



COUNTY OF UNION

DEPARTMENT OF ENGINEERING, PUBLIC WORKS & FACILITIES MANAGEMENT
Joseph J. Policay, Jr., CPWM, Acting Director

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COUNTY COMMISSIONERS**

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Clerk of the Board

RICARDO S. MATIAS
PE, CME, CFM
County Engineer
Director, Division of Engineering

MEMORANDUM

TO: All Potential Bidders

FROM: Ricardo S. Matias, PE, CME, CFM, 
County Engineer
Director / Division of Engineering

DATE: January 30, 2024

RE: **ADDENDUM NUMBER 1**
Ash Brook Golf Course Clubhouse Improvements,
Township of Scotch Plains,
County of Union, New Jersey
BA# 8-2024;
Union County Engineering Project #2023-009

Attached is Addendum Number 1 dated January 29, 2024 for the above referenced project.

Please be sure to complete and submit the standard "Acknowledgement of Addendum" form included in the original bid specifications and submit it with the bid.

DIVISION OF ENGINEERING



ADDENDUM NUMBER ONE

for

Repairs and Alterations at the Clubhouse

For the

Ash Brook Golf Course

for the

County of Union

USA Project No. 2023-038

Dated: 01-29-2024

USA ARCHITECTS, PLANNERS AND INTERIOR DESIGNERS, LTD

20 N. Doughty Avenue
Somerville, NJ 08876

1 S. 3rd Street,
Alpha Building, Seventh Fl
Easton, PA 18042

This Addendum is issued for the purpose of amending certain requirements of the Bidding Documents and is hereby made an integral part of the Contract Documents for this project. Statements made herein shall amend, supersede, and take precedence over any conflicting and contrary information contained in previously issued documents including previously issued addenda, if any. Bidders shall acknowledge receipt of this addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

CHANGES TO PRIOR ADDENDA:

None

CHANGES TO PROCUREMENT AND CONTRACTING REQUIREMENTS (DIVISION 00):

None

CHANGES TO CONDITIONS OF THE CONTRACT:

Item 01: Delete Bid Form and **Replace** with attached Bid Form.

CHANGES TO GENERAL REQUIREMENTS (DIVISION 01):

Item 02: Delete 01 21 00, Allowance article K.1 and **Replace** with the below.

Allowance No. 1: Contingency Allowance: Contractor shall include the lump sum of Four Hundred Fifty Thousand Dollars (450,000.00) in their bid to cover changes as directed by the Owner.

Item 03: Delete 01 22 00, Unit Price in its entirety.

CHANGES TO SPECIFICATIONS:

None

CHANGES TO DRAWINGS:

Item 02: Delete detail F5/2.0 and **Replace** with the attached sketch F5/2.0.

CONTRACTOR QUESTIONS

Q1: Please provide specifications or a manufacturer & model # for the Privacy Screen.

A1: All privacy screen requirements are listed on drawing A-200.

Q2: Please provide an Elevation Detail for Section 03345 Glass-Fiber Reinforced Precast Panels. None of the views are scaled.

A2: An elevation detail/ sample can be found on detail 4/ A-620. Vertical dimensions are shown on detail 2/ A-620. Overall length of material shall be verified in the field.

Q3: Please provide a summary of the changes that were made to the plans & specs.

A3: All bids from the previous bid solicitation for this project, BA# 33-203, were rejected. This new bid solicitation, BA# 8-2024, has the following additions and/ or modifications made to the previous bid package.

A PLA Agreement was added to the documents. Detail 2/ M-101 has camera worked for the underground sanitary line added to the scope of work. All other work remains the same as the previous bid.

However, it is the responsibility of the bidder to review the current bid solicitation package in its entirety and not rely on the information from the previous bid solicitation or items indicated above to formulate their bid proposal.

ATTACHMENTS:

Pre-Bid Sign in Sheet, January 26, 2024
Pre-Bid Meeting Minutes, January 26, 2024
Bid Form
Sketch F5/ S2.0

END OF ADDENDUM NUMBER ONE

Pre-Bid Meeting - Sign In Sheet

#	Name	Firm	Telephone	E-mail address
1	Robert Duchers	CAPC LLC	973 376 6116	bob@grafasas.net
2	Samuel Duchers	Senco Metals	973-342-1742	Bob Cliff@sencometals.com
3	Phillip Filipowski	Senco Metals	---	---
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Meeting minutes

Meeting 2: Pre-Bid Meeting

**Date:** Jan 26, 2024**Time:** 11:00 AM - 12:00 PM EST**Meeting location:**Ash Brook Golf Course, 1210
Raritan Road, Scotch Plains NJ**Invitees & Attendance****Organizers** Eric Chait (MAST Construction Services, Inc.)**Description**

Pre-bid meeting and walkthrough for prospective general contractors.

Meeting Discussion**Introductions**

1. The Project Team was introduced, including members from the County of Union (Owner), Kemper Sports (Operator), USA Architects (Designer), and MAST Construction Services (Construction Manager).

Open

Created on Sep 27, 2023 by Eric Chait **Last updated on** Sep 27, 2023 by Eric Chait

Scope of Work, Logistics & Coordination**1. Exterior Renovations**

Open

- Exterior renovations include but are not limited to:
 - Selective demolition
 - Curbs and pavers at flagpoles
 - Decorative metal sculptures at driveway island
 - Fencing at dumpster area
 - Hardscape drainage improvements
 - Retaining walls
 - Metal ceiling and light fixtures outside cart barn
 - Brick shelf and stone veneer
 - Staircases
 - Terrace work including tile, steel support, and drainage improvements

Created on Sep 27, 2023 by Eric Chait **Last updated on** Jan 29, 2024 by Eric Chait

2. Interior Renovations

 Open

- Interior renovations include but are not limited to:
 - Sliding glass doors
 - Ceiling fans
 - New hallway to lower level rest rooms
 - Sewer line investigation
 - Column covers
 - Leveling floor boxes
 - Water damage remediation

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Jan 29, 2024 by Eric Chait

3. Occupied / Operational Facility

 Open

- It was noted that the facility will remain open for golf operations throughout construction activities.
- Restaurant events will not be scheduled for the anticipated duration of the project.

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Jan 29, 2024 by Eric Chait

4. Site Logistics & Cart Barn Access

 Open

- Golf operations must remain unimpeded through construction activities.
- There are two entrances to the cart barn under the terrace, at least one of which must be fully accessible to facility staff before and after normal construction project work hours every day.
 - All safety barriers and partitions put in place during the day must be removed by the close of business to allow for cart barn access via at least one door.
 - Advance coordination of any construction activities in the area of the cart barn must be performed with the golf staff in advance via the Construction Manager.
- There is a Site Logistics Plan (Temporary Facilities 015000) and a Project Narrative (Summary 011000) included in the Bid Package, both of which must be adhered to fully.
 - Alternatives may be considered if necessary, but must be proposed via the Construction Manager for approval by the Owner and the Operator.
 - The Contractor must provide portajohns in the Laydown Area outlined in the Site Logistics Plan.
 - There will be no access for contractors to the facility's rest rooms.
 - Temporary electrical power for the Contractor's trailer and and machinery/ equipment needed in the Laydown Area must be arranged via the local utility by the Contractor.
 - There is an existing water line in the Laydown Area as shown on the Site Logistics Plan.

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Jan 29, 2024 by Eric Chait

Bid Documents, Process & Timeline

1. Plans and Specifications

 Open

- All Bid Documents are available via download from the Union County website, or at the Union County Division of Engineering (2325 South Avenue, Scotch Plains NJ 07076) as outlined in the Notice to Bidders.

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Sep 29, 2023 by Eric Chait

2. Additional Site Walkthrough (if needed)

 Open


- An additional site walk-through can be held prior to bid due date for potential subcontractors, etc.
 - Contact the Construction Manager (MAST) to arrange.
 - There is no access to the facility for contractors otherwise.

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Jan 29, 2024 by Eric Chait

3. Allowances

 Open

- There are two allowances on the project:
 - Construction Contingency: \$350,000.00 (subsequently increased via Addendum #1 to \$450,000)
 - To use at the Owner's discretion only.
 - Testing & Inspections: \$50,000.00
 - For third party inspections of steel, concrete, and grout.
 - The contractor will obtain multiple bids for third party inspection services and submit to the Owner via the Construction Manager for selection and approval.

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Jan 29, 2024 by Eric Chait

4. Requests for Information (RFI's)

 Open

- The Bidding RFI deadline was 1/25/2024.

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Jan 29, 2024 by Eric Chait

5. Addenda

 Open

- The last day for the issuance of Addenda by the Architect is 1/30/2024.

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Jan 29, 2024 by Eric Chait

6. Bid Due Date

 Open

- Bids are due no later than 10:30AM on 2/8/2024 at the Union County Administration Building, 10 Elizabethtown Plaza, 3rd Floor Conference Room, Elizabeth NJ 07207.

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Jan 29, 2024 by Eric Chait

Schedule

1. Notice to Proceed

 Open


- It is anticipated that the Notice to Proceed will be issued to the awarded contractor in March 2024

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Jan 29, 2024 by Eric Chait

2. Substantial Completion

 Open


- Substantial Completion for the project will be 211 calendar days from the date of the Notice to Proceed.

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Sep 27, 2023 by Eric Chait

3. Final Completion

 Open

- Final Completion will be 241 calendar days from the date of the Notice to Proceed.

 **Created on** Sep 27, 2023 by Eric Chait **Last updated on** Sep 27, 2023 by Eric Chait

Meeting Summary

This meeting has no summary

BID FORM

I/We have carefully examined the plans, specifications, and advertisement for bid for the

**Ash Brook Golf Course Clubhouse Improvements,
Township of Scotch Plains, County of Union, New Jersey
BA# 8-2024; Union County Engineering Project #2023-009**

that is on file in the Union County Division of Engineering. I/We have inspected the site of the work and will contract to do all the work and furnish all materials mentioned in said plans and specifications. Work will be accomplished in the manner prescribed therein.

LUMP SUM BID:

Written

Figures

BID ALLOWANCES:

A. CONTINGENCY ALLOWANCE: (To be used if and when directed by the County)

Four Hundred and Fifty Thousand Dollars

\$450,000.00

Written

Figures

B. 3RD PARTY TESTING & INSPECTION ALLOWANCE: (To be used for testing)

Fifty Thousand Dollars

\$50,000.00

Written

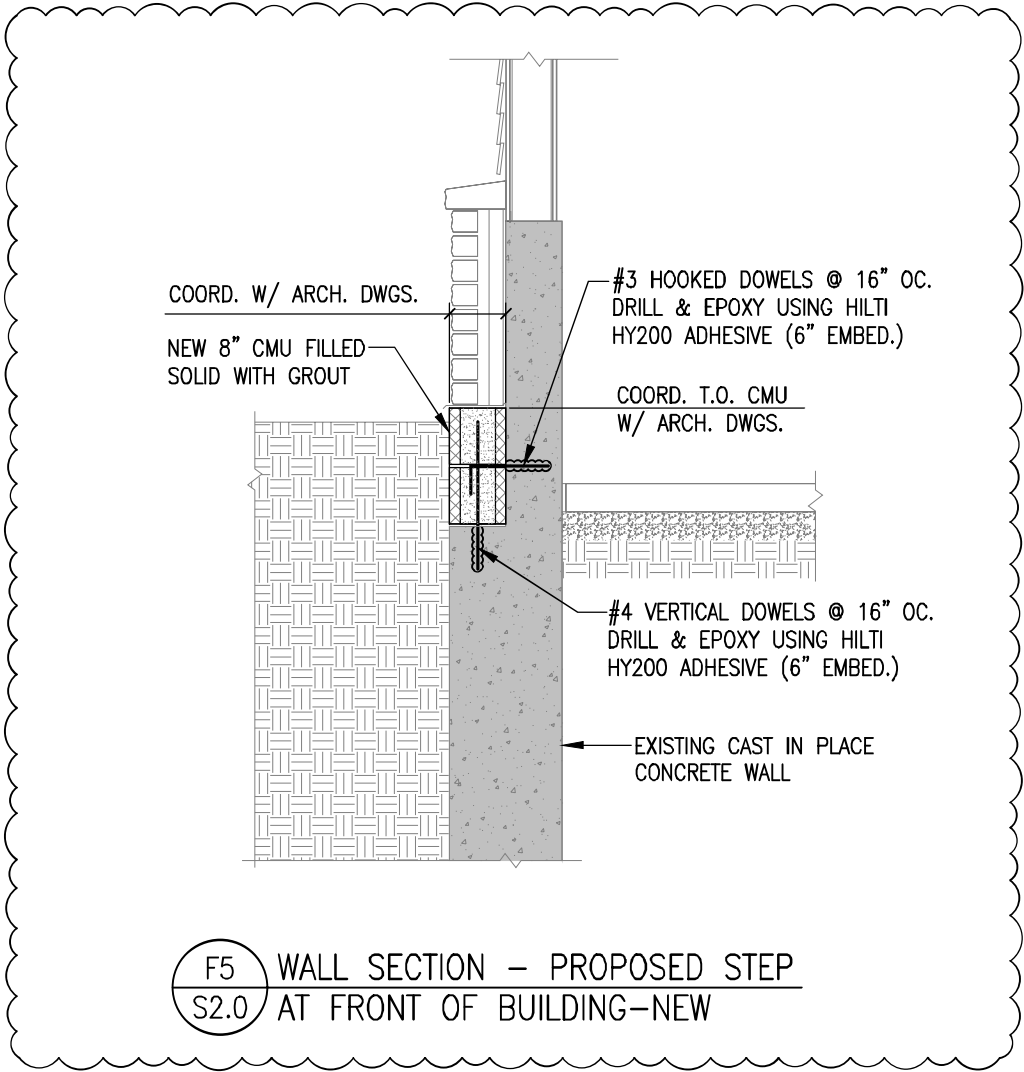
Figures

TOTAL LUMP SUM PLUS BID ALLOWANCE A & B AMOUNTS:

Written

Figures

NOTE: Bid Contingency may include one-half of one percent of contract amount set aside for local training if and when directed by the County.



F5 WALL SECTION - PROPOSED STEP
 S2.0 AT FRONT OF BUILDING-NEW

**SPECIFICATIONS
FOR
Ash Brook Golf Course Clubhouse
Improvements, Township of Scotch Plains,
County of Union, New Jersey**

BA#8-2024; Union County Engineering Project #2023-009

January 2024

**UNION COUNTY
BOARD OF COUNTY COMMISSIONERS**

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Edward T. Oatman

**DEPARTMENT OF ENGINEERING, PUBLIC WORKS AND
FACILITIES MANAGEMENT**
Joseph J. Policay Jr., CPWM
Acting Director, Department of Engineering, Public Works and
Facilities Management

**COUNTY ENGINEER
DIVISION OF ENGINEERING**
Ricardo Matias, PE, CME, CFM

Prepared by:
USA Architects, Planners and Interior Designers, Ltd.
20 North Doughty Avenue
Somerville, New Jersey
(T) 908-722-2300
Andrew P. Adornato, AIA

**COUNTY OF UNION
NOTICE TO BIDDERS**

Sealed bids will be received by the assistant director of the Division of Purchasing, or her designee, at the County of Union, New Jersey on **February 8, 2024 at 10:30 a.m.**, prevailing time, in the **3rd Floor Conference Room**, U.C. Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey for:

**Ash Brook Golf Course Clubhouse Improvements,
Township of Scotch Plains, County of Union, New Jersey
BA# 8-2024; Union County Engineering Project #2023-009**

Bid Packages may be obtained at no charge by registering and downloading at <http://ucnj.org/bid-specs>. Bid Packages may also be obtained in person from the Division of Engineering at 2325 South Avenue, Scotch Plains, New Jersey 07076 between 8:30 a.m. and 4:00 p.m. weekdays upon payment of a non-refundable money order or bank check in the amount of \$275.00 made payable to the County of Union. No Personal / Company checks will be accepted. Requests for mailing of specifications will not be honored. For further information please call 908-789-3675.

The County reserves the right to reject any and all bids and to waive any and all informalities in the bid in accordance with the New Jersey Local Public Contracts Law.

Bidders on this project are required to be pre-classified by the State of NJ, Division of Property Management and Construction (DPMC); #C009 (General Construction/Alterations & Additions), #C029 (Structural Steel & Ornamental Iron Works), #C030 (Plumbing), #C032 (HVAC/R), #C045 (Sprinkler System) and #C047 (Electrical) as well as other documentary requirements in the INSTRUCTION TO BIDDERS found in the bid specification. If the Bidder himself does not have the required classification(s) as stated above, the Bidder must include and identify a subcontractor(s), of any tier, who has the required classification(s) in the List of Subcontractors.

Please note the successful bidder will be required to sign a *PROJECT LABOR AGREEMENT (PLA)* for this project. A form PLA is included in the bid package for your review. Further, take note of all documents referring to the PLA and any action required on same.

A **pre-bid meeting** will be held on January 26, 2024 at 11:00 am. The meeting will be located at the Ashbrook Clubhouse Lobby, 1210 Raritan Road, Scotch Plains, New Jersey. Specific questions regarding the project will be addressed at the pre-bid meeting.

Bids shall be submitted in a sealed envelope and clearly marked with the subject of the bid, name and address of the bidder, phone & fax number, and date of the bid opening. Each bid must be delivered to reach the Division of Purchasing prior to the stated time of the opening of the bids. The County will not be responsible for late delivery by the U.S. Mail or any other carrier. If hand delivered, please note that parking and security access at the County Complex may cause delays and bidders should take them into consideration in order to submit a timely bid. **No late bids will be accepted.**

Bidders are required to comply with the requirements of N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27.

MICHELLE HAGOPIAN, ASSISTANT DIRECTOR OF PURCHASING

***Union County Board of County Commissioners
We're Connected to You!***

NB-1

**Ash Brook Golf Course Clubhouse Improvements,
Township of Scotch Plains, County of Union, New Jersey
BA# 8-2024; Union County Engineering Project #2023-009**

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Revised: 2022.01.12

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INSURANCE AND BONDS AIA DOCUMENT A-101/2017 EXHIBIT A

(Sample form until contract is awarded)

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AIA DOCUMENT A-201/2017

(Sample form until contract is awarded)

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**UNION COUNTY BOARD OF COUNTY COMMISSIONERS
INSTRUCTIONS TO BIDDERS AND FORMS**

DEFINITIONS

Wherever reference is made to the County, Title of Project, Bidder, or Vendor/Contractor they shall be as follows:

OWNER/COUNTY:

Union County Board of County Commissioners
UC Administration Building, 6th Floor
10 Elizabethtown Plaza
Elizabeth, New Jersey 07207

ADDRESS INQUIRIES TO:

Union County Division of Purchasing
UC Administration Building, 3rd Floor
10 Elizabethtown Plaza
Elizabeth, NJ 07207
Attn: Michelle Hagopian, Assistant Director, Division of Purchasing
Telephone: 908-527-4130
Facsimile: 908-558-2548
ucbids@ucnj.org

ADDRESS BIDS AND SUBMIT TO:

Union County Division of Purchasing
UC Administration Building, 3rd Floor
10 Elizabethtown Plaza
Elizabeth, NJ 07207
Attn: Michelle Hagopian, Assistant Director, Division of Purchasing
Telephone: 908-527-4130
Facsimile: 908-558-2548
ucbids@ucnj.org

TITLE OF PROJECT:

Ash Brook Golf Course Clubhouse Improvements,
Township of Scotch Plains, County of Union, New Jersey
BA# 8-2024; Union County Engineering Project #2023-009

BIDDER: Bidder shall be a single overall contract bidder

ARCHITECT:

USA Architects Planners & Interior Designers
20 N Doughty Avenue
Somerville, NJ 08876

COUNTY ENGINEER AND/OR CONSTRUCTION MANAGER (as applicable):

COUNTY ENGINEER:

Ricardo S. Matias, PE, CME, CFM
Union County
Division of Engineering

CONSTRUCTION MANAGER:

MAST Construction Services, Inc.
96 East Main Street
Little Falls, NJ 07424

GENERAL SPECIFICATIONS

1. BID FORM

Bids for this Work will be enclosed in a sealed envelope addressed to the Purchasing Division, County of Union, New Jersey, Union County Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey 07207, with the full name of the Project clearly marked on the outside. Refer to the sheet marked "Notice of Bid (Advertisement)" for the correct name of the Project. Bidders must submit their bids on the attached pricing sheet (Bid Form), in a sealed envelope addressed to the County and bearing on the outside: the name of the Bidder, Bidder's business address, and the title of the Project.

The Division of Purchasing will receive the bids for this Work at the Union County Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey on the date and time noted on the sheet marked "**Notice of Bid (Advertisement)**".

The County will not assume responsibility for bids forwarded by mail. It is the individual's responsibility to see that the bids are presented to the Purchasing Division at the time and at the place designated.

Bids will be accepted only on the Bid Form supplied. Bids on forms other than the original supplied herein will be rejected. The "complete" Bid Documents includes the Bid Bond, Bid Form, Bidder's Checklist, Consent of Surety, Ownership Disclosure Certification, Non-Collusion Affidavit, and any other documents noted in these Instructions to Bidders or Contract Document to be submitted with this Bid.

The bidder will state in the bidding sheet the price per unit of measure for each scheduled Item of Work for which he will agree to carry out the Work, and the Total Bid Price for the construction of the Project.

The prices in the Bid Form shall be typed or written in pen and ink. Erasures or alterations must be initialed by the bidder in ink.

The bidding sheet for this Project may include a fixed amount as a Bid Allowance. If applicable, all bidders are required to add this fixed amount to their base bid and to include this additional amount in their Bid Bond. This sum will be included in the Contract as well as the performance, labor and materials bond. Payment by the County will be made to the Contractor from these funds only upon the completion of extra Work pursuant to a written Change Order(s) signed by the County's Engineer or his designee and the Contractor, prior to the commencement of such Work. Work commenced prior to written approval by the County shall be done at Contactor's risk. Such payment will only be in the amount agreed to by the parties, in writing in the Change Order(s). See Section 37, Change Orders, of these general specifications for further details.

Refer to Bid Document Submission Checklist for all required documents.

In the event there is a discrepancy between the unit price given and the extended total, the unit price will govern. Any discrepancies will be mathematically adjusted.

Insert applicable alternates, if any have been specified, applicable to the Bidder's Work. All alternates MUST be bid upon. Any Bidder's failure to do so will be deemed a material, non-waivable defect and shall render the bid nonresponsive. The Bidder shall clearly designate whether the change in price is an addition or subtraction, by using either a "+" sign or the word "addition", or in the alternative, a "-" sign or the word "minus". If there is no other change in price, the Bidder shall insert "NC" or "No Charge".

When two or more low bids are equal in all respects, awards will be made according to the provisions of N.J.S.A. 40A:11-6.1(d).

Where unit prices have already been established by the Contract Documents, the Bidder agrees that such unit prices shall prevail. All unit prices, whether filled in by the Bidder or established by the Contract Documents, shall become part of the Contract. No bid will be considered or award made, unless applicable unit prices, as required, are filled in.

The County reserves the right to reject any or all bids and also reserves the right to waive any minor informalities or non-material exceptions in the bids.

The County of Union has the right to reject any and all bids from any bidder that is in, or contemplates bankruptcy of any chapter of nature. Said bidder shall notify the County, in writing, of any condition or knowledge of the same.

Conditional bids will not be accepted. Bids may be withdrawn prior to the advertised time for the opening of bids or authorized postponement thereof or in accordance with the provisions of N.J.S.A. 40A:11-23.3 discussed below. Bids received after the advertised time shall not be considered. Bidders shall be solely responsible for premature opening or late delivery of bids not properly marked, addressed, or directed.

2. WITHDRAWAL OF BID DUE TO MISTAKE

N.J.S.A. 40A:11-23.3 authorizes a bidder to request withdrawal of a public works bid due to a mistake on the part of the bidder. A mistake is defined by N.J.S.A. 40A:11-2(42) as a clerical error that is an **unintentional and substantial computational error or an unintentional omission of a substantial quantity of labor, material, or both, from the final bid computation.**

A bidder claiming a mistake under N.J.S.A. 40A:11-23.3 must submit a request for withdrawal, **in writing**, by certified or registered mail to Michele Hagopian, Assistant Director, Division of Purchasing, County of Union, New Jersey, Union County Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey 07207. The bidder must request withdrawal of a bid due to a mistake, as defined by the law, within

five business days after the receipt and opening of the bids. Since the bid withdrawal request shall be effective as of the postmark of the certified or registered mailing, Michele Hagopian, Assistant Director of the Division of Purchasing or his designee may contact all bidders, after bids are opened, to ascertain if any bidders wish to, or already have exercised a request to withdraw their bid pursuant to N.J.S.A. 40A:11-23.3.

A bidder's request to withdraw the bid **shall** contain evidence, including any pertinent documents, demonstrating that a mistake was made. Such documents and relevant written information shall be reviewed and evaluated by the County's designated staff pursuant to the statutory criteria of N.J.S.A. 40A:11-23.3.

The County will not consider any written request for a bid withdrawal for a mistake, as defined by N.J.S.A. 40A:11-2(42), by a bidder in the preparation of a bid proposal unless the postmark of the certified or registered mailing is within the five business days following the opening of bids.

3. QUALIFICATIONS OF BIDDERS AND REQUIRED SUBMISSIONS

The County may make such investigation as it deems necessary to determine the ability of the Bidders to perform the Work, which includes investigation of any and all subcontractors listed with the bid. The Bidder shall furnish any information and data for this purpose as the County may request.

4. INTERPRETATIONS AND ADDENDA

Any explanation desired by a bidder regarding the meaning or interpretation of the Contract Documents must be requested in writing to the Assistant Director, Division of Purchasing at ucbids@ucnj.org with reasonable time allowed for a reply to reach bidders before submission of their bids. Any interpretation or instruction made by the County Engineer will be in the form of an addendum to the Contract Documents or clarification and will be furnished to all prospective bidders. Oral explanations or instructions given before the award of the Contract will not be binding. Bidders are required to bring to the attention of the Assistant Director, Division of Purchasing at ucbids@ucnj.org, the discovery of any apparent ambiguity, inconsistency, error, discrepancy, omission in the Contract Documents for interpretation and correction at least ten (10) working days before opening of bids with the exception of Saturdays, Sundays and holidays.

All Addenda issued through the Office of the Division of Purchasing are amendments to the Contract Documents and shall be considered in preparing bids. Same shall become part of the Contract Documents.

Addenda take precedence over all earlier documents and over each other according to the latest date. Addenda unless themselves interpretive remain subject to interpretation the same as any other document incorporated in the Contract.

Addenda may be issued by the Assistant Director, Division of Purchasing up to seven (7) working days prior to the opening of bids. Failure of any bidder to receive an addendum shall not relieve such bidder from the obligation imposed by such addendum. Bidders are to keep themselves currently acquainted with the Contract Documents during the entire bidding period and make inquiry on their own initiative as to issuance of any Addenda. Receipts of all Addenda shall be acknowledged on the “*Acknowledgement of Receipt of Changes*” included in the bid package and must be submitted with the bid.

5. OBLIGATION OF BIDDER TO INSPECT SITE AND CONTRACT DOCUMENTS

At the time of the opening of bids, each Bidder will be presumed to have inspected the site(s) and to have read, and be thoroughly familiar with the Contract Documents. The failure or neglect of any Bidder to receive or examine any form, instrument, or document shall in no way relieve any Bidder from any obligation in respect to its bid.

The Bidder shall examine the contents of the Project Manual and the set of Drawings and assure itself that all pages of the Specifications, Drawings, and other Contract Documents are included in the documents obtained for bidding purposes. Should the Specifications, Drawings, and other Contract Documents be incomplete, the Bidder shall notify the County Engineer in writing, who will supply the Bidder with any missing pages of Specifications, Drawings, or other Contract Documents. The lack of such written notification by the Bidder will be construed as evidence that the Specifications, Drawings, or other Contract Documents supplied it for bidding purposes are full and complete and as a waiver of any subsequent claim to the contrary.

6. BID AND PERFORMANCE GUARANTEE

Each bidder must furnish a Bid Bond, Certified Check or Bank Cashier’s Check in the amount of ten percent (10%) of the Bid. Checks shall be drawn to the order of the County of Union, New Jersey, not to exceed \$20,000.

Each bidder must furnish with the bid a certificate from a Surety Company, i.e. Consent of Surety, stating that in the event of the contract being awarded to said bidder, such Surety Company will provide the Contractor with bonds guaranteeing the faithful performance of the Work in accordance with the plans and specifications, and the payment for labor, materials, and all other indebtedness which may accrue on the account of this Work. A Performance, Labor and Materials Bond will be furnished by the Contractor upon an award of Contract, and will be in the amount of 100% of the contract price.

A one-year Maintenance Bond will be required upon acceptance of the Project by the County in the amount as stated in Section 15 of the General Specifications. Bonds will be written by a firm authorized to issue the bonds under the laws of the State of New Jersey and be in a form acceptable to the County Counsel.

N.J.S.A. 40A:11-1 et seq. allows the prime Contractor to furnish the Performance Security for his Subcontractors. The County of Union requires Performance Security to be furnished by the prime contractor for the entire job in the total amount of the contract.

The County will return all certified checks or cashier's checks after the proposals have been opened, tabulated and reviewed except those of the three (3) bidders lowest responsible bidders. The County will return the checks of these bidders when a contract is awarded to the successful bidder within ten (10) days after the award of the contract.

If the successful bidder refuses or neglects to sign an agreement and furnish the required bonds, the Bid Bond will be held and used by the County to offset any damages for such refusal or neglect.

7. COMMENCEMENT AND COMPLETION

Work will not commence until a Notice to Proceed is received from the County Engineer.

Upon substantial completion of the Project, the Contractor must request a joint inspection with the County Engineer. Upon completion of this inspection, the County Engineer will prepare a list of incomplete or incorrect items (punch list) and have Contractor initial and date same. The Contractor shall rectify all deficiencies noted on the punch list within 30 calendar days of receipt of the list. The County Engineer may approve extensions for extenuating circumstances.

8. BIDDER AFFIDAVIT

All Bidders are required to complete, sign, and submit with their Bid, the attached "Affidavit Regarding List of Debarred, Suspended or Disqualified Bidders". (See form enclosed)

9. LABOR AND MATERIALS

The prices will cover all costs of any nature incident to and growing out of the Work, including all labor, material, equipment, transportation, loss by damage or destruction of the Project, settlement of damages, and for replacement of defective work or materials. *N.J.S.A. 54:32B-1 et seq.* exempts all materials sold to the County of Union from sales or use taxes and should not be included in the prices provided on the Bidding Sheet.

10. INSURANCE REQUIREMENTS

The County of Union requires all contractors to be able to comply with the following insurance requirements. In the event a bid is accepted by the County, the contractor must accept the applicable insurance requirements, as set forth below, as part of any contract awarded to it by the County.

Contractor shall carry and maintain at all times while the contract is in full force and effect, the following insurance coverage with an insurance company or companies acceptable to the County, with limits not less than those shown below. A Certificate of Insurance shall be filed with the County prior to commencement of any Work indicating the following:

- a) Commercial General Liability (CGL): Coverage for all operations including, but not limited to, contractual, products and completed operations, and personal injury with limits no less than \$5,000,000 per occurrence/\$10,000,000 aggregate. The County of Union, its Board of County Commissioners, officers, employees, agents and servants shall be included as an additional insured. Coverage is provided on a primary and non-contributory basis to the County of Union, et al.
- b) Automobile Liability: Coverage for all owned, non-owned and hired vehicles with limits not less than \$5,000,000 per occurrence, combined single limits (CSL) or its equivalent.
- c) Workers Compensation: As required by the State of New Jersey and Employers Liability with limits not less than \$1,000,000 per accident for bodily injury or disease.
- d) Professional Liability (if design/build): Coverage with limits not less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate
- e) Contractor's Pollution Legal Liability and/or Asbestos Legal Liability and/or Errors & Omissions (if project involves environmental hazards): Coverage with limits no less than \$1,000,000 per occurrence or claim/\$2,000,000 aggregate.
- f) Builders Risk (for major renovations): During the course of construction utilizing an "All Risk" coverage form with limits equal to the completed value of the project and no coinsurance penalty provisions.

Where applicable, a waiver of subrogation in favor of the County of Union, its Board of County Commissioners, officers, employees, agents, servants and the State of New Jersey is to be included in those policies of insurance where permitted by law.

Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the Entity.

Special Risks or Circumstances: The County reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

11. INDEMNIFICATION REQUIREMENTS

The County of Union requires all bidders to accept the following indemnification requirements in the event the County accepts their bid. The Contract awarded by the County to the successful bidder will contain the following provision:

“To the fullest extent permitted by law the Contractor shall indemnify, defend, and hold harmless the owner and the owner’s consultants, agents, representatives, and employees from and against any and all claims, damages, losses, costs, and expenses, including, but not limited to attorneys’ fees, legal costs and legal expenses arising out of or resulting from the performance of the Contractor’s work under this contract, provided that such claim, damage, loss, cost, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) caused or alleged to be caused by the negligent acts, negligent omissions, and/or fault of the Contractor, anyone directly or indirectly employed or retained by the Contractor, or anyone for whose acts the Contractor may be liable regardless of whether caused in part by the negligent act or omission of a party indemnified hereunder provided it is not caused by the sole negligence of a party indemnified hereunder. Contractor shall further indemnify and hold harmless the County and the County’s consultants, agents, representative, and employees from and against any and all claims, damages, losses, costs, and expenses, including, but not limited to attorneys’ fees, legal costs and legal expenses, arising out of or resulting from performance of the work, provided that such claim, damage, loss, cost, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) caused or alleged to be caused by the negligent acts, negligent omissions, and/or fault of the County or the County’s consultants, agents, representatives, or employees and arises out of this project and provided such claim, damage, loss, cost, or expense is not caused by the sole negligence of a party indemnified hereunder.”

12. ROYALTIES AND PATENTS

The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall hold the County harmless from loss on account thereof.

13. PLANS AND SPECIFICATIONS

In carrying out the Work, the plan(s) and the specifications will be followed by the Contractor. Minor alterations in the plan may be made or permitted by the County Engineer from time to time and, if no additional Work is necessary, there will be no additional charge for carrying out such minor alterations.

The Contractor shall provide the County Engineer a set of reproducible as-built drawings upon completion of the Project. The Contractor shall maintain an updated construction progress plan in the Project field office at all times.

When applicable, The New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, as amended, and Supplemental Specifications for State Aid Projects, herein after referred to as the "Standard Specifications", are made a part of these specifications and contract for the improvements, and will govern the construction of this Project, the material used and the execution of this Project, except as revised and modified herein. The references to these specifications are given herein for the purpose of aiding in the rapid location of the description of the various items herein specified. The entire Work must be carried on and completed to the satisfaction of the County. The Standard Specifications are amended as follows:

"Any reference to the Commissioner, Department, Department Laboratory, Engineer or Inspector should be redefined to be the County of Union".

14. GUARANTEE AGAINST DEFECTIVE WORK

Prior to final payment being made or before the release of the performance security required by Section 3 above, the Contractor and Surety shall execute and deliver to the County an original Maintenance Bond with an original signature and seal having a penal sum equal to:

- A) One hundred percent (100%) of the final adjusted Contract amount, if such amount is \$50,000.00 or less;
- B) Fifty percent (50%) of the final adjusted Contract amount, if such amount be greater than \$50,000.00 but less than \$250,000.00; and,
- C) Twenty-five percent (25%) of the final adjusted contract amount, if such amount is \$250,000.00 or more.

The Bond and Surety shall be satisfactory to the Union County Counsel. The Surety shall hold a Certificate of Authorization to do business in the State of New Jersey and shall conform to P.L. 1995 c.384, codified as N.J.S.A. 2A:44-143, 144. The Surety Disclosure Statement and Certification required by N.J.S.A. 2A: 44-143, 144, shall be attached to the Bond. Such Maintenance Bond shall remain in full force and effect for a period of one (1) year from the date of Final Completion. Such Maintenance Bond shall also provide that the Contractor and the Surety guarantee to replace for the said period of one (1) year from the date of Final Completion, all Work performed and/or all materials furnished that were not performed or were not furnished in accordance to the terms and

performance requirements of the Contract Documents, and will make good any defects thereof which become apparent before the expiration of one (1) year. If, during that period, any part of the Project, in the judgment of the Engineer, is found defective, the Contractor will repair or replace same within five (5) days of receipt of notice from the County Engineer. If the Contractor refuses or neglects to do such Work in the time specified, the County Engineer may have the Work done by others and the Contractor or his Surety thereof will pay the cost.

The Contractor will furnish the County a Maintenance Bond for a percentage of the final adjusted contract price, as stated above. The one (1) year period will start the day of Final Completion of Project by the County. Final payment is conditional on the receipt of a maintenance bond in a form acceptable to County Counsel.

15. TRAFFIC AND STREET MAINTENANCE

The Work must be started and performed by the Contractor in such a manner as to minimize delays to the traveling public. It must be completed in a timely fashion, with little or no inconvenience to traffic and pedestrians, where such inconvenience may be avoided.

All municipal, county, and state roadways shall remain open to traffic unless otherwise provided for in the technical specifications.

If modified traffic patterns are authorized in order to provide a safe working or traveling environment, the Contractor is responsible for providing all equipment, barrels, cones, signs, and barricades to implement the work zone and detours, unless otherwise specified in the technical specifications. All work zones and detours shall be established in accordance with the technical plans and specifications if provided or in strict compliance with the current version of the Manual for Uniform Traffic Control Devices (MUTCD). The Contractor shall obtain approval for these work zones and detour plans from the Municipal Police or applicable police agency and the Union County Bureau of Traffic Maintenance prior to implementation.

All traffic control plans shall provide for safe movement of vehicular, bicycle, and pedestrian traffic. Particular attention shall be given to requirements of the Americans with Disabilities Act.

No portion of any street or alleyway may be used for the storage of any materials or equipment without the approval of the Municipal Police or other applicable police agency. Sidewalks, gutters, drains, fire hydrants and private drives shall be maintained for their intended use unless specifically approved by the County Engineer.

Upon suspension of Work, at the end of the day or for protracted periods, the Contractor shall remove all rubbish and materials from the Work site to the approved storage/staging location. All road cuts, saw cuts, and trenches that may pose hazard to

vehicular, pedestrian, or bicycle traffic, to include handicapped users, shall be filled to the surface of the roadway or sidewalk. At no time will steel plates or settled trenches be allowed at the daily suspension of Work, unless specifically approved by the County Engineer.

Use of Traffic Control Officers shall be determined by the County in accordance with the provisions of N.J.S.A. 40A:11-23.1(c). If applicable to the Project, the County shall have provided an allowance for same as set forth in the Bid Form.

With respect to pedestrian traffic, the Contractor shall install signs restricting access of the general public and, as necessary, Union County employees to the area of construction. The Contractor shall provide safe access to required areas and place physical barriers to restricted areas. These barriers may range from caution tape to actual barriers, at the direction of the County Engineer.

16. CONTRACTOR'S EMPLOYEES

The Contractor must employ only suitable and competent labor in the Work, and must remove from the Work any incompetent, unsuitable, or disorderly person upon complaint from the County Engineer.

The parties to any contract resulting from this proposal do hereby agree that the provisions of N.J.S.A. 10:2-1 through 10:2-4 (discrimination in employment on public works contracts): 34:11-56.25 et seq. (payment of prevailing rate of wages determined pursuant to N.J.S.A. 34:11-56.30 by the Commissioner), and the Rules and Regulations promulgated pursuant thereto, are hereby made a part of any contract and are binding upon them.

There will be no discrimination against any employee who is employed in the Work to be covered by any contract resulting from this bid because of age, race, creed, color, national origin, ancestry, marital status or sex.

Any person, firm, or corporation violating the provisions of this Section will be deemed and judged a disorderly person.

17. OWNERSHIP DISCLOSURES REQUIRED

Pursuant to P.L. 2016, c. 43, codified as N.J.S.A. 52:25-24.2, no corporation, partnership, or limited liability company shall be awarded any contract nor shall any agreement be entered into for the performance of any work or the furnishing of any materials or supplies the County unless prior to the receipt of the bid or accompanying the bid, of said corporation, said partnership, or said limited liability company there is submitted a statement setting forth the names and addresses of all stockholders in the corporation who own ten percent (10%) or more of its stock, of any class, or of all individual partners in the partnership who own a ten percent (10%) or greater interest

therein, or of all members in the limited liability company who own a ten percent (10%) or greater interest therein, as the case may be. If one or more such stockholder or partner or member is itself a corporation or partnership or limited liability company, the stockholders holding ten percent (10%) or more of that corporation's stock, or the individual partners owning ten percent (10%) or greater interest in that partnership, or the members owning ten percent (10%) or greater interest in that limited liability company, as the case may be, shall also be listed. The disclosure shall be continued until names and addresses of every non corporate stockholder, and individual partner, and member, exceeding the ten percent (10%) ownership criteria has been listed.

To comply with this section, a bidder with any direct or indirect parent entity which is publicly traded may submit the name and address of each publicly traded entity and the name and address of each person that holds a ten percent (10%) or greater beneficial interest in the publicly traded entity as of the last annual filing with the federal Securities and Exchange Commission ("SEC") or the foreign equivalent, and, if there is any person that holds a ten percent (10%) or greater beneficial interest, also shall submit links to the websites containing the last annual filings with the federal SEC or the foreign equivalent and the relevant page numbers of the filings that contain the information on each person that holds a ten percent (10%) or greater beneficial interest.

(See forms attached)

18. NON-COLLUSION AFFIDAVIT

The Bidder shall submit with its bid either the attached completed "Non-Collusion Affidavit" or a statement of non-collusion with verbiage similar to same.

19. EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCES

The successful bidder shall be required to complete and submit an Initial Project Workforce Report, New Jersey Department of Treasury Form AA-201, upon notification of award. Failure to submit this completed form may result in the Contract being terminated.

The successful bidder shall also be required to submit a copy of its Monthly Project Workforce Report, New Jersey Department of Treasury Form AA-202, to the New Jersey Department of Treasury's Division of Public Contracts Equal Employment Opportunity Compliance and to the Board.

20. COMPLIANCE WITH NEW JERSEY PREVAILING WAGE ACT

The County of Union, in order to fulfill the requirements of N.J.S.A. 34:11-56.25 et seq, requires that the following additional conditions be strictly followed. The bidders represent that he is not listed or is not on record in the Office of the Commissioner or the Department of Labor and Workforce Development as one who failed to pay prevailing

wages in accordance with the provisions of this Act. The bidder agrees to the inclusion of a contract provision upon award which specifically requires said Contractor to fully comply with each and all of the requirements of the aforesaid Act as it relates to prevailing rates of wages on public contracts as set forth in the New Jersey Prevailing Wage Act, P.L. 1963, Chapter 150 and P.L. 1974, Chapter 64.

A Copy of the Prevailing Wage Rates is attached for your reference. Applicable rates are those wages and fringe benefit rates in effect on the date the contract is awarded. All predetermined rate increases listed at the time the contract award must also be paid, beginning on the dates specified. Rates may change between the time of issuance of this determination and the award of the public works contract. Therefore, prior to the award of the contract, verification must be made with the Public Contracts section, to insure that the rates contained in this determination are still prevailing.

The Contractor agrees to abide and be bound by each and all of the said statutory provisions with respect to the payment of prevailing rates of wages, and acknowledges that the County reserves the right to terminate the Contractor's (or his subcontractors') right to proceed with the scope of Work, or such portion thereof that relates to the failure to pay prevailing rates of wages. In such event or under the terms of N.J.S.A. 34:11-56.27, the Contractor and his surety will be liable to the County of Union for any excess costs occasioned by such a violation.

The Contractor or subcontractors for this Project will post the Prevailing Wage Rates for each craft and classification involved as determined by the Commissioner of Labor and Industry, including the effective date of any changes thereof, in prominent and easily accessible places at the site of the Work or at such place or places as are used by them to pay workmen their wages.

The County of Union requires a copy of payroll records from the Contractor and subcontractors. Payroll records shall be submitted with each voucher request for payment. Prevailing wage rates may be obtained from the New Jersey Labor, Division of Workplace Standards, Public Contracts Section, (609-292-2259).

In addition to compliance with the New Jersey Prevailing Wage Act, the County requires compliance with procedures established by Resolution No. 2014-0408 adopted by the Union County Board of County Commissioners on May 8, 2014. The resolution is furnished in Section 56 of these General Specifications.

UNION LABOR IS PREFERRED ON ALL COUNTY WORK AND, WHERE NOTED, SUBJECT TO A PROJECT LABOR AGREEMENT TO BE EXECUTED BY THE CONTRACTOR AND CONSTRUCTION MANAGER PRIOR TO COMMENCEMENT OF THE WORK. FAILURE OF ANY CONTRACTOR TO COMPLY WITH THIS PROVISION CONSTITUTES A DEFAULT, RESULTING IN IMMEDIATE STOPPAGE OF THE WORK. ANY LOSSES OR OTHER DAMAGES INCURRED BY OTHER PARTIES AS

A RESULT OF SAID DEFAULT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

The foregoing reference to specific laws will not be deemed to be a limitation of obligation of the Contractor to perform his obligations in full compliance with the provisions and requirements of all federal and state statutes and local ordinances applicable to the Work to be done under the contract.

It is agreed and understood that any contracts and/or orders placed as a result of this proposal will be governed and construed and the rights and obligations of the parties hereto will be determined in accordance with the laws of the State of New Jersey.

Upon completion of the Work, the Contractor will furnish a Certification of Compliance with the New Jersey Prevailing Wage Act. The certificate in a form acceptable to County Counsel is a condition of the final payment. (See form attached)

21. BRAND NAME OR EQUAL

When the Specifications, Forms, and other Contract Documents use “brand name or equivalent” or similar language, the listed brand name shall serve as a reference or point of comparison for the functional or operational characteristic desired for the goods or services being requested. Where a bidder attempts to submit an equivalent product for a brand name, it shall be the responsibility of the bidder to fully describe and document the product to be provided with the bid in order to establish the equivalence claim.

- A. If the Bidder proposes to offer substitute goods as an equal to those specified herein, the bidder shall so indicate with the Bid Proposal. For the purposes of this paragraph, a proposed item shall be considered equal to goods specified herein if:
 - 1. The County, in its sole discretion, determines that: (i) the goods conform substantially, even with deviations, to the brand name goods specified herein; (ii) the goods are equal to or greater than the brand name goods specified herein in terms of quality, durability, functionality, appearance, strength and design; (iii) the goods are capable, at least as well as the brand name goods specified herein, or performing with existing equipment; and (iv) the goods do not cost the County more than the brand name goods specified herein costs the County.

- B. To offer substitute goods as an equal to those specified herein, it is necessary that:

1. The Bidder submits sufficient information with its bid to permit the County to determine that the goods are equivalent to the brand name goods specified herein, including, but not necessarily limited to the brand, catalog number and specifications/data sheets;
 2. The Bidder fully identifies and describes the variations of the goods from the brand name goods specified herein on a separate sheet that is to be submitted with the bid proposal. Bidder's literature WILL NOT suffice in explaining exceptions to these specifications.
 3. The Bidder certifies that the goods (i) are similar in substance to the brand name goods specified, and (ii) are suited to the same use as the item specified;
- C. The County shall be allowed a reasonable time within which to evaluate the Bidder's proposal to offer substitute goods as an equal to those specified herein. The County shall be the sole judge of acceptability. No "or-equal" goods shall be ordered, delivered, assembled, set-up or utilized until the County's evaluation is complete. The County's determination as to equivalency shall be deemed final and absolute.

In the event the Bidder does not provide sufficient supporting documentation with the bid, it will be presumed and required that the brand name goods and services as described in the specifications will be provided.

22. LINES AND GRADES

Normally, horizontal and vertical control points will be provided in the technical specifications. All other surveying will be the responsibility of the Contractor unless otherwise noted.

23. NUMBER OF WORKING DAYS

In accordance with N.J.S.A. 40A:11-17, the Work for the within Project shall be completed as specified on the Time of Completion Form. See form attached

There shall be taken a deduction from the contract price, or any wages paid by the County, to any inspector(s) necessarily employed by it on the Work, for any number of days in excess of the number allowed in the specifications.

24. PROMPT PAYMENT OF CONSTRUCTION CONTRACTS (NJ Prompt Payment Act)

Pursuant to N.J.S.A. 2A:30A-1 et seq., payment to the Contractor, other than for Work done pursuant to a contact allowance, where applicable, shall be processed and paid as follows:

1. All contractor bills shall be either approved for payment, or notice provided as to why the bill or any portion of it will not be approved by the representative(s) of the governing body no later than the public meeting following 20 calendar days of the billing date as defined in the statute.
2. If the billing is approved, said bill shall be paid in the payment cycle following the meeting.

25. STOPPING WORK ON ACCOUNT OF BAD WEATHER

Work must only be performed in weather suitable for the type of construction planned or underway. Extremes in temperature, humidity, precipitation, evaporation, etc. can detrimentally affect the constructed product. Refer to the Standard and Technical Specifications for specific items.

26. ACCESS FOR OTHER CONTRACTORS

The Contractor for this Work will give proper access to other contractors who may be employed upon the Project and must not hinder or delay unnecessarily any Work that may be progressing under other contracts.

27. CONDEMNED MATERIALS AND WORK

Any materials and or part of the Work that may be condemned by the County Engineer will be removed and replaced by the Contractor or otherwise rectified, as may be directed by the County Engineer. No payment will be made upon the Work until such faulty work has been made good as may be directed. In the event the Contractor refuses or neglects to make good such faulty work, he will be deemed to have abandoned the contract and proceedings may be taken against him as provided herein.

28. STORAGE

In the event that it is necessary for the Contractor to stockpile or store materials or equipment on the job site, the Contractor shall inform the County of such necessity and the County may offer available space, if any, for storage of such materials or equipment. The Contractor shall use said space only for such purpose. Any and all materials which may be stored in such space or which may be brought onto the job site at any time by the Contractor will be at the Contractor's sole risk. The County will not be responsible for loss of or damage to said materials or equipment for any cause whatsoever. The

Contractor shall take necessary measures to protect any such storage area and shall be responsible for any and all damages.

29. FINAL CLEAN UP

Upon completion of the Work, the Contractor will remove all equipment, unused materials, rubbish, etc., and will repair, or replace in an a manner acceptable to the County Engineer, all areas that may have been damaged in the prosecution of the Work. Same shall be a condition precedent to final payment. Should said Contractor fail to comply with this requirement, the County shall undertake the clean-up with its own forces and charge the cost of same against the Contractor's contract balance.

30. SUB-LETTING OF WORK

Except for the List of Subcontractors, pursuant to N.J.S.A. 40A:11-16 (See form attached), no portion of the Work will be sublet by the Contractor to any other entities, except with the consent of the County Engineer. A complete list of subcontractors must be submitted to the County Engineer at the preconstruction meeting. If the job does not warrant a preconstruction meeting, the Contractor must submit such list prior to the start of Work.

All Subcontractors will be subject to N.J.S.A. 34:11-56 et al.

N.J.S.A. 40A:11-16 requires the bidder to list in the bid sheets the name or names of all subcontractors involved in the following types of Work: plumbing and gas fitting and all kindred work, steam and hot water heating, ventilating apparatus, steam power plants and kindred work, electrical work, ornamental iron work, and structural steel. In addition, the County may require the identification of specific additional subcontractors. If these trades are expected to be part of the contract, such subcontractors should be listed on the "Subcontractor Identification Statement List of Subcontractors" and Bidder shall certify same on the accompanying sheet titled "Subcontractor Identification Certification". (See forms attached) **Bidder's failure to submit these two forms shall be considered a material defect and result in rejection of Bidder's bid.** Substitutions of any listed subcontractors pursuant to N.J.S.A. 40A:11-16 will not be permitted except with the consent of the County Engineer.

31. SAFETY

The Contractor shall observe all rules and regulations of the Federal, State, and local health officials. Attention is directed to Federal, State, and local laws, rules, and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions that are unsanitary, hazardous, or dangerous to the worker's health or safety.

The Contractor shall admit to the site, without delay and without the presentation of an inspection warrant, any inspector of OSHA or other legally responsible agency involved in safety and health administration upon presentation of proper credentials.

The Contractor shall make available to the Contractor's employees, subcontractors, the County Engineer, and the public, all information pursuant to OSHA 29 CFR Part 1926.59 of The Hazard Communication Standard 29 CFR 1910.1200, and shall also maintain a file on each job site containing all Material Safety Data Sheets (MSDS) for products in use at the Project. These Material Safety Data Sheets shall be made available to the Engineer upon request.

The Contractor shall at all times conduct the Work to provide for the safety and convenience of the general public and protection of persons and property. The safety provisions of applicable laws, OSHA regulations, building and construction codes, and the rules and regulations of the New Jersey Department of Labor and Workforce Development shall be observed.

32. QUALITY, SAFETY AND PERFORMANCE STANDARDS

All goods and services must be constructed and provided with the highest quality materials and workmanship. It is the intent of these specifications that only equipment equal to, or exceeding, the standard specified will be acceptable in order to protect the safety of the occupants of the Building.

33. MATTERS NOT MENTIONED IN CONTRACT DOCUMENTS

Any Work, material, or method, not specifically described in these specifications, but shown upon the plans of the Work, will be carried out as shown on said plan.

34. PERMITS

The Contractor will obtain all necessary permits required by law and provide the County with necessary approvals prior to commencement of permitted Work.

35. CONTRACTOR TO PROVIDE PROOF OF PAYMENT

Upon the completion of the Work, the Contractor will furnish a General Release as proof that all claims for labor, materials, etc., have been settled by the Contractor. The General Release, in a form acceptable to County Counsel, is a condition of final payment.

36. CHANGE ORDERS

The applicability of change orders and change order procedures shall comply with *N.J.S.A. 40A:11-16.7* and *N.J.A.C. 5:30-11.1 et seq.*, "Change Orders and Open End Contracts".

37. SUPPLEMENTAL WORK

In case any supplemental work is necessary, it will be performed by the Contractor at a price fixed by agreement between the Contractor and the County Engineer and approved by the County as specified in Section 36. The Contractor will do no supplemental work on any character, for which the Contractor will demand pay, except upon the written order of the County.

38. FORM OF CONTRACT

The Contract will be subject to all statutory provisions on the matter of Public Works, Public Contracts, The Law Against Discrimination, the Laws Governing Affirmative Action and Prevailing Rates of Wages under the laws of New Jersey.

The Agreements shall be executed by both parties not later than twenty-one (21) days from the date of the award by the County (Sundays and holidays excluded); however, such time frame may be extended by agreement of the parties.

39. PROGRESS PAYMENTS

Monthly progress payments will be made based on the value of labor and materials incorporated in the Work and of materials suitably stored at the site. An itemized schedule of values shall be submitted with each Application for Payment.

(Refer to the Owner/Contractor Agreement for Retainage and other conditions pertaining to payment and the application of N.J.S.A. 2A:30A-1 et seq.)

All Applications for Payment shall be accompanied by paid invoices for materials incorporated in the Work and for materials suitably stored at the site, and affidavit(s) by Subcontractors whose Work was included in the next to the last application to the effect such Work and such materials have been paid for.

No payment shall be made without Contractor having provided all submittals set forth in this Section, and the approval of same by the County.

For contracts exceeding \$100,000.00, monthly payments will be made on the Work to the extent of 98% of the value of the Work done which is considered to be retainage.

For contracts less than \$100,000.00, monthly payments will be on the Work to the extent of 90% of the value of the Work done. In lieu of the retainage, the Contractor will, at his option, deposit with the County Counsel negotiable bearer bonds of the State of

New Jersey or any political subdivision thereof, equal to the amount otherwise withheld as retainage.

When the Project is completed, the final cost of the Project will be based on actual quantities of authorized Work done under each item scheduled in the bidding sheet and approved Change Orders, if any. The money due to the Contractor as determined by said final certificate after deduction of previous monthly payments on account, will be paid to the Contractor in accordance with the terms of the contract dealing with Prompt Payment, providing, however that before such final payment is made, all outstanding claims against the Contractor must be satisfied. Before final payment is released, the Contractor must furnish: **a)** Maintenance Bond (see Section 6 of these general specifications); **b)** Certification of Compliance, New Jersey Prevailing Wage Act (see Sections 21 and 51); and **c)** General Release (see Section 36) in a form satisfactory to County Counsel; **d)** complete set of as-built plans in the latest AutoCad on compact disc; and **e)** a complete set of in-progress photos in jpg, jpeg, or bmp digital format on a compact disc.

40. INSPECTION

The Work must be done in accordance with the plans and specifications, and will be inspected by the County Engineer. An inspector may be placed upon the Work at any time by the County Engineer to see that the plans, specifications, and instructions of the County Engineer are carried out. In connection herewith, bidders are referred to N.J.S.A. 40A:11-17.

41. DAMAGES

The Contractor will be held responsible for all damages that may occur to Work, or to persons or property by reason of the nature of the Work or from the elements, or by reason of inadequate protection of the Work, or from any carelessness or negligence on his part or on the part of his employees. The County will withhold payments on the Work until all suits or claims for damages sustained on, or by reason of, this Work will have been settled by the Contractor.

The construction and final completion of this Work will be guaranteed by the Contractor. Any damages that may be done to the Work or any part thereof, by the elements or otherwise, during its construction, will be made good by the Contractor.

42. LIQUIDATED DAMAGES

If the Project is not completed within the time specified herein or within such further time as may have been granted by the County Engineer, then the Contractor hereby agrees to pay to the County as liquidated damages, but not as a penalty, \$1,000.00 per day for each and every calendar day that he is in default on time to complete the Work. The said sum will be deducted from moneys due the Contractor and if the damages

exceed this amount, then the Contractor or his Surety Company will pay the excess. These damages may be waived at the option of the County.

43. AFFIRMATIVE ACTION REQUIREMENTS

(REVISED 01/2022)

EXHIBIT B

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE

N.J.S.A. 10:5-31 et seq. (P.L.1975, c.127)

N.J.A.C. 17:27-1.1 et seq.

CONSTRUCTION CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor

union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Dept. of LWD, Construction EEO Monitoring Program, may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B, and C, as long as the Dept. of LWD, Construction EEO Monitoring Program is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Dept. of LWD, Construction EEO Monitoring Program, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. 17:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

(A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

(B) If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:

(1) To notify the public agency compliance officer, the Dept. of LWD, Construction EEO Monitoring Program, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;

(2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;

(3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;

(4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;

(5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and nondiscrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;

(6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:

(i) The contractor or subcontractor shall interview the referred minority or women worker.

(ii) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency,

provided the referral agency is acceptable to the Dept. of LWD, Construction EEO Monitoring Program. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.

(iii) The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Dept. of LWD, Construction EEO Monitoring Program, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.

(iv) If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Dept. of LWD, Construction EEO Monitoring Program.

(7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Dept. of LWD, Construction EEO Monitoring Program and submitted promptly to the Dept. of LWD, Construction EEO Monitoring Program upon request.

(C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade.

Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Dept. of LWD, Construction EEO Monitoring Program an initial project workforce report (Form AA-201) electronically provided to the public agency by the Dept. of LWD, Construction EEO Monitoring Program, through its website, for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Dept. of LWD, Construction EEO Monitoring Program, and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women. (D) The contractor and its subcontractors shall furnish such reports or other documents to the Dept. of LWD, Construction EEO Monitoring Program as may be requested by the Dept. of LWD, Construction EEO Monitoring Program from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Dept. of LWD, Construction EEO Monitoring Program for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq.

44. INVESTMENT ACTIVITIES IN IRAN

Pursuant to N.J.S.A. 52:32-55 et seq., prohibits State and local public contracts with persons or entities engaging in certain investment activities in energy or finance sectors of Iran.

45. COMPLIANCE WITH THE PUBLIC WORKS CONTRACTOR REGISTRATION ACT - (N.J.S.A. 34:11-56.48 et. seq.)

Pursuant to the above-referenced law, Bidders are required to be registered with the New Jersey Department of Labor and Workforce Development and to possess a current certificate by said Department indicating compliance with the Act prior to the time and date that bids are received. Bidders are notified of this requirement of their compliance. Such certificates or applications shall also be provided for each Subcontractor furnishing plumbing and gas fitting, steam and hot water heating and ventilating apparatus, and all kindred work, steam power plants and kindred work, electrical work, structural steel and ornamental iron work, and such other subcontractors as the specifications require relative to prior identification.

46. UTILITIES

Attention of the bidder is directed to the fact that the approximate locations of known utility structures and facilities that may be encountered within and adjacent to the limits of the Work are shown on the plans and described herein. The accuracy and completeness of this information is not guaranteed by the County Engineer and the bidder is advised to ascertain for himself all the facts concerning the location of these and other utilities.

The Contractor will not proceed with his Work until he has made diligent inquiries of all public utility and municipal officials to determine the exact location of all-underground structures and pipes within the site of the Project. The Contractor will notify utility owners not less than ten (10) days in advance of the time he proposes to perform any Work that will endanger or affect their facilities in compliance with **New Jersey One-Call**. In excavating in any part of the Work, care must be taken not to remove or damage any gas, water, sewer, or other pipe, conduit, or structure, - public or private - without the concurrence of the owner and the County Engineer. The Contractor will, at his own expense, shore up, secure and maintain a continuous flow in such structures, and will keep them in repair until final acceptance of the Work.

When pipes or other structures are encountered or when the removal, relocation or protection of these utilities are necessary in carrying out the Project as planned, the Contractor will cooperate with the owner of said utilities and will permit the owners or their agents access to the site of the Work in order to relocate or protect their facilities and not hinder or delay unnecessarily the Work of the owners in moving same. No extra allowance of payment will be made to the Contractor for the use of any materials, equipment, etc., or for the performance of any Work in connection with the moving of said structures unless the Contractor is specifically ordered by the County Engineer to furnish such materials, equipment, or services. If directed by the County Engineer to do any Work or furnish any materials or equipment, payment will be allowed the Contractor in accordance with the unit prices bid for such Work, or, if such items are not scheduled in the proposal, such Work shall be allowed "Supplemental Work" as provided in Section 39 of these general specifications. The corporations, companies, agencies or municipalities owning or controlling the utilities, and the name, and telephone numbers are listed in the beginning of the Technical Specifications.

47. MATERIAL COMPLIANCE AND SHOP DRAWINGS

The Contractor will require the manufacturer or supplier to furnish three (3) copies of Certification of Compliance with each delivery of materials, components and manufactured items for the Project. Two (2) copies will be furnished to the County Engineer; one copy will be retained by the Contractor. Certificates of Compliance will contain the following information:

1. Project to which material is consigned;
2. Name of the Contractor to which the material is supplied;
3. Kind of material supplied;

4. Quantity of material represented by the Certificate;
5. Means of identifying the consignment, such as label marking, seal number, etc.;
6. Date and method of shipment;
7. That the material is in conformity with the pertinent specifications stated in the certificate; and
8. Signature of a person having legal authority to bind the supplier.

The Contractor will submit to the County Engineer for his approval five (5) copies of complete and fully detailed shop or working drawings for those items listed in the beginning of the technical specifications.

Each drawing will identify the name of the job, location and Contractor.

All drawings will be approved in accordance with the standard specifications. Refer to the Technical Specifications for specific items.

All materials or articles used in the Work will be of American manufacture, insofar as same are available, in conformance with N.J.S.A. 40A:11-18.

48. PRECONSTRUCTION

In order to provide full coordination of this Project among the parties concerned, the County Engineer will arrange for a preconstruction meeting between the Contractor, County Engineer and other interested parties as soon as possible after the contract is executed. At this meeting the Contractor will present his proposed schedule of Work which shall be subject to review and approval of the County through its designated representatives.

49. DISPUTES UNDER THE CONTRACT

A dispute arising under the Contract shall be submitted in writing to the County Engineer with all facts and supporting data. The County Engineer will review the dispute and issue his decision or request additional facts or documentation after which he will render his decision.

In the event the dispute is not then resolved, the matter shall, pursuant to law, be submitted to mediation before being submitted to a court of competent jurisdiction venued in Union County.

The County Engineer will notify the County Counsel when a matter is to be submitted to mediation. The County Counsel will communicate with the parties and inform them of the procedures to be followed in making such a submission.

50. CONTRACTOR BUSINESS REGISTRATION CERTIFICATE

Pursuant to N.J.S.A. 52:32-44, the County of Union is prohibited from entering into a contract with an entity unless the bidder/proposer/contractor, and each subcontractor that is required by law to be named in a bid/proposal/contract has a valid Business Registration Certificate on file with the Division of Revenue and Enterprise Services within the Department of the Treasury.

Prior to contract award or authorization, the contractor shall provide the County of Union with its proof of business registration and that of any named subcontractor(s).

Subcontractors named in a bid or other proposal shall provide proof of business registration to the bidder, who in turn, shall provide it to the County of Union prior to the time a contract, purchase order, or other contracting document is awarded or authorized.

Proof of registration must show that the bidder was in fact registered with the State of New Jersey Department of the Treasury, Division of Revenue and obtained the business registration prior to the receipt of bids. If subcontractors are named on the bid, proof of the business registration for each must be provided prior to the award of a contract. Similarly, to the bidder, the proof must show that each subcontractor was registered with the State of New Jersey Department of the Treasury, Division of Revenue and obtained the business registration prior to the receipt of bids.

During the course of contract performance:

- 1) the contractor shall not enter into a contract with a subcontractor unless the subcontractor first provides the contractor with a valid proof of business registration.
- 2) the contractor shall maintain and submit to the County of Union a list of subcontractors and their addresses that may be updated from time to time.
- 3) the contractor and any subcontractor providing goods or performing services under the contract, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into the State. Any questions in this regard can be directed to the Division of Taxation at (609)292-6400. Form NJ-REG can be filed online at <http://www.state.nj.us/treasury/revenue/busregcert.shtml>.

Before final payment is made under the contract, the contractor shall submit to the County of Union a complete and accurate list of all subcontractors used and their addresses.

Pursuant to N.J.S.A. 54:49-4.1, a business organization that fails to provide a copy of a business registration as required, or that provides false business registration information,

shall be liable for a penalty of \$25 for each day of violation, not to exceed \$50,000, for each proof of business registration not properly provided under a contract with a contracting agency.

51. PROJECT LABOR AGREEMENT (To be signed where the overall project cost exceeds \$5 Million, irrespective of Phasing)

An Executive Order of Governor James E. McGreevey dated January 17, 2002, requires the use of a Project Labor Agreement in public construction contracts. This Executive Order was codified as N.J.S.A. 52:38-1 et seq. as a result of P.L. 2002, Chapter 44. Contractor must be prepared to abide by the terms of the within Project Labor Agreement, including obtaining the necessary and applicable Letters of Assent from subcontractors (of any tier). Through said Letters of Assent the subcontractors (of any tier) also must be prepared to abide by the terms of the Project Labor Agreement.

Contractor's failure to enter into this Project Labor Agreement shall result in the County's valid refusal to enter into a contract, for the performance of the Work with Contractor and shall constitute a default under the Contract. In addition, Contractor will be required to submit the completed Letters of Assent to the County with the executed Project Labor Agreement. The Project Labor Agreement is to be executed only where the total Project cost is \$5 Million or more, irrespective of Phasing.

PROJECT LABOR AGREEMENT

ARTICLE 1 - PREAMBLE

WHEREAS, as the General Contractor and the Project Management Firm, on behalf of themselves, and reflecting the objectives of the County of Union as Owner, desire to provide for the efficient, safe, quality, and timely completion of (the "Project"), in a manner designed to afford lower reasonable costs to the County of Union, (hereinafter referred to as the "County" or "Owner"), and the public it represents, and the advancement of public policy objectives;

WHEREAS, this Project Labor Agreement will foster the achievement of these goals, inter alia by:

- (1) ensuring a reliable source of skilled and experienced labor;
- (2) standardizing the terms and conditions governing the employment of labor on the Project;
- (3) permitting wide flexibility in work scheduling and shift hours and times from those which otherwise might obtain;
- (4) receiving negotiated adjustments as to work rules and staffing requirements from

those which otherwise might obtain;

- (5) providing comprehensive and standardized mechanisms for the settlement of work disputes, including those relating to jurisdiction;
- (6) avoiding the costly delays of potential strikes, slowdowns, walkouts, picketing and other disruptions arising from work disputes, and promote labor harmony and peace for the duration of the Project.
- (7) furthering public policy objectives as to improved employment opportunities for minorities, women, and the economically disadvantaged in the construction industry and expediting the construction process; and

WHEREAS, the signatory Unions desire the stability, security and work opportunities afforded by a Project Labor Agreement; and

WHEREAS, the Parties desire to maximize Project safety conditions for both workers and the public.

NOW, THEREFORE, the Parties enter into this Agreement:

SECTION 1. PARTIES TO THE AGREEMENT

This is a Project Labor Agreement (this "Agreement") entered into by and between (the "GC" or "General Contractor") and (the "PMF" or "Project Management Firm"), and their successors and assigns, for the Project's construction work to be performed on the property of the County in the State of New Jersey and by the Union County Building and Construction Trades Council, AFL-CIO, on behalf of itself and its affiliates and members, and the signatory Local Unions on behalf of themselves and their members.

ARTICLE 2 - GENERAL CONDITIONS

SECTION 1. DEFINITIONS

Throughout this Agreement, the Union party and the Building Trades Council are referred to singularly and collectively as "the Union(s)" where specific reference is made to "Local Unions" that phrase is sometimes used; the term "Contractor(s)" shall include the General Contractor ("GC"), Project Management Firm ("PMF"), and all signatory contractors, and their subcontractors of whatever tier, engaged in on-site Project construction work within the scope of this Agreement as defined in Article 3; the County of Union is referenced as "Owner"; the Union County Building and Construction Trades Council, AFL-CIO is referenced as the "BTC", and the work covered by this Agreement (as defined in Article 3) is referred to as the "Project".

SECTION 2. CONDITIONS FOR AGREEMENT TO BECOME EFFECTIVE

This Agreement shall not become effective unless executed by the BTC and the GC and/or PMF and will remain in effect until the final completion of the Project.

SECTION 3. ENTITIES BOUND & ADMINISTRATION OF AGREEMENT

This Agreement shall be binding on all signatory Unions and the General Contractor and the Project Management Firm and all signatory Contractors performing on-site Project work, including site preparation and staging areas, as defined in Article 3. The Contractors shall include in any subcontract that they let, for performance during the term of this Agreement, a requirement that their subcontractors, of whatever tier, become signatory and bound by this Agreement with respect to subcontracted work performed within the scope of Article 3 and execute the Letter of Assent attached as Schedule B. This Agreement shall be administered by the GC and/or PMF on behalf of all Contractors.

SECTION 4. SUPREMACY CLAUSE

This Agreement, together with the local Collective Bargaining Agreements appended hereto as Schedule A represents the complete understanding of all signatories and supersedes any national agreement, local agreement or other collective bargaining agreement of any type which would otherwise apply to this Project, in whole or in part, except for all work performed under the NTD Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, all instrument calibration work and loop checking shall be performed under the terms of the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, and the National Agreement of the International Union of Elevator Constructors, with the exception of Article 7, 9, and 10 of this Agreement, which shall apply to such work. Where a subject covered by the provisions, explicit or implicit, of this Agreement is also covered by a Schedule A, the provisions of this Agreement shall prevail. It is further understood that neither the GC nor any Contractor shall be required to sign any other trade agreement as a condition of performing work on this Project. No practice, understanding or agreement between a Contractor and Local Union, which is not explicitly set forth in this Agreement, shall be binding on this Project unless endorsed in writing by the GC.

SECTION 5. LIABILITY

The liability of any Contractor and the liability of any Union under this Agreement shall be several and not joint. The GC and/or PMF and any Contractor shall not be liable for any violations of this Agreement by any other Contractor and the BTC and Local Unions shall not be liable for any violations of this Agreement by any other Union.

SECTION 6. THE GENERAL CONTRACTOR OR PROJECT MANAGEMENT FIRM

The GC and PMF shall require in its bid specifications for all work within the scope of

Article 3 that all successful bidders, and their subcontractors of whatever tier, become bound by, and signatory to, this Agreement. The County is not a party to and shall not be liable in any manner under this Agreement. It is understood that nothing in this Agreement shall be construed as limiting the sole discretion of the County in determining which Contractors shall be awarded contracts for Project work. It is further understood that the County has sole discretion at any time to terminate, delay, or suspend the work, in whole or part, on this Project.

SECTION 7. AVAILABILITY AND APPLICABILITY TO ALL SUCCESSFUL BIDDERS

The Unions agree that this Agreement will be made available to, and will fully apply to any successful bidder for Project work who becomes signatory thereto, without regard to whether that successful bidder performs work at other sites on either a union or non-union basis and without regard to whether employees of such successful bidder are, or are not, members of any unions. This Agreement shall not apply to the work of any Contractor or GC or PMF, which is performed at any location other than the Project site, as defined in Article 3, Section 1.

ARTICLE 3 - SCOPE OF THE AGREEMENT

The Project work covered by this Agreement shall be as defined and limited by the following sections of this Article.

SECTION 1: THE WORK

This Agreement shall apply to all on-site public construction work, including site preparation, demolition and hazardous waste remediation, for the Owner performed on the Project. The scope of work is confined to the on-site Project work contained in the scope of the final construction contract of the General Contractor and/or PMF awarded work on the Project.

SECTION 2. EXCLUDED EMPLOYEES

The following persons are not subject to the provisions of this Agreement, even though performing work on the Project:

A. Superintendents, supervisors (excluding superintendents and general supervisors and forepersons specifically covered by a craft's Schedule A), engineers, inspectors and testers (excluding divers specifically covered by a craft's Schedule A), quality control/assurance personnel, timekeepers, mail carriers, clerks, office workers, messengers, guards, non-manual employees, and all professional, engineering, administrative and management persons;

B. Employees of Owner or any State agency, authority or entity or employees of any municipality or other public employer;

C. Employees and entities engaged in off-site manufacture, modifications, repair, maintenance, assembly, painting, handling or fabrication of project components, materials, equipment or machinery, unless such offsite operations are covered by the New Jersey Prevailing Wage Act (for example, by being dedicated exclusively to the performance of the public works contract or building project and are adjacent to the site of work), or involved in deliveries to and from the Project site, excepting local deliveries of all major construction materials including fill, ready mix concrete and cement, asphalt and other items which are covered by this Agreement. Provided, however, local deliveries of ready mix, concrete, cement and asphalt shall not be contracted except to a subcontractor who pays wages and benefits not less than the economic equivalent of the wages and benefits set forth in Exhibit A.

D. Employees of the GC and/or PMF, excepting those performing manual, on-site construction labor who will be covered by this Agreement;

E. Employees engaged in on-site equipment warranty.

F. Employees engaged in geophysical testing (whether land or water) other than boring for core samples;

G. Employees engaged in laboratory or specialty testing or inspections;

H. Employees engaged in ancillary Project work performed by third parties such as electric utilities, gas utilities, telephone utility companies, and railroads.

SECTION 3. NON-APPLICATION TO CERTAIN ENTITIES

This Agreement shall not apply to the parents, affiliates, subsidiaries, or other joint or sole ventures of any Contractor or of GC and/or PMF, which do not perform work at this Project. It is agreed, for the purposes of this Agreement only, that this Agreement does not have the effect of creating any joint employment, single employer or alter ego status among the Owner, the GC and/or PMF and/or any Contractor. The Agreement shall further not apply to the Owner or any other state or county agency, authority, or other municipal or public entity and nothing contained herein shall be construed to prohibit or

restrict the Owner or its employees of any other state authority, agency or entity and its employees from performing on or off-site work related to the Project. As the contracts which comprise the Project work are completed and accepted, the Agreement shall not have further force or effect on such items or areas except where inspections, additions, repairs, modifications, check-out and/or warranty work are assigned in writing (copy to Local Union involved) by the General Contractor and/or Project Management Firm for performance under the terms of this Agreement.

ARTICLE 4 - UNION RECOGNITION AND EMPLOYMENT

SECTION 1. PRE-HIRE RECOGNITION

The Contractors recognize the signatory Unions as the sole and exclusive bargaining representatives of all craft employees who are performing on-site Project work within the scope of this Agreement as defined in Article 3.

SECTION 2. UNION REFERRAL

A. The Contractors agree to hire Project, craft employees covered by this Agreement through the job referral systems and hiring halls (where the referrals meet the qualifications set forth in items 1,2, and 4 subparagraph B) established in the Local Unions' area collective bargaining agreements (attached as Schedule A to this Agreement), subject to the goals of any applicable local ordinances or agreements pertaining to hiring and apprenticeship goals for minorities, women, residents of disadvantaged communities, and local residents. Notwithstanding this, the Contractors shall have sole rights to determine the competency of all referrals; the number of employees required (except with regard to pile driving and cranes); the selection of employees to be laid-off (subject to the applicable procedures in Schedule A for permanent and/or temporary layoffs and except as provided in Article 5, Section 3); and the sole right to reject any applicant referred by a Local Union, subject to the show-up payments required in the applicable Schedule A. In the event that a Local Union is unable to fill any request for qualified employees within a 48-hour period after such requisition is made by the Contractor (Saturdays, Sundays, and holidays excepted), the Contractor may employ qualified applicants from another competent source. In the event that the Local Union does not have a job referral system, the Contractor shall give the Local Union first preference to refer applicants, subject to the other provisions of this Article. The Contractor shall notify the Local Union of the Project, craft employees hired within its jurisdiction from any source other than referral by the Union.

B. A Contractor may request by name, and the Local will honor, referral of persons who have applied to the Local for Project work and who meet the following qualifications as determined by a Committee of 3 designated, respectively, by the applicable Local Union, the GC and/or PMF and a mutually selected third party or, in the absence of

agreement, the permanent arbitrator (or designee) designated in Article 7:

- (1) possess any license required by New Jersey law for the Project work to be performed;
- (2) have worked a total of at least 1000 hours in the Construction craft during the prior 3 years;
- (3) were on the Contractor's active payroll for at least 60 out of the 180 calendar days prior to the contract award;
- (4) have demonstrated ability to safely perform the basic function of the applicable trade.

Following the employment of the first employee in each craft under Schedule A or the procedure set forth above in paragraph A, no more than twelve (12%) per centum of the employees covered by this Agreement, per Contractor by craft, shall be hired through the special provisions above which, consistent with N.J.S.A. 52:38-4, permit contractors and subcontractors working on the public works project to retain a percentage of their current workforce (any fraction shall be rounded to the next highest whole number).

C. A certified MBE/WBE contractor may request from the Workforce Coordinator, through the GC and/or PMF, an exception to, and waiver of, the above per centum limitation upon the number of its employees to be hired through the special provision of Section 2.B above. This exception is based upon hardship and demonstration by the contractor that the Project work would be the contractor's only job and that it would be obliged to lay off qualified minority and female employees in its current workforce moving from the last job. The exception and waiver are also conditioned upon the employees meeting the qualifications as set forth in Section 2.B above.

SECTION 3. NON-DISCRIMINATION IN REFERRALS

The Unions represent that their hiring halls and referral systems will be operated in a non-discriminatory manner and in full compliance with all applicable federal, state and local laws and regulations, which require equal employment opportunities. Referrals shall not be affected in any way by the rules, regulations, bylaws, constitutional provisions or any other aspects or obligations of union membership, policies or requirements and shall be subject to such other conditions as are established in this Article. No employment applicant shall be discriminated against by any referral system or hiring hall because of the applicant's union membership, or lack thereof.

SECTION 4. WORKFORCE DIVERSITY

To the extent applicable, the parties hereby agree that each will implement and abide by the requirements of the Owner with regard to workforce diversity. Furthermore, General Contractor, Contractors and the Unions will comply with such affirmative action plan, including but not limited to: (1) the parties will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, sex or any other protected category used by government regulation; (2) the parties will endeavor to include in any solicitations or advertisements for employees or subcontractors, a notice that all qualified applicants will receive consideration for employment, and contractors and subcontractors for work, without regard to age, race, creed, color, national origin, ancestry, marital status, sex or any other protected category used by government regulation; and (3) the parties agree to utilize the best efforts to ensure that minority business enterprises and women-owned business enterprises shall have the maximum practicable opportunity to provide Construction Work under this Agreement.

The Local Unions agree and support the importance the Owner places on having and maintaining a diverse workforce. The Unions agree to refer any and all Union County resident journeymen and apprentices who are registered on the Out-of-Work list of the local union referral systems at the time of a contractor's request. The Local Unions will cooperate with Contractor requests for residents of Union County, residents of disadvantaged communities, minority or women referrals to meet the requirements of the Owner.

In the event a Union either fails, or is unable, to refer qualified minority or female applicants in percentages equaling Project affirmative action goals as set forth in the Owners bid specifications, the Contractor may employ qualified minority or female applicants from any other available source as Apprentice Equivalent. Apprentice Equivalent will have completed a DOL approved training program, applied to take a construction Apprenticeship test, and will be paid at not less than the applicable equivalent Apprentice rate. With the approval of the Local Administrative Committee ("LAC"), experience in construction related areas may be accepted as meeting the above requirements.

SECTION 5. CROSS AND QUALIFIED REFERRALS

The Unions shall not knowingly refer to a Contractor an employee then employed by another Contractor working under this Agreement. The Local Unions will exert their utmost efforts to recruit sufficient numbers of skilled and qualified craft employees to fulfill the requirements of the Contractor.

SECTION 6. UNION DUES / WORKING ASSESSMENTS

The union security provisions contained in the applicable Schedule A local agreements, shall not apply to the employees covered by this Agreement as for the period of time during which they are performing on-site Project work. No employee shall be discriminated against at the Project site because of the employee's union membership or lack thereof. In the case of unaffiliated employees who have voluntarily executed dues checkoff authorization cards provided in a Schedule A local agreement, the dues payment can be received by the Unions as a working assessment fee.

SECTION 7. CRAFT FOREPERSONS AND GENERAL FOREPERSONS

The selection of craft forepersons and/or general forepersons and the number of forepersons required shall be solely the responsibility of the Contractor except where otherwise provided by specific provisions of an applicable Schedule A. All forepersons shall take orders exclusively from the designated Contractor representatives. Craft foreperson shall be designated as working forepersons at the request of the Contractor, except when an existing local Collective Bargaining Agreement prohibits a foreperson from working when the craftsperson he is leading exceed a specified number.

ARTICLE 5 - UNION REPRESENTATION

SECTION 1. LOCAL UNION REPRESENTATIVE

Each Local Union representing on-site Project employees shall be entitled to designate in writing (copy to General Contractor involved and/or Project Management Firm) representatives, including the Business Manager, who shall be afforded access to the Project.

SECTION 2. STEWARDS

A. Each Local Union shall have the right to designate a working journey person as a Steward and an alternate, and shall notify the Contractor and GC and/or PMF of the identity of the designated Steward (and alternate) prior to the assumption of such duties. Stewards shall not exercise supervisory functions and will receive the regular rate of pay for their craft classifications. There will be no non-working Stewards on the Project.

B. In addition to their work as an employee, the Steward shall have the right to receive complaints or grievances and to discuss and assist in their adjustment with the Contractor's appropriate supervisor. Each Steward shall be concerned with the employees of the Steward's Contractor and, if applicable, subcontractors of that Contractor, but not with the employees of any other Contractor. The Contractor will not discriminate against the Steward in the proper performance of Union duties.

C. The Stewards shall not have the right to determine when overtime shall be worked,

or who shall work overtime, except pursuant to a Schedule A provision providing procedures for the equitable distribution of overtime.

SECTION 3. LAYOFF OF A STEWARD

Contractors agree to notify the appropriate Union 24 hours prior to the layoff of a Steward, except in cases of discipline or discharge for just cause. If a Steward is protected against layoff by a Schedule A, such provisions shall be recognized to the extent the Steward possesses the necessary qualifications to perform the work required. In any case in which a Steward is discharged or disciplined for just cause, the Local Union involved shall be notified immediately by the Contractor.

ARTICLE 6 - MANAGEMENT'S RIGHTS

SECTION 1. RESERVATION OF RIGHTS

Except as expressly limited by a specific provision of this Agreement, Contractors retain full and exclusive authority for the management of their Project operations including, but not limited to: the right to direct the work force, including determination as to the number to be hired and the qualifications therefore; the promotion, transfer, layoff of its employees; or the discipline or discharge for just cause of its employees; the assignment and schedule of work; the promulgation of reasonable Project work rules; and, the requirement, timing and number of employees to be utilized for overtime work. No rules, customs, or practices, which limit or restrict productivity or efficiency of the individual, as determined by the Contractor, GC and/or PMF, and/or joint working efforts with other employees shall be permitted or observed.

SECTION 2. MATERIALS, METHODS & EQUIPMENT

There shall be no limitations or restriction upon the contractors' choice of materials, techniques, methods, technology or design, or, regardless of source or location, upon the use and installation of equipment, machinery, package units, pre-cast, pre-fabricated, pre-finished, or pre-assembled materials, tool, or other labor-saving devices. Contractors may, without restriction, install or use materials, supplies or equipment regardless of their source. The on-site installation or application of such items shall be performed by the craft having jurisdiction over such work; provided, however, it is recognized that other personnel having special qualifications may participate, in a supervisory capacity, in the installation, check-out or testing of specialized or unusual equipment or facilities as designated by the Contractor. Notwithstanding the foregoing statement of contractor rights, prefabrication issues relating to work traditionally performed at the job site shall be governed pursuant to the terms of the applicable Schedule A. There shall be no restrictions as to work, which is performed off-site for the Project, except for 1) offsite operations work covered under the New Jersey Prevailing Wage Act or 2) done in a

fabrication center, tool yard, or batch plant dedicated exclusively to the performance of work on the Project, and located adjacent to the "site of work". Where available locally, offsite operations work covered under the New Jersey Prevailing Wage Act shall be performed within the territorial jurisdiction of the local unions signatory to this Agreement.

ARTICLE 7 - WORK STOPPAGES AND LOCKOUTS

SECTION 1. NO STRIKES-NO LOCKOUT

There shall not be strikes, sympathy strikes, picketing, work stoppages, slowdowns, hand billing, demonstrations or other disruptive activity at the Project for any reason by any Union or employee against any Contractor or employer while performing work at the Project. There shall be no other Union, or concerted or employee activity which disrupts or interferes with the operation of the existing free flow of traffic in the project area. Failure of any Union or employee to cross any picket line established by any union, signatory or non-signatory to this Agreement, or the picket or demonstration line of any other organization, at or in proximity to the Project site is a violation of this Article. There shall be no lockout at the Project by any signatory Contractor. Contractors and Unions shall take all steps necessary to ensure compliance with this Section 1 and to ensure uninterrupted construction and the free flow of traffic in the project area for the duration of this Agreement.

SECTION 2. DISCHARGE FOR VIOLATION

A Contractor may discharge any employee violating Section 1, above, and any such employee will not be eligible thereafter for referral under this Agreement for a period of 100 days.

SECTION 3. NOTIFICATION

If a Contractor contends that any Union has violated this Article, it will notify the appropriate district or area council of the Local Union involved advising of such fact, with copies of the notification to the Local Union and the BTC. The district or area council, and the BTC shall each instruct, order and otherwise use their best efforts to cause the employees, and/or the Local Unions to immediately cease and desist from any violation of this Article. A district or area council, or the BTC complying with these obligations shall not be liable for the unauthorized acts of a Local Union or its members.

SECTION 4. EXPEDITED ARBITRATION

Any Contractor or Union alleging a violation of Section 1 of this Article may utilize the expedited procedure set forth below (in lieu of, or in addition to, any actions at law or equity) that may be brought.

A. A party invoking this procedure shall notify J.J. Pierson, Esq., FCI Arb., The Arbitration Centre, 51 JFK Parkway, First Floor West, Short Hills, New Jersey 07078, telephone number (973) 359-8100, fax number (973) 359-8161, or e-mail jjpierson@jjpierson.com, who shall serve as Arbitrator under this expedited arbitration procedure. In the event that J.J. Pierson is unable to serve, a party invoking this procedure shall notify Louis Verrone, who shall serve as arbitrator under this expedited procedure. Copies of such notification will be simultaneously sent to the alleged violator and, if a Local Union is alleged to be in violation, its International, the GC and/or PMF, and the BTC.

B. The Arbitrator shall thereupon, after notice as to time and place to the Contractor, the GC and/or PMF, the Local Union involved, and the BTC, hold a hearing within 48 hours of receipt of the notice invoking the procedure it is contended that the violation still exists. The hearing will not, however, be scheduled for less than 24 hours after the notice to the district or area council required by Section 3 above. Hearings shall be held at the jobsite or at the Newark office of the New Jersey State Board of Mediation, as directed by the Arbitrator.

C. All notices pursuant to this Article may be by telephone, telegraph, hand delivery, or fax, confirmed by overnight delivery, to the arbitrator, Contractor or Union involved. The hearing may be held on any day including Saturdays or Sundays. The hearing shall be completed in one session, which shall not exceed 8 hours duration (no more than 4 hours being allowed to either side to present their case, and conduct their cross examination) unless otherwise agreed. A failure of any Union or Contractor to attend the hearing shall not delay the hearing of evidence by those present or the issuance of an award by the Arbitrator.

D. The sole issue at the hearing shall be whether a violation of Section 1, above, occurred. If a violation is found to have occurred, the Arbitrator shall issue a Cease and Desist Award restraining such violation and serve copies on the Contractor and Union involved. The Arbitrator shall have no authority to consider any matter in justification, explanation or mitigation of such violation or to award damages, which issue is reserved solely for court proceedings, if any. The Award shall be issued in writing within 3 hours after the close of the hearing, and may be issued without an Opinion. If any involved party desires an Opinion, one shall be issued within 15 calendar days, but its issuance shall not delay compliance with, or enforcement of, the Award.

E. An Award issued under this procedure may be enforced by any court of competent jurisdiction upon the filing of this Agreement together with the Award. Notice of the filing of such enforcement proceedings shall be given to the Union or Contractor involved. In any court proceeding to obtain a temporary or preliminary order enforcing the arbitrator's Award as issued under this expedited procedure, the involved Union and Contractor waive their right to a hearing and agree that such proceedings may be ex parte, provided notice is given to opposing counsel. Such agreement does not waive any party's right to participate in a hearing for a final court order of enforcement or in any contempt

proceeding.

F. Any rights created by statute or law governing arbitration proceedings which are inconsistent with the procedure set forth in this Article, or which interfere with compliance thereto, are hereby waived by the Contractors and Unions to whom they accrue.

G. The fees and expenses of the Arbitrator shall be equally divided between the involved Contractor and Union.

SECTION 5. ARBITRATION OF DISCHARGES FOR VIOLATION

Procedures contained in Article 9 shall not be applicable to any alleged violation of this Article, with the single exception that an employee discharged for violation of Section 1, above, may have recourse to the procedures of Article 9 to determine only if the employee did, in fact, violate the provisions of Section 1 of this Article; but not for the purpose of modifying the discipline imposed where a violation is found to have occurred.

ARTICLE 8. - LOCAL ADMINISTRATIVE COMMITTEE (“LAC”)

SECTION 1. MEETINGS

The Local Administrative Committee (“LAC”) will meet on a regular basis to: 1) Implement and oversee this Agreement’s procedures and initiatives; 2) monitor the effectiveness of this Agreement; and 3) identify opportunities to improve efficiency and work execution.

SECTION 2. COMPOSITION

The LAC will be co-chaired by the President of the Union County Building and Construction Trades Council or his designee, and designated official of the GC and/or PMF. It will be comprised of representatives of the local unions signatory to this Agreement and representatives of the GC and/or PMF and other contractors on the project.

ARTICLE 9 - GRIEVANCE & ARBITRATION PROCEDURE

SECTION 1. PROCEDURE FOR RESOLUTION OF GRIEVANCES

Any question, dispute or claim arising out of, or involving the interpretation or application of this Agreement (other than jurisdictional disputes or alleged violations of Article 7, Section 1) shall be considered a grievance and shall be resolved pursuant to the exclusive procedure of the steps described below; provided, in all cases, that the question, dispute

or claim arose during the term of this Agreement.

Step 1:

A. When any employee covered by this Agreement feels aggrieved by a claimed violation of this Agreement, the employee shall, through the Local Union business representative or job steward give notice of the claimed violation to the work site representative of the involved Contractor. To be timely, such notice of the grievance must be given within 7 calendar days after the act, occurrence, or event giving rise to the grievance, or after the act, occurrence or event became known or should have become known to the Union. The business representative of the Local Union or the job steward and the work site representative of the involved Contractor shall meet and endeavor to adjust the matter within 7 calendar days after timely notice has been given. If they fail to resolve the matter within the prescribed period, the grieving party, may, within 7 calendar days thereafter, pursue Step 2 of the grievance procedure by serving the involved Contractor and the General Contractor and/or Project Management Firm with written copies of the grievance setting forth a description of the claimed violation, the date on which the grievance occurred, the provisions of this Agreement alleged to have been violated. Grievances and disputes settled at Step 1 are non-precedential except as to the specific Local Union, employee and Contractor directly involved, unless the settlement is accepted in writing, by the General Contractor and/or Project Management Firm, as creating a precedent.

B. Should any signatory to this Agreement have a dispute (excepting jurisdictional disputes or alleged violations of Article 7, Section 1) with any other signatory to this Agreement and, if after conferring, a settlement is not reached within 7 calendar days, the dispute shall be reduced to writing and proceed to Step 2 in the same manner as outlined in subparagraph (a) for the adjustment of employee grievances.

Step 2:

The Business Manager or designee of the involved Local Union, together with representatives of the BTC, the involved Contractor, and the General Contractor and/or Project management Firm shall meet in Step 2 within 5 calendar days of the written grievance to arrive at a satisfactory settlement.

Step 3:

A. If the grievance shall have been submitted but not resolved in Step 2, any of the participating Step 2 entities may, within 14 calendar days after the initial Step 2 meeting, submit the grievance in writing (copies to other participants) to J.J. Pierson, Esq., FCI Arb., The Arbitration Centre, 51 JFK Parkway, First Floor West, Short Hills, New Jersey 07078, telephone number (973) 359-8100, fax number (973) 359-8161, who shall act as the

Arbitrator under this procedure. In the event that J.J. Pierson is unable to serve, a party invoking this procedure shall notify Louis Verrone, who shall serve as arbitrator under this expedited procedure. The Labor Arbitration Rules of the American Arbitration Association shall govern the conduct of the arbitration hearing, at which all Step 2 participants shall be parties. Hearings shall be held at the jobsite or at the Newark office of the New Jersey State Board of Mediation, as directed by the Arbitrator.

The decision of the Arbitrator shall be final and binding on the involved Contractor, Local Union and employees and the fees and expenses of such arbitration's shall be borne equally by the involved Contractor and Local Union.

B. Failure of the grieving party to adhere to the time limits set forth in this Article shall render the grievance null and void. These time limits may be extended only by written consent of the GC and/or PMF, involved Contractor and involved Local Union at the particular step where the extension is agreed upon. The Arbitrator shall have authority to make decisions only on the issues presented to him and shall not have the authority to change, add to, delete or modify any provision of this Agreement.

SECTION 2. LIMITATION AS TO RETROACTIVITY

No arbitration decision or award may provide retroactivity of any kind exceeding 30 calendar days prior to the date of service of the written grievance on the construction Project Manager and the involved Contractor or Local Union.

SECTION 3. PARTICIPATION BY GENERAL CONTRACTOR AND/OR PROJECT MANAGEMENT FIRM

The General Contractor and/or Project Management Firm shall be notified by the involved Contractor of all actions at Steps 2 and 3 and, at its election, may participate in full in all proceedings at these Steps, including Step 3 arbitration.

ARTICLE 10 - JURISDICTIONAL DISPUTES

SECTION 1. NO DISRUPTIONS

There will be no strikes, sympathy strikes, work stoppages, slowdowns, picketing or other disruptive activity of any kind arising out of any jurisdictional dispute. Pending the resolution of the dispute, the work shall continue uninterrupted and as assigned by the Contractor. No jurisdictional dispute shall excuse a violation of Article 7.

SECTION 2. ASSIGNMENT

A. There shall be a mandatory pre-job markup / assignment meeting prior to the

commencement of any work. Attending such meeting shall be designated representatives of the Union signatories to this Agreement, the GC, and the involved Contractors. Best efforts will be made to schedule the pre-job meeting in a timely manner after Notice to Proceed is issued but not later than 30 days prior to the start of the Project.

B. All Project construction work assignments shall be made by the Contractor according to criteria set forth in Section 3, Subsection D 1-3.

C. When a Contractor has made an assignment of work, he shall continue the assignment without alteration unless otherwise directed by an arbitrator or there is agreement between the National or International Unions involved. Claims of a change of original assignment shall be processed in accordance with Article I of the Procedural Rules of the Plan for the Settlement of Jurisdictional Disputes in the Construction Industry ("the Plan").

D. In the event that a Union involved in the change of original assignment dispute is an affiliate of a National or International Union that is not affiliated with the Building and Construction Trades Department and does not wish to process a case through the Plan, the parties shall mutually select one of the following Arbitrators: Arbitrator J.J. Pierson, Arbitrator Paul Greenberg or Arbitrator Richard K. Hanft and submit the dispute directly to the Arbitrator. The selected Arbitrator shall determine whether the case requires a hearing or may be decided upon written submissions. In rendering his determination on whether there has been a change of original assignment, the Arbitrator shall be governed by the following:

1. The contractor who has the responsibility for the performance and installation shall make a specific assignment of the work which is included in his contract to a particular union(s). For instance, if contractor A subcontracts certain work to contractor B, then contractor B shall have the responsibility for making the specific assignments for the work included in his contract. If contractor B, in turn, shall subcontract certain work to contractor C, then contractor C shall have the responsibility for making the specific assignment for the work included in his contract. After work has been so assigned, such assignment will be maintained even though the assigning contractor is replaced and such work is subcontracted to another contractor. It is a violation of the Agreement for the contractor to hold up disputed work or shut down a project because of a jurisdictional dispute.

2. When a contractor has made an assignment of work, he shall continue the assignment without alteration unless otherwise directed by an arbitrator or there is agreement between the National or International Unions involved.

3. Unloading and/or handling of materials to stockpile or storage by a trade for the convenience of the responsible contractor when his employees are not on the job site, or in an emergency situation, shall not be considered to be an original assignment to that trade.

4. Starting of work by a trade without a specific assignment by an authorized representative of the responsible contractor shall not be considered an original

assignment to that trade, provided that the responsible contractor, or his authorized representative, promptly, and, in any event, within eight working hours following the start of work, takes positive steps to stop further unauthorized performance of the work by that trade.

SECTION 3. PROCEDURE FOR SETTLEMENT OF DISPUTES

A. Any Union having a jurisdictional dispute with respect to Project work assigned to another Union will submit through its International the dispute in writing to the Administrator of the Plan within 72 hours and send a copy of the letter to the other Union involved, the Contractor involved, the General Contractor, the BTC, and the district or area councils of the unions involved. Upon receipt of a dispute letter from any Union, the Administrator will invoke the procedures set forth in the Plan to resolve the jurisdictional dispute. The jurisdictional dispute letter shall contain the information described in Article IV of the Procedural Rules of the Plan.

B. Within 5 calendar days of receipt of the dispute letter, there shall be a meeting of the General Contractor, the Contractor involved, the Local Unions involved and designees of the BTC and the district or area councils of the Local Unions involved for the purpose of resolving the jurisdictional dispute.

C. In order to expedite the resolution of jurisdictional disputes, the parties have agreed in advance to mutually select one of the following designated Arbitrators: Arbitrator J. J. Pierson, Arbitrator Paul Greenberg or Arbitrator Richard K. Hanft to hear all unresolved jurisdictional disputes arising under this Agreement. All other rules and procedures of the Plan shall be followed. If none of the three Arbitrators is available to hear the dispute within the time limits of the Plan, the Plan's arbitrator selection process shall be utilized to select another arbitrator.

D. In the event that a Union involved in the dispute is an affiliate of a National or International Union that is not affiliated with the Building and Construction Trades Department and does not wish to process a case through the Plan as described in paragraphs A-C above, the parties to the dispute shall mutually select one of the following Arbitrators: Arbitrator J. J. Pierson, Arbitrator Paul Greenberg or Arbitrator Richard K. Hanft to hear the dispute and shall submit the dispute directly to the selected arbitrator. The time limits for submission and processing disputes shall be the same as provided elsewhere in this Section. The selected Arbitrator shall schedule the hearing within seven business days from the date of submission. If he cannot hear the case within the required timeframe, one of the other Arbitrators will be selected to hear the case unless all parties to the dispute agree to waive the seven (7) day time limit. In rendering his decision, the Arbitrator shall determine:

1. First whether a previous agreement of record or applicable agreement, including a disclaimer agreement, between the National and International Unions to the dispute governs;

2. Only if the Arbitrator finds that the dispute is not covered by an appropriate or applicable agreement of record or agreement between the crafts to the dispute, he shall then consider the established trade practice in the industry and prevailing practice in the locality. Where there is a previous decision of record governing the case, the Arbitrator shall give equal weight to such decision of record, unless the prevailing practice in the locality in the past ten years favors one craft. In that case, the Arbitrator shall base his decision on the prevailing practice in the locality. Except, that if the Arbitrator finds that a craft has improperly obtained the prevailing practice in the locality through raiding, the undercutting of wages or by the use of vertical agreements, the Arbitrator shall rely on the decision of record and established trade practice in the industry rather than the prevailing practice in the locality.

3. Only if none of the above criteria is found to exist, the Arbitrator shall then consider that because efficiency, cost or continuity and good management are essential to the wellbeing of the industry, the interests of the consumer or the past practices of the employer shall not be ignored.

The Arbitrator shall set forth the basis for his decision and shall explain his findings regarding the applicability of the above criteria. If lower-ranked criteria are relied upon, the Arbitrator shall explain why the higher-ranked criteria were not deemed applicable. The Arbitrator's decision shall only apply to the job in dispute.

Each party to the arbitration shall bear its own expense for the arbitration and agrees that the fees and expenses of the Arbitrator shall be borne by the losing party or parties as determined by the Arbitrator.

E. The Arbitrator shall render a short-form decision within 5 days of the hearing based upon the evidence submitted at the hearing, with a written decision to follow within 30 days of the close of hearing.

F. This Jurisdictional Dispute Resolution Procedure will only apply to work performed by Local Unions that represent workers employed on the Project.

G. Any Local Union involved in a jurisdictional dispute on this Project shall continue working in accordance with Section 2 above and without disruption of any kind.

SECTION 4. AWARD

Any award rendered pursuant to this Article and the Plan shall be final and binding on the disputing Local Unions and the involved Constructor on this Project only and may be enforced in accordance with the provisions of Article VII of the Plan. Any award rendered pursuant to the alternate procedures of this Article shall be final and binding on the disputing Local Unions and the involved Contractor on this Project only, and may be enforced in any court of competent jurisdiction. Such award or resolution shall not establish a precedent on any other construction work not covered by this Agreement. In all disputes under this Article, the General Contractor and the involved Contractors shall be considered parties in interest.

SECTION 5. LIMITATIONS

The Arbitrator shall have no authority to assign work to a double crew, that is, to more employees than the minimum required by the Contractor to perform the work involved; nor to assign work to employees who are not qualified to perform the work involved; nor to assign work being performed by non-union employees to union employees. This does not prohibit the establishment, with the agreement of the involved Contractor, of composite crews where more than 1 employee is needed for the job. The aforesaid determinations shall decide only to whom the disputed work belongs.

SECTION 6. NO INTERFERENCE WITH WORK

A. There shall be no interference or interruption of any kind with the work of the Project while any jurisdictional dispute is being resolved. The work shall proceed as assigned by the Contractor until finally resolved under the applicable procedure of this Article. The award shall be confirmed in writing to the involved parties. There shall be no strike, work stoppage or interruption in protest of any such award. Any claims of a violation of this section shall be submitted and processed in accordance with the impediment to job progress provisions of the Plan.

B. In the event a Union alleged to have engaged in an impediment to job progress is an affiliate of a National or International Union that is not affiliated with the Building and Construction Trades Department and does not wish to have the impediment to job progress charge processed through the Plan, the parties to the dispute shall mutually select one of the three Arbitrators designated in this Article to hear the dispute. The selected Arbitrator shall schedule the hearing within two business days from the date of submission. If he cannot hear the case within the required timeframe, one of the other Arbitrators shall be selected by the parties to hear the case unless all parties to the dispute agree to waive the two day time limit. The sole issue at the hearing shall be whether or not a violation of this Section has in fact occurred, and the Arbitrator shall have no authority to consider any matter in justification, explanation or mitigation of such violation or to award damages. The Arbitrator's decision shall be issued in writing within 3 hours after the close of the hearing, and may be issued without an opinion. If any party desires an opinion, one shall be issued within 15 days, but its issuance shall not delay compliance with, or enforcement of, the decision. The Arbitrator may order cessation of the violation of this Section and other appropriate relief, and such decision shall be served on all parties by facsimile upon issuance. Each party to the arbitration shall bear its own expense for the arbitration and agrees that the fees and expenses of the Arbitrator shall be borne by the losing party or parties as determined by the Arbitrator.

ARTICLE 11 - WAGES AND BENEFITS

SECTION 1. CLASSIFICATION AND BASE HOURLY RATE

All employees covered by this Agreement shall be classified in accordance with the work performed and paid the base hourly wage rates for those classifications as specified in the attached Schedules A, as amended during this Agreement. Recognizing, however, that special conditions may exist or occur on the Project, the parties, by mutual agreement may establish rates and/or hours for one or more classifications, which may differ from Schedules A. Parties to such agreements shall be the General Contractor and/or Project Management Firm, the Contractor involved, the involved Local Unions and the BTC.

SECTION 2. EMPLOYEE BENEFIT FUNDS

A. The Contractors agree to pay contributions on behalf of all employees covered by this Agreement to the established employee benefit funds in the amounts designated in the appropriate Schedule A. Bona fide jointly trusted fringe benefit plans established or negotiated through collective bargaining during the life of this Agreement may be added. However, if a defined benefit pension fund covered by the terms and conditions of this Agreement has not adopted the building and construction industry exemption authorized by subsection (b) of Section 4203 of the Employee Retirement Income Security Act of 1974, the Contractor shall not be obligated to hire employees covered by that fund.

B. The Contractor agrees to be bound by the written terms of the legally established Trust Agreements specifying the detailed basis on which payments are to be paid into, and benefits paid out of, such Trust Funds but only with regard to work done on this Project and only for those employees to whom this Agreement requires such benefit Payments.

C. Should any contractor or sub-contractor become delinquent in the payment of contributions to the fringe benefit funds, then the subcontractor at the next higher tier, or upon notice of the delinquency claim from the Union or the Funds, agrees to withhold from the subcontractor such disputed amount from the next advance, or installment payment for work performed and the amount claimed and owed will be paid within thirty (30) days after receipt of the notification by the General Contractor and/or Project Management Firm, if not paid prior to said date by the delinquent contractor/subcontractor.

ARTICLE 12 - HOURS OF WORK, PREMIUM PAYMENTS, SHIFTS AND HOLIDAYS

SECTION 1. WORK WEEK AND WORK DAY

A. The standard work week shall consist of 40 hours of work at straight time rates per one of the following schedules:

1) Five-Day Work Week: Monday-Friday, 5 days, 8 hours plus 1/2 hour unpaid lunch period each day.

B. The Day Shift shall commence between the hours of 6:00 a.m. and 9:00 a.m. and shall end between the hours of 2:30 p.m. and 5:30 p.m. Starting and quitting times shall

occur at the employees' place of work as may be designated by the Contractor in accordance with area practice.

C. Notice - Contractors shall provide not less than 5 days prior notice to the Local Union involved as to the work week and work hours schedules to be worked or such lesser notice as may be mutually agreed upon.

SECTION 2. OVERTIME

Overtime pay for hours outside of the standard work week and work day, described in paragraph A above, shall be paid in accordance with the applicable Schedule A. There will be no restriction upon the Contractor's scheduling of overtime or the non-discriminatory designation of employees who shall be worked, except as noted in Article 5, Section 2. There shall be no pyramiding of overtime pay under any circumstances. The Contractor shall have the right to schedule work so as to minimize overtime.

SECTION 3. SHIFTS

A. Flexible Schedules - Scheduling of shift work shall remain flexible in order to meet Project schedules and existing Project conditions including the minimization of interference with traffic. It is not necessary to work a day shift in order to schedule a second shift. Shifts must be worked a minimum of five consecutive work days, must have prior approval of the Construction Project Manager and must be scheduled with not less than five work days' notice to the Local Union.

B. Second/Shift - The second shift (starting between 2 p.m. and 8p.m.) shall consist of 8 hours work (or 10 hours of work) for an equal number of hours pay at the straight time rate plus 15% in lieu of overtime and exclusive of a 1/2 hour unpaid lunch period.

C. Flexible Starting Times – Shift starting times will be adjusted by the Contractor as necessary to fulfill Project requirements subject to the notice requirements of Paragraph A.

D. It is agreed that when project circumstances require a deviation from the above shifts, the involved unions, contractors and the General Contractor and/or Project Management Firm shall adjust the starting times of the above shifts or establish shifts which meet the project requirements. It is agreed that neither party will unreasonably withhold their agreement.

SECTION 4. HOLIDAYS

A. Schedule - There shall be 8 recognized holidays on the Project:

New Year's Day

Labor Day

Presidents Day

Veterans Day

Memorial Day

Thanksgiving Day

Fourth of July

Christmas Day

* Presidential Election Day shall be observed as a holiday in a general election year. Work shall be scheduled on Good Friday pursuant to the craft's Schedule A. Columbus Day and the Friday after Thanksgiving shall be observed as a holiday for Elevator Constructors Local 1 only.

All said holidays shall be observed on the dates designated by New Jersey State Law. In the absence of such designations, they shall be observed on the calendar date except those holidays which occur on Sunday shall be observed on the following Monday. Holidays falling on Saturday are to be observed on the preceding Friday.

B. Payment - Regular holiday pay, if any, and/or premium pay for work performed on such a recognized holiday shall be in accordance with the applicable Schedule A.

C. Exclusivity - No holidays other than those listed in Section 4-A above shall be recognized nor observed.

SECTION 5. REPORTING PAY

A. Employees who report to the work location pursuant to regular schedule and who are not provided with work or whose work is terminated early by a Contractor, for whatever reason, shall receive minimum reporting pay in accordance with the applicable Schedule A.

B. When an employee, who has completed their scheduled shift and left the Project site, is "called back" to perform special work of a casual, incidental or irregular nature, the employee shall receive pay for actual hours worked with a minimum guarantee, as may be required by the applicable Schedule A.

C. When an employee leaves the job or work location of their own volition or is discharged for cause or is not working as a result of the Contractor's invocation of Section 7 below, they shall be paid only for the actual time worked.

D. Except as specifically set forth in this Article there shall be no premiums, bonuses, hazardous duty, high time or other special payments of any kind.

E. There shall be no pay for time not actually worked except as specifically set forth in this Agreement or except where specifically provided in an applicable Schedule A.

SECTION 6. PAYMENT OF WAGES

A. Payday - Payment shall be made by check, drawn on a New Jersey bank with branches located within commuting distance of the job site. Paychecks shall be issued by the Contractor at the job site by 10 a.m. on Thursdays. In the event that the following Friday is a bank holiday, paychecks shall be issued on Wednesday of that week. Not

more than 3 days wages shall be held back in any pay period. Paycheck stubs shall contain the name and business address of the Contractor, together with an itemization of deductions from gross wages.

B. Termination-Employees who are laid-off or discharged for cause shall be paid in full for that which is due them at the time of termination. The Contractors shall also provide the employee with a written statement setting forth the date of lay off or discharge.

SECTION 7. EMERGENCY WORK SUSPENSION

A Contractor or GC and/or PMF may, if considered necessary for the protection of life and /or safety of employees or others, suspend all or a portion of Project work. In such instances, employees will be paid for actual time worked; provided, however, that when a Contractor request that employees remain at the job site available for work, employees will be paid for "stand-by" time at their hourly rate of pay.

SECTION 8. INJURY/DISABILITY

An employee who, after commencing work, suffers a work-related injury or disability while performing work duties, shall receive no less than 8 hours wages for that day. Further, the employee shall be rehired at such time as able to return to duties provided there is still work available on the Project for which the employee is qualified and able to perform.

SECTION 9. TIME KEEPING

A Contractor may utilize brassing or other systems to check employees in and out. Each employee must check in and out. The Contractor will provide adequate facilities for checking in and out in an expeditious manner.

SECTION 10. MEAL PERIOD

A Contractor shall schedule an unpaid period of not more than 1/2 hour duration at the work location between the 3rd and 5th hour of the scheduled shift. A Contractor may, for efficiency of operation, establish a schedule which coordinates the meal periods of two or more crafts. If an employee is required to work through the meal period, the employee shall be compensated in a manner established in the applicable Schedule A.

SECTION 11. BREAK PERIODS

There will be no rest periods, organized coffee breaks or other non-working time established during working hours. Individual coffee containers will be permitted at the

employee's work location. Local area practice will prevail for coffee breaks that are not organized.

ARTICLE 13 - APPRENTICES

SECTION 1. RATIOS

Recognizing the need to maintain continuing supportive programs designed to develop adequate numbers of competent workers in the construction industry and to provide craft entry opportunities for minorities, women and economically disadvantaged non-minority males, Contractors will employ apprentices in their respective crafts to perform such work as is within their capabilities and which is customarily performed by the craft in which they are indentured. Contractors may utilize apprentices and such other appropriate classifications as are contained in the applicable Schedule A in a ratio not to exceed the ratio provided in the applicable Schedule A collective bargaining agreements providing prevailing wage and fringe benefits as defined in N.J.S.A. 34:11-56.26(9) for the classification in Union County, New Jersey. Apprentices and such other classifications as are appropriate shall be employed in a manner consistent with the provisions of the appropriate collective bargaining agreement listed in Schedule A.

SECTION 2. DEPARTMENT OF LABOR

To assist the Contractors in attaining a maximum effort on this Project, the Unions agree to work in close cooperation with, and accept monitoring by, the New Jersey State and Federal Departments of Labor to ensure that minorities, women, or economically disadvantaged are afforded opportunities to participate in apprenticeship programs which result in the placement of apprentices on this Project. To further ensure that this Contractor effort is attained, up to 50% of the apprentices placed on this Project should be first year, minority, women or economically disadvantaged apprentices. The Local Unions will cooperate with Contractor request for minority, women or economically disadvantaged referrals to meet this Contractor effort.

SECTION 3. HELMETS TO HARDHATS

The Employers and the Unions recognize a desire to facilitate the entry into the building and construction trades of veterans who are interested in careers in the building and construction industry. The Employers and Unions agree to utilize the services of the Center for Military Recruitment, Assessment and Veterans Employment (hereinafter "Center") and the Center's "Helmets to Hardhats" program to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs as identified by the parties.

The Unions and Employers agree to coordinate with the Center to create and maintain an integrated database of veterans interested in working on the Project and of apprenticeship

and employment opportunities for the Project. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

ARTICLE 14 - SAFETY PROTECTION OF PERSON AND PROPERTY

SECTION 1. SAFETY REQUIREMENTS

Each Contractor will ensure that applicable OSHA requirements and other requirements set forth in the contract documents are at all times maintained on the Project and the employees and Unions agree to cooperate fully with these efforts. Employees must perform their work at all times in a safe manner and protect themselves and the property of the Contractor and the Owner from injury or harm. Failure to do so will be grounds for discipline, including discharge.

SECTION 2. CONTRACTOR RULES

Employees covered by this Agreement shall at all times be bound by the reasonable safety, security, and visitor rules as established by the Contractors and the GC and/or PMF for this Project. Such rules will be published and posted in conspicuous places throughout the Project.

SECTION 3. INSPECTIONS

The Contractors and GC and/or PMF retain the right to inspect incoming shipments of equipment, apparatus, machinery, and construction materials of every kind.

ARTICLE 15 - NO DISCRIMINATION

SECTION 1. COOPERATIVE EFFORTS

The Contractors and Unions agree that they will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin or age in any manner prohibited by law or regulation. It is recognized that special procedures maybe established by Contractors and Local Unions and the New Jersey State Department of Labor for the training and employment of persons who have not previously qualified to be employed on construction projects of the type covered by this Agreement. The parties to this Agreement will assist in such programs and agree to use their best efforts to ensure that the goals for female and minority employment are met on this Project.

SECTION 2. LANGUAGE OF AGREEMENT

The use of the masculine or feminine gender in this Agreement shall be construed as including both genders.

ARTICLE 16 - GENERAL TERMS

SECTION 1. PROJECT RULES

The Project Management Firm and the Contractors shall establish such reasonable Project rules as are appropriate for the good order of the Project, provided they do not violate the terms of this Agreement. These rules will be explained at the pre-job conference and posted at the Project site and may be amended thereafter as necessary. Failure of an employee to observe these rules and regulations shall be grounds for discipline, including discharge. The fact that no order was posted prohibiting a certain type of misconduct shall not be a defense to an employee disciplined or discharged for such misconduct when the action taken is for cause.

SECTION 2. TOOLS OF THE TRADES

The welding/cutting torch and chain fall are tools of the trade having jurisdiction over the work performed. Employees using these tools shall perform any of the work of the trade. There shall be no restrictions on the emergency use of any tools or equipment by any qualified employee, or on the use of any tools or equipment for the performance of work within the employee's jurisdiction.

SECTION 3. SUPERVISION

Employees shall work under the supervision of the craft foreperson or general foreperson.

SECTION 4. TRAVEL ALLOWANCES

There shall be no payments for travel expenses, travel time, subsistence allowance or other such reimbursements or special pay except as expressly set forth in this Agreement and in Schedule A.

SECTION 5. FULL WORK DAY

Employees shall be at their staging area at the starting time established by the Contractor and shall be returned to their staging area by quitting time after performing their assigned functions under the supervision of the Contractor. The signatories reaffirm their policy of a

fair day's work for a fair day's wage.

SECTION 6. COOPERATION

The Project Management Firm and/or General Contractor and the Unions will cooperate in seeking any New Jersey State Department of Labor approvals that may be required for implementation of any terms of this Agreement.

ARTICLE 17 - SAVINGS AND SEPARABILITY

SECTION 1. THIS AGREEMENT

In the event that the application of any provision of this Agreement is enjoined, on either an interlocutory or permanent basis, or otherwise found in violation of law, the provision involved shall be rendered, temporarily or permanently, null and void but the remainder of the Agreement shall remain in full force and effect. In such event, this Agreement shall remain in effect for contracts already bid and awarded or in construction where the Contractor voluntarily accepts this Agreement. The parties to this Agreement will enter into negotiations for a substitute provision in conformity with the law and the intent of the parties for contracts to be let in the future.

SECTION 2. THE BID SPECIFICATIONS

In the event that the General Contractor's and/or Project Management Firm's bid specifications, or other action, requiring that a successful bidder become signatory to this Agreement is enjoined, on either an interlocutory or permanent basis, or otherwise found in violation of law such requirement shall be rendered, temporarily or permanently, null and void but this Agreement shall remain in full force and effect to the extent allowed by law. In such event, this Agreement shall remain in effect for contracts already bid and awarded or in constructions where the Contractor voluntarily accepts this Agreement. The parties will enter into negotiations as to modifications to this Agreement to reflect the court action taken and the intent of the parties for contracts to be let in the future.

SECTION 3. NON-LIABILITY

In the event of an occurrence referenced in Section 1 or Section 2 of this Article, neither the Owner, the Project Management Firm and/or General Contractor, or any Contractor, or any signatory Union shall be liable, directly or indirectly, for any action taken, or not taken, to comply with any court order, injunction or determination. Project bid specifications will be issued in conformance with court orders in effect and no retroactive payments or other action will be required if the original court determination is ultimately reversed.

