ID Badge to their employer who shall be responsible for returning badge to Martin County School District's Department of Human Resources with 48 hours of arrest or notice of arrest or criminal offense.
 - d. Persons failing to notify their employer and Martin County School District's Department of Human Resources with 48 hours of arrest will be charged with 3rd degree felony, punishable by up to five years imprisonment and \$1,000 fine.
 - e. Employers of persons having been arrested for disqualifying offenses who subsequently allows said employee to continue working on school property may also be charged with 3rd degree felony, punishable by up to five years imprisonment and \$1,000 fine.
- B. Contractor/CM, his subcontractors, vendors and suppliers working on school board sites shall be fingerprinted and obtain work badges.
 - 1. Contractor/CM, his subcontractors, vendors and suppliers have worked and obtained in other school districts must be screened to obtain new badges.

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2. Questions regarding fingerprinting or identification badge processing may be directed to District Personnel Department at (772)219-1200, Ext. 30296.
 3. Fingerprinting services are provided by private vendor through Florida Dept. of Education. DOE sponsored website will direct individuals to nearest fingerprinting location.
 4. Cost of fingerprinting is (Check with the School District) per person and shall be prepaid either by money order to (Check with the School District) or by credit card payment via Internet. Website is <http://www.flprints.com>. For information, telephone (877) 357-7456.
 5. Money orders shall be made out to 3M Cogent. Money order must be brought to appointment.
 6. Individuals shall register online prior to their appointment:
 - a. Navigate to https://www.cogentid.com/fl/index_fdoe.htm and select "register online".
 - b. For County select Martin County from pull-down box.
 - c. For CRI Literal select: FL931392Z Contractors & Vendors.
 - d. Fill out remaining information and submit.
 - e. Use Internet Explorer.
 7. Individuals being fingerprinted shall provide valid, government issued driver's license, identification card or passport.
 8. After fingerprinting and criminal background check is complete, individuals shall make appointment for photo ID's by making appointments at Martin County School District Personnel Department located in Building 20 at School District Administration Center, 500 E. Ocean Blvd., Stuart, FL 34994.
 9. Appointments for ID photo badges shall be made after completion of fingerprinting with Martin County School District Personnel Department by phone at (772) 219-1200, Ext. 30296
 10. Photo ID applicants shall have registration confirmation receipt with them when they arrive for appointment.
 11. Cost of Photo ID's is (Check with the School District). Payment may be made with company check, money order or personal check. Checks shall be made payable to Martin County School District.
- C. Non-Instructional Contractors with current Martin County School District ID Photo Badges shall update their badges to the State Uniform Badge required by Florida Statute 1012.467, effective July 1, 2014.
1. There is no cost for individuals with current Martin County School District ID Photo Badges to upgrade their badges.
 2. Badges from other individual School Districts are no longer accepted on school sites in Florida.
 3. New state wide badges are accepted in any School District regardless of where it was issued.
 4. Non-Instructional Contractors and their employees working on School sites shall apply for State-Wide Badges as noted above.
 5. Non-Instructional Contractors shall submit lists of their badged employees via email to Eileen Loreti at the Martin County School District Personnel Department at loretie@martin.k12.fl.us.

1.4 SECURITY PROGRAM

- A. Protect new work, existing facilities and grounds from damage, theft, vandalism, and unauthorized entry.
- B. Initiate security program in coordination with Owner's existing security system at time of project mobilization to ensure safety of students, faculty and visitors to the unaffected portions of the school facilities.

- C. No student contact is permitted between the Contractor's personnel and students. Any breach of this requirement will result in the immediate removal of the personnel from the job site upon direction by the Owner.
- D. Smoking is not allowed on School Board property. Any breach of this restriction will result in immediate removal of personnel from the site upon direction by Owner's Project Manager.
- E. Maintain security program throughout construction period until Owner's project acceptance.

1.5 ENTRY CONTROL

- A. Restrict entrance of persons and vehicles into Project site and existing facilities as indicated by Owner approved security plan.
 - 1. Allow entrance only to authorized persons with proper identification.
 - 2. Maintain log of workers and visitors, make available to Owner on request.
 - 3. Coordinate access of Owner's personnel to site in coordination with Owner's security forces.

1.6 PERSONNEL IDENTIFICATION

- A. Contractor/CM on-site staff, subcontractors and vendors on site shall wear identification badges at all times on site.
- B. Identification badges shall be current at time of project and shall be reverified and reissued yearly if project extends past original badge expiration date.

1.7 SUBMITTALS

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Provide list of personnel proposed to be used on project for fingerprinting and background checks (only required for existing school projects).
- C. Contractor/CM shall submit initial list of accredited persons and provide monthly updated lists to Owner.
- D. Provide security plan to Owner indicating how construction site is to be secured and separated from existing school and its operations including normal and emergency egress and exiting from the operational portion of school and for new additions and existing portion under construction.

PART 2 PRODUCTS

2.1 Not Used.

PART 3 EXECUTION

3.1 Not Used.

END OF SECTION

SECTION 01 42 00
REFERENCE STANDARDS

PART 1 GENERAL

1.1 REFERENCE STANDARDS

- A. Reference and design standards referenced in Florida Building Code and Florida Fire Prevention Code, 6th Editions are applicable.
- B. Documents listed shall be standard references currently in effect at time of project building permitting.
- C. American Society of Testing Materials (ASTM):
 - 1. See individual product specification sections for applicable ASTM standards.
- D. American National Standards Institute (ANSI)/Underwriters Laboratories (UL):
 - 1. See individual product specification sections for applicable ANSI standards.
- E. Underwriters Laboratories (UL) – Fire Resistance Directory.
- F. Warnock-Hersey – Product Directory.
- G. Building Industry Consulting Services International (BICSI):
 - 1. BICSI-568-2001: Installing Commercial Building Telecommunications Cabling.
 - 2. BICSI Telecommunications Distribution Methods Manual (TDMM).
 - 3. BICSI Telecommunications Cabling Installation Manual (TCIM).
 - 4. BICSI Outside Plant Design Reference Manual, 5th Edition.
- H. FCC (Federal Communications Commission) Rules.
- I. National Electrical Code (NEC):
 - 1. NFPA 70 National Electrical Code, 2008 Edition.
- J. National Fire Protection Association (NFPA):
 - 1. NFPA 101: Life Safety Code - National Fire Protection Association (NFPA).
 - 2. NFPA 70: National Electrical Code - National Fire Protection Association (NFPA).
- K. Occupational Health and Safety (OSHA): State and Federal Requirements.
- L. Telecommunications Industry Association (TIA)/Electronics Industry Association (EIA):
 - 1. TIA/EIA-568-B.1 and addenda: Commercial Building. Telecommunications Cabling Standard - Part 1: General Requirements.
 - 2. TIA/EIA-568-B.2 and addenda: Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted-Pair.
 - 3. TIA/EIA-568-B.2-1: Transmission Performance Specifications for 4-Pair 100 Ohm Category 6 Cabling.
 - 4. TIA/EIA-568-B.3 and addenda: Commercial Building Telecommunications Cabling Standard - Part 3: Optical Fiber Cabling and Components Standard.
 - 5. TIA/EIA-568-B.3-1: Additional Transmission Performance Specifications for 50/125 ohm Optical Fiber Cables.
 - 6. TIA/EIA-569-A and Addenda: Commercial Building Standard for Telecommunications Pathways and Spaces, CSA T530.
 - 7. TIA/EIA-606-A and Addenda: Administration Standard for Telecommunications Infrastructure of Commercial Buildings, CSA T528.
 - 8. ANSI-J-STD-607-A and Addenda: Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications, CSA T530.
 - 9. TIA/EIA-526-7 and Addenda: Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant.
 - 10. TIA/EIA-526-14A and Addenda: Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant.

11. TIA/EIA-758: Customer Owned Outside Plant Telecommunications Cabling Standard.
- M. International Electrical Code (IEC):
 1. TR3 61000-5-2 - Ed. 1.0 and amendments: Electromagnetic compatibility (EMC) - Part 5: Installation and mitigation guidelines – Section 2: Earthing and Cabling”.
 2. ISO/IEC 11801: 2000 Edition, 1.2 and amendments: Information Technology – Generic cabling for customer premises.
- N. International Standards Organization (ISO/IEC): 11801: 2000 Ed. 1.2 and amendments: Information technology - Generic cabling for customer premises.
- O. NACE (National Association of Corrosion Engineers) - Industrial Maintenance Painting.
- P. NPCA (National Paint and Coatings Association) - Guide to U.S. Government Paint Specifications.
- Q. PDCA (Painting and Decorating Contractors of America) - Painting - Architectural Specifications Manual.
- R. SSPC (Steel Structures Painting Council) - Steel Structures Painting Manual.
 1. SSPC-SP 1 – Solvent Cleaning.
 2. SSPC-SP 2 – Hand Tool Cleaning.
 3. SSPC-SP 3 – Power Tool Cleaning.
 4. SSPC-SP 13 – Nace No 6 Surface Preparation for Concrete.
- S. WDMA (Window and Door Manufacturer’s Association) I.S. 1-A-2004.

1.2 DEFINITIONS

- A. Communication Definitions:
 1. ITS: Information Transport System: Copper cabling or optical fiber for transmission of information on School District property. Transmission includes data, video, voice, fire alarm, security, access control, and other low-voltage networks. Information Transport System is not limited to School District-owned cabling, but includes copper and optical fiber, and equipment owned by outside providers carrying School District’s information. Pathways are not limited by School District’s ownership, but include those owned by third parties. Information Transport System may be referred to as “the network” within project documents.
 2. ICP: Inside Cable Plant: Part of Information Transport System running within buildings. ICP elements include workstation outlet assembly, cabling to the workstation from network rooms, backbone cabling within building, backbone cabling running between physically contiguous buildings, network racks and hardware (routers, switches, hubs, firewalls, etc.), patch panels, punch blocks, fiber distribution panels, patch cords, and cross-connect cables/wires.
 3. OCP: Outside Cable Plant: Part of Information Transport System running between buildings, from building to definable exterior point, between definable exterior points, or from non-School District source to School District building or definable exterior point. OCP includes termination punch blocks, fiber distribution panels, interior splices for outside to inside optical fiber transition, and other initial device into which outside cable attaches. OCP does not include backbone cable running between physically contiguous buildings unless cabling enters OSP pathway element (e.g. OSP conduits, maintenance holes, etc.). OCP includes underground cabling and aerial cabling.
 4. Cable: An assembly of one or more insulated conductors or optical fibers, within an enveloping sheath.
 5. DP: Dead pairs: Unused copper pairs terminating within splice case, but without being splices to outgoing cable.

6. GP: Grounding electrode: Conductor (rod, pipe or plate or group of conductors) in direct contact with earth for purpose of providing low-impedance connection to earth.
 7. GEC: Grounding electrode conductor: Conductor used to connect grounding electrode to equipment grounding conductor, or to grounded conductor of circuit at service equipment, or at source of separately derived system.
 8. Handbox: Rectangular or square underground pathway element similar to small maintenance hole, which cannot be fully entered, that allows for pulling point or splice point in power, security or communications pathway.
 9. Handhole: A round underground pathway element similar to a handbox, which cannot be fully entered, that allows for a pulling point in a pathway.
 10. Identifier: An item of information that links a specific element of the Information Transport System infrastructure with its corresponding record.
 11. Infrastructure (Information Transport System): A collection of those Information Transport System components, excluding equipment, that together provides the basic support for the distribution of all information within a building or campus.
 12. Linkage: A connection between a record and an identifier or between records.
 13. Maintenance (man) holes: Underground pathway element large enough for person to fully enter work, used to provide access to underground cable to pull, splice, and maintain.
 14. Media (Information Transport System): Wire, cable, or conductors used for Information Transport System.
 15. OB: Outlet box: Metallic or nonmetallic box used to hold Information Transport System outlets/connectors or transition devices.
 16. Outlet (Connector) (Information Transport System): Connecting device in work area on which horizontal cable or outlet cable terminates.
 17. Pathway: Facility for the placement of Information Transport System cable.
 18. Record: Collection of detailed information related to specific element of Information Transport System infrastructure.
 19. Report: Presentation of collection of information from various records.
 20. Space (Information Transport System): Area used for housing installation and termination of Information Transport System equipment and cable, e.g., equipment rooms, network rooms, work areas, and maintenance holes/handboxes/handholes.
 21. Splice: Joining of conductors in splice closure, meant to be permanent.
 22. Splice box: Box, located in pathway run, intended to house cable splice.
 23. Splice closure: Device used to protect splice.
 24. Termination position: Discrete element of termination hardware where information Transport System conductors are terminated.
 25. Work Area (work station): Building space where occupants interact with Information Transport System terminal equipment.
- B. Painting Definitions:
1. ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products for interpretation of terms used herein.

1.3 ABBREVIATIONS AND ACRONYMS

- A. Abbreviations noted in Florida Building Code, Chapter 2 are applicable.
- B. General Abbreviations:
1. AC: Above Counter/Air Conditioning.
 2. ACR: Attenuation-to-Crosstalk Ratio.
 3. ADA: Americans with Disabilities Act.

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4. AFF: Above finished floor.
5. AFG: Above finished grade.
6. ANSI: American National Standards Institute.
7. ARCH: Architect or Architectural.
8. ASTM: American Society for Testing and Materials (ASTM International).
9. AWG: American Wire Gauge.
10. BD: Building distributor (replacing main-cross connect and MDF as “building service” room identifiers).
11. BICSI®: Building Industry Consulting Service International, Inc.
12. BTU: British Thermal Unit.
13. CAT6: Category 6 cable.
14. CATV: Community Antenna Television (cable television).
15. CD: Campus distributor (replacing main-cross connect and MDF as “campus-wide service” room identifiers). Also, compact disk for storage of audio or video information.
16. CO: Communications Outlet.
17. COAX: Coaxial Cable.
18. CP: Communications Panel.
19. dB: Decibel.
20. EMS: Energy Management System or Emergency Management System.
21. EMT: Electrical metallic tubing.
22. ENT: Electrical nonmetallic tubing.
23. EDPM: Ethylene-polypropylene-diene membrane.
24. EF: Entrance Facility.
25. EIA: Electronic Industries Alliance.
26. ELFEXT: Equal Level Far-End Crosstalk.
27. EMC: Electromagnetic Compatibility.
28. EMI: Electromagnetic Interference.
29. ER: Equipment Room. Replacing “TR”
30. FMC: Flexible metallic conduit.
31. FCC: Federal Communications Commission.
32. FD: Floor distributor (replacing network room, intermediate and horizontal cross-connect, and telecommunications as “building service” room identifiers). Also, Floor Drain as part of building plumbing system.
33. FDDI: Fiber Distribution Data Interface.
34. FEXT: Far-End Crosstalk.
35. FO: Fiber Optic.
36. Freq: Frequency.
37. GE: Grounding equalizer (replacing TBBIBC).
38. Gnd: Ground.
39. HB: Handbox. Also, hose bibb for water supply part of plumbing system.
40. HC: Horizontal Cross-Connect (replaced by floor distributor “FD”).
41. HH: Handhole.
42. HVAC: Heating, Ventilation, and Air Conditioning.
43. Hz: Hertz.
44. IC: Intermediate Cross-Connect (replaced by building distributor “BD”).
45. IDC: Insulation Displacement Connectors.
46. IDF: Intermediate Distribution Frame (replaced by “BD” or “FD”).
47. IEEE: Institute of Electrical and Electronics Engineers.
48. IMC: Intermediate metal conduit.
49. IN: Inches.

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50. ISO: International Organization for Standardization.
51. ISP: Inside Cable Plant.
52. JB: Junction Box.
53. LBS: Pounds.
54. LED: Light Emitting Diode.
55. LFMC: Liquidtight flexible metal conduit.
56. LFNC: Liquidtight flexible nonmetallic conduit.
57. Mbps: Megabits per second.
58. MC: Main Cross-Connect (replaced by campus distributor “CD”).
59. MDF: Main Distribution Frame (replaced by “CD” or “BD”).
60. MER: Main Equipment Room.
61. MH: Maintenance Hole.
62. MHz: Megahertz.
63. NBR: Acrylonitrile-butadiene rubber.
64. NEC: National Electrical Code, NFPA 70.
65. NEMA: National Electrical Manufacturers Association.
66. NESC: National Electric Safety Code, C2-1997.
67. NFPA: National Fire Protection Association.
68. NIC: Not in Contract.
69. NR: Network Room.
70. #: Number.
71. OFCI: Owner Furnished Contractor Installed.
72. OFOI: Owner Furnished Owner Installed.
73. OSHA: Occupational Safety and Health Administration.
74. OCP: Outside Cable Plant.
75. OTDR: Optical Time Domain Reflectometer.
76. PR: Pair.
77. PVC: Polyvinyl Chloride.
78. RCDD®: Registered Communications Distribution Designer.
79. RFI: Radio Frequency Interference.
80. RGC or GRC: Rigid Galvanized Conduit.
81. RH: Relative Humidity.
82. RNC: Rigid nonmetallic conduit.
83. SCS: Structured Cabling System.
84. SS: Stainless Steel.
85. SM: Single Mode.
86. TIA/EIA: Telecommunications Industry Association/Electronic Industry Association.
87. TBB: Telecommunication Bonding Backbone.
88. TBBIBC: Telecommunication Bonding Backbone Interconnecting Bonding Conductor (replaced by grounding equalizer “GE”).
89. TE: Telephone Equipment (Wall Mounted Equipment Rack).
90. TEL: Telephone.
91. TGB: Telecommunications Grounding Buss bar.
92. TMGB: Telecommunications Main Grounding Buss bar.
93. TR: Telecommunications Room. (Replaced with Main-MDF or Intermediate-IDF Distribution Frame Locations).
94. TYP: Typical.
95. UL: Underwriters Laboratory.
96. UPS: Uninterruptible Power Supply.
97. UTP: Unshielded Twisted Pair.

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- 98. V: Volt.
- 99. WAO: Work Area Outlet.

1.4 UNITS OF MEASURE

- A. Weights and Measures shall be as identified by Weights and Measures Division, NIST, U. S. Department of Commerce, 100 Bureau Dr., Stop 2600, Gaithersburg, MD 20899-2600.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 45 00
QUALITY CONTROL

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Quality assurance procedures to control labor and product installation including tolerances, adherence to references and standards.
- B. Construction of mockups and field samples to set standard of quality for product installation.
- C. Independent inspecting and testing laboratory services for quality control and adherence to contract documents.
- D. Manufacturers' field services for quality control and adherence to contract documents.
- E. Work shall be in conformance with 2007 Edition of AIA A201 General Conditions of the Contract and as amended by Owner on July 13, 2009. Copy is included in Division 1, Section 00 72 00 – General Conditions.

1.2 RELATED SECTIONS

- A. Section 01 22 00 – Unit Prices.
- B. Section 01 29 00 – Payment Procedures.
- C. Section 01 31 00 – Project Management and Coordination.
- D. Section 01 33 00 – Submittal Procedures.
- E. Section 01 42 00 – References.
- F. Section 01 66 00 – Product Storage and Handling Requirements.
- G. Section 01 78 00 – Closeout Submittals.
- H. Section 01 91 00 – Commissioning.
- I. Section 23 05 93 – Testing, Adjusting and Balancing of HVAC.
- J. Section 23 08 00 – Commissioning of HVAC.

1.3 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and work to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements, supports and installation of mechanical and electrical work that is indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel or perpendicular with line of building. Conduits and piping shall be spaced neatly, consistently and uniformly when in groupings. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- E. Coordinate completion and clean up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner's partial occupancy.

- F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.
- G. Owner will not consider change orders for extra work required by Contractor/CM due to improper or untimely coordination.

1.4 FIELD ENGINEERING

- A. Employ a Land Surveyor registered in the State of Florida, acceptable to Architect and Owner for construction layout.
- B. Contractor/CM shall locate and protect survey control and reference points.
- C. Control datum for survey is that established by Owner provided survey.
- D. Verify setbacks and easements; confirm drawing dimensions and elevations.
- E. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.
- F. Upon completion of project, surveyor noted above, shall prepare and submit copy of site drawing and certificate signed by Land Surveyor that elevations and locations of Work are in accord with Contract Documents.

1.5 QUALITY ASSURANCE

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with contract documents, request clarification from Architect before proceeding, and document any instructions or directions that may invalidate warranty.
- D. Comply with specified standards as a minimum quality for work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.
- H. Schedule work so no absorbent materials are installed and no concealed areas are closed up until building is dried-in and permanent doors and windows are installed to prevent development of mold or entrapment of mold or moisture inside concealed spaces or moisture absorption into interior materials.
- I. See Section 01 31 00 – Project Management and Coordination for services of Florida licensed land surveyor to verify locations and elevation of floor slabs after floor slab placement and before continuation of construction activities.

1.6 TOLERANCES:

- A. Monitor fabrication and installation tolerance control of products to produce acceptable work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with contract documents, most stringent tolerance shall prevail.
- C. Adjust products to appropriate dimensions; position before securing products in place.

1.7 REFERENCES AND STANDARDS:

- A. Comply with Section 01 42 00 – References for reference standards, definitions, abbreviations and acronyms applicable to project.
- B. Workmanship shall comply with requirements of standards specified by product or trade association, or other consensus standards of specified products, except when applicable code requirements are more stringent.
- C. Use current reference standard(s) in effect at time of contract execution.
- D. Obtain copies of standards where required by product specification sections.
- E. Contractual relationships, duties, nor responsibilities of parties in Contract nor those of Architect shall be altered from contract documents by mention or inference otherwise in reference documents.

1.8 MOCKUPS AND FIELD STANDARDS:

- A. Comply with Section 01 43 39 – Mockups general requirements and individual product sections for specific requirements. Construct mockups as indicated for review by Architect and Owner's Project Manager.
- B. Assemble and erect specified items with required attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be basis of work quality standard for work.
- D. Where Architect accepts mockups as quality standard of work required, maintain mockups until work is complete.
- E. Upon Architect's approval mockups and work samples may be incorporated in completed work. Otherwise, remove mock-up and clear area.

1.9 TESTING SERVICES:

- A. Owner will appoint and pay for services specified for independent firm to perform testing.
- B. Independent firm will perform tests and other specified services as outlined in individual specification sections and as required by Owner.
- C. Testing and quality control may occur on or off project site.
- D. Independent firm shall submit reports to Owner and Architect and Contractor/CM, indicating observations and results of tests and compliance or non-compliance with contract documents.
- E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - a. Notify Owner, Architect and independent firm 24 hours prior to expected time for operations requiring services.
 - b. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
 - c. Testing does not relieve Contractor to perform work per contract requirements.
 - d. As directed by Architect, independent testing firm shall re-test as result of non-conformance with requirements. Contractor shall pay for re-testing cost by deducting testing charges from the Contract Sum/Price.

1.10 BUILDING INSPECTION SERVICES:

- A. Owner will employ in-house Building Official, or hire independent Building Official and Construction Inspectors as required to perform Document review and approval, and on-site building inspections in accord with Florida Building Code, Section 423 State Requirements for Educational Facilities and other applicable codes.
- B. Building Official and Inspectors will perform code interpretation, document review, project inspections, and other services specified and required in individual specification sections, and shall be paid by Owner.
- C. Inspections firm will conduct inspections and observations of work, indicate compliance or non-compliance with applicable codes and contract documents, and will submit reports to Architect, Contractor/CM and Owner.
- D. Cooperate with inspection firm; provide safe access and assistance by incidental labor as requested.
- E. Notify Owner and Architect and inspection firm 24 hours prior to expected time for operations requiring services.
- F. Inspection of work does not relieve Contractor of performing work in accord with contract requirements.

1.11 MANUFACTURERS' FIELD SERVICES:

- A. Where specified, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to the Architect 30 days in advance of required observations, the observer is subject to Owner's approval.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Comply with Section 01 33 00 – Submittal Procedures.

1.12 COMMISSIONING

- A. Comply with Section 01 91 00 – Commissioning for training of Owner's personnel in operation and maintenance of equipment identified in this Section.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 EXAMINATION:

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work, beginning new work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work.
- C. Examine and verify specific conditions described in individual specification sections. Immediately notify AE or Owner's Project Manager of conditions that would prevent meeting contractual requirements.
- D. Verify that utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION:

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance in manner approved by product manufacturer.
- C. Apply manufacturer's required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.3 CLEANING AND WASTE MANAGEMENT

- A. Comply with Section 01 74 00 – Cleaning and Waste Management.

END OF SECTION

SECTION 01 66 00
PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Packaging and transportation, delivery and receiving, product handling, storage, conditions and location, maintenance, protection, repair and replacement of products damaged while handling or in storage.

1.2 RELATED DOCUMENTS

- A. Section 01 31 00 – Project Management and Coordination.
- B. Section 01 33 00 – Submittal Procedures.
- C. Section 01 35 53 – Security Procedures.
- D. Section 01 45 00 – Quality Control.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 TRANSPORTATION AND HANDLING

- A. Packaging and Transportation:
 - 1. Supplier shall package finished products in boxes or crates to provide protection during shipment, handling and storage at site.
 - 2. Products shall be protected against exposure to outside storage against damage due to weather conditions.
 - 3. Protect products sensitive to damage against impact, abrasion, puncture and other damage during handling and transport to project.

3.2 DELIVERY AND RECEIVING

- A. Arrange deliveries of products in accord with project schedule to allow installation and project completion per approved project schedule.
- B. Prior to project commencement, Contractor's personnel shall meet with Owner's Project Manager and School staff for renovation and new construction to delineate areas for materials storage lay-down areas.
- C. Restrict access of persons to storage areas in accord with Section 01 35 33 – Security Procedures.
- D. Material deliveries to Owner occupied sites shall be coordinated with Owner's Project Manager to ensure availability of personnel and handling equipment for safe and secure unloading and storage of equipment.
- E. Deliver products in undamaged, dry condition, in original unopened containers or packaging with identifying labels intact and legible.
- F. Clearly mark partial deliveries of component parts of equipment to identify equipment and contents, to permit easy accumulation of parts, and to facilitate assembly.
- G. Upon delivery, Contractor/CM shall inspect shipments for following items:
 - 1. Products received match reviewed submittals and Contract Documents.

2. Correct quantities.
 3. Accessories and installation hardware are included.
 4. Containers and packages are intact and labels are legible.
 5. Products are adequately protected for conditions and are undamaged.
- H. Product Handling:
1. Provide equipment and personnel to handle products to prevent product damage.
 2. Handle products to avoid bending, flexing or overstressing.
 3. Lift large or heavy components by using designated lifting points in accord with manufacturers written directions.

3.3 STORAGE AND PROTECTION

- A. General Requirements:
1. Store products immediately upon delivery in accord with manufacturers written directions.
 2. Arrange for storage location to allow access, maintenance and inspection of products.
 3. Stored products shall not conflict with work conditions. construction is contiguous to or within existing school, Provide demising walls to physically separate new or renovation work from existing on-going school operations.
- B. Enclosed Storage:
1. Store products subject to damage by weather in weathertight enclosure.
 2. Maintain temperature and humidity within ranges stated in manufacturer's instructions.
 4. Provide temperature and humidity control within ranges stated in manufacturer's instructions.
 5. Store unpacked or loose products on shelves, in bins, or in neat groups of like items.
- C. Exterior Storage:
1. Provide platforms, blocking or skids to support fabricated products above ground, and sloped to allow drainage.
 2. Protect products to avoid soiling or staining.
 3. Provide product cover to prevent water or condensation on product while allowing ventilation.
 4. Store loose granular materials on clean, solid surfaces such as pavement or on rigid sheet materials to prevent mixing with foreign matter.
 5. Provide for surface drainage to prevent humidity, mold or algae growth.
- D. Maintenance of Storage:
1. Periodically inspect stored products on scheduled basis.
 2. Verify storage facilities and environmental conditions are in compliance with manufacturer's written requirements.
 3. Verify that product surfaces exposed to weather are undamaged, stolen, or have otherwise been adversely affected.
- E. Maintenance of Equipment Storage:
1. Stored mechanical and electrical equipment shall comply with manufacturer's written service instructions for each item, with notice of instructions attached to each item of equipment.
 2. Stored equipment shall be serviced on regular basis, maintaining log of services, and submitted to Architect in accord with Section 01 78 00 – Submittal Procedures as part of Project Record Documents.
- F. Storage of Owner's Salvaged Furnishings and Equipment:
1. Contractor/CM shall provide temporary storage facilities for items to be salvaged and reinstalled.

3.4 PROTECTION OF FINISHED WORK

- A. Protect finished surfaces, including doors, door jambs, soffits of openings used as passageways, through which equipment and materials are handled.
- B. Protect finished floor surfaces in traffic areas prior to allowing equipment or materials to be moved.
- C. Keep finished surfaces clean, unmarked, and suitably protected until Owner's project acceptance.

3.5 REPAIRS AND REPLACEMENTS

- A. Promptly replace or repair damaged equipment or building surfaces caused by moving equipment at no additional cost to Owner.
- B. Additional time required to repair or replace damaged equipment or building surfaces shall not be grounds for Contract time extension or Contractor's additional expense, unless Owner specifically authorizes time extension or additional costs.

END OF SECTION

SECTION 01 74 00
CLEANING AND WASTE MANAGEMENT

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Administrative and procedural requirements for waste management and cleaning during construction and final cleaning at Substantial Completion.
- B. Development and implementation of Waste Management Plan to indicate following procedures:
 - 1. Limiting amount of project waste through planning, scheduling, and project management.
 - 2. Recycling demolished structures and construction and waste materials, and reuse of recycled or salvaged materials whenever possible.
 - 3. Procedures to reduce construction noise, fumes, vibration, dust or other airborne contaminants.
 - 4. Adherence to Federal, State and local environmental and anti-pollution regulations and ordinances.
 - 5. Waste materials shall be suitably disposed off site in approved landfill sites.
 - 6. Development of contamination containment plan to include procedures for addressing volatile and hazardous materials or their waste products, cleaning materials and residue.
- C. Cleaning and Protection:
 - 1. Development of daily and periodic construction cleaning and protection of products stored on site or erected in project, and shall include sequence and frequency policy and schedule for project duration.
 - 2. Development of evacuation, fire and life safety plan, staff training procedures in handling and disposal of materials deleterious to human contact or exposure.
 - 3. Final cleaning leaving project ready for Owner's acceptance.

1.2 RELATED SECTIONS

- A. Section 01 31 00 – Project Management and Coordination.
- B. Section 01 33 00 – Submittal Procedures.
- C. Section 01 42 00 – References.
- D. Section 01 66 00 – Product Storage and Handling Requirements.
- E. Section 01 78 00 – Closeout Submittals.

1.3 SUBMITTALS

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Submit MSDS sheets for products requiring special care or handling in storage, application or cleanup.
- C. Submit Waste Management and Cleaning Plans identifying and providing operational procedures for each item noted in Scope of Work.

1.4 COORDINATION

- A. Coordinate scheduling and implementation of Waste Management and Cleaning Plans with each trade on site.

- B. Ensure enforcement to promote efficient and orderly sequence of installation of interdependent construction elements, with intent to reduce waste maximize efficient and safe work environment.
- C. Coordinate periodic and final clean up of Work of each trade in preparation for Substantial Completion and for portions of Work designated for Owner's partial occupancy.

1.5 QUALITY ASSURANCE

- A. Monitor each trade, product suppliers, product deliveries, waste generation, site conditions, and workmanship, to minimize waste and maximize recycled materials and reuse of retained materials.

PART 2 PRODUCTS

NOT USED (See individual product specifications for cleaning products recommended by manufacture.)

PART 3 EXECUTION

NOT USED (See individual product specifications for written cleaning procedures and instructions recommended by manufacture.)

END OF SECTION

SECTION 01 78 00
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.
- E. Operation and maintenance data.
- F. Spare parts and maintenance Products.
- G. Warranties and bonds.
- H. Maintenance service.
- I. Training.

1.2 RELATED SECTIONS

- A. Section 01 29 00 – Payment Procedures.
- B. Section 01 33 00 – Submittal Procedures.
- C. Section 01 91 00 – Commissioning.
- D. Section 27 60 00 – Integrated Audio System.

1.3 CLOSEOUT PROCEDURES

- A. Submit written certification that contract documents were reviewed, work inspected, and that work is complete in accord with contract documents and ready for Owner's Project Manager and AE's review.
- B. Provide submittals to AE and Owner's Project Manager that are required by building and fire authorities.
 - 1. Submit final application for payment identifying total adjusted contract sum, previous payments, and sum remaining due.
 - 2. Owner may opt to occupy all or portions of completed facilities upon substantial completion of those portions of work.
 - 3. Contractor/CM shall provide punch list to AE identifying items remaining to be completed.
 - 4. AE shall inspect project to determine completion of punch list and project compliance with Contract Documents.

1.4 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances.
- C. Clean equipment and fixtures to sanitary condition with cleaning materials per manufacturer's written recommendations.
- D. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.5 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

1.6 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of record documents, recording accurate field revisions to contract documents to include:
 - 1. Drawings/specifications and addenda.
 - 2. Change orders and other modifications to work.
 - 3. Reviewed shop drawings, product data, and samples.
 - 4. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling ready access and reference by Owner's Project Manager.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications shall be legibly marked and recorded for each product used indicating the following:
 - 1. Manufacturer's name, product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by addenda and modifications.
- F. Record drawings and shop drawings shall be legibly marked with each item recorded to indicate actual construction as follows:
 - 1. Measured depths of foundations in relation to finish first floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the work.
 - 4. Field changes of dimension and details.
 - 5. Details not on original contract drawings.
- H. Upon project completion, transfer project record drawing information to Autocad (2010 or later format) files and provide four copies of CD's to Architect for review and transmitted to Owner, prior to claim for final Application for Payment.
 - 1. Contractor/CM shall also submit two hard copies of record drawings and project manual maintained during project to Owner's Project Manager.
 - 2. Owner will be responsible for making prints from CD's and for their distribution to Owner's user groups.

1.7 OPERATION AND MAINTENANCE DATA

- A. Submit documentation as noted in individual product specifications and as noted herein.

1.8 SPARE PARTS AND MAINTENANCE PRODUCTS

- 1. Provide spare parts, maintenance, and extra products in quantities specified in specification.
- 2. Deliver to Owner; obtain receipt prior to final payment.

1.9 WARRANTIES

- A. Submit documentation as noted in individual product specifications and as noted herein.
- B. Provide duplicate notarized copies.
- C. Execute and assemble transferable warranty documents from subcontractors, suppliers, and manufacturers.
- D. Provide Table of Contents and assemble in D-side 3-ring white binders with typed title sheet of contents inside durable plastic front cover.
- E. Submit prior to final application for payment.
- F. For items of work delayed beyond date of substantial completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.10 MAINTENANCE SERVICE

- A. Furnish service and maintenance of components indicated in specification sections for one-year from date of project substantial completion.
- B. Examine, clean, adjust, and lubricate system components as required for reliable operation.
- C. Include systematic examination, adjustment, and lubrication of components repairing or replacing parts as required with parts produced by the manufacturer of the original component.
- D. Owner shall approve in writing of transfers or reassignments of maintenance service tasks.

1.11 ASBESTOS CERTIFICATION

- A. Provide notarized letter from Contractor/CM certifying that “to the best of his/her knowledge no asbestos containing building materials were used as a building material in the project”, per FS 255.40.

1.12 PROJECT CLOSE-OUT PROCEDURES

- A. Items are to be submitted to the School District’s Construction Manager’s Office once the request for final payment has been submitted.
 - 1. ____ 4 Copies: AIA Application For Payment, Signed and Sealed, Noted as Final Payment.
 - 2. ____ Consent of Surety to make final payment.
 - 3. ____ Release of Lien from all Sub-Contractors or Laborers who have filled an Intent to Lien.
 - 4. ____ Warranty/Guarantee from Construction Manager for one-year from the date of Substantial Completion.
 - 5. ____ Warranty/Guarantee from each Sub-Contractor for one-year from the date of Substantial Completion.
 - 6. ____ Copy of the approval by the Architect-Engineer and the transmittal to the end user of manuals, shop drawings, as-builds, brochures, warranties, list of sub-contractors with phone numbers, addresses and contact persons.
 - 7. ____ Verification that all applicable district personnel have been trained in the operation of their new equipment (per system: HVAC, controls, etc.)

8. ____ Executed Roof Warranty in the name of the Martin County School District.
9. ____ 4 Copies: OEF Form 209, Certificate of Final Inspection.
10. ____ 4 Copies: Completed Punch-list.
11. ____ SREF 4.2(3)(e) Architect's Certificate of Specification of Asbestos Containing Materials.
12. ____ SREF 4.2(3)(e) Contract's Certificate of Asbestos Use.
13. ____ SREF 4.2(3)(d) Threshold inspector's statement that building complies with Threshold Plan.
14. ____ 4 Copies: OEF Form 110B, Certificate of Occupancy.
15. ____ OEF Form 564 for new construction or additions to existing schools only (Return to Director's Secretary)
16. ____ Inspection Log Book

PART 2 PRODUCTS

2.1 APPROVED PRODUCTS

- A. Use only cleaning and maintenance products approved for use in Florida Educational Facilities.

PART 3 EXECUTION

- 3.1 Not used.

END OF SECTION

SECTION 01 91 00
COMMISSIONING

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Administrative and procedural requirements for commissioning facilities and facility systems.
- B. Demonstration and training.
- C. Starting systems.
- D. Demonstration and instructions.

1.2 RELATED SECTIONS

- A. Section 01 31 00 – Project Coordination.
- B. Section 01 78 00 – Closeout Documents.
- C. Section 23 05 93 – Testing, Adjusting, and Balancing HVAC.
- D. Section 23 08 00 – Commissioning of HVAC.

1.3 STARTING SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect and Owner seven days prior to startup of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.
- D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested. Execute startup under supervision of responsible Contractors' personnel in accordance with manufacturers' instructions.
- F. When specified in individual specification sections, require manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to startup, and to supervise placing equipment or system in operation.
- G. Submit written reports per section 01 78 00 - Execution and Closeout Documents that equipment or system is installed and functioning correctly.

1.4 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. Demonstration of equipment shall be performed by qualified manufacturers' representative who is knowledgeable about the Project and equipment.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.
- E. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at equipment location.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

- G. Amount of time required for instruction in each piece of equipment and system is indicated in individual equipment and system specification sections.

1.5 TESTING, ADJUSTING, AND BALANCING

- A. Contractor/CM shall employ, and pay for commissioning services other than TAB firm to perform testing, adjusting and balancing of other systems as indicated or require for fully functional systems
- B. Independent TAB firm shall perform services specified in section 23 05 93 – Testing, Adjusting, and Balancing for HVAC system(s).
- C. The Contractor/CM shall submit reports to Architect indicating observations, results of tests and compliance or non-compliance with specified requirements and with requirements of contract documents.

PART 2 PRODUCTS

2.1 Not Used.

PART 3 EXECUTION

3.1 LIST OF EQUIPMENT TO BE COMMISSIONED:

- A. Communications System
- B. Fire Alarm System
- C. Intercom System
- D. Kitchen Equipment
- E. HVAC Equipment.
- F. Gymnasium Equipment including bleachers, scoreboards, basketball backstops, sound system, playcourt surface, equipment with floor inserts
- G. Lighting Systems
- H. Stage, Auditorium, Gym and Instructional Spaces Sound Reinforcement Systems
- I. Irrigation System
- J. Fire Protection System
- K. Movable Interior Partitions
- L. Emergency Generator

3.2 EQUIPMENT COMMISSIONING REQUIREMENTS

- A. Comply with individual specification sections for equipment start-up, operation and training.

END OF SECTION

SECTION 01 91 01
COMMISSIONING OF HVAC

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Independent commissioning of heating, ventilation, and air conditioning in accord with project documents and include:
 - 1. Evaluate proposed HVAC and electrical systems design and control system documents.
 - 2. Review and document HVAC and Electrical control interface systems interface.
 - 3. Coordinate start-up of HVAC and Electrical systems.
 - 4. Coordinate and review operation, training procedures, demonstration and instructions for HVAC equipment use by Owner.
 - 5. Review, evaluate, and document HVAC equipment operation and performance.
- B. Work with TAB contractor for testing, adjusting, and balancing to ensure HVAC system performance is maximized for operational efficiency.
- C. Coordinate HVAC Commissioning scheduling and activities with GC/CM.
- D. Commissioned Systems Include:
 - 1. HVAC components and equipment.
 - 2. HVAC interaction of cooling, heating, and comfort delivery systems.
 - 3. Building Automation System (BAS): control hardware and software, sequences of operation, and integration of factory controls with BAS.
 - 4. Plumbing: Domestic hot water systems.
 - 5. Lighting Control System with interface with daylighting.

1.2 RELATED SECTIONS

- A. Section 01 31 00 – Project Coordination.
- B. Section 01 33 00 – Submittal Procedures.
- C. Section 01 42 00 – References.
- D. Section 01 45 00 – Quality Control.
- E. Section 01 78 00 – Closeout Submittals.
- F. Section 01 91 00 – Commissioning
- G. Section 23 05 93 – Testing, Adjusting and Balancing For HVAC.

1.3 REFERENCES

- A. See Section 01 42 00 – References for additional reference standards, definitions, abbreviations and acronyms.
- B. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE):
 - 1. ASHRAE Guideline 0-2005 with Amendments a, b, c & d - The Commissioning Process.
 - 2. ASHRAE Guideline 1.1-2007, The HVAC Commissioning Process.
 - 3. ASHRAE 110-95 – An Introduction to Laboratory Fume Hood Performance Testing.
- C. NEBB Whole Building Systems Commissioning of New Construction, 2009 (3rd Edition).
- D. American National Standards Institute/American Industrial Hygiene Association/American Society of Safety Engineers (ANSI/AIHA/ASSE):
 - 1. ANSI/AIHA/ASSE Z9.5-2012 – American National Standard for Laboratory Ventilation.

1.4 DEFINITIONS

A. Definition of terms used are as follows:

1. Acceptance Phase: Phase of construction after initial start-up and check-out when functional performance testing, operational training, and operating and maintenance documentation development and review occurs.
2. Basis of Design: Documentation of primary thought processes and assumptions for design decisions made to meet Owner's Project Requirements as reflected in construction documents (drawings and specifications). Basis of design describes intent of project, systems, components, conditions, and methods chosen to meet Owner's Project Requirements. Design professionals (Architect and Engineer) are responsible for interpretation of the basis of design.
3. Commissioning Provider: Independent entity, not otherwise associated with design team or Contractor/CM, who directs and coordinates day-to-day commissioning activities. Commissioning Provider does not have construction oversight or design role.
4. Commissioning Plan: Overall plan providing structure, schedule, and coordination planning for commissioning process.
5. Commissioning Team: Group responsible for accomplishing commissioning process.
6. Data Logging: Monitoring flows, currents, status, and pressures of equipment using stand-alone recording equipment, separate from control system. Additional monitoring may be provided through capabilities of control system.
7. Deferred Functional Performance Tests: Functional tests performed after date of substantial completion due to partial occupancy, equipment and seasonal testing requirements, design or other site conditions precluding testing of system or piece of equipment during normal commissioning sequence.
8. Owner's Project Requirements: Documents prepared by Owner providing explanation of concepts, criteria, and work scope critical to Owner's expectations.
9. Factory Testing: Testing of equipment at factory (or on-site) by factory personnel in Owner's representative and commissioning agent's presence.
10. Functional Performance Tests: Tests of dynamic function and operation of equipment and systems using manual (direct observation) or monitoring methods. Functional testing is dynamic testing of systems (rather than just components) under full operation. Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied modes, varying outside air temperatures, fire alarm modes, and power failure. Systems are run through control system's sequences of operation and components are verified to respond properly. Commissioning Provider develops Functional Performance Test procedures in sequential written form, coordinates, oversees and documents actual testing performed by GC/CM. Functional Performance Tests are performed after Test and Balance, pre-functional checklists and start-up is complete.
11. Indirect Indicators: Indicators of response or condition, such as reading from control system screen reporting damper to be 100% closed.
12. Manual Tests: Using hand-held instruments, immediate control system read-outs or direct observation to verify performance (contrasted to analyzing monitored data taken over time to make observations).
13. Monitoring: Recording of parameters (flow, current, status, or pressure) of equipment operation using data loggers or trending capabilities of control systems.

14. Over-written Value: Writing over sensor value in control system to determine response of system (e.g., changing outside air temperature value from 50°F to 75°F to verify economizer operation). See “Simulated Signal.
15. Owner-contracted Tests: Tests paid by Owner outside GC/CM’s contract and for which Commissioning Provider does not oversee. Tests shall not be repeated during functional testing if properly documented.
16. Phased Commissioning: Commissioning completed in phases (by floors, for example) due to size of structure or other scheduling issues, to minimize total construction time.
17. Pre-functional Checklists: Lists of items to inspect and elementary component tests to conduct to verify proper installation of equipment, provided by GC/CM to Commissioning Authority who shall review and approve scope of tests. Pre-functional checklists are primarily static inspections and procedures to prepare equipment or system for initial operation (e.g., belt tension, oil levels, labels affixed, gauges in place, sensors calibrated). Some pre-functional checklist items may entail simple testing of function of components, piece of equipment or systems. Pre-functional refers to testing to be accomplished prior to formal functional testing of installed equipment. Pre-functional checklists augment and may be combined with manufacturer’s start-up checklist. GC/CM shall execute checklists.
18. Sampling: Functional Performance Testing of fraction of total number of identical or near identical pieces of equipment. Sampling population is at discretion of commissioning firm and is subject to modification based upon sampling results (i.e. will be expanded if initial results warrant).
19. Simulated Condition: Condition created for purpose of testing response of system (e.g., blowing hair dryer on space sensor to determine response of variable volume terminal unit).
20. Simulated Signal: Disconnecting sensor and using signal generator to send amperage, resistance or pressure to transducer and control system to simulate sensor value.
21. Start-up: Initial starting or activating of dynamic equipment, including executing pre-functional checklists.
22. Test, Adjust, and Balance: Process of measuring actual flows of air and hydronic systems, adjusting flows to required values, and documenting results.
23. Trending: Monitoring of equipment performance over time, using data logging equipment or building control system.

1.5 QUALITY ASSURANCE

- A. Supervision, coordination, and documentation of commissioning process shall be responsibility of Commissioning Provider.
- B. Commissioning Provider shall become familiar with Owner's Project Requirements, Basis of Design documentation, project documents, and shall assume responsibility for overall system commissioning effort.
- C. Acceptable Commissioning Firms:
 1. OCI Associates, Inc., 181 Melody Lane, Ft. Pierce, FL 34905; Tel: 772-465-1165; Fax: 772-466-1134; Website: www.ociassociates.com
 2. Johnson, Levinson, Ragan, Davila, Inc., 1450 Centrepark Blvd., Suite 350, West Palm Beach, FL 33401; Tel: 561-689-2303; Fax: 561-689-2302; Website: www.jlrdinc.com.
 3. TLC Engineering, 874 Dixon Blvd., Cocoa, FL 32922; Tel: 321-636-0274; Fax: 321-639-8986; Website: www.tlc-eng.com.

1.6 COORDINATION:

- A. Commissioning Provider will be hired by Owner. Commissioning Provider shall direct and coordinate activities of commissioning team.
- B. Commissioning team shall consist of Commissioning Provider, Owner, GC/CM, and associated subcontractors.
- C. Scheduling: Commissioning Provider shall schedule commissioning activities of and shall coordinate schedule with GC/CM. Commissioning Provider shall generally provide not less than two (2) weeks notice to GC/CM of commissioning activities, except where retesting is required or commissioning activities have been delayed by no fault of commissioning firm.

1.7 COMMISSIONING PROCESS:

- A. Commissioning Provider shall develop and coordinate execution of commissioning plan; observe and document installation, check-out, start-up, and equipment and system testing to establish that equipment and systems are functioning in accord with project requirements, and to assist in developing correct and complete documentation of construction effort.
- B. Commissioning Provider shall not be responsible for design concept, design criteria, compliance with codes, design, construction scheduling, cost estimating, construction management, or construction supervision.
- C. Commissioning Provider may assist design team with problem-solving, or GC/CM with correction of non-conformance items or deficiencies.
- D. Commissioning Provider is not responsible for providing tools required to start, check-out and perform functional tests of equipment and systems, except for specified testing with supplemental portable data-loggers, which shall be supplied and installed by Commissioning Provider.
- E. Work Required during Construction Phase:
 - 1. Ensure compliance with construction documents, and achieve following objectives:
 - 2. Review the engineer of records basis of design as well as the project design documents and make comments pertaining to the execution of commissioning.
 - 3. Develop commissioning plan and distribute to GC/CM, Owner and Engineer.
 - 4. Coordinate commissioning activities during construction with GC/CM and ensure that commissioning activities are included in master project schedule.
 - 5. Review submittals applicable to systems being commissioned, including GC/CM proposed detailed start-up procedures, concurrent with Engineer's reviews and provide review comments to Engineer and Owner.
 - 6. Commissioning provider's review shall be for compliance with commissioning needs, and to aid in development of functional testing procedures and only secondarily to review for compliance with equipment specifications. Design professional remains responsible for interpretation of compliance with contract requirements.
 - 7. Request and review additional information as required to perform assigned commissioning tasks, including review of operations and maintenance materials, and GC/CM's start-up and check-out procedures.
 - 8. Develop specific Functional Performance Test procedures and forms to document proper operation of equipment and system.
 - 9. Submit proposed functional tests to Engineer for review and general conformance to requirements of contract documents and provide copy of proposed functional

- performance test procedures to GC/CM who shall review proposed tests for feasibility, safety, equipment and warranty protection.
10. Required performance testing includes control system trending, stand-alone data logger monitoring, or manual logging of system operation to demonstrate proper operation. Functional Performance Test forms shall include following information:
 - a. Date.
 - b. Project name.
 - c. System and equipment or component name(s).
 - d. Equipment location and identification number.
 - e. Test identification number, and reference to pre-function checklist and start-up documentation identification numbers for each piece of equipment.
 - f. Participating parties.
 - g. Reference to specification describing specific sequence of operations or parameters being tested or verified.
 - h. Formulae used in calculations.
 - i. Required pre-test field measurements.
 - j. Instructions for setting up test.
 - k. Special cautions or alarm limits.
 - l. Specific step-by-step procedures to execute test, in clear, sequential, and repeatable format.
 - m. Acceptance criteria of proper performance with provisions for clearly indicating whether or not proper performance of each part of test was achieved.
 - n. Section for comments.
 - o. Signature and date block for Commissioning Provider and participating parties.
 11. Review GC/CM start-up and pre-functional testing reports and provide on-site observation of start-up and pre-functional testing as specified herein.
 12. Review proposed testing, adjusting, and balancing execution plan for completeness and requirements of commissioning process and provide comments to GC/CM, Engineer, and Owner.
 13. Perform site visits, monthly until pre-functional testing of equipment and systems begins, and then weekly throughout Project, to review component and system installations. Concurrently, schedule and conduct commissioning planning and coordination meetings to review construction progress and to assist in resolving discrepancies or issues relating to commissioning process.
- F. Acceptance Phase: Demonstrate that performance of equipment and systems installed during construction phase meets requirements of construction documents. Notify Owner and Engineer of deficiencies in results or procedures. Commissioning activity shall achieve following objectives:
1. Coordinate, witness, and approve functional tests of equipment and systems performed by GC/CM. Review functional test reports and analyze trend logs, data logger reports, and other monitoring data to evaluate equipment and system performance.
 2. Document performance of functional testing and provide comparison to required performance, as defined by project documents.
 3. Coordinate retesting as necessary until satisfactory performance is demonstrated.
 4. Maintain master deficiency and resolution log, separate testing record log, and provide written progress reports and test results with recommended corrective actions for observed deficiencies.
 5. Compile and submit commissioning report to Owner and Engineer documenting results

- of the Start-Up, Pre-Functional Performance Testing, and Functional Performance Testing.
- 6. Review GC/CM's proposed training of Owner's operating personnel, and provide comments to Engineer and Owner.
- 7. Coordinate and attend GC/CM provided training sessions. Verify approved training has been properly completed.
- G. Warranty period: assist Owner in identifying defects in installed equipment or system operation to accomplish following objectives:
 - 1. Review equipment warranties to ensure that Owner's responsibilities are clearly defined.
 - 2. Verify that warranty items have been corrected properly.
 - 3. Coordinate and supervise required seasonal or deferred testing and deficiency corrections, as specified or required by commissioning plan.
 - 4. Return to site, approximately 10 months into warranty period and review with Owner building operation and condition of outstanding issues related to original and seasonal commissioning.
 - 5. Assist Owner in reviewing failure and repair records of equipment during warranty period and in evaluation of GC/CM's corrective actions. Identify areas that may come under warranty or under original construction contract.
 - 6. Interview Owner and identify problems or concerns regarding operating building as originally intended and shall make suggestions for improvements.
 - 7. Assist the Owner in developing reports, documents, and requests for services to remedy outstanding problems.

PART 2 PRODUCTS

- 2.1 Not Used.

PART 3 EXECUTION

3.1 REPORTING:

- A. Provide final commissioning report to Owner with following reports:
 - 1. Copies of periodic commissioning reports.
 - 2. Copies of Pre-Functional Performance Test reports.
 - 3. Copies of Functional Performance Test reports.
 - 4. Copies of the Training Report.

3.2 SYSTEMS TO BE COMMISSIONED:

- A. As defined previously herein under item 1.1, F.

3.3 START-UP, PREFUNCTIONAL CHECKLISTS, AND INITIAL CHECK-OUT:

- A. GC/CM shall be responsible for initial check-out and pre-functional testing of installed equipment and systems.
- B. Commissioning Provider shall monitor activities of parties responsible for executing required start-up, and pre-functional testing, as identified in commissioning plan.
- C. Commissioning Provider shall review GC/CM furnished documentation of start-up, initial check-out, and pre-functional test procedures for equipment and systems to ensure that there

- is written documentation that each manufacturer-recommended procedure has been completed.
- D. Observe first pre-functional test procedures for each type and size equipment to ensure that approved procedures are being followed.
 - 1. For lower-level components of equipment, (e.g., variable volume terminal units, sensors, controllers), observe sampling of pre-functional and start-up procedures.
 - 2. In no case, shall number of units witnessed be less than 20% of total number of identical or very similar units.

3.4 FUNCTIONAL PERFORMANCE TESTING:

- A. Functional Performance Testing of equipment or systems shall be conducted only after pre-functional testing and start-up has been satisfactorily completed. Schedule functional tests with GC/CM. Direct, witness, and document Functional Performance Testing of equipment and systems to be commissioned. GC/CM shall be responsible for execution of Functional Performance Tests.
- B. Functional Performance Testing shall demonstrate that each item of equipment and each system is operating according to requirements of construction documents as defined by A/E. Each item of equipment and system undergoing Functional Performance Testing shall be operated through all modes of operation where there is required system response. Verify each action required in sequences of operation has been accomplished according to requirements, or A/E shall revise sequences as deemed appropriate.
- C. Functional Performance Testing shall proceed from components to subsystems to systems. When proper performance of interacting individual systems has been achieved, interface or coordinated responses between systems shall be tested.
- D. Proper and accurate operation of control system shall be proven by functional testing and approved by Commissioning Provider before it may be used for testing, adjusting and balancing activities or to verify performance of other components or systems. If authorized by Commissioning Provider, portions of control system may be tested and approved before functional testing of the entire system is completed.
- E. Air and water balancing shall be completed and corrected as necessary before Functional Performance Testing of air-related or water-related equipment or systems.
- F. Test Methods:
 - 1. Functional Performance Testing and verification shall be achieved by manual testing (direct manipulation of equipment and observation of its response and performance) or by monitoring performance using control system's trend log capabilities.
 - 2. Functional Performance Test procedures shall specify which methods shall be used for each test. Determine which method is most appropriate for tests that do not have method specified.
 - 3. Commissioning Provider may substitute specified methods or require additional method to be executed, other than that specified, if required to demonstrate proper operation of equipment or system being tested.
 - 4. Develop Functional Performance Testing plans that define allowable sampling procedures and that specify procedures to be followed in case of observed discrepancies or failures in sample chosen for functional testing.
 - 5. AHU operation (leaving air temperature, VFD speed) shall be trend logged with VAV box and air valve flow rates, as well as space temperatures to demonstrate modulation of system components with changing loads, as well as occupied/non-occupied status and

Martin County School District
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control strategies such as optimum static pressure reset and temperature set-up/set-back.

6. Sampling: Multiple identical pieces of non-life-safety or otherwise non-critical equipment may be functionally tested using sampling strategy, as defined in functional test procedures.
 - a. Significant application differences and significant sequence of operation differences in otherwise identical equipment invalidates their common identity.
 - b. Small size or capacity difference, alone, does not constitute difference.
 - c. The following equipment may be sample tested: Reheat coils, terminal boxes, occupancy sensors, and lighting controls.
7. If 10% or 3 or more identical pieces of equipment (size alone does not constitute a difference) fail to perform to requirements of project documents (mechanically or substantively) due to manufacturing defects or application error not allowing it to meet performance specifications, identical units may be considered unacceptable by Commissioning Provider. In such case, GC/CM shall provide Commissioning Provider with the following:
 - a. Within 1 week of notification from Commissioning Provider, GC/CM or manufacturer's representative shall examine other identical units making record of findings. Findings shall be provided to Commissioning Provider within 2 weeks of original notice.
 - b. Within 2 weeks of original notification, GC/CM shall provide signed and dated, written explanation of problem, cause of failures, and proposed solution, including full equipment submittals for corrective or replacement equipment, if appropriate. Proposed solutions shall meet requirements of original installation.
 - c. Commissioning Provider shall evaluate proposed solution and submit recommendation of approval or disapproval to Owner and Engineer.
 - d. When approved, 2 examples of proposed solution shall be installed by GC/CM and Commissioning Provider shall schedule and conduct functional testing of proposed solution. Upon completion of functional testing of proposed solution, Commissioning Provider shall recommend acceptance or disapproval of proposed solution to Owner.
 - e. Upon acceptance of proposed solution by Owner, GC/CM shall replace or repair identical items and extend warranty accordingly, if original equipment warranty had begun. Replacement/repair work shall proceed with reasonable speed beginning within 2 weeks of approval of proposed solution.
8. Ensure that each Functional Performance Test is performed under conditions that simulate actual operating conditions as closely as is practically possible.
9. Simulation of operating conditions (not by overwritten value) may be allowed, at Commissioning Provider's discretion. Simulation of conditions shall be accomplished by subjecting the equipment to actual operating conditions by artificial means whenever possible.
10. Where actually achieving simulated operating condition is impractical, as determined by Commissioning Provider or as identified in Functional Performance Test procedure, use of signal generators to create simulated signal may be used to test and calibrate transducers and DDC constants instead of using sensor to act as signal generator via simulated conditions or overwritten values. Signal generators or simulators shall be provided by GC/CM.
11. Overwriting sensor values to simulate conditions, such as overwriting outside air temperature reading in control system to be different than it really is, may be allowed if approved by Commissioning Provider. Simulation of operating conditions is preferable.

12. Altering setpoints: rather than overwriting sensor values, and when simulating conditions is difficult, altering setpoints shall be used to test sequences.
13. Indirect indicators: relying on indirect indicators for responses or performance may be allowed only after the Commissioning Provider has visually and directly verified that indirect readings represent actual conditions and responses over range of test parameters.

3.5 RETESTING OF EQUIPMENT AND/OR SYSTEMS:

- A. Prior to retesting of functional performance tests found to be deficient, submit data indicating that deficient items have been completed and corrected to Commissioning Provider.
- B. After review of submitted data, if corrective measures are acceptable, Commissioning Provider shall schedule and conduct recheck.
- C. If during retesting it becomes apparent that deficient items have not been completed and corrected as indicated in data provided by GC/CM, retesting shall be stopped. Costs for commissioning team to further supervise retesting of Functional Performance Test shall be the responsibility of GC/CM.

3.6 DOCUMENTATION, NONCONFORMANCE, AND APPROVAL OF TESTS:

- A. Documentation: Witness and document results of functional tests using specific procedural forms developed for that purpose. Deficiencies or nonconformance issues shall be noted and reported with test results. Include completed test forms in final commissioning report.
- B. As Functional Performance Testing progresses and deficiencies are identified, discuss issues and attempt to resolve discrepancies with GC/CM.
- C. Approval: Note each satisfactorily demonstrated function on functional test form. Formal approval of functional tests shall be made after review of test reports by Commissioning Provider and Owner. Recommend acceptance of each test to the Owner using standard form. Owner shall give final approval on each test using same form, providing signed copy to Commissioning Provider and GC/CM.

3.7 DEFERRED TESTING:

- A. Deferred testing: If required pre-functional or functional test cannot be completed as scheduled, execution of checklists and functional testing may be delayed upon approval of Commissioning Provider and Owner. Deferred tests shall be conducted in same manner as seasonal tests as soon as possible.
- B. Schedule and coordinate any required seasonal testing, tests delayed until weather or other conditions are suitable for demonstration of equipment or system's performance. Seasonal testing shall be executed, documented, and deficiencies corrected as specified herein for functional testing. Adjustments or corrections to operations and maintenance manuals and record documents due to test results of shall be made before seasonal testing process is considered complete. Schedule deferred testing with GC/CM and Owner.

3.8 OPERATION AND MAINTENANCE MANUALS:

- A. Prior to beginning specified training programs, review draft operations and maintenance manuals, equipment documentation, and as-installed drawings for systems that were commissioned and verify compliance with documents. Communicate deficiencies in documents to Owner and Contractor. When identified deficiencies have been corrected, recommend approval and acceptance of operations and maintenance manuals to Owner. Review equipment warranties and verify that requirements needed to keep warranty valid are clearly identified.
- B. Ensure that Owner's Project Requirements, basis of design, are included in the first section of operations and maintenance manuals. Narrative sections shall be updated by responsible parties to record status.

END OF SECTION

SECTION 02 41 13
SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SECTION INCLUDES

- A. Provide labor, materials, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
 - 1. Required demolition of designated existing elements
 - 2. Salvage of designated items

1.3 REFERENCES

- A. Comply with NFPA 1 – Chapter 29 and NFPA 241 Standard for Safeguarding Construction Alteration and Demolition Operation 2000 Edition
- B. Florida Building Code – FBC

1.4 NOTIFICATION OF OWNERS OF UTILITY LINES AND EQUIPMENT

- A. Notify the Owner or local authority owning any conduits, wires, pipes, or equipment affected by demolition work.
- B. Arrange for removal or relocation of affected items and pay fees or costs in conjunction with removal or relocation, except as otherwise noted.

1.5 PROTECTION

- A. Prior to starting any work on site, provide a safety plan as outlined in Section 423 FBC to the Building Department for approval.
- B. Coordinate the implementation of the safety plan with the Building Department, Campus Police, School Representative, and Program Management.
- C. Prior to starting demolition operations, provide necessary protection of existing spaces and items to remain.
- D. Owner may be continuously occupying areas of the building immediately adjacent to areas of selective demolition. If Owner continues to occupy the facility comply with the following:
 - 1. Conduct demolition work in a manner that will minimize need for disruption of the Owners normal operations.
 - 2. Provide protective measures as required to provide free and safe passage of Owner's personnel and public to and from occupied portions of the facilities.
 - 3. Provide minimum of 72 hours advance notice to Owner of demolition activities that will impact Owners normal operations.
 - a. Obtain specific approval from Owner for impact.
- E. Owner assumes no responsibility for actual condition of items to be demolished.
 - 1. Owner will maintain conditions at time of commencement of contract insofar as practical.

- F. Protect any exposed existing finish work that is to remain during demolition operations.
- G. Erect and maintain dust proof partitions, closures, and ventilator system as required preventing the spread of dust or fumes to occupied portions of the building.
 - 1. Take whatever precautions necessary to minimize impact on occupied areas.

1.6 REGULATORY REQUIREMENTS

- A. Conform to applicable codes for demolition of structures, safety of adjacent structures, dust control, runoff, and erosion control, and disposal of demolished materials.
- B. Obtain required permits from authorities having jurisdiction.
- C. Notify affected utility companies before starting work and comply with their requirements.
- D. Do not close or obstruct roadways, sidewalks, and hydrants, without permits.
- E. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.
 - 1. Contact the Architect and Owner immediately.
- F. Test soils around buried tanks for contamination.
- G. No demolition will occur during school hours without the written permission of the Owner.

1.7 EXPLOSIVES

- A. The use of explosives is strictly prohibited.

PART 2 PRODUCTS - (Not applicable)

PART 3 EXECUTION

3.1 PREPARATION

- A. Verify the proper disconnection and capping of all abandoned utilities.
- B. Verify that required barricades and other protective measures are in place.
- C. Provide necessary shoring, bracing, and other precautions required for proper support of existing structure during cutting and demolition operations.
- D. Photograph existing conditions of structure, surfaces, equipment and surrounding spaces that could be misconstrued as damage resulting from selective demolition work; submit photographs and written report of existing damage to Architect prior to starting work.
 - 1. Contractor shall repair damage caused to existing facilities at no cost to Owner unless they can provide documentation is indicating pre-existing damage.

3.2 DEMOLITION OPERATIONS

- A. Cut and remove elements and equipment as designated on Drawings.
 - 1. Remove elements in their entirety unless otherwise indicated.
- B. Execute demolition in a careful and orderly manner with least possible disturbance or damage to adjoining surfaces and structure.
- C. Exercise extreme caution in cutting and demolition of portions of existing structure.
 - 1. Obtain approval of Architect prior to cutting or removing structural members for any reason.
- D. Avoid excessive vibrations in demolition procedures that may transmit through existing structure and finish materials.

- E. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning assessment, removal, handling, and protection against exposure or environmental pollution and immediately contact the District's ECO.

3.3 DISPOSAL

- A. Materials, equipment, and debris resulting from demolition operations shall become property of Contractor.
 - 1. Remove demolition debris at least once each day in accordance with applicable City, State, and Federal Laws.
- B. Cover debris in trucks with approved netting to prevent spillage during transportation.
- C. Do not store except in approved containers or burn materials on site.
 - 1. Remove combustible waste materials in a manner approved by local Fire Department.
 - 2. Remove, handle, and dispose of any hazardous waste and debris in accordance with applicable City, State, and Federal Laws.
- D. Transport demolition debris to off-site disposal area and legally dispose of debris.
- E. Use street routes specifically designated by City for hauling debris.
- F. When possible dispose of material to recycling centers.

3.4 CLEANING AND REPAIR

- A. Leave building broom clean and free of debris, ready to receive new work.
- B. Repair demolition performed in excess of that required.
 - 1. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition.

END OF SECTION

SECTION 08 71 00
DOOR HARDWARE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications, and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SECTION INCLUDES

- A. Provide labor, material, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
 - 1. Hardware for wood and hollow steel doors.
 - 2. Lock Cylinders for gates, folding partitions, wire cages and doors.
 - 3. Thresholds.
 - 4. Gaskets.
 - 5. Screws, bolts, expansion shields and related prep work.
 - 6. Hardware layout templates.
 - 7. Keys key cabinet and Knox Box.

1.3 RELATED WORK

- A. Section 01 25 13 – Product Substitution Procedures.
- B. Section 01 31 00 – Project Coordination.
- C. Section 01 33 00 – Submittal Procedures.
- D. Section 01 42 00 – References.
- E. Section 01 45 00 – Quality Control.
- F. Section 01 74 00 – Cleaning and Waste Management.
- G. Section 01 78 00 – Closeout Submittals.
- H. Section 08 11 13 – Hollow Metal Doors and Frames.
- I. Section 08 14 29 – Prefinished Wood Doors.
- J. Section 08 41 00 – Entrances and Storefronts.

1.4 REFERENCES

- A. See Section 01 42 00 – References for additional reference standards, abbreviations, definitions, and acronyms.
- B. ANSI A117.1 – Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
- C. ANSI/NFPA 80 – Fire Doors and Windows.
- D. AWI – Architectural Woodwork Institute.
- E. BHMA – Builders' Hardware Manufacturers Association.
- F. DHI – Door and Hardware Institute.
- G. Florida Fire Prevention Code.
- H. NAAMM – National Association of Architectural Metal Manufacturers.
- I. NFPA 101 – Life Safety Code, 2008 Edition.
- J. SDI – Steel Door Institute.

K. Florida Building Code (FBC), 5th Edition.

1.5 COORDINATION

A. Coordinate hardware installation with other affected trades in accord with Section 01 31 00 – Project Coordination.

1.6 QUALITY ASSURANCE

- A. Manufacturers: Company shall specialize in manufacturing door hardware with five years continuous experience.
- B. Hardware Supplier: Company shall specialize in supplying institutional door hardware with five years continuous documented experience, approved by manufacturer.
- C. Hardware Supplier Personnel: Employ Architectural Hardware Consultant (AHC) on project.

1.7 REGULATORY REQUIREMENTS

- A. Conform to Florida Building Code for requirements applicable to fire rated doors, frames, and accessibility for physically disabled.
- B. Conform to Florida Fire Prevention Code and applicable sections of NFPA 101.

1.8 CERTIFICATIONS

- A. Architectural Hardware Consultant shall inspect complete installation and certify that hardware and installation has been furnished and installed in accord with manufacturer's printed instructions and as specified.
- B. Provide two copies of certifications to Architect.

1.9 SUBMITTALS

- A. Submit schedules, samples, parts lists, templates, installation instructions and product data per Section 01 33 00 – Submittals.
- B. Submittals shall identify each door and each set number following numbering system noted on Drawings.
- C. Manufacturing order shall not be placed until hardware schedule has been submitted and reviewed by Architect.
- D. Furnish templates to facilitate work schedule.
- E. Indicate locations and mounting heights of each type of hardware.
- F. Submit samples of hinge, latch set, exit device, door closer, thresholds, illustrating style, color, and finish.
- G. Project samples may be incorporated in Work.
- H. Submit manufacturer, supplier, fabricator, and installer's qualifications in accord with Section 01 33 00 – Submittal Procedures.

1.10 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data in accord with Section 01 78 00 – Closeout Submittals.
- B. Include data on operating hardware, and inspection procedures related to preventative maintenance.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and protect products in original packaging to site in accord with Section 01 66 00 – Project Storage and Handling Requirements.
- B. Hardware Packaging
 - 1. Items shall be individually labeled and identified with door opening code and hardware group to match hardware schedule.
 - 2. Each item shall identify door location by number identified on Door Schedule.
- C. Hardware manufacturers shall deliver via security shipping following items to District Maintenance Dept., 2485 SE Dixie Hwy., Stuart, FL 34996:
 - 1. Two copies of factory key biting schedule.
 - 2. Permanent building keys and construction key voiding devices.
- D. Protect hardware from theft by cataloging and storing in secured area.

1.12 WARRANTY

- A. Provide five-year warranty period in accord with Section 01 78 00 – Closeout Submittals for locksets, latch sets, exit devices hinges and items listed in the hardware schedule excluding overhead door closers.
- B. Provide ten-year warranty period in accord with Section 01 78 00 – Closeout Submittals for overhead door closers.

1.13 MAINTENANCE MATERIALS

- A. Provide special wrenches and tools applicable to different or special hardware component.
- B. Provide maintenance tools and accessories supplied by hardware component manufacturer.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Manufacturers not listed may submit requests for substitution except as noted in accord with Section 01 25 13 – Product Substitution Procedures.
- B. Obtain each kind of hardware from one manufacturer.
- C. Acceptable products and manufacturers are listed below:
 - 1. Hinges: Ives, Hager, Stanley, Bommer.
 - 2. Locks and Latches: Best Access (No Substitution Permitted).
 - 3. Cylinders, Keys, Keying: Corbin/Russwin (No Substitution Permitted).
 - 4. Exit Devices: Von Duprin (No Substitution Permitted).
 - 5. Removable Mullions: Von Duprin (No Substitution Permitted).
 - 6. Door Closers: LCN (No Substitution Permitted).
 - 7. Overhead Stops/holders: Glen Johnson, Rixon.
 - 8. Wall/Floor Stops/Flush Bolts: Ives, Rockwood, Glen Johnson.
 - 9. Kick Plates: Ives, Rockwood, Quality.
 - 10. Thresholds/Weatherstripping: National Guard, Zero, Pemko.
 - 11. Silencers: Ives, Rockwood, Quality, Glen Johnson.
 - 12. Push/Pulls: Quality, Rockwood.
 - 13. Key Cabinet: Lund, Key Control, Telkey.

2.2 HARDWARE FINISH

- A. Hardware shall have the following finishes:
 - 1. Exterior Hinges: Stainless Steel (32D).
 - 2. Interior Hinges/Locks/Exit Devices/Overhead Holders: Satin Chrome (26D).
 - 3. Door Closers: Aluminum.
 - 4. Flat Goods: Stainless Steel (32D) or Satin Chrome (26D).
 - 5. Thresholds: Mill Finish Aluminum.

2.3 HINGES AND PIVOTS

- A. Exterior butts shall be stainless steel (32D). Butts on all out-swinging doors shall be furnished with non-removable pins (NRP). Size: 4½" wide x 4½" high, for exterior doors up to 42" wide and heavy weight 4½" wide x 4½" high hinges for doors over 42" wide.
- B. Interior butts shall be steel, standard weight 4½" wide x 4½" high hinges doors up to 42" wide and heavy weight 4½" wide x 4½" high hinges for doors over 42" wide.
- C. Doors less than 5'-0" high shall have two (2) butts. Furnish one (1) additional butt for each 2'-6" of height or fraction thereof.

2.4 KEYING

- A. Pre-Order Meeting: Hardware supplier shall meet with District's Maintenance Lock Dept. Representative to establish keying order before lock order is placed.
- B. Locks shall be construction master keyed using split key method keyed to School District's restricted keyway.
- C. Hardware supplier shall meet with District's Maintenance Lock Dept. Representative will establish final count of locks and cylinders, and transmit release order to Best Access Systems Lock Company for production in amounts established with Hardware Supplier.
- D. Construction keys in following quantities:
 - 1. 12 master keys
- E. Supply permanent keys in following quantities:
 - 1. Six keys for each lock with maximum of 12 keys of keyed alike sets.
 - 2. Five master keys for each building or area grouping. Key groups include:
 - a. Auditorium/Multipurpose/Stage (including adjacent support spaces).
 - b. Food Service (including Kitchen and adjacent support spaces).
 - c. Media Center (including adjacent support spaces).
 - d. Administrative Offices (including adjacent support spaces).
 - e. Classrooms, Resource Rooms and Labs (including adjacent storage area) subdivided into subgroups by floor level or building(s).
 - f. Mechanical/Electrical Rooms.
 - g. Custodial/Receiving Areas.
 - 3. Grand master keys shall be supplied based on size of facility as follows:
 - a. Five (5) Grandmaster keys for Elementary Schools and Ancillary Projects.
 - b. Ten (10) Grandmaster Keys for Middle Schools.
 - c. Twenty (20) Grandmaster keys for High Schools.
 - 4. Keys shall be stamped "DO NOT DUPLICATE".
- F. Key Function
 - 1. Supply locksets with following key functions:

Location	Function
a. Passage	N

- b. Privacy L
- c. Classroom/Office R
- d. Storage/Mechanical Rm D
- e. Electronic Lever Lockset DEL

2.5 KEY CABINETS

- A. Key Cabinet: Lund 1203 with pin tumbler lock.
- B. Cabinet Size: Size for project keys plus 10% spare capacity.
 - 1. Horizontal metal strips for key hook labeling with clear plastic strip cover over labels.
 - 2. Finish: Baked enamel finish, gray color.
- C. Attach key legend in key cabinet with 5-way cross-reference system indicating keyset number, FISH Room number, key code number, hook number and key description.

2.6 KEY VAULT

- A. Recessed Key Vault: Knox Company, Series 4400 Know-Vault, Model 4400-R.
- B. Key Vault shall be keyed to Owner's key system and will be Owner provided.
- C. Manufacturer: Knox Company. Key box shall meet criteria of fire department having jurisdiction at project location.

2.7 CLOSER/MAGNETIC HOLD OPEN SYSTEM

- A. LCN, Series No: 4041.
- B. Furnish closer/electromagnet compete with required accessories necessary for complete working system.
- C. Furnish two-year warranty.

2.8 LOCKSETS

- A. Lever Lock: Best Access Lock Company, heavy duty cylindrical type, Best 93K Series, Lever Design 15D.
- B. Electronic Lever Lock: Best Access Lock Company, heavy duty cylindrical type, Best 93KW7DEU, Lever Design 15D.

2.9 EXIT DEVICES

- A. Von Duprin 98 Series in types and functions listed.
- B. Devices shall be listed under "Panic Hardware" in accident equipment list of Underwriter Laboratories. Fire ratings shall be attached where indicated per UL requirements.
- C. Exit devices shall be tested per ANSI/BHMA A156.3 by BHMA certified testing laboratory. Provide written certification of 1,000,000 cycle testing per Section 01 33 00 – Submittals.
- D. Supply locksets with following key functions:

Location	Function
1. Non Fire Rated	19R NLP, 19R DT, or 19R BE with 560 strike as required.
2. Fire Rated	F19R SE or F19R BE with 570 strike as required.
3. Non Fire Rated (Pairs)	19R NLP, 19R DT, or 19R BE with 570 strike as required.

- 4. Fire Rated (Pairs) F19R SE or F19R BE with 570 strike and F4023 mullion as required.
- 5. Fire Rated (Electronic) ELX981-F X 992L X 06 X 26D.
- 6. Non-fire Rated (Electronic) SD ELL X 98NL X 990NL X 06 X 26D.
- 7. Power Supply PS873B X 4TD
- E. Electrical Power Transfer: EPT-10 X SP28.
- F. Surface strikes shall be roller type with plate underneath to prevent movement and dead-latching feature to prevent latchbolt tampering.

2.10 DOOR CLOSERS

- A. Door closers shall be LCN 4040/4041 Series with non-ferrous covers, forged steel arms, separate valves for adjusting backcheck closing and latching cycles and adjustable spring to provide up to 50% increase in spring power.
- B. Furnish closers with parallel arm mounted on door openings into egress spaces, mounted to permit 180 degree door swing where wall conditions permit, and have non-hold open arms unless otherwise noted.
- C. Door closer cylinders shall be high strength cast iron construction.
- D. Door closers shall be tested in accord with ANSI/BHMA A156.4 by BHMA certified testing laboratory and attest in writing that closers have successfully completed one million cycles.
- E. Door closers shall utilize temperature stable fluid capable of withstanding temperature ranges of 120° F (49°C) to -30°F (-34°C), without requiring seasonal adjustment of closer speed to properly close door.
- F. Closers for fire rated doors shall be provided with temperature stabilizing fluid complying with UCB 7-2 (1997) and UL 10C.
- G. Door closers shall incorporate tamper resistant non-critical screw valves of V-slot design to reduce clogging from particles within closer.
- H. Closers shall have separate and independent screw valve adjustments for latch speed, general speed, and hydraulic backcheck.
- I. Backcheck shall be located to effectively slow swing of door at minimum of 10 degrees in advance of dead stop location to protect door frame and hardware from damage.

2.11 DOOR TRIM

- A. Push/pull plates, armor plates, and kick plates shall be .050 gage stainless steel with US32D finish.
- B. Plates shall be two (2") less than door width with beveled edges, sized as follows:
 - 1. Push and pull plates shall be 4" wide x 16" high mounted 42" from door bottom.
 - 2. Armor plates shall be 36" high less than door width mounted 2" from door bottom.
 - 3. Kick plates 10" high x 2" less than door width mounted 2" from door bottom.

2.12 DOOR STOPS

- A. Door stops shall be furnished for doors to prevent door and hardware damage. Wall bumpers are preferred. Provide floor stops where wall bumpers are not practical. Where neither wall nor floor stops are practical, use surface mounted overhead stops as follows:
 - 1. Wall Stops: Ives WS407CVX Series.
 - 2. Floor Stops: Ives FS436 or FS438.
 - 3. Overhead Stops: Glynn Johnson 450 Series (Interior) and 900 Series (Exterior).

2.13 THRESHOLDS, WEATHERSTRIPPING AND SEALS

- A. Thresholds and weatherstripping shall be as listed in Hardware Schedule.

2.14 DOOR SILENCERS

- A. Door Silencers: Ives SR64 Two (2) per door pair and three (3) per single door frame.

2.15 AUTOMATIC FLUSH BOLTS, SURFACE BOLTS AND COORDINATORS

A. Door Bolts:

1. Manufacturer; H. B. Ives.
 - a. Non Fire-rated: 454-f26D 8".
 - b. Fire-rated: 456-B26D.
2. Manufacturer: Glynn Johnson:
 - a. Non Fire-rated: 1631 or 1632.
 - b. Fire-rated: FB7 or FB8.
3. Manufacturer; DCI.
 - a. Non Fire-rated: 1008-US26D.
 - b. Fire-rated: 842-US26D.

B. Coordinators:

1. Manufacturer: Monarch, B-1277 with B-1278 opening bar.
2. Manufacturer: H. B. Ives, 469-B26D with 478 carry bar.
3. Manufacturer: DCI, 500 with carry bar.

2.16 OVERHEAD RAIN DRIP

- A. Rain Drip: Pemko 346PW at exterior HM Steel door locations or as scheduled herein.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.
- B. Beginning of installation shall indicate installer's acceptance of existing conditions.

3.2 INSTALLATION

- A. Install hardware in accord with manufacturer's instructions and requirements of DHI.
- B. Use templates provided by hardware item manufacturer.
- C. Mounting heights for hardware from finished floor to center line of hardware item:
 1. Locksets: 38".
 2. Push/Pulls: 42".
 3. Dead Locks: 48".
 4. Exit Devices: 40".
- D. Conform to of Florida Bldg. Code: Accessibility, 7th Edition.
- E. Set door thresholds in full bed of butyl rubber.

3.3 ADJUST AND CLEAN

- A. Adjust and check operation of each item of hardware and door, to ensure proper function of every item.
- B. Replace items that cannot be adjusted to operate freely and smoothly.
- C. Final adjustment shall be made after ventilating systems are in operation.
- D. Clean hardware and adjacent surfaces after hardware installation.
- E. Instruct Owner's personnel in adjustment and maintenance of hardware and hardware finishes.

3.4 PROTECTION

- A. Protect installed hardware from damage.
- B. Replace damaged hardware.

3.5 HARDWARE SCHEDULE

- A. Attached Schedule is furnished for guidance in preparing Bidder's cost proposal and should not be considered as totally inclusive.
- B. Bidders shall use drawings to prepare hardware quantities. Variations between this schedule and drawings shall be communicated to Architect for resolution.
- C. Quantities listed are for each pair of doors or for each single door.
- D. Hardware Schedule was prepared by:

Allegion, PLC
3451 Technological Ave, Suite 7
Orlando FL 32817
Ph: 407-571-2000
Fax 407-571-2006

- E. Index of Manufacturers:
 - 1. Corbin/Ruswin: NGP.
 - 2. Glynn-Johnson: BLY.
 - 3. Hager: HAG.
 - 4. Ives: IVE.
 - 5. LCN Closers: LCN.
 - 6. Best: BES.
 - 7. Von Durprin: VON.
 - 8. Pemko: PEM
 - 9. B/O: Supplied by other trades.
- F. Hardware Group Schedules

3.6 HARDWARE SCHEDULE

A. Please see drawings.

3.7 HARDWARE INDEX

A. Please see drawings.

END OF SECTION

SECTION 09 91 13 – EXTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications, and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SECTION INCLUDES

- A. Provide labor, material, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
 - 1. Exterior paint and coating systems.

1.3 REFERENCES

- A. ASTM D16 – Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products
- B. ASTM D3359 – Standard Test Methods for Measuring Adhesion by Tape Test
- C. ASTM D4442-92 – Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood Base Materials
- D. EPA – Method 24
- E. GS-11, GC-03
- F. NACE International (National Association of Corrosion Engineers) – Industrial Maintenance Painting
- G. NPCA (National Paint and Coatings Association) – Guide to U.S. Government Paint Specifications
- H. Paint – Certified Product List - Florida Department of Agriculture and Consumer Services
- I. PDCA (Painting and Decorating Contractors of America) – Architectural Painting Specifications Manual
- J. PDCA Standard P1-04 Touchup Painting and Damage Repair; Financial Responsibility
- K. PDCA Standard P5-04 Benchmark Sample Procedures for Paint and other Decorative Coating System
- L. SSPC (Steel Structures Painting Council) – Steel Structures Painting Manual
- M. SSPC-SP 1 – Solvent Cleaning
- N. Modern Guide to Paint Specifications (current edition) – Standard Type 1

1.4 DEFINITIONS

- A. Conform to ASTM D16 for interpretation of terms used in this section.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product:

1. Product characteristics
2. Surface preparation instructions and recommendations
3. Primer requirements and finish specifications
4. Storage and handling requirements
5. Application methods
6. Cautions and VOC levels, certification from manufacturer that products comply with local regulations controlling volatile organic compounds (VOC's).
7. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
8. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

B. Samples:

1. Submit a complete set of color chips representing the full range of manufacturer's color samples available.
2. Submit two 9" x 9" samples illustrating selected colors and textures for each type.

1.6 INFORMATION SUBMITTALS

A. Closeout Documents:

1. Coating Maintenance Manual: Upon conclusion of the project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual. Manual shall include an Area Summary with finish schedule designating where each product/color/finish was used. It shall also include care and cleaning instructions, touch up procedures, and a Product Data Sheet for each product used.

1.7 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. and at exterior inside and outside corner.
 - b. Other Items: Architect will designate items or areas required.
2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum 5-years documented experience.
- B. Applicator: Company specializing in performing the work of this section with minimum 5-years documented experience.

1.9 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame and smoke rating requirements for finishes.
- B. Painting manufacturer and Contractor shall conform to Federal Rules and Regulations, Vol. 63, No. 176, September 11, 1998, State and local VOC (Volatile Organic Compound) Regulations in area where Project is located. Notify Architect in writing if variations to Specifications herein are required.
 1. VOC content shall be a maximum 350 gm/liter, unless noted otherwise
- C. VOC Content: Determine VOC (Volatile Organic Compound) content of solvent borne and waterborne paints and related coatings in accordance with EPA Method 24 or ASTM D3960.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.
- B. Storage:
 1. Store paint materials in a properly ventilated area at the temperature range r required by the manufacturer'.
 2. Store and dispose of solvent-based materials and materials used with solvent-based materials in accordance with manufacturers and other regulating authorities having jurisdiction.

1.11 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1.12 MAINTENANCE MATERIAL

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint: 5 percent, but not less than 1 gal. of each material and color applied.

1.13 WARRANTY

- A. Warranty: Manufacturer shall warrant the product against defects in materials or workmanship and agrees to repair or replace components that fail within specified warranty period. The warranty period shall commence at the time of substantial completion and extend for a period of Five (5) years.
- B. Special Warranty: Construction Manager shall provide a letter of warranty stipulating that any paint system failure including but not limited to peeling, cracking, premature or uneven fading and effervescing will be repaired within 30 days of notification by the owner at no additional cost to the Owner and shall extend for a period of 3 years from substantial completion.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer shall be one of the following however products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product and acceptance is provided by the Architect in writing prior to bidding.
 - 1. Benjamin Moore & Co.
 - 2. PPG Industries
 - 3. Pratt & Lambert
 - 4. Sherwin Williams
- B. Single Source: Provide primers and undercoat paint produced by the same manufacturer as the finish coat.

2.2 COMPATIBILITY

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists.
- B. Paint materials and equipment shall be compatible in use; finish coats shall be compatible with prime coats; prime coats shall be compatible with the surface to be coated; tools and equipment shall be compatible with the coating to be applied.
 - 1. Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristic of finish materials to ensure use of compatible primers.
 - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. Thinners, when used, shall be only those thinners recommended for that purpose by the manufacturer of the material to be thinned.
- D. The term "paint," as used herein, includes enamels, paints, sealers, stains, fillers, emulsions, and other coatings, whether used as prime, intermediate, or finish coats.

2.3 ACCEPTANCE OF SPECIFICATION

- A. By submitting a proposal, the Contractor has reviewed the bidding documents with the painting subcontractor and accepts the Specifications as sufficient to produce approved painting results. If the painting subcontractor contends that the materials or number of coats specified will not produce satisfactory results, he shall so notify the Architect directly or indirectly through a Bidding Contractor 14 days prior to receipt of bids for proper action.
- B. The type of material to be used and the number of coats to be applied are listed in the "Painting Schedule" of this section of these specifications. Also refer to Room Finish Schedule.
 - 1. Paint exposed surfaces whether or not colors are designated in schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.
 - 2. The Architect shall not be limited in the number of colors selected for single space or for the complete Project.

2.4 PAINTING SCHEDULE

- A. Concrete Substrates
 - 1. Textured Coating
 - a. 1st Coat: Tex·Cote XL-70 "W" Primer.
 - b. 2nd Coat: Tex·Cote XL-70 "W" Textured Coating (15 mil dry).
 - c. Texture: As selected by the Architect.

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2. Clear Water Repellant:
 - a. 1st Coat: Siloxane Water Repellant, MPI #117.
 - b. 2nd Coat: Siloxane Water Repellant, MPI #117.

- B. CMU Substrates:
 1. Latex System:
 - a. Block Filler: Block filler, latex, interior/exterior, MPI #4.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, flat (Gloss Level 1), MPI #10.

 2. Clear Water Repellant:
 - a. 1st Coat: Siloxane Water Repellant, MPI #117.
 - b. 2nd Coat: Siloxane Water Repellant, MPI #117.

- C. Portland Cement Plaster Substrates:
 1. Latex System:
 - a. Prime Coat: Primer, Alkali Resistant, Water Based, exterior, MPI #3.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, flat (Gloss Level 1), MPI #10.

- D. Steel Substrates:
 1. Latex over Alkyd Primer System:
 - a. Prime Coat: Primer, alkyd, anti-corrosive, for metal, MPI #79.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, semi-gloss, (Gloss Level 5), MPI #11.

- E. Galvanized-Metal Substrates:
 1. Latex System:
 - a. Prime Coat: Primer, galvanized, water based, MPI #134.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, semi-gloss, (Gloss Level 5), MPI #11.

- F. Aluminum (Not Anodized or Otherwise Coated) Substrates:
 1. Latex System:
 - a. Prime Coat: Primer, quick dry, for aluminum, MPI #95.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, semi-gloss, (Gloss Level 5), MPI #11.

- G. Wood Substrates: Including wood trim, architectural woodwork, wood-based panel products, glued-laminated construction.
 1. Latex System:
 - a. Prime Coat: Primer, latex, for exterior wood, MPI #6.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, semi-gloss, (Gloss Level 5), MPI #11.

H. Gypsum Board and Plaster Substrates:

1. Latex System:
 - a. Prime Coat: Primer, Alkali Resistant, Water Based, exterior, MPI #3.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, flat, (Gloss Level 5), MPI #10.

I. Architectural PVC, Plastic, Fiberglass:

1. Latex System:
 - a. Prime Coat: Latex Primer/Sealer, MPI #17.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Industrial Acrylic Semi-Gloss Coating, MPI #153.

2.5 MATERIALS – GENERAL REQUIREMENTS

A. Paints and Coatings - General

1. Unless otherwise indicated, provide factory-mixed coatings.
2. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application.
3. Do not reduce, thin, or dilute coatings or add materials to coatings unless approved in manufacturer's product instructions.
4. Confirm VOC's need by using the products MSDS sheets.

- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as “best” by the manufacturer.

2.6 ACCESSORIES

- A. Coating application accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows (Do not apply finishes unless moisture content of surfaces is below the following maximums):
1. Concrete: 12 percent.
 2. Fiber-Cement Board: 12 percent.
 3. Masonry (Clay and CMUs): 12 percent.

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4. Wood: 15 percent.
 5. Gypsum Board: 12 percent.
 6. Plaster: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
1. Application of coating indicates acceptance of surfaces and conditions.
- E. Do not begin application of coatings until substrates have been properly prepared; notify Owner's Representative of unsatisfactory conditions before proceeding.
- F. If substrate preparation is the responsibility of another installer, notify Owner's Representative of unsatisfactory preparation before proceeding.
- G. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.
- H. Test shop applied primer for compatibility with subsequent cover materials.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- C. The surface shall be dry and in sound condition. Remove all oil, dust, dirt, loose rust, peeling paint, or other contamination to ensure good adhesion.
- D. Provide barrier coats over incompatible primers or remove and re-prime. Notify Architect in writing about anticipated problems using the specified finish coat material with substrates primed by others.
- E. Impervious Surfaces:
1. Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach.
 2. Rinse with clean water and allow surface to dry.
- F. Aluminum Surfaces:
1. Remove all oil, grease, dirt, oxide, and other foreign material by cleaning per SSPC-SP1 Solvent Cleaning.
- G. Block/Unit Masonry (Cinder and Concrete)

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1. Remove all loose mortar and foreign material.
2. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners.
3. Let concrete and mortar cure at least 30 days at 75°F unless the manufacturer's products are designed for application prior to the 30-day period.
4. The pH of the surface and moisture content must be in accordance with the paint manufacturer's recommendations prior to painting.

H. Concrete:

1. Remove contamination by washing with an appropriate cleaner, rinse thoroughly.
2. The pH of the surface and moisture content shall be in accordance with the paint manufacturer's recommendations prior to painting.
3. Allow the surface to thoroughly dry.
4. Clean concrete floor surfaces scheduled to be painted with a commercial solution of muriatic acid or other etching cleaner. Flush floor with clean water to neutralize acid and allow to dry before painting.
5. Fill bug holes, air pockets, and other voids under another section with a cement-patching compound of sufficient cohesive strength to support the specified coating system.

I. Drywall:

1. Shall be clean, dry and all dust removed prior to painting.
2. All nail heads must be set and spackled.
3. Tape all joints and cover with a joint compound.
4. Spackled nail heads and tape joints shall be sanded smooth.

J. Galvanized Surfaces:

1. Clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils.
2. Apply a test area, priming as required.
3. Allow the coating to cure in accordance with the manufacturer's recommendation before testing.
4. Perform adhesion tests in accordance with ASTM 3359 Adhesion by Tape Test.
5. If adhesion is poor, then notify Owner's representative that additional surface preparation under another section is necessary to remove pre-treatments or contaminants that interfere with adhesion of the coating.

K. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

L. Plaster Cement Surfaces:

1. Shall allow to thoroughly dry for at least 30 days before painting, unless the manufacturer's products are designed for application prior to the 30-day period.
 1. Bare plaster must be cured and hard prior to painting.
 2. Correct any soft, porous, or powdery plaster per requirements under another section of the specifications.

M. Steel: Structural, Plate, etc.:

1. Check other sections for additional surface preparation and shop priming of bare steel surfaces.
2. Surface preparation shall include appropriate SSPC recommended methods.
3. Shop primer shall be compatible with the field-applied coatings.
4. Surfaces shall be dry and clean prior to the application of field-applied coatings.
5. Remove all contaminants in accordance with SSPC-SP1 Solvent Cleaning or SSPC Method recommended for condition of substrate.

N. Wood:

1. Shall be clean and dry, then prime and paint as soon as possible.
2. Scrape, sand, and spot prime knots and pitch streaks before a full priming coat is applied.
3. Patch all nail holes and imperfections with a wood filler or putty and sand smooth after application of primer.
4. Wood and Metal Doors Scheduled for Painting: Finish doors on tops, bottoms, and side edges same as hinge side face, unless otherwise indicated.
5. Seal with shellac any marks, which may bleed through surface finishes.

3.3 MATERIALS PREPARATION

- A. Mix and prepare painting materials in accordance with manufacturer's directions.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing, and application of paint in a clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce a mixture of uniform density and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
- D. Use only thinners approved by the paint manufacturer and only within recommended limits.
- E. Tinting: Tint each undercoat of lighter shade to facilitate identification of each coat where multiple coats of the same materials are applied. Tint undercoats to match the color of the finish coat but provide sufficient differences in shade of undercoats to distinguish each separate coat.
- F. Surface preparation, priming, and finish coats specified in this section are in addition to shop priming surface treatment specified under other sections
- G. Preparation and testing of existing painted surfaces, indicated to be repainted to accommodate new work, shall be performed as work of this section.

3.4 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

- B. Use applicators and techniques suited for paint and substrate indicated.
- C. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
- D. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates
- E. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- F. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- G. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- H. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.5 FIELD QUALITY CONTROL

- A. Engage services of an independent testing laboratory to sample paint being used. Samples of materials delivered to project site will be taken, identified and sealed, and certified in presence of Contractor.
- B. Testing laboratory will perform appropriate tests for one or each of the following characteristics: Abrasion resistance, apparent reflectivity, flexibility, washability, absorption, accelerated weathering, dry opacity, accelerated yellowness, recoating, skinning, color retention, alkali resistance, and quantitative materials analysis.
- C. A test patch for adhesion may also be required. The procedure for the test patch is as follows:
 - 1. An area that represents the worst condition of the existing paint is selected.
 - 2. The surface is prepared as appropriate for the repaint work.
 - 3. The new coating or coating system is applied.
 - 4. The coating is allowed to cure for at least 7 days at 75 degrees F. or according to the coating manufacturer's instructions.
 - 5. After proper curing the adhesion is tested using an acceptable method such as the Adhesion by Tape Test (ASTM D 3359).
- D. If test results show that material being used does not comply with specified requirements, Contractor may be directed to stop painting work, and remove noncomplying paint; pay for testing; repaint surfaces coated with rejected paint; remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the 2 coatings are noncompatible.

3.6 EQUIPMENT

- A. Paint the following work where exposed.
 - 1. Uninsulated metal and plastic piping.
 - 2. Pipe hangers and supports.
 - 3. Metal and plastic conduit.

3.7 CLEAN-UP AND PROTECTION

- A. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- B. Provide "Wet Paint" signs as required to protect newly painted finishes.
- C. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- D. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- E. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- F. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.8 TOUCH- UP AND DAMAGE REPAIR

- A. Contractor shall repair all deficiencies in coating application in accordance with PDCA Standard P1-04.
- B. Inform Owner's representative of all damage to properly painted surfaces and receive authorization prior to performing damage repair.

3.9 SITE ENVIRONMENTAL PROCEDURES

- A. Indoor Air Quality: Provide temporary ventilation as specified in Section – Temporary Controls.
- B. Waste Management: As specified in Section - Temporary Construction Facilities and as follows:
 - 1. Coordinate with manufacturer for take-back program. Set aside scrap to be returned to manufacturer for recycling into new product. Close and seal all partially used containers of paint to maintain quality as necessary for reuse.

END OF SECTION 09 91 13

SECTION 10 14 23 – SIGNAGE

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications, and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Section Includes:
 - 1. Provide labor, material, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
 - a. Identification signage.
 - b. Specialty signage.
 - c. Exit door tactile signage.
 - d. Exterior building signage.

1.3 REFERENCES

- A. ASTM B26/B26M – Standard Specification for Aluminum-Alloy Sand Castings.
- B. ASTM B209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- C. ADAAG – Americans with Disabilities Act Accessibility Guidelines; US Architectural and Transportation Barriers Compliance Board.
- D. ANSI A117.1 – Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
- E. NFPA 101 – 7.10.1.3.
- F. FAC – Florida Accessibility Code.
- G. FBC – Florida Building Code.

1.4 DEFINITIONS

- A. Accessible: In accordance with the accessibility standard.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type sign material and accessories.
- B. Shop Drawings: For signs.
 - 1. Include fabrication and installation details and attachments to other work.
 - 2. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.

3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign.
- C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.
1. Include representative Samples of available typestyles and graphic symbols.
- D. Sign Schedule: Use same designations specified or indicated on Drawings.
- E. Recycle: Submit manufacturer's documentation substantiating the following requirements for materials for each type provided under work of this section for recycled content:
1. Indicate recycled content; indicate percentage of pre-consumer and post-consumer recycled content per unit of product.
 2. Indicate relative dollar value of recycled content product to total dollar value of product included in project.
 3. If recycled content product is part of an assembly, indicate the percentage of recycled content product in the assembly by weight.
 4. If recycled content product is part of an assembly, indicate relative dollar value of recycled content product to total dollar value of assembly.
- F. Local/Regional Materials: Submit manufacturer's documentation substantiating the following requirements for materials extracted/harvested and manufactured within a 500 mile radius from the project site. Not less than 20 percent of building materials (by cost) shall be regional materials. Unless otherwise indicated, submit the following for each type of product provided under work of this section for locations:
1. Sourcing Location(s): Indicate location of extraction, harvesting, and recovery; indicate distance between extraction, harvesting, and recovery and the project site.
 2. Manufacturing Location(s): Indicate location of manufacturing facility; indicate distance between manufacturing facility and the project site.
 3. Product Value: Indicate dollar value of product containing local/regional materials; include materials cost only.
 4. Product Component(s): Where product components are sourced or manufactured in separate locations, provide location information for each component. Indicate the percentage by weight of each component per unit of product.

1.6 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Provide products from a firm that makes the indicated products as a regular production item and with not less than five (5) years experience.
- B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- C. Signage shall comply with State of Florida SREF requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site.
- B. Package signs, labeled in name groups.
- C. Store adhesive attachment tape at ambient room temperatures.

1.8 FIELD CONDITIONS

- A. Do not install signs when ambient temperature is lower than recommended by manufacturer.
- B. Maintain this minimum temperature during and after installation of signs.

1.9 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Deterioration of finishes beyond normal weathering.
 - b. Deterioration of embedded graphic image.
 - c. Separation or delamination of sheet materials and components.
 - 2. Warranty Period: Five (5) years from date of Substantial Completion.

1.10 PERFORMANCE REQUIREMENTS

- A. Accessibility Standard: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1 for signs.
- B. Code Standards: Signage shall comply with the Florida Building Code and other applicable codes and their requirements shall govern.
- C. ADA requirements supersede technical specifications in this Section

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer shall be one of the following however products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product and acceptance is provided by the Architect in writing prior to bidding.
 - 1. Andco Industries, Inc.

2. APCO Graphics, Inc.
3. ASI Sign Systems
4. Best Sign Systems
5. Environmental Graphics, Inc.
6. Sign Design
7. Multi-Graphics, Inc.
8. InPro Corporation
9. Baron Signs

2.2 FLORIDA AMERICANS WITH DISABILITIES ACT REQUIREMENTS

- A. Manufacturer shall conform to tactile, Braille, letter size, and other requirements as required by Florida Accessibility Code for Building Construction and ANSI A117.1.
- B. ADA requirements supersede technical specifications in this Section.
- C. Pictograms shall have the equivalent verbal description directly below the pictogram.

2.3 SIGNS

- A. General; applies to all signs except as noted:
 1. Material shall be minimum 1/8" clear matte acrylic stock with 3/8" radius corners.
 - a. Exterior signs – Shall be UV stable material of non-petroleum base phenolic resin using a process to create the raised lettering, which is an integral part of the sign.
 - b. Interior signs – Shall be material of non-petroleum base phenolic resin using a process to create the raised lettering, which is an integral part of the sign.
 - c. Interior signs exposed to direct sun, shall be of same material as exterior signs.
 - d. Paint shall be Matthews Acrylic Polyurethane system or equal.
 - 1) Shall be low VOC
 - 2) Shall be UV Stable
 - 3) Shall be lead and chromate free
 - 4) Minimum life expectancy of 10-years
 2. Applied lettering not allowed.
 3. Letters and background colors selected by Architect from manufacturer's standard colors.
 4. Mounting:
 - a. Shall be mounted in a bed of sealant and secured with non-removable vandal resistant oval head screws.
 - b. Shall be double sided tape and adhesive.
 - c. Mount at locations as directed by Architect.
 - d. Mount at 60" above finished floor to the center of the sign and as indicated on the drawings.
 - e. Exterior signage shall be mounted in a bed of sealant and secured with non-removable vandal resistant oval head stainless steel screws.
 5. Graphic Process with Braille in one of the following to provide raised letters, but no applied lettering method allowed:
 - a. Provide raised (photopolymer process)
 - b. Engraved letters

- c. Sand carved process
6. Letters:
 - a. Letters and numbers shall have width to height ratio between 3:5 and 1:1 and stroke width to height ratio between 1:5 and 1:10.
 - b. Letters and numbers to be raised 1/32" and 5/8" minimum and 2" maximum height unless indicated otherwise on the drawings or within the specifications.
 - c. Letters and numbers to be Sans Serif font with Grade 2 Braille, verify font type with the Architect.
 - d. Pictograms shall have the equivalent verbal description directly below the pictogram.
7. Characters and backgrounds must be matte or other non-glaze surface and of contrasting colors.
8. Size of signs shall be indicated on drawing.
9. All signs shall comply with applicable codes.

B. Room Name and Number Signs

1. Provide signs for each room or space to include a combination separate name sign and a separate room number sign as indicated on the Drawings.
 - a. Minimum size of 3" high by 6" wide for signs (longer where nomenclature demands) or as indicated on the drawings.
2. Provide additional sign for each door in a space with multiple doors.
3. Classroom and administrative office signs shall have a slot providing the owner the ability to add a teacher's name and change the name as necessary.

C. Directional Signage

1. Provide directional signage as follows:
 - a. To Main Office with an arrow (2 required)

D. Exit signs – Where Indicated

1. Exit signs shall be Bradyglo B-355 High Performance Photoluminescent Exit Signs as manufactured by Brady Worldwide, Inc.
 - a. Sign shall comply with NFPA Life Safety Code 101 and OSHA 1910 and UL924 for upper and lower service temperature limits and humidity resistance.
 - b. Sign shall be steel encased and the size is to be nominal 8" high by 15" width with a 0.875" x 7" letter size.
 - c. A minimum one hour of 54 lux unfiltered fluorescent light exposure will provide a continuous glow for 50 to 60 hours.
 - d. Sign color shall be high visibility green.
 - e. Service life shall be maintenance free operation for 25+ years.
2. Mounting brackets shall be the standard of the manufacturer to fit the mounting conditions.
3. Provide exit signs at locations indicated in the life safety and reflected ceiling plans.

2.4 SPECIALITY SIGNAGE

A. Emergency Access Opening

1. Provide and install at designated emergency access openings a sign mounted on the door to read as follows "EMERGENCY ACCESS OPENING."

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2. Signs shall be non-corrosive, 1/8" three-ply laminate, UV inhibitors, non-glare surface, and white background with red letters 3" high by width needed for copy.
3. Mount on doors with non-removable oval head stainless steel screws verify number of signs required.
4. Graphic Process: Raised letters shall be an integral part of the sign face, do not surface apply any lettering.
 - a. Letters: Letters shall have width to height ratio between 3:5 and 1:1 and a stroke width to height ratio between 1:5 and 1:10.
5. Letters shall be raised 1/32" upper case, and sans serif type.
6. Background must be matte or other non-glare surface.

B. "No Smoking" - "Smoke Free Facility" Sign

1. Copy to read: "No Smoking" or "Smoke Free Facility" with universal graphic.
2. Mounting: Non-removable oval head screws, using rawl plugs where mounted on masonry.
3. Signs shall be non-corrosive, 1/8" three ply laminate, UV inhibitors, non-glare surface, green background with white letters 3" high by width needed for copy.
4. Graphic Process: Raised letters, and graphic, Braille shall be formed as an integral part of the sign face or surface applied to the sign face.
5. Colors: Letters and background colors as selected by Architect from manufacturer's standard colors.
6. Letters: Letters and numbers shall have width to height ratio between 3:5 and 1:1 and a stoke width to height ratio between 1:5 and 1:10. Letters and numbers shall be raised 1/32" upper case sans serif font type with Grade 2 Braille. Verify exact location with Architect. Schedule is provided for verbiage and quantity for pricing purposes. Locations and final graphics/verbiage to be determined by Architect.
7. Raised characters shall be 2" high. Pictograms shall be accompanied by the equivalent verbal description placed directly below the pictogram.

C. "Possession of Weapons" Sign

1. Copy to read: "NOTICE: Possession of weapons on school grounds is a crime. Students and visitors on these premises are subject to search for weapons by metal detectors." The same notice shall be repeated in Spanish and located on the lower half of the sign.
2. Mounting: Non-removable oval head screws, using rawl plugs where mounted on masonry.
3. Signs shall be non-corrosive, 24" wide x 18" high, 1/8" three ply laminate, UV inhibitors, non-glare surface, white background with black letters except the word "NOTICE" shall be in red letters.
4. Graphic Process: Raised letters.
5. Letters: Letters and numbers shall have width to height ratio between 3:5 and 1:1 and a stoke width to height ratio between 1:5 and 1:10. Letters and numbers shall be raised 1/32" upper case sans serif font type. Verify exact location with Architect. Schedule is provided for verbiage and quantity for pricing purposes.

2.5 EXIT DOOR TACTILE SIGNAGE

- A. Tactile signage shall be provided to comply with the following unless otherwise indicated:
 - 1. Tactile signage shall be located at each exit door requiring an exit sign.
 - 2. Tactile signage shall read "EXIT".
 - 3. Tactile signage shall comply with ICC/ANSI A117.1.

2.6 ACCESSORIES

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signage, noncorrosive and compatible with each material joined, and complying with the following:
 - 1. Stainless-steel devices unless otherwise indicated.
 - a. Fastener Heads: Use oval countersunk screws and bolts with tamper-resistant Allen-head or spanner-head slots unless otherwise indicated.
- B. Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch thick, with adhesive on both sides.

2.7 MATERIALS

- A. Polycarbonate Sheet: Of thickness indicated, manufactured by extrusion process, coated on both surfaces with abrasion-resistant coating:
 - 1. Impact Resistance: 16 ft-lbf/in. per ASTM D 256, Method A.
 - 2. Tensile Strength: 9000 lbf/sq. in. per ASTM D 638.
 - 3. Flexural Modulus of Elasticity: 340,000 lbf/sq. in. per ASTM D 790.
 - 4. Heat Deflection: 265 deg F at 264 lbf/sq. in per ASTM D 648.
 - 5. Abrasion Resistance: 1.5 percent maximum haze increase for 100 revolutions of a Taber abraser with a load of 500 g per ASTM D 1044.

2.8 FABRICATION

- A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.
- B. Metal Welded Signage
 - 1. Welded Connections: Comply with AWS standards for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of exposed side. Clean exposed welded surfaces of welding flux and dress exposed and contact surfaces.
 - 2. Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.
 - 3. Preassemble signs in the shop to greatest extent possible. Disassemble signs only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation, in location not exposed to view after final assembly.

4. Conceal fasteners if possible; otherwise, locate fasteners where they will be inconspicuous.

2.9 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of signage work.
- B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.
 1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
 2. Install signs so they do not protrude or obstruct according to the accessibility standard.
 3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
 4. Interior Wall Signs: Install signs on walls adjacent to latch side of door where applicable. Where not indicated or possible, such as double doors, install signs on nearest adjacent walls. Locate to allow approach within 3 inches of sign without encountering protruding objects or standing within swing of door.
- B. Room-Identification Signs and Other Accessible Signage: Install in locations on walls as indicated and according to accessibility standard.
- C. Wall-Mounted Signs: Comply with sign manufacturer's written instructions except where more stringent requirements apply.
 1. Two-Face Tape: Mount signs to smooth, nonporous surfaces. Do not use this method for vinyl-covered or rough surfaces.

2. Signs Mounted on Glass: Provide matching opaque plate on opposite side of glass to conceal mounting materials.

D. Mounting Methods:

1. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.

- E. Provide fire rated/smoke barrier partitioning labeling at rated partitions.

3.3 ADJUSTING AND CLEANING

- A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.
- B. Remove temporary protective coverings and strippable films as signs are installed.
- C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 10 14 23

SECTION 26 01 00
OPERATION AND MAINTENANCE MANUALS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. O & M Manuals contain copies of all warranties, operation and maintenance instructions, and other pertinent information relative to the project that is used throughout the life of the facility. This section contains additional requirements for the preparation of Electrical and Systems Operation and Maintenance Manuals.

1.3 OPERATION AND MAINTENANCE MANUALS

- A. General: Refer to Section 01 77 00 Closeout Procedures.
- B. O & M Data:
 - 1. Manufacturers' operation and maintenance data is required for all items as called for in the specifications. O & M Manuals shall include manufacturer's name, model number(s), characteristics, manufacturer's agent, service agent, supplier, where and/or what item(s) are used for and description (i.e. surge suppression - switchboard MDPA).
 - 2. Include troubleshooting instructions, list of special tools required, theory of operation, manufacturer's care and cleaning, preventative maintenance instructions, wiring diagrams, and point-to-point schematics.
- C. O & M Manuals to include, but are not limited to:
 - 1. Completed forms and information contained in Division 01 General Requirements, Section 01 77 00 and this section of the specifications. Reinforced separation sheets tabbed with the appropriate specification reference number and typed index for each section in the Systems Schedule
 - a. Project Information Sheet (Exhibit A)
 - b. O & M Cover Examples (Exhibit B)
 - c. Spare Parts/Maintenance Stock Certification (Exhibit D)
 - d. Check Out Memo
 - e. Conductor Insulation Resistance Test Memo
 - f. Ground Test Information
 - g. Voltage and Amperage Readings (Tabulated Data)
 - h. Progress and Record Drawing Certification
 - 2. Shop Drawings: Shop drawings shall be a copy of the final and accepted shop drawing submitted in accordance with Division 01 requirements.
 - 3. Product Data: Product data and/or catalog sheets shall be a copy of the final and accepted submittal submitted in accordance with Division 01 requirements. These shall be inserted in binder in proper order.

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4. Warranties/Guarantees: Provide copies of warranties/guarantees in respective location in O & M binder, (Power and Lighting) (Systems). Original warranties/guarantees are to be incorporated as noted in Division 01 General Requirements.
5. Copies of electrical panel schedules and electrical panel directories included with the corresponding specification section.
6. Wiring diagrams, schematic, etc. inserted in proper order, for:
 - a. Time clocks.
 - b. Photocells.
 - c. Control devices, motor controls.
 - d. UPS systems.
 - e. Transformers.
 - f. Panelboards.
 - g. Distribution panelboards.
 - h. Switchboards.
 - i. Each and every part of Divisions 27 and 28 sections of these Specifications
7. Division 26
 - a. Section 26 05 19 – Building Wire and Cable
 - i. Product data and/or catalog sheets on all products applicable to this project.
 - b. Section 26 05 26 – Grounding and Bonding
 - i. Product data and/or catalog sheets on all products applicable to this project.
 - ii. Test results on each ground rod.
 - iii. Ground Test Information Form
 - c. Section 26 05 29 – Hangers and Supports
 - i. Product data and/or catalog sheets on all products applicable to this project.
 - d. Section 26 05 33 – Raceway and Boxes for Electrical Systems
 - i. Product data and/or catalog sheets on all products applicable to this project.
 - e. Section 26 05 34 – Outlet Boxes
 - i. Product data and/or catalog sheets on all products applicable to this project.
 - f. Section 26 05 35 – Pull and Junction Boxes
 - i. Product data and/or catalog sheets on all products applicable to this project.
 - g. Section 26 05 37 – Surface Raceways
 - i. Product data and/or catalog sheets on all products applicable to this project.
 - h. Section 26 05 43 – Underground Ducts and Raceways for Electrical Systems
 - i. Product data and/or catalog sheets on all products applicable to this project.
 - i. Section 26 05 53 – Identification for Electrical Systems
 - i. Product data and/or catalog sheets on all products applicable to this project.
 - ii. Equipment supplier list for each section's equipment.
 - j. Section 26 22 13 - Dry Type Transformers
 - i. Product data and/or catalog sheets on equipment applicable to this project.
 - ii. Equipment supplier list for section's equipment.
 - iii. Recommended periodic testing procedures.
 - iv. Parts list.
 - v. Any special manufacturer suggested O & M information.
 - vi. Installation/removal instructions.
 - vii. Check-Out Memo Form
 - k. Section 26 24 16 - Panelboards
 - i. Product data and/or catalog sheets on equipment applicable to this project.

- ii. Equipment supplier list for section's equipment.
- iii. Internal wiring diagrams.
- iv. Bus diagrams.
- v. Operation and maintenance requirements, instructions, and recommended testing.
- vi. Parts list.
- vii. Copy of directory.
- viii. Voltage and Amperage Readings Tabulated Data Form
- ix. Check-Out Memo Form
- l. Section 26 27 26 – Wiring Devices
 - i. Product data and/or catalog sheets on all products applicable to this project.
 - ii. Equipment supplier list for section's equipment.
 - iii. Ground fault wiring devices: in addition to above provide:
 - a) Wiring diagram.
- m. Section 26 43 00 – Surge Protective Devices
 - i. Product data and/or catalog sheets on all equipment applicable to this project.
 - ii. Equipment supplier list.
 - iii. Parts list.
 - iv. Recommended testing and replacement procedures.
- 8. Division 28
 - a. Section 28 13 10 – Access Control System
 - i. For each system; name, address, phone, cell, fax, email:
 - a) Installer
 - b) Authorized representative
 - ii. Product data and/or catalog sheets on equipment applicable to this project.
 - iii. Parts list.
 - iv. Wiring diagrams of panels.
 - v. Shop drawings as submitted and accepted in submittal process.

1.4 PROCESSING SUBMITTALS

- A. Refer to Division 01 General Requirements.

1.5 DELAYS

- A. Contractor is responsible for delays in job project accruing directly or indirectly from late submissions or resubmissions of shop drawings, or product data.

1.6 RESUBMITTALS

- A. The A/E shall be reimbursed cost to review resubmittals subsequent to the second submittal.

PART 2 - PRODUCTS

(Not Applicable)

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PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

EXHIBIT A

PROJECT INFORMATION SHEET

School: _____

Project Name: _____

Project Number: _____

Substantial Completion Date: _____

Certificate of final Completion Date: _____

	Name & Address	Phone/Fax	Contact
Martin County School District Authorized Construction Representative			
Architect	Harvard Jolly		
Mechanical Engineer	JLRD, Inc. 1450 Centrepark Blvd., Suite 350 West Palm Beach, Florida 33401	P: 561-689-2303 F: 561-689-2302	
Electrical Engineer	JLRD, Inc. 1450 Centrepark Blvd., Suite 350 West Palm Beach, Florida 33401	P: 561-689-2303 F: 561-689-2302	
Civil Engineer			
Structural Engineer			
Food Service Consultant			
Other Consultant(s)			

Brief Description of Project Scope:

EXHIBIT B

MANUAL COVER (face)

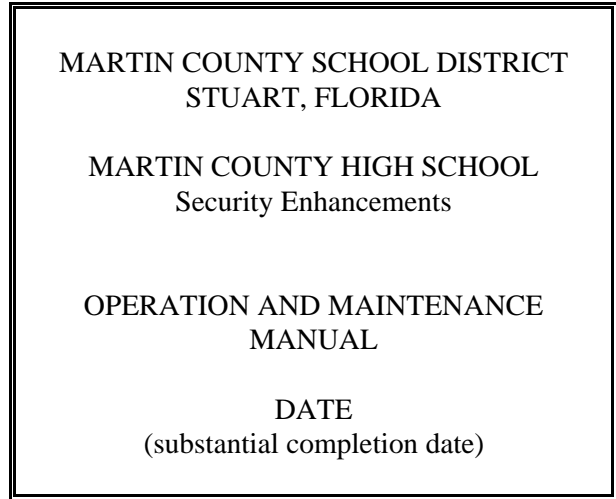
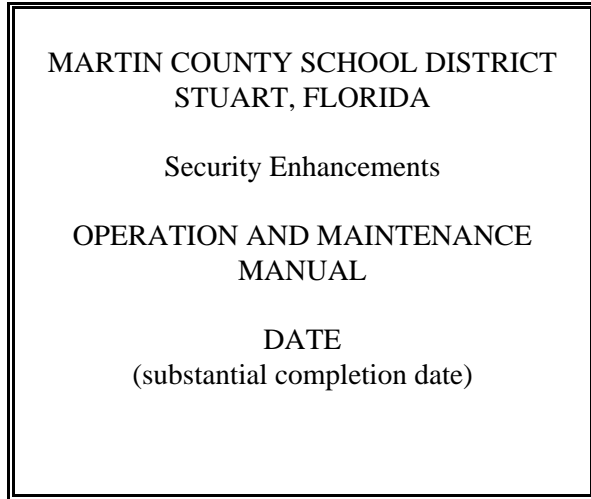


EXHIBIT C

MANUAL COVER (spine)

MCS
D

MARTIN COUNTY
HS
Security
Enhancements

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OPERATION &
MAINTENANCE
MANUAL

MCS
D

MARTIN COUNTY
HS
Security
Enhancements

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OPERATION &
MAINTENANCE
MANUAL

EXHIBIT D

SPARE PARTS / MAINTENANCE STOCK CERTIFICATION

This form verifies that the parts/stock listed below has been delivered to and received by Martin County School District Maintenance. Original shall be included in the Closeout Documentation Manual. Copies shall also be included in the O & M Manual.

Project Name: _____

Type/Name of Spare Parts/Attic Stock: _____

Specification Reference: _____

Quantity of Spare Parts/Attic Stock: _____

Signature below by the Contractor and Subcontractor signifies that the spare parts/maintenance stock, required by the Contract Documents, have been delivered to the Owner.

Contractor/CM

Authorized Signature, Title

Date: _____

Subcontractor

Authorized Signature, Title

Date: _____

Signature by the Owner acknowledges receipt of the same spare parts/maintenance stock.

Martin County School District - Department

Authorized Signature, Title

Date: _____

CHECK OUT MEMO

Check Out Memo shall be completed and a copy provided to the Owner at the Owner's Performance Verification and Demonstration meeting. A copy shall also be included in the specification section of each O & M Manual for the equipment checked.

Project Name _____

Type of Equipment Checked _____

Equipment Number _____

Name of Manufacturer of Equipment _____

Signature below by the manufacturer's authorized representative signifies that the equipment has been satisfactorily tested and checked out on the job by the manufacturer.

1. The attached Test and Data and Performance Verification information was used to evaluate the equipment installation and operation.
2. The equipment is properly installed, has been tested by the manufacturer's authorized representative, and is operating satisfactorily in accordance with all requirements, except for items noted below.*
3. Written operating and maintenance information has been presented and reviewed in detail with the Contractor.
4. Sufficient copies of all applicable operating and maintenance information, parts lists, lubrication checklists, and warranties have been furnished to the Contractor for insertion in the Operation and Maintenance Manuals.

CHECKED BY:

MANUFACTURER'S REPRESENTATIVE – PRINT NAME

ADDRESS

TELEPHONE, FAX, E-MAIL

MANUFACTURER'S REPRESENTATIVE – SIGNATURE AND TITLE

DATE CHECKED

WITNESSED BY:

CONTRACTOR'S REPRESENTATIVE – SIGNATURE AND TITLE
*EXCEPTIONS NOTED AT TIME OF CHECK-OUT (USE ADDITIONAL PAGE IF NECESSARY)

CONDUCTOR INSULATION RESISTANCE TEST MEMO

PROJECT NAME _____

CONDUCTOR FROM _____ TO

SIZE _____

INSULATION TYPE

INSULATION VOLTAGE
RATING _____

DATE _____ TIME _____

WEATHER
CONDITIONS _____

TEST VOLTAGE (DC) _____

RANGE _____

MEGGER INSTRUMENT/SERIAL
NUMBER _____

TESTING METHODOLOGY

INSULATION RESISTANCE MEASUREMENT (ACCEPTABLE MEASUREMENT NOT TO BE
LESS THAN (1) MEGOHM):

PHASE A TO GROUND	_____
PHASE B TO GROUND	_____
PHASE C TO GROUND	_____
NEUTRAL TO GROUND	_____
ISOLATED GROUND TO GROUND	_____

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CONTRACTOR'S REPRESENTATIVE _____

DATE _____

OWNER'S REPRESENTATIVE: _____

DATE: _____

ENGINEER'S REPRESENTATIVE: _____

DATE: _____

GROUND TEST INFORMATION

PROJECT NAME: _____

GROUND TYPE: _____

TEST BY: _____

DATE OF TEST: _____

GROUND LOCATION: _____

GROUND TYPE (Rod, Water pipe, etc.):

PRIOR TO CONNECTION TO SYSTEM

GROUND _____ (OHMS)

AFTER CONNECTION TO SYSTEM

GROUND _____ (OHMS)

WEATHER CONDITIONS (Wet/Dry) _____

SOIL CONDITIONS (Wet/Dry) _____

CONTRACTOR'S REPRESENTATIVE _____

DATE _____

ENGINEER'S REPRESENTATIVE _____

DATE _____

OWNER'S REPRESENTATIVE _____

DATE _____

VOLTAGE AND AMPERAGE READINGS (TABULATED DATA)

PROJECT NAME _____

SWITCHGEAR/PANELBOARD _____

FULL LOAD AMPERAGE READINGS:

DATE _____

TIME _____

PHASE A _____

B _____

C _____

N _____

GROUND _____

FULL LOAD VOLTAGE READINGS:

DATE _____

TIME _____

PHASE A TO N _____ A TO B _____

B TO N _____ A TO C _____

C TO N _____ B TO C _____

VOLTAGE AT THE END OF THE LONGEST BRANCH

TYPE OF LOAD _____

NO LOAD VOLTAGE READINGS:

DATE _____

TIME _____

PHASE A TO N _____ A TO B _____

B TO N _____ A TO C _____

C TO N _____ B TO C _____

ENGINEER'S REPRESENTATIVE

DATE _____

OWNER'S AUTHORIZED REPRESENTATIVE

DATE _____

CONTRACTOR'S REPRESENTATIVE

DATE _____

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PROGRESS AND RECORD DRAWING CERTIFICATION

NAME OF PROJECT: _____

DIVISION NUMBER AND NAME:

This is to certify that the attached marked-up design prints were marked as the items were installed at the site during construction, and that these prints represent as accurate "As-Builts" record of the work as actually installed. One copy will be turned over to the Owner at the instruction in Operation Conference. The duplicate copy is for the Engineer's files.

General Contractor

By: Authorized Signature and Title

Date

Subcontractor

By: Authorized Signature and Title

Date

SECTION 26 05 00
COMMON WORK RESULTS FOR ELECTRICAL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 01, General Requirements, are included as a part of this Section as though bound herein.
- B. The requirements in this section of the specification are in addition to all requirements in sections referenced above.

1.2 SUMMARY

- A. This section includes Basic Electrical Requirements specifically applicable to Division 26 Sections, in addition to Division 01 - General Requirements - and any supplemental requirements/conditions.

1.3 DESCRIPTION OF WORK

- A. The work required under this Division shall include all materials, labor and auxiliaries required to install a complete and properly operating electrical system.
- B. The Contractor shall furnish, perform, or provide all labor including planning, purchasing, transporting, storing, installing, testing, cutting and patching, trenching, excavating, backfilling, coordination, field verification, equipment (installation and safety), supplies, and materials necessary for the correct installation of complete electrical systems (as described or implied by these specifications and the applicable drawings) in strict accordance with applicable codes, which may not be repeated in these specifications, but are expected to be common knowledge of qualified Bidders.
- C. The Division 26 Contract Documents refer to work required in addition to (or above) the minimum requirements of the NEC 2014. Edition and applicable local codes. All work shall comply with all applicable codes as a minimum and with the additional requirements called for in these Contract Documents.
- D. Only trained and licensed personnel shall be used by the Contractor to perform work. The Contractor shall not perform work, which violates applicable Codes, even if called for in the Contract Documents. The Contractor's Bid shall include work necessary to completely install the electrical systems indicated by the Contract Documents in accordance with applicable Codes.
- E. Refer to other Division 26 Sections for additional work requirements.
- F. Coordinate and verify power and telephone company service requirements prior to bid. Bid to include all work required for complete and properly operating systems.
- G. Connections of all items using electric power shall be included under this division of the specifications, including necessary wire, conduit, circuit protection, disconnects and accessories. Securing of roughing-in drawings and connection information for equipment involved shall also be included under this division. See other divisions for specifications for electrically operated equipment.

- H. The Contractor shall provide and install panic hardware on all electrical room doors where the electrical room houses equipment rated 1200 amps or more per NEC 110.26. All electrical room doors shall open in the direction of egress.

1.4 WORK SEQUENCE

- A. Install work in stages and/or phases to accommodate Owner's occupancy requirements. Coordinate electrical schedule and operations with Owner and Architect/Engineer.

1.5 CODES, FEES, AND STANDARDS

- A. Obtain permits and request inspections from authority having jurisdiction and applicable utility companies.
- B. Pay for all required licenses, fees, and inspections.
- C. Contact the Utility Companies to determine if fees, charges, or costs are required by the Utility Company for permanent power and for temporary power, installations, and hook-ups. These fees, charges or costs shall be included in Contractor's bid.
- D. Material shall be new and free of defects with UL listing or be listed with an approved, nationally recognized Electrical Testing Agency if and only if UL Listing is not available for material.

1.6 PROJECT/SITE CONDITIONS

- A. Install Work in locations shown or described in the Contract Documents, unless prevented by Project conditions.
- B. The Contractor shall install all equipment so that all Code required and Manufacturer recommended servicing clearances are maintained. Contractor shall be responsible for the proper arrangement and installation of all equipment within any designated space. Should the Contractor determine that a departure from the Contract Documents is necessary, he shall submit to the A/E, for approval, detailed drawings of his proposed changes with his written reasons for the changes. No changes shall be implemented by the Contractor without the issuance of the required drawings, clarifications, and/or change orders.
- C. The Contractor shall verify finish dimensions at the project site in preference to using dimensions noted on Contract Documents.

1.7 CONTRACT DOCUMENTS

- A. These specifications and applicable drawings shall be considered supplementary, one to the other and are considered Contract Documents. All workmanship, methods, and/or material described or implied by one and not described or implied by the other shall be furnished, performed, or otherwise provided just as if it had appeared in both sets of documents.
- B. Where a discrepancy or conflict is found between these specifications and any applicable drawing, the Contractor shall notify the A/E in written form. In the event that a discrepancy exists between specifications and any applicable drawing, the most stringent requirement shall govern unless the discrepancy conflicts with applicable codes wherein the code shall govern. The most stringent requirement shall be that work, product, etc which is the most expensive and costly to implement.

- C. The drawings are diagrammatic and are not intended to include every detail of construction, materials, methods, and equipment. They indicate the result to be achieved by an assemblage of various systems. Coordinate equipment locations with Architectural and Structural drawings. Layout equipment before installation so that all trades may install equipment in spaces available. Coordinate installation in a neat and workmanlike manner.
- D. Wiring arrangements for equipment shown on the drawings are intended to be diagrammatic and do not show all required conductors and functional connections. All wiring and appurtenances required for the proper operation of all equipment to be connected shall be provided.
- E. Specifications require the Contractor to provide shop drawings which shall indicate the fabrication, assembly, installation, and erection of a particular system's components. Drawings that are part of the Contract Documents shall not be considered a substitute for required shop drawings, field installation drawings, Code requirements, or applicable standards.
- F. Locations indicated for outlets, switches, and equipment are approximate and shall be verified by instructions in specifications and notes on the drawings. Where instructions or notes are insufficient to locate the item, notify the A/E.
- G. The Contractor shall take finish dimensions at the project site in preference to scaling dimensions on the drawings.
- H. Where the requirements of another Division, section, or part of these specifications exceed the requirements of this Division those requirements shall govern.

1.8 MATERIALS AND EQUIPMENT

- A. Material shall be new (except where specifically noted, shown or specified as "Reused") and/or denoted as existing) and shall be UL listed and bear UL label. Where no UL label listing is available for a particular product, material shall be listed with an approved, nationally recognized Electrical Testing Agency. Where no labeling or listing service is available for certain types of equipment, test data shall be submitted to prove to the Engineer that equipment meets or exceeds available standards.
- B. Where Contract Documents list design selection or manufacturer, type, this model shall set the standard of quality and performance required. Where no brand name is specified, the source and quality shall be subject to A/E's review and acceptance. Where Contract Documents list accepted substitutions, these items shall comply with requirements in Division 01.
- C. When a product is specified to be in accordance with a trade association or government standard and at the request of A/E the Contractor shall furnish a certificate that the product complies with the referenced standard and supporting test data to substantiate compliance.
- D. Where multiple items of the same equipment or materials are required, they shall be the product of a single Manufacturer.
- E. Where the Contract Documents require materials and/or equipment installed, pulled, or otherwise worked on, the materials and/or equipment shall be furnished and installed by the Contractor responsible for Division 26 methods and materials unless specifically noted otherwise.
- F. Where the contract documents refer to the terms "furnish," "install," or "provide," or any combination of these terms) the materials and/or equipment shall be supplied and delivered to the project including all labor, unloading, unpacking, assembly, erection, anchoring, protecting supplies and materials necessary for the correct installation of complete system unless specifically noted otherwise.
- G. Before the Contractor orders equipment, the physical size of specified equipment shall be checked to fit spaces allotted on the drawings, with NEC working clearances provided. Internal access for proposed equipment substitutions shall be provided.

- H. Electrical equipment shall be protected from the weather, during shipment, storage, and construction per manufacturer's recommendations for storage and protection. Should any apparatus be subjected to possible damage by water, it shall be thoroughly dried and put through a dielectric test, at the expense of the Contractor, to ascertain the suitability of the apparatus, or it shall be replaced without additional cost to the Owner. No additional time will be allowed and the project completion date shall be maintained.
- I. Inspect all electrical equipment and materials prior to installation. Damaged equipment and materials shall not be installed or placed in service. Replace or repair and test damaged equipment in compliance with industry standards at no additional cost to the Owner. Equipment required for the test shall be provided by the Contractor.
- J. Material and equipment shall be provided complete and shall function up to the specified capacity/function. Should any material and/or equipment as a part or as a whole fail to meet performance requirements, replacements shall be made to bring performance up to specified requirements. Damages to finish by such replacements, alterations, or repairs shall be restored to prior conditions, at no additional cost to the Owner.
- K. Where tamperproof screws are specified or required, Phillips head or Allen head devices shall not be accepted. For each type used, provide Owner with three tools. Owner will designate the specific hardware design to correspond with existing devices elsewhere in the building, to limit special tool requirements.
- L. Where the Contract Documents denote equipment and/or material to be 'new' and/or 'existing' and also provide no denotation for other equipment as to it being 'new' and/or 'existing,' this is not to infer that the non-denoted equipment is either new or existing, or opposite of the equipment that is denoted. The use of the terms 'new' or 'existing' is meant to clarify denoted equipment/materials for that item only, and the lack of the terms 'new' or 'existing' in relation to identifiers/notes/denotations on the drawings is not to infer that this non-denoted equipment or materials is new or existing.

1.9 MISCELLANEOUS CIRCUITS REQUIRED

- A. Provide 120-volt, 20-amp circuit to post indicator valves (whether shown on drawings or not). Connect to spare 20 amp, 1 pole circuit breaker in nearest 120-volt panel. Re-label circuit breaker accordingly. Provide locking device on breaker. Coordinate location with civil engineer (and drawings/specifications) or fire protection engineer (and drawings/specifications) prior to bid and provide all electrical. Coordinate final location and electrical requirements with valve installer after bid and provide all electrical. Nearest panel to be nearest emergency panel, when building has emergency generator system.
- B. Provide 120-volt, 20-amp circuit to fire protection system panel and bell (whether shown on drawings or not). Connect to spare 20 amp, 1 pole circuit breaker in nearest 120-volt panel. Re-label circuit breaker accordingly. Provide locking device on breaker. Coordinate location with civil engineer (and drawings/specifications) or fire protection engineer (and drawings/specifications) prior to bid and provide all electrical. Coordinate final location and electrical requirements with panel installer after bid and provide all electrical. Nearest panel to be nearest emergency panel, when building has emergency generator system.

- C. Provide 120-volt, 20-amp circuit to intercom system panel (whether shown on drawings or not). Connect to spare 20 amp, 1 pole circuit breaker in nearest 120-volt panel. Re-label circuit breaker accordingly. Provide locking device on breaker. Coordinate location with intercom system engineer (and drawings/specifications) prior to bid and provide all electrical. Coordinate final location and electrical requirements with panel installer after bid and provide all electrical. Nearest panel to be nearest emergency panel, when building has emergency generator system.
- D. Provide 120-volt, 20-amp circuit to all fire alarm panels, remote panels, etc (whether shown on drawings or not). Connect to spare 20 amp, 1 pole circuit breaker in nearest 120-volt panel. Re-label circuit breaker accordingly. Provide locking device on breaker. Coordinate location with fire alarm system engineer (and drawings/specifications) prior to bid and provide all electrical. Coordinate final location and electrical requirements with panel installer after bid and provide all electrical. Nearest panel to be nearest emergency panel, when building has emergency generator system.
- E. Provide 120-volt, 20-amp circuit to fire and smoke dampers (whether shown on drawings or not). Connect to spare 20 amp, 1 pole circuit breaker in nearest 120-volt panel. Re-label circuit breaker accordingly. Provide locking device on breaker. Coordinate location with fire protection engineer (and drawings/specifications) prior to bid and provide all electrical. Coordinate final location and electrical requirements with damper installer after bid and provide all electrical. Nearest panel to be nearest emergency panel, when building has emergency generator system.
- F. Provide 120-volt, 20-amp circuit to building control panels for HVAC system (whether shown on drawings or not). Connect to spare 20 amp, 1 pole circuit breaker in nearest 120-volt panel. Re-label circuit breaker accordingly. Provide locking device on breaker. Coordinate location with fire protection engineer (and drawings/specifications) prior to bid and provide all electrical. Coordinate final location and electrical requirements with damper installer after bid and provide all electrical

1.10 SUPERVISION OF THE WORK

- A. Reference the General Conditions for additional requirements.
- B. The Contractor shall provide experienced, qualified, and responsible supervision for work. A competent foreman shall be in charge of the work in progress at all times. If, in the judgment of the A/E, the foreman is not performing his duties satisfactorily, the Contractor shall immediately replace him upon receipt of a letter of request from the A/E. Once a satisfactory foreman has been assigned to the work, he shall not be withdrawn by the Contractor without the written consent of the A/E.
- C. Provide field superintendent who has had a minimum of four (4) years previous successful experience on projects of comparable size and complexity. Superintendent shall be on the site at all times during construction and must have an active Journeyman's Electrical License.
- D. Superintendent shall be employed by a Florida Registered Electrical Contractor (ER) or Florida Certified Electrical Contractor (EC).

1.11 COORDINATION

- A. Provide all required coordination and supervision where work connects to or is affected by work of others and comply with all requirements affecting this Division. Work required under other divisions, specifications, or drawings to be performed by this Division shall be coordinated with the Contractor and such work performed at no additional cost to Owner including but not limited to electrical work required for:

Martin County School District
Purchasing/Maintenance/Transportation Department
Enhanced Security Project A2

1. Door Hardware
 2. Roll-up doors
 3. Fire shutters
 4. Roll-up grilles
 5. Elevators
 6. Mechanical Division of the Specifications
 7. Landscape Architect drawings
 8. Kitchen Equipment
 9. Millwork design drawings and shop drawings
- B. Contractor shall obtain set of contract documents from Owner for all areas of work noted above and include all electrical work in bid whether included in Divisions 26, 27 or 28 Contract Documents or not.
- C. Installation studies shall be made to coordinate the electrical work with other trades. Work shall be preplanned. Unresolved conflicts shall be referred to the A/E prior to installation of the equipment.
- D. For locations where several elements of electrical or combined mechanical and electrical work must be sequenced and positioned with precision in order to fit into the available space, prepare coordination drawings at 1/4" scale showing the actual physical dimension required for the installation to assure proper integration of equipment with building systems and NEC required clearances. Coordination drawings shall be provided for all areas determined by the A/E.
- E. Secure accepted shop drawings from all required disciplines and verify final electrical characteristics before roughing power feeds to any equipment. When electrical data on accepted shop drawings differs from that shown or called for in Construction Documents, make adjustments to the wiring, disconnects, and branch circuit protection to match that required for the equipment installed.
- F. Damage from interference caused by inadequate coordination shall be corrected at no additional cost to the Owner and the contract time for completion will not be extended.
- G. The Contractor shall maintain an up-to-date set of Contract Documents and Specifications of all trades on the project site, including Architectural, Structural, Mechanical, Electrical and, where provided Interior Design Drawings.
- H. It is the responsibility of this Contractor to coordinate the exact required location of floor outlets, floor ducts, floor stub-ups, etc. with Owner and Architect (and receive their written approval) prior to rough-in. Locations indicated in Contract Documents are approximate.
- I. The Contract Documents describe specific sizes of switches, breakers, fuses, conduits, conductors, motor starters and other items of wiring equipment. These sizes are based on specific items of power consuming equipment (heaters, lights, motors for fans, compressors, pumps, etc.). The Contractor shall coordinate the requirements of each load with each load's respective circuitry shown and with each load's requirements as noted on its nameplate data and manufacturer's published electrical criteria. The Contractor shall adjust circuit breaker, fuse, conduit, and conductor sizes to meet the actual requirements of the equipment being provided and installed and change from single point to multiple points of connection (or vice versa) to meet equipment requirements. Changes due to these coordination efforts shall be made at no additional cost to the Owner.

1.12 PROVISION FOR OPENINGS

- A. Locate openings required for work. Provide sleeves, guards, or other accepted methods to allow passage of items installed.

- B. Coordinate with roofing Contractor on installation of electrical items which pierce roof. Roof penetrations shall not void warranty. The use of pitch pockets is not acceptable.
- C. Where work pierces waterproofing, it shall maintain the integrity of the waterproofing. Coordinate roofing materials which pierce roof for compatibility with membrane or other roof types with Contractor prior to installation.

1.13 CONCRETE PADS

- A. Furnish and install reinforced concrete housekeeping pads for transformers, switchgear, motor control centers, and other free-standing equipment. Unless otherwise noted, pads shall be four (4) inches high and shall exceed dimensions of equipment being set on them, including future sections, by six (6) inches each side, except when equipment is flush against a wall where the side against the wall shall be flush with the equipment. Pads shall be reinforced with W1.4 x 1.4 6 x 6 welded wire mesh. Chamfer top edges 1/2". Trowel all surfaces smooth. Provide 3000 psi concrete.
- B. Contractor to provide/install concrete pad for exterior pad mount transformers as required by Power Company.

1.14 SURFACE MOUNTED EQUIPMENT

- A. Surface mounted fixtures, outlets, cabinets, conduit, panels, etc. shall have finish as directed by Engineer.

1.15 CUTTING AND PATCHING

- A. New Construction:
 - 1. Reference Division 01 - General Requirements.
 - 2. Cutting of work in place shall be cut, drilled, patched, and refinished by trade responsible for initial installation.
 - 3. The Contractor shall be responsible for backfilling and matching new grades with adjacent undisturbed surface.

1.16 TRENCHING

- A. Trench excavation in excess of 5 feet deep shall comply with OSHA Standard 29 CFRs. 1926.650 Subpart P.

1.17 INSTALLATION

- A. Erect equipment to minimize interferences and delays in execution of the work.
- B. Take care in erection and installation of equipment and materials to avoid marring finishes or surfaces. Any damage shall be repaired or replaced as determined by the A/E at no additional cost to the Owner.

- C. Equipment requiring electrical service shall not be energized or placed in service until A/E is notified and is present or have waived their right to be present in writing. Where equipment to be placed in service involves service or connection from another Contractor or the Owner, the Contractor shall notify the Owner in writing when the equipment will be ready. The Owner shall be notified as far in advance as possible of the date the various items of equipment will be complete.
- D. Equipment supports shall be secured and supported from structural members except as field accepted by the A/E in writing.
- E. Plywood material shall not be used as a backboard for mounting panel boards, disconnects, motor starters, and dry type transformers. Provide "cast in place" type inserts or install expansion type anchor bolts. Electrical equipment shall not be mounted directly to dry wall for support without additional channels as anchors. Channels shall be anchored to the floor and structure above. Panelboards and terminal cabinets shall be provided with structural framing located within drywall partitions.
- F. The Contractor shall keep the construction site clean of waste materials and rubbish. Upon completion of the work, the Contractor shall remove from the site all debris, waste, unused materials, equipment, etc.
- G. Inserts, pipe sleeves, supports, and anchorage of electrical equipment shall be provided. Where items are to be set or embedded in concrete or masonry, the items shall be furnished and a layout made prior to the setting or embedment thereof, so as to cause no delay.

1.18 PROGRESS AND RECORD DRAWINGS

- A. Keep two sets of blue-line prints on the job, and neatly mark up design drawings each day as components are installed. Different colored pencils shall be used to differentiate each system of electrical work. Cost of prints and this labor task shall be included under this Division. All items on Progress Drawings shall be shown in actual location installed. Change the equipment schedules to agree with items actually furnished.
- B. Prior to request for substantial completion observation, furnish a set of neatly marked prints showing "as-installed" (as-built) condition of all electrical installed under this Division of the specifications. Marked up prints are to reflect all changes in work including change orders, field directives, addenda from bid set of Contract Documents, request for information responses, etc. Marked up set of prints are to show:
 - 1. All raceways 1-1/2" and above, exactly as installed.
 - 2. All site raceways exactly as installed.
 - 3. Any combining of circuits (which is only allowed by specific permission) or change in homerun outlet box shall be made on as-builts.
 - 4. Any circuit number changes on plan shall be indicated on as-builts.
 - 5. Any panelboard schedule changes shall be indicated on as-builts.
- C. Marked up prints as noted above are to be submitted to A/E for acceptance. Contractor shall review submitted "as-builts" with Engineer in the field. Contractor shall verify every aspect for accuracy.
- D. After acceptance of marked up prints by A/E with all changes, additions, etc. included on accepted marked up prints, submit prior to request for final payment and/or request for final observation.
- E. Where the Contractor has failed to produce representative "as-built" drawings in accordance with requirements specified herein, the Contractor shall reimburse Engineer all costs to produce a set of "as-built" drawings to the Architect/Owner satisfaction.

1.19 "OBSERVATION OF WORK" REPORT

- A. Reference the General Conditions.
- B. Items noted by A/E or his representative during construction and before final acceptance which do not comply with the Contract Documents will be listed in a "Observation of Work" report which will be sent to the Contractor for immediate action. The Contractor shall correct all deficiencies in a prompt concise manner. After completion of the outstanding items, provide a written confirmation report for each item. The report shall indicate each item noted, and method of correction. Enter the date on which the item was corrected, and return the signed reports so items can be rechecked. Failure to correct the deficiencies in a prompt concise manner or failure to return the signed reports shall be cause for disallowing request for payments.
- C. Items noted after acceptance during one-year guarantee period shall be checked by the Contractor in the same manner as above. The signed reports are to be returned by him when the items have been corrected.

1.20 TRAINING OF OWNERS OPERATORS: (Refer to Appendix A)

- A. The owners shall be given comprehensive training in the understanding of the systems and operation and maintenance of each major piece of equipment
- B. The contractor shall be responsible for scheduling the training which shall start with classroom sessions followed by hands on training on each piece of equipment. Hands on training shall include start-up, operation in all modes possible, shut-down and any emergency procedures.
- C. The manufacturer's representative shall provide the instructions on each major piece of equipment. These sessions shall use the printed installation, operation and maintenance instruction material included in the O&M manuals and shall emphasize safe and proper operating requirements and preventative maintenance.

1.21 SYSTEMS WARRANTY

- A. Reference the General Conditions.
- B. The work shall include a one-year warranty. This warranty shall be by the Contractor to the Owner for any defective workmanship or material which has been furnished at no cost to the Owner for a period of one year from the date of substantial completion of System. Warranty shall not include light bulbs in service after one month from date of substantial completion of the System. Explain the provisions of warranty to the Owner at the "Demonstration of Completed System" meeting to be scheduled with the Owner upon project completion.
- C. Where items of equipment or materials carry a manufacturer's warranty for any period in excess of twelve (12) months, then the manufacturer's warranty shall apply for that particular piece of equipment or material.
- D. Where extended Warranty or Guarantees are called for herein, furnish three copies to be inserted in Operation and Maintenance Manuals.
- E. All preventative maintenance and normal service will be performed by the Owner's maintenance personnel after final acceptance of the work which shall not alter the Contractor's warranty.

1.22 WASTE MATERIALS DISPOSAL

- A. Contractor shall include in his bid the transport and disposal or recycling of all waste materials generated by this project in accordance with all rules, regulations and guidelines applicable. Contractor shall comply fully with Florida statute 403.7186 regarding mercury containing devices and lamps. Lamps, ballasts and other materials shall be transported and disposed of in accordance with all DEP and EPA guidelines applicable at time of disposal. Contractor shall provide owner with written certification of accepted disposal.

1.23 SUBSTANTIAL COMPLETION

- A. The Contractor shall be fully responsible for contacting all applicable parties to schedule required observations of the work by Engineer.
- B. Work shall be complete as required by authorities having jurisdiction and the general conditions of the contract prior to request for substantial completion observation. Work must be deemed substantially complete by A/E to fulfill requirements.

1.24 PROHIBITION OF ASBESTOS AND PCB

- A. The use of any process involving asbestos or PCB, and the installation of any product, insulation, compound of material containing or incorporating asbestos or PCB, is prohibited. The requirements of this specification for complete and operating electrical systems shall be met without the use of asbestos or PCB.
- B. Prior to the Final Review field visit, the Contractor shall certify in writing that the equipment and materials installed in this Project under this Division 26 contain no asbestos or PCB's. Additionally, all manufacturers shall provide a statement with their submittal that indicates that their product contains no asbestos or PCB's. This statement shall be signed and dated by a duly authorized agent of the manufacturer.

PART 2 PRODUCTS

(Not Applicable)

PART 3 EXECUTION

(Not Applicable)

END OF SECTION

APPENDIX A

Training Schedule							
Div.	Training Description	Subcontractor	Demo Date	Time	Hours	Comments	Personnel to attend training
	Premise Distribution System IT Network/Data				4 hours	Familiarize the owner with the locations of all TR's, cable and jack labeling and numbering systems, data and voice connections.	
	Electrical Systems				2-4 hour	Complete overview of all electrical systems. See specifications for list of essential features to be demonstrated, include generator.	
	Audio Video Systems				2-4 hour	Demo system operation and provide a 2 hour video taped instruction with manufacture's training personnel to school personnel upon all aspects of the CATV system from the head-end to the user TV.	
	Access Control System				4 hours	Demonstrate to owner selected personnel proper operation and maintenance of all related equipment.	
	Intrusion Detection				2-4 hour	Demonstrate to owner selected personnel proper operation and maintenance of all related equipment.	

SECTION 26 05 03
EQUIPMENT WIRING SYSTEMS

PART 1 – GENERAL

1.1 DESCRIPTION OF SYSTEM

- A. Provide and install all equipment, labor, material, accessories, and mounting hardware for a complete and operating system for the following:
 - 1. Electrical connections to equipment specified under other sections.

1.2 RELATED SECTIONS

- A. Summary of Work
- B. Conduit.
- C. Building Wire and Cable.
- D. Boxes.
- E. Electric Doors

1.3 REFERENCES

- A. NEMA WD 1 - General Requirements for Wiring Devices
- B. NEMA WD 6 - Wiring Devices-Dimensional Requirements
- C. ANSI/NFPA 70 - National Electrical Code.

1.4 SUBMITTALS

- A. Submit under provisions of the General Requirements of the Contract Documents and Section Submittals.

1.5 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.6 COORDINATION

- A. Obtain and review shop drawings, product data, and manufacturer's instructions for equipment furnished under other sections.
- B. Determine connection locations and requirements.
- C. Sequence rough-in of electrical connections to coordinate with installation schedule for equipment.
- D. Sequence electrical connections to coordinate with start-up schedule for equipment.

PART 2 – PRODUCTS

2.1 CORDS AND CAPS

- A. Attachment Plug Construction: Conform to NEMA WD 1.
- B. Configuration: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
- C. Cord Construction: ANSI/NFPA 70, Type SO multi-conductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
- D. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify conditions under provisions of Section Investigation of Existing Electrical Systems.
- B. Verify that equipment is ready for electrical connection, wiring, and energization.

3.2 ELECTRICAL CONNECTIONS

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations (including inside of coolers/freezers).
- C. Make wiring connections using wire and cable with insulation suitable for temperatures encountered in heat producing equipment and in cooler/freezers.
- D. Provide receptacle outlet where connection with attachment plug is required. Provide cord and cap where field-supplied attachment plug is required.
- E. Provide suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- F. Install disconnect switches, controllers, control stations, and control devices as required.
- G. Modify equipment control wiring with terminal block jumpers as required.
- H. Provide interconnecting conduit and wiring between devices and equipment where required.
- I. Coolers and Freezers: Cut and seal conduit openings in freezer and cooler walls, floor, and ceilings.

3.3 EQUIPMENT CONNECTION SCHEDULE

- A. By local authority and as required for a complete and operating service.
- B. Electric Door(s) and Gate(s):
 - 1. Electrical Connection: liquid tight flexible conduit with local field installed disconnect switch and field installed control switch.
 - 2. Voltage: 120 volts, 1 phase, 60 Hz, 3/4" c or as indicated on drawings.
 - 3. Load rating: 1/2 hp, 3/4" c or as indicated on drawings
 - 4. Provide local disconnecting means.

END OF SECTION

SECTION 26 05 07
SUBMITTALS

PART 1- GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Requirements for submittals specifically applicable to Division 26, 27, 28 Sections.
- B. See Section Substitutions for additional requirements when submittal consists of accepted substitution equipment.

1.3 SUBMITTAL OF "ACCEPTED SUBSTITUTE" EQUIPMENT/PRODUCT

- A. Representation: In submitting item, equipment, product, etc. that has been listed on contract drawings, in contract documents or in an addenda, Contractor represents that he:
 - 1. Has investigated substituted item and has determined that it is equal or superior to specified product in all aspects and that use of substituted item will not require any additional time to the Contract.
 - 2. Will coordinate installation of accepted substitution into work, making changes as may be required to complete work in all aspects.
 - 3. Waives all claims for additional costs related to substitution which may subsequently become apparent.
 - 4. Will provide the same warranties for the substitution as for the product specified.
 - 5. Will absorb all costs incurred by the substitution when affecting other trades including but not limited to electrical, structural, architectural, etc.
 - 6. Will absorb any cost incurred by the Engineer in review of the substituted product if the acceptance of the substituted item creates the need for system modification and/or redesign, or if the substituting contractor exhibits negligence in his substituting procedure thus submitting inferior, misapplied or miss-sized equipment. In the event of additional engineering costs, the billing structure shall be agreed upon prior to review by all involved parties.
- B. Substitutions that cannot meet space requirements or other requirements of these Specifications, whether accepted or not, shall be replaced at the Contractor's expense with no additional time added to the Contract.

1.4 SUBMITTALS

- A. Submittals shall consist of a minimum of one view type 3-ring binder, white, sized to hold 8-1/2" x 11" sheets for "ELECTRICAL SUBMITTALS" (Power and Lighting).
 - 1. Binder is to be adequately sized to comfortably hold required submittals. Minimum spline size to be 1", maximum spline size to be 3" (provide additional binders if 3" size is not sufficient to properly hold submittals).

2. Binder cover and spline to have outer clear vinyl pockets. Provide correct designation of project in each pocket; see Binder Examples for Submittals included at end of this Section. Description sheet is to be white with black letters, minimum of 11" high and full width of pocket. Description is to describe project and match project drawing/project manual description. Description to include submittal type, i.e., "ELECTRICAL SUBMITTALS" for Power and Lighting.
- B. Submittals Binders to include:
1. First sheet shall be prepared and filled out by Contractor and shall list project addresses, telephones, etc.; see "PROJECT ADDRESSES" Form included at end of this section.
 2. Second sheet in binder shall be a photocopy of the Electrical Index pages in Specifications.
 3. Provide reinforced separation sheets tabbed with the appropriate specification reference number and typed index for each section in the Systems Schedule.
 4. Submittals consisting of marked catalog sheets or shop drawings shall be inserted in the binder in proper order. Submittal data shall be presented in a clear and thorough manner. Clearly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Markings shall be made with arrows or circles (highlighting is not acceptable).
 5. Shop Drawings: Drawings to include identification of project and names of Architect, Engineer, General Contractor, subcontractor and supplier, data, number sequentially and indicate the following:
 - a) Fabrication and erection dimensions.
 - b) Arrangements and sectional views.
 - c) Necessary details, including complete information for making connections with other work.
 - d) Kinds of materials and finishes.
 - e) Descriptive names of equipment.
 - f) Modifications and options to standard equipment required by the work.
 - g) Leave blank area, size approximately 4 by 2 1/2 inches, near title block (for A/E's stamp imprint).
 - h) In order to facilitate review of drawings, insofar as practicable, they shall be noted, indicating by cross reference the contract drawings, note, and specification paragraph numbers where items occur in the Contract Documents.
 - i) Conduit/raceway rough-in drawings.
 - j) Items requiring shop drawings include (but not limited to):
 1. Manual transfer switch
 2. Special built light fixtures
 3. Each section of fire alarm, television, etc.
 4. UPS systems
 5. Emergency generator systems
 6. Special and/or modified equipment
 7. Main switchboard(s)
 8. UL listed fire and smoke stopping assemblies for each applicable penetration
 - k) See specific sections of Specifications for further requirements.
 6. Product Data: Technical data is required for all items as called for in the Specifications regardless if item furnished is as specified.

- a) Submit technical data verifying that the item submitted complies with the requirements of the Specifications. Technical data shall include manufacturer's name and model number, dimensions, weights, electrical characteristics, and clearances required. Indicate all optional equipment and changes from the standard item as called for in the Specifications. Furnish drawings, or diagrams, dimensioned and in correct scale, covering equipment, showing arrangement of components and overall coordination.
- b) In order to facilitate review of product data, insofar as practicable, they shall be noted, indicating by cross reference the contract drawings, note, and/or specification paragraph numbers where and/or what item(s) are used for and where item(s) occur in the contract documents.
- c) See specific sections of Specifications for further requirements.

1.5 PROCESSING SUBMITTALS

- A. Submit under provisions of the General Requirements of the Contract and this section of the Specifications, whichever is the most strict.
- B. Quantity of submittals with marking on each copy shall be submitted under provisions of General Requirements of the Contract, Division 01, and this and other sections of the Specifications. Original submittal must contain 3-ring binders with:
 1. Project Addresses
 2. Index
 3. Separation Sheets
 4. Basic Materials
 5. Panelboards
 6. Light Fixtures
 7. Long Lead Items
 8. Systems Product Data
- C. Remainder of submittals are to be submitted no later than 60 days after award of contract or 60 days prior to Request for Substantial Completion whichever is earlier.
- D. The Contractor shall review all submittals before submitting to the A/E. No request for payment will be considered until the submittals have been reviewed and submitted for approval.
- E. Product Data: For standard manufactured materials, products and items, submit one (1) copy or sets of data (per binder). If submittal is rejected, resubmittal shall contain same quantity of new data.
- F. Shop Drawings: For custom fabricated items and systems shop drawings, initially submit a transparency (suitable for reproduction) together with two (2) prints made therefrom. When submittal is acceptable, furnish one (1) print per binder made from the accepted transparency.
- G. Shop Drawing Review Notation.

<u>Action</u>	<u>Description</u>
1. No Exception Noted	No exceptions taken. Resubmittal not required.
2. Rejected	Not in compliance with Contract Documents. Resubmit.
3. Submit Specific Item	Resubmit item as specified.
4. Make Corrections Noted	Make corrections noted, resubmittal not required.
5. Revise and Resubmit	Make corrections noted, resubmittal is required

- 6. Review not Required Not required for review. No action taken. Copy retained for reference.
- H. Acceptance: When returned to Contractor, submittals will be marked with A/E's stamp. If box marked "Rejected" "Revise and Resubmit" or "Submit Specific Item" is checked, submittal is not accepted and Contractor is to correct and resubmit as noted, otherwise submittal is accepted and Contractor is to comply with notation making necessary corrections on submittal. Review comments will generally not be on each individual submittal sheet, and will be on a separate sheet attached to shop drawing transmittal, submittal as a whole or each submittal section.
- I. Note that the acceptance of shop drawings or other information submitted in accordance with the requirements specified above, does not assure that the Engineer, Architect, or any other Owner's Representative, attests to the dimensional accuracy or dimensional suitability of the material or equipment involved, the ability of the material or equipment involved or the Mechanical/Electrical performance of equipment. Acceptance of shop drawings does not invalidate the plans and Specifications if in conflict, unless a letter requesting such change is submitted and accepted on the Engineer's letterhead.

1.6 DELAYS

- A. Contractor is responsible for delays in job progress accruing directly or indirectly from late submissions or resubmissions of shop drawings, or product data.

1.7 RE-SUBMITTALS

- A. The A/E shall be reimbursed for all costs to review resubmittals subsequent to the second submission for the same product. Cost will be billed to Contractor at Engineer's standard hourly rate.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

Martin County School District
Purchasing/Maintenance/Transportation Department
Enhanced Security Project A2

PROJECT ADDRESSES

OWNER:

ARCHITECT:

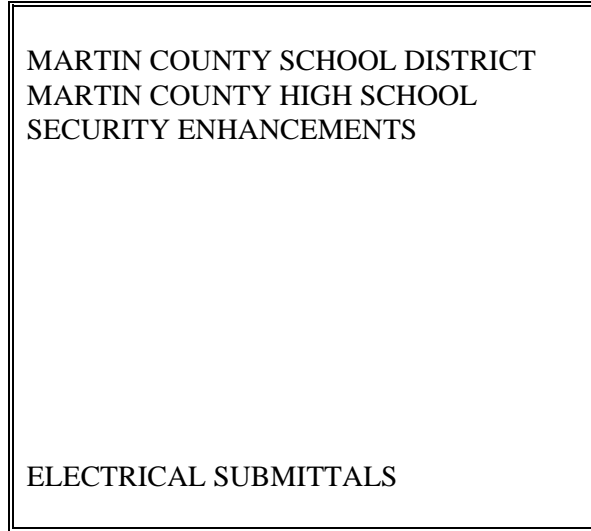
ENGINEER:

JLRD, Inc.
1450 Centrepark Blvd., Suite 350
West Palm Beach, Florida 33401
Telephone No.: (561) 689-2303
Fax No.: (561) 689-2302

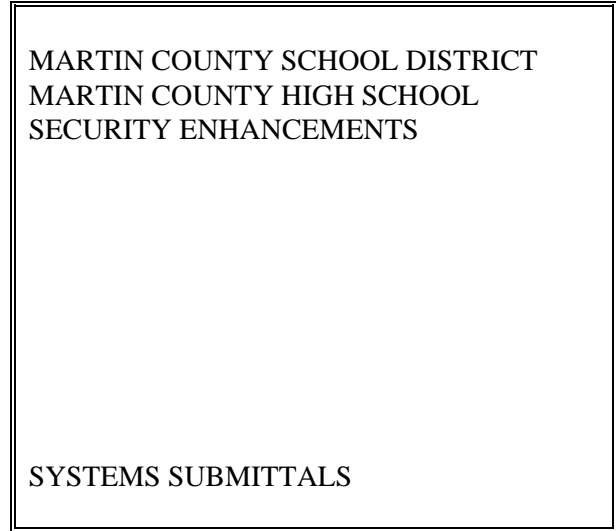
GENERAL CONTRACTOR:

SUBCONTRACTOR:

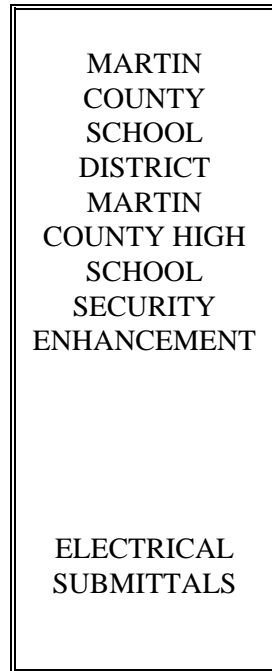
BINDER EXAMPLES FOR SUBMITTALS
Insert In Vinyl Pockets (Front & Spline) 3-Ring Binder



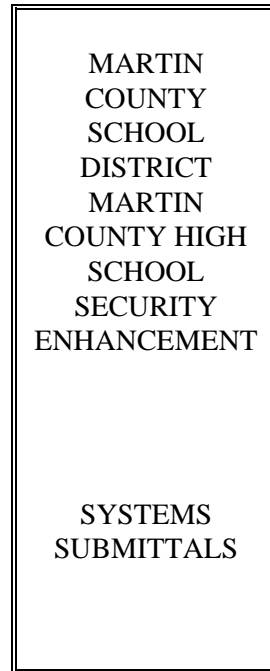
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SECTION 26 05 08
SUBSTITUTIONS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies general, administrative, and procedural requirements for substitutions for Divisions 26, 27 28 above and beyond the requirements of Division 1 General Requirements and any Supplemental requirements/conditions.
- B. Request for substitutions must be submitted no later than 10 days prior to bid due date.
- C. Request for substitution will not be considered after bid due date.

1.3 DEFINITIONS

- A. Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Products, materials, equipment, finishes, and methods of construction are considered substitutions if they meet any one of the following conditions:
 - 1. Does not meet all the requirements of these specifications under Part 1 - General or Part 2 - Products for any section included in Divisions 26, 27 28.
 - 2. Is a different design which accomplishes the same result as that design specified in Division 26 Sections.
 - 3. Is of similar or different design that:
 - a) Requires more space.
 - b) Requires more power.
 - c) Requires changes in other elements of the work such as (but not limited to) architectural, mechanical, structural, or other electrical work.
 - d) Affects the construction schedule.
 - 4. Is listed in these specifications on the Contract Documents or in any addenda as an accepted substitution.

1.4 REQUEST FOR SUBSTITUTION SUBMITTALS (10 Days Prior to Bid Due Date)

- A. A separate request for substitutions shall be submitted for each product, material, etc. that is defined as a substitution.
- B. Submittal must consist of written request for substitution with data as required below. Request must be very specific as to what specified item, request for substitution is submitted for.
- C. Each request for substitution submittal for each product, etc. shall include:
 - 1. Name of material or equipment for which it is to be substituted.
 - 2. Drawings, product data, performance data and/or other information necessary for the engineer to determine that the equipment meets all specifications and requirements.

3. Proof that pole lighting fixture and pole meet applicable wind loading requirements. Pole lighting fixtures must be submitted showing proof that they comply with the applicable wind loading requirements for location of this project.
4. Compliance Statement. Each request shall include the following compliance statement typed on letterhead of submitting company:
 - a) Submittal complies with all aspects/requirements of Contract Documents. (Yes or No). If no, state deviance.
 - b) Submittal complies with all applicable codes. (Yes or No). If no, state deviance.
 - c) Submittal complies with all other elements of the work and does not require any other changes. (Yes or No). If No, state required change.
 - d) Meets or exceeds the performance of specified product. (Yes or No). If no, state required change.

1.5 REQUEST FOR SUBSTITUTION SUBMITTALS (AFTER BID)

- A. Substitution requests submitted after bid will not be reviewed.
- B. Submittals for items noted as an Accepted Substitution on Contract Drawings, these specifications, or listed in addenda, shall be submitted as required in Section Submittals.

1.6 CONSIDERATION AND ACCEPTANCE

- A. Request for substitutions will not be considered if:
 1. Submittal does not comply with all requirements as noted above or contain all information required above.
 2. If submittal does not contain Compliance Statement, fully filled out.
 3. If Compliance Statement contains a 'no' or 'N'.
 4. Submittals are submitted beyond time limitations noted above.
- B. Samples.
 1. Sample may be required to be submitted, if deemed necessary by the A/E to determine if the substitution meets specifications.
 2. Where required by A/E on an individual basis, samples may be required after written notice of acceptance and approval has been made of each substitution.
 3. The A/E reserves the right to reject sample and consequently the substitution should the sample not meet the requirement of the contract documents.
- C. Substitutions will be considered on basis of design, concept of the Work, and overall conformance with information given in Contract Documents, including but not limited to:
 1. Design criteria, which shall be equal or superior to the specified item.
 2. Finishes, which shall be identical or superior to finishes of specified product.
 3. Lenses or louvers, which shall be identical size, thickness and type material specified.
 4. Physical size and dimension which are identical or within design criteria limitations as determined by the Engineer.
 5. Photometric data, which shall be identical or superior in quantity and quality.
 6. Trim detail and mechanical qualities, which shall be identical or within design criteria limitations as determined by the Engineer.
- D. The Engineer's decision on acceptance or rejection of substitutions will be final.
- E. Substitution requests, if accepted will be included in addenda.

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- F. Approval of a substituted item or listing a substituted item as an accepted substitution, does not modify or act as a waiver in any way, the requirements of the contract documents. See Section Submittals for additional requirements on accepted substitution submittals, equipment, etc.
- G. The naming of any manufacturer as an accepted substitution does not imply automatic approval as a substitution. It is the sole responsibility of the Contractor to ensure that any price quotations received, and submittals made are for systems that meet or exceed these specifications.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 26 05 09
REFERENCE STANDARDS AND REGULATORY REQUIREMENTS

PART 1- GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Reference Standards and Regulatory Requirements applicable to Divisions 26, 27 28 sections.

1.3 REFERENCES

- A. The following references may be referenced within these specifications:
 - AASHTO American Association of State Highway and Transportation Officials
 - ADA Americans with Disabilities Act
 - AHERA Asbestos Hazard Emergency Response Act
 - AIA American Institute of Architects
 - ANSI American National Standards Institute
 - ASCE American Society of Civil Engineers
 - ASHRAE American Society of Heating, Refrigerating and Air Conditioning Engineers
 - ASME ASME International
 - American Society of Mechanical Engineers International
 - ASTM ASTM International
 - American Society for Testing and Materials International
 - BOR Board of Regents
 - BICSI BICSI, Inc.
 - BOCC Board of County Commissioners St Johns County
 - CRSI Concrete Reinforcing Steel Institute
 - DCA-ADAIA Department of Community Affairs - Florida Americans with Disabilities Accessibility Implementation Act
 - DCA-ADAAG Department of Community Affairs - Florida Americans with Disabilities Act Accessibility Guidelines
 - DCA-ARM Department of Community Affairs - Accessibility Requirements Manual
 - DER Rule 17-761 Department of Environmental Regulation, Chapter 17-761 on Underground Storage Tank Systems
 - DER Rule 17-762 Department of Environmental Regulation, Chapter 17-762 on Above Ground Storage Tank Systems.
 - DMS/DOC Department of Management Services
 - Division of Communications
 - DOCA or DCA State of Florida Department of Community Affairs
 - EIA/TIA Electronics Industries Alliance/Telecommunications Industry Association
 - EJCDC Engineers Joint Contract Documents Committee
 - American Consulting Engineers Council
 - FAC Florida Administrative Code

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FBC	Florida Building Code
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FFPC	Florida Fire Prevention Code
FGC	Florida Building Code (Fuel Gas)
FLA	State of Florida
FMC	Florida Building Code (Mechanical)
FMG	FM Global (formerly Factory Mutual System)
FPC	Florida Building Code (Plumbing)
FS	Florida Statutes
HL	Hospital Licensure
ICC	International Code Council
IEEE	Institute of Electrical and Electronics Engineers, Inc
IES	Illumination Engineering Society of North America
ICPEA	International Power Cable Engineer's Association
IMCFMR	Intermediate Care Facilities for the Mentally Retarded
LPCR	Local Power Company Requirements
LPI	Lightning Protection Institute
LTCR	Local Telephone Company Requirements
NEC	National Electrical Code
NECPA	National Energy Conservation Policy Act
NESC	National Electrical Safety Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NHRF	Nursing Homes and Related Facilities
OEF	Office of Educational Facilities
OSHA	Occupational Safety and Health Act
SBE	State Board of Education
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
UFSRS	Uniform Fire Safety Rules and Standards of Insurance Division of State Fire Marshal
UL	Underwriters Laboratories, Inc.
FBC	Florida Building Code Section 423 State Requirements for Educational Facilities
FAC	Florida Administrative Codes, Chapter 33-8, Rules of the Department of Corrections, County and Municipal Detention Facilities.

1.4 REGULATORY REQUIREMENTS

- A. Conform to all the applicable requirements of the following codes, standards, guidelines, etc.. If there should be conflicting requirements between these codes, standards, guidelines, etc., the more or most stringent requirement shall apply that does not violate any codes or laws.
1. Standards and Miscellaneous Codes/Requirements (Comply with latest edition or notice available unless otherwise adopted by Authority Having Jurisdiction):
 - a) Americans with Disabilities Act of 1990, as amended
 - b) ADA Standards for Accessible Design, 2010
 - c) American National Standards Institute
 - d) American Society of Heating, Refrigerating and Air Conditioning Engineers

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- e) American Society of Mechanical Engineers
- f) American Society for Testing and Materials
- g) Concrete Reinforcing Steel Institute
- h) Department of Community Affairs
- i) Electronics Industries Association/Telecommunications Industry Association
- j) Florida Building Code, 2017
- k) Florida Fire Prevention Code, 2016
- l) Institute of Electrical and Electronics Engineers
- m) Illumination Engineering Society
- n) Local Power Company Requirements
- o) Lightning Protection Institute
- p) Local Telephone Company Requirements
- q) National Electrical Code, 2014
- r) National Energy Conservation Policy Act
- s) National Electrical Safety Code
- t) National Electrical Manufacturers Association
- u) NFPA 1 Fire Code, 2016
- v) NFPA 101 Life Safety Code, 2016
- w) Occupational Safety and Health Act
- x) Safety Code for Elevators and Escalators
A17.1a, 2008 and A17.1b, 2009 Addenda
- y) Safety Code for Existing Elevators and Escalators
A17.3, 1996
- z) Sheet Metal and Air Conditioning Contractors
- aa) Underwriters Laboratories, Inc.
- bb) Applicable Federal, State, Local Codes, Laws and Ordinances, Florida Statutes
and Referenced Codes/Standards

PART 2 – PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 26 05 19
BUILDING WIRE AND CABLE

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Provide all equipment, labor, material, accessories, and mounting hardware to properly install all conductors and cables rated 600 volts and less for a complete and operating system for the following:
 - 1. Building wire and cable.
 - 2. Wiring connectors and connections.
- B. All sizes shall be given in American Wire Gauge (AWG) or in thousand circular mils (MCM/KCMIL).

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.
- B. ANSI/Fed. Spec J-C 30B – Metal Clad Cables, Interlocking Galvanized Steel Tape Armor.

1.4 SUBMITTALS

- A. Product Data: Submit catalog cut sheet showing, type and UL listing of each type of conductor, connector and termination.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.7 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet Project Conditions.

- C. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

1.8 COORDINATION

- A. Determine required separation between cable and other work.
- B. Determine cable routing to avoid interference with other work.

PART 2 – PRODUCTS

2.1 BUILDING WIRE AND CABLE

- A. Description: Single conductor insulated wire.
- B. Conductor: Copper.
- C. Insulation Voltage Rating: 600 volts.
- D. Insulation: ANSI/NFPA 70, Type THHN/THWN and XHHW.

PART 3 – EXECUTION

3.1 GENERAL

- A. Install products in accordance with manufacturer's instructions.
- B. Conductors #10 AWG or #12 AWG shall be 600 volt type THWN/THHN unless noted otherwise, rated 90 degrees C dry, 75 degrees C wet.
- C. Conductors #8 AWG and larger shall be type THWN-2/THHN unless noted otherwise, rated 90 degrees C wet or dry.
- D. Use solid conductor for feeders and branch circuits 14 AWG and smaller (except for control circuits).
- E. Use conductor not smaller than 12 AWG for power and lighting circuits.
- F. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- G. All conductors shall be installed in raceway.
- H. Conductor sizes indicated on circuit homeruns or in schedules shall be installed over the entire length of the circuit unless noted otherwise on the drawings or in these specifications.
- I. Before installing raceways and pulling wire to any mechanical equipment, verify electrical characteristics with final submittal on equipment to assure proper number and AWG of conductors. (As for multiple speed motors, different motor starter arrangements, etc.).
- J. Coordinate all wire sizes with lug sizes on equipment, devices, etc. Provide/install lugs as required to match wire size.
- K. Where oversized conductors are called for (due to voltage drop, etc.) provide/install lugs as required to match conductors, or provide/install splice box, and splice to reduce conductor size to match lug size.

3.2 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that mechanical work likely to damage wire has been completed.

3.3 PREPARATION

- A. Completely and thoroughly swab raceway before installing wire.

3.4 WIRING METHODS

- A. Use only building wire, type (THHN/THWN for #10 and #12 and THHN/THWN-2 for #8 and larger) insulation, in raceway or cable (AC or MC) unless noted otherwise.
- B. Wiring in vicinity of heat producing equipment: Use only XHHW insulation, in raceway.
- C. Conductors installed within fluorescent fixture channels shall be Type THHN or XHHW, rated 90 degrees C dry. Conductors for all other light fixtures shall have temperature ratings as required to meet the UL listing of the fixture; however, in no case shall the temperature rating be less than 90 degrees Centigrade. Remove incorrect insulation types in new work.
- D. Pre-manufactured cable systems for power distribution are not allowed.
- E. MC Type cable is not allowed.

3.5 INTERFACE WITH OTHER PRODUCTS

- A. Identify wire and cable under provisions of Section Identification for Electrical Systems.
- B. Identify each conductor with its circuit number or other designation indicated on Drawings.
- C. Identify neutrals with its associated circuit number(s).

3.6 FIELD QUALITY CONTROL

- A. Perform field inspection and testing under provisions of the General Requirements of the Contract Documents and Section Tests and Performance Verification of Electrical Systems.
- B. Inspect wire for physical damage and proper connection.
- C. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.
- D. Verify continuity of each branch circuit conductor.

3.7 PULLING

- A. No wire shall be pulled until the conduit system is complete from pull point to pull point and major equipment terminating conduits have been fixed in position.
- B. Mechanical pulling devices shall not be used on conductors sized #8 and smaller. Pulling means which might damage the raceway shall not be used.
- C. Use only powdered soapstone or other pulling lubricant acceptable to the A/E. Compound or lubricant shall not cause the conductor or insulation to deteriorate.
- D. All conductors to be installed in a common raceway shall be pulled together. The manufacturer's recommended pulling tensions shall not be exceeded.
- E. Bending radius of insulated wire or cable shall not be less than the minimum recommended by the manufacturer.
- F. Where communications type conductors are installed, special requirements shall apply as outlined under that specific system detail specifications.

3.8 CONTROL AND SIGNAL CIRCUITS

- A. For control and signal circuits above 50 VAC, conductors shall be #14 AWG minimum size, Type XHHW or THWN-THHN as permitted by NFPA 70, within voltage drop limits, increased to #12 AWG as necessary for proper operation.
- B. For control and signal circuits 50 VAC and below, conductors, at the Contractor's option, may be #16 AWG, 300 volt rated, PVC insulated, except where specifically noted otherwise in the contract documents.
- C. Conductor insulation for Fire Alarm Systems shall be as accepted by Code Inspection Authority only. Wire acceptance by the A/E shall not supersede this final Acceptance for conditions of this specific project.
- D. Install circuit conductors in conduit.
- E. Circuit conductors to be stranded.

3.9 COLOR CODING

- A. All power feeders and branch circuits No. 6 and smaller shall be wired with color-coded wire with the same color used for a system throughout the building. Power feeders above No. 6 shall either be fully color-coded or shall have black insulation and be similarly color-coded with tape or paint in all junction boxes and panels. Tape or paint shall completely cover the full length of conductor insulation within the box or panel.
- B. Unless otherwise accepted or required by A/E to match existing, color-code shall be as follows: Neutrals to be white for 120/208V system, natural grey for 277/480V system; ground wire green, bare. 120/208V, Phase A - black; Phase B - red; Phase C - blue. 480/277V, Phase A brown; Phase B - orange; Phase C - yellow. All switchlegs, other voltage system wiring, control and interlock wiring shall be color-coded other than those above.

3.10 TAPS/SPLICES/CONNECTORS/TERMINATIONS

- A. Clean conductor surfaces before installing lugs and connectors.
- B. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
- C. Power and lighting conductors shall be continuous and unspliced where located within conduit. Splices shall occur within troughs, wireways, outlet boxes, or equipment enclosures where sufficient additional room is provided for all splices. No splices shall be made in in-ground pull boxes (without written acceptance of engineer).
- D. Splices in lighting and power outlet boxes, wireway, and troughs shall be kept to a minimum, pull conductors through to equipment, terminal cabinets, and devices.
- E. No splices shall be made in junction box, and outlet boxes (wire No. 8 and larger) without written acceptance of Engineer.
- F. No splices shall be made in communications outlet boxes, pull boxes or wireways (i.e., fire alarm, computer, telephone, intercom, sound system, etc.) without written acceptance of Engineer. Pull cables through to equipment cabinets, terminal cabinets and devices.

- G. Allow adequate conductor lengths in all junction boxes, pull boxes and terminal cabinets. All termination of conductors in which conductor is in tension will be rejected and shall be replaced with conductors of adequate length. This requirement shall include the providing by the Contractor of sleeve type vertical cable supports in vertical raceway installations provided in pullboxes at proper vertical spacings.
- H. A calibrated torque wrench shall be used for all bolt tightening.
- I. Interior Locations:
 - 1. All (non-electronic systems) copper taps and splices in No. 8 or smaller shall be fastened together by means of "spring type" connectors. All taps and splices in wire larger than No. 8 shall be made with compression type connectors and taped to provide insulation equal to wire.
- J. Exterior Locations:
 - 1. Make splices, taps and terminations above grade in splice or termination cabinets. Do not splice any cable in ground or below finished grade.
 - 2. All taps and splices shall be made with compression type connectors and covered with Raychem heavywall cable sleeves (type CRSM-CT, WCSM or MCK) with type "S" sealant coating with sleeve kits as per manufacturer's installation instructions or be terminated/connected to terminal strips in above grade terminal boxes suitable for use.
 - 3. Provide and install above grade termination cabinets sized to meet applicable codes and standards, where required for splicing.

END OF SECTION

SECTION 26 05 26
GROUNDING AND BONDING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Provide all labor, materials, and equipment necessary to properly install a grounding system conductor in all new branch wiring and feeder installations, which shall be in full compliance with all applicable Codes as accepted by the Authorities having jurisdiction. The secondary distribution system shall include a grounding conductor in all raceways in addition to the return path of the metallic conduit.
- B. In general, all electrical equipment (metallic conduit, motor frames, panelboards, etc.) shall be bonded together with a green insulated or bare copper system grounding conductor in accordance with specific rules of Article 250 of the NEC and State codes. Bonding conductor through the raceway system shall be continuous from main switch ground bus to panel ground bar of each panelboard, and from panel grounding bar of each panelboard to branch circuit equipment and devices.
- C. All raceways shall have an insulated copper system ground conductor throughout the entire length of circuit installed with-in conduit in strict accordance with NEC. Grounding conductor shall be included in total conduit fill determining conduit sizes, even though not included or shown on drawings. Grounding conductors that run with feeders in PVC conduit outside of building(s) shall be bare only.
- D. Provide and install all grounding and bonding as required by the National Electrical Code (NEC) including but not limited to Article 250 of the NEC.
- E. Section Includes
 - 1. Grounding electrodes and conductors
 - 2. Equipment grounding conductors
 - 3. Bonding
 - 4. Counterpoise system
 - 5. Ground ring

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.

1.4 SUBMITTALS

- A. Refer to Division 01 requirements.
- B. Submit catalog cut sheet/product data on:
 - 1. Ground rods and couplings
 - 2. Mechanical connectors

3. Ground wells
 4. Ground bus bars and associated components
 5. Ground ring conductor
 6. Counterpoise conductor
 7. Exothermic welding materials and molds
 8. Testing equipment and procedures.
- C. Product data shall prove compliance with Specifications. National Electrical Code, manufacturer's specifications and written installation data.

1.5 PROJECT RECORD DOCUMENTS

- A. Submit record documents to accurately record actual locations of grounding electrodes.
- B. Submit test results of each ground rod. See Section Tests and Performance Verification of Electrical Systems.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART 2 – PRODUCTS

2.1 ROD ELECTRODE

- A. Material: Copper-clad steel.
- B. Diameter: 5/8 inch.
- C. Length: 30 feet (minimum). Increase lengths as required to meet and achieve specified resistance.

2.2 MECHANICAL CONNECTORS

- A. All grounding connectors shall be in accordance with UL 467 and UL listed for use with rods, conductors, reinforcing bars, etc., as appropriate.
- B. Connectors and devices used in the grounding systems shall be fabricated of copper or bronze materials, and properly applied for their intended use. Specified items of designated manufacturers indicate required criteria and equal products may be provided if approved. All connectors and devices shall be compatible with the surfaces being bonded and shall not cause galvanic corrosion by dissimilar metals. Materials in items not listed herein shall be of equal quality to the following specified items:
 1. Lugs: Substantial construction, of cast copper or cast bronze, with "ground" (micro-flat) surfaces, twin clamp, two-hole tongue, equal to Burndy QQA Series or T&B equal. Lightweight and "competitive" devices shall be rejected.
 2. Grounding and Bonding Bushings: Malleable iron, Thomas and Betts (T&B), or equal.
 3. Piping Clamps: Burndy GAR-TC Series with two hole compression terminal or T&B equal.
 4. Grounding Screw and Pigtail: Raco No. 983 or equal.
 5. Building Structural Steel, Existing: Thompson 701 Series heavy duty bronze "C" clamp with two-bolt vise-grip cable clamp.

- C. Mechanical lugs or wire terminals shall be used to bond ground wires together or to junction boxes and panel cabinets and shall be manufactured by Anderson, Buchanan, Thomas and Betts Co., or Burndy.

2.3 WIRE

- A. Material: Stranded copper.
- B. Size: Size to meet NFPA 70 requirements as a minimum. Increase size if called for on drawings, in these specifications, or as required for voltage drop.
- C. Insulated THWN (or bare as noted elsewhere).

2.4 GROUNDING WELL COMPONENTS

- A. Grass Non-Traffic Areas:
 - 1. Well: Minimum 18-inch (600 mm) long sleeve with minimum 12-inch diameter.
 - 2. Well Cover: High-density plastic, composolite, or cast iron with legend "GROUND" embossed on cover.
 - 3. Material: Structural Plastic, composolite, or concrete.
 - 4. Manufacturer: Carson 2200 Series or equal by Quazite.
 - 5. Increase depth, diameter or size as required to provide proper access at installed location.
- B. Paving and Low Traffic Areas:
 - 1. Well: Minimum 12 inch long by 12 inch wide by 18 inches deep with open bottom.
 - 2. Well Cover: Traffic rated for use with "GROUND" embossed on cover.
 - 3. Material: Composolite.
 - 4. Manufacturer: Quazite.
 - 5. Increase depth, diameter or size as required to provide proper access at installed location.

2.5 GROUNDING BARS/GROUND BUS (INCLUDING 'SYSTEMS' GROUND BUS/BARS AND GROUND BUS BARS)

- A. Ground bars shall be copper of the size and description as shown on the drawings. If not sized on drawings, bus bar shall be minimum 1/4" x 2" bus grade copper, spaced from wall on insulating 2" polyester molded insulator standoff/supports, and be 12" or greater minimum overall length, allowing 2" length per lug connected thereto. Increase overall length as required to facilitate all lugs required while maintaining 2" spacing. Size of bus bar used in main electrical room shall be similar except minimum of 4" high and 24" long.
- B. Provide bolt-tapping lug with two hex head mounting bolts for each terminating ground conductor, sized to match conductors. Mount on bus bar at 2 inches on center spacing. Lugs to be manufactured by Burndy or T&B.
- C. Standoff supports to be 2" polyester as manufactured by Glastic #2015-4C.

PART 3 – EXECUTION

3.1 GENERAL

- A. Install products in accordance with manufacturer's instructions.
- B. Install grounding electrodes conductor, bonding conductors, ground rods, etc. with all required accessories.
- C. Grounding shall meet (or exceed as required to meet these specifications) all the requirements of the NEC, the NFPA, and applicable standards of IEEE.
- D. Where there is a conflict between these specifications and the above applicable codes/standards, or between this section of these specifications and other sections, then the most stringent or excessive requirement shall govern. Where there is an omission of a code/standard requirement in these specifications then the code/standard requirements shall be complied with.
- E. Requirement in these specifications to comply with a specific code/standard article, etc. is not to be construed as deleting of requirements of other applicable codes/standards and their articles, etc.

3.2 GROUNDING ELECTRODES

- A. All connections shall be exothermic welded unless otherwise noted herein. All connections above grade and in accessible locations may be by exothermic welding or by braising or clamping with devices UL listed as suitable for use except in locations where exothermic welding is specifically specified in these specifications or called for on drawings.
- B. Each rod shall be die stamped with identification of manufacturer and rod length.
- C. Install rod electrodes at locations indicated and/or as called for in these specifications.
- D. Ground Resistance:
 - 1. Main Electrical Service (to each building) and Generator Locations:
 - a. Grounding resistance measured at each main service electrode system and at each generator electrode system shall not exceed 5 ohms.
 - 2. Other Locations:
 - a. Resistance to ground of all non-current carrying metal parts shall not exceed 25 ohms measured at motors, panels, busses, cabinets, equipment racks, light poles, transformers, and other equipment.
 - b. Lightning Protection system ground locations shall not exceed 25 ohms for the Franklin System measured at ground electrode.
 - 3. Resistance called for above shall be maximum resistance of each ground electrode prior to connection to grounding electrode conductor. Where ground electrode system being measured consists of two (2) or more ground rod electrodes then the resistance specified above shall be the maximum resistance with two (2) or more rods connected together but not connected to the grounding electrode conductor.
- E. Install additional rod electrodes as required to achieve specified resistance to ground (specified ground resistance is for each ground rod location prior to connection to ground electrode conductor). Depending on soil condition, etc. of ground rod locations, it has been found that the ground rod lengths required to achieve the specified resistance may range from the minimum specified length to up to 80 feet or more in length.
- F. Provide grounding well with cover at each rod location. Install grounding well top flush with finished grade.
- G. Verify that final backfill and compaction has been completed before driving rod electrodes.

- H. Install ground rods not less than 1 foot below grade level and not less than 2 feet from structure foundation.

3.3 GROUNDING ELECTRODE CONDUCTOR

- A. Conductor shall be sized to meet (or exceed as required to meet these specifications and/or drawings) the requirements of NEC 250.

3.4 EQUIPMENT GROUNDING CONDUCTOR

- A. Grounding conductors shall be provided with every circuit to meet (or exceed as required to meet these specifications and/or drawings) the requirements of NEC 250.
- B. At every voltage level, new portions of the electrical power distribution system shall be grounded with a dedicated copper conductor, which extends from termination back to power source in supply panelboard.
- C. Provide separate, insulated (bare if with feeder in PVC conduit outside of building(s)) conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.
- D. Except as otherwise indicated, each feeder raceway on the load side of the service entrance shall contain a ground conductor sized as indicated and where not shown shall be sized to meet (or exceed as required to meet these specifications and/or drawings) the requirements of NEC 250. Conductor shall be connected to the equipment grounding bus in switchboards and panelboards, to the Grounding Bus in all motor control centers, and as specified, to lighting fixtures, motors and other types of equipment and outlets. The ground shall be in addition to the metallic raceway and shall be properly connected thereto, using a lug device located within each item enclosure at the point of electric power connections to permit convenient inspection.
- E. Provide green insulated ground wire for all grounding type receptacles and for equipment of all voltages. In addition to grounding strap connection to metallic outlet boxes, a supplemental grounding wire and screw equal to Raco No. 983 shall be provided to connect receptacle ground terminal to the box.
- F. All plugstrips and metallic surface raceway shall contain a green insulation ground conductor from supply panel ground bus connected to grounding screw on each receptacle in strip and to strip channel. Conductor shall be continuous.
- G. Where integral grounding conductor is specified elsewhere in bus duct construction, provide equivalent capacity conductor from supply switchboard or panelboard grounding bus to the bus duct grounding conductor. Bond integral conductor to bus duct enclosure at each tap and each termination.
- H. All motors, all heating coil assemblies, and all building equipment requiring flexible connections shall have a green grounding conductor properly connected to the frames and extending continuously inside conduit with circuit conductors to the supply source bus with accepted connectors regardless of conduit size or type. This shall include Food Service equipment, Laundry equipment, and all other "Equipment by Owner" to which an electric conduit is provided under this Division.

3.5 MAIN ELECTRICAL SERVICE

- A. Complete installation shall meet and exceed the requirements of the NEC 250.
- B. Artificial electrodes shall be provided for the main service in sufficient number and configuration to secure resistance specified.
- C. Provide and bond to all of the following:
 - 1. Ground rods.
 - 2. Metal water pipe (interior and exterior to building).
 - 3. Building metal frame, structural steel and/or reinforced structural concrete.
 - 4. All piping entering or leaving all buildings (including chilled water piping).
 - 5. Encased electrodes.
 - 6. Ground ring.
 - 7. Site distribution counterpoise ground system.
 - 8. Lightning protection system.
- D. A main ground, bare copper conductor, sized per applicable table in NEC 250, but in no case less than #2/0, shall be run in conduit from the main switchgear of each building to the building steel in respective building. This ground conductor shall also be run individually from the main switchgear and be bonded to the main water service ahead of any union in pipe and must be metal pipe of length and location as acceptable by authorities having jurisdiction. Provide properly sized bonding shunt around water meter and/or dielectric unions in the water pipe. Also required is the same size ground wire to ground rod electrode as called for below:
 - 1. Three 30 ft. ground rods in a delta configuration at no less than 30 ft. spacing driven to a minimum depth of 30 ft. plus 1 below grade. If three 30 ft rods in a delta configuration does not provide specified resistance change rod lengths from minimum specified to 40 or more feet as required to provide specified resistance. Adjust rod spacing as required to provide spacing equal to or greater than the driven depth of the deepest ground rod.
 - 2. Bond ground rod electrodes together with a bare copper ground conductor that matches size required by applicable table in NEC 250, but in no case less than #2/0.
 - 3. Provide additional rod electrodes as required to achieve specified ground resistance.
- E. Ground/bond neutral per NEC 250.
- F. A main ground, bare copper conductor, sized per applicable table in NEC 250, but in no case less than #2/0, shall be run in conduit from the main switchgear of each building to a concrete encased electrode per NEC 250.52(A)(3).
- G. Bond grounding electrodes to site counterpoise grounding system and lightning protection system where provided.
- H. Provide and install ground bus bar on wall near main service disconnect/switchboard. Connect to ground bar in disconnect/switchboard bonded to switchboard/disconnect enclosure/neutral with copper grounding conductor sized per applicable table in NEC 250.

3.6 TRANSFORMER GROUNDING

- A. Ground all transformers and enclosures of 120/208V and 277/480V "separately derived systems" as specified herein.
 - 1. Ground per NEC 250 and these specifications.
 - 2. Bond neutral to transformer frame/enclosure and the equipment grounding conductors of the derived system with copper ground conductor sized per applicable table in NEC 250.
 - 3. Connect transformer neutral/ground to grounding electrode per NEC 250 with grounding

- electrode conductor sized per applicable table in NEC 250.
4. In addition to connection to grounding electrode conductor called for above (i.e. per NEC 250) provide, install and connect supplemental grounding electrode as follows:
 - a. Where grounding required per NEC 250 is to building steel/structure, supplement this grounding with connection to nearest available effectively grounded metal water pipe.
 - b. Where grounding connection required per NEC 250 is to grounded metal water pipe, supplement this grounding with connection to building steel/structure in addition to any other available electrodes specified in NEC 250.
 - c. Where supplemental grounding electrodes required above is a ground rod electrode, provide, install and connect two or more 30 ft. ground rod electrodes at no less than 30 ft. spacing, driven vertical to a minimum depth of 30 ft. plus 1 below grade.
 5. Where neither building steel nor water pipe grounding electrodes are available (i.e. exterior locations with no available water pipe electrode) provide two (2) ground connections: each to two (2) or more 30 ft. ground rod electrodes at no less than 30 ft. spacing, driven vertical to a minimum depth of 30 ft. plus 1 below grade.
 6. Where transformer is mounted exterior to building one (1) of the two (2) ground electrodes required shall be ground rod electrode as called for in 5 above. This ground rod electrode shall also be connected to counterpoise system (wherever counterpoise system is available).
 7. Ground to water system service pipe as required by NEC 250.
- B. Provide additional ground electrodes as required to achieve specified ground resistance.
 - C. Where two or more ground electrodes are used at any one required ground location, they shall be bonded together with a copper ground conductor, sized to meet applicable table in NEC 250, but in no case less than #2/0.
 - D. Complete installation shall exceed the minimum requirements of NEC 250.
 - E. Equipment ground conductors shall be provided in addition to above grounding. See 'EQUIPMENT GROUNDING CONDUCTOR'.
 - F. Provide and install ground bus bar on wall near transformer (or in associated electrical room for exterior mounted transformers). Connect to ground lug in transformer bonded to transformer enclosure/neutral with copper ground conductor sized per applicable table in NEC 250.
 - G. Multiple separately derived systems may be grounded as allowed in NEC 250-30 (A) (4).

3.7 GENERATOR GROUNDING

- A. Separately derived systems (i.e. systems where generator neutral is not solidly interconnected to service supplied system neutral such as 4-pole switched neutral transfer switch systems).
 1. Ground per NEC 250 and these specifications.
 2. Bond neutral to transformer frame/enclosure and the equipment grounding conductors of the derived system with copper ground conductor sized per applicable table in NEC 250.
 3. Connect generator neutral/ground to grounding electrodes per NEC 250 with grounding electrode conductor sized per applicable table in NEC 250.
 4. In addition to connection to grounding electrode conductor called for above (i.e. per NEC 250) provide, install and connect supplemental grounding electrode as follows:
 - a. Where grounding required per NEC 250 is to building steel/structure, supplement this grounding with connection to nearest available effectively grounded metal water pipe.

- b. Where grounding connection required per NEC 250 is to grounded metal water pipe, supplement this grounding with connection with connection to other electrodes specified in NEC 250.
 - c. Where supplemental grounding electrodes required above is a ground rod electrode, provide, install and connect two or more 30' ground rod electrodes at no less than 30' spacing, driven vertical to a minimum depth of 30' plus 1' below grade.
 5. Where neither building steel nor water pipe grounding electrodes are available (i.e. exterior locations with no available water pipe electrode) provide two ground connections: each to two or more 30' ground rod electrodes at no less than 30' spacing, driven vertical to a minimum depth of 30' plus 1' below grade.
 6. Where generator is mounted exterior to building one of the two ground electrodes required shall be ground rod electrode as called for in paragraph 5. above. This ground rod electrode shall also be connected to counterpoise system.
- B. Non separately derived systems (i.e. systems where generator neutral is solidly interconnected to service supplied system neutral such as 3-pole non-switched neutral transfer switch systems).
 1. Ground per NEC 250 and these specifications.
 2. Do not bond neutral to transformer frame/enclosure or the equipment grounding conductors of the derived system.
 3. Connect generator frame/enclosures ground to grounding electrode per NEC 250 with grounding electrode conductor sized per applicable table in NEC 250.
 4. In addition to connection to grounding electrode conductor called for above (i.e. per NEC 250) provide, install and connect supplemental grounding electrode as follows:
 - a. Where grounding required per NEC 250 is to building steel/structure, supplement this grounding with connection to nearest available effectively grounded metal water pipe.
 - b. Where grounding connection required per NEC 250 is to grounded metal water pipe, supplement this grounding with connection to other electrodes specified in NEC 250.
 - c. Where supplemental grounding electrodes required above is a ground rod electrode, provide, install and connect two or more 30' ground rod electrodes at no less than 30' spacing, driven vertical to a minimum depth of 30' plus 1' below grade.
 5. Where neither building steel nor water pipe grounding electrodes are available (i.e. exterior locations with no available water pipe electrode) provide two ground connections: each to two or more 30' ground rod electrodes at no less than 30' spacing, driven vertical to a minimum depth of 30' plus 1' below grade.
 6. Where generator is mounted exterior to building one of the two ground electrodes required shall be ground rod electrode as called for in paragraph 5. above. This ground rod electrode shall also be connected to counterpoise system.
- C. Provide additional ground electrodes as required to achieve specified ground resistance.
- D. Where two or more ground electrodes are used at any one required ground location, they shall be bonded together with a copper ground conductor, sized to meet applicable table in NEC 250, but in no case less than #2/0.
- E. Complete installation shall exceed the minimum requirements of NEC 250.
- F. Equipment ground conductors shall be provided in addition to above grounding. See "Equipment Grounding Conductors."

3.8 LIGHTNING PROTECTION SYSTEMS

- A. Ground per applicable section on lightning protection system, NFPA 780, and as specified herein. The most stringent requirements shall govern.
- B. Bond lightning protection system grounds to electrical service system ground, all piping entering or leaving all buildings, and counterpoise system ground where provided.
- C. See Section Lightning Protection System.

3.9 EXTERIOR GRADE (OR FREE STANDING ABOVE GROUND) MOUNTED EQUIPMENT

- A. General:
 - 1. All equipment (including chillers, pumps, disconnects, starters, control panels, panels, etc.) mounted exterior to building shall have their enclosures grounded directly to a grounding electrode at the equipment location in addition to the building equipment ground connection.
 - 2. Bond each equipment enclosure, metal rack support, mounting channels, etc. to ground electrode system at each rack with an insulated copper ground conductor sized to match the grounding electrode conductor required by applicable table in NEC 250 based on equipment feeder size, but in no case shall conductor be smaller than #6 copper or larger than #2 copper. This connection is in addition to grounding electrode connections required for services.
- B. Main electrical service rack mounted equipment.
 - 1. Ground per "MAIN ELECTRICAL SERVICE".
 - 2. Bond all metal parts as noted above.
- C. Electrical sub service rack mounted equipment.
 - 1. Ground per "MAIN ELECTRICAL SERVICE", except do not bond neutral to ground.
 - 2. Bond all metal parts as noted above.
- D. Electrical equipment connection rack mounted equipment.
 - 1. Bond all metal parts as noted above.
- E. Grounding electrodes (ground electrodes system) shall be:
 - 1. Located at each rack location.
 - 2. For service equipment: Ground electrode required per "MAIN ELECTRICAL SERVICE".
 - 3. For equipment connection equipment: Two or more 30 ft. ground rods at no less than 30 ft. spacing, driven vertical to a minimum depth of 1 ft below grade. Bond the two or more ground rods together with a size to meet applicable table in NEC 250, but no less than a #2 copper ground conductor. Provide additional rod electrodes as required to achieve specified ground resistance.
- F. Complete installation shall exceed the minimum requirements of NEC 250 and, when applicable, NFPA 780.

3.10 ROOF MOUNTED EQUIPMENT

- A. Bond all roof mounted electrical equipment to lightning protection system (when provided) per NFPA 780.
- B. Where lightning protection system is not provided, ground/bond all roof mounted electrical equipment to building steel and to two (2) or more 30 ft. ground rods at no less than 30 ft. spacing driven vertically to a minimum depth of 30 ft. plus 1 below grade.

1. Bond the two or more ground rods together with a Class I or Class II as required per NFPA 780 lightning protection main copper conductor.
2. Provide additional rod electrodes as required to achieve specified ground resistance.
3. Complete installation shall exceed the minimum requirements of NFPA 780.

3.11 LIGHTING FIXTURES

- A. All new fixtures in building interior, and exterior fixtures shall be provided with green grounding conductor, solidly connected to unit. Individual fixture grounds shall be with lug to fixture body, generally located at point of electrical connection to the fixture unit.
- B. All suspended fixtures and those supplied through flexible metallic conduit shall have green ground conductor from outlet box to fixture. Cord connected fixtures shall contain a separate green ground conductor.
- C. Pole Light Fixtures:
 1. Metal Pole Light Fixtures:
 - a. Freestanding pole mounted lighting fixtures shall each have a Class I or Class II lightning protection main copper down conductor connected to grounding electrodes at base of pole.
 - b. Conductor shall be bonded to metal pole via UL Listed ground clamp suitable for use. Locate ground lug opposite to handhole (or adjacent if visible through handhole).
 2. Concrete or Non-Metallic Pole:
 - a. Freestanding pole mounted lighting fixtures shall each have a Class I or Class II lightning protection main copper down conductor connected to grounding electrodes at base of pole.
 - b. Conductor shall be extended from grounding electrode to top of pole and terminate at the top of pole in a Class I or Class II copper lightning protection air terminal.
 - c. Each metal part of light fixture assembly, bracket, ballast cabinet, disconnect, transformer, etc. that is mounted to pole shall be bonded to down conductor.
 3. Fixtures located on elevated roadway ramps shall be specially provided with a connection to lightning counterpoise grounding system, properly installed.
 4. Grounding electrode(s) at each pole shall be connected (bonded) to site distribution counterpoise system.
 5. Grounding Electrodes:
 - a. Two or more 10 ft. ground rods at no less than 10 ft. spacing shall be driven vertically to a minimum depth of 10 ft. plus 1 below grade.
 - b. Bond the two or more ground rod electrodes together with a Class I or Class II lightning protection main copper conductor.
 - c. Provide additional rod electrodes as required to achieve specified ground resistance.
 - d. The two (2) or more grounding rod electrodes shall be installed at each light pole.
 6. Installation shall exceed minimum requirements of NFPA 780.

3.12 PULLBOX, MANHOLE, HANDHOLE GROUNDING.

- A. One 30 ft. ground rod electrode shall be driven vertically to a minimum depth of 30 ft. plus 1 ft. below grade in each manhole, handhole or pullbox (in ground).
- B. The complete installation shall exceed the minimum requirements of the NEC.
- C. Provide additional ground rod electrodes as required to provide resistance called for herein.
- D. Where more than one ground rod electrode is required bond the two or more ground rod

electrodes together with a copper ground conductor.

- E. Bond to counterpoise system (whenever counterpoise system is provided.)
- F. Bond grounding electrode to all exposed metal parts of manhole, handhole, and pullbox (including metal cover) with #6 copper ground conductor. Connect to ground rod electrode with exothermic weld. Connect to metal cover with exothermic weld. Connect to other metal parts with exothermic weld or UL accepted grounding clamp. Provide 3 ft. or more slack ground cable on cover connection as required to facilitate removal of cover.

3.13 HAZARDOUS LOCATIONS

- A. Ground in hazardous locations shall be done in accordance with applicable portions of NEC 500, 501, 502, 503, 511 and 514.

3.14 GROUND RING

- A. Provide complete underground building perimeter ground ring system, completely encircling each building.
- B. Conductor shall be minimum of Class II lightning protection copper conductor (bare).
- C. Install at not less than 2-1/2 feet depth into earth.
- D. Install ground rods (minimum 30 feet long) at 150 foot intervals along ground ring conductor.
- E. Bond ground ring to building steel every 150 feet of building perimeter, bond to any and all electrical and piping systems that cross the ground ring system, bond to lightning protection down conductors and to any lightning or other earth grounding electrodes that may be present on the premises.
- F. Bond to building service and counterpoise ground systems.

3.15 MISCELLANEOUS GROUNDING CONNECTIONS

- A. Provide bonding to meet regulatory requirements.
- B. Required connections to building steel shall be with UL accepted non-reversible crimp type ground lugs exothermically welded to bus bar that is either exothermically welded to steel or bolted to steel in locations where weld will affect the structural properties of the steel. Required connections to existing building structural steel purlins/I beams shall be with heavy duty bronze "C" clamp with two bolt vise-grip cable clamp.
- C. Grounding conductors shall: be so installed as to permit shortest and most direct path from equipment to ground; be installed in conduit; be bonded to conduit at both ends when conduit is metal; have connections accessible for inspection; and made with accepted solderless connectors brazed (or bolted) to the equipment or to be grounded; in NO case be a current carrying conductor; have a green jacket unless it is bare copper; be run in conduit with power and branch circuit conductors. The main grounding electrode conductor shall be exothermically welded to ground rods, water pipe, and building steel.
- D. All surfaces to which grounding connections are made shall be thoroughly cleaned to maximum conductive condition immediately before connections are made thereto. Metal rustproofing shall be removed at grounding contact surfaces, for 0 ohms by digital Vm. Exposed bare metal at the termination point shall be painted.

- E. All ground connections that are buried or in otherwise inaccessible locations, shall be welded exothermically. The weld shall provide a connection which shall not corrode or loosen and which shall be equal or larger in size than the conductors joined together. The connection shall have the same current carrying capacity as the largest conductor.
- F. Install ground bushings on all metal conduits entering enclosures where the continuity of grounding is broken between the conduit and enclosure (i.e. metal conduit stub-up into a motor control center enclosure or at ground bus bar). Provide an appropriately sized bond jumper from the ground bushing to the respective equipment ground bus or ground bus bar.
- G. Install ground bushings on all metal conduits where the continuity of grounding is broken between the conduit and the electrical distribution system (i.e. metal conduit stub-up from wall outlet box to ceiling space. Provide an appropriately sized bond jumper from the ground bushing to the respective equipment ground bus or ground bus bar.
- H. Each feeder metallic conduit shall be bonded at all discontinuities, including at switchboards and all subdistribution and branch circuit panels with conductors in accordance with applicable table in NEC 250 for parallel return with respective interior grounding conductor.
- I. Grounding provisions shall include double locknuts on all heavywall conduits.
- J. Bond all metal parts of pole light fixtures to ground rod at base.
- K. Install grounding bus in all existing panelboards of remodeled areas, for connection of new grounding conductors, connected to an accepted ground point.
- L. Bond together reinforcing steel and metal accessories in pool and fountain structures and bond to electrical system per NEC.
- M. Where reinforced concrete is utilized for building grounding system, proper reinforced bonding shall be provided to secure low resistance to earth with "thermite" type devices, and #10AWG wire ties shall be provided to not less than ten (10) full length rebars which contact the connected rebar (by Division 26 contractor). Provide size and length of rod to meet NEC requirements.

3.16 GROUNDING BAR/GROUND BUS (INCLUDING 'SYSTEMS' GROUND BUS/BAR ON GROUND BUS/BAR) INSTALLATION

- A. Where indicated on the drawings provide and install grounding bar/ground bus (bus bar). These bus installations are intended to provide a low-impedance "earthing" path for surge voltages, which are electrically "clamped" and shunted to earth by variable-impedance surge protective devices. Metal sheaths of underground cables are also to be grounded thereto at points of building entrance.
- B. Mount bolt tapping lugs with hex head bolts to bus bar at 2" oc spacing, one for each ground conductor.
- C. Mount bus bar to wall using 2" polyester molded insulator stand-off.
- D. Extend a #2/0 (minimum size) or larger THWN insulated copper ground conductor (if larger size is called for on drawings or required by NEC for service ground, etc.) in PVC conduit to accepted service ground installation or ground bus/bar in main service equipment enclosure.
- E. Extend #6 insulated copper ground wire from respective bus/bar to each 'local' ground bus/bar in each cabinet for Division 28 systems.
- F. 'SYSTEMS' grounding bus/bar must be connected with #2/0 insulated copper conductor to grounding electrodes system as defined in NEC "Article 800.100 (B)".

3.17 COUNTERPOISE SYSTEM

- A. Install counterpoise and ground over all sections of underground ductbanks, conduits, or cables outside (exterior) to building.
- B. No. 2 bare stranded copper counterpoise shall be run six (6) inches above all underground duct banks, conduits and cables outside (exterior) to building.
- C. Provide one (1) counterpoise conductor for ductbanks (or conduit groupings) 12 inches wide or less. Provide two (2) counterpoise conductors above outside edge of ductbank (or conduit groupings) over 12 inches wide.
- D. Counterpoise shall run to building and be grounded at each building to the main building electrical service ground rod electrode (exterior to building). Counterpoise shall be bonded to ground rod at all light poles, pullboxes, manholes, handholes and at each building. Provide and install appropriate ground rod every 150 ft. length of counterpoise conductor (see "GROUNDING ELECTRODES"). Counterpoise conductor shall not be run into interior of building. Route counterpoise underground around exterior perimeter of building to main service ground rod installation.

3.18 COMMUNICATIONS SYSTEMS

- A. Provide and install all grounding as required by NEC Article 800 and where available on project: Articles 810 (Radio and Television Equipment); 820 (Community Antenna Television and Radio Distribution Systems); and 830 (Network-Powered Broadband Communications Systems).
- B. Provide and install grounding electrode at point of entry of communication cables and bond to service entrance grounding electrodes per NEC 800. Install ground bus bar at point of entry of communications cable and connect electrode to ground bus. Connect communications cable metal sheath and surge protection devices to ground bar.

3.19 TESTING AND REPORTS

- A. Raceway Continuity: Metallic raceway system as a component of the facilities ground system shall be tested for electrical continuity. Resistance to ground throughout the system shall not exceed specified limits.
- B. Ground resistance measurements shall be made on each system utilized in the project. The ground resistance measurements shall include building structural steel, driven grounding system, water pipe grounding system and other accepted systems as may be applicable. Ground resistance measurements shall be made in normally dry weather, not less than 24 hours after rainfall, and with the ground under test isolated from other grounds and equipment. Resistances measured shall not exceed specified limits.
- C. Upon completion of testing, the testing conditions and results shall be certified by the Contractor and submitted to the Architect/Engineer as called for in Section Tests and Performance Verification of Electrical Systems.

3.20 INTERFACE WITH OTHER PRODUCTS

- A. Interface with site grounding system.
- B. Interface with lightning protection system installed under Section Lightning Protection System.
- C. Interface with communications system installed under Division 27 sections.

3.21 FIELD QUALITY CONTROL

- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.
- B. Use suitable test instrument to measure resistance to ground of system. Perform testing in accordance with test instrument manufacturer's recommendations using the fall-of-potential method.

END OF SECTION

SECTION 26 05 29
HANGERS AND SUPPORTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Furnish and install all supports, hangers and inserts required to mount fixtures, conduit, cables, pullboxes and other equipment furnished under this Division.
- B. Section Includes:
 - 1. Conduit and equipment supports.
 - 2. Anchors and fasteners.

1.3 REFERENCES

- A. NECA - National Electrical Contractors Association.
- B. ANSI/NFPA 70 - National Electrical Code.

1.4 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART 2 – PRODUCTS

2.1 PRODUCT REQUIREMENTS

- A. Materials and Finishes: Provide corrosion resistance.
- B. Exterior locations: Provide stainless steel hangers, anchors, etc. Strut may be PVC Coated or Stainless Steel.
- C. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".
- C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.
- D. Do not use spring steel clips and clamps.

- E. Obtain permission from Architect/Engineer before using powder-actuated anchors.
- F. Obtain permission from Architect/Engineer before drilling or cutting structural members.
- G. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.
- H. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- I. In wet and damp locations use steel channel supports to stand cabinets and panelboards one inch (25 mm) off wall.
- J. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.
- K. All items shall be supported from the structural portion of the building.
- L. This Contractor shall lay out and install his work in advance of the laying of floors or walls, and shall furnish and install all sleeves that may be required for openings through floors, wall, etc. Where plans call for conduit to be run exposed, this Contractor shall furnish and install all inserts and clamps for the supporting of conduit. If this Contractor does not properly install all sleeves and inserts required, he will be required to do the necessary cutting and patching, later at his own expense, to the satisfaction of the Architect.
- M. All conduits shall be securely fastened in place per NEC, and hangers, supports or fastenings shall be provided at each elbow and at the end of each straight run terminating at a box or cabinet. The use of perforated iron for supporting conduits will not be permitted. The required strength of the supporting equipment and size and type of anchors shall be based on the combined weight of conduit, hanger and cables. Horizontal and vertical conduit runs may be supported by one-hole malleable straps, clamp-backs, or other accepted devices with suitable bolts, expansion shields (where needed) or beam-clamps for mounting to building structure or special brackets.
- N. Where two or more conduits are run parallel or in a similar direction, they shall be grouped together and supported by means of Kindorf type trapeze hanger system (racking) consisting of concrete inserts, threaded solid rods, washers, nuts, and galvanized "L" angle iron, or Unistrut cross members. These conduits shall be individually fastened to the cross member of every other trapeze hanger with galvanized cast one hole straps, clamp backs, bolted with proper size cadmium machine bolts, washers and nuts. If adjustable trapeze hangers are used to support groups of parallel conduits, U-bolt type clamps shall be used at the end of a conduit run and at each elbow. J-bolts, or accepted clamps, shall be installed on each third intermediate trapeze hanger to fasten each conduit.
- O. Hanger assemblies shall be protected after fabrication by galvanizing. Hangers for PVC coated conduit shall be PVC coated galvanized conduit or stainless steel.
- P. On concrete or brick construction, insert anchors shall be installed with round head machine screws. In wood construction, round head screws shall be used. An electric or hand drill shall be used for drilling holes for all inserts in brick, concrete, or similar construction. In brick, inserts shall be near center of brick, not near edge or in joint. Where steel members occur, same shall be drilled and tapped, and round head machine screws shall be used. All screws, bolts, washers, etc., used for supporting conduit or outlets shall be fabricated from rust-resisting metal, or accepted substitution. Fasteners similar to "TAP-CON" self tapping power-driven type are acceptable. Plastic anchors are not acceptable.
- Q. Conduit supporting devices such as spring type conduit clips manufactured by Caddy Corporation may not be used.

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- R. Threaded rod hangers shall be galvanized continuous thread type, minimum 3/8" diameter.
- S. Concrete/insert anchors, threaded rods, or similar fasteners installed on side or bottom of pre-stressed beams are not acceptable.

END OF SECTION

SECTION 26 05 33
RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Raceways, boxes, enclosures, handholes, sleeves, and accessories required for fully functional electrical and communication systems pathways.

1.2 RELATED SECTIONS

- A. Section 01 25 13 - Product Substitution Procedures
- B. Section 01 31 00 - Project Coordination
- C. Section 01 33 00 - Submittal Procedures
- D. Section 01 35 53 – Security Procedures
- E. Section 01 42 00 – References
- F. Section 01 45 00 - Quality Control
- G. Section 01 66 00 – Product Storage and Handling Requirements
- H. Section 01 78 00 - Closeout Submittals
- I. Section 07 84 00 - Fire Stopping
- J. Section 07 92 00 - Joint Sealants
- K. Section 26 05 00 - Common Work Results for Electrical
- L. Section 26 05 29 – Hangers and Supports for Electrical Systems
- M. Section 26 05 43 – Underground Ducts and Raceways for Electrical Systems
- N. Section 26 05 53 – Identification for Electrical Systems
- O. Section 26 20 00 – Low Voltage Electrical Transmission
- P. Section 28 05 13 – Conductors and Cables for Electronic Safety and Security

1.3 REFERENCES

- A. See Section 01 42 00 – References for additional reference standards, definitions, abbreviations, and acronyms.
- B. American National Standards Institute (ANSI):
 - 1. ANSI C80.1-2005: Electrical Rigid Steel Conduit.
 - 2. ANSI C80.3-2005: Electrical Metallic Tubing (EMT).
- C. National Fire Protection Association (NFPA): NFPA 70 - National Electrical Code, 2014 Edition.
- D. Underwriters Laboratories (UL):
 - 1. UL 5-2011: Standard for Surface Mounted Raceways and Fittings.
 - 2. UL 5A-2015: Nonmetallic Surface Raceways and Fittings.
 - 3. UL 6-2007: Electrical Rigid Metal Conduit.
 - 4. UL 651-11: Standard for Schedule 40, 80, Type E, B and A rigid PVC Conduit and Fittings.
 - 5. UL 797-2007: Electrical Metallic Tubing – Steel.
- E. National Electrical Contractors Association (NECA):
 - 1. NECA 1 - Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association; 2010.
 - 2. NEC 101-2006: Standard for Installing Steel Conduits (Rigid, IMC, EMT).

- F. National Electrical Manufacturers Association (NEMA):
 - 1. NEMA FB1-2012: Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Conduit.
 - 2. NEMA TC 2-2013: Electrical Polyvinyl Chloride (EMT) Conduit.
 - 3. NEMA TC 3-2013: Polyvinyl Chloride Fittings for Use with PVC Conduit and Tubing..

1.4 SUBMITTALS

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Product Data: Submit data for metallic conduit, metallic tubing, nonmetallic conduit, flexible nonmetallic conduit, nonmetallic tubing, fittings, and conduit bodies.
- C. Comply with Section 01 78 00 – Closeout Submittals. Project Record Documents shall accurately record routing of conduits 2” (52mm) or larger.

1.5 QUALITY ASSURANCE

- A. Comply with Section 01 45 00 - Quality Control.
- B. Conform to requirements of NFPA 70 - National Electrical Code; National Fire Protection Association; 2014 Edition.
- C. Florida Building Code, 5th Edition.
- D. Products shall be listed and classified by Underwriters Laboratories, Inc. and be suitable for purpose specified and indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with Section 01 66 00 – Product Storage and Handling Requirements.
- B. Upon receipt of materials on site, promptly inspect for damage.
- C. Store materials in lockable trailer or other similar lockable storage facility on site. Payment will not be allowed for products either unprotected on site or stored off-site.
- D. Protect PVC conduit from sunlight and UV degradation.

PART 2 PRODUCTS

2.1 ALLOWABLE CONDUIT TYPES PER LOCATION

- A. Conduit Size: Comply with NFPA 70.
 - 1. Minimum Size: 0.75” (19.1mm) unless otherwise specified or indicated for electrical pathways and 1” (25.4mm) for communication pathways.
- B. Underground Installations:
 - 1. Beyond 5’ (1.5m) from structures foundation walls: Use rigid steel conduit, thickwall non-metallic conduit, or thinwall non-metallic conduit.
 - 2. Within 5’ (1.5m) of foundation wall: Use rigid steel conduit.
 - 3. Within or under slab on grade: Use rigid steel conduit or thickwall non-metallic conduit.
 - 4. Minimum Size: 4” (101.6mm).
- C. Outdoor Locations Above Grade: Use rigid steel conduit or intermediate metal conduit.

- D. In Slab Above Grade:
 - 1. Use rigid steel conduit or thickwall nonmetallic conduit.
 - 2. Maximum Size Conduit in Slab: 1” (25.4mm).
- E. Wet and Damp Locations: Use rigid steel conduit or thickwall nonmetallic conduit.
- F. Dry Location:
 - 1. Concealed: Use rigid steel conduit, intermediate metal conduit, electrical metallic tubing, or thickwall nonmetallic conduit.
 - 2. Exposed: Use rigid steel conduit, intermediate metal conduit, electrical metallic tubing, or thickwall nonmetallic conduit.

2.2 METAL CONDUIT AND TUBING

- A. Approved Manufacturers:
 - 1. AFC Cable Systems, 272 Duchaine Blvd, New Bedford, MA 02745-1214; Tel: 508-998-1131; Fax: 508-998-1447; website: www.afcweb.com.
 - 2. Allied Tube and Conduit, 16100 South Lathrop Ave., Harvey, IL 60426; Tel: 800-882-5543; Fax: 954-574-0714; website: www.alliedtube.com.
 - 3. Anamet Electrical Inc., 1000 Broadway Ave. East, P.O. Box 39, Mattoon, IL 61938; Tel: 900-801-8845; Fax: 800-677-2706; website: www.anacondasealtite.com.
 - 4. O-Z/Gedney, 9377 W. Higgins Rd., Rosemont, IL 60018; Tel: 847-268-6000; Fax: 847-268-6018; website: www.o-zgedney.com.
 - 5. Wheatland Tube Co., Division of John Maneely Co., 700 South Dock St. Sharon, PA 16146; Tel: 800-257-8182; Fax: 724-346-7260; website: www.wheatland.com.
 - 6. Other manufacturers shall request material approvals in accord with Section 01 25 13 – Product Substitution Procedures.
- B. Rigid Steel Conduit: ANSI C80.1-2005.
- C. Electrical Metallic Tubing (EMT): ANSI C80.3-2005.
- D. Intermediate Metal Conduit (IMC): Rigid steel.
- E. Fittings and Conduit Bodies: NEMA FB 1-2012; fittings shall match conduit.

2.3 NONMETALLIC CONDUIT AND TUBING

- A. Approved Manufacturers:
 - 1. AFC Cable Systems, 272 Duchaine Blvd., New Bedford, MA 02745-1214; Tel: 508-998-1131; Fax: 508-998-1447; Website: www.afcweb.com.
 - 2. Allied Tube and Conduit, 16100 South Lathrop Ave., Harvey, IL 60426; Tel: 800-882-5543; Fax: 954-574-0714; Website: www.alliedtube.com.
 - 3. CANTEX, Inc., 301 Commerce St., Suite 2700, Ft. Worth, TX 76102; [Tel:817-215-7000](tel:817-215-7000); Fax: 817-215-7001; Website: www.CANTEXinc.com.
 - 4. RACO, a Hubbell Company, 3902 West Sample St., P.O. Box 4002, South Bend, IN 46634-4002; Tel: 219-283-4300; Fax: 800-722-6462; Website: www.hubbell-raco.com.
 - 5. Thomas & Betts Corp., 8155 T & B Blvd., Memphis, TN 38125; Tel: 901-252-8000; Fax: 901-252-1345; Website: tnb.com.
 - 6. Other manufacturers shall request material approvals in accord with Section 01 25 13 – Product Substitution Procedures.
- B. Description: NEMA TC 2-2013; Schedule 40 PVC.
- C. Fittings and Conduit Bodies: NEMA TC 3-2013; fittings shall match conduit.

2.4 NONMETALLIC TUBING (INTERIOR USE ONLY)

- A. Approved Manufacturer: IPEX, Inc; 3 Place du Commerce, Suite 101, Ile-des-Soeurs, Verdun, Quebec, Canada H3E 1K7; Tel: 514-769-2200; Fax: 514-7569-1672; Website:www.ipexinc.com.
1. Product Kwikpath.
- B. Description: 1.25" (3.18mm) minimal size, riser or plenum rated as required.
- C. Fittings: As required and provided by manufacturer. Fittings shall be by same manufacturer as tubing.
- D. Other manufacturers shall request material approvals in accord with Section 01 25 13 – Product Substitution Procedures.

2.5 BOXES, ENCLOSURES AND CABINETS

- A. Approved Manufacturers:
1. EGS/Appleton Electric., 9377 West Higgins Rd., Rosemount, IL 60018; Tel: 800-621-1506; Fax: 800-356-4714; Website: www.appletonelec.com.
 2. Hoffman Enclosures, Inc., 2100 Hoffman Way, Anoka, MN 55303; Tel: 763-421-2240; Fax: 763-422-2178; Website: www.hoffmanonline.com.
 3. Killark Electric, a Hubbell Company; 3940 Martin Luther King Druve; St. Louis, MO 63115; Tel: 314-531-0460; Fax: 314-531-7164; Website: www.killark.com.
 4. Other manufacturers shall request material approvals in accord with Section 01 25 13 – Product Substitution Procedures.

2.6 HANDHOLES AND BOXES

- A. Approved Manufacturers:
1. Armocast Products Company, 13230 Saticoy St., North Hollywood, CA 91605; Tel: 818-982-3600; Fax: 818-918-7742; Website: www.armocastprod.com.
 2. Carlson Industries, LLC, 1160 Nicole Ct., Glendora, CA 91740; Tel: 800-735-5566; Fax: 800-827-1777; Website: carsonind.com.
 3. Nordic Fiberglass, Inc., P.O. Box 27, Warren, MN 56762; Tel: 218-745-5095; Fax: 218-745-4990; Website: nordicfiberglass.com.
 4. Other manufacturers shall request material approvals in accord with Section 01 25 13 – Product Substitution Procedures.

2.7 NONMETALLIC TUBING (EXTERIOR USE)

- A. See Section 33 81 26 - Communications Underground Ducts, Manholes, and Handholes.

2.8 SLEEVES

- A. Manufacturer: Specified Technologies, Inc., 200 Evans Way, Sommerville, NJ 08876; Tel: 800-992-1180, 908-526-8000; Fax: 909-526-9623; Website: www.sticfirestop.com.
1. Product: EZ Path firestop fittings, EZDP133K.
- B. Other manufacturers shall request material approvals in accord with Section 01 25 13 – Product Substitution Procedures.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field measurements are as indicated. Immediately notify Contractor/CM of field variances from measurements indicated.
- B. Verify with Contractor/CM routing and termination locations of conduit prior to rough-in.

3.2 INSTALLATION

- A. Install conduit securely, in neat and workmanlike manner, as specified in NECA 1-2010.
- B. Install steel conduit per NECA 101-2006.
- C. Install nonmetallic conduit in accord with manufacturer's written instructions.
- D. Arrange supports to prevent misalignment during wiring installation.
- E. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
- F. Fasten conduit supports to building structure and surfaces.
- G. Do not attach conduit to ceiling support wires.
- H. Arrange conduit to maintain headroom and present neat appearance.
- I. Route exposed conduit level, parallel and perpendicular to walls.
- J. Route conduit installed above accessible ceilings parallel and perpendicular to walls.
- K. Route conduit in and under slab from point-to-point.
- L. Maintain adequate clearance between conduit and piping.
- M. Maintain 12" (304.8mm) clearance between conduit and surfaces with temperatures exceeding 104° F (40° C).
- N. Cut conduit square using saw or pipecutter; de-burr cut ends.
- O. Bring conduit to shoulder of fittings; fasten securely.
- P. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum.
- Q. Innerduct containing backbone cabling shall end with two feet of cable tray in network rooms. Innerduct may be shortened as needed to accommodate service loops.
- R. Secure innerducts to wall of network rooms to prevent horizontal movement of cable (D-rings are acceptable). Secure cables to the wall in non-deforming manner to prevent vertical movement of cable.
- S. Install no more than equivalent of two 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use factory elbows for bends in metal conduit larger than 2" (52.1 mm) size.
- T. "Dog legs" within stud space shall be avoided. Conduits shall not run horizontally through studs before stubbing out of wall.

- U. Conduits from work area outlets shall turn at right angles into area served by WAO box from adjoining hallway.
- V. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.
- W. Provide suitable fittings to accommodate expansion and deflection where conduit crosses expansion joints.
- X. Provide suitable pull string in each empty conduit except sleeves and ripples.
- Y. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
- Z. Ground and bond conduit under provisions of Section 27 05 26 - Grounding and Bonding for Communications Systems.
- AA. Firestop conduit in accord with Section 07 84 00 – Firestopping. Conduits in fire-rated penetrations shall be fire-stopped as soon as conduit is installed. Firestopping may be delayed if, during new construction, partitions and floors are not completed to point of forming final fire barriers. Installed shall consult with Contractor or local AHJ to determine if temporary fire-stopping is required.
- AB. Identify conduit under provisions of Section 26 05 53 - Identification for Electrical Systems.

3.3 INTERFACE WITH OTHER PRODUCTS

- A. Install conduit to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00 - Firestopping.
- B. Route conduit through wall openings in neat and cleanly cut or drilled penetrations for conduits. Roof penetrations are not permitted.

END OF SECTION

SECTION 26 05 34
OUTLET BOXES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Provide and install all outlet boxes (flush or surface) complete with all accessories as required to facilitate installation of electrical system and as required by the NEC.
- B. Section includes wall and ceiling outlet boxes (and/or small junction/pullboxes).

1.3 REFERENCES

- A. ANSI/NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies.
- B. ANSI/NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- C. ANSI/NFPA 70 - National Electrical Code.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

1.4 SUBMITTALS

- A. Submit catalog cut sheet/product data on:
 - 1. Surface cast boxes.
- B. For pullboxes and junction boxes not covered in Section Pull and Junction Boxes for Electrical Systems, submit product data showing dimensions, covers, and construction.

1.5 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.6 PROJECT CONDITIONS

- A. Verify field measurements are as shown on Drawings.
- B. Verify locations of outlets in offices and work areas prior to rough-in.
- C. Electrical boxes are shown on Drawings in approximate locations unless dimensioned. Install at location required for box to serve intended purpose.

PART 2 PRODUCTS

2.1 GENERAL

- A. All boxes and fittings shall be labeled by Underwriters Laboratories.

- B. Provide box accessories as required for each installation, including mounting brackets, wallboard hangers, extension rings, outlet boxes, and corrosion-resistant knockout closures compatible with outlet boxes being used and meeting requirements of individual wiring situations.
- C. All boxes shall be of the size and shape required by NFPA 70 for their respective locations.
- D. Boxes shall be of such form and dimensions as to be adapted to the specific use and location, type of device or fixtures to be used, and number and size of conductors and arrangement, size and number of conduits connecting thereto.
- E. Handy boxes shall not be used.
- F. Where a box is used as the sole support for a ceiling paddle fan, the box must be listed for this purpose and the weight of the fan.
- G. 4" x 4" boxes and 4 11/16" x 4 11/16" boxes used as junction boxes shall be one piece.

2.2 SHEET METAL OUTLET BOXES: ANSI/NEMA OS 1, GALVANIZED STEEL

- A. Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported; include 1/2 inch (13 mm) male fixture studs where required.
- B. Concrete Ceiling Boxes: Concrete type.
- C. Interior flush outlet boxes shall be galvanized steel constructed with stamped knockouts in back and sides, and threaded holes with screws for securing box coverplates or wiring devices. T & B, Steel City, Raco or accepted substitution.
- D. Ceiling outlet boxes shall be 4" octagonal or 4" square X 1 1/2" deep or larger as required for number and size of conductors and arrangement, size and number of conduits terminating at them.
- E. Switch, wall receptacle, telephone and other recessed wall outlet boxes in drywall shall be 4" square X 1 1/2" deep. For recessing in exposed masonry, provide one piece 4" square x 1 1/2" deep wall boxes with appropriate 4" square cut tile wall covers Steel City series #52-C-49/52-C-52 or accepted substitution. For recessing in furred-out block walls, provide 4" square box with required extension for block depth and required extension for drywall depth.

2.3 CAST BOXES: NEMA FB 1

- A. Interior surface outlet boxes and conduit bodies installed from 0" AFF to 90" AFF (including fire alarm device backbox) shall be the heavy cast aluminum or iron with external threaded hubs for power devices and threaded parts for low voltage devices - Appleton, Crouse Hinds or accepted substitution. Trim rings shall also be of one-piece construction.
- B. Weatherproof outlet boxes shall be constructed of corrosion-resistant cast metal suited to each application and having threaded conduit hubs, cast metal faceplate with spring-hinged waterproof cap suitable configured, gasket, and corrosion-proof fasteners.
- C. Boxes to be Type FD unless otherwise noted on drawings.
- D. Freestanding cast boxes are to be type FSY (with flange). Other cast zinc boxes are not acceptable.

PART 3 EXECUTION

3.1 GENERAL

- A. Install electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.
- B. Install electrical boxes to maintain headroom and to present neat mechanical appearance.

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- C. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches (150 mm) from ceiling access panel or from removable recessed luminaire.
- D. Install boxes to preserve fire resistance rating of partitions and other elements.
- E. Align adjacent wall-mounted outlet boxes for switches, thermostats, and similar devices with each other.
- F. Use flush mounting outlet boxes in finished areas.
- G. Do not install flush mounting boxes back-to-back in walls; provide minimum 6-inch (150 mm) separation. Provide minimum 24 inches (600 mm) separation in acoustic rated walls.
- H. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
- I. Use stamped steel bridges to fasten flush mounting outlet box between studs.
- J. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
- K. Support all outlet boxes from structure with minimum of one (1) 3/8" all-thread rod hangers. Boxes larger than 25 square inches shall be supported with two (2) all-thread rod hangers, minimum.
- L. Do not fasten boxes to ceiling support wires.
- M. Support boxes independently of conduit.
- N. Use gang box where more than one device is mounted together. Do not use sectional box.
- O. Use gang box with plaster ring for single device outlets.
- P. Use cast outlet box in exterior locations and wet locations.
- Q. Comply with applicable portions of the National Electrical Contractor's Association's (NECA) "Standard of Installation".
- R. Install outlets in the locations shown on the drawings; however, the Owner shall have the right to make, prior to rough-in, slight changes in locations to reflect room furniture layouts.
- S. The Contractor shall coordinate his work with that of the General Contractor so that each electrical box is the type suitable for the wall or ceiling construction provided and suitable fireproofing is inbuilt into fire rated walls.
- T. The Contractor shall relocate electrical boxes as required so that electrical devices, once installed, will be symmetrically located with respect to the room layout.
- U. All boxes shall be installed in a flush rigid manner with box lines at perpendicular and parallel angles to finished surfaces. Boxes shall be supported by appropriate hardware selected for the type of surface from which the box shall be supported. For example, provide metal screws for metal, wood screws for wood, and expansion devices for masonry or concrete.
- V. For locations exposed to weather or moisture (interior or exterior), provide weatherproof boxes and accessories.
- W. As a minimum, provide pull boxes in all raceways over 150 feet long. The pull box shall be located near the midpoint of the raceway length.
- X. Provide knockout closures to cap unused knockout holes where blanks have been removed, and plugs for unused threaded hubs.
- Y. Provide conduit locknuts and bushings of the type and size to suit each respective use and installation.
- Z. Boxes and conduit bodies shall be located so that all electrical wiring is accessible.
- AA. Avoid using round boxes where conduit must enter box through side of box, which would result in a difficult and insecure connection with a locknut or bushing on the rounded surface.
- BB. All flush outlets shall be mounted so that covers and plates will finish flush with finished surfaces without the use of shims, mats or other devices not submitted or accepted for the purpose. Add-a-Depth rings or switch box extension rings (Steel City #SBEX) are not acceptable. Plates shall not support wiring devices. Gang switches with common plate where two or more are indicated in

the same location. Wall-mounted devices of different systems (switches, thermostats, etc.) shall be coordinated for symmetry when located near each other on the same wall. Outlets on each side of walls shall have separate boxes. Through-wall type boxes shall not be permitted. Back-to-back mounting shall not be permitted. Trim rings shall be extended to within 1/8" of finish wall surface.

CC. Outlet boxes mounted in metal stud walls, are to be supported to studs with two (2) screws inside of outlet box to a horizontal stud brace between vertical studs or one side of outlet box supported to stud with opposite side mounted to section of stud or device to prevent movement of outlet box after wall finished.

DD. All outlet boxes that do not receive devices in this contract are to have blank plates installed matching wiring device plates.

EE. Mount Height.

1. Height of wall outlets to bottom above finished floors shall be as follows, unless specifically noted otherwise, or unless otherwise required by applicable codes including ADA. Verify with the Architectural plans and shop drawings for installing.

Switches	4'-0" AFF to top
Receptacles	1'-4" AFF to bottom
Lighting Panels	6'-6" AFF to centerline of highest breaker/fuse
Phone outlets	1'-4" AFF to bottom
Intercom Call-in button/handsets	4'-0" AFF to top
Fire Alarm Pull Stations	4'-0" AFF to top
Fire Alarm Strobe Lights	80" AFF to bottom
Thermostats	4'-0" AFF to top
Space Sensors	4'-0" AFF to top

2. Bottoms of outlets above counter tops or base cabinets shall be minimum 2" above counter top or backsplash, whichever is highest. Outlets may be raised so that bottom rests on top of concrete block course, but all outlets above counters in same area shall be at same height. It is the responsibility of this Division to secure cabinet drawings and coordinate outlet locations in relation to all cabinets as shown on Architectural plans, prior to rough-in, regardless of height shown on Division 26 Drawings.

3. Height of wall-mounted fixtures shall be as shown on the drawings or as required by Architectural plans and conditions. Fixture outlet boxes shall be equipped with fixture studs when supporting fixtures.

FF. Special Purpose Outlets.

1. Locate special purpose outlets as indicated on the drawings for the equipment served. Location and type of outlets shall be coordinated with appropriate trades involved. The securing of complete information for proper electrical roughing-in shall be included as work required under this section of specifications. Provide plug for each outlet.

3.2 INTERFACE WITH OTHER PRODUCTS

A. Coordinate installation of outlet box for products furnished under all Sections of these specifications.

B. Coordinate locations and sizes of required access doors with applicable sections in these specifications.

- C. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
- D. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.
- E. Position outlet boxes to locate luminaires as shown on reflected ceiling plan.

3.3 ADJUSTING

- A. Adjust flush-mounting outlets to make front flush with finished wall material.
- B. Install knockout closure in unused box opening.

END OF SECTION

SECTION 26 05 35
PULL AND JUNCTION BOXES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Provide and install pull and junction boxes as shown on drawings or as required by the National Electrical Code (NEC).
- B. Provide and install pull and junction boxes wherever required for a complete and operating distribution system whether shown on drawings or not.
- C. Where outlet boxes are used for pull and/or junction boxes, they shall meet the requirements of the outlet box section of these specifications.

1.3 REFERENCES

- A. ANSI/NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies.
- B. ANSI/NEMA OS 1 - Sheet-steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- C. ANSI/NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports.
- D. ANSI/NFPA 70 - National Electrical Code.
- E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

1.4 SUBMITTALS

- A. Submit actual shop drawings on all pull boxes showing.
 - 1. Covers.
 - 2. Dimensions - inside and out.
 - 3. Rating of concrete or gauge of metal.
 - 4. Manufacturer.

1.5 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations and mounting heights of pull and junction boxes.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.7 PROJECT CONDITIONS

- A. Verify field measurements are as shown on Drawings.
- B. Verify locations of pull and junction boxes prior to rough-in.
- C. Electrical boxes are shown on Drawings in approximate locations unless dimensioned. Install at location required for box to serve intended purpose and to maintain required access.

PART 2 PRODUCTS

2.1 GENERAL

- A. Dimensions of pull and junction boxes shall meet dimensions shown on drawings or dimensions required by NEC, whichever is largest.
- B. Pull and junction boxes shall meet all requirements of UL and NEC.
- C. Small pull boxes (i.e. 4" x 4") shall meet the requirements of these specifications for outlet boxes as a minimum.
- D. All boxes (above ground) of 100 cubic inches or more shall be constructed of 14-gauge steel with hot dip galvanized coating.

2.2 SHEET METAL BOXES:

- A. NEMA OS 1, galvanized steel (interior locations only).
- B. Boxes to be fully weatherproof and watertight stainless steel NEMA 4SS where installed outside.

2.3 IN-GROUND PULL BOXES:

- A. Material: Precast concrete, or composolite.
- B. Bottom: Open with 6" of gravel for drainage.
- C. Cover: Meet Florida Dept. of Transportation requirements for installed location. (Pedestrian, heavy traffic, light traffic).
- D. Solid sides constructed to facilitate conduit entries.

PART 3 EXECUTION

3.1 GENERAL

- A. Install per NEC
- B. Install electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.
- C. Install electrical boxes to maintain headroom and to present neat mechanical appearance.
- D. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
- E. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches (150 mm) from ceiling access panel or from removable recessed luminaire.
- F. Install boxes to preserve fire resistance rating of partitions and other elements.
- G. Align adjacent wall-mounted boxes with each other.
- H. Use flush mounting boxes in finished areas.

- I. Do not install flush mounting boxes back-to-back in walls; provide minimum 6-inch (150 mm) separation. Provide minimum 24 inches (600 mm) separation in acoustic rated walls.
- J. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
- K. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
- L. Pull and junction boxes larger than 25 square inches shall be supported with two (2) 3/8" all-thread rod hangers minimum.
- M. Do not fasten boxes to ceiling support wires.
- N. Support boxes independently of conduit.
- O. Large Pull Boxes: Boxes larger than 100 cubic inches (1600 cubic centimeters) in volume or 12 inches (300 mm) in any dimension.
 - 1. Interior Dry Locations: Per NEC, with screw covers.
 - 2. Other Locations: Use hinged enclosure under provisions of Section Cabinets and Enclosures.
- P. Outdoor Locations: All boxes installed outdoors to be NEMA 4 Stainless Steel, fully weatherproof and watertight.

3.2 IN GROUND PULL BOXES

- A. Provide and install ground rod in each pull box. Connect #2 copper ground wires (counterpoise) to ground rod, run out pullbox 6" over conduits to next pull box; tie to respective building electrical ground rod at each building.
- B. Install pull boxes flush with finished grade. Provide extensions as required.
- C. Bond metallic covers, if provided, to ground rod via exothermic welds.
- D. Label cover with respective system.

3.3 INTERFACE WITH OTHER PRODUCTS

- A. Coordinate locations and sizes of required access doors with applicable sections in these specifications.
- B. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.

3.4 ADJUSTING

- A. Install knockout closure in unused box opening.

END OF SECTION

SECTION 26 05 37
SURFACE RACEWAYS

PART 1 – GENERAL

1.1 DESCRIPTION OF SYSTEM

- A. Provide and install all equipment, labor, material, accessories, and mounting hardware for a complete and operating system for the following:
 - 1. Wireways.

1.2 REFERENCES

- A. NECA (National Electrical Contractor's Association) Standard of Installation.

1.3 SUBMITTALS

- A. Submit under provisions of the General Requirements of the Contract Documents and Section Submittals.
- B. Submit Product Data: Provide dimensions, knockout sizes and locations, materials, fabrication details, finishes, and accessories.
- C. Submit Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, and installation of Product.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with NECA Standard of Installation.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this Section with minimum five years experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART 2 – PRODUCTS

2.1 WIREWAY

- A. Manufacturers:
 - 1. Hoffman.
 - 2. Square "D"

3. Electrical Enclosures
4. Substitutions: Under provisions of Section Substitutions.
- B. Description: General purpose, Oiltight and dusttight or Raintight type wireway as indicated on drawings. If not indicated provide type required to meet applicable codes.
- C. Knockouts: Manufacturer's standard.
- D. Size: As indicated on Drawings, or larger as required by the NEC
- E. Cover: Hinged cover with full gasketing for raintight and oiltight types.
- F. Connector: Slip-in for general purpose and raintight types and flanged for oiltight types.
- G. Fittings: Lay-in type with removable top, bottom, and side; captive screws for general purpose, and drip shield for raintight type, and removable top for oiltight type.
- H. Finish: Rust inhibiting primer coating with gray enamel finish.

PART 3- EXECUTION

3.1 INSTALLATION

- A. Install Products in accordance with manufacturer's instructions.
- B. Use flat-head screws, clips, and straps to fasten raceway channel to surfaces. Mount plumb and level.
- C. Use suitable insulating bushings and inserts at connections to outlets and corner fittings.
- D. Wireway Supports: Provide steel channel as specified in Section Supporting Devices.
- E. Close ends of wireway and unused conduit openings.
- F. Ground and bond raceway and wireway under provisions of Section Grounding and Bonding.
- G. Install only in locations deemed accessible by the NEC and local authority. Provide all access panels, etc., as required to maintain required access.

END OF SECTION

SECTION 26 05 43
UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Underground ducts, raceways, pullboxes, handholes, and accessories required for complete functioning underground electrical and communications distribution system.

1.2 REFERENCE STANDARDS

- A. See Section 01 42 00 – References for additional reference standards, definitions, abbreviations, and acronyms.
- B. American Society of Testing materials (ASTM):
 - 1. ASTM D1557-09: Standard Test Method for Laboratory Compaction characteristics of Soil Using Modified Effort (56,000ft-lbs/ft³ (2700Kn-m/m³)).
 - 2. ASTM C136-06: Standard Test Method for Sieve Analysis of Fine and Course Aggregates.
 - 3. ASTM C33-11a: Standard Specification for Concrete Aggregates.
 - 4. ASTM C39-12a: Standard Test Method for Compressive Strength of Cylindrical Concrete.
- C. National Electrical Contractors Association (NECA):
 - 1. ANSI/NECA 1-2010: Standard Practice in Good Workmanship in Electrical Construction.
- D. National Fire Protection Association (NFPA): NFPA 70 - National Electrical Code, 2008 Edition.
- E. National Electrical Manufacturers Association (NEMA):
 - 1. ANSI/NEMA TC2-2013: Electrical Polyvinyl Chloride (PVC) Conduit.
 - 2. ANSI/NEMA TC3-2004: Electrical Polyvinyl Chloride (PVC) Fittings.
- F. Occupational Safety and Health Administration (OSHA): Part 1926 – Safety and Health Regulations for Construction.
- G. Florida Building Code and Trench Safety Act, 2010 Edition.

1.3 SUBMITTALS

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Product Data: Submit manufacturer's descriptive literature for each type of conduit, ductbank, man and hand holes, supports, components and accessories specified or indicated.
- C. Shop Drawings:
 - 1. Submit duct bank layouts for communications and electrical conduits, man and hand hole, conduit types, sizes, and location, with dimensions, and support points.
 - 2. Drawings shall indicate floor plans and sections, drawn to scale and shall include:
 - a. Relationships between underground ducts, components and adjacent structural, electrical, and communications interface elements.
 - b. Vertical and horizontal offsets and transitions.
 - c. Details of hand and manhole access to ductbanks.
 - d. Vertical elevations of ductbanks from grade, floor slab and adjacent structures.
 - 3. Provide manufacturer's catalog data for ductbank, man and handholes, and accessories required for complete installation.

- D. Submit manufacturer's printed installation instructions for installation, including product storage, protection, and handling requirements.
- E. Comply with Section 01 78 00 – Closeout Submittals: If variations from approved shop drawings occur during installation of ductbank system, submit Project Record Documents indicating final locations.

1.4 PROJECT COORDINATION

- A. Comply with Section 01 31 00 – Project Coordination.
- B. Contractor/CM shall coordinate pre-installation meeting with site work, communications, and electrical installers to plan, layout and install underground conduits, ductbanks and man and handholes to avoid conflicts and interference with other trades.
- C. Underground Utility Locating:
 - 1. Provide Owner approved utility locating company to trace utilities to identifiable points.
 - 2. Make visual inspection of site and locate existing underground utilities including electrical, gas, domestic water, chilled water, sewer, storm drainage, electrical, and telecommunications conduits, conductors, hand and pull hole locations.
 - 3. Clearly mark underground utilities prior to excavation.
 - 4. Immediately notify Contractor/CM if unmarked utilities are discovered. Stop work in area until utility can be identified. Notify Owner's Project Manager.
- D. See Section 01 35 53 – Security Procedures for separation of work areas on existing operational facilities from of work site.
- E. Worksite will have restricted access and may preclude use of heavy equipment, including backhoes, concrete trucks, utility, and other construction vehicles. Contractor/CM shall coordinate with Owner's Project Manager for specific restrictions and coordination with facility's on-going operations based on location of work.
- F. During construction of underground ducts, Owner's Project Manager shall determine if closures of roads or spaces are possible at proposed dates and times. Coordinate work with Contractor/CM, and regulatory authority having jurisdiction for interface connections or activities.
- G. Information from Owner on underground utility placement does not waive Contractor/ CM's responsibility from confirming presence and location of underground utilities in work area.
- H. Contractor/CM shall provide necessary equipment to safely excavate and construct underground duct pathways. Comply with federal, state, and local regulations regarding work. Personal protective equipment, if required, shall be Contractor/CM's responsibility.
- I. Comply with Florida Trench Safety Act, OSHA, and other applicable workplace regulatory requirements.

1.5 PROJECT REQUIREMENTS

- A. During relocation of underground electrical and communications elements, services provided by or through system elements shall be minimally impacted. Service outages at occupied sites shall be minimized by scheduling work during off-hours to greatest extent possible. Service outages shall be coordinated with facility user and pre-approved by Owner's Project Manager.
- B. Pathway routing shall avoid established trees. Small ornamental trees that interfere with work can may be moved or replaced if preapproved by Owner's Project Manager. Planting beds and shrubs may be disrupted as needed, provided they are restored to original condition.
- C. Walkways and roadway may be crossed if required, provided they are restored to original condition.

- D. Where possible, new conduits installed along same pathway as existing pathway shall be installed as part of existing ductbank. Contractor/CM may expose existing ductbank and use its vertical side to frame space for new conduits.
- E. Communications and data systems (fire alarm, intercom, telephones, sensors, cameras, etc.) may require dedicated cabling to specific, non-standard locations. See Div. 27 specifications for additional requirements. Devices shall be designed as required and may run independent of other pathways and requirements. Owner’s Project Manager shall preapprove pathway designs involving data, communications, security, or life-safety cabling.
- F. Underground Pathways
 - 1. Underground conduit structures are pathways used for placing building’s electrical supply network between access points such as from electrical utility demark location to transformer, pull boxes and handholes, to site main electrical distribution room and between buildings.
 - 2. Cable pathways shall be underground, where possible. Underground pathways shall be concrete-encased conduit.
 - 3. Diameter of ducts shall be minimum of one-half trade size larger in diameter than diameter of largest anticipated cable.
 - 4. Clearances between utilities:

Underground Clearances as Required by the NESC	
Structure	Minimum Clearance
Communications or other low voltage	3” (75 mm) concrete encased conduit 4” (100 mm) masonry 12” (300 mm) of compacted earth
Pipes (e.g. gas, water, oil)	6” (150 mm) when crossing 12” (300 mm) when parallel
Telecommunications conduit terminated on same pole as electrical	Preferably 180 degrees but not less than 90 degrees
NOTE: Check with authority having jurisdiction for applicable codes. See NESC for other clearances	

- 5. Underground pathways shall be designed for minimal depth of 30” (76.2cm) to top of pathway elements. Deviations shall be pre-approved by Owner’s Project Manager Authority Having Jurisdiction (AHJ).
- 6. Conduits may gradually slope up to under 30” (76.2cm) depth to enter handholes or pull boxes.
- 7. Underground conduit elevations shall slope to allow drainage. Drain slope towards pull boxes or manholes at one percent grade.
- 8. Provide 12” (30.4cm) fine aggregate compacted bed under ductbank and pull box locations.
- 9. Conduit layout in ductbanks shall facilitate orderly cable racking within pull boxes to ensure minimal change in formation cable.
 - a. Main conduit formations shall enter end walls of pull boxes approximately halfway between floor and top.
 - b. Splay ductbank entrances at end walls rather than center placement.

- c. If total number of conduits being placed is significantly less than capacity of terminating pull box or cable entrance, conduits shall enter at lower level with upper space reserved for future conduits.
 - d. Conduit entrance into pull boxes shall be sized for ultimate number of conduits to preclude future wall breakouts.
10. Curved duct bank sections shall be minimized. Where required, ducts shall be pre-manufactured with minimum 15' (4.56m) radii.
 11. Ductbank configuration may vary, depending on spaces into which conduits end.
 12. Buildings shall have minimum of four conduits accessing entrance facility. Two conduits shall be 4" (101 mm) inner diameter. Remaining two may be multi-cell conduits with minimum three factory-manufactured inner conduits.
 13. Compacted backfill shall be fine aggregate grading in accord with ASTM C136-06 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates).
 14. Backfill material may be material removed from original excavation, provided backfill materials meet ASTM C136-06.
 15. Match sod of same type grass as surrounding area.
 16. Compact first 6" (152mm) of backfill to 95% density per ASTM D1557-09, Method A.
 17. Compact second 6" (152mm) of backfill to 85% density per ASTM D1557-09, Method A.
 18. Horizontal conduits shall end flush with interior surface of pull boxes. Vertical conduit risers ending in electrical rooms shall extend 12" (305mm) above concrete curb located at electrical switchgear. Cut conduits square and level to floor. Bushings shall be installed on conduit ends.
 19. Provide compression-type duct plugs.
 20. Install warning tape 24" (60.8cm) above ductbank.
 22. Provide #10 copper, green insulated tracer wire.
 23. Install 0.375" (86.5mm) diam. pull strings in conduits.
- J. Non-encasement
1. In special circumstances, if preapproved by Owner's Project Manager or where indicated, CM/Contractor may install conduits without concrete ductbank.
 2. Typical installations may include parking lift gates, information kiosks, playfield ticket booths, concession stands or other non-critical locations.

1.6 DELIVERY, STORAGE, AND PROTECTION

- A. Comply with Section 01 66 00 – Product Storage and Handling Requirements.
- B. Store materials under cover and elevated above grade. Prevent water, dirt, and debris from entering conduits and tubing.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Approved Conduit Manufacturers:
 1. IPEX, Inc.: 3 Place du Commerce, Suite 101, Ile-des-Soeurs, Verdun, Quebec, Canada H3E 1H7; Tel: 514-769-2200; Fax: 514-769-1672; Website: www.ipexinc.com.
 - a. Product: TerraCon PVC raceway for directional boring and open trenching
 2. Thomas and Betts, Inc., subsidiary of ABB Low Voltage Products Division; 8155 T & B Boulevard, Memphis, TN 38125; Tel: 800-816-7809; Website: www.carlon.com.
 - a. Product: Carlon® Bore-Gard® and Boreable Multi-Gard Raceway for directional boring and open trenching.

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3. Other manufacturers shall submit requests for product approvals in accord with Section 01 25 13 – Product Substitution Procedures.
- B. Conduit:
1. PVC SCH 40 Pipe.
 - a. Manufactured to NEMA TC2 (Electrical Polyvinyl Chloride (PVC) Tubing and Conduit) specifications.
 - b. Bell ends
 - c. Adhesive as recommended by conduit manufacturer for type of conduit providing permanent and watertight seal.
 2. PVC SCH 40 Fittings.
 - a. Manufactured to NEMA TC3 (PVC Fittings for Use with Rigid PVC Conduit and Tubing) specifications.
 - b. Adhesive as recommended by conduit manufacturer for type of fitting providing permanent and watertight seal.
 3. PVC SCH 40 Pre-Manufactured Sweeps.
 - a. 6' (1.83m) radius, minimum up to and including 90-degree sweeps.
 - b. Sweeps greater than 90 degrees are not allowed.
 4. PVC type EB-35.
 - b. For use in encased concrete.
 - c. Manufactured to NEMA TC8 (PVC Plastic Utilities Duct for Underground Installations) specifications.
 - d. Bell ends.
 - e. Adhesive as recommended by conduit manufacturer for type of fitting providing permanent and watertight seal.
 5. PVC type EB-35 Fittings.
 - a. For use in encased concrete.
 - b. Manufactured to NEMA TC9 (Fittings for PVC Plastic Utilities Duct for Underground) specifications.
 - c. Adhesive as recommended by conduit manufacturer for type of fitting providing permanent and watertight sea.
- C. Conduit Spacers
1. Approved Manufacturer: Underground Devices, Inc., 3304 Commercial Ave., Northbrook, IL 60062; Tel: 847-205-9000; Fax: 847-205-9004; Website: www.udevices.com.
 - a. Product: Underground Devices, Inc. WUNPEECE Spacer Type-4W20-2.
 2. Other manufacturers shall submit requests for product approvals in accord with Section 01 25 13 – Product Substitution Procedures.
- D. Conduit Plugs (compression-type plug).
1. Approved Manufacturer: Condux International Inc., 145 Kingswood Dr., PO Box 247, Mankato, MN 56002-0247; Tel: 800-533-2077; 507-387-6576; Fax: 501-387-1442; Website: www.condux.com.
 - a. Product: 4" (103mm) Nonmetallic Eye Nut Plug-08067840.
 2. Other manufacturers shall submit requests for product approvals in accord with Section 01 25 13 – Product Substitution Procedures.
 3. Universal or “push-in” type plugs (e.g. Condux, Universal Plug-08047601) are not acceptable.

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- E. Conduit Seals.
 - 1. Approved Manufacturers:
 - a. Tyco Electronics Corp., 8000 Purfoy Rd., Fuquay, NC 27526-9349; Tel: 919-557-8900; Fax: 919-557-8498; Website: www.tycoelectronics.com.
 - 1) Expandable sealing bags: Tyco T-DUX (based on conduit size)..
 - b. 3M Communication Markets Division, 6801 River Place Blvd., Austin, TX 78726-9000; Tel: 800-426-8688; Website: www.3M.com/Telecom.
 - 1) Expanding foam: 3M Part #4416 Duct Sealant Kit.
 - 3. Other manufacturers shall submit requests for product approvals in accord with Section 01 25 13 – Product Substitution Procedures.
 - 4. Expanding foam insulation products (e.g. Great Stuff) are not acceptable.
- E. Innerduct Conduits.
 - 1. Approved Manufacturer:
 - a. Thomas and Betts, Inc., subsidiary of ABB Low Voltage Products Division; 8155 T & B Boulevard, Memphis, TN 38125; Tel: 800-816-7809; Website: www.carlon.com.
 - 1) Products:
 - a) Carlon, Ribbed Wall High Density Polyethylene, 1.25” (3.18mm) OD, orange.
 - b) Carlon, Corrugated High Density Polyethylene, 1.25” (3.18mm) OD, orange.
 - b. Endot Industries, Inc., 60 Green Pond Rd., Rockaway, NJ 07866; Tel: 800-443-6368; Fax: 973-625-4087; Website: www.endot.com.
 - 1) Products:
 - a) ENDOCOR corrugated, 1.25” (3.18mm) OD, orange.
 - c. Other manufacturers shall submit requests for product approvals in accord with Section 01 25 13 – Product Substitution Procedures.
- F. Pull Tape.
 - 1. Approved Manufacturer:
 - a. Neptco, 30 Hamlet St., Pawtucket, RI 02861; Tel: 401-722-5500, 800-354-5445; Fax: 401-722-6328; Website: www.neptco.com.
 - 1) Product: RP1800P, 3/8” (86.5mm) width, 1800 lbs. (818kg) strength.
 - b. Ideal Industries, Inc., Sycamore, IL 60178; Tel: 815-895-5181, 800-435-0705; Website: www.idealindustries.com.
 - 1) Product: 3-in-1 Premise MULETAPE®, Cat. No. 31-315, 1,800 lb (818kg) pull strength.
 - c. Other manufacturers shall submit requests for product approvals in accord with Section 01 25 13 – Product Substitution Procedures.
- G. Warning Tape.
 - 1. Manufacturer: Empire Level Mfg. Corp., 929 Empire Dr., Mukwonago, WI 53149; Tel: 800-558-0722; Fax: 262-368-2127; Website: www.empirelevel.com.
 - a. Product: Thortec premium reinforced detectable underground orange warning tape, marked “Optic Fiber” or “Communications”.
 - b. Other manufacturers shall submit requests for product approvals in accord with Section 01 25 13 – Product Substitution Procedures.
- H. Tracer Wire: Green, #10 copper conductor insulated wire.
- I. Concrete: 0.375” (86.5mm) maximum size aggregate, nominal compressive strength, 3,000 psi (20.68Mpa) at 28 days.
- J. Steel Reinforcing: #5 deformed bars, 40,000 lbs. (18,180kgs) tensile strength.

- K. Sand for backfill: clean, material passing #4 U.S. sieve, conforming to ASTM C33-11a - Standard Specification for Concrete Aggregates.
- L. Manufacturers not listed shall comply with Section 01 25 13 Product Substitution Procedures.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Pathway routing shall avoid established trees. Small ornamental trees that interfere with work can may be moved or replaced if preapproved by Owner’s Project Manager. Planting beds and shrubs may be disrupted as needed, provided they are restored to original condition.
- B. Walkways and roadway may be crossed if required, provided they are restored to original condition.
- C. Where possible, new conduits installed along same pathway as existing pathway shall be installed as part of existing ductbank. Contractor/CM may expose existing ductbank and use its vertical side to frame space for new conduits.
- D. Communications and data systems (fire alarm, intercom, telephones, sensors, cameras, etc.) may require dedicated cabling to specific, non-standard locations. See other Div. 27 Specifications for additional requirements. Devices shall be designed as required and may run independent of other pathways and requirements. Owner’s Project Manager shall preapprove pathway designs involving data, communications, security or life-safety cabling.
- E. Cable pathways shall be underground, where possible. Underground pathways shall be concrete-encased conduit.
- F. Clearances between utilities:

Underground Clearances as Required by NESC	
Structure	Minimum Clearance
Communications or other low voltage	3” (75 mm) concrete encased conduit 4” (100 mm) masonry 12” (300 mm) of compacted earth
Pipes (e.g. gas, water, oil)	6” (150 mm) when crossing 12” (300 mm) when parallel
Telecommunications conduit terminated on same pole as electrical	Preferably 180 degrees but not less than 90 degrees
Underground pathways minimal depth elements.	30” (76.2cm) to top of pathway

- G. Conduits shall slope at 1% grade for drainage between pull boxes and handholes.
- H. Provide 12” (30.4cm) fine aggregate compacted bed under ductbank and pull box locations.
- I. Conduit Layout:
 - 1. Layout in ductbanks shall facilitate orderly cable racking within pull boxes to ensure minimal change in formation cable.

2. Main conduit formations shall enter end walls of pull boxes approximately halfway between floor and top.
 3. Splay ductbank entrances at end walls rather than center placement.
 4. If total number of conduits being placed is significantly less than capacity of terminating pull box or cable entrance, conduits shall enter at lower level with upper space reserved for future conduits.
 5. Conduit entrance into pull boxes shall be sized for ultimate number of conduits to preclude future wall breakouts.
 6. Duct bank change in directions shall be provided with pull hole boxes.
 7. Ductbank configuration may vary, depending on spaces into which conduits end.
 12. Buildings shall have minimum of four conduits accessing entrance facility. Two conduits shall be 4" (101 mm) inner diameter. Remaining two may be multi-cell conduits with minimum three factory-manufactured inner conduits.
 13. Compacted backfill shall be fine aggregate grading in accord with ASTM C136-06 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates).
 14. Backfill material may be material removed from original excavation, provided backfill materials meet ASTM C136-06.
 15. Match sod of same type grass as surrounding area.
 16. Compact first six inches of backfill to 95% density per ASTM D1557-09, Method A.
 17. Compact second six inches of backfill to 85% density per ASTM D1557-09, Method A.
 18. Horizontal conduits shall end flush with interior surface of pull boxes. Vertical conduit risers ending in electrical rooms shall extend 12" (304mm) above concrete curb located at electrical switchgear. Cut conduits square and level to floor. Bushings shall be installed on conduit ends.
 19. Provide compression-type duct plugs.
 20. Install warning tape 24" (60.8cm) above duct bank.
 22. Provide #10 copper, green insulated tracer wire.
 23. Install 0.375" (86.5mm) diam. pull strings in conduits.
- K. Non-encasement
1. In special circumstances, if preapproved by Owner's Project Manager or where indicated, CM/Contractor may install conduits without concrete ductbank.
 2. Typical installations may include parking lift gates, information kiosks, playfield ticket booths, concession stands or other non-critical locations.
- L. Digging and Trenching
1. Underground pathways shall be minimum depth of 30" (76.2 cm) to top of pathway elements.
 2. Excavating and trenching shall be in accord with codes and requirements established by applicable local, state, and federal agencies and departments.
 3. Trenching and digging shall be in neat and workmanlike manner.
 4. Sawcut paved areas encountered during excavations. Cuts shall be neat and straight.
 5. Remove excavated soil, rubble, debris, or other materials encountered during excavation. Excavated material to be reused may be stored on site with pre-approval of Owner's Project Manager at designated location(s).
 6. Excess material shall be properly removed from site per local disposal requirements.
 7. Excavated material from ductbank trenches may be left near trenching to be used as backfill, if acceptable.
 8. Only remove material necessary to safely and properly install ductbanks.
 9. Contact CM/Contractor and Owner's Project Manager immediately if trench or hole bottom is wet, unstable, or otherwise unable to support proposed infrastructure.

10. Provide pumps, as necessary, to keep water out of excavation. Direct effluent towards nearest storm drain only if effluent is free from dirt and debris. Otherwise, effluent shall be diverted to an area free from vehicular and pedestrian traffic and other construction areas.
 11. Contractor/CM shall immediately notify Owner's Project Manager of rock that cannot be excavated by $\frac{3}{4}$ yard³ (0.51 m³) power shovel or broken sufficiently by air hammer to clear space required for infrastructure installation.
- B. Backfill:
1. Notify Owner's Project Manager and Authority Having Jurisdiction (AHJ) prior to backfilling which will conceal installed pathway elements. Document pathway depths and locations.
 2. Backfill in stages, when necessary to complete trenching and ductbank installation.
 3. Use pre-excavation photographs or video recording of previous conditions to restore existing conditions, including brick walkway placement and pattern.
 4. Restore brick walkways in same pattern and arrangement as originally installed.
 5. Provide and install level layer of compacted fine aggregate over each encased ductbank.
 6. First 12" (304mm) of aggregate bed shall be compacted to not less than 95% density per ASTM D1557-09, method A. Remaining fine aggregate fill to grade shall be compacted to not less than 85% density per ASTM D1557-09, method A.
 7. Remove remainder of excavated material from site.
 8. Remove erosion control devices no longer needed, not including those in and around seeded areas.
 9. Compacted backfill shall be fine aggregate grading in accord with ASTM C136-06 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates).
 10. Backfill material may be material removed from original excavation, provided backfill materials meets requirements of ASTM C136-06.
- C. Protection:
1. Protect property from damage during construction. Restore, repair, rebuild, or replace damaged items adjacent property, existing fences, trees and shrubs, roadways and curbs, sidewalks, and surface utilities damaged during construction.
 2. Provide traffic control elements to include barriers, tapes, barricades, signage, planking, decking and ramps to protect against unauthorized pedestrian or vehicular access to construction areas.
 3. Provide temporary walkways to divert pedestrian traffic safely around construction area.
 4. CM/Contractor shall request pre-approval from Owner's Project Manager for temporary driveway or walkway locations. Protect, support, and maintain existing utilities in work area when encountered during excavation.
 5. Install erosion control measures as needed to minimize erosion and to prevent soil run-off from construction area.
 6. Provide and install bracing, shoring, and sheathing as necessary to protect facility staff, construction personnel and surrounding conditions. Adhere to local, state, and federal requirements for Trench Safety.
 7. Hand remove and stack paving bricks and pavers and curbing on pallets in construction pathway.
 8. Provide detailed photographic or video survey of pathways and areas to be disturbed prior to construction. Deliver set of photographs or video on flash drive to Owner's Project Manager prior to construction.
 9. Workers shall use appropriate personal protective equipment to work safely within trenches and excavated areas. Provide appropriate safety equipment as needed to extract

disabled workers or as otherwise needed to provide safe work environment and to provide immediate support in emergency situations.

D. Coordination and Scheduling:

1. Secure necessary construction permits, as required.
2. Coordinate construction schedules and work sequencing on site with facility operations and Owner's Project Manager.
3. Installer shall coordinate construction schedules with CM/Contractor.
4. Locate and stake pathways and spaces where work is to be installed. Confirm locations with Owner's Project Manager and A/E. CM/Contractor shall notify Owner's Project Manager of discrepancies in site plan and existing conditions.

E. Conduit/Duct Pathways Installation:

1. Pathway elements shall be labeled in accord with Section 26 05 53 – Identification for Electrical Systems.
2. Trench walls shall not be used as vertical forms for pouring concrete. Sides of trenches shall be formed to maintain straight and neat cross-section for ductbanks to be encased by concrete. Remove forms after concrete sets.
3. When penetrating existing pull boxes or building walls, core-drill, or shall saw cut openings for access. Confirm with manufacturer or structural engineer that proposed method to access structure and final configuration of conduits shall not compromise structural integrity of structure.
4. Provide and install framing to prevent penetration of concrete into interior space of structure. Remove framing when concrete has set and after backfilling is complete.
5. Install horizontal conduits ending in structures flush with interior surface of wall.
6. Install vertical conduits ending in entrance facilities such that they extend minimum of 4" (101mm) above floor. Cut conduits square with conduit and not necessarily level to floor. Provide and install bushings on conduit ends.
7. Provide and install conduit spacers beneath each conduit three times per 20 linear ft. of conduit. Spacers shall be evenly distributed over each 20 segments (e.g. one at each 20 ft. joint and two evenly spaced over middle). Each horizontal row of spacers shall be installed with 6" (152 mm) minimum horizontal distance from other row of spacers to eliminate weak vertical shear planes.
8. Provide and install steel reinforcing bars, vertically and horizontally, to form box framing conduits. Coated wire shall be used to support rebar cage. Vertical and horizontal bars shall be tied to prevent movement and provide separation from conduits during concrete pouring. Vertical and horizontal bars shall be one-piece U-shaped bars prefabricated to extend around ducts to be located 3" (75mm) outside conduits. Provide 3" (75mm) cover to face of rebar.
9. Provide and install reinforcing bars as detailed. Rebar shall be secured to each other. Longitudinal bars shall overlap 12" (304mm), unless welded together, and shall be secured to vertical and horizontal bars to prevent movement or cage.
10. When abutting manholes or building walls, provide dowel holes in each structure to enable longitudinal reinforcing rods to penetrate structure far enough to prevent vertical and horizontal shearing of ductbanks from structure. Do not penetrate walls with holes. Provide and install additional reinforcing rods to secure anchorage to manhole or wall openings.

G. Concrete Encasement

1. When encasing ductbanks, provide and install concrete around conduits providing 3" (7.6 cm) of concrete around sides of conduit ductbank for areas indicated for complete encasement.

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2. Shape top of concrete ductbank to slope water to edges.
 3. Conduit encased in concrete shall have bell ends, joined with adhesive providing permanent and watertight seal.
 4. Pathways including service entrance and inter-building pathways shall be encased in concrete. Concrete shall have maximum 0.375" (86.5mm) aggregate with nominal compressive strength of 3000 psi (20.68Mpa).
 5. Separate rebar cage from conduits with 3" (7.6cm) concrete and provide 3" cover from rebar to top, sides and bottom of encasement.
 6. Provide steel reinforcing bars, vertically and horizontally, to form vertical box framing conduits as indicated.
- H. Final Installation of New Pathway
1. Clean conduits by pulling cylindrical brushes until dirt is removed. Blow conduits dry.
 2. Install pull strings into conduits.
 3. Install tracer wire in one conduits of new pathway. In pull boxes, hand boxes, and entrance facilities, tracer wire shall be bonded to ground. Wire shall be clearly labeled in accord with Section 26 05 53 – Identification for Electrical Systems.
 4. In pull boxes and handholes, tracer wire shall loop up to be reachable without entering hole. Wire shall be securely anchored along neck, ceiling, and wall.
 5. Install duct plugs at both ends of conduits.
- I. Restoration
1. Restoration of disturbed landscaping shall be to preconstruction conditions per photographic or video records.

END OF SECTION

SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Provide and install all equipment, labor, and material for a complete identification system, including but not limited to:
 - 1. Nameplates and labels.
 - 2. Wire and cable markers.
 - 3. Conduit markers.

1.3 REFERENCES

- A. ANSI/NFPA 70 - National Electrical Code.
- B. Americans with Disabilities Act – 1990 including Amendments

1.4 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART 2 – PRODUCTS

2.1 NAMEPLATES

- A. Nameplates shall be laminated phenolic plastic, chamfer edges.
 - 1. For 120/208 Volt System:
 - a. Black front and back with white core, with lettering etched through the outer covering. White engraved letters on black background.
 - 2. For 277/480 Volt System:
 - a. Orange with white letters.
 - 3. Emergency Power:
 - a. Red front and back, white core, lettering etched through outer covering, white engraved letters on red background.
- B. Nameplates for emergency power shall be laminated phenolic plastic. Red front and back, with white core, with lettering etched through outer covering, white engraved letters on red background.
- C. Letter Size:
 - 1. 1/8-inch letters for identifying individual equipment and loads.
 - 2. 1/4-inch letters for identifying grouped equipment and loads.

- D. Nameplates shall adequately describe the function of the particular equipment involved. Where nameplates are detailed on the drawings, inscription and size of letters shall be as shown and shop drawing submitted for acceptance. Nameplates for panelboards, switchboards, motor control centers, disconnects and enclosed breakers shall include the panel designation, voltage, and phase of the supply. For example, "Panel A, 120/208V, 3-phase, 4-wire". In addition, provide phenolic label in panel to describe where the panel is fed from and location. For example, "Fed From MDP-1:3:5 Electrical Room #E101 Level 1". Nameplates for equipment listed below shall describe particular equipment name and associated panel/ckt (if applicable). The name of the machine on the nameplates for a particular machine shall be the same as the one used on all motor starters, disconnect and P.B. station nameplates for that machine.
- E. The following items shall be equipped with nameplates:
 - 1. All motors, motor starters, motor-control centers, pushbutton stations, control panels, time switches, disconnect switches, transformers, panelboards, circuit breakers (i.e., all 2 pole, 3 pole C.B's.), contactors or relays in separate enclosures, power receptacles where the nominal voltage between any pair of contacts is greater than 150V, wall switches controlling outlets that are not located within sight of the controlling switch, high voltage boxes and cabinets, large electrical, and electrical systems (Divisions 27, 28 sections), junction and pull boxes (larger than 4-11/16"), terminal cabinets, terminal boards, and equipment racks. Nameplates shall also describe the associated panel and circuit number (if applicable).
- F. All Electrical system panels, transfer switches, motor control centers, disconnect switches, motor controllers, etc. shall be labeled as per branch, *i.e.*: "Panel ABC Emergency-Life Safety Branch" (similar for emergency legally required standby branch, or emergency optional standby branch).

2.2 WIRE MARKERS

- A. Description: Cloth, tape, split sleeve, or tubing type wire markers.
- B. Locations: Each conductor at panelboard gutters, pull boxes, outlet and junction boxes, and each load connection.
- C. Legend:
 - 1. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings including neutral conductor.
 - 2. Control Circuits: Control wire number indicated on schematic and interconnection diagrams on shop drawings.

2.3 CONDUIT/JUNCTION BOX COLOR CODE

- A. All conduit system junction boxes (except those subject to view in public areas) shall match existing. If none exists, the paint shall be color coded as listed below:

<u>COLOR CODE FOR JUNCTION BOXES</u>	<u>COLOR</u>
System Emergency 277/480-volt	Red
System Emergency 120/208	Pink
Fire Alarm	Orange
Normal Power 277/480-volt	Brown
Normal Power 120/208-volt	Black
Fiber Optics	Purple
Sound System	Yellow
Intercom	Blue
Computer/Data	Gold

TV	White
BAS	White
Security/CCTV	Green
Telephone	Dark Green
Grounding	Fluorescent Green

- B. Conduits (not subject to public view) longer than 20 feet shall be painted with above color paint band 20 ft. on center. Paint band shall be 4" in length, applied around entire conduit. Where conduits are parallel and on conduit racking, the paint bands shall be evenly aligned. Paint shall be neatly applied and uniformed. Paint boxes and raceways prior to installation or tape conduits and surrounding surfaces to avoid overspray. Paint overspray shall be removed.
- C. Junction boxes and conduit located in public areas (i.e. areas that can be seen by the public) shall be painted to match surface attached to. Provide written request to A/E for interpretation of those public areas, which may be in question.

2.4 CONDUIT/JUNCTION BOX MARKER

- A. All new and existing junction boxes/cover plates for power, lighting and systems (except those installed in public areas) shall adequately describe its associated panel and circuit reference number(s) within, (i.e. ELRW-2, 4, 6) or systems within (i.e. fire alarm, intercom, etc.). Identification shall be neatly written by means of black permanent marker. (Paint 1/2 cover plate with appropriate color above and 1/2 with associated panel/circuit or system as described above.) Junction box cover plates located in public areas shall be identified with small phenolic labels securely attached. Label colors to be determined by A/E. Large pull/junction boxes (8" x 8" or larger) shall be color identified by painting the corners of box cover plate with specified colors at 45° angles and phenolic labels as specified herein.
- B. Identify conduit not installed in public areas with corresponding panel/circuit numbers or corresponding system type as described above. Spacing: 20 ft. on center adjacent to color identification bands.

2.5 UNDERGROUND WARNING TAPE

- A. Description: Minimum 6-inch-wide plastic tape, detectable type, with suitable warning legend describing buried lines. Systems conduits shall have orange colored tape and power/lighting conduits shall have red colored tape.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Degrease and clean surfaces to receive nameplates and labels.

3.2 APPLICATION

- A. Install nameplate parallel to equipment lines.
- B. Secure nameplate to equipment front using stainless steel pop rivets.
- C. Secure nameplate to inside surface of door on panelboard that is recessed in finished locations.
- D. Nameplates installed inside on dead front cover shall be self adhesive tape. (Do not drill or install screws in dead front.)

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- E. Identify new conduit, junction boxes, and outlet boxes using field painting.
- F. Identify new underground conduits using underground warning tape. Install a minimum of one tape per trench at 6 inches below finished grade. For trenches exceeding 24 inches in width, provide one tape per 24 inches of trench width spaced evenly over trench width.
- G. Install wire markers at all new connections and terminations and existing connections and terminations, modified or altered.

END OF SECTION

SECTION 26 27 26
WIRING DEVICES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 01, General Requirements, are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Provide and install all equipment, labor, material, accessories, and mounting hardware for a complete and operating system for the following:
 - 1. Wall switches.
 - 2. Wall dimmers.
 - 3. Receptacles.
 - 4. Device plates and decorative box covers.

1.3 REFERENCES

- A. NEMA WD 1 - General Purpose Wiring Devices.
- B. NEMA WD 5 - Wiring Devices, Special Purpose
- C. NEMA WD 6 - Wiring Device Configurations.

1.4 SUBMITTALS

- A. Submit Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.
 - 1. Submit product data on all types of wiring devices including plates and engraving.
- B. Submit Manufacturer's Instructions:
 - 1. Indicate application conditions and limitations of use stipulated by product testing agency specified under regulatory requirements.
 - 2. Include instructions for storage, handling, protection, examination, preparation, operation and installation of product.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.7 EXTRA MATERIALS

- A. Provide a minimum of two (2) screw drivers of each type of tamper proof screw used on project.
- B. Turn over to owner. Submit receipt in O&M manual.

PART 2 PRODUCTS

2.1 GENERAL

- A. All devices shall be Specification Grade as minimum.
- B. General purpose wiring devices shall meet NEMA standard WD-1, Wiring Devices, General Purpose. Special purpose devices shall conform to the requirements of NEMA standard WD-5, Wiring Devices, Special Purpose.
- C. All wiring devices shall bear UL labels.
- D. All devices of one type (i.e. all snap switches, all duplex receptacles, etc.) shall be by the same Manufacturer. "Hazardous Location" and special purpose devices as may not be available from the same manufacturer shall constitute the only exception to this requirement of single source.
- E. Corrosion resistant devices shall be as specified for normal usages and fabricated of yellow color melamine plastic. Where "Weatherproof" type is indicated for exterior or wet locations, provide matching self-closing cover, with gasketed seals at plate/wall junctions and for cover.
- F. Provide factory packaged wiring devices having high impact strength molded plastic bodies.
- G. Except where specifically required in these specifications use of interchangeable type or combination switch-receptacle-pilot devices is not acceptable and shall be removed.

2.2 WALL SWITCHES

- A. Manufacturers:
 - 1. Legrand
 - 2. Leviton
 - 3. Hubbell
- B. General:
 - 1. Snap switches for general use shall be maintained contact types, and shall be single-pole, double-pole, three-way, or four-way as required for the specific switching arrangements shown on the drawings. They shall be quiet tumbler operation types, having silver alloy contacts, and meeting all NEMA performance standards. Color to match plates unless specifically noted otherwise in specifications and/or on drawings.
 - 2. Switches shall be toggle or key-operated types, as indicated on the drawings. All key-operated switches shall be keyed alike.
 - 3. Where switches are denoted as having pilot lights, pilot lights shall glow when the switches are "ON". Provide pilot light switch with lamp and miniature step-down transformer. The pilot light shall have a red lens, and the lamp shall be long-life type.
 - 4. Jewels for use with switches controlling motors shall be green, and jewels for other purposes shall be amber. All units shall be front relampable.
 - 5. Snap switches installed in hazardous locations shall be UL listed for the type of location (class and division).

6. Voltage and ampere rating of switches shall be marked on switch and shall conform to voltage of system to which applied.
- C. Description: NEMA WD 1, heavy-duty, AC only general-use snap switch.
- D. Voltage Rating: 120-277 volts, AC.
- E. Current Rating: 20 amperes minimum.
- F. Ratings: Match branch circuit and load characteristics.

2.3 WALL DIMMERS

- A. Manufacturers:
 1. Legrand
 2. Leviton
 3. Hubbell
- B. Description: NEMA WD 1, semiconductor dimmer for incandescent lamps, type as indicated on Drawings.
- C. Device Body: Plastic with rotary knob or linear slide as called for on drawings.
- D. Voltage: 120 volts or as required to match application.
- E. Power Rating: Match load shown on Drawings; 600 Watts minimum.
- F. Accessory Wall Switch: Match dimmer appearance.
 1. Same manufacturer and style as dimmer switch.

2.4 RECEPTACLES

- A. General:
 1. All receptacles shall be of standard NEMA configuration, as indicated on the drawings, and shall comply with the respective ANSI C73 series standard for the NEMA configuration. Color to match plates unless specifically noted otherwise in specifications and/or on drawings.
 2. Duplex receptacles shall have integral UL listed self-grounding clips. Similar, single receptacles shall be provided for plug-in connections of Industrial Fluorescent light fixtures on the same switching circuit. Receptacle faces to be impact resistant nylon.
 3. Weatherproof duplex receptacles shall be provided in all exterior locations and shall be Ground Fault Circuit Interrupting (GFCI) types, with weatherproof cover plates allowing use of receptacle with cover in closed position.
 4. Special purpose receptacles for specific equipment shall be grounding types, having the number of poles, voltage, and ampere ratings, and NEMA configurations required by the equipment. For each special purpose receptacle, provide an identical mating plug equipped with cord grip, secured to cord.
 5. Duplex receptacles shall have back and side wired screw pressure terminals.
- B. Description: NEMA WD 1; heavy-duty general use receptacle.
- C. Configuration: NEMA WD 6; heavy-duty, general use type as specified and indicated.
- D. Convenience Receptacle: Type 5-20.
- E. GFCI Receptacle: Convenience receptacle with integral ground fault circuit interrupter to meet regulatory requirements.
- F. Manufacturers:
 1. Legrand
 2. Leviton
 3. Hubbell

2.5 COVER PLATES

- A. All wiring devices shall be provided with standard size one-piece cover plates of suitable configuration for the number and type of devices to be covered.
- B. Metallic cover plates shall be used in interior spaces, except as noted below, and shall be fabricated of corrosion-resistant #302 stainless steel, having a nominal thickness of .04", and a brushed finish. Screws securing the plates shall have flush (when installed) heads with finish to match plates. Metallic cover plates shall meet all requirements of the National Electrical Code and Federal Specifications.
- C. Cover plates for switches located in corrosive atmospheres (where vapor-proof is not indicated) shall be equal to Hubbell #17CM81/#17CM82/#17CM83/#17CM84 one piece neoprene with matching press switch.
- D. Cover plates for exterior receptacles shall be gasketed covers with hinge allowing plug and cord to be plugged in and activated with cover closed.
- E. Cover plate engraving, where required, shall be accomplished by cover plate manufacturer in accordance with instructions given on the drawings. Metallic plates in ivory, beige, gray, and white shall be engraved with black fill. Red, brown, and black plates shall be engraved with white fill.

2.6 COLOR

- A. Devices connected to normal power and located in finished interior spaces shall be of color selected by Architect from the following list of standard colors: ivory, beige, gray, white, brown, and black.
- B. Cover plates for devices connected to normal power and located in finished interior spaces shall be of color selected by Architect from the above list of standard colors or #302 SS.
- C. All devices and coverplates in paneled walls shall have finish to match paneling.
- D. Receptacles and switches connected to the emergency branch of the power system shall be 'RED'. Cover plates for such devices shall be stainless steel and engraved with "STANDBY POWER".
- E. Receptacles connected to the computer power distribution branch shall be 'GREY' in color, with trim plate to match other normal power receptacles.
- F. Contractor shall modify any given catalog numbers as required to procure devices and plates of the proper color.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify conditions under provisions of Division 01 - General Requirements and any other applicable supplemental requirements/conditions.
- B. Verify outlet boxes are installed at proper height.
- C. Verify wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify floor boxes are adjusted properly.
- E. Verify branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

3.2 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean debris from outlet boxes.

3.3 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install devices plumb and level.
- C. Install switches with OFF position down.
- D. Install wall dimmers to achieve full rating specified and indicated after derating for ganging as instructed by manufacturer.
- E. Do not share neutral conductor on load side of dimmers.
- F. Install receptacles with grounding pole on bottom.
- G. Install decorative plates on switch, receptacle, and blank outlets in finished areas.
- H. Electrical boxes shall be cleaned and completely free of any debris, dust, etc. prior to the installation of wiring devices.
- I. Where 2 or more switches or receptacles are to be installed adjacent to one another, provide a multi-gang box and combination multi-gang coverplate. Provide proper NEC barriers in boxes which serve devices for both the Normal and Emergency Systems.
- J. Provide device coverplates for every device installed. Cover plates shall be installed so that they appear straight with no gaps between plate edges and the wall. Maintain vertical and horizontal to within 1/16 of an inch.
- K. In finished areas, provide same type of plate for all surface mounted devices as for recessed mounted devices.
- L. In any room, where new and existing construction is present, all receptacles, switches, and coverplates which are existing to remain shall be changed, as required to match new work.
- M. Wiring devices shall not be installed in exposed masonry until cleaning of masonry with acids has been completed.
- N. All receptacles and switches shall be grounded by means of a ground wire from device ground screw to outlet box screw and branch circuit ground conductor. Strap alone will not constitute an acceptable ground.
- O. All wiring devices, relays, contactors, pushbuttons, selector switches, pilot lights, etc. shall be installed in approved enclosures rated for the appropriate NEMA classified environment.
- P. All devices shall be installed so that only one wire is connected to each terminal.
- Q. Once construction is substantially completed, replace all damaged, burned, or scorched wiring devices.
- R. Receptacles shown to be floor mounted shall be installed in floor boxes (with coverplates) which are approved for this use.
- S. Connect wiring devices by wrapping conductor around screw terminal.
- T. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.
- U. Install protective rings and split nozzle on active flush cover service fittings.
- V. Install local room area wall switches at door locations on the lock side of the door, approximately four inches from the jamb. Where locations shown on the drawings are in question, provide written request for information to A/E prior to rough-in.

3.4 NEUTRAL CONDUCTOR CONNECTIONS

- A. At each receptacle "in" and "out" phase and neutral conductors shall have an additional conductor for connection to device. The practice of "looping" conductors through receptacle boxes shall not be acceptable.

3.5 INTERFACE WITH OTHER PRODUCTS

- A. Coordinate locations of outlet boxes provided under other Sections of these specs to obtain mounting heights specified and indicated on Drawings.

3.6 FIELD QUALITY CONTROL

- A. Inspect each wiring device for defects.
- B. Operate each wall switch with circuit energized and verify proper operation.
- C. Verify that each receptacle device is energized.
- D. Test each receptacle device for proper polarity.
- E. Test each GFCI receptacle device for proper operation.

3.7 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

END OF SECTION

SECTION 27 05 00
COMMON WORK RESULTS FOR COMMUNICATIONS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Common work results for communications systems including general project requirements, other related specification sections, communications references, standards, definitions, abbreviations and acronyms, quality control requirements, communication submittals to include shop drawings, product and material data sheets, project record documentation, testing, certification, and other items required, for complete functioning communications system.

1.2 REFERENCES

- A. See Section 01 42 00 – References for additional reference standards, definitions, abbreviations, and acronyms.
- B. Florida Building Code, 2010 Edition.
- C. NFPA 70 (National Electrical Code, 2014 Edition).
- D. Telecommunications Standards:
 - 1. ANSI/TIA/EIA standards and BICSI methodologies (TDMM and CO-OSP). Reference to term “telecommunications network”, is hereinafter referred to as Information Transport System Installation (ITSI).
 - 2. Methodologies refers to BICSI manuals for telecommunications design and CO-OSP.
- E. American Standards for Testing Materials (ASTM).
- F. Underwriters Laboratories (UL).

1.3 REFERENCES, DEFINITIONS, AND ACRONYMS

- A. See Section 01 42 00 – References for additional reference standards, abbreviations, definitions, and acronyms.
- B. See BICSI Dictionary, 3rd Edition for additional word meanings for communications work.
- C. Structured Cabling System Description:
 - 1. Information Transport System includes copper and optical fiber, and equipment owned by outside providers carrying Owner information. Pathways are not limited to Owner’s system but may include those owned by third parties. Information Transport System may be referred to as “the network.” Elements of Information Transport System to be handled uniquely within overall Information Transport System will be specifically addressed (e.g., fire alarm cabling). This term replaces telecommunication network in building codes, standards, or methodologies.
 - 2. Inside Cable Plant: Part of Information Transport System running within building. Inside Cable Plant elements includes workstation outlet assembly, cabling to workstation from network rooms, backbone cabling within buildings, backbone cabling running between physically contiguous buildings network racks and hardware (routers, switches, hubs, firewalls, etc.), patch panels, punch blocks fiber distribution panels patch cords, and cross-connect cables/wires. Inside Cable Plant will be referred to as “ISP.”

3. Outside Cable Plant: That part of Information Transport System running between buildings, from building to a definable exterior point, between definable exterior points, or from a non-Owner source to Owner's building or definable exterior point, including termination punch blocks, fiber distribution panels, interior splices for outside to inside optical fiber transition, and other initial device into which outside cable attaches. The Outside Cable Plant does not include backbone cable running between physically contiguous buildings unless cabling enters OSP pathway element (e. g. OSP conduits, maintenance holes, etc.). Outside Cable Plant includes underground cabling and aerial cabling. Outside Cable Plant may be referred to as "OSP."
- C. Specific Communication System Elements:
1. Alien Crosstalk: Emissions from one or more adjacent cables affecting wire pairs in other cables.
 2. Attenuation: Decrease in magnitude or signal power loss propagated between two points.
 3. Cable: Assembly of one or more insulated conductors or optical fibers, within enveloping sheath.
 4. Campus: Includes buildings owned or leased by Owner with direct physical cable connection to contiguous campus through Owner's owned or leased conduits, including pathways.
 5. Dead pairs: Unused copper pairs terminating within splice case, but without being spliced to outgoing cable.
 6. Conductor, usually a rod, pipe, or plate (or group of conductors) in direct contact with earth for purpose of providing low-impedance connection to the earth.
 7. Grounding electrode conductor: Conductor used to connect grounding electrode to equipment grounding conductor, or to grounded conductor of circuit at service equipment, or at the source of separately derived system.
 8. Handbox: Rectangular or square underground pathway element similar to small maintenance hole, which cannot be fully entered, that allows for pulling point or splice point in pathway.
 9. Handhole: Round underground pathway element similar to handbox, which cannot be fully entered, that allows for pulling point in pathway.
 10. Identifier: Information that links specific element of Information Transport System infrastructure with its corresponding record.
 11. Infrastructure (Information Transport System): Collection of Information Transport System components, excluding equipment that together provides basic support for distribution of information within or between buildings.
 12. Linkage: Connection between record and identifier or between records.
 13. Maintenance holes: Underground pathway element large enough for person to fully enter work, used to provide access to underground cable to pull, splice, and maintain. Formerly known as manhole.
 14. Media (Information Transport System): Wire, cable, or conductors used for Information Transport System.
 15. Outlet box: Metallic or nonmetallic box used to hold Information Transport System outlets/connectors or transition devices.
 16. Outlet/connector (Information Transport System): Connecting device in work area on which horizontal cable or outlet cable terminates.
 17. Pathway: Facility for placement of Information Transport System cable.
 18. Record: Collection of detailed information related to specific element of Information Transport System infrastructure.
 19. Report: Presentation of collection of information from various records.

20. Space (Information Transport System): An area used for housing installation and termination of Information Transport System equipment and cable, e.g., equipment rooms, network rooms, work areas, and maintenance holes/handboxes/handholes.
 21. Splice: Joining of conductors in splice closure, meant to be permanent.
 22. Splice box: Box, located in pathway run, intended to house cable splice.
 23. Splice closure: Device used to protect splice.
 24. Termination position: Discrete element of termination hardware where information Transport System conductors are terminated.
 25. Wire Map: Method used to identify wiring errors.
 26. Work area (work station): Building space where the occupants interact with Information Transport System terminal equipment.
- D. Communications System Acronyms:
1. ACR: Attenuation-to-Crosstalk Ratio.
 2. ADA: Americans with Disabilities Act.
 3. AFF: Above finished floor.
 4. ANSI: American National Standards Institute.
 5. ASTM: American Society for Testing and Materials (ASTM International)
 6. AWG: American Wire Gauge
 7. BICSI®: Building Industry Consulting Service International.
 8. dB: Decibel.
 9. EIA: Electronic Industries Alliance.
 10. ELFEXT: Equal Level Far-End Crosstalk.
 11. EMC: Electromagnetic Compatibility.
 12. EMI: Electromagnetic Interference.
 13. FCC: Federal Communications Commission.
 14. FEXT: Far-End Crosstalk.
 15. FOTP: Fiber Optic Test Procedure.
 16. Freq: Frequency.
 17. GE: Grounding equalizer (replacing TBBIBC).
 18. Gnd: Ground.
 19. HB: Handbox.
 20. HH: Handhole.
 21. HVAC: Heating, Ventilation, and Air Conditioning.
 22. Hz: (Hertz) or MHz (Megahertz).
 23. IDC: Insulation Displacement Connectors.
 24. IEEE: Institute of Electrical and Electronics Engineers.
 25. ISO: International Organization for Standardization.
 26. ISP: Inside Cable Plant.
 27. IDF: Intermediate Distribution Frame: Location of building distribution equipment room(s).
 28. MDF: Main Distribution Frame: Location of campus wide central equipment room).
 29. Martin County School District (MCSD): Owner.
 30. Mbps: Megabits per second.
 31. MDF. Main Distribution Frame also referred to as Main Equipment Room.
 32. MH: Maintenance Hole.
 33. MM: Multimode fiber optic cable.
 34. NEC: National Electrical Code, NFPA 70.
 35. NESC: National Electric Safety Code, C2-1997.
 36. NEXT: Near End Cross Talk.

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37. NFPA: National Fire Protection Association.
38. OSHA: Occupational Safety and Health Administration.
39. OSP: Outside Cable Plant.
40. OTDR: Optical Time Domain Reflectometer.
41. PSACR: Power Sum Attenuation to Crosstalk Ratio.
42. PSELFEXT: Power Sum Equal Level Far End Cross Talk.
43. PSFEXT: Power Sum Far End Crosstalk.
44. PSNEXT: Power Sum Near End Crosstalk.
45. PR: Pair.
46. RCDD®: Registered Communications Distribution Designer.
47. RFI: Radio Frequency Interference.
48. RH: Relative Humidity.
49. SM: Single Mode Fiber Optic Cable.
50. TBB: Telecommunication Bonding Backbone.
51. TBBIBC: Telecommunication Bonding Backbone Interconnecting Bonding Conductor.
52. TE: Telephone Equipment (Wall Mounted Equipment Rack).
53. TGB: Telecommunications Grounding Bussbar.
54. TIA: Telecommunications Industry Association.
55. TMGB: Telecommunications Main Grounding Bussbar.
56. TR: Telecommunications Room (MDF or IDF).
57. UL: Underwriters Laboratory.
58. UPS: Uninterruptible Power Supply.
59. WAO: Work Area Outlet.

E. ABBREVIATIONS

1. dB: Decibel: sound level or channel attenuation.
2. “, in, inch(es), ft, foot: us length.
3. mm, cm, m, or km: metric length
4. W: Ohm(s): wire resistance.
5. μ : wavelength (nm) Nanometer.

1.4 SUBMITTALS

- A. Comply with Section 01 33 00 Submittal Procedures.
- B. Comply with Section 01 35 33 – Security Procedures for submittal of installer’s personnel information for security badging requirements.
- C. Project Record Documents
 1. Submit one (1) mylar reproducible set of Project Record Drawings and one electronic set of Project Record Drawings in AutoCAD Release 10 or later edition “DWG” rewritable file extension format.
 2. Submit complete updated hard copy of project record drawings and specifications maintained on project site during construction.
 3. See specific communication sections for additional requirements.
- D. Operation & Maintenance Manuals:
 1. Prior to the Substantial Completion Inspection, complete Operation & Maintenance (O&M) Manuals.
 2. Submit O&M Manuals to Owner at Substantial Completion Inspection.
 3. Instruction manuals shall contain sufficient information to permit Owner’s personnel to operate system without assistance from Contractor.
 4. Provide O&M Manuals covering equipment and materials furnished.

5. O&M Manuals shall contain information necessary for operation, maintenance, parts procurement, and parts replacement for SCS.
6. Information shall include detailed documentation for firmware configuration.
7. Provide 8-1/2" x 11" loose leaf 3-ring binders with clear vinyl overlay designed to receive identification inserts with identification on front cover and back splines as follows:
 - a. Operating & Maintenance Manual, Project Name, and Contractor.
 - b. On front page, enclosed in 3-ring clear plastic sheet protector, provide the following:
 - (1). Project Name.
 - (2) Contractor Name.
 - (3) Contractor's Project Manager.
 - (4) Contractor's Project Number.
 - (5) Owner's Project Number or Purchase Order Number.
 - c. Contact list with name, address, contact person, phone number, and fax number for each of the following:
 - d. Structured Cabling System Contractor.
 - e. Conduit subcontractor.
8. Manufacturers of Equipment and local supply source(s) for repair parts.
9. Index: On the second page, enclosed in a 3-ring clear plastic sheet protector, provide index indicating section numbers and titles.
10. Sections shall be separated with tabbed section divider with number and title (typed) as follows:
 - a. Section 1 – Cuts Sheets: Manufacturer's original data/cut sheets for each system component.
 - b. Section 2 – Equipment List: Typed list of each item of equipment with brief description, serial number, and part number, enclosed in 3-ring clear plastic sheet protector.
 - c. Section 3 – Factory Manuals: Manufacturer's printed Installation and Operating Manuals for each item of LAN equipment. Provide 3-ring zip-lock pockets for each manual not factory 3-ring punched. Do not include manuals loose or inserted in binder pockets.
 - d. Section 4 - Warranties: Copy of Contractor's warranty and Manufacturer's printed warranty for each item of equipment. Enclose in 3-ring clear plastic sheet protector.
 - e. Section 5 – Transmittal of Loose Items: Copy of transmittal to Owner's Project Manager for loose items such as patch cords, wire management rings, spare parts, with receipts signed-off by Owner's Project Manager. Enclose in 3-ring clear plastic sheet protector.
 - f. Section 6 - Documentation of Training: Documentation of training signed-off by Owner's Project Manager (insert in manuals at Final Completion inspection). Enclose in 3-ring clear plastic sheet protector.
 - g. Section 7 - Cable Tests: Executive summary of test results for Category 6, fiber optic, ITV, and voice backbone cabling.

1.5 QUALITY ASSURANCE

- A. Comply with Section 01 45 00 – Quality Control.
- B. Telecommunications installer shall have RCDD (Registered Communications Distribution Designer) on staff with minimum of 3 years of experience with specified manufacturers' hardware and cabling.

- C. Telecommunications installers shall have experience with installation of specified manufacturers' hardware and cabling.
- D. Telecommunications installers shall use BICSI registered installers. Seventy-five percent or more of installers shall be BICSI Installer Level II. Up to twenty-five percent of installers may be BICSI Installer Level I. Workers not involved in installing cable elements (e.g. laborers delivering/moving materials, installing grounding by electrician, or workers installing pathway elements) do not have to be registered.
- E. Team leads shall be BICSI registered technicians. Provide statements in bid documents of experience for proposed team leads. Statements shall include industry-specific training and certifications with dates verifying active status on registrations/certifications, project experience, experience with Category 6 and shielded cabling, and experience as a team lead.
- F. Only installers trained and certified by manufacturer shall be allowed to install copper products. Installers shall possess highest levels of certification available by manufacturer for specific structured cable solution being installed.
- G. Only installers trained and certified by fire stop manufacturer shall be allowed to install fire stop products. See Section 07 84 00 – Fire Stopping.
- H. Only installers trained and certified for cable testing and wiring by manufacturer shall be allowed to terminate and test optical fiber. Other installers specified above may pull or place optical fiber cable under supervision of installer trained and certified by manufacturer. Submit proof of registration/certification of proposed installers to include narrative on levels of registration/certification of installers.
- I. Owner reserves right to reject unregistered or uncertified installers performing work for which they are not certified. Installer shall be responsible for loss of work, delays in schedules, or extra cost from use of unregistered/uncertified workers. Additional cost and effort to maintain installation schedule shall be communications system installer's responsibility.
- J. Provide required documentation for new workers after submittal of initial documentation on installers. Owner may periodically check installer identification and registrations/certifications during installation.

1.6 PROJECT CONDITIONS

- A. Security and Work Coordination:
 - 1. SCS construction area shall be protected and secured from unauthorized access.
 - 3. Workplace safety and security is SCS installer's responsibility.
 - 4. Contact Contractor/CM or Owner's Project Manager, if project has no Contractor/CM, of conditions preventing safe, timely or complete installation of telecommunications systems.
 - 5. Failure to provide notification to Contractor/CM or Owner's Project Manager shall be deemed acceptance of working conditions.
 - 6. Comply with Section 01 31 00 – Project Coordination. Access to project including SCS installer's approved parking and "lay-down areas", access to buildings, maintenance holes, handholes, hand boxes, utility poles, underground spaces, and pathways shall be coordinated with Owner's Project Manager.
 - 7. Contractor/CM or SCS installer, if project has no Contractor/CM, shall provide traffic control and signage to maintain safe working environment.

8. Work area access, road closures, parking spaces closures, and work outside of Owner's normal operating hours shall be coordinated with Owner's Project Manager.
 9. Owner's continued occupation of existing facilities shall not be interrupted by SCS installer's work activities.
 10. Active cable plant associated with specific work and active cable plant beyond construction area shall not be disrupted.
 11. Unusual circumstances (e.g., voice cutovers) may occur if prior written notification and approval is granted by Owner's Project Representative. Disruptions, if needed, shall be at Owner's convenience and approved schedule.
- B. Owner shall not be responsible for delays or additional compensation due to SCS installer's unsafe working practices or unacceptable work.

1.7 WARRANTY

- A. Communications Installer shall provide warranties or guarantees in accord with Section 01 78 00 – Closeout Submittals and as noted herein.
- B. Communications CAT 6 and fiber optic cabling shall adhere to warranty requirements of Siemens System 6 or Ortronics NetClear GT2 warranty which may not be manufactured by either systems manufacturer but shall be inclusive with manufacturers and installer's warranties for complete and functional communications system.
- C. Manufacturer and authorized communications installer shall provide twenty (20) year warranty for category 6 structured cabling system for end-to-end channel model installation covering applications assurance, margin compliance claimed by manufacturer over category 6 channel specifications for transmission parameters across entire frequency range of 1-250 MHz in accord with manufacturers catalogs and literature, cable, connecting hardware and labor cost for repair or replacement.
- D. Manufacturer shall provide 20-year Channel Performance Warranty for complete communications system. System shall be either Siemon Systems 6 solution or Ortronics NetClear GT2 solution.
 1. Manufacturers shall warranty worst-case performance data for installed cabling system, and performance data indicated in warranty documents/certificate.
 2. Twenty (20) year warranty for Cat 6 structured cabling system shall provide for end-to-end channel model installation which covers applications assurance, cable, connecting hardware, and labor cost for repair or replacement.
 3. Warranty shall indicate compliance with Margin claimed by manufacturers over Cat 6 channel specifications on transmission parameters across entire frequency range of 1-250 MHz as indicated in manufacturer's catalogs and product literature.
- E. SCS installer shall provide 3-year warranty for communications system installation to include materials and labor warranty for replacement of defective installation or equipment including cables, jacks, patch cords, patch panels, devices, and cabling.
- F. Date of warranty period shall begin from date of project's substantial completion and acceptance by Owner.

Martin County School District
Purchasing/Maintenance/Transportation Department
Enhanced Security Project A2

PART 2 PRODUCTS - NOT USED

PART 3 PRODUCTS - NOT USED

END OF SECTION

SECTION 27 05 26
GROUNDING AND BONDING FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Grounding and bonding for TMGB at entrance to main electrical room, and TGB for other network rooms, ISP, conductors, connections and required hardware.
- B. Protection, grounding, and bonding shall be provided in new construction and in existing buildings where completely new communications system work is to be installed, or in existing buildings where expansion of existing communications system is required to interface with existing communication systems.
- C. Upgrading of existing communication systems to current codes, including installation of lightning protection, grounding bussbars, and bonding backbones.
- D. Coordination of interface connections with electrical contractor for proper pathway and termination locations, busbar locations and connection to main electrical service ground and electrical distribution panels.

1.2 REFERENCES

- A. Telecommunications Definitions (See Section 01 42 00 – References for additional reference standards, definitions, abbreviations, and acronyms).
 - 1. BCT (Bonding Conductor for Telecommunications): conductor that interconnects telecommunications bonding infrastructure to building's service equipment (power) ground.
 - 2. Bonding: Joining of metallic parts to form electrically conductive path.
 - 3. GE (Grounding Equalizer): conductor interconnecting elements of telecommunications grounding infrastructure.
 - 4. Ground: Conducting connection between electrical circuit or equipment and earth or to some conducting body that serves in lieu of earth.
 - 5. RBC (Rack Bonding Conductor): Bonding conductor connecting equipment rack directly to TMGB or TMB.
 - 6. RGB (Rack Grounding Busbar): Busbar vertically mounted on equipment rack.
 - 7. TBB (Telecommunications Bonding Backbone): Conductor connecting telecommunications main grounding busbar (TMGB) to
 - 8. TGB (Telecommunications Grounding Busbar): common point of connection for telecommunications system and equipment bonding to ground and located in Telecommunications Room or Equipment Room.
 - 9. TMGB (Telecommunications Main Grounding Busbar): Busbar placed in convenient an accessible location and bonded by bonding conductor for telecommunications and to building service (power) ground.
 - 10. UBC (Unit Bonding Conductor): Conductor interconnecting Rack Bonding Busbar to telecommunications equipment.
- B. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.
- C. Soares Book on Grounding.
- D. IEEE Standard 1100 – IEEE Recommended Practice for Powering and Grounding Electronic Equipment (Emerald Book).

- E. Building Industry Consulting Services International (ANSI/NECA/BICSI):
 1. BICSI-607 – Telecommunications Bonding and Grounding Planning and Installation Methods for Commercial Buildings.
 2. BICSI-607A – Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises.

1.3 QUALITY ASSURANCE

- A. Comply with Section 01 45 00 – Quality Control.
- B. Network equipment grounding shall be installed per ANIS-J-STD-607-A standard.
- C. Voltage drop over grounding conductors shall not exceed 40 volts. Installer shall provide sizing calculations based on grounding electrode conductor to AE for review.
- D. Protectors, grounding, and bonding hardware shall be products of same manufacturer.
- E. Grounding conductors shall be sized for maximum current possible for electrical grounding electrode conductor to pass through telecommunications grounding system.
- F. Sizing of Telecommunications Bonding Backbone (TBB) and Grounding Equalizer (GE):
 1. TBB and GE shall be copper conductors (#6 AWG minimum size).
 2. TBB and GE shall be sized at 2 kcmil per linear foot of conductivity length up to maximum of 3/0 AWG and may be insulated.
 3. If insulated, TBB and GE shall meet fire ratings of its pathway and shall be listed for space in which it is located.
 4. TBB and GE sizing noted in attached Schedule is not intended to account for reduction or control of electromagnetic interference.
 5. Bonding and Grounding Conductor Sizing Schedule:

TBB OR GE LENGTH Meters (Ft)	TBB/GE Size (AWG)
< 4 (13)	6 (13mm ²)
4-6 (14-20)	4 (21mm ²)
6-8 (21-26)	3 (27mm ²)
8-10 (27-33)	2 (34mm ²)
10-13 (34-41)	1 (42mm ²)
13-16 (42-52)	1/0 (54mm ²)
16-20 (53-66)	2/0 (67mm ²)
>20 (66)	3/0 (85mm ²)

1.4 SUBMITTALS

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Product Data: Submit manufacturer’s descriptive literature for each system component specified with specific product number clearly identified.
- C. Shop Drawings:
 1. Provide scaled drawings of floor plans (not less than 1/16” =1’-0”) indicating proposed location and size, dimensions, type of connection (e.g., mechanical, exothermic weld of each bonding busbar (e.g., TMGB and TGB), conductor (e.g., BCT, GE and TBB), connections (e.g., lugs), and splice points.
 2. Provide scaled plan and elevation drawings of Telecommunication Rooms (not less than 1/4” =1’-0”) indicating proposed locations busbars (e.g., TMGB, TGB, UBC and RGB).
 3. Provide separate drawing for proposed bonding and grounding layouts and details.

- D. Comply with Section 01 78 00 – Closeout Submittals for project closeout documents.
- E. Project Record Documents:
 - 1. Provide scaled drawings of floor plans (not less than 1/16" = 1'-0") indicating actual location and size, dimensions, type of connection (e.g., mechanical, exothermic weld of each bonding busbar (e.g., TMGB and TGB), conductor (e.g., BCT, GE and TBB), connections (e.g., lugs), and splice points.
 - 2. Provide scaled plan and elevation drawings of Telecommunication Rooms (not less than 1/4" = 1'-0") indicating actual locations busbars (e.g., TMGB, TGB, UBC and RGB).
 - 3. Provide separate drawing for actual bonding and grounding layouts and details.
- F. Operation and Maintenance (O&M) Manuals:
 - 1. Manufacturer's specification sheets (cutsheets), operation and maintenance manuals for each product and system maintenance.
- G. Certification: Provide letter to Owner's Project Manager from Contractor/CM installer's RCDD that grounding system was installed in accord with contract documents, acknowledging that telecommunications grounding system has been successfully tested and is fully functional for intended purpose. One letter from RCDD may be submitted to include attesting requirements from other Div 27 Sections.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Approved Manufacturer's.
 - 1. Ortronics Corporation, 125 Eugene O'Neill Dr., New London, CT 06320; Tel: 1 887 599-5393; Fax: 1 888 282-0043; Website; www.ortronics.com.
 - 2. Erico International Corp., 34600 Solon Rd., Solon, OH 44139. Tel: 440-248-0100; Fax: 440- 248-0723; Website: www.erico.com.
 - 3. Chatsworth Products Inc., 701 Industrial Dr., New Bern, NC 28562. Tel: 252-514-2779; Fax: 252-514-2977; Website: www.chatsworth.com.
 - 4. Thermoweld/Continental Industries, 4102 South 74th East Ave., Tulsa, OK 74145-4707. Tel: 918-627-5210; Fax: 918-622-1275; Website: www.conind.com.
 - 5. Harger Group, 301 Ziegler Dr. Grayslake, IL 60030; Tel: 800-842-7437; Fax: 847-548-8755; Website: www.harger.com.
 - 6. Panduit Corp., 18900 Panduit Dr., Tinley Park, IL 60478; Tel: 708-532-1800; Fax: 708-532-1811; Website: www.panduit.com.
- B. Other manufacturers shall comply with Section 01 25 13 - Product Substitution Procedures for product approval.

2.2. TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB):

- A. Manufacturers:
 - 1. Harger BICSI pattern 4" x 12" TMGB kit (#GBI1412JKT); 2" x 12" MGB kit (#GBI14210GKT).
 - 2. Chatsworth BICSI pattern 4" x 12" TMGB kit, TMGB (40158-012): Chatsworth BICSI pattern 2" x 12" MGB kit, TGB (40156-012).
 - 3. Rackmount bussbar:
 - a. Ortronics Grounding Strip (OR-808004551)
 - b. Chatsworth Horizontal Rack Busbar, 19" (10610-019).

2.3 TELECOMMUNICATIONS GROUNDING BUSBAR (TGB)

A. Manufacturers:

1. Harger BICSI pattern: 2" x 12" MGB kit (#GBI14210GKT).
2. Chatsworth BICSI pattern: 2" x 12" MGB kit, TGB (40156-012).

2.4 BONDING CONDUCTORS FOR TELECOMMUNICATIONS (BCT)

A. Bonding Conductor:

1. Bare copper conductor, stranded.
2. Insulated copper conductors, insulated, green, stranded, or solid.
3. Equal in size to largest Telecommunications Bonding Backbone (TBB).

B. Approved Manufacturers:

1. Harger Group.
2. Panduit Corp.

2.5 TELECOMMUNICATIONS BONDING BUSBAR (TBB)

A. TBB:

1. Bare copper or insulated conductor.
2. Conductor shall be listed for application when insulated.
3. Conductor shall be sized at 2 kcmil per linear foot of conductor length up to maximum wire size of 3/0 AWG.

2.6 GROUNDING EQUILIZER (GE)

A. GE:

1. Bare copper or insulated conductor.
2. Conductor shall be listed for application when insulated.
3. Conductor shall be same size as largest TBB.

B. Approved Manufacturers:

1. Harger Group.
2. Panduit Corp.

2.7 RACK BONDING CONDUCTOR (RBC)

A. RBC:

1. Bare copper or insulated conductor.
2. Conductor shall be listed for application when insulated.
3. Conductor shall be minimum of same size as largest TBB.

B. Approved Manufacturers:

1. Harger Group.
2. Panduit Corp.

2.8 RACK BONDING BUSBAR (RBB)

A. RBB:

1. Busbar shall be wrought copper and tin-plated grounding strip for use in 2-post and 4-post Communications Racks.
2. Busbar shall support multiple unit bonding conductors and shall be UL listed.

B. Manufacturers:

1. Harger Rack Grounding Busbar Kit #RGBVKIT14583672A.
2. Panduit Rack Grounding Busbar Strip Kit #RGS134-1Y.

2.9 GENERAL BONDING CONDUCTORS OR JUMPERS

- A. Provide and install general bonding conductors and jumpers as indicated.
- B. Provide conductors and jumpers connecting equipment located in same rooms as TMGB/TMB, conductors and jumpers shall be in green insulated jacket. Jacket shall include markings that indicate conductor size (minimum o #6 AWG), manufacturer, and UL listing.
- C. Approved Manufacturers:
 - 1. Harger Group.
 - 2. Panduit Corp.

2.10 BONDING ACCESSORIES

- A. Exothermic weld connectors, UL listed:
 - 1. Approved Manufacturers:
 - a. Erico International; Cadweld products.
 - b. Continental Industries; Thermoweld products.
- B. Grounding Lugs:
 - 1. Two-lug connectors, UL-listed, irreversible compression.
 - 2. Single-lug connectors, UL-listed, irreversible compression.
 - 3. Approved Manufacturers:
 - a. Enrico International Corp.
 - b. Harger Group
 - c. Panduit Corp.
- C. Stand-off Insulators:
 - 1. Round or hexagon glass reinforced thermoset polyester insulators sized for voltage rating.
 - 2. Approved Manufacturers:
 - a. Harger Group.
 - b. Chatsworth Products, Inc.
- D. Other materials as required for complete and functioning grounding system.

PART 3 EXECUTION

3.1 GENERAL

- A. Install pre-painted plywood panel on interior room walls of Telecommunications Rooms with sufficient anchorage to walls to support items attached to walls.
- B. Locate TMGB and TGBs per approved shop drawings and shall be easily accessible to telecommunications staff.
- C. Follow manufacturer's printed installation instructions. If manufacturer and contract documents are in conflict, most stringent shall apply. If manufacturer's printed instructions are conflicting, immediately report discrepancies to A/E in timely manner to maintain project schedule.

3.2 TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB)

- A. TMGB Installation:
 - 1. Position TMGB to be protected from physical damage.
 - 2. Install TMGB with stand-off insulators.
 - 3. If building TMGB is located in another room, install TGB with stand-off insulators.
 - 4. TMGB shall be bonded to grounding conductor with exothermic weld.

5. Bond entrance facility bussbar to appropriately sized TBB with exothermic weld.
6. Neatly install conductor from entrance facility bussbar at right angles along walls or ceiling surfaces to structural steel within same room or room in close proximity to electrical service panel within room, or metallic cold-water pipes within room.
7. Conductors attached to structural steel shall be connected with exothermic welds.
8. Metallic raceways for telecommunications cabling in space where TMGB is located shall be bonded to the TMGB.
9. Insulate TMGB 2" from wall.
10. For outside plant cables entering building with cable shield isolation gap, bond cable shield (on building side of gap) to TMGB. Outside plant protectors shall be bonded to TMGB with #6 AWG copper conductors.
11. Connections to busbar shall be made with 2-hole lugs.
12. Connections shall be made by cleaning area of connection on busbar and 2-hole lugs and then applying thin coating of antioxidant compound.

3.3 COMMUNICATIONS GROUNDING BUSBAR (TGB)

A. TGB Installation:

1. Provide and install necessary grounding hardware to properly ground equipment in network room per codes, standards and methodologies noted. Self-tapping screws, or any other type of screws, shall not be used to form bonds or attach grounding hardware.
2. Within each network room, provide and install insulated (green), stranded #6 copper ground wire from network room bussbar to following items:
 - a. Racks
 - b. Ladder rack
 - c. BETs
 - d. Electrical service panels- Provide and install two-lug connectors or exothermic bonds to bussbar.
 - e. Metallic, cold-water pipes- Verify identification of water pipe with Owner's Project Manager prior to bonding to it. Provide and install two-lug connectors or exothermic bonds to bussbar and provide and install appropriate grounding connectors for water pipes if present.
 - f. Metallic raceways for telecommunications cabling in space where TMGB is located shall be bonded to the TMGB.
 - g. Insulate TMGB 2" from wall.
 - h. Connections shall be made by cleaning area of connection on busbar and 2-hole lugs and then applying thin coating of antioxidant compound
3. Do not bend grounding conductor wires into tight angles. Changes in direction shall be of the highest radius possible.

3.4 MAIN DISTRIBUTION FRAME ENCLOSURES (MDF)

A. MDF Installation:

1. Install pre-painted plywood panel on interior room walls with sufficient anchorage to walls to support items attached to walls.
2. Install grounding bussbar in enclosure housing networking or other active equipment. Install bussbar at location indicated and approved by Owner's Project Manager. Bussbar may be rackmount bussbar attached to rails or backboard.
3. Provide and install necessary grounding hardware to properly ground equipment in network room per applicable codes, standards and methodologies noted. Self-tapping screws, or any other type of screws, shall not be used to form bonds or attach grounding hardware.

4. Connect enclosure to TBB with not more than 30 feet of insulated (green), stranded #6 copper ground wire.
5. Do not bend grounding conductor wires into tight angles. Changes in direction shall be of highest radius possible.

3.5 BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT)

- A. Route BCT in conduit from telecommunications service entrance room to main electrical service ground connection.
 1. See Section 27 05 53 – Identification for Communication Ssystems.
 2. Label conduit at telecommunications service entrance with tag or adhesive label that states, “Building Conductor for Telecommunications (BCT) to Main Electrical Service Ground Connection”.
 3. Label conduit at main electrical service ground c with tag or adhesive label that states, “Building Conductor for Telecommunications (BCT) to Telecommunications Main Grounding Busbar”.
 4. BCT shall not be run in metallic conduit nor completely encircled with metallic clamps.

3.6 TELECOMMUNICATIONS BONDING BACKBONE (TBB)

- A. TBB when located along same route as cable tray, TBB shall be located on outer side of cable tray to minimize contact with communications cabling.
- B. TBB cabling sizes shall be per Paragraph 1.04.F.5.

3.7 BONDING CONDUCTORS OR JUMPERS

- A. Bonding conductors or jumpers shall be utilized in each telecommunications room between TMGB/TGB and following components:
 1. Communications building entrance protectors.
 2. Electrical panel board (if in same room as TMGB/TGB).
 3. Building steel frame (if available in same room as TMGB/TGB).
 4. Telecommunications ladder rack and cable tray:
 - a. Bonding jumpers may be utilized to ground adjacent pieces of ladder rack and cable tray together, reducing need for single conductor back to TMGB/TGB.
 - b. Where ladder racks or cable trays are painted, paint shall be removed at connection points prior to making connections.
 5. Telecommunications equipment racks and cabinets:
 - a. Cabinets and racks shall be bonded to TMGB/TGB directly with #6 AWG Rack Bonding Conductor (RBC) from Rack Grounding Busbar (RGB).
 - b. Where ladder racks or cable trays are painted, paint shall be removed at connection points prior to making connections.

3.8 GROUNDING LUGS

- A. Wires shall be inserted to full dept of lugs.
- B. Space between wire insulation and body of compression lugs shall be not greater than 0.25” ((63mm).
- C. Lugs shall be sized to match wire size per lug manufacturer’s printed recommendations.
- D. Lugs shall have manufacturer’s embossed coding system imprinted on lugs.
- E. Connectors may not be modified. Daisy chaining and stacking (piggy backing) of gruond lugs is prohibited.

F. Bolts, nuts, washers for securing connections shall match hole diameters.

3.9 TESTING

A. Comply with Section 27 18 00 - Communications Testing.

B. Telecommunication Grounding System Test Notification:

1. Grounding connections shall be tested for continuity and resistance after installation but prior to project substantial completion.
2. A/E, District Instructional Technology Department, and Owner's Project Manager shall be given forty-eight (48) hours notice prior to start of testing.

C. Telecommunication Grounding System Testing:

1. Testing shall be performed for impedance of bonds of grounding system, including cable armor bonding to ground. Impedance of two-point bonding test across any bond shall not exceed 0.1 ohm. Remediate bond(s) over limit or which contribute to total impedance exceeding 0.1 ohm from any point in network room to bussbar in that room.
2. Bonds installed shall be tested for impedance with earth ground resistance test in its two-point setup (LEM Handy GEO tester, or approved testor). Place QA label (with date and inspector) in proximity to each bond tested.
3. Test grounding conductors, once installed, for current. Measure AC and bi-directional DC current. Report AC current over 1 Amp. Report any DC current, in either direction, over 500 miliamps.

END OF SECTION

SECTION 27 05 28
PATHWAYS FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Surface metallic raceways, surface nonmetallic raceways, fittings, device and cover brackets, communication systems utility columns, outlet boxes, Poke-thrus, floor boxes, pull and junction boxes for communications systems.

1.2 REFERENCES

- A. See Section 01 42 00 – References for additional reference standards, definitions, abbreviations, and acronyms.
- B. National Fire Protection Association (NFPA): NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.
- C. National Electrical Manufacturers Association (NEMA):
 - 1. NEMA WD 6 - Wiring Devices - Dimensional Requirements, 2002 Edition.
 - 2. NEMA VE 1 - Metallic Cable Tray System; National Electrical Manufacturers Association; 2002 Edition.
- D. Telecommunications/Electronics Industry Association (TIA/EIA): TIA/EIA-569 - Commercial Building Standard for Telecommunications Pathways and Spaces; Rev. A, 1998, and relevant Addenda (ANSI/TIA/EIA-569).
- E. Underwriters Laboratories (UL): UL 5 - Surface Metal Raceways and Fittings; Underwriters Laboratories Inc; 1996.
- F. National Electrical Contractors Association (NECA): NECA 1 - Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association; 2000.
- G. National Electrical Manufacturers Association (NEMA):
 - 1. NEMA OS 1 - Sheet Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; National Electrical Manufacturers Association; 2003.
 - 2. NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports; National Electrical Manufacturers Association; 2003.

1.3 QUALITY ASSURANCE

- A. Comply with Section 01 45 00 Quality Control. Comply with Reference Standards indicated.
- B. Provide products listed and classified by Underwriters Laboratories, Inc., as suitable for purpose specified and indicated.

1.4 SUBMITTALS

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Product Data: Submit manufacturer’s descriptive literature for each system component specified in this section.
- C. Shop Drawings:
 - 1. Submit raceway layouts, each system component required for complete system, raceway lengths, device types, locations and identify circuits.
 - 2. Indicate cable tray type, dimensions, support points, and finishes.

3. Indicate box, outlets, systems furniture, and service pole locations.
 4. Provide manufacturer's catalog data for fastening systems.
- D. Comply with Section 01 78 00 – Closeout Submittals: If variations from approved shop drawings occur during installation of raceway system, submit final as-built drawings indicating such variations.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with Section 01 66 00 – Product Storage and Handling Requirements.
- B. Store products in manufacturer's unopened packaging until installation.
- C. Maintain storage area conditions for products in accord with manufacturer's written instructions.

PART 2 PRODUCTS

2.1 APPROVED MANUFACTURES

- A. Approved manufacturers are listed herein. Other manufacturers may submit for approval per Section 01 25 13 – Product Substitution Procedures.

2.2 SURFACE METALLIC RACEWAYS

- A. Surface Metallic Raceways:
 1. Acceptable product: Wiremold 4000 System by The Wiremold Company, 60 Woodlawn St., West Hartford, CT 06110. Tel: 800-621-0049, 860-233-6251; Fax: 860-232-2062; Website: www.wiremold.com.
 2. Product description: Two-piece system of galvanized steel, nominal 0.040" (1.27 mm) metal thickness, having total assembled cross-section dimension 4.75" (120 mm) high by 1.75" (44 mm) deep, having cross-section area 7.5 square inches (48.38 sq cm), consisting of base, snap-on cover, and removable longitudinal barrier, dividing raceway interior into two equal spaces.
 3. Surface-mount locations shall use shallow, wall-mount boxes with outlets on the sides of box.
 4. Finish: ScuffCoat grey or ivory color as selected.
- B. Fittings:
 1. Factory-formed units to complete indicated configuration of raceway systems, including external corner units, internal corner units, flat units, blank end units, and elbows.
 2. Couplings: one per raceway unit.
 3. Wire clips: One per two-foot intervals (61 cm) of indicated raceway configuration.
 3. Replacement longitudinal barrier: One section per 8 linear feet (2.44 m) of indicated raceway configuration.
 4. Material: Same material and metal thickness as linear raceway components.
 5. Finish: Matching linear raceway components.
- C. Device Brackets and Plates:
 1. Factory-formed brackets and plates allowing installation of indicated power, data, and communications devices, both single-gang and two-gang, either vertically or horizontally in raceways.
 2. Finish: Color matching linear raceway components.

2.3 SURFACE NONMETALLIC RACEWAY SYSTEMS

- A. Surface Nonmetallic Multi-channel Raceway System
 - 1. Approved Product: Wiremold Access 5000 System by The Wiremold Company, 60 Woodlawn St., West Hartford, CT 06110. Tel: 800-621-0049, 860-233-6251; Fax: 860-232-2062; Website: www.wiremold.com.
 - 2. Corner Units:
 - a. Supply factory-formed cover and trim cover units for internal and external corners of indicated raceway layouts:
 - b. Finish corner units to match linear cover and trim cover units.
 - 3. Fittings:
 - a. Provide factory-formed fittings in rigid PVC compound with base to eliminate mitering for indicated configurations and service requirements.
- B. Finish: White.
- C. Surface Nonmetallic Single Channel Raceway System
 - 1. Approved Product: Wiremold Eclipse PN03, PN05, PN10 Series by The Wiremold Company, 60 Woodlawn St., West Hartford, CT 06110. Tel: 800-621-0049, 860-233-6251; Fax: 860-232-2062; Website: www.wiremold.com.
 - 2. Surface mount boxes:
 - a. Wiremold Large Data Box, four port, PDB4TJ.
 - 3. Corner Units:
 - a. Supply factory-formed cover and trim cover units for internal and external corners of indicated raceway layouts:
 - b. Finish corner units to match linear cover and trim cover units.
 - 4. Fittings:
 - a. Supply factory-formed fittings specified in manufacturer's product data for indicated configurations and service requirements.
 - b. Finish: White.

2.4 INDOOR SERVICE POLES AND COMPONENTS

- A. Approved Product: Wiremold Tele-Power Pole Multi Outlet Assembly by The Wiremold Company, 60 Woodlawn St., West Hartford, CT 06110. Tel: 800-621-0049, 860-233-6251; Fax: 860-232-2062; Website: www.wiremold.com.
- B. Main Body: Aluminum with clear anodized finish in single unit lengths as required.
- C. Cover Plates: Match pole finish.
- D. Convenience Receptacle Configuration: NEMA WD 6; Type 5-15. Furnish 4 per column.
- E. Foot: Suitable for floor finish as indicated.
- F. Provide concealed top clamp to fasten pole to inverted "T" grid ceiling suspensions member.
- G. Accessories:
 - 1. Trim plates for closing ceiling opening to match poles.
 - 2. Flexible cable assembly with connector for branch circuit connections.
- H. Fabrication:
 - 1. Provide full-sized opening at top of pole.

2.5 BOXES

- A. Manufacture: The Wiremold Company: 60 Woodlawn St., West Hartford, CT 06110. Tel: 800-621-0049, 860-233-6251; Fax: 860-232-2062; Website: www.wiremold.com.
- B. Outlet Boxes.
 - 1. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
 - 2. Nonmetallic Outlet Boxes: NEMA OS 2.
- C. Poke Thrus.
 - 1. Two 20A duplex receptacles and up to four communications devices:
 - a. Wiremold RC4 Flush Poke-Thru
 - 2. One 20A duplex receptacle and up to two communication devices
 - a. Wiremold RC7 Flush Poke-Thru
 - 3. No other products are acceptable.
- D. Floor Boxes.
 - 1. Wiremold AC Series Raised Floor Boxes.
 - 2. Wiremold 880 Floor Boxes for Wood Floors.
- E. Pull Boxes and Junction Boxes.
 - 1. Sheet Metal Boxes: NEMA OS 1, galvanized steel.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Verification of Conditions: Verify that substrates are prepared and ready to receive products specified.

3.2 SURFACE RACEWAY INSTALLATION

- A. Raceway shall be mounted in unobtrusive manner. Horizontal raceway shall be used at baseboard elevation, under or over chair rails, or along ceiling.
- B. Where possible, raceway shall extend vertically up or down from WAO. Installer shall discuss placement of raceway prior to installation with Owner's Project Manager.
- C. Secure surface-mount raceway with screws. Do not use adhesive attachments.

3.3 COMMUNICATION SYSTEM FURNITURE POLES

- A. Install utility columns plumb and fasten support to structure.
- B. Use pre-manufactured knock-outs for work area outlets. WAOs shall be installed flush or with minimal profile. Surface-mount boxes shall not be used on utility poles.
- C. Neatly cut openings in ceiling panels and install trim plates.

3.4 BOX INSTALLATION

- A. Install boxes securely, in neat and workmanlike manner, per NECA 1.
- B. Install in locations indicated, and as required for splices, taps, wire pulling, equipment connections, and as required by NFPA 70.
- C. Set wall mounted boxes at elevations to accommodate mounting heights at 18" (45.72cm) above finished floor, unless otherwise noted.

- D. Set wall mounting boxes for wall phones at 46" (1.17m) to center of box, if installed over counter or other low obstruction.
- E. Set wall mounting boxes for wall phones at 48" (1.21m) to center of box, if unobstructed access is available.
- F. Boxes indicated on Drawings are approximate locations unless dimensioned.
- G. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
- H. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6" (15.24 cm) from ceiling access panel or from removable recessed luminaire.
- I. Install boxes to preserve fire resistance rating of building elements, using materials and methods specified in Section 07 84 00.
- J. Work area outlet boxes on opposite sides of a fire-rated wall shall not share the same stud space.
- K. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.
- L. Use flush mounting outlet box in finished areas.
- M. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
- N. Do not install flush mounting box back-to-back in walls; provide minimum 6 inches (mm) separation. Provide minimum 24" (60cm) separation in acoustic rated walls.
- O. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
- P. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
- Q. Do not fasten boxes to ceiling support wires.
- R. Support boxes independently of conduit.
- S. Use gang box where more than one device is mounted together. Do not use sectional box.
- T. Do not install work area outlets in standard AC outlet shaped openings within floor boxes.
- U. Set floor boxes level.
- V. Large Pull Boxes: Use enclosure with removable cover in interior dry locations, surface-mounted cast metal box in other locations. Hinged lids may be used, if provided with a means to fasten securely open.

3.5 ADJUSTING

- A. Adjust floor boxes and poke-thrus flush with finish flooring material.

3.6 CLEANING

- A. Remove dust, debris, and other material from product installation.
- B. Clean exposed surfaces and restore finishes.

END OF SECTION

SECTION 27 05 29
HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Hangers and supports, wire baskets, cable trays and accessories for communications systems.

1.2 REFERENCES

- A. See Section 01 42 00 – References for additional reference standards, definitions, abbreviations, and acronyms.
- B. National Fire Protection Association (NFPA): NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.
- C. National Electrical Manufacturers Association (NEMA):
1. NEMA WD 6 - Wiring Devices - Dimensional Requirements, 2002 Edition.
 2. NEMA VE 1 - Metallic Cable Tray System; National Electrical Manufacturers Association; 2002 Edition.
- D. Telecommunications/Electronics Industry Association (TIA/EIA): TIA/EIA-569 - Commercial Building Standard for Telecommunications Pathways and Spaces; Rev. A, 1998, and relevant Addenda (ANSI/TIA/EIA-569).
- E. Underwriters Laboratories (UL): UL 5 - Surface Metal Raceways and Fittings; Underwriters Laboratories Inc; 1996.
- F. National Electrical Contractors Association (NECA): NECA 1 - Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association; 2000.
- G. National Electrical Manufacturers Association (NEMA):
1. NEMA OS 1 - Sheet Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; National Electrical Manufacturers Association; 2003.
 2. NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports; National Electrical Manufacturers Association; 2003.

1.3 QUALITY ASSURANCE

- A. Comply with Section 01 45 00 Quality Control.
- B. Provide products listed and classified by Underwriters Laboratories, Inc., as suitable for purpose specified and indicated.

1.4 SUBMITTALS

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Product Data: Submit manufacturer's descriptive literature for each system component specified in this section.
- C. Shop Drawings:
1. Submit raceway layouts, each system component required for complete system, raceway lengths, device types, locations and identify circuits.
 2. Indicate cable tray type, dimensions, support points, and finishes.
 3. Indicate box, outlets, systems furniture, and service pole locations.
 4. Provide manufacturer's catalog data for fastening systems.

- D. Comply with Section 01 78 00 – Closeout Submittals: If variations from approved shop drawings occur during installation of raceway system, submit final as-built drawings indicating such variations.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with Section 01 66 00 – Product Storage and Handling Requirements.
- B. Store products in manufacturer’s unopened packaging until installation.
- C. Maintain storage area conditions for products in accord with manufacturer’s written instructions.

PART 2 PRODUCTS

2.1 APPROVED MANUFACTURES

- A. Approved manufacturers are listed herein. Other manufacturers may submit for approval per Section 01 25 13 – Product Substitution Procedures.

2.2 WIRE BASKET CABLE TRAY

- A. Approved Products:
 - 1. FieldMate Wire Basket Cable Tray by The Wiremold Company: 60 Woodlawn St., West Hartford, CT 06110. Tel: 800-621-0049, 860-233-6251; Fax: 860-232-2062; Website: www.wiremold.com.
 - 2. Cablofil, Inc: www.cablofil.com: Wire Cable Tray.
 - 3. Copper B-Line, Inc: www.b-line.com:
 - a. Cent-R-Rail Systems.
 - b. Cable Tray Systems.
 - c. Wire Basket Cable Support.
 - 4. GS Metals Corp: www.flextray.com: FLEXTRAY Cable Management System.
 - 5. Cable Management Solutions, Inc.
 - a. Floor and Overhead Snake Tray.
 - b. Snake Canyon.
 - c. Wall Snake.
 - d. Ladder Snake
- B. Accessories:
 - 1. Provide manufacturer’s standard clamps, hangers, brackets, splice plates, reducer plates, blind ends, barrier strips, and connectors.
 - 2. Provide bushings or rubber edge trim as needed. Products shall be free of sharp edges or points that may damage cables.
 - 3. Provide manufacturer’s standard clamps, hangers, brackets, splice plates, reducer plates, blind ends, barrier strips, and connectors.

2.3 HANGARS AND SUPPORTS

- A. Approved Cable Support Manufacturer: ERICO International Corporation, 34600 Solon Rd., Solon, OH 44139. Tel: 440-248-0100; Fax: 440-349-2996; Website: www.erico.com.
 - 1. CableCat Adjustable Cable Support (CAT425 series slings).
 - 2. CableCat Cable Support (CAT64 series).
- B. Hangers, Supports, Anchors, and Fasteners - General: Corrosion-resistant materials of size and type adequate to carry the loads of equipment and conduit, including weight of wire in conduit.

- C. Anchors and Fasteners:
 - 1. Obtain permission from Owner's Project Manager before using powder-actuated anchors.
 - 2. Concrete Structural Elements: Use precast inserts, expansion anchors, powder-actuated anchors, or preset inserts.
 - 3. Steel Structural Elements: Use beam clamps, steel spring clips, steel ramset fasteners, or welded fasteners.
 - 4. Concrete Surfaces: Use self-drilling anchors or expansion anchors.
 - 5. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts or hollow wall fasteners.
 - 6. Solid Masonry Walls: Use expansion anchors or preset inserts.
 - 7. Sheet Metal: Use sheet metal screws.
 - 8. Wood Elements: Use wood screws.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Verification of Conditions: Verify that substrates are prepared and ready to receive products specified.
- B. Install hangars, supports and components in accord with Drawings, Shop Drawings and manufacturer's printed installation instructions.

3.2 CABLE TRAY SYSTEM

- A. Install cable tray securely, in neat and workmanlike manner, per NECA 1.
- B. Cut cable tray using manufacturer's equipment, if available from manufacturer. Smooth rough or jagged edges and points.
- C. Arrange supports to prevent misalignment during wiring installation.
- D. Fasten support to building structure and surfaces.
- E. Cable tray elements shall be supported with manufacturer's hardware to provide minimal profile. Suspension shoes and brackets shall be used in place of trapeze struts. Sharp corners and threaded rod shall not extend below the basket.
- F. Install cable trays maintaining following minimum clearance:
 - 1. 12" (304mm) of unobstructed clearance above cable tray's highest plane
 - 2. 6" (152mm) from source of EMI.
 - 3. 12" (304mm) from heat source exceeding 104° F (40° C).
- G. If cables rise to ceiling space of floor above network room greater than 12' (3.4m), install cable tray to relieve vertical weight from cables on each floor. Secure cables with Velcro-type straps as needed to relieve vertical weight strain.
- H. Continuous support elements shall be bonded from ground to TMGB/TGB with grounding wire. Sections may be bolted together or tied together with grounding jumpers if support structure is approved by manufacturer as a grounding conductor.
- I. Provide pull strings in cable trays.
- J. Provide fittings or gaps with bonding jumpers to accommodate expansion and deflection where cable tray crosses expansion joints.

- K. Cable tray shall not penetrate fire-rated barriers. Cable tray shall end within 18” (45.6cm) of fire-rated barriers. Cables shall use firestop assemblies or sleeves to penetrate fire-rated barriers.
- M. Cable tray shall be installed only in main corridors and hallways. Cable tray shall not be installed in Communications Rooms, if room enclosure is fire or smoke rated.
- N. Cable tray shall be single tiered wire basket installed to allow 12” (30.4cm) of open space above and to one side of tray. Cable tray shall be 2” (5.1cm) deep wire basket tray with appropriate width dimensions as required by volume of cable planned for installation at time of construction, and account for 20 per cent future growth.
- O. Cable tray shall not be filled more than 50% capacity. Cable tray shall extend up to communications room wall to provide access to racks and walls in “T” design. Small rooms may use single, straight cable tray in line with rack, provided it extends parallel to face of rack.
- P. Use at least 2- 4” (101mm) conduits in lieu of cable tray where installation passes through rated walls. Additional conduits may be required as cable volume dictates. Determination of conduits requirements shall be coordinated with Owner’s Project Manager.
- Q. Install cable tray products within network rooms for vertical strain relief as needed while maintaining 50% additional capacity within support structure. Secure cables with Velcro-type straps at minimum of 36” (91.5cm), or as recommended by manufacturer to relieve vertical weight strain.
- R. Use appropriate hardware and parts to attach tray to permanent building structure (concrete columns or deck, structural steel, or other immovable structures capable of supporting cable tray). Parts shall be specifically designed and where possible UL-listed for final installed configuration.

3.3 HANGARS AND SUPPORT DEVICES

- A. Attachment Devices.
 - 1. Obtain Owner’s project Manager’s permission before using powder-actuated anchors.
 - 2. Concrete Structural Elements: Use precast inserts, expansion anchors, powder-actuated anchors, or preset inserts.
 - 3. Steel Structural Elements: Use beam clamps, steel spring clips, steel ramset fasteners, or welded fasteners.
 - 4. Concrete Surfaces: Use self-drilling anchors or expansion anchors.
 - 5. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts or hollow wall fasteners.
 - 6. Solid Masonry Walls: Use expansion anchors or preset inserts.
 - 7. Sheet Metal: Use sheet metal screws.
 - 8. Wood Elements: Use stainless steel wood screws.
- B. Install cable supports above concealed ceilings using rigid support to structural element or by attaching directly to structural element.
- C. Install hangers and supports as required to adequately and securely support electrical system components, in neat and workmanlike manner, per NECA 1.
 - 1. Do not fasten support to pipes, ducts, mechanical equipment, or conduit.
 - 2. Installer may use existing threaded rods for other utilities, if pre-approved by Owner’s Project Manager and is capable of supporting additional load and maintaining clearances.
 - 3. Do not drill or cut structural members.

4. Installation of hangars and supports to suspended ceiling grid support system in not allowed.
 - D. J-hooks or sling-type supports may be installed with suspended ceiling grid wire with manufacturer clamps, provided:
 1. Wire is painted orange prior to installation, to differentiate from ceiling grid support wires.
 2. Wire is not used to support ceiling grid, as required by the NEC.
 - E. Weld support members or use hexagon-head bolted fasteners to present neat appearance with adequate strength and rigidity. Use spring lock washers under nuts.
 - F. Support Category 5e cables with J-hook type or sling-type supports in concealed ceiling spaces.
 - G. Support Category 6 cables with Cat 6 rated "J" hooks with wide base if supporting more than eight cables.
 - H. J-hook and sling-type supports shall be installed every 4-5' (1.2-1.5m) on center for runs exceeding 30' (9.12m). Runs from main or secondary corridors into classrooms and offices do not require support.
 - I. Close J-hook supports with manufacturer provided bars and not with cable ties. Do not use cable ties to strap cable to J-hook supports. Install cables under such strain as to require tying to supports.
- 3.4 CLEANING
- A. Clean cable trays and supports of dust and debris.
 - B. Clean exposed surfaces and restore finish.

END OF SECTION

SECTION 27 05 53
IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Identification and labeling of system communication components including locations of each element of system and labeling of each component.
- B. Cables and terminations shall be identified in accord with TIA/EIA 606 for labeling and numbering with cables terminated in alpha-numeric sequence at both origination and termination locations.

1.2 REFERENCES

- A. See Section 01 42 00 – References for additional reference standards, abbreviations, definitions, and acronyms.
- B. National Electric Code (NEC) 2011 Edition.
- C. Telecommunications Industry Association (TIA)/Electronics Industry Association (EIA):
 - 1. TIA/EIA-606-A – Administrative Standard for Commercial Telecommunications Infrastructure.
 - 2. TIA-942 – Telecommunications Infrastructure Standard for Data Centers.
- D. Building Industry Consulting Services International (BICSI):
 - 1. Telecommunications Distribution Methods Manual (TDMM).
 - 2. Information Transport Systems Installation Methods Manual (ITSIMM).
- E. NFPA 70E, 2004 Edition – Standard for Electrical Safety in the Workplace.

1.3 QUALITY ASSURANCE

- A. Labeling shall be hand held thermal transfer printer producing printed, crisp, clear, non-smearing, and legible labels.
- B. Labels shall be durable for life of telecommunications system.
- C. Telecommunication system warranty shall include 20 year labeling replacement due to illegible or detached labels.

1.4 SUBMITTALS

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Product Submittals:
 - 1. Provide manufacturer's product information cut sheets and specifications with specific product number identified or filled out.
 - 2. Provide labeling lists for outlets, horizontal cables, and backbone cabling in Microsoft Excel format for planned identification labels in accord with TIA/EIA 606-A – Labeling Standards.
 - 3. Labeling lists shall be approved by Owner's Project Manager prior to start of communications installation.
- C. Shop Drawings:
 - 1. Provide scaled drawings of floor plans indicating outlets with proposed identification label for each outlet. Each cable shall be terminated in alpha-numeric sequence at termination locations.

2. Provide riser diagrams for each Communications Room identified by FISH Room Number and backbone cable(s) by both room number and cable number.
 3. Provide enlarged scaled drawings of each Communications Room indicating Rack Row and Number(s), with patch panel locations and number(s).
 4. See Part 3 – Execution for additional instructions for labeling of racks and patch panels.
- D. Project Record Documents:
1. See Section 01 78 00 – Closeout Submittals. See other specification sections for specific record document requirements for those sections.
 2. Field deviations, changes and additions of telecommunications system from reviewed Shop Drawings shall be recorded on project field documents during construction and submitted to AE for review and compilation of final Record Documents (drawings, project manual, and cable manifest) which shall be submittal to Owner as part of final project closeout.
 3. Cable manifest (spreadsheet in Microsoft Excel format) shall identify source, destination, pair/strand count, and labeling scheme used for each horizontal and backbone cable.
 4. Project Record Documents shall only include Division 27 work scope, and shall be submitted on one USB Flash Drive. See Section 01 78 00 – Closeout Submittals for required number of copies.

1.5 PROJECT REQUIREMENTS

- A. OSP conduits shall provide access to MER and shall be labeled with same number at access point nearest property line and in MER.
- B. Voice patch panels shall be labeled to indicate what ER is served.
- C. Grounding and bonding system shall be labeled in accord with TIA/EIA-606.
- D. In MDF and IDF rooms, copper patch panels shall be labeled in alphabetic order beginning with 'A' on top most patch panel and continuing down rack. Each port in patch panel shall be labeled with room number where cable is terminated in WAO.
- E. Fiber Patch Panels
 1. MDF and IDF rooms shall have separate fiber enclosures for Single Mode and Multimode optical fiber cable. Each enclosure shall be labeled as such.
 2. Fiber panels housed in enclosures shall have fiber labeled MM (multimode) or SM (single mode) from MDF to IDF rooms or to other locations, using FISH number of room being fed by each fiber.
 3. Provide one fiber enclosure housing in MDF or IDF for both MM and SM optical fiber cable. Panels in each enclosure shall be labeled either MM or SM depending on type of optical fiber cable terminated in panel.
- F. WAO's shall be labeled as follows:
 1. Top of faceplate shall be labeled with Building and Room designation in accord with FISH numbering system where horizontal cable is terminated. FISH numbering system is indicated on Drawings.
 2. MDF space would be labeled 01-101 to indicate Building #1 and IDF Room Space Number is 101 per Architectural Finish Schedule and Floor Plans. IDF Room 01-122 would indicate cable is terminated in satellite (floor) communications equipment room, IDF Room #122 in Building 01 on same floor. Second Floor IDF Room in Building would be #01-222.
 3. Face plate labeling shall be permanent machine labeling typed in 12 pt. or larger Ariel font format.

- G. Wireless access points shall be terminated in separate patch panel from other horizontal cables and shall be designated as "Wireless AP". At wireless access point, labeling shall be same as described below:
 - 1. Permanent machine labeling shall be typed in 12 pt. or larger Ariel font format and imprinted on items specified and shall be labeled for on-site record.
 - 2. Hand written labels are not allowed.
- H. Project records shall be provided to Owner at project completion as part of closeout submittals identifying location and nomenclature of each item.
 - 1. Documentation shall be on hard copy and on Flash Drive(s). Written documents shall be in Word format and include manufacturer's written product information.
 - 2. Project record drawings shall be provided on Flash Drives to Owner in AutoCAD format, and shall be AutoCAD Release 10 or later edition.
- I. Comply with Section 01 78 00 - Closeout Submittals.

PART 2 PRODUCTS

2.1 HANDHELD LABELERS

- A. Provide labels for ISP Cable, OSP (horizontal) cables, racks, grounding busbars and as indicated.
- B. Size labels according to cable diameter and readability.
- C. Labels shall be machine made, thermal transfer type, and self-adhesive.
- D. Approved Manufacturers and Products:
 - 1. BMP41 as manufactured by Brady Worldwide, Inc., 6555 W. Hope Rd., Milwaukee, WI 53223, PO Box 2131, Milwaukee, WI 53201; Tel: 800-541-1686 Fax: 800-292-2289; Website: www.bradycorp.com.
 - 2. Rhino 5200 as manufactured by Dymo, a Div. of NewellRubbermaid, 3 Glenlake Parkway, Atlanta, GA 30328; Tel: 800-241-4324; Website: www.dymo.com.
 - 3. Spirit HD2100 as manufactured by HellermannTyton North America, 7930 N. Faulkner Rd., Milwaukee, WI 53224-9517; Tel: 800-537-1512; Fax: 800-848-9866; Website: www.hellermanntyton.us.
 - 4. PanTher LS8EQ as manufactured by Panduit. Website: www.panduit.com.

2.2 FACEPLATE, PATCH PANEL, AND WALL BLOCK LABELS

- A. Faceplates, patch panels, and wall blocks shall have integral slot for insertion of device identification labels.
- B. Where device does not have integral label insert, submit proposed labeling method.

2.3 GROUNDING AND BONDING CONDUCTORS

- A. Warning Marker: non-metallic, machine made, preprinted as wrap-around marker (flag marker is not acceptable) as manufactured by Panduit, LTYK Grounding and Bonding Label Kit.
- B. Identification Labels:
 - 1. Labels shall be self-laminating, machine made, and thermally printed.
 - 2. Label size varies with conductor size:
 - a. 18-14AWG: 1" (2.54cm) x 0.75" (1.90cm) label.
 - b. 12-10AWG: 1" (2.54cm) x 1.25" (3.18cm) label.
 - c. 8-4AWG: 1" (2.54cm) x 2.25" (5.62cm) label.
 - d. 2-1AWG: 1" (2.54cm) x 4" (10.1cm) label.

- e. 1/0-250kcmil: 1" (2.54cm) x 6.5" (16.21cm) label.
3. Labels shall be Panduit S100X***VAC or S100X***VAT, where *** denotes second dimension based on wire size.
4. Equivalent identification labels manufactured by Brady Worldwide, Inc. or Hellermann Tyton, Inc. are acceptable.

PART 3 EXECUTION

3.1 GENERAL

- A. Comply with TIA/EIA-606-A – Administrative Standard for Commercial Telecommunications Infrastructure identification of communication devices, wiring, and system components.
- B. Labels shall be physically accessible and easily read.
- C. Communications rooms where cabling is terminated or originated are referred to in documents as MDF and IDF Rooms on floor plans and room finish schedules.
- D. Space numbers indicated on Drawings are Owner's FISH (Florida Inventory of School Houses) numbers and shall be used to denote cable origination and termination points. FISH numbers have five digits (two digits for the building number followed by dash and three digits for space number). First floor spaces begin with 100, second floor spaces are 200 series and third floor spaces are 300 series.
- E. Sites will generally have one MDF room per site and each building will generally have one IDF room on each floor level unless the rooms on same floor exceed total cable run greater than 300' (90m) from IDF room.
- F. Typical space number for MDF would be 02-114 (Bldg. 02, Space 114 on the first floor). IDF space would be 02-211 (Bldg. 02, space 211 on the second floor).

3.2 LABELING

- A. Equipment Racks:
 1. Equipment racks shall be labeled with 0.375" (95.6mm) high text in Ariel font.
 2. Racks shall be numbered facing racks from left to right, from front (nearest access door) to back of space.
 3. Labels shall include Telecommunications Room (IDF/MDF).number followed by dash and rack number: Example: Rack 114-01, 114-02, 114-03, etc.
 4. Labels shall be placed at top and bottom of front and rear of each equipment rack.
- B. Patch Panels:
 1. Label shall be at center of patch panel with identification as PP# (example: A-Z, top to bottom, skipping I and O).
 2. Each rack starts over with new rack number and patch panel alpha labeling scheme to bottom, skipping I and O).
 3. Patch panels serving wireless access points, add "WAP" as suffix.
- C. Terminations for Patch Panels and 110-blocks.
 1. Utilize available inserts: print with inkjet or laser printer, including full labeling scheme.
 2. Example of Patch Panel and 110-block description: 114-1-A01, where 114 is room number, "01" is Rack #1, "A" is patch panel "A", and "01" is patch panel position (add "WAP" suffix for outlets to wireless access points).
- D. Inside Plant (ISP) Horizontal Cabling:
 1. Label within 6" (152mm) at both cable termination ends.

2. Example of ISP description: 114-01-A01, where 114 is Telecommunications Room number, “01” is Rack #1, “A” is patch panel “A”, and “01” is patch panel position (add “WAP” suffix for outlets to wireless access points).
 3. For cables routed through junction boxes and pull boxes, group cables together by destination (room) via velcro-strap, and flag (identify) that destination near velcro strap.
- E. Outside Plant (OSP) Horizontal Cabling:
1. Label transition point (if utilized) as “COMMUNICATIONS OSP TRANSITION POINT”.
 2. Label cables at transition point within 6” (152mm) at both termination ends.
 3. Example of OSP description: 114-01-A01, where 114 is Telecommunications Room number, “01” is Rack #1, “A” is patch panel “A”, and “01” is patch panel position (add “WAP” suffix for outlets to wireless access points).
- F. Faceplates:
1. Communications outlet faceplates shall be permanently marked with machine generated labels, complying with EIA/TIA 606, matching numbering plan on approved Shop Drawings.
 2. Utilize faceplate label inserts if available. If faceplate has no insert, attach directly to faceplate with adhesive label.
 2. Labels shall be mounted level and plumb with square edges and alignment with other faceplates.
 3. Example of faceplate description: 114-01-A01, where 114 is Telecommunications Room number, “01” is Rack #1, “A” is patch panel “A”, and “01” is patch panel position (add “WAP” suffix for outlets to wireless access points).
- G. Copper Backbone (between Telecommunications Rooms):
1. Locate label within 6” (152mm) at both cable termination ends starting with nearest end identification with a slash mark followed by farthest end identification.
 2. Example of cable label description: 114-01:24:12/138-01:12:6, where the cable origination is located in Telecommunications Room number 114, “01” is Rack #1, “24” is panel in equipment rack, and 12 is port in panel 24. The cable termination is located in Telecommunications Room number 138, “01” is Rack #1, “12” is panel in equipment rack, and 6 is port in panel 12. Cable designation in Telecommunications Room number 138 is reversed (138-01:12:6/114-01:24:12).
- H. Fiber Backbone (between Telecom Rooms):
1. Locate label within 6” (152mm) at both cable termination ends starting with nearest end identification with a slash mark followed by farthest end identification

3.3 PATHWAYS

- A. Conduit
1. Label exterior conduit as “COMMUNICATIONS” (unless otherwise noted) with text readable from standing position on finished floor.
 2. For wall stub-up locations, for future use, label end of stub-up conduit in Telecommunications (MDF and IDF) Rooms only.
 3. For overhead conduits, label both ends in Telecommunications (MDF and IDF) Rooms.
 4. For long runs of conduit that stub-up into Telecommunications (MDF and IDF) Rooms, label end of conduits in Telecommunications (MDF and IDF) Rooms with destination room name and number or locations without space numbers such as Elevators.
 5. Sleeves passing through single wall or floor do not have to be labeled, unless walls are fire rated.
- B. Junction Boxes and Pull Boxes:

1. Label exterior of junction boxes and pull boxes as “COMMUNICATIONS” with text readable from standing position on finished floor.
- C. Firestop Locations:
 1. Communications firestop locations identified on Drawings shall be labeled on both sides of walls or floors. Comply with Section 07 84 00 – Firestopping.

3.4 GROUNDING

- A. Label TMGB (Telecommunications Main Grounding Bus Bar) as 114-TMGB, where 114 indicates room number where TMGB is located. The first digit of room number indicates first floor.
- B. Label TGB (Telecommunications Grounding Bus Bar) as 138-TGB, where 138 indicates room number where TGB is located. First digit of room number indicates first floor.
- C. Label grounding conductors within 12” (304mm) of both ends with warning marker and identification label.
 1. Identification label shall include source and destination of grounding conductor.

END OF SECTION

SECTION 27 11 19
COMMUNICATIONS TERMINATION BLOCKS AND PATCH PANELS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Supply and installation of terminal blocks, patch panels, and accessories in equipment rooms to provide fully functional communications system.

1.2 REFERENCES

- A. See Sections 01 42 00 – References and 27 05 00 - Common Work Results for Communications for additional reference standards, abbreviations, definitions, and acronyms. If a standard referred to below has been superseded, the most current standard is to be used.
- B. NFPA (National Fire Protection Association): NEC 70, 2011 Edition.

1.3 QUALITY ASSURANCE

- A. Comply with Section 01 45 00 – Quality Control.
- B. Horizontal Copper Rack Terminations
 - 1. Horizontal cables for new construction shall be terminated in T568B pin/pair configuration. Terminate (punch down) four wiring pairs per jack port.
 - 2. Horizontal cables for existing buildings shall conform to existing termination scheme which may be either T568A or T568B.
 - 3. Cables shall be neatly dressed to respective patch panel and within rack cable management using Velcro cable ties and/or rack cable management loops. Cables shall not be bundled outside of rack but shall be loose and random in cable tray.
- C. Fiber Rack Terminations
 - 1. Terminate fiber on rack mounted patch panel. Fiber-optic connecting hardware shall support individually terminated fibers onto connectors. Adapter panels shall be limited to single type of fiber (multimode or single mode).
 - 2. Terminate fiber in appropriately sized, rack mountable enclosures.
 - 3. Enclosures shall be lockable (if room access is not controlled) and shall be sealed design to prevent accumulation of dust, dirt and moisture in panel.
 - 4. Optical patch panels shall meet ANSI EIA/TIA-568-A wiring standard for connecting hardware.
 - 5. Termination panels shall be mounted in top of rack or cabinet.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Approved Manufacturer's.
 - 1. The Siemon Company, Siemon Business Park, 101 Siemon Company Dr., Watertown, CT 06795-0400; Tel: 860-945-4200; Fax: 860-945-4225; Website: www.siemon.com.
- B. Other manufacturers not listed shall comply with Section 01 25 13 - Product Substitution Procedures.
- C. Category 6A Copper Patch Panels
 - 1. Manufacturer: Siemon Company.

- a. Model #HD6-24, with 4-6 port modules, Cat 6 UPT HD patch panel, 1 RU.
 - b. Model #HD6-48, with 8-6 port modules, Cat 6 UPT HD patch panel, 1 RU.
- D. Fiber Terminations
1. Manufacturer: Siemon Company:
 - a. Fiber housing, FCP3-DWR, 8 adapter plates, (RIC-F-LC12-02 and # RIC-F-LC24-02).
- E. Patch Cords
1. Manufacturer: Siemon Company:
 - a. Model # MC6-1-01, MC6-2-01, MC6-7-01, MC6-10-01, Cat 6, UTP, double ended stranded modular cord with color matching boot, T568A/B, CMG.
- F. Additional materials needed to properly terminate and secure cables, including but not limited to panel and plate connectors, grounding kits, strain-relief hardware, break-out kits, blank panels, and plates.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Horizontal Cable Rack Terminations.
1. Horizontal cable shall be installed per manufacturer printed instructions to ensure manufacturer certified solution.
 2. Provide and install modular patch panels as indicated on Drawings.
 3. Terminate horizontal cables in T568A pin/pair configuration. All four pairs shall be terminated.
 4. Neatly dress cables to respective patch panel and within rack cable management using Velcro cable ties and rack cable management loops. Cables shall not be bundled outside of rack but shall be loose and random in cable tray.
 5. Provide identification labels for each cable in accord with Section 27 05 53 – Identification for Communications Systems.
- B. Optical Fiber Rack Terminations
1. Provide and install rack-mounted optical fiber housings where indicated.
 2. Terminate fibers using dual LC connector panels and plates, and fiber connectors.
 3. Place fiber slack neatly in fiber housing.
 4. Secure cable strength members to cable strain relief brackets or attachment points within fiber housing.
 5. Install blank panels and plates to fill empty locations within fiber housings.
 5. Install additional materials to properly terminate and secure inter-building and intra-building optical fiber cables, including panel and plate connectors, grounding kits, strain-relief hardware, break-out kits, blank panels, and plates.
 6. Provide identification labels for adaptors.
- C. Wall Termination Fields
1. Wall field terminations shall be installed per manufacturer's written instructions to ensure manufacturer certified solution.
 2. Install 110 blocks and protectors as indicated. Wall-mounted hardware, including cable management, shall be at or below 5'-6" (1.69m) from finished floor.
 3. Cable management troughs shall be installed for cross-connect wires to be installed within troughs. Wire management may be adjusted during installation, if approved by Owner's Project Manager.
 4. Locate cable management as needed to accommodate conditions. Cable management shall remain continuous for cross-connects between protectors and 110 blocks.

5. Provide 6" (152mm) clear space above and below top and bottom of connecting hardware for cable handling.
6. Service loops shall be secured to wall as needed and in unobtrusive manner. Service loops shall not block access to other cables, utilities, or other accessed structures (e.g., shut-off valves, meters, etc.). Service loops shall not rest horizontally on cable trays.
7. Wall fields shall be designed to minimize need to work behind equipment racks. Buss bars and BETs shall be located behind equipment racks and 110 blocks shall be accessible.
8. Wall field elements and pathways within spaces shall maintain minimum 3 ft. (92.3 cm) separation from electrical service panels.

3.2 LABELING

- A. Terminal blocks, patch cords and patch panels shall be labeled in accord with Section 27 05 53 – Identification for Communications Systems.

END OF SECTION

SECTION 27 15 00
COMMUNICATIONS CABLING

PART 1 GENERAL

1.1. SCOPE OF WORK

- A. Single copper and multi-pair copper, fiber optical channel solution, riser or plenum rated cabling as required for horizontal cable and backbone fiber and copper distribution cable required for complete and fully functional communications system.

1.2 QUALITY ASSURANCE

- A. Comply with NFPA 70 - National Electrical Code; National Fire Protection Association; 2011 Edition.
- B. See Section 01 42 00 – References for additional reference standards, definitions, abbreviations, and acronyms.
- C. See Section 01 45 00 – Quality Control for additional requirements.
- D. Only cable manufacturers who comply with Siemon warranty requirements will be allowed to bid this work.
- E. Project shall utilize Siemon System 6 solution. Installer and manufacturer shall provide warranty for single channel solution for complete and fully functional communications system.
- F. Cabling indicated shall be rated for plenum or riser locations, and as indicated for given environment.

1.3 SUBMITTALS

- A. Comply with Section 01 33 00 – Submittal Procedures and Section 01 78 00 – Closeout Submittals.
- B. Product Data: Submit data for each specified product in accord with Section 01 33 00 – Submittal Procedures, and Section 27 05 00 – Common Work Results for Communications Systems.

1.4 WARRANTY

- A. Manufacturer and SCS installer shall warranty Cat 6 structured cabling system for end-to-end channel model installation covering applications assurance, cable, connecting hardware and labor cost for repair and replacement for twenty (20) years from date of project's substantial completion.
- B. See Sections 01 78 00 – Closeout Submittals and 27 05 00 – Common Work Results for Communications for additional warranty requirements.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Comply with Section 01 66 00 – Product Storage and Handling Requirements.
- B. Protect products from damage during delivery, storage, and installation. Replace damaged products at no added cost to Owner.

PART 2 PRODUCTS

2.1 CABLE MANUFACTURERS

A. Approved Cable Manufacturer's:

1. The Siemon Company, Siemon Business Park, 101 Siemon Company Dr., Watertown, CT 06795-0400; Tel: 860-945-4200; Fax: 860-945-4225; Website: www.siemon.com.
2. Berk-Tek, A Nexans Company, 132 White Rd., New Holland, PA 17557; Tel: 800-237-5835, 717-354-6200; Fax: 717-354-7944; Website: berktek.com.
3. General Cable Corporation, 4 Tesseneer Dr., Highland Heights, KY 41076; Tel: 859 572-8000; Fax: 859-572-8458; Website: www.generalcable.com.
4. Hitachi Cable America, Inc., 900 Holt Ave., Manchester, NH 03109; Tel: 603-669-4347, 800-772-0116; Fax: 603-669-6629; Website: hitachi-cable.com.
5. Superior Essex Cable, 6120 Powers Ferry Rd., Suite 150, Atlanta, GA 30339; Tel: 800-551-8948, 770-657-6000; Fax: 777-657-6154; Website: www.superioressex.com.

B. Other manufacturers not listed shall comply with Section 01 25 13 - Product Substitution Procedures.

2.2 COPPER HORIZONTAL CABLING

A. Unshielded twisted pair, 4-pair 100-ohm, Category 6, plenum and/or non-plenum, blue:

1. Siemon Company, Premium 6™, UTP, 4-pair cable.
 - a. Plenum: Part #9C6P4-E3-06-RXA (blue).
 - b. Riser: Part #9C6R4-E3-06-RXA (blue).
2. Berk-Tek, A Nexans Company, LANmark 1000 Enhanced Series 4-pair cable:
 - a. Plenum: Part #10032093 (blue).
 - b. Riser: Part #10032455 (blue).
3. Hitachi Cable America, Inc., Premium 4-pair cable.
 - a. Plenum: Part #: 30183-8 (blue).
 - b. Riser: Part #: 30212-8 (blue).

B. Category 6 Cabling Channel Performance shall meet following performance specifications for Data/Voice Drops:

Frequency	10 MHz	100 MHz	200 MHz	250 MHz	Units
Insertion Loss	6.3	21.3	31.5	35.6	Db
NEXT	56.6	39.9	34.8	33.1	Db
PSNEXT	54.0	37.1	31.9	30.2	Db
ELFEXT	43.3	23.3	17.2	15.3	Db
PSELFEXT	40.3	20.3	14.2	12.3	Db
Return Loss	19	12	9	8	Db
Delay	<555	N/A	N/A	N/A	N/Sec
Delay Skew	<50	N/A	N/A	N/A	N/Sec

2.3 COPPER BACKBONE CABLING

A. 25 Pair Copper backbone (Riser/Tie) telephone cabling shall be provided between MDF and IDF locations, continuous runs with no splices with ground shields at each end.

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1. Building Interior Locations:
 - a. General Cable Corporation: CMR Category 3, 25 Pair, Part #2133033.
 - b. Hitachi Cable America, Inc.: Part #39228-50.
2. Outside Plant (direct burial) Locations:
 - a. General Cable Corporation: Part #PE89 Type, Category 3, 25 Pair, Part #7525785.
 - b. Superior Essex Cable: Caspic®-FSF RDUP PE-89, Cat 3, 25 Pair, Part # 09-97-92.

B. Category 3 Cabling Electrical Characteristics:

Frequency	Ins. Loss	Next Loss	ACR	Structural Return Loss	Units
1	2.6	41.3	38.7	12.0	dB/100m
4	5.6	32.3	26.7	12.0	dB/100m
8	8.5	27.8	19.3	12.0	dB/100m
10	9.7	26.3	16.6	12.0	dB/100m
16	13.1	23.2	10.1	10.0	dB/100m

C. Multi-Pair Cable Specifications:

1. Gage: 24 AWG.
2. DC Resistance: 27.3W/1000' (8.96W/100m), maximum.
3. Mutual Capacitance (at 1khz).
4. Impedance: 100W (25 pair).
5. Buried/Underground Attenuation (db/1,000' [305m]) at 1.0 MHz: 6.4 (25 pair), maximum.
6. Aerial Cable Attenuation (db/1,000' [305m]) at 1.0 MHz: 6.7 (25 pair), maximum.

2.4 OPTICAL FIBER (Single Mode) CABLING

A. Single Mode Fiber Construction:

1. Number of fibers: 12 stand from MDF to IDF rooms.
2. Core/Cladding: 8.3/125 microns.
3. Buffering: 900 microns.
4. Fiber shall be optimized for VCSEL system. Fiber shall exceed TIA/EIA 568-B.3 and 10Gigabit Standards.
5. Sheath construction: Non-metallic.

B. Minimal Optical Specifications:

Fiber Type	SM 8.3/125
Wavelength	1310/1550
Maximum Attenuation (Db/Km)	.5/.5
Minimum Bandwidth (MHz.Km)	Unlimited
Gigabit Ethernet Min. Distance (m)	5000/NA

C. Singlemode Fiber Cable:

1. Siemon Company, 8.3/125 Micron, XGLO fiber.
 - a. 12 Strand: Part #-9F8LJ1-12D.
 - b. Riser: 4 Strand, Part #9C6R4-E3-06-RXA (blue).
 - c. Plenum: 4 Strand, Part #9C6P4-E3-06-RXA (blue).

2. Berk-Tek, A Nexans Company, LANmark 1000 Enhanced Series 4-pair cable:
 - a. Plenum: Part #10032093 (blue).
 - b. Riser: Part #10032455 (blue).
3. Hitachi Cable America, Inc., Premium 4-pair cable.
 - a. Plenum: Part #: 30183-8 (blue).
 - b. Riser: Part #: 30212-8 (blue).

2.5 OPTICAL FIBER (Multimode) CABLING

A. Multimode Fiber Construction:

1. Number of fibers: 12 stand from MDF to IDF rooms, and 4 strand from IDF rooms to D2FO (communications outlet) locations.
2. Core/Cladding: 50/125 microns.
3. Buffering: 900 microns.
4. Fiber shall be optimized for VCSEL system. Fiber shall exceed TIA/EIA 492.AAAC, and IEEE 802.3 10Gigabit Standards.
5. Sheath construction: Non-metallic.

B. Minimal Multimode Fiber Specifications:

Fiber Type	SM 50/125
Wavelength	850/1300
Maximum Attenuation (Db/Km)	3.5/1
Minimum Bandwidth (MHz.Km)	1500/500
Gigabit Ethernet Min. Distance (m)	900/600

C. Multimode Fiber Cable:

1. Siemon Company:
 - a. 12 Strand (50/125, Multimode) Fiber, Indoor/Outdoor, XGLO 10G300, OM2, Part # 9F5LJ1-12D.
 - b. 4 Strand (50/125, Multimode) Fiber, Riser Rated, OM3. Indoor cable, XLGO 10G300, Part # 9BB5R004C-T312A.
2. Berk-Tek/Ortronics:
 - a. 12 Strand (50/125, Multimode) Fiber, GIGAlite-10, OM2, Indoor/Outdoor, Part #OPD012-EB3010/25.
 - b. 6 Strand (50/125, Multimode), GIGAlite-10, riser rated, OM3, Premises Distribution cable, Part #PDR006-EB3010/25.
3. Hitachi Cable America:
 - a. 12 Strand (50/125, Multimode) Fiber, riser rated, OM2, 10 Gigabit, Part #60710-12.
 - b. 4 Strand (50/125, Multimode) Fiber, riser rated, OM3, 10 Gigabit, Part #60104-4.

PART 3 EXECUTION

3.1 PROJECT COORDINATION

- A. Comply with Section 01 31 00 – Project Coordination. Contractor/CM shall coordinate and conduct meeting with cabling installer and affected trades to plan, organize and facilitate timely and orderly work to minimize project delay and work interference between trades.
- B. Existing facility operations shall not be interrupted by communications installer’s work activities. Active cable plant associated with specific work activities beyond construction area shall not be disrupted.

- C. Circumstances (e.g. voice cutovers) that require service disruptions in existing facilities shall be scheduled with as much notice as possible. Service disruptions, if needed, shall be coordinated by Owner's Project Manager.

3.2 CABLING INSTALLATION

- A. Work shall be installed per manufacturer's printed instructions to ensure certified channel solution.
- B. Install plenum or non-plenum cable types, where indicated based on environmental conditions.
- C. Install horizontal cable in star topology with WAO's connected by cable directly to floor distributor.
- D. Horizontal cabling shall be terminated in IDF room on same floor as WAO's. Exceptions may be made, if approved in advance, by Owner's Project Manager.
- E. Cables routed through floors (poke-thrus, conduits, floor boxes, etc.) to utilize ceiling space on the level below may be routed to network room on adjacent floor (approved deviation from BICSI methodologies).
- F. Install cables, WAO's, and network room equipment installation in accord with methodologies contained in latest BICSI Telecommunications Distribution Methods Manual and Information Transport Systems Installation 5th Addition unless noted otherwise for cable attachments, firestopping, cable routing, equipment rack grounding & bonding, pulling tensions, and EMI protection methods.
- G. Cables placement in conduit shall not exceed fill capacities per ANSI/EIA/TIA-569.
- H. Upon entering floor distributor, separate cabling according to service application (voice, data, life safety and security), and extend around interior perimeter of room via specified cabling tray, and then routed to floor at furthest point of appropriate service backboard for voice, data, video systems.
- I. Smaller network rooms with cable tray extending directly from wall penetration to rack need not encircle room. Provide 5' (1.524m) cable service slack. Added cables shall follow established path.
- J. Provide 12" (305 mm) of cable slack in in-wall, surface-mounted, and raceway boxes, provided manufacturer's bend radius is not exceeded. Some of slack may be pulled back into junction boxes, raceways, cable trays, or concealed ceiling space. Slack beyond outlet box shall be easily pulled out of box and shall not be secured with cable ties or otherwise secured beyond box.
- K. Each type of material (fiber optic cable, equipment rack components and termination hardware) shall be selected and installed to be compatible with manufacturer's warranty.
- L. Cables shall be one continuous piece without splices.
- M. Cables may be installed within existing conduits, wire-ways or spaces if approved by Owner's Project Manager, where cables do not exceed conduit or junction box capacity. Cabling components and faceplates shall be new.
- N. Voice and data cables shall be color coded throughout building.
 - 1. Standard voice cables: white.
 - 2. Standard data cables: blue.

3. Security and life safety cables: red or placed in red conduit.
- O. Install pull strings with horizontal cables as cables are pulled.
- P. Specify placement of horizontal cables in cable trays in random overlapping fashion. Cable ties in cable tray shall not be used, except as needed to maintain bend radii when changing directions. Plastic cable ties shall not be used.
- Q. Install horizontal cable free of surface damage, kinks, twists, and with NO visible anomalies.
- R. Cables shall be labeled and documented as specified in Section 27 05 53 – Identification of Communications Systems.
- S. Copper horizontal cable lengths:
 1. Horizontal cables from IDF room to WAO's, shall not exceed 295' (90 m).
 2. Horizontal cables used for patch cords and cross-connect jumpers in MDF and IDF rooms, shall not exceed 16' (4.88 m).
 3. Provide 33' (10.6 m) allowance for combined length of patch cords and cables used to connect equipment at WAO and in MDF and IDF rooms.
 4. Total length for components shall not exceed 328' (100 m).
- T. Each horizontal data cable provided to individual WAO shall consist of 4-pair 100-ohm, Category 6, UTP cable.
- U. Coordinate with other trades to complete work above ceilings and below raised floors prior to ceiling tile and floor panel installation.
- T. Cabling shall not be exposed, except when in cable tray or within IDF and MDF rooms. Raceway shall be used in corridors to individual spaces where conduit shall run perpendicular into spaces and to WAO locations.

END OF SECTION

SECTION 27 15 43
COMMUNICATIONS FACEPLATES AND CONNECTORS

PART 1 GENERAL

1.1. SCOPE OF WORK

- A. Wall outlet faceplates for single and multiple gang wall plates for wall and ceiling locations indicated to provide complete and functioning communications system.

1.2. REFERENCES

- A. See Section 01 42 00 – References for additional reference standards, definitions, abbreviations, and acronyms.
- B. National Fire Protection Association (NFPA): NFPA 70, National Electrical Code, 2011 Edition.

1.3. DESIGN REQUIREMENTS

- A. Wall Outlets:
 - 1. Communication outlets containing copper services shall be equipped with 8-position modular jacks (RJ45 type).
 - 2. Communication outlets containing fiber services shall be equipped with SC type connections for multi mode or single mode cabling terminations.
 - 3. Outlet/connector box shall provide space for fiber cable connection with minimum 1.18” (30mm) bend radius and 3.28’ (1m) cable coils for termination.
 - 4. Outlet boxes where indicated shall be sized to accommodate both copper and fiber cabling.
 - 5. Outlets shall consist of single and multiple outlets with corresponding sized wall plates as indicated. Provide blank module inserts for unused modules. Module types shall be as indicated.
- B. Floor Outlets:
 - 1. Multi-service floor outlets shall have single gang wall plate for communications inside floor box with blank module inserts for unused module locations.
- C. Modular furniture outlets shall have modular furniture faceplate capable of housing four 8-position modular connectors, with blank module inserts for unused module locations.
- D. Surface mounted boxes and raceway outlets, power pole outlets and faceplates are only allowed for use in retrofitting existing facilities.
- E. Four pair wiring assignments for modular jacks shall be per T568B wiring pin assignments and as indicated.
- F. See Section 27 05 53 – Identifications for Communications Systems for outlet labeling.

1.4. QUALITY ASSURANCE

- A. Provide single channel solution for project with Siemens System 6 solution.
- B. Systems installer shall be certified and trained by manufacturer to install listed products.
- C. Installer shall maintain Registered Communications Distribution Designer on staff to supervise and direct installation.

1.6 SUBMITTALS

- A. Product Data: Submit manufacturer's data sheets for specified products in accord with Sections 01 33 00 – Submittal Procedures.
- B. Shop Drawings:
 - 1. Provide scaled drawings (not less than 1/8" = 1'-0") indicating location and type/part number of faceplates to be used. Information may be included with submittal for drawing requirements required in Section 27 05 53 – Identification of Communications Systems.
 - 2. Drawings shall show locations, mounting heights, typical installation details for data outlets in each space.
 - 3. Faceplates, connector modules, blank plates, specific outlet designator, wire and outlet type shall be identified and follow same nomenclature noted in Communications System Drawings.
- C. Comply with Section 01 78 00 – Submittal Procedures for Project Record Drawings, Warranties, and other closeout documents.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Comply with Section 01 66 00 – Product Storage and Handling Requirements.
- B. Protect products from damage during delivery, storage, and installation. Replace damaged products at no added cost to Owner.

1.8 WARRANTY

- A. Structured Cabling System (SCS) shall be provided by manufacturer for channel configuration including cable, jacks, patch cords, patch panels specifically approved for channel configuration with manufacturer's components.

PART 2 PRODUCTS

2.1 FACEPLATES

- A. Modular Faceplates:
 - 1. Siemon:
 - a. MAX Modular Faceplate, stainless steel, 4-port (MX-FP-S-06-L, single gang.
 - b. Blank Insert, MX-BL-02, as needed.
 - c. Outlet Type Designator: Siemon CT-FP-LBL-104 (10-8.5" x 11") label sheets with 100 color coded strips.
 - d. Blank Snap-in Tabs: Model # CT-ICON-XX (color as required).
- B. Wall Phone Faceplate:
 - 1. Siemon Max Series Stainless Steel (Keystone Max Module included), Part # MS-WP-Z6.
- C. Surface Mount Boxes:
 - 1. Siemon: CT4-BOX-02, single gang.
- D. Raceway faceplates and adapters:
 - 1. Wiremold 4000 or 5000 series - Device Mounting Bracket with applicable hardware.
 - 2. Raceway parts as required by same manufacturer.

2.2 CONNECTOR MODULES

- A. Angled Cat 6 Modules:
 - 1. Siemon: MAX 6 Model # MX6-04, gray, with dust covers.
 - a. Blank Inserts: Model # MX-BL-02.

B. Cat 6 UTP Outlets:

1. Siemon Model # MX6-F04, gray color.
2. Ortronics: CAT6 Clarity6 TracJack module, fog white, Model # OR-TJ600-88 (Wiremold Gray), 180-degree exit.

PART 3 EXECUTION

3.1 PROJECT COORDINATION

- A. Facility operations shall not be interrupted by communications installer's work activities. Active cable plant associated with specific work activities beyond construction area shall not be disrupted.
- B. Circumstances (e.g., voice cutovers) that require service disruptions in existing facilities shall be scheduled with as much notice as possible. Service disruptions, if needed, shall be coordinated by Owner's Project Manager.
- C. Work area outlets shall comply with ADA requirements for placement. Utility rooms and mechanical spaces are not required to follow ADA guidelines and locations shall be placed as indicated or as relocated in consultation with AE and Owner's Project Manager.

3.2 FACEPLATE AND CONNECTOR INSTALLATION

- A. Outlets shall be terminated in T568A pin/hair configuration. All four pairs shall be terminated.
- B. Project in new facilities shall not use surface-mount boxes. In existing facilities surface-mounted boxes may be used if boxes are shallow, wall-mounted boxes with outlets on side, not on face, of box.
- C. Install outlet modules where indicated. Immediately notify Contractor/CM of conditions preventing outlet box installation where indicated. Contact Owner's Project Manager if project has no Contractor/CM.
- D. Terminate outlets in T568A pin/pair configuration. All four pairs shall be terminated.
- E. Provide and install blank modules in faceplates, as required.
- F. Wall phone installations.
 1. Install 4-conductor plate, connecting blue conductor to red terminal, blue and white conductor to green terminal. Wrap remaining conductors around cable jacket. Do not trim these conductors back to jacket.
 2. Owner acknowledges this is deviation from ANSI/TIA/EIA and BICSI requirements and acknowledges this installation is not within parameters of approved manufacturers' solutions for voice cabling.
- G. Cover outlet openings and shutters with masking tape if other construction is taking place in area. Tape shall be applied with sufficient pressure to ensure up to 60 days of adhesion. Tape shall not wrap around edges of faceplate or surface-mount box.
- H. Install outlets in neat and professional manner per industry standards.
- I. Install outlets where indicated.
- J. Label outlets as indicated and in accord with Section 27 05 53 – Identification for Communications Systems.

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- K. WAO's shall be installed per manufacturer printed installation instructions to ensure certified channel solution.

END OF SECTION

SECTION 27 16 19
COMMUNICATIONS PATCH CORDS, STATION CORDS, AND CROSS-CONNECT WIRE

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Stations cords, patch cords and connectors for communications cabling for communications system in sizes, types and locations indicated.

1.2 REFERENCES

- A. See Section 01 42 00 – References for additional reference standards, definitions, abbreviations, and acronyms. If a standard referred to below has been superseded, the most current standard is to be used.
- B. National Fire Protection Association (NFPA): NFPA 70, National Electrical Code, 2011 Edition.

1.3 DESIGN REQUIREMENTS

- A. Provide single channel solution for project with either Siemens System 6 solution or Ortronics NetClear GT2 solution.
- B. Wall Outlets:
 - 1. Communication outlets containing copper services shall be equipped with 8-position modular jacks (RJ45 type).
 - 2. Communication outlets containing fiber services shall be equipped with LC type connections for multi-mode or single mode cabling terminations.
 - 3. Outlet/connector box shall provide space for fiber cable connection with minimum 1.18” (30mm) bend radius and 3.28’ (1m) cable coils for termination.
 - 4. Outlet boxes where indicated shall be sized to accommodate both copper and fiber cabling.
 - 5. Outlets shall consist of single and multiple outlets with corresponding sized wall plates as indicated. Provide blank module inserts for unused modules. Module types shall be as indicated on T-Drawings.
- C. Floor Outlets: Multi-service floor outlets shall have single gang wall plate for communications inside floor box with blank module inserts for unused module locations.
- D. Modular furniture outlets shall have modular furniture faceplate capable of housing four 8-position modular connectors, with blank module inserts for unused module locations.
- E. Surface mounting boxes and raceway outlets, power pole outlets and faceplates are only allowed for use in retrofitting existing facilities.
- F. Four pair wiring assignments for modular jacks shall be per T568B wiring pin assignments and as indicated.
- G. See Section 27 05 53 – Identifications for Communications Systems for outlet labeling.

1.4 QUALITY ASSURANCE

- A. Comply with Section 01 45 00 – Quality Control.
- B. Systems installer shall be certified and trained by manufacturer to install listed products.

- C. Installer shall maintain Registered Communications Distribution Designer on staff to supervise and direct installation.

1.5 SUBMITTALS

- A. Product Data: Submit manufacturer's data sheets for specified products in accord with Sections 01 33 00 –Submittal Procedures.
- B. Shop Drawings:
 - 1. Provide scaled drawings (not less than 1/8" = 1'-0") indicating location and type/part number of faceplates to be used. Information may be included with submittal for drawing requirements required in Section 27 05 53 – Identification of Communications Systems.
 - 2. Drawings shall show locations, mounting heights, typical installation details for data outlets in each space.
 - 3. Connector modules, specific outlet designator, wire and outlet type shall be identified and follow same nomenclature noted in Communications Symbol Legend on T-Drawings.
- C. Comply with Section 01 78 00 – Submittal Procedures for Project Record Drawings, Warranties, and other closeout documents.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Comply with Section 01 66 00 – Product Storage and Handling Requirements.
- B. Protect products from damage during delivery, storage, and installation. Replace damaged products at no added cost to Owner.

1.7 WARRANTY

- A. Structured Cabling System (SCS) shall be provided by manufacturer for channel configuration including cable, jacks, patch cords, patch panels specifically approved for channel configuration with manufacturer's components

PART 2 PRODUCTS

2.1 APPROVED MANUFACTURES

- A. The Siemon Company, Siemon Business Park, 101 Siemon Company Dr., Watertown, CT 06795-0400; Tel: 860-945-4200; Fax: 860-945-4225; Website: www.siemon.com.
- B. Other manufacturers shall be approved, and products installed shall be warranted by Siemon in accord with Section 27 05 00 – Common Work Results for Communications.

2.2 MODULAR WORKSTATION CORDS

- A. Data workstation cords and patch cords shall be black, double ended, 4-pair, UTP, T568A/B, clear boot, with round, 24 AWG copper, stranded conductors insulated with high density polyethylene and jacketed with flame retardant PVC.
- B. Cords shall be component part of CAT 6 channel solution.
- C. Workstation Cords:
 - 1. Siemon: Part #MC6-07-01 Workstation Cords.

2.3 DATA PATCH CORDS

- A. Provide one modular patch cord for each copper Cat 6 data Channel used at patch panels in MDF and IDF locations indicated.
 - 1. Siemon: Part #MC6-01-01.

2.4 FIBER OPTIC CONNECTORS

- A. Fiber Optic Adaptor shall be Multimode LC, Angled adaptor, one-piece construction.
- B. Adapter shall maintain 0.5" (12.7mm) center spacing when mounted in optical fiber communications outlet. Multimode adapters shall be gray color.
- C. Manufacturer:
 - 1. Siemon Anaerobic LC Type; Part #FC1-LC-MM-B80.

2.5 CROSS CONNECT WIRE

- A. Connector Modules:
 - 1. Siemon: CAT6 MAX 6.

PART 3 – EXECUTION

3.1 PROJECT COORDINATION

- A. Facility operations shall not be interrupted by communications installer's work activities. Active cable plant associated with specific work activities beyond construction area shall not be disrupted.
- B. Circumstances (e.g., voice cutovers) that require service disruptions in existing facilities shall be scheduled with as much notice as possible. Service disruptions, if needed, shall be coordinated by Owner's Project Manager.
- C. Work area outlets shall comply with ADA requirements for placement. Utility rooms and mechanical spaces are not required to follow ADA guidelines and locations shall be placed as indicated or as relocated in consultation with AE and Owner's Project Manager.

3.2 FACEPLATE AND CONNECTOR INSTALLATION

- A. Outlets shall be terminated in T568A pin/hair configuration. All four pairs shall be terminated.
- B. Project in new facilities shall not use surface-mount boxes. In existing facilities surface-mounted boxes may be used if boxes are shallow, wall-mounted boxes with outlets on side, not on face, of box.
- C. Install outlet modules where indicated. Immediately notify Contractor/CM of conditions preventing outlet box installation where indicated. Contact Owner's Project Manager if project has no Contractor/CM.
- D. Terminate outlets in T568A pin/pair configuration. All four pairs shall be terminated.
- E. Provide and install blank modules in faceplates, as required.
- F. Wall phone installations.
 - 1. Install 4-conductor plate, connecting blue conductor to red terminal, blue and white conductor to green terminal. Wrap remaining conductors around cable jacket. Do not trim these conductors back to jacket.

2. Owner acknowledges this is deviation from ANSI/TIA/EIA and BICSI requirements and acknowledges this installation is not within parameters of approved manufacturers' solutions for voice cabling.
- G. Cover outlet openings and shutters with masking tape, if other construction is taking place in area. Tape shall be applied with sufficient pressure to ensure up to 60 days of adhesion. Tape shall not wrap around edges of faceplate or surface-mount box.
- H. Install outlets in neat and professional manner per industry standards.
- I. Install outlets where indicated.
- J. Label outlets as indicated and in accord with Section 27 05 53 – Identification for Communications Systems.
- K. WAO's shall be installed per manufacturers written instructions to ensure certified channel solution.

END OF SECTION

SECTION 27 18 00
COMMUNICATIONS TESTING

PART 1 GENERAL

1.1. SCOPE OF WORK

- A. System validation testing for voice and data communications cabling and connecting hardware for verification that structured cabling system has been installed properly and performs as specified.
- B. Communications system validation testing shall in accord with ANSI/TIA 568.B.1, for Category 6 Structured Cabling System (SCS).

1.2. QUALITY ASSURANCE

- A. Comply with Section 01 45 00 – Quality Control.
- B. Installed voice and data communications systems to verify that cable has been installed and functions properly.
- C. Perform validation testing on horizontal and backbone cabling testing in accord with ANSI/TIA/EIA-568-B.1 and CAT6 addendum for copper cabling.
- D. Third Party Testing: Owner may elect to employ independent testing and certification firm to provide testing of all or part of Structured Cabling System.
- E. SCS installer shall set wiring tester for channel configuration for DATA which includes patch cord, patch panel, UTP Cable, work-area jack and work area cord, with permanent link configuration for VOICE.
- F. SCS installer's RCDD shall sign off on copper and fiber optic cable test results, indicating that cable testing procedures and cables testing are in compliance with contract documents and referenced standards.

1.3. SUBMITTALS

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Comply with Section 01 78 00 – Closeout Submittals.
- C. Provide list of test equipment proposed for certification testing for review prior to testing.
- D. Provide names of personnel performing testing. Personnel shall have attended training program in operation of specified manufacturer's equipment and shall provide certificates demonstrating successful completion of training.
- E. Test Results:
 - 1. Provide Owner's Project Manager with printed and electronic forms of test results as noted in Part 3 Execution.
 - 2. Test results shall be unedited and as presented by tester's software. Provide software from tester's manufacturer with test results to enable viewing of test results in native format.

1.6 PROJECT CONDITIONS

- A. Owner reserves right to be present during testing.

- B. For additions and renovations to existing occupied facilities, testing of existing and active connections is likely to be restricted until after normal working hours. Owner's Project Manager will determine if testing can occur during normal business hours.
- C. Testing shall occur only after channel is installed. If channel components are moved or re-positioned after testing, retest cables, faceplates, and other components in final position.

1.7 WARRANTY

- A. Warranty: Comply with Section 27 05 00 – Common Work Results for Communications, Para. 1.09.
- B. Manufacturer shall provide 20-year Channel Performance Warranty for complete communications system.
 - 1. System shall be Siemon Systems 6 solution.
 - 2. Manufacturer's shall warranty worst-case performance data for installed cabling system, and performance data indicated in warranty documents/certificate.
 - 3. Twenty (20) year warranty for Cat 6 structured cabling system shall provide for end to end channel model installation which covers applications assurance, cable, connecting hardware, and labor cost for repair or replacement.
 - 4. Warranty shall indicate compliance with Margin claimed by manufacturer's over Cat 6 channel specifications on transmission parameters across entire frequency range of 1-250 MHz as indicated in manufacturer's catalogs and product literature.
- C. SCS installer shall provide 3 year warranty for communications system installation to include materials and labor warranty for replacement of defective installation or equipment including cables, jacks, patch cords, patch panels, devices and cabling.
- D. Date of warranty period shall begin from date of project's substantial completion.

PART 2 PRODUCTS

2.1 APPROVED TESTING EQUIPMENT

- A. Approved Copper Cable Testing Equipment Manufacturer's:
 - 1. Agilent Technologies, Inc., Electronic Test & Measurement Div., P.O. Box 4026, Englewood, CO 80155-4026; Tel: 800-829-4444; Fax: 800-829-4433; Website: www.agilent.com.
 - 2. Fluke Networks, Inc., 6920 Seaway Blvd., Everett, WA 98203; Tel: 425-446-4519; Website: www.flukenetworks.com.
 - 3. IDEAL Industries, Inc., Becker Place, Sycamore, IL 60178; Tel: 800-435-0705; Fax: 800-533-4484; Website: www.idealindustries.com.
 - 4. JDS Uniphase Corp., Wavetek Div., 430 N. McCarthy Blvd., Milpitas, CA 95035; Tel: 408-546-5000; Fax: 408-546-4300; Website: www.jdsu.com.
- B. Approved Fiber Optic Cable Testing Equipment Manufacturer's:
 - 1. Agilent Technologies, Inc., Electronic Test & Measurement Div., P.O. Box 4026, Englewood, CO 80155-4026; Tel: 800-829-4444; Fax: 800-829-4433; Website: www.agilent.com.
 - 2. Fluke Networks, Inc., 6920 Seaway Blvd., Everett, WA 98203; Tel: 425-446-4519; Website: www.flukenetworks.com.
 - 3. IDEAL Industries, Inc., Becker Place, Sycamore, IL 60178; Tel: 800-435-0705; Fax: 800-533-4484; Website: www.idealindustries.com.
 - 4. Anritsu Company, Inc., GN NETTEST Div., 1155 East Collins Blvd., Suite 100, Richardson, TX 75081; [Tel:972-644-1777](tel:972-644-1777); Fax: 972-671-1877; Website: anritsu.com.

5. AFL Global, Inc., Noyes Test and Inspection Div., 170 Ridgeview Center Dr., Duncan, SC 29334; Tel: 800-235-3423; Fax: 864-433-0333; Website: www.aflglobal.com.
 6. Tektronix, Inc., 14200 SW Karl Braun Dr., P.O. Box 500, Beaverton, OR 97077; Website: www.tek.com.
 7. JDS Uniphase Corp., Wavetek Div., 430 N. McCarthy Blvd., Milpitas, CA 95035; Tel: 408-546-5000; Fax: 408-546-4300; Website: www.jdsu.com.
- C. Other test equipment manufacturers shall submit requests for product substitution in accord with Section 01 25 13 – Product Substitution Procedures.

PART 3 EXECUTION

3.1 GENERAL

- A. Owner reserves right to be present during testing.
- B. Provide required test equipment and personnel necessary to support certification and validation tests indicated and in accord with Section 01 45 00 – Quality Control.
- C. Fail, fail*, Pass*, or Warning test result yields Fail result for channel or permanent link under test. To achieve overall Pass condition, result of each individual test shall be Pass. Test results shall come from tester with permanently enabled marginal reporting feature.
- D. Test result shall indicate compliance with margin claimed by manufacturer over Cat 6 channel specifications for frequency range of 1-250 MHz as indicated in manufacturer's catalogs and product literature.

3.2 CATEGORY 6 COPPER CABLE TESTING

- A. Category 6 field testing shall be performed with approved Level III balanced twisted-pair field test device.
- B. Installed category 6 channels shall comply with ANSI/TIA/EIA standards for Category 6. Use cable manufacturer's test standards if more stringent.
- C. Category 6 balanced twisted-pair horizontal and backbone cables shall not exceed 90 m (295 ft) for basic link, and 100 m (328 ft) for channel shall be tested per ANSI/TIA/EIA-568-B.2. Test parameters include wire map plus ScTP shield continuity (when present), length, NEXT loss (pair-to-pair), NEXT loss (power sum), ELFEXT (pair-to-pair), ELFEXT loss (power sum), return loss, insertion loss, propagation delay, and delay skew.
- D. Copper riser cabling for VOICE shall be tested for length, continuity, polarity, checks and wire map.

3.3 COPPER TEST EQUIPMENT

- A. Balanced twisted-pair field testers shall be factory calibrated each calendar year by field test equipment manufacturer as stipulated by manuals provided with field test unit. Calibration certificate shall be provided to Owner's Project Manager for review prior to start of testing.
- B. Set testers to correct cable, by manufacturer and name, to ensure correct parameters are used during testing. Test settings selected from options provided in field testers shall be compatible with installed cable under test.
- C. Level III balanced twisted-pair field test device. Scanners shall be in good working order and have current calibration stickers from manufacturer-approved calibration facility.

- D. Balanced twisted-pair field testers shall be factory calibrated each calendar year by field test equipment manufacturer as stipulated by manuals provided with field test unit.
- E. Set tester manufacturer’s cable and name, to ensure using correct parameters during testing. Test settings selected from options provided in field testers shall be compatible with installed cable under test.

3.4 CATEGORY 6 TESTING

- A. Category 6 testing shall be performed with approved Level III balanced twisted-pair field test device. Scanners shall be in good working order with current calibration stickers from manufacturer’s approved calibration facility.
- B. Installed Category 6 channels shall comply with ANSI/TIA/EIA standards or use cable manufacturers test standards to certify total solution installed, if more stringent.
- C. Category 6 balanced twisted-pair horizontal and backbone cables shall not exceed 90 m (295 ft) for basic link, and 100 m (328 ft) for channel shall be 100 percent tested in accord to ANSI/TIA/EIA-568-B.2.
- D. Provide test results indicating CAT 6 cable tests in text files on flash drive(s), and two print copies in 3-ring binders. Provide text files for each building. Each test page shall be separated by standard page break (one test per page).

- E. Cat 6 Channel Performance Testing Requirements shall meet or exceed following:

Frequency	10 MHZ	100 MHZ	200 MHZ	250 MHZ	UNITS
Insertion Loss	6.3	21.3	31.5	35.6	DB
NEXT	56.6	39.9	34.8	33.1	DB
PSNEXT	54.0	37.1	31.9	30.2	DB
ELFEXT	43.3	23.3	17.2	15.3	DB
PSELFEXT	40.3	20.3	14.2	12.3	DB
Return Loss	19.0	12.0	9.0	8.0	DB
Delay	<555	N/A	N/A	N/A	NSec
Delay Skew	<50	N/A	N/A	N/A	NSec

- F. Calculations shall be derived from tests and provide results for following:
 1. Continuity.
 2. Polarity checks.
 3. Wire map.
 4. Attenuation.
 5. PSNEXT.
 6. PSFEXT.
 7. ELFEXT.
 8. PSELFEXT.
 9. ACR.
 10. Installed length of CAT 6 cable.
- G. Correct cable NVP shall be entered into test equipment to ensure proper length and attenuation readings. Cables not in accord with EIA/TIA 568B, Category 6 tests shall be identified to AE and RCDD for corrective action. Cable replacement shall be at no additional cost to Owner.
- H. Data jacks in each outlet shall be tested for CAT 6 compliance in channel configuration to verify integrity of conductors and correctness of termination sequence indicated.

- I Prior to testing UTP runs, test equipments shall be calibrated per manufacturer’s printed guidelines. Correct cable NVP shall be entered into test equipment to ensure proper length and attenuation readings.

3.5 FIBER OPTIC TEST EQUIPMENT

- A. Optical fiber test equipment shall be factory calibrated (with date of last calibration) as recommended by field test equipment manufacturer. Manufacturer’s calibration certificates shall indicate equipment name and serial number, and shall be provided for review prior to start of testing.

3.6 OPTICAL FIBER CABLING TESTING

- A. Optical fiber horizontal and backbone cabling shall be verified in accord with ANIA/TIA/EIA-568-B.1 with Addendum for fiber optic cabling testing.
- B. Each strand in fiber optic cables shall be tested for correctness of termination, overall transmission loss, and defects using approved Optical Time Domain Reflectometer (OTDR) and power meter.
- C. Tests shall be performed for reach stand of fiber in two-way averaging measurement of fiber. Engineer of record shall be notified at least one week prior to testing to allow his observation of testing optical fiber strands for insertion loss and length and bi-directional OTDR tests on OSP optical fiber strands.
- D. Test for insertion loss at 850 nm and 1300 nm per TIA/EIA-526-14 method B, one jumper reference. System loss measurements (both calculated and measured) shall be provided for 50/125mm multimode cabling in at least one direction.
- E. Test for insertion loss at 1310 and 1550 for single mode cabling in at least one direction using Method A.1 (1-jumper) test procedure as specified in ANSI/TIA/EIA-526-7.
- F. Acceptable losses shall calculate allowable attenuated loss based on final installed length, attenuation coefficient, and connector loss per attached chart.
- G. Fiber Optic links compliance tests with following loss budget for link types:

Fiber Insertion Loss			
Link Type	Loss (dB)	Wavelength (nm)	Length (m)
Horizontal, MM	≤2.0	850 or 1300	≤90
Backbone, MM	≤3.5/km + 0.75/conn +0.3/spl	850	≤2000
	≤1.5/km + 0.75/conn +0.3/spl	1300	≤2000
Backbone, SM	≤1.0/km + 0.75/conn +0.3/spl	1310	≤3000
	≤1.0/km + 0.75/conn +0.3/spl	1550	≤3000
Centralized, MM	≤3.3	850 or 1300	≤90

H. Channel attenuation for Gigabit Ethernet shall be per IEEE 802.3z as noted below:

Maximum Channel Attenuation (dB)			
Fiber Type	50/125μ		
1000BASE-SX	3.2		
1000BASE-LX	4		

I. Test Reports:

1. Certification report shall be provided listing both calculated and measured loss for each fiber optic strand and submitted with test results as noted above. Cable lengths shall be verified with OTDR or Light Source/Power Meter with length testing capacity.
2. Provide printed and electronic forms of tests results. Test results shall be unedited and as presented by tester’s software. Supplemental summaries may be provided to Owner’s Project Manager. Provide Fiber performance calculation worksheets and fiber link attenuation records as illustrated in Section 21 (Figures 21.14 and 21.15) of BICSI Telecommunications Cabling Installation Workbook, Technician, 2nd Edition.
3. Test reports shall indicate fiber wavelength, fiber and cable manufacturer’s part numbers, type, attenuation, bandwidths specifications, and measurement direction.

J. Test optical fiber strands for insertion loss and length. Perform bi-directional OTDR tests on OSP optical fiber strands. OTDR trace(s) shall be in project closeout submittals.

K. Calculate allowable attenuated loss based on final installed length, attenuation coefficient, and connector loss.

L. Immediately remediate strands testing above calculated limits.

M. Owner reserves right to have third party testing to confirm test results. Remediate, at Contractor’s expense, strands exceeding calculated limits by third party testing.

3.7 COMMUNICATIONS AND GROUNDING SYSTEM TESTING

A. See Section 27 05 26 – Grounding and Bonding for Communications Systems.

B. Testing shall be performed for impedance of bonds of grounding system, including cable armor bonding to ground. Impedance of two-point bonding test across any bond shall not exceed 0.1 ohm. Remediate bond(s) over limit or which contribute to total impedance exceeding 0.1 ohm from any point in network room to bussbar in that room.

C. Bonds installed shall be tested for impedance with earth ground resistance test in its two-point setup (LEM Handy GEO tester, or approved testor). Place QA label (with date and inspector) in proximity to each bond tested.

D. Test grounding conductors, once installed, for current. Measure AC and bi-directional DC current. Report AC current over 1 Amp. Report any DC current, in either direction, over 500 miliamps.

END OF SECTION

SECTION 28 13 10
ACCESS CONTROL SYSTEM

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 01, General Requirements, are included as a part of this Section as though bound herein.

1.2 PERFORMANCE REQUIREMENTS

A. Purpose:

1. Provide electronic card access control system for all new construction and renovation projects.
2. Electronic card access shall be located at designated perimeter doors leading to each of the program areas with electric strike RIM exit device, controlled by card access system.
3. Electronic card access control system shall include all necessary components, wiring for power and control to sensors, card access controls, door hardware devices, uninterruptible power supply system (UPS) and capable of interfacing with existing Avigilon software for a complete operable and fully integrated system that is capable of control through the District's intranet.
4. Raceway system shall consist of conduit, J-hooks, sleeves, boxes and wiring for an automatic card access system.
5. Electronic card access system shall be independent from Section Intrusion Detection System and shall be an IP-based control system.
6. The system shall shunt the alarm system to allow passage through the doors when access card is swiped then rearm the alarm system when the door closes. On egress a passive infrared sensor shall shunt the alarm and unlock the door allowing for passage out of the building then resetting the alarm when the door closes.

B. The System shall include but not be limited to:

1. Main Cabinet shall be surface mounted, installed on a plywood backboard. Main cabinet shall be installed in the MDF Room, including all required power supplies, batteries, integral charger, and the software for a complete fully operational system.
 - a. Backboard: Plywood, 1/2 inch thick, AC Grade, covered with two coats of UL Classified, fire retardant intumescent paint, light gray color, painted front, rear, and all four sides.
 - b. Backboard shall be clearly labeled with the name of the backboard manufacturer, UL classification of the Fire-Retardant Coating with the NFPA 255 Coating Flame Index and the APA Grade of the plywood. Backboard shall be securely fastened to the wall in order to support any and all attached equipment.
2. Surge suppression for the 120 VAC power supply.
3. Card readers shall be HID iClass.13.56MHz.
4. The distribution cabinet must be within 300 feet of the controlled devices.
5. Raceway shall not exceed 400 feet without a pull box.
6. Grounding.
7. Raceway, fittings, wire, and wire fittings.
8. A 2-inch raceway from the main cabinet to the next building and floor distribution cabinet.

9. Wire and cable labeling.
 10. Programming Software that is capable of interfacing with Avigilon system.
 11. Electrical power required to comply with all functions and operations required for the system.
- C. Access Card Locations: Provide a card reader/controlled device at the following locations:
1. All designated perimeter doors.
 2. Other doors may be installed to include.
 - a. Vehicle Gates
 - b. Pedestrian Gate
 - c. Other areas as defined in the plans specific review process.
- D. Basis of design shall be Avigilon ACM Enterprise Plus.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications:
1. The Contractor shall use personnel who are manufacturer-certified, thoroughly trained and experienced with the specified requirements and methods needed for the proper performance of the work.
- B. Manufacturer Qualifications:
1. Manufacturer shall have completed a minimum of five projects of equal scope to systems described herein and shall have been in the business of supplying and installing specified type of systems for a minimum of five years.
- C. Fabricator Qualifications Mockups:
1. Fabricator shall have completed a minimum of five projects of equal scope to systems described herein and shall have been in the business of supplying and installing specified type of systems for a minimum of five years.

1.4 SUBMITTALS

- A. Shop Drawings:
1. Shop Drawings shall be prepared in latest version of AutoCAD 2006 or later format with electronic copies submitted along with full sized Shop Drawings.
 2. Shop Drawings shall indicate typical wire connections and cable types, keypad locations, and all main and remote panels. Provide wiring schematics including point-to-point, terminal strips, connections to batteries, and power supplies, including the estimated anticipated wiring lengths required for all connection points (i.e., zone and system communications bus runs) within the system. Indicate interfaces to equipment furnished by others.
 3. Submit dimensioned Shop Drawings indicating mechanical layout of all card access equipment, including cabinets and interconnecting conduit for the main panel, typical remote panel, keypad, and indicator locations, identifying all parts by manufacturer and part number.
 4. Shop Drawings shall be accompanied by engineering documentation including:
 - a. Floor Plans indicating all components, raceways, and terminal boxes and cabling.
 - b. Riser diagram indicating all connections in a manner following the floor plan layout.
 - c. Cabling diagram indicating the Contractor's designed routing and number of cables in specific raceways or conduits, from the main panel connecting to other sub-panels, modules, or devices. Diagram shall include length, in wire feet, and capacitance calculation charts for all cables.

B. Warranty Requirements:

1. Contractor shall warranty that all materials furnished shall be free from defects of material for a period of one year excluding specific items of work that require a warranty of a greater period that may be set forth in this Specification. Contractor shall warranty that workmanship for a period of one year from date of Final Completion, excluding specific items of work that require a warranty of a greater period that may be set forth in this Specification. Immediately upon receipt of written notice from the Owner, the Contractor shall repair or replace at no expense to the Owner, any defective material or work that may be discovered before final acceptance of work or within the warranty period; any material or work damaged thereby; and adjacent material or work that may be displaced in repair or replacement. Examination of or failure to examine work by the Owner shall not relieve Contractor from these obligations.

PART 2 PRODUCTS

2.1 MATERIALS, PRODUCTS, EQUIPMENT, MANUFACTURED UNITS

A. Raceways

1. General:
 - a. Provide raceways (conduits, wireways, pull boxes, J-hooks, outlet boxes, etc.) in compliance with the requirements of the card access manufacturer, Section Conduit for Electrical Systems, and Section Outlet Boxes.
2. Conduit:
 - a. Provide conduit sized and based on fill in accordance with the NEC. Minimum size of conduit is to be 1 inch.
 - b. Provide pull cords in all raceway installed without cable.
3. J-Hooks:
 - a. Provide J-hooks in accordance with the NEC, EIA/TIA requirements for structured cabling systems. All cable supports shall be UL listed.
 - i. Design Selection: Enrico Caddy or J-Hook
4. Boxes:
 - a. Provide boxes sized as required by the system manufacturer and the NEC for cables and/or devices installed.

B. Conduit and Boxes

1. Provide and install the building and floor distribution cabinets for each building according to the following criteria:
 - a. There must be one of these main cabinets within 300 feet of a door access reader.
 - b. Each cabinet shall feed a minimum of eight controlled devices (access readers) and the cabinet can be located on any floor in an MDF or IDF room. It does not have to be located on the same floor as the controlled devices.
 - c. The main cabinet can serve as the distribution cabinet for its area of eight door access readers.
 - d. Minimum conduit size shall be 1 inch. No conduit shall be installed more than 150 feet without a pull box.
2. Provide 1-inch conduits if needed from the distribution cabinets and distribute to feed the junction and mounting boxes for each device.
 - a. If a separate 120V feed is needed at any device, a separate conduit will be needed.

- b. Each separate 1-inch feed will supply no more than one Controlled Device/Card Reader Feed locations however if multiple devices are being installed in the same area, conduit sizes will need to be increased.
3. Provide and extend conduit to feed 2-inch x 4-inch x 2 1/8-inch flush mounted boxes with single gang mud ring and weatherproof covers; mounted with the opening vertical, at all designated card reader locations.
 - a. Locate to the strike side of single doors, and as designated for double doors, and gates.
 - b. Center 42 inches above finished floor/grade.
 - c. Exact location to be determined during plan review.
4. Provide a 2-inch x 4-inch x 2 1/8-inch card access feed junction box with cover at the interior side of all designated card access door locations.
 - a. If the area location has removable ceiling tiles, the box shall be located above the tile.
 - b. If the location has a structure of fixed ceiling material, then flush-mount the box with a square to round mud ring and cover.
 - c. Both boxes from a) and b) above shall be connected. Also, if door is a double door an additional single gang box will be installed, connected, and centered on the top of the door frame.
5. Provide a 1-inch conduit from the control box to the closet network switch if conduit is determined to be needed.
6. Cable:
 - a. Provide at each card reader location, a single home run cable to the locations to be identified in the drawings. The cable for the Card Access System shall be Belden # 658AFS or manufacturer recommended equivalent.
 - b. Provide between Access Control Panel and Access Control Terminal Cabinet one (1) Belden # 9502 cable or manufacturer recommended equivalent.
 - c. Card Access system cables installed in interior, exterior and/or underground raceways shall comply with the applicable section of the NEC.
7. Power Feeds:
 - a. Provide a double duplex, dedicated 120-volt clean power receptacle adjacent to the lower portion of the main terminal cabinet and each distribution cabinet.
8. Surge Suppression:
 - a. Provide surge suppression equipment listed by Underwriters' Laboratories, bearing the UL seal, and marked accordingly. Surge suppression equipment is to be UL listed and labeled for the intended use.

PART 3 EXECUTION

3.1 FIELD QUALITY CONTROL

- A. Training of the School's administrative and maintenance personnel is required in cooperation with the District's Representative.
 1. Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections, and to assist in field testing.
 2. Report results in writing.
- B. Startup Service:
 1. Engage a factory-authorized service representative to perform startup service in accordance with the manufacturer's requirements.

- a. Complete installation and startup check according to manufacturer's written instructions.
 - b. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - c. Report results in writing.
- C. Adjusting
1. When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to three visits to site during other-than-normal occupancy hours for this purpose. These visits are not considered as "warranty calls."

3.2 ERECTION TOLERANCES

- A. Install system in accordance with NECA "Standard of Installation" and Divisions 26, 27, and 28.
- B. Permanently label all conduits as to plan room number destination, at all terminal cabinets.
- C. Install 200 lb. strength pull string throughout the conduit system.
- D. Mount all junction boxes located above the ceiling with the opening facing down unless mounted to the wall above the ceiling, and with a reasonable immediate access pathway provided.
 1. Note: The requiring of removing of a light fixture or other similar ceiling equipment is not a reasonable access pathway.
- E. All conduit runs shall be as direct as possible in order to save on wiring costs and to reduce poor performance due to cable loss.
- F. Refer to Section Door Hardware for Card Access Door preparation.
- G. The Contractor shall be advised that the circuit routing for the card access system may not be shown on the project drawings and that he is responsible to install all raceways, wiring and cabling for a complete and fully functional system.
- H. General:
 1. The Contractor shall provide and install the card access system (including raceways, pull and back boxes, and wire) in accordance with the Card Access System manufacturer's requirements.
 2. The Contractor shall size and route raceways to accommodate the proper installation of the system cabling. T-tapped cabling is not acceptable.
 3. Where raceway and/or conduit is not accessible after completion of the project, conduit shall be routed from device to device or fire rated access panels shall be installed to provide access to junction and pull boxes.
 4. Device to device wiring is only to be acceptable where the wiring scheme of the system, as recommended by the manufacturer, requires cable to pass from device to device.
 5. Termination of devices is to be in accordance with manufacturer's requirements.
 6. Install Card Access System wiring with at least 12 inches of separation from line voltage power wiring on parallel runs. Wiring crossing power circuits shall be at right angles. For metal enclosed electric light or power or Class 1 circuits, separation may be reduced as described in the National Electrical Code. Increase separation if so required to comply with EIA/TIA referenced standards.
 7. Each Card Access System outlet shall have splice-free cables homerun to the respective control panel in the associated Main/Intermediate Distribution Frame (MDF/IDF) at the communication equipment room (CER), communication closet (CC), or communication panel (CP) as indicated on the drawings. Each cable shall be tagged at each end.

3.3 DEMONSTRATION

- A. Training of the School's Administrative and Maintenance Personnel is required in cooperation with the District's Representative.
- B. Engage a factory-authorized service representative to train school administrative and maintenance personnel to adjust, operate, and maintain Card Access System. Refer to Division 01 Section Closeout Procedures for information regarding Demonstration and Training.

END OF SECTION

SECTION 32 00 00 – SITE CLEARING / VEGETATION REMOVAL

PART 1 – GENERAL

- 1.1 SCOPE: Work shall include performing all clearing of site as necessary to complete work indicated on drawings and specified under this section. The work shall consist of furnishing all labor, supplies, equipment and materials necessary to complete the planning of all trees, palms, shrubs and ground covers in the locations shown on the drawings, and all other work associated with and incidental to the landscape planting work as shown on the drawings and specified under this section.
- A. All plant materials and references in this section are not necessarily required on this project; however, when indicated or required by drawings and/or specifications set forth in this section, they shall be applicable.
 - B. All plant material shall be of the specific size and quality indicated on the drawings; shall be installed, maintained and watered in strict accordance with sound nursery practices.
 - C. The Architect reserves the right to adjust the number and location of designated types and species to be used.
 - D. The Contractor shall remove all existing plant material necessary to implement the construction plans.
 - E. The Contractor shall provide for the contract growing of all plant materials that cannot be guaranteed to be available from standard nursery operations at the time of the planting.
- 1.2 WORK INCLUDED: Without restricting the volume or generality of the above “Scope” work to be performed under this section shall include, but is not limited to, the following:
- A. Removal of all shrubs, stumps, vegetation, trash, etc. as described below.
 - B. Removal of all trees as described below.
 - C. Disposal of shrubs, stumps, vegetation, trash, timber, branches, etc. as specified.
 - D. Contractor shall accept site as he finds it and it shall be his responsibility to remove all trash, rubbish and debris as required.
 - E. The Contractor shall prune all existing shrub materials (including all Brazilian Pepper) that are overhanging the property line, back to the property line.
- 1.3 WORK NOT INCLUDED: If required, the following items of work are specified in other sections:
- A. Earthwork.

- 1.4 BIDDING: Each bidder submitting a proposal for this contract shall be responsible to inspect the site to acquaint himself with the nature of conditions which will be encountered during construction. Bidder shall make himself aware of all existing and/or proposed utilities in area of work.
- 1.5 SUPERVISION: The Contractor shall provide a competent superintendent and any necessary assistants on the project when work is in progress. The superintendent shall not be changed during the project without the consent of the Owner's representative unless the superintendent ceases his status as an employee of the Contractor. The superintendent shall represent the Contractor in the Contractor's absence, and all directions given to him by the Owner's representative shall be binding as if they were given to the Contractor. The Contractor's superintendent shall supervise the Contractor's employees on the job site and be responsible for their actions and conduct on the job site.
- 1.6 PROTECTION OF WORK AND PROPERTY: The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the Owner's property from injury or loss arising in connection with his work. The Contractor shall be responsible for contacting the necessary entities to determine the locations of all underground utilities on the site. The Contractor shall take care to avoid damage to any existing buildings, equipment, piping, pipe coverings, electrical systems, sewers, sidewalks, landscaping, grounds, aboveground or underground installations or structures of any kind, and shall be responsible for any damage that occurs as a result of his work. Contractor shall adequately protect his work and all adjacent property as provided and required by law.

PART 2 – PRODUCTS

- 2.1 HERBICIDES:
- A. Post-emergence Herbicide: The post-emergence herbicide shall be a foliar applied herbicide which will control a broad range of annual and perennial grass and broad-leafed weeds plus applicable woody brush and tree species. Herbicide shall kill the entire weeds species, including the below the ground root or rhizome system. The herbicide shall have no residual soil activity. All herbicide is to be applied according to the manufacturer's recommendations.
- B. Pre-emergence Herbicide: The pre-emergence herbicide shall be a selective pre-emergence herbicide used for the control of annual grasses and broad-leafed weeds in ornamental planting beds. Herbicide shall control weeds by killing the young weed seedlings as they come into contact with the herbicide during germination. The herbicide shall be in granular form.
- 2.2 WATER: All water is to be supplied and applied by the Contractor.

PART 3 – EXECUTION

- 3.1 REMOVAL OF SHRUBS, STUMPS, VEGETATION, TRASH, ETC: Remove all shrubs, vegetation, trash, etc. in all areas indicated on the drawings.

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- 3.2 REMOVAL OF TREES: Where indicated on the drawings, remove all trees. Tree removal shall be complete, including stumps and root systems below grade. The Contractor shall remove all existing vegetation necessary to implement the project construction plans. Planting material intended to remain shall be protected as specified below. Plant material required to be relocated by the Contractor shall be relocated as specified below.
- 3.3 DISPOSAL: All accumulation of shrubs, stumps, vegetation, trash, timber, branches, etc. resulting from work under this section shall be removed to approved disposal areas off site or burned. Disposal by burning is not acceptable.
- 3.4 PROTECTION OF EXISTING VEGETATION INDICATED TO REMAIN:
- A. Protect individual trees indicated to remain by the installation of 5' long, 2" x 4" stakes (install with 3' remaining above ground) no more than 10' o.c. around the dripline of all trees designated to be preserved. Place 1" x 4" or 2" x 4" rails between all stakes at approximate 3' height. Barricades shall be installed prior to beginning any other construction work on the site, and shall be maintained until the sod installation begins. Barricades shall be constructed in a workmanlike manner. All barricades shall be sturdy. There shall be no exposed nail points.
 - B. No construction activity of any type, including parking or storage of materials, is to take place within any tree protection barricaded areas on the site. All barricades shall be removed by the Contractor prior to final acceptance of the work.
- 3.5 GRADING OF PLANTING AREAS: Unless otherwise specified, all planting areas bordered by pavement, sidewalk or curb shall have a finished grade

END OF SECTION 32 00 00

SECTION 32 13 13 – CONCRETE SIDEWALKS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications, and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Section Includes:
 - 1. Provide labor, material, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
 - a. Sidewalks.

1.3 REFERENCES

- A. ACI 117 – Standard Tolerances for Concrete Construction and Materials.
- B. ACI 211.1 – Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.
- C. ACI 304R – Guide for Measuring, Mixing, Transporting, and Placing Concrete.
- D. Concrete Reinforcing Steel Institute, "Manual of Standard Practice.
- E. ACI 308 – Standard Practice for Curing Concrete.
- F. ACI347R – Guide to Formwork for Concrete.
- G. ASTM A185 – Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
- H. ASTM C33/C33M – Standard Specification for Concrete Aggregates.
- I. ASTM C150/C150M – Standard Specification for Portland Cement.
- J. ASTM C494 – Specification for Chemical Admixtures for Concrete.
- K. FBC – Florida Building Code.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete sidewalk mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For the following, from manufacturer:

1. Cementitious materials.
2. Steel reinforcement and reinforcement accessories.
3. Fiber reinforcement.
4. Admixtures.
5. Curing compounds.
6. Joint fillers.

1.6 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

1.7 FIELD CONDITIONS

- A. Hot-Weather Concrete Placement: Comply with ACI 301 (ACI 301M) and as follows when hot-weather conditions exist:
1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with ACI 301/ 301M unless otherwise indicated.

2.2 FORMS

- A. Form Materials: Plywood or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.3 STEEL REINFORCEMENT

- A. Plain-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, fabricated from galvanized-steel wire into flat sheets.

2.4 CONCRETE MATERIALS

- A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C 150/C 150M
- B. Normal-Weight Aggregates: ASTM C 33/C 33M, uniformly graded. Provide aggregates from a single source.
 - 1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Air-Entraining Admixture: ASTM C 260/C 260M.
- D. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
- E. Water: Potable and complying with ASTM C 94/C 94M.

2.5 FIBER REINFORCEMENT

- A. Synthetic Fiber: Monofilament polypropylene fibers engineered and designed for use in concrete, complying with ASTM C 1116/C 1116M, Type III.

2.6 CURING MATERIALS

- A. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- B. Water: Potable.

2.7 RELATED MATERIALS

- A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.

2.8 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
1. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that comply with or exceed requirements.
- B. Cementitious Materials:
1. Fly Ash or Pozzolan: 25 percent.
 2. Slag Cement: 50 percent.
 3. Combined Fly Ash or Pozzolan, and Slag Cement: 50 percent, with fly ash or pozzolan not exceeding 25 percent.
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
1. Air Content: 2-1/2 percent plus or minus 1-1/2 percent for 1-1/2-inch nominal maximum aggregate size.
- D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- E. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use water-reducing admixture in concrete as required for placement and workability.
 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
- F. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd. (0.60 kg/cu. m).
- G. Concrete Mixtures: Normal-weight concrete.
1. Compressive Strength (28 Days): 3500 psi.
 2. Maximum W/C Ratio at Point of Placement: 0.45.
 3. Slump Limit: 5 inches

2.9 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M. Furnish batch certificates for each batch discharged and used in the Work.
 - 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proof-roll prepared subbase surface below concrete sidewalks to identify soft pockets and areas of excess yielding.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT INSTALLATION

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Install welded-wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
 - 1. When joining existing sidewalks, place transverse joints to align with previously placed joints unless otherwise indicated.
- B. Construction Joints: Set construction joints at locations where sidewalk operations are stopped for more than one-half hour.
 - 1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of sidewalk strips unless otherwise indicated.
 - 2. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
 - 1. Locate expansion joints at intervals of 50 feet on center unless otherwise indicated.
 - 2. Extend joint fillers full width and depth of joint.
 - 3. Place top of joint filler flush with finished concrete surface.
 - 4. Furnish joint fillers in one-piece lengths.
- D. Contraction Joints: Form weakened-plane contraction joints at 10'-0" on center, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness with either method, as follows:
 - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 3/8-inch radius. Repeat grooving of contraction joints after applying surface finishes.
 - a. Tolerance: Ensure that grooved joints are within 3 inches either way from centers of dowels.
 - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
 - a. Tolerance: Ensure that sawed joints are within 3 inches either way from centers of dowels.
- E. Edging: After initial floating, tool edges of sidewalk, gutters, curbs, and joints in concrete with an edging tool to a 3/8-inch radius. Repeat tooling of edges after applying surface finishes.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete formwork installation.

- B. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- C. Comply with ACI 301 (ACI 301M) requirements for measuring, mixing, transporting, and placing concrete.
- D. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.
- E. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- F. Consolidate concrete according to ACI 301 (ACI 301M) by hand spading, rodding, or tamping.
- G. Screed sidewalk surface with a straightedge and strike off.
- H. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- I. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.

3.7 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
 - 1. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

3.8 DETECTABLE WARNING INSTALLATION

- A. Stamped Detectable Warnings: Install stamped detectable warnings as part of a continuous concrete paving placement and according to stamp-mat manufacturer's written instructions.
 - 1. Before using stamp mats, verify that the vent holes are unobstructed.
 - 2. Apply liquid release agent to the concrete surface and the stamp mat.

3. Stamping: While initially finished concrete is plastic, accurately align and place stamp mats in sequence. Uniformly load, gently vibrate, and press mats into concrete to produce imprint pattern on concrete surface. Load and tamp mats directly perpendicular to the stamp-mat surface to prevent distortion in shape of domes. Press and tamp until mortar begins to come through all of the vent holes. Gently remove stamp mats.
4. Remove residual release agent according to manufacturer's written instructions, but no fewer than three days after stamping concrete. High-pressure-wash surface and joint patterns, taking care not to damage stamped concrete. Control, collect, and legally dispose of runoff.

3.9 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete by moisture curing or moisture-retaining-cover curing or a combination of these as follows:
 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period, using cover material and waterproof tape.

3.10 SIDEWALK TOLERANCES

- A. Comply with tolerances in ACI 117 (ACI 117M) and as follows:
 1. Elevation: 3/4 inch.
 2. Thickness: Plus 3/8 inch, minus 1/4 inch.
 3. Joint Spacing: 3 inches.
 4. Contraction Joint Depth: Plus 1/4 inch, no minus.

3.11 REPAIR AND PROTECTION

- A. Remove and replace concrete sidewalk that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.
- B. Protect concrete sidewalk from damage. Exclude traffic from sidewalk for at least 14 days after placement. When construction traffic is permitted, maintain sidewalk as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Maintain concrete sidewalk free of stains, discoloration, dirt, and other foreign material. Sweep sidewalk not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 32 13 13

SECTION 32 17 23 – PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications, and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Section Includes the following:
 - 1. Provide labor, material, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
 - a. Painted markings applied to concrete pavement.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include technical data and tested physical and performance properties.
- B. Shop Drawings:
 - 1. Indicate pavement markings, colors, lane separations, defined parking spaces, accessibility spaces and dimensions to adjacent work.
 - 2. Indicate, with international symbol of accessibility, spaces allocated for people with disabilities.
- C. Samples: For each exposed product and for each color and texture specified; on rigid backing, 8 inches square.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of applicable standards of state and local ordinances and DOT for pavement-marking work.
 - 1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

1.5 PREINSTALLATION MEETINGS

- A. The contractor shall conduct a pre-installation meeting at the project site a minimum of 30 days prior to any work being installed as indicated in this section and other related sections that require coordination with this section.
 - 1. Review methods and procedures related to marking pavement including, but not limited to, the following:
 - a. Pavement aging period before application of pavement markings.
 - b. Review requirements for protecting pavement markings, including restriction of traffic during installation period.

1.6 FIELD CONDITIONS

- A. Environmental Limitations: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for alkyd materials 55 deg F for water-based materials, and not exceeding 95 deg F.

1.7 PERFORMANCE

- A. All work shall conform to the latest edition of the F.D.O.T. Standard Specifications for Road and Bridge Construction – “Section 710 Painting Traffic Strips” and the manual on Uniform Traffic Control Devices.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer shall be one of the following however products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product and acceptance is provided by the Architect in writing prior to bidding.
 - 1. US Specialty Coating
 - 2. Krylon Industries
 - 3. Aervoe Industries, Inc.

2.2 PERFORMANCE REQUIREMENTS

- A. Accessibility Standard: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design".

2.3 PAVEMENT-MARKING PAINT

- A. Pavement-Marking Paint: Alkyd-resin type, lead, and chromate free, ready mixed, complying with AASHTO M 248, colors complying with FS TT-P-1952.

1. Color: White, Yellow, Blue as selected by the Architect.
- B. Pavement-Marking Paint: Latex, waterborne emulsion, lead, and chromate free, ready mixed, complying with FS TT-P-1952, Type II, with drying time of less than [three] [45] minutes.
 1. Color: White, Yellow, Blue as selected by the Architect.
- C. Glass Beads: AASHTO M 247, Type 1 made of 100 percent recycled glass.
 1. Roundness: Minimum 75 percent true spheres by weight.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that pavement is dry and in suitable condition to begin pavement marking according to manufacturer's written instructions.
- B. Proceed with pavement marking only after unsatisfactory conditions have been corrected.

3.2 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Allow paving to age for a minimum of thirty (30) days before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.
 1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to pavement. Mask an extended area beyond edges of each stencil to prevent paint application beyond stencil. Apply paint so that it cannot run beneath stencil.
 2. Broadcast glass beads uniformly into wet markings at a rate of 6 lb/gal.

3.3 PROTECTING AND CLEANING

- A. Protect pavement markings from damage and wear during remainder of construction period.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 32 17 23

SECTION 32 17 28 – PARKING AND TRAFFIC SIGNAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications, and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Section Includes:
 - 1. Provide labor, material, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
 - a. Post-and-panel signs.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For signage.
 - 1. Include fabrication and installation details and attachments to other work.
 - 2. Show sign mounting heights, locations, and accessories.
 - 3. Show message list, typestyles, graphic elements, and layout for each sign at least.
- C. Delegated-Design Submittal: For signs indicated in "Performance Requirements" Article and applicable codes.
 - 1. Include structural analysis calculations for signs indicated to comply with design loads; signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and manufacturer.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.6 FIELD CONDITIONS

- A. Field Measurements: Verify locations of anchorage devices embedded in permanent construction by other installers by field measurements before fabrication and indicate measurements on Shop Drawings.

1.7 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Deterioration of finishes beyond normal weathering.
 - b. Deterioration of embedded graphic image.
 - c. Separation or delamination of sheet materials and components.
 - 2. Warranty Period: Five (5) years from date of Substantial Completion.

1.8 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Signs and supporting elements shall withstand the effects of gravity and other loads within limits and under conditions indicated.
 - 1. Uniform Wind Load: As indicated on Drawings <Insert design load>.
 - 2. Concentrated Horizontal Load: As indicated on Drawings <Insert design load>.
 - 3. Other Design Load: As indicated on Drawings <Insert design load>.
 - 4. Uniform and concentrated loads need not be assumed to act concurrently.
- B. Accessibility Standard: Comply with applicable provisions in ADA Standards for Accessible Design" and Florida Building Code - Accessibility.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Manufacturer and basis of design shall be the following however products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product and acceptance is provided by the Architect in writing prior to bidding.
 - 1. Safety Signs-Brimar Industries
- B. The following manufacturers are acceptable provided they equal or exceed the material requirements and functional qualities of the basis of design product.
 - 1. J.J. Keller & Associates, Inc.
 - 2. Road Traffic Signs

2.2 POST-AND-PANEL SIGNS

- A. Post-and-Panel Sign: Sign of single-panel configuration; with smooth, uniform surfaces and support assembly; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:
 - 1. Solid-Sheet Sign Panels: Aluminum sheet:
 - a. Thickness: 0.080 inch.
 - b. Graphics: Engineering Grade Reflective Finish.
 - 2. Posts: Steel.
 - a. Basis of Design: "Model #Y-3433-B" verify with Architect.
 - b. Shape: U-channel.
 - c. Size: 3 1/16" wide x 1 15/32" deep x 8' - 0" long.
 - d. Installation Method: Direct burial.
 - e. Finish and Color: Green enamel.

2.3 SIGNS

- A. Stop: 24" octagon #Y-1229 red with white letters.
- B. Speed Limit: 12" x 18" vertical Model #Y-1986, white with black letters. Speed as selected by the Architect.
- C. Direction and Miscellaneous Sign: 12" x 18" vertical Model #Y-1253, white with black text. Verbiage as indicated by the Architect.
- D. Handicapped Parking: 12" x 18" vertical Model #T4572, white with blue top and black trim.
- E. Handicapped Fine: 12" x 6" horizontal Model #T4617, white with black trim.
- F. Van Accessible: 12" x 6" horizontal, Model #T4585, blue with white and black trim.

2.4 MATERIALS

- A. Aluminum Sheet and Plate: ASTM B 209 (ASTM B 209M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.
- B. Steel Materials:
 - 1. Bolts for Steel Framing: ASTM A 307 or ASTM A 325 (ASTM A 325M) as necessary for design loads and connection details.

2.5 ACCESSORIES

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following unless otherwise indicated:

1. For exterior exposure, furnish stainless-steel devices unless otherwise indicated.

2.6 FABRICATION

- A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.
- B. Sign Message Panels: Construct sign-panel surfaces to be smooth and to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally from corner to corner.
- C. Post Fabrication: Fabricate posts designed for structural performance indicated and of lengths required for installation method indicated for each sign.
 1. Steel Posts: Fabricate from minimum 0.342" thick, steel tubing unless otherwise indicated. Include post caps, fillers, spacers, junction boxes, access panels, reinforcement where required for loading conditions, and related accessories required for complete installation.
 - a. Hot-dip galvanize post assemblies after fabrication according to ASTM A 123/A 123M.
 2. Direct Burial: Fabricate posts 30 inches longer than height of sign to permit direct burial or embedment in concrete foundations or concrete-filled postholes.

2.7 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Surface Preparation: Remove mill scale and rust, if present, from uncoated steel, and prepare for coating according to coating manufacturer's written instructions.
- D. Factory Enamel Finish: After surface preparation and pretreatment, apply manufacturer's standard finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

3.2 INSTALLATION

- A. General: Install signs using installation methods indicated and according to manufacturer's written instructions.
 - 1. Install signs level, plumb, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
 - 2. Install signs so they do not protrude or obstruct according to the accessibility standard.
 - 3. Before installation, verify that sign components are clean and free of materials or debris that would impair installation.

3.3 INSTALLING POSTS

- A. Vertical Tolerance: Set posts plumb within a tolerance of 1/16 inch in 3 feet.
- B. Direct-Burial Method:
 - 1. Excavation: Excavate posthole to dimensions indicated.
 - 2. Setting in Earth: Set post in position, support to prevent movement, and backfill with satisfactory soil or well-graded aggregate as recommended in writing by manufacturer. Place and compact backfill in 6-inch lifts, compacting each lift.

END OF SECTION 32 17 28

SECTION 32 31 13 - CHAIN LINK FENCES AND GATES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications, and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Section Includes:
 - 1. Provide labor, material, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
 - a. Chain-link fences.
 - b. Security: Padlocks and chains.
 - c. Foundations: Concrete.

1.3 DEFINITION

- A. A fence is defined as a physical or visual barrier between areas. It can be constructed of various materials to perform the function it is designed to do. A physical and visual fence is described in this standard in fences A thru H and can be regimental or architectural. This type of fencing is used to separate areas that have different functions and for security.
- B. A fence or barrier can be made with landscape materials such as ground cover, bushes, trees, and earthen berms. Refer to DGM Standard 02930, Exterior Plants, for materials. This type of fencing will be used in low security areas and for an aesthetic accent to the facility.
- C. It is the intent of Martin County School District to have an “open street” concept at each campus. We also realize that some situations may call for additional security in the form of fencing.

1.4 REFERENCES

- A. ASTM A392 – Standard Specification for Zinc-Coated Steel Chain Link Fence Fabric.
- B. ASTM F567 – Standard Practice for Installation of Chain Link Fence.
- C. ASTM F626 – Standard Specification for Fence Fittings.
- D. ASTM F668 – Standard Specification for Poly Vinyl Chloride (PVC) and Other Organic Polymer-Coated Steel Chain-Link Fence Fabric.
- E. ASTM F1043 – Standard Specification for Strength and Protective Coatings on Steel Industrial Fence Framework.
- F. ASTM F1083 – Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
- G. CLFMA – Standard Guide for Metallic-coated Steel Chain Link Fence & Fabric.
- H. CLFMA – Chain Link Fence Wind Load Guide for the Selection of Line Post and Line Post Spacing.
- I. FBC – Florida Building Code.

1.5 APPLICATION

- A. This Standard designates the areas that receive fencing, gates, and accessories; the heights of the fencing and the materials used at each location.
- B. Fencing and Site requirements for fencing shall comply with Florida Building Code, current edition with supplements.

1.6 FENCE TYPE: A through H

- A. Chain-Link Fabric: Black PVC coated, steel, ASTM F 668
- B. Framework: Black Polymer coated steel
 - 1. Gates: ASTM F 900-05
 - 2. Posts and Rail: ASTM F 1043-06 Material Group 1A and 1C
 - 3. Fence Fittings: ASTM 626-96a
 - 4. Padlocks: Provide as specified in DC 08 71 00 – Door Hardware.
- C. Installation: ASTM F 567-00, Installation of Chain-Link Fences

1.7 SUBMITTALS, GENERAL INSTRUCTIONS, PRODUCT DATA, SHOPDRAWINGS, SAMPLES, CERTIFICATES

- A. Supply product data, details, dimensions, and finishes for the following:
 - 1. Fence and gateposts, rails, and fittings
 - 2. Chain-link fabric, reinforcement, and attachments
 - 3. Gates and hardware
 - 4. Privacy slats (where shown on drawings) (possible at dumpsters)
 - 5. Tension wire
 - 6. Concrete footings
- B. Shop Drawings: Show locations of fence, gates, posts, rails, tension wires, attachments, heights, and finish.
- C. Warranty Requirements: One (1) year from date of Substantial Completion.
- D. Delegated-Design Submittal: For fences and gate framework and footings indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified Florida professional engineer responsible for their preparation

1.8 QUALITY ASSURANCE

- A. Installer Qualifications
 - 1. An experienced installer who has successfully completed chain-link fences and gate projects.
- B. Contractor Qualifications
 - 1. The Contractor shall be licensed in Martin County, Florida to install the work described in this section.
- C. Pre-Construction Surveys/Conferences
 - 1. Contractor shall verify information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures and verify field dimensions before work begins.
- D. Preparation/Field Verification
 - 1. Contractor shall secure information on locations of underground conduits and utility locations before work begins.

2. Do not interrupt utilities serving facilities occupied by the Owner. Repair of interrupted underground conduits and utilities shall be the responsibility of the Contractor.

E. Samples

1. Supply samples for approval for each item listed in paragraph 1.4 Submittals.

1.9 SAFETY PROCEDURES

A. Construction, dealing with School Safety, of fencing shall be done as follows:

1. During hours when school is not occupied by students or in areas that are marked and barricaded as construction areas.
2. Do not interrupt campus operation with fence construction.

B. Construction shall comply with OSHA Standards on safety during construction.

1.10 FENCING PERMIT

- A. A permit for the installation of the fence is necessary and the responsibility of the fencing contractor.

1.11 PERFORMANCE REQUIREMENTS

A. Structural Performance: Chain-link fence and gate framework shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to Florida Building Code and ASCE/SEI 7.

B. Posts and Rails: Comply with ASTM F 1043 for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 or ASTM F 1083 based on the following:

1. Minimum Post Size: Determine according to ASTM F 1043 for framework up to 12 feet high, and post spacing not to exceed 10 feet.
2. Minimum Post Size and Maximum Spacing: Determine according to CLFMI WLG 2445, based on mesh size and pattern specified and on the following:
 - a. Refer to structural drawings for wind load.
 - b. Fence Height: as noted on drawings and specifications.
 - c. Material Group: IA, ASTM F 1043, Schedule 40 steel pipe.

C. Delegated-Design: Provide delegated design services including calculations and shop drawings for fences and gate framework and footings indicated to comply with performance requirements, applicable code requirements and design criteria signed and sealed by an engineer registered in the State of Florida.

1.12 FENCING CONTRACTORS

A. The following vendors are approved vendors for the fencing contractors at MCSD:

1. A GREAT FENCE, I.LC
751 NW Eute1-prise Drive, Unit 105 PSL, FL 34986
PHONE: (772) 812-0223
2. DANIELS FENCE CORP.
2885 SE JEFFERSON STREET, STUART, FL 34997
PHONE: (772) 283-2383

PART 2 – PRODUCT/ SYSTEM

2.1 COMPONENTS: MATERIALS, SIZES, FINISHES

- A. Fabric, posts, gates, & accessories.

2.2 MANUFACTURERS: Chain Link Types A-C

- A. Ameristar
- B. Master – Halco
- C. Stephens Pipe & Steel
- D. Merchant Metals

2.3 MANUFACTURER: Architectural Fence (Type)

- A. Omega II Fence System

2.4 TYPE A Chain-Link Fence

- A. The location of this fence is around the perimeter of a school facility, to be located within 1 foot of the property line. Also, for water retention areas, drainage ditches and canals (in which case a 20'-0" maintenance swath shall be provided between the fence and the water line).
 - 1. Fence height: 6'-0" above grade.
 - 2. Mesh and wire size: 2-inch mesh, .148-inch diameter, steel core, vinyl coated with the top and bottom selvage knuckled. Provide mesh fabricated in one piece width (height).
 - 3. Top and bottom tension wire No. 6 gauge, spring coil vinyl coated.
 - 4. Brace rail: Round, 1-5/8" OD. With 3/8" truss rod.
 - 5. Stretcher bars: 3/16" x 3/4" hot dipped galvanized steel, vinyl coated. One stretcher bar for each gate and end post & two bars for each corner and pull post.
 - 6. Tie Wire: No. 9 gauge vinyl coated steel tie wire.
 - 7. Posts: (Maximum 10'-0" o.c.)
 - a) Terminal; 3" OD, pull post @ 350' max.
 - b) Line; 2 1/2" OD, 10' maximum spacing.
 - 8. Gate or gates: Site specific.
 - 9. Post for swing gates, leafs up to and including 6' wide = 3" OD.
 - a) Over 6' to 12' wide = 4" OD.
 - b) Over 12' to 18' wide = 6 5/8" OD. c) Over 18' = 8 5/8" OD.
 - 10. Hardware
 - a) Hinges: Per ASTM F900-05.
 - b) Latches: Lockable with padlock. Per ASTM F900-05
 - 11. Footing: Concrete 2500 psi, Per ASTM F567
- B. Non-Climb Mini mesh.
 - 1. Fence height: 8'-0" above grade.
 - 2. Mesh and wire size: 1-inch mini mesh/non-climb, .148-inch diameter, steel core, vinyl coated with top and bottom selvage knuckled. Provided mesh fabricated in one piece widths (height).
 - 3. Bottom & Middle tension wire: No. 6 gauge spring coil vinyl coated.
 - 4. Top rail: Round, 1-5/8" OD, located 6" below top of knuckled mesh.
 - 5. Brace rail: Not applicable, n/a.

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6. Stretcher/tension bars: 3/16" x 3/4" hot dipped galvanized steel, vinyl coated. Two stretcher bars for each gate, one stretcher bar each end post, and two stretcher bars for each corner and pull post.
7. Tie wire: No. 9 gauge vinyl coated steel core tie wire.
8. Posts: (Maximum 10'-0" OC)
 - a) Terminal post and End post. Pull post @ 350' LF max.
 - b) Line: 2-1/2" OD sch. 40, 11'-6" length with 10' maximum spacing.
9. Gate or Gates: Not applicable, n/a.
10. Post for swing gates, leaf's up to and including 6' wide – 3" OD.
 - a) Over 6' – 12' wide – 4" OD
 - b) Over 12' – 18' wide – 6-5/8" OD
 - c) Over 18" – 8-5/8" OD.
11. Hardware:
 - a) Hinges: Per ASTM F900-05.
 - b) Latches: Lockable with padlock, Per ASTM F900-05.
 - c) Tamper proof anchors: When required to anchor mini mesh to concrete in a secure manner the use of zinc plated steel or stainless-steel anchors are required. A style similar to Torx-Pin. The use of large diameter washer is also required.
 - d) Tension wire anchors: Earth anchors 15" length min – 3" OD min steel anchor with a min of one flight will be required. Earth anchors will have a closed top for tension wire to be secured. Earth anchors are required between each line post that has a 6'-0" min span or greater. Earth anchors shall be centrally located when practical. Should soil conditions not allow earth anchors to be twisted/turned into soil, the use of concrete is required. Concrete footing to be twice diameter of the anchor and min 15" depth.
12. Footing: Concrete 2500 psi, Per ASTM F567.

2.5 TYPE B Chain-Link Fence

- A. This fence encloses the Kindergarten Tot Lot (Fence is not required at the YouthLot).
 1. Fence height: 4'-0" above grade.
 2. Mesh and wire size: 2-inch mesh, .148 diameters, steel core, vinyl coated with the top and bottom selvage knuckled. Provide mesh fabricated in one-piece width (height).
 3. Top rail: Round, 1-5/8" OD.
 4. Bottom Tension Wire: 6 gauge spring coil vinyl coated.
 5. Stretcher Bars: 3/16" x 3/4" hot dipped galvanized steel, vinyl coated. One stretcher bar for each gate and end post & two bras for each corner and pull post.
 6. Tie wire: No. 9 gauge vinyl coated steel tie wire.
 7. Posts: (Maximum 10'-0" o.c.)
 - a) Terminal; 3" OD.
 - b) Line; 2 1/2" OD.
 8. Gate: Double 4'-0" wide, double swing. Gate shall swing out.
 9. Post for swing gates, leafs up to and including 6' wide = 3" OD.
 10. Hardware:
 - a) Hinges: Per ASTM F900-05.
 - b) Latches: Lockable with padlock. Per ASTM F900-05.
 11. Footing: Concrete 2500 psi, Per ASTM F567
- B. Non-Climb Mini mesh.
 1. Fence height: 8'-0" above grade.

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2. Mesh and wire size: 1-inch mini mesh/non-climb, .148-inch diameter, steel core, vinyl coated with top and bottom selvage knuckled. Provided mesh fabricated in one piece widths (height).
3. Bottom tension wire: No. 6 gauge spring coil vinyl coated.
4. Top rail: Round, 1-5/8" OD, located 6" below top of knuckled mesh.
5. Brace rail: Not applicable, n/a.
6. Stretcher/tension bars: 3/16" x 3/4" hot dipped galvanized steel, vinyl coated. Two stretcher bars for each gate, one stretcher bar each end post, and two stretcher bars for each corner and pull post.
7. Tie wire: No. 9 gauge vinyl coated steel core tie wire.
8. Posts: (Maximum 10'-0" OC)
 - a) Terminal post and End post. Pull post @ 350' LF max.
 - b) Line: 2-1/2" OD sch. 40, 11'-6" length with 10' maximum spacing.
9. Gate or Gates: Not applicable, n/a.
10. Post for swing gates, leaf's up to and including 6' wide – 3" OD.
 - a) Over 6' – 12' wide – 4" OD
 - b) Over 12' – 18' wide – 6-5/8" OD c) Over 18" – 8-5/8" OD.
11. Hardware:
 - a) Hinges: Per ASTM F900-05.
 - b) Latches: Lockable with padlock, Per ASTM F900-05.
 - c) Tamper proof anchors: when required to anchor mini mesh to concrete in a secure manner the use of zinc plated steel or stainless-steel anchors are required. A style similar to Torx-Pin. The use of large diameter washer is also required.
 - d) Tension wire anchors: Earth anchors 15" length min – 3" OD min steel anchor with a min of one flight will be required. Earth anchors will have a closed top for tension wire to be secured. Earth anchors are required between each line post that has a 6'-0" min span or greater. Earth anchors shall be centrally located when practical. Should soil conditions not allow earth anchors to be twisted/turned into soil, the use of concrete is required. Concrete footing to be twice diameter of the anchor and min 15" depth.
12. Footing: Concrete 2500 psi, Per ASTM F567.

2.6 TYPE C Chain-Link Fence

- A. This fence is used to enclose equipment, dumpster, and bicycle rack areas.
 1. Fence height: 6'-0" above grade.
 2. Mesh and wire size: 2-inch mesh, .148 diameter, steel core, vinyl coated with the top and bottom selvage knuckled. Provide mesh fabricated in one-piece width (height).
 3. Top rail: Round, 1-5/8" OD.
 4. Brace rail: Round, 1-5/8" OD with 3/8" truss rod.
 5. Bottom Tension Wire: 6 gauge spring coil vinyl coated.
 6. Stretcher bars: 3/16" x 3/4" hot dipped galvanized steel, vinyl coated. One stretcher bar for each gate and end post & two bars for each corner and pull post.
 7. Tie wire: No. 9 gauge vinyl coated steel tie wire.
 8. Posts: (Maximum 10'-0" o.c.)
 - a) Terminal; 3" OD.
 - b) Line; 2 1/2" OD.
 9. Gate: Bicycle rack: One gate 8' gate (4'-0" double leaf). All gates shall swing out. Gates shall be at opposite ends of enclosure.

10. Gate: Equipment, Dumpster Enclosure: Gate shall be sized for equipment and dumpster repair and removal. Minimum size 4'-0" single leaf. For gates 5'-0" and larger, use double leaf. All gates shall swing out 180 degrees.
 11. Hardware:
 - a) Hinges: Per ASTM F900-05
 - b) Latches: Lockable with padlock. Per ASTM F900-05
 12. Footing: Concrete 2500 psi, Per ASTM F900-05
- B. Non-Climb Mini mesh.
1. Fence height: 8'-0" above grade.
 2. Mesh and wire size: 1-inch mini mesh/non-climb, .148-inch diameter, steel core, vinyl coated with top and bottom selvage knuckled. Provided mesh fabricated in one piece widths (height).
 3. Bottom tension wire: No. 6 gauge spring coil vinyl coated.
 4. Top rail: Round, 1-5/8" OD, located 6" below top of knuckled mesh.
 5. Brace rail: Not applicable, n/a.
 6. Stretcher/tension bars: 3/16" x 3/4" hot dipped galvanized steel, vinyl coated. Two stretcher bars for each gate, one stretcher bar each end post, and two stretcher bars for each corner and pull post.
 7. Tie wire: No. 9 gauge vinyl coated steel core tie wire.
 8. Posts: (Maximum 10'-0" OC)
 - a) Terminal post and End post. Pull post @ 350' LF max.
 - b) Line: 2-1/2" OD sch. 40, 11'-6" length with 10' maximum spacing.
 9. Gate or Gates: Not applicable, n/a.
 10. Post for swing gates, leaf's up to and including 6' wide – 3" OD.
 - a) Over 6' – 12' wide – 4" OD
 - b) Over 12' – 18' wide – 6-5/8" OD c) Over 18" – 8-5/8" OD.
 11. Hardware:
 - a) Hinges: Per ASTM F900-05.
 - b) Latches: Lockable with padlock, Per ASTM F900-05.
 - c) Tamper proof anchors: when required to anchor mini mesh to concrete in a secure manner the use of zinc plated steel or stainless-steel anchors are required. A style similar to Torx-Pin. The use of large diameter washer is also required.
 - d) Tension wire anchors: Earth anchors 15" length min – 3" OD min steel anchor with a min of one flight will be required. Earth anchors will have a closed top for tension wire to be secured. Earth anchors are required between each line post that has a 6'-0" min span or greater. Earth anchors shall be centrally located when practical. Should soil conditions not allow earth anchors to be twisted/turned into soil, the use of concrete is required. Concrete footing to be twice diameter of the anchor and min 15" depth.
 12. Footing: Concrete 2500 psi, Per ASTM F567.

2.7 EGRESS GATE

- A. Egress Latches: Pedestrian gates that are located along a means of egress shall be equipped with panic hardware that allows immediate egress from the site.
 1. The panic hardware operating mechanism shall be equipped with guards that prevent unauthorized operation by individuals outside the school site
 2. Exit Hardware: Rim type exterior grade exit device, Advantex 40xW Series Narrow Stile Weatherized Rim Exit Device as manufactured by Detex Corporation.
 3. Closer: Flush mounted Gate Closer #TB400 as manufactured by Lockey

4. Function: Entrance by trim when latch bolt is released by key or set in a retracted position by key.
5. Mounting Channel: Bent-plate channel formed from 1/8 inch thick, aluminum plate. Channel spans gate frame. Exit device is mounted on channel web, recessed between flanges, with flanges extending 1/8 inch beyond push pad surface.
6. The gate shall be equipped with 0.093" thick perforated aluminum plate of a size and configuration to prevent activation of the panic device from outside the fence enclosure.
7. Manufacture all locking hardware from pressed steel or equivalent materials.
8. Cast iron hardware is not acceptable.

PART 3 – QUALITY ASSURANCE DURING EXECUTION

3.1 PROPER SEQUENCE AND SCHEDULING

- A. Do not begin installation before final grading is completed.

3.2 INSTALLATION PROCEDURES/ADJUSTMENT PROCEDURES

- A. Installation of chain-link fencing shall comply with:
 1. ASTM 567
 2. Florida Building Code, current edition w/ supplements
 3. Martin County, Florida, and local codes
- B. Installation instructions and procedures of Architectural fencing shall be by fencing Manufacturer. Spikes in the fabric shall be down.

3.3 SAFETY REQUIREMENTS FOR INSTALLATION

- A. Fencing shall be installed in accordance with OSHA Standards.

3.4 PROTECTION DURING CONSTRUCTION

- A. Care and protection of the construction site shall be made by the contractor to assure that there is no access by students, teachers, or visitors at the facility.

END OF SECTION

SECTION 32 31 15 – GATE OPERATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications, and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Section Includes:
 - 1. Provide labor, material, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
 - a. Swing, gate operators.
 - b. Horizontal-slide, gate operators.

1.3 ACTION SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
 - 1. Gate operators, including operating instructions and motor characteristics.
- B. Shop Drawings: Gate Operator: Show locations and details for installing operator components, switches, and controls. Indicate motor size, electrical characteristics, drive arrangement, mounting, and grounding provisions. Wiring Diagrams: For power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of gate operator.
- B. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For gate operators to include in emergency, operation, and maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Emergency Access Requirements: According to requirements of authorities having jurisdiction for gates with automatic gate operators serving as a required means of access.

1.7 FIELD CONDITIONS

- A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.8 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure to comply with performance requirements.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - c. Faulty operation of gate operators and controls.
 - 2. Operator Warranty Period: Five (5) years from date of Substantial Completion.
 - 3. Access Control Warranty Period: Two (2) years from date of Substantial Completion.

1.9 PERFORMANCE REQUIREMENTS

- A. Lightning Protection System: Maximum resistance-to-ground value of 25 ohms at each grounding location along fence under normal dry conditions.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Manufacturer and basis of design shall be the following however products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product and acceptance is provided by the architect in writing prior to bidding.
 - 1. Lift Master
- B. The following manufacturers are acceptable provided they equal or exceed the material requirements and functional qualities of the basis of design product.
 - 1. Aleko Products
 - 2. Apollo Gate Operators

2.2 GATE OPERATORS GENERAL

- A. Operators: Factory-assembled, automatic, gate-operating system designed for gate size, type, weight, and frequency of use. Control system shall have characteristics suitable for Project conditions, with control stations, safety devices, and weatherproof enclosures.

1. Operator design shall allow for removal of cover or motor without disturbing limit-switch adjustment and without affecting auxiliary emergency operation.
 2. Electronic components shall have built-in troubleshooting diagnostic feature.
 3. Unit shall be designed and wired for both right-hand/left-hand opening, permitting universal installation.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. UL Standard: Manufacture and label gate operators according to UL 325.

2.3 SWING GATE OPERATORS

- A. Basis of Design: "Model 500DC".
- B. Gate Operators: Single Actuator Arm, Full length commercial housing corrosion resistant aluminum with Molecular bonded self-lubricating drive screw.
1. LA500CONTUL Control Box for single or master/second application.
 2. Compliance: UL Listed. Compliant to the UL 325, UL 991 and CSA C22.2 No. 247 standards.
 - a. Model is intended for use in Class I, II, III, and IV vehicular swing gate applications.
 3. Monitored Safety Inputs: 3 inputs per board (main board and expansion board) totaling 6 inputs with any combination of up to:
 - a. Main Board:
 - 1) 1 Monitored Close Photo Eye input
 - 2) 1 Monitored Open Photo Eye input
 - 3) 1 Monitored Open Safety Edge or Open Photo Eye input
 - b. Expansion Board
 - 1) 2 Monitored Safety Edge or Photo Eye inputs (selectable for Open or Close).
 - 2) 1 Monitored Photo Eye input (selectable for Open or Close).
 - c. 8 Monitored edges available when Transceiver is added.
 4. Electrical Power Requirements:
 - a. 230V AC, single phase.
 5. Motor: 24V DC, with soft start/stop operation.
 - a. Duty cycle: Continuous duty.
 6. Recommended Cycles per Day: 300.
 7. Gate Travel Speed: 90-degree opening in 15 to 18 seconds.
 8. Wormgear Reduction: Precision machined metal gears contained in lubrication housing.
 9. Battery Backup: Power Management system draws 14.8 mA when gate is idle. Provides 500 cycles on Battery Backup with two 7 Ah batteries with remote controls programmed.
 10. Standby Time: Provides up to 24 days of standby power in the event of a power loss (excluding accessories).
 11. Accessory Electrical Power Requirements: 24V DC 500 mA output, switched and unswitched power.
 12. Chassis: Commercial-duty die cast aluminum housing.

13. Inherent Reversing Sensor: Detects obstructions or increased loads. Reverses gate when closing or stops/reverses the gate when opening.
14. Electronic Limits: Maintains accurate limit position throughout travel, even after using the manual release handle.
15. LED Diagnostic Display: Simplifies installation and troubleshooting.
16. Colored Terminal Blocks: Provides easy identification of safety and fire department inputs.
17. Programmable Auxiliary Relays: 2 programmable relays with 6 settings each
 - a. Pre-warning or gate-in-motion sounder.
 - b. Switch on/off devices at open or Close Limits or while gate is in motion.
 - c. Tamper detection if gate is pushed off Close Limit.
 - d. Cycle quantity feedback.
 - e. Red/Green light to control gate traffic.
18. Quick Close, Anti-Tailgate: Quickly secures property, preventing unauthorized access.
19. Sequenced Access Management: Capable of sequentially controlling the operator in tandem with barrier gate.
20. Plug-in Loop Detector Inputs: Programmed inputs for shadow, interrupt, and exit.
21. Alarm Reset Button: Instantly resets the built-in safety alarm siren.
22. Fire Department Compliant: Selectable settings allow gate to auto open on power failure or battery depletion.
23. Surge Suppression: Industrial strength on high and low voltage outputs. Protects against lightning strikes at a 50-foot radius.
24. Emergency Release: Simple-to-use keyed release handle allows gate to be operated manually and maintain limit position once re-engaged.
25. Chassis: Commercial-duty die cast aluminum housing.
26. Operating Temperature Range: -4 degrees F to 140 degrees F.
27. MyQ Enabled Accessories:
 - a. LiftMaster 828LM Internet Gateway: Allows remote monitoring from Internet-enabled computer or smartphone.
28. Accessories: Safety Monitoring Devices:
 - a. Monitored Photo Eyes and Wireless Edge Kits.
 - 1) LiftMaster LMRRUL Reflective Photo Eyes.
 - b. Wired Monitored Edges (all require use of LMWEKITU)
 - 1) LiftMaster S Small Profile Monitored Edge

2.4 HORIZONTAL SLIDING GATE OPERATORS

A. Basis of Design: "Model CSL24UL"

B. Gate Operators:

1. Compliance: UL Listed. Compliant to the UL 325, UL 991, and CSA C22.2 No. 247 standards.
 - a. This model is intended for use in Class I, II, III, and IV vehicular slide gate applications.
2. Monitored Safety Inputs: 3 inputs per board (main board and expansion board) totaling 6 inputs with any combination of up to:
 - a. Main Board:
 - 1) 1 Monitored Close Photo Eye input

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- 2) 1 Monitored Open Photo Eye input
- 3) 1 Monitored Open Safety Edge or Open Photo Eye input
- b. Expansion Board
 - 1) 2 Monitored Safety Edge or Photo Eye inputs (selectable for Open or Close).
 - 2) 1 Monitored Photo Eye input (selectable for Open or Close).
- c. 8 Monitored edges available when Transceiver is added.
3. Electrical Power Requirements:
 - a. 230V AC, single phase.
4. Motor: 24V DC, with soft start/stop operation.
 - a. Duty cycle: Continuous duty.
5. Capacity: 50-foot gate at 1,500 pounds.
6. Recommended Cycles per Day: Continuous duty.
7. Gate Travel Speed: 12 inches per second.
8. Warranty: 5 years for commercial applications, 7 years for single-home applications.
9. Wormgear Reduction: Commercial oil bath gearbox with 10:1 wormgear reduction running in synthetic oil bath.
10. Battery Backup: Power Management system draws 14.8 mA when gate is idle with remote controls programmed. Provides 208 cycles on Battery Backup with two 7 Ah batteries or 1179 cycles with two 33 Ah batteries.
11. Standby Time: Provides up to 24 days of standby power in the event of a power loss with two 7 Ah batteries or 105 days with two 33 Ah batteries (excluding accessories).
12. Solar Capable: See daily solar cycle chart.
13. Accessory Electrical Power Requirements: 24V DC 500 mA output, switched and unswitched power.
14. Chassis: Constructed with 1/4 inch (6mm) gold zinc-plated steel for rust prevention.
15. Cover: High-density, UV-resistant polycarbonate two-piece cover.
16. Internet Connectivity: MyQ Technology
 - a. 902 to 928 MHz
 - b. 50-channel FHSS (Frequency Hopping Spread Spectrum).
 - c. LiftMaster 828LM Internet Gateway enables monitoring and control of gate operators via internet-enabled smartphone, tablet, or computer.
 - d. Provides two-way communication between gate operator and MyQ accessories to enable remote open, close, and monitoring of gate.
17. Receiver:
 - a. Security+ 2.0 3-channel on-board receiver, holds up to 50 remote controls (unlimited with use of 811LM/813LM), HomeLink compatible
 - b. Transmits 310 MHz, 315 MHz, 390 MHz.
18. Inherent Reversing Sensor: Detects obstructions or increased loads. Reverses gate when closing or stops/reverses the gate when opening.
19. Electronic Limits: Maintains accurate limit position throughout travel, even after using the manual disconnect.
20. PosiLock: Automatically powers the operator and returns a gate to the closed position when gate is pushed off of its closed limits.
21. LED Diagnostic Display: Simplifies installation and troubleshooting.
22. Colored Terminal Blocks: Provides easy identification of safety and fire department inputs.
23. Programmable Auxiliary Relays: 2 programmable relays with 6 settings each.
 - a. Pre-warning or gate-in-motion sounder.
 - b. Switch on/off devices at open or Close Limits or while gate is in motion.

- c. Tamper detection if gate is pushed off Close Limit.
- d. Cycle quantity feedback.
- e. Red/Green light to control gate traffic.
- 24. Quick Close, Anti-Tailgate: Quickly secures property, preventing unauthorized access.
- 25. Sequenced Access Management: Capable of sequentially controlling the operator in tandem with barrier gate.
- 26. Plug-in Loop Detector Inputs: Programmed inputs for shadow, interrupt, and exit.
- 27. Alarm Reset Button: Instantly resets the built-in safety alarm siren.
- 28. Fire Department Compliant: Selectable settings allow gate to auto open on power failure or battery depletion.
- 29. Surge Suppression: Industrial strength on high and low voltage outputs. Protects against lightning strikes at a 50-foot (15240 mm) radius.
- 30. Keyed Manual Disconnect: Simple-to-use disconnect allows gate to be operated manually and maintain limit position once re-engaged.
- 31. Operating Temperature Range: -4 degrees F to 140 degrees F.
- 32. MyQ enabled Accessories:
 - a. LiftMaster 828LM Internet Gateway: Allows remote monitoring from internet-enabled computer or smartphone.
- 33. Accessories: Safety Monitoring Devices:
 - a. Monitored Photo Eyes and Wireless Edge Kits.
 - 1) LiftMaster LMRRUL Reflective Photo Eyes.
 - b. Wired Monitored Edges (all require use of LMWEKITU)
 - 1) LiftMaster S50 Small Profile Monitored Edge
- 34. Accessories: Provide the accessories listed below.
 - a. LiftMaster LOOPDETLM Plug-in Loop Detector

2.5 ACCESS CONTROL SYSTEMS (PROVIDE FOR EACH GATE)

- A. Basis of Design: “Model KPR2000”
- B. Single Entry Access Keypad and Proximity Reader:
 - 1. Performance:
 - a. Operating Voltage: 12V to 24V DC.
 - b. Current Draw: 25 mA idle; 60 mA peak.
 - c. Proximity Card Reader: HID 26-bit and 30-bit Wiegand format.
 - d. Industry standard 125 kHz.
 - e. Read Range – Proximity: 1 to 2-1/2 inches.
 - f. Weatherization: Meets or exceeds IP68.
 - g. Operating Temperature: -4 degrees F to 140 degrees F.
 - h. Operating Humidity: 10% to 90% non-condensing.
 - 2. Construction: Zinc-alloy enclosure.
 - 3. Dimensions: Surface mount, 5 inches H x 3-1/5 inches W x 1-1/10 inches D).
 - 4. Standard Features:
 - a. Stand-alone controller and pass-through mode.
 - b. Selectable ASCII keypad mode, or 26-bit card keypad mode.
 - c. Controls access for up to 2,000 users (card only, card or PIN, card and PIN).
 - d. Integrated alarm buzzer.
 - e. Additional alarm output (20A).

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- f. Rugged vandal-resistant backlit metal enclosure.
 - g. One programmable relay output (2A, form A).
 - h. Timed or latch mode to hold door/gate open (1 to 99 second timer).
 - i. Supports second keypad configuration for in and out same door or gate.
 - j. Block enrollment capability.
 - k. Program cards included for rapid programming.
 - l. Anti-tamper alarm (1 to 3 minute timer).
5. Accessories:
- a. Low-Profile Access Pedestal (LiftMaster Model PED42).
 - b. Trim Plate Kit (LiftMaster Model 142A0271) Decorative trim piece for face plate. Powder coated finish-black
 - c. 12V DC, 2A Power Supply (LiftMaster Model PS12D2A).
 - d. HID 26-Bit Proximity Card, or Key Fob, 100 required.

2.6 TELEPHONE ENTRY CONTROL SYSTEMS (ONE SYSTEM TO BE USED FOR THE TWO GATES)

A. Basis of Design: Model EL”

B. Light Commercial Telephone Entry Control System:

- 1. Base Unit Includes E-Z Scan:
 - a. Wiegand Input Module: Allows addition of card readers, remote keypads and Passport receiver.
- 2. Memory Chip Capacity: 2,000 users; programmable as directory codes, access codes and cards.
- 3. Standard Features:
 - a. Remote Access Diagnostics: Unit will record the following alarms: Forced door/gate, door/gate ajar, unit over/under voltage.
 - b. Voice Prompts: Push-button provides ADA-compliant voice prompts for end users.
 - c. Line Noise Tolerance: Enhanced telephone connection to unit via modem.
 - d. Legacy Database Conversion: Versa XS 4.0 software allows transfer of information from existing Sentex system to new Sentex system.
 - e. Programming: Versa XS 4.0 software allows control programming through modem, unit keypad or direct laptop connection.
 - f. Controllable System Relays: 4 independent relays can be set to activate doors/gates; can function as strike, control, shunt, alarm or CCTV relays. Activation time between 1 and 300 seconds.
 - g. Call Forwarding: System will dial a pre-programmed telephone number when the tenant is not at the monitored location. Access can be granted or denied from remote location. Call forwarding can be programmed manually as needed or time-activated to occur at scheduled intervals.
 - h. Call Waiting: Resident can answer an access call from a visitor while in the middle of another outside call. Resident can answer an outside call if on an access call.
 - i. Illuminated keypad.
 - j. Non-Volatile Memory: In event of power failure, database information is retained in memory allowing immediate start-up and operation when power is restored.

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- k. Separate Call Button: Initiates phone call to resident.
 - l. Distinctive Ringing: Unique double ring on resident's telephone to distinguish between a standard call and an access request call.
 - m. Entry Codes: Codes can be time-restricted or established as one-time-use only.
 - n. Holiday Programming: Maximum of 16 holidays can be defined to override the pre-defined lock/unlock schedules.
 - o. Time Zones: Software manages up to 62 separate time zones with 3 segments each for access/no access schedules.
 - p. Anti-Passback: Waits for pre-programmed period of time before code or card can be reused.
 - q. Transaction Monitoring: Maximum of 4,000 transactions (date, time, unit ID and transaction) stored in unit are retrievable for record of on-site activities.
 - r. Battery backed clock/calendar including daylight savings and leap years.
 - s. Automatic Gate/Door Unlock Schedule: Main or auxiliary access points can be programmed to open at pre-defined times.
 - t. Security Lockout: Locks out all users for a programmable period of time if several invalid code attempts are made.
 - u. Alarm Calling: System dials pre-defined telephone number to notify security personnel of the alarm condition if door/gate is forced open or held open too long.
 - v. Remote Updates: Software updates accomplished through remote computer and modem connection.
 - w. Do Not Disturb: Assignable on tenant-by-tenant basis when programmed manually through touch-tone telephone or by a pre-programmed schedule.
 - x. Lightning Protection: Installer shall provide external surge suppressors in addition to surge protection inherent in the entry system.
 - y. Auto Sensor Input: Programmable to automatically dial the residence when a vehicle approaches the property.
- 4. Exit Reader: Provides reader for true anti-passback operation.
 - 5. Camera: Integrates camera into system to provide live video directly to television or monitor screen.
 - a. Color low-lux camera compatible with DVRs.
 - 6. Commercial Receiver and Remote Access Control: LiftMaster PPWR Passport Credential Radio Control Receiver.
 - a. Receiver: LiftMaster PPWR Passport Receiver with Security+ 2.0.
 - b. Standard Receiver Features:
 - c. Security+ 2.0 Technology provides enhanced radio range.
 - d. Compatible with HomeLink wireless control system.
 - e. Supports standard 26-bit, 31-bit, 34-bit even and odd, 50-bit and Sentex 30-bit proximity card formats.
 - f. Designed for outdoor environments.
 - g. Duplicate memory module included that may be removed for programming additional receivers or for safe storage.
 - h. 12,000 remote capacity.
 - i. 9-inch (229 mm) antenna.
 - j. Standard Wiegand output interface.
 - 7. Power: 12V to 24V DC.
 - 8. Enclosure: Surface-mount, vandal-resistant plastic and weather-resistant enclosure. 6 inches H x 4-1/8 inches W x 1-7/8 inches D.
 - a. Operating Temperature: -40 degrees F to 149 degrees F.
 - 9. Power: 12V AC at 0.75A max.

10. Enclosure: Vandal-resistant.
 - a. Color: Gray.
11. Mount: LiftMaster PED42 Pedestal; 42 inches pad mount, 2 inches H x 2 inches W square black powder-coated pedestal.

2.7 GROUT AND ANCHORING CEMENT

- A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout, recommended in writing by manufacturer, for exterior applications.
- B. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating, and that is recommended in writing by manufacturer for exterior applications.

2.8 GROUNDING MATERIALS

- A. Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."
- B. Connectors and Grounding Rods: Listed and labeled for complying with UL 467.
 1. Connectors for Below-Grade Use: Exothermic welded type.
 2. Grounding Rods: Copper-clad steel, 5/8 by 96 inches.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 GATE-OPERATOR INSTALLATION

- A. Install gate operators according to manufacturer's written instructions, aligned and true to fence line and grade.
- B. Excavation: Hand-excavate holes for posts, pedestals, and equipment bases/pads, in firm, undisturbed soil to dimensions and depths and at locations according to gate-operator component manufacturer's written instructions and as indicated.
- C. Vehicle Loop Detector System: Cut grooves in pavement, bury, and seal wire loop according to manufacturer's written instructions. Connect to equipment operated by detector.

- D. Ground electric-powered motors, controls, and other devices according to NFPA 70 and manufacturer's written instructions.

3.3 ACCESS CONTROL AND TELEPHONE CONTROL SYSTEM INSTALLATION

- A. Install in accordance with manufacturer's instructions including but not limited to the following:
 - 1. Mount directly to concrete pad, firmly secured, plumb and level.
 - 2. Mount to mounting pedestal; provide base plate.
 - 3. Wire in accordance with National Electric Code.
 - 4. Enclose all splices in easily accessible junction boxes or on terminal boards.
 - 5. Tag and identify all cable runs in all junction boxes.
- B. Test system and adjust to assure components and accessories are properly connected and in working order.
- C. Wiring shall be in accordance with national electric codes and manufacturer's instructions. Make conduit and wiring connections to existing gate and door hardware devices as required.

3.4 GROUNDING AND BONDING

- A. Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."
- B. Fence and Gate Grounding:
 - 1. Ground for fence and fence posts shall be a separate system from ground for gate and gate posts.
 - 2. Install ground rods and connections at gate locations.
 - 3. Ground fence on each side of gates.
 - a. Bond metal gates to gate posts.
- C. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at grounding location.
 - 1. Make grounding connections to each barbed wire strand with wire-to-wire connectors designed for this purpose.
 - 2. Make grounding connections to each barbed tape coil with connectors designed for this purpose.
- D. Connections:
 - 1. Make connections with clean, bare metal at points of contact.
 - 2. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
 - 3. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
 - 4. Make above-grade ground connections with mechanical fasteners.

5. Make below-grade ground connections with exothermic welds.
 6. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.
- E. Bonding to Lightning Protection System: Ground fence and bond fence grounding conductor to lightning protection down conductor or lightning protection grounding conductor according to NFPA 780.

3.5 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Automatic Gate Operator: Energize circuits to electrical equipment and devices, start units, and verify proper motor rotation and unit operation.
1. Hydraulic Operator: Purge operating system, adjust pressure and fluid levels, and check for leaks.
 2. Test and adjust operators, controls, alarms, and safety devices. Replace damaged and malfunctioning controls and equipment.
 3. Lubricate operator and related components.
- C. Lubricate hardware and other moving parts.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain chain-link fences and gates.

END OF SECTION 32 31 15

SECTION 32 31 24 – DECORATIVE STEEL DUMPSTER GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications, and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SUMMARY

- A. Section Includes:
 - 1. Provide labor, material, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
 - a. Steel swing gates (dumpster).

1.3 REFERENCE

- A. ASTM A36/A36M – Standard Specification for Carbon Structural Steel.
- B. ASTM A53 – Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-coated Welded and Seamless.
- C. ASTM A123/A123M – Standard Specification for Zinc (Hot-Galvanized) Coatings on Iron and Steel Products.
- D. ASTM A153/A153M – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- E. ASTM A283 – Carbon Steel Plates, Shapes, and Bars.
- F. ASTM A307 – Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
- G. ASTM A500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes.
- H. ASTM A501 – Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
- I. ASTM A488 – Standard Practice for Steel Castings, Welding, Qualifications of Procedures and Personnel.
- J. ASTM A563 – Standard Specification for Carbon and Alloy Steel Nuts.
- K. ASTM A593 – Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
- L. ASTM A594 – Standard Specification for Stainless Steel Nuts.
- M. ASTM F2408 – Ornamental Fences Employing Galvanized Steel Tubular Pickets; 2011.
- N. AWS – Structural Welding Code.
- O. AWS A2.4 – Standard Symbols for Welding, Brazing, Nondestructive Examination.
- P. SSPC – Steel Structure Painting Council - Steel Structures Painting Council.
- Q. FBC – Florida Building Code.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For gates. Include plans, elevations, sections, details, and attachments to other work.
- C. Samples: For each material and for each color specified.
 - 1. Provide samples 12 inches in length for linear materials.
- D. Welding certificates.
- E. Delegated-Design Submittal: For gate framework and footings indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified Florida professional engineer responsible for their preparation.

1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Provide products from a firm that makes the indicated products as a regular production item and with not less than five (5) years experience.
- B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation of specified materials and assemblies with not less than three (3) years experience.

1.6 WARRANTY

- A. Manufacturer shall warranty paint finish for a period of ten (10) years.

1.7 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Gate framework shall withstand the effects of gravity loads and the loads and stresses within limits and under conditions indicated according to Florida Building Code and ASCE/SEI 7.
 - 1. Refer to structural drawings for wind load.
- B. Delegated-Design: Provide delegated design services including calculations and shop drawings for gate framework and footings indicated to comply with performance requirements, applicable code requirements and design criteria signed and sealed by an engineer registered in the State of Florida.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer shall be the following however products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product and acceptance is provided by the Architect in writing prior to bidding.

1. Ornamental Design Ironwork, Inc.

2.2 GATES

- A. Gates: Complete factory-fabricated system of posts and panels, accessories, fittings, and fasteners; finished with electrodeposition coating, and having the following performance characteristics:

1. Capable of resisting vertical load, horizontal load and infill performance requirements for fence categories defined in ASTM F2408.

2.3 MATERIAL

- A. Ferrous Metal

1. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
2. Steel Tubing: ASTM A 500, cold-formed steel tubing.
3. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40) unless otherwise indicated.

- B. Fasteners: ASTM A276/A276M, Type 302 stainless steel; finished to match gate components.

2.4 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

1. For steel, provide type as recommended by producer of metal to be welded and as required for strength and compatibility in fabricated items.

- B. Concrete: Normal-weight, air-entrained, ready-mix concrete complying with requirements in Division 3 Section "Cast-in-Place Concrete" with a minimum 28-day compressive strength of 3000 psi (20 MPa), 3-inch slump, and 1-inch maximum aggregate size.

- C. Non-shrink, Nonmetallic Grout: Premixed, factory-packaged, non-staining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.

- D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M, formulated for 30-mil thickness per coat.

2.5 DUMPSTER SWING GATES

- A. Gate Configuration: As indicated on drawings
- B. Post and Sleeve: 5" diameter post with 6" diameter sleeve, Schedule 80 minimum.
- C. Steel Frames and Bracing: Fabricate members from square extruded tubes 2" by 2" square with 0.125-inch wall thickness minimum.
- D. Frame Corner Construction: Fully welded mitered corners.
- E. Slats: 2-3/8" width industrial type vinyl slats which are flat tubular plastic with three center support sections.
- F. Picket Size: Fabricate members from square extruded tubes 1" by 1" square with 0.083-inch wall thickness.
- G. Cane Bolts: Provide for inactive leaf of pairs of gates. Fabricated from 3/4-inch diameter, round steel bars, hot-dip galvanized after fabrication. Finish to match gates. Provide galvanized-steel pipe strikes to receive cane bolts in both open and closed positions. Provide steel sleeves cast in 12" diameter x 12" deep concrete pad to receive cane bolts.

2.6 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Non-shrink, Nonmetallic Grout: Premixed, factory-packaged, non-staining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.
- C. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M, formulated for 30-mil thickness per coat.

2.7 FINISHES

- A. Aluminum Steel: Hot-dip galvanize all items to comply with ASTM A 123/A 123M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products
- B. Finish: Baked-Enamel or Powder-Coated Finish: Minimum dry film thickness of 1.2 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

1. Color: As selected by the Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, construction layout, and other conditions affecting performance of the Work.
- B. Do not begin installation before final grading is completed unless otherwise permitted by Architect.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of gates and posts.

3.3 INSTALLATION

- A. Install according to manufacturer's written instructions.
- B. Install setting posts as indicated and fastening rails and infill panels to posts. Peen threads of bolts after assembly to prevent removal.
- C. Post Excavation: Drill or hand-excavate holes for posts in firm, undisturbed soil. Excavate holes to a diameter of not less than 4 times post size and a depth of not less than 24 inches plus 3 inches for each foot or fraction of a foot that gate height exceeds 4 feet.
- D. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 2. Concrete Fill: Place concrete around posts and sleeves and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - a. Place top 4 inches below grade to allow covering with inches below grade to allow covering with surface material. Slope top surface of concrete to drain water away from post.
 3. Posts Set into Voids in Concrete: Form or core drill holes not less than 3/4 inch larger than outside diagonal dimension of post.
 - a. Extend posts at least 5 inches into concrete.
 - b. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink grout, mixed and placed to comply with grout manufacturer's written instructions. Finish and slope top surface of grout to drain water away from post.

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- E. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

3.4 CLEANING

- A. Clean jobsite of excess materials; scatter excess material from post hole excavations uniformly away from posts. Remove excess material if required.
- B. Clean with mild household detergent and clean water rinse well.

3.5 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

END OF SECTION 32 31 23

PURCHASING/MAINTENANCE/TRANSPORTATION DEPARTMENT

ENHANCED SECURITY PROJECT A2

MARTIN COUNTY SCHOOL DISTRICT

100% CONSTRUCTION DOCUMENTS SUBMITTAL

ARCHITECTURAL DESIGN CONSULTANT:

HARVARD JOLLY ARCHITECTURE

2047 VISTA PARKWAY, SUITE 100
WEST PALM BEACH, FL 33411
PHONE: 561-478-4457

MECHANICAL, PLUMBING & ELECTRICAL ENGINEER:

JLRD INC. ENGINEERS

1450 CENTREPARK BLVD - SUITE 350
WEST PALM BEACH, FLORIDA 33401
PHONE: 561-689-2303

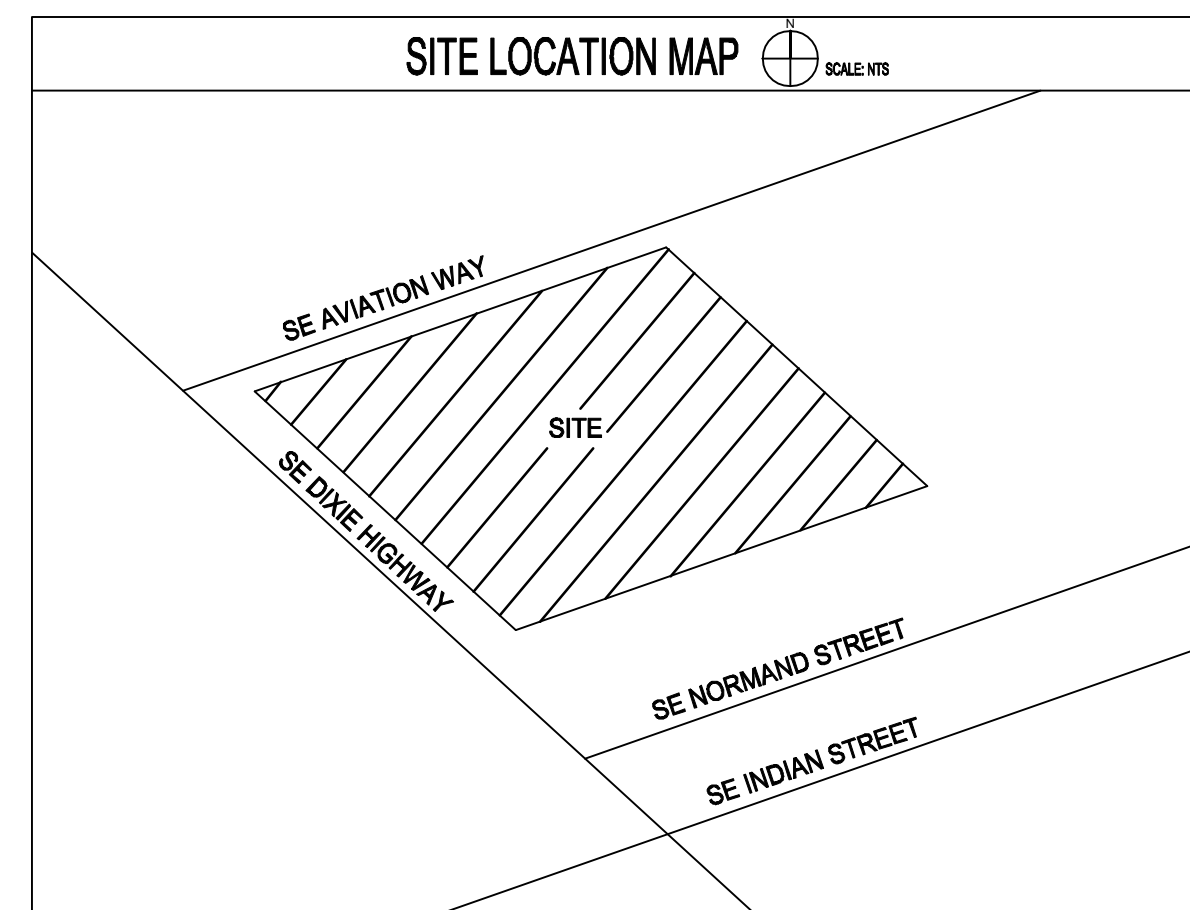
BOARD MEMBERS:

MARSHA POWERS
TONY ANDERSON
CHRISTIA LI ROBERTS
VICTORIA DEFENTHALER
MICHAEL DITERLIZZI

DR. JOHN D. MILLAY

CHAIR
VICE CHAIR
MEMBER
MEMBER
MEMBER

SUPERINTENDENT



PROJECT NARRATIVE

THIS PROJECT INCLUDES THE SECURITY ENHANCEMENT AT THE PURCHASING/ MAINTENANCE/ TRANSPORTATION DEPARTMENT BUILDINGS LOCATED WITHIN THE MARTIN COUNTY SCHOOL DISTRICT. THE SECURITY ENHANCEMENTS CONSIST OF THE INSTALLATION OF PERIMETER ANTI-CLIMBING FENCING, RELOCATION AND INSTALLATION OF VEHICULAR AND PEDESTRIAN GATES, A NEW ROADWAY ACCESS WITHIN THE SITE, IMPROVED LIGHTING THROUGHOUT THE SITE, CALL BOXES AND CARD READERS AS SHOWN, AND THE RELOCATION OF THE DUMPSTER ENCLOSURE. THE INSTALLATION OF THE SCOPE OF WORK SHALL BE IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS SET FORTH IN THESE DOCUMENTS, FROM DIRECTION GIVEN FROM THE MARTIN COUNTY SCHOOL DISTRICT AND PER MANUFACTURERS RECOMMENDED INSTALLATION REQUIREMENTS. ALL AREAS, REGARDLESS OF LOCATION, WILL BE REQUIRED TO BE REPAIRED IF DISTURBED BY THE INSTALLATION OF THE SCOPE OF WORK. CONTRACTOR TO REVIEW ALL AS-BUILT DOCUMENTS BEFORE COMMENCING CONSTRUCTION AND VISIT THE SITE TO RECOGNIZE THE AREAS WITHIN THE SCOPE OF WORK. DO NOT SCALE DRAWINGS.

ALL NEW CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE MARTIN COUNTY SCHOOL DISTRICT STANDARDS, APPLICABLE CODES AND AUTHORITY HAVING JURISDICTION. THIS INCLUDES THE REQUIREMENTS OF SREF, THE 2020 FLORIDA BUILDING CODE SEVENTH EDITION AND THE FLORIDA FIRE PREVENTION CODE.

ARCHITECT'S STATEMENT OF COMPLIANCE:
TO THE BEST OF OUR KNOWLEDGE, THESE DRAWINGS AND THE PROJECT MANUAL ARE COMPLETE AND COMPLY WITH THE MINIMUM REQUIREMENTS OF THE 2020 FLORIDA BUILDING CODE SEVENTH EDITION.

SHEET NO.	TITLE	ORIGINAL DATE	REVISION NO.	LATEST REVISION DATE
ARCHITECTURAL				
G-001	COVER SHEET & INDEX	12/15/2021		
AD-101	DEMOLITION SITE PLAN	12/15/2021		
A-101	PROPOSED SITE PLAN	12/15/2021		
A-102	PARTIAL SITE PLAN & DETAILS	12/15/2021		
A-103	SITE DETAILS	12/15/2021		
ELECTRICAL				
E-001	ELECTRICAL NOTES & LEGEND	12/15/2021		
E-101	ELECTRICAL SECURITY PLAN - OVERALL	12/15/2021		
E-201	ENLARGED ELECTRICAL PLAN	12/15/2021		
E-202	ENLARGED ELECTRICAL PLAN	12/15/2021		
E-203	ENLARGED ELECTRICAL PLAN	12/15/2021		
E-301	ELECTRICAL SCHEDULES AND PANELS	12/15/2021		
E-302	ELECTRICAL RISERS	12/15/2021		
E-303	ELECTRICAL DETAILS	12/15/2021		

Comm. No: 16025.12

Date: 12/15/2021

Drawn: MFH

Revisions		
No.	Date	Note

TO THE BEST OF MY KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE MINIMUM BUILDING CODES.

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COVER SHEET
& INDEX

G-001

GENERAL NOTES

- PRIOR TO BIDDING THE CONTRACTOR AND SUBCONTRACTORS SHALL VISIT THE FACILITY AND THOROUGHLY FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS. NO CLAIMS FOR ADDITIONAL WORK DUE TO UNFORESEEN CONDITIONS WILL BE CONSIDERED. THIS INCLUDES ALL SITE WORK, EQUIPMENT AND INFRASTRUCTURE AS REQUIRED TO PREPARE FOR NEW CONSTRUCTION. DRAWINGS SHALL NOT BE SCALED.
- SCHEDULE DEMOLITION WORK WITHIN FACILITY ADMINISTRATION AND DISTRICT MANAGEMENT TO MINIMIZE DISRUPTION OF SERVICES. PROVIDE PHASED SEQUENCE OF WORK NOT TO DISTURB FULL ACCESS TO THE OCCUPIED FACILITY TO REMAIN. FINAL LOGISTICS TO BE REVIEWED WITH DISTRICT FOR COORDINATION WITH ON-SITE SERVICES.
- SPECIFIC DEMOLITION NOTES ARE NOT TO BE CONSIDERED ALL INCLUSIVE OR COMPLETE IN THEMSELVES. CONTRACTOR SHALL PROVIDE ALL DEMOLITION INCIDENTAL TO OR REQUIRED FOR NEW AND RENOVATED CONSTRUCTION WHETHER SPECIFICALLY NOTED. INCLUDING BUT NOT LIMITED TO, REMOVAL OF EXISTING PAVEMENT, SIDEWALKS, FENCING, GATES, POSTS, PLANTING MATERIALS, ETC.
- CONSTRUCTION LIMITS - SOME ITEMS OF DEMOLITION MAY REQUIRE ACCESS IN AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. PROPER COORDINATION AND NOTIFICATION OF THE OWNER SHALL BE REQUIRED PRIOR TO PERFORMING SUCH

- WORK. DEMOLITION WORK - CARRY OUT DEMOLITION WORK TO CAUSE AS LITTLE INCONVENIENCE TO ADJACENT OCCUPIED BUILDING AREAS AS POSSIBLE. DEMOLISH IN AN ORDERLY AND CAREFUL MANNER AS REQUIRED TO ACCOMMODATE NEW WORK. PERFORM DEMOLITION IN ACCORDANCE WITH APPLICABLE AUTHORITIES HAVING JURISDICTION. TAKE CARE TO PREVENT DAMAGE AND EXCESSIVE NOISE OR VIBRATION SO AS TO NOT DISTURB ADJACENT AREAS. ANY OPERATION THAT MAY CAUSE DISTURBANCE TO THE OWNER SHALL BE COORDINATED WITH THE OWNER A MINIMUM OF ONE (1) WEEK IN ADVANCE. SEE CONSULTANT DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.
- PROTECTION - EXERCISE CARE DURING WORK TO PROTECT INTERIOR AND EXTERIOR EXISTING CONSTRUCTION TO REMAIN. REPAIR TO EXISTING CONSTRUCTION DUE TO DAMAGE SHALL BE DONE AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL IMMEDIATELY REPORT ANY HAZARDOUS OR TOXIC MATERIALS DISCOVERED TO ARCHITECT, OWNER AND AUTHORITIES HAVING JURISDICTION.
- WHERE EXISTING SERVICES SUCH AS PLUMBING, ELECTRICAL, GAS, ETC. ARE AFFECTED BY DEMOLITION WORK THE SERVICES SHALL BE REMOVED TO A POINT WHERE THEY CAN BE CAPPED AND TERMINATED UNLESS OTHERWISE SHOWN ON THE DRAWINGS OF THE SPECIFIC DISCIPLINE AFFECTED.

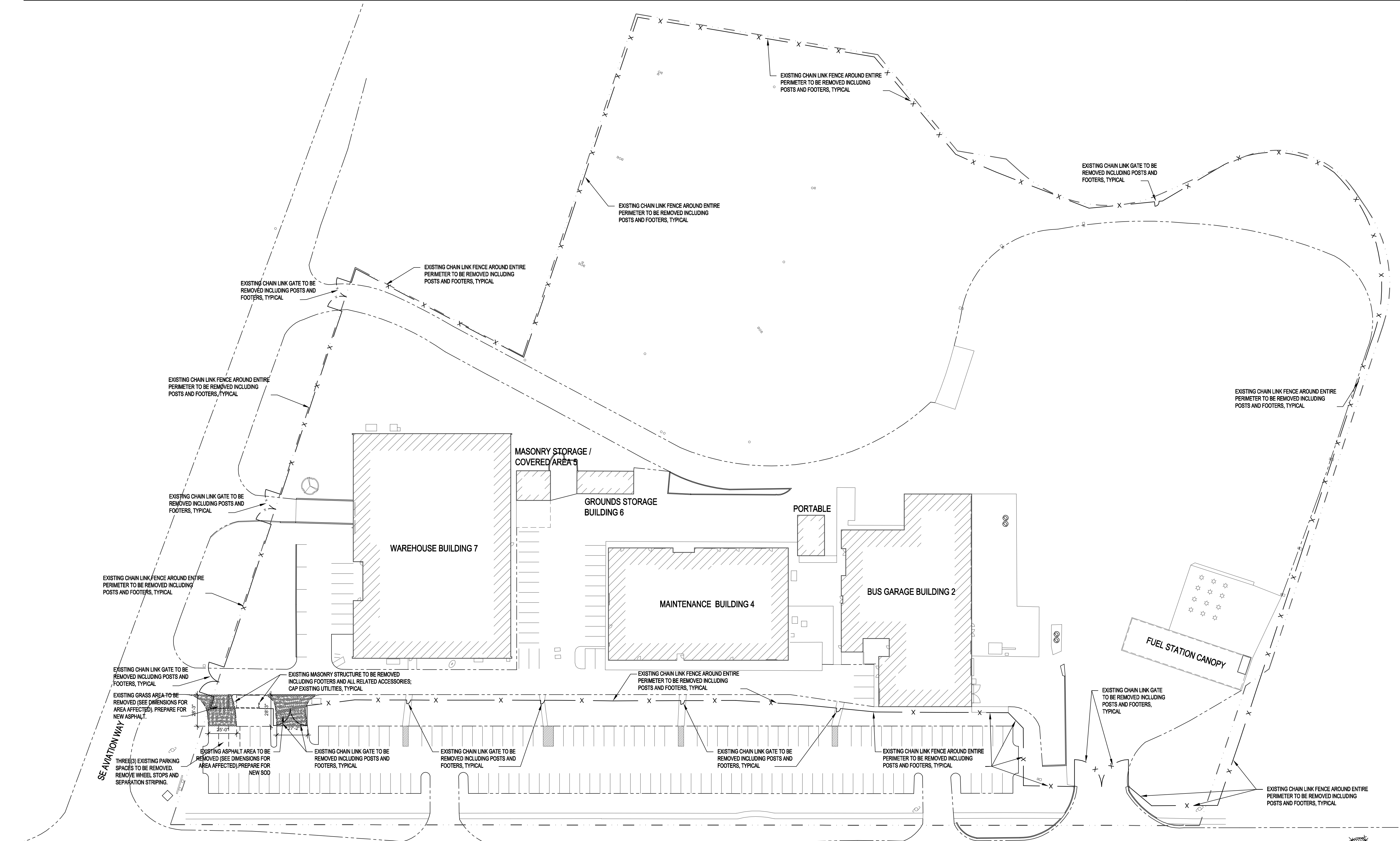
- CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF WORK OF OTHER TRADES SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER. REFER TO OTHER DISCIPLINE DRAWINGS FOR ADDITIONAL INFORMATION.
- ALL MATERIALS REMOVED UNDER THIS CONTRACT, WHICH ARE NOT TO BE SALVAGED OR REUSED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE. TO CONVEY MATERIALS, USE MOVEABLE, COVERED, DEBRIS BOXES. DO NOT STORE/PERMIT DEBRIS TO ACCUMULATE ON SITE.
- ANY MATERIALS SPECIFIED TO BE REUSED BY THE OWNER SHALL BE CAREFULLY REMOVED, PROTECTED AND STORED AT THE OWNER'S DIRECTION.
- AFTER THE DEMOLITION OF MATERIALS, THE RESULTING EXPOSED SURFACES SHALL BE SMOOTH AND FLUSH WITH THE EXISTING CONDITIONS. PATCH, REPAIR AND REPLACE SURFACES AS REQUIRED.
- BUILDING EXIT ACCESS AND ALL LIFE SAFETY DEVICES SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE AREAS DESIGNATED AS OCCUPIED DURING THE CONSTRUCTION PERIOD.
- SEQUENCE FOR FENCE REMOVAL AND REPLACEMENT TO BE COORDINATED WITH

- DISTRICT IN ORDER TO MAINTAIN SECURITY OF THE SITE AT ALL TIMES. PROVIDE TEMPORARY SIGNAGE TO SEPARATE SITE ACCESS FROM OCCUPIED FACILITY AND CONSTRUCTION PERSONNEL. SIGNAGE TO BE CLEARLY VISIBLE FROM ACCESS POINTS ON CAMPUS.
- PROVIDE FOR CONSTRUCTION FENCE TO SECURELY SEPARATE OCCUPIED FACILITY FROM BALANCE OF THE CAMPUS. GENERAL CONTRACTOR TO PROVIDE STAGING PLAN FOR APPROVAL BY THE DISTRICT.
- PROTECT EXISTING TREES WITH TRUNK DIAMETER OF 6" AND LARGER, INCLUDING ROOTS, WHETHER THEY ARE IDENTIFIED AS EXISTING TO REMAIN OR NOT.
- CONTRACTOR IS RESPONSIBLE FOR THE REPAIR OF ANY EXISTING LAWN AREAS, SIDEWALKS, DRIVEWAYS, PARKING LOTS, ETC. DISTURBED DURING THE CONSTRUCTION PROCESS.
- CONTRACTOR SHALL COORDINATE WITH DISTRICT PERSONNEL PRIOR TO THE REMOVAL/CUTTING/TRIMMING OF EXISTING LANDSCAPE ALONG THE FENCE PERIMETER REQUIRED FOR THE REMOVAL AND INSTALLATION OF THE FENCE.
- THE SCOPE OF WORK IS TO TAKE PLACE ON AN OCCUPIED AND ACTIVE CAMPUS. ALL PERSONNEL WORKING ON-SITE WITH THIS PROJECT MUST HAVE, WEAR AND DISPLAY A MARTIN COUNTY SCHOOL DISTRICT BADGE. CONTRACTOR/VENDOR

- MUST APPLY AT THE DISTRICT AND PAY FOR ALL BADGE ASSOCIATED COSTS. CONSTRUCTION PERSONNEL SHALL BE CONFINED TO THE LIMITS OF CONSTRUCTION AREA.
- THE CONTRACTOR SHALL NOTIFY SUNSHINE STATE ONE (1-800-432-4770) A MINIMUM OF 48 HOURS IN ADVANCE OF COMMENCING WORK TO HAVE AREA SCANNED FOR UNDERGROUND PIPING.
- CONTRACTOR TO COORDINATE AREAS OF PAVEMENT/CONCRETE TRENCHING WITH ELECTRICAL DRAWINGS AND MINIMIZE IMPACT AND DISRUPTION TO SCHOOL PERSONNEL. COORDINATE PARKING LOT/DRIVE LANES/SIDEWALK CLOSURES WITH DISTRICT AND SCHOOL STAFF A MINIMUM OF 72 HOURS PRIOR TO DISRUPTION.

LEGEND

- EXISTING PROPERTY LINE
- - - - - EXISTING CHAINLINK FENCE
- - - - - NEW 8'-0" HIGH ANTI-CLIMBING CHAIN LINK FENCE, BLACK VINYL COATED



01 DEMOLITION SITE PLAN
SCALE: 1" = 40'-0"

Comm. No: 16025.12
Date: 12/15/2021
Drawn: MFH

Revisions		
No.	Date	Note

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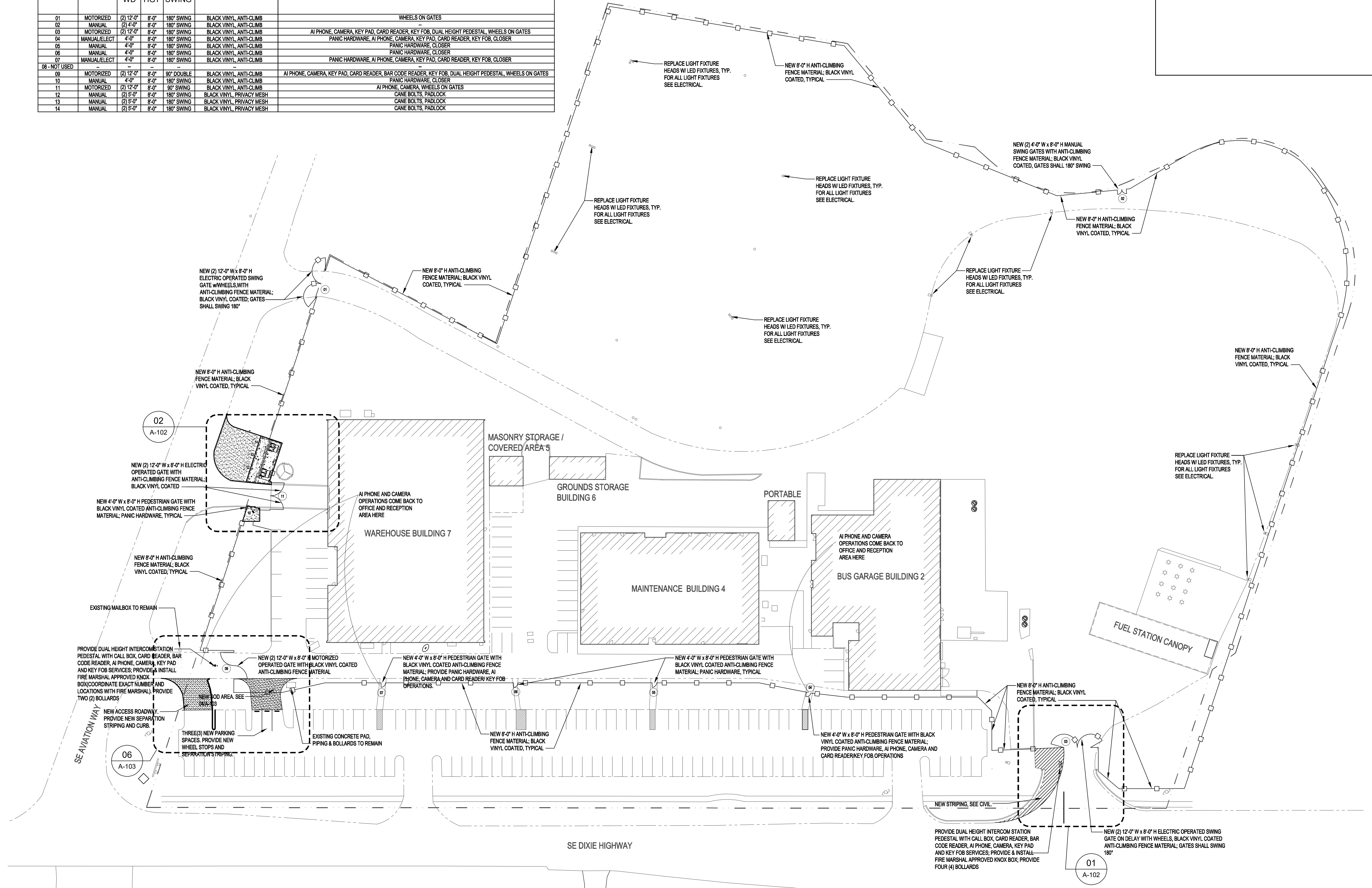
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DEMOLITION SITE PLAN

NUMBER	TYPE	GATE			MATERIAL	NOTES
		SIZE		SWING		
		WD	HGT			
01	MOTORIZED	(2) 12'-0"	8'-0"	180° SWING	BLACK VINYL ANTI-CLIMB	WHEELS ON GATES
02	MANUAL	(2) 4'-0"	8'-0"	180° SWING	BLACK VINYL ANTI-CLIMB	AI PHONE, CAMERA, KEY PAD, CARD READER, KEY FOB, DUAL HEIGHT PEDESTAL, WHEELS ON GATES
03	MOTORIZED	(2) 12'-0"	8'-0"	180° SWING	BLACK VINYL ANTI-CLIMB	PANIC HARDWARE, AI PHONE, CAMERA, KEY PAD, CARD READER, KEY FOB, CLOSER
04	MANUAL/ELECT	4'-0"	8'-0"	180° SWING	BLACK VINYL ANTI-CLIMB	PANIC HARDWARE, CLOSER
05	MANUAL	4'-0"	8'-0"	180° SWING	BLACK VINYL ANTI-CLIMB	PANIC HARDWARE, AI PHONE, CAMERA, KEY PAD, CARD READER, KEY FOB, CLOSER
06	MANUAL	4'-0"	8'-0"	180° SWING	BLACK VINYL ANTI-CLIMB	PANIC HARDWARE, CLOSER
07	MANUAL/ELECT	4'-0"	8'-0"	180° SWING	BLACK VINYL ANTI-CLIMB	PANIC HARDWARE, AI PHONE, CAMERA, KEY PAD, CARD READER, KEY FOB, CLOSER
08	NOT USED	--	--	--	--	--
09	MOTORIZED	(2) 12'-0"	8'-0"	90° DOUBLE	BLACK VINYL ANTI-CLIMB	AI PHONE, CAMERA, KEY PAD, CARD READER, BAR CODE READER, KEY FOB, DUAL HEIGHT PEDESTAL, WHEELS ON GATES
10	MANUAL	4'-0"	8'-0"	180° SWING	BLACK VINYL ANTI-CLIMB	PANIC HARDWARE, CLOSER
11	MOTORIZED	(2) 12'-0"	8'-0"	90° SWING	BLACK VINYL ANTI-CLIMB	AI PHONE, CAMERA, WHEELS ON GATES
12	MANUAL	(2) 5'-0"	8'-0"	180° SWING	BLACK VINYL, PRIVACY MESH	CANE BOLTS, PADLOCK
13	MANUAL	(2) 5'-0"	8'-0"	180° SWING	BLACK VINYL, PRIVACY MESH	CANE BOLTS, PADLOCK
14	MANUAL	(2) 5'-0"	8'-0"	180° SWING	BLACK VINYL, PRIVACY MESH	CANE BOLTS, PADLOCK

LEGEND

- EXISTING PROPERTY LINE
- - - - - EXISTING CHAINLINK FENCE
- - - - - NEW 8'-0" HIGH ANTI-CLIMBING CHAIN LINK FENCE, BLACK VINYL COATED



01 PROPOSED SITE PLAN
SCALE: 1" = 40'-0"

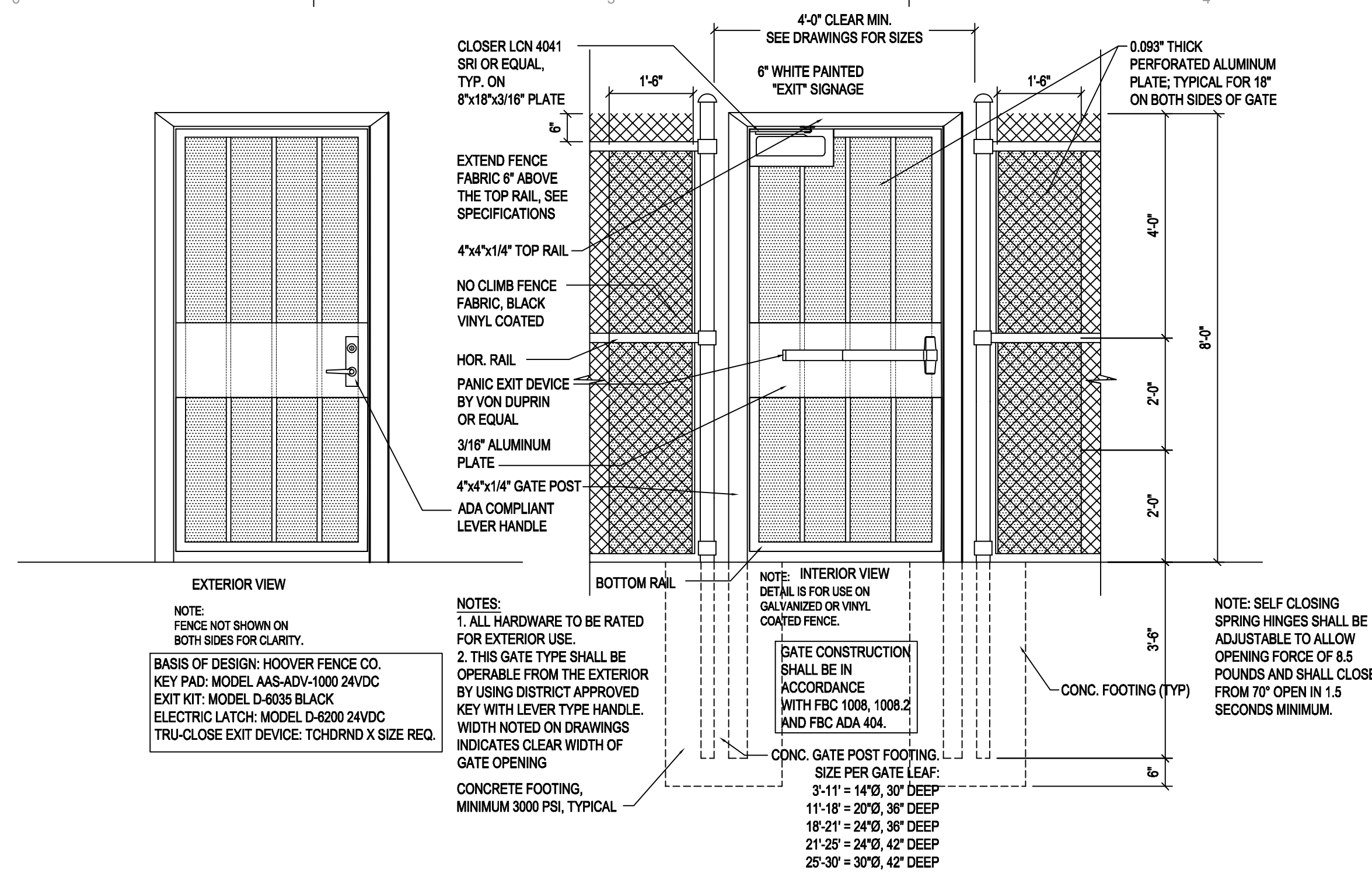
Purchasing/Maintenance/Transportation Dept.
Enhanced Security Project A2
Martin County School District
2845 SE Dixie Highway, Stuart, Florida 34994
100% Construction Documents

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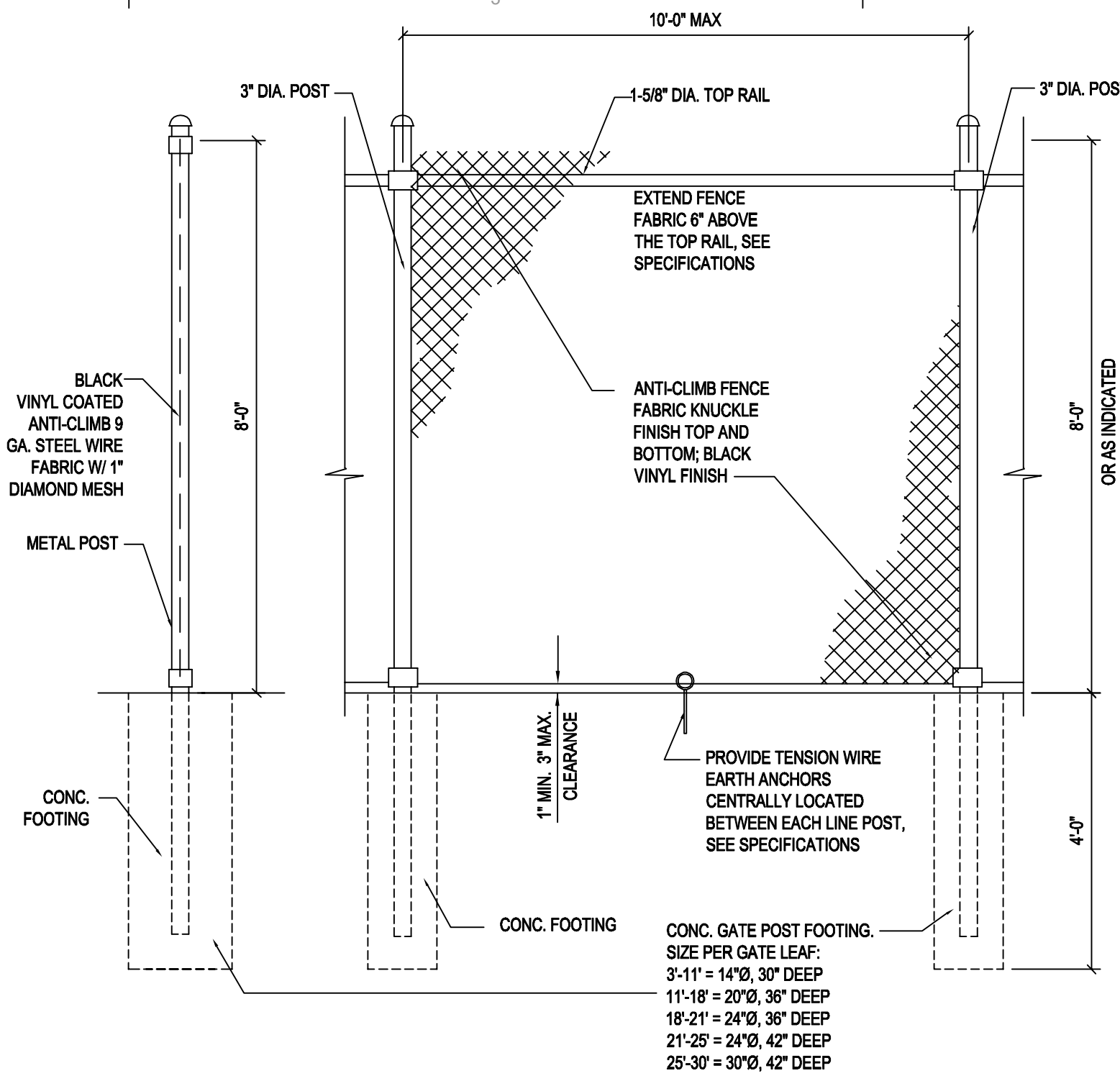
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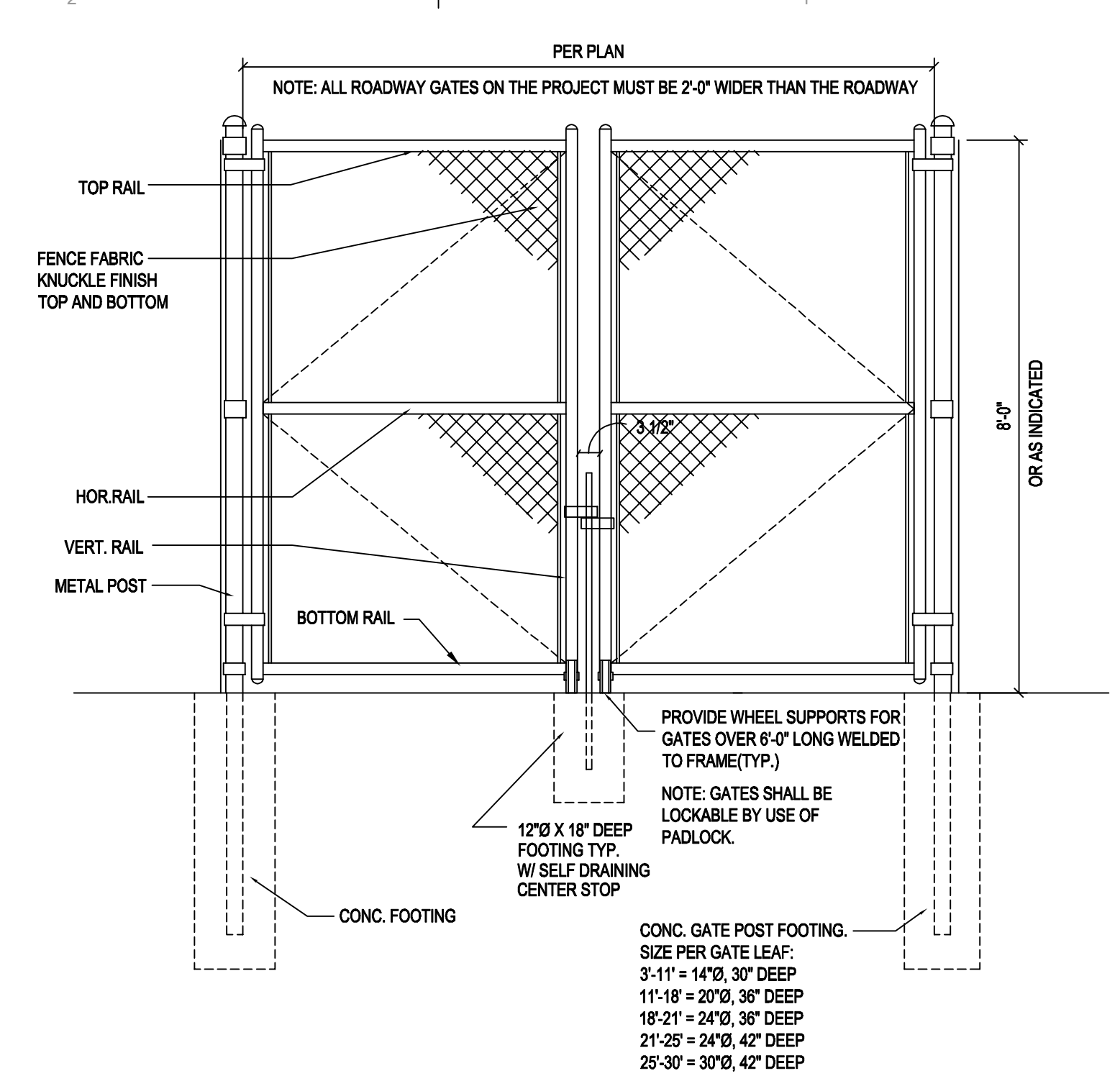
PROPOSED SITE PLAN



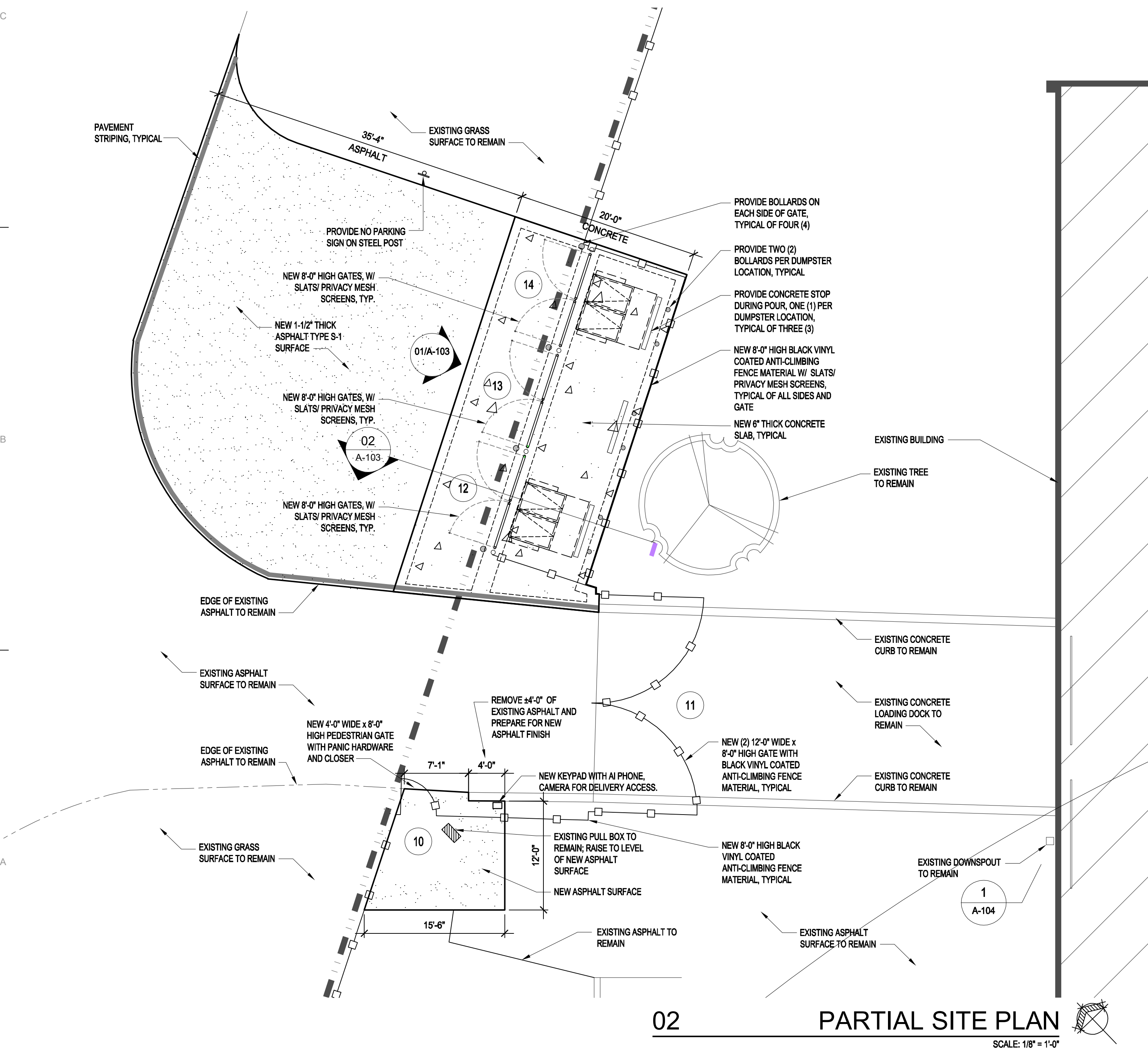
06 TYPICAL PANIC GATE DETAIL
SCALE: 1/2" = 1'-0"



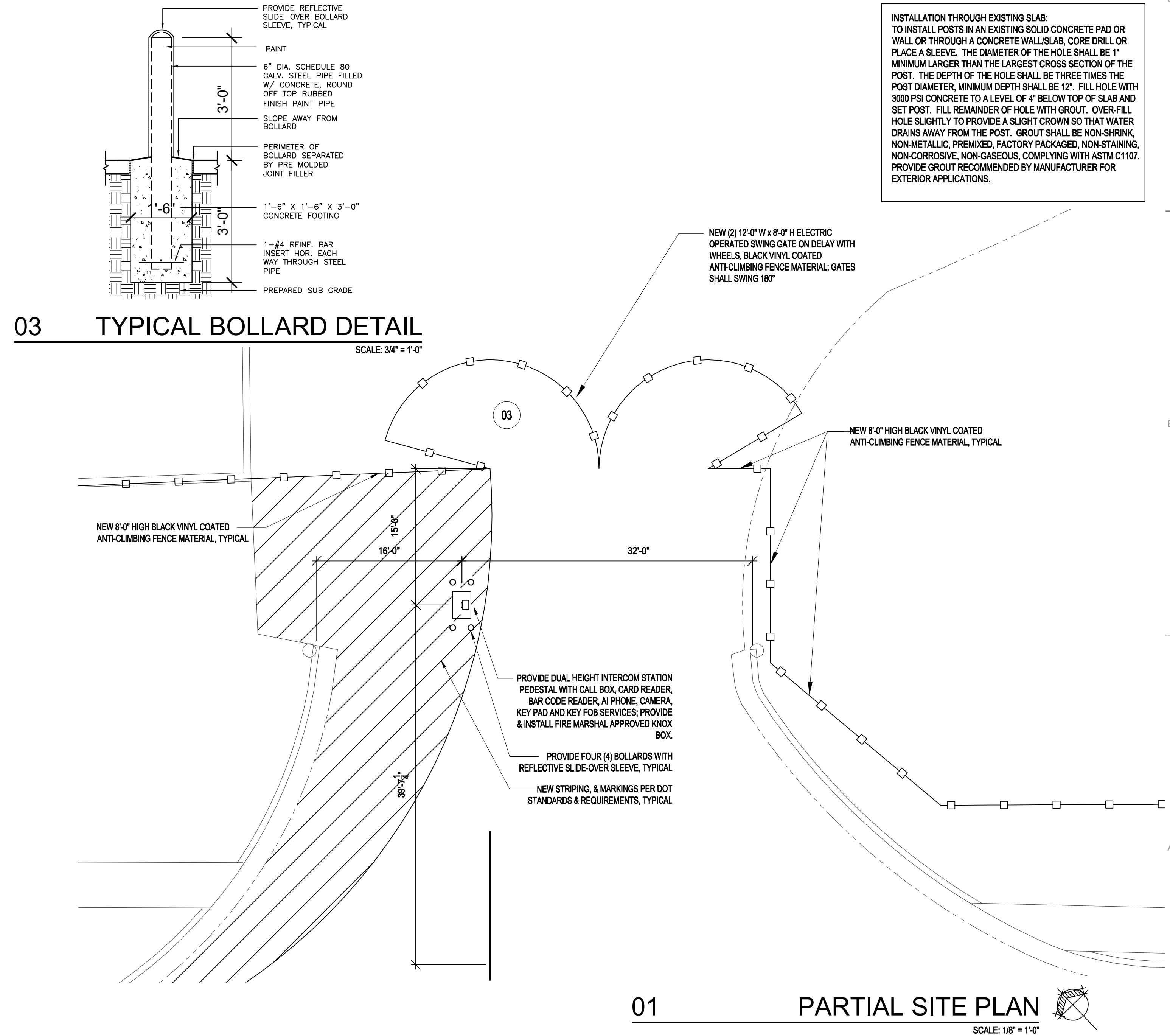
05 TYPICAL CHAIN LINK FENCE DETAIL
SCALE: 1/2" = 1'-0"



04 TYPICAL CHAIN LINK PAIR OF GATES DETAIL
SCALE: 1/2" = 1'-0"



02 PARTIAL SITE PLAN
SCALE: 1/8" = 1'-0"



01 PARTIAL SITE PLAN
SCALE: 1/8" = 1'-0"

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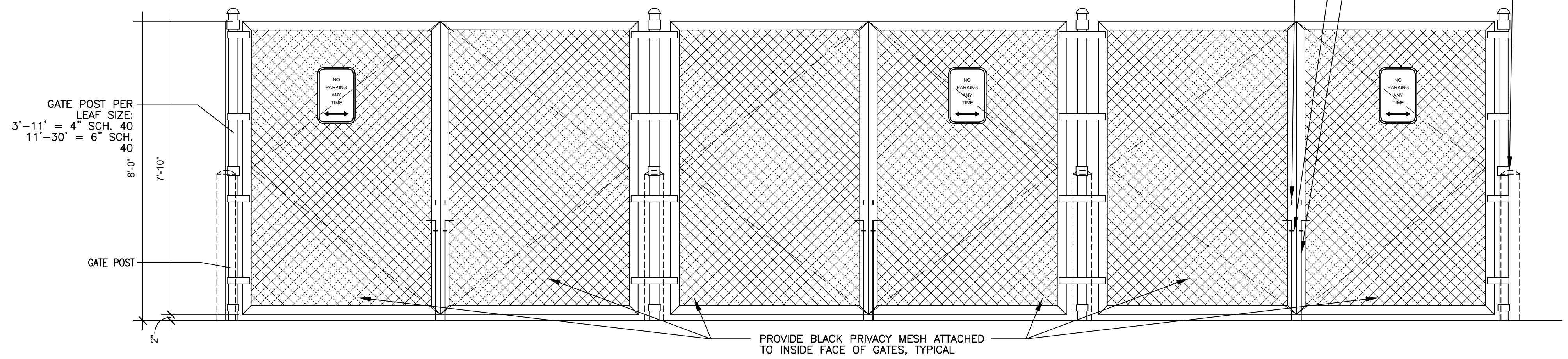
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PARTIAL
SITE PLAN &
DETAILS

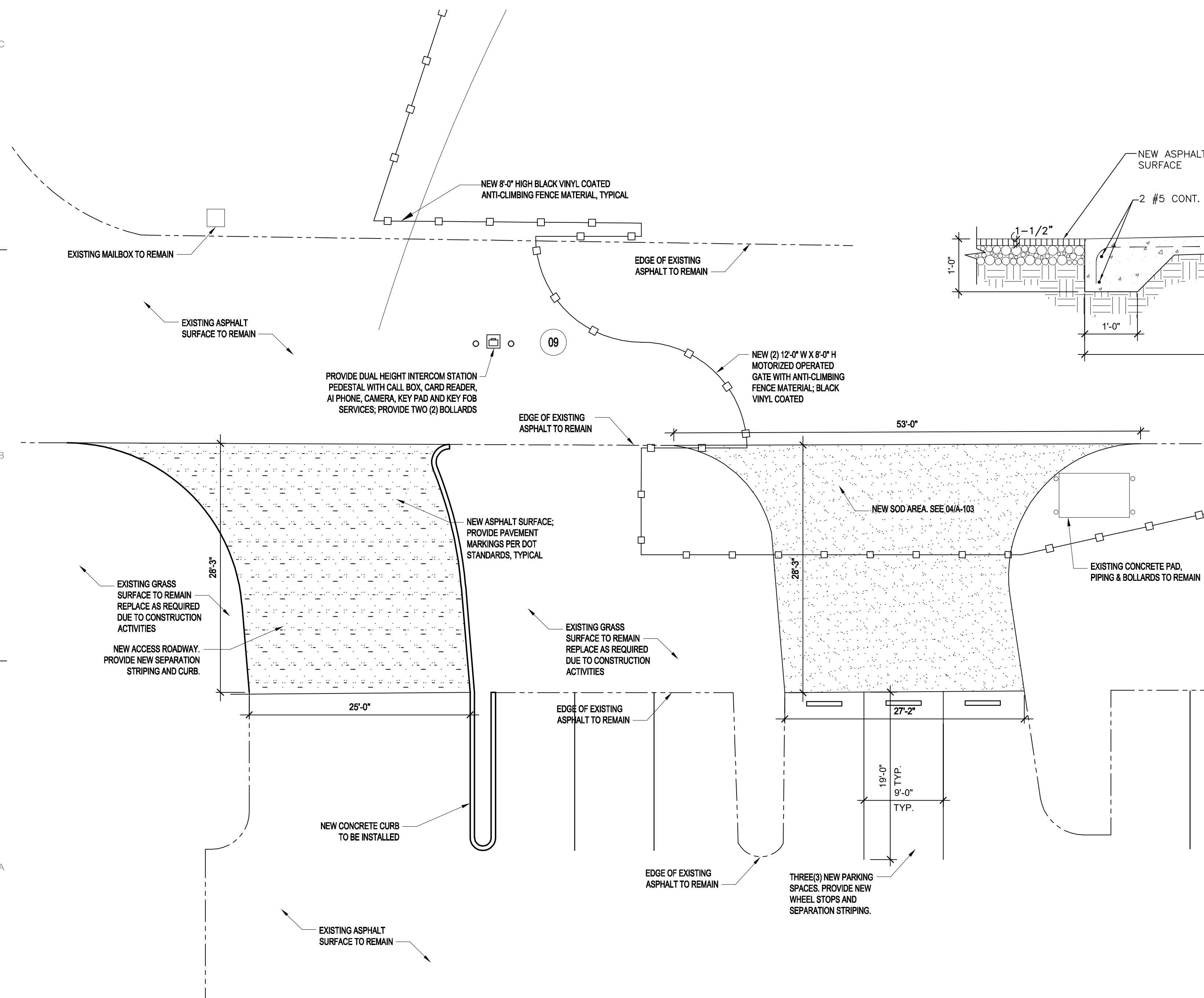
SIZE OF A SINGLE GATE SECTION (1)		NOMINAL PIPE SIZE (2,4)		MINIMUM FOUNDATION DIMENSIONS (3)	
				DIAMETER	DEPTH
3'	TO	11'	3-1/2"	14"	30"
11'-1"	TO	18'	6"	20"	36"
18'-1"	TO	21'	6"	24"	36"
21'-1"	TO	25'	6"	24"	42"
25'-1"	TO	30'	6"	30"	42"

FOOTNOTES:
 (1) A GATE WITH A 22 FOOT TOTAL WIDTH WOULD HAVE TWO, SINGLE SECTIONS, EACH 11' WIDE.
 (2) THE GATE POST EXTENDS TO WITHIN 3" OF THE FOUNDATION BOTTOM.
 (3) UNLESS OTHERWISE NOTED ON THE PLANS FOR A SPECIFIC GATE.
 (4) ALL GATEPOSTS SHALL BE HOT DIP GALVANIZED, SCH 40, HAVING THE LISTED NOMINAL PIPE SIZE, UNLESS THE DESIGN ENGINEER SPECIFIES LARGER PIPES. SEE BODY FOR ASTM REQUIREMENTS.

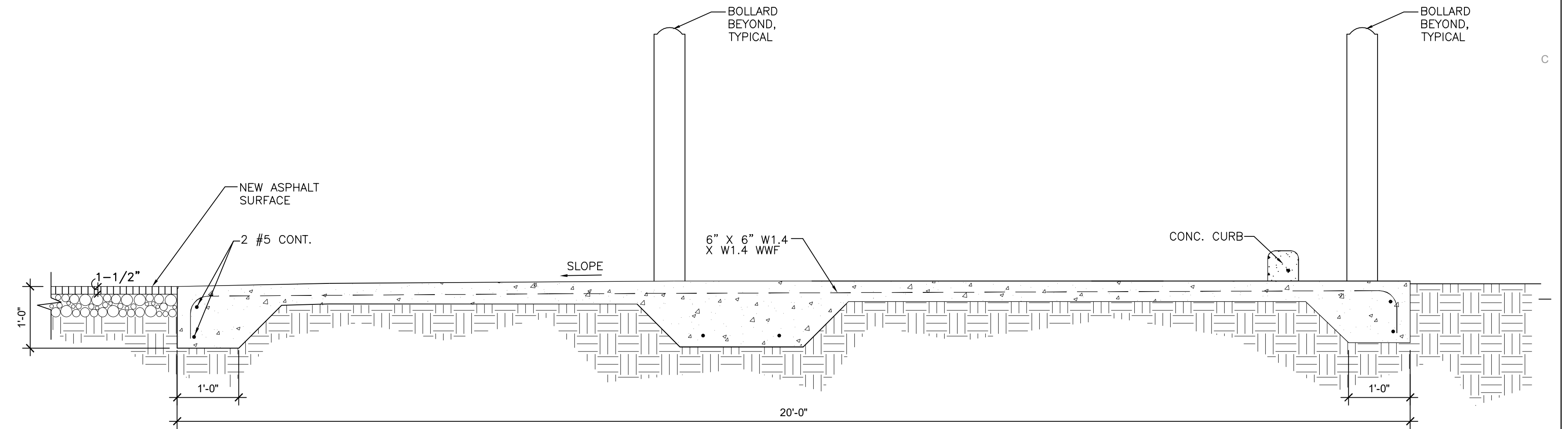
05 REQUIRED MINIMUM SWING GATE POST AND FOUNDATION SIZES



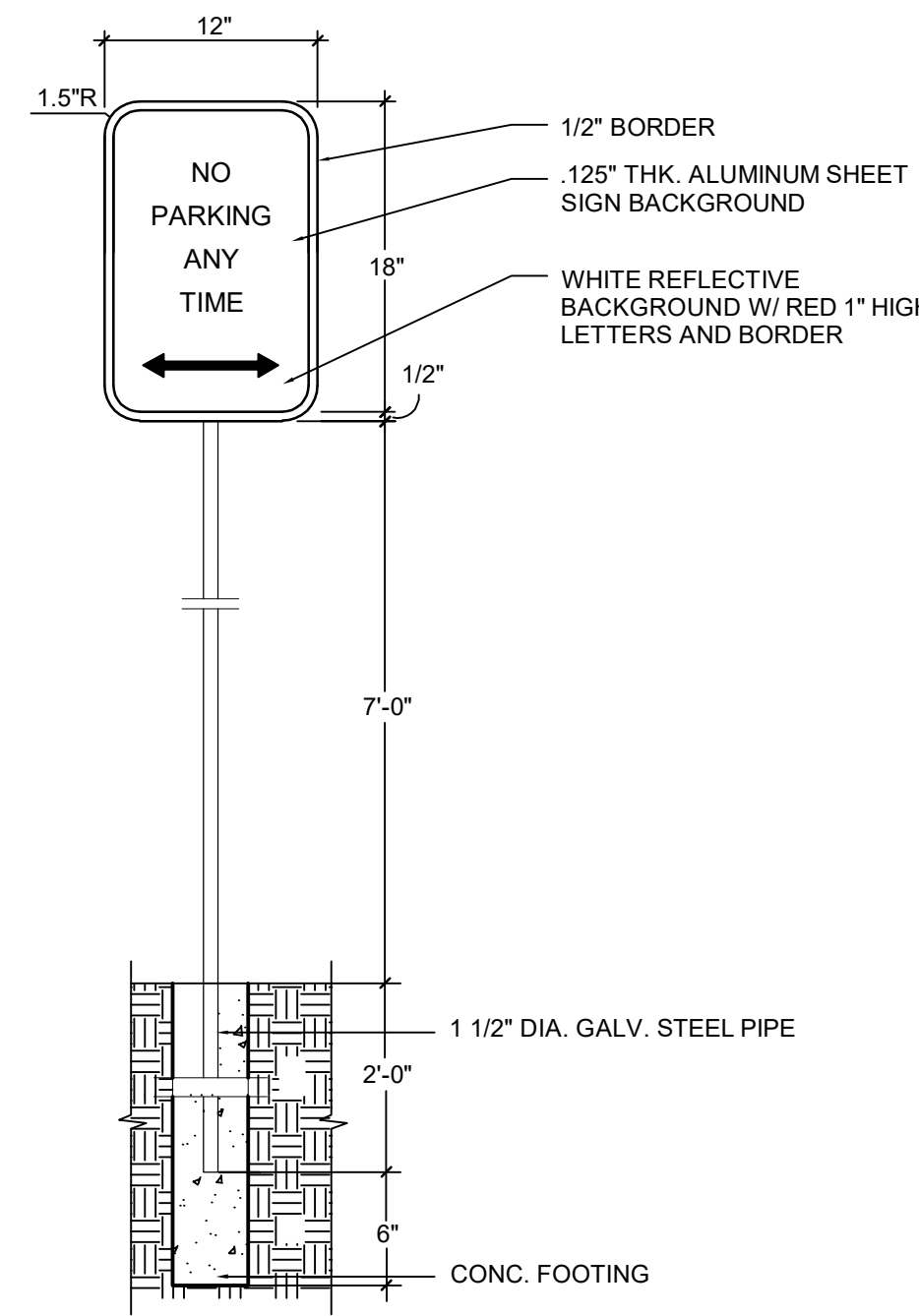
01 DUMPSTER ELEVATION
SCALE: 1/2" = 1'-0"



06 PARTIAL SITE PLAN
SCALE: 1/8" = 1'-0"

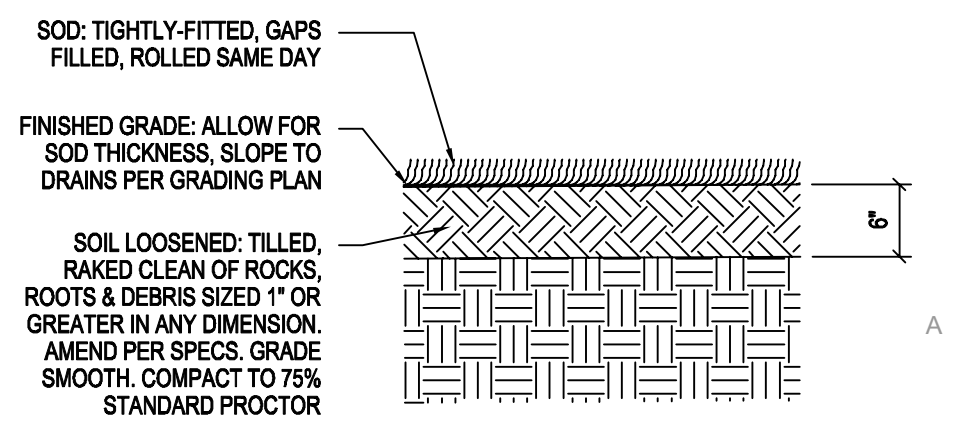


02 DUMPSTER SLAB DETAIL
SCALE: 3/4" = 1'-0"



GENERAL NOTES:

1. TYPICAL LETTERS FOR INFORMATIONAL SIGNS SHALL BE 2" SERIES (U.O.N.)
2. SIGN FABRICATED FROM STEEL
3. POST SHALL BE "U" TYPE FLANGED STEEL 2.5#/FT. AND SHALL CONFORM TO ASTM A499 GRADE 60
4. BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM 307
5. ALL STEEL POSTS, PLATES AND HARDWARE SHALL BE GALVANIZED PER ASTM A153
6. SET POST IN CONCRETE 12"x12"x36" DEEP BOTTOM OF SIGN TO BE 7'-0" HIGH ABOVE GRADE
7. PROVIDE ONE (1) SIGN AT EACH DUMPSTER GATE



04 SOD DETAIL
SCALE: 3/4" = 1'-0"

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ELECTRICAL SYMBOL LEGEND

ACS	ACCESS CONTROL SYSTEM	Ⓐ	EQUIPMENT SCHEDULE NOTATION
IDS	INTRUSION DETECTION SYSTEM	Ⓜ	T.V. ANTENNA OUTLET
NVR	NETWORK VIDEO RECORDER	Ⓜ	T.V. ORIENTATION OUTLET
POE	POWER OVER ETHERNET	Ⓜ	JUNCTION PULL BOX
WP	WEATHER PROOF	Ⓜ	SECURITY JUNCTION BOX
	GROUND TYPE SINGLE RECEPTACLE 120V-20A. +18" AFF UNLESS NOTED OTHERWISE	Ⓜ	VIDEO JUNCTION BOX
	GROUND TYPE DUPLEX RECEPTACLE 120V-20A. MOUNT ABOVE COUNTER OR AT HEIGHT NOTED.	Ⓜ	CARD ACCESS JUNCTION BOX
	GROUND TYPE DUPLEX RECEPTACLE 120V-20A. WITH INTEGRAL GROUND FAULT INTERRUPT PROTECTION.	Ⓜ	COMMUNICATIONS OUTLET
	RECEPTACLE 120V-20A. MOUNT 18" AFF UNLESS OTHERWISE NOTED.	Ⓜ	BELL
	TAMPER RESISTANT GROUND TYPE DUPLEX RECEPTACLE 120V-20A. MOUNT 18" AFF UNLESS OTHERWISE NOTED.	Ⓜ	TELEPHONE OUTLET
	GROUND TYPE DUPLEX RECEPTACLE 120V-20A. WITH BLUE FACE AND COVER. MOUNT 18" AFF UNLESS OTHERWISE NOTED.	Ⓜ	FIRE ALARM HORN/STROBE
	GROUND TYPE DOUBLE DUPLEX RECEPTACLE 120V-20A. MOUNT IN TWO GANG OUTLET BOX 18" AFF UNLESS OTHERWISE NOTED.	Ⓜ	FIRE ALARM STROBE LIGHT ONLY
	TAMPER RESISTANT GROUND TYPE DOUBLE DUPLEX RECEPTACLE 120V-20A. MOUNT IN TWO GANG OUTLET BOX 18" AFF UNLESS OTHERWISE NOTED.	Ⓜ	FIRE ALARM PULL STATION
	GROUND TYPE DUPLEX RECEPTACLE 120V-20A. MOUNT IN FLUSH FLOOR BOX.	Ⓜ	COMBINATION FIXED TEMPERATURE AND RATE OF RISE HEAT DETECTOR
	120V SPECIAL PURPOSE OUTLET (SUFFIX INDICATES AMPS)	Ⓜ	CEILING MTD SMOKE DETECTOR (PHOTO ELECTRIC TYPE)
	3 WIRE 1Ø OR 4 WIRE 3Ø SPECIAL PURPOSE OUTLET (SUFFIX INDICATES AMPS)	Ⓜ	DUCT MOUNTED SMOKE DETECTOR (PHOTO ELECTRIC TYPE)
	TRANSFORMER - SEE SCHEDULE FOR RATING	Ⓜ	SMOKE DETECTOR REMOTE INDICATOR/RESET
	DISCONNECT SWITCH SEE SCHEDULE FOR RATING	Ⓜ	MAGNETIC DOOR HOLDER
	120/208V PANELBOARD	Ⓜ	POST INDICATING VALVE SWITCH
	277/480V PANELBOARD	Ⓜ	TAMPER SWITCH
	PATCH PANEL - (DEDICATED FOR CCTV)	Ⓜ	PRESSURE SWITCH
	SECURITY JUNCTION BOX	Ⓜ	FLOW SWITCH
	CARD / PROXIMITY READER TERMINAL	Ⓜ	CLOCK
	AI Phone (X=R; REMOTE STATION (AUDIO, CAMERA, PUSHBUTTON TO TALK) (X=M; MASTER STATION (AUDIO, MONITOR, PUSHBUTTON, DOOR RELEASE)	Ⓜ	MICROPHONE OUTLET - WALL MOUNTED
	KEYPAD STATION (OUTDOOR RATED)	Ⓜ	PUBLIC ADDRESS/INTERCOM SPEAKER-CEILING
	KNOX BOX	Ⓜ	PUBLIC ADDRESS/INTERCOM SPEAKER-WALL
	ELECTRIC STRIKE	Ⓜ	PUSH BUTTON STATION (ONE OR MORE BUTTONS) *P* INDICATES PRIVACY TYPE *K* INDICATES KEY-OPERATED

GENERAL ELECTRICAL NOTES

- ALL ELECTRICAL WORK SHALL COMPLY WITH NATIONAL ELECTRICAL CODE, THE NATIONAL FIRE CODES, THE AMERICANS WITH DISABILITIES ACT, MARTIN COUNTY SCHOOL DISTRICT, AND THE FLORIDA BUILDING CODE.
- THE CONTRACTOR SHALL THOROUGHLY REVIEW THE PROJECT TO ENSURE THAT ALL WORK SHALL MEET OR EXCEED THE ABOVE REQUIREMENTS. ANY ALLEGED DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO BID.
- THE CONTRACTOR IS DIRECTED TO OBTAIN COPIES OF ALL RELATED PLANS, SPECIFICATIONS, SHOP DRAWINGS AND ADDENDUM TO COORDINATE THE RELATED WORK AND SCHEDULING.
- THE CONTRACTOR IS REMINDED THAT ELECTRICAL SERVICE TO AND FOR MECHANICAL AND OTHER EQUIPMENT ARE BASED ON EQUIPMENT DESIGN DATA. THE VALUES MAY DIFFER DEPENDING UPON THE ACTUAL EQUIPMENT TO BE FURNISHED. ANY MODIFICATION TO THE ELECTRICAL, BASED UPON ACTUAL EQUIPMENT SELECTION, SHALL RESULT IN NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL THOROUGHLY REVIEW THE ARCHITECTURAL AND MECHANICAL PLANS TO ASSURE THAT ELECTRICAL SERVICE FOR ALL ITEMS AND/OR EQUIPMENT REQUIRING ELECTRICAL SERVICE IS INCLUDED. ANY ITEM AND/OR EQUIPMENT NOT PROVIDED WITH ELECTRICAL SERVICE, REQUIRING ELECTRICAL SERVICE, SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION.
- MECHANICAL AND ELECTRICAL EQUIPMENT HAVE BEEN LOCATED AND ARRANGED TO MINIMIZE THE INTERFERENCES OF EQUIPMENT AND STRUCTURE. THE CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE WORK TO BE PERFORMED BY OTHER TRADES AND THE PHYSICAL CHARACTERISTICS OF THE STRUCTURE IN ORDER TO SCHEDULE AND INSTALL EQUIPMENT AND TO MINIMIZE POSSIBLE INTERFERENCE. FAILURE TO PROPERLY COMMUNICATE AND SCHEDULE WORK WITH OTHER TRADES RESULTING IN ADDITIONAL WORK AND MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE MODIFICATIONS REQUIRED TO RESOLVE THE CONFLICT SHALL BE DECIDED BY THE ENGINEER.
- ALL PANELBOARDS SHALL BE PROVIDED WITH A TYPED SCHEDULE SHOWING CIRCUIT NUMBERS AND A COMPLETE DESCRIPTION OF EACH CIRCUIT.
- MINIMUM TRADE SIZE CONDUIT PERMITTED SHALL BE 3/4 INCH UNLESS NOTED OTHERWISE.
- ALL CONDUCTOR METAL SHALL BE COPPER WITH 600 VOLT INSULATION TYPE THHN. (MINIMUM SIZE SHALL BE #12AWG.) CONTRACTOR SHALL ADJUST WIRE AND CONDUIT SIZES IF OTHER INSULATION TYPES ARE USED.
- ALL LIGHT SWITCHES AND DUPLEX RECEPTACLES SHALL BE RATED FOR 20 AMPERE AT 125/277 VOLTS A/C. WIRING DEVICES SHALL BE MANUFACTURED BY HUBBELL OR APPROVED EQUAL. PROVIDE BARRIERS AT 277V SWITCHES WHERE REQUIRED BY N.E.C. ARTICLE 404-8(b).
- ALL ELECTRICAL WIRING DEVICES INDICATED TO BE INSTALLED IN MASONRY WALLS OR FLOORS SHALL BE FLUSH MOUNTED, INCLUDING BRANCH CIRCUIT PANELBOARDS, UNLESS OTHERWISE NOTED. THE CONDUITS TO ASSOCIATED ELECTRICAL EQUIPMENT SHALL BE CONCEALED IN WALLS OR FLOOR.
- ALL CONDUIT RUNS SHALL BE CONCEALED UNLESS SPECIFICALLY NOTED OTHERWISE.
- THE FIXTURE SCHEDULE IS FOR REFERENCE ONLY. MODEL NUMBERS LISTED MAY NOT INCLUDE ALL REQUIRED OPTIONS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. EQUAL FIXTURES OF OTHER MANUFACTURERS MAY BE SUBSTITUTED AS EQUAL. ALL SUBSTITUTIONS ARE SUBJECT TO APPROVAL AS EQUAL BY THE ENGINEER.
- COMMUNICATION CONDUITS ARE TO BE LONG RADIUS TYPE AND SHALL CONTAIN PULL WIRES. PROVIDE PLATES FOR ALL OUTLETS.
- ALL SPECIAL PURPOSE OUTLETS SHALL BE PROVIDED TO MATCH EQUIPMENT TO BE SUPPLIED.
- THE PLANS INDICATE THE DESIRED ARRANGEMENT AND GENERAL LOCATIONS OF LIGHT FIXTURES. THE ARCHITECTURAL PLANS INDICATE ADDITIONAL DATA AS TO THE FINAL FIXTURE PLACEMENT.
- ALL PANELBOARDS, SWITCHES AND CIRCUIT BREAKERS SHALL BE ITE, SQUARE D, GE, OR CUTLER HAMMER.
- ALL CONDUITS SHALL HAVE A SEPARATE GREEN GROUND CONDUCTOR INSTALLED FOR GROUNDING.
- ANY EXISTING UTILITIES LOCATED IN THE AREA OF CONSTRUCTION WHICH REQUIRE RELOCATION BY THE OWNER SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE A MINIMUM OF TEN DAYS IN ADVANCE.
- ALL DISCONNECT SWITCHES SHALL BE THE HEAVY DUTY TYPE WITH BUSSMAN TIME DELAY, DUAL ELEMENT AND CURRENT LIMITING FUSES.
- THE CONTRACTOR SHALL CHECK THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND/OR DIMENSIONS FOR INSTALLATION OF ALL ELECTRICAL ITEMS. ALL QUESTIONABLE LOCATIONS SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
- ALL EMPTY CONDUITS SHALL CONTAIN JET LINE #232 POLYOFIN 200 LB. TEST.
- ALL WORK SHOWN ON THE ELECTRICAL PLANS SHALL BE PERFORMED BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
- EQUIPMENT INSTALLED WITHIN CONCEALED SPACES SHALL HAVE REASONABLE ACCESS PANELS PROVIDED NEARBY FOR INSPECTION, TESTING AND SERVICE CONSIDERATIONS.
- REFER TO SPECIFICATIONS FOR MORE INFORMATION.
- THE CONTRACTOR SHALL VERIFY CEILING TYPES AND INSTALLATION REQUIREMENTS PRIOR TO ORDERING LIGHT FIXTURES.

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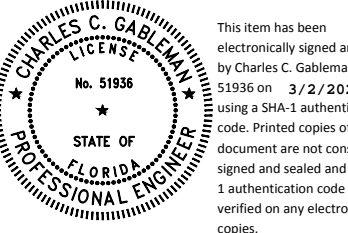
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Revisions		
No.	Date	Note

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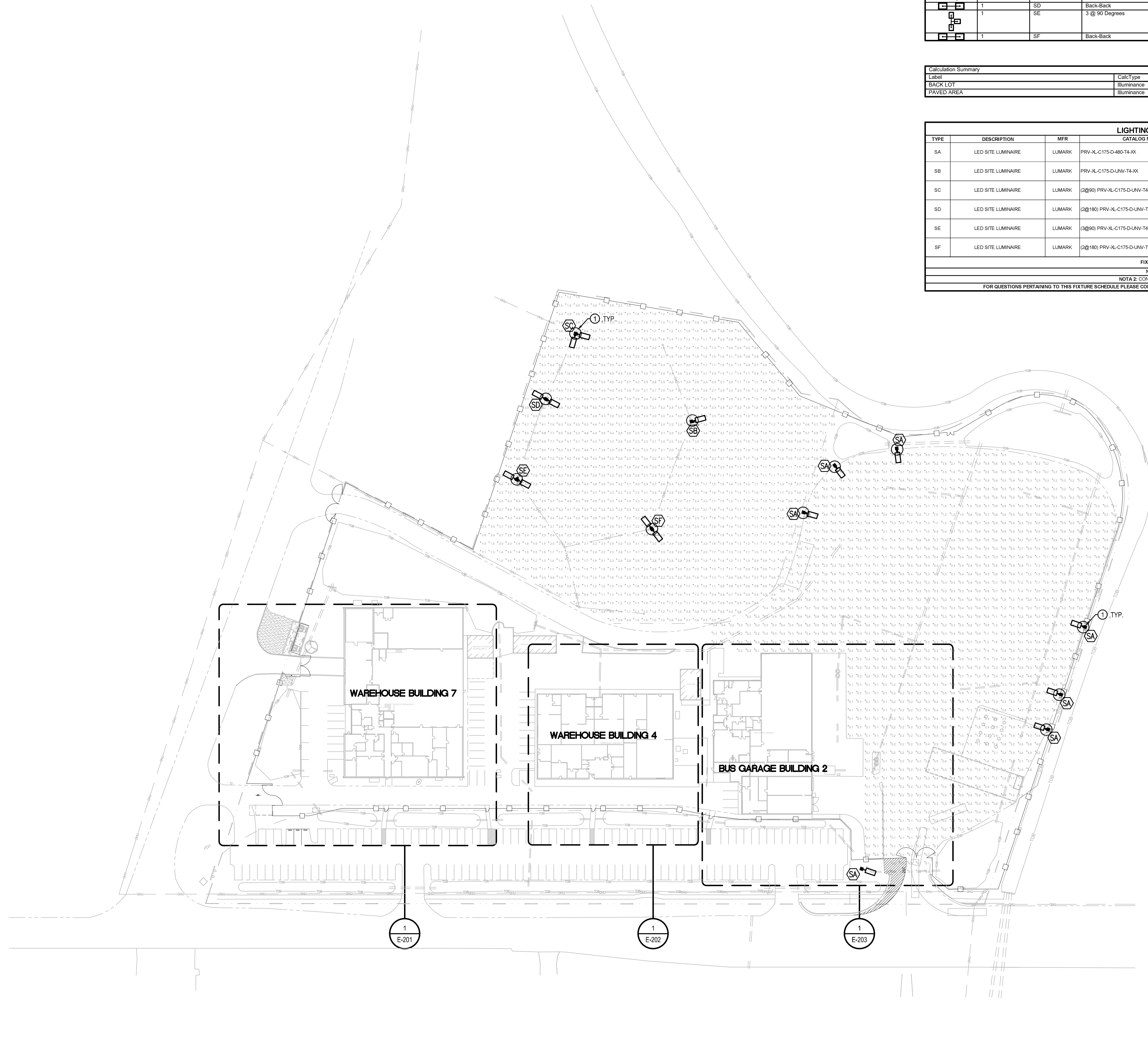
Charles C. Gahmann, P.E. 01096
 ELD 208 #281176

ELECTRICAL NOTES AND LEGEND

E-001

DRAWING INDEX	
SHEET NO.	DESCRIPTION
E-001	ELECTRICAL NOTES AND LEGEND
E-101	ELECTRICAL SECURITY PLAN - OVERALL
E-201	ENLARGED ELECTRICAL PLAN
E-202	ENLARGED ELECTRICAL PLAN
E-203	ENLARGED ELECTRICAL PLAN
E-301	ELECTRICAL SCHEDULES AND PANELS
E-302	ELECTRICAL RISERS
E-303	ELECTRICAL DETAILS

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1 E-101
 ELECTRICAL SECURITY PLAN - OVERALL
SCALE: 1"=60'-0"

Symbol	Qty	Label	Arrangement	Lum. Lumens	Arr. Lum. Lumens	LLF	Lum. Watts	Arr. Watts
SA	6	SA	Single	48569	48569	0.900	346	346
SB	1	SB	Single	48569	48569	0.900	346	346
SC	2	SC	2 @ 90 degrees	48569	97138	0.900	346	692
SD	1	SD	Back-Back	48569	97138	0.900	346	692
SE	1	SE	3 @ 90 Degrees	48569	145707	0.900	346	1038
SF	1	SF	Back-Back	52349	104698	0.900	346	692

Label	Calc Type	Units	Avg	Max	Min	Avg/Min	Max/Min
BACK LOT	Illuminance	Fc	2.87	11.0	0.4	7.18	27.50
PAVED AREA	Illuminance	Fc	1.39	6.6	0.0	N.A.	N.A.

LIGHTING FIXTURE SCHEDULE									
TYPE	DESCRIPTION	MFR	CATALOG NUMBER	VOLTS	LAMPS	WATTS	DIMMING	MOUNTING	REMARKS
SA	LED SITE LUMINAIRE	LUMARK	PRV-XL-C175-D-480-T4-XX	480V	LED	346W	N/A	EXISTING POLE	NOTE 1, 2
SB	LED SITE LUMINAIRE	LUMARK	PRV-XL-C175-D-UNV-T4-XX	120V	LED	346W	N/A	EXISTING POLE	NOTE 1, 2
SC	LED SITE LUMINAIRE	LUMARK	2@90 PRV-XL-C175-D-UNV-T4-XX	120V	LED	(2) 346W	N/A	EXISTING POLE	NOTE 1, 2
SD	LED SITE LUMINAIRE	LUMARK	2@180 PRV-XL-C175-D-UNV-T4-XX	120V	LED	(2) 346W	N/A	EXISTING POLE	NOTE 1, 2
SE	LED SITE LUMINAIRE	LUMARK	3@90 PRV-XL-C175-D-UNV-T4-XX	120V	LED	(3) 346W	N/A	EXISTING POLE	NOTE 1, 2
SF	LED SITE LUMINAIRE	LUMARK	2@180 PRV-XL-C175-D-UNV-T5-XX	120V	LED	(2) 346W	N/A	EXISTING POLE	NOTE 1, 2

FIXTURE SCHEDULE NOTES
 NOTE 1: ADVISE FINISH
 NOTE 2: CONFIRM TENON OR DRILL MOUNTING
 FOR QUESTIONS PERTAINING TO THIS FIXTURE SCHEDULE PLEASE CONTACT RYAN HUFF AT LIGHTING DYNAMICS: 877-285-7169; RHUFF@LIGHTINGDYNAMICS.COM

PLAN NOTES

① REPLACE EXISTING POLE MOUNTED LIGHTING FIXTURES WITH NEW, TYPE AS SHOWN. RECONNECT TO EXISTING LIGHTING CIRCUITS/ CONTROLS AS REQUIRED.

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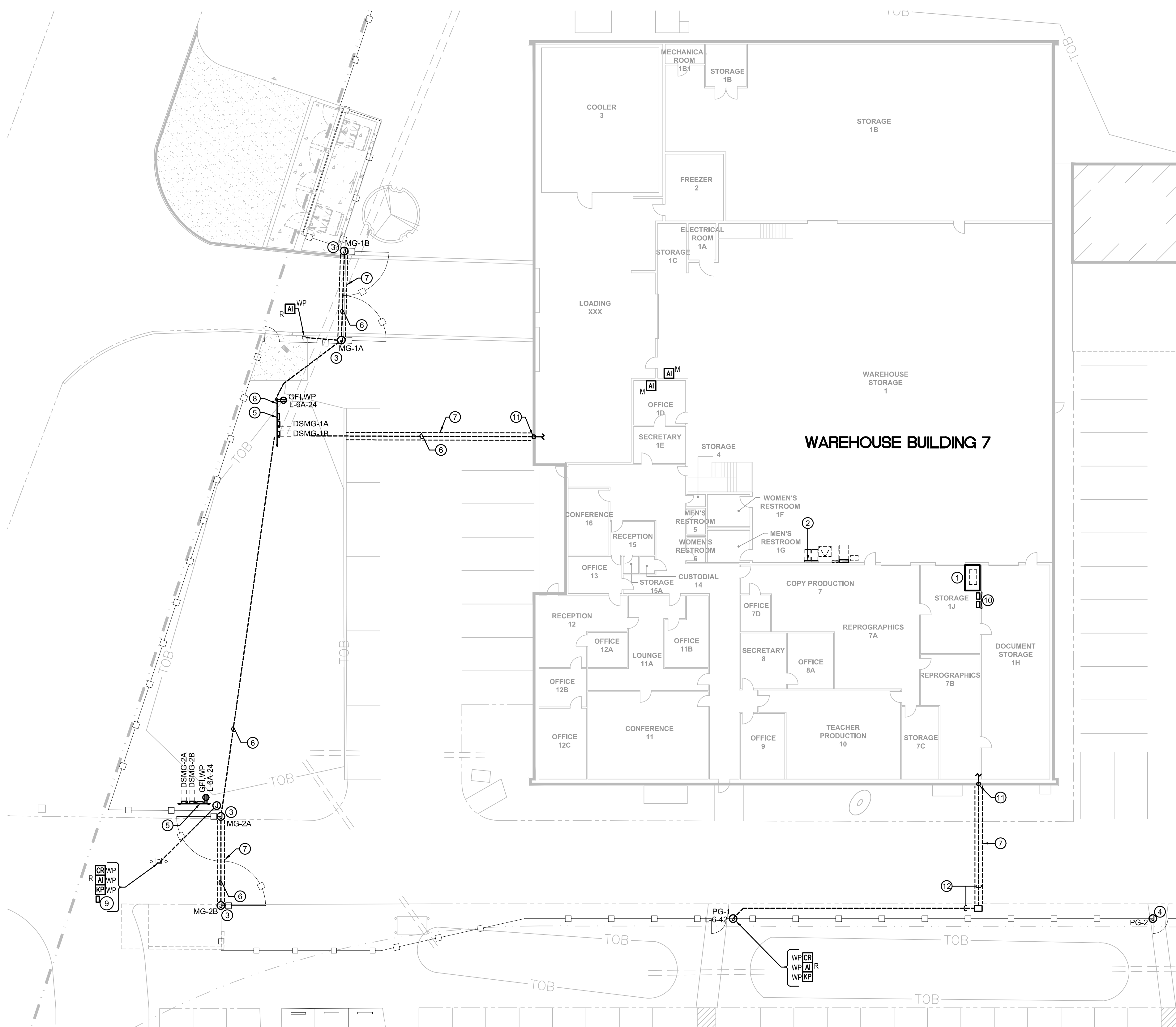
Revisions		
No.	Date	Note

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Charles C. Gableman, P.E. 51934
 E-101 2021 12/15/21

ELECTRICAL SECURITY PLAN - OVERALL

E-101



1
E-201

ENLARGED ELECTRICAL PLAN - WAREHOUSE AREA

SCALE: 1/16"=1'-0"

PLAN NOTES

- 1 APPROXIMATE LOCATION OF EXISTING SERVER RACK LOCATED IN STORAGE ROOM 1J.
- 2 EXISTING ELECTRICAL PANELS 'L-6' AND 'L-6A' LOCATION.
- 3 GATE MOTOR, SEE DISCONNECT SCHEDULE.
- 4 PEDESTRIAN GATE WITH PANIC HARDWARE, NO ELECTRIC REQUIRED.
- 5 ENCLOSURE, IF REQUIRED.
- 6 ROUTE UNDERGROUND CONDUITS FROM GATE ENTRY TO EXISTING STORAGE 1J, AS FOLLOWS:
 1-1" GATE MOTOR CONTROL.
 1-1" GATE MOTOR POWER FOR EACH DOUBLE GATE.
 1-1" ACCESS CONTROL (KEYPAD, PROXIMITY READER).
 1-1" C ALPHONE (VOICE/VIDEO).
 1-1" C SPARE.
- 7 TRENCHING OF ROADWAY REQUIRED, SEE DETAIL 7 ON SHEET E-303 FOR HARDSCAPE PATCHING.
- 8 PROVIDE STRUT RACKS FOR EXTERIOR MOUNTED EQUIPMENT, CONTAINING DISCONNECT SWITCH AND MAINTENANCE RECEPTACLE, WIRED TO CIRCUIT INDICATED, SEE DETAIL 2/E-303.
- 9 PROVIDE AND INSTALL KNOX-BOX (3200 SERIES) WITH INTEGRAL MULTIPURPOSE ELECTRICAL SWITCH WITH ENCLOSURE: 1/4" PLATE STEEL HOUSING, 1/2" THICK DOOR WITH INTERIOR GASKET SEAL, BOTH KNOX AND LOCK SHALL HAVE 1/8" STEEL DUST COVER WITH TAMPER SEAL MOUNTING CAPABILITY. FINISH COLOR SHALL BE ALUMINUM. VERIFY EXACT MOUNTING HEIGHT AND LOCATION WITH MARTIN COUNTY FIRE RESCUE PRIOR TO ROUGH-IN.
- 10 ALPHONE, ACS CONTROL PANEL, AND TERMINAL CABINETS, CONNECT TO CIRCUIT L-6-42 VIA 2#12, 1#12G-3/4" C EACH CIRCUIT.
- 11 CORE DRILL OPENING LOW ON WALL FOR CONDUITS INTO BUILDING, WEATHER PROOF PENETRATION AS REQUIRED.
- 12 ROUTE UNDERGROUND CONDUITS FROM GATE ENTRY TO EXISTING STORAGE 1J.
- 13 2#10, 1#10G - 3/4" C TO CIRCUIT INDICATED AND 3/4" CONDUIT WITH PULL STRING TO STORAGE ROOM 1J.

Revisions		
No.	Date	Note

TO THE BEST OF MY KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE MINIMUM BUILDING CODES.

CHARLES C. GABLEMAN, P.E.
 No. 51958
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER

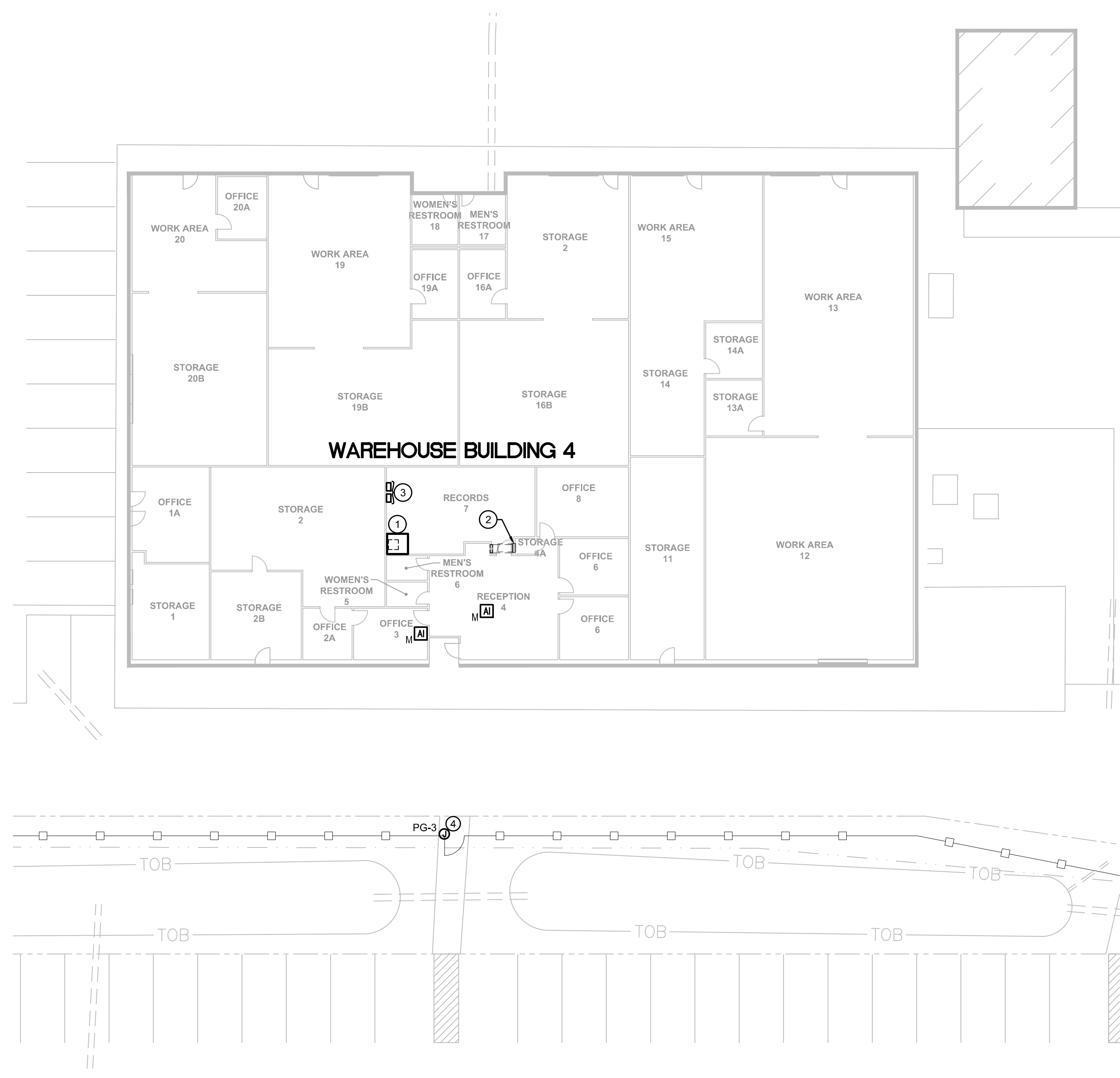
This item has been electronically signed and sealed by Charles C. Gableman P.E. on 3/2/2023 using my Public Key Certification Code. Printed copies of this document are not considered signed and sealed and the Seal of a Professional Engineer must be verified on any electronic copies.

Charles C. Gableman, P.E. 51958
 E-201 3/2/2023

ENLARGED ELECTRICAL PLAN

E-201

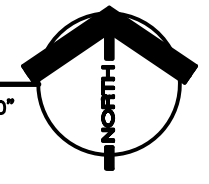
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1
E-202

ENLARGED ELECTRICAL PLAN - ADMINISTRATION AREA

SCALE: 1/16"=1'-0"



- PLAN NOTES**
- 1 APPROXIMATE LOCATION OF EXISTING SERVER RACK LOCATED IN WORKROOM 7.
 - 2 EXISTING ELECTRICAL PANEL 'L3' LOCATION.
 - 3 AI PHONE, ACS CONTROL PANELS, AND TERMINAL CABINETS CONNECT TO CIRCUITS L3-25 VIA 2#12, 1#12G-3/4" C EACH.
 - 4 PEDESTRIAN GATE WITH PANIC HARDWARE, NO ELECTRIC REQUIRED.

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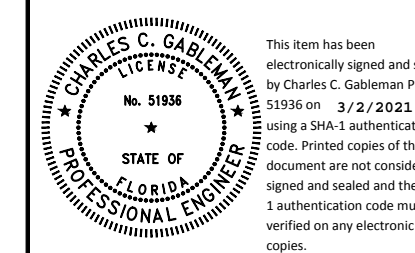
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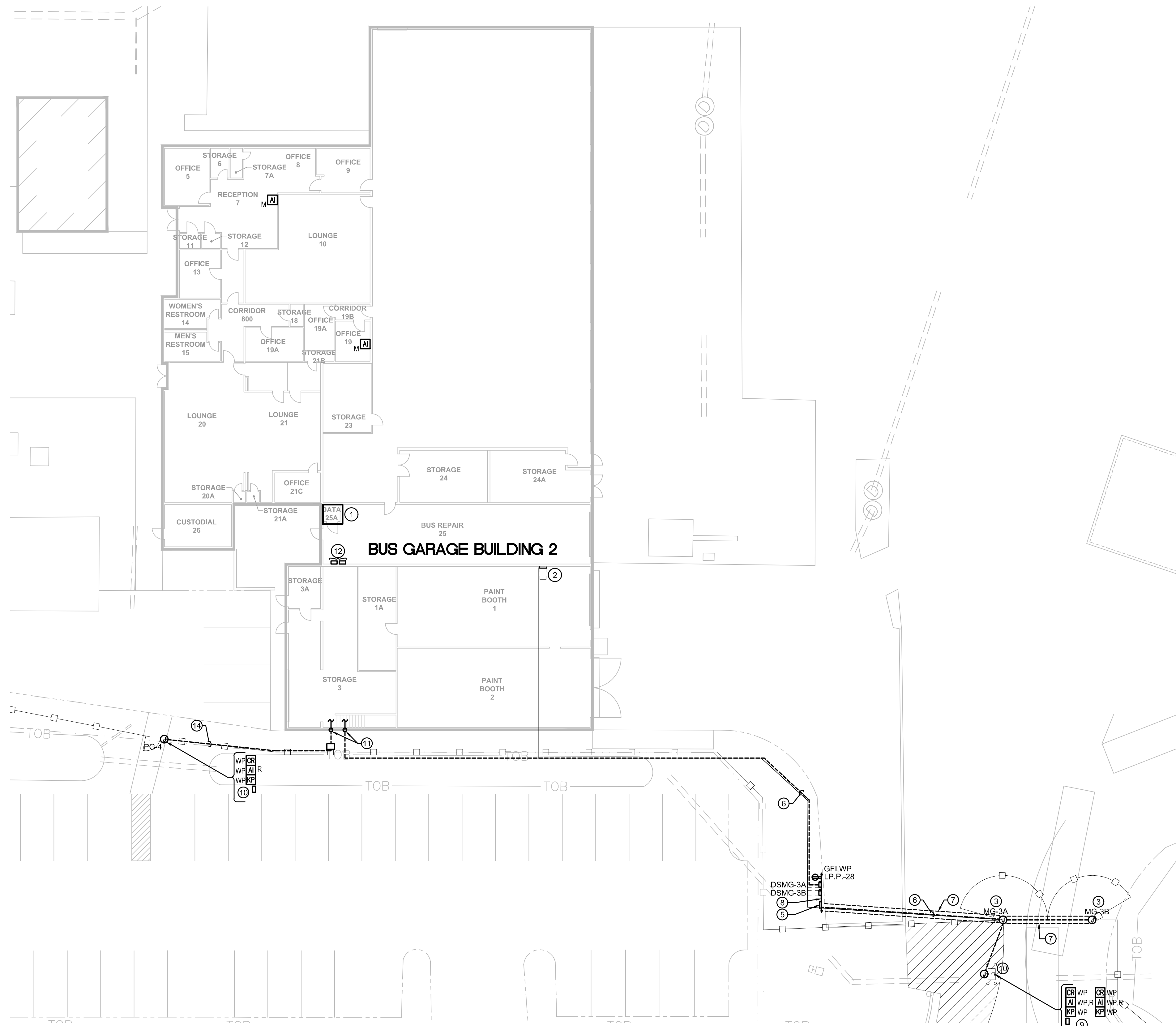


Charles C. Gableman, P.E. 51936
 2120 209 #212176

ENLARGED ELECTRICAL PLAN

E-202

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1
E-203
ENLARGED ELECTRICAL PLAN - BUS GARAGE AREA
SCALE: 1/16"=1'-0"

PLAN NOTES

- ① LOCATION OF EXISTING DATA ROOM 25A.
- ② EXISTING ELECTRICAL PANEL 'LP.P.' LOCATION.
- ③ GATE MOTOR. SEE DISCONNECT SCHEDULE.
- ④ PEDESTRIAN GATE WITH PANIC HARDWARE. NO ELECTRICAL POWER OR SYSTEMS, SHOWN FOR REFERENCE ONLY.
- ⑤ ENCLOSURE, IF REQUIRED.
- ⑥ ROUTE UNDERGROUND CONDUITS FROM GATE ENTRY TO PANEL LOCATIONS AS FOLLOWS:
 1-1" GATE MOTOR CONTROL. (ADJACENT TO 25A)
 1-1" GATE MOTOR POWER. (PANEL LP.P.)
 1-1" ACCESS CONTROL (KEYPAD, PROXIMITY READER). (ADJACENT TO 25A)
 1-1" AI PHONE (VOICE/VIDEO). (ADJACENT TO 25A)
 1-1" C SPARE. (STUB INTO BUILDING AND CAP)
- ⑦ TRENCHING OF ROADWAY REQUIRED, SEE DETAIL 7 ON SHEET E-303 FOR HARDSCAPE PATCHING.
- ⑧ PROVIDE STRUT RACKS FOR EXTERIOR MOUNTED EQUIPMENT. CONTAINING DISCONNECT SWITCH AND MAINTENANCE RECEPTACLE, WIRED TO CIRCUIT INDICATED, SEE DETAIL 2/E-303.
- ⑨ PROVIDE AND INSTALL KNOX-BOX (3200 SERIES) WITH INTEGRAL MULTIPURPOSE ELECTRICAL SWITCH WITH ENCLOSURE. 1/4" PLATE STEEL HOUSING, 1/2" THICK DOOR WITH INTERIOR GASKET SEAL. BOTH KNOX AND LOCK SHALL HAVE 1/8" STEEL DUST COVER WITH TAMPER SEAL MOUNTING CAPABILITY. FINISH COLOR SHALL BE ALUMINUM. VERIFY EXACT MOUNTING HEIGHT AND LOCATION WITH MARTIN COUNTY FIRE RESCUE PRIOR TO ROUGH-IN.
- ⑩ PROVIDE DUAL HEIGHT INTERCOM STATION PEDESTAL WITH CALL BOX, CARD READER, BAR CODE READER, AI PHONE, CAMERA, KEY PAD AND PROXIMITY READER FOR KEY FOB.
- ⑪ CORE DRILL OPENING LOW ON WALL, FOR CONDUITS INTO BUILDING. WEATHER PROOF PENETRATION AS REQUIRED.
- ⑫ AI PHONE, ACS CONTROL PANELS, AND TERMINAL CABINETS CONNECT TO CIRCUITS LPP-40 VIA 2#12, 1#12G-3/4" EACH CIRCUIT.
- ⑬ ROUTE UNDERGROUND CONDUITS FROM GATE ENTRY TO PANEL LOCATIONS AS FOLLOWS:
 1-1" ACCESS CONTROL (KEYPAD, PROXIMITY READER). (ADJACENT TO 25A)
 1-1" AI PHONE (VOICE/VIDEO). (ADJACENT TO 25A)
 1-1" C SPARE. (STUB INTO BUILDING AND CAP)
- ⑭ ROUTE UNDERGROUND CONDUITS FROM GATE ENTRY TO PANEL LOCATIONS AS FOLLOWS:
 1-1" ACCESS CONTROL (KEYPAD, PROXIMITY READER). (ADJACENT TO 25A)
 1-1" AI PHONE (VOICE/VIDEO). (ADJACENT TO 25A)
 1-1" C SPARE. (STUB INTO BUILDING AND CAP)

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 I, CHARLES C. GABLEMAN, P.E., REGISTERED PROFESSIONAL ENGINEER, STATE OF FLORIDA, LICENSE NO. 121176, DATE 3/2/2013, HAVE REVIEWED THESE PLANS AND SPECIFICATIONS AND CONSIDER THEM TO BE CORRECT AND COMPLETE FOR THE PROJECT DESCRIBED HEREIN.
 I HEREBY CERTIFY THAT I AM THE DESIGNER OF THESE PLANS AND SPECIFICATIONS.

Charles C. Gableman, P.E. 61096
 2120 205 #121176

ENLARGED ELECTRICAL PLAN

E-203

LOCATION: WAREHOUSE STORAGE 1 **PANELBOARD SCHEDULE** EXISTING PANEL: L-6

BUS AMPS			LOAD	POLES	TRIP	CIRC	BUS			LOAD	BUS AMPS			
A	B	C					A	B	C		A	B	C	
-	-	-	MAIN BREAKER	3	225	3	1	2	-	-	SPACE NOT USABLE	-	-	-
-	-	-	EXISTING LOAD	1	20	7	4	-	-	SPACE NOT USABLE	-	-	-	-
-	-	-	EXISTING LOAD	1	20	9	6	-	-	SPACE NOT USABLE	-	-	-	-
-	-	-	EXISTING LOAD	1	30	11	8	20	1	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	-	-	13	10	20	1	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	3	20	15	12	20	1	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	-	-	17	14	20	1	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	2	20	19	16	20	1	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	-	-	21	18	20	1	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	1	20	23	20	20	1	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	1	20	25	22	20	1	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	1	20	27	24	20	1	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	1	20	29	26	20	1	ICE MACHINE	-	-	-	-
-	-	-	EXISTING LOAD	1	20	31	28	20	2	WATER HEATER	-	-	-	-
-	-	-	EXISTING LOAD	1	20	33	30	-	-	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	1	20	35	32	20	2	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	1	20	37	34	-	-	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	2	50	37	36	20	1	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	1	20	41	38	70	2	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	-	-	39	40	-	-	EXISTING LOAD	-	-	-	-
-	-	-	EXISTING LOAD	1	20	41	42	20	1	AIPHONE, ACCESS, PNL	①	0.5	-	-

RATED VOLTAGE: 120/208V 3PHASE, 4WIRE EXISTING FEED IS () BOTTOM: () TOP FROM:
RATING IS TO BE () 100 () 200 () 400 AMPS VERIFY GROUND BAR IS EXISTING
() MAIN BREAKER 200 AMPS () MAIN LUGS ONLY VERIFY NEUTRAL BUS IS TO BE () FULL () DOUBLE SIZE
BRANCH POLES= () 12 () 24 () 30 () 42 HINGED DOOR WITH KEYPED LATCH () IS () IS NOT REQUIRED
PANELBOARD IS TO BE () FUSED () BOLT IN CIRCUIT BREAKER TYPE HARD WIRED SURGE PROTECTION () IS () IS NOT REQUIRED
ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT CURRENT I_{sc} = 10,000

LOCATION: WAREHOUSE STORAGE 1 **PANELBOARD SCHEDULE** EXISTING PANEL: L-6A

BUS AMPS			LOAD	POLES	TRIP	CIRC	BUS			LOAD	BUS AMPS		
A	B	C					A	B	C		A	B	C
-	-	-	EXISTING LOAD	1	20	1	2	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	20	3	4	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	20	5	6	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	2	20	7	8	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	-	-	9	10	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	2	20	11	12	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	-	-	13	14	20	2	EXISTING LOAD	-	-	-
-	1.4	-	EXISTING LOAD	1	20	15	16	-	-	EXISTING LOAD	-	-	-
-	1.4	-	MG-1A VEHICLE GATE	①	1	20	17	18	20	2	EXISTING LOAD	-	-
-	1.4	-	MG-1B VEHICLE GATE	①	1	20	19	20	-	EXISTING LOAD	-	-	-
-	1.4	-	MG-2A VEHICLE GATE	①	1	20	21	22	20	1	EXISTING LOAD	-	-
-	1.4	-	MG-2B VEHICLE GATE	①	1	20	23	24	20	1	EXTERIOR GFI RECEPTACLE	①	0.4
-	-	-	EXISTING LOAD	-	-	25	26	20	2	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	3	70	27	28	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	2	50	31	30	20	2	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	-	-	33	32	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	30	35	34	40	2	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	30	37	36	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	2	60	39	38	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	2	60	39	40	100	3	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	-	-	41	42	-	-	EXISTING LOAD	-	-	-

RATED VOLTAGE: 120/208V 3PHASE, 4WIRE EXISTING FEED IS () BOTTOM: () TOP FROM:
RATING IS TO BE () 100 () 200 () 400 AMPS VERIFY GROUND BAR IS EXISTING
() MAIN BREAKER 200 AMPS () MAIN LUGS ONLY VERIFY NEUTRAL BUS IS TO BE () FULL () DOUBLE SIZE
BRANCH POLES= () 12 () 24 () 30 () 42 HINGED DOOR WITH KEYPED LATCH () IS () IS NOT REQUIRED
PANELBOARD IS TO BE () FUSED () BOLT IN CIRCUIT BREAKER TYPE HARD WIRED SURGE PROTECTION () IS () IS NOT REQUIRED
ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT CURRENT I_{sc} = 10,000

LOCATION: WAREHOUSE STORAGE 1 **PANELBOARD SCHEDULE** EXISTING PANEL: L.3

BUS AMPS			LOAD	POLES	TRIP	CIRC	BUS			LOAD	BUS AMPS		
A	B	C					A	B	C		A	B	C
-	-	-	EXISTING LOAD	1	20	1	2	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	20	3	4	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	20	5	6	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	20	7	8	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	20	9	10	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	20	11	12	20	1	EXISTING LOAD	-	-	-
-	-	-	SPACE	-	-	13	14	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	3	20	17	16	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	-	-	19	20	20	2	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	2	30	21	22	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	-	-	23	24	20	1	EXISTING LOAD	-	-	-
0.5	-	-	AIPHONE, ACCESS, PANELS	①	-	25	26	20	1	EXISTING LOAD	-	-	-
-	-	-	SPACE	-	-	27	28	-	-	SPACE	-	-	-
-	-	-	SPACE	-	-	29	30	-	-	SPACE	-	-	-

RATED VOLTAGE: 120/208V 3PHASE, 4WIRE FEED IS TO BE () BOTTOM: () TOP FROM:
RATING IS TO BE () 100 () 225 () 400 AMPS GROUND BAR IS REQUIRED
() MAIN BREAKER AMPS () MAIN LUGS ONLY NEUTRAL BUS IS TO BE () FULL () DOUBLE SIZE
BRANCH POLES= () 12 () 24 () 30 () 42 HINGED DOOR WITH KEYPED LATCH () IS () IS NOT REQUIRED
PANELBOARD IS TO BE () FUSED () BOLT IN CIRCUIT BREAKER TYPE HARD WIRED SURGE PROTECTION () IS () IS NOT REQUIRED
ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT CURRENT I_{sc} = MATCH EXISTING

DISCONNECT SWITCH SCHEDULE

NO.	SWITCH/FUSE	VOLTAGE	LOCATION	CIR NO.	CONDUIT/CONDUCTOR	ENCL. TYPE	REMARKS
DSMG-1A	30A/2P/15ADEF	120V/1Ø	MG-1A	L-6A-17	1"Ø-3Ø6, 1#6G	NEMA 4X-SS	NOTES 1.2
DSMG-1B	30A/2P/15ADEF	120V/1Ø	MG-2A	L-6A-19	1"Ø-3Ø6, 1#6G	NEMA 4X-SS	NOTES 1.2
DSMG-2A	30A/2P/15ADEF	120V/1Ø	MG-3A	L-6A-21	1"Ø-3Ø6, 1#6G	NEMA 4X-SS	NOTES 1.2
DSMG-2B	30A/2P/15ADEF	120V/1Ø	MG-1A	L-6A-23	1"Ø-3Ø6, 1#6G	NEMA 4X-SS	NOTES 1.2
DSMG-3A	30A/2P/15ADEF	120V/1Ø	MG-2A	L.P.P.-32	1"Ø-3Ø6, 1#6G	NEMA 4X-SS	NOTES 1.2
DSMG-3B	30A/2P/15ADEF	120V/1Ø	MG-3A	L.P.P.-34	1"Ø-3Ø6, 1#6G	NEMA 4X-SS	NOTES 1.2

NOTES:
1. PROVIDE WITH SOLID NEUTRAL.
2. RACK MOUNTED.

LOCATION: BUS REPAIR 25 **PANELBOARD SCHEDULE** EXISTING PANEL: L.P.P.

BUS AMPS			LOAD	POLES	TRIP	CIRC	BUS			LOAD	BUS AMPS		
A	B	C					A	B	C		A	B	C
-	-	-	EXISTING LOAD	1	20	1	2	50	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	20	3	4	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	2	20	5	6	50	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	-	-	7	8	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	2	20	9	10	15	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	-	-	11	12	20	1	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	-	-	13	14	20	2	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	3	30	15	16	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	-	-	17	18	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	20	19	20	30	3	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	20	21	22	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	2	50	23	24	20	2	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	-	-	25	26	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	1	20	27	28	20	1	EXTERIOR GFI RECEPTACLE	②	0.2	
-	-	-	EXISTING LOAD	1	20	29	30	20	1	CABINETS, AIPHONE, ACS PANELS	①	0.5	
-	-	-	EXISTING LOAD	1	20	31	32	20	1	MG-3A VEHICLE GATE	①	1.4	
-	-	-	EXISTING LOAD	1	20	33	34	20	1	MG-3B VEHICLE GATE	①	1.4	
-	-	-	EXISTING LOAD	-	-	35	36	20	2	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	3	30	37	38	-	-	EXISTING LOAD	-	-	-
-	-	-	EXISTING LOAD	40	20	1	40	20	1	AIPHONE, ACCESS, IDS PNL, PANIC	①	0.5	
-	-	-	EXISTING LOAD	1	20	41	42	-	-	SPACE	-	-	-

RATED VOLTAGE: 120/208V FEED IS TO BE () BOTTOM: () TOP FROM:
RATING IS TO BE () 100 () 200 () 400 AMPS GROUND BAR IS REQUIRED
() MAIN BREAKER AMPS () MAIN LUGS ONLY NEUTRAL BUS IS TO BE () FULL () DOUBLE SIZE
BRANCH POLES= () 12 () 24 () 30 () 42 HINGED DOOR WITH KEYPED LATCH () IS () IS NOT REQUIRED
PANELBOARD IS TO BE () FUSED () BOLT IN CIRCUIT BREAKER TYPE HARD WIRED SURGE PROTECTION () IS () IS NOT REQUIRED

RISER NOTES

- ① PROVIDE AND INSTALL NEW BREAKER, BREAKER TO MATCH EXISTING TYPE.
- ② REMOVE EXISTING 2-POLE BREAKER. PROVIDE AND INSTALL NEW BREAKER, BREAKER TO MATCH EXISTING TYPE. PROVIDE BLANK COVER PLATE AS NECESSARY.

HARVARD JOLLY ARCHITECTURE
2047 Vista Parkway, Suite 100 West Palm Beach, FL 33411 | 561-478-4457 | www.HarvardJolly.com | AR0013140

JLR
JOHNSON, LEVINSON RAGAN, DAVILA, INC.
1450 Outpost Boulevard, Suite 300 West Palm Beach, Florida 33401 (407) 880-3200 (407) 880-0200 Fax www.jlrinc.com

Purchasing/Maintenance/Transportation Dept.
Enhanced Security Project A2
Martin County School District
2845 SE Dixie Highway, Stuart, Florida 34994
100% Construction Documents

Comm. No: 16025.12
Date: 12/15/2021
Drawn: SL

Revisions		
No.	Date	Note

TO THE BEST OF MY KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE MINIMUM BUILDING CODES.

CHARLES C. GABLEMAN, P.E.
No. 1098
STATE OF FLORIDA
PROFESSIONAL ENGINEER

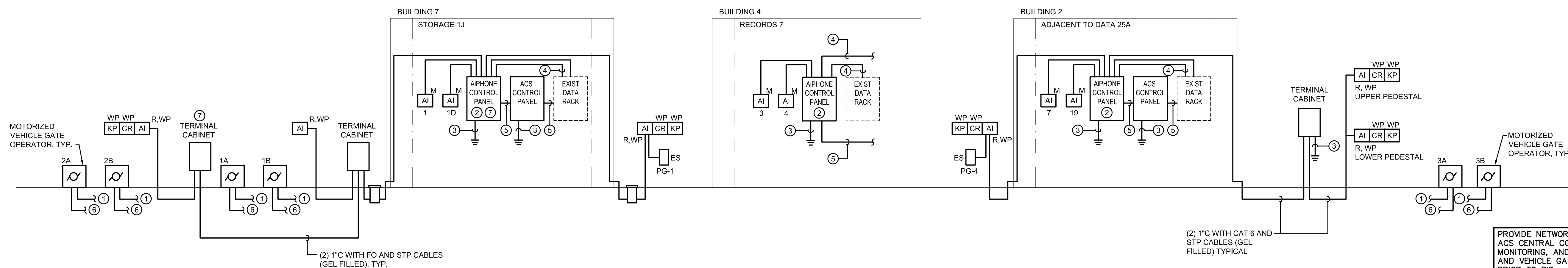
This item has been electronically signed and sealed by Charles C. Gableman P.E. on 3/2/2021. Using State's Authentication Code. Printed copies of this document are not considered signed and sealed and the State's authentication code must be verified on any electronic copies.

Charles C. Gableman, P.E. 01098
EJAP 2020 #121176

ELECTRICAL SCHEDULES AND PANELS

E-301

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AIPHONE SYSTEM SHALL BE COMPATIBLE WITH EXISTING DATA INFRASTRUCTURE FOR COMMUNICATING BETWEEN EACH BUILDING'S AIPHONE CONTROLLER USING THE EXISTING DATA NETWORK AS REQUIRED.

- RISER NOTES**
- ① RELAYS AND POWER DISTRIBUTION MODULES FOR GATE RELEASE UPON KEYPAD, CARD / PROXIMITY READER, AIPHONE MASTER STATION SIGNAL, PROVIDE AS REQUIRED.
 - ② AIPHONE CONTROLLER WITH ETHERNET NETWORK INTERFACE FOR GATE RELEASE UPON KEYPAD, CARD/ PROXIMITY READER, AIPHONE MASTER STATION SIGNAL, PROVIDE AS REQUIRED.
 - ③ 3/4" 1#6G.
 - ④ 3/4" WITH CAT. 6 CABLING TO BUILDING'S LOCAL DATA RACK.
 - ⑤ 3/4" TO ACS CONTROLLER FOR NETWORK INTERFACE.
 - ⑥ 120V/ 1PH POWER VIA DISCONNECT.
 - ⑦ PROVIDE FIBER OPTIC/ ETHERNET MEDIA CONVERTOR.

PROVIDE NETWORK INTERFACE OF AIPHONE SYSTEM WITH ACS CENTRAL CONTROL PANEL FOR CONTROL, MONITORING, AND RECORDING OF EACH PEDESTRIAN GATE AND VEHICLE GATE OPENING. COORDINATE WITH OWNER PRIOR TO BID.

1 PARTIAL ACS/AIPHONE/GATE RISER DIAGRAM

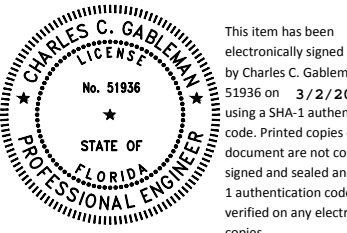
E-302

SCALE: NONE

Comm. No: 16025.12
 Date: 12/15/2021
 Drawn: SL

Revisions		
No.	Date	Note

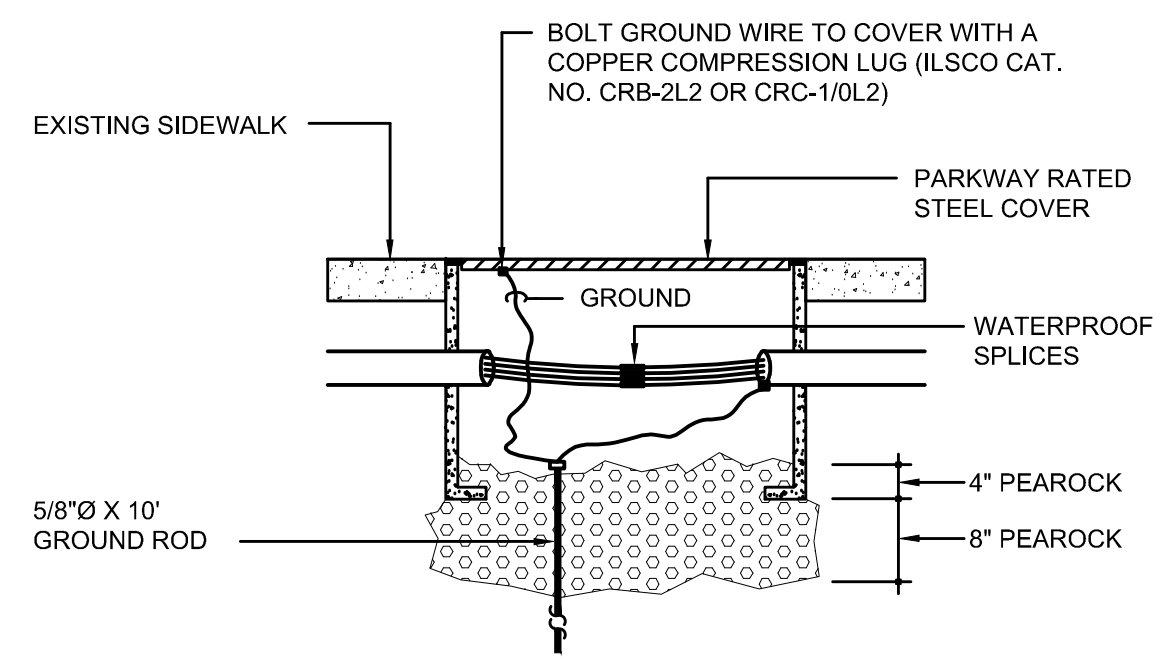
TO THE BEST OF MY KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE MINIMUM BUILDING CODES.



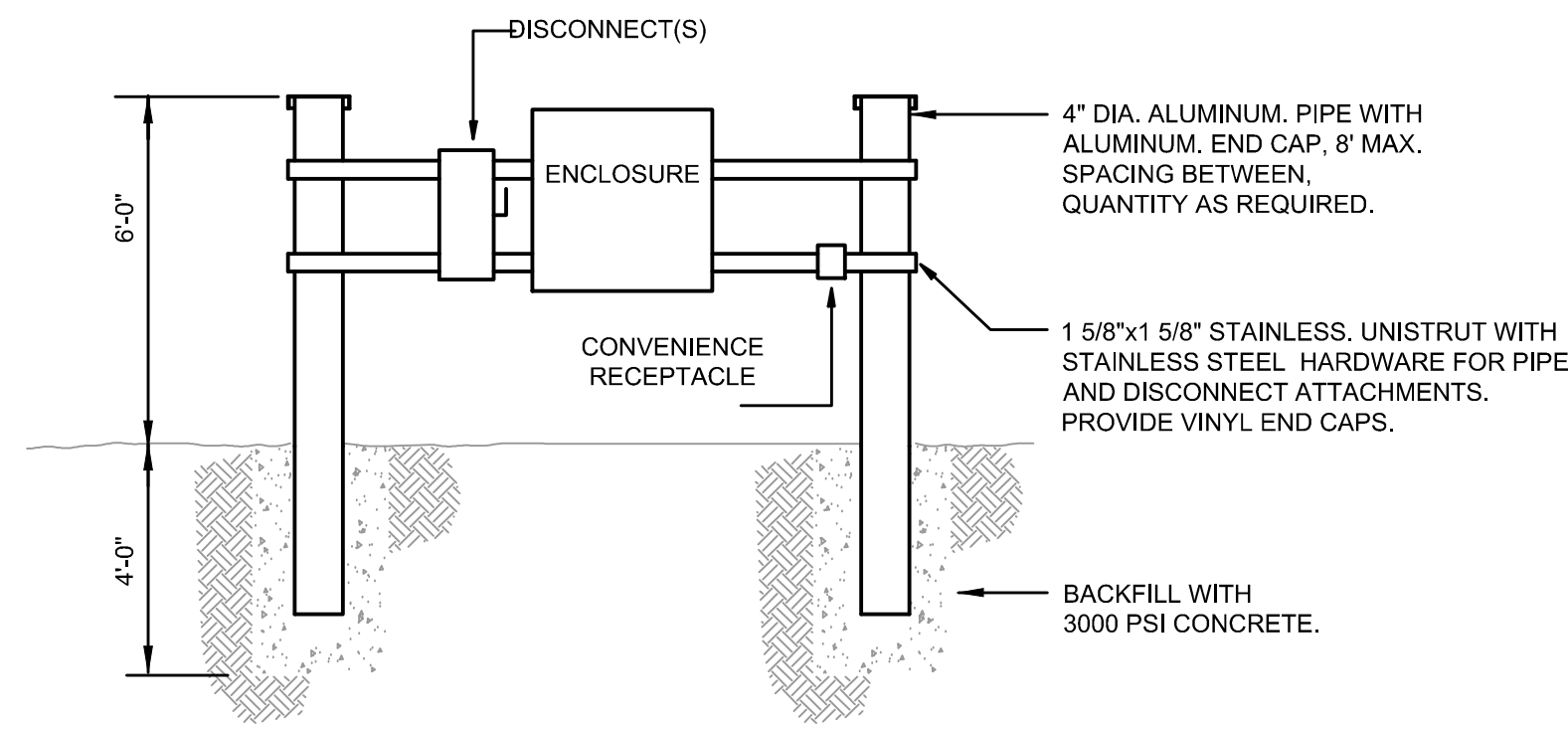
Charles C. Gableman, P.E. 01095
 ELPD 2025 #221176

ELECTRICAL RISERS

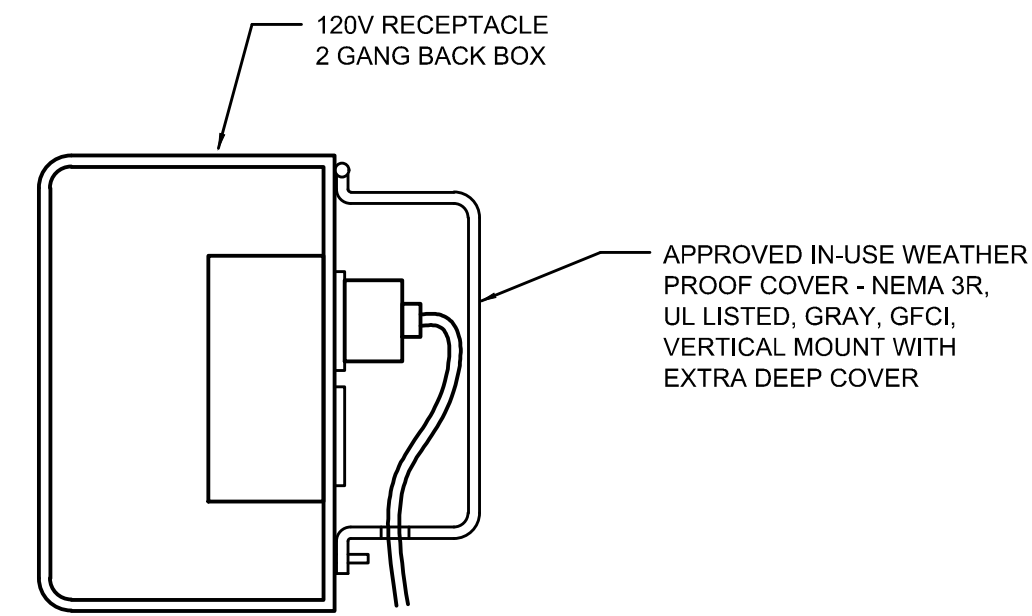
E-302



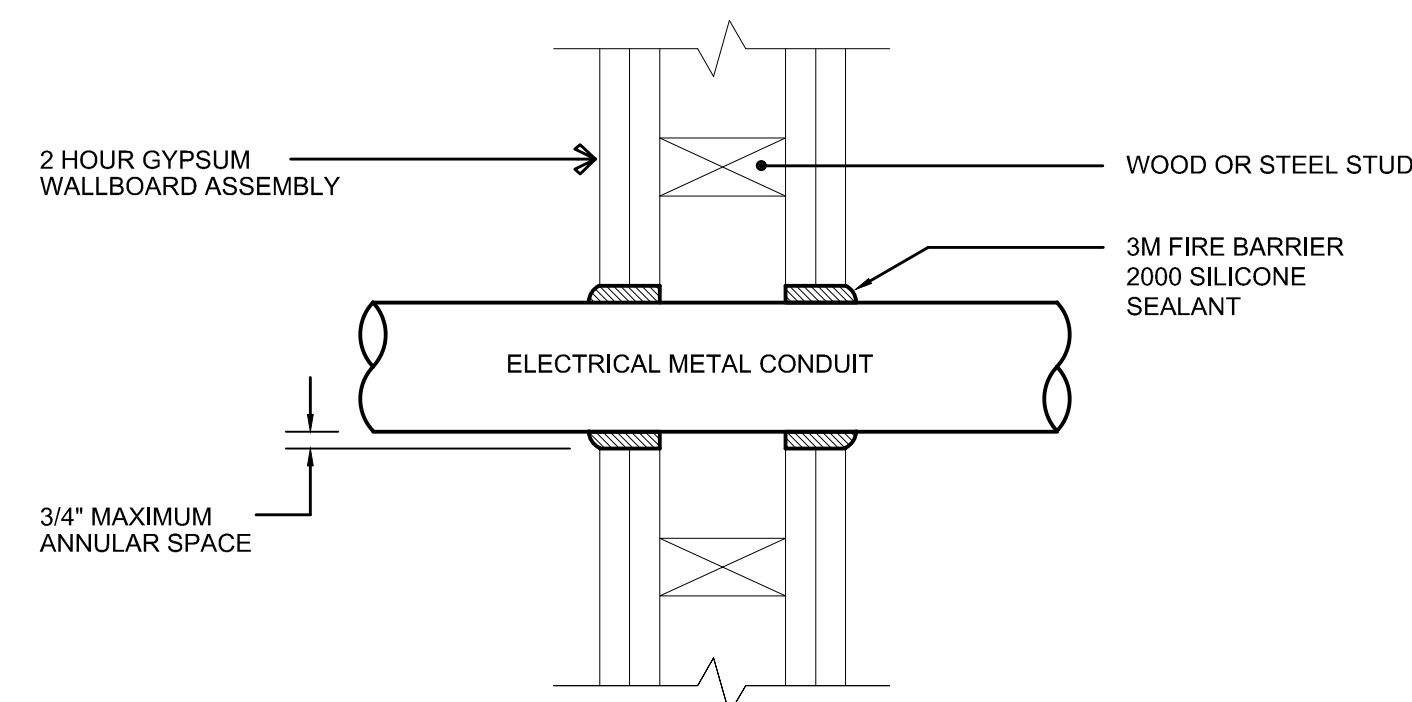
1 TYPICAL PULL BOX SECTION
E-303 SCALE: NONE



2 PANEL MOUNTING DETAIL - TYPICAL
E-303 SCALE: NONE



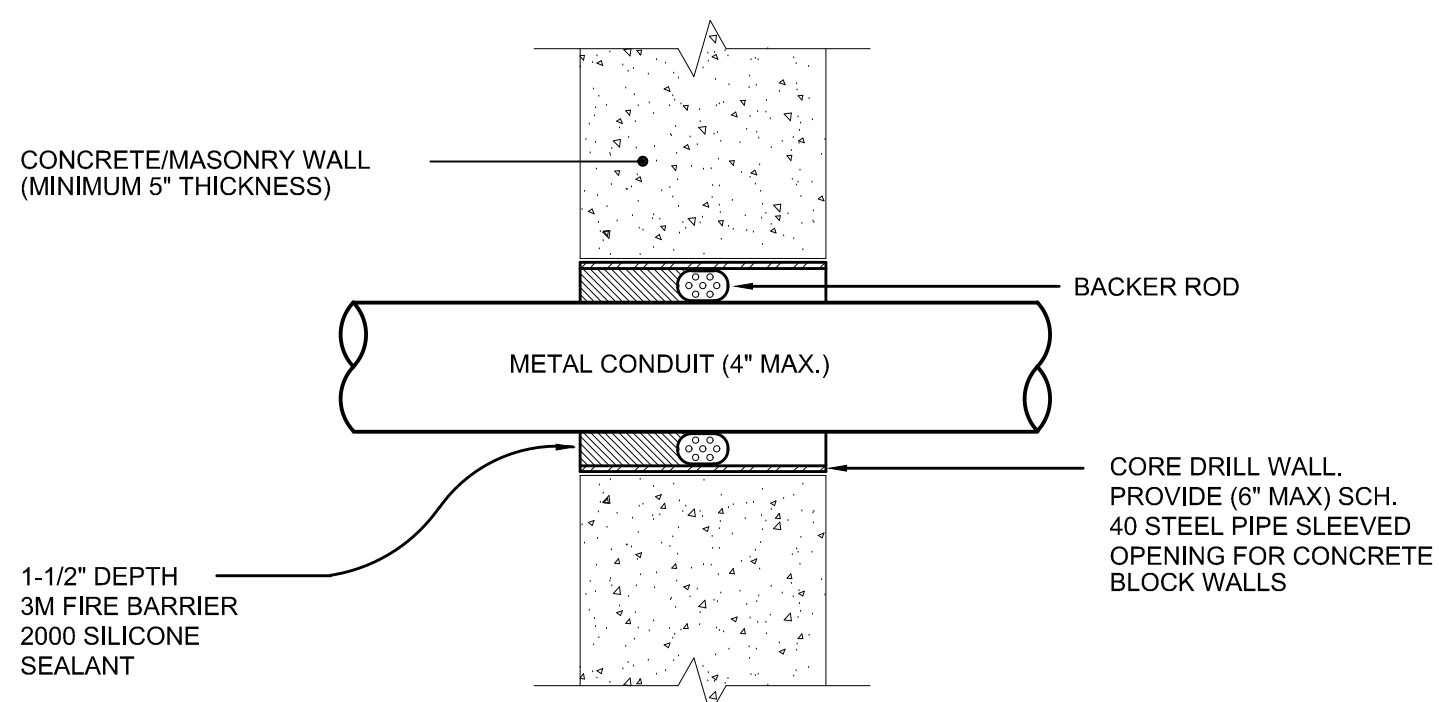
3 EXTERIOR 120V RECEPTACLE DETAIL
E-303 SCALE: NONE



4 CONDUIT PENETRATION THROUGH RATED GYPSUM WALL
E-303 (UL #W-L-1010) SCALE: NONE

CONDUIT PENETRATION NOTES (GYPSUM):

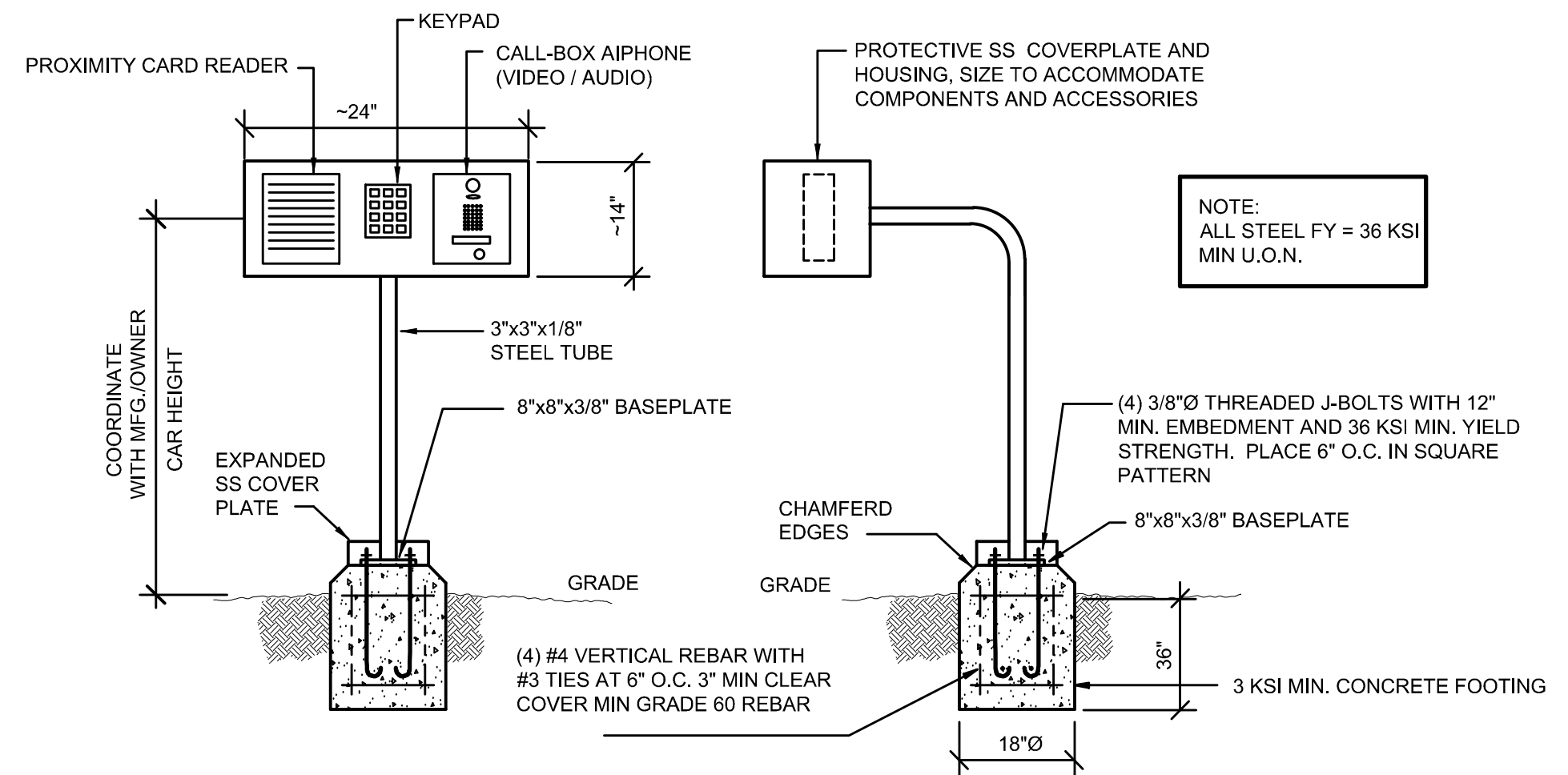
1. MAXIMUM 3/4" ANNULAR SPACE.
2. INSTALL 3M FIRE BARRIER 2000 SILICONE SEALANT TO COMPLETELY FILL THE ANNULAR SPACE BETWEEN THE PIPE AND THE WALL ASSEMBLY. FILL TO THE FULL THICKNESS OF THE GYPSUM WALL (MINIMUM 1-1/4 INCH SEALANT THICKNESS) PLUS AN ADDITIONAL 1/4 INCH CROWN AROUND THE PERIMETER OF THE CONDUIT.



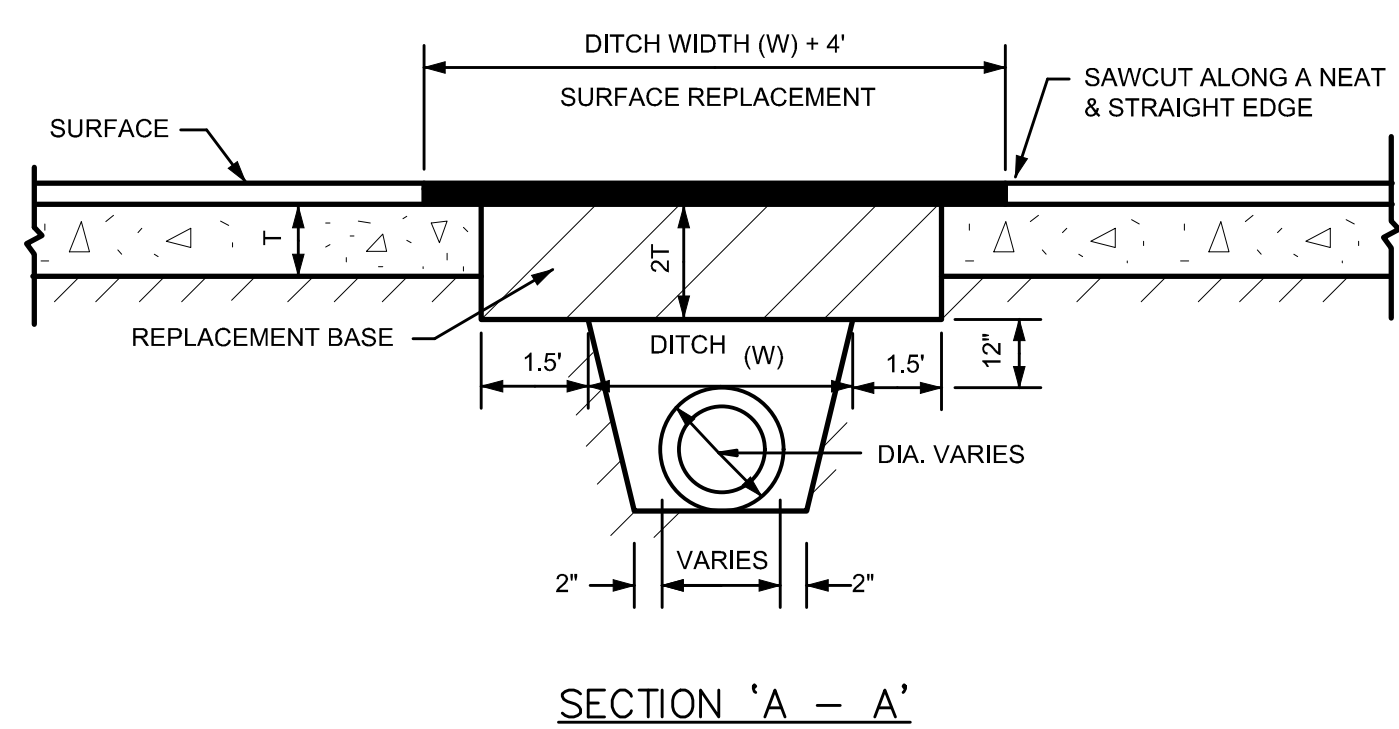
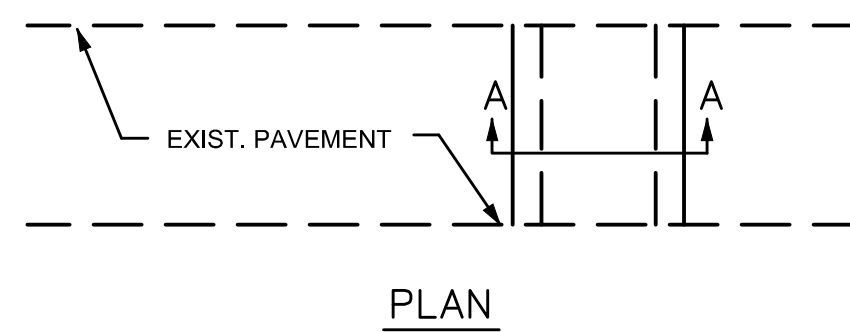
5 CONDUIT PENETRATION THROUGH RATED CONCRETE/MASONRY WALL
E-303 (UL #C-AJ-1014) SCALE: NONE

CONDUIT PENETRATION NOTES (CONCRETE/MASONRY):

1. CORE DRILL FOR A MAXIMUM 6 INCH DIAMETER OPENING WITH MAXIMUM 6 INCH SCHEDULE 40 STEEL PIPE SLEEVED OPENING FOR CONCRETE BLOCK OR BRICK WALLS OR MAXIMUM 3/4 INCH ANNULAR SPACE.
2. INSTALL OPEN CELL POLYURETHANE BACKER ROD IN OPENING. RECESS 1-1/2 INCHES FROM WALL SURFACE.
3. INSTALL A MINIMUM OF 1-1/2 INCHES OF 3M FIRE BARRIER 2000 SILICONE SEALANT OVER BACKER ROD.



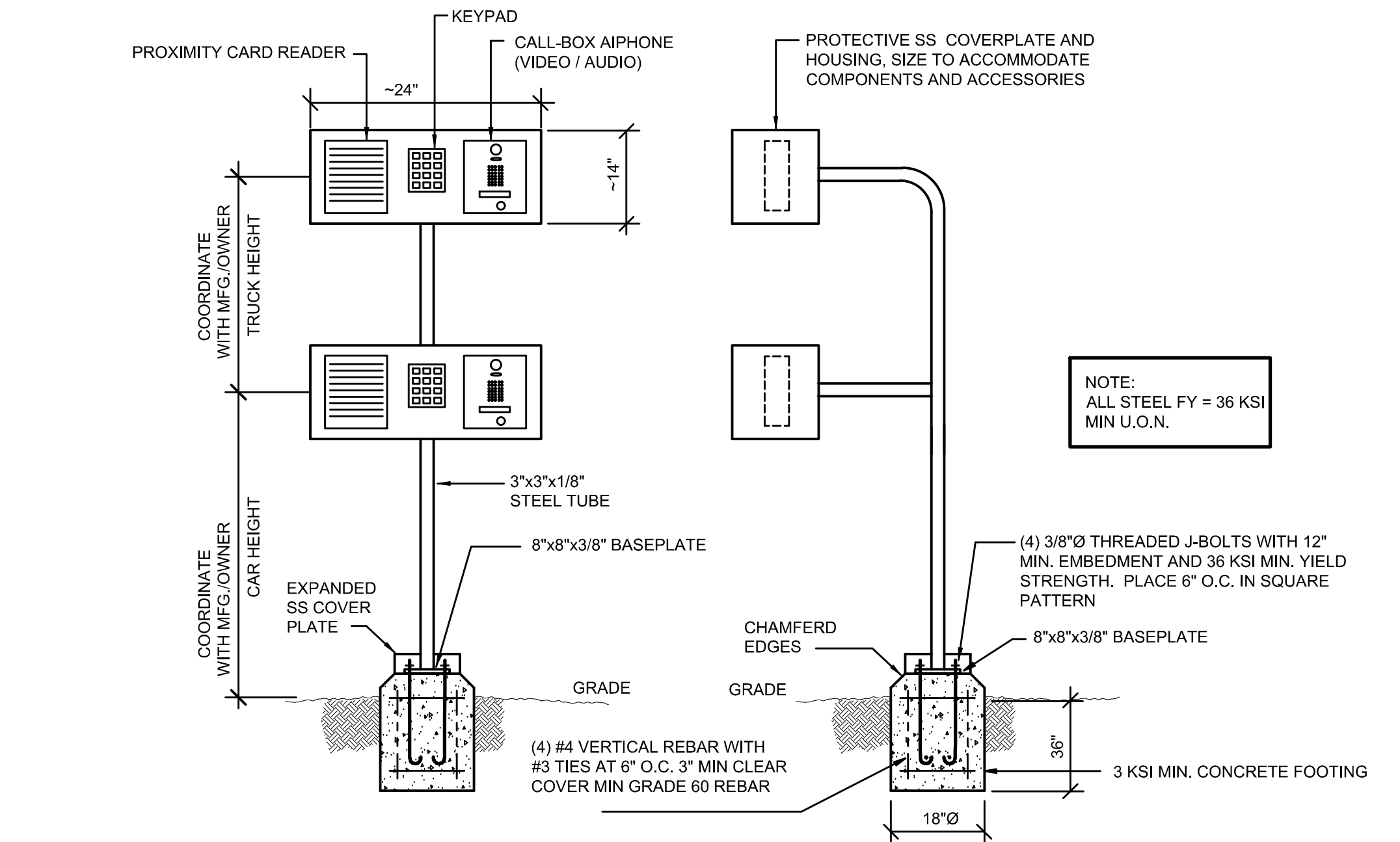
6 INTERCOM STATION PEDESTAL DETAIL
E-303 SCALE: NONE



7 FLEXIBLE PAVEMENT RESTORATION PERPENDICULAR UTILITY INSTALLATION
E-303 SCALE: NONE

GENERAL NOTES

1. REPLACED BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE. MINIMUM 8", MAXIMUM 18".
2. BASE MATERIAL SHALL BE PLACED IN 6" MAXIMUM (LOOSE MEASUREMENT) LAYERS AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO 98% OF MAXIMUM DENSITY. PER AASHTO T-180.
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
4. SURFACED TREATED PAVEMENT JOINTS SHALL BE LAPPED AND FEATHERED.
5. SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE.
6. BASE MATERIAL SHALL HAVE A MINIMUM LBR. OF 100 AND A MINIMUM CARBONATE CONTENT OF 60%.
7. IF THE DITCH IS FILLED TEMPORARILY, IT SHALL BE COVERED WITH A 2" ASPHALTIC CONCRETE PATCH TO KEEP THE FILL MATERIAL FROM RAVELING UNTIL REPLACED WITH A PERMANENT PATCH.
8. BACKFILL USING EXISTING SOILS SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK ETC. BACKFILL SHALL BE PLACED AND COMPACTED TO MINIMUM 98% OF MAX DENSITY PER AASHTO T-180.



8 INTERCOM STATION PEDESTAL DETAIL
E-303 SCALE: NONE

Revisions		
No.	Date	Note

**SECTION IX
SAMPLE AIA AGREEMENT / A201-2017 GENERAL CONDITIONS**

(Refer to the Following Pages)



AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the - day of - in the year 20-
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

The School Board of Martin County, Florida
1939 SE Federal Highway
Stuart, FL 34994

and the Contractor:
(Name, legal status, address and other information)

-

for the following Project:
(Name, location and detailed description)

INVITATION TO BID (ITB) NO. 1001-2023-2024
ENHANCED SECURITY PROJECT
PURCHASING/MAINTENANCE/TRANSPORTATION SITES

The Architect: ENGINEER
(Name, legal status, address and other information)

HARVARD • JOLLY | 
2047 Vista Pkwy # 100, West Palm Beach, FL 33411

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101®–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

TABLE OF ARTICLES

1	THE CONTRACT DOCUMENTS
2	THE WORK OF THIS CONTRACT
3	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
4	CONTRACT SUM
5	PAYMENTS
6	DISPUTE RESOLUTION
7	TERMINATION OR SUSPENSION
8	MISCELLANEOUS PROVISIONS
9	ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)
- 10 days after the Notice to Proceed is issued.

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

[] Not later than () calendar days from the date of commencement of the Work.

[X] By the following date: - days from the Notice to Proceed to Final Completion,
- days breaks down as follows:
-

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
N/A	

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be (\$ -), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
N/A	

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. (Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
N/A		

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price
N/A	

§ 4.4 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
N/A		

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

Refer to Item 12.2 LIQUIDATED DAMAGES located in the ITB# 1010-0-2021/LD for information.

§ 4.6 Other:
(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

Init.

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the TBD day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the TBD day of the TBD month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than (TBD) days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

Init.

/

5% Retainage for the Contractor, Subcontractors, Suppliers and their subcontractors and suppliers will be withheld by Owner to the maximum extent permitted by law.

§ 5.1.7.1.1 The following items are not subject to retainage:

(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

N/A, unless required by law.

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

N/A, unless required by law.

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

(Insert any other conditions for release of retainage upon Substantial Completion.)

Contractor's Job Cost Ledger. With each application for payment, the Contractor shall provide its computer-generated job cost ledger (accounting report) in both hard copy and Excel™ format. The Contractor shall provide a reconciliation of the job cost ledger with the Application for Payment Form and shall support the charges by including payrolls, petty cash accounts, and receipted invoices or invoices with check vouchers attached.

Lien Waivers. By submitting an application for payment, the Contractor warrants that full and complete title will vest in the Owner with regard to all Work covered by an application for payment, no later than the time of such payment. Additionally, all Work represented by a submitted application for payment shall be free and clear of any and all liens, claims, security interests or encumbrances in favor of any person or entity. Each application for payment shall be accompanied by a **Partial Waiver and Release of Lien Upon Progress Payment**, pursuant to s. 713.20, Florida Statutes, from the Contractor and each subcontractor, and, with the exception of the initial application for payment, a certificate from each subcontractor and other potential lienor stating that the subcontractor has been paid all amounts due the subcontractor or other potential lienor from previous applications for payment. The Contractor shall also submit with each application for payment after the initial application a certificate stating that it has paid all subcontractors all amounts due the subcontractors from previous applications for payment. The Contractor is responsible for collecting all waivers and releases of liens upon progress payment and all certificates from all subcontractors or other potential lienors and submitting them together with the application for payment. Owner shall not consider the application for payment as complete unless all appropriate waivers and releases of liens are received. Once payment is made, each waiver and release of lien shall be unconditional with respect to all labor, services, or materials furnished for that associated application for payment. In addition to the foregoing, the following documents must be submitted with each application for payment:

- (i) with the exception of the initial application for payment, **Partial Waiver and Release of Lien Upon Progress Payment**, pursuant to s. 713.20, Florida Statutes and a certificate stating that it has paid all subcontractors all amounts due the subcontractors from previous applications for payment;
- (ii) and any other evidence required by the Owner or Architect to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed (1) progress payments already received by the Contractor ; less (2) that portion of those payments attributable to the Contractor's Fee; plus (3) payrolls for the period covered by the present application for payment.
- (iii) The Contractor's acceptance of the supportability and allowability of the charges submitted in the applications for payment is not demonstrated or inferred through the approval and signature of each monthly pay application that includes the referenced charges. (i.e. After application for payment approval by the Owner, charges included remain subject to the provisions and restrictions set forth here and remain subject to audit/recovery. CONTRACTOR SHALL NOT FRONT-END LOAD ITS SCHEDULE OF VALUES BY IMBALANCING IT OR BY INCREASING ANY ELEMENT THEREOF IN EXCESS OF THE ACTUAL COST, AND SUCH ACTS SHALL CONSTITUTE A MATERIAL BREACH OF THIS AGREEMENT.

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§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner’s prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor’s responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner’s final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect’s final Certificate for Payment, or as follows:

The Owner’s final payment to the Contractor shall be made after the MCSD Close-out List is completed and the final payment is reviewed/ approved by Board of the School District.

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located. *(Insert rate of interest agreed upon, if any.)*

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ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker. *(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*

N/A

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows: *(Check the appropriate box.)*

- Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- Litigation in a court of competent jurisdiction
- Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)

1. Take the Cost of the Work incurred by the Contractor to the date of termination;
2. Add the Contractor’s Fee computed upon the Cost of the Work to the date of termination at the rate stated in Section 6.1 or, if the Contractor’s Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion; and
3. Subtract the aggregate of previous payments made by the Owner for Construction Phase services.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:

(Name, address, email address, and other information)

Mark Sechrist, MCSD Director of Facilities and Planning
David Williams, MCSD Construction Manager of Facilities and Planning
MCSD District Office
1939 SE Federal Highway
Stuart, Florida 34994
772.219.1200

§ 8.3 The Contractor’s representative:

(Name, address, email address, and other information)

-

§ 8.4 Neither the Owner’s nor the Contractor’s representative shall be changed without ten days’ prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

N/A

§ 8.7 Other provisions:

N/A

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™-2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™-2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013 incorporated into this Agreement.)

.5 Drawings

Number	Title	Date
- PLANS		-
GENERAL		

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.6 Specifications

Section

-PROJECT SPECIFICATIONS
MANUAL

Title

Date

Pages

-

.7 Addenda, if any:

Number

Date

Pages

REFER TO ITB# -
1001-2023-2024

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[**N/A**] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

[**N/A**] The Sustainability Plan:

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Title Date Pages

[N/A] Supplementary and other Conditions of the Contract:

Document Title Date Pages

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

INVITATION TO BID (ITB) NO. 1001-2023-2024 ENHANCED SECURITY PROJECT PURCHASING/MAINTENANCE/TRANSPORTATION SITES

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)

DRAFT COPY OF AIA CONTRACT PENDING REVIEW AND SIGNING BY THE AWARDED CONTRACTOR.

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AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

INVITATION TO BID (ITB) NO. 1001-2023-2024
ENHANCED SECURITY PROJECT
PURCHASING/MAINTENANCE/TRANSPORTATION SITES

THE OWNER:

(Name, legal status and address)

The School Board of Martin County, Florida
1939 SE Federal Highway
Stuart, FL 34994

THE ARCHITECT:

(Name, legal status and address)

HARVARD • JOLLY | **PSK**
2047 Vista Pkwy # 100, West Palm Beach, FL 33411

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- 1 GENERAL PROVISIONS
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- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT
- 15 CLAIMS AND DISPUTES

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement or Contract) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions, including Exhibit A – Owner’s Project Description and Specific Project Requirements), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. The Contract Documents include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor’s bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect’s consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect’s consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect’s duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect’s consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker’s interpretations and decisions will endeavor in good faith to: secure faithful performance by both Owner and Contractor and act impartially in doing so. The Initial Decision Maker shall not be liable for interpretations or decisions rendered in good faith, including the results thereof.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results. All Work

mentioned or indicated in the Contract Documents shall be performed by the Contractor as part of this Contract unless it is specifically indicated in the Contract Documents that such Work is to be done by others. Should the Contract Documents disagree in themselves or with each other, the Contractor shall provide the better quality or greater quantity of Work unless otherwise directed by written addendum to the Contract.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. The Contractor and all Subcontractors shall refer to all of the Contract Documents, including those showing primarily the Work of the mechanical, electrical and other specialized trades, and to all of the Sections of the Specifications, and shall perform all Work reasonably inferable therefrom as being necessary to produce the intended results.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 All indications or notations which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials or processes wherever they appear in the Work, except where a contrary result is clearly intended by the Contract Documents.

§ 1.2.5 Where codes, standards, requirements or publications of public and private bodies are referred to in the Specifications, references shall be understood to be the latest revision on or before the date this Contract is executed, except where a contrary result is clearly intended by the Contract Documents.

§ 1.2.6 Where no explicit quality or standards for materials or workmanship are established for Work, such Work is to be of good quality for the intended use and consistent with the quality of the surrounding Work and of the construction of the Project generally.

§ 1.2.7 All manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the manufacturer's written or printed directions and instructions, except where a contrary result is clearly intended by the Contract Documents.

§ 1.2.8 The Plumbing, Mechanical, Electrical and Fire Protection Drawings are diagrammatic only, and are not intended to show the alignment, physical locations or configurations of such Work. Such Work shall be installed without additional cost to the Owner to clear all obstructions, permit proper clearances for the Work of other trades, be installed in an effective and coordinate manner with all other Work in the area, and clearly present an orderly appearance when exposed.

§ 1.2.9 Exact locations of fixtures and outlets shall be obtained from the Architect as provided in subparagraph 3.2.5 before the Work is roughed in; Work installed without such information for the Architect shall be relocated at the Contractor's expense.

§ 1.2.10 Test boring or soil test information included with the Contract Documents or otherwise made available to the Contractor was obtained by the Owner for use by the Architects in the design of the Project or Work. The Owner does not hold out such information to the Contractor as an accurate or approximate indication of subsurface conditions, and no claim for extra cost or extension of time resulting from a reliance by the Contractor on such information shall be allowed.

§ 1.2.11 Where the Work is to fit with existing conditions or work to be performed by others, the Contractor shall fully and completely join the Work with such conditions or work, unless otherwise specified.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

(Paragraphs deleted)

§ 1.6.3 All notices directed to the Owner shall not be duly served unless a copy thereof is also delivered to the attention to the Owner's Legal Department or its designated legal counsel by one of the above referenced means applicable to the notice.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority.

(Paragraphs deleted)

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3. The Contractor shall resume the Work immediately after the cause for such order has been eliminated or upon written notice to do so by Owner, whichever is earlier. Contractor shall not be entitled to any increase in the Contract Sum or any extension of the Contract Time.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after service of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15. If Owner exercises its right to carry out any Contract Work or warranty or special warranty Work, Contractor may not thereafter assert that any warranty or special warranty was terminated, voided, compromised or otherwise undermined in any manner whatsoever thereby.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become fully familiar with local conditions under which the Work is to be performed, and connected all personal observations consistently with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work and during performance of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. Contractor shall be liable for damage to the extent Contractor knew or reasonably should have, but failed to, discover an error, inconsistency or omission relating to the Contract Document; however, it is recognized that the Contractor's duties are made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise provided in the Contract Documents, such as Contractor's design related obligations, concerning which, Contractor shall bear the cost of the requisite licensed professionals. The Contractor shall immediately notify the Architect of any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. If the Contractor performs any construction activity when or where Contractor knew or reasonably should have, but failed to, discover an error, inconsistency or omission in the Contract Documents without such notice to the Architect, the Contractor shall be solely responsible for proper performance and shall bear all costs relating to any corrections.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall immediately report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from performance of said obligations, including errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.2.5 Any claim by the Contractor or Subcontractors that, in submitting their respective bids, they did not include all items of Work shown in the Contract Documents, will be given no consideration for an adjustment of the Contract Sum or Contract Time of any kind. If any item of Work is specified in a Section generally applicable to a specific trade or Subcontractor that may not normally or customarily furnish or install the items of Work, it shall be the responsibility of the Contractor to coordinate the situation with the applicable Subcontractor(s), and the item under consideration shall be the responsibility of the Contractor to provide the work in question, without any additional cost to the Owner.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention, which shall not be less than such state of skill and attention generally rendered by the contracting profession for projects similar to the Project in scope, type, difficulty and location. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor, Subcontractors, suppliers of material or equipment, and any and all of their officers, directors, employees, agents, contractors,

subcontractors, and all other persons or entities taking any action in furtherance of performing any portion of the Work.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 If the Contractor proposes to use a material which, while suitable for the intended use, deviates in any way from any requirement of the Contract Documents, the Contractor shall inform the Architect in writing of the nature of such deviations at the time the material is submitted for approval.

§ 3.4.4 In informing the Architect of deviations or proposed substitutions, the Contractor shall provide, upon request, evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that otherwise attainable. If, in the opinion of the Architect, the evidence presented by the Contractor does not provide a sufficient basis for such reasonable certainty, the Architect may reject such substitution or deviation without further investigation.

§ 3.4.5 Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by Contractor, notwithstanding any approval or acceptance of such substitution by Owner or Architect.

§ 3.4.6 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.7 Contractor acknowledges, understands and agrees that protection of students and campus safety is of the utmost importance to Owner. Contractor also acknowledges, understands and agrees that it must comply with all federal laws, state laws (such as the Jessica Lundsford Act) and Owner's School Board policies relating to the protection of students and campus safety, including but not limited to performing background checks for criminal history for violent crimes and crimes involving dishonesty or immoral turpitude, as well as searching sex offender registries for sexual offenders and sexual predators. Contractor agrees that each and every of the following who will or may have any potential student contact will, prior to any such potential student contact, be required to and successfully complete a background check and sex offender registry check in accordance with Sections 434.04 & 1012.315, Florida Statutes (regardless of whether that statute requires same): all of its owners, members, officers, directors, employees (including those who may be working as 1099 independent contractors) and other agents. Contractor also agrees that it will not permit any person to perform any work or service pursuant to this Agreement that may involve any potential student contact without first conducting and ensuring passage of all background and sex offender checks required by this Agreement. Contractor further agrees that no person that would be prohibited from employment by Owner pursuant to Section 1012.315, Florida Statutes may perform any work or service arising out of or relating to this Agreement. Prohibited persons include any person who has "been arrested for and are awaiting final disposition of, have been found guilty of, regardless of adjudication, or entered a plea of nolo contendere or guilty to, or have been adjudicated delinquent" of any offense described in any subsection of Section 1012.315(2), Florida Statutes. For purposes of this Agreement, and consistent with Owner's School Board policy, "conviction is defined as a finding of guilt, or plea of guilty, or a plea of nolo contendere, or a verdict of guilty. The withholding of adjudication or the entry of an order sealing or expunging the record or requiring a pre-trial intervention or pre-trial diversion program shall not be considered an exception to this section." Contractor agrees to establish policies and procedures that will ensure all such checks are performed periodically and that no person prohibited from having any potential

student contact is assigned any role or credentials in any way arising out of or relating to Contractor's performance of this Agreement.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. Promptly after written notification of any non-conformance or warranted item, Contractor shall repair or replace all non-conformances and warranted items with Work conforming to such requirements at no cost to Owner. The Contractor's warranty excludes remedy for damage or defect caused by: abuse, alterations to the Work not executed by the Contractor, grossly negligent or reckless maintenance or operation, and the item of Work reaching its normal or customary life expectancy. If required by the Architect or Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.5.3 Contractor shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. If required by the Architect or Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment, including certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts or other evidence which, in the opinion of the Architect, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. All such data shall be furnished at the Contractor's expense. This provision shall not require the Contractor to pay for periodic testing of different batches of the same material, unless such testing is specifically required by the Contract Documents to be performed at the Contractor's expense.

§ 3.5.4 The warranties provided in this Section 3.5 shall be in addition to and not in limitation of any other warranty required by the Contract Documents, or otherwise implied or prescribed by applicable law.

§ 3.5.5 Contractor shall procure and deliver to Architect, no later than the date claimed by Contractor as the date of Substantial Completion, all manufacturer warranties applicable to materials used in the Work and all special warranties required by the Contract Documents. Delivery of possession of the Project for occupancy by Contractor shall constitute Contractor's guarantee to Owner that all warranties to which Owner is entitled will issue to Owner and that said warranties will be performed in accordance with its terms and conditions.

§ 3.5.6 Contractor shall warrant and guarantee all Work according to the terms of any special warranty or guaranty required by the Contract Documents.

§ 3.6 Taxes

Owner and the Project are exempt from sales, use and other tax obligations. Exemption information will be made available to Contractor on request. To the extent Contractor acquires any material, labor, equipment or service for the Project in manner that requires payment of any tax, Contractor shall solely bear and pay all such tax obligations.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work when or where Contractor knew or should have known it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

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§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall immediately provide notice to the Owner and the Architect before conditions are disturbed and in no event later than five days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features.

(Paragraphs deleted)

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site at all times during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.9.4 Contractor shall coordinate and supervise the Work performed by Subcontractors to the end that the Work is carried out without conflict between trades, subcontractors or suppliers of material or equipment, and so that none of same individually or collectively, causes delay to the general progress of the Work. Contractor and all subcontractors shall at all times afford each trade, any separate contractor, or Owner, every reasonable opportunity for the installation of Work and storage of materials.

§ 3.9.5 Contractor shall arrange for and attend job meetings with the Architect and such other persons as the Architect may from time to time wish to have present. Contractor shall be represented by a principal, project manager, general superintendent or other authorized main office representative, as well as by Contractor's superintendent. An authorized representative of any Subcontractor or Sub-subcontractor shall attend such meetings if the representative's presence is requested by Architect or Owner. All such representatives must be empowered to make binding commitments on all matters to be discussed at such meetings, including means, methods, costs, payments, change orders, time schedules and manpower. Any notices required under the Contract may be served on any such representative.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of

Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect. Contractor's submission of, or, Owner or Architect's acceptance of, a schedule that fails to show completion within the Contract Time shall not affect Contractor's obligation to complete all Work on the Project within the Contract Time. Owner may, at its option, raise any such Claim at any time after submission of any such schedule or to defer any such claim until after final completion or termination of the Contract.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, quantities, dimensions, field measurements, relations to existing work, and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work, pending and previously accepted Shop Drawings, Product Data, Samples or similar submittals, work to be installed later, and verification of compliance with all the requirements of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are required by the Contract Documents for a portion of the Work (such as Contractor's design related obligations) or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. However, Contractor shall bear the cost of the requisite licensed professionals who can perform the obligations in compliance with applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, Owner and the Contract Documents. Contractor shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the better of the condition intended by the Contract Documents or the condition existing prior to the cutting, fitting, or patching.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The

Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 During and at the end of each workday, Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect and Owner.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of property, but only to the extent caused by the intentional or negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect's site visits do not comprise or constitute exhaustive or continuous on-site inspections on which Contractor may rely to check, confirm or verify the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component. The Architect's approval of a specific item shall not constitute approval or permission for Contractor to substitute materials or deviate from the Contract Documents (without complying with other applicable terms of this Contract); nor shall any such approval excuse or imply permission to use any item that is inferior or non-compliant under the Contract Documents.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and

assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor in good faith to: secure faithful performance by both Owner and Contractor and act impartially in doing so. Architect will not be liable for interpretations or decisions rendered in good faith, including the results thereof.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor. Sub-subcontractors also generally fall within the scope of references in this Contract to indirect employment or contracting of Work.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect or Owner may notify the Contractor whether the Owner or the Architect: (1) has reasonable objection to any such proposed person or entity, requires additional information from Contractor to consider the proposed Subcontractor, or (3) requires additional time for review. Failure to provide notice within the 14-day period shall constitute notice of no reasonable objection. Contractor's failure to provide additional information requested shall constitute reasonable grounds to object to a proposed Subcontractor such that requiring no further action by Owner or Architect.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made a permissible and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. No increase in the Contract Sum or Contract Time shall be allowed for such change.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution. A substitute Subcontractor shall be subject to approval in accordance with this Section 5.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner pursuant to Section 14.2 or 14.4, and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

(Paragraph deleted)

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, whereupon the Owner shall be relieved of any legal responsibility for any obligation under the subcontract, including all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

(Paragraph deleted)

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, and thereafter, Contractor shall bear sole responsibility for the completing the Work.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

(Paragraph deleted)

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work; and
- .2 The amount of the adjustment, if any, in the Contract Sum, which, unless otherwise provided in the Contract Documents or agreed to by Owner and Contractor, shall be determined using one of the adjustment methods listed in Section 7.3.3.

§ 7.2.2 Upon request of Owner or Architect, Contractor shall without cost to Owner submit to Architect, in such form as Architect may require, an accurate written estimate of the cost of any proposed extra Work or change. The estimate shall indicate the quantity and unit cost of each item of materials, and the number of hours of work and hourly rate for each class of labor, as well as the description and amounts of all other costs chargeable under the terms of this Article. Unit labor costs for the installation of each item of materials shall be shown. Contractor shall provide all supporting information requested by Owner or Architect. Contractor shall promptly revise and resubmit each estimate if Architect determines that it is not in compliance with the requirements of this Article, or that it contains errors of fact or mathematical errors. If required by Architect, in order to establish the exact cost of new Work added or of previously required Work omitted, Contractor shall obtain and furnish to Architect bona fide competitive proposals from recognized suppliers for furnishing any material included in such Work. Such estimates shall be furnished

promptly so as to occasion no delay in the Work. All of the information required by this paragraph shall be furnished at Contractor's sole expense.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

(Paragraph deleted)

§ 7.3.6 Upon service of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and, in no less than 5 days, advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum or the method for determining the adjustment. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be determined in the same manner as a net increase, but shall in no event be less than the actual net cost as confirmed by the Architect, plus overhead and profit. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase or decrease, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and

certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time described herein is a reasonable period for performing and completing all of the Work, including all potential changes to the Work and taking into consideration the average, high and low climatic range(s), the usual industrial and/or residential conditions prevailing in this locality, and the Covid-19 health pandemic.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If Contractor shall be delayed in the completion of its Work by reason of unforeseeable causes beyond its control and without Contractor's sole or concurrent fault or negligence, including, but not restricted to, acts of God or the sole gross neglect of Owner or any Separate Contractor(s), the period herein specified above for the completion of delivery shall be extended by such time as shall be approved by Owner and Architect.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15. **§ 8.3.3** If Contractor is delayed in the progress of the Work at any time for any reason, including by Owner, Architect, or any other person or entity, regardless of the cause(s) or source of any cause(s), including the incorporation of any minor or major changes to the Work, Contractor shall not assert any claim arising out of or relating to same against Owner or Architect. In such event, Contractor's sole remedy shall be limited to an extension of time, without cost, compensation, increase in the Contract Sum, damage recovery or any other thing of value. In no event shall Contractor be entitled to any compensation, increase in the Contract Sum, damage recovery or any other thing of value (other than an extension of Contract Time under this paragraph) arising out of or relating to any alleged delay.

(Paragraph deleted)

§ 8.3.4 Contractor shall pay Owner, as damages for non-completion of the Work within the Contract Time, one thousand five hundred dollars (\$1,500.00) for each and every day which may exceed the Contract Time for both substantial and final completion, is hereby agreed upon, fixed and determined by the parties hereto as liquidated damages that Owner will likely suffer by reason of such default and not by way of penalty. All liquidated damages are fixed and agreed upon due to the impracticability and difficulty of fixing and ascertaining the actual damages Owner would in such event sustain. Owner is hereby authorized to deduct the said liquidated damages from any monies that may be due or become due Contractor for the Work under this Contract, or as much thereof as Owner may, at its own option, deem just and reasonable.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants and represents that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the

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Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work. Contractor shall inquire and perform all due diligence available to Contractor prior to making all of the foregoing warranties and representations. This provision shall supersede and replace any inconsistent language utilized in submittal AIA Forms G702 (Application for Payment) and G703 (Application for Payment Continuation Sheet) or equivalent documents, including any language utilized in such forms that purport to qualify any representation or warranty based on knowledge, information or belief.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- .7 repeated failure to carry out the Work in accordance with the Contract Documents; or
- .8 failure of the Contractor to submit lien waivers, releases and any other similar documents required by the Contract Documents that protect Owner in connection with making payments to Contractor.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3 or 9.5.1.8, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.5.5 Nothing herein shall preclude Owner from setting off any amounts Contractor owes to Owner against any Certificate for Payment approved by the Architect.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner. Contractor shall likewise require each such Subcontractor and Sub-subcontractor to provide lien waivers, releases and any other similar documents required by the Contract Documents that protect Owner in connection with making payments to Contractor.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. The Owner has the right to review, test, verify or audit Contractor's receipts, payments, expenditures and all other books or records relating to the Project at any time. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner.

§ 9.6.8 **Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.**

§ 9.8 Substantial Completion
(Paragraphs deleted)

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted by Architect to Owner and Contractor for their written acceptance of the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents. An omission from the Certificate of Substantial Completion shall not permit Owner or Contractor to evade any obligation to perform under and in accordance with the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage, provided such occupancy or use is authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete. In such event, unless otherwise agreed, Owner and Contractor shall accept the written responsibilities assigned to each of them by Architect for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, occupancy or use of all or a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled, unless such Certificate was improvidently issued by Architect or is reasonably objected to by Owner.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with

the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

(Paragraphs deleted)

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

§ 9.10.6 Nothing herein shall preclude Owner from setting off any amounts Contractor owes to Owner against any Certificate for Payment approved by the Architect.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents, but including any risk retention associated with said insurance, such as deductibles, etc.) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable solely to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, and not attributable either in whole or in part to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition. § 10.2.8 Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services, and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the builders risk insurance company issuing insurance on the Project or by applicable governmental authority. The area within the Project site limits shall be kept orderly, clean, and all combustible rubbish, materials and substances shall be promptly removed from the site.

(Paragraphs deleted)

§ 10.2.9 Contractor shall at all times protect excavations, trenches, buildings, materials and equipment from rain water, groundwater, backup or leakage of sewers, drains and other piping, and from water of any other origin and shall remove promptly any accumulation of water.

§ 10.2.11 During the progress of the Work and at all times prior to the date of Substantial Completion or occupancy of the Work by Owner, Contractor shall provide temporary heat, ventilation and enclosure, adequate to permit the Work to proceed in a timely fashion, and to prevent damage to completed Work or Work in progress, or to materials stored on the premises.

§ 10.2.12 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters or recognizes on the site any material or substance known or that may reasonably be believed to be hazardous, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), Contractor shall, upon recognizing the condition, immediately: stop Work in the affected area and notify the Owner and Architect of the condition. Contractor and Owner shall cooperate in implementing measures to remove or contain said material or substance and Contractor shall comply with all directions of Architect in implementation of such removal or containment.

§ 10.3.2 When the material or substance has been removed, contained or otherwise rendered reasonably harmless, Work in the affected area shall resume. Excepting where 10.3.3 or 10.3.4 applies, by Change Order or Construction Change Directive, the Contract Time shall be extended appropriately and the Contract Sum shall be increased..

§ 10.3.3 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site.

(Paragraphs deleted)

§ 10.3.3 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's sole fault or negligence.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 **Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner and made payable to the Owner, and after Owner is made whole, disbursed as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. After Owner is made whole, Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from service of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any

dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense. Contractor shall bear the any cost, loss or damage resulting from any such failure or defect.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after service of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after service of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

(Paragraphs deleted)

§ 13.1.1 Governing Law

The Contract shall be governed by and interpreted in accordance with the laws of the State of Florida without regard to conflict of laws considerations, and any applicable federal act, rule or regulation. , including This Contract is made, is intended to be made and shall be considered made in Martin County, Florida. This Contract is performable, is intended to be performed and shall be considered to be performed in Martin County, Florida. In the very unlikely event the foregoing provision is held not to resolve any choice of law or conflict of law dispute, the parties agree that Florida's choice of law rules shall apply. Any and all disputes arising out of or relating to this Contract shall be maintained in a state or federal court located in and having jurisdiction over Martin County, Florida. All parties agree to submit to the jurisdiction of the courts of the State of Florida and agree and stipulate that venue shall exclusively be proper in a state or federal court in Martin County, Florida. No suit shall be maintained: (i) in any country other than the United States of America, (ii) in any state other than the State of Florida, or (iii) in any federal or state court whose geographical jurisdiction and venue does not specifically include Martin County, Florida. The parties waive the right to raise any claims of forum non conveniences and agree that the bringing of suit in any other forum, court or tribunal would be and is improper forum shopping. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.1.2 Sovereign Immunity

Notwithstanding anything to the contrary in this Agreement, Owner is not responsible for any damages or indemnity to Contractor or any third party or any other person or entity for which Owner has sovereign immunity or is otherwise protected or limited under Florida law, including but not limited to Section 768.28 Florida Statutes. Owner intends to avail itself of the benefits of Section 768.28, Florida Statutes, and of other statutes and common law governing sovereign immunity to the fullest extent possible. In no event will Owner's liability under this Agreement either be expanded in scope or exceed the amounts for which Owner has immunity. Nothing in this Agreement is intended to inure to the benefit of any third party for the purpose of allowing any claim which would otherwise be barred under the doctrine of sovereign immunity or by operation of law. This section controls over all other sections and provisions of this Agreement.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, Contractor shall not assign the Contract in whole or in part, or any right, duty, obligation or covenant, whether express or implied, in or under the Contract, including the right to receive payments and the right to bring causes of action arising out of or relating to the Contract without written consent of Owner. If Contractor attempts to make an assignment without such consent, the assignment will be void ab initio and that Contractor shall nevertheless remain legally responsible under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided in this Agreement, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures.

§ 13.4.2 If Architect or Owner determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 Contractor shall schedule tests, inspections, or approvals required by the Contract Documents with reasonable notice and coordination with Architect so that Architect, Owner or its/their professionals and consultants may observe same at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest thirty days after the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- 3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents, Contractor thereafter gives Owner a thirty day notice and Owner fails to make payment within that thirty day period.

(Paragraph deleted)

§ 14.1.3 If one of the reasons described in Section 14.1.1 exists, the Contractor may, upon fifteen days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed.

(Paragraph deleted)

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the Contract Documents or the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Time shall be adjusted for the suspension, delay, or interruption under Section 14.3.1. No adjustment in the Contract Time shall be made to the extent that performance is, was, or would have been, so suspended, delayed, or interrupted, in whole or in part by another cause for which the Contractor is responsible.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon service of notice from the Owner of such termination for the Owner's convenience, the Contractor shall:

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, and excepting as Owner may otherwise direct in writing, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, Contractor shall be reimbursed in accordance with the Contract Documents for all Work performed up to the termination date, inclusive of earned but unpaid retainage, and including all materials or equipment not incorporated in the Work, but delivered and suitably stored at the Project site. Payment of materials or equipment stored at the Project site shall be conditioned upon submission by the Contractor of bills of sale or such other evidence as is satisfactory to Owner to establish Owner's title to such material or equipment or otherwise protect Owner's interest.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes

and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Article 14, Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4. The Contractor's Claim shall include all material information supporting the claim.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include all material information supporting the claim and an estimate of the effect on the progress of the Work.

(Paragraph deleted)

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

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§ 15.1.8 Limitation of Liability

Owner shall be liable, if ever, only to the extent of its interest in the Project; and no officer, director, partner, agent or employee of Owner shall ever be personally or individually liable with respect to this Contract or the Work. Each Subcontract shall include the foregoing limitation.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time.

(Paragraph deleted)

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.5 and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. A good faith mediation session shall be held within 60 days after a request for mediation is made. The mediation request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

(Paragraph deleted)

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, service of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

**DRAFT COPY OF AIA CONTRACT PENDING REVIEW AND SIGNING BY
THE AWARDED CONTRACTOR.**



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