



Peralta Community College District



Project Manual for:

Bid No. 23-24/02

**MERRITT COLLEGE
SECONDARY POWER SUBSTATION C REPLACEMENT
Project Number: 2355.04**

Located at:
Merritt College, 12500 Campus Drive Oakland, CA 94619
August 17, 2023

Peralta Community College District

Seraphine Nzomo, Senior Buyer/Capital Projects – Bonds
Verna Van, Project Manager – Kitchell CEM

Advertisement Date: (1) July 14, 2023; (2) July 21, 2023
Bid Date: August 17, 2023 @ 3PM
(Project No.: 2355.04)

Requests for Information (RFI) due date: August 3, 2023 @ 3PM

Document 00 01 07
CERTIFICATIONS

Name of Project: Merritt College – Secondary Power Substation C

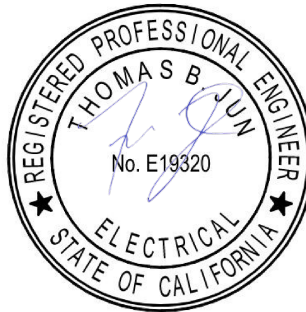
Contract Documents Prepared By:

Name: Thomas Jun

Title: Electrical Engineer

Date: April 21, 2023

Signed:

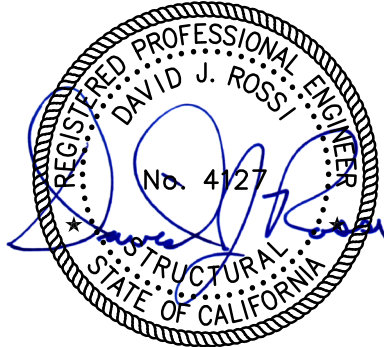


Name: David Rossi

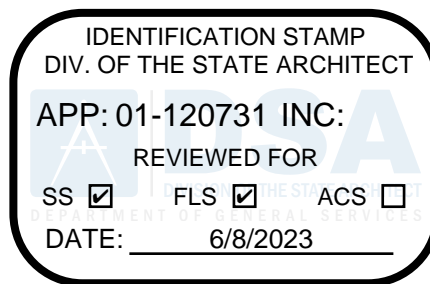
Title: Structural Engineer

Date: April 21, 2023

Signed:



END OF CERTIFICATIONS



DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS, 2022 CBC

Application Number:
01-120731
DSA File Number:
1-C1

School Name:
Merritt College
Increment Number:

School District:
Peralta Community College District
Date Created:
2023-04-17 09:31:43

2022 CBC

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2022 CBC).

****NOTE:** Undefined section and table references found in this document are from the CBC, or California Building Code.

KEY TO COLUMNS

1. TYPE	2. PERFORMED BY
<p>Continuous – Indicates that a continuous special inspection is required</p> <p>Periodic – Indicates that a periodic special inspection is required</p> <p>Test – Indicates that a test is required</p>	<p>GE (Geotechnical Engineer) – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative.</p> <p>LOR (Laboratory of Record) – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335.</p> <p>PI (Project Inspector) – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA.</p> <p>SI (Special Inspection) – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.</p>

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (CONCRETE), 2022 CBC

Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

Application Number: 01-120731	School Name: Merritt College	School District: Peralta Community College District
DSA File Number: 1-C1	Increment Number:	Date Created: 2023-04-17 09:31:43

C1. CAST-IN-PLACE CONCRETE				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify use of required design mix.	Periodic	SI	Table 1705A.3 Item 5, 1910A.1.
<input checked="" type="checkbox"/>	b. Identify, sample, and test reinforcing steel.	Test	LOR	1910A.2; ACI 318-19 Ch.20 and Section 26.6.1.2; DSA IR 17-10. (See Appendix (end of this form) for exemptions.)
<input checked="" type="checkbox"/>	c. During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Test	LOR	Table 1705A.3 Item 6; ACI 318-19 Sections 26.5 & 26.12.
<input checked="" type="checkbox"/>	d. Test concrete (f'c).	Test	LOR	1905A.1.17; ACI 318-19 Section 26.12.
<input checked="" type="checkbox"/>	e. Batch plant inspection: Continuous	See Notes	SI	Default of ' Continuous ' per 1705A.3.3. If approved by DSA, batch plant inspection may be reduced to ' Periodic ' subject to requirements in Section 1705A.3.3.1, or eliminated per 1705A.3.3.2. See IR 17-13. (See Appendix (end of this form) for exemptions.)
<input type="checkbox"/>	f. Welding of reinforcing steel.	Provide special inspection per STEEL, Category S/A4(d) & (e) and/or S/A5(g) & (h) below.		

C2. PRESTRESSED / POST-TENSIONED CONCRETE (IN ADDITION TO SECTION C1):				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Sample and test prestressing tendons and anchorages.	Test	LOR	1705A.3.4, 1910A.3
<input type="checkbox"/>	b. Inspect placement of prestressing tendons.	Periodic	SI	1705A.3.4, Table 1705A.3 Items 1 & 9.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (CONCRETE), 2022 CBC

Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

Application Number: 01-120731	School Name: Merritt College	School District: Peralta Community College District
DSA File Number: 1-C1	Increment Number:	Date Created: 2023-04-17 09:31:43

	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	c. Verify in-situ concrete strength prior to stressing of post-tensioning tendons.	Periodic	SI	Table 1705A.3 Item 13. Special inspector to verify specified concrete strength test prior to stressing.
<input type="checkbox"/>	d. Inspect application of post-tensioning or prestressing forces and grouting of bonded prestressing tendons.	Continuous	SI	1705A.3.4, Table 1705A.3 Item 9; ACI 318-14 Section 26.13

C3. PRECAST CONCRETE (IN ADDITION TO SECTION C1):				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Inspect fabrication of precast concrete members.	Continuous	SI	ACI 318-19 Section 26.13.
<input type="checkbox"/>	b. Inspect erection of precast concrete members.	Periodic	SI*	Table 1705A.3 Item 10. * May be performed by PI when specifically approved by DSA.
<input type="checkbox"/>	c. For precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Design Category D, E or F, inspect such connections and reinforcement in the field for: 1. Installation of the embedded parts 2. Completion of the continuity of reinforcement across joints. 3. Completion of connections in the field.	Continuous	SI	Table 1705A.3; ACI 318-19 Section 26.13.1.3; ACI 550.5
<input type="checkbox"/>	d. Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5.	Periodic	SI	Table 1705A.3; ACI 318-19 Section 26.13.1.3; ACI 550.5

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (CONCRETE), 2022 CBC

Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

Application Number: 01-120731	School Name: Merritt College	School District: Peralta Community College District
DSA File Number: 1-C1	Increment Number:	Date Created: 2023-04-17 09:31:43

C4. SHOTCRETE (IN ADDITION TO SECTION C1):				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Inspect shotcrete placement for proper application techniques.	Continuous	SI	1705A.3.9, Table 1705A.3 Item 7, 1908A.1, 1908A.2, 1908A.3. See ACI 506.2-13 Section 3.4, ACI 506R-16.
<input type="checkbox"/>	b. Sample and test shotcrete (f'_c).	Test	LOR	1908A.2, 1705A.3.9

C5. POST-INSTALLED ANCHORS:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Inspect installation of post-installed anchors	See Notes	SI*	1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8 (See Appendix (end of this form) for exemptions). ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA.
<input checked="" type="checkbox"/>	b. Test post-installed anchors.	Test	LOR	1910A.5. (See Appendix (end of this form) for exemptions.)

C6. OTHER CONCRETE:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a.			

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number: 01-120731	School Name: Merritt College	School District: Peralta Community College District
DSA File Number: 1-C1	Increment Number:	Date Created: 2023-04-17 09:31:43

Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with a check mark by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. **Items marked as exempt shall be identified on the approved construction documents.** The project inspector shall verify all construction complies with the approved construction documents.

	SOILS:
<input type="checkbox"/>	1. Deep foundations acting as a cantilever footing with a design based on minimum allowable pressures per CBC Table 1806A.2 and without a geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade.
<input type="checkbox"/>	2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1804A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill.

	CONCRETE/MASONRY:
<input type="checkbox"/>	1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding" in the Appendix below) given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding" in the Appendix below
<input type="checkbox"/>	2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.
<input type="checkbox"/>	3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1. Refer to construction documents for specific exemptions accordingly for each applicable wall condition.
<input checked="" type="checkbox"/>	4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number: 01-120731	School Name: Merritt College	School District: Peralta Community College District
DSA File Number: 1-C1	Increment Number:	Date Created: 2023-04-17 09:31:43

CONCRETE/MASONRY:	
<input checked="" type="checkbox"/>	5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.

WELDING:	
<input type="checkbox"/>	1. Solid-clad and open-mesh fences, gates with maximum leaf span of 10', and gates with a maximum rolling section of 10' all having an apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates/fences are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.
<input type="checkbox"/>	2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds shall not be ground flush.
<input type="checkbox"/>	3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud.
<input type="checkbox"/>	4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections S/A3, S/A4 and/or S/A5 of listing above).
<input type="checkbox"/>	5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections S/A3, S/A4 and/or S/A5 of listing above).
<input type="checkbox"/>	6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for sections S/A3, S/A4 and/or S/A5 located in the Steel/Aluminum category of listing above).
<input type="checkbox"/>	7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) ≤4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS(SIGNATURE), 2022 CBC

Application Number: 01-120731	School Name: Merritt College	School District: Peralta Community College District
DSA File Number: 1-C1	Increment Number:	Date Created: 2023-04-17 09:31:43

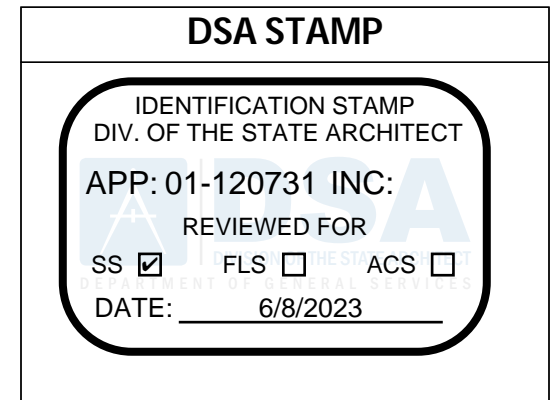
Name of Architect or Engineer in general responsible charge:

David Rossi, SE

Name of Structural Engineer (When structural design has been delegated):

Signature of Architect or Structural Engineer:  Date: 14 APR 2023

Note: To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.



DSA 103-22: LIST OF REQUIRED VERIFIED REPORTS, CBC 2022

Application Number: 01-120731	School Name: Merritt College	School District: Peralta Community College District
DSA File Number: 1-C1	Increment Number:	Date Created: 2023-04-17 09:31:43

1. Structural Testing and Inspection: Laboratory Verified Report Form DSA 291

2. Concrete Batch Plant Inspection: Laboratory Verified Report Form DSA 291

3. Post-installed Anchors: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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END OF DOCUMENT

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LIST OF DRAWINGS AND TABLES

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TABLES

NONE

END OF DOCUMENT

Peralta Community College District

Office of General Services
333 East 8th Street, Oakland, California 94606
(510) 466-7200 (510) 466-7315

**SUBSTITUTION
REQUEST**

DOCUMENT 00 10 00

Project: _____ Substitution Request Number: _____

 From: _____
 To: _____ Date: _____

 PCCD Project No: _____
 Re: _____ Contract For: _____

Specification Title: _____ Description: _____
 Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
 Manufacturer: _____ Phone: _____
 Address: _____
 Trade Name: _____ Model No.: _____
 Installer: _____ Phone: _____
 Address: _____

History: New product 1-4 years old 5-10 years old More than 10 years old

Differences between proposed substitution and specified product: _____

Point-by-point comparative data attached — REQUIRED BY A/E

Reason for not providing specified item: _____

Similar Project Installation:

Project: _____ Architect: _____
 Address: _____ Owner: _____
 _____ Date Installed: _____

Proposed substitution affects other parts of Work: No Yes; explain _____

Savings to Owner for accepting substitution: _____ (\$ _____)

Proposed substitution changes Contract Time: No Yes [Add] [Deduct] _____ days.

Supporting Data Attached: Drawings Product Data Samples Tests Reports _____

Peralta Community College District

Office of General Services
333 East 8th Street, Oakland, California 94606
(510) 466-7200 (510) 466-7315

**SUBSTITUTION
REQUEST**

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Submitter will be responsible for payment to parties for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

Telephone: _____

Attachments:

A/E's REVIEW AND ACTION

- Substitution approved - Make submittals in accordance with Specification Section 01 25 13 Substitution Procedures.
- Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 13 Substitution Procedures. Substitution rejected - Use specified materials.
- Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

Additional Comments: Contractor Subcontractor Supplier Manufacturer A/E
 Other:

NOTICE TO BIDDERS

1. Notice is hereby given that the governing board ("Board") of the Peralta Community College District ("District") will receive, by electronic submission, bids for the following project, Bid No. **23-24/02**, **Merritt College Secondary Power Substation C Replacement**.

2. Scope of Work:

Replacement of the existing medium voltage, "Substation C", at Merritt College. The existing Substation C system is to remain active until the replacement is installed and power has been transferred. The work shall include, but not be limited to, the demolition of the existing equipment, associated civil, landscape, structural and electrical work as indicated in the Drawings and Specifications.

The work to be performed under this contract includes the furnishing of all labor, materials, equipment, transportation, services, permits, temporary controls and construction facilities, and all general conditions, seismic requirements, general requirements and incidentals required to complete the work on the project in its entirety as described in the contract documents.

3. To bid on this Project, the Bidder is required to possess one or more of the following State of California contractor license(s):

B – General Contracting

The Bidder's license(s) must remain active and in good standing throughout the term of the Contract.

4. To bid on this Project, the Bidder is required to be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code.
5. All Bidders are hereby notified that this Project is subject to the District's Pre-Qualification Procedure with Quality Bidders. All General Contractors must be prequalified in order to bid on this project. No bids will be received or opened from Bidders who have not been pre-qualified through the District's Pre-Qualification Procedure. The list of Pre-Qualified General Contractors is posted on the PCCD website at: <https://web.peralta.edu/purchasing/notice-to-bidders-for-public-works-projects/>
6. Contract Documents will be available on or after **July 14, 2023** for review at the District Vendor Registry website, and may be downloaded from the District's website, <https://web.peralta.edu/purchasing/documents-list-of-current-bids-rfps-and-rfqs/> using the Solicitations from Peralta Community College District link. This will take you to Vendor Registry, where bids will be submitted and questions submitted.
7. In addition, Contract Documents are available for bidders' review at the following builders' exchanges:

- A. Builder's Exchange of: <http://bayareabx.com>
- B. A list of these builders' exchanges is available at the District's Facilities Office.

The District will only receive bids submitted electronically. Bids will be received until **3:00PM, August 17, 2023, only at Vendor Registry**, after which time the bids will be opened and publicly read aloud via video conference at the following link: <https://peralta-edu.zoom.us/j/88627804170>

Any bid that is submitted after this time shall be nonresponsive and returned to the bidder. **Each bidder is solely responsible for timely submission of its bid; the District is not responsible for any technological issues in a bidder's ability to timely submit its bid or portion thereof.** Any claim by a bidder of error in its bid must be made in compliance with section 5100 et seq. of the Public Contract Code. Prior to publicly reading aloud bids at the video conference, the District reserves the right to verify the genuineness of any bid security.

- 8. Pursuant to Public Contract Code section 20111.5, only prequalified bidders will be eligible to submit a bid for this Project. Any bid submitted by a bidder who is not prequalified shall be non-responsive and returned by email to the bidder.
- 9. All bids shall be on the form provided by the District. Each bid must conform and be responsive to all pertinent Contract Documents, including, but not limited to, the Instructions to Bidders.
- 10. A bid bond by an admitted surety insurer on the form provided by the District, or a cashier's check or a certified check, drawn to the order of the Peralta Community College District, in the amount of ten percent (10%) of the total bid price, shall accompany the Bid Form and Proposal, as a guarantee that the Bidder will, within seven (7) calendar days after the date of the Notice of Award, enter into a contract with the District for the performance of the services as stipulated in the bid.

A **mandatory pre-bid virtual conference** will be held on **Tuesday, July 25, 2023 at 10:00AM via Zoom** (see 10.a for pre-bid conference meeting information) and a **mandatory site visit will be held on July 26, 2023 at 10:30AM** at the project site on Merritt College campus located at 12500 Campus Drive, Oakland, California. We will meet at Building A.

All bidders are **required to attend the pre-bid conference and site visit**.

All participants are required to sign in at the site. The site visit is expected to take approximately one (1) hour. All participants are required to sign the site. Failure to attend or tardiness will render bid ineligible.

- a. Pre-bid meeting Zoom: Conference Meeting ID 821 2447 1974.
Join from PC, Mac, Linux, iOS or Android:
<https://peralta-edu.zoom.us/j/82124471974>
- 11. The successful Bidder shall be required to furnish a 100% Performance Bond and a 100% Payment Bond if it is awarded the contract for the Work.

12. The successful Bidder may substitute securities for any monies withheld by the District to ensure performance under the Contract, in accordance with the provisions of section 22300 of the Public Contract Code.
13. The Contractor and all Subcontractors under the Contractor shall pay all workers on all work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to section 1770 et seq. of the California Labor Code. Prevailing wage rates are also available from the District or on the Internet at: <<http://www.dir.ca.gov>>.
14. This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and subject to the requirements of Title 8 of the California Code of Regulations. The successful Bidder shall comply with all requirements of Division 2, Part 7, Chapter 1, Articles 1-5 of the Labor Code.
15. The District has entered into a Project Labor Agreement that is applicable to this Project. A copy of the Project Labor Agreement is available for review at the District Facilities Office and may be downloaded from the District's website, <https://build.peralta.edu/construction-project-labor-agreement>. The successful bidder and all subcontractors will be required to agree to be bound by the Project Labor Agreement.
16. The Contractor and all Subcontractors under the Contractor shall comply with applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic including, if required, preparing, posting, and implementing a Social Distancing Protocol.
17. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder.
18. The Board reserves the right to reject any and all bids and/or waive any irregularity in any bid received. If the District awards the Contract, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

END OF DOCUMENT

INSTRUCTIONS TO BIDDERS

Bidders shall follow the instructions in this document, and shall submit all documents, forms, and information required for consideration of a Bid.

Peralta Community College District ("District") will evaluate information submitted by the apparent low Bidder and, if incomplete or unsatisfactory to District, Bidder's bid may be rejected at the sole discretion of District.

1. Bids are requested for a general construction contract, or work described in general, for the following project:

MERRITT COLLEGE SECONDARY POWER SUBSTATION "C" REPLACEMENT

2. Bidder and its subcontractors must possess the appropriate State of California contractors' license and must maintain the license throughout the duration of the project. Bidders must also be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code. Bids submitted by a contractor who is not properly licensed or registered shall be deemed nonresponsive and will not be considered.
3. The District has prequalified bidders pursuant to Public Contract Code section 20651.5. Only prequalified bidders will be eligible to submit a bid for this Project. Any bid submitted by a bidder who is not prequalified shall be deemed nonresponsive and will not be considered.
4. District will receive bids submitted electronically from bidders as stipulated in the Notice to Bidders.
 - a. Each bidder is solely responsible for timely submission of its bid; the District is not responsible for any technological issues affecting a bidder's ability to timely submit its bid or portion thereof.
5. Bidders are advised that on the date that bids are opened, the District Offices will **not** be open to bidders or their representatives.
6. Bids will be opened and publicly read aloud via video conference. A link to the video conference is as follows: <https://peralta-edu.zoom.us/j/88627804170>. Prior to publicly reading aloud bids at the video conference, the District reserves the right to verify the genuineness of any bid security.
7. Bidders must submit Bids on the documents titled Bid Form and Proposal, and must submit all other required District forms. Bids not submitted on the District's required forms shall be deemed nonresponsive and shall not be considered. Additional sheets required to fully respond to requested information are permissible.
8. Bidders shall not modify the Bid Form and Proposal or qualify their bids. Bidders shall not submit to the District a re-formatted, re-typed, altered, modified, or otherwise recreated version of the Bid Form and Proposal or other District-provided document.

9. Bids shall be clearly written and without erasure or deletions. District reserves the right to reject any bid containing erasures, deletions, or illegible contents.
10. Bidders must supply all information required by each Bid Document. Bids must be full and complete. District reserves the right in its sole discretion to reject any Bid as non-responsive as a result of any error or omission in the Bid. Bidders must complete and submit all of the following documents with the Bid Form and Proposal:
 - a. Photocopy of Bid Bond on the District's form, or other security.
 - b. Designated Subcontractors List.
 - c. Site Visit Certification, if a site visit was required.
 - d. Non-Collusion Declaration.
 - e. Iran Contracting Act Certification, if contract value is \$1,000,000 or more.
 - f. SLBE/SELBE Self Certification Affidavit.
11. Bidders must submit with their bids a legible photocopy of (i) a cashier's check or (ii) a certified check payable to District, or (iii) a bid bond by an admitted surety insurer of not less than ten percent (10%) of amount of Base Bid, plus all additive alternates ("Bid Bond"). If Bidder chooses to provide a Bid Bond as security, Bidder must use the required form of corporate surety provided by District. The Surety on Bidder's Bid Bond must be an insurer admitted in the State of California and authorized to issue surety bonds in the State of California. Bidder must deposit the original of the bid bond, cashier's check, or certified check in the mail on the same day as the bid opening. Bids submitted without necessary bid security will be deemed non-responsive and will not be considered.
12. If Bidder to whom the Contract is awarded fails or neglects to enter into the Contract and submit required bonds, insurance certificates, and all other required documents, within **SEVEN (7)** calendar days after the date of the Notice of Award, District may deposit Bid Bond, cashier's check, or certified check for collection, and proceeds thereof may be retained by District as liquidated damages for failure of Bidder to enter into Contract, in the sole discretion of District. It is agreed that calculation of damages District may suffer as a result of Bidder's failure to enter into the Contract would be extremely difficult and impractical to determine and that the amount of the Bidder's required bid security shall be the agreed and conclusively presumed amount of damages.
13. Bidders must submit with the Bid the Designated Subcontractors List for those subcontractors who will perform any portion of Work, including labor, rendering of service, or specially fabricating and installing a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in excess of one half of one percent (0.5%) of total Bid. Failure to submit this list when required by law shall result in bid being deemed nonresponsive and the bid will not be considered.
14. All of the listed subcontractors are required to be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code.

- a. An inadvertent error in listing the California contractor license number on the Designated Subcontractors List shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the correct contractor's license number is submitted to the District within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.
 - b. An inadvertent error listing an unregistered subcontractor shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive provided that any of the following apply:
 - (1) The subcontractor is registered prior to the bid opening.
 - (2) The subcontractor is registered and has paid the penalty registration fee within 24 hours after the bid opening.
 - (3) The subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.
15. If a mandatory pre-bid conference and site visit ("Site Visit") are required as referenced in the Notice to Bidders, then Bidders must submit the Site-Visit Certification with their Bid. District will transmit to all prospective Bidders of record such Addenda as District in its discretion considers necessary in response to questions arising at the Site Visit. Oral statements shall not be relied upon and will not be binding or legally effective. Addenda issued by the District as a result of the Site Visit, if any, shall constitute the sole and exclusive record and statement of the results of the Site Visit.
 16. Bidders shall submit the Non-Collusion Declaration with their Bids. Bids submitted without the Non-Collusion Declaration shall be deemed non-responsive and will not be considered.
 17. The Contractor and all Subcontractors under the Contractor shall pay all workers on all work performed pursuant to the Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the Department of Industrial Relations, are available upon request at the District's principal office. Prevailing wage rates are also available on the internet at <http://www.dir.ca.gov>.
 18. The District has entered into a Project Labor Agreement that is applicable to this Project. A copy of the Project Labor Agreement is available for review at the District Facilities Office and may be downloaded from the District's website, <http://web.peralta.edu/purchasing/files/2012/06/00-8251-PLA-Agreement.pdf>. The successful bidder and all subcontractors will be required to agree to be bound by the Project Labor Agreement.
 19. Submission of Bid signifies careful examination of Contract Documents and complete understanding of the nature, extent, and location of Work to be performed. Bidders

must complete the tasks listed below as a condition to bidding, and submission of a Bid shall constitute the Bidder's express representation to District that Bidder has fully completed the following:

- a. Bidder has visited the Site, if required, and has examined thoroughly and understood the nature and extent of the Contract Documents, Work, Site, locality, actual conditions, as-built conditions, and all local conditions and federal, state and local laws, and regulations that in any manner may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto;
- b. Bidder has conducted or obtained and has understood all examinations, investigations, explorations, tests, reports, and studies that pertain to the subsurface conditions, as-built conditions, underground facilities, and all other physical conditions at or contiguous to the Site or otherwise that may affect the cost, progress, performance, or furnishing of Work, as Bidder considers necessary for the performance or furnishing of Work at the Contract Sum, within the Contract Time, and in accordance with the other terms and conditions of Contract Documents, including specifically the provisions of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies, or similar information or data are or will be required by Bidder for such purposes;
- c. Bidder has correlated its knowledge and the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Contract Documents;
- d. Bidder has given the District prompt written notice of all conflicts, errors, ambiguities, or discrepancies that it has discovered in or among the Contract Documents and the actual conditions, and the written resolution(s) thereof by the District, is/are acceptable to Bidder;
- e. Bidder has made a complete disclosure in writing to the District of all facts bearing upon any possible interest, direct or indirect, that Bidder believes any representative of the District or other officer or employee of the District presently has or will have in this Contract or in the performance thereof or in any portion of the profits thereof;
- f. Bidder must, prior to bidding, perform the work, investigations, research, and analysis required by this document and that Bidder represented in its Bid Form and Proposal and the Agreement that it performed prior to bidding. Contractor under this Contract is charged with all information and knowledge that a reasonable bidder would ascertain from having performed this required work, investigation, research, and analysis. Bid prices must include entire cost of all work "incidental" to completion of the Work.
- g. Conditions Shown on the Contract Documents: Information as to underground conditions, as-built conditions, or other conditions or obstructions, indicated in the Contract Documents, e.g., on Drawings or in Specifications, has been obtained with reasonable care, and has been

recorded in good faith. However, District only warrants, and Bidder may only rely, on the accuracy of limited types of information.

- (1) As to above-ground conditions or as-built conditions shown or indicated in the Contract Documents, there is no warranty, express or implied, or any representation express or implied, that such information is correctly shown or indicated. This information is verifiable by independent investigation and Bidder is required to make such verification as a condition to bidding. In submitting its Bid, Bidder shall rely on the results of its own independent investigation. In submitting its Bid, Bidder shall not rely on District-supplied information regarding above-ground conditions or as-built conditions.
- (2) As to any subsurface condition shown or indicated in the Contract Documents, Bidder may rely only upon the general accuracy of actual reported depths, actual reported character of materials, actual reported soil types, actual reported water conditions, or actual obstructions shown or indicated. District is not responsible for the completeness of such information for bidding or construction; nor is District responsible in any way for any conclusions or opinions that the Bidder has drawn from such information; nor is the District responsible for subsurface conditions that are not specifically shown (for example, District is not responsible for soil conditions in areas contiguous to areas where a subsurface condition is shown).

h. Conditions Shown in Reports and Drawings Supplied for Informational Purposes: Reference is made to the document entitled Geotechnical Data, and the document entitled Existing Conditions, for identification of:

- (1) Subsurface Conditions: Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by Architect in preparing the Contract Documents; and
- (2) Physical Conditions: Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that has been utilized by Architect in preparing the Contract Documents.
- (3) These reports and drawings are **not** Contract Documents and, except for any "technical" data regarding subsurface conditions specifically identified in Geotechnical Data and Existing Conditions, and underground facilities data, Bidder may not in any manner rely on the information in these reports and drawings. Subject to the foregoing, Bidder must make its own independent investigation of all conditions affecting the Work and must not rely on information provided by District.

20. Bids shall be based on products and systems specified in Contract Documents or listed by name in Addenda. Whenever in the Specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words "or equal." Bidder may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or

specified. The District is not responsible and/or liable in any way for a Contractor's damages and/or claims related, in any way, to that Contractor's basing its bid on any requested substitution that the District has not approved in advance and in writing. Contractors and materials suppliers who submit requests for substitutions prior to the award of the Contract must do so in writing and in compliance with Public Contract Code section 3400. All requests must comply with the following:

- a. District must receive any notice of request for substitution of a specified item a minimum of **TEN (10)** calendar days prior to bid opening. The Successful Bidder will not be allowed to substitute specified items unless properly noticed.
 - b. Within 35 days after the date of the Notice of Award, the Successful Bidder shall submit data substantiating the request(s) for all substitution(s) containing sufficient information to assess acceptability of product or system and impact on Project, including, without limitation, the requirements specified in the Special Conditions and the Specifications. Insufficient information shall be grounds for rejection of substitution.
 - c. Approved substitutions, if any, shall be listed in Addenda. District reserves the right not to act upon submittals of substitutions until after bid opening.
 - d. Substitutions may be requested after Contract has been awarded only if indicated in and in accordance with requirements specified in the Special Conditions and the Specifications.
21. Bidders may examine any available "as-built" drawings of previous work by giving District reasonable advance notice. District will not be responsible for accuracy of "as-built" drawings. The document entitled Existing Conditions applies to all supplied "as-built" drawings.
 22. All questions about the meaning or intent of the Contract Documents are to be directed via Vendor Registry. All questions are due by **Thursday, August 3, 2023 at 3:00 PM**. Interpretations or clarifications considered necessary by the District in response to such questions will be issued in writing by Addenda and delivered electronically to all parties recorded by the District as having received the Contract Documents or posted on the District's website at <https://web.peralta.edu/purchasing/documents-list-of-current-bids-rfps-and-rfqs>. Addenda may also be issued to modify other parts of the Contract Documents as deemed advisable by the District. Questions received less than SEVEN (7) calendar days prior to the date for opening Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
 23. Addenda may also be issued to modify other parts of the Contract Documents as deemed advisable by the District.
 24. Each Bidder must acknowledge each Addendum in its Bid Form and Proposal by number or its Bid shall be considered non-responsive. Each Addendum shall be part of the Contract Documents. A complete listing of Addenda may be secured from the District.

25. This Contract may include alternates. Alternates are defined as alternate products, materials, equipment, systems, methods, or major elements of the construction that may, at the District's option and under terms established in the Contract and pursuant to section 20103.8 of the Public Contract Code, be selected for the Work.
26. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on the criteria as indicated in the Notice to Bidders. In the event two or more responsible bidders submit identical bids, the District shall select the Bidder to whom to award the Contract by lot.
27. Discrepancies between written words and figures, or words and numeral, will be resolved in favor of figures or numerals.
28. Bidders in contention for contract awards shall be required to attend a Post Bid interview, which will be set within three (3) calendar days following bid opening. A duly authorized representative of the apparent low bidder is required to attend the Post Bid Interview, in person. The apparent low bidder's authorized representative(s) must have (1) knowledge of how the bid submitted was prepared, (2) the person responsible for supervising performance of the Work, and (3) the authority to bind the apparent low bidder. Failure to attend the Post Bid Interview as scheduled will be considered just cause for the District to reject the Bid as nonresponsive. .
29. Any bid protest by any Bidder regarding any other bid must be submitted in writing to the District, before 5:00 p.m. of the **THIRD (3rd)** business day following bid opening.
 - a. Only a Bidder who has actually submitted a bid, and who could be awarded the Contract if the bid protest is upheld, is eligible to submit a bid protest. Subcontractors are not eligible to submit bid protests. A Bidder may not rely on the bid protest submitted by another Bidder.
 - b. A bid protest must contain a complete statement of any and all bases for the protest and all supporting documentation. Materials submitted after the bid protest deadline will not be considered.
 - c. The protest must refer to the specific portions of all documents that form the basis for the protest.
 - (1) Without limitation to any other basis for protest, an inadvertent error in listing the California contractor's license number on the Designated Subcontractors List shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the correct contractor's license number is submitted to the District within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.
 - (2) Without limitation to any other basis for protest, an inadvertent error listing an unregistered subcontractor shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive provided that any of the following apply:
 - (i) The subcontractor is registered prior to the bid opening.

- (ii) The subcontractor is registered and has paid the penalty registration fee within 24 hours after the bid opening.
 - (iii) The subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.
 - d. The protest must include the name, address and telephone number of the person representing the protesting party.
 - e. The party filing the protest must concurrently transmit a copy of the protest and any attached documentation to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.
 - f. The procedure and time limits set forth in this paragraph are mandatory and are each bidder's sole and exclusive remedy in the event of bid protest. Failure to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including filing a Government Code Claim or legal proceedings.
- 30. The Bidder to whom Contract is awarded shall execute and submit the following documents by 5:00 p.m. of the **SEVENTH (7th)** calendar day following the date of the Notice of Award. Failure to properly and timely submit these documents entitles District to reject the bid as nonresponsive.
 - a. Agreement: To be executed by successful Bidder. Submit four (4) copies, each bearing an original signature.
 - b. Escrow of Bid Documentation: This must include all required documentation. See the document titled Escrow Bid Documentation for more information.
 - c. Performance Bond (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
 - d. Payment Bond (Contractor's Labor and Material Bond) (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
 - e. Insurance Certificates and Endorsements as required.
 - f. Workers' Compensation Certification.
 - g. Prevailing Wage and Related Labor Requirements Certification.
 - h. Drug-Free Workplace Certification.
 - i. Tobacco-Free Environment Certification.
 - j. Hazardous Materials Certification.
 - k. Lead-Based Materials Certification.

- l. Imported Materials Certification.
 - m. Sex Offender Registration Act_Certification.
 - n. Buy American Certification.
 - o. Small Local Business Enterprise and Small Emerging Local Business Enterprise Program Affidavit.
 - p. Registered Subcontractors List: Must include Department of Industrial Relations (DIR) registration number of each subcontractor for all tiers. Per Article 10 of the General Conditions, the complete submittal of Registered Subcontractors List is required within 10 days after the Notice to Proceed is issued.
31. Time for Completion: District may issue a Notice to Proceed within **NINETY (90)** days from the date of the Notice of Award. Once Contractor has received the Notice to Proceed, Contractor shall complete the Work within the period of time indicated in the Contract Documents.
- a. In the event that the District desires to postpone issuing the Notice to Proceed beyond this 90-day period, it is expressly understood that with reasonable notice to the Contractor, the District may postpone issuing the Notice to Proceed.
 - b. It is further expressly understood by Contractor that Contractor shall not be entitled to any claim of additional compensation as a result of the postponement of the issuance of the Notice to Proceed beyond a 90-day period. If the Contractor believes that a postponement of issuance of the Notice to Proceed will cause a hardship to the Contractor, the Contractor may terminate the Contract. Contractor's termination due to a postponement beyond this 90-day period shall be by written notice to District within **TEN (10)** calendar days after receipt by Contractor of District's notice of postponement.
 - c. It is further understood by the Contractor that in the event that Contractor terminates the Contract as a result of postponement by the District, the District shall only be obligated to pay Contractor for the Work that Contractor had performed at the time of notification of postponement and which the District had in writing authorized Contractor to perform prior to issuing a Notice to Proceed.
 - d. Should the Contractor terminate the Contract as a result of a notice of postponement, District shall have the authority to award the Contract to the next lowest responsive responsible bidder.
32. District reserves the right to reject any or all bids, including without limitation the right to reject any or all nonconforming, non-responsive, unbalanced, or conditional bids, to re-bid, and to reject the bid of any bidder if District believes that it would not be in the best interest of the District to make an award to that bidder, whether because the bid is not responsive or the bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by District. District also reserves the right to waive any inconsequential deviations or

irregularities in any bid. For purposes of this paragraph, an "unbalanced bid" is one having nominal prices for some work items and/or enhanced prices for other work items.

33. It is the policy of the District that no qualified person shall be excluded from participating in, be denied the benefits of, or otherwise be subjected to discrimination in any consideration leading to the award of contract, based on race, color, gender, sexual orientation, political affiliation, age, ancestry, religion, marital status, national origin, medical condition or disability. The Successful Bidder and its subcontractors shall comply with applicable federal and state laws, including, but not limited to the California Fair Employment and Housing Act, beginning with Government Code section 12900, and Labor Code section 1735.
34. Prior to the award of Contract, District reserves the right to consider the responsibility of the Bidder. District may conduct investigations as District deems necessary to assist in the evaluation of any bid and to establish the responsibility, including, without limitation, qualifications and financial ability of Bidders, proposed subcontractors, suppliers, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to District's satisfaction within the prescribed time.

END OF DOCUMENT

DOCUMENT 00 21 13.1

BIDDER INFORMATION AND FORMS

**[INTENTIONALLY LEFT BLANK UNLESS PROVIDED IN SPECIAL CONDITIONS
– SEPARATE PREQUALIFICATION PROCESS RECOMMENDED]**

END OF DOCUMENT

EXISTING CONDITIONS

1. Summary

This document describes existing conditions at or near the Project, and use of information available regarding existing conditions. This document is **not** part of the Contract Documents. See General Conditions for definition(s) of terms used herein.

2. Reports and Information on Existing Conditions

- a. Documents providing a general description of the Site and conditions of the Work may have been collected by Peralta Community College District ("District"), its consultants, contractors, and tenants. These documents may, but are not required to, include previous contracts, contract specifications, tenant improvement contracts, as-built drawings, utility drawings, and information regarding underground facilities.
- b. Information regarding existing conditions may be inspected at the District offices or the Construction Manager's offices, if any, and copies may be obtained at cost of reproduction and handling upon Bidder's agreement to pay for such copies. These reports, documents, and other information are **not** part of the Contract Documents. These reports, documents, and other information do **not** excuse Contractor from fulfilling Contractor's obligation to independently investigate any or all existing conditions or from using reasonable prudent measures to avoid damaging existing improvements.
- c. Information regarding existing conditions may also be included in the Project Manual, but shall **not** be considered part of the Contract Documents.
- d. Prior to commencing this Work, Contractor and the District's representative shall survey the Site to document the condition of the Site. Contractor will record the survey in digital videotape format and provide an electronic copy to the District within fourteen (14) days of the survey.
- e. Contractor may also document any pre-existing conditions in writing, provided that both the Contractor and the District's representative agree on said conditions and sign a memorandum documenting the same.

3. Use of Information

- a. Information regarding existing conditions was obtained only for use of District and its consultants, contractors, and tenants for planning and design and is **not** part of the Contract Documents.
- b. District does not warrant, and makes no representation regarding, the accuracy or thoroughness of any information regarding existing conditions. Bidder represents and agrees that in submitting a bid it is not relying on any information regarding existing conditions supplied by District.

- c. Under no circumstances shall District be deemed to warrant or represent existing above-ground conditions, as-built conditions, or other actual conditions, verifiable by independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder must perform as a condition to bidding and Bidder should not and shall not rely on this information or any other information supplied by District regarding existing conditions.
- d. Any information shown or indicated in the reports and other data supplied herein with respect to existing underground facilities at or contiguous to the Project may be based upon information and data furnished to District by the District's employees and/or consultants or builders of such underground facilities or others. District does not assume responsibility for the completeness of this information, and Bidder is solely responsible for any interpretation or conclusion drawn from this information.
- e. District shall be responsible only for the general accuracy of information regarding underground facilities, and only for those underground facilities that are owned by District, and only where Bidder has conducted the independent investigation required of it pursuant to the Instructions to Bidders, and discrepancies are not apparent.

4. Investigations/Site Examinations

- a. Before submitting a Bid, each Bidder is responsible for conducting or obtaining any additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the Site or otherwise, that may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or that Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of Contract Documents.
- b. On request, District will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a Bid. Bidders must fill all holes and clean up and restore the Site to its former condition upon completion of its explorations, investigations, tests, and studies. Such investigations and Site examinations may be performed during any and all Site visits indicated in the Notice to Bidders and only under the provisions of the Contract Documents, including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such work, and District's prior approval.

END OF DOCUMENT

GEOTECHNICAL DATA

1. Summary

This document describes geotechnical data at or near the Project that is in the District's possession available for Contractor's review, and use of data resulting from various investigations. This document is **not** part of the Contract Documents. See General Conditions for definition(s) of terms used herein.

2. Geotechnical Reports

- a. Geotechnical reports may have been prepared for and around the Site and/or in connection with the Work by soil investigation engineers hired by Peralta Community College District ("District"), and its consultants, contractors, and tenants.
- b. Geotechnical reports may be inspected at the District offices or the Construction Manager's offices, if any, and copies may be obtained at cost of reproduction and handling upon Bidder's agreement to pay for such copies. These reports are **not** part of the Contract Documents.
- c. The following reports and drawings of physical conditions that may relate to the Project are for reference only and can be made available to the bidders:
 - (1) Geotechnical Recommendations for Electrical Substation, April 20, 2023

3. Use of Data

- a. Geotechnical data were obtained only for use of District and its consultants, contractors, and tenants for planning and design and are **not** a part of Contract Documents.
- b. Except as expressly set forth below, District does not warrant, and makes no representation regarding, the accuracy or thoroughness of any geotechnical data. Bidder represents and agrees that in submitting a Bid it is not relying on any geotechnical data supplied by District, except as specifically allowed below.
- c. Under no circumstances shall District be deemed to make a warranty or representation of existing above ground conditions, as-built conditions, geotechnical conditions, or other actual conditions verifiable by independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder should perform as a condition to bidding and Bidder must not and shall not rely on information supplied by District.

4. Limited Reliance Permitted on Certain Information

- a. Reference is made herein for identification of:

Reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by District in preparation of the Contract Documents.

Drawings of physical conditions in or relating to existing subsurface structures (except underground facilities) that are at or contiguous to the Site and have been utilized by District in preparation of the Contract Documents.

- b. Bidder may rely upon the general accuracy of the "technical data" contained in the reports and drawings identified above, but only insofar as it relates to subsurface conditions, provided Bidder has conducted the independent investigation required pursuant to Instructions to Bidders, and discrepancies are not apparent. The term "technical data" in the referenced reports and drawings shall be limited as follows:
- (1) The term "technical data" shall include actual reported depths, reported quantities, reported soil types, reported soil conditions, and reported material, equipment or structures that were encountered during subsurface exploration. The term "technical data" does not include, and Bidder may not rely upon, any other data, interpretations, opinions or information shown or indicated in such drawings or reports that otherwise relate to subsurface conditions or described structures.
 - (2) The term "technical data" shall not include the location of underground facilities.
 - (3) Bidder may not rely on the completeness of reports and drawings for the purposes of bidding or construction. Bidder may rely upon the general accuracy of the "technical data" contained in such reports or drawings.
 - (4) Bidder is solely responsible for any interpretation or conclusion drawn from any "technical data" or any other data, interpretations, opinions, or information provided in the identified reports and drawings.

5. Investigations/Site Examinations

- a. Before submitting a Bid, each Bidder is responsible for conducting or obtaining any additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the Site or otherwise, that may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or that Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of Contract Documents.

- b. On request, District will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a Bid. Bidders must fill all holes and clean up and restore the Site to its former condition upon completion of its explorations, investigations, tests, and studies. Such investigations and Site examinations may be performed during any and all Site visits indicated in the Notice to Bidders and only under the provisions of the Contract Documents, including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such work, and District's prior approval.

END OF DOCUMENT

DOCUMENT 00 41 13
BID FORM AND PROPOSAL

To: Peralta Community College District ("District" or "Owner")

From: _____
(Proper Name of Bidder)

The undersigned declares that Bidder has read and understands the Contract Documents, including, without limitation, the Notice to Bidders and the Instructions to Bidders, and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications of Bid No. **23-24/02**, for the following project known as:

Merritt College Secondary Power Substation C Replacement

("Project" or "Contract") and will accept in full payment for that Work the following total lump sum amount, all taxes included:

A) _____	dollars	\$ _____
<i>Base Bid</i>		
B) <u>Eighty Thousand</u>	dollars	\$ <u>80,000.00</u>
<i>Allowance No. 1</i>		

*Allowance #1 in the amount of **\$80,000** shall be included. This shall be used by the District for temporary power if deemed necessary.*

Allowance #1, 300kW generator, shall only be allocated for the rental and associated fees per Specification 01 21 00. Contractor shall not bill for or be due any portion of this allowance unless the District has identified specific use and associated work, Contractor has submitted price, and the District has accepted cost for the work. Contractor hereby authorizes the District to execute a unilateral deductive change order at or near the end of the Project for all or any portion of the allowance not allocated.

_____	dollars	\$ _____
Total Base Bid = Sum of (A + B)		

Bidder acknowledges and agrees that the lowest responsive, responsible bidder will be determined based on Total Base Bid.

Alternate Pricing

NO BID ALTERNATES

Additional Detail Regarding Calculation of Base Bid

1. The undersigned has reviewed the Work outlined in the Contract Documents and fully understands the scope of Work required in this Proposal, understands the construction and project management function(s) is described in the Contract Documents, and that each Bidder who is awarded a contract shall be in fact a prime contractor, not a subcontractor, to the District, and agrees that its Proposal, if accepted by the District, will be the basis for the Bidder to enter into a contract with the District in accordance with the intent of the Contract Documents.
2. The undersigned has notified the District in writing of any discrepancies or omissions or of any doubt, questions, or ambiguities about the meaning of any of the Contract Documents, and has contacted the Construction Manager before bid date to verify the issuance of any clarifying Addenda.
3. The undersigned agrees to commence work under this Contract on the date established in the Contract Documents and to complete all work within the time specified in the Contract Documents.
4. The liquidated damages clause of the General Conditions and Agreement is hereby acknowledged.
5. It is understood that the District reserves the right to reject this bid and that the bid shall remain open to acceptance and is irrevocable for a period of ninety (90) days.
6. The following documents are attached hereto:
 - Bid Bond on the District's form or other security
 - Designated Subcontractors List
 - Site Visit Certification
 - Non-Collusion Declaration
 - Iran Contracting Act Certification
 - SLBE/SELBE Self Certification Affidavit
7. Receipt and acceptance of the following Addenda is hereby acknowledged:

No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____

8. Bidder acknowledges that the license required for performance of the Work is a B – General Contracting license.

9. Bidder hereby certifies that Bidder is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work.
10. Bidder specifically acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with all requirements of the Department of Industrial Relations.
11. Bidder hereby certifies that its bid includes sufficient funds to permit Bidder to comply with all local, state or federal labor laws or regulations during the Project, including payment of prevailing wage, and that Bidder will comply with the provisions of Labor Code section 2810(d) if awarded the Contract.
12. Bidder agrees to comply with all requirements of the Project Labor Agreement.
13. The Bidder represents that it is competent, knowledgeable, and has special skills with respect to the nature, extent, and inherent conditions of the Work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the Work that may create, during the Work, unusual or peculiar unsafe conditions hazardous to persons and property.
14. Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the Work with respect to such hazards.
15. Bidder expressly acknowledges that it is familiar with and capable of complying with applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic including, if required, preparing, posting, and implementing a Social Distancing Protocol.
16. Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Gov. Code, § 12650 et seq.), the District will be entitled to civil remedies set forth in the California False Claim Act. It may also be considered fraud and the Contractor may be subject to criminal prosecution.
17. The undersigned Bidder certifies that it is, at the time of bidding, and shall be throughout the period of the Contract, licensed by the State of California to do the type of work required under the terms of the Contract Documents and registered as a public works contractor with the Department of Industrial Relations. Bidder further certifies that it is regularly engaged in the general class and type of work called for in the Contract Documents.

Furthermore, Bidder hereby certifies to the District that all representations, certifications, and statements made by Bidder, as set forth in this bid form, are true and correct and are made under penalty of perjury.

Dated this _____ day of _____ 20 ____

Name of Bidder: _____

Type of Organization: _____

Signed by: _____

Title of Signer: _____

Address of Bidder: _____

Taxpayer Identification No. of Bidder: _____

Telephone Number: _____

Fax Number: _____

E-mail: _____ Web Page: _____

Contractor's License No(s): No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class: _____ Expiration Date: _____

Public Works Contractor Registration No.: _____

END OF DOCUMENT

BID BOND

(Note: If Bidder is providing a bid bond as its bid security, Bidder must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

That the undersigned, _____, as Principal ("Principal"),
and, _____, as Surety ("Surety"), a
corporation organized and existing under and by virtue of the laws of the State of ____ and
authorized to do business as a surety in the State of California, are held and firmly bound
unto the Peralta Community College District ("District") of Alameda County, State of
California, as Obligees, in an amount equal to ten percent (10%) of the Base Bid plus
alternates, in the sum of

_____ Dollars (\$ _____)

lawful money of the United States of America, for the payment of which sum well and truly
to be made, we, and each of us, bind ourselves, our heirs, executors, administrators,
successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted a
bid to the District for all Work specifically described in the accompanying bid for the
following project: Merritt College Secondary Power Substation C Replacement ("Project" or
"Contract").

NOW, THEREFORE, if the Principal is awarded the Contract and, within the time and manner
required under the Contract Documents, after the prescribed forms are presented to
Principal for signature, enters into a written contract, in the prescribed form in accordance
with the bid, and files two bonds, one guaranteeing faithful performance and the other
guaranteeing payment for labor and materials as required by law, and meets all other
conditions to the Contract between the Principal and the District becoming effective, or if
the Principal shall fully reimburse and save harmless the District from any damage
sustained by the District through failure of the Principal to enter into the written contract
and to file the required performance and labor and material bonds, and to meet all other
conditions to the Contract between the Principal and the District becoming effective, then
this obligation shall be null and void; otherwise, it shall be and remain in full force and
effect. The full payment of the sum stated above shall be due immediately if Principal fails
to execute the Contract within seven (7) days of the date of the District's Notice of Award to
Principal.

Surety, for value received, hereby stipulates and agrees that no change, extension of time,
alteration or addition to the terms of the Contract or the call for bids, or to the work to be
performed thereunder, or the specifications accompanying the same, shall in any way affect
its obligation under this bond, and it does hereby waive notice of any such change,
extension of time, alteration or addition to the terms of the Contract or the call for bids, or
to the work, or to the specifications.

In the event suit is brought upon this bond by the District and judgment is recovered, the Surety shall pay all costs incurred by the District in such suit, including a reasonable attorneys' fee to be fixed by the Court.

If the District awards the bid, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on the _____ day of _____, 20__.

Principal

By

Surety

By

Name of California Agent of Surety

Address of California Agent of Surety

Telephone Number of California Agent of Surety

Bidder must attach Power of Attorney and Certificate of Authority for Surety and a Notarial Acknowledgment for all Surety's signatures. The California Department of Insurance must authorize the Surety to be an admitted Surety Insurer.

END OF DOCUMENT

DESIGNATED SUBCONTRACTORS LIST
(Public Contract Code Sections 4100-4114)

PROJECT: Merritt College Secondary Substation C Replacement

Bidder acknowledges and agrees that it must clearly set forth below the name, location and California contractor license number of each subcontractor who will perform work or labor or render service to the Bidder in or about the construction of the Work or who will specially fabricate and install a portion of the Work according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of one percent (0.5%) of Bidder's total Base Bid and the kind of Work that each will perform. Vendors or suppliers of materials only do not need to be listed.

Bidder acknowledges and agrees that, if Bidder fails to list as to any portion of Work, or if Bidder lists more than one subcontractor to perform the same portion of Work, Bidder must perform that portion itself or be subjected to penalty under applicable law. In case more than one subcontractor is named for the same kind of Work, state the portion of the kind of Work that each subcontractor will perform.

If alternate bid(s) is/are called for and Bidder intends to use subcontractors different from or in addition to those subcontractors listed for work under the Base Bid, Bidder must list subcontractors that will perform Work in an amount in excess of one half of one percent (0.5%) of Bidder's total Base Bid, plus alternate(s).

If further space is required for the list of proposed subcontractors, attach additional copies of page 2 showing the required information, as indicated below.

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

SITE VISIT CERTIFICATION

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID
IF SITE VISIT WAS MANDATORY

PROJECT: Merritt College Secondary Power Substation C Replacement

Check option that applies:

_____ I certify that I visited the Site of the proposed Work, received the attached pages of information, and became fully acquainted with the conditions relating to construction and labor. I fully understand the facilities, difficulties, and restrictions attending the execution of the Work under contract.

_____ I certify that _____ (Bidder's representative) visited the Site of the proposed Work, received the attached _____ pages of information, and became fully acquainted with the conditions relating to construction and labor. The Bidder's representative fully understood the facilities, difficulties, and restrictions attending the execution of the Work under contract.

Bidder fully indemnifies the Peralta Community College District, its Architect, its Engineers, its Construction Manager, and all of their respective officers, agents, employees, and consultants from any damage, or omissions, related to conditions that could have been identified during my visit and/or the Bidder's representative's visit to the Site.

I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

ATTACHMENTS:

- 1.**
- 2.**
- 3.**

END OF DOCUMENT

**NON-COLLUSION DECLARATION
(Public Contract Code Section 7106)**

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.
[Title] [Name of Firm]

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____,
[Date]

at _____, _____,
[City] [State]

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

IRAN CONTRACTING ACT CERTIFICATION
(Public Contract Code Sections 2202-2208)

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT PROJECT NO. 2355.04: Between the Peralta Community College District ("District") and ("Contractor" or "Bidder") ("Contract" or "Project").

Prior to bidding on or submitting a proposal for a contract for goods or services of \$1,000,000 or more, the bidder/proposer must submit this certification pursuant to Public Contract Code section 2204.

The bidder/proposer must complete **ONLY ONE** of the following two options. To complete OPTION 1, check the corresponding box **and** complete the certification below. To complete OPTION 2, check the corresponding box, complete the certification below, and attach documentation demonstrating the exemption approval.

- OPTION 1.** Bidder/Proposer is not on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code section 2203(b), and we are not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.
- OPTION 2.** Bidder/Proposer has received a written exemption from the certification requirement pursuant to Public Contract Code sections 2203(c) and (d). *A copy of the written documentation demonstrating the exemption approval is included with our bid/proposal.*

CERTIFICATION:

I, the official named below, CERTIFY UNDER PENALTY OF PERJURY, that I am duly authorized to legally bind the bidder/proposer to the OPTION selected above. This certification is made under the laws of the State of California.

<i>Vendor Name/Financial Institution (Printed)</i>	<i>Federal ID Number (or n/a)</i>
<i>By (Authorized Signature)</i>	
<i>Printed Name and Title of Person Signing</i>	<i>Date Executed</i>

END OF DOCUMENT

WORKERS' COMPENSATION CERTIFICATION

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT/PROJECT NO. 2355.04: between the Peralta Community College District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

Labor Code section 3700, in relevant part, provides:

Every employer except the State shall secure the payment of compensation in one or more of the following ways:

- a. By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this state; and/or
- b. By securing from the Director of Industrial Relations a certificate of consent to self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his employees.

I am aware of the provisions of section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work of this Contract.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

(In accordance with Labor Code sections 1860 and 1861, the above certificate must be signed and filed with the awarding body prior to performing any Work under this Contract.)

END OF DOCUMENT

**PREVAILING WAGE AND
RELATED LABOR REQUIREMENTS CERTIFICATION**

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT/PROJECT NO.
2355.04: between the Peralta Community College District ("District") and _____
_____ ("Contractor" or "Bidder") ("Contract" or
"Project").

I hereby certify that I will conform to the State of California Public Works Contract requirements regarding prevailing wages, benefits, on-site audits with 48-hours' notice, payroll records, and apprentice and trainee employment requirements, for all Work on the above Project including, without limitation, labor compliance monitoring and enforcement by the Department of Industrial Relations.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DRUG-FREE WORKPLACE CERTIFICATION

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT/PROJECT NO. 2355.04: between the Peralta Community College District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

This Drug-Free Workplace Certification form is required from the successful Bidder pursuant to Government Code section 8350 et seq., the Drug-Free Workplace Act of 1990. The Drug-Free Workplace Act of 1990 requires that every person or organization awarded a contract or grant for the procurement of any property or service from any state agency must certify that it will provide a drug-free workplace by doing certain specified acts. In addition, the Act provides that each contract or grant awarded by a state agency may be subject to suspension of payments or termination of the contract or grant, and the contractor or grantee may be subject to debarment from future contracting, if the contracting agency determines that specified acts have occurred.

The District is not a "state agency" as defined in the applicable section(s) of the Government Code, but the District is a local agency and community college district under California law and requires all contractors on District projects to comply with the provisions and requirements of the Drug-Free Workplace Act of 1990.

Contractor must also comply with the provisions of Health & Safety Code section 11362.3 which prohibits the consumption or possession of cannabis or cannabis products in any public place, including on campus.

Contractor shall certify that it will provide a drug-free workplace by doing all of the following:

- a. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the person's or organization's workplace and specifying actions which will be taken against employees for violations of the prohibition.
- b. Establishing a drug-free awareness program to inform employees about all of the following:
 - (1) The dangers of drug abuse in the workplace.
 - (2) The person's or organization's policy of maintaining a drug-free workplace.
 - (3) The availability of drug counseling, rehabilitation, and employee-assistance programs.
 - (4) The penalties that may be imposed upon employees for drug abuse violations.
- c. Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required above, and that, as a

condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I, the undersigned, agree to fulfill the terms and requirements of Government Code section 8355 listed above and will publish a statement notifying employees concerning (a) the prohibition of controlled substance at the workplace, (b) establishing a drug-free awareness program, and (c) requiring that each employee engaged in the performance of the Contract be given a copy of the statement required by section 8355(a), and requiring that the employee agree to abide by the terms of that statement.

I also understand that if the District determines that I have either (a) made a false certification herein, or (b) violated this certification by failing to carry out the requirements of section 8355, that the Contract awarded herein is subject to termination, suspension of payments, or both. I further understand that, should I violate the terms of the Drug-Free Workplace Act of 1990, I may be subject to debarment in accordance with the requirements of the aforementioned Act.

I acknowledge that I am aware of the provisions of and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990 and Health and Safety Code section 11362.3.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

TOBACCO-FREE ENVIRONMENT CERTIFICATION

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT/PROJECT NO. 2355.04: between the Peralta Community College District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

This Tobacco-Free Environment Certification form is required from the successful Bidder.

Pursuant to, without limitation, 20 U.S.C. section 6083, Labor Code section 6400 et seq., Health & Safety Code section 104350 et seq., Business and Professions Code section 22950 et seq., and District Board policies, all District sites, including the Project site, are tobacco-free environments. Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school-owned vehicles and vehicles owned by others while on District property. The prohibition on smoking includes the use of any electronic smoking device that creates an aerosol or vapor, in any manner or in any form, and the use of any oral smoking device for the purpose of circumventing the prohibition of tobacco smoking. Further, Health & Safety Code section 11362.3 prohibits the smoking or use of cannabis or cannabis products in any place where smoking tobacco is prohibited.

I acknowledge that I am aware of the District's policy regarding tobacco-free environments at District sites, including the Project site and hereby certify that I will adhere to the requirements of that policy and not permit any of my firm's employees, agents, subcontractors, or my firm's subcontractors' employees or agents, to use tobacco and/or smoke on the Project site.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

HAZARDOUS MATERIALS CERTIFICATION

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT/PROJECT NO. 2355.04: between the Peralta Community College District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

1. Contractor hereby certifies that no asbestos, or asbestos-containing materials, polychlorinated biphenyl (PCB), or any material listed by the federal or state Environmental Protection Agency or federal or state health agencies as a hazardous material, or any other material defined as being hazardous under federal or state laws, rules, or regulations, ("New Hazardous Material"), shall be furnished, installed, or incorporated in any way into the Project or in any tools, devices, clothing, or equipment used to affect any portion of Contractor's work on the Project for District.
2. Contractor further certifies that it has instructed its employees with respect to the above-mentioned standards, hazards, risks, and liabilities.
3. Asbestos and/or asbestos-containing material shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Any or all material containing greater than one-tenth of one percent (0.1%) asbestos shall be defined as asbestos-containing material.
4. Any disputes involving the question of whether or not material is New Hazardous Material shall be settled by electron microscopy or other appropriate and recognized testing procedure, at the District's determination. The costs of any such tests shall be paid by Contractor if the material is found to be New Hazardous Material.
5. All Work or materials found to be "New Hazardous Material" or Work or material installed with equipment containing "New Hazardous Material" will be immediately rejected and this Work will be removed at Contractor's expense at no additional cost to the District.
6. Contractor has read and understood the document titled Hazardous Materials Procedures & Requirements, and shall comply with all the provisions outlined therein. Contractor certifies that it is knowledgeable of, and shall comply with, all laws applicable to the Work, including, but not limited to, all federal, state, and local laws, statutes, standards, rules, regulations, and ordinances applicable to the Work.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

LEAD-BASED MATERIALS CERTIFICATION

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT/PROJECT NO. 2355.04: between the Peralta Community College District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

This certification provides notice to the Contractor that:

- (1) Contractor's work may disturb lead-containing building materials.
- (2) Contractor shall notify the District if any work may result in the disturbance of lead-containing building materials.
- (3) Contractor shall comply with the Renovation, Repair and Painting Rule, if lead-based paint is disturbed in a six-square-foot or greater area indoors or a 20-square-foot or greater area outdoors.

1. Lead as a Health Hazard

Lead poisoning is recognized as a serious environmental health hazard facing children today. Even at low levels of exposure, much lower than previously believed, lead can impair the development of a child's central nervous system, causing learning disabilities, and leading to serious behavioral problems. Lead enters the environment as tiny lead particles and lead dust disburse when paint chips, chalks, peels, wears away over time, or is otherwise disturbed. Ingestion of lead dust is the most common pathway of childhood poisoning; lead dust gets on a child's hands and toys and then into a child's mouth through common hand-to-mouth activity. Exposures may result from construction or remodeling activities that disturb lead paint, from ordinary wear and tear of windows and doors, or from friction on other surfaces.

Ordinary construction and renovation or repainting activities carried out without lead-safe work practices can disturb lead-based paint and create significant hazards. Improper removal practices, such as dry scraping, sanding, or water blasting painted surfaces, are likely to generate high volumes of lead dust.

Because the Contractor and its employees will be providing services for the District, and because the Contractor's work may disturb lead-containing building materials, CONTRACTOR IS HEREBY NOTIFIED of the potential presence of lead-containing materials located within certain buildings utilized by the District. All school buildings built prior to 1978 are presumed to contain some lead-based paint until sampling proves otherwise.

2. Overview of Law

Both the Federal Occupational Safety and Health Administration ("Fed/OSHA") and the California Division of Occupational Safety and Health ("Cal/OSHA") have implemented safety orders applicable to all construction work where a contractor's employee may be occupationally exposed to lead.

The OSHA Regulations apply to all construction work where a contractor's employee may be occupationally exposed to lead. The OSHA Regulations contain specific and detailed requirements imposed on contractors subject to those regulations. The OSHA Regulations define construction work as work for construction, alteration, and/or repair, including painting and decorating. Regulated construction work includes, but is not limited to, the following:

- a. Demolition or salvage of structures where lead or materials containing lead are present;
- b. Removal or encapsulation of materials containing lead;
- c. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;
- d. Installation of products containing lead;
- e. Lead contamination/emergency cleanup;
- f. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
- g. Maintenance operations associated with the construction activities described in the subsection.

Because it is assumed by the District that all painted surfaces (interior as well as exterior) within the District contain some level of lead, it is imperative that the Contractor, its workers and subcontractors fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials (including title 8, California Code of Regulations, section 1532.1).

Contractor shall notify the District if any Work may result in the disturbance of lead-containing building materials. Any and all Work that may result in the disturbance of lead-containing building materials shall be coordinated through the District. A signed copy of this Certification shall be on file prior to beginning Work on the Project, along with all current insurance certificates.

3. Renovation, Repair and Painting Rule, Section 402(c)(3) of the Toxic Substances Control Act

The EPA requires lead safe work practices to reduce exposure to lead hazards created by renovation, repair and painting activities that disturb lead-based paint. Pursuant to the Renovation, Repair and Painting Rule (RRP), renovations in homes, childcare facilities, and schools built prior to 1978 must be conducted by certified renovations firms, using renovators with training by a EPA-accredited training provider, and fully and adequately complying with all applicable laws, rules and regulations governing lead-based materials, including those rules and regulations appearing within title 40 of the Code of Federal Regulations as part 745 (40 CFR 745).

The RRP requirements apply to all contractors who disturb lead-based paint in a six-square-foot or greater area indoors or a 20-square-foot or greater area outdoors. If a DPH-certified inspector or risk assessor determines that a home constructed before 1978 is lead-free, the federal certification is not required for anyone working on that particular building.

4. Contractor's Liability

If the Contractor fails to comply with any applicable laws, rules, or regulations, and that failure results in a site or worker contamination, the Contractor will be held solely responsible for all costs involved in any required corrective actions, and shall defend, indemnify, and hold harmless the District, pursuant to the indemnification provisions of the Contract, for all damages and other claims arising therefrom.

If lead disturbance is anticipated in the Work, only persons with appropriate accreditation, registrations, licenses, and training shall conduct this Work.

It shall be the responsibility of the Contractor to properly dispose of any and all waste products, including, but not limited to, paint chips, any collected residue, or any other visual material that may occur from the prepping of any painted surface. It will be the responsibility of the Contractor to provide the proper disposal of any hazardous waste by a certified hazardous waste hauler. This company shall be registered with the Department of Transportation (DOT) and shall be able to issue a current manifest number upon transporting any hazardous material from any school site within the District.

The Contractor shall provide the District with any sample results prior to beginning Work, during the Work, and after the completion of the Work. The District may request to examine, prior to the commencement of the Work, the lead training records of each employee of the Contractor.

THE CONTRACTOR HEREBY ACKNOWLEDGES, UNDER PENALTY OF PERJURY, THAT IT:

1. HAS RECEIVED NOTIFICATION OF POTENTIAL LEAD-BASED MATERIALS ON THE OWNER'S PROPERTY;
2. IS KNOWLEDGEABLE REGARDING AND WILL COMPLY WITH ALL APPLICABLE LAWS, RULES, AND REGULATIONS GOVERNING WORK WITH, AND DISPOSAL, OF LEAD.

THE UNDERSIGNED WARRANTS THAT HE/SHE HAS THE AUTHORITY TO SIGN ON BEHALF OF AND BIND THE CONTRACTOR. THE DISTRICT MAY REQUIRE PROOF OF SUCH AUTHORITY.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

IMPORTED MATERIALS CERTIFICATION

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT/PROJECT NO. 2355.04: between the Peralta Community College District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

This form shall be executed by all entities that, in any way, provide or deliver and/or supply any soils, aggregate, or related materials ("Fill") to the Project Site and shall be provided to the District at least ten (10) days before delivery. All Fill shall satisfy all requirements of any environmental review of the Project performed pursuant to the statutes and guidelines of the California Environmental Quality Act, section 21000, et seq., of the Public Resources Code ("CEQA"), and all requirements of section 17210, et seq., of the Education Code, including requirements for a Phase I environmental assessment acceptable to the State of California Community Colleges Chancellor's Office and Department of Toxic Substances Control.

Certification of: Delivery Firm/Transporter Supplier Manufacturer
 Wholesaler Broker Retailer
 Distributor Other _____

Type of Entity Corporation General Partnership
 Limited Partnership Limited Liability Company
 Sole Proprietorship Other _____

Name of firm ("Firm"): _____

Mailing address: _____

Addresses of branch office used for this Project: _____

If subsidiary, name and address of parent company: _____

By my signature below, I hereby certify that I am aware of section 25260 of the Health and Safety Code and the sections referenced therein regarding the definition of hazardous material. I further certify on behalf of the Firm that all soils, aggregates, or related materials provided, delivered, and/or supplied or that will be provided, delivered, and/or supplied by this Firm to the Project Site are free of any and all hazardous material as defined in section 25260 of the Health and Safety Code. I further certify that I am authorized to make this certification on behalf of the Firm.

Date: _____

Proper Name of Firm: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

SEX OFFENDER REGISTRATION ACT CERTIFICATION

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT/PROJECT NO. 2355.04: between the Peralta Community College District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

This certification provides notice to the Contractor that:

- Penal Code section 290.001 requires every person required to register pursuant to sections 290 to 290.009, inclusive, of the Sex Offender Registration Act who is carrying on a vocation at the community college for more than fourteen (14) days, or for an aggregate period exceeding thirty (30) days in a calendar year, shall, in addition to the registration required by the Sex Offender Registration Act, register with the campus police department within five (5) working days of commencing employment at that community college on a form as may be required by the Department of Justice. The terms "employed or carries on a vocation" include employment whether or not financially compensated, volunteered, or performed for government or educational benefit.
- If the community college has no campus police department, the registrant shall instead register with the police of the city in which the campus is located or the sheriff of the county in which the campus is located if the campus is located in an unincorporated area or in a city that has no police department, on a form as may be required by the Department of Justice.
- The registrant shall also notify the campus police department within five (5) working days of ceasing to be employed, or ceasing to carry on a vocation, at the community college.

Contractor hereby acknowledges, under penalty of perjury, that it is aware of the provisions of section 290.001 of the Penal Code, and it will provide notice of the above provisions to all of its employees, subcontractors, and employees of subcontractors regardless of whether they are designated as employees or acting as independent contractors of the Contractor at least five (5) working days before commencing the performance of the Work of this Contract.

THE UNDERSIGNED WARRANTS THAT HE/SHE HAS THE AUTHORITY TO SIGN ON BEHALF OF AND BIND THE CONTRACTOR. THE DISTRICT MAY REQUIRE PROOF OF SUCH AUTHORITY.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

Project No. 2355.04	Peralta Community College District
DSA No. 01-120731	Merritt College Secondary Power Substation C Replacement
Interface Engineering	Oakland, CA

Document 00 45 46.11

**SMALL LOCAL BUSINESS ENTERPRISE and
SMALL EMERGING LOCAL BUSINESS ENTERPRISE PROGRAM**

The District is committed to ensure equal opportunity and equitable treatment in awarding and managing its public contracts and has established an annual overall program goal of twenty-five percent participation for small local businesses. Bidders are encouraged to meet the District’s twenty-five percent goal.

Definitions:

SLBE: A Small Local Business Enterprise is a business that has not exceeded gross annual revenue of 8.5 million dollars for a construction firm, or 6 million dollars for goods and nonprofessional services firm, or 3 million dollars for architecture, engineering and professional services firm, for the past three consecutive years and meets the below geographic location requirements.

SELBE: A Small Local Emerging Business Enterprise is a business that has not exceeded gross annual revenue of 1.5 million dollars for the past three consecutive years and meets the below geographic location requirements.

Commercially Useful Function: Shall mean a business is directly responsible for providing the materials, equipment, supplies or services to the District as required by the contract solicitation. The business performs work that is normal for its business services and carries out its obligation by actually performing, managing, or supervising the work involved. The business is **not** Commercially Useful if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of SLBE or SELBE participation.

Geographic Location Requirements:

- The business must be located at a fixed, established commercial address located in the District’s market area of Albany, Alameda, Berkeley, Emeryville, Oakland, or Piedmont, and not a temporary or movable office, a post office box, or a telephone answering service.
- If the business has an office outside of the District’s market area as well as an office within the market area, the office within the District’s market area must be staffed on a full time permanent basis with someone employed by the business.
- If requested, the business that has an office outside of the District’s market area must provide proof of one or more past contracts citing the business address (such as contracts to perform work, to rent space or equipment, or for other business services) was within the District’s market area at least one (1) year prior to the date of contract award. The one year requirement does not apply to businesses whose sole establishment is located within the District’s market area.

Subcontractors:

Non-SLBE/SELBE Prime Contractors are encouraged to use subcontractors, who meet the district definitions of SLBE and SELBE and the following requirements:

1. The Subcontractors must provide a Commercially Useful Function.
2. The Prime Contractor must maintain the Subcontractor percentages (based on the portion of work) indicated in the Registered Subcontractor List form at the time the

Issue for Bid	SLBE and SELBE Program
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Project No. 2355.04	Peralta Community College District
DSA No. 01-120731	Merritt College Secondary Power Substation C Replacement
Interface Engineering	Oakland, CA

Contract is awarded and throughout the term of the Contract.

3. The Prime Contractor must fill out and sign this SLBE/SELBE form and return it with the bid documents, and 48 hours after the bid opening the Prime Contractor must submit this signed SLBE/SELBE form from each of the SLBE and SELBE subcontractors listed in the Subcontractor form. The Subcontractor must agree to provide the requested documentation to verify the SLBE/SEBLE status.

4. No Substitutions can be made to the SLBE and SELBE subcontractor without the prior written approval of the District. The District will approve a subcontractor substitution on the following conditions:

- a. A written statement from the subcontractor agreeing to the substitution.
- b. When the subcontractor has been given a reasonable opportunity to execute the subcontract, yet fails to, or refuses to execute the subcontract, or refuses to satisfy contractual obligations.
- c. When the subcontractor becomes insolvent.
- d. When the District determines the work performed by the subcontractor is not in accordance with the contract agreement, or the subcontractor is substantially and unduly delaying or disrupting the progress of work. Firms that meet the District criteria for an SLBE and SELBE can complete this form under penalty of perjury. Firms claiming SLBE and SELBE status will be required to submit proof of residency and revenue 48 hours after bid opening. Such proof shall consist of a copy of a contract to perform work, to rent space or equipment, or for other business services, executed from their local address, and the firm's tax returns for the past three consecutive years.

I certify under penalty of perjury that my firm (____) does (____ does not) meet the District's definition of a Small Local Business Enterprise or a Small Emerging Local Business Enterprise and resides in the geographic location of the District's market area. I acknowledge and have been advised and hereby agree that my firm will be required to provide proof (and if applicable, my SLBE and SELBE Contractors will provide proof) of status.

Bid # _____ Bid Name _____

Signed Date

Printed or typed name Title

Name of Company Telephone # Email

Issue for Bid	SLBE and SELBE Program
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REGISTERED SUBCONTRACTORS LIST
(Labor Code Section 1771.1)

PROJECT: MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT

Date Submitted (for Updates): _____

Contractor acknowledges and agrees that it must clearly set forth below the name and Department of Industrial Relations (DIR) registration number of each subcontractor **for all tiers** who will perform work or labor or render service to Contractor or its subcontractors in or about the construction of the Work **at least two (2) weeks before the subcontractor is scheduled to perform work**. This document is to be updated as all tiers of subcontractors are identified.

Contractor acknowledges and agrees that, if Contractor fails to list as to any subcontractor of any tier who performs any portion of Work, the Contract is subject to cancellation and the Contractor will be subjected to penalty under applicable law.

If further space is required for the list of proposed subcontractors, attach additional copies of page 2 showing the required information, as indicated below.

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

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Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Date: _____

Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

POST BID INTERVIEW

PART 1 – GENERAL

1.01 SUMMARY

If requested by the District, this Section requires the apparent low bidder to attend and participate in a Post Bid Interview with the Construction Manager, prior to award of any contract by the District. The Post Bid Interview will be scheduled by the Construction Manager within three (3) calendar days after the date of bid.

1.02 REQUIRED ATTENDANCE

- A. A duly authorized representative of the apparent low bidder is required to attend the Post Bid Interview, in person.
- B. The apparent low bidder's authorized representative(s) must have (1) knowledge of how the bid submitted was prepared, (2) the person responsible for supervising performance of the Work, and (3) the authority to bind the apparent low bidder.
- C. Failure to attend the Post Bid Interview as scheduled will be considered just cause for the District to reject the Bid as nonresponsive.

1.03 POST BID INTERVIEW PROCEDURE

- A. The Construction Manager will review the Bid with the attendees.
- B. The Construction Manager will review the Contract Documents with the attendees, including but not limited to:
 - (1) Insurance
 - (2) Bonding
 - (3) Addenda
 - (4) Pre-Bid Clarifications
 - (5) Scope of Work
 - (6) Bid Packages Descriptions
 - (7) Bid Alternates
 - (8) Contract Plans
 - (9) Contract Specifications
 - (10) Project Schedule and Schedule Requirements

- (11) Critical Dates Requirement for Other Bid Packages
- (12) Prevailing Wage Requirements
- (13) Liquidated Damages
- (14) Required Documentation for Contract Administration
- (15) Contract Coordination Requirements

1.04 POST BID INTERVIEW DOCUMENTATION

The Construction Manager will document the Post Bid Interview on the form attached to this Section. Both the apparent low bidder and the Construction Manager are required to sign the Post Bid Interview Documentation.

POST BID INTERVIEW

CONSTRUCTION MANAGER

[Name]
[Address 1]
[Address 2]
[Phone]

[Fax]

BIDDER: _____

DATE: _____ TIME: _____ PHONE: _____

I. INTRODUCTIONS:

A. Present

CONTRACTOR

[CM]

CONTRACTOR

[CM]

II. PROPOSED CONTRACT:

III. PURPOSE OF INTERVIEW IS TO ASSURE A MUTUAL UNDERSTANDING OF THE FOLLOWING:

- A. Do you acknowledge submission of a complete and accurate bid? Yes No
- B. Do you acknowledge the Bid Document submittal timelines after NOA and NTP and can you meet those timelines? Yes No
- C. Do you acknowledge the requirements for the escrow of bid documents? Yes No
- D. Are you comfortable with your listed subcontractors? Yes No

IV. CONTRACTUAL REQUIREMENTS:

- A. Do you understand you are a prime contractor? Yes No
- B. Can you meet specified insurance requirements? Yes No
 - 1. Do any of your policies that require Additional Insured endorsements exceed the minimum coverage requirements? Yes No
 - 2. Are you requesting that the District accept an Umbrella or Excess Liability Insurance Policy to meet the policy limit? Yes No

- | | | | |
|----|---|-----|----|
| 3. | Will there be a gap between the per occurrence amount of any underlying policy and the start of the coverage under the Umbrella or Excess Liability Insurance Policy? | Yes | No |
| C. | Will you provide the Performance Bond and Labor and Material Bond for 100% of the Contract Price as stipulated? | Yes | No |
| 1. | Cost for bond: _____% | Yes | No |
| 2. | Is the cost of your bond in your base bid? | Yes | No |
| 3. | Is your surety licensed to issue bonds in California? | Yes | No |
| D. | Do you understand the sex offender registration requirements? | Yes | No |
| E. | Is it understood that all workers must be paid prevailing wage? | Yes | No |
| F. | Is it understood that all subcontractors of every tier must be registered as a public works contractor with the Department of Industrial Relations | Yes | No |
| V. | SCOPE OF WORK: | | |
| A. | Acknowledged Receipt of Addenda #1-___ | Yes | No |
| B. | Are the costs for addenda items included in your bid? (if applicable) | Yes | No |
| C. | Do you have a complete understanding of your Scope of Work under the proposed Agreement? | Yes | No |
| D. | You have re-reviewed the documents and understand the Scope of the Work. Are there any items that require clarification? | Yes | No |

If yes, please identify them.

1. _____

2. _____

3. _____

Is (are) there additional cost(s) for the above item(s)?	Yes	No
--	-----	----

- | | | |
|---|-----|----|
| E. Have you reviewed bid alternative(s) #1-___? (If applicable) | Yes | No |
| F. Are the costs for bid alternatives included in your bid? | Yes | No |
| G. Are the plans and specifications clear and understandable to your satisfaction? | Yes | No |
| H. Do you acknowledge that the time to submit notice of requests for substitution of specified materials has expired? | Yes | No |

VI. SCHEDULE:

- | | | |
|---|-----|----|
| A. Do you acknowledge and agree to the stipulated completion dates and milestones in the contract? | Yes | No |
| 1. Will you provide a detailed construction schedule to _____ within the required ten (10) days of the Notice to Proceed, per the contract? | Yes | No |
| 2. Can you meet the submittal deadline? | Yes | No |
| 3. It is understood that the Project schedule is critical and that that weekend and overtime work may be required to meet the milestones. | Yes | No |
| 4. It is understood that if rain does occur, then all dewatering and protection of work is required, per the contract. If not, what do you believe must change and why? _____ | Yes | No |

- | | | |
|--|-----|----|
| B. Identify critical materials, deliveries, long lead items and other dependencies, including Owner Furnished items that could affect the completion of your work. | Yes | No |
|--|-----|----|

1. _____
2. _____
3. _____
4. _____
5. _____

C. Do you understand that there is going to be maintenance and other construction taking place on site during the course of the project? Yes No

VII. EXECUTION OF WORK

A. Do you understand the access to the site? Yes No

B. Do you understand the staging area restrictions? Yes No

C. Have you included protection of [asphalt, floors, and roofs]? Yes No

D. Do you understand that the site is occupied by students, teachers, administrators, parents, etc.? Yes No

VIII. CONTRACTOR COMMENTS/SUGGESTIONS:

1. _____
2. _____
3. _____
4. _____
5. _____

IX. CONTRACTOR

You agree the information contained herein is part of your contractual obligations. Your signature acknowledges your agreement to perform all Work in the Contract Documents, and that costs for all Work are included in your bid.

The foregoing information is true and accurate, and I am authorized to sign as an officer of the company I am representing.

[Company Name]

Signature _____ Title: _____

Date: _____

X. CONSTRUCTION MANAGER

Signature _____ Title: _____

Date: _____

Title of Document: POST BID INTERVIEW

Number of Pages: _____

Date of Document: _____

END OF DOCUMENT

NOTICE OF AWARD

Dated: _____ 20__

To: _____ (Contractor)

(Address)

From: Governing Board ("Board") of the Peralta Community College District ("District")

Re: MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT, PROJECT NO. 2355.04 ("Project").

Contractor has been awarded the Contract for the above referenced Project on _____, 20__, by action of the District's Board.

The Contract Price is _____ Dollars (\$_____), and includes allowance(s)_____.

Three (3) copies of each of the Contract Documents (except Drawings) accompany this Notice of Award. Three (3) sets of the Drawings will be delivered separately or otherwise made available. Additional copies are available at cost of reproduction.

You must comply with the following conditions precedent within **SEVEN (7)** calendar days of the date of this Notice of Award.

The Contractor shall execute and submit the following documents by 5:00 p.m. of the **SEVENTH (7th)** calendar day following the date of the Notice of Award.

- a. Agreement: To be executed by successful Bidder. Submit three (3) copies, each bearing an original signature.
- b. Escrow of Bid Documentation: This must include all required documentation. See document titled Escrow Bid Documentation for more information.
- c. Performance Bond (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
- d. Payment Bond (Contractor's Labor & Material Bond) (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
- e. Insurance Certificates and Endorsements as required.
- f. Workers' Compensation Certification.
- g. Prevailing Wage and Related Labor Requirements Certification.
- h. Disabled Veteran Business Enterprise Participation Certification.
- i. Drug-Free Workplace Certification.

- j. Tobacco-Free Environment Certification.
- k. Hazardous Materials Certification.
- l. Lead-Based Materials Certification.
- m. Imported Materials Certification.
- n. Sex Offender Registration Act Certification.

Failure to comply with these conditions within the time specified will entitle District to consider your bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited, as well as any other rights the District may have against the Contractor.

After you comply with those conditions, District will return to you one fully signed counterpart of the Agreement.

PERALTA COMMUNITY COLLEGE DISTRICT

BY: _____

NAME: _____

TITLE: _____

END OF DOCUMENT

AGREEMENT

THIS AGREEMENT IS MADE AND ENTERED INTO THIS _____ DAY OF _____
_____, 20____, by and between the Peralta Community College District ("District") and _____
_____ ("Contractor")
("Agreement").

WITNESSETH: That the parties hereto have mutually covenanted and agreed, and by these presents do covenant and agree with each other, as follows:

- 1. The Work:** Contractor agrees to furnish all tools, equipment, apparatus, facilities, labor, and material necessary to perform and complete in a good and workmanlike manner, the work of the following project:

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT ("Project" or "Contract" or "Work")

It is understood and agreed that the Work shall be performed and completed as required in the Contract Documents including, without limitation, the Drawings and Specifications and submission of all documents required to secure funding or by the Division of the State Architect for close-out of the Project, under the direction and supervision of, and subject to the approval of, the District or its authorized representative.

- 2. The Contract Documents:** The complete Contract consists of all Contract Documents as defined in the General Conditions and incorporated herein by this reference. Any and all obligations of the District and Contractor are fully set forth and described in the Contract Documents. All Contract Documents are intended to cooperate so that any Work called for in one and not mentioned in the other or vice versa is to be executed the same as if mentioned in all Contract Documents.
- 3. Interpretation of Contract Documents:** Should any question arise concerning the intent or meaning of Contract Documents, including the Drawings or Specifications, the question shall be submitted to the District for interpretation. If a conflict exists in the Contract Documents, valid, written modifications, beginning with the most recent, shall control over this Agreement (if any), which shall control over the Special Conditions, which shall control over any Supplemental Conditions, which shall control over the General Conditions, which shall control over the remaining Division 0 documents, which shall control over Division 1 Documents which shall control over Division 2 through Division 49 documents, which shall control over figured dimensions, which shall control over large-scale drawings, which shall control over small-scale drawings. In the case of a discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and Specifications. In no case shall a document calling for lower quality and/or quantity material or workmanship control. The decision of the District in the matter shall be final.
- 4. Time for Completion:** It is hereby understood and agreed that the Work under this Contract shall be completed within **645 consecutive calendar days** ("Contract Time") from the date specified in the District's Notice to Proceed.

5. Completion - Extension of Time: Should the Contractor fail to complete this Contract, and the Work provided herein, within the time fixed for completion, due allowance being made for the contingencies provided for herein, the Contractor shall become liable to the District for all loss and damage that the District may suffer on account thereof. The Contractor shall coordinate its Work with the Work of all other contractors. The District shall not be liable for delays resulting from Contractor's failure to coordinate its Work with other contractors in a manner that will allow timely completion of Contractor's Work. Contractor shall be liable for delays to other contractors caused by Contractor's failure to coordinate its Work with the Work of other contractors.

6. Liquidated Damages: Time is of the essence for all work under this Agreement. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that the District will sustain in the event of and by reason of Contractor's delay; therefore, Contractor agrees that it shall pay to the District the sum of **two thousand dollars (\$2,000.00) per day as liquidated damages for each and every day's delay beyond the time herein prescribed in Specification Section 01 32 13 Scheduling of Work.**

It is hereby understood and agreed that this amount is not a penalty.

In the event that any portion of the liquidated damages is not paid to the District, the District may deduct that amount from any money due or that may become due the Contractor under this Agreement, and such deduction does not constitute a withholding or penalty. The District's right to assess liquidated damages is as indicated herein and in the General Conditions.

The time during which the Contract is delayed for cause, as hereinafter specified, may extend the time of completion for a reasonable time as the District may grant, provided that Contractor has complied with the claims procedure of the Contract Documents. This provision does not exclude the recovery of damages by either party under other provisions in the Contract Documents.

7. Loss Or Damage: The District and its agents and authorized representatives shall not in any way or manner be answerable or suffer loss, damage, expense, or liability for any loss or damage that may happen to the Work, or any part thereof, or in or about the same during its construction and before acceptance, and the Contractor shall assume all liabilities of every kind or nature arising from the Work, either by accident, negligence, theft, vandalism, or any cause whatsoever; and shall hold the District and its agents and authorized representatives harmless from all liability of every kind and nature arising from accident, negligence, or any cause whatsoever.

8. Limitation Of District Liability: District's financial obligations under this Contract shall be limited to the payment of the compensation provided in this Contract. Notwithstanding any other provision of this Contract, in no event shall District be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits or revenue, lost bonding capacity, arising out of or in connection with this Contract for the services performed in connection with this Contract.

9. Insurance and Bonds: Prior to issuance of the Notice to Proceed by the District, Contractor shall provide all required certificates of insurance, insurance endorsements, and payment and performance bonds as evidence thereof.

- 10. Prosecution of Work:** If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this Contract, the District, may, pursuant to the General Conditions and without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.
- 11. Authority of Architect, Project Inspector, and DSA:** Contractor hereby acknowledges that the Architect(s), the Project Inspector(s), and the Division of the State Architect ("DSA") have authority to approve and/or suspend Work if the Contractor's Work does not comply with the requirements of the Contract Documents, Title 24 of the California Code of Regulations, and all applicable laws and regulations. The Contractor shall be liable for any delay caused by its non-compliant Work.
- 12. Assignment of Contract:** Neither the Contract, nor any part thereof, nor any moneys due or to become due thereunder, may be assigned by the Contractor without the prior written approval of the District, nor without the written consent of the Surety on the Contractor's Performance Bond (the "Surety"), unless the Surety has waived in writing its right to notice of assignment.
- 13. Classification of Contractor's License:** Contractor hereby acknowledges that it currently holds valid Type B-General Contractor's license(s) issued by the State of California, Contractors' State License Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.
- 14. Registration as Public Works Contractor:** The Contractor and all Subcontractors currently are registered as public works contractors with the Department of Industrial Relations, State of California, in accordance with Labor Code section 1771.1.
- 15. Payment of Prevailing Wages:** The Contractor and all Subcontractors shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code.
- 16. Labor Compliance Monitoring and Enforcement:** This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and Title 8 of the California Code of Regulations. Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code, including, without limitation, the requirement that the Contractor and all of its Subcontractors shall timely submit complete and accurate electronic certified payroll records as required by the Contract Documents, or the District may not issue payment.
- 17. Contract Price:** In consideration of the foregoing covenants, promises, and agreements on the part of the Contractor, and the strict and literal fulfillment of each and every covenant, promise, and agreement, and as compensation agreed upon for the Work and construction, erection, and completion as aforesaid, the District

covenants, promises, and agrees that it will well and truly pay and cause to be paid to the Contractor in full, and as the full Contract Price and compensation for construction, erection, and completion of the Work hereinabove agreed to be performed by the Contractor, the following price:

_____ Dollars
(\$ _____),

in lawful money of the United States, which sum is to be paid according to the schedule provided by the Contractor and accepted by the District and subject to additions and deductions as provided in the Contract. This amount supersedes any previously stated and/or agreed to amount(s).

- 18. No Representations:** No representations have been made other than as set forth in writing in the Contract Documents, including this Agreement. Each of the Parties to this Agreement warrants that it has carefully read and understood the terms and conditions of this Agreement and all Contract Documents, and that it has not relied upon the representations or advice of any other Party or any attorney not its own.
- 19. Entire Agreement:** The Contract Documents, including this Agreement, set forth the entire agreement between the parties hereto and fully supersede any and all prior agreements, understandings, written or oral, between the parties hereto pertaining to the subject matter thereof.
- 20. Severability:** If any term, covenant, condition, or provision in any of the Contract Documents is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions in the Contract Documents shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.
- 21. Authority of Signatories:** Each party has the full power and authority to enter into and perform this Contract, and the person signing this Contract on behalf of each party has been properly authorized and empowered to enter into this Contract. This Contract may be executed in one or more counterparts, each of which shall be deemed an original. For this Agreement, and for all Contract Documents requiring a signature, a facsimile or electronic signature shall be deemed to be the equivalent of the actual original signature. All counterparts so executed shall constitute one Contract binding all the Parties hereto.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, accepted and agreed on the date indicated above:

CONTRACTOR

**PERALTA COMMUNITY COLLEGE
DISTRICT**

By: _____

By: _____

Title: _____

Title: _____

NOTE: If the party executing this Contract is a corporation, a certified copy of the by-laws, or of the resolution of the Board of Directors, authorizing the officers of said corporation to execute the Contract and the bonds required thereby must be attached hereto.

END OF DOCUMENT

NOTICE TO PROCEED

Dated: _____, 20__

TO: _____
("Contractor")

ADDRESS: _____

PROJECT: MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT

PROJECT NO. 2355.04:
between the Peralta Community College District and Contractor ("Contract").

You are notified that the Contract Time under the above Contract will commence to run on _____, 20__. By that date, you are to start performing your obligations under the Contract Documents. In accordance with the Agreement executed by Contractor, the date of completion is _____, 20__.

You must submit the following documents by 5:00 p.m. of the TENTH (10th) calendar day following the date of this Notice to Proceed:

- a. Contractor's preliminary schedule of construction.
- b. Contractor's preliminary schedule of values for all of the Work.
- c. Contractor's preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals
- d. Contractor's Safety Plan specifically adapted for the Project.
- e. Registered Subcontractors List: A complete subcontractors list for all tiers, including the name, Department of Industrial Relations registration number, and portion of work.

Thank you. We look forward to a very successful Project.

PERALTA COMMUNITY COLLEGE DISTRICT

BY: _____

NAME: _____

TITLE: _____

END OF DOCUMENT

ESCROW BID DOCUMENTATION

1. Requirement to Escrow Bid Documentation

- a. Contractor shall submit, within **SEVEN (7)** calendar days after the date of the Notice of Award, one copy of all documentary information received or generated by Contractor in preparation of bid prices for this Contract, as specified herein. This material is referred to herein as "Escrow Bid Documentation." The Escrow Bid Documentation of the Contractor will be held in escrow for the duration of the Contract.
- b. Contractor agrees, as a condition of award of the Contract, that the Escrow Bid Documentation constitutes all written information used in the preparation of its bid, and that no other written bid preparation information shall be considered in resolving disputes or claims. Contractor also agrees that nothing in the Escrow Bid Documentation shall change or modify the terms or conditions of the Contract Documents.
- c. The Escrow Bid Documentation will not be opened by District except as indicated herein. The Escrow Bid Documentation will be used only for the resolution of change orders and claims disputes.
- d. Contractor's submission of the Escrow Bid Documentation, as with the bonds and insurance documents required, is considered an essential part of the Contract award. Should the Contractor fail to make the submission within the allowed time specified above, District may deem the Contractor to have failed to enter into the Contract, and the Contractor shall forfeit the amount of its bid security, accompanying the Contractor's bid, and District may award the Contract to the next lowest responsive responsible bidder.
- e. NO PAYMENTS WILL BE MADE, NOR WILL DISTRICT ACCEPT PROPOSED CHANGE ORDERS UNTIL THE ABOVE REQUIRED INFORMATION IS SUBMITTED AND APPROVED.
- f. The Escrow Bid Documentation shall be submitted in person by an authorized representative of the Contractor to the District.

2. Ownership of Escrow Bid Documentation

- a. The Escrow Bid Documentation is, and shall always remain, the property of Contractor, subject to review by District, as provided herein.
- b. Escrow Bid Documentation constitute trade secrets, not known outside Contractor's business, known only to a limited extent and only by a limited number of employees of Contractor, safeguarded while in Contractor's possession, extremely valuable to Contractor, and could be extremely valuable to Contractor's competitors by virtue of it reflecting Contractor's contemplated techniques of construction. Subject to the provisions herein, District agrees to safeguard the Escrow Bid Documentation, and all

information contained therein, against disclosure to the fullest extent permitted by law.

3. Format and Contents of Escrow Bid Documentation

- a. Contractor may submit Escrow Bid Documentation in its usual cost-estimating format; a standard format is not required. The Escrow Bid Documentation shall be submitted in the language (e.g., English) of the specification.
- b. Escrow Bid Documentation must clearly itemize the estimated costs of performing the work of each bid item contained in the bid schedule, separating bid items into sub-items as required to present a detailed cost estimate and allow a detailed cost review. The Escrow Bid Documentation shall include all subcontractor bids or quotes, supplier bids or quotes, quantity takeoffs, crews, equipment, calculations of rates of production and progress, copies of quotes from subcontractors and suppliers, and memoranda, narratives, add/deduct sheets, and all other information used by the Contractor to arrive at the prices contained in the bid proposal. Estimated costs should be broken down into Contractor's usual estimate categories such as direct labor, repair labor, equipment ownership and operation, expendable materials, permanent materials, and subcontract costs as appropriate. All labor rates must be broken down to specify any and all burden costs including, but not limited to, health and welfare pay, vacation and holiday pay, pension contributions, training rates, benefits of any kind, insurance of any kind, workers' compensation, liability insurance, truck expenses, supply expenses of any kind, payroll taxes, and any other taxes of any kind. Plant and equipment and indirect costs should be detailed in the Contractor's usual format. The Contractor's allocation of indirect costs, contingencies, markup, and other items to each bid item shall be identified.
- c. All costs shall be identified. For bid items amounting to less than \$10,000, estimated unit costs are acceptable without a detailed cost estimate, provided that labor, equipment, materials, and subcontracts, as applicable, are included and provided that indirect costs, contingencies, and markup, as applicable, are allocated.
- d. Bid Documentation provided by District should not be included in the Escrow Bid Documentation unless needed to comply with the following requirements.

4. Submittal of Escrow Bid Documentation

- a. The Escrow Bid Documentation shall be submitted by the Contractor in a sealed container within **SEVEN (7)** calendar days after the date of the Notice of Award. The container shall be clearly marked on the outside with the Contractor's name, date of submittal, project name and the words "Escrow Bid Documentation – Intended to be opened in the presence of Authorized Representatives of Both District and Contractor".
- b. By submitting Escrow Bid Documentation, Contractor represents that the material in the Escrow Bid Documentation constitutes all the documentary information used in preparation of the bid and that the Contractor has personally examined the contents of the Escrow Bid Documentation container and has found that the documents in the container are complete.

- c. If Contractor's proposal is based upon subcontracting any part of the work, each subcontractor whose total subcontract price exceeds 5 percent of the total contract price proposed by Contractor, shall provide separate Escrow Documents to be included with those of Contractor. Those documents shall be opened and examined in the same manner and at the same time as the examination described above for Contractor.
- d. If Contractor wishes to subcontract any portion of the Work after award, District retains the right to require Contractor to submit Escrow Documents for the Subcontractor before the subcontract is approved.

5. Storage, Examination and Final Disposition of Escrow Bid Documentation

- a. The Escrow Bid Documentation will be placed in escrow, for the life of the Contract, in a mutually agreeable institution. The cost of storage will be paid by Contractor for the duration of the project until final Contract payment. The storage facilities shall be the appropriate size for all the Escrow Bid Documentation and located conveniently to both District's and Contractor's offices.
- b. The Escrow Bid Documentation shall be examined by both District and Contractor, at any time deemed necessary by either District or Contractor, to assist in the negotiation of price adjustments and change orders or the settlement of disputes and claims. In the case of legal proceedings, Escrow Bid Documentation shall be used subject to the terms of an appropriate protective order if requested by Contractor and ordered by a court of competent jurisdiction. Examination of the Escrow Bid Documentation is subject to the following conditions:
 - (1) As trade secrets, the Escrow Bid Documentation is proprietary and confidential to the extent allowed by law.
 - (2) District and Contractor shall each designate, in writing to the other party **SEVEN (7)** calendar days prior to any examination, the names of representatives who are authorized to examine the Escrow Bid Documentation. No other person shall have access to the Escrow Bid Documentation.
 - (3) Access to the documents may take place only in the presence of duly designated representatives of the District and Contractor. If Contractor fails to designate a representative or appear for joint examination on **SEVEN (7)** calendar days' notice, then the District representative may examine the Escrow Bid Documents alone upon an additional **THREE (3)** calendar days' notice if a representative of the Contractor does not appear at the time set.
 - (4) If a subcontractor has submitted sealed information to be included in the Escrow Bid Documents, access to those documents may take place only in the presence of a duly designated representative of the District, Contractor and that subcontractor. If that subcontractor fails to designate a representative or appear for joint examination on **SEVEN (7)** calendar days' notice, then the District representative and/or the Contractor may examine the Escrow Bid Documentation without that

subcontractor present upon an additional **THREE (3)** calendar days' notice if a representative of that subcontractor does not appear at the time set.

- c. The Escrow Bid Documentation will be returned to Contractor at such time as the Contract has been completed and final settlement has been achieved.

END OF DOCUMENT

ESCROW AGREEMENT IN LIEU OF RETENTION
(Public Contract Code Section 22300)

(Note: Contractor must use this form.)

This Escrow Agreement in Lieu of Retention ("Escrow Agreement") is made and entered into this _____ day of _____, 20____, by and between the Peralta Community College District ("District"), whose address is 333 East 8th Street, Oakland, California 94606, and _____ ("Contractor"), whose address is _____, and _____ ("Escrow Agent"), a state or federally chartered bank in the state of California, whose address is _____.

For the consideration hereinafter set forth, District, Contractor, and Escrow Agent agree as follows:

1. Pursuant to section 22300 of Public Contract Code of the State of California, which is hereby incorporated by reference, Contractor has the following two (2) options:
 - Deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by District pursuant to the Construction Contract No. _____ entered into between District and Contractor for the _____ Project, in the amount of _____ Dollars (\$ _____) dated, _____, 20____, (the "Contract"); **or**
 - On written request of Contractor, District shall make payments of the retention earnings for the above referenced Contract directly to Escrow Agent.

When Contractor deposits the securities as a substitute for Contract earnings (first option), Escrow Agent shall notify District within ten (10) calendar days of the deposit. The market value of the securities at the time of substitution and at all times from substitution until the termination of the Escrow Agreement shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between District and Contractor.

Securities shall be held in name of Peralta Community College District, and shall designate Contractor as beneficial owner.

2. District shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to Contract provisions, provided that Escrow Agent holds securities in form and amount specified above.
3. When District makes payment of retention earned directly to Escrow Agent, Escrow Agent shall hold them for the benefit of Contractor until the time that the escrow created under this Escrow Agreement is terminated. Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the Parties shall be equally applicable and binding when District pays Escrow Agent directly.

4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account, and all expenses of District. The District will charge Contractor \$_____ for each of District's deposits to the escrow account. These expenses and payment terms shall be determined by District, Contractor, and Escrow Agent.
5. Interest earned on securities or money market accounts held in escrow and all interest earned on that interest shall be for sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to District.
6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from District to Escrow Agent that District consents to withdrawal of amount sought to be withdrawn by Contractor.
7. District shall have the right to draw upon the securities and/or withdraw amounts from the Escrow Account in the event of default by Contractor. Upon seven (7) days' written notice to Escrow Agent from District of the default, if applicable, Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by District. Escrow Agent shall not be authorized to determine the validity of any notice of default given by District pursuant to this paragraph, and shall promptly comply with District's instructions to pay over said escrowed assets. Escrow Agent further agrees to not interplead the escrowed assets in response to a conflicting demand.
8. Upon receipt of written notification from District certifying that the Contract is final and complete, and that Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payments of fees and charges.
9. Escrow Agent shall rely on written notifications from District and Contractor pursuant to Paragraphs 5 through 8, inclusive, of this Escrow Agreement and District and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of securities and interest as set forth above.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

10. Names of persons who are authorized to give written notice or to receive written notice on behalf of District and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of District:

Title

Name

Signature

Address

On behalf of Contractor:

Title

Name

Signature

Address

On behalf of Escrow Agent:

Title

Name

Signature

Address

At the time that the Escrow Account is opened, District and Contractor shall deliver to Escrow Agent a fully executed copy of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

On behalf of District:

Title

Name

Signature

Address

On behalf of Contractor:

Title

Name

Signature

Address

END OF DOCUMENT

PERFORMANCE BOND
(100% of Contract Price)

(Note: Contractor must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("Board") of the Peralta Community College District ("District") and _____ ("Principal") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project: Merritt College Secondary Power Substation C Replacement ("Project" or "Contract") which Contract dated _____, 20____, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

WHEREAS, said Principal is required under the terms of the Contract to furnish a bond for the faithful performance of the Contract.

NOW, THEREFORE, the Principal and _____ ("Surety") are held and firmly bound unto the Board of the District in the penal sum of _____ Dollars (\$ _____), lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents, to:

- Promptly perform all the work required to complete the Project; and
- Pay to the District all damages the District incurs as a result of the Principal's failure to perform all the Work required to complete the Project.

Or, at the District's sole discretion and election, the Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by the District of the lowest responsible bidder, arrange for a contract between such bidder and the District and make available as Work progresses sufficient funds to pay the cost of completion less the "balance of the Contract Price," and to pay and perform all obligations of Principals under the Contract, including, without limitation, all obligations with respect to warranties, guarantees and the payment of liquidated damages. The term "balance of the Contract Price," as used in this paragraph, shall mean the total amount payable to Principal by the District under the Contract and any modifications thereto, less the amount previously paid by the District to the Principal, less any withholdings by the District allowed under the Contract. District shall not be required or obligated to accept a tender of a completion contractor from the Surety for any or no reason.

The condition of the obligation is such that, if the above bound Principal, its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alteration thereof made as therein provided, on its part to be kept and performed at the time and in the intent and meaning, including all contractual guarantees and warranties of materials and workmanship, and shall indemnify and save harmless the

District, its trustees, officers and agents, as therein stipulated, then this obligation shall become null and void, otherwise it shall be and remain in full force and virtue.

Surety expressly agrees that the District may reject any contractor or subcontractor proposed by Surety to fulfill its obligations in the event of default by the Principal. Surety shall not utilize Principal in completing the Work nor shall Surety accept a Bid from Principal for completion of the Work if the District declares the Principal to be in default and notifies Surety of the District's objection to Principal's further participation in the completion of the Work.

As a condition precedent to the satisfactory completion of the Contract, the above obligation shall hold good for a period equal to the warranty and/or guarantee period of the Contract, during which time Surety's obligation shall continue if Contractor shall fail to make full, complete, and satisfactory repair and replacements and totally protect the District from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit the District's rights or the Contractor or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond. The Surety also stipulates and agrees that it shall not be exonerated or released from the obligation of this bond by any overpayment or underpayment by the District that is based upon estimates approved by the Architect. The Surety does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work or to the specifications.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20____.

_____	_____
Principal	Surety
_____	_____
By	By

	Name of California Agent of Surety

	Address of California Agent of Surety

	Telephone No. of California Agent of Surety

Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

END OF DOCUMENT

PAYMENT BOND
Contractor's Labor & Material Bond
(100% Of Contract Price)

(Note: Contractor must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("Board") of the Peralta Community College District, ("District") and _____, ("Principal") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

Merritt College Secondary Power Substation C Replacement ("Project" or "Contract") which Contract dated _____, 20____, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

WHEREAS, pursuant to law and the Contract, the Principal is required, before entering upon the performance of the work, to file a good and sufficient bond with the body by which the Contract is awarded in an amount equal to one hundred percent (100%) of the Contract price, to secure the claims to which reference is made in sections 9000 through 9510 and 9550 through 9566 of the Civil Code, and division 2, part 7, of the Labor Code.

NOW, THEREFORE, the Principal and _____ ("Surety") are held and firmly bound unto all laborers, material men, and other persons referred to in said statutes in the sum of _____ Dollars (\$_____), lawful money of the United States, being a sum not less than the total amount payable by the terms of Contract, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, by these presents.

The condition of this obligation is that if the Principal or any of its subcontractors, or the heirs, executors, administrators, successors, or assigns of any, all, or either of them shall fail to pay for any labor, materials, provisions, or other supplies, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Principal or any of its subcontractors of any tier under Section 13020 of the Unemployment Insurance Code with respect to such work or labor, that the Surety will pay the same in an amount not exceeding the amount herein above set forth, and also in case suit is brought upon this bond, will pay a reasonable attorney's fee to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under section 9100 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void; otherwise it shall be and remain in full force and affect.

And the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of Contract or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20__.

_____	_____
Principal	Surety
_____	_____
By	By

	Name of California Agent of Surety

	Address of California Agent of Surety

	Telephone No. of California Agent of Surety

Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

END OF DOCUMENT

ALLOWANCE EXPENDITURE DIRECTIVE FORM

Peralta Community College District
 333 East 8th Street
 Oakland, CA 94606

ALLOWANCE EXPENDITURE DIRECTIVE NO.:

ALLOWANCE EXPENDITURE DIRECTIVE

Project: Merritt College Secondary Power Substation C Replacement
Bid No.:

Date:
DSA File No.:
DSA Appl. No.: 01-120731

The following parties agree to the terms of this Allowance Expenditure Directive ("AED"):

Owner Name, Address, Telephone:

Contractor Name, Address, Telephone:

Reference	Description	Allowance Authorized for Expenditure
Request for AED # Requested by: Performed by: Reason:	[Description of Allowance item relating to Work] [Requester] [Performer] [Reason]	\$
Request for AED # Requested by: Performed by: Reason:	[Description of Allowance item relating to Work] [Requester] [Performer] [Reason]	\$
Request for AED # Requested by: Performed by: Reason:	[Description of Allowance item relating to Work] [Requester] [Performer] [Reason]	\$

Total Contract Allowance Amount:	\$
Amount of Previously Approved Allowance Expenditure Directive(s):	\$
Amount of this Allowance Expenditure Directive:	\$

The undersigned Contractor approves the foregoing release of Allowance for completion of each specified item, and agrees to furnish all labor, materials and services and perform all work necessary to complete any additional work specified for the consideration stated therein ("Work"). Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650, et seq.

This Allowance Expenditure Directive must be signed by an authorized District representative.

It is expressly understood that the authorized allowance expenditure granted herein represent a full accord and satisfaction for any and all cost impacts of the items herein, and Contractor waives any and all further compensation based on the items herein. The value of the extra work or changes expressly includes any and all of the Contractor's costs and expenses, and its subcontractors, both direct and indirect. Any costs, expenses, or damages not included are deemed waived.

Signatures:

<p>DISTRICT:</p> <p>PERALTA COMMUNITY COLLEGE DISTRICT</p> <p>Date: _____</p> <p>By: _____ [Print Name and Title here]</p>	<p>CONTRACTOR:</p> <p>_____</p> <p>Date: _____</p> <p>By: _____ [Print Name and Title here]</p>
<p>ARCHITECT:</p> <p>_____</p> <p>Date: _____</p> <p>By: _____ [Print Name and Title here]</p>	<p>PROJECT INSPECTOR:</p> <p>_____</p> <p>Date: _____</p> <p>By: _____ [Print Name and Title here]</p>

END OF DOCUMENT

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT PROJECT

DOCUMENT 00 63 43

CONSTRUCTION CHANGE DIRECTIVE NO. {###}

TO: {Contractor Name}

FROM: Peralta Community College District

DATE: {Date}

SUBJECT/ITEM: {Title of CCD}

DESCRIPTION:

REFERENCES:

RFI {#}

ATTACHMENTS:

{Include pictures, drawings, specification section, screenshots etc}

REASON FOR CCD:

{“Unforeseen” is not an acceptable reason}

CONSTRUCTION CHANGE DIRECTIVE INSTRUCTIONS:

The Contractor is directed to proceed with the above-described work on a time and material basis with a **Not-To-Exceed Amount** of XXXXXXXXXXXX dollars (**\$####.00**). Itemized time and material documentation shall be provided *on a daily basis* and signed by the IOR or CM in accordance with the Contract Documents (Force Account).

All changes to the original contract are subject to Board Approval followed by the Chancellor's signature.

MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT PROJECT

DOCUMENT 00 63 43

CONSTRUCTION CHANGE DIRECTIVE NO. {###}

AUTHORIZED BY DISTRICT:

District

Contractor

District Representative Name

Contractor Representative Name

Signed Date

Signed Date

Construction Manager (CM)

Architect (A/E)

CM Representative Name

A/E Representative Name

Signed Date

Signed Date

DAILY FORCE ACCOUNT REPORT

From: Contractor
[Name/Address]

To: Owner
[Name/Address]

Project: Merritt College Secondary Power Substation C Replacement

Contractor hereby submits this Daily Force Account Report for Work performed, pursuant to Force Account Directive No. _____, on _____.
[Date of Work]

Contractor attests that the material, labor, and equipment itemized herein were used only on the force account work.

A. Material: *Attach all applicable invoices not provided in prior Daily Force Account Reports and complete the information below.*

Description	Unit Price	Quantity	Cost

Daily subtotal (w/out markup): \$ _____

B. Labor: *Labor must be fully Burdened. Attach timesheets, if applicable, and complete the information below.*

Name	Craft	Regular Hrs.	Rate	OT Hrs.	Rate

Daily subtotal (w/out markup): \$ _____

C. Equipment: Attach all applicable invoices not provided in prior Daily Force Account Reports and complete the information below.

Type / Model	Hrs. Operated	Rate

Daily subtotal (w/out markup): \$ _____

Complete based on information reported above.

	<u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u>	<u>ADD</u>
i.	<u>Material</u>	
ii.	<u>Add Labor</u>	
iii.	<u>Add Equipment</u>	
iv.	<u>Subtotal</u>	
v.	<u>Add overhead and profit for any and all tiers of Subcontractor</u> , the total not to exceed ten percent (10%) of Item (d)	
vi.	<u>Subtotal</u>	
vii.	<u>Add Overhead and Profit for Contractor</u> , not to exceed five percent (5%) of Item (f)	
viii.	<u>Subtotal</u>	
ix.	<u>Add Bond and Insurance</u> , not to exceed two percent (2%) of Item (h)	
x.	<u>TOTAL</u>	

	<u>WORK PERFORMED BY CONTRACTOR</u>	<u>ADD</u>
(a)	<u>Material</u>	
xi.	<u>Add Labor</u>	
xii.	<u>Add Equipment</u>	
xiii.	<u>Subtotal</u>	
xiv.	<u>Add Overhead and Profit for Contractor</u> , not to exceed fifteen percent (15%) of Item (d)	
xv.	<u>Subtotal</u>	
xvi.	<u>Add Bond and Insurance</u> , not to exceed two percent (2%) of Item (f)	
vii.	<u>TOTAL</u>	

Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act (Gov. Code, § 12650, et seq.).

It is expressly understood that all force account work for the date stated above must be reported herein, and Contractor may not claim any labor, equipment, material or any other costs or expenses not reported herein. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, or damages, not included are deemed waived.

SUBMITTED BY:

Contractor:

[Name]

Date

REVIEWED BY:

Community College:

Peralta Community College District

[Name]

Date

District may require additional information from Contractor to review this Daily Force Account Report. Upon District's return of the Daily Force Account Report, Contractor may invoice the Work reflected therein. District's review and return of the Daily Force Account Report and/or payment for the force account work does not constitute acceptance of the Work or waiver of any Contract rights or criteria.

END OF DOCUMENT

PROPOSED CHANGE ORDER FORM

Peralta Community College District
333 East 8th Street
Oakland, CA 94606

PCO NO.:

Project: Merritt College Secondary Power Substation C
Replacement

Date:
DSA File No.:
DSA Appl. No.: 01-120731

Bid No.:

RFI #:

Contractor hereby submits for District's review and evaluation this Proposed Change Order ("PCO"), submitted in accordance with and subject to the terms of the Contract Documents, including Sections 17.7 and 17.8 of the General Conditions. Any spaces left blank below are deemed no change to cost or time.

Contractor understands and acknowledges that documentation supporting Contractor's PCO must be attached and included for District review and evaluation. Contractor further understands and acknowledges that failure to include documentation sufficient to, in District's discretion, support some or all of the PCO, shall result in a rejected PCO.

	<u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u>	<u>ADD</u>	<u>DEDUCT</u>
(a)	<u>Material</u> (attach suppliers' invoice or itemized quantity and unit cost plus sales tax)		
(b)	<u>Add Labor</u> (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(c)	<u>Add Equipment</u> (attach suppliers' invoice)		
(d)	<u>Subtotal</u>		
(e)	<u>Add overhead and profit for any and all tiers of Subcontractor</u> , the total not to exceed ten percent (10%) of Item (d)		
(f)	<u>Subtotal</u>		
(g)	<u>Add General Conditions</u> (if Time is Compensable) (attach supporting documentation)		
(h)	<u>Subtotal</u>		
(i)	<u>Add Overhead and Profit for Contractor</u> , not to exceed five percent (5%) of Item (h)		
(j)	<u>Subtotal</u>		
(k)	<u>Add Bond and Insurance</u> , not to exceed two percent (2%) of Item (j)		
(l)	<u>TOTAL</u>		
(m)	<u>Time</u> (zero unless indicated; "TBD" not permitted)	____ Calendar Days	

[REMAINDER OF PAGE LEFT BLANK INTENTIONALLY]

	WORK PERFORMED BY CONTRACTOR	ADD	DEDUCT
(a)	Material (attach itemized quantity and unit cost plus sales tax)		
(b)	Add Labor (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(c)	Add Equipment (attach suppliers' invoice)		
(d)	Add General Conditions (if Time is Compensable) (attach supporting documentation)		
(e)	Subtotal		
(f)	Add Overhead and Profit for Contractor , not to exceed fifteen percent (15%) of Item (e)		
(g)	Subtotal		
(h)	Add Bond and Insurance , not to exceed two percent (2%) of Item (g)		
(i)	TOTAL		
(j)	Time (zero unless indicated; "TBD" not permitted)	_____ Calendar Days	

The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for completion of the entire Work as stated herein, and agrees to furnish all labor, materials, and service, and perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq. It is understood that the changes herein to the Contract shall only be effective when approved by the governing board of the District.

It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

SUBMITTED BY:

Contractor:

[Name]

Date

END OF DOCUMENT

CHANGE ORDER FORM

Peralta Community College District
 333 East 8th Street
 Oakland, CA 94606

CHANGE ORDER NO.:

CHANGE ORDER

Project: Merritt College Secondary Power Substation C Replacement
Bid No.:

Date:
DSA File No.:
DSA Appl. No.: 01-120731

The following parties agree to the terms of this Change Order:

Owner:	[Name / Address]	Contractor:	[Name / Address]
Architect:	[Name / Address]	Project Inspector:	[Name / Address]

Reference	Description	Cost	Days Ext.
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	\$	
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	\$	
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	\$	
Contract time will be adjusted as follows:		Original Contract Amount:	\$
Previous Completion Date: <u> [Date] </u>		Amount of Previously Approved Change Order(s):	\$
<u> [#] </u> Calendar Days Extension (zero unless otherwise indicated)		Amount of this Change Order:	\$
Current Completion Date: <u> [Date] </u>		Contract Amount:	\$

The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for completion of the entire work as stated therein, and agrees to furnish all labor, materials and services and perform all work necessary to complete any additional work specified for the consideration stated therein. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq.

This change order is subject to approval by the governing board of this District and must be signed by the District. Until such time as this change order is approved by the District's governing board and executed by a duly authorized District representative, this change order is not effective and not binding.

It is expressly understood that the compensation and time, if any, granted herein represent a full accord and satisfaction for any and all time and cost impacts of the items herein, and Contractor waives any and all further compensation or time extension based on the items herein. The value of the extra work or changes expressly includes any and all of the Contractor's costs and expenses, and its subcontractors, both direct and indirect, resulting from additional time required on the project or resulting from delay to the project including without limitation, cumulative impacts. Any costs, expenses, damages or time extensions not included are deemed waived.

Signatures:

District:

Contractor:

[Name] _____
Date

[Name] _____
Date

Architect:

Project Inspector:

[Name] _____
Date

[Name] _____
Date

END OF DOCUMENT

AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS

THIS AGREEMENT AND RELEASE OF CLAIMS ("Agreement and Release") IS MADE AND ENTERED INTO THIS _____ DAY OF _____, 20__ by and between the PERALTA COMMUNITY COLLEGE DISTRICT ("District") and _____ ("Contractor"), whose place of business is _____.

RECITALS

WHEREAS, District and Contractor entered into MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT/PROJECT NO. 2355.04 ("Contract" or "Project") in the County of Alameda, California; and

WHEREAS, the Work under the Contract was completed on _____, and a Notice of Completion was recorded with the County Recorder on _____.

NOW, THEREFORE, it is mutually agreed between District and Contractor as follows:

AGREEMENT AND RELEASE

1. Contractor will only be assessed liquidated damages as detailed below:

Original Contract Sum	\$ _____
Modified Contract Sum	\$ _____
Payment to Date	\$ _____
Liquidated Damages	\$ _____
Payment Due Contractor	\$ _____

2. Subject to the provisions hereof, District shall forthwith pay to Contractor the undisputed sum of _____ Dollars (\$ _____) under the Contract, less any amounts represented by any notice to withhold funds on file with District as of the date of such payment.

3. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against District arising from the performance of work under the Contract, except for the claims described in Paragraph 6 and continuing obligations described in Paragraph 8. It is the intention of the parties in executing this Agreement and Release that this Agreement and Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities of Contractor against District and all of its respective agents, employees, trustees, inspectors, assignees, consultants and transferees, except for any Disputed Claim that may be set forth in Paragraph 4 and the continuing obligations described in Paragraph 6 hereof.

4. The following claims are disputed (hereinafter, the "Disputed Claims") and are specifically excluded from the operation of this Agreement and Release:

<u>Claim No.</u>	<u>Description of Claim</u>	<u>Amount of Claim</u>	<u>Date Claim Submitted</u>
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____

[If further space is required, attach additional sheets showing the required information.]

5. Consistent with California Public Contract Code section 7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 4 hereof, Contractor hereby releases and forever discharges District, all its agents, employees, inspectors, assignees, and transferees from any and all liability, claims, demands, actions, or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract.
6. Guarantees and warranties for the Work, and any other continuing obligation of Contractor including, without limitation, the duty to defend, indemnify and hold harmless the District, shall remain in full force and effect as specified in the Contract Documents.
7. Contractor hereby waives the provisions of California Civil Code section 1542 which provides as follows:
- A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, AND THAT, IF KNOWN BY HIM OR HER WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY.
8. The provisions of this Agreement and Release are contractual in nature and not mere recitals and shall be considered independent and severable. If any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, county, municipal, or other law, ruling, or regulations, then such provision, or part thereof, shall remain in force and effect to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.

9. All rights of District shall survive completion of the Work or termination of Contract, and execution of this Release.

* * * CAUTION: THIS IS A RELEASE - READ BEFORE EXECUTING * * *

PERALTA COMMUNITY COLLEGE DISTRICT

Signature: _____

Print Name: _____

Title: _____

CONTRACTOR: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

GUARANTEE FORM

_____ ("Contractor") hereby agrees that the _____
_____ ("Work" of Contractor) which Contractor has installed for the Peralta
Community College District ("District") for the following project:

PROJECT: MERRITT COLLEGE SECONDARY POWER SUBSTATION C REPLACEMENT

("Project" or "Contract") has been performed in accordance with the requirements of the
Contract Documents and that the Work as installed will fulfill the requirements of the
Contract Documents.

The undersigned agrees to repair or replace any or all of such Work that may prove to be
defective in workmanship or material together with any other adjacent Work that may be
displaced in connection with such replacement within a period of two year(s) from the date
of completion as defined in Public Contract Code section 7107, subdivision (c), ordinary
wear and tear and unusual abuse or neglect excepted. The date of completion is
_____, 20__.

In the event of the undersigned's failure to comply with the above-mentioned conditions
within a reasonable period of time, as determined by the District, but not later than seven
(7) days after being notified in writing by the District, the undersigned authorizes the
District to proceed to have said defects repaired and made good at the expense of the
undersigned. The undersigned shall pay the costs and charges therefor upon demand.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

Representatives to be contacted for service subject to terms of Contract:

Name: _____

Address: _____

Phone No.: _____

Email: _____

END OF DOCUMENT

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GENERAL CONDITIONS

1. CONTRACT TERMS AND DEFINITIONS

1.1 Definitions

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

1.1.1 Adverse Weather: Shall be only weather that satisfies all of the following conditions: (1) unusually severe precipitation, sleet, snow, hail, or extreme temperature conditions in excess of the norm for the location and time of year it occurred based on the closest weather station data averaged over the past five years, (2) that is unanticipated and would cause unsafe work conditions and/or is unsuitable for scheduled work that should not be performed during inclement weather (i.e., exterior finishes), and (3) at the Project.

1.1.2 Allowance(s): The Allowance Item(s) identified in the Bid Form and Proposal and included in the Contract Price. Any unused portion of the Allowance will revert to the District documented by a deductive Change Order. Contractor hereby authorizes the District to execute a unilateral deductive Change Order at or near the end of the Project for all or any portion of the Allowance not allocated. .

1.1.3 Allowance Expenditure Directive: Written authorization for expenditure of an Allowance, if any. Contractor shall not bill for or be due any portion of an Allowance unless the District has identified specific work, Contractor has submitted a price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has executed an Allowance Expenditure Directive incorporating that work.

1.1.4 Approval, Approved, and/or Accepted: Written authorization, unless stated otherwise.

1.1.5 Architect (or "Design Professional in General Responsible Charge"): The individual, partnership, corporation, joint venture, or any combination thereof, named as Architect, who will have the rights and authority assigned to the Architect in the Contract Documents. The term Architect means the Design Professional in General Responsible Charge as defined in DSA PR 13-02 on this Project or the Architect's authorized representative.

1.1.6 As-Builts: Reproducible blue line prints of drawings to be prepared on a monthly basis pursuant to the Contract Documents, that reflect changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed since the preceding monthly submittal. See **Record Drawings**.

1.1.7 Bidder: A contractor who intends to provide a proposal to the District to perform the Work of this Contract.

1.1.8 Burdened: The labor rate for Contractor or any Subcontractor inclusive of any and all burden costs including, but not limited to, health and welfare pay, vacation and holiday pay, pension contributions, training rates, benefits of any kind, insurance of any kind, workers' compensation, liability insurance, truck expenses, supply expenses of any kind, payroll taxes, and any other taxes of any kind.

1.1.9 Change Order: A written order to the Contractor authorizing an addition to, deletion from, or revision in the Work, and/or authorizing an adjustment in the Contract Price or Contract Time.

1.1.10 Claim: A Dispute that remains unresolved at the conclusion of the all the applicable Dispute Resolution requirements provided herein.

1.1.11 Construction Change Directive: A written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District and the Architect, directing a change in the Work.

1.1.12 Construction Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Construction Manager is used on the Project that is the subject of this Contract, then all references to Construction Manager herein shall be read to refer to District.

1.1.13 Construction Schedule: The progress schedule of construction of the Project as provided by Contractor and approved by District.

1.1.14 Contract, Contract Documents: The Contract consists exclusively of the documents evidencing the agreement of the District and Contractor, identified as the Contract Documents. The Contract Documents consist of the following documents:

- 1.1.14.1** Notice to Bidders
- 1.1.14.2** Instructions to Bidders
- 1.1.14.3** Bid Form and Proposal
- 1.1.14.4** Bid Bond
- 1.1.14.5** Designated Subcontractors List
- 1.1.14.6** Site Visit Certification (if a site visit was required)
- 1.1.14.7** Non-Collusion Declaration
- 1.1.14.8** Notice of Award
- 1.1.14.9** Notice to Proceed
- 1.1.14.10** Agreement
- 1.1.14.11** Escrow of Bid Documentation
- 1.1.14.12** Escrow Agreement for Security Deposits in Lieu of Retention (if applicable)
- 1.1.14.13** Performance Bond
- 1.1.14.14** Payment Bond (Contractor's Labor & Material Bond)
- 1.1.14.15** General Conditions
- 1.1.14.16** Special Conditions (if applicable)
- 1.1.14.17** Project Labor Agreement (if applicable)
- 1.1.14.18** Hazardous Materials Procedures and Requirements
- 1.1.14.19** Workers' Compensation Certification
- 1.1.14.20** Prevailing Wage Certification

- 1.1.14.21** Disabled Veteran Business Enterprise Participation Certification (if applicable)
- 1.1.14.22** Drug-Free Workplace Certification (if applicable)
- 1.1.14.23** Tobacco-Free Environment Certification
- 1.1.14.24** Hazardous Materials Certification (if applicable)
- 1.1.14.25** Lead-Based Materials Certification (if applicable)
- 1.1.14.26** Imported Materials Certification (if applicable)
- 1.1.14.27** Sex Offender Registration Act Certification (if applicable)
- 1.1.14.28** Buy American Certification (if certain federal funds used)
- 1.1.14.29** Roofing Project Certification (if applicable)
- 1.1.14.30** Registered Subcontractors List
- 1.1.14.31** Iran Contracting Act Certification (if applicable)
- 1.1.14.32** Federal Debarment Certification (if applicable)
- 1.1.14.33** Federal Byrd Anti-Lobbying Certification (if applicable)
- 1.1.14.34** Post Bid Interview
- 1.1.14.35** All Plans, Technical Specifications, and Drawings
- 1.1.14.36** Any and all addenda to any of the above documents
- 1.1.14.37** Any and all change orders or written modifications to the above documents if approved in writing by the District

1.1.15 Contract Price: The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

1.1.16 Contract Time: The time period stated in the Agreement for the completion of the Work.

1.1.17 Contractor: The person or persons identified in the Agreement as contracting to perform the Work to be done under this Contract, or the legal representative of such a person or persons.

1.1.18 Daily Job Report(s): Daily Project reports prepared by the Contractor's employee(s) who are present on Site, which shall include the information required herein.

1.1.19 Day(s): Unless otherwise designated, day(s) means calendar day(s).

1.1.20 Department of Industrial Relations (or "DIR"): is responsible, among other things, for labor compliance monitoring and enforcement of California prevailing wage laws and regulations for public works contracts.

1.1.21 Design Professional in General Responsible Charge: See definition of **Architect** above.

1.1.22 Dispute: A separate demand by Contractor for a time extension, or payment of money or damages arising from Work done by or on behalf of the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or Contractor is not otherwise entitled to; or an amount of payment disputed by the District.

1.1.23 District: The public agency or the district for which the Work is performed. The governing board of the District or its designees will act for the District in all matters pertaining to the Contract. The District may, at any time,

1.1.23.1 Direct the Contractor to communicate with or provide notice to the Construction Manager or the Architect on matters for which the Contract Documents indicate the Contractor will communicate with or provide notice to the District; and/or

1.1.23.2 Direct the Construction Manager or the Architect to communicate with or direct the Contractor on matters for which the Contract Documents indicate the District will communicate with or direct the Contractor.

1.1.24 Drawings (or "Plans"): The graphic and pictorial portions of the Contract Documents showing the design, location, scope and dimensions of the work, generally including plans, elevations, sections, details, schedules, sequence of operation, and diagrams.

1.1.25 DSA: Division of the State Architect.

1.1.26 Force Account Directive: A process that may be used when the District and the Contractor cannot agree on a price for a specific portion of work or before the Contractor prepares a price for a specific portion of work and whereby the Contractor performs the work as indicated herein on a time and materials basis.

1.1.27 Job Cost Reports: Any and all reports or records detailing the costs associated with work performed on or related to the Project that Contractor shall maintain for the Project. Specifically, Job Cost Reports shall contain, but are not limited by or to, the following information: a description of the work performed or to be performed on the Project; quantity, if applicable, of work performed (hours, square feet, cubic yards, pounds, etc.) for the Project; Project budget; costs for the Project to date; estimated costs to complete the Project; and expected costs at completion. The Job Cost Reports shall also reflect all Contract cost codes, change orders, elements of non-conforming work, back charges, and additional services.

1.1.28 Labor Commissioner's Office (or "Labor Commissioner", also known as the Division of Labor Standards Enforcement ("DLSE")): Division of the DIR responsible for adjudicating wage claims, investigating discrimination and public works complaints, and enforcing Labor Code statutes and Industrial Welfare Commission orders.

1.1.29 Municipal Separate Storm Sewer System (or "MS4"): A system of conveyances used to collect and/or convey storm water, including, without limitation, catch basins, curbs, gutters, ditches, man-made channels, and storm drains.

1.1.30 Plans: See **Drawings**.

1.1.31 Premises: The real property owned by the District on which the Site is located.

1.1.32 Product(s): New material, machinery, components, equipment, fixtures and systems forming the Work, including existing materials or components required and approved by the District for reuse.

1.1.33 Product Data: Illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work.

1.1.34 Program Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Program Manager is designated for Project that is the subject of this Contract, then all references to Project Manager herein shall be read to refer to District.

1.1.35 Project: The planned undertaking as provided for in the Contract Documents.

1.1.36 Project Inspector (or "Inspector"): The individual(s) retained by the District in accordance with title 24 of the California Code of Regulations to monitor and inspect the Project.

1.1.37 Project Labor Agreement (or "PLA"): a prehire collective bargaining agreement in accordance with Public Contract Code section 2500 *et seq.* that establishes terms and conditions of employment for a specific construction project or projects and/or is an agreement described in Section 158(f) of Title 29 of the United States Code.

1.1.38 Proposed Change Order (or "PCO"): a written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

1.1.39 Provide: Shall include "provide complete in place," that is, "furnish and install," and "provide complete and functioning as intended in place" unless specifically stated otherwise.

1.1.40 Qualified SWPPP Practitioners (or "QSP"): certified personnel that attended a State Water Resources Control Board sponsored or approved training class and passed the qualifying exam.

1.1.41 Record Drawings: Reproducible drawings (or Plans) prepared pursuant to the requirements of the Contract Documents that reflect all changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed upon completion of the Project. See also **As-Builts**.

1.1.42 Request for Information (or "RFI"): A written request prepared by the Contractor requesting that the Architect provide additional information necessary to clarify or amplify an item in the Contract Documents that the Contractor believes is not clearly shown or called for in the Drawings or Specifications or other portions of the Contract Documents, or to address problems that have arisen under field conditions.

1.1.43 Request for Substitution for Specified Item: A request by Contractor to substitute an equal or superior material, product, thing, or service for a specific material, product, thing, or service that has been designated in the Contract Documents by a specific brand or trade name.

1.1.44 Safety Orders: Written and/or verbal orders for construction issued by the California Division of Occupational Safety and Health ("CalOSHA") or by the United States Occupational Safety and Health Administration ("OSHA").

1.1.45 Safety Plan: Contractor's safety plan specifically adapted for the Project. Contractor's Safety Plan shall comply with all provisions regarding Project safety, including all applicable provisions in these General Conditions.

1.1.46 Samples: Physical examples that illustrate materials, products, equipment, finishes, colors, or workmanship and that, when approved in accordance with the Contract Documents, establish standards by which portions of the Work will be judged.

1.1.47 Shop Drawings: All drawings, prints, diagrams, illustrations, brochures, schedules, and other data that are prepared by the Contractor, a subcontractor, manufacturer, supplier, or distributor, that illustrate how specific portions of the Work shall be fabricated or installed.

1.1.48 Site: The Project site as shown on the Drawings.

1.1.49 Specifications: That portion of the Contract Documents, Division 1 through Division 49, and all technical sections, and addenda to all of these, if any, consisting of written descriptions and requirements of a technical nature of materials, equipment, construction methods and systems, standards, and workmanship.

1.1.50 State: The State of California.

1.1.51 Storm Water Pollution Prevention Plan (or "SWPPP"): A document which identifies sources and activities at a particular facility that may contribute pollutants to storm water and contains specific control measures and time frames to prevent or treat such pollutants.

1.1.52 Subcontractor: A contractor and/or supplier who is under contract with the Contractor or with any other subcontractor, regardless of tier, to perform a portion of the Work of the Project.

1.1.53 Submittal Schedule: The schedule of submittals as provided by Contractor and approved by District.

1.1.54 Surety: The person, firm, or corporation that executes as surety the Contractor's Performance Bond and Payment Bond, and must be a California admitted surety insurer as defined in the Code of Civil Procedure section 995.120.

1.1.55 Work: All labor, materials, equipment, components, appliances, supervision, coordination, and services required by, or reasonably inferred from, the Contract Documents, that are necessary for the construction and completion of the Project.

1.2 Laws Concerning the Contract; Venue

Contract is subject to all provisions of the Constitution and laws of California and the United States governing, controlling, or affecting District, or the property, funds, operations, or powers of District, and such provisions are by this reference made a part

hereof. Any provision required by law to be included in this Contract shall be deemed to be inserted.

To the fullest extent permitted by California law, the county in which the District administration office is located shall be the venue for any action or proceeding that may be brought or arise out of, in connection with or by reason of this Contract.

1.3 No Oral Agreements

No oral agreement or conversation with any officer, agent, or employee of District, either before or after execution of Contract, shall affect or modify any of the terms or obligations contained in any of the documents comprising the Contract.

1.4 No Assignment

Contractor shall not assign this Contract or any part thereof including, without limitation, any Work or money to become due hereunder without the prior written consent of the District. Assignment without District's prior written consent shall be null and void. Any assignment of money due or to become due under this Contract shall be subject to a prior lien for services rendered or material supplied for performance of work called for under this Contract in favor of all persons, firms, or corporations rendering services or supplying material to the extent that claims are filed pursuant to the Civil Code, Code of Civil Procedure, Government Code, Labor Code, and/or Public Contract Code, and shall also be subject to deductions for liquidated damages or withholding of payments as determined by District in accordance with this Contract. Contractor shall not assign or transfer in any manner to a Subcontractor or supplier the right to prosecute or maintain an action against the District.

1.5 Notice and Service Thereof

1.5.1 Any notice from one party to the other or otherwise under Contract shall be in writing and shall be dated and signed by the party giving notice or by a duly authorized representative of that party. Any notice shall not be effective for any purpose whatsoever unless served in one of the following manners:

1.5.1.1 If notice is given by personal delivery thereof, it shall be considered delivered on the day of delivery.

1.5.1.2 If notice is given by overnight delivery service, it shall be considered delivered one (1) day after date deposited, as indicated by the delivery service.

1.5.1.3 If notice is given by depositing same in United States mail, enclosed in a sealed envelope, it shall be considered delivered three (3) days after date deposited, as indicated by the postmarked date.

1.5.1.4 If notice is given by registered or certified mail with postage prepaid, return receipt requested, it shall be considered delivered on the day the notice is signed for.

1.5.1.5 Electronic mail may be used for convenience but is not a substitute for the notice and service requirements herein.

1.6 No Waiver

The failure of District in any one or more instances to insist upon strict performance of any of the terms of this Contract or to exercise any option herein conferred shall not be construed as a waiver or relinquishment to any extent of the right to assert or rely upon any such terms or option on any future occasion. No action or failure to act by the District, Architect, or Construction Manager shall constitute a waiver of any right or duty afforded the District under the Contract, nor shall any action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

1.7 Substitutions for Specified Items

Unless the Special Conditions contain different provisions, Contractor shall not substitute different items for any items identified in the Contract Documents without prior written approval of the District.

1.8 Materials and Work

1.8.1 Except as otherwise specifically stated in this Contract, Contractor shall provide and pay for all materials, labor, tools, equipment, transportation, supervision, temporary constructions of every nature, and all other services, management, and facilities of every nature whatsoever necessary to execute and complete this Contract, in a good and workmanlike manner, within the Contract Time.

1.8.2 Unless otherwise specified, all materials shall be new and of the best quality of their respective kinds and grades as noted or specified, workmanship shall be of good quality, and Contractor shall use all diligence to inform itself fully as to the required manufacturer's instructions and to comply therewith.

1.8.3 Materials shall be furnished in ample quantities and at such times as to ensure uninterrupted progress of Work and shall be stored properly and protected from the elements, theft, vandalism, or other loss or damage as required.

1.8.4 For all materials and equipment specified or indicated in the Drawings, the Contractor shall provide all labor, materials, equipment, and services necessary for complete assemblies and complete working systems, functioning as intended. Incidental items not indicated on Drawings, nor mentioned in the Specifications, that can legitimately and reasonably be inferred to belong to the Work described, or be necessary in good practice to provide a complete assembly or system, shall be furnished as though itemized here in every detail. In all instances, material and equipment shall be installed in strict accordance with each manufacturer's most recent published recommendations and specifications.

1.8.5 Contractor shall, after award of Contract by District and after relevant submittals have been reviewed, place orders for materials and/or equipment as specified so that delivery of same may be made without delays to the Work. Contractor shall, upon five (5) days' demand from District, present documentary evidence showing that orders have been placed.

1.8.6 District reserves the right but has no obligation, in response to Contractor's neglect or failure in complying with the above instructions, to place orders for such materials and/or equipment as the District may deem advisable in order that the Work may be completed at the date specified in the Contract, and all expenses incidental to the procuring of said materials and/or equipment shall be paid for by Contractor or deducted from payment(s) to Contractor.

1.8.7 Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver the Site to District, together with all improvements and appurtenances constructed or placed thereon by it, and free from any claims, liens, or charges. Contractor further agrees that neither it nor any person, firm, or corporation furnishing any materials or labor for any work covered by the Contract shall have any right to lien any portion of the Premises or any improvement or appurtenance thereon, except that Contractor may install metering devices or other equipment of utility companies or of political subdivision, title to which is commonly retained by utility company or political subdivision. In the event of installation of any such metering device or equipment, Contractor shall advise District as to owner thereof.

1.8.7.1 If a lien or a claim based on a stop payment notice of any nature should at any time be filed against the Work or any District property, by any entity that has supplied material or services at the request of the Contractor, Contractor and Contractor's Surety shall promptly, on demand by District and at Contractor's and Surety's own expense, take any and all action necessary to cause any such lien or a claim based on a stop payment notice to be released or discharged immediately therefrom.

1.8.7.2 If the Contractor fails to furnish to the District within ten (10) calendar days after demand by the District, satisfactory evidence that a lien or a claim based on a stop payment notice has been so released, discharged, or secured, the District may discharge such indebtedness and deduct the amount required therefor, together with any and all losses, costs, damages, and attorney's fees and expense incurred or suffered by District from any sum payable to Contractor under the Contract.

1.8.8 Nothing contained in this Article, however, shall defeat or impair the rights of persons furnishing materials or labor under any bond given by Contractor for their protection or any rights under any law permitting such protection or any rights under any law permitting such persons to look to funds due Contractor in hands of District (e.g., stop payment notices), and this provision shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing material for work when no formal contract is entered into for such material.

1.8.9 Title to new materials and/or equipment for the Work of this Contract and attendant liability for its protection and safety shall remain with Contractor until incorporated in the Work of this Contract and accepted by District. No part of any materials and/or equipment shall be removed from its place of storage except for immediate installation in the Work of this Contract. Should the District, in its discretion, allow the Contractor to store materials and/or equipment for the Work off-site, Contractor will store said materials and/or equipment at a bonded warehouse and with appropriate insurance coverage at no cost to District.

Contractor shall keep an accurate inventory of all materials and/or equipment in a manner satisfactory to District or its authorized representative and shall, at the District's request, forward it to the District.

1.8.10 [RESERVED]

2. [RESERVED]

3. ARCHITECT

3.1 The Architect shall represent the District during the Project and will observe the progress and quality of the Work on behalf of the District. Architect shall have the authority to act on behalf of District to the extent expressly provided in the Contract Documents and to the extent determined by District. Architect shall have authority to reject materials, workmanship, and/or the Work whenever rejection may be necessary, in Architect's reasonable opinion, to ensure the proper execution of the Contract.

3.2 Architect shall, with the District and on behalf of the District, determine the amount, quality, acceptability, and fitness of all parts of the Work, and interpret the Specifications, Drawings, and shall, with the District, interpret all other Contract Documents.

3.3 Architect shall have all authority and responsibility established by law, including title 24 of the California Code of Regulations.

3.4 Contractor shall provide District and the Construction Manager with a copy of all written communication between Contractor and Architect at the same time as that communication is made to Architect, including, without limitation, all RFIs, correspondence, submittals, claims, and proposed change orders.

4. CONSTRUCTION MANAGER

4.1 If a Construction Manager is used on this Project ("Construction Manager" or "CM"), the Construction Manager will provide administration of the Contract on the District's behalf. After execution of the Contract and Notice to Proceed, all correspondence and/or instructions from Contractor and/or District shall be forwarded through the Construction Manager. The Construction Manager will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences, or procedures or for safety precautions in connection with the Work, which shall all remain the Contractor's responsibility.

4.2 The Construction Manager, however, will have authority to reject materials and/or workmanship not conforming to the Contract Documents, as determined by the District, the Architect, and/or the Project Inspector. The Construction Manager shall also have the authority to require special inspection or testing of any portion of the Work, whether it has been fabricated, installed, or fully completed. Any decision made by the Construction Manager, in good faith, shall not give rise to any duty or responsibility of the Construction Manager to: the Contractor; any Subcontractor; the Contractor or Subcontractor's respective agents, employees; or other persons performing any of the Work. The Construction Manager shall have free access to any or all parts of Work at any time.

4.3 If the District does not use a Construction Manager on this Project, all references within the Contract Documents to Construction Manager or CM shall be read as District.

5. INSPECTOR, INSPECTIONS, AND TESTS

5.1 Project Inspector

5.1.1 One or more Project Inspector(s), including special Project Inspector(s), as required, will be assigned to the Work by District, in accordance with requirements of title 24, part 1, of the California Code of Regulations, to enforce the building code and monitor compliance with Plans and Specifications for the Project previously approved by the DSA. Duties of Project Inspector(s) are specifically defined in section 4-342 of said part 1 of title 24.

5.1.2 No Work shall be carried on except with the knowledge and under the inspection of the Project Inspector(s). The Project Inspector(s) shall have free access to any or all parts of Work at any time. Contractor shall furnish Project Inspector(s) reasonable opportunities for obtaining such information as may be necessary to keep Project Inspector(s) fully informed respecting progress and manner of work and character of materials, including, but not limited to, submission of form DSA 156 (or the most current version applicable at the time the Work is performed) to the Project Inspector at least 48 hours in advance of the commencement and completion of construction of each and every aspect of the Work. Forms are available on the DSA's website at: <http://www.dgs.ca.gov/dsa/Forms.aspx>. Inspection of Work shall not relieve Contractor from an obligation to fulfill this Contract. Project Inspector(s) and the DSA are authorized to suspend work whenever the Contractor and/or its Subcontractor(s) are not complying with the Contract Documents. Any work stoppage by the Project Inspector(s) and/or DSA shall be without liability to the District. Contractor shall instruct its Subcontractors and employees accordingly.

5.1.3 If Contractor and/or any Subcontractor requests that the Project Inspector(s) perform any inspection off-site, this shall only be done if it is allowable pursuant to applicable regulations and DSA approval, if the Project Inspector(s) agree to do so, and at the expense of the Contractor.

5.2 Tests and Inspections

5.2.1 Tests and Inspections shall comply with title 24, part 1, California Code of Regulations, group 1, article 5, section 4-335, and with the provisions of the Specifications.

5.2.2 The District will select an independent testing laboratory to conduct the tests. Selection of the materials required to be tested shall be by the laboratory or the District's representative and not by the Contractor. The Contractor shall notify the District's representative a sufficient time in advance of its readiness for required observation or inspection.

5.2.3 The Contractor shall notify the District's representative a sufficient time in advance of the manufacture of material to be supplied under the Contract Documents, which must by terms of the Contract Documents be tested, in order that

the District may arrange for the testing of same at the source of supply. This notice shall be provided, at a minimum, seventy-two (72) hours prior to the manufacture of the material that needs to be tested.

5.2.4 Any material shipped by the Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required, shall not be incorporated into and/or onto the Project.

5.2.5 The District will select the testing laboratory and pay for the costs of all tests and inspections, excepting those inspections performed at Contractor's request and expense. Contractor shall reimburse the District for any and all laboratory costs or other testing costs for any materials found to be not in compliance with the Contract Documents. At the District's discretion, District may elect to deduct laboratory or other testing costs for noncompliant materials from the Contract Price, and such deduction shall not constitute a withholding.

5.3 Costs for After Hours and/or Off Site Inspections

If the Contractor performs Work outside the Inspector's regular working hours or requests the Inspector to perform inspections off Site, costs of any inspections required outside regular working hours or off Site shall be borne by the Contractor and may be invoiced to the Contractor by the District or the District may deduct those expenses from the next Progress Payment.

6. CONTRACTOR

Contractor shall construct and complete, in a good and workmanlike manner, the Work for the Contract Price including any adjustment(s) to the Contract Price pursuant to provisions herein regarding changes to the Contract Price. Except as otherwise noted, Contractor shall provide and pay for all labor, materials, equipment, permits (excluding DSA), fees, licenses, facilities, transportation, taxes, bonds and insurance, and services necessary for the proper execution and completion of the Work, except as indicated herein.

6.1 Status of Contractor

6.1.1 6.1.1 Contractor represents and warrants that Contractor is an independent contractor or business entity that is: (i) free from the control and direction of the District in connection with the performance of the Services, (ii) performing Services that are outside the usual course of the District's business, and (iii) customarily engaged in an independently established trade, occupation, or business of the same nature as that involved in the Services performed, District being interested only in the results obtained. Contractor understands and agrees that it and all of its employees and its Subcontractors shall not be considered officers, employees, agents, partner, or joint venture of the District, and are not entitled to benefits of any kind or nature normally provided employees of the District and/or to which District's employees are normally entitled, including, but not limited to, State Unemployment Compensation or Worker's Compensation. Contractor shall assume full responsibility for payment of all federal, state, and local taxes or contributions, including unemployment insurance, social security, and income taxes with respect to Consultant's employees. Contractor is and shall at all be wholly responsible for the manner in which it, its agents, and its Subcontractors perform the services required

of it by the Contract Documents. Nothing herein contained shall be construed as creating the relationship of employer and employee, or principal and agent, between the District, or any of the District's employees or agents, and Contractor or any of Contractor's Subcontractors, agents or employees District shall be permitted to monitor the Contractor's activities to determine compliance with the terms of this Contract.

6.1.2 As required by law, Contractor and all Subcontractors shall be properly licensed and regulated by the Contractors State License Board, 9821 Business Park Drive, Sacramento, California 95827, <http://www.cslb.ca.gov>.

6.1.3 As required by law, Contractor and all Subcontractors shall be properly registered as public works contractors by the Department of Industrial Relations at: <https://efiling.dir.ca.gov/PWCR/ActionServlet?action=displayPWCRRegistrationForm> or current URL.

6.1.4 Contractor represents that Contractor and all Subcontractors shall not be presently debarred, suspended, proposed for disbarment, declared ineligible or excluded pursuant to either Labor Code section 1777.1 or Labor Code section 1777.7.

6.1.5 [RESERVED]

6.1.6 Contractor represents that it has no existing interest and will not acquire any interest, direct or indirect, which could conflict in any manner or degree with the performance of the Work required under this Contract and that no person having any such interest shall be employed by Contractor.

6.1.7 [RESERVED]

6.1.8 If Contractor intends to make any change in the name or legal nature of the Contractor's entity, Contractor must first notify the District in writing prior to making any contemplated change. The District shall determine in writing if Contractor's intended change is permissible while performing this Contract.

6.2 Project Inspection Card(s)

Contractor shall verify that forms DSA 152 (or the current version applicable at the time the Work is performed) are issued for the Project prior to the commencement of construction.

6.3 Contractor's Supervision

6.3.1 During progress of the Work, Contractor shall keep on the Premises, and at all other locations where any Work related to the Contract is being performed, an experienced and competent project manager and construction superintendent who are employees of the Contractor, to whom the District does not object and at least one of whom shall be fluent in English, written and verbal.

6.3.2 The project manager and construction superintendent shall both speak fluently the predominant language of the Contractor's employees.

6.3.3 Before commencing the Work herein, Contractor shall give written notice to District of the name of its project manager and construction superintendent. Neither the Contractor's project manager nor construction superintendent shall be changed except with prior written notice to District. If the Contractor's project manager and/or construction superintendent proves to be unsatisfactory to Contractor, or to District, any of the District's employees, agents, the Construction Manager, or the Architect, the unsatisfactory project manager and/or construction superintendent shall be replaced. However, Contractor shall notify District in writing before any change occurs, but no less than two (2) business days prior. Any replacement of the project manager and/or construction superintendent shall be made promptly and must be satisfactory to the District. The Contractor's project manager and construction superintendent shall each represent Contractor, and all directions given to Contractor's project manager and/or construction superintendent shall be as binding as if given to Contractor.

6.3.4 Contractor shall give efficient supervision to Work, using its best skill and attention. Contractor shall carefully study and compare all Contract Documents, Drawings, Specifications, and other instructions and shall at once report to District, Construction Manager, and Architect any error, inconsistency, or omission that Contractor or its employees and Subcontractors may discover, in writing, with a copy to District's Project Inspector(s). The Contractor shall have responsibility for discovery of errors, inconsistencies, or omissions.

6.4 Duty to Provide Fit Workers

6.4.1 Contractor and Subcontractor(s) shall at all times enforce strict discipline and good order among their employees and shall not employ or work any unfit person or anyone not skilled in work assigned to that person. It shall be the responsibility of Contractor to ensure compliance with this requirement. District may require Contractor to permanently remove unfit persons from Project Site.

6.4.2 Any person in the employ of Contractor or Subcontractor(s) whom District may deem incompetent or unfit shall be excluded from working on the Project and shall not again be employed on the Project except with the prior written consent of District.

6.4.3 The Contractor shall furnish labor that can work in harmony with all other elements of labor employed or to be employed in the Work.

6.5 Field Office

6.5.1 Contractor shall provide a temporary office on the Site for the District's use exclusively, during the term of the Contract.

6.6 Purchase of Materials and Equipment

The Contractor is required to order, obtain, and store materials and equipment sufficiently in advance of its Work at no additional cost or advance payment from District to assure that there will be no delays.

6.7 Documents on Work

6.7.1 Contractor shall at all times keep on the Site, or at another location as the District may authorize in writing, one (1) legible copy of all Contract Documents, including Addenda and Change Orders, and Titles 19 and 24 of the California Code of Regulations, the specified edition(s) of the Uniform Building Code, all approved Drawings, Plans, Schedules, and Specifications, and all codes and documents referred to in the Specifications, and made part thereof. These documents shall be kept in good order and available to District, Construction Manager, Architect, Architect's representatives, the Project Inspector(s), and all authorities having jurisdiction. Contractor shall be acquainted with and comply with the provisions of these titles as they relate to this Project. (See particularly the duties of Contractor, Title 24, Part 1, California Code of Regulations, section 4-343.) Contractor shall also be acquainted with and comply with all California Code of Regulations provisions relating to conditions on this Project, particularly Titles 8 and 17. Contractor shall coordinate with Architect and Construction Manager and shall submit its verified report(s) according to the requirements of Title 24.

6.7.2 Daily Job Reports.

6.7.2.1 Contractor shall maintain, at a minimum, at least one (1) set of Daily Job Reports on the Project. These must be prepared by the Contractor's employee(s) who are present on Site, and must include, at a minimum, the following information:

- 6.7.2.1.1** A brief description of all Work performed on that day.
- 6.7.2.1.2** A summary of all other pertinent events and/or occurrences on that day.
- 6.7.2.1.3** The weather conditions on that day.
- 6.7.2.1.4** A list of all Subcontractor(s) working on that day, including DIR registration numbers.
- 6.7.2.1.5** A list of each Contractor employee working on that day and the total hours worked for each employee.
- 6.7.2.1.6** A complete list of all equipment on Site that day, whether in use or not.
- 6.7.2.1.7** A complete list of all materials, supplies, and equipment delivered on that day.
- 6.7.2.1.8** A complete list of all inspections and tests performed on that day.

6.7.2.2 Each day Contractor shall provide a copy of the previous day's Daily Job Report to the District or the Construction Manager.

6.8 Preservation of Records

Contractor shall maintain, and District shall have the right to inspect, Contractor's financial records for the Project, including, without limitation, Job Cost Reports for the Project in compliance with the criteria set forth herein. The District shall have the right to examine and audit all Daily Job Reports or other Project records of Contractor's project manager(s), project superintendent(s), and/or project foreperson(s), all certified payroll records and/or related documents including, without limitation, Job Cost Reports, payroll, payment, timekeeping and tracking documents; all books, estimates, records,

contracts, documents, bid documents, bid cost data, subcontract job cost reports, and other data of the Contractor, any Subcontractor, and/or supplier, including computations and projections related to bidding, negotiating, pricing, or performing the Work or Contract modification, in order to evaluate the accuracy, completeness, and currency of the cost, manpower, coordination, supervision, or pricing data at no additional cost to the District. These documents may be duplicative and/or be in addition to any Bid Documents held in escrow by the District. The Contractor shall make available at its office at all reasonable times the materials described in this paragraph for the examination, audit, or reproduction until three (3) years after final payment under this Contract. Notwithstanding the provisions above, Contractor shall provide any records requested by any governmental agency, if available, after the time set forth above.

6.9 Integration of Work

6.9.1 Contractor shall do all cutting, fitting, patching, and preparation of Work as required to make its several parts come together properly, to fit it to receive or be received by work of other contractors, and to coordinate tolerances to various pieces of work, showing upon, or reasonably implied by, the Drawings and Specifications for the completed structure, and shall conform them as District and/or Architect may direct.

6.9.2 Contractor shall make its own layout of lines and elevations and shall be responsible for the accuracy of both Contractor's and Subcontractors' work resulting therefrom.

6.9.3 Contractor and all Subcontractors shall take all field dimensions required in performance of the Work, and shall verify all dimensions and conditions on the Site. All dimensions affecting proper fabrication and installation of all Work must be verified prior to fabrication by taking field measurements of the true conditions. If there are any discrepancies between dimensions in drawings and existing conditions which will affect the Work, Contractor shall bring such discrepancies to the attention of the District and Architect for adjustment before proceeding with the Work. In doing so, it is recognized that Contractor is not acting in the capacity of a licensed design professional, and that Contractor's examination is made in good faith to facilitate construction and does not create an affirmative responsibility of a design professional to detect errors, omissions or inconsistencies in the Contract Documents or to ascertain compliance with applicable laws, building codes or regulations. However, nothing in this provision shall abrogate Contractor's responsibilities for discovering and reporting any error, inconsistency, or omission pursuant to the Contract within the Contractor's standard of care including, without limitation, any applicable laws, ordinance, rules, or regulations. Following receipt of written notice from Contractor, the District and/or Architect shall inform Contractor what action, if any, Contractor shall take with regard to such discrepancies.

6.9.4 All costs caused by noncompliant, defective, or delayed Work shall be borne by Contractor, inclusive of repair work. Schedule delays resulting from unauthorized work shall be Contractor's responsibility.

6.9.5 Contractor shall not endanger any work performed by it or anyone else by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other contractor except with consent of District.

6.10 Notifications

6.10.1 Contractor shall notify the Architect and Project Inspector, in writing, of the commencement of construction of each and every aspect of the Work at least 48 hours in advance by submitting form DSA 156 (or the most current version applicable at the time the Work is performed) to the Project Inspector. Forms are available on the DSA's website at: <http://www.dgs.ca.gov/dsa/Forms.aspx>.

6.10.2 Contractor shall notify the Architect and Project Inspector, in writing, of the completion of construction of each and every aspect of the Work at least 48 hours in advance by submitting form DSA 156 (or current version) to the Project Inspector.

6.11 Obtaining of Permits, Licenses and Registrations

6.11.1 Contractor shall secure and pay for all permits (except DSA), licenses, registrations, approvals and certificates necessary for prosecution of Work, including but not limited to those listed in the Special Conditions, if any, before the date of the commencement of the Work or before the permits, licenses, registrations, approvals and certificates are legally required to continue the Work without interruption. The Contractor shall obtain and pay, only when legally required, for all licenses, registrations, approvals, permits, inspections, and inspection certificates required to be obtained from or issued by any authority having jurisdiction over any part of the Work included in the Contract. All final permits, licenses, registrations, approvals and certificates shall be delivered to District before demand is made for final payment.

6.11.2 General Permit For Storm Water Discharges Associated With Construction and Land Disturbance Activities.

6.11.2.1 Contractor acknowledges that all California community college districts are obligated to develop and implement the following requirements for the discharge of storm water to surface waters from its construction and land disturbance activities pursuant to the Clean Water Act and Porter Cologne Water Quality Act. District has determined that the construction of this Project requires enrollment in the Construction Storm Water Permit. District has filed certain submittals referred to as Permit Registration Documents ("PRDS") with the Regional Water Control Board ("Storm Water Pollution Prevention Plan" or "SWPPP").

6.11.2.2 Contractor shall comply with any District SWPPP that is approved by the District and applicable to the Project, at no additional cost to the District. Contractor shall pay any fees and any penalties that may imposed by a regulatory agency for its non-compliance with the SWPPP during the course of Work.

6.11.2.3 Contractor shall provide a Qualified Storm Water Practitioner ("QSP") at no additional cost to the District, who shall be onsite and implement and monitor any and all SWPPP requirements applicable to the Project, including but not limited to:

6.11.2.3.1 All required visual observations, sampling, analysis, reporting and record keeping, including any Numeric Action Levels ("NALs"), if applicable;

6.11.2.3.2 Rain Event Action Plan ("REAP") at least forty eight (48) hours prior to any forecasted rain event requiring implementation of the REAP, including any erosion and sediment control measures needed to protect all exposed portions of the site, if applicable;

6.11.2.3.3 Active Treatment System ("ATS"), if applicable; and

6.11.2.3.4 Best management practices ("BMPs").

6.12 Royalties and Patents

6.12.1 Contractor shall obtain and pay, only when legally required, all royalties and license fees necessary for prosecution of Work before the earlier of the date of the commencement of the Work or the date that the license is legally required to continue the Work without interruption. Contractor shall defend suits or claims of infringement of patent, copyright, or other rights and shall hold the District, the Architect, and the Construction Manager harmless and indemnify them from loss on account thereof except when a particular design, process, or make or model of product is required by the Contract Documents. However, if the Contractor has reason to believe that the required design, process, or product is an infringement of a patent or copyright, the Contractor shall indemnify and defend the District, Architect and Construction Manager against any loss or damage unless the Contractor promptly informs the District of its information.

6.12.2 The review by the District or Architect of any method of construction, invention, appliance, process, article, device, or material of any kind shall be only its adequacy for the Work and shall not approve use by the Contractor in violation of any patent or other rights of any person or entity.

6.13 Work to Comply With Applicable Laws and Regulations

6.13.1 Contractor shall give all notices and comply with the following specific laws, ordinances, rules, and regulations and all other applicable laws, ordinances, rules, and regulations bearing on conduct of Work as indicated and specified, including but not limited to the appropriate statutes and administrative code sections. If Contractor observes that Drawings and Specifications are at variance therewith, or should Contractor become aware of the development of conditions not covered by Contract Documents that may result in finished Work being at variance therewith, Contractor shall promptly notify District in writing and any changes deemed necessary by District shall be made as provided in Contract for changes in Work.

6.13.1.1 National Electrical Safety Code, U. S. Department of Commerce

6.13.1.2 National Board of Fire Underwriters' Regulations

6.13.1.3 International Building Code, latest addition, and the California Code of Regulations, title 24, and other amendments

6.13.1.4 Manual of Accident Prevention in Construction, latest edition, published by A.G.C. of America

6.13.1.5 Industrial Accident Commission's Safety Orders, State of California

6.13.1.6 Regulations of the State Fire Marshall (title 19, California Code of Regulations) and Pertinent Local Fire Safety Codes

6.13.1.7 Americans with Disabilities Act

6.13.1.8 Education Code of the State of California

6.13.1.9 Government Code of the State of California

6.13.1.10 Labor Code of the State of California, division 2, part 7, Public Works and Public Agencies

6.13.1.11 Public Contract Code of the State of California

6.13.1.12 California Art Preservation Act

6.13.1.13 U. S. Copyright Act

6.13.1.14 U. S. Visual Artists Rights Act

6.13.2 Contractor shall comply with all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act (Public Resources Code section 21000 et seq.).

6.13.3 If Contractor performs any Work that it knew, or through exercise of reasonable care should have known, to be contrary to any applicable laws, ordinance, rules, or regulations, Contractor shall bear all costs arising therefrom and arising from the correction of said Work.

6.13.4 Where Specifications or Drawings state that materials, processes, or procedures must be approved by the DSA, State Fire Marshall, or other body or agency, Contractor shall be responsible for satisfying requirements of such bodies or agencies applicable at the time the Work is performed, and as determined by those bodies or agencies.

6.13.5 [RESERVED]

6.14 Safety/Protection of Persons and Property

6.14.1 The Contractor will be solely and completely responsible for conditions of the Site, including safety of all persons and property during performance of the Work. This requirement will apply continuously and not be limited to normal working hours.

6.14.2 The wearing of hard hats will be mandatory at all times for all personnel on Site. Contractor shall supply sufficient hard hats to properly equip all employees and visitors.

6.14.3 Any construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the Site.

6.14.4 Implementation and maintenance of safety programs shall be the sole responsibility of the Contractor.

6.14.5 The Contractor shall furnish to the District a copy of the Contractor's safety plan within the time frame indicated in the Contract Documents and specifically adapted for the Project.

6.14.6 Contractor shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in connection with the prosecution of this Contract and shall take all necessary measures and be responsible for the proper care and completion and final acceptance by District. All Work shall be solely at Contractor's risk with the exception of damage to the Work caused by "acts of God" as defined in Public Contract Code section 7105.

6.14.7 Contractor shall take, and require Subcontractors to take, all necessary precautions for safety of workers on the Project and shall comply with all applicable federal, state, local, and other safety laws, standards, orders, rules, regulations, and building codes to prevent accidents or injury to persons on, about, or adjacent to premises where Work is being performed and to provide a safe and healthful place of employment. Contractor shall furnish, erect, and properly maintain at all times, all necessary safety devices, safeguards, construction canopies, signs, nets, barriers, lights, and watchmen for protection of workers and the public and shall post danger signs warning against hazards created by such features in the course of construction.

6.14.8 Hazards Control – Contractor shall store volatile wastes in covered metal containers and remove them from the Site daily. Contractor shall prevent accumulation of wastes that create hazardous conditions. Contractor shall provide adequate ventilation during use of volatile or noxious substances.

6.14.9 Contractor shall designate a responsible member of its organization on the Project, whose duty shall be to post information regarding protection and obligations of workers and other notices required under occupational safety and health laws, to comply with reporting and other occupational safety requirements, and to protect the life, safety, and health of workers. Name and position of person so designated shall be reported to District by Contractor.

6.14.10 Contractor shall correct any violations of safety laws, rules, orders, standards, or regulations. Upon the issuance of a citation or notice of violation by the Division of Occupational Safety and Health, Contractor shall correct such violation promptly.

6.14.11 Contractor shall comply with any District storm water requirements that are approved by the District and applicable to the Project, at no additional cost to the District.

6.14.12 In an emergency affecting safety of life or of work or of adjoining property, Contractor, without special instruction or authorization, shall act, at its

discretion, to prevent such threatened loss or injury. Any compensation claimed by Contractor on account of emergency work shall be determined by agreement.

6.14.13 All salvage materials will become the property of the Contractor and shall be removed from the Site unless otherwise called for in the Contract Documents. However, the District reserves the right to designate certain items of value that shall be turned over to the District unless otherwise directed by District.

6.14.14 All connections to public utilities and/or existing on-site services, including, without limitation, internet, phone and data connections, shall be made and maintained in such a manner as to not interfere with the continuing use of same by the District during the entire progress of the Work.

6.14.15 Contractor shall provide such heat, covering, and enclosures as are necessary to protect all Work, materials, equipment, appliances, and tools against damage by weather conditions, such as extreme heat, cold, rain, snow, dry winds, flooding, or dampness.

6.14.16 The Contractor shall protect and preserve the Work from all damage or accident, providing any temporary roofs, window and door coverings, boxings, or other construction as required by the Architect. The Contractor shall be responsible for existing structures, walks, roads, trees, landscaping, and/or improvements in working areas; and shall provide adequate protection therefore. If temporary removal is necessary of any of the above items, or damage occurs due to the Work, the Contractor shall replace same at its expense with same kind, quality, and size of Work or item damaged. This shall include any adjoining property of the District and others.

6.14.17 Contractor shall take adequate precautions to protect existing roads, sidewalks, curbs, pavements, utilities, adjoining property, and structures (including, without limitation, protection from settlement or loss of lateral support), and to avoid damage thereto, and repair any damage thereto caused by construction operations.

6.14.18 Contractor shall confine apparatus, the storage of materials, and the operations of workers to limits indicated by law, ordinances, permits, or directions of Architect, and shall not interfere with the Work or unreasonably encumber Premises or overload any structure with materials. Contractor shall enforce all instructions of District and Architect regarding signs, advertising, fires, and smoking, and require that all workers comply with all regulations while on Project Site.

6.14.19 Contractor, Contractor's employees, Subcontractors, Subcontractors' employees, or any person associated with the Work shall conduct themselves in a manner appropriate for a school site. No verbal or physical contact with neighbors, students, and faculty, profanity, or inappropriate attire and/or logos, or behavior will be permitted. District may require Contractor to temporarily or permanently remove non-complying persons from Project Site.

6.14.20 Contractor shall take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed, Contractor shall have a civil engineer, registered as a professional engineer in California, replace them at no cost to District.

6.14.21 In the event that the Contractor enters into any agreement with owners of any adjacent property to enter upon the adjacent property for the purpose of performing the Work, Contractor shall fully indemnify, defend, and hold harmless each person, entity, firm, or agency that owns or has any interest in adjacent property. The form and content of the agreement of indemnification shall be approved by the District prior to the commencement of any Work on or about the adjacent property. The Contractor shall also indemnify the District as provided in the indemnification provision herein. These provisions shall be in addition to any other requirements of the owners of the adjacent property.

6.15 Working Evenings and Weekends

Contractor may be required to work increased hours, evenings, and/or weekends at no additional cost to the District. Contractor shall give the District seventy-two (72) hours' notice prior to performing any evening and/or weekend work. Contractor shall perform all evening and/or weekend work only upon District's approval and in compliance with all applicable rules, regulations, laws, and local ordinances including, without limitation, all noise and light limitations. Contractor shall reimburse the District for any increased or additional Inspector charges as a result of Contractor's increased hours, or evening and/or weekend work.

6.16 Cleaning Up

6.16.1The Contractor shall provide all services, labor, materials, and equipment necessary for protecting and securing the Work, all school occupants, furnishings, equipment, and building structure from damage until its completion and final acceptance by District. Dust barriers shall be provided to isolate dust and dirt from construction operations. At completion of the Work and portions thereof, Contractor shall clean to the original state any areas beyond the Work area that become dust laden as a result of the Work. The Contractor must erect the necessary warning signs and barricades to ensure the safety of all school occupants. The Contractor at all times must maintain good housekeeping practices to reduce the risk of fire damage and must make a fire extinguisher, fire blanket, and/or fire watch, as applicable, available at each location where cutting, braising, soldering, and/or welding is being performed or where there is an increased risk of fire.

6.16.2Contractor at all times shall keep Premises, including property immediately adjacent thereto, free from debris such as waste, rubbish (including personal rubbish of workers, e.g., food wrappers, etc.), and excess materials and equipment caused by the Work. Contractor shall not leave debris under, in, or about the Premises (or surrounding property or neighborhood), but shall promptly remove same from the Premises on a daily basis. If Contractor fails to clean up, District may do so and the cost thereof shall be charged to Contractor. If Contract is for work on an existing facility, Contractor shall also perform specific clean-up on or about the Premises upon request by the District as it deems necessary for continued operations. Contractor shall comply with all related provisions of the Specifications.

6.16.3If the Construction Manager, Architect, or District observes the accumulation of trash and debris, the District will give the Contractor a 24-hour written notice to mitigate the condition.

6.16.4 Should the Contractor fail to perform the required clean-up, or should the clean-up be deemed unsatisfactory by the District, the District may, at its sole discretion, then perform the clean-up. All cost associated with the clean-up work (including all travel, payroll burden, and costs for supervision) will be deducted from the Contract Price.

6.17 No Relief from Obligations Based on Review by Other Persons

6.17.1 Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents by act or omission of the District, Architect, Construction Manager, Project Inspector, or DSA or other entities having jurisdiction including, but not limited to, administration of the Contract, review of submittals, or by tests, observation, inspection, or permit/interconnection approvals.

7. SUBCONTRACTORS

7.1 Contractor shall provide the District with information for all Subcontracts as indicated in the Contractor's Submittals and Schedules Section herein.

7.2 No contractual relationship exists between the District and any Subcontractor, supplier, or sub-subcontractor by reason of this Contract.

7.3 Contractor agrees to bind every Subcontractor by terms of this Contract as far as those terms that are applicable to Subcontractor's work including, without limitation, all labor, wage & hour, apprentice and related provisions and requirements. If Contractor shall subcontract any part of this Contract, Contractor shall be as fully responsible to District for acts and omissions of any Subcontractor and of persons either directly or indirectly employed by any Subcontractor, including Subcontractor caused Project delays, as it is for acts and omissions of persons directly employed by Contractor. The divisions or sections of the Specifications and/or the arrangement of the drawings are not intended to control the Contractor in dividing the Work among Subcontractors or limit the work performed by any trade.

7.4 District's consent to, or approval of, or failure to object to, any Subcontractor under this Contract shall not in any way relieve Contractor of any obligations under this Contract and no such consent shall be deemed to waive any provisions of this Contract.

7.5 Contractor is directed to familiarize itself with sections 4100 through 4114 of the Public Contract Code of the State of California, as regards subletting and subcontracting, and to comply with all applicable requirements therein. In addition, Contractor is directed to familiarize itself with sections 1720 through 1861 of the Labor Code of the State of California, as regards the payment of prevailing wages and related issues, and to comply with all applicable requirements therein including, without limitation, section 1775 and the Contractor's and Subcontractors' obligations and liability for violations of prevailing wage law and other applicable laws.

7.6 No Contractor whose Bid is accepted shall, without consent of the awarding authority and in full compliance with section 4100 et seq. of the Public Contract Code, including, without limitation, sections 4107, 4107.5, and 4109 of the Public Contract Code, and section 1771.1 of the Labor Code, either:

7.6.1 Substitute any person as a Subcontractor in place of the Subcontractor designated in the original Bid; or

7.6.2 Permit any Subcontract to be assigned or transferred, or allow any portion of the Work to be performed by anyone other than the original Subcontractor listed in the Bid; or

7.6.3 Sublet or subcontract any portion of the Work in excess of one-half of one percent (0.5%) of the Contractor's total bid as to which its original bid did not designate a Subcontractor.

7.7 The Contractor shall be responsible for the coordination of the trades, Subcontractors, sub-subcontractors, and material or equipment suppliers working on the Project.

7.7.1 Contractor is responsible for ensuring that all Subcontractors are properly registered as public works contractors by the Department of Industrial Relations.

7.8 Contractor is solely responsible for settling any differences between the Contractor and its Subcontractor(s) or between Subcontractors.

7.9 Contractor must include in all of its subcontracts the assignment provisions as indicated in the Termination section of these General Conditions.

8. OTHER CONTRACTS/CONTRACTORS

8.1 District reserves the right to let other contracts, and/or to perform work with its own forces, in connection with the Project. Contractor shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly coordinate and connect Contractor's Work with the work of other contractors.

8.2 In addition to Contractor's obligation to protect its own Work, Contractor shall protect the work of any other contractor that Contractor encounters while working on the Project.

8.3 If any part of Contractor's Work depends for proper execution or results upon work of District or any other contractor, the Contractor shall inspect and, before proceeding with its Work, promptly report to the District in writing any defects in District's or any other contractor's work that render Contractor's Work unsuitable for proper execution and results. Contractor shall be held accountable for damages to District for District's or any other contractor's work that Contractor failed to inspect or should have inspected. Contractor's failure to inspect and report shall constitute Contractor's acceptance of all District's or any other contractor's work as fit and proper for reception of Contractor's Work, except as to defects that may develop in District's or any other contractor's work after execution of Contractor's Work and not caused by execution of Contractor's Work.

8.4 To ensure proper execution of its subsequent work, Contractor shall measure and inspect work already in place and shall at once report to the District in writing any discrepancy between that executed work and the Contract Documents.

8.5 Contractor shall ascertain to its own satisfaction the scope of the Project and nature of District's or any other contracts that have been or may be awarded by District in prosecution of the Project to the end that Contractor may perform this Contract in light of the other contracts, if any.

8.6 Nothing herein contained shall be interpreted as granting to Contractor exclusive occupancy of the Site, the Premises, or of the Project. Contractor shall not cause any unnecessary hindrance or delay to the use and/or operation(s) of the Premises and/or to District or any other contractor working on the Project. If simultaneous execution of any contract or Premises operation is likely to cause interference with performance of Contractor's Contract, Contractor shall coordinate with those contractor(s), person(s), and/or entity(s) and shall notify the District of the resolution.

9. DRAWINGS AND SPECIFICATIONS

9.1 A complete list of all Drawings that form a part of the Contract is to be found as an index on the Drawings themselves, and/or may be provided to the Contractor and/or in the Table of Contents.

9.2 Materials or Work described in words that so applied have a well-known technical or trade meaning shall be deemed to refer to recognized standards, unless noted otherwise.

9.3 Trade Name or Trade Term. It is not the intention of this Contract to go into detailed descriptions of any materials and/or methods commonly known to the trade under "trade name" or "trade term." The mere mention or notation of "trade name" or "trade term" shall be considered a sufficient notice to Contractor that it will be required to complete the work so named, complete, finished, and operable, with all its appurtenances, according to the best practices of the trade.

9.4 The naming of any material and/or equipment shall mean furnishing and installing of same, including all incidental and accessory items thereto and/or labor therefor, as per best practices of the trade(s) involved, unless specifically noted otherwise.

9.5 Contract Documents are complementary, and what is called for by one shall be binding as if called for by all. As such, Drawings and Specifications are intended to be fully cooperative and to agree. However, if Contractor observes that Drawings and Specifications are in conflict with the Contract Documents, Contractor shall promptly notify District and Architect in writing, and any necessary changes shall be made as provided in the Contract Documents.

9.6 In the case of discrepancy or ambiguity in the Contract Documents, the order of precedence in the Agreement shall prevail. However, in the case of discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and

Specifications. In case of ambiguity, conflict, or lack of information, District will furnish clarifications with reasonable promptness.

9.7 Drawings and Specifications are intended to comply with all laws, ordinances, rules, and regulations of constituted authorities having jurisdiction, and where referred to in the Contract Documents, the laws, ordinances, rules, and regulations shall be considered as a part of the Contract within the limits specified. Contractor shall bear all expense of correcting work done contrary to said laws, ordinances, rules, and regulations.

9.9 As required by Section 4-317(c), Part 1, Title 24, CCR: "Should any existing conditions such as deterioration or non-complying construction be discovered which is not covered by the DSA-approved documents wherein the finished work will not comply with Title 24, California Code of Regulations, a construction change document, or a separate set of plans and specifications, detailing and specifying the required repair work shall be submitted to and approved by DSA before proceeding with the repair work."

9.9 Ownership of Drawings

All copies of Plans, Drawings, Designs, Specifications, and copies of other incidental architectural and engineering work, or copies of other Contract Documents furnished by District, are the property of District. They are not to be used by Contractor in other work and, with the exception of signed sets of Contract Documents, are to be returned to District on request at completion of Work, or may be used by District as it may require without any additional costs to District. Neither the Contractor nor any Subcontractor, or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by the Architect. District hereby grants the Contractor, Subcontractors, sub-subcontractors, and material or equipment suppliers a limited license to use applicable portions of the Drawings prepared for the Project in the execution of their Work under the Contract Documents.

10. CONTRACTOR'S SUBMITTALS AND SCHEDULES

Contractor's submittals shall comply with the provisions and requirements of the Specifications including, without limitation Submittals.

10.1 Schedule of Work, Schedule of Submittals, and Schedule of Values

10.1.1 Within **TEN (10)** calendar days after the date of the Notice to Proceed (unless otherwise specified in the Specifications), the Contractor shall prepare and submit to the District for review, in a form supported by sufficient data to substantiate its accuracy as the District may require:

10.1.1.1 Preliminary Schedule. A preliminary schedule of construction indicating the starting and completion dates of the various stages of the Work, including any information and following any form as may be specified in the Specifications. Once approved by District, this shall become the Construction Schedule. This schedule shall include and identify all tasks that are on the Project's critical path with a specific determination of the start and completion of each critical path task as well as all Contract milestones and each milestone's completion date(s) as may be required by the District.

10.1.1.1.1 The District is not required to approve a preliminary schedule of construction with early completion, i.e., one that shows early completion dates for the Work and/or milestones. Contractor shall not be entitled to extra compensation if the District approves a Construction Schedule with an early completion date and Contractor completes the Project beyond the date shown in the schedule but within the Contract Time. A Construction Schedule showing the Work completed in less than the Contract Time, the time between the early completion date and the end of the Contract Time shall be Float

10.1.1.2 Preliminary Schedule of Values. A preliminary schedule of values for all of the Work, which must include quantities and prices of items aggregating the Contract Price and must subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Unless the Special Conditions contain different limits, this preliminary schedule of values shall include, at a minimum, the following information and the following structure:

10.1.1.2.1 Divided into at least the following categories:

- 10.1.1.2.1.1** Overhead and profit;
- 10.1.1.2.1.2** Supervision;
- 10.1.1.2.1.3** General conditions;
- 10.1.1.2.1.4** Layout;
- 10.1.1.2.1.5** Mobilization;
- 10.1.1.2.1.6** Submittals;
- 10.1.1.2.1.7** Bonds and insurance;
- 10.1.1.2.1.8** Close-out/Certification documentation;
- 10.1.1.2.1.9** Demolition;
- 10.1.1.2.1.10** Installation;
- 10.1.1.2.1.11** Rough-in;
- 10.1.1.2.1.12** Finishes;
- 10.1.1.2.1.13** Testing;
- 10.1.1.2.1.14** Punchlist and District acceptance.

10.1.1.2.2 And also divided by each of the following areas:

- 10.1.1.2.2.1** Site work;
- 10.1.1.2.2.2** By each building;
- 10.1.1.2.2.3** By each floor.

10.1.1.2.3 The preliminary schedule of values shall not provide for values any greater than the following percentages of the Contract value:

- 10.1.1.2.3.1** Mobilization and layout combined to equal not more than 1%;
- 10.1.1.2.3.2** Submittals, samples and shop drawings combined to equal not more than 3%;
- 10.1.1.2.3.3** Bonds and insurance combined to equal not more than 2%.
- 10.1.1.2.3.4** Closeout documentation shall have a value in the preliminary schedule of not less than 5%.

10.1.1.2.4 Notwithstanding any provision of the Contract Documents to the contrary, payment of the Contractor's overhead, supervision, general conditions costs, and profit, as reflected in the Cost Breakdown, shall be paid based on percentage complete, with the disbursement of Progress Payments and the Final Payment.

10.1.1.2.5 Contractor shall certify that the preliminary schedule of values as submitted to the District is accurate and reflects the costs as developed in preparing Contractor's bid. For example, without limiting the foregoing, Contractor shall not "front-load" the preliminary schedule of values with dollar amounts greater than the value of activities performed early in the Project.

10.1.1.2.6 The preliminary schedule of values shall be subject to the District's review and approval of the form and content thereof. In the event that the District objects to any portion of the preliminary schedule of values, the District shall notify the Contractor, in writing, of the District's objection(s) to the preliminary schedule of values. Within five (5) calendar days of the date of the District's written objection(s), Contractor shall submit a revised preliminary schedule of values to the District for review and approval. The foregoing procedure for the preparation, review and approval of the preliminary schedule of values shall continue until the District has approved the entirety of the preliminary schedule of values.

10.1.1.2.7 Once the preliminary schedule of values is approved by the District, this shall become the Schedule of Values. The Schedule of Values shall not be thereafter modified or amended by the Contractor without the prior consent and approval of the District, which may be granted or withheld in the sole discretion of the District.

10.1.1.3 Preliminary Schedule of Submittals. A preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals. Once approved by District, this shall become the Submittal Schedule. All submittals shall be forwarded to the District by the date indicated on the approved Submittal Schedule, unless an earlier date is necessary to maintain the Construction Schedule, in which case those submittals shall be forwarded to the District so as not to delay the Construction Schedule. Upon request by the District, Contractor shall provide an electronic copy of all submittals to the District. All submittals shall be submitted no later than 90 days after the Notice to Proceed.

10.1.1.4 Safety Plan. Contractor's Safety Plan specifically adapted for the Project. Contractor's Safety Plan shall comply with the following requirements:

10.1.1.4.1 All applicable requirements of California Division of Occupational Safety and Health ("CalOSHA") and/or of the United States Occupational Safety and Health Administration ("OSHA").

10.1.1.4.2 All provisions regarding Project safety, including all applicable provisions in these General Conditions.

10.1.1.4.3 Contractor's Safety Plan shall be in English and in the language(s) of the Contractor's and its Subcontractors' employees.

10.1.1.5 Complete Registered Subcontractors List. The name, address, telephone number, facsimile number, California State Contractors License number, classification, DIR registration number and monetary value of all Subcontracts of any tier for parties furnishing labor, material, or equipment for completion of the Project.

10.1.2 Contractor must provide all schedules both in hard copy and electronically, in a format (e.g., Microsoft Project or Primavera) approved in advance by the District.

10.1.3 The District will review the schedules submitted and the Contractor shall make changes and corrections in the schedules as requested by the District and resubmit the schedules until approved by the District.

10.1.4 The District shall have the right at any time to revise the schedule of values if, in the District's sole opinion, the schedule of values does not accurately reflect the value of the Work performed.

10.1.5 All schedules must be approved by the District before Contractor can rely on them as a basis for payment.

10.2 Monthly Progress Schedule(s)

10.2.1 Contractor shall provide Monthly Progress Schedule(s) to the District. A Monthly Progress Schedule shall update the approved Construction Schedule or the last Monthly Progress Schedule, showing all work completed and to be completed as well as updating the Registered Subcontractors List. The monthly Progress Schedule shall be sent within the timeframe requested by the District and shall be in a format acceptable to the District and contain a written narrative of the progress of work that month and any changes, delays, or events that may affect the work. The process for District approval of the Monthly Progress Schedule shall be the same as the process for approval of the Construction Schedule.

10.2.2 Contractor shall submit Monthly Progress Schedule(s) with all payment applications.

10.2.3 Contractor must provide all schedules both in hard copy and electronically, in a format (e.g., Microsoft Project or Primavera) approved in advance by the District.

10.2.4 The District will review the schedules submitted and the Contractor shall make changes and corrections in the schedules as requested by the District and resubmit the schedules until approved by the District.

10.2.5 The District shall have the right at any time to revise the schedule of values if, in the District's sole opinion, the schedule of values does not accurately reflect the value of the Work performed.

10.2.6 All schedules must be approved by the District before Contractor can rely on them as a basis for payment.

10.3 Material Safety Data Sheets (MSDS)

Contractor is required to ensure Material Safety Data Sheets are available in a readily accessible place at the Site for any material requiring a Material Safety Data Sheet per the federal "Hazard Communication" standard, or employees' "right to know" law. The Contractor is also required to ensure proper labeling on substances brought onto the job site and that any person working with the material or within the general area of the material is informed of the hazards of the substance and follows proper handling and protection procedures. Two additional copies of the Material Safety Data Sheets shall also be submitted directly to the District.

10.4 Submittals

Architect's favorable review shall neither be construed as a complete check nor relieve the Contractor, Subcontractor, manufacturer, fabricator, or supplier from responsibility for any deficiency that may exist or from any departures or deviations from the requirements of the Contract Documents unless the Contractor has, in writing, called Architect's attention to the deviations at the time of submission and the Architect has given specific written response. "Favorable review" shall mean merely that Architect has no objection to Contractor using, upon Contractor's own full responsibility, plan or method of Work proposed, or furnishing materials or equipment proposed.

11. SITE ACCESS, CONDITIONS, AND REQUIREMENTS

11.1 Site Investigation

Before bidding on this Work, Contractor shall make a careful investigation of the Site and thoroughly familiarize itself with the requirements of the Contract. By the act of submitting a bid for the Work included in this Contract, Contractor shall be deemed to have made a complete study and investigation, and to be familiar with and accepted the existing conditions of the Site.

Prior to commencing the Work, Contractor and the District's representative shall survey the Site to document the condition of the Site. Contractor will record the survey in digital videotape format and provide an electronic copy to the District within fourteen (14) days of the survey. This electronic record shall serve as a basis for determining any damages caused by the Contractor during the Project. The Contractor may also document any pre-existing conditions in writing, provided that both the Contractor and the District's representative agree on said conditions and sign a memorandum documenting the same.

11.2 Soils Investigation Report

11.2.1 When a soils investigation report obtained from test holes at Site or for the Project is available, that report may be available to the Contractor but shall not be a part of this Contract and shall not alleviate or excuse the Contractor's obligation to perform its own investigation. Any information obtained from that report or any information given on Drawings as to subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only, is not guaranteed, does not form a part of this Contract, and Contractor may not rely thereon. By submitting its bid, Contractor acknowledges that it has made visual examination of Site and has made whatever tests Contractor deems appropriate to

determine underground condition of soil. Although any such report is not a part of this Contract, recommendations from the report may be included in the Drawings, Specifications, or other Contract Documents. It is Contractor's sole responsibility to thoroughly review all Contract Documents, Drawings, and Specifications.

11.2.2 Contractor agrees that no claim against District will be made by Contractor for damages and hereby waives any rights to damages if, during progress of Work, Contractor encounters subsurface or latent conditions at Site materially differing from those shown on Drawings or indicated in Specifications, or for unknown conditions of an unusual nature that differ materially from those ordinarily encountered in the work of the character provided for in Plans and Specifications, except as indicated in the provisions of these General Conditions regarding trenches, trenching, and/or existing utility lines.

11.3 Access to Work

District and its representatives shall at all times have access to Work wherever it is in preparation or progress, including storage and fabrication. Contractor shall provide safe and proper facilities for such access so that District's representatives may perform their functions.

11.4 Layout and Field Engineering

11.4.1 All field engineering required for layout of this Work and establishing grades for earthwork operations shall be furnished by Contractor at its expense. This Work shall be done by a qualified, California-registered civil engineer approved in writing by District and Architect. Any required Record and/or As-Builts of Site development shall be prepared by the approved civil engineer.

11.4.2 The Contractor shall be responsible for having ascertained pertinent local conditions such as location, accessibility, and general character of the Site and for having satisfied itself as to the conditions under which the Work is to be performed. Contractor shall follow best practices, including but not limited to potholing to avoid utilities. District shall not be liable for any claim for allowances because of Contractor's error, failure to follow best practices, or negligence in acquainting itself with the conditions at the Site.

11.4.3 Contractor shall protect and preserve established benchmarks and monuments and shall make no changes in locations without the prior written approval of District. Contractor shall replace any benchmarks or monuments that are lost or destroyed subsequent to proper notification of District and with District's approval.

11.5 Utilities

Utilities shall be provided as indicated in the Specifications.

11.6 Sanitary Facilities

Sanitary facilities shall be provided as indicated in the Specifications.

11.7 Surveys

Contractor shall provide surveys done by a California-licensed civil engineer surveyor to determine locations of construction, grading, and site work as required to perform the Work.

11.8 Regional Notification Center

The Contractor, except in an emergency, shall contact the appropriate regional notification center at least two (2) days prior to commencing any excavation if the excavation will be conducted in an area or in a private easement that is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the District, and obtain an inquiry identification number from that notification center. No excavation shall be commenced and/or carried out by the Contractor unless an inquiry identification number has been assigned to the Contractor or any Subcontractor and the Contractor has given the District the identification number. Any damages arising from Contractor's failure to make appropriate notification shall be at the sole risk and expense of the Contractor. Any delays caused by failure to make appropriate notification shall be at the sole risk of the Contractor and shall not be considered for an extension of the Contract Time.

11.9 Existing Utility Lines

11.9.1 Pursuant to Government Code section 4215, District assumes the responsibility for removal, relocation, and protection of main or trunk utility lines and facilities located on the construction Site at the time of commencement of construction under this Contract with respect to any such utility facilities that are not identified in the Plans and Specifications. Contractor shall not be assessed for liquidated damages for delay in completion of the Project caused by failure of District or the owner of a utility to provide for removal or relocation of such utility facilities.

11.9.2 Locations of existing utilities provided by District shall not be considered exact, but approximate within a reasonable margin and shall not relieve Contractor of responsibilities to exercise reasonable care or costs of repair due to Contractor's failure to do so. District shall compensate Contractor for the costs of locating and repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Plans and Specifications with reasonable accuracy, and for equipment necessarily idle during such work.

11.9.3 No provision herein shall be construed to preclude assessment against Contractor for any other delays in completion of the Work. Nothing in this Article shall be deemed to require District to indicate the presence of existing service laterals, appurtenances, or other utility lines, within the exception of main or trunk utility lines or whenever the presence of these utilities on the Site of the construction Project can be inferred from the presence of other visible facilities, such as buildings, meter junction boxes, on or adjacent to the Site of the construction.

11.9.4 If Contractor, while performing Work under this Contract, discovers utility facilities not identified by District in Contract Plans and Specifications, Contractor shall immediately notify the District and the utility in writing. The cost of repair for

damage to above-mentioned visible facilities without prior written notification to the District shall be borne by the Contractor.

11.10 Notification

Contractor understands, acknowledges and agrees that the purpose of prompt notification to the District pursuant to these provisions is to allow the District to investigate the condition(s) so that the District shall have the opportunity to decide how the District desires to proceed as a result of the condition(s). Accordingly, failure of Contractor to promptly notify the District in writing, pursuant to these provisions, shall constitute Contractor's waiver of any claim for damages or delay incurred as a result of the condition(s).

11.11 Hazardous Materials

Contractor shall comply with all provisions and requirements of the Contract Documents related to hazardous materials including, without limitation, Hazardous Materials Procedures and Requirements.

11.12 No Signs

Neither the Contractor nor any other person or entity shall display any signs not required by law or the Contract Documents at the Site, fences trailers, offices, or elsewhere on the Site without specific prior written approval of the District.

12. TRENCHES

12.1 Trenches Greater Than Five Feet

Pursuant to Labor Code section 6705, if the Contract Price exceeds \$25,000 and involves the excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall, in advance of excavation, promptly submit to the District and/or a registered civil or structural engineer employed by the District or Architect, a detailed plan, stamped by a licensed engineer retained by the Contractor, showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

12.2 Excavation Safety

If such plan varies from the Shoring System Standards established by the Construction Safety Orders, the plan shall be prepared by a registered civil or structural engineer, but in no case shall such plan be less effective than that required by the Construction Safety Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by the District or by the person to whom authority to accept has been delegated by the District.

12.3 No Tort Liability of District

Pursuant to Labor Code section 6705, nothing in this Article shall impose tort liability upon the District or any of its employees.

12.4 No Excavation without Permits

The Contractor shall not commence any excavation Work until it has secured all necessary permits including the required CalOSHA excavation/shoring permit. Any permits shall be prominently displayed on the Site prior to the commencement of any excavation.

12.5 Discovery of Hazardous Waste and/or Unusual Conditions

12.5.1 Pursuant to Public Contract Code section 7104, if the Work involves digging trenches or other excavations that extend deeper than four feet below the Surface, the Contractor shall promptly, and before the following conditions are disturbed, notify the District, in writing, of any:

12.5.1.1 Material that the Contractor believes may be material that is hazardous waste, as defined in section 25117 of the Health and Safety Code, is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

12.5.1.2 Subsurface or latent physical conditions at the Site differing from those indicated.

12.5.1.3 Unknown physical conditions at the Site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

12.5.2 The District shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work, shall issue a Change Order under the procedures described herein.

12.5.3 In the event that a dispute arises between District and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the Work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided either by Contract or by law that pertain to the resolution of disputes and protests.

13. INSURANCE AND BONDS

13.1 Insurance

Unless different provisions and/or limits are indicated in the Special Conditions, all insurance required of Contractor and/or its Subcontractor(s) shall be at least as broad as the amounts and include the provisions set forth herein.

13.1.1 Commercial General Liability and Automobile Liability Insurance

13.1.1.1 Contractor shall procure and maintain, during the life of this Contract, Commercial General Liability Insurance and Automobile Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, personal injury, death, advertising injury, and medical payments arising from, or in connection with, operations under this Contract. This coverage shall be provided in a form at least as broad as Insurance Services (ISO) Form CG 0001 11188. Contractor shall ensure that Products Liability and Completed Operations coverage, Fire Damage Liability coverage, and Automobile Liability Insurance coverage including owned, non-owned, and hired automobiles, are included within the above policies and at the required limits, or Contractor shall procure and maintain these coverages separately.

13.1.1.2 Contractor's deductible or self-insured retention for its Commercial General Liability Insurance policy shall not exceed \$25,000 unless approved in writing by District.

13.1.1.3 All such policies shall be written on an occurrence form.

13.1.2 Excess Liability Insurance

13.1.2.1 If Contractor's underlying policy limits are less than required, subject to the District's sole discretion, Contractor may procure and maintain, during the life of this Contract, an Excess Liability Insurance Policy to meet the policy limit requirements of the required policies in order to satisfy, in the aggregate with its underlying policy, the insurance requirements herein.

13.1.2.2 There shall be no gap between the per occurrence amount of any underlying policy and the start of the coverage under the Excess Liability Insurance Policy. Any Excess Liability Insurance Policy shall be written on a following form and shall protect Contractor, District, State, Construction Manager(s), Project Manager(s), and Architect(s) in amounts and including the provisions as set forth in the Supplementary Conditions (if any) and/or Special Conditions, and that complies with all requirements for Commercial General Liability and Automobile Liability and Employers' Liability Insurance.

13.1.2.3 The District, in its sole discretion, may accept an Excess Liability Insurance Policy that brings Contractor's primary limits to the minimum requirements herein.

13.1.3 Subcontractor(s): Contractor shall require its Subcontractor(s), if any, to procure and maintain Commercial General Liability Insurance, Automobile Liability Insurance, and Excess Liability Insurance (if Subcontractor elects to satisfy, in part the insurance required herein by procuring and maintaining an Excess Liability Insurance Policy) with forms of coverage and limits equal to the amounts required of the Contractor.

13.1.4 Workers' Compensation and Employers' Liability Insurance

13.1.4.1 In accordance with provisions of section 3700 of the California Labor Code, the Contractor and every Subcontractor shall be required to secure the payment of compensation to its employees.

13.1.4.2 Contractor shall procure and maintain, during the life of this Contract, Workers' Compensation Insurance and Employers' Liability Insurance for all of its employees engaged in work under this Contract, on/or at the Site of the Project. This coverage shall cover, at a minimum, medical and surgical treatment, disability benefits, rehabilitation therapy, and survivors' death benefits. Contractor shall require its Subcontractor(s), if any, to procure and maintain Workers' Compensation Insurance and Employers' Liability Insurance for all employees of Subcontractor(s). Any class of employee or employees not covered by a Subcontractor's insurance shall be covered by Contractor's insurance. If any class of employee or employee engaged in Work under this Contract, on or at the Site of the Project, is not protected under the Workers' Compensation Insurance, Contractor shall provide, or shall cause a Subcontractor to provide, adequate insurance coverage for the protection of any employee(s) not otherwise protected before any of those employee(s) commence work.

13.1.5 Builder's Risk Insurance: Builder's Risk "All Risk" Insurance

Contractor shall procure and maintain, during the life of this Contract, Builder's Risk (Course of Construction), or similar first party property coverage acceptable to the District, issued on a replacement cost value basis. The cost shall be consistent with the total replacement cost of all insurable Work of the Project included within the Contract Documents. Coverage is to insure against all risks of accidental physical loss and shall include without limitation the perils of vandalism and/or malicious mischief (both without any limitation regarding vacancy or occupancy), sprinkler leakage, civil authority, theft, sonic disturbance, earthquake, flood, collapse, wind, rain, dust, fire, war, terrorism, lightning, smoke, and rioting. Coverage shall include debris removal, demolition, increased costs due to enforcement of all applicable ordinances and/or laws in the repair and replacement of damaged and undamaged portions of the property, and reasonable costs for the Architect's and engineering services and expenses required as a result of any insured loss upon the Work and Project, including completed Work and Work in progress, to the full insurable value thereof.

13.1.6 Pollution Liability Insurance

13.1.6.1 Contractor shall procure and maintain Pollution Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, including natural resource damage, cleanup costs, removal, storage, disposal, and/or use of the pollutant arising from operations under this Contract, and defense, including costs and expenses incurred in the investigation, defense, or settlement of claims. Coverage shall apply to sudden and/or gradual pollution conditions resulting from the escape or release of smoke, vapors, fumes, acids, alkalis, toxic chemicals, liquids, or gases, natural gas, waste materials, or other irritants, contaminants, or pollutants, including asbestos. This coverage shall be provided in a form at least as broad as Insurance Services Offices, Inc. (ISO)

Form CG 2415, or Contractor shall procure and maintain these coverages separately.

13.1.6.2 Contractor warrants that any retroactive date applicable to coverage under the policy shall predate the effective date of the Contract and that continuous coverage will be maintained or an extended reporting or discovery period will be exercised for a period of three (3) years, beginning from the time that the Work under the Contract is completed.

13.1.6.3 If Contractor is responsible for removing any pollutants from a site, then Contractor shall ensure that Any Auto, including owned, non-owned, and hired, is included within the above policies and at the required limits, to cover its automobile exposure from transporting the pollutants from the site to an approved disposal site. This coverage shall include the Motor Carrier Act Endorsement, MCS 90.

13.1.7 Proof of Insurance and Other Requirements: Endorsements and Certificates

13.1.7.1 Contractor shall not commence Work nor shall it allow any Subcontractor to commence Work under this Contract, until Contractor and its Subcontractor(s) have procured all required insurance and Contractor has delivered in duplicate to the District complete endorsements (or entire insurance policies) and certificates indicating the required coverages have been obtained, and the District has approved these documents.

13.1.7.2 Endorsements, certificates, and insurance policies shall include the following:

13.1.7.2.1 A clause stating the following, or other language acceptable to the District:

“This policy shall not be canceled until written notice to District, Architect, and Construction Manager stating date of the cancellation by the insurance carrier. Date of cancellation may not be less than thirty (30) days after date of mailing notice.”

13.1.7.2.2 Language stating in particular those insured, extent of insurance, location and operation to which insurance applies, expiration date, to whom cancellation and reduction notice will be sent, and length of notice period.

13.1.7.2.3 All endorsements, certificates and insurance policies shall state that District, its trustees, employees and agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s) and Architect(s) are named additional insureds under all policies except Workers' Compensation Insurance and Employers' Liability Insurance.

13.1.7.2.4 All endorsements shall waive any right to subrogation against any of the named additional insureds.

13.1.7.2.5 Contractor's and Subcontractors' insurance policy(s) shall be primary and non-contributory to any insurance or self-insurance maintained by District, its trustees, employees and/or agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s), and/or Architect(s).

13.1.7.2.6 Contractor's insurance limit shall apply separately to each insured against whom a claim is made or suit is brought.

13.1.7.3 No policy shall be amended, canceled or modified, and the coverage amounts shall not be reduced, until Contractor or Contractor's broker has provided written notice to District, Architect(s), and Construction Manager(s) stating date of the amendment, modification, cancellation or reduction, and a description of the change. Date of amendment, modification, cancellation or reduction may not be less than thirty (30) days after date of mailing notice.

13.1.7.4 Insurance written on a "claims made" basis shall be retroactive to a date that coincides with or precedes Contractor's commencement of Work, including subsequent policies purchased as renewals or replacements. Said policy is to be renewed by the Contractor and all Subcontractors for a period of five (5) years following completion of the Work or termination of this Agreement. Such insurance must have the same coverage and limits as the policy that was in effect during the term of this Agreement, and will cover the Contractor and all Subcontractors for all claims made.

13.1.7.5 Unless otherwise stated in the Special Conditions, all of Contractor's insurance shall be with insurance companies with an A.M. Best rating of no less than **A: VII**.

13.1.7.6 The insurance requirements set forth herein shall in no way limit the Contractor's liability arising out of or relating to the performance of the Work or related activities.

13.1.7.7 Failure of Contractor and/or its Subcontractor(s) to comply with the insurance requirements herein shall be deemed a material breach of the Contract.

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13.1.8 Insurance Policy Limits

13.1.8.1 Unless different limits are indicated in the Special Conditions, the limits of insurance shall not be less than the following amounts:

Commercial General Liability	Product Liability and Completed Operations, Fire Damage Liability – Split Limit	\$2,000,000 per occurrence; \$4,000,000 aggregate
Automobile Liability – Any Auto	Combined Single Limit	\$1,000,000
Workers’ Compensation		Statutory limits pursuant to State law
Employers’ Liability		\$1,000,000
Builder’s Risk (Course of Construction)		Issued for the value and scope of Work indicated herein.
Pollution Liability		\$1,000,000 per claim; \$2,000,000 aggregate

13.1.8.2 If Contractor normally carries insurance in an amount greater than the minimum amounts required by District, that greater amount shall become the minimum required amount of insurance for purposes of the Contract. Therefore, Contractor hereby acknowledges and agrees that all insurance carried by it shall be deemed liability coverage for all actions it performs in connection with the Contract.

13.2 Contract Security - Bonds

13.2.1 Contractor shall furnish two surety bonds issued by a California admitted surety insurer as follows:

13.2.1.1 Performance Bond: A bond in an amount at least equal to one hundred percent (100%) of Contract Price as security for faithful performance of this Contract.

13.2.1.2 Payment Bond: A bond in an amount at least equal to one hundred percent (100%) of the Contract Price as security for payment of persons performing labor and/or furnishing materials in connection with this Contract.

13.2.2 Cost of bonds shall be included in the Bid and Contract Price.

13.2.3 All bonds related to this Project shall be in the forms set forth in these Contract Documents and shall comply with all requirements of the Contract Documents, including, without limitation, the bond forms.

14. WARRANTY/GUARANTEE/INDEMNITY

14.1 Warranty/Guarantee

14.1.1 The Contractor shall obtain and preserve for the benefit of the District, manufacturer's warranties on materials, fixtures, and equipment incorporated into the Work.

14.1.2 In addition to guarantees required elsewhere, Contractor shall, and hereby does guarantee and warrant all Work furnished on the job against all defects for a period of **ONE (1)** year after the later of the following dates, unless a longer period is provided for in the Contract Documents:

14.1.2.1 The acceptance by the District's governing board of the Work, subject to these General Conditions, or

14.1.2.2 The date that commissioning for the Project, if any, was completed.

At the District's sole option, Contractor shall repair or replace any and all of that Work, together with any other Work that may be displaced in so doing, that may prove defective in workmanship and/or materials within a **ONE (1)** year period from date of completion as defined above, unless a longer period is provided for in the Contract Documents, without expense whatsoever to District. In the event of failure of Contractor and/or Surety to commence and pursue with diligence said replacements or repairs within ten (10) days after being notified in writing, Contractor and Surety hereby acknowledge and agree that District is authorized to proceed to have defects repaired and made good at expense of Contractor and/or Surety who hereby agree to pay costs and charges therefore immediately on demand.

14.1.3 If, in the opinion of District, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to District or to prevent interruption of District operations, District will attempt to give the notice required above. If Contractor or Surety cannot be contacted or neither complies with District's request for correction within a reasonable time as determined by District, District may, notwithstanding the above provision, proceed to make any and all corrections and/or provide attentions the District believes are necessary. The costs of correction or attention shall be charged against Contractor and Surety of the guarantees provided in this Article or elsewhere in this Contract.

14.1.4 The above provisions do not in any way limit the guarantees on any items for which a longer guarantee is specified or on any items for which a manufacturer gives a guarantee for a longer period. Contractor shall furnish to District all appropriate guarantee or warranty certificates as indicated in the Specifications or upon request by District.

14.1.5 Nothing herein shall limit any other rights or remedies available to District.

14.2 Indemnity and Defense

14.2.1 To the furthest extent permitted by California law, the Contractor shall indemnify, keep and hold harmless the District, the Architect(s), and the Construction Manager(s), their respective consultants, separate contractors, board members, officers, representatives, agents, and employees, in both individual and official capacities ("Indemnitees"), against all suits, claims, injury, damages, losses, and expenses ("Claims"), including but not limited to attorney's fees, caused by, arising out of, resulting from, or incidental to, in whole or in part, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers. However, the Contractor's indemnification and hold harmless obligation shall be reduced by the proportion of the Indemnitees' and/or Architect's liability to the extent the Claim(s) is/are caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or defects in design furnished by the Architect, as found by a court or arbitrator of competent jurisdiction. This indemnification and hold harmless obligation of the Contractor shall not be construed to negate, abridge, or otherwise reduce any right or obligation of indemnity that would otherwise exist or arise as to Indemnitee or other person described herein. This indemnification and hold harmless obligation includes, but is not limited to, any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any failure or alleged failure of Contractor's obligations regarding any stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the DIR.

14.2.2 To the furthest extent permitted by California law, Contractor shall also defend Indemnitees, at its own expense, including but not limited to attorneys' fees and costs, against all Claims caused by, arising out of, resulting from, or incidental to, in whole or in part, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers. However, without impacting Contractor's obligation to provide an immediate and ongoing defense of Indemnitees, the Contractor's defense obligation shall be retroactively reduced by the proportion of the Indemnitees' and/or Architect's liability to the extent caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or defects in design furnished by the Architect, as found by a court or arbitrator of competent jurisdiction. The District shall have the right to accept or reject any legal representation that Contractor proposes to defend the Indemnitees. If any Indemnitee provides its own defense due to failure to timely respond to tender of defense, rejection of tender of defense, or conflict of interest of proposed counsel, Contractor shall reimburse such Indemnitee for any expenditures. Contractor's defense obligation shall not be construed to negate, abridge, or otherwise reduce any right or obligation of defense that would otherwise exist as to any Indemnitee or other person described herein. Contractor's defense obligation includes, but is not limited to, any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any failure or alleged failure of Contractor's obligations regarding any stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the DIR. The Contractor shall give prompt notice to the District in the event of any Claim(s).

14.2.3 Without limitation of the provisions herein, if the Contractor's obligation to indemnify and hold harmless the Indemnitees or its obligation to defend Indemnitees as provided herein shall be determined to be void or unenforceable, in whole or in part, it is the intention of the parties that these circumstances shall not otherwise affect the validity or enforceability of the Contractor's agreement to indemnify, defend, and hold harmless the rest of the Indemnitees, as provided herein. Further, the Contractor shall be and remain fully liable on its agreements and obligations herein to the fullest extent permitted by law.

14.2.4 Pursuant to Public Contract Code section 9201, the District shall provide timely notification to Contractor of the receipt of any third-party claim relating to this Contract. The District shall be entitled to recover its reasonable costs incurred in providing said notification.

14.2.5 In any and all claims against any of the Indemnitees 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 Contractor's indemnification obligation herein 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 workers' compensation acts, disability benefit acts, or other employee benefit acts.

14.2.6 The District may retain so much of the moneys due the Contractor as shall be considered necessary, until disposition of any such Claims or until the District, Architect(s) and Construction Manager(s) have received written agreement from the Contractor that they will unconditionally defend the District, Architect(s) and Construction Manager(s), their respective officers, agents and employees, and pay any damages due by reason of settlement or judgment.

14.2.7 The Contractor's defense and indemnification obligations hereunder shall survive the completion of Work, the warranty/guarantee period, and the termination of the Contract.

15. TIME

15.1 Notice to Proceed

15.1.1 District may issue a Notice to Proceed within ninety (90) days from the date of the Notice of Award. Once Contractor has received the Notice to Proceed, Contractor shall complete the Work within the period of time indicated in the Contract Documents.

15.1.2 In the event that the District desires to postpone issuing the Notice to Proceed beyond ninety (90) days from the date of the Notice of Award, it is expressly understood that with reasonable notice to the Contractor, the District may postpone issuing the Notice to Proceed. It is further expressly understood by Contractor that Contractor shall not be entitled to any claim of additional compensation as a result of the postponement of the issuance of the Notice to Proceed.

15.1.3 If the Contractor believes that a postponement of issuance of the Notice to Proceed will cause a hardship to Contractor, Contractor may terminate the Contract. Contractor's termination due to a postponement shall be by written notice to District

within ten (10) days after receipt by Contractor of District's notice of postponement. It is further understood by Contractor that in the event that Contractor terminates the Contract as a result of postponement by the District, the District shall only be obligated to pay Contractor for the Work that Contractor had performed at the time of notification of postponement. Should Contractor terminate the Contract as a result of a notice of postponement, District shall have the authority to award the Contract to the next lowest responsive responsible bidder.

15.2 Computation of Time / Adverse Weather

15.2.1 The Contractor will only be allowed a time extension for Adverse Weather conditions if requested by Contractor in compliance with the time extension request procedures and only if all of the following conditions are met:

15.2.1.1 The weather conditions constitute Adverse Weather, as defined herein;

15.2.1.2 Contractor can verify that the Adverse Weather caused delays in excess of five (5) hours of the indicated labor required to complete the scheduled tasks of Work on the day affected by the Adverse Weather;

15.2.1.3 The Contractor's crew is dismissed as a result of the Adverse Weather;

15.2.1.4 Said delay adversely affects the critical path in the Construction Schedule; and

15.2.1.5 Exceeds thirty-six (36) days of delay per year.

15.2.2 If the aforementioned conditions are met, a non-compensable day-for-day extension will only be allowed for those days in excess of those indicated herein.

15.2.3 The Contractor shall work seven (7) days per week, if necessary, irrespective of inclement weather, to maintain access and the Construction Schedule, and to protect the Work under construction from the effects of Adverse Weather, all at no further cost to the District.

15.2.4 The Contract Time has been determined with consideration given to the average climate weather conditions prevailing in the County in which the Project is located.

15.3 Hours of Work

15.3.1 Sufficient Forces

Contractor and Subcontractors shall continuously furnish sufficient and competent work forces with the required levels of familiarity with the Project and skill, training and experience to ensure the prosecution of the Work in accordance with the Construction Schedule.

15.3.2 Performance During Working Hours

Work shall be performed during regular working hours as permitted by the appropriate governmental agency except that in the event of an emergency, or when

required to complete the Work in accordance with job progress, Work may be performed outside of regular working hours with the advance written consent of the District and approval of any required governmental agencies.

15.3.3 No Work during Testing

Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking tests. The District or District's Representative will provide Contractor with a schedule of test dates concurrent with the District's issuance of the Notice to Proceed, or as soon as test dates are made available to the District.

15.4 Progress and Completion

15.4.1 Time of the Essence

Time limits stated in the Contract Documents are of the essence to the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

15.4.2 No Commencement Without Insurance or Bonds

The Contractor shall not commence operations on the Project or elsewhere prior to the effective date of insurance and bonds. The date of commencement of the Work shall not be changed by the effective date of such insurance or bonds. If Contractor commences Work without insurance and bonds, all Work is performed at Contractor's peril and shall not be compensable until and unless Contractor secures bonds and insurance pursuant to the terms of the Contract Documents and subject to District claim for damages.

15.5 Schedule

Contractor shall provide to District, Construction Manager, and Architect a schedule in conformance with the Contract Documents and as required in the Notice to Proceed and the Contractor's Submittals and Schedules section of these General Conditions.

15.6 Expeditious Completion

The Contractor shall proceed expeditiously with adequate forces and shall achieve Completion within the Contract Time.

16. EXTENSIONS OF TIME – LIQUIDATED DAMAGES

16.1 Liquidated Damages

Contractor and District hereby agree that the exact amount of damages for failure to complete the Work within the time specified is extremely difficult or impossible to determine. If the Work is not completed within the time specified in the Contract Documents, it is understood that the District will suffer damage. It being impractical and unfeasible to determine the amount of actual damage, it is agreed the Contractor shall pay to District as fixed and liquidated damages, and not as a penalty, the amount

set forth in the Agreement for each calendar day of delay in completion. Contractor and its Surety shall be liable for the amount thereof pursuant to Government Code section 53069.85.

16.2 Excusable Delay

16.2.1 Contractor shall not be charged for liquidated damages because of any delays in completion of the Work which are not the fault of Contractor or its Subcontractors, including acts of God as defined in Public Contract Code section 7105, acts of enemy, epidemics, and quarantine restrictions. Contractor shall, within five (5) calendar days of beginning of any delay, including a Force Majeure event, notify District in writing of causes of delay including documentation and facts explaining the delay and the direct correlation between the cause and effect. District shall review the facts and extent of any delay and shall grant extension(s) of time for completing Work when, in its judgment, the findings of fact justify an extension. Extension(s) of time shall apply only to that portion of Work affected by delay and shall not apply to other portions of Work not so affected. An extension of time may only be granted if Contractor has timely submitted the Construction Schedule as required herein.

16.2.2 Contractor shall notify the District pursuant to the claims provisions in these General Conditions of any anticipated delay and its cause. Following submission of a claim, the District may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the Work might be delayed thereby.

16.2.3 In the event the Contractor requests an extension of Contract Time for unavoidable delay, such request shall be submitted in accordance with the provisions in the Contract Documents governing changes in Work. When requesting time, requests must be submitted with full justification and documentation. If the Contractor fails to submit justification, it waives its right to a time extension at a later date. Such justification must be based on the official Construction Schedule as updated at the time of occurrence of the delay or execution of Work related to any changes to the Scope of Work. Any claim for delay must include the following information as support, without limitation:

16.2.3.1 The duration of the activity relating to the changes in the Work and the resources (manpower, equipment, material, etc.) required to perform the activities within the stated duration.

16.2.3.1 Specific logical ties to the Contract Schedule for the proposed changes and/or delay showing the activity/activities in the Construction Schedule that are affected by the change and/or delay. In particular, Contractor must show an actual impact to the schedule, after making a good faith effort to mitigate the delay by rescheduling the work, by providing an analysis of the schedule ("Time Impact Analysis"). Such Time Impact Analysis shall describe in detail the cause and effect of the delay and the impact on the critical dates in the Project schedule. (A portion of any delay of seven (7) days or more must be provided.)

16.2.3.2 A recovery schedule must be submitted within twenty (20) calendar days of written notification to the District of causes of delay.

16.3 No Additional Compensation for Delays Within Contractor's Control

16.3.1 Contractor is aware that governmental agencies, including, without limitation, the Division of the State Architect, the Department of General Services, gas companies, electrical utility companies, water districts, and other agencies may have to approve Contractor-prepared drawings or approve a proposed installation. Accordingly, Contractor shall include in its bid, time for possible review of its drawings and for reasonable delays and damages that may be caused by such agencies. Thus, Contractor is not entitled to make a claim for damages or delays arising from the review of Contractor's drawings.

16.3.2 Contractor shall only be entitled to compensation for delay when all of the following conditions are met:

16.3.2.1 The District is responsible for the delay;

16.3.2.2 The delay is unreasonable under the circumstances involved;

16.3.2.3 The delay was not within the contemplation of the District and Contractor;

16.3.2.4 The delay could not have been avoided or mitigated by Contractor's reasonable diligence; and

16.3.2.5 Contractor timely complies with the claims procedure of the Contract Documents.

16.3.3 Where a change in the Work extends the Contract Time, Contractor may request and recover additional, actual direct costs, provided that Contractor can demonstrate such additional costs are:

16.3.3.1 Actually incurred performing the Work;

16.3.3.2 Not compensated by the Markup allowed; and

16.3.3.3 Directly result from the extended Contract Time.

Contractor shall comply with all required procedures, documentation and time requirements in the Contract Documents. Contractor may not seek or recover such costs using formulas (e.g. Eichleay, labor factors).

16.4 Force Majeure

"Force Majeure" means any event or circumstance unknown at the time of contracting that is beyond the parties' control and makes performance of the contract impractical or impossible. The Party seeking to have its performance obligation(s) excused must demonstrate that there was such an insuperable interference occurring without the party's intervention as could not have been prevented by the exercise of prudence, diligence, and care, by providing prompt notice to the other Party, including full particulars of such event, of its inability to perform its obligations due to such event, following commencement of the claiming Party's inability to so perform its obligations. To the extent satisfying these conditions, Force Majeure events include the following:

acts of God, war, civil unrest, epidemic, fire, smoke, volcanic eruption, earthquake, strike, unusually severe weather, flood, or shortage of transportation facilities, lock out, or commandeering of materials, product, plant, or facilities by the government. Force Majeure shall not be based on a Party's financial inability to perform under this Agreement unless there exists extreme and unreasonable difficulty, expense, injury, or loss involved. A Force Majeure event does not include an act of negligence or intentional wrongdoing by a Party. Any Party claiming a Force Majeure event shall use reasonable diligence to remove the condition that prevents performance and shall not be entitled to suspend performance of its obligations in any greater scope or for any longer duration than is required by the Force Majeure event. Each Party shall use its best efforts to mitigate the effects of such Force Majeure event, remedy its inability to perform, and resume full performance of its obligations hereunder. No obligation that arose before the Force Majeure event that could and should have been fully performed before such Force Majeure event is excused as a result of such Force Majeure event.

16.5 Float or Slack in the Schedule

Float or slack is the amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any of the activities in the schedule. Float or slack is not for the exclusive use of or benefit of either the District or the Contractor, but its use shall be determined solely by the District.

17. CHANGES IN THE WORK

17.1 No Changes Without Authorization

17.1.1 There shall be no change whatsoever in the Drawings, Specifications, or in the Work without an executed Change Order or a written Construction Change Directive authorized by the District as herein provided. District shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Drawings and Specifications unless the District's governing board has authorized the same and the cost thereof has been approved in writing by Change Order or Construction Change Directive in advance of the changed Work being performed. No extension of time for performance of the Work shall be allowed hereunder unless claim for such extension is made at the time changes in the Work are ordered, and such time duly adjusted and approved in writing in the Change Order or Construction Change Directive. Contractor shall be responsible for any costs incurred by the District for professional services and DSA fees and/or delay to the Project Schedule, if any, for DSA to review any request for changes to the DSA approved plans and specifications for the convenience of the Contractor and/or to accommodate the Contractor's means and methods. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Drawings and Specifications.

17.1.2 Contractor shall perform immediately all work that has been authorized by a fully executed Change Order or Construction Change Directive. Contractor shall be fully responsible for any and all delays and/or expenses caused by Contractor's failure to expeditiously perform this Work.

17.1.3 Should any Change Order result in an increase in the Contract Price or extend the Contract Time, the cost of or length of extension in that Change Order shall be agreed to, in writing, by the District in advance of the Work by Contractor, and shall

be subject to the monetary limitations set forth in Public Contract Code section 20118.4. In the event that Contractor proceeds with any change in Work without a Change Order executed by the District or Construction Change Directive, Contractor waives any claim of additional compensation or time for that additional work. Under no circumstances shall Contractor be entitled to any claim of additional compensation or time not expressly requested by Contractor in a Proposed Change Order or approved by District in an executed Change Order.

17.1.4A Change Order or Construction Change Directive will become effective when approved by the Board, notwithstanding that Contractor has not signed it. A Change Order or Construction Change Directive will become effective without Contractor's signature provided District indicates it as a "Unilateral Change Order". Any dispute as to the adjustment in the Contract Price or Contract Time, if any, of the Unilateral Change Order shall be resolved pursuant to the Payment and Claims and Disputes provisions herein.

17.1.5 Contractor understands, acknowledges, and agrees that the reason for District authorization is so that District may have an opportunity to analyze the Work and decide whether the District shall proceed with the Change Order or alter the Project so that a change in Work becomes unnecessary.

17.2 Architect Authority

The Architect will have authority to order minor changes in the Work not involving any adjustment in the Contract Price, or an extension of the Contract Time, or a change that is inconsistent with the intent of the Contract Documents. These changes shall be effected by written Change Order, Construction Change Directive, by Architect's response(s) to RFI(s), or by Architect's Supplemental Instructions ("ASI").

17.3 Change Orders

17.3.1A Change Order is a written instrument prepared and issued by the District and/or the Architect and signed by the District (as authorized by the District's Governing Board), the Contractor, the Architect, and approved by the Project Inspector (if necessary) and DSA (if necessary), stating their agreement regarding all of the following:

17.3.1.1 A description of a change in the Work;

17.3.1.2 The amount of the adjustment in the Contract Price, if any; and

17.3.1.3 The extent of the adjustment in the Contract Time, if any.

17.4 Construction Change Directives

17.4.1A Construction Change Directive is a written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District and the Architect, directing a change in the Work. The District may, as provided by law, by Construction Change Directive and without invalidating the Contract, order changes in the Work consisting of additions, deletions, or other revisions. The adjustment to the Contract Price or Time, if any, is subject to the provisions of this section regarding Changes in the Work. If all or a portion of the Project is being

funded by funds requiring approval by the State Allocation Board ("SAB"), these revisions may be subject to compensation once approval of same is received and funded by the SAB, and funds are released by the Office of Public School Construction ("OPSC"). Any dispute as to the adjustment in the Contract Price, if any, of the Construction Change Directive or timing of payment shall be resolved pursuant to the Payment and Claims and Disputes provisions herein.

17.4.2The District may issue a Construction Change Directive in the absence of agreement on the terms of a Change Order.

17.5 Force Account Directives

17.5.1When work, for which a definite price has not been agreed upon in advance, is to be paid for on a force account basis, all direct costs necessarily incurred and paid by the Contractor for labor, material, and equipment used in the performance of that Work, shall be subject to the approval of the District and compensation will be determined as set forth herein.

17.5.2The District will issue a Force Account Directive to proceed with the Work on a force account basis, and a not-to-exceed budget will be established by the District.

17.5.3All requirements regarding direct cost for labor, labor burden, material, equipment, and markups on direct costs for overhead and profit described in this section shall apply to Force Account Directives. However, the District will only pay for actual costs verified in the field by the District or its authorized representative(s) on a daily basis.

17.5.4The Contractor shall be responsible for all cost related to the administration of Force Account Directive. The markup for overhead and profit for Contractor modifications shall be full compensation to the Contractor to administer Force Account Directive, and Contractor shall not be entitled to separately recover additional amounts for overhead and/or profit.

17.5.5The Contractor shall notify the District or its authorized representative(s) at least twenty-four (24) hours prior to proceeding with any of the force account work. Furthermore, the Contractor shall notify the District when it has consumed eighty percent (80%) of the budget, and shall not exceed the budget unless specifically authorized in writing by the District. The Contractor will not be compensated for force account work in the event that the Contractor fails to timely notify the District regarding the commencement of force account work, or exceeding the force account budget.

17.5.6The Contractor shall diligently proceed with the work, and on a daily basis, submit a daily force account report using Document 00 63 47, "Daily Force Account Report," no later than 5:00 p.m. each day. The report shall contain a detailed itemization of the daily labor, material, and equipment used on the force account work only. The names of the individuals performing the force account work shall be included on the daily force account reports. The type and model of equipment shall be identified and listed. The District will review the information contained in the reports, and sign the reports no later than the next work day, and return a copy of the report to the Contractor for their records. The District will not sign, nor will the Contractor receive compensation for work the District cannot verify. The Contractor

will provide a weekly force account summary indicating the status of each Force Account Directive in terms of percent complete of the not-to-exceed budget and the estimated percent complete of the work.

17.5.7 In the event the Contractor and the District reach a written agreement on a set cost for the work while the work is proceeding based on a Force Account Directive, the Contractor's signed daily force account reports shall be discontinued and all previously signed reports shall be invalid.

17.6 Price Request

17.6.1 Definition of Price Request

A Price Request ("PR") is a written request prepared by the Architect requesting the Contractor to submit to the District and the Architect an estimate of the effect of a proposed change in the Work on the Contract Price and the Contract Time.

17.6.2 Scope of Price Request

A Price Request shall contain adequate information, including any necessary Drawings and Specifications, to enable Contractor to provide the cost breakdowns required herein. The Contractor shall not be entitled to any additional compensation for preparing a response to a Price Request, whether ultimately accepted or not.

17.7 Proposed Change Order

17.7.1 Definition of Proposed Change Order

A Proposed Change Order ("PCO") is a written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

17.7.2 Changes in Contract Price

A PCO shall include breakdowns and backup documentation pursuant to the revisions herein and sufficient, in the District's judgment, to validate any change in Contract Price. In no case shall Contractor or any of its Subcontractors be permitted to reserve rights for additional compensation for Change Order Work.

17.7.3 Changes in Time

A PCO shall also include any changes in time required to complete the Project. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Construction Schedule as defined in the Contract Documents. The Contractor shall justify the proposed change in time by submittal of a schedule analysis that accurately shows the impact of the change on the critical path of the Construction Schedule ("Time Impact Analysis"). If Contractor fails to request a time extension in a PCO, including the Time Impact Analysis then the Contractor is thereafter precluded from requesting, and waives any right to request, additional time and/or claim a delay. In no case shall Contractor or any of its Subcontractors be permitted to reserve rights for additional time for Change Order Work. A PCO that leaves the amount of time requested blank, or

states that such time requested is "to be determined", is not permitted and shall also constitute a waiver of any right to request additional time and/or claim a delay.

17.7.4 Allowances

If there is an Allowance, then Contractor shall not bill for or be due any portion of an Allowance unless the District has identified specific work, Contractor has submitted a price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has executed an Allowance Expenditure Directive incorporating that work.

Any unused portion of the Allowance will revert to the District documented by a deductive Change Order. Contractor authorizes the District to execute a unilateral deductive Change Order at or near the end of the Project for all or any portion of the Allowance not allocated.

17.7.5 Unknown and/or Unforeseen Conditions

Separate from what is provided in the Allowance, if requests an increase in Contract Price and/or Contract Time that is based at least partially on Contractor's assertion that Contractor has encountered unknown and/or unforeseen condition(s) on the Project, then Contractor shall base the PCO on provable information that, beyond a reasonable doubt and to the District's satisfaction, demonstrates that the unknown and/or unforeseen condition(s) were actually unknown and/or unforeseen and that the condition(s) were reasonably unknown and/or unforeseen. If not, the District shall deny the PCO as unsubstantiated, and the Contractor shall complete the Project without any increase in Contract Price and/or Contract Time based on that PCO.

17.7.6 Time to Submit Proposed Change Order

Contractor shall submit its PCO, using Document 00 63 57 (Proposed Change Order Form), within five (5) working days of the date Contractor discovers, or reasonably should have discovered, the circumstances giving rise to the PCO, unless additional time to submit a PCO is granted in writing by the District. Time is of the essence in Contractor's submission of PCOs so that the District can promptly investigate the basis for the PCO. Accordingly, if Contractor fails to submit its PCO within this timeframe, Contractor waives, releases, and discharges any right to assert or claim any entitlement to an adjustment of the Contract Price and/or Time based on circumstances giving rise to the PCO.

17.7.7 Proposed Change Order Certification

In submitting a PCO, Contractor certifies and affirms that the cost and/or time request is submitted in good faith, that the cost and/or time request is accurate and in accordance with the provisions of the Contract Documents, and the Contractor submits the cost and/or request for extension of time recognizing the significant civil penalties and treble damages which follow from making a false claim or presenting a false claim under Government Code section 12650 et seq.

It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the

Project including, without limitation, cumulative impacts. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

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17.8 Format for Proposed Change Order

17.8.1 The following format shall be used as applicable by the District and the Contractor (e.g. Change Orders, PCO’s) to communicate proposed additions and deductions to the Contract, supported by attached documentation. Any spaces left blank will be deemed no change to cost or time.

	<u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u>	<u>ADD</u>	<u>DEDUCT</u>
(a)	<u>Material</u> (attach suppliers’ invoice or itemized quantity and unit cost plus sales tax)		
(b)	<u>Add Labor</u> (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(c)	<u>Add Equipment</u> (attach suppliers’ invoice)		
(d)	<u>Subtotal</u>		
(e)	<u>Add overhead and profit for any and all tiers of Subcontractor</u> , the total not to exceed ten percent (10%) of Item (d)		
(f)	<u>Subtotal</u>		
(g)	<u>Add General Conditions Cost</u> (if Time is Compensable) (attach supporting documentation)		
(h)	<u>Subtotal</u>		
(i)	<u>Add Overhead and Profit for Contractor</u> , not to exceed five percent (5%) of Item (h)		
(j)	<u>Subtotal</u>		
(k)	<u>Add Bond and Insurance</u> , not to exceed two percent (2%) of Item (j)		
(l)	<u>TOTAL</u>		
(m)	<u>Time</u> (zero unless indicated; “TBD” not permitted)	<u> </u> Calendar Days	

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	WORK PERFORMED BY CONTRACTOR	ADD	DEDUCT
(a)	Material (attach itemized quantity and unit cost plus sales tax)		
(b)	Add Labor (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(c)	Add Equipment (attach suppliers' invoice)		
(d)	Add General Conditions Cost (if Time is Compensable) (attach supporting documentation)		
(e)	Subtotal		
(f)	Add Overhead and Profit for Contractor , not to exceed fifteen percent (15%) of Item (e)		
(g)	Subtotal		
(h)	Add Bond and Insurance , not to exceed two percent (2%) of Item (g)		
(i)	TOTAL		
(j)	Time (zero unless indicated; "TBD" not permitted)		Calendar Days

17.8.2 Mandatory Use of Forms. Contractor shall only submit PCOs by completing Document 00 63 57 (Proposed Change Order Form). Contractor acknowledges and agrees that use of this specific and consistent format is essential to District's evaluation of PCOs. Accordingly, Contractor waives, releases, and discharges any right to assert or claim any entitlement to an adjustment of the Contract Price and/or Time for any purported PCO that does not comply with Document 00 63 57 (Proposed Change Order Form).

17.8.3 Labor. Contractor shall be compensated for the costs of labor actually and directly utilized in the performance of the Work. Such labor costs shall be the actual cost, use of any formulas (e.g., labor factors) is not allowed, not to exceed prevailing wage rates in the locality of the Site and shall be in the labor classification(s) necessary for the performance of the Work, fully Burdened. Labor costs shall exclude costs incurred by the Contractor in preparing estimate(s) of the costs of the change in the Work, in the maintenance of records relating to the costs of the change in the Work, coordination and assembly of materials and information relating to the change in the Work or performance thereof, or the supervision and other overhead and general conditions costs associated with the change in the Work or performance thereof, including but not limited to the cost for the job superintendent. If applicable, District will pay Contractor the reasonable costs for room and board, supported with appropriate backup documentation, without markup for profit or overhead as provided by U.S. General Services Administration per diem rates for California lodging, meals and incidentals, <https://www.gsa.gov/travel/plan-book/per-diem-rates/per-diem-rates-lookup>.

17.8.4 Materials. Contractor shall be compensated for the costs of materials necessarily and actually used or consumed in connection with the performance of the change in the Work. Costs of materials may include reasonable costs of transportation from a source closest to the Site of the Work and delivery to the Site. If discounts by material suppliers are available for materials necessarily used in the performance of the change in the Work, they shall be credited to the District. If materials necessarily used in the performance of the change in the Work are

obtained from a supplier or source owned in whole or in part by the Contractor, compensation therefor shall not exceed the current wholesale price for such materials. If, in the reasonable opinion of the District, the costs asserted by the Contractor for materials in connection with any change in the Work are excessive, or if the Contractor fails to provide satisfactory evidence of the actual costs of such materials from its supplier or vendor of the same, the costs of such materials and the District's obligation to pay for the same shall be limited to the then lowest wholesale price at which similar materials are available in the quantities required to perform the change in the Work. The District may elect to furnish materials for the change in the Work, in which event the Contractor shall not be compensated for the costs of furnishing such materials or any mark-up thereon.

17.8.5 Equipment. As a precondition for the District's duty to pay for Equipment rental or loading and transportation, Contractor shall provide satisfactory evidence of the actual costs of Equipment from the supplier, vendor or rental agency of same. Contractor shall be compensated for the actual cost of the necessary and direct use of Equipment in the performance of the change in the Work. Use of such Equipment in the performance of the change in the Work shall be compensated in increments of fifteen (15) minutes. Rental time for Equipment moved by its own power shall include time required to move such Equipment to the site of the Work from the nearest available rental source of the same. If Equipment is not moved to the Site by its own power, Contractor will be compensated for the loading and transportation costs in lieu of rental time. The foregoing notwithstanding, neither moving time or loading and transportation time shall be allowed if the Equipment is used for performance of any portion of the Work other than the change in the Work. Unless prior approval in writing is obtained by the Contractor from the Architect, the Project Inspector and the District, no costs or compensation shall be allowed for time while Construction Equipment is inoperative, idle or on standby, for any reason. Contractor shall not be entitled to an allowance or any other compensation for Equipment or tools used in the performance of change in the Work where such Equipment or tools have a replacement value of \$500.00 or less. Equipment costs claimed by the Contractor in connection with the performance of any Work shall not exceed rental rates established by distributors or construction equipment rental agencies in the locality of the Site; any costs asserted which exceed such rental rates shall not be allowed or paid. Unless otherwise specifically approved in writing by the Architect, the Project Inspector and the District, the allowable rate for the use of Equipment in connection with the Work shall constitute full compensation to the Contractor for the cost of rental, fuel, power, oil, lubrication, supplies, necessary attachments, repairs or maintenance of any kind, depreciation, storage, insurance, labor (exclusive of labor costs of the Equipment operator), and any and all other costs incurred by the Contractor incidental to the use of such Equipment.

17.8.6 General Conditions Cost. The phrase "General Conditions Cost" shall mean, other than expressly limited or excluded herein, the costs of Contractor during the construction phase, including but not limited to: payroll costs for project manager for Work conducted at the Site, payroll costs for the superintendent and full-time general foremen, workers not included as direct labor costs engaged in support functions (e.g., loading/unloading, clean-up), costs of offices and temporary facilities including office materials, office supplies, office equipment, minor expenses, utilities, fuel, sanitary facilities and telephone services at the Site, costs of consultants not in the direct employ of Contractor or Subcontractors, and fees for permits and licenses.

17.8.7 Overhead and Profit. The phrase "Overhead and Profit" shall include field and office supervisors and assistants, watchperson, use of small tools, consumable, insurance other than construction bonds and insurance required herein, general conditions costs and home office expenses.

17.9 Change Order Certification

17.9.1 All Change Orders and PCOs include the following certification by the Contractor, either in the form specifically or incorporated by this reference:

17.9.1.1 The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for completion of the entire Work as stated herein, and agrees to furnish all labor, materials, and service, and perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq. It is understood that the changes herein to the Contract shall only be effective when approved by the governing board of the District.

17.9.1.2 It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

17.9.2 Accord and Satisfaction: Contractor's execution of any Change Order shall constitute a full accord and satisfaction, and release, of all Contractor (and if applicable, Subcontractor) claims for additional time, money or other relief arising from or relating to the subject matter of the change including, without limitation, impacts of all types, cumulative impacts, inefficiency, overtime, delay and any other type of claim.

17.9.3 Mandatory Use of Forms. Contractor shall only submit Change Orders by completing Document 00 63 63 (Change Order Form). Contractor acknowledges and agrees that use of this specific and consistent format is essential to District's processing of Change Orders. Accordingly, Contractor waives, releases, and discharges any right to assert or claim any entitlement to an adjustment of the Contract Price and/or Time for any change that does not comply with Document 00 63 63 (Change Order Form).

17.10 Determination of Change Order Cost

17.10.1 The amount of the increase or decrease in the Contract Price from a Change Order, if any, shall be determined in one or more of the following ways as applicable to a specific situation and at the District's discretion:

17.10.1.1 District acceptance of a PCO;

17.10.1.2 By unit prices contained in Contractor's original bid;

17.10.1.3 By agreement between District and Contractor.

17.11 Deductive Change Orders

All deductive Change Order(s) must be prepared pursuant to the provisions herein. Where a portion of the Work is deleted from the Contract, the reasonable value of the deducted work less the value of work performed shall be considered the appropriate deduction. The value submitted on the Schedule of Values shall be used to calculate the credit amount unless the bid documentation is being held in escrow as part of the Contract Documents. Unit Prices, if any, may be used in District's discretion in calculating reasonable value. If Contractor offers a proposed amount for a deductive Change Order(s), Contractor shall include a minimum of five percent (5%) total profit and overhead to be deducted with the amount of the work of the Change Order(s). If Subcontractor work is involved, Subcontractors shall also include a minimum of five percent (5%) profit and overhead to be deducted with the amount of its deducted work. Any deviation from this provision shall not be allowed.

17.12 Addition or Deletion of Alternate Bid Item(s)

If the Bid Form and Proposal includes proposal(s) for Alternate Bid Item(s), during Contractor's performance of the Work, the District may elect to add or delete any such Alternate Bid Item(s) if not included in the Contract at the time of award. If the District elects to add or delete Alternate Bid Item(s) after Contract award, the cost or credit for such Alternate Bid Item(s) shall be as set forth in the Bid Form and Proposal unless the parties agree to a different price and the Contract Time shall be adjusted by the number of days allocated in the Contract Documents. If days are not allocated in the Contract Documents, the Contract Time shall be equitably adjusted.

17.13 Discounts, Rebates, and Refunds

For purposes of determining the cost, if any, of any change, addition, or omission to the Work hereunder, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to the Contractor, and the Contractor shall make provisions so that such discounts, rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a reduction of the Contractor's cost in determining the actual cost of construction for purposes of any change, addition, or omission in the Work as provided herein.

17.14 Accounting Records

With respect to portions of the Work performed by Change Orders and Construction Change Directives, the Contractor shall keep and maintain cost-accounting records satisfactory to the District, including, without limitation, Job Cost Reports as provided in these General Conditions, which shall be available to the District on the same terms as any other books and records the Contractor is required to maintain under the Contract Documents. Such records shall include without limitation hourly records for Labor and Equipment and itemized records of materials and Equipment used that day in connection with the performance of any Work. All records maintained hereunder shall be subject to inspection, review and/or reproduction by the District, the Architect or the Project Inspector upon request. In the event that the Contractor fails or refuses, for any

reason, to maintain or make available for inspection, review and/or reproduction such records, the District's reasonable good faith determination of the extent of adjustment to the Contract Price shall be final, conclusive, dispositive and binding upon Contractor.

17.15 Notice Required

If the Contractor desires to make a claim for an increase in the Contract Price, or any extension in the Contract Time for completion, it shall notify the District pursuant to the provisions herein, including the Article on Claims and Disputes. No claim shall be considered unless made in accordance with this subparagraph. Contractor shall proceed to execute the Work even though the adjustment may not have been agreed upon. Any change in the Contract Price or extension of the Contract Time resulting from such claim shall be authorized by a Change Order.

17.16 Applicability to Subcontractors

Any requirements under this Article shall be equally applicable to Change Orders or Construction Change Directives issued to Subcontractors by the Contractor to the extent as required by the Contract Documents.

17.17 Alteration to Change Order Language

Contractor shall not alter Change Orders or reserve time in Change Orders. Change Orders altered in violation of this provision, if in conflict with the terms set forth herein, shall be construed in accordance with the terms set forth herein. Contractor shall execute finalized Change Orders and proceed under the provisions herein with proper notice.

17.18 Failure of Contractor to Execute Change Order

Contractor shall be in default of the Contract if Contractor fails to execute a Change Order when the Contractor agrees with the addition and/or deletion of the Work in that Change Order.

18. REQUEST FOR INFORMATION

18.1 Any Request for Information shall reference all applicable Contract Document(s), including Specification section(s), detail(s), page number(s), drawing number(s), and sheet number(s), etc. The Contractor shall make suggestions and interpretations of the issue raised by each Request for Information. A Request for Information cannot modify the Contract Price, Contract Time, or the Contract Documents. Upon request by the District, Contractor shall provide an electronic copy of the Request for Information in addition to the hard copy.

18.2 The Contractor shall be responsible for any costs incurred for professional services that District may deduct from any amounts owing to the Contractor, if a Request for Information requests an interpretation or decision of a matter where the information sought is equally available to the party making the request. District, at its

sole discretion, shall deduct from and/or invoice Contractor for all the professional services arising herein.

19. PAYMENTS

19.1 Contract Price

The Contract Price is stated in the Agreement and, including authorized adjustments, is the total amount payable by the District to the Contractor for performance of the Work under the Contract Documents.

19.2 Applications for Progress Payments

19.2.1 Procedure for Applications for Progress Payments

19.2.1.1 Application for Progress Payment

19.2.1.1.1 Not before the fifth (5th) day of each calendar month during the progress of the Work, Contractor shall submit to the District and the Architect an itemized Application for Payment for operations completed in accordance with the Schedule of Values. Such application shall be notarized, if required, and supported by the following or each portion thereof unless waived by the District in writing:

19.2.1.1.1.1 The amount paid to the date of the Application to the Contractor, to all its Subcontractors, and all others furnishing labor, material, or equipment for its Contract;

19.2.1.1.1.2 The amount being requested under the Application for Payment by the Contractor on its own behalf and separately stating the amount requested on behalf of each of the Subcontractors and all others furnishing labor, material, and equipment under the Contract;

19.2.1.1.1.3 The balance that will be due to each of such entities after said payment is made;

19.2.1.1.1.4 A certification that the As-Builts and annotated Specifications are current;

19.2.1.1.1.5 Itemized breakdown of work done for the purpose of requesting partial payment;

19.2.1.1.1.6 An updated and acceptable construction schedule in conformance with the provisions herein;

19.2.1.1.1.7 The additions to and subtractions from the Contract Price and Contract Time;

19.2.1.1.1.8 A total of the retentions held;

19.2.1.1.1.9 Material invoices, evidence of equipment purchases, rentals, and other support and details of cost as the District may require from time to time;

19.2.1.1.1.10 The percentage of completion of the Contractor's Work by line item;

19.2.1.1.1.11 Schedule of Values updated from the preceding Application for Payment;

19.2.1.1.1.12 A duly completed and executed conditional waiver and release upon progress payment compliant with Civil Code section 8132 from the Contractor and each subcontractor of any tier and supplier to be paid from the current progress payment;

19.2.1.1.1.13 A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134 from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payment(s); and

19.2.1.1.1.14 A certification by the Contractor of the following:

The Contractor warrants title to all Work performed as of the date of this payment application has been completed in accordance with the Contract Documents for the Project. The Contractor further warrants that all amounts have been paid for work which previous Certificates for Payment were issued and payments received and all Work performed as of the date of this payment application is free and clear of liens, claims, security interests, or encumbrances in favor of the Contractor, Subcontractors, material and equipment suppliers, workers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work, except those of which the District has been informed. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq.

19.2.1.1.1.15 The Contractor shall be subject to the False Claims Act set forth in Government Code section 12650 et seq. for information provided with any Application for Progress Payment.

19.2.1.1.1.16 All remaining certified payroll records ("CPR(s)") for each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each Subcontractor in connection with the Work for the period of the Application for Payment. As indicated herein, the District shall not make any payment to Contractor until:

19.2.1.1.1.16.1 Contractor and/or its Subcontractor(s) provide electronic CPRs directly to the DIR on no less than every 30 days while Work is being performed and within 30 days after the final day of Work performed on the Project for any journeyman, apprentice, worker or other employee was employed in connection with the Work, or within

ten (10) days of any request by the District or the DIR to the requesting entity, and

19.2.1.1.1.16.2 Any delay in Contractor and/or its Subcontractor(s) providing CPRs in a timely manner may directly delay the Contractor's payment.

19.2.1.1.2 Applications received after June 20th will not be paid until the second week of July and applications received after December 12th will not be paid until the first week of January.

19.2.2 Prerequisites for Progress Payments

19.2.2.1 First Payment Request: The following items, if applicable, must be completed before the District will accept and/or process the Contractor's first payment request:

19.2.2.1.1 Installation of the Project sign;

19.2.2.1.2 Installation of field office;

19.2.2.1.3 Installation of temporary facilities and fencing;

19.2.2.1.4 Schedule of Values;

19.2.2.1.5 Contractor's Construction Schedule;

19.2.2.1.6 Schedule of unit prices, if applicable;

19.2.2.1.7 Submittal Schedule;

19.2.2.1.8 Receipt by Architect of all submittals due as of the date of the payment application;

19.2.2.1.9 Copies of necessary permits;

19.2.2.1.10 Copies of authorizations and licenses from governing authorities;

19.2.2.1.11 Initial progress report;

19.2.2.1.12 Surveyor qualifications;

19.2.2.1.13 Written acceptance of District's survey of rough grading, if applicable;

19.2.2.1.14 List of all Subcontractors, with names, license numbers, telephone numbers, and Scope of Work;

19.2.2.1.15 All bonds and insurance endorsements; and

19.2.2.1.16 Resumes of Contractor's project manager, and if applicable, job site secretary, record documents recorder, and job site superintendent.

19.2.2.2 Second Payment Request: The District will not process the second payment request until and unless all submittals and Shop Drawings have been accepted for review by the Architect.

19.2.2.3 No Waiver of Criteria: Any payments made to Contractor where criteria set forth herein have not been met shall not constitute a waiver of said criteria by District. Instead, such payment shall be construed as a good faith effort by District to resolve differences so Contractor may pay its Subcontractors and suppliers. Contractor agrees that failure to submit such items may constitute a breach of contract by Contractor and may subject Contractor to termination.

19.3 Progress Payments

19.3.1 District's Approval of Application for Payment

19.3.1.1 Upon receipt of an Application for Payment, The District shall act in accordance with both of the following:

19.3.1.1.1 Each Application for Payment shall be reviewed by the District as soon as practicable after receipt for the purpose of determining that the Application for Payment is a proper Application for Payment.

19.3.1.1.2 Any Application for Payment determined not to be a proper Application for Payment suitable for payment shall be returned to the Contractor as soon as practicable, but not later than seven (7) days, after receipt. An Application for Payment returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the Application for Payment is not proper. The number of days available to the District to make a payment without incurring interest pursuant to this section shall be reduced by the number of days by which the District exceeds this seven-day return requirement.

19.3.1.1.3 An Application for Payment shall be considered properly executed if funds are available for payment of the Application for Payment, and payment is not delayed due to an audit inquiry by the financial officer of the District.

19.3.1.2 The District's review of the Contractor's Application for Payment will be based on the District's and the Architect's observations at the Site and the data comprising the Application for Payment that the Work has progressed to the point indicated and that, to the best of the District's and the Architect's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to:

19.3.1.2.1 Observation of the Work for general conformance with the Contract Documents,

19.3.1.2.2 Results of subsequent tests and inspections,

19.3.1.2.3 Minor deviations from the Contract Documents correctable prior to completion, and

19.3.1.2.4 Specific qualifications expressed by the Architect.

19.3.1.3 District's approval of the certified Application for Payment shall be based on Contractor complying with all requirements for a fully complete and valid certified Application for Payment.

19.3.2 Payments to Contractor

19.3.2.1 Within thirty (30) days after approval of the Application for Payment, Contractor shall be paid a sum equal to ninety-five percent (95%) of the value of the Work performed (as verified by Architect and Inspector and certified by Contractor) up to the last day of the previous month, less the aggregate of previous payments and amount to be withheld. The value of the Work completed shall be Contractor's best estimate. No inaccuracy or error in said estimate shall operate to release the Contractor, or any Surety upon any bond, from damages arising from such Work, or from the District's right to enforce each and every provision of this Contract, and the District shall have the right subsequently to correct any error made in any estimate for payment.

19.3.2.2 The Contractor shall not be entitled to have any payment requests processed, or be entitled to have any payment made for Work performed, so long as any lawful or proper direction given by the District concerning the Work, or any portion thereof, remains incomplete.

19.3.2.3 If the District fails to make any progress payment within thirty (30) days after receipt of an undisputed and properly submitted Application for Payment from the Contractor, the District shall pay interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

19.3.3 No Waiver

No payment by District hereunder shall be interpreted so as to imply that District has inspected, approved, or accepted any part of the Work. Notwithstanding any payment, the District may enforce each and every provision of this Contract. The District may correct or require correction of any error subsequent to any payment.

19.4 Decisions to Withhold Payment

19.4.1 Reasons to Withhold Payment

The District may withhold payment in whole, or in part, to the extent reasonably necessary to protect the District if, in the District's opinion, the representations to the District required herein cannot be made. The District may withhold payment, in whole, or in part, to such extent as may be necessary to protect the District from loss because of, but not limited to any of the following:

19.4.1.1 Defective Work not remedied within **FORTY-EIGHT (48)** hours of written notice to Contractor.

19.4.1.2 Stop Payment Notices or other liens served upon the District as a result of the Contract. Contractor agrees that the District may withhold up to 125% of the amount claimed in the Stop Payment Notice to answer the claim and to provide for the District's reasonable cost of any litigation pursuant to the stop payment notice.

19.4.1.3 Written notice from payment and/or performance bond surety(ies) to withhold payment from Contractor.

19.4.1.4 Liquidated damages assessed against the Contractor.

19.4.1.5 The cost of completion of the Contract if there exists a reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price or by the completion date.

19.4.1.6 Damage to the District or other contractor(s).

19.4.1.7 Unsatisfactory prosecution of the Work by the Contractor.

19.4.1.8 Failure to store and properly secure materials.

19.4.1.9 Failure of the Contractor to submit, on a timely basis, proper, sufficient, and acceptable documentation required by the Contract Documents, including, without limitation, a Construction Schedule, Schedule of Submittals, Schedule of Values, Monthly Progress Schedules, Shop Drawings, Product Data and samples, Proposed product lists, executed Change Orders, and/or verified reports.

19.4.1.10 Failure of the Contractor to maintain As-Builts.

19.4.1.11 Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Application for Payment.

19.4.1.12 Unauthorized deviations from the Contract Documents.

19.4.1.13 Failure of the Contractor to prosecute the Work in a timely manner in compliance with the Construction Schedule, established progress schedules, and/or completion dates.

19.4.1.14 Failure to provide acceptable electronic certified payroll records, as required by the Labor Code, by these Contract Documents, or by written request; for each journeyman, apprentice, worker, or other employee employed by the Contractor and/or by each Subcontractor in connection with the Work for the period of the Application for Payment or if payroll records are delinquent or inadequate.

19.4.1.15 Failure to properly pay prevailing wages as required in Labor Code section 1720 et seq., failure to comply with any other Labor Code requirements, and/or failure to comply with labor compliance monitoring and enforcement by the DIR.

19.4.1.16 Allowing an unregistered subcontractor, as described in Labor Code section 1725.5, to engage in the performance of any work under this Contract.

19.4.1.17 Failure to comply with any applicable federal statutes and regulations regarding minimum wages, withholding, payrolls and basic records, apprentice and trainee employment requirements, equal employment opportunity requirements, Copeland Act requirements, Davis-Bacon Act and related requirements, Contract Work Hours and Safety Standards Act requirements, if applicable.

19.4.1.18 Failure to properly maintain or clean up the Site.

19.4.1.19 Failure to timely indemnify, defend, or hold harmless the District.

19.4.1.20 Any payments due to the District, including but not limited to payments for failed tests, utilities changes, or permits.

19.4.1.21 Failure to pay Subcontractor(s) or supplier(s) as required by law and by the Contract Documents.

19.4.1.22 Failure to pay any royalty, license or similar fees.

19.4.1.23 Contractor is otherwise in breach, default, or in substantial violation of any provision of this Contract.

19.4.1.24 Failure to perform any implementation and/or monitoring required by any SWPPP for the Project and/or the imposition of any penalties or fines therefore whether imposed on the District or Contractor.

19.4.2 Reallocation of Withheld Amounts

19.4.2.1 District may, in its discretion, apply any withheld amount to pay outstanding claims or obligations as defined herein. In so doing, District shall make such payments on behalf of Contractor. If any payment is so made by District, then that amount shall be considered a payment made under Contract by District to Contractor and District shall not be liable to Contractor for any payment made in good faith. These payments may be made without prior judicial determination of claim or obligation. District will render Contractor an accounting of funds disbursed on behalf of Contractor.

19.4.2.2 If Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provision thereof, District may, after **FORTY-EIGHT (48)** hours' written notice to the Contractor and, without prejudice to any other remedy, make good such deficiencies. The District shall adjust the total Contract Price by reducing the amount thereof by the cost of making good such deficiencies. If District deems it inexpedient to correct Work that is damaged, defective, or not done in accordance with Contract provisions, an equitable reduction in the Contract Price (of at least one hundred fifty percent (150%) of the estimated reasonable value of the nonconforming Work) shall be made therefor.

19.4.3 Payment After Cure

When Contractor removes the grounds for declining approval, payment shall be made for amounts withheld because of them. No interest shall be paid on any retainage or amounts withheld due to the failure of the Contractor to perform in accordance with the terms and conditions of the Contract Documents.

19.5 Subcontractor Payments

19.5.1 Payments to Subcontractors

No later than seven (7) days after receipt, or pursuant to Business and Professions Code section 7108.5 and Public Contract Code section 7107, the Contractor shall pay to each Subcontractor, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to its Sub-subcontractors in a similar manner.

19.5.2 No Obligation of District for Subcontractor Payment

The District shall have no obligation to pay, or to see to the payment of, money to a Subcontractor except as may otherwise be required by law.

19.5.3 Joint Checks

District shall have the right in its sole discretion, if necessary for the protection of the District, to issue joint checks made payable to the Contractor and Subcontractors and/or material or equipment suppliers. The joint check payees shall be responsible for the allocation and disbursement of funds included as part of any such joint payment. In no event shall any joint check payment be construed to create any contract between the District and a Subcontractor of any tier, or a material or equipment supplier, any obligation from the District to such Subcontractor or a material or equipment supplier, or rights in such Subcontractor or a material or equipment supplier against the District.

20. COMPLETION OF THE WORK

20.1 Completion

20.1.1 District will accept completion of Contract and have the Notice of Completion recorded when the entire Work shall have been completed to the satisfaction of District.

20.1.2 The Work may only be accepted as complete by action of the governing board of the District.

20.1.3 District, at its sole option, may accept completion of Contract and have the Notice of Completion recorded when the entire Work shall have been completed to the satisfaction of District, except for minor corrective items, as distinguished from incomplete items. If Contractor fails to complete all minor corrective items within fifteen (15) days after the date of the District's acceptance of completion, District shall withhold from the final payment one hundred fifty percent (150%) of an

estimate of the amount sufficient to complete the corrective items, as determined by District, until the item(s) are completed.

20.1.4 At the end of the 15-day period, if there are any items remaining to be corrected, District may elect to proceed as provided herein related to adjustments to Contract Price, and/or District's right to perform the Work of the Contractor.

20.2 Close-Out/Certification Procedures

20.2.1 Punch List

The Contractor shall notify the Architect when Contractor considers the Work complete. Upon notification, Architect will prepare a list of minor items to be completed or corrected ("Punch List"). The Contractor and/or its Subcontractors shall proceed promptly to complete and correct items on the Punch List. Failure to include an item on Punch List does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

20.2.2 Close-Out/Certification Requirements

20.2.2.1 Utility Connections

Buildings shall be connected to water, gas, sewer, and electric services, complete and ready for use. Service connections shall be made and existing services reconnected.

20.2.2.2 Record Drawings and Record Specifications

20.2.2.2.1 Contractor shall provide exact Record Drawings of the Work ("As-Builts") and Record Specifications upon completion of the Project and as a condition precedent to approval of final payment.

20.2.2.2.2 Contractor shall obtain the Inspector's approval of the corrected prints and employ a competent draftsman to transfer the Record Drawings information to the most current version of AutoCAD that is, at that time, currently utilized for plan check submission by either the District, the Architect, OPSC, and/or DSA, and print a complete set of transparent sepias. When completed, Contractor shall deliver corrected sepias and diskette/CD/other

20.2.2.2.3 Contractor is liable and responsible for any and all inaccuracies in the Record Drawings and Record Specifications, even if inaccuracies become evident at a future date.

20.2.2.3 Construction Storm Water Permit, if applicable

Contractor shall submit to District all electronic or hard copy records required by the Construction Storm Water Permit, if applicable, within seven (7) days of Completion of the Project.

20.2.2.4 Maintenance Manuals: Contractor shall prepare all operation and maintenance manuals and date as indicated in the Specifications.

20.2.2.5 Source Programming: Contractor shall provide all source programming for all items in the Project.

20.2.2.6 Verified Reports: Contractor shall completely and accurately fill out and file forms DSA 6-C or DSA 152 (or current form), as appropriate. Refer to section 4-336 and section 4-343 of Part 1, Title 24 of the California Code of Regulations.

20.3 Final Inspection

20.3.1 Contractor shall comply with Punch List procedures as provided herein, and maintain the presence of a Project Superintendent and Project Manager until the Punch List is complete to ensure proper and timely completion of the Punch List. Under no circumstances shall Contractor demobilize its forces prior to completion of the Punch List without District's prior written approval. Upon receipt of Contractor's written notice that all of the Punch List items have been fully completed and the Work is ready for final inspection and District acceptance, Architect and Project Inspector will inspect the Work and shall submit to Contractor and District a final inspection report noting the Work, if any, required in order to complete in accordance with the Contract Documents. Absent unusual circumstances, this report shall consist of the Punch List items not yet satisfactorily completed.

20.3.2 Upon Contractor's completion of all items on the Punch List and any other uncompleted portions of the Work, the Contractor shall notify the District and Architect, who shall again inspect such Work. If the Architect finds the Work complete and acceptable under the Contract Documents, the Architect will notify Contractor, who shall then jointly submit to the Architect and the District its final Application for Payment.

20.3.3 Final Inspection Requirements

20.3.3.1 Before calling for final inspection, Contractor shall determine that the following have been performed:

20.3.3.1.1 The Work has been completed.

20.3.3.1.2 All life safety items are completed and in working order.

20.3.3.1.3 Mechanical and electrical Work including, without limitation, security system, data, and fire alarm, are complete and tested, fixtures are in place, connected, and ready for tryout.

20.3.3.1.4 Electrical circuits scheduled in panels and disconnect switches labeled.

20.3.3.1.5 Painting and special finishes complete.

20.3.3.1.6 Doors complete with hardware, cleaned of protective film, relieved of sticking or binding, and in working order.

20.3.3.1.7 Tops and bottoms of doors sealed.

20.3.3.1.8 Floors waxed and polished as specified.

20.3.3.1.9 Broken glass replaced and glass cleaned.

20.3.3.1.10 Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.

20.3.3.1.11 Work cleaned, free of stains, scratches, and other foreign matter, and damaged and broken material replaced.

20.3.3.1.12 Finished and decorative work shall have marks, dirt, and superfluous labels removed.

20.3.3.1.13 Final cleanup, as provided herein.

20.4 Costs of Multiple Inspections

More than two (2) requests of the District to make a final inspection shall be considered an additional service of District, Architect, Construction Manager, and/or Project Inspector, and all subsequent costs will be invoiced to Contractor and if funds are available, withheld from remaining payments.

20.5 Partial Occupancy or Use Prior to Completion

20.5.1 District's Rights to Occupancy

The District may occupy or use any completed or partially completed portion of the Work at any stage, and such occupancy shall not constitute the District's Final Acceptance of any part of the Work. Neither the District's Final Acceptance, the making of Final Payment, any provision in Contract Documents, nor the use or occupancy of the Work, in whole or in part, by District shall constitute acceptance of Work not in accordance with the Contract Documents nor relieve the Contractor or the Contractor's Performance Bond Surety from liability with respect to any warranties or responsibility for faulty or defective Work or materials, equipment and workmanship incorporated therein. In the event that the District occupies or uses any completed or partially completed portion of the Work, the Contractor shall remain responsible for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents unless the Contractor requests in writing, and the District agrees, to otherwise divide those responsibilities. Any dispute as to responsibilities shall be resolved pursuant to the Claims and Disputes provisions herein, with the added provision that during the dispute process, the District shall have the right to occupy or use any portion of the Work that it needs or desires to use.

20.5.2 Inspection Prior to Occupancy or Use

Immediately prior to partial occupancy or use, the District, the Contractor, and the 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.

20.5.3 No Waiver

Unless otherwise agreed upon, partial or entire occupancy or use of a portion or portions of the Work shall not constitute beneficial occupancy or District's acceptance of the Work not complying with the requirements of the Contract Documents.

21. FINAL PAYMENT AND RETENTION

21.1 Final Payment

Upon receipt and approval of a valid and final Application for Payment, the Architect will issue a final Certificate of Payment. The District shall thereupon jointly inspect the Work and either accept the Work as complete or notify the Architect and the Contractor in writing of reasons why the Work is not complete. Upon District's acceptance of the Work of the Contractor as fully complete by the Governing Board of the District (that, absent unusual circumstances, will occur when the Punch List items have been satisfactorily completed), the District shall record a Notice of Completion with the County Recorder, and the Contractor shall, upon receipt of final payment from the District, pay the amount due Subcontractors.

21.2 Prerequisites for Final Payment

The following conditions must be fulfilled prior to Final Payment:

21.2.1A full release of all Stop Payment Notices served in connection with the Work shall be submitted by Contractor.

21.2.2A duly completed and executed conditional waiver and release upon final payment compliant with Civil Code section 8136, from the Contractor and each subcontractor of any tier and supplier to be paid from the final payment.

21.2.3A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134, from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payments.

21.2.4A duly completed and executed Document 00 65 19.26, "AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS" from the Contractor.

21.2.5The Contractor shall have made all corrections to the Work that are required to remedy any defects therein, to obtain compliance with the Contract Documents or any requirements of applicable codes and ordinances, or to fulfill any of the orders or directions of District required under the Contract Documents.

21.2.6Each Subcontractor shall have delivered to the Contractor all written guarantees, warranties, applications, and bonds required by the Contract Documents for its portion of the Work.

21.2.7Contractor must have completed all requirements set forth under "Close-Out/Certification Procedures," including, without limitation, submission of an approved set of complete Record Drawings.

21.2.8Architect shall have issued its written approval that final payment can be made.

21.2.9 The Contractor shall have delivered to the District all manuals and materials required by the Contract Documents, which must be approved by the District.

21.2.10 The Contractor shall have completed final clean-up as provided herein.

21.3 Retention

21.3.1 The retention, less any amounts disputed by the District or that the District has the right to withhold pursuant to provisions herein, shall be paid:

21.3.1.1 After approval by the Architect of the Application and Certificate of Payment,

21.3.1.2 After the satisfaction of the conditions set forth herein, and

21.3.1.3 After forty-five (45) days after the recording of the Notice of Completion by District.

21.3.2 No interest shall be paid on any retention, or on any amounts withheld due to a failure of the Contractor to perform, in accordance with the terms and conditions of the Contract Documents, except as provided to the contrary in any Escrow Agreement between the District and the Contractor pursuant to Public Contract Code section 22300.

21.4 Substitution of Securities

The District will permit the substitution of securities in accordance with the provisions of Public Contract Code section 22300.

22. UNCOVERING OF WORK

If a portion of the Work is covered without Inspector or Architect approval or not in compliance with the Contract Documents, it must, if required in writing by the District, the Project Inspector, or the Architect, be uncovered for the Project Inspector's or the Architect's observation and be corrected, replaced, and/or recovered at the Contractor's expense without change in the Contract Price or Contract Time.

23. NONCONFORMING WORK AND CORRECTION OF WORK

23.1 Nonconforming Work

23.1.1 Contractor shall promptly remove from Premises all Work identified by District as failing to conform to the Contract Documents whether incorporated or not. Contractor shall promptly replace and re-execute its own Work to comply with the Contract Documents without additional expense to the District and shall bear the expense of making good all work of other contractors destroyed or damaged by any removal or replacement pursuant hereto and/or any delays to the District or other Contractors caused thereby.

23.1.2 If Contractor does not remove Work that District has identified as failing to conform to the Contract Documents within a reasonable time, not to exceed **FORTY-EIGHT (48)** hours, District may remove it and may store any material at

Contractor's expense. If Contractor does not pay expense(s) of that removal within ten (10) days' time thereafter, District may, upon ten (10) days' written notice, sell any material at auction or at private sale and shall deduct all costs and expenses incurred by the District and/or District may withhold those amounts from payment(s) to Contractor.

23.2 Correction of Work

23.2.1 Correction of Rejected Work

Pursuant to the notice provisions herein, the Contractor shall immediately correct the Work rejected by the District, the Architect, or the Project Inspector as failing to conform to the requirements of the Contract Documents, whether observed before or after Completion and whether or not fabricated, installed, or completed. The Contractor shall bear costs of correcting the rejected Work, including additional testing, inspections, and compensation for the Inspector's or the Architect's services and expenses made necessary thereby.

23.2.2 One-Year Warranty Corrections

If, within one (1) year after the date of Completion of the Work or a designated portion thereof, or after the date for commencement of warranties established hereunder, or by the terms of an 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 receipt of written notice from the District to do so. This period of one (1) year shall be extended with respect to portions of the Work first performed after Completion by the period of time between Completion and the actual performance of the Work. This obligation hereunder shall survive District's acceptance of the Work under the Contract and termination of the Contract. The District shall give such notice promptly after discovery of the condition.

23.3 District's Right to Perform Work

23.3.1 If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this contract, the District, after **FORTY-EIGHT (48)** hours written notice to the Contractor, may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

23.3.2 If it is found at any time, before or after completion of the Work, that Contractor has varied from the Drawings and/or Specifications, including, but not limited to, variation in material, quality, form, or finish, or in the amount or value of the materials and labor used, District may require at its option:

23.3.2.1 That all such improper Work be removed, remade or replaced, and all work disturbed by these changes be made good by Contractor at no additional cost to the District;

23.3.2.2 That the District deduct from any amount due Contractor the sum of money equivalent to the difference in value between the work performed and that called for by the Drawings and Specifications; or

23.3.2.3 That the District exercise any other remedy it may have at law or under the Contract Documents, including but not limited to the District hiring its own forces or another contractor to replace the Contractor's nonconforming Work, in which case the District shall either issue a deductive Change Order, a Construction Change Directive, or invoice the Contractor for the cost of that work. Contractor shall pay any invoices within thirty (30) days of receipt of same or District may withhold those amounts from payment(s) to Contractor.

24. TERMINATION AND SUSPENSION

24.1 District's Request for Assurances

If District at any time reasonably believes Contractor is or may be in default under this Contract, District may in its sole discretion notify Contractor of this fact and request written assurances from Contractor of performance of Work and a written plan from Contractor to remedy any potential default under the terms this Contract that the District may advise Contractor of in writing. Contractor shall, within ten (10) calendar days of District's request, deliver a written cure plan that meets the District's requirements in its request for assurances. Contractor's failure to provide such written assurances of performance and the required written plan, within ten (10) calendar days of request, will constitute a material breach of this Contract sufficient to justify termination for cause.

24.2 District's Right to Terminate Contractor for Cause

24.2.1 Grounds for Termination: The District, in its sole discretion, may terminate the Contract and/or terminate the Contractor's right to perform the work of the Contract based upon any of the following:

24.2.1.1 Contractor refuses or fails to execute the Work or any separable part thereof with sufficient diligence as will ensure its completion within the time specified or any extension thereof, or

24.2.1.2 Contractor fails to complete said Work within the time specified or any extension thereof, or

24.2.1.3 Contractor persistently fails or refuses to perform Work or provide material of sufficient quality as to be in compliance with Contract Documents; or

24.2.1.4 Contractor persistently refuses, or repeatedly fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials to complete the Work in the time specified; or

24.2.1.5 Contractor fails to make prompt payment to Subcontractors, or for material, or for labor; or

24.2.1.6 Contractor persistently disregards laws, or ordinances, or instructions of District; or

24.2.1.7 Contractor fails to supply labor, including that of Subcontractors, that is sufficient to prosecute the Work or that can work in harmony with all other elements of labor employed or to be employed on the Work; or

24.2.1.8 Contractor or its Subcontractor(s) is/are otherwise in breach, default, or in substantial violation of any provision of this Contract, including but not limited to a lapse in licensing or registration.

24.2.2 Notification of Termination

24.2.2.1 Upon the occurrence at District's sole determination of any of the above conditions, District may, without prejudice to any other right or remedy, serve written notice upon Contractor and its Surety of District's termination of this Contract and/or the Contractor's right to perform the work of the Contract. This notice will contain the reasons for termination. Unless, within three (3) days after the service of the notice, any and all condition(s) shall cease, and any and all violation(s) shall cease, or arrangement satisfactory to District for the correction of the condition(s) and/or violation(s) be made, this Contract and/or the Contractor's right to perform the Work of the Contract shall cease and terminate. Upon termination, Contractor shall not be entitled to receive any further payment until the entire Work is finished.

24.2.2.2 Upon Termination, District may immediately serve written notice of tender upon Surety whereby Surety shall have the right to take over and perform this Contract only if Surety:

24.2.2.2.1 Within three (3) days after service upon it of the notice of tender, gives District written notice of Surety's intention to take over and perform this Contract; and

24.2.2.2.2 Commences performance of this Contract within three (3) days from date of serving of its notice to District.

24.2.2.3 Surety shall not utilize Contractor in completing the Project if the District notifies Surety of the District's objection to Contractor's further participation in the completion of the Project. Surety expressly agrees that any contractor which Surety proposes to fulfill Surety's obligations is subject to District's approval. District's approval shall not be unreasonably withheld, conditioned or delayed.

24.2.2.4 If Surety fails to notify District or begin performance as indicated herein, District may take over the Work and execute the Work to completion by any method it may deem advisable at the expense of Contractor and/or its Surety. Contractor and/or its Surety shall be liable to District for any excess cost or other damages the District incurs thereby. Time is of the essence in this Contract. If the District takes over the Work as herein provided, District may, without liability for so doing, take possession of and utilize in completing the Work such materials, appliances, plan, and other property belonging to Contractor as may be on the Site of the Work, in bonded storage, or previously paid for.

24.3 Termination of Contractor for Convenience

24.3.1 District in its sole discretion may terminate the Contract in whole or in part upon three (3) days' written notice to the Contractor.

24.3.2 Upon notice, Contractor shall:

24.3.2.1 Cease operations as directed by the District in the notice;

24.3.2.2 Take necessary actions for the protection and preservation of the Work as soon as possible; and

24.3.2.3 Terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

24.3.3 Within 30 days of the notice, Contractor submit to the District a payment application for the actual cost for labor, materials, and services performed, including all Contractor's and Subcontractor(s)' mobilization and/or demobilization costs, that is unpaid. Contractor shall have no claims against the District except for the actual cost for labor, materials, and services performed that adequately documented through timesheets, invoices, receipts, or otherwise. District shall pay all undisputed invoice(s) for work performed until the notice of termination.

24.3.4 Under a termination for convenience, the District retains the right to all the options available to the District if there is a termination for cause.

24.4 Effect of Termination

24.4.1 Contractor shall, only if ordered to do so by the District, immediately remove from the Site all or any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The District retains the right, but not the obligation, to keep and use any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The Contractor and its Surety shall be liable upon the Performance Bond for all damages caused to the District by reason of the Contractor's failure to complete the Contract.

24.4.2 In the event that the District shall perform any portion of, or the whole of the Work, pursuant to the provisions of the General Conditions, the District shall not be liable nor account to the Contractor in any way for the time within which, or the manner in which, the Work is performed by the District or for any changes the District may make in the Work or for the money expended by the District in satisfying claims and/or suits and/or other obligations in connection with the Work.

24.4.3 In the event termination for cause is determined to have not been for cause, the termination shall be deemed to have been a termination for convenience effective as of the same date as the purported termination for cause.

24.4.4 In the event that the Contract is terminated for any reason, no allowances or compensation will be granted for the loss of any anticipated profit by the Contractor or any impact or impairment of Contractor's bonding capacity.

24.4.5 If the expense to the District to finish the Work exceeds the unpaid Contract Price, Contractor and Surety shall pay difference to District within twenty-one (21) days of District's request.

24.4.6The District shall have the right (but shall have no obligation) to assume and/or assign to a general contractor or construction manager or other third party who is qualified and has sufficient resources to complete the Work, the rights of the Contractor under its subcontracts with any or all Subcontractors. In the event of an assumption or assignment by the District, no Subcontractor shall have any claim against the District or third party for Work performed by Subcontractor or other matters arising prior to termination of the Contract. The District or any third party, as the case may be, shall be liable only for obligations to the Subcontractor arising after assumption or assignment. Should the District so elect, the Contractor shall execute and deliver all documents and take all steps, including the legal assignment of its contractual rights, as the District may require, for the purpose of fully vesting in the District the rights and benefits of its Subcontractor under Subcontracts or other obligations or commitments. All payments due the Contractor hereunder shall be subject to a right of offset by the District for expenses and damages suffered by the District as a result of any default, acts, or omissions of the Contractor. Contractor must include this assignment provision in all of its contracts with its Subcontractors.

24.4.7The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to District.

24.5 Emergency Termination of Public Contracts Act of 1949

24.5.1This Contract is subject to termination as provided by sections 4410 and 4411 of the Government Code of the State of California, being a portion of the Emergency Termination of Public Contracts Act of 1949.

24.5.1.1 Section 4410 of the Government Code states:

In the event a national emergency occurs, and public work, being performed by contract, is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor, as the result of an order or a proclamation of the President of the United States, or of an order of any federal authority, and the circumstances or conditions are such that it is impracticable within a reasonable time to proceed with a substantial portion of the work, then the public agency and the contractor may, by written agreement, terminate said contract.

24.5.1.2 Section 4411 of the Government Code states:

Such an agreement shall include the terms and conditions of the termination of the contract and provision for the payment of compensation or money, if any, which either party shall pay to the other or any other person, under the facts and circumstances in the case.

24.5.2Compensation to the Contractor shall be determined at the sole discretion of District on the basis of the reasonable value of the Work done, including preparatory work. As an exception to the foregoing and at the District's discretion, in the case of any fully completed separate item or portion of the Work for which there is a separate previously submitted unit price or item on the accepted schedule of values, that price shall control. The District, at its sole discretion, may adopt the Contract Price as the reasonable value of the work done or any portion thereof.

24.6 Suspension of Work

24.6.1 District in its sole discretion may suspend, delay or interrupt the Work in whole or in part for such period of time as the District may determine upon three (3) days written notice to the Contractor.

24.6.1.1 An adjustment may be made for changes in the cost of performance of the Work caused by any such suspension, delay or interruption. No adjustment shall be made to the extent:

24.6.1.1.1 That performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible; or

24.6.1.1.2 That an equitable adjustment is made or denied under another provision of the Contract; or

24.6.1.1.3 That the suspension of Work was the direct or indirect result of Contractor's failure to perform any of its obligations hereunder.

24.6.1.2 Any adjustments in cost of performance may have a fixed or percentage fee as provided in the section on Format for Proposed Change Order herein. This amount shall be full compensation for all Contractor's and its Subcontractor(s)' changes in the cost of performance of the Contract caused by any such suspension, delay or interruption.

25. CLAIMS PROCESS

25.1 Obligation to File Claims for Disputed Work

25.1.1 Should Contractor otherwise seek extra time or compensation for any reason whatsoever ("Disputed Work"), then Contractor shall first follow procedures set forth in the Contract Documents including, without limitation, Articles 15, 16 and 17, all of which are conditions precedent to submitting a Claim pursuant to Article 25. . A Notice of Delay or Proposed Change Order are less formal procedures that proceed the formal claim and do not constitute a Claim. A Claim also does not include correspondence, RFIs, vouchers, invoices, progress payment applications, or other routine or authorized form of requests for progress payments in compliance with the Contract. If a dispute remains, then Contractor shall give written notice to District that expressly invokes this Article 25 within the time limits set forth herein.

25.1.2 Contractor's sole and exclusive remedy for Disputed Work is to file a written claim setting forth Contractor's position as required herein within the time limits set forth herein.

25.2 Duty to Perform during during Claims Process

Contractor and its subcontractors shall continue to perform its Work under the Contract including the disputed work, and shall not cause a delay of the Work during any dispute, claim, negotiation, mediation, or arbitration proceeding, except by written agreement by the District.

25.3 Definition of a Claim

25.3.1 Pursuant to Public Contract Code section 9204, the term "Claim" means a separate demand by the Contractor, sent by registered mail or certified mail with return receipt requested, for one or more of the following:

25.3.1.1 A time extension, including without limitation, for relief of damages or penalties for delay assessed by the District under the Contract;

25.3.1.2 Payment by the District of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or to which Contractor is not otherwise entitled to; or

25.3.1.3 An amount of payment disputed by the District.

25.4 Claims Presentation

25.4.1 Form and Contents of Claim

25.4.1.1 If Contractor intends to submit a Claim for an increase in the Contract Price and/or Contract Time for any reason including, without limitation, the acts of District or its agents, Contractor shall, within thirty (30) days after the event giving rise to the Claim, give notice of the Claim ("Notice of Potential Claim") in writing specifically identifying Contractor is invoking this Article 25 Claims Presentation. The Notice of Potential Claim shall provide Contractor's preliminary request for an adjustment to the Contract Price and/or Contract Time, with a description of the grounds therefore.

25.4.1.2 Within thirty (30) days after serving the written Notice of Potential Claim, Contractor shall provide a Claim including an itemized statement of the details and amounts of its Claim for any increase in the Contract Price of Contract Time as provided below, including a Time Impact Analysis and any and all other documentation substantiating Contractor's claimed damages:

25.4.1.2.1 The issues, events, conditions, circumstances and/or causes giving rise to the dispute, and shall show, in detail, the cause and effect of same;

25.4.1.2.2 Citation to provisions in the Contract Documents, statute sections, and/or case law entitling Contractor to an increase in the Contract Price or Contract Time;

25.4.1.2.3 The pertinent dates and/or durations and actual and/or anticipated effects on the Contract Price, Contract Schedule milestones and/or Contract Time adjustments;

25.4.1.2.4 The Time Impact Analysis of all time delays that shows actual time impact on the critical path; and

25.4.1.2.5 The line-item costs for labor, material, and/or equipment, if applicable, for all cost impacts priced like a change order according to Article

17 and must be updated monthly as to cost and entitlement if a continuing claim.

25.4.1.3 The Claim shall include the following certification by the Contractor:

25.4.1.3.1 The undersigned Contractor certifies under penalty of perjury that the attached dispute is made in good faith; that the supporting data is accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the adjustment for which Contractor believes the District is liable; and that I am duly authorized to certify the dispute on behalf of the Contractor.

25.4.1.3.2 Furthermore, Contractor understands that the value of the attached dispute expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from the Work performed on the Project, additional time required on the Project and/or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor may not separately recover for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

25.4.2 Contractor shall bear all costs incurred in the preparation and submission of a Claim.

25.4.3 Failure to timely submit a Claim and the requisite supporting documentation shall constitute a waiver of Contractor's claim(s) against the District and Contractor's Claims for compensation or an extension of time shall be deemed waived, released, and discharged as to any entitlement for adjustment to the Contract Price and. or Contract Time.

25.5 Claim Resolution pursuant to Public Contract Code section 9204

Contractor may request to waive the claims procedure under Public Contract Code section 9204 and proceed directly to the commencement of a civil action or binding arbitration. If Contractor chooses to proceed, Contractor shall comply with the following steps.

25.5.1 STEP 1:

25.5.1.1 Upon receipt of a Claim by registered or certified mail, return receipt requested, including the documents necessary to substantiate it, the District shall conduct a reasonable review of the Claim and, within a period not to exceed 45 days, shall provide the Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Upon receipt of a Claim, the District and Contractor may, by mutual agreement, extend the time period to provide a written statement. If the District needs approval from its governing body to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the Claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of Claim sent by registered mail or certified mail, return receipt requested, the District shall have up to three (3) days following the next duly publicly noticed meeting of the governing body after the 45-day period, or

extension, expires to provide Contractor a written statement identifying the disputed portion and the undisputed portion.

25.5.1.1.1 Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this section shall bear interest at seven percent (7%) per annum.

25.5.1.2 Upon receipt of a Claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable. In this instance, District and Contractor must comply with the sections below regarding Public Contract Code section 20104 et seq. and Government Code Claim Act Claims.

25.5.1.3 If the District fails to issue a written statement, or to otherwise meet the time requirements of this section, this shall result in the Claim being deemed rejected in its entirety. A claim that is denied by reason of the District's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of Contractor.

25.5.2STEP 2:

25.5.2.1 If Contractor disputes the District's written response, or if the District fails to respond to a Claim within the time prescribed, Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the District shall schedule a meet and confer conference within 30 days for settlement of the dispute. Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the District shall provide the Contractor a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed.

25.5.2.1.1.1 Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this section shall bear interest at seven percent (7%) per annum.

25.5.3STEP 3:

25.5.3.1 Any disputed portion of the claim, as identified by Contractor in writing, shall be submitted to nonbinding mediation, with the District and Contractor sharing the associated costs equally. The District and Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.

25.5.3.1.1 For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

25.5.3.2 Unless otherwise agreed to by the District and Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Public Contract Code section 20104.4 to mediate after litigation has been commenced.

25.5.4 STEP 4:

25.5.4.1 If mediation under this section does not resolve the parties' dispute, the District may, but does not require arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program.

25.6 Subcontractor Pass-Through Claims

25.6.1 If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a District because privity of contract does not exist, the contractor may present to the District a Claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that Contractor present a Claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the Claim be presented to the District shall furnish reasonable documentation to support the Claim.

25.6.2 Within 45 days of receipt of this written request from a subcontractor, Contractor shall notify the subcontractor in writing as to whether the Contractor presented the Claim to the District and, if Contractor did not present the Claim, provide the subcontractor with a statement of the reasons for not having done so.

25.6.3 The Contractor shall bind all its Subcontractors to the provisions of this section and will hold the District harmless against Claims by Subcontractors.

25.7 Government Code Claim Act Claim

25.7.1 If a claim, or any portion thereof, remains in dispute upon satisfaction of all applicable Claim Resolution requirements the Contractor shall comply with all claims presentation requirements as provided in Chapter 1 (commencing with section 900) and Chapter 2 (commencing with section 910) of Part 3 of Division 3.6 of Title 1 of Government Code as a condition precedent to the Contractor's right to bring a civil action against the District.

25.7.2 Contractor shall bear all costs incurred in the preparation, submission and administration of a Claim. Any claims presented in accordance with the Government Code must affirmatively indicate Contractor's prior compliance with the claims procedure herein of the claims asserted.

25.7.3 For purposes of those provisions, the running of the time within which a claim pursuant to Public Contract Code section 20104.2 only must be presented to the District shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

25.8 Claim Resolution pursuant to Public Contract Code section 20104 et seq.

25.8.1 In the event of a disagreement between the parties as to performance of the Work, the interpretation of this Contract, or payment or nonpayment for Work performed or not performed, the parties shall attempt to resolve all Claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between Contractor and District by those procedures set forth in Public Contract Code section 20104, et seq., to the extent applicable.

25.8.1.1 Contractor shall file with the District any written Claim, including the documents necessary to substantiate it, upon the application for final payment.

25.8.1.2 For claims of less than fifty thousand dollars (\$50,000), the District shall respond in writing within forty-five (45) days of receipt of the Claim or may request in writing within thirty (30) days of receipt of the Claim any additional documentation supporting the claim or relating to defenses or claims the District may have against the Contractor.

25.8.1.2.1 If additional information is required, it shall be requested and provided by mutual agreement of the parties.

25.8.1.2.2 District's written response to the documented Claim shall be submitted to the Contractor within fifteen (15) days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor to produce the additional information, whichever is greater.

25.8.1.3 For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the District shall respond in writing to all written Claims within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the Claim any additional documentation supporting the Claim or relating to defenses or claims the District may have against the Contractor.

25.8.1.3.1 If additional information is required, it shall be requested and provided upon mutual agreement of the District and the Contractor.

25.8.1.3.2 The District's written response to the claim, as further documented, shall be submitted to the Contractor within thirty (30) days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor to produce the additional information or requested documentation, whichever is greater.

25.8.1.4 If Contractor disputes the District's written response, or the District fails to respond within the time prescribed, Contractor may so notify the District,

in writing, either within fifteen (15) days of receipt of the District's response or within fifteen (15) days of the District's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the District shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute.

25.8.1.5 Following the meet and confer conference, if the claim or any portion of it remains in dispute, the Contractor may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions the running of the time within which a claim must be filed shall be tolled from the time the Contractor submits its written Claim until the time the Claim is denied, including any period of time utilized by the meet and confer process.

25.8.1.6 For any civil action filed to resolve claims filed pursuant to this section, within sixty (60) days, but no earlier than thirty (30) days, following the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within fifteen (15) days by both parties of a disinterested third person as mediator, shall be commenced within thirty (30) days of the submittal, and shall be concluded within fifteen (15) days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

25.8.1.7 If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of the Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986, (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

25.8.1.8 The District shall not fail to pay money as to any portion of a Claim which is undisputed except as otherwise provided in the Contract Documents. In any suit filed pursuant to this section, the District shall pay interest due at the legal rate on any arbitration award or judgment. Interest shall begin to accrue on the date the suit is filed in a court of law.

25.8.2 Contractor shall bind its Subcontractors to the provisions of this Section and will hold the District harmless against disputes by Subcontractors.

25.9 Claim Procedure Compliance

25.9.1 Failure to submit and administer claims as required in Article 25 shall waive Contractor's right to claim on any specific issues not included in a timely submitted claim. Claim(s) not raised in a timely protest and timely claim submitted under this Article 25 may not be asserted in any subsequent litigation, Government Code Claim, or legal action.

25.9.2 District shall not be deemed to waive any provision under this Article 25, if at District's sole discretion, a claim is administered in a manner not in accord with this Article 25. Waivers or modifications of this Article 25 may only be made by a signed change order approved as to form by legal counsel for both District and Contractor; oral or implied modifications shall be ineffective.

25.10 Claim Resolution Non-Applicability

25.10.1 The procedures for dispute and claim resolutions set forth in this Article shall not apply to the following:

25.10.1.1 Personal injury, wrongful death or property damage claims;

25.10.1.2 Latent defect or breach of warranty or guarantee to repair;

25.10.1.3 Stop payment notices;

25.10.1.4 District's rights set forth in the Article on Suspension and Termination;

25.10.1.5 Disputes arising out of labor compliance enforcement by the Department of Industrial Relations; or

25.10.1.6 District rights and obligations as a public entity set forth in applicable statutes; provided, however, that penalties imposed against a public entity by statutes, including, but not limited to, Public Contract Code sections 20104.50 and 7107, shall be subject to the Claim Resolution requirements provided in this Article.

25.11 Attorney's Fees

Should litigation be necessary to enforce any terms or provisions of this Agreement, then each party shall bear its own litigation and collection expenses, witness fees, court costs, and attorney's fees.

26. STATE LABOR, WAGE & HOUR, APPRENTICE, AND RELATED PROVISIONS

26.1 Labor Compliance and Enforcement

Since this Project is subject to labor compliance and enforcement by the Department of Industrial Relations ("DIR"), Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code and Title 8 of the California Code of Regulations, including, without limitation, the requirement that the Contractor and all Subcontractors shall timely furnish complete and accurate electronic certified payroll records directly to the DIR. The District may not issue payment if this requirement is not met.

26.2 Wage Rates, Travel, and Subsistence

26.2.1 Pursuant to the provisions of Article 2 (commencing at section 1770), Chapter 1, Part 7, Division 2, of the Labor Code, the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in

which this public work is to be performed for each craft, classification, or type of worker needed to execute this Contract are on file at the District's principal office and copies will be made available to any interested party on request. Contractor shall obtain and post a copy of these wage rates at the job site.

26.2.2 Holiday and overtime work, when permitted by law, shall be paid for at the general prevailing rate of per diem wages for holiday and overtime work on file with the Director of the Department of Industrial Relations, unless otherwise specified. The holidays upon which those rates shall be paid need not be specified by the District, but shall be all holidays recognized in the applicable collective bargaining agreement. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code.

26.2.3 Contractor shall pay and shall cause to be paid each worker engaged in Work on the Project the general prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between Contractor or any Subcontractor and such workers.

26.2.4 If during the period this bid is required to remain open, the Director of the Department of Industrial Relations determines that there has been a change in any prevailing rate of per diem wages in the locality in which the Work under the Contract is to be performed, such change shall not alter the wage rates in the Notice to Bidders or the Contract subsequently awarded.

26.2.5 Pursuant to Labor Code section 1775, Contractor shall, as a penalty to District, forfeit the statutory amount (believed by the District to be currently up to two hundred dollars (\$200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates, determined by the District and/or the Director, for the work or craft in which that worker is employed for any public work done under Contract by Contractor or by any Subcontractor under it. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by Contractor.

26.2.6 Any worker employed to perform Work on the Project, which Work is not covered by any classification listed in the general prevailing wage rate of per diem wages determined by the Director, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to Work to be performed by him, and such minimum wage rate shall be retroactive to time of initial employment of such person in such classification.

26.2.7 Pursuant to Labor Code section 1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time, subsistence pay, and apprenticeship or other training programs authorized by Labor Code section 3093, and similar purposes.

26.2.8 Contractor shall post at appropriate conspicuous points on the Site of Project, a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned. In addition, Contractor shall

post a sign-in log for all workers and visitors to the Site, a list of all subcontractors of any tier on the Site, and the required Equal Employment Opportunity poster(s).

26.3 Hours of Work

26.3.1 As provided in article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code, eight (8) hours of labor shall constitute a legal day's work. The time of service of any worker employed at any time by Contractor or by any Subcontractor on any subcontract under this Contract upon the Work or upon any part of the Work contemplated by this Contract shall be limited and restricted by Contractor to eight (8) hours per day, and forty (40) hours during any one week, except as hereinafter provided. Notwithstanding the provisions hereinabove set forth, Work performed by employees of Contractor in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.

26.3.2 Contractor shall keep and shall cause each Subcontractor to keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by Contractor in connection with the Work or any part of the Work contemplated by this Contract. The record shall be kept open at all reasonable hours to the inspection of District and to the Division of Labor Standards Enforcement of the DIR.

26.3.3 Pursuant to Labor Code section 1813, Contractor shall as a penalty to the District forfeit the statutory amount (believed by the District to be currently twenty-five dollars (\$25)) for each worker employed in the execution of this Contract by Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code.

26.3.4 Any Work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to the District.

26.4 Payroll Records

26.4.1 Contractor shall upload, and shall cause each Subcontractor performing any portion of the Work under this Contract to upload, an accurate and complete certified payroll record ("CPR") electronically using DIR's eCPR System by uploading the CPRs by electronic XML file or entering each record manually using the DIR's iform (or current form) online on no less than every 30 days while Work is being performed and within 30 days after the final day of Work performed on the Project and within ten (10) days of any request by the District or Labor Commissioner at <http://www.dir.ca.gov/Public-Works/Certified-Payroll-Reporting.html> or current application and URL, showing the name, address, social security number, work classification, straight-time, and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each Subcontractor in connection with the Work.

26.4.1.1 The CPRs enumerated hereunder shall be filed directly with the DIR on a weekly basis or to the requesting party, whether the District or DIR, within ten (10) days after receipt of each written request. The CPRs from the Contractor and each Subcontractor for each week shall be provided on or before Wednesday of the week following the week covered by the CPRs. District may not make any payment to Contractor until:

26.4.1.1.1 Contractor and/or its Subcontractor(s) provide CPRs acceptable to the DIR; and

26.4.1.1.2 Any delay in Contractor and/or its Subcontractor(s) providing CPRs to the DIR in a timely manner may directly delay Contractor's payment.

26.4.2 All CPRs shall be available for inspection at all reasonable hours at the principal office of Contractor on the following basis:

26.4.2.1 A certified copy of an employee's CPR shall be made available for inspection or furnished to the employee or his/her authorized representative on request.

26.4.2.2 CPRs shall be made available for inspection or furnished upon request to a representative of District, Division of Labor Standards Enforcement, Division of Apprenticeship Standards, and/or the DIR.

26.4.2.3 CPRs shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through the District, Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested CPRs have not been provided pursuant to the provisions herein, the requesting party shall, prior to being provided the records, reimburse the costs of preparation by Contractor, Subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of Contractor.

26.4.3 Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by District, Division of Apprenticeship Standards, or Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of Contractor awarded Contract or performing Contract shall not be marked or obliterated.

26.4.4 Contractor shall inform District of the location of the records enumerated hereunder, including the street address, city, and county, and shall, within five (5) working days, provide a notice of change of location and address.

26.4.5 In the event of noncompliance with the requirements of this section, Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects Contractor must comply with this section. Should noncompliance still be evident after the ten (10) day period, Contractor shall, as a penalty to District, forfeit up to one hundred dollars (\$100) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Labor Commissioner, these penalties shall be withheld from progress payments then due.

26.4.6 [RESERVED]

26.5 [RESERVED]

26.6 Apprentices

26.6.1 Contractor acknowledges and agrees that, if this Contract involves a dollar amount greater than or a number of working days greater than that specified in Labor Code section 1777.5, then this Contract is governed by the provisions of Labor Code Section 1777.5. It shall be the responsibility of Contractor to ensure compliance with this Article and with Labor Code section 1777.5 for all apprenticeship occupations.

26.6.2 Apprentices of any crafts or trades may be employed and, when required by Labor Code section 1777.5, shall be employed provided they are properly registered in full compliance with the provisions of the Labor Code.

26.6.3 Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he/she is employed, and shall be employed only at the work of the craft or trade to which she/he is registered.

26.6.4 Only apprentices, as defined in section 3077 of the Labor Code, who are in training under apprenticeship standards and written apprentice agreements under chapter 4 (commencing at section 3070), division 3, of the Labor Code, are eligible to be employed. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which he/she is training.

26.6.5 Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractors employing workers in any apprenticeable craft or trade in performing any Work under this Contract shall apply to the applicable joint apprenticeship committee for a certificate approving the Contractor or Subcontractor under the applicable apprenticeship standards and fixing the ratio of apprentices to journeymen employed in performing the Work.

26.6.6 Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractor may be required to make contributions to the apprenticeship program.

26.6.7 If Contractor or Subcontractor willfully fails to comply with Labor Code section 1777.5, then, upon a determination of noncompliance by the Administrator of Apprenticeship, it shall:

26.6.7.1 Be denied the right to bid on any subsequent project for one (1) year from the date of such determination;

26.6.7.2 Forfeit as a penalty to District the full amount as stated in Labor Code section 1777.7. Interpretation and enforcement of these provisions shall be in accordance with the rules and procedures of the California Apprenticeship Council and under the authority of the Chief of the Division of Apprenticeship Standards.

26.6.8 Contractor and all Subcontractors shall comply with Labor Code section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.

26.6.9 Contractor shall become fully acquainted with the law regarding apprentices prior to commencement of the Work. Special attention is directed to sections 1777.5, 1777.6, and 1777.7 of the Labor Code, and title 8, California Code of Regulations, section 200 et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, 9th floor, San Francisco, California 94102.

26.7 Non-Discrimination

26.7.1 Contractor herein agrees to comply with the provisions of the California Fair Employment and Housing Act as set forth in part 2.8 of division 3 of the California Government Code, commencing at section 12900; the Federal Civil Rights Act of 1964, as set forth in Public Law 88-352, and all amendments thereto; Executive Order 11246; and all administrative rules and regulations found to be applicable to Contractor and Subcontractor.

26.7.2 Special requirements for Federally Assisted Construction Contracts: During the performance of this Contract, Contractor agrees to incorporate in all subcontracts the provisions set forth in Chapter 60-1.4(b) of Title 41 published in Volume 33 No. 104 of the Federal Register dated May 28, 1968.

26.8 Labor First Aid

Contractor shall maintain emergency first aid treatment for Contractor's workers on the Project which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 *et seq.*) and the California Occupational Safety and Health Act of 1973 (Lab. Code, § 6300, *et seq.*; 8 Cal. Code of Regs., § 330, *et seq.*).

27. [RESERVED]

28. MISCELLANEOUS

28.1 Assignment of Antitrust Actions

28.1.1 Section 7103.5(b) of the Public Contract Code states:

In entering into a public works contract or subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, which assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties.

28.1.2 Section 4552 of the Government Code states:

In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder.

28.1.3 Section 4553 of the Government Code states:

If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

28.1.4 Section 4554 of the Government Code states:

Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action.

28.1.5 Under this Article, "public purchasing body" is District and "bidder" is Contractor.

28.2 Excise Taxes

If, under Federal Excise Tax Law, any transaction hereunder constitutes a sale on which a Federal Excise Tax is imposed and the sale is exempt from such Federal Excise Tax because it is a sale to a State or Local Government for its exclusive use, District, upon request, will execute documents necessary to show (1) that District is a political subdivision of the State for the purposes of such exemption, and (2) that the sale is for the exclusive use of District. No Federal Excise Tax for such materials shall be included in any Contract Price.

28.3 Taxes

Contract Price is to include any and all applicable sales taxes or other taxes that may be due in accordance with section 7051 et seq. of the Revenue and Taxation Code, Regulation 1521 of the State Board of Equalization or any other tax code that may be applicable.

28.4 Shipments

Contractor is responsible for any or all damage or loss to shipments until delivered and accepted on Site, as indicated in the Contract Documents. There must be no charge for

containers, packing, unpacking, drayage, or insurance. The total Contract Price shall be all inclusive (including sales tax) and no additional costs of any type will be considered.

28.5 Compliance with Government Reporting Requirements

If this Contract is subject to federal or other governmental reporting requirements because of federal or other governmental financing in whole or in part for the Project of which it is part, or for any other reason, Contactor shall comply with those reporting requirements at the request of the District at no additional cost.

END OF DOCUMENT

SPECIAL CONDITIONS

1. Mitigation Measures

Contractor shall comply with all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act. (Public Resources Code section 21000 *et seq.*)

2. Modernization Projects

2.1 Access. Access to the school buildings and entry to buildings, classrooms, restrooms, mechanical rooms, electrical rooms, or other rooms, for construction purposes, must be coordinated with District and onsite District personnel before Work is to start. Unless agreed to otherwise in writing, only a school custodian will be allowed to unlock and lock doors in existing building(s). The custodian will be available only while school is in session. If a custodian is required to arrive before 7:00 a.m. or leave after 3:30 p.m. to accommodate Contractor's Work, the overtime wages for the custodian will be paid by the Contractor, unless at the discretion of the District, other arrangements are made in advance.

2.2 Keys. Upon request, the District may, at its own discretion, provide keys to the school site for the convenience of the Contractor. The Contractor agrees to pay all expenses to re-key the entire school site and all other affected District buildings if the keys are lost or stolen, or if any unauthorized party obtains a copy of a key or access to the school.

2.3 Maintaining Services. The Contractor is advised that Work is to be performed in spaces regularly scheduled for instruction. Interruption and/or periods of shutdown of public access, electrical service, water service, lighting, or other utilities shall be only as arranged in advance with the District. Contractor shall provide temporary services to all facilities interrupted by Contractor's Work.

2.4 Maintaining Utilities. The Contractor shall maintain in operation during duration of Contract, drainage lines, storm drains, sewers, water, gas, electrical, steam, and other utility service lines within working area.

2.5 Confidentiality. Contractor shall maintain the confidentiality of all information, documents, programs, procedures and all other items that Contractor encounters while performing the Work. This requirement shall be ongoing and shall survive the expiration or termination of this Contract and specifically includes, without limitation, all student, parent, and employee disciplinary information and health information.

2.6 Work during Instructional Time. By submitting its bid, Contractor affirms that Work may be performed during ongoing instruction in existing facilities. If so, Contractor agrees to cooperate to the best of its ability to minimize any disruption to

school operations and any use of school facilities by the public up to, and including, rescheduling specific work activities, at no additional cost to District.

2.7 No Work during Student Testing. Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking State or Federally-required tests.

3. Badge Policy for Contractors

All Contractors doing work for the District will provide their workers with identification badges. These badges will be worn by all members of the Contractor's staff who are working in a District facility.

3.1 Badges must be filled out in full and contain the following information:

3.1.1 Name of Contractor

3.1.2 Name of Employee

3.1.3 Contractor's address and phone number

3.2 Badges are to be worn when the Contractor or his/her employees are on site and must be visible at all times. Contractors must inform their employees that they are required to allow District employees, the Architect, the Construction Manager, the Program Manager, or the Project Inspector to review the information on the badges upon request.

3.3 Continued failure to display identification badges as required by this policy may result in the individual being removed from the Project or assessment of fines against the Contractor.

4. Substitutions for Specified Items

Replace Section 1.7 in the General Conditions with the following provisions:

1.7.1 Whenever in the Specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words "or equal." Contractor may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or specified.

1.7.1.1 If the material, process, or article offered by Contractor is not, in the opinion of the District, substantially equal or better in every respect to that specified, then Contractor shall furnish the material, process, or article specified in the Specifications without any additional compensation or change order.

1.7.1.2 This provision shall not be applicable with respect to any material, product, thing or service for which District made findings and gave notice in accordance with Public Contract Code section 3400(c);

therefore, Contractor shall not be entitled to request a substitution with respect to those materials, products or services.

1.7.2 A request for a substitution shall be submitted as follows:

1.7.2.1 Contractor shall notify the District in writing of any request for a substitution at least ten (10) days prior to bid opening as indicated in the Instructions to Bidders.

1.7.2.2 Requests for Substitutions after award of the Contract shall be submitted within thirty-five (35) days of the date of the Notice of Award.

1.7.3 Within 35 days after the date of the Notice of Award, Contractor shall provide data substantiating a request for substitution of "an equal" item, including but not limited to the following:

1.7.3.1 All variations of the proposed substitute from the material specified including, but not limited to, principles of operation, materials, or construction finish, thickness or gauge of materials, dimensions, weight, and tolerances;

1.7.3.2 Available maintenance, repair or replacement services;

1.7.3.3 Increases or decreases in operating, maintenance, repair, replacement, and spare parts costs;

1.7.3.4 Whether or not acceptance of the substitute will require other changes in the Work (or in work performed by the District or others under Contract with the District); and

1.7.3.5 The time impact on any part of the Work resulting directly or indirectly from acceptance of the proposed substitute.

1.7.4 No substitutions shall be made until approved, in writing, by the District. The burden of proof as to equality of any material, process, or article shall rest with Contractor. The Contractor warrants that if substitutes are approved:

1.7.4.1 The proposed substitute is equal or superior in all respects to that specified, and that such proposed substitute is suitable and fit for the intended purpose and will perform adequately the function and achieve the results called for by the general design and the Contract Documents;

1.7.4.2 The Contractor provides the same warranties and guarantees for the substitute that would be provided for that specified;

1.7.4.3 The Contractor shall be fully responsible for the installation of the substitute and any changes in the Work required, either directly or indirectly, because of the acceptance of such substitute, with no increase in Contract Price or Contract Time. Incidental changes or extra component parts required to accommodate the substitute will be

made by the Contractor without a change in the Contract Price or Contract Time;

1.7.4.4 The Contractor shall be responsible for any re-design costs occasioned by District's acceptance and/or approval of any substitute; and

1.7.4.5 The Contractor shall, in the event that a substitute is less costly than that specified, credit the District with one hundred percent (100%) of the net difference between the substitute and the originally specified material. In this event, the Contractor agrees to execute a deductive Change Order to reflect that credit.

1.7.5 In the event Contractor furnishes a material, process, or article more expensive than that specified, the difference in the cost of that material, process, or article so furnished shall be borne by Contractor.

1.7.6 In no event shall the District be liable for any increase in Contract Price or Contract Time due to any claimed delay in the evaluation of any proposed substitute or in the acceptance or rejection of any proposed substitute.

1.7.7 Contractor shall be responsible for any costs the District incurs for professional services, DSA fees, or delay to the Project Schedule, if applicable, while DSA reviews changes for the convenience of Contractor and/or to accommodate Contractor's means and methods. District may deduct those costs from any amounts owing to the Contractor for the review of the request for substitution, even if the request for substitution is not approved. District, at its sole discretion, shall deduct from the payments due to and/or invoice Contractor for all the professional services and/or DSA fees or delay to the Project Schedule, if applicable, while DSA reviews changes for the convenience of Contractor and/or to accommodate Contractor's means and methods arising herein.

5. Weather Days

Replace Section 15.2.1.5 in the General Conditions with the following:

15.2.1.5 The number of days of Adverse Weather exceeds the following parameters:

January	7	July	0
February	6	August	0
March	6	September	0
April	3	October	2
May	1	November	5
June	0	December	6

[THE REMAINDER OF THIS PAGE LEFT BLANK INTENTIONALLY]

6. [RESERVED]

7. Insurance Policy Limits

All of Contractor's insurance shall be with insurance companies with an A.M. Best rating of no less than **A- or A:VII**. The limits of insurance shall not be less than:

Commercial General Liability	Product Liability and Completed Operations, Fire Damage Liability – Split Limit	\$2,000,000 per occurrence; \$4,000,000 aggregate
Automobile Liability – Any Auto	Combined Single Limit	\$1,000,000
Workers' Compensation		Statutory limits pursuant to State law
Employers' Liability		\$1,000,000
Builder's Risk (Course of Construction)		Issued for the value and scope of Work indicated herein.
Pollution Liability		\$1,000,000 per claim; \$2,000,000 aggregate

8. Permits, Certificates, Licenses, Fees, Approvals

8.1 Payment for Permits, Certificates, Licenses, Fees, and Approvals. As required in the General Conditions, the Contractor shall secure and pay for all permits, licenses, approvals, and certificates necessary for the prosecution of the Work with the exception of the following:

8.2 General Permit For Storm Water Discharges Associated With Construction and Land Disturbance Activities

8.2.1 Contractor acknowledges that all California school districts are obligated to develop and implement the following requirements for the discharge of storm water to surface waters from its construction and land disturbance activities (storm water requirements):

8.2.1.1 Projects that disturb less than one acre of land and are not part of a larger common plan of development or sale, in accordance with Title 24, Chapter 5.106.1, shall prevent the pollution of stormwater runoff from the construction activities through one or more of the following measures:

8.2.1.1.1 Comply with lawfully enacted stormwater management and/or erosion control ordinance.

8.2.1.1.2 Prevent loss of soil through wind or water erosion by adhering to a Storm Water Pollution Prevention Plan ("SWPPP") implementing an effective combination of erosion and sediment control and good housekeeping best management practices ("BMPs").

8.2.1.1.2.1 Soil loss BMP's that should be considered for implementation as appropriate for each project include, but are not limited to, the following:

8.2.1.1.2.1.1 Scheduling construction activity during dry weather, when possible.

8.2.1.1.2.1.2 Preservation of natural features, vegetation, soil, and buffers around surface waters.

8.2.1.1.2.1.3 Drainage swales or lined ditches to control stormwater flow.

8.2.1.1.2.1.4 Mulching or hydroseeding to stabilize disturbed soils.

8.2.1.1.2.1.5 Erosion control to protect slopes.

8.2.1.1.2.1.6 Protection of storm drain inlets (gravel bags or catch basin inserts).

8.2.1.1.2.1.7 Perimeter sediment control (perimeter silt fence, fiber rolls).

8.2.1.1.2.1.8 Sediment trap or sediment basin to retain sediment on site.

8.2.1.1.2.1.9 Stabilized construction exits.

8.2.1.1.2.1.10 Wind erosion control.

8.2.1.1.2.1.11 Other soil loss BMP's acceptable to the enforcing agency.

8.2.1.1.2.2 Good housekeeping BMP's to manage construction equipment, materials, non-stormwater discharges, and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following:

8.2.1.1.2.2.1 Dewatering activities.

8.2.1.1.2.2.2 Material handling and waste management.

8.2.1.1.2.2.3 Building materials stockpile management.

8.2.1.1.2.2.4 Management of washout areas (concrete, paints, stucco, etc.).

- 8.2.1.1.2.2.5** Control of vehicle/equipment fueling to contractor's staging area.
- 8.2.1.1.2.2.6** Vehicle and equipment cleaning performed off site.
- 8.2.1.1.2.2.7** Spill prevention and control.
- 8.2.1.1.2.2.8** Other housekeeping BMP's acceptable to the enforcing agency.

8.2.1.2 Projects that disturb one acre or more of land or disturb less than one acre of land but are part of a larger common plan of development or sale shall comply with all lawfully enacted stormwater discharge regulations in accordance with Title 24, Chapter 5.106.2.

8.2.2 Contractor shall comply with any District storm water requirements that are approved by the District and applicable to the Project, at no additional cost to the District.

8.2.3 At no additional cost to the District, Contractor shall provide a Qualified Storm Water Practitioner who shall be onsite and implement and monitor any and all SWPPP requirements applicable to the Project, including but not limited to:

8.2.3.1 At least forty-eight (48) hours prior to a forecasted rain event, implementing the Rain Event Action Plan (REAP) for any rain event requiring implementation of the REAP, including any erosion and sediment control measures needed to protect all exposed portions of the site; and

8.2.3.2 Monitoring any Numeric Action Levels (NALs), if applicable.

9. Project Labor Agreement/Payroll Records

The District has entered into a Project Labor Agreement ("PLA"), which covers this Project.

Accordingly, the following provision is added as Section 26.4.6:

26.4.6 As Contractor and its subcontractors have agreed to be bound by the terms of the PLA entered into by the District, July 21, 2019, Contractor and its subcontractors may be excused from uploading CPRs electronically using DIR's eCPR System by uploading the CPRs by electronic XML file or entering each record manually using the DIR's iform (or current form) online at <http://www.dir.ca.gov/Public-Works/Certified-Payroll-Reporting.html> , or by using a more current application and URL. However, within ten (10) days of any request by the District or Labor Commissioner, Contractor and its subcontractors shall provide CPRs showing the name, address, social security number, work classification, straight time, and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each subcontractor in connection with the Work.

10. As-Builts and Record Drawings

10.1 When called for by Division 1, Contractor shall submit As-Built Drawings pursuant to the Contract Documents consisting of one set of computer-aided design and drafting ("CADD") files in .DWG format, plus one set of As Built Drawings in electronic PDF format.

10.2 Contractor shall submit Record Drawings pursuant to the Contract Documents consisting of one set of computer-aided design and drafting ("CADD") files in .DWG format, plus one set of Record Drawings in electronic PDF format.

11. Construction Manager

The District will use a Construction Manager on the Project that is the subject of this Contract. Kitchell CEM is the Construction Manager for this Project.

12. Program Manager

AECOM is the Program Manager designated for the Project that is the subject of this Contract.

13. [RESERVED]

14. Project Management Information Systems (PMIS)

The contractor will be responsible to use the Project Management Information System (PMIS) supplied by the District as required. The PMIS will be used for all project documentation including but not limited to:

- (A) Application for payments
- (B) Change Order/Potential Change Orders (PCOs) Requests
- (C) Request for Information (RFIs)
- (D) Submittals
- (E) Daily Logs
- (F) Meeting Minutes
- (G) Reports

15. Preliminary Schedule of Values

The preliminary schedule of values shall include, at a minimum, the following information and the following structure:

Replace Section 10.1.1.2.3 in the General Conditions with the following provisions:

10.1.1.2.3 The preliminary schedule of values shall not provide for values any greater than the following percentages of the Contract value:

10.1.1.2.3.1 Mobilization and layout combined to equal not more than [1]%;

10.1.1.2.3.2 Submittals, samples and shop drawings combined to equal not more than [3]%;

10.1.1.2.3.3 Bonds and insurance combined to equal not more than [2]%.

16. COVID-19 Safety Requirements

Contractor shall, at its cost, timely comply with all applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic protocols.

The following provisions are added as Section 27 of the General Conditions:

27. FEDERAL LABOR, WAGE & HOUR, APPRENTICE, AND RELATED PROVISIONS

27.1 Minimum Wages

The Davis-Bacon Act and 29 CFR parts 1 through 7 shall apply if the Project is financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution.

27.1.1 All laborers and mechanics employed or working upon the Site of the Work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the Project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account, except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3) , the full amount of wages and bona fide fringe benefits, or cash equivalents thereof, due at time of payment computed at rates not less than those contained in the applicable wage determination of the Secretary of Labor regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of this section, including but not limited to paragraph 27.1.7; also, regular contributions made or costs incurred for more than a weekly period, but not less often than quarterly, under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of Work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing Work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that

the employer's payroll records accurately set forth the time spent in each classification in which Work is performed. The wage determination including any additional classification and wage rates conformed under this section, including but not limited to paragraph 27.1.6 and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its Subcontractors at the Site of the Work in a prominent and accessible place where it can be easily seen by the workers.

27.1.2 Any class of laborers or mechanics, including helpers, and which is to be employed under the Contract which is not listed in the wage determination shall be classified in conformance with the wage determination. An additional classification and wage rate and fringe benefits will not be approved unless when the following criteria have been met:

27.1.2.1 The Work to be performed by the classification requested is not performed by a classification in the wage determination; and

27.1.2.2 The classification is utilized in the area by the construction industry; and

27.1.2.3 The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

27.1.3 If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the District agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the Contractor to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210.

27.1.4 In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the District do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contractor shall provide the questions, including the views of all interested parties and the recommendation of the District, to the District for the District's review and referral to the Administrator for determination.

27.1.5 The wage rate (including fringe benefits where appropriate) determined pursuant to this section, shall be paid to all workers performing Work in the classification under this Contract from the first day on which Work is performed in the classification.

27.1.6 Whenever the minimum wage rate prescribed in any applicable wage determination for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

27.1.7 If the Contractor does not make payments to a trustee or other third person, the Contractor may consider, as part of the wages of any laborer or mechanic, the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has

found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. If the Secretary of Labor so requires, the Contractor shall set aside in a separate account sufficient assets to meet obligations under the plan or program.

27.2 Withholding. District may, upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this Contract or any other Federal contract with the same Contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any Subcontractor the full amount of wages required by the Contract. In the event of Contractor's or any Subcontractors' failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the Site of the Work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the Contract, the District may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as it deems necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

27.3 Payrolls and basic records.

27.3.1 Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the Work and preserved for a period of three years thereafter for all laborers and mechanics working at the Site of the Work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records that show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

27.3.2 The Contractor shall submit weekly for each week in which any Contract Work is performed a copy of all payrolls to the District. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each

employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information shall be submitted on a form acceptable to the District. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <https://www.dol.gov/whd/programs/dbra/wh347.htm> or its successor site. Contractor is responsible for the submission of copies of payrolls by all Subcontractors. Contractor and Subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the District, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. Contractor may require a Subcontractor to provide addresses and social security numbers to the Contractor for its own records, without weekly submission to the District or other government agency

27.3.3 Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or Subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

27.3.3.1 That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5,

27.3.3.2 That the appropriate information is being maintained under 29 CFR 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and

27.3.3.3 That such information is correct and complete;

27.3.3.4 That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and

27.3.3.5 That no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

27.3.3.6 That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of Work performed, as specified in the applicable wage determination incorporated into or applicable to the Contract.

27.3.3.7 The weekly submission of a properly executed certification in the form set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 27.3.3 of this section.

27.3.3.8 The falsification of any of the above certifications may subject the Contractor or one or more Subcontractors to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

27.3.3.9 The Contractor or Subcontractor shall make the records required under this section available for inspection, copying, or transcription by authorized

representatives of the District or the federal Department of Labor, and shall permit representatives to interview employees during working hours on the job. If the Contractor or Subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

27.4 Apprentices and trainees

27.4.1 Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the Work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first ninety (90) days of probationary employment as an apprentice in an eligible apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job Site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of Work actually performed. In addition, any apprentice performing Work on the job Site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the Work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or Subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the Work performed until an acceptable program is approved.

27.4.2 Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to Work at less than the predetermined rate for the Work performed unless they are employed pursuant to and individually registered in a program which

has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job Site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of Work actually performed. In addition, any trainee performing Work on the job Site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the Work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the Work performed until an acceptable program is approved.

27.4.3 Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

27.5 Compliance with Copeland Act requirements. Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this Contract.

27.6 Subcontracts. The Contractor or Subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the Federal agency may by appropriate instructions require, and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The Contractor shall be responsible for the compliance by any Subcontractor or lower tier Subcontractor with all the Contract clauses in 29 CFR 5.5.

27.7 Contract termination: debarment. A breach of the Contract clauses in 29 CFR 5.5 may be grounds for termination of the Contract, and for debarment as a Contractor and a Subcontractor as provided in 29 CFR 5.12.

27.8 Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this Contract.

27.9 Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of

the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

27.10 Certification of eligibility.

27.10.1 By entering into this Contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

27.10.2 No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

27.10.3 Contractor shall be subject to the penalty for making false statements prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

27.11 Clauses Mandated by Contract Work Hours and Safety Standards Act.

As used in the following paragraphs, the terms laborers and mechanics include watchmen and guards.

27.11.1 Overtime requirements. No Contractor or Subcontractor contracting for any part of the Contract Work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such Work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

27.11.2 Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in the foregoing paragraph the Contractor and any Subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the foregoing paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to Work in excess of the standard workweek of forty hours without payment of the overtime wages required by the foregoing paragraph.

27.11.3 Withholding for unpaid wages and liquidated damages. The District may upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of Work performed by the Contractor or Subcontractor under the Contract or any other Federal contract with the same Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same Contractor, such sums as

may be determined to be necessary to satisfy any liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the forgoing paragraph.

27.11.4 Subcontracts. The Contractor or Subcontractor shall insert in any subcontracts the foregoing paragraphs concerning "Overtime requirements" and "Violation; liability for unpaid wages; liquidated damages" and also a clause requiring each Subcontractor to include these clauses in any lower tier subcontracts. Contractor shall be responsible for compliance by any Subcontractor or lower tier Subcontractor with the clauses set forth in paragraphs 27.11.1 through 27.11.4 of this section.

END OF DOCUMENT

HAZARDOUS MATERIALS
PROCEDURES & REQUIREMENTS

1. Summary

This document includes information applicable to hazardous materials and hazardous waste abatement.

2. Notice of Hazardous Waste or Materials

- a. Contractor shall give notice in writing to the District, the Construction Manager, and the Architect promptly, before any of the following materials are disturbed, and in no event later than twenty-four (24) hours after first observance, of any:
 - (1) Material that Contractor believes may be a material that is hazardous waste or hazardous material, as defined in section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law;
 - (2) Other material that may present a substantial danger to persons or property exposed thereto in connection with Work at the site.
- b. Contractor's written notice shall indicate whether the hazardous waste or material was shown or indicated in the Contract Documents to be within the scope of Work, and whether the materials were brought to the site by Contractor, its Subcontractors, suppliers, or anyone else for whom Contractor is responsible. As used in this section the term "hazardous materials" shall include, without limitation, asbestos, lead, Polychlorinated biphenyl (PCB), petroleum and related hydrocarbons, and radioactive material.
- c. In response to Contractor's written notice, the District shall investigate the identified conditions.
- d. If the District determines that conditions do not involve hazardous materials or that no change in terms of Contract is justified, the District shall so notify Contractor in writing, stating reasons. If the District and Contractor cannot agree on whether conditions justify an adjustment in Contract Price or Contract Time, or on the extent of any adjustment, Contractor shall proceed with the Work as directed by the District.
- e. If after receipt of notice from the District, Contractor does not agree to resume Work based on a reasonable belief it is unsafe, or does not agree to resume Work under special conditions, then District may order such portion of Work that is in connection with such hazardous condition or such affected area to be deleted from the Work, or performed by others, or District may invoke its rights to terminate the Contract in whole or in part. District will determine entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Time as a result of deleting such portion of Work, or performing the Work by others.

- f. If Contractor stops Work in connection with any hazardous condition and in any area affected thereby, Contractor shall immediately redeploy its workers, equipment, and materials, as necessary, to other portions of the Work to minimize delay and disruption.

3. Additional Warranties and Representations

- a. Contractor represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have the required levels of familiarity with the Site and the Work, training, and ability to comply fully with all applicable laws and contractual requirements for safe and expeditious performance of the Work, including whatever training is or may be required regarding the activities to be performed (including, but not limited to, all training required to address adequately the actual or potential dangers of Contract performance).
- b. Contractor represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have and maintain in good standing any and all certifications and licenses required by applicable federal, state, and other governmental and quasi-governmental requirements applicable to the Work.
- c. Contractor represents and warrants that it has studied carefully all requirements of the Specifications regarding procedures for demolition, hazardous waste abatement, or safety practices, specified in the Contract, and prior to submitting its bid, has either (a) verified to its satisfaction that the specified procedures are adequate and sufficient to achieve the results intended by the Contract Documents, or (b) by way of approved "or equal" request or request for clarification and written Addenda, secured changes to the specified procedures sufficient to achieve the results intended by the Contract Documents. Contractor accepts the risk that any specified procedure will result in a completed Project in full compliance with the Contract Documents.

4. Monitoring and Testing

- a. District reserves the right, in its sole discretion, to conduct air monitoring, earth monitoring, Work monitoring, and any other tests (in addition to testing required under the agreement or applicable law), to monitor Contract requirements of safe and statutorily compliant work methods and (where applicable) safe re-entry level air standards under state and federal law upon completion of the job, and compliance of the work with periodic and final inspection by public and quasi-public entities having jurisdiction.
- b. Contractor acknowledges that District has the right to perform, or cause to be performed, various activities and tests including, but not limited to, pre-abatement, during abatement, and post-abatement air monitoring, that District shall have no obligation to perform said activities and tests, and that a portion of said activities and tests may take place prior to the completion of the Work by Contractor. In the event District elects to perform these activities and tests, Contractor shall afford District ample access to the Site and all areas of the Work as may be necessary for the performance of these activities and tests. Contractor will include the potential impact of these

activities or tests by District in the Contract Price and the Scheduled Completion Date.

- c. Notwithstanding District's rights granted by this paragraph, Contractor may retain its own industrial hygiene consultant at Contractor's own expense and may collect samples and may perform tests including, but not limited to, pre-abatement, during abatement, and post-abatement personal air monitoring, and District reserves the right to request documentation of all such activities and tests performed by Contractor relating to the Work and Contractor shall immediately provide that documentation upon request.

5. Compliance with Laws

- a. Contractor shall perform safe, expeditious, and orderly work in accordance with the best practices and the highest standards in the hazardous waste abatement, removal, and disposal industry, the applicable law, and the Contract Documents, including, but not limited to, all responsibilities relating to the preparation and return of waste shipment records, all requirements of the law, delivering of all requisite notices, and obtaining all necessary governmental and quasi-governmental approvals.
- b. Contractor represents that it is familiar with and shall comply with all laws applicable to the Work or completed Work including, but not limited to, all federal, state, and local laws, statutes, standards, rules, regulations, and ordinances applicable to the Work relating to:
 - (1) The protection of the public health, welfare and environment;
 - (2) Storage, handling, or use of asbestos, PCB, lead, petroleum based products, radioactive material, or other hazardous materials;
 - (3) The generation, processing, treatment, storage, transport, disposal, destruction, or other management of asbestos, PCB, lead, petroleum, radioactive material, or hazardous waste materials or other waste materials of any kind; and
 - (4) The protection of environmentally sensitive areas such as wetlands and coastal areas.

6. Disposal

- a. Contractor has the sole responsibility for determining current waste storage, handling, transportation, and disposal regulations for the job Site and for each waste disposal facility. Contractor must comply fully at its sole cost and expense with these regulations and any applicable law. District may, but is not obligated to, require submittals with this information for it to review consistent with the Contract Documents.
- b. Contractor shall develop and implement a system acceptable to District to track hazardous waste from the Site to disposal, including appropriate "Hazardous Waste Manifests" on the EPA form, so that District may track the volume of waste it put in each landfill and receive from each landfill a certificate of receipt.

- c. Contractor shall provide District with the name and address of each waste disposal facility prior to any disposal, and District shall have the express right to reject any proposed disposal facility. Contractor shall not use any disposal facility to which District has objected. Contractor shall document actual disposal or destruction of waste at a designated facility by completing a disposal certificate or certificate of destruction forwarding the original to the District.

7. Permits

- a. Before performing any of the Work, and at such other times as may be required by applicable law, Contractor shall deliver all requisite notices and obtain the approval of all governmental and quasi-governmental authorities having jurisdiction over the Work. Contractor shall submit evidence satisfactory to District that it and any disposal facility:
 - (1) have obtained all required permits, approvals, and the like in a timely manner both prior to commencement of the Work and thereafter as and when required by applicable law; and
 - (2) are in compliance with all such permits, approvals and the regulations.

For example, before commencing any work in connection with the Work involving asbestos-containing materials, or PCBs, or other hazardous materials subject to regulation, Contractor agrees to provide the required notice of intent to renovate or demolish to the appropriate state or federal agency having jurisdiction, by certified mail, return receipt requested, or by some other method of transmittal for which a return receipt is obtained, and to send a copy of that notice to District. Contractor shall not conduct any Work involving asbestos-containing materials or PCBs unless Contractor has first confirmed that the appropriate agency having jurisdiction is in receipt of the required notification. All permits, licenses, and bonds that are required by governmental or quasi-governmental authorities, and all fees, deposits, tap fees, offsite easements, and asbestos and PCB disposal facilities expenses necessary for the prosecution of the Work, shall be procured and paid for by Contractor. Contractor shall give all notices and comply with the all applicable laws bearing on the conduct of the Work as drawn and specified. If Contractor observes or reasonably should have observed that Plans and Specifications and other Contract Documents are at variance therewith, it shall be responsible for promptly notifying District in writing of such fact. If Contractor performs any Work contrary to applicable laws, it shall bear all costs arising therefrom.

- b. In the case of any permits or notices held in District's name or of necessity to be made in District's name, District shall cooperate with Contractor in securing the permit or giving the notice, but the Contractor shall prepare for District review and execution upon approval, all necessary applications, notices, and other materials.

8. Indemnification

To the fullest extent permitted by law, the indemnities and limitations of liability expressed throughout the Contract Documents apply with equal force and effect to any claims or liabilities imposed or existing by virtue of the removal, abatement, and disposal of hazardous waste. This includes, but is not limited to, liabilities connected to the selection and use of a waste disposal facility, a waste transporter, personal injury, property damage, loss of use of property, damage to the environment or natural resources, or "disposal" and "release" of materials associated with the Work (as defined in 42 U.S.C. § 9601 *et seq.*).

9. Termination

District shall have an absolute right to terminate for default immediately without notice and without an opportunity to cure should Contractor knowingly or recklessly commit a material breach of the terms of the Contract Documents, or any applicable law, on any matter involving the exposure of persons or property to hazardous waste. However, if the breach of contract exposing persons or property to hazardous waste is due solely to an ordinary, unintentional, and non-reckless failure to exercise reasonable care, then the procedures for termination for cause shall apply without modification.

END OF DOCUMENT

SUMMARY OF WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Site Access Conditions and Requirements;
- B. Special Conditions.

1.02 SUMMARY OF WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of this Contract consists of the following:

Replacement of the existing medium voltage, "Substation C", at Merritt College. The existing substation c system is to remain active until the replacement is installed and power has been transferred. The work shall include, but not be limited to, the demolition of the existing equipment, associated civil, landscape, structural and electrical work as indicated in the Drawings and Specifications.

The work to be performed under this contract includes the furnishing of all labor, materials, equipment, transportation, services, permits, temporary controls and construction facilities, and all general conditions, seismic requirements, general requirements and incidentals required to complete the work on the project in its entirety as described in the contract documents

1.03 CONTRACTS

- A. Perform the Work under a single, fixed-price Contract.

1.04 WORK BY OTHERS

- A. Work on the Project that will be performed and completed prior to the start of the Work of this Contract:

(1) [NOT USED]

- B. Work on the Project that will be performed by others concurrent with the Work of this Contract:

(1) [NOT USED]

1.05 CODES, REGULATIONS, AND STANDARDS

- A. The codes, regulations, and standards adopted by the state and federal agencies having jurisdiction shall govern minimum requirements for this

Project. Where codes, regulations, and standards conflict with the Contract Documents, these conflicts shall be brought to the immediate attention of the District and the Architect.

- B. Codes, regulations, and standards shall be as published effective as of date of bid opening, unless otherwise specified or indicated.

1.06 PROJECT RECORD DOCUMENTS

- A. Contractor shall maintain on Site one set of the following record documents; Contractor shall record actual revisions to the Work:
 - (1) Contract Drawings.
 - (2) Specifications.
 - (3) Addenda.
 - (4) Change Orders and other modifications to the Contract.
 - (5) Reviewed shop drawings, product data, and samples.
 - (6) Field test records.
 - (7) Inspection certificates.
 - (8) Manufacturer's certificates.
- B. Contractor shall store Record Documents separate from documents used for construction. Provide files, racks, and secure storage for Record Documents and samples.
- C. Contractor shall record information concurrent with construction progress.
- D. Specifications: Contractor shall legibly mark and record at each product section of the Specifications the description of the actual product(s) installed, including the following:
 - (1) Manufacturer's name and product model and number.
 - (2) Product substitutions or alternates utilized.
 - (3) Changes made by Addenda and Change Orders and written directives.

1.07 EXAMINATION OF EXISTING CONDITIONS

- A. Contractor shall be held to have examined the Project Site and acquainted itself with the conditions of the Site and of the streets or roads approaching the Site.
- B. Prior to commencement of Work, Contractor shall survey the Site and existing buildings and improvements to observe existing damage and defects such as

cracks, sags, broken, missing or damaged glazing, other building elements and Site improvements, and other damage.

- C. Should Contractor observe cracks, sags, and other damage to and defects of the Site and adjacent buildings, paving, and other items not indicated in the Contract Documents, Contractor shall immediately report same to the District and the Architect.

1.08 CONTRACTOR'S USE OF PREMISES

- A. If unoccupied and only with District's prior written approval, Contractor may use the building(s) at the Project Site without limitation for its operations, storage, and office facilities for the performance of the Work. If the District chooses to beneficially occupy any building(s), Contractor must obtain the District's written approval for Contractor's use of spaces and types of operations to be performed within the building(s) while so occupied. Contractor's access to the building(s) shall be limited to the areas indicated.
- B. If the space at the Project Site is not sufficient for Contractor's operations, storage, office facilities and/or parking, Contractor shall arrange and pay for any additional facilities needed by Contractor.
- C. Contractor shall not interfere with use of or access to occupied portions of the building(s) or adjacent property.
- D. Contractor shall maintain corridors, stairs, halls, and other exit-ways of building clear and free of debris and obstructions at all times.
- E. No one other than those directly involved in the demolition and construction, or specifically designated by the District or the Architect shall be permitted in the areas of work during demolition and construction activities.
- F. The Contractor shall install the construction fence and maintain that it will be locked when not in use. Keys to this fencing will be provided to the District.

1.09 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. The Drawings show above-grade and below-grade structures, utility lines, and other installations that are known or believed to exist in the area of the Work. Contractor shall locate these existing installations before proceeding with excavation and other operations that could damage same; maintain them in service, where appropriate; and repair damage to them caused by the performance of the Work. Should damage occur to these existing installations, the costs of repair shall be at the Contractor's expense and made to the District's satisfaction.
- B. Contractor shall be alert to the possibility of the existence of additional structures and utilities. If Contractor encounters additional structures and utilities, Contractor will immediately report to the District for disposition of same as indicated in the General Conditions.

1.10 UTILITY SHUTDOWNS AND INTERRUPTIONS

- A. Contractor shall give the District a minimum of three (3) days written notice in advance of any need to shut off existing utility services or to effect equipment interruptions. The District will set exact time and duration for shutdown, and will assist Contractor with shutdown. Work required to re-establish utility services shall be performed by the Contractor.
 - (1) Power shut down to be performed when school is not in regular session and coordinated with the Campus and construction manager.
- B. Contractor shall obtain District's written approval as indicated in the General Conditions in advance of deliveries of material or equipment or other activities that may conflict with District's use of the building(s) or adjacent facilities.

1.11 STRUCTURAL INTEGRITY

- A. Contractor shall be responsible for and supervise each operation and work that could affect structural integrity of various building elements, both permanent and temporary.
- B. Contractor shall include structural connections and fastenings as indicated or required for complete performance of the Work.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

ALLOWANCE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Non-specified work.

1.2 RELATED SECTIONS

A. Document 01 10 00 (Summary of Work)

B. Document 01 29 00 (Payments and Completion)

C. Document 01 32 19 (Submittal Procedures)

1.3 ALLOWANCES

- A. Included in the Contract, a stipulated sum/price of **eighty thousand dollars (\$80,000)** as an allowance for **Emergency Generator Rental** within the limits set forth in the Contract Documents. This Allowance shall not be utilized without written approval by the District.
- B. Contractor's costs, without overhead and profit, for products, delivery, installation, labor, insurance, payroll, taxes, bonding and equipment rental will be included in Allowance Expenditure Directive authorizing expenditure of funds from this Allowance. No overhead and profit shall be added to the Allowance Expenditure Directive.
- C. Funds will be drawn from Allowance only with District approval evidenced by an Allowance Expenditure Directive.
- D. At Contract closeout, funds remaining in Allowance will be credited to District by Change Order.
- E. Whenever costs are more than the Allowance, the amount covered by the Allowance will be approved at cost. The Contract Price shall be adjusted by Change Order for amounts in excess of the Allowance.

PART 2 PRODUCTS

- A. Allowance #1:
 - 1. Rental of a 300kW generator to provide temporary power to the facilities serviced by existing substation C in the event the existing system becomes inoperable. This is for emergency use only, not intended for contractor scope of work.
 - 2. Rental shall cover usage for 24 hour running periods for the duration required to maintain power to the existing facilities serviced by existing substation C until power start-up of new substation. Includes associated fees, taxes, parts, delivery, pick-up, fueling, and any required maintenance.

PART 3 EXECUTION

- A. Contractor shall not bill for or be due any portion of this allowance unless the District has identified specific use and associated work, Contractor has submitted price, and the District has accepted cost for the work. Contractor hereby authorizes the District to execute a unilateral deductive change order at or near the end of the Project for all or any portion of the allowance not allocated.

- B. The project intent is to reduce the amount of downtime during the replacement of Substation C. Contractor shall first install all of the new electrical equipment prior to demolition of any existing electrical equipment. Then the contractor shall transfer all existing power to the new electrical infrastructure. Finally, the contractor shall demolish the existing electrical equipment no longer required. The power transfer shall take place during summer break while school is not in session.

END OF DOCUMENT

ALTERNATES AND UNIT PRICING

PART 1 – ALTERNATES

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A.** General Conditions;
- B.** Special Conditions;
- C.** Bid Form and Proposal;
- D.** Instruction to Bidders.

1.02 DESCRIPTION

The items of work indicated below propose modifications to, substitutions for, additions to and/or deletions from the various parts of the Work specified in other Sections of the Specifications. The acceptance or rejection of any of the alternates is strictly at the option of the District subject to District's acceptance of Contractor's stated prices contained in this Proposal.

1.03 GENERAL

Where an item is omitted, or scope of Work is decreased, all Work pertaining to the item whether specifically stated or not, shall be omitted and where an items is added or modified or where scope of Work is increased, all Work pertaining to that required to render same ready for use on the Project in accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

1.04 BASE BID

The Base Bid includes all work required to construct the Project completely and in accordance with the Contract Documents.

1.05 ALTERNATES

- A.** [NOT USED]
- B.** [NOT USED]

The above Alternate descriptions are general in nature and for reference purposes only. The Contract Documents, including, without limitation, the Drawings and Specifications, must be referred to for the complete scope of Work.

PART 2 - UNIT PRICING

2.01 GENERAL

Contractor shall completely state all required figures based on Unit Prices listed below. Where scope of Work is decreased, all Work pertaining to the item, whether specifically stated or not, shall be omitted and where scope of Work is increased, all work pertaining to that item required to render same ready for use on the Project in accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

2.02 UNIT PRICES

Furnish unit prices for each of the named items on a square foot, lineal foot, or per each basis, as applies. Unit prices shall include all labor, materials, services, profit, overhead, insurance, bonds, taxes, and all other incidental costs of Contractor, subcontractors, and supplier(s).

A. [NOT USED]

B. [NOT USED]

END OF DOCUMENT

DOCUMENT 01 25 13
PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. Instructions to Bidders;
- B. General Conditions, including, without limitation, Substitutions For Specified Items; and
- C. Special Conditions.

1.02 SUBSTITUTIONS OF MATERIALS AND EQUIPMENT

- A. Catalog numbers and specific brands or trade names followed by the designation "or equal" are used in conjunction with material and equipment required by the Specifications to establish the standards of quality, utility, and appearance required. Substitutions which are equal in quality, utility, and appearance to those specified may be reviewed subject to the provisions of the General Conditions.
- B. Wherever more than one manufacturer's product is specified, the first-named product is the basis for the design used in the work and the use of alternative-named manufacturers' products or substitutes may require modifications in that design. If such alternatives are proposed by Contractor and are approved by the District and/or the Architect, Contractor shall assume all costs required to make necessary revisions and modifications of the design resulting from the substitutions requested by the Contractor.
- C. When materials and equipment are specified by first manufacturer's name and product number, second manufacturer's name and "or approved equal," supporting data for the second product, if proposed by Contractor, shall be submitted in accordance with the requirements for substitutions. The District's Board has found and determined that certain item(s) shall be used on this Project based on the purpose(s) indicated pursuant to Public Contract Code section 3400(c). These findings, as well as the products and brand or trade names, have been identified in the Notice to Bidders.
- D. The Contractor will not be allowed to substitute specified items unless the request for substitution is submitted as follows:
 - (1) District must receive any notice of request for substitution of a specified item a minimum of ten (10) calendar days prior to bid opening.

- (2) Within 35 days after the date of the Notice of Award, the Contractor shall submit data substantiating the request(s) for all substitution(s) containing sufficient information to assess acceptability of product or system and impact on Project, including, without limitation, the requirements specified in the Special Conditions and the technical Specifications. Insufficient information shall be grounds for rejection of substitution.
- E. If the District and/or Architect, in reviewing proposed substitute materials and equipment, require revisions or corrections to be made to previously accepted Shop Drawings and supplemental supporting data to be resubmitted, Contractor shall promptly do so. If any proposed substitution is judged by the District and/or Architect to be unacceptable, the specified material or equipment shall be provided.
- F. Samples may be required. Tests required by the District and/or Architect for the determination of quality and utility shall be made at the expense of Contractor, with acceptance of the test procedure first given by the District.
- G. In reviewing the supporting data submitted for substitutions, the District and/or Architect will use for purposes of comparison all the characteristics of the specified material or equipment as they appear in the manufacturer's published data even though all the characteristics may not have been particularly mentioned in the Contract Documents. If more than two (2) submissions of supporting data are required, the cost of reviewing the additional supporting data shall be borne by Contractor, and the District will deduct the costs from the Contract Price. The Contractor shall be responsible for any re-design costs occasioned by District's acceptance and/or approval of any substitute.
- H. The Contractor shall, in the event that a substitute is less costly than that specified, credit the District with one hundred percent (100%) of the net difference between the substitute and the originally specified material. In this event, the Contractor agrees to execute a deductive Change Order to reflect that credit. In the event Contractor furnishes a material, process, or article more expensive than that specified, the difference in the cost of that material, process, or article so furnished shall be borne by Contractor.
- I. In no event shall the District be liable for any increase in Contract Price or Contract Time due to any claimed delay in the evaluation of any proposed substitute or in the acceptance or rejection of any proposed substitute.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

DOCUMENT 01 26 00

CHANGES IN THE WORK

CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE PROVISIONS IN THE AGREEMENT, GENERAL CONDITIONS, AND SPECIAL CONDITIONS, IF USED, RELATED TO CHANGES AND/OR REQUESTS FOR CHANGES.

END OF DOCUMENT

DOCUMENT 01 29 00

**APPLICATION FOR PAYMENT AND
CONDITIONAL AND UNCONDITIONAL WAIVER AND RELEASE FORMS**

**CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS IN THE GENERAL
CONDITIONS AND SPECIAL CONDITIONS RELATED TO APPLICATIONS FOR
PAYMENT AND/OR PAYMENTS.**

**CONDITIONAL WAIVER AND RELEASE
ON PROGRESS PAYMENT
(CIVIL CODE SECTION 8132)**

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Through Date: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: \$ _____

Check Payable to: _____

Exceptions

This document does not affect any of the following:

- (1) Retentions.
- (2) Extras for which the claimant has not received payment.
- (3) The following progress payments for which the claimant has previously given a conditional waiver and release but has not received payment:

Date(s) of waiver and release: _____

Amount(s) of unpaid progress payment(s): \$ _____

- (4) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

**UNCONDITIONAL WAIVER AND RELEASE
ON PROGRESS PAYMENT
(CIVIL CODE SECTION 8134)**

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Through Date: _____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has received the following progress payment: \$_____

Exceptions

This document does not affect any of the following:

- (1) Retentions.
- (2) Extras for which the claimant has not received payment.
- (3) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

**CONDITIONAL WAIVER AND RELEASE
ON FINAL PAYMENT
(CIVIL CODE SECTION 8136)**

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: \$ _____

Check Payable to: _____

Exceptions

This document does not affect any of the following: _____

Disputed claims for extras in the amount of: \$ _____

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

**UNCONDITIONAL WAIVER AND RELEASE
ON FINAL PAYMENT
(CIVIL CODE SECTION 8138)**

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

Exceptions

This document does not affect any of the following: _____

Disputed claims for extras in the amount of: \$_____

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

PROJECT MEETINGS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions; and
- B. Special Conditions.

1.02 PROGRESS MEETINGS:

- A. Contractor shall schedule and hold regular weekly progress meetings after a minimum of one week's prior written notice of the meeting date and time to all Invitees as indicated below.
- B. Location: Contractor's field office.
- C. The Contractor shall notify and invite the following entities ("Invitees"):
 - (1) District Representative.
 - (2) Contractor.
 - (3) Contractor's Project Manager.
 - (4) Contractor's Superintendent.
 - (5) Subcontractors, as appropriate to the agenda of the meeting.
 - (6) Suppliers, as appropriate to the agenda of the meeting.
 - (7) Construction Manager, if any.
 - (8) Architect
 - (9) Engineer(s), if any and as appropriate to the agenda of the meeting.
 - (10) Others, as appropriate to the agenda of the meeting.
- D. The District's, the Architect's, and/or an engineer's Consultants will attend at their discretion, in response to the agenda.
- E. The District representative, the Construction Manager, and/or another District Agent shall take and distribute meeting notes to attendees and other concerned parties. If exceptions are taken to anything in the meeting notes,

those exceptions shall be stated in writing to the District within five (5) working days following District's distribution of the meeting notes.

1.03 PRE-INSTALLATION/PERFORMANCE MEETING:

- A. Pre-Installation and Performance meeting requirements are described in the various technical sections of the Project Manual. At this meeting, invitees shall review and resolve conflicts, incompatibilities, or inadequacies discovered or anticipated.
- B. Contractor shall review in detail Project conditions, schedule, requirements for performance, application, installation, and quality of completed Work, and protection of adjacent Work and property.
- C. Contractor shall review in detail means of protecting the completed Work during the remainder of the construction period.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

SCHEDULING OF WORK

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions;
- C. Summary of Work; and
- D. Submittals.

1.02 SECTION INCLUDES

- A. Scheduling of Work under this Contract shall be performed by Contractor in accordance with requirements of this Section.
 - (1) Development of schedule, cost and resource loading of the schedule, monthly payment requests, and project status reporting requirements of the Contract shall employ computerized Critical Path Method ("CPM") scheduling ("CPM Schedule").
 - (2) CPM Schedule shall be cost loaded based on Schedule of Values as approved by District.
 - (3) Submit schedules and reports as specified in the General Conditions.
- B. Upon Award of Contract, Contractor shall immediately commence development of Initial and Original CPM Schedules to ensure compliance with CPM Schedule submittal requirements.

1.03 CONSTRUCTION SCHEDULE

- A. Within ten (10) days of issuance of the Notice to Proceed, and before request for first progress payment, the Contractor shall prepare and submit to the Project Manager a construction progress schedule conforming to the Milestone Schedule below.
- B. The Construction Schedule shall be continuously updated, and an updated schedule shall be submitted with each application for progress payment. Each revised schedule shall indicate the work actually accomplished during the previous period and the schedule for completion of the remaining work.

C. Milestone Schedule:

**ESTIMATED PRE-CONSTRUCTION
ACTIVITY DESCRIPTION**

DURATION

**CONTRACT AWARD BOARD APPROVAL
DISTRICT ISSUES EXECUTED CONTRACT
& NTP**

**WITHIN 45 CALENDAR DAYS AFTER BID CLOSE
W/IN 45 CALENDAR DAYS AFTER BOARD APPROVAL**

**CONSTRUCTION
ACTIVITY DESCRIPTION**

DURATION

**ALL SUBMITTALS PROVIDED
PROCUREMENT ALL EQUIPMENT & MATERIALS*
CONSTRUCTION & POWER TRANSFER**
SUBSTANTIAL COMPLETION
FINAL PROJECT COMPLETION**

**WITHIN 45 CALENDAR DAYS OF NTP
WITHIN 465 CALENDAR DAYS OF NTP
WITHIN 615 CALENDAR DAYS OF NTP
WITHIN 615 CALENDAR DAYS OF NTP
WITHIN 645 CALENDAR DAYS OF NTP**

*Any delays associated with procurement of equipment and materials outside the control of the contractor will be considered non-compensable delays. Any delays of this nature must be clearly communicated with back-up documentation so that it can be proven to the District prior to approval of a non-compensable schedule extension.

**Power transfer to occur when school is not in session during the summer break.

1.04 QUALIFICATIONS

A. Contractor shall employ experienced scheduling personnel qualified to use the latest version of [i.e., Primavera Project Planner]. Experience level required is set forth below. Contractor may employ such personnel directly or may employ a consultant for this purpose.

- (1) The written statement shall identify the individual who will perform CPM scheduling.
- (2) Capability and experience shall be verified by description of construction projects on which individual has successfully applied computerized CPM.
- (3) Required level of experience shall include at least two (2) projects of similar nature and scope with value not less than three fourths ($\frac{3}{4}$) of the Total Bid Price of this Project. The written statement shall provide contact persons for referenced projects with current telephone and address information.

B. District reserves the right to approve or reject Contractor's scheduler or consultant at any time. District reserves the right to refuse replacing of Contractor's scheduler or consultant, if District believes replacement will negatively affect the scheduling of Work under this Contract.

1.05 GENERAL

A. Progress Schedule shall be based on and incorporate milestone and completion dates specified in Contract Documents.

- B. Overall time of completion and time of completion for each milestone shown on Progress Schedule shall adhere to times in the Contract, unless an earlier (advanced) time of completion is requested by Contractor and agreed to by District. Any such agreement shall be formalized by a Change Order.
- (1) District is not required to accept an early completion schedule, i.e., one that shows an earlier completion date than the Contract Time.
 - (2) Contractor shall not be entitled to extra compensation in event agreement is reached on an earlier completion schedule and Contractor completes its Work, for whatever reason, beyond completion date shown in its early completion schedule but within the Contract Time.
 - (3) A schedule showing the work completed in less than the Contract Time, and that has been accepted by District, shall be considered to have Project Float. The Project Float is the time between the scheduled completion of the work and the Completion Date. Project Float is a resource available to both District and the Contractor.
- C. Ownership Project Float: Neither the District nor Contractor owns Project Float. The Project owns the Project Float. As such, liability for delay of the Completion Date rests with the party whose actions, last in time, actually cause delay to the Completion Date.
- (1) For example, if Party A uses some, but not all of the Project Float and Party B later uses remainder of the Project Float as well as additional time beyond the Project Float, Party B shall be liable for the time that represents a delay to the Completion Date.
 - (2) Party A would not be responsible for the time since it did not consume the entire Project Float and additional Project Float remained; therefore, the Completion Date was unaffected by Party A.
- D. Progress Schedule shall be the basis for evaluating job progress, payment requests, and time extension requests. Responsibility for developing Contract CPM Schedule and monitoring actual progress as compared to Progress Schedule rests with Contractor.
- E. Failure of Progress Schedule to include any element of the Work, or any inaccuracy in Progress Schedule, will not relieve Contractor from responsibility for accomplishing the Work in accordance with the Contract. District's acceptance of schedule shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests and shall not, in any manner, impose a duty of care upon District, or act to relieve Contractor of its responsibility for means and methods of construction.
- F. Software: Use the latest version of Primavera P6 and Microsoft Project. Such software shall be compatible with Windows operating system. Contractor shall transmit contract file to District on compact disk at times requested by District.
- G. Transmit each item under the form approved by District.

- (1) Identify Project with District Contract number and name of Contractor.
- (2) Provide space for Contractor's approval stamp and District's review stamps.
- (3) Submittals received from sources other than Contractor will be returned to the Contractor without District's review.

1.06 INITIAL CPM SCHEDULE

- A. Initial CPM Schedule submitted for review at the pre-construction conference shall serve as Contractor's schedule for up to ninety (90) calendar days after the Notice to Proceed.
- B. Indicate detailed plan for the Work to be completed in first ninety (90) days of the Contract; details of planned mobilization of plant and equipment; sequence of early operations; procurement of materials and equipment. Show Work beyond ninety (90) calendar days in summary form.
- C. Initial CPM Schedule shall be time scaled.
- D. Initial CPM Schedule shall be cost and resource loaded. Accepted cost and resource loaded schedule will be used as basis for monthly progress payments until acceptance of the Original CPM Schedule. Use of Initial CPM Schedule for progress payments shall not exceed ninety (90) calendar days.
- E. District and Contractor shall meet to review and discuss the Initial CPM Schedule within seven (7) calendar days after it has been submitted to District.
 - (1) District's review and comment on the schedule shall be limited to Contract conformance (with sequencing, coordination, and milestone requirements).
 - (2) Contractor shall make corrections to schedule necessary to comply with Contract requirements and shall adjust schedule to incorporate any missing information requested by District. Contractor shall resubmit Initial CPM Schedule if requested by District.
- F. If, during the first ninety (90) days after Notice to Proceed, the Contractor is of the opinion that any of the Work included on its Initial CPM Schedule has been impacted, the Contractor shall submit to District a written Time Impact Evaluation ("TIE") in accordance with Article 1.12 of this Section. The TIE shall be based on the most current update of the Initial CPM Schedule.

1.07 ORIGINAL CPM SCHEDULE

- A. Submit a detailed proposed Original CPM Schedule presenting an orderly and realistic plan for completion of the Work in conformance with requirements as specified herein.
- B. Progress Schedule shall include or comply with following requirements:

- (1) Time scaled, cost and resource (labor and major equipment) loaded CPM schedule.
- (2) No activity on schedule shall have duration longer than fifteen (15) work days, with exception of submittal, approval, fabrication and procurement activities, unless otherwise approved by District.
 - (a) Activity durations shall be total number of actual work days required to perform that activity.
- (3) The start and completion dates of all items of Work, their major components, and milestone completion dates, if any.
- (4) District furnished materials and equipment, if any, identified as separate activities.
- (5) Activities for maintaining Project Record Documents.
- (6) Dependencies (or relationships) between activities.
- (7) Processing/approval of submittals and shop drawings for all material and equipment required per the Contract. Activities that are dependent on submittal acceptance or material delivery shall not be scheduled to start earlier than expected acceptance or delivery dates.
 - (a) Include time for submittals, re-submittals and reviews by District. Coordinate with accepted schedule for submission of Shop Drawings, samples, and other submittals.
 - (b) Contractor shall be responsible for all impacts resulting from re-submittal of Shop Drawings and submittals.
- (8) Procurement of major equipment, through receipt and inspection at jobsite, identified as separate activity.
 - (a) Include time for fabrication and delivery of manufactured products for the Work.
 - (b) Show dependencies between procurement and construction.
- (9) Activity description; what Work is to be accomplished and where.
- (10) The total cost of performing each activity shall be total of labor, material, and equipment, excluding overhead and profit of Contractor. Overhead and profit of the General Contractor shall be shown as a separate activity in the schedule. Sum of cost for all activities shall equal total Contract value.
- (11) Resources required (labor and major equipment) to perform each activity.
- (12) Responsibility code for each activity corresponding to Contractor or Subcontractor responsible for performing the Work.

- (13) Identify the activities which constitute the controlling operations or critical path. No more than twenty-five (25%) of the activities shall be critical or near critical. Near critical is defined as float in the range of one (1) to (10) days.
- (14) Twenty (20) workdays for developing punch list(s), completion of punch-list items, and final clean-up for the Work or any designated portion thereof. No other activities shall be scheduled during this period.
- (15) Interface with the work of other contractors, District, and agencies such as, but not limited to, utility companies.
- (16) Show detailed Subcontractor Work activities. In addition, furnish copies of Subcontractor schedules upon which CPM was built.
 - (a) Also furnish for each Subcontractor, as determined by District, submitted on Subcontractor letterhead, a statement certifying that Subcontractor concurs with Contractor's Original CPM Schedule and that Subcontractor's related schedules have been incorporated, including activity duration, cost and resource loading.
 - (b) Subcontractor schedules shall be independently derived and not a copy of Contractor's schedule.
 - (c) In addition to Contractor's schedule and resource loading, obtain from electrical, mechanical, and plumbing Subcontractors, and other Subcontractors as required by District, productivity calculations common to their trades, such as units per person day, feet of pipe per day per person, feet of wiring per day per person, and similar information.
 - (d) Furnish schedule for Contractor/Subcontractor CPM schedule meetings which shall be held prior to submission of Original CPM schedule to District. District shall be permitted to attend scheduled meetings as an observer.
- (17) Activity durations shall be in Work days.
- (18) Submit with the schedule a list of anticipated non-Work days, such as weekends and holidays. The Progress Schedule shall exclude in its Work day calendar all non-Work days on which Contractor anticipates critical Work will not be performed.

C. Original CPM Schedule Review Meeting: Contractor shall, within sixty (60) days from the Notice to Proceed date, meet with District to review the Original CPM Schedule submittal.

- (1) Contractor shall have its Project Manager, Project Superintendent, Project Scheduler, and key Subcontractor representatives, as required by District, in attendance. The meeting will take place over a continuous one (1) day period.

- (2) District's review will be limited to submittal's conformance to Contract requirements including, but not limited to, coordination requirements. However, review may also include:
 - (a) Clarifications of Contract Requirements.
 - (b) Directions to include activities and information missing from submittal.
 - (c) Requests to Contractor to clarify its schedule.
- (3) Within five (5) days of the Schedule Review Meeting, Contractor shall respond in writing to all questions and comments expressed by District at the Meeting.

1.08 ADJUSTMENTS TO CPM SCHEDULE

- A. Adjustments to Original CPM Schedule: Contractor shall have adjusted the Original CPM Schedule submittal to address all review comments from original CPM Schedule review meeting and resubmit network diagrams and reports for District's review.
 - (1) District, within ten (10) days from date that Contractor submitted the revised schedule, will either:
 - (a) Accept schedule and cost and resource loaded activities as submitted, or
 - (b) Advise Contractor in writing to review any part or parts of schedule which either do not meet Contract requirements or are unsatisfactory for District to monitor Project's progress, resources, and status or evaluate monthly payment request by Contractor.
 - (2) District may accept schedule with conditions that the first monthly CPM Schedule update be revised to correct deficiencies identified.
 - (3) When schedule is accepted, it shall be considered the "Original CPM Schedule" which will then be immediately updated to reflect the current status of the work.
 - (4) District reserves right to require Contractor to adjust, add to, or clarify any portion of schedule which may later be discovered to be insufficient for monitoring of Work or approval of partial payment requests. No additional compensation will be provided for such adjustments, additions, or clarifications.
- B. Acceptance of Contractor's schedule by District will be based solely upon schedule's compliance with Contract requirements.
 - (1) By way of Contractor assigning activity durations and proposing sequence of Work, Contractor agrees to utilize sufficient and necessary

management and other resources to perform work in accordance with the schedule.

- (2) Upon submittal of schedule update, updated schedule shall be considered "current" CPM Schedule.
 - (3) Submission of Contractor's schedule to District shall not relieve Contractor of total responsibility for scheduling, sequencing, and pursuing Work to comply with requirements of Contract Documents, including adverse effects such as delays resulting from ill-timed Work.
- C. Submittal of Original CPM Schedule, and subsequent schedule updates, shall be understood to be Contractor's representation that the Schedule meets requirements of Contract Documents and that Work shall be executed in sequence indicated on the schedule.
- D. Contractor shall distribute Original CPM Schedule to Subcontractors for review and written acceptance, which shall be noted on Subcontractors' letterheads to Contractor and transmitted to District for the record.

1.09 MONTHLY CPM SCHEDULE UPDATE SUBMITTALS

- A. Following acceptance of Contractor's Original CPM Schedule, Contractor shall monitor progress of Work and adjust schedule each month to reflect actual progress and any anticipated changes to planned activities.
- (1) Each schedule update submitted shall be complete, including all information requested for the Original CPM Schedule submittal.
 - (2) Each update shall continue to show all Work activities including those already completed. These completed activities shall accurately reflect "as built" information by indicating when activities were actually started and completed.
- B. A meeting will be held on approximately the twenty-fifth (25th) of each month to review the schedule update submittal and progress payment application.
- (1) At this meeting, at a minimum, the following items will be reviewed: Percent (%) complete of each activity; Time Impact Evaluations for Change Orders and Time Extension Request; actual and anticipated activity sequence changes; actual and anticipated duration changes; and actual and anticipated Contractor delays.
 - (2) These meetings are considered a critical component of overall monthly schedule update submittal and Contractor shall have appropriate personnel attend. At a minimum, these meetings shall be attended by Contractor's General Superintendent and Scheduler.
 - (3) Contractor shall plan on the meeting taking no less than four (4) hours.

- C. Within five (5) working days after monthly schedule update meeting, Contractor shall submit the updated CPM Schedule update.
- D. Within five (5) work days of receipt of above noted revised submittals, District will either accept or reject monthly schedule update submittal.
 - (1) If accepted, percent (%) complete shown in monthly update will be basis for Application for Payment by the Contractor. The schedule update shall be submitted as part of the Contractor's Application for Payment.
 - (2) If rejected, update shall be corrected and resubmitted by Contractor before the Application for Payment is submitted.
- E. Neither updating, changing or revising of any report, curve, schedule, or narrative submitted to District by Contractor under this Contract, nor District's review or acceptance of any such report, curve, schedule or narrative shall have the effect of amending or modifying in any way the Completion Date or milestone dates or of modifying or limiting in any way Contractor's obligations under this Contract.

1.10 SCHEDULE REVISIONS

- A. Updating the Schedule to reflect actual progress shall not be considered revisions to the Schedule. Since scheduling is a dynamic process, revisions to activity durations and sequences are expected on a monthly basis.
- B. To reflect revisions to the Schedule, the Contractor shall provide District with a written narrative with a full description and reasons for each Work activity revised. For revisions affecting the sequence of work, the Contractor shall provide a schedule diagram which compares the original sequence to the revised sequence of work. The Contractor shall provide the written narrative and schedule diagram for revisions two (2) working days in advance of the monthly schedule update meeting.
- C. Schedule revisions shall not be incorporated into any schedule update until the revisions have been reviewed by District. District may request further information and justification for schedule revisions and Contractor shall, within three (3) days, provide District with a complete written narrative response to District's request.
- D. If the Contractor's revision is still not accepted by District, and the Contractor disagrees with District's position, the Contractor has seven (7) calendar days from receipt of District's letter rejecting the revision to provide a written narrative providing full justification and explanation for the revision. The Contractor's failure to respond in writing within seven (7) calendar days of District's written rejection of a schedule revision shall be contractually interpreted as acceptance of District's position, and the Contractor waives its rights to subsequently dispute or file a claim regarding District's position.
- E. At District's discretion, the Contractor can be required to provide Subcontractor certifications of performance regarding proposed schedule revisions affecting said Subcontractors.

1.11 RECOVERY SCHEDULE

- A. If the Schedule Update shows a completion date twenty-one (21) calendar days beyond the Contract Completion Date, or individual milestone completion dates, the Contractor shall submit to District the proposed revisions to recover the lost time within seven (7) calendar days. As part of this submittal, the Contractor shall provide a written narrative for each revision made to recapture the lost time. If the revisions include sequence changes, the Contractor shall provide a schedule diagram comparing the original sequence to the revised sequence of work.
- B. The revisions shall not be incorporated into any schedule update until the revisions have been reviewed by District.
- C. If the Contractor's revisions are not accepted by District, District and the Contractor shall follow the procedures in paragraph 1.09.C, 1.09.D and 1.09.E above.
- D. At District's discretion, the Contractor can be required to provide Subcontractor certifications for revisions affecting said Subcontractors.

1.12 TIME IMPACT EVALUATION ("TIE") FOR CHANGE ORDERS, AND OTHER DELAYS

- A. When Contractor is directed to proceed with changed Work, the Contractor shall prepare and submit within fourteen (14) calendar days from the Notice to Proceed a TIE which includes both a written narrative and a schedule diagram depicting how the changed Work affects other schedule activities. The schedule diagram shall show how the Contractor proposes to incorporate the changed Work in the schedule and how it impacts the current schedule-update critical path. The Contractor is also responsible for requesting time extensions based on the TIE's impact on the critical path. The diagram must be tied to the main sequence of schedule activities to enable District to evaluate the impact of changed Work to the scheduled critical path.
- B. Contractor shall be required to comply with the requirements of Paragraph 1.09.A for all types of delays such as, but not limited to, Contractor/Subcontractor delays, adverse weather delays, strikes, procurement delays, fabrication delays, etc.
- C. Contractor shall be responsible for all costs associated with the preparation of TIEs, and the process of incorporating them into the current schedule update. The Contractor shall provide District with four (4) copies of each TIE.
- D. Once agreement has been reached on a TIE, the Contract Time will be adjusted accordingly. If agreement is not reached on a TIE, the Contract Time may be extended in an amount District allows, and the Contractor may submit a claim for additional time claimed by contractor.

1.13 TIME EXTENSIONS

- A. The Contractor is responsible for requesting time extensions for time impacts that, in the opinion of the Contractor, impact the critical path of the current

schedule update. Notice of time impacts shall be given in accord with the General Conditions.

- B. Where an event for which District is responsible impacts the projected Completion Date, the Contractor shall provide a written mitigation plan, including a schedule diagram, which explains how (e.g., increase crew size, overtime, etc.) the impact can be mitigated. The Contractor shall also include a detailed cost breakdown of the labor, equipment, and material the Contractor would expend to mitigate District-caused time impact. The Contractor shall submit its mitigation plan to District within fourteen (14) calendar days from the date of discovery of the impact. The Contractor is responsible for the cost to prepare the mitigation plan.
- C. Failure to request time, provide TIE, or provide the required mitigation plan will result in Contractor waiving its right to a time extension and cost to mitigate the delay.
- D. No time will be granted under this Contract for cumulative effect of changes.
- E. District will not be obligated to consider any time extension request unless the Contractor complies with the requirements of Contract Documents.
- F. Failure of the Contractor to perform in accordance with the current schedule update shall not be excused by submittal of time extension requests.
- G. If the Contractor does not submit a TIE within the required fourteen (14) calendar days for any issue, it is mutually agreed that the Contractor does not require a time extension for said issue.

1.14 SCHEDULE REPORTS

- A. Submit four (4) copies of the following reports with the Initial CPM Schedule, the Original CPM Schedule, and each monthly update.
- B. Required Reports:
 - (1) Two activity listing reports: one sorted by activity number and one by total Project Float. These reports shall also include each activity's early/late and actual start and finish dates, original and remaining duration, Project Float, responsibility code, and the logic relationship of activities.
 - (2) Cost report sorted by activity number including each activity's associated cost, percentage of Work accomplished, earned value- to date, previous payments, and amount earned for current update period.
 - (3) Schedule plots presenting time-scaled network diagram showing activities and their relationships with the controlling operations or critical path clearly highlighted.

- (4) Cash flow report calculated by early start, late start, and indicating actual progress. Provide an exhibit depicting this information in graphic form.
- (5) Planned versus actual resource (i.e., labor) histogram calculated by early start and late start.

C. Other Reports:

In addition to above reports, District may request, from month to month, any two of the following reports. Submit four (4) copies of all reports.

- (1) Activities by early start.
 - (2) Activities by late start.
 - (3) Activities grouped by Subcontractors or selected trades.
 - (4) Activities with scheduled early start dates in a given time frame, such as fifteen (15) or thirty (30) day outlook.
- D. Furnish District with report files on compact disks containing all schedule files for each report generated.

1.15 PROJECT STATUS REPORTING

- A. In addition to submittal requirements for CPM scheduling identified in this Section, Contractor shall provide a monthly project status report (i.e., written narrative report) to be submitted in conjunction with each CPM Schedule as specified herein. Status reporting shall be in form specified below.
- B. Contractor shall prepare monthly written narrative reports of status of Project for submission to District. Written status reports shall include:
- (1) Status of major Project components (percent (%) complete, amount of time ahead or behind schedule) and an explanation of how Project will be brought back on schedule if delays have occurred.
 - (2) Progress made on critical activities indicated on CPM Schedule.
 - (3) Explanations for any lack of work on critical path activities planned to be performed during last month.
 - (4) Explanations for any schedule changes, including changes to logic or to activity durations.
 - (5) List of critical activities scheduled to be performed next month.
 - (6) Status of major material and equipment procurement.
 - (7) Any delays encountered during reporting period.

- (8) Contractor shall provide printed report indicating actual versus planned resource loading for each trade and each activity. This report shall be provided on weekly and monthly basis.
 - (a) Actual resource shall be accumulated in field by Contractor, and shall be as noted on Contractor's daily reports. These reports will be basis for information provided in computer-generated monthly and weekly printed reports.
 - (b) Contractor shall explain all variances and mitigation measures.
- (9) Contractor may include any other information pertinent to status of Project. Contractor shall include additional status information requested by District at no additional cost.
- (10) Status reports, and the information contained therein, shall not be construed as claims, notice of claims, notice of delay, or requests for changes or compensation.

1.16 WEEKLY SCHEDULE REPORT

At the Weekly Progress Meeting, the Contractor shall provide and present a time-scaled three (3) week look-ahead schedule that is based and correlated by activity number to the current schedule (i.e., Initial, Original CPM, or Schedule Update).

1.17 DAILY CONSTRUCTION REPORTS

On a daily basis, Contractor shall submit a daily activity report to District for each workday, including weekends and holidays when worked. Contractor shall develop the daily construction reports on a computer-generated database capable of sorting daily Work, manpower, and man-hours by Contractor, Subcontractor, area, sub-area, and Change Order Work. Upon request of District, furnish computer disk of this data base. Obtain District's written approval of daily construction report data base format prior to implementation. Include in report:

- A. Project name and Project number.
- B. Contractor's name and address.
- C. Weather, temperature, and any unusual site conditions.
- D. Brief description and location of the day's scheduled activities and any special problems and accidents, including Work of Subcontractors. Descriptions shall be referenced to CPM scheduled activities.
- E. Worker quantities for its own Work force and for Subcontractors of any tier.
- F. Equipment, other than hand tools, utilized by Contractor and Subcontractors.

1.18 PERIODIC VERIFIED REPORTS

Contractor shall complete and verify construction reports on a form prescribed by the Division of the State Architect and file reports on the first day of February, May,

August, and November during the preceding quarter year; at the completion of the Contract; at the completion of the Work; at the suspension of Work for a period of more than one (1) month; whenever the services of Contractor or any of Contractor's Subcontractors are terminated for any reason; and at any time a special verified report is required by the Division of the State Architect. Refer to section 4-336 and section 4-343 of Part 1, Title 24 of the California Code of Regulations.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

SUBMITTALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Contractor's Submittals and Schedules, Drawings and Specifications;
- B. Special Conditions.

1.02 SECTION INCLUDES:

- A. Definitions:
 - (1) Shop Drawings and Product Data are as indicated in the General Conditions and include, but are not limited to, fabrication, erection, layout and setting drawings, formwork and falsework drawings, manufacturers' standard drawings, descriptive literature, catalogues, brochures, performance and test data, wiring and control diagrams. In addition, there are other drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment or systems and all positions conform to the requirement of the Contract Documents, including, without limitation, the Drawings.
 - (2) "Manufactured" applies to standard units usually mass-produced; "fabricated" means specifically assembled or made out of selected materials to meet design requirements. Shop Drawings shall establish the actual detail of manufactured or fabricated items, indicated proper relation to adjoining work and amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure.
 - (3) Manufacturer's Instructions: Where any item of Work is required by the Contract Documents to be furnished, installed, or performed, at a minimum, in accordance with a specified product manufacturer's instructions, the Contractor shall procure and distribute copies of these to the District, the Architect, and all other concerned parties and shall furnish, install, or perform the work, at a minimum, in accordance with those instructions.
- B. Samples, Shop Drawings, Product Data, and other items as specified, in accordance with the following requirements:

- (1) Contractor shall submit all Shop Drawings, Product Data, and Samples to the District, the Architect, the Project Inspector, and the Construction Manager.
- (2) Contractor shall comply with all time frames herein and in the General Conditions and, in any case, shall submit required information in sufficient time to permit proper consideration and action before ordering any materials or items represented by such Shop Drawings, Product Data, and/or Samples.
- (3) Contractor shall allow sufficient time so that no delay occurs due to required lead time in ordering or delivery of any item to the Site. Contractor shall be responsible for any delay in progress of Work due to its failure to observe these requirements.
- (4) Time for completion of Work shall not be extended on account of Contractor's failure to promptly submit Shop Drawings, Product Data, and/or Samples.
- (5) Reference numbers on Shop Drawings shall have Architectural and/or Engineering Contract Drawings reference numbers for details, sections, and "cuts" shown on Shop Drawings. These reference numbers shall be in addition to any numbering system that Contractor chooses to use or has adopted as standard.
- (6) When the magnitude or complexity of submittal material prevents a complete review within the stated time frame, Contractor shall make this submittal in increments to avoid extended delays.
- (7) Contractor shall certify on submittals for review that submittals conform to Contract requirements. Also certify that Contractor-furnished equipment can be installed in allocated space. In event of any variance, Contractor shall specifically state in transmittal and on Shop Drawings, portions vary and require approval of a substitute. Submittals shall not be used as a means of requesting a substitution.
- (8) Unless specified otherwise, sampling, preparation of samples, and tests shall be in accordance with the latest standard of the American Society for Testing and Materials.
- (9) Upon demand by Architect or District, Contractor shall submit samples of materials and/or articles for tests or examinations and consideration before Contractor incorporates same in Work. Contractor shall be solely responsible for delays due to sample(s) not being submitted in time to allow for tests. Acceptance or rejection will be expressed in writing. Work shall be equal to approved samples in every respect. Samples that are of value after testing will remain the property of Contractor.

C. Submittal Schedule:

- (1) Contractor shall prepare its proposed submittal schedule that is coordinated with the its proposed construction schedule and submit

both to the District within ten (10) days after the date of the Notice to Proceed. Contractor's proposed schedules shall become the Project Construction Schedule and the Project Submittal Schedule after each is approved by the District.

- (2) Contractor is responsible for all lost time should the initial submittal be rejected, marked "revise and resubmit", etc.
- (3) All Submittals shall be forwarded to the District by the date indicated on the approved Submittal Schedule, unless an earlier date is necessary to maintain the Construction Schedule, in which case those Submittals shall be forwarded to the District so as not to delay the Construction Schedule.
- (4) Contractor may be assessed \$100 a day for each day it is late in submitting a shop drawing or sample. No extensions of time will be granted to Trade Contractor or any Subcontractor because of its failure to have shop drawings and samples submitted in accordance with the Schedule.

1.03 SHOP DRAWINGS:

- A. Contractor shall submit one reproducible transparency and six (6) opaque reproductions. The District will review and return the reproducible copy and one (1) opaque reproduction to Contractor.
- B. Before commencing installation of any Work, the Contractor shall submit and receive approval of all drawings, descriptive data, and material list(s) as required to accomplish Work.
- C. Review of Shop Drawings is regarded as a service to assist Contractor and in all cases original Contract Documents shall take precedence as outlined under General Conditions.
- D. No claim for extra time or payment shall be based on work shown on Shop Drawings unless the claim is (1) noted on Contractor's transmittal letter accompanying Shop Drawings and (2) Contractor has complied with all applicable provisions of the General Conditions, including, without limitation, provisions regarding changes and payment, and all required written approvals.
- E. District shall not review Shop Drawings for quantities of materials or number of items supplied.
- F. District's and/or Architect's review of Shop Drawing will be general. District and/or Architect review does not relieve Contractor of responsibility for dimensions, accuracy, proper fitting, construction of Work, furnishing of materials, or Work required by Contract Documents and not indicated on Shop Drawings. The District's and/or Architect's review of Shop Drawings is not to be construed as approving departures from Contract Documents.
- G. Review of Shop Drawings and Schedules does not relieve Contractor from responsibility for any aspect of those Drawings or Schedules that is a violation

of local, County, State, or Federal laws, rules, ordinances, or rules and regulations of commissions, boards, or other authorities or utilities having jurisdiction.

- H. Before submitting Shop Drawings for review, Contractor shall check Shop Drawings of its subcontractors for accuracy, and confirm that all Work contiguous with and having bearing on other work shown on Shop Drawings is accurately drawn and in conformance with Contract Documents.
- I. Submitted drawings and details must bear stamp of approval of Contractor:
 - (1) Stamp and signature shall clearly certify that Contractor has checked Shop Drawings for compliance with Drawings.
 - (2) If Contractor submits a Shop Drawing without an executed stamp of approval, or whenever it is evident (despite stamp) that Drawings have not been checked, the District and/or Architect will not consider them and will return them to the Contractor for revision and resubmission. In that event, it will be deemed that Contractor has not complied with this provision and Contractor shall bear risk of all delays to same extent as if it had not submitted any Shop Drawings or details.
- J. Submission of Shop Drawings (in either original submission or when resubmitted with correction) constitutes evidence that Contractor has checked all information thereon and that it accepts and is willing to perform Work as shown.
- K. Contractor shall pay for cost of any changes in construction due to improper checking and coordination. Contractor shall be responsible for all additional costs, including coordination. Contractor shall be responsible for costs incurred by itself, the District, the Architect, the Project Inspector, the Construction Manager, any other Subcontractor or contractor, etc., due to improperly checked and/or coordination of submittals.
- L. Shop Drawings must clearly delineate the following information:
 - (1) Project name and address.
 - (2) Specification number and description.
 - (3) Architect's name and project number.
 - (4) Shop Drawing title, number, date, and scale.
 - (5) Names of Contractor, Subcontractor(s) and fabricator.
 - (6) Working and erection dimensions.
 - (7) Arrangements and sectional views.
 - (8) Necessary details, including complete information for making connections with other Work.

- (9) Kinds of materials and finishes.
 - (10) Descriptive names of materials and equipment, classified item numbers, and locations at which materials or equipment are to be installed in the Work. Contractor shall use same reference identification(s) as shown on Contract Drawings.
- M. Contractor shall prepare composite drawings and installation layouts when required to solve tight field conditions.
- (1) Shop Drawings shall consist of dimensioned plans and elevations and must give complete information, particularly as to size and location of sleeves, inserts, attachments, openings, conduits, ducts, boxes, structural interferences, etc.
 - (2) Contractor shall coordinate these composite Shop Drawings and installation layouts in the field between itself and its Subcontractor(s) for proper relationship to the Work, the work of other trades, and the field conditions. The Contractor shall check and approve all submittal(s) before submitting them for final review.

1.04 PRODUCT DATA OR NON REPRODUCIBLE SUBMITTALS:

- A. Contractor shall submit manufacturer's printed literature in original form. Any fading type of reproduction will not be accepted. Contractor must submit a minimum of six (6) each, to the District. District shall return one (1) to the Contractor, who shall reproduce whatever additional copies it requires for distribution.
- B. Contractor shall submit six (6) copies of a complete list of all major items of mechanical, plumbing, and electrical equipment and materials in accordance with the approved Submittal Schedule, except as required earlier to comply with the approved Construction Schedule. Other items specified are to be submitted prior to commencing Work. Contractor shall submit items of like kind at one time in a neat and orderly manner. Partial lists will not be acceptable.
- C. Submittals shall include manufacturer's specifications, physical dimensions, and ratings of all equipment. Contractor shall furnish performance curves for all pumps and fans. Where printed literature describes items in addition to that item being submitted, submitted item shall be clearly marked on sheet and superfluous information shall be crossed out. If highlighting is used, Contractor shall mark all copies.
- D. Equipment submittals shall be complete and include space requirements, weight, electrical and mechanical requirements, performance data, and supplemental information that may be requested.
- E. Imported Materials Certification must be submitted at least ten (10) days before material is delivered.

1.05 SAMPLES:

- A. Contractor shall submit for approval Samples as required and within the time frame in the Contract Documents. Materials such as concrete, mortar, etc., which require on-site testing will be obtained from Project Site.
- B. Contractor shall submit four (4) samples except where greater or lesser number is specifically required by Contract Documents including, without limitation, the Specifications.
 - (1) Samples must be of sufficient size and quality to clearly illustrate functional characteristics, with integrally related parts and attachment devices.
 - (2) Samples must show full range of texture, color, and pattern.
- C. Contractor shall make all Submittals, unless it has authorized Subcontractor(s) to submit and Contractor has notified the District in writing to this effect.
- D. Samples to be shipped prepaid or hand-delivered to the District.
- E. Contractor shall mark samples to show name of Project, name of Contractor submitting, Contract number and segment of Work where representative Sample will be used, all applicable Specifications Sections and documents, Contract Drawing Number and detail, and ASTM or FS reference, if applicable.
- F. Contractor shall not deliver any material to Site prior to receipt of District's and/or Architect's completed written review and approval. Contractor shall furnish materials equal in every respect to approved Samples and execute Work in conformance therewith.
- G. District's and/or Architect's review, acceptance, and/or approval of Sample(s) will not preclude rejections of any material upon discovery of defects in same prior to final acceptance of completed Work.
- H. After a material has been approved, no change in brand or make will be permitted.
- I. Contractor shall prepare its Submittal Schedule and submit Samples of materials requiring laboratory tests to specified laboratory for testing not less than ninety (90) days before such materials are required to be used in Work.
- J. Samples which are rejected must be resubmitted promptly after notification of rejection and be marked "Resubmitted Sample" in addition to other information required.
- K. Field Samples and Mock-Ups are to be removed by Contractor at District's direction:
 - (1) Size: As Specified.
 - (2) Furnish catalog numbers and similar data, as requested.

1.06 REVIEW AND RESUBMISSION REQUIREMENTS:

- A. The District will arrange for review of Sample(s), Shop Drawing(s), Product Data, and other submittal(s) by appropriate reviewer and return to Contractor as provided below within twenty-one (21) days after receipt or within twenty-one (21) days after receipt of all related information necessary for such review, whichever is later.
- B. One (1) copy of product or materials data will be returned to Contractor with the review status.
- C. Samples to be incorporated into the Work will be returned to Contractor, together with a written notice designating the Sample with the appropriate review status and indicating errors discovered on review, if any. Other Samples will not be returned, but the same notice will be given with respect thereto, and that notice shall be considered a return of the Sample.
- D. Contractor shall revise and resubmit any Sample(s), Shop Drawing(s), Product Data, and other submittal(s) as required by the reviewer. Such resubmittals will be reviewed and returned in the same manner as original Sample(s), Shop Drawing(s), Product Data, and other submittal(s), within fourteen (14) days after receipt thereof or within fourteen (14) days after receipt of all related information necessary for such review. Such resubmittal shall not delay the Work.
- E. Contractor may proceed with any of the Work covered by Sample(s), Shop Drawing(s), Product Data, and other submittal(s) upon its return if designated as no exception taken, or revise as noted, provided the Contractor proceeds in accordance with the District and/or the Architect's notes and comments.
- F. Contractor shall not begin any of the work covered by a Sample(s), Shop Drawing(s), Product Data, and other submittal(s), designated as revise and resubmit or rejected, until a revision or correction thereof has been reviewed and returned to Contractor.
- G. Sample(s), Shop Drawing(s), Product Data, and other submittal(s) designated as revise and resubmit or rejected and requiring resubmittal, shall be revised or corrected and resubmitted to the District no later than fourteen (14) days or a shorter period as required to comply with the approved Construction Schedule, after its return to Contractor.
- H. Neither the review nor the lack of review of any Sample(s), Shop Drawing(s), Product Data, and other submittal(s) shall waive any of the requirements of the Contract Documents, or relieve Contractor of any obligation thereunder.
- I. District's and/or Architect's review of Shop Drawings does not relieve the Contractor of responsibility for any errors that may exist. Contractor is responsible for the dimensions and design of adequate connections and details and for satisfactory construction of all the Work.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

SITE STANDARDS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including without limitation, Site Access, Conditions, and Regulations;
- B. Special Conditions;
- C. Drug-Free Workplace Certification;
- D. Tobacco-Free Environment Certification;
- E. Criminal Background Investigation/Fingerprinting Certification;
- F. Temporary Facilities and Controls.

1.02 REQUIREMENTS OF THE DISTRICT:

- A. Drug-Free Schools and Safety Requirements:
 - (1) All school sites and other District Facilities have been declared "Drug-Free Zones." No drugs, alcohol and/or smoking are allowed at any time in any buildings and/or grounds on District property. No students, staff, visitors, or contractors are to use drugs on these sites.
 - (2) Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school-owned vehicles and vehicles owned by others while on District property. Contractor shall post: "Non-Smoking Area" in a highly visible location in each work area, staging area, and parking area. Contractor may designate a smoking area outside of District property within the public right-of-way, provided that this area remains quiet and unobtrusive to adjacent neighbors. This smoking area is to be kept clean at all times.
 - (3) Contractor shall ensure that no alcohol, firearms, weapons, or controlled substances enter or are used at the Site. Contractor shall immediately remove from the Site and terminate the employment of any employee(s) found in violation of this provision.
- B. Language: Profanity or other unacceptable and/or loud language will not be tolerated, "Cat calls" or other derogatory language toward students, staff, volunteers, parents or public will not be allowed.

- C. Disturbing the Peace (Noise and Lighting):
- (1) Contractor shall observe the noise ordinance of the Site at all times including, without limitation, all applicable local, city, and/or state laws, ordinances, and/or regulations regarding noise and allowable noise levels.
 - (2) The use of radios, etc., shall be controlled to keep all sound at a level that cannot be heard beyond the immediate area of use. District reserves the right to prohibit the use of radios at the Site, except for mobile phones or other handheld communication radios.
 - (3) If portable lights are used after dark, all light must be located so as not to direct light into neighboring property.
- D. Traffic:
- (1) Driving on the Premises shall be limited to periods when students and public are not present. If driving or deliveries must be made during the school hours, two (2) or more ground guides shall lead the vehicle across the area of travel. In no case shall driving take place across playgrounds or other pedestrian paths during recess, lunch, and/or class period changes. The speed limit on-the Premises shall be five (5) miles per hour (maximum) or less if conditions require.
 - (2) All paths of travel for deliveries, including without limitation, material, equipment, and supply deliveries, shall be reviewed and approved by District in advance. Any damage will be repaired to the pre-damaged condition by the Contractor.
 - (3) District shall designate a construction entry to the Site. If Contractor requests, District determines it is required, and to the extent possible, District shall designate a staging area so as not to interfere with the normal functioning of school facilities. Location of gates and fencing shall be approved in advance with District and at Contractor's expense.
 - (4) Parking areas shall be reviewed and approved by District in advance. No parking is to occur under the drip line of trees or in softscape areas that could otherwise be damaged.
- E. All of the above shall be observed and complied with by the Contractor and all workers on the Site. Failure to follow these directives could result in individual(s) being suspended or removed from the work force at the discretion of the District. The same rules and regulations shall apply equally to delivery personnel, inspectors, consultants, and other visitors to the Site.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

PART 4 - SITE LOGISTICS PLANS

A. See next two pages, pages 3 and 4.

END OF DOCUMENT

UTILITY SHUTDOWNS

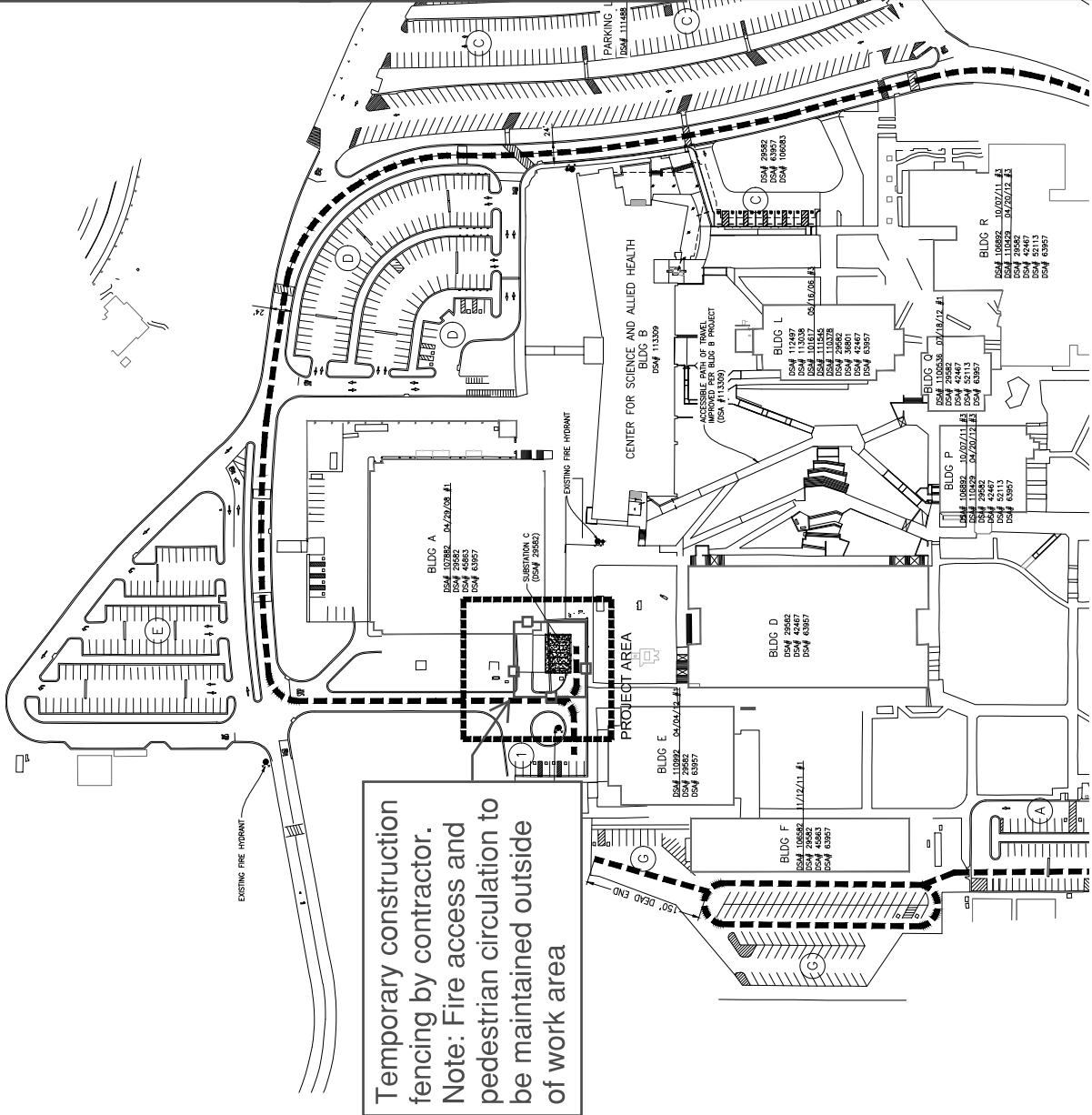
- (1) Utility shutdowns will be required for the switch over of power from the old equipment to the new equipment & must take place during summer recess or while campus activities are not taking place.
 - (2) Utility shutdowns may be required for other activities or in case of emergency.
- Any planned utility shutdowns must be coordinated with the District a minimum of 7 days prior to shutdown. In case of emergency shutdown, contractor to notify CM and District ASAP. Contractor to provide temporary utility connections as necessary to maintain campus systems.

HOURS OF OPERATION

- (1) Construction activities are limited to between 7:00AM & 7:00PM Monday through Friday, except pile driving &/or other extreme noise generating activities greater than 90dBA shall be limited to between 8:00AM & 4:00PM Monday through Friday.
- (2) Any construction activity proposed to occur outside of the standard hours listed above shall be evaluated on a case-by-case basis as requested by written notification.

GENERAL NOTES

- (1) Coordinate with other bond program & campus maintenance projects on site.
- (2) Verify & document existing systems around the construction site before demo begins - confirm whether functioning or not.
- (3) Walk site with CM, Campus representative and DGS before demo to verify any visible existing conditions that do not exist on drawings.
- (4) Site cleanliness - in addition to what is mentioned in Spec 01 50 00 Temporary Facilities & Controls Section 1.06 and Spec 01 50 13 Construction Management & Disposal, apply OSHA regulation 1926.25 - Housekeeping standards.



Temporary construction fencing by contractor.
 Note: Fire access and pedestrian circulation to be maintained outside of work area



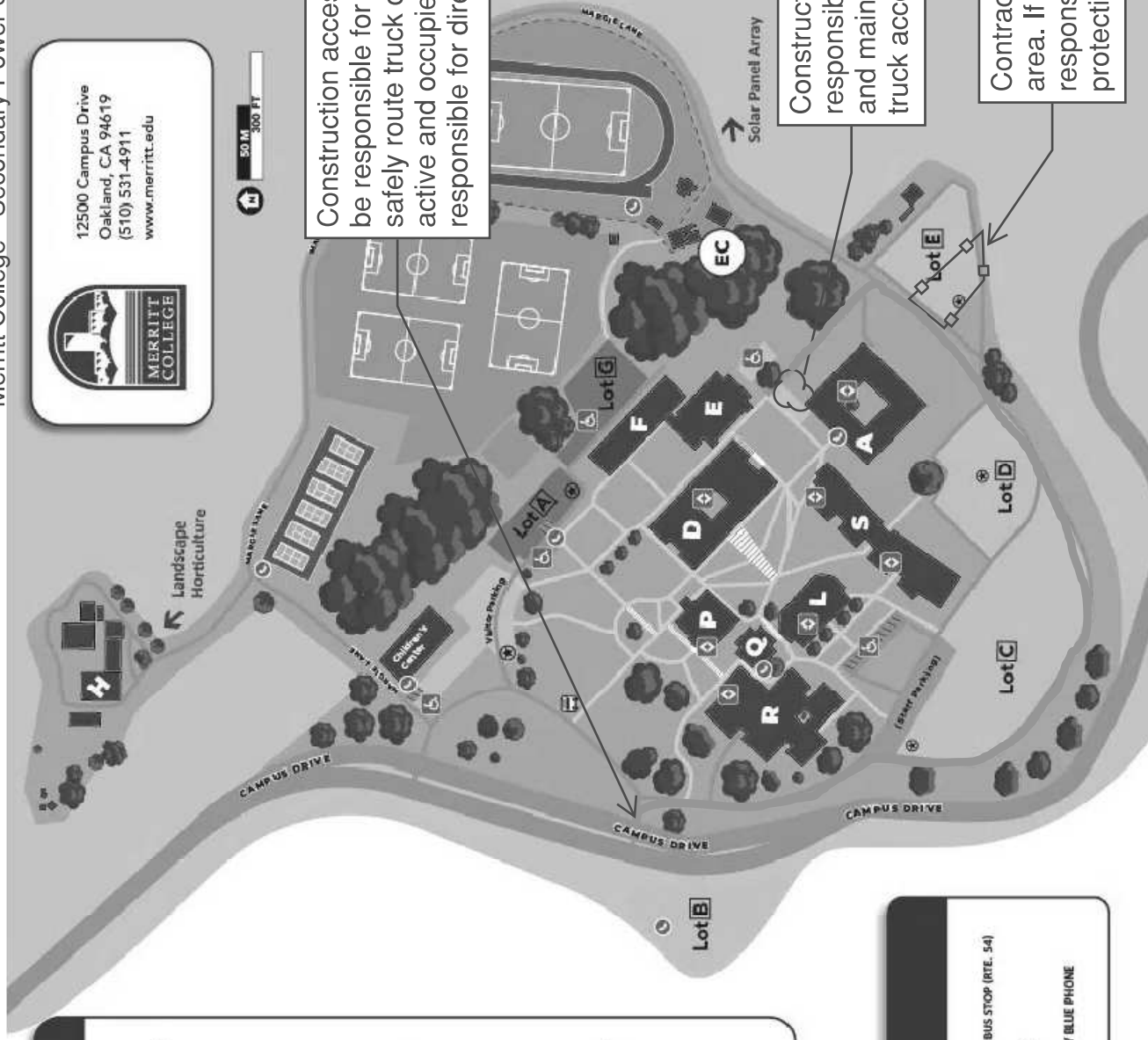
12500 Campus Drive
 Oakland, CA 94619
 (510) 531-4911
 www.merritt.edu



Construction access path. Contractor will be responsible for providing flaggers to safely route truck deliveries through the active and occupied campus. Contractor responsible for directional signage to site.

Construction area. Contractor responsible for providing fencing and maintaining emergency fire truck access routes.

Contractor parking and lay-down area. If used contractor will be responsible for fencing and protection of materials.



Directory	
A	Administration of Justice, Art, Child Development, Fitness Center, Music, Classrooms
D	Division I Office, MILK Jr. Freedom Center, Inland 37.8 High School
E	Gymnasium
F	Locker rooms, Faculty Offices, Engineers Office
H	Landscape Horticulture
L	Library Learning Center Electronic Classroom Math/Science Lab Tutorial Center
P	Classrooms, Puente Program, Computer Access Lab/DSIS, Computer Labs
Q	Administration Office of President Vice President of Instruction Business Services Cashier's Office Mailroom & Switchboard Production Center
R	Student Services Admissions & Records, Assessment, Bookstore, Counseling, Disabled Students Programs & Services, EOPS, Financial Aide, Newton/Seale Student Lounge, Student Activities, Student Health Services, Transfer Center, Veterans Affairs, Vice President of Student Services
S	Science & Allied Health Program Classrooms & Labs, Division II Office, Division III Office
EC	Environmental Center

Legend

- PAVED AREA
- ACCESSIBLE PARKING
- AC TRANSIT BUS STOP (RTE. 54)
- DAILY HOURLY PARKING DISPENSERS
- STAIRWAYS
- ACCESSIBLE ELEVATOR
- EMERGENCY BLUE PHONE

Existing utilities must be maintained while the campus is occupied. Utility shutdowns necessary for the installation & connection of new utilities must take place while the campus is not occupied. In addition, utility shutdowns must be scheduled & approved by the District a minimum of 7 days prior to shutdown. Contractor shall provide temporary utility connections as necessary to maintain campus systems. Installation of utilities & associated work that extend outside the main area of construction shall be scheduled with the District. Contractor will be responsible for installing fencing &/or other separation barricades to keep construction activities safely separated from campus activities. This includes any & all work that extends outside of the main construction area including but not limited to storm drain lines, sanitary sewer lines, gas lines, electrical power lines & electrical low voltage lines.

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Obtaining of Permits, Licenses and Registrations and Work to Comply with All Applicable Laws and Regulations;
- B. Special Conditions; and
- C. Quality Control.

1.02 DESCRIPTION:

This section covers the general requirements for regulatory requirements pertaining to the Work and is supplementary to all other regulatory requirements mentioned or referenced elsewhere in the Contract Documents.

1.03 REQUIREMENTS OF REGULATORY AGENCIES:

- A. All statutes, ordinances, laws, rules, codes, regulations, standards, and the lawful orders of all public authorities having jurisdiction over the Work, are hereby incorporated into these Contract Documents as if repeated in full herein and are intended to be included in any reference to Code or Building Code, unless otherwise specified, including, without limitation, the references in the list below. Contractor shall make available at the Site copies of all the listed documents applicable to the Work as the District and/or Architect may request, including, without limitation, applicable portions of the California Code of Regulations ("CCR").
 - (1) California Building Standards Administrative Code, Part 1, Title 24, CCR.
 - (2) California Building Code (CBC), Part 2, Title 24, CCR; (International Building Code volumes 1-2 and California Amendments).
 - (3) California Electrical Code (CEC), Part 3, Title 24, CCR; (National Electrical Code and California Amendments).
 - (4) California Mechanical Code (CMC), Part 4, Title 24, CCR; (Uniform Mechanical Code and California Amendments).
 - (5) California Plumbing Code (CPC), Part 5, Title 24, CCR; (Uniform Plumbing Code and California Amendments).

- (6) California Fire Code (CFC), Part 9, Title 24, CCR; (International Fire Code and California Amendments).
- (7) California Green Building Standards Code (CALGreen), Part 11, Title 24, CCR.
- (8) California Referenced Standards Code, Part 12, Title 24, CCR.
- (9) State Fire Marshal Regulations, Public Safety, Title 19, CCR.
- (10) Partial List of Applicable National Fire Protection Association (NFPA) Standards:
 - (a) NFPA 13 - Automatic Sprinkler System.
 - (b) NFPA 14 - Standpipes Systems.
 - (c) NFPA 17A - Wet Chemical System
 - (d) NFPA 24 - Private Fire Mains.
 - (e) (California Amended) NFPA 72 - National Fire Alarm Codes.
 - (f) NFPA 253 - Critical Radiant Flux of Floor Covering System.
 - (g) NFPA 2001 - Clean Agent Fire Extinguishing Systems.
- (11) California Division of the State Architect interpretation of Regulations ("DSA IR"), including, without limitation:
 - (a) DSA IR A-6 — Construction Change Document Submittal and Approval Processes.
 - (b) DSA IR A-7 — Project Inspector Certification and Approval.
 - (c) DSA IR A-8 — Project Inspector and Assistant Inspector Duties and Performance.
 - (d) DSA IR A-12 — Assistant Inspector Approval.
- (12) DSA Procedures ("DSA PR")
 - (a) DSA PR 13-01 – Construction Oversight Process
- (13) DSA PR 13-02 – Project Certification Process

B. This Project shall be governed by applicable regulations, including, without limitation, the State of California's Administrative Regulations for the Division of the State Architect-Structural Safety (DSA/SS), Chapter 4, Part 1, Title 24, CCR, and the most current version on the date the bids are opened and as it pertains to school construction including, without limitation:

- (1) Test and testing laboratory per Section 4-335. District shall pay for the testing laboratory.
- (2) Special inspections per Section 4-333(c).
- (3) Deferred Approvals per section 4-317(g).
- (4) Verified reports per Sections 4-336 & 4-343(c).
- (5) Duties of the Architect & Engineers shall be per Section 4-333(a) and 4-341.
- (6) Duties of the Contractor shall be per Section 4-343.
- (7) Duties of Project Inspector shall be per Section 4-334.
- (8) Addenda and Construction Change Documents per Section 4-338.

Contractor shall keep and make available all applicable parts of the most current version of Title 24 referred to in the plans and specifications at the Site during construction.

- C. Items of deferred approval shall be clearly marked on the first sheet of the Architect's and/or Engineer's approved Drawings. All items later submitted for approval shall be per Title 24 requirements to the DSA.
- (1) Contractor shall submit the following to Architect for review and endorsement:
 - (a) Product information on proposed material/system supplier.
 - (b) Drawings, specifications, and calculations prepared, signed, and stamped by an architect or engineer licensed in the State of California for that portion of the Work.
 - (c) All other requirements as may be required by DSA.
 - (2) Cost of preparing and submitting documentation per DSA Deferred Approval requirements including required modifications to Drawings and Specifications, whether or not indicated in the Contract Documents, shall be borne by Contractor.
 - (3) Contractor shall not begin fabrication and installation of deferred approval items without first obtaining DSA approval of Drawings and Specifications.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

ABBREVIATIONS AND ACRONYMS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions including without limitation, Definitions;
- B. Special Conditions.

1.02 DOCUMENT INCLUDES:

- A. Abbreviations used throughout the Contract Documents.
- B. Reference to a technical society, organization, or body is by abbreviation, as follows:

1.	AA	Aluminum Association
2.	AASHTO	American Association of State Highway and Transportation Officials
3.	ABPA	Acoustical and Board Products Association
4.	ACI	American Concrete Institute
5.	AGA	American Gas Association
6.	AGC	Associated General Contractors
7.	AHC	Architectural Hardware Consultant
8.	AHRI	Air Conditioning, Heating, Refrigeration Institute
9.	AI	Asphalt Institute
10.	AIA	American Institute of Architects
11.	AISC	American Institute of Steel Construction
12.	AISI	American Iron and Steel Institute
13.	AMCA	Air Movement and Control Association
14.	ANSI	American National Standards Institute
15.	APA	APA – The Engineered Wood Association
16.	ASCE	American Society of Civil Engineers
17.	ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
18.	ASSE	American Society of Civil Engineers
19.	ASME	American Society of Mechanical Engineers
20.	ASTM	American Society of Testing and Materials International
21.	AWPA	American Wood Protection Association
22.	AWPI	American Wood Preservers Institute
23.	AWS	American Welding Society
24.	AWSC	American Welding Society Code
25.	AWI	Architectural Woodwork Institute
26.	AWWA	American Water Works Association
27.	BIA	The Brick Industry Association

28.	CCR	California Code of Regulations
29.	CLFMI	Chain Link Fence Manufacturers Institute
30.	CRA	California Redwood Association
31.	CRSI	Concrete Reinforcing Steel Institute
32.	CS	Commercial Standards
33.	CSI	Construction Specifications Institute
34.	CTI	Cooling Technology Institute
35.	FGIA	Fenestration and Glazing Industry Alliance
36.	FGMA	Flat Glass Manufacturers' Association
37.	FIA	Factory Insurance Association
38.	FM	Factory Mutual Global
39.	FS/FED SPEC	Federal Specification
40.	FTI	Facing Title Institute
41.	GA	Gypsum Association
42.	IAPMO	International Association of Plumbing and Mechanical Officials
43.	ICC	International Code Council
44.	IEEE	Institute of Electrical and Electronics Engineers
45.	IES	Illuminating Engineering Society
46.	MCAC	Mason Contractors Association of California
47.	MIMA	Mineral Wool Insulation Manufacturers Association
48.	MLMA	Metal Lath Manufacturers Association
49.	MS/MIL SPEC	Military Specifications
50.	NAAMM	National Association of Architectural Metal Manufacturers
51.	NBHA	National Builders Hardware Association
52.	NCMA	National Concrete Masonry Association
53.	NCSEA	National Council of Structural Engineers Associations
54.	NEC	National Electrical Code
55.	NEMA	National Electrical Manufacturers Association
56.	NIST	National Institute of Standards and Technology
57.	NSI	Natural Stone Institute
58.	NTMA	National Terrazzo and Mosaic Association, Inc.
59.	ORS	Office of Regulatory Services (California)
60.	OSHA	Occupational Safety and Health Act
61.	PCI	Precast/Prestressed Concrete Institute
62.	PCA	Portland Cement Association
63.	PCA	Painting Contractors Association
64.	PDI	Plumbing Drainage Institute
65.	PEI	Porcelain Enamel Institute, Inc.
66.	PG&E	Pacific Gas & Electric Company
67.	PS	Product Standards
68.	SDI	Steel Door Institute; Steel Deck Institute
69.	SJI	Steel Joist Institute
70.	SPC	Society for Protective Coatings
71.	TCNA	Tile Council of North America, Inc.
72.	TPI	Truss Plate Institute
73.	UBC	Uniform Building Code

74.	UL	Underwriters Laboratories Code
75.	UMC	Uniform Mechanical Code
76.	USDA	United States Department of Agriculture
77.	VI	Vermiculite Institute
78.	WCLIB	West Coast Lumber Inspection Bureau
79.	WDMA	Window and Door Manufacturers Association
80.	WEUSER	Western Electric Utilities Service Engineering Requirements
81.	WIC	Woodwork Institute of California

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

DEFINITIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions including without limitation, Definitions;
- B. Special Conditions.

1.02 QUALITY ASSURANCE

- A. For products or workmanship specified by association, trade, or Federal Standards, Contractor shall comply with requirements of the standard, except when more rigid requirements are specified in the Contract Documents, or are required by applicable codes.
- B. Contractor shall conform to current reference standard publication date in effect on the date of bid opening.
- C. Contractor shall obtain copies of standards unless specifically required not to by the Contract Documents.
- D. Contractor shall maintain a copy of all standards at jobsite during submittals, planning, and progress of the specific Work, until final completion, unless specifically required not to by the Contract Documents.
- E. Should specified reference standards conflict with Contract Documents, Contractor shall request clarification from the District and./or the Architect before proceeding.
- F. The contractual relationship of the parties to the Contract shall not be altered from the contractual relationship as indicated in the Contract Documents by mention or inference otherwise in any referenced document.
- G. Governing Codes shall be as shown in the Contract Documents including, without limitation, the Specifications.

END OF DOCUMENT

REFERENCES**PART 1 - GENERAL****1.01 1.01 SCHEDULE OF REFERENCES:**

The following information is intended only for the general assistance of the Contractor, and the District does not represent that all of the information is current. It is the Contractor's responsibility to verify the correct information for each of the entities listed.

AA	Aluminum Association 1525 Wilson Blvd., Suite 600 Arlington, VA 22209 www.aluminum.org	703/358-2960
AABC	Associated Air Balance Council 1518 K Street, NW, Suite 503 Washington, DC 20005 www.aabchq.com	202/737-0202
AASHTO	American Association of State Highway and Transportation Officials 555 12th St. NW - Suite 1000 Washington, DC 20004 www.transportation.org	202/624-5800
AATCC	American Association of Textile Chemists and Colorists P.O. Box 12215 One Davis Drive Research Triangle Park, NC 27709 2215 www.aatcc.org	919/549-8141
ACA	American Coatings Association 901 New York Ave., NW, Suite 300 West Washington, DC 20001 www.paint.org	202/462-6272

ACI	American Concrete Institute 38800 Country Club Dr. Farmington Hills, MI 48331-3439 www.aci-int.org	248/848-3700
ACPA	American Concrete Pipe Association 8445 Freeport Parkway, Suite 350 Irving, TX 75063-2595 www.concrete-pipe.org	972/506-7216
ADC	Air Duct Council 1901 N. Roselle Road, Suite 800 Schaumburg, IL 60195 www.flexibleduct.org	847/706-6750
AF&PA	American Forest and Paper Association 1111 Nineteenth Street, NW, Suite 800 Washington, DC 20036 www.afandpa.org	202/463-2700
AGA	American Gas Association 400 North Capitol Street, NW Washington, DC 20001 www.aga.org	202/824-7000
AGC	Associate General Contractors of America 2300 Wilson Blvd., Suite 400 Arlington, VA 22201 www.agc.org	703/548-3118
AHA	American Hardboard Association 1210 West Northwest Highway Palatine, IL 60067 http://domensino.com/AHA/default.htm	847/934-8800
AI	Asphalt Institute 2696 Research Park Drive Lexington, KY 40511-8480 www.asphaltinstitute.org	859/288-4960
AIA	The American Institute of Architects 1735 New York Ave., NW Washington, DC 20006-5292 www.aia.org	202/626-7300
AISC	American Institute of Steel Construction One East Wacker Drive Suite 700 Chicago, IL 60601-1802 www.aisc.org	312/670-2400

AISI	American Iron and Steel Institute 25 Massachusetts Ave., NW, Suite 800 Washington, DC 20001 www.steel.org	202/452-7100
AITC	American Institute of Timber Construction 7012 S. Revere Parkway Suite 140 Centennial, CO 80112 https://www.plib.org/aitc/	303/792-9559
ALI	Associated Laboratories, Inc. P.O. Box 152837 Dallas, TX 75315 www.assoc-labs.com	214/565-0593
ALSC	American Lumber Standards Committee, Inc. P.O. Box 210 Germantown, MD 20875 www.alsc.org	301/972-1700
AMCA	Air Movement and Control Association International, Inc. 30 W. University Drive Arlington Heights, IL 60004 www.amca.org	847/394-0150
AMPP (formerly SSPC)	Association for Materials Protection and Performance (merger of Society for Protective Coatings and National Association of Corrosion Engineers International) (formerly Steel Structures Painting Council) 800 Trumbull Drive Pittsburgh, PA 15205 www.sspc.org	412/281-2331 877/281-7772
ANLA	AmericanHort (merger of American Nursery & Landscape Association and OFA – The Association of Horticultural Professionals) 2130 Stella Court Columbus, OH 43215 www.americanhort.org	614/487-1117
ANSI	American National Standards Institute 1899 L Street, NW, 11th Floor Washington, DC 20036 www.ansi.org	202/293-8020
APA	APA-The Engineered Wood Association 7011 S. 19th Street Tacoma, WA 98466-5333 www.apawood.org	253/565-6600

APA	Architectural Precast Association 325 John Knox Rd, Suite L-103 Tallahassee, FL 32303 www.archprecast.org	850/205-5637
APCIA	American Property Casualty Insurance Association (merger of American Insurance Association (formerly the National Board of Fire Underwriters) with the Property Casualty Insurers Association of America) 555 12th St, NW, Suite 550 Washington DC 20004 www.apci.org	202/828-7100
AHRI	Air Conditioning and Refrigeration Institute 4100 N. Fairfax Drive, Suite 200 Arlington, VA 22203 www.lightindustries.com/ARI	703/524-8800
ARMA	Asphalt Roofing Manufacturers Association 2331 Rock Spring Road Forest Hill, MD 21050 www.asphaltroofing.org	443/640-1075
ASA	The Acoustical Society of America ASA Office Manager Suite 1NO1 2 Huntington Quadrangle Melville, NY 11747-4502 http://asa.aip.org	516/576-2360
ASCE	American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191 www.asce.org	800/548-2723 703/295-6300
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329-2305 www.ashrae.org	800/527-4723 404/636-8400
ASLA	American Society of Landscape Architects 636 Eye Street, NW Washington, DC 20001-3736 www.asla.org	202/898-2444
ASME	American Society of Mechanical Engineers Three Park Avenue New York, NY 10016-5990 www.asme.org	800/434-2763

ASPE	American Society of Plumbing Engineers 2980 S River Rd. Des Plaines, IL 60018 http://aspe.org	847/296-0002
ASQ	American Society for Quality P.O. Box 3005 Milwaukee, WI 53201-3005 or 600 North Plankinton Avenue Milwaukee, WI 53203 http://asq.org	800/248-1946 414/272-8575
ASSE	American Society of Sanitary Engineering 901 Canterbury, Suite A Westlake, Ohio 44145 www.asse-plumbing.org	440/835-3040
ASTM	ASTM International 100 Barr Harbor Drive PO Box C700 West Conshohocken, PA, 19428-2959 www.astm.org	610/832-9500
AWCI	Association of the Wall and Ceiling Industry 513 West Broad Street, Suite 210 Falls Church, VA 22046 www.awci.org	703/538-1600
AWPA	American Wood Protection Association (formerly American Wood Preservers Institute) P.O. Box 361784 Birmingham, AL 35236-1784 www.awpa.com	205/733-4077
AWPI	American Wood Preservers Institute 2750 Prosperity Ave. Suite 550 Fairfax, VA 22031-4312 www.arcat.com	800/356-AWPI 703/204-0500
AWS	American Welding Society 8669 NW 36 Street, Suite 130 Miami, FL 33166 www.aws.org	800/443-9353 305/443-9353
AWI	Architectural Woodwork Institute 46179 Westlake Drive, Suite 120 Potomac Falls, VA 20165-5874 www.awinet.org	571/323-3636

AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235 www.awwa.org	800/926-7337 303/794-7711
BHMA	Builders Hardware Manufacturers Association 355 Lexington Avenue, 15th Floor New York, NY 10017 www.buildershardware.com	212/297-2122
BIA	The Brick Industry Association 1850 Centennial Park Drive, Suite 301 Reston, VA 20191 www.gobrick.com	703/620-0010
CGA	Compressed Gas Association 14501 George Carter Way, Suite 103 Chantilly VA 20151-2923 www.cganet.com	703/788-2700
CISCA	Ceilings & Interior Systems Construction Association 1010 Jorie Blvd, Suite 30 Oak Brook, IL 60523 www.cisca.org	630/584-1919
CISPI	Cast Iron Soil Pipe Institute 1064 Delaware Avenue SE Atlanta, GA 30316 www.cispi.org	404/622-0073
CLFMI	Chain Link Fence Manufacturers Institute 10015 Old Columbia Road, Suite B-215 Columbia, MD 21046 www.associationsites.com/main-pub.cfm?usr=clfma	410/290-6267
CPA	Composite Panel Association 19465 Deerfield Avenue, Suite 306 Leesburg, VA 20176 www.compositepanel.org	703/724-1128
CPSC	Consumer Product Safety Commission 4330 East-West Highway Bethesda, MD 20814 www.cpsc.gov	301/504-7923 800/638-2772
CRA	California Redwood Association 405 Enfrente Drive, Suite 200 Novato, CA 94949 www.calredwood.org	415/382-0662

CRI	Carpet and Rug Institute 100 S. Hamilton Street Dalton, GA 30722-2048 www.carpet-rug.org	706/278-3176
CRSI	Concrete Reinforcing Steel Institute 933 N. Plum Grove Road Schaumburg, IL 60173 4758 www.crsi.org	847/517-1200
CSI	The Construction Specifications Institute 123 North Pitt St, Suite 450 Alexandria, VA 22314 www.csinet.org	800/689-2900
CTIOA	Ceramic Tile Institute of America 12061 Jefferson Blvd. Culver City, CA 90230-6219 www.ctioa.org	310/574-7800
DHI	Door and Hardware Institute (formerly National Builders Hardware Association) 14150 Newbrook Dr. Chantilly, VA 20151 www.dhi.org	703/222-2010
DIPRA	Ductile Iron Pipe Research Association 2000 2nd Avenue, South Suite 429 Birmingham, AL 35233 www.dipra.org	205/402-8700
DOC	U.S. Department of Commerce 1401 Constitution Ave., NW Washington, DC 20230 www.commerce.gov	202/482-2000
DOT	U.S. Department of Transportation 1200 New Jersey Avenue, SE Washington, DC 20590 www.dot.gov	855/368-4200
EJMA	Expansion Joint Manufacturers Association, Inc. 25 North Broadway Tarrytown, NY 10591 www.ejma.org	914/332-0040

EPA	Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N.W. Washington, DC 20460 www.epa.gov	202/272-0167
FCICA	Floor Covering Installation Contractors Association 7439 Millwood Drive West Bloomfield, MI 48322 www.fcica.com	248/661-5015 877/TO-FCICA
FGIA	Fenestration and Glazing Industry Alliance 1900 E Golf Rd, Suite 1250 Schaumburg, IL 60173 https://fgiaonline.org/	847/303-5664
FM Global	Factory Mutual Insurance Company Amy Daley Global Practice Leader – Education, Public Entities, Health Care FM Global 270 Central Avenue Johnston, RI 02919-4949 www.fmglobal.com	401/275-3000 401/275-3029
FS	General Services Administration (GSA) Index of Federal Specifications, Standards and Commercial Item Descriptions 470 East L'Enfant Plaza, SW, Suite 8100 Washington, DC 20407 www.gsa.gov	202/619-8925
GA	The Gypsum Association 6525 Belcrest Road, Suite 480 Hyattsville, MD 20782 www.gypsum.org	301/277-8686
HMA	Hardwood Manufacturers Association One Williamsburg Place, Suite 108 Warrendale, PA 15086 http://hmamembers.org	412/244-0440

IAPMO	International Association of Plumbing and Mechanical Officials (formerly the Western Plumbing Officials Association) 4755 E. Philadelphia St. Ontario, CA 91761 www.iapmo.org	909/472-4100
ICC	International Code Council 500 New Jersey Avenue, NW, 6th Floor Washington, DC 20001 www.iccsafe.org	888/422-7233
IEEE	Institute of Electrical and Electronics Engineers 3 Park Avenue, 17th Floor New York, NY 10016-5997 www.ieee.org	212/419-7900
IES	Illuminating Engineering Society 120 Wall Street, Floor 17 New York, NY 10005-4001 www.ies.org	212/248-5000
ITRK	Intertek Testing Services 3933 US Route 11 Cortland, NY 13045 www.intertek.com	607/753-6711
MCAA	Mechanical Contractors Association of America 1385 Piccard Drive Rockville, MD 20850 www.mcaa.org	301/869-5800
MIA	Marble Institute of America 28901 Clemens Rd, Ste 100 Cleveland, OH 44145 www.marble-institute.com	440/250-9222
MMPA (formerly WMMPA)	Moulding & Millwork Producers Association (formerly Wood Moulding & Millwork Producers Association) 507 First Street Woodland, CA 95695 www.wmmpa.com	530/661-9591 800/550-7889

MSS	Manufacturers Standardization Society (MSS) of the Valve and Fittings Industry, Inc. 127 Park Street, NE Vienna, VA 22180-4602 http://mss-hq.org	703/281-6613
NAAMM	National Association of Architectural Metal Manufacturers 800 Roosevelt Rd. Bldg. C, Suite 312 Glen Ellyn, IL 60137 www.naamm.org	630/942-6591
NAIMA	North American Insulation Manufacturers Association P.O. Box 1906 Alexandria, VA 22313 https://insulationinstitute.org/	703/684-0084
NALP	National Association of Landscape Professionals (formerly Professional Landcare Network) 12500 Fair Lakes Circle, Suite 200 Fairfax, VA 22033 https://www.landscapeprofessionals.org/	703/736-9666
NAPA	National Asphalt Pavement Association 6406 Ivy Lane, Suite 350 Greenbelt, MD 20770-1441 www.asphaltpavement.org	888/468-6499 301/731-4748
NCSPA	National Corrugated Steel Pipe Association 14070 Proton Road, Suite 100 Dallas, TX 75244 www.ncspa.org	972/850-1907
NCMA	National Concrete Masonry Association 13750 Sunrise Valley Drive Herndon, VA 20171-4662 www.ncma.org	703/713-1900
NEBB	National Environmental Balancing Bureau 8575 Grovemont Circle Gaithersburg, MD 20877 www.nebb.org	301/977-3698
NECA	National Electrical Contractors Association 3 Bethesda Metro Center, Suite 1100 Bethesda, MD 20814 www.necanet.org	301/657-3110
NEMA	National Electrical Manufacturers Association 1300 North 17th Street N, Suite 900 Rosslyn, VA 22209 www.nema.org	703/841-3200

NEII	National Elevator Industry, Inc. 1677 County Route 64 P.O. Box 838 Salem, New York 12865-0838 www.neii.org	518/854-3100
NFPA	National Fire Protection Association 1 Batterymarch Park Quincy, MA USA 02169-7471 www.nfpa.org	800/344-3555 855/274-8525
NGA (formerly GANA)	National Glass Association (merged with Glass Association of North America) 1945 Old Gallows Road Suite 750 Vienna, VA 22182 www.glass.org	866/342-5642 Ext 127
NHLA	National Hardwood Lumber Association PO Box 34518 Memphis, TN 38184 www.nhla.com	901/377-1818
NIA	National Insulation Association 12100 Sunset Hills Road, Suite 330 Reston, VA 20190 www.insulation.org	703/464-6422
NRCA	National Roofing Contractors Association 10255 W. Higgins Road, Suite 600 Rosemont, IL 60018-5607 www.nrca.net	847/299-9070
NSF	NSF International P.O. Box 130140 789 N. Dixboro Road Ann Arbor, MI 48113-0140, USA www.nsf.org	800/673-6275 734/769-8010
NTMA	National Terrazzo and Mosaic Association 209 N. Crockett Street, Suite 2 PO Box 2605 Fredericksburg, TX 78624 www.ntma.com	800/323-9736
OSHA	Occupational Safety and Health Act U.S. Department of Labor Occupational Safety & Health Administration 200 Constitution Ave., NW Washington, DC 20210 www.osha.gov	800/321-OSHA (6742)

PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077 or 500 New Jersey Ave., N.W. 7 th Floor Washington, D.C. 20001 www.cement.org	847/966-6200 202/408-9494
PCA	Painting Contractors Association (formerly Painting and Decorating Contractors of America) 2316 Millpark Drive Maryland Heights, MO 63043 https://www.pcapainted.org/	800/322-7322
PCI	Precast/Prestressed Concrete Institute 200 W. Adams St. #2100 Chicago, IL 60606 www.pci.org	312/786-0300
PDCA	Painting and Decorating Contractors of America 2316 Millpark Drive, Ste 220 Maryland Heights, MO 63043 www.pdca.com	800/332-PDCA (7322) 314/514-7322
PDI	Plumbing & Drainage Institute 800 Turnpike Street, Suite 300 North Andover, MA 01845 http://pdionline.org	978/557-0720 800/589-8956
PEI	Porcelain Enamel Institute, Inc. P.O. Box 920220 Norcross, GA 30010 www.porcelainenamel.com	770/676-9366
PG&E	Pacific Gas & Electric Company P.O. Box 997300 Sacramento, CA 95899-7300 www.pge.com	800/743-5000
PLIB	Pacific Lumber Inspection Bureau (formerly West Coast Lumber Inspection Bureau) 1010 South 336th Street, Suite 210 Federal Way, WA 98003-7394 https://www.plib.org/	253/835-3344
RFCI	Resilient Floor Covering Institute 115 Broad Street, Suite 201 La Grange GA 30240 www.rfci.com	706/882-3833

SDI	Steel Deck Institute P.O. Box 25 Fox River Grove, IL 60021 www.sdi.org	847/458-4647
SDI	Steel Door Institute 30200 Detroit Road Westlake, OH 44145 www.steeldoor.org	440/899-0010
SJI	Steel Joist Institute 234 W. Cheves Street Florence, SC 29501 http://steeljoist.org	843/407-4091
SMA	Stucco Manufacturers Association 500 East Yale Loop Irvine, CA 92614 www.stuccomfgassoc.com	949/387-7611
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association 4201 Lafayette Center Drive Chantilly, VA 20151-1219 www.smacna.org	703/803-2980
SPI	SPI: The Plastics Industry Trade Association, Inc. 1425 K St. NW, Suite 500 Washington, DC 20005 www.plasticsindustry.org	202/974-5200
TCA	The Tile Council of North America 100 Clemson Research Blvd. Anderson, SC 29625 www.tcnatile.com	864/646-8453
TPI	Truss Plate Institute 2670 Crain Highway, Suite 203 Waldorf, MD 20601 www.tpinst.org	240/587-5582
TPI	Turfgrass Producers International 444 E. Roosevelt Road #346 Lombard, IL 60148 www.turfgrassod.org	800/405-8873 847/649-5555
TCIA	Tree Care Industry Association (formerly the National Arborist Association) 136 Harvey Road, Suite 101 Londonderry, NH 03053 www.tcia.org	800/733-2622

TVI	The Vermiculite Institute c/o The Schundler Company 150 Whitman Avenue Edison, NJ. 08817 www.vermiculiteinstitute.org	732/287-2244
UL	Underwriters Laboratories Inc. 333 Pfingsten Road Northbrook, IL 60062-2096 www.ul.com	847/272-8800 877/854-3577
UNI	Uni-Bell PVC Pipe Association 2711 LBJ Freeway, Suite 1000 Dallas, TX 75234 www.uni-bell.org	972/243-3902
USDA	U.S. Department of Agriculture 1400 Independence Ave., S.W. Washington, DC 20250 www.usda.gov	202/720-2791
WA	Wallcoverings Association 401 North Michigan Avenue Suite 2200 Chicago, IL 60611 www.wallcoverings.org	312/321-5166

WCLIB	West Coast Lumber Inspection Bureau P.O. Box 23145 Portland, OR 97281 or 6980 S.W. Varns Tigard, OR 97223 www.wclib.org	503/639-0651
WCMA	Window Covering Manufacturers Association 355 Lexington Avenue 15th Floor New York, NY 10017 www.wcmanet.org	212/297-2122
WDMA	Window & Door Manufacturers Association 2001 K Street NW, 3rd Floor North Washington, D.C. 20006 www.wdma.com	202/367-1157
WCMA	Window Covering Manufacturers Association 355 Lexington Avenue 15th Floor New York, New York 10017 www.wcmanet.org	212/297-2122
WDMA	Window & Door Manufacturers Association 401 N. Michigan Avenue, Suite 2200 Chicago, IL 60611 or 2025 M Street, NW, Ste. 800 Washington, D.C. 20036-3309 www.wdma.com	312/321-6802 202/367-1157
WI	Woodwork Institute P.O. Box 980247 West Sacramento, CA 95798 www.wicnet.org	916/372-9943
WRI	Wire Reinforcement Institute 942 Main Street, Suite 300 Hartford, CT 06103 www.wirereinforcementinstitute.org	860/240-9545
WWCA	Western Wall & Ceiling Contractors Association 1910 N. Lime St. Orange, CA 92865 www.wwcca.org	714/221-5520
WWPA	Western Wood Products Association (formerly Redwood Inspection Service) 1500 SW First Ave., Suite 870 Portland, OR 97201 www.wwpa.org	503/224-3930

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Purchase of Materials and Equipment;
- B. Special Conditions;
- C. Imported Materials Certification.

1.02 MATERIAL AND EQUIPMENT

- A. Only items approved by the District and/or Architect shall be used.
- B. Contractor shall submit lists of products and other product information in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.

1.03 MATERIAL AND EQUIPMENT COLORS

- A. The District and/or Architect will provide a schedule of colors.
- B. No individual color selections will be made until after approval of all pertinent materials and equipment and after receipt of appropriate samples in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.
- C. Contractor shall request priority in writing for any item requiring advance ordering to maintain the approved Construction Schedule.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Contractor shall deliver manufactured materials in original packages, containers, or bundles (with seals unbroken), bearing name or identification mark of manufacturer.
- B. Contractor shall deliver fabrications in as large assemblies as practicable; where specified as shop-primed or shop-finished, package or crate as required to preserve such priming or finish intact and free from abrasion.
- C. Contractor shall store materials in such a manner as necessary to properly protect them from damage. Materials or equipment damaged by handling, weather, dirt, or from any other cause will not be accepted.

- D. Materials are not acceptable that have been warehoused for long periods of time, stored or transported in improper environment, improperly packaged, inadequately labeled, poorly protected, excessively shipped, deviated from normal distribution pattern, or reassembled.
- E. Contractor shall store material so as to cause no obstructions of sidewalks, roadways, access to the Site or buildings, and underground services. Contractor shall protect material and equipment furnished under Contract.
- F. Contractor may store materials on Site with prior written approval by the District, all material shall remain under Contractor's control and Contractor shall remain liable for any damage to the materials. Should the Project Site not have storage area available, the Contractor shall provide for off-site storage at a bonded warehouse and with appropriate insurance coverage at no cost to District.
- G. When any room in Project is used as a shop or storeroom, the Contractor shall be responsible for any repairs, patching, or cleaning necessary due to that use. Location of storage space shall be subject to prior written approval by District.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers listed in various sections of Contract Documents are names of those manufacturers that are believed to be capable of supplying one or more of items specified therein.
- B. The listing of a manufacturer does not imply that every product of that manufacturer is acceptable as meeting the requirements of the Contract Documents.

2.02 FACILITIES AND EQUIPMENT

Contractor shall provide, install, maintain, and operate a complete and adequate facility for handling, the execution, disposal, and distribution of material and equipment as required for proper and timely performance of Work connected with Contract.

2.03 MATERIAL REFERENCE STANDARDS

Where material is specified solely by reference to "standard specifications" and if requested by District, Contractor shall submit for review data on actual material proposed to be incorporated into Work of Contract listing name and address of vendor, manufacturer, or producer, and trade or brand names of those materials, and data substantiating compliance with standard specifications.

PART 3 - EXECUTION

3.01 WORKMANSHIP

- A. Where not more specifically described in any other Contract Documents, workmanship shall conform to methods and operations of best standards and accepted practices of trade or trades involved and shall include items of fabrication, construction, or installation regularly furnished or required for completion (including finish and for successful operation, as intended).
- B. Work shall be executed by tradespersons skilled in their respective lines of Work. When completed, parts shall have been durably and substantially built and present a neat appearance.

3.02 COORDINATION

- A. Contractor shall coordinate installation of Work so as to not interfere with installation of others. Adjustment or rework because of Contractor's failure to coordinate will be at no additional cost to District.
- B. Contractor shall examine in-place work for readiness, completeness, fitness to be concealed or to receive other work, and in compliance with Contract Documents. Concealing or covering Work constitutes acceptance of additional cost which will result should in-place Work be found unsuitable for receiving other Work or otherwise deviating from the requirements of the Contract Documents.

3.03 COMPLETENESS

Contractor shall provide all portions of the Work, unless clearly stated otherwise, installed complete and operational with all elements, accessories, anchorages, utility connections, etc., in manner to assure well-balanced performance, in accordance with manufacturer's recommendations and by Contract Documents. For example, electric water coolers require water, electricity, and drain services; roof drains require drain system; sinks fit within countertop, etc. Terms such as "installed complete," "operable condition," "for use intended," "connected to all utilities," "terminate with proper cap," "adequately anchored," "patch and refinish," "to match similar," should be assumed to apply in all cases, except where completeness of functional or operable condition is specifically stated as not required.

3.04 APPROVED INSTALLER OR APPLICATOR

Installation by a manufacturer's approved installer or applicator is an understood part of Specifications and only approved installer or applicator is to provide on-site Work where specified manufacturer has on-going program of approving (i.e. certifying, bonding, re-warranting) installers or applicators. Newly established relationships between a manufacturer and an installer or applicator who does not have other approved applicator work in progress or completed is not approved for this Project.

3.05 MANUFACTURER'S RECOMMENDATIONS

All installations shall be in accordance with manufacturer's published recommendations and specific written directions of manufacturer's representative. Should Contract Documents differ from recommendations of manufacturer or directions of his representative, Contractor shall analyze differences, make recommendations to the District and the Architect in writing, and shall not proceed until interpretation or clarification has been issued by the District and/or the Architect.

END OF DOCUMENT

QUALITY CONTROL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Inspector, Inspections and Tests, Uncovering of Work and Non-conforming of Work and Correction of Work;
- B. Special Conditions.

1.02 RELATED CODES:

- A. The Work is governed by requirements of Title 24, California Code of Regulations ("CCR"), and the Contractor shall keep a copy of these available at the job Site for ready reference during construction.
- B. The Division of the State Architect ("DSA") shall be notified at or before the start of construction.
- C. Project Inspector and testing lab must be employed by the Owner and approved by A/E of Record, Structural Engineer, and DSA.

1.03 OBSERVATION AND SUPERVISION:

- A. The District and Architect or their appointed representatives will review the Work and the Contractor shall provide facilities and access to the Work at all times as required to facilitate this review. Administration by the Architect and any consulting Structural Engineer will be in accordance with applicable regulations, including, without limitation, CCR, Part 1, Title 24, Section 4-341.
- B. One or more Project Inspector(s) approved by DSA and employed by or in contract with the District, referred to hereinafter as the "Project Inspector", will observe the work in accordance with CCR, Part 1, Title 24, Sections 4-333(b) and 4-342:
 - (1) The Project Inspector and Special Inspector(s) shall have access to the Work wherever it is in preparation or progress for ascertaining that the Work is in accordance with the Contract Documents and all applicable code sections. The Contractor shall provide facilities and operation of equipment as needed, and access as required and shall provide assistance for sampling or measuring materials.
 - (2) The Project Inspector will notify the District and Architect and call the attention of the Contractor to any observed failure of Work or material to conform to Contract Documents.

- (3) The Project Inspector shall observe and monitor all testing and inspection activities required.

The Contractor shall conform with all applicable laws as indicated in the Contract Documents, including, without limitation, to CCR, Part 1, Title 24, Section 4-343. The Contractor shall supervise and direct the Work and maintain a competent superintendent on the job who is authorized to act in all matters pertaining to the Work. The Contractor's superintendent shall also inspect all materials, as they arrive, for compliance with the Contract Documents. Contractor shall reject defective Work or materials immediately upon delivery or failure of the Work or material to comply with the Contract Documents. The Contractor shall submit verified reports as indicated in the Contract Documents, including, without limitation, the Specifications and as required by Part 1, Title 24, Section 4-336.

1.04 TESTING AGENCIES:

- A. Testing agencies and tests shall be in conformance with the General Documents and the requirements of Part 1, Title 24, Section 4- 335.
- B. Testing and inspection in connection with earthwork shall be under the direction of the District's consulting soils engineer, if any, referred to hereinafter as the "Soils Engineer."
- C. Testing and inspection of construction materials and workmanship shall be performed by a qualified laboratory, referred to hereinafter as the "Testing Laboratory." The Testing Laboratory shall be under direction of an engineer registered in the State of California, shall conform to requirements of ASTM E329, and shall be employed by or in contract with the District.

1.05 TESTS AND INSPECTIONS:

- A. The Contractor shall be responsible for notifying the District and Project Inspector of all required tests and inspections. Contractor shall notify the District and Project Inspector at least seventy-two hours (72) hours in advance of performing any Work requiring testing or inspection.
- B. The Contractor shall provide access to Work to be tested and furnish incidental labor, equipment, and facilities to facilitate all inspections and tests.
- C. The District will pay for first inspections and tests required by the "CCR", and other inspections or tests that the District and/or the Architect may direct to have made, including the following principal items:
 - (1) Tests and observations for earthwork and paving.
 - (2) Tests for concrete mix designs, including tests of trial batches.
 - (3) Tests and inspections for structural steel work.
 - (4) Field tests for framing lumber moisture content.
 - (5) Additional tests directed by the District that establish that materials and installation comply with the Contract Documents.

- (6) Tests and observations of welding and expansion anchors.
- D. The District may at its discretion, pay and then back charge the Contractor for:
 - (1) Retests or reinspections, if required, and tests or inspections required due to Contractor error or lack of required identifications of material.
 - (2) Uncovering of work in accordance with Contract Documents.
 - (3) Testing done on weekends, holidays, and overtime will be chargeable to the Contractor for the overtime portion.
 - (4) Testing done off Site.
- E. Testing and inspection reports and certifications:
 - (1) If initially received by Contractor, Contractor shall provide to each of the following a copy of the agency or laboratory report of each test or inspection or certification.
 - (a) The District;
 - (b) The Construction Manager, if any;
 - (c) The Architect;
 - (d) The Consulting Engineer, if any;
 - (e) Other engineers on the Project, as appropriate;
 - (f) The Project Inspector; and
 - (g) The Contractor.
 - (2) When the test or inspection is one required by the CCR, a copy of the report shall also be provided to the DSA.

PART 2 - PRODUCTS

2.01 TYPE OF TESTS AND INSPECTIONS:

- A. Contractor shall refer to DSA Form 103 (or current version) for all required inspections.
- B. Contractor shall schedule a meeting prior to the commencement of any major construction activities to review DSA Form 103 with the Inspector of Record (IOR), Special Inspection Agency and Construction Manager.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions;
- C. Site Standards; and
- D. Construction Waste Management and Disposal. Refer to Specification Section 01 74 19.

1.02 TEMPORARY UTILITIES:

- A. Electric Power and Lighting:
 - (1) Contractor will pay for power during the course of the Work. To the extent power is available in the building(s) or on the Site, Contractor may use the District's existing utilities by making prearranged payments to the District for the utilities used by Contractor and all Subcontractors. Contractor shall be responsible for providing temporary facilities required to deliver that power service from its existing location in the building(s) or on the Site to point of intended use.
 - (2) Contractor shall verify characteristics of power available in building(s) or on the Site. Contractor shall take all actions required to make modifications where power of higher voltage or different phases of current are required. Contractor shall be fully responsible for providing that service and shall pay all costs required therefor.
 - (3) Contractor shall furnish, wire for, install, and maintain temporary electrical lights wherever it is necessary to provide illumination for the proper performance and/or observation of the Work: a minimum of 20 foot-candles for rough work and 50 foot-candles for finish work.
 - (4) Contractor shall be responsible for maintaining existing lighting levels in the project vicinity should temporary outages or service interruptions occur.
- B. Water:
 - (1) Contractor shall pay for water used during the course of the Work. Contractor shall coordinate and pay for installation or use of water

meter in compliance with local water agency requirements. To the extent water is then available in the building(s) or on the Site, Contractor may use the District's existing utilities by making prearranged payments to the District for the utilities used by Contractor and all Subcontractors. Contractor shall be responsible for providing temporary facilities required to deliver such utility service from its existing location in the building(s) on the Site, or other location approved by the local water agency, to point of intended use.

- (2) Contractor shall use backflow preventers on water lines at point of connection to District's water supply. Backflow preventers shall comply with requirements of Uniform Plumbing Code.
- (3) Contractor shall make potable water available for human consumption.

C. Sanitary Facilities:

- (1) Contractor shall provide sanitary temporary facilities in no fewer numbers than required by law and such additional facilities as may be directed by the Inspector for the use of all workers. The facilities shall be maintained in a sanitary condition at all times and shall be left at the Site until removal is directed by the Inspector or Contractor completes all other work at the Site.
- (2) Use of toilet facilities in the Work under construction shall not be permitted except by consent of the Inspector and the District.

D. Fire Protection:

- (1) Contractor shall provide and maintain fire extinguishers and other equipment for fire protection. Such equipment shall be designated for use for fire protection only and shall comply with all requirements of the California Fire, State Fire Marshall and/or its designee.
- (2) Where on-site welding and burning of steel is unavoidable, Contractor shall provide protection for adjacent surfaces.

E. Trash Removal:

- (1) Contractor shall provide trash removal on a timely basis. Under no circumstance shall Contractor use District trash service.
- (2) Refer to Specification Section 01 74 19.

F. Field Office:

- (1) If Contractor chooses to provide a field office, it shall be an acceptable construction trailer that is well-lit and ventilated. The construction trailer shall be equipped with shelves, desks, filing cabinet, chairs, and such other items of equipment needed. Trailer and equipment are the property of the Contractor and must be removed from the Site upon completion of the Work.

- (2) Contractor shall provide any additional electric lighting and power required for the trailer. Contractor shall make adequate provisions for heating and cooling as required.
- (3) Contractor shall provide internet connection.

1.03 CONSTRUCTION AIDS:

- A. Plant and Equipment:
 - (1) Contractor shall furnish, operate, and maintain a complete plant for fabricating, handling, conveying, installing, and erecting materials and equipment; and for conveyances for transporting workers. Include elevators, hoists, debris chutes, and other equipment, tools, and appliances necessary for performance of the Work.
 - (2) Contractor shall maintain plant and equipment in safe and efficient operating condition. Damages due to defective plant and equipment, and uses made thereof, shall be repaired by Contractor at no expense to the District.
- B. None of the District's tools and equipment shall be used by Contractor for the performance of the Work.

1.04 BARRIERS AND ENCLOSURES:

- A. Contractor shall obtain the District's written permission for locations and types of temporary barriers and enclosures, including fire-rated materials proposed for use, prior to their installation.
- B. Contractor shall provide and maintain temporary enclosures to prevent public entry and to protect persons using other buildings and portions of the Site and/or Premises, the public, and workers. Contractor shall also protect the Work and existing facilities from the elements, and adjacent construction and improvements, persons, and trees and plants from damage and injury from demolition and construction operations.
- C. Contractor shall provide site access to existing facilities for persons using other buildings and portions of the Site, the public, and for deliveries and other services and activities.

1.05 SECURITY:

The Contractor shall be responsible for project security for materials, tools, equipment, supplies, and completed and partially completed Work.

1.06 TEMPORARY CONTROLS:

- A. Noise Control:
 - (1) Contractor acknowledges that adjacent facilities may remain in operation during all or a portion of the Work period, and it shall take

all reasonable precautions to minimize noise as required by applicable laws and the Contract Documents.

- (2) Notice of proposed noisy operations, including without limitation, operation of pneumatic demolition tools, concrete saws, and other equipment, shall be submitted to the District a minimum of forty-eight (48) hours in advance of their performance.

B. Noise and Vibration:

- (1) Equipment and impact tools shall have intake and exhaust mufflers.
- (2) Contractor shall cooperate with District to minimize and/or cease the use of noisy and vibratory equipment if that equipment becomes objectionable by its longevity.

C. Dust and Dirt:

- (1) Contractor shall conduct demolition and construction operations to minimize the generation of dust and dirt, and prevent dust and dirt from interfering with the progress of the Work and from accumulating in the Work and adjacent areas including, without limitation, occupied facilities.
- (2) Contractor shall periodically water exterior demolition and construction areas to minimize the generation of dust and dirt.
- (3) Contractor shall ensure that all hauling equipment and trucks carrying loads of soil and debris shall have their loads sprayed with water or covered with tarpaulins, and as otherwise required by local and state ordinance.
- (4) Contractor shall prevent dust and dirt from accumulating on walks, roadways, parking areas, and planting, and from washing into sewer and storm drain lines.

D. Water:

- (1) Contractor shall not permit surface and subsurface water, and other liquids, to accumulate in or about the vicinity of the Premises. Should accumulation develop, Contractor shall control the water or other liquid, and suitably dispose of it by means of temporary pumps, piping, drainage lines, troughs, ditches, dams, or other methods.

E. Pollution:

- (1) No burning of refuse, debris, or other materials shall be permitted on or in the vicinity of the Premises.
- (2) Contractor shall comply with applicable regulatory requirements and anti-pollution ordinances during the conduct of the Work including, without limitation, demolition, construction, and disposal operations.

F. Lighting:

- (1) If portable lights are used after dark, all light must be located so as not to direct light into neighboring property.

1.07 JOB SIGN(S):

A. General:

- (1) Contractor shall provide and maintain a Project identification sign with the design, text, and colors designated by the District and/or the Design Professional; locate sign as approved by the District.
- (2) Signs other than the specified Project sign and or signs required by law, for safety, or for egress, shall not be permitted, unless otherwise approved in advance by the District.

B. Materials:

- (1) Structure and Framing: Structurally sound, new or used wood or metal; wood shall be nominal 3/4-inch exterior grade plywood.
- (2) Sign Surface: Minimum 3/4-inch exterior grade plywood.
- (3) Rough Hardware: Galvanized.
- (4) Paint: Exterior quality, of type and colors selected by the District and/or the Design Professional.

C. Fabrication:

- (1) Contractor shall fabricate to provide smooth, even surface for painting.
- (2) Size: 4'-0" x 8'-0", unless otherwise indicated.
- (3) Contractor shall paint exposed surfaces of supports, framing, and surface material with exterior grade paint: one coat of primer and one coat of finish paint.
- (4) Text and Graphics: As indicated.

1.08 PUBLICITY RELEASES:

- A. Contractor shall not release any information, story, photograph, plan, or drawing relating information about the Project to anyone, including press and other public communications medium, including, without limitation, on website(s) without the written permission of the District.

PART 2 – PRODUCTS Not used.

PART 3 – EXECUTION Not used.

END OF DOCUMENT

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions; and
- C. Temporary Facilities and Controls.

1.02 SECTION INCLUDES:

- A. Administrative and procedural requirements for the following:
 - (1) Salvaging non-hazardous construction waste.
 - (2) Recycling non-hazardous construction waste.
 - (3) Disposing of non-hazardous construction waste.

1.03 DEFINITIONS:

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.04 PERFORMANCE REQUIREMENTS:

- A. General: Develop waste management plan that results in end-of Project rates for salvage/recycling of sixty-five percent (65%) by weight (or by volume, but not a combination) of total waste generated by the Work.

1.05 SUBMITTALS:

- A. Waste Management Plan: Submit waste management plan within 30 days of date established for commencement of the Work.
- B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit copies of report. Include the following information:
 - (1) Material category.
 - (2) Generation point of waste.
 - (3) Total quantity of waste in tons or cubic yards.
 - (4) Quantity of waste salvaged, both estimated and actual in tons or cubic yards.
 - (5) Quantity of waste recycled, both estimated and actual in tons or cubic yards.
 - (6) Total quantity of waste recovered (salvaged plus recycled) in tons or cubic yards.
 - (7) Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- C. Waste Reduction Calculations: Before request for final payment, submit copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- D. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- E. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

- H. Qualification Data: For Waste Management Coordinator.
- I. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- J. Submittal procedures and quantities are specified in Document 01 33 00.

1.06 QUALITY ASSURANCE:

- A. Waste Management Coordinator Qualifications: LEED Accredited Professional by U.S. Green Building Council.
- B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Waste Management Conference: Conduct conference at Project site to comply with requirements. Review methods and procedures related to waste management including, but not limited to, the following:
 - (1) Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
 - (2) Review requirements for documenting quantities of each type of waste and its disposition.
 - (3) Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - (4) Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - (5) Review waste management requirements for each trade.

1.07 WASTE MANAGEMENT PLAN:

- A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measurement throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

- (1) Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
- (2) Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
- (3) Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
- (4) Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
- (5) Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
- (6) Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 PLAN IMPLEMENTATION:

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 - (1) Comply with Document 01 50 00 for operation, termination, and removal requirements.
- B. **[Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.]**
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
 - (1) Distribute waste management plan to everyone concerned within 3 days of submittal return.

- (2) Distribute waste management plan to entities when they first begin work on site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - (1) Designate and label specific areas of Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 - (2) Comply with Document 01 50 00 for controlling dust and dirt, environmental protection, and noise control.

3.02 RECYCLING CONSTRUCTION WASTE:

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to the Contractor.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
 - (1) Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project Site. Include list of acceptable and unacceptable materials at each container and bin.
 - (a) Inspect containers and bins for contamination and remove contaminated materials if found.
 - (2) Stockpile processed materials on site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - (3) Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 - (4) Store components off the ground and protect from the weather.
 - (5) Remove recyclable waste off District property and transport to recycling receiver or processor.
- D. Packaging:
 - (1) Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 - (2) Polystyrene Packaging: Separate and bag material.

- (3) Pallets: As much as possible, require deliveries using pallets to remove pallets from Project Site. For pallets that remain on Site, break down pallets into component wood pieces and comply with requirements for recycling wood.
- (4) Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- E. Site-Clearing Wastes: Chip brush, branches, and trees on site.
- F. Wood Materials:
 - (1) Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 - (2) Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
- G. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.
 - (1) Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.03 DISPOSAL OF WASTE:

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project Site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - (1) Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on site.
 - (2) Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials off District property and legally dispose of them.

END OF DOCUMENT

OWNER-FURNISHED PRODUCTS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions; and
- C. Materials and Equipment.

1.02 SECTION INCLUDES

- A. Requirements for the following:
 - (1) Installing Owner-furnished materials and equipment.
 - (2) Providing necessary utilities, connections and rough-ins.

1.03 DEFINITIONS

- A. Owner: District, who is providing/furnishing materials and equipment.
- B. Installing Contactor: Contractor, who is installing the materials and equipment furnished by the Owner.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Receive, store and handle products in accordance with the manufacturer's instructions.
- B. Protect equipment items as required to prevent damage during storage and construction.

PART 2 – PRODUCTS

2.01 GENERAL PRODUCT REQUIREMENTS

- A. Installing Contractor's Responsibilities:
 - (1) Verify mounting and utility requirements for Owner-furnished materials and equipment items.

Provide mounting and utility rough in for all items where required.

- (a) Rough in locations, sizes, capacities, and similar type items shall be as indicated and required by product manufacturer.

B. Owner and Installing Contractor(s) Responsibilities:

- (1) Owner-Furnished/Contractor Installed ("OFICI"): Furnished by the Owner; installed by the Installing Contractor.
 - (a) General: Owner and Installing Contractor(s) will coordinate deliveries of materials and equipment to coincide with the construction schedule.
 - (b) Owner will furnish specified materials and equipment delivered to the site. Owner/vendor's representative shall be present on Site at the time of delivery to comply with the contract requirements and Specifications Section 01 43 00, Materials and Equipment, Article 1.04.
 - (c) The Owner furnishing specified materials and equipment is responsible to provide manufacturer guarantees as required by the Contract to the Installing Contractor.
 - (d) The Installing Contractor shall:
 - 1) Review, verify and accept the approved manufacturer's submittal/Shop Drawings for all materials and equipment required to be installed by the Installing Contractor and furnished by the Owner. Any discrepancies, including but not limited to possible space conflicts, should be brought to the attention of the Project Manager and/or Program Manager, if applicable.
 - 2) Coordinate timely delivery. Installing Contractor shall receive materials and equipment at Site when delivered and give written receipt at time of delivery, noting visible defects or omissions; if such declaration is not given, the Installing Contractor shall assume responsibility for such defects and omissions.
 - 3) Store materials and equipment until ready for installation and protect from loss and damage. Installing Contractor is responsible for providing adequate storage space.
 - 4) Coordinate with other bid package contractors and field measurement to ensure complete installation.
 - 5) Uncrate, assemble, and set in place.
 - 6) Provide adequate supports.
 - 7) Install materials and equipment in accordance with manufacturer's recommendations, instructions, and

Shop Drawings, supply labor and material required, and make mechanical, plumbing, and electrical connections required to operate equipment.

- 8) Be certified by equipment manufacturer for installation of the specific equipment supplied by the Owner.
- 9) Provide anchorage and/or bracing as required for seismic restraint per Title 24, UBC Standard 27-11 and all other applicable codes.
- 10) Provide the contract-required warranty and guarantee for all work, materials and equipment, and installation upon its completion and acceptance by the District. Guarantee includes all costs associated with the removal, shipping to and from the Site, and re-installation of any equipment found to be defective.

C. Compatibility with Space and Service Requirements:

- (1) Equipment items shall be compatible with space limitations indicated and as shown on the Contract Documents and specified in other sections of the Specifications.
- (2) Modifications to equipment items required to conform to space limitations specified for rough in shall not cause additional cost to the District.

D. Manufacturer's printed descriptions, specifications, and instructions shall govern the Work unless specifically indicated or specified otherwise.

2.02 FURNISHED MATERIALS AND EQUIPMENT

- A. All furnished materials and equipment are indicated or scheduled on the Contract Documents.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Install equipment items in accordance with the manufacturer's instructions.
- B. Set equipment items securely in place, rigidly or flexibly mounted in accordance with manufacturers' directions.
- C. Make electrical and mechanical connections as indicated and required.
- D. Touch-up and restore damaged or defaced finishes to the Owner's satisfaction.

3.02 CLEANING AND PROTECTION

- A. Repair or replace items not acceptable to the Architect or Owner.

- B. Upon completion of installation, clean equipment items in accordance with manufacturer's recommendations, and protect from damage until final acceptance of the Work by the Owner.

END OF DOCUMENT

SECTION 01 66 00

PRODUCT DELIVERY, STORAGE AND HANDLING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Site Access, Conditions and Requirements;
- B. Special Conditions.

1.02 PRODUCTS

- A. Products are as defined in the General Conditions.
- B. Contractor shall not use and/or reuse materials and/or equipment removed from existing Premises, except as specifically permitted by the Contract Documents.
- C. Contractor shall provide interchangeable components of the same manufacturer, for similar components.

1.03 TRANSPORTATION AND HANDLING

- A. Contractor shall transport and handle Products in accordance with manufacturer's instructions.
- B. Contractor shall promptly inspect shipments to confirm that Products comply with requirements, quantities are correct, and products are undamaged.
- C. Contractor shall provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.04 STORAGE AND PROTECTION

- A. Contractor shall store and protect Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Contractor shall store sensitive products in weather-tight, climate controlled enclosures.
- B. For exterior storage of fabricated Products, Contractor shall place on sloped supports, above ground.
- C. Contractor shall provide off-site storage and protection when Site does not permit on-site storage or protection.

- D. Contractor shall cover products subject to deterioration with impervious sheet covering and provide ventilation to avoid condensation.
- E. Contractor shall store loose granular materials on solid flat surfaces in a well-drained area and prevent mixing with foreign matter.
- F. Contractor shall provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
- G. Contractor shall arrange storage of Products to permit access for inspection and periodically inspect to assure Products are undamaged and are maintained under specified conditions.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

FIELD ENGINEERING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Site Investigation, and Soils Investigation Report;
- B. Special Conditions;
- C. Site-Visit Certification.

1.02 REQUIREMENTS INCLUDED:

- A. Contractor shall provide and pay for field engineering services by a California-registered engineer, required for the project, including, without limitations:
 - (1) Survey work required in execution of the Project.
 - (2) Civil or other professional engineering services specified, or required to execute Contractor's construction methods.

1.03 QUALIFICATIONS OF SURVEYOR OR ENGINEERS:

Contractor shall only use a qualified licensed engineer or registered land surveyor, to whom District makes no objection.

1.04 SURVEY REFERENCE POINTS:

- A. Existing basic horizontal and vertical control points for the Project are those designated on the Drawings.
- B. Contractor shall locate and protect control points prior to starting Site Work and preserve all permanent reference points during construction. In addition Contractor shall:
 - (1) Make no changes or relocation without prior written notice to District and Architect.
 - (2) Report to District and Architect when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
 - (3) Require surveyor to replace Project control points based on original survey control that may be lost or destroyed.

1.05 RECORDS:

Contractor shall maintain a complete, accurate log of all control and survey work as it progresses.

1.06 SUBMITTALS:

- A. Contractor shall submit name and address of Surveyor and Professional Engineer to District and Architect prior to its/their work on the Project.
- B. On request of District and Architect, Contractor shall submit documentation to verify accuracy of field engineering work, at no additional cost to the District.
- C. Contractor shall submit a certificate signed by registered engineer or surveyor certifying that elevations and locations of improvements are in conformance or nonconformance with Contract Documents.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 COMPLIANCE WITH LAWS:

Contractor is responsible for meeting all applicable codes, OSHA, safety and shoring requirements.

3.02 NONCONFORMING WORK:

Contractor is responsible for any re-surveying required by correction of nonconforming work.

END OF DOCUMENT

CUTTING AND PATCHING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Inspector, Inspections, and Tests, Integration of Work, Nonconforming Work, and Correction of Work, and Uncovering Work;
- B. Special Conditions;
- C. Hazardous Materials Procedures and Requirements;
- D. Hazardous Materials Certification;
- E. Lead-Based Paint Certification;
- F. Imported Materials Certification.

1.02 CUTTING AND PATCHING:

- A. Contractor shall be responsible for all cutting, fitting, and patching, including associated excavation and backfill, required to complete the Work or to:
 - (1) Make several parts fit together properly.
 - (2) Uncover portions of Work to provide for installation of ill-timed Work.
 - (3) Remove and replace defective Work.
 - (4) Remove and replace Work not conforming to requirements of Contract Documents.
 - (5) Remove Samples of installed Work as specified for testing.
 - (6) Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.
 - (7) Attaching new materials to existing remodeling areas – including painting (or other finishes) to match existing conditions.
- B. In addition to Contract requirements, upon written instructions from the District, Contractor shall uncover Work to provide for observations of covered Work in accordance with the Contract Documents; remove samples of installed materials for testing as directed by District; and remove Work to provide for alteration of existing Work.

- C. Contractor shall not cut or alter Work, or any part of it, in such a way that endangers or compromises the integrity of the Work, the Project, or work of others.

1.03 SUBMITTALS:

- A. Prior to any cutting or alterations that may affect the structural safety of Project, or work of others, and well in advance of executing such cutting or alterations, Contractor shall submit written notice to District pursuant to the applicable notice provisions of the Contract Documents, requesting consent to proceed with the cutting or alteration, including the following:
 - (1) The work of the District or other trades.
 - (2) Structural value or integrity of any element of Project.
 - (3) Integrity or effectiveness of weather-exposed or weather-resistant elements or systems.
 - (4) Efficiency, operational life, maintenance or safety of operational elements.
 - (5) Visual qualities of sight-exposed elements.
- B. Contractor's Request shall also include:
 - (1) Identification of Project.
 - (2) Description of affected Work.
 - (3) Necessity for cutting, alteration, or excavations.
 - (4) Affects of Work on District, other trades, or structural or weatherproof integrity of Project.
 - (5) Description of proposed Work:
 - (a) Scope of cutting, patching, alteration, or excavation.
 - (b) Trades that will execute Work.
 - (c) Products proposed to be used.
 - (d) Extent of refinishing to be done.
 - (6) Alternates to cutting and patching.
 - (7) Cost proposal, when applicable.
 - (8) The scheduled date the Contractor intends to perform the Work and the duration of time to complete the Work.

- (9) Written permission of District or other District contractor(s) whose work will be affected.

1.04 QUALITY ASSURANCE:

- A. Contractor shall ensure that cutting, fitting, and patching shall achieve security, strength, weather protection, appearance for aesthetic match, efficiency, operational life, maintenance, safety of operational elements, and the continuity of existing fire ratings.
- B. Contractor shall ensure that cutting, fitting, and patching shall successfully duplicate undisturbed adjacent profiles, materials, textures, finishes, colors, and that materials shall match existing construction. Where there is dispute as to whether duplication is successful or has been achieved to a reasonable degree, the District's decision shall be final.

1.05 PAYMENT FOR COSTS:

- A. Cost caused by ill-timed or defective Work or Work not conforming to Contract Documents, including costs for additional services of the District, its consultants, including but not limited to the Construction Manager, the Architect, the Project Inspector(s), Engineers, and Agents, will be paid by Contractor and/or deducted from the Contract by the District.
- B. District shall only pay for cost of Work if it is part of the original Contract Price or if a change has been made to the contract in compliance with the provisions of the General Conditions. Cost of Work performed upon instructions from the District, other than defective or nonconforming Work, will be paid by District on approval of written Change Order. Contractor shall provide written cost proposals prior to proceeding with cutting and patching.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Contractor shall provide for replacement and restoration of Work removed. Contractor shall comply with the Contract Documents and with the Industry Standard(s), for the type of Work, and the Specification requirements for each specific product involved. If not specified, Contractor shall first recommend a product of a manufacturer or appropriate trade association for approval by the District.
- B. Materials to be cut and patched include those damaged by the performance of the Work.

PART 3 – EXECUTION

3.01 INSPECTION:

- A. Contractor shall inspect existing conditions of the Site and the Work, including elements subject to movement or damage during cutting and patching, excavating and backfilling. After uncovering Work, Contractor shall inspect conditions affecting installation of new products.

- B. Contractor shall report unsatisfactory or questionable conditions in writing to District as indicated in the General Conditions and shall proceed with Work as indicated in the General Conditions by District.

3.02 PREPARATION:

- A. Contractor shall provide shoring, bracing and supports as required to maintain structural integrity for all portions of the Project, including all requirements of the Project.
- B. Contractor shall provide devices and methods to protect other portions of Project from damage.
- C. Contractor shall, provide all necessary protection from weather and extremes of temperature and humidity for the Project, including without limitation, any work that may be exposed by cutting and patching Work. Contractor shall keep excavations free from water.

3.03 ERECTION, INSTALLATION AND APPLICATION:

- A. With respect to performance, Contractor shall:
 - (1) Execute fitting and adjustment of products to provide finished installation to comply with and match specified tolerances and finishes.
 - (2) Execute cutting and demolition by methods that will prevent damage to other Work, and provide proper surfaces to receive installation of repairs and new Work.
 - (3) Execute cutting, demolition excavating, and backfilling by methods that will prevent damage to other Work and damage from settlement.
- B. Contractor shall employ original installer or fabricator to perform cutting and patching for:
 - (1) Weather-exposed surfaces and moisture-resistant elements such as roofing, sheet metal, sealants, waterproofing, and other trades.
 - (2) Sight-exposed finished surfaces.
- C. Contractor shall execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes as shown or specified in the Contract Documents including, without limitation, the Drawings and Specifications.
- D. Contractor shall fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces. Contractor shall conform to all Code requirements for penetrations or the Drawings and Specifications, whichever calls for a higher quality or more thorough requirement. Contractor shall maintain integrity of both rated and non-rated fire walls, ceilings, floors, etc.
- E. Contractor shall restore Work which has been cut or removed. Contractor shall install new products to provide completed Work in accordance with

requirements of the Contract Documents and as required to match surrounding areas and surfaces.

- F. Contractor shall refinish all continuous surfaces to nearest intersection as necessary to match the existing finish to any new finish.

END OF DOCUMENT

ALTERATION PROJECT PROCEDURES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Integration of Work, Purchase of Materials and Equipment, Uncovering of Work and Non-conforming Work and Correction of Work and Trenches;
- B. Special Conditions.

PART 2 - PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK:

- A. New Materials: As specified in the Contract Documents including, without limitation, in the Specifications, Contractor shall match existing products, conditions, and work for patching and extending work.
- B. Type and Quality of Existing Products: Contractor shall determine by inspection, by testing products where necessary, by referring to existing conditions and to the Work as a standard.

PART 3 - EXECUTION

3.01 EXAMINATION:

- A. Contractor shall verify that demolition is complete and that areas are ready for installation of new Work.
- B. By beginning restoration Work, Contractor acknowledges and accepts the existing conditions.

3.02 PREPARATION:

- A. Contractor shall cut, move, or remove items as necessary for access to alterations and renovation Work. Contractor shall replace and restore these at completion.
- B. Contractor shall remove unsuitable material not as salvage unless otherwise indicated in the Contract Documents. Unsuitable material may include, without limitation, rotted wood, corroded metals, and deteriorated masonry and concrete. Contractor shall replace materials as specified for finished Work.

- C. Contractor shall remove debris and abandoned items from all areas of the Site and from concealed spaces.
- D. Contractor shall prepare surface and remove surface finishes to provide for proper installation of new Work and finishes.
- E. Contractor shall close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity. Contractor shall insulate ductwork and piping to prevent condensation in exposed areas. Contractor shall insulate building cavities for thermal and/or acoustical protection, as detailed.

3.03 INSTALLATION:

- A. Contractor shall coordinate Work of all alternations and renovations to expedite completion and to accommodate District occupancy.
- B. Designated Areas and Finishes: Contractor shall complete all installations in all respects, including operational, mechanical work and electrical work.
- C. Contractor shall remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring Products and finishes to original or specified condition.
- D. Contractor shall refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat and square or straight transition to adjacent finishes.
- E. Contractor shall install products as specified in the Contract Documents, including without limitation, the Specifications.

3.04 TRANSITIONS:

- A. Where new Work abuts or aligns with existing, Contractor shall perform a smooth and even transition. Patched Work must match existing adjacent work in texture and appearance.
- B. When finished surfaces are cut so that a smooth transition with new Work is not possible, Contractor shall terminate existing surface along a straight line at a natural line of division and make a recommendation for resolution to the District and the Architect for review and approval.

3.05 ADJUSTMENTS:

- A. Where removal of partitions or walls results in adjacent spaces becoming one, Contractor shall rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
- B. Where a change of plane of 1/4 inch or more occurs, Contractor shall submit a recommendation for providing a smooth transition to the District and the Architect for review and approval.

- C. Contractor shall trim and seal existing wood doors and shall trim and paint metal doors as necessary to clear new floor finish and refinish trim as required.
- D. Contractor shall fit Work at penetrations of surfaces.

3.06 REPAIR OF DAMAGED SURFACES:

- A. Contractor shall patch or replace portions of existing surfaces, which are damaged, lifted, discolored, or showing other imperfections, in the area where the Work is performed.
- B. Contractor shall repair substrate prior to patching finish.

3.07 CULTIVATED AREAS AND OTHER SURFACE IMPROVEMENTS:

- A. Cultivated or planted areas and other surface improvements which are damaged by actions of the Contractor shall be restored by Contractor to their original condition or better, where indicated.
- B. Contractor shall protect and replace, if damaged, all existing guard posts, barricades, and fences.
- C. Contractor shall give special attention to avoid damaging or killing trees, bushes and/or shrubs on the Premises and/or identified in the Contract Documents, including without limitation, the Drawings.

3.08 FINISHES:

- A. Contractor shall finish surfaces as specified in the Contract Documents, including without limitations, the provisions of all Divisions of the Specifications.
- B. Contractor shall finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, Contractor shall refinish entire surface to nearest intersections.

3.09 CLEANING:

- A. Contractor shall continually clean the Site and the Premises as indicated in the Contract Documents, including without limitation, the provisions in the General Conditions and the Specifications regarding cleaning.

END OF DOCUMENT

CONTRACT CLOSEOUT AND FINAL CLEANING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Completion of Work;
- B. Special Conditions;
- C. Temporary Facilities and Controls.

1.02 CLOSEOUT PROCEDURES

Contractor shall comply with all closeout provisions as indicated in the General Conditions.

1.03 FINAL CLEANING

- A. Contractor shall execute final cleaning prior to final inspection.
- B. Contractor shall clean interior and exterior glass and all surfaces exposed to view; remove temporary labels, tape, stains, and foreign substances, polish transparent and glossy surfaces, wax and polish new vinyl floor surfaces, vacuum carpeted and soft surfaces.
- C. Contractor shall clean equipment and fixtures to a sanitary condition.
- D. Contractor shall replace filters of operating equipment.
- E. Contractor shall clean debris from roofs, gutters, down spouts, and drainage systems.
- F. Contractor shall clean Site, sweep paved areas, and rake clean landscaped surfaces.
- G. Contractor shall remove waste and surplus materials, rubbish, and construction facilities from the Site and surrounding areas.

1.04 ADJUSTING

Contractor shall adjust operating products and equipment to ensure smooth and unhindered operation.

1.05 RECORD DOCUMENTS AND SHOP DRAWINGS

- A. Contractor shall legibly mark each item to record actual construction, including:
 - (1) Measured depths of foundation in relation to finish floor datum.
 - (2) Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permit 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 detail.
 - (5) Details not on original Contract Drawings
 - (6) Changes made by modification(s).
 - (7) References to related Shop Drawings and modifications.
- B. Contractor will provide one set of Record Drawings to District.
- C. Contractor shall submit all required documents to District and/or Architect prior to or with its final Application for Payment.

1.06 INSTRUCTION OF DISTRICT PERSONNEL

- A. Before final inspection, at agreed upon times, Contractor shall instruct District's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. For equipment requiring seasonal operation, Contractor shall perform instructions for other seasons within six months or by the change of season.
- C. Contractor shall use operation and maintenance manuals as basis for instruction. Contractor shall review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- D. Contractor shall prepare and insert additional data in Operation and Maintenance Manual when the need for such data becomes apparent during instruction.
- E. Contractor shall review contents of manual with personnel in detail to explain all aspects of operation and maintenance.

1.07 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Contractor shall provide products, spare parts, maintenance, and extra materials in quantities specified in the Specifications and in Manufacturer's recommendations.

- B. Contractor shall provide District with all required Operation and Maintenance Data at one time. Partial or piecemeal submissions of Operation and Maintenance Data will not be accepted.

PART 2 – PRODUCTS Not used.

PART 3 – EXECUTION Not used.

END OF DOCUMENT

OPERATION AND MAINTENANCE DATA

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Completion of the Work;
- B. Special Conditions.

1.02 QUALITY ASSURANCE:

Contractor shall prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.03 FORMAT:

- A. Contractor shall prepare data in the form of an instructional manual entitled "OPERATIONS AND MAINTENANCE MANUAL & INSTRUCTIONS" ("Manual").
- B. Manuals and Instructions to be submitted in both PDF and hard copy formats.
- C. Binders: Contractor shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers; two-inch maximum ring size. When multiple binders are used, Contractor shall correlate data into related consistent groupings.
- D. Cover: Contractor shall identify each binder with typed or printed title "OPERATION AND MAINTENANCE MANUAL & INSTRUCTIONS"; and shall list title of Project and identify subject matter of contents.
- E. Contractor shall arrange content by systems process flow under section numbers and sequence of Table of Contents of the Contract Documents.
- F. Contractor shall provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- G. Text: The content shall include Manufacturer's printed data, or typewritten data on 24-pound paper.
- H. Drawings: Contractor shall provide with reinforced punched binder tab and shall bind in with text; folding larger drawings to size of text pages.
- I. Contractor will also submit the "OPERATIONS AND MAINTANANCE MANUAL & INSTRUCTIONS" (Manual) electronically (in PDF format) at the completion of the Project.

1.04 CONTENTS, EACH VOLUME:

- A. Table of Contents: Contractor shall provide title of Project; names, addresses, and telephone numbers of the Architect, any engineers, subconsultants, Subcontractor(s), and Contractor with name of responsible parties; and schedule of products and systems, indexed to content of the volume.
- B. For Each Product or System: Contractor shall list names, addresses, and telephone numbers of Subcontractor(s) and suppliers, including local source of supplies and replacement parts.
- C. Product Data: Contractor shall mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- D. Drawings: Contractor shall supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Contractor shall not use Project Record Documents as maintenance drawings.
- E. Text: The Contractor shall include any and all information as required to supplement product data. Contractor shall provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- F. Warranties and Bonds: Contractor shall bind in one copy of each.

1.05 MANUAL FOR MATERIALS AND FINISHES:

- A. Building Products, Applied Materials, and Finishes: Contractor shall include product data, with catalog number, size, composition, and color and texture designations. Contractor shall provide information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Contractor shall include Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Contractor shall include product data listing applicable reference standards, chemical composition, and details of installation. Contractor shall provide recommendations for inspections, maintenance, and repair.
- D. Additional Requirements: Contractor shall include all additional requirements as specified in the Specifications.
- E. Contractor shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.06 MANUAL FOR EQUIPMENT AND SYSTEMS:

- A. Each Item of Equipment and Each System: Contractor shall include description of unit or system, and component parts and identify function,

normal operating characteristics, and limiting conditions. Contractor shall include performance curves, with engineering data and tests, and complete nomenclature, and commercial number of replaceable parts.

- B. Panelboard Circuit Directories: Contractor shall provide electrical service characteristics, controls, and communications.
- C. Contractor shall include color coded wiring diagrams as installed.
- D. Operating Procedures: Contractor shall include start-up, break-in, and routine normal operating instructions and sequences. Contractor shall include regulation, control, stopping, shutdown, and emergency instructions. Contractor shall include summer, winter, and any special operating instructions.
- E. Maintenance Requirements: Contractor shall include routine procedures and guide for troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- F. Contractor shall provide servicing and lubrication schedule, and list of lubricants required.
- G. Contractor shall include manufacturer's printed operation and maintenance instructions.
- H. Contractor shall include sequence of operation by controls manufacturer.
- I. Contractor shall provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Contractor shall provide control diagrams by controls manufacturer as installed.
- K. Contractor shall provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- L. Contractor shall provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Contractor shall provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- N. Additional Requirements: Contractor shall include all additional requirements as specified in Specification(s).
- O. Contractor shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.07 SUBMITTAL:

- A. Contractor shall submit to the District for review two (2) copies of preliminary draft or proposed formats and outlines of the contents of the Manual within thirty (30) days of Contractor's start of Work.

- B. For equipment, or component parts of equipment put into service during construction and to be operated by District, Contractor shall submit draft content for that portion of the Manual within ten (10) days after acceptance of that equipment or component.
- C. Contractor shall submit two (2) copies of a complete Manual in final form prior to final Application for Payment. Copy will be returned with Architect/Engineer comments. Contractor must revise the content of the Manual as required by District prior to District's approval of Contractor's final Application for Payment.
- D. Contractor must submit two (2) copies of revised Manual in final form within ten (10) days after final inspection.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

WARRANTIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Warranty/Guarantee Information;
- B. Special Conditions.

1.02 FORMAT

- A. Binders: Contractor shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers; two-inch maximum ring size.
- B. Cover: Contractor shall identify each binder with typed or printed title "WARRANTIES" and shall list title of Project.
- C. Table of Contents: Contractor shall provide title of Project; name, address, and telephone number of Contractor and equipment supplier; and name of responsible principal. Contractor shall identify each item with the number and title of the specific Specification, document, provision, or section in which the name of the product or work item is specified.
- D. Contractor shall separate each warranty with index tab sheets keyed to the Table of Contents listing, providing full information and using separate typed sheets as necessary. Contractor shall list each applicable and/or responsible Subcontractor(s), supplier(s), and/or manufacturer(s), with name, address, and telephone number of each responsible principal(s).

1.03 PREPARATION:

- A. Contractor shall obtain warranties, executed in duplicate by each applicable and/or responsible subcontractor(s), supplier(s), and manufacturer(s), within ten (10) days after completion of the applicable item or work. Except for items put into use with District's permission, Contractor shall leave date of beginning of time of warranty blank until the date of completion is determined.
- B. Contractor shall verify that documents are in proper form, contain full information, and are notarized, when required.
- C. Contractor shall co-execute submittals when required.
- D. Contractor shall retain warranties until time specified for submittal.

1.04 TIME OF SUBMITTALS:

- A. For equipment or component parts of equipment put into service during construction with District's permission, Contractor shall submit a draft warranty for that equipment or component within ten (10) days after acceptance of that equipment or component.
- B. Contractor shall submit for District approval all warranties and related documents within ten (10) days after date of completion. Contractor must revise the warranties as required by the District prior to District's approval of Contractor's final Application for Payment.
- C. For items of work delayed beyond date of completion, Contractor shall provide an updated submittal within ten (10) days after acceptance, listing the date of acceptance as start of warranty period.

PART 2 - PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

RECORD DOCUMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Documents on Work;
- B. Special Conditions.

PART 2 - RECORD DRAWINGS

2.01 GENERAL:

- A. Contractor shall maintain on Site one set of the following record documents; Contractor shall record actual revisions to the Work:
 - (1) Contract Drawings.
 - (2) Specifications.
 - (3) Addenda.
 - (4) Change Orders and other modifications to the Contract.
 - (5) Reviewed shop drawings, product data, and samples.
 - (6) Field test records.
 - (7) Inspection certificates.
 - (8) Manufacturer's certificates.
- B. As indicated in the Contract Documents, the District will provide Contractor with one set of reproducible, full size original Contract Drawings electronically.
- C. Contractor shall maintain at each Project Site one set of marked-up plans and shall transfer all changes and information to those marked-up plans, as often as required in the Contract Documents, but in no case less than once each month. Contractor shall submit to the Project Inspector one set of reproducible vellums of the Project Record Drawings ("As-Builts") showing all changes incorporated into the Work since the preceding monthly submittal. The As-Builts shall be available at the Project Site. The Contractor shall submit reproducible vellums at the conclusion of the Project following review of the blueline prints.

- D. Label and date each Record Drawing "RECORD DOCUMENT" in legibly printed letters.
- E. All deviations in construction, including but not limited to pipe and conduit locations and deviations caused by without limitation Change Orders, Construction Claim Directives, RFI's, and Addenda, shall be accurately and legibly recorded by Contractor.
- F. Locations and changes shall be done by Contractor in a neat and legible manner and, where applicable, indicated by drawing a "cloud" around the changed or additional information.

2.02 RECORD DRAWING INFORMATION:

- A. Contractor shall record the following information:
 - (1) Locations of Work buried under or outside each building, including, without limitation, all utilities, plumbing and electrical lines, and conduits.
 - (2) Actual numbering of each electrical circuit to match panel schedule.
 - (3) Locations of significant Work concealed inside each building whose general locations are changed from those shown on the Contract Drawings.
 - (4) Locations of all items, not necessarily concealed, which vary from the Contract Documents.
 - (5) Installed location of all cathodic protection anodes.
 - (6) Deviations from the sizes, locations, and other features of installations shown in the Contract Documents.
 - (7) Locations of underground work, points of connection with existing utilities, changes in direction, valves, manholes, catch basins, capped stubouts, invert elevations, etc.
 - (8) Sufficient information to locate Work concealed in each building with reasonable ease and accuracy.

In some instances, this information may be recorded by dimension. In other instances, it may be recorded in relation to the spaces in the building near which it was installed.

- B. Contractor shall provide additional drawings as necessary for clarification.
- C. Contractor shall provide reproducible record drawings, made from final Shop Drawings marked "No Exceptions Taken" or "Approved as Noted."
- D. After review and approval of the marked-up specifications by the Project Inspector, Contractor shall provide electronic copies of the drawings (in PDF

format) with one file with all of the sheets and one set of individual sheet files at the conclusion of the Project.

PART 3 - RECORD SPECIFICATIONS

3.01 GENERAL:

- A. Contractor shall mark each section legibly to record
 - (1) Manufacturer, trade name, catalog number, and supplier of each Product and item of equipment actually installed.
 - (2) Product substitutions or alternates utilized.
 - (3) Changes made by Addenda and Change Orders and written directives.
- B. After review and approval of the marked-up specifications by the Project Inspector, Contractor shall provide one electronic copy of the specifications (in PDF format) at the conclusion of the Project.

PART 4 - MAINTENANCE OF RECORD DOCUMENTS

4.01 GENERAL

- A. Contractor shall store Record Documents apart from documents used for construction as follows:
 - (1) Provide files and racks for storage of Record Documents.
 - (2) Maintain Record Documents in a clean, dry, legible condition and in good order.
- B. Contractor shall not use Record Documents for construction purposes.

PART 5 – PRODUCTS Not Used.

END OF DOCUMENT

COMMISSIONING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Contractor’s Submittals and Schedules, Drawings and Specifications;
- B. Special Conditions.
- C. Submittal Procedures: Procedures for submittal of product data and quality assurance submittals.
- D. Closeout Procedures: General closeout requirements.
- E. Sustainable Design Closeout Documentation: Closeout requirements relating to sustainable design certification.
- F. Appropriate Sections of Divisions 15 and 16 specify closeout and/or commissioning related requirements for specific pieces of equipment or building operating systems.

1.02 SECTION INCLUDES

- A. Equipment and system commissioning, including the following:
 - (1) Completion of commissioning procedures on specific equipment and systems as indicated under “Related Documents and Provisions” above.
 - (2) Verification of operational and functional performance of specific equipment and systems for compliance with the “Design Intent” as described in the “Related Documents and Provisions” indicated above.

1.03 REFERENCES

- A. [ASTM International (ASTM)]:
 - (1) [ASTM X000-00, Title of Standard].
 - (2) [ASTM X000-00, Title of Standard].
- B. [Name of Organization (Organization Acronym)]:
 - (1) [Acronym, Standard or Document Number and Date of Issue, Title of Standard or Document].

1.04 DEFINITIONS

- A. Commissioning: The process of verifying that the installation and performance of selected building systems meet or exceed the specified design criteria and therefore satisfy the design intent.
- B. Deficiencies and Resolutions List: List of noted deficiencies discovered as result of commissioning process.
- C. Final Commissioning Report: Overall final commissioning document, prepared by the Systems Commissioning Authority, which details the actual commissioning procedures performed, inspection and testing results, and the final version of the deficiencies and resolutions list indicating that all issues discovered through the commissioning process have been verified as resolved.
- D. Functional Performance Testing Process: Documented testing of system parameters, under actual or simulated operating conditions.
- E. Pre-Commissioning Checklists: Installation and start-up items to be completed by the appropriate party prior to operational verification through functional testing.
- F. Physical Inspection Process: On-site inspection and review of related system components for conformance to the specifications.
- G. Systems Commissioning Authority (SCA): Independent entity under contract directly with the District or District's Representative responsible for performing the specified commissioning procedures.

1.05 DESCRIPTION OF CONSTRUCTION PHASE COMMISSIONING PROCESS

- A. As soon as practicable after the [bid award] [start of construction] the Systems Commissioning Authority (SCA) will conduct a pre-installation commissioning "kick-off" meeting with the contractors. Parties directly affected by the commissioning work will be required to attend. The SCA will explain the commissioning process in detail, and identify specific commissioning related responsibilities of the various parties.
- B. Commissioning status meetings will be scheduled to occur during construction to monitor progress and to help facilitate the commissioning process. Contractor representatives will be required to attend these meetings.
- C. Once contractors have provided the SCA with written verification indicating completion of installation and startup procedures, the SCA will conduct an on-site physical inspection of the specific systems and equipment.
- D. Upon confirmation of system readiness, the SCA will schedule with the contractors to perform functional compliance with the project specifications and drawings. The SCA will oversee the process and will provide the format and documentation for these tests.

- E. Deficiencies noted during these tests will be documented on the Deficiencies and Resolutions list. When corrected, issues will be resolved at the time of discovery. The responsible Contractor will resolve all other issues at a later date. All deficiencies will be noted by the SCA as either resolved or pending resolution.
- F. The construction commissioning process will be complete when all noted deficiencies have been corrected, proved to be compliance with the project specifications or otherwise resolved to the satisfaction of the District.

1.06 SYSTEMS COMMISSIONING AUTHORITY'S DUTIES AND RESPONSIBILITIES

- A. Meet and communicate with the District's representatives, Construction Manager, if any, Contractors, equipment manufacturers' representatives, Architect, Engineer and others as needed, to facilitate the commissioning process.
- B. Review commissioning related specifications, submittals and construction documents. Communicate noted deficiencies and concerns to the District, Architect and Engineer.
- C. Develop detailed and specific functional testing procedures for equipment and systems to be commissioned.
- D. Develop testing, adjusting and balancing (TAB) specifications. Oversee the TAB process.
- E. Perform site inspections and verify contractor readiness for the functional testing process. Document deficiencies for future resolution.
- F. Witness contractor performed functional testing process as appropriate to verify contractor compliance with the functional testing procedures. Document deficiencies for future resolution.
- G. Provide the District, Construction Manager, Contractor, Architect, and Engineer with a Final Commissioning Report to document the commissioning process and to verify that the commissioning process is complete.

1.07 DUTIES AND RESPONSIBILITIES OF OTHERS FOR COMMISSIONING

- A. The commissioning process will require the active participation of persons qualified to represent the District, Mechanical Engineer, Electrical Engineer, General Contractor, Equipment Manufacturers' Representatives, Mechanical Contractor, HVAC Contractor, Controls Contractor, TAB Contractor, Electrical Contractor, and other specific subcontractors, as deemed appropriate. The SCA will witness the final functional performance commissioning process. Participants shall include in their contracts all costs necessary to participate in and complete the commissioning process.
- B. Contractor will assure the participation and co-operation of Subcontractors, as required to complete the commissioning process.

- C. The District will assure the participation of their chosen representatives as required to complete the commissioning process.
- D. The Architect will assure the participation of necessary representatives from the Design Team as required to complete the commissioning process. Design team members will provide prompt replies to requests for information issued during the commissioning process.
- E. It is the Contractor's specific responsibility to complete their respective start-up and checkout procedures, and to insure the complete readiness of equipment and systems, prior to the start of the functional performance testing phase. The SCA shall request written confirmation of system readiness for performance testing, from the appropriate subcontractor or Contractor. Once the SCA is provided with confirmation of all related systems completion, the actual date and times for the functional performance testing process will be confirmed. Contractors shall provide sufficient time, and qualified representatives, to complete this process.
- F. After a second failure of a system to successfully meet the criteria as set forth in the functional performance testing process, the Contractor shall reimburse the District for all costs associated with any additional re-testing efforts made necessary due to remaining Contractor related system deficiencies previously reported by the Contractor as corrected. These costs shall include salary, travel costs and per diem lodging costs (where applicable) for the SCA. Rates to be used:

Mileage: \$0.65/Mile
 Per Diem Lodging: \$115.00/Day
 Salary: \$100.00/Hour

- G. Training on related systems and equipment operation and maintenance shall only be scheduled to commence after final performance commissioning is satisfactorily completed, and systems are verified to be 100 percent complete and functional.

1.08 SUBMITTALS

- A. Submit under provisions of Document 01 33 00 Submittals.
- B. Pre-Commissioning Checklist Forms: Submit two (2) signed copies of the checklist forms to the SCA upon completion of all listed items.
- C. Equipment Manufacturer's Startup Forms: Submit two (2) completed copies of the installation and startup checklists provided by the equipment manufacturers to the SCA.
- D. Test Reports: Submit two (2) copies of test reports for equipment and systems to the SCA.
- E. Control Schematics: Submit two (2) copies of the control schematics for equipment, systems, and subsystems to the SCA.

- F. Inspection Records: Submit two (2) copies of the records of inspections for code compliance, and approved permits and licenses to operate the equipment and systems to the SCA.
- G. Operating Data: Submit two (2) copies of equipment and system operating data including all necessary instructions to facilitate operation to specified performance standards to the District.
- H. Maintenance Data: Submit two (2) copies of equipment and system maintenance data including all necessary information required to maintain the equipment and systems in continuous operation, such as the testing, balancing and adjusting report and the as-built drawings.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

SECTION 03 11 13 – CONCRETE FORMING**PART 1 - GENERAL****1.01 DESCRIPTION:**

- A. Work Included: Furnish, install and remove forms for cast-in-place concrete including form supports.
- B. Related Work Specified Elsewhere:
 - 1. Excavating, filling and backfilling: See Division 31, Earthwork.
 - 2. Patching and filling of form tie holes and repairs: See Section 03 35 00, Concrete Finishing.

1.02 REFERENCES, CODES AND STANDARDS: The following references, codes and standards are hereby made a part of this section and formwork shall conform to the applicable requirements therein except as otherwise specified herein or shown on the drawings. Nothing contained herein shall be construed as permitting work that is contrary to code requirements.

- A. "Recommended Practice for Concrete Formwork", ACI 347, Latest Edition.
- B. California Building Code, 2019 Edition

1.03 SUBMITTALS: Comply with requirements of shop drawings, product data and sample section.

- A. Shop drawings shall include finished footing and slab edge elevations and dimensions of all formed surfaces including finish floor elevations. Further, submit the following:
 - 3. Submit product data sheet for form sealer.
 - 4. Submit product data sheet for metal ties (if used).
 - 5. Submit product data sheet for cold joint form at slabs-on-grade.
- B. Contractor shall check architectural, structural and mechanical drawings to determine size and location of all depressions, openings, chases.

1.04 ALLOWABLE TOLERANCES: Design, construct, set, and maintain the formwork so as to insure complete work within the suggested tolerance limits specified in ACI 347, section 3.3.1. See concrete finishes section for surface tolerances of all interior slabs-on-grade.

PART 2 - PRODUCTS**2.01 MATERIALS:**

- A. Earth Forms: Unless otherwise indicated or required by the Structural Drawings, concrete for footings may be placed directly against vertical excavated surfaces provided the material will stand without caving and provided that minimum reinforcing steel clearances indicated on Drawings are maintained and suitable provisions are taken to prevent raveling of top edges or sloughing of loose material from walls of excavation. Sides of excavation shall be made with a neat cut and the width made as detailed on Drawings. Concrete which is exposed to view on exterior shall be formed to a minimum depth of 6" below finished grade.
- B. Wood Forms:
1. Exposed Concrete Not Otherwise Noted or Specified: APA Plyform, Grade B-B, Class I or II (as per strength and tolerance requirements), Exterior, each piece grade marked, no mill oiling permitted.
 2. Chamfer Strips, Reveals, and Score Marks: Clear Douglas fir or pine, selected straight, milled on all faces -or- extruded polyvinylchloride specially produced for concrete work, Vinylex Corp., Preco Industries, Vulcan Metal Products, or equivalent. Material usage shall be consistent for each application.
 3. Unexposed Concrete Not Otherwise Specified: Of sufficient design and strength to hold concrete properly in place and alignment.
 4. Framing: At Contractor option subject to meeting necessary strengths and surface tolerances.
- C. Form Release Agents:
5. Exposed Concrete Including Surfaces to Receive Paint: Chemically active type producing water insoluble soaps. Form release agents shall be delivered in manufacturer's sealed and trademarked containers and shall be guaranteed to provide clean, stain-free concrete release and not to interfere with future applied coatings and finishes. Release agents shall contain no petroleum solvents such as creosote, paraffin, waxes or diesel oil.
 6. Concealed Concrete: Contractor option.
- D. Form Sealer (Wood Forms): Burke "Form Sealer", or equivalent, and of a type which will not interfere with bond of applied finishes.
- E. Form Ties: Metal, spreader type, removable to 1" from concrete face. Ties for exposed concrete shall be of same type throughout project. Wire ties and wood spreaders will not be allowed except that such devices may be permitted for footings, shallow foundations and similar other totally concealed below grade surfaces upon specific approval of Architect. Wood spreaders shall not remain in concrete.
- F. Cold Joints (Slabs-on-Grade): Standard 24 gage galvanized steel, keyed profile, sized to suit slab thickness. See Section 1.3.A.3 for submittal requirements.

PART 3 - EXECUTION**3.01 PREPARATION:**

- A. Vertical and Horizontal Controls: Establish and maintain necessary benchmarks, lines, or controls throughout construction.
- B. Secure information and provide for openings, sleeves, chases, pipes, recesses, nailers, anchors, ties, inserts, and similar embedded items. Coordinate with concrete and grouted masonry work for requirements governing embedment and sleeving of pipes and conduit.

3.02 CONSTRUCTION:

- A. Formwork: - General: Construct wood forms of sound material, straight and rigid, thoroughly braced, mortar tight, and of such strength that the pressure of concrete and the movement of men and equipment will not displace them. Visible waves in exposed concrete surfaces after stripping of forms may result in rejection of that portion of the concrete. The design and engineering of formwork shall be the complete responsibility of the Contractor.
- B. Plywood Forms for Exposed Concrete:
 - 1. Plywood panels shall be clean, smooth, uniform in size, and free from damaged edges or faces (including holes other than those required for form ties). Use full size (4' x 8' or larger) panels wherever possible. Make plywood panel pattern regular and symmetrical, joints plumb or level, horizontal joints continuous. Block plywood edges which do not occur at bearing points in order to eliminate joint offsets.
- C. Framing and Bracing: Framing, bracing and supporting members shall be of ample size and strength to safely carry, without excessive deflection (exceeding allowable tolerances), all dead and live loads to which formwork may be subjected, and shall be spaced sufficiently close to prevent any apparent bulging or sagging of forms.
- D. Form Ties: Form ties shall be of sufficient strength and used in sufficient quantities to prevent spreading of the forms. Ties for exposed concrete surfaces shall be arranged symmetrically and shall be aligned both vertically and horizontally (do not stagger). Form ties are not permitted through sandblasted surfaces.
- E. Forms for exposed concrete shall be constructed full height and width between indicated construction joints or emphasized joints in concrete surface and shall not be broken for pour or construction joints within these areas.
- F. Construct forms no higher than 12" above the top of a pour or construction joint.

- G. Construction Joints: Construction joints shall be in accordance with requirements of Concrete, Cast-In-Place Section. Confine construction or pour joints to rustication strip locations where they occur; where rusticated joints do not occur in a surface, provide a surfaced pouring strip where construction joints intersect exposed surfaces to provide straight line at joints. Prior to subsequent pour, remove strip and tighten forms. Construction joints shall have no "overlapping" or offsetting of concrete surfaces and shall, as closely as possible, present the same appearance as butted plywood joints. Joints in a continuous line shall be straight and true.
- H. Chamfered Corners: In general, chamfer all corners for exposed concrete unless otherwise noted. Obtain chamfers by placing 3/4" x 3/4" non-staining moldings in forms. Pieces shall be in longest lengths possible, joints mitered.
- I. Score Lines: Where "score", emphasized or rustication lines are indicated on vertical surface, obtain such lines by accurate placement of moldings in forms. Pieces shall be in longest lengths practical with joints mitered.
- J. Arrange forms to allow proper erection sequence and to permit form removal without damage to concrete.
- K. Form Sealer: Wood forms for exposed concrete shall be sealed on contact faces and edges using specified form sealer in strict accordance with manufacturer's directions.
- L. Form Release Agent: Thoroughly clean forms and coat with release agent prior to initial use and before each reuse. Apply release agent in strict accordance with manufacturer's directions and coverage recommendations avoiding starved areas or excessive applications. Apply release agents before reinforcing steel is placed.
- M. Reuse of Forms: Do not reuse any form which cannot be reconditioned to "like new" condition. Control reuse of forms for exposed surfaces to provide surface of uniform color and texture without sharp demarcation between adjacent surfaces.
- N. Waterproofing Conditions: Concrete surfaces to receive waterproofing materials shall be formed to provide a relatively smooth surface free of sharp corners, projections, and offsets at form joints. Depressions and voids shall permit satisfactory patching as specified under Concrete Finishes Section. Form ties shall not penetrate or damage applied waterproofing.
- O. Bases and Foundations: Whenever concrete bases or foundations are to be provided for equipment furnished by other trades, dimensions shall be verified for the equipment furnished before concrete is placed.
- P. Prior to placement of concrete, remove dirt, debris, and foreign material from forms. Leave no wood in concrete except nailers.

3.03 REMOVAL OF FORMS:

- A. The removal of forms shall be carried out in such manner as to ensure the complete safety of the structure.

- B. Forms for exposed concrete surfaces shall be removed in such a manner as to preclude damage to finish. Pinch bars and similar tools shall not be used for prying against exposed surfaces. Stripping shall commence at top edge or vertical corner where the use of wooden wedges is possible.
- C. Removal of Forms: After concrete is placed, the following minimum times shall elapse before the removal of forms:
 - 1. Side Forms (Footings, Slabs on Grade): 24 hours.
- D. Upon removal of forms, bolts, wires, clamps, rods, etc., not necessary to the work, shall be removed to a minimum of 1 inch from the surface. The Contractor shall so conduct his operations as to eliminate any danger of rust stains from form tie materials or other unprotected ferrous materials embedded in or adjacent to exposed concrete.

END OF SECTION 03 11 13

SECTION 03 21 00 – CONCRETE REINFORCING**PART 1 - GENERAL****1.01 DESCRIPTION:**

- A. Work Included: Furnish and install reinforcement for cast-in-place concrete.
- B. Related Work Specified Elsewhere:
 - 1. Reinforcement for concrete work: See Sidewalks and Driveways.

1.02 REFERENCES, CODES AND STANDARDS: The following references, codes and standards are hereby made a part of this section and reinforcement shall conform to the applicable requirements therein except as otherwise specified herein or shown on the drawings. Nothing contained herein shall be construed as permitting work that is contrary to code requirements.

- A. "Manual of Standard Practice for Detailing Reinforced Concrete Structures", ACI 315, latest edition.
- B. "Building Code Requirement for Reinforced Concrete", ACI 318-14.
- C. "Manual of Standard Practice" published by CRSI, latest edition.
- D. California Building Code, 2019 Edition.

1.03 SOURCE QUALITY CONTROL: Refer to quality control section for general requirement governing testing and inspection. Where certified mill test reports (required hereinafter under "submittals") are not furnished, conform to the following.

- A. Reinforcing bars shall be tested in tension and bending as per ASTM A-615. Testing shall be done by the Owner's testing agency. Furnish one copy of test reports to Architect, Structural Engineer, Owner and Contractor.
- B. Samples will be taken by the testing agency from bundles as delivered from the mill. Where bundles are identified by heat number and a mill analysis accompanies the report, one tensile and one bending test specimen will be taken from each 10 tons or fraction thereof, of each size and kind of bar. Where positive identification of heat numbers cannot be made or where random samples are taken, one series of tests shall be made from each 2-1/2 tons or fraction thereof, of each size and kind of bar.
- C. The costs of tests, sampling and handling of reinforcing steel shall be paid by the Owner by deducting from moneys due the Contractor.
- D. Include material required to provide samples for testing.
- E. The following is subject to Special Inspection as per California Building Code, Sec. 1704A. Costs therefore will be paid by the Owner. No inspection is required for slabs-on-grade 5" thick or thinner.
 - 1. Placement of reinforcing steel as required by Sec. 1705A.

1.04 SUBMITTALS: Comply with requirements of shop drawings, product data, and sample sections.

A. Shop Drawings:

1. Fully detailed shop drawings, including bending schedules and bending diagrams, shall be submitted to the Architect for review. Shop drawings shall show placing detail and size location of reinforcing steel.
2. Shop drawings shall be of such detail and completeness that fabrication and placement at the site can be accomplished without the use of project or contract drawings for reference.
3. Contractor shall check architectural, structural, mechanical and electrical project or contract drawings for anchor bolt schedules and locations, anchors, inserts, conduits, sleeves, and any other items which are required to be cast in concrete, and shall make necessary provisions as required so that reinforcing steel will not interfere with the placement of such embedded items.
4. Reinforcing Steel shall not be fabricated or placed before the shop drawings have been reviewed by the Architect and returned to the Contractor. Review of shop drawings by the Architect will not relieve the Contractor of responsibility for errors or for failure in accuracy and complete placing of the work.

- B. Mill Test Reports: Certified mill test reports (tensile and bending) for each heat and melt of steel shall be submitted to the Architect before delivery of any material to the job site. See requirements above under "Source Quality Control".

1.05 DELIVERY AND STORAGE: Deliver reinforcing to site properly bundled and tagged, and store so as to prevent excessive rusting or fouling with grease or any coating that will interfere with bond. Segregate so as to maintain identification after bundles are broken. Do not use damaged, reworked, or deteriorated material.**PART 2 - PRODUCTS****2.01 MATERIALS:**

A. Reinforcing Bars:

1. New, free of loose rust.
2. Billet Steel Bars: ASTM A615, Grade 40 for #3 bars and smaller, Grade 60 for #4 bars and larger.
3. Low Alloy Steel Bars: ASTM A706 required for all reinforcing in shear walls and reinforcing bars to be welded.

- B. Welded Wire Fabric: Welded wire fabric shall be new, rectangular mesh, welded steel wire fabric, conforming with ASTM A185. Gage or diameter of wire and center-to-center spacing of wire shall be as indicated on the Drawings.

- C. Tie Wire: #16 minimum, black and annealed.

- D. Accessories: Metal or plastic spacers, supports, ties, etc., as required for spacing, assembling, and supporting reinforcing in place. Legs of accessories to be of type that will rest on forms without embedding into forms. Galvanize metal items where exposed to moisture or use approved other non-corrosive, non-staining supports. Use plastic or plastic coated accessories for supporting reinforcing where concrete soffits are exposed.

2.02 FABRICATION:

- A. Comply with details on Drawings.
- B. Where specific details are not shown or noted, do detailing and fabrication in conformance with or superior to requirements contained in the References, Codes and Standards Article.
- C. Clean bars of loose rust, loose mill scale and any substance that may decrease bond. Bend bars accurately to details on reviewed shop drawings. Unless otherwise permitted by the Structural Engineer, bar shall be bent cold.
- D. Shop fabricate reinforcement.

PART 3 - EXECUTION**3.01 PLACING:**

- A. General: Reinforcing steel shall be placed in accordance with the Drawings and reviewed shop drawings and the applicable requirements of the References, Codes and Standards Articles. Install reinforcement accurately and secure against movement, particularly under the weight of workmen and the placement of concrete. Reinforcing partially embedded in concrete shall not be field bent except as shown on the Drawings or permitted by the Structural Engineer.
- B. Reinforcement Supports:
 - 1. Reinforcement shall be accurately located in the forms and held in place by means of supports adequate to prevent displacement and to maintain reinforcement at proper distance from form face. Supports and their placement shall comply with CRSI "Placing Reinforcing Bars". The use of wood supports and spacers inside the forms is not permitted except as noted in Concrete Forms Section.
 - 2. Support reinforcement for on-grade slabs by wiring to precast concrete blocks spaced 3'-0" o.c. (maximum) both ways staggered. Size blocks so that reinforcing is maintained at the distance from face of concrete shown on the drawings.
- C. Obstructions: Wherever conduits, piping, inserts, sleeves, etc., interfere with placing of reinforcing, reinforcing shall be maintained at the distance from face of concrete shown on the drawings.
- D. Tying: Reinforcing shall be rigidly and securely tied with steel tie wire at splices and at crossing points and intersections in the position shown. Tie wires, after cutting, shall be bent in such a manner that concrete placement will not force the wire ends to surface of exposed concrete.
- E. Spacing: Where Drawings do not show the spacing of the reinforcing, the minimum clear spacing shall conform to ACI 318 Section 25.2.
- F. Splicing: Make splices only at those locations shown on the Drawings or as approved by the Structural Engineer. Where Drawings do not show minimum laps, comply with requirements of ACI 318 Section 25.5. Stagger splices in adjacent bars wherever possible.
- G. Dowels: Dowels shall be tied securely in place before concrete is deposited. In the event there are no bars in position to which dowels may be tied, No. 3 bars (minimum) shall be added to provide proper support and anchorage.
- H. Welding: Not permitted.

3.02 CLEANING:

- A. Reinforcement, at time of placing concrete, shall be free of any coating that would impair bond.

3.03 PROTECTIVE CONCRETE COVER:

- A. Except where indicated otherwise on the Drawings, the minimum concrete coverage for steel reinforcement shall be as specified in ACI 318 Section 20.6.1.3 "Specified concrete cover requirements."

3.04 PLACEMENT TOLERANCES:

- A. Where placement tolerances are not indicated on the Drawings, applicable requirements of ACI 301 shall apply. Bars may be shifted as necessary to avoid interference with other reinforcing steel, conduits, or embedded items. If bars are shifted more than one diameter, or enough to exceed specified tolerances, the resulting arrangement of bars shall be subject to the Architect's acceptance.

3.05 NOTIFICATION AND INSPECTION:

- A. The Contractor shall notify the Architect at least 72 hours ahead of each concrete pour, and no concrete shall be deposited until reinforcing steel has been installed, and has been observed by the Architect.

3.06 CORRECTION BEFORE CONCRETE PLACEMENT:

- A. Capable steel workers shall be kept on the job during the placing of concrete, and they shall properly reset any reinforcement displaced by runways, workers, or other causes. Reinforcement shall not be bent after being partially embedded in hardened concrete.

3.07 DEFECTIVE WORK:

- A. The following reinforcing steel work will be considered defective and will be ordered by the Architect to be removed and replaced by the contractor:
 - 1. Bars with kinks or bends not indicated on Drawings.
 - 2. Bars injured due to bending or straightening.
 - 3. Bars heated for bending or straightening.
 - 4. Reinforcement not placed in accordance with the Drawings and Specifications.
 - 5. Reinforcement with corrosion or coatings which may impair bond with concrete.

END OF SECTION 03 21 00

SECTION 03 31 00 – CAST-IN-PLACE CONCRETE**PART 1 - GENERAL****1.01 DESCRIPTION:**

- A. Work included: Furnish and install cast-in-place concrete required for the project as shown on the Drawings and specified herein. This Section also includes:
1. Concrete for work specified in Mechanical and Electrical Divisions unless specifically included therein.
 2. Grouting of structural steel setting plates and elevator sills (if required).
 3. Grouting of bases and equipment not specified under other Sections.
 4. Concrete fill for metal stairs and pipe guards (bollards).
 5. Coordination with other trades with regard to requirements for special bases, sleeves, chases, inserts, finishes or provisions of any nature.
 6. Curing of formed concrete surfaces.
 7. Installation of anchor bolts, hangers, anchors, plates, inserts and miscellaneous metal or other materials embedded in concrete and which are furnished by other trades.
- B. Related Work Specified Elsewhere:
1. Concrete work beyond the building lines: See Sidewalks and Driveways.
 2. Shotcrete.
 3. Aggregate base for slabs on grade: See Earthwork.
 4. Concrete Forms (including erection, stripping and removal).
 5. Concrete Reinforcement.
 6. Post Tensioning.
 7. Finish for concrete surfaces including patching and curing of concrete (except curing of formed concrete): See Concrete Finishes.

1.02 REFERENCES, CODES AND STANDARDS: The following references, codes and standards are hereby made a part of this Section and concrete work shall conform to the applicable requirements therein except as otherwise specified herein or shown on the Drawings. Nothing contained herein shall be construed as permitting work that is contrary to code requirements.

- A. "Building Code Requirements for Reinforced Concrete", ACI 318-11.
- B. California Building Code, 2019 Edition.

1.03 SOURCE QUALITY CONTROL: Refer to quality Control Section for general requirements governing testing and inspection.

- A. Cement and Aggregates: Furnish to the Architect the following data:

1. Mill certificates from cement manufacturer certifying that cement meets Specifications and is suitable for purpose intended.
2. Proof of aggregate's compatibility with cement to be used and certification that aggregates meet Specifications. Owner reserves the right to have his testing agency perform any additional tests on cement and aggregates which may be deemed advisable.

1.04 ENVIRONMENTAL CONDITIONS:

- A. Cold Weather Requirements: Comply with ACI 306R, "Cold Weather Concreting".
- B. Hot Weather Requirements: Comply with ACI 305, "Hot Weather Concreting".

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Cement: ASTM C 150, Type II. Cement shall be of same brand, type and source throughout Project.
- B. Aggregates:
 1. Concrete for Slabs On Grade, suspended slabs: ASTM C 33 from sources with proven history of successful use. Source shall be constant unless 10 days prior notice is given for approval after recheck of mix design.
 2. Fine Aggregate: Sechelt or Orcas sands.
 3. Coarse Aggregate: Granite Rock Co., Kaiser Limestone or Kaiser Clayton, Sechelt or Orcas aggregates.
 4. Other aggregates may be submitted for use provided the concrete mix meets the following shrinkage criteria: .040% drying shrinkage (max.), as tested per Structural Engineers Association of California recommendation, May 1989.
 5. All Other Concrete: ASTM C 33 from sources with proven history of successful use. Source shall be constant unless 10 days prior notice is given for approval after recheck of mix design.
 6. Fine Aggregate: Natural sand with sand equivalent of not less than 75 when tested per Test Method Calif. 217-E. Radum sand, or approved equal.
 7. Coarse Aggregate: Fine grain, sound crushed stone, natural gravel or granite with cleanness value not less than 75 when tested as per Test Method Calif. 227. Granite Rock Co., Kaiser Limestone or Kaiser Clayton.
- C. Water: Clean and potable, free from impurities detrimental to concrete.
- D. Admixtures: The use of admixtures shall be confined to those admixtures listed below. Admixtures containing chlorides are not permitted. Admixtures shall be batched in strict accordance with manufacturer's recommendations.
 1. Chemical Admixtures:

- a. Water Reducing Admixture: W.R. Grace Co. "WRDA-79", Master Builders "Pozzolith 200N" or Sika Chemical Corp. "Plastocrete 161". Admixture shall conform to ASTM C 494, Type A and shall not contain more chloride ions than are present in the municipal drinking water.
 - b. High-Range Water Reducing Admixture: W.R. Grace Co. "WRDA-19" or approved equal. Admixture shall conform to ASTM C494 Type F and shall not contain more chloride ions than are present in the municipal drinking water.
 - c. Mid-Range Water Reducing Admixture: W.R. Grace Co., Daracon 50, 55, 04 65, or approved equal. Admixtures should conform to ASTM C494 Type A/F and shall not contain more chloride ions than are present in the municipal drinking water.
 - d. Air Entraining Agent: Air-entraining admixture conforming with ASTM C260 may be introduced into the mix. Air-entrainment shall not exceed 4 percent [unless otherwise specified]. Submit manufacturer's data to Architect for review.
 - e. Flyash: Pozzolanic admixtures, conforming with ASTM C618, Class F, with weight loss on ignition limited to 3%, may be utilized in mix designs where indicated on structural drawings.
2. Certification: Written conformance to above requirements and the chloride ion content of the admixture shall be submitted by the admixture manufacturer prior to review of mix designs by the Architect.
- E. Non-Shrink Grout (Non-Metallic): Euclid Chemical Co. "Euco N-S", L&M "Crystex", Upco "Upcon", U.S. Grout Corp. "Five Star", Master Builders "Masterflow 713", or approved equal, nonmetallic, nonstaining, premixed grout having a compressive strength at 28 days of not less than 6800 psi, non-shrink at all flow levels. Grout shall conform to ASTM C1107.
- F. Curing Compounds (Formed Concrete): Conform to requirements of Concrete Finishes Section (for Clear Curing and Sealing Compound).

2.02 MIXES:

- A. Mix Designs:
1. Mix designs for concrete shall be Contractor-designed at his expense. Designs shall be prepared by a qualified agency approved by the Architect and Structural Engineer. Four (4) copies of mix designs shall be submitted for Architect's review at least 30 days prior to placing any concrete and shall indicate completely, brands, types and quantities of admixtures included. If concrete is to be placed by pumping, recommendations of ACI Committee 304 shall be followed.
 2. Mix designs shall be proportioned in accordance with ACI 301, Article 4.2.3. Submit mix designs for each class of concrete for review. Submit mix designs for each class of concrete for review.
- B. Structural Drawings indicate minimum compressive strengths, slumps, maximum size aggregates and minimum cement contents.

PART 3 - EXECUTION

3.01 MIXING: Concrete shall be ready mixed as per ASTM C 94a. Equipment shall be adequate for the purpose and kept in good mechanical condition at all times.

- A. The rate of delivery, haul time, mixing time and hopper capacity shall be such that mixed concrete delivered shall be placed in the forms within 90 minutes or 300 revolutions of the drum from the time of introduction of cement and water to the mixer. Any interruption in placing in excess of 90 minutes or 300 revolutions will be cause for shutdown of the work for the day and the wasting of any remaining mixed concrete in hoppers or mixers. In case such interruption occurs, the Contractor shall provide construction joints where and as directed and cut concrete back to such line, cleaning forms and reinforcing as herein specified. Delivery tickets shall show departure time from plants. Revolution counters shall be set at "0" and shall commence to operate when drum revolution begins after introduction of ingredients into the mixer.
- B. No water shall be added to the mix after the initial introduction of mixing water for the batch except when, on arrival at the job site, the slump of the concrete is less than that specified. In this case, and only under the direction of the Special Inspector and with not more than one application per load, additional water may be added from the truck system to bring the slump within required limits. The drum or blades shall then be turned an additional 30 revolutions or more until mix is uniform.
- C. Mixers shall be equipped with an automatic device for recording number of revolutions of drum or blades prior to completion of mixing operation.
- D. Concrete shall be kept continuously agitated until discharged into the hopper at the job site.
- E. Contractor shall note that the appearance of unpainted exposed concrete surfaces depends upon uniform color and texture within any one area and between adjacent areas and he shall exercise strict batching and mixing controls to achieve this end.

3.02 PLACING:

- A. Absorbent forms shall be thoroughly wetted before concrete is placed. Aggregate base for slabs on grade shall be moist but not saturated when concrete is placed.
- B. Placing of concrete shall be done immediately after mixing. No concrete shall be placed or used after it has begun to set and no retempering will be allowed. The method used in placing shall be such that concrete is conveyed to place and deposited without separation of the ingredients. No concrete shall be placed with a free unconfined fall in excess of six (6) feet. Concrete shall not be allowed to cascade through reinforcing steel in such manner as to promote segregation. Do not support runways on reinforcing steel.
- C. Splash or accumulations of hardened or partially hardened concrete shall be removed. Contact faces of forms for exposed concrete shall be protected from splash during placing of adjacent concrete. Concrete containing piping shall be placed in a manner that will prevent damage to pipes.

- D. Deposit concrete in approximate horizontal layers not exceeding 18" in thickness, unless otherwise authorized. Placing of concrete shall be carried on in a continuous operation without interruption until placing of course, section, panel or monolith is completed.
- E. Distribution of concrete shall be even and continuous and no placement joints shall show. Before a placement is started, make certain that adequate equipment, men, and concrete will be available to place in cycles which will permit proper and thorough integration of each layer of concrete. Upon stopping of a placement, the top surface shall be on a level. Points of deposit in walls shall be so spaced that it will not be necessary for concrete to flow laterally more than 24 inches.
- F. No concrete shall be placed for any element until reinforcing for same is fastened in place nor until forms are complete. No concrete shall be placed before work that is to be embedded has been set. Notify other crafts so they may deliver anchor, inserts, etc., or other work to be embedded in ample time and also notify them when their assistance in setting is required. Reinforcing or other materials that have been set in place shall not be disturbed.
- G. No pipes except electrical conduits 1-1/4" and less in diameter shall be embedded in structural concrete. Before placing concrete, such pipes and large conduits shall be sleeved providing 1/4" clearance (min.) all around. Sleeves for plumbing and mechanical pipes shall be placed so as not to impair strength of concrete or interfere with reinforcing bar placement. Multiple sleeve openings shall be placed no closer than three times diameter of the larger sleeve. Reinforcing clearances to sleeves shall conform to clearances specified for concrete surfaces. Sleeves and inserts will be provided and set under other Sections of the work.
- H. Remove debris, mud and water from places to receive concrete.
- I. Concrete splash and/or grout shall be removed from surfaces that will receive painter's finish.
- J. Place no concrete in water unless written permission has been obtained from Structural Engineer.
- K. Notify Owner's Representative, Architect and Structural Engineer 48 hours minimum prior to placing of any concrete.

3.03 VIBRATION AND CONSOLIDATION:

- A. Concrete shall be thoroughly consolidated by means of internal mechanical vibrators. Such consolidation shall be produced as will be obtained by placing the vibrator directly in concrete at 18" - 30" intervals for a period of approximately 5 to 15 seconds and withdrawing slowly or as directed, depending on the consistency of concrete. One vibrator will be required for each location where simultaneous placing takes place, to ensure thorough vibrating of all sections. Provide sufficient spare vibrators on the job so as to have them readily available in case any vibrator in use should suddenly cease to function properly. Where spare vibrators are employed, provide additional spares. Provide smaller diameter vibrators for areas with congested reinforcing steel. Under no condition shall vibrator be placed against reinforcing steel or attached to forms. Use no vibrators to transport material.

- B. Vibrator shall be of the flexible immersion type having a frequency of not less than 8,000 rpm. Use and type of vibrator shall conform to ACI 309, "Recommended Practice for Consolidation of Concrete".
- C. Spading will not be permitted on exposed concrete surfaces.
- D. Voids and rock pockets shall be eliminated. Voids and rock pockets in exposed concrete may subject that portion to rejection.

3.04 CONSTRUCTION JOINTS:

- A. Placement of construction joints and the manner in which they are provided for shall be only as approved by Owner's Representative or as shown on the Drawings. Construction joints shall be few as possible and will not be permitted simply to save forms. Submit shop drawings of construction joints showing proposed locations and details. Submit to Architect prior to forming or placing concrete.

3.05 CURING: See Section 03 35 00, Paragraph 3.01.

3.06 EQUIPMENT BASES: Verify sizes and shapes required by items specified elsewhere. Concrete bases for special equipment shall be installed in strict accordance with Drawing details and the specifications and recommendations of the equipment manufacturer.

3.07 GROUTING:

- A. The setting of steel base plates is specified under Structural Steel Section. The grouting of the steel base plates shall be performed as hereinafter specified and as a part of this Section.
- B. Grout used for the grouting of base plates shall be non-metallic, non-shrink grout mixed and applied in strict accordance with manufacturer's directions.
- C. Grouting of bases shall be carefully done so as not to leave any voids between the base plates and the concrete.

3.08 FIELD QUALITY CONTROL: Refer to Quality Control Section for general requirements governing testing and inspection.

- A. Tests and inspections shall be performed by qualified individuals, engineering companies or testing laboratories who shall perform those special inspections required by Sec. 1704 of the California Building Code, those tests and inspections specified below and such other tests and inspections as the Architect or Owner may require to establish the acceptability of the work.
- B. Testing and inspection services shall be retained by the Owner at his expense except that when tests or inspections reveal failure of materials to meet contract requirements, costs for subsequent tests and inspections will be deducted from the Contract Price. Excessive inspection time required by Contractor's failure to provide sufficient workmen or to properly pursue the progress of the work shall likewise be deducted from the Contract Price.

- C. Furnish material and handling for test cylinders and any other samples which testing agency requires for analysis of concrete work.
- D. Compression Tests; unless noted otherwise:
 - 1. Mild Reinforced Concrete: 4 compression test cylinders will be taken for each placement of 150 cu. yd. or fraction thereof of each class of concrete placed each day. Make, cure and store test cylinders as per ASTM C 31. One cylinder will be tested at 7 days for information; two at 28 days for acceptance; and one retained as a spare.
- E. Slump Test: Slump tests will be performed as per ASTM C 143 (slump cone) 360-63 at time of taking test cylinders. Tests shall be taken at the truck.
- F. Testing agencies shall select and prepare samples taken at job site.

END OF SECTION 03 31 00

SECTION 03 35 00 – CONCRETE FINISHING**PART 1 - GENERAL****1.01 DESCRIPTION**

- A. Work Included: Finish required on exposed cast-in-place concrete and shotcrete surfaces including patching or repair of defective areas as described in Section 03 35 01 Concrete Finishes.
- B. Related Work Specified Elsewhere:
 - 1. Finish for concrete work beyond the building lines: See Sidewalks and Driveways.
 - 2. Curing of formed concrete and expansion joint fillers: See Concrete, Cast-In-Place.
 - 3. Caulking and Sealants.
 - 4. Concrete Finishes: See Section 03 35 01.

- 1.02 PROTECTION:** Protect exposed surfaces including flat work as required to prevent damage by impact or stains

PART 2 - PRODUCTS**2.01 MATERIALS**

- A. Curing Compounds: ASTM C 309-81, Type 1, clear resin type free of oil, wax, grease, or other substance which might prove deleterious to any material to be applied to concrete and shall be approved by Environmental Protection Agency for use in the State of California and at this Project Site. Curing compounds for exposed slabs shall be a multi-purpose curing-hardener-sealer type equivalent to Floorseal "Mirrorcrete Hardener", or Vaporseal 309 Curing/Sealing Membrane and shall meet the above requirements.
- B. Sealer: Floorseal "Mirrorcrete Sealer".
- C. Weakened Plane Joint Former: Burke Co. "Zip Strip Plastic Joint Former", or approved equal, two-part, rigid PVC plastic, depth equal to 1/4 of slab thickness(min.).

PART 3 - EXECUTION**3.01 CURING**

- A. Curing Compound - General:
 - 1. Follow directions and recommendations of compound manufacturer.
 - 2. Application shall commence immediately following completion of specified finishing and/or following disappearance of surface "sheen".

3. When applying compound, the surfaces shall be damp but shall be free from standing water.
4. Surfaces shall be covered with a uniform and even film of compound, as supplied. Using pressurized spray equipment, lambswool applicator or short nap roller, apply in a single coat to achieve total coverage as recommended by manufacturer.
5. When curing compound is applied inside enclosed spaces, adequate mechanical ventilation shall be provided and maintained throughout the periods of application.

3.02 PATCHING AND REPAIR OF DEFECTIVE AREAS

- A. Within 3 days after stripping formwork, surface defects such as rock pockets, honeycombs, cracks, and holes exceeding 3/16" diameter shall be filled and patched. The Architect shall distinguish between concrete which requires replacement or repair and surface defects which require patching. Permission to patch any area shall not be construed as a waiver of the Architect's right to require complete removal of the defective work if the patching, in their opinion, does not satisfactorily restore the quality and appearance of the surface.
- B. Areas to be patched shall have loose material chipped away and shall be thoroughly dampened for at least 6 inches entirely surrounding the patch. Coat areas with thin brush coat of fine sand-cement grout followed by patching mortar. Patching mortar shall be prepared of the same material and proportions as used for concrete, except that coarse aggregate shall be removed. Where exposed formed concrete is to remain unpainted, trial patches using combinations of white cement and cement used in concrete mix shall be allowed to set up in order to verify that the patching mortar shall match the color of the adjacent concrete surface. Water in the mix shall be kept to a minimum. Mortar shall not be retempered by adding water. Mortar shall be allowed to stand for one hour prior to use and shall be mixed to prevent setting. Mortar shall be compacted thoroughly into place and screeded to leave patch slightly higher than surrounding surfaces and then left undisturbed for 1 to 2 hours to permit initial shrinkage. Patch shall then be finished to match adjacent surfaces.
- C. Form tie holes shall be patched and finished flush with adjacent surface. For holes passing entirely through walls, a plunger type "grease gun" or other suitable device shall be used to completely fill holes.

3.03 FINISHING

- A. Flatwork: Unless otherwise noted or specified, slabs shall be finished monolithically. Floor slabs which are indicated as sloped to drain shall be sloped uniformly so as to provide positive drainage of the indicated areas. Special care shall be taken that a smooth, even joint is obtained between successive pours.
- B. Formed Surfaces: Remove fins and projections, patch, and leave "as formed". Air bubbles or "bug-holes" not exceeding 3/16" diameter need not be repaired.
- C. Tolerance: Comply with ACI 117 for local flatness/levelness tolerance measured in accordance with ASTM E1155. Specified Overall Value (SOV) of F/F=30 and Minimum Local Value (MLV) of F/F=25, all as per ACI 302 and with the following specific requirements:

1. Floor Flatness (F/F): SOV=20 MLV=15
 2. Floor Levelness (F/L): SOV=15 MLV=10
 3. Elevation tolerance: 80 percent points taken within individual sets of readings shall fall within +3/8 inch to -3/8 inch from design elevation indicated on Drawings.
- D. Broom Finish: After the concrete has received a float finish, the surface shall be given a non-slip medium broom finish.
- 3.04 SEALER:** At cleanup time for the entire Project, concrete slabs which will be exposed in the completed project, shall receive one (1) coat of the same curing-hardener-sealer compound used for original curing and specified herein under "Curing Materials". Follow manufacturer's directions and recommendations
- 3.05 DEFECTIVE WORK:** Finish which is not true to line and plane, which is not in conformance with specified finish and appearance requirements, which exceeds specified tolerances, which does not properly connect to adjoining work, which does not slope to drain and which has been improperly cured, will be deemed as defective. Defective work shall be repaired or removed and replaced as directed by the Architect with proper work meeting Drawing and Specification requirements and at no added cost to the Owner

END OF SECTION 03 35 00

SECTION 05 50 00 – METAL FABRICATIONS**PART 1 - GENERAL****1.01 DESCRIPTION:**

- A. Work Included: Items of structural steel and miscellaneous metal and related accessory items required for the Project and which are not specified elsewhere. Such items include but are not limited to:
1. Items of structural steel.
 2. Metal connectors requiring special fabrication.
 3. Grouting required for setting miscellaneous metal items.
- B. Related Work Specified Elsewhere:
1. Cast-In-Place Concrete

1.02 REFERENCES, CODES AND STANDARDS: The following references and standards are hereby made a part of this Section and structural steel and miscellaneous metal work shall conform to the applicable requirements therein except as otherwise specified herein or shown on the Drawings. Nothing contained herein shall be construed as permitting work that is contrary to code requirements or governing rules and regulations.

- A. American institute of Steel Construction (AISC).
1. "Steel Construction Manual, 14th Edition", AISC 325-11.
 2. "Specification for Structural Steel for Buildings", AISC 360-10.
- B. American Welding Society's (AWS): "Structural Welding Code (AWS D1.1-10)".
- C. Steel Structures Painting Council (SSPC): "Surface Preparation Specifications (Vol. 2, Painting Manual)".
- D. California Building Code, 2019 Edition.

1.03 QUALIFICATIONS: Welding procedures, welders, and tackers for structural metal work shall be qualified in accord with AWS Building Code.

1.04 SUBMITTALS: Comply with requirements of Shop Drawings, Product Data and Samples Section.

- A. Shop Drawings: Shop drawings shall show dimensions, sizes, thicknesses, gages, finishes, joining, attachments, and relationship of work to adjoining construction. Where items must fit and coordinate with finished surfaces and/or constructed spaces, take measurements at site and not from Drawings. Where materials must be set to exact locations to receive work, furnish assistance and direction necessary to permit other trades to properly locate their work. Where welded connectors and inserts are required to receive work, shop drawing shall show exact locations required, and such drawings shall be furnished to the trades responsible for installing the connectors or inserts. Catalog work sheets showing illustrated

cuts of item to be furnished, scale details and dimensions may be submitted for standard manufactured items. Indicate welds by AWS Welding Symbols.

B. Proof of Compliance of Materials:

1. Certified reports of tensile properties and bend tests for steel shapes, bars and plates used for structural purposes.

PART 2 - PRODUCTS

2.01 BASIC MATERIALS AND ACCESSORIES:

- A. Standard Structural Steel Shapes, Bars and Plates: ASTM A 36
- B. Steel Tubing: Hollow Structural Sections (Steel Tubing), Square Rectangular, or Round: ASTM A500 Grade B.
- C. Steel Pipe: ASTM A 53, Type E or S.
- D. Fastenings (General): Furnish Bolts, nuts, screws, clips, washers and any other fastenings necessary for proper erection of items specified herein. Use stainless steel or hot dip galvanized on exterior.
- E. Welding Electrodes: As permitted by AWS D 1.1. Where exposed and unpainted, select filler metal to match base metal.
- F. Non-Shrink Grout: Sauereisen No. F-100, Euclid "Euno NS", Upco "Upcon", 5-Star, Master Builders "Masterflow 713", or approved equal, non-metallic, non-staining, premixed grout having a min. compressive strength of 6,800 psi (28 days).

2.02 FINISHES: Where used in this Section, "Exterior" shall be construed to include all exposures except within totally enclosed spaces.

- A. Exterior Ferrous Metal Not Otherwise Specified and Interior Ferrous Metal Exposed to Continuing Moisture: Welds, burrs, and rough surfaces ground smooth after fabrication and completed assembly hot dip galvanized.

2.03 FABRICATION - STRUCTURAL STEEL:

- A. Fabricate structural steel in accordance with AISC, and requirements of regulatory agencies.
- B. Fabricate and assemble structural steel in the shop to the greatest extent possible.
- C. Structural connections shall be welded or bolted as indicated. Shop connections not otherwise shown shall be welded. Eccentric connections are not permitted unless shown in detail on shop drawings.
- D. Provide bearing plates for members bearing on masonry and concrete.
- E. Perform shearing, flame cutting and chipping carefully and accurately.
- F. Structural Welding:

1. Weld in accordance with AISC, AWS D1.1, and AISC specification.
2. Preparation of Surfaces: Surfaces to be welded shall be free of loose scale, slag, rust, grease, paint, and any other foreign material.
3. Welding Equipment: Welding equipment to be used in each case shall be acceptable to welding inspector. Use equipment with suitable devices to regulate speed and manually adjust operating amperage and voltage. The amperage capacity shall be sufficient to overcome line drop and to give adequate welding heat.

PART 3 - EXECUTION

3.01 CONDITION OF SURFACES: Inspect surfaces to receive metal work and report any defects which would interfere with the installation.

3.02 WORKMANSHIP:

A. General Requirements:

1. Install structural steel in accordance with the CBC and the AISC Specifications for Structural Steel Buildings, and the AISC Code of Standard Practice for Steel Buildings and Bridges.
2. Verify measurements at job.
3. Coordinate metal work with adjoining work for details of attachment, fittings, etc. Drill or punch holes; do not use cutting torch. Shearing and punching shall leave true lines and surfaces.
4. Conceal fastenings where practicable. Thickness of metal and details of assembly and supports shall give ample strength and stiffness. Form joints exposed to weather to exclude water.
5. Set work plumb, true, rigid, and neatly trimmed out. Miter corners and angles of exposed moldings and frames unless otherwise noted.
6. Grout in accordance with requirements of Concrete, Cast-In-Place Section. (Not included in this section.)
7. Protect dissimilar metals from galvanic corrosion.

B. Welding:

1. Perform welding in accord with AWS D 1.1, Structural Welding Code.
2. Welds shall be made only by operators experienced in performing the type of work indicated.
3. Welds normally exposed to view in the finished work shall be uniformly made and ground smooth.
4. Where welding is done in proximity to glass or finished surfaces shall be protected from damage due to weld sparks, spatter, or tramp metal.

C. Bolted, Screwed, and Riveted Connections:

1. In general, use bolts for field connections only and then only as detailed. Provide washers under heads and nuts bearing on wood. Draw nuts tight and

upset threads of permanent connections to prevent loosening. Use beveled washers where bearing is on sloped surfaces.

2. Where screws must be used for permanent connections in ferrous metal, use flat head type, countersunk, with screw slots filled and finished smooth and flush.

D. Surface Treatment and Protective Coatings:

1. Cleaning: Thoroughly clean mill scale, rust, dirt, grease and other foreign matter from ferrous metal prior to any galvanizing or painting.
2. Painting: After material has been properly cleaned and treated, apply shop prime coat of paint to all surfaces except those encased in concrete or masonry. Apply paint as per manufacturer's directions. Spot paint abrasions and field connections after assembly. Shop coat shall be dry prior to shipment to job site. Unless otherwise specified or directed, do not apply shop prime coats or any stenciled or painted identification markings to any galvanized surfaces.
3. Galvanizing: Conform to ASTM A 123 for rolled, pressed and forged shapes, plates, bar and strip and assembled steel products and A 153 for hardware items. Where galvanizing is removed by welding or other assembly procedure, touch-up welds and abraded areas with zinc-rich paint.

3.03 PROTECTION AND CLEANING: Remove soil and foreign matter from finished surfaces and apply such protective measures as may be required to prevent damage or discoloration of any kind until acceptance of Project.

3.04 QUALITY CONTROL:

- A. Tests and inspections of structural steel work shall be performed by qualified individuals, engineering companies or testing laboratories who shall perform those special inspections in accordance with the quality inspection requirements of AISC 360. Testing and inspection services shall be retained by the Owner at his expense except as follows:
 1. Special inspection of the steel fabrication process is not required where the fabricator does not perform any welding, thermal cutting or heating operation of any kind as part of the fabrication process. In such cases the fabricator will be required to submit a detailed procedure for material control that demonstrates the fabricator's ability to maintain suitable records and procedures such that, at any time during the fabrication process, the material specification, and grade for the elements are capable of being determined. Mill test reports shall be identifiable to the elements when required by the approved construction documents.
- B. Where certified analysis and/or test reports required under "Submittals" are not furnished, or where inspecting agency cannot identify the material or where the source is questionable, material will be treated to determine compliance with Specifications. Costs of tests therefore shall be paid by the Owner but deducted from the Contract Price.
- C. Inspection of shop and field welding shall be in accordance with AWS D1.1.

END OF SECTION 05 50 00

SECTION 26 00 00 - ELECTRICAL BASIC REQUIREMENTS**PART 1 - GENERAL****1.01 SECTION INCLUDES**

- A. Work included in 26 00 00, Electrical Basic Requirements applies to Division 26, Electrical work to provide materials, labor, tools, permits, incidentals, and other services to provide and make ready for Owner's use of electrical systems for proposed project.
- B. Contract Documents include, but are not limited to Specifications, Drawings, Addenda, Owner/Architect Agreement, and Owner/Contractor Agreement. Confirm requirements before commencement of work.
- C. Definitions:
 - 1. Provide: To furnish and install, complete and ready for intended use.
 - 2. Furnish: Supply and deliver to project site, ready for unpacking, assembly and installation.
 - 3. Install: Includes unloading, unpacking, assembling, erecting, installation, applying, finishing, protecting, cleaning and similar operations at project site as required to complete items of work furnished.
 - 4. Approved or Approved Equivalent: To possess the same performance qualities and characteristics and fulfill the utilitarian function without any decrease in quality, durability or longevity. For equipment/products defined by the Contractor as "equivalent", substitution requests must be submitted to Engineer for consideration and approved by the Engineer prior to submitting bids for substituted items.
 - 5. Authority Having Jurisdiction (AHJ): Indicates reviewing authorities, including local fire marshal, Owner's insurance underwriter, Owner's Authorized Representative, and other reviewing entity whose approval is required to obtain systems acceptance.

1.02 RELATED SECTIONS

- A. Contents of Section applies to Division 26, Electrical Contract Documents.
- B. Related Work:
 - 1. Additional conditions apply to this Division including, but not limited to:
 - a. Specifications.
 - b. Drawings
 - c. Addenda
 - d. Owner/Architect Agreement
 - e. Owner/Contractor Agreement
 - f. Codes, Standards, Public Ordinances and Permits

1.03 REFERENCES AND STANDARDS

- A. References and Standards per individual Division 26, Electrical Sections and those listed in this Section.

- B. Codes to include latest adopted editions, including current amendments, supplements and local jurisdiction requirements in effect as of the date of the Contract Documents, of/from:
1. State of California:
 - a. CALGreen - California Green Building Standards Code (CCR, Title 24, Part 11)
 - b. CBC - California Building Code
 - c. CEC - California Electrical Code
 - d. CEC T24 - California Energy Code Title 24
 - e. CFC - California Fire Code
 - f. CMC - California Mechanical Code
 - g. CPC - California Plumbing Code
 - h. CSFM - California State Fire Marshal
 - i. DSA - Division of State Architect Regulations and Requirements
- C. Reference standards and guidelines include but are not limited to the latest adopted editions from:
1. ABA - Architectural Barriers Act
 2. ADA - Americans with Disabilities Act
 3. ANSI - American National Standards Institute
 4. APWA - American Public Works Association
 5. ASCE - American Society of Civil Engineers
 6. ASHRAE Guideline 0, the Commissioning Process
 7. ASTM - ASTM International
 8. CFR - Code of Federal Regulations
 9. EPA - Environmental Protection Agency
 10. ETL - Electrical Testing Laboratories
 11. FCC - Federal Communications Commission
 12. FM - FM Global
 13. IBC - International Building Code
 14. IEC - International Electrotechnical Commission
 15. IEEE - Institute of Electrical and Electronics Engineers
 16. IES - Illuminating Engineering Society
 17. ISO - International Organization for Standardization
 18. MSS - Manufacturers Standardization Society
 19. NEC - National Electric Code
 20. NECA - National Electrical Contractors Association
 21. NEMA - National Electrical Manufacturers Association
 22. NETA - National Electrical Testing Association
 23. NFPA - National Fire Protection Association
 24. OSHA - Occupational Safety and Health Administration
 25. UL - Underwriters Laboratories Inc.
- D. See Division 26, Electrical individual Sections for additional references.

1.04 SUBMITTALS

- A. See individual Division 26, Electrical Sections.

- B. Provide drawings in format and software release equal to the design documents. Drawings to be the same sheet size and scale as the Contract Documents.
- C. In addition:
1. "No Exception Taken" constitutes that review is for general conformance with the design concept expressed in the Contract Documents for the limited purpose of checking for conformance with information given. Any action is subject to the requirements of the Contract Documents. Contractor is responsible for the dimensions and quantity and will confirm and correlate at the job site, fabrication processes and techniques of construction, coordination of the work with that of all other trades, and the satisfactory performance of the work.
 2. Provide product submittals and shop drawings in electronic format only. Electronic format must be submitted via zip file via e-mail. For electronic format, provide one file per division containing one bookmarked PDF file with each bookmark corresponding to each Specification Section. Arrange bookmarks in ascending order of Specification Section number. Individual submittals sent piecemeal in a per Specification Section method will be returned without review or comment. All transmissions/submissions to be submitted to Architect. Deviations will be returned without review.
 - a. Provide separate submittals for power system study (per Specification Section 26 05 73) and electrical equipment (for example, switchboards and panelboards).
 - b. Provide separate submittals for lighting control cutsheets, and for lighting control shop drawings.
 3. Product Data: Provide manufacturer's descriptive literature for products specified in Division 26, Electrical Sections.
 4. Identify/mark each submittal in detail. Note what differences, if any, exist between the submitted item and the specified item. Failure to identify the differences will be considered cause for disapproval. If differences are not identified and/or not discovered during the submittal review process, Contractor remains responsible for providing equipment and materials that meet the specifications and drawings.
 - a. Label submittal to match numbering/references as shown in Contract Documents. Highlight and label applicable information to individual equipment or cross out/remove extraneous data not applicable to submitted model. Clearly note options and accessories to be provided, including field installed items. Highlight connections by/to other trades.
 - b. Include technical data, installation instructions and dimensioned drawings for products, fixtures, equipment and devices installed, furnished or provided. Reference individual Division 26, Electrical specification Sections for specific items required in product data submittal outside of these requirements.
 - c. See Division 26, Electrical individual Sections for additional submittal requirements outside of these requirements.
 5. Maximum of two reviews of complete submittal package. Arrange for additional reviews and/or early review of long-lead items; Bear costs of these additional reviews at Engineer's hourly rates. Incomplete submittal packages/submittals will be returned to contractor without review.

6. Resubmission Requirements: Make corrections or changes in submittals as required, and in consideration of Engineer's comments. Identify Engineer's comments and provide an individual response to each of the Engineer's comments. Cloud changes in the submittals and further identify changes which are in response to Engineer's comments.
7. Structural/Seismic: Provide weights, dimensions, mounting requirements and like information required for mounting, seismic bracing, and support as designed and detailed on the construction document. Indicate manufacturer's installation and support requirements to meet ASCE 7-16 requirements for non-structural components. Provide engineered seismic drawings and equipment seismic certification. Equipment Importance Factor as specified in Part 3 of this Section.
8. Trade Coordination: Include physical characteristics, electrical characteristics, device layout plans, wiring diagrams, and connections as required per Division 26, Electrical Coordination Documents. For equipment with electrical connections, furnish copy of approved submittal for inclusion in Division 26, Electrical submittals. During shop drawing stage of the project, verify correct disconnect sizes, conductor sizes, etc., and bring any discrepancies to the attention of the Mechanical trade. Be responsible for any modifications to electrical equipment or installations as a result of equipment incompatibility discovered after shop drawing review.
9. Make provisions for openings in building for admittance of equipment prior to start of construction or ordering of equipment.
10. Substitutions and Variation from Basis of Design:
 - a. The Basis of Design designated product establishes the qualities and characteristics for the evaluation of any comparable products by other listed acceptable manufacturers if included in this Specification or included in an approved Substitution Request as judged by the Design Professional.
 - b. If substitutions and/or equivalent equipment/products are being proposed, it is the responsibility of parties concerned, involved in, and furnishing the substitute and/or equivalent equipment to verify and compare the characteristics and requirements of that furnished to that specified and/or shown. If greater capacity and/or more materials and/or more labor is required for the rough-in, circuitry or connections than for the item specified and provided for, then provide compensation for additional charges required for the proper rough-in, circuitry and connections for the equipment being furnished. No additional charges above the Base Bid, including resulting charges for work performed under other Divisions, will be allowed for such revisions. Coordinate with the requirements of "Submittals". For any product marked "or approved equivalent", a substitution request must be submitted to Engineer for approval prior to purchase, delivery or installation.
11. Shop Drawings: Provide coordinated shop drawings which include physical characteristics of all systems, device layout plans, and control wiring diagrams. Reference individual Division 26, Electrical specification Sections for additional requirements for shop drawings outside of these requirements.
 - a. Provide Shop Drawings indicating access panel locations, size and elevation for approval prior to installation.
12. Samples: Provide samples when requested by individual Sections.
13. Resubmission Requirements:

- a. Make any corrections or change in submittals when required. Provide submittals as specified. The engineer will not be required to edit and/or interpret the Contractor's submittals. Indicate changes for the resubmittal in a cover letter with reference to page(s) changed and reference response to comment. Cloud changes in the submittals.
 - b. Resubmit for review until review indicates no exception taken or "make corrections as noted".
14. Operation and Maintenance Manuals, Owner's Instructions:
- a. Submit, at one time, electronic files (PDF format) of manufacturer's operation and maintenance instruction manuals and parts lists for equipment or items requiring servicing. Submit data when work is substantially complete and in same order format as submittals. Include name and location of source parts and service for each piece of equipment.
 - 1) Include copy of approved submittal data along with submittal review letters received from Engineer. Data to clearly indicate installed equipment model numbers. Delete or cross out data pertaining to other equipment not specific to this project.
 - 2) Include copy of manufacturer's standard Operations and Maintenance for equipment. At front of each tab, provide routine maintenance documentation for scheduled equipment. Include manufacturer's recommended maintenance schedule and highlight maintenance required to maintain warranty. Furnish list of routine maintenance parts, including part numbers, sizes, quantities, relevant to each piece of equipment.
 - 3) Include Warranty per Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.
 - 4) Include product certificates of warranties and guarantees.
 - 5) Include copy of complete parts list for equipment. Include available exploded views of assemblies and sub assemblies.
 - 6) Include commissioning reports.
 - 7) Include copy of startup and test reports specific to each piece of equipment.
 - 8) Engineer will return incomplete documentation without review. Engineer will provide one set of review comments in Submittal Review format. Contractor must arrange for additional reviews; Contractor to bear costs for additional reviews at Engineer's hourly rates.
 - b. Thoroughly instruct Owner in proper operation of equipment and systems. Where noted in individual Sections, training will include classroom instruction with applicable training aids and systems demonstrations. Field instruction per Section 26 00 00, Electrical Basic Requirements, Demonstration.
 - c. Copies of certificates of code authority inspections, acceptance, code required acceptance tests, letter of conformance and other special guarantees, certificates of warranties, specified elsewhere or indicated on Drawings.
15. Record Drawings:
- a. Maintain at site at least one set of drawings for recording "As-constructed" conditions. Indicate on drawings changes to original documents by referencing revision document, and include buried elements, location of conduit, and location of concealed electrical items. Include items changed by field orders, supplemental instructions, and constructed conditions.

- b. Record Drawings are to include equipment and fixture/connection schedules that accurately reflect "as constructed or installed" for project.
- c. At completion of project, input changes to original project on CAD Drawings and make one set of black-line drawings created from CAD Files in version/release equal to contract drawings. Submit CAD Files and drawings upon substantial completion.
- d. See Division 26, Electrical individual Sections for additional items to include in record drawings.

1.05 QUALITY ASSURANCE

- A. Regulatory Requirements: Work and materials installed to conform with all local, State and Federal codes, and other applicable laws and regulations. Where code requirements are at variance with Contract Documents, meet code requirements as a minimum requirement and include costs necessary to meet these in Contract. Machinery and equipment are to comply with OSHA requirements, as currently revised and interpreted for equipment manufacturer requirements. Install equipment provided per manufacturer recommendations.
- B. Whenever this Specification calls for material, workmanship, arrangement or construction of higher quality and/or capacity than that required by governing codes, higher quality and/or capacity take precedence.
- C. Drawings are intended to be diagrammatic and reflect the Basis of Design manufacturer's equipment. They are not intended to show every item in its exact dimensions, or details of equipment or proposed systems layout. Verify actual dimensions of systems (i.e. distribution equipment, duct banks, light fixtures, etc.) and equipment proposed to assure that systems and equipment will fit in available space. Contractor is responsible for design and construction costs incurred for equipment other than Basis of Design, including, but not limited to, architectural, structural, electrical, HVAC, fire sprinkler, and plumbing systems.
- D. Manufacturer's Instructions: Follow manufacturer's written instructions. If in conflict with Contract Documents, obtain clarification. Notify Engineer/Architect, in writing, before starting work.
- E. Items shown on Drawings are not necessarily included in Specifications or vice versa. Confirm requirements in all Contract Documents.
- F. Provide products that are UL listed.

1.06 WARRANTY

- A. Provide written warranty covering the work for a period of one year from date of Substantial Completion in accordance with Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.
- B. Sections under this Division can require additional and/or extended warranties that apply beyond basic warranty under the General Conditions. Confirm requirements in all Contract Documents.

1.07 COORDINATION DOCUMENTS

- A. Prior to construction, coordinate installation and location of HVAC equipment, ductwork, grilles, diffusers, piping, plumbing equipment/fixtures, fire sprinklers, plumbing, lights, cable tray and electrical services with architectural and structural requirements, and other trades (including ceiling suspension and tile systems), and provide maintenance access requirements. Coordinate with submitted architectural systems (i.e. roofing, ceiling, finishes) and structural systems as submitted, including footings and foundation. Identify zone of influence from footings and ensure systems are not routed within the zone of influence.
- B. Advise Architect in event a conflict occurs in location or connection of equipment. Bear costs resulting from failure to properly coordinate installation or failure to advise Architect of conflict.
- C. Submit final Coordination Drawings with changes as Record Drawings at completion of project.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Articles, fixtures, and equipment of a kind to be standard product of one manufacturer.

2.02 STANDARDS OF MATERIALS AND WORKMANSHIP

- A. Base contract upon furnishing materials as specified. Materials, equipment, and fixtures used for construction are to be new, latest products as listed in manufacturer's printed catalog data and are to be UL or ETL listed and labeled or be approved by State, County, and City authorities prior to procurement and installation.
- B. Names and manufacturer's names denote character and quality of equipment desired and are not to be construed as limiting competition.
- C. Hazardous Materials:
 - 1. Comply with local, State of California, and Federal regulations relating to hazardous materials.
 - 2. Do not use any materials containing a hazardous substance. If hazardous materials are encountered, do not disturb; immediately notify Owner and Architect. Hazardous materials will be removed by Owner under separate contract.

PART 3 - EXECUTION

3.01 ACCESSIBILITY AND INSTALLATION

- A. Confirm Accessibility and Installation requirements in Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

- B. Install equipment requiring access (i.e., junction boxes, light fixtures, power supplies, motors, etc.) so that they may be serviced, reset, replaced or recalibrated by service people with normal service tools and equipment. Do not install equipment in passageways, doorways, scuttles or crawlspaces which would impede or block the intended usage.
- C. Install equipment and products complete as directed by manufacturer's installation instructions. Obtain installation instructions from manufacturer prior to rough-in of equipment and examine instructions thoroughly. When requirements of installation instructions conflict with Contract Documents, request clarification from Engineer prior to proceeding with installation. This includes proper installation methods, sequencing, and coordination with other trades and disciplines.
- D. Earthwork:
 - 1. Confirm Earthwork requirements in Contract Documents. In the absence of specific requirements, comply with individual Division 26, Electrical Sections and the following:
 - a. Perform excavation, dewatering, shoring, bedding, and backfill required for installation of work in this Division in accordance with related earthwork Sections. Contact utilities and locate existing utilities prior to excavation. Repair any work damaged during excavation or backfilling.
 - b. Excavation: Do not excavate under footings, foundation bases, or retaining walls.
 - c. Provide protection of underground systems. Review the project Geotechnical Report for references to corrosive or deleterious soils which will reduce the performance or service life of underground systems materials.
- E. Firestopping:
 - 1. Comply with individual Division 26, Electrical Sections and the following:
 - a. Coordinate location and protection level of fire and/or smoke rated walls, ceilings, and floors. When these assemblies are penetrated, seal around piping and equipment with approved firestopping material. Install firestopping material complete as directed by manufacturer's installation instructions. Meet requirements of ASTM E814, Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
- F. Plenums:
 - 1. In plenums, provide plenum rated materials that meet the requirements to be installed in plenums. Immediately notify Architect/Engineer of discrepancy.
- G. Start up equipment, in accordance with manufacturer's start-up instructions, and in presence of manufacturer's representative. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment.
- H. Provide miscellaneous supports/metals required for installation of equipment and conduit.

3.02 SEISMIC CONTROL

- A. Confirm Seismic Control requirements in individual Division 26 Electrical Sections.
- B. General:
 - 1. Earthquake resistant designs for Electrical (Division 26) equipment and distribution, i.e. power distribution equipment, generators, UPS, etc. to conform to regulations of jurisdiction having authority.
 - 2. Restraints which are used to prevent disruption of function of piece of equipment because of application of horizontal force to be such that forces are carried to frame of structure in such a way that frame will not be deflected when apparatus is attached to a mounting base and equipment pad, or to structure in normal way, utilizing attachments provided. Secure equipment and distribution systems to withstand a force in direction equal to value defined by jurisdiction having authority.
 - 3. Provide stamped shop drawings from licensed Structural Engineer of seismic bracing and seismic movement assemblies for conduit and equipment. Submit shop drawings along with equipment submittals.
 - 4. Provide stamped shop drawings from licensed Structural Engineer of seismic flexible joints for conduit crossing building expansion or seismic joints. Submit shop drawings along with seismic bracing details.
 - 5. Provide means to prohibit excessive motion of electrical equipment during earthquake.

3.03 REVIEW AND OBSERVATION

- A. Confirm Review and Observation requirements in Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.
- B. Notify Architect, in writing, at following stages of construction so that they may, at their option, visit site for review and construction observation:
 - 1. Underground conduit installation prior to backfilling.
 - 2. When main systems, or portions of, are being tested and ready for inspection by AHJ.
- C. Final Punch:
 - 1. Prior to requesting a final punch visit from the Engineer, request from Engineer the Electrical Precloseout Checklist, complete the checklist confirming completion of systems' installation, and return to Engineer. Request a final punch visit from the Engineer, upon Engineer's acceptance that the electrical systems are ready for final punch.
 - 2. Costs incurred by additional trips required due to incomplete systems will be the responsibility of the Contractor.

3.04 CUTTING AND PATCHING

- A. Comply with individual Division 26, Electrical Sections and the following:

1. Proposed floor cutting to be approved by Project Structural Engineer. Submit proposed locations to Architect/Project Structural Engineer. Where slabs are of post tension construction, perform x-ray scan of proposed penetration locations and submit scan results including proposed penetration locations to Project Structural Engineer/Architect for approval. Where slabs are of waffle type construction, show column cap extent and cell locations relative to proposed penetration(s).
2. Cutting, patching and repairing for work specified in this Division including masonry work and concrete work included under this Section will be performed by skilled craftsmen of each respective trade in conformance with appropriate Division of Work.
3. Additional openings required in building construction to be made by drilling or cutting. Use of jack hammer is specifically prohibited. Patch openings in and through concrete and masonry with grout.
4. Restore new or existing work that is cut and/or damaged to original condition. Patch and repair specifically where existing items have been removed. This includes repairing walls where existing conduit and devices are removed as part of this project. Where alterations disturb lawns, paving, and/or walks, surfaces to be repaired, refinished and left in condition matching existing prior to commencement of work.
5. Additional work required by lack of proper coordination will be provided at no additional cost to the Owner.

3.05 EQUIPMENT SELECTION AND SERVICEABILITY

- A. Replace or reposition equipment which is too large or located incorrectly to permit servicing, at no additional cost to Owner.

3.06 DELIVERY, STORAGE AND HANDLING

- A. Comply with individual Division 26, Electrical Sections and the following:
 1. Handle materials delivered to project site with care to avoid damage. Store materials on site inside building or protected from weather, dirt and construction dust. Products and/or materials that become damaged due to water, dirt, and/or dust as a result of improper storage and handling to be replaced before installation.
 2. Protect equipment to avoid damage. Close conduit openings with caps or plugs. Keep motors and bearings in watertight and dustproof covers during entire course of installation.
 3. Protect bus duct and similar items until in service.

3.07 DEMONSTRATION

- A. Confirm Demonstration requirements in individual Division 26, Electrical Sections.
- B. Upon completion of work and adjustment of equipment, test systems and demonstrate to Owner's Authorized Representative, Architect, and Engineer that equipment furnished and installed or connected under provisions of these Specifications functions in manner required. Provide field instruction to Owner's Maintenance Staff as specified in Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.

- C. Manufacturer's Field Services: Furnish services of a qualified person at time approved by Owner, to instruct maintenance personnel, correct defects or deficiencies, and demonstrate to satisfaction of Owner that entire system is operating in satisfactory manner and complies with requirements of other trades that may be required to complete work. Complete instruction and demonstration prior to final job site observations.

3.08 CLEANING

- A. Confirm Cleaning requirements in Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.
- B. Upon completion of installation, thoroughly clean electrical equipment, removing dirt, debris, dust, temporary labels and traces of foreign substances. Throughout work, remove construction debris and surplus materials accumulated during work.

3.09 INSTALLATION

- A. Confirm Installation requirements in Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.
- B. Install equipment and fixtures in accordance with manufacturer's installation instructions, plumb and level and firmly anchored to vibration isolators. Maintain manufacturer's recommended clearances.
- C. Start up equipment, in accordance with manufacturer's start-up instructions, and in presence of manufacturer's representative. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment.
- D. Provide miscellaneous supports/metals required for installation of equipment.

3.10 PAINTING

- A. Comply with individual Division 26, Electrical Sections and the following:
 - 1. Ferrous Metal: After completion of work, thoroughly clean and paint exposed supports constructed of ferrous metal surfaces (i.e., hangers, hanger rods, equipment stands, etc.) with one coat of black asphalt varnish for exterior or black enamel for interior, suitable for hot surfaces.
 - 2. See individual equipment Specifications for other painting.
 - 3. Structural Steel: Repair damage to structural steel finishes or finishes of other materials damaged by cutting, welding or patching to match original.
 - 4. Conduit: Clean, primer coat and paint interior/exterior conduit exposed in public areas with two coats paint suitable for metallic surfaces. Color selected by Architect.
 - 5. Covers: Covers such as manholes, vaults and the like will be furnished with finishes which resist corrosion and rust.

3.11 DEMOLITION

- A. Comply with individual Division 26, Electrical Sections and the following:

1. It is the intent of these documents to provide necessary information and adjustments to electrical system required to meet code, and accommodate installation of new work.
2. Coordinate with Owner so that work can be scheduled not to interrupt operations, normal activities, building access or access to different areas. Owner will cooperate to best of their ability to assist in coordinated schedule, but will remain final authority as to time of work permitted.
3. Examination:
 - a. Determine exact location of existing utilities and equipment before commencing work, compensate Owner for damages caused by failure to locate and preserve utilities. Replace damaged items with new material to match existing.
 - b. Verify that abandoned wiring and equipment serve only abandoned facilities.
 - c. Demolition drawings are based on casual field observation and existing record documents.
 - 1) Verify accuracy of information shown prior to bidding and provide such labor and material as is necessary to accomplish work.
 - 2) Verify location and number of electrical outlets, luminaires, panels, etc. in field.
 - d. Report discrepancies to Architect before disturbing existing installation.
 - 1) Promptly notify Owner if utilities are found which are not shown on Drawings.
4. Execution:
 - a. Remove existing luminaires, switches, receptacles, and other electrical equipment and devices and associated wiring from walls, ceilings, floors, and other surfaces scheduled for remodeling, relocation, or demolition unless shown as retained or relocated on Drawings.
 - b. Provide temporary wiring and connections to maintain electrical continuity of existing systems during construction. Remove or relocate electrical boxes, conduit, wiring, equipment, and luminaires, as encountered in removed or remodeled areas in existing construction affected by this work.
 - c. Remove and restore wiring which serves usable existing outlets clear of construction or demolition.
 - d. If existing junction boxes will be made inaccessible, or if abandoned outlets serve as feed through boxes for other existing electrical equipment which is being retained, provide new conduit and wire to bypass inaccessible junction boxes and abandoned outlets.
 - e. If existing conduits pass through partitions or ceiling which are being removed or remodeled, provide new conduit and wire to reroute clear of construction or demolition and maintain service to existing load.
 - f. Extend circuiting and devices in existing walls to be furred out.
 - g. Remove abandoned wiring to source of supply.
 - h. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
 - i. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets which are not removed.
 - j. Disconnect and remove abandoned panelboards and distribution equipment.

- k. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
- l. Existing lighting which is to remain, leave luminaires in proper working order.
- m. Repair adjacent construction and finishes damaged during demolition work.
- n. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.

3.12 ACCEPTANCE

- A. Comply with individual Division 26, Electrical Sections and the following:
 - 1. System cannot be considered for acceptance until work is completed and demonstrated to Architect that installation is in strict compliance with Specifications, Drawings and manufacturer's installation instructions, particularly in reference to following:
 - a. Cleaning
 - b. Operation and Maintenance Manuals
 - c. Training of Operating Personnel
 - d. Record Drawings
 - e. Warranty and Guaranty Certificates
 - f. Start-up/Test Document and Commissioning Reports

3.13 FIELD QUALITY CONTROL

- A. Confirm Field Quality Control requirements in Section 26 00 00, Electrical Basic Requirements and individual Division 26, Electrical Sections.
- B. Tests:
 - 1. Conduct tests of equipment and systems to demonstrate compliance with requirements specified. Reference individual Specification Sections for required tests. Document tests and include in operation and maintenance manuals.
 - 2. During site evaluations by Architect or Engineer, provide appropriate personnel with tools to remove and replace trims, covers, and devices so that proper evaluation of installation can be performed.

3.14 LETTER OF CONFORMANCE

- A. Provide Letter of Conformance, copies of manufacturers' warranties and extended warranties with a statement that Electrical items were installed in accordance with manufacturer's recommendations, UL listings and FM Global approvals. Include Letter of Conformance, copies of manufacturers' warranties and extended warranties in Operation and Maintenance Manuals.

3.15 SALVAGED EQUIPMENT AND RECYCLED MATERIAL

- A. Salvage the following equipment not being reused and return to Owner:
 - 1. Luminaires
 - 2. Panelboards
 - 3. Breakers
 - 4. Transformers

- B. Electrical equipment that cannot be salvaged for reuse, sell/give to recycling company. Recycle following excess, removed, or demolished electrical material:
 - 1. Copper or aluminum conductors, buses, and motor/transformer windings.
 - 2. Steel and aluminum from raceways, boxes, enclosures, and housings.
 - 3. Acrylic and glass from luminaire lenses/refractors.
- C. Provide separate on-site storage space for recycled and salvaged material. Clearly label space.
- D. Confirm additional salvaged equipment and recycled materials in the Contract Documents.

END OF SECTION 26 00 00

SECTION 26 00 05 - ELECTRICAL PRE-CLOSEOUT CHECKLIST

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Automatic Transfer Switches
- B. Busduct
- C. Grounding and Bonding
- D. Medium Voltage Switchgear
- E. Medium Voltage Transformers
- F. Panelboards
- G. Raceways
- H. Surge Protective Devices
- I. Switchboards

1.02 PRE-CLOSEOUT CHECKLIST SUBMITTAL

- A. Two weeks prior to the Engineer's Punch-Walk request, complete and submit Pre-closeout Checklist to document compliance with the Contract Documents and that systems are functionally operational and ready for Closeout Inspection.
- B. A Closeout/Punch-Walk inspection will only be scheduled after completion of Pre-closeout Checklist and Engineer's acceptance of its completeness.
- C. The Pre-closeout Checklist is a general guide to document compliance with the Contract Documents and is not an all-inclusive list of Contract requirements, and it is the responsibility of the Contractor to ensure the installation is complete and in full conformance with the Contract Documents.
- D. Complete and submit Pre-closeout Checklist, as indicated in Part 3.
- E. Unless all similar equipment have exactly the same level of completeness, reproduce the Checklist as needed and submit one checklist for each piece of equipment.

PART 2 - EQUIPMENT - NOT USED

PART 3 - INSTALLATION

3.01 PRE-CLOSEOUT CHECKLIST

- A. Automatic Transfer Switches
 - 1. Installation:

Yes	No	Task	Comment
		Concrete pad installed.	
		Nameplates installed.	
		Seismically braced.	
		Arc-flash labels installed.	
		Grounding and bonding complete.	
		Accessories installed and power provided.	
		AIC rating exceeds AFC noted on plans.	
		Adequate lighting in room with emergency battery back-up.	
		Interior and exterior clean of construction dust and debris.	
		Any damage to enclosure has been repaired or replaced.	
		Feeder lugs torqued per manufacturer's instructions.	
		Sequence of operation is in compliance with specifications.	
		Operating transfer time, voltage, frequency and time delay settings are in compliance with specifications.	
		Service maintenance contact offered to Owner.	
		Spare parts provided.	

2. Controls:

Yes	No	Task	Comment
		Signal and control circuits installed for remote annunciator, automatic start-stop of generator(s) and all other accessories.	
		Wiring inside automatic transfer switches per NFPA-76A and CEC.	

3. Testing:

Yes	No	Task	Comment
		Manufacturer's service tech has inspected and tested on site to assure free of defects and operating per manufacturer's requirements.	

Yes	No	Task	Comment
		Inspected and tested in accordance with NETA STD ATS.	
		Tested in bypass, normal and emergency modes.	
		Load shedding tested.	
		Accessories operating as required.	

B. Busduct

1. Installation:

Yes	No	Task	Comment
		Moisture protection provided.	
		Installed per manufacturer's instructions.	
		Nameplates installed.	
		Seismically braced.	
		Arc-flash labels installed.	
		Exterior clean of construction dust and debris.	
		Any damage has been repaired or section replaced.	
		Terminations torqued per manufacturer's recommendations.	
		Expansion fittings installed where busway crosses expansion and/or seismic joints.	
		Firestopping installed where busway penetrates fire-rated walls.	
		Weatherseals installed where busway penetrates exterior walls and/or roof.	
		Concrete curb installed around interior floor penetrations.	
		Code required clearances provided.	

2. Testing:

Yes	No	Task	Comment
		Insulation resistance.	
		Withstand voltage (dielectric).	

C. Grounding and Bonding

1. Installation:

Yes	No	Task	Comment
		Concrete encased electrode (UFER) installed and connected.	
		Ground rods driven so that a minimum of 8 feet is in contact with soil. Any portion of ground rod remaining above ground, and connections to ground rod are protected from physical damage.	
		Test wells provided at ground rods where indicated in contract documents.	
		Water service and other metal piping bonded to grounding system.	
		Metal raceway systems bonded.	
		Equipment grounding conductors installed.	
		Receptacles tested for proper grounding and polarity.	
		Bonding and grounding properly torqued at all connection and termination points.	
		Isolated grounding system installed if required by contract documents.	
		Separately derived systems grounded per contract documents and code.	
		Ground grid installed under access floor. All metal raceway, pipe, duct and metal objects under raised floor are bonded.	
		Healthcare projects: patient care areas are provided with NFPA 70 and 99 grounding and bonding.	
		Electrostatic (ESD) flooring bonded at 2 opposite locations.	

2. Testing:

Yes	No	Task	Comment
		Grounding continuity tested and results submitted for each receptacle in patient care areas per NFPA 99.	

Yes	No	Task	Comment
		Grounding system resistance to ground tested. Results not to exceed limits stated in specifications. Test results submitted.	
		Tests listed in NETA Standard AB and done in accordance with NETA standard ATS.	

D. Medium Voltage Switchgear

1. Installation:

Yes	No	Task	Comment
		Warning signs installed.	
		Seismically braced.	
		Nameplates installed.	
		Arc-flash labels installed.	
		Grounding and bonding complete.	
		Interior and exterior clean of construction dust and debris.	
		Housekeeping pad installed.	
		Any damage to enclosure has been repaired or replaced.	
		AIC rating exceeds AFC noted on plans.	
		Busbars and feeder lugs torqued per manufacturer instructions.	
		Any damage to enclosure has been repaired or replaced.	

2. Testing:

Yes	No	Task	Comment
		Factory service agent has inspected, adjusted and tested field assembled components and equipment. Results report has been submitted.	
		Insulation resistance tested with Megger with results recorded and submitted.	
		Continuity of each circuit tested.	
		Ground fault system tested per NETA, ATS, Section 7.14.	

E. Medium Voltage Transformers

1. Installation:

Yes	No	Task	Comment
		Seismically braced.	
		Permanent labels installed.	
		Arc-flash labels installed.	
		Nameplates installed.	
		Grounding and bonding complete.	
		Interior and exterior clean.	
		Support pad installed.	
		Any damage to enclosure has been repaired or replaced.	
		If exterior installation protective bollards are installed.	
		Liquid filled: oil containment curb installed.	
		Noise levels within acceptable limits.	
		Feeder lugs torqued per manufacturer's instructions.	
		Taps adjusted to attain appropriate voltage on each phase.	

2. Testing:

Yes	No	Task	Comment
		Test per NETA STD ATS, Section 7.2.	
		Excitation-current test per manufacturer.	
		Liquid Filled: Insulation liquid's specific gravity, water content and dispensation factor tested.	
		Dry type: turns ratio tested at tap positions.	
		Dry type: resistance of each winding tested at each tap connection.	
		Dry type: over potential tested on high and low-voltage windings-to-ground.	
		Grounding and bonding tested.	

F. Panelboards

1. Installation:

Yes	No	Task	Comment
		Securely mounted and	

Yes	No	Task	Comment
		seismically braced as required.	
		Permanent ID label installed.	
		Arc-flash labels installed.	
		Electronic breakers settings set as per the Electrical Distribution Studies.	
		Nameplates installed.	
		Grounding and bonding complete.	
		Interior and exterior clean of construction dust and debris.	
		Any damage to enclosure has been repaired or replaced.	
		Door(s) work and close properly.	
		Key works and door(s) lock properly.	
		Filler plates installed in all unused spaces.	
		Spare conduit provided out of recessed panels.	
		Typed panel directories are up to date and complete.	
		Permanent identification numbers installed at each pole position.	
		Handle guards provided where indicated on plans and as required by code.	
		Tie handles installed for multi-wire branch circuits (unless separate neutrals provided for each circuit).	
		AIC rating exceeds AFC noted on plans.	
		Panel wiring diagram, UL label, and short circuit rating provided on interior of panel.	
		Phase loads checked and balanced.	
		Breaker terminations are tight.	
		Feeder lugs torqued per manufacturer's instructions.	

2. Testing:

Yes	No	Task	Comment
		Shunt trip circuit breakers tested.	
		GFCI breakers tested.	
		Grounding and bonding tested.	

G. Raceways

1. Installation:

Yes	No	Task	Comment
		Installed per NECA 101.	
		Appropriate type used in exposed locations.	
		Hazardous locations installed per NEC 501.	
		Pull stings installed in all empty conduit and secured at each end.	
		Caps provided at ends of empty conduit.	
		Labels provided at both ends of empty conduit with location of opposite end.	
		Flexible metal conduit used at motor and equipment connections subject to movement and/or vibration.	
		Metal conduit not in contact with HVAC ductwork, piping, or other objects or equipment.	
		Conduit minimum 12 inches away from steam and hot water radiant heating lines and 3 inches away from waste and water lines.	
		Supports provided per code.	
		No unrelated conduit in elevator equipment rooms.	
		No conduit runs between floors in stairwells.	
		Conduit fitting types per specifications.	
		Conduit fittings properly tightened and providing an effective ground path.	
		Appropriate fittings or assembly installed at expansion and	

Yes	No	Task	Comment
		seismic joints.	

H. Surge Protective Devices

1. Installation:

Yes	No	Task	Comment
		Installed per manufacturer's instructions.	
		Securely mounted and seismically braced as required.	
		Permanent id label installed.	
		Grounding and bonding complete.	
		Interior and exterior clean of construction dust and debris.	
		Any damage to enclosure has been repaired or replaced.	
		Door(s) work and close properly.	
		Key works and door(s) lock properly.	
		Terminations torqued per manufacturer's recommendations.	

2. Controls:

Yes	No	Task	Comment
		Remote status monitoring installed and operational.	

3. Testing:

Yes	No	Task	Comment
		Tolerance limit tested.	

I. Switchboards

1. Installation:

Yes	No	Task	Comment
		Seismically braced.	
		Switches/breakers have permanent labels.	
		Arc-flash labels installed.	
		Nameplates installed.	
		Grounding and bonding complete.	
		Interior and exterior clean of construction dust and debris.	
		Housekeeping pad installed.	
		Any damage to enclosure has been repaired or replaced.	
		Electronic breakers settings set	

Yes	No	Task	Comment
		as per the Electrical Distribution Studies.	
		AIC rating exceeds AFC noted on plans.	
		If over 800A: 2 doors out of electrical room swinging out and have panic hardware installed on room side of doors.	
		Ground fault protection provided on 480v breakers sized at 1000a and larger.	
		Busbars and feeder lugs torqued per manufacturer instructions.	
		Adjustable breaker trip and time delay settings set per fault current, coordination, and arc-flash studies.	
		Adequate ventilation in room.	

2. Testing:

Yes	No	Task	Comment
		Tested per NETA STD ATS, Section 7.1.	
		Insulation resistance tested with Megger and results submitted.	
		Key interlock systems checked, tested, and properly functioning.	
		Shunt trip circuit breakers tested.	
		Grounding and bonding tested.	
		Circuit breakers ground fault protection tested.	
		Control wiring tested.	

END OF SECTION 26 00 05

SECTION 26 05 13 - MEDIUM-VOLTAGE CABLES

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Medium Voltage Cable
 - 2. Cable Terminations and Splices
 - 3. Arc Proofing Materials
 - 4. Accessories

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. UL 1072 - Standard for Medium-Voltage Power Cables.
 - 2. IEEE 386 - Standard for Separable Insulated Connector Systems for Power Distribution Systems Rated 2.5 kV through 35 kV.
 - 3. IEEE 400 - Guide for Field Testing and Evaluation of the Insulation of Shielded Power Cable Systems Rated 5 kV and Above.
 - 4. IEEE 400.2 - Guide for Field Testing of Shielded Power Cable Systems Using Very low Frequency (VLF).
 - 5. IEEE 400.3 - Guide for Partial Discharge Testing of Shielded Power Cable Systems in a Field Environment.
 - 6. IEEE 404 - Extruded and Laminated Dielectric Shielded Cable Joints Rated 2.5 kV to 500 kV.
 - 7. ICEA - Insulated Cable Engineers Association.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, provide:
 - 1. Product Data: Manufacturer's product data sheet highlighting selected option(s). Product data sheets not edited to indicate products and options specific to project or that list only catalog numbers to identify submitted options are not acceptable.
 - 2. Certification Report: Manufacturer's certification indicating cable has been produced within the past 12 months.
 - 3. Factory Test Report: Prior to installation of the cable, deliver manufacturer's certified NEMA WC 74 standard factory test report. Report to show conformance with the referenced standards and be approved prior to delivery of cable.

4. Certification of Compatibility: Provide certification from the cable manufacturer that the splices and terminations are approved for use with the cable.
5. Cable insulation test reports in project closeout documentation.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 1. Installer Qualifications: Licensed electrician with no fewer than five years of experience splicing, terminating, and testing cables equivalent to those being spliced and terminated, including experience with all materials within this Section.
 2. Factory Testing:
 - a. Cables: Factory tested per specified NEMA WC standard to ensure no electrical defects. Factory tests are to be certified and included in project closeout documentation.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Cable shipped on factory reels such that it is protected from mechanical injury. Each end of each length of cable is to be hermetically sealed with manufacturer's end caps and securely attached to the reel. Mark or tag cable to indicate month and year of manufacture.
- B. Cable stored and/or cut on site is to have the ends turned down, and sealed with cable manufacturer's standard cable end seals, or field-installed heat-shrink cable end seals.
- C. Before accepting cable delivery, inspect the outside of each cable reel and remove protruding nails, fastenings, or other objects which might damage the cable. Inspect for flaws, breaks, or abrasions in the cable sheath as the cable leaves the reel. Damage to the sheath or finish of the cable will be sufficient cause for rejecting the cable. Cable damaged in any way during installation is to be replaced at no additional cost to the Owner.

1.07 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Medium Voltage Cable:
 1. Okonite
 2. General Cable
 3. Southwire
 4. Or approved equivalent.

- B. Cable Terminations and Splices:
 - 1. 3M
 - 2. Elastimold (Thomas & Betts)
 - 3. Or approved equivalent.
- C. Arc Proofing Materials:
 - 1. 3M
 - 2. Or approved equivalent.
- D. Accessories:
 - 1. Provide accessories from same manufacturer as Cable, Cable Terminations and Splices.
 - 2. Or approved equivalent.

2.02 MEDIUM VOLTAGE CABLE

- A. Shielded cable: 5-46 kV, NEMA WC 74.
- B. Voltage: 35 KV grounded.
- C. Conductor Type: Single core, annealed bare copper, Type MV-105, cross sectional area per Drawings.
- D. Stranding: Compact, Class B.
- E. Conductor Screen: Extruded, semi-conductive, EPR per conductor.
- F. Insulation:
 - 1. Thickness: 133 percent.
 - 2. Type:
 - a. Type EPR: Ethylene Propylene Rubber insulation to be thermosetting, light and heat stabilized.
- G. Insulation Screen: Extruded, semi-conductive, EPR per conductor applied directly over insulation.
- H. Shielding: 5-mil bare copper tape per conductor. Helically applied with 25 percent minimum overlap.
- I. Armour: None.
- J. Jacket: Thermoplastic PVC. Low friction, lead-free, flame retardant, oil, moisture and sunlight resistant.
- K. Cable temperature ratings for continuous operation, emergency overload operation and short circuit operation to be not less than NEMA WC 74 for respective cable.
- L. Factory printed manufacturer's name, trade name of cable, voltage, wire size, and type of insulation to be marked or molded clearly on overall outside surface of jackets.

2.03 CABLE TERMINATIONS AND SPLICES

- A. Materials to be compatible with conductors, insulations and protective jackets on cables and wires.
- B. Splices to insulate and protect conductors not less than insulation and protective jackets on cables and wires that protect conductors. In locations where moisture might be present, splices to be watertight. In manholes and handholes splices to be submersible type.
- C. Splicing and Terminating Fittings: In accordance with IEEE 386, 404.
 - 1. Heavy duty, pressure type fittings, which will assure satisfactory performance of connections under conditions of temperature cycling and magnetic forces from available short circuit currents.
 - 2. Fittings suitably designed and proper size for cables and wires being spliced and terminated. Terminations to bus to be with two hole lugs.
- D. Splicing and Terminating Kits:
 - 1. General:
 - a. Assembled by manufacturer or supplier of materials and packaged for individual splices and terminations or for groups of splices and terminations.
 - b. Consist of materials designed for the cables being spliced and terminated and be suitable for prevailing environmental conditions.
 - c. Include detail drawings and printed instructions for each type of splice and termination being installed, as prepared by manufacturers of materials in kits.
 - d. Detail drawings, and printed instructions to indicate cable type, voltage rating, manufacturer's name and catalog numbers for materials indicated.
 - e. Voltage ratings for splices and terminations be not less than voltage ratings for cables on which they are being installed.
 - f. Include shielding and stress cone materials.
 - 2. Taped splices and terminations with insulating and semi-conducting rubber tapes to withstand 200 percent elongation without cracking, rupturing or reducing their electric and self-bonding characteristics by more than 5 percent.
 - 3. Epoxy resin kits as follows:
 - a. Compatible with cable insulations and jackets and make splices watertight and submersible.
 - b. Thermosetting and generate its own heat so that external fire or heat will not be required.
 - c. Set solid and cure in approximately 60 minutes in 70 degrees F ambient temperature.
 - d. Impervious to deterioration when subjected to oil, water, gases, salt water, sewage and fungus.
 - e. Furnished in pre-measured quantities, sized for each splice and each termination, with two resin components in an easy mixing plastic bag which will permit mixing resin without entrapping air or contaminants. Other methods of packaging and mixing epoxy resin components will be considered for approval, provided they include adequate safeguards to assure precise proportioning of resin components and to prevent entrapping air and contaminants.

- f. Use snap-together, longitudinally-split, interlocking seam, transplant molded bodies or taped frameworks, injection fittings and injection gun or pouring equipment. Fill voids within splices and terminations.
- E. Pre-Molded Rubber Splices and Terminations:
1. Splices and terminations in accordance with IEEE 386, and 404.
 2. Pre-Molded rubber devices to have minimum of 1/4-inch semi-conductive shield material covering entire housing. Test each rubber part prior to shipment from factory.
 3. Grounding of metallic shields are accomplished by solderless connector enclosed in watertight rubber housing covering entire assembly. Grounding device and splice or terminator of same manufacturer to ensure electrical integrity of shielded parts.
 4. Pre-Molded parts suitable for indoor, outdoor, submersible, or direct-burial applications.
- F. Separable Insulated Connectors:
1. Description: Modular system, complying with IEEE 386, with disconnecting, single-pole, cable terminators and with matching, stationary, plug-in, dead-front terminals designed for cable voltage and for sealing against moisture.
- G. Fault Indicators:
1. Indicators: Manually reset fault indicator, arranged to clamp to cable sheath and provide display after fault has occurred in cable. Instrument not to be affected by heat, moisture, and corrosive conditions and to be recommended by manufacturer for installation conditions.
 2. Resetting Tool: Designed for use with fault indicators, with moisture-resistant storage and carrying case.

2.04 ARC PROOFING MATERIALS

- A. Arc-Proofing Tape: Flexible, conformable, unsupported intumescent elastomer. Tape to be 0.030-inches thick, capable of over 100 percent elongation, non-corrosive to metallic cable sheaths and compatible with synthetic cable jackets. Self-extinguishing and does not support combustion. Resistant to water, salt water, gas, sewage, and UV. Black in color.
- B. Glass-Cloth Tape: Silicone thermosetting adhesive. Coated on one side with pressure-sensitive adhesive which does not require heat, moisture, or other preparation prior to or subsequent to application. The adhesive coating shall be smooth and uniform, and be free of lumps and bare spots. No separation between adjacent layers of the roll. 7 mil thickness. White in color.

2.05 ACCESSORIES

- A. Potheads: IEEE 48, Class 1 termination. Pothead with porcelain insulators, cable connector and aerial lug, sealed cable entrance and support, and insulating compound.
- B. Cable Terminations: IEEE 48, Class 2 porcelain insulator cable terminator in kit form.

- C. Cast Epoxy Cable Terminations: IEEE 48, Class 1 cast epoxy cable termination in kit form with stress cone, shield ground connection, wet porcelain rain shield for outdoor units, epoxy resin molding material, and accessories and molds required for proper application.
- D. Modular Cable Terminations: IEEE 48, Class 1, molded-rubber cable termination in kit form with stress cone, ground clamp, non-tracking rubber skirts, load break connector, rubber cap, and aerial lug.
- E. Tape Terminations: IEEE 48; Class 1, tape termination kit with semi-conductive tape, stress control tape, splicing tape, vinyl plastic tape, stress cone, mechanical ground straps, and cable preparation kit.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Examination:
 - 1. Verify that conduit, duct, trench, or manholes are ready to receive cable. Raceway construction is to be complete, cleaned, and protected from the weather before cable is placed.
 - 2. Verify that field measurements are as indicated.
 - 3. Verify routing and termination locations of cable bank prior to rough-in.
 - 4. Cable routing is shown in approximate locations unless dimensioned. Route as required to complete wiring system.
- B. Preparation:
 - 1. Pull leather-washer-type duct mandrel, with graduated washer sizes, through full length of conduits and ducts. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout conduit and ducts.
- C. Installation:
 - 1. Avoid abrasion and other damage to cables during installation.
 - 2. Use suitable lubricants and pulling equipment. Grease is not acceptable.
 - 3. Sustain cable pulling tensions and bending radii below recommended limits.
 - 4. Ground cable shield at each termination and splice.
 - 5. Install cables in conduit.
 - 6. Arrange cable in manholes to avoid interference with duct entrances.
 - 7. Fireproof cables in manholes, vaults, open cable trays, or other exposed locations using fireproofing tape in half-lapped wrapping. Extend fireproofing 1-inch into duct. Stretch tape slightly to obtain a snug, wrinkle-free wrap which conforms to the cable. Overlap the last 6 inches of protected cable when starting a new roll of tape. Arc proof tape must be held in place after wrapping with bands of Glass Cloth Electrical Tape. Band (2 complete wraps) the first and last applied wrap.
 - 8. Pull Conductors: Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
 - a. Where necessary, use manufacturer-approved pulling compound or lubricant that will not deteriorate conductor or insulation.

- b. Use pulling means, including fish tape, cable, rope, and basket-weave cable grips that will not damage cables and raceways. Do not use rope hitches for pulling attachment to cable.
 9. Install exposed cables parallel and perpendicular to surfaces of exposed structural members and follow surface contours where possible.
 10. Install "buried-cable" warning tape 12-inches above cables.
 11. In manholes, handholes, pull boxes, junction boxes, and cable vaults, train cables around walls by longest route from entry to exit and support cables at intervals adequate to prevent sag.
 12. Install terminations at ends of conductors and seal multiconductor cable ends with standard kits.
 13. Install separable insulated-connector components as follows:
 - a. Protective Cap: At each terminal junction, with one on each terminal to which no feeder is indicated to be connected.
 - b. Portable Feed-Through Accessory: Three.
 - c. Standoff Insulator: Three.
 14. Ground shields of shielded cable at terminations, splices, and separable insulated connectors. Ground metal bodies of terminators, splices, cable and separable insulated-connector fittings, and hardware.
 15. Provide terminations and splices performed by skilled high voltage personnel. Provide record of experience for personnel performing splices and terminations. Provide services of field engineer of cable manufacturer to supervise and certify terminations and splices.
- D. Field Quality Control:
1. Perform field inspection and testing.
 2. Inspect exposed cable sections for physical damage.
 3. Inspect cable for proper connections as indicated.
 4. Inspect shield grounding, cable supports, and terminations for proper installation.
 5. Inspect and test in accordance with NETA STD ATS, except Section 4.
 6. Perform inspections and tests listed in NETA STD ATS, Section 7.3.3.
 7. Complete tests with terminal equipment disconnected.
 8. Provide written final report and test results to Architect.
- E. Protection: Protect installed cables from entrance of moisture.

3.02 CABLE

- A. See General Installation Requirements above.
- B. Install per manufacturers written instructions and requirements.

3.03 CABLE TERMINATIONS AND SPLICES

- A. See General Installation Requirements above.
- B. Install per manufacturers written instructions and requirements.

3.04 ARC PROOFING MATERIALS

- A. See General Installation Requirements above.

- B. Install per manufacturer's written instructions and requirements.

3.05 ACCESSORIES

- A. See General Installation Requirements above.
- B. Install per manufacturers written instructions and requirements.

END OF SECTION 26 05 13

SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Lugs and Pads
 - 2. Wires and Cables
 - 3. Connectors

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, provide:
 - 1. Cable insulation test reports in project closeout documentation.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Lugs and Pads:
 - 1. Anderson
 - 2. IlSCO
 - 3. Panduit
 - 4. Thomas & Betts
 - 5. 3M
 - 6. Or approved equivalent.
- B. Wires and Cables:
 - 1. General:

- a. General Cable
 - b. Okonite
 - c. Southwire
 - d. Encore Wire
 - e. Or approved equivalent.
- C. Connectors:
- 1. Anderson Power Products
 - 2. Burndy
 - 3. Ilsco
 - 4. 3M
 - 5. Thomas & Betts
 - 6. Or approved equivalent.

2.02 LUGS AND PADS

- A. Ampacity: Cross-sectional area of pad for multiple conductor terminations to match ampere rating of panelboard bus or equipment line terminals.
- B. Copper Pads: Drilled and tapped for multiple conductor terminals.
- C. Lugs: Compression type for use with stranded branch circuit or control conductors; mechanical type for use with solid branch and feeder circuit conductors.

2.03 WIRES AND CABLES

- A. Building Wires:
 - 1. Copper: Soft-drawn with conductivity of not less than 98 percent IACS at 20 degrees C (68 degrees F). 600 volt rated throughout. Conductors 12 AWG and 10 AWG, solid. Conductors 8 AWG and larger, stranded. 12 AWG minimum conductor size. Minimum insulation rating of 90 degrees C. Insulation Type: THHN/THWN-2.
- B. Phase color to be consistent at feeder terminations; A-B-C, top to bottom, left to right, front to back.
- C. Color Code Conductors as Follows:

PHASE	208 VOLT WYE	480 VOLT
A	Black	Brown
B	Red	Orange
C	Blue	Yellow
Neutral	White	Gray or White w/colored strip
Ground	Green	Green
Isolated Ground	Green w/yellow trace	N/A

- D. AC Cable (Armored Cable): Not allowed.
- E. NMB Cable: Not allowed.

2.04 CONNECTORS

- A. Split bolt connectors not allowed.
- B. Conductor Branch Circuits: Wire nuts with integral spring connectors for conductors 12 AWG through 8 AWG. Push-in type connectors where conductors are not required to be twisted together are not acceptable.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Install per manufacturer instructions and CEC.
- B. Field Quality Control:
 - 1. Test conductor insulation on feeders of 100 amp and greater for conformity with 1000 volt megohmmeter. Use Insulated Cable Engineers Association testing procedures. Minimum insulation resistance acceptable is 1 megohm for systems 600 volts and below. Notify Architect if insulation resistance is less than 1 megohm.
 - 2. Test Report: Prepare a typed tabular report indicating the testing instrument, the feeder tested, amperage rating of the feeder, insulation type, voltage, the approximate length of the feeder, conduit type, and the measured resistance of the megohmmeter test. Submit test reports with project closeout documents.
 - 3. Inspect and test in accordance with NETA Standard ATS, except Section 4.
 - 4. Perform inspections and tests listed in NETA Standard ATS, Section 7.3.2.

3.02 LUGS AND PADS

- A. Thoroughly clean surfaces to remove all dirt, oil, grease or paint.
- B. Use torque wrench to tighten per manufacturer's directions.

3.03 WIRES AND CABLES

- A. General:
 - 1. Do not install or handle thermoplastic insulated wire and cable in temperatures below -10 degrees C (14 degrees F). Do not handle thermoset insulated wire and cable in temperatures below -40 degrees C (-40 degrees F). All wire and cable must be acclimated to temperatures above freezing for no less than 24 hours prior to installation.
 - 2. Install conductors in raceways having adequate, code size cross-sectional area for wires indicated.
 - 3. Install conductors with care to avoid damage to insulation.
 - 4. Do not apply greater tension on conductors than recommended by manufacturer during installation.
 - 5. Use of pulling compounds is permitted. Clean residue from exposed conductors and raceway entrances after conductor installation. Do not use pulling compounds for installation of conductors connected to GFCI circuit breakers or GFCI receptacles.

6. Conductor Size and Quantity:
 - a. Install no conductors smaller than 12 AWG unless otherwise shown.
 - b. Provide required conductors for a fully operable system.
 - c. Power Circuits: No. 12 AWG minimum, except as follows:
 - 1) No. 10 AWG for 20A, 120V circuits longer than 70 ft.
 - 2) No. 8 AWG for 20A, 120V circuits longer than 100 ft.
 - d. When exact run lengths are determined for all branch circuits, and prior to installation of the conductors, ensure that the maximum voltage drop, based on 80 percent of the circuit protective device, does not exceed 3 percent. Increase wire size from #12AWG, if necessary, to ensure that the 3 percent voltage drop is not exceeded.
 7. Provide dedicated neutrals (one neutral conductor for each phase conductor) in all 120V circuits.
- B. Conductors in Cabinets:
1. Cable and tree wires in panels and cabinets for power and control. Use plastic ties in panels and cabinets.
 2. Tie and bundle feeder conductors in wireways of panelboards.
 3. Hold conductors away from sharp metal edges.
- C. Homeruns:
1. Do not change intent of branch circuit homeruns without approval. Homeruns for 20A branch circuits may be combined to a maximum of six current carrying conductors including neutral conductors in homeruns. Apply derating factors as required per NEC. Increase conductor size as needed.
- D. Identify wire and cable under the provisions of Section 26 05 53, Identification for Electrical Systems. Identify each conductor with its panel and circuit number as indicated.
- E. Exposed cable is not allowed.
- F. All cable must be run parallel or perpendicular to building lines and hidden from view when possible. Where installed in tray each power cable is to be identified with Lamacoid nametag engraved with identification of equipment being fed. Tag to be fastened to cable using tie-wraps. Provide nametag at each floor level.
- G. Do not install PVC jacketed cables in return air plenums, unless they are specially rated plenum cables.

3.04 CONNECTORS

- A. Install to assure a solid and safe connection.
- B. Select hand twist connectors for wire size and install tightly on conductors.
- C. Install compression connectors using methods and tools recommended by the manufacturer.
- D. Do not install stranded conductors under screw terminals unless compression lugs are installed.

- E. Do not connect wiring without UL listed connectors that are listed for the purposes.

END OF SECTION 26 05 19

SECTION 26 05 26 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Grounding Electrodes
 - 2. Connectors and Accessories
 - 3. Grounding Conductor

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, provide:
 - 1. Test reports of ground resistance for service and separately derived system grounds.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. Comply with the requirements of ANSI/NFPA 70.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Grounding Electrodes:
 - 1. Erico
 - 2. Thomas & Betts
 - 3. Talley
 - 4. Or approved equivalent.
- B. Connectors and Accessories:

1. Burndy Hyground Compression System
 2. Erico/Cadweld
 3. Amp Ampact Grounding System
 4. Pipe Grounding Clamp:
 - a. Burndy GAR Series
 - b. O Z Gedney
 - c. Thomas & Betts
 - d. Or approved equivalent.
- C. Grounding Conductor
1. General Cable
 2. Okonite
 3. Southwire
 4. Or approved equivalent

2.02 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel, minimum 3/4-inch diameter, 10-feet long, tapered point, chamfered top.

2.03 CONNECTORS AND ACCESSORIES

- A. Grounding Connectors: Hydraulic compression tool applied connectors or exothermic welding process connectors or powder actuated compression tool applied connectors.
- B. Pipe Grounding Clamp: Mechanical ground connector with cable parallel or perpendicular to pipe.

2.04 GROUNDING CONDUCTOR

- A. Grounding Electrode Conductor: Soft-draw bare stranded copper for wire sizes larger than #10 AWG Bare. Solid copper for wire sizes #10 AWG and smaller.
- B. Equipment Grounding Conductor: Green insulated, insulation type to match that of associated feeder or branch circuit wiring, size as indicated on drawings.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Verify site conditions prior to beginning work.
- B. Bond Sections of service equipment enclosure to service ground bus.
- C. Separately Derived Systems: Ground each separately derived system per NEC Article 250.
- D. Corrosion inhibitors: Apply a corrosion inhibitor to contact surfaces when making grounding and bonding connections. Use corrosion inhibitor appropriate for protecting a connection between metals used.

- E. Grounding system resistance to ground not to exceed 5 ohms. Make necessary modifications or additions to grounding electrode system for compliance. Submit final tests to assure that this requirement is met.
- F. Resistance of grounding electrode system: measure using a four-terminal fall-of-potential method as defined in IEEE 81. Take ground resistance measurements before electrical distribution system is energized and in normally dry conditions, not less than 48 hours after last rainfall. Take resistance measurements of separate grounding electrode systems before systems are bonded together below grade. Combined resistance of separate systems may be used to meet required resistance, but specified number of electrodes must still be provided.
- G. Inspect and test in accordance with NETA Standard ATS, Except Section 4.
- H. Perform inspections and tests listed in NETA Standard AB, Section 7.13.

3.02 GROUNDING ELECTRODES INSTALLATION

- A. Concrete-Encased Electrode ("Ufer Ground"):
 - 1. From service equipment ground bus provide grounding electrode conductor to footing/foundation rebar.
 - 2. Bond #4 grounding electrode conductor to one minimum 20-foot long, 3/4-inch diameter independent steel rebar(s).
 - 3. Protect grounding electrode conductor from footing/foundation to service equipment grounding bus with rigid PVC conduit where grounding electrode conductor passes through concrete floor or other concrete structure. Do not use rigid metal conduit for grounding electrode conductor protection.
 - 4. Coordinate bonding of rebar in base of building concrete footing with installer prior to placement of concrete.
- B. Ground Rod Electrode:
 - 1. Verify that final backfill and compaction have been completed before driving rod electrodes.
 - 2. Bond #6 grounding electrode conductor to driven ground rods as indicated on Drawings.
 - 3. Tap at center ground rod and extend grounding electrode conductor to service grounding bus. Install grounding electrode conductor to service grounding bus in rigid PVC conduit for physical protection where grounding electrode conductor passes through concrete floor or other concrete structure.
- C. Bond together metal siding not attached to grounded structure; bond to grounding electrode system.

3.03 CONNECTORS AND ACCESSORIES INSTALLATION

- A. Install per manufacturer's instructions.

3.04 GROUNDING CONDUCTOR INSTALLATION

- A. Raceways:

1. Ground metallic raceway systems. Bond to ground terminal with code size jumper except where code size or larger equipment grounding conductor is included with circuit, use grounding bushing with lay-in lug.
 2. Connect metal raceways, which terminate within an enclosure but without mechanical connection to enclosure, by grounding bushings and ground conductor to grounding bus.
 3. Where equipment supply conductors are in flexible metallic conduit, install stranded copper equipment grounding conductor from outlet box to equipment frame.
 4. Install equipment grounding conductor, code size minimum unless noted on drawings, in metallic and nonmetallic raceway systems.
- B. Feeders and Branch Circuits:
1. Provide continuous green insulated copper equipment grounding conductors for feeders and branch circuits.
 2. Where installed in a continuous solid metallic raceway system and larger sizes are not detailed, provide insulated equipment grounding conductors for feeders and branch circuits sized in accordance with the latest adopted edition of NEC Article 250, Table 250-122.
- C. Bond boxes, cabinets, enclosures and panelboard equipment grounding conductors to enclosure with specified conductors and lugs. Install lugs only on thoroughly cleaned contact surfaces.
- D. Motors, Equipment and Appliances: Install code size equipment grounding conductor to (motor) equipment frame or manufacturer's designated ground terminal.
- E. Receptacles: Connect ground terminal of receptacle and associated outlet box to equipment grounding conductor. Self grounding nature of receptacle devices does not eliminate equipment grounding conductor bolted to outlet box.

END OF SECTION 26 05 26

SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS AND EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Anchors, Threaded Rod and Fasteners
 - 2. Support Channel and Supports

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.

1.04 SUBMITTALS

- A. Submittals not required for this Section.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. Manufacturers regularly engaged in the manufacture of bolted metal framing support systems, whose products have been in satisfactory use in similar service for not less than 10 years.
 - 2. Support systems to be supplied by a single manufacturer.
 - 3. Engineering Responsibility: Design and preparation of Shop Drawings and calculations for each multiple pipe support, trapeze, equipment hangers/supports, and seismic restraint by a qualified Structural Professional Engineer.
 - a. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of hangers and supports that are similar to those indicated for this Project in material, design, and extent.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

1.07 PERFORMANCE REQUIREMENTS

- A. General: Provide conduit and equipment hangers and supports in accordance with the following:
 - 1. When supports, anchorages, and seismic restraints for equipment and supports, anchorages and seismic restraints for conduit, cable tray and equipment are not shown on the Drawings, the Contractor is responsible for their design.
 - 2. Connections to structural framing shall not introduce twisting, torsion, or lateral bending in the framing members. Provide supplementary steel as required.
- B. Engineered Support Systems: The following support systems to be designed, detailed, and bear the seal of a professional engineer registered in the State of California.
 - 1. Support frames such as conduit racks or stanchions for conduit and equipment which provide support from below.
 - 2. Equipment and piping support frame anchorage to supporting slab or structure.
- C. Provide channel support systems, for conduits to support multiple conduits capable of supporting combined weight of support systems and system contents.
- D. Provide seismic restraint and supports for conduit and equipment.
- E. Obtain approval from AHJ for seismic restraint hanger and support system to be installed for piping and equipment.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Anchors, Threaded Rod and Fasteners:
 - 1. Anchor It
 - 2. Epcon System
 - 3. Hilti-Hit System
 - 4. Power Fast System
 - 5. Or approved equivalent.
- B. Support Channel and Supports:
 - 1. B-Line
 - 2. Kindorf
 - 3. Superstrut
 - 4. Unistrut
 - 5. Or approved equivalent.

2.02 ANCHORS, THREADED ROD AND FASTENERS

- A. Anchors, Threaded Rod 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.

- B. Concrete Inserts: Cast in concrete for support fasteners for loads up to 800 lbs.
- C. Anchors and Fasteners:
 - 1. Do not use powder-actuated anchors.
 - 2. Concrete Structural Elements: Use precast inserts.
 - 3. Steel Structural Elements: Use beam clamps.
 - 4. Concrete Surfaces: Use self-drilling anchors.
 - 5. Solid Masonry Walls: Use expansion anchors.
 - 6. Sheet Metal: Use sheet metal screws.
- D. Fasteners: Provide fasteners of types as required for assembly and installation of fabricated items; surface-applied fasteners are specified elsewhere.
- E. Bolts: Low carbon steel externally and internally threaded fasteners conforming with requirements of ASTM A307; include necessary nuts and plain hardened washers. For structural steel elements supporting mechanical material or equipment from building structural members or connection thereto, use fasteners conforming to ASTM A325.
- F. Miscellaneous Materials: Provide incidental accessory materials, tools, methods, and equipment required for fabrication.

2.03 SUPPORT CHANNEL AND SUPPORTS

- A. Supports - General: Corrosion-resistant materials of size and type adequate to carry the loads of equipment and conduit, including weight of wire in conduit.
 - 1. Channel Material: Carbon steel.
 - 2. Coating: Hot dip galvanized.
- B. Pipe Straps: Two-hole galvanized or malleable iron.
- C. Miscellaneous Metal: Provide miscellaneous metal items specified hereunder, including materials, fabrication, fastenings and accessories required for finished installation, where indicated on Drawings or otherwise not shown on drawings that are necessary for completion of the project. The Contractor is responsible for their design.
 - 1. Fabricate miscellaneous units to size shapes and profiles indicated or, if not indicated, of required dimensions to receive adjacent other work to be retained by framing. Except as otherwise shown, fabricate from structural steel shapes and plates and steel bars, of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.
- D. Structural Shapes: Where miscellaneous metal items are needed to be fabricated from structural steel shapes and plates, provide members constructed of steel conforming with requirements of ASTM A36 or approved equivalent.
- E. Steel Pipe: Provide seamless steel pipe conforming to requirements of ASTM A53, Type S, Grade A, or Grade B. Weight and size required as specified.
- F. Miscellaneous Materials: Provide incidental accessory materials, tools, methods, and equipment required for fabrication.

PART 3 - EXECUTION**3.01 GENERAL INSTALLATION REQUIREMENTS**

- A. Fabrication - Miscellaneous Metals
1. General: Verify dimensions prior to fabrication. Form metal items to accurate sizes and configurations as indicated on Drawings and otherwise required for proper installation; make with lines straight and angles sharp, clean and true; drill, countersink, tap, and otherwise prepare items for connections with work of other trades, as required. Fabricate to detail of structural shapes, plates and bars; weld joints where practicable; provide bolts and other connection devices required. Include anchorages; clip angles, sleeves, anchor plates, and similar devices. Hot dipped galvanize after fabrication items installed in exterior locations. Set accurately in position as required and anchor securely to building construction. Construct items with joints formed for strength and rigidity, accurately machining for proper fit; where exposed to weather, form to exclude water.
 2. Finishes:
 - a. Ferrous Metal: After fabrication, but before erection, clean surfaces by mechanical or chemical methods to remove rust, scale, oil, corrosion, or other substances detrimental to bonding of subsequently applied protective coatings. For metal items exposed to weather or moisture, galvanize in manner to obtain G90 zinc coating in accordance with ASTM A123. Provide other non-galvanized ferrous metal with one coat of approved rust-resisting paint primer, in manner to obtain not less than 1.0 mil dry film thickness. Touch-up damaged areas in primer with same material, before installation. Apply zinc coatings and paint primers uniformly and smoothly; leave ready for finish painting as specified elsewhere.
 - b. Metal in contact with Concrete, Masonry and Other Dissimilar Materials: Where metal items are to be erected in contact with dissimilar materials, provide contact surfaces with coating of an approved zinc-chromate primer in manner to obtain not less than 1.0 mil dry film thickness, in addition to other coatings specified in these specifications.
 - c. For Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

3.02 ANCHORS, THREADED ROD AND FASTENERS INSTALLATION

- A. Safety factor of 4 required for every fastening device or support for equipment installed. Supports to withstand four times the weight of equipment it supports.
- B. Do not use other trade's fastening devices as supporting means for luminaires, equipment or materials.
- C. Do not use supports or fastening devices to support other than one particular item.
- D. Securely suspend junction boxes, pull boxes or other conduit terminating housings located above suspended ceiling from floor above or roof structure to prevent sagging and swaying.

- E. Provide seismic bracing per CBC requirements.
- F. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- G. Use spring lock washers under fastener nuts for strut.
- H. Cutting and Drilling
 - 1. Do not drill or cut structural members without prior permission from Architect.

3.03 SUPPORT CHANNEL AND SUPPORTS INSTALLATION

- A. Install supports as required to adequately and securely support electrical system components, in a neat and workmanlike manner, as specified in NECA 1.
- B. Safety factor of 4 required for every fastening device or support for equipment installed. Supports to withstand four times the weight of equipment it supports.
- C. Verify mounting height of luminaires prior to installation when heights are not detailed.
- D. Install vertical support members for equipment and luminaires, straight and parallel to building walls.
- E. Install horizontal support members straight and parallel to finished floor unless otherwise noted.
- F. Provide independent supports to structural member for luminaires, materials, or equipment installed in or on walls or in void spaces.
- G. Do not use other trade's fastening devices as supporting means for luminaires, equipment or materials.
- H. Do not fasten supports to pipes or conduit.
- I. Do not use supports or fastening devices to support other than one particular item.
- J. Support conduits within 18-inches of outlets, boxes, panels, cabinets and deflections unless more stringently required by CEC.
- K. Maximum distance between supports not to exceed 8 foot spacing unless otherwise required by CEC.
- L. Support flexible conduits and metal clad cable within 12-inches of outlets, boxes, panels, cabinets and deflections unless otherwise required by CEC.
- M. Maximum distance between supports for flexible conduits and metal clad cable not to exceed 48-inches spacing unless otherwise required by CEC.
- N. Maximum distance between supports for rigid PVC conduits unless otherwise required by CEC is as follows:
 - 1. 1/2-inch or 3/4-inch and 1-inch conduit, 3-feet apart.

2. 1-1/4-inch or 1-1/2-inch and 2-inch conduit, 4-feet apart.
 3. 2-1/2-inch and 3-inch conduit, 5-feet apart.
 4. 4-inch and 5-inch conduit, 6-feet apart.
 5. 6-inch conduit, 7-feet apart.
- O. Maximum distance between supports for auxiliary gutters and wireways unless otherwise required by CEC is as follows:
1. Sheet metal auxiliary gutters and wireways - 4-feet apart horizontally and 10-feet vertically.
 2. Non-metallic auxiliary gutters and wireways - 30-inches apart horizontally and 3-feet vertically.
- P. Install strut hangers as instructed by strut manufacturer. Suspend strut hangers as instructed by strut manufacturer for the load, with a maximum spacing of 8-feet on center and within 2-feet of outlet box, cabinet, junction box or other channel raceway termination unless otherwise required by CEC.
- Q. Coordinate routing of conduit racks with materials and equipment installed by other trades. Where conduit racks are exposed to view, coordinate location and installation with Architect for optimal appearance.
- R. Provide seismic bracing per CBC requirements.
- S. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- T. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.
- U. Wet and Damp Locations:
1. In wet and damp locations use steel channel supports to stand cabinets and panelboards 1-inch off wall.

END OF SECTION 26 05 29

SECTION 26 05 33 - RACEWAYS

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Rigid Metal Conduit (RMC)
 - 2. Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Metal Conduit
 - 3. Liquidtight Flexible Metal Conduit (LFMC)
 - 4. Electrical Polyvinyl Chloride (PVC) Conduit
 - 5. Conduit Fittings
- B. Provide a complete system of conduit and fittings, with associated couplings, connectors, and fittings, as shown on Drawings and described in these Specifications.

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.
- B. In addition, reference the following:
 - 1. Section 26 05 29, Hangers and Supports for Electrical Systems and Equipment
 - 2. Section 26 05 34, Boxes
 - 3. Section 26 05 43, Electrical Vaults and Underground Raceways

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

1.07 DEFINITIONS

- A. Raceway system is defined as consisting of conduit, tubing, duct, and fittings including but not limited to connectors, couplings, offsets, elbows, bushings, expansion/deflection fittings, and other components and accessories. Complete electrical raceway installation before starting the installation of conductors and cables.

PART 2 - PRODUCTS**2.01 MANUFACTURERS**

- A. Rigid Metal Conduit (RMC):
 - 1. Allied Tube & Conduit
 - 2. Beck Manufacturing Inc.
 - 3. Picoma
 - 4. Wheatland Tube Company
 - 5. Or approved equivalent.

- B. Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit:
 - 1. Allied Tube & Conduit
 - 2. Thomas & Betts Corporation
 - 3. Robroy Industries
 - 4. O'kote Inc.
 - 5. Or approved equivalent.

- C. Liquidtight Flexible Metal Conduit (LFMC):
 - 1. AFC Cable Systems Inc.
 - 2. Electri-Flex Company
 - 3. International Metal Hose
 - 4. Or approved equivalent.

- D. Electrical Polyvinyl Chloride (PVC) Conduit:
 - 1. AFC Cable Systems Inc.
 - 2. Electri-Flex Company
 - 3. International Metal Hose
 - 4. JM Eagle
 - 5. Or approved equivalent.

- E. Conduit Fittings:
 - 1. Bushings:
 - a. Insulated Type for Threaded Raceway Without Factory Installed Plastic Throat Conductor Protection:
 - 1) Thomas & Betts 1222 Series
 - 2) O-Z Gedney B Series
 - 3) Or approved Equivalent.
 - 2. Raceway Connectors and Couplings:
 - a. Thomas & Betts Series
 - b. O-Z Gedney Series
 - c. Or approved Equivalent.
 - 3. Expansion/Deflection Fittings:
 - a. EMT: O-Z Gedney Type TX
 - b. RMC: O-Z Gedney Type AX, DX and AXDX, Crouse & Hinds XD
 - c. PVC: O-Z Gedney Type DX with PVC adapters, Carlon E945 Series, Kraloy OPEJ Series
 - d. Or approved equivalent.

2.02 RIGID METAL CONDUIT (RMC)

- A. UL 6, ANSI C80.1. Hot dipped galvanized steel conduit after thread cutting.
 - 1. Fittings: NEMA FB2.10.

2.03 POLYVINYL CHLORIDE (PVC) EXTERNALLY COATED GALVANIZED RIGID METAL CONDUIT

- A. Description: UL 6, ANSI C80.1, and NEMA RN 1; rigid steel conduit with external PVC coating.
 - 1. PVC Coating: Minimum 40 mils in thickness.
- B. Fittings and Conduit Bodies: NEMA FB 1; steel fittings with external PVC coating to match conduit.

2.04 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

- A. Description: UL 360, inner core made from spiral wound strip of heavy gauge, hot dipped galvanized low carbon steel. 3/4-inch through 1-1/4-inch trade sizes to have a square lock core and contain an integral bonding strip of copper. 1-1/2-inch and larger to have fully interlocked core. Jacket material to be moisture, oil and sunlight resistant flexible PVC.
- B. Fittings: NEMA FB 2.20.

2.05 ELECTRICAL POLYVINYL CHLORIDE (PVC) CONDUIT

- A. Description: UL 651, NEMA TC 2; Schedule 40 PVC.
- B. Fittings: NEMA TC 3.

2.06 CONDUIT FITTINGS

- A. Bushings:
 - 1. Insulated type for threaded raceway connectors without factory-installed plastic throat conductor protection.
 - 2. Insulated grounding type for threaded raceway connectors.
- B. Raceway Connectors and Couplings:
 - 1. Steel connectors, couplings, and conduit bodies, hot-dip galvanized.
 - 2. Connector locknuts to be steel, with threads meeting ASTM tolerances. Locknuts to be hot-dip galvanized.
 - 3. Steel gland, Tomic or Breagle connectors and couplings are recognized for this Contract as having acceptable raceway to fitting electrical conductance.
 - 4. Set screw connectors and couplings, without integral compression glands, are recognized for this Contract as not having acceptable raceway to fitting electrical conductance. A ground conductor sized per this Specification must be included and bonded within raceway assembly utilizing this type connector or coupling.

PART 3 - EXECUTION**3.01 GENERAL INSTALLATION REQUIREMENTS**

- A. Finished Surfaces: Schedule raceway installation to avoid conflict with installed wall and ceiling surfaces. If unavoidable, coordinate work and repairs with Architect.
- B. Conduit Size:
 - 1. Minimum Size: 3/4-inch for power and control, unless otherwise noted. 3/4-inch for communication/data, unless otherwise noted. 3/4-inch for signal systems, unless otherwise noted.
- C. Underground Installations:
 - 1. More than 5-feet from Foundation Wall: Use PVC.
 - 2. Within 5-feet from Foundation Wall: Use PVC coated RMC.
 - 3. In or Under Slab on Grade: Use PVC.
 - 4. Minimum Size: 1-inch.
- D. Provide two pull strings/tapes in empty conduits. Types:
 - 1. Feeders: Polyester measure/pulling tape, Greenlee 4436 or approved.
 - 2. Branch Circuits and Low Voltage: Greenlee Poly Line 431 or approved.
 - 3. If fish tape is used for pulling line or low voltage wiring, fiberglass type to be used. Metal fish tapes will not be allowed.
 - 4. Secure pull string/tape at each end.
 - 5. Provide caps on ends of empty conduit to be used in future.
 - 6. Label both ends of empty conduits with location of opposite end.
- E. Elbows: Use PVC coated RMC for underground installations.
- F. Verify that field measurements are as shown on Drawings.
- G. Plan locations of conduit runs in advance of the installation and coordinate with ductwork, plumbing, ceiling and wall construction in the same areas.
- H. Locate penetrations and holes in advance where they are proposed in the structural sections such as footings, beams, and walls. Penetrations are acceptable only when the following occurs:
 - 1. Where shown on the Structural Drawings.
 - 2. As approved by the Structural Engineer prior to construction, and after submittal of drawing showing location, size, and position of each penetration.
- I. Verify routing and termination locations of conduit prior to rough-in.
- J. Conduit routing is shown on drawings in approximate locations unless dimensioned. Route as required to complete wiring system.
- K. Install raceways securely, in neat and workmanlike manner, as specified in NECA 1, Standard Practices for Good Workmanship in Electrical Construction.
- L. Install steel conduit as specified in NECA 101, Standard for Installing Steel Conduits.

- M. Install nonmetallic conduit in accordance with manufacturer's instructions.
- N. Inserts, anchors and sleeves.
 - 1. Coordinate location of inserts and anchor bolts for electrical systems prior to concrete pour.
 - 2. Coordinate location of sleeves with consideration for other building systems prior to concrete pour.
- O. Conduit Supports:
 - 1. Arrange supports to prevent misalignment during wiring installation.
 - 2. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
 - 3. Group related conduits; support using conduit rack. Construct rack using steel channel. Provide space on each for 25 percent additional conduits.
 - 4. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
 - 5. Do not attach conduit to ceiling support wires.
- P. Flexible metal conduit length not-to-exceed 6-feet, 3-feet in concealed walls. Provide sufficient slack to reduce the effect of vibration.
- Q. Install conduit seals at boundaries where ambient temperatures differ by 10 degrees F or more as shown on the drawings. Install seals on warm side of partition.
- R. Seal raceways stubbing up into electrical equipment. Plug raceways with conductors with duct-seal. Cap spare raceways and plug PVC raceway products with plastic plugs as made by Underground Products, or equal, shaped to fit snugly into the stubup.
- S. Seal raceways penetrating an exterior building wall to prevent moisture and vermin from entering into the electrical equipment.
- T. Use suitable caps on spare and empty conduits to protect installed conduit against entrance of dirt and moisture.
- U. Keep 277/480 volt wiring independent of 120/208 volt wiring. Keep power wiring independent of communication system wiring.
- V. Keep emergency system wiring independent of other wiring systems per NEC 700.
- W. Arrange conduit to maintain headroom and present neat appearance.
- X. Do not install conduits on surface of building exterior, along vapor barrier, across roof, on top of parapet walls, or across floors, unless otherwise noted on drawings.
- Y. Exposed conduits are permitted only in following areas:
 - 1. Where specifically noted on Drawings.
- Z. Do not install conduits or other electrical equipment in obvious passages, doorways, scuttles or crawl spaces which would impede or block area passage's intended usage.

- AA. Install continuous conduit and raceways for electrical power wiring and signal systems wiring.
- BB. Below Grade Conduit:
 - 1. See Section 26 05 43, Electrical Vaults and Underground Raceways.
 - 2. Use PVC, PVC coated RMC.
 - 3. Provide watertight conduit sleeves and rubber seals for conduit entering building below grade, Link-Seal system by Thunderline Corporation or approved equivalent.
- CC. Route conduit installed above accessible ceilings parallel and perpendicular to walls.
- DD. Maintain adequate clearance between conduit and piping.
- EE. Keep conduits a minimum of 12-inches away from steam or hot water radiant heating lines (at or above 104 degrees F) or 3-inches away from waste or water lines.
- FF. Cut conduit square using saw or pipecutter; deburr cut ends.
- GG. Bring conduit to shoulder of fittings; fasten securely.
- HH. Use conduit hubs to fasten conduit to cast boxes in damp and wet locations.
- II. Install no more than the equivalent of three 90 degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams.
- JJ. Use hydraulic one shot bender to fabricate elbows for bends in metal conduit larger than 2-inch size.
- KK. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.
- LL. Provide suitable fittings to accommodate expansion and deflection where conduit crosses seismic, control, and expansion joints.
- MM. Conduit Terminations for Signal Systems: Provide a plastic bushing on the end of conduit used for signal system wiring.
- NN. Feeders: Do not combine or change feeder runs.
- OO. Install conduit to preserve fire resistance rating of partitions and other elements.

3.02 RIGID METAL CONDUIT (RMC) INSTALLATION

- A. Outdoor Locations Above Grade: RMC.
- B. Damp Locations: RMC.
- C. In areas exposed to mechanical damage: RMC.
- D. For security conduits installed exposed and subject to tampering: RMC.

3.03 POLYVINYL CHLORIDE (PVC) EXTERNALLY COATED GALVANIZED RIGID METAL CONDUIT INSTALLATION

- A. Use PVC coated RMC 36-inch radius ells for power service conduits and 48-inch radius ells for telephone service conduits.

3.04 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC) INSTALLATION

- A. Use PVC coated liquidtight flexible metallic conduit for motors and equipment connections subject to movement or vibration and subjected to any of following conditions: Exterior location, moist or humid atmosphere, corrosive environments, water spray, oil, or grease.
- B. Install 12-inch minimum slack loop on liquidtight flexible metallic conduit.

3.05 ELECTRICAL POLYVINYL CHLORIDE (PVC) CONDUIT INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide equipment grounding conductor in PVC conduit runs containing power conductors.
- C. Underground Installation:
 - 1. Areas subject to vehicular traffic: Schedule 80 PVC.
 - 2. Other underground applications: Schedule 40 PVC, except where prohibited by the NEC or local codes.
- D. Convert PVC conduit to Rigid Metal Conduit (RMC) prior to emerging from underground, concrete encasement, or concrete slab.
- E. Provide expansion fittings to compensate for expansion and contraction per NEC 352.44.
- F. PVC elbows are not acceptable. Use fiberglass or PVC coated RMC.
- G. Trim cut ends inside and outside to remove rough edges.
- H. Provide bushings when entering a box, fitting or other enclosure.

3.06 CONDUIT FITTINGS INSTALLATION

- A. Conduit Joints: Assemble conduits continuous and secure to boxes, panels, luminaires and equipment with fittings to maintain continuity. Provide watertight joints where embedded in concrete, below grade or in damp locations. Seal metal conduit with metal thread primer. Rigid conduit connections to be threaded, clean and tight (metal to metal). Threadless connections are not permitted for RMC.
- B. 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.

- C. Use compression fittings in dry locations, damp and rain-exposed locations. Maximum size permitted in damp locations and locations exposed to rain is 2-inches in diameter.
- D. Use threaded type fittings in wet locations, hazardous locations, and damp or rain-exposed locations where conduit size is greater than 2-inches.
- E. Use PVC coated, threaded type fittings in corrosive environments.
- F. Use insulated type bushings with ground provision at switchboards, panelboards, safety disconnect switches, junction boxes that have feeders 60 amperes and greater.
- G. Condulets and Conduit Bodies:
 - 1. Do not use condulets and conduit bodies in conduits for signal wiring, in feeders 100 amp and larger, or for conductor splicing.
- H. Sleeves and Chases - Floor, Ceiling and Wall Penetrations: Provide necessary rigid conduit sleeves, openings and chases where conduits or cables are required to pass through floors, ceilings or walls.
- I. Expansion Joints:
 - 1. Provide conduits crossing expansion joints where cast in concrete with expansion-deflection fittings, installed per manufacturer's recommendations.
 - 2. Secure conduits 3-inches and larger to building structure on opposite sides of a building expansion joint with an expansion-deflection fitting across joint installed per manufacturer's recommendations.
 - 3. Provide conduits less than 3-inches where not cast in concrete with junction boxes securely fastened on both sides of expansion joint, connected together with 15-inches of slack (minimum of 15-inches longer than straight line length) flexible conduit and copper green ground bonding jumper. In lieu of this flexible conduit, an expansion-deflection fitting, as indicated for conduits 3-inch and larger may be installed.
 - 4. Verify expansion/deflection requirements with Structural Engineer prior to installation.
- J. Provide rigid conduit coupling flush with surface of slab or wall for conduit stubbed in concrete slab or wall to serve electrical equipment or an outlet under table or to supply shop tool, etc. Provide plug where conduit is to be used in future.

END OF SECTION 26 05 33

SECTION 26 05 34 - BOXES

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Outlet Boxes
 - 2. Pull and Junction Boxes
- B. Provide electrical boxes and fittings for a complete installation. Include but not limited to outlet boxes, junction boxes, pull boxes, bushings, locknuts and other necessary components.

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.
- B. In addition, reference the following:
 - 1. Section 26 05 33, Raceways
 - 2. Section 26 05 53, Identification for Electrical Systems

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Outlet Boxes:
 - 1. Hubbell
 - 2. Thomas & Betts
 - 3. Eaton/Crouse-Hinds
 - 4. Or approved equivalent.
- B. Pull and Junction Boxes:
 - 1. Eaton/Crouse-Hinds

2. Hoffman
3. Or approved equivalent.

2.02 OUTLET BOXES

- A. Luminaire Outlet: 4-inch octagonal box, 1-1/2-inches deep with 3/8-inch luminaire stud if required. Provide raised covers on bracket outlets and on ceiling outlets.
- B. Device Outlet: Installation of one or two devices at common location, minimum 4-inches square. Installation of one or two devices at common locations, minimum 4-inches square. Single- or two-gang flush device raised covers.
- C. Accessories: Provide outlet box accessories for each installation, including mounting brackets, wallboard hangers, extension rings, luminaire studs, cable clamps and metal straps for supporting outlet boxes, compatible with outlet boxes being used and meeting requirements of individual wiring situations.

2.03 PULL AND JUNCTION BOXES

- A. Construction: Provide ANSI 61 gray polyester powder painted sheet steel junction and pull boxes, with screw-on covers; of type shape and size, to suit each respective location and installation; with welded seams and equipped with stainless steel nuts, bolts, screws and washers.
- B. Location:
 1. Provide junction boxes above accessible ceilings for drops into walls for receptacle outlets from overhead.
 2. Provide junction boxes and pull boxes to facilitate installation of conductors and limiting accumulated angular sum of bends between boxes, cabinets and appliances to 270 degrees.
- C. In-Ground Cast Metal Box: NEMA 250, Type 6, outside flanged, recessed cover box for flush mounting:
 1. Construction: Galvanized cast iron.
 2. Cover: Smooth cover with neoprene gasket and stainless steel cover screws.
 3. Cover Legend: ELECTRIC.
- D. Fiberglass Handholes: Die molded glass fiber hand holes:
 1. Cable Entrance: Pre-cut 6- x 6-inch cable entrance at center bottom of each side.
 2. Cover: Fiberglass weatherproof cover with nonskid finish.
 3. Cover Legend: ELECTRIC.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Coordinate locations of floor boxes and wall mounted wiring device boxes with architectural and structural floor plans prior to rough-in.
- B. Install boxes securely, in a neat and workmanlike manner, as specified in NECA 1, Standard Practice of Good Workmanship in Electrical Construction.

- C. Secure boxes rigidly to substrate upon which they are being mounted, or solidly embed boxes in concrete or masonry.
- D. Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and as required by NEC. Locate boxes and conduit bodies so as to ensure accessibility of electrical wiring.
- E. Set wall mounted boxes at elevations to accommodate mounting heights shown on Architectural Elevations.
- F. Electrical boxes are shown on drawings in approximate locations unless dimensioned.
 - 1. Adjust box locations up to 10-feet if required to accommodate intended purpose.
- G. Install boxes to preserve fire resistance rating of partitions and other elements.
- H. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
- I. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
- J. Support boxes independently of conduit, except cast box that is connected to two rigid metal conduits both supported within 12-inches of box.
- K. Box Color Coding and Marking: Reference Section 26 05 53, Identification for Electrical Systems.
- L. Adjust boxes to be parallel with building lines. Boxes not plumb to building lines are not acceptable.
- M. Install knockout closures in unused box openings.
- N. Clean interior of boxes to remove dust, debris, and other material.
- O. Clean exposed surfaces and restore finish.

3.02 OUTLET BOXES INSTALLATION

- A. Mount outlet boxes, unless otherwise required by ADA, or noted on drawings, following distances above finished floor:
 - 1. Control Switches:
 - a. 48-inches to the top of outlet box.
 - 2. Receptacles: 15-inches to the bottom of outlet box.
- B. Locate outlet boxes to allow luminaires positioned as shown on floor plan.
- C. Align adjacent wall mounted outlet boxes for switches. Adjacent boxes not aligned vertically to be adjusted at no additional cost to Owner.

3.03 PULL AND JUNCTION BOXES INSTALLATION

- A. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
- B. Large Pull Boxes: Use hinged enclosure in interior dry locations, surface-mounted cast metal box in other locations.

END OF SECTION 26 05 34

SECTION 26 05 43 - ELECTRICAL VAULTS AND UNDERGROUND RACEWAYS

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Precast Vault Concrete Materials
 - 2. Vault Components
 - 3. Handholes
 - 4. Raceways

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.
- B. In addition, reference the following:
 - 1. Section 26 05 33, Raceways

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Tubing and Conduit (EPC-40 and EPC-80).
 - 2. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing.
 - 3. NEMA TC 6/8 - Extra-Strength PVC Plastic Utilities Duct for Underground Installation.
 - 4. NEMA TC 9 - Fittings for Extra-Strength Plastic Utilities Duct for Underground Installation.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, provide:
 - 1. Shop drawings detailing items provided under this Section:
 - a. Vault cover assigned designators.
 - b. Duct entry schedule.
 - c. Pulling iron working load.
 - d. ASTM load designation and percentage increase in live load for impact.
 - e. Vault section weights.
 - f. Rebar and piling support details.
 - g. Indicate dimensions, reinforcement, size and locations of openings, and accessory locations for precast manholes and handholes.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. Installer will have documented experience in the placement of vaults for a minimum of three years.
 - 2. Manufacturer will have documented experience in the manufacture of vaults for minimum of three years.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Precast Vault Concrete Materials:
 - 1. Oldcastle Precast
 - 2. Jensen Precast
 - 3. Or approved equivalent.
- B. Vault Components:
 - 1. Pull-In/Lift Irons:
 - a. Oldcastle Precast
 - b. Jensen Precast
 - c. Hubbell
 - d. Inwesco
 - e. Or approved equivalent.
 - 2. Vault Cable Rack Hardware:
 - a. Oldcastle Precast
 - b. Jensen Precast
 - c. Hubbell/Chance
 - d. Or approved equivalent.
 - 3. Grade Rings:
 - a. Oldcastle Precast
 - b. Jensen Precast
 - c. Neenah Foundry
 - d. Or approved equivalent.
- C. Handholes:
 - 1. Oldcastle Precast
 - 2. Jensen Precast
 - 3. Hubbell/Quazite
 - 4. Or approved equivalent.
- D. Raceways:
 - 1. See Section 26 05 33, Raceways.

2.02 PRECAST VAULT CONCRETE MATERIALS

- A. Concrete:
 - 1. Conform to ASTM C478.
 - 2. Compressive Strength: 5000-PSI minimum at 28 days.
 - 3. Air Content: 4 percent minimum.
 - 4. Cementitious Materials: Minimum of 564-lbs/cu yd.
 - 5. Course Aggregates: ASTM C33. Sound, crushed, angular granite stone only. Smooth or rounded stone will not be used.
 - 6. Fine Aggregates: ASTM C33. Free from organic impurities.
 - 7. Chemical Admixtures: ASTM C494. Calcium chloride or admixtures containing calcium chloride will not be used.
 - 8. Air Entraining Admixtures: ASTM C260.
- B. Reinforcing Steel: ASTM A615 grade 60 deformed bar.
- C. Lift Loops:
 - 1. ASTM A416 steel strand.
 - 2. Lifting loops made from deformed bars are not allowed.
- D. Flexible Joint Sealants:
 - 1. Butyl rubber based conforming to Federal Specification SS-S-210A, AASHTO-198, Type B-Butyl Rubber and maximum of 1 percent volatile matter.
 - 2. Suitable for application temperatures between 10 and 100 degrees F.
- E. Epoxy Gels:
 - 1. Two-component, solvent-free, moisture-insensitive, high modulus, high strength, structural epoxy paste adhesive.
 - 2. Meet requirements of ASTM C-881, Type I and II, Grade 3, Class B and C, epoxy resin adhesive.

2.03 VAULT COMPONENTS

- A. Lifting Inserts, Holes and Devices: Comply with OSHA Standard 1926.704. Size lift holes and inserts for precision fit with lift devices and not penetrating through structure wall. Precast manufacturer will provide lifting devices.
- B. Internally seal joints between tongue and groove; additionally, seal around external perimeter of the joint as follows:
 - 1. External Seals: Polyethylene backed flat butyl rubber sheet no less than 1/16-inch thick and 6-inches wide applied to outside perimeter of joint.
 - 2. Internal Seals: Plastic or paper-backed butyl rubber rope no less than 14 feet long and having cross-sectional area no less than annular space times height of joint.
 - 3. Contractor Option: Internal seals on round joints may consist of O-ring gasket conforming to ASTM C443, installed according to precast manufacturer's recommendation.
- C. Top Section: Include grooved opening for frame and cover.

- D. Frames and Doors: Spring assisted, galvanized, diamond plate door with hex-head locking latch.
- E. Precast Base Sections: Cast monolithically without construction joints or with approved galvanized or PVC water stop cast in the cold joint between base slab and walls. Include a round sump with cast sleeve sized by the vault manufacturer, and two 1-inch ground rod openings.
- F. Wall and inside slab finish resulting from casting against forms standard for industry will be acceptable. Form ties through the wall are not allowed. Float finish for exterior slab surfaces below grade. Small surface holes, normal color variations, normal form joint marks and minor depressions, chips and spalls will be tolerated. Dimensional tolerances will be as set forth in above references.
- G. Conduit entry size and locations as indicated on Drawings. Conduit openings not to extend into corners of structures, but may extend across joint with Engineer's approval.
- H. Knockout panel dimensions as required by structural design at their maximum burial depth using design loads specified below.
- I. Design components in accordance with ACI, ASTM C890 and the following loads:
 - 1. Horizontal Load on Walls and Knockout Panels: 80 psf per foot of burial depth (using a burial depth of 20-feet) plus a live lateral surcharge due to HS20 traffic load of 80 psf.
 - 2. Vertical Load on Below Grade Adaptor Slabs and Tops: Fill height of 20-feet assuming soil unit weight of 100 lbs/ft, plus live HS20 traffic load.
 - 3. Vertical Load on Covers Supported Around Perimeter: Live HS20 traffic load.
- J. Provide cable racks, mounting channels and inserts as indicated on Drawings. Cable Rack Inserts: Minimum load rating of 800 pounds.
- K. Cable Supports: Maple clamps and saddles.
- L. Sump Cover: ASTM A48; Class 30B gray cast iron.
- M. Rectangular sub-grade components to be designed and manufactured in conformance with ASTM C913 and as follows:
 - 1. Joints Between Precast Components: Keyways or tongue and groove. Joints to Accept Cast Iron Frames: Flat and no less than 5-inches wide.
 - 2. Construct access vault structures to sizes and elevations shown on Drawings.
 - 3. Manholes and Hardware:
 - a. Provide each manhole with one galvanized 3/4-inch rebar by 16-inches wide bolt-on ladder, mounting pads and mounting hardware. Rungs at 12-inches centers. Side Rails: 2-inches by 5/16-inches flat bar.
 - b. Supply each manhole entrance with one galvanized 3/4-inch by 16-inches wide bolt-on manhole step.
- N. Pull-In Irons:
 - 1. 7/8-inch hot-dipped galvanized pull-in irons located opposite each new and future main cable entrance.

- O. Vault Cable Rack Hardware:
 - 1. Cable Rack: Chance #1225
 - 2. Cable Rack Hooks: Chance #1231
 - 3. Cable Rack Insulators: Chance #1121
- P. Grade Rings:
 - 1. Rings, Covers and Frames: Class 35 gray iron. Covers and Frames: Equal to Neenah Foundry #R-1530 manhole frame Type B non-rocking lid. As required to meet grading level.

2.04 HANDHOLES

- A. Housing: Polyester pre-mix with calcium carbonate and polyester resins interlaced with fiber fiberglass and ultraviolet inhibitors.
- B. Extension Rings: Capable of accepting up to 18-inches of extension rings to adapt to re-leveling of grade during construction.
- C. Lid: Polyester pre-mix with calcium carbonate and polyester resins interlaced with fiber fiberglass and ultraviolet inhibitors, with nonskid finish, neoprene gaskets and stainless steel screws. Same size as opening of housing for as much hand space as possible for wire access.
- D. Lid Legend: ELECTRICAL.
- E. Cable Entrance: Pre-cut 6 x 6-inch cable entrance at center bottom of each side.

2.05 RACEWAYS

- A. See Section 26 05 33, Raceways.
- B. PVC Conduit: NEMA TC 2. Fittings and Conduit Bodies: NEMA TC 3.
 - 1. Schedule 40 for normal/utility feeds.
 - 2. Schedule 80 for emergency feeds.
- C. Plastic Utilities Duct: NEMA TC 6/8; PVC Type DB.
- D. Plastic Utility Duct Fittings: NEMA TC 9.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Install per manufacturer's instructions and recommendations.
- B. Plan locations of duct runs in advance of the installation. Coordinate with site utility systems and building foundation depths.
- C. Duct bank routing is shown on Drawings in approximate locations unless dimensions are indicated. Verify routing and termination locations of duct bank prior to excavation for rough-in. Route as required to complete duct system.

- D. Manhole and vault locations are shown on Drawings in approximate locations unless dimensions are indicated. Verify locations of manholes and vaults prior to excavating for installation. Locate as required to complete duct bank system.
- E. Requirements for Precast Concrete Vaults: Coordinate delivery of precast concrete manhole components to jobsite with manufacturer. Handle materials in accordance with ASTM C891 and manufacturer's recommendations. Handle and store components on job site using methods that prevent damage.
- F. Cleaning Vaults: Clean and leave free of debris, silt and rocks from installation work.

3.02 HANDHOLES

- A. Excavate to required depth and remove materials that are unstable or unsuitable for good foundation. Prepare level, compacted foundation extending 6-inches beyond base. Some vaults may be piling supported. Check structural drawings and details.
- B. Set base plumb and level. Set handhole such that cover surface matches finished grade.
- C. Provide minimum 12-inches of pea gravel below handhole for stability and drainage.
- D. Turn conduits up into handhold with required bend radius per guidance in Section 26 05 33, Raceways.
- E. Engrave cover of handhole to identify its purpose (examples: "Power," "Emergency Power," "Signal," "Fire Alarm").

3.03 RACEWAYS

- A. Power and System Duct Bank Raceways: PVC or PVC coated Rigid Metal Conduit.
- B. Elbows for Power and System Raceways: PVC coated Rigid Metal Conduit elbows.
- C. Provide all excavation and backfill required to support this Division of work. Coordinate trench specs for concrete, soil or sand backfill.
- D. Excavate trenches six inches deeper and wider than ductbank burial and cross-sectional requirements. Remove from the site all excavated materials not suitable or specified for backfill.
- E. Backfill trenches with sand, tamped firm and even to trench depth level.
- F. Backfill with non-expansive soil with limited porosity. Deposit all backfill soil in 6-inch layers. Thoroughly and carefully tamp all backfill soils to 90-95 percent compaction until the ductbank is covered by no less than 12-inches of material. Backfill and tamp the remainder of the excavation at 12-inch intervals. Uniformly grade the finished surface.

- G. Provide sheeting, shoring, dewatering and cleaning required to keep the trenches and their grades in proper condition for the work to be carried on.
- H. Restore all landscape and paving to like new to match existing.
- I. Slope raceways away from buildings and drain towards manholes or vaults with a minimum slope of 3 percent. Drain raceways into manholes or vaults, not into building structures or panels. Where sloping cannot be fully provided and there is a section of raceway where water would flow to a panel, switchboard, transformer, or building, provide a means to discharge the excess water from the raceway, or raceway system, consisting of a box or fitting at a low point prior to equipment entry, or at building entry, with a fitting or plug that can be removed to allow drainage.
- J. Cut raceway square using saw or pipe cutter; de-burr cut ends.
- K. Insert raceway to shoulder of fittings; fasten securely.
- L. Join PVC raceway using adhesive as recommended by manufacturer.
- M. Wipe PVC raceway dry and clean before joining. Apply full even coat of adhesive to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum.
- N. Number of equivalent 90-degree bends permitted between pull points: Maximum of three bends for power system conduit banks.
- O. Provide suitable fittings to accommodate expansion and deflection where required.
- P. Terminate raceway at manhole entries using end bells.
- Q. Use suitable separators and chairs installed not greater than 5 feet on centers.
- R. Provide 1/4-inch polypropylene pull rope in each empty raceway except sleeves and nipples.
- S. Swab raceway. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
- T. Interface installation of underground warning tape with backfilling. Install tape 6-inches below finished surface.

END OF SECTION 26 05 43

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Equipment Nameplates
 - 2. Device Labels
 - 3. Wire Markers

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.

1.04 SUBMITTALS

- A. Submittals not required for this Section.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. Manufacturer's Qualifications: Firms regularly engaged in manufacture of identification devices of types and sizes required.
 - 2. Manufacturer's standard products of categories and types required for each application as referenced in other Division 26, Electrical Sections. Where more than a single type is specified for application, provide single selection for each product category.
 - 3. Codes and Standards: Comply with ANSI A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices unless otherwise indicated.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Equipment Nameplates:
 - 1. B & I Nameplates
 - 2. Intellicum
 - 3. JBR Associates

4. Or approved equivalent.
- B. Device Labels:
1. Kroy
 2. Brady
 3. Or approved equivalent.
- C. Wire Markers:
1. Brady
 2. Panduit
 3. Sumitomo
 4. Or approved equivalent.

2.02 EQUIPMENT NAMEPLATES

- A. Engraved phenolic plastic, laminate, minimum 1/16-inch thick in the size indicated, with beveled edge border matching letter color. Federal specification LP-387A. All upper case letters in engraver standard letter style of the size and wording indicated. Provide with 2-mil adhesive backing. Embossed tape style labels are not acceptable.
- B. Color:
1. Normal (Utility): White letters on black background.
- C. Letter Size:
1. Use 1/2-inch letters minimum for identifying major equipment and loads, including switchgear, switchboards, distribution panels, generators, automatic transfer switches, UPS, etc.
 2. Use 1/4-inch or 1/2-inch letters minimum for identifying panels, breakers, transformers, VFDs, disconnects, etc.
 3. Use 3/16-inch minimum for identifying source, voltage, current, phase, wire configurations, and short circuit current rating (SCCR).
- D. Fasteners: Self-tapping stainless steel screws, except contact-type permanent adhesive where screws cannot or should not penetrate the substrate.
- E. The Architect, Engineer, Commissioning Agent and Owner reserve the right to make modifications to the nameplates as necessary.
- F. Locations:
1. Switchgear, switchboards, distribution panels, automatic transfer switches.
 2. Main breakers and distribution breakers in switchgear, switchboards, and distribution panels.
 3. Low-voltage equipment enclosures including, but not limited to, fire alarm panels, access control panels, and lighting control panels.

2.03 DEVICE LABELS

- A. Extra strength, laminated adhesive tape with 3/16-inch black letters on clear background. Embossed tape/punch tape style labels are not acceptable.
- B. Wall Switches:

1. Wall switches with engraved buttons do not require labeling.
- C. Junction Boxes: Label to show system identification, source circuit, or raceway origin. In finished areas, utilize device label. In unfinished areas or above ceilings, use of permanent ink marker is acceptable.
- D. Panel and circuit designation written in permanent marker on the back of the plate and inside all back-boxes and junction boxes.

2.04 WIRE MARKERS

- A. Description: Vinyl-cloth self-adhesive type wire markers.
- B. Locations: Each conductor at panelboard gutters, pull boxes, outlet boxes, junction boxes, and each load connection.
- C. Power and Lighting Circuits: Branch circuit or feeder number as indicated on drawings and source panel.
- D. Control Circuits: control wire number indicated on schematic and interconnection diagrams on drawings or shop drawings.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Coordinate designations used on Drawings with equipment nameplates and device labels.
- B. Install nameplates and labels parallel to equipment lines.
- C. Identify empty conduit and boxes with intended use.
- D. Provide typewritten branch panel schedules with protective clear transparent covers accounting for every breaker installed. Use actual room designations assigned by name or number near completion of the work, and not the designations shown on drawings.
- E. Provide color coded boxes as follows:
 1. Fire Alarm: Red.

3.02 EQUIPMENT NAMEPLATES

- A. Degrease and clean surfaces to receive nameplates.
- B. Secure equipment nameplates to equipment front using manufacturer adhesive backing.
- C. Secure equipment nameplates to inside surface of door on panelboard that is recessed in finished locations.
- D. Verify emergency system distribution equipment nameplate colors with Architect/Owner.

- E. Switchgear, switchboards, sub-distribution switchboards, distribution panels and branch panels to include name, source, voltage, current, phase, wire configuration, and short circuit current rating (SCCR). Transformers to include source, KVA, and secondary voltage, phase, and wire configuration.
- F. Provide nameplates for flush mounted branch panelboards identifying name on front door. On inside of door provide nameplate as noted above. Verify with Architect/Owner if nameplate on outside of door is required.
- G. Provide a second label at branch panelboards listing the means of identification of branch circuit conductors. This identification legend to consist of the color code used for each voltage system (208Y/120V and 480Y/277V). Include identification of both voltage systems on each label, regardless of the voltage of the panelboard to which the label is affixed. Comply with requirements of NEC 210.5.
 - 1. See Specification Section 26 05 19, Low-Voltage Electrical Power Conductors and Cables, for required conductor color code for this project.

3.03 DEVICE LABELS

- A. Reference 3.01, General Installation Requirements.
- B. Install per manufacturer's instructions and recommendations.
- C. Degrease and clean surfaces to receive labels. Fingers to be regularly cleaned of grease and debris to prevent fingerprints on labels. Labels installed dirty or with fingerprints to be replaced at no cost to Owner.

3.04 WIRE MARKERS

- A. Reference 3.01, General Installation Requirements.
- B. Install per manufacturer's instructions and recommendations.
- C. Provide wire markers on each conductor for power, control, signalling and communications circuits.

END OF SECTION 26 05 53

SECTION 26 05 73 - ELECTRICAL DISTRIBUTION SYSTEM STUDIES

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Protective Devices
 - 2. Short Circuit Study
 - 3. Selective Coordination Study
 - 4. Arc Flash Labels
 - 5. Arc Flash Risk Assessment
 - 6. Load-Flow and Voltage Drop Study

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.
- B. In addition, reference the following:
 - 1. Section 26 22 00, Low Voltage Transformers
 - 2. Section 26 23 00, Low Voltage Metal Enclosed Drawout Switchgear
 - 3. Section 26 24 13, Switchboards
 - 4. Section 26 28 00, Overcurrent Protective Devices
 - 5. Section 26 28 16, Enclosed Switches and Circuit Breakers
 - 6. Section 26 32 13, Engine Generators
 - 7. Section 26 36 00, Transfer Switches

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements and Division 01, General Requirements.
- B. In addition, meet the following:
 - 1. IEEE 242, Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems.
 - 2. IEEE 399, Recommended Practice for Industrial and Commercial Power Systems Analysis.
 - 3. IEEE 1584, Guide for Performing Arc Flash Calculation.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition provide:
 - 1. Power system studies required under this Section with submittals for electrical equipment, including overcurrent protective devices.
 - 2. Electrical equipment ordered prior to submittal of power system studies are not compliant with these specifications, and are subject to removal and replacement at no cost to Owner where not in compliance with Code and Contract Documents for selective coordination.

- a. Provide written verification with Stamp or Seal and signature of preparing Engineer.
3. Provide samples of NFPA 70E compliant arc flash hazard labeling for electrical equipment.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 1. Study Preparer Qualifications: Qualified engineer of switchgear manufacturer or approved professional engineer.
 - a. Experienced in preparation of studies of similar type and magnitude.
 - b. Familiar with software analysis products specified.
 2. Computer Software for Study Preparation: Use latest edition of commercially available software utilizing specified methodologies.
 - a. Acceptable Software Products:
 - 1) EasyPower
 - 2) Operation Technology, Inc; ETAP.
 - 3) SKM Systems Analysis, Inc; Power Tools for Windows.
 - b. The above manufacturers are known to be acceptable for study purposes. At the completion of the study, provide an electronic EasyPower file of the project to the Owner/Engineer. The file is to include all files required to edit and evaluate the electronic model, including libraries, one-lines, scenarios, TCC curves and all reports.
 3. Contractor Responsibility: Provide project-related data needed by study preparer, including equipment, wire sizes, insulation types, conduit types, actual circuit lengths and available fault currents from utility. Provide information in a timely matter to allow studies to be completed prior to release of equipment.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Analyze specific electrical and utilization equipment (according to NEC definition), actual protective devices to be used, and actual feeder lengths to be installed.
 1. Scope of Studies: New distribution wiring and equipment, from primary source to buses and branch circuit panelboards and equipment rated 50A or larger at utilization voltage.
 2. Primary Source, for Purposes of Studies: Utility company transformer secondary.
 3. Study Methodology: Comply with requirements and recommendations of NFPA 70, IEEE 399, and IEEE 242.
 4. Report: State methodology and rationale employed in making each type of calculation; identify computer software package(s) used.

- B. One-Line Diagrams: Prepare schematic drawing of electrical distribution system, with electrical equipment and wiring to be protected by protective devices; identify nodes on diagrams for reference on report that includes:
 - 1. Calculated fault impedance, X/R ratios, utility contribution, and short circuit values (asymmetric and symmetric) at main switchboard bus and downstream devices containing protective devices.
 - 2. Breaker and fuse ratings.
 - 3. Generator kW and voltage ratings, percent impedance, X/R ratios, and wiring connections.
 - 4. Transformer kVA and voltage ratings, percent impedance, X/R ratios, and wiring connections.
 - 5. Identification of each bus, with voltage.
 - 6. Conduit materials, feeder sizes, actual lengths, and X/R ratios.

2.02 PROTECTIVE DEVICES

- A. Provide protective devices of ratings and settings as required so that protective device closest to fault will open first.
- B. Replace existing protective devices to achieve specified performance.
- C. Analyze and determine ratings and settings of protective devices to minimize damage caused by fault and so that protective device closest to fault will open first.
 - 1. Required Ratings and Settings: Derive required ratings and settings of protective devices in consideration of upstream protective device settings and optimize system to ensure selective coordination.
 - 2. Motors with Solid-State Protective Modules: Select settings for best possible motor protection, taking into consideration actual installed motor torque and current and thermal characteristics.
 - 3. Identify any equipment, both new and existing, that is underrated.
 - 4. Identify specified protective devices that will not achieve required protection or coordination but with minor changes can be made to do so; provide such modified devices at no additional cost to Owner and identify them on submittals as "revised in accordance with Protective Device Coordination Study"; minor changes include different trip sizes in same frame, time curve characteristics of induction relays, CT ranges, etc.
 - 5. Identify specified protective devices that will not achieve required protection or coordination and cannot be field adjusted to do so, and for which adequate devices would involve change to contract sum.
 - 6. In all cases where adequate protection or coordination cannot be achieved at no extra cost to Owner, provide a discussion of alternatives and logical compromises for best achievable coordination.
 - 7. Do not order, furnish, or install protective devices that do not meet performance requirements unless specifically approved by Engineer.
- D. Protective Device Rating and Setting Chart: Summarize in tabular format required characteristics for each protective device based on analysis; include:
 - 1. Device identification.
 - 2. Relay CT ratios, tap, time dial, and instantaneous pickup.
 - 3. Circuit breaker sensor rating, long-time, short-time, and instantaneous settings, and time bands.

4. Fuse rating and type.
 5. Ground fault pickup and time delay.
 6. Input level and expected response time at two test points that are compatible with commonly available test equipment and ratings of protective device.
 7. Highlight devices that as furnished by Contractor will not achieve required protection.
- E. Specified equipment has been designed and selected to achieve specified performance; ensure that equipment actually installed provides that performance.
- F. In addition to requirements specified elsewhere, provide overcurrent protective devices having ratings and settings in accordance with results of system studies.

2.03 SHORT CIRCUIT STUDY

- A. Calculate fault impedance to determine available 3-phase short circuit and ground fault currents at each bus and piece of equipment during normal conditions, alternate operations, emergency power conditions, and other operations that could result in maximum fault conditions.
1. Show fault currents available at key points in system down to fault current of 1,000 A at 480 V and 208 V.
 2. Include motor contributions in determining momentary and interrupting ratings of protective devices.
 3. Primary Fault Level Assumptions: Obtain data from utility company.

2.04 SELECTIVE COORDINATION STUDY

- A. For all emergency, legally required standby and critical operations systems over current devices, perform an organized time-current analysis of each protective device in series from individual device back to source, under normal and emergency power conditions.
1. Graphically illustrate that adequate time separation exists between series devices, including upstream primary device.
 2. Plot specific time-current characteristics of each protective device on log-log paper.
 3. Organize plots so that upstream devices are clearly depicted on one sheet.
 4. Also show following on curve plot sheets:
 - a. Device identification.
 - b. Voltage and current transformer ratios for curves.
 - c. 3-phase and 1-phase ANSI damage curves for each transformer.
 - d. No-damage, melting, and clearing curves for fuses.
 - e. Cable damage curves.
 - f. Transformer inrush points.
 - g. Maximum short circuit cutoff point.
 - h. Simple one-line diagram for portion of system that each curve plot illustrates.
 - i. Software report for each curve plot, labeled for identification.
- B. Devices to coordinate down to 0.01 seconds. Coordination required for emergency systems, legally required systems, and elevators.

2.05 ARC FLASH LABELS

- A. Provide label compliant with NFPA 70E guidelines indicating personal protective equipment (PPE) recommended for servicing of electrical equipment while energized, as well as calculated incident energy levels and arc flash protective boundary distance.

2.06 ARC FLASH RISK ASSESSMENT

- A. Calculate arc flash incident energy (AFIE) levels and flash protection boundary distances to determine required level of personal protective equipment (PPE) at each bus and piece of equipment during normal conditions, emergency power conditions, and other operations that could result in maximum arc flash incident energy levels.
 - 1. Show flash protection boundary distance.
 - 2. Include incident energy levels.

PART 3 - EXECUTION

3.01 FIELD QUALITY CONTROL

- A. Provide services of qualified field engineer and necessary tools and equipment to test, calibrate, and adjust installed protective devices to conform to requirements determined by coordination analysis.
- B. Adjust installed protective devices having adjustable settings to conform to requirements determined by coordination analysis.
- C. Submit report showing final adjusted settings of protective devices.

3.02 ELECTRICAL POWER SYSTEM STUDIES

- A. Short Circuit Analysis Study:
 - 1. Provide complete short circuit study, equipment interrupting and withstand evaluation. Study to include complete electrical distribution system, including contributions from normal source of power without alternative sources of power. Include complete low voltage distribution systems as specified in this Section.
 - 2. Study Basis: thoroughly cover normal and alternative operation modes that can produce maximum fault conditions, including simultaneous motor contributions.
 - 3. Perform study in accordance with applicable ANSI/IEEE Standards.
 - 4. Study Input Data: Utility company short circuit single and three phase contribution, and X/R ratio; resistance and reactance components of each feeder, busway and branch impedance; motor and generator contributions; applicable circuit parameters and contribute to short circuit duty.
 - 5. Calculate short circuit momentary duties and interrupting duties on basis of maximum available fault current at each switchgear bus, switchboard, motor control center, panelboards, transfer switches, busway plug connection point, dry-type transformer primary and secondary locations, other significant locations throughout system affected by available fault current (including large HVAC units, uninterruptible power supplies, etc.).

6. Perform equipment evaluation study to determine adequacy of overcurrent protection devices by tabulating and comparing short circuit ratings of these devices with available fault current. Notify Owner in writing where problem areas or inadequacies appear in electrical equipment.
 7. Study Report: In bound final report, include sheets listing tabulated information from study, including feeder impedances, motor, utility and generator impedances and fault contributions, and resulting short circuit current including asymmetrical, symmetrical, three, five and eight cycle fault current levels, and line-to-neutral and three-phase-bolted-fault current levels at each calculated point in electrical distribution system.
- B. Selective Coordination Study:
1. Perform time-current coordination analysis with aid of computer software intended for this purpose. Include determination of settings, ratings, or types for overcurrent protective devices supplied.
 2. Where necessary, make an appropriate compromise between system protection and service continuity with service continuity considered more important than system protection.
 3. Provide sufficient number of computer generated log-log plots to indicate degree of system protection and coordination by displaying time-current characteristics of series connected overcurrent devices and other pertinent system parameters.
 4. Time-Current Coordination Curves: Determine settings of overcurrent protective devices to achieve selective coordination. Graphically illustrate that adequate time separation exists between devices installed in series, including power utility company's upstream devices. Prepare separate sets of curves for the switching schemes and for emergency periods where the power source is local generation. Show the following information:
 - a. Device tag and title, one-line diagram with legend identifying the portion of the system covered.
 - b. Terminate device characteristic curves at a point reflecting maximum symmetrical fault current to which the device is exposed.
 - c. Identify the device associated with each curve by manufacturer type, function, and, if applicable, tap, time delay, and instantaneous settings recommended.
 - d. No more than 3 devices per TCC.
 - e. Plot the following listed characteristic curves, as applicable:
 - 1) Power utility's overcurrent protective device.
 - 2) Medium-voltage equipment overcurrent relays.
 - 3) Medium- and low-voltage fuses including manufacturer's minimum melt, total clearing, tolerance, and damage bands.
 - 4) Low-voltage equipment circuit-breaker trip devices, including manufacturer's tolerance bands.
 - 5) Transformer full-load current, magnetizing inrush current, and ANSI through-fault protection curves.
 - 6) Cables and conductors damage curves.
 - 7) Ground-fault protective devices.
 - 8) Generator short-circuit decrement curve and generator damage point.
 - 9) Circuit breakers in each motor-control center and panelboard, one of each type and rating.

5. Selective coordination of devices by use of manufacturer's tested combination data is acceptable. Devices to be shown on time current curves as required and specifically noted as a tested combination to the appropriate available fault.
 6. Study includes separate, tabular computer printout containing suggested device settings of adjustable overcurrent protective devices, equipment where device is located, and device number corresponding to device on system one-line diagram.
 7. Provide computer generated system one-line diagram which clearly identifies individual equipment buses, bus numbers, device identification numbers and maximum available short-circuit current at each bus when known.
 8. Discussion Section which evaluates degree of system protection and service continuity with overcurrent devices, along with recommendations as required for addressing system protection or device coordination deficiencies.
 9. Call significant deficiencies in protection and/or coordination to attention of Engineer and recommendations made for improvements as soon as they are identified.
 10. Contractor responsible for supplying pertinent electrical system conductor, circuit breaker, generator, and other component and system information in timely manner to allow time-current analysis to be completed prior to final installation.
- C. Arc Flash Risk Assessment:
1. Perform arc flash risk assessment with aid of computer software intended for this purpose.
 2. Perform arc flash risk assessment in conjunction with short-circuit analysis and time-current coordination analysis.
 3. Submit results of assessment in tabular form, and include device or bus name, bolted fault and arcing fault current levels, flash protection boundary distances, personal-protective equipment classes and AFIE levels.
 4. Perform analysis under worst-case arc flash conditions, and final report describes, when applicable, how these conditions differ from worst-case bolted fault conditions.
 5. Arc flash risk assessment includes recommendations for reducing AFIE levels and enhancing worker safety.
 6. Proposed vendor demonstrates experience with arc flash risk assessment by submitting names of at least ten actual arc flash risk assessments it has performed in past year.
 7. Proposed vendor demonstrates capabilities in providing equipment, services, and training to reduce arc flash exposure and train workers in accordance with NFPA 70E and other applicable standards.
 8. Proposed vendor demonstrates experience in providing equipment labels in compliance with CEC and ANSI Z535.4 to identify AFIE and appropriate Personal Protective Equipment classes.
- D. Load-Flow And Voltage Drop Study:
1. Perform a load-flow and voltage drop study to determine the steady state loading profile of the system. Determine load-flow and voltage drop based of full load current shown in the design. The model should include all loads indicated in the panel schedules, one-line diagram, and equipment connection schedules, as applicable.

2. Prepare the load-flow and voltage-drop analysis and report to show power system components that are overloaded; indicate voltage drop for all buses in the system.
3. Provide recommendations for areas that have voltage drop values higher than 2-percent for feeders.
4. Indicate the recommended fixed transformer taps that might be used to solve the voltage drop issues.

END OF SECTION 26 05 73

SECTION 26 08 05 - ELECTRICAL ACCEPTANCE TESTING

PART 1 - GENERAL

1.01 SUMMARY

- A. Work included: Testing, evaluation, and calibration of:
 - 1. Power Distribution Equipment
- B. Test procedures specified in this Section are in addition to those specified in other Sections of Division 26, Electrical.

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. Acceptance Testing Criteria: Latest edition of Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems, published by NETA.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, provide:
 - 1. Quality Assurance Submittal: Submit proof of qualification that Testing Firm meets all requirements set forth in this Section. Refer to 1.05 Quality Assurance, below.
 - 2. Test Reports:
 - a. Maintain written record of tests.
 - b. At completion of project, assemble and certify a final test report. Document testing and performance compliance with NETA recommended forms, parameters, and level of detail. Submit report to Architect prior to final acceptance to include:
 - 1) Summary of Project
 - 2) Description of Equipment Tested
 - 3) Visual Inspection Report
 - 4) Description of Tests
 - 5) Test Results
 - 6) Conclusions and Recommendations

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:

1. Qualifications of Testing Firm:
 - a. Corporately independent testing organization which can function as an unbiased testing authority, professionally independent of manufacturers, suppliers and installers of equipment or systems evaluated by testing firms.
 - b. Independent organization as defined by a NETA Level II ETT certified testing agency in compliance with NETA Level II ETT certified testing requirements and practices.
 - c. Regularly engaged in testing of electrical materials, devices, appliances, electrical installations and systems for purpose of preventing injury to persons or damage to property and other equipment.
 - d. Engaged in testing practices for minimum of five years.
 - e. Use only full-time technicians, regularly employed by firm for testing services. Electrically unskilled employees are not permitted to perform testing or assistance of any kind. Electricians and line workers may assist, but may not perform testing or inspection services.
2. Certifications:
 - a. Comply with NETA Level II ETT certified testing agency criteria for accreditation of testing laboratories. Full membership in NETA constitutes proof of such criteria.
 - b. Lead, on site, technical person currently certified by NETA in Electrical Power Distribution System Testing.
 - c. Instruments used by testing firm to evaluate electrical performance meet NETA Specifications for Test Instruments.

1.06 PERFORMANCE REQUIREMENTS

- A. Retain services of recognized independent testing firm for purpose of performing inspections and tests as specified.
- B. Independent test firm providing report direct to Architect.
- C. Material, equipment, labor and technical supervision to perform tests and inspections provided by testing firm.
- D. Intent of these tests to assure that electrical equipment, Contractor or Owner supplied, is operational within industry and manufacturer's tolerances and is installed in accordance with design Specifications.
- E. Tests and inspections determine suitability for energization.
- F. Supply to independent testing organization complete sets of approved shop drawings, coordination study (provided by Contractor's equipment supplier under Contractor's direction), setting of adjustable devices and other information requested by testing agency.

1.07 SCOPE OF WORK

- A. Provide testing, evaluation, and calibration of the following:
 1. Medium Voltage Transformers
 2. Low Voltage Circuit Breakers (greater than 100 amp)
 3. Medium Voltage Circuit Breakers

4. Metal Enclosed Switchgear
 5. Switchboards
 6. Panelboards
 7. Medium Voltage Cables
 8. Grounding Systems
 9. Automatic Transfer Switches
- B. Test cable, equipment and systems listed above to assure proper installation, setting, connections, and functioning in accordance with the Drawings, Specifications, and the manufacturer's recommendations. It is the intent that field testing be extensive, and complete as specified, to provide positive assurance of totally correct installation and operation of equipment.
- C. Furnish necessary test equipment to satisfactorily perform tests specified.

PART 2 - PRODUCTS

2.01 POWER DISTRIBUTION EQUIPMENT

- A. The testing agency provides test equipment.
- B. Care and Precautions:
1. Contractor responsible for any damage to equipment or material due to improper test procedures or test apparatus handling. Replace or restore to original condition any damaged equipment or material.
 2. Provide and use safety devices such as rubber gloves and blankets, protective screen, barriers and danger signs to adequately protect and warn personnel in the vicinity of the tests.
 3. Use test equipment that is calibrated and certified traceable to the National Bureau of Standards. Certification Date: No later than 6 months.

PART 3 - EXECUTION

3.01 FIELD QUALITY CONTROL

- A. Tests:
1. Contractor's Responsibilities:
 - a. Perform routine insulation resistance, continuity and rotation tests for distribution and utilization equipment prior to and in addition to tests performed by testing firm.
 - b. Notify testing firm when equipment becomes available for acceptance tests. Coordinate work to expedite project scheduling.
 2. Testing Firm's Responsibilities:
 - a. Notify Architect prior to commencement of any testing.
 - b. Report directly to Architect any systems, material or installation found defective on basis of acceptance tests.
 - c. Provide auxiliary portable power supply necessary for conducting tests.

3.02 REPLACEMENT OF DEFECTIVE MATERIAL OR EQUIPMENT

- A. Repair or replace any material or equipment found defective or cannot pass the tests specified in this Section at no additional cost to the Owner.

- B. Complete correction of defective material or equipment and retesting within the Contract period.
- C. If the equipment or material cannot pass the second test, remove the defective equipment and replace it with equivalent equipment that meets the requirements of the Specifications. Such replacement at no additional cost to the Owner.

3.03 ADJUSTING

- A. Final Settings: Testing firm responsible for implementing final settings and adjustments on protective devices and tap changes in accordance with Architect's specified values.

END OF SECTION 26 08 05

SECTION 26 12 00 - MEDIUM-VOLTAGE TRANSFORMERS

PART 1 - GENERAL

1.01 SUMMARY

- A. Work included:
 - 1. Liquid Filled Transformers

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. Provide factory tests to applicable IEEE standards. Include the routine tests as defined in the standards and the following other tests:
 - a. Impedance voltage and load loss.
 - b. Dielectric tests.
 - c. Audible sound level.
 - d. Short circuit capability.
 - e. Temperature rise.
 - 2. Test insulating liquid samples in accordance with IEEE standards.
 - 3. Make completed transformer available for inspection at manufacturer's factory prior to packaging for shipment. Notify Owner's Authorized Representative or Engineer at least 7 days before inspection is scheduled to be conducted.
 - 4. Allow witnessing of factory inspections and tests at manufacturer's test facility. Notify Owner's Authorized Representative or Engineer at least 7 days before inspections and tests are scheduled.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS**2.01 MANUFACTURERS**

- A. Eaton Electrical
- B. ABB/General Electric
- C. Basis of Design: Schneider Electric/Square D
- D. Or approved equivalent.

2.02 LIQUID-FILLED TRANSFORMERS

- A. Provide compartmental type, self cooled, tamperproof and weatherproof with pad mounting provisions. Comply within the latest applicable standards of NEMA and ANSI. Provide transformer with no exposed screws, bolts or other fastening devices which are externally removable.
- B. Voltage: Unless otherwise indicated on Drawings, transformers are 3 phase delta primary and 3 phase wye secondary.
- C. Taps: Standard NEMA, ANSI 3 phase primary taps: 10 percent range of tap voltage adjustment for transformers smaller than 30KVA and 15 percent range tap voltage adjustment for 30KVA and larger.
- D. Rating: Unless otherwise indicated on Drawings, provide transformer ratings continuous, with an average temperature rise, by resistance, not to exceed 65C in a 30C ambient with 100 percent of rated nameplate load connected to the secondary.
- E. Sealed tank construction of sufficient strength to withstand a pressure of 7 PSI without permanent distortion. Provide welded cover with the fastening tamperproof. Provide exterior cooling panels, lifting eyes, jacking pads, and welded cover.
- F. Core and coil assembly core type with aluminum windings. Where wye primary.wye secondary is scheduled or required provide triplex or 5-legged core design. Transformer coils or continuous wire wound construction. Provide each coil layer with end fillers or tie-downs to provide maximum mechanical strength. Braze tap terminations directly to bus stubs or lugs firmly mounted. Materials incorporated must have at least a minimum of 1 year of proven field usage. Accelerated laboratory test not acceptable.
- G. Tap changing mechanism for deenergized operation only and externally operable with two 2.5 percent full capacity taps above and two 2.5 percent full capacity taps below normal rated primary voltage.

- H. High and low voltage compartments to be located side-by-side separated by a steel barrier. Provide full height air filled terminal compartments with individual doors. Provide high voltage door fastenings which are not accessible until the low voltage door has been opened. Provide the low voltage door with a three point latching mechanism with vault type handle provisions for a single padlock. Provide doors with lift off type stainless steel hinges and door stops. Provide removable front sills and ANSI tank grounding provisions in each compartment.
- I. Dead front construction with load break gang operated immersed switch with switch hand located in the high voltage compartment for operating with distribution hot stick. Provide 2-position on-off for radial feed unless loop feed is indicated on Drawings. If loop is indicated provide 4-position switch. Provide dry well canister mounted current limiting fuses externally replaceable with distribution hot stick. Size fuses to manufacturer's recommendation to final design load. Provide Series NX Arc-Strangler fuses. Provide distribution class lightning arrester mounted in the high voltage compartment.
- J. Secondary Terminals: Low voltage bushings, 6 hole spade, molded epoxy with blade type spade terminals for NEMA standard hole spacing arranged for vertical take-off. Provide low voltage neutral with insulated busing grounded to the transformer tank by removable grounding strap. Wye-wye connected transformers are provided with the high and low voltage neutrals internally tied with a removable link for testing.
- K. Accessories:
 - 1. 1-inch drain valve/sampling device
 - 2. Dial type thermometer
 - 3. Magnetic liquid level gauge
 - 4. Pressure/vacuum gauge
 - 5. Pressure relief valve
 - 6. 1000KVA and larger provide sudden pressure relay
- L. Degrease, clean, phosphatize, prime and finish enclosures with a gray, baked enamel. Visibly ground the core of the transformer to this enclosure by means of a flexible ground strap.
- M. Mount transformer core and coil on vibration mounting pads designed to suppress transmission of 120 cycle frequencies and harmonics thereof. Arrange and select pads in consideration of core and coil weight. Provide additional noise suppressing mountings external to transformers where transformers are located in mechanical spaces.
- N. Maximum sound levels from no load to rated load:
 - 1. 45dB through 150KVA.
 - 2. 50dB through 300KVA.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Examination:

1. Verify that support pads are ready to receive products.
 2. Verify that field measurements are as shown on shop drawings.
- B. Installation:
1. Provide transformers with 8-inch thick working pad of 2500 to 3000 PSI concrete reinforced with 8 gauge wire fabric or No. 6 reinforcing bars on 12-inch centers. Provide 8-inch thick base of gravel below pad for support. Size pads to extend 6-inches on each side from the transformers most prominent dimension. Provide 3/4-inch by 10 foot ground rod at each corner thermally bonded to a No. 2 bare copper ground conductor, bonded to transformer, and concrete reinforcement.
 2. Mount transformers no closer to combustible materials than allowed by applicable codes. Mount transformers away from structure as recommended by manufacturer and power utility to allow for adequate ventilation.
 3. Provide 8-inch round by 24-inch (above and below grade) concrete and steel bollards where subject to vehicular traffic.
 4. Provide oil enclosure consisting of fire resistant dikes, curbed areas, or basin or trenches filled with coarse crushed stone. Provide requirements of applicable codes unless specifically noted otherwise on Drawings.
 5. Transformers grouped together or grouped with other electrical equipment are to have finishes matching in color and type.
 6. Install plumb and level.
- C. Field Quality Control:
1. Inspect and test in accordance with NETA STD ATS, except Section 4.
 2. Check for damage and tight connections prior to energizing transformers.
 3. Measure primary and secondary voltages and make appropriate tap adjustments so that secondary voltage is above and within 2 percent of rated voltage.
 4. Examine and remedy excessively noisy transformer to achieve an acceptable noise level or replace with a new unit with an acceptable sound level.

3.02 LIQUID FILLED TRANSFORMERS

- A. Perform inspections and tests listed in NETA STD ATS, Section 7.2. In addition to the basic requirements of Section 7.2, include the following:
1. Liquid-Filled Transformers:
 - a. Calculate the polarization index.
 - b. Perform excitation-current tests in accordance with test equipment manufacturer's published data.
 - c. Measure insulating liquid's specific gravity, water content, and dissipation factor or power factor.

END OF SECTION 26 12 00

SECTION 26 24 13 - SWITCHBOARDS

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Switchboards
 - 2. Non-Utility Power Meters (Microprocessor-Based Metering Equipment)

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.
- B. In addition, reference the following:
 - 1. Section 26 05 73, Electrical Distribution System Studies.
 - 2. Section 26 28 00, Overcurrent Protective Devices.

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. UL 891, Standards for Switchboards.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, provide:
 - 1. Operation and Maintenance Manuals:
 - a. After completion of work and start-up of the equipment at the project site, deliver to the Owner's Authorized Representative operation instructions, maintenance manuals and drawings presenting full details for care and maintenance of each time of equipment provided under this Contract.
 - b. Each copy to contain the operating and maintenance information and parts lists for equipment provided under this Contract. When necessary, provide supplemental drawings to show system operation and servicing maintenance points. For electrical components, provide wiring and connection diagrams. Include instructions required to accomplish specified operation and functions. Data to be neat, clean and legible.
 - c. Switchboard drawings and wiring diagrams to be included and up to date at the completion of start-up and system acceptance by the Owner. Drawings and wiring diagrams to include any field modifications or changes to reflect actual as-installed conditions.
 - d. In general, the manual to include, but not necessarily be limited to, the following:
 - 1) Switchboard Elevation and One Line.
 - 2) AC and DC Schematic and Physical Component Layout Drawings.
 - 3) Remote Interface Drawing.

- 4) Bill of Material.
- 5) Description of Operation.
- e. Provide manuals adequately labeled with the project name and location and the contents indexed.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Switchboards
 1. Eaton
 2. GE Industries
 3. Siemens
 4. Basis of Design: Schneider Electric/Square D
 5. Or approved equivalent.
- B. Non-Utility Power Meters (Microprocessor-Based Metering Equipment)
 1. Eaton
 2. GE Industries
 3. Siemens
 4. Basis of Design: Schneider Electric/Square D
 5. Or approved equivalent.
- C. Manufacturers listed above are allowed on condition of meeting specified conditions including available space for equipment, Code required working clearances, selective coordination per Section 26 05 73, Electrical Distribution System Studies, and amps interrupting capacity (AIC) per short circuit study in Section 26 05 73, Electrical Distribution System Studies. Prior to submitting bid, manufacturer to provide documentation to Engineer verifying specific conditions, including those mentioned above, can be met. Remove and replace electrical equipment installed, at no cost to the Owner, that does not meet these conditions.

2.02 SWITCHBOARDS

- A. Description: NEMA PB 2 freestanding switchboard with electrical ratings and configurations as indicated and specified.
- B. Integrated Equipment Rating: Provide fully rated integrated equipment rating greater than the available fault current. Series rated switchboards are not acceptable. Reference drawings for available fault current. If drawings do not have available fault current shown, then coordinate with serving electrical utility.

- C. Enclosure to be suitable for having 100 percent rated circuit breakers installed and applied at 100 percent. Enclosure to meet minimum size and ventilation requirements set forth on the 100 percent circuit breaker or must be UL tested for 100 percent rating of the circuit breaker.
- D. Bus Material: Copper, standard size.
- E. Ground Bus: Extend length of switchboard, 50 percent of phase bus capacity.
- F. Neutral Bus: 100 percent rated, full length of switchboard.
- G. Lugs: Tool applied compression type for copper conductors.
- H. Molded Case Circuit Breakers: Integral thermal and instantaneous magnetic trip in each pole.
 - 1. Provide circuit breakers UL listed as Type HACR for air conditioning equipment branch circuits.
 - 2. Include shunt trip where indicated.
- I. Circuit breakers 1200 Amp and Greater: Provide breaker with energy-reducing maintenance switching with local status indicator per CEC Article 240.87(B).
- J. Metering Transformer Compartment: For utility company's use; compartment size, bus spacing and drilling, door, and locking and sealing requirements in accordance with utility company's requirements.
- K. Future Provisions: Fully equip spaces for future devices with bussing and bus connections, suitably insulated and braced for short circuit currents. Provide continuous current rating as indicated.
- L. Enclosure: NEMA Type 3R - Outdoor.
 - 1. Align sections as shown on Drawings.
 - 2. Finish: Manufacturer's standard light gray enamel over external surfaces. Coat internal surfaces with minimum one coat corrosion-resisting paint, or plate with cadmium or zinc.
 - 3. Removable front covers: Screw attached.
 - 4. Provide removable hinge pins on hinged doors.
 - 5. Provide full height barriers between sections.

2.03 NON-UTILITY POWER METERS (MICROPROCESSOR-BASED METERING EQUIPMENT)

- A. Power Xpert Branch Circuit Monitor
 - 1. The main breaker meter to be Eaton PowerXpert 4000 or approved equal.
 - 2. Sub breaker meters to be Eaton Power IQ 250 or approved equal.
 - 3. Power meters to have certified revenue accuracy as per ANSI C12.20 and IEC 60687 class 0.5S or better.
 - 4. The meter and associated instrument transformers to provide accuracy of +/- 1 percent over the range of 5 percent to 100 percent of rated current or voltage, +/- 2 percent over the range of 5 percent to 100 percent of rated power.

5. Where shown on Drawings, supply a UL listed microprocessor-based Branch Circuit Monitoring System (PXBCM), or approved equal having the specified features. This system is to consist of meter base, and meter module(s) as described below.
6. The Branch Circuit Monitor is to measure the following operational data for up to 84 branch load circuits:
 - a. Forward and Reverse kWh.
 - b. Watts, VA, Amps, Power Factor.
 - c. Present and Peak demand readings for Amps, Forward and Reverse Watts.
 - d. Maximum Watts, VA, Amps.
7. The Branch Circuit Monitor is to support alarms for current that can be set based on percent of breaker rating and alarms for voltage based on percent of nominal voltage.
 - a. High, High-High, Low, Low-Low non-latching alarms for current.
 - b. High and Low latching alarms for current, resettable via Modbus or the WEB interface.
 - c. High and Low latching and non-latching voltage alarms for each meter module input voltage.
 - d. Alarm Status and alarm counters shall be available via Modbus communications.
8. Branch Circuit monitor is to support upgradeable firmware via communications.
9. The Branch Circuit Monitor is to have the following ratings:
 - a. Elevation: 0 to 9843 ft (0 to 3000M).
 - b. Pollution degree: 2 (IEC 60644-1).
 - c. Ambient temperature range: -20 degrees C to +70 degrees C (-4 degrees to +158 degrees F).
 - d. Storage temperature range: -40 degrees C to +85 degrees C (-40 degrees F to +185 degrees F).
 - e. Humidity: 5 percent to 95 percent non-condensing.
 - f. PXBCM as a component to have a NEMA 1 rating. When installed in an enclosure it will have the same rating as its enclosure NEMA 3R.
 - g. Housing Ingress Protection: IP20 as a component, in an enclosure the same as the enclosure.
 - h. CE Mark.
 - i. EMC (Electromagnetic Compatibility):
 - 1) IEC61326: EMI IEC61000-4-X Level 3.
 - 2) CISPR 11: Class B emissions, CISPR 22 (Ethernet) class B emissions.
 - 3) FCC Part 15 Class B emissions.
 - j. UL/cUL 61010-1 3rd Edition.
 - k. EN61010-1.
10. PXBCM Meter Base:
 - a. Each PXBCM-MB Meter Base to support connection of up to 4 Meter Modules in either a MMS Strip or MME External configuration monitoring a total of up to 100 single-phase two-wire AC loads, 48 single-phase three-wire AC loads or 32 three-phase four-wire AC loads or combinations not to exceed 25 poles per meter module.
 - b. The PXBCM-MB to be equipped with 4 meter module ports. Each port will provide control power and communications to either a PXBCM-MMS Meter Module Strip or a PXBCM-MME Meter Module External with a maximum cable length of 28 feet between each Meter Base and each Meter Module.

- c. Each PXBCM-MB is to support connection to up to 4 PXBCM-MMS Meter Module Strip or 4 PXBCM-MME Meter Module External, or a combination of up to 4 total PXBCM-MMS and PXBCM-MME each meter module with independent single or three phase voltage metering circuits with inputs up to 277V L-N and 480V L-L.
 - d. PXBCM-MB Power Supply to be rated for 100-277VAC L:N +/-10 percent CAT III, 47-63 Hz, 6W.
 - e. The PXBCM-MB to include a 3 terminal RS-485 serial port for Modbus RTU communications and an RJ-45 port for Ethernet communications. The Ethernet port will support Modbus TCP communications as well as an Embedded WEB server.
 - f. The PXBCM-MB embedded WEB server is to support device configuration for to up to 4 PXBCM-MMS Meter Module Strip or 4 PXBCM-MME Meter Module External, or a combination of up to 4 total PXBCM-MMS and PXBCM-MME and display of up to 100 points of metering data. It will be possible to save device configuration information to a file for archiving and for uploading to PXBCM.
 - g. The PXBCM-MB to support connection to a pre-configured HMI via RS-485 serial port. The HMI will not require configuration.
 - h. The PXBCM-MB is to be equipped with LEDs to indicate communications activity and Device/Alarm Status. An LED will also indicate if Ethernet is configured for DHCP (automatically assigned IP address) or Fixed IP (manually assigned IP address). The PXBCM-MB is to be equipped with 2 rotary switches to assign Modbus Slave ID 1-99.
 - i. The PXBCM-MB is to be equipped with security mode switches to enable the device to operate in a secure mode to prevent tampering with device configuration and resets over comms.
 - j. The PXBCM Meter Base is to automatically sense the type of PXBCM Meter Module connected to each of its 4 meter module ports.
 - k. The Configuration Wizard is to support naming and configuration of up to 100 virtual meters by assigning 1-3 channels of current to 1, 2 or 3 pole meters. Virtual meters are to aggregate the channel data assigned to each virtual meter and report the aggregated virtual meter values for:
 - 1) Forward and Reverse Energy.
 - 2) Watts, VA, Average Amps and Power Factor.
 - 3) Average and Peak demand for Watts and VA.
11. PXBCM-MMS Meter Module Strip:
- a. PXBCM-MMS Meter Module Strips to be available in configurations to mount on either the left or right of a panelboard and contain 9, 15, or 21 CTs. Four additional 333mV connections are to be provided on each PXBCM-MMS for Auxiliary 333mV CT connections which can be used to monitor the panel mains or branch circuits. The MMS is to include both load current and voltage metering circuits providing meter data to the Meter Base.
 - b. The PXBCM Meter Module Strip is to be available with either 9 CTs, 15 CTs or 21 CTs per assembly for factory assembly into Panelboards with 18, 30 or 42 poles. PXBCM MMS CTs are to be rated for up to 100A continuous current monitoring and designed to mount in an Eaton PRL-1a, PRS-2a or PRL-3e Panelboard with 1-inch breaker pole spacing.
 - c. PXBCM Meter Module Strip 1-inch center CTs are to have a window opening sufficient for insulated Aluminum conductor rated for 100A capacity.

- d. The PXBCM Meter Module Strip is to support direct connection of one set of 3 phase nominal metering voltage inputs up to 277V L-N and 480V L-L voltages and be rated as Cat III.
 - e. The Meter Modules can also monitor voltage in the following configurations:
 - 1) Three phase, four wire wye.
 - 2) Three phase, three wire delta.
 - 3) Three phase, center tapped delta.
 - 4) Three phase, three wire.
 - 5) Single phase, two wire.
 - f. Power and Energy metering to be performed based on the voltage assignment for each 100A strip mounted CT and 333mV Aux CT current input as configured using the embedded WEB server.
 - g. PXBCM MMS Accuracy of kWh metering on branch circuits to be rated for ANSI C12.20 0.5 accuracy class as a system, including 100A rated strip mounted solid core current transformers. kWh accuracy for 333mV input auxiliary circuits is to satisfy ANSI C12.20 0.5 class excluding external 333mV sensor performance.
 - h. The PXBCM MMS to be UL approved for mounting to the panelboard interior with no interference. Strip placement is to line up 1-inch center CTs with breaker poles and not impede the normal routing of branch circuit conductors in the panel enclosure.
 - i. The PXBCM MMS to connect to the PXBCM MB using factory supplied cables.
12. PXBCM-MME Meter Module External:
- a. The PXBCM-MME provides the same metering functionality as the PXBCM-MMS but is used for retrofit or non-uniform/high-mix load applications where the PXBCM-MMS strip mounted 100A CTs cannot be applied.
 - b. The PXBCM Meter Module external is to support 25 channels of current using external 333mV current sensors connected to terminal strips on the PXBCM-MME.
 - c. The PXBCM Meter Module External is to support direct connection of one set of 3 phase nominal metering voltage inputs up to 277V L-N and 480V L-L voltages and be rated as Cat III.
 - d. The Meter Modules can also monitor voltage in the following configurations:
 - 1) Three phase, four wire wye.
 - 2) Three phase, three wire delta.
 - 3) Three phase, center tapped delta.
 - 4) Three phase, three wire.
 - 5) Single phase, two wire.
 - e. Power and Energy metering to be performed based on the voltage assignment for each 333mV current sensor input as configured using the embedded WEB server.
 - f. PXBCM MMS Accuracy of kWh metering on 333mV input circuits to satisfy ANSI C12.20 0.5 class excluding external 333mV sensor performance.
13. Optional HMI Display is to display data for all configured sub-meters.
- a. HMI configuration is not to be required for each sub-meter. The HMI will discover the configuration information automatically.
 - b. Displayed information to include:

- 1) Sub-meter name, current, voltage, energy consumption, demand, and power factor for up to 100 load circuits.
- 2) Aggregated Power and Energy readings for any 1, 2 or 3 pole meters.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Provide concrete housekeeping pad. Extend 6-inches beyond switchboard width and depth dimensions. Minimum 3-inches above finished floor. Install plumb and level.
- B. Verify that field measurements are as indicated on Shop Drawings.
- C. Install in a neat and workmanlike manner and in location shown on Drawings, according to NEMA PB 2.1.
- D. Adjust all operating mechanisms for free mechanical movement.
- E. Tighten bolted bus connections in accordance with manufacturer's instructions.

3.02 SWITCHBOARDS INSTALLATION

- A. Shop inspect and test switchboard according to NEMA PB 2.
- B. Make completed switchboard available for inspection at manufacturer's factory prior to packaging for shipment. Notify Owner at least 7 days before inspection is allowed.
- C. Install switchboard in accordance with manufacturer's installation instructions.
- D. Tighten accessible bus connections and mechanical fasteners after placing switchboard.
- E. Provide arc flash labels per Section 26 05 73, Electrical Distribution System Studies.
- F. Provide engraved nameplates per Section 26 05 53, Identification of Electrical Systems.
- G. Provide fuses in each switch.
- H. Perform field inspection and testing.
- I. Perform inspections and tests listed in NETA STD ATS, Section 7.1.
- J. Measure, using a Megger, insulation resistance of each bus section phase-to-phase and phase-to-ground for one minute each, at minimum test voltage of 1000 Vdc; minimum acceptable value for insulation resistance is 1 megohm.
- K. Check tightness of accessible bolted bus joints using calibrated torque wrench per manufacturer's recommended torque values.

- L. Physically test key interlock systems to check for proper functionality.
- M. Test ground fault systems by operating push-to-test button.
- N. Shunt Trip Circuit Breakers: Provide wiring to remote trip switch/contacts as indicated on Drawings.
- O. Adjust circuit breaker trip and time delay settings to values indicated.
- P. Adjust circuit breaker trip and time delay settings to values as instructed by Engineer.
- Q. Clean exterior and interior of switchboard in accordance with manufacturers installation instructions.
- R. Vacuum construction dust, dirt, and debris out of switchboard interior.
- S. Where enclosure finish is damaged, touch up finish with matching paint in accordance with manufacturer's specifications and installation instructions.

3.03 NON-UTILITY POWER METERS (MICROPROCESSOR-BASED METERING EQUIPMENT) INSTALLATION

- A. Perform field inspection and testing.
- B. Perform inspections and tests listed in NETA STD ATS, Section 7.1.
- C. Measure, using a Megger, insulation resistance of each bus section phase-to-phase and phase-to-ground for one minute each, at minimum test voltage of 1000 Vdc; minimum acceptable value for insulation resistance is 1 megohms.
- D. Check tightness of accessible bolted bus joints using calibrated torque wrench per manufacturers recommended torque values.
- E. Provide cabling between current and voltage sensors and meter display enclosure.
- F. Provide device label for each meter per Section 26 05 53, Identification for Electrical Systems, listing load monitored (e.g., "Panel A", "Chiller # 3, etc). Use red label with white lettering where load is on generator backup.
- G. Provide common multiple meter unit cabinet with blank spaces where multiple meters are mounted as shown on one-line diagram and/or floor plans (e.g., 8 meter cabinet with 3 blank spaces where 5 meters are shown in common location).
- H. Provide cabling between meter display enclosure and auxiliary device for communication to energy management system.
- I. Provide ModBus cabling between meters, and from meter to energy management system.
- J. Provide a minimum of 4 hours of video recorded training for Owner on use of non-utility meters.

END OF SECTION 26 24 13

SECTION 26 24 16 - PANELBOARDS**PART 1 - GENERAL****1.01 SUMMARY**

- A. Work Included:
 - 1. Power Distribution Panelboards

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.
- B. In addition, reference the following:
 - 1. Section 26 05 73, Electrical Distribution System Studies.
 - 2. Section 26 24 13, Switchboards.
 - 3. Section 26 28 00, Overcurrent Protective Devices.
 - 4. Section 26 43 00, Surge Protective Devices

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. UL 67, Standards for Panelboards.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, provide:
 - 1. Product Data: For each type of panelboard, overcurrent protective device, surge protective device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
 - 2. Shop Drawings: For each panelboard and related equipment.
 - a. Dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings. Include the following:
 - 1) Enclosure types and details for types other than NEMA 250, Type 1.
 - 2) Bus configuration, current, and voltage ratings.
 - 3) Short-circuit current rating of panelboards and overcurrent protective devices.
 - 4) Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
 - b. Wiring Diagrams: Power, signal, and control wiring.
 - 3. Operation and Maintenance Manuals:
 - a. After completion of work and start-up of the equipment at the project site, deliver to the Owner's Authorized Representative operation instructions, maintenance manuals and drawings presenting full details for care and maintenance of each type of equipment provided under this Contract.

- b. Each copy to contain the operating and maintenance information and parts lists for equipment provided under this Contract. When necessary, provide supplemental drawings to show system operation and servicing maintenance points. For electrical components, provide wiring and connection diagrams. Include instructions required to accomplish specified operation and functions. Data to be neat, clean and legible.
- c. Panelboard drawings and wiring diagrams to be included and up to date at the completion of start-up and system acceptance by the Owner. Drawings and wiring diagrams to include any field modifications or changes to reflect actual as-installed conditions.
- d. In general, the manual to include, but not necessarily be limited to, the following:
 - 1) Panelboard Elevation and One Line.
 - 2) AC and DC Schematic and Physical Component Layout Drawings.
 - 3) Remote Interface Drawing.
 - 4) Bill of Material.
 - 5) Description of Operation.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Power Distribution Panelboards:
 - 1. Eaton
 - 2. ABB/General Electric
 - 3. Siemens
 - 4. Basis of Design: Schneider Electric/Square D
 - 5. Or approved equivalent.
- B. Manufacturers listed above are allowed on condition of meeting specified conditions including available space for equipment, Code required working clearances, selective coordination per Section 26 05 73, Electrical Distribution System Studies, and amps interrupting capacity (AIC). Prior to submitting bid, manufacturer to provide documentation to Engineer verifying specific conditions, including those mentioned above, can be met. Remove and replace electrical equipment installed, at no cost to the Owner, that does not meet these conditions.

2.02 POWER DISTRIBUTION PANELBOARDS

- A. Description: NEMA PB 1 Type 3R or as indicated on drawings, circuit breaker type.

- B. Integrated Equipment Rating: Provide fully rated integrated equipment rating greater than the available fault current. Series rated panelboards are not acceptable. Reference drawings for available fault currents. If drawings do not have available fault current shown, then coordinate with serving electrical utility.
- C. Panelboard Bus: Non-reduced copper, ratings as indicated on drawings. Bus bar with suitable electroplating (tin) for corrosion control at connection. Provide copper ground bus in each panelboard.
- D. Lugs: Mechanical type for copper conductors. All device terminals/lugs shall be rated for a minimum of 75 degrees C to facilitate the use of 75 degrees C conductor ampacity rating.
- E. Molded Case Circuit Breakers: With integral thermal and instantaneous magnetic trip in each pole; UL listed. For air conditioning equipment branch circuits provide circuit breakers UL listed as Type HACR.
- F. Molded Case Circuit Breakers with Current Limiters: With replaceable current limiting elements, in addition to integral thermal and instantaneous magnetic trip in each pole; UL listed.
- G. Circuit Breaker Accessories: Trip units and auxiliary switches as indicated.
- H. Fully equip unused spaces for future devices, including manufacturer required connections and mounting hardware.
- I. Cabinet Front: Surface type hinged door with flush lock, metal directory frame, finished in manufacturer's standard gray enamel.
- J. Surge Protective Device: Provide for emergency distribution systems equipment as required per NEC Article 700.8.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Install panelboards in accordance with NEMA PB 1.1, NECA 1 and manufacturer's installation instructions.
- B. Install panelboards level and plumb. Install recessed panelboards flush with wall finishes.
- C. Height: 6-feet 6-inches to top of panelboard; install panelboards taller than 6-feet 6-inches with bottom no more than 4-inches above floor.
- D. Provide filler plates for unused spaces in panelboards.
- E. Provide typed circuit directory for each branch circuit panelboard. Include all "spaces" and "spares." Revise directory to reflect circuiting changes and as-installed conditions. Use final Owner designated room names and numbers, and not designations shown on drawings.

- F. Provide engraved plastic nameplates per Section 26 05 53, Identification for Electrical Systems.
- G. Provide arc flash labels per Section 26 05 73, Electrical Distribution System Studies.
- H. Provide concrete housekeeping pad for floor-mounted distribution panelboards. Extend 6-inches beyond distribution panel width and depth dimensions. Minimum 3-inches above finished floor. Install plumb and level.
- I. Provide two 1-inch spare conduits out of each recessed panelboard to an accessible location above ceiling. Identify each as SPARE.
- J. Provide permanent identification number in or on panelboard dead-front adjacent to each breaker pole position. Horizontal centerline of numbers to correspond with centerline of circuit breaker pole position.
- K. Ground and bond panelboard enclosure per NEC.
- L. Paint:
 - 1. Standard factory finish unless noted otherwise.
 - 2. Panelboards located in finished interior areas in view of building occupants; paint to match adjacent wall surface. Color and paint preparation as specified by Architect. Covers to be painted off wall, then installed over dried, painted wall surface.
- M. Provide handle guards on each circuit supplying obviously constant loads such as fire alarm, security, lighting controls, refrigerators and freezers, fire protection, etc.
- N. Provide interior wiring diagram, neutral wiring diagram, UL label, and short circuit rating on interior or in booklet format inserted in sleeve inside panel cover.
- O. Verify available recessing depth and coordinate wall framing with other divisions.
- P. Maintain fire rating of wall where panels are installed flush in fire rated walls.
- Q. Perform inspections and tests in accordance with manufacturer's requirements.
- R. Thoroughly clean exterior and interior of each panelboard in accordance with manufacturer's installation instructions.
- S. Vacuum construction dust, dirt, and debris out of each panelboard.
- T. Where enclosure finish is damaged, touch up finish with matching paint in accordance with manufacturer's specifications and installation instructions.
- U. Reference Section 26 08 05, Electrical Acceptance Testing for testing requirements.

3.02 POWER DISTRIBUTION PANELBOARDS INSTALLATION

- A. Provide handle tie to branch circuit breakers of multiwire branch circuits for simultaneous disconnection of circuits. Handle tie will be identified for use with circuit breakers provided. Reconfigure assigned circuits as necessary so that circuit breakers associate with multiwire branch circuits are physically adjacent, record changes in panelboard schedules and circuiting plans for record drawings.
- B. Shunt Trip Circuit Breakers: Provide wiring to remote trip switch/contacts as indicated on Drawings.
- C. Measure steady state load currents at each panelboard feeder; rearrange circuits in panelboard to balance phase loads to within 20 percent of each other. Maintain proper phasing for multi-wire branch circuits.

END OF SECTION 26 24 16

SECTION 26 28 00 - OVERCURRENT PROTECTIVE DEVICES

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Fuses
 - 2. Molded Case Circuit Breakers

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, provide:
 - 1. Product data and instantaneous let-through current curves and average melting time current curves for fuses supplied to project.
 - 2. Product data and time/current trip curves for circuit breakers supplied to project.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements apply to this Section.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Fuses:
 - 1. Bussmann
 - 2. Ferraz-Shawmut
 - 3. Littelfuse
 - 4. McGraw-Edison
 - 5. Or approved equivalent.
- B. Molded Case Circuit Breakers:

1. Eaton Electrical
2. ABB/General Electric
3. Siemens
4. Schneider Electric/Square D
5. Or approved equivalent.

2.02 FUSES

- A. Characteristics:
 1. Dual element, time delay, current limiting, nonrenewable type, rejection feature.
 2. Combination Loads: UL Class RK1, RK5, or J, 1/10 to 600 amp. UL Class L, above 600 amps.
 3. Fuse pullers for complete range of fuses.

2.03 MOLDED CASE CIRCUIT BREAKERS

- A. 1-, 2- or 3-pole bolt-on, single handle common trip, 600VAC or 250VAC as indicated on Drawings.
- B. Overcenter toggle-type mechanism, quick-make, quick-break action. Trip indication is by handle position.
- C. Calibrate for operation in 40 degrees C ambient temperature.
- D. 15 to 150 Amp Breakers: Permanent trip unit containing individual thermal and magnetic trip elements in each pole.
- E. 151 to 400 Amp Breakers: Adjustable magnetic trip elements. Provide push-to-trip button on cover of breaker for mechanical tripping.
- F. Greater than 401 Amp: Electronic trip type with adjustments for long-time, instantaneous, and short-time functions.
- G. Circuit breakers 1200 Amp and Greater: Provide breaker with energy-reducing maintenance switching with local status indicator per CEC Article 240.87(B).
- H. Provide ground fault function for breakers greater than 800 amps where applied at 480 volts line-to-line; and where indicated on drawings.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Coordination:
 1. Obtain and review the submitted product data for equipment furnished by the Owner, and furnished under other Divisions of this contract.
 2. Confirm the equipment nameplate maximum overcurrent protection (MOCP) and make accommodations and adjustments to overcurrent protective devices as necessary to coordinate with the nameplate rating.
- B. Install all items in accordance with manufacturers written instructions.

3.02 FUSES

- A. Fuses: For each class and ampere rating of fuse installed, provide the following quantities of spares for quantity of fuses installed:
 - 1. 0 to 24: Provide 6 spare.
 - 2. 25 to 48: Provide 9 spare.
 - 3. 49 and Above: Provide 12 spare.

3.03 MOLDED CASE CIRCUIT BREAKERS

- A. Provide testing of ground fault interrupting breakers.
- B. Provide circuit breakers, as specified and on Drawings, for installation in panelboards, individual enclosures or combination motor starters.
- C. Provide ground fault interrupter circuit breakers for equipment in damp or wet locations.
- D. Provide device on handle to lock breaker in "ON" position for breakers feeding time switches, night lights and similar circuits required to be continuously energized.
- E. Shunt Trip Circuit Breakers: Provide wiring to remote trip switch/contacts as indicated on Drawings.
- F. Provide multi-pole branch circuit breakers for multiwire branch circuits for simultaneous disconnection of circuits.

END OF SECTION 26 28 00

SECTION 26 36 00 - TRANSFER SWITCHES

PART 1 - GENERAL

1.01 SUMMARY

- A. Work included: Materials, installation and testing of:
 - 1. Open Transition Transfer Switch
 - 2. Microprocessor Controller
 - 3. Accessories
 - 4. Automatic Sequence of Operation

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. UL 1008, Automatic Transfer Switches.
 - 2. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association
 - 3. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association
 - 4. NEMA ICS 10 Part 1 - Industrial Control and Systems Part 1: Electromechanical AC Transfer Switch Equipment; National Electrical Manufacturers Association
 - 5. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; International Electrical Testing Association (ANSI/NETA ATS)
 - 6. NFPA 70 - National Electrical Code; National Fire Protection Association
 - 7. NFPA 110 - Standard for Emergency and Standby Power Systems; National Fire Protection Association

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, provide:
 - 1. Product Data: Provide catalog sheets showing voltage, switch size, ratings and size of switching and overcurrent protective devices, operating logic, withstand current ratings, dimensions, and enclosure details.
 - 2. Operation Data: Instructions for operating equipment under emergency conditions when engine generator is running.
 - 3. Maintenance Data: Routine preventative maintenance and lubrication schedule. List special tools, maintenance materials, and replacement parts.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. NFPA 70, National Electrical Code
 - 2. NFPA 110, Standard for Emergency and Standby Power Systems
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Authorized service facilities located within 200 miles of project site.
- E. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience with power transfer systems of similar size, type, and complexity; manufacturer's authorized installer.
- F. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.
- G. Field Conditions: Maintain field conditions within manufacturer's required service conditions during and after installation.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.
- B. Provide a comprehensive warranty that includes parts, labor, and travel to the site.

1.07 COORDINATION

- A. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances required by NFPA 70.
- B. Coordinate arrangement of equipment with the dimensions and clearance requirements of the actual equipment to be installed.
- C. Coordinate the work with placement of supports, anchors, etc. required for mounting.
- D. Notify Architect of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Receive, inspect, handle, and store transfer switches in accordance with manufacturer's instructions.

- B. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- C. Handle carefully in accordance with manufacturer's instructions to avoid damage to transfer switch components, enclosure, and finish.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Approved manufacturers listed below are allowed on condition of meeting the specified conditions including available space allocated for the equipment (including code required working clearances) and functionality of system as described in drawings and specifications. Remove and replace electrical equipment installed and not meeting these conditions at no cost to Owner.
 - 1. ASCO Power Technologies
 - 2. Caterpillar
 - 3. Cummins
 - 4. Eaton Corporation
 - 5. Russelectric
 - 6. Or approved equivalent.
- B. Basis of Design: Transfer switches on drawings are designed based on ASCO product line.
- C. Source Limitations: Furnish transfer switches and accessories produced by a single manufacturer and obtained from a single supplier.

2.02 OPEN TRANSITION TRANSFER SWITCH

- A. Provide open transition transfer switches where indicated on the drawings.
- B. Provide type, number of poles, amperage, voltage, withstand, and close-on ratings as indicated on drawings.
- C. Provide transfer switch rated for available fault with upstream overcurrent protection.
- D. Minimum 3-cycle (0.05 seconds) Withstand Current Rating (WCR). If required, provide 18-cycle (0.3 seconds) or 30-cycle (0.5 seconds) to accommodate selective coordination and available fault current at the installed location as indicated on the drawings.
- E. Provide selectively coordinated power distribution system per Section 26 05 73, Electrical Distribution System Studies.
- F. Transfer switch electrically operated and mechanically held. Electrical operator momentarily energized, single-solenoid mechanism. Mechanically interlocked to ensure only two possible positions, normal or emergency.

- G. Use only one type of main operator for ease of maintenance and commonality of parts.
- H. Lugs to be mechanical or tool applied compression type.
- I. Equip transfer switch(es) with bus stubs for compression lug connectors. Size and quantity of lugs as required.
- J. Positively locked and unaffected by momentary outages, so that contact pressure is maintained at constant value and contact temperature rise is minimized for maximum reliability and operating life.
- K. Contact structure to consist of main current carrying contact, silver alloy with minimum 50 percent silver content. Contacts protected by silver tungsten arching contacts on sizes above 400 amps.
- L. Inspection of contacts to be possible from front of switch without disassembly of operating linkages and without disconnection of power conductors.
- M. Designs utilizing components of molded-case circuit breakers, contactors, or parts thereof, which are not intended for continuous duty, repetitive switching or transfer between two active power sources are not acceptable.
- N. Each switch to have time delay in neutral position. Time delay adjustable from 0-5 seconds and initially set at 2 seconds. Provide means to permit neutral delay transfer switches to be driven to neutral position and held there.
- O. Construction Type: Only "contactor type" (open contact) transfer switches are acceptable. Do not use "breaker type" (enclosed contact) transfer switches.
- P. Switching Methods:
 - 1. Open Transition:
 - a. Provide break-before-make transfer without a neutral position that is not connected to either source, and with interlocks to prevent simultaneous connection of the load to both sources.
 - b. Where in-phase transfer is indicated, utilize in-phase monitor to initiate transfer when phase angle difference between sources is near zero to limit in-rush currents.
- Q. Enclosures:
 - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
 - a. Outdoor Locations: Type 3R or Type 4.
 - b. Indoor Locations: Type 12.
 - 2. Provide lockable door(s) for outdoor locations.
 - 3. Finish: Manufacturer's standard unless otherwise indicated.
- R. Short Circuit Current Rating:

1. Withstand and Closing Rating: Provide transfer switches, when protected by the supply side overcurrent protective devices to be installed, with listed withstand and closing rating not less than the available fault current at the installed location as indicated on the drawings.
 2. Short Time Rating: Minimum 3-cycle (0.05 seconds) Withstand Current Rating (WCR). If required, provide 18-cycle (0.3 seconds) or 30-cycle (0.5 seconds) to accommodate selective coordination and available fault current at the installed location as indicated on the drawings.
- S. Control Functions:
1. Manual source selection.
 2. Outputs:
 - a. Auxiliary contacts; one set for each switch position.
- T. Status Indications:
1. Connected to alternate/emergency source.
 2. Connected to primary/normal source.
 3. Alternate/emergency source available.
 4. Primary/normal source available.
- U. Remote Annunciators:
1. Remote Annunciator Mounting: Wall-mounted; Provide flush-mounted annunciator for finished areas and surface-mounted annunciator for non-finished areas unless otherwise indicated.
 2. Transfer Switch Status Indications:
 - a. Connected to alternate/emergency source.
 - b. Connected to primary/normal source.
 - c. Alternate/emergency source available.
 - d. Primary/normal source available.
- V. Source Quality Control:
1. Perform production tests on transfer switches at factory to verify operation and performance characteristics prior to shipment. Include certified test report with submittals.
- W. Start Circuit Integrity: Start-signal wiring between transfer switch and engine-generator is to be monitored by circuit-supervising electronic controls. Basis of Design is ASCO transfer switch accessory 7ES and ASCO Model 5101 engine-start module. A break in any start-circuit wire, or an unintended short between start-circuit wires, is to immediately close an alarm contact and start the generator.
- X. Basis of Design: ASCO Power Technologies Series 7000 Open Transition Automatic Transfer Switch.

2.03 MICROPROCESSOR CONTROLLER

- A. Proved sensing and logic by single built-in microprocessor for maximum reliability, minimum maintenance, and ability to communicate serially through an optional serial communication module.
- B. Single controller to provide twelve selectable nominal voltages for maximum application flexibility and minimal spare part requirements.

1. Voltage sensing to be true RMS type, accurate to ± 1 percent of nominal voltage.
 2. Frequency sensing accurate to ± 0.2 percent.
- C. Connect controller to transfer switch by an interconnecting wiring harness. Include keyed disconnect plug to enable controller to be disconnected from transfer switch for routine maintenance. Provide sensing and control logic on multi-layer printed circuit boards. Interfacing relays to be industrial grade plug-in type with dust covers. Enclose panel with protective cover, mounted separately from transfer switch unit for safety and ease of maintenance. Protective cover to include built-in pocket for storage of operator's manuals.
- D. Customer connections to be wired to common terminal block to simplify field-wiring connections.
- E. Controller Display and Keypad:
1. A four line, 20 character LCD display and keypad to be an integral part of controller for viewing available data and setting desired operational parameters. Operational parameters to also be available for viewing and limited control through serial communications input port. Following parameters only to be adjustable via DIP switches on controller:
 - a. Nominal line voltage and frequency
 - b. Single or three phase sensing
 - c. Operating parameter protection
 - d. Transfer operating mode configuration (Open transition, Closed transition, or Delayed transition)
 2. Instructions and controller settings to be easily accessible, readable and accomplished without use of codes, calculations, or instruction manuals.
 3. Provide source status screens for both normal and emergency to provide digital readout of voltage on all 3 phases, frequency, and phase rotation.

2.04 ACCESSORIES

- A. Equip new transfer switches with the following time delays. Adjustable in 1 second increments, except extended parallel time which will be adjustable in 0.01 second increments.
1. Time Delay - Adjustable 0 to 30 seconds on signal to start.
 2. Time Delay - Adjustable 0 to 60 minutes on transfer to emergency.
 3. Time Delay - Adjustable 0 to 60 minutes on re-transfer to normal after normal source failure.
 4. Time Delay - Adjustable 0 to 60 minutes on re-transfer to normal after a system test.
 5. Time Delay - Adjustable 0 to 60 minutes for unloaded cool down of engine generator.
 6. Time Delay - Adjustable 1 to 5 minute time delay on failure to synchronize normal and emergency sources prior to closed transition transfer.
 7. Time Delay - Adjustable 0.1 to 9.99 second time delay on an extended parallel condition of both power sources during closed transition operation.
- B. Continuously monitor voltage and frequency on both normal and emergency sources, with the following pickup, dropout, and trip setting capabilities (values shown as percentage of nominal unless otherwise specified):

Parameter	Sources	Dropout/Trip	Pickup/Reset
Undervoltage	N&E, 3	70 to 98%	85 to 100%
Overvoltage	N&E, 3	102 to 115%	2% below trip
Underfrequency	N&E	85 to 98%	90 to 100%
Overfrequency	N&E	102 to 110%	2% below trip
Voltage unbalance	N&E	5 to 20%	1% below dropout

- C. Provide three position momentary-type test switch for test/automatic/reset modes. Test position will simulate normal source failure. Reset position bypasses time delays on either transfer to emergency or retransfer to normal.
- D. Provide SPDT contact, rated 5 amps at 30 VDC, for a low-voltage engine start signal. Start signal prevents dry cranking of engine by requiring generator set to reach proper output, and run for duration of cool down setting, regardless of whether normal source restores before load is transferred.
- E. Provide auxiliary contacts, rated 10 amps, 250 VAC, consisting of two contacts, closed when ATS is connected to normal source and two contacts closed, when ATS is connected to emergency source, two contacts closed when normal source is available, two contacts closed when emergency source is available.
- F. Where indicated in documents, provide means to drive ATS to a center/off position upon receipt off a dry contact signal from the load shed controller.
- G. Provide signal to test transfer switches with elevator loads to prevent interruption of power during elevator operation.
- H. Provide LED indicating lights (16 mm industrial grade, type 12); one to indicate when ATS is connected to normal source (green) and one to indicate when ATS is connected to emergency source (red).
- I. Provide LED indicating lights (16 mm industrial grade, type 12), energized by controller outputs. Lights to provide true source availability of normal and emergency sources, as determined by voltage sensing trip and reset settings for each source.
- J. Data Logging - Controller to have ability to log data and to maintain last 99 events, even in event of total power loss. Following events to be time and date stamped and maintained in non-volatile memory:
1. Event Logging
 - a. Data and time and reason for transfer normal to emergency.
 - b. Data and time and reason for transfer emergency to normal.
 - c. Data and time and reason for engine start.
 - d. Data and time engine stopped.
 - e. Data and time emergency source available.
 - f. Data and time emergency source not available.
 2. Statistical Data
 - a. Total number of transfers.
 - b. Total number of transfers due to source failure.
 - c. Total number of days controller is energized.

- d. Total number of hours both normal and emergency sources are available.
- K. Digital Power Meter: Provide a digital demand power meter at each transfer switch where indicated on plans. Install on the load side of the switch with the following functionality:
- 1. Provide 1 percent metering accuracy and data for the following:
 - a. Line-to-neutral voltages (VAN, VBN, VCN)
 - b. Line-to-neutral voltage average (VAVE)
 - c. Line-to-line voltages (VAB, VBC, VCA)
 - d. Line-to-line voltage average (VLAVE)
 - e. Current on each phase (IA, IB, IC)
 - f. Current in the neutral conductor (IN)
 - g. Average current (IAVE)
 - h. Active power, kW per phase and total (WA, WB, WC, WT)
 - i. Demand recording of peak kW; in intervals of: 15 minute, 30 minute, 1 hour, 1 day, 1, week, 1 month, and past 24 months
 - j. Reactive power, kVAR per phase and total (VARA, VARB, VARC, VART)
 - k. Apparent power, kVA per phase and total (VAA, VAB, VAC, VAT)
 - l. kWhours importing, exporting and net (kWhIMP, kWhEXP, kWhNET)
 - m. kVARhours leading, lagging and net (kVARhLEAD, kVARhLAG, kVARhNET)
 - n. kVAhours net (kVAhNET)
 - o. Power factor (PF)
 - p. Signal frequency (Hz)

2.05 AUTOMATIC SEQUENCE OF OPERATION

- A. Initiate Time Delay to Start Alternate Source Engine Generator: Upon initiation by normal source monitor.
- B. Time Delay To Start Alternate Source Engine Generator: 0 to 30 seconds, adjustable.
- C. Initiate Transfer Load to Alternate Source: Upon initiation by normal source monitor and permission by alternate source monitor.
- D. Time Delay Before Transfer to Alternate Power Source: 0 to 60 minutes, adjustable.
- E. Initiate Retransfer Load to Normal Source: Upon permission by normal source monitor.
- F. Time Delay Before Retransfer to Normal Power: 0 to 60 minutes, adjustable; bypass time delay in event of alternate source failure.
- G. Time Delay Before Engine Shut Down: 0 to 60 minutes, adjustable, of unloaded operation.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Install in accordance with manufacturer's instructions and recommendations.

- B. Provide engraved plastic nameplates under provisions of Section 26 05 53, Identification for Electrical Systems.
- C. Install arc flash labels. See Section 26 05 73, Electrical Distribution System Studies.
- D. Transfer Switches:
 - 1. Perform work in a neat and workmanlike manner in accordance with NECA 1.
 - 2. Install transfer switches in accordance with manufacturer's instructions.
 - 3. Arrange equipment to provide minimum clearances and required maintenance access.
 - 4. Provide required support and attachment in accordance with Section 26 05 29, Hangers and Supports for Electrical Systems and Equipment.
 - 5. Install transfer switches plumb and level.
 - 6. Unless otherwise indicated, mount floor-mounted transfer switches on properly sized 3 inch high concrete pad.
 - 7. Provide grounding and bonding in accordance with Section 26 05 26, Grounding and Bonding for Electrical Systems.
- E. Transfer Switch Settings:
 - 1. Time delay on signal to start: 2 seconds
 - 2. Time delay on transfer to emergency: 0 seconds
 - 3. Time delay on retransfer to normal: 10 minutes
 - 4. Time delay for engine cool down: 15 minutes
 - 5. Time delay on failure to synchronize: 30 seconds
 - 6. Time delay on extended parallel: 0.1 seconds.
- F. Examination:
 - 1. Verify that field measurements are as shown on the drawings.
 - 2. Verify that the ratings and configurations of transfer switches are consistent with the indicated requirements.
 - 3. Verify that rough-in for field connections are in the proper locations.
 - 4. Verify that mounting surfaces are ready to receive transfer switches.
 - 5. Verify that conditions are satisfactory for installation prior to starting work.
- G. Acceptance and Inspection:
 - 1. Factory test complete ATS to ensure proper operation of individual components and correct overall sequence of operation and to ensure that operating transfer time, voltage, frequency and time delay settings are in compliance with specification requirements.
 - 2. Record the following for each switch:
 - a. Time delay on retransfer to normal.
 - b. Transfer switch time in neutral position during retransfer to normal for each switch with neutral delay.
 - c. Time delay to engine shut down for entire system.
 - 3. If transfer switch feeds UPS system, verify that voltage threshold for transfer switch is set to start generator before UPS would switch to battery power. This is to prevent running UPS on battery power during brownout that doesn't start generator.

4. Prior to acceptance of installation, inspect and test equipment on site by equipment supplier and service tech employed and bonded by manufacturer, to show it is free of any defects and placed in service.
- H. Field Quality Control:
1. Perform field inspection and testing.
 2. Inspect and test in accordance with NETA STD ATS, except Section 4.
 3. Perform inspections and tests listed in NETA STD ATS, Section 7.22.3.
 4. Provide services of a manufacturer's authorized representative to observe installation and assist in inspection and testing. Include manufacturer's detailed testing procedures and field reports with submittals.
 5. Prepare and start system in accordance with manufacturer's instructions.
 6. Correct defective work, adjust for proper operation, and retest until entire system complies with contract documents.
 7. Submit detailed reports indicating inspection and testing results and corrective actions taken.
- I. Closeout:
1. Demonstrate operation of transfer switch in normal and emergency modes.
 2. Demonstration: Demonstrate proper operation of transfer switches to Owner, and correct deficiencies or make adjustments as directed.
 3. Training: Train Owner's personnel on operation, adjustment, and maintenance of transfer switches.
 - a. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
 - b. Provide minimum of four hours of training.
 - c. Instructor: Manufacturer's authorized representative.
 - d. Location: At project site.
 - e. Date and Time: As selected by Owner.
- J. Cleaning and Maintenance:
1. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.
- K. Testing:
1. Reference Section 26 08 05, Electrical Acceptance Testing.

END OF SECTION 26 36 00

SECTION 26 43 00 - SURGE PROTECTIVE DEVICES

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. SPD for Distribution Panels - Nonmodular Type
- B. Supply and install the Surge Protective Devices (SPD) having the electrical characteristics, ratings and modifications as specified herein and as shown on the contract drawings.

1.02 RELATED SECTIONS

- A. Contents of Division 26, Electrical apply to this Section.

1.03 REFERENCES AND STANDARDS

- A. References and Standards as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. Listed per UL 1449, third edition, and complimentary listed per UL 1283 as FRI/EMI filter.
 - 2. Comply with ANSI/IEEE C62.45 test procedures for Category-C3 established in C62.41.2 and CSA certified (C22.2).

1.04 SUBMITTALS

- A. Submittals as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, provide:
 - 1. Related SPD Specifications, Drawings, maintenance manuals, installation instructions, and UL 1449, third edition, listed surge suppression ratings of specified protection modes.
 - 2. Project Record Documents: Record actual locations of SPDs.
 - 3. Maintenance Data:
 - a. Include module replacement instructions.
 - b. Include maintenance and troubleshooting instructions for electronic components.

1.05 QUALITY ASSURANCE

- A. Quality assurance as required by Section 26 00 00, Electrical Basic Requirements.
- B. In addition, meet the following:
 - 1. Manufacturer's Qualifications: ISO 9001 certification SPD manufacturers complete quality control and documentation procedures of firms regularly engaged in manufacture of SPD product for Category-C3 (ANSI/IEEE C62.41.2) and whose product has been of satisfactory service for not less than 5 years.

- a. Provide local support for SPD.
 - b. Provide both service entrance and distribution panel SPD of same manufacturer.
2. Manufacturer Qualifications: Company specializing in manufacturing products specified in this Section with minimum three years documented experience.

1.06 WARRANTY

- A. Warranty of materials and workmanship as required by Section 26 00 00, Electrical Basic Requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Advanced Protection Technologies, Inc. (APT)
- B. Current Technology
- C. Eaton Electrical
- D. Lea International
- E. Liebert
- F. Schneider Electric/Square D
- G. Surge Suppression Inc. (SSI)
- H. Siemens
- I. Or approved equivalent.

2.02 SPD FOR DISTRIBUTION PANELS - NONMODULAR TYPE

- A. List SPD in accordance with UL 1449 (third edition), Standard for Safety, Surge Protective Devices, and UL 1283, Electromagnetic Interference Filters.
- B. Independently test SPD with Category-C3 high exposure waveform (20KV - 1.2/50 μ s, 10 kA - 8/20 μ s) per ANSI/IEEE C62.41.2 (2002)
- C. Provide SPD with copper bus bars for surge current path. Small gauge round wiring, plug-in type connections, or printed circuit boards not be used in path for surge current diversion. Equally distribute surge current to MOV components to ensure equal stressing and maximum performance. Surge suppression platform must provide equal impedance paths to each matched MOV.
- D. Use no plug in component modules or printed circuit boards as surge current conductors. Hardwire internal components with connections utilizing low impedance conductors and compression fittings.
- E. In order to isolate SPD under any fault condition, manufacturer to provide:

1. Individually fuse the MOV via copper fuse. Copper fuse provides protection during high (ka) surge events.
 2. Equip MOVs with thermal fuse which allows disconnection of suppression component at overheating stage common during TOV.
 3. Test overcurrent protection components in compliance with UL 1449 (3rd Edition) Limited Current Test and AIC rating test.
- F. Equip SPD with an audible alarm that activates when one of surge current modules have failed. Provide an alarm on/off switch to silence alarm. Provide an alarm push-to-test switch to test the alarm. Locate switches and alarm on the front cover of the SPD's enclosure.
- G. Provide SPD that Meet or Exceed the Following Criteria:
1. Provide maximum single impulse current rating at no less than 100 kA per phase. Manufacturers must provide documented proof of independent third party verification of single impulse current withstand capabilities.
 2. Pulse Life Test: Capable of protecting against and surviving 2000 ANSI/IEEE C62.41.2 Category-C3 transients without failure or degradation of UL 1449 (third edition) clamp voltage by more than 10 percent.
 3. UL 1449 (third edition) clamping voltage not to exceed the following:

VOLTAGE	L-G	L-N	N-G
208Y/120V	800V	800V	800V
480Y/277V	1200V	1200V	1200V
 4. Nominal discharge current of 20KA I (n).
- H. Make SPD of solid-state components which operate bidirectionally.
- I. Provide SPD with response time no greater than five nanoseconds for individual protection modes.
1. SPD designed to withstand maximum continuous operating voltage (MCOV) of not less than 115 percent of nominal RMS voltage.
 2. Provide visible indication of proper SPD connection and operation. Provide 10 year warranty, incorporating unlimited replacements of SPD if they are destroyed by transients within warranty period.
- J. Provide SPD designed to withstand maximum continuous operating voltage (MCOV) of not less than 115 percent of nominal RMS voltage.
1. Provide terminals for necessary power and ground connections.
 2. Provide SPD with minimum EMI/RFI filtering of 30dB at 100KHZ with an insertion loss ratio of 316:1 using Military Standard 220A methodology.
 3. Provide SPD with 10 year warranty, incorporating unlimited replacement parts if they are destroyed by transients during warranty period.

PART 3 - EXECUTION

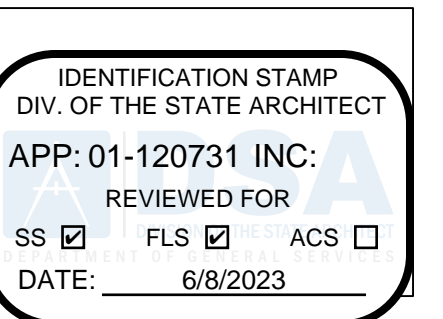
3.01 SPD FOR DISTRIBUTION PANELS - NONMODULAR TYPE INSTALLATION

- A. Install one secondary SPD at each distribution panel location as indicated on Drawings. SPD unit to be integral to panelboard.

END OF SECTION 26 43 00

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 CAMPUS DRIVE
OAKLAND, CA 94619
PROJECT NO.: 01-120731



DIRECTORY

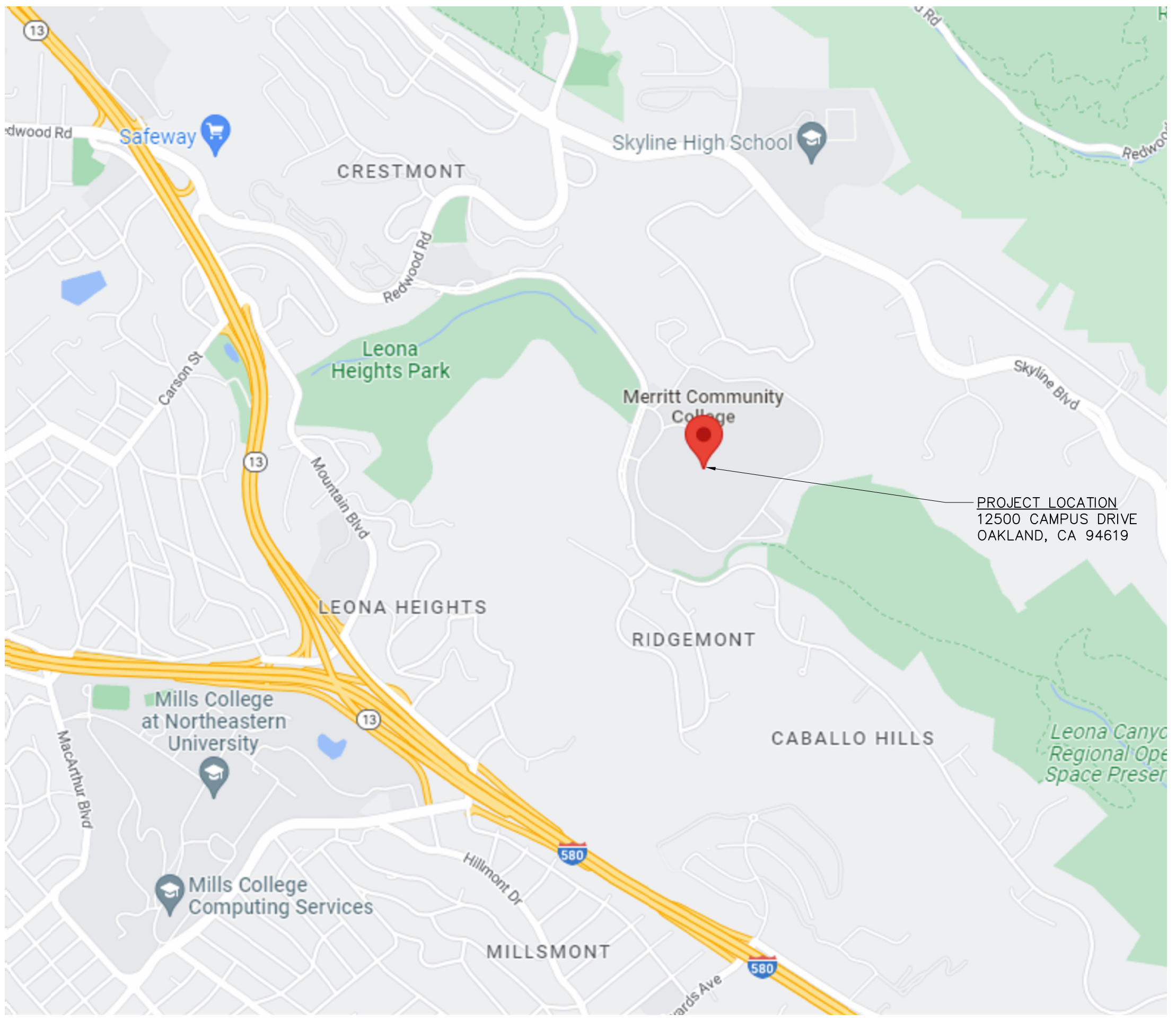
CLIENT
KITCHELL
405 14ST, SUITE 1000
OAKLAND, CA 94612
P: 510 847 7418
CONTACT: ERIN GRIFFIN

ELECTRICAL ENGINEER
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CIVIL ENGINEER
KPFF
45 FREMONT ST, 28TH FLOOR
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CONTACT: BRIAN BIEHL

VICINITY MAP



SHEET INDEX

23 SHEETS

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- C2.0 SITE LAYOUT PLAN
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- C4.0 SPECIFICATIONS
- C4.1 SPECIFICATIONS
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- E4.1 DETAILS - ELECTRICAL
- E4.2 DETAILS - ELECTRICAL

DEFERRED SUBMITTALS

NONE

PROJECT DESCRIPTION

THE MERRITT COMMUNITY COLLEGE CAMPUS HAS AN EXISTING 12KV SYSTEM. A PORTION OF THE EXISTING ELECTRICAL EQUIPMENT ARE IN NEED OF AN UPGRADE OR REPLACEMENT. AT SUBSTATION 'C', THE INTENT IS TO DESIGN A REPLACEMENT WHILE THE CURRENT SYSTEM REMAINS ACTIVE TO REDUCE THE AMOUNT OF DOWN TIME. ONCE THE EQUIPMENT HAS BEEN INSTALLED AND POWER HAS BEEN TRANSFERRED, THE OLD EXISTING EQUIPMENT WILL BE DEMOLISHED.

CODE REFERENCE

2019 CALIFORNIA BUILDING CODE
2019 CALIFORNIA ELECTRICAL CODE
2019 CALIFORNIA ENERGY CODE
2019 CALIFORNIA FIRE CODE
2019 CALIFORNIA GREEN BUILDING STANDARDS CODE

THE CONTRACTOR IS REQUIRED TO COMPLY WITH THE ABOVE CODES AND REGULATIONS AND ALL OTHER CODES OR ZONING REQUIREMENTS. ADVISE ENGINEER AND CLIENT OF ANY NON-COMPLIANCE IN THE CONSTRUCTION DOCUMENTS PRIOR TO PROCEEDING WITH WORK.

ALL WORK SHALL CONFORM TO 2019 TITLE 24, CALIFORNIA CORE OF REGULATIONS (CCR).

LIST OF APPLICABLE CODES

- 2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
- 2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
- 2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR
- 2019 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR
- 2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
- 2019 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 CCR
- 2019 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR
- 2019 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
- 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
- 2019 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR
- TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS
- SAFETY DURING DEMOLITION AND CONSTRUCTION MUST COMPLY WITH CFC CHAPTER 33

APPLICABLE STANDARDS
FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

GENERAL CONFORMANCE STATEMENT

APPLICATION NUMBER: 01-120731

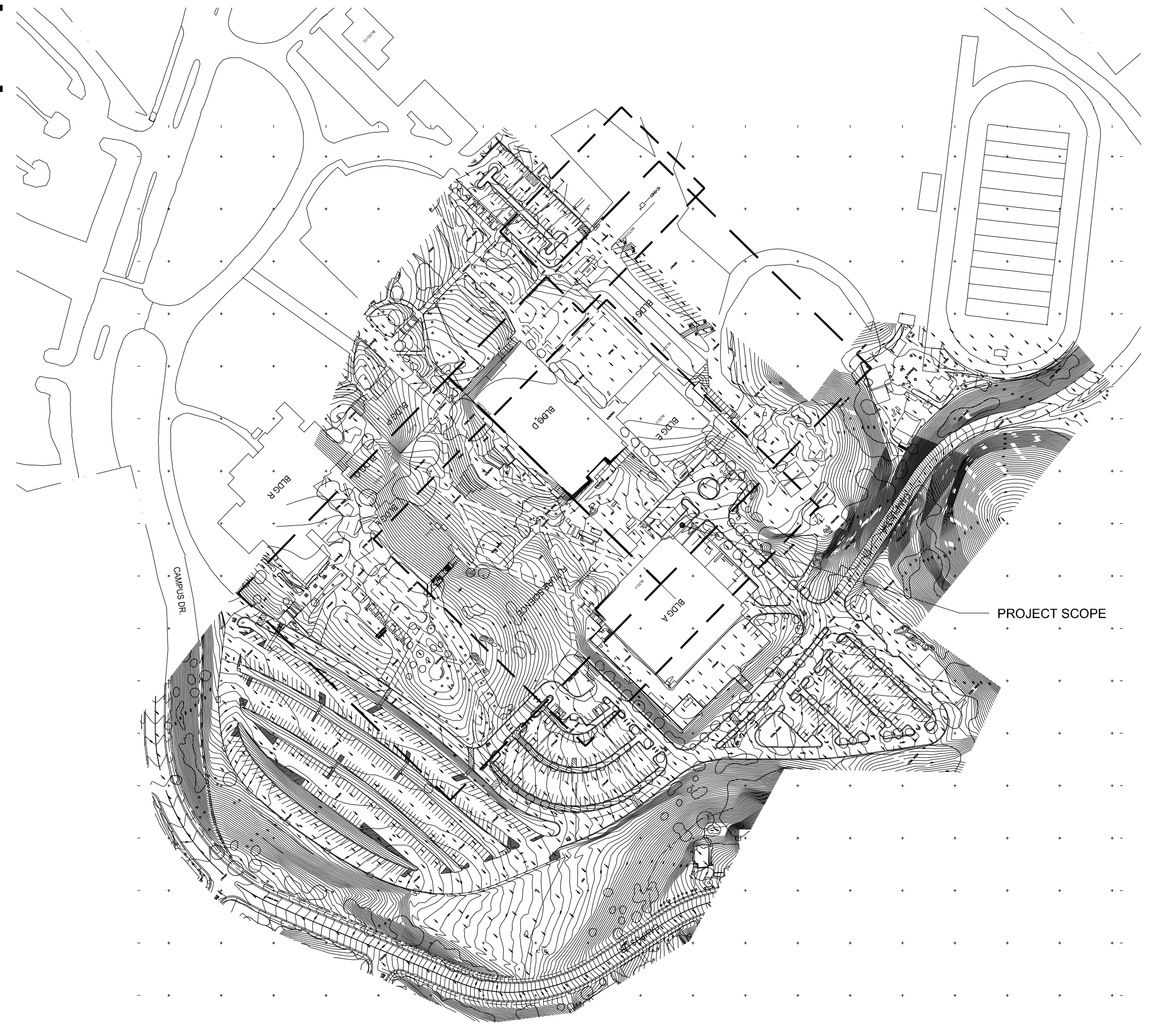
STATEMENT OF GENERAL CONFORMANCE:

THE DRAWINGS OR SHEETS LISTED IN THE INDEX ON THIS SHEET HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. IT HAS BEEN EXAMINED BY ME FOR:

1. DESIGN INTENT AND APPEARANCE TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS, AND THE PROJECT SPECIFICATIONS PREPARED BY ME.
2. COORDINATION WITH MY PLANS AND SPECIFICATIONS AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THE PROJECT.

THIS STATEMENT OF GENERAL CONFORMANCE "SHALL" NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES, AND RESPONSIBILITIES UNDER SECTION 17302 AND 81138 OF THE EDUCATION CODE AND SECTION 4-336, 4-341, AND 4-344 OF TITLE 24, PART 1 (TITLE 24, PART 1 SECTION 4-317 (B))

I CERTIFY THAT ALL DRAWINGS OR SHEETS LISTED IN THE INDEX ON THIS SHEET (CIVIL, ELECTRICAL, STRUCTURAL) ARE IN GENERAL CONFORMANCE AND HAVE BEEN COORDINATED.



MERRITT COLLEGE CAMPUS MAP

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr,
Oakland, CA 94619

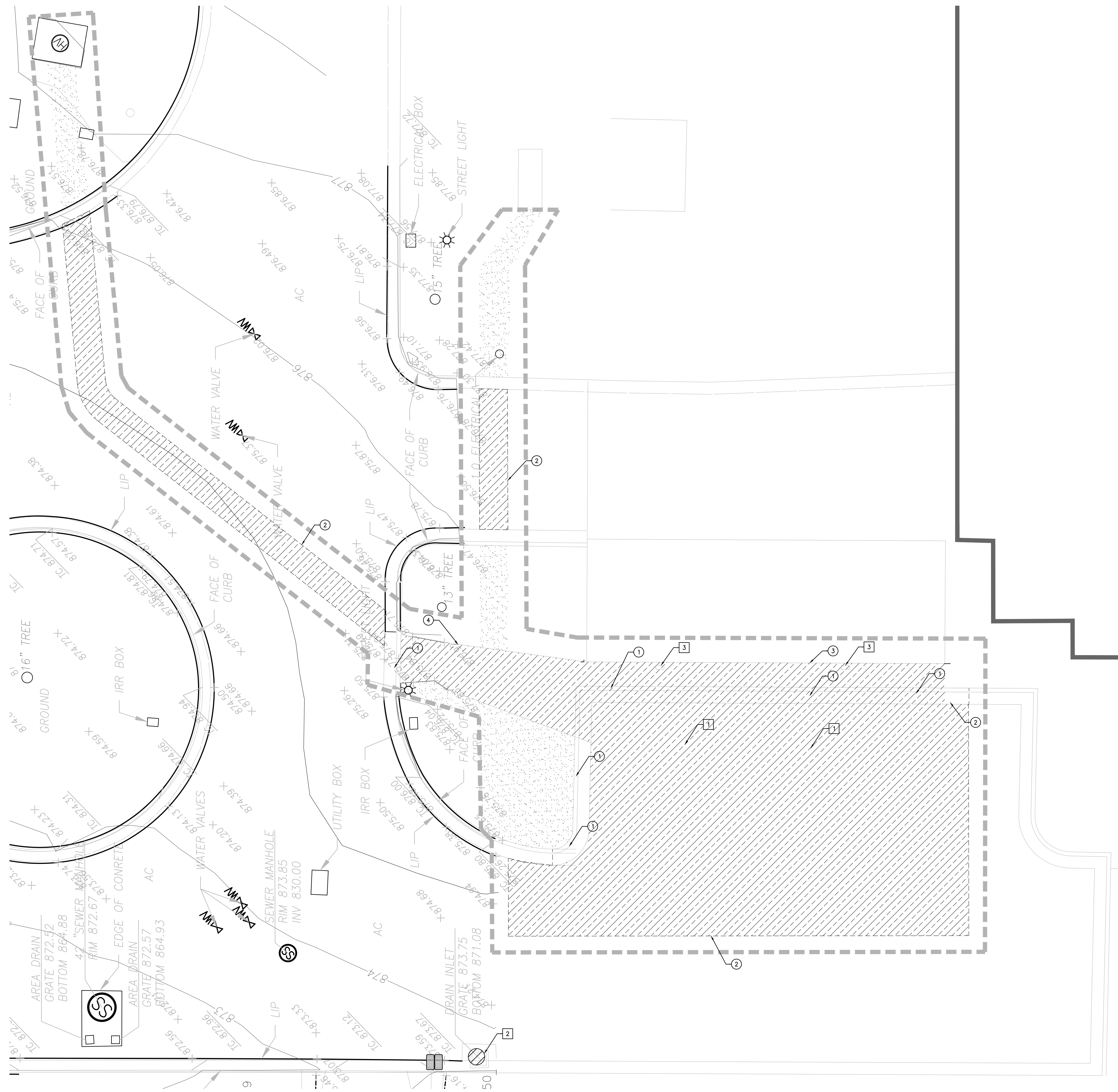
SHEET TITLE
COVER SHEET

REVISIONS

50% PRICING SET	09/30/2022
100% CD SET	10/24/2022
DSA SUBMITTAL	12/01/2022
DSA RESUBMITTAL 1	04/14/2023
DSA RESUBMITTAL 2	05/25/2023

DRAWN BY: **KB**
CHECKED BY: **RK**
JOB NO: 2022-0586
DATE: 05/25/2023
SHEET NUMBER

G0.1



DEMOLITION AND EROSION CONTROL LEGEND:

- LIMIT OF WORK
- - - SAWCUT
- ⊗ INLET PROTECTION - SEE DETAIL 3, SHEET C3.0
- ▣ GRAVEL FILTER BAG - SEE DETAIL 4, SHEET C3.0
- ▨ ASPHALT HARDSCAPE REMOVAL
- ░ CLEAR AND GRUB

PROTECT IN PLACE:

- 1 ELECTRIC PULL BOX, ADJUST TO GRADE
- 2 CURB INLET
- 3 GROUND WELL

REMOVE/DEMOLISH:

- 1 DEMOLISH CURB WHERE NECESSARY
- 2 SAWCUT WHERE NECESSARY
- 3 DEMOLISH CONCRETE WALL - SEE STRUCTURAL DRAWINGS
- 4 ASPHALT WALKWAY

GENERAL DEMOLITION NOTES:

1. CONTRACTOR TO CLEAR PROJECT SITE AREA WITHIN THE CONFINES OF THE DEMOLITION LIMIT LINE. THE CONTRACTOR SHALL DEMOLISH AND REMOVE FROM THE SITE ALL EXISTING UTILITIES, STRUCTURES, PLANTERS, TREES, AND ALL OTHER SITE FEATURES, UNLESS OTHERWISE NOTED ON THE PLAN.
2. REMOVAL OF LANDSCAPING SHALL INCLUDE ROOTS AND ORGANIC MATERIALS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS AND SHALL PAY ALL FEES NECESSARY FOR ENCROACHMENT, GRADING, DEMOLITION AND DISPOSAL OF SAID MATERIALS AS REQUIRED BY PRIVATE, LOCAL AND STATE JURISDICTIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FULLY ACKNOWLEDGE THE EXTENT OF THE DEMOLITION WORK.
5. THE CONTRACTOR SHALL VERIFY AND LOCATE ALL EXISTING ABOVE AND UNDERGROUND UTILITIES. LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND ARE SHOWN FOR GENERAL INFORMATION ONLY.
6. DAMAGE TO ANY EXISTING UTILITIES AND SERVICES TO REMAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL REPAIR AND/OR REPLACE IN KIND.
7. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT DEBRIS AND UNSUITABLE MATERIALS FROM ENTERING STORM DRAINS, SANITARY SEWERS AND STREETS.
8. DUST CONTROL SHALL BE IMPLEMENTED DURING DEMOLITION.
9. DEMOLITION IS LIMITED TO WITHIN DEMOLITION LIMIT LINE UNLESS NOTED OTHERWISE.

ISA STAMP

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120731 INC.
REVIEWED FOR: SS FLS ACS
DATE: 6/8/2023

kpff
45 Fremont Street, 28th Floor
San Francisco, CA 94105
415.989.1004 | kpff.com

05/25/2023
DATE SIGNED

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr,
Oakland, CA 94619

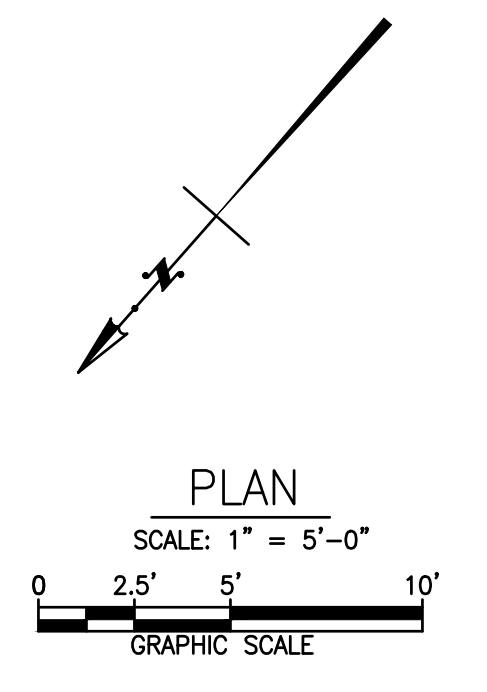
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**EXISTING
CONDITIONS &
DEMO PLAN**

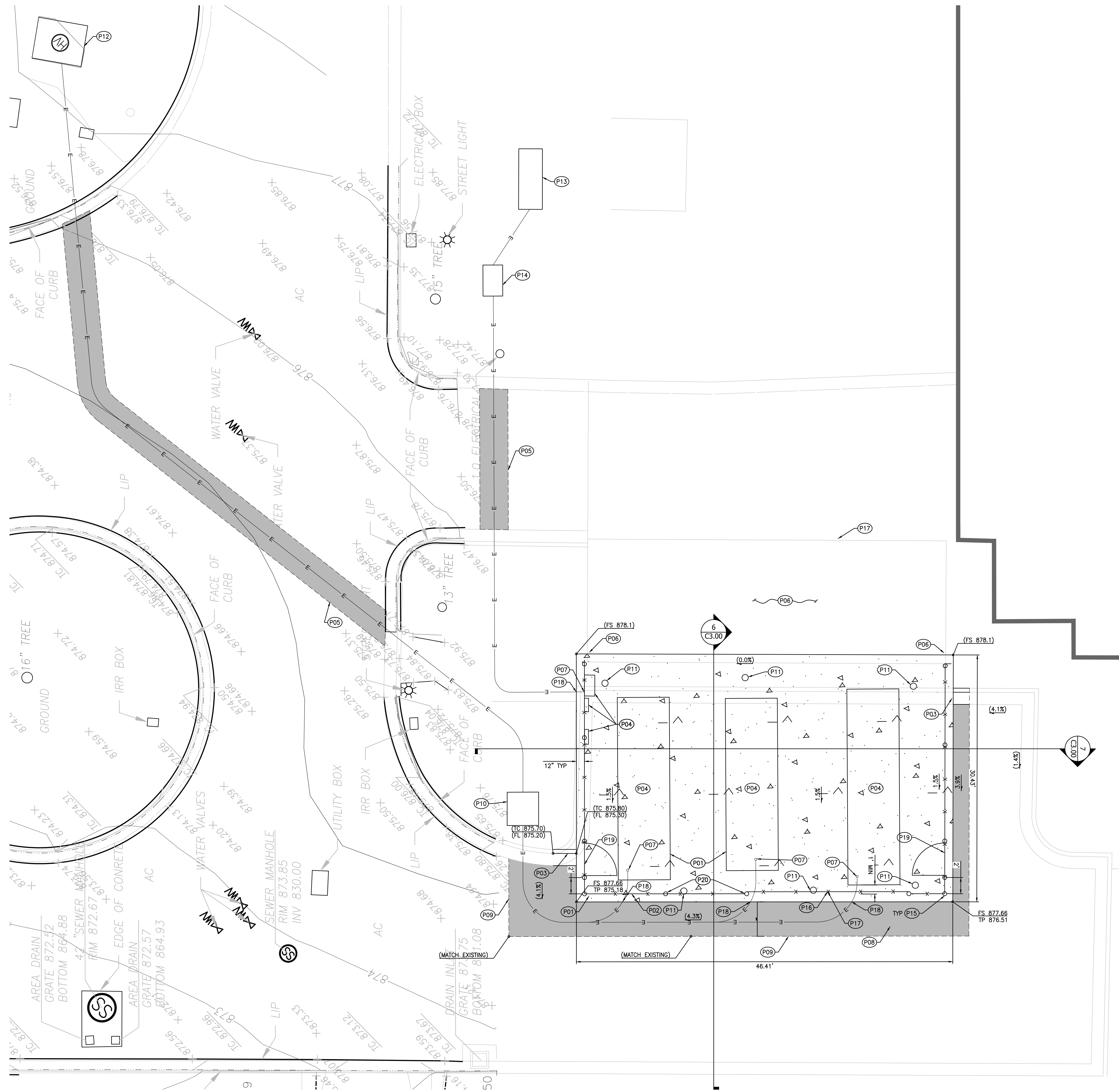
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100% CD	11/01/22
DSA SUBMITTAL	11/23/22
DSA RESUBMITTAL 1	04/14/23
DSA RESUBMITTAL 2	05/25/23

DRAWN BY: CC
CHECKED BY: RB
JOB NO.: 2022-0586
DATE: 05/25/2023
SHEET NUMBER

C1.0





ABBREVIATIONS:

FL	FLOW LINE
FS	FINISHED SURFACE
TC	TOP OF CURB
TP	TOP OF PAVEMENT

GRADING GENERAL NOTES:

1. PROVIDE STRAIGHT LINE GRADING BETWEEN SPOT ELEVATIONS AND CONTOUR LINES.
2. SURFACE CROSS SLOPES OF SIDEWALKS SHALL NOT EXCEED 2%.
3. COORDINATE WITH ARCHITECT/LANDSCAPE ARCHITECT PLAN FOR SIDEWALK FINISH.
4. ELEVATIONS SHOWN ARE TO TOP OF PAVEMENT, UNLESS NOTED OTHERWISE.
5. ADJUST ALL UTILITY VAULTS AND LIDS WITHIN THE WORK AREA TO MATCH THE NEW PAVEMENT AND FINISHED GRADE ELEVATIONS AND SLOPES.
6. FOR EXTERIOR LANDINGS, SEE WATERPROOFING DRAWINGS, SEE ARCHITECTURE DRAWINGS.
7. UNLESS OTHERWISE SPECIFIED, THE NOMINAL SPECIFIED HEIGHT OF CURB MEASURED FROM GUTTER TO TOP OF CURB SHALL BE 6".

SITE LAYOUT NOTES:

- (P01) NEW CONCRETE EQUIPMENT SLAB - SEE STRUCTURAL DRAWINGS.
- (P02) NEW 8.5FT HIGH FENCE SEE STRUCTURAL DRAWINGS.
- (P03) REBUILD CONCRETE CURB AND GUTTER AS NECESSARY - SEE DETAIL 1, SHEET C3.0.
- (P04) NEW ELECTRICAL EQUIPMENT, SHOWN FOR REFERENCE ONLY - SEE ELECTRICAL DRAWINGS
- (P05) TRENCH, AND PATCH PAVE AS NEEDED FOR NEW ELECTRICAL CONDUIT. - SEE DETAIL 5, SHEET C3.0. SEE ELECTRICAL DRAWINGS FOR ALIGNMENT
- (P06) CONTRACTOR TO CONFIRM ELEVATION OF EXISTING SLAB. NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES.
- (P07) CONDUIT SLAB PENETRATION - SEE DETAIL 3, SHEET E4.1
- (P08) ASPHALT PAVING - SEE DETAIL 2, SHEET C3.0
- (P09) SAWCUT AS NECESSARY
- (P10) UNDERGROUND VAULT - SEE ELECTRICAL DRAWINGS
- (P11) GROUND WELL - SEE DETAIL 6, SHEET E4.1. SET RIM 2" ABOVE TOP OF CURB.
- (P12) EXISTING ELECTRICAL MANHOLE
- (P13) EXISTING ELECTRICAL GENERATOR
- (P14) PROPOSED PULLBOX - SEE DETAIL 4, SHEET E4.1. SET RIM 2" ABOVE ADJACENT GRADE.
- (P15) FENCE POST - SEE DETAIL 8, SHEET C3.0
- (P16) 20' WIDE ROLLING GATE - SEE DETAIL 9, SHEET C3.0
- (P17) MOUNT DANGER HIGH VOLTAGE SIGN ON GATE - SEE DETAIL 10, SHEET C3.0
- (P18) CONDUIT THICKENED EDGE PENETRATION - SEE DETAIL 4, SHEET S3.1
- (P19) 4' WIDE SWING GATE - SEE DETAIL 11, SHEET C3.0
- (P20) 10.5' TALL, STD PIPE 6 GATE POST FOR LIGHT MOUNTING - SEE ELECTRICAL DRAWINGS

SITE LAYOUT LEGEND

	ASPHALT PAVING - SEE DETAIL 2, SHEET C1.02.
	FENCE
	CURB/CURB & GUTTER
	PROPOSED ELEVATION
	EXISTING ELEVATION
	PROPOSED SLOPE
	EXISTING SLOPE
	ELECTRICAL CONDUIT - SEE ELECTRICAL PLANS

DSA STAMP

IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 APP: 01-120731 INC.
 REVIEWED FOR: SS FLS ACS
 DATE: 6/8/2023

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Professional Engineer Seal for Alan J. Ballester, No. 82786, State of California, Civil, Exp. 12/31/2023. Date: 05/25/2023, Title: Surveyor.

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

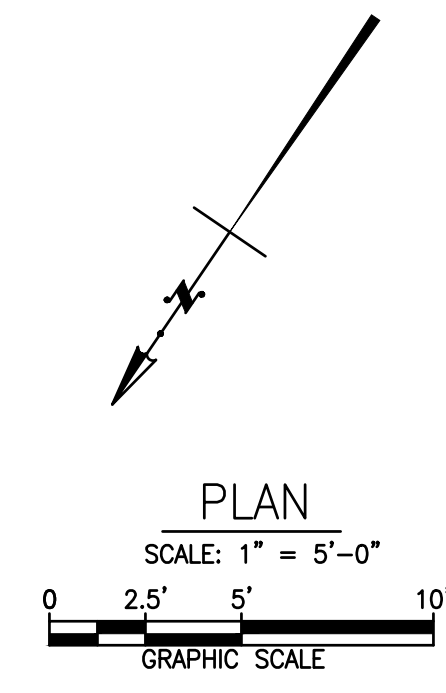
12500 Campus Dr,
Oakland, CA 94619

SHEET TITLE
SITE LAYOUT PLAN

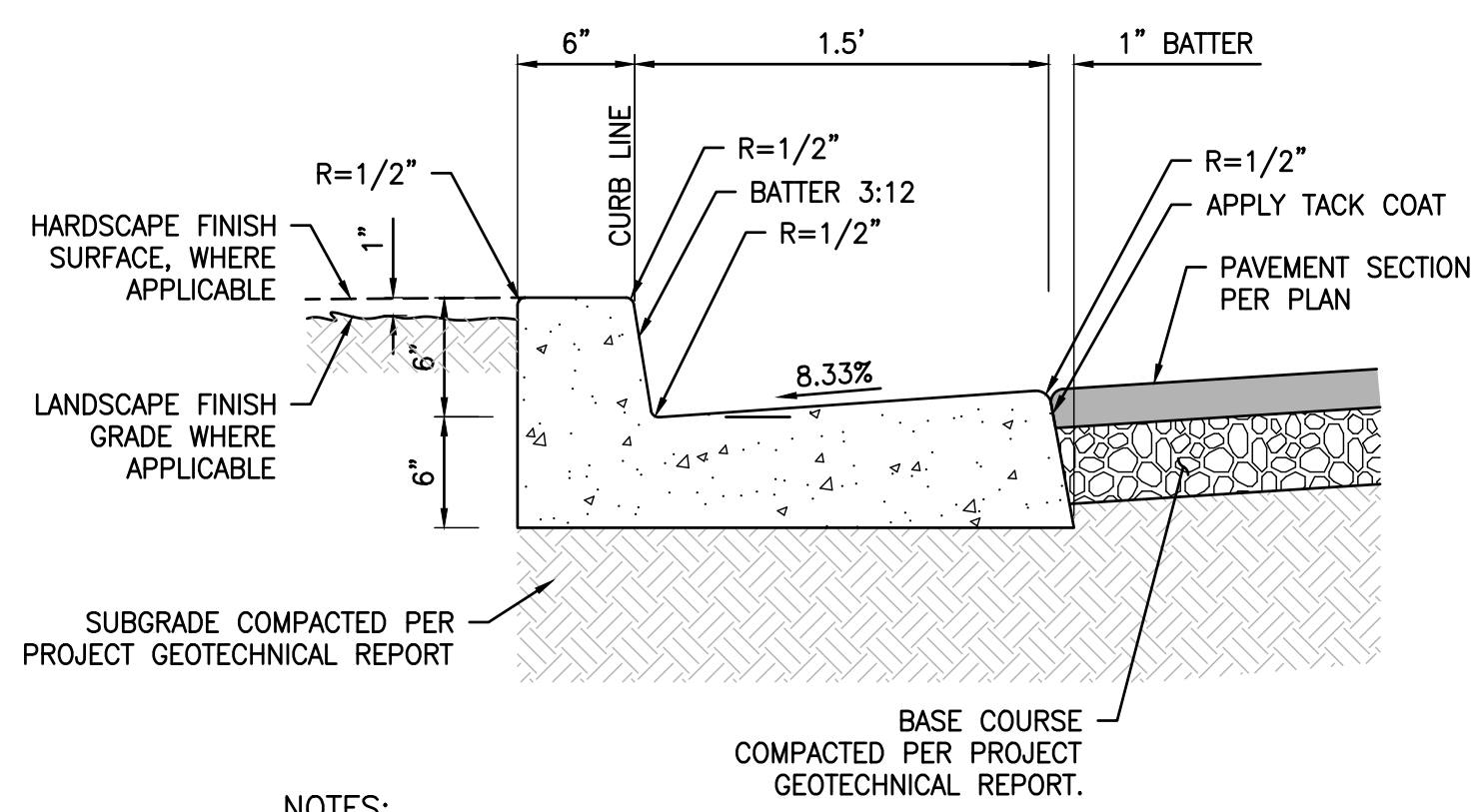
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100% CD	11/01/22
DSA SUBMITTAL	11/23/22
DSA RESUBMITTAL 1	04/14/23
DSA RESUBMITTAL 2	05/25/23

DRAWN BY: CC
 CHECKED BY: RB
 JOB NO.: 2022-0586
 DATE: 05/25/2023
 SHEET NUMBER



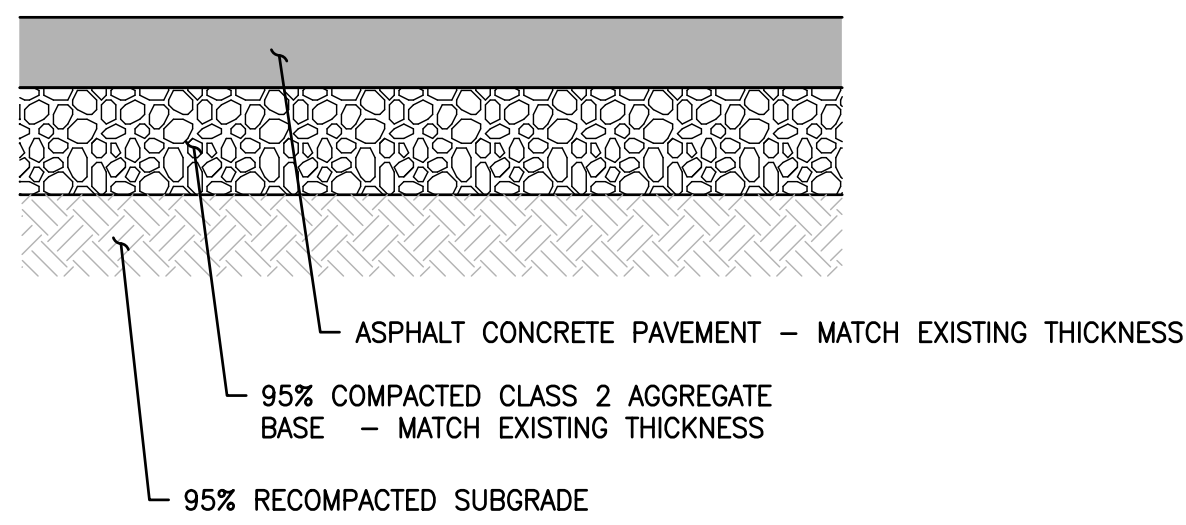
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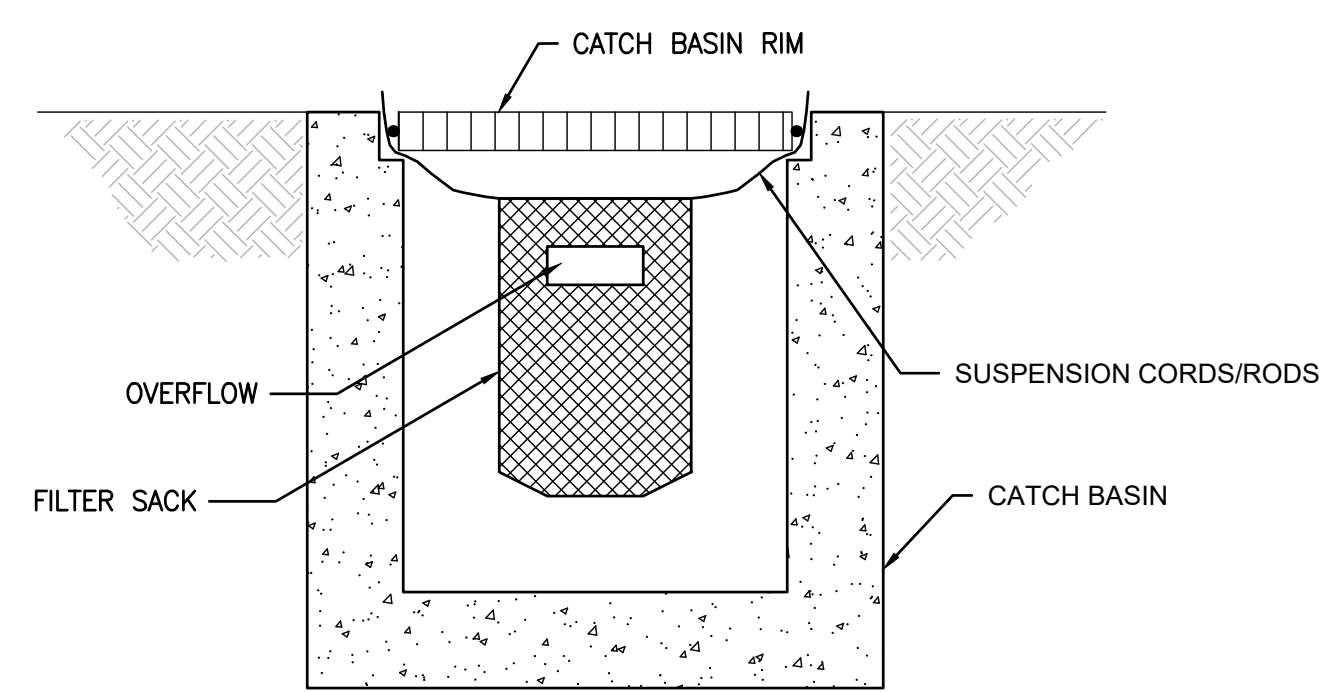
NOTES:

- ISOLATION JOINTS SHALL BE PLACED ONLY AS SPECIFIED.
- CONTROL JOINTS CONSISTING OF 1" DEEP SCORES SHALL BE PLACED AT 10' INTERVALS O.C.
- WHERE A WALK IS ADJACENT TO THE CURB THE JOINTS SHALL ALIGN WITH JOINTS IN THE WALK.

1 CONCRETE CURB & GUTTER
N.T.S.

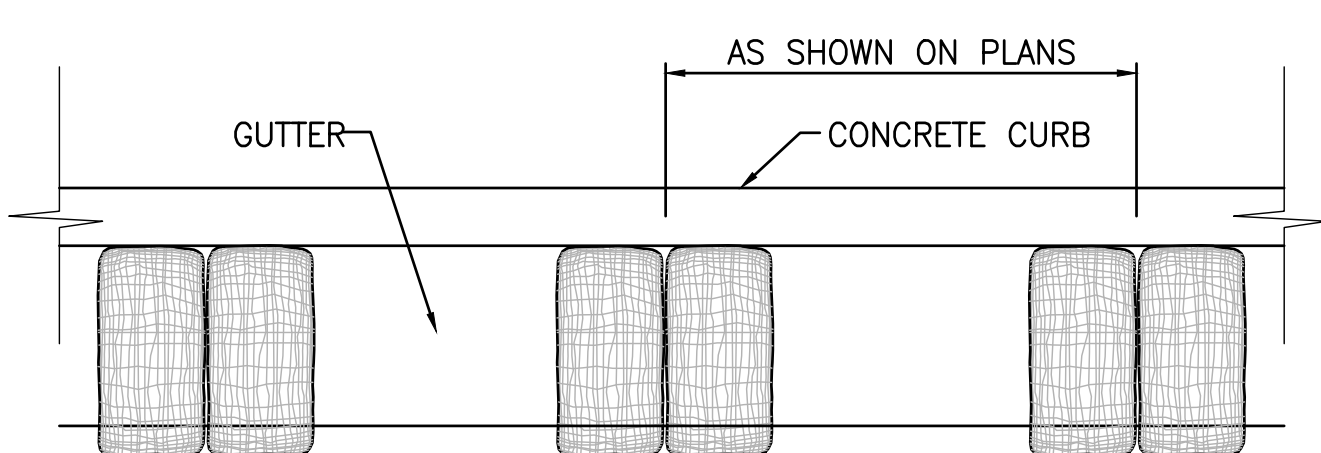


2 ASPHALT CONCRETE
N.T.S.



NOTE:
RECESSED CURB INLET MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS. SIZE OF FILTER FABRIC INLET SACK TO BE DETERMINED BY MANUFACTURER.

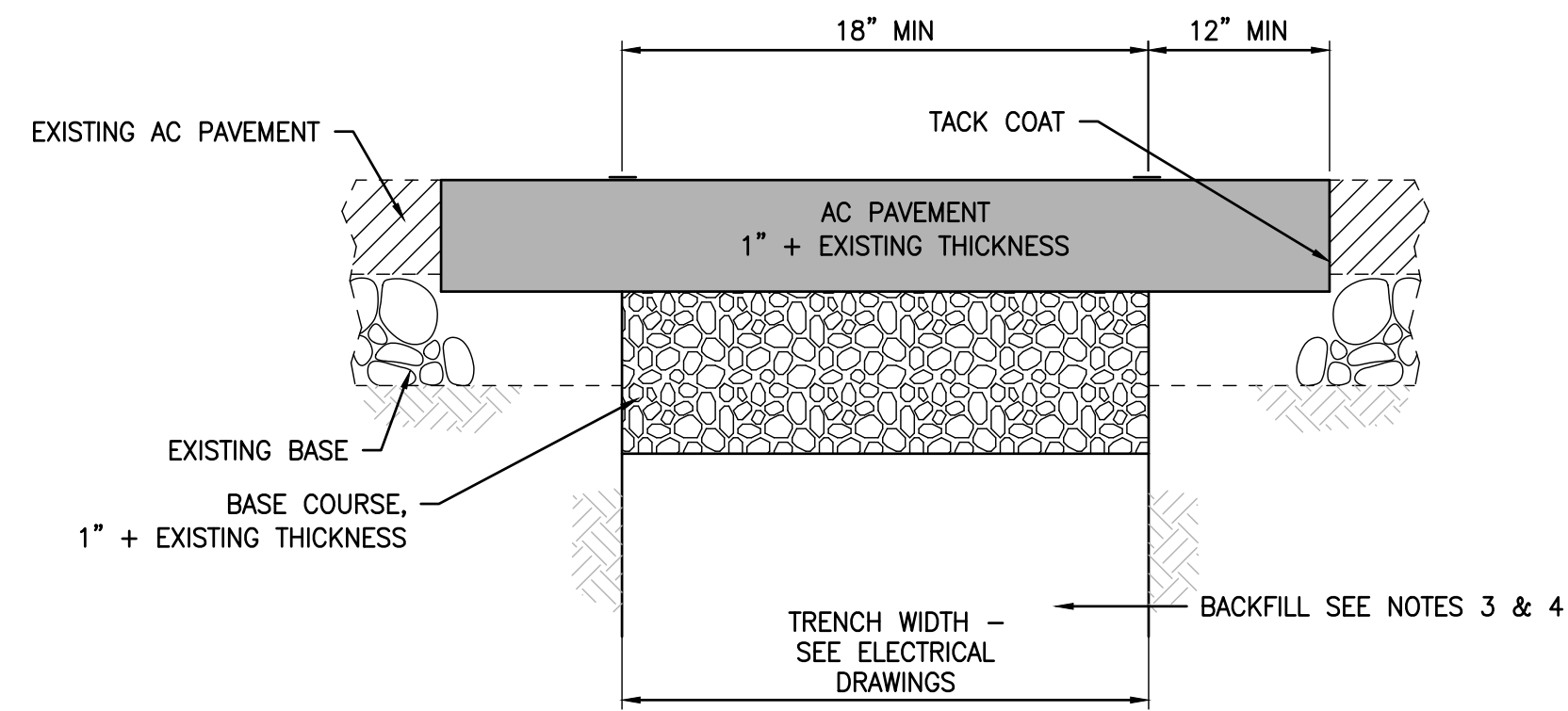
3 INLET PROTECTION
N.T.S.



NOTE:

- PLACE BIOBAG FLUSH AGAINST CURB IN GUTTER
- BIOBAG SHALL BE CLEAN 100-PERCENT RECYCLED WOOD PRODUCT WASTE, STANDARD SIZE, 10X8X30-INCHES, WEIGHT APPROXIMATELY 45-LBS, WITH 1/2-INCH PLASTIC NETTING.

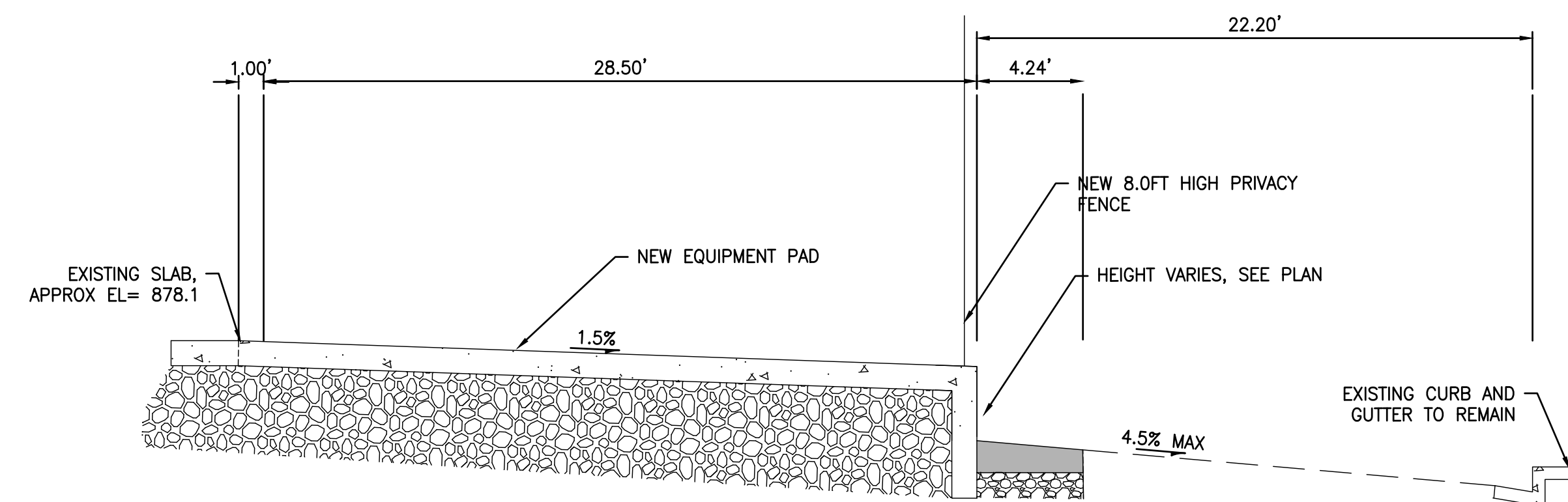
4 BIOBAG PROTECTION
N.T.S.



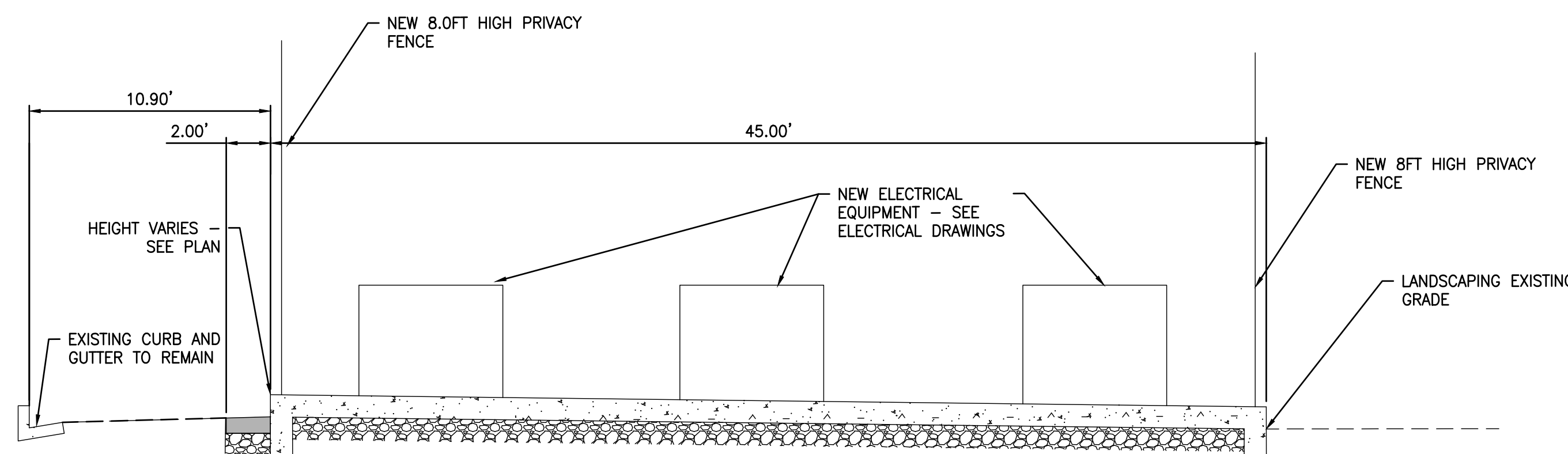
NOTES:

- DURING EXCAVATION AND SUBGRADE PREPARATION, THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO ENSURE THE PROTECTION OF ALL IMPROVEMENTS, WHETHER PUBLIC OR PRIVATE, INCLUDING UTILITIES AND THEIR SERVICES, FROM ANY DAMAGE THAT COULD OCCUR DUE TO CONTRACTOR'S CONSTRUCTION ACTIVITIES.
- BACKFILL AND DENSIFICATION SHALL BE DONE IN CONFORMANCE WITH THE EARTHWORK SPECIFICATIONS AS PROVIDED ON SHEETS C4.0 AND C4.1, EXCEPT AS FOLLOWS:
A) IF NOT OTHERWISE SPECIFIED, TRENCH BACKFILL SHALL BE DENSIFIED TO A MINIMUM OF 90 PERCENT RELATIVE COMPACTION.
- TEMPORARY PAVEMENT RESURFACING SHALL BE PLACED AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE SPECIFIED BY THE ENGINEER. IT SHALL BE PLACED LEVEL WITH THE EXISTING PAVEMENT ON COMPACTED TRENCH BACKFILL, AND SHALL BE A MINIMUM OF 2" THICK.
- PERMANENT PAVEMENT RESURFACING SHALL BE DONE WITHIN TWO (2) WEEKS AFTER BACKFILLING OF TRENCHES HAS BEEN COMPLETED, ONLY AFTER SETTLEMENT HAS TAKEN PLACE AND THE FILL SURFACE HAS SUFFICIENTLY DRIED. ALL CUTS SHALL BE GROOMED CLEAN AND STRAIGHT.
- CONTACT SURFACES OF EXISTING PAVEMENT, MANHOLE FRAMES AND SHAFTS AND CONCRETE SURFACES SHALL HAVE A TACK COATING APPLIED BEFORE PERMANENT ASPHALT RESURFACING IS PLACED.
- ASPHALT CONCRETE PAVEMENT SHALL BE AS SPECIFIED.

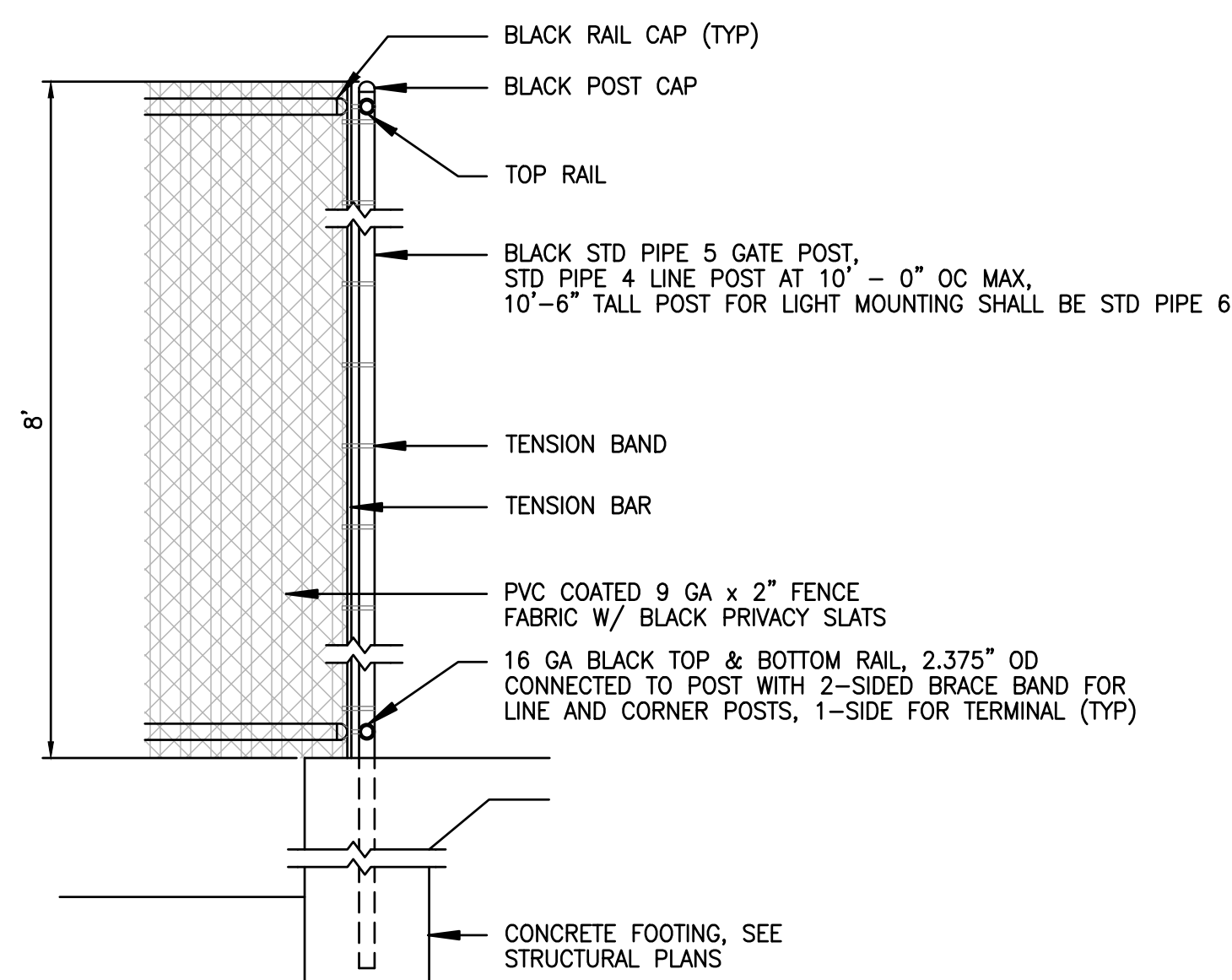
5 ASPHALT TRENCH PATCH
N.T.S.



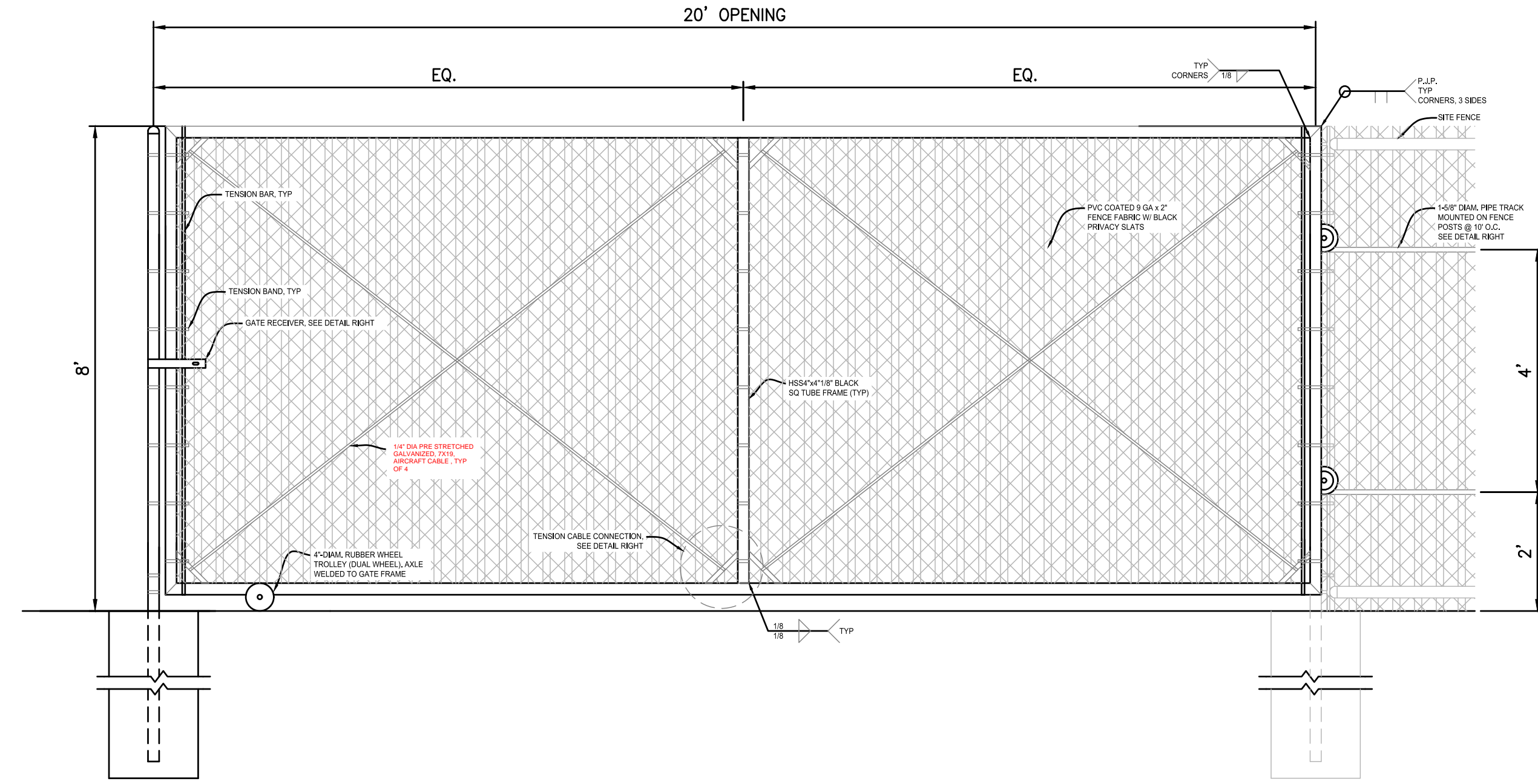
6 EQUIPMENT PAD SECTION
N.T.S.



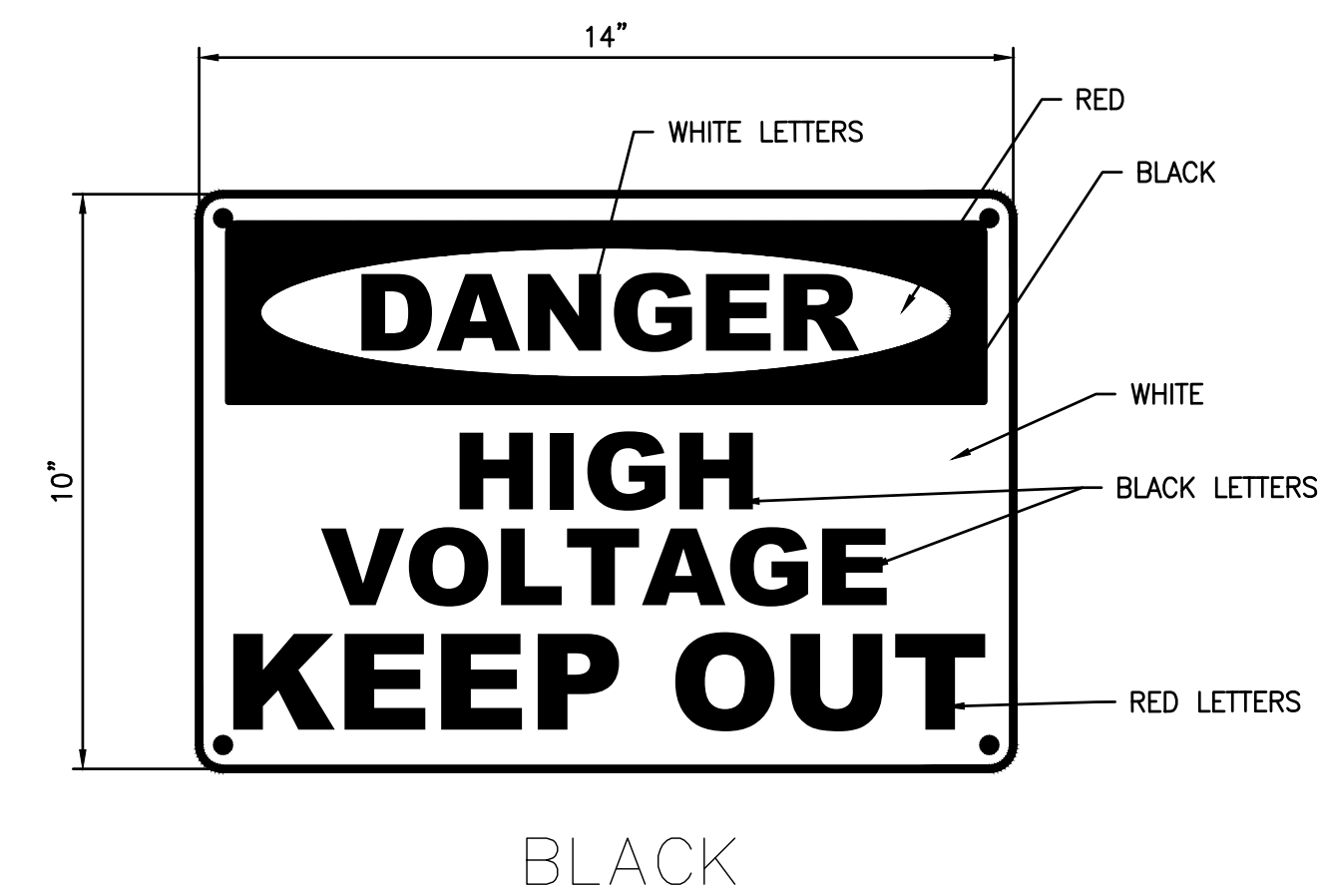
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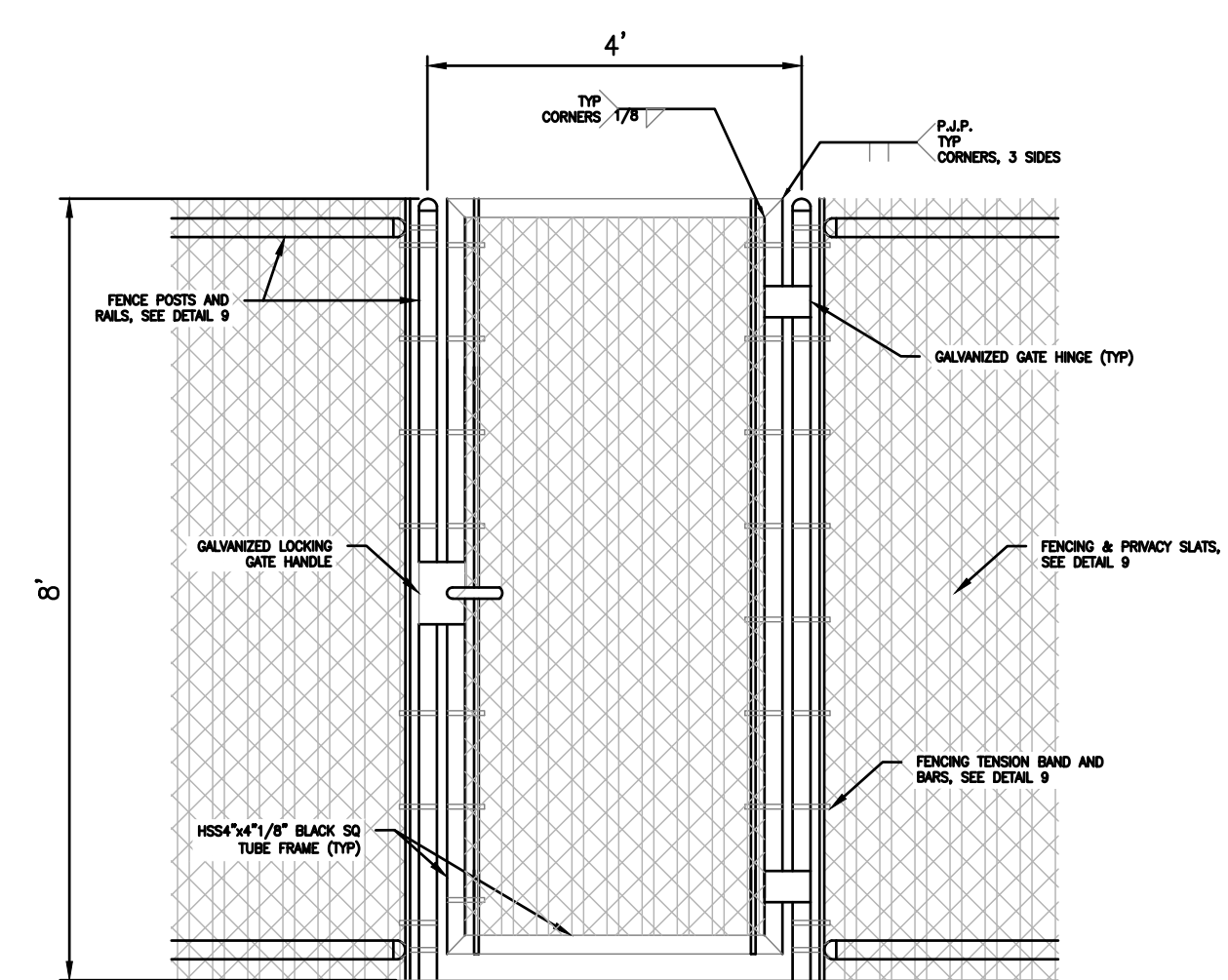
8 FENCE POST
N.T.S.



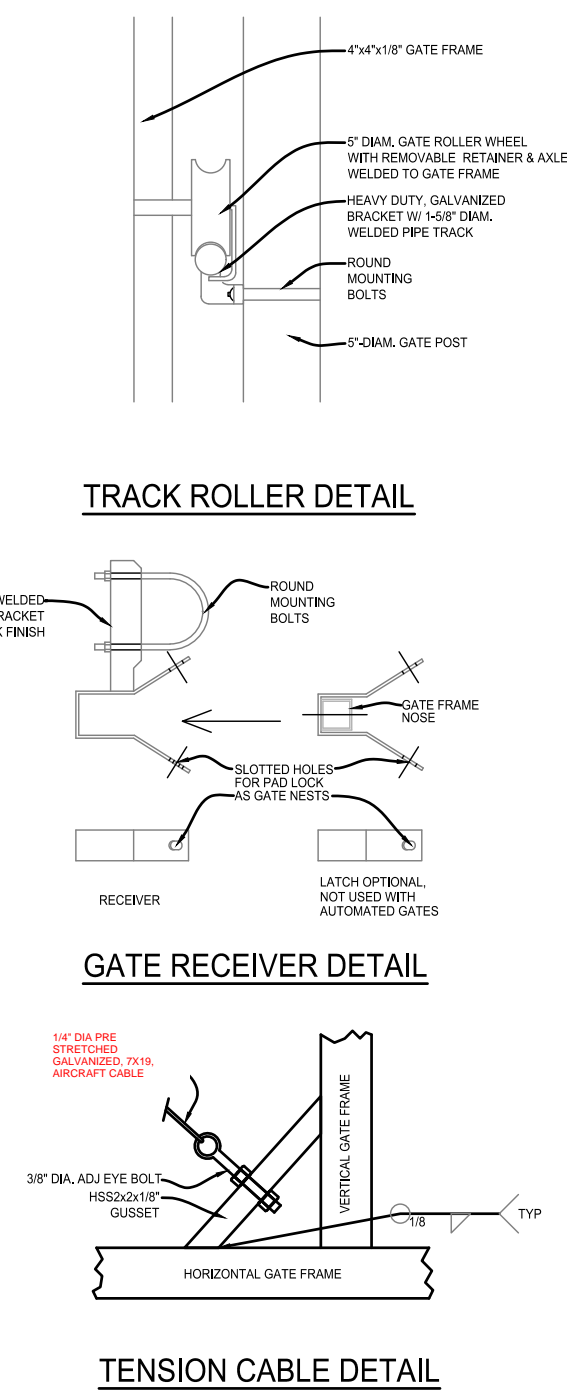
9 SLIDING GATE
N.T.S.



10 DANGER HIGH VOLTAGE
N.T.S.



11 ACCESS GATE
N.T.S.



DSA STAMP
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120731 INC.
REVIEWED FOR
SS FLS ACS
DATE: 6/8/2023

kpff
45 Fremont Street, 28th Floor
San Francisco, CA 94105
415.989.1004 | kpff.com

CIVIL ENGINEER
No. 82786
DATE SIGNED: 05/25/2023
DATE SIGNED

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr.,
Oakland, CA 94619

SHEET TITLE
DETAILS

REVISIONS	DATE
100% CD	11/01/22
DSA SUBMITTAL	11/23/22
DSA RESUBMITTAL 1	04/14/23
DSA RESUBMITTAL 2	05/25/23

DRAWN BY: CC
CHECKED BY: RB
JOB NO.: 2022-0586
DATE: 05/25/2023
SHEET NUMBER

C3.0



05/25/2023
DATE SURET

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr,
Oakland, CA 94619

SHEET TITLE

SPECIFICATIONS

REVISIONS		
100% CD		11/01/22
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DSA RESUBMITTAL 2		05/25/23

DRAWN BY	CC	
CHECKED BY	RB	
JOB NO.	2022-0586	
DATE	05/25/2023	
SHEET NUMBER		

C4.0

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**SECTION 31 2000
EARTH MOVING**

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the following:

- Preparing subgrades.
- Excavating and backfilling for buildings and structures.
- Excavating and backfilling for utility trenches.
- Base course for concrete walks and pavements.
- Base course for asphalt paving.

1.02 SUBMITTALS

A. Product Data: All soil materials. Include technical data and tested physical and performance properties.

1.03 DEFINITIONS

- A. Backfill: Soil material used to fill an excavation.
- Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 - Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Base Course: Course placed between subgrade and hot-mix asphalt or concrete paving.
- C. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
- Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions changes in the Work.
 - Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- F. Fill: Soil materials used to raise existing grades.

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PART 2 - NOT USED

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Locate and clearly flag trees and vegetation to remain or to be relocated.
- C. Protect existing site improvements to remain from damage during construction.
- Restore damaged improvements to their original condition, as acceptable to Owner.

3.02 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to sediment and erosion control Drawings and the requirements of authorities having jurisdiction.
- B. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- C. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.03 TREE PROTECTION

- A. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.
- B. Do not excavate within tree protection zones, unless otherwise indicated.
- C. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Architect.

3.04 UTILITIES

- A. Locate, identify, disconnect, and seal or cap-off utilities indicated to be abandoned in place.
- Arrange with utility companies to shut off indicated utilities.
 - Utilities 8 inches in diameter or less indicated to be demolished may be plugged and abandoned in place, except under proposed building footprints.

DSA Application No. November 14, 2022 31 1000 - 2 Merritt College Substation C SITE CLEARING

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3.04 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
- Excavations for Footings and Foundations. Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

3.05 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.06 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

- Excavate trenches 3 inches deeper than elevation to allow for bedding course. Hand excavate for bell of pipes.
- Excavate utility structures to provide 9 inches clearance (enlarge as needed) to allow for compaction of backfill material.

3.07 SUBGRADE INSPECTION

- A. Proof-roll subgrade before filling or placing aggregate with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
- B. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.08 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.

DSA Application No. November 14, 2022 31 2000 - 4 Merritt College Substation C EARTH MOVING

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**SECTION 31 1000
SITE CLEARING**

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes the following:
- Removing existing trees and other vegetation.
 - Removing above- and below-grade site improvements.
 - Disconnecting and capping or sealing site utilities.
 - Temporary erosion and sedimentation control measures.

1.02 MATERIAL OWNERSHIP

- A. Except for materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site and disposed of properly.
- B. Historic items, relics, and other items of interest or value to the Owner encountered during site clearing shall remain the Owner's property. Contact Architect for direction without moving objects.

1.03 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
- Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- C. Utility Locator Service: Notify public utility locator service for area where Project is located a minimum of 48 hours prior to site clearing.
- D. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

DSA Application No. November 14, 2022 31 1000 - 1 Merritt College Substation C SITE CLEARING

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- H. In-Water Fill Material: Natural or artificially well graded angular rock with nominal maximum size of a 6 inches and having less than 5 percent passing the a 1/4-inch sieve.
- I. Filter Fabric: Nonwoven geotextile, specifically manufactured as a drainage geotextile; made from polyesters, nylons, polypropylenes, or a combination thereof; per Caltrans Standard Specifications, Section 88-1.03 for underdrains.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, freezing temperatures or frost, and other hazards created by earthwork operations. Provide protective insulating materials as necessary.
- B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Section 31 10 00 "Site Clearing."
- C. Protect and maintain erosion and sedimentation controls during earthwork operations.
- D. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- E. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

3.02 EXPLOSIVES

- A. Explosives: Do not use explosives.

3.03 EXCAVATION

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions.
- If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
 - Earth excavation includes excavating pavements and obstructions visible on the surface; underground structures, utilities, and other items indicated to be removed, together with soil, boulders, and other materials not classified as rock or unauthorized excavation.

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- G. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical apparatuses, or other man-made stationary features constructed above or below the ground surface.
- H. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- I. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.04 PROJECT CONDITIONS

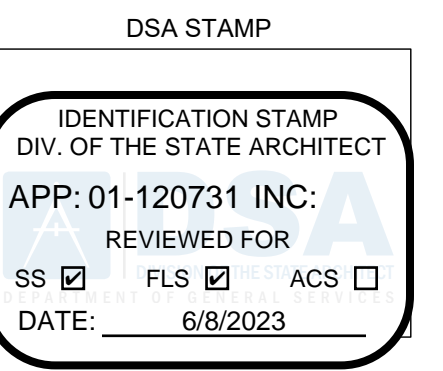
- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Architect and then only after arranging to provide temporary utility services according to requirements indicated.
- B. Site Information: Research public utility records and verify existing utility locations prior to ordering any material. Notify the Architect immediately if any discrepancies are found in the project survey.

PART 2 - PRODUCTS

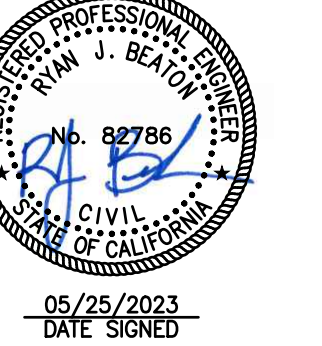
2.01 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Imported soil that is free or organic matter, contain no rocks or lumps larger than three inches in greatest dimension, have a liquid limit less than 40 and plasticity index less than 12.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
- Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Base Course: California Standard Specifications, Class 2 Aggregate Base for 3/4-inch aggregate. Aggregate may include up to 50 percent reclaimed material by volume.
- E. Engineered Fill: See Satisfactory Soils.
- F. Bedding Course: Sand that meets gradation of: 90%-100% passing a #4 sieve, and 0%-15% passing a #200 sieve.
- G. Backfill and Fill:
- Satisfactory soil materials.
 - Initial Trench Backfill: Bedding Course.
 - Final Trench Backfill: Engineered Fill.

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- 3.12 SOIL FILL**
- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
- Under grass and planted areas, use satisfactory soil material.
 - Under walks and pavements, use satisfactory soil material.
 - Under steps and ramps, use engineered fill.
 - Under building slabs, use engineered fill.
 - Under footings and foundations, use engineered fill.
 - Under and around utility structures, use engineered fill.
- 3.13 SOIL MOISTURE CONTROL**
- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to at least 4 percent above optimum moisture content.
- Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
- 3.14 COMPACTION OF SOIL BACKFILLS AND FILLS**
- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:
- Under mat slab, scarify, lime treat, and recompact top 18 inches of existing subgrade and each layer of backfill or fill soil material at 87 to 92 percent.
 - Under walkways, scarify and recompact top 12 inches below subgrade and compact each layer of backfill or fill soil material at 90 percent.
 - Under lawn or unpaved areas, scarify and recompact compact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
 - For utility trenches, compact each layer of initial and final backfill soil material at 95 percent.
- 3.15 GRADING**
- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

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- Lawn or Unpaved Areas: Plus or minus 1 inch.
 - Walks: Plus or minus 1/2-inch.
 - Pavements: Plus or minus 1/2-inch.
- C. Grading Inside Building Lines: Finish subgrade to a tolerance of 1/2-inch when tested with a 10-foot straightedge.
- 3.16 BASE COURSE**
- A. Place base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place base course under pavements and walks as follows:
- Shape base course to required crown elevations and cross-slope grades.
 - Compact base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of density according to ASTM D 1557.
- 3.17 FIELD QUALITY CONTROL**
- A. Testing Agency: Contractor will engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.
- D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
- Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 square feet or less of paved area or building slab, but in no case fewer than three tests.
 - Foundation Wall Backfill: At each compacted backfill layer, at least one test for each 100 feet or less of wall length, but no fewer than two tests.
 - Trench Backfill: At each compacted initial and final backfill layer, at least one test for each 150 feet or less of trench length, but no fewer than two tests.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

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- 3.18 PROTECTION**
- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
- Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.
- 3.19 DISPOSAL OF SURPLUS AND WASTE MATERIALS**
- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.
- END OF SECTION

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- SECTION 32 1216
ASPHALT PAVING**
- PART 1 - GENERAL**
- 1.01 SUMMARY**
- A. Section Includes:
- Hot-mix asphalt paving.
 - Hot-mix asphalt patching.
 - Pavement-marking paint.
- B. Related Sections:
- Division 31 Section "Earth Moving" for aggregate subbase and base courses and for aggregate pavement shoulders.
- 1.02 SUBMITTALS**
- A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.
- Job-Mix Designs: Certification of conformance for each job mix proposed for the Work.
- B. Material Certificates: For each paving material, from manufacturer.
- 1.03 QUALITY ASSURANCE**
- A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction or Caltrans.
- B. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of Section 39 of the 2015 Caltrans Standard Specifications for asphalt paving work.
- Measurement and payment provisions and safety program submittals included in the Caltrans Standard Specifications do not apply to this Section.
- 1.04 PROJECT CONDITIONS**
- A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
- Tack Coat: Minimum surface temperature of 60 deg F.
 - Asphalt Base Course: Minimum surface temperature of 60 deg F and rising at time of placement.
 - Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.
- B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 55 deg F for water-based materials, and not exceeding 95 deg F.
- END OF SECTION

DSA Application No. November 14, 2022 32 1216 - 1 Merritt College Substation C ASPHALT PAVING

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- PART 2 - PRODUCTS**
- 2.01 AGGREGATES**
- A. Conform to requirements of Section 39-2-02 Type "B" Aggregate of the 2015 Caltrans Standard Specifications for Construction.
- 2.02 ASPHALT MATERIALS**
- A. Asphalt Binder: Conform to requirements of Section 92 Grade 64-10 of the 2015 Caltrans Standard Specifications.
- B. Tack Coat: Conform to requirements of Section 94 "Asphaltic Emulsions" of the 2015 Caltrans Standard Specifications.
- 2.03 MIXES**
- A. Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction and complying with the following requirements:
- Provide mixes conforming to Section 39 of the 2015 Caltrans Standard Specifications.
 - Surface Course: Section 39 Type "A" of the Caltrans Standard Specification.
 - Include a minimum of 15% Recycled Asphalt Pavement (RAP) in mix design.
- 2.04 AUXILIARY MATERIALS**
- A. Pavement-Marking Paint: Latex, waterborne emulsion, lead and chromate-free, ready mixed, complying with FS-TT-P-1952D, with drying time of less than 15 minutes.
- Color: White and Yellow: Caltrans Spec. No. 8010-20B
Blue: Federal Standard 595b, Color No. 35180
- B. Glass Beads: AASHTO M 247, Type 1.
- C. Wheel Stops: Precast, air-entrained concrete, 2500-psi minimum compressive strength, a maximum of 5.25 inches high by 9 inches wide by 72 inches long. Provide chamfered corners, drainage slots on underside, and holes for anchoring to substrate.
- Dowels: Galvanized steel, 3/4-inch diameter, 18-inch minimum embedment length.
- PART 3 - EXECUTION**
- 3.01 EXAMINATION**
- A. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
- B. Proceed with paving only after unsatisfactory conditions have been corrected.
- 3.02 PATCHING**
- A. Hot-Mix Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into adjacent sound pavement, unless otherwise indicated. Saw-cut excavation faces vertically.

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- Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.
- B. Tack Coat: Apply uniformly to vertical surfaces abutting or projecting into new, hot-mix asphalt paving at a rate of 0.05 to 0.15 gal./sq. yd.
- Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
 - Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.
- C. Patching: Fill excavated pavements with hot-mix asphalt mix for full thickness of patch and, while still hot, compact flush with adjacent surface.
- 3.03 SURFACE PREPARATION**
- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
- B. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd.
- Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
 - Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.
- 3.04 HOT-MIX ASPHALT PLACING**
- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
- Spread mix at minimum temperature of 250 deg F.
 - Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
- B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.
- C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.
- 3.05 JOINTS**
- A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
- Clean contact surfaces and apply tack coat to joints.
 - Offset longitudinal joints, in successive courses, a minimum of 6 inches.
 - Offset transverse joints, in successive courses, a minimum of 24 inches.
 - Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."

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- 3.06 COMPACTION**
- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
- Complete compaction before mix temperature cools to 185 deg F.
- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
- Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
- F. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- G. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.
- 3.07 INSTALLATION TOLERANCES**
- A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
- Base Course: Plus or minus 1/2 inch.
 - Surface Course: Plus 1/4 inch, no minus.
- B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
- Base Course: 1/4 inch.
 - Surface Course: 1/8 inch.
 - Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.
- 3.08 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 30 days before starting pavement marking.

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- 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 5 mils.
- Broadcast glass beads uniformly into wet pavement markings at a rate of 6 lb/gal.
- 3.09 WHEEL STOPS**
- A. Install wheel stops in bed of adhesive as recommended by manufacturer.
- B. Securely attach wheel stops to pavement with not less than two galvanized-steel dowels embedded at one-quarter to one-third points. Securely install dowels into pavement and bond to wheel stop. Recess head of dowel beneath top of wheel stop.
- 3.10 FIELD QUALITY CONTROL**
- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Replace and compact hot-mix asphalt where core tests were taken.
- C. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.
- 3.11 DISPOSAL**
- A. Excavated materials from the Project site to be recycled on-site to the extent practical. Excess excavated materials from Project site shall be legally disposed of off-site.
- END OF SECTION

DSA Application No. November 14, 2022 32 1216 - 5 Merritt College Substation C ASPHALT PAVING

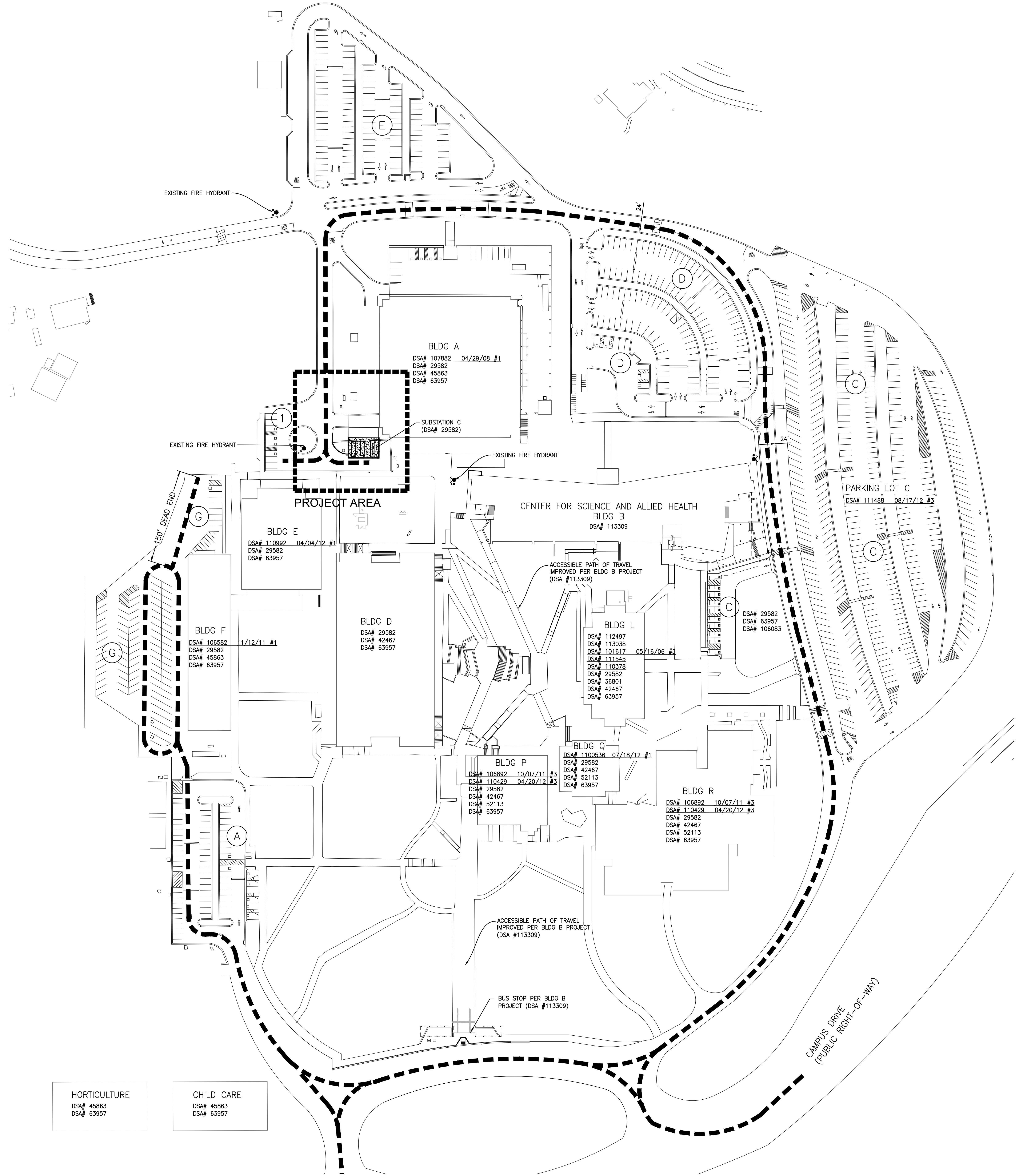
SHEET TITLE

SPECIFICATIONS

REVISIONS	
100% CD	11/01/22
DSA SUBMITTAL	11/23/22
DSA RESUBMITTAL 1	04/14/23
DSA RESUBMITTAL 2	05/25/23

DRAWN BY: CC
CHECKED BY: RB
JOB NO.: 2022-0586
DATE: 05/25/2023
SHEET NUMBER

C4.1



LEGEND

- FIRE ACCESS ROUTE
- FIRE HYDRANT

GENERAL NOTES:

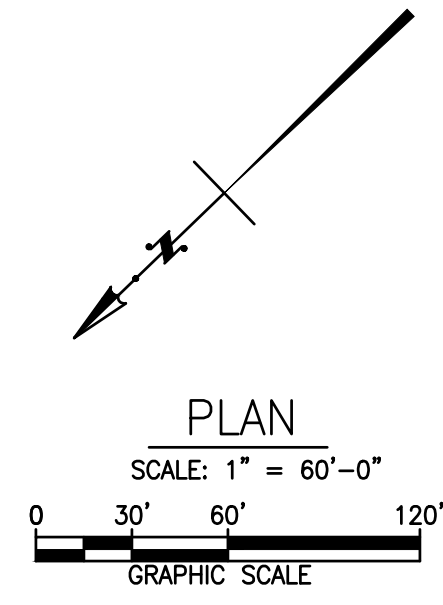
1. PROJECTS SUBMITTED TO DSA ON OR AFTER 11/12/97 ARE UNDERLINED WITH PROJECT CLOSEOUT DATES AND LETTERTYPE INDICATED

CAMPUSWIDE IMPROVEMENTS

DSA#	113074		
DSA#	106947	03/03/08	#3
DSA#	102079	09/14/07	#3
DSA#	102524	10/30/12	#1
DSA#	106083	06/21/06	#3
DSA#	110711	09/06/12	#3
DSA#	110042	06/12/09	#1
DSA#	112497		
DSA#	112534		
DSA#	112724		
DSA#	63957		

Parking Counts		
Lot	User	Count
(A)	ALL	62 STANDARD 7 ACCESSIBLE
(C)	ALL	354 STANDARD 21 ACCESSIBLE 3 MOTORCYCLE
(D)	STUDENTS	123 STANDARD 9 ACCESSIBLE 35 MOTORCYCLE
(E)	STUDENTS	107 STANDARD 0 ACCESSIBLE
(F)	NOT USED	NOT USED
(G)	STAFF	75 STANDARD 4 ACCESSIBLE
(1)	VISITORS	6 STANDARD 4 ACCESSIBLE

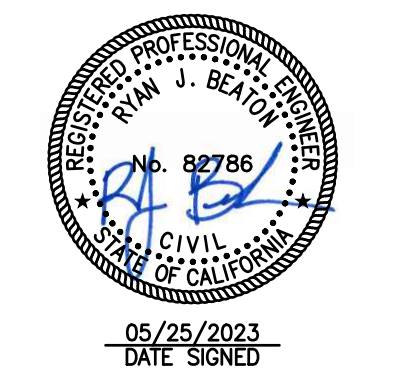
HORTICULTURE DSA# 45863 DSA# 63957	CHILD CARE DSA# 45863 DSA# 63957
--	--



DSA STAMP

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120731 INC.
REVIEWED FOR:
SS FLS ACS
DATE: 6/8/2023

kpff
45 Fremont Street, 28th Floor
San Francisco, CA 94105
415.989.1004 | kpff.com



MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr,
Oakland, CA 94619

SHEET TITLE

CAMPUS ACCESS PLAN

REVISIONS	
100% CD	11/01/22
DSA SUBMITTAL	11/23/22
DSA RESUBMITTAL 1	04/14/23
DSA RESUBMITTAL 2	05/25/23

DRAWN BY	CC
CHECKED BY	RB
JOB NO.	2022-0586
DATE	05/25/2023
SHEET NUMBER	

C5.0

MERRITT COLLEGE REPLACEMENT OF SECOND POWER SUBSTATION C

12500 CAMPUS DR
OAKLAND, CA 94619

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120731 INC:
REVIEWED FOR
SS FLS ACS
DATE: 6/8/2023

INTERFACE
ENGINEERING
1999 Harrison Street, Suite 550
Oakland, CA 94612
415-489-7240
www.interfaceengineering.com

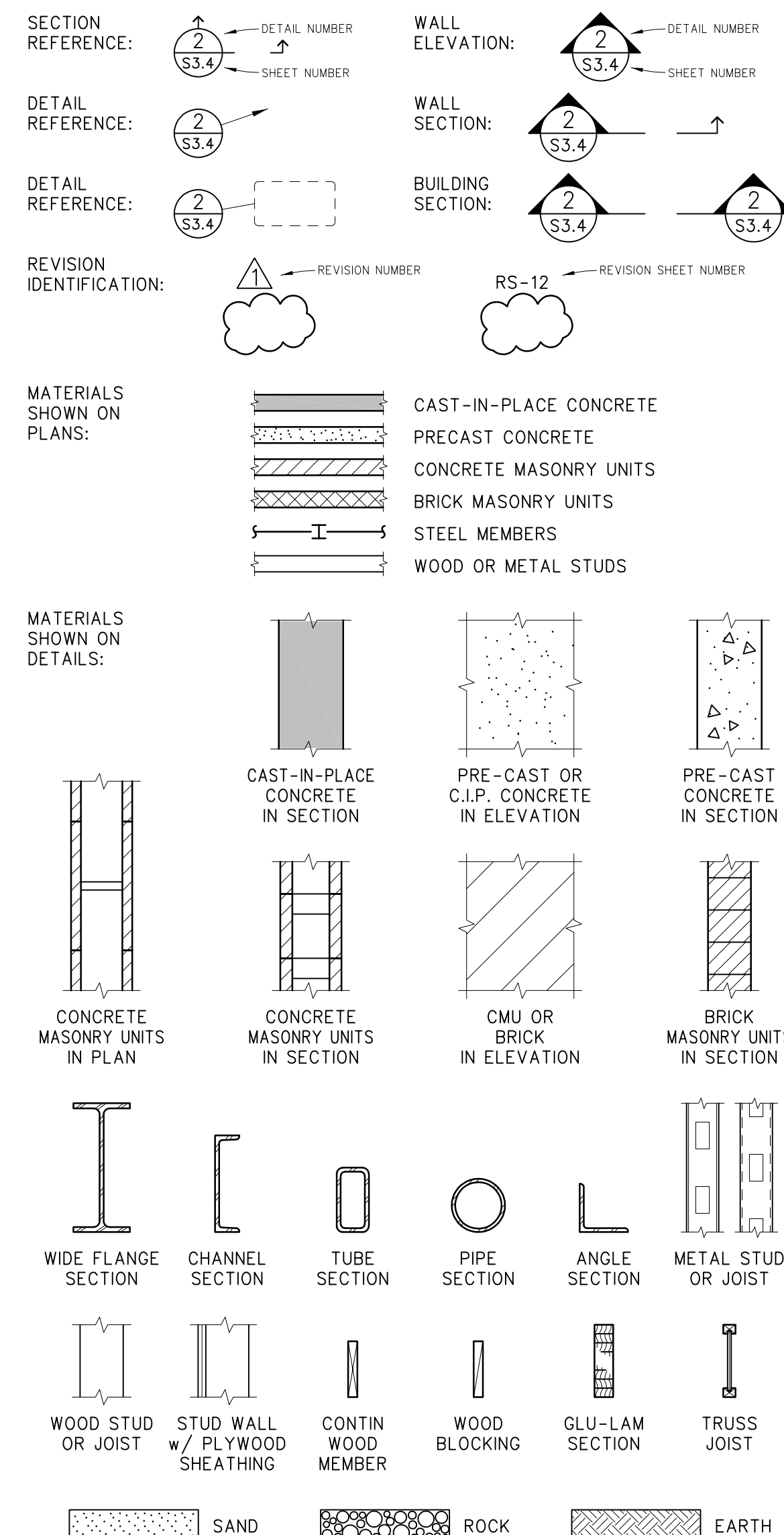
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45 Fremont Street, 28th Floor
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415-989.1004 | kpff.com



ABBREVIATIONS

A.B. Anchor Bolt	GA Gage	R Radius
ACI American Concrete Institute	GALV Galvanized	R.D. Roof Drain
A.D. Area Drain	G.B. Grade Beam	RDWD Redwood
ADOL Additional	GLB Glued Laminated Beam	REF Reference
ADJ Adjacent	GLC Glued Laminated Column	REINF Reinforcing
A.F.F. Above Finish Floor	GR Gypsum	REQD Required
AISC American Institute of Steel Construction	HDR Header	REV Revision
ALT Alternate	HGR Hanger	RF Roof
APPROX Approximately	HK Hook	RM Room
ARCH Architect or Architectural	HORIZ Horizontal	R.O. Rough Opening
ASPH Asphalt	H.P. High Point	S Section Modulus
ASTM American Society of Testing and Materials	H.R. Hard Rock	S.A.D. See Architectural Drawings
A.C. Asphaltic Concrete, Air Condition	HSS Hollow Steel Structure	S.C.D. See Civil Drawings
BAL Balance	HT Height	SCHED Schedule
BLD Building	I Moment of Inertia	S.E.D. See Electrical Drawings
BLK Block	I.D. Inside Diameter	SF Square Feet
BLKG Blocking	I.F. Inside Face	SHT Sheet
BM Beam	INFO Information	SHTG Sheathing
B.O. Bottom of	INSUL Insulation	SM Similar
BOT Bottom	INT Interior	S.J. Shrinkage Joint, Seismic Joint or Slip Joint
B.P. Break Point	KIPS 1000 Pounds	S.L.D. See Landscape Drawings
BRD Board	KSF KIPS Per Square Foot	S.M.D. See Mechanical Drawings
BRG Bearing	L Angle	S.M.F. Special Moment Frames
BRKT Bracket	LBS Pounds	S.M.S. Sheet Metal Screw
BTWN Between	LL Live Load	S.O.G. Slab On Grade
B.U. Bottom Upper	LLH Long Leg Horizontal	SP Space or Spacing
C Channel	LLV Long Leg Vertical	S.P.D. See Plumbing Drawings
CBC California Building Code	LONGIT Longitudinal	SPEC Specification
C.I.P. Cast In Place	L.P. Low Point	SQ Square
C.J. Construction or Control Joint	L.S. Laminated Strand Lumber	S.S.D. See Structural Drawings
CLG Ceiling	LSL Laminated Strand Lumber	STAGG Staggered
CLR Center Line	LT Light	STD Standard
CMU Concrete Masonry Unit	LVL Laminated Veneer Lumber	STIFF Stiffener
COL Column	LTWT Light Weight	STL Steel
CONC Concrete	MACH Machine	STRUCT Structural
CONN Connection	MAS Masonry	SYM Symmetric
CONSTR Construction	MATL Material	T & B Top and Bottom
CONTIN Continuous	MAX Maximum	T & G Tongue and Groove
C.J.P. Complete Joint Penetration	M.B. Machine Bolt	T.B. Tie Beam
CTR Centered	MC Miscellaneous Channel	THK Thick
CTRD Countersink	M.D. Mid-depth	THRU Through
C.TRSNK Countersink	MECH Mechanical	T.L. Top Lower
d Penny weight	M.F. Moment Frame	T.O. Top Of
DBL Double	MFR Manufacturer	T.O. CONC Top of Concrete
DEPR Depression	MIN Minimum	T.O. PAR Top of Parapet
D.F. Douglas Fir	MISC Miscellaneous	T.O. PLY Top of Plywood
DIA or ø Diameter	MTL Metal	T.O. PL Top of Plate
DIAG Diagonal	(N) New	T.O. SLAB Top of Slab
DIM Dimension	N.A. Not Applicable	T.O. STL Top of Steel
DL Dead Load	N.I.C. Not In Contract	T.O. WALL Top of Wall
DN Down	NO. Number	TRANS Transverse
do Ditto	N.P. No Profile	TS Tube/Steel
D.W.F. Deformed Wire Fabric	N.S. Near Side	T.U. Top Upper
DWG Drawing	N.T.S. Not To Scale	TYP Typical
(E) Existing	N.U.O. Unless Noted Otherwise	UBC Uniform Building Code
EA Each	N.C. Number	U.N.O. Unless Noted Otherwise
E.F. Each Face	N.P. No Profile	V.B. Vapor Barrier
E.J. Expansion Joint	N.S. Near Side	VENT Ventilation
EL Elevation	N.T.S. Not To Scale	VERT Vertical
ELEC Electrical	o.c. On Center	V.I.F. Verify in Field
ELEV Elevator	O.D. Outside Diameter	W Wide Flange
EMBED Embedment	ND. Number	w/ With
E.N. Edge Nail	N.P. No Profile	w/o Without
ENCL Enclosure	N.S. Near Side	WD Wood
ENGR Engineer	N.T.S. Not To Scale	WF Wide Flange
E.O. Edge of	o.c. On Center	WP Work Point
E.O. MAS Edge of Masonry	O.D. Outside Diameter	W.P.J. Weakened Plane Joint
E.O. PL Edge of Plate	O.F. Opposite Face	WT Weight or Structural T
E.O. SLAB Edge of Slab	OPNG Opening	W.W.F. Welded Wire Fabric
EQ Equal	O.H. Opposite Hand	
EQUIP Equipment	OSB Oriented Strand Board	
E.W. Each Way	O.S.G. Open Web Steel Girder	
EXP Expansion	O.S.J. Open Web Steel Joist	
EXT Exterior	PAR Parapet	
F.D. Floor Drain	PC Piece	
FDN Foundation	P/C Precast	
F.F. Finish Floor	PCF Pounds per Cubic Foot	
FIN Finish	P.D.F. Powder Driven Fastener	
FLR Floor	P.D.P. Powder Driven Pin	
F.O. Face of	PL Plate	
F.O. CONC Face of Concrete	PLF Pounds per Linear Foot	
F.O. MAS Face of Masonry	PLY Plywood	
F.O. STUD Face of Stud	PLYWD Plywood	
FRM Framing	P.J.P. Partial Joint Penetration	
F.S. Far Side	PSF Pounds per Square Foot	
FT Foot or Feet	PSI Pounds per Square Inch	
FTG Footing	PSL Parallel Strand Lumber	
	P/T Post-Tensioned	
	P.T. Pressure Treated	
	P.T.D.F. Pressure Treated Douglas Fir	

SYMBOLS



SHEET INDEX

SHEET INDEX		ISSUE LOG			
#	TITLE	ISSUED AS PART OF A SET	ISSUED AS PART OF A SET	ISSUED FOR INFORMATION ONLY	DATE
S0.1	TITLE PAGE & SHEET INDEX	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2022-10-24
S1.1	GENERAL NOTES	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2022-10-24
S1.2	GENERAL NOTES	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2022-10-24
S2.1	DEMOLITION PLAN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2022-10-24
S2.2	FOUNDATION PLAN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2022-10-24
S3.1	SECTIONS & DETAILS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2022-10-24

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr,
Oakland, CA 94619

SHEET TITLE
TITLE PAGE & SHEET INDEX

REVISIONS	DATE
50% PRICING SET	09/30/2022
100% CD SET	10/24/2022
DSA SUBMITTAL	12/01/2022
DSA SUBMITTAL 1	04/14/2023
DSA SUBMITTAL 2	05/25/2023

DRAWN BY: **KB**

CHECKED BY: **RK**

JOB NO. 2022-0586

DATE 05/25/2023

SHEET NUMBER

S0.1

GENERAL NOTES

GENERAL

Dimensions refer to rough concrete surfaces, face of studs, face of concrete block, top of sheathing, or top of slab unless otherwise indicated. The Contractor shall verify all dimensions prior to the start of construction. The Architect shall be notified of any discrepancies or inconsistencies.

All drawings are considered to be a part of the contract documents. The Contractor shall be responsible for the review and coordination of all drawings and specifications prior to the start of construction. Any discrepancies that occur shall be brought to the attention of the Architect prior to the start of construction so that a clarification can be issued. Any work performed in conflict with the contract documents or any code requirements shall be corrected by the Contractor at their own expense and at no expense to the owner or Architect.

Notes and details on the structural drawings shall take precedence over general notes and typical details. Where no details are given, construction shall be as shown for similar work.

All work shall conform to the minimum standards of the following codes:

2019 California Building Code, which comprises Title 24, Part 2 of the California Code of Regulations, as adopted by the California Building Standards Commission referred to here as "The California Building Code, 2022 Edition" or "the code", and any other regulating agencies which have authority over any portion of the work, including the State of California Division of Industrial Safety, and those additional codes and standards including, but not limited to, the following incorporated codes listed below, and in these structural notes and specifications.

American Society of Civil Engineers: ASCE 7-16 with Supplement 1, Minimum Design Loads for Buildings and Other Structures Including Supplement No. 1 and 2.

American Concrete Institute (ACI): ACI 318-19 Bldg. Code Requirements for Structural Concrete and Requirements for Structural Concrete and Commentary

American Institute of Steel Construction (AISC): Steel Construction Manual 15th Edition

American Iron and Steel Institute (AISI): AISI S100-16(2020) w/ S2-20 North American Specification for the Design of Cold-formed Steel Structural Members, 2016 Edition (Reaffirmed 2020) with Supplement 2, 2020 Edition

American Iron and Steel Institute (AISI): AISI S202-20 Code of Standard Practice for Cold-formed Steel Structural Framing, 2020

American Welding Society: AWS D1.1:2020 Structural Welding Code - Steel

ASTM specifications on the structural drawings shall be of the latest version, unless otherwise noted.

Refer to the architectural drawings for the following:

Dimensions not shown on the structural drawings.
Size and location of all floor and roof openings, except as noted.
Size and location of all concrete curbs, equipment pads, pits, floor drains, slopes, depressed areas, change in level, chamfers, grooves, inserts, etc.

Refer to the mechanical, plumbing, and electrical drawings for the following:

Pipe runs, sleeves, hangers, trenches, wall and slab openings, etc., except as noted.
Electrical conduit runs, boxes, and outlets in walls and slabs.
Concrete inserts for electrical, mechanical, or plumbing fixtures.
Size and location of machine or equipment bases or anchor bolts for motor mounts.

The contract structural drawings and specifications represent the finished structure. They do not indicate the method of construction. The Contractor shall provide all measures necessary to protect the structure during construction. Such measures shall include, but not be limited to, bracing and shoring for loads due to construction equipment, etc. Observation visits to the site by the Engineer shall not include inspection of the aforementioned items.

Contractor shall investigate the site, during clearing and earthwork operations, for filled excavations or buried structures, such as cesspools, cisterns, foundations, etc. If any such structures are found, the Engineer shall be notified immediately.

Openings, pockets, etc., larger than 6" shall not be placed in concrete slabs, decks, or walls, unless specifically detailed on the structural drawings. Notify the Engineer when drawings by others show openings, pockets, etc., larger than 6" not shown on the structural drawings, but which are located in structural members. For any further restrictions on openings in structural elements, see applicable sections below.

Construction material shall be spread out if placed on framed roof or floor. Load shall not exceed the design live load per square foot. Provide adequate shoring and/or bracing where the structure has not attained the design strength.

Specifications and detailing of all waterproofing and drainage items, although sometimes indicated on the structural drawings for general information purposes only, are solely the design responsibility of others.

Shop drawings, special inspections, and material sampling and testing, when required, are specified in their respective tables in the general notes and in the specifications.

DESIGN

Design conforms to the California Building Code, 2022 Edition

Design conforms to the San Francisco City and County Building Code, 2022 Edition

Wind Analysis:
Basic wind speed, V/35 (CBC Figure 1609A.3) V/ULT = 92 mph
Exposure (CBC Section 1609A.4.3) = B
Internal Pressure Coefficient, GC/P1 ... (ASCE Table 26.13-1) GC/P1 = +0.18

Interior Wall Condition (psf): +20/-25
Corner Wall Condition (psf): +25/-30

(+) Pressures indicate pressure towards wall
(-) Pressures indicate pressure away from wall
Corner conditions - extent of wall from building corner as defined by ASCE

Seismic Analysis:
Seismic Importance Factor, I (ASCE Table 1.5-2) I = 1.0
Risk Category (CBC Table 1604A.5) = II

Site Location, Latitude 37.79041°
Site Location, Longitude -122.164597°
Spectra Accel., Short Period, S/S (CBC Figure 1613.2.1(1)&(2)) S/S = 2.493 g
Spectra Accel., Long Period, S/1 (CBC Figure 1613.2.1(3)&(4)) S/1 = 0.953 g
Site Classification (CBC Section 1613A.2.2) = 0
Design Response, Short Period, S/DS (CBC Section 1613A.2.4) S/DS = 1.662 g
Design Response, Long Period, S/D1 (CBC Section 1613A.2.4) S/D1 = 0.635 g
Seismic Design Category (CBC Section 1613A.2.5) = E

Component: Generators, batteries, inverters, motors, transformers, and other electrical components constructed of high-deformability materials
Component Amplification Factor: ap = 1
Component Response Modification Factor: Rp = 2.5
Component Overstrength Factor: Ro = 2.0
Component Importance Factor: Ip = 1.0

EXISTING CONSTRUCTION

The removal, cutting, drilling, etc., of existing work shall be performed with great care and small tools in order not to jeopardize the structural integrity of the building. If existing structural members that are not indicated for removal interfere with the new work, the Engineer shall be notified immediately, and approval obtained, before removal of the existing members.

FOUNDATIONS

Foundation design conforms to California Building Code Chapter 18A. The presumptive load-bearing values provided in CBC Table 1806A.2 for Clay, Sandy Clay class of material shall be used for foundation design.

Maximum soil pressure = 1500 psf DL + LL
Lateral bearing pressure = 100 pcf
Lateral slitting resistance = 130 psf

Engineered Fill

Engineered fill below footings shall be compacted to 90% relative compaction as determined by the ASTM D1557 compaction test method and under the observation of the Geotechnical Engineer.

Slabs On Grade

At areas under unoccupied slabs on grade, provide 4"/6" compacted Caltrans Class 2 Aggregate Base. Aggregate base shall be rolled to a smooth surface.

REINFORCING STEEL

Reinforcing Steel detailing, fabrication, and placement shall conform to the "California Building Code," Chapter 19; the "Manual of Standard Practice of the Concrete Reinforcing Steel Institute," latest edition; and the "Building Code Requirements for Structural Concrete and Commentary," ACI 318-19; unless otherwise noted.

Standards:

Reinforcing steel shall conform to the following standards:

Deformed Bars, #3 ASTM A615, Grade 40
Deformed Bars, #4 and larger ASTM A615, Grade 60

Placing: All steel reinforcement shall be securely tied in place so as to maintain their exact position before and during the placement of concrete. Reinforcing steel shall be securely tied in place with #16 annealed iron wire. Bars in beams and slabs shall be supported on well-cured concrete blocks or approved plastic tipped metal chairs, as specified by CRSI Manual of Standard Practice, MSP-1. Accessories for epoxy-coated reinforcing, where shown on plans, shall be as noted in the Specifications. Wire fabric in slabs shall be securely fastened to supporting devices to maintain their position during concrete placement.

Lap bars 5/8 diameters, laps shall be staggered, for #3 to #6 bars unless otherwise noted
Lap bars 7/8 diameters, laps shall be staggered, for #7 to #11 bars unless otherwise noted
Lap wire fabric 6" minimum.
Lap circular hoop reinforcement 48 bar diameters, 12" minimum.
Lap spiral reinforcement 2 turns.

Clear distances, steel to forms, unless noted otherwise:

Slabs not exposed to weather, joists, interior wall surfaces 3/4"
.....
Exterior wall surfaces, slabs exposed to weather, #5 and smaller 1-1/2"
.....
Exterior wall surfaces, slabs exposed to weather, #6 and larger 2"
.....
Column Ties, Beam Ties 1-1/2"
.....
Clear distance between bars 2"
.....
Framed surfaces in contact with earth 2"
.....
Slabs on rolled grade 1-1/2"
.....
Unformed surfaces in contact with earth 3"

Shop drawings shall be submitted to the Architect for review prior to fabrication. Shop drawings shall include elevations of all beams and columns showing bar and lap locations. See Shop Drawing Submittal Requirements elsewhere in General Notes. Submit mill certificates for reinforcing steel prior to rebar placement.

CONCRETE WORK

Forms shall be properly constructed conforming to concrete surfaces as shown on the drawings, sufficiently tight to prevent leakage, sufficiently strong, and braced to maintain their shape and alignment until no longer needed to support the concrete. Forms for exposed concrete shall be plywood, using sheets as large as possible, with all joints tightly fitted and blocked, and shall produce a finished concrete surface which is smooth, true, and free from blemishes according to accepted standards for architectural concrete.

Refer to architectural, electrical, and mechanical drawings for details at door and window openings, floor type hinges, etc., and for location of sleeves, pipes, and other embedded items. Openings through slabs or walls not shown on the structural drawings which would interrupt reinforcing bars shall not be made without approval of the Architect.

Debris should be entirely removed from forms prior to concrete placement.

Horizontal construction joints shall be located as shown on the structural drawings, and the hardened concrete surfaces shall be cleaned by sand-blasting or other approved means to expose firmly embedded aggregates prior to pouring additional concrete in contact with these surfaces. Vertical construction joints through beams or slabs shall be located only as shown on structural drawings.

Forms and shoring shall not be removed until the concrete has attained sufficient strength to withstand all loads to be imposed without excessive stress, creep, or deflection. See specifications for shoring requirements.

Concrete shall be ready mixed conforming to ASTM C94. Cement shall be Portland Cement Type II, conforming to ASTM C150. All hardrock (H.R.) concrete used in suspended slabs and slabs on grade shall be designed for low shrinkage (L.S.). Acceptable coarse aggregates for low shrinkage concrete include Kaiser Clayton, Granite Rock, Limestone, Sechtel, or Orcas aggregates. Fine aggregates acceptable for low shrinkage concrete include Sechtel, Orcas, or Granite Rock sands. Alternative aggregates may be submitted provided they provide a concrete mix with a shrinkage limitation of 0.040% after 28 days of drying. Submit test data to Architect for review.

Use maximum size aggregate as noted below.

Use 3/8" maximum aggregate where necessary for proper placing, such as in thin or congested sections, etc. Superplasticizers may be used to improve workability in thin or congested sections. Incorporate superplasticizers into concrete mix designs.

Flyash shall consist of pozzolanic admixtures conforming to ASTM C618, Class F, and shall be used in quantities noted below. See specifications for additional requirements.

Admixtures used in concrete shall conform to the following ASTM standards, shall be used in dosages recommended by the manufacturer, and shall not contain more chloride than is found in the municipal drinking water supply. Liquid volume in ASTM C494, Type C admixtures shall be added to water content and water cement ratio calculations.

Water reducers ASTM C494, Type A
Mid-range water reducers ASTM C494, Type A/F
High-range water reducers ASTM C494, Type F
Hydration Stabilizers (Retarders) ASTM C494, Type B and D
Accelerators ASTM C494, Type C
Air Entraining Agents ASTM C260
Corrosion Inhibitors ASTM C494, Type C
Shrinkage Reducing Admixtures ASTM C494, Type F
Viscosity Modifying Admixtures ASTM C494, Type S
Silica Fume ASTM C1240
Crystalline Waterproofing No ASTM standard
Post-Industrial, recycled CO₂ ASTM C494, Type S

Cementitious Material (CM) content includes all cement and Supplemental Cementitious Materials (SCM)

Contractor shall submit for review of the Architect the concrete mixes proposed for use, designed by the concrete supplier and reviewed by an approved testing laboratory.

Concrete shall have the following characteristics:

Concrete Location	Max Aggregate	Strength Min @ 28 days (psi)	Min Slump ¹ (in)	Min CM Content (Sacks)	Min CM Content (Gals)	Max Water Content ¹	Max Water/Cement Ratio	Flyash Content	
								Min, Max (%)	Min, Max (%)
Footings	1-1/2" HR	3000	3.5	5.0	36	0.60	20.35		
Slab on grade/Pads	1"x4" HR-LS	3000	3.5	5.0	33	0.45	15.25		

NOTES:

¹ Slump shall be the minimum consistent with proper placing. Achieve slump with water reducing admixtures (ASTM C-494 Type A, F, or A/F) for desired workability.
² Use high range water reducing admixture (superplasticizer) as needed.
³ Use water reducing admixtures or mid-range water reducing admixtures for desired workability.

Pipes other than electrical conduits shall not be embedded in structural concrete except where specifically approved by the Engineer. Electrical conduits embedded in concrete shall not exceed 1-1/4" O.D., without approval of the Engineer.

Conduit, when embedded in concrete slabs, shall be spaced with one conduit diameter clear (larger conduit) or 1 inch clear, whichever is greater, between adjacent conduits or rebar. Conduit shall not be located directly over and parallel to rebar. Embedded conduit can be tied to rebar when oriented perpendicular to them, provided the location of rebar is not affected by the conduit. Conduit without clearance noted above shall be submitted to the architect for review prior to installation. Added trim reinforcement will be required where clearances cannot be met, such as electric panel rooms.

Sleeves, when installed in concrete, shall be spaced with one sleeve diameter (larger sleeve) clear between adjacent sleeves, rebar, or 1 inch, whichever is greater. Sleeves may not touch rebar or other support hardware. Provide clearance between sleeves and reinforcing for typical slab edge conditions. Added trim reinforcement is required per the typical slab opening detail when sleeves exceed 12" diameter or are placed in groups where the out-to-out dimension exceeds 12" in any direction. Sleeve placement shall not interfere with the rebar placement without the approval of the Engineer.

A Sleeve/Penetration Slab Shop drawing shall be submitted for review prior to fabrication. Shop drawings shall include all concrete sleeves, penetrations, and openings, from all disciplines, coordinated, dimensioned and located on plan. See Shop Drawing Submittal Requirements elsewhere in General Notes.

The Contractor shall inform the Architect at least 3 days prior to pouring any structural concrete so that the Architect may have the opportunity of reviewing the work prior to concrete placement.

All concrete except slabs on grade 6" thick or less shall be mechanically vibrated so as to completely fill the forms without causing undue segregation.

For 28 day strengths and 4" diameter x 8" long cylinders:

5 test cylinders from each 50 yards, or fraction thereof, poured in any one day, shall be secured and tested by an independent testing agency; one to be tested at 7 days for information, three at 28 days for acceptance, and hold one in reserve. For post-tensioned concrete secure 5 cylinders per 50 yards, or fraction thereof, poured in any one day, two sets minimum. Test one at 96 hours for stressing, three at 28 days for acceptance, and hold one in reserve.

The Contractor shall remove and replace any concrete which fails to attain specified strength in 28 days if so directed by the Architect. Any defects in the hardened concrete shall be satisfactorily repaired or the hardened concrete shall be replaced.

STRUCTURAL STEEL AND MISCELLANEOUS IRON

Structural Steel and Miscellaneous Metal shall be detailed, fabricated, and erected in accordance with AISC 325. Fabricators and Erectors shall be AISC Certified.

Standards:

All Structural Steel shall conform to the following ASTM designations, U.N.O.

HSS Rectangular and Square A500, Grade C (Fy = 50 ksi)
Other Steel Plates and Bars A36

Unless otherwise shown or noted stiffener plates shall be 3/8" thick minimum.

All structural steel surfaces that are encased in concrete, masonry, spray on fireproofing, or are encased by building finishes shall be left unpainted except as required for designation of protected zones, unless noted otherwise.

All steel elements exposed to weather shall be galvanized, galvanize according to ASTM A123, hot dip process.

Erection clips, temporary bracing, and shoring required by the Contractor are not shown. Contractor shall comply with all OSHA requirements.

Additional miscellaneous metal items such as embeds, railings, and supports for interior finishes may be shown on drawings prepared by others. See architectural drawings.

Shop drawings shall be submitted to the architect for review prior to fabrication

The testing agency shall send copies of Structural Testing and Inspection Reports directly to the Engineer of Record.

Welded Connections:

All welded connections shall be welded in accordance with the "Structural Welding Code - Steel (AWS-D1.1)". All welding shall be done with electrodes having a minimum tensile strength of 70 ksi, unless noted otherwise. Shielded metal arc welding (SMAW) electrodes shall be low-hydrogen type. Unless otherwise noted.

- All welders shall be qualified in accordance with AWS D1.1 for all welds they will be performing.
- The weld lengths called for on the structural drawings are the net effective length required. Where fillet weld symbol is given without indication of size, use the minimum size welds as specified in AISC 360, Section JF.2b.
- All welding shall be performed in conformance with a written welding procedure specification (WPS). Submit all WPS's applicable to the project for review listing specific electrodes to be used. The submittal shall include an index of all procedures, shall identify the actual electrode to be used for each procedure, and shall include electrode data sheets describing the products, the limitations of use, the recommended welding parameters, and storage and exposure requirements. For WPS's that are not pre-qualified per AWS D1.1, submit procedure qualification record with WPS.
- Run-off tabs per AWS D1.1 are required for Complete Joint Penetration (C.J.P.) groove welds. All welds are to be started and completed on the run-off tabs as much as practicable. Do not end welds at cope hole locations. Use of weld dams is not allowed.
- The minimum preheat and interpass temperatures of AWS D.1 Section 3.5 must be followed.
- All C.J.P. groove welds in members and connections shall be made with a filler metal having a minimum Charpy V-Notch toughness of 20 FT-LBS at 40 degrees F as determined by AWS classification or manufacturer's certification.
- All butt welds are complete joint penetration welds.
- Complete penetration welds and partial penetration welds shall be examined by Ultrasonic Testing. All testing and inspection shall conform to CBC requirements. Refer to the specifications for additional information.

EPOXY FOR CONCRETE

Epoxy shall be HIT-HY 200 as manufactured by Hilti, Inc. (ICC Evaluation Report ESR-3187). All drilled holes shall be sized according to the manufacturer's recommendations.

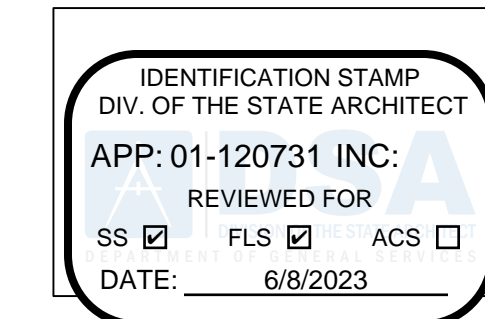
EXPANSION ANCHORS

Expansion anchors shall be KB-T22 as manufactured by Hilti, Inc. (ICC Evaluation Report ESR-4266) or approved equal with a current ICC report. All drilled holes shall be sized according to the manufacturer's recommendations.

Anchor diameter refers to the thread size of the the wedge anchor. All drilled holes shall be sized according to the manufacturer's recommendations. Expansion anchors shall be installed in accordance with the manufacturer's recommendations.

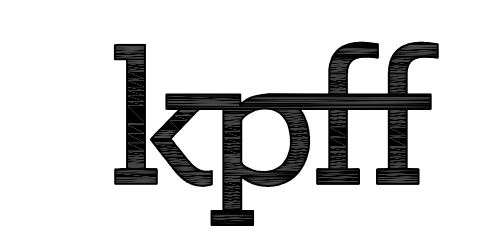
Expansion anchors shall not be used to resist vibratory or shock loads.

Minimum expansion anchor embedment shall be indicated on the drawings. Minimum embedment indicated on the drawings is the minimum effective embedment unless otherwise indicated.



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MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr.
Oakland, CA 94619

SHEET TITLE
GENERAL NOTES

REVISIONS	
50% PRICING SET	09/30/2022
100% CD SET	10/24/2022
DSA SUBMITTAL	12/01/2022
DSA RESUBMITTAL 1	04/14/2023
DSA RESUBMITTAL 2	05/25/2023

DRAWN BY: KB
CHECKED BY: RK
JOB NO.: 2022-0586
DATE: 05/25/2023
SHEET NUMBER:

GENERAL NOTES

POST-INSTALLED ANCHOR TESTING

The Owner's testing agency shall perform tension load tests on anchors installed in hardened concrete. L.V.P.s are not required to be tested. Refer to the tables below for test load values.

Post-installed anchors used for structural applications shall be tested at a frequency of 100%. Anchors used for nonstructural applications such as equipment anchorage shall be tested at a frequency of 50% or alternate bolts in a group including at least one half the anchors in each group. Anchors used for sill track bolting shall be tested at a frequency of 10%. If any anchor fails testing, all anchors of the same type shall be tested, which are installed by the same trade, not previously tested until 20 consecutive anchors pass, then resume initial testing frequency.

Test expansion anchors and screw anchors with the torque wrench method.

The Owner's testing agency shall develop and utilize an effective method of field marking locations of passed and failed anchor tests.

Test equipment including torque wrenches are to be calibrated by an approved testing laboratory in accordance with the standard recognized procedures.

The following criteria apply for the acceptance of installed anchors:

HYDRAULIC RAM METHOD:

The anchor shall maintain the test load for a minimum of 15 seconds and shall exhibit no observable movement at the applicable test load.

Reaction loads from test fixtures may be applied close to the anchor being tested provided the anchor is not restrained from withdrawing by the fixture(s).

Tension test loads in the tables below are based on the minimum of 125 percent of the maximum design strength of the dowel provided in the ICC Report, but not to exceed 80 percent of the yield strength of the dowel.

The tension values listed in the tables below are only applicable when the anchors are installed with special inspection as set forth in section 1701A of the code.

Drilled adhesive dowel capacities listed in the table below assume maximum short-term temperatures of 130 degrees F and maximum long-term temperatures of 110 degrees F. Short-term temperatures are those that occur over brief intervals such as a result of diurnal cycling. Long-term temperatures are roughly constant over significant periods of time.

EPOXY DOWEL TESTING REQUIREMENTS (ICC REPORT ESR-3187)

HILTI HY200 DOWEL IN NORMAL WEIGHT CONCRETE					
DOWEL SIZE	MINIMUM EMBEDMENT	MINIMUM THICKNESS	TENSION TEST LOAD (lbs)	TENSION CAPACITY (STRENGTH) (lbs)	MIN f'c (psi)
3/4"	8"	9 3/4"	8,397	9,797	3000.000000

TORQUE WRENCH METHOD:

The applicable test torque must be reached within the following limits. For wedge or sleeve type anchors: one-half turn of the nut. For 3/8 inch sleeve type anchors and all screw anchors: one-quarter turn of the nut.

If the manufacturer's recommended installation torque is less than the test torque noted in the table, the manufacturer's recommended installation torque should be used in lieu of the tabulated values.

EXPANSION ANCHOR TESTING REQUIREMENTS (ICC REPORT ESR-1917)

NORMAL WEIGHT CRACKED CONCRETE SLAB - STAINLESS STEEL ANCHOR					
ANCHOR DIAMETER (INCHES)	EMBED DEPTH (INCHES)	MIN CONC THICKNESS (INCHES)	TORQUE TEST LOAD (LBS)	REQUIRED EDGE DISTANCE (INCHES)	REQUIRED SPACING (INCHES)
1/2	2	4	40	5 3/4	4 1/2
1/2	3 1/4	6	40	5 1/4	3 1/4
5/8	3 1/8	6	60	5 1/2	4 1/8

SHOP DRAWING SUBMITTALS

When indicated with a "x", the following items shall have either a) shop drawings or b) certificates of conformance or c) shop drawings, calculations, and details submitted to the architect for review and approval prior to fabrication. When shop drawings, calculations, and details are required, submittals (drawings and calculations) must be signed and stamped by a Civil or Structural Engineer registered in the State of California. For additional information on the contents of the submittals, refer to the project specifications and the specific general notes sections. Submit two prints or an electronic (PDF copy) of calculations (where indicated) and shop drawings to the Architect for review.

Item	Shop Drawings	Certificate ¹	Shop Dwg. calcs, and Details	Remarks
Statement of Special Inspections		x		See Special Inspection Notes. Do not submit KPFF Drawings.
Concrete reinforcing	x			
Concrete, mixes	x			
Concrete, cement		x		
Concrete, fine aggregates		x		
Concrete, coarse aggregates		x		
Concrete, admixtures		x		
Expansion Anchors	x			
Epoxy for Bolts or Rebar	x			
Screw Anchors	x			

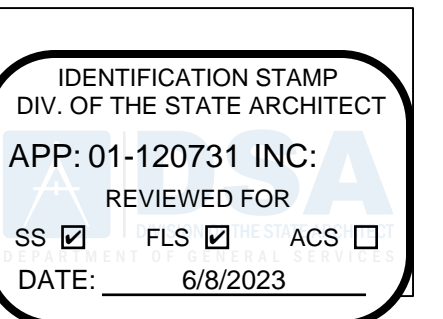
(1) Certificates shall be dated within 3 months of the submittal.

MATERIAL SAMPLING AND TESTING

See DSA Form 103 for material sampling and testing requirement.

SPECIAL INSPECTION

See DSA Form 103 for special inspection requirements.



MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr., Oakland, CA 94619

SHEET TITLE	
GENERAL NOTES	
REVISIONS	
50% PRICING SET	09/30/2022
100% CD SET	10/24/2022
DSA SUBMITTAL	12/01/2022
DSA RESUBMITTAL 1	04/14/2023
DSA RESUBMITTAL 2	05/25/2023
DRAWN BY	
KB	
CHECKED BY	
RK	
JOB NO.	
2022-0586	
DATE	
05/25/2023	
SHEET NUMBER	
S1.2	

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 Plotted Monday, May 15, 2023 2:50pm by kbrfemer

IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 APP: 01-120731 INC:
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 SS FLS ACS
 DATE: 6/8/2023

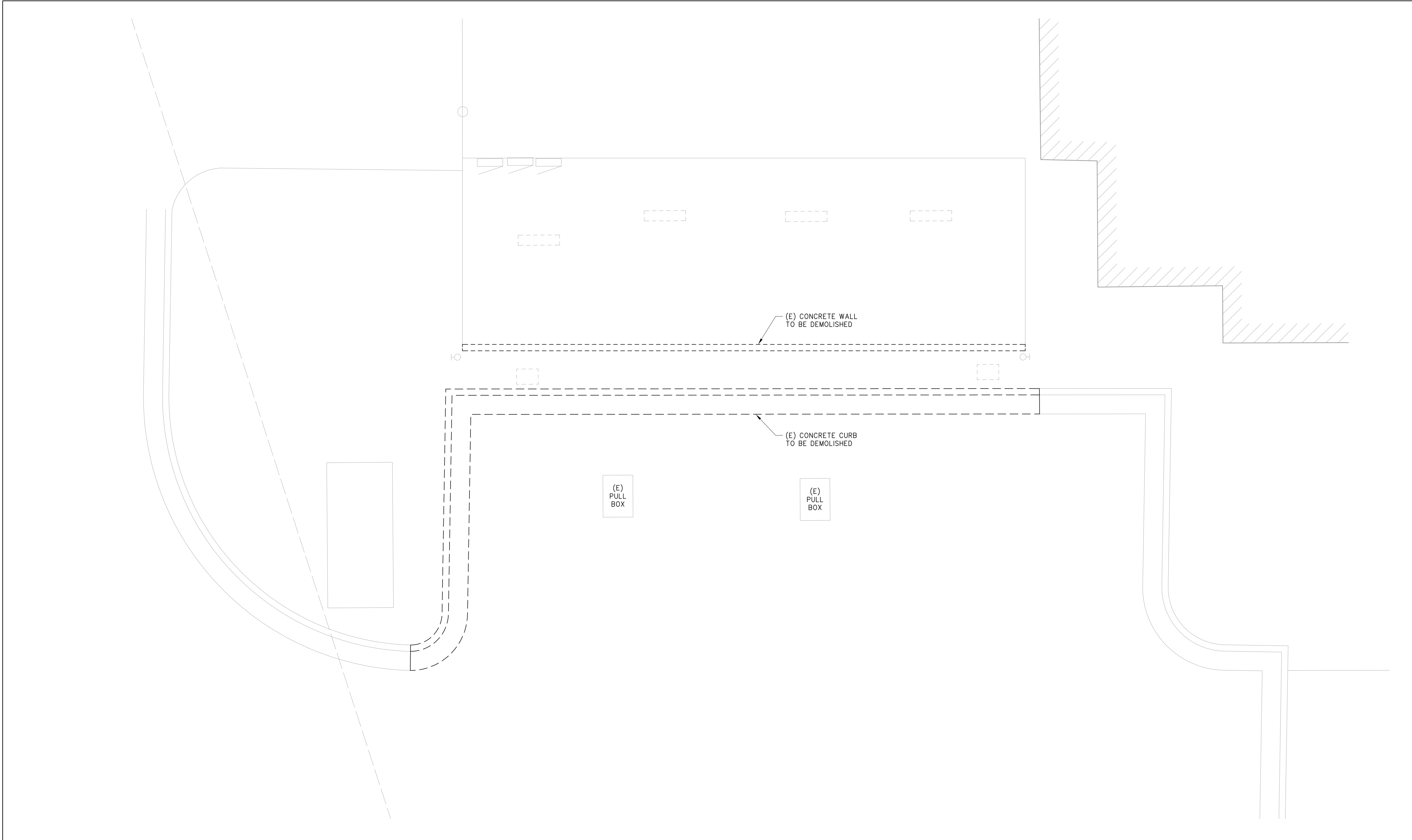
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DATE SIGNED
 25 MAY 2023
 STATE OF CALIFORNIA
 PROFESSIONAL ENGINEER
 No. 4127
 DAVID J. ROSE

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr,
 Oakland, CA 94619



SHEET TITLE
DEMOLITION PLAN

REVISIONS

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100% CD SET	10/24/2022
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DSA RESUBMITTAL 1	04/14/2023
DSA RESUBMITTAL 2	05/25/2023

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KB

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RK

JOB NO.
 2022-0586

DATE
 05/25/2023

SHEET NUMBER
S2.1

DEMOLITION PLAN

SCALE:
 1/4" = 1'-0"
 1
 KPFF K0000 S2.1

IDENTIFICATION STAMP
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 APP: 01-120731 INC.
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 DATE: 6/8/2023

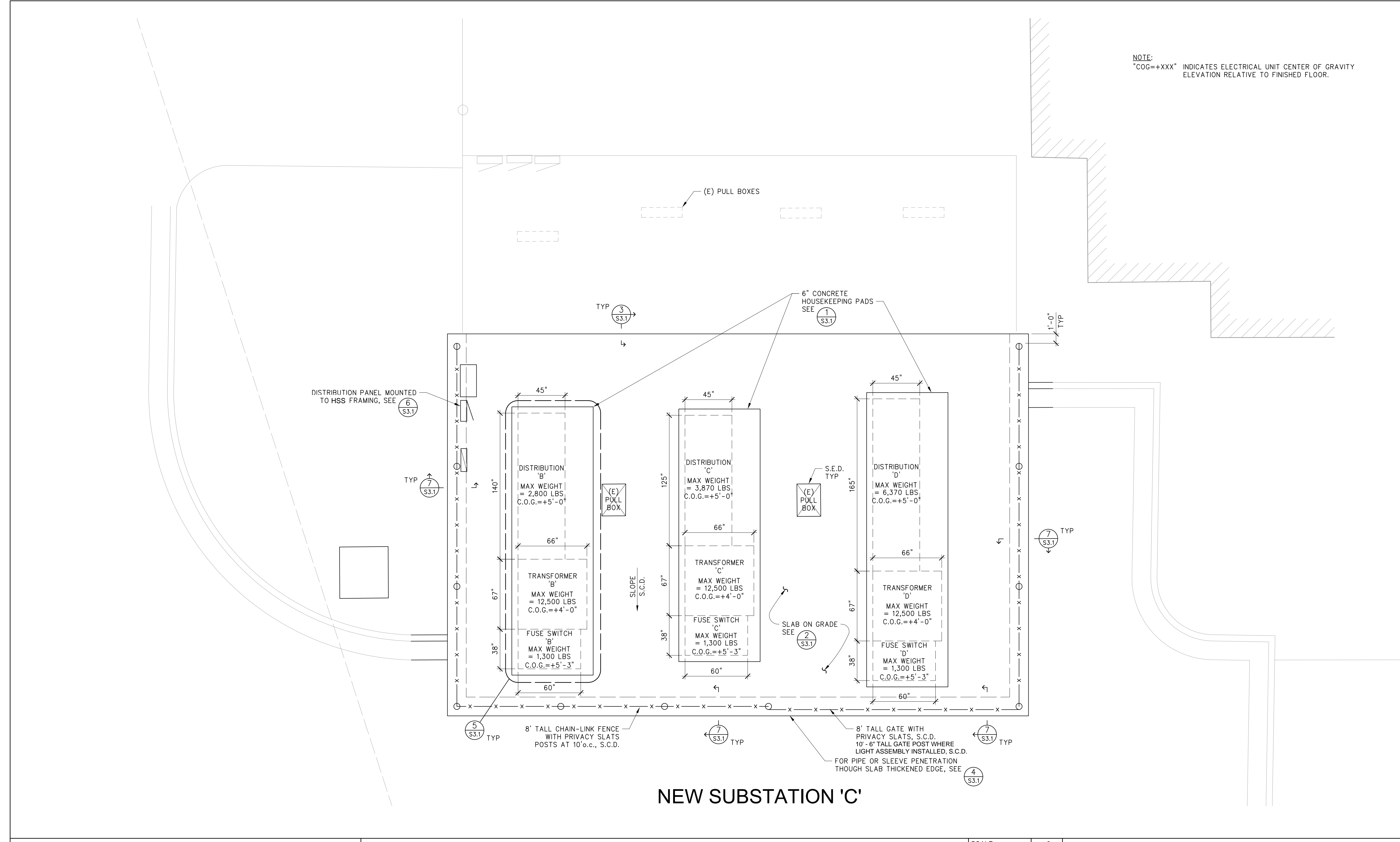
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PROFESSIONAL SEAL
 CIVIL ENGINEER
 NO. 4127
 DAVID J. ROSSI
 STATE OF CALIFORNIA
 25 MAY 2023
 DATE SIGNED

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr.
 Oakland, CA 94619



FOUNDATION PLAN

SCALE:
 1/4" = 1'-0"
 1
 KPFF K0000 S2.2

SHEET TITLE
FOUNDATION PLAN

REVISIONS

NO.	DESCRIPTION	DATE
1	50% PRICING SET	09/30/2022
2	100% CD SET	10/24/2022
3	DSA SUBMITTAL	12/01/2022
4	DSA RESUBMITTAL 1	04/14/2023
5	DSA RESUBMITTAL 2	05/25/2023

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KB

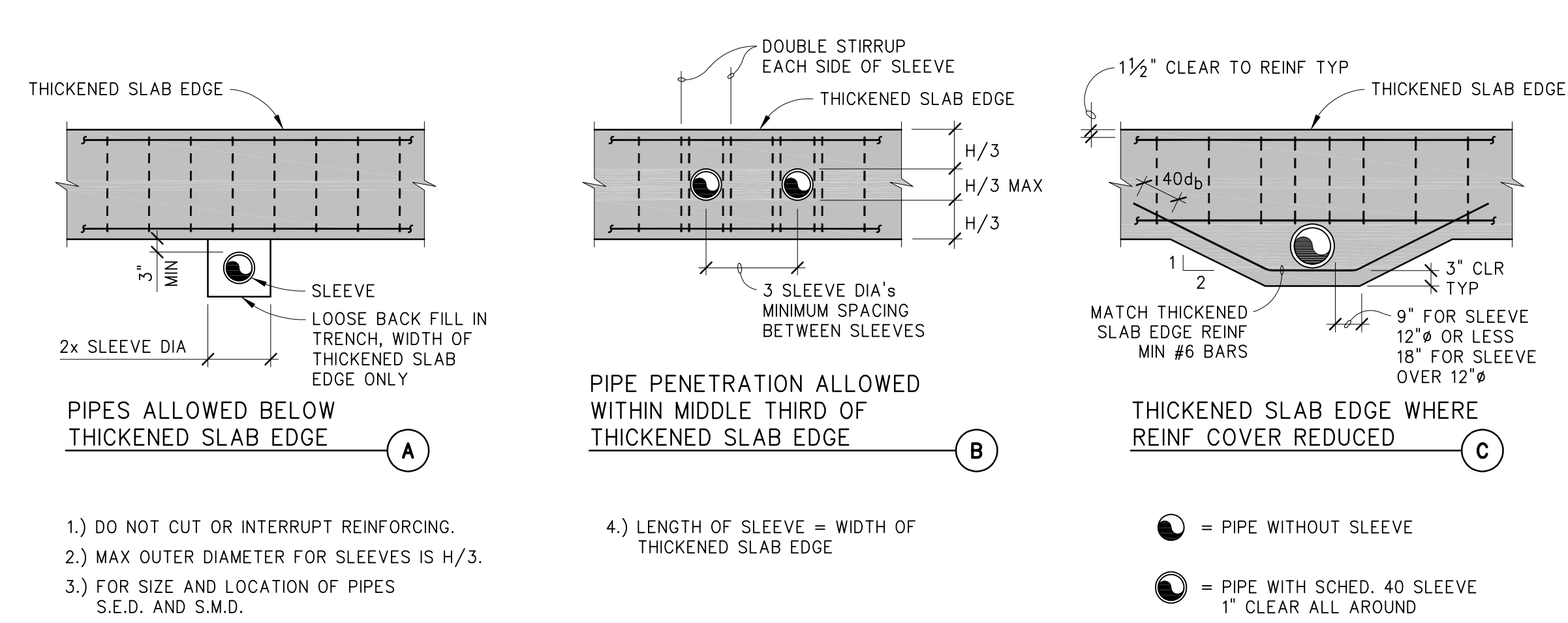
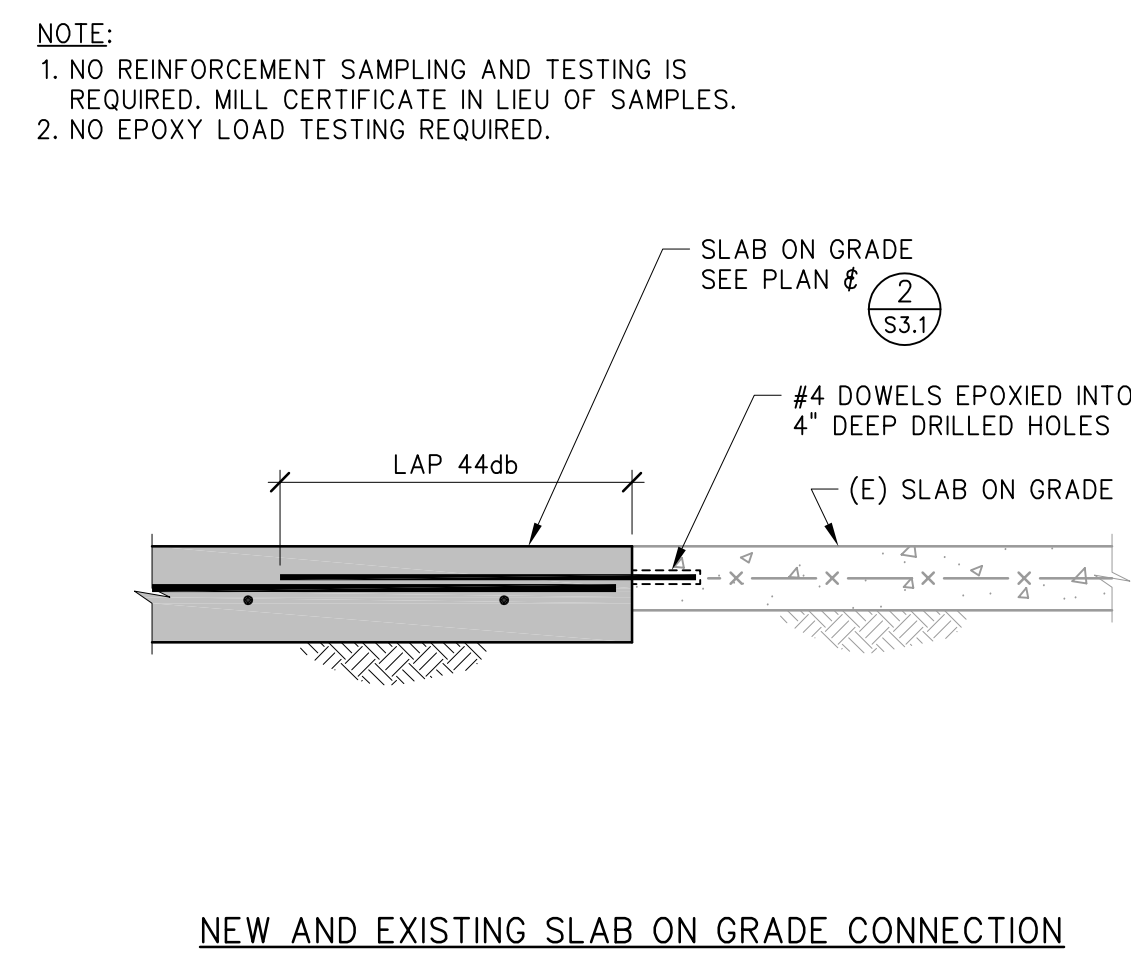
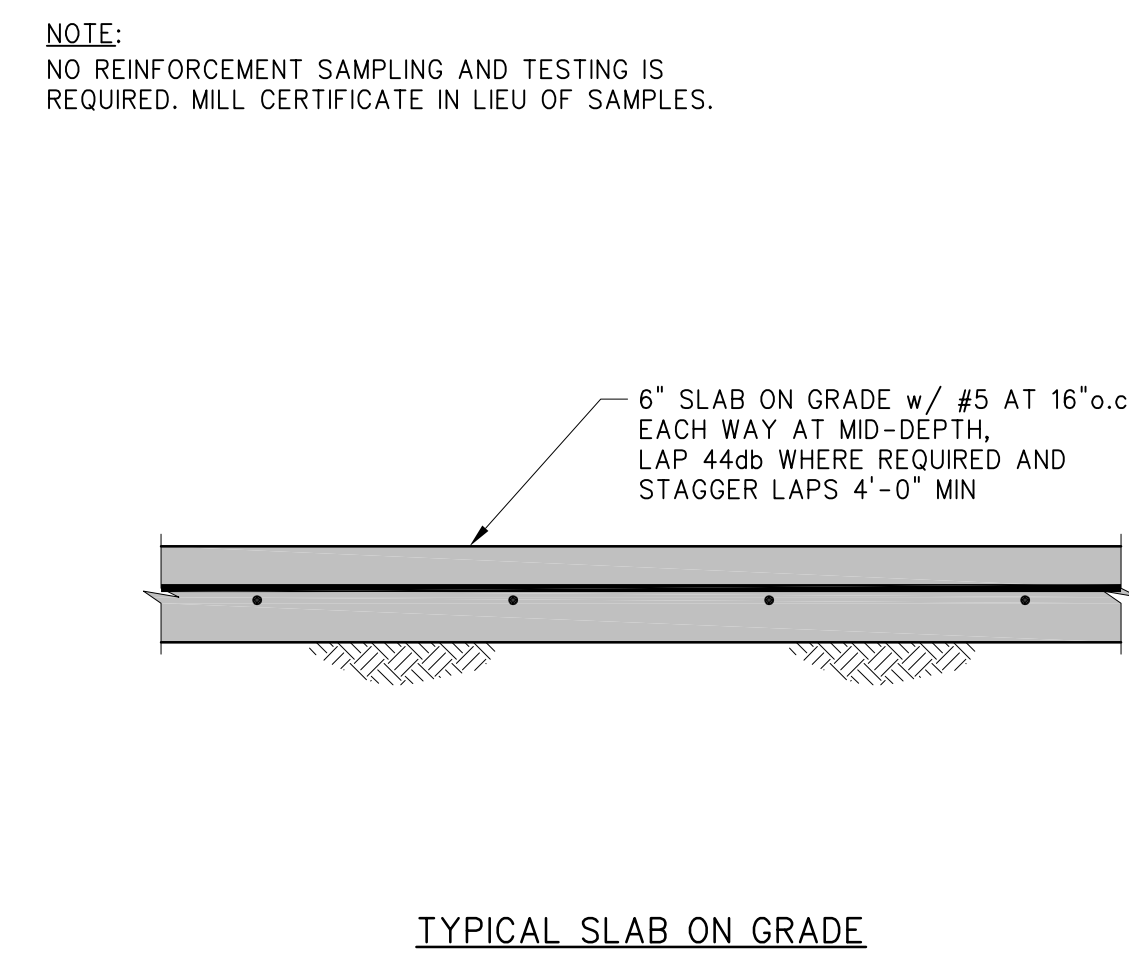
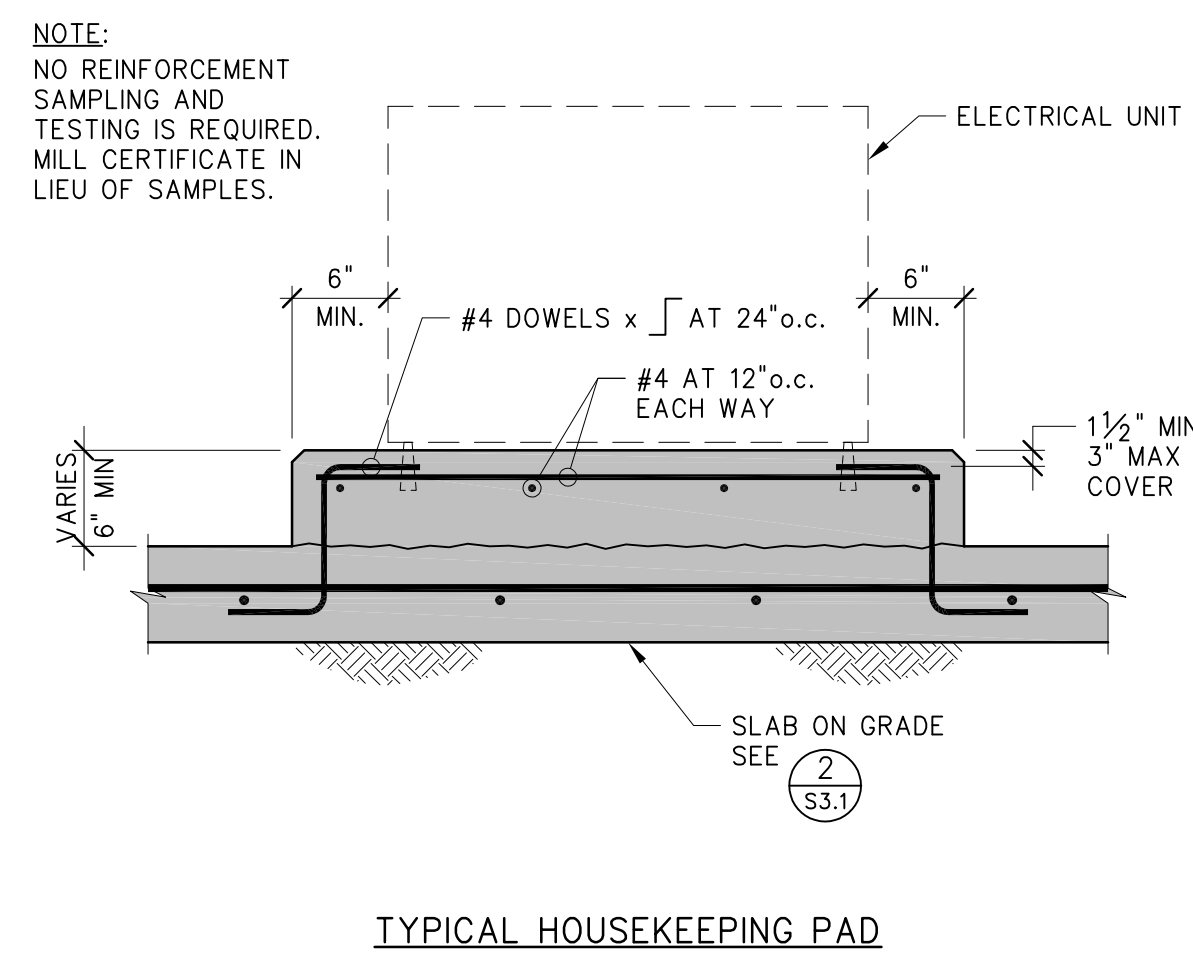
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S2.2

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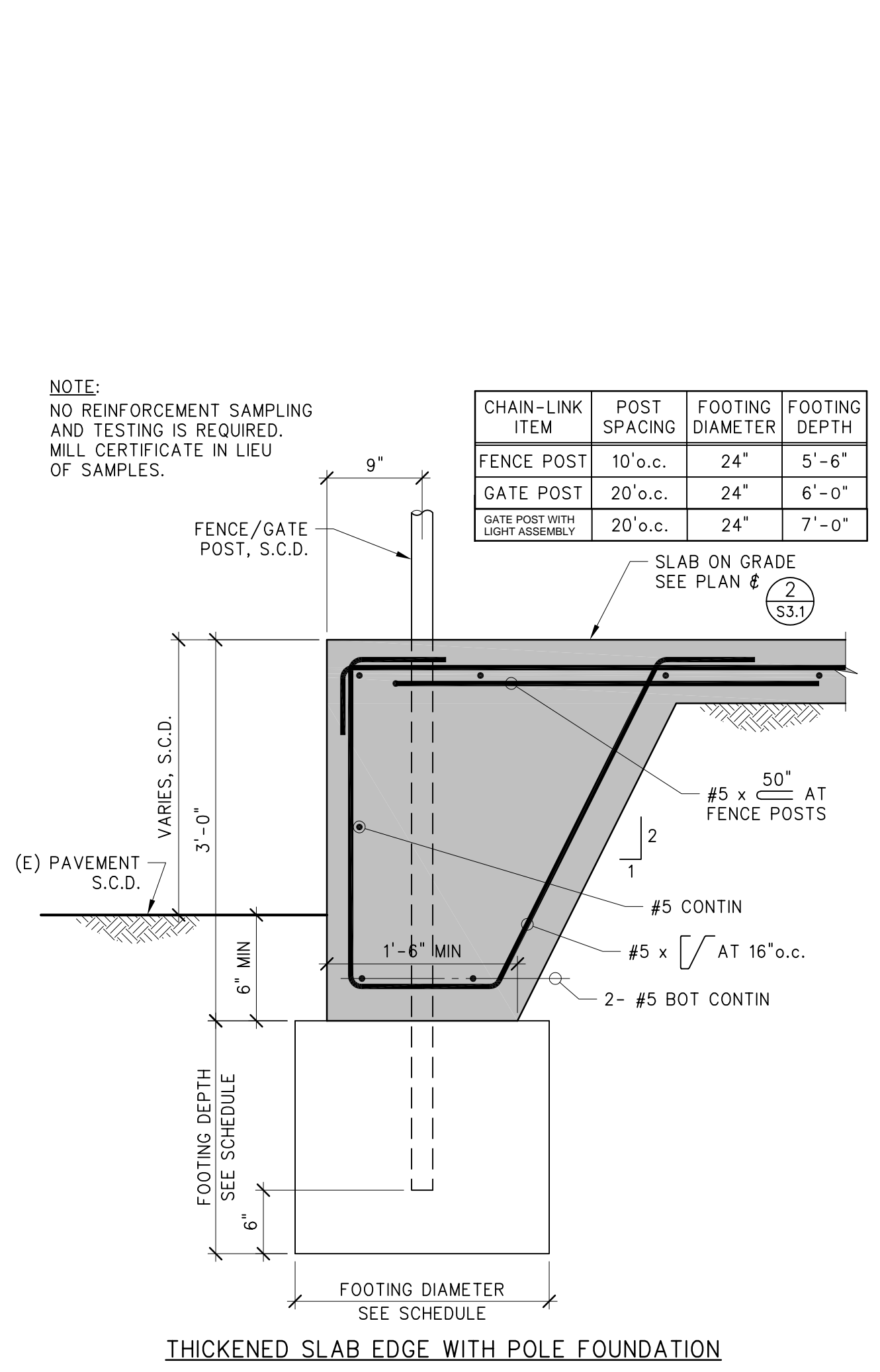
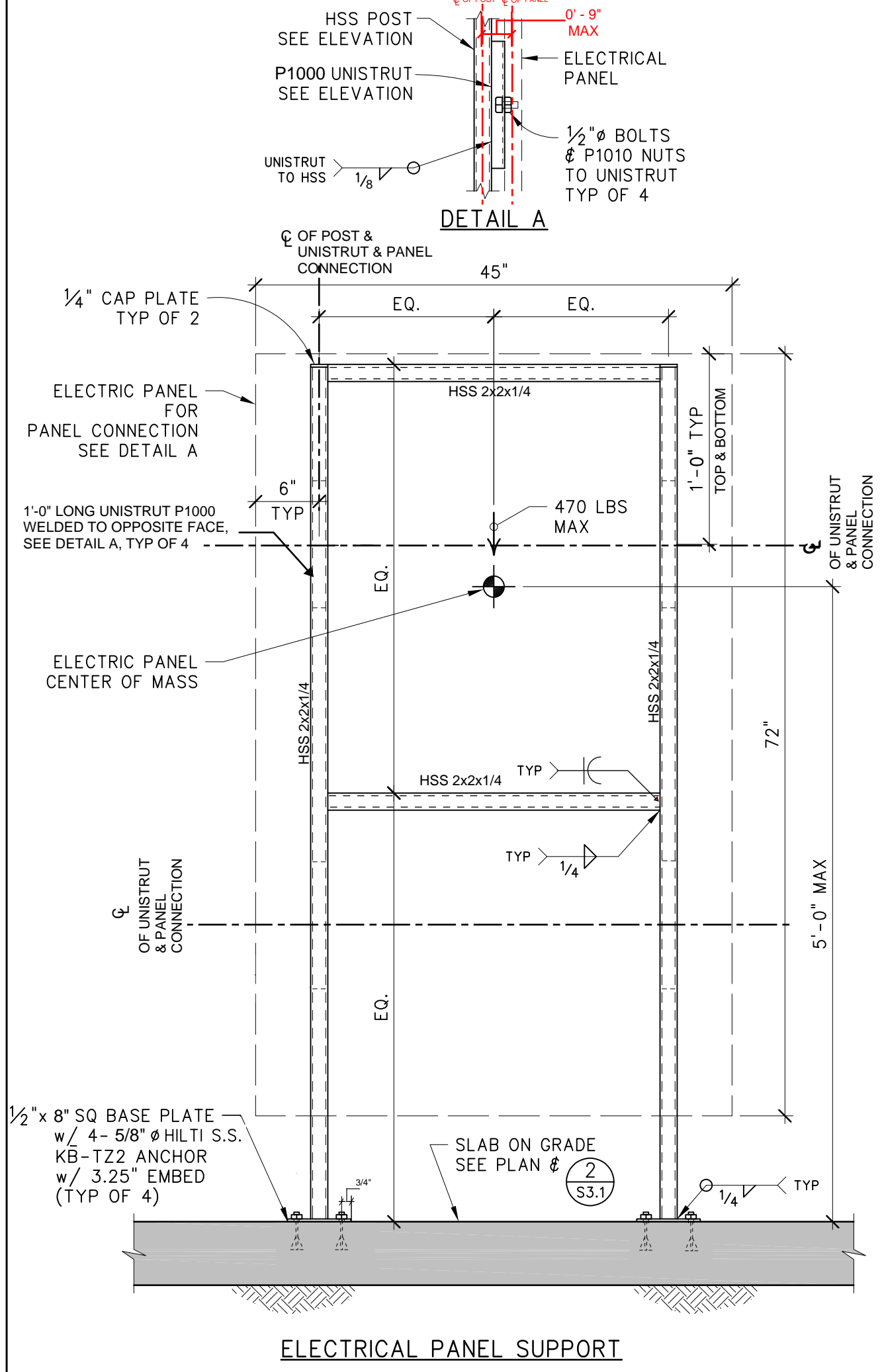
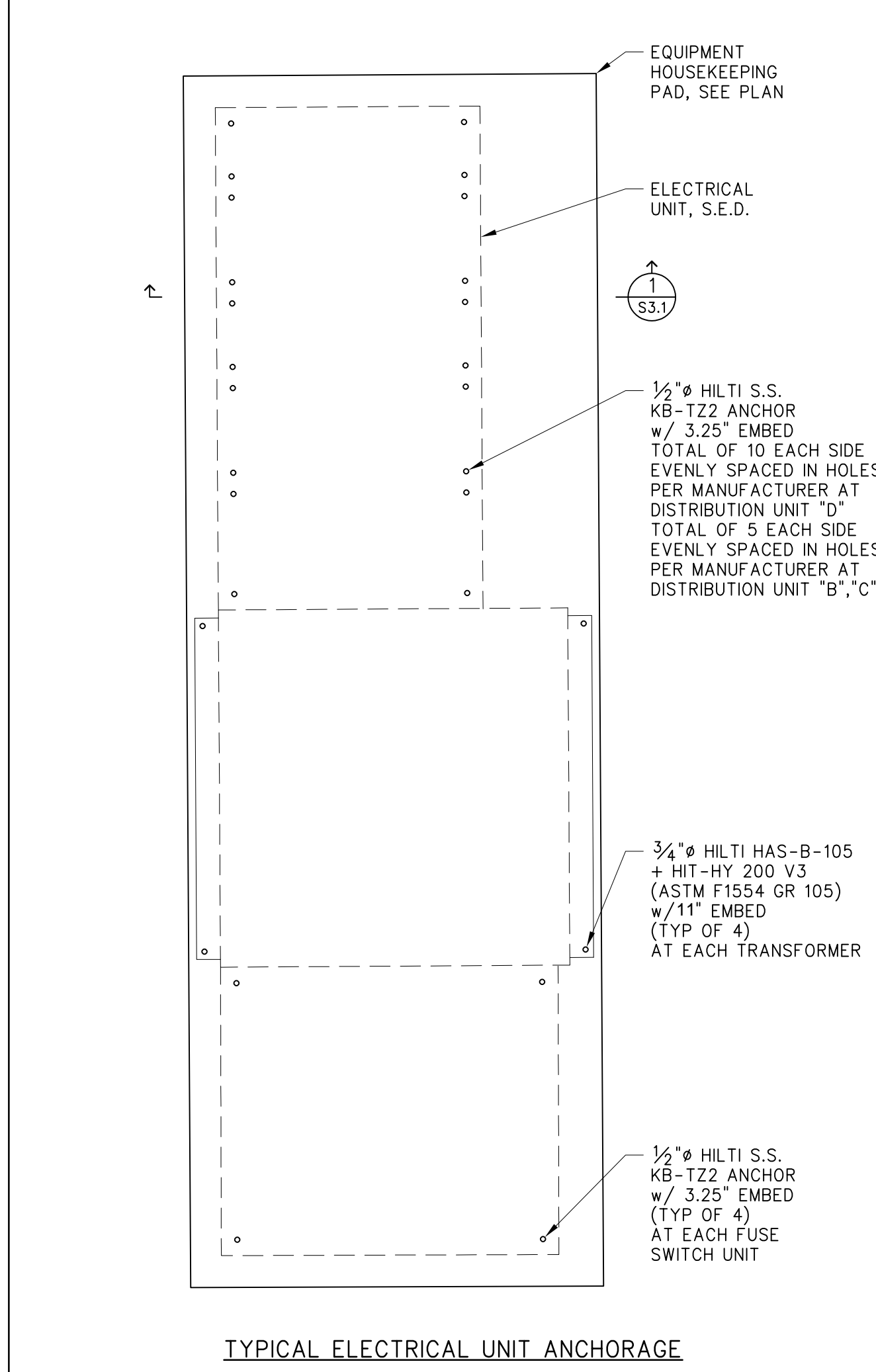


DETAIL 1 SCALE: 1" = 1'-0" S3.1

DETAIL 2 SCALE: 1" = 1'-0" S3.1

SECTION 3 SCALE: 1" = 1'-0" S3.1

SCALE: NONE S3.1



PLAN DETAIL 5 SCALE: NONE S3.1

DETAIL 6 SCALE: NONE S3.1

SECTION 6 SCALE: 1" = 1'-0" S3.1

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PROFESSIONAL ENGINEER
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No. 4121
STATE OF CALIFORNIA
25 MAY 2023
DATE SIGNED

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr.
Oakland, CA 94619

SHEET TITLE
SECTIONS & DETAILS

REVISIONS

NO.	DESCRIPTION	DATE
50%	PRICING SET	09/30/2022
100%	CD SET	10/24/2022
1	DSA SUBMITTAL	12/01/2022
1	DSA RESUBMITTAL	04/14/2023
2	DSA RESUBMITTAL	05/25/2023

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2022-0586

DATE
05/25/2023

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ELECTRICAL SYMBOL LIST

NOTE: This is a standard symbol list and not all items listed may be used.

Abbreviations

(A)	ABANDON IN PLACE
(E)	EXISTING
(N)	NEW
(R)	RELOCATE
(X)	DEMOLISH
A	AMPERES, AMPER
AC	ALTERNATING CURRENT, AIR CONDITIONER
ADJ	ADJUSTABLE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AVAILABLE INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
B	BLUE
BAS	BUILDING AUTOMATION SYSTEM
BB	BASE BOARD HEATER
BC	BARE COPPER
C	CONDUIT, CLOSE, CONTROL
CA	CABLE
CB	CIRCUIT BREAKER
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED OWNER INSTALLED
COM	COMMUNICATION
COORD	COORDINATE
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
CU	COPPER
DIA	DIAMETER
DIM	DIMENSION
DIV	DIVISION
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NON-METALLIC TUBING
ESD	ELECTROSTATIC DISCHARGE
FT	FOOT, FEET
G, GND	GROUND
G	GREEN
GE	GROUNDING EQUALIZER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GFP	GROUND FAULT PROTECTION
HH	HANDHOLE
I	INTERLOCK
ID	IDENTIFICATION
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
IN	INCH, INCHES
INST	INSTANTANEOUS
ISO	ISOLATION, INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
ISR	INTRINSICALLY SAFE RELAY
KV	KILOVOLT
KVA	KILOVOLT AMPERES
KW	KILOWATT
LV	LOW VOLTAGE
M	MOTOR
MCA	MINIMUM CIRCUIT AMPS
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDB	MAIN DISTRIBUTION BOARD
MDP	MAIN DISTRIBUTION PANEL
MH	MANHOLE, MAINTENANCE HOLE
MIN	MINIMUM

MISC	MISCELLANEOUS
MSB	MAIN SWITCHBOARD
MT, MTD	MOUNT, MOUNTED
MT	EMPTY CONDUIT WITH NYLON PULL CORD
MTS	MANUAL TRANSFER SWITCH
N.I.C.	NOT IN CONTRACT
N/A	NOT APPLICABLE
N	NEUTRAL
NA	NON AUTOMATIC
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NESC	NATIONAL ELECTRICAL SAFETY CODE
NO	NORMALLY OPEN
NP	NAMEPLATE
NTS	NOT TO SCALE
O	OPEN
OC	ON CENTER
OCA	OPEN-CLOSE-AUTO
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OSP	OUTSIDE PLANT
PB	PUSHBUTTON, PULLBOX
PH	PHASE
PID	PROPORTIONAL - INTEGRAL - DERIVATIVE
PNL	PANEL
PWR	POWER
QTY	QUANTITY
RC	REVERSING CONTACTOR
REF	REFERENCE
REQD	REQUIRED
RFI	REQUEST FOR INFORMATION
RMC	RIGID METAL CONDUIT
SDP	SUB DISTRIBUTION PANEL
SPD	SURGE PROTECTION DEVICE
SS	SURGE SUPPRESSOR
SS-1	SELECTOR SWITCH 1
ST	SHUNT TRIP
STD	STANDARD
SWBD	SWITCHBOARD
TBD	TO BE DETERMINED
TDD, TDE	TIME DELAY RELAY
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS, VOLTAGE
VM	VOLTMETER
VS	VOLTMETER SWITCH
W	WITH
W/O	WITHOUT
W	WIRE, WHITE
WH	WATER HEATER
WP	WEATHERPROOF
XFMR	TRANSFORMER

Connections / Equipment

	UTILITY METER BASE
	WALL-MOUNTED JUNCTION BOX

General

	DEMOLISH
--	----------

	DETAIL NUMBER AND SHEET LOCATION
	EXISTING WORK
	KEYED NOTE
	NEW WORK
	SECTION NUMBER AND SHEET LOCATION

Lighting

	WALL MOUNTED LUMINAIRE
--	------------------------

Miscellaneous

	AUTOMATIC TRANSFER SWITCH
	BRANCH PANEL
	CIRCUIT BREAKER
	CIRCUIT BREAKER WITH CURRENT LIMITING FUSES
	CURRENT TRANSFORMER
	DIGITAL TYPE METER WITH VOLTMETER, AMMETER, KW METER, KVA METER, KVAR METER, AND %THD METER
	DRY TYPE TRANSFORMER
	FUSE
	FUSED DISCONNECT SWITCH OR SWITCH/FUSE IN SWITCHBOARD
	GROUND BAR
	GROUND ROD BONDED TO BARE COPPER GROUND CONDUCTOR
	GROUNDING BUS BAR
	GROUNDING INSIDE PULLBOX/GROUND WELL
	GROUNDING POINT
	LANDING LUG
	MAIN DISTRIBUTION PANEL / SUB DISTRIBUTION PANEL
	METER WITH CONNECTION
	SURFACE MOUNT EQUIPMENT ENCLOSURE AS NOTED
	SURGE PROTECTION DEVICE
	SWITCH
	DEADBREAK ELBOW

Raceways

	CONDUIT CONCEALED IN WALL OR CEILING SPACE
	CONDUIT ELLED DOWN
	CONDUIT ELLED UP
	CONDUIT ROUTED BELOW FLOOR / GRADE
	CONDUIT WIRING CONTINUATION
	CONDUIT WIRING STUBBED OUT WITH END CAP OR INSULATED PLASTIC BUSHING
	FLEXIBLE CONDUIT
	HANDHOLE WITH ID NUMBER
	PULL BOX

Switches and Receptacles

	SINGLE POLE SWITCH
	W = WEATHERPROOF SWITCH

GENERAL ELECTRICAL NOTES

- A. DO NOT COMMENCE INSTALLATION OF ELECTRICAL SYSTEMS AND EQUIPMENT WITHOUT RELATED SHOP DRAWING APPROVALS.
- B. ELECTRICAL CIRCUITS SHALL BE INTERRUPTED ONLY WITH PRIOR WRITTEN CONSENT. SUCH INTERRUPTIONS SHALL BE PRECEDED BY ALL POSSIBLE PREPARATIONS BY THE CONTRACTOR WHICH ARE NECESSARY TO KEEP THE ELECTRICAL CIRCUITS OFF FOR A MINIMUM PERIOD IN AN EXPEDITIOUS MANNER PURSUANT WITH GOOD WORKMANSHIP. THIS INCLUDES CIRCUIT TRACING TO IDENTIFY THE ELECTRICAL LOAD BEING SERVED AND THE ORIGIN OF THE CIRCUIT.
- C. COORDINATE WITH OWNER SO THAT WORK CAN BE SCHEDULED NOT TO INTERRUPT OPERATIONS, NORMAL ACTIVITIES, BUILDING ACCESS, ACCESS TO DIFFERENT AREAS. THE OWNER WILL COOPERATE TO THE BEST OF THEIR ABILITY TO ASSIST IN A COORDINATED SCHEDULE, BUT WILL REMAIN THE FINAL AUTHORITY AS TO TIME OF WORK PERMITTED.
- D. COORDINATE THE EXACT LOCATION OF EXISTING UTILITIES AND EQUIPMENT PRIOR TO COMMENCEMENT OF WORK. COMPENSATE THE OWNER FOR DAMAGES CAUSED BY THE FAILURE TO LOCATE AND PRESERVE UTILITIES. REPLACE DAMAGED ITEMS WITH NEW MATERIAL TO MATCH EXISTING.
- E. PROVIDE TEMPORARY SUPPORT FOR ELECTRICAL SYSTEMS THAT REMAIN IN PLACE.
- F. REMOVE ABANDONED WIRING TO LEAVE SITE CLEAN.
- G. MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS WHICH REMAIN ACTIVE. MODIFY INSTALLATION OR PROVIDE ACCESS PANEL AS APPROPRIATE.
- H. WHERE DRAWINGS INDICATE EXISTING ELECTRICAL EQUIPMENT OR DEVICES TO BE RELOCATED AND/OR REUSED, REFURBISH THEM THOROUGHLY CLEAN SUCH ITEMS. NOTIFY ARCHITECT OF ANY DEFECTS IN SUCH INSTALLATIONS. REPAIR ANY DAMAGE CAUSED BY DEMOLITION OR CONSTRUCTION PERFORMED UNDER THIS CONTRACT.
- I. PROVIDE UPDATED PANEL SCHEDULES AND DIRECTORIES THAT IDENTIFY EXISTING CIRCUITS AND NUMBER OF SPARE CIRCUITS AVAILABLE UPON COMPLETION OF DEMOLITION WORK.
- J. OFFER REMOVED PANELBOARDS AND EQUIPMENT TO THE OWNER. IF OWNER CHOOSES TO RETAIN THESE ITEMS, RETURN SUCH ITEMS TO OWNER. CAREFULLY REMOVE AND DISPOSE OF ITEMS REJECTED BY OWNER FROM PROJECT SITE AND IN A LEGAL MANNER.
- K. PROVIDE SUITABLE ANCHORAGE AND SUPPORT FOR ELECTRICAL EQUIPMENT IN RATED WALLS, SLABS AND CEILINGS. MOUNT DEVICES AND RACEWAYS IN ACCORDANCE WITH ESTABLISHED CODES AND SPECIFICATIONS.
- L. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- M. DRAWINGS AND SPECIFICATIONS COMPLEMENT EACH OTHER. REQUIREMENT BY EITHER INFERS REQUIREMENT BY BOTH.
- N. CONNECT EQUIPMENT AND DEVICES FURNISHED UNDER OTHER DIVISIONS OF THIS CONTRACT, BY OWNER OR BY OTHER CONTRACTS.
- O. BRACE ELECTRICAL EQUIPMENT TO RESIST A HORIZONTAL FORCE THAT ACT IN ANY DIRECTION. COMPLY WITH TITLE 24 REQUIREMENTS.
- P. INSTALL COMPLETE SYSTEM OF CONDUCTORS IN RACEWAY SYSTEM THROUGHOUT BUILDING FOR FEEDERS, BRANCH CIRCUITS, ETC.
- Q. ALL WORK ON SERVICE CONDUCTORS, FEEDERS, AND OTHER SUCH EQUIPMENT SHALL BE DONE ONLY WHEN SUCH CONDUCTORS, FEEDERS, AND EQUIPMENT ARE DE-ENERGIZED. THE CONTRACTOR SHALL HAVE AN "ELECTRICAL SAFETY AND LOCK-OUT/TAG-OUT PROCEDURE" IN PLACE PRIOR TO COMMENCEMENT OF WORK.
- R. ALL AIC RATINGS SHOWN ARE MINIMUM REQUIREMENTS. COORDINATE AND UPGRADE RATINGS FOR ALL DISTRIBUTION EQUIPMENT AS PER SHORT CIRCUIT ANALYSIS RECOMMENDATION.
- S. PENETRATIONS THROUGH EXISTING WALLS SHALL BE 4 INCH MAX DIAMETER. AT CONCRETE AND MASONRY WALLS, WHERE OCCUR, DO NOT DAMAGE EXISTING STUDS OR PLATES.
- T. HIRE THIRD PARTY TESTING AGENCY TO PERFORM THE FOLLOWING, AS PART OF A DEFERRED SUBMITTAL IN CONSTRUCTION FOR REVIEW AND APPROVAL BY THE ENGINEER OF RECORD.
 1. SHORT CIRCUIT STUDY, ARC FLASH STUDY & LABELS, AND OVERCURRENT PROTECTIVE STUDY.
 2. ACCEPTANCE TESTING IN ACCORDANCE WITH SPECIFICATIONS.
- U. PROVIDE TESTING REPORTS TO ENGINEER FOR REVIEW UPON COMPLETION OF INSTALLATION FOR THE FOLLOWING, AS PART OF A DEFERRED SUBMITTAL IN CONSTRUCTION FOR REVIEW AND APPROVAL BY THE ENGINEER OF RECORD.
 1. INSULATION RESISTANCE (MEGGER) TEST REPORTS PRIOR TO CONDUCTOR TERMINATION AND EQUIPMENT ENERGIZATION.
 2. TORQUE TEST REPORTS PRIOR TO EQUIPMENT ENERGIZATION.

DSA COMPONENT ANCHORAGE NOTES

- A. ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26, AND ASCE 7-16 CHAPTER 13, 26 AND 30.
 1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
 2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
 3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.
- B. THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS:
 1. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
 2. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.
- C. THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

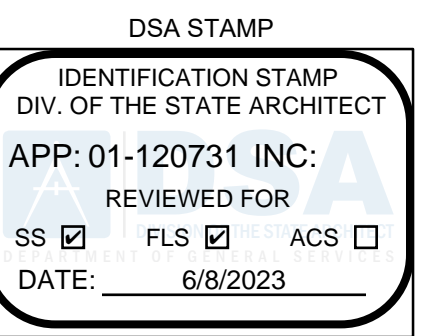
SCOPE OF WORK

INTENT OF PROJECT IS TO REPLACE MEDIUM VOLTAGE SUBSTATION 'C' AND PROVIDE POWER TO NEW CHILD DEVELOPMENT CENTER BUILDING.

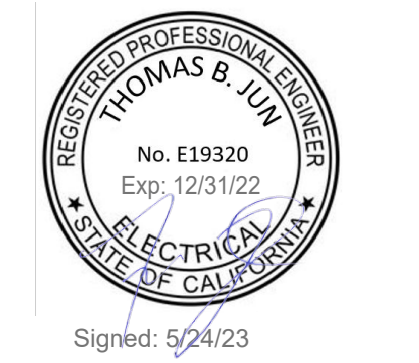
- A. FURNISH AND INSTALL MEDIUM VOLTAGE INFRASTRUCTURE FOR NEW SUBSTATION 'C' WHILE OLD SUBSTATION 'C' REMAINS ACTIVE. INFRASTRUCTURE SHALL INCLUDE BUT IS NOT LIMITED TO SUBSTATIONS SPACE, MEDIUM VOLTAGE JUNCTION BARS, EQUIPMENT, CONDUCTORS, PULL BOXES, AND UNDERGROUND CONCRETE ENCASED DUCT BANKS.
- B. TRANSFER ALL EXISTING POWER TO NEW INFRASTRUCTURE PRIOR TO DEMOLITION OF ANY EQUIPMENT.
- C. DEMOLITION SUBSTATION 'C' AND PREPARE UNDERGROUND PULL BOXES TO EXTENT LOW VOLTAGE FEEDERS TO NEW SUBSTATION 'C' LOCATION. DEMOLITION SHALL INCLUDE REMOVAL OF ALL MEDIUM VOLTAGE EQUIPMENT AND CONDUCTORS. EXISTING MEDIUM VOLTAGE UNDERGROUND CONDUIT SHALL BE CUT, CAPPED AND ABANDONED IN PLACE.
- D. PROVIDE POWER TO NEW CHILD DEVELOPMENT CENTER BUILDING.
- E. POWER TO BUILDINGS SHALL BE MAINTAINED DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE TEMPORARY POWER.

SHEET INDEX

E0.1	SYMBOL LIST, GENERAL NOTES, AND SHEET INDEX
E0.2	LUMINAIRE SCHEDULE AND TITLE 24 - ELECTRICAL
E1.1	MEDIUM VOLTAGE SITE PLAN - ELECTRICAL
ED2.1	DEMO SUB-STATION 'C' PLANS - ELECTRICAL
ED3.1	DEMO MEDIUM VOLTAGE SINGLE LINE DIAGRAM - ELECTRICAL
E2.1	SUB-STATION 'C' PLANS - ELECTRICAL
E2.2	ENLARGED SUB-STATION 'C' PLANS - ELECTRICAL
E3.1	NEW MEDIUM VOLTAGE SINGLE LINE DIAGRAM - ELECTRICAL
E4.1	DETAILS - ELECTRICAL
E4.2	DETAILS - ELECTRICAL



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Signed: 5/24/23

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr., Oakland, CA 94619

SHEET TITLE
SYMBOL LIST, GENERAL NOTES, SHEET INDEX

REVISIONS	DATE
100% CD	11/01/22
DSA SUBMITTAL	11/23/22
PLAN CHECK RESPONSE 1	04/14/23
PLAN CHECK RESPONSE 2	05/25/23

DRAWN BY	EM
CHECKED BY	THOMAS JUN
JOB NO.	2022-0586
DATE	11/23/2022
SHEET NUMBER	E0.1

STATE OF CALIFORNIA
Outdoor Lighting
 CALIFORNIA ENERGY COMMISSION

REGISTRATION NUMBER: 2022-11-01 16:24:05
 REGISTRATION PROVIDER: ENERGOFT

CA BUILDING ENERGY EFFICIENCY STANDARDS - 2019 NONRESIDENTIAL COMPLIANCE
 REPORT VERSION: 2019.1.003
 SCHEMA VERSION: rev 20200601

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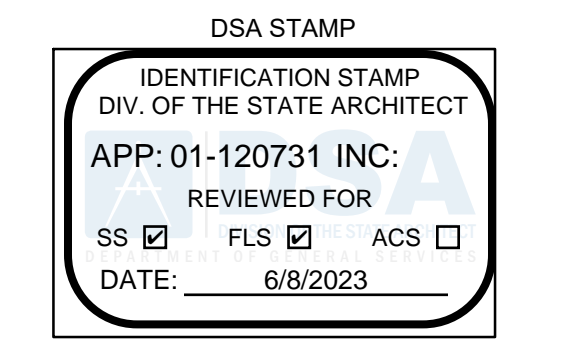
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TYPE	DESCRIPTION	HOUSING	SHIELDING	MOUNTING	FINISH	UL/IP RATING	DRIVER/ POWER SUPPLY	LIGHT SOURCE	INPUT WATTS	VOLTAGE	MFG/CATALOG #	NOTES
F1	WALLPACK LED			WALL MOUNTED	ARCHITECT TO SELECT	DAMP	INTEGRAL	3140 LUMENS, 3000K, 70CRI, LED	39W	120V	W4GLD 10C1000 30K T3M MVOLT SPD OR APPROVED EQUIVALENT	

NOTES:

- THIS LUMINAIRE SCHEDULE IS NOT COMPLETE WITHOUT A COPY OF THE PROJECT MANUAL CONTAINING THE ELECTRICAL SPECIFICATIONS.
- DIMMING CONTROL PROTOCOOL (0-10VDC, LINE VOLTAGE, DALI, ETC.) COMPATIBLE WITH LIGHTING CONTROL SYSTEM AS SPECIFIED AND SHOWN ON DRAWINGS.
- COORDINATE ALL CEILING TYPES WITH LUMINAIRE LOCATIONS PRIOR TO ORDERING LUMINAIRES. COORDINATE INSTALLATION WITH REFLECTED CEILING PLAN.
- SPECIFIED MANUFACTURERS ARE APPROVED TO SUBMIT BID. INCLUSION DOES NOT RELIEVE MANUFACTURER FROM SUPPLYING PRODUCT AS DESCRIBED.
- PROVIDE SUBMITTALS THAT INCLUDE THE LUMINAIRE, LAMP AND DIMMABLE LED DRIVER INFORMATION OF EACH LUMINAIRE, WITH APPLICABLE OPTIONS CLEARLY CHECKED OR HIGHLIGHTED. SUBMITTALS NOT INCLUDING THIS INFORMATION WILL BE RETURNED AS REJECTED BY THE ENGINEER OF RECORD.
- REMOTE DRIVERS: UL LISTED FOR THEIR APPLICATION. DRIVERS MARKED AS UL RECOGNIZED COMPONENT BUT NOT UL LISTED ARE SUBJECT TO REMOVAL AND REPLACEMENT AT NO COST TO OWNER.
- REFER TO FLOOR PLANS FOR LOCATION, CIRCUITING, AND SWITCH LEG FOR EACH REMOTE DRIVER. LABEL ALL REMOTE DRIVERS TO SHOW LUMINAIRE TYPE IDENTIFICATION AND SOURCE CIRCUIT. PROVIDE WIRING BETWEEN REMOTE DRIVER AND LUMINAIRE AS RECOMMENDED BY MANUFACTURER. DO NOT EXCEED MAXIMUM DISTANCE RECOMMENDED BY MANUFACTURER BETWEEN DRIVER AND FURTHEST LUMINAIRE.
- PROVIDE COMMISSIONING OF THE LIGHTING AND LIGHTING CONTROLS IN ACCORDANCE WITH CALIFORNIA TITLE 24 LIGHTING COMMISSIONING REQUIREMENTS.



MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

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SHEET TITLE
LUMINAIRE SCHEDULE AND TITLE 24 - ELECTRICAL

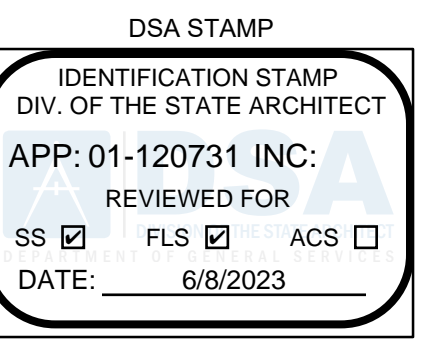
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100% CD	11/01/22
DSA SUBMITTAL	11/23/22
PLAN CHECK RESPONSE 1	04/14/23
PLAN CHECK RESPONSE 2	05/25/23

DRAWN BY: EM
 CHECKED BY: THOMAS JUN
 JOB NO: 2022-0586
 DATE: 11/23/2022
 SHEET NUMBER

E0.2

GENERAL SHEET NOTES

A. HIRE THIRD PARTY UNDERGROUND LOCATING CONTRACTOR TO SURVEY ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.



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MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

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Oakland, CA 94619



1 OVERALL MEDIUM VOLTAGE SITE PLAN - ELECTRICAL
SCALE: 1"=80'-0"

SHEET TITLE
SITE PLAN - ELECTRICAL

REVISIONS	DATE
100% CD	11/01/22
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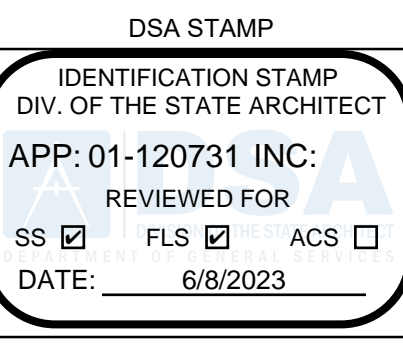
E1.1

GENERAL SHEET NOTES

- A. REFER TO STRUCTURAL AND CIVIL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
- B. DESIGN INTENT IS TO INSTALL ALL NEW INFRASTRUCTURE PRIOR TO DEMOLITION, IN ORDER TO MINIMIZE DOWNTIME DURING SWITCHOVER.

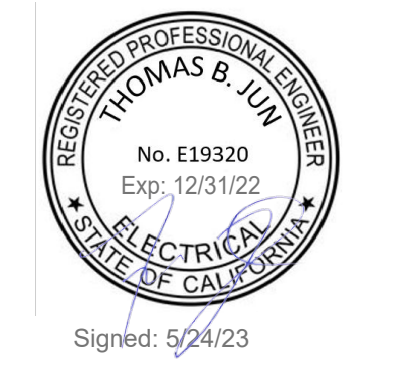
SHEET KEYNOTES

1. REMOVE ALL CONDUCTORS ASSOCIATED WITH SUBSTATION 'C'. CUT, CAP AND ABANDON CONDUIT IN PLACE.
2. DISCONNECT AND TERMINATE BACK TO GENERATOR. REFER TO E2.1 AND NEW SINGLE LINE DIAGRAM FOR ADDITIONAL INFORMATION.



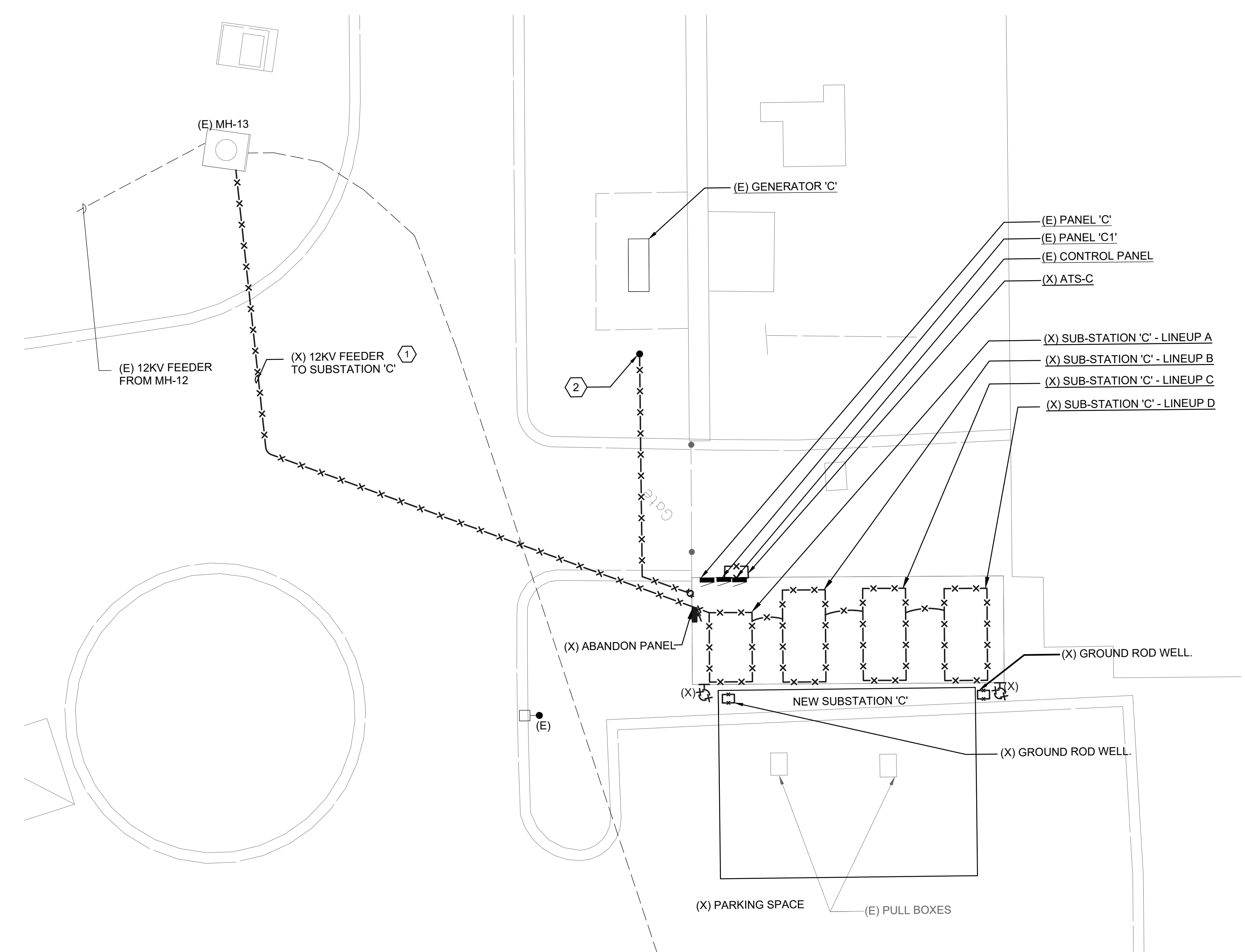
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MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr,
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1 SUB-STATION C DEMO PLAN - ELECTRICAL

SCALE: 1"=10'-0"

SHEET TITLE
DEMO SUB-STATION 'C' PLANS - ELECTRICAL

REVISIONS	DATE
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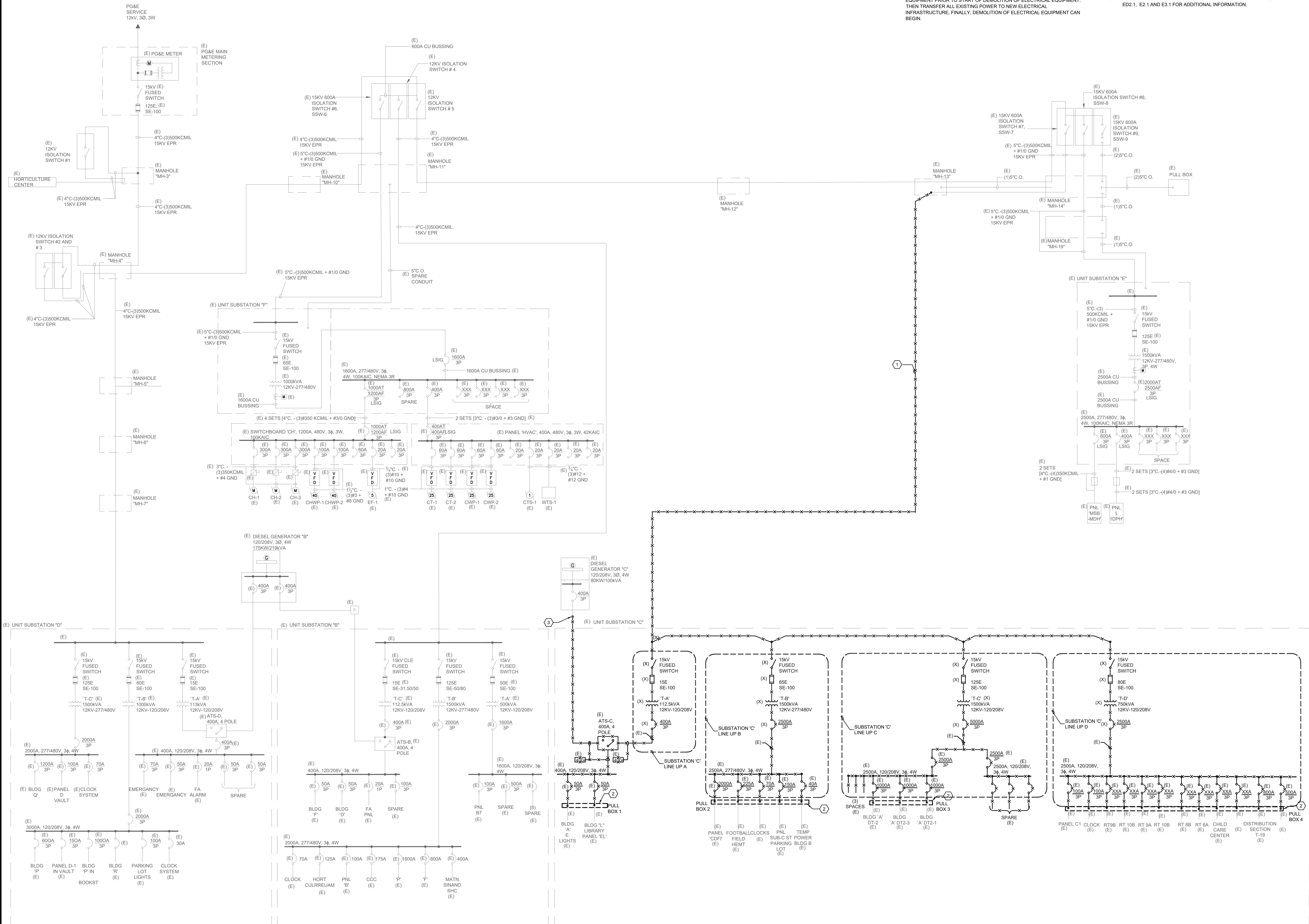
ED2.1

GENERAL SHEET NOTES

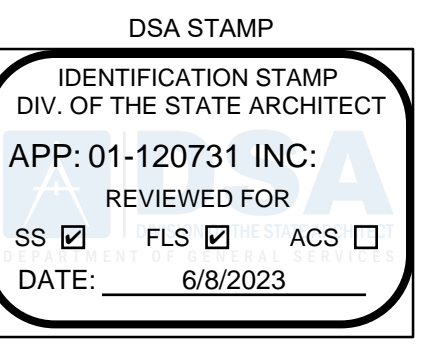
- A. INFORMATION SHOWN ON THIS SINGLE-LINE-DIAGRAM HAS BEEN COMPILED FROM MULTIPLE AS-BUILT DRAWINGS. FIELD VERIFY INFORMATION SHOWN AND REPORT TO ENGINEER ANY DISCREPANCIES
- B. DESIGN INTENT IS TO REDUCE AMOUNT OF DOWNTIME DURING THE REPLACEMENT OF SUBSTATION C. FIRST, INSTALL NEW ELECTRICAL EQUIPMENT PRIOR TO START OF DEMOLITION OF ELECTRICAL EQUIPMENT. THEN TRANSFER ALL EXISTING POWER TO NEW ELECTRICAL INFRASTRUCTURE, FINALLY, DEMOLITION OF ELECTRICAL EQUIPMENT CAN BEGIN.

SHEET KEYNOTES

- 1 CONDUIT TO BE ABANDONED IN PLACE AND CAPPED OFF
- 2 LOCATE UNDERGROUND PULL BOX INSIDE OF EXISTING SUBSTATION 'C' SPACE UTILIZED TO EXTEND LOW VOLTAGE FEEDERS FROM EXISTING SUBSTATION 'C' TO NEW SUBSTATION 'C-B', 'C-C' AND 'C-D'.
- 3 DISCONNECT AND TERMINATE BACK TO GENERATOR. REFER TO ED2.1, E2.1 AND E3.1 FOR ADDITIONAL INFORMATION.



1 MEDIUM VOLTAGE SINGLE LINE DIAGRAM - DEMO
NO SCALE



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MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

**12500 Campus Dr,
Oakland, CA 94619**

SHEET TITLE
DEMO MEDIUM VOLTAGE SINGLE LINE DIAGRAM - ELECTRICAL

REVISIONS	DATE
100% CD	11/01/22
DSA SUBMITTAL	11/23/22
PLAN CHECK RESPONSE 1	04/14/23
PLAN CHECK RESPONSE 2	05/25/23

DRAWN BY
EM

CHECKED BY
THOMAS JUN

JOB NO.
2022-0586

DATE
11/23/2022

SHEET NUMBER

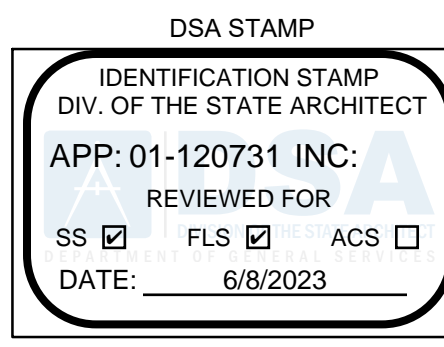
ED3.1

GENERAL SHEET NOTES

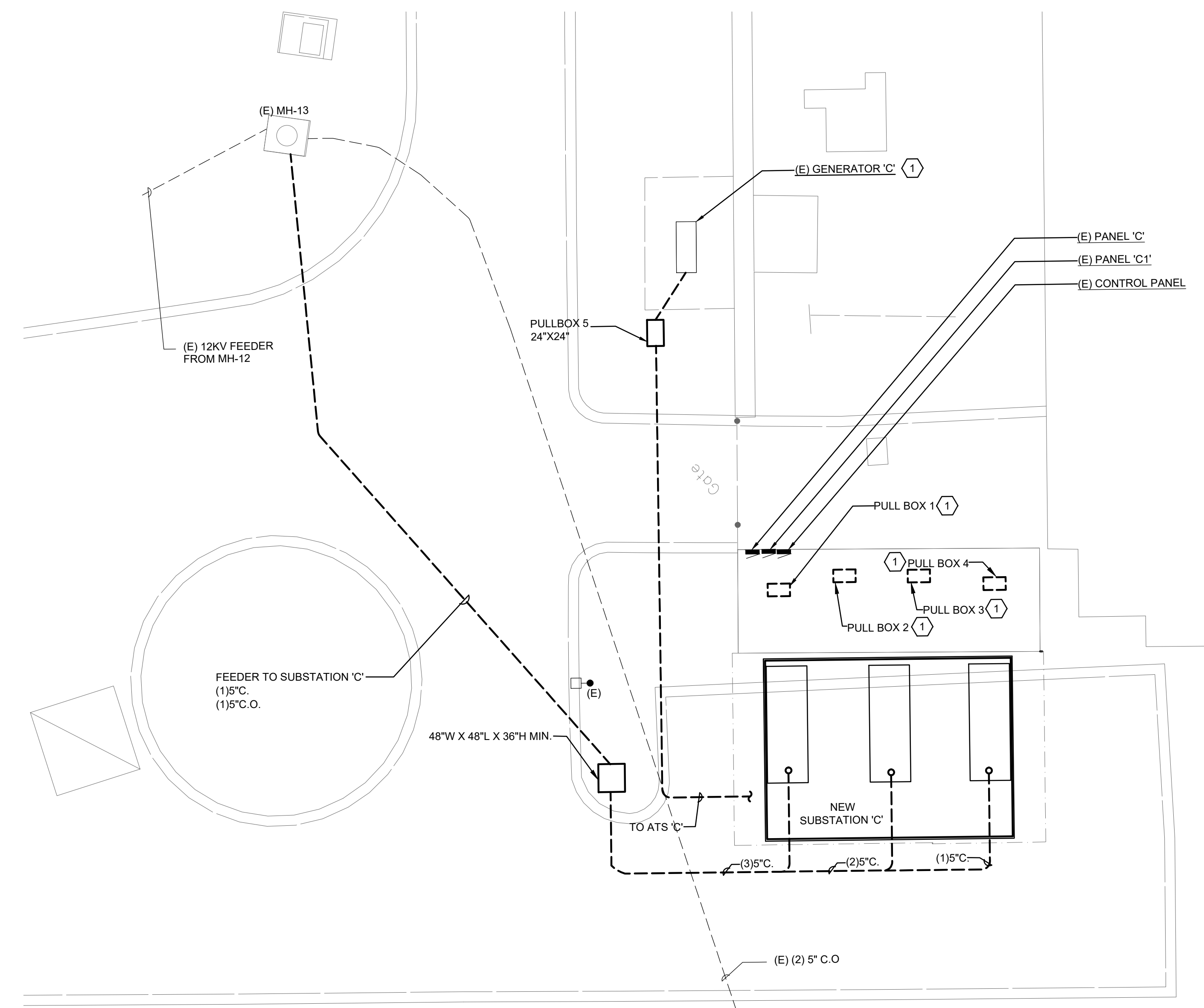
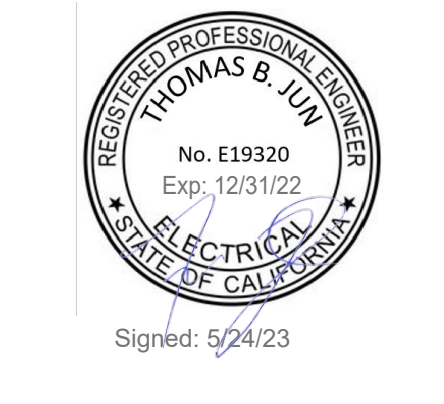
- A. REFER TO STRUCTURAL AND CIVIL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
- B. DESIGN INTENT IS TO INSTALL ALL NEW INFRASTRUCTURE PRIOR TO DEMOLITION, IN ORDER TO MINIMIZE DOWNTIME DURING SWITCHOVER.

SHEET KEYNOTES

- 1. PROVIDE PULLBOX AFTER THE REMOVAL OF OLD SUBSTATIONS.
- 2. RECONNECT EXISTING GENERATOR TO THE NEW SUBSTATION C. REFER TO SINGLE LINE DIAGRAM FOR ADDITIONAL INFORMATION.



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2 SUB-STATION C NEW PLAN - ELECTRICAL
 0 10' 20'
 SCALE: 1"=10'-0"

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr,
Oakland, CA 94619

SHEET TITLE
SUB-STATION 'C' PLANS - ELECTRICAL

REVISIONS	DATE
100% CD	11/01/22
DSA SUBMITTAL	11/23/22
PLAN CHECK RESPONSE 1	04/14/23
PLAN CHECK RESPONSE 2	05/25/23

DRAWN BY
EM

CHECKED BY
THOMAS JUN

JOB NO.
2022-0586

DATE
11/23/2022

SHEET NUMBER

E2.1

GENERAL SHEET NOTES

- A. REFER TO STRUCTURAL AND CIVIL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
- B. DESIGN INTENT IS TO INSTALL ALL NEW INFRASTRUCTURE PRIOR TO DEMOLITION, IN ORDER TO MINIMIZE DOWNTIME DURING SWITCHOVER.

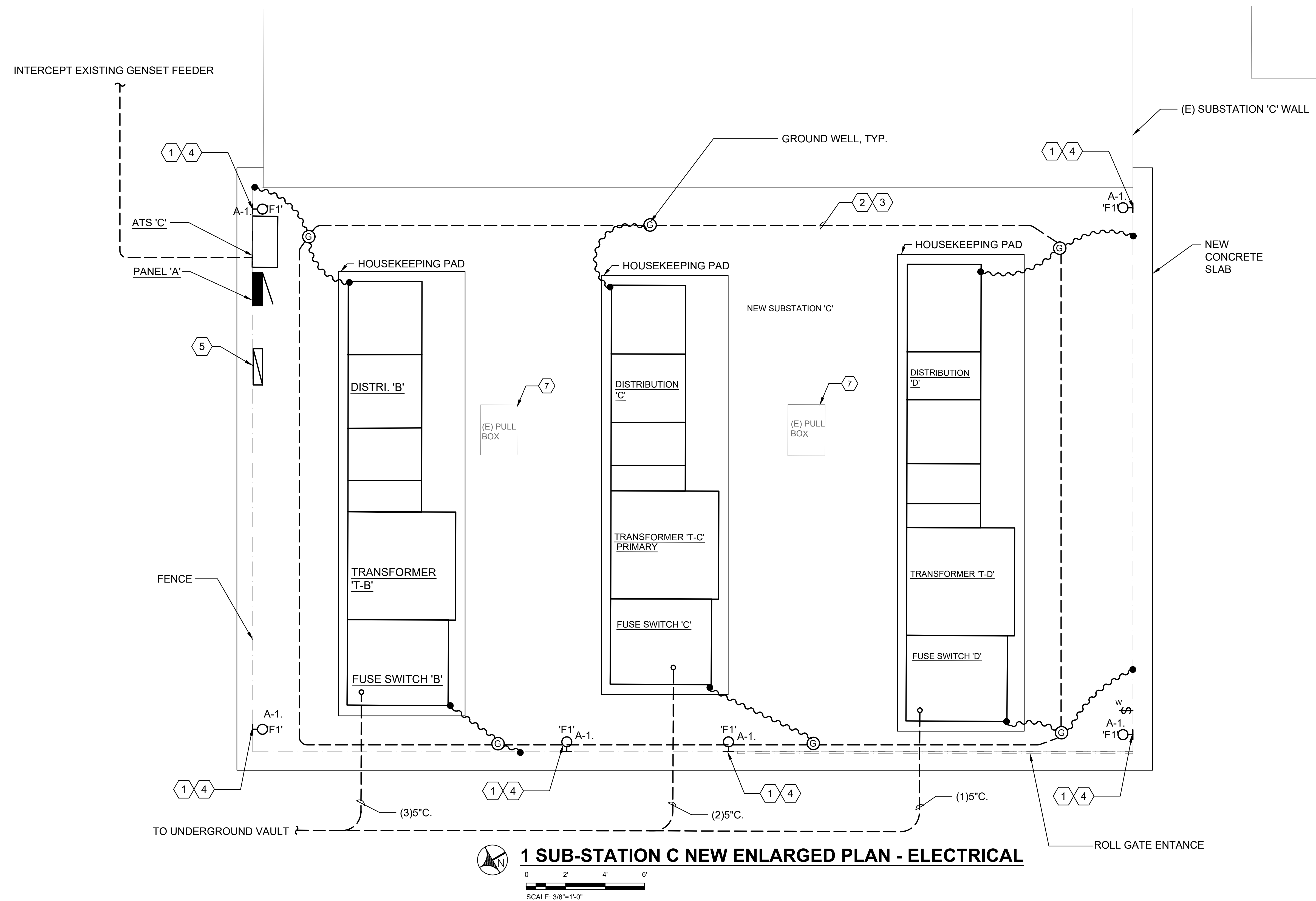
SHEET KEYNOTES

- 1. MOUNT FLOOD LIGHT ON FENCE POLE. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH ENGINEER PRIOR TO INSTALLATION. REFER TO 8/E4.2 FOR MOUNTING DETAIL.
- 2. PROVIDE CONNECTION BETWEEN EQUIPMENT PAD REBAR AND #2 BARE COPPER WIRE. REFER TO DETAIL 8/E4.1 FOR ADDITIONAL INFORMATION.
- 3. PROVIDE #2 BARE COPPER WIRE.
- 4. PROVIDE NEW LUMINAIRE AND HOMERUN 3/4"C, 2#12, 1#12 GND. TO PANEL 'A'. IF MOUNTED ON CHAIN LINK FENCE, FURNISH POLE MOUNTED BRACKET TO INSTALL LUMINAIRE. OTHERWISE, LUMINAIRE SHALL BE SURFACE MOUNTED AT 8' A.F.F.
- 5. PROVIDE NEMA-3R ENCLOSURE WITH PROGRAMMABLE ASTRONOMICAL TIME CLOCK AND PHOTO CELL FOR SITE LIGHTING.
- 6. REFER TO STRUCTURAL DETAIL 7/S3.1 FOR MOUNTING INFORMATION.
- 7. REFER TO DETAIL 7/E4.1 FOR EXISTING PULLBOX DETAIL.

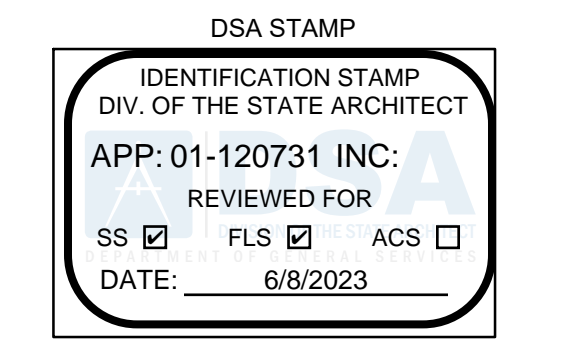
Panel 'A'											
120/208V, 3 Ph, 4 W, 400A Bus with Main Lug Only Surface Mounted Panelboard with an Available Fault Current of 9966A RMS											
Ckt. No.	Description / Location	Load (VA) Type			C.B. A/Pole			C.B. Note			Ckt. No.
		VA	Type	A/Pole	Note	Ph.	Note	A/Pole	VA	Type	
1	PERIMETER LIGHTING	234	L	20/1		A		50/3	4,798	G	2
3	SPARE	-	-	100/3		B		-	4,798	-	4
5	-	-	-	-		C		-	4,798	-	6
7	-	-	-	-		A		70/3	6,717	G	8
9	SPARE	-	-	100/3		1 B		-	6,717	-	10
11	-	-	-	-		C		-	6,717	-	12
13	-	-	-	-		A		-	-	-	14
15	SPARE	-	-	100/3		1 B		-	-	-	16
17	-	-	-	-		C		-	-	-	18
19	-	-	-	-		A		-	-	-	20
21	-	-	-	-		B		-	-	-	22
23	-	-	-	-		C		-	-	-	24
25	-	-	-	-		A		-	-	-	26
27	-	-	-	-		B		-	-	-	28
29	-	-	-	-		C		-	-	-	30
31	-	-	-	-		A		-	-	-	32
33	-	-	-	-		B		-	-	-	34
35	-	-	-	-		C		-	-	-	36
37	-	-	-	-		A		-	-	-	38
39	-	-	-	-		B		-	-	-	40
41	-	-	-	-		C		-	-	-	42

Total Connected Load:	Ph. A	11,748 VA	96 Amps	Panel Connected Load:	11.7 KVA	32.6 Amps
Total Connected Load:	Ph. B	11,515 VA	96 Amps	Sub-Fed Connected Load:	0.0 KVA	0.0 Amps
Total Connected Load:	Ph. C	11,515 VA	96 Amps	Total Demand Load:	11.8 KVA	32.8 Amps

Notes:
 1. ADJUSTABLE
 2.
 3.
 4.
 5.



1 SUB-STATION C NEW ENLARGED PLAN - ELECTRICAL
 SCALE: 3/8"=1'-0"



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Signed: 5/24/23

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

SHEET TITLE
ENLARGED SUB-STATION 'C' PLANS - ELECTRICAL

REVISIONS	DATE
100% CD	11/01/22
DSA SUBMITTAL	11/23/22
PLAN CHECK RESPONSE 1	04/14/23
PLAN CHECK RESPONSE 2	05/25/23

DRAWN BY: EM
 CHECKED BY: THOMAS JUN
 JOB NO.: 2022-0586
 DATE: 11/23/2022
 SHEET NUMBER

E2.2

FEEDER SCHEDULE

Key

A, C, S, X A = Aluminum
 C = Conduit only
 S = Service secondary
 X = Separately derived system

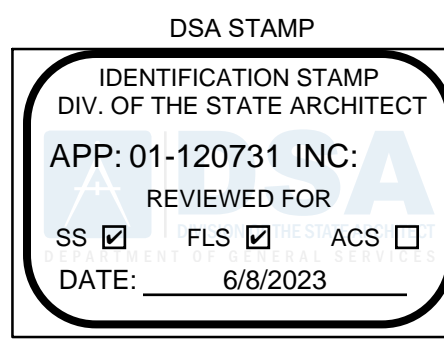
4004 (4 500 kcmil CU, 1 1/0 CU GND., IN 3" C.)

GENERAL SHEET NOTES

- INFORMATION SHOWN ON THIS SINGLE-LINE DIAGRAM HAS BEEN COMPILED FROM MULTIPLE AS-BUILT DRAWINGS. FIELD VERIFY INFORMATION SHOWN AND REPORT TO ENGINEER ANY DISCREPANCIES
- DESIGN INTENT IS TO REDUCE AMOUNT OF DOWNTIME DURING THE REPLACEMENT OF SUBSTATION C. FIRST, INSTALL NEW ELECTRICAL EQUIPMENT PRIOR TO START OF DEMOLITION OF ELECTRICAL EQUIPMENT. THEN TRANSFER ALL EXISTING POWER TO NEW ELECTRICAL INFRASTRUCTURE. FINALLY, DEMOLITION OF ELECTRICAL EQUIPMENT CAN BEGIN.

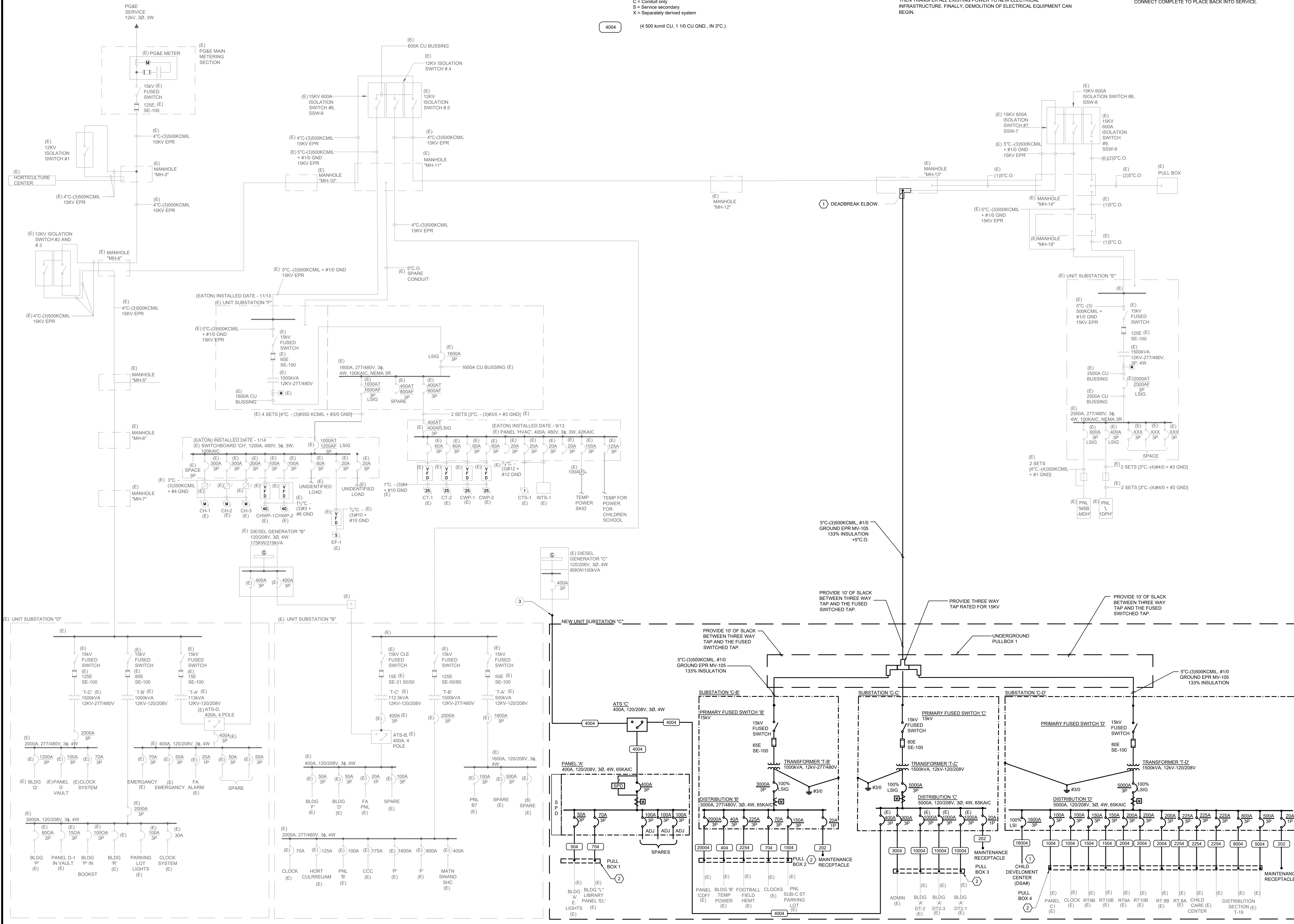
SHEET KEYNOTES

- POWER PROVISION TO CHILD DEVELOPMENT CARE BUILDING.
- LOCATE UNDERGROUND PULL BOX INSIDE OF EXISTING SUBSTATION 'C' SPACE, UTILIZED TO EXTEND LOW VOLTAGE FEEDERS FROM EXISTING SUBSTATION 'C' TO NEW SUBSTATION 'C-B', 'C-C' AND 'C-D'.
- INTERCEPT EXISTING FEEDER OUTSIDE OF GENERATOR SET AND CONNECT COMPLETE TO PLACE BACK INTO SERVICE.



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1 NEW MEDIUM VOLTAGE SINGLE LINE DIAGRAM - NEW

NO SCALE

MERRITT COLLEGE - REPLACEMENT OF SECOND POWER SUBSTATION C

12500 Campus Dr., Oakland, CA 94619

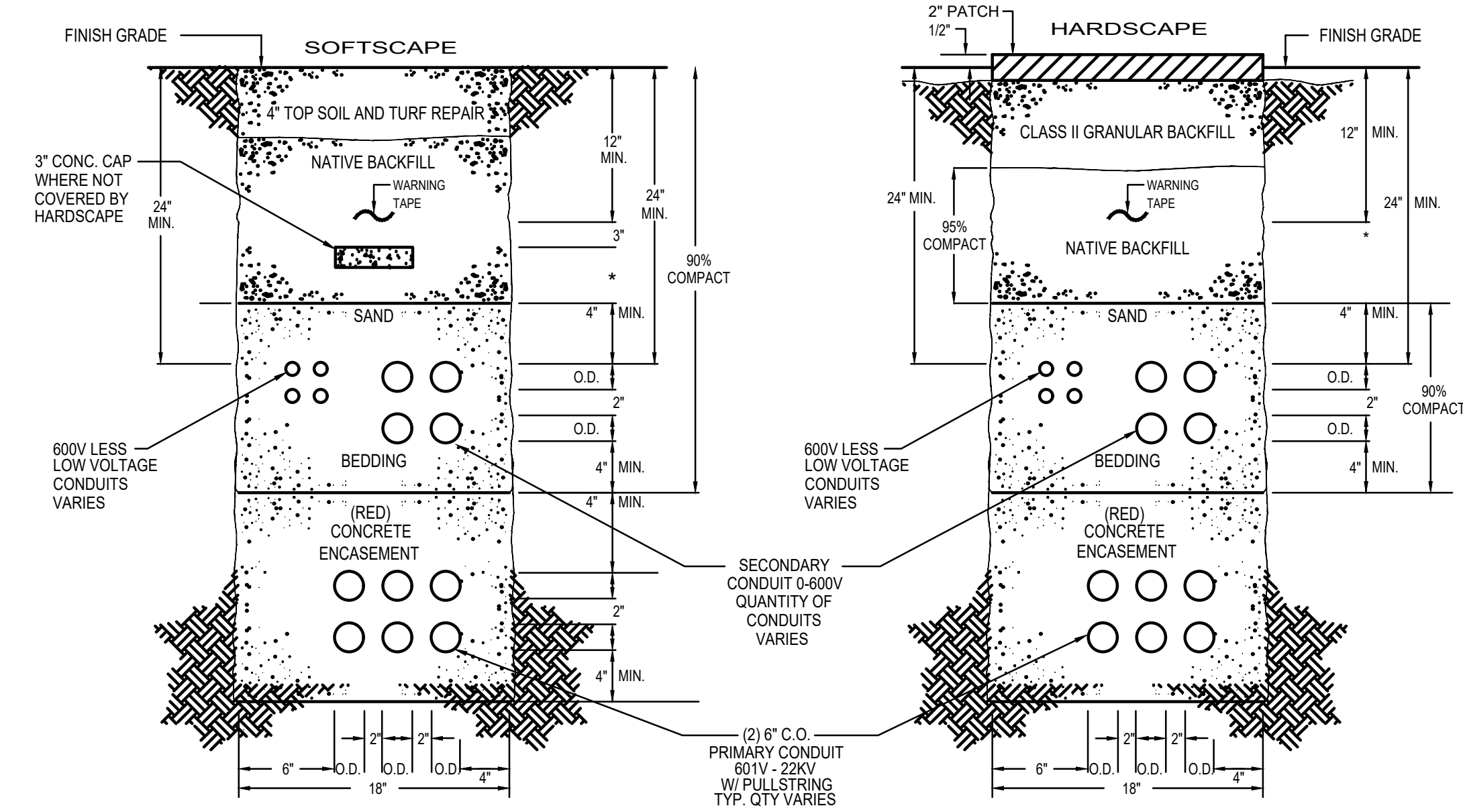
SHEET TITLE

NEW MEDIUM VOLTAGE SINGLE LINE DIAGRAM - ELECTRICAL

REVISIONS	DATE
100% CD	11/01/22
DSA SUBMITTAL	11/23/22
PLAN CHECK RESPONSE 1	04/14/23
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DRAWN BY: EM
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 SHEET NUMBER

E3.1

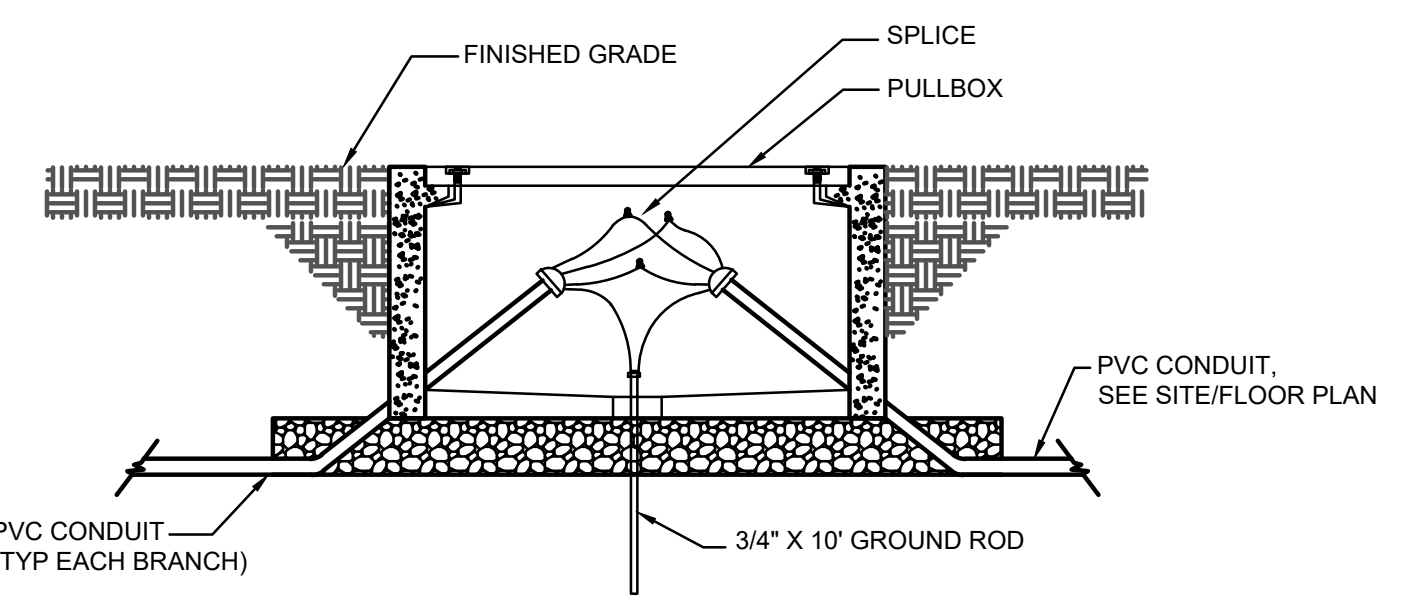


MINIMUM CLEARANCE REQUIREMENTS (INCHES)

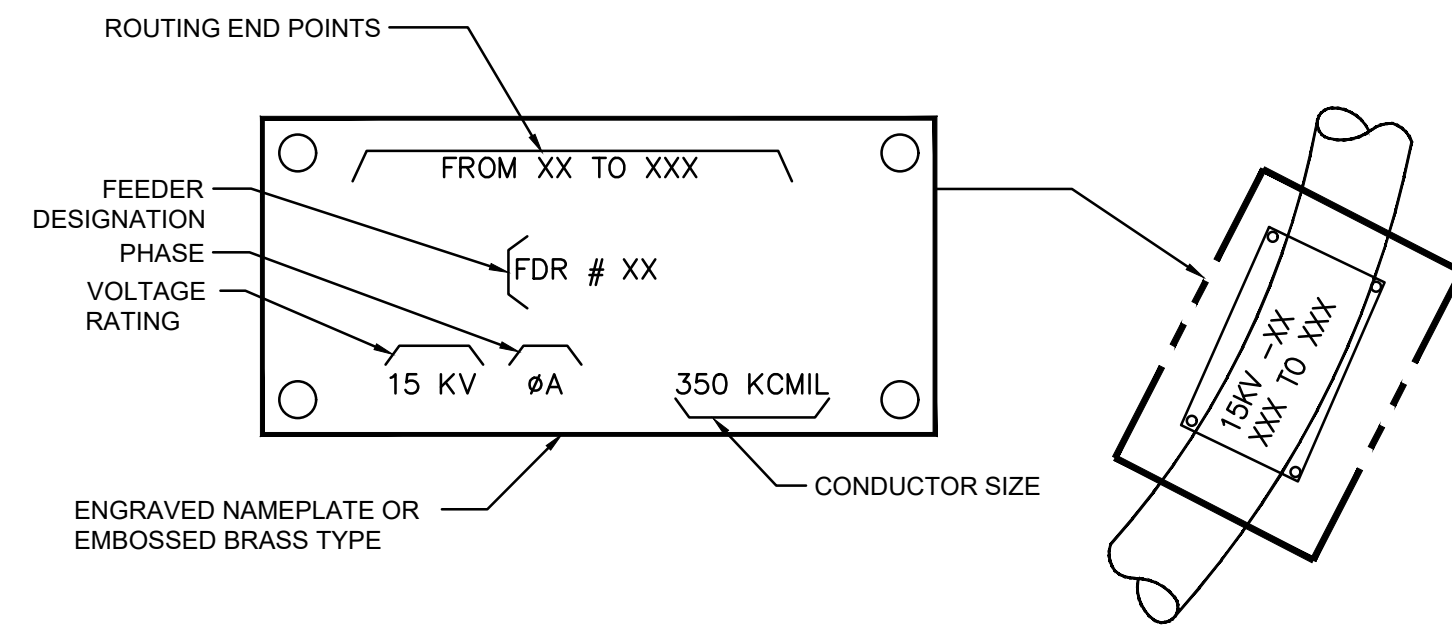
	PC	SC
PRIMARY CONDUIT (601V-22KV) (PC)	-	6
SECONDARY POWER CONDUIT (0-600V) (SC)	6	-

- TABLE ONLY APPLIES TO CONDUITS AFTER THE UTILITY POINT OF CONNECTION.
- NOTES:
1. DETAIL FOR REFERENCE ONLY. REFER TO CIVIL DRAWING.
 2. ALL TRENCHES MUST CONFORM TO D.S.H.A. REQUIREMENTS.
 3. PROVIDE 12" SEPARATION WHEN CROSSING "WET" UTILITIES. IF SEPARATION CANNOT BE CONTAINED ENCASE IN CONCRETE.
 4. UTILITY OWNED AND END-USER CONDUIT AND TRENCH SHALL NOT BE COMBINED.
 5. CRUSHED GRAVEL MATERIAL REQUIRES 95% COMPACTION MINIMUM.
 6. OPTIONAL AREA - CAN BE FILLED WITH EITHER CRUSHED GRAVEL OR SAND BEDDING MATERIAL.

1 UTILITY CONDUITS 0-600V AND 601V-22KV TRENCHING
 NO SCALE

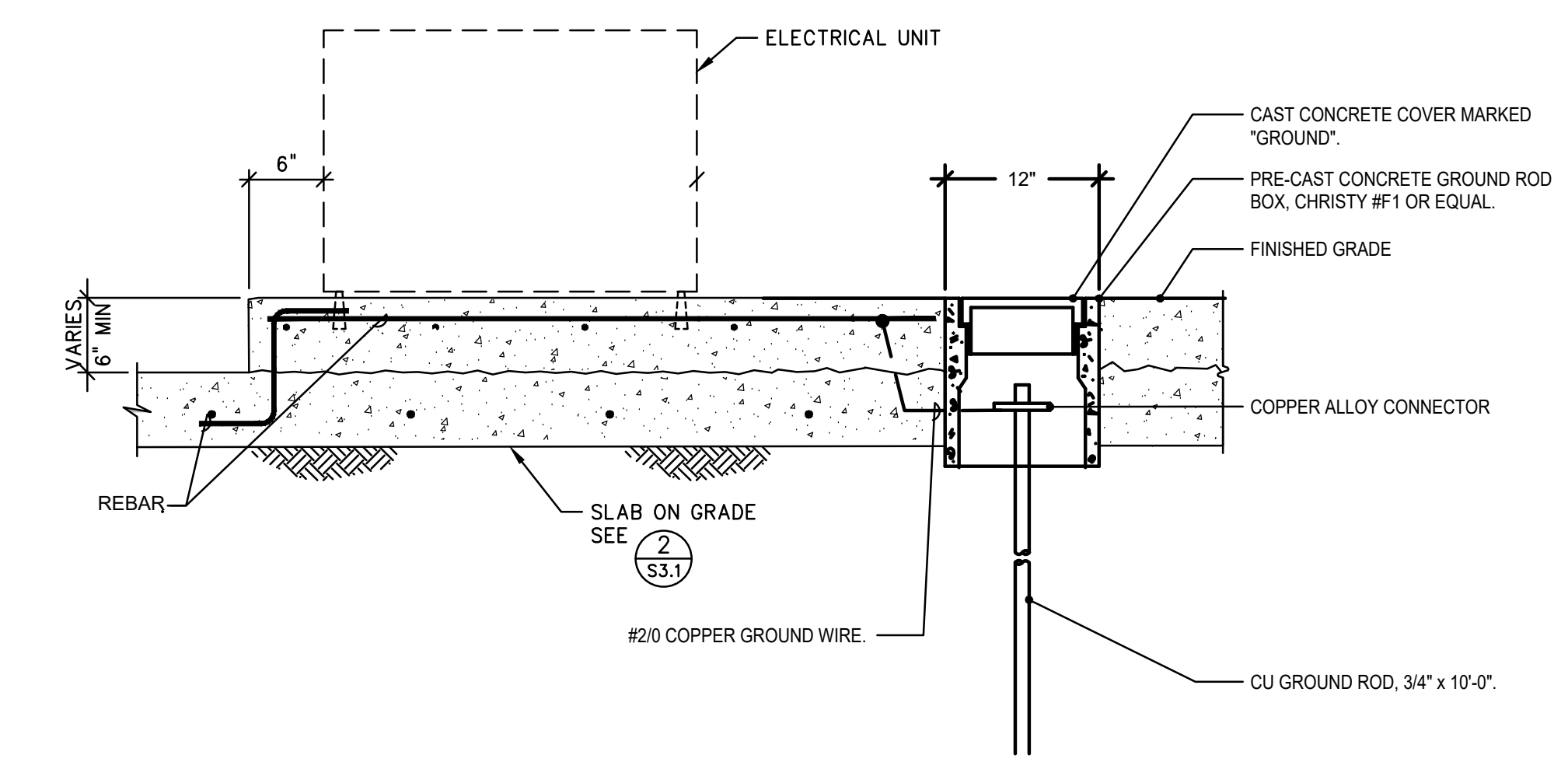


4 UNDERGROUND PULLBOX DETAIL
 NO SCALE

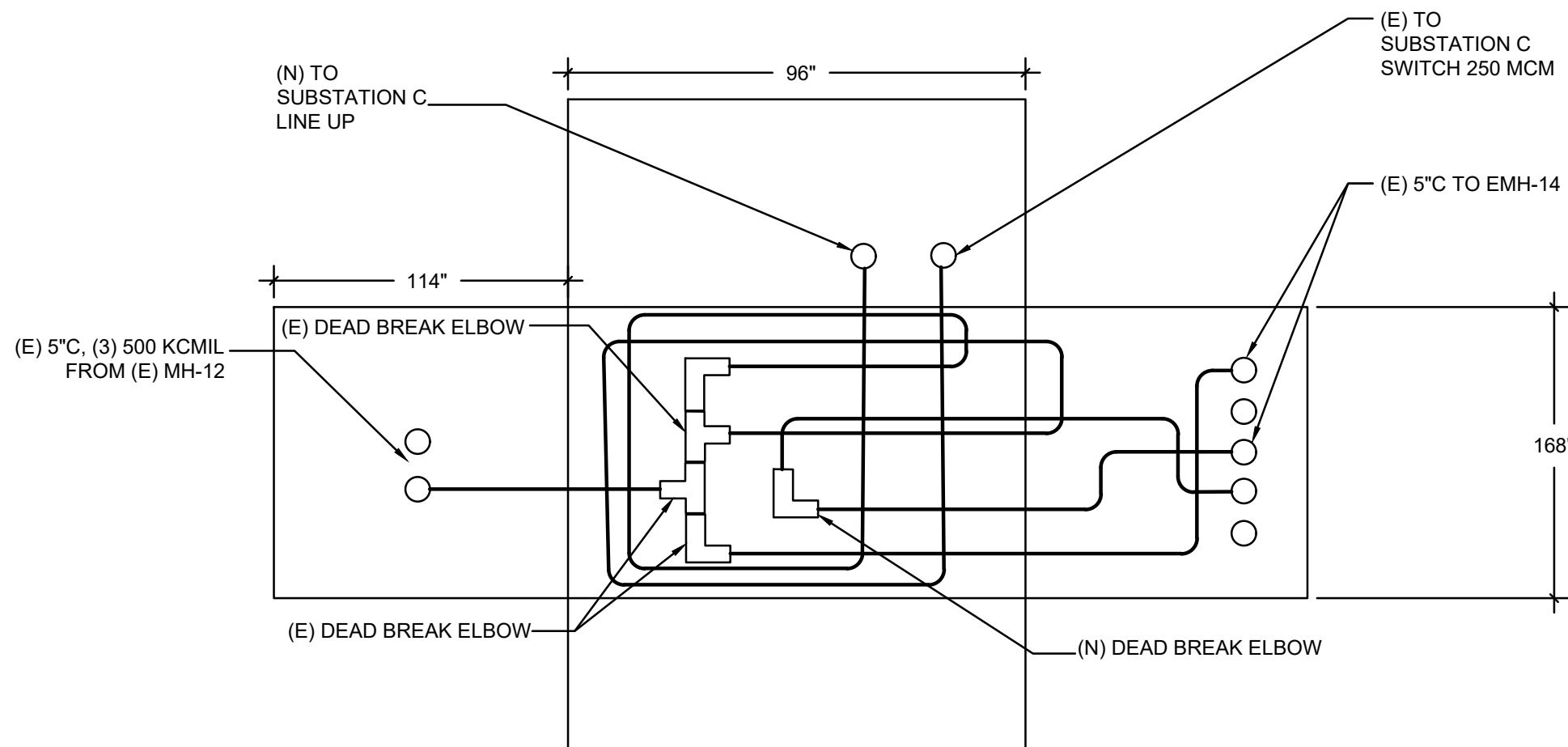


- NOTE:
1. INSTALL NAMEPLATE ABOVE CABLE OR VISIBLE FROM MANHOLE COVER
 2. FEEDER COLOR BAND SCHEDULE
- PHASE A - YELLOW 1 BAND FOR FDR #5
 PHASE B - RED 2 BANDS FOR FEEDER #6
 PHASE C - BLUE

5 FEEDER NAMEPLATE
 NO SCALE

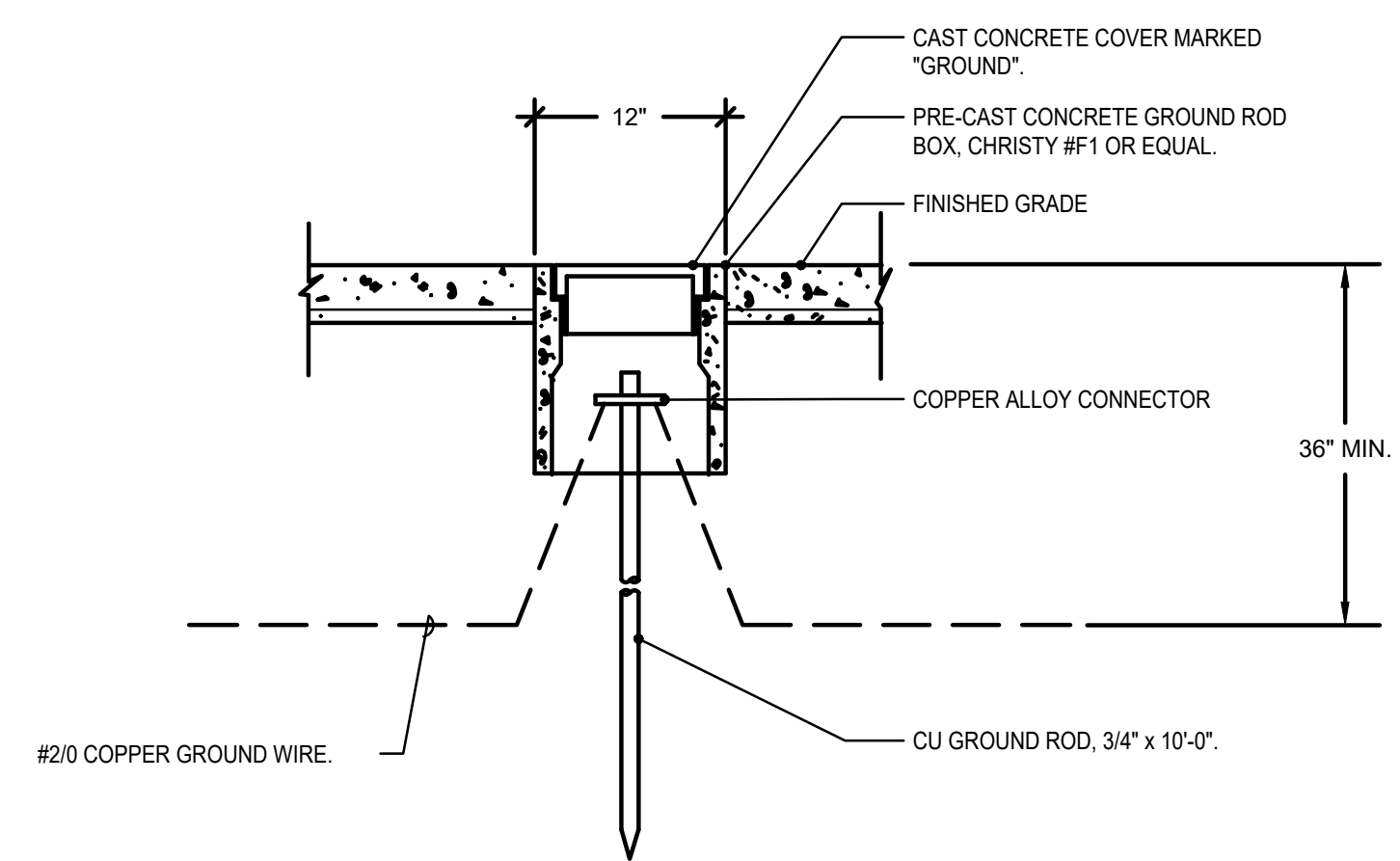


8 HOUSE KEEPING PAD GROUND DETAIL
 NO SCALE

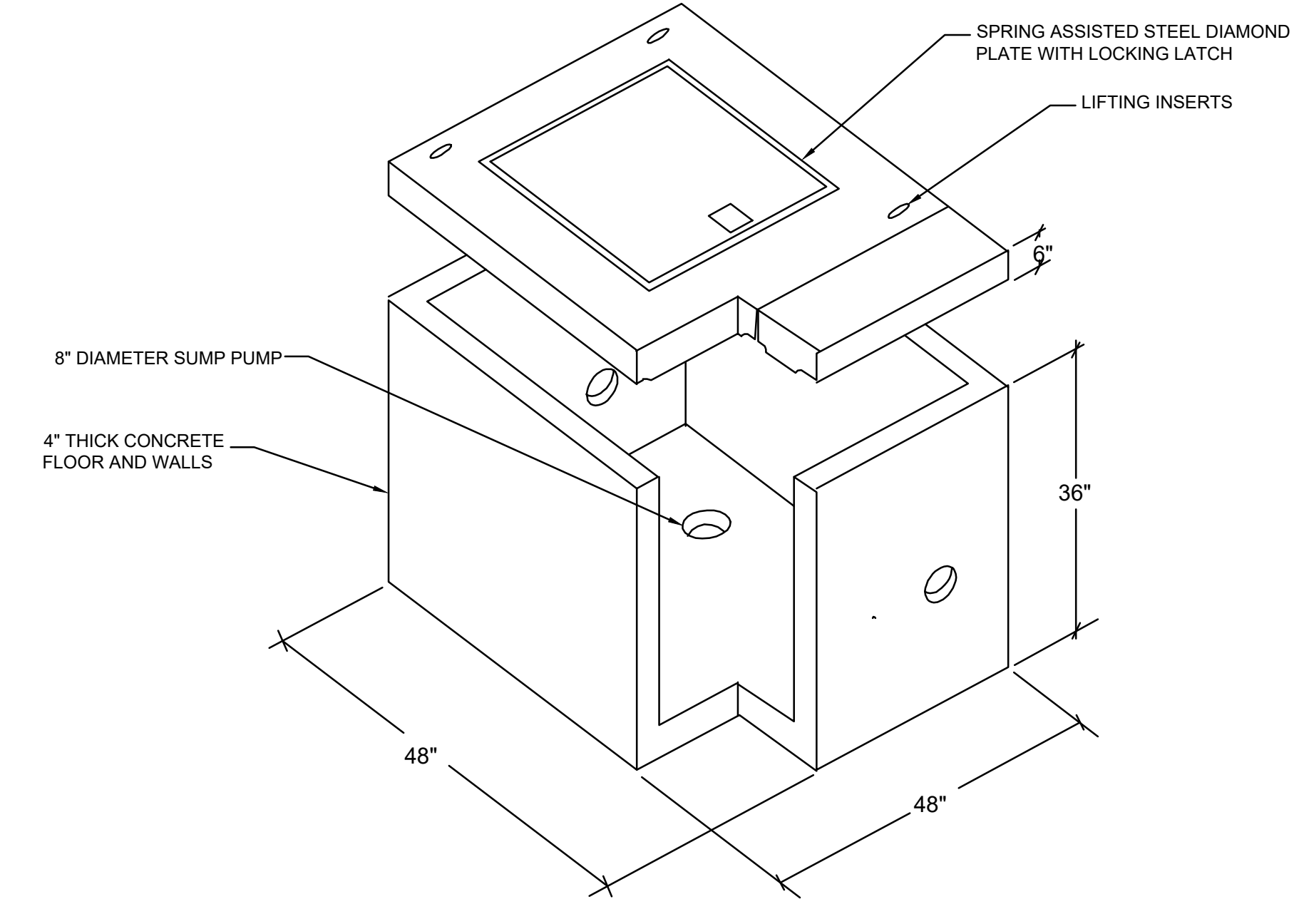


- NOTES:
1. JUNCTION ELBOWS PER PHASE 15KV, 600A DEAD BREAK (TYP)
 2. FURNISH AND INSTALL NEW CABLE RACKS AS NECESSARY.

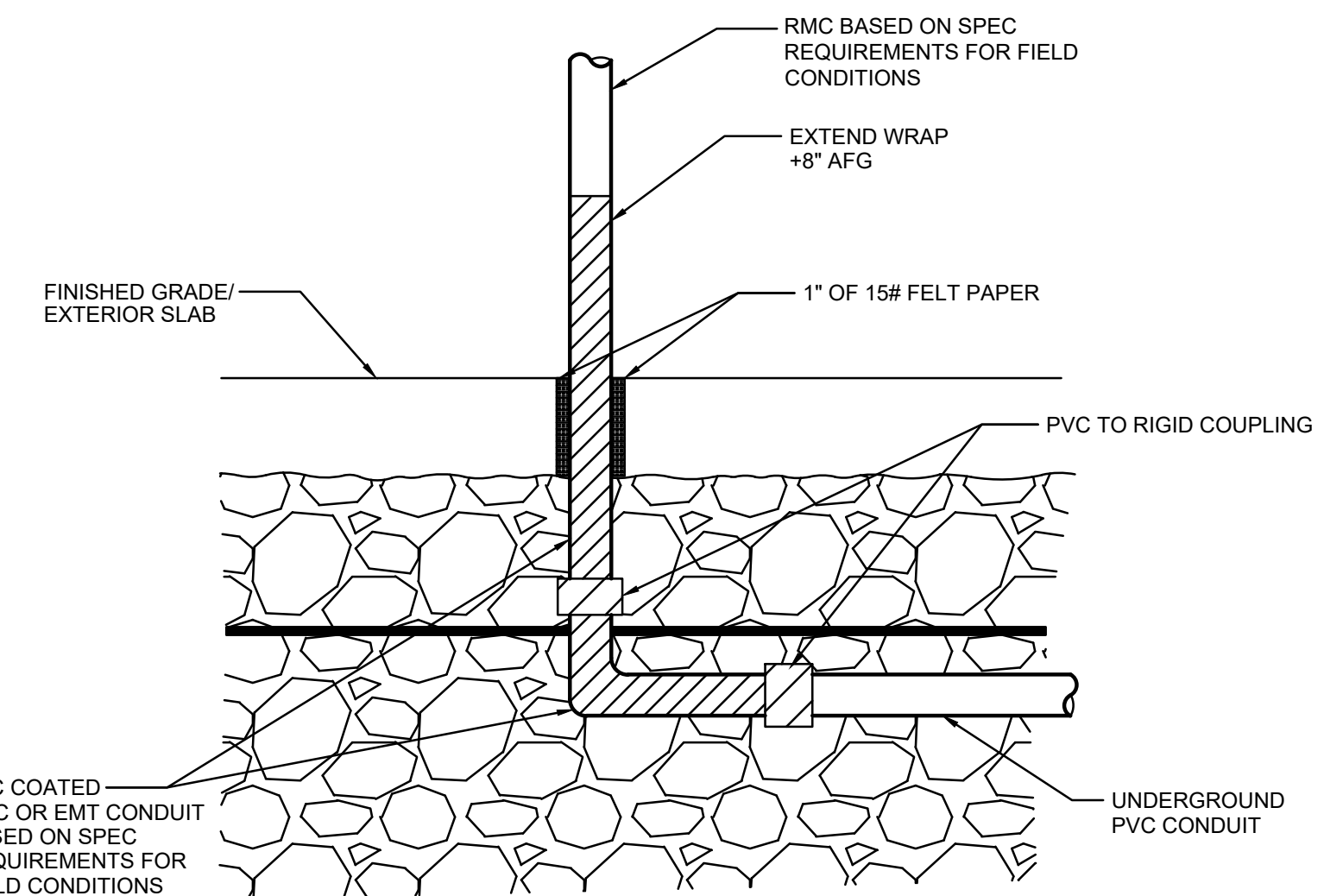
2 (E) MANHOLE DETAIL (MH-13)
 NO SCALE



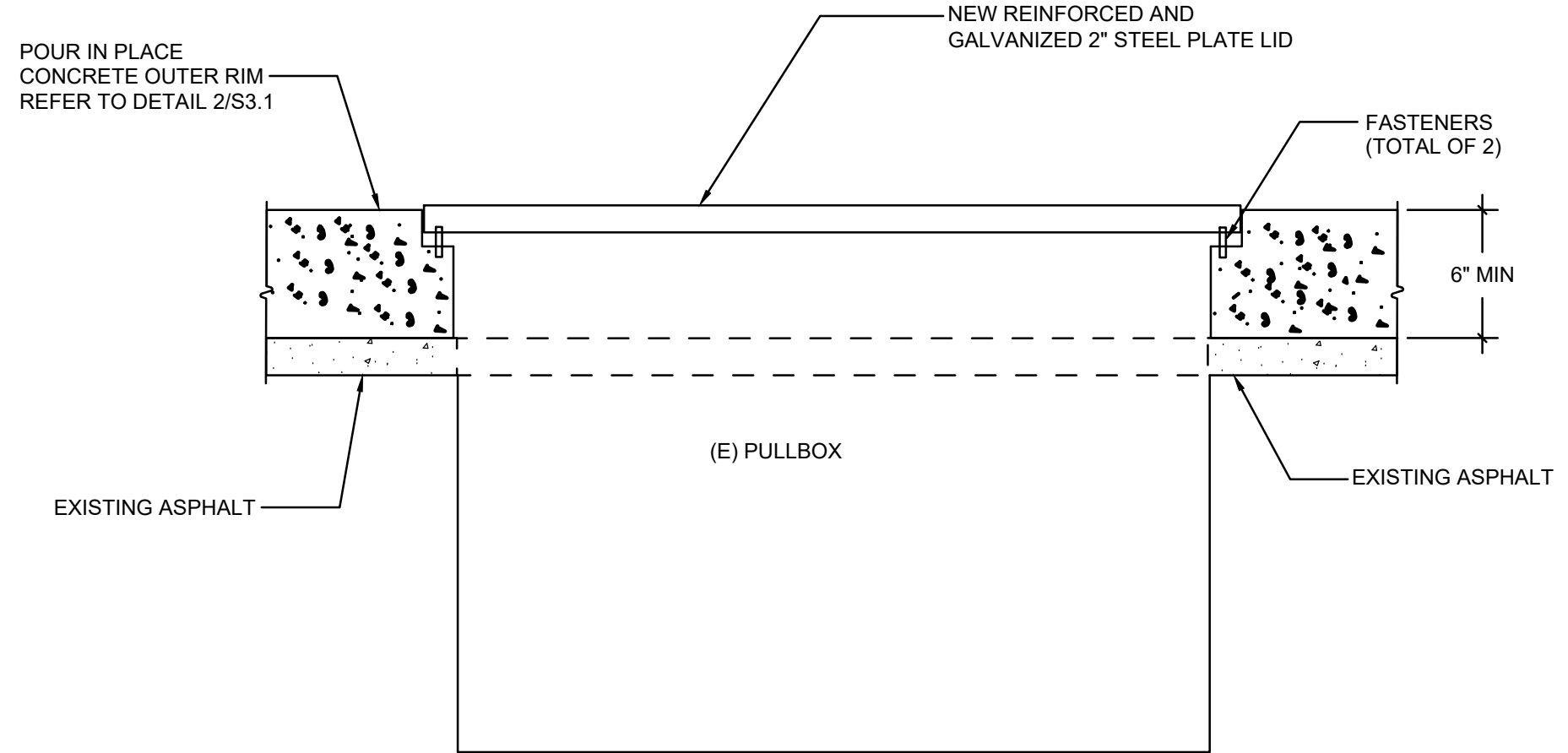
6 GROUND ROD IN WELL
 NO SCALE



9 ELECTRICAL VAULT ISOMETRIC DETAIL
 NO SCALE



3 CONDUIT TRANSITION DETAIL
 NO SCALE



7 NEW LID ON EXISTING PULLBOX DETAIL
 NO SCALE

SHEET TITLE
DETAILS - ELECTRICAL

REVISIONS	DATE
100% CD	11/01/22
DSA SUBMITTAL	11/23/22
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PLAN CHECK RESPONSE 2	05/25/23

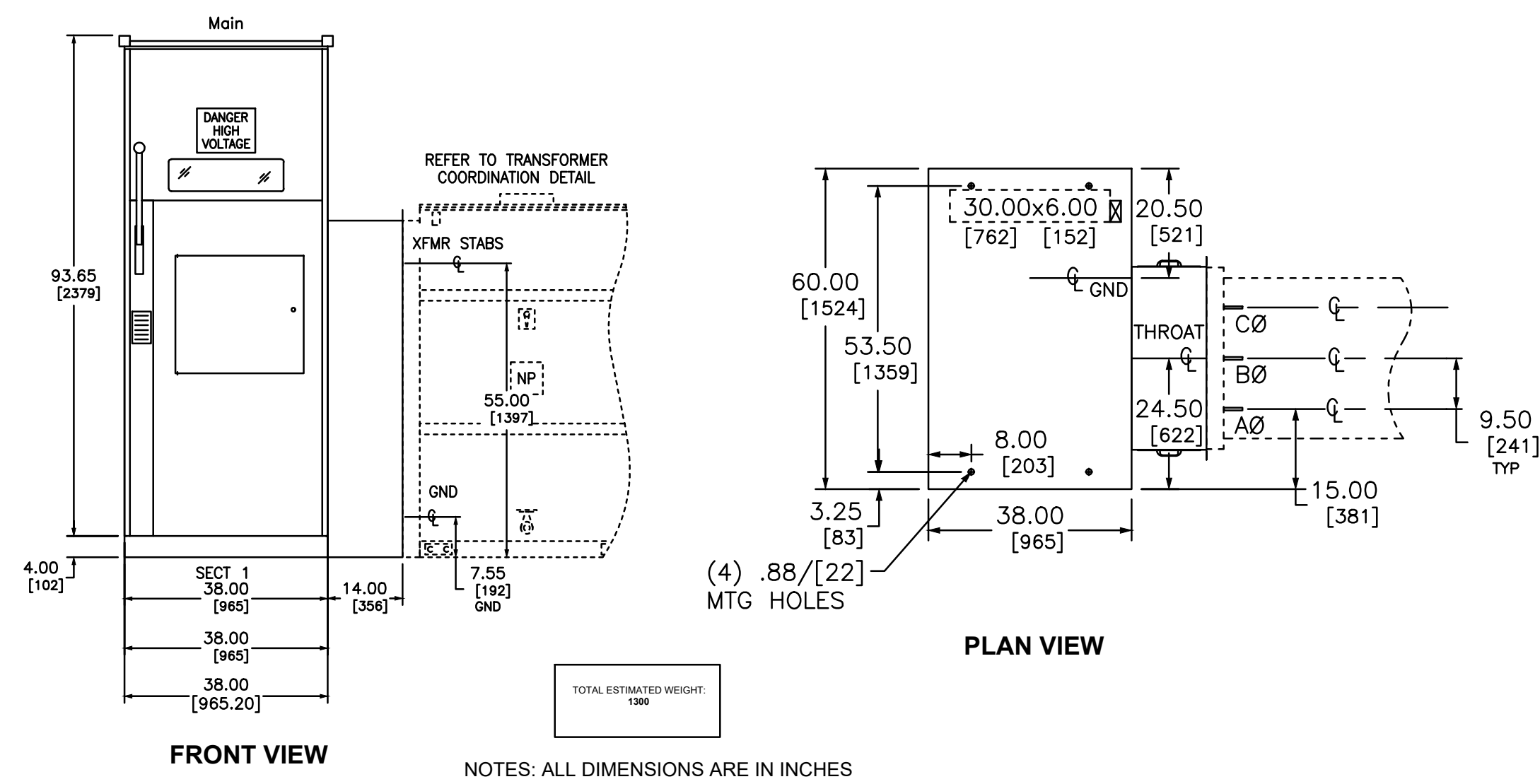
DRAWN BY
 EM

CHECKED BY
THOMAS JUN

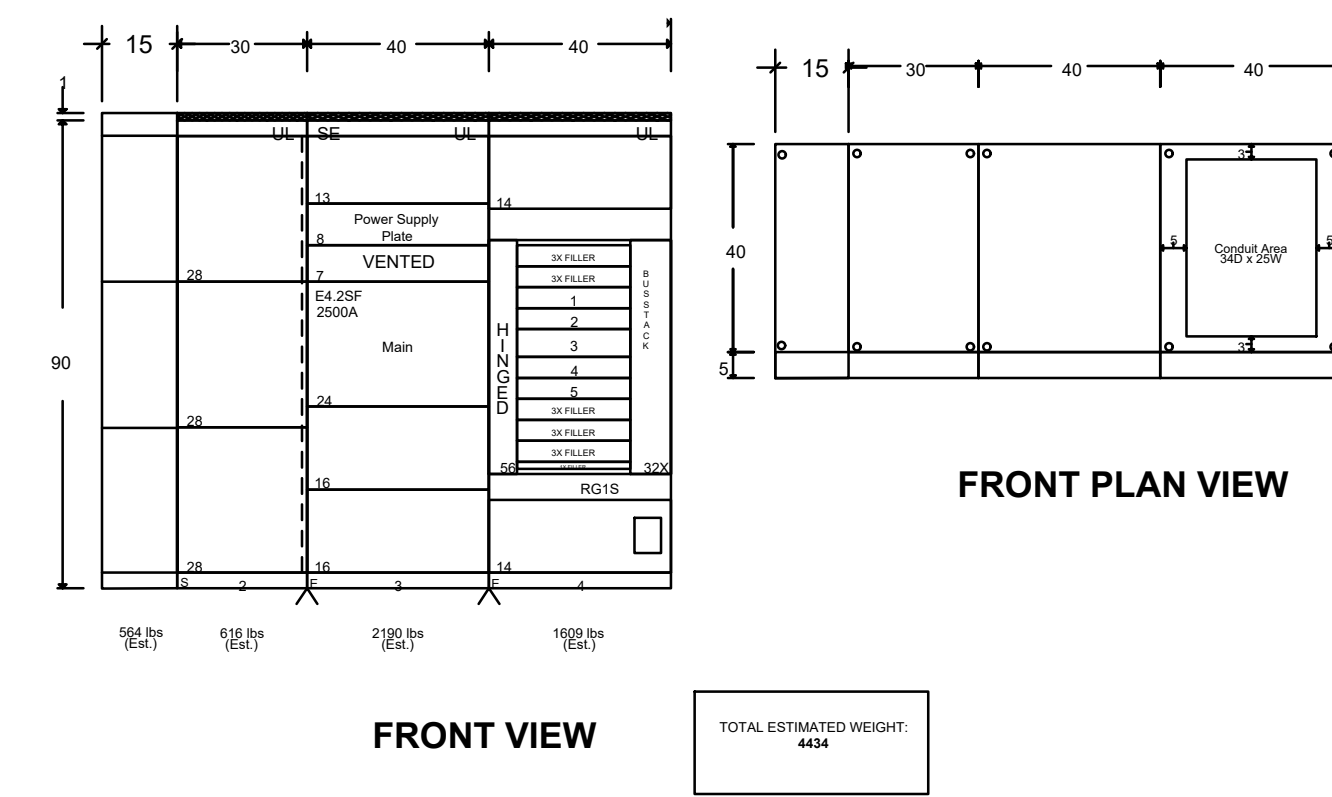
JOB NO.
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DATE
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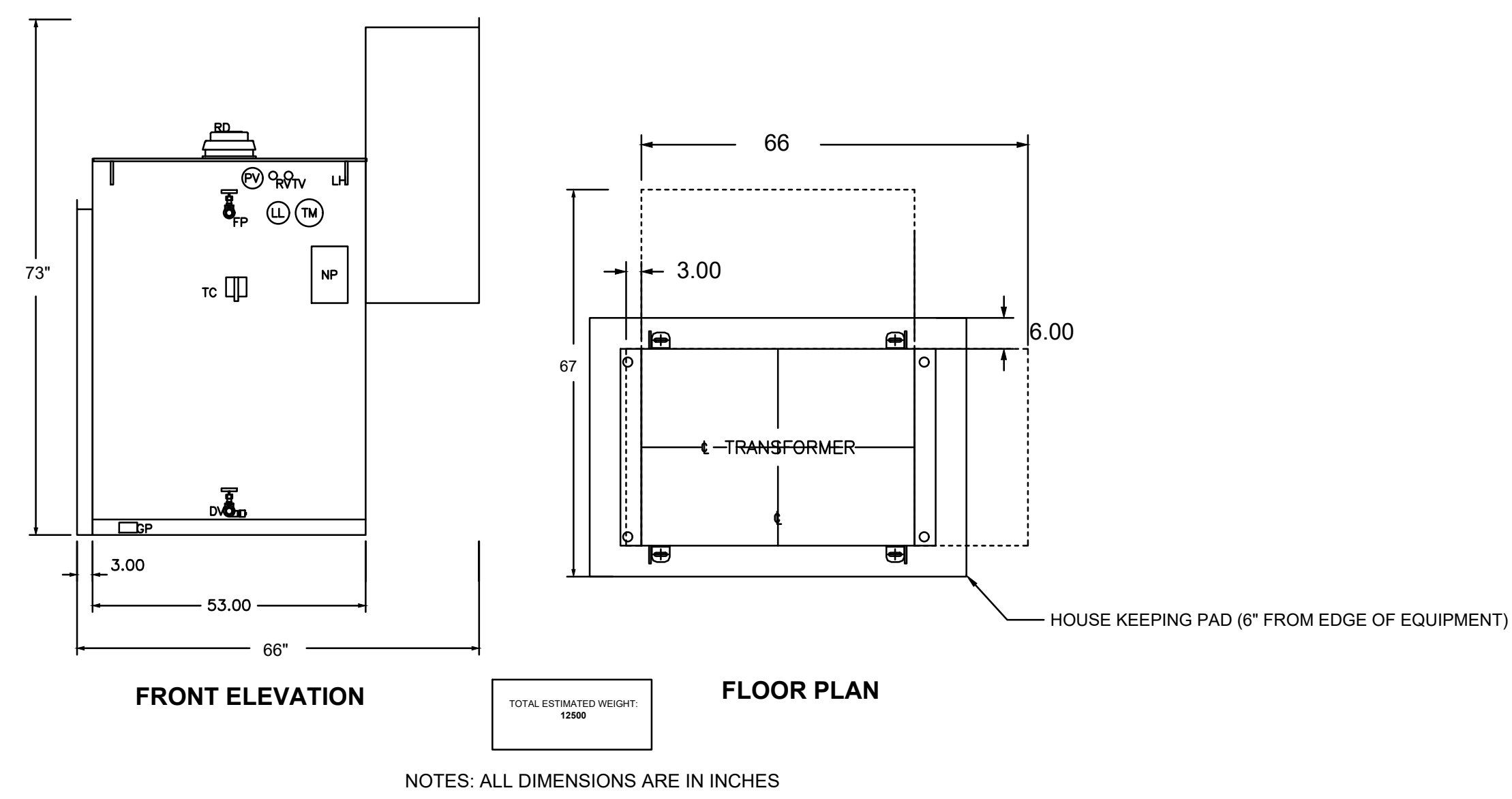
SHEET NUMBER



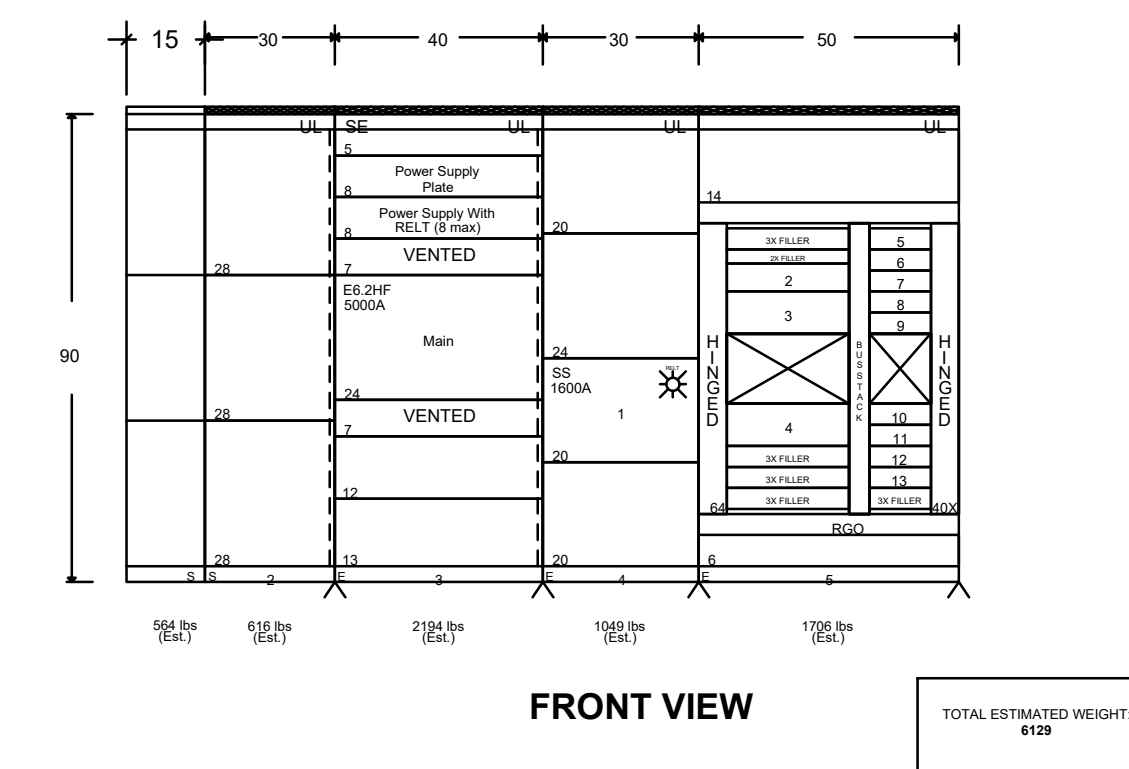
1 PRIMARY FUSE SWITCH 'B', 'C' AND 'D' DETAIL
NO SCALE



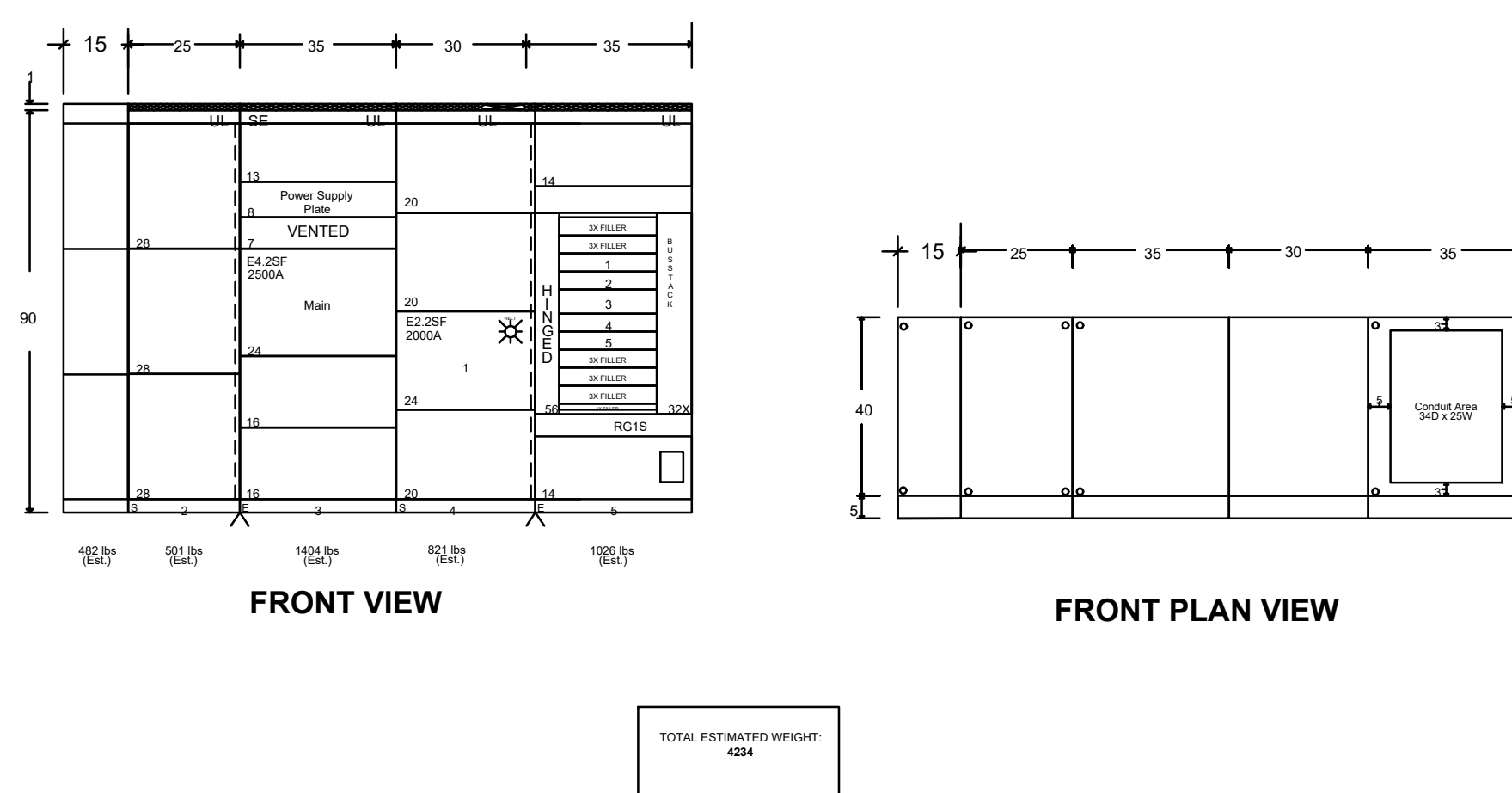
4 DISTRIBUTION PANEL 'C' DETAIL
NO SCALE



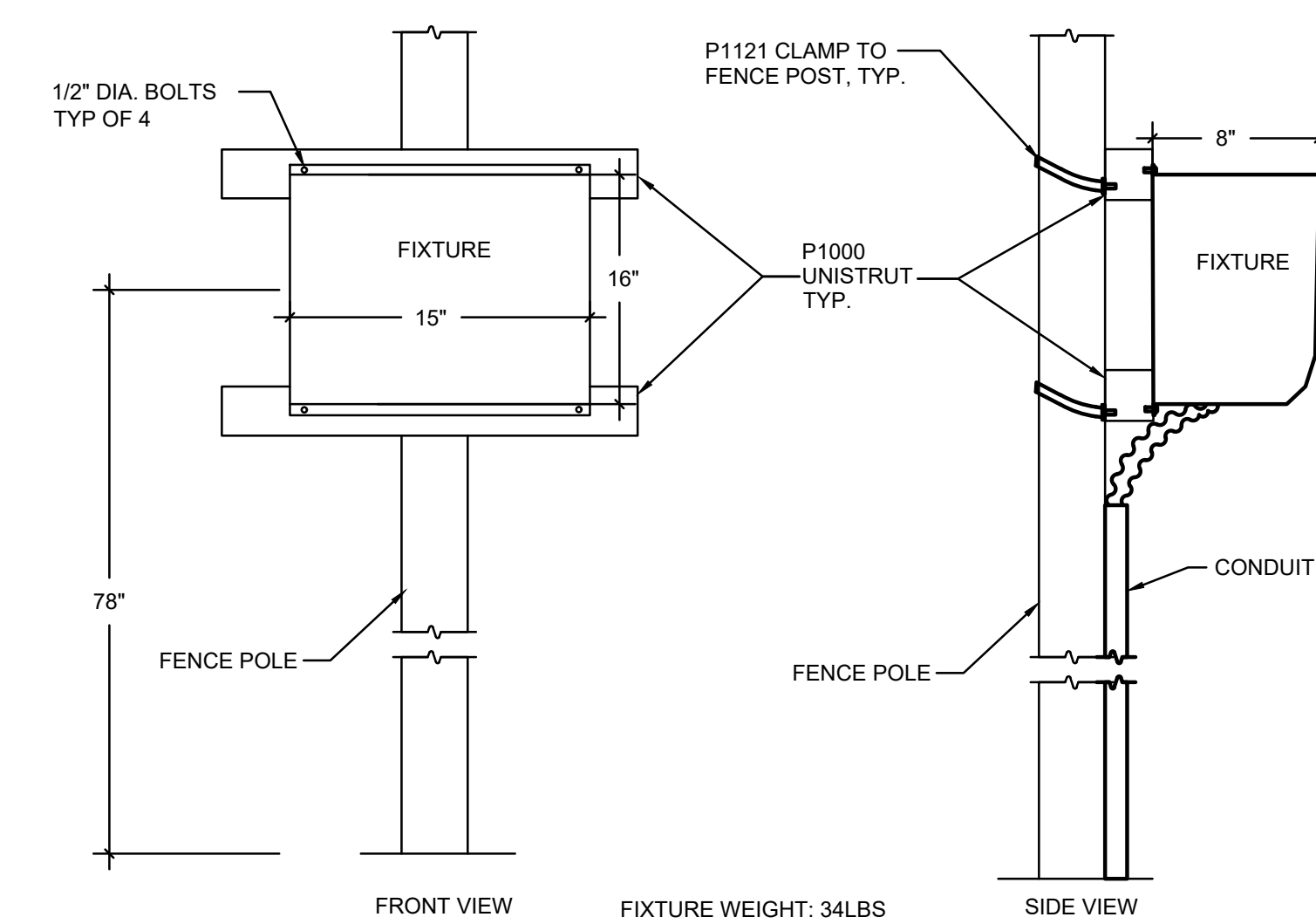
2 TRANSFORMER 'T-B', 'T-C', AND 'T-D' DETAIL
NO SCALE



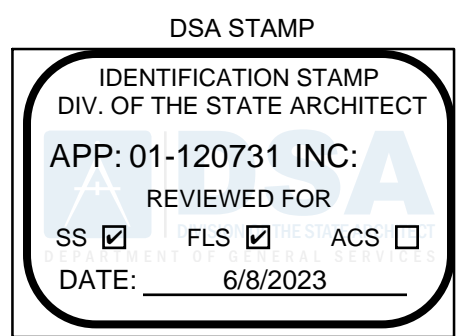
5 DISTRIBUTION PANEL 'D' DETAIL
NO SCALE



3 DISTRIBUTION PANEL 'B' DETAIL
NO SCALE



6 POLE MOUNTED EXTERIOR LIGHT DETAIL
NO SCALE



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SHEET TITLE
DETAILS - ELECTRICAL

REVISIONS	DATE
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E4.2