SECTION 4. NON-WAIVER

Nothing in this Article shall be construed as waiving the prohibitions of Article 7 as to signatory Contractors and signatory Unions.

ARTICLE 18 - FUTURE CHANGES IN SCHEDULE A AREA CONTRACTS

SECTION 1. CHANGES TO AREA CONTRACTS

A. Schedules A to this Agreement shall continue to full force and effect until the Contractor and/or Union parties to the Area Collective Bargaining Agreements, which are the basis for Schedules A, notify the General Contractor and/or Project Management Firm in writing of the mutually agreed upon changes in provisions of such agreements which are applicable to the Project, and their effective dates.

B. It is agreed that any provisions negotiated into Schedules A collective bargaining agreements will not apply to work on this Project if such provisions are less favorable to this Project than those uniformly required of contractors for construction work normally covered by those agreements; nor shall any provisions be recognized or applied on this Project if it may be construed to apply exclusively, or predominantly, to work covered by this Project Agreement.

C. Any disagreement between signatories to this Agreement over the incorporation into Schedules "A" of provisions agreed upon in the renegotiations of Area Collective Bargaining Agreements shall be resolved in accordance with the procedure set forth in Article 9 of this Agreement.

SECTION 2. LABOR DISPUTES DURING AREA CONTRACT NEGOTIATIONS

The Unions agree that there will be no strikes, work stoppages, sympathy actions, picketing, slowdowns or other disruptive activity or other violations of Article 7 affecting the Project by any Local Union involved in the renegotiations of Area Local Collective Bargaining Agreements nor shall there be any lock-out on the Project affective a Local Union during the course of such renegotiations.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed and effective as of _____, 202__.

ATTEST:

County of Union

JAMES E. PELLETTIERE, Clerk
Board of County Commissioners

EDWARD T. OATMAN
County Manager

APPROVED AS TO FORM:

BRUCE H. BERGEN, ESQ.
County Counsel

Affirmative Action Compliant

ATTEST:

Union County Building and
Construction Trades Council AFL-
CIO

Corporate Secretary/Notary Public

Authorized Signatory

Print Name

Print Title

ATTEST:

(General Contractor)

Corporate Secretary/Notary Public

Authorized Signatory

Print Name

Print Title

ATTEST:

(Project Management Firm)

Corporate Secretary/Notary Public

Authorized Signatory

Print Name

Print Title

UNION AFFILIATES

SIGNATURES

ASBESTOS WORKER LOCAL 32

BOILER MAKERS LOCAL 28

BRICKLAYERS AND ALLIED
CRAFTS LOCAL 4

CARPENTERS LOCAL 254

DOCKBUILDERS LOCAL 1556

ELECTRICAL WORKERS LOCAL 102

ELECTRICAL WORKERS LOCAL 164
(TELECOM)

ELEVATOR CONSTRUCTORS LOCAL 1

OPERATING ENGINEERS LOCAL 825

IRONWORKERS LOCAL 11

STEAMFITTERS LOCAL 475

LABORERS LOCAL 3

HEAVY CONSTRUCTION
LABORERS LOCAL 472

PAINTERS AND ALLIED TRADES,
DISTRICT COUNCIL 21

PLUMBERS LOCAL 24

RESILIENT FLOORING LOCAL 251

ROOFERS LOCAL 4

SHEET METAL WORKERS LOCAL 22

SHEET METAL WORKERS LOCAL 25

SPRINKLER FITTERS LOCAL 696

TILE/MARBLE/TERRAZO WORKERS
LOCAL 7

TEAMSTERS LOCAL 560

OPERATIVE PLASTERER LOCAL 29

MILLWRIGHTS LOCAL 715

PROJECT LABOR AGREEMENT

TELE-DATA ADDENDUM

The parties hereby agree that all Tele-data work and associated electrical work performed on any of the sites during construction shall be done by employees represented by the signatory unions. For the purpose of this Agreement, Tele-data work shall include, but not limited to, the following: All receiving, placement, installation, operation, testing, inspection, maintenance, repair and service of radio, television, video, data, voice, sound, emergency call, microwave and visual production and reproduction apparatus, equipment and appliances used for domestic, commercial, education and entertainment purposes; all installation and erection of equipment, apparatus or appliance, cables and/or wire, emergency power (batteries) and all directly related work which becomes an integral part of the telecommunication and/or telecommunications related systems repair and service maintenance work of telecommunications systems and devices including, but not limited to, Private Branch Exchanges (PBX-PABX), Key equipment-owned, CCTV, CATV, card access, Systems RS 232 ethernet and/or any local area network system associated with computer installation.

SIGNATORY UNIONS

BY: _____

BY: _____

PROJECT LABOR AGREEMENT

SHEET METAL ADDENDUM

(General Contractor) and (Project Management Firm) agrees that when subcontracting for prefabrication of H.V.A.C. duct and other related sheet metal, such prefabrication shall be subcontracted to fabricators who pay their employees engaged in such fabrication not less than the prevailing wage for comparable sheet metal fabrication as established under agreements between local affiliates of Sheet Metal Workers' International Association and local sheet metal fabricators.

General Contractor and Project Management Firm and the Sheet Metal Workers' International Association agree to work with fabrication shops referenced in the Addendum. This joint effort will be directed at improving fabricators' competitiveness through the application of continuous improvement principles.

(General Contractor)

Sheet Metal Workers'
International Assoc. Local #25

(Project Management Firm)

Sheet Metal Workers' International
Assoc. Local #22

TEAMSTERS LOCAL 560 ADDENDUM

1. Notwithstanding the provisions of Article 11, Section 2 of the Project Labor Agreement, a Contractor who becomes signatory to this Project Labor Agreement who is not already a participating and contributing employer to the pension fund(s) specified in the Exhibit A collective bargaining agreement (currently the Trucking Employees of North Jersey Pension Fund; hereinafter the "TENJ Pension Fund," and the Teamsters Local No. 408 Pension Fund), shall make direct all contributions required by the Exhibit A collective bargaining agreement exclusively to the Trucking Employees of North Jersey Annuity Fund, a defined contribution plan. Any such Contractor shall not participate in nor contribute to the TENJ or Local 408 Pension Funds, and shall have no obligation to the TENJ or Local 408 Pension Funds.

2. Any Contractor who is already participating in and contributing to the TENJ or Local 408 Pension Fund, separately from this Project Labor Agreement, shall pay contributions as provided for in Article 11, Section 2 of this Project Labor Agreement.

Agreed to and accepted this _____ day
of _____, 202__:

For the General Contractor:

For Teamsters Local 560

PROJECT LABOR AGREEMENT

LETTER OF ASSENT

Re: Project Labor Agreement
The Union County Building & Trades Council, AFL-CIO and

_____ dated _____
(the "Agreement")

The undersigned, as a General Contractor and/or Project Management Firm, Contractor(s) or Subcontractor(s) on a Contract which is part of the Construction of the _____ Project in _____, New Jersey (the "Project"), for and in consideration of the award of a Contract to perform work on said Project, and in further consideration of the mutual promises made in the Project Labor Agreement, a copy of which was received and is acknowledged, hereby:

(1) On behalf of itself and all its employees, accepts and agrees to be bound by the terms and conditions of the Project Labor Agreement, together with any and all amendments and supplements now existing or which are later made thereto, and understands that any act of non-compliance with all such terms and conditions will subject the non-complying Contractor or employee(s) to being prohibited from the Project Site until full compliance is obtained.

(2) Certifies that it has no commitments or agreements that would preclude its full compliance with the terms and conditions of said Projects Labor Agreement.

(3) Agrees to secure from any Contractor(s) (as defined in said Project Labor Agreement) which is or becomes a Subcontractor(s) (of any tier), a duly executed Letter of Assent in form identical to this document prior to commencement of any work.

Company Name

By: _____

Contract Number _____

Title: _____

General Contractor _____

Date: _____

cc: (Unions employed by Contractor)

SCHEDULE A

SCHEDULE B

EXHIBIT A

52. BID PROTEST – LEGAL FEES AND COSTS

In the event a Bidder unsuccessfully challenges a Bid Submission by filing an action in a court of law concerning same, said Bidder shall be responsible for payment of reasonable legal costs and fees incurred by the County relating to said protest.

53. AMERICAN GOODS AND PRODUCTS WHERE POSSIBLE

Bidder shall comply with the requirements of N.J.S.A. 40A:11-18 and use only manufactured and farm products of the United States, wherever available, for the Project.

54. NEW JERSEY PAY-TO-PLAY REQUIREMENTS

This Contract is required by law to be publicly advertised for bids. As such, lists of political contributions pursuant to N.J.S.A. 19:44A-1 et seq. are NOT REQUIRED to be provided with the bids.

55. STATEMENT OF EQUIPMENT TO BE USED IN CONSTRUCTION

Pursuant to N.J.S.A. 40A:11-20 entitled Certificate of Bidder Showing Ability to Perform Contract, the County requires a Certification from all bidders submitting a bid showing that the Bidder owns, leases, or controls all necessary equipment required by the Project Plans and Specifications. All bidders shall provide this information at the time of the bid opening using the attached form entitled, "CERTIFICATE OF BIDDER SHOWING ABILITY TO PERFORM CONTRACT".

If the Bidder is not the actual owner of the equipment, it shall state the source from which the equipment will be obtained and shall attach a certificate from the owner or person in control of the equipment demonstrating that the equipment owner has granted the Bidder control of the requisite equipment during such time as may be necessary for completion of the portion of the contract for which the equipment is necessary.

56. NEW JERSEY SALES AND USE TAX REQUIREMENTS,

Contractors are required to comply with the following:

New Jersey Sales and Use Tax Requirements: All contractors with subcontractors, or any of their affiliates, who enter into contracts for the provision of goods or services with or for New Jersey local government entities, are required to collect and remit to the New Jersey Director of Taxation in the Department of the Treasury the use tax due on all of their sales of tangible personal property delivered into the State of New Jersey pursuant to the "Sales and Use Tax Act," (N.J.S.A. 54:32B-1 et seq.), regardless of whether the tangible personal property is intended for a contract with the contracting agency. This tax shall be remitted for the term of the Contract.

For purposes herein “affiliate” shall mean any entity that: (a) directly, indirectly, or constructively controls another entity, (b) is directly, indirectly, or constructively controlled by another entity, or (c) is subject to the control of a common entity. For purposes of the immediately preceding sentence, an entity controls another entity if it owns, directly or indirectly, more than fifty percent (50%) of the ownership interest in that entity. NJSA 52:32-44(g)(3).

57. RESOLUTION NO. 2014-408

WHEREAS, the County of Union recognizes there is a need to ensure that all work on significant public construction and maintenance contracts is performed by responsible, qualified firms that maintain the capacity, expertise, personnel, and other qualifications and resources necessary to successfully perform public contracts in a timely, reliable, and cost-effective manner; and

WHEREAS, in order to effectuate the purpose of selecting responsible contractors for significant public contracts and to protect Union County's capital investments in such contracts prospective contractors and subcontractors should be required to meet pre-established, clearly-defined, minimum standards relating to contractor responsibility, including retirements and criteria concerning qualifications, competency) expertise, adequacy of resources, including equipment, financial and personnel, and satisfactory records regarding past project performance, safety, legal compliance and business integrity; and

WHEREAS, the County has a compelling interest in assuring that its Public Works Projects meet the highest standard of safety and quality; and

WHEREAS, due to the critical impact that skilled construction craft labor has on public works projects, and due to the limited availability of skilled construction craft labor and imminent craft labor skill shortages, it is necessary to require contractors and subcontractors to participate in established, formal apprenticeship training programs for the purpose of both promoting successful project delivery and ensuring future workforce development; and

WHEREAS, an apprenticeship program is a structured system of training designed to prepare individuals for occupations and lifelong careers in skilled trades and crafts by providing a wage-paying job that incorporates extensive workplace and classroom training under the supervision of experienced workers, in preparation for highly skilled occupations; and

WHEREAS, apprenticeship programs are a critical component in public safety, by ensuring that workers on public projects are properly trained, able, competent and capable craftsmen, and provide assurance of compliance with the

County's bid specifications and achieve high quality standards; and

WHEREAS, for an apprenticeship program to be fully effective, the public and private sectors must recognize its value and commit to supporting its mission; and

WHEREAS, Union County has long recognized the value of apprenticeship programs through its support of the Union County Vocational-Technical Schools, which offer training programs to help ensure that Union County will continue to produce a skilled and educated work force in the trade specialties, and thus, strengthen Union County's economy by fostering the development of highly paid trade and craft careers; and

WHEREAS, the use of apprenticeship programs or apprenticeship trained employees on Union County Public Works Projects will serve the dual goal of providing the County with assurance that its public works projects are completed with a well-trained workforce, in a highly skilled and timely fashion, while creating opportunities for careers in the skilled trades and craft industry for County residents; and

WHEREAS, the County of Union also recognizes that it is beneficial to their employees to utilize fair business, employment, and training practices that have a positive impact on local communities affected by such contracts:

NOW, THEREFORE, BE IT RESOLVED by the Board of Chosen Freeholders of the County of Union as follows:

1. The County of Union shall require compliance with the provisions of this Resolution by business entities seeking to provide services to the County of Union as specified herein. The requirements of this Resolution are intended to supplement, not replace, existing contractor qualifications and performance standards or criteria currently required by law, public policy or contracting documents, including but not limited to Union County's DPMC classification and Project Labor Agreement policies
2. All contractors and subcontractors that perform significant work on any public facility or public works project, including construction, alteration, renovation, repair, service, or maintenance work, shall meet the requirements of this Resolution. For purposes of this Resolution, the term "significant work" shall be defined as any work or activity covered under the New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 et seq.
3. All firms engaged in contracts covered by this Resolution shall be qualified responsible contractors or subcontractors that have sufficient

capabilities in all respects to successfully perform contracts on which they are engaged, including the necessary experience, equipment, technical skills and qualifications and organizational, financial and personnel resources. Firms bidding on public contracts shall also be required to have a satisfactory past performance record and a satisfactory record of legal compliance, integrity and business ethics. Compliance with these standards shall be established by compliance with the requirements set forth in paragraph 8 of this Resolution.

4. As a condition of performing work on public works contracts over the public works threshold, the general contractor shall provide certification that he and each subcontractor working on the project shall have at least one (1) employee who has successfully completed the OSHA 10-hour construction safety and health course. As a condition of performing work on public works contracts of \$500,000.00 or more total cost of project, the general contractor shall provide certification that each subcontractor working on the project shall have at least one (1) employee who has successfully completed the OSHA 30-hour construction safety and health course.

5. All contractors and subcontractors that perform significant work on any public facility or public works project shall be required to affirmatively provide evidence of and confirm compliance with proof of participation in an Apprenticeship Program currently registered and approved by the United States Department of Labor ("USDOL"), the New Jersey Department of Labor ("NJDOL") or any state having equal to or higher requirements as either the USDOL or NJDOL apprenticeship programs. Additionally, Apprenticeship Programs shall meet the criteria set forth in Section 8(i) of this Resolution.

6. As a condition of performing work on public works contracts subject to this Resolution, a general contractor seeking award of a contract shall submit a Contractor Responsibility Certification at the time it submits its bid for contract.

7. The Contractor Responsibility Certification shall be completed on a form provided by the Union County Purchasing Department and shall reference the project for which a bid is being submitted by name and contract or project number.

8. In the Contractor Responsibility Certification, general contractors and subcontractors shall certify the following facts regarding their past performance and work history and its current qualifications and performance capabilities:

- a. The firm has all valid, effective licenses, registrations or

certificates required by federal, state, county, or local law, including, but not limited to, licenses, registrations, certificates required to: (1) do business in the designated locale; and (2) perform the contract work it seeks to perform. These shall include, but not be limited to, licenses, registrations or certificates for any type of trade work or specialty work, which the firm proposes to self-perform.

b. The firm meets the bonding requirements for the contract, as required by applicable law or contract specifications and any insurance requirements, as required by applicable law or contract specifications, including general liability insurance, workers compensation insurance and unemployment requirements.

c. The firm has not been debarred by any federal, state or local government agency or authority in the past three (3) years.

d. The firm has not defaulted on any project in the past three (3) years.

e. The firm has not had any type of business, contracting or trade license, registration, or other certification suspended or revoked in the past three (3) years.

f. The firm has not been cited and found guilty for a willful violation of federal or state safety laws in the past three (3) years.

g. The firm and/or its owners have not been convicted of any crime relating to the contracting business by a final decision of a court or government agency in the past three (3) years.

h. The firm will pay all craft employees that it employs on the project the current wage rates and benefits as required under applicable Federal or State prevailing wage laws.

i. The firm participates in an Apprenticeship Program that is currently registered with the USDOL, the NJDOL or any state having equal to or higher requirements as either the USDOL or NJDOL apprenticeship programs, for each craft or trade in which it apprentices. The firm shall provide proof of meeting this qualification standard by submitting appropriate documentation as an attachment to this Certification. The firm shall continue to participate in applicable apprenticeship programs for the full duration of the contract work. The apprenticeship program in which the firm participates shall have graduated at least one (1) enrollee

in each of the past three (3) years.

9. The County of Union may conduct any additional inquiries to verify that the prospective awardee and its subcontractors have the technical qualifications and performance capabilities necessary to successfully perform the contract and that the firms have a sufficient record of legal compliance and business integrity to justify the award of a public contract. In conducting such inquiries, the County of Union may seek relevant information from the firm, its prior clients or customers, its subcontractors or any other relevant source.

10. If any provision of this Resolution shall be held to be invalid or unenforceable by a court of competent jurisdiction, any such holding shall not invalidate any other provisions of this Resolution and all remaining provisions shall remain in full force and effect.

NOW, THEREFORE, BE IT RESOLVED by the Board of Chosen Freeholders of the County of Union that it hereby establishes and adopts the Responsible Contractor Policy, and it hereby authorizes the County Manager to sign any and all documents necessary to make said Policy effective immediately.

58. FEDERAL TERMS

TERMS AND CONDITIONS APPLICABLE TO ALL CONTRACTS/PURCHASES FUNDED, IN WHOLE OR IN PART, BY FEDERAL FUNDS.

The provisions set forth below apply to all contracts funded, in whole or in part, by Federal funds as required by 2 CFR 200.317.

1. CONTRACTING WITH SMALL AND MINORITY BUSINESSES, WOMEN'S BUSINESS ENTERPRISES, AND LABOR SURPLUS AREA FIRMS

Pursuant to 2 CFR 200.321, the State must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. Accordingly, if subawards are to be made the Contractor shall:

- (1) Include qualified small and minority businesses and women's business enterprises on solicitation lists;
- (2) Assure that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
- (3) Divide total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
- (4) Establish delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's

- business enterprises; and,
- (5) Use the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

2. DOMESTIC PREFERENCE FOR PROCUREMENTS

Pursuant to 2 CFR 200.322, where appropriate, the State has a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). If subawards are to be made the Contractor shall include a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). For purposes of this section:

- (1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
- (2) "Manufactured products" means items and construction materials composed in whole or in part of nonferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

3. PROCUREMENT OF RECOVERED MATERIALS

Where applicable, in the performance of contract, pursuant to 2 CFR 200.323, the contractor must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$ 10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

To the extent that the scope of work or specifications in the contract requires the contractor to provide recovered materials the scope of work or specifications are modified to require that as follows.

- i. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired—
 1. Competitively within a timeframe providing for compliance with the contract performance schedule;

2. Meeting contract performance requirements; or
 3. At a reasonable price.
- ii. Information about this requirement, along with the list of EPA-designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.
 - iii. The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act."

4. EQUAL EMPLOYMENT OPPORTUNITY

Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor." See, 2 CFR Part 200, Appendix II, para. C.

During the performance of this contract, the contractor agrees as follows:

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:
Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job

functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

- (4) The contractor will send to each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his/her books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the

interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

5. DAVIS-BACON ACT, 40 U.S.C. 3141-3148, AS AMENDED

When required by Federal program legislation, all prime construction contracts in excess of \$2,000 shall be done in compliance with the Davis-Bacon Act (40 U.S.C. 3141- 3144, and 3146-3148) and the requirements of 29 C.F.R. pt. 5 as may be applicable. The contractor shall comply with 40 U.S.C. 3141-3144, and 3146-3148 and the requirements of 29 C.F.R. pt. 5 as applicable. Contractors are required to pay wages to laborers and

mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. Additionally, contractors are required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

6. COPELAND ANTI-KICKBACK ACT

Where applicable, the Contractor must comply with Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States").

- a. Contractor. The Contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into the OGS centralized contract.
- b. Subcontracts. The Contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
- c. Breach. A breach of the clauses above may be grounds for termination of the OGS centralized contract, and for debarment as a Contractor and subcontractor as provided in 29 C.F.R. § 5.12.

7. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT, 40 U.S.C. 3701-3708

Where applicable, all contracts awarded by the non-Federal entity in excess of \$ 100,000 that involve the employment of mechanics or laborers must comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5).

- (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.

- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section 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 (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), 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 clause set forth in paragraph (b)(1) of this section, in the sum of \$27 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 clause set forth in paragraph (b)(1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The unauthorized user shall 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 any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime 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 clause set forth in paragraph (b)(2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

8. RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT

If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding

agency.

9. CLEAN AIR ACT, 42 U.S.C. 7401-7671Q, AND THE FEDERAL WATER POLLUTION CONTROL ACT, 33 U.S.C. 1251-1387, AS AMENDED

Where applicable, Contracts and subgrants of amounts in excess of \$150,000, must comply with the following:

Clean Air Act

1. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
2. The contractor agrees to report each violation to the Division of Purchase and Property and understands and agrees that the Division of Purchase and Property will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
3. The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

Federal Water Pollution Control Act

1. The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
2. The contractor agrees to report each violation to the Division of Purchase and Property and understands and agrees that the Division of Purchase and Property will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
3. The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

10. DEBARMENT AND SUSPENSION (EXECUTIVE ORDERS 12549 AND 12689)

- (1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- (2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

- (3) This certification is a material representation of fact relied upon by the State or authorized user. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the State or authorized user, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

11. BYRD ANTI-LOBBYING AMENDMENT, 31 U.S.C. 1352

Contractors that apply or bid for an award exceeding \$100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

12. PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT

- (a) Recipients and subrecipients are prohibited from obligating or expending loan or grant funds to:
 - (1) Procure or obtain;
 - (2) Extend or renew a contract to procure or obtain; or
 - (3) Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115–232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
- (i) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and

other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

(ii) Telecommunications or video surveillance services provided by such entities or using such equipment.

(iii) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

13. CONTRACTS FOR MORE THAN THE SIMPLIFIED ACQUISITION THRESHOLD

Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

14. TERMINATION FOR CONVENIENCE PROVISION

All contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement.

15. BONDING REQUIREMENTS

For construction or facility improvement contracts or subcontracts exceeding the Simplified Acquisition Threshold, the Federal awarding agency or pass-through entity may accept the bonding policy and requirements of the non-Federal entity provided that the Federal awarding agency or pass-through entity has made a determination that the Federal interest is adequately protected. If such a determination has not been made, the minimum requirements must be as follows:

(a) A bid guarantee from each bidder equivalent to five percent of the bid price. The "bid guarantee" must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute such contractual documents as may be required within the time specified.

(b) A performance bond on the part of the contractor for 100 percent of the contract price. A “performance bond” is one executed in connection with a contract to secure fulfillment of all the contractor's requirements under such contract.

(c) A payment bond on the part of the contractor for 100 percent of the contract price. A “payment bond” is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

Bidders name _____

**EDWARD T. OATMAN
COUNTY MANAGER**

**MICHELE HAGOPIAN, ASSISTANT DIRECTOR
DIVISION OF PURCHASING**

BID DOCUMENT SUBMISSION CHECKLIST

**ALL SIGNATURES AND SEALS SHALL BE ORIGINALS UNLESS OTHERWISE SPECIFIED
BID SHEETS SHOULD NOT BE SUBMITTED DOUBLE SIDED PAGES, (SINGLE SIDE ONLY)**

EACH BIDDER SHOULD COMPLETE THIS FORM AND INITIAL EACH ENTRY.

DATE COMPLETED: _____

**PLEASE SUBMIT BID DOCUMENTS ON SINGLE SIDED PAPER ONLY, WITH THE EXCEPTION OF THE SURETY
AND BID BOND DOCUMENTS.**

**IN ACCORDANCE WITH THE BID SPECIFICATIONS I HAVE REVIEWED, COMPLETED / EXECUTED AND INCLUDED
THE FOLLOWING FORMS:**

_____ Bid Form Page (**Signed, Dated and Bid on all alternatives applicable to the Work**).

_____ Security in the form of:

_____ Bid bond in an amount equal to 10% of the total amount of this bid not to exceed \$20,000.00; or

_____ Certified check or cashier's check in the amount of 10% of this bid not to exceed \$20,000.00

_____ Consent of Surety form signed by a Surety Company if the total amount of your Bid is over \$36,000.00.

If your bid is accepted, the Surety Company that provided the Consent shall be required to furnish a Performance, Labor and Materials Bond in the amount of 100% of the award of the contract.

The County of Union has provided its Consent of Surety form for your use. The use of this form by your Surety Company will expedite the bid review process and eliminate the possibility of having your bid rejected. If, however, you should need to use another form, please use language similar to that used on the Union County form and avoid making any additions or deletions to the Union County form language. In lieu of the Consent of Surety you may submit a Certified Check in the full amount of the bid.

_____ STATEMENT OF BIDDER OWNERSHIP. Pursuant to N.J.S.A. 52:25-24.2, which includes **BOTH** of the following documents:

- Bidder Signature Page
- Bidder Disclosure Statement (**Fill out 2 pages completely**)

_____ SUBCONTRACTOR IDENTIFICATION. Pursuant to N.J.S.A. 40A:11-16, which includes **BOTH** of the following documents:

- Subcontractor Identification Statement: List of Subcontractors (**only for certain types of work**)
- Subcontractor Identification Certification

_____ Acknowledgement of Addendum form: (**This form is to be used only when an addendum has been added to the specifications**).

_____ A copy of the State of New Jersey Department of the Treasury, Division of Revenue, **Business Registration Certificate ("BRC")** should be included with the bids as it must be received by the County prior to the award of the contract. The BRC provided must show that the Bidder was registered at the time of receipt of bids or the bid will be rejected.

_____ A copy of the State of New Jersey Department of the Treasury, Division of Revenue, **Business Registration Certificate (“BRC”)** of all named or listed subcontractors (List of Subcontractors) in a Construction bid should be included with the bid as the BRC(s) must be received by the County prior to the award of the contract. Each subcontractor’s certificate provided must show that the subcontractor was registered at the time of the receipt of bids or the bid will be rejected.

_____ Affirmative Action Requirement

_____ Experience Statement

_____ Certificate of Bidder showing ability to perform Contract

_____ Non-Collusion Affidavit – Fill out completely and notarize

_____ Certificates from New Jersey Department of Labor and Workforce and Workforce Development – Public Works Contractor Registration Act. **(Only for certain types of work)**

_____ Federal Attachments **(If applicable)**

_____ NJDPMC Certificate / Notice of Classification **(If applicable)**

_____ Americans with Disabilities Act

_____ Statement of Bidder’s Qualifications

_____ Contractor Performance Record

_____ Affidavit Regarding List of Debarred, Suspended or Disqualified Bidders

_____ Prior Negative Experience Questionnaire

_____ Contractor’s Certification of Compliance – New Jersey Prevailing Wage Act

_____ Uncompleted Contracts Affidavit **(For Bidder, if applicable) MUST ALSO PROVIDE DPMC FORM 701**

_____ Certificate of Insurance Statement

_____ Collection of Use Tax on Sales to Local Government Statement

_____ Acknowledgement of Project Labor Agreement (PLA)

_____ Time of Completion

_____ Disclosure of Investment Activities in Iran

_____ Federal Non-Debarment Certification

_____ BYRD Anti-Lobbying Amendment Certification

_____ Certification Regarding Lobbying

_____ Disclosure of Lobbying Activities (LLL Form)

I HAVE TAKEN THE FOLLOWING ACTIONS:

_____ Visited the site and attended the Pre-Bid Meeting **(Where applicable)**

_____ Reviewed the Contract Documents (including any permits the County or its professionals may have obtained), Work, Site, Locality, and Local Conditions and Laws and Regulations that in any manner may affect Cost, Progress, Performance or Furnishing of Work.

_____ Reviewed Bond Requirements

Bidders name _____

_____ Provided Proof of Compliance with New Jersey Prevailing Wage Act

_____ Reviewed Form of Owner/Contractor Agreement and General Conditions to the Contract

NOTE: QUESTIONS PERTAINING TO THIS BID ARE TO BE DIRECTED TO THE DIVISION OF PURCHASING AT ucbids@ucnj.org.

BIDDING DOCUMENTS

The Bidding Documents consist of the following items:

- **ADDENDA, if issued**
- **CLARIFICATIONS, if issued**
- **INSTRUCTION TO BIDDERS**
- **BID FORM**
- **OWNER-CONTRACTOR AGREEMENT (AIA 101) AND GENERAL CONDITIONS (AIA 201)**
- **SPECIFICATIONS: As outlined in the Table of Contents and included in the Project Manual.**
- **DRAWINGS: As per List of Drawings, indicated on the Project Title Sheet.**

BID FORM

I/We have carefully examined the plans, specifications, and advertisement for bid for the

**Ash Brook Golf Course Clubhouse Improvements,
Township of Scotch Plains, County of Union, New Jersey
BA# 8-2024; Union County Engineering Project #2023-009**

that is on file in the Union County Division of Engineering. I/We have inspected the site of the work and will contract to do all the work and furnish all materials mentioned in said plans and specifications. Work will be accomplished in the manner prescribed therein.

LUMP SUM BID:

Written

Figures

BID ALLOWANCES:

A. CONTINGENCY ALLOWANCE: (To be used if and when directed by the County)

Three Hundred and Fifty Thousand Dollars **\$350,000.00**

Written

Figures

B. 3RD PARTY TESTING & INSPECTION ALLOWANCE: (To be used for testing)

Fifty Thousand Dollars **\$50,000.00**

Written

Figures

TOTAL LUMP SUM PLUS BID ALLOWANCE A & B AMOUNTS:

Written

Figures

NOTE: Bid Contingency may include one-half of one percent of contract amount set aside for local training if and when directed by the County.

UNIT PRICES (SHALL BE FILLED IN AT TIME OF BID)

The Bid is a lump sum basis of award bid for all work. The following units prices are for changing quantities of work items from those indicated by the Contract Documents (Drawings and/or Specifications) and upon written instructions from the Architect, the following unit prices shall prevail. The unit prices may be used by the Owner and shall include all labor, installation, materials, bailing, shoring, removal, overhead, profit, insurance bond, and all incidental items required for similar work under the Specifications, and all other applicable provisions of

the Contract to cover the finished work of the several kinds called for. Changes shall be processed in accordance with the provisions set forth in the General Conditions. It is further agreed that the Owner may accept or reject any or all of the submitted Unit Prices at the time the Contract is awarded, or may substitute for them prices negotiated with the Contractor as part of the contract award process or as part of future Change Orders.

ALL SPACES ARE TO BE FILLED IN WITH A DOLLAR AMOUNT. ADD-DEDUCT AMOUNT CANNOT FLUCTUATE BY MORE THAN 10%.

- A. Unit Price #1: 4" Sanitary PVC Pipe _____ Linear Foot
- B. Unit Price #2: Concrete Slab Saw Cutting and Concrete Patching _____ Linear Foot
- C. Unit Price #3: Stone Back Fill _____ Cubic Yard
- D. Unit Price #4: PVC 90 Degree Elbow _____ Each
- E. Unit Price #5: PVC 45 Degree Elbow _____ Each
- F. Unit Price #6: PVC Cleanouts _____ Each
- G. Unit Price #7: PVC 'Y' Connections _____ Each
- H. Unit price #8: PVC Couplings _____ Each

CONSENT OF SURETY
TO ACCOMPANY PROPOSAL (BID)

_____ (hereinafter called Surety), organized and existing under the laws of the State of _____ duly authorized and qualified to transact business in the State of New Jersey, in consideration of the sum of One Dollar (\$1.00), lawful money of the United States of America, to it in hand paid, receipt whereof is hereby acknowledged, and in consideration, hereby certifies and agrees that if the contract for which the attached proposal is made be awarded to _____ (hereinafter called Contractor) for the performance of certain work and labor or the supplying of certain materials, or both, as more particularly set forth in said proposal and described for purposes of this instrument as a proposal for _____ to the COUNTY OF UNION and if Contractor shall enter into the contract, Surety will become bound as surety for its faithful performance, labor and material payment and will provide the Contractor with a performance, labor and material payment bond in the full amount of the contract price.

NOTE:
Expiration date
Needed if Annual
Surety

NAME OF INSURANCE COMPANY

ADDRESS: _____

ORIGINAL SIGNATURE
ATTORNEY-IN-FACT FOR INSURANCE CO.

NOTE: PROOF OF AUTHORITY OF OFFICERS OF SURETY COMPANY TO EXECUTE THIS DOCUMENT MUST BE SUBMITTED.

BIDDER SIGNATURE PAGE

THE BIDDER MUST READ THE FOLLOWING INSTRUCTIONS TO COMPLETE THIS PAGE:

- 1. If doing business under a **trade name, partnership or a sole proprietorship**, you must submit the bid under exact title of the trade name, partnership, or proprietorship, and the bid must be signed by either the **owner**, or a **partner** and **witnessed** by a **notary public**.
- 2. If a **Corporation**, the bid must be signed by the **President** or **Vice President** and **witnessed** by a **Corporate Secretary** (corporate title must be exact) and **affix corporate seal**. If a Corporate Secretary does not exist, President or Vice President's signature shall be witnessed by a Notary Public.
- 3. Other persons **authorized** by **corporate resolution** to execute agreements in its behalf may also sign the bid documents (pages). **Copy of a resolution must accompany the bid**.
- 4. The person who signs this bid form **must also** sign the **Non-Collusion Affidavit**.
- 5. You **cannot** witness your own signature.

NAME OF BIDDER

ADDRESS OF BIDDER

**ORIGINAL SIGNATURE
CORPORATE SECRETARY**

**PRINT NAME AND TITLE
CORPORATE SECRETARY**

TEL: _____
FAX: _____
E-Mail: _____

BY: _____
ORIGINAL SIGNATURE

Corporate Seal

PRINT OR TYPE NAME AND TITLE

WARNING: IF YOU FAIL TO FULLY, ACCURATELY, AND COMPLETELY SUPPLY THE INFORMATION REQUESTED ON THIS PAGE, YOUR BID MAY BE REJECTED.

STATEMENT OF OWNERSHIP DISCLOSURE

N.J.S.A. 52:25-24.2 (P.L. 1977, c.33, as amended by P.L. 2016, c.43)

This statement shall be completed, certified to, and included with all bid and proposal submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.

Name of Organization: _____

Organization Address: _____

Part I Check the box that represents the type of business organization:

- Sole Proprietorship (skip Parts II and III, execute certification in Part IV)
- Non-Profit Corporation (skip Parts II and III, execute certification in Part IV)
- For-Profit Corporation (any type) Limited Liability Company (LLC)
- Partnership Limited Partnership Limited Liability Partnership (LLP)
- Other (be specific): _____

Part II

- The list below contains the names and addresses of all stockholders in the corporation who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership who own a 10 percent or greater interest therein, or of all members in the limited liability company who own a 10 percent or greater interest therein, as the case may be. **(COMPLETE THE LIST BELOW IN THIS SECTION)**
- OR**
- No one stockholder in the corporation owns 10 percent or more of its stock, of any class, or no individual partner in the partnership owns a 10 percent or greater interest therein, or no member in the limited liability company owns a 10 percent or greater interest therein, as the case may be. **(SKIP TO PART IV)**

(Please attach additional sheets if more space is needed):

Name of Individual or Business Entity	Address

Part III DISCLOSURE OF 10% OR GREATER OWNERSHIP IN THE STOCKHOLDERS, PARTNERS OR LLC MEMBERS LISTED IN PART II

If a bidder has a direct or indirect parent entity which is publicly traded, and any person holds a 10 percent or greater beneficial interest in the publicly traded parent entity as of the last annual federal Security and Exchange Commission (SEC) or foreign equivalent filing, ownership disclosure can be met by providing links to the website(s) containing the last annual filing(s) with the federal Securities and Exchange Commission (or foreign equivalent) that contain the name and address of each person holding a 10% or greater beneficial interest in the publicly traded parent entity, along with the relevant page numbers of the filing(s) that contain the information on each such person. **Attach additional sheets if more space is needed.**

Website (URL) containing the last annual SEC (or foreign equivalent) filing	Page #'s

Please list the names and addresses of each stockholder, partner or member owning a 10 percent or greater interest in any corresponding corporation, partnership and/or limited liability company (LLC) listed in Part II **other than for any publicly traded parent entities referenced above.** The disclosure shall be continued until names and addresses of every noncorporate stockholder, and individual partner, and member exceeding the 10 percent ownership criteria established pursuant to N.J.S.A. 52:25-24.2 has been listed. **Attach additional sheets if more space is needed.**

Stockholder/Partner/Member and Corresponding Entity Listed in Part II	Address

Part IV Certification

I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder/proposer; that the **County of Union** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with **County of Union** to notify the **County of Union** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the, permitting the **County of Union** to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

SUBCONTRACTOR IDENTIFICATION STATEMENT
LIST OF SUBCONTRACTORS

This form is ONLY required for plumbing and gas fitting, steam and hot water heating and ventilating apparatus, steam power plants, electrical work, structural steel, ornamental iron work, and any other trades required to be identified by the specifications (including, but not limited, to satisfying any DPMC Classification requirements).

CHECK THIS BOX IF NONE OF THE ABOVE LISTED TRADES OR THOSE REQUIRED TO BE IDENTIFIED IN THE SPECIFICATIONS ARE TO BE USED TO PERFORM THE WORK

In compliance with N.J.S.A. 40A:11-16 and the bid specifications, the undersigned hereby lists the name or names of the following subcontractors:

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

IF MORE THAN THREE SUBCONTRACTORS, PLEASE COPY THIS SHEET AS NECESSARY AND ATTACH TO THE BID PACKAGE.

(Continued on following page)

SUBCONTRACTOR IDENTIFICATION CERTIFICATION

Note the law does not permit the listing of alternate subcontractors. However, multiple subcontractors for the same trade are permitted to be named provided the bidder meets the following requirements:

- Bidder identifies each subcontractor named for that category;
- Bidder states the scope of work, goods and services (the portion of the work) to be performed by each subcontractor; and
- Bidder provides the price quote provided by each subcontractor.

The bidder is advised that any change of subcontractor(s) from ones listed herein is subject to the County's approval. Change of subcontractor(s) will be approved only if made for good cause and not as a result of an arbitrary purpose.

The undersigned Bidder certifies and declares that the subcontractors listed above shall be used as subcontractors to complete certain portions of the work in this project as set forth in N.J.S.A. 40A: 11-16.

Witness

Date _____

NAME OF BIDDER

ADDRESS

By: _____
ORIGINAL SIGNATURE ONLY

PRINT NAME AND TITLE

ACKNOWLEDGMENT OF ADDENDUM

COUNTY OF UNION

(Name of Construction /Public Works Project) (Project or Bid Number)

Pursuant to N.J.S.A. 40A:11-23.1a., the undersigned bidder, hereby acknowledges receipt of the following notices, revisions, or addenda to the bid advertisement, specifications or bid documents. By indicating date of receipt, bidder acknowledges the submitted bid takes into account the provisions of the notice, revision or addendum. Note that the County of Union’s record of notice to bidders shall take precedence and that failure to include provisions of changes in a bid proposal may be subject for rejection of the bid.

Local Unit Reference Number or Title of Addendum/Revision	How Received (mail, fax, pick-up, etc.)	Date Received

ACKNOWLEDGMENT BY BIDDER:

NAME OF BIDDER: _____

ORIGINAL SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____

CONTRACTOR BUSINESS REGISTRATION CERTIFICATE

Pursuant to N.J.S.A. 52:32-44, the County of Union is prohibited from entering into a contract with an entity unless the bidder/proposer/contractor, and each subcontractor that is required by law to be named in a bid/proposal/contract has a valid Business Registration Certificate on file with the Division of Revenue and Enterprise Services within the Department of the Treasury.

Prior to contract award or authorization, the contractor shall provide the County of Union with its proof of business registration and that of any named subcontractor(s).

Subcontractors named in a bid or other proposal shall provide proof of business registration to the bidder, who in turn, shall provide it to the County of Union prior to the time a contract, purchase order, or other contracting document is awarded or authorized.

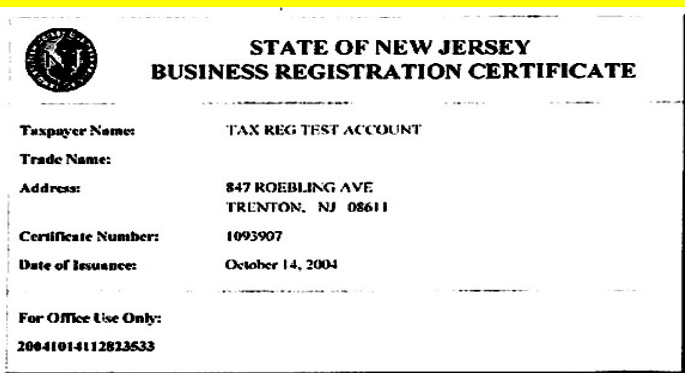
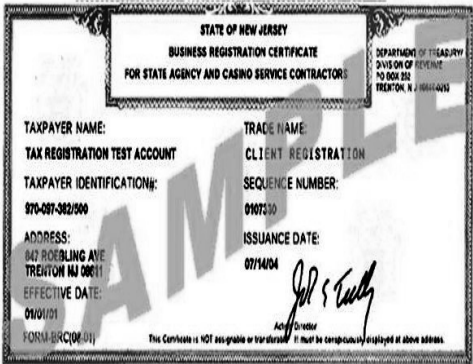
Proof of registration must show that the bidder was in fact registered with the State of New Jersey Department of the Treasury, Division of Revenue and obtained the business registration prior to the receipt of bids. If subcontractors are named on the bid, proof of the business registration for each must be provided prior to the award of a contract. Similarly to the bidder, the proof must show that each subcontractor was registered with the State of New Jersey Department of the Treasury, Division of Revenue and obtained the business registration prior to the receipt of bids.

During the course of contract performance:

- (1) the contractor shall not enter into a contract with a subcontractor unless the subcontractor first provides the contractor with a valid proof of business registration.
- (2) the contractor shall maintain and submit to the County of Union a list of subcontractors and their addresses that may be updated from time to time.
- (3) the contractor and any subcontractor providing goods or performing services under the contract, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into the State. Any questions in this regard can be directed to the Division of Taxation at (609)292-6400. Form NJ-REG can be filed online at <http://www.state.nj.us/treasury/revenue/busregcert.shtml>.

Before final payment is made under the contract, the contractor shall submit to the County of Union a complete and accurate list of all subcontractors used and their addresses.

Pursuant to N.J.S.A. 54:49-4.1, a business organization that fails to provide a copy of a business registration as required, or that provides false business registration information, shall be liable for a penalty of \$25 for each day of violation, not to exceed \$50,000, for each proof of business registration not properly provided under a contract with a contracting agency.



AFFIRMATIVE ACTION REQUIREMENT

REQUIRED AFFIRMATIVE ACTION EVIDENCE

General Requirements of P.L. 1975, c. 127: You are hereby put on notice that:

CONSTRUCTION CONTRACTS: The successful contractor must submit within three (3) days of the notice of intent to award or the signing of the contract the initial project manning report (A.A.201). This report should be submitted at the time the signed contract is returned to the County of Union. Attention: *Affirmative Action Officer*.

If the successful contract does not submit the initial project manning report (A.A.201) within the three (3) days from the time the signed contract is returned to the County of Union, the County of Union WILL declare the contractor non-responsive and award the contract to the next lowest responsible bidder.

NAME OF BIDDER

ORIGINAL SIGNATURE

PRINT OR TYPE NAME AND TITLE

DATE THIS FORM IS COMPLETED

EXPERIENCE STATEMENT

I hereby certify that my company has performed the following private or public work, which is relevant to this bid. I further certify that my company has never defaulted under any contract. Should you not sign this form due to prior defaults, please provide details on an attached sheet.

Witness

NAME OF BIDDER

Date

ADDRESS

By: _____
ORIGINAL SIGNATURE ONLY

PRINT NAME AND TITLE

YOU MAY ATTACH ADDITIONAL SHEETS, BUT YOU MUST SIGN AND WITNESS THIS SHEET.

CERTIFICATE OF BIDDER SHOWING ABILITY TO PERFORM CONTRACT

STATE OF NEW JERSEY / _____)
Specify, if Other) SS:
COUNTY OF _____)

I, _____, of the (City, Town, Borough, etc.) of _____
State of _____, of full age, being duly sworn according to law on my oath depose and say that:

I am _____ of the firm of _____, the Bidder making
the proposal for the above named Project ("Contractor"), and that I executed said proposal with full authority to do so; and
that said Contractor, pursuant to N.J.S.A. 40A:11-20, certifies that it owns, leases or controls all the necessary equipment
required by the Plans, Specifications and Advertisements under this Bids are asked for.

If the Bidder is not the actual owner or lessee of any such equipment, then the Bidder shall attach to this Certificate
information identifying the source from which the equipment will be obtained, and such information shall be accompanied
by a certificate from the owner or person in control of the equipment definitively granting to the Bidder the control of the
equipment required during such time as may be necessary for the completion of that portion of the contract.

(Also type or print name of affiant under signature)

By: _____

NON-COLLUSION AFFIDAVIT
(N.J.S.A. 52:34-15)

STATE OF _____)
) SS: _____
 COUNTY OF _____)

I _____, of the City of _____, in the County of _____, and the State of _____, of full age, being duly sworn according to law, on my oath depose and say that: I am _____ of the firm of _____, the bidder making the proposal for the above named project, and that I executed the said proposal for the above named project, and that I executed the said proposal with full authority to do so; that said bidder has not, directly or indirectly, entered into any agreement, participation in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named project; and that all statements contained in said proposal and in this Affidavit are true and correct, and made with full knowledge that the COUNTY OF UNION, NEW JERSEY relies upon the truth of the statements contained in said proposal and in the statements contained in the affidavit in awarding the contract for the said project.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bonafide established commercial or selling agencies maintained by _____ (N.J.S.A. 52:34-15).

NAME OF BIDDER

ORIGINAL SIGNATURE ONLY

NOTE: The person who signed the bidder signature page for the bidder should sign this form also.

Subscribed and sworn before me
 this ____ day of _____, 20 ____.

 Notary Public of the State of _____
 My commission expires: _____

WARNING: IF YOU FAIL TO FULLY, ACCURATELY, AND COMPLETELY FILL OUT THIS AFFIDAVIT OF NON-COLLUSION, YOUR BID MAY BE REJECTED.

Contractor Registration Advisement
For Public Works Projects

A new law, known as "The Public Works Contractor Registration Act" (P.L. 1999, c.238), became effective April 11, 2000. Under the Act, no contractor/subcontractor will be permitted to bid on or engage in any contract for public work, as defined in Section 2 of P.L. 1963, c.150 (C:34:11-56.26), unless that contractor/subcontractor is registered with the New Jersey Department of Labor and Workforce and Workforce Development. The Act provides that upon registration with the Department, a public works contractor/subcontractor will be issued a certificate by the Department indicating compliance with the Act's requirements. The registration fee has been set at \$300.00 per year. Upon the effective date of the Act, public bodies will be expected to request production of such a certificate from those bidding on or engaging in public works projects.

It is important to note that the term "contractor," is defined in the, Act as, "a person, partnership, association, joint stock company, trust, corporation or other legal business entity or successor thereof who enters into a contract which is subject to the provision of the "New Jersey Prevailing Wage Act," P.L. 1963, c.150 (C.34:11-56.25, et seq.) for the construction, reconstruction, demolition, alteration, repair or maintenance of a public building regularly open to and used by the general public or a public institution, and includes any subcontractor or lower tier subcontractor as defined herein: except that, for the purposes of the act, no pumping station, treatment plant or other facility associated with utility and environmental construction, reconstruction, demolition, alteration, repair or maintenance shall be regarded as a public building regularly open to and used by the general public or a public institution."

Registration forms, copies of the Act, and other relevant information can be obtained by contacting:

Contractor Registration Unit
New Jersey Department of Labor and Workforce and Workforce Development
Division of Wage & Hour Compliance
PO Box 389
Trenton, New Jersey 08625-0389
Telephone: 609-292-9464
Fax: 609-633-8591
E-mail: contreg@dol.state.nj.us

AMERICANS WITH DISABILITIES ACT
EQUAL OPPORTUNITY FOR INDIVIDUALS WITH DISABILITIES

The contractor and the County of Union (hereafter "Owner") do hereby agree that the provisions of Title II of the Americans With Disabilities Act of 1990 (the "Act") (42 US.C. S12101 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs and activities provided or made available by public entities, and the rules and regulations promulgated pursuant thereunto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the Owner pursuant to this contract, the contractor agrees that the performance shall be in strict compliance with the Act. In the event the contractor, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the contractor shall defend the Owner in any action or administrative proceeding commenced pursuant to this Act. The contractor shall indemnify, protect, and save harmless the Owner, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The contractor shall, at its own expense, appear, defend, and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the Owner's grievance procedure, the contractor agrees to abide by any decision of the Owner which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the Owner, or if the Owner incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the contractor shall satisfy and discharge the same at its own expense.

The Owner shall, as soon as practicable after a claim has been made against it, give written notice thereof to the contractor along with full and complete particulars of the claim. If any action or administrative proceeding is brought against the Owner or any of its agents, servants, and employees, the Owner shall expeditiously forward or have forwarded to the contractor every demand, complaint, notice, summons, pleading, or process received by the Owner or its representatives.

It is expressly agreed and understood that any approval by the Owner of the services provided by the contractor pursuant to this contract will not relieve the contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the Owner pursuant to this paragraph.

It is further agreed and understood that the Owner assumes no obligation to indemnify or save harmless the contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this Agreement. Furthermore, the contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the contractor's obligations assumed in this Agreement, nor shall they be construed to relieve the contractor from any liability, nor preclude the Owner from taking any other actions available to it under any other provisions of this Agreement or otherwise at law.

Name _____
(Please print or type)

Signature _____ **Date** _____

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. Questions may be answered on separate attached sheets. The Bidder may submit any additional information it desires.

1. _____
(Name of Bidder)

2. _____
(Permanent Main Office Address)

3. _____
(When Organized)

4. _____
(If a Corporation, where incorporated)

5. Number of years your organization has been engaged in construction or contracting business under present firm or trade name? _____

6. How many years of experience in construction work has your organization had (a) as a general contractor? And/or (b) As a subcontractor? _____

7. Contracts on hand: (Attach a list or table showing gross amounts of each Contract and the appropriate dates of completion) _____

8. General character of work performed by you. _____

9. Have you ever failed to complete any work awarded to you? _____

10. Have you ever defaulted on a Contract? _____ If so, complete details, including where and why?

STATEMENT OF BIDDER'S QUALIFICATIONS - (continued)

11. Has any officer or partner of your organization ever failed to complete a construction contract handled in its own name? If so, state name of individual, name of owner, location and type of project, and reason for the failure to complete. _____

12. List your major equipment available for this Contract.

13. Experience in the construction work similar in importance to this Project.

14. Have you had any material adverse changes from the trades as listed in NJ Notice of Classification within last five (5) years? _____. If so, list prior classification.

15. Background and experience of the principal members of your organization, including the officers.

Individual's Name	Present Position or Office	Yrs. of Construction Experience	Magnitude & Type of Work	In What Capacity

16. Bank Reference. (Name, Address, Phone, Representative) _____

17. Will you, upon request, fill out a detailed financial Statement? _____

18. The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the proper agency in verification of the responses comprising this Statement of Bidder's Qualifications.

19. Bidder's telephone number, fax number and e-mail address (if applicable).

Phone _____

Fax _____

E-mail _____

Mobile _____

Dated at _____ this _____ day of _____, 20__.

BIDDER (Signature)

BIDDER (Print Name)

Subscribed and sworn to before me
this _____ day of _____, 20__.

(Seal) Notary Public of New Jersey/
Specify Other State
My Commission Expires _____, 20__.

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

CONTRACTOR PERFORMANCE RECORD

List all contracts completed by you below or provide separate form.

Name of Owner	Name & Location of Project: Type Of Work	Prime or Sub-Cont.	Engineer or Architect in Charge for Owner	Contract Price (Omit Cost)	Date Completed	Was Time* Extension Necessary	Were Any Penalties Imposed	Were Liens* Claims or Stop Notice Filed

* If answer is YES, provide explanation of details in connection with non-completion of contracts, time extensions, penalties imposed, labor troubles, liens, claims and notices filed against contracts listed in preceding item "Performance Record" on an attached sheet.

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

Bidders name _____

CONTRACTOR PERFORMANCE RECORD
CERTIFICATION

The information above is true and complete to the best of my knowledge and belief.

(Name of Organization)

(Signature)

(Title)

Subscribed and sworn to before me
This _____ day of _____, 20____.

(Seal) Notary Public of New Jersey/
Specify Other State
My Commission Expires _____, 20____.

PRIOR NEGATIVE EXPERIENCE QUESTIONNAIRE
(N.J.S.A. 40A:11-4)

1. Within the past ten (10) years, have you been found, through either court adjudication, arbitration, mediation, or other contractually stipulated alternate dispute resolution mechanism, to have: failed to provide or perform goods or services; or failed to complete a contract in a timely manner; or otherwise performed unsatisfactorily under a prior contract with a public entity?

_____ yes _____ no If yes, please provide full, detailed explanation.

2. Within the past ten (10) years, have you defaulted on a contract, thereby requiring a public entity to utilize the services of another contractor to provide the goods or perform the services or to correct or complete the contract?

_____ yes _____ no If yes, please provide full, detailed explanation.

3. Within the past ten (10) years, have you defaulted on a contract, thereby requiring a public entity to look to your surety for completion of the contract or tender of the costs of completion?

_____ yes _____ no If yes, please provide full, detailed explanation.

4. Within the past ten (10) years, have you been debarred or suspended from contracting with any of the agencies or department of the executive branch of the State of New Jersey at the time of the contract award, where the action was based on failure to perform a contract for goods or services with a public entity?

_____ yes _____ no If yes, please provide full, detailed explanation.

PRIOR NEGATIVE EXPERIENCE CERTIFICATION

I hereby certify that the above statements are true and accurate as of this _____ day of _____, 20__.

Name of Contractor

By _____
(Signature of Authorized Representative)

Subscribed and sworn to before me
This _____ day of _____, 20__.

(Seal) Notary Public of New Jersey/
Specify Other State
My Commission Expires _____, 20__.

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

TO BE COMPLETED ONLY WHEN FINAL PAYMENT IS REQUESTED

CONTRACTOR'S CERTIFICATION OF COMPLIANCE - NEW JERSEY PREVAILING WAGE ACT

TO: County of Union
Division of Engineering
2325 South Avenue
Scotch Plains, New Jersey 07076

CONTRACT:

PROJECT:

In accordance with the requirements of the New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56 et al *, the undersigned contractor on the public work being performed for:

COUNTY OF UNION

hereby certifies that he/she has complied with the contract requirements regarding the payment of the minimum prevailing wages established under "The New Jersey Prevailing Wage Act" N.J.S.A. 34:11-56 et al.

CONTRACTOR: _____
ADDRESS: _____

BY: _____
ORIGINAL SIGNATURE ONLY

STATE OF NEW JERSEY
COUNTY OF _____

Being by me duly sworn according to law, on his oath deposes and says that _____ is _____ of _____ the above named contractor, and that the facts set forth in the above statement are true.

Subscribed and sworn before me
this ____ day of _____, 20__.

Notary Public: _____
My Commission Expires: _____

* N.J.S.A. 34:11-56.33 requires the contractor and subcontractor to file written statements with the public body in form satisfactory to the Commissioner certifying to the amounts then due and owing from such contractor and subcontractor filing such statement to any and all workmen for wages due on account of the public work, setting forth therein the names of the persons whose wages are unpaid and the amount due to each respectively. Union County will withhold the amount so deducted for the benefit of the workmen whose wages are unpaid as shown by the verified statement filed, and will pay directly to any workman the amount shown by such statement to be due to him for such wages. Such payment shall thereby discharge the obligation of the contractor to the person receiving such payment to the extent of the amount thereof.

UNCOMPLETED CONTRACTS AFFIDAVIT
(To be submitted with DPMC Form 701)

PURSUANT TO N.J.A.C. 17:19-2.13, BIDDER DECLARES THE FOLLOWING WITH RESPECT TO ITS UNCOMPLETED CONTRACTS, ON ALL WORK, FROM WHATEVER SOURCE (PUBLIC AND PRIVATE), BOTH IN NEW JERSEY AND FROM OTHER GOVERNMENTAL JURISDICTIONS

ENTITY	PROJECT TITLE	ORIGINAL CONTRACT AMOUNT	UNCOMPLETED AMOUNT AS OF BID OPENING DATE	NAME AND TELEPHONE NUMBER OF PARTY TO BE CONTACTED FROM ENTITY FOR VERIFICATION

TOTAL AMOUNT OF UNCOMPLETED CONTRACTS \$ _____

Sworn and Subscribed to Before me

This _____ day of _____ 20__

Notary Public

BIDDER:

(Signature)

(Print Name)

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

CERTIFICATE OF INSURANCE STATEMENT

The Bidder fully understands the County of Union insurance requirements as stated in the Instructions to Bidders as well as the Owner/Contractor Agreement and agrees to provide all insurance required by these documents prior to the issuance of the Notice to Proceed.

BIDDER (Signature)

BIDDER (Print Name)

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

COLLECTION OF USE TAX ON SALES TO LOCAL GOVERNMENTS STATEMENT

The Bidder fully understands the requirements of the use tax on sales to local governments as stated in the General Conditions to the Contract for Construction and the Instructions to Bidders, and agrees at all times to comply with the "Contractor Use Tax Collection Legislation", as defined therein, and the terms relating thereto contained in the Contract Documents.

BIDDER (Signature)

BIDDER (Print Name)

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

ACKNOWLEDGEMENT OF PROJECT LABOR AGREEMENT
(Projects of \$5 Million or more irrespective of Phasing)

Contractor _____, hereby acknowledges that the
within Project, upon which the undersigned has submitted a Bid Proposal, requires the
execution of a Project Labor Agreement and the utilization of union employees. The
undersigned agrees to execute the PLA and comply with all terms and conditions of
same in the performance of the Work.

Attest:

Contractor: _____

By: _____

TIME OF COMPLETION

The undersigned proposed that if awarded the Contract, the scope of work will be started within ten (10) calendar days and will be substantially completed within **Two Hundred and Eleven (211) calendar days** from the date of the notice to proceed.

I, _____ of _____
NAME (Print or type) COMPANY

Agree to complete work in the time frame specified _____
SIGNATURE

SITE VISIT – GENERAL CONTRACTOR

I, _____ of _____
NAME (Print or type) COMPANY

Visited the site of the work on _____
SIGNATURE

COUNTY OF UNION NEW JERSEY
Division of Purchasing
DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN FORM

Solicitation Number: _____ Vendor/Bidder: _____

PART 1
CERTIFICATION
VENDOR/BIDDER MUST COMPLETE PART 1 BY CHECKING ONE OF THE BOXES
FAILURE TO CHECK ONE OF THE BOXES WILL RENDER THE PROPOSAL NON-RESPONSIVE

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person nor entity, nor any of its parents, subsidiaries, or affiliates, is identified on the State of New Jersey, Department of the Treasury’s Chapter 25 list as a person or entity engaged in investment activities in Iran. The Chapter 25 list is found on the Department’s website at <http://www.state.nj.us/treasury/pdf/Chapter25List.pdf>. Vendors/Bidders **must** review this list prior to completing the below certification. **Failure to complete the certification will render a Vendor’s/Bidder’s proposal non-responsive.** If the Director of the Division of Purchase and Property finds a person or entity to be in violation of the law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

CHECK THE APPROPRIATE BOX

A. I certify, pursuant to Public Law 2012, c.25, that neither the Vendor/Bidder listed above nor any of its parents, subsidiaries, or affiliates is listed on the N.J. Department of Treasury’s list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 (“Chapter 25 List”). Disregard Part 2 and complete and sign the Certification below.

OR

B. I am unable to certify as above because the Vendor/Bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department’s Chapter 25 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the Certification below. Failure to provide such information will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

PART 2

PLEASE PROVIDE ADDITIONAL INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN

If you checked Box “B” above, provide a detailed, accurate and precise description of the activities of the Vendor/Bidder, or one of its parents, subsidiaries or affiliates, engaged in investment activities in Iran by completing the information below.

ENTITY NAME: _____
RELATIONSHIP TO VENDOR/BIDDER: _____
DESCRIPTION OF ACTIVITIES: _____
DURATION OF ENGAGEMENT: _____
ANTICIPATED CESSATION DATE: _____
VENDOR/BIDDER CONTACT NAME: _____
VENDOR/BIDDER CONTACT PHONE#: _____

Attach Additional Sheets If Necessary

CERTIFICATION

I, the undersigned, certify that I am authorized to execute this certification on behalf of the Vendor/Bidder, that the foregoing information and any attachments hereto, to the best of my knowledge are true and complete. I acknowledge that the County of Union, New Jersey is relying on the information contained herein, and that the Vendor/Bidder is under a continuing obligation from the date of this certification through the completion of any contract(s) with the County of Union to notify the County of Union in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification. If I do so, I will be subject to criminal prosecution under the law, and it will constitute a material breach of my agreement(s) with the County of Union, permitting the County of Union to declare any contract(s) resulting from this certification void and unenforceable.

Signature _____

Bidders name _____
Date _____

Print Name and Title _____

Revised 10/19/17

**CERTIFICATION OF NON-DEBARMENT
FOR FEDERAL GOVERNMENT CONTRACTS**

N.J.S.A. 52:32-44.1 (P.L. 2019, c.406)

This certification shall be completed, certified to, and submitted to the contracting unit prior to contract award, except for emergency contracts where submission is required prior to payment.

PART I: VENDOR INFORMATION	
Individual or Organization Name	
Physical Address of Individual or Organization	
Unique Entity ID (if applicable)	
CAGE/NCAGE Code (if applicable)	
Check the box that represents the type of business organization:	

Sole Proprietorship (skip Parts III and IV) Non-Profit Corporation (skip Parts III and IV)

For-Profit Corporation (any type) Limited Liability Company (LLC) Partnership

Limited Partnership Limited Liability Partnership (LLP)

Other (be specific): _____

PART II – CERTIFICATION OF NON-DEBARMENT: Individual or Organization
I hereby certify that the individual or organization listed above in Part I is not debarred by the federal government from contracting with a federal agency. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that the County of Union is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by the County of Union to notify the County of Union in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the

County of Union, permitting the County of Union to declare any contract(s) resulting from this certification void and unenforceable.			
Full Name (Print):		Title:	
Signature:		Date:	

PART III – CERTIFICATION OF NON-DEBARMENT: Individual or Entity Owning Greater than 50 Percent of Organization

Section A (Check the Box that applies)

<input type="checkbox"/>	Below is the name and address of the stockholder in the corporation who owns more than 50 percent of its voting stock, or of the partner in the partnership who owns more than 50 percent interest therein, or of the member of the limited liability company owning more than 50 percent interest therein, as the case may be.
--------------------------	---

Name of Individual or Organization	
---	--

Physical Address	
-------------------------	--

OR

<input type="checkbox"/>	No one stockholder in the corporation owns more than 50 percent of its voting stock, or no partner in the partnership owns more than 50 percent interest therein, or no member in the limited liability company owns more than 50 percent interest therein, as the case may be.
--------------------------	---

Section B (Skip if no Business entity is listed in Section A above)

<input type="checkbox"/>	Below is the name and address of the stockholder in the corporation who owns more than 50 percent of the voting stock of the organization’s parent entity, or of the partner in the partnership who owns more than 50 percent interest in the organization’s parent entity, or of the member of the limited liability company owning more than 50 percent interest in organization’s parent entity, as the case may be.
--------------------------	---

Stockholder/Partner/Member Owning Greater Than 50 Percent of Parent Entity	
---	--

Physical Address	
-------------------------	--

OR

<input type="checkbox"/>	<p>No one stockholder in the parent entity corporation owns more than 50 percent of its voting stock, no partner in the parent entity partnership owns more than 50 percent interest therein, or no member in the parent entity limited liability company owns more than 50 percent interest therein, as the case may be.</p>
--------------------------	---

Section C – Part III Certification

I hereby certify that no individual or organization that is debarred by the federal government from contracting with a federal agency owns greater than 50 percent of the **Organization listed above in Part I** or, if applicable, owns greater than 50 percent of a parent entity of **<name of organization>** _____ . I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that the County of Union is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by the County of Union to notify the County of Union in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the County of Union, permitting the County of Union to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

Part IV – CERTIFICATION OF NON-DEBARMENT: Contractor – Controlled Entities

Section A

<input type="checkbox"/>	<p>Below is the name and address of the corporation(s) in which the Organization listed in Part I owns more than 50 percent of voting stock, or of the partnership(s) in which the Organization listed in Part I owns more than 50 percent interest therein, or of the limited liability company or companies in which the Organization listed above in Part I owns more than 50 percent interest therein, as the case may be.</p>
--------------------------	---

Name of Business Entity	Physical Address

****Add additional sheets if necessary****

OR	
<input type="checkbox"/>	The Organization listed above in Part I does not own greater than 50 percent of the voting stock in any corporation and does not own greater than 50 percent interest in any partnership or any limited liability company.

Section B (skip if no business entities are listed in Section A of Part IV)
--

<input type="checkbox"/>	Below are the names and addresses of any entities in which an entity listed in Part III A owns greater than 50 percent of the voting stock (corporation) or owns greater than 50 percent interest (partnership or limited liability company).
--------------------------	---

Name of Business Entity Controlled by Entity Listed in Section A of Part IV	Physical Address

Add additional Sheets if necessary

OR	
-----------	--

<input type="checkbox"/>	No entity listed in Part III A owns greater than 50 percent of the voting stock in any corporation or owns greater than 50 percent interest in any partnership or limited liability company.
--------------------------	--

Section C – Part IV Certification
--

I hereby certify that the **Organization listed above in Part I** does not own greater than 50 percent of any entity that that is debarred by the federal government from contracting with a federal agency and, if applicable, does not own greater than 50 percent of any entity that in turns owns greater than 50 percent of any entity debarred by the federal government from contracting with a federal agency. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that the County of Union is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by the County of Union to notify the County of Union in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the County of Union, permitting the County of Union to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

BYRD ANTI-LOBBYING AMENDMENT CERTIFICATION
(To be submitted with each bid, proposal or offer exceeding \$100,000)

The undersigned, [Company] _____ certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, [Company] _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 et seq., apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Representative

Name and Title of Contractor's Authorized Representative

Date

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents of all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, United States Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Organization: _____

Street address: _____

City, State, Zip: _____

CERTIFIED BY: (type or print)

TITLE: _____

(signature)

(date)

DISCLOSURE OF LOBBYING ACTIVITIES (LLL Form)

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352 0348-0046

N/A – My agency does not engage in any lobbying activities

<p>1. Type of Federal Action:</p> <p><input type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance</p>	<p>2. Status of Federal Action:</p> <p><input type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. Initial award <input type="checkbox"/> c. Post-award</p>	<p>3. Report Type:</p> <p><input type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change</p> <p>For Material Change Only: year _____ quarter _____ date of last report _____</p>
<p>4. Name and Address of Reporting Entity:</p> <p><input type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier _____, <i>if known:</i></p> <p>Congressional District, if known:</p>	<p>5. If Reporting Entity in NO.4 is a Subawardee, enter Name and Address of Prim:</p> <p>Congressional District, if known:</p>	
<p>6. Federal Department/Agency:</p>	<p>7. Federal Program Name/Description:</p> <p>CDFA NUMBER, if applicable _____</p>	
<p>8. Federal Action Number, if known:</p>	<p>9. Award Amount, if known:</p> <p>\$ _____</p>	
<p>10. a. Name and address of Lobbying Registrant <i>(if individual, last name, first name, MI):</i></p>	<p>b. Individuals Performing Services <i>(including address if different from No. 10a) (las name, first name, MI):</i></p>	
<p>11. Information request through this form is authorized by title 31 U.S.C. Section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.</p>	<p style="text-align: right;">Signature:</p> <p>_____</p> <p>Print Name: _____</p> <p>Title: _____</p> <p>Telephone NO.: _____</p> <p>Date: _____</p>	

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is or expects to be a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number, Invitation for Bid (IFB) number, grant announcement number, the contract, grant, or loan award number, the application/proposal control number assigned by the Federal agency.) Include prefixes, e.g. "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. A) Enter the full name, address, city, state and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.
B) Enter the full names of the individual(s) performing services, and include full address if different from 10(a). Enter last name, first name and middle initial (MI).
11. The certifying official shall sign and date the form; print his/her name, title, and telephone number.

STANDARD SPECIFICATIONS

The Standard Specifications for Road and Bridge Construction of New Jersey Department of Transportation, 2019 Edition; is added to and/or amended elsewhere herein by the Notice to Contractors (Advertisement), Proposal, Information for Bidders, General Conditions, Supplemental Conditions, Project Plans, and Supplementary Specifications; shall, insofar as technical requirements are involved, govern in the execution of this project.

Such Standard Specifications are made a part of these Specifications by this reference and will not be repeated herein. It is the responsibility of prospective bidders to familiarize themselves with these Standard Specifications, copies of which may be examined at the office of the Engineer and may be obtained, upon payment of the cost thereof, from:

Department of Transportation
State of New Jersey
1035 Parkway Avenue
Trenton, New Jersey 08625

The Notice to Contractors (Advertisement), Proposal, General Conditions, Special Provisions, Project Plans and/or Supplementary Specifications shall govern and prevail in the case of conflict between them and the Standard Specifications.

In these Standard Specifications the words "COMMISSIONER" or "DEPARTMENT" shall refer to and mean the person, persons, body, board or agent legally empowered to enter into contracts and otherwise legally act for the Owner. The word "STATE" shall refer to and mean the professional engineering representative of the Owner as hereinbefore defined and the word "ENGINEER" shall refer to and mean the professional engineering representative of the Owner as hereinbefore defined and the word "INSPECTOR" shall mean the authorized project representative of the Engineer with the authority as hereinbefore defined. The word "LABORATORY" shall mean and refer to the Engineer who may, at his discretion, and with the consent of the Owner, employ qualified technical personnel or testing laboratories to assist him in fulfilling the duties normally assigned to the "LABORATORY" in these Standard Specifications.

When reference is made herein to the bulletins, standards, specifications, publications or requirements of the American Association of State Highway Official (AASHO), the American Concrete Institute (ACI), the American Society of Civil Engineers (ASCE) or similar national or regional societies, associations, institutes or organizations; the requirements of the bulletins, specifications, publications or requirements referred to shall be considered a part of these Specifications by such reference and shall not be repeated herein but shall have the same import and be as binding as if herein set forth in full.



AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the _____ day of _____ in the year _____
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
(Name, location and detailed description)

The Architect:
(Name, legal status, address and other information)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101®–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement.

AIA Document A201®–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

The Owner and Contractor agree as follows.

TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

- Not later than () calendar days from the date of commencement of the Work.

By the following date:

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
-----------------	-----------------------------

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be (\$), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
------	-------

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. (Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
------	-------	---------------------------

§ 4.3 Allowances, if any, included in the Contract Sum: (Identify each allowance.)

Item	Price
------	-------

§ 4.4 Unit prices, if any:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
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§ 4.5 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any.)

§ 4.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than () days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™-2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201-2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201-2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201-2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201-2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

_____ %

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201-2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

- Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- Litigation in a court of competent jurisdiction
- Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™-2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201-2017, may be given in accordance with AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203-2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™-2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™-2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013 incorporated into this Agreement.)

.5 Drawings

Number	Title	Date
--------	-------	------

.6 Specifications

Section	Title	Date	Pages
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.7 Addenda, if any:

Number	Date	Pages
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Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

- AIA Document E204™-2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

The Sustainability Plan:

Title	Date	Pages
-------	------	-------

Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
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.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)



AIA Document A101® – 2017 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the _____ day of _____ in the year _____
(In words, indicate day, month and year.)

for the following PROJECT:
(Name and location or address)

THE OWNER:
(Name, legal status and address)

THE CONTRACTOR:
(Name, legal status and address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Document A201®–2017, General Conditions of the Contract for Construction. Article 11 of A201®–2017 contains additional insurance provisions.

TABLE OF ARTICLES

- A.1 GENERAL
- A.2 OWNER'S INSURANCE
- A.3 CONTRACTOR'S INSURANCE AND BONDS
- A.4 SPECIAL TERMS AND CONDITIONS

ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE A.2 OWNER'S INSURANCE

§ A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ A.2.2 Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual general liability insurance.

§ A.2.3 Required Property Insurance

§ A.2.3.1 Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's

property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ A.2.3.1.1 Causes of Loss. The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:

(Indicate below the cause of loss and any applicable sub-limit.)

Cause of Loss	Sub-Limit
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§ A.2.3.1.2 Specific Required Coverages. The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:

(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)

Coverage	Sub-Limit
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§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

§ A.2.3.3 Insurance for Existing Structures

If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ A.2.4 Optional Extended Property Insurance.

The Owner shall purchase and maintain the insurance selected and described below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

- § A.2.4.1 **Loss of Use, Business Interruption, and Delay in Completion Insurance**, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.
- § A.2.4.2 **Ordinance or Law Insurance**, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.
- § A.2.4.3 **Expediting Cost Insurance**, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.
- § A.2.4.4 **Extra Expense Insurance**, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.
- § A.2.4.5 **Civil Authority Insurance**, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.
- § A.2.4.6 **Ingress/Egress Insurance**, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.
- § A.2.4.7 **Soft Costs Insurance**, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

§ A.2.5 Other Optional Insurance.

The Owner shall purchase and maintain the insurance selected below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

- § A.2.5.1 **Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information.
(Indicate applicable limits of coverage or other conditions in the fill point below.)

- § A.2.5.2 Other Insurance
(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage

Limits

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 **Certificates of Insurance.** The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

§ A.3.1.2 **Deductibles and Self-Insured Retentions.** The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 **Additional Insured Obligations.** To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than _____ (\$ __) each occurrence, _____ (\$ __) general aggregate, and _____ (\$ __) aggregate for products-completed operations hazard, providing coverage for claims including

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal injury and advertising injury;
- .3 damages because of physical damage to, or destruction of, tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

- .1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- .2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
- .3 Claims for bodily injury other than to employees of the insured.
- .4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured
- .5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
- .6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
- .7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
- .8 Claims related to roofing, if the Work involves roofing.
- .9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
- .10 Claims related to earth subsidence or movement, where the work involves such hazards.
- .11 Claims related to explosion, collapse, and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than _____ (\$) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than _____ (\$) each accident, _____ (\$) each employee, and _____ (\$) policy limit.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than _____ (\$) per claim and _____ (\$) in the aggregate.

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than _____ (\$) per claim and _____ (\$) in the aggregate.

§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than _____ (\$) per claim and _____ (\$) in the aggregate.

§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than _____ (\$) per claim and _____ (\$) in the aggregate.

§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than _____ (\$) per claim and _____ (\$) in the aggregate.

§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.

(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

- § A.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below.

(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

- § A.3.3.2.2 Railroad Protective Liability Insurance**, with policy limits of not less than _____ (\$) per claim and _____ (\$) in the aggregate, for Work within fifty (50) feet of railroad property.
- § A.3.3.2.3 Asbestos Abatement Liability Insurance**, with policy limits of not less than _____ (\$) per claim and _____ (\$) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.
- § A.3.3.2.4 Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.**
- § A.3.3.2.5 Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.**
- § A.3.3.2.6 Other Insurance**
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage

Limits

§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:
(Specify type and penal sum of bonds.)

Type	Penal Sum (\$0.00)
Payment Bond	
Performance Bond	

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

Sample



AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

THE OWNER:
(Name, legal status and address)

THE ARCHITECT:
(Name, legal status and address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining

provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™-2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building

information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the

site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's

capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes

remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the

time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under

Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the

Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate

Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The

Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

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

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

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

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable

by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The

foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers

to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied; (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect; (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents; (4) consent of surety, if any, to final payment; (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties; and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not

constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the

endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 **Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 **Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The

Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the

Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section

15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly

consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

Sample



STATE OF NEW JERSEY
Department of Labor and Workforce Development
Division of Wage and Hour Compliance - Public Contracts Section
PO Box 389
Trenton, NJ 08625-0389

PREVAILING WAGE RATE DETERMINATION

The New Jersey Prevailing Wage Act (N.J.S.A. 34:11-56.25 et seq.) requires that the Department of Labor and Workforce Development establish and enforce a prevailing wage level for workers engaged in public works in order to safeguard their efficiency and general well being and to protect them as well as their employers from the effects of serious and unfair competition.

Prevailing wage rates are wage and fringe benefit rates based on the collective bargaining agreements established for a particular craft or trade in the locality in which the public work is performed. In New Jersey, these rates vary by county and by the type of work performed.

Applicable prevailing wage rates are those wages and fringe benefits in effect on the date the contract is awarded. All pre-determined rate increases listed at the time the contract is awarded must also be paid, beginning on the dates specified. Rates that have expired will remain in effect until new rates are posted.

Prevailing Wage Rate

The prevailing wage rate for each craft will list the effective date of the rate and the following information:

W = Wage Rate per Hour **B** = Fringe Benefit Rate per Hour* **T** = Total Rate per Hour

* Fringe benefits are an integral part of the prevailing wage rate. Employers not providing such benefits must pay the fringe benefit amount directly to the employee each payday. Employers providing benefits worth less than the fringe benefit amount must pay the balance directly to the employee each payday.

Unless otherwise stated in the Prevailing Wage Rate Determination, the fringe benefit rate for overtime hours remains at the straight time rate.

When the Overtime Notes in the Prevailing Wage Rate Determination state that the overtime rates are "inclusive of benefits," the benefit rate is increased by the same factor as the wage rate (i.e. multiplied by 1.5 for time and one-half, multiplied by 2 for double time, etc.).

Apprentice Rate Schedule

An "apprentice" is an individual who is registered with the United States Department of Labor - Office of Apprenticeship and enrolled in a certified apprenticeship program during the period in which they are working on the public works project.

The apprentice wage rate is a percentage of the journeyman wage rate, unless otherwise indicated. The apprentice benefit rate is the full journeyman benefit rate, unless otherwise indicated.

If there is no apprentice rate schedule listed, the individual must be paid at least the journeyman rate even if that individual is in a certified apprentice program for that trade.

If there is no ratio of apprentices to journeymen listed for a particular craft, then the ratio shall be one (1) apprentice to every four (4) journeymen.

Comments/Notes

For each craft listed there will be comments/notes that cover the definition of the regular workday, shift differentials, overtime, recognized holidays, and any other relevant information.

Public Works Contractor Registration

The Public Works Contractor Registration Act (N.J.S.A. 34:11-56.48, et seq.) requires that **all** contractors, subcontractors, or lower tier subcontractors who are working on or who bid on public works projects register with the Department of Labor and Workforce Development. Applications are available at www.nj.gov/labor (click on Wage & Hour and then go to Registration & Permits).

Pursuant to N.J.S.A. 34:11-56.51:

No contractor shall bid on any contract for public work as defined in section 2 of P.L.1963, c. 150 (C.34:11-56.26) unless the contractor is registered pursuant to this act. No contractor shall list a subcontractor in a bid proposal for the contract unless the subcontractor is registered pursuant to P.L.1999, c.238 (C.34:11-56.48 et seq.) at the time the bid is made. No contractor or subcontractor, including a subcontractor not listed in the bid proposal, shall engage in the performance of any public work subject to the contract, unless the contractor or subcontractor is registered pursuant to that act.

Snow Plowing

Snow plowing contracts are not subject to the New Jersey Prevailing Wage Act or the Public Works Contractor Registration Act.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Air Conditioning & Refrigeration - Service and Repair

PREVAILING WAGE RATE

	03/01/23
Journeyman (Mechanic)	W44.23 B28.63 T72.86

Craft: Air Conditioning & Refrigeration - Service and Repair

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
As Shown	1st Year	2nd Year	3rd Year	4th Year	5th Year	Wage = %	of Jnymn	Wage		
Wage and Bene	40%	50%	60%	70%	80%	Bene = %	of Jnymn	Bene		

Ratio of Apprentices to Journeymen - 1:4

Craft: Air Conditioning & Refrigeration - Service and Repair

COMMENTS/NOTES

THESE RATES MAY BE USED FOR THE FOLLOWING:

- Service/Repair/Maintenance Work to EXISTING facilities.
- Replacement or Installation of air conditioning and refrigeration equipment when the combined tonnage does not exceed 15 tons for refrigeration, or 25 tons for air conditioning.
- Replacement or Installation of "packaged" or "unitary" rooftop-type units when the combined tonnage of the units does not exceed 75 tons.

NOTE: These rates may NOT be used for any work in new construction (including work on new additions).

The regular workday shall consist of 8 hours, starting between 6:00 AM and 10:00 AM, Monday through Friday.

SHIFT DIFFERENTIALS:

- The second and third shifts shall be paid an additional 15% of the hourly rate.
- All shifts must run for a minimum of 5 consecutive days.

OVERTIME:

Hours worked in excess of 8 per day or before or after the regular workday, that are not shift work, and all hours on Saturday shall be paid at time and one-half the hourly rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Boilermaker PREVAILING WAGE RATE

	01/01/23
Foreman	W53.50 B46.66 T100.16
General Foreman	W55.50 B47.71 T103.21
Journeyman	W48.50 B44.92 T93.42

Craft: Boilermaker APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 Hours	65%	70%	75%	80%	85%	90%	95%			
Benefit =	38.07	39.03	40.03	41.00	41.99	42.97	43.93			

Ratio of Apprentices to Journeymen - *

* 1 apprentice will be allowed for the first 5 journeymen, 1 apprentice for the next 10 journeymen and 1 apprentice for each succeeding 20 journeymen up to a maximum of 5 apprentices per contractor on any one job.

Craft: Boilermaker COMMENTS/NOTES

HIGH WORK: All apprentices working on the erection, repair, or dismantling of smoke stacks, standpipes, or water towers shall be paid the Journeyman rate.

The regular workday shall consist of 8 hours, between 8:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall work 7½ hours and receive 8 hours pay, at a rate equal to the regular hourly rate plus 10%.
- The third shift shall work 7 hours and receive 8 hours pay, at a rate equal to the regular hourly rate plus 20%.
- For "Municipal Water Works" projects only, the following shall apply: Two, four day, 10 hour shifts may be worked at straight time Monday through Thursday. The day shift shall work four days, at 10 hours, for 10 hours pay. The second shift shall work four days, at nine and a half hours, for 10 hours pay, plus 10% the hourly rate for new work and .25 cents on repair work. Friday may be used as a make-up day at straight time, due to weather conditions, holiday or any other circumstances beyond the employer's control.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays (except Labor Day) shall be paid at double the hourly rate. All hours on Labor Day shall be paid at four times the hourly rate.
- If any other craft employed by the same contractor, or a subcontractor thereof, receives double time in lieu of time and one-half, then the Boilermaker shall receive double time in lieu of time and one-half.
- For "Municipal Water Works" projects only, the following shall apply: Four 10 hour days may be worked Monday through Thursday at straight time. Friday may be used as a make-up day for a day lost to inclement weather, holiday or other conditions beyond the control of the employer. Overtime shall be paid for any hours that exceed 10 hours per day or 40 hours per week.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

RECOGNIZED HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Boilermaker - Minor Repairs

PREVAILING WAGE RATE

	01/01/23
Foreman	W35.45 B17.78 T53.23
General Foreman	W35.95 B17.78 T53.73
Mechanic	W33.95 B17.78 T51.73

Craft: Boilermaker - Minor Repairs

COMMENTS/NOTES

NOTE: These rates apply to MINOR REPAIR WORK ONLY (repair work in the field for which the contract amount does not exceed \$125,000.00), for boilers that do not produce electric or are not used in the heating of petroleum products.

OVERTIME:

Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays (except Labor Day) shall be paid at double the hourly rate. All hours on Labor Day shall be paid at four times the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Washington's Birthday, Good Friday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Thanksgiving Day, day after Thanksgiving, Christmas Day. Saturday holidays observed the preceding Friday, Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Bricklayer, Stone Mason

PREVAILING WAGE RATE

	06/01/23
Deputy Foreman	W51.00 B36.28 T87.28
Foreman	W55.75 B36.28 T92.03
Journeyman	W48.00 B36.28 T84.28

Craft: Bricklayer, Stone Mason

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	40%	50%	55%	60%	65%	70%	75%	80%		
6 Months										
Benefits	4.00	5.00	5.50	6.00	24.29	26.00	27.73	29.43		

Ratio of Apprentices to Journeymen - 1:5

Craft: Bricklayer, Stone Mason

COMMENTS/NOTES

The regular workday shall consist of 8 hours, between 6:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:

- When a 2 shift schedule (including a day shift) is established, the first, or day shift, shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular rate plus 10%, inclusive of benefits.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 10%, inclusive of benefits, and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular rate plus 10%, inclusive of benefits, and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When an irregular shift must be established, this shift shall receive the regular rate plus 10%, inclusive of benefits.

OVERTIME:

- The first 2 hours in excess of 8 per day, or before or after the regular workday that are not shift work, Monday through Friday, shall be paid at time and one-half the regular rate, inclusive of benefits. Any additional overtime shall be paid at double the regular rate, inclusive of benefits. The first 10 hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. Any additional overtime shall be paid at double the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Saturday may be used as a make-up day for hours lost to inclement weather.
- When Bricklayers/Stone Masons work on Saturday with Laborers, and no other crafts are working on the project for the day, benefits may be paid at straight time. If other crafts are present, the applicable overtime rate for benefits shall be paid.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Carpenter PREVAILING WAGE RATE

	05/04/23
Foreman	W62.72 B37.56 T100.28
Journeyman	W54.54 B32.73 T87.27

Craft: Carpenter APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	40%	55%	65%	80%	90%					
Benefit	59% of	Appren	tice	Wage	for all	intervals	+ \$0.56			

Ratio of Apprentices to Journeymen - 1:3

For Solar installation- all work on solar projects that fall under the jurisdiction of the carpenters, and does not require an electrician, the ratio of Apprentices to Journeymen shall be 1:1.

Craft: Carpenter COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES REGISTERED AS OF 5-1-19:

INTERVAL PERIOD AND RATES
 Yearly 40% 55% 65% 80%
 Benefits 59% of apprentice wage rate for all intervals + \$0.56

FOREMAN REQUIREMENTS:

- When there are 2 or more Carpenters on a job, 1 shall be designated as a Foreman.
- When there are 21 or more Carpenters on a job, 2 shall be designated as Foremen.

The regular workday shall consist of 8 hours, starting between 6:00 AM and 9:00 AM.

SHIFT DIFFERENTIALS:

- When a 2 shift schedule (including a day shift) is established, the day shift shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular rate plus 10%, inclusive of benefits.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 10% and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular rate plus 10% and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When an irregular shift must be established, this shift shall receive the regular rate plus 15%, inclusive of benefits.

OVERTIME:

- All hours in excess of 8 per day, or before or after an established shift that are not shift work, and all hours on Saturdays shall be paid at time and one-half the hourly rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the hourly rate, inclusive of benefits.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a day lost due to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans' Day may be substituted for the day after Thanksgiving.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Carpenter - Resilient Flooring

PREVAILING WAGE RATE

	05/04/23
Foreman	W62.72 B37.47 T100.19
Journeyman	W54.54 B32.64 T87.18

Craft: Carpenter - Resilient Flooring

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	40%	55%	65%	80%	90%					
Benefit	59%	of	Appren	tice	Wage	for all	intervals	+ \$0.47		
					Rate					

Ratio of Apprentices to Journeymen - *

* 1 apprentice shall be allowed to every 2 journeymen or major fraction thereof. No more than 3 apprentices on any one job or project.

Craft: Carpenter - Resilient Flooring

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES REGISTERED AS OF 5-1-19:

INTERVAL PERIOD AND RATES
 Yearly 40% 55% 65% 80%
 Benefits 59% of apprentice wage rate for all intervals + \$0.47

FOREMAN REQUIREMENTS:

- On any job where there are 4 or more Carpenters of Resilient Flooring, 1 must be designated a Foreman.

FOR SYNTHETIC TURF INSTALLATION ONLY:

- The rate shall be 90% of the wage and benefit rate.

The regular workday consists of 8 hours, starting between 6:00 AM and 9:00 AM.

SHIFT DIFFERENTIALS:

- When a 2 shift schedule (including a day shift) is established, the day shift, shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular wage rate plus 10%.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular wage rate, the second shift shall receive the regular wage rate plus 10% and the third shift shall receive the regular wage rate plus 15%.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular wage rate plus 10% and the third shift shall receive the regular wage rate plus 15%.
- When an irregular shift must be established, this shift shall receive the regular rate plus 15%, inclusive of benefits.

OVERTIME:

- Hours in excess of 8 per day or 40 per week, or before or after the regular workday, Monday through Friday, shall be paid at time and one-half the wage rate. Saturday may be used as a make-up day, at straight time, up to 8 hours, for hours lost to reasons beyond the control of the employer, up to a total of 40 hours per week; hours in excess of 8 on Saturday shall

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

then be paid at time and one-half the wage rate. If Saturday is not a make-up day, all hours on Saturday shall be paid at time and one-half the wage rate. All hours on Sundays and holidays shall be paid at double the wage rate.

- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for hours lost to reasons beyond the control of the employer. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the wage rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. Veterans' Day may be substituted for the day after Thanksgiving.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Carpenter-Residential Construction

PREVAILING WAGE RATE

	07/19/23
Foreman	W52.62 B11.78 T64.40
Journeyman	W45.76 B10.97 T56.73

Craft: Carpenter-Residential Construction

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	40%	55%	65%	80%						
Benefit	12% of	Appren	tice	wage rate	for all	intervals	+ \$5.47			

Ratio of Apprentices to Journeymen - 1:3

Craft: Carpenter-Residential Construction

COMMENTS/NOTES

FOREMAN REQUIREMENTS:

- When there are 2 or more Carpenters on a job, 1 shall be designated as a Foreman.
- When there are 21 or more Carpenters on a job, 2 shall be designated as Foremen.

The regular workday shall consist of 8 hours, starting between 6:00 AM and 9:00 AM.

RESIDENTIAL CONSTRUCTION:

All residential construction (excluding commercial buildings and institutional housing), no more than four (4) floors in height above grade consisting of those projects involving the construction, alteration, or repair of town houses or row houses, single family homes, mobile homes, multi-family homes, mixed-use buildings that include commercial space on the first floor or below grade, and apartment buildings.

SHIFT DIFFERENTIALS:

- When a 2 shift schedule (including a day shift) is established, the day shift shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular rate plus 10%, inclusive of benefits.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 10% and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular rate plus 10% and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When an irregular shift must be established, this shift shall receive the regular rate plus 15%, inclusive of benefits.

OVERTIME:

- All hours in excess of 8 per day, or before or after an established shift that are not shift work, and all hours on Saturdays shall be paid at time and one-half the hourly rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the hourly rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

day lost due to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans' Day may be substituted for the day after Thanksgiving.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Cement Mason

PREVAILING WAGE RATE

See "Bricklayer, Stone Mason" Rates

Craft: Cement Mason

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									

Ratio of Apprentices to Journeymen - 1:4

Craft: Cement Mason

COMMENTS/NOTES

See "Bricklayer, Stone Mason" Rates

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Commercial Painter

PREVAILING WAGE RATE

	05/02/23
Foreman	W48.02 B29.51 T77.53
General Foreman	W52.38 B29.51 T81.89
Journeyman	W43.65 B29.51 T73.16

Craft: Commercial Painter

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	40%	45%	55%	65%	70%	75%	80%	80%		
Benefits	8.85	8.85	11.25	11.25	12.30	12.30	15.10	15.10		

Ratio of Apprentices to Journeymen - 1:4

Craft: Commercial Painter

COMMENTS/NOTES

* Commercial Painters perform work on all commercial structures such as offices, schools, hotels, shopping malls, restaurants, condominiums, etc.

Spraying, sandblasting, lead abatement work on commercial buildings, work performed above 3 stories or 30 feet in height, or using swing scaffolds requires an additional 10% of the wage rate.

FOREMEN REQUIREMENTS:

- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:

- Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular rate.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.
- Four 10-hour days may be worked, at straight time, Monday through Friday.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, General Election Day,

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Veterans' Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Diver PREVAILING WAGE RATE

	06/01/23
Diver	W63.24 B51.72 T114.96
Tender	W51.50 B51.72 T103.22

Craft: Diver COMMENTS/NOTES

NOTE: All dive crews must consist of a Tender, a Diver, and a standby Diver (standby Diver is the same rate as a Diver).

DEPTH & PENETRATION RATES: Divers shall be paid the following depth and penetration rates, in addition to the regular hourly rate, when applicable:

AIR DIVES:

- 0-59 feet: No additional wage
- 60-74 feet: + \$0.25 per foot
- 75-125 feet: + \$0.78 per foot

MIXED GAS DIVES:

- 0-74 feet: No additional wage
- 75-125 feet: + \$1.00 per foot
- 126-200 feet: + \$2.00 per foot

PENETRATION DIVES:

- 126-200 feet: + \$1.50 per foot
- 201-275 feet: + \$1.75 per foot
- 276-350 feet: + \$2.00 per foot
- 351-425 feet: + \$2.50 per foot

SHIFT DIFFERENTIAL:

- When a 2 shift schedule (including a day shift) is established, the day shift shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis and receive an additional 113% of the wage rate.
- When a three shift schedule is established, all three shifts shall be established on an 8 hour basis, but the second and third shifts shall receive an additional 113% of the wage rate.
- Benefits on shift work shall be paid at the straight-time rate.

OVERTIME:

Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Presidential Election Day, Thanksgiving Day, Christmas Day. Veterans' Day may be switched with the day after Thanksgiving.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Dockbuilder/Pile Driver

PREVAILING WAGE RATE

	06/01/23
Foreman	W59.23 B51.72 T110.95
Foreman (Concrete Form Work)	W58.13 B38.36 T96.49
Journeyman	W51.50 B51.72 T103.22
Journeyman (Concrete Form Work)	W50.55 B38.36 T88.91

Craft: Dockbuilder/Pile Driver

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
Yearly	20.60	25.75	33.48	41.20						
Benefits	33.96	for all	intervals							

Ratio of Apprentices to Journeymen - *

* When there are 4 or fewer Dockbuilders/Pile Drivers on a job, no more than 1 may be an apprentice. When there are 5 or more Dockbuilders/Pile Drivers, there may be 1 apprentice for every 5 Dockbuilders/Pile Drivers.

Craft: Dockbuilder/Pile Driver

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR CONCRETE FORM WORK ONLY:

INTERVAL	PERIOD AND RATES			
Yearly	20.22	25.28	32.86	40.44
Benefits	26.14	for all	intervals	

CREOSOTE HANDLING:

When handling creosote products on land piling, floating marine construction, and construction of wharves, the worker shall receive an additional \$0.25 per hour.

HAZARDOUS WASTE WORK:

- Hazardous waste removal work on a state or federally designated hazardous waste site where Level A, B, or C personal protection is required: an additional 20% of the hourly rate, per hour.
- Hazardous waste removal work in Level D, or where personal protection is not required: an additional \$1.00 per hour.

CERTIFIED WELDER: When required on the job by the project owner, a Certified Welder shall receive an additional \$1.00 per hour.

FOREMAN REQUIREMENTS:

The first Dockbuilder/Pile Driver on the job shall be designated a Foreman.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

SHIFT DIFFERENTIAL:

- When a 2 shift schedule (including a day shift) is established, the day shift shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis and receive an additional 113% of the wage rate.
- When a three shift schedule is established, all three shifts shall be established on an 8 hour basis, but the second and third shifts shall receive an additional 113% of the wage rate.
- Benefits on shift work shall be paid at the straight-time rate.

OVERTIME:

Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Presidential Election Day, Thanksgiving Day, Christmas Day. Veterans' Day may be switched with the day after Thanksgiving.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Drywall Finisher

PREVAILING WAGE RATE

	05/02/23
Foreman	W47.17 B29.54 T76.71
General Foreman	W49.31 B29.54 T78.85
Journeyman	W42.88 B29.54 T72.42

Craft: Drywall Finisher

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	40%	50%		60%	70%		80%	90%		
6 Months										
Benefits	Intervals	1 to 2 =	11.45	Intervals	3 to 4 =	14.33	Intervals	5 to 6 =	18.04	

Ratio of Apprentices to Journeymen - 1:4

Craft: Drywall Finisher

COMMENTS/NOTES

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, and the third shift shall receive 8 hours pay for 7 hours of work.
- Shift work must run for a minimum of 5 consecutive workdays.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Electrician

PREVAILING WAGE RATE

	05/29/23	06/03/24
Cable Splicer	W68.06 B43.20 T111.26	W69.72 B44.96 T114.68
Foreman (11-20 Journeymen)	W72.39 B45.95 T118.34	W74.15 B47.84 T121.99
Foreman (1-3 Journeymen)	W68.06 B43.20 T111.26	W69.72 B44.96 T114.68
Foreman (4-10 Journeymen)	W71.15 B45.17 T116.32	W72.89 B47.02 T119.91
General Foreman (21-30 Journeymen)	W74.24 B47.14 T121.38	W76.06 B49.06 T125.12
General Foreman (31-60 Journeymen)	W80.43 B51.07 T131.50	W82.39 B53.15 T135.54
General Foreman (61+ Journeymen)	W81.67 B51.85 T133.52	W83.66 B53.97 T137.63
Journeyman	W61.87 B39.30 T101.17	W63.38 B40.89 T104.27
Sub-Foreman	W70.52 B44.79 T115.31	W72.25 B46.61 T118.86

Craft: Electrician

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
Yearly	40%	49%	58%	68%	80%		of Jour	neyman	Wage	Rate
Benefit	40%	49%	58%	68%	80%		of Jour	neyman	Benefit	Rate

Ratio of Apprentices to Journeymen - 2:3

Craft: Electrician

COMMENTS/NOTES

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

THESE RATES ALSO APPLY TO THE FOLLOWING:

- All burglar and fire alarm work.
- All fiber optic work.
- Teledata work in new construction.
- Teledata work involving 16 Voice/Data Lines or more.

The regular workday shall be 8 hours, between 8:00 AM and 4:30 PM.

FOREMAN REQUIREMENTS:

- 1 to 3 Journeymen- 1 must be a Foreman (Foreman/1-3 Journeymen rate).
- 4 to 10 Journeymen- 1 must be a Foreman (Foreman/4-10 Journeymen rate).
- 11 to 20 Journeymen- 1 must be Foreman (Foreman/11-20 Journeymen rate) and 1 must be a Sub-Foreman.
- 21 to 30 Journeymen- 1 must be a General Foreman (General Foreman/21-30 Journeymen rate) and 2 must be a Sub-Foreman.
- 31 to 40 Journeymen- 1 must be a General Foreman (General Foreman/31-40 Journeymen rate) and 3 must be a Sub-Foreman.
- 41 to 50 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 4 must be a Sub-Foreman.
- 51 to 60 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 5 must be a Sub-Foreman.
- 61+ Journeymen- 1 must be a General Foreman (General Foreman/61+ Journeymen rate) and 6 must be a Sub-Foreman.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 5 consecutive workdays.
- 2nd Shift (4:30 PM to 12:30 AM) shall receive 8 hours pay for 7.5 hours work + an additional 10% of the regular rate, per hour, inclusive of benefits.
- 3rd Shift (12:30 AM to 8:00 AM) shall receive 8 hours pay for 7 hours work + an additional 15% of the regular rate, per hour, inclusive of benefits.

OVERTIME:

Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, and all hours on Saturdays, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Electrician - Teledata (15 Voice/Data Lines & Less)

PREVAILING WAGE RATE

	12/04/23	12/02/24
Journeyman Technician (1-2 Workers on Job)	W47.08 B27.78 T74.86	W48.21 B28.45 T76.66
Master Tech/General Foreman (26 + Workers on Job)	W61.20 B36.12 T97.32	W62.67 B36.99 T99.66
Senior Technician/Lead Foreman (16-25 Workers on Job)	W56.03 B33.05 T89.08	W57.37 B33.86 T91.23
Technician A/Foreman (9-15 Workers on Job)	W53.67 B31.67 T85.34	W54.96 B32.43 T87.39
Technician B/Working Foreman (4-8 Workers on Job)	W51.32 B30.28 T81.60	W52.55 B31.01 T83.56
Technician C/Foreman (3 Workers on Job)	W48.96 B28.89 T77.85	W50.14 B29.59 T79.73

Craft: Electrician - Teledata (15 Voice/Data Lines & Less)

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
6 Months	35%	35%	40%	43%	48%	54%	61%	67%	74%	81%
Benefits	7.45	7.45	8.51	9.15	10.22	11.49	12.98	14.26	15.76	17.24

Ratio of Apprentices to Journeymen - 2:3

Craft: Electrician - Teledata (15 Voice/Data Lines & Less)

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AFTER 11-28-22:

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
6 Months	35%	35%	40%	43%	48%	54%	61%	67%	74%	81%
Benefits	7.67	7.67	8.76	9.43	10.52	11.84	13.38	14.69	16.22	17.76

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AFTER 12-4-23:

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
6 Months	35%	35%	40%	43%	48%	54%	61%	67%	74%	81%
Benefits	7.88	7.88	9.00	9.68	10.80	12.15	13.73	15.09	16.66	18.23

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AFTER 12-2-24:

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

INTERVAL	PERIOD AND RATES									
6 Months	35%	35%	40%	43%	48%	54%	61%	67%	74%	81%
Benefits	8.07	8.07	9.22	9.91	11.07	12.45	14.06	15.44	17.06	18.68

NOTES:

- These rates are for service, maintenance, moves, and/or changes affecting 15 Voice/Data (teledata) lines or less. These rates may NOT be used for any teledata work in new construction (including additions) or any fiber optic work.
- The number of Teledata workers on the jobsite is the determining factor for which Foreman category applies .

The regular workday shall be 8 hours, between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 5 consecutive workdays.
- 2nd Shift (4:30 PM to 12:30 AM) shall receive 8 hours pay for 7.5 hours work + an additional 10% of the regular rate, per hour, inclusive of benefits.
- 3rd Shift (12:30 AM to 8:00 AM) shall receive 8 hours pay for 7 hours work + an additional 15% of the regular rate, per hour, inclusive of benefits.

OVERTIME:

Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, that are not shift work, and the first 10 hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. Hours in excess of 10 on Saturday and all hours on Sunday and holidays shall be paid at double the regular rate, inclusive of benefits.

- Four 10-hour days may be worked Monday through Friday, between the hours of 7:00 AM and 5:30 PM. A make-up day may be used for a day not being worked during the four 10-hour day schedule if a holiday occurs during the week or for any other conditions that prevent an employee from working the four 10-hour day schedule.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. Saturday holidays will be observed the preceding Friday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Electrician - Teledata (16 Instruments & More)

PREVAILING WAGE RATE

See "Electrician" Rates

Craft: Electrician - Teledata (16 Instruments & More)

COMMENTS/NOTES

See ELECTRICIAN Rates

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Electrician- Outside Commercial

PREVAILING WAGE RATE

	05/29/23	06/03/24
Cable Splicer	W68.37 B42.89 T111.26	W70.04 B44.66 T114.70
Certified Welder	W65.26 B40.95 T106.21	W66.86 B42.62 T109.48
Equipment Operator	W62.15 B39.00 T101.15	W63.67 B40.60 T104.27
Foreman (11-20 Journeymen workers on job)	W72.72 B45.62 T118.34	W74.50 B47.50 T122.00
Foreman (1-3 Journeymen workers on job)	W68.37 B42.89 T111.26	W70.04 B44.66 T114.70
Foreman (4-10 Journeymen workers on job)	W71.47 B44.86 T116.33	W73.23 B46.70 T119.93
General Foreman (21-30 Journeymen workers on job)	W74.58 B46.81 T121.39	W76.41 B48.71 T125.12
General Foreman (31-60 Journeymen workers on job)	W80.80 B50.70 T131.50	W82.78 B52.76 T135.54
General Foreman (61+ Journeymen workers on job)	W82.04 B51.48 T133.52	W84.05 B53.58 T137.63
Groundman	W37.29 B23.41 T60.70	W38.21 B24.35 T62.56
Journeyman Lineman/Technician	W62.15 B39.00 T101.15	W63.67 B40.60 T104.27
Sub-Foreman	W70.85 B44.46 T115.31	W72.59 B46.27 T118.86

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Electrician- Outside Commercial

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
1000 Hours	60%	65%	70%	75%	80%	85%	90%			
Benefits	61.75% of	Journey	man	wage	+	\$.01				

Craft: Electrician- Outside Commercial

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE AS OF 5-29-23:

Interval Period and Rates
 1000 Hours 60% 65% 70% 75% 80% 85% 90%
 Benefits 62.75% of the Journeyman wage + \$.01

APPRENTICE RATE SCHEDULE AS OF 6-3-24:

Interval Period and Rates
 1000 Hours 60% 65% 70% 75% 80% 85% 90%
 Benefits 63.75% of the Journeyman wage + \$.01

* FOR UTILITY WORK PLEASE SEE STATEWIDE RATES

The regular worday shall be 8 hours, between 8:00 AM and 4:30 PM.

FOREMAN REQUIREMENTS:

- 1 to 3 Journeymen- 1 must be a Foreman (Foreman/1-3 Journeymen rate).
- 4 to 10 Journeymen- 1 must be a Foreman (Foreman/4-10 Journeymen rate).
- 11 to 20 Journeymen- 1 must be Foreman (Foreman/11-20 Journeymen rate) and 1 must be a Sub-Foreman.
- 21 to 30 Journeymen- 1 must be a General Foreman (General Foreman/21-30 Journeymen rate) and 2 must be a Sub-Foreman.
- 31 to 40 Journeymen- 1 must be a General Foreman (General Foreman/31-40 Journeymen rate) and 3 must be a Sub-Foreman.
- 41 to 50 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 4 must be a Sub-Foreman.
- 51 to 60 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 5 must be a Sub-Foreman.
- 61+ Journeymen- 1 must be a General Foreman (General Foreman/61+ Journeymen rate) and 6 must be a Sub-Foreman.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 5 consecutive workdays.
- 2nd Shift (4:30 PM to 12:30 AM): 8 hrs. pay for 7.5 hrs. work + an additional 10% of the regular rate, inclusive of benefits.
- 3rd Shift (12:30 AM to 8:00 AM): 8 hrs. pay for 7 hrs. work + an additional 15% of the regular rate per hour, inclusive benefits.

OVERTIME:

Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, and all hours on Saturdays, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS:

New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day,

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Thanksgiving Day and Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Electrician-Utility Work (North)

PREVAILING WAGE RATE

Rates are located in the "Statewide" rate package

Craft: Electrician-Utility Work (North)

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
* 6 Months	60%	65%	70%	75%	80%	85%	90%			
Benefits	69% of	Appren	tice	Wage	Rate	for all	intervals			

Craft: Electrician-Utility Work (North)

COMMENTS/NOTES

Electrician-Utility Work (North) rates are located in the "Statewide" rate package.

* The apprentice wage rate is paid at the percentage of the Journeyman Lineman wage rate located in the "Statewide" rate package.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Electrician-Utility Work (South)

PREVAILING WAGE RATE

Rates are located in the "Statewide" rate package

Craft: Electrician-Utility Work (South)

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	32.52	35.23	37.94	40.65	43.36	46.07	48.78			
Benefits	28.97	30.65	32.31	33.98	35.69	37.36	39.02			

Craft: Electrician-Utility Work (South)

COMMENTS/NOTES

Electrician-Utility Work (South) rates are located in the "Statewide" rate package.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Elevator Constructor

PREVAILING WAGE RATE

	03/29/23
Journeyman	W77.49 B45.23 T122.72

Craft: Elevator Constructor

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	34.60	42.62	50.37	58.12						
Benefits	35.56	36.49	38.02	39.55						

Ratio of Apprentices to Journeymen - 1:1

Craft: Elevator Constructor

COMMENTS/NOTES

The regular workday shall consist of either 7 or 8 hours to be established at the beginning of the project, between 7:00 AM and 4:30 PM.

OVERTIME:

For all hours worked before or after the regular workday, Monday through Friday, and all hours on Saturday and Sunday, shall be paid at double the hourly rate. Holiday pay is one days wages (8 hours) plus double the hourly rate for all hours worked.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Saturday holidays shall be observed on the previous Friday and Sunday holidays shall be observed on the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Elevator Modernization & Service

PREVAILING WAGE RATE

	03/29/23
Journeyman	W60.89 B44.07 T104.96

Craft: Elevator Modernization & Service

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	34.60	33.49	39.58	45.67						
Benefits	35.50	36.07	37.52	38.97						

Ratio of Apprentices to Journeymen - 1:1

Craft: Elevator Modernization & Service

COMMENTS/NOTES

MODERNIZATION (addition, replacement, refurbishing, relocation, or changes in design or appearance, of elevator equipment in existing buildings):

- The regular workday consists of 8 hours, between 7:00 AM and 4:30 PM.

- Overtime:

Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturday and Sunday shall be paid at time and one-half the hourly rate. Holiday pay is one days wages (8 hours) plus time and one-half the hourly rate for all hours worked.

SERVICE (repair or replacement of parts for the purpose of maintaining elevator equipment in good operating condition):

- The regular workday consists of 8 hours, between 6:00 AM and 6:00 PM.

- Overtime:

Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturday shall be paid at time and one-half the hourly rate. All hours on Sunday and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS (Modernization and Service): New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Saturday holidays shall be observed on the previous Friday and Sunday holidays shall be observed on the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Glazier PREVAILING WAGE RATE

	06/20/23
* Leadman	W52.53 B30.38 T82.91
Foreman	W54.53 B30.62 T85.15
General Foreman	W56.53 B30.86 T87.39
Journeyman	W50.53 B30.14 T80.67

Craft: Glazier APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
	50%	55%	60%	65%	70%	75%	80%	90%		
6 Months										
Benefits	10.16	10.16	12.85	12.85	16.15	16.15	17.64	17.64		

Ratio of Apprentices to Journeymen - 1:4

Craft: Glazier COMMENTS/NOTES

Hazard/Height Pay: +\$1.00 per hour

* When there are three (3) men working on a jobsite for three (3) days or longer, 1 Journeyman may be designated as a Leadman for the duration of the job, provided he has his OSHA certification.

FOREMAN REQUIREMENTS:

- When there are 4 or more Glaziers on a job, 1 must be designated a Foreman.
- When there are 15 or more Glaziers on a job, 1 must be designated a General Foreman.

The regular workday shall consist of 8 hours, between 7:00 AM and 5:30 PM, Monday to Friday.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, and the third shift shall receive 8 hours pay for 7 hours of work.

OVERTIME:

Hours in excess of 8 per day, or before or after the regular workday Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

rate.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, General Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Heat & Frost Insulator

PREVAILING WAGE RATE

	09/19/23
Foreman	W60.97 B37.97 T98.94
General Foreman	W63.31 B39.08 T102.39
Journeyman	W58.69 B37.41 T96.10

Craft: Heat & Frost Insulator

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	27.51	32.64	39.31	45.91						
Benefits	21.73	25.78	28.63	31.61						

Ratio of Apprentices to Journeymen - 1:3

Craft: Heat & Frost Insulator

COMMENTS/NOTES

NOTE: These rates apply to the installing of insulation on hot and cold mechanical systems.

The regular workday shall be 8 hours between 7:00 AM and 3:30 PM. In addition, the regular workday may also be 8 hours between 6:00 AM and 2:30 PM.

SHIFT DIFFERENTIAL:

- Shift work must run for a minimum of 5 consecutive workdays.
- Second Shift shall work 7.5 hours and receive 8 hours pay, at the regular rate, plus 25% per hour.
- Third Shift shall work 7 hours and receive 8 hours pay, at the regular rate, plus 30% per hour.

OVERTIME:

The first 2 hours in excess of 8 per day, hours outside of the regular workday Monday through Friday that are not shift work, and the first 10 hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours in excess of 10 per day, and all hours on Sunday and holidays (except Labor Day) shall be paid at double the regular rate, inclusive of benefits. All hours on Labor Day shall be paid at triple the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Presidential Election Day, Thanksgiving Day and Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Heat & Frost Insulator - Asbestos Worker

PREVAILING WAGE RATE

	09/19/23
Asbestos Helper	W36.89
Abatement	B24.92
	T61.81

Craft: Heat & Frost Insulator - Asbestos Worker

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	HEAT &	FROST	INSULAT OR						

Ratio of Apprentices to Journeymen - 1:3

Craft: Heat & Frost Insulator - Asbestos Worker

COMMENTS/NOTES

NOTE: These rates apply only to the removal of insulation materials/asbestos from mechanical systems, including containment erection and demolition, and placing material in appropriate containers.

The regular workday shall be 8 hours between 7:00 AM and 3:30 PM. In addition, the regular workday may also be 8 hours between 6:00 AM and 2:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 5 consecutive workdays.
- The second shift shall work 7.5 hours and receive 8 hours pay at the regular rate, plus 25% per hour.
- The third shift shall work 7 hours and receive 8 hours pay at the regular rate, plus 30% per hour.

OVERTIME: The first 2 hours in excess of 8 per day, hours outside of the regular workday Monday through Friday that are not shift work, and the first 10 hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours in excess of 10 per day, and all hours on Sunday and holidays (except Labor Day) shall be paid at double the regular rate, inclusive of benefits. All hours on Labor Day shall be paid at triple the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Presidential Election Day, Thanksgiving Day and Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Industrial Painter- Bridges

PREVAILING WAGE RATE

	02/01/23	02/01/24	02/01/25	02/01/26
Foreman	W63.28 B34.92 T98.20	W0.00 B0.00 T100.20	W0.00 B0.00 T102.20	W0.00 B0.00 T104.20
General Foreman	W65.78 B34.92 T100.70	W0.00 B0.00 T102.70	W0.00 B0.00 T104.70	W0.00 B0.00 T106.70
Journeyman	W58.28 B34.92 T93.20	W0.00 B0.00 T95.20	W0.00 B0.00 T97.20	W0.00 B0.00 T99.20

Craft: Industrial Painter- Bridges

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	50%	70%	90%							
6 Months										
Benefits	13.65	20.81	27.43							

Ratio of Apprentices to Journeymen - 1:3

Craft: Industrial Painter- Bridges

COMMENTS/NOTES

* Industrial Painters perform work on all industrial structures, such as bridges.

These rates apply to: All bridges that span waterways, roadways, railways and canyons. All tunnels, overpasses, viaducts and all appurtenances.

FOREMEN REQUIREMENTS:

- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays and Sundays shall be paid at time and one-half the regular rate. All hours on holidays shall be paid at double the regular rate, except Veterans Day, which shall be paid at time and one-half the regular rate.
- During a regular work week schedule, Saturday may be used as a make-up day lost to inclement weather, paid at the regular rate.
- Four 10-hour days may be worked, at the regular rate, Monday through Thursday. When the four 10-hour day schedule is used, the 11th and 12th hours shall be paid at time and one-half the regular rate. After the 12th hour, a worker shall be paid at double the regular rate. Friday may be used as a make-up day lost to inclement weather, paid at the regular rate.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Industrial Painter- Structural Steel

PREVAILING WAGE RATE

	02/01/23	02/01/24	02/01/25	02/01/26
Foreman	W52.02	W0.00	W0.00	W0.00
	B32.57	B0.00	B0.00	B0.00
	T84.59	T86.59	T88.59	T90.59
General Foreman	W54.52	W0.00	W0.00	W0.00
	B32.57	B0.00	B0.00	B0.00
	T87.09	T89.09	T91.09	T93.09
Journeyman	W47.02	W0.00	W0.00	W0.00
	B32.57	B0.00	B0.00	B0.00
	T79.59	T81.59	T83.59	T85.59

Craft: Industrial Painter- Structural Steel

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	INDUST	RIAL	PAINTER	BRIDGES					

Ratio of Apprentices to Journeymen - 1:3

Craft: Industrial Painter- Structural Steel

COMMENTS/NOTES

* Industrial Painters perform work on all industrial structures, such as water tanks, waste water facilities, refineries, any structural steel work, etc.

These rates apply to: All work in power plants (any aspect). On steeples, on dams, on hangers, transformers, substations, on all open steel, in refineries, tank farms, water/sewerage treatment facilities and on pipelines.

FOREMEN REQUIREMENTS:

- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays and Sundays shall be paid at time and one-half the regular rate. All hours on holidays shall be paid at double the regular rate, except for Veterans Day, which shall be paid at time and one-half the regular rate.
- During the regular work week schedule, Saturday may be used to make-up a day lost to inclement weather, paid at the regular rate.
- Four 10-hour days may be worked, at the regular rate, Monday through Thursday. When the four 10-hour day schedule is used, the 11th and 12th hours shall be paid at time and one-half the regular rate. After the 12th hour, a worker shall be paid at double the regular rate. Friday may be used as a make-up day lost to inclement weather, paid at the regular rate.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Industrial Painter- Water Tanks

PREVAILING WAGE RATE

	02/01/23	02/01/24	02/01/25	02/01/26
Foreman	W53.07 B32.22 T85.29	W0.00 B0.00 T87.29	W0.00 B0.00 T89.29	W0.00 B0.00 T91.29
General Foreman	W55.57 B32.22 T87.79	W0.00 B0.00 T89.79	W0.00 B0.00 T91.79	W0.00 B0.00 T93.79
Journeyman	W48.07 B32.22 T80.29	W0.00 B0.00 T82.29	W0.00 B0.00 T84.29	W0.00 B0.00 T86.29

Craft: Industrial Painter- Water Tanks

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	50%	70%	90%							
6 Months										
Benefits	13.65	20.81	27.43							

Ratio of Apprentices to Journeymen - 1:3

Craft: Industrial Painter- Water Tanks

COMMENTS/NOTES

* Industrial Painters perform work on all industrial structures, such as water tanks, waste water facilities, refineries, any structural steel work, etc.

These rates apply to: All new and repaint water tanks (interior and exterior).

FOREMEN REQUIREMENTS:

- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays and Sundays shall be paid at time and one-half the regular rate. All hours on holidays shall be paid at double the regular rate, except Veterans Day, which shall be paid at time and one-half the regular rate.
- During a regular work week schedule, Saturday may be used to make-up a day lost to inclement weather, paid at the regular rate.
- Four 10-hour days may be worked, at the regular rate, Monday through Thursday. When the four 10-hour day schedule is used, the 11th and 12th hours shall be paid at time and one-half the regular rate. After the 12th hour, a worker shall be paid at double the regular rate. Friday may be used as a make-up day lost to inclement weather, paid at the regular rate.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Ironworker PREVAILING WAGE RATE

	07/07/23
Rod /Fence Foreman	W49.89 B49.67 T99.56
Rod/Fence Journeyman	W46.89 B49.67 T96.56
Structural Foreman	W52.19 B49.67 T101.86
Structural Journeyman	W49.19 B49.67 T98.86

Craft: Ironworker APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
6 Months	50%	60%		Yearly	70%	80%	90%			
Benefits	same as	journeyma n	amount							

Ratio of Apprentices to Journeymen - 1:4

Craft: Ironworker COMMENTS/NOTES

HAZARDOUS WASTE WORK: On hazardous waste removal work on a state or federally designated hazardous waste site where the Ironworker is required to wear Level A,B, or C personal protection: + \$3.00 per hour

The regular workday consists of 8 hours between 6:00 AM and 4:30 PM.

FOREMAN REQUIREMENTS:

When there are 2 or more Ironworkers on a job, 1 shall be designated a Foreman.

SHIFT DIFFERENTIALS:

- When a 2 shift schedule is established, the first, or day shift , shall be established on an 8 hour basis .The second shift shall be established on an 8 hour basis, and receive the regular rate plus 15%.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 15%, and the third shift shall receive the regular rate plus 20%.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis.
- When an irregular shift is established for the Ironworker (Structural) classification, the rate shall be paid at time and one-half the regular rate, inclusive of benefits. When an irregular shift is established for the Rod/Fence classification, the shift shall be established on an 8 hour basis and receive the regular rate, plus 20%.

OVERTIME:

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

- All hours in excess of 8 per day, or before or after an established shift that are not shift work, and all hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the hourly rate, inclusive of benefits. Saturday may be used as a make-up day for a day lost to inclement weather. If Saturday is not a make-up day, all hours on Saturday shall be paid at time and one-half the hourly rate, inclusive of benefits.

- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Laborer - Asbestos & Hazardous Waste Removal

PREVAILING WAGE RATE

	09/05/23
Foreman	W44.75 B24.71 T69.46
Journeyman (Handler)	W39.78 B24.71 T64.49

Craft: Laborer - Asbestos & Hazardous Waste Removal

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	22.07	25.75	29.42	33.10						
Benefits	22.06	for	all	intervals						

Ratio of Apprentices to Journeymen - *

* Ratio of apprentices to journeymen shall not be more than one apprentice for the first journeyman and no more than (1) apprentice for each additional three (3) journeymen.

Craft: Laborer - Asbestos & Hazardous Waste Removal

COMMENTS/NOTES

NOTE: These rates apply to work in connection with Asbestos, Radiation, Hazardous Waste, Lead, Chemical, Biological, Mold Remediation and Abatement.

The regular workday shall be 8 hours.

OVERTIME:

- Hours in excess of 8 per day, Monday through Saturday, and all hours on Sunday and holidays shall be paid at time and one-half the regular rate.
- Benefits on ALL overtime hours shall be paid at straight time.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Easter, Memorial Day, July 4th, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. (Holidays start at 12:00 am).

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Laborer - Building

PREVAILING WAGE RATE

	11/14/23
Class A Journeyman	W38.25 B32.42 T70.67
Class B Journeyman	W37.25 B32.42 T69.67
Class C Journeyman	W31.70 B32.42 T64.12
Foreman	W43.00 B32.42 T75.42
General Foreman	W47.75 B32.42 T80.17

Craft: Laborer - Building

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
	60%	70%	80%	90%	of Class B	wage rate				
6 Months										
Benefit	29.17	29.17	29.17	29.17						

Ratio of Apprentices to Journeymen - *

* Ratio of apprentices to journeymen shall not be more than one apprentice for the first journeyman and no more than (1) apprentice for each additional three (3) journeymen.

Craft: Laborer - Building

COMMENTS/NOTES

CLASS A: Specialist laborer including mason tender or concrete pour crew; scaffold builder (scaffolds up to 14 feet in height); operator of forklifts, Bobcats (or equivalent machinery), jack hammers, tampers, motorized tampers and compactors, vibrators, street cleaning machines, hydro demolition equipment, riding motor buggies, conveyors, burners; and nozzle men on gunite work.

CLASS B: Basic laborer - includes all laborer work not listed in Class A or Class C.

CLASS C: Janitorial-type light clean-up work associated with the TURNOVER of a project, or part of a project, to the owner. All other clean-up work is Class B.

The regular workday shall be 8 hours between 6:00 AM and 6:00 PM.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 5 consecutive workdays.
- When a 2-shift schedule is worked, including a day shift, both shifts shall be established on the basis of 8 hours pay for 8 hours worked. The second shift shall receive the regular rate plus an additional 10%.
- When a 3-shift schedule is worked, the day shift shall be established on the basis of 8 hours pay for 8 hours worked, the second shift shall be established on the basis of 8 hours pay for 7.5 hours worked, and the third shift shall be established

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

on the basis of 8 hours pay for 7 hours worked. The day shift shall receive the regular rate, the second shift shall receive the regular rate plus an additional 10%, and the third shift shall receive the regular rate plus an additional 15%.

- When a second or third shift is worked with no day shift, the second or third shift shall be established on the basis of 8 hours pay for 8 hours worked. The second shift shall receive the regular rate plus an additional 10%, and the third shift shall receive the regular rate plus an additional 15%.

- When an irregular shift must be established this shift shall receive the regular rate plus an additional 10%.

OVERTIME:

- Hours in excess of 8 per day, or outside the regular workday that are not shift work, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. Saturday may be used as a make-up day (paid at straight time) for a day lost to inclement weather, or for a holiday that is observed during the work week, Monday through Friday. All hours on Sundays and holidays shall be paid at double the regular rate.

- Four 10-hour days may be worked Monday to Thursday, at straight time, with Friday used a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the regular rate.

- Benefits on ALL overtime hours shall be paid at time and one-half.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Laborer - Heavy & General

PREVAILING WAGE RATE

Rates are located in the
"Statewide" rate package

Craft: Laborer - Heavy & General

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 Hours	60%	70%	80%	90%						
Benefit	23.98	for	all	intervals						

Ratio of Apprentices to Journeymen - *

* No more than 1 apprentice for the first journeyman and no more than 1 apprentice for each additional 3 journeymen.

Craft: Laborer - Heavy & General

COMMENTS/NOTES

Heavy & General Laborer rates are located in the "Statewide" rate package.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Laborer-Residential and Modular Construction

PREVAILING WAGE RATE

	04/01/23
* Skilled Tradesman (only applies to Modular Construction)	W27.90 B5.45 T33.35
Foreman (person directing crew, regardless of his skill classification)	W31.90 B5.45 T37.35
Laborer (for single family and stand-alone duplex owned by single owner)	W17.85 B2.95 T20.80
Residential and Modular Construction Laborer	W23.90 B5.45 T29.35

Craft: Laborer-Residential and Modular Construction

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
As shown	800 hours	600 hours	600 hours							
wage & benefits	70%	80%	90%							

Ratio of Apprentices to Journeymen-

One (1) apprentice shall be allowed for the first journeyman on site and no more than one (1) additional apprentice for each additional three (3) journeymen on site.

Craft: Laborer-Residential and Modular Construction

COMMENTS/NOTES

* SKILLED TRADESMAN- any worker doing work not typically done by a Building Laborer. Some examples are installing interior doors, sheet rock, hooking up appliances, installing light fixtures, installing railing systems, etc. Please note where local building codes require that certain work be performed under the supervision of a licensed tradesman (i.e. Plumber, Electrician, etc.) Laborers shall work under such supervision.

RESIDENTIAL CONSTRUCTION- All residential construction (not commercial), single-family, stand-alone duplex houses, townhouses and multi-family buildings of not more than four (4) floors. Each housing unit must be fully and independently functional; each housing unit must have its own kitchen and bathroom. The definition includes all incidental items such as site work, parking areas, utilities, streets and sidewalks. Please note the construction must be Residential in nature. A First Floor at or below grade may contain commercial space not to exceed 50% square footage of the floor; at least 50% of the First Floor must contain living accommodations or related nonresidential uses (e.g. laundry space, recreation/hobby rooms, and/or corridor space). Basement stories below grade used for storage, parking, mechanical systems/equipment, etc., are considered basement stories which are not used in determining the building's height. An attic is an unfinished space located immediately below the roof. Such space is not used in determining a building's height even if used for storage purposes. In addition, barracks and dormitories are not considered residential projects.

MODULAR RESIDENTIAL CONSTRUCTION- all aspects of modular residential construction (not commercial) at the site of installation of structures of no more than four (4) stories, including all excavation and site preparation, footings and

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

foundation systems whether poured on-site or prefabricated, all underground waterproofing, underground utilities, concrete slabs, sidewalks, driveways, paving, hardscape and landscaping. Please note the construction must be Residential as defined above. All work performed by the Set Crew (the crew of workers who set the modular boxes on the foundation), including the rigging, setting, attaching and assembly of all modules and structural members, preparation of the foundation to accept modules, such as sill plates, connection of all in-module and under-module connections including, but not limited to, plumbing, electrical, HVAC, fire suppression, CATS, telephone, television/internet, and fiber optic, the building or installation of any porches or decks regardless of material or method of construction, the on-site installation of, or completion of any roof system, doors, windows and fenestrations, including flashing, gutter and soffit systems, waterproofing, insulation and interior and exterior trim work, and painting. Please note that modular construction does not include on-site stick built construction, tip up construction or panel built construction.

The regular workday shall be 8 hours between 6:00 AM and 6:00 PM.

OVERTIME:

Hours worked in excess of 8 per day/40 per week, Monday through Saturday, and all hours worked on Sunday and holidays shall be paid at time and one-half the hourly rate.

RECOGNIZED HOILDAYS:

New Year's Day, Martin Luther King Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Millwright PREVAILING WAGE RATE

	05/04/23
Foreman	W64.35 B38.57 T102.92
Journeyman	W55.96 B33.62 T89.58

Craft: Millwright APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	40%	55%	65%	80%	90%					
Benefits	59% of	Appren	tice	Wage	Rate	for all	intervals	+ \$0.61		

Ratio of Apprentices to Journeymen - 1:3

Craft: Millwright COMMENTS/NOTES

FOREMAN REQUIREMENTS:

- When there are 2 or more Millwrights on a job, 1 shall be designated as a Foreman.

The regular workday shall consist of 8 hours, starting between 6:00 AM and 9:00 AM.

SHIFT DIFFERENTIALS:

- When a 2 shift schedule (including a day shift) is established, the day shift shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular rate plus 15%, inclusive of benefits.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 15% and the third shift shall receive the regular rate plus 20%, inclusive of benefits.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular rate plus 15% and the third shift shall receive the regular rate plus 20%, inclusive of benefits.
- When an irregular shift must be established, this shift shall receive the regular rate plus 15%, inclusive of benefits.

OVERTIME:

- All hours in excess of 8 per day, or before or after an established shift that are not shift work, and all hours on Saturdays shall be paid at time and one-half the hourly rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the hourly rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a day lost due to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. Veterans' Day may be substituted for the day after Thanksgiving.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Operating Engineer

PREVAILING WAGE RATE

Rates are located in the
"Statewide" rate package

Craft: Operating Engineer

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	60%	70%	80%	90%						

Ratio of Apprentices to Journeymen - *

* 1 apprentice for each piece of heavy equipment. At least 10 pieces of heavy equipment or a minimum of 5 Operating Engineers must be on site.

Craft: Operating Engineer

COMMENTS/NOTES

Operating Engineer rates are located in the "Statewide" rate package.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Operating Engineer - Field Engineer

PREVAILING WAGE RATE

Rates are located in the
"Statewide" rate package

Craft: Operating Engineer - Field Engineer

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	70%	75%	of Rod/	Chainman	Wage					
Yearly			80%	90%	Transit/	Instrument	man	Wage		

Ratio of Apprentices to Journeymen - *

* No more than 1 Field Engineer Apprentice per Survey Crew.

Craft: Operating Engineer - Field Engineer

COMMENTS/NOTES

Operating Engineer - Field Engineer rates are located in the "Statewide" rate package.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Painter - Line Striping

PREVAILING WAGE RATE

	12/01/23
Apprentice (1st year)	W29.89 B15.70 T45.59
Apprentice (2nd year)	W34.10 B26.65 T60.75
Foreman (Charge Person)	W43.10 B27.43 T70.53
Journeyman 1 (at least 1 year of working exp. as a journeyman)	W38.33 B27.43 T65.76
Journeyman 2 (at least 2 years of working exp. as a journeyman)	W42.10 B27.43 T69.53

Craft: Painter - Line Striping

COMMENTS/NOTES

OVERTIME:

Hours in excess of 8 per day, Monday through Saturday, and all hours on Sundays and holidays shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans Day, Thanksgiving Day and Christmas Day. Veterans Day may be substituted for the day after Thanksgiving.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Paperhanger PREVAILING WAGE RATE

	05/02/23
Foreman	W52.82 B29.51 T82.33
Journeyman	W48.02 B29.51 T77.53

Craft: Paperhanger APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	COMME	CIAL	PAINTER						
		R								

Craft: Paperhanger COMMENTS/NOTES

FOREMEN REQUIREMENTS:

- When there are 4 or more Paperhangers on a job, 1 shall be designated a Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular rate.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.
- Four 10-hour days may be worked, at straight time, Monday through Friday.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, General Election Day, Veterans Day, Thanksgiving Day, Christmas Day

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Pipefitter PREVAILING WAGE RATE

	05/02/23
Foreman	W58.68 B49.97 T108.65
Journeyman	W54.43 B46.36 T100.79

Craft: Pipefitter APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	35%	45%	55%	65%	75%					
Benefit	26.80	29.79	32.79	35.78	38.78					

Ratio of Apprentices to Journeymen - 1:5

Craft: Pipefitter COMMENTS/NOTES

FOREMAN REQUIREMENTS:

- When there are 2 or more Journeyman Pipefitters on a job, 1 shall be designated a Foreman.
- There shall be a Foreman for every 8 Journeyman Pipefitters on a job.

The regular workday shall be 8 hours between 7:00 AM and 3:30 PM.

SHIFT DIFFERENTIAL:

- 2nd Shift (3:30 PM-11:30 PM) shall work 7.5 hours and receive 8 hours pay at the regular rate, plus 10% per hour on the total rate.
- 3rd Shift (11:30 PM-7:00 AM) shall work 7 hours and receive 8 hours pay at the regular rate, plus 15% per hour on the total rate.

OVERTIME:

- All hours worked in excess of 8 per day, Monday through Friday, and all hours worked on Saturday, shall be paid at time and one-half, inclusive of benefits. All hours on Sunday and holidays shall be paid at double time, inclusive of benefits.
- By mutual agreement, employees may work four 10-hour days, Monday to Thursday, at straight time rate. Friday may be used as a make-up day for a day lost to inclement weather, and may be paid at straight time. If Friday is not a make-up day, the first 8 hours shall be paid at time and one-half, inclusive of benefits; hours in excess of 8 shall be paid at double time, inclusive of benefits.

SHIFT DIFFERENTIAL (Maintenance Work Only):

- 2nd Shift (3:30 PM-11:30 PM) shall work 7.5 hours and receive 8 hours pay at the regular rate, plus 10% per hour on the total rate.
- 3rd Shift (11:30 PM-7:00 AM) shall work 7 hours and receive 8 hours pay at the regular rate, plus 15% per hour on the total rate.

OVERTIME (Maintenance Work Only):

- All hours in excess of 8 per day, Monday through Saturday, shall be paid at time and one-half, inclusive of benefits. All

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

hours on Sundays and holidays shall be paid at double time, inclusive of benefits.

NOTE: Maintenance work is work to repair, restore, or improve the efficiency of existing facilities. This does NOT apply to ANY new construction.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays are observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Plasterer

PREVAILING WAGE RATE

See Bricklayer, Stone Mason Rates

Craft: Plasterer

COMMENTS/NOTES

See BRICKLAYER, STONE MASON Rates

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Plumber PREVAILING WAGE RATE

	05/02/23
Foreman	W64.25 B41.62 T105.87
General Foreman	W68.41 B41.62 T110.03
Journeyman	W59.49 B41.62 T101.11

Craft: Plumber APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	30%	45%	55%	65%	75%					
Benefits	17.09	23.48	25.72	27.96	30.19					

Ratio of Apprentices to Journeymen - *

* Employers may employ 1 apprentice on any job where 1 or 2 journeymen are employed. Thereafter, 1 apprentice may be employed for every 4 journeymen.

Craft: Plumber COMMENTS/NOTES

FOREMAN REQUIREMENTS:

- On any job having 2 or more Plumbers, 1 must be designated a Foreman.
- On any job having 9 or more Plumbers, 2 shall be designated as Foremen.

The regular workday shall consist of 8 hours between 7:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must continue for a minimum of 5 consecutive workdays.
- When two shifts are worked, the second shift shall work 7.5 hours and receive 8 hours pay, at a rate equal to the hourly rate plus 10%, inclusive of benefits.
- When a third shift is worked, the third shift shall work 7 hours and receive 8 hours pay, at a rate equal to the hourly rate plus 15%, inclusive of benefits.

OVERTIME:

- All hours in excess of 8 per day, or before or after the regular workday that are not shift work, Monday through Friday, and all hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays, shall be paid at double the hourly rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a day lost due to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Roofer PREVAILING WAGE RATE

	06/13/23
Foreman	W46.77 B30.81 T77.58
Journeyman	W43.77 B30.81 T74.58

Craft: Roofer APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	17.50	21.88	26.26	28.45	30.63	32.83	35.01	39.39		
Benefits	2.16	2.16	27.31	27.31	27.31	27.31	27.31	27.31		

Ratio of Apprentices to Journeymen - *

- * A) For roofing jobs that are of the 1 or single ply nature: 1:2 or fraction thereof
- B) For roofing jobs on new built up roofs: 1:3 or fraction thereof
- C) For roofing jobs that are of a tear-off nature: 1:2 or fraction thereof
- D) For roofing jobs {not requiring complete removal of existing systems, installation done over existing roof}: 1:3 or fraction thereof

Craft: Roofer COMMENTS/NOTES

Pitch: +.50 per hour

Mop Man: +.30 per hour

The regular workday consists of 8 hours between 8:00 AM and 4:30 PM.

OVERTIME:

Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturdays, Sundays, and holidays shall be paid at time and one-half the regular rate.

RECOGNIZED HOLIDAYS: New Year's Day, Good Friday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Sheet Metal Sign Installation

PREVAILING WAGE RATE

	06/13/23
Foreman	W42.32 B41.76 T84.08
Journeyman	W40.07 B41.76 T81.83

Craft: Sheet Metal Sign Installation

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 hours	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%
Benefits	13.85	15.77	17.72	19.69	22.11	24.09	26.07	28.06	30.04	32.02

Ratio of Apprentices to Journeymen - 1:3

Craft: Sheet Metal Sign Installation

COMMENTS/NOTES

FOREMAN REQUIREMENT:

When there are 6 or more Sheet Metal Sign Installers on a job, 1 shall be designated a Foreman.

The regular workday consists of 8 hours, between 7:00 AM and 3:30 PM.

OVERTIME:

Hours before or after the regular workday, Monday through Friday, and all hours worked on Saturday shall be paid at time and one-half the hourly rate. All hours on Sunday and holidays shall be paid at double the hourly rate.

Four(4) 10 hour days may be worked, Monday through Friday, at straight time, for projects lasting at least one week in duration. The fifth day may be used as a make-up day at straight time for a day lost due to inclement weather. However, if the fifth day is not a make-up day, all hours worked will be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Saturday holidays observed the preceding Friday, Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Sheet Metal Worker

PREVAILING WAGE RATE

	07/19/23
Foreman	W58.90 B49.52 T108.42
General Foreman	W59.90 B49.52 T109.42
Journeyman	W55.40 B49.52 T104.92

Craft: Sheet Metal Worker

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	35%	45%	55%	65%	of	Journey	man	Wage	Rate	
Benefit	35%	45%	55%	65%	of	Journey	man	Benefit	Rate	

Ratio of Apprentices to Journeymen - 1:4

Craft: Sheet Metal Worker

COMMENTS/NOTES

FOREMAN REQUIREMENTS:

- When there are 2 or more Sheet Metal Workers on a project, 1 must be designated a Foreman.
- When there are 17 or more Sheet Metal Workers on a project, 1 must be designated a General Foreman.
- When there is only 1 Sheet Metal Worker (1 Journeyman) on a project, he/she shall receive \$1.00 more than the regular Journeyman's rate.

The regular workday is 8 hours between 7:00 AM and 4:30 PM.

SHIFT DIFFERENTIAL:

- 2nd Shift (3:30 PM - 12:00 AM) : +17% of regular hourly rate
- Shift work must run for a minimum of 5 consecutive workdays.

OVERTIME:

- Hours in excess of 8 per day, or before or after the regular workday, that are not shift work, and the first 10 hours on Saturdays shall be paid at time and one-half of the regular rate, inclusive of benefits. Hours in excess of 10 per day on Saturday, and all hours on Sundays and holidays shall be at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Friday, at straight time, with hours in excess of 10 per day, and hours in excess of 40 per week paid at the overtime rates listed above.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Sprinkler Fitter

PREVAILING WAGE RATE

	07/01/23	01/01/24
Foreman	W71.62 B37.55 T109.17	W71.06 B38.11 T109.17
General Foreman	W75.17 B37.55 T112.72	W74.55 B38.11 T112.66
Journeyman	W67.12 B37.55 T104.67	W66.56 B38.11 T104.67

Craft: Sprinkler Fitter

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 Hours									80%	85%
Benefits							Intervals	9 to 10	Jourymn	Ben.

Craft: Sprinkler Fitter

COMMENTS/NOTES

Apprentice rate schedule for those apprentices registered as of 7-1-13:

Interval Period and Rates
 1000 Hrs. 25% 30% 40% 45% 55% 60% 70% 75% 85% 90%
 Ben. 14.31 14.31 29.86 29.86 29.86 29.86 Intervals 7-10 Journy. Ben.

Apprentice rate schedule for those apprentices registered as of 7-1-22:

Interval Period and Rates
 1000 Hrs. 30% 35% 40% 45% 50% 55% 60% 70% 85% 95%
 Ben. 14.31 14.31 29.86 29.86 29.86 29.86 Intervals 7-10 Journy. Ben.

The regular workday consists of 8 consecutive hours between 6:00 AM and 4:30 PM.

FOREMAN REQUIREMENTS:

- The first Sprinkler Fitter on the job must be designated a Foreman.
- On any job having 12 or more Sprinkler Fitters, one must be designated a General Foreman.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 2 consecutive workdays.
- 2nd and 3rd shift shall receive an additional 15% of the regular rate, per hour.
- Any "off hours" shift starting at 8:00 PM or later shall receive an additional 25% of the regular rate, per hour.

OVERTIME:

The first 2 hours in excess of 8 per day, after the regular workday that are not shift work, Monday through Friday, shall be paid at time and one-half the regular rate. Hours worked in excess of 10 per day, Monday through Friday, and all hours on Saturday, Sunday and holidays, shall be paid double the regular rate.
 Four 10 hour days may be worked, Monday through Friday, at straight-time.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Tile Finisher-Marble PREVAILING WAGE RATE

	07/07/23	01/01/24
Finisher	W49.65	W49.92
	B36.82	B37.08
	T86.47	T87.00

Craft: Tile Finisher-Marble APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	750 Hours	40%	60%	65%	70%	75%	85%	95%		
Benefits	Interval 1	thru 5 =	75% of	jyrnm. ben	rate	Interval 6	thru 7 =	full jyrnm	benefit	rate

Ratio of Apprentices to Journeymen - 1:4

Craft: Tile Finisher-Marble COMMENTS/NOTES

OVERTIME:

Hours in excess of 7 per day, Monday through Friday, and the first 7 hours on Saturdays shall be paid at time and one half the regular rate, inclusive of benefits. Hours in excess of 7 on Saturdays and all hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Tile Setter - Marble

PREVAILING WAGE RATE

	07/07/23	01/01/24
Tile Setter	W63.12 B39.49 T102.61	W63.47 B39.89 T103.36

Craft: Tile Setter - Marble

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
750 Hours	40%	60%	65%	70%	75%	85%	95%			
Benefits	Interval 1	thru 5 =	75% of	jyrm. ben	rate	Interval 6	thru 7 =	full jyrm	benefit	rate

Ratio of Apprentices to Journeymen - 1:4

Craft: Tile Setter - Marble

COMMENTS/NOTES

OVERTIME:

Hours in excess of 7 per day, Monday through Friday, and the first 7 hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. Hours in excess of 7 on Saturdays, and all hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Tile Setter - Mosaic & Terrazzo

PREVAILING WAGE RATE

	08/09/23	01/01/24
Grinder or Assistant	W59.04 B39.69 T98.73	W58.96 B40.83 T99.79
Mechanic	W60.65 B39.70 T100.35	W60.57 B40.84 T101.41
Terrazzo Resinous Worker	W50.47 B32.37 T82.84	W50.50 B33.23 T83.73

Craft: Tile Setter - Mosaic & Terrazzo

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	50%	55%	60%	65%	70%	75%	85%	95%	100%	
750 Hours										

Ratio of Apprentices to Journeymen - 1:5

Craft: Tile Setter - Mosaic & Terrazzo

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AFTER 7-1-17:

INTERVAL	PERIOD AND RATES							
1500 Hours	35%	45%	60%	70%	80%	90%	100%	

The regular workday consists of 7 hours, between 8:00 AM and 3:30 PM.

OVERTIME:

- Hours in excess of 7 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Monday after Easter, Memorial Day, July 4th, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Truck Driver

PREVAILING WAGE RATE

	05/01/23	05/01/24
Bucket, Utility, Pick-up, Fuel Delivery trucks	W43.56 B41.78 T85.34	W45.41 B43.28 T88.69
Dump truck, Asphalt Distributor, Tack Spreader	W43.56 B41.78 T85.34	W45.41 B43.28 T88.69
Euclid-type vehicles (large, off-road equipment)	W43.66 B41.78 T85.44	W45.51 B43.28 T88.79
Helper on Asphalt Distributor truck	W43.56 B41.78 T85.34	W45.41 B43.28 T88.69
Low Boy Driver	W45.16 B41.78 T86.94	W47.01 B43.28 T90.29
Slurry Seal, Seeding/Fertilizing/ Mulching truck	W43.56 B41.78 T85.34	W45.41 B43.28 T88.69
Straight 3-axle truck	W43.56 B41.78 T85.34	W45.41 B43.28 T88.69
Tractor Trailer (all types)	W43.66 B41.78 T85.44	W45.51 B43.28 T88.79
Vacuum or Vac-All truck (entire unit)	W43.56 B41.78 T85.34	W45.41 B43.28 T88.69
Winch Trailer	W43.76 B41.78 T85.54	W45.61 B43.28 T88.89

Craft: Truck Driver

COMMENTS/NOTES

BLENDED RATE:

When a truck driver is performing work on the site and also serving as a material delivery driver, the driver shall be paid a "blended rate" which shall be 80% of the above-listed wage rates, plus the full benefit rate. This rate shall be used when the driver "round robins" for a minimum of 6 hours during the work day.

HAZARDOUS WASTE REMOVAL:

- On hazardous waste removal work on a State designated hazardous waste site where the driver is in direct contact with hazardous materials and when personal protective equipment is required for respiratory, skin, and eye protection, the driver shall receive an additional \$3.00 per hour (with or without protective gear).
- A hazardous waste related certified worker at a designated hazardous waste site who is not working in a zone requiring level A, B or C personal protection shall receive an additional \$1.00 per hour.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

TRUCK FOREMAN: \$.75 cents per hour above regular rate. Overtime shall be increased accordingly.

The regular workday shall be 8 hours, starting between 6:00 AM and 8:00 AM.

SHIFT DIFFERENTIAL:

- Shifts starting at 4:00 PM (2nd Shift): + \$3.00 per hour.
- Shifts starting at 12:00 AM (midnight/3rd Shift): time and one-half the hourly rate.
- Shifts starting at a time other than from 6:00 AM to 8:00 AM, when such hours are mandated by the project owner: + \$3.00 per hour.

OVERTIME:

- Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, that are not shift work, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Employees may work four 10-hour days at straight time, Monday through Thursday, with Friday used as a make-up day for a lost day. If Friday is not a make-up day, then all hours on Friday shall be paid at time and one-half the hourly rate.
- Benefits on overtime shall be \$40.03.
- As of 5-1-23, benefits on overtime shall be \$41.53.
- As of 5-1-24, benefits on overtime shall be \$43.03.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day (Decoration Day), July 4th, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. The day after Thanksgiving may be substituted for Veteran's Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Truck Driver-Material Delivery Driver

PREVAILING WAGE RATE

	05/01/23	05/01/24
Driver	W35.87 B41.78 T77.65	W37.62 B43.28 T80.90

Craft: Truck Driver-Material Delivery Driver

COMMENTS/NOTES

BLENDED RATE:

When a truck driver is performing work on the site and also serving as a material delivery driver, the driver shall be paid a "blended rate". See the "Truck Driver" craft for the blended rates.

Truck Foreman/Shop Steward: +\$0.25 per hour

SHIFT DIFFERENTIALS:

- 2nd Shift shall receive an additional \$0.50 per hour
- 3rd Shift shall receive time and one-half the hourly rate.

OVERTIME:

- Hours in excess of 8 per day, or before or after the regular workday that are not shift work, Monday through Friday, and all hours on Saturday shall be paid at time and one-half the hourly rate. All hours on Sunday and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day (Decoration Day), July 4th, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. The day after Thanksgiving may be substituted for Veterans Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - UNION

Craft: Welder PREVAILING WAGE RATE

Welder

Craft: Welder COMMENTS/NOTES

Welders rate is the same as the craft to which the welding is incidental .

STATEWIDE RATES

OPERATING ENGINEERS **Rates Expiration Date :**

{For apprentice rates refer to "Operating Engineers" apprentice rates in any county rate package}

The regular workday consists of 8 hours, Monday to Friday, between 6:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must be established for 5 consecutive workdays.
- Any work started outside of the allowed start time, 6:00 AM to 9:00 AM, except for * tidal work, shall be considered an irregular shift and paid at straight time, plus 15% for the first eight hours, inclusive of benefits.
- * FOR TIDAL WORK- a contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work), providing the eight hour shift is completed between the hours of 5:00 AM and 6:30 PM.
- All time worked in excess of an established shift (an established shift is a shift that is determined at the time of the bid) shall be paid at the applicable overtime rate. When a portion of an established shift works into Saturday, Sunday or a holiday, that time worked shall be paid at the established shift rate.
- When working with other trades who receive a higher irregular shift differential, these employees shall also receive the higher differential rate.

OVERTIME:

- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veterans Day.

For projects bid after April 1, 2020, on hazardous waste removal work of any kind, including a state or federally designated site, where the operating engineer is required to wear level A, B, or C personal protection, the operating engineer shall receive an hourly wage rate of his regular hourly wage plus \$5.00 per hour.

- An operating engineer working at a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A, B, or C personal protection, shall receive an hourly wage rate of his regular rate plus \$1.00 per hour.

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
57.63	37.65	95.28	98.03	100.53

CLASSIFICATIONS:

A-Frame

Backhoe (combination)

Boom Attachment on loaders (Except pipehook)

Boring & Drilling Machine

Brush Chopper, Brush Shredder, Tree Shredder, Tree Shearer

Bulldozer, finish grade

Cableway

Carryall

Concrete Pump

Concrete Pumping System (Pumpcrete & similar types)

Conveyor, 125 feet or longer

Drill Doctor (Duties include dust collector and maintenance)

Front End Loader (2 cu. yds. but less than 5 cu. yds.)

Grader, finish

Groove Cutting Machine (ride-on type)

Heater Planer

Hoist: Outside Material Tower Hoist (all types including steam, gas, diesel, electric, air hydraulic, single and double drum, concrete, brick shaft caisson, snorkle roof, and other similar types, Except Chicago-boom type) * receives an additional \$1.00 per hour on 100 ft. up to 199 ft. total height, and an additional \$2.00 per hour on 200 ft. and over total height.

Hydraulic Crane (10 tons & under)

Hydraulic Dredge

Hydro-Axe

Hydro-Blaster

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
57.63	37.65	95.28	98.03	100.53

CLASSIFICATIONS:

Jack (screw, air hydraulic, power-operated unit, or console type, Except hand jack or pile load test type)

Log Skidder

Pan

Paver, concrete

Plate & Frame Filter Press

Pumpcrete (unit type)

Pumpcrete, Squeezecrete, or Concrete Pumping machine (regardless of size)

Scraper

Side Boom

Straddle Carrier (Ross and similar types)

Whiphammer

Winch Truck (hoisting)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
55.72	37.65	93.37	96.12	98.62

CLASSIFICATIONS:

- Asphalt Curbing Machine
- Asphalt Plant Engineer
- Asphalt Spreader
- Autograde Curb Trimmer & Sidewalk Shoulder Slipform (CMI & similar types)
- Autograde Curecrete Machine (CMI & similar types)
- Autograde Tube Finisher & Texturing Machine (CMI & similar types)
- Bar Bending Machines (Power)
- Batcher, Batching Plant, & Crusher [On Site]
- Belt Conveyor System
- Boom-Type Skimmer Machine
- Bridge Deck Finisher
- Bulldozer (all sizes)
- Captain (Power Boats)
- Car Dumper (railroad)
- Compressor & Blower unit for loading/unloading of concrete, cement, fly ash, or similar type materials (used independently or truck-mounted)
- Compressor (2 or 3 battery)
- Concrete Breaking Machine
- Concrete Cleaning/Decontamination Machine
- Concrete Finishing Machine
- Concrete Saw or Cutter (ride-on type)
- Concrete Spreader (Hetzl, Rexomatic & similar types)
- Concrete Vibrator

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
55.72	37.65	93.37	96.12	98.62

CLASSIFICATIONS:

- Conveyors - under 125 feet
- Crane Signalman
- Crushing Machine
- Directional Boring Machine
- Ditching Machine - Small (Ditchwitch, Vermeer or similar types)
- Dope Pot - Mechanical (with or without pump)
- Dumpster
- Elevator
- Fireman
- Fork Lift (Economobile, Lull & similar types)
- Front End Loader (1 cu. yd. and over but less than 2 cu. yds.)
- Generator (2 or 3 battery)
- Giraffe Grinder
- Goldhofer/Hydraulic Jacking Trailer
- Grader & Motor Patrols
- Grout Pump
- Gunnite Machine (Excluding nozzle)
- Hammer - Vibratory (in conjunction with generator)
- Heavy Equipment Robotics - Operator/Technician
- Hoist (roof, tigger, aerial platform hoist, house car)
- Hopper
- Hopper Doors (power operated)
- Ladder (motorized)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
55.72	37.65	93.37	96.12	98.62

CLASSIFICATIONS:

Laddervator

Locomotive (Dinky-type)

Maintenance Utility Man

Master Environmental Maintenance Technician

Mechanic

Mixer (Except paving mixers)

Pavement Breaker (truck-mounted or small self-propelled
ride-on type)

Pavement Breaker - maintenance of compressor or hydraulic unit

Pipe Bending Machine (power)

Pitch Pump

Plaster Pump (regardless of size)

Post Hole Digger (post pounder, auger)

Rod Bending Machines

Roller (black top)

Scale (power)

Seamen Pulverizing Mixer

Shoulder Widener

Silo

Skimmer Machine (boom type)

Steel Cutting Machine (service & maintenance)

Tamrock Drill

Tractor

Transfer Machines

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
55.72	37.65	93.37	96.12	98.62

CLASSIFICATIONS:

Tug Captains

Tug Master (Power Boats)

Ultra High Pressure Waterjet Cutting Tool System -
Operator/Maintenance Technician

Vacuum Blasting Machine - Operator/Maintenance Technician

Vibrating Plant (used with unloading)

Welder & Repair Mechanic

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
50.38	37.65	88.03	90.78	93.28

CLASSIFICATIONS:

Assistant Engineer/Oiler

Driller's Helper

Field Engineer - Transit man or Instrument man

Maintenance Apprentice (Deckhand)

Maintenance Apprentice (Oiler)

Mechanic's Helper

Off Road Back Dump

Tire Repair & Maintenance

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
47.80	37.65	85.45	88.20	90.70

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

TERRITORY
ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

OPERATING ENGINEERS Rates Expiration Date :

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
57.96	37.65	95.61	98.36	100.86

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (minimum)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
59.22	37.65	96.87	99.62	102.12

CLASSIFICATIONS:

- Autograde Pavement Profiler (CMI & similar types)
- Autograde Pavement Profiler - Recycle Type (CMI & similar types)
- Autograde Placer/Trimmer/Spreader Combination (CMI & similar types)
- Autograde Slipform Paver (CMI & similar types)
- Backhoe (Excavator)
- Central Power Plant
- Concrete Paving Machine
- Cranes, Derricks, Pile Drivers (all types), under 100 tons with a boom (including jib and/or leads) under 100 ft.
- Draglines
- Drill, Bauer, AMI and similar types
- Drillmaster, Quarrymaster
- Drillmaster/Quarrymaster (down-the-hole drill), rotary drill, self-propelled hydraulic drill, self-powered drill
- Elevator Grader
- Field Engineer-Chief of Party
- Front End Loader (5 cu. yards or larger)
- Gradall
- Grader, Rago
- Helicopter Co-Pilot
- Helicopter Communications Engineer
- Juntann Pile Driver
- Locomotive (large)
- Mucking Machine

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
59.22	37.65	96.87	99.62	102.12

CLASSIFICATIONS:

Pavement & Concrete Breaker (Superhammer & Hoe Ram)

Pile Driver

Prentice Truck

Roadway Surface Grinder

Scooper (loader & shovel)

Shovel (Excavator)

Trackhoe (Excavator)

Tree Chopper with boom

Trenching Machine (cable plow)

Tunnel Boring Machine

Vacuum Truck

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
54.09	37.65	91.74	94.49	96.99

CLASSIFICATIONS:

- Chipper
- Compressor (single)
- Concrete Spreader (small type)
- Conveyor Loader (Except elevator graders)
- Engines, Large Diesel (1620 HP) & Staging Pump
- Farm Tractor
- Fertilizing Equipment (operation & maintenance)
- Fine Grade Machine (small type)
- Form Line Grader (small type)
- Front End Loader (under 1 cubic yard)
- Generator (single)
- Grease, Gas, Fuel, & Oil Supply Trucks
- Heaters (Nelson or other type)
- Lights - portable generating light plant
- Mixer, Concrete (small)
- Mulching Equipment (operation & maintenance)
- Power Broom or Sweeper
- Pump (diesel engine & hydraulic - regardless of power)
- Pump (larger than 2 inch suction, including submersible pumps)
- Road Finishing Machine (small type)
- Roller - grade, fill, or stone base
- Seeding Equipment (operation & maintenance)
- Sprinkler & Water Pump Trucks

OPERATING ENGINEERS Rates Expiration Date :

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
54.09	37.65	91.74	94.49	96.99

CLASSIFICATIONS:

Steam Generator or Boiler

Stone Spreader

Tamping Machine (vibrating ride-on type)

Temporary Heating Plant (Nelson or other type, including propane, natural gas, and flow-type units)

Water or Sprinkler Truck

Welding Machine (gas, diesel, or electric convertor, of any type)

Welding System - Multiple (rectifier transformer type)

Wellpoint Systems (including installation by bull gang and maintenance)

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
61.04	37.65	98.69	101.44	103.94

CLASSIFICATIONS:

Helicopter Pilot/Engineer

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
65.72	37.65	103.37	106.12	108.62

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), 100 tons and over and TOWER CRANE with boom (including jib and/or leads) 140 ft. and over

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
64.72	37.65	102.37	105.12	107.62

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), 100 tons and over and TOWER CRANE with boom (including jib and/or leads) from 100 ft. to 139 ft.

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
61.22	37.65	98.87	101.62	104.12

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types) , under 100 tons with a boom (including jib and/or leads) 140 ft. and over

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
63.72	37.65	101.37	104.12	106.62

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), 100 tons and over and TOWER CRANE with a boom (including jib and/or leads) under 100 ft.

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
60.22	37.65	97.87	100.62	103.12

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), under 100 tons with a boom (including jib and/or leads) from 100 ft. to 139 ft.

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

{For apprentice rates refer to "Operating Engineers" apprentice rates in any county rate package}

The regular workday consists of 8 hours, Monday to Friday, between 6:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must be established for 5 consecutive workdays.
- Any work started outside of the allowed start time, 6:00 AM to 9:00 AM, except for * tidal work, shall be considered an irregular shift and paid at straight time, plus 15% for the first eight hours, inclusive of benefits.
- * FOR TIDAL WORK- a contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work), providing the eight hour shift is completed between the hours of 5:00 AM and 6:30 PM.
- All time worked in excess of an established shift (an established shift is a shift that is determined at the time of the bid) shall be paid at the applicable overtime rate. When a portion of an established shift works into Saturday, Sunday or a holiday, that time worked shall be paid at the established shift rate.
- When working with other trades who receive a higher irregular shift differential, these employees shall also receive the higher differential rate.

OVERTIME:

- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veterans Day.

For projects bid after April 1, 2020, on hazardous waste removal work of any kind, including a state or federally designated site, where the operating engineer is required to wear level A, B, or C personal protection, the operating engineer shall receive an hourly wage rate of his regular hourly wage plus \$5.00 per hour.

- An operating engineer working at a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A, B, or C personal protection, shall receive an hourly wage rate of his regular rate plus \$1.00 per hour.

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
62.85	37.65	100.50	103.25	105.75

CLASSIFICATIONS:

Helicopter Co-Pilot & Communications Engineer

TERRITORY
ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

STRUCTURAL STEEL ERECTION Rates Expiration Date :

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
58.79	37.65	96.44	99.19	101.69

CLASSIFICATIONS:

A-Frame

Cherry Picker -10 tons or less (Over 10 tons use crane rate)

Hoist (all types Except Chicago-boom)

Jack (screw, air hydraulic, power-operated unit or console type, Except hand jack or pile load test type)

Side Boom

Straddle Carrier

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
56.13	37.65	93.78	96.53	99.03

CLASSIFICATIONS:

- Aerial Platform Used On Hoists
- Apprentice Engineer/Oiler with Compressor or Welding Machine
- Captain (Power Boats)
- Compressor (2 or 3 in battery)
- Concrete Cleaning/Decontamination Machine Operator
- Conveyor or Tugger Hoist
- Directional Boring Machine
- Elevator or House Car
- Fireman
- Forklift
- Generator (2 or 3)
- Heavy Equipment Robotics, Operator/Technician
- Maintenance Utility Man
- Master Environmental Maintenance Technician
- Tug Master (Power Boats)
- Ultra High Pressure Waterjet Cutting Tool System Operator/Maintenance Technician
- Vacuum Blasting Machine Operator/Maintenance Technician
- Welding Machines, Gas or Electric Converters on any type-2 or 3 in battery including diesels

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
54.60	37.65	92.25	95.00	97.50

CLASSIFICATIONS:

Compressor (Single)

Generators

Welding Machines, Gas, Diesel, Or Electric Converters of any type-single

Welding System, Multiple (Rectifier Transformer Type)

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
50.84	37.65	88.49	91.24	93.74

CLASSIFICATIONS:

Assistant Engineer/Oiler

Drillers Helper

Field Engineer - Transit/Instrument Man

Maintenance Apprentice (Deckhand)

Maintenance Apprentice (Oiler)

Off Road Back Dump

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
58.41	37.65	96.06	98.81	101.31

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (Minimum)

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
47.80	37.65	85.45	88.20	90.70

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
59.55	37.65	97.20	99.95	102.45

CLASSIFICATIONS:

Field Engineer-Chief of Party

Vacuum Truck

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
67.74	37.65	105.39	108.14	110.64

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms, including jib, 140 ft. and over, above ground). Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, 140 ft. and over, above ground), and Pile Drivers (all types) 100 tons and over and Tower Cranes.

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
66.08	37.65	103.73	106.48	108.98

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, less than 140 ft. above ground), Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, less than 140 ft. above ground), Pile Drivers (all types), 100 tons and over and Tower Crane.

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
63.24	37.65	100.89	103.64	106.14

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, 140 ft. and over, above ground), Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, 140 ft. and over, above ground), Pile Drivers (all types), under 100 tons.

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
61.58	37.65	99.23	101.98	104.48

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, less than 140 ft. above ground), Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, less than 140 ft. above ground), Pile Drivers (all types), under 100 tons.

TERRITORY
ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

STRUCTURAL STEEL ERECTION Rates Expiration Date :

Effective Dates:

07/01/2023			07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
63.24	37.65	100.89	103.64	106.14

CLASSIFICATIONS:

Helicopter Pilot & Engineer

TEST BORING PRELIMINARY TO CONSTRUCTION-SOUTH/WEST **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Hunterdon, Mercer, Monmouth, Ocean, Salem, Sussex, Warren

The regular workday consists of 8 hours, Monday to Friday, between 6:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must be established for 5 consecutive workdays.
- Any work started outside of the allowed start time, 6:00 AM to 9:00 AM, except for * tidal work, shall be considered an irregular shift and paid at straight time, plus 15% for the first eight hours, inclusive of benefits.
- * FOR TIDAL WORK- a contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work), providing the eight hour shift is completed between the hours of 5:00 AM and 6:30 PM.
- All time worked in excess of an established shift (an established shift is a shift that is determined at the time of the bid) shall be paid at the applicable overtime rate. When a portion of an established shift works into Saturday, Sunday or a holiday, that time worked shall be paid at the established shift rate.
- When working with other trades who receive a higher irregular shift differential, these employees shall also receive the higher differential rate.

OVERTIME:

- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veterans Day.

For projects bid after April 1, 2020, on hazardous waste removal work of any kind, including a state or federally designated site, where the operating engineer is required to wear level A, B, or C personal protection, the operating engineer shall receive an hourly wage rate of his regular hourly wage plus \$5.00 per hour.

- An operating engineer working at a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A, B, or C personal protection, shall receive an hourly wage rate of his regular rate plus \$1.00 per hour.

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
59.22	37.65	96.87	99.62	102.12

CLASSIFICATIONS:

Driller

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
52.38	37.65	90.03	92.78	95.28

CLASSIFICATIONS:

Driller's Helper

FREE AIR TUNNEL JOBS **Rates Expiration Date :**

{For apprentice rates refer to "Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$3.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

03/01/2023

Rate	Fringe	Total
50.30	35.73	86.03

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

03/01/2023

Rate	Fringe	Total
50.00	35.73	85.73

CLASSIFICATIONS:

Heading Foreman, Shaft Foreman, Rod Foreman, Electrician Foreman, Rigging Foreman

TERRITORY
ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

FREE AIR TUNNEL JOBS **Rates Expiration Date :**

Effective Dates:

03/01/2023

Rate	Fringe	Total
49.50	35.73	85.23

CLASSIFICATIONS:

Iron Foreman, Caulking Foreman, Form Foreman, Cement Finishing Foreman, Concrete Foreman, Track Foreman, Cleanup Foreman, Grout Foreman

Effective Dates:

03/01/2023

Rate	Fringe	Total
52.00	35.73	87.73

CLASSIFICATIONS:

Blaster

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.95	35.73	84.68

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.60	35.73	84.33

CLASSIFICATIONS:

Skilled Men (including Caulker, Powder Carrier, all other skilled men)

Skilled Men (including Miner, Drill Runner, Iron Man, Conveyor Man, Manitenance Man, Safety Miner, Rigger, Block Layer, Cement Finisher, Tod Man)

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.45	35.73	84.18

CLASSIFICATIONS:

Semi-Skilled Men (including Bell or Signal Man Top or Bottom, Form Worker & Mover, Concrete Worker, Shaft Man, Tunnel Laborer, Caulker's Helper, all other semi-skilled)

Semi-Skilled Men (including Miner's Helper, Chuck Tender, Track Man, Nipper, Brake Man, Derail Man, Cable Man, Hose Man, Gravel Man, Form Man)

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FREE AIR TUNNEL JOBS Rates Expiration Date :

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.05	35.73	83.78

CLASSIFICATIONS:

All Others (including Powder Watchman, Change House Attendant, Top Laborer)

DRILL FOR GROUND WATER SUPPLY **Rates Expiration Date :**

The well driller and/or helper may perform all work relative to the construction, finishing, and servicing of wells, pumps and borings for ground water supply. The present methods of well drilling entailing as they do, many diverse job operations calling for drilling, pump discharge, piping, and the operation of various types of related power equipment, shall all be within the job duties and functions of the well driller and/or helper. In the event that an extension of work should occur beyond water well drilling functions, into the field of general construction work, such extension of work would come under the appropriate rates listed elsewhere in this wage determination.

- For Work Hours, Shift Differentials, Overtime Rates, and Recognized Holidays see the "Operating Engineers" section of this wage determination.

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
57.97	37.65	95.62	98.37	100.87

CLASSIFICATIONS:

Driller

Effective Dates:

	07/01/2023		07/01/2024	07/01/2025
Rate	Fringe	Total	Total	Total
51.13	37.65	88.78	91.53	94.03

CLASSIFICATIONS:

Driller's Helper

OPERATING ENGINEERS MARINE-DREDGING **Rates Expiration Date :**

NOTE: These wage rates only apply to dredging and other marine construction activities occurring in navigable waters and their tributaries.

Boat crews carrying explosive material (dynamite, pourfex, and other similar materials) shall be paid at 120% of the hourly wage rate for hours engaged in handling of said materials. Employees required to possess a Hazardous Material Certification as a condition of employment shall be compensated at 120% of the hourly wage rate.

OVERTIME:

Hours in excess of 40 per week, and all hours on Saturdays and Sundays, shall be paid at time and one-half the hourly rate. All hours on holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Martin Luther King Day, Good Friday, Memorial Day, July 4th, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday.

Effective Dates:

10/01/2023

Rate	Fringe	Total
45.26	15.22	60.48

CLASSIFICATIONS:

Lead Dredgerman, Operator, Leverman

Licensed Tug Operator (over 1000 HP)

Effective Dates:

10/01/2023

Rate	Fringe	Total
39.14	14.79	53.93

CLASSIFICATIONS:

Derrick Operator, Spider/Spill Barge Operator

Engineer, Electrician, Chief Welder, Chief Mate

Fill Placer, Operator II

Licensed Boat Operator

Maintenance Engineer

Effective Dates:

10/01/2023

Rate	Fringe	Total
36.84	14.63	51.47

CLASSIFICATIONS:

Certified Welder

OPERATING ENGINEERS MARINE-DREDGING **Rates Expiration Date :**

Effective Dates:

10/01/2023

Rate	Fringe	Total
35.83	14.31	50.14

CLASSIFICATIONS:

Mate, Drag Barge Operator, Steward, Assistant Fill Placer

Welder

Effective Dates:

10/01/2023

Rate	Fringe	Total
34.68	14.23	48.91

CLASSIFICATIONS:

Boat Operator

Effective Dates:

10/01/2023

Rate	Fringe	Total
28.81	13.82	42.63

CLASSIFICATIONS:

Shoreman, Deckhand, Rodman, Scowman

Effective Dates:

10/01/2023

Rate	Fringe	Total
40.33	14.87	55.20

CLASSIFICATIONS:

Crane Operator

MICROSURFACING/SLURRY SEAL Rates Expiration Date :

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem

IN ALL OTHER COUNTIES use the Heavy and General Laborers - North "Slurry Seal Laborer" rates.

SHIFT DIFFERENTIALS:

Any shift starting at 3:30 PM or later shall receive an additional \$0.35/hr

OVERTIME:

Hours in excess of 8 per day or 40 per week shall be paid at time and one-half the hourly rate. All hours on holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

Effective Dates:

03/01/2017

Rate	Fringe	Total
36.50	21.27	57.77

CLASSIFICATIONS:

Foreman

Effective Dates:

03/01/2017

Rate	Fringe	Total
33.80	21.27	55.07

CLASSIFICATIONS:

Box man

Effective Dates:

03/01/2017

Rate	Fringe	Total
31.75	21.27	53.02

CLASSIFICATIONS:

Microsurface/Slurry Preparation

Effective Dates:

03/01/2017

Rate	Fringe	Total
31.75	21.27	53.02

CLASSIFICATIONS:

Squeegee man

TERRITORY
ENTIRE STATE

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MICROSURFACING/SLURRY SEAL Rates Expiration Date :

Effective Dates:

03/01/2017

Rate	Fringe	Total
30.30	21.27	51.57

CLASSIFICATIONS:

Cleaner, Taper

ASPHALT LABORERS - SOUTH **Rates Expiration Date :**

"THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY: Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$5.00/hr
- other Hazardous Waste site: + \$1.00/hr

FOR TIDE WORK (pertains to tidal water): A contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work) providing the eight (8) hour shift is completed between the hours of 5:00 AM and 6:30 PM.

Effective Dates:

03/01/2023

Rate	Fringe	Total
51.80	35.73	87.53

CLASSIFICATIONS:

Paving Foreman

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.35	35.73	84.08

CLASSIFICATIONS:

Head Raker

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.50	35.73	84.23

CLASSIFICATIONS:

Screedman

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ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
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ASPHALT LABORERS - SOUTH Rates Expiration Date :

Effective Dates:

03/01/2023

Rate	Fringe	Total
47.95	35.73	83.68

CLASSIFICATIONS:

Tampers, Smoothers, Kettlemen,
Painters, Shovelers, Roller Boys

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.05	35.73	83.78

CLASSIFICATIONS:

Milling Controller

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.25	35.73	83.98

CLASSIFICATIONS:

Traffic Control Coordinator

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.20	35.73	83.93

CLASSIFICATIONS:

Raker, Luteman

TEST BORING PRELIMINARY TO CONSTRUCTION-NORTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:
Bergen, Essex, Hudson, Middlesex, Morris, Passaic, Somerset, Union

SHIFT DIFFERENTIAL:

Employees on a shift other than between the hours of 8:00 AM and 5:00 PM shall receive an additional \$2.00 per hour.

OVERTIME:

Hours in excess of 8 per day, Monday through Friday, and all hours on Saturday shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular rate.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. Sunday holidays observed the following Monday.

Hazardous Waste Pay (for Levels A, B, and C): an additional 15% of the hourly rate, per hour.

A newly hired Helper with no experience in the industry shall be paid as follows:

- 1st year on the job - 70% of Helper wage rate
- 2nd year on the job - 80% of Helper wage rate
- 3rd year on the job - 90% of Helper wage rate
- All helpers receive full fringe benefit rate.

Effective Dates:

12/01/2023

Rate	Fringe	Total
36.28	33.49	69.77

CLASSIFICATIONS:

Helper (4th year helper)

Effective Dates:

12/01/2023

Rate	Fringe	Total
46.25	33.49	79.74

CLASSIFICATIONS:

Driller

Effective Dates:

12/01/2023

Rate	Fringe	Total
52.66	33.49	86.15

CLASSIFICATIONS:

Foreman

HEAVY & GENERAL LABORERS - NORTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Passaic, Somerset, Sussex, Union, Warren

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

FOR TIDE WORK (pertains to tidal water): A contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work) providing the eight (8) hour shift is completed between the hours of 5:00 AM and 6:30 PM.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$5.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

03/01/2023

Rate	Fringe	Total
47.55	35.73	83.28

CLASSIFICATIONS:

"D" Rate:

basic, landscape, asphalt, slurry seal, or railroad track laborer; utility meter installer; flagman; salamander tender; pitman; dumpman; rakers or tampers on cold patch work; wrappers or coaters of pipe; waterproofer; timberman; wagon drill or drill master helper; powder carrier; magazine tender; signal man; power buggy operator; tree cutter; operator of basic power tools

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.25	35.73	83.98

CLASSIFICATIONS:

"C" Rate:

pipe layer; laser man; conduit or duct line layer; operator of jack hammer, chipping hammer, pavement breaker, concrete cutter, asphalt cutter, sheet hammer, or walk-behind saw cutter; sandblaster; acetylene cutting or burning; wagon drill, directional drill, or hydraulic drill operator; drill master; core driller; traffic control coordinator; asphalt raker or lute man

HEAVY & GENERAL LABORERS - NORTH **Rates Expiration Date :**

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.50	35.73	84.23

CLASSIFICATIONS:

"B" Rate:

concrete finisher; setter of brick or stone pavers; stone cutter; form setter; manhole, catch basin, or inlet builder; asphalt screedman; rammer; hardscaping; gunite nozzle man

Effective Dates:

03/01/2023

Rate	Fringe	Total
52.05	35.73	87.78

CLASSIFICATIONS:

"A" Rate:

blaster

Effective Dates:

03/01/2023

Rate	Fringe	Total
51.80	35.73	87.53

CLASSIFICATIONS:

"FOREMAN" Rate:

labor foreman, asphalt foreman, drill foreman, pipe foreman, grade foreman, finisher foreman, concrete foreman

Effective Dates:

03/01/2023

Rate	Fringe	Total
52.80	35.73	88.53

CLASSIFICATIONS:

"GENERAL FOREMAN" Rate

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

FOR TIDE WORK (pertains to tidal water): A contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work) providing the eight (8) hour shift is completed between the hours of 5:00 AM and 6:30 PM.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$5.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

03/01/2023

Rate	Fringe	Total
47.55	35.73	83.28

CLASSIFICATIONS:

basic, landscape, or railroad track laborer; utility meter installer; flagman; salamander tender; pitman; dumpman; rakers or tampers on cold patch work; wrappers or coaters of pipe; waterproofers; tree cutter, timberman

Effective Dates:

03/01/2023

Rate	Fringe	Total
47.55	35.73	83.28

CLASSIFICATIONS:

wagon drill or drill master helper; powder carrier; magazine tender; signal man

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date :**

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.25	35.73	83.98

CLASSIFICATIONS:

pipe layer; laser man; conduit or duct line layer; operator of jack hammer, chipping hammer, pavement breaker, concrete cutter, asphalt cutter, sheet hammer, or walk-behind saw cutter; sandblaster; acetylene cutting or burning

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.25	35.73	83.98

CLASSIFICATIONS:

wagon or directional drill operator; drill master

Effective Dates:

03/01/2023

Rate	Fringe	Total
52.05	35.73	87.78

CLASSIFICATIONS:

blaster

Effective Dates:

03/01/2023

Rate	Fringe	Total
51.80	35.73	87.53

CLASSIFICATIONS:

labor foreman, drill foreman, pipe foreman, grade foreman, finisher foreman, concrete foreman

Effective Dates:

03/01/2023

Rate	Fringe	Total
52.80	35.73	88.53

CLASSIFICATIONS:

general foreman

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HEAVY & GENERAL LABORERS - SOUTH Rates Expiration Date :

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.50	35.73	84.23

CLASSIFICATIONS:

concrete finisher; setter of brick or stone pavers; stone cutter; form setter; manhole, catch basin, or inlet builder; rammer; gunite nozzle man

PIPELINE - MAINLINE TRANSMISSION Rates Expiration Date :

These rates apply to the following: welding on Transportation Mainline pipe lines (cross-country pipe lines, or any segments thereof, transporting coal, gas, oil, water or other transportable materials, vapors or liquids, including portions of such pipe lines within private property boundaries up to the final metering station or connection - the point where a valve, consumer connection, or town border station divides mainline transmission lines or higher pressure lateral and branch lines from lower pressure distribution systems).

PER DIEM PAYMENT:

In addition to the total wage rate paid for each craft, the following per diem (per day) amounts must also be paid - Pipeline Journeyman: \$80.50; Pipeline Journeyman Welder: \$140.50; and Pipeline Helper: \$64.50. Note: in order to receive the per diem payment an employee must work a minimum of 8 hours in a 24 hour period.

NOTES:

- Journeymen employed as "stringer bead" welders and journeymen who are regularly employed as "hot-pass" welders shall receive \$1.00 per hour more than other journeymen.
- Welders running "stringer bead" or "hot-pass" on "cutouts" or "tie-ins" on a production basis shall be paid \$1.00 per hour above the journeymen rate.
- Whenever a welder helper is employed using a power buffer or power grinder immediately behind the stringer bead and/or hot-pass welders, and the pipe gang is set on a production basis, the helper shall be paid \$2.00 per hour above the helper rate.
- If back welding is performed inside a pipe under either or both of the following conditions, the welder engaged in the welding will receive \$3.00 per hour above the regular rate for the job only for the days on which such back welding is performed:
 - The employer elects, as a regular procedure, to back weld each line-up. This condition is not intended to apply to occasional back welding performed by the pipe gang to repair a bead, to rectify a "high-lo" condition or wall thickness, etc.
 - A welder is required to back weld a completed weld behind the firing line.
- If the welder helper is required to go inside the pipe for the purpose of brushing, buffing and grinding the weld, they shall receive a wage rate \$1.00 per hour above the regular helper rate for the days involved.
- Welders working on "hot work" shall be paid \$2.00 per hour above the regular rate for each day engaged in such work. "Hot work" is defined as work on lines in service where there is the danger of fire or explosion.

The regular workday shall be 8 hours, between 8:00 AM and 4:30 PM.

OVERTIME:

Hours in excess of 8 per day, and all hours on Sundays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. Sunday holidays observed the following Monday.

Effective Dates:

07/01/2023

Rate	Fringe	Total
57.34	34.70	92.04

CLASSIFICATIONS:

Pipeline Journeyman Welder

TERRITORY
ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
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PIPELINE - MAINLINE TRANSMISSION Rates Expiration Date :

Effective Dates:

07/01/2023

Rate	Fringe	Total
57.34	34.70	92.04

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

07/01/2023

Rate	Fringe	Total
33.84	24.32	58.16

CLASSIFICATIONS:

Pipeline Helper

PIPELINE - GAS DISTRIBUTION **Rates Expiration Date :**

These rates apply to the following: welding on gas line distribution systems (that portion of the gas distribution system placed in streets, roads, subways, tunnels, viaducts, highways and easements which serves the users of gas).

SHIFT DIFFERENTIALS:

An "irregular" shift may start any time from 5:00 PM to 12:00 AM, Monday through Friday, and shall receive an additional 15% of the regular rate per hour, inclusive of benefits.

OVERTIME:

Hours in excess of forty per week, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. Sunday holidays observed the following Monday.

Effective Dates:

11/01/2023

Rate	Fringe	Total
64.70	31.84	96.54

CLASSIFICATIONS:

Pipeline Journeyman Welder

Effective Dates:

11/01/2023

Rate	Fringe	Total
64.70	31.84	96.54

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

11/01/2023

Rate	Fringe	Total
41.00	23.56	64.56

CLASSIFICATIONS:

Pipeline Helper

ASPHALT LABORERS- NORTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Passaic, Somerset, Sussex, Union, Warren

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$5.00/hr
- other Hazardous Waste site: + \$1.00/hr

FOR TIDE WORK (pertains to tidal water): A contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work) providing the eight (8) hour shift is completed between the hours of 5:00 AM and 6:30 PM.

Effective Dates:

03/01/2023

Rate	Fringe	Total
51.80	35.73	87.53

CLASSIFICATIONS:

Asphalt Foreman

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.50	35.73	84.23

CLASSIFICATIONS:

Asphalt Screedman

Effective Dates:

03/01/2023

Rate	Fringe	Total
48.25	35.73	83.98

CLASSIFICATIONS:

Asphalt Raker or Lute Man

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ASPHALT LABORERS- NORTH Rates Expiration Date :

Effective Dates:

03/01/2023

Rate	Fringe	Total
47.55	35.73	83.28

CLASSIFICATIONS:

Asphalt Laborer

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Electrician-Utility Work (North)

(For apprentice rates refer to Electrician-Utility Work (North) in any county rate package).

These rates apply to work contracted for by the following utility companies:

Public Service Electric & Gas Co. of NJ, GPU Energy, Borough of Madison Electric Department, Sussex Rural Electric Cooperative, Rockland Utilities, and Butler Municipal Electric Co.

These rates do not apply to work on substations or switching stations.

For Utility work contracted for by a utility company other than those listed above or those listed under "Electrician-Utility Work (South), see the "Outside Commercial Rates" for the county in which the jobsite is located.

* FOR OUTSIDE COMMERCIAL RATES PLEASE SEE COUNTY RATES

The regular workday is 8 hours, between 6:00 AM and 6:00 PM.

FOR EMERGENCY WORK ONLY: (emergency work is defined as work caused by storm, catastrophe, act of god, and circumstances beyond the control of the employer)-all hours of work shall be paid at double the hourly rate.

SHIFT DIFFERENTIALS:

Shift work must run for a minimum of 5 consecutive workdays.

2nd shift (between the hours of 4:30 PM and 1:00 AM): 8 hours of work + 17.3% of the regular rate, inclusive of benefits.

3rd shift (between the hours of 12:30 AM and 9:00 AM): 8 hours of work + 31.4% of the regular rate per hour, inclusive of benefits.

OVERTIME:

Hours in excess of 8 per day, or before or after the regular workday Monday through Friday, that is not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the hourly rate, inclusive of benefits.

Four 10-hour days may worked, at straight time, between 6:00 AM and 6:00 PM, Monday through Thursday.

RECOGNIZED HOLIDAYS:

New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day and Christmas Day, or day on which they are legally observed.

Effective Dates:

	12/03/2023		12/01/2024
Rate	Fringe	Total	Total
62.94	43.42	106.36	109.56

CLASSIFICATIONS:

Chief Lineman

Effective Dates:

	12/03/2023		12/01/2024
Rate	Fringe	Total	Total
59.38	40.97	100.35	103.36

CLASSIFICATIONS:

Journeyman Lineman

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ELECTRICIAN- UTILITY WORK (NORTH) Rates Expiration Date :

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
59.38	40.97	100.35	103.36

CLASSIFICATIONS:

Special License Operator

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
58.79	40.56	99.35	102.32

CLASSIFICATIONS:

Transit Man

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
57.00	39.33	96.33	99.21

CLASSIFICATIONS:

Line Equipment Operator

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
49.88	34.41	84.29	86.81

CLASSIFICATIONS:

Dynamite Man

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
74.23	51.21	125.44	129.20

CLASSIFICATIONS:

General Foreman

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
68.29	47.12	115.41	118.85

CLASSIFICATIONS:

Assistant General Foreman

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
66.51	45.89	112.40	115.76

CLASSIFICATIONS:

Line Foreman

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
48.10	33.18	81.28	83.72

CLASSIFICATIONS:

Street Light Mechanical Leader

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
45.72	31.54	77.26	79.58

CLASSIFICATIONS:

Groundman Winch Operator

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
45.72	31.54	77.26	79.58

CLASSIFICATIONS:

Groundman Truck Operator

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
45.13	31.13	76.26	78.55

CLASSIFICATIONS:

Street Light Mechanic

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
45.13	31.13	76.26	78.55

CLASSIFICATIONS:

Line Equipment Mechanic

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
38.60	26.63	65.23	67.17

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
35.63	24.58	60.21	62.02

CLASSIFICATIONS:

Groundman 1st Year

Effective Dates:

12/03/2023			12/01/2024
Rate	Fringe	Total	Total
58.79	40.56	99.35	102.32

CLASSIFICATIONS:

Line Equipment Foreman

ELECTRICIAN- UTILITY WORK (SOUTH) **Rates Expiration Date :**

Electrician-Utility Work (South)

(For apprentice rates refer to Electrician-Utility Work (South) in any county rate package).

These rates apply to work contracted for by the following utility company:

Atlantic City Electric.

These rates do not apply to work on substations or switching stations.

For utility work contracted for by a utility company other than the one listed above or those listed under "Electrician-Utility Work (North), see the "Outside Commercial Rates" for the county in which the jobsite is located.

* FOR OUTSIDE COMMERCIAL RATES PLEASE SEE COUNTY RATES

The regular workday is 8 hours, between 7:00 AM and 4:30 PM.

FOR EMERGENCY WORK ONLY: (emergency work is defined as work caused by storm, catastrophe, act of god, and circumstances beyond the control of the employer)- all hours of work shall be paid at double the hourly rate.

SHIFT DIFFERENTIALS:

Shift work must run for a minimum of 5 consecutive workdays.

When two (2) or three (3) shifts are worked the following shall apply:

1st shift (between the hours of 8:00 AM and 4:30 PM)

2nd shift (between the hours of 4:30 PM and 12:30 AM): 8 hours of work + 10% of the regular rate of pay for 7.5 hours worked.

3rd shift (between the hours of 12:30 AM and 8:00 AM): 8 hours of work + 15% of the regular rate of pay for 7 hours worked.

OVERTIME:

Hours in excess of 8 per day, or before or after the regular workday Monday through Friday, that is not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate. All hours on Sundays and Holidays shall be paid double the hourly rate.

Four 10-hour days may be worked, at straight time, between 6:00 AM and 6:00 PM, Monday through Thursday with Friday used as a make-up day.

RECOGNIZED HOLIDAYS:

New Year's Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day and Christmas Day or on days celebrated.

WORKING RULES:

There shall be a Foreman in charge of each work crew. No crews are to exceed twelve (12) men, including Foremen.

There shall be a General Foreman designated for transmission work when three (3) or more crews are on the same job and for distribution work where there are more than twenty (20) employees on site.

A small job crew shall consist of five (5) or less employees, one (1) of the Journeyman Linemen in the crew shall be designated as a Small Job Foreman.

Work performed from ladders and/or mechanical lift equipment shall be the work of Linemen and/or Apprentices.

On new construction, fitting and framing poles, towers or structures may be done by Journeymen and/or Apprentices. Groundmen may assist, but may not perform any work which would be performed by Linemen if assembled in the air.

There shall be a Journeyman Lineman in each pole setting, erection, grounding, wire and cable-pulling crew of more than three (3) men.

Effective Dates:

12/03/2023

Rate	Fringe	Total
69.38	57.15	126.53

CLASSIFICATIONS:

General Foreman

ELECTRICIAN- UTILITY WORK (SOUTH) **Rates Expiration Date :**

Effective Dates:

12/03/2023

Rate	Fringe	Total
61.79	52.45	114.24

CLASSIFICATIONS:

Foreman

Effective Dates:

12/03/2023

Rate	Fringe	Total
58.54	50.46	109.00

CLASSIFICATIONS:

Small Job Foreman

Effective Dates:

12/03/2023

Rate	Fringe	Total
54.20	47.78	101.98

CLASSIFICATIONS:

Heavy Equipment Operator

Effective Dates:

12/03/2023

Rate	Fringe	Total
54.20	47.78	101.98

CLASSIFICATIONS:

Cable Splicer

Effective Dates:

12/03/2023

Rate	Fringe	Total
54.20	47.78	101.98

CLASSIFICATIONS:

Journeyman Lineman

Effective Dates:

12/03/2023

Rate	Fringe	Total
54.20	47.78	101.98

CLASSIFICATIONS:

Journeyman Welder

ELECTRICIAN- UTILITY WORK (SOUTH) Rates Expiration Date :

Effective Dates:

12/03/2023

Rate	Fringe	Total
54.20	47.78	101.98

CLASSIFICATIONS:

Journeyman Painter

Effective Dates:

12/03/2023

Rate	Fringe	Total
43.36	41.09	84.45

CLASSIFICATIONS:

Light Equipment Operator

Effective Dates:

12/03/2023

Rate	Fringe	Total
37.94	37.71	75.65

CLASSIFICATIONS:

Groundman Truck Driver

Effective Dates:

12/03/2023

Rate	Fringe	Total
35.23	36.05	71.28

CLASSIFICATIONS:

Groundman 3rd Year

Effective Dates:

12/03/2023

Rate	Fringe	Total
32.52	34.37	66.89

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/03/2023

Rate	Fringe	Total
29.81	32.69	62.50

CLASSIFICATIONS:

Groundman 1st Year

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ELECTRICIAN- UTILITY WORK (SOUTH) Rates Expiration Date :

Effective Dates:

12/03/2023

Rate	Fringe	Total
23.85	29.03	52.88

CLASSIFICATIONS:

Flagman

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS Rates Expiration Date :

****THESE RATES APPLY TO CONSTRUCTION ON NEW TRANS HUDSON TUNNELS ONLY****

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$3.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

03/01/2023

Rate	Fringe	Total
75.46	35.73	111.19

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

03/01/2023

Rate	Fringe	Total
75.01	35.73	110.74

CLASSIFICATIONS:

Heading Foreman, Shaft Foreman, Rod Foreman, Electrical Foreman, Rigging Foreman

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS **Rates Expiration Date :**

Effective Dates:

03/01/2023

Rate	Fringe	Total
74.26	35.73	109.99

CLASSIFICATIONS:

Iron Foreman, Caulking Foreman, Form Foreman, Cement Finishing Foreman, Concrete Foreman, Track Foreman, Clean-up Foreman, Grout Foreman

Effective Dates:

03/01/2023

Rate	Fringe	Total
78.01	35.73	113.74

CLASSIFICATIONS:

Blaster

Effective Dates:

03/01/2023

Rate	Fringe	Total
73.43	35.73	109.16

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

03/01/2023

Rate	Fringe	Total
72.91	35.73	108.64

CLASSIFICATIONS:

Skilled Men (including Caulker, Powder Carrier, all other skilled men)

Skilled Men (including Miner, Drill Runner, Iron Man, Conveyor Man, Maintenance Man, Safety Miner, Rigger, Block Layer, Cement Finisher, Rod Man)

Effective Dates:

03/01/2023

Rate	Fringe	Total
72.68	35.73	108.41

CLASSIFICATIONS:

Semi-Skilled Men (including Bell or Signal Man top or bottom, Form Worker & Mover, Concrete Worker, Shaft Man, Tunnel Laborer, Caulker's Helper, all other semi-skilled)

Semi-Skilled Men (including Miner's Helper, Chuck Tender, Track Man, Nipper, Brake Man, Derail Man, Cable Man, Hose Man, Gravel Man, Form Man)

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HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS Rates Expiration Date :

Effective Dates:

03/01/2023

Rate	Fringe	Total
72.08	35.73	107.81

CLASSIFICATIONS:

All others (including Powder Watchman, Change House Attendant, Top Laborer, Job Steward)

SECTION 011000 - SUMMARY OF WORK

PART 1 – GENERAL

1.1 SUMMARY OF WORK

- A. Project Description: Project name is Ash Brook Golf Course Clubhouse Repairs and Renovations at 1210 Raritan Road, Scotch Plains, NJ for the County of Union, and further identified as Project #2023-038 on the Contract Documents prepared by USA Architects.
- B. Owner: County of Union
 - 1. Owner's Representative: Ricardo Matias, County Engineer.
- C. Construction Manager: MAST Construction Services, Inc., 96 E. Main Street, Little Falls, NJ 07424
- D. Architect: USA Architects, 20 No. Doughty Avenue, Somerville, NJ 08876.
- E. Related Documents include Drawings and general provisions of contract, including General and Supplementary Conditions, Instructions to Bidders, and other Division and Specification Sections, all of which apply to work in this section and contracts listed below.
 - 1. Project Narrative appended to this Section.
- F. The Contract and work will include all components of the project
 - 1. General Scope: Construction includes: selective demolition, site work and drainage, sidewalk/pavers/curbs, fencing, retaining walls, cavity wall masonry, column cladding, stucco, exterior sliding door replacement, terrace reconstruction, ceiling replacement, framing, interior finishes, electrical/lighting, and other work included in the contract documents.
- G. Web-based Project Software: The Contractor is required to utilize the Construction Manager's Project Management Software: Autodesk Construction Cloud through the entire duration of the project for the submission of all documents which include but are not limited to RFI's and submittals. Autodesk will be administered by the Construction Manager for the project.

1.2 WORK BY OWNER

- A. General: Cooperate Fully with Owner so that work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Contractor is responsible for coordinating their work on this Contract through the Construction Manager, with the preceding and concurrent work performed by Owner.

1.3 INTENT OF THE SPECIFICATIONS

A. The intent of these Specifications is to describe the materials and methods of construction required for the performance of the work. In general, it is intended that the drawings shall delineate the detailed extent of the work. When there is a discrepancy between drawings, referenced specifications, and standards and this specification, this specification shall govern.

B. The following apply:

1. Protect all existing construction. Damage to existing construction or equipment shall be restored to the satisfaction of the Architect at no additional cost to the Owner.

3. The following work hour schedule shall be strictly adhered to. Failure to do so shall be cause to immediately terminate the Agreement between Owner and Contractor. It shall be understood by all parties if work is to be performed on weekends and holidays, the Contractor can perform said work only if approved by the Owner beforehand.

1) Working hours on Monday through Friday shall be 7:00 A.M. to 3:30 P.M.

2) On holidays, Saturdays and Sundays working hours subject to local ordinances and Owner approval.

Note: Contractor shall verify local ordinances and adjust the above hours accordingly as to exact start and stoppage times allowed.

4. Contractor shall upon completion of the day's work inspect and clean any debris located in the area of work. Contractor shall provide all necessary precaution to protect existing building and contents during the demolition and installation process. The Contractor shall be responsible to remove and replace any item or finishes damaged during the execution of the Work.

5. The Contractor shall report any discrepancies between the documents and field conditions to the architect ten (10) days prior to submission of a proposal so that the architect may clarify the discrepancy. Failure to report any discrepancies will nullify any extra cost, once a contract has been awarded.

6. Construction Sequencing: In order to minimize impact on golf and restaurant operations, the contractor is required to sequence accordingly.

- 1) Interior work at the restaurant and lower level be performed first while the weather may still be largely prohibitive for exterior construction operations (e.g., masonry).
- 2) Sequence the exterior work to commence as soon as weather permits on the southwest side of the building closest to the pro shop and practice green, and proceed counter-clockwise around the building to reconstruction of the retaining walls on the north side.

7. Cart Barn: Access by Ash Brook staff to at least one of the two entrances to the golf cart barn located at the lower level of the rear of the building should be maintained at all times, to the extent possible (see Protection System provided on contract documents). If both entrances to the

cart barn will be inaccessible for any length of time during normal sequence of construction operations, the Owner or the Construction Manager should be provided with at least 2 full business days notice in writing (e.g., via email). Every effort should be made to allow safe and unimpeded access by Ash Brook golf staff to at least one entrance to the cart barn outside of regular work hours (7AM – 3:30PM, Monday-Friday, holidays excepted), unless advance written permission is provided by the Owner or the Construction Manager. Ash Brook staff will stage carts outside of the cart barn prior to the arrival of contractors each morning.

8. Freight Elevator – The building's freight elevator is only intended for food/beverage and restaurant equipment and is off limits to contractors.

9. Rest Rooms: The existing rest rooms in the clubhouse are intended for Ash Brook guests and staff only. The contractors and their forces are required to provide their own temporary rest rooms as outlined in these specifications.

C. CONTRACTS

1. Contract Type: A single prime contract based on a stipulated price.
2. The Owner intends to occupy adjacent portion of the building during the entire construction period. Cooperate with the Owner to minimize conflict and to facilitate Owner's operations. Schedule the Work to accommodate Owner occupancy.
3. The specifications contain the Bid Proposal Form for a single overall contract including all the work consisting of General Construction, Steel Construction, Masonry, Plumbing, HVAC, and Electrical, and all the work necessary to provide the County of Union with a complete fully functional, operational facility with all required certificates of occupancy and best quality of workmanship with substantial completion taking place no later than the milestone dates outlined under paragraph 2.1.A of this section.

D. KNOWLEDGE OF CONTRACT REQUIREMENTS

1. The Contractor and its subcontractors, sub-subcontractors and materialmen shall consult in detail the General Conditions, all divisions and sections of the specification, all drawings and all addenda for instructions and requirements pertaining to the work and shall provide all labor, materials, equipment, and services necessary to furnish, install and complete the work in strict conformance with all provisions thereof.
2. The Contractor will be held to have examined the site of the work prior to submitting its proposal and informed it, its subcontractors, sub-subcontractors, and materialmen of all existing conditions affecting the execution of the work.
3. The Contractor will be held to have examined the Contract Documents, and modifications thereto, as they may affect subdivisions of the work and informed it, its subcontractors,

sub-subcontractors, and materialmen of all conditions thereof affecting the execution of the work.

4. The scope of work for the Contract is not necessarily limited to the description of each section of the specifications and the illustrations shown on the drawings. Include all minor items not expressly indicated in the contract documents, or as might be found necessary as a result of field conditions, in order to complete the work as it is intended, without any gaps between the various subdivisions of work of the contractors and their subcontractors.
5. The contractor will be held to be thoroughly familiar with all conditions affecting labor in the neighborhood of the project including, but not limited to, unions, incentive pay, procurement, living and commuting conditions and to have informed its subcontractors and sub-subcontractors thereof.

E. CONTRACT DOCUMENTS INFORMATION

1. The Contract Documents are prepared in accordance with available information as to existing conditions and locations. If, during construction, conditions are revealed at variance with the contract documents, notify the Architect immediately so that supplementary instructions may be issued.
2. The specifications determine the kinds and methods of installation of the various materials, the drawings establish the quantities, dimensions and details of materials, the schedules on the drawings give the location, type, and extent of the material.
3. Should the drawings, specifications or schedules disagree in themselves or with either or both of the others, the better quality or greater quantity of work or materials shall be performed and provided, unless otherwise directed in writing by the Architect.
4. Dimensions given on the drawings govern scale measurements and large-scale drawings govern small-scale drawings, except as to anything omitted unless such omission is expressly noted on the larger scale drawings.
5. Whenever a material, article or piece of equipment is referred to in the singular number in the contract documents, it shall be the same as referring to it in the plural. As many such materials, articles or pieces of equipment shall be provided as are required to complete the work.
6. The Construction Manager, Architect and Owner do not assume any responsibility for the content and accuracy of any surveys, utility information, subsurface reports and other information provided through their office, by others, to the Contractor. The Contractor is responsible to obtain any additional information that is required in this regard for the performance of the work.

- F. Contractor Use of Premises: Limit use of the premises to construction activities in areas indicated; allow for Owner occupancy and use by the public.

1. Confine operations to areas within Contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
 2. Keep driveways and entrances clear at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize requirements for storage of materials.
 3. If it becomes necessary for certain short-term activities to be performed outside of the site enclosure fence or over public areas, the Contractor will be responsible for all related costs including traffic control and premium time work in order to comply with all local regulations.
 4. The Contractor shall ensure that proper parking and material storage is provided for their staff as required so as not to interrupt the facility's operation.
 5. The Contractor, their subcontractors, vendors, etc. shall not erect any sign on the Project site without the prior written consent of the Owner. This consent may be at the sole discretion of the Owner.
 6. The golf course is located on a site with limited space for contractor field offices and trailers. Currently, the Contractor will be permitted to establish their field office, the field office for the Construction Manager and their storage and staging areas as described in these specifications.
- G. Use of the Existing Building: Maintain the existing building in a weather tight condition throughout construction. Repair damage caused by construction operations. Take precautions necessary to protect the building and occupants during the construction period.
1. The Contractor will provide temporary partitions to separate ongoing work when and as required. All areas impacted by the work will be cleaned, minimally, at the end of each work shift or at the daily conclusion of the work. No tools, equipment, etc. is to be staged or stored out of the protected area.
- H. Full Owner Occupancy: The Owner will occupy the site and existing building during construction. Cooperate with the Owner to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Owner's operations.
- I. Partial Owner Occupancy: The Owner reserves the right to occupy and place and install equipment in completed areas prior to Substantial Completion provided such occupancy does not interfere with completion of the Work. Placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
1. A Certificate of Substantial Completion will be executed for each portion of the Work occupied prior to Owner occupancy.

2. Obtain a Certificate of Occupancy from local building officials prior to Owner occupancy.
- J. It shall be understood that the working hours for this project shall be between the hours indicated above. All interior spaces affected by the work shall be swept clean daily and restored to their original condition at the end of each working day.
- K. The Contractor is to provide all information regarding the status of equipment and materials, especially those with long or impacted lead times, to the Construction Manager on a monthly basis or more frequently if required.
- L. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary services according to requirements indicated:
1. Notify Architect, Construction Manager and Owner not less than 2 days in advance of proposed utility interruptions.
 2. Obtain Owner's written permission before proceeding with utility interruptions.
- M. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruptions to Owner occupancy, with Owner.
1. Notify Architect, Construction Manager and Owner not less than 2 days in advance of proposed disruptive operations
- N. Smoking: Smoking is prohibited on the project site at all times.
- O. Controlled Substances: It shall be the Contractor's responsibility to prevent illegal drug use on the Project. Use of illegal drugs or substances on the Project site by any employee of the Contractor or any subcontractor, shall subject the employee to permanent removal from the site. Persistent use of illegal drugs or substances by employees of the Contractor or any of its subcontractors, shall constitute a default under the construction contract.

END OF SECTION

SCOPE OF WORK

County of Union

Clubhouse Repairs and Restoration

Ash Brook Golf Course

Scotch Plains, New Jersey

General Description:

The project proposes repairs and restoration of the clubhouse, façade, and non-golf grounds of Union County's Ash Brook Golf Course located at 1210 Raritan Road in Scotch Plains, New Jersey. The clubhouse consists of two levels (Main Level and Lower Level), and houses common public areas, multiple rest rooms, staff office space, pro shop, restaurant/bar with full kitchen, dining room, terrace, snack bar, cart barn, food/beverage and equipment storage areas, and electrical/mechanical spaces to serve the entire building.

General Construction:

Construction includes: selective demolition, site work and drainage, sidewalk/pavers/curbs, fencing, retaining walls, cavity wall masonry, column cladding, stucco, exterior sliding door replacement, terrace reconstruction, ceiling replacement, framing, interior finishes, electrical/lighting, and other work included in the contract documents.

Project Notes:

- Construction Sequencing – In order to minimize impact on golf and restaurant operations, the contractor is required to sequence accordingly:
 - Interior work at the restaurant and lower level be performed first while the weather may still be largely prohibitive for exterior construction operations (e.g., masonry).
 - Sequence the exterior work to commence as soon as weather permits on the southwest side of the building closest to the pro shop and practice green, and proceed counter-clockwise around the building to reconstruction of the retaining walls on the north side.
- Cart Barn – Access by Ash Brook staff to at least one of the two entrances to the golf cart barn located at the lower level of the rear of the building should be maintained at all times, to the extent possible (see Protection System provided on contract documents). If both entrances to the cart barn will be inaccessible for any length of time during normal sequence of construction operations, the Owner or the Construction Manager should be provided with at least 2 full business days notice in writing (e.g., via email). Every effort should be made to allow safe and unimpeded access by Ash Brook golf staff to at least one entrance to the cart barn outside of regular work hours (7AM – 3:30PM, Monday-Friday, holidays excepted), unless advance written permission is provided by the Owner or the Construction Manager. Ash Brook staff will stage carts outside of the cart barn prior to the arrival of contractors each morning.
- Freight Elevator – The building's freight elevator is only intended for food/beverage and restaurant equipment and is off limits to contractors.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Change procedures.

1.02 RELATED REQUIREMENTS

- A. Section 01 21 00 - Allowances: Payment procedures relating to allowances.
- B. Section 01 78 00 - Closeout Submittals: Project record documents.

1.03 SCHEDULE OF VALUES

- A. Use Schedule of Values Form: AIA G703, current edition.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Submit Schedule of Values in duplicate within 15 days after date of Commencement of the Work.
- E. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section. Identify site mobilization, bonds and insurance, and phased work.
- F. Provide sufficient detail **to facilitate continued evaluation of Applications for Payment and progress reports and** so that no line item exceeds five percent of the Contract Sum. **Round amounts to nearest whole dollar, the total shall equal the Contract Sum.**
- G. Include in each line item, the amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- H. Include within each line item, a direct proportional amount of Contractor's overhead and profit.
- I. Revise schedule to list approved Change Orders, with each Application For Payment.
- J. **Closeout Costs: Include separate line items under Contractor and principal subcontracts for project closeout requirements in an amount totaling a minimum of 5% of Contract Sum and subcontract amount.**

1.04 TAXES

- A. The owner is exempt from any local, state or federal sales, use or excise tax. The owner will not pay for state sales and use tax that are included in any invoices.

1.05 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Use Form AIA G732 and Form AIA G703, current edition.
- C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- D. Forms filled out by hand will not be accepted.
- E. Execute certification by signature of authorized officer.
- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- H. Submit one electronic and three hard-copies of each Application for Payment.
- I. Submit the following prior to the first Application for Payment. No payment will be approved until these have been submitted.
 - 1. Evidence of Affirmative Action Compliance.
 - 2. Proof of Business Registration.
 - 3. Copy of the building permit.
 - 4. Name and qualifications of a proposed superintendent.
 - 5. Names of persons or entities proposed for each principal portion of the Work.
 - 6. Submittal schedule.
 - 7. Schedule of values.
 - 8. Insurance certificates naming the Owner, Architect, and Architect's consultants as additional insureds under the Contractor's commercial general liability policy.
- J. Include the following with **each** application **during construction**:
 - 1. Transmittal letter as specified for submittals in Section 01 30 00.
 - 2. Construction progress schedule, revised and current as specified in Section 01 32 16.
 - 3. Current construction photographs specified in Section 01 30 00.
 - 4. Partial release of liens from major subcontractors and vendors.
 - 5. Certified payrolls.
 - 6. Affidavits attesting to off-site stored products.
 - 7. **Updated Construction Schedule**
 - 8. **Daily Construction Reports**

9. Updated Change Order Log

- K. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.06 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 2. Promptly execute the change.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 14 days.
- D. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01 25 00.
- E. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
- F. Substantiation of Costs: Provide full information required for evaluation.
1. Provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
 2. Support each claim for additional costs with additional information:
 - a. Origin and date of claim.
 - b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.
 - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

- G. **Overhead and Profit:**
 - 1. For all extra Work performed by Contractor:
 - a. The gross cost to the Owner shall include the net cost of the Work to the Contractor plus an allowance for overhead and profit (inclusive of bond (see note 3 below)and insurance) not to exceed 15% of the net cost.
 - 2. For all extra Work performed by a Subcontractor:
 - a. The gross cost to the Owner shall include the net cost of the Work to the Subcontractor plus an allowance for overhead and profit not to exceed 10% of the net cost, plus the Contractor's overhead and profit (inclusive of bond (see note 3 below)and insurance) not to exceed 10% of the Subcontractor's cost (for a maximum aggregate total of 21%).
 - 3. Bond costs cannot be included or itemized within Change Orders costs unless the Bid Contingency is exhausted and original contract sum will be increased by Change Order(s).
- H. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- J. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- K. Promptly enter changes in Project Record Documents.

1.07 APPLICATION FOR FINAL PAYMENT

- A. Forms:
 - 1. AIA G706 "Contractor's Affidavit of Payment of Debts and Claims":
 - 2. AIA Document G706A "Contractor's Affidavit of release of Liens"
 - 3. AIA Document G707 "Consent of Surety to Final Payment"
- B. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- C. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 70 00.
 - 2. Conditions listed in AIA Document A201 § 9.10.2.
 - 3. Pursuant to N.J.S.A. 52:32-44, submit a complete and accurate list of all subcontractors used and their addresses.
 - 4. Completion of items specified for completion after Substantial Completion.
 - 5. Ensure that unsettled claims will be settled.
 - 6. Ensure that incomplete Work is not accepted and will be completed without undue delay.

7. Transmittal of required Project construction records to the Owner.
8. Certified property survey (if applicable).
9. Proof that taxes, fees, and similar obligations were paid.
10. Removal of temporary facilities and services.
11. Removal of surplus materials, rubbish, and similar elements.
12. Completion of training necessary for the Owners personnel to operate all systems trouble-free.
13. Execution of maintenance agreements and assurance that maintenance is on-going.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROGRESS PAYMENTS PROCEDURE

- A. Submit applications for payment within the time period stipulated in the Agreement.
- B. The Architect will review and respond to the application within the time period stipulated in the Agreement.
- C. The Owner will make payment within 30 days of the date established for the progress payment.
- D. If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received.
- E. The Contractor shall pay each Subcontractor, no later than ten days after receipt of payment from the Owner.

END OF SECTION

SECTION 01 21 00 – ALLOWANCES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specifications Sections, apply to this Section.

1.2 SUMMARY

- A. Selected materials and equipment, and in some cases, installation, are included in Contract Documents by allowances. Allowances are established to defer selection until more information is available. Other requirements will be issued by a Change Order.
- B. Types of allowances required include the following:
 - 1. Contingency allowance.
 - 2. Testing and Inspection Allowance
- C. Procedures for submitting and handling Change Orders are included in Division 1 Section "012000 Price and Payment Procedures."
- F. Lump Sum and Contingency Allowances:
 - 1. Contractor's overhead, profit, supervision, and related costs for products and equipment ordered by Owner under the lump sum and contingency allowance are as follows:
 - a. For all contingency allowance work performed by the contractor and all subcontractors, the gross cost to the Owner shall not exceed an overhead and profit margin as per the terms set forth in section 01200 Price and Payment Procedures.
 - 2. Allowances shall include costs of specific products and materials ordered under the Allowance, including delivery.
 - 3. Use Allowances only as directed by the Architect and Construction Manager and only by Change Order, which designates amount(s) to be charged to the Allowance.
 - 4. At Project Closeout, credit unused amounts remaining in the Allowances to the Owner by Change Order.

G. Testing and Inspection Allowances:

Testing and inspection allowances include the cost of engaging testing agencies, actual tests and inspections and reporting results.

1. The allowance does not include incidental labor required to assist the testing agency or for costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the contract sum. Contractors are not entitled to overhead and profit markups on Testing and Inspection allowance draws.
2. Costs of testing and inspection services not required by the contract documents are not included in the allowance.
3. At Project Closeout, credit unused amounts remaining in the testing and inspection allowance to the Owner.

H. Unused Materials: Return unused materials for credit to the Owner, after installation has been completed and accepted.

1. If it is not feasible to return unused material, prepare unused material for the Owner's storage, and deliver to the storage space as directed. Otherwise, disposal is the Contractor's responsibility.

I. Inspection: Inspect products covered by an allowance promptly upon delivery for damage or defects.

J. Preparation: Coordinate materials and installation for each allowance with related materials and installations to ensure that each allowance item is integrated with related construction activities.

K. SCHEDULE OF ALLOWANCES

1. Allowance No. 1: Contingency Allowance: Contractor shall include the lump sum of Two Hundred Fifty Thousand Dollars (\$350,000.00) in their bid to cover changes as directed by the Owner.
2. Allowance No. 2: Testing and Inspection Allowance: Contractor shall include the sum of Fifty Thousand Dollars \$50,000.00 in their bid for special testing and inspections as required by NJ Uniform Construction Code and as required by the Contract Documents.

END OF SECTION

SECTION 01 22 00 - UNIT PRICES

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.

1.2 DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if:
 - 1. The estimated quantities of Work required by the Contract Documents are increased or decreased.
 - 2. If no estimate of quantity is given in the bidding documents for inclusion in the base or alternate bids.
 - 3. Unit prices as listed in the proposal form.

1.3 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, profit, and applicable taxes.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices.
- C. Schedule: A "Unit Price Schedule" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials described under each unit price.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 UNIT PRICE SCHEDULE

- A. Unit Price #1: 4" Sanitary PVC Pipe
 - 1. Description: Replace existing 4" sanitary PVC pipe with new 4" PVC Pipe. Excavate, remove and dispose of existing 4" sanitary pipe. Provide new 4" SCH-40 PVC piping and ensure piping properly pitched in the direction of drainage.
 - 2. Unit of Measurement: Linear Foot

- B. Unit Price #2: Concrete Slab Saw Cutting and Concrete Patching
 - 1. Description: Cut existing concrete slab to access and replace the existing 4" sanitary PVC pipe with new 4" PVC Pipe. Cut out, remove and dispose of existing concrete. Patch and replace with new concrete to match existing adjacent thickness and rebar. All new concrete shall be flush with adjacent.
 - 2. Provide Transparent Finish on New Concrete Floors.
 - a. Sealer: Water Based Sealer for Concrete Floors; MPI #99.
 - 1) Products:
 - (a) Sherwin Williams Armorseal 8100 Water-Based Epoxy Floor Coating
 - (b) Approved equal.
 - b. Sealer Sheen:
 - 1) Matte MPI gloss level 6; use this sheen at all locations.
 - c. Slip-Resistant Additive
 - 1) Products:
 - (a) H&C Products Group; H&C Sharkgrip Slip-Resistant Additive
 - (b) Approved Equal
 - 3. Unit of Measurement: Linear Foot
 - C. Unit Price #3: Stone Back Fill
 - 1. Description: Provide stone back fill below new 4" sanitary PVC Pipe.
 - 2. Unit of Measurement: Cubic Yards
 - D. Unit Price #4: PVC 90 Degree Elbow
 - 1. Description: Provide new 4-inch 90 Degree PVC elbow for sanitary piping.
 - 2. Unit of Measurement: Each
 - E. Unit Price #5: PVC 45 Degree Elbow
 - 1. Description: Provide new 4-inch 45 Degree PVC elbow for sanitary piping.
 - 2. Unit of Measurement: Each
 - F. Unit Price #6: PVC Cleanouts
 - 1. Description: Provide new 4-inch PVC cleanouts for sanitary piping.
 - 2. Unit of Measurement: Each
 - G. Unit Price #7: PVC 'Y' Connections
 - 1. Description: Provide new 4-inch PVC 'Y' connection for sanitary piping.
 - 2. Unit of Measurement: Each
 - H. Unit Price #8: PVC Couplings
 - 1. Description: Provide new 4-inch couplings for sanitary piping.
 - 2. Unit of Measurement: Each

END OF SECTION

SECTION 01 25 00 - SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Procedural requirements for proposed substitutions.

1.2 DEFINITIONS

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
 - 1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
 - a. Unavailability.
 - b. Regulatory changes.
 - 2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
 - a. Substitution requests offering advantages solely to the Contractor will not be considered.

1.3 REFERENCE STANDARDS

- A. CSI/CSC Form 13.1A - Substitution Request (After the Bidding/Negotiating Phase) Current Edition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
 - 4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 5. Waives claims for additional costs or time extension that may subsequently become apparent.

- a. Waiver includes claims related to providing custom aesthetic effects, colors, or finishes to meet the intent expressed in the Contract Documents.
 6. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
1. Note explicitly any non-compliant characteristics.
- C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
1. Contractor's Substitution Request documentation must include the following:
 - a. Project Information:
 - 1) Official project name and number.
 - 2) Owner's, Architect's, and Contractor's names.
 - b. Substitution Request Information:
 - 1) Discrete and consecutive Substitution Request number, and descriptive subject/title.
 - 2) Indication of whether the substitution is for cause or convenience.
 - 3) Issue date.
 - 4) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
 - 5) Description of Substitution.
 - 6) Reason why the specified item cannot be provided.
 - 7) Differences between proposed substitution and specified item.
 - 8) Description of how proposed substitution affects other parts of work.
 - c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
 - 1) Physical characteristics.
 - 2) In-service performance.
 - 3) Expected durability.
 - 4) Visual effect.
 - 5) Sustainable design features.
 - 6) Warranties.
 - 7) Other salient features and requirements.
 - 8) Include, as appropriate or requested, the following types of documentation:
 - (a) Product Data:
 - (b) Samples.
 - (c) Certificates, test, reports or similar qualification data.
 - (d) Drawings, when required to show impact on adjacent construction elements.
 - d. Impact of Substitution:
 - 1) Savings to Owner for accepting substitution.
 - 2) Change to Contract Time due to accepting substitution.

- D. Limit each request to a single proposed substitution item.
 - 1. Submit an electronic document, combining the request form with supporting data into single document.

3.2 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

- A. Submittal Form (after award of contract):
 - 1. Submit substitution requests by completing CSI/CSC Form 13.1A - Substitution Request. See this form for additional information and instructions.
 - 2. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- B. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
- C. Submit request for Substitution for Convenience within 14 days of discovery of its potential advantage to the project or the date of Commencement of the Work, whichever is later, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
 - 1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
 - 2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
 - 3. Bear the costs engendered by proposed substitution of:
 - a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request.
 - b. Other construction by Owner.
 - c. Other unanticipated project considerations.
- D. Substitutions will not be considered under one or more of the following circumstances:
 - 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
 - 2. Without a separate written request.
 - 3. When acceptance will require revisions to Contract Documents.

3.3 RESOLUTION

- A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
- B. Architect will notify Contractor in writing of decision to accept or reject request.
 - 1. Architect's decision following review of proposed substitution will be noted on the submitted form.

3.4 ACCEPTANCE

- A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.5 CLOSEOUT ACTIVITIES

- A. Include completed Substitution Request Forms as part of the Project record.

END OF SECTION

SECTION 01 30 00 - ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General administrative requirements.
- B. Preconstruction meeting.
- C. Site mobilization meeting.
- D. Progress meetings.
- E. Number of copies of submittals.
- F. Requests for Information (RFI) procedures.
- G. Submittal procedures.

1.2 RELATED REQUIREMENTS

- A. Section 01 60 00 - Product Requirements: General product requirements.
- B. Section 01 70 00 - Execution and Closeout Requirements: Additional coordination requirements.

1.3 GENERAL ADMINISTRATIVE REQUIREMENTS

- A. Comply with requirements of Section 01 70 00 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- B. Make the following types of submittals to Architect:
 - 1. Requests for Interpretation (RFI).
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.
 - 5. Design data.
 - 6. Manufacturer's instructions and field reports.
 - 7. Applications for payment and change order requests.
 - 8. Progress schedules.
 - 9. Coordination drawings.
 - 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
 - 11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PRECONSTRUCTION MEETING

- A. Attendance Required:
 - 1. Owner.
 - 2. Architect.
 - 3. **Construction Manager**
 - 4. Contractor.

- B. Agenda:
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of schedule of values, and progress schedule.
 - 5. Designation of personnel representing the parties to Contract and <1|A/E|>.
 - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 7. Scheduling.

- C. **The Construction Manager will** record minutes and distribute copies within **three business** days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.2 SITE MOBILIZATION MEETING

- A. Architect will schedule meeting at the Project site prior to Contractor occupancy.

- B. Meeting may be conducted as part of the Preconstruction Meeting.

- C. Attendance Required:
 - 1. Contractor.
 - 2. Owner.
 - 3. Architect.
 - 4. **Construction Manager**
 - 5. Contractor's superintendent.
 - 6. Major subcontractors.

- D. Agenda:
 - 1. Use of premises by Owner and Contractor.
 - 2. Owner's requirements.
 - 3. Construction facilities and controls provided by Owner.
 - 4. Temporary utilities provided by Owner.

5. Survey and building layout.
6. Security and housekeeping procedures.
7. Schedules.
8. Application for payment procedures.
9. Procedures for testing.
10. Procedures for maintaining record documents.
11. Requirements for start-up of equipment.
12. Inspection and acceptance of equipment put into service during construction period.

- E. **The Construction Manager will** record minutes and distribute copies within **three business** days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.3 PROGRESS MEETINGS

- A. Attendance Required:

1. Contractor.
2. Owner.
3. Architect.
4. **Construction Manager**
5. Contractor's superintendent.
6. Major subcontractors.

- B. Agenda: **The Construction Manager will prepare the meeting agenda for progress meetings and will distribute to all invited parties. Significant items that could affect progress will be reviewed along with topics appropriate to the status of the project, as well as overall construction progress as it relates to the Contractor's Construction Schedule. Topics of discussion may include the following:**

1. Review minutes of previous meetings.
2. Review of work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that impede, or will impede, planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of RFIs log and status of responses.
7. Review of off-site fabrication and delivery schedules.
8. Maintenance of progress schedule.
9. Corrective measures to regain projected schedules.
10. Planned progress during succeeding work period.
11. Coordination of projected progress.
12. Maintenance of quality and work standards.
13. Effect of proposed changes on progress schedule and coordination.
14. Other business relating to work.

- C. **The Construction Manager will** record minutes and distribute copies within **three business** days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.4 PREINSTALLATION MEETINGS - SEE SECTION **01 70 00**.

3.5 **REQUESTS FOR INTERPRETATION (RFI)**

- A. Definition: A request seeking one of the following:
1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
 2. A resolution to an issue which has arisen due to field conditions and affects design intent.
- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
1. Prepare a separate RFI for each specific item.
 - a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
 - b. Do not forward requests which solely require internal coordination between subcontractors.
 2. Prepare in a format and with content acceptable to Owner.
 3. Combine RFI and its attachments into a single electronic file. PDF format is preferred.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
 - a. Approval of submittals (use procedures specified elsewhere in this section).
 - b. Approval of substitutions (see Section - 01 60 00 - Product Requirements)
 - c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
 - d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
 3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
 4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.

- E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
 - 1. Official Project name and number, and any additional required identifiers established in Contract Documents.
 - 2. Owner's, Architect's, and Contractor's names.
 - 3. Discrete and consecutive RFI number, and descriptive subject/title.
 - 4. Issue date, and requested reply date.
 - 5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
 - 6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
 - 7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.
- F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- G. Web-based Project Software: The Contractor is required to utilize the Construction Manager's Project Management Software: Autodesk Construction Cloud through the entire duration of the project for the submission of all documents which include but are not limited to RFI's and submittals. Autodesk will be administered by the Construction Manager for the project.

3.6 SUBMITTAL SCHEDULE

- A. Submit to Architect for review a schedule for submittals in tabular format.
 - 1. Submit at the same time as the preliminary schedule.
 - 2. Coordinate with Contractor's construction schedule and schedule of values.
 - 3. Format schedule to allow tracking of status of submittals throughout duration of construction.
 - 4. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.
 - 5. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
 - a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

3.7 SUBMITTAL SUBMISSION

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

1. Web-based Project Software: The Contractor is required to utilize the Construction Manager's Project Management Software: Autodesk Construction Cloud through the entire duration of the project for the submission of all documents which include but are not limited to RFI's and submittals. Autodesk will be administered by the Construction Manager for the project.
2. All submittals received for review shall contain the Contractor's stamp of approval. Submittals received by the Architect and/or Engineers which do not contain the Contractor's stamp of approval will be returned to the Contractor without review and must be properly resubmitted. No delay claims will be entertained.

3.8 SUBMITTAL REVIEW

- A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.
 1. Processing: Allow 15 calendar days for initial review. Allow more time if processing must be delayed for coordination with other submittals. The Architect will advise the Contractor when a submittal must be delayed for coordination. Allow two weeks for reprocessing each submittal.
 - a. No extension of time will be authorized because of failure to transmit submittals sufficiently in advance of the Work to permit processing.
- B. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.
- C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
 1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.
- D. Architect's and consultants' actions on items submitted for review:
 1. Authorizing purchasing, fabrication, delivery, and installation:
 - a. "Approved", or language with same legal meaning.
 - b. "Approved as Noted, Resubmission not required", or language with same legal meaning.
 - 1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
 - c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
 - 1) Resubmit corrected item, with review notations acknowledged and incorporated. Resubmit separately, or as part of project record documents.
 - 2) Non-responsive resubmittals may be rejected.
 2. Not Authorizing fabrication, delivery, and installation:
 - a. "Revise and Resubmit".
 - 1) Resubmit revised item, with review notations acknowledged and incorporated.
 - 2) Non-responsive resubmittals may be rejected.
 - b. "Rejected".

1) Submit item complying with requirements of Contract Documents.

- E. Architect's and consultants' actions on items submitted for information:
1. Items for which no action was taken:
 - a. "Received" - to notify the Contractor that the submittal has been received for record only.
 2. Items for which action was taken:
 - a. "Reviewed" - no further action is required from Contractor.

END OF SECTION

SECTION 01 32 16 - CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, with network analysis diagrams and reports.

1.2 PROJECT PHASING & MILESTONE DATES

- A. Mobilize on site and commence work within 10 days after Notice to Proceed.
- B. Comply with all individual phasing and sequencing requirements in the contract documents
- C. Substantial Completion – 211 Calendar Days from Notice to Proceed
- D. Overall Final Completion – 241 Calendar Days from Notice to Proceed

Contractor must maintain these dates. Failure shall cause contractor to be charged liquidated damages and possible fees incurred by design professionals extending construction administration past final completion date.

1.3 SUBMITTALS

- A. Within 5 days after date of Commencement of the Work, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 10 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 5 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

1.4 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.2 CONTENT

- A. The Contractor is to formulate and submit a precedence-based network diagram project schedule for the Work using Primavera P6 or other approved precedence based scheduling program. The schedule is to be provided in both pdf and XER formats based on the following requirements:
1. Obtain the information from their subcontractors and vendors required to formulate and prepare a critical path composite bar chart schedule of the Work based on time scale network logic.
 2. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the Contractor's schedule of values.
 3. Within each time bar, indicate estimated completion percentage in 10 percent increments. As work progresses, place a contrasting mark in each bar to indicate actual completion.
 4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the Work.
 5. Coordinate the schedule of values, list of subcontractors, submittal schedule, progress reports, payment requests and other schedules with this schedule.
 6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures, such as punch list formulation and the Contractor's procedures such as equipment start-up necessary for certification of Substantial Completion.
 7. Indicate important stages of construction for each major portion of the Work, including submittal, release of long lead items, the selection of allowance items if any, review, testing and installation.
 8. Provide a separate time bar to identify each major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities. Indicate milestone dates set forth in this section and elsewhere in the Contract Documents.
 9. Following response to the initial submittal, print and distribute copies to the Construction Manager, Architect, Owner, subcontractors and other parties required to comply with scheduled dates. Post copies in the project meeting room and temporary field office. When revisions are made, distribute to the same parties and post in the

- same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
10. Revise the schedule after each meeting, event or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting, or as required by the Construction Manager.
 11. Provide a copy of the XER files for the base line schedule and all required updates to the Construction Manager when and as requested and on a monthly basis concurrently with the submittal of the Contractor's payment application.
 12. In addition to showing the critical path, the schedule shall also include milestones, float, predecessors, and successors. Any constraints shall also be clearly identified.
- B. If the project, or any component that includes a required completion date is not complete for the use of that component by the milestone dates specified in Article 2.1 of this section and elsewhere in the Contract Documents, the Contractor shall pay the Owner the sum of \$1,000 (One Thousand Dollars) per calendar day as liquidated damages, not as a penalty. For each calendar day until the work is completed.
- C. There will be no bonus or incentive paid should the work, or any portion thereof, be completed in advance of the specified activity milestone date or phase completion date.
- D. Any claim for an extension, or extensions, of time must be fully substantiated by incorporation of the impact from the changed condition into an update of the Contractors' Construction Schedule, as set forth in General Conditions. This update must also reflect any other impacts to the schedule resulting from delays, concurrent or non-concurrent, for which any Contractor is responsible. No claims will be evaluated or accepted without inclusion of the substantiation requirements set forth in this article.
- E. If the Contractor is delayed in the progress of the Work at any time by the Owner, Architect, or Construction Manager, due to the incorporation of any major changes to the Work, the Contractor shall not assert any claim regarding the same to any of these parties and the Contractor's sole remedy shall be limited to an extension to the time, and costs as permitted by law, of completion in the amount deemed to be reasonable by the Architect and Construction Manager.
- F. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- G. Identify each item by specification section number.
- H. Provide sufficient detail so that no activity exceeds five percent of the Contract Sum.
- I. Identify work of separate stages and other logically grouped activities.
- J. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.

- K. Coordinate content with schedule of values specified in Section 01 20 00 - Price and Payment Procedures.
- L. Provide legend for symbols and abbreviations used.

3.3 NETWORK ANALYSIS

- A. Prepare network analysis diagrams and supporting mathematical analyses using the Critical Path Method.
- B. Illustrate order and interdependence of activities and sequence of work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.
- C. Mathematical Analysis: Tabulate each activity of detailed network diagrams, using calendar dates, and identify for each activity:
 - 1. Preceding and following event numbers.
 - 2. Activity description.
 - 3. Estimated duration of activity, in maximum 15 day intervals.
 - 4. Earliest start date.
 - 5. Earliest finish date.
 - 6. Actual start date.
 - 7. Actual finish date.
 - 8. Latest start date.
 - 9. Latest finish date.
 - 10. Total and free float; float time shall accrue to Owner and to Owner's benefit.
 - 11. Monetary value of activity, keyed to Schedule of Values.
 - 12. Percentage of activity completed.
 - 13. Responsibility.
- D. Analysis Program: Capable of compiling monetary value of completed and partially completed activities, accepting revised completion dates, and recomputation of all dates and float.
- E. Required Reports: List activities in sorts or groups:
 - 1. By preceding work item or event number from lowest to highest.
 - 2. By amount of float, then in order of early start.

3.4 REVIEW AND EVALUATION OF SCHEDULE

- A. Participate in joint review and evaluation of schedule with Architect at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 5 days.

3.5 UPDATING SCHEDULE

- A. Save baseline schedule for comparison to future schedules.
- B. Maintain schedules to record actual start and finish dates of completed activities.
- C. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- D. Annotate diagrams to graphically depict current status of Work.
- E. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- F. Indicate changes required to maintain Date of Substantial Completion.
- G. Submit reports required to support recommended changes.
- H. Provide narrative report to define problem areas, anticipated delays, and impact on the schedule. Report corrective action taken or proposed and its effect.

3.6 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Architect, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

3.7 DAILY CONSTRUCTION REPORTS

- A. Prepare a daily construction report, recording information concerning events at the site. Submit duplicate copies to the Architect and Construction Manager at weekly intervals. Include the following information:
 - 1. List of subcontractors at the site.
 - 2. High and low temperatures, general weather conditions.
 - 3. Accidents, stoppages, delays, shortages, losses.
 - 4. Emergency procedures.
 - 5. Change Orders received, implemented.
 - 6. Partial Completions, occupancies.
 - 7. Substantial Completions authorized.

3.8 UPCOMING WORK SUMMARY

- A. Prepare summary report (Two-Week Look Ahead) for submission at Progress Meetings indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and Contract Time.

3.9 RECOVERY SCHEDULE:

- A. When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

END OF SECTION

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Submittals.
- B. Quality assurance.
- C. References and standards.
- D. Testing and inspection agencies and services.
- E. Control of installation.
- F. Mock-ups.
- G. Tolerances.
- H. Manufacturers' field services.
- I. Defect Assessment.

1.2 RELATED REQUIREMENTS

- A. Section 01 30 00 - Administrative Requirements: Submittal procedures.
- B. Section 01 42 16 - Definitions.
- C. Section 01 42 19 - Reference Standards.
- D. Section 01 60 00 - Product Requirements: Requirements for material and product quality.

1.3 REFERENCE STANDARDS

- A. IAS AC89 - Accreditation Criteria for Testing Laboratories 2021.

1.4 DEFINITIONS

- A. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
 - 1. Design Services Types Required:

- a. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor's sole responsibilities for construction means, methods, techniques, sequences, and procedures.
 - b. Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.
- B. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.5 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
- 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test/inspection.
 - h. Date of test/inspection.
 - i. Results of test/inspection.
 - j. Compliance with Contract Documents.
 - k. When requested by Architect, provide interpretation of results.
 - 2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
- C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
- 1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
- D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

- E. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
 - 1. Submit report within 30 days of observation to Architect for information.
 - 2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
- F. Erection Drawings: Submit drawings for Architect's benefit as contract administrator or for Owner.
 - 1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
 - 2. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications:
 - 1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
 - 2. Submit copy of report during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
 - 3. Qualification Statement: Provide documentation showing testing laboratory is accredited under IAS AC89.
- B. Quality-Control Personnel Qualifications. Engage a person with requisite training and experience to implement and manage quality assurance (QA) and quality control (QC) for the project.

1.7 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.2 MOCK-UPS

- A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.
- B. Accepted mock-ups shall be a comparison standard for the remaining Work.
- C. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

3.3 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.4 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Architect 30 days in advance of required observations.
 - 1. Observer subject to approval of Architect.
 - 2. Observer subject to approval of Owner.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.5 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.
- B. If, in the opinion of Owner, it is not practical to remove and replace the work, Owner will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 42 16 - DEFINITIONS

PART 1 GENERAL

1.1 SUMMARY

- A. Other definitions are included in individual specification sections.

1.2 DEFINITIONS

- 1. Architect.
 - 2. Change Order.
 - 3. Claim.
 - 4. Construction Change Directive.
 - 5. Construction Manager
 - 6. Contract.
 - 7. Contract Document.
 - 8. Contract Sum.
 - 9. Contract Time.
 - 10. Contractor.
 - 11. Date of Commencement of the Work.
 - 12. day.
 - 13. defective.
 - 14. Drawings.
 - 15. Instruments of Service.
 - 16. Modification.
 - 17. Owner.
 - 18. Product Data.
 - 19. Project.
 - 20. Samples.
 - 21. Separate Contractor.
 - 22. Shop Drawings.
 - 23. Specifications.
 - 24. Subcontractor.
 - 25. (Date of) Substantial Completion.
 - 26. Sub-subcontractor.
 - 27. Work.
- B. Furnish: When referring to products, means to purchase and deliver.
 - C. Install: When used in connection with "furnish," includes unloading (if not provided by delivery carrier), inspecting for damage, uncrating, and other handling at the site.

- D. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.
- E. Provide: When referring to products, means to furnish and install.
- F. Shall: Must; be obliged to (expressing imperative mood, not future tense).
- G. Supply: To furnish and install.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of each prime contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Site Logistics Plan attachment.

1.2 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Temporary electric power and light.
 - 3. Temporary heat.
 - 4. Ventilation.
 - 5. Sanitary facilities, including drinking water.
 - 6. Storm and sanitary sewer.
- C. Support facilities include, but are not limited to, the following:
 - 1. Field offices and storage sheds.
 - 2. Dewatering facilities and drains.
 - 3. Temporary enclosures.
 - 4. Hoists.
 - 5. Temporary project identification signs and bulletin boards.
 - 6. Waste disposal services.
 - 7. Rodent and pest control.
 - 8. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Temporary fire protection.
 - 2. Barricades, warning signs, and lights.
 - 3. Sidewalk bridge or enclosure fence for the site.
 - 4. Environmental protection.
 - 5. Construction enclosure fence and gates

6. Temporary exitways

1.3 REGULATIONS

- A. Comply with applicable laws and regulations.
- B. Storage and Fabrication Sheds: Install sheds, equipped to accommodate materials and equipment involved. Sheds may be open shelters or enclosed spaces within the building.
- C. Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures. Install where facilities will best serve the Project. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
- D. Toilets: Install self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material. Use of pit-type privies will not be permitted. Temporary toilets must be located only in the Laydown Area as identified in these specifications.
- E. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up. Dispose of drainage properly. Supply cleaning compounds. Wash Facilities must be located only in the Laydown Area as identified in these specifications.
- F. Drinking Water Facilities: Provide containerized tap-dispenser bottled-water type drinking water units.
- G. Collection and Disposal of Waste: Provide waste removal facilities and services as required to maintain the site in clean and orderly condition. Collect waste daily. Comply with NFPA 241 for removal of combustible waste. Enforce requirements strictly. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose in a lawful manner. Provide containers with lids. If materials to be recycled or reused on the project must be stored on site, provide suitable non-combustible containers.

1.4 USE CHARGES

- A. General: Cost or use charges for temporary facilities are **not** chargeable to the Owner or the Architect. The Architect will not accept a prime contractor's cost or use charges for temporary services or facilities as a basis of claim for an adjustment in the Contract Sum or the Contract Time.

- B. Water Service: Use water from the Owner's existing water system without metering and without payment of service and use charges.
- C. Other entities using temporary services and facilities include, but are not limited to, the following:
 - 1. Sub- contractors.
 - 2. The Owner's work forces.
 - 3. The Architect.
 - 4. Testing agencies.
 - 5. Personnel of government agencies.

1.5 SUBMITTALS

- A. Temporary Utilities: The contractor shall submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Within 15 days of the date established for submittal of the Contractor's Construction Schedule, the contractor shall submit a schedule indicating implementation and termination of each temporary utility for which the contractor is responsible.

1.6 QUALITY ASSURANCE

- A. Regulations: The contractor shall comply with industry standards and with applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 - 1. Building code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, fire department and rescue squad rules.
 - 5. Environmental protection regulations.
- B. Standards: The contractor shall comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
 - 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with the normal application of trade regulations and union jurisdictions.
 - 2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

- A. Temporary Utilities: The contractor shall prepare a schedule indicating dates for implementation and termination of each temporary utility for which the contractor is responsible. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: The contractor shall provide new materials. If acceptable to the Architect, undamaged, previously used materials in serviceable condition may be used. Provide materials suitable for use intended.
- B. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry."
 - 1. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thicknesses indicated.
 - 2. For fences and vision barriers, provide minimum 3/8-inch- thick exterior plywood.
 - 3. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch- thick exterior plywood.
 - 4. For temporary interior partitions and enclosure walls provide 1/2" thick fire rated plywood one side, over 1/2" type "X" gypsum board securely fastened to both sides of 20 Ga. 4" metal studs at 16" o.c. – (1) hr fire rating. Run the plywood up to 8'-0" AFF. Run the gypsum boards up to the deck above. Doors and frames to be (1) hr rated hollow metal knock down type – "B" label. Provide R-11 fiberglass batt insulation at temporary partitions and enclosure walls located at exterior walls.
- C. Roofing Materials: Provide UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of job-built temporary offices, shops, and sheds.
- D. Paint: Comply with requirements of Division 9 Section "Painting."

1. For sign panels and applied graphics, provide exterior-grade alkyd gloss enamel over exterior primer.
 2. For interior walls of temporary offices, provide 2 coats interior latex-flat wall paint.
- E. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- F. Water: Provide potable water approved by local health authorities.
- G. Open-Mesh Fencing: Provide 0.12-inch thick, galvanized 2-inch chainlink fabric fencing 8 feet high with galvanized looped-wire top strand (not barbed) and galvanized steel pipe posts, 1-1/2 inches I.D. for line posts, bottom and top rails and 2-1/2 inches I.D. for corner posts.

2.2 EQUIPMENT

- A. General: The contractor shall provide new equipment. If acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Water Hoses: Provide 3/4-inch heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge. It shall be the Contractor's responsibility to provide the necessary measures to keep the water hoses, along with the temporary water system piping, from freezing. The Contractor shall also be responsible to shut down the temporary water system at the supply valve at the end of each day's work for as long as temporary water is provided. No contractor shall modify the temporary water system without consulting with, and obtaining approval in writing from the Contractor.
- C. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.

- G. Temporary Offices: The contractor shall provide its own mobile units as specified elsewhere in this Section.
- H. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material. Temporary toilets must be located only in the Laydown Area as identified in these specifications.
- I. 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.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required at no additional cost to the Owner.
- B. The Contractor shall provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
 - 1. Arrange with the company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
 - 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 - 3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.

- B. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction.
- C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period.
 - 1. Power Distribution System: Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 V, ac 20 ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.
- D. Temporary Lighting: When an overhead floor or roof deck has been installed, provide temporary lighting with local switching.
 - 1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.
- E. Temporary Heat: Provide temporary heat required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize energy consumption.
- F. Heating Facilities: Provide vented, self-contained, LP-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open flame, or salamander-type heating units is prohibited.
 - 2. The Mechanical Contractor shall replace the filters and thoroughly clean the HVAC units used for temporary heat. Filters used for this purpose shall not be taken from the number required by the Contract Documents.
- G. Sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.

- H. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted. Temporary toilets must be located only in the Laydown Area as identified in these specifications.
 - 1. Provide separate facilities for male and female personnel.
- I. Wash Facilities: Install wash facilities supplied with potable water for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
 - 1. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.
- J. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

3.3 SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities in the designated Laydown Area.
 - 1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Provide incombustible construction for offices, shops, and sheds located within the construction area or within 30 feet of building lines. Comply with requirements of NFPA 241.
- C. Field Offices: The General Contractor shall provide an insulated, weathertight temporary office of sufficient size to accommodate required office personnel at the Project Site. Keep the office clean and orderly for use for small meetings.
 - 3. The Contractor's field office shall be a new or reconditioned trailer.
 - a. Provide heating sufficient to maintain a minimum of 70F interior temp during the winter. Provide air conditioning sufficient to maintain a maximum of 75F interior temp during the summer.
 - b. Provide adequate space for a meeting area
 - c. Provide adequate furnishings and equipment to meet all contract requirements of your work.
 - 4. Provide, pay, assemble, install and maintain all service, support, supplies, bathroom supplies, cables, consumables, ink, paper, folders, utilities, film and development,

usage charges, warranty and maintenance required to operate aforementioned equipment and facility.

5. All facilities, equipment and furnishings are to be provided, assembled and installed within fourteen (14) days of the Notice to Proceed. No payments will be released to the Contractor until this contract requirement is satisfied and all facilities are fully operational. All facilities, equipment and furnishing are to remain on site until thirty days after punch list completion, or sooner if directed by the Construction Manager and, at that time, all furnishings and equipment as previously listed will be transferred to the Owner.
- D. Web-based Project Software: The Contractor is required to utilize the Construction Manager's Project Management Software: Autodesk Construction Cloud through the entire duration of the project for the submission of all documents which include but are not limited to RFI's and submittals. Autodesk will be administered by the Construction Manager for the project.
- E. Storage and Fabrication Sheds: Install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on-site.
- G. Dewatering Facilities and Drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 2 Sections. Where feasible, use the same facilities. Maintain the site, excavations, and construction free of water.
- H. Temporary Enclosures: Provide temporary enclosure for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
 1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq. ft. or less with plywood or similar materials.
 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
 4. Where temporary wood or plywood enclosure exceeds 100 sq. ft. in area, use UL labeled, fire-retardant-treated material for framing and main sheathing.
- I. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

- J. Temporary Site Lighting: Install exterior yard and sign lights so signs are visible when Work is being performed.
- K. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.
- L. Rodent and Pest Control: Before foundation work has been completed, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
- M. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Architect.
- B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10, "Standard for Portable Fire Extinguishers," and NFPA 241, "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
 - 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 - 2. Store combustible materials in containers in fire-safe locations.
 - 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
 - 4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

- C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- D. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- E. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
 - 1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- F. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid using tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities and good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 - 2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the property of the Contractor. The Owner reserves the right to take possession of project identification signs.
2. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts subject to unusual operating conditions.
 - c. Replace lamps burned out or noticeably dimmed by hours of use.

END OF SECTION

SECTION 01 51 00 - TEMPORARY UTILITIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary Utilities: Provision of electricity, lighting, heat, ventilation, and water.

1.2 RELATED REQUIREMENTS

- A. Section 01 50 00 - Temporary Facilities and Controls:
 - 1. Temporary telecommunications services for administrative purposes.
 - 2. Temporary sanitary facilities required by law.
 - 3. Site Logistics Plan, attached.

1.3 REFERENCE STANDARDS

- A. 29 CFR 1926 - Safety and Health Regulations for Construction Current Edition.

1.4 TEMPORARY ELECTRICITY

- A. Cost: By Contractor.
- B. Connect to Owner's existing power service.
 - 1. Do not disrupt Owner's need for continuous service.
 - 2. Exercise measures to conserve energy.
 - 3. Provide separate metering and reimburse Owner for cost of electricity used.
- C. Provide temporary electric feeder from existing building electrical service at location as directed.
- D. Complement existing power service capacity and characteristics as required.
- E. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.
- F. Provide main service disconnect and over-current protection at convenient location and meter.
- G. Permanent convenience receptacles may be utilized during construction.
- H. Provide adequate distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.

1.5 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain LED, compact fluorescent, or high-intensity discharge lighting as suitable for the application for construction operations in accordance with requirements of 29 CFR 1926 and authorities having jurisdiction.
- B. Provide and maintain 1 watt/sq ft lighting to exterior staging and storage areas after dark for security purposes.
- C. Provide and maintain 0.25 watt/sq ft H.I.D. lighting to interior work areas after dark for security purposes.
- D. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- E. Maintain lighting and provide routine repairs.

1.6 TEMPORARY HEATING

- A. Cost of Energy: By Contractor.
- B. Provide heating devices and heat as needed to maintain specified conditions for construction operations.
- C. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.
- D. Owner's existing heat plant may be used.
- E. Prior to operation of permanent equipment for temporary heating purposes, verify that installation is approved for operation, equipment is lubricated and filters are in place. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.

1.7 TEMPORARY VENTILATION

- A. Utilize existing ventilation equipment. Extend and supplement equipment with temporary fan units as required to maintain clean air for construction operations.

1.8 TEMPORARY WATER SERVICE

- A. Cost of Water Used: By Owner.
- B. Provide and maintain suitable quality water service for construction operations at time of project mobilization.
- C. Connect to existing water source.

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Re-use of existing products.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations.
- E. Maintenance materials, including extra materials, spare parts, tools, and software.

1.2 RELATED REQUIREMENTS

- A. Section 01 25 00 - Substitution Procedures: Substitutions made during procurement and/or construction phases.
- B. Section 01 40 00 - Quality Requirements: Product quality monitoring.

1.3 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.1 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.

- B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.
- C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

2.2 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. VOC: Comply with the most stringent of federal, State, and local requirements, and these specifications.
- C. Use of products having any of the following characteristics is not permitted unless specifically indicated otherwise:
 - 1. Made outside the United States, its territories, Canada, or Mexico.
 - 2. Made using or containing CFC's or HCFC's.
 - 3. Made of wood from newly cut old growth timber.
 - 4. Containing lead, cadmium, or asbestos.

2.3 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.4 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.1 SUBSTITUTION LIMITATIONS

- A. See Section 01 25 00 - Substitution Procedures.

3.2 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.3 STORAGE AND PROTECTION

- A. Provide protection of stored materials and products against theft, casualty, or deterioration.
- B. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
 - 1. Structural Loading Limitations: Handle and store products and materials so as not to exceed static and dynamic load-bearing capacities of project floor and roof areas.
- C. Store and protect products in accordance with manufacturers' instructions.
- D. Store with seals and labels intact and legible.
- E. Arrange storage of materials and products to allow for visual inspection for the purpose of determination of quantities, amounts, and unit counts.
- F. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- G. For exterior storage of fabricated products, place on sloped supports above ground.
- H. Provide off-site storage and protection when site does not permit on-site storage or protection.

- I. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- J. Comply with manufacturer's warranty conditions, if any.
- K. Do not store products directly on the ground.
- L. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- M. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- N. Prevent contact with material that may cause corrosion, discoloration, or staining.
- O. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- P. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 70 00 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition.
- C. Pre-installation meetings.
- D. Cutting and patching.
- E. Cleaning and protection.
- F. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- G. General requirements for maintenance service.

1.2 RELATED REQUIREMENTS

- A. Section 01 30 00 - Administrative Requirements: Submittals procedures.
- B. Section 01 40 00 - Quality Requirements: Testing and inspection procedures.
- C. Section 01 50 00 - Temporary Facilities and Controls: Temporary interior partitions.
- D. Section 01 76 10 - Temporary Protective Coverings: Materials for protection of installed work.
- E. Section 01 78 00 - Closeout Submittals: Project record documents, operation and maintenance data, warranties.

1.3 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.4 PROJECT CONDITIONS

- A. Use of explosives is not permitted.
- B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
 - 1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
 - 2. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.
- D. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
 - 1. During Owner Occupancy: Excessively noisy tools and operations will not be tolerated inside the building; excessively noisy includes jackhammers.

1.5 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- C. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- D. Coordinate completion and clean-up of work of separate sections.
- E. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.1 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.3 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect four days in advance of meeting date.

- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.4 GENERAL INSTALLATION REQUIREMENTS

- A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.
- B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- F. Make neat transitions between different surfaces, maintaining texture and appearance.

3.5 RENOVATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of renovation work constitutes acceptance of existing conditions.
- B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00 .
- C. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
 - 2. Remove items indicated on drawings.
 - 3. Relocate items indicated on drawings.
 - 4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.

5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
 - D. Protect existing work to remain.
 1. Prevent movement of structure; provide shoring and bracing if necessary.
 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 3. Repair adjacent construction and finishes damaged during removal work.
 - E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
 1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
 2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
 3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
 4. Trim existing wood doors as necessary to clear new floor finish. Refinish trim as required.
 - F. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
 - G. Refinish existing surfaces as indicated:
 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
 - H. Clean existing systems and equipment.
 - I. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
 - J. Do not begin new construction in renovation areas before demolition is complete.
 - K. Comply with all other applicable requirements of this section.
- 3.6 CUTTING AND PATCHING
- A. Whenever possible, execute the work by methods that avoid cutting or patching.
 - B. See Renovation article above for additional requirements.
 - C. Perform whatever cutting and patching is necessary to:

1. Complete the work.
 2. Fit products together to integrate with other work.
 3. Provide openings for penetration of mechanical, electrical, and other services.
 4. Match work that has been cut to adjacent work.
 5. Repair areas adjacent to cuts to required condition.
 6. Repair new work damaged by subsequent work.
 7. Remove samples of installed work for testing when requested.
 8. Remove and replace defective and non-complying work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 84 00, to full thickness of the penetrated element.
- J. Patching:
1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 2. Match color, texture, and appearance.
 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.
- 3.7 PROGRESS CLEANING
- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.8 PROTECTION OF INSTALLED WORK

- A. See Section 01 76 10 for temporary protective covering materials.
- B. Protect installed work from damage by construction operations.
- C. Provide special protection where specified in individual specification sections.
- D. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- E. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- F. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- G. Protect work from spilled liquids. If work is exposed to spilled liquids, immediately remove protective coverings, dry out work, and replace protective coverings.
- H. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- I. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.9 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.10 FINAL CLEANING

- A. Execute final cleaning after Substantial Completion but before making final application for payment.
- B. Use cleaning materials that are nonhazardous.
- C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

- F. Clean filters of operating equipment.
- G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.
- H. Clean site; sweep paved areas, rake clean landscaped surfaces.
- I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.11 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
 - 1. Provide copies to Architect and Owner.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Owner will occupy all of the building as specified in Section 01 10 00.
- F. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- G. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- H. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- I. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.12 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.

- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

SECTION 01 76 10 - TEMPORARY PROTECTIVE COVERINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary protective coverings for installed floors, walls, and other surfaces.

1.2 REFERENCE STANDARDS

- A. ANSI A135.4 - Basic Hardboard 2012 (Reaffirmed 2020).
- B. ASTM C208 - Standard Specification for Cellulosic Fiber Insulating Board 2022.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
- D. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films 2023, with Errata.

1.3 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes available; and installation instructions.
- C. Shop Drawings: Indicate existing finished surfaces to be protected.

PART 2 PRODUCTS

2.1 GENERAL

- A. Provide materials that are easily removed without damage to the surfaces covered and with the following characteristics:
 - 1. Water resistant.
 - 2. Vapor permeable.
 - 3. Impact resistant.
 - 4. Slip resistant.
 - 5. Flame retardant.

2.2 MATERIALS

- A. Sheet Materials:

1. Corrugated polypropylene sheet.
 2. Recycled paperboard/plastic composite sheet.
 3. Recycled paperboard sheet.
 4. Wood Hardboard: ANSI A135.4, tempered, 1/4 inch thick nominal.
 5. Plywood, 1/2 inch thick nominal.
 6. Fiberboard: ASTM C208, 1/2 inch thick nominal.
 7. Flame Retardance: Meet requirements of NFPA 701.
 8. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.
- B. Rolled Materials:
1. Self-adhering polyethylene film.
 2. Recycled cellulose fiberboard paper.
 3. Laminated glass fiber reinforced kraft paper.
 4. Rosin coated paper.
 5. Flame Retardance: Meet requirements of NFPA 701.
 6. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.
- C. Corner and Door Jamb Protection Materials:
1. Cardboard, shaped specifically for application.
 2. PVC plastic.
- D. Tape: Type recommended by protective covering material manufacturer.

PART 3 EXECUTION

3.1 PREPARATION

- A. Remove dirt and debris from surfaces to be protected.

3.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Trim or overlap sheet materials to fit area to be covered.
- C. Roll out and cut rolled materials to fit area to be covered.
- D. Tape seams. Avoid taping directly to finished surfaces.
- E. Stretch self-adhering film materials to completely cover surface.

3.3 REMOVAL

- A. Remove protective coverings prior to Date of Substantial Completion. Reuse or recycle materials if possible.

END OF SECTION

SECTION 01 78 00 - CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Operation and Maintenance Data.
- B. Warranties and bonds.

1.2 RELATED REQUIREMENTS

- A. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 70 00 - Execution and Closeout Requirements: Contract closeout procedures.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

1.3 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. A certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect.
- C. Operation and Maintenance Data:
 - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
 - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
- D. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.

3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 1. Drawings.
 2. Specifications.
 3. Addenda.
 4. Change Orders and other modifications to the Contract.
 5. Reviewed shop drawings, product data, and samples.
 6. Manufacturer's instruction for assembly, installation, and adjusting.
 7. Cross references from design drawings to shop drawings.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products 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 modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 1. Measured depths of foundations in relation to finish first floor datum.
 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 4. Field changes of dimension and detail.

3.2 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.3 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 - 1. Product data, with catalog number, size, composition, and color and texture designations.
 - 2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.
- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.4 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.
 - 2. Identify function, normal operating characteristics, and limiting conditions.
 - 3. Include performance curves, with engineering data and tests.
 - 4. Complete nomenclature and model number of replaceable parts.

- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
 - C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
 - D. Include color coded wiring diagrams as installed.
 - E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
 - F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - 1. Include HVAC outdoor and exhaust air damper calibration strategy.
 - a. Include provisions which ensure that full closure of dampers can be achieved.
 - 2. Include Carbon Dioxide Monitoring Protocol.
 - 3. Include Carbon Monoxide Monitoring Protocol.
 - 4. Include Frost Mitigation Strategy for ventilation heat-recovery system.
 - G. Provide servicing and lubrication schedule, and list of lubricants required.
 - H. Include manufacturer's printed operation and maintenance instructions.
 - I. Include sequence of operation by controls manufacturer.
 - J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - K. Provide control diagrams by controls manufacturer as installed.
 - L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
 - M. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
 - N. Include test and balancing reports.
 - O. Additional Requirements: As specified in individual product specification sections.
- 3.5 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS
- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Arrangement of Contents: Organize each volume in parts as follows:
 - 1. Project Directory.
 - 2. Table of Contents, of all volumes, and of this volume.
 - 3. Operation and Maintenance Data: Arranged by system, then by product category.
 - a. Source data.
 - b. Product data, shop drawings, and other submittals.
 - c. Operation and maintenance data.
 - d. Field quality control data.
 - e. Photocopies of warranties and bonds.
 - 4. Design Data: To allow for addition of design data furnished by Architect or others, provide a tab labeled "Design Data" and provide a binder large enough to allow for insertion of at least 20 pages of typed text.

3.6 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.
- F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

SECTION 02 41 00 - DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Building demolition excluding removal of hazardous materials and toxic substances.
- B. Selective demolition of built site elements.
- C. Selective demolition of building elements for alteration purposes.
- D. Abandonment and removal of existing utilities and utility structures.

1.2 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2022, with Errata (2021).

1.3 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Site Plan: Indicate:
 - 1. Areas for temporary construction and field offices.
- C. Demolition Plan: Submit demolition plan as required by OSHA and local AHJs.
 - 1. Indicate extent of demolition, removal sequencing, bracing and shoring, and location and construction of barricades and fences.
 - 2. Demolition firm qualifications.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.4 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Company specializing in the type of work required.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.1 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Comply with applicable requirements of NFPA 241.
 - 3. Use of explosives is not permitted.
 - 4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 5. Provide, erect, and maintain temporary barriers and security devices.
 - 6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 - 7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 8. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
 - 9. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
 - 10. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Do not begin removal until built elements to be salvaged or relocated have been removed.
- D. Protect existing structures and other elements to remain in place and not removed.
 - 1. Provide bracing and shoring.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.
- E. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- F. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - 1. Dismantle existing construction and separate materials.
 - 2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.
- G. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.2 EXISTING UTILITIES

- A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
- H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone. Identify and mark, in same manner as other utilities to remain, utilities to be reconnected.

3.3 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
 - 1. Verify construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from areas that remain occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00 in locations indicated on drawings.
- C. Maintain weatherproof exterior building enclosure, except for interruptions required for replacement or modifications; prevent water and humidity damage.
- D. Remove existing work as indicated and required to accomplish new work.
 - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction indicated.
 - 2. Remove items indicated on drawings.

- E. Services including, but not limited to, HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications: Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. Verify that abandoned services serve only abandoned facilities before removal.
 - 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.

- F. Protect existing work to remain.
 - 1. Prevent movement of structure. Provide shoring and bracing as required.
 - 2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch to match new work.

3.4 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 03 49 00 - GLASS-FIBER REINFORCED PRECAST CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Plant-cast, glass-fiber-reinforced precast concrete panels.
- B. Embedded hardware and anchors.
- C. Loose connection hardware.
- D. Integrated steel support framing.

1.2 RELATED SECTIONS

- A. Section 0 540 00 - Cold-Formed Metal Framing: Structural stud members.
- B. Section 07 92 00 - Joint Sealants: Application of backer rods or bond breakers and joint sealers.

1.3 REFERENCES

- A. ASTM A 27/A 27M – Standard Specification for Steel Castings, Carbon for General Application.
- B. ASTM A 36/A 36M – Standard Specification for Carbon Structural Steel.
- C. ASTM A 47/A 47M – Standard Specification for Ferritic Malleable Iron Castings.
- D. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip) on Iron and Steel Hardware.
- E. ASTM A 108 – Standard Specification for Steel Bars, Carbon, Cold-Finished, Standard Quality.
- F. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- G. ASTM A 283/A 283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates.
- H. ASTM A 325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
- I. ASTM A 500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

- J. ASTM A 513 - Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing
- K. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- L. ASTM A780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
- M. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.
- N. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
- O. ASTM C 33 - Standard Specification for Concrete Aggregates.
- P. ASTM C 150 - Standard Specification for Portland Cement.
- Q. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete.
- R. ASTM C 494/C 494M - Standard Specification for Chemical Admixtures for Concrete.
- S. ASTM C 618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
- T. ASTM C 979 - Standard Specification for Pigments for Integrally Colored Concrete.
- U. ANSI - American Iron and Steel Institute (AISI), Specification for the Design of Cold-Formed Steel Structural Members
- V. AWS D1.1 - Structural Welding Code - Steel.
- W. AWS D1.3 - Structural Welding Code - Sheet Steel.
- X. AWS D1.4 - Structural Welding Code - Reinforcing Steel.
- Y. PCI MNL-117 – Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products.
- Z. PCI MNL-128 – Recommended Practice for Glass Fiber Reinforced Concrete Panels.
- AA. PCI MNL-130 – Manual for Quality Control for Plants and Production of Glass Fiber Reinforced Concrete Products.

- BB. SSPC 2 – Hand Tool Cleaning.
- CC. SSPC 3 – Power Tool Cleaning.
- DD. SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).
- EE. SSPC Paint 25 - Zinc Oxide, Alkyd, Linseed Oil Primer for Use Over Hand Cleaned Steel, Type I and Type II
- FF. CIELAB - International Commission of Illumination, 1976 Standards.

1.4 SYSTEM DESCRIPTION

- A. System: Plant fabricated glass-fiber-reinforced precast concrete panels consisting of face mix, back-up mix, steel support frame attached via pins, gravity anchors and flex anchors, steel connections for panel attachment to structure, and other inclusions for attachments to panels.
- B. Design Requirements: Design glass-fiber-reinforced precast concrete panels and shapes under the supervision of a professional engineer and in accordance with procedures of PCI MNL-128, Recommended Practices for Glass Fiber Reinforced Concrete Panels using property data generated from the manufacturer's actual production.
- C. Performance Requirements:
 - 1. Provide glass-fiber-reinforced precast concrete panels and panel frames capable of withstanding gravity, wind, seismic, and erection design loads as well as the effects of thermal and moisture-induced volume changes, according to load factors and combinations established in PCI MNL 128.
 - 2. Design Loads: As indicated.
 - 3. Design framing systems to withstand design loads with lateral deflections no greater than 1/240 of the wall height.
 - 4. Provide for movement of framing members without damage or overstressing, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 100 degrees F.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Product Data: Submit manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Indicate dimensions, cross-sections and edge details; metal framing details, location, size and type of reinforcement, including reinforcement necessary for safe handling and erection; and connection details, and relationship to adjacent materials:
 - 1. Design calculations demonstrating compliance with indicated loading conditions

and showing flexural ultimate strengths assumed for design, stamped by a structural professional engineer registered in the location of the project.

2. Layout, dimensions, and identification of each panel segment corresponding to installation sequence.
 3. Location and details of anchorage devices embedded in panels and shapes, and connection details to building.
- D. Samples:
1. Selection Samples: For each finish product specified, two complete sets of color sample, minimum size 6 inches (150 mm) square, representing manufacturer's full range of available colors and patterns for the exposed face of panels.
 2. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns for the exposed face of panels.
 3. Do not start fabrication until samples are approved.
- E. Maintain plant records and quality control program during production of units. Make records and access to plant available to Architect upon request.
- F. Submit certificates of compliance for the following:
1. Admixtures.
 2. Portland Cement: Identify the cement brand name, type and mill location used for the quality control sample.
 3. Glass Fibers: Submit evidence that glass composition, Portland cement matrix, or both have been designed for glass-fiber reinforced precast concrete panel applications.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with PCI MNL 128, Recommended Practice for Glass Fiber Reinforced Concrete Panels
- B. Manufacturer Qualifications: Provide panels and shapes only from a manufacturer who has demonstrated capability to produce products of the quality and scope required for this project, and with not less than 5 years of successful experience in manufacturing glass-fiber reinforced precast concrete panels and shapes and who is certified in one or more of the following programs:
1. Certified Participant in the Architectural Precast Association's Plant Certification Program for GFRC.
 2. Designated PCI-Certified Plant for Group G, Glass Fiber Reinforced Concrete by PCI's Plant Certification Program
 3. Retains licensed Professional Engineer for plant and record inspection indicating production, testing and quality control methods comply with PCI MNL-130, Manual for Quality Control: Glass Fiber Reinforced Concrete.
- C. Installer Qualifications: A firm which has specialized in erection of glass-fiber reinforced precast concrete panels or architectural precast concrete items similar to those required

on this project for not less than 5 years and who is acceptable to manufacturer of glass-fiber reinforced precast concrete panels.

- D. Welder Qualifications: Use welders who have been qualified in accordance with AWS D1.1 and AWS D1.4 within the last year.
- E. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver units to the project site palletized, safely wrapped, packed and labeled and retain until erected.
- B. Store materials in a dry location off the ground, and in such a manner to prevent damage or intrusion of foreign matter.
- C. Handle and transport units in a position consistent with their shape and design in order to avoid excessive stresses or damage.
- D. Store units to protect them from contact with soil, staining, and from physical damage.
- E. Place stored units so that identification marks are easily readable.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Advanced Cast Stone Inc. 115 Lee Street, Everman, TX. 76140 Tel: (800) 687-4352 Fax: (817) 293-6378. Email: DebbieC@advancedcaststone.com Website: www.advancedcaststone.com
- B. Or Approved Equal

2.2 MATERIALS

- A. Aggregates:
 - 1. Back-up Mix: Washed and dried silica sand or other sand having a history of successful use in glass-fiber-reinforced precast concrete panel construction; passing through a No. 20 sieve.
 - 2. Facing Mix: Fine and course aggregate for face mix shall conform to ASTM C 33 except for gradation. Aggregates shall be clean, hard, strong, durable, inert, and free

of staining and deleterious materials. Provide aggregate in colors and sizes as required to achieve the panel finish texture and colors indicated on the Drawings.

- B. Portland Cement: ASTM C 150, Type I, II or III. Use the same type, brand and color of portland cement for all panels and shapes. Color shall be as required to obtain the panel facing color indicated.
- C. Admixtures:
1. Air-entraining admixtures, ASTM C 260. ASTM C260, ASTM C494, ASTM C618 or acrylic thermoplastic copolymer dispersion conforming to PCI MNL-130, Appendix E.
 2. Polymer Compound: Conform to requirements of PCI MNL-128, Appendix L.
- D. Coloring Agent: ASTM C 979; shall have no adverse effects to glass-fiber-reinforced precast concrete panel set and strength; shall be stable at high temperature; and shall be sunlight fast and alkali-resistant. Color shall be as required to obtain panel facing color selected.
- E. Water for Mixing Concrete: Use potable water.
- F. Glass Fiber: Conforming to PCI MNL-130, Appendix D and specifically designed to be compatible with the aggressive alkaline environment of portland cement based composites or fibers with a history of successful use in portland cement based composites that has been modified to be compatible with the fiber.
- G. Anchors and Loose Attachment Hardware:
1. Structural Steel: ASTM A 36/A 36M.
 2. Cold Drawn Wire:
 3. Anchor Bolts: ASTM A 325.
 4. Pipe: ASTM A 500 Grades A or B.
 5. Tube Steel: ASTM A 500 Grade A or B.
 6. Carbon-Steel Rods: ASTM A 108, cold drawn.
 7. Carbon-Steel Plate: ASTM A 283/A 283M.
 8. Malleable-Steel Castings: ASTM A 47/A 47M.
 9. Carbon-Steel Castings: ASTM A 27/A27M, Grade 60-30.
 10. Finish: Galvanized in accordance with ASTM A 153/A 153M.
- H. Panel Frame Materials:
1. Cold-Formed Steel Framing: Manufacturer's standard C-shaped steel studs, complying with AISI "Specification for the Design of Cold-Formed Steel Structural Members," minimum uncoated steel thickness of 0.0538 inch (1.37mm) of web depth indicated, with stiffened flanges, V-shaped steel track, and of the following steel sheet:
 - a. Metallic-Coated Steel Sheet: ASTM A 653/A653M, structural-steel sheet, of grade required by structural performance of framing and with zinc coating thickness of:
 - 1) G60 (Z180).
 - 2) G90 (Z275).
 - b. Painted, Nonmetallic-Coated Steel Sheet: ASTM A1011/A1011M hot rolled or

ASTM A1008/ A1008M cold rolled; nonmetallic coated according to ASTM A 1003/ A 1003M; of grade required by structural performance of framing.

2. Hollow Structural Sections: Steel tubing, ASTM A500, Grade B, or ASTM A513. Finish hollow structural sections with wall thickness less than 3/16 inch (4.76 mm) as follows:
 - a. Organic Zinc-Rich Primer: SSPC-Paint 20 on surfaces prepared to comply with SSPC-SP6/NACE No.3, "Commercial Blast Cleaning."
 - b. Primer: SSPC-Paint 25 on surfaces prepared to comply with SSPC-SP 2, Hand Tool Cleaning," or better.
 3. Steel Channels and Angles: ASTM A36/ A36M, finished as follows:
 - a. Organic Zinc-Rich Primer: SSPC-Paint 20 on surfaces prepared to comply with SSPC-SP6/NACE No.3, "Commercial Blast Cleaning."
 - b. Primer: SSPC-Paint 25 on surfaces prepared to comply with SSPC-SP 2, "Hand Tool Cleaning," or better.
- I. Form Materials: Provide form materials that will produce panels having the profile, dimensions and tolerances indicated. Use release agents which are compatible with finish specified and joint sealants proposed for use.
- J. Mixes: Portland cement, water, glass fibers and sand mixed in proportions determined in accordance with PCI MNL-128.

2.3 FABRICATION

- A. Fabricate panels in general compliance with PCI MNL-128 and MNL-130.
- B. Molds:
1. Rigid and constructed of materials that will result in finished products conforming to the profiles, dimensions and tolerances indicated on the Drawings.
 2. Release agents; apply and use according to manufacturer's instructions.
- C. Proportioning and Mixing:
1. Carefully measure mix constituents in a manner to achieve the desired mix proportions.
 2. Meter the glass fiber and cement slurry to the spray head at rates to achieve the desired mix proportion and glass content. Check rates in accordance with standard procedures described in PCI MNL-128.
 3. Maintain cleanliness of equipment and working procedures at all times.
- D. Hand Spray Application:
1. Spray apply a mist coat consisting of the matrix without fiber. Applied coating not to exceed 1/8 inch thick in order to avoid an unreinforced surface.
 2. Spray or place face mix in thickness shown on shop drawings.
 3. Spray-up main body of material before the mist coat has set.
 4. Apply by spraying such that uniform thickness and distribution of glass fiber and cement matrix is achieved during the application process.
 5. Consolidate by rolling or such other techniques as necessary to achieve complete

encapsulation of fibers and compaction.

6. Control thickness by using a pin gauge or other approved method. Perform a minimum of 2 measurements per 5 square feet of panel surface with at least 3 measurements per panel.
7. Perform hand forming of intricate details, incorporate formers or infill material, and overspray before the material has achieved its initial set so as to insure complete bonding.

E. Inserts and Embedments:

1. Properly embed inserts in built up homogeneous glass-fiber reinforced precast concrete panel bosses to develop their strength. Waste material or overspray is not acceptable to encapsulate inserts or for bonding pads.
2. Test inserts to establish test data and reduce test values by the appropriate safety factors to determine connection strength to be used in design.
3. Rigid embedded items bonded to the glass-fiber reinforced precast concrete panel shall not create undesirable restraint to volume changes.

F. Panel Frame Fabrication:

1. Fabricate panel frames and accessories plumb, square, true to line, and with components securely fastened in accordance with design requirements.
 - a. Fabricate panel frames using jigs or templates.
 - b. Cut cold-formed metal framing members by sawing or shearing; do not torch cut.
 - c. Fasten cold-formed metal framing members by welding. Comply with AWS D1.3 requirements and procedure for welding, appearance and quality of welds, and methods used in correcting welding work.
 - d. Fasten framing members of hollow structural sections, steel channels, or steel angles by welding. Comply with AWS D1.1 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - e. Weld flex, gravity, and seismic anchors to panel frames.
2. Reinforce, stiffen, and brace framing assemblies, if necessary, to withstand handling, delivery, and erection stresses. Lift fabricated assemblies in a manner that prevents damage or significant distortion.
3. Galvanizing Repair: Touch up accessible damaged galvanized surfaces according to ASTM A 780.

G. Finish of Exposed Faces: Panel faces shall be free of honeycombs, form marks, concrete droppings or other blemishes that would telegraph through the panel. Provide a finish surface free of laitance, grease, form release treatments, efflorescence, curing compounds or other foreign material that would adversely affect bonding of any subsequent coating.

1. Color and texture of exposed face surfaces shall match Architect's design reference panel.
2. Color and texture of exposed face surfaces shall match_____.
3. Color and texture of exposed face surfaces shall match one of the manufacturers standard finishes as selected by the Architect.

H. Dimensional Tolerances of Finished Units: Provide in accordance with PCI MNL-117 and PCI MNL-128.

I. Cover: Provide embedded anchors, inserts, and other sprayed in items with sufficient anchorage and embedment for design requirements.

J. Curing:

1. Immediately after the completion of spraying of the panel, cure panels using a method to ensure sufficient strength for removing the units from the form.
2. After initial curing, remove panel from form and place in a controlled curing environment.
3. An acrylic thermoplastic copolymer dispersion may be used as a curing admixture. Only copolymers shown to eliminate the need for moist curing through independent laboratory test data shall be used.

K. Panel Identification:

1. Mark each glass-fiber reinforced precast concrete panel to correspond to identification mark on shop drawings for panel location.
2. Mark each glass-fiber reinforced precast concrete panel with date on which it was cast.
3. Apply markings on surface that will not be exposed in the finished construction.

2.4 SOURCE QUALITY CONTROL

A. Independent Testing:

1. Allow Owner's testing agency access to material storage areas, concrete production equipment, concrete placement, and curing facilities.
2. Cooperate with Owner's testing agency and provide samples of materials and concrete mixes as may be requested for additional testing and evaluation.
3. Test glass-fiber reinforced precast concrete panel units in accordance with PCI MNL-130.

B. Plant Testing:

1. Test glass-fiber reinforced precast concrete panel units in accordance with PCI MNL-130.
2. Perform testing by an independent testing agency capable of performing the specified tests. Submit copies to the Architect and designated authorities.

C. Acceptability of Appearance:

1. Finished construction in place shall present a uniform, pleasing appearance when viewed in good typical lighting with the naked eye at a distance of 10 feet and shall show no imperfections at a distance of 20 feet.
2. The range of total acceptable color (lightness, color saturation and hue) variation shall not exceed CIELAB 3.0 provided that the difference in hue alone does not exceed CIELAB 1.0 as defined by the International Commission of Illumination, 1976 Standards.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Check placement of structural support system to assure a true and level surface for attachment of panels. Do not begin construction until discrepancies that could adversely affect installation of panels have been corrected.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Setting:
 - 1. Lift glass-fiber reinforced precast concrete panel units with suitable lifting devices at points provided by the manufacturer.
 - 2. Set glass-fiber reinforced precast concrete panel units level, plumb, square and true within the allowable tolerances.
 - 3. Site cutting of panels is not permitted.
- C. Supports and Bracing: Provide temporary supports and bracing required to maintain position, stability, and alignment as units are being permanently connected.
- D. Fastening:
 - 1. Fasten glass-fiber reinforced precast concrete panel units in place by bolting or welding or both as shown on erection drawings.
 - 2. Field welding shall be done by qualified welders using equipment and materials compatible with the base material.
 - 3. Use non-combustible shields during welding operations to protect adjacent Work.
- E. Tolerances of Erected Units:
 - 1. Tolerances for location of glass-fiber reinforced precast concrete panel units shall be noncumulative and as listed below. For erection tolerances not listed below, those listed in PCI MNL 117 shall apply.
 - 2. Face width of joint:
 - a. Panel dimension 10 feet or less plus 3/16 inch.
 - b. Panel dimension 10 to 20 feet plus 3/16 inch, minus 1/4 inch.
 - c. Panel dimension greater than 20 feet plus 1/4 inch, minus 5/16 inch
 - 3. Warpage: Maximum permissible warpage of one corner out of plane of the other

three shall be 1/16 inch per foot of distance from the nearest adjacent corner or 1/8 inch total after installation.

4. Bowing: Not over $L/360$, where L is the panel length.

3.4 PATCHING AND CLEANING

- A. Patch and clean panels using methods and materials in accordance with manufacturer's instructions.
- B. Patching blemishes using a patching mixture matching the color and texture of surrounding surface.
- C. Use extreme care to prevent damage to panel surfaces and to adjacent materials. Provide protection of adjacent surfaces if required.
- D. Surface must be thoroughly rinsed with clean water immediately after using cleaner.

3.5 FIELD TESTS AND INSPECTION

- A. Quality Control Program: Panel manufacturer shall have an established quality control program in effect at the plant or shall employ an independent testing laboratory approved by the Architect to monitor glass content, spray rate, physical properties and curing period and conditions.
- B. Sampling and Testing:
 1. Prepare test specimens and use test procedures in accordance with PCI MNL-128, Chapter 8 and Appendix A.
 2. Prepare a minimum of 2 test boards per work shift until a production uniformity acceptable to the quality control personnel has been achieved. At such time frequency may be reduced to one board per work shift.
 3. For each board determine glass content by the washout test, flexural ultimate strength and flexural yield strength.
 4. Glass content shall be considered satisfactory if within minus 0.5 and plus 1.0 percent, by weight, of the glass content in the design mix.
 5. Flexural yield strength shall be considered satisfactory if both of the following requirements are met.
 - a. The average of all sets of 3 consecutive strength tests equal or exceed assumed ultimate flexural strength for design purposes.
 - b. No individual test (average of 6 coupons) fall below required assumed ultimate flexural strength for design purposes by more than 10 percent.
 6. Submit reports giving proportions, test results, inspection results, unit identification numbers and casting date for each work shift.
- C. Rejection:
 1. Panels in place may be rejected for any one of the following product defects or installation deficiencies:
 - a. Non-repairable damage incurred during construction operations.
 - b. Ragged or irregular edges.

- c. Visible form joints or irregular surfaces.
- d. Panels not conforming to tolerance requirements.
- e. Foreign material embedded in the face.
- f. Visible repairs.
- g. Cracks visible at a distance of 10 feet.
- h. Panels do not meet design strength requirements.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 03 49 00

SECTION 03 54 00 - CAST UNDERLAYMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Liquid-applied self-leveling floor underlayment.
 - 1. Use cementitious type at leveling applications.

1.2 REFERENCE STANDARDS

- A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens) 2021.
- B. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete 2018.
- C. ASTM C348 - Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars 2021.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.

1.3 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's data sheets documenting physical characteristics and product limitations of underlayment materials. Include information on surface preparation, environmental limitations, and installation instructions.
- C. Manufacturer's Instructions.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Keep dry and protect from direct sun exposure, freezing, and ambient temperature greater than 105 degrees F.

1.5 FIELD CONDITIONS

- A. Do not install underlayment until floor penetrations and peripheral work are complete.
- B. Maintain minimum ambient temperatures of 50 degrees F 24 hours before, during and 72 hours after installation of underlayment.

- C. During the curing process, ventilate spaces to remove excess moisture.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Cementitious Underlayment: Blended cement mix, that when mixed with water in accordance with manufacturer's directions will produce self-leveling underlayment with the following properties:
 - 1. Compressive Strength: Minimum 4000 pounds per square inch after 28 days, tested per ASTM C109/C109M.
 - 2. Flexural Strength: Minimum 1000 psi after 28 days, tested per ASTM C348.
 - 3. Density: 125 pounds per cubic foot, nominal.
 - 4. Final Set Time: 1-1/2 to 2 hours, maximum.
 - 5. Thickness: Capable of thicknesses from feather edge to maximum 3-1/2 inch.
 - 6. Surface Burning Characteristics: Flame spread/Smoke developed index of 0/0 in accordance with ASTM E84.
- B. Aggregate: Dry, well graded, washed silica aggregate, approximately 1/8 inch in size and acceptable to underlayment manufacturer.
- C. Reinforcement: Galvanized metal lath complying with recommendations of underlayment manufacturer for specific project circumstances.
- D. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to underlayment mix materials.
- E. Primer: Manufacturer's recommended type.
- F. Joint and Crack Filler: Latex based filler, as recommended by manufacturer.

2.2 MIXING

- A. Site mix materials in accordance with manufacturer's instructions.
- B. Add aggregate for areas where thickness will exceed 1/2 inch. Mix underlayment and water for at least two minutes before adding aggregate, and continue mixing to assure that aggregate has been thoroughly coated.
- C. Mix to self-leveling consistency without over-watering.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum byproducts, or other compounds detrimental to underlayment material bond to substrate.

3.2 PREPARATION

- A. Concrete: Mechanically prepare steel troweled concrete to create a textured surface necessary to achieve the best bond; acceptable methods include bead blasting and scarifying. Do not use acid etching.
- B. Remove substrate surface irregularities. Fill voids and deck joints with filler. Finish smooth.
- C. Vacuum clean surfaces.
- D. Prime substrate in accordance with manufacturer's instructions. Allow to dry.
- E. Close floor openings.

3.3 APPLICATION

- A. Install underlayment in accordance with manufacturer's instructions.
- B. Pump or pour material onto substrate. Do not retemper or add water.
 - 1. Pump, move, and screed while the material is still highly flowable.
 - 2. Be careful not to create cold joints.
 - 3. Wear spiked shoes while working in the wet material to avoid leaving marks.
- C. Place to indicated thickness, with top surface level to 1/8 inch in 10 ft.
- D. For final thickness over 1-1/2 inches, place underlayment in layers. Allow initial layer to harden to the point where the material has lost its evaporative moisture. Immediately prime and begin application of the subsequent layer within 24 hours.
- E. Where additional aggregate has been used in the mix, add a top layer of neat mix (without aggregate), if needed to level and smooth the surface.
- F. If a fine, feathered edge is desired, steel trowel the edge after initial set, but before it is completely hard.

3.4 CURING

- A. Once underlayment starts to set, prohibit foot traffic until final set has been reached.
- B. Air cure in accordance with manufacturer's instructions.

3.5 PROTECTION

- A. Protect against direct sunlight, heat, and wind; prevent rapid drying to avoid shrinkage and cracking.
- B. Do not permit traffic over unprotected floor underlayment surfaces.

END OF SECTION

SECTION 04 01 00 – MASONRY RESTORATION AND REPLACEMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES:

- A. Concrete block unit masonry
- B. Stone facing for cavity walls and columns
- C. GFRC panels
- D. GFRC blocks and caps for top of walls and columns
- E. Reinforcement and anchorage of masonry elements.
- F. Flashings.
- G. Accessories.

1.2 RELATED REQUIREMENTS

- A. Section 07 92 00 - Joint Sealants: Sealing control and expansion joints.

1.3 REFERENCE STANDARDS

- A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- B. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement 2022.
- C. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
- D. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units 2022.
- E. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units 2022.
- F. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar 2018.
- G. ASTM C150/C150M - Standard Specification for Portland Cement 2022.
- H. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a, with Editorial Revision.
- I. ASTM C404 - Standard Specification for Aggregates for Masonry Grout 2018.

- J. ASTM C476 - Standard Specification for Grout for Masonry 2023.
- K. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete 2016.
- L. ASTM C1714/C1714M - Standard Specification for Preblended Dry Mortar Mix for Unit Masonry 2019a.
- M. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing 2017.
- N. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls 2005.
- O. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2022, with Errata.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a pre-installation planning meeting immediately after contracts are signed with required attendance by all relevant suppliers and installers.

1.5 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for all materials to be used including: masonry units, fabricated wire reinforcement, mortar, flashing, sealants, waterproofing membrane and masonry accessories.
- C. Samples: Provide samples for all products in the submittals.
- D. Verification Samples: Submit 4 inch strip of mortar to illustrate color and texture.

1.6 QUALITY ASSURANCE

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.
- B. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum ten years of experience.
- C. Installer Qualifications: Company specializing in performing work of the type specified and with at least ten years of documented experience in the laying up of stone walls.

1.7 PROJECT CONDITIONS

- A. Do not rebuild, repair, patch or repoint masonry unless air temperatures are between 40 degrees F and 90 degrees F and will remain so for at least 48 hours after completion of work.

- B. Prevent mortar used in repair work from staining face of surrounding masonry and other surfaces. Protect sills, ledges, projections and surrounding pavement from mortar droppings. Remove immediately grout and mortar in contact with exposed masonry and other surfaces.

1.8 DISCOVERED DEFECTS

- A. During the course of the work, if any structural problems are uncovered, they must be brought to the immediate attention of the Architect. Structural problems would include but are not limited to: voids in the existing concrete, cracks through masonry or concrete, rusted steel reinforcements, signs of structural movement such as loose masonry units and bulges in the masonry, etc.

1.9 MOCK-UPS

- A. Construct mockups for these conditions:
 1. A masonry wall with a mock-up panel size 8 feet long by 6 feet high showing cavity wall construction and finished stone appearance,
 2. A stone column on the east elevation (that extends from grade level to above the main deck). Show the cavity wall system and the finished stone appearance for a height of 4 feet of the column on all four sides of the column
 3. A stone wall section 6 feet long on the west or south elevation where the stone is to be installed on only the foundation wall.
 4. Any other mockup locations as directed by the Architect.
- B. Include mortar, accessories, structural backup, anchoring system and flashings (with lap joint, corner, and end dams) in each mock-up. Show stages of construction in mockups so Architect can evaluate construction details as well as the finished wall appearance.
- C. Do not proceed with work until mock-ups have been approved. Preserve the approved mockups for reference and quality control purposes until the masonry work is nearly completed.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.
- B. Deliver materials to site in manufacturer's original and unopened containers and packaging, bearing labels as to batch, type and names of products and manufacturers for verification by the Architect.
- C. Protect materials during storage and construction from wetting by rain, snow or ground water, and from staining or inter-mixture with earth or other types of materials.
- D. Protect prepackaged mortar, cement, concrete-related materials from deterioration by moisture and temperature. Store in a dry location or in waterproof containers.

- E. Before laying stone, pressure wash each piece of stone on all sides to remove dust, mud and other contaminants which would prevent mortar from strongly bonding to the stone. For this cleaning, the use of detergents is not required unless the stone surfaces are contaminated with materials that will not wash off without the use of a detergent. Allow stone to dry before laying it up.
- F. During the construction process, keep cleaned stones clean until they are laid up in the walls. Do not allow the stones to come in contact with dust, dirt or mud.

PART 2 -PRODUCTS

2.1 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
 - 2. Special Shapes: Provide nonstandard blocks configured for corners, lintels, headers, control joint edges, and other detailed conditions.
 - a. Provide bullnose units for outside corners.
 - 3. Nonloadbearing Units: ASTM C129.
 - a. Hollow block.
 - b. Normal weight.

2.2 MORTAR

- A. Site-Mixed Mortar: Mortar which is prepared and mixed by the Contractor on site. Site-Mixed Mortar is prohibited on this project.
- B. Site-Mixed Mortar: Pre-Blended Mortar: Mortars which are manufactured and packaged off-site under carefully monitored procedures for quality and mix control by a company with experience in producing mortars which meet the all the masonry requirements of these Specifications. Pre-Blended Mortar is required for this project.
- C. All mortar mixes shall meet the requirements of ASTM C270, Standard Specification For Unit Masonry, for the respective types of mixes determined by the "Component," not the "Performance," sections of ASTM C270. The difference between the "Component" and the "Performance" standards is important and must be followed in selecting a supplier for the mortar.
- D. Masonry Cement And Mortar Cement shall not be permitted in the mortar mixes.
- E. Sand used in the production of Pre-Blended Mortar shall meet the requirements of ASTM C144. Supplier/manufacturer may not use Paragraph 6.1 and 6.2 to justify using an aggregate that fails to meet the requirements. ASTM C404 may be used to allow a coarser aggregate grading for joints thicker than ½ in.

- F. Mortar for stone and block laying and stucco shall meet the requirements for Type S mortar of ASTM C270.
- G. The color of the mortar can be adjusted by the mortar manufacturer by the blend of white and grey Portland cement in the mix, the sand (aggregate), and small amounts of pigments which are added to the mix.
- H. Subject to these requirements, provide:
 - 1. Spec-Joint 46 Custom Masonry Mortar, Edison Coatings, Inc., Plainville, CT, www.edisoncoatings.com, (800) 341-6621 or approved equivalent product.
- I. FREEZE-THAW RESISTANCE ADMIXTURE: A polymer modifier admixture that imparts freeze-thaw and salt- resistance to mortar by improving bond strength and flexibility while reducing shrinkage. Provided in ready-to-use concentration to be used in place of mixing water to produce workable mixtures. Note that typical mortar mixes will require less admixture than the typical amount of water to produce workable mixtures. Subject to these requirements, provide:
 - 1. Ice Minus 9 (rl-9), Edison Coatings, Inc. Plainville, CT, www.edisoncoatings.com, (800)341-6621 or approved equivalent product for polymer modification.

2.3 STONE

- A. Supply a natural stone as selected by the Architect: Stonemont Split Ledge 3" to 5" from Rolling Rock Building Stone, Inc. Boyertown, PA, contact – Randy Schlappich, rschlappich@rollrock.com
 - 1. Stonemont Split Ledge 3"-5"

2.4 REINFORCEMENT AND ANCHORAGE

- A. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.
- B. All reinforcements and anchors shall be fabricated from stainless steel materials: ASTM A666, Type 304 or 316.
- C. Single Wythe Joint Reinforcement: ASTM A951/A951M.
 - 1. Type: Truss or ladder.
 - 2. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.
- D. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch of mortar coverage from masonry face.
 - 1. Concrete frame: Dovetail anchors of bent steel strap, nominal 1 inch width x 0.024 in thick, with trapezoidal wire ties 0.1875 inch thick.
 - 2. Steel frame: Crimped wire anchors for welding to frame, 0.25 inch thick, with trapezoidal wire ties 0.1875 inch thick.

- E. Two-Piece Wall Ties: Formed steel wire, 0.1875 inch thick, adjustable, eye and pintle type, sized to provide not less than 5/8 inch of mortar coverage from masonry face and to allow vertical adjustment of up to 1-1/4 in.
- F. Masonry Veneer Anchors: Thermally broken 2-piece wing nut anchors with insulation retention washers that permit differential movement between masonry veneer and structural backup, stainless steel.
 - 1. Wire ties: Manufacturer's standard shape, 0.1875 inch thick.
 - 2. Vertical adjustment: Not less than 1.25 inches.
 - 3. Manufacturers:
 - a. Heckman; Pos-I-Tie with ThermalClip: www.heckmannbuildingprods.com.
 - b. Hohman & Barnard, Inc; 2-Seal Thermal Wingnut: www.h-b.com.
 - c. Approved equal.

2.5 FLASHINGS

- A. Metal Flashing Materials:
 - 1. Stainless Steel Flashing: ASTM A666, Type 304, soft temper; 26 gauge, 0.0187 inch thick; finish 2B to 2D.
- B. Shop- or Factory-Fabricated Flashing Corners and End Dams: Stainless steel.
- C. Termination Bars: Aluminum; compatible with membrane and adhesives.
 - 1. Size: 1 inch by 0.125 inch, punched 8 inches on center for fasteners.
- D. Drip Edge: Stainless steel; angled drip with hemmed edge; compatible with membrane and adhesives.

2.6 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
 - 1. Manufacturers:
 - a. Blok-Lok Limited; RS Series: www.blok-lok.com.
 - b. Hohmann & Barnard, Inc; RS Series: www.h-b.com.
 - c. WIRE-BOND; Rubber Control Joints: www.wirebond.com.
 - d. Approved equal.
- B. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
 - 1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.
 - a. Manufacturers:
 - 1) Advanced Building Products Inc; Mortar Break DT: www.advancedbuildingproducts.com.
 - 2) Hohmann & Barnard, Inc; Mortar Trap: www.h-b.com.

- 3) Mortar Net Solutions; MortarNet: www.mortarnet.com.
- 4) Approved equal.

C. Weeps:

1. Type: Polyester mesh.
2. Color(s): As selected by Architect from manufacturer's full range.
3. Manufacturers:
 - a. CavClear/Archovations, Inc: www.cavclear.com.
 - b. Mortar Net Solutions; WeepVent: www.mortarnet.com.
 - c. Approved equal.

D. Cavity Vents:

1. Type: Polyester mesh.
2. Color(s): As selected by Architect from manufacturer's full range.
3. Manufacturers:
 - a. CavClear/Archovations, Inc: www.cavclear.com.
 - b. Mortar Net Solutions; CellVent: www.mortarnet.com.
 - c. Approved equal.

E. Drainage Fabric: Polyester or polypropylene mesh.

1. Manufacturers:
 - a. Advanced Building Products, Inc; Mortairvent
www.advancedbuildingproducts.com.
 - b. Archovations, Inc; CavClear Masonry Mat: www.archovations.com.
 - c. Mortar Net Solutions; WallNet: www.mortarnet.com.
 - d. York Manufacturing, Inc; Weep Armor Weep Vent Protection: www.yorkmfg.com.
 - e. Approved equal.

F. Multicomponent Cavity Wall Drainage System: Combination mortar diverter, flashing and weep system.

1. May be used in lieu of flashing, cavity mortar control, and weeps described above.
2. Membrane Type: Stainless steel.
3. Drip Edge: Stainless steel.
4. Termination Bar: Stainless steel.
5. Manufacturers:
 - a. Mortar Net Solutions; TotalFlash Panel: www.mortarnet.com.
 - b. York Manufacturing, Inc; Flash-Vent: www.yorkmfg.com.
 - c. Approved equal.

2.7 MASONRY CLEANING

- A. Pressure Washing: Use hot or cold pressure washing in conjunction with the detergent cleaner to remove dirt from masonry and metal surfaces. Limit pressure to 1200 psi with a tip that has a 25° pattern or larger.

- B. Non-Ionic Detergent Building Wash – Concentrated cleaning material which is non-toxic, odorless, non-corrosive and biodegradable and designed for cleaning existing masonry.
 - 1. “E-Wash 30,” Edison Coatings, Inc., Plainville, CT, www.edisoncoatings.com, (800) 341-6621
 - 2. “Enviro Klean 2010 All Surface Cleaner,” Prosoco, Lawrence, KS, www.prosoco.com 1-800-255-4255
 - 3. Approved Equal
- C. Scraping Tools – Use only stainless steel or wood scrapers to remove deposits from the surface of the stone. Use of ordinary steel tools will result in the deposit of iron on the surface which will rust over time.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.
- D. Verify that weather barrier has been installed over substrate completely and correctly, and that testing has been completed.

3.2 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under this and other sections.

3.3 COLD AND HOT WEATHER REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.
- B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

3.4 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Lay up stonework in a random, quarry-faced, ashlar pattern with some horizontal coursing. Follow pattern set by mockups approved by the Architect.

- C. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of similar thickness.
- D. Concrete Masonry Units:
 - 1. Bond: Running.

3.5 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- C. Interlock intersections and external corners.
- D. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- E. Do not expose cut surfaces in the finished wall that show grinder marks.
- F. It is expected that rebuilding/repair/repointing work will be done with sufficient skill and care that there are no significant mortar stains on the masonry surfaces.
- G. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.
- H. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.6 WEEPS/CAVITY VENTS

- A. Install weeps in veneer and cavity walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.
- B. Install cavity vents in veneer and cavity walls at 32 inches on center horizontally below shelf angles and lintels and near top of walls.

3.7 CAVITY MORTAR CONTROL

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
- B. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

- 3.8 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY
- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
 - B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
 - C. Place continuous joint reinforcement in first and second joint below top of walls.
 - D. Lap joint reinforcement ends minimum 6 inches.
 - E. Fasten anchors to structural framing or back up masonry and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.
- 3.9 GROUTED COMPONENTS
- A. Lap splices minimum 24 bar diameters.
 - B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
 - C. Place and consolidate grout fill without displacing reinforcing.
 - D. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.
- 3.10 CONTROL AND EXPANSION JOINTS
- A. Concrete Masonry Unit Control Joints: Place control joints in exposed above grade masonry walls consistent with lines of building spaces and as follows unless indicated otherwise:
 - 1. At changes in wall height.
 - 2. At changes in wall thickness, such as at pipe and duct chases and pilasters.
 - 3. Above movement joints in foundations and floors.
 - 4. Below movement joints in roofs and floors that bear on a wall.
 - 5. Near one or both sides of door and window openings.
 - 6. Adjacent to corners of walls or intersections within a distance equal to half the control joint spacing.
 - B. Do not continue horizontal joint reinforcement through control or expansion joints.
 - C. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
 - D. Size control joints as indicated on drawings; if not indicated, 3/4 inch wide and deep.

- E. Form expansion joint as detailed on drawings.

3.11 BUILT-IN WORK

- A. As work progresses, install built-in metal door frames and glazed frames and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.
 - a. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
- C. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.
- D. Do not build into masonry construction organic materials that are subject to deterioration.

3.12 TOLERANCES

- A. In accordance with other requirements, the contractor shall conduct all masonry and concrete work in a manner that eliminates water infiltration into the masonry. The contractor shall notify the Architect of any deviations or field conditions beyond their control that would compromise that requirement.
- B. Install masonry within the site tolerances found in TMS 402/602.
- C. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- D. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- E. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- F. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- G. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.
- H. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.13 CUTTING AND FITTING

- A. Cut and fit for all penetrations through the stone including but not limited to: chases, pipes, conduit, sleeves, electrical boxes, light housings etc. Coordinate with other sections of work to provide correct size, shape, and location of openings.
- B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.14 FINAL CLEANING

- A. Replace defective mortar. Match adjacent work.
- B. The use of acidic cleaners for final cleaning and excess mortar removal will not be permitted. Acidic cleaners can damage the seals of the new mortar to the stone causing premature failure of the joints.
- C. It is expected that rebuilding/repair/repointing work will be done with sufficient skill and care that there are no significant mortar stains on the masonry surfaces.
- D. The use of metal scrapers, chisels or wire brushes is prohibited.
- E. Use natural (or plastic bristle) brushes, wooden scrapers, and water to remove minor mortar stains from the surface of the masonry.
- F. After completion of masonry work, remove debris and wash down masonry and surrounding surfaces with a detergent wash to remove dust, stains and other contaminants.

END OF SECTION 04 01 00

SECTION 04 72 00 - CAST STONE MASONRY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Architectural cast stone.
- B. Units required are indicated on drawings as "cast stone".

1.2 RELATED REQUIREMENTS

- A. Section 04 20 00 - Unit Masonry: Installation of cast stone in conjunction with masonry.
- B. Section 07 92 00 - Joint Sealants: Sealing joints indicated to be left open for sealant.

1.3 REFERENCE STANDARDS

- A. ACI 318 - Building Code Requirements for Structural Concrete 2019 (Reapproved 2022).
- B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2022.
- C. ASTM A775/A775M - Standard Specification for Epoxy-Coated Steel Reinforcing Bars 2022.
- D. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement 2019, with Editorial Revision (2020).
- E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
- F. ASTM C33/C33M - Standard Specification for Concrete Aggregates 2018.
- G. ASTM C150/C150M - Standard Specification for Portland Cement 2022.
- H. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a, with Editorial Revision.
- I. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete 2019, with Editorial Revision (2022).
- J. ASTM C642 - Standard Test Method for Density, Absorption, and Voids in Hardened Concrete 2021.
- K. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete 2016.

- L. ASTM C1364 - Standard Specification for Architectural Cast Stone 2023.

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Test results of cast stone components made previously by the manufacturer.
- C. Shop Drawings: Include elevations, dimensions, layouts, profiles, cross sections, reinforcement, exposed faces, arrangement of joints, anchoring methods, anchors, and piece numbers.
- D. Mortar Color Selection Samples.
- E. Verification Samples: Pieces of actual cast stone components not less than 6 inches square, illustrating range of color and texture to be anticipated in components furnished for the project.
- F. Full-Size Samples, For Review:
 - 1. Basic Shapes: One of each.
 - 2. Accent, Trim and Specialty Shapes: One of each.
- G. Source Quality Control Test Reports.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 - 1. Current producer member of the Cast Stone Institute or the Architectural Precast Association.
 - 2. Manufacturer's production facility currently holds a Plant Certification from the Cast Stone Institute or the Architectural Precast Association.
 - 3. Adequate plant capacity to furnish quality, sizes, and quantity of cast stone required without delaying progress of the work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver cast stone components secured to shipping pallets and protected from damage and discoloration. Protect corners from damage.
- B. Number each piece individually to match shop drawings and schedule.
- C. Store cast stone components and installation materials in accordance with manufacturer's instructions.
- D. Store cast stone components on pallets with nonstaining, waterproof covers. Ventilate under covers to prevent condensation. Prevent contact with dirt.
- E. Protect cast stone components during handling and installation to prevent chipping, cracking, or other damage.

- F. Store mortar materials where contamination can be avoided.
- G. Schedule and coordinate production and delivery of cast stone components with unit masonry work to optimize on-site inventory and to avoid delaying the work.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Architectural Cast Stone:
 - 1. Any current producer member of the Architectural Precast Association.
 - a. American Stone Virginia, Ladysmith, VA 22501: www.asiprecast.com.
 - b. Cast Stone Systems, Inc, Warrenton, NC 27589: www.caststonesystems.com.
 - c. Great Lakes Cast Stone, Girard, PA 16417: www.greatlakescaststone.com.
 - d. Nelson Precast, Baltimore, MD 21230: www.nelsonprecast.com.
 - e. Northern Design Precast, Loudon, NH 03307: www.ndprecast.com.
 - f. P&D Architectural Precast, LaGrange, NC 28551: www.pdarchprecast.com.
 - g. Preferred Precast, Inc, Cumberland, RI 02864: preferredprecast.com.
 - h. Southside Precast Products, Buffalo, NY 14218: www.southsideprecast.com.
 - i. Sun Precast Co., Inc, Beaver Springs, PA 17812: www.sunprecast.com.
 - 2. Any current producer member of the Cast Stone Institute.
 - a. Cast Stone Systems, Inc, Warrenton, NC 27589: www.caststonesystems.com.
 - b. Great Lakes Cast Stone, Girard, PA 16417: www.greatlakescaststone.com.
 - c. Hoyle Stone Products, Millington, MD 21651: hoylestone.com.
 - d. Stafford Stone Works, LLC, Fredericksburg, VA 22401: staffordstoneworks.com.
 - e. Sun Precast Co., Inc, Beaver Springs, PA 17812: www.sunprecast.com.
 - 3. Approved equal.

2.2 ARCHITECTURAL CAST STONE

- A. Cast Stone: Architectural concrete product manufactured to simulate appearance of natural granite, complying with ASTM C1364.
 - 1. Compressive Strength: As specified in ASTM C1364; calculate strength of pieces to be field cut at 80 percent of uncut piece.
 - 2. Freeze-Thaw Resistance: Demonstrated by laboratory testing in accordance with ASTM C1364.
 - 3. Surface Texture: Fine grained texture, with no bugholes, air voids, or other surface blemishes visible from distance of 20 feet.
 - 4. Color: Selected by Architect from manufacturer's full range.
 - 5. Remove cement film from exposed surfaces before packaging for shipment.
- B. Shapes: Provide shapes indicated on drawings.
 - 1. Variation from Any Dimension, Including Bow, Camber, and Twist: Maximum of plus/minus 1/8 inch or length divided by 360, whichever is greater, but not more than 1/4 inch.

2. Unless otherwise indicated on drawings, provide:
 - a. Wash or slope of 1:12 on exterior horizontal surfaces.
 - b. Drips on projecting components, wherever possible.
 - c. Raised fillets at back of sills and at ends to be built in.
- C. Reinforcement: Provide reinforcement as required to withstand handling and structural stresses; comply with ACI 318.
 1. Pieces More than 24 inches in Any Dimension: Provide full length two-way reinforcement of cross-sectional area not less than 0.25 percent of unit cross-sectional area.

2.3 MATERIALS

- A. Portland Cement: ASTM C150/C150M.
 1. For Mortar: Type I or II, except Type III may be used in cold weather.
- B. Coarse Aggregate: ASTM C33/C33M, except for gradation; granite, quartz, or limestone.
- C. Fine Aggregate: ASTM C33/C33M, except for gradation; natural or manufactured sands.
- D. Pigments: ASTM C979, inorganic iron oxides; do not use carbon black.
- E. Admixtures: ASTM C494/C494M.
- F. Water: Potable.
- G. Reinforcing Bars: ASTM A615/A615M deformed bars, epoxy coated.
 1. Epoxy coated in accordance with ASTM A775/A775M.
- H. Steel Welded Wire Reinforcement: ASTM A1064/A1064M, galvanized or ASTM A884/A884M, epoxy coated.
- I. Embedded Anchors, Dowels, and Inserts: Type 304 stainless steel, of type and size as required for conditions.
- J. Mortar: Portland cement-lime, as specified in Section 04 05 11 ; do not use masonry cement.
- K. Cleaner: General-purpose cleaner designed for removing mortar and grout stains, efflorescence, and other construction stains from new masonry surfaces without discoloring or damaging masonry surfaces; approved for intended use by cast stone manufacturer and by cleaner manufacturer for use on cast stone and adjacent masonry materials.

2.4 SOURCE QUALITY CONTROL

- A. Test compressive strength and absorption of specimens selected at random from plant production.
 1. Test in accordance with ASTM C642.

2. Select specimens at rate of 3 per 500 cubic feet, with a minimum of 3 per production week.
3. Submit reports of tests, showing compliance with requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine construction to receive cast stone components. Notify Architect if construction is not acceptable.
- B. Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION

- A. Install cast stone components in conjunction with masonry, complying with requirements of Section 04 20 00.
- B. Mechanically anchor cast stone units indicated; set remainder in mortar.
- C. Setting:
 1. Drench cast stone components with clear, running water immediately before installation.
 2. Set units in a full bed of mortar unless otherwise indicated.
 3. Fill vertical joints with mortar.
 4. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.

3.3 TOLERANCES

- A. Joints: Make all joints 3/8 inch, except as otherwise detailed.
 1. Rake mortar joints 3/4 inch for pointing.
 2. Remove excess mortar from face of stone before pointing joints.
 3. Point joints with mortar in layers 3/8 inch thick and tool to a slight concave profile.
 4. Leave the following joints open for sealant:
 - a. Head joints in top courses, including copings, parapets, cornices, sills, and steps.
 - b. Joints in projecting units.
 - c. Joints between rigidly anchored units, including soffits, panels, and column covers.
 - d. Joints below lugged sills and stair treads.
 - e. Joints below ledge and relieving angles.
 - f. Joints labeled "expansion joint".
- B. Installation Tolerances:
 1. Variation from Plumb: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet or more.
 2. Variation from Level: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet, or 3/8 inch maximum.

3. Variation in Joint Width: Not more than 1/8 inch in 36 inches or 1/4 of nominal joint width, whichever is less.
4. Variation in Plane Between Adjacent Surfaces (Lipping): Not more than 1/16 inch difference between planes of adjacent units or adjacent surfaces indicated to be flush with units.

3.4 REPAIR

- A. Repair chips and other surface damage noticeable when viewed in direct daylight at 10 feet.
 1. Repair with matching touch-up material provided by the manufacturer and in accordance with manufacturer's instructions.
 2. Repair methods and results subject to Architect 's approval.
- B. Repair stones with exposed reinforcement, including field cut units.
 1. Cut reinforcement back to a minimum depth of 1.5 inches.
 2. Apply a galvanized compound, zinc primer or other reinforcement protection to all exposed reinforcement.
 3. Fill recessed pocket as described above for chips and other surface damage.

3.5 CLEANING

- A. Clean completed exposed cast stone after mortar is thoroughly set and cured.
 1. Wet surfaces with water before applying cleaner.
 2. Apply cleaner to cast stone in accordance with manufacturer's instructions.
 3. Remove cleaner promptly by rinsing thoroughly with clear water.
 4. Do not use acidic cleaners.

3.6 PROTECTION

- A. Protect completed work from damage.
- B. Clean, repair, or restore damaged or mortar-splashed work to condition of new work.

END OF SECTION

SECTION 05 52 13 - PIPE AND TUBE RAILINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Stair railings and guardrails.
- B. Free-standing railings at steps.

1.2 RELATED REQUIREMENTS

- A. Section 09 91 13 - Exterior Painting: Paint finish.
- B. Section 09 91 23 - Interior Painting: Paint finish.

1.3 REFERENCE STANDARDS

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- B. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- C. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- D. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- E. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- F. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- G. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes 2021a.
- H. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings 2020.
- I. ASTM B211/B211M - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire 2019.

- J. ASTM B241/B241M - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube 2022.
- K. ASTM B429/B429M - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube 2020.
- L. ASTM B483/B483M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Tube and Drawn Pipe for General Purpose Applications 2021.
- M. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification 2021.
- N. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2023).

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.
 - 1. Include the design engineer's seal and signature on each sheet of shop drawings.
- C. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated within the previous 12 months.

1.5 QUALITY ASSURANCE

- A. Structural Designer Qualifications: Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located, or personnel under direct supervision of such an engineer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Handrails and Railings:
 - 1. Alumi-Guard; www.alumi-guard.com/#sle.
 - 2. ATR Technologies Inc; Aluminum Multi-Line Railing: <http://www.atr-technologies.com/#sle>.
 - 3. Avcon Railing Systems; Presidential Aluminum: www.avcon.com/#sle.
 - 4. Garlock Safety Systems; www.garlocksafety.com/#sle.
 - 5. Greco Aluminum Railings; www.grecoaluminum.com/#sle.

2.2 RAILINGS - GENERAL REQUIREMENTS

- A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of applicable local code.

- B. Allow for expansion and contraction of members and building movement without damage to connections or members.
- C. Dimensions: See drawings for configurations and heights.
- D. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
 - 1. For anchorage to concrete, provide inserts to be cast into concrete, for welding anchors.
 - 2. For anchorage to masonry, provide brackets to be embedded in masonry, for bolting anchors.
 - 3. Provide thermal breaks
- E. Provide welding fittings to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and wall brackets.

2.3 ALUMINUM MATERIALS

- A. Aluminum Pipe: Schedule 40; ASTM B429/B429M, ASTM B241/B241M, or ASTM B483/B483M.
- B. Aluminum Tube: Minimum wall thickness of 0.127 inch; ASTM B429/B429M, ASTM B241/B241M, or ASTM B483/B483M.
- C. Solid Bars and Flats: ASTM B211/B211M.
- D. Non-Weld Mechanical Fittings: Slip-on cast aluminum, for Schedule 40 pipe, with flush setscrews for tightening by standard hex wrench, no bolts or screw fasteners.
- E. Welding Fittings: No exposed fasteners; cast aluminum.
- F. Exposed Fasteners: No exposed bolts or screws.

2.4 FABRICATION

- A. Accurately form components to suit specific project conditions and for proper connection to building structure.
- B. Fit and shop assemble components in largest practical sizes for delivery to site.
- C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.
- D. Welded Joints:
 - 1. Exterior Components: Continuously seal joined pieces by intermittent welds and plastic filler. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.

2. Interior Components: Continuously seal joined pieces by intermittent welds and plastic filler.
 3. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- E. Weld connections that cannot be shop welded due to size limitations.
1. Weld in accordance with AWS D1.1/D1.1M.
 2. Match shop welding and bolting.
 3. Clean welds, bolted connections, and abraded areas.
 4. Touch up shop primer and factory-applied finishes.
 5. Repair galvanizing with galvanizing repair paint per ASTM A780/A780M.
- 2.5 ALUMINUM FINISHES
- A. Superior Performance Organic Coating System: AAMA 2605 multiple coat, thermally cured polyvinylidene fluoride system.
 - B. Color: Black, match existing.
 - C. Touch-Up Materials: As recommended by coating manufacturer for field application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.2 PREPARATION

- A. Clean and strip aluminum where site welding is required.
- B. Supply items required to be cast into concrete or embedded in masonry with setting templates, for installation as work of other sections.
- C. Apply one coat of bituminous paint to concealed aluminum surfaces that will be in contact with cementitious or dissimilar materials.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.
- C. Install railings in compliance with ADA Standards for accessible design at applicable locations.

- D. Anchor railings securely to structure.
- E. Field weld anchors as indicated on drawings. Touch-up welds with primer. Grind welds smooth.
- F. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

3.4 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Nonstructural dimension lumber framing.
- B. Preservative treated wood materials.
- C. Fire retardant treated wood materials.
- D. Communications and electrical room mounting boards.

1.2 RELATED REQUIREMENTS

- A. Section 09 21 16 - Gypsum Board Assemblies for metal backing and flexible wood backing.

1.3 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.
- B. ASTM D2898 - Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing 2010 (Reapproved 2017).
- C. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs 2022.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
- E. AWC (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings 2018.
- F. AWPA U1 - Use Category System: User Specification for Treated Wood 2023.
- G. FM 1-49 - Perimeter Flashing 2016.
- H. PS 1 - Structural Plywood 2019.
- I. PS 20 - American Softwood Lumber Standard 2021.

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

- B. Product Data: Provide technical data on fire retardant treatment, wood preservative materials, adhesives, and application instructions.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
 - 2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.2 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No. 3 or Utility Grade.
 - 2. Boards: Standard or No. 3.
 - 3. Coordinate with Section 09 21 16 - Gypsum Board Assemblies for metal backing and flexible wood backing.

2.3 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for use with galvanized metals and stainless steel complying with ASTM F593 Group 2 for use with stainless steel metals, for high humidity and preservative-treated wood locations; unfinished steel elsewhere.
 - 2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.
 - 3. Anchors: Bolt or ballistic fastener for anchorages to steel.

2.4 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 - 1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
 - 2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

- B. Fire Retardant Treatment:
 - 1. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Treat wood in exterior walls and parapets.
 - c. Treat wood in contact with roofing, flashing, or waterproofing.
 - d. Do not use treated wood in direct contact with the ground.

- C. Preservative Treatment:
 - 1. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - b. Treat lumber exposed to weather.
 - c. Treat lumber in contact with masonry or concrete.

PART 3 EXECUTION

3.1 PREPARATION

- A. Coordinate installation of rough carpentry members specified in other sections.

3.2 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.3 FRAMING INSTALLATION

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
- B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
- C. Install structural members full length without splices unless otherwise specifically detailed.
- D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AWC (WFCM) Wood Frame Construction Manual.
- E. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.
- F. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.

3.4 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

3.5 SITE APPLIED WOOD TREATMENT

- A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.
- B. Allow preservative to dry prior to erecting members.

3.6 CLEANING

- A. Waste Disposal:
 - 1. Comply with applicable regulations.
 - 2. Do not burn scrap on project site.
 - 3. Do not burn scraps that have been pressure treated.
 - 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

SECTION 07 11 13 - BITUMINOUS DAMPPROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Bituminous dampproofing.
- B. Protection boards.

1.2 RELATED REQUIREMENTS

- A. Section 07 21 00 - Thermal Insulation: Rigid insulation board used as protection board.

1.3 REFERENCE STANDARDS

- A. ASTM D1187/D1187M - Standard Specification for Asphalt-Base Emulsions for Use as Protective Coatings for Metal 1997 (Reapproved 2018).
- B. ASTM D1227/D1227M - Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing 2013, with Editorial Revision (2019).
- C. NRCA (WM) - The NRCA Waterproofing Manual 2021.

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide properties of primer, bitumen, and mastics.
- C. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.5 FIELD CONDITIONS

- A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application until dampproofing has cured.

PART 2 PRODUCTS

2.1 BITUMINOUS DAMPPROOFING

- A. Bituminous Dampproofing: Cold-applied water-based emulsion; asphalt with mineral colloid or chemical emulsifying agent; with or without fiber reinforcement; asbestos-free; suitable for application on vertical and horizontal surfaces.
 - 1. Asphalt-Base Emulsion for Metal Protective Coating: ASTM D1187/D1187M, Type I - Continuous water exposure within few days after drying or Type II - Continuous weather exposure after drying.
 - 2. Emulsified Asphalt for Roofing Protective Coating: ASTM D1227/D1227M, Type II, Class 1 - Mineral colloid emulsifying agents with non-asbestos fibers or Type III, Class 1 - Mineral colloid emulsifying agents without fibrous reinforcement.
 - 3. VOC Content: Not more than permitted by local, State, and federal regulations.
 - 4. Applied Thickness: 1/16 inch, minimum, wet film.

2.2 ACCESSORIES

- A. Protection Board: Rigid insulation; see Section 07 21 00.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions are acceptable prior to starting this work.
- B. Verify substrate surfaces are durable, free of matter detrimental to adhesion or application of dampproofing system.
- C. Verify that items penetrating surfaces to receive dampproofing are securely installed.

3.2 PREPARATION

- A. Protect adjacent surfaces not designated to receive dampproofing.
- B. Clean and prepare surfaces to receive dampproofing in accordance with manufacturer's instructions.
- C. Do not apply dampproofing to surfaces unacceptable to manufacturer.
- D. Apply mastic to seal penetrations, small cracks, or minor honeycombs in substrate.

3.3 APPLICATION

- A. Foundation Walls: Apply two coats of asphalt dampproofing.

- B. Perform this work in accordance with manufacturer's instructions and NRCA (WM) applicable requirements.
- C. Prime surfaces in accordance with manufacturer's instructions and NRCA (WM) applicable requirements.
- D. Prime surfaces at a rate approved by manufacturer for application indicated, and allow primer to dry thoroughly.
- E. Apply bitumen with mop.
- F. Seal items watertight with mastic, that project through dampproofing surface.
- G. Place protection board directly over dampproofing, butt joints, and adhere to tacky dampproofing.
- H. Scribe and cut boards around projections, penetrations, and interruptions.

END OF SECTION

SECTION 07 21 00 - THERMAL INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Board insulation and integral vapor retarder at cavity wall construction, perimeter foundation wall, and interior wall with facer providing exposed finish.

1.2 REFERENCE STANDARDS

- A. ASTM C240 - Standard Test Methods for Testing Cellular Glass Insulation Block 2021.
- B. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus 2021.
- C. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation 2022.
- D. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications 2013 (Reapproved 2019).
- E. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation 2022.
- F. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation 2014 (Reapproved 2019).
- G. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2023.
- H. ASTM D1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics 2016 (Reapproved 2023).
- I. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
- J. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components 2023.

1.3 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, product limitations, and NFPA 285 compliance.

- C. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

1.4 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.1 APPLICATIONS

- A. Insulation Inside Masonry Cavity Walls: Extruded polystyrene (XPS) carbon black board.

2.2 FOAM BOARD INSULATION MATERIALS

- A. Extruded Polystyrene (XPS) Cavity Wall Insulation Board: Comply with ASTM C578, and manufactured using carbon black technology.
 - 1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 3. Type and Thermal Resistance, R-value: Type IV, 5.6 (0.98), minimum, per 1 inch thickness at 75 degrees F mean temperature.
 - 4. Board Size: 15-3/4 inch by 96 inch.
 - 5. Board Thickness: 1-3/4 inch.
 - 6. Board Edges: Square.
 - 7. Products:
 - a. DuPont de Nemours, Inc; Styrofoam Brand Cavitymate Ultra: building.dupont.com/#sle.
 - b. Approved equal.

2.3 ACCESSORIES

- A. Insulation Fasteners: Impaling clip of galvanized steel with washer retainer and clips, to be mechanically fastened to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.
- B. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.2 BOARD INSTALLATION AT CAVITY WALLS

- A. Secure impale fasteners to substrate at following frequency:
 - 1. As per manufacture's recommendations.
- B. Install boards to fit snugly between wall ties with wall tie washers holding board in place.
- C. Install boards horizontally on walls.
 - 1. Place boards to maximize adhesive contact.
 - 2. Install in running bond pattern.
 - 3. Butt edges and ends tightly to adjacent boards and protrusions.
 - 4. Fill gaps larger than 1/4 inch with spray foam insulation.
 - 5. Place impale fastener locking discs.
- D. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.3 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07 27 00 - AIR BARRIERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Air barriers.

1.2 RELATED REQUIREMENTS

1.3 DEFINITIONS

- A. Air Barrier: Airtight barrier made of material that is virtually air impermeable but water vapor permeable, both to amount as specified, with sealed seams and sealed joints to adjacent surfaces.

1.4 REFERENCE STANDARDS

- A. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing 2017.
- B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection 2021.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
- D. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2022a, with Editorial Revision (2023).
- E. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials 2021a.
- F. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components 2023.

1.5 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week prior to commencing work of this section or roofing section, whichever is earlier.
 - 1. Require attendance by all affected installers, such as roofing, plumbing and electrical trades who will penetrate the air barrier, insulation installers, and finish wall system installers.
 - 2. Review preparation and installation procedures, including tricky details, installation sequencing, and coordination and scheduling necessary for related work.

3. Discuss exposure limitations, warranty requirements, and protection of installed work.

1.6 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on material characteristics, performance criteria, limitations, and NFPA 285 compliance.
- C. Shop Drawings: Provide drawings of special joint conditions.
- D. ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection required by ABAA QAP.
- E. Manufacturer's Installation Instructions: Indicate preparation, installation methods, and storage and handling criteria.
- F. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.
- G. ABAA Installer Qualification: Submit documentation of current contractor accreditation and current installer certification; keep copies of each contractor accreditation and installer certification on site during and after installation, and present on-site documentation upon request.
- H. Manufacturer's qualification statement.
- I. Installer's qualification statement.
- J. Digital photographs of each portion of installation, including atypical details.

1.7 QUALITY ASSURANCE

- A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP); www.airbarrier.org:
 1. Installer Qualification: Use accredited contractor, certified installers, evaluated materials, and third-party field quality control audit.
- B. Air Barrier Association of America (ABAA) Evaluated Air Barrier Assemblies; www.airbarrier.org: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.
- C. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

- D. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.

1.8 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

PART 2 PRODUCTS

2.1 APPLICATIONS

- A. Air Barrier at Masonry Cavity Walls: self-adhered sheet or fluid applied coating/membrane.
- B. Air Barrier at Metal Framed Walls: self-adhered sheet, fluid applied coating/membrane, or glass-mat faced gypsum panel.
- C. Air Barrier at Wood Framed Walls: mechanically fastened sheet.

2.2 AIR BARRIER MATERIALS (AIR IMPERMEABLE AND WATER VAPOR PERMEABLE)

- A. Air Barrier Sheet, Mechanically Fastened:
 - 1. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
 - 2. Water Vapor Permeance: 10 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedure A - Desiccant Method, at 73.4 degrees F.
 - 3. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 90 days of weather exposure.
 - 4. Surface Burning Characteristics: Flame spread index of 25 or less, and smoke developed index of 50 or less, Class A, when tested in accordance with ASTM E84.
 - 5. Seam and Perimeter Tape: Polyethylene self-adhering type, mesh reinforced, 2-1/2 inches wide, compatible with sheet material; unless otherwise indicated.
 - 6. Products:
 - a. DuPont de Nemours, Inc; Tyvek CommercialWrap D: building.dupont.com.
 - b. Kingspan Insulation LLC; GreenGuard RainDrop Building Wrap: www.trustgreenguard.com/.
 - c. Kingspan Insulation LLC; GreenGuard MAX Building Wrap: www.trustgreenguard.com.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Air Barrier Sheet, Self-Adhered:
 - 1. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.

2. Water Vapor Permeance: 10 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedures A - Desiccant Method and B - Water Method, at 73.4 degrees F.
 3. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 90 days of weather exposure.
 4. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A when tested in accordance with ASTM E84.
 5. Comply with NFPA 285 requirements for wall assembly.
 6. Seam and Perimeter Tape: As recommended by sheet manufacturer.
 7. Products:
 - a. 3M; Vapor Permeable Air Barrier 3015VP; www.3m.com.
 - b. Dorken Systems Inc; DELTA-VENT SA: www.dorken.com.
 - c. SIGA Cover Inc; SIGA-Majvest 500 SA: www.siga.swiss/.
 - d. Soprema Inc; SopraSEAL Stick VP: www.soprema.us.
 - e. VaproShield, LLC; WrapShield SA - Self-Adhered: www.vaproshield.com.
 - f. VaproShield, LLC; RevealShield SA - Self-Adhered: www.vaproshield.com.
 - g. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Air Barrier, Fluid Applied: Vapor permeable, elastomeric waterproofing.
1. Air Barrier Coating:
 - a. Wet Film Thickness (WFT) or Dry Film Thickness (DFT): As indicated, to meet both air and water vapor performance requirements.
 - b. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
 - c. Water Vapor Permeance: 11 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedures A - Desiccant Method and B - Water Method, at 73.4 degrees F.
 - d. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 90 days of weather exposure.
 - e. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A when tested in accordance with ASTM E84.
 - f. Comply with NFPA 285 requirements for wall assembly.
 - g. Nail Sealability: Pass, when tested in accordance with ASTM D1970/D1970M.
 - h. Products:
 - 1) Carlisle Coatings and Waterproofing, Inc; Fire Resist Barrithane VP (20 mils DFT): www.carlisleccw.com.
 - 2) DuPont de Nemours, Inc; Tyvek Fluid Applied WB+ (25 mils DFT): building.dupont.com.
 - 3) PROSOCO, Inc; R-GUARD Cat 5 (12 to 15 mils WFT): www.prosoco.com/r-guard.
 - 4) Soprema Inc; SopraSEAL LM 204 VP (20 mils DFT): www.soprema.us.
 - 5) Substitutions: See Section 01 60 00 - Product Requirements.
- D. Air Barrier, Glass-Mat Faced Gypsum Panel: Vapor permeable; comply with ASTM C1177/C1177M physical requirements.

1. Thickness: 5/8 inch.
2. Width and Height: 48 inches wide by 96 inches high.
3. Edges: Square.
4. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
5. Water Vapor Permeance: 11 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedures A - Desiccant Method and B - Water Method, at 73.4 degrees F.
6. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A when tested in accordance with ASTM E84.
7. Seam and Perimeter Detailing: As recommended by manufacturer.
8. Products:
 - a. Georgia-Pacific; Dens Element Barrier System: www.buildgp.com.
 - b. Substitutions: See Section 01 60 00 - Product Requirements.

2.3 AIR BARRIER MATERIALS (AIR IMPERMEABLE AND WATER VAPOR IMPERMEABLE)

- A. Air and Vapor Barrier Sheet, Mechanically Fastened: Two layers of aluminum over layer of woven polyethylene, used to separate space with conditioned air from adjacent space without conditioned air, such as knee walls exposed to attic conditions.
- B. Air and Vapor Barrier Sheet, Self-Adhered:
- C. Air and Vapor Barrier, Fluid-Applied:
- D. Air and Vapor Barrier, Glass-Mat Faced Gypsum Panel: Vapor impermeable; comply with ASTM C1177/C1177M physical requirements.

2.4 ACCESSORIES

- A. Sealants, Tapes, and Accessories for Sealing Air Barrier and Adjacent Substrates: As indicated or in compliance with air barrier manufacturer's installation instructions.
- B. Sealant for Cracks and Joints In Substrates: Resilient elastomeric joint sealant compatible with substrate and air barrier materials.
 1. Application: Apply at 30 to 40 mil, 0.030 to 0.040 inch, nominal thickness.
- C. Primer: Liquid applied polymer.
- D. Flexible Flashing: Self-adhesive sheet flashing complying with ASTM D1970/D1970M, except slip resistance requirement waived if not installed on roof.
 1. Width: 4 inches.
 2. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 30 days of weather exposure.

- E. Sill Plate Sealer: Closed-cell foam tape with rubberized adhesive membrane; bridges gap between foundation structure and sill plate or skirt board.
 - 1. Width: 3-1/2 inches or 5-1/2 inches to match width of sill.
 - 2. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 30 days of weather exposure.

- F. Preformed Transition Membrane: Semirigid silicone or polyester composition, tapered edges, ribbed back, tear resistant.
 - 1. Products:
 - a. Henry Company; Moistop Corner Shield: www.henry.com.
 - b. Pecora Corporation; KL-Span: www.pecora.com.
 - c. Tremco Commercial Sealants & Waterproofing; Proglaze ETA System: www.tremcosealants.com.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.

- G. Stainless Steel Flashing: Flexible flashing with 2 mil, 0.002 inch thick Type 304 stainless steel sheet, 8 mil, 0.008 inch of butyl adhesive and siliconized release liner.
 - 1. Roll Length: 50 feet long.
 - 2. Width: 6 inches wide.
 - 3. Overlap joints at least 2 inches.

- H. Liquid Flashing: One part, fast curing, nonsag, elastomeric, gun grade, trowelable.

- I. Liquid Flashing: One part, fast curing, nonsag, gun grade, trowelable.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces and conditions are ready for work of this section.
- B. Where existing conditions are responsibility of another installer, notify Architect of unsatisfactory conditions.
- C. Do not proceed with this work until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's installation instructions.

3.3 INSTALLATION

- A. Install materials in accordance with manufacturer's installation instructions.
- B. Air Barriers: Install continuous airtight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- C. Apply sealants and adhesives within recommended temperature range in accordance with manufacturer's installation instructions.
- D. Mechanically Fastened Sheets - On Exterior:
 - 1. Install sheets shingle fashion to shed water, with seams generally horizontal.
 - 2. Overlap seams as recommended by manufacturer, 6 inches, minimum.
 - 3. Overlap at outside and inside corners as recommended by manufacturer, 12 inches, minimum.
 - 4. For applications indicated to be airtight, seal seams, laps, penetrations, tears, and cuts with self-adhesive tape; use only large-headed, gasketed fasteners as recommended by manufacturer.
 - 5. Install air barrier underneath jamb flashings.
 - 6. At framed openings with frames having nailing flanges, extend sheet into opening and over flanges; at head of opening, seal sheet over flange and flashing.
- E. Self-Adhered Sheets:
 - 1. Prepare substrate in accordance with sheet manufacturer's installation instructions; fill and tape joints in substrate and between dissimilar materials.
 - 2. Lap sheets shingle fashion to shed water and seal laps airtight.
 - 3. Once sheets are in place, press firmly into substrate with resilient hand roller; ensure that laps are firmly adhered with no gaps or fishmouths.
 - 4. Use same material, or other material approved by sheet manufacturer, to seal to adjacent substrates, and as flashing.
 - 5. At wide joints, provide extra flexible membrane allowing joint movement.
- F. Fluid-Applied Coatings or Membranes:
 - 1. Prepare substrate in accordance with manufacturer's installation instructions; treat joints in substrate and between dissimilar materials as indicated.
 - 2. Where exterior masonry veneer is being installed, install masonry anchors before installing air barrier over masonry; provide airtight seal around anchors.
 - 3. Use flashing to seal to adjacent construction and to bridge joints in coating substrate.
- G. Openings and Penetrations in Exterior Air Barriers:
 - 1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto air barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
 - 2. At openings with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.

3. At openings with nonflanged frames, seal air barrier to each side of framing at opening using flashing at least 9 inches wide, and covering entire depth of framing.
4. At head of openings, install flashing under air barrier extending at least 2 inches beyond face of jambs; seal air barrier to flashing.
5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
6. Service and Other Penetrations: Form flashing around penetrating item and seal to air barrier surface.

3.4 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements for additional requirements.
- B. Coordination of ABAA Tests and Inspections:
 1. Provide testing and inspection required by ABAA QAP.
 2. Notify ABAA in writing of schedule for air barrier work, and allow adequate time for testing and inspection.
 3. Cooperate with ABAA testing agency.
 4. Allow access to air barrier work areas and staging.
 5. Do not cover air barrier work until tested, inspected, and accepted.
- C. Do not cover installed air barriers until required inspections have been completed.
- D. Take digital photographs of each portion of installation prior to covering up air barriers.
 1. Provide particular attention to atypical details.

3.5 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

SECTION 07 51 05-NDL WARRANTY

PART 1 - GENERAL

1.1 GENERAL

- A. This specification section sets forth warranty requirements.

1.2 WARRANTY

- A. Quotations will include a price for a 25 year no dollar limit, non prorated warranty to be provided by the material supplier. If the supplier is a subsidiary company, the warranty must be issued by the parent company.
- B. The material supplier will issue the warranty to owner upon material supplier acceptance of project completion and full payment of all bills related to project.
- C. Warranty supplier shall, as part of the warranty, provide one (1) maintenance visit within the first two (2) years of the warranty period. Each maintenance visit will include Inspections, Housekeeping, Routine Maintenance and Preventive Maintenance as described below.

1. General

- a. All repairs will follow the manufacturer's written repair and maintenance guidelines or NRCA recommended repair procedure.

2. Debris

- a. A complete walkover of the existing roof areas to determine the immediate surface conditions of the roof.
- b. Removal of all naturally occurring debris (i.e., leaves, branches, paper and similar items) from the roof membrane.
- c. Service will include removal of surface debris from the roof drains, gutters, and scuppers, but not clogged piped or plumbing.
- d. All debris will be disposed of at the owner's approved site location.

3. Terminations and Flashing

- a. Sealant voids in termination bars, counter flashings and parapet caps will be cleaned and resealed as required.
- b. Exposed fasteners will be resealed on perimeter metal details where required.
- c. All pitch pans will be refilled and topped off as required.
- d. Metal projections (hoods and clamps) will be checked and resealed.

- e. Soil stack leads will be inspected for cuts or holed and temporarily resealed when required with appropriate materials until arrangements can be made for permanent repair.
 - f. Re-secure loose metal coping caps, termination bars, counter flashings and metal edge systems where required with appropriate fasteners.
4. Membrane
- a. Tears, splits and breaks in the perimeter and internal membrane flashing systems and flashing strip-ins will be repaired with appropriate repair materials.
 - b. Visible membrane defects which may allow water into the roofing system will be repaired with appropriate repair materials.
 - c. Dress-up reflective coatings where mastic repairs have been made.
 - d. Drains and Gutters.
 - e. Check and re-secure drain bolts and clamping rings.
 - f. Check strip-in around drain leads, coat with approved mastics if required.
 - g. Reattach loose gutter straps, seal open gutter joints, and repair gutter strip-ins where required.
 - h. Check scupper boxes for open solder or caulking and seal with appropriate materials if required.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 SPECIAL PROJECT WARRANTY

- A. Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of built-up roofing such as built-up roofing membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:
- B. Warranty Period: **[Five]** <5> years from date of Substantial Completion.
- C. ROOFING INSTALLER'S WARRANTY
- D. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
 - 1. Owner: Elizabeth Public Schools
 - 2. Address: 500 N Broad St, Elizabeth, NJ 07208
 - 3. Building Name/Type: School 25
 - 4. Address: 525 First Ave, Elizabeth, NJ 07202
 - 5. Acceptance Date: _____.
 - 6. Warranty Period: 20 + 5

7. Expiration Date: _____.
- E. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- F. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- G. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding <72 mph >;
 - c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
 2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.

6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

H. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

1. Authorized Signature: _____.
2. Name: _____.
3. Title: _____.

END OF SECTION 075105

SECTION 07 54 16 – ELVALOY MODIFIED THERMOPLASTIC ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. This portion of the specification sets forth the general requirements and describes materials and workmanship for installing the specified roofing system.
- B. Follow Membrane manufacturer's guidelines.
- C. Roofing contractor shall furnish and install all materials described herein unless specifically noted otherwise.
- D. This section is for work on roofs: SION.

1.2 DEFINITIONS

- A. Roofing Terminology: See ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.3 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.
- C. Roofing System Design: ASCE 7-16 Roof System Design Wind-Load Analysis. Allowable Stress Design wind-uplift loads and safety factor:
 - 1. Roof Terrace
 - a. Zone 1' 43.0 pounds per square foot
 - b. Zone 1 74.9 pounds per square foot
 - c. Zone 2 98.9 pounds per square foot
 - d. Zone 3 134.8 pounds per square foot

1.4 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.5 SUBMITTALS

- A. Related section: SECTION 01 30 00 Administrative Requirements
- B. Prior to starting work, the roofing contractor shall submit 3 copies of the technical data on roofing materials, including material specifications, Material Safety Data Sheets, and installation procedures.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that has UL listed and FM Approvals approved for membrane roofing system consistent to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by membrane roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
- C. Source Limitations: Obtain components including roof insulation, fasteners, adhesive, and etc. as approved by membrane roofing manufacturer.
- D. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- E. Preliminary Roofing Conference: Before starting roof deck construction, conduct conference at Project site.
 - 1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review deck substrate requirements for conditions and finishes, including flatness and fastening.
 - 5. Review structural loading limitations of roof deck during and after roofing.

6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.
10. Manufacturer shall provide, at no additional expenses to the Owner, on-site inspection, by the roofing manufacturer's representative, at a minimum of everyday of application to ensure that the roofing is installed as specified. Written reports are to be submitted with pictures to the Architect indicating progress of the Work and conformance to the Contract Documents and manufacturer's best recommended practice. Keep architect informed as to the progress and quality of the work. Report to the architect any refusal by the contractor to correct unacceptable work. confirm upon completion to the architect that manufacturer has observed the application of the roof system and no procedures varied from the design of the architect. Notify architect of any proposed changes. Manufacturer shall attend all required progress meetings.

F. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.8 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.9 WARRANTY

- A. Refer to Section 07 51 05 for warranty requirements.

PART 2 - PRODUCTS

2.1 ROOFING MANUFACTURERS

- A. Basis of Design: Subject to compliance with requirements, provide products by the following:
 - 1. SR Products – 1380 E. Highland Road, Macedonia, Ohio 44056
- B. Vapor Barrier - One Ply - Torched to concrete deck.

1. PIKA PLY 180 (FS)

Property	Typical Value	Test Method
Thickness, mil (mm)	88 (2.2)	ASTM D 5147/6164
Tear Strength at 73.4 + 3.6°F (23 + 2°C), lbf/in	120 MD 87 XMD	ASTM D 5147/6164
Maximum Load, 0°F + 3.6°F (-18 + 2°C), lbf/in.	117 MD 83 XMD	ASTM D 5147/6164
Elongation at Maximum Load, 0°F + 3.6°F, (-18 + 2°C), %	29 MD 22 XMD	ASTM D 5147/6164

Maximum Load, 73.4 + 3.6°F (23 + 2°C), lbf/in.	70 MD 70 XMD	ASTM D 5147/6164
Elongation at Maximum Load, 73.4 + 3.6°F (23 + 2°C), %	56 MD 61 XMD	ASTM D 5147/6164
Low Temperature Flexibility, °F	-15	ASTM D 5147/6164
Compound Stability, °F	215	ASTM D 5147/6164
Dimensional Stability, %	<0.5	ASTM D 5147/6164
Net Mass per Unit Area, lb/100 ft ²	73	ASTM D 228

C. Membrane Sheets: ASTM D 751.

1. SION RM

Property	Typical Value	Test Method
Tear Strength, min, lbf	89 MD 108 XMD	ASTM D 751
Linear Dimensional Change max, (%)	0.3 MD	ASTM D 1204
Elongation at Break, min, (%)	50 MD 42 XMD	ASTM D 751
Breaking Strength, min, lbf/in.	325 MD 324 XMD	ASTM D 751
Seam Strength, (lbf)	295	ASTM D 751
Membrane Thickness (Nominal) (in)	.060"	ASTM D 751
Low Temperature Bend	-40°F (Pass)	ASTM D 2136
Solar Reflectance (%)	82	ASTM C 1549
Emissivity	.91	ASTM C 1371
SRI	109	ASTM E 1980
Dynamic Puncture Resistance	Pass	ASTM D 5635
Heat Aging (%)	>90	ASTM D 3045
Permeance (Perms)	0.003	ASTM E 96
Accelerated Weather Test	Pass	ASTM G 155
Fungi Resistance	No growth	ASTM G 21
Water Immersion, max, (%)	1.20	ASTM D 570
Static Puncture Resistance	Pass	ASTM D 5602

D. Flashing Sheets: ASTM D 751.

1. SION FS

Property	Typical Value	Test Method
Tear Strength, min, lbf	89 MD 109 XMD	ASTM D 751
Linear Dimensional Change max, (%)	0.3 MD	ASTM D 1204
Elongation at Break, min, (%)	35 MD 34 XMD	ASTM D 751
Breaking Strength, min, lbf/in.	298 MD 278 XMD	ASTM D 751
Seam Strength, (lbf)	286	ASTM D 751

Membrane Thickness (Nominal) (in)	.060"	ASTM D 751
Low Temperature Bend	-40°F (Pass)	ASTM D 2136
Solar Reflectance (%)	82	ASTM C 1549
Emissivity	.91	ASTM C 1371
SRI	109	ASTM E 1980
Dynamic Puncture Resistance	Pass	ASTM D 5635
Heat Aging (%)	>90	ASTM D 3045
Permeance (Perms)	0.003	ASTM E 96
Accelerated Weather Test	Pass	ASTM G 155
Fungi Resistance	Pass	ASTM G 21
Water Immersion, max, (%)	1.20	ASTM D 570
Static Puncture Resistance	Pass	ASTM D 5602

E. Slip Sheet: SR HYPALON

1. SR HYPALON

Property	Typical Value	Test Method
Specific Gravity	1.65	ASTM D297
Tensile Strength, PSI	800	ASTM D 412
Elongation, %	400	ASTM D 412
Tear Resistance, lb	6	ASTM D 1004
Puncture Resistance, lb	80	FTMS101C
Water Absorption. %	-	ASTM D 471
Weight Gain	5%	7 days @ 72°F
Low Temp Brittleness	-40°F pass	ASTM D 1790
EMMAQUA Weathering	Pass	ASTM E 838
Ozone Resistance	7 x no cracks	ASTM 1149

2.2 AUXILIARY MEMBRANE ROOFING MATERIALS

A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use, and compatible with membrane roofing.

B. Sheet Flashing:

1. SION NR Detail Membrane (non-reinforced) - Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as KEE sheet membrane.
2. SION RM Strip-In Membrane - strip-in membrane for SION RM membrane and FS Clad metal ends and joints.
3. SION FS Clad Metal - 24 gauge G-90 galvanized steel laminated with a 25 mil thick sheet of non-reinforced SION.

C. Bonding Adhesive:

1. SION FS Bonding Adhesive LV.

2. SION RM Substrate Adhesive.
 - D. Slip Sheet: Manufacturer's standard, of thickness required for application.
 - E. Pipe Boot:
 1. SION Preformed Pipe Boot.
 2. SION Split Pipe Boot.
 - F. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.
 - G. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch thick (25 mm wide by 1.3 mm thick), prepunched.
 - H. Fasteners:
 1. Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions consistent with FM Approvals 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.
 2. OMG Rhinobond Insulation Plate and OMG Super XHD Screws designed for fastening insulation board to a steel deck.
 - I. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.
- 2.3 ASPHALT MATERIALS
- A. Roofing Asphalt: [ASTM D 312, Type III or Type IV] [ASTM D 6152, SEBS modified].
 - B. Asphalt Primer: ASTM D 41 Type II
 1. SR Asphalt Low VOC
 2. SR Asphalt Primer WB
- 2.4 WALKWAYS
- A. Flexible Walkways: SION Walk Tread - Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway rolls.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
 - 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 - 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 05 31 00 "Steel Decking".
 - 4. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
 - 5. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
 - 6. Verify that concrete curing compounds that will impair adhesion of roofing components to roof deck have been removed.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
- D. Install acoustical roof deck rib insulation strips, specified in Section 05 31 00 "Steel Decking," according to acoustical roof deck manufacturer's written instructions, immediately before installation of overlying construction and to remain dry.

3.3 MEMBRANE ROOFING INSTALLATION

- A. Adhered Sheet Installation:

1. Starting at the lowest point of the roof, unroll, dry set and align specified cap sheet as indicated on approved shop drawings.
2. Align the cap sheet to position the selvedge to the factory lap line marked on the previous roll. Upon alignment, specified cap sheet is folded halfway back upon itself from the end lap direction.
3. Specified adhesive is applied with full coverage to substrate - hot asphalt (minimum rate of 25 lbs/100 sq. ft.); cold substrate adhesive (1-1/2 – 2 gal/100 sq. ft.).
4. Hold back specified adhesive 3" from the start of selvedge.
5. Cap sheet is hand introduced into adhesive.
6. Cap sheet must be firmly broomed into adhesive and then rolled with a roller (minimum 200 lbs.) to insure proper adhesion.
7. All seams to be made using the hot air welding method with a minimum 1.5" full weld at edge. Hand held hot-air welder, 115 volt, 1500 watt power minimum. Motorized hot-air welder, 220 volt, 5000 watt power minimum. Generator minimum output of 7500 watts required.
8. All welded seams to be probed. Roll ends of the fleece backed cap sheet membrane are butted and then capped with specified 8" hot-air welded strip-in membrane.
9. At the completion of each working day, cap sheet is lapped onto existing roof surfacing and secured with specified adhesive. Remove and discard the lapped membrane at the start of the next workday.
10. At no time will hot asphalt adhesive be permitted to contact the top surface of membrane.
11. Roof traffic on applied areas of membrane must be restricted to eliminate asphalt staining of the top surface.

B. Membrane installation further requirements:

1. Follow warranty supplier's recommendations for backnailing requirements.
2. Place ply sheets to ensure water will flow over or parallel to, but never against, exposed edges.
3. When using adhesives, ply should never touch ply even at roof edges, laps, tapered edge strips, and cants.
4. Apply specified adhesive no more than ten feet ahead of each roll being embedded, less in cool weather.
5. Avoid excessive application of adhesive over top ply, leave top ply exposed with minimal adhesive at ply lines or back-line on the insulation.
6. Light brooming or squeegeeing may be required to aid adhesion of ply sheets, base sheets, and/or cap sheets.
7. Avoid traffic on all newly installed membrane.
8. Overlap previous day's work 24 inches.
9. Lap ply sheet ends six inches. Stagger end laps twelve inches minimum.
10. Fit plies into roof drain rims, install metal flashing and finishing plies, secure clamping collars, and install domes.
11. Cut out fishmouths/side laps that are not completely sealed. Replace all sheets that are not fully and continuously bonded.

12. Roof is to be inspected and approved by representative from roof system warrantor before application of surfacing.

3.4 DAILY WATERSTOP/TIE-INS

- A. Install "deadman" insulation filler at insulation staggers.
- B. Extend roofing plies at least twelve inches onto prepared area of adjacent roofing. Embed plies into Specified Interply Adhesive. Strip edges with twelve-inch wide ply sheet embedded completely in alternate uniform courses of Specified Interply Adhesive.
- C. At beginning of next day's work, remove temporary connection by cutting felts evenly along edge of existing roof system. Remove "deadman" insulation fillers.

3.5 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
 1. Snap a chalk line 4" from toe of cant out onto roof membrane.
 2. Cut and dry fit one ply of top ply flashing membrane. Flashing must extend 4" beyond the toe of the cant onto the thermoplastic field membrane and a minimum of 8" in height. Allow for top ply flashing sections to overlap for a minimum of 2" hot air welds at vertical laps.
 3. Fully adhere top ply flashing above the cant using top ply flashing adhesive. Using a roof or masonry trowel, apply top ply flashing adhesive to the designated surface in a monolithic film (approximately 8-10 sq. ft. per gallon). Allow material to flash for a minimum of 15 minutes on days warmer than 70°F, and 30-45 minutes when temperatures are cooler than 70°F. Place flashing membrane into the still tacky top ply flashing adhesive and work smooth with roller pressure. Be sure to overlap cap sections a minimum of 2" with the overlap free of adhesive for hot air welding.
 4. Mechanically fasten top of flashing to substrate using aluminum termination bars fastened a minimum of 12" O.C.
 5. Seal top of termination bar with specified sealant.
 6. Dry laid area of top ply flashing extends over the cant and to chalk line that is 4" beyond toe of cant on field surface ply of thermoplastic membrane.
 7. Hot air weld toe of top ply flashing membrane to field surface membrane using minimum 2" welds.
 8. Hot air weld vertical laps of top flashing ply using minimum 2" welds.
 9. Install specified counter flashing system as per detail drawings.

3.6 AT SINGLE AND MULTIPLE PENETRATIONS-SMALL PIPES & CONDUITS

- A. Remove existing pitch pans.

- B. Install roofing system onto wood blocking.
- C. Install specified pitch pan(s) fabricated with clad metal and riveted flange corners around penetration(s) and attach flange to blocking 3" o.c.
- D. Do not prime pan interior or projection if two-part pitch pocket sealant is used.
- E. Cover vertical riveted seam of pitch pan with duct tape (see detail drawing).
- F. Seal flange and vertical riveted seam with flashing with minimum 2" hot air weld to Elvaloy modified fleece backed thermoplastic field membrane and to clad metal flange.
- G. Heat weld outside corners to all four (4) corners of pitch pan.
- H. Fill to pitch pan 3/4" from top with non-shrink grout, allow to set up.
- I. Seal top with specified pitch pan sealant.
- J. All penetrations will receive a bonnet or watershed as shown in detail drawings.

3.7 AT PLUMBING VENTS

- A. Remove existing flashing and clean to bare metal.
- B. Wedge plumbing vent tight against deck.
- C. Install prefabricated plumbing vent flashing.
- D. Hot air weld flange to Elvaloy modified fleece backed thermoplastic membrane (minimum 2" weld).
- E. Secure top of boot to pipe with a stainless steel draw band or clamp and seal with specified caulking.
 - 1. Apply edge sealant to flange weld after probing and correcting any voids.

3.8 EQUIPMENT STANDS - "I" BEAMS AND ANGLE IRONS

- A. Remove existing flashing. Weld 1/4 inch plate steel (where required) to open portion of beam. Slope to shed water away from I-beam. Fill beam interior below sloped plate to roof deck with batt insulation. Install vertical and horizontal sections of wood blocking around column. Blocking height to be a minimum of 8 inches above final insulation surface. Provide tapered edge strip and cant around stand. Mechanically attach to deck; miter corners.
- B. Install new roofing two inches beyond top edge of cant. Adhere specified flashing membrane. Overlap section four inches. Extend flashing ply four inches beyond toe of cant.

- C. Install Cap Ply of specified flashing membrane over the base ply. Nail cap flashing ply to wood curb six inches o.c.; extend 4 inches beyond cant. Mechanically fasten top of sheeting to substrate with one inch cap nails eight inches o.c. Hot air weld base to cap flashing ply to field membrane with 2" weld.
- D. Fabricate and install new aluminum counter flashing. Mechanically fasten counter flashing to structural beam with compatible bar/fasteners. Extend counter flashing two inches below top of base flashing. Wipe clean top surface of counter flashing with metal cleaner. Caulk top of counter flashing, provide watershed, and tool neatly.

3.9 EXPANSION JOINTS, ROOF DIVIDERS AND COPING

- A. Install new wood blocking at flashing base. Provide tapered edge strip over installed insulation at blocking edge. Firmly butt tapered edge strip to blocking. Edge strip shall be properly adhered or attached to the substrate.
- B. Properly adhere or attach cant strip securely to substrate and blocking.
- C. Extend new roofing at least two inches beyond top edge of cant.
- D. Adhere flashing to flashing substrate in a continuous application of flashing adhesive. Remove wrinkles and voids. Overlap sections four inches. Extend flashing ply four inches beyond toe of cant.
- E. Expansion Joints shall receive the following:
 - 1. Install vinyl water barrier over joint opening. Allow barrier to drape four inches within joint opening. Nail both sides of barrier eight inches o.c.
 - 2. Insert fiberglass batten insulation into expansion joint opening; fill entire opening.
- F. Surface flashing as specified.
- G. Install joint cover as shown on detail drawing.

3.10 AT SCUPPERS

- A. Remove existing scupper liners and membrane to wood blocking.
- B. Replace rotted and untreated blocking as needed and approved by owner's representative with new, treated wood blocking.
- C. Install flashing ply over wood blocking, into the port and out onto the roof 2 feet in all directions, set in a bed of asphalt mastic.
- D. Install surface field membrane.

- E. Install pre-manufactured scupper formed from clad metal.
- F. Install scupper head below outside of port and new downspouts.
- G. Install cap-flashing ply with minimum 2" hot air welds to scupper flanges.
- H. Wall flashing shall extend over flanges and roof membrane out 4" past cant.

3.11 AT GRAVEL STOP, DRIP EDGE, AND FASCIA

- A. Remove existing edge flashing system to wood blocking.
- B. Replace rotted blocking as needed and approved by building owner's representative.
- C. Provide tapered edge strip along gravel stop, over installed insulation at blocking edge. Firmly butt tapered edge strip to blocking. Fully adhere edge strip to insulation.
- D. Solidly adhere roof membrane plies completely to insulation and blocking. Envelope felts. Ensure complete bond and continuity without wrinkles or voids.
- E. Install fascia system and stripping plies according to detail drawings.
- F. Heat weld edge of Elvaloy flashing to Elvaloy clad metal fascia flange and Elvaloy modified fleece backed thermoplastic field membrane with minimum 2" hot air welds.
- G. Install new downspouts at spill-out scupper locations. Dimensions to match existing.

3.12 AT EDGE/GUTTERS

- A. Remove existing edge flashing, gutters and downspouts.
- B. Replace rotted blocking as needed and approved by building owner's representative. Install insulation firmly butting against wood blocking.
- C. Solidly adhere roofing membrane plies completely to insulation blocking. Ensure complete bond and continuity without wrinkles or voids. Envelope felts.
- D. Fabricate and install new gutter with outlet tubes. Locate outlet tubes in original position. Slope gutter to outlets.
- E. Install gutter support system.
- F. Provide gutter expansion joints every 30 feet.
- G. Install fascia system and stripping plies according to detail drawings.

- H. Heat weld edge of Elvaloy flashing to Elvaloy clad metal drip edge flange and Elvaloy modified fleece backed thermoplastic field membrane with minimum 2" hot air welds.
- I. Install new downspouts. Dimensions to match existing.

3.13 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products in locations indicated. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.14 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
- B. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.
- C. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.15 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements; repair substrates; and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 07 54 16

07 76 00 – HYBRID PEDESTAL SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. Furnish and install a complete Architectural Pavers and Adjustable Pedestals deck support system with a maximum cavity height of up to 22 inches.
- B. Related Sections include the following:
 - 1. Division 03 - Section 03 30 00 Cast-in-Place Concrete.
 - 2. Division 06 - Section 06 10 00 Rough Carpentry.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM D 638 - Tensile Properties of Plastics
 - 2. ASTM D 790 - Flexural Properties of Unreinforced and Reinforced Plastics Insulating
 - 3. ASTM D 1525 - Vicat Softening Temperature of Plastics

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 Administrative Requirements.
- B. Samples:
 - 1. Architectural Pavers: Submit samples for type, color and texture required.
 - 2. Pedestals: Submit sample of each pedestal component.
 - 3. PVC Pipe: Submit 12-inch long sample of PVC pipe.
 - 4. Wind Uplift Paver System.
- C. Shop Drawings: Submitted by contractor showing all components required for the paver & pedestal requirements. Shop drawings shall include plan drawings showing layout of all paver areas and detail drawings showing how the various components of the system fit together. Include manufacturer's literature completely describing all components of the paver pedestal systems and giving detailed installation recommendations and instructions. Also included detailed installation drawings for all precast pavers.
- D. Uplift Engineer: Wind Uplift Paver System must be designed by a New Jersey licensed Engineer for wind uplift at the location of the project. Drawings must be signed sealed.

1.4 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** All products covered under this Section shall be produced by a single manufacturer unless otherwise specified with a minimum of fifteen (15) years proven production experience.
- B. **Installer Qualifications:** Installer shall have a minimum of three (3) years proven construction experience and be capable of estimating & building from blueprint plans and details,

determining elevations, in addition to proper material handling. All Work must comply with Tile Tech Inc installation application procedures for pedestal mounted pavers as specified herein.

- C. **Special Consideration:** The installer and or subcontractor must assume the responsibility for and take into consideration (1) the structural capability and adequacy of the structure to carry the dead and live load weight(s) involved, and (2) that the density of any insulation is satisfactory to resist crushing and damaging the waterproofing membrane.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. In accordance with provisions of Section 01 30 00.
- B. Protect Pavers and Pedestal System during shipment, storage and construction against damage. Store a minimum of 4 inches off the ground in a dry location and cover with polyethylene to protect from contact with materials which would cause staining or discoloration.

1.6 PROJECT CONDITIONS

- A. Tile Tech Pedestal System specified are to be used with pedestrian traffic only & all four (4) sides of a deck system must restrain and contain the decking panels with perimeter blocking or walls. Decking panels must not be allowed to move laterally.
- B. All membrane waterproofing and protection board surfaces to receive pedestals must be broom clean, frost free, and free of dirt, oil or any rough foreign matter, which may impair the waterproofing / roofing manufacturers guarantee or protection requirements.
- C. The substrate that is to receive pedestals must have slope and provide positive and adequate drainage in accordance with good building practice and applicable building codes.
- D. Decks over Roofing and Waterproofing;
 - 1. If high density closed cell extruded 60psi polystyrene insulation is installed on top of the membrane in a protected membrane system, Tile Tech Pedestals may be installed directly on top of this type of insulation.
 - 2. Do not use Tile Tech Pedestals over any insulation less than 60psi or with low density polystyrene (bead board) insulation.
- E. Installation or anticipated installation of additional items on top of the deck such as planters, hot tubs, sculptures, or industrial equipment must be supported directly by additional pedestals that are in addition to the main deck paver/tile pedestal system. Failure to adequately support the additional weight of any such features or items may cause significant damage to the deck, underlying structure, or waterproofing .

1.7 WARRANTIES / GUARANTEES

- A. Tile Tech Pedestal System (pavers and pedestals) shall remain free from defects for a period of ten (10) years. The contractor shall warrant that his work will remain free from defects of labor and materials used in conjunction with his work in accordance with the general conditions for this project or a maximum of three (3) years.

PART 2 -PRODUCTS

2.1 MANUFACTURERS

- A. A. The Paver Pedestal Systems specified herein are based upon products manufactured by:
Tile Tech Inc., 888-380-5575 Phone: (213) 380-5560 Fax: (213) 380-5561
E-mail: sales@tiletechpavers.com Website: www.tiletechpavers.com
- B. Paver Pedestal Systems equal in appearance and function and meeting these specifications, will be acceptable when the specified submittals are approved in writing by the Architect prior to bid.

2.2 MATERIALS

- A. PORCELAIN PAVERS:
1. Type: Porcelain Pavers.
 2. Color: Rustic Maple
 3. Size: Nominal 24" x 24" x 3/4"
- B. PEDESTALS:
1. Stak-Cap™ Pedestals: PVC Pipe & Stack Adjustable
 - a. Stack or use SDR35 PVC pipe to accommodate various HEIGHT adjustments of ½" to 2".
 - b. Each cap provides maximum of ½" of HEIGHT and 1% SLOPE. Rotate and stack one cap relative to another to accommodate SLOPE adjustments from 0% to 5%.
 - c. Base diameter of 6-inch and top diameter of 5-¼-inch and is ½-inch high.
 - d. Made of high impact and flame resistant ABS plastic.
 - e. Use of Buffer Pads under Stak-Cap™ Pedestals is MANDATORY.
 2. Uni-Just™ Pedestals: PVC Pipe & Screw Adjustable
 - a. Assembly consist of 5 parts: Uni-Base™, Uni-Collar™, Uni-Insert™, Uni-Cap™ & Buffer Pads.
 - b. Use SDR35 PVC pipe to accommodate various HEIGHT adjustments from 2-½" to 24".
 - c. Additional precise height adjustment of up to 1-½" with the use of Uni-Insert™ which can screw up or down while loaded. Additional heights beyond 24" can be accomplished subject to consultation with manufacturer and approval by manufacturer.
 - d. Self-leveling and can tilt in any direction to a level plane to accommodate SLOPE adjustments from 0% to 6%.
 - e. Base diameter of 7.25-inch with bearing surface area of thirty eight (38) square inches.
 - f. Made of 100% recycled and flame resistant High Density Polypropylene.
 - g. Use of Buffer Pads under Uni-Just™ Pedestals is MANDATORY.
 3. Uni-Shims™: 1/8-inch & 1/16-inch Thick
 - a. Can be used whole or broken into halves or quarters and can be stacked up to 2 high.

- b. Used on top or under Stak-Cap™ or Uni-Just™ Pedestals for fine leveling of pedestals and or individual pavers.
 - c. Made of high impact and flame resistant ABS plastic.
- C. OTHER COMPONENTS: INSTALLER OR USER SUPPLIED
- 1. Pedestal Pipe: 4-inch diameter SDR35 PVC Sewer Pipe
 - a. Used with either Stak-Cap™ or Uni-Just™ Pedestals and is cut to required height.
 - b. Dimensions: 4.215-inch outside diameter & 3.890-inch inside diameter.
 - c. Meet ASTM D-3034 and F-679.
 - d. NOT supplied with pedestal components by Tile Tech Inc.
 - 2. Protection Course:
 - a. Protection board (required over insulated BUR systems, and when specified for use over bituminous asphalt-based waterproofing): W.R. Meadows “Vibraflex” or equal, minimum 3/8- inch thick asphaltic composition protection board.
 - b. Insulation (when specified): Dow Styrofoam “Highload 100” or equal, minimum compressive strength of 100psi recommended for foam plastic insulation placed beneath Pedestal System to prevent damage to the waterproofing membrane.
 - c. NOT supplied with pedestal components by Tile Tech Inc.
- D. Wind Uplift Paver System:
- 1. High wind in this area requires the Hex-Tray™ system. This system to be engineered by a New Jersey licensed engineer hired by the contractor. This system is to be used in conjunction with the porcelain pavers & adjustable pedestals to prevent wind-uplift. The Hex-Tray™ system creates a solid paver surface which provides high wind uplift resistance. This system locks down and utilizes the entire paver surface, preventing horizontal and vertical movement
- 2.3 PERIMETER CONTAINMENT AND SUPPORT
- A. The complete assembly of insulation (if used), protection board (if used), drainage mat (if used), pedestals and pavers must be restrained at the perimeter of the deck area.
 - B. Perimeter parapet walls, concrete dividers or other perimeter restraint must be capable of resisting lateral forces (including seismic and wind). Cumulative movement in excess of 1/8 inch will void the Tile Tech Inc Pedestal System warranty.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to starting work inspect the substrate to ensure that it has been properly prepared to accept the Tile Tech Pedestal System. The substrate and or surface shall be clean and free of any projections and debris which may impair the performance of the pedestal and or the deck system. Verify all elevations, required pedestal heights and deck dimensions. Commencement of work shall imply acceptance of surfaces & deck conditions.

- B. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

3.2 PREPARATION

- A. The substrate surface that will receive the Pedestal System must be well compacted (on Grade) or structurally capable of carrying the dead and live loads anticipated.
 - 1. Insulation OVER the membrane: (Option 1) Insulation and/or protection board (if specified) must be applied over the waterproofing substrate and/or specified drainage mat. Install the system according to the membrane manufacturer's recommendations and specifications.
 - 2. Insulation UNDER membrane: (Option 2) Insulation required to be installed within a roofing system below deck supports must meet the roofing membrane manufacturers' specifications and must have a minimum core density of 60psi.
 - 3. Protection Board: (for asphalt type systems used over waterproofing) Full coverage 1/8-inch asphaltic composition protection board is recommended. When protection is specified only under the pedestal cut protection board pads to extend beyond the outside perimeter of the pedestal system base or buffer pad by a minimum of TWO (2) inch.
 - 4. Drainage Mat: (when desired or specified) Install drainage mat according to the manufacturers recommendations to avoid crushing.

3.3 INSTALLATION

- A. Install in accordance with Tile Tech Inc. and other contributing manufacturer's instructions. Installation requirements vary for each individual project site. Decking paver or tile used, pattern, grid layout, starting point, and finished elevation should be shown on plan view shop drawings, which have been prepared and approved by the designer, installing contractor and/or owner.
- B. GRID LAYOUT AND ELEVATIONS:
 - 1. Once the starting point and the finished elevation of the deck surface have been determined, the "Top of Pedestal Elevation" (finished elevation less decking paver or tile thickness) is established and marked around the perimeter using a transit water level or laser leveling device.
 - 2. Precise measurements should be taken and deck area should be accurately defined. Mark off and 'square up' all outside edges with control lines using "snapped" chalk lines. Mark two (2) lines that are perpendicular to each other across the deck area. Continue to mark a grid of lines in both directions marking the location of each pedestal. Use the control lines as references to periodically check and assure a square layout during installation.
 - 3. Next, a pedestal must be placed where each measured grid line meets the perimeter. Remove two (2) spacer tabs in line with one another atop each pedestal system placed around the perimeter. Remove all four (4) spacer tabs at corners.
 - 4. Adjust each pedestal height to the "Top of Pedestal Elevation" marked on the perimeter. Position the pedestal as close to the edge of the perimeter as possible, with the two remaining spacer tabs aligned with the grid line. Using the elevation marked on the

perimeter, stretch a mason's line along and slightly ahead of the second row of pedestals. A laser leveling device may also be used for this purpose.

5. On larger decks, it is recommended that Tile Tech Pedestal System be pre-assembled and pre-set to the proper elevation and placed in position prior to the installation of decking paver or tile.
6. As the pedestals located along the grid lines are loaded with pavers or tiles, fine vertical height adjustment can be made by inserting and rotating, from the top, a T-handle Hex Key in to the Uni-Insert™ of the Pedestal assembly. Clockwise rotation of the Uni-Insert™ will raise the bearing surface and the deck. Counter-clockwise rotation will lower the top bearing surface and deck.
7. Always maintain adequate thread engagement. Tile Tech Pedestal Uni-Insert™ contains a locking tab that will not allow the screw to extend past its maximum extension. Never use if the locking tab is broken. If the height required goes beyond the Uni-Insert™ limit re-cut PVC pipe to the correct height and re-assemble the pedestal using the correct size pipe.
8. Slight irregularities in decking paver or tile thickness can be compensated for by using one (1) to two (2) shim segments. Place on top of the pedestal, under the corner(s) of the decking paver or tile. Use no more than two (2) shims on top of the pedestal and always adhere quartered (1/4) wedges with construction adhesive.
9. Stak-Cap™ Pedestal can be used for limited and or fixed height requirements. Complete deck and grid layout as instructed above. Stack no more than five (5) fixed height Stak-Cap™ Pedestals together and place in lieu of Uni-Just™ Pedestals where needed. Stak-Cap™ Pedestal can also be used with PVC pipe to reduce cost. Spacer tabs can be removed to accommodate perimeter and corner support locations.

C. SLOPE AND HEIGHT COMPENSATION:

1. Stak-Cap™ Pedestals can provide limited slope and height compensation to maintain a level decking surface over sloping substrates and is accomplished using a combination of the following:
 - a. Rotate and stack one cap in relation to another to change slope and add height. Each cap will add ½-inch of height and provide 1% slope. Stack no more than 5 caps.
 - b. Can also be used with PVC Pipe cut to required height of maximum of 6-inches.
2. Uni-Just™ Pedestals can provide both slope and height compensation to maintain a level decking surface over sloping substrates and is accomplished using a combination of the following:
 - a. PVC Pipe cut to varying lengths to compensate for GENERAL height requirements.
 - b. SCREW extension for PRECISE height adjustment.
 - c. Self-Leveling cap that pivots and tilts in any direction for slope compensation from 0% to 6%.

- d. Additional slope adjustments is achieved by the use of the Base Slop Plates that provide 2% slope per plate and can be stacked to a maximum of 5 units to obtain 10% slope.
3. Tile Tech Pedestals are designed to be rotated for final precise adjustment when they are fully loaded. Pedestals should be leveled in each succeeding row as the installation proceeds. Final height adjustment or maintenance is easily made by simply using a T-handle Hex Key that allows you to adjust the pedestals without removing the pavers. T-handle Hex Key is inserted between the four paver corners to engage Uni-Insert™ portion and is adjusted clockwise or counter clockwise to level as needed.
4. Uni-Shims™ may be used in multiples, whole or quarters, and placed under the pedestal base or on top the pedestal cap to level pedestals. Use a small amount of construction adhesive to adhere sections of shims and/or whole shims to each other or to the pedestal. DO NOT use construction adhesive to adhere pedestal or shims to insulation, roofing or waterproofing membrane. Additional sections of shims may be used and should be available for regular maintenance.

3.4 PERIMETER CONTAINMENT

- A. Any area of the pedestal deck that is not restrained by a parapet or foundation wall must be 'boxed-in' and contained. The deck panels will move if all sides are not adequately restrained. Perimeter framing and edging boards located at the outside of the deck perimeter must be installed to provide restraint. No movement should be allowed at the perimeter of the deck system greater than one tab width.

3.5 FIELD QUALITY CONTROL

- A. Inspect often during installation to assure that grid spacer lines are being maintained in a straight and consistent pattern and that deck pavers or tiles are level and not rocking. Unless otherwise specified in writing to allow for expansion, inspect to assure that all paver spacing between tiles and at perimeter walls does not exceed a tab width. Particular attention should be made to assure that all pedestrian entry or access points to the deck are level and that the deck surface tiles are not randomly raised or uneven creating a tripping or safety hazard.
- B. Confirm that deck pedestal height excess of sixteen (16) inches have been braced in accordance with Tile Tech Inc written instructions.

3.6 ROUTINE MAINTENANCE AND CARE

- A. The deck owner must perform routine maintenance of the deck. Check for rocking pavers and adjust using T-Handle Hex Key or shim immediately. Pedestals can settle and may have to be realigned. Failure to do so can cause a tripping hazard. Periodically check spacer tabs and immediately replace broken tabs to limit deck movement. Make sure the edge restraint stays intact and structurally sound.

- B. Extra Materials: Deliver supply of maintenance materials to the owner. Furnish not less than 1 percent maintenance materials from same lot as materials installed and enclosed in protective packaging with appropriate identifying labels.

END OF SECTION 07 76 00

SECTION 07 92 00 - JOINT SEALANTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.2 RELATED REQUIREMENTS

- A. Section 09 21 16 - Gypsum Board Assemblies: Sealing acoustical and sound-rated walls and ceilings.

1.3 REFERENCE STANDARDS

- A. ASTM C794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants 2018 (Reapproved 2022).
- B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications 2022.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- D. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems 2023.
- E. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016 (Reapproved 2023).
- F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants 2022.
- G. ASTM C1311 - Standard Specification for Solvent Release Sealants 2022.
- H. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants 2023.
- I. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints 2019 (Reapproved 2020).
- J. SCAQMD 1168 - Adhesive and Sealant Applications 1989, with Amendment (2022).
- K. SWRI (VAL) - SWR Institute Validated Products Directory Current Edition.

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
 - 6. Substrates for which laboratory adhesion and/or compatibility testing is required.
 - 7. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
 - 8. Sample product warranty.
 - 9. Certification by manufacturer indicating that product complies with specification requirements.
 - 10. SWRI Validation: Provide currently available sealant product validations as listed by SWRI (VAL) for specified sealants.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- E. Samples for Verification: Where custom sealant color is specified, obtain directions from Architect and submit at least two physical samples for verification of color of each required sealant.
- F. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.
- G. For exterior sealants: Installation Plan: Submit at least four weeks prior to start of installation.
- H. Preinstallation Field Adhesion Test Plan: Submit at least two weeks prior to start of installation.
- I. Field Quality Control Plan: Submit at least two weeks prior to start of installation.
- J. Preinstallation Field Adhesion Test Reports: Submit filled out Preinstallation Field Adhesion Test Reports log within 10 days after completion of tests; include bagged test samples and photographic records.

- K. Field Quality Control Log: Submit filled-out log for each length or instance of sealant installed, within 10 days after completion of inspections/tests; include bagged test samples and photographic records, if any.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.
- C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.
- D. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.
 - 1. Adhesion Testing: In accordance with ASTM C794.
 - 2. Compatibility Testing: In accordance with ASTM C1087.
 - 3. Stain Testing: In accordance with ASTM C1248; required only for stone substrates.
 - 4. Allow sufficient time for testing to avoid delaying the work.
 - 5. Deliver sufficient samples to manufacturer for testing.
 - 6. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.
- E. Preinstallation Field Adhesion Test Plan: Include destructive field adhesion testing of one sample of each combination of sealant type and substrate, except interior acrylic latex sealants, and include the following for each tested sample.
 - 1. Identification of testing agency.
 - 2. Name(s) of sealant manufacturer's field representatives who will be observing.
 - 3. Preinstallation Field Adhesion Test Log Form: Include the following data fields, with known information filled out.
 - a. Test date.
 - b. Copy of test method documents.
 - c. Age of sealant upon date of testing.
 - d. Test results, modeled after the sample form in the test method document.
 - e. Indicate use of photographic record of test.
- F. Field Quality Control Plan:
 - 1. Visual inspection of entire length of sealant joints.
 - 2. Nondestructive field adhesion testing of sealant joints, except interior acrylic latex sealants.
 - a. Test the entire length of every sealant joint.
 - 3. Destructive field adhesion testing of sealant joints, except interior sealant joints.

- a. For each different sealant and substrate combination, allow for one test every 100 feet in the first 1,000 linear feet, and one test per 1,000 linear feet thereafter, or once per floor on each elevation.
 - b. If any failures occur in the first 1,000 linear feet, continue testing at frequency of one test per 500 linear feet at no extra cost to Owner.
 4. Field testing agency's qualifications.
 5. Field Quality Control Log Form: Show same data fields as on Preinstallation Field Adhesion Test Log, with known information filled out and lines for multiple tests per sealant/substrate combinations; include visual inspection and specified field testing; allow for possibility that more tests than minimum specified may be necessary.
- G. Field Adhesion Test Procedures:
1. Allow sealants to fully cure as recommended by manufacturer before testing.
 2. Have a copy of the test method document available during tests.
 3. Record the type of failure that occurred, other information required by test method, and the information required on the Field Quality Control Log.
 4. When performing destructive tests, also inspect the opened joint for proper installation characteristics recommended by manufacturer, and report any deficiencies.
 5. Deliver the samples removed during destructive tests in separate sealed plastic bags, identified with project, location, test date, and test results, to Owner.
 6. If any combination of sealant type and substrate does not show evidence of minimum adhesion or shows cohesion failure before minimum adhesion, report results to Architect.
- H. Nondestructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Nondestructive Continuous Method.
- I. Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Destructive Tail Procedure.
1. Sample: At least 18 inches long.
 2. Minimum Elongation Without Adhesive Failure: Consider the tail at rest, not under any elongation stress; multiply the stated movement capability of the sealant in percent by two; then multiply 1 inch by that percentage; if adhesion failure occurs before the 1-inch mark is that distance from the substrate, the test has failed.
 3. If either adhesive or cohesive failure occurs before minimum elongation, take necessary measures to correct conditions and retest; record each modification to products or installation procedures.

PART 2 PRODUCTS

2.1 JOINT SEALANT APPLICATIONS

- A. Scope:

1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to:
 - a. Wall expansion and control joints.
 - b. Joints between door, window, and other frames and adjacent construction.
 - c. Joints between different exposed materials.
 - d. Openings below ledge angles in masonry.
 - e. Other joints indicated below.
 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, piping, and other openings; between wall/ceiling and other construction; and other flanking sound paths.
 - 1) Exception: Such gaps and openings in gypsum board and plaster finished stud walls and suspended ceilings.
 - 2) Exception: Through-penetrations in sound-rated assemblies that are also fire-rated.
 - c. Other joints indicated below.
 3. Do not seal the following types of joints:
 - a. Intentional weep holes in masonry.
 - b. Joints indicated to be treated with manufactured expansion joint cover, or some other type of sealing device.
 - c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - d. Joints where installation of sealant is specified in another section.
 - e. Joints between suspended panel ceilings/grid and walls.
- B. Exterior Joints: Use nonsag nonstaining silicone sealant, unless otherwise indicated.
1. Lap Joints in Sheet Metal Fabrications: Butyl rubber, noncuring.
 2. Lap Joints between Manufactured Metal Panels: Butyl rubber, noncuring.
 3. Control and Expansion Joints in Concrete Paving: Self-leveling polyurethane traffic-grade sealant.
- C. Interior Joints: Use nonsag polyurethane sealant, unless otherwise indicated.
1. Wall and Ceiling Joints in Nonwet Areas: Acrylic emulsion latex sealant.
 2. Wall and Ceiling Joints in Wet Areas: Nonsag polyurethane sealant for continuous liquid immersion.
 3. Floor Joints in Wet Areas: Nonsag polyurethane non-traffic-grade sealant suitable for continuous liquid immersion.
 4. Joints between Tile in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; white.
 5. In Sound-Rated Assemblies: Acrylic emulsion latex sealant.
 6. Narrow Control Joints in Interior Concrete Slabs: Self-leveling epoxy sealant.
 7. Other Floor Joints: Self-leveling polyurethane traffic-grade sealant.

D. Sound-Rated Assemblies: Walls and ceilings identified as STC-rated, sound-rated, or acoustical.

2.2 JOINT SEALANTS - GENERAL

A. Sealants and Primers: Provide products having lower volatile organic compound (VOC) content than indicated in SCAQMD 1168.

2.3 NONSAG JOINT SEALANTS

A. Nonstaining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.

1. Movement Capability: Plus 100 percent and minus 50 percent, minimum.
2. Nonstaining to Porous Stone: Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248.
3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
4. Color: To be selected by Architect from manufacturer's standard range.
5. Cure Type: Single-component, neutral moisture curing.
6. Products:
 - a. Dow Chemical Company; DOWSIL 790 Silicone Building Sealant : consumer.dow.com/en-us/industry/ind-building-construction.html.
 - b. Pecora Corporation; Pecora 890 NST (Non-Staining Technology) : www.pecora.com.
 - c. Momentive Performance Materials, Inc; SCS2700 SilPruf LM: www.siliconeforbuilding.com.
 - d. Sika Corporation; Sikasil WS-290: www.usa-sika.com.
 - e. Tremco Commercial Sealants & Waterproofing; Spectrem 1 : www.tremcosealants.com.
 - f. Substitutions: See Section 01 60 00 - Product Requirements.
 - g. Approved equal.

B. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.

1. Movement Capability: Plus and minus 35 percent, minimum.
2. Color: To be selected by Architect from manufacturer's standard range.
3. Products:
 - a. Master Builders Solutions by BASF; MasterSeal NP1: www.master-builders-solutions.basf.us/en-us.
 - b. Pecora Corporation; DynaTrol II: www.pecora.com.
 - c. Sika Corporation; Sikaflex-1a: www.usa-sika.com.
 - d. Tremco Commercial Sealants & Waterproofing; Dymonic 100 : www.tremcosealants.com.
 - e. W. R. Meadows, Inc; POURTHANE NS: www.wrmeadows.com/#sle.
 - f. Substitutions: See Section 01 60 00 - Product Requirements.
 - g. Approved equal.

- C. Noncuring Butyl Sealant: Solvent-based, single component, nonsag, nonskinning, nonhardening, nonbleeding; non-vapor permeable; intended for fully concealed applications.

2.4 SELF-LEVELING JOINT SEALANTS

- A. Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion .
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Color: To be selected by Architect from manufacturer's full range.
 - 3. Products:
 - a. Pecora
 - b. Sherwin-Williams Company; Stampede 1SL Polyurethane Sealant: www.sherwin-williams.com.
 - c. Sika Corporation; Sikaflex-1c SL: www.usa-sika.com.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
 - e. Approved equal.

2.5 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
 - 1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type O - Open Cell Polyurethane.
 - 2. Type for Joints Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B - Bi-Cellular Polyethylene.
 - 3. Open Cell: 40 to 50 percent larger in diameter than joint width.
 - 4. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.
- D. Preinstallation Adhesion Testing: Install a sample for each test location indicated in the test plan.
 - 1. Test each sample as specified in PART 1 under QUALITY ASSURANCE article.
 - 2. Notify Architect of date and time that tests will be performed, at least seven days in advance.
 - 3. Arrange for sealant manufacturer's technical representative to be present during tests.
 - 4. Record each test on Preinstallation Adhesion Test Log as indicated.
 - 5. If any sample fails, review products and installation procedures, consult manufacturer, or take other measures that are necessary to ensure adhesion; retest in a different location; if unable to obtain satisfactory adhesion, report to Architect.
 - 6. After completion of tests, remove remaining sample material and prepare joints for new sealant installation.

3.2 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.3 INSTALLATION

- A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.
- C. Install acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.

- E. Install bond breaker backing tape where backer rod cannot be used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.4 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements for additional requirements.
- B. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- C. Non-Destructive Adhesion Testing: If there are any failures in first 100 linear feet, notify Architect immediately.
- D. Destructive Adhesion Testing: If there are any failures in first 1,000 linear feet, notify Architect immediately.
- E. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.
- F. Repair destructive test location damage immediately after evaluation and recording of results.

3.5 POST-OCCUPANCY

- A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width, i.e., at low temperature in thermal cycle. Report failures immediately and repair them.

END OF SECTION

SECTION 08 11 13 - HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Non-fire-rated hollow metal doors and frames.
- B. Hollow metal frames for wood doors.

1.2 RELATED REQUIREMENTS

- A. Section 09 91 23 - Interior Painting: Field painting.

1.3 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors 2022.
- C. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames 2020.
- D. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100) 2023.
- E. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames 2020.
- F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- G. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable 2021a.
- H. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2023.
- I. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete 2020.
- J. ASTM C476 - Standard Specification for Grout for Masonry 2023.
- K. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames 2016.

- L. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
- M. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames 2002.
- N. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames 2011.
- O. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames 2017.
- P. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames 2014.
- Q. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames 2023.

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.
- D. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.
- B. Manufacturer Qualifications: Provide hollow metal doors and frames from SDI Certified manufacturer: www.steeldoor.org/sdicertified.php.
- C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.
- D. Maintain at project site copies of reference standards relating to installation of products specified.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Hollow Metal Doors and Frames:
 - 1. Curries, an Assa Abloy Group company; www.assaabloydss.com/#sle.
 - 2. Republic Doors, an Allegion brand; www.republicdoor.com/#sle.
 - 3. Steelcraft, an Allegion brand; www.allegion.com/#sle.
 - 4. Approved equal.

2.2 PERFORMANCE REQUIREMENTS

- A. Requirements for Hollow Metal Doors and Frames:
 - 1. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
 - 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
 - 3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
 - 4. Typical Door Face Sheets: Flush.
 - 5. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
 - 6. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvanized) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
 - a. Based on SDI Standards: Provide at least A40/ZF120 (galvanized) when necessary, coating not required for typical interior door applications, and at least A60/ZF180 (galvanized) for corrosive locations.
- B. Hollow Metal Panels: Same construction, performance, and finish as doors.
- C. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.3 HOLLOW METAL DOORS

- A. Door Finish: Factory primed and field finished.

- B. Interior Doors, Non-Fire Rated:
 - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 3 - Extra Heavy-duty.
 - b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 16 gauge, 0.053 inch, minimum.
 - 2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
 - 3. Door Thickness: 1-3/4 inches, nominal.

2.4 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Frame Finish: Factory primed and field finished.
- C. Interior Door Frames, Non-Fire Rated: Knock-down type at gypsum board walls, and face welded type at masonry walls.
 - 1. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.
- D. Frames for Wood Doors: Comply with frame requirements in accordance with corresponding door.
- E. Borrowed Lites Glazing Frames: Construction and face dimensions to match door frames, and as indicated on drawings.
- F. Frames Wider than 48 inches: Reinforce with steel channel fitted tightly into frame head, flush with top.

2.5 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15 mil, 0.015 inch dry film thickness (DFT) per coat; provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.6 ACCESSORIES

- A. Louvers: Roll formed steel with overlapping frame; finish same as door components ; factory-installed.
 - 1. Style: Sightproof inverted V blade.

- B. Mechanical Fasteners for Concealed Metal-to-Metal Connections: Self-drilling, self-tapping, steel with electroplated zinc finish.
- C. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.
- D. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
- E. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.2 PREPARATION

- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.3 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Coordinate frame anchor placement with wall construction.
- C. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- D. Install door hardware as specified in Section 08 71 00.
 - 1. Comply with recommended practice for hardware placement of doors and frames in accordance with ANSI/SDI A250.6 or NAAMM HMMA 861.
- E. Coordinate installation of electrical connections to electrical hardware items.

3.4 TOLERANCES

- A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.5 ADJUSTING

- A. Adjust for smooth and balanced door movement.

END OF SECTION

SECTION 08 35 13 - FOLDING GLASS DOORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes furnishing and installing a floor track supported, sliding-folding, thermally broken, aluminum-framed glass panel system that includes:
 - 1. Aluminum frame.
 - 2. Threshold.
 - 3. Panels.
 - 4. Sliding-folding and locking hardware.
 - 5. Weather stripping.
 - 6. Glass and glazing.
 - 7. Accessories as required for a complete working installation.

- B. Related Documents and Sections: Contractor to examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to, the following:
 - 1. Section 06 10 00, Rough Carpentry: Wood framing R.O. and blocking.
 - 2. Section 07 92 00, Joint Sealants.

1.2 REFERENCES

- A. Reference Standards in accordance with Division 01 and current editions from the following:
 - 1. AAMA. American Architectural Manufacturers Association; www.aamanet.org
 - a. AAMA 502, Voluntary Specification for Field Testing of Newly Installed Fenestration Products.
 - b. AAMA 520, Voluntary Specification for Rating the Severe Wind-Driven Rain Resistance of Windows, Doors and Unit Skylights.
 - c. AAMA 611, Voluntary Specification for Anodized Architectural Aluminum.
 - d. AAMA 920, Operation / Cycling Performance.
 - e. AAMA 1304, Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems.
 - f. AAMA 2604, Voluntary Specifications, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
 - g. AAMA 2605, Voluntary Specifications, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
 - h. AAMA/WDMA/CSA 101/I.S.2/A440, NAFS, North American Fenestration Standard - Specification for Windows, Doors and Skylights.
 - 2. ANSI. American National Standards Institute; www.ansi.org
 - a. ANSI Z97.1, Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.
 - 3. ASTM. ASTM International; www.astm.org

- a. ASTM C1036, Standard Specification for Flat Glass.
 - b. ASTM C1048, Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.
 - c. ASTM E90-09, Standard Test Method for Laboratory Measurements of Airborne Sound Transmission Loss of Building Partitions and Elements.
 - d. ASTM E283, Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 - e. ASTM E330, Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
 - f. ASTM E331, Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
 - g. ASTM E413, Classification for Rating Sound Insulation.
 - h. ASTM E547, Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential.
 - i. ASTM E1332, Standard Classification for Rating Outdoor-Indoor Sound Attenuation.
 - j. ASTM E2268, Standard Test Method for Water Penetration of Exterior Windows, Skylights, and Doors by Rapid Pulsed Air Pressure Difference.
 - k. ASTM F842, Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies.
4. CPSC. Consumer Product Safety Commission; www.cpsc.gov
 - a. CPSC 16CFR-1201, Safety Standard for Architectural Glazing Materials
 5. CSA Group (Canadian Standards Association); www.csagroup.org/global/en/home
 - a. CSA A440S1 - The Canadian supplement to North American (NAFS) standards
 6. DIN. "Deutsches Institut für Normung" (German institute for standardization); www.en-standard.eu/din-standards
 - a. DIN EN 1191, Windows and doors – Resistance to repeated opening and closing – Test method; German version EN 1191: 2000.
 - b. DIN EN ISO 717-1, Acoustics – Rating of sound insulation in buildings and building elements.
 - c. DIN EN ISO 9001, 2015 quality management system registration.
 - d. DIN EN ISO 10140-1, 2, 4 & 5, Airborne sound measurement.
 - e. DIN EN ISO 12400, Window and pedestrian doors- Mechanical durability – Requirements and classification.
 - f. DIN EN ISO 14001, 2015 environmental management system registration.
 - g. DIN 52210-3, Testing of acoustics in buildings - Airborne and impact sound insulation - Laboratory measurements of sound insulation of building elements and field measurements between rooms.
 - h. DIN 52210-4, Tests in Building Acoustics - Airborne and Impact Sound.
 7. NFRC. National Fenestration Rating Council; www.nfrc.org
 - a. NFRC 100, Procedure for Determining Fenestration Product U-factors
 - b. NFRC 200, Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence
 - c. NFRC 400, Procedure for Determining Fenestration Product Air Leakage
 - d. NFRC 500, Procedure for Determining Fenestration Product Condensation Resistance Rating Values

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate Folding Glass Storefront system and framing R.O.
- B. Pre-installation Meetings: See Section 01 30 00.

1.4 SUBMITTALS

- A. For Contractor submittal procedures see Section 01 30 00.
- B. Product Data: Submit manufacturer's printed product literature for each Folding Glass Storefront system to be incorporated into the Work. Show performance test results and details of construction relative to materials, dimensions of individual components, profiles, and colors.
- C. Product Drawings: Indicate Folding Glass Storefront system component sizes, dimensions and framing R.O., configuration, swing panels, direction of swing, stacking layout, typical head jamb, side jambs and sill details, type of glazing material, handle height and field measurements.
- D. Installation, Operation and Maintenance Data: Submit Owner's Manual from manufacturer. Identify with project name, location and completion date, and type and size of unit installed.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer capable of providing complete, precision built, engineered, pre-fitted units with a minimum thirty (30) years' experience in the sale of folding-sliding door systems for large openings in the North American market.
- B. Installer Qualifications: Installer experienced in the installation of manufacturer's products or other similar products for large openings. Installer to provide reference list of at least three (3) projects of similar scale and complexity successfully completed in the last three (3) years.
 - 1. Installer to be trained and certified by manufacturer.
- C. Single Source Responsibility: Furnish Folding Glass Storefront system materials from one manufacturer for entire Project.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's instructions and recommendations, Section 01 60 00 requirements, and as follows:
 - 1. Deliver materials to job site in sealed, unopened cartons or crates.
 - a. Upon receipt, inspect the shipment to ensure it is complete, in good condition and meets project requirements.
 - 2. Store material under cover in a clean and dry location, protecting units against weather and defacement or damage from construction activities, especially to the edges of panels.

1.7 FIELD CONDITIONS

- A. Field Measurements: Contractor to field verify dimensions of rough openings (R.O.) **and threshold depressions to receive sill**. Mark field measurements on product drawing submittal.

1.8 WARRANTY

- A. Manufacturer Warranty: Provide Folding Glass Storefront system manufacturer's standard limited warranty as per manufacturer's published warranty document in force at time of purchase, subject to change, against defects in materials and workmanship.
- B. Warranty Period beginning with the earliest of 120 days from Date of Delivery or Date of Substantial Completion:
 - 1. Rollers and Glass Seal Failure: Ten (10) years
 - 2. All Other Components Except Screens: Ten (10) years
 - a. Exception: Five (5) years if NOT installed by manufacturer's specific system approved or certified trained installer.

PART 2 -PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product by Manufacturer: **NanaWall SL70** by **NANA WALL SYSTEMS, INC.** (www.nanawall.com)

2.2 PERFORMANCE / DESIGN CRITERIA

- A. Criteria (Lab Tested): Standard Flush Sill - Inward Opening
 - 1. Air Infiltration (ASTM E283):
 - a. 0.15 cfm/ft² (0.76 L/s/m²) at a static air pressure difference of 1.57 psf (75 Pa)
 - b. 0.29 cfm/ft² (1.47 L/s/m²) at a static air pressure difference of 6.24 psf (300 Pa)
 - 2. Structural Loading (ASTM E330):
 - a. Windload Resistance: Pass; C4
 - b. Design Pressure Positive: 70 psf (3350 Pa)
 - c. Design Pressure Negative: 70 psf (3350 Pa)
- B. Items below are common to all sill types, except as noted.
 - 1. Swing Panel - Operation / Cycling Performance (AAMA 920): 500,000 cycles
 - 2. System - Life Cycle Performance (DIN EN 1191/12400): 20,000 cycles
 - 3. Folding Glass Storefront Units tested to AAMA/WDMA/CSA 101/I.S.2/A440.
 - 4. FL 35025
- C. Design Criteria:
 - 1. Sizes and Configurations: As indicated by the Drawings for selected number and size of panels, location of swing panels, and location of track and stacking.
 - 2. Unit Operation: Sliding and folding hardware with top and bottom tracks.
 - 3. Panel Configuration:
 - a. Window/door combination
 - 4. Stack Storage Configuration:
 - a. Inswing
 - 5. Mounting Type: Floor track supported
 - 6. Panel Type: Hinged

- a. Primary swing panel of paired swing panels, looking from inside, to be on the **right**.
 - b. Entry/Egress panel hinged to side jamb.
7. Panel Pairing Configuration: See drawings.

2.3 MATERIALS

- A. Monumental Thermally Broken Aluminum Framed Folding Glass Storefront Description: Floor track supported system designed for angle changes, segmented curves. Manufacturer's standard or post reinforced frame and panel profiles, with top track, side jambs and panels with dimensions as shown on Drawings.
1. Panels and Frames
 - a. Panels
 - 1) Single lite.
 - 2) Panel Size (W x H): As indicated.
 - 3) Rail Depth: 2-3/4 inch (70 mm)
 - 4) Top Rail and Stile Width: 2-1/4 inch (57 mm)
 - 5) Bottom Rail Width:
 - a). 2-1/4 inch (57 mm)
 - b). [Manufacturer's standard kickplate with height indicated.]
 - b. Frame:
 - 1) Matching top track and side jambs
 - a). Top Track and Side Jambs Width: 2-9/16 inch (65 mm)
 - b). Top Track and Side Jambs Depth: 3-1/8 inch (80 mm)
 - 2) Sill Type:
 - a.) Flush sill (thermally broken)
 - 3) Sill Finish: Aluminum with
 - a.) a dark bronze anodized finish.
 - 4) For ADA Compliance: Provide gasket to cover the channel in the sill at swing doors.
 2. Aluminum Extrusion: A1MgSi0.5 alloy, 6063-T5 (F-22 - European standard)
 - a. Thickness: 0.078 inch (2.0 mm) nominal
 - b. Thermal Break: 3/4 to 15/16 inch (20 to 24 mm) wide polyamide plastic reinforced with glass fibers. Thinner or poured and de-bridged type thermal breaks not acceptable.
 3. Panel and Frame Aluminum Finish: Inside and Outside;
 - a. Same (one-color)
 - b. PVDF Coat (AAMA 2605): Fluoropolymer Kynar with color to match custom finish.
- B. Glass and Glazing:
1. Safety Glazing: In compliance with ASTM C1036, ASTM C1048, ANSI Z97.1 and CPSC 16CFR 1201.
 2. Manufacturer's **tempered and laminated** glass lites in **double** insulated glazing units, dry glazed with glass stops on the inside.
 - a. Glass Lite / Insulated Glass Unit (IGU):
 3. Double IGU:

- a. 1-5/16 inch (34 mm), 6 mm + 6 mm STC 44 enhanced laminated glass to achieve unit STC of 42.
 4. Glass Lite Type:
 - a. Standard
 - b. Solar gray
 5. Glass Spacers: Manufacturer's standard
 - a. black finish with capillary tubes
- C. Locking Hardware and Handles:
1. Main Entry Panel(s) for Models WITH a **Pair of** Swing Panel(s): Provide manufacturer's **Standard lever handles** on the inside and outside, and a lockset with a lockable latch, and multi-point locking with a dead bolt and rods at the top and bottom on primary panel **only**.
 - a. Rods to be concealed and not edge mounted.
 - b. After turn of key or thumb-turn, depression of handles withdraws latch.
 - c. Lifting of handles engages rods and turn of key or thumb turn engages deadbolt and operates lock.
 - d. Secondary Swing Panel: Provide two-point locking with U-shaped handles on inside only for the secondary swing panel.
 - e. Lever Handle - Finish:
 - 1) Titanium black stainless-steel
 - f. Locking:
 - 1) Standard profile cylinder
 - 2) Adapter for Small Format Interchangeable Core (SFIC)
 2. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel or as otherwise indicated.
 3. Aluminum locking rods with standard fiberglass reinforced polyamide end caps at the top and bottom. Rods to have a stroke of 15/16 inch (24 mm).
 4. Additional profile cylinders to be **keyed alike**.
- D. Sliding-Folding Hardware: Provide manufacturer's standard combination sliding and folding hardware with top and bottom tracks and threshold. All running carriages to be with sealed, self-lubrication, ball bearing multi-rollers. Surface mounted hinges and running carriages NOT acceptable. Weight of panels borne by the bottom of the guide channel in the sill is NOT acceptable.
1. Lower Running Carriage Carrying Capacity: 440 lbs. (200 kgs)
 2. Upper guide carriage and lower running carriage provided with four vertical stainless-steel wheels and two horizontal polyamide wheels.
 3. Vertical wheels to ride on top of stainless-steel guide track covers over the full length of the sill track and lie above the water run-off level.
 4. Wheels riding below water run-off level and wheels riding on aluminum surfaces are NOT acceptable.
 5. Swing Panel Hinges:
 - a. Zinc die cast with finish closest match to finish of frame and panels and stainless-steel security hinge pins with set-screws.
 6. Adjustment: Provide folding-sliding hardware capable of compensation and adjustments without needing to remove panels from tracks, in width, 1/16 inch (1.5 mm) per hinge and in height, 5/64 inch (2 mm) up and down.

- E. Weather stripping: Manufacturer's double layer EPDM between panels, EPDM gasket and Q-lon gasket, or brush seal between panel and frame, or brush seals with a two-layer fiberglass reinforced polyamide fin attached at both inner and outer edge of bottom of door panels with a recessed sill or on frame for sealing between panels and between panel and frame.
- F. Fasteners: Tapered pins or stainless-steel screws for connecting frame components.

2.4 FABRICATION

- A. Folding Glass Wall: Extruded aluminum frame and panel profiles, corner connectors and hinges, sliding and folding hardware, locking hardware and handles, glass and glazing and weather stripping.
 - 1. Each unit factory pre-assembled and shipped with complete system components and installation instructions.
 - 2. Exposed work to be carefully matched to produce continuity of line and design with all joints.
 - 3. No raw edges visible at joints.

PART 3 -EXECUTION

3.1 EXAMINATION

- A. Examination and Acceptance of Conditions per Section 01 70 00 and as follows:
 - 1. Carefully examine rough openings with Installer present, for compliance with requirements affecting Work performance.
 - a. Examine surfaces of openings and verify dimensions; verify rough openings are level, plumb, and square with no unevenness, bowing, or bumps on the floor; and other conditions as required by the manufacturer for readiness to receive Work.
 - b. Verify structural integrity of the header for deflection with live and dead loads limited to the lesser of L/720 of the span or 1/4 inch (6 mm). Provide structural support for lateral loads, and both wind load and eccentric load when the panels are stacked open.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install Folding Glass Storefront system in accordance with the Drawings, approved submittals, manufacturer's recommendations, and installation instructions, and as follows:
 - 1. Properly flash, waterproof and seal around opening perimeter.
 - 1. Securely attach anchorage devices to rigidly fit frame in place, level, straight, plumb and square. Install frame in proper elevation, plane and location, and in proper alignment with other work.
 - 2. When lower track is designed to drain, provide connections to allow for drainage.
 - 3. Install panels, handles, lockset, screens, and other accessories in accordance with manufacturer's recommendations and instructions.

3.3 FIELD QUALITY CONTROL

- A. Field Tests and Inspections per Section 01 40 00 of the following:
 - 1. Verify the Folding Glass Storefront system operates and functions properly. Adjust hardware for proper operation.
- B. Non-Conforming Work: Repair or replace non-conforming work as directed by the Architect; see General and Supplementary Conditions, and Division 01, General Requirements.

3.4 CLEANING AND PROTECTION

- A. Keep units closed and protect Folding Glass Storefront installation against damage from construction activities.
- B. Remove protective coatings and use manufacturer recommended methods to clean exposed surfaces.

END OF SECTION

SECTION 09 21 16 - GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Gypsum board.
- C. Joint treatment and accessories.

1.2 RELATED REQUIREMENTS

- A. Section 07 92 00 - Joint Sealants:

1.3 REFERENCE STANDARDS

- A. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing 2020.
- B. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing 2015, with Errata (2020).
- C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.
- D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- E. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members 2015.
- F. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017 (Reapproved 2022).
- G. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2023.
- H. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.
- I. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2020.
- J. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications 2022.

- K. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness 2022.
 - L. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs 2022.
 - M. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base 2019.
 - N. ASTM C1278/C1278M - Standard Specification for Fiber-Reinforced Gypsum Panel 2017.
 - O. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.
 - P. ASTM C1629/C1629M - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels 2019.
 - Q. ASTM C1658/C1658M - Standard Specification for Glass Mat Gypsum Panels 2019, with Editorial Revision (2020).
 - R. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2021.
 - S. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2013a (Reapproved 2017).
 - T. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings 2021.
 - U. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
 - V. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2020.
 - W. GA-216 - Application and Finishing of Gypsum Panel Products 2021.
 - X. UL (FRD) - Fire Resistance Directory Current Edition.
- 1.4 SUBMITTALS
- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
 - B. Product Data:
 - 1. Provide data on metal framing, gypsum board, accessories, and joint finishing system.

- C. Test Reports: For stud framing products that do not comply with AISI S220 or ASTM C754, provide independent laboratory reports showing maximum stud heights at required spacings and deflections.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
- B. Fire-Resistance-Rated Assemblies: Provide completed assemblies complying with applicable code and UL assemblies indicated on drawings
 - 1. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL (FRD).

2.2 METAL FRAMING MATERIALS

- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S240.
- B. Manufacturers - Metal Framing, Connectors, and Accessories:
 - 1. ClarkDietrich; www.clarkdietrich.com/#sle.
 - 2. Marino; www.marinoware.com/#sle.
 - 3. Approved equal.
- C. Non-structural Framing Accessories:
 - 1. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
 - a. Materials: ASTM A36/A36M formed sheet steel support member with factory-welded ASTM A1003/A1003M steel plate base.
 - b. Design assembly at guardrails and reception desks to resist the following forces applied to the top of the assembly and in any direction, without damage or permanent set:
 - 1) Distributed Loads: 75 pounds per linear foot.
 - 2) Concentrated Loads: 200 pounds.
 - c. Products:

- 1) ClarkDietrich; Pony Wall (PW): www.clarkdietrich.com.
 - 2) The Steel Network; MidWall: www.steelnetwork.com.
 - 3) Approved equal.
2. Framing Connectors: ASTM A653/A653M G90 galvanized steel clips; secures cold rolled channel to wall studs for lateral bracing.
 3. Metal Backing: ASTM A653/A653M G90 galvanized steel.
 - a. Provide framing and backing members as indicated or as required to support finishes, fixtures, specialty items, and trim.
 - b. In walls, provide backing attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
 - c. Where ceiling-mounting is indicated, provide backing and supplementary supports above ceiling, unless other method of support is explicitly indicated.
 4. Flexible Wood Backing: Fire-retardant-treated wood with sheet steel connectors.
 5. Drywall Corner Clips: Drywall clips help support drywall to reduce wood blocking on top plates, end walls, and corners.
 6. Steel Column and Beam Drywall Clip: UL-listed slip-on clips to connect gypsum board to steel beams and columns for fireproofing.
- D. Grid Suspension Systems: Steel grid system of main tees and support bars connected to structure using hanging wire.

2.3 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
1. American Gypsum Company; www.americangypsum.com/#sle.
 2. Georgia-Pacific Gypsum; www.gpgypsum.com/#sle.
 3. Gold Bond Building Products, LLC provided by National Gypsum Company; www.goldbondbuilding.com/#sle.
 4. Approved equal.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces, unless otherwise indicated.
 2. Glass mat faced gypsum panels, as defined in ASTM C1658/C1658M, suitable for paint finish, of the same core type and thickness may be substituted for paper-faced board.
 - a. Glass mat faced gypsum panels are required wherever board is installed before building is enclosed and conditioned.
 3. Unfaced fiber-reinforced gypsum panels as defined in ASTM C1278/C1278M, suitable for paint finish, of the same core type and thickness may be substituted for paper-faced board.
 4. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
 5. Thickness:
 - a. Vertical Surfaces: 5/8 inch.
 6. Paper-Faced Products:

- a. American Gypsum Company; LightRoc Gypsum Wallboard: www.americangypsum.com/#sle.
 - b. Georgia-Pacific Gypsum; ToughRock: www.gpgypsum.com/#sle.
 - c. USG Corporation; Sheetrock Brand Gypsum Panels 3/8 in. (9.5 mm): www.usg.com/#sle.
 - d. Approved equal.
- C. Abuse Resistant Wallboard:
1. Application: Exposed surfaces up to 12 feet high in High-traffic areas indicated.
 2. Surface Abrasion: Level 3, minimum, when tested in accordance with ASTM C1629/C1629M.
 3. Indentation: Level 1, minimum, when tested in accordance with ASTM C1629/C1629M.
 4. Soft Body Impact: Level 2, minimum, when tested in accordance with ASTM C1629/C1629M.
 5. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 6. Paper-Faced Type: Gypsum wallboard, as defined in ASTM C1396/C1396M.
 7. Unfaced Type: Interior fiber-reinforced gypsum panels, as defined in ASTM C1278/C1278M.
 8. Type: Fire-resistance-rated Type X, UL or WH listed.
 9. Thickness: 5/8 inch.
 10. Edges: Tapered.
 11. Paper-Faced Products:
 - a. American Gypsum Company; M-Bloc AR Type X: www.americangypsum.com.
 - b. CertainTeed Corporation; Extreme Abuse Resistant Drywall with M2Tech: www.certainteed.com.
 - c. Gold Bond Building Products, LLC provided by National Gypsum Company; Gold Bond XP Hi-Abuse Gypsum Board: www.goldbondbuilding.com.
 - d. Approved equal.
- 2.4 GYPSUM BOARD ACCESSORIES
- A. Acoustic Insulation: ASTM C665; preformed mineral-fiber, friction fit type, unfaced; thickness as required for STC.
- B. Acoustic Firestop: Moldable acoustic silicone pad, 1/8 inch thick, complying with ASTM E814, ASTM E119, and ASTM C919.
1. Products:
 - a. 3M Fire Protection Products; Fire Barrier Moldable Putty Pads MPP+ : www.3m.com/firestop.
 - b. Rectorseal, a CSW Industrials Company; Metacaulk Putty and Pads : www.metacaulk.com.
 - c. Everkem Diversified Products, Inc; Intumescent Fire-Rated Putty Pads : www.everkemproducts.com.
 - d. Hilti, Inc; CP 617 Firestop Putty Pad: www.us.hilti.com.
 - e. HoldRite, a Brand of Reliance Worldwide Corporation; HydroFlame Firestop Putty Pad: www.holdrite.com.

- f. Nelson FireStop Products; Firestop Fire Protective Putty (FSP)
: www.nelsonfirestop.com.
 - g. Passive Fire Protection Partners; MP1 - Putty Pads: www.firestop.com.
 - h. Specified Technologies Inc; SpecSeal SSP Putty & Putty Pads: www.stifirestop.com.
 - i. Tremco Commercial Sealants & Waterproofing; TREMstop MP
: www.tremcosealants.com.
 - j. Approved equal.
- C. Finishing Accessories: ASTM C1047, extruded aluminum alloy (6063 T5) or galvanized steel sheet ASTM A924/A924M G90, unless noted otherwise.
- 1. Types: As detailed or required for finished appearance.
- D. Mullion Trim Cap: Sound barrier mullion trim caps of aluminum and sound absorbing foam, capable of accommodating variations in adjacent surfaces.
- 1. Fasteners: Concealed.
 - 2. Sound Transmission: STC 55.
 - 3. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84.
 - 4. Finish: Anodized, natural.
 - 5. Products:
 - a. MULL-it-OVER Products; Mullion Trim Cap: www.mullitoverproducts.com.
 - b. Approved equal.
- E. Beads, Joint Accessories, and Other Trim: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.
- 1. Types: As indicated on drawings or required for finished appearance.
- F. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
- 1. Paper Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
 - 2. Joint Compound: Drying type, vinyl-based, ready-mixed.
- G. Finishing Compound: Surface coat and primer, takes the place of skim coating.
- H. Abuse Resistant Finishes:
- 1. Acrylic, water-based, non-textured, high build, tintable primer and surfacer.
- I. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- J. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

- K. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.2 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
 - 1. Exception: Tapered edges to receive joint treatment at right angles to framing.
- C. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- D. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.
- E. Installation on Metal Framing: Use screws for attachment of gypsum board except face layer of nonrated double-layer assemblies, which may be installed by means of adhesive lamination.
- F. Replace gypsum board that directly or indirectly has been damaged by exposure to moisture or mold.

3.3 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
 - 1. Not more than 30 feet apart on walls, soffits, and ceilings over 50 feet long or more than 900 square feet in area.
 - 2. Where a control joint occurs in a fire or an acoustically rated assembly, provide gypsum blocking behind the joint.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.4 JOINT TREATMENT

- A. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, embed and finish with setting type joint compound.

- B. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.
- C. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
 - 2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 - 3. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
 - 4. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.
 - 5. Level 0: Temporary partitions.
- D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
 - 2. Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile.
- E. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

3.5 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09 51 00 - ACOUSTICAL CEILINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

1.2 REFERENCE STANDARDS

- A. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2022.
- B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels 2013.
- C. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions 2020.
- D. ASTM E1264 - Standard Classification for Acoustical Ceiling Products 2023.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Do not install acoustical units until after interior wet work is dry.

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on suspension system components and acoustical units.
- C. Samples: Submit two samples 4 by 4 inch in size illustrating material and finish of acoustical units.
- D. Samples: Submit two samples each, 12 inches long, of suspension system main runner, cross runner, and perimeter molding.
- E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.5 FIELD CONDITIONS

- A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acoustic Tiles/Panels:
 - 1. Armstrong World Industries, Inc: www.armstrong.com.
 - 2. CertainTeed Corporation: www.certainteed.com/ceilings-and-walls.
 - 3. USG Corporation: www.usg.com.
- B. Suspension Systems:
 - 1. Same as for acoustical units.
 - 2. Substitutions: See Section 01 60 00 - Product Requirements.

2.2 ACOUSTICAL UNITS

- A. Acoustical Units - General: ASTM E1264, Class A.
- B. Acoustical Panels Type:
 - 1. Size: 24 by 48 inches.
 - 2. Thickness: 5/8 inches.
 - 3. Edge: Square.
 - 4. Surface Color: White.
 - 5. Surface Pattern: Perforated
 - 6. Suspension System: Exposed grid Type W.
 - 7. Products:
 - a. Armstrong Ceramaguard/ Fine Fissured.

2.3 SUSPENSION SYSTEM(S)

- A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
- B. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.

- C. Exposed Steel Suspension System Type W: Formed steel, commercial quality cold rolled; intermediate-duty.
 - 1. Profile: Tee; 15/16 inch wide face.
 - 2. Construction: Double web.
 - 3. Finish: White painted.

2.4 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.
- B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.
- C. Perimeter Moldings: Same metal and finish as grid.
- D. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.

3.2 PREPARATION

- A. Install after major above-ceiling work is complete.
- B. Coordinate the location of hangers with other work.
- C. Provide hanger clips during steel deck erection. Provide additional hangers and inserts as required.

3.3 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.

- D. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- H. Do not eccentrically load system or induce rotation of runners.

3.4 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Fit border trim neatly against abutting surfaces.
- D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- E. Cutting Acoustical Units:
 - 1. Cut to fit irregular grid and perimeter edge trim.
 - 2. Make field cut edges of same profile as factory edges.
 - 3. Double cut and field paint exposed reveal edges.
- F. Where round obstructions occur, provide preformed closures to match perimeter molding.
- G. Install hold-down clips on panels within 20 ft of an exterior door.

3.5 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

SECTION 09 54 23 - LINEAR METAL CEILINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Linear metal ceilings.
- B. Suspended metal support system and perimeter trim.

1.2 REFERENCE STANDARDS

- A. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
- B. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
- C. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels 2013.
- D. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions 2020.

1.3 DESIGN REQUIREMENTS

- A. Design components to ensure light fixtures and installed accessories will not induce eccentric loads. Where components may induce rotation of ceiling system components, provide stabilizing reinforcement.

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Furnish for component profiles.
- C. Shop Drawings: Indicate reflected ceiling plan, location of mechanical and electrical components, and details of junction with dissimilar materials.
- D. Samples: Submit two samples 12 by 12 inch in size illustrating color and finish of exposed to view components.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Linear Panels: Ten, standard length.

1.5 QUALITY ASSURANCE

- A. Designer Qualifications for Wind Design: Perform under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed at the State in which the Project is located.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Accept factory-finished products on site in manufacturer's unopened factory packaging only; reject opened packages.
- B. Protect factory-finished products from damage to appearance by storing products in manufacturer's unopened factory packaging in dry storage area.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Linear Metal Ceilings:
 - 1. Hunter Douglas Architectural; Box Series: www.hunterdouglasarchitectural.com.
 - a. Luxalon® Exterior 84C Ceiling
 - b. Color: Silver Grey
 - 2. Approved equal.

2.2 PANELS

- A. 84B, size 84 x 12.5 mm manufactured from 0.6 mm aluminium.
- B. Panels to be manufactured from pre-painted, stove enamelled aluminium, corrosion resistant alloy EN-AW 3005 or equivalent (according to EN 1396 and ECCA). Panels to be coupled in longitudinal direction by means of panel splices.

2.3 LINEAR METAL CEILINGS

- A. Linear Metal Ceiling System: Panels, suspension members, trim, and accessories as required to provide a complete system.
- B. Performance Requirements:
 - 1. Design to support imposed loads of indicated items without eccentric loading of supports.
 - 2. Design for maximum deflection of 1/360 of span.
 - 3. Systems Located Outside Building Envelope:
 - a. Accommodate wind and suction loads and wind uplift without damage in accordance with applicable code.

2.4 COMPONENTS

- A. Linear Metal Panels:
 - 1. Type: Linear panel with reveals; snap-in installation.
 - a. Spacing: 1 inch reveal between panel faces.
 - 2. Material: Aluminum sheet, ASTM B209 (ASTM B209M).
Finish: Architect will make a color selection from the standard Hunter Douglas color range for Luxalon® Exterior 84C panels. The coating will consist of a tough and durable Luxacote® finish in a nominal thickness of approximately 20 microns, applied in a continuous coil coating process ensuring colour stability.
- B. Edge Molding and Splices: Same material, thickness, and finish as linear panels.
- C. End Caps: Formed metal; same color and finish as sight-exposed surfaces of linear panels.
- D. Suspension Members: Formed aluminum sections, with integral attachment points; primed finish; size and type to suit application and ceiling system flatness requirement specified.
- E. Suspension Wire: Steel, annealed, galvanized finish, 9 gauge, 0.1144 inch diameter.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions before starting work.

3.2 INSTALLATION

- A. Suspension Components:
 - 1. Install after above-ceiling work is complete in accordance with manufacturer's instructions, ASTM C636/C636M, and ASTM E580/E580M.
 - 2. Hang carrying members independent of walls, columns, ducts, light fixtures, pipe, and conduit; where carrying members are spliced, avoid visible displacement of face panels with adjacent panels.
 - 3. Where ducts or other equipment prevent regular spacing of hangers, reinforce nearest adjacent hangers to span the required distance.
- B. Linear Metal Ceiling:
 - 1. Install linear panels and other system components in accordance with manufacturer's instructions.
 - 2. Stagger end joints minimum 12 inches.
 - 3. Set exterior end joints with 1/16 inch gap for expansion and contraction.
 - 4. Install edge moldings at junctions with other finishes and at vertical surfaces; use maximum piece lengths.

5. Exercise care when site cutting sight-exposed finished components to ensure surface finish is not defaced.

3.3 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.
- C. Maximum Variation From Dimensioned Position: 1/4 inch.

3.4 CLEANING

- A. Replace damaged or abraded components.

END OF SECTION

SECTION 09 65 00 - RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient tile flooring.
- B. Resilient base.
- C. Installation accessories.

1.02 REFERENCE STANDARDS

- A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source 2019a, with Editorial Revision (2020).
- B. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile 2004 (Reapproved 2018).
- C. ASTM F1700 - Standard Specification for Solid Vinyl Floor Tile 2020.
- D. ASTM F1861 - Standard Specification for Resilient Wall Base 2016.
- E. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source 2019.

1.03 SUBMITTALS

- A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- B. Verification Samples: Submit two samples, 12 by 12 inch in size illustrating color and pattern for each resilient flooring product specified.
- C. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- D. Maintenance Materials: Furnish the following for Commission's use in maintenance of project.
 - 1. Extra Flooring Material: Quantity equivalent to 5 percent of each type and color.
 - 2. Extra Wall Base: Quantity equivalent to 5 percent of each type and color.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

1.05 FIELD CONDITIONS

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 TILE FLOORING

- A. Vinyl Composition Tile - VCT: Homogeneous, with color extending throughout thickness.
 - 1. Manufacturers:
 - a. Armstrong Flooring
 - b. Approved equal.
 - 2. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
 - 3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
 - 4. Size: 12 by 12 inch.
 - 5. Thickness: 0.125 inch.
 - 6. Color/ Pattern: Match Existing Adjacent

2.02 RESILIENT BASE

- A. Resilient Base - WB: ASTM F1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove.
 - 1. Manufacturers:
 - a. Roppe Corporation
 - b. Approved equal.
 - 2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
 - 3. Height: 4 inch.
 - 4. Thickness: 0.125 inch.
 - 5. Finish: Satin.

6. Length: Roll.
7. Color: Match Existing Adjacent.

2.03 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
- C. Moldings, Transition and Edge Strips: Same material as flooring.
- D. Copper Grounding Strips: Type and size as recommended by static control flooring manufacturer.
- E. Filler for Coved Base: Plastic.
- F. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
 1. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

3.02 PREPARATION

- A. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.
- B. Prohibit traffic until filler is fully cured.

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.

3.04 INSTALLATION - TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.
- B. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.
- C. Install square tile to basket weave pattern. Allow minimum 1/2 full size tile width at room or area perimeter.
- D. Install plank tile with a random offset of at least 6 inches from adjacent rows.

3.05 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Miter internal corners. At external corners, 'V' cut back of base strip to 2/3 of its thickness and fold. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean, seal, and wax in accordance with manufacturer's written instructions.

3.07 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 09 91 13 - EXTERIOR PAINTING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
 - 1. Exposed surfaces of steel lintels and ledge angles.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
 - 5. Non-metallic roofing and flashing.
 - 6. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, zinc, and lead.
 - 7. Marble, granite, slate, and other natural stones.
 - 8. Floors, unless specifically indicated.
 - 9. Ceramic and other types of tiles.
 - 10. Brick, glass unit masonry, architectural concrete, cast stone, integrally colored plaster and stucco.
 - 11. Exterior insulation and finish system (EIFS).
 - 12. Glass.
 - 13. Concealed pipes, ducts, and conduits.

1.2 RELATED REQUIREMENTS

- A. Section 05 50 00 - Metal Fabrications: Shop-primed items.
- B. Section 05 51 00 - Metal Stairs: Shop-primed items.
- C. Section 09 91 23 - Interior Painting.
- D. Section 09 93 00 - Staining and Transparent Finishing. Wood substrates.

1.3 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.
- B. ASTM D4258 - Standard Practice for Surface Cleaning Concrete for Coating 2023.
- C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.
- D. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- E. SSPC-SP 2 - Hand Tool Cleaning 2018.
- F. SSPC-SP 6 - Commercial Blast Cleaning 2007.
- G. SSPC-SP 13 - Surface Preparation of Concrete 2018.

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - 2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
- C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
 - 2. Where sheen is not specified, submit each color in each sheen available.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.
- E. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 - Product Requirements, for additional provisions.
 - 2. Extra Paint and Finish Materials: 1 gallon of each color and type; from the same product run, store where directed.
 - 3. Label each container with color and type in addition to the manufacturer's label.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.7 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Minimum Application Temperatures for Latex Paints: 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
 - 1. Benjamin Moore: www.benjaminmoore.com.
 - 2. PPG Paints: www.ppgpaints.com.
 - 3. Sherwin-Williams Company: www.sherwin-williams.com.
- C. Primer Sealers: Same manufacturer as top coats.

D. Or Approved Equal

2.2 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.

1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
4. Supply each paint material in quantity required to complete entire project's work from a single production run.
5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:

1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
 - 1) Opaque, Flat: 50 g/L, maximum.
 - 2) Opaque, Nonflat: 150 g/L, maximum.
 - 3) Opaque, High Gloss: 250 g/L, maximum.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Colors: As indicated on drawings.

1. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
2. Extend colors to surface edges; colors may change at any edge as directed by Architect.

2.3 PAINT SYSTEMS - EXTERIOR

A. Exterior Surfaces to be Painted, Unless Otherwise Indicated: primed metal.

1. Top Coat(s): Exterior 100% AcrylicLatex.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec Ext Gloss, N449.
 - 2) PPG Paints Speedhide Exterior Latex, 6-900XI Series, Semi-Gloss.
 - 3) Sherwin-Williams A-100 Exterior Acrylic Latex, A08 Series.
 - 4) Or Approved Equal

2. Top Coat(s): Exterior Light Industrial Coating, Water Based.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec HP D.T.M. Acrylic, HP29, Semi-Gloss.
 - 2) PPG Paints Pitt-Tech Plus DTM Industrial Enamel, 4216 HP Series, Semi-Gloss.
 - 3) Sherwin-Williams Pro Industrial DTM Acrylic Coating, B66 Series, Semi-Gloss.
 - 4) Or Approved Equal
3. Top Coat Sheen: As specified for substrates below.
4. Primer: As specified under "PRIMERS" below.

B. Ferrous Metals, Unprimed, Light Industrial Coating, 3 Coat:

1. One coat of rust inhibitive primer.
2. Semi-gloss: Two coats of Light Industrial Coating.

C. Ferrous Metals, Primed, Latex, 2 Coat:

1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.
2. Semi-gloss: Two coats of Light Industrial Coating.

2.4 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.

1. Interior/Exterior Latex Block Filler.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec Masonry Int/Ext High-Build Block Filler, 571.
 - 2) PPG Paints Speedhide Masonry Hi Fill Latex Block Filler, 6-15XI.
 - 3) Sherwin-Williams Loxon Block Surfacer, A24W00200.
 - 4) Or Approved Equal.
2. Rust-Inhibitive Water Based Primer.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec HP Acrylic Metal Primer, HP04.
 - 2) PPG Paints Pitt-Tech Plus DTM Industrial Primer, 4020 PF Series.
 - 3) Sherwin-Williams Pro Industrial Pro-Cryl Primer, B66-310 Series.
 - 4) Or Approved Equal.
3. Latex Primer for Exterior Wood.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec EXT Latex Primer.
 - 2) PPG Paints Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer, 17-921XI Series.
 - 3) Sherwin-Williams Exterior Latex Wood Primer, B42W08041.
 - 4) Or Approved Equal

2.5 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.**

- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- E. Test shop-applied primer for compatibility with subsequent cover materials.
- F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - 1. Exterior Plaster and Stucco: 12 percent.
 - 2. Fiber Cement Siding: 12 percent.
 - 3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
 - 4. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.
 - 5. Concrete Floors and Traffic Surfaces: 8 percent.

3.2 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Ferrous Metal:
 - 1. Solvent clean according to SSPC-SP 1.

2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
3. Remove rust, loose mill scale, and other foreign substances using using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

3.3 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.
- C. Apply products in accordance with manufacturer's written instructions.
- D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- E. Apply each coat to uniform appearance.
- F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply additional coats until complete hide is achieved.
- G. Sand wood and metal surfaces lightly between coats to achieve required finish.
- H. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.4 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.5 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 09 91 23 - INTERIOR PAINTING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
 - 1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
 - 2. Prime surfaces to receive wall coverings.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
 - 5. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, and lead items.
 - 6. Marble, granite, slate, and other natural stones.
 - 7. Floors, unless specifically indicated.
 - 8. Ceramic and other tiles.
 - 9. Brick, architectural concrete, cast stone, integrally colored plaster, and stucco.
 - 10. Glass.
 - 11. Acoustical materials, unless specifically indicated.
 - 12. Concealed pipes, ducts, and conduits.
 - 13. Operating and moving parts of operating equipment, including valve and damper operators, linkages, sensing devices, and motor and fan shafts.

1.2 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.
- B. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- C. SSPC-SP 6 - Commercial Blast Cleaning 2007.

1.3 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
 - 2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
- C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.
- E. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Paint and Finish Materials: 1 gallon of each color and type; from the same product run, store where directed.
 - 2. Label each container with color, type, and room locations in addition to the manufacturer's label.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience and approved by manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.6 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply materials when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F above the dew point, or to damp or wet surfaces.
- D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
 - 1. Benjamin Moore: www.benjaminmoore.com.
 - 2. PPG Paints: www.ppgpaints.com.
 - 3. Sherwin-Williams Company: www.sherwin-williams.com.
- C. Primer Sealers: Same manufacturer as top coats.

2.2 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
 - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 - 3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
 - 4. Supply each paint material in quantity required to complete entire project's work from a single production run.
 - 5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

- B. Volatile Organic Compound (VOC) Content:
1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
 - 1) Opaque, Flat: 50 g/L, maximum.
 - 2) Opaque, Nonflat: 150 g/L, maximum.
 - 3) Opaque, High Gloss: 250 g/L, maximum.
 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- C. Colors: As indicated on drawings.
1. Extend colors to surface edges; colors may change at any edge as directed by Architect.

2.3 PAINT SYSTEMS - INTERIOR

- A. Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board.
1. Two top coats and one coat primer.
 2. Top Coat(s): High Performance Architectural Interior Latex.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec 500, 537, Eggshell.
 - 2) Benjamin Moore Scuff-X, 485, Eggshell.
 - 3) Sherwin-Williams Pre-Catalyzed Waterbased Epoxy, K45 Series, Eg-Shel.
 - 4) Sherwin-Williams ProMar 200 HP Series, Low Gloss Eg-Shel.
 3. Top Coat(s): Institutional Low Odor/VOC Interior Latex.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec 500, 535, Flat.
 - 2) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Flat.
 4. Top Coat Sheen:
 - a. Flat; use this sheen for ceilings and other overhead surfaces.
 - b. Semi-Gloss; Use this sheen at all locations unless indicated otherwise.
 5. Primer: As specified under "PRIMERS" below.
- B. Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals:
1. Medium duty applications include doors, door frames, railings, handrails, guardrails, and balustrades.
 2. Two top coats and one coat primer.
 3. Top Coat(s): Interior Urethane or Epoxy-Modified Latex.
 - a. Products:
 - 1) Benjamin Moore Corotech Polyamide Epoxy Coating, V400, Gloss.
 - 2) PPG Paints Aquapon WB EP Two-Component Waterborne Epoxy Coating, 98E-1/98E-98 Series, Gloss.

- 3) Sherwin-Williams Waterbased Catalyzed Epoxy, B73 Series, Gloss.
4. Top Coat Sheen:
 - a. Gloss: Use this sheen unless indicated otherwise.
5. Primer: As specified under "PRIMERS" below.

2.4 PRIMERS

- A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
 1. Interior Drywall Primer Sealer.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec 500 Interior Latex Primer, N534.
 - 2) PPG Paints Speedhide Interior Latex Sealer, 6-2.
 - 3) Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28 W02600
 2. Interior Rust-Inhibitive Water Based Primer; MPI #107.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec HP Acrylic Metal Primer, HP04.
 - 2) PPG Paints Pitt-Tech Plus Interior/Exterior DTM Waterborne Acrylic Primer/Finish, 4020 PF Series.
 - 3) Sherwin-Williams Pro-Cryl Universal Primer, B66-310 Series.
 - 4) Sherwin-Williams Pro Industrial Pro-Cryl Primer, B66-310 Series.
 3. Latex Primer for Interior Wood; Plaster; or Gypsum Wallboard.
 - a. Products:
 - 1) Benjamin Moore Ultra Spec 500 Interior Latex Primer, N534.
 - 2) Sherwin-Williams Premium Wall & Wood Interior Latex Primer, B28W08111; except ProMar 200 Zero VOC Interior Latex Primer, B28W02600, for gypsum wallboard.

2.5 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been adequately prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- E. Test shop-applied primer for compatibility with subsequent cover materials.
- F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
 - 1. Gypsum Wallboard: 12 percent.

3.2 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
- G. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with tinted primer.
- H. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.
 - 1. Fill joints of knock-down frames.

3.3 APPLICATION

- A. Apply products in accordance with manufacturer's written instructions.
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- D. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.

- E. Sand wood and metal surfaces lightly between coats to achieve required finish.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.4 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.5 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 09 93 00 - STAINING AND TRANSPARENT FINISHING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of stains and transparent finishes.

1.2 RELATED REQUIREMENTS

- A. Section 09 91 23 - Interior Painting:

1.3 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.

1.4 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category.
 - 2. Manufacturer's installation instructions.
- C. Samples: Submit three samples, illustrating selected colors and sheens for each system. Submit on actual wood substrate to be finished, 4 by 4 inch in size.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.
- E. Applicator's Qualification Statement.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of stain or transparent finish, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Stain and Transparent Finish Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.7 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by manufacturer of stains and transparent finishes.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

PART 2 PRODUCTS

2.1 STAINS AND TRANSPARENT FINISHES - GENERAL

- A. Finishes:
 - 1. Provide finishes capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 - 3. Supply each finish material in quantity required to complete entire project's work from a single production run.
 - 4. Do not reduce, thin, or dilute finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Volatile Organic Compound (VOC) Content:
 - 1. Provide stains and transparent finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
 - 1) Opaque, Flat: 50 g/L, maximum.
 - 2) Opaque, Nonflat: 150 g/L, maximum.

- 3) Opaque, High Gloss: 250 g/L, maximum.
 - 4) Varnishes: 350 g/L, maximum.
 - c. Architectural coatings VOC limits of the State in which the Project is located.
 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- C. Colors: Match existing adjacent ceiling, to be selected from manufacturer's full range of available colors.
1. Selection to be made by Architect after award of contract.

2.2 INTERIOR STAIN AND TRANSPARENT FINISH SYSTEMS

- A. Finish on Wood - Vertical Surfaces:
1. Stain: Semi-Transparent Stain for Wood, Solvent Based.
 - a. Products:
 - 1) Behr Advanced Formula Oil-Based Wood Stain.
 - 2) PPG Paints Deft Interior Oil-Based Fast Dry Stain, DFT570 Series.
 - 3) Sherwin-Williams MinWax 250 VOC Oil Stain.
 - 4) Approved equal.
 2. Stain: Semi-Transparent Stain for Wood, Water Based.
 - a. Products:
 - 1) Behr Fast Drying Water-Based Wood Stain.
 - 2) PPG Paints Deft Interior Water-Based Wood Stain, DFT300 Series.
 - 3) Sherwin-Williams Minwax Water-Based Wood Stain.
 - 4) Approved equal.
 3. Top Coat(s): Polyurethane Varnish.
 - a. Products:
 - 1) Behr Water-Based Spar Urethane.
 - 2) PPG Paints Deft Interior Water-Based Polyurethane Acrylic.
 - 3) Sherwin-Williams Minwax Water-Based Oil-Modified Polyurethane.
 - 4) Approved equal.
 4. Top Coat Sheen:
 - a. Semi-Gloss: Use this sheen at all locations.

2.3 ACCESSORY MATERIALS

- A. Accessory Materials: Cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of finished surfaces.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin application of stains and finishes until substrates have been properly prepared.

- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

3.2 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or repair existing finishes that exhibit surface defects.
- D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- E. Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

3.3 APPLICATION

- A. Apply products in accordance with manufacturer's written instructions.
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- D. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- E. Reinstall items removed prior to finishing.

3.4 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.5 PROTECTION

- A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 32 31 13 - CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Polyvinyl chloride (PVC)-coated steel chain link fabric.
 - 2. Polymer-coated steel framework.
 - 3. Privacy slats.

1.2 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 01 Specification Sections.
- B. Product data in the form of manufacturer's technical data, specifications, and installation instructions for fence and gate posts, fabric, gates, gate operators, and accessories.
- C. Shop drawings showing location of fence, gates, each post, and details of post installation, extension arms, gate swing, hardware, and accessories.
 - 1. Include Shop Drawings signed and sealed by the qualified professional engineer responsible for their preparation.
- D. Wiring diagrams from manufacturer for electrically operated gates.
- E. Samples for initial selection of PVC color in form of manufacturer's color charts or 6-inch lengths of actual fabric wire showing colors available.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has at least three years' experience and has completed at least five chain link fence projects with same material and of similar scope to that indicated for this Project with a successful construction record of in-service performance.
- B. Single-Source Responsibility: Obtain chain link fences and gates, including accessories, fittings, and fastenings, from a single source.
- C. Professional Engineer Qualifications: A professional engineer who is legally authorized to practice in the jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated that have resulted in installing chain link fences similar to those indicated for this Project and with a record of successful in-service performance.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Verify layout information for fences and gates shown on the Drawings in relation to the property survey and existing structures. Verify dimensions by field measurements.

PART 2 PRODUCTS

2.1 FABRIC

- A. Selvage: Knuckled on both selvages.
- B. Steel Chain-Link Fence Fabric: Fabricated in one-piece widths for fencing 12 feet and less in height to comply with Chain Link Fence Manufacturers Institute (CLFMI) "Product Manual" and with requirements indicated below:
 - 1. Mesh and Wire Size: 2-inch mesh, 0.192-inch diameter (6 gage).
 - 2. PVC Coating Color: black, complying with ASTM F 934.

2.2 FRAMING

- A. Round member sizes are given in actual outside diameter (OD) to the nearest thousandth of inches. Round fence posts and rails are often referred to in ASTM standard specifications by nominal pipe sizes (NPS) or the equivalent trade sizes in inches. The following indicates these equivalents all measured in inches:

Actual <u>OD</u>	NPS <u>Size</u>	Trade <u>Size</u>
8.625	8	8-5/8

- B. Type II Round Posts: Cold-formed, electric-welded steel pipe conforming to heavy industrial requirements of ASTM F 669, Group IC, with minimum yield strength of 50,000 psi, either protective coating system below according to ASTM F 1234, and weights per foot as follows:
 - 1. Coatings: Type B outside with a minimum of 0.9 oz. of zinc per sq. ft. after welding, a chromate conversion coating and a clear polymer overcoat. Type B inside with a minimum of 0.9 oz. of zinc per sq. ft. or Type D inside with a minimum 0.3-mil-thick, 81-percent zinc-pigmented nominal coating.
- C. Supplemental Color Coating: In addition to above metallic coatings, provide posts and rails with manufacturer's standard polymer coating according to ASTM F 1234, 10-mil minimum polyvinyl chloride (PVC) or 3-mil minimum polyester plastic resin finish applied to exterior surfaces and, except for tubular shapes, to exposed interior surfaces. Color to match chain link fabric.
- D. Top Rail: Manufacturer's longest lengths (17 to 21 feet) with swedged-end or expansion-type coupling, approximately 6 inches long for joining. Provide rail ends or other means for attaching top rail securely to each gate corner, pull, and end post.
 - 1. Round Steel: 1.660-inch OD Type I or II steel pipe.

2. Roll-Formed Steel: 1-1/4-by-1-5/8-inch C section weighing a minimum of 1.40 lb per linear ft.
 3. Round Aluminum: 1.660-inch OD aluminum pipe.
 4. Square Aluminum: 1-1/2-inch-square aluminum tubing with 0.125-inch minimum walls.
- E. Steel posts for fabric heights over 6 feet:
1. Round Line or Intermediate Posts: 2.375-inch OD Type I or II steel pipe.
 2. Round End, Corner, and Pull Posts: 2.875-inch OD Type I or II steel pipe.
 3. Roll-Formed Line or Intermediate Posts: 2.25-by-1.70-inch C section weighing a minimum of 2.70 lb per linear ft.
 4. Hot-Formed Line or Intermediate Posts: 2.25-by-1.70-inch galvanized-steel H section weighing a minimum of 3.26 lb per linear ft.
 5. Square End, Corner, and Pull Posts: 2-1/2-inch-square galvanized-steel tubing weighing a minimum of 5.00 lb per linear ft.
 6. Roll-Formed End, Corner, and Pull Posts: 3-1/2-by-1-1/2-inch roll-formed galvanized-steel sections weighing a minimum of 5.10 lb per linear ft.

2.3 FITTINGS AND ACCESSORIES

- A. Material: Comply with ASTM F 626. Mill-finished aluminum or galvanized iron or steel to suit manufacturer's standards.
1. Steel and Iron: Unless specified otherwise, hot-dip galvanize pressed steel or cast-iron fence fittings and accessories with at least 1.2 oz. zinc per sq. ft. as determined by ASTM A 90.
 2. Aluminum: Die cast conforming to ASTM B 26, aluminum-alloy 360 or sand cast conforming to ASTM B 85, aluminum-alloy 365, ZG61A, or Tenzalloy.
 3. Supplemental Color Coating: In addition to above metallic coatings, provide a 10-mil minimum polyvinyl chloride (PVC) plastic resin finish applied to exterior surfaces and, except inside cap shapes, to exposed interior surfaces. Color to match chain link fabric.
- B. Post and Line Caps: Provide weathertight closure cap for each post. Provide line post caps with loop to receive tension wire or top rail.
- C. Post Brace Assembly: Manufacturer's standard adjustable brace. Use material specified below for brace, and truss to line posts with 3/8-inch-diameter rod and adjustable tightener. Provide manufacturer's standard galvanized-steel, cast-iron or cast-aluminum cap for each end.
1. Round Steel: 1.660-inch OD Type I or II steel pipe.
 2. Roll-Formed Steel: 1-1/4-by-1-5/8-inch C section weighing a minimum of 1.40 lb per linear ft.
 3. Round Aluminum: 1.660-inch OD aluminum pipe.
 4. Square Aluminum: 1-1/2-inch-square aluminum tubing with 0.125-inch minimum walls.
- D. Bottom and Center Rail: Same material as top rail. Provide manufacturer's standard galvanized-steel, cast-iron or cast-aluminum cap for each end.
- E. Tension or Stretcher Bars: Hot-dip galvanized steel with a minimum length 2 inches less than the full height of fabric, a minimum cross section of 3/16 inch by 3/4 inch, and a minimum of

1.2 oz. of zinc coating per sq. ft. Provide one bar for each gate and end post, and two for each corner and pull post, except where fabric is integrally woven into the post.

- F. Tension and Brace Bands: 3/4-inch-wide minimum hot-dip galvanized steel with a minimum of 1.2 oz. of zinc coating per sq. ft.
 - 1. Tension Bands: 0.074 inch thick (14 gage) minimum.
 - 2. Brace Bands: 0.105 inch thick (12 gage) minimum.
- G. Tension Wire: 0.192-inch-diameter (6-gage) mill-finished aluminum wires, ASTM B 211, alloy 6061-T94 with 50,000-psi minimum tensile strength.
- H. Tie Wires: 0.106-inch-diameter (12-gage) galvanized steel with a minimum of 0.80 oz. per sq. ft. of zinc coating according to ASTM A 641, Class 3 or 0.148-inch-diameter (9-gage) aluminum wire alloy 1350-H19 or equal, to match fabric wire.

2.4 PRIVACY SLATS

- A. Material: Polyvinyl chloride (PVC) light-stabilized, 0.023 inch thick minimum, sized to fit mesh specified in direction indicated.
- B. Color: Black

2.5 CONCRETE

- A. Concrete: Provide concrete consisting of portland cement per ASTM C 150, aggregates per ASTM C 33, and potable water. Mix materials to obtain concrete with a minimum 28-day compressive strength of 3000 psi. Use at least four sacks of cement per cu. yd., 1-inch maximum size aggregate, 3-inch maximum slump.
- B. Packaged Concrete Mix: Mix dry-packaged normal-weight concrete conforming to ASTM C 387 with clean water to obtain a 2- to 3-inch slump.

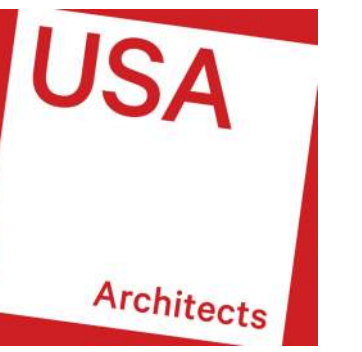
PART 3 EXECUTION

3.1 INSTALLATION

- A. General: Install fence to comply with ASTM F 567. Do not begin installation and erection before final grading is completed, unless otherwise permitted.
 - 1. Apply fabric to outside of framework. Install fencing on boundary lines inside of property line established by survey as required by Division 01.
- B. Excavation: Drill or hand-excavate (using post-hole digger) holes for posts to diameters and spacings indicated, in firm, undisturbed or compacted soil.
 - 1. If not indicated on Drawings, excavate holes for each post to minimum diameter recommended by fence manufacturer, but not less than four times the largest cross section of post.
 - 2. Unless otherwise indicated, excavate hole depths approximately 3 inches lower than post bottom, with bottom of posts set not less than 36 inches below finish grade surface.

- C. Setting Posts: Center and align posts in holes 3 inches above bottom of excavation. Space a maximum of 10 feet o.c., unless otherwise indicated.
 - 1. Protect portion of posts above ground from concrete splatter. Place concrete around posts and vibrate or tamp for consolidation. Check each post for vertical and top alignment, and hold in position during placement and finishing operations.
 - a. Unless otherwise indicated, extend concrete footings 2 inches above grade and trowel to a crown to shed water.
- D. Top Rails: Run rail continuously through line post caps, bending to radius for curved runs and at other posts terminating into rail end attached to posts or post caps fabricated to receive rail. Provide expansion couplings as recommended by fencing manufacturer.
- E. Center Rails: Install center rails in one piece between posts and flush with post on fabric side, using rail ends and special offset fittings where necessary.
- F. Brace Assemblies: Install braces at end and gate posts and at both sides of corner and pull posts. Locate horizontal braces at midheight of fabric on fences with top rail and at two thirds fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- G. Bottom Tension Wire: Install tension wire within 6 inches of bottom of fabric before stretching fabric and tie to each post with not less than same gage and type of wire. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch-diameter (11-gage) hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c.
- H. Top Tension Wire: Install tension wire through post cap loops before stretching fabric. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch-diameter (11-gage) hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c.
- I. Fabric: Leave approximately 2 inches between finish grade and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Install fabric on security side of fence, and anchor to framework so that fabric remains under tension after pulling force is released.
- J. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not over 15 inches o.c.
- K. Tie Wires: Use wire of proper length to secure fabric firmly to posts and rails. Bend ends of wire to minimize hazard to persons or clothing.
 - 1. Maximum Spacing: Tie fabric to line posts 12 inches o.c. and to rails and braces 24 inches o.c.
- L. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts for added security.
- M. Privacy Slats: Install slats in direction indicated, securely locked in place.
 - 1. Vertically.

END OF SECTION 32 31 13



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Paul R. Swartz, AIA Susan M. DeHart, AIA
Armand T. Christopher Jr., AIA James McAuliffe, AIA
Peter C. Campiano, AIA Marlene Borruso, AIA
Andrew P. Adornato, AIA

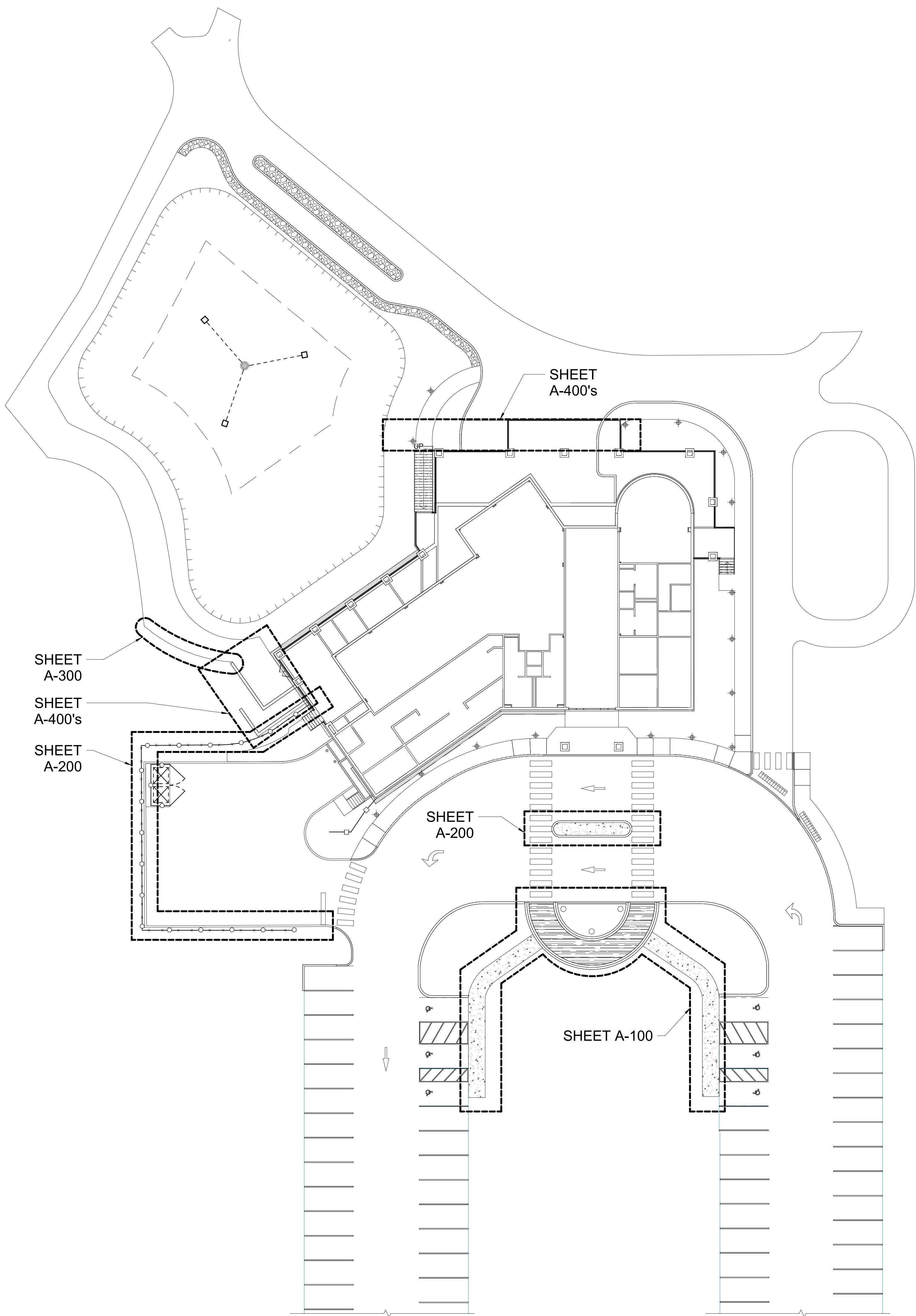
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1210 RARITAN ROAD
SCOTCH PLAINS, NJ 07076

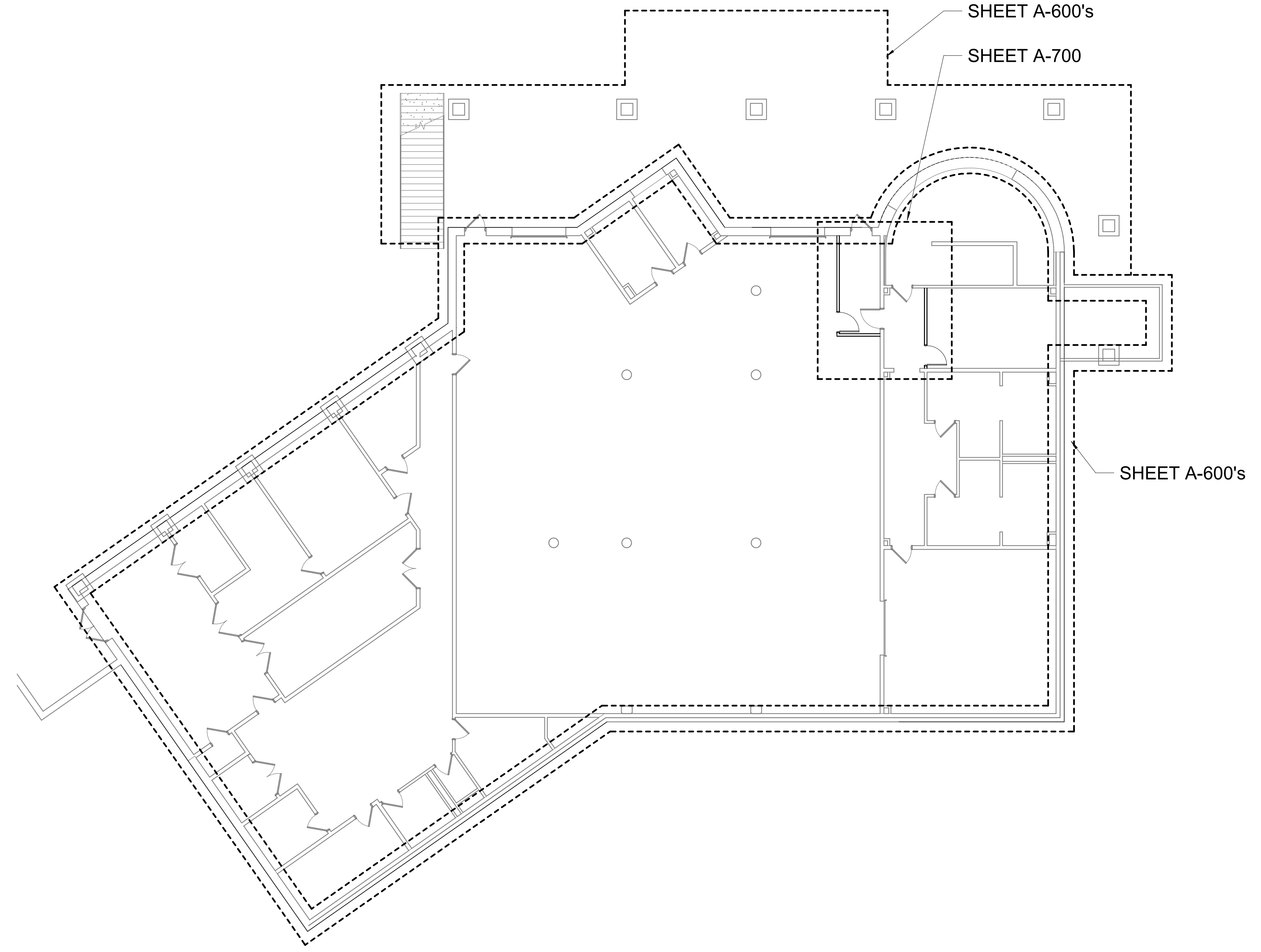
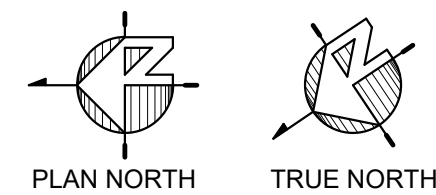
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1	09.21.23	ISSUED FOR BID
No.	Date	Issue or Revision

Drawing Title
KEY PLANS

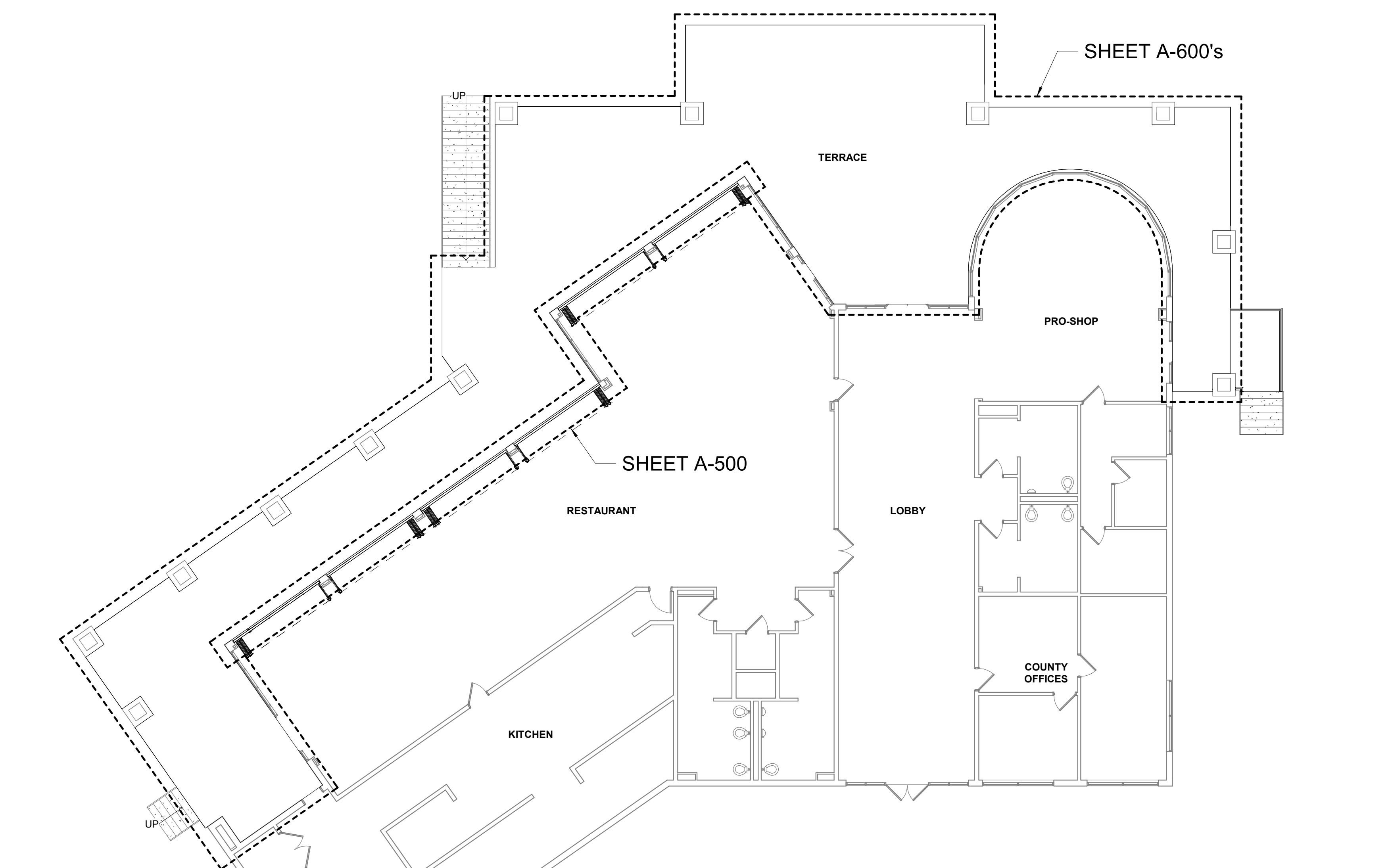
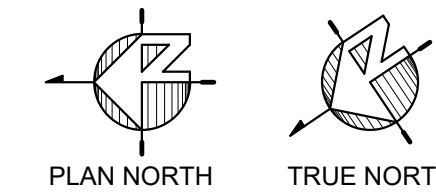
Scale	USA Project No.
As indicated	2023-038
Drawing Date	Drawing No.
09.21.23	A-001
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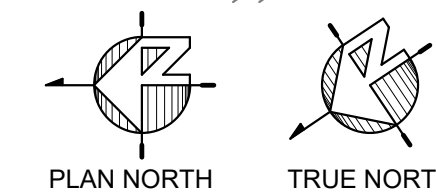
1 SITE KEY PLAN
SCALE: N.T.S.



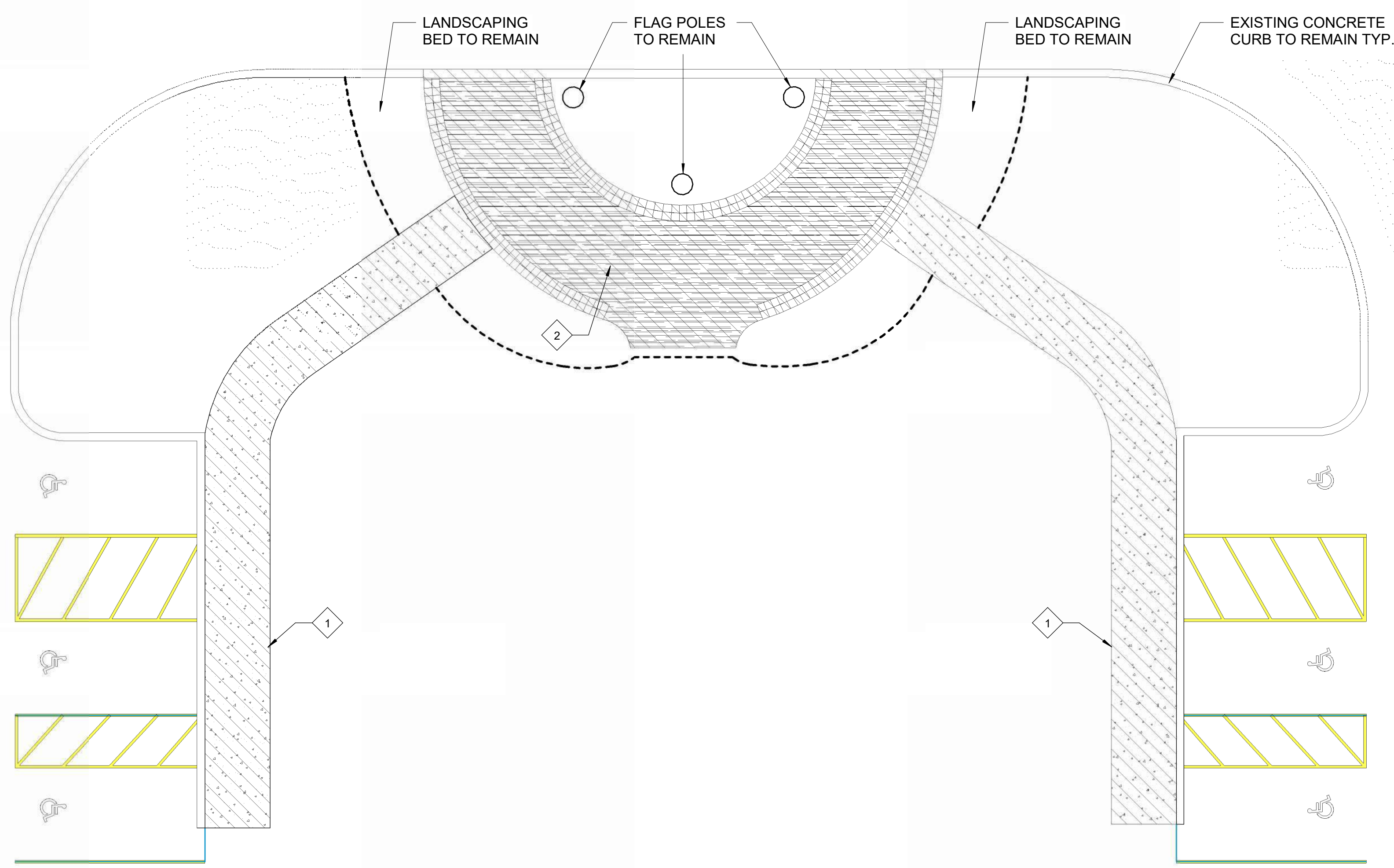
2 LOWER LEVEL KEY PLAN
SCALE: N.T.S.



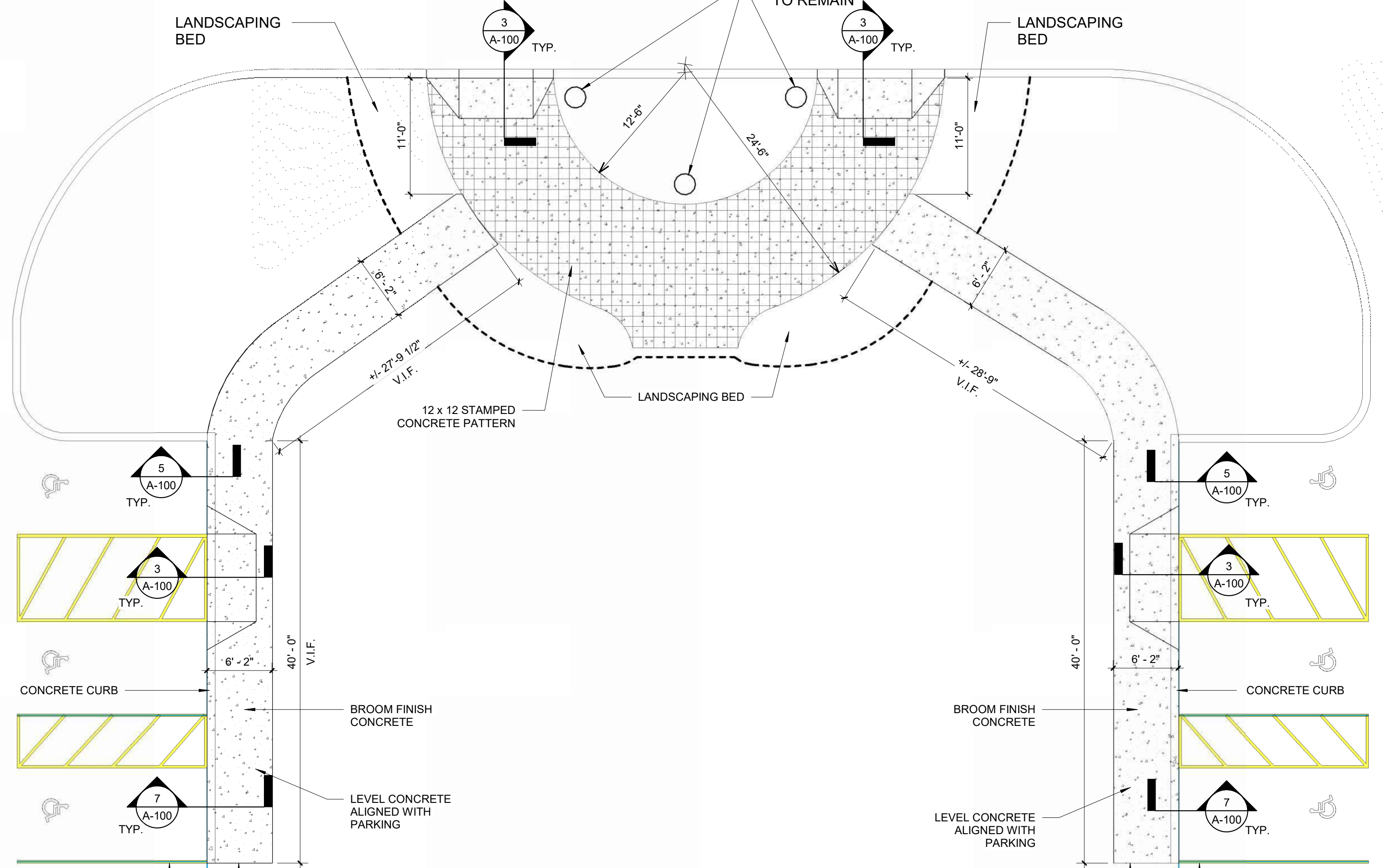
3 FIRST FLOOR KEY PLAN
SCALE: N.T.S.



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1 WALKWAY/ PLAZA DEMOLITION PLAN
 SCALE: 1/8" = 1'-0"



2 WALKWAY/ PLAZA PROPOSED PLAN
 SCALE: 1/8" = 1'-0"

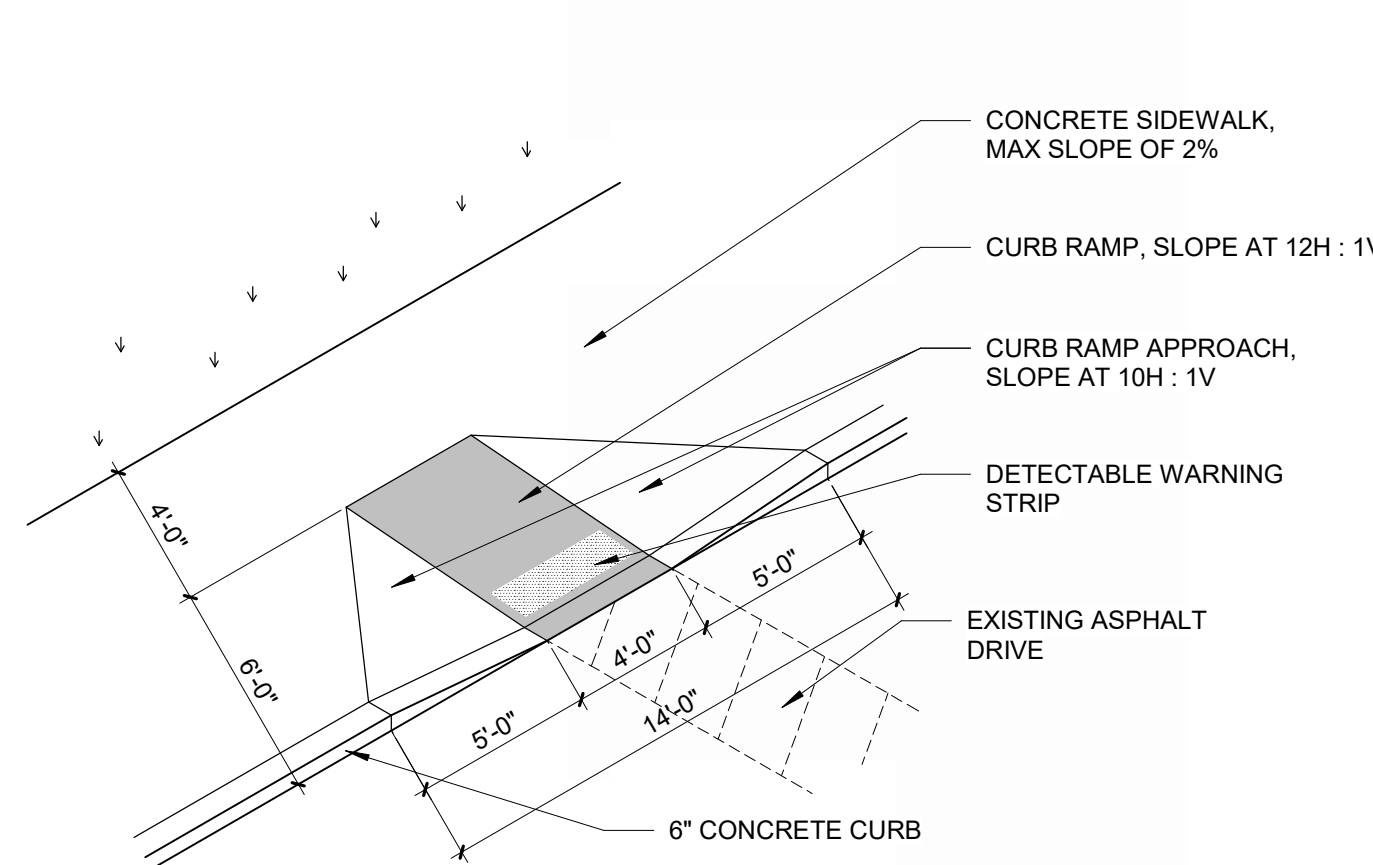
GENERAL NOTES:
 1. CONTRACTOR TO PATCH ALL ASPHALT PAVEMENT.
 2. CONTRACTOR TO RE-STRIPE ALL ADA SPACES.
 3. CONTRACTOR TO RE-SEED AND MOW ALL AFFECTED AREAS ADJACENT TO CONSTRUCTION.

GENERAL DEMOLITION NOTES:

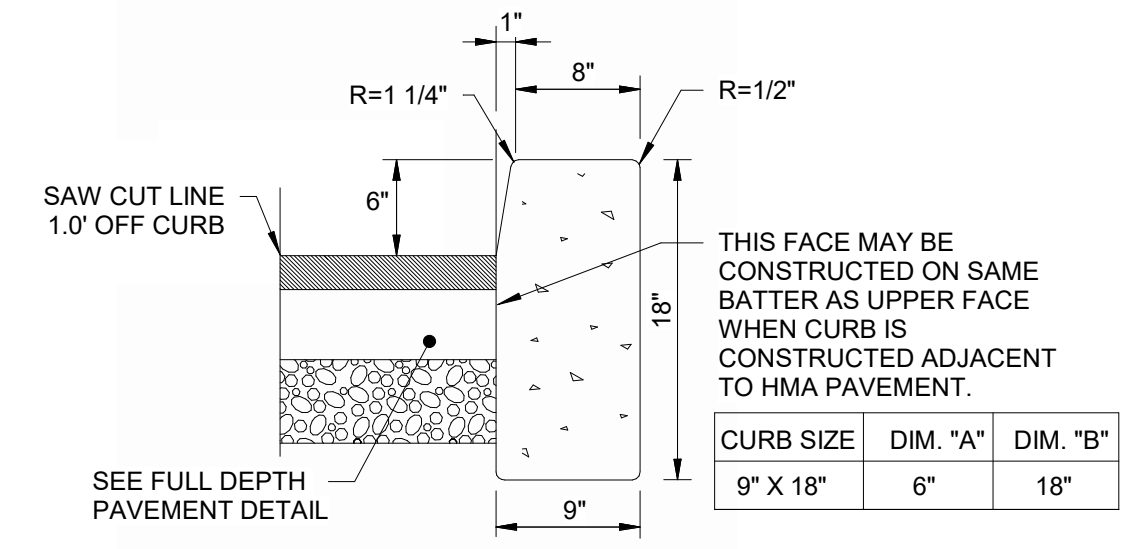
- CONTRACTOR MUST INSTALL AND MAINTAIN PLASTIC DUST BARRIERS DURING DEMOLITION AND CONSTRUCTION TO PROTECT THE GENERAL PUBLIC FROM DUST AND FUMES. LOCATE PARTITIONS REQUIRED TO PROTECT ADJACENT AREAS AND EQUIPMENT, AND CONTINUE EGRESS THROUGH THE SPACE. CONTRACTOR SHALL PROVIDE TEMPORARY EXIT WAYS AS REQUIRED BY LOCAL CODE ENFORCEMENT OFFICIAL DURING CONSTRUCTION.
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- REMOVE ANY MISCELLANEOUS PROJECTIONS, HANGERS, BOLTS, SCREWS AND NAILS FROM EXISTING SURFACES TO REMAIN. PATCH AND PREPARE SURFACES TO RECEIVE NEW FINISH.
- PATCH AND REPAIR ALL ADJACENT SURFACES WHICH ARE AFFECTED BY THE DEMOLITION OR REMOVAL OF ACCESSORIES TO THEIR ORIGINAL FORM AND PREPARE FOR NEW FINISH. COORDINATE WITH FINISH DRAWINGS.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY CLEANUP OF CONSTRUCTION DEBRIS.
- BEFORE DEMOLITION BEGINS, CONTRACTOR SHALL COORDINATE SEQUENCE AND SCHEDULES FOR ALL WORK AND RELOCATION OR DISPOSAL OF ALL MATERIALS WITH OWNER.
- DEMOLITION PLANS ARE DIAGRAMMATIC. PRIOR TO SUBMITTING BID, GENERAL CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND BRING ANY AREAS IN QUESTION TO THE ATTENTION OF THE ARCHITECT.
- INSTALL SAFETY BARRICADES AND WARNING FENCING TO PROTECT PEDESTRIANS AND CARTS.
- PROTECT ALL EXISTING SURFACES AND STRUCTURES FROM DAMAGE FROM RAIN, SNOW, WIND DAMAGE, ETC. DURING THE WORK.

SELECTIVE DEMOLITION LEGEND:

- DEMOLITION SCOPE OF WORK ITEM TYPICAL THROUGHOUT ENTIRE ROOM / AREA
- DEMOLITION SCOPE OF WORK ITEM AT A SPECIFIC LOCATION
- REMOVE CONCRETE WALKWAY AND CURBING IN THEIR ENTIRETY TO SUB-BASE. PREPARE AREA FOR NEW CONCRETE WALKWAY.
- REMOVE BRICK PAVERS AND ACCESSORIES IN THEIR ENTIRETY TO SUB-BASE. PREPARE AREA FOR NEW CONCRETE PLAZA.

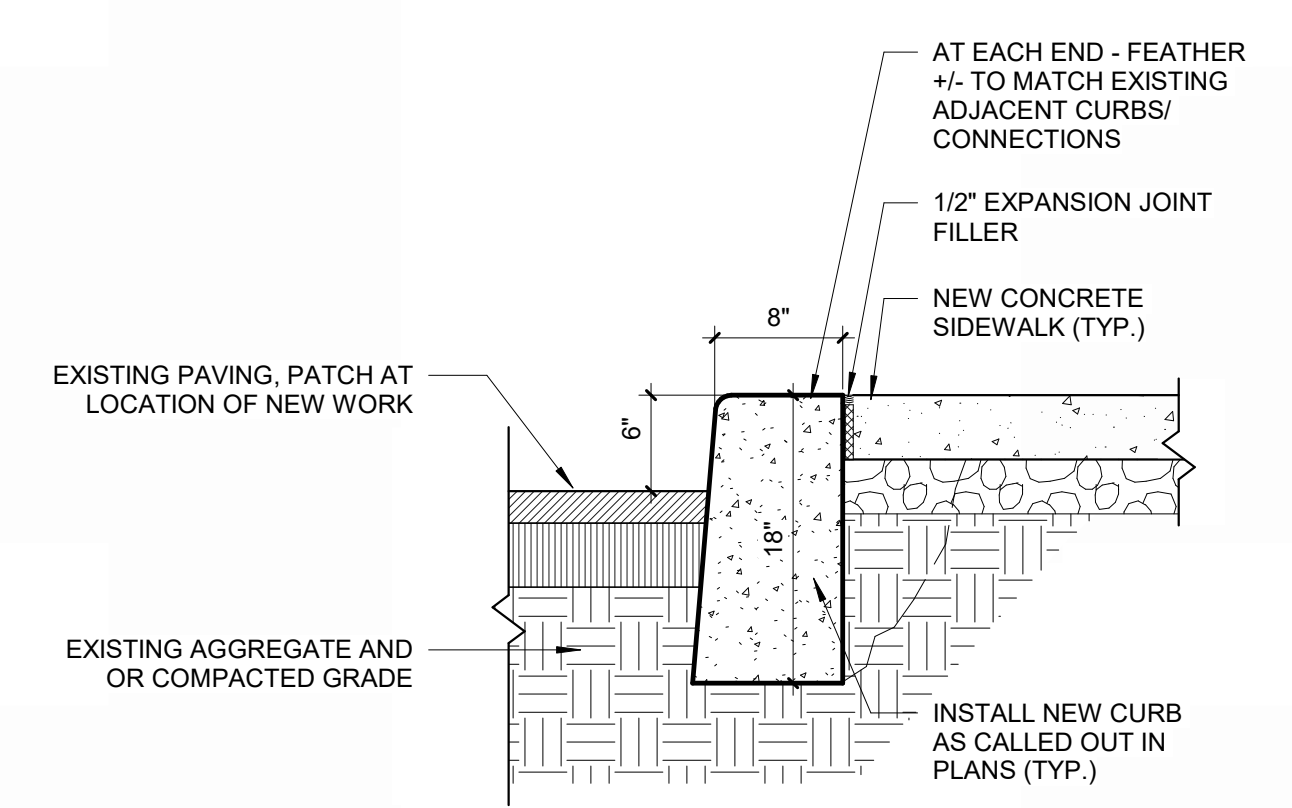


3 TYPICAL ADA CURB RAMP DETAIL
 SCALE: N.T.S.

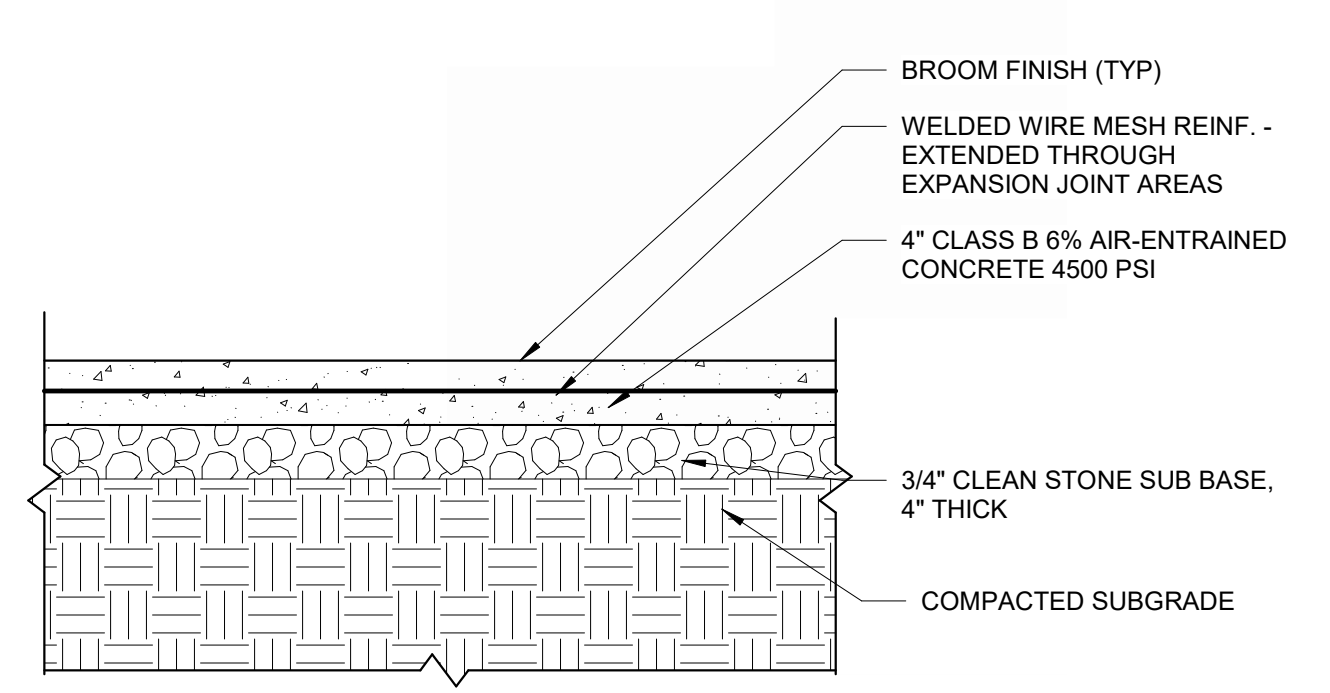


4 CONCRETE CURB DETAIL
 SCALE: 1" = 1'-0"

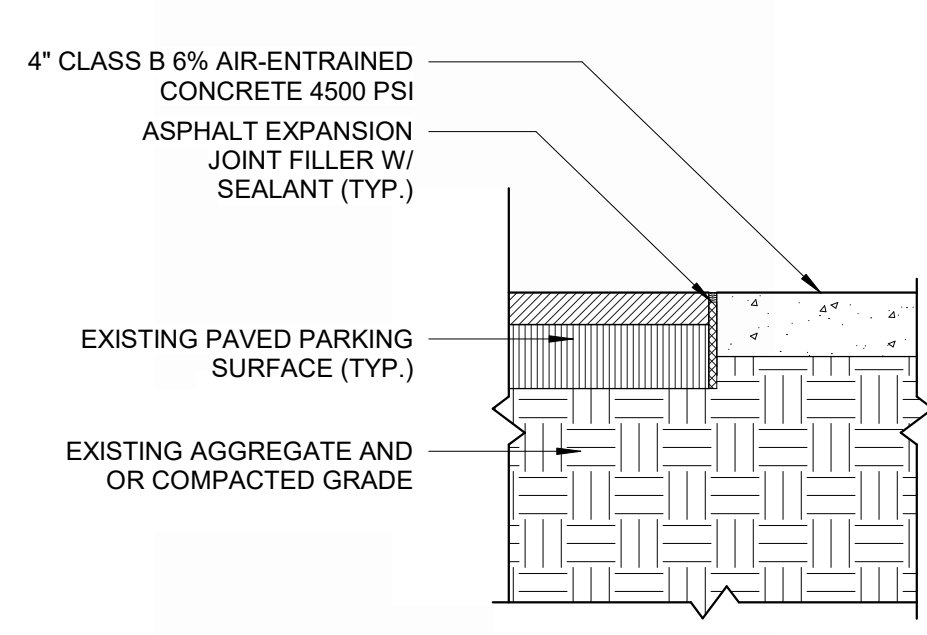
- NOTES:**
- CONCRETE TO TEST 4000 P.S.I. - 34" MINIMUM ON 28 DAY TEST. AIR ENTRAINMENT 4% TO 7%. SLUMP TO BE 5" MAXIMUM.
 - 1/2" PREFORMED EXPANSION JOINT FILLER, BITUMINOUS TYPE, CONFORMING TO A.A.S.H.T.O. SPEC'S M-33 IS TO BE INSTALLED BETWEEN CURBING AT 10' MAX. SPACING.
 - CONCRETE CURB SHALL NOT BE CONSTRUCTED FROM NOVEMBER 1 TO MARCH 15 UNLESS WRITTEN APPROVAL IS RECEIVED FROM THE ARCHITECT.
 - Q.P. TO BE SPRAYED WITH A PRIME COAT OF ASPHALTIC OIL (MC-30) AT A RATE OF 0.3 GALLONS PER SQUARE YARD.
 - IMMEDIATELY AFTER THE CONCRETE HAS BEEN FINISHED, THE CONTRACTOR SHALL APPLY A COMPLETE UNIFORM COAT OF CURING COMPOUND AT A RATE OF NOT LESS THAN ONE (1) GALLON PER 200 SQUARE FEET.



5 TYPICAL DETAIL @ CURB
 SCALE: 1" = 1'-0"



6 CONCRETE PAD / SIDEWALK - DETAIL
 SCALE: 1" = 1'-0"



7 TYPICAL DETAIL @ ASPHALT-TO-CONCRETE
 SCALE: 1" = 1'-0"

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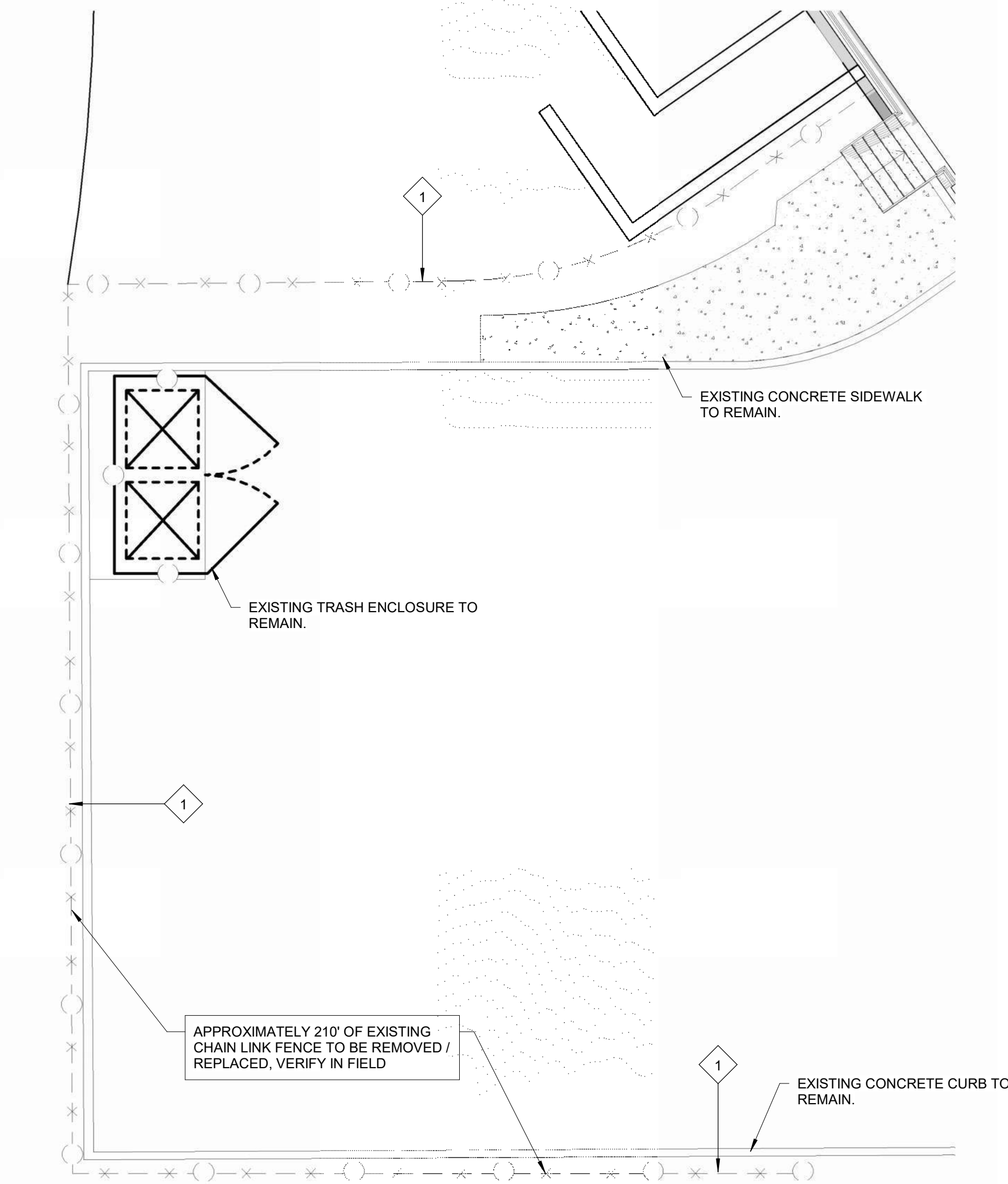
Scale	AS NOTED	USA Project No.	2023-038
Drawing Date	09.21.23	Drawing No.	A-100
Drawn By	DTB	Checked By	ApA

GENERAL DEMOLITION NOTES:

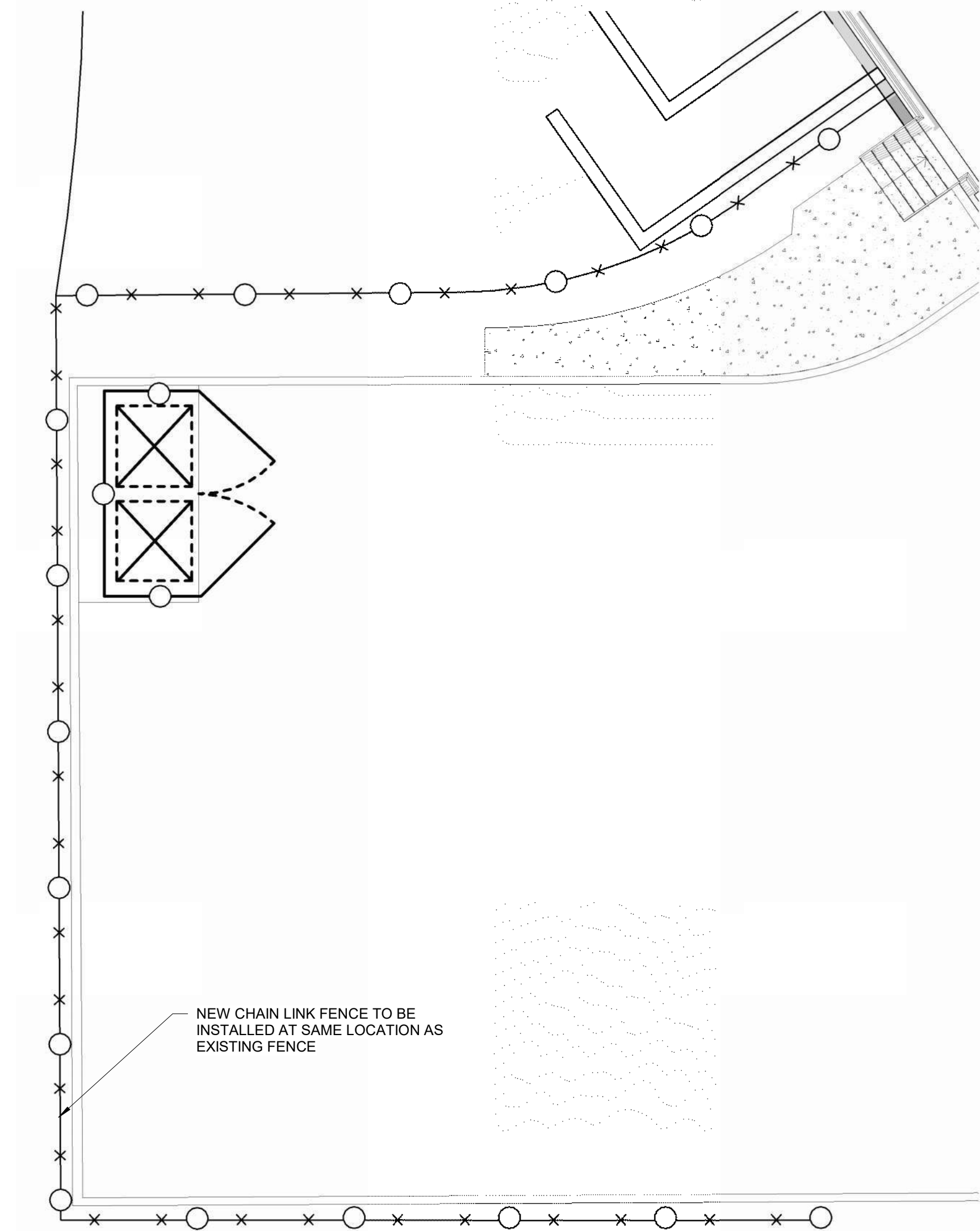
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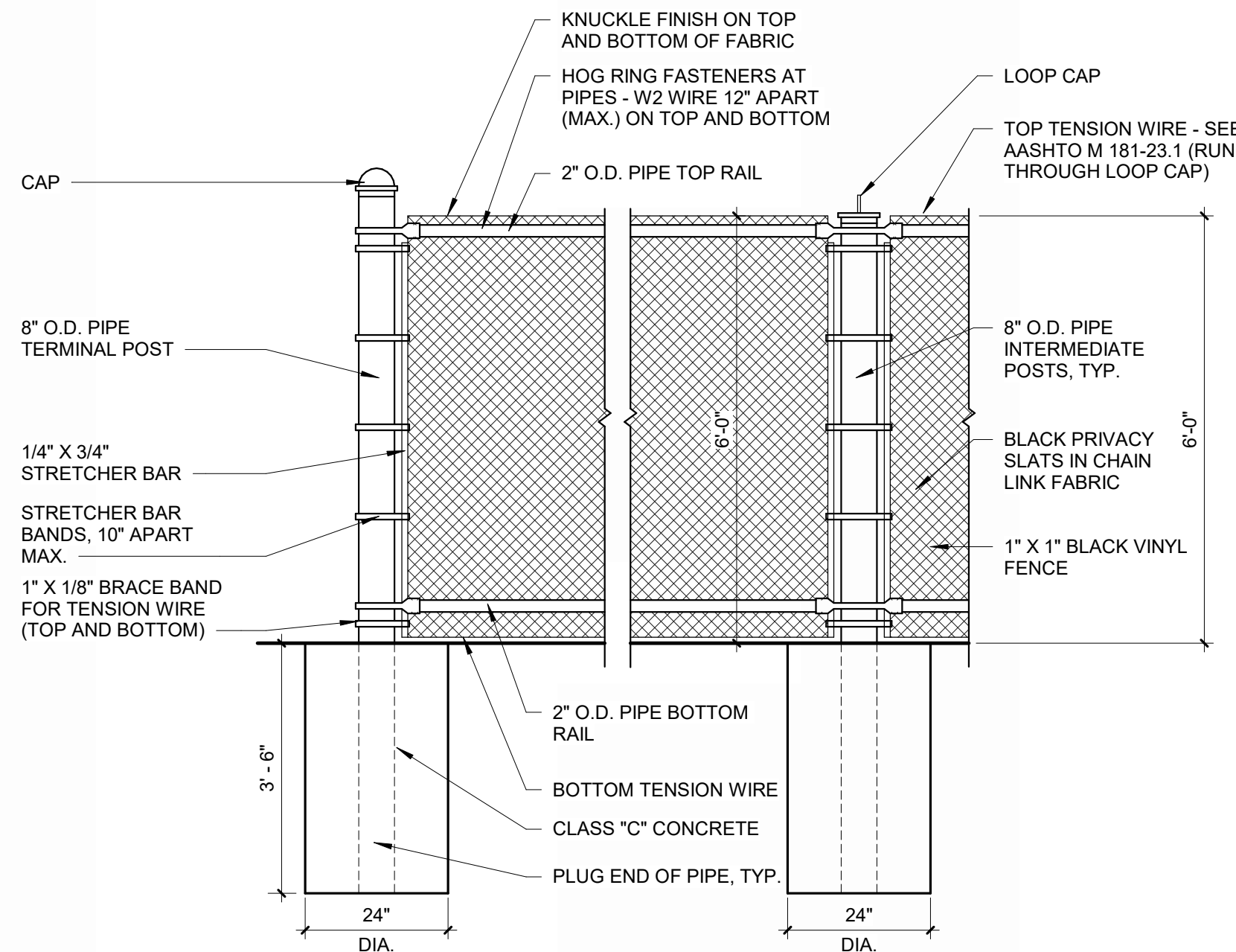
- DEMOLITION SCOPE OF WORK ITEM TYPICAL THROUGHOUT ENTIRE ROOM / AREA
- DEMOLITION SCOPE OF WORK ITEM AT A SPECIFIC LOCATION
- REMOVE EXISTING CHAIN LINK FENCE AND CONCRETE FOOTINGS IN THEIR ENTIRETY. PREPARE AREA FOR NEW FOOTINGS AND FENCE SYSTEM.



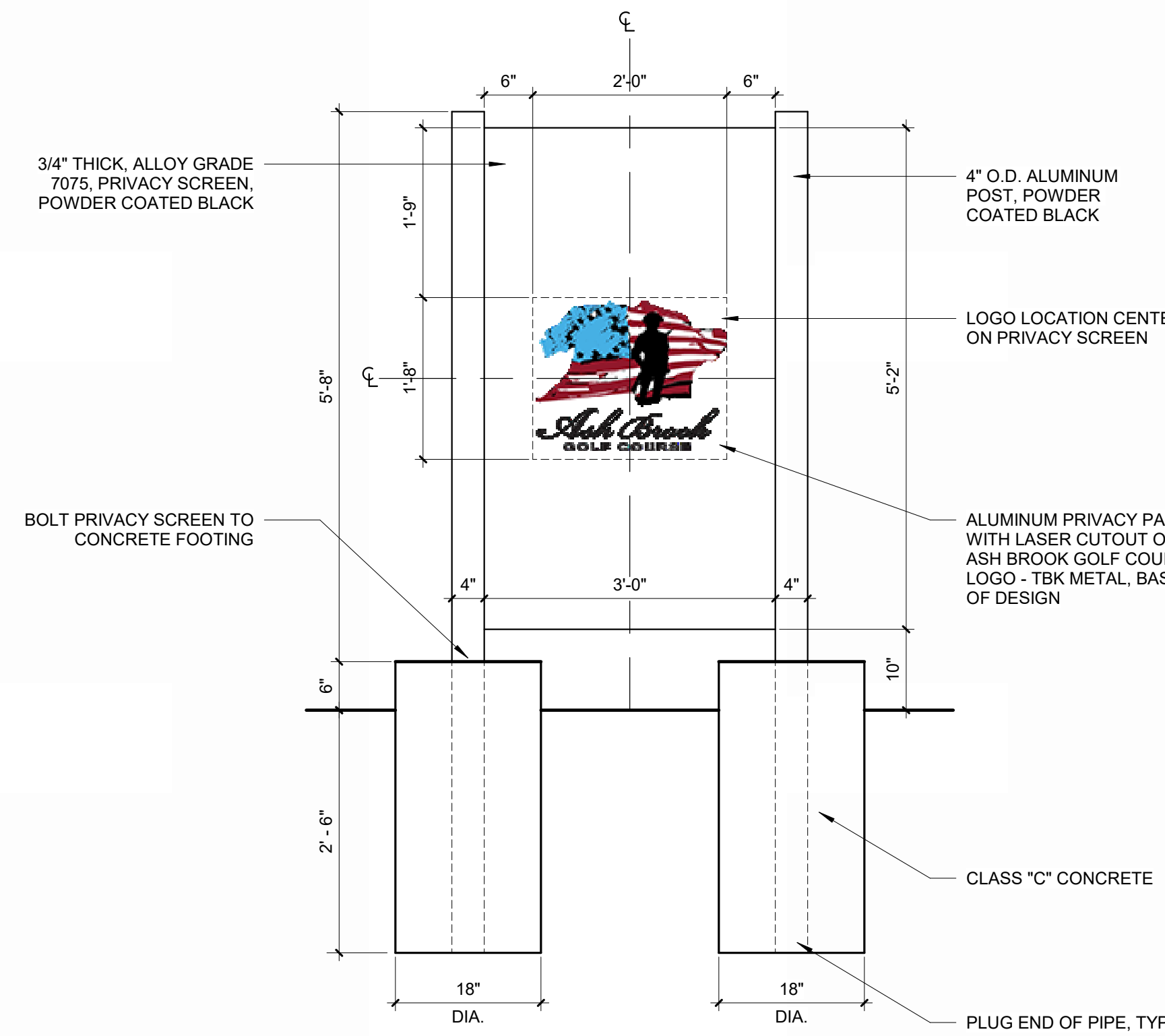
1 FENCE DEMOLITION PLAN
SCALE: N.T.S.



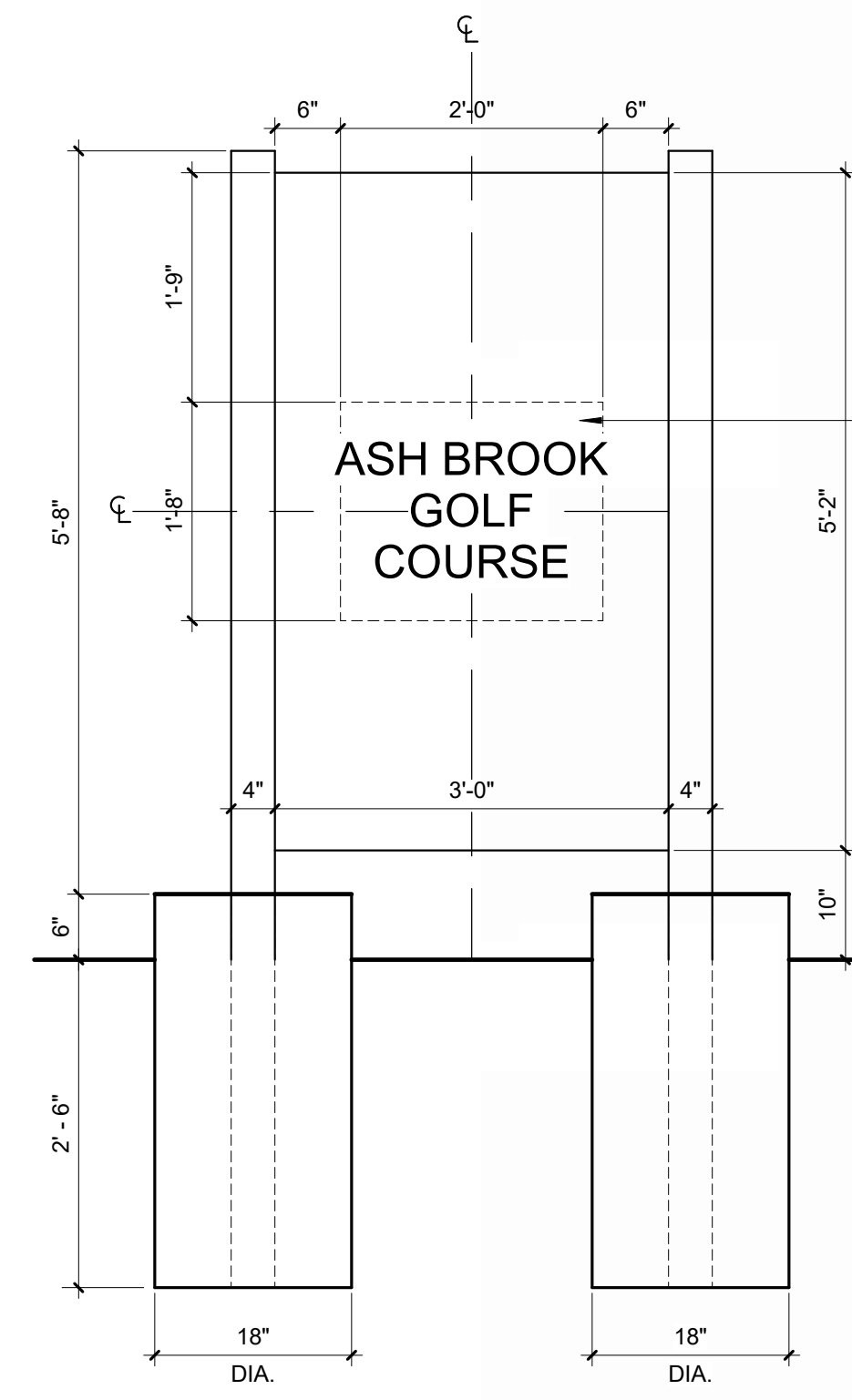
2 FENCE PROPOSED PLAN
SCALE: N.T.S.



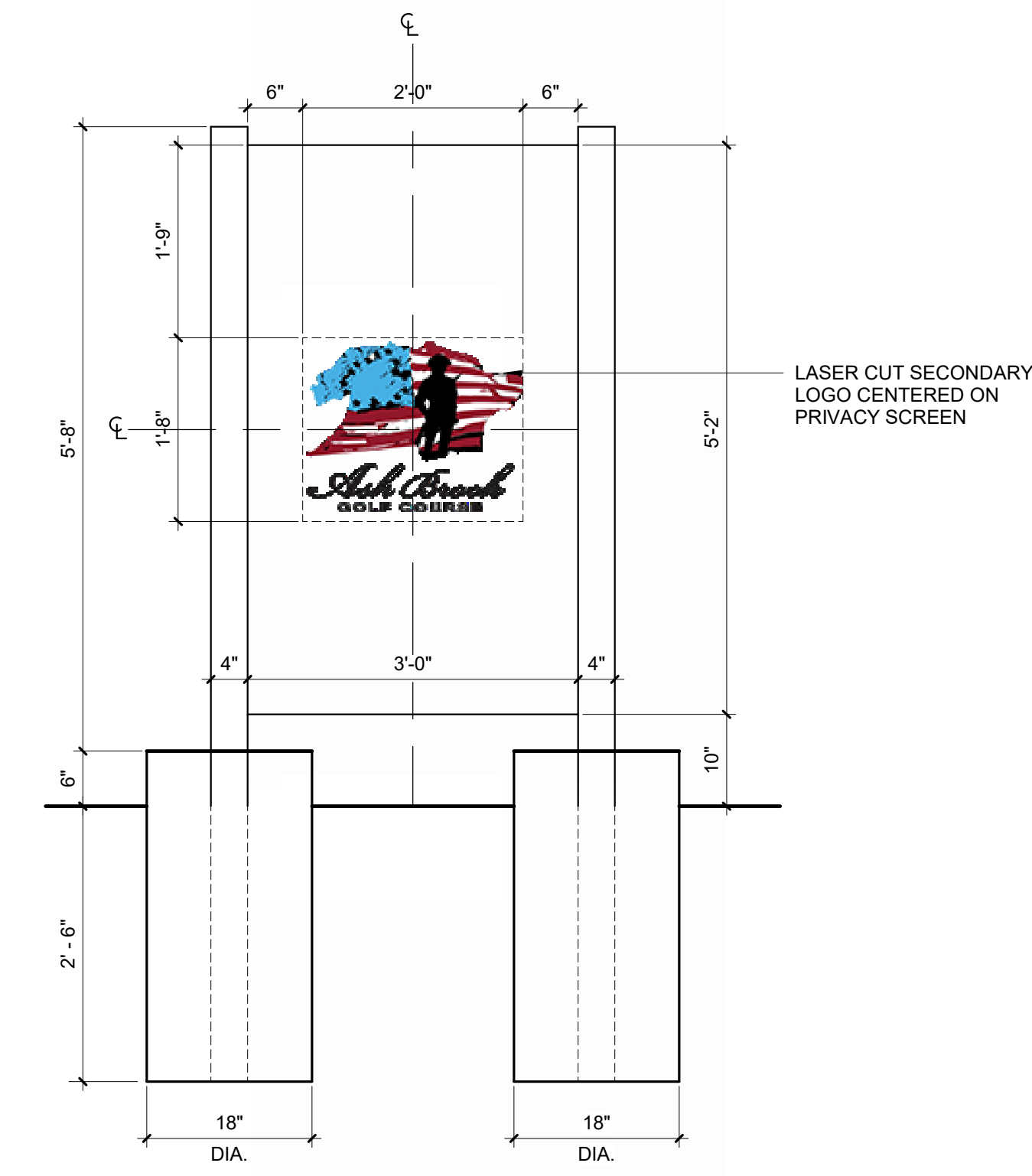
A CHAIN LINK FENCE DETAIL
SCALE: 1/2" = 1'-0"



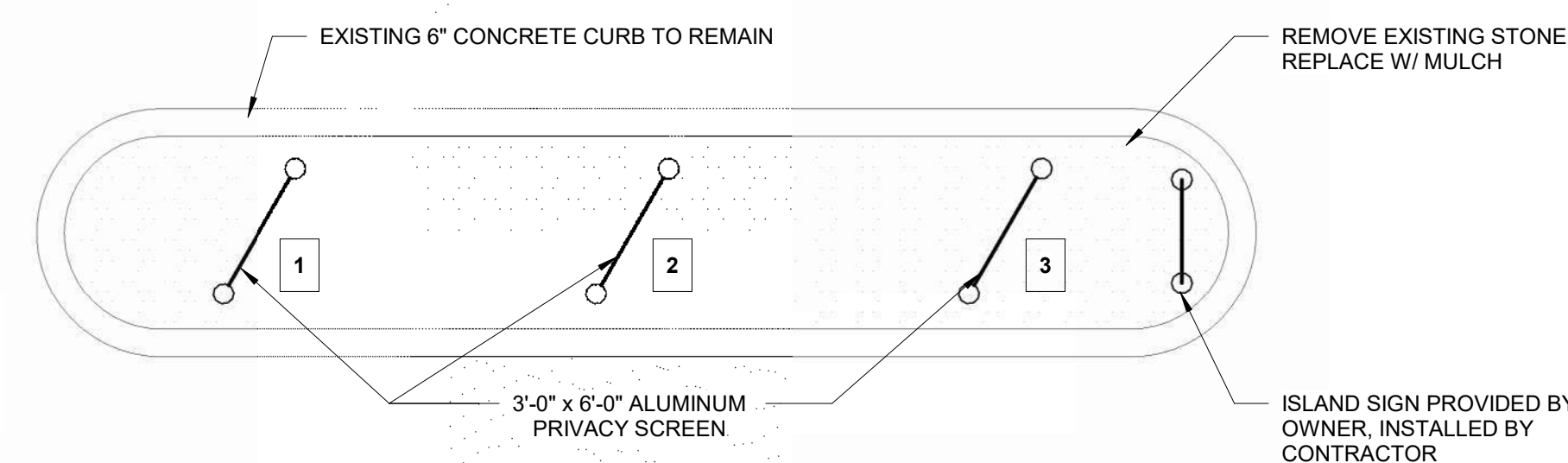
B PRIVACY SCREEN ELEVATIONS
SCALE: 3/4" = 1'-0"



REFER TO PRIVACY SCREEN 1 FOR BALANCE OF NOTES AND DETAILS.



REFER TO PRIVACY SCREEN 1 FOR BALANCE OF NOTES AND DETAILS.



3 DIVIDER ISLAND PROPOSED PLAN
SCALE: 1/4" = 1'-0"

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Drawing Title
CHAIN LINK FENCE & ISLAND PLANS & DETAILS

Scale	USA Project No.
AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-200
Drawn By	Checked By
DTB	ApA

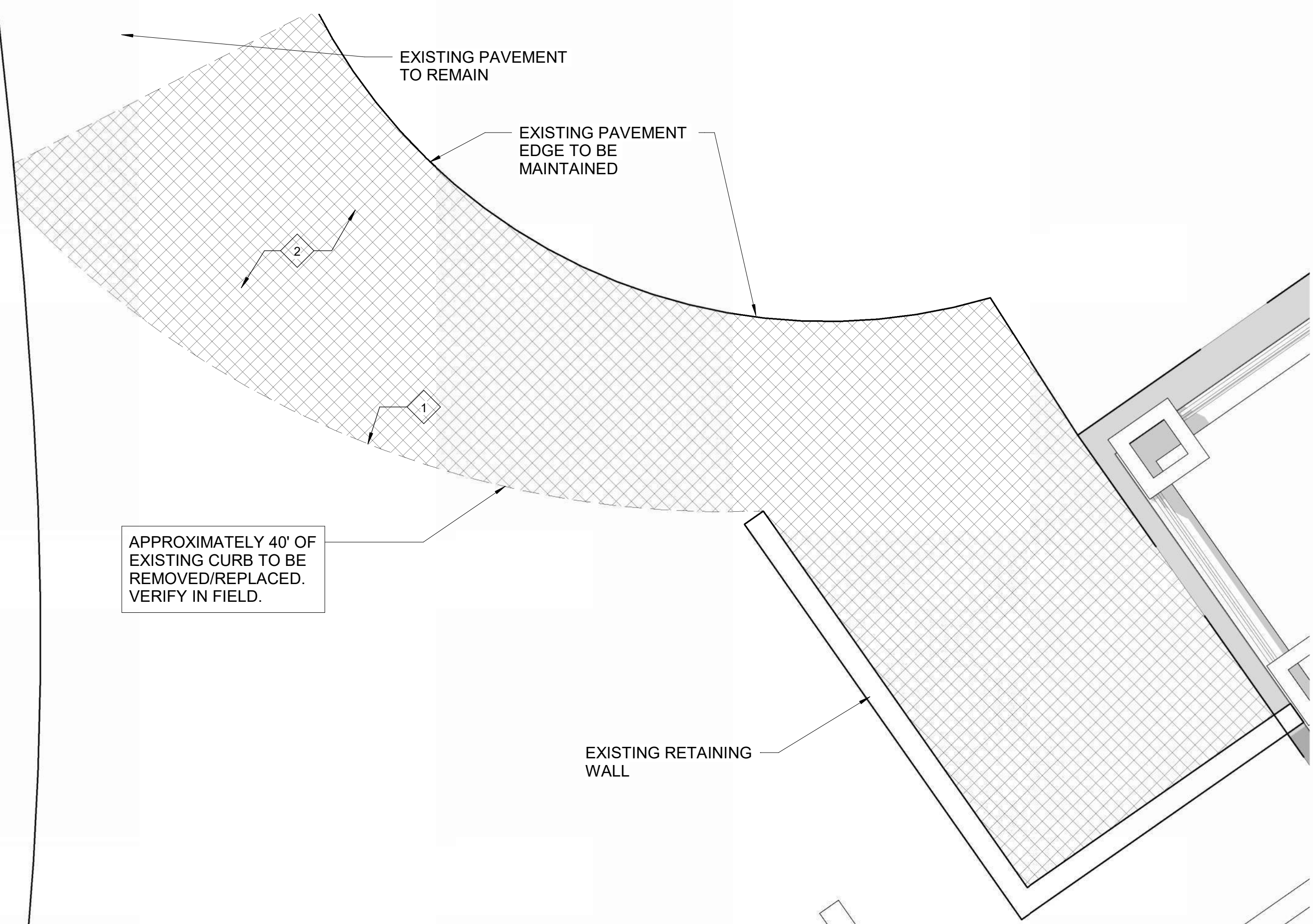
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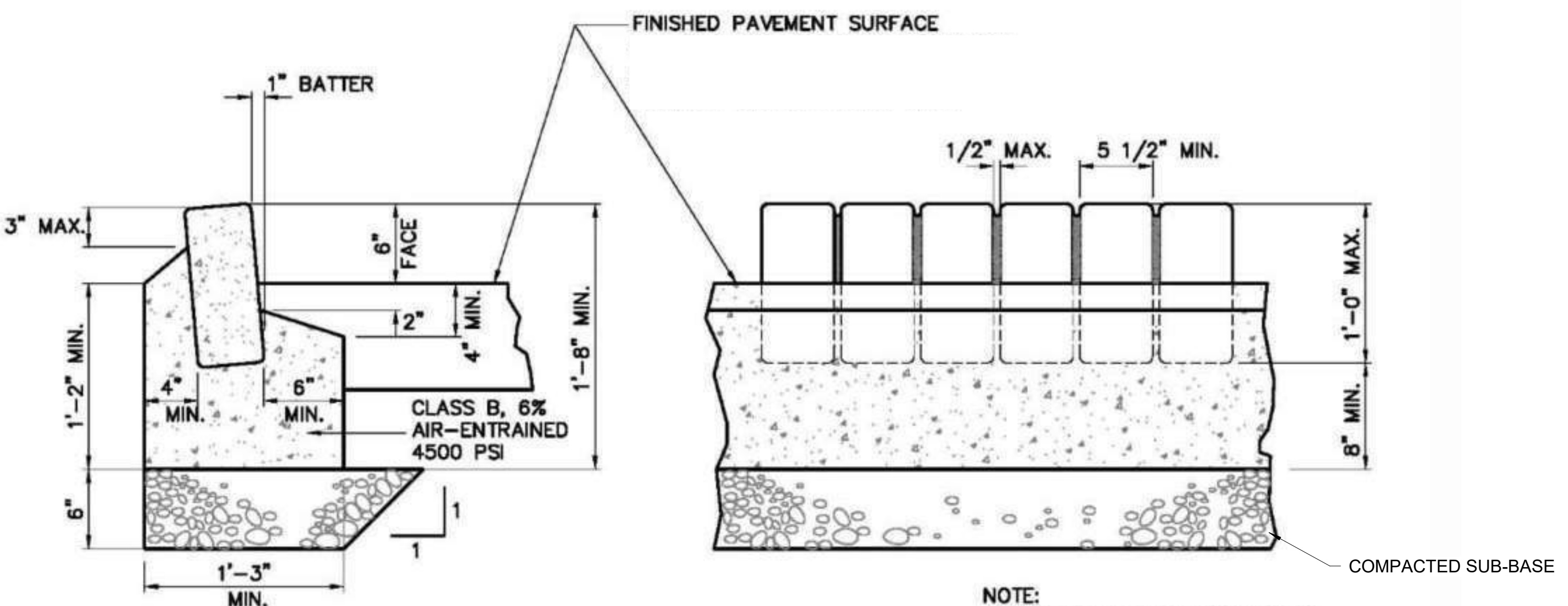
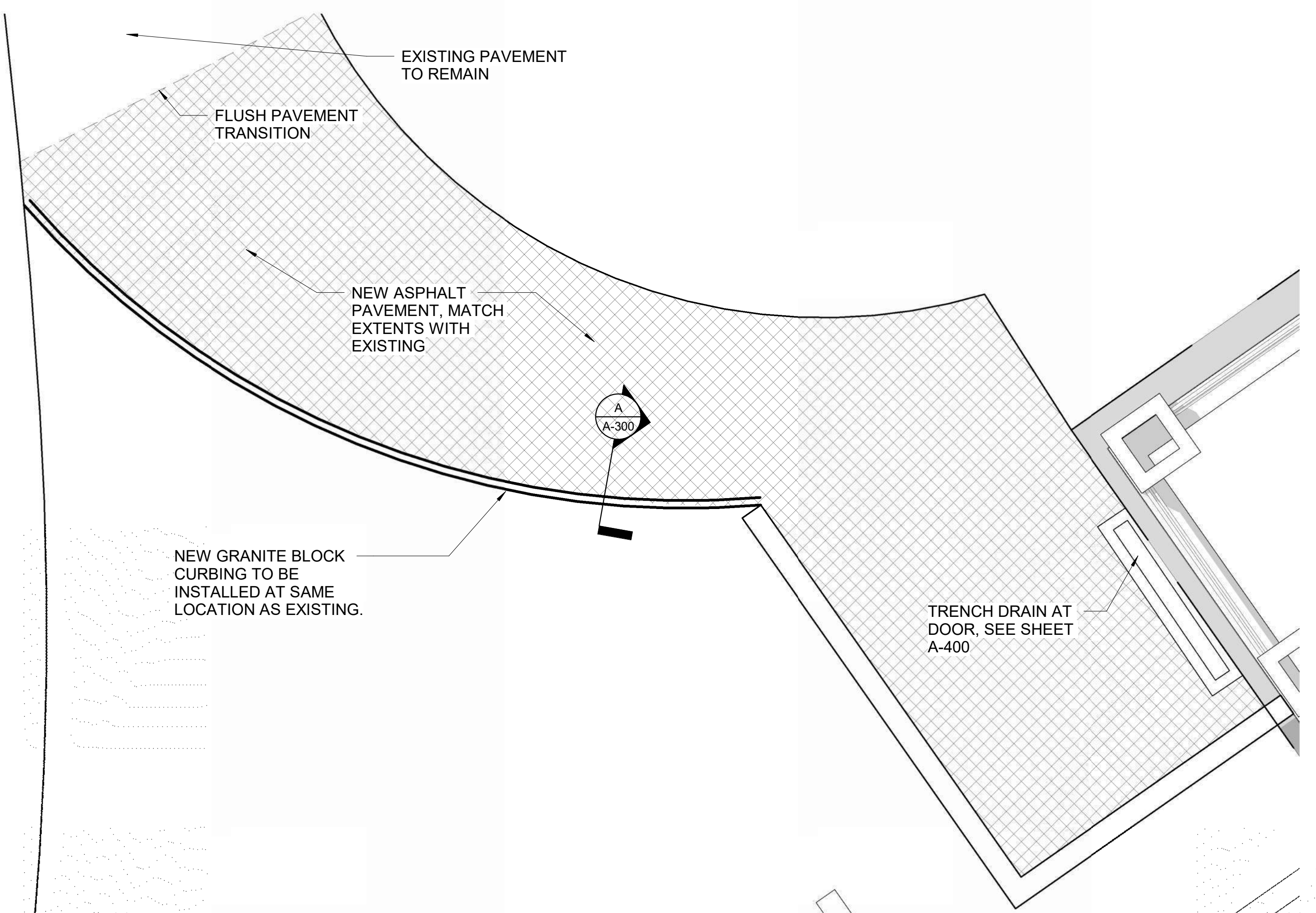
SELECTIVE DEMOLITION LEGEND:

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- DEMOLITION SCOPE OF WORK ITEM AT A SPECIFIC LOCATION
- REMOVE GRANITE CURBING IN ITS ENTIRETY. PREPARE AREA FOR NEW CURBING AND CONCRETE FOUNDATION
- REMOVE PAVEMENT IN ITS ENTIRETY. PREPARE AREA FOR NEW PAVEMENT

1 GRANITE CURB DEMOLITION PLAN
 SCALE: 1/4" = 1'-0"

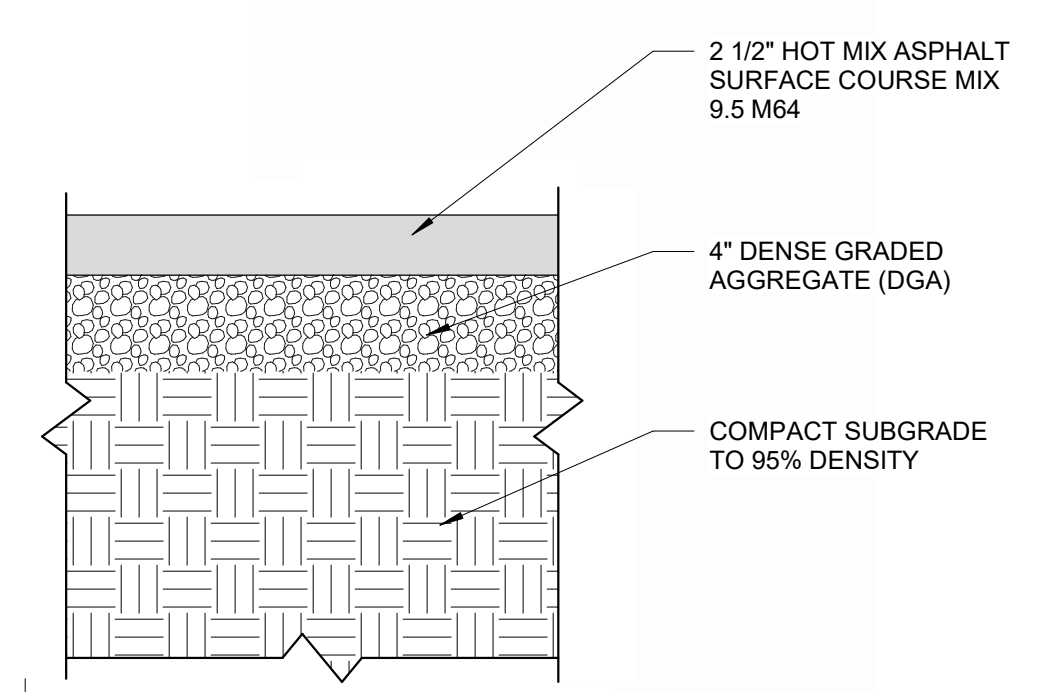


2 GRANITE CURB PROPOSED PLAN
 SCALE: 1/4" = 1'-0"



GRANITE BLOCK DIMENSIONS
 HEIGHT: MIN. 10" TO 12" MAX.
 THICKNESS + WIDTH: MIN. 5" TO 7" MAX.

A GRANITE BLOCK CURB
 SCALE: 1 1/2" = 1'-0"



B PAVEMENT DETAIL
 SCALE: 1 1/2" = 1'-0"

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Drawing Title
GRANITE CURBING PLANS & DETAILS

Scale	USA Project No.
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09.21.23	A-300
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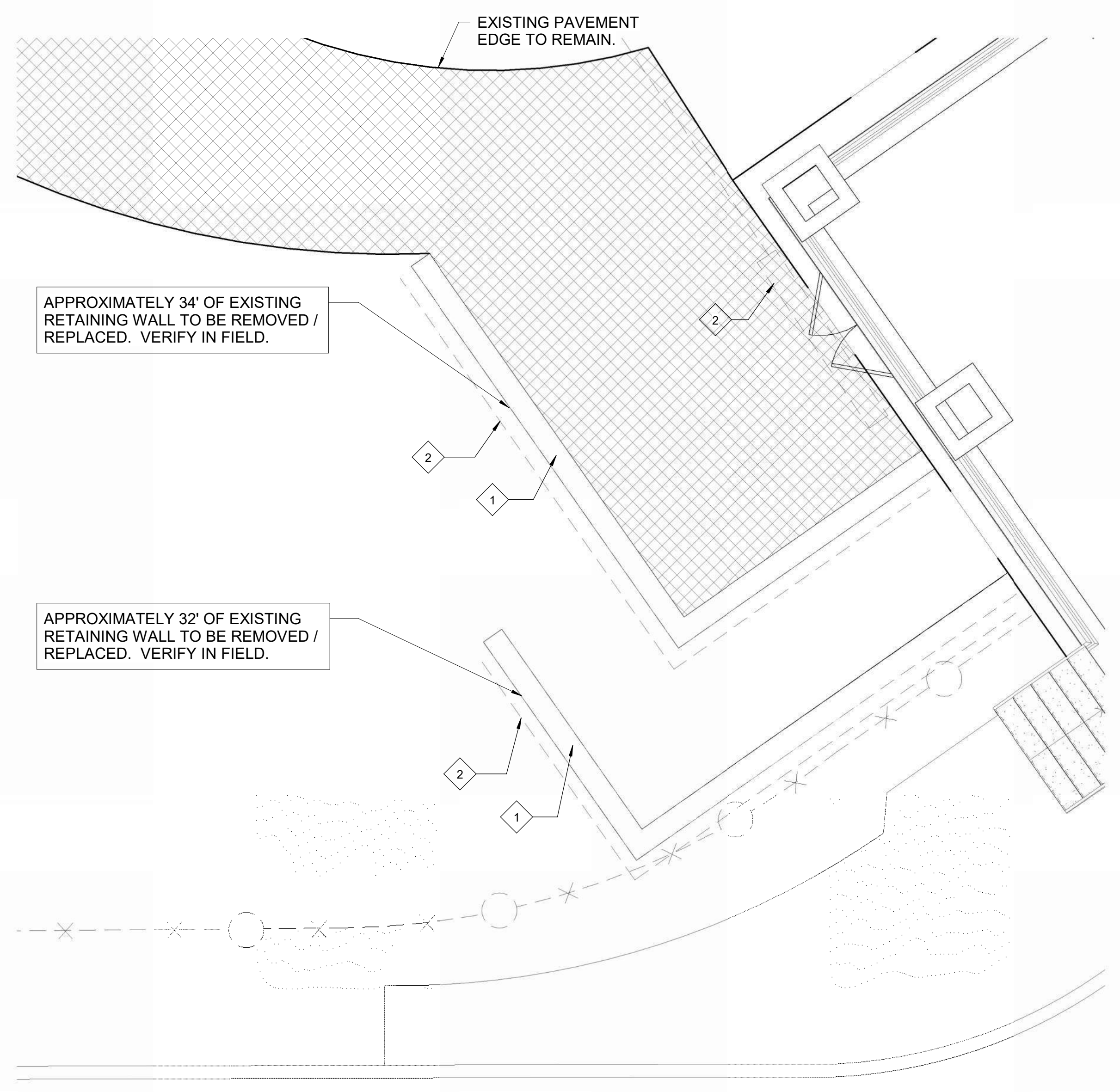
Paul R. Swartz, AIA Susan M. DeHart, AIA
Armand T. Christopher Jr., AIA James McAuliffe, AIA
Peter C. Campiano, AIA Marlene Borruso, AIA
Andrew P. Adornato, AIA

GENERAL DEMOLITION NOTES:

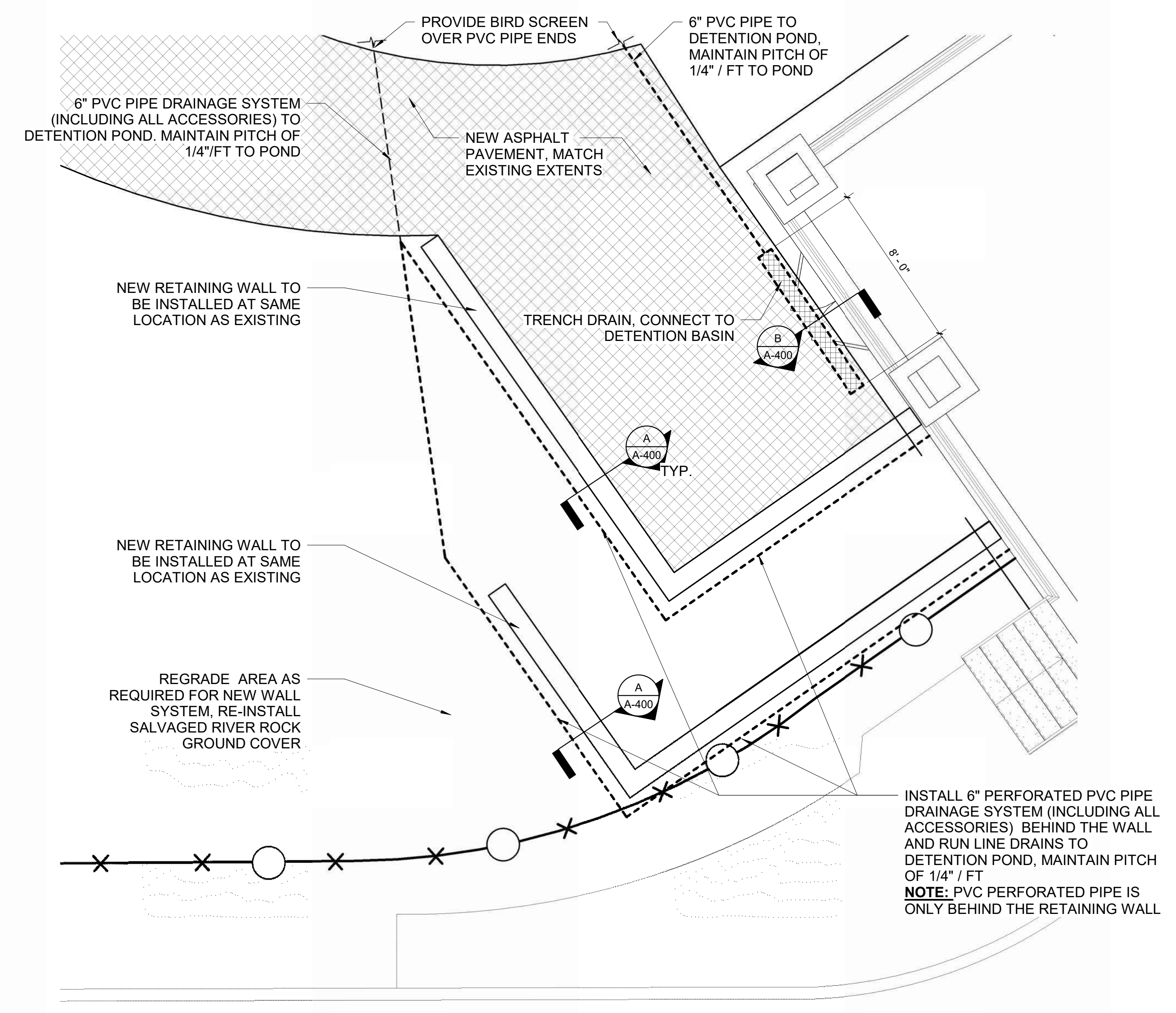
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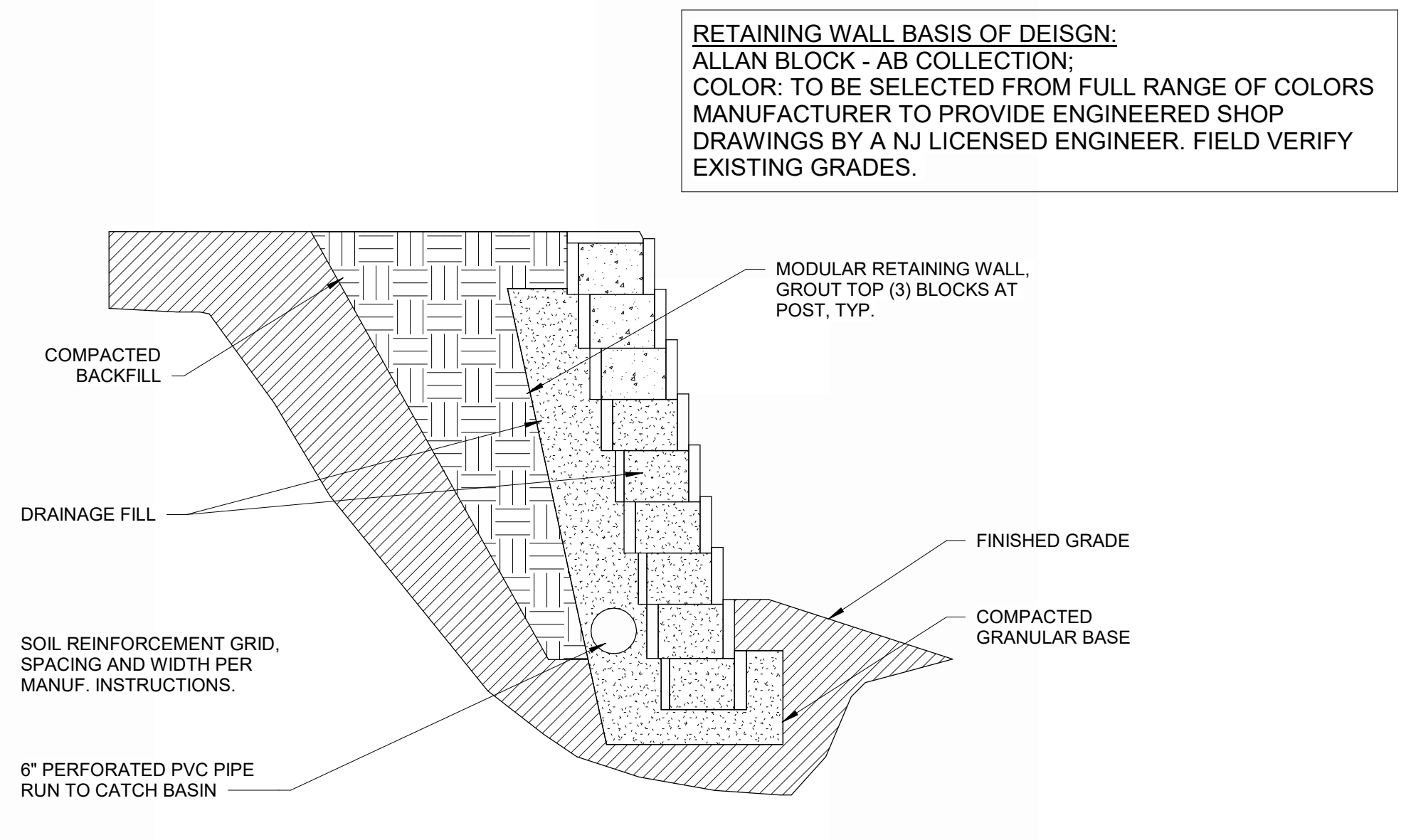
- X DEMOLITION SCOPE OF WORK ITEM TYPICAL THROUGHOUT ENTIRE ROOM / AREA
- X DEMOLITION SCOPE OF WORK ITEM AT A SPECIFIC LOCATION
- 1 REMOVE RETAINING WALL AND FOUNDATION IN THEIR ENTIRETY. PREPARE AREA FOR NEW RETAINING WALL AND FOUNDATION. STABILIZE AREA AS REQUIRED
- 2 REMOVE TRENCH DRAIN, PIPING AND ALL ACCESSORIES IN THEIR ENTIRETY. PREPARE AREA FOR NEW DRAIN AND UNDERGROUND PIPE.



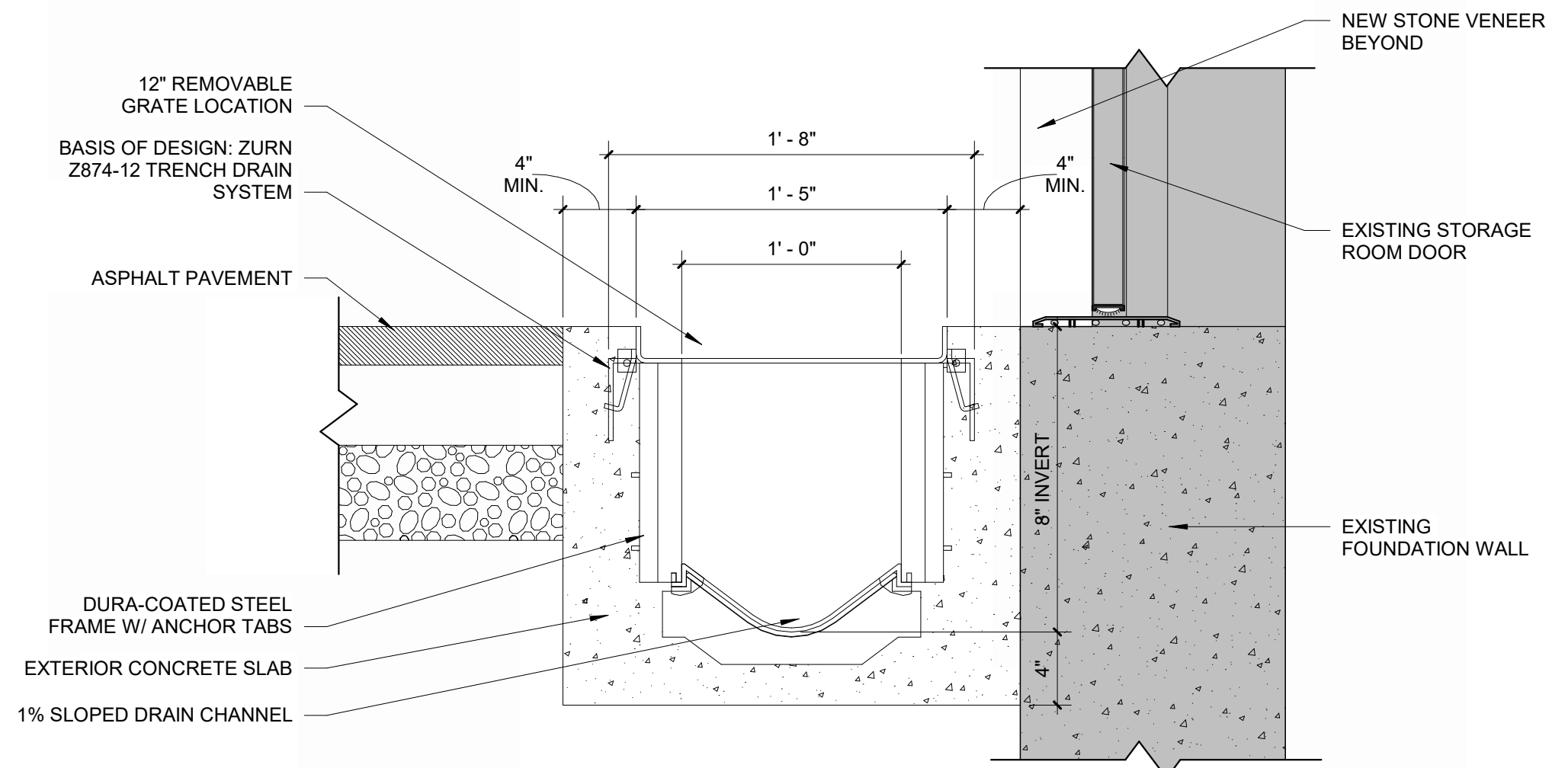
1 RETAINING WALL / TRENCH DRAIN DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



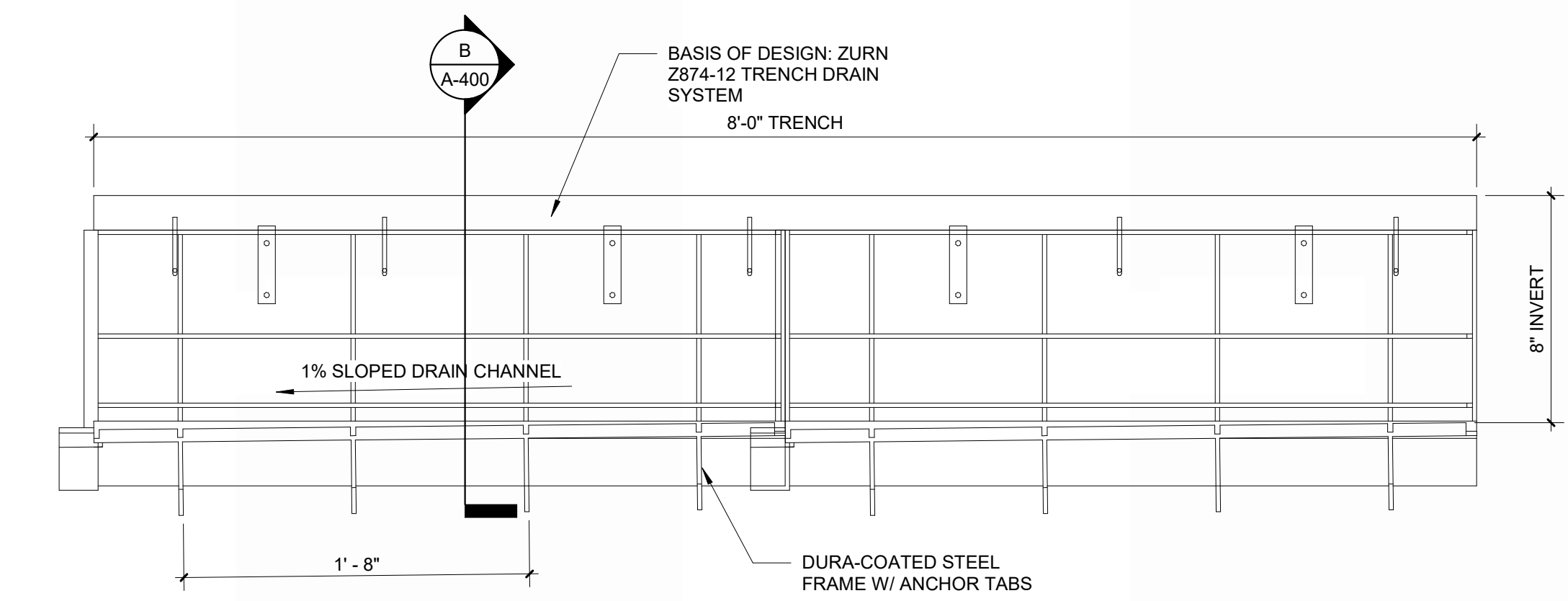
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SCALE: 1/4" = 1'-0"



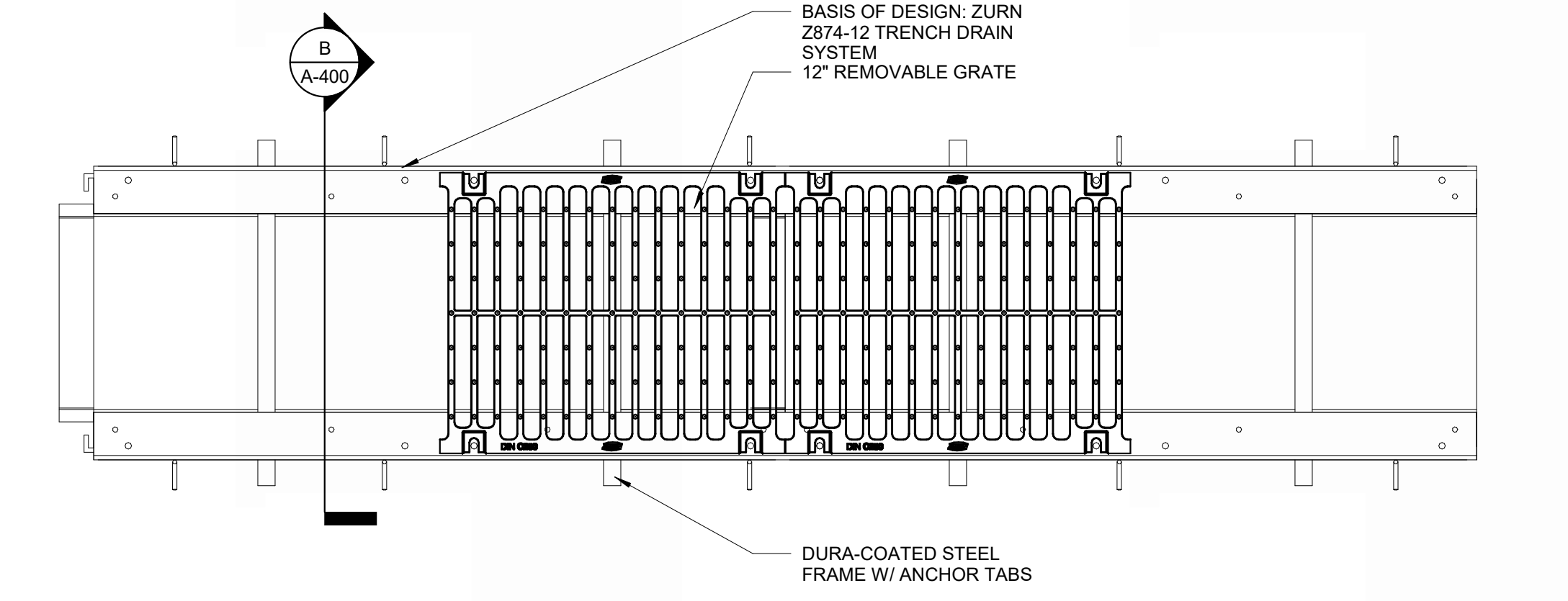
A MODULAR RETAINING WALL
SCALE: 1" = 1'-0"



B TRENCH DRAIN SECTION
SCALE: N.T.S.



C TRENCH DRAIN SECTION
SCALE: N.T.S.



D TRENCH DRAIN PLAN
SCALE: N.T.S.

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Drawing Title	
RETAINING WALL + TRENCH DRAIN PLANS & DETAILS	
Scale	USA Project No.
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09.21.23	A-400
Drawn By	Checked By
DTB	ApA

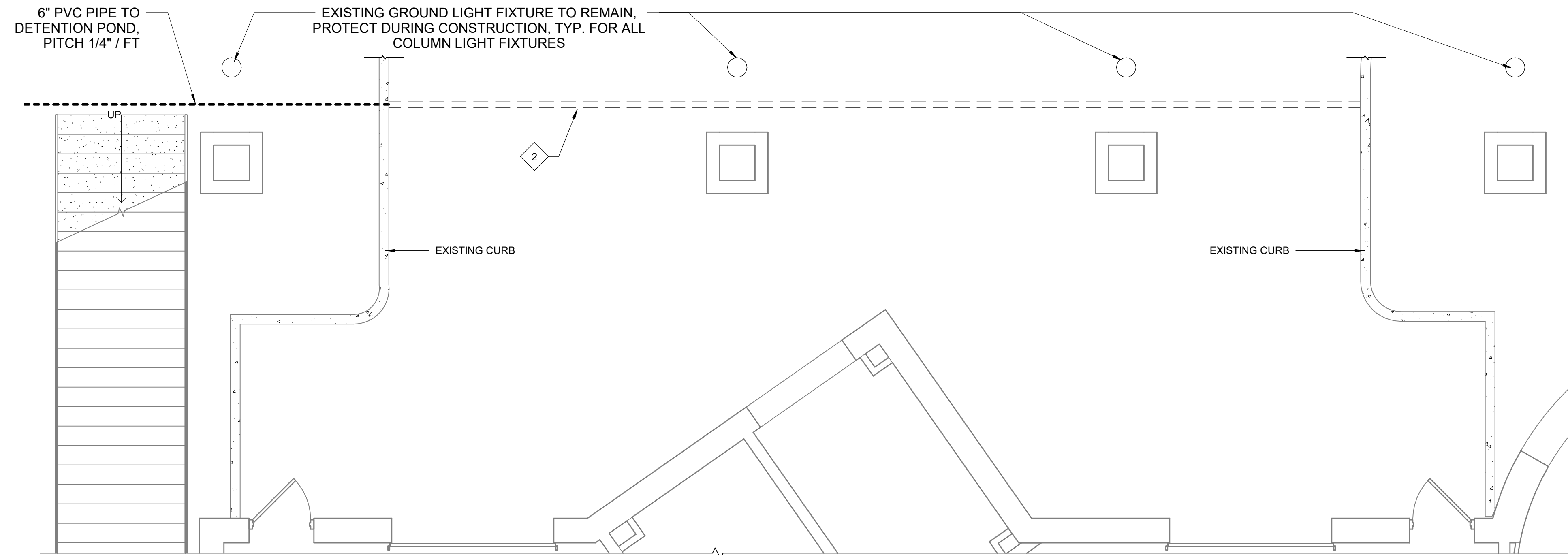
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GENERAL DEMOLITION NOTES:

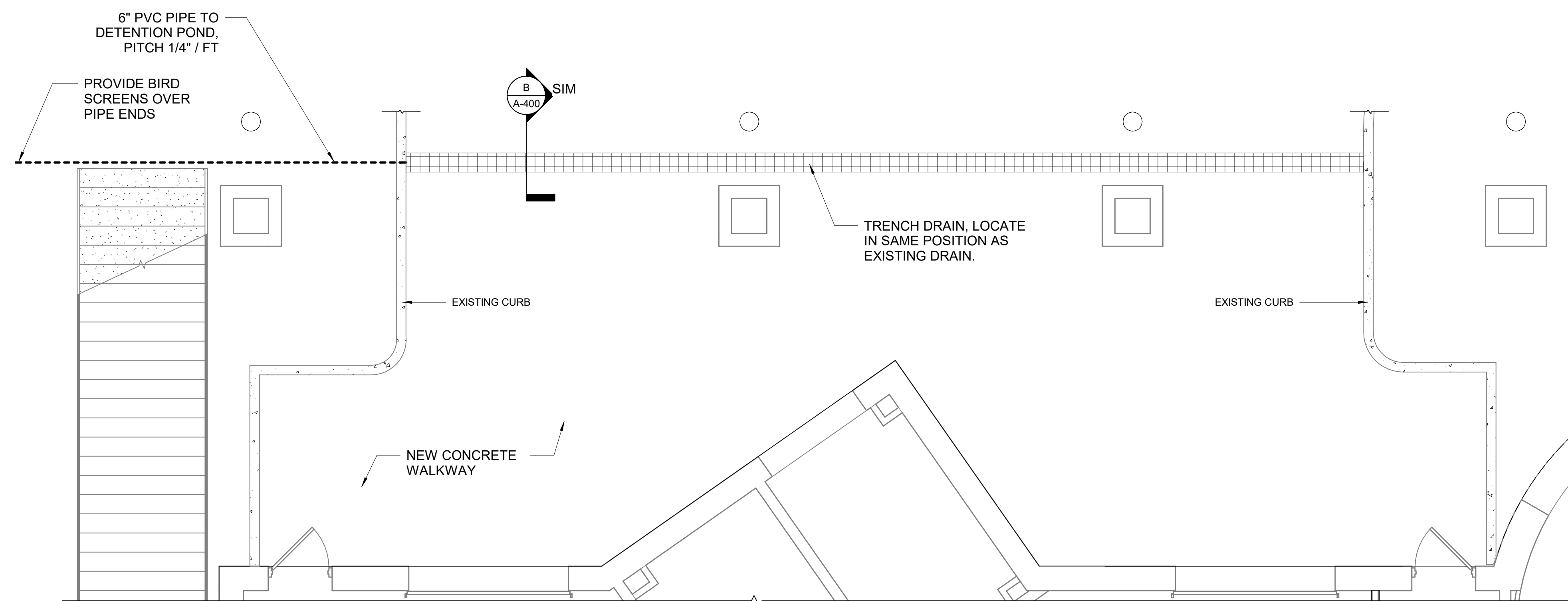
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4. PATCH AND REPAIR ALL ADJACENT SURFACES WHICH ARE AFFECTED BY THE DEMOLITION OR REMOVAL OF ACCESSORIES TO THEIR ORIGINAL FORM AND PREPARE FOR NEW FINISH. COORDINATE WITH FINISH DRAWINGS.
5. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY CLEANUP OF CONSTRUCTION DEBRIS.
6. BEFORE DEMOLITION BEGINS, CONTRACTOR SHALL COORDINATE SEQUENCE AND SCHEDULES FOR ALL WORK AND RELOCATION OR DISPOSAL OF ALL MATERIALS WITH OWNER.
7. DEMOLITION PLANS ARE DIAGRAMMATIC. PRIOR TO SUBMITTING BID, GENERAL CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND BRING ANY AREAS IN QUESTION TO THE ATTENTION OF THE ARCHITECT.
8. INSTALL SAFETY BARRICADES AND WARNING FENCING TO PROTECT PEDESTRIANS AND CARTS
9. PROTECT ALL EXISTING SURFACES AND STRUCTURES FROM DAMAGE FROM RAIN, SNOW, WIND DAMAGE, ETC. DURING THE WORK.

SELECTIVE DEMOLITION LEGEND:

- DEMOLITION SCOPE OF WORK ITEM TYPICAL THROUGHOUT ENTIRE ROOM / AREA
- DEMOLITION SCOPE OF WORK ITEM AT A SPECIFIC LOCATION
- REMOVE RETAINING WALL AND FOUNDATION IN THEIR ENTIRETY. PREPARE AREA FOR NEW RETAINING WALL AND FOUNDATION. STABILIZE AREA AS REQUIRED.
- REMOVE TRENCH DRAIN, PIPING AND ALL ACCESSORIES IN THEIR ENTIRETY. PREPARE AREA FOR NEW DRAIN AND UNDERGROUND PIPE.



1 TRENCH DRAIN AT CART BARN - DEMOLITION PLAN
 SCALE: 1/4" = 1'-0"



2 TRENCH DRAIN AT CART BARN - PROPOSED PLAN
 SCALE: 1/4" = 1'-0"

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REPAIRS AND RESTORATION
 AT THE
CLUBHOUSE
 FOR THE
ASH BROOK GOLF COURSE
 1210 RARITAN ROAD
 SCOTCH PLAINS, NJ 07076

No.	Date	Issue or Revision
2	01.11.24	ISSUED FOR RE-BID
1	09.21.23	ISSUED FOR BID

Drawing Title	
TRENCH DRAIN AT CART BARN	
Scale	USA Project No.
AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-401
Drawn By	Checked By
DTB	ApA

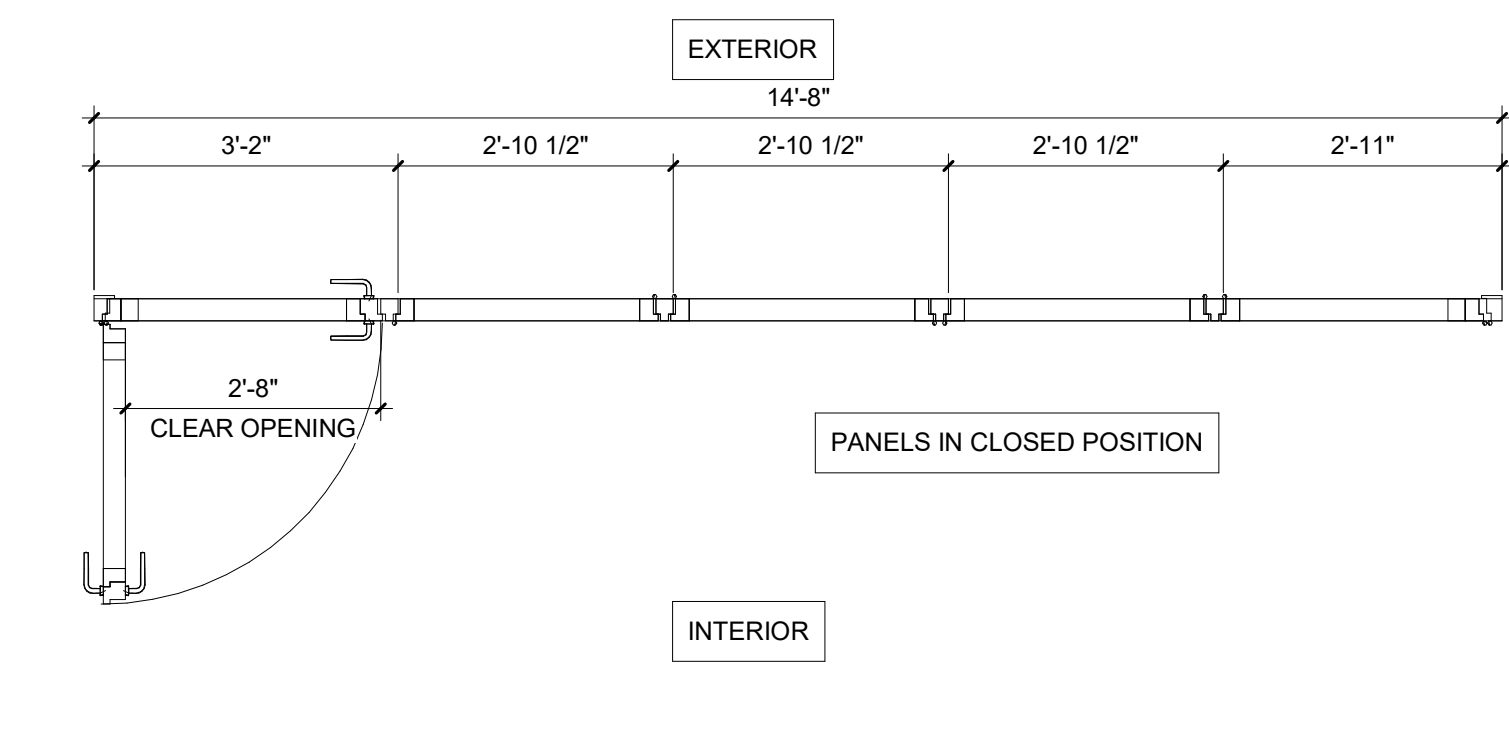
GENERAL DEMOLITION NOTES:

1. CONTRACTOR MUST INSTALL AND MAINTAIN PLASTIC DUST BARRIERS DURING DEMOLITION AND CONSTRUCTION TO PROTECT THE GENERAL PUBLIC FROM DUST AND FUMES. LOCATE PARTITIONS REQUIRED TO PROTECT ADJACENT AREAS AND EQUIPMENT, AND CONTINUE EGRESS THROUGH THE SPACE. CONTRACTOR SHALL PROVIDE TEMPORARY EXIT WAYS AS REQUIRED BY LOCAL CODE ENFORCEMENT OFFICIAL DURING CONSTRUCTION.
2. DO NOT CONSIDER DEMOLITION AND ALTERATION NOTES TO BE ALL INCLUSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND ASSESS EACH SPACE AND TO FULFILL THE INTENT OF THE WORK INDICATED BY THE CONTRACT DOCUMENTS. VERIFY ALL DIMENSIONS WITHIN THE CONTRACT LIMITS. BRING DEVIATIONS FROM THE CONTRACT DOCUMENTS TO THE ATTENTION OF THE ARCHITECT. THE EXTENT OF DEMOLITION AND REMOVAL INCLUDES, BUT IS NOT LIMITED TO WORK SHOWN ON THE DRAWINGS. COORDINATE W/ MECHANICAL, ELECTRICAL, PLUMBING & STRUCTURAL DRAWINGS.
3. REMOVE ANY MISCELLANEOUS PROJECTIONS, HANGERS, BOLTS, SCREWS AND NAILS FROM EXISTING SURFACES TO REMAIN. PATCH AND PREPARE SURFACES TO RECEIVE NEW FINISH.
4. PATCH AND REPAIR ALL ADJACENT SURFACES WHICH ARE AFFECTED BY THE DEMOLITION OR REMOVAL OF ACCESSORIES TO THEIR ORIGINAL FORM AND PREPARE FOR NEW FINISH. COORDINATE WITH FINISH DRAWINGS.
5. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY CLEANUP OF CONSTRUCTION DEBRIS.
6. BEFORE DEMOLITION BEGINS, CONTRACTOR SHALL COORDINATE SEQUENCE AND SCHEDULES FOR ALL WORK AND RELOCATION OR DISPOSAL OF ALL MATERIALS WITH OWNER.
7. DEMOLITION PLANS ARE DIAGRAMMATIC. PRIOR TO SUBMITTING BID, GENERAL CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND BRING ANY AREAS IN QUESTION TO THE ATTENTION OF THE ARCHITECT.
8. INSTALL SAFETY BARRICADES AND WARNING FENCING TO PROTECT PEDESTRIANS AND CARTS
9. PROTECT ALL EXISTING SURFACES AND STRUCTURES FROM DAMAGE FROM RAIN, SNOW, WIND DAMAGE, ETC. DURING THE WORK.

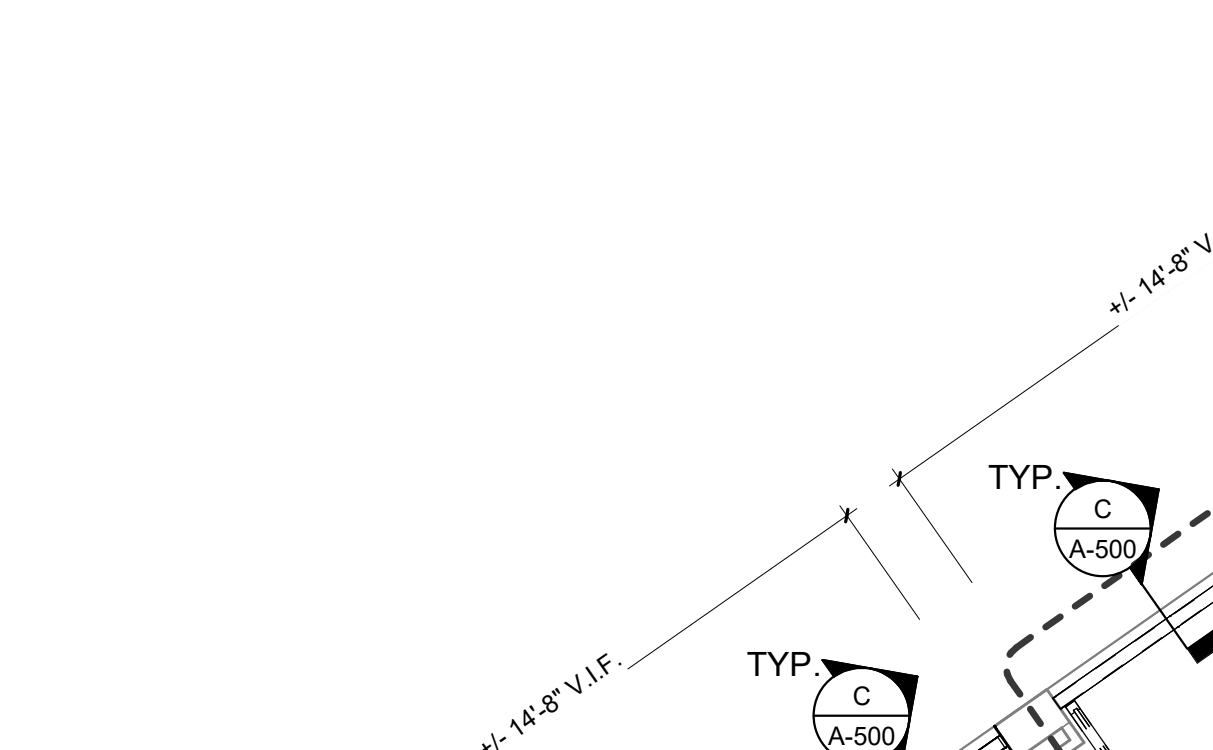
SELECTIVE DEMOLITION LEGEND:

- DEMOLITION SCOPE OF WORK ITEM TYPICAL THROUGHOUT ENTIRE ROOM / AREA
- DEMOLITION SCOPE OF WORK ITEM AT A SPECIFIC LOCATION
- REMOVE FOLDING DOOR SYSTEM AND ACCESSORIES IN THEIR ENTIRETY. PREPARE AREA FOR NEW FOLDING DOOR SYSTEM.
- REMOVE STONE AND SHEATHING FROM SURFACE OF COLUMNS IN THEIR ENTIRETY. PATCH & REPAIR ADJACENT SURFACES TO RECEIVE NEW FINISH
- SCRAPE AND PAINT ALL EXISTING STEEL ONCE EXPOSED FROM DEMOLITION.

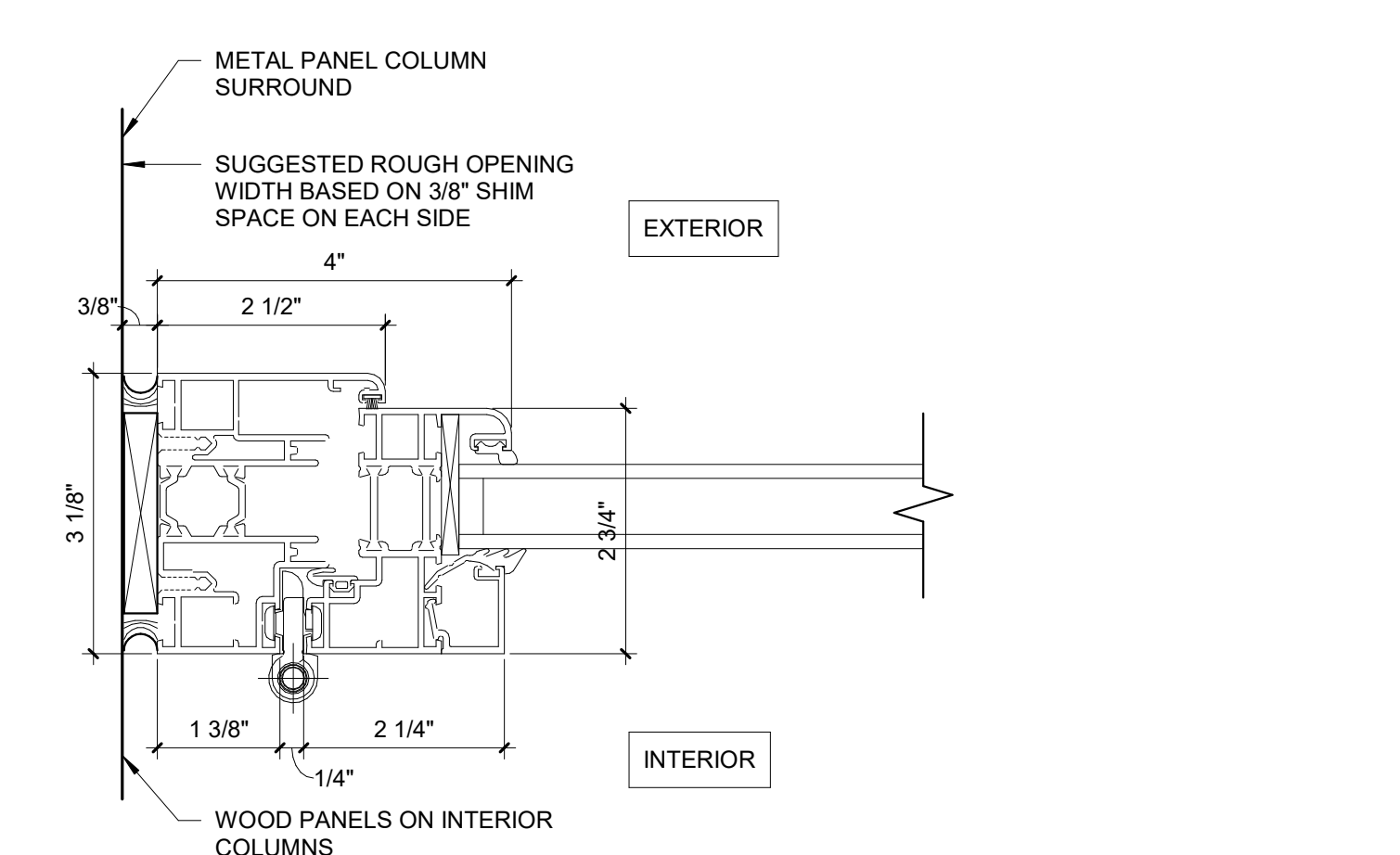
B SLIDING DOOR HEAD / SILL
 SCALE: 6" = 1'-0"



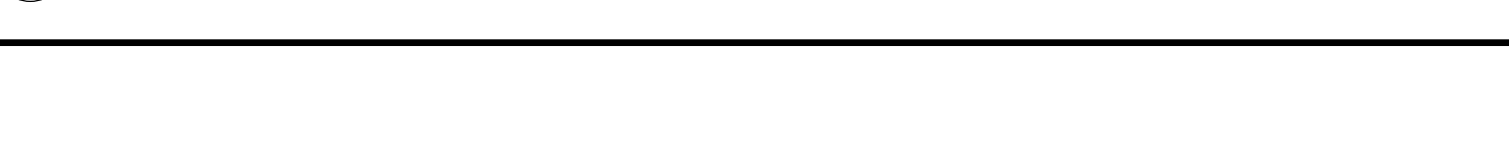
C SLIDING DOOR HEAD / SILL @ TRANSOM WINDOWS
 SCALE: 6" = 1'-0"



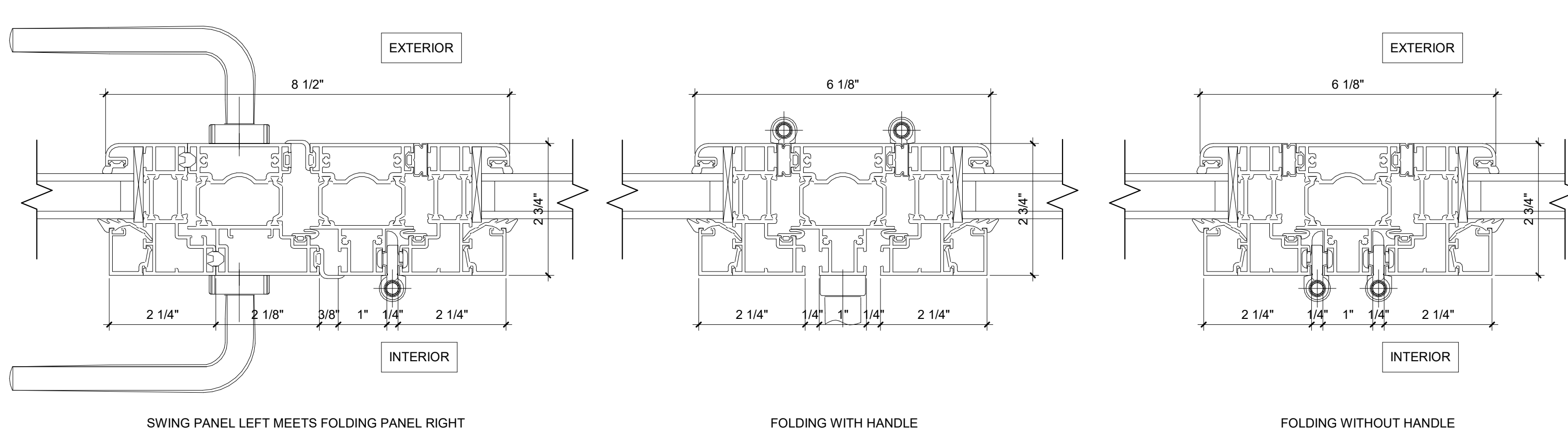
A SLIDING DOOR PLAN
 SCALE: 1/2" = 1'-0"



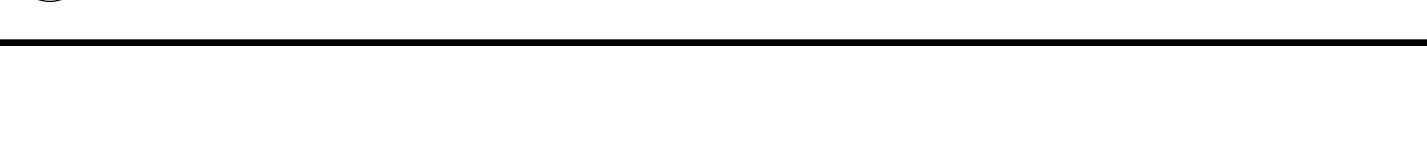
D SLIDING DOOR JAMB
 SCALE: 6" = 1'-0"



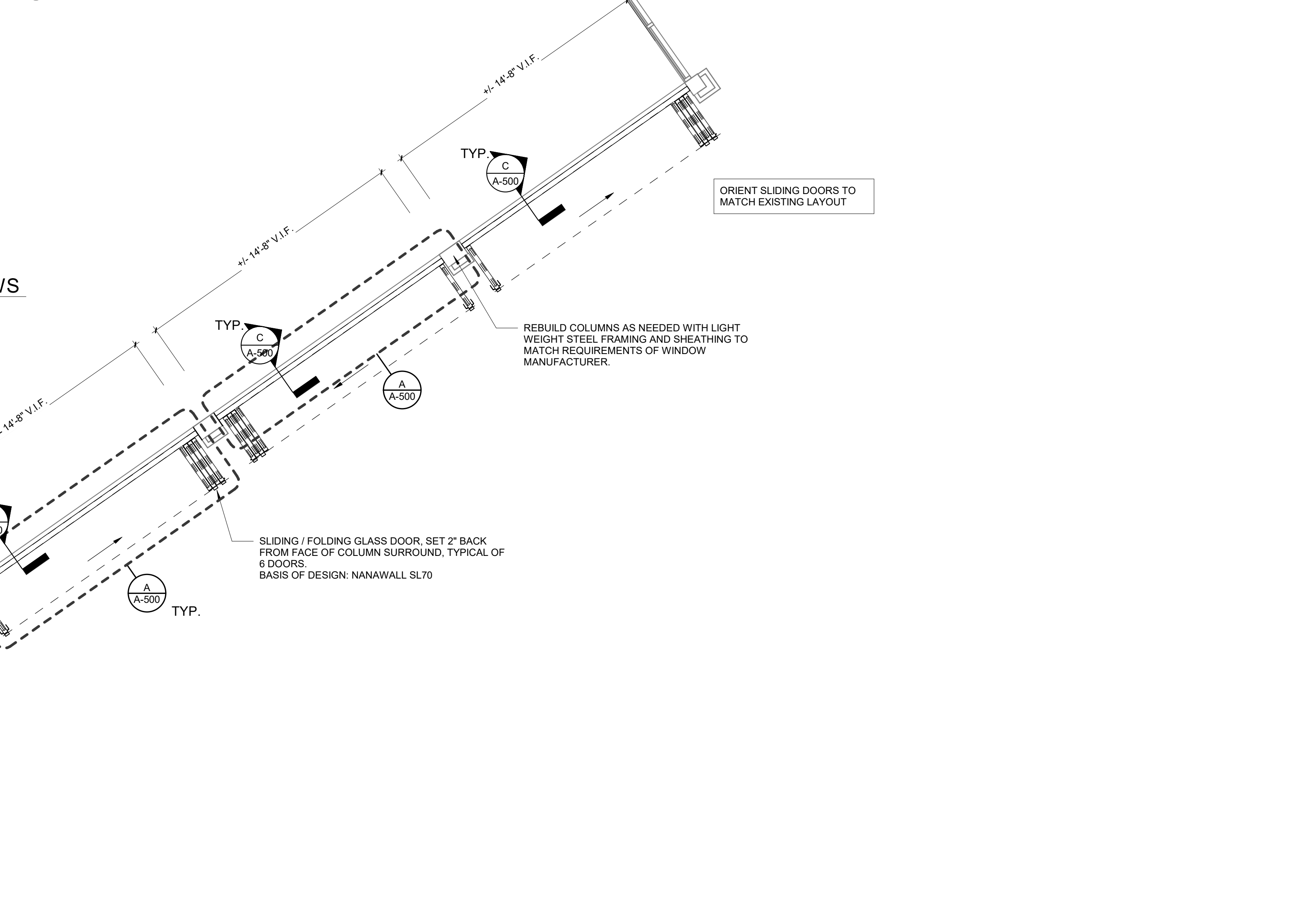
2 FOLDING DOORS & COLUMNS PROPOSED PLAN
 SCALE: 1/4" = 1'-0"



E SLIDING / FOLDING DOOR - INTERMEDIATE MULLIONS
 SCALE: 6" = 1'-0"



1 FOLDING DOORS & COLUMNS DEMOLITION PLAN
 SCALE: 1/8" = 1'-0"





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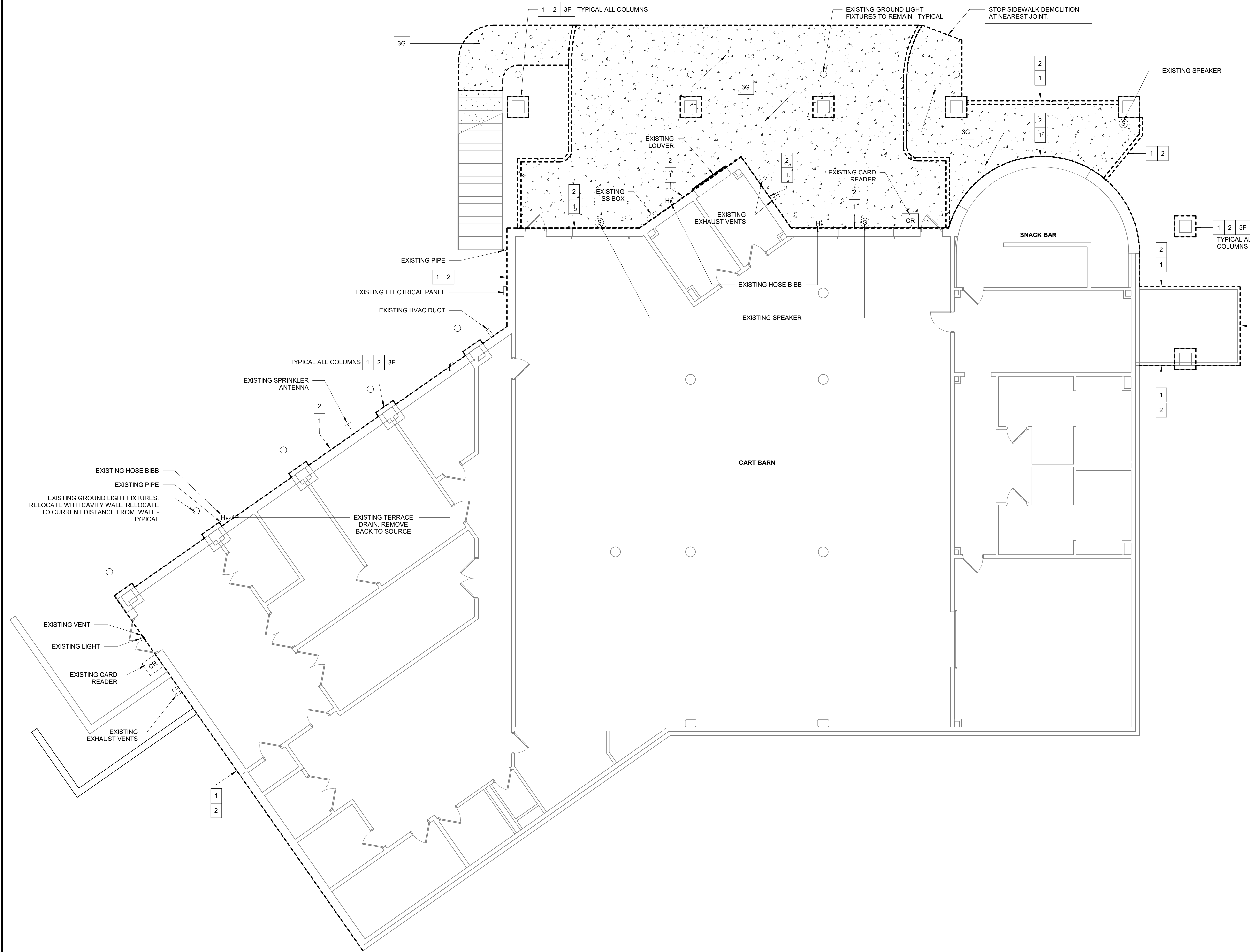
Paul R. Swartz, AIA Susan M. DeHart, AIA
Armand T. Christopher Jr., AIA James McAuliffe, AIA
Peter C. Campiano, AIA Marlene Borruso, AIA
Andrew P. Adornato, AIA

GENERAL CONSTRUCTION NOTES:

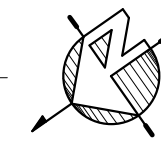
- A. Do not consider construction notes to be all inclusive. It is contractor's responsibility to inspect and assess the area and to fulfill the intent of the work indicated by the contract documents. Verify all dimensions within the contract limits. Bring deviations from the contract documents to the attention of the Architect.
- B. The extent of demolition and construction work includes, but is not limited to, work shown on the drawings.
- C. Patch and repair all adjacent surfaces affected by the demolition or removal of accessories to their original form and prepare for new finish.
- D. The contractor shall be responsible for daily cleanup of construction debris.
- E. Before work begins, contractor shall coordinate sequence and schedules for all work and relocation or disposal of all materials with Owner.
- F. Tree Stumps, Shrubby and Vegetation: Prior to construction Contractor shall be responsible for all trimming that is necessary to provide access to building to facilitate work.
- G. On the Drawings, the reference to a single number item in the Notes below includes all lettered sub-items.
- H. Detail photos are provided only as examples of the work items to be performed and the photos do not represent a complete listing of all the locations where work is required. It is the contractor's responsibility to visit the site and review the entire building.
- I. The photos should only be used to identify parts of the building and not for estimating any quantities.
- J. Building will be in full operation. Coordinate ingress and egress with Owner.
- K. Install safety barricades and warning fencing to protect pedestrians and carts.
- L. Protect all existing surfaces and structures from damage from rain, snow, wind damage, etc. during the work.
- M. During cold weather, protect concrete and masonry work from damage by enclosing work area and heating the work area continuously with a furnace. Furnace shall be located outside the enclosure and combustion gasses shall be released outside the enclosure and outside the building.
- N. Scrape, sand, prepare and paint all steel structural elements that are exposed during the work.

SCOPE OF WORK NOTES:

- 1. Thin-stone veneer
 - a. Remove all thin-stone veneer. Patch and repair surface to receive new finish.
- 2. On all stone walls to be rebuilt or stuccoed, remove all devices, lights, vents, fans, plumbing fixtures, etc. Locations shown on drawings.
 - a. Disconnect from power or feed sources
 - b. Remove, label and securely store all fixtures.
 - c. When work is completed, reinstall fixtures
 - d. Note that some of the walls will be thicker after reconstruction and it may be necessary to extend the mounting and feeds. This may require all new feeds to the devices in order to meet current codes.
- 3. Remove and replace terrace in its entirety including associated columns, masonry and walls in the areas above and below the terrace on the upper and lower levels of the building.
 - a. Remove existing metal drop ceiling. Scrape and paint all steel. Ceiling was previously removed, but there may still be hangers and framework which was not removed.
 - 1. Remove recessed light fixtures. Maintain wiring for new fixtures. Refer to electrical drawings.
 - b. Remove and salvage internal frame and gas burner equipment from the fire pit. Demolish the fire pit and discard.
 - c. Remove and dispose of existing terrace paves. Remove and discard loose fill on top of concrete deck.
 - d. Remove aluminum railing system. Contractor re-use if it comes out clean. Contractor shall put a new railing system (match existing) in bid price in case existing cannot be re-used. If railing system is being re-used, scrape, sand, prepare and paint the railing system. Use spray, not brush application of paint.
 - e. Remove existing concrete deck and steel cold formed decking. Refer to structural.
 - f. Demolish column structures below and above the deck. Leave steel support columns in place. Remove steel cold formed framing of the columns
 - g. Remove concrete pad sidewalk and curbing in their entirety.
 - h. Remove stone veneer, CMU, sheathing and any cold formed steel framing at edge of terrace.
 - i. Pour new concrete brickshelf/footings on top of existing footings. Refer to details.
 - j. Rebuild columns on lower and upper levels
 - 1. Lower level columns will extend above the deck level are to be constructed with cold formed steel framing, sheathing flashing and drainage cavity with 4" stone laid up on the exterior. Eliminate the taper of the columns so that columns are square with vertical sides.
 - 2. Upper level columns which start at the deck level are to be constructed with cold formed steel framing, sheathing and drainage cavity with 4" stone veneer on the exterior. Width of the columns to match existing.
 - 3. Flash tops of columns and install new cast-stone caps.
 - k. Install additional steel beams in deck structure. See Structural plans.
 - l. Install custom-fabricated cast stone blocks around the perimeter of the terrace to provide a rigid anchor/stop for porcelain roof paver tiles.
 - m. Install thin-profile cold-formed metal decking and pour 3" structural concrete deck. See Structural plans.
 - n. Install new thin topping layer of concrete pitched at 1/4" per foot to the 14 new drain locations. Use small aggregate concrete designed for topping applications.
 - o. Install adhered PVC roofing membrane system on top of new concrete.
 - 1. Install new flashing at the perimeter of the roofing membrane.
 - p. Install rainwater drains inside the terrace and connect with PVC Schedule 40 drain pipe
 - 1. Run drain pipes down through the hollow columns to exterior of building
 - 2. Construct exterior underground drain system from columns to pond area.
 - q. Install new pedestal support system with porcelain tile surface
 - 1. Basis of design: Tile Tech Inc. porcelain tile and hybrid pedestal system as the basis for design.
 - 2. Incorporate 120 mph uplift protection in mounting system
 - 3. Tile size: 24" x 24" x 3/4" square tiles
 - 4. Tile: Wood Rustic Maple.
 - r. Install new 4" thick stone surface on designated walls and columns. See details.
 - s. Install new GFRG (glass fiber reinforced panels) on designated panels on the outside face of the deck. GFRG panels shall have textured surface. Refer to detail. Architect to select from full range of colors including custom colors.
 - 1. GFRG panels basis of design are 3/4" custom panels from DeNoto Precast Inc.
 - 2. Install light weight steel framing, sheathing, waterproof membrane and flashing.
 - 3. Provide a drainage cavity system inside the wall.
 - 4. Provide and install stainless steel attachment hardware for panels.
 - t. Replace the low wall opposite the Snack Bar window:
 - 1. Remove cap stones and save for re-use.
 - 2. Demolish existing wall on including stone facing on both sides.
 - 3. Rebuild wall with 4" thick stone facing on each side and mortar/rubble fill in between stone facing. Match existing dimensions.
 - 4. Reinstall stone cap.
 - u. Remove existing thin-stone veneer and apply a stucco finish: walls.
 - 1. Remove existing thin-stone veneer.
 - 2. Remove existing cement board from this area and replace with new cement board. If cement board is in good, useable condition, do not remove it.
 - 3. Install stainless expanded wire mesh on wall with stainless steel screws with a stainless steel bottom edge piece with a 1/2" gap between edge and concrete sidewalk.
 - 4. Install a three coat stucco system.
 - 5. Caulk seam at base of wall between concrete and stainless steel edge metal.
 - v. Install new concrete walkway and curbing. Refer to detail.
 - w. Install new metal drop ceiling below deck.
 - 1. Replace all ceiling recessed lights. Refer to Electrical Drawings.
- 4. Remove exterior thin-stone veneer system, cast stone sill and CMU to existing brick shelf and replace with new 4" stone veneer and cast stone sill.
 - a. Install self-adhering flashing membrane up behind the siding, down the exposed wall, across the foundation shelf with metal drip edge extending just beyond the stonework being installed.
 - b. Install new 4" stone veneer and cast stone sill.
 - a. Remove existing thin-stone veneer. Replace with aluminum panel on terrace side. See detail.
 - b. Replace with aluminum panel on terrace side. See detail.
 - c. Replace with wood panel on restaurant side. See detail.
 - d. Caulk seam at base of wall between concrete and stainless steel edge metal.
- 5. Concrete Stair and Landing
 - a. Remove concrete stair and landing in their entirety.
 - b. Replace with new concrete stair and landing. Refer to structural drawings. Landing to be stamped with 12" x 12" paver pattern. Match pattern direction of adjacent pavers.
- 7. Steel Stair Framing and Treads
 - a. Remove aluminum guardrail and handrail system. Store for reinstallation.
 - b. Remove stone treads and landings. Clean and store for reinstallation.
 - c. Cut off railing system sleeves below treads and landings. Fabricate new steel sleeve (match size and shape) with perforated holes in bottom to allow water to run thru. See photo D/A-613.
 - d. Cut 1/2" diameter holes in treads and landing at 6" O.C. to allow water to drain.
 - e. Scrape, sand, prepare and paint entire steel stair system.
 - f. Adhere 80 mil. PVC roof membrane over steel treads and landings. Maintain new drainage holes.
- 8. Ceiling Fans
 - a. Remove ceiling fans in their entirety.
 - b. Install new Hunter Jetty 52" - 51731 Matte Black Ceiling Fan. Connect to existing junction box. Re-use existing switches/controls for operation.
- 9. Golf Cart Protection Enclosure
 - a. Location of enclosure for continuous access to cart barn during construction. This is to be maintained at one location during construction. Enclosure will be built at separate times during construction to allow for continuous access to cart barn.



1 LOWER LEVEL DEMOLITION PLAN
SCALE: 1 : 84



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REPAIRS AND RESTORATION
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SCOTCH PLAINS, NJ 07076

2	01.11.24	ISSUED FOR RE-BID
1	09.21.23	ISSUED FOR BID
No.	Date	Issue or Revision

Drawing Title	
LOWER LEVEL DEMOLITION PLAN	
Scale	USA Project No.
AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-600
Drawn By	Checked By
JLG	APA



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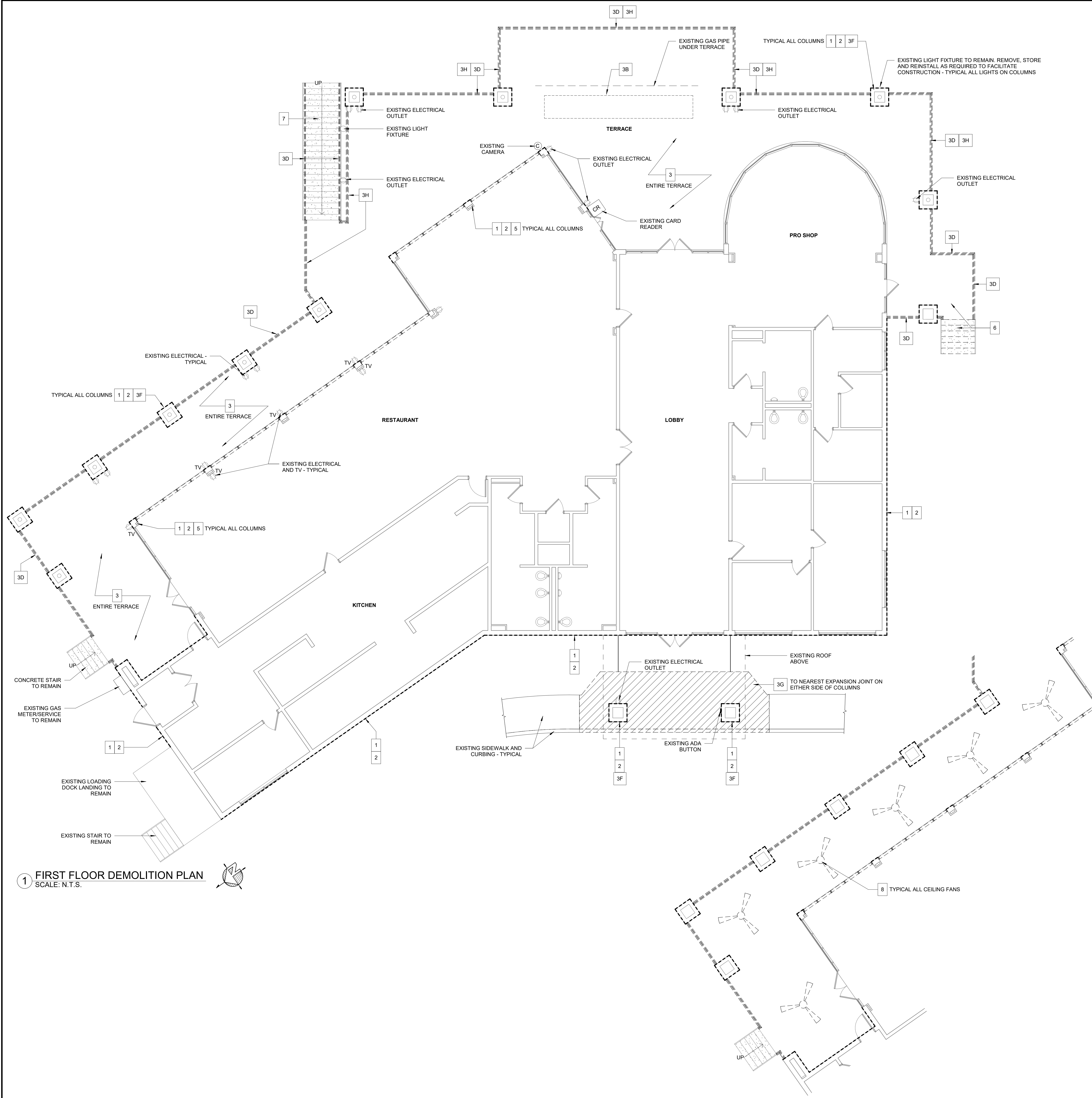
Paul R. Swartz, AIA Susan M. DeHart, AIA
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Peter C. Campasano, AIA Marlene Borruso, AIA
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GENERAL CONSTRUCTION NOTES:

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- C. The contractor shall be responsible for daily cleanup of construction debris.
- D. Before work begins, contractor shall coordinate sequence and schedules for all work and relocation or disposal of all materials with Owner.
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- K. During cold weather, protect concrete and masonry work from damage by enclosing work area and heating the work area continuously with a furnace. Furnace shall be located outside the enclosure and combustion gasses shall be released outside the enclosure and outside the building.
- L. Scrape, sand, prepare and paint all steel structural elements that are exposed during the work.

SCOPE OF WORK NOTES:

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 - a. Remove all thin-stone veneer. Patch and repair surface to receive new finish.
 - b. On all stone walls to be rebuilt or stuccoed, remove all devices, lights, vents, fans, plumbing fixtures, etc. Locations shown on drawings.
 - c. Disconnect from power or feed sources
 - d. Remove, label and securely store all fixtures.
 - e. When work is completed, reinstall fixtures.
 - f. Note that some of the walls will be thicker after reconstruction and it may be necessary to extend the mounting and feeds. This may require all new feeds in order to meet current codes.
- 2. Remove and replace terrace in its entirety including associated columns, masonry and walls in the areas above and below the terrace on the upper and lower levels of the building.
 - a. Remove existing metal drop ceiling. Scrape and paint all steel. Ceiling was previously removed, but there may still be hangers and framework which was not removed.
 - 1. Remove recessed light fixtures. Maintain wiring for new fixtures. Refer to electrical drawings.
 - b. Remove and salvage internal frame and gas burner equipment from the fire pit. Demolish the fire pit and discard.
 - c. Remove and dispose of existing terrace paves. Remove and discard loose fill on top of concrete deck.
 - d. Remove aluminum railing system. Contractor may re-use if it comes out clean. Contractor shall put a new railing system (match existing) in bid price in case existing cannot be re-used. If railing system is being re-used, scrape, sand, prepare and paint the railing system. Use spray, not brush application of paint.
 - e. Remove existing concrete deck and steel cold formed decking. Refer to structural.
 - f. Demolish column structures below and above the deck. Leave steel support columns in place. Remove steel cold formed framing of the columns
 - g. Remove concrete pad sidewalk and curbing in their entirety.
 - h. Remove stone veneer, CMU, sheathing and any cold formed steel framing at edge of terrace.
 - i. Pour new concrete brickshell/footings on top of existing footings. Refer to details.
 - j. Rebuild columns on lower and upper levels
 - 1. Lower level columns which extend above the deck level are to be constructed with cold formed steel framing, sheathing and drainage cavity with 4" stone laid up on the exterior. Eliminate the taper of the columns so that columns are square with vertical sides.
 - 2. Upper level columns which start at the deck level are to be constructed with cold formed steel framing, sheathing and drainage cavity with 4" stone veneer on the exterior. Width of the columns to match existing.
 - 3. Flash tops of columns and install new cast-stone caps.
 - k. Install additional steel beams in deck structure. See Structural plans.
 - l. Install custom-fabricated cast stone blocks around the perimeter of the terrace to provide a rigid anchor/stop for porcelain roof paver tiles.
 - m. Install thin-profile cold-formed metal decking and pour 3" structural concrete deck. See Structural plans.
 - n. Install new thin topping layer of concrete pitched at 1/4" per foot to the 14 new drain locations. Use small aggregate concrete designed for topping applications.
 - o. Install adhered PVC roofing membrane system on top of new concrete.
 - 1. Install new flashing at the perimeter of the roofing membrane.
 - 2. Install new drains.
 - p. Install rainwater drains inside the terrace and connect with PVC Schedule 40 drain pipe
 - 1. Run drain pipes down through the hollow columns to exterior of building
 - 2. Construct exterior underground drain system from columns to pond area.
 - q. Install new pedestal support system with porcelain tile surface
 - 1. Basis of design: Tile Tech Inc. porcelain tile and hybrid pedestal system as the basis for design.
 - 2. Incorporate 120 mph uplift protection in mounting system
 - 3. Tile size: 24" x 24" x 3/4" square tiles
 - 4. Tile: Wood Rustic Maple.
 - r. Install new 4" thick stone surface on designated walls and columns. See details.
 - s. Install new GFRG (glass fiber reinforced concrete) panels on designated panels on the outside face of the deck.
 - 1. GFRG panels shall have textured surface. Refer to detail. Architect to select from full range of colors including custom colors.
 - 2. GFRG panels basis of design are 3/4" custom panels from DeNoto Precast Inc.
 - 3. Install light weight steel framing, sheathing, waterproof membrane and flashing.
 - 4. Provide a drainage cavity system inside the wall.
 - 5. Provide and install stainless steel attachment hardware for panels.
 - t. Replace the low wall opposite the Snack Bar window:
 - 1. Remove cap stones and save for re-use.
 - 2. Demolish existing wall on including stone facing on both sides.
 - 3. Rebuild wall with 4" thick stone facing on each side and mortar/rubble fill in between stone facing. Match existing dimensions.
 - 4. Reinstall stone cap.
 - u. Remove existing thin-stone veneer and apply a stucco finish: walls.
 - 1. Remove existing thin-stone veneer.
 - 2. Remove existing cement board from this area and replace with new cement board. If cement board is in good, useable condition, do not remove it.
 - 3. Install stainless expanded wire mesh on wall with stainless steel screws with a stainless steel bottom edge piece with a 1/2" gap between edge and concrete sidewalk.
 - 4. Install a three coat stucco system.
 - 5. Caulk seam at base of wall between concrete and stainless steel edge metal.
 - v. Install new concrete walkway and curbing. Refer to detail.
 - 1. Replace all ceiling recessed lights. Refer to Electrical Drawings.
 - w. Install new metal drop ceiling below deck.
 - 1. Replace exterior thin-stone veneer system, cast stone sill and CMU to existing brick shell and replace with new 4" stone veneer and cast stone sill.
 - 2. Install self-adhering flashing membrane up behind the siding, down the exposed wall, across the foundation shelf with metal drip edge extending just beyond the stonework being installed.
- 3. Columns between terrace and restaurant.
 - a. Remove existing thin-stone veneer. Replace with aluminum panel on terrace side. See detail.
 - b. Replace with aluminum panel on restaurant side. See detail.
 - c. Replace with wood panel on restaurant side. See detail.
 - d. Caulk seam at base of wall between concrete and stainless steel edge metal.
- 4. Concrete Stair and Landing
 - a. Remove concrete stair and landing in their entirety.
 - b. Replace with new concrete stair and landing. Refer to structural drawings. Landing to be stamped with 12" x 12" paver pattern. Match pattern direction of adjacent pavers.
- 5. Steel Stair Framing and Treads
 - a. Remove aluminum guardrail and handrail system. Store for reinstallation.
 - b. Remove stone treads and landings. Clean and store for reinstallation.
 - c. Cut off railing system sleeves below treads and landings. Fabricate new steel sleeve (match size and shape) with perforated holes in bottom to allow water to run thru. See photo D/A-613.
 - d. Cut 1/2" diameter holes in treads and landing at 6" O.C. to allow water to drain.
 - e. Scrape, sand, prepare and paint entire steel stair system.
 - f. Adhere 80 mil. PVC roof membrane over steel treads and landings. Maintain new drainage holes.
- 6. Ceiling Fans
 - a. Remove ceiling fans in their entirety.
 - b. Install new Hunter Jetty 52" - 51731 Matte Black Ceiling Fan. Connect to existing junction box. Re-use existing switches/controls for operation.
- 7. Golf Cart Protection Enclosure
 - a. Location of enclosure for continuous access to cart barn during construction. This is to be maintained at one location during construction. Enclosure will be built at separate times during construction to allow for continuous access to cart barn.



1 FIRST FLOOR DEMOLITION PLAN
SCALE: N.T.S.

2 PARITAL FIRST FLOOR CEILING DEMOLITION PLAN
SCALE: N.T.S.

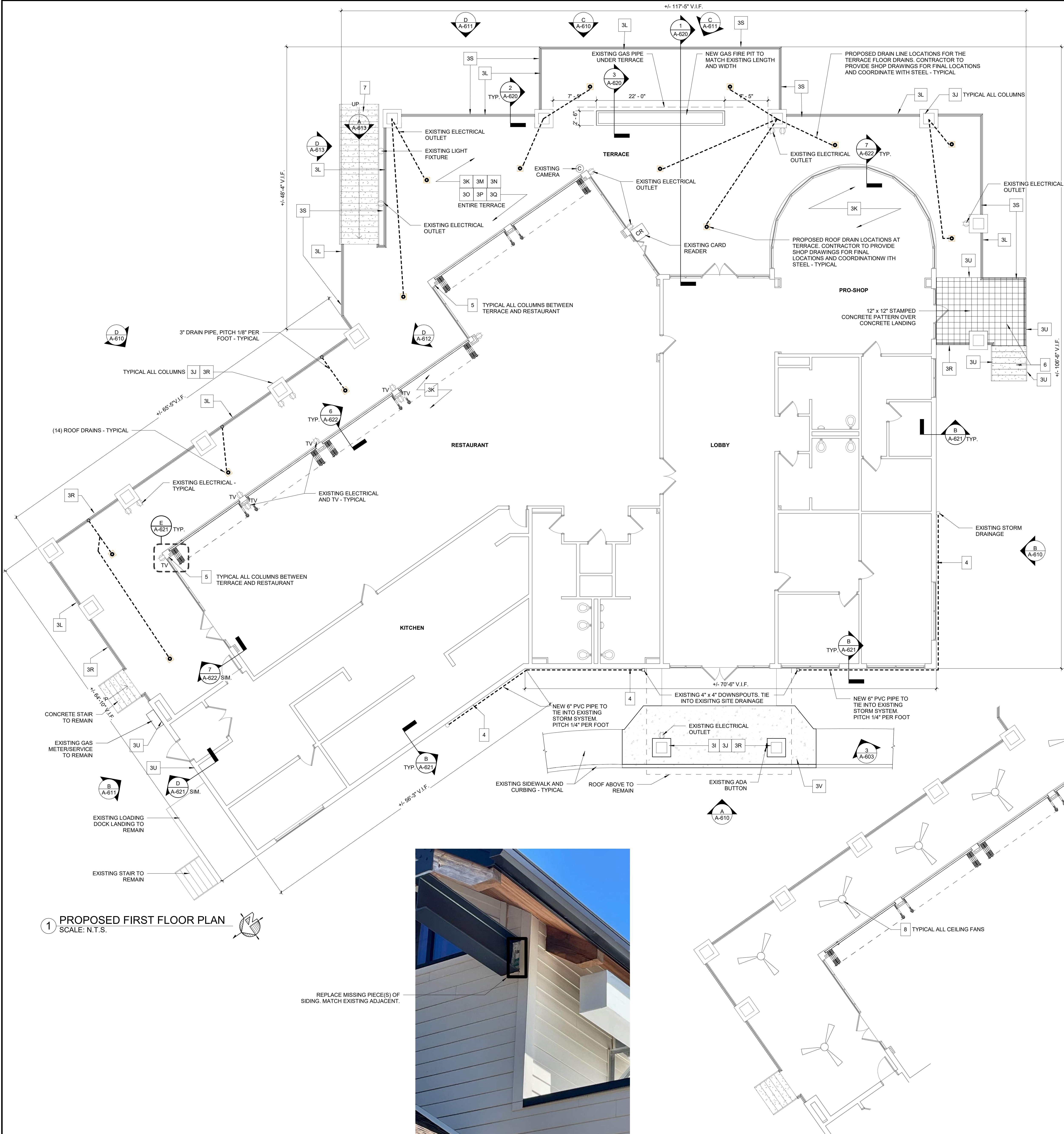
REPAIRS AND RESTORATION

AT THE
CLUBHOUSE
FOR THE
ASH BROOK GOLF COURSE
1210 RARITAN ROAD
SCOTCH PLAINS, NJ 07076

2 01.11.24 ISSUED FOR RE-BID
1 09.21.23 ISSUED FOR BID

Scale	USA Project No.
AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-601
Drawn By	Checked By
DTB	ApA

1/15/2024 9:33:22 AM



GENERAL CONSTRUCTION NOTES:

- Do not consider construction notes to be all inclusive. It is contractor's responsibility to inspect and assess the area and to fulfill the intent of the work indicated by the contract documents. Verify all dimensions within the contract limits. Bring deviations from the contract documents to the attention of the Architect.
- The extent of demolition and construction work includes, but is not limited to, work shown on the drawings. Patch and repair all adjacent surfaces affected by the demolition or removal of accessories to their original form and prepare for new finish.
- The contractor shall be responsible for daily cleanup of construction debris.
- Before work begins, contractor shall coordinate sequence and schedules for all work and relocation or disposal of all materials with Owner.
- Tree Stumps, Shrubbery and Vegetation: Prior to construction Contractor shall be responsible for all trimming that is necessary to provide access to the building to facilitate work.
- On the Drawing, reference to a single number item in the Notes below includes all lettered sub-items.
- Detail photos are provided only as examples of the work items to be performed and the photos do not represent a complete listing of all the locations where work is required. It is the contractor's responsibility to visit the site and review the entire building.
- The photos should only be used to identify parts of the building and not for estimating any quantities.
- Building will be in full operation. Coordinate ingress and egress with Owner.
- Install safety barricades and warning fencing to protect pedestrians and carts.
- Protect all existing surfaces and structures from damage from rain, snow, wind damage, etc. during the work.
- During cold weather, protect concrete and masonry work from damage by enclosing work area and heating the work area continuously with a furnace. Furnace shall be located outside the enclosure and combustion gasses shall be released outside the enclosure and outside the building.
- Scrape, sand, prepare and paint all steel structural elements that are exposed during the work.

SCOPE OF WORK NOTES:

- Thin-stone veneer
 - Remove all thin-stone veneer. Patch and repair surface to receive new finish.
 - On all stone walls to be rebuilt or stuccoed, remove all devices, lights, vents, fans, plumbing fixtures, etc. Locations shown on drawings.
 - Disconnect from power or feed sources
 - Remove, label and securely store all fixtures.
 - When work is completed, reinstall fixtures.
 - Note that some of the walls will be thicker after reconstruction and it may be necessary to extend the mounting and feeds. This may require all new feeds in order to meet current codes.
- Remove and replace terrace in its entirety including associated columns, masonry and walls in the areas above and below the terrace on the upper and lower levels of the building.
 - Remove existing metal drop ceiling. Scrape and paint all steel. Ceiling was previously removed, but there may still be hangers and framework which was not removed.
 - Remove recessed light fixtures. Maintain wiring for new fixtures. Refer to electrical drawings.
 - Remove and salvage internal frame and gas burner equipment from the fire pit. Demolish the fire pit and discard.
 - Remove and dispose of existing terrace paves. Remove and discard loose fill on top of concrete deck.
 - Remove aluminum railing system. Contractor may re-use if it comes out clean. Contractor shall put a new railing system (match existing) in bid price in case existing cannot be re-used. If railing system is being re-used, scrape, sand, prepare and paint the railing system. Use spray, not brush application of paint.
 - Remove existing concrete deck and steel cold formed decking. Refer to structural.
 - Demolish column structures below and above the deck. Leave steel support columns in place. Remove steel cold formed framing of the columns
 - Remove concrete pad sidewalk and curbing in their entirety.
 - Remove stone veneer, CMU, sheathing and any cold formed steel framing at edge of terrace.
 - Pour new concrete brickshell/footings on top of existing footings. Refer to details.
 - Rebuild columns on lower and upper levels
 - Lower level columns which extend above the deck level are to be constructed with cold formed steel framing, sheathing and drainage cavity with 4" stone laid up on the exterior. Eliminate the taper of the columns so that columns are square with vertical sides.
 - Upper level columns which start at the deck level are to be constructed with cold formed steel framing, sheathing and drainage cavity with 4" stone veneer on the exterior. Width of the columns to match existing.
 - Flash tops of columns and install new cast-stone caps.
- Install additional steel beams in deck structure. See Structural plans.
- Install custom-fabricated cast stone blocks around the perimeter of the terrace to provide a rigid anchor/stop for porcelain roof paver tiles.
- Install thin-profile cold-formed metal decking and pour 3" structural concrete deck. See Structural plans.
- Install new thin topping layer of concrete pitched at 1/4" per foot to the 14 new drain locations. Use small aggregate concrete designed for topping applications.
- Install adhered PVC roofing membrane system on top of new concrete.
 - Install new flashing at the perimeter of the roofing membrane.
 - Install new drains
 - Install rainwater drains inside the terrace and connect with PVC Schedule 40 drain pipe
 - Run drain pipes down through the hollow columns to exterior of building
 - Construct exterior underground drain system from columns to pond area.
- Install new pedestal support system with porcelain tile surface
 - Basis of design: Tile Tech Inc. porcelain tile and hybrid pedestal system as the basis for design.
 - Incorporate 120 mph uplift protection in mounting system
 - Tile size: 24" x 24" x 3/4" square tiles
 - Tile: Wood Rustic Maple.
- Install new 4" thick stone surface on designated walls and columns. See details.
- Install new GFRG (glass fiber reinforced concrete) panels on designated panels on the outside face of the deck. GFRG panels shall have textured surface. Refer to detail. Architect to select from full range of colors including custom colors.
 - GFRG panels basis of design are 3/4" custom panels from DeNoto Precast Inc.
 - Install light weight steel framing, sheathing, waterproof membrane and flashing.
 - Provide a drainage cavity system inside the wall.
 - Provide and install stainless steel attachment hardware for panels.
- Replace the low wall opposite the Snack Bar window:
 - Remove cap stones and save for re-use.
 - Demolish existing wall on including stone facing on both sides.
 - Rebuild wall with 4" thick stone facing on each side and mortar/rubble fill in between stone facing. Match existing dimensions.
 - Reinstall stone cap.
- Remove existing thin-stone veneer and apply a stucco finish: walls.
 - Remove existing thin-stone veneer.
 - Remove existing cement board from this area and replace with new cement board. If cement board is in good, useable condition, do not remove it.
 - Install stainless expanded wire mesh on wall with stainless steel screws with a stainless steel bottom edge piece with a 1/2" gap between edge and concrete sidewalk.
 - Install a three coat stucco system.
 - Caulk seam at base of wall between concrete and stainless steel edge metal.
- Install new concrete walkway and curbing. Refer to detail.
- Install new metal drop ceiling below deck.
 - Replace all ceiling recessed lights. Refer to Electrical Drawings.
- Remove exterior thin-stone veneer system, cast stone sill and CMU to existing brick shelf and replace with new 4" stone veneer and cast stone sill.
 - Install self-adhering flashing membrane up behind the siding, down the exposed wall, across the foundation shelf with metal drip edge extending just beyond the stonework being installed.
 - Install new 4" stone veneer and cast stone sill.
- Columns between terrace and restaurant.
 - Remove existing thin-stone veneer. Replace with aluminum panel on terrace side. See detail.
 - Replace with aluminum panel on terrace side. See detail.
 - Replace with wood panel on restaurant side. See detail.
 - Caulk seam at base of wall between concrete and stainless steel edge metal.
- Concrete Stair and Landing
 - Remove concrete stair and landing in their entirety.
 - Replace with new concrete stair and landing. Refer to structural drawings. Landing to be stamped with 12" x 12" paver pattern. Match pattern direction of adjacent pavers.
- Steel Stair Framing and Treads
 - Remove aluminum guardrail and handrail system. Store for reinstallation.
 - Remove stone treads and landings. Clean and store for reinstallation.
 - Cut off railing system sleeves below treads and landings. Fabricate new steel sleeve (match size and shape) with perforated holes in bottom to allow water to run thru. See photo D/A-613.
 - Cut 1/2" diameter holes in treads and landing at 6" O.C. to allow water to drain.
 - Scrape, sand, prepare and paint entire steel stair system.
 - Adhere 80 mil. PVC roof membrane over steel treads and landings. Maintain new drainage holes.
- Ceiling Fans
 - Remove ceiling fans in their entirety.
 - Install new Hunter Jetty 52" - 51731 Matte Black Ceiling Fan. Connect to existing junction box. Re-use existing switches/controls for operation.
- Golf Cart Protection Enclosure
 - Location of enclosure for continuous access to cart barn during construction. This is to be maintained at one location during construction. Enclosure will be built at separate times during construction to allow for continuous access to cart barn.

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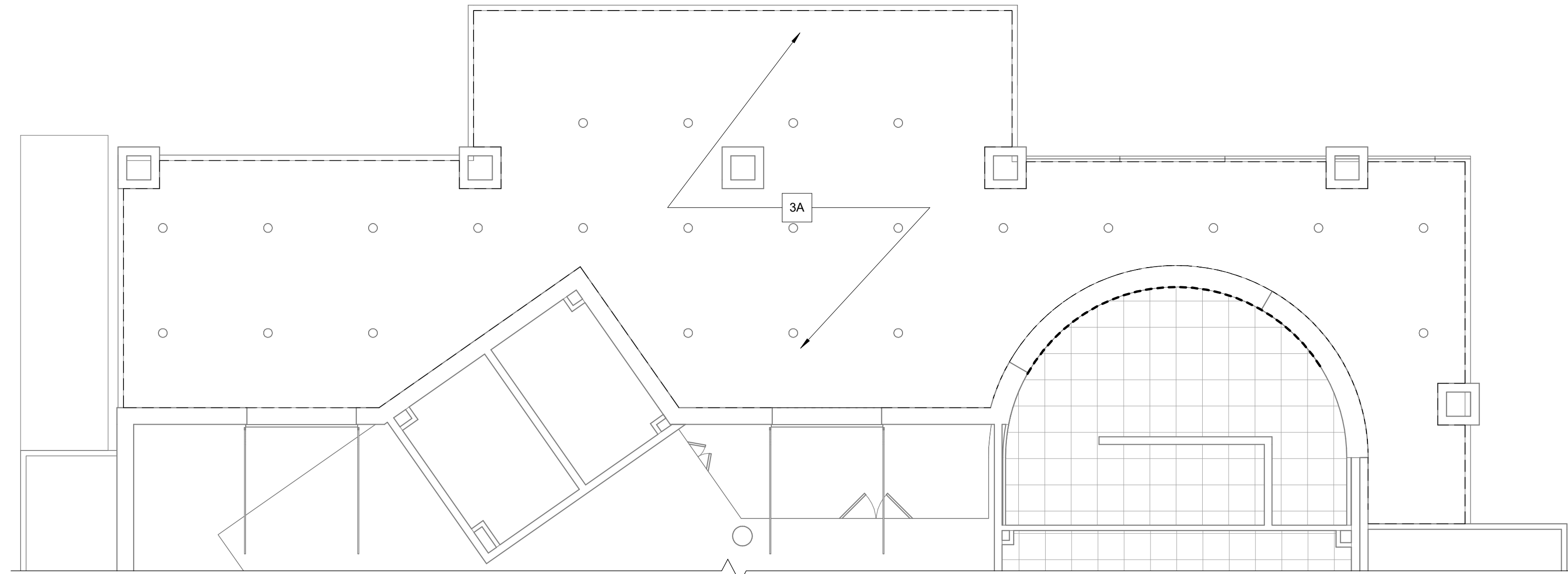
Drawing Title
PROPOSED FIRST FLOOR PLAN

Scale	USA Project No.
AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-603
Drawn By	Checked By
JLG	APA

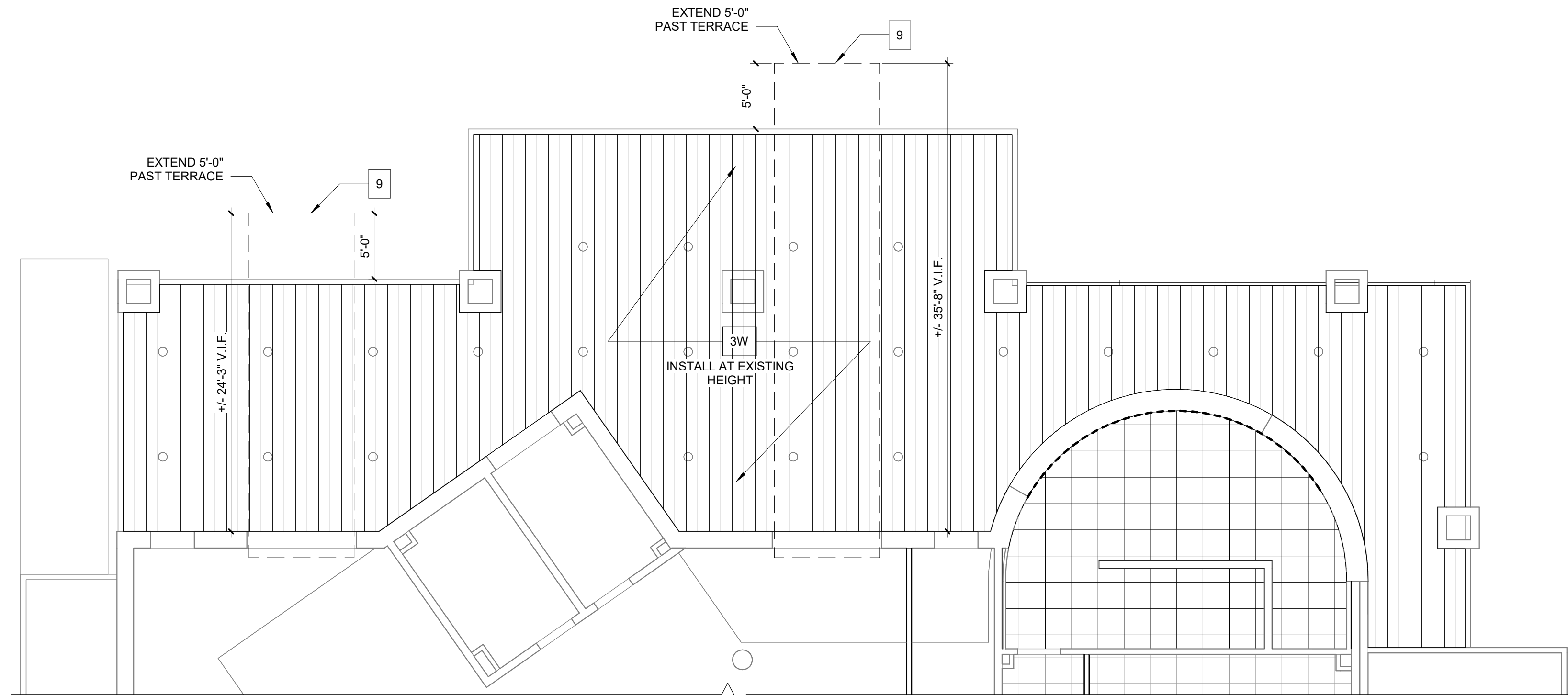


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Paul R. Swartz, AIA Susan M. DeHart, AIA
Armand T. Christopher, Jr., AIA James McAuliffe, AIA
Peter C. Campasano, AIA Marlene Borruso, AIA
Andrew P. Adornato, AIA



1 PARTIAL LOWER LEVEL REFLECTED CEILING DEMOLITION PLAN
SCALE: N.T.S.



2 PARTIAL LOWER LEVEL PROPOSED REFLECTED CEILING PLAN
SCALE: N.T.S.

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- K. Install safety barricades and warning fencing to protect pedestrians and carts.
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- N. Scrape, sand, prepare and paint all steel structural elements that are exposed during the work.

SCOPE OF WORK NOTES:

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 - a. Remove all thin-stone veneer. Patch and repair surface to receive new finish.
- 2. On all stone walls to be rebuilt or stuccoed, remove all devices, lights, vents, fans, plumbing fixtures, etc. Locations shown on drawings.
 - a. Disconnect from power or feed sources
 - b. Remove, label and securely store all fixtures.
 - c. When work is completed, reinstall fixtures
 - d. Note that some of the walls will be thicker after reconstruction and it may be necessary to extend the mounting and feeds. This may require all new feeds to the devices in order to meet current codes.
- 3. Remove and replace terrace in its entirety including associated columns, masonry and walls in the areas above and below the terrace on the upper and lower levels of the building.
 - a. Remove existing metal drop ceiling. Scrape and paint all steel. Ceiling was previously removed, but there may still be hangers and framework which was not removed.
 - 1. Remove recessed light fixtures. Maintain wiring for new fixtures. Refer to electrical drawings.
 - b. Remove and salvage internal frame and gas burner equipment from the fire pit. Demolish the fire pit and discard.
 - c. Remove and dispose of existing terrace paves. Remove and discard loose fill on top of concrete deck.
 - d. Remove aluminum railing system. Contractor may re-use if it comes out clean. Contractor shall put a new railing system (match existing) in bid price in case existing cannot be re-used. If railing system is being re-used, scrape, sand, prepare and paint the railing system. Use spray, not brush application of paint.
 - e. Remove existing concrete deck and steel cold formed decking. Refer to structural.
 - f. Demolish column structures below and above the deck. Leave steel support columns in place. Remove steel cold formed framing of the columns
 - g. Remove concrete pad sidewalk and curbing in their entirety.
 - h. Remove stone veneer, CMU, sheathing and any cold formed steel framing at edge of terrace.
 - i. Pour new concrete brickshell/footings on top of existing footings. Refer to details.
 - j. Rebuild columns on lower and upper levels
 - 1. Lower level columns which extend above the deck level are to be constructed with cold formed steel framing, sheathing flashing and drainage cavity with 4" stone laid up on the exterior. Eliminate the taper of the columns so that columns are square with vertical sides.
 - 2. Upper level columns which start at the deck level are to be constructed with cold formed steel framing, sheathing and drainage cavity with 4" stone veneer on the exterior. Width of the columns to match existing.
 - 3. Flash tops of columns and install new cast-stone caps.
 - k. Install additional steel beams in deck structure. See Structural plans.
 - l. Install custom-fabricated cast stone blocks around the perimeter of the terrace to provide a rigid anchor/stop for porcelain roof paver tiles.
 - m. Install thin-profile cold-formed metal decking and pour 3" structural concrete deck. See Structural plans.
 - n. Install new thin topping layer of concrete pitched at 1/4" per foot to the 14 new drain locations. Use small aggregate concrete designed for topping applications.
 - o. Install adhered PVC roofing membrane system on top of new concrete.
 - 1. Install new flashing at the perimeter of the roofing membrane.
 - 2. Install new drains
 - p. Install rainwater drains inside the terrace and connect with PVC Schedule 40 drain pipe
 - 1. Run drain pipes down through the hollow columns to exterior of building
 - 2. Construct exterior underground drain system from columns to pond area.
 - q. Install new pedestal support system with porcelain tile surface
 - 1. Basis of design: Tile Tech Inc. porcelain tile and hybrid pedestal system as the basis for design.
 - 2. Incorporate 120 mph uplift protection in mounting system
 - 3. Tile size: 24" x 24" x 3/4" square tiles
 - 4. Tile: Wood Rustic Maple.
 - r. Install new 4" thick stone surface on designated walls and columns. See details.
 - s. Install new GFRG (glass fiber reinforced) panels on designated panels on the outside face of the deck. GFRG panels shall have textured surface. Refer to detail. Architect to select from full range of colors including custom colors.
 - 1. GFRG panels basis of design are 3/4" custom panels from DeNoto Precast Inc.
 - 2. Install light weight steel framing, sheathing, waterproof membrane and flashing.
 - 3. Provide a drainage cavity system inside the wall.
 - 4. Provide and install stainless steel attachment hardware for panels.
 - t. Replace the low wall opposite the Snack Bar window:
 - 1. Remove cap stones and save for re-use.
 - 2. Demolish existing wall on including stone facing on both sides.
 - 3. Rebuild wall with 4" thick stone facing on each side and mortar/ rubble fill in between stone facing. Match existing dimensions.
 - 4. Reinstall stone cap.
 - u. Remove existing thin-stone veneer and apply a stucco finish: walls.
 - 1. Remove existing thin-stone veneer.
 - 2. Remove existing cement board from this area and replace with new cement board. If cement board is in good, useable condition, do not remove it.
 - 3. Install stainless expanded wire mesh on wall with stainless steel screws with a stainless steel bottom edge piece with a 1/2" gap between edge and concrete sidewalk.
 - 4. Install a three coat stucco system.
 - 5. Caulk seam at base of wall between concrete and stainless steel edge metal.
 - v. Install new concrete walkway and curbing. Refer to detail.
 - w. Install new metal drop ceiling below deck.
 - 1. Replace all ceiling recessed lights. Refer to Electrical Drawings.
- 4. Remove exterior thin-stone veneer system, cast stone sill and CMU to existing brick shelf and replace with new 4" stone veneer and cast stone sill.
 - a. Install self-adhering flashing membrane up behind the siding, down the exposed wall, across the foundation shelf with metal drip edge extending just beyond the stonework being installed.
 - b. Install new 4" stone veneer and cast stone sill.
- 5. Columns between terrace and restaurant.
 - a. Remove existing thin-stone veneer. Replace with aluminum panel on terrace side. See detail.
 - b. Replace with aluminum panel on terrace side. See detail.
 - c. Replace with wood panel on restaurant side. See detail.
 - d. Caulk seam at base of wall between concrete and stainless steel edge metal.
- 6. Concrete Stair and Landing
 - a. Remove concrete stair and landing in their entirety.
 - b. Replace with new concrete stair and landing. Refer to structural drawings. Landing to be stamped with 12" x 12" paver pattern. Match pattern direction of adjacent pavers.
- 7. Steel Stair Framing and Treads
 - a. Remove aluminum guardrail and handrail system. Store for reinstallation.
 - b. Remove stone treads and landings. Clean and store for reinstallation.
 - c. Cut off railing system sleeves below treads and landings. Fabricate new steel sleeve (match size and shape) with perforated holes in bottom to allow water to run thru. See photo D/A-613.
 - d. Cut 1/2" diameter holes in treads and landing at 6" O.C. to allow water to drain.
 - e. Scrape, sand, prepare and paint entire steel stair system.
 - f. Adhere 80 mil. PVC roof membrane over steel treads and landings. Maintain new drainage holes.
- 8. Ceiling Fans
 - a. Remove ceiling fans in their entirety.
 - b. Install new Hunter Jetly 52" - 51731 Matte Black Ceiling Fan. Connect to existing junction box. Re-use existing switches/controls for operation.
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 - a. Location of enclosure for continuous access to cart barn during construction. This is to be maintained at one location during construction. Enclosure will be built at separate times during construction to allow for continuous access to cart barn.

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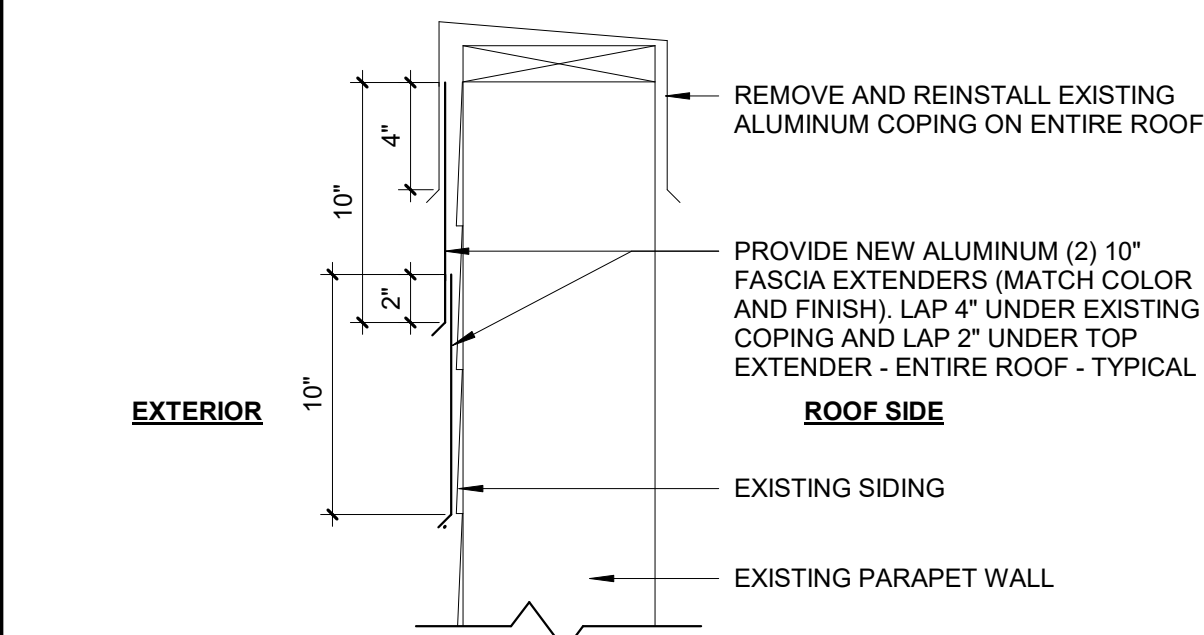
Scale AS NOTED USA Project No. 2023-038

Drawing Date 09.21.23 Drawing No.

Drawn By JLG Checked By APA A-604



A PHOTO 01
SCALE: N.T.S.



1 EXISTING PARAPET COPING EXTENSION DETAIL
SCALE: 1 1/2" = 1'-0"



C PHOTO 03
SCALE: N.T.S.



B PHOTO 02
SCALE: N.T.S.



D PHOTO 04
SCALE: N.T.S.

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- 3. Remove and replace terrace in its entirety including associated columns, masonry and walls in the areas above and below the terrace on the upper and lower levels of the building.
 - a. Remove existing metal drop ceiling. Scrape and paint all steel. Ceiling was previously removed, but there may still be hangers and framework which was not removed.
 - 1. Remove recessed light fixtures. Maintain wiring for new fixtures. Refer to electrical drawings.
 - b. Remove and salvage internal frame and gas burner equipment from the fire pit. Demolish the fire pit and discard.
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 - f. Demolish column structures below and above the deck. Leave steel support columns in place. Remove steel cold formed framing of the columns
 - g. Remove concrete pad sidewalk and curbing in their entirety.
 - h. Remove stone veneer, CMU, sheathing and any cold formed steel framing at edge of terrace.
 - i. Pour new concrete bricks/shell/footings on top of existing footings. Refer to details.
 - j. Rebuild columns on lower and upper levels
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 - d. Cut 1/2" diameter holes in treads and landing at 6" O.C. to allow water to drain.
 - e. Scrape, sand, prepare and paint entire steel stair system.
 - f. Adhere 80 mil. PVC roof membrane over steel treads and landings. Maintain new drainage holes.
- 8. Ceiling Fans
 - a. Remove ceiling fans in their entirety.
 - b. Install new Hunter Jetly 52" - 51731 Matte Black Ceiling Fan. Connect to existing junction box. Re-use existing switches/controls for operation.
- 9. Golf Cart Protection Enclosure
 - a. Location of enclosure for continuous access to cart barn during construction. This is to be maintained at one location during construction. Enclosure will be built at separate times during construction to allow for continuous access to cart barn.



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Paul R. Swartz, AIA
Amard T. Christopher, Jr., AIA
Peter C. Campiano, AIA
Andrew P. Adornato, AIA

Susan M. DeHart, AIA
James McAuliffe, AIA
Marlene Borruso, AIA

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REPAIRS AND RESTORATION
AT THE
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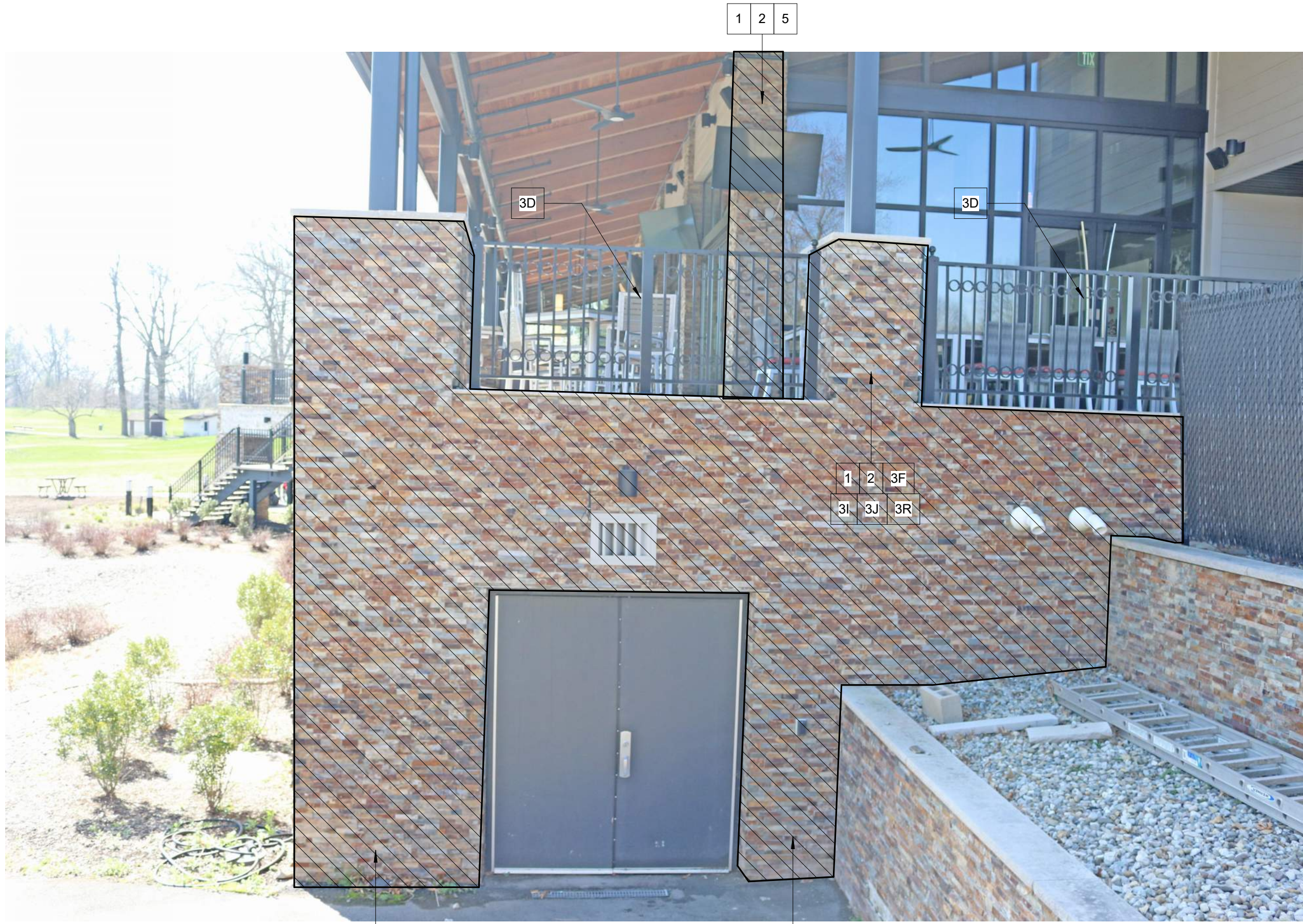
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1	09.21.23	ISSUED FOR BID

No.	Date	Issue or Revision
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Drawing Title

PHOTO DETAILS

Scale	AS NOTED	USA Project No.	2023-038
Drawing Date	09.21.23	Drawing No.	
Drawn By	DTB	Checked By	ApA
			A-610



A PHOTO 05
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1 2 3F
 3I 3J 3R

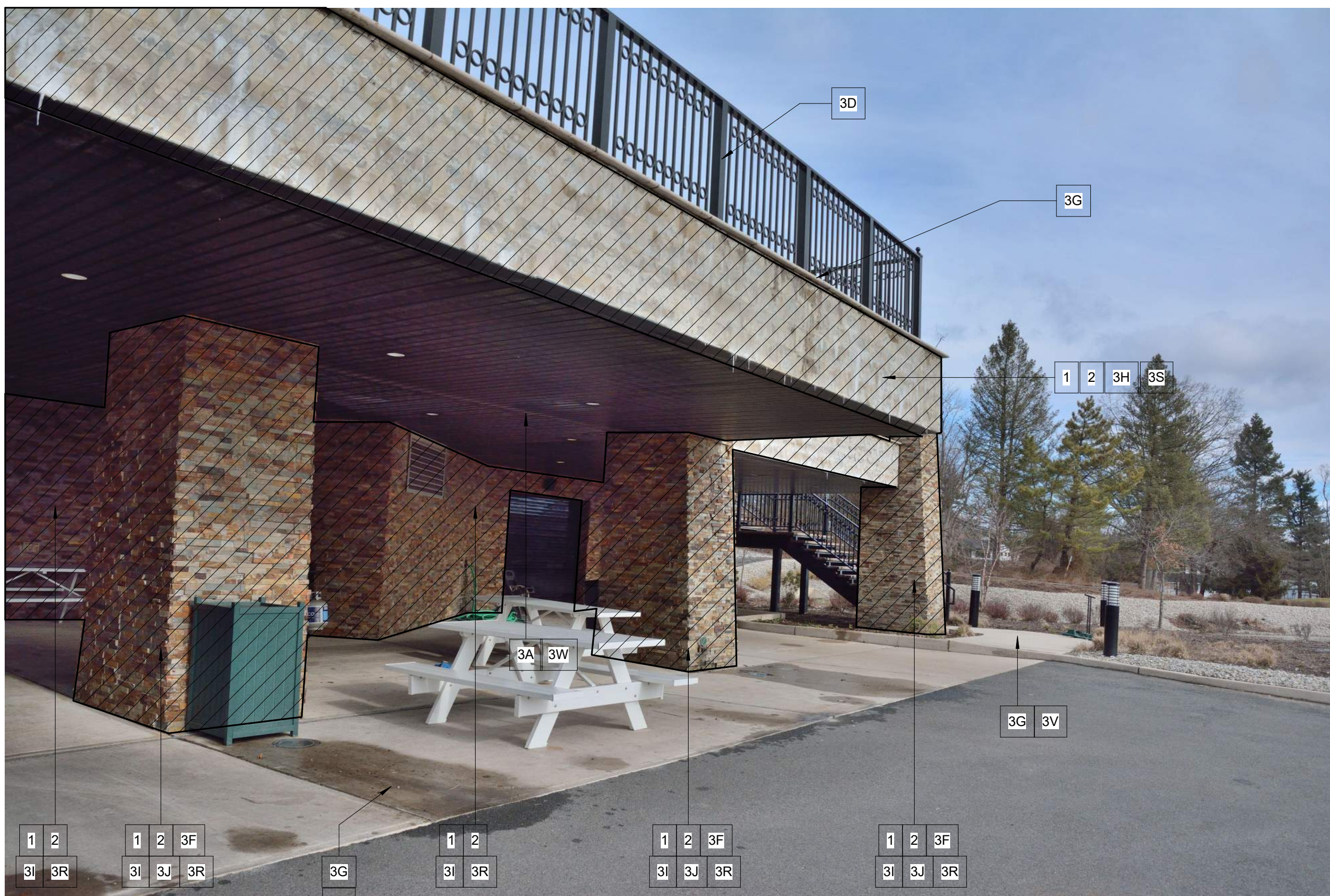
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 3I 3R



B PHOTO 06
 SCALE: N.T.S.

1 2
 3I 3R

1 2 3U
 3I 3R



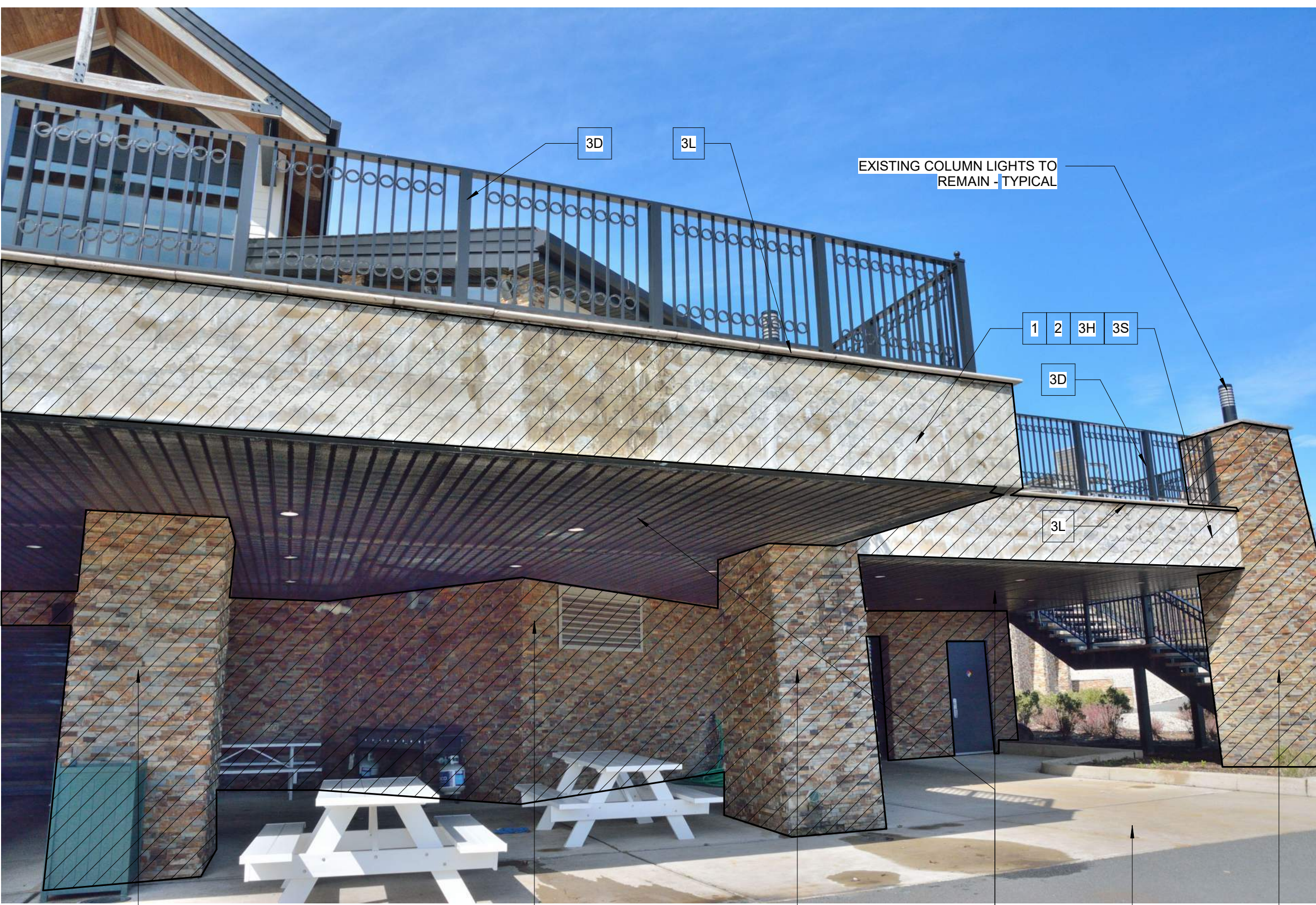
C PHOTO 07
 SCALE: N.T.S.

1 2 3F
 3I 3J 3R

1 2
 3I 3R

1 2 3F
 3I 3J 3R

1 2 3F
 3I 3J 3R



D PHOTO 08
 SCALE: N.T.S.

1 2 3F
 3I 3J 3R

1 2
 3I 3R

1 2 3F
 3I 3J 3R

3A 3W
 3G
 3V

1 2 3F
 3I 3J 3R

GENERAL CONSTRUCTION NOTES:

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- C. Patch and repair all adjacent surfaces affected by the demolition or removal of accessories to their original form and prepare for new finish.
- D. The contractor shall be responsible for daily cleanup of construction debris.
- E. Before work begins, contractor shall coordinate sequence and schedules for all work and relocation or disposal of all materials with Owner.
- F. Tree Stumps, Shrubbery and Vegetation: Prior to construction Contractor shall be responsible for all trimming that is necessary to provide access to the building to facilitate work.
- G. On the Drawings, the reference to a single number item in the Notes below includes all lettered sub-items.
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- I. The photos should only be used to identify parts of the building and not for estimating any quantities.
- J. Building will be in full operation. Coordinate ingress and egress with Owner.
- K. Install safety barricades and warning fencing to protect pedestrians and carts.
- L. Protect all existing surfaces and structures from damage from rain, snow, wind damage, etc. during the work.
- M. During cold weather, protect concrete and masonry work from damage by enclosing work area and heating the work area continuously with furnaces. Furnace shall be located outside the enclosure and combustion gasses shall be released outside the enclosure and outside the building.
- N. Scrape, sand, prepare and paint all steel structural elements that are exposed during the work.

SCOPE OF WORK NOTES:

- 1. Thin-stone veneer
 - a. Remove all thin-stone veneer. Patch and repair surface to receive new finish.
- 2. On all stone walls to be rebuilt or stuccoed, remove all devices, lights, vents, fans, plumbing fixtures, etc. Locations shown on drawings.
 - a. Disconnect from power or feed sources
 - b. Remove, label and securely store all fixtures.
 - c. When work is completed, reinstall fixtures.
 - d. Note that some of the walls will be thicker after reconstruction and it may be necessary to extend the mounting and feeds. This may require all new feeds to the devices in order to meet current codes.
- 3. Remove and replace terrace in its entirety including associated columns, masonry and walls in the areas above and below the listing of all the locations where work is required. It is the contractor's responsibility to visit the site and review the entire building.
 - a. Remove existing metal drop ceiling. Scrape and paint all steel. Ceiling was previously removed, but there may still be hangers and framework which was not removed.
 - 1. Remove recessed light fixtures. Maintain wiring for new fixtures. Refer to electrical drawings.
 - b. Remove and salvage internal frame and gas burner equipment from the fire pit. Demolish the fire pit and discard.
 - c. Remove and dispose of existing terrace paves. Remove and discard loose fill on top of concrete deck. work area continuously with furnaces. Furnace shall be located outside the enclosure and combustion gasses shall be released outside the enclosure and outside the building.
 - d. Remove existing aluminum railing system. Contractor may re-use if it comes out clean. Contractor shall put a new railing system (match existing) in bid price in case existing cannot be re-used. If railing system is being re-used, scrape, sand, prepare and paint the railing system. Use spray, not brush application of paint.
 - e. Remove existing concrete deck and steel cold formed decking. Refer to structural.
 - f. Demolish column structures below and above the deck. Leave steel support columns in place. Remove steel cold formed framing of the columns
 - g. Remove concrete pad sidewalk and curbing in their entirety.
 - h. Remove stone veneer, CMU, sheathing and any cold formed steel framing at edge of terrace.
 - i. Pour new concrete brickshell/footings on top of existing footings. Refer to details.
 - j. Rebuild columns on lower and upper levels
 - 1. Lower level columns which extend above the deck level are to be constructed with cold formed steel framing, sheathing flashing and drainage cavity with 4" stone laid up on the exterior. Eliminate the taper of the columns so that columns are square with vertical sides.
 - 2. Upper level columns which start at the deck level are to be constructed with cold formed steel framing, sheathing and drainage cavity with 4" stone veneer on the exterior. Width of the columns to match existing.
 - 3. Flash tops of columns and install new cast-stone caps.
 - k. Install additional steel beams in deck structure. See Structural plans.
 - l. Install custom-fabricated cast stone blocks around the perimeter of the terrace to provide a rigid anchor/stop for porcelain roof paver tiles.
 - m. Install thin-profile cold-formed metal decking and pour 3" structural concrete deck. See Structural plans.
 - n. Install new thin topping layer of concrete pitched at 1/4" per foot to the 14 new drain locations. Use small aggregate concrete designed for topping applications.
 - o. Install adhered PVC roofing membrane system on top of new concrete.
 - 1. Install new flashing at the perimeter of the roofing membrane.
 - 2. Install new drains.
 - p. Install rainwater drains inside the terrace and connect with PVC Schedule 40 drain pipe
 - 1. Run drain pipes down through the hollow columns to exterior of building
 - 2. Construct exterior underground drain system from columns to pond area.
 - q. Install new pedestal support system with porcelain tile surface
 - 1. Basis of design: Tile Tech Inc. porcelain tile and hybrid pedestal system as the basis for design.
 - 2. Incorporate 120 mph uplift protection in mounting system
 - 3. Tile size: 24" x 24" x 3/4" square tiles
 - 4. Tile: Wood Rustic Maple.
 - r. Install new 4" thick stone surface on designated walls and columns. See details.
 - s. Install new GFRG (glass fiber reinforced) panels on designated panels on the outside face of the deck.
 - 1. GFRG panels shall have textured surface. Refer to detail. Architect to select from full range of colors including custom colors.
 - 2. GFRG panels basis of design are 3/4" custom panels from DeNoto Precast Inc.
 - 3. Install light weight steel framing, sheathing, waterproof membrane and flashing.
 - 4. Provide a drainage cavity system inside the wall.
 - 5. Provide and install stainless steel attachment hardware for panels.
 - t. Replace the low wall opposite the Snack Bar window:
 - 1. Remove cap stones and save for re-use.
 - 2. Demolish existing wall on including stone facing on both sides.
 - 3. Rebuild wall with 4" thick stone facing on each side and mortar/rubble fill in between stone facing. Match existing dimensions.
 - 4. Reinstall stone cap.
 - u. Remove existing thin-stone veneer and apply a stucco finish: walls.
 - 1. Remove existing thin-stone veneer
 - 2. Remove existing cement board from this area and replace with new cement board. If cement board is in good, useable condition, do not remove it.
 - 3. Install stainless expanded wire mesh on wall with stainless steel screws with a stainless steel bottom edge piece with a 1/2" gap between edge and concrete sidewalk.
 - 4. Install a three coat stucco system.
 - 5. Caulk seam at base of wall between concrete and stainless steel edge metal.
 - v. Install new concrete walkway and curbing. Refer to detail.
 - w. Install new metal drop ceiling below deck.
 - 1. Replace all ceiling recessed lights. Refer to Electrical Drawings.
- 4. Remove exterior thin-stone veneer system, cast stone sill and CMU to existing brick shelf and replace with new 4" stone veneer and cast stone sill.
 - a. Install self-adhering flashing membrane up behind the siding, down the exposed wall, across the foundation shelf with metal drip edge extending just beyond the stonework being installed.
 - b. Install new 4" stone veneer and cast stone sill.
- 5. Columns between terrace and restaurant.
 - a. Remove existing thin-stone veneer. Replace with aluminum panel on terrace side. See detail.
 - b. Replace with aluminum panel on terrace side. See detail.
 - c. Replace with wood panel on restaurant side. See detail.
 - d. Caulk seam at base of wall between concrete and stainless steel edge metal.
- 6. Concrete Stair and Landing
 - a. Remove concrete stair and landing in their entirety.
 - b. Replace with new concrete stair and landing. Refer to structural drawings. Landing to be stamped with 12" x 12" paver pattern. Match pattern direction of adjacent pavers.
- 7. Steel Stair Framing and Treads
 - a. Remove aluminum guardrail and handrail system. Store for reinstallation.
 - b. Remove stone treads and landings. Clean and store for reinstallation.
 - c. Cut off railing system sleeves below treads and landings. Fabricate new steel sleeve (match size and shape) with perforated holes in bottom to allow water to run thru. See photo D/A-613.
 - d. Cut 1/2" diameter holes in treads and landing at 6" O.C. to allow water to drain.
 - e. Scrape, sand, prepare and paint entire steel stair system.
 - f. Adhere 80 mil. PVC roof membrane over steel treads and landings. Maintain new drainage holes.
- 8. Ceiling Fans
 - a. Remove ceiling fans in their entirety.
 - b. Install new Hunter Jetty 52" - 51731 Matte Black Ceiling Fan. Connect to existing junction box. Re-use existing switches/controls for operation.
- 9. Golf Cart Protection Enclosure
 - a. Location of enclosure for continuous access to cart barn during construction. This is to be maintained at one location during construction. Enclosure will be built at separate times during construction to allow for continuous access to cart barn.

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REPAIRS AND RESTORATION
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2	01.11.24	ISSUED FOR RFD
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Drawing Title
PHOTO DETAILS

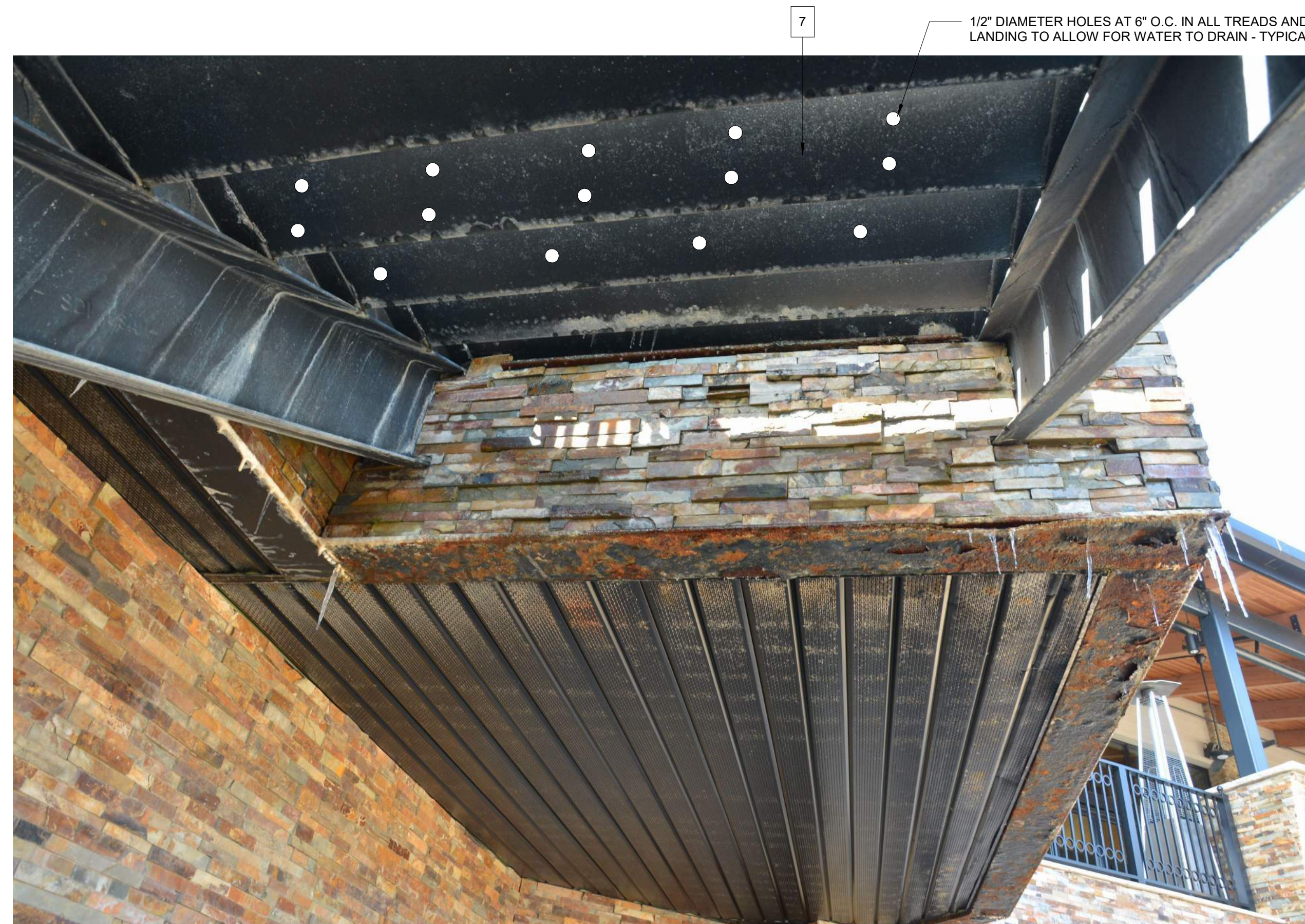
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AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-611
Drawn By	Checked By
JLG	APA



A PHOTO 09
SCALE: N.T.S.



B PHOTO 10
SCALE: N.T.S.



C PHOTO 11
SCALE: N.T.S.



D PHOTO 12
SCALE: N.T.S.

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- K. Install safety barricades and warning fencing to protect pedestrians and carts.
- L. Protect all existing surfaces and structures from damage from rain, snow, wind damage, etc. during the work. During cold weather, protect concrete and masonry work from damage by enclosing work area and heating the work area continuously with a furnace. Furnace shall be located outside the enclosure and combustion gasses shall be released outside the enclosure and outside the building.
- N. Scrape, sand, prepare and paint all steel structural elements that are exposed during the work.

SCOPE OF WORK NOTES:

- 1. Thin-stone veneer
 - a. Remove all thin-stone veneer. Patch and repair surface to receive new finish.
- 2. On all stone walls to be rebuilt or stuccoed, remove all devices, lights, vents, fans, plumbing fixtures, etc. Locations shown on drawings.
 - a. Disconnect from power or feed sources
 - b. Remove, label and securely store all fixtures.
 - c. When work is completed, reinstall fixtures.
 - d. Note that some of the walls will be thicker after reconstruction and it may be necessary to extend the mounting and feeds. This may require all new feeds to the devices in order to meet current codes.
- 3. Remove and replace terrace in its entirety including associated columns, masonry and walls in the areas above and below the terrace on the upper and lower levels of the building.
 - a. Remove existing metal drop ceiling. Scrape and paint all steel. Ceiling was previously removed, but there may still be hangers and framework which was not removed.
 - 1. Remove recessed light fixtures. Maintain wiring for new fixtures. Refer to electrical drawings.
 - b. Remove and salvage internal frame and gas burner equipment from the fire pit. Demolish the fire pit and discard.
 - c. Remove and dispose of existing terrace paves. Remove and discard loose fill on top of concrete deck.
 - d. Remove aluminum railing system. Contractor may re-use if it comes out clean. Contractor shall put a new railing system (match existing) in bid price in case existing cannot be re-used. If railing system is being re-used, scrape, sand, prepare and paint the railing system. Use spray, not brush application of paint.
 - e. Remove existing concrete deck and steel cold formed decking. Refer to structural.
 - f. Demolish column structures below and above the deck. Leave steel support columns in place. Remove steel cold formed framing of the columns
 - g. Remove concrete pad sidewalk and curbing in their entirety.
 - h. Remove stone veneer, CMU, sheathing and any cold formed steel framing at edge of terrace.
 - 1. Pour new concrete brick/sill/footings on top of existing footings. Refer to details.
 - j. Rebuild columns on lower and upper levels
 - 1. Lower level columns which extend above the deck level are to be constructed with cold formed steel framing, sheathing flashing and drainage cavity with 4" stone laid up on the exterior. Eliminate the taper of the columns so that columns are square with vertical sides.
 - 2. Upper level columns which start at the deck level are to be constructed with cold formed steel framing, sheathing and drainage cavity with 4" stone veneer on the exterior. Width of the columns to match existing.
 - 3. Flash tops of columns and install new cast-stone caps.
 - k. Install additional steel beams in deck structure. See Structural plans.
 - l. Install custom-fabricated cast stone blocks around the perimeter of the terrace to provide a rigid anchor/stop for porcelain roof paver tiles.
 - m. Install thin-profile cold-formed metal decking and pour 3" structural concrete deck. See Structural plans.
 - n. Install new thin topping layer of concrete pitched at 1/4" per foot to the 14 new drain locations. Use small aggregate concrete designed for topping applications.
 - o. Install adhered PVC roofing membrane system on top of new concrete.
 - 1. Install new flashing at the perimeter of the roofing membrane.
 - 2. Install new drains.
 - 3. Run rainwater drains inside the terrace and connect with PVC Schedule 40 drain pipe
 - 1. Run drain pipes down through the hollow columns to exterior of building
 - 2. Construct exterior underground drain system from columns to pond area.
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 - 4. Tile: Wood Rustic Maple.
 - r. Install new 4" thick stone surface on designated walls and columns. See details.
 - s. Install new GFRP (glass fiber reinforced panels) on designated panels on the outside face of the deck.
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 - 2. Demolish existing wall on including stone facing on both sides.
 - 3. Rebuild wall with 4" thick stone facing on each side and mortar/rubble fill in between stone facing. Match existing dimensions.
 - 4. Reinstall stone cap.
 - u. Remove existing thin-stone veneer and apply a stucco finish: walls.
 - 1. Remove existing thin-stone veneer.
 - 2. Remove existing cement board from this area and replace with new cement board. If cement board is in good, useable condition, do not remove it.
 - 3. Install stainless expanded wire mesh on wall with stainless steel screws with a stainless steel bottom edge piece with a 1/2" gap between edge and concrete sidewalk.
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 - b. Replace with aluminum panel on terrace side. See detail.
 - c. Replace with wood panel on restaurant side. See detail.
 - d. Caulk seam at base of wall between concrete and stainless steel edge metal.
- 6. Concrete Stair and Landing
 - a. Remove concrete stair and landing in their entirety.
 - b. Replace with new concrete stair and landing. Refer to structural drawings. Landing to be stamped with 12" x 12" paver pattern. Match pattern direction of adjacent pavers.
- 7. Steel Stair Framing and Treads
 - a. Remove aluminum guardrail and handrail system. Store for reinstallation.
 - b. Remove stone treads and landings. Clean and store for reinstallation.
 - c. Cut off railing system sleeves below treads and landings. Fabricate new steel sleeve (match size and shape) with perforated holes in bottom to allow water to run thru. See photo D/A-613.
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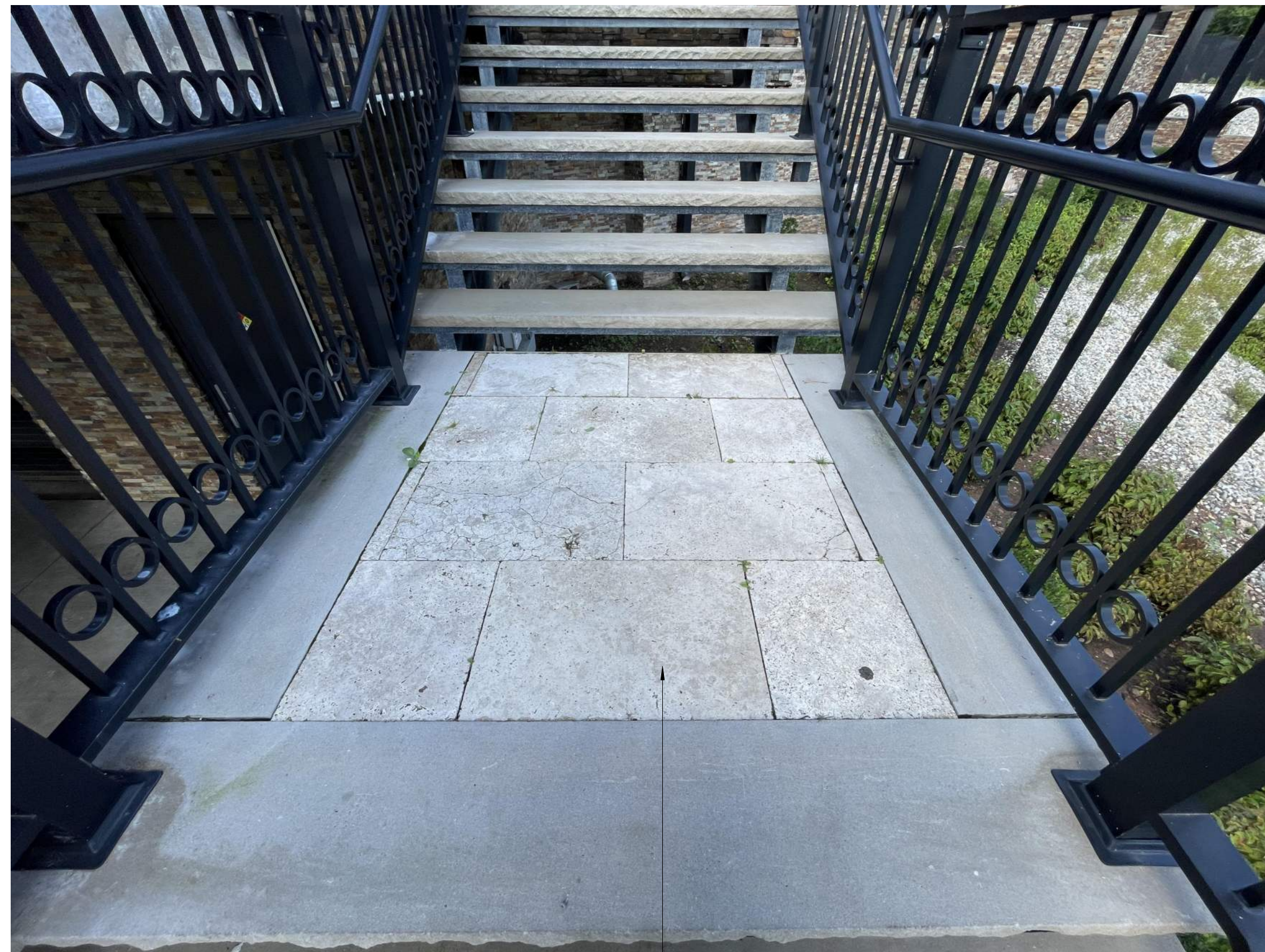
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Drawing Title
PHOTO DETAILS

Scale	USA Project No.
AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-612
Drawn By	Checked By
JLG	APA

1/15/2024 9:34:02 AM



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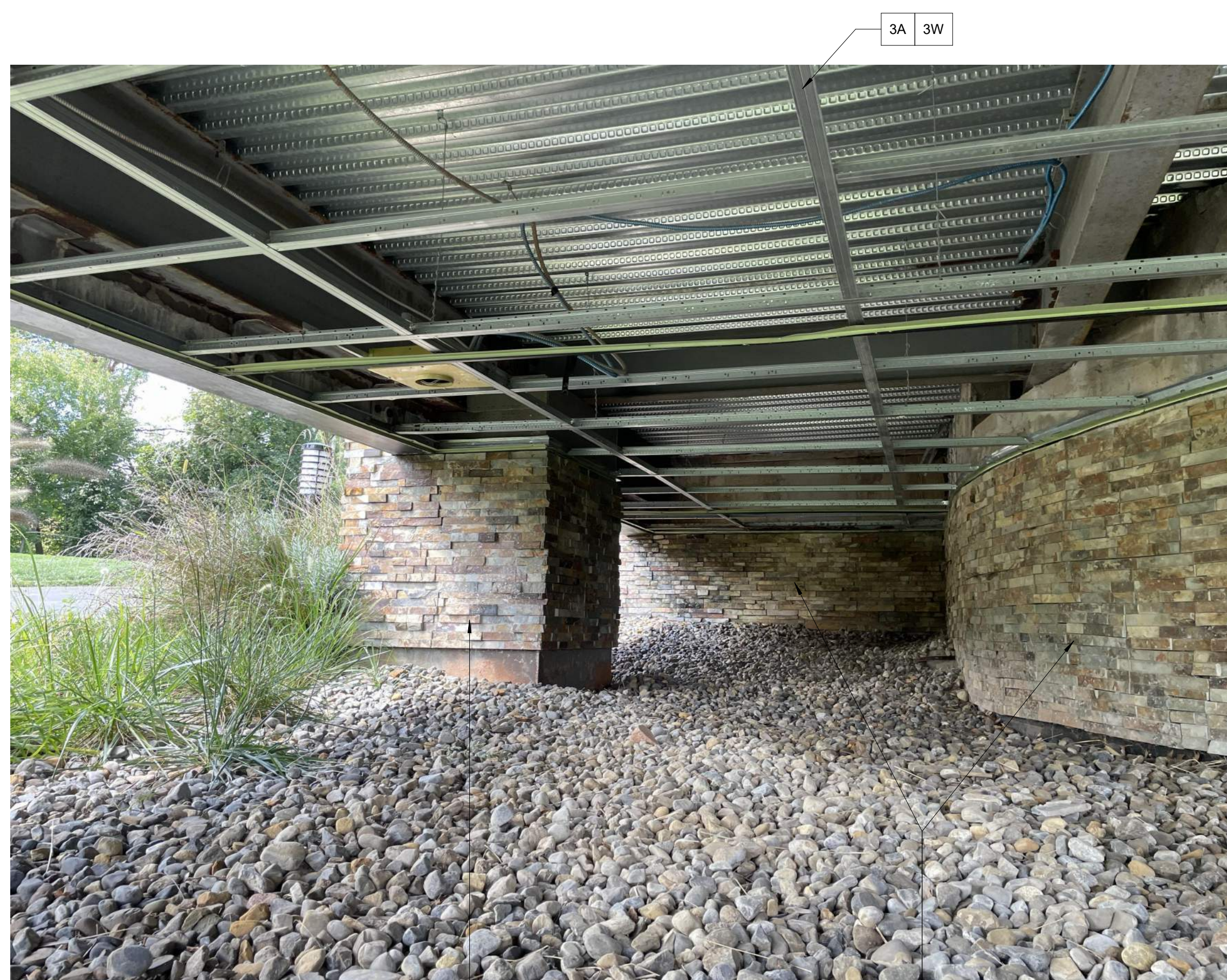
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B PHOTO 14
SCALE: N.T.S.

3G 3V

1 2 3U



C PHOTO 15
SCALE: N.T.S.

1 2 3F
3I 3J 3R

1 2 3U



D PHOTO 16
SCALE: N.T.S.

NEW SLEEVE TO HAVE 1/2" DIAMETER HOLES FOR DRAINAGE

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 - a. Disconnect from power or feed sources
 - b. Remove, label and securely store all fixtures.
 - c. When work is completed, reinstall fixtures.
 - d. Note that some of the walls will be thicker after reconstruction and it may be necessary to extend the mounting and feeds. This may require all new feeds to the devices in order to meet current codes.
- 3. Remove and replace terrace in its entirety including associated columns, masonry and walls in the areas above and below the terrace on the upper and lower levels of the building.
 - a. Remove existing metal drop ceiling. Scrape and paint all steel. Ceiling was previously removed, but there may still be hangers and framework which was not removed.
 - 1. Remove recessed light fixtures. Maintain wiring for new fixtures. Refer to electrical drawings.
 - b. Remove and salvage internal frame and gas burner equipment from the fire pit. Demolish the fire pit and discard.
 - c. Remove and dispose of existing terrace paves. Remove and discard loose fill on top of concrete deck.
 - d. Remove aluminum railing system. Contractor may re-use if it comes out clean. Contractor shall put a new railing system (match existing) in bid price in case existing cannot be re-used. If railing system is being re-used, scrape, sand, prepare and paint the railing system. Use spray, not brush application of paint.
 - e. Remove existing concrete deck and steel cold formed decking. Refer to structural.
 - f. Demolish column structures below and above the deck. Leave steel support columns in place. Remove steel cold formed framing of the columns
 - g. Remove concrete pad sidewalk and curbing in their entirety.
 - h. Remove stone veneer, CMU, sheathing and any cold formed steel framing at edge of terrace.
 - i. Pour new concrete brickshell/footings on top of existing footings. Refer to details.
 - j. Rebuild columns on lower and upper levels
 - 1. Lower level columns which extend above the deck level are to be constructed with cold formed steel framing, sheathing flashing and drainage cavity with 4" stone laid up on the exterior. Eliminate the taper of the columns so that columns are square with vertical sides.
 - 2. Upper level columns which start at the deck level are to be constructed with cold formed steel framing, sheathing and drainage cavity with 4" stone veneer on the exterior. Width of the columns to match existing.
 - 3. Flash tops of columns and install new cast-stone caps.
 - k. Install additional steel beams in deck structure. See Structural plans.
 - l. Install custom-fabricated cast stone blocks around the perimeter of the terrace to provide a rigid anchor/stop for porcelain roof paver tiles.
 - m. Install thin-profile cold-formed metal decking and pour 3" structural concrete deck. See Structural plans.
 - n. Install new thin topping layer of concrete pitched at 1/4" per foot to the 14 new drain locations. Use small aggregate concrete designed for topping applications.
 - o. Install adhered PVC roofing membrane system on top of new concrete.
 - 1. Install new flashing at the perimeter of the roofing membrane.
 - 2. Install new drains
 - p. Install rainwater drains inside the terrace and connect with PVC Schedule 40 drain pipe
 - 1. Run drain pipes down through the hollow columns to exterior of building
 - 2. Construct exterior underground drain system from columns to pond area.
 - q. Install new pedestal support system with porcelain tile surface
 - 1. Basis of design: Tile Tech Inc. porcelain tile and hybrid pedestal system as the basis for design.
 - 2. Incorporate 120 mph uplift protection in mounting system
 - 3. Tile size: 24" x 24" x 3/4" square tiles
 - 4. Tile: Wood Rustic Maple.
 - r. Install new 4" thick stone surface on designated walls and columns. See details.
 - s. Install new GFRG (glass fiber reinforced) panels on designated panels on the outside face of the deck.
 - 1. GFRG panels shall have textured surface. Refer to detail. Architect to select from full range of colors including custom colors.
 - 2. GFRG panels basis of design are 3/4" custom panels from DeNoto Precast Inc.
 - 3. Install light weight steel framing, sheathing, waterproof membrane and flashing.
 - 4. Provide a drainage cavity system inside the wall.
 - 5. Provide and install stainless steel attachment hardware for panels.
 - t. Replace the low wall opposite the Snack Bar window:
 - 1. Remove cap stones and save for re-use.
 - 2. Demolish existing wall on including stone facing on both sides.
 - 3. Rebuild wall with 4" thick stone facing on each side and mortar/brick fill in between stone facing. Match existing dimensions.
 - 4. Reinstall stone cap.
 - u. Remove existing thin-stone veneer and apply a stucco finish: walls.
 - 1. Remove existing thin-stone veneer.
 - 2. Remove existing cement board from this area and replace with new cement board. If cement board is in good, useable condition, do not remove it.
 - 3. Install stainless expanded wire mesh on wall with stainless steel screws with a stainless steel bottom edge piece with a 1/4" gap between edge and concrete sidewalk.
 - 4. Install a three coat stucco system.
 - 5. Caulk seam at base of wall between concrete and stainless steel edge metal.
 - v. Install new concrete walkway and curbing. Refer to detail.
 - w. Install new metal drop ceiling below deck.
 - 1. Replace all ceiling recessed lights. Refer to Electrical Drawings.
- 4. Remove exterior thin-stone veneer system, cast stone sill and CMU to existing brick shelf and replace with new 4" stone veneer and cast stone sill.
 - a. Install self-adhering flashing membrane up behind the siding, down the exposed wall, across the foundation shelf with metal drip edge extending just beyond the stonework being installed.
 - b. Install new 4" stone veneer and cast stone sill.
- 5. Columns between terrace and restaurant.
 - a. Remove existing thin-stone veneer. Replace with aluminum panel on terrace side. See detail.
 - b. Replace with aluminum panel on restaurant side. See detail.
 - c. Replace with wood panel on restaurant side. See detail.
 - d. Caulk seam at base of wall between concrete and stainless steel edge metal.
- 6. Concrete Stair and Landing
 - a. Remove concrete stair and landing in their entirety.
 - b. Replace with new concrete stair and landing. Refer to structural drawings. Landing to be stamped with 12" x 12" paver pattern. Match pattern direction of adjacent pavers.
- 7. Steel Stair Framing and Treads
 - a. Remove aluminum guardrail and handrail system. Store for reinstallation.
 - b. Remove stone treads and landings. Clean and store for reinstallation.
 - c. Cut off railing system sleeves below treads and landings. Fabricate new steel sleeve (match size and shape) with perforated holes in bottom to allow water to run thru. See photo D/A-613.
 - d. Cut 1/2" diameter holes in treads and landing at 6" O.C. to allow water to drain.
 - e. Scrape, sand, prepare and paint entire steel stair system.
 - f. Adhere 80 mil. PVC roof membrane over steel treads and landings. Maintain new drainage holes.
- 8. Ceiling Fans
 - a. Remove ceiling fans in their entirety.
 - b. Install new Hunter Jetty 52" - 51731 Matte Black Ceiling Fan. Connect to existing junction box. Re-use existing switches/controls for operation.
- 9. Golf Cart Protection Enclosure
 - a. Location of enclosure for continuous access to cart barn during construction. This is to be maintained at one location during construction. Enclosure will be built at separate times during construction to allow for continuous access to cart barn.



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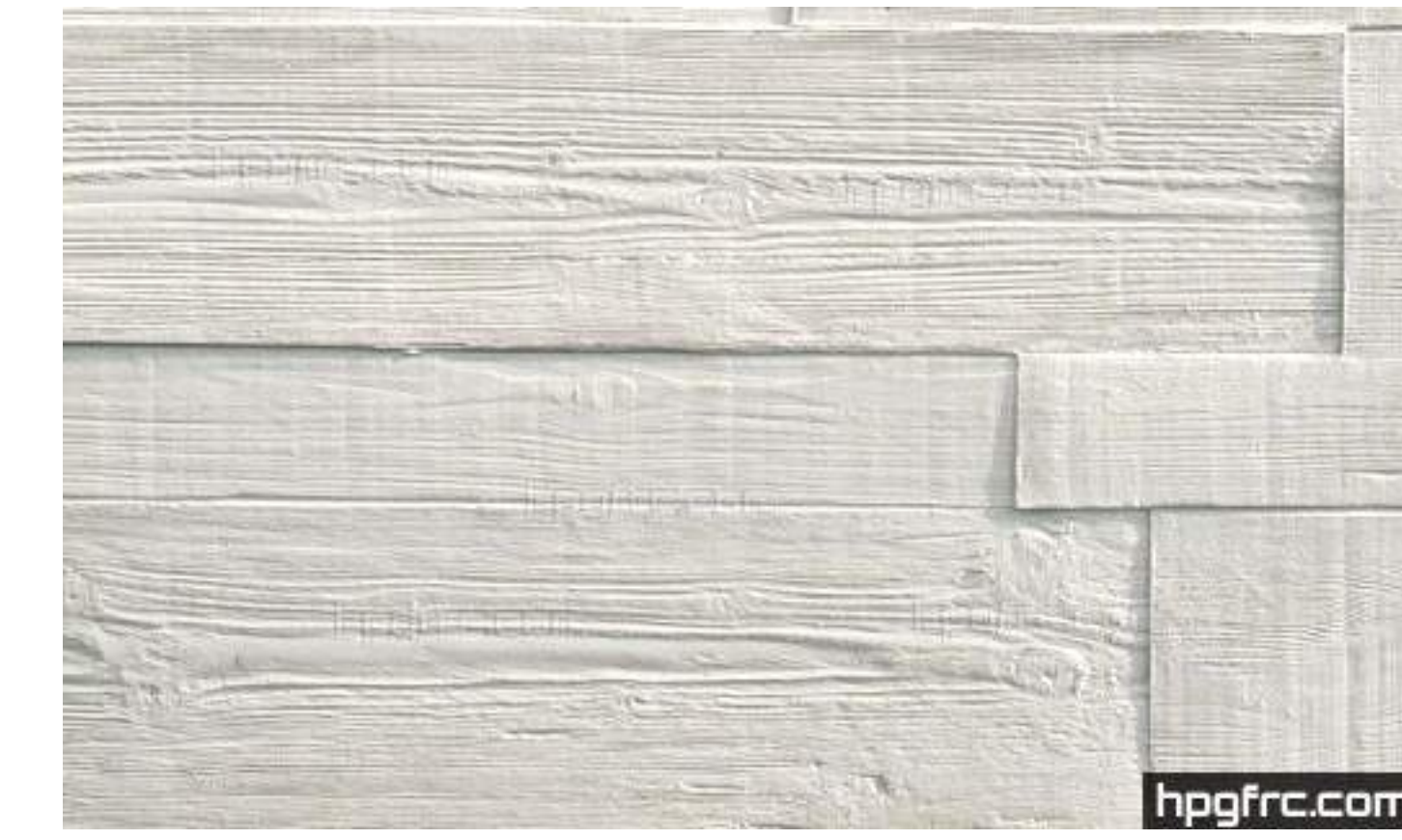
REPAIRS AND RESTORATION
 AT THE
CLUBHOUSE
 FOR THE
ASH BROOK GOLF COURSE
 1210 RARITAN ROAD
 SCOTCH PLAINS, NJ 07076

2	01.11.24	ISSUED FOR RE-BID
1	09.21.23	ISSUED FOR BID

No. Date Issue or Revision
 Drawing Title

PHOTO DETAILS

Scale	USA Project No.
AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-613
Drawn By	Checked By
JLG	APA

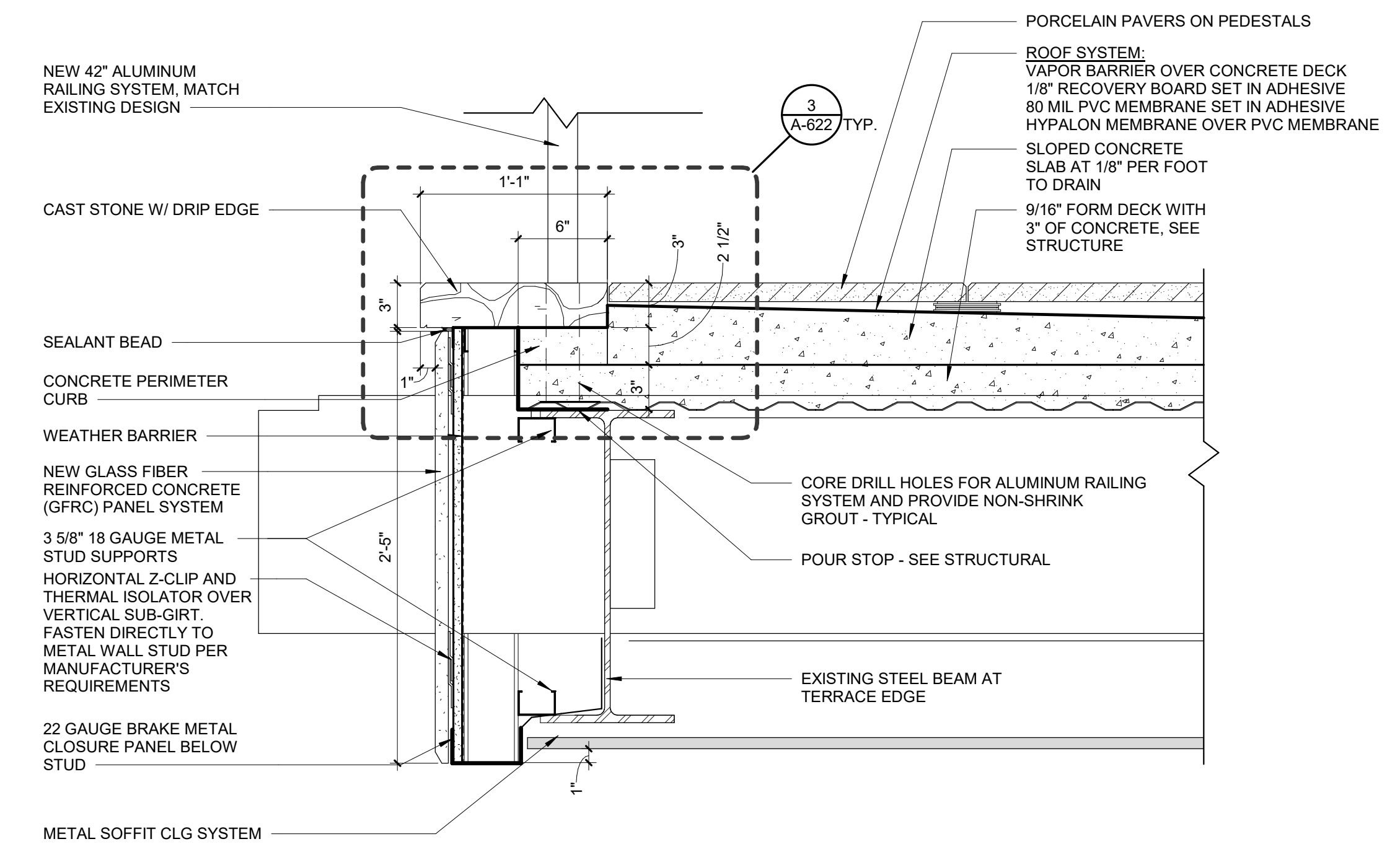


4 GLASS FIBER REINFORCED PANEL ELEVATION - PATTERN - TYPICAL
SCALE: N.T.S.

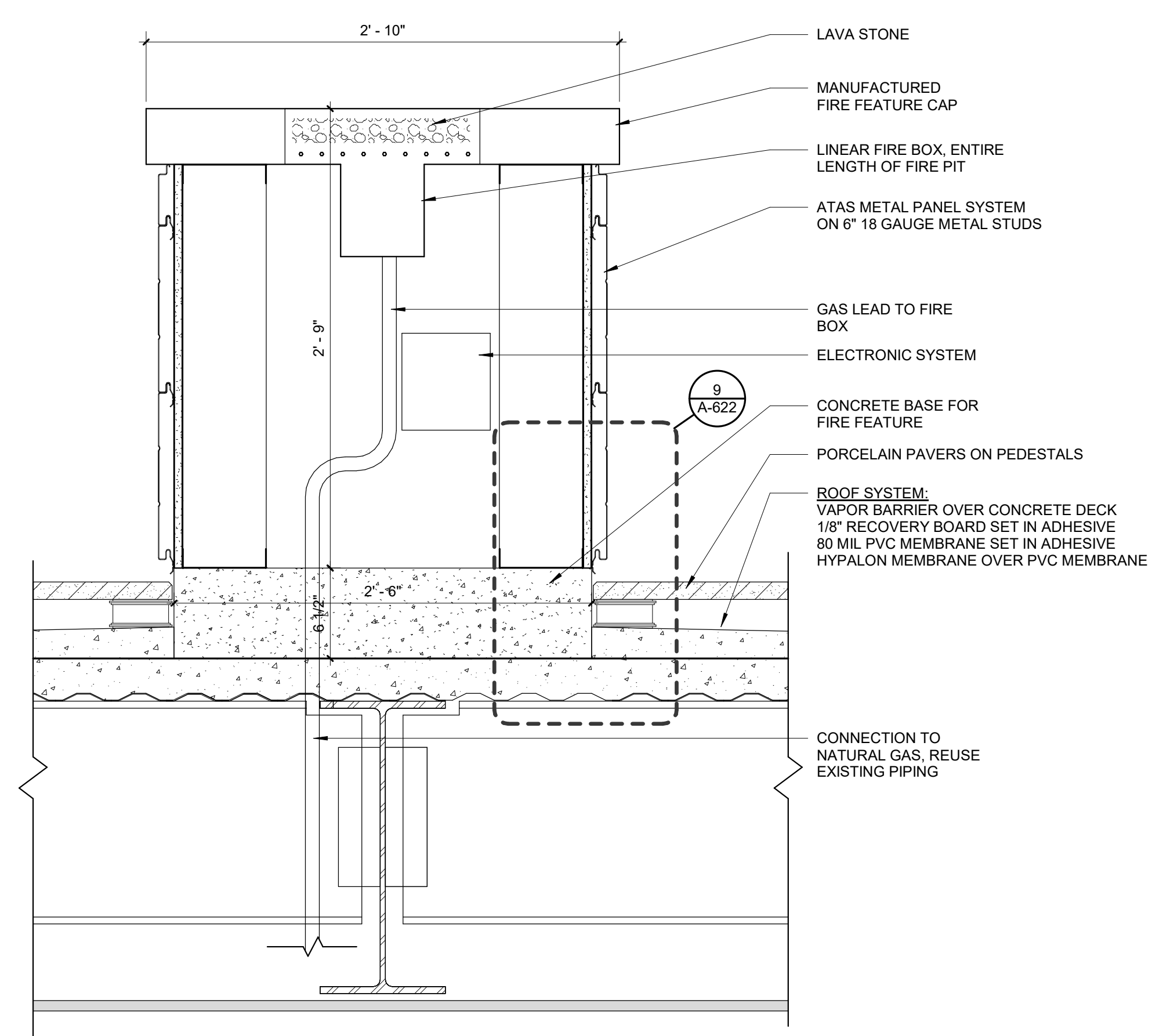


Medium Sand Float
SUGGESTED APPLICATION PROCEDURES:
1. Apply a first coat and double back with a second application. Plaster mix is to be formulated with a blend of a (6) #0 aggregate.
2. Using circular motion, rub surface with float to achieve uniform pattern, bringing sand particles to surface. An absolute minimum of water should be used in floating.

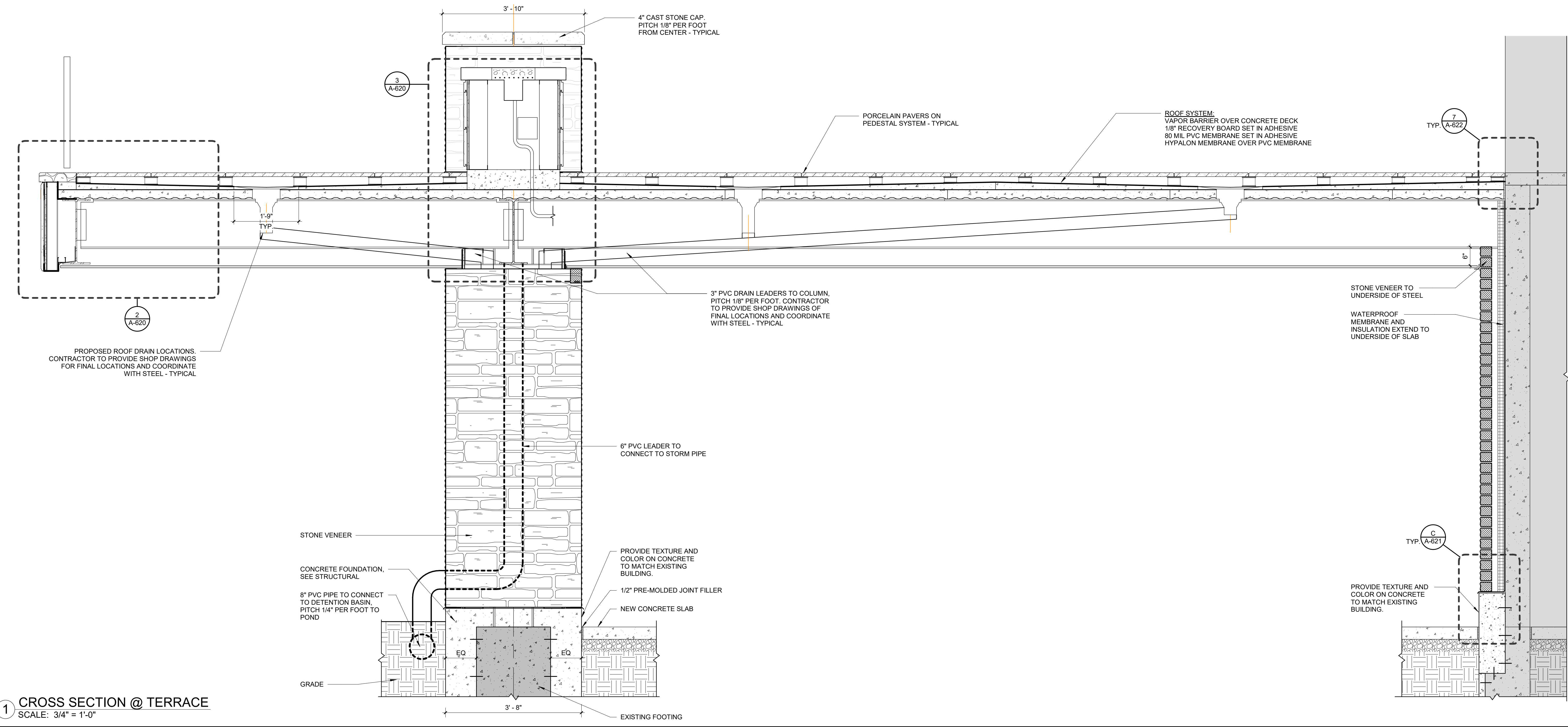
5 STUCCO TEXTURE TYPE ELEVATION
SCALE: N.T.S.



2 DETAIL @ PROPOSED TERRACE EDGE
SCALE: 1 1/2" = 1'-0"



3 DETAIL @ FIRE FEATURE
SCALE: 1 1/2" = 1'-0"



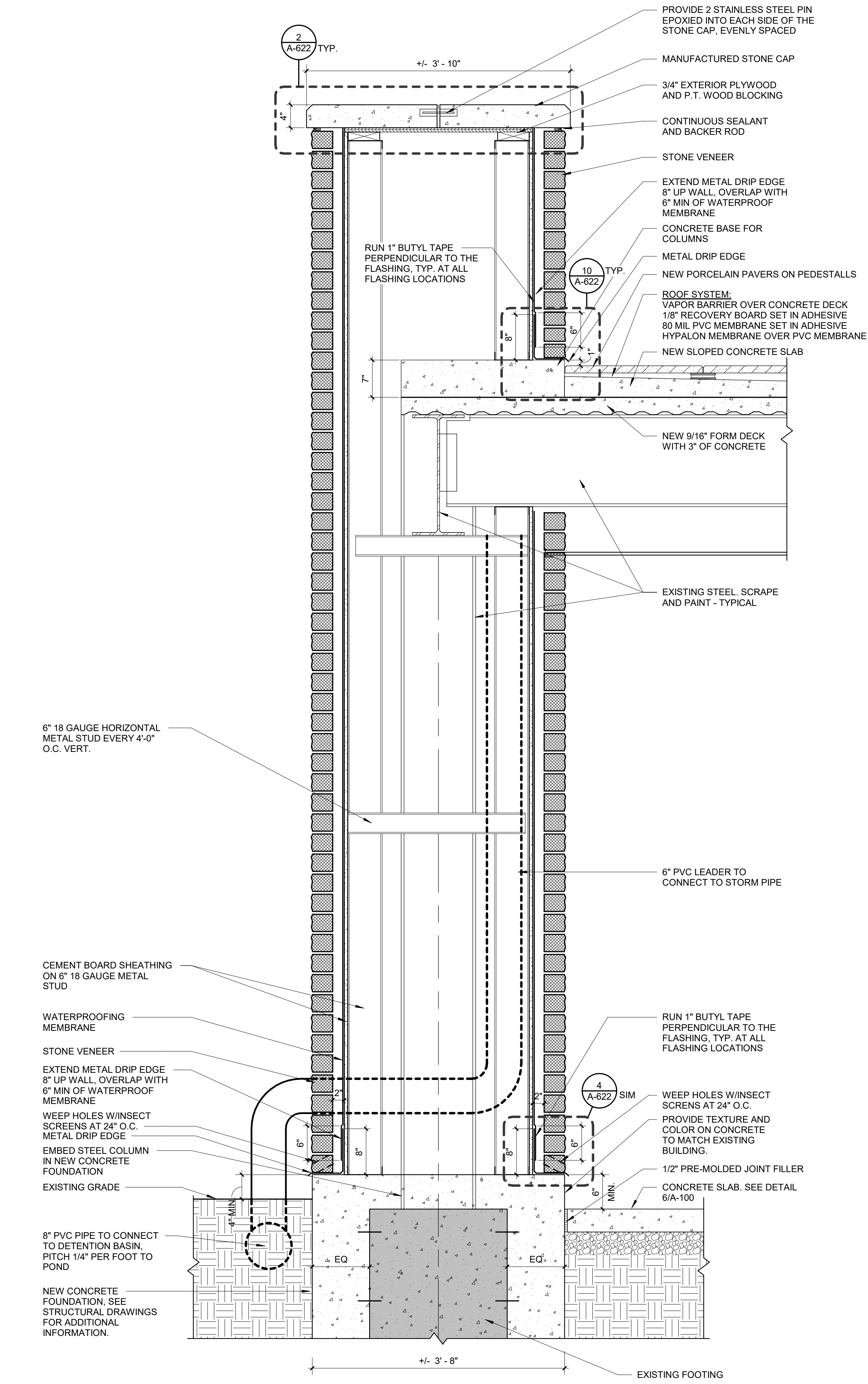
1 CROSS SECTION @ TERRACE
SCALE: 3/4" = 1'-0"

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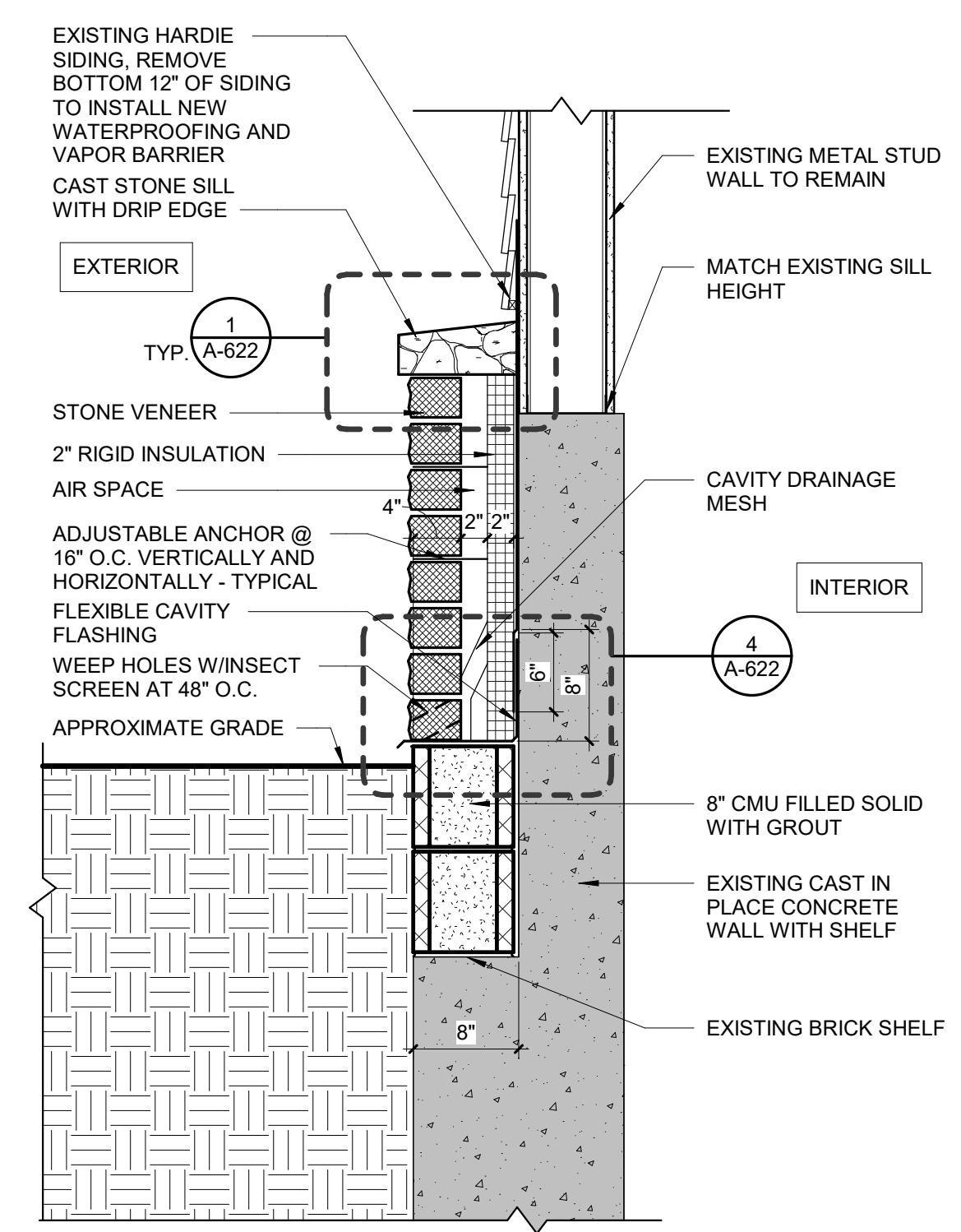
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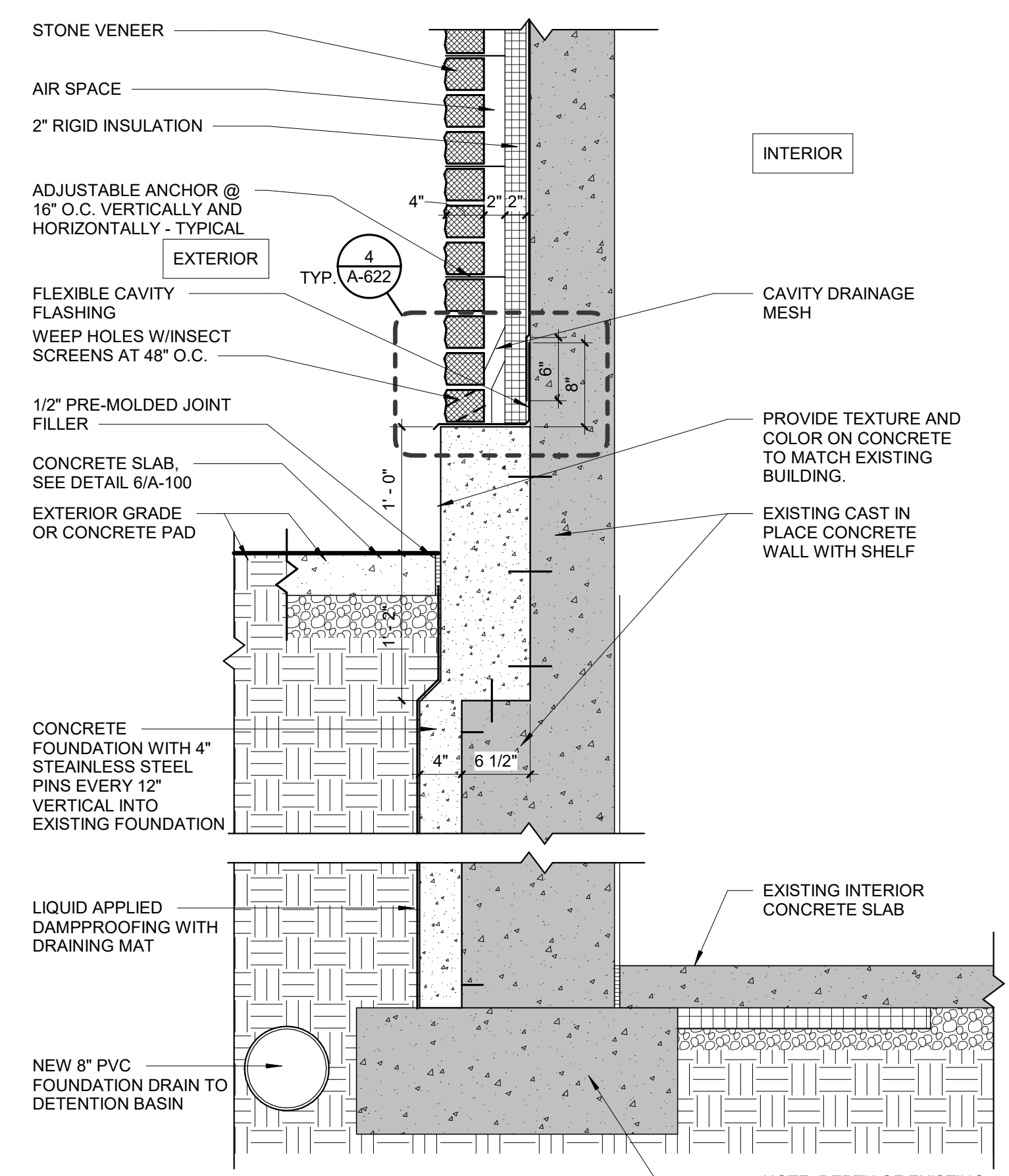
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Scale	USA Project No.
AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-620
Drawn By	Checked By
DTB	APA



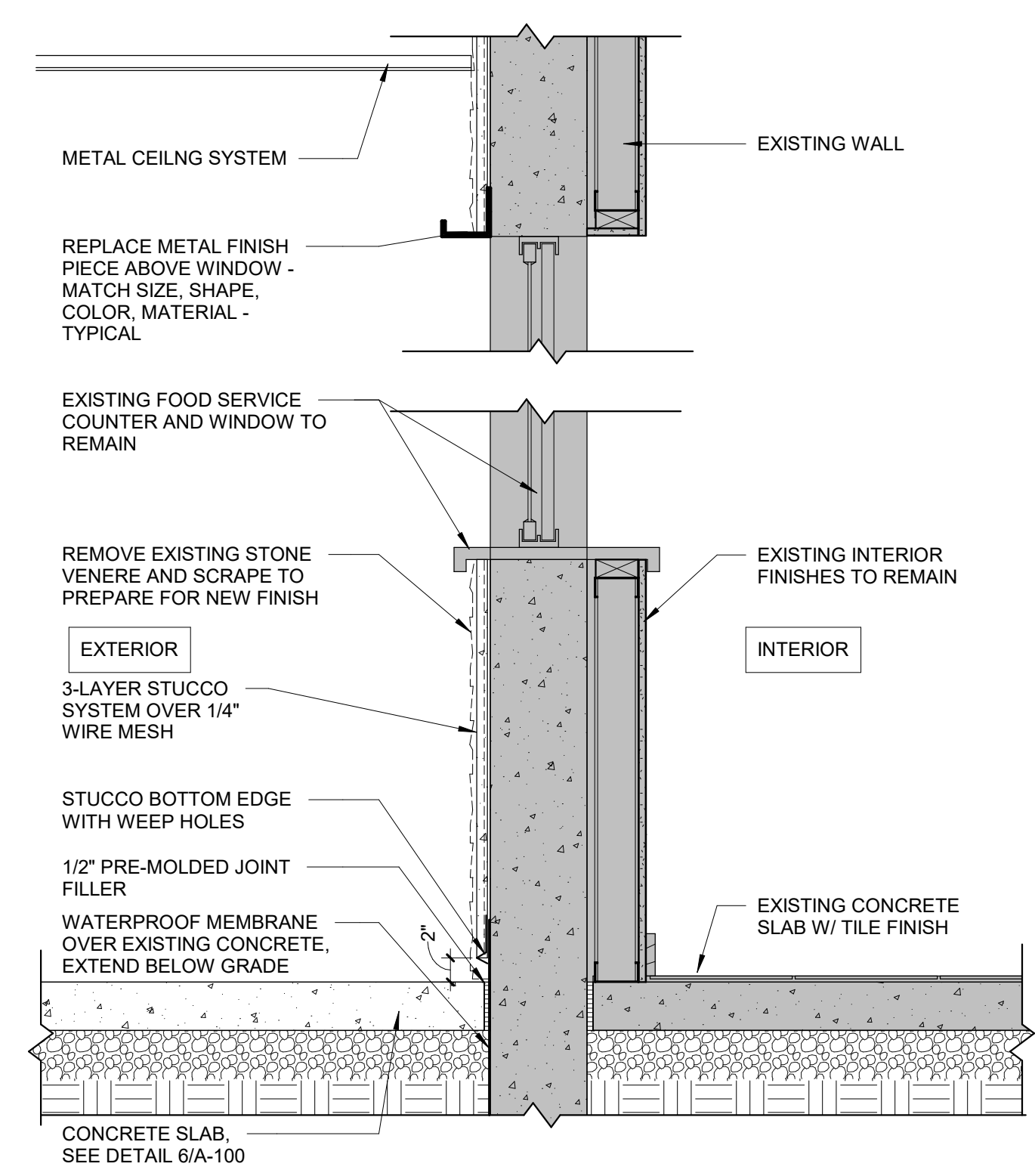
A TERRACE COLUMN SECTION
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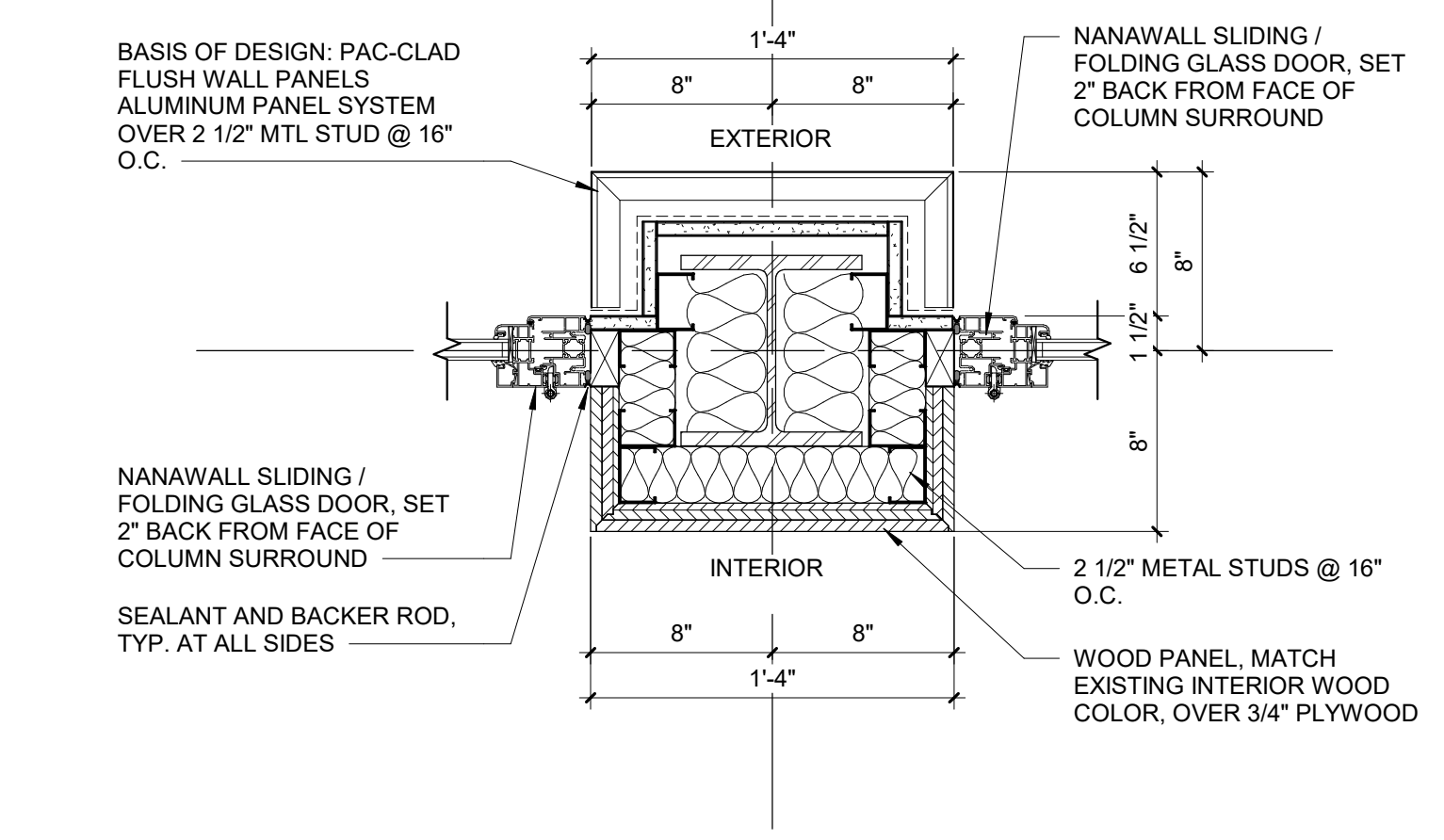
B SECTION DETAIL @ PROPOSED STEP AT FRONT/SIDE OF BUILDING
 SCALE: 1" = 1'-0"



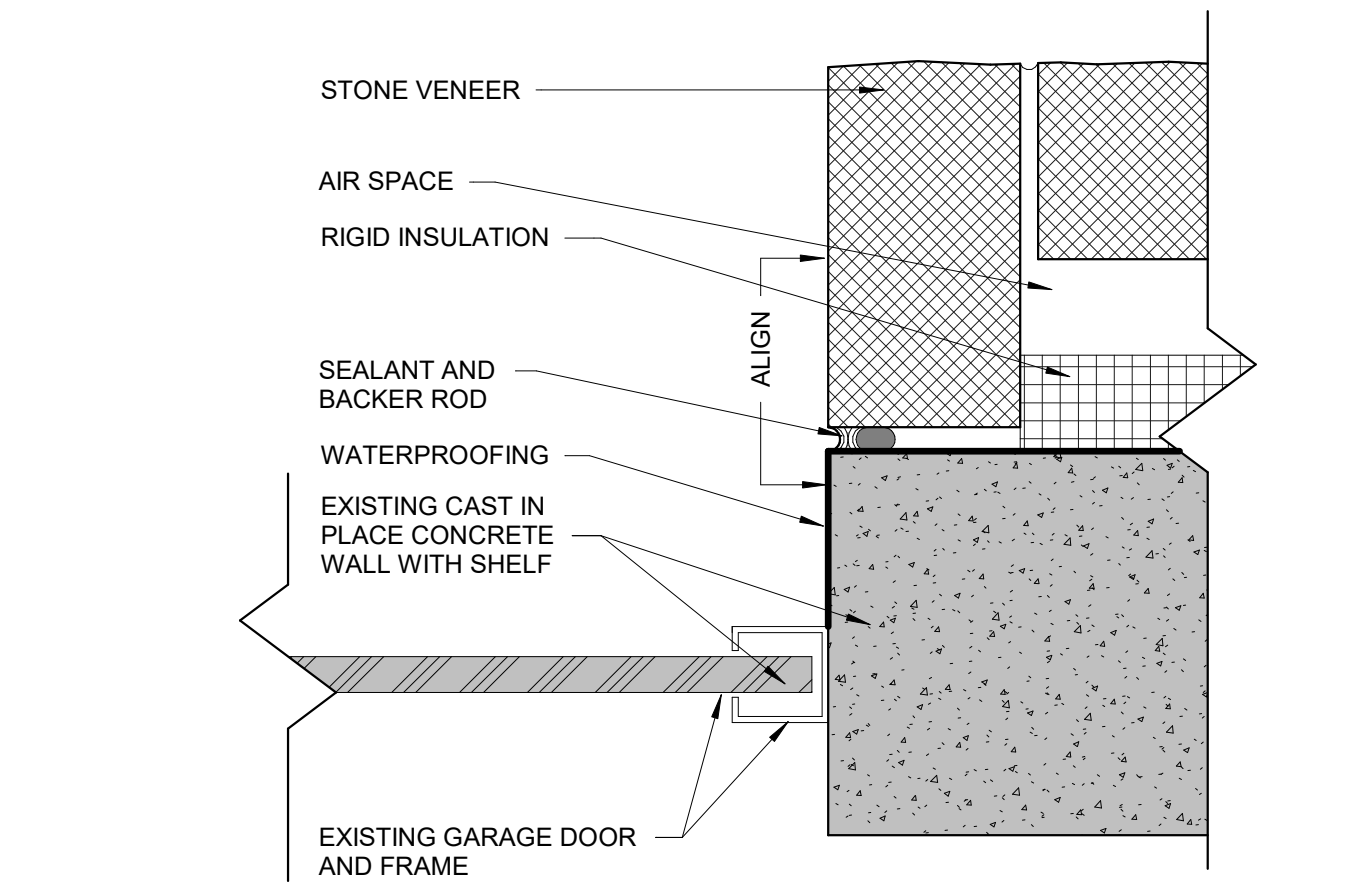
C SECTION DETAIL
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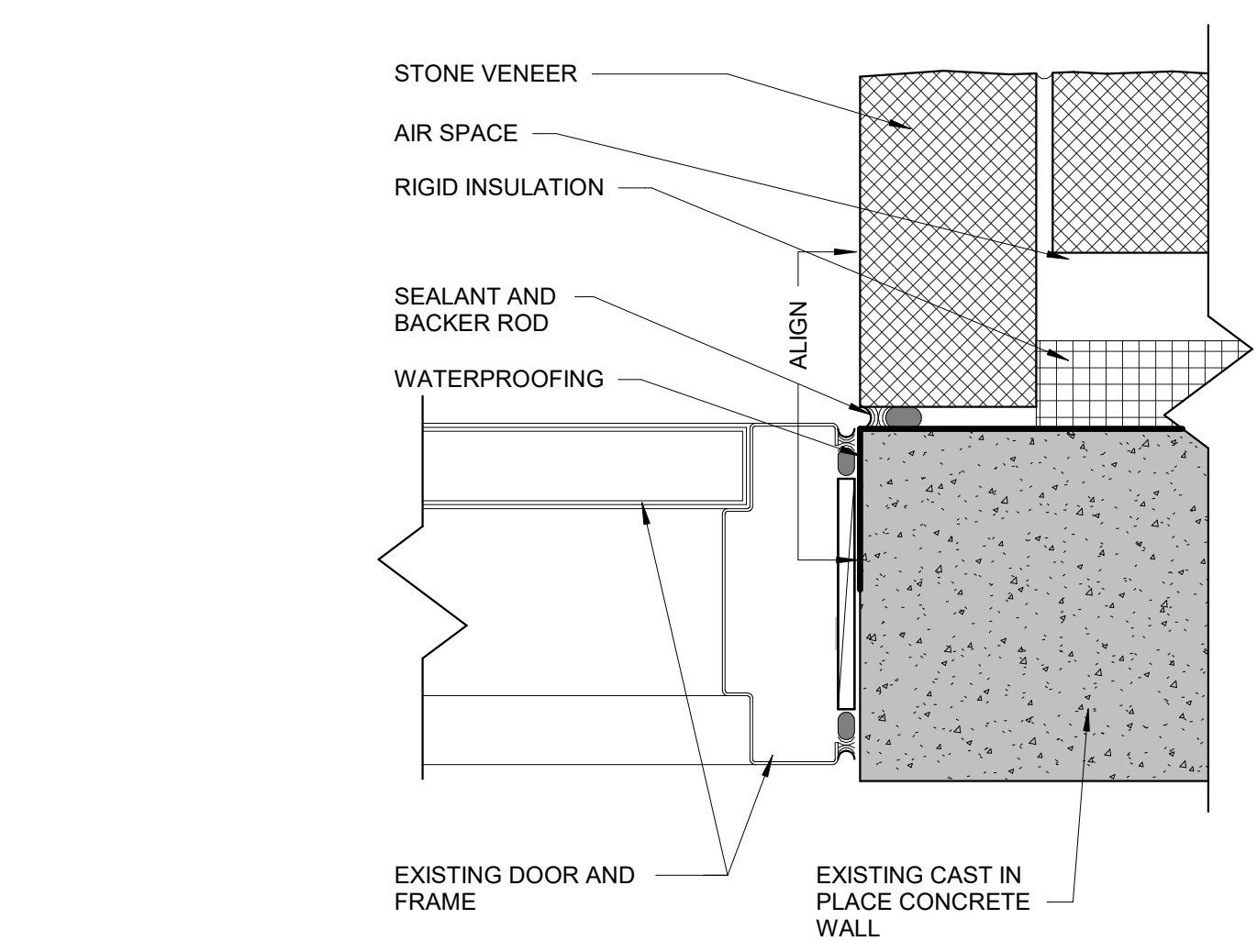
D SECTION DETAIL @ PROPOSED STUCCO WALL
 SCALE: 1" = 1'-0"



E PROPOSED COLUMN ENCLOSURE
 SCALE: 1 1/2" = 1'-0"



F TYPICAL METAL TRIM AT OPENING
 SCALE: 3" = 1'-0"



G TYPICAL METAL TRIM AT DOOR
 SCALE: 3" = 1'-0"

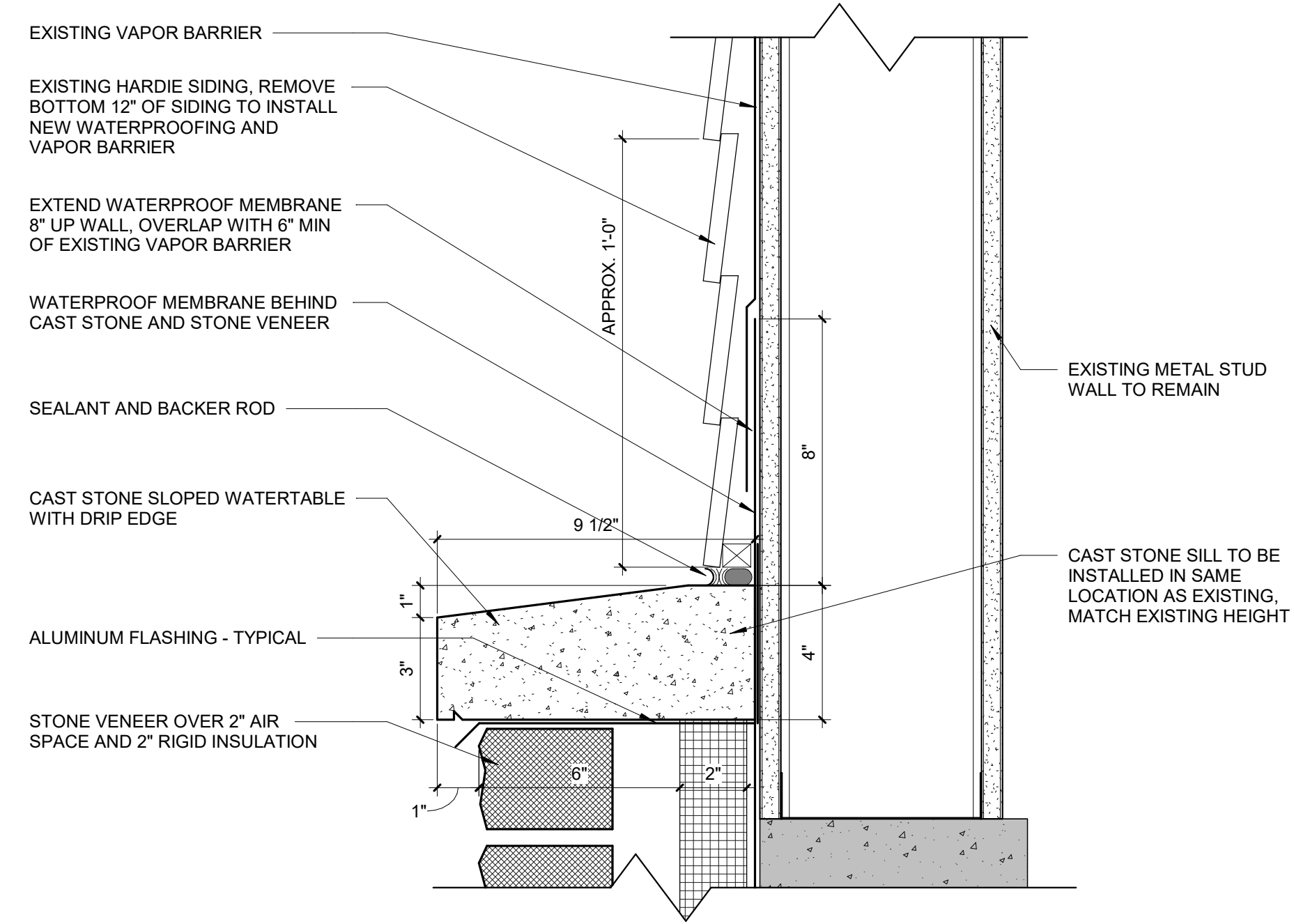
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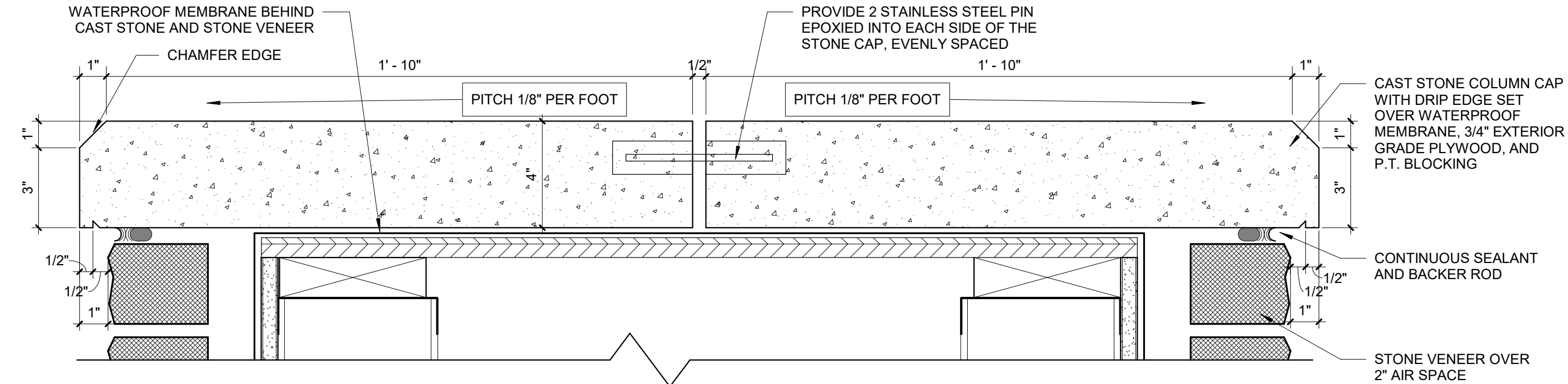
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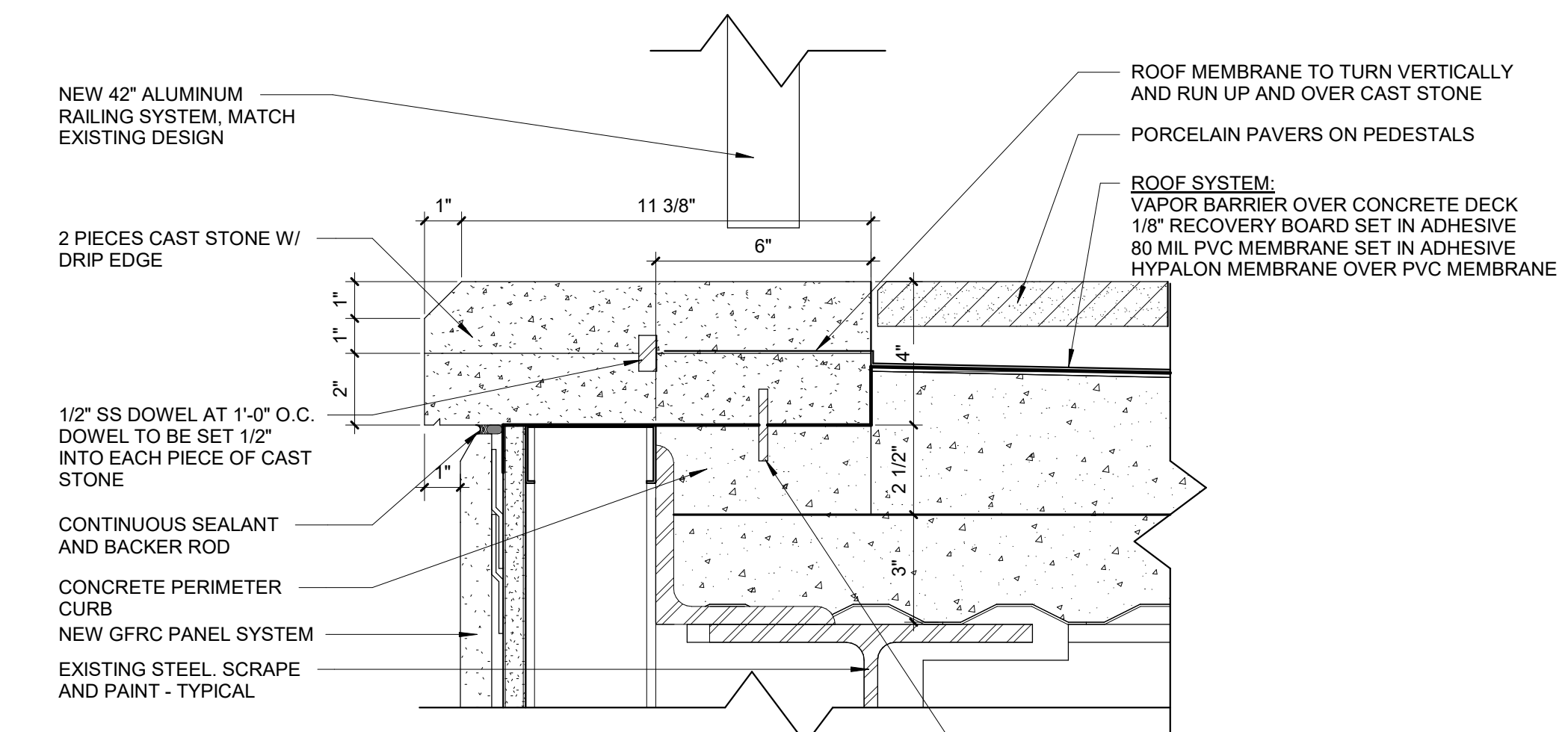
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Scale	USA Project No.
AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-621
Drawn By	Checked By
DTB	ApA



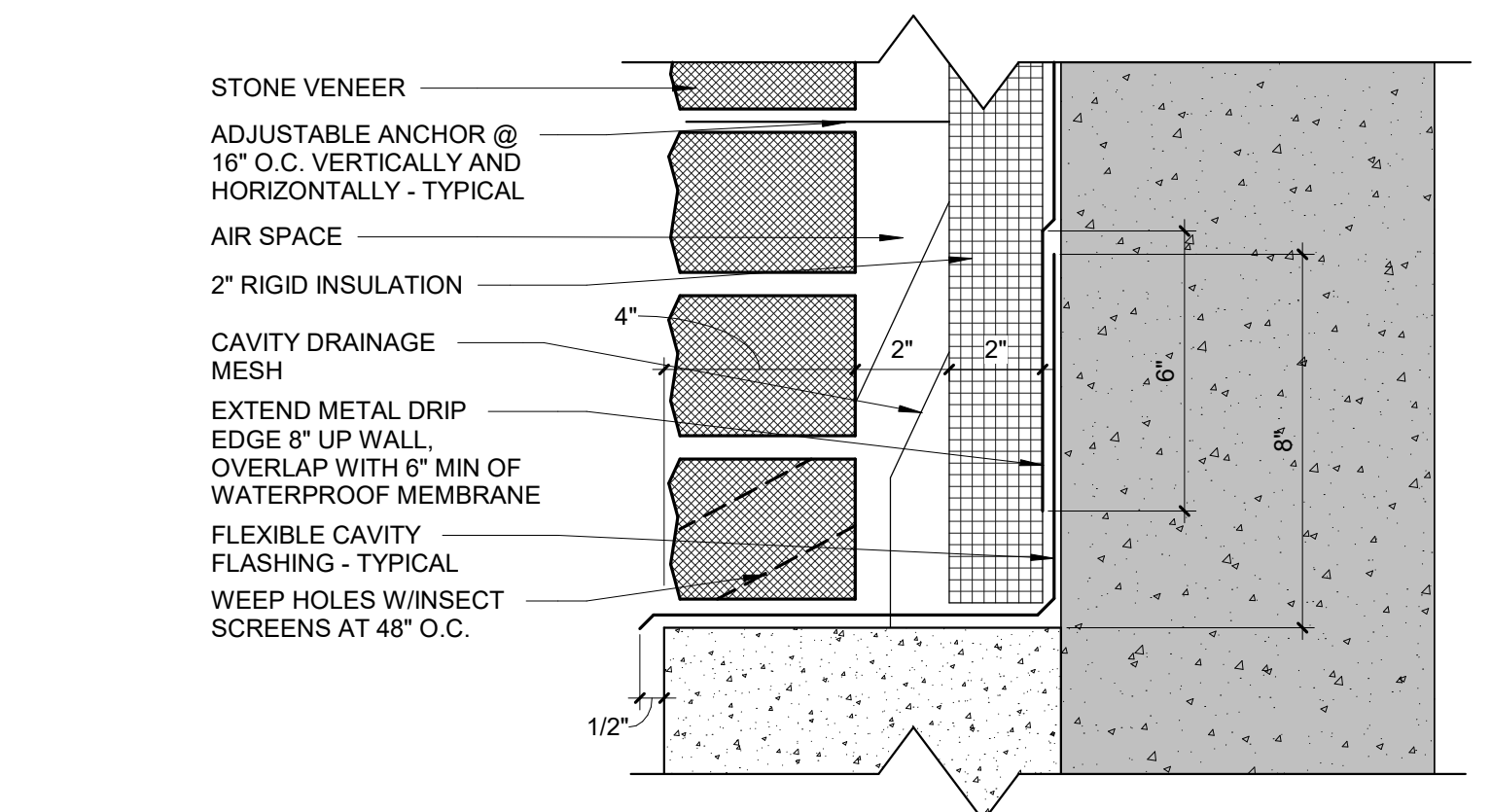
1 DETAIL @ CAST STONE SILL
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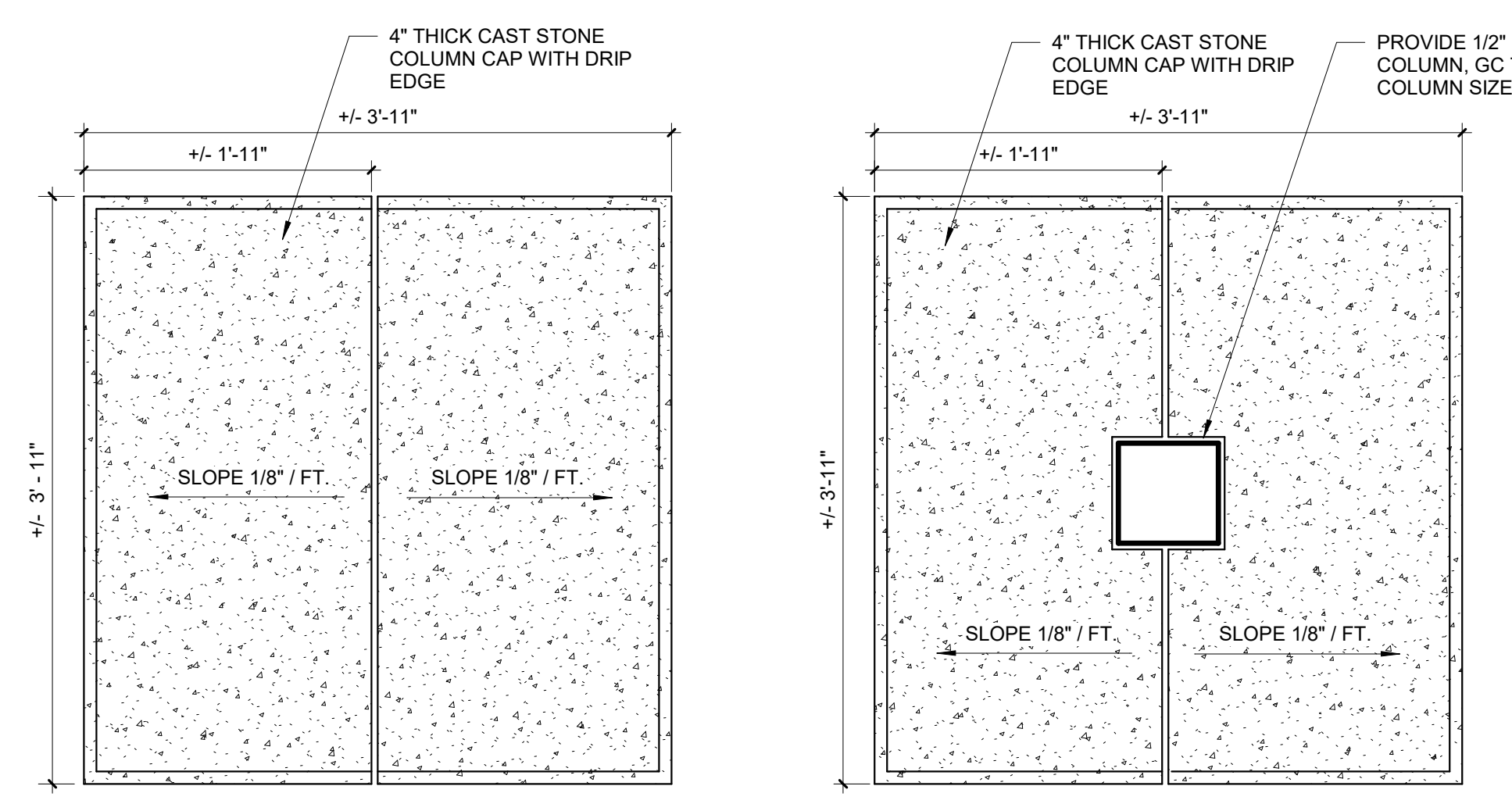
2 DETAIL @ CAST STONE COLUMN CAP
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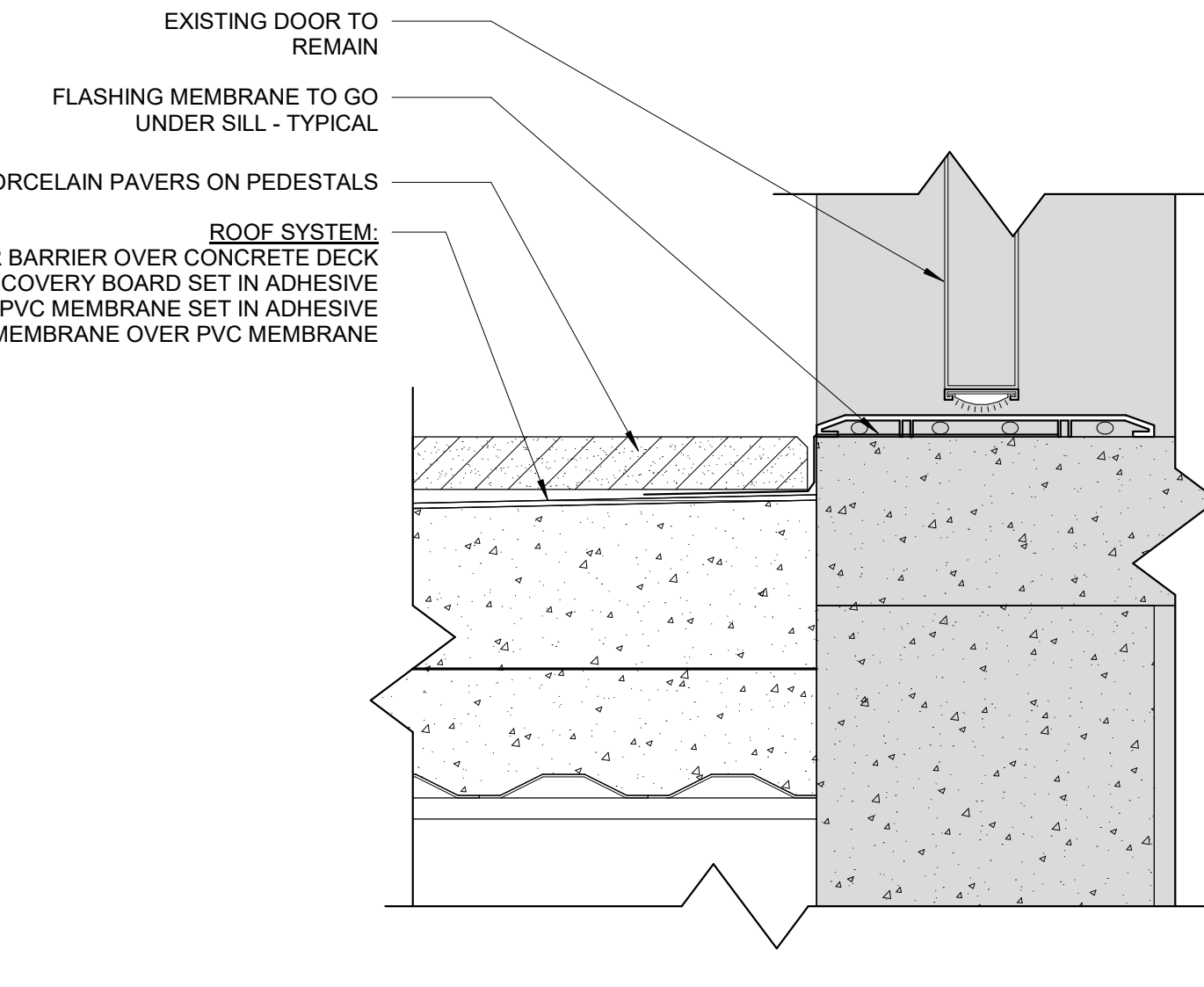
3 DETAIL @ CAST STONE TERRACE EDGE
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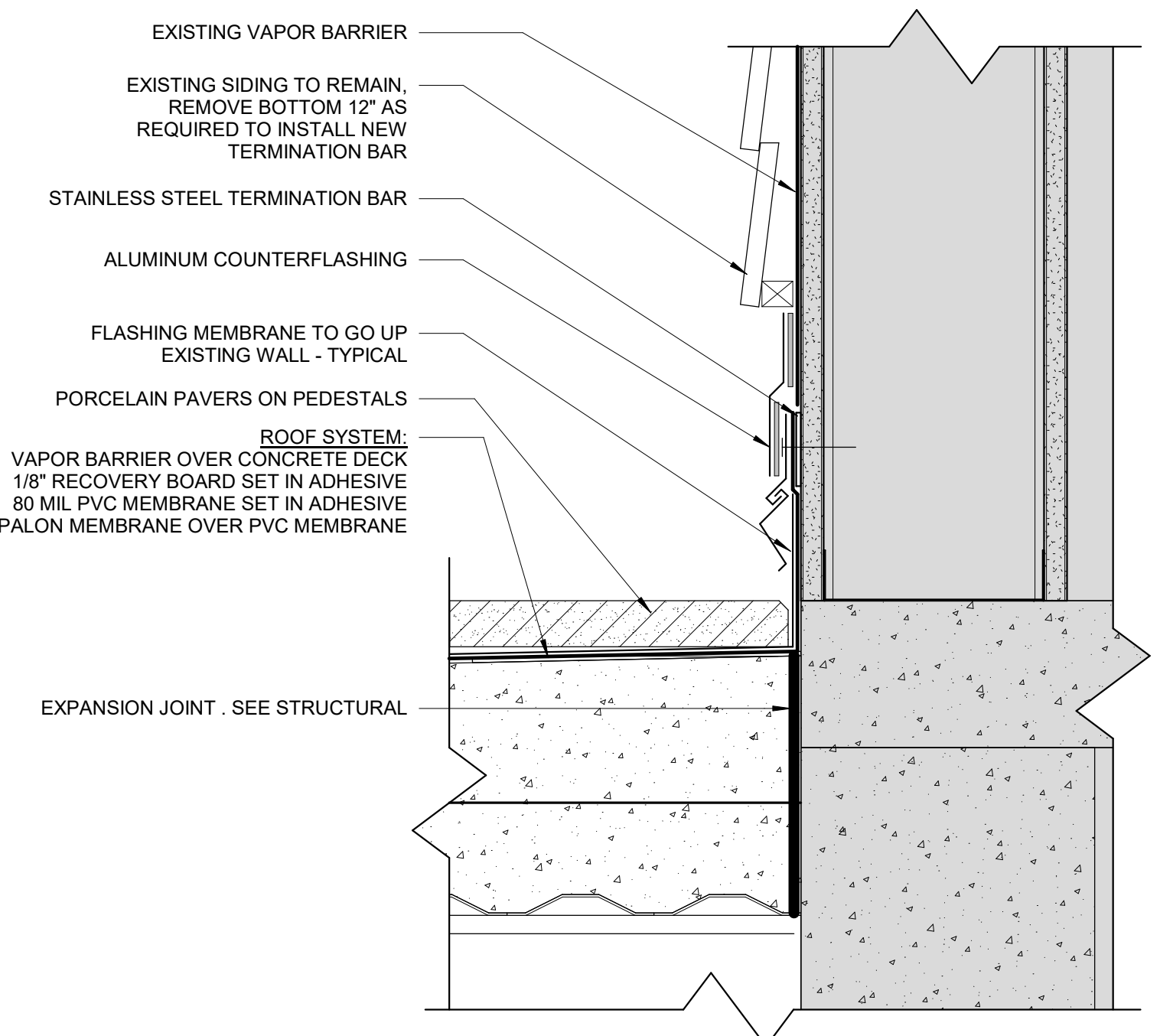
4 ENLARGED FLASHING DETAIL
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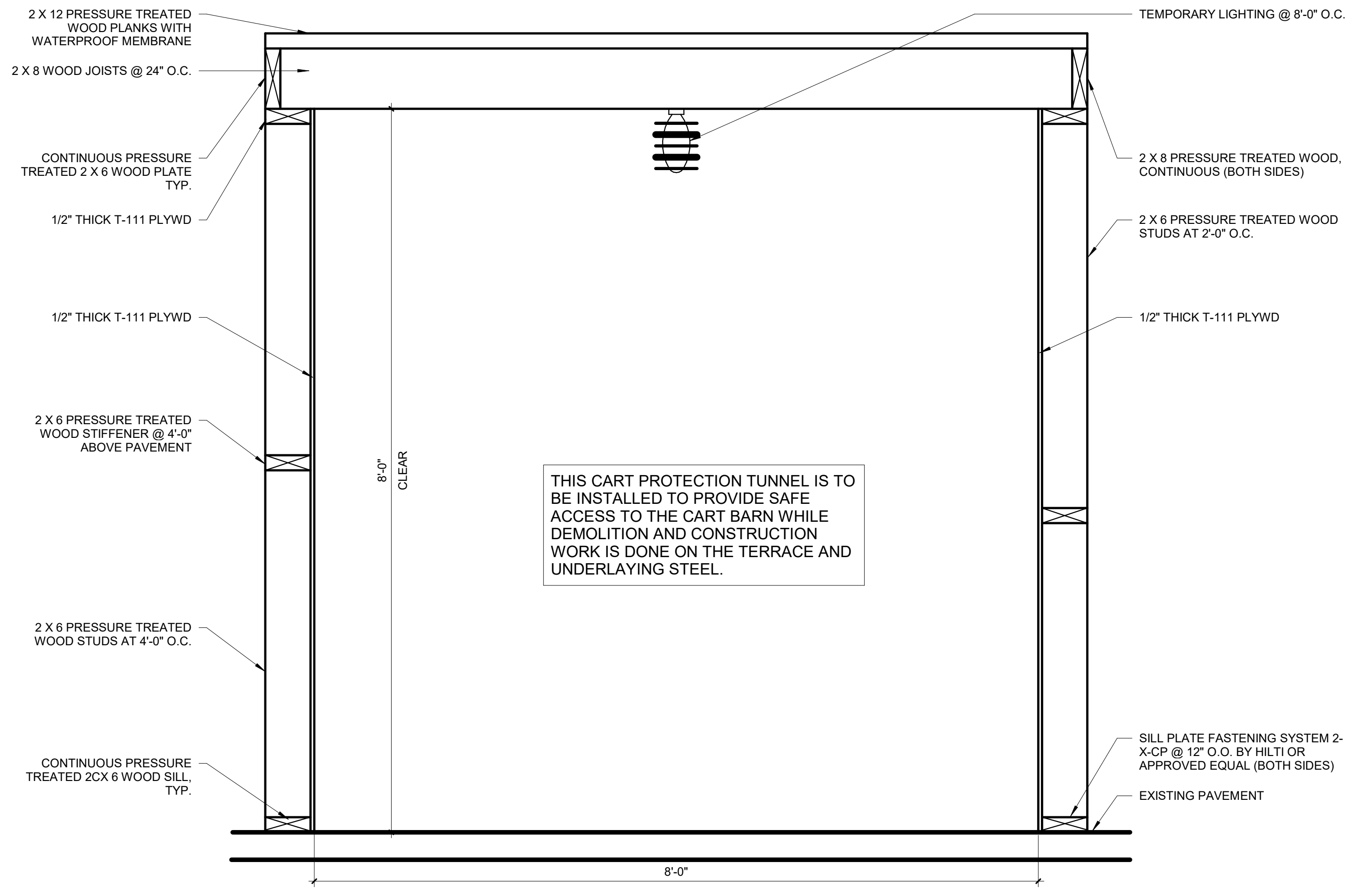
5 PLAN DETAIL @ CAST STONE COLUMN CAP
 SCALE: 1" = 1'-0"



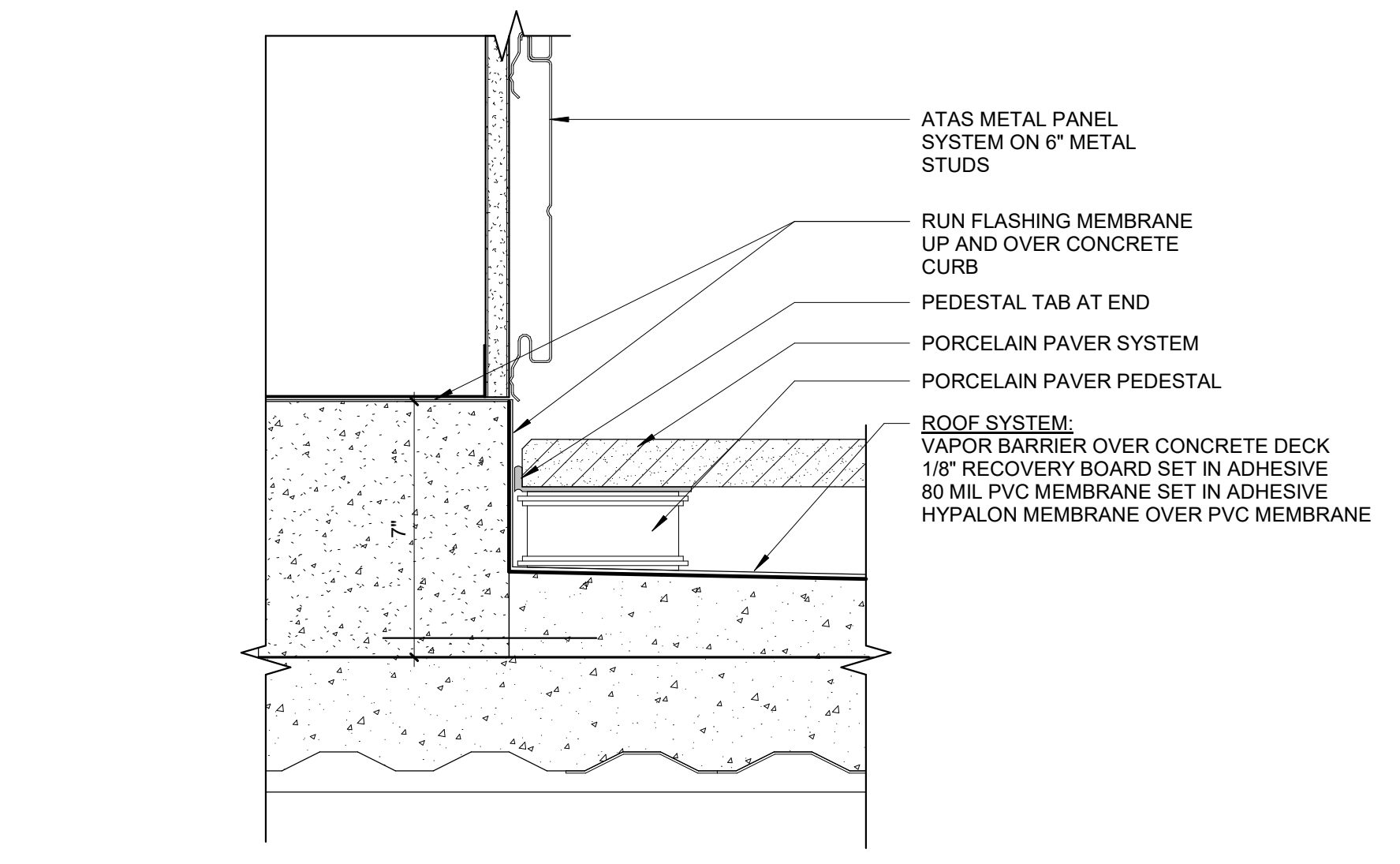
6 DETAIL @ CAST STONE TERRACE EDGE
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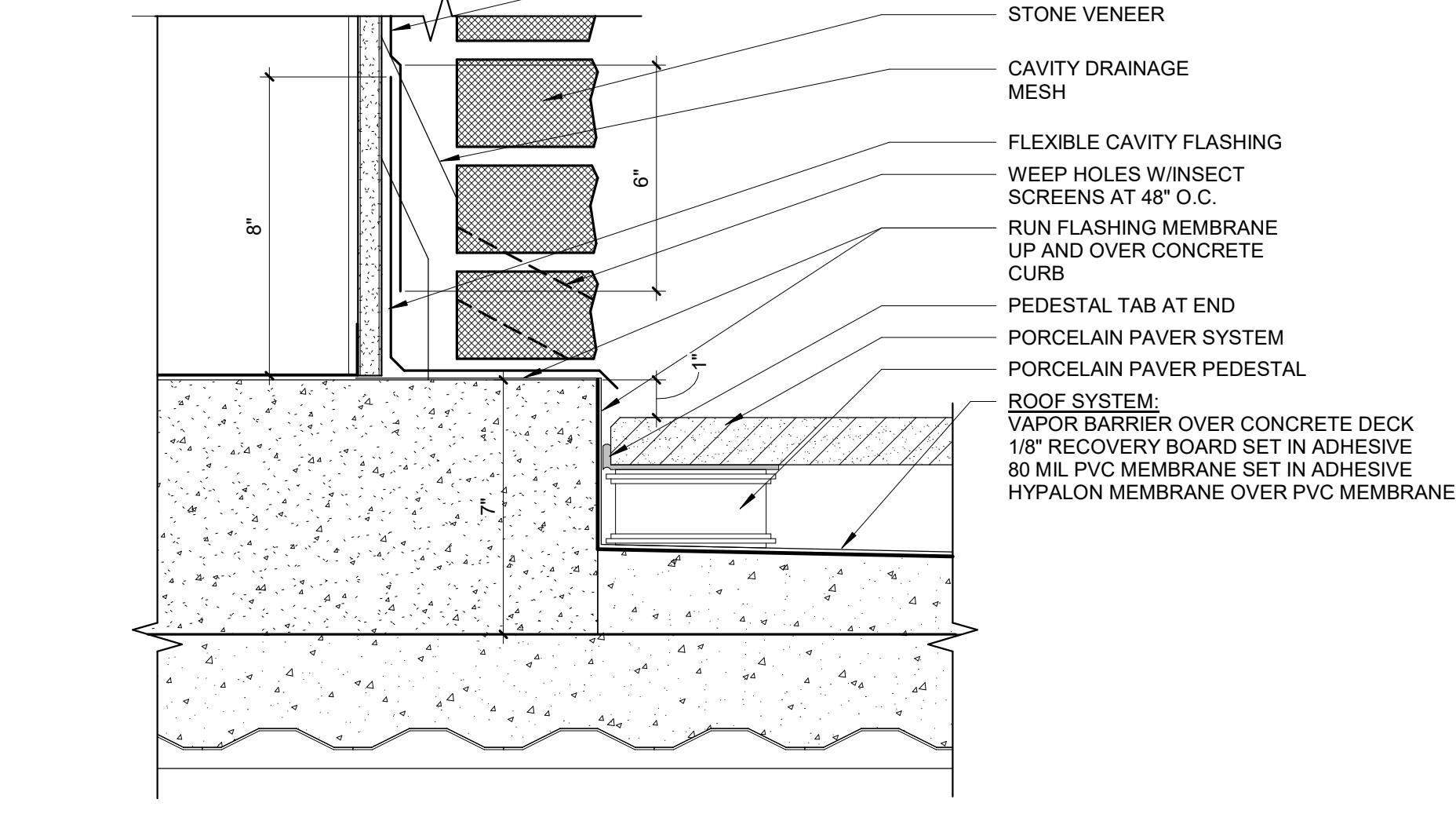
7 DETAIL @ CAST STONE TERRACE EDGE
 SCALE: 3" = 1'-0"



8 GOLF CART PROTECTION ENCLOSURE
 SCALE: 1" = 1'-0"



9 DETAIL @ FIRE FEATURE FLASHING
 SCALE: 3" = 1'-0"



10 DETAIL @ TERRACE COLUMN FLASHING
 SCALE: 3" = 1'-0"

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Drawing Title
CAVITY WALL
DETAILS

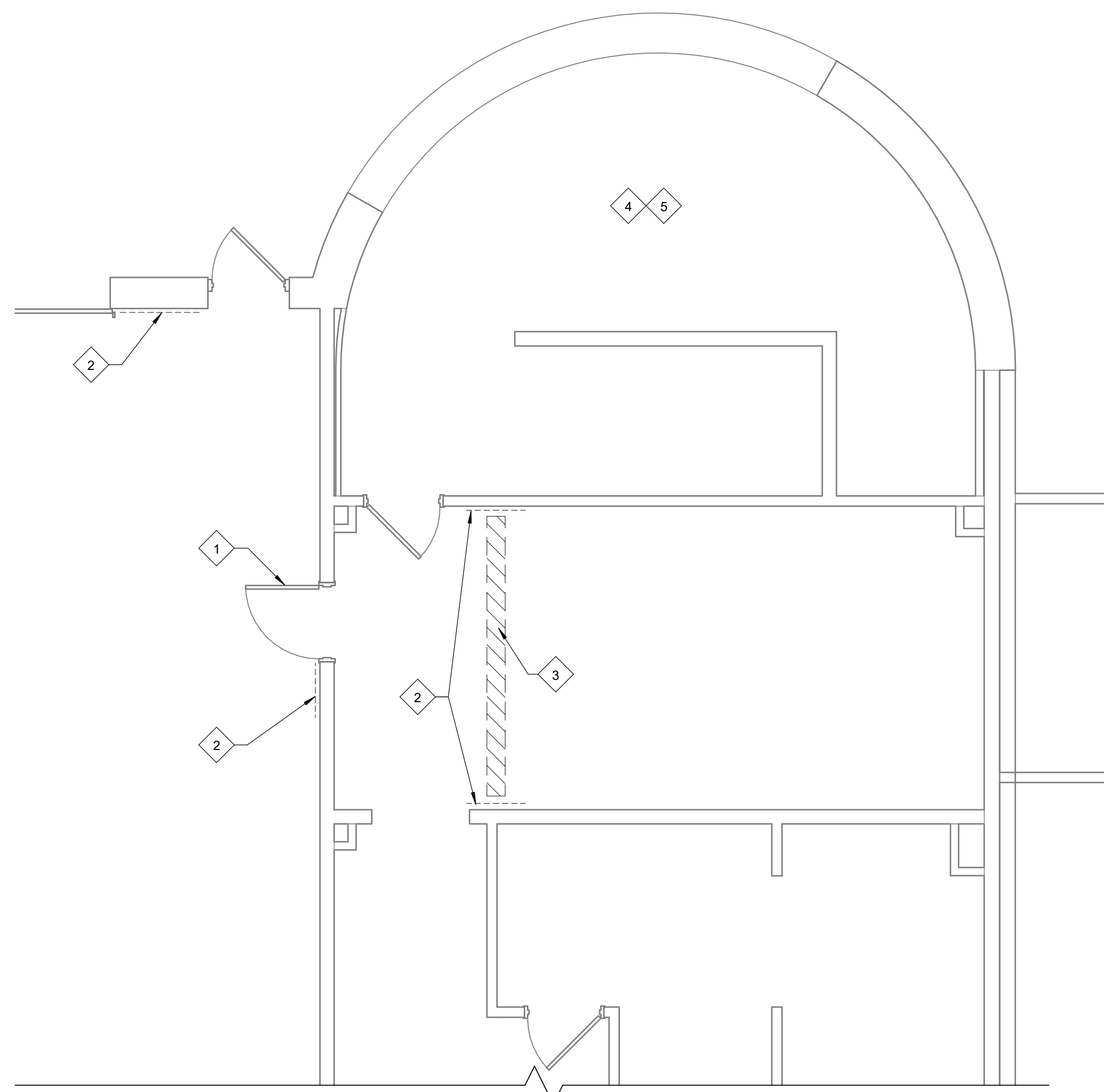
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AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-622
Drawn By	Checked By
DTB	ApA

GENERAL DEMOLITION NOTES:

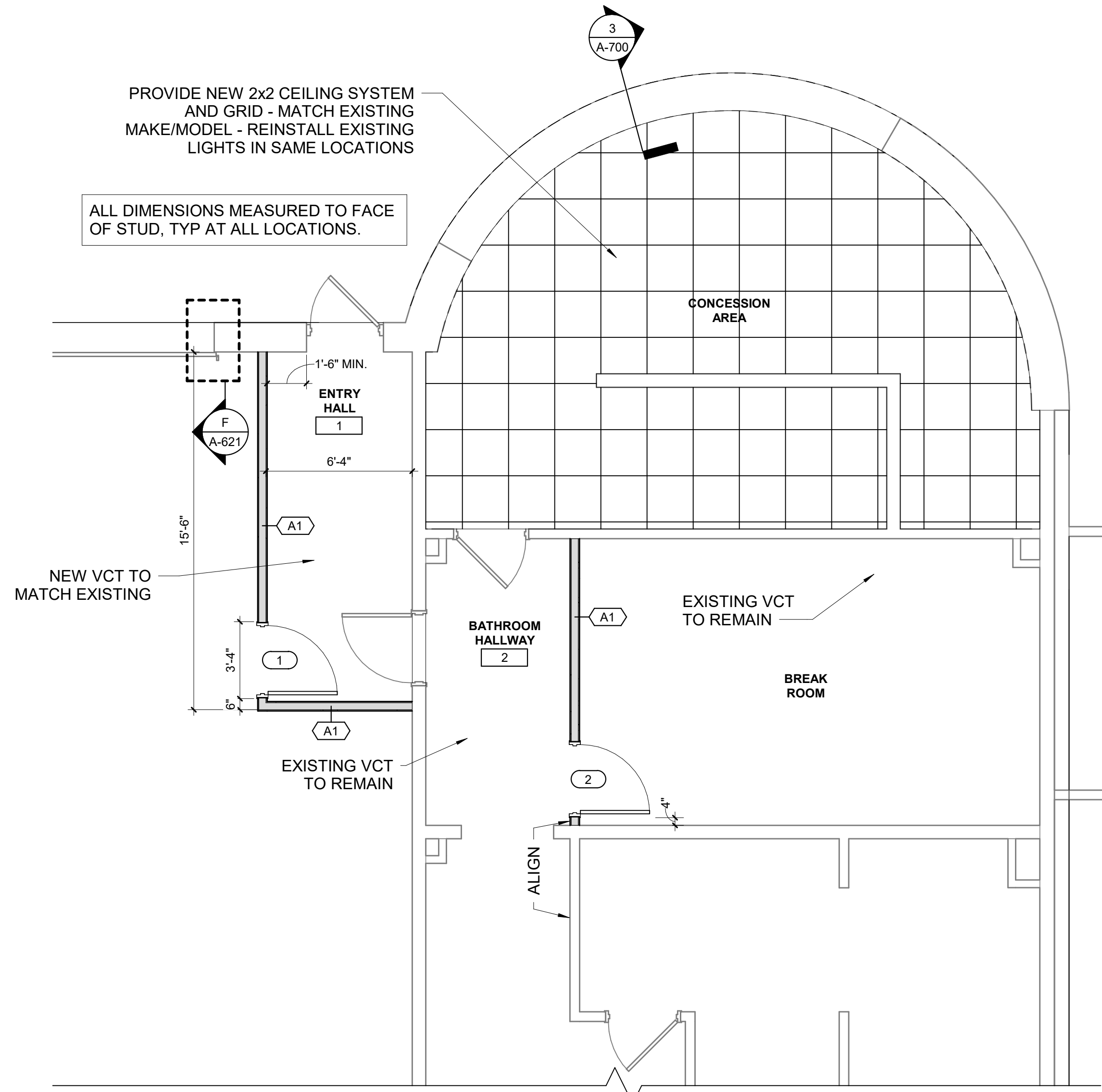
- CONTRACTOR MUST INSTALL AND MAINTAIN PLASTIC DUST BARRIERS DURING DEMOLITION AND CONSTRUCTION TO PROTECT THE GENERAL PUBLIC FROM DUST AND FUMES. LOCATE PARTITIONS REQUIRED TO PROTECT ADJACENT AREAS AND EQUIPMENT, AND CONTINUE EGRESS THROUGH THE SPACE. CONTRACTOR SHALL PROVIDE TEMPORARY EXIT WAYS AS REQUIRED BY LOCAL CODE ENFORCEMENT OFFICIAL DURING CONSTRUCTION.
- DO NOT CONSIDER DEMOLITION AND ALTERATION NOTES TO BE ALL INCLUSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND ASSESS EACH SPACE AND TO FULFILL THE INTENT OF THE WORK INDICATED BY THE CONTRACT DOCUMENTS. VERIFY ALL DIMENSIONS WITHIN THE CONTRACT LIMITS. BRING DEVIATIONS FROM THE CONTRACT DOCUMENTS TO THE ATTENTION OF THE ARCHITECT. THE EXTENT OF DEMOLITION AND REMOVAL INCLUDES, BUT IS NOT LIMITED TO WORK SHOWN ON THE DRAWINGS. COORDINATE W/ MECHANICAL, ELECTRICAL, PLUMBING & STRUCTURAL DRAWINGS.
- REMOVE ANY MISCELLANEOUS PROJECTIONS, HANGERS, BOLTS, SCREWS AND NAILS FROM EXISTING SURFACES TO REMAIN. PATCH AND PREPARE SURFACES TO RECEIVE NEW FINISH.
- PATCH AND REPAIR ALL ADJACENT SURFACES WHICH ARE AFFECTED BY THE DEMOLITION OR REMOVAL OF ACCESSORIES TO THEIR ORIGINAL FORM AND PREPARE FOR NEW FINISH. COORDINATE WITH FINISH DRAWINGS.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY CLEANUP OF CONSTRUCTION DEBRIS.
- BEFORE DEMOLITION BEGINS, CONTRACTOR SHALL COORDINATE SEQUENCE AND SCHEDULES FOR ALL WORK AND RELOCATION OR DISPOSAL OF ALL MATERIALS WITH OWNER.
- DEMOLITION PLANS ARE DIAGRAMMATIC. PRIOR TO SUBMITTING BID, GENERAL CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND BRING ANY AREAS IN QUESTION TO THE ATTENTION OF THE ARCHITECT.
- INSTALL SAFETY BARRICADES AND WARNING FENCING TO PROTECT PEDESTRIANS AND CARTS.
- PROTECT ALL EXISTING SURFACES AND STRUCTURES FROM DAMAGE FROM RAIN, SNOW, WIND DAMAGE, ETC. DURING THE WORK.

SELECTIVE DEMOLITION LEGEND:

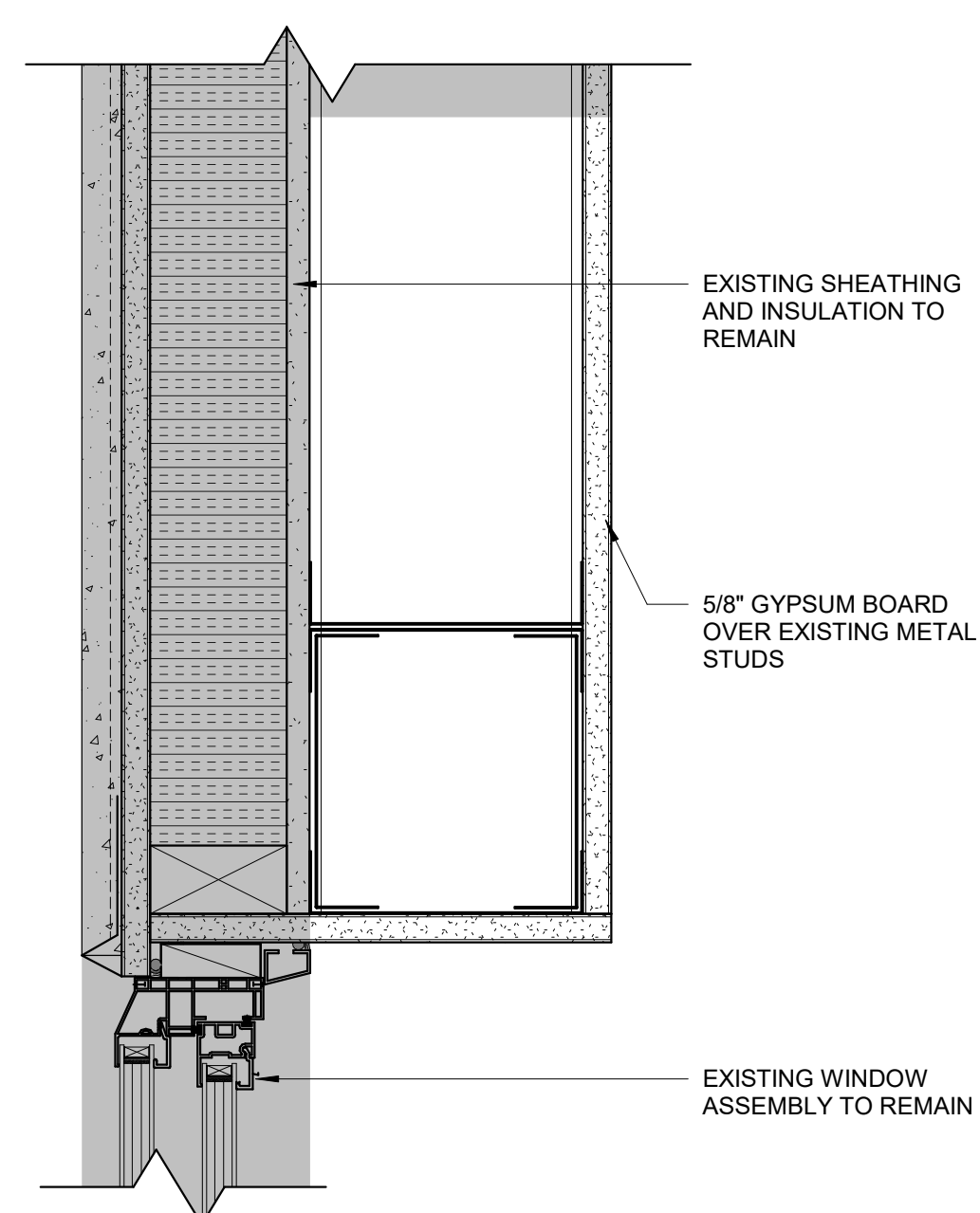
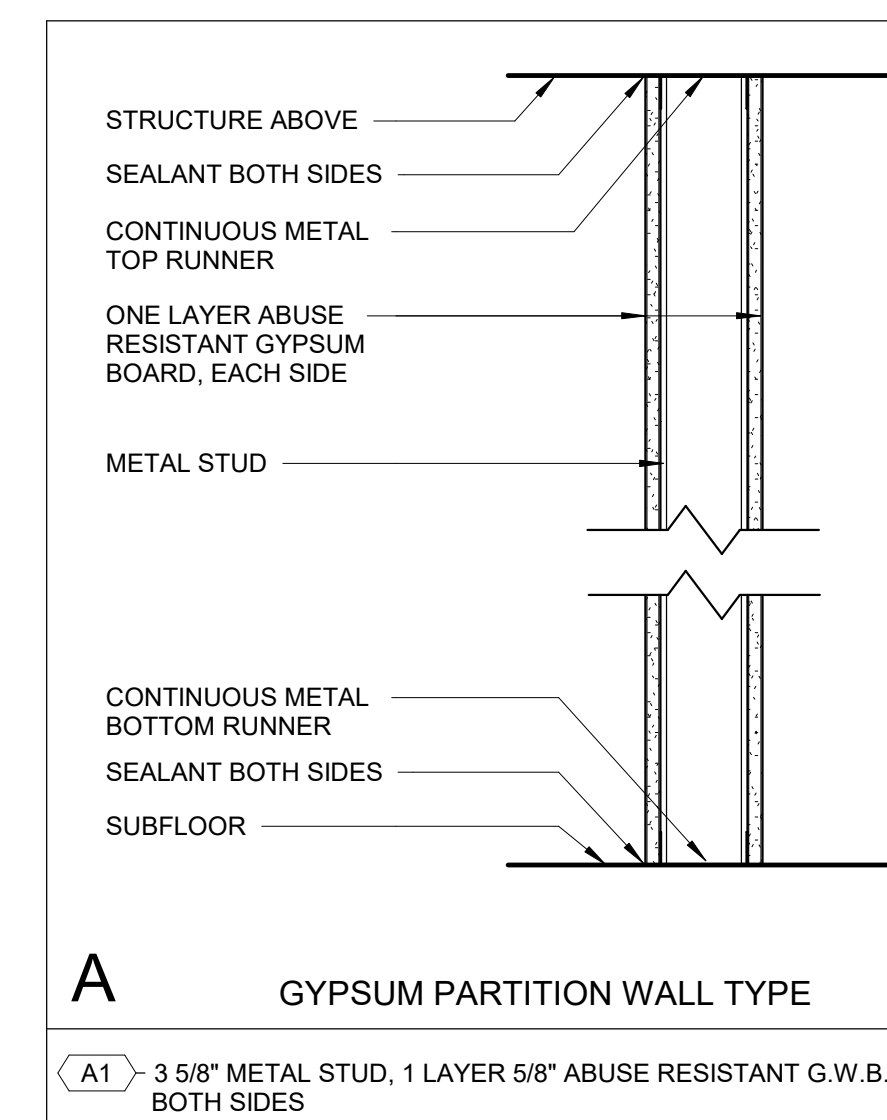
- DEMOLITION SCOPE OF WORK ITEM TYPICAL THROUGHOUT ENTIRE ROOM / AREA
- DEMOLITION SCOPE OF WORK ITEM AT A SPECIFIC LOCATION
- REMOVE DOOR & HARDWARE IN THEIR ENTIRETY.
- REMOVE EXISTING ELECTRICAL OUTLETS, SWITCHES, CONDUITS, OR ANY OTHER SURFACE MOUNTED APPLIANCES AS REQUIRED TO FACILITATE WORK. RELOCATE AS NECESSARY.
- SELECTIVELY REMOVE ACOUSTIC CEILING PANELS AND GRID TO INSTALL NEW WALL. PREPARE AREA FOR NEW WORK.
- REMOVE CEILING SYSTEM IN ITS ENTIRETY FOR INSTALL OF NEW STEEL MEMBERS.
- TEMPORARILY DISCONNECT ALL MEP ITEMS FOR INSTALLATION OF NEW STEEL MEMBERS. REINSTALL ALL MEP ITEMS ONCE STEEL IS INSTALLED.



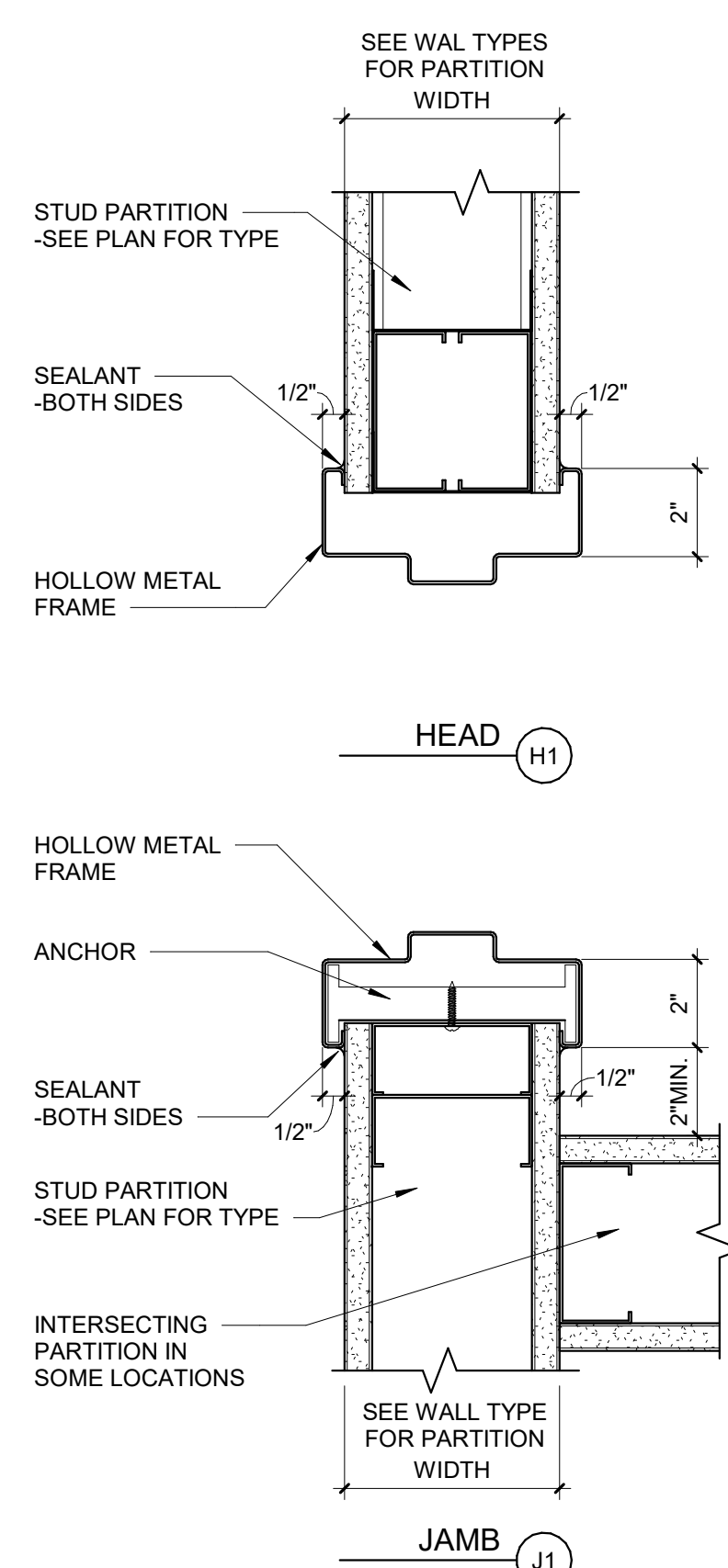
1 LOWER LEVEL DEMOLITION PLAN
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2 LOWER LEVEL PROPOSED PLAN
SCALE: 1/4" = 1'-0"

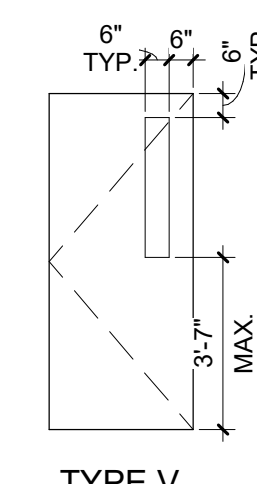


3 CONCESSION STAND SOFFIT
SCALE: 3" = 1'-0"



4 DOOR JAMB DETAILS
SCALE: 3" = 1'-0"

DOOR SCHEDULE									
DOOR NUMBER	ELEVATION TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR TYPE	FRAME TYPE	FRAME HEIGHT	HARDWARE SET	FIRE RATING	COMMENTS
1	V	3'-0"	7'-0"	HM	HM	7'-2"	1	---	PROVIDE ALUMIMUM THRESHOLD
2	V	3'-0"	7'-0"	HM	HM	7'-2"	1	---	
3		14'-7 31/32"	7'-11 31/32"		AL				SLIDING / FOLDING DOORS



5 DOOR ELEVATION
SCALE: 1/4" = 1'-0"

DOOR HARDWARE SCHEDULE

HARDWARE SET 1					
QTY	EA	DESCRIPTION	CATALOGUE NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5x4.5	630	IVE
1	EA	CLASSROOM LOCK	T508P6	636	FAL
1	EA	SURFACE CLOSER	SC81A RW/PA/FC	689	FAL
1	EA	WALL STOP	WS406407CCV	630	IVE
1	SET	GASKETING	32BAA-S	AA	ZER
1	EA	DOOR BOTTOM	35AA	AA	ZER

ROOM FINISH SCHEDULE						
NUMBER	ROOM NAME	FLOOR	FINISH			COMMENTS
			BASE	WALL	CEILING	
1	ENTRY HALL	VCT	RB-1	PT-1	ACT-1	MATCH EXISTING ROOM FINISHES
2	BATHROOM HALLWAY	VCT (EXISTING)	RB-1	PT-1	ACT-1	MATCH EXISTING ROOM FINISHES



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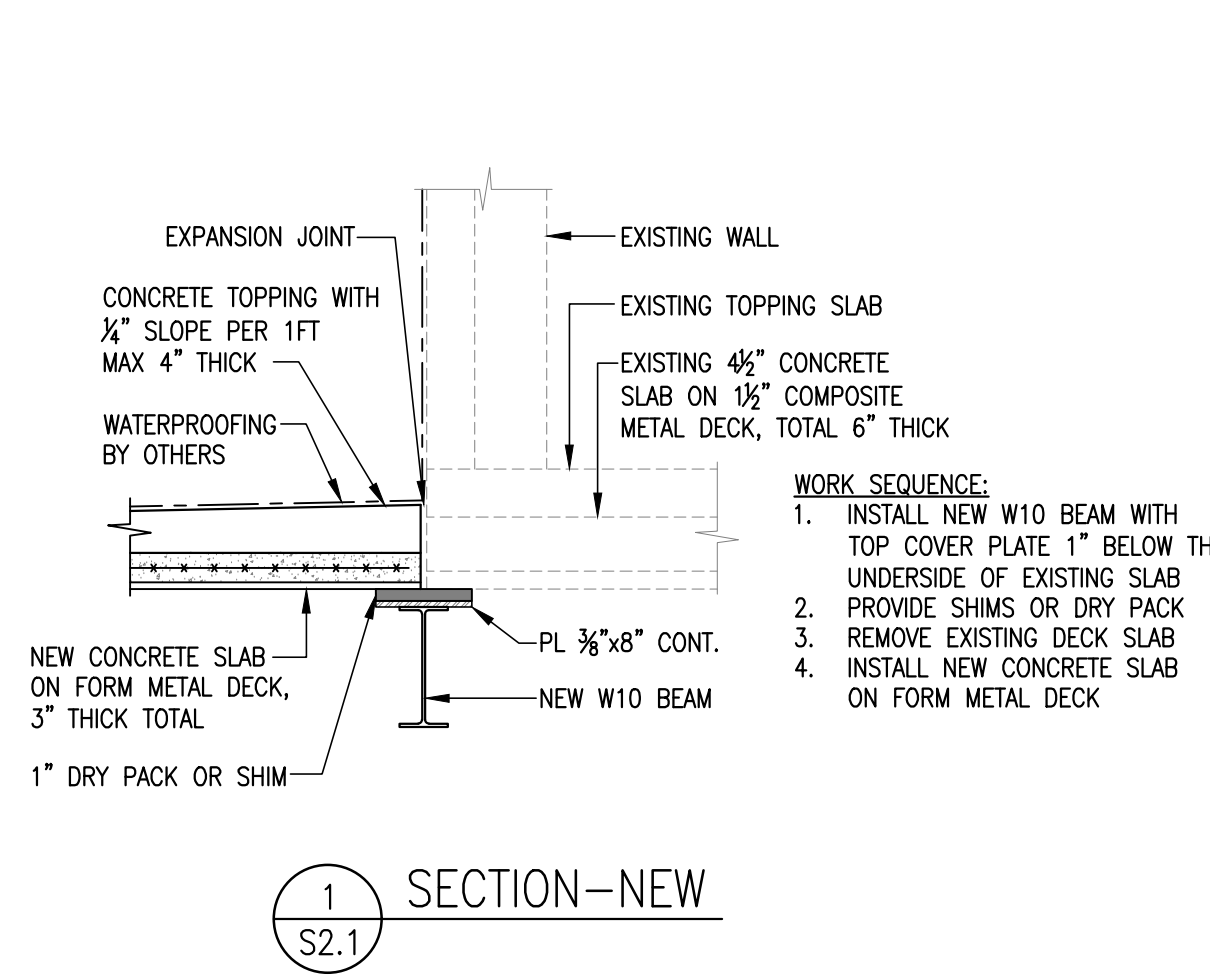
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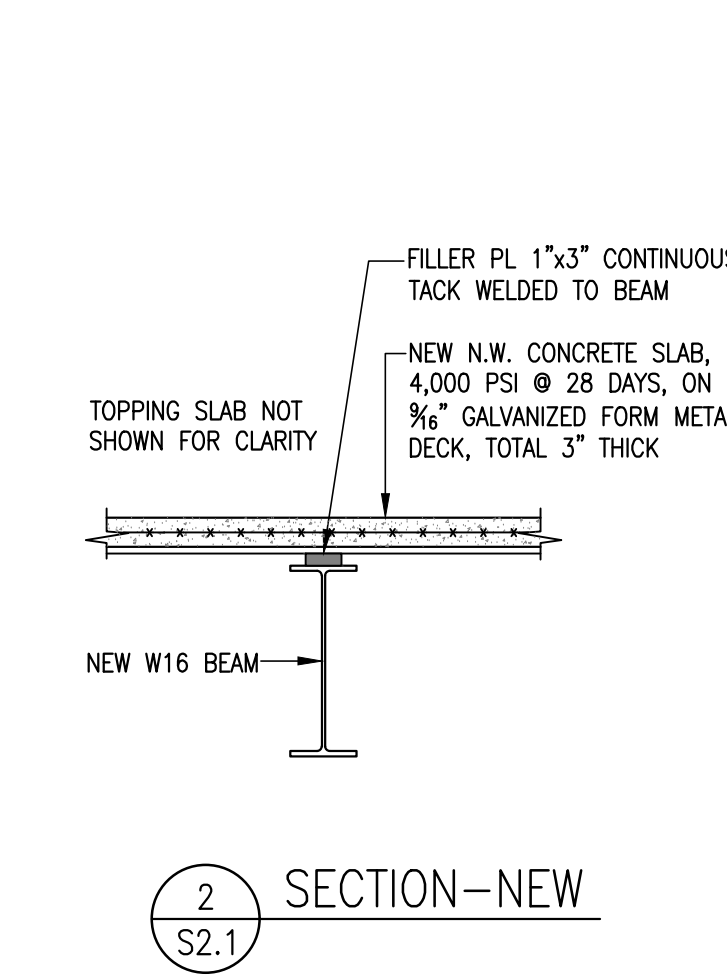
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1	09.21.23	ISSUED FOR BID
No.	Date	Issue or Revision

Drawing Title	
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Scale	USA Project No.
AS NOTED	2023-038
Drawing Date	Drawing No.
09.21.23	A-700
Drawn By	Checked By
DTB	ApA

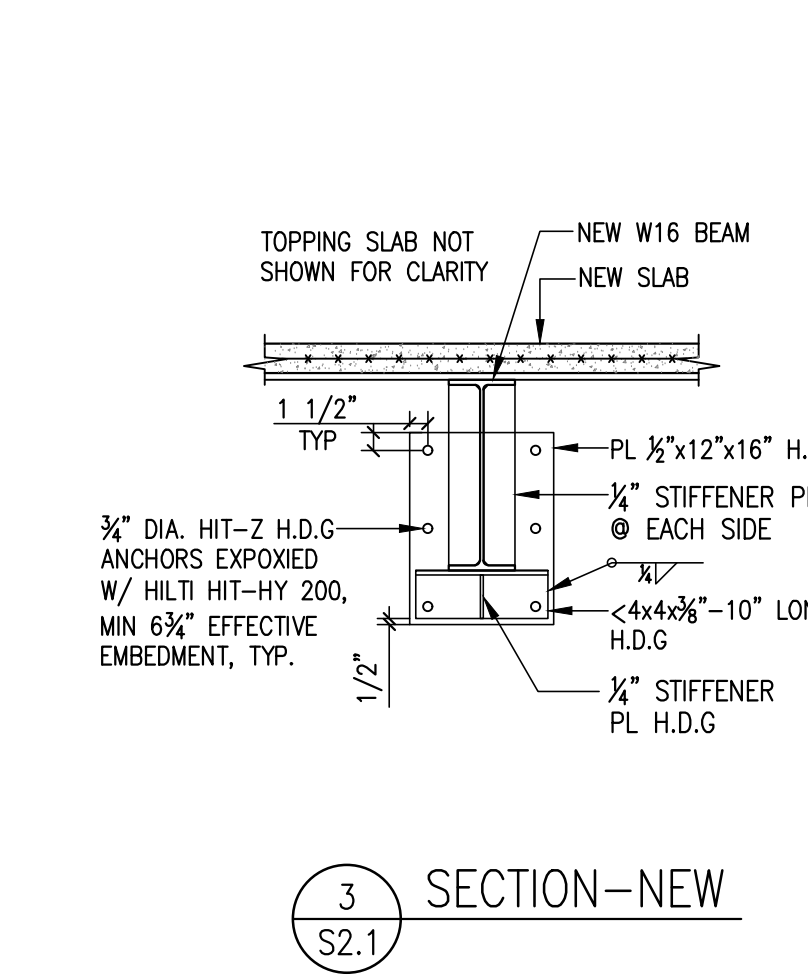
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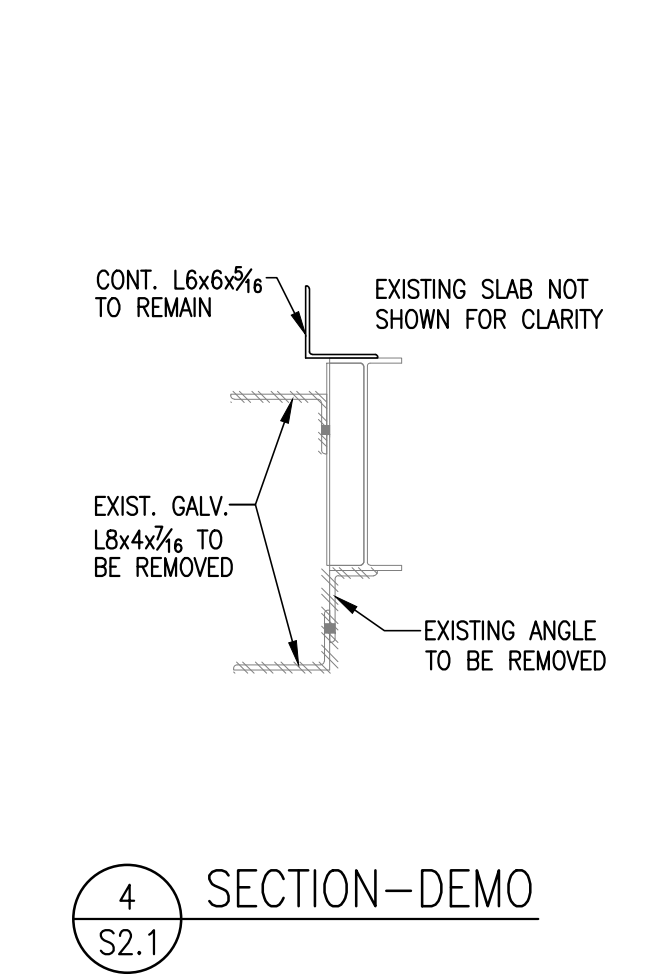
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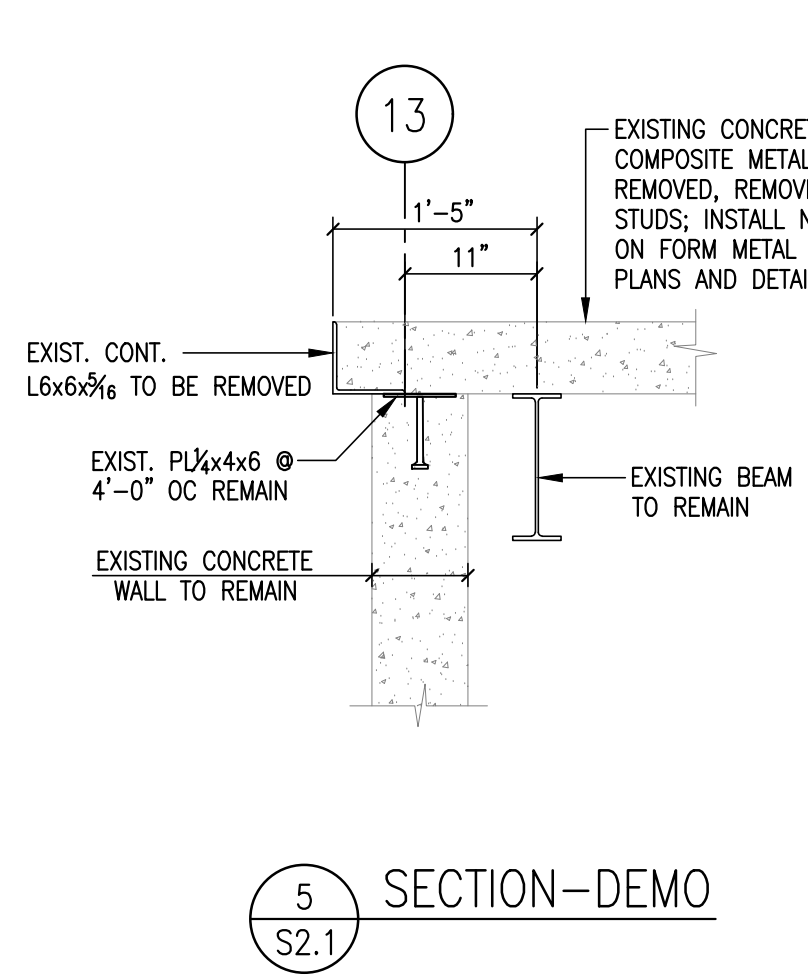
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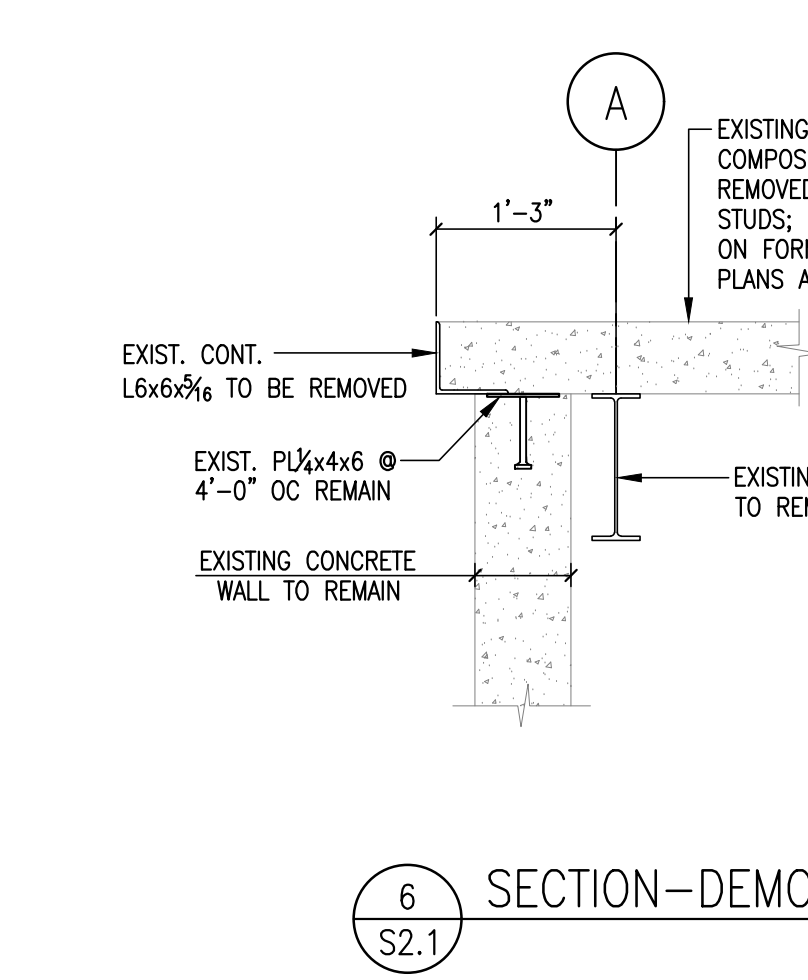
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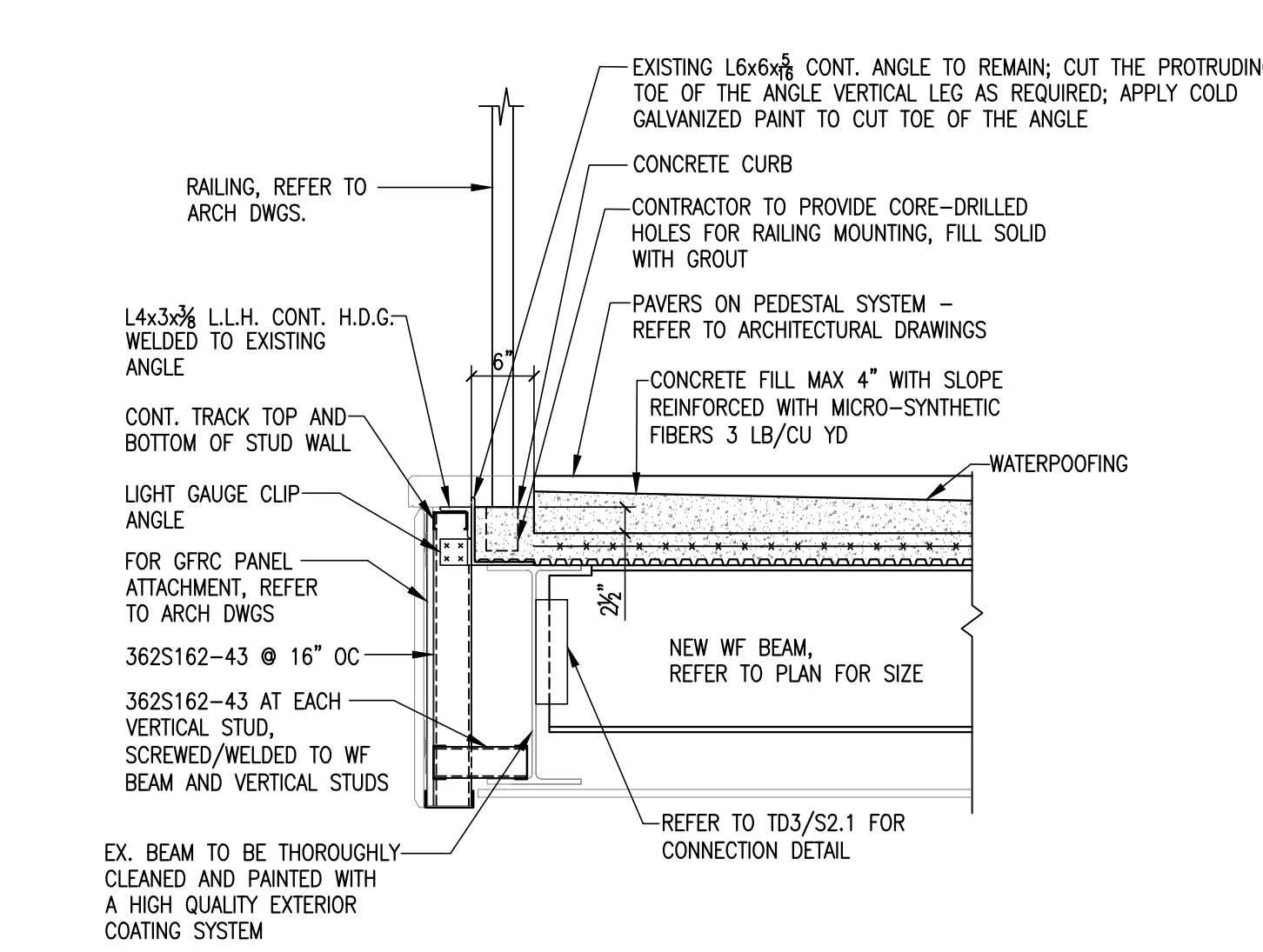
4 SECTION-DEMO
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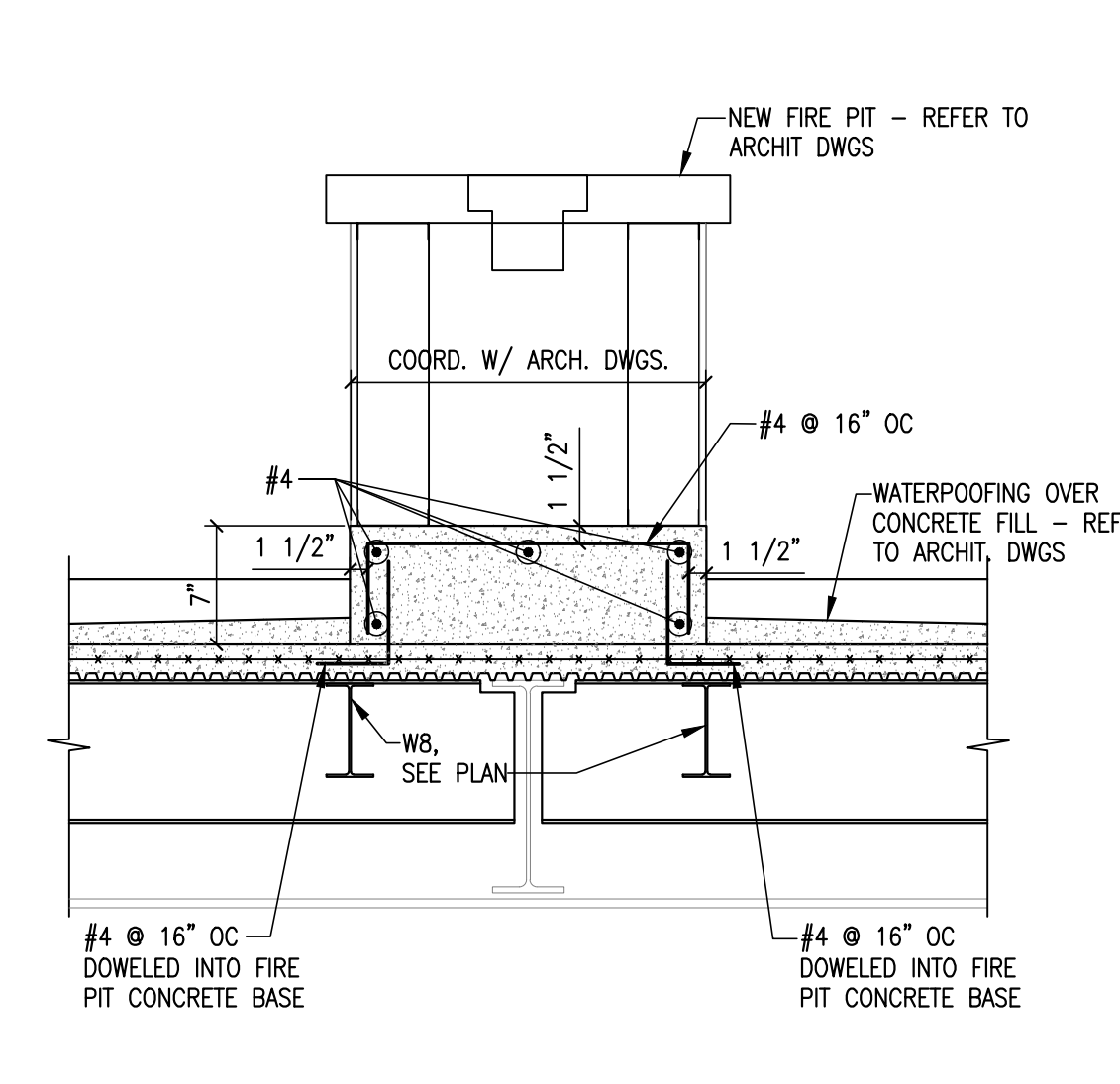
5 SECTION-DEMO
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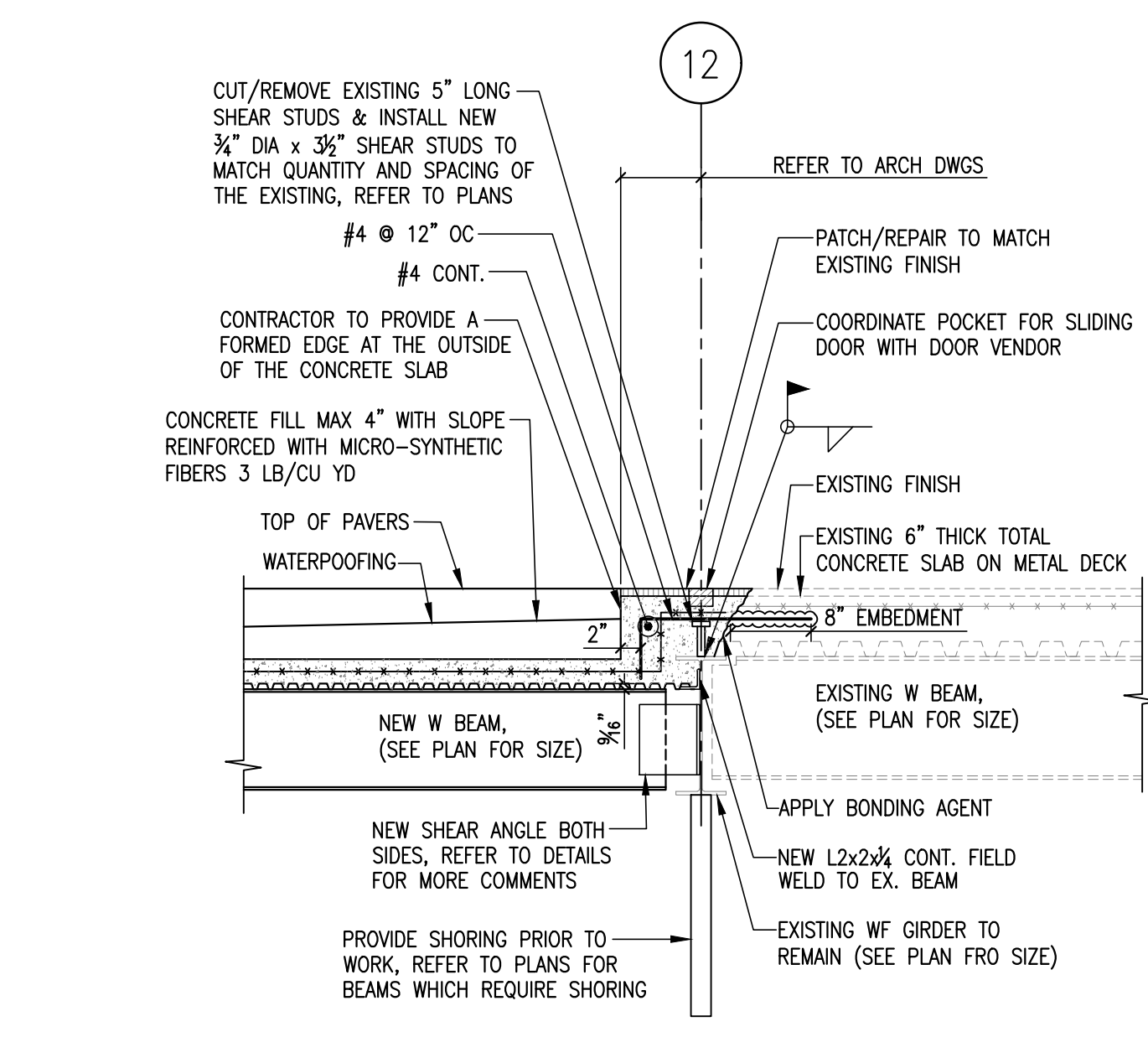
6 SECTION-DEMO
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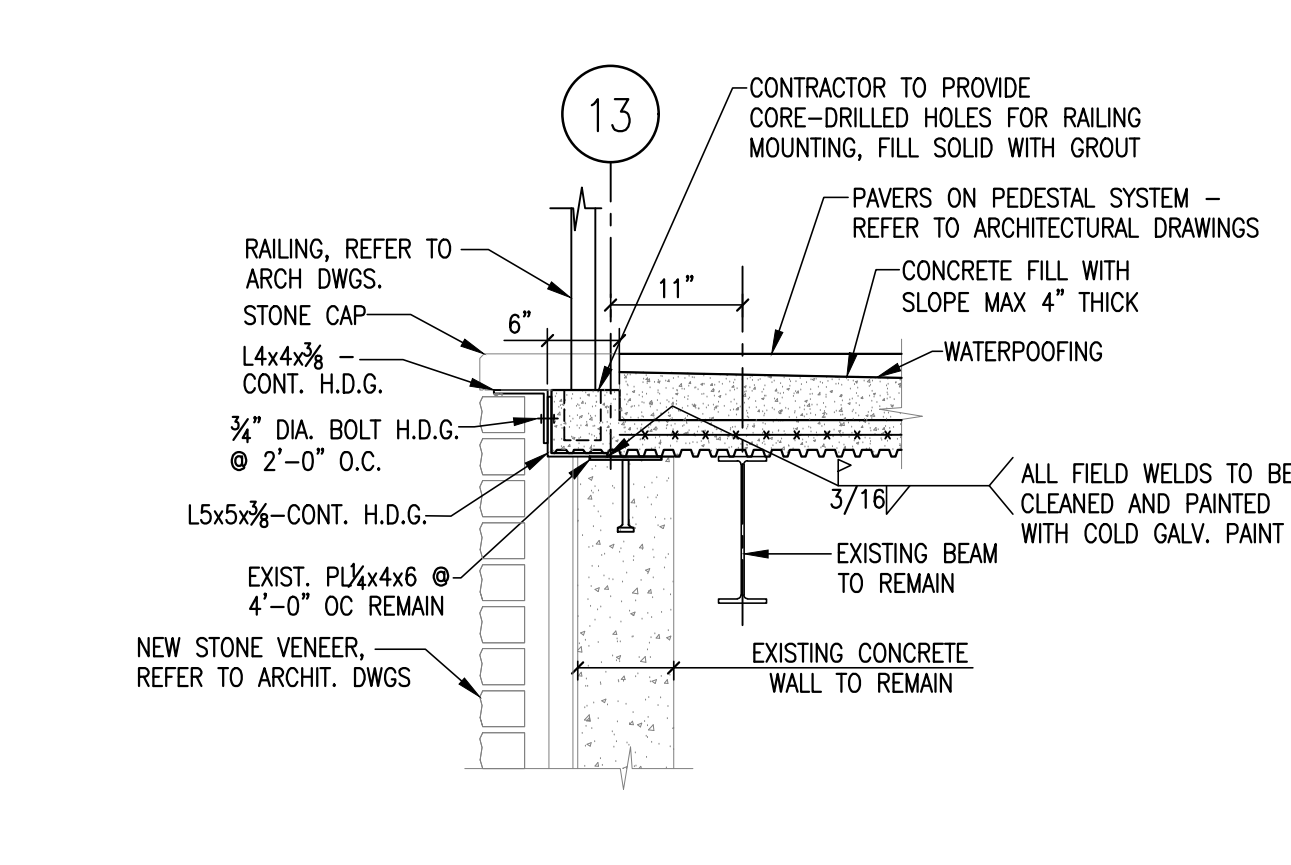
7 SECTION-NEW
S2.1



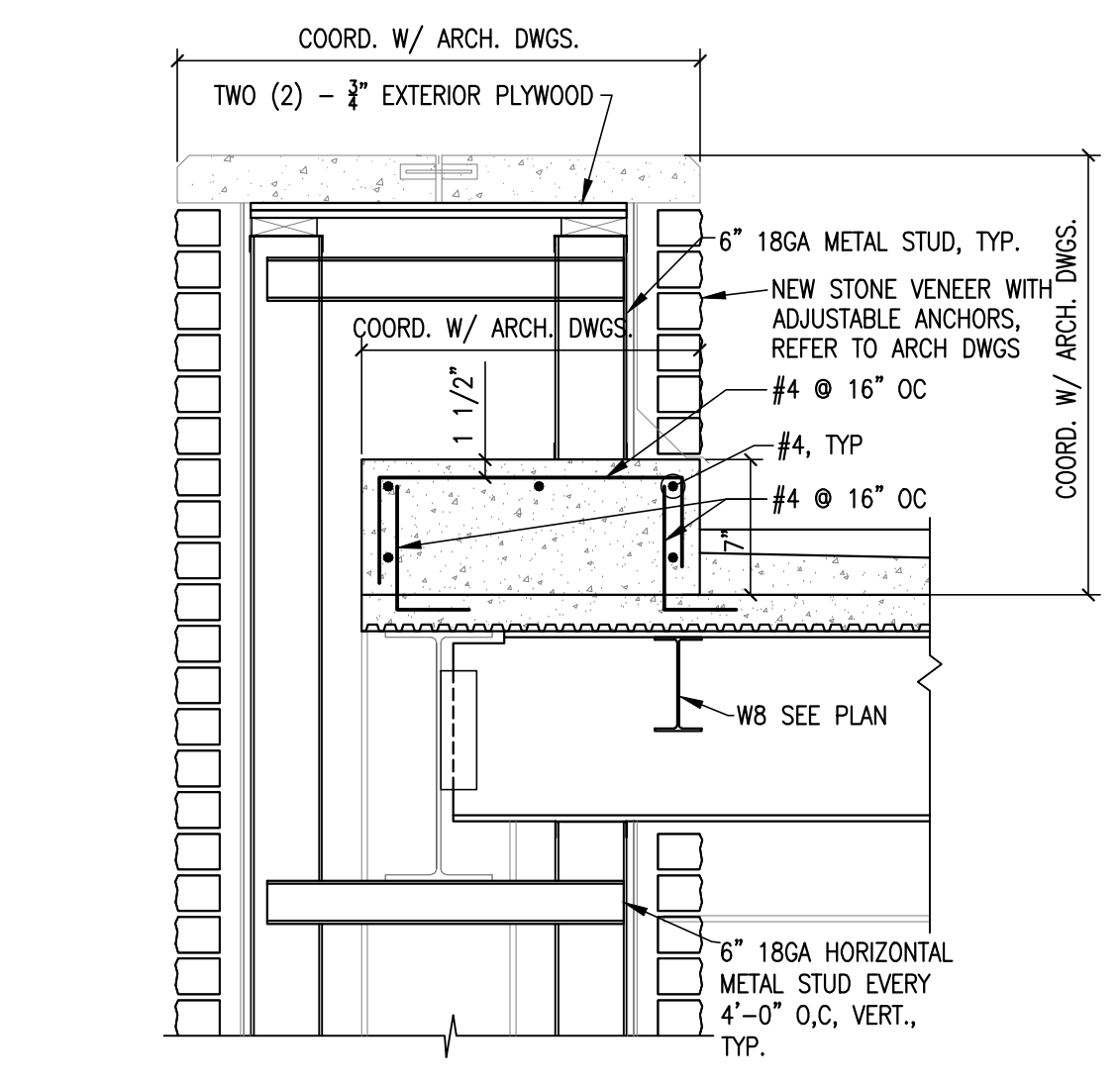
8 SECTION-NEW
S2.1



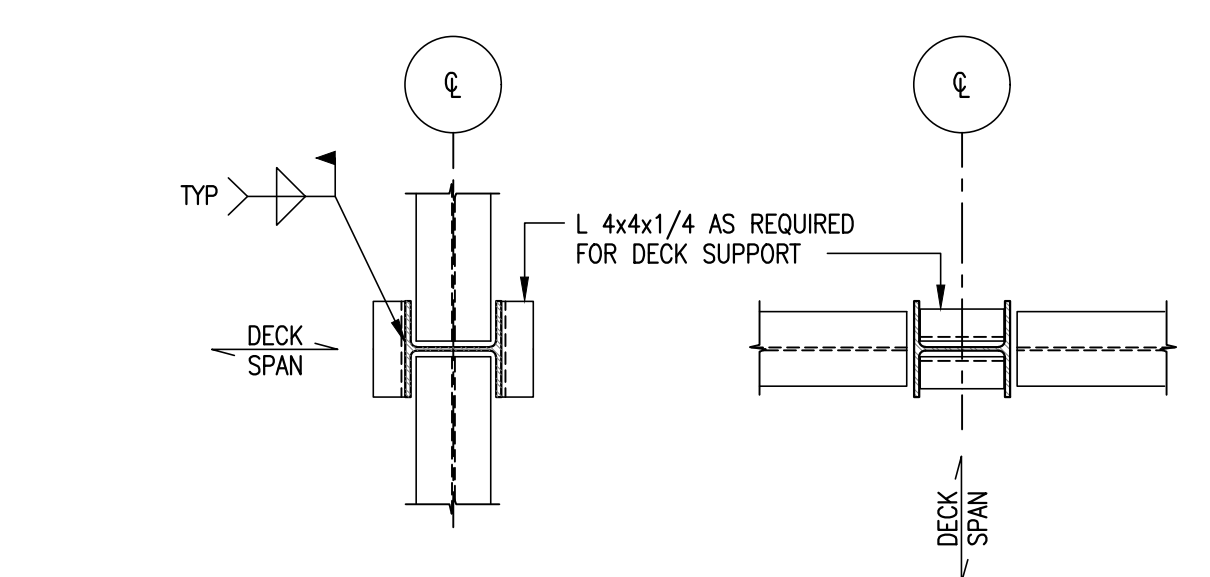
9 SECTION-NEW
S2.1



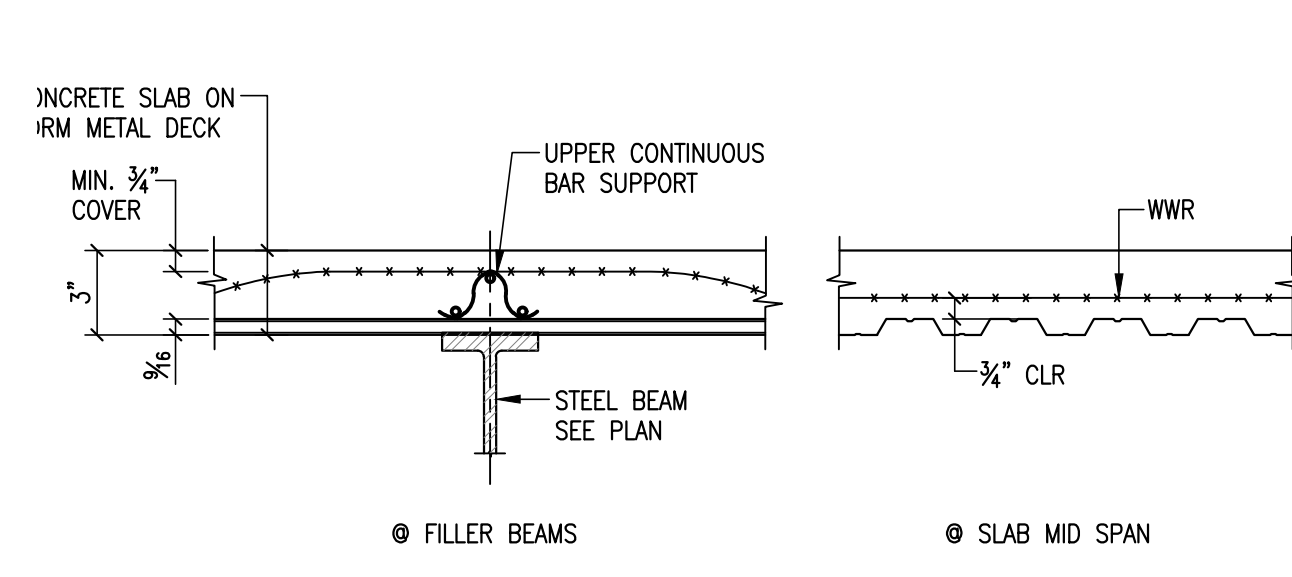
10 SECTION-NEW
S2.1



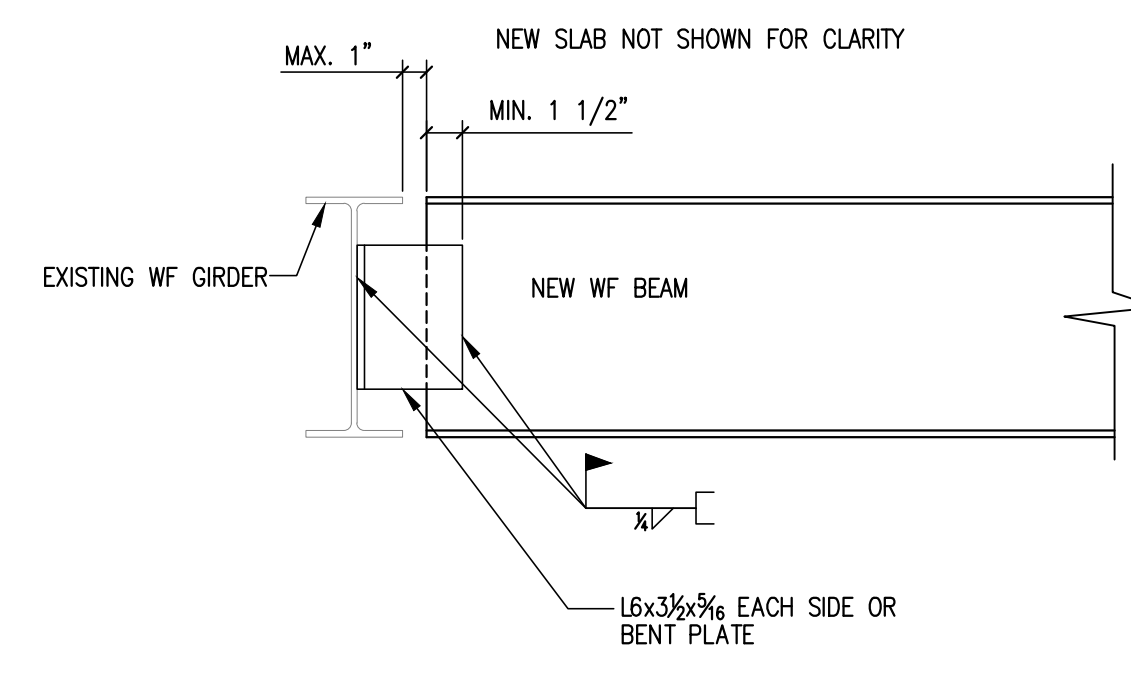
11 TYPICAL TERRACE SLAB CURB AT COLUMN DETAIL
S2.1



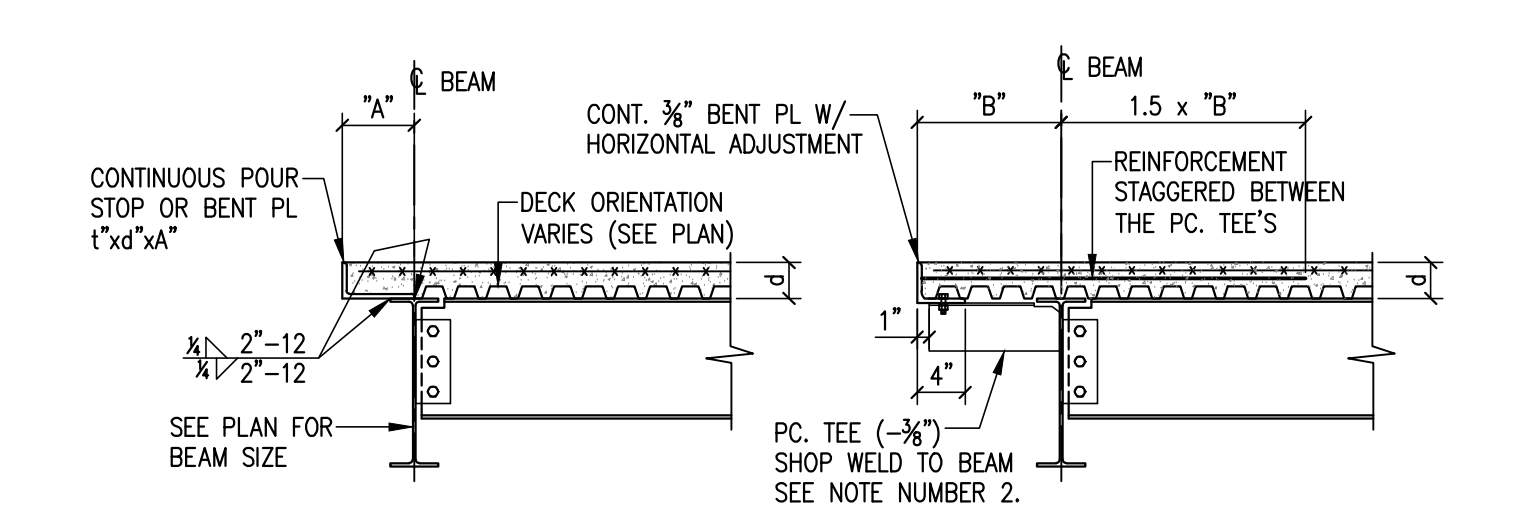
TD1 TYPICAL DETAIL
S2.1



TD2 TYPICAL DETAIL
S2.1



TD3 TYPICAL DETAIL
S2.1



TYPE I		TYPE II		
DIMENSION "A"	PLATE (I)	DIMENSION "B"	PC. TEE/SPA.	REBAR
4'-6"	16 GAGE	12" SB < 16"	WT6x11/40" O.C.	#5 @ 40"
6" SA < 9"	1/2"	16" SB < 20"	WT6x11/32" O.C.	#5 @ 32"
9" SA < 12"	3/8"	20" SB < 30"	WT6x11/24" O.C.	#5 @ 24"

GENERAL NOTES:
1. SLAB EDGE ATTACHMENTS ARE CUSTOM FABRICATED U.O.N.
2. IF EDGE OF SLAB SUPPORTS CMU WALL CONSTRUCTION THEN USE FULL DEPTH 3/8" STIFFENER PLATE IN LIEU OF TEE.

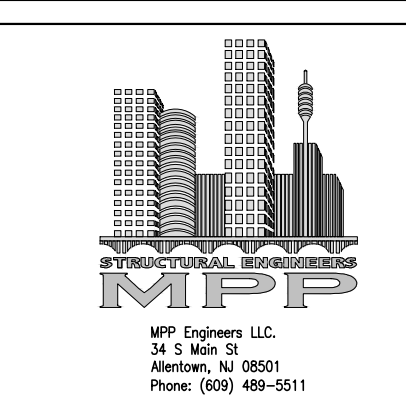
TD4 TYPICAL SLAB EDGE DETAILS
S2.1



20 N. Doughty Avenue
Somerville, NJ 08876
t 908.722.2300
f 908.722.7201

usaarchitects.com

Paul R. Swartz, AIA
Armond T. Christopher Jr., AIA
Peter C. Campiano, AIA
Andrew P. Adornato, AIA
Susan M. Dehart, AIA
James McAuffre, AIA
Marlene Borruso, AIA



SCOTT W. MCCONNELL
ARCHITECT, MEMBER AIA, LEED AP, AIA AIA

USA Architects, Planners and Interior Designers, LTD.
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REPAIRS AND RESTORATION
AT THE
CLUBHOUSE
FOR THE
ASH BROOK GOLF COURSE
12110 RARITAN ROAD
SCOTCH PLAINS, NJ 07076

No.	Date	Issue or Revision
2	01-11-2024	ISSUED FOR RE-BID
1	09-21-2023	ISSUED FOR BID

Drawing Title
SECTIONS AND DETAILS - 1ST FLOOR TERRACE

Scale As indicated	USA Project No. 2023-038
Drawing Date 09.21.2023	Drawing No. S2.1
Drawn By MPP	Checked By SWM

GENERAL PROJECT NOTES

CONTRACT DOCUMENTS

- THE TERM "CONTRACTOR" WHICH IS USED WITHIN THESE DRAWINGS AND SPECIFICATIONS MEANS THE SINGLE PRIME CONTRACTOR OR FIRM AWARDED THE SINGLE CONTRACT FOR THE PROJECT. REFERENCES TO VARIOUS OTHER CONTRACTOR ENTITIES (I.E. MECHANICAL CONTRACTOR (MC), ELECTRICAL CONTRACTOR (EC), PLUMBING CONTRACTOR (PC), GENERAL CONTRACTOR (GC), ETC) SHALL BE UNDERSTOOD TO MEAN A SUB-CONTRACTOR TO THE PRIME CONTRACTOR. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL WORK SPECIFIED HEREWITHIN.
- THE ASSIGNMENT OF TRADE RESPONSIBILITY NOTED WITHIN THESE DRAWINGS AND/OR SPECIFICATIONS IS THE ENGINEER'S RECOMMENDATION. THE GENERAL AND SPECIFIC DELINEATION OF TRADE RESPONSIBILITY IS NOTED, THE TRADE NORMALLY RESPONSIBLE FOR THE WORK INDICATED SHALL BE RESPONSIBLE FOR PROVIDING THOSE ITEMS IN THEIR ENTIRETY. THE PRIME CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL FINAL TRADE RESPONSIBILITY BETWEEN SUBCONTRACTORS, WHETHER IN AGREEMENT WITH THE TRADE RESPONSIBILITY NOTED OR MODIFIED AS DESIRED, SUCH THAT ALL ITEMS NOTED WITHIN THE COMPLETE SET OF CONSTRUCTION DOCUMENTS ARE PROVIDED AS PART OF THE SINGLE PRIME CONTRACT.
- THE WORK IS GENERALLY INDICATED ON THE DRAWINGS BUT ADDITIONAL RELATED INFORMATION AND DETAILS MAY APPEAR ON OTHER PROJECT DOCUMENTS AND/OR SPECIFICATIONS. ALL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE COMPLEMENTARY. NOTIFY THE DESIGN PROFESSIONAL OF ANY DISCREPANCIES BETWEEN ANY OF THE DRAWINGS AND/OR SPECIFICATIONS PRIOR TO INSTALLATION.
- THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE GENERAL CONFIGURATION OF THE WORK. ALL WORK THAT WILL BE REQUIRED FOR THE ACTUAL INSTALLATION IS NOT NECESSARILY INDICATED DUE TO THE SCALE OF THE DRAWINGS. COORDINATE THE ACTUAL INSTALLATION OF ALL WORK WITH ALL OTHER BUILDING SYSTEM COMPONENTS AND OTHER TRADES AND PROVIDE ALL NECESSARY COORDINATION, OFFSETS, ACCESSORIES, MATERIALS, ETC. AS PART OF THE WORK.
- THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO DESCRIBE A COMPLETE OPERATING SYSTEM. ALL LABOR, MATERIAL OR EQUIPMENT WHICH IS NOT SPECIFIED OR INDICATED BUT IS NECESSARY FOR THE OPERATION AND COMPLETION OF A PROPERLY OPERATING SYSTEM, ACCORDING TO THE TRADE INTENT OF THE SPECIFICATIONS AND AS INTERPRETED BY THE DESIGN PROFESSIONAL, SHALL BE FURNISHED AS A PART OF THE CONTRACT, AS THOUGH IT WERE SPECIFICALLY DETAILED AND DESCRIBED.

BIDDING

- BIDDERS SHALL CAREFULLY EXAMINE SPECIFICATIONS AND DRAWINGS, VISIT THE SITE OF PROPOSED WORK AND REVIEW ALL EXISTING CONDITIONS AND LIMITATIONS AND INCLUDE ANY WORK REQUIRED DUE TO THE EXISTING CONDITIONS AND LIMITATIONS. REQUEST CLARIFICATIONS FROM THE DESIGN PROFESSIONAL REGARDING DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DRAWINGS AND SPECIFICATIONS PRIOR TO BIDDING. SUBMISSION OF A BID SHALL INDICATE THAT THE BIDDING IS IN ACCORDANCE WITH THE TRADE INTENT TO BE MET IN EXECUTION OF THE WORK AND HAS INCLUDED SUCH WORK IN HIS BID. FAILURE TO VISIT AND INSPECT THE EXISTING CONDITIONS SHALL NOT BE A VALID REASON FOR AUTHORIZATION OF A CHANGE ORDER.

CONSTRUCTION PROCESS

- DIMENSIONS, GRADES, ELEVATIONS AND LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. VERIFY ALL LINES, GRADES AND DIMENSIONS PRIOR TO STARTING THE WORK. ALL NECESSARY MEASUREMENTS, SURVEYS, LINES, GRADES, AND ELEVATIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. VERIFY ALL LINES AND GRADES WITH THE LOCAL CONTROLLING AGENCY, AHP OR OTHER PARTY WHERE REQUIRED.
- THE INSTALLATION OF ALL WORK SHALL BE COORDINATED WITH OTHER TRADES. IF CONFLICTS ARE FOUND, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN PROFESSIONAL PRIOR TO BEGINNING OF INSTALLATION OF THE WORK.
- PERIODICALLY AND AT THE COMPLETION OF THE WORK, REMOVE FROM THE BUILDING AND SITE ALL RUBBISH AND ACCUMULATED MATERIALS AND LEAVE THE WORKPLACE IN A CLEAN, ORDERLY AND ACCEPTABLE CONDITION. PROVIDE DUMPSTERS, TRASH CONTAINERS, HAULING AND APPROVED DISPOSAL FEES ASSOCIATED WITH THE WORK. REMOVE ALL INSTALLED MATERIALS AND EQUIPMENT OF PAINT SPLASHES, GREASE STAINS, DUST, FINGER MARKS, AND ALL OTHER UNSIGHTLY MARKS PRIOR TO SUBSTANTIAL COMPLETION INSPECTION.

CODES AND PERMITS

- MAKE APPLICATION TO THE LOCAL INSPECTION AUTHORITY BEFORE ANY WORK COMMENCES AND FURNISH A COPY TO THE DESIGN PROFESSIONAL FOR RECORD.
- UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL OBTAIN AND PAY FOR ALL THIRD-PARTY REVIEW FEES, BUILDING PERMITS, INSPECTIONS, TESTS, AND CERTIFICATES RELATING TO THE WORK AS REQUIRED BY ANY OF THE AUTHORITIES HAVING JURISDICTION. ALL INSPECTION CERTIFICATES SHALL BE DELIVERED TO THE DESIGN PROFESSIONAL AND BECOME PROPERTY OF THE OWNER.
- PERFORM ALL WORK IN COMPLIANCE WITH THE CODES, LAWS, ORDINANCES, RULES OR REGULATIONS OF FEDERAL, STATE, OR LOCAL AUTHORITIES, AND ALL LOCAL UTILITY COMPANIES HAVING JURISDICTION OVER THE PREMISES. ALL SUCH CODES, LAWS, ORDINANCES, RULES AND REGULATIONS ARE HEREBY INCORPORATED AND MADE A PART OF THESE SPECIFICATIONS. REQUEST CLARIFICATIONS FROM THE DESIGN PROFESSIONAL REGARDING DISCREPANCIES BETWEEN RELEVANT CODES AND THE DRAWINGS AND SPECIFICATIONS PRIOR TO BIDDING. SUBMISSION OF A BID SHALL INDICATE THAT BIDDER IS FAMILIAR WITH THE APPLICABLE CODE REQUIREMENTS AND HAS INCLUDED SUCH WORK IN THE BID.
 - INTERNATIONAL MECHANICAL CODE: IMC 2021
 - NATIONAL ELECTRICAL CODE: NEC 2020 (NFPA-70)
 - FIRE PROTECTION CODE: APPLICABLE EDITION NFPA 13 (REFER TO STATE LISTING OF ADOPTED CODE.)
 - INTERNATIONAL BUILDING CODE: IBC 2021, NJ EDITION
- ALL WORK PERFORMED ON THIS PROJECT AND ALL EQUIPMENT FURNISHED FOR THIS PROJECT SHALL BE IN CONFORMANCE WITH THE REGULATIONS AND REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA). THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH OSHA REGULATIONS. ALL PURCHASED EQUIPMENT SHALL BE DESIGNED, MANUFACTURED, AND FURNISHED WITH THE NECESSARY ACCESSORIES TO MEET OSHA REQUIREMENTS. ALL CONSTRUCTION FACILITIES, INCLUDING LADDERS, PLATFORMS, GUARD RAILS, SAFETY FEATURES, ETC. SHALL MEET OSHA REQUIREMENTS.

PRODUCTS AND MATERIALS

- EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR TYPE AND CAPACITY OF EQUIPMENT USED. MANUFACTURER'S INSTRUCTIONS SHALL BE CONSIDERED PART OF THE SPECIFICATIONS. TYPE, CAPACITY AND APPLICATION OF EQUIPMENT SHALL BE STABLE AND SHALL OPERATE SATISFACTORILY FOR THE PURPOSE INTENDED.
- EQUIPMENT USED AS THE BASIS-OF-DESIGN AS INDICATED ON THE DRAWINGS DEFINES THE GENERAL SPACE REQUIREMENTS, WEIGHTS AND RELATED SERVICES (ELECTRICAL SERVICES, PIPING CONNECTIONS, ETC.). PROVIDE EQUIPMENT OF SIMILAR SIZE, REQUIREMENTS AND CLEARANCES WHICH SHALL NOT NECESSITATE REVISIONS TO THE BUILDING CONSTRUCTION OR OTHER TRADES. IF REVISIONS ARE REQUIRED DUE TO SUBSTITUTION THE CONTRACTOR SHALL PAY ALL COSTS FOR ANY REQUIRED REVISIONS. NO REVISIONS SHALL BE MADE WITHOUT DESIGN PROFESSIONAL'S WRITTEN APPROVAL.
- ALL MATERIALS, EQUIPMENT AND SYSTEMS SPECIFIED OR REQUIRED FOR THE COMPLETION OF THE WORK SHALL BE COMPLETELY SATISFACTORY AND ACCEPTABLE IN OPERATION, PERFORMANCE, AND CAPACITY. NO APPROVAL, EITHER WRITTEN OR VERBAL, OF ANY DRAWINGS, DESCRIPTIVE DATA OF SAMPLES OF SUCH MATERIAL, EQUIPMENT AND/OR APPURTENANCES, SHALL RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PROVIDE SYSTEMS IN COMPLETE WