

Addendum #8

East Lake Community Center Renovations

CONTRACT NO. Y-17-005

Bid schedule per this Addendum

Pre-Bid Meeting January 9th, 2020 at 10:00am
Last Day for Questions January 17th, 2020
Bid Opening January 30th, 2020 at 2:00 pm

Attachments:

SPECIFICATIONS

Section 028213.01 Asbestos Abatement – Summary of Work

- Issued as part of this addendum.

Section 028213.02 Submittals for Asbestos Abatement

- Issued as part of this addendum.

Section 028213.03 Testing Laboratory Services

- Issued as part of this addendum.

Section 028233.01 Removal and Disposal of Asbestos Containing Materials

- Issued as part of this addendum.

DRAWINGS

Civil

Sheet C5.1 (Revision 1 dated 01-21-2020)

- Added temporary construction fence.

Architectural

Sheet A2.1 (Revision 2 dated 01-21-2020)

- Materials Legend: Clarified exterior materials.

Sheet A5.5(Revision 2 dated 01-21-2020)

- Sidewalk Accent Graphic & Key Plan 5: Added as part of this addendum.

Sheet A7.1 (Revision 1 dated 01-21-2020)

- 1st Floor Reflected Ceiling Plan: Modified the graphic sizes of the ACP in the Multi-purpose Rooms to match the requirements specified in the Finish Schedule. Made minor adjustments to the ACP layout accordingly.

Revised Bid Schedule for Site Work (noted as Bid Schedule (Revision 1))

- Multiple clarifications and adjustments made to bid tab based on contractor feedback. Major changes are as follows:
 - Revised Item 35 to say Temporary Irrigation- this item includes irrigation necessary to establish lawn and planting. There is no permanent irrigation in this job.
 - Items 18 and 38- Erosion Control Maintenance (duplicates) were removed, this cost should be included in Item 2- Erosion Control
 - Two items were added to allow for costs of special waste disposal

QUESTIONS RECEIVED VIA EMAIL

- Submitted Sunshine Rooms Polycarbonate Panels for Prior Approval
 - Subject to compliance with requirements, this product appears to be an acceptable alternative.
- Submitted Duo-Guard Translucent Wall Panels for Prior Approval
 - Subject to compliance with requirements, this product appears to be an acceptable alternative.
- Submitted Alphasite LED Light Fixtures for prior approval
 - Based on the submittals, the Electrical Engineer cannot assert that these fixtures are comparable to those specified. Please revise and resubmit or explore other products.
- The ACP-3 and ACP-4 baffles measure out to be 2'x6'3" on RCP A7.1. These are manufactured in 3'x3' and 3'10-1/2"x6'3"- judging from the RCP it looks like the ~4' wide panels will mostly fit in the space as drawn, but could run into some issues in a few places with corners needing to go past where walls allow to maintain a straight line with current spacing. It probably needs to be redrawn with correct dimensions in mind.
 - The sizes drawn did not match the size specified in the finish schedule, corrected drawing attached.
- A6.2, elevations 1-2 show the gym, including what appear to be acoustical wall panels. They don't appear to be labeled. Contractor requests panel thickness, acceptable manufacturers, fabric manufacturers (and colors).
 - This item was clarified in Addendum 4

END OF ADDENDUM #8

SECTION 02 82 13.01
ASBESTOS ABATEMENT - SUMMARY OF WORK

PART 1 GENERAL

1.01 GENERAL

- A. Include all Work listed below and incidentals thereto. Require that all skilled phases of the Work be executed by craftsmen experienced in their respective trades.
- B. Contractor shall verify and require that all materials and methods used are consistent with materials and methods for established safe asbestos removal, and consistent with the Contract Documents.
- C. Contractor may subcontract any phase or portion of the Work. However, such subcontract shall not relieve Contractor or subcontractor from enforcing the use of all required safety equipment and supplies by the subcontractor and his employees during any phase of the Work.
- D. Hold all meetings with appropriate parties as scheduled and as otherwise necessary to accomplish the work of the Contract Documents. Meetings shall include, but are not limited to, the following:
 - 1. Pre-abatement conference. Mandatory attendance by Contractor's key personnel, including project manager, field superintendent, foreman, and all subcontractors' key personnel.
 - 2. Other meetings considered necessary by Contractor or as requested by Owner.

1.02 SUMMARY OF WORK

- A. Removal and Disposal (Abatement) of Asbestos-Containing Materials (ACM): The bidders are required to visit the premises prior to submitting bids for the work described herein, and thoroughly inspect the conditions under which the contract is to be executed. The contractor is responsible for field verification of all locations and quantities and determining all varying field conditions prior to the submission of bids. Bids should include the removal of all ACM identified in the Asbestos Survey Report dated July 19, 2019 by Terracon Consultants, provided separately. This should not be interpreted as limiting the extent of work.

1.03 REGULATORY REQUIREMENTS

- A. Comply with NFPA 241, "Safeguarding Construction, Alteration and Demolition Operations," and applicable industry standards.

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ASBESTOS ABATEMENT - SUMMARY OF WORK**

- B. The hazardous materials regulatory requirements, which will apply, to this Project are listed in Sections 0282-13.05. It is the sole responsibility of Contractor to maintain a safe work site.

1.04 BUILDING OCCUPANCY

- A. Portions of the facility will be occupied during the asbestos abatement activities.
- B. Smoking will not be allowed in the building.
- C. Construction personnel shall wear appropriate clothing (shoes, shirts, and trousers) when not wearing protective clothing required by the Work.

1.05 BUILDING SECURITY

- A. Contractor and Contractor's personnel shall be knowledgeable of and obey all building security and safety regulations.

1.06 TEMPORARY FACILITIES

- A. The utilities (power and water) at the facility will be available to the Contractor to complete work specified within the contract documents.

1.07 FIRST AID

- A. First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.

1.08 WORK SEQUENCE

- A. The abatement work will be commencing sometime in the spring of 2020 for Phase I. Phase II of work has not been scheduled. The abatement contractor will have access to the building in Phase I upon bid acceptance and notice to proceed. Coordinate with owner for entry into building and selected areas for work and establish work schedule.

1.09 USE OF COMPLETED PORTIONS

- A. The owner shall have the right to take possession of and use any completed or partially completed portions of the work, but such taking possession and use shall not be deemed as acceptance of any work not completed in accordance with the Contract Documents. Contractor, Owner, and Owner's Representative shall make an inspection of that portion of work determined its status of completion. A certificate

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ASBESTOS ABATEMENT - SUMMARY OF WORK**

of substantial completion shall be issued on the inspected and occupied area only, indicating partial acceptance of the work.

1.10 FIRE PREVENTION

- A. The contractor shall make provisions for exits where necessary due to construction activity at existing exits
- B. The entrance and exit doors throughout the buildings must be made available for emergency exit and marked accordingly. Do not place barriers such as plywood or lock doors, etc. during abatement.
- C. **FIRE EXTINGUISHERS:**
 - 1. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.
 - 2. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

1.11 COMMUNICATION

- A. Contractor's supervisor shall secure a local cellular phone account, which shall remain operational during business hours throughout the project. Supervisor shall keep the mobile cellular phone on his person for continuous accessibility by Owner and Owner's Representative during regular business hours and any time Contractor is on site.

1.12 BASIS OF PAYMENT

- A. Lump sum price for work summarized in section 1.02 Summary of Work.

PART 2 PRODUCTS

Not Used.

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ASBESTOS ABATEMENT - SUMMARY OF WORK

PART 3 EXECUTION

3.01 NESHAP NOTIFICATION.

- A. Contractor shall be responsible for preparation and submittal of written notice of impending commencement of asbestos removal work not fewer than 10 working days before work commences on Project to the Tennessee Department of Environment and conservation, Division of Air Pollution Control as required by 40 CFR 61, Subpart M. If the time from signing of the contract to the scheduled start of work is less than the applicable notice period, contractor shall seek a waiver of the notice to proceed. Without written approval from above agency, Contactor shall not shorten the applicable notice period.

END OF SECTION

SECTION 02 82 13.03
TESTING LABORATORY SERVICES

PART 1 GENERAL

1.01 DESCRIPTION

- A. Owner intends elect to provide a qualified Testing Laboratory to perform routine and special testing of the Work performed under the Contract Documents to determine general compliance therewith.
- B. Testing Laboratory representative will, in addition to performing routine and special testing necessary to determine general compliance with the Contract Documents, and local, state, and federal regulations, observe and document on a routine basis the execution and progress of the Work. Such observation and documentation of the execution and progress of the Work shall be for the sole benefit of the Owner and shall not be construed in any way as to include responsibility for the Contractor's means, methods, techniques, sequences or procedures involved with the execution of the Work. Nor shall such observation and documentation by Testing Laboratory be construed as to include responsibility for any safety programs or procedures either utilized or not utilized by the Contractor during the Work.
- C. The providing of such Testing by the Owner shall not relieve the Contractor from providing his own testing for compliance with all applicable codes, regulations, and requirements as specified in this Section and elsewhere in the Contract Documents.
- D. Work Included
1. Cooperate with Owner's selected Testing Laboratory in all aspects of the testing in order to expedite testing and results.
 2. Provide Testing Laboratory representatives' access to the Work at all times and in all locations requested as necessary to perform testing.
 3. If elected the selection of firm to perform final air clearance testing.
- E. Work Not Included By Owner:
1. OSHA compliance air monitoring will be provided by the Contractor.

**SECTION 02 82 13.03
TESTING LABORATORY SERVICES**

1.02 QUALITY ASSURANCE

- A. Air samples will be collected and analyzed in general accordance with the procedures outlined in the National Institute for Occupational Safety and Health (NIOSH) Methods.
- B. Final air sampling will be conducted in general accordance with EPA Guidance Document (1985b) "Measuring Airborne Asbestos Following an Abatement Action" and in accordance with the Tennessee Department of Environment and Conservation rules and regulations (Chapter Number 1200-01-20).
- C. Air Testing: All air testing shall be performed in general accordance with the procedures outlined in the American Society for Testing and Materials (ASTM) standards E1553-93 and ES33-94; National Institute for Occupational Safety and Health (NIOSH) methods #7400.

1.03 PAYMENT FOR TESTING

- A. Initial Services: Owner will pay for air testing services conducted by Owner's Representative.
- B. Retesting: When clearance tests indicate noncompliance with Contract Documents, subsequent retesting necessitated by the noncompliance shall be performed and costs thereof may be deducted by Owner from the Contract Sum.

1.04 RESULTS

- A. Asbestos test results will be available to Contractor and Owner as follows:
 - 1. Results of Final Air Clearance Testing for re-occupancy using Phase Contrast Microscopy in general accordance with NIOSH 7400 Method - within twenty-four hours after the sample has been collected.

PART 2 PRODUCTS

2.01 EQUIPMENT

- A. Owner's Representative shall provide all equipment and supplies.

PART 3 EXECUTION

3.01 GENERAL SEQUENCE

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TESTING LABORATORY SERVICES

- A. Asbestos Abatement Contractor to complete abatement of the wallboard and ceiling board and tank insulation identified on demolition drawings as well as the floor tile and associated adhesive on all floors in Phase I first, followed by abatement of areas selected for partial abatement as needed for wall penetrations for Mechanical, Electrical and Plumbing equipment. This phasing will be repeated for Phase II. General Contractor will notify Asbestos Abatement Contractor for locations, quantities and scheduling of additional wallboard, floor tiles and associated mastics to be removed as needed by Mechanical, Electrical and Plumbing installation. General Contractor will be responsible for documentation of the quantities stated in the wallboard, floor tiles and associated mastics Allowances prior to removal for quantity verification.
- B. Owner's Testing Laboratory may test for Reoccupancy Level of 0.01f/cc utilizing Phase Contrast Microscopy in general accordance with NIOSH 7400 Method.
- C. Refer to Article 3.04 of Specification Section 0282 33.04 for details on the sequence of events for cleanup and clearance testing.

END OF SECTION

**SECTION 02 82 13.02
SUBMITTALS FOR ABESTOS ABATEMENT**

PART 1 GENERAL

1.01 DESCRIPTION

- A. Submit two complete sets to Architect for his review of Pre-Job Submittals at the pre-abatement meeting. The Work may not proceed until the complete Pre-Job Submittal package has been reviewed and approved.
- B. Submit complete sets to Architect for his review, in the required number of copies, of Post-Job Submittals following substantial completion of the Work. Requests for final payment will not be approved until the Post-Job Submittal package has been reviewed and approved.

1.02 WORK INCLUDED

- A. Make submittals required by the Contract Documents in a timely manner and at appropriate times in the execution of the work to allow for sufficient and prompt review by Architect. Revise and resubmit as necessary to establish compliance with the specified requirements.

1.03 QUALITY ASSURANCE

- A. Coordination of Submittals
 - 1. Carefully review all aspects of each item being submitted.
 - 2. Verify that each submittal conforms in all respects with the specified requirements.

1.04 SUMMARY OF REQUIRED SUBMITTALS

- A. Contractor shall be responsible for all procedures or practices to be utilized on the Project. It is Contractor's responsibility to make the following items available to Architect.
 - 1. Names of supervisory personnel and their qualifications, EPA certifications for training and state licenses.
 - 2. Written description or sketch of the plans for construction of a worker and barrel/equipment decontamination enclosure system and for isolation of the regulated areas.
 - 3. Prepare a contingency plan for emergencies including, but not limited to: fire, accident,

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SUBMITTALS FOR ABESTOS ABATEMENT**

power failure, pressure differential system failure, supplied air system failure, or any other event that may require modification or abridgement of decontamination or work area isolation procedures. **Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.**

4. Asbestos Abatement Contractor shall prepare a written hazard communication program. This program must state how the Contractor plans to meet the various requirements of this standard. **This written program must be available at the job site. If the Contractor employs workers who speak or read solely a language other than English, he must provide copies of the written hazard communications program in such language(s), as well as English** This program must contain, but not limited to, the following events:

- Container Labels: All containers shall be identified with manufacturer's labels for all chemicals used on-site with the identity of the chemical's appropriate hazard warnings, and the manufacturer's name and address. No chemicals will be allowed on-site without approved labels.
- Site-specific list of chemicals with corresponding Safety Data Sheets.
- Training: Provide upon request a written documentation of the training given to employees exposed to any chemicals.

THIS PROGRAM MUST BE WRITTEN IN ACCORDANCE WITH OSHA'S HAZARD COMMUNICATION STANDARD – 29 CFR 1910.1200 AND 29 CFR 1926.59.

The Contractor shall ensure that the written hazard communication program meets paragraph (e) of 29 CFR 1910.1200 and 1926.59, if applicable (i.e. Multi-employer workplaces).

5. Written description and/or sketch of the security procedures plan to be utilized.
6. Description of all special equipment, techniques, etc. to be used on the Project.
7. Manufacturer's information that the HEPA vacuum system utilized meets the requirements of the Contract Documents.

B. Pre-Job Submittals: Submit complete information relative to the following:

1. Evidence of written notice of impending commencement of asbestos removal work submitted by registered mail or courier not fewer than ten days before work commences on Project to:

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SUBMITTALS FOR ABESTOS ABATEMENT

Department of Environment and Conservation
Division of Air Pollution Control
9th Floor, L & C Annex
401 Church Street
Nashville, TN 37243-1531
(615) 532-6828 – office
(615) 532-0596 - fax

Comply with the applicable notice period set forth in 40 CFR 61, Subpart M, Revised November 20, 1990. If the time from signing of the contract to the scheduled start of work is less than the applicable notice period, Contractor shall seek a waiver of the notice to proceed. Without written approval from above agency, Contractor shall not shorten the applicable notice period.

2. All required permits, site locations, and arrangements for transportation and disposal of asbestos-containing materials. Information concerning approved landfills in Tennessee may be obtained from:

Department of Environment and Conservation
Division of Air Pollution Control
9th Floor, L & C Annex
401 Church Street
Nashville, TN 37243-1531

Include copies of notification, permits, etc. with submittal package.

3. All building/demolition permits as required by the state governing authority.
4. Names of supervisory and worker personnel and their qualifications, EPA training certifications and license. Documentation shall name the supervisor(s) who will act as the Competent Person (s) required by 29 CFR 1926.1101. Refer to Section 0282 13.05 for additional details.
5. Alphabetized list of workers and their training and license. Refer to Section 0282 13.05 for additional details.
6. Submit a letter signed by an officer of the abatement contracting firm, that exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.1101.
7. Submit documentation indicating successful fit testing (within last 12 months of project) of respirators for the individuals working on this project in accordance with

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29 CFR 1926.1101 and 29 CFR 1910.134.

8. Provide letter indicating that each and every worker to be utilized on the Project by the Contractor or subcontractor documenting that each is actively involved in a company employee medical surveillance program.
9. Identify all hazardous materials management, recycling, transportation, and disposal subcontractors to be utilized on the project.
10. Supply all corporate documentation and insurance information for subcontractors as required by contract documents.
11. Provide documentation of OSHA 29 CFR 1910.1200 (HAZCOM), DOT, and other training certifications and permits necessary for operations conducted by the various subcontractors.
12. Provide documentation in Pre-Job Submittals, the required license for the Asbestos Abatement firm and each individual participating in any work activity as required by the state of Tennessee Department of Environment and Conservation, Chapter Rule 1200-01.

C. Progress Reports

1. Daily Reports

Progress Reports shall be kept on a daily basis to cover each area of the work. These reports shall be kept on file at the field office and shall be made available for review upon request of the Owner or the Owner's Representative.

D. Post-Job Submittals: Submit complete information relative to the following:

1. Receipts from landfill operator which acknowledge Contractor's deliveries of hazardous material. Receipts shall include date, quantity of material delivered, and signature of authorized representative of landfill. Asbestos Waste Shipment Record will be required for asbestos-containing materials.
2. Evidence of final payment of suppliers and subcontractors and release of any liens.
3. Copies of daily logs showing the following: date, entering and leaving time, company or agency represented, and reason for entry for all persons entering regulated area.
5. Submit a copy of employee air monitoring results relative to OSHA respiratory protection compliance.

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SUBMITTALS FOR ABESTOS ABATEMENT

1.05 DOCUMENTS REQUIRED PRIOR TO FINAL PAYMENT

- A. Prior to final payment and before the issuance of a final certificate of payment the abatement contractor will provide the following papers and any other requirements stipulated in the provisions of the General or Supplemental Conditions, with the Architect:
1. Copy of Post-Job Submittals: Two copies of the Post-Job submittals required by the contract documents.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

**SECTION 02 82 33.01
REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING MATERIALS**

PART 1 GENERAL

1.01 DESCRIPTION

- A. Perform all planning, administrative, execution and cleaning requirements necessary to safely remove and disposal of asbestos-containing/contaminated materials (ACM) listed in the Summary of Work.
- B. Contractor shall verify and require that all materials and methods used are consistent with materials and methods for established and safe asbestos removal and disposal procedures, and consistent with the Contract Documents. Require that all skilled phases of the Work be executed by craftsmen experienced in their respective trades.
- C. Contractor shall furnish and pay for all labor, services, appliances, materials, equipment, insurance, permits, patents and decontamination facilities necessary to carry out the complete removal and disposal of the identified asbestos containing materials and associated debris.
- D. Coordinate dumpster location with the Owner.

1.02 SUMMARY OF WORK

- A. The work of this Section (Asbestos Abatement) includes the proper removal of asbestos-containing and asbestos-contaminated materials from the building as identified in section 02 82 13.01. The asbestos abatement contractor will be responsible for identifying locations and quantities of scheduled demolition work. The partial abatement areas will be coordinated between asbestos abatement contractor and the General Contractor as needed.
- B. Work Included:
 - 1. Pre-clean using HEPA vacuum and/or wet cleaning methods as appropriate. Pre-cleaning includes loose asbestos debris and non-asbestos building debris.
 - 2. Properly decontaminate using wet-cleaning or HEPA vacuuming as appropriate.
 - 3. Remove asbestos-containing/contaminated materials as specified.

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REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING MATERIALS

4. All asbestos removed during a work period shall be bagged and sealed prior to the stop work time for that work period.
5. Properly clean using wet-cleaning methods or HEPA vacuum methods as appropriate, all regulated areas following asbestos removal.
6. Properly dispose, at Contractor's expense, all ACM and asbestos-contaminated materials and waste in an EPA-approved landfill.
7. Apply approved sealant to all surfaces which have undergone friable asbestos removal and to plastic sheeting inside the regulated area prior to removal of the regulated area enclosure.
8. Leave all regulated areas decontaminated and visibly clean following Work of this Section.

1.03 DEFINITIONS

A. Definitions:

1. Abatement - Procedures to decrease or eliminate fiber release from asbestos-containing building materials. Includes encapsulation, enclosure, and removal.
2. Airlock - System for permitting ingress or egress without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least 4 feet apart.
3. Amended Water - Water to which a surfactant is added.
4. Air Monitoring - The process of measuring the fiber content of a specific volume of air in a stated period of time.
5. Clean Room - An uncontaminated area or room, which is part of the worker decontamination enclosure system, with provisions for storage of worker's street clothes and protective equipment.
6. Code(s) of Federal Regulations - Shall be referred to by the following example: Title 40, Code of Federal Regulations, Part 763 is "40 CFR 763."
7. Curtained Doorway - A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms.

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Typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway and securing each edge along the top of the doorway, with the vertical edge along one vertical side of one along one vertical side of the doorway, and the vertical edge of the other along the opposite vertical side. Two curtained doorways spaced a minimum of 4 feet apart form an airlock.

8. Decontamination Enclosure System - A series of connected rooms, with curtained doorways between any two adjacent rooms, for the decontamination of workers, materials, or equipment. A decontamination enclosure system always contains an airlock.
9. Encapsulation - The sealing of asbestos surfaces by applying a material (encapsulant) that will envelop or coat the fiber matrix and eliminate fallout and protect against contact damage.
10. Enclosure - Procedures necessary to completely enclose material containing asbestos; airtight, impermeable barriers.
11. EPA - Environmental Protection Agency.
12. Equipment Decontamination Enclosure System - A decontamination enclosure system for materials and equipment, typically consisting of a designated area of the regulated area, a washroom, and an uncontaminated area.
13. Equipment Room - A contaminated area or room that is part of the worker decontamination enclosure system, with provisions for storage of contaminated clothing and equipment.
14. Fixed Object - A unit of equipment or furniture in the regulated area which cannot be removed from the regulated area.
15. Glove Bag Technique - A method for removing asbestos-containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other nonplanar surfaces in a non-contaminated regulated area. The glove bag assembly is a manufactured or fabricated device consisting of a glove bag (typically constructed of 6 mil transparent regulite plastic), two inward projecting long sleeve rubber gloves, one inward projecting waterwand sleeve, an internal tool pouch, and an attached labeled receptacle for asbestos waste. The glove bag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all

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asbestos fibers released during the removal process. The area(s) in which glovebags are used must be prepared to the satisfaction of OSHA.

16. HEPA Filter - A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97 percent of particles greater than 0.3 microns in length.
17. HEPA Vacuum Equipment - HEPA-filtered vacuuming equipment.
18. Holding Area - A chamber between the washroom and uncontaminated area in the equipment decontamination enclosure system. The holding area comprises an airlock.
19. Movable Object - A unit of equipment or furniture in the regulated area, which can be removed from the regulated area.
20. NIOSH - National Institute for Occupational Safety and Health.
21. OSHA - Occupational Safety and Health Administration.
22. Owner's Representative - Person designated by Owner (usually but not necessarily the "Owner's Representative") to perform checks on Contractor and job site for the purpose of determining general compliance with the Specifications. Owner's Representative may also be responsible for Quality Assurance observation of Contractor's Work and of the job site.
23. PCM - Phase Contrast Microscope. Also called "light microscope," this is the instrument used for fiber counting under NIOSH Method 7400.
24. Plastic Sheeting - A plastic sheet material used for protection of walls, floors, etc., and used to seal openings into regulated areas.
25. Plasticize - To cover floor, walls, and fixed objects with plastic sheeting.
26. PLM - Polarized Light Microscope. Used in conjunction with dispersion oils of known refractive indices, this instrument is capable of identifying asbestiform minerals. It is the EPA-recommended method of asbestos identification.
27. Regulated Area - Area or areas that receive abatement or are contaminated.

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28. Removal - The process of eliminating asbestos-containing or contaminated materials from a structure and depositing in a suitable disposal site.
29. Shower Room - A room constituting an airlock, between the clean room and the equipment room in the worker decontamination enclosure system, with hot and cold or warm running water suitably arranged for complete showering during decontamination.
30. Surfactant - A chemical wetting agent added to water to improve its penetrating ability and thus reducing the quantity of water required to saturate asbestos-containing materials.
31. TEM - Transmission Electron Microscopy.
32. Unit Wrap Technique - A method with limited applications for removing asbestos-containing material and the object to which it is attached as a singular unit. The method consists of first applying encapsulant to the asbestos-containing material and then carefully sealing entire object and asbestos material in a minimum of two layers of 6 mil plastic sheeting. Sealed object is then removed and disposed of as contaminated waste.
33. Wet Cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with amended water, and by afterwards disposing of these cleaning tools as asbestos-contaminated waste.
34. Washroom - A room between the regulated area and the holding area in the equipment decontamination enclosure system. The washroom comprises an air lock.
35. Worker Decontamination Enclosure System - A decontamination enclosure system for workers typically consisting of a clean room, a shower room, and an equipment room.

1.04 QUALITY CRITERIA

A. Qualifications for Performance of Work:

1. Maintain on-site a superintendent having not less than two years of full-time experience in responsible charge of asbestos removal operations in similar scope and magnitude to this Project within the two-year period preceding start of project. Superintendent shall remain on -site at all times while Work

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is in progress. Superintendent shall enter regulated areas daily to check progress and completeness of Work.

2. Use only AHERA accredited trained and experienced asbestos removal workers and superintendents to perform the Work.
3. The abatement contractor along with their perspective workers and superintendents must also be accredited and licensed through the state of Tennessee Department of Environment and Conservation as required by the state of Tennessee, Chapter Rule 1200-01-20.

B. Reference Standards:

1. Acknowledge, by executing the Contract, awareness and familiarity with the contents and requirements of the following regulations, codes, and standards; and assume responsibility for the performance of the Work in strict compliance therewith.
 1. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
 - a. U.S. Environmental Protection Agency (EPA) Regulations for Asbestos (40 CFR 763).
 - b. EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR 61, Subparts A and M), revised November 20, 1990.
 - c. U.S. Department of Labor Occupational Safety and Health Administration (OSHA) Asbestos Regulations (29 CFR 1910.1001, 1926.1101 and 1926.62).
 - d. EPA Office of Pesticide and Toxic Substances Guidance Document, "Guidance for Controlling Friable Asbestos-Containing Materials in Buildings," EPA 560/5-85-024, June 1985.
 - e. American National Standards Institute, Practices for Respiratory Protection, ANSI Z88.2-1980.
 - f. All State, County, and City codes and ordinances as applicable.

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- g. EPA document "Guide to Respiratory Protection for the Asbestos Abatement Industry," EPA-560-OPTS-86-001, September 1986.
- h. U.S. Department of Transportation Hazardous Substance Regulations (40 CFR 171 and 173, Subpart J and Section 173.1090).
- i. U.S. Department of Labor Occupational Safety and Health Administration (OSHA) Respiratory Protection Regulations (29 CFR 1910.134).
- j. The Tennessee Department of Environment and Conservation, Division of Solid Waste Management, Toxic Substance Program (Chapter 1200-01).

1.05 SUBMITTALS

- A. Reference Section 0282 13.02 for the submittals required by the Contract Documents.
- B. The abatement contractor must supply documentation of the new licenses for the asbestos abatement firm, supervisors and workers that will be participating on this project as required by the State of Tennessee, Department of Environment and Conservation, Division of Solid Waste Management Toxic Substance Program, Chapter Rule 1200-01.

1.06 PRODUCT HANDLING

- A. Deliver all materials for the Project in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.
- B. Store all materials for the Project under cover sufficient to prevent damage or contamination.
- C. Dispose of materials that become contaminated with asbestos in accordance with applicable regulatory standards.

1.07 WORK SITE CONDITIONS

- A. Worker and Visitor Procedures: Contractor or subcontractor is hereby advised that asbestos has been determined by the U.S. Government to be a

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CANCER-CAUSING AGENT. Contractor or subcontractor shall provide workers and visitors with respirators, and protective clothing which shall meet the requirements of 29 CFR 1910.134 and 1926.1101.

1.08 PERSONNEL PROTECTION

- A. Prior to commencement of work, all workers shall be instructed by the Contractor and shall be knowledgeable, in the appropriate procedures of personnel protection and asbestos removal.
- B. Contractor acknowledges and agrees that he is solely responsible for enforcing worker protection requirements at least equal to those required by federal regulations.
- C. Initial Exposure Assessment (IEA):
 - 1. Provide an initial exposure assessment as described in 29 CFR 1926.1101 for each operation to justify the selection of the appropriate respiratory protection for each activity including work area preparation, removal of ACM, Work Area clean-up, and disposal at the landfill.
 - 2. Obtain PEL and excursion limit air sampling form either prior asbestos jobs within the last 12 months or initial exposure monitoring from this project to generate an initial exposure assessment.
 - 3. Air sample data from previous asbestos jobs must include documentation that the data was obtained during operations which closely resemble the processes, type of ACM, control methods, work practices, and environmental conditions used and prevailing on this project. Include documentation that the training and experience of the workers on the prior asbestos jobs was no more extensive than that of the workers on this project. Documentation shall be sufficient to determine that the conditions prevailing, and which will prevail on the current project, will, with a high degree of certainty, not result in employee exposures above the PEL or excursion limit.
 - 4. Revise and resubmit the respiratory protection schedule, with attached supporting documentation, if exposure assessments result in or require a change in respiratory protection for any of the work activities listed above.
- D. Contractor shall provide workers with personally issued and marked respiratory equipment approved by NIOSH and OSHA to be suitable for the asbestos exposure level in the regulated areas according to OSHA Standard 29 CFR 1926.1101 or as

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more stringently specified elsewhere in the Contract Documents. Contractor will be required to start out using PAPR's for all Class I work as described in the OSHA Standard 29 CFR 1926.1101 Type of respiratory protection required:

RESPIRATORY PROTECTION FACTORS

Respirator Type	
Air Purifying: Negative-pressure respirator, high efficiency filter, half-facepiece	10
Air Purifying: Negative-pressure respirator, high efficiency filter, full-facepiece	50
Powered Air Purifying (PAPR): Positive-pressure respirator, high efficiency filter, full-facepiece	1000
Type C supplied air: Positive-pressure respirator, pressure-demand, full-facepiece	1000
Type C supplied air: Positive-pressure respirator, pressure-demand, full-facepiece, equipped with an auxiliary positive-pressure self-contained breathing apparatus (SCBA)	Over 1000

- E. Where respirators with disposable filters are used, provide sufficient filters for equipment, as necessary by the workers, or as required by applicable regulations.
- F. Provide emergency backup air supply for each worker in the regulated area at all times when "Type C" (supplied air) respirators are required. Provide emergency backup equipment with air supply of sufficient duration for all workers to safely exit regulated area. Locate emergency equipment so that it is readily accessible to each regulated area following interruption of normal air supply.
- G. All supplied air (Type C) respiratory equipment shall supply as a minimum, Grade D air. Contractor shall maintain on-site documentation and submit certified test results that air supplied to work area is Grade D or better. Documentation will include, as a minimum, equipment serial numbers, or panel numbers, and shall have been certified within the six months prior to project startup date.
- H. Ambient air pumps shall not be used for Type C supplied air systems.

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- I. Permit no visitors, except for governmental inspectors having jurisdiction, or as authorized by Owner, in the regulated areas after commencement of asbestos disturbance or removal. Provide authorized visitors with suitable respirators.
- J. Provide workers with sufficient sets of protective disposable clothing, consisting of full-body coveralls, head covers, gloves, and foot covers, of sizes to properly fit individual workers.
- I. Provide eye protection, steel toe shoes, and hard hats as required for job conditions or by applicable safety regulations. Leave reusable footwear, hard hats, and eye protection devices in the contaminated equipment room until the end of the asbestos abatement work, at which time such items shall be disposed of as asbestos waste or decontaminated for reuse.
- K. Provide authorized visitors with a set of suitable protective disposable clothing, headgear, eye protection, and footwear of sizes to properly fit visitors whenever they are required to enter the regulated area, to a maximum of three sets per day.
- L. Provide, in addition to protective clothing for authorized visitors, protective clothing for use by Owner's Representative. Furnish protective clothing in as many sets as required protective clothing in as many sets as required for monitoring by Owner's Representative.
- M. Post in Equipment Room the asbestos removal decontamination and work procedures to be followed by workers.

1.09 SIGN-IN/OUT LOG

- A. Maintain a sign-in/out log in the immediate vicinity of the change room. Maintain from the time the first activity is performed involving the disturbance of asbestos-containing material until acceptance of the final air test results by Owner's Representative. Require all persons entering the regulated area, including Contractor or Contractor's workers, Owner or agents of Owner, and government officials to sign in and out each time upon entering and leaving the regulated area. Indicate name, time, company or agency represented, and reason for entering the regulated area.

1.10 TRAINING PROGRAM

- A. Workers shall have received training on proper respirator use, hazards of asbestos exposure, and OSHA asbestos regulations. No worker shall be utilized on any portion of the work until documentation of training has been provided.

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REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING MATERIALS

PART 2 PRODUCTS

2.01 MATERIALS, TOOLS AND EQUIPMENT

- A. Air Purifying Equipment (for internal recirculation in the work area) - Shall be HEPA Filtration System. Ensure that no air movement system or purification equipment exhausts contaminated air from the regulated areas outside the regulated area.
- B. Communication Equipment - Shall be suitable for inter room communications.
- C. Glove Bag - Shall consist of heavy, 6-mil, clear plastic with preprinted asbestos hazard warning and in accordance with the U.S. OSHA Construction Standard for Asbestos (29 CFR 1926.1101), DOT placard (49 CFR) and the EPA generators label (40 CFR 763). All Glove Bags must be suitable to withstand the temperatures of the existing conditions, which may include temperature exceeding 150 degrees Fahrenheit.
- D. Impermeable Containers - Shall be suitable to receive and retain any asbestos-containing or contaminated materials from within occupied spaces until disposal at an approved site and shall be labeled in accordance with OSHA Regulation 29 CFR 1926. Containers must be both airtight and watertight. Use a minimum of two types of impermeable containers: 1) 6-mil plastic bags sized to fit within the drum; and 2) metal or fiber drums with tightly fitting lids or double 6-mil plastic bags.
- E. Lowered Air Pressure Equipment - Comply with ANS1 Z9.2-79.
- F. Other Materials - Provide all other materials such as lumber, nails, and hardware, which may be required to construct the decontamination area and the barriers that isolate the regulated areas.
- G. Plastic sheeting - shall be of thickness specified, in sizes to minimize the frequency of joints. Utilize reinforced plastic sheeting in specified thickness on floors.
- H. Scaffolding - Shall be as required to accomplish the specified work and will meet all applicable safety regulations.

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REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING MATERIALS

- I. Surfactant (Wetting Agent) - Shall consist of resin materials in water base which have been tested to indicate material is non-toxic and non-irritating to skin and eyes, and is non-carcinogenic.
- J. Tape - Shall be glass fiber or other type capable of sealing joints of adjacent sheets of plastic and to maintain attachment of plastic sheet to finished or unfinished surfaces of dissimilar materials under both dry and wet conditions.
- K. Transportation - As required for loading, temporary storage, transit, and unloading of contaminated materials
- L. Warning Labels and Signs - Shall be as required by OSHA Regulation 29 CFR 1926.1101 (and U.S. DOT 49 CFR 171 and 172 for impermeable containers).
- M. Floor tile adhesive backing removal agent- shall consist of a relatively high flash point (140° or greater), non-toxic, noncarcinogenic solvent. Contractor shall only use acceptable materials and shall be applied as recommended by the manufactures.
- N. Caulking-abated edges shall be caulked prior to final clearances. Caulking shall be non-shrinking. Contractor shall determine and submit proof that caulk proposes for use is compatible with the temperature conditions of the surface to which it is to be applied.

PART 3 EXECUTION

3.01 PREPARATION

- A. Coordinate sequence of regulated area preparation in the building with Owner's Representative in order to properly segregate regulated areas from areas where other special considerations are required.
- B. The removal of asbestos containing materials may require multiple categories of containment preparations. The categories and the suggested styles of containments along with the asbestos containing materials that may be removed inside each containment are as follows:
 - 1. Full Containment
 - A. Large sections or entire rooms of wall and ceiling board, tank insulation or contaminated areas.
 - B. Floor tile and associated adhesives if no perimeter walls

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or barriers are present, such as an open stairwell.

2. Partial Containment

A. Vinyl Floor Tile, Associated Mastic Adhesive, if outside full containment areas or if enclosed by four walls and a ceiling

C. Work Site Preparation for Removal of Asbestos-Containing Materials.

1. Demarcate work area with barrier tape and warning signs.
2. Isolate the work area. Erect critical barriers at exterior entrances, entrances to occupied areas, and major air duct openings. Brace wall barriers at sufficient intervals and heights. Seal penetrations such as windows, cracks, and openings through which pipes and ducts pass, with two layers of 6-mil plastic sheeting sealed with tape.
3. Maintain emergency and fire exits from the work area, or establish alternative exits satisfactory to fire officials of local jurisdiction.
4. Pre-clean all surfaces within the work area using HEPA vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filtration.
5. Completely seal in plastic all immovable objects in the work area.
6. When applicable; construct worker and barrel/equipment decontamination units in compliance with EPA and OSHA regulations and guidelines concerning number, size, and placement or airlocks, etc. Shower in worker decontamination unit shall open into airlocks on both contaminated and uncontaminated sides. Construct decontamination units of appropriate materials including plastic sheeting (to provide airtight barriers) and plywood or other suitable rigid materials to allow continuous diminished pressure to be maintained in work area. Supply sufficient number of lockers in worker decontamination unit change or "clean" room for worker's clothing. Post OSHA decontamination procedures in change room for duration of Project. In decontamination system shower trap use a filter having a pore size of not large than 5 micron and drain shower wastewater into a sanitary sewer. Replace contaminated filters when they become clogged but not less than every third day. Dispose of filters as contaminated waste. Contractor may trap

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and collect shower wastewater in impermeable containers and dispose of as contaminated material, at his option, rather than filtering and draining into sanitary sewer.

7. Maintain for the duration of the Project a Sign-In/Sign-Out Log in the immediate area of the change room. Log shall be utilized by every person each time upon entering and leaving the work area.
8. Erect doorways with plastic or fixed-louvered doors between adjacent areas in work area to minimize fiber dispersal between adjacent areas.
9. When utilizing a Full Containment-Place regulated area under diminished air pressure utilizing HEPA filtration systems, which comply with ANSI Z9.2-79. Allow no air movement system or air-filtering equipment to discharge unfiltered air outside the regulated area. To diminish air pressure inside regulated area, exhaust filtered air to outside the building away from air intake devices. The HEPA filtration system shall be of a capacity to affect a minimum of one air change every 15 minutes in the regulated area. Contractor must utilize a negative pressure recorder in all Class I work areas to document adequate diminished pressure inside contained areas.
10. Ensure that all barriers and plastic enclosures remain effectively sealed and taped for duration of asbestos removal and subsequent cleaning. Repair damaged barriers and remedy defects immediately upon discovery. Visually inspect enclosures at the beginning of each work period. Use smoke methods to test effectiveness of barriers at the request of the Owner's Representative.
11. Notify Owner's Representative and Testing Laboratory of work area readiness for observation of the preparation of job site prior to any removal of asbestos-containing material.

D. In Full Containment areas, the Contractor shall prepare the area in accordance with the following procedures, this are in addition to the above site work conditions:

1. Cover the floor of the Controlled Area with a minimum of two (2) individual layers of clear polyethylene sheeting, each at least 6~mil in thickness, turned up walls at least 12 inches. Form a sharp right-angle bends at junction of floor and wall so that there is no radius which could be stepped on causing the wall attachment to be pulled loose. Both spray-glue and duct tape all the seams in floor covering. Locate seams in top layer six feet from, or at right angles to, seams in bottom layer. Install sheeting so that top layer can be removed independently of bottom layer.

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(Special Note: In areas where the flooring materials are the only items to be removed or if floor tile abatement is also occurring is simultaneously, do not cover floors with plastic sheeting). The floor tile and associated adhesives will be removed up to walls, cabinets, shelving, etc.

2. Cover all walls, doors, and existing casework; which includes cabinets and shelving that will remain in the Controlled Area, including "Critical Barrier" sheet plastic barriers, with a minimum of one layer of polyethylene sheeting, at least 6-mil in thickness, mechanically supported and sealed with duct tape. Tape all joints including the joints joining with the floor covering with duct or fiber tape.

- E. In Partial Containment areas, the Contractor shall prepare the area in accordance with the following procedures, in addition to the above listed work site conditions:

1. Place a layer of 4-mil (minimum) polyethylene on all wall surfaces of the contained area, exposing only the asbestos-containing or contaminated materials. Wall polyethylene should extend to the floor level up the wall approximately two (2) feet and be completely taped down with water resistant duct or fiber tape. Spray adhesive is recommended to assist hanging of wall plastic.

- F. In Limited Containment areas, the Contractor shall prepare the area in accordance with the following procedures, in addition to the above listed work site conditions:

1. The Contractor shall place a minimum of one (1) layer of 6-mil polyethylene sheeting (drop cloth) beneath the pipe insulation to be removed. The sheeting shall extend a minimum five (5) feet in all directions of the piping where possible.

3.02 ABATEMENT OF ASBESTOS-CONTAINING FLOOR TILE AND ASSOCIATED ADHESIVES AND GYPSUM WALL AND CEILING BOARD AS WELL AS TANK INSULATION.

- A. Remove and properly dispose of all asbestos-containing materials and debris in accordance with OSHA Asbestos Regulations 29 CFR 1926.1101 or as more stringently specified herein. Floor tile and adhesives will be removed up to but not underneath walls, partitions, casework or cabinets.
- B. Prepare the regulated area as previously specified in Article 3.01 of this section.
- C. Wet the asbestos-containing materials sufficiently with amended water to saturate the material without causing excessive dripping. Spray the material repeatedly during removal to maintain wet conditions.
- D. Remove the saturated material in small sections. Do not allow the material to dry out.

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As it is removed, place the material in sealable plastic bags of six-mil minimum thickness.

3.03 NOT USED

3.04 CLEAN UP AND CLEARANCE TESTING

A. Clean Up:

1. Remove all visible accumulations of asbestos material and debris.
2. Clean all surfaces in the regulated area.
3. Clean all sealed and impermeable containers and all equipment used in the regulated area and remove from regulated area (excluding that equipment needed for further cleaning) via the equipment decontamination enclosure system.
4. Notify Owner's Representative for observation of cleaning to determine completeness.

B. Clearance Testing:

1. Standard of Cleaning Prior to Final Clearance/Reoccupancy Testing:
 - a. Regulated areas and all other decontaminated areas and cleaned areas shall be considered clean when visibly clean and free of debris.
2. Final Clearance/Reoccupancy Testing:
 - a. Final Clearance: Regulated areas and all other decontaminated areas shall be considered clean and ready for Final Clearance Testing when areas have been cleaned and are visibly free of dust and debris. Apply one coat of approved encapsulant to all substrate surfaces from which material was removed and to all wall and floor plastic in the regulated area.
 - 1) Misting, spraying, and pump equipment, as recommended by the encapsulant material's manufacturer, shall be used.
 - 2) Encapsulant shall be a minimum of one coat, mixed and applied in accordance with the manufacturer's written instructions.

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- b. Notify Owner's Representative for observation of encapsulant application for completeness.
 - c. After encapsulant dries, remove plastic sheeting from walls and floors. Do not remove plastic sheeting covering penetrations, immovable objects, or critical barriers.
 - d. Remove all visible accumulations of asbestos material and debris. Clean all surfaces in the regulated area. Clean all sealed and impermeable containers and all equipment used in the regulated area and remove from regulated area.
3. Final Clearance/Reoccupancy Testing:
- a. Notify Owner's Representative that the area(s) are ready for Reoccupancy Testing.
 - b. Upon notice from Contractor that the regulated areas and all other contaminated and cleaned areas are ready for Reoccupancy Testing, the Owner's Representative will test for the Reoccupancy Level of 0.01 f/cc utilizing Phase Contrast Microscopy in general accordance with NIOSH 7400 Method.
 - c. Areas which do not comply with the standard of cleaning for Clearance/Reoccupancy shall continue to be cleaned by and at Contractor's expense until the specified standard of cleaning is achieved as evidenced by results of air sampling tests by Owner's Representative as previously specified. The cost of all follow-up tests necessitated by the failure of the air tests to meet the cleaning criteria shall be borne by Contractor.
 - d. When standard of cleaning of 0.01 f/cc or less is achieved, and observation by Owner's Representative determines that the area has been visually decontaminated, the decontamination enclosure system shall be removed, the area thoroughly cleaned, and materials disposed of as contaminated waste. The remaining barriers between contaminated and clean areas and all openings into the regulated area and fixtures will be removed and disposed of as contaminated waste.

C. Final Observation:

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REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING MATERIALS

1. A final observation of the cleaning work of this Section will be performed by Owner's Representative to determine if the areas are visibly clean.
 2. Reclean at no additional cost to Owner all areas not found to be visibly clean.
- D. Contractor's Duties:
1. Cooperate with Owner's Representative in all aspects of the testing in order to expedite air monitoring and results.
 2. Provide Owner's Representative access to the Work and in all locations requested as necessary to perform air tests.
 3. Contractor will notify Owner's Representative 24 hours in advance of asbestos abatement activities.

3.05 DISPOSAL OF CONTAMINATED WASTE

- A. Remove sealed and labeled containers of contaminated material and dispose of accordingly in approved sanitary landfill as follows:
1. Pass sealed plastic bags of contaminated material from the regulated area into decontamination enclosure. All gross materials shall be removed from outside surfaces of bags in the regulated area prior to passing the bags into the decontamination enclosure.
 2. Clean plastic bags (using HEPA vacuum and wet wipe methods or other suitable methods) while in the decontamination enclosure.
 3. Pass cleaned plastic bags into decontamination enclosure holding area.
 4. Seal asbestos waste in leak-proof impermeable containers labeled in accordance with 29 CFR 1926.1101 or applicable local standards.
 5. Label containers with name and location of waste generator.
 6. Use only enclosed or covered trucks to haul impermeable containers to prevent loss or damage to container enroute to storage areas, temporary holding areas or facilities, disposal container and to sanitary landfill.

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7. Allow only sealed plastic bags or impermeable containers to be deposited in landfill. Leave damaged, broken, or leaking plastic bags in the impermeable container and deposit entire container in landfill.
8. Ensure that there are no visible emissions to the outside air from site where materials and waste are deposited.
9. Submit to Owner after completion of Work receipts, waste shipping manifest, landfill receipts that includes date, quantity of material, and signature from authorized representative of landfill operator for all deliveries of waste material.

3.06 OBSERVATIONS

- A. Owner's Representative will observe the status and progress of the Work for completeness and general compliance with the requirements of the Contract Documents. Observations will be made following completion of removal, and as appropriate during the Work outlined elsewhere in the Contract Documents.
- B. Notify Owner's Representative at least 24 hours in advance for such observations. Should no advance notice be given, Owner's Representative will still make reasonable effort to comply with the time of requested observation. Contractor shall not proceed until such observation by Owner's Representative is made.
- C. Any delay in the completion of the Work caused by lack of advance notice by Contractor to Owner's Representative shall not be sufficient cause for any extension of the completion deadline. Also, compensation for the time spent by Owner's Representative on the Project resulting from prearranged meetings where the Work has not progressed to the designated point shall be the responsibility of Contractor and may be deducted by Owner from the Contract Price.

3.07 FINAL COMPLETION

- A. Owner's Representative will, within a reasonable time period, observe the Work to determine status of final completion when Contractor notifies in writing to Owner that: 1) the Work has been completed in compliance with the Contract Documents; 2) Contractor has inspected the Work for such compliance; and 3) the Work is ready for final inspection.
- B. Owner's Representative will promptly notify Contractor if it is determined that the Work is incomplete or defective, and will provide the reasons therefore.

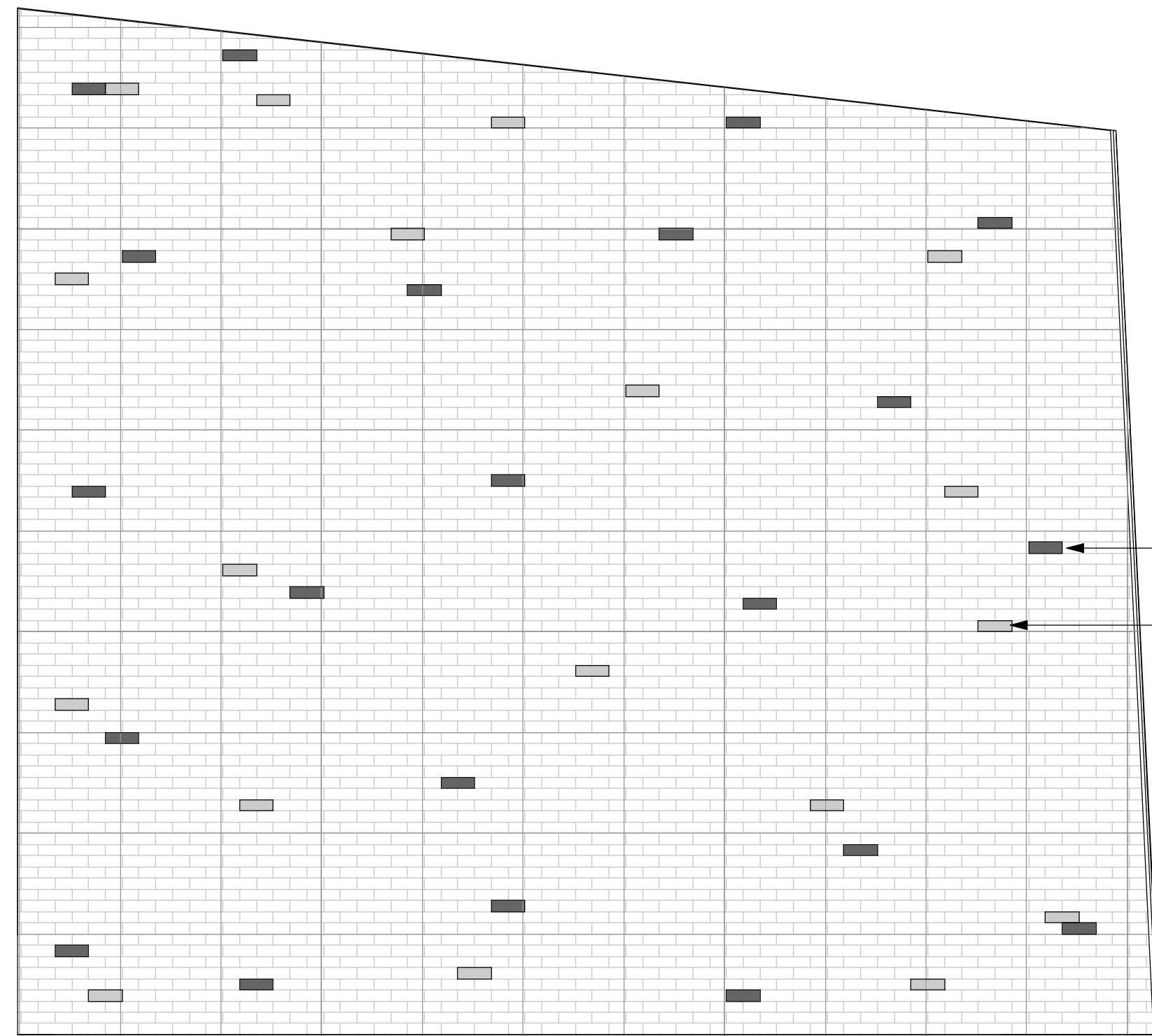
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- C. Contractor shall, upon receipt of notice from Owner's Representative that the Work is not complete, promptly remedy the Work deficiencies noted and notify Engineer when the Work is ready for reinspection. Owner's Representative will within a reasonable time period reinspect the Work.
- D. Contractor shall submit two complete bound copies to Owner's Representative of the post-job submittals when Owner's Representative determines that the Work is acceptable and complete under the Contract Documents (Reference Section 0282 13.02 for more details). Also submit any outstanding pre-job submittals described in Section 0282 13.02.
- E. Consider the Work of this Contract completed following acceptance of the Work by Owner's Representative, and upon receipt and approval of the information described in Section 0282 13.02 of the Contract Documents and submission of proof of Advertisement of Completion.
- F. Contractor will then, if required and prior to processing final payment request, prepare final Change Order showing adjustments to the Contract Sum not made by previous Change Orders. If no Change Orders are required, final Certification and Application for Payment will be processed.

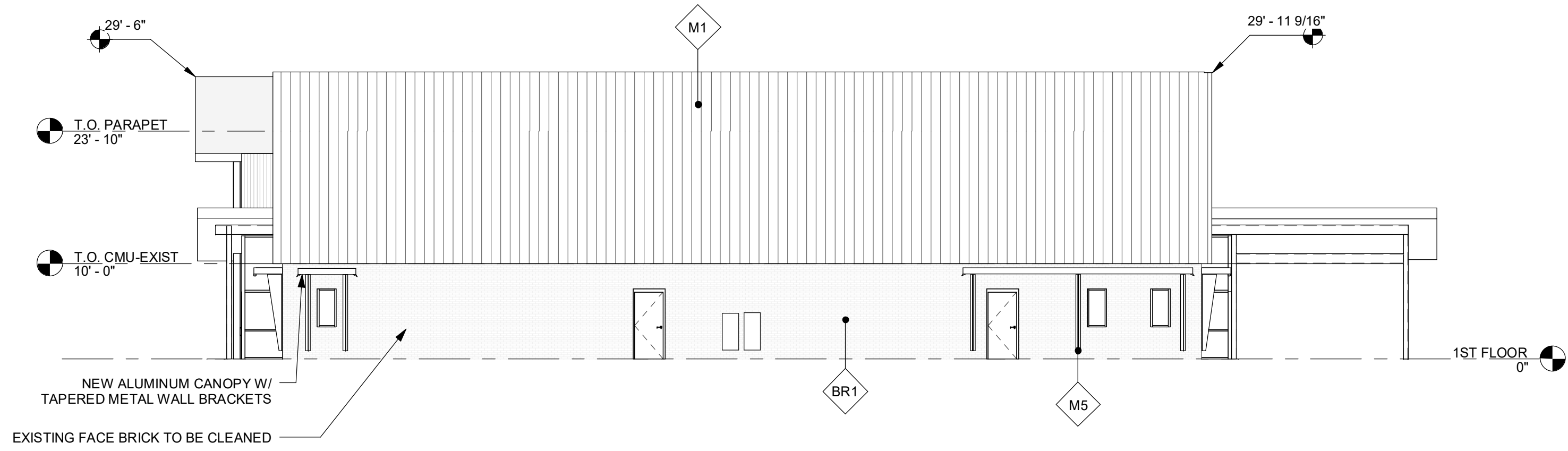
END OF SECTION

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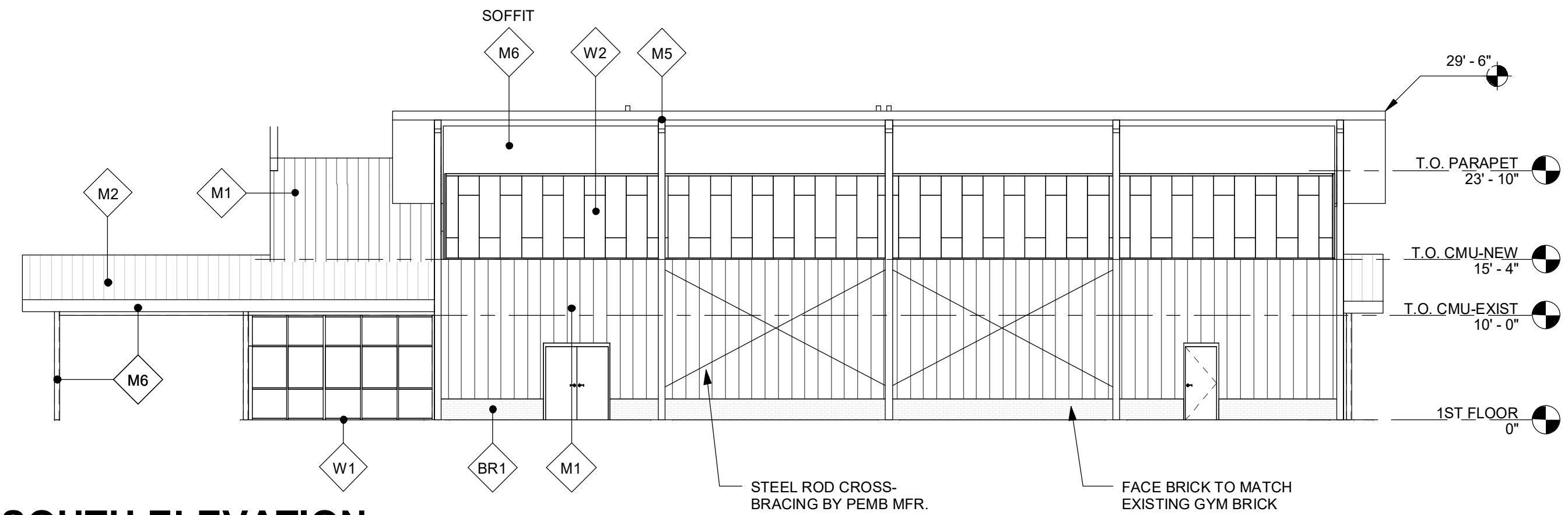


5 EXTERIOR ACCENT WALL DETAIL
SCALE: 3/8" = 1'-0"

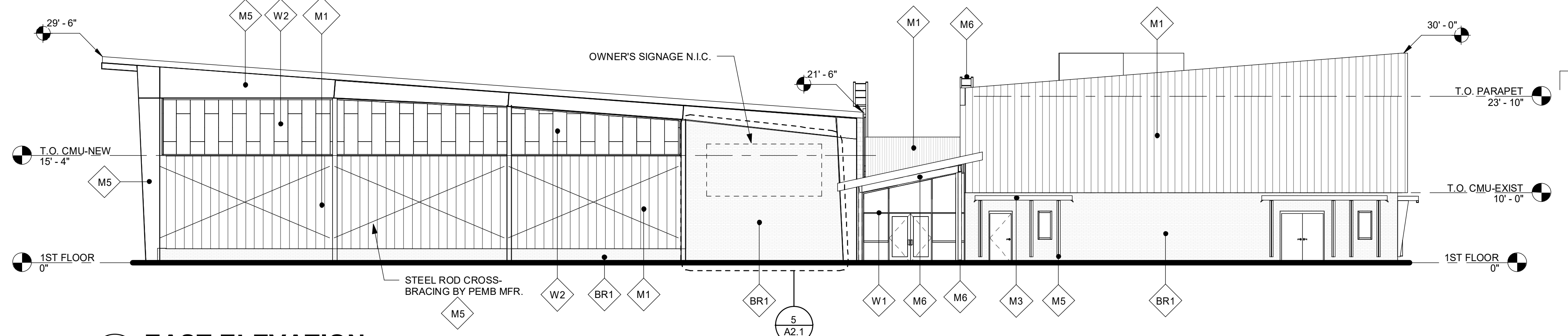
2'x2' GRID OVERLAY SHOWN FOR REFERENCE ONLY TO HELP APPROXIMATE LOCATIONS OF CUSTOM GLAZED BRICKS (BR2 & BR3)



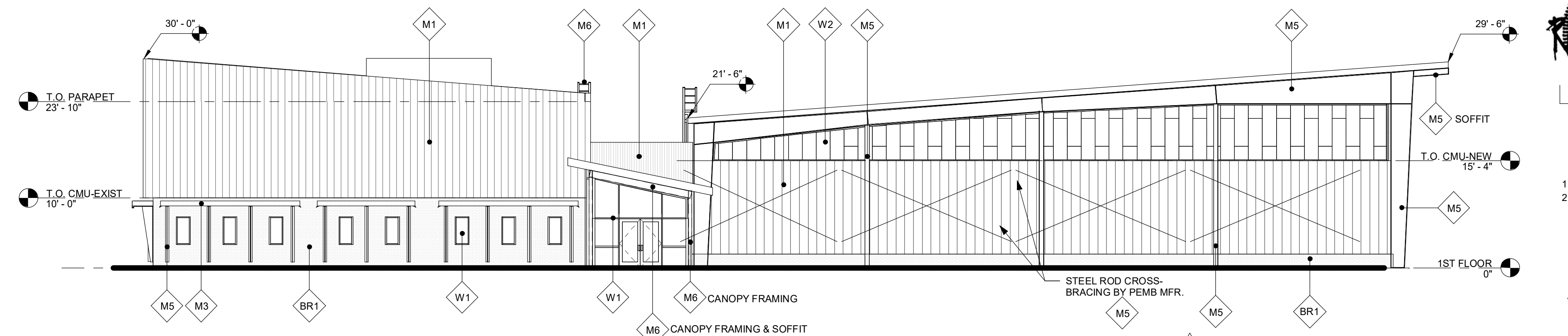
4 NORTH ELEVATION
SCALE: 3/32" = 1'-0"



3 SOUTH ELEVATION
SCALE: 3/32" = 1'-0"



2 EAST ELEVATION
SCALE: 3/32" = 1'-0"



1 WEST ELEVATION
SCALE: 3/32" = 1'-0"

MATERIAL LEGEND

◇	MATERIAL
METAL	
M1	METAL WALL PANEL - STANDING SEAM, BERRIDGE ZINC GREY
M2	METAL ROOF PANEL - STANDING SEAM (CONCEALED FASTENER), BERRIDGE ZINC GREY
M3	METAL CANOPY - PREFINISHED ALUMINUM CANOPY PER SPECIFICATIONS, MATCH P1
M4	METAL MISCELLANEOUS - GUTTERS, DOWNSPOUTS, SOFFIT, COPING; PREFINISHED FROM COLORS AS SPECIFIED
M5	EXPOSED EXTERIOR STRUCTURE (TYPICAL, EXCEPT WHERE NOTED), FINISHED TO MATCH P-1
M6	EXPOSED EXTERIOR STRUCTURE (CENTRAL SPINE), FINISHED TO MATCH P-2
STOREFRONT/WINDOWS	
W1	CLEAR ANODIZED STOREFRONT FRAMING WITH 1" CLEAR INSULATED SAFETY GLAZING (TEMPERED WHERE CODE REQUIRES)
W2	TRANSLUCENT THERMAL GLAZING SYSTEM - MANUFACTURER'S STANDARD WHITE COLOR
PAINT	
P1	DARK GRAY GREEN (ALL EXPOSED STEEL UNLESS NOTED OTHERWISE) SHERWIN WILLIAMS SW6209 RIPE OLIVE
P2	OFF-WHITE (ALL STEEL AT CENTRAL SPINE)
MASONRY	
BR1	FIELD COLOR AND MORTAR TO MATCH EXISTING. PROVIDE BR-2 & BR-3 ACCENTS AS INDICATED. PALMETTO RED SMOOTH
BR2	GLAZED ACCENT COLOR - (TO MATCH BR1 SIZE) - ELGIN BUTLER #4340 RAINFOREST GREEN
BR3	GLAZED ACCENT COLOR - (TO MATCH BR1 SIZE) - ELGIN BUTLER #4625 PURPLE HEART



ISSUE DATES
INITIAL ISSUE 12-20-19
1 Addendum 4 01/10/2020
2 Addendum 8 01/21/2020

JOB NO. 18-072 | D'WN Author | CK'D Checker

A2.1
EXTERIOR ELEVATIONS

ENTIRE SHEET REISSUED AS PART OF THIS ADDENDUM.

SITE AMENITIES

STEEL BOLLARD - SEE DETAIL

CUBE BENCH - PRECAST CONCRETE BENCHES @ VARYING HEIGHTS - BASIS OF DESIGN TF5119 WAUSAU MADE
COLOR: A20 WHITE



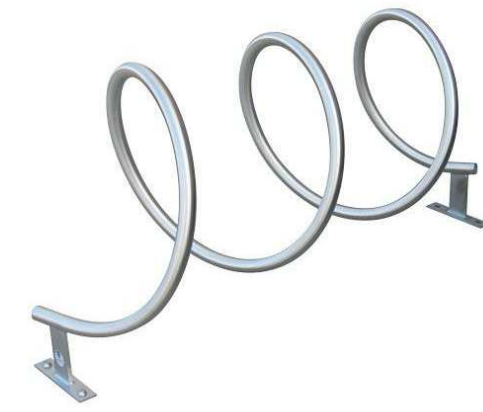
PRECAST CONCRETE BENCH - BASIS OF DESIGN TF5021 FROM WAUSAU MADE
COLOR: A20 WHITE



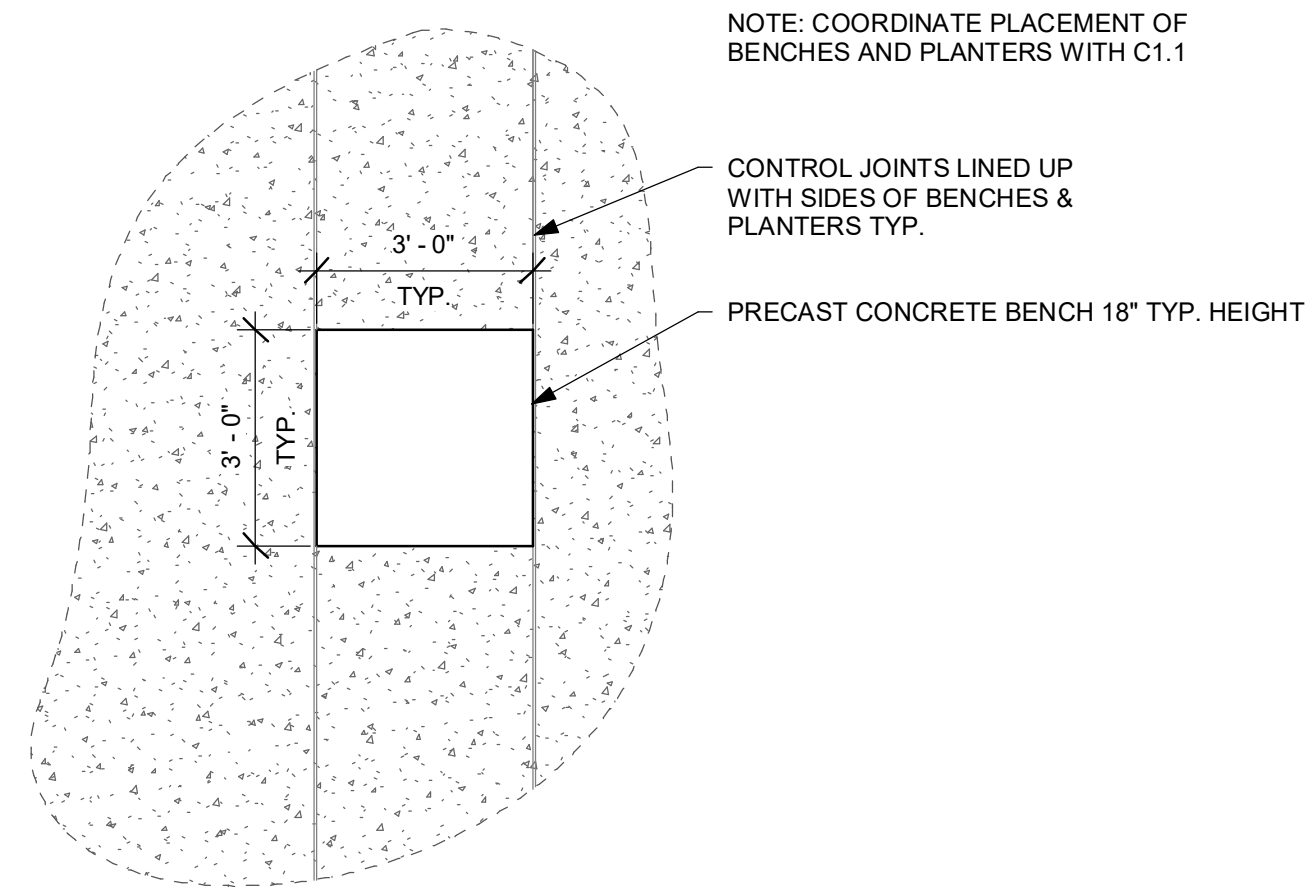
CUBE PLANTER - PRECAST CONCRETE CUBE PLANTER. BASIS OF DESIGN KORNEGAY DESIGN ASPECT SERIES SIZE: 36" x 36" HEIGHTS: 12", 21" 30"
COLOR: TBD



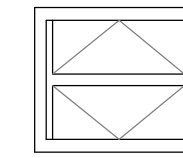
BIKE RACK (SPIRAL) - BASIS OF DESIGN "HELIX RACK" FROM DERO
COLOR: TBD



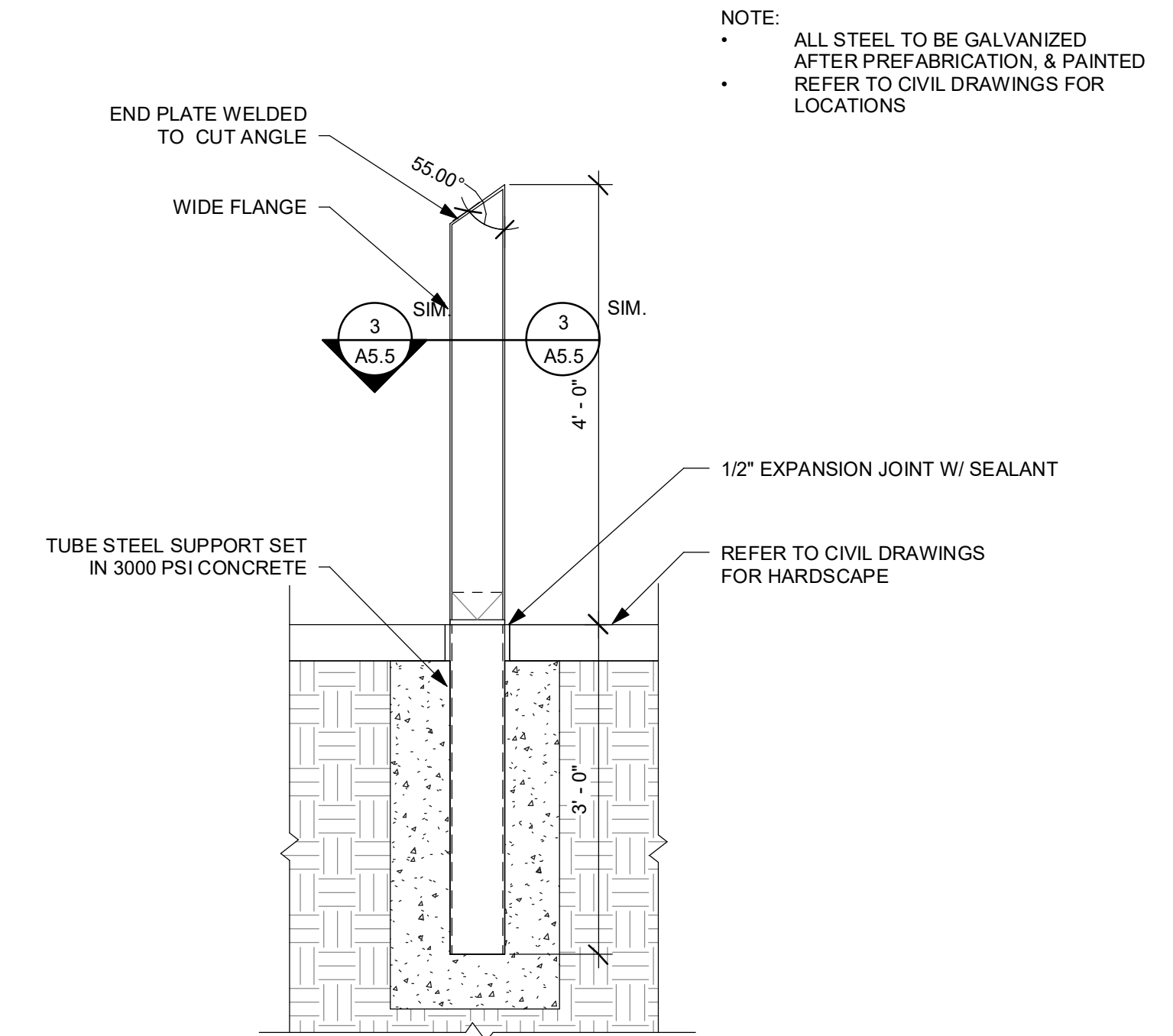
4 CONCRETE BENCH TYPICAL PATTERN
SCALE: 3/8" = 1'-0"



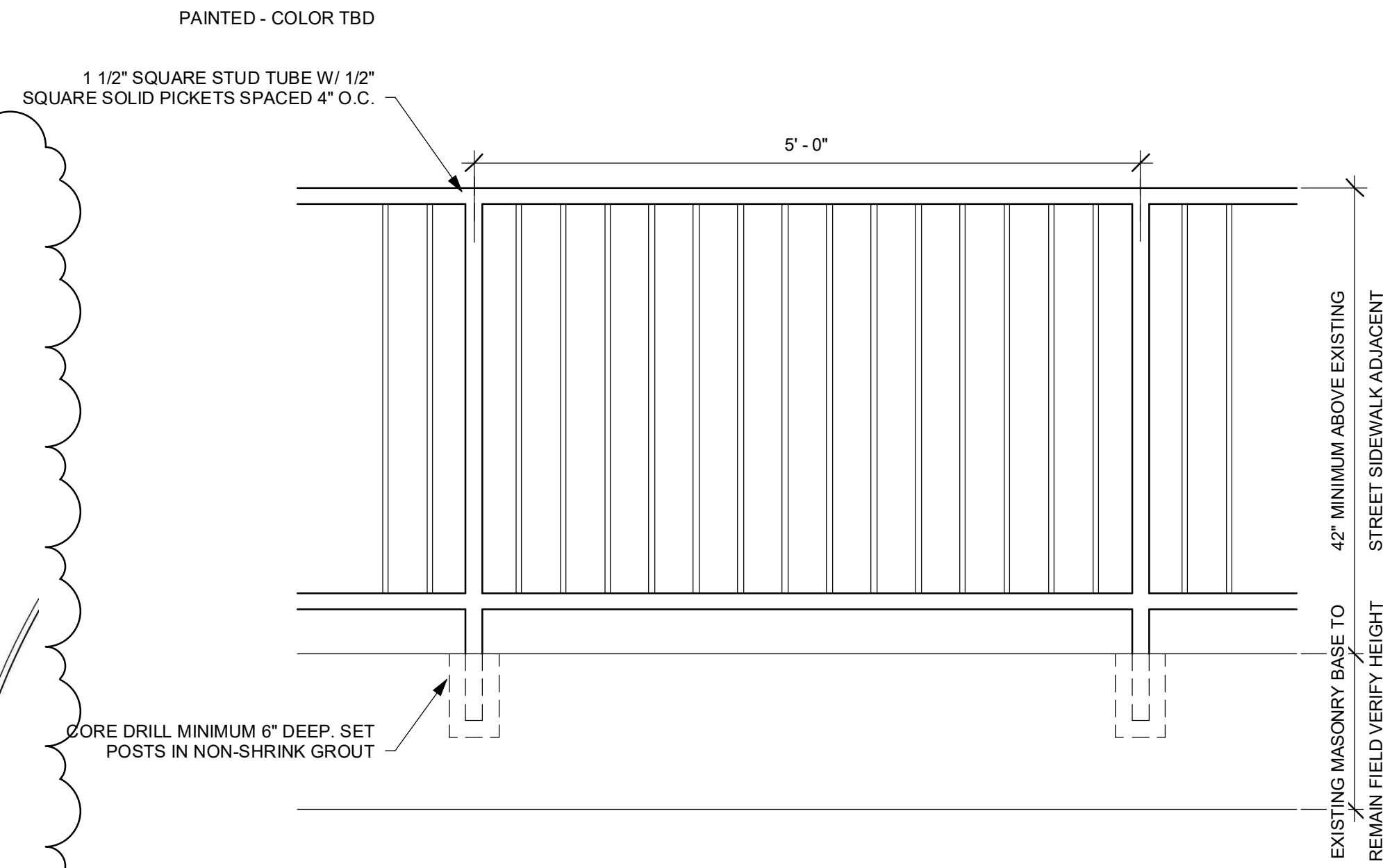
3 STEEL BOLLARD SECTION
SCALE: 1 1/2" = 1'-0"



1 STEEL BOLLARD DETAIL
SCALE: 3/4" = 1'-0"

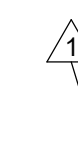
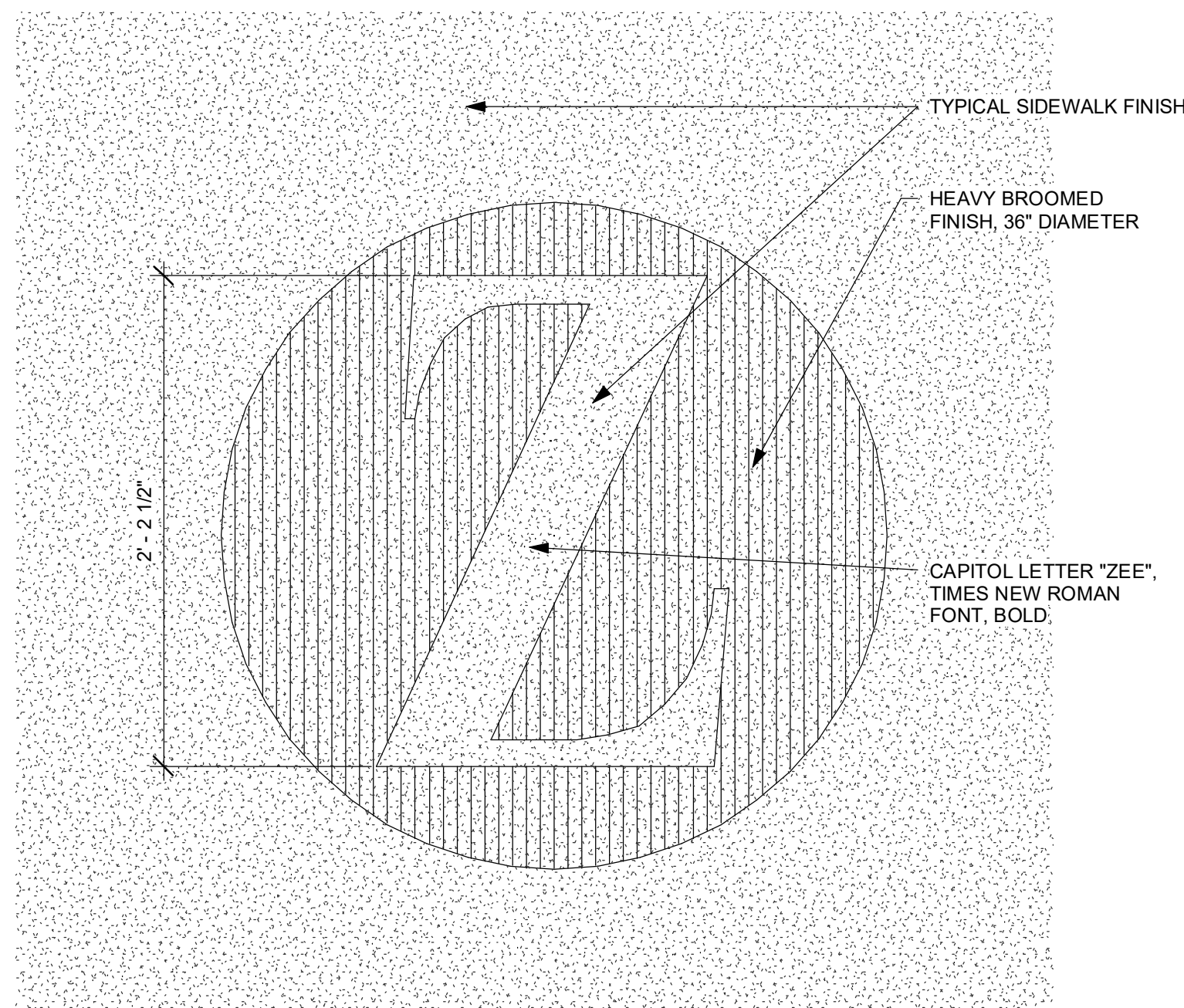


2 TYPICAL GUARD DETAIL
SCALE: 1" = 1'-0"

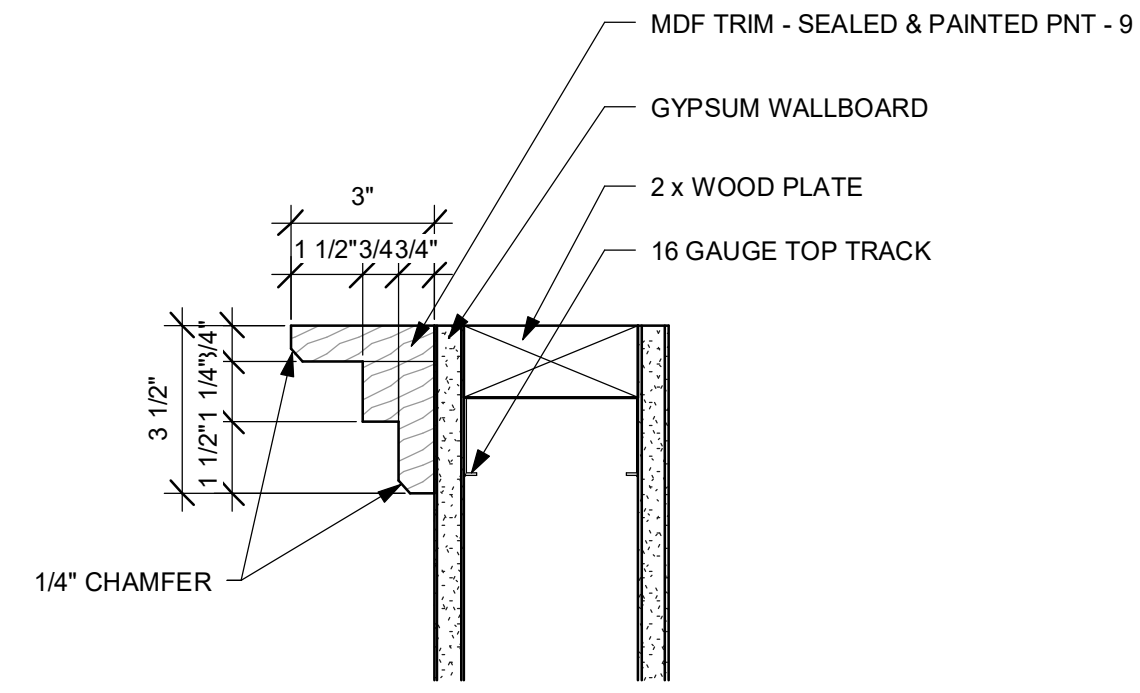
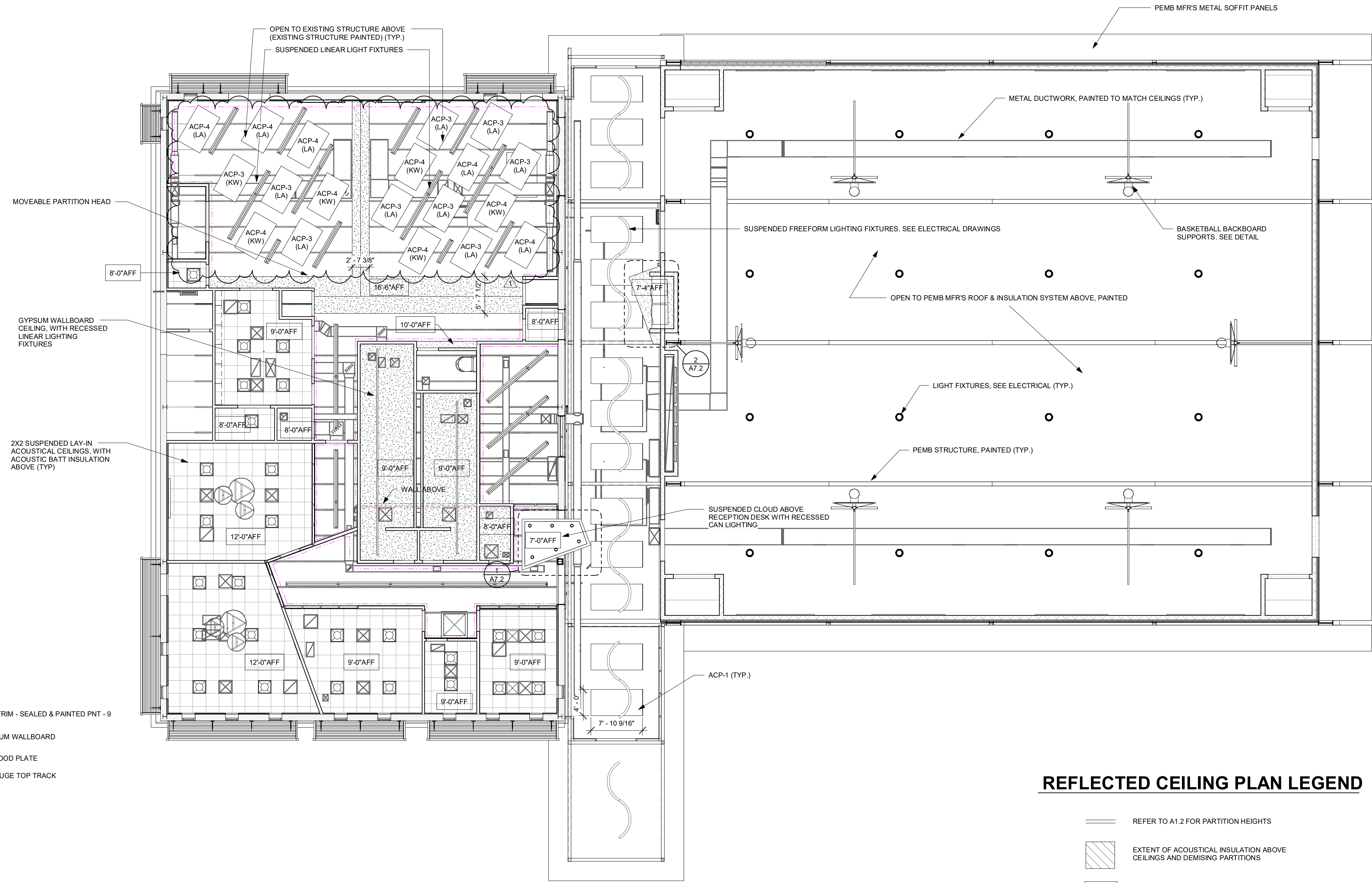


NOTE:
• ALL STEEL TO BE GALVANIZED AFTER PREFABRICATION, & PAINTED REFER TO CIVIL DRAWINGS FOR LOCATIONS

5 SIDEWALK ACCENT GRAPHIC & KEY PLAN
SCALE: 1 1/2" = 1'-0"



ENTIRE SHEET REISSUED AS PART OF THIS ADDENDUM.



3 PARTITION CAP TRIM
 SCALE: 3" = 1'-0"

1 1ST FLOOR REFLECTED CEILING PLAN
 SCALE: 1/8" = 1'-0"



REFLECTED CEILING PLAN LEGEND

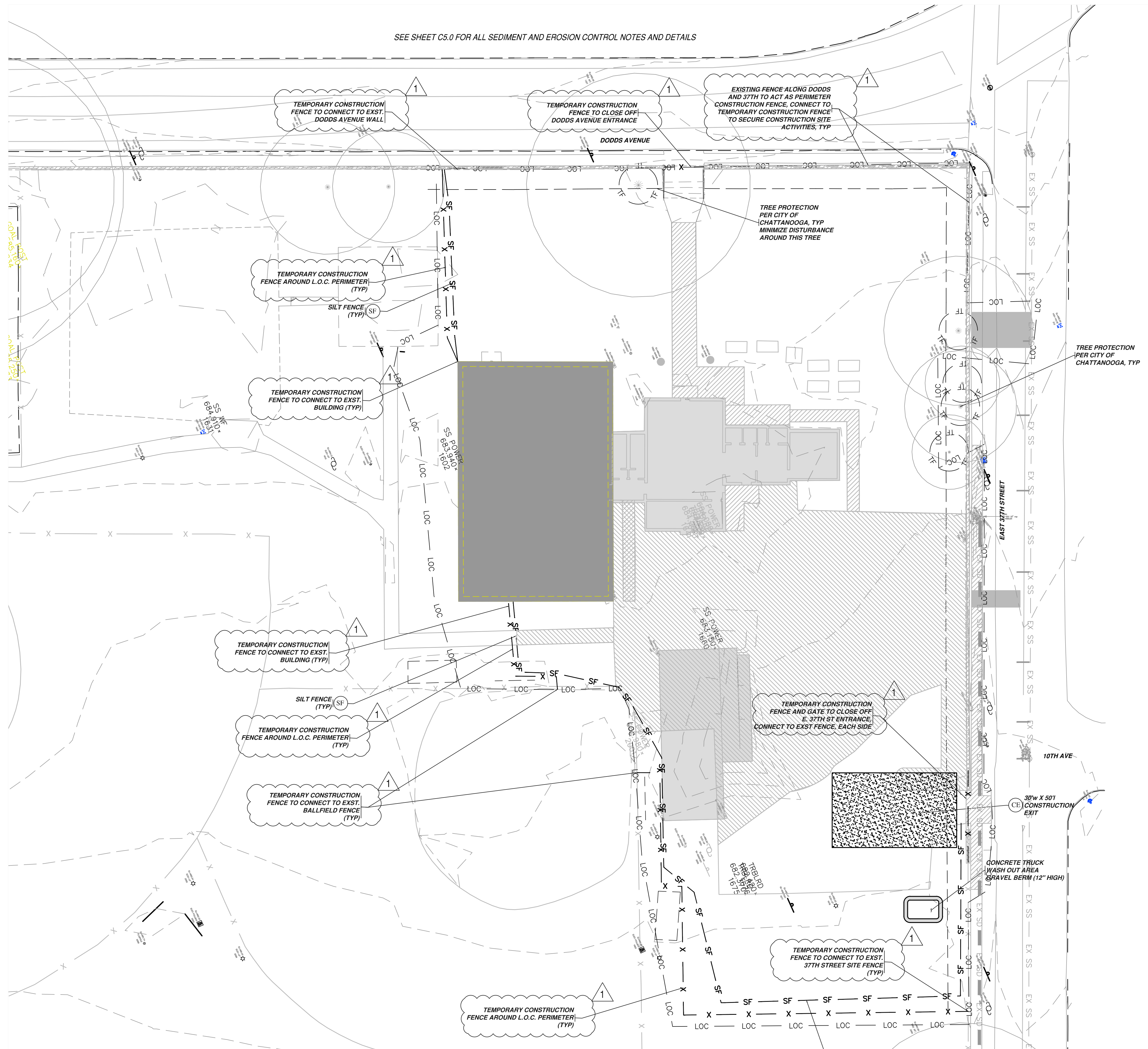
- REFER TO A1.2 FOR PARTITION HEIGHTS
- EXTENT OF ACOUSTICAL INSULATION ABOVE CEILINGS AND DEMISING PARTITIONS
- GYPSUM WALLBOARD CEILING
- 2 X 4' SUSPENDED ACOUSTICAL CEILING SYSTEM
- 2 X 2' SUSPENDED ACOUSTICAL CEILING SYSTEM
- 2 X 4' LIGHTING FIXTURE
- 1 X 4' LIGHTING FIXTURE OR PENDANT FIXTURE
- 4' STRIP LIGHT FIXTURE
- RECESSED CAN LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- SUPPLY DIFFUSER
- RETURN DIFFUSER
- SPRINKLER HEAD (CENTER WITHIN PANEL) SEE FIRE PROTECTION DRAWINGS
- WALL CAP SIDE DICTATION



ISSUE DATES
 INITIAL ISSUE 12-20-19
 1 Addendum 8 01/21/2020

JOB NO. 18-072 | DWN BL | CKD MW

SEE SHEET C5.0 FOR ALL SEDIMENT AND EROSION CONTROL NOTES AND DETAILS



LEGEND

Ex. Curb	EX CL
Ex. Centerline	EX CL
Ex. Fence	EX FL
Ex. Water Line	EX W
Ex. Fire Line	EX FL
Ex. Irrigation Line	EX IRR
Ex. Storm Drainage Line	EX SD
Ex. Sanitary Sewer Line	EX SS
Ex. Sanitary Sewer Force Main	EX FIM
Ex. Swale Centerline	EX SCL
Ex. Ditch Centerline	EX DCL
Ex. Gas Line	EX G
Ex. Overhead Elect. or Utility Line	EX OHE
Ex. Underground Electrical	EX UGE
Ex. Underground Fiber Optics	EX UGFO
Ex. Underground Telephone	EX UGT

PROPERTY LINE

BUILDING LINE	BL
EASEMENT LINE	EL
BUILDING SETBACK LINE	BSL
LANDSCAPE BUFFER LINE	LBL
LOT LINE	LL
ROW LINE	RL
CURB	CL
CENTERLINE	CL

PROPOSED LIMITS OF CONSTRUCTION

PROP. FENCE LINE	LOC
PROP. LIMITS OF CONSTRUCTION	LOC
PROPOSED TREE PROTECTION	TF
PROPOSED SWALE CENTERLINE	SCL
PROPOSED DITCH CENTERLINE	DCL

PROPOSED UTILITIES

PROP. WATER LINE	W
PROP. FIRE LINE	FL
PROP. IRRIGATION LINE	IRR
PROP. GAS LINE	G
PROP. STORM DRAINAGE LINE	SD
PROP. SANITARY SEWER LINE	SS
PROP. SANITARY SEWER FORCE MAIN	FIM
PROP. OVERHEAD ELECT. OR UTILITY LINE	OHE
PROP. UNDERGROUND ELECTRICAL	UGE
PROP. UNDERGROUND FIBER OPTICS	UGFO
PROP. UNDERGROUND TELEPHONE	UGT

ABBREVIATIONS:

SE - NEW PUBLIC SANITARY SEWER EASEMENT (SEE PLAN FOR WIDTH)
 DE - NEW DRAINAGE EASEMENT (SEE PLAN FOR WIDTH)
 WE - NEW PUBLIC WATER EASEMENT (SEE PLAN FOR WIDTH)
 LA BUFFER - NEW LANDSCAPE BUFFER (SEE PLAN FOR WIDTH AND TYPE)
 FYSB - FRONT YARD SETBACK
 SFSB - SIDE YARD SETBACK
 RYSB - REAR YARD SETBACK
 FFE - FINISHED FLOOR ELEVATION
 TW - FINISH GRADE AT TOP OF RETAINING WALL
 BG - FINISHED GROUND GRADE AT BOTTOM OF RETAINING WALL (GRASS GRADE)
 SDOO / SSSO - STORM DRAINAGE / SANITARY SEWER CLEAN-OUT
 OS - ROOF DOWNSPOUT CONNECTION

SITE INFORMATION:

SITE AREA: 8.8 ACRES
 SITE IS ZONED: R-2
 LAND DISTURBANCE AREA: 0.90± ACRES
 TAX MAP PARCEL #: 188B J 016
 EXST. BUILDING AREA: 11,341± SF
 BUILDING AREA: 16,324± SF (44% INCREASE COMPARED TO PRE)
 BUILDING TYPE: GYMNASIUM

STREET ADDRESS: 3610 DODDS AVENUE
 FRONT YARD SETBACK: 25 FEET
 SIDE YARD SETBACK: 10 FEET
 REAR YARD SETBACK: 25 FEET

SANITARY SEWER AVAILABILITY: EXST. PUBLIC SEWER MAIN LOCATED IN EAST 37TH STREET.
 POTABLE WATER EXST. PUBLIC WATER MAIN LOCATED IN SUPPLY AVAILABILITY: EAST 37TH STREET.

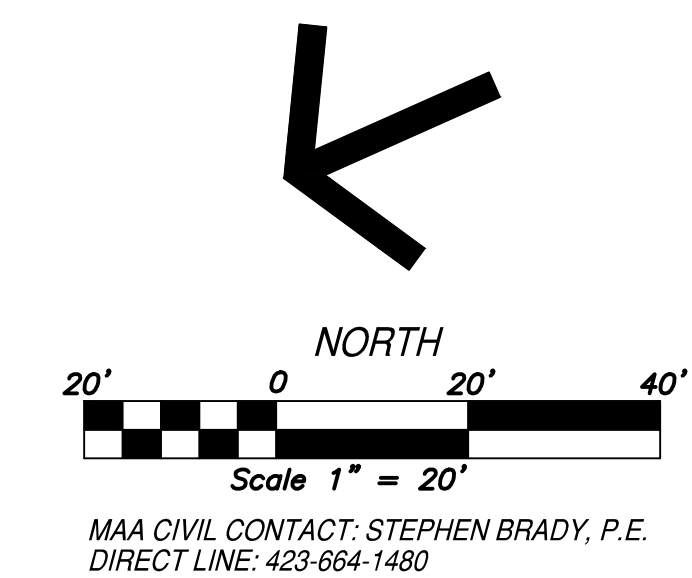
STORM DRAINAGE: STORM DRAINAGE WILL DISCHARGE INTO AN EXISTING CULVERT IN EAST 37TH STREET.

PROPERTY FRONTAGE: 240 LF DODDS AVE = 7 REQUIRED TREES
 340 LF E 37TH ST = 10 REQUIRED TREES
 REQUIRED STREET YARD TREES: 17
 EXISTING STREET YARD TREES: 6
 PROPOSED STREET YARD TREES: 11

REGULAR PARKING SPACES: 23
 REGULAR HCAP SPACES: 0
 VAN ACCESSIBLE HCAP SPACES: 1
 TOTAL PARKING PROVIDED: 24 SPACES

FLOODZONING PORTIONS OF THE PROPERTY ARE LOCATED IN FLOOD ZONE "X" AS SCALED FROM THE FIRM MAP COMMUNITY-PANEL NUMBER 4706SC04570, MAP REVISED 2/3/2016.
 PROPERTY OWNER: CITY OF CHATTANOOGA

NOTE:
 TEMPORARY CONSTRUCTION FENCING TO BE 6' TALL CHAIN-LINK PANEL FENCING WITH WIND-SCREEN, OR APPROVED EQUAL.



East Lake YFD Center Improvements

3610 Dodds Avenue, Chattanooga, TN 37402



ISSUE DATES
 INITIAL ISSUE 12/20/19
 ADDENDUM 8 01/21/20

JOB NO. 18-072 | D'WN SDB | CK'D MH

**Bid Schedule (Revision 1)
Contract Number Y-17-005**

EAST LAKE YOUTH AND FAMILY DEVELOPMENT CENTER SITE IMPROVEMENTS

City of Chattanooga

CONTRACT NUMBER Y-17-005					
Item No.	Description	Estimated Qty.	Unit	Unit Price	Total Price
1	Mobilization	1	LS		
2	Erosion Control (including continued maintenance)	1	LS		
3	Temporary Seeding	1	LS		
4	Removal of Structures, Obstructions, Fence, portion of wall, planters	1	LS		
5	Removal of Existing Asphalt Pavement	1	LS		
6	Removal of Existing Storm Drain Pipe	1	LS		
7	Removal of Existing Storm Drain Structures	1	LS		
8	Removal of Concrete Pavement, Slabs, Sidewalks, Steps, Etc.	1	LS		
9	Tree Protection	1	LS		
10	Controlling and Maintaining Access (Includes Fencing, Barriers, and Gravel for Temporary Paving)	1	LS		
11	Removal and/or Abandonment of Exst. Utilities	1	LS		
12	Clearing and Grubbing	1	LS		
13	Removal and Replacement of Sidewalks on East 37th Street	1	LS		
14	Removal and replacement Dodds/37th Street Pedestrian Guardrail	1	LS		
15	Pavement Cut and Replace of Existing Asphalt	1	LS		
16	Wooden Dumpster Enclosure	1	LS		
17	Site Amenities, Benches, Bike Racks, Bollards	1	LS		
18	Site Grading	1	LS		
19	Site Storm Drainage	1	LS		
20	Site Utilities, Sanitary, Grease, Gas, Domestic Water and Fire, & all associated fees	1	LS		
21	Base Stone for Paving	1	LS		
22	Site Paving, Asphalt	1	LS		
23	Milling and Topping for Parking Lot	1	LS		
24	Curb and Gutter	1	LS		

CONTRACT NUMBER Y-17-005

Item No.	Description	Estimated Qty.	Unit	Unit Price	Total Price
25	Site Lighting (Foundations, Poles, Fixtures, Conduit, Wiring, Etc).	1	LS		
26	Curb Stops	1	LS		
27	Temporary Traffic Control	1	LS		
28	Infiltration Bed and all work associated with Green Infrastructure Installation, including as-built survey, testing, & documentation	1	LS		
29	Site Sidewalks	1	LS		
30	Entrance Paving on E 37th St	1	LS		
31	Concrete Paving	1	LS		
32	Parking Lot and Entry Drive Paint and Thermoplastic Striping and Signs	1	LS		
33	Landscaping, including trees	1	LS		
34	Concrete Steps	1	LS		
35	Curb Ramps	1	LS		
36	Environmental Consultant for Classification of Special Waste	1	LS		
37	Excavate special waste to be buried elsewhere on site and capped with 24" of clean soils or under pavements	400	cy		
38	Excavate special waste to be disposed of legally offsite	100	cy		
39	Undercutting, including offsite disposal	1,200	cy		
40	Haul in of approved structural fill to replace undercut	1,200	cy		

Y-17-005 TOTAL SITE BID \$ _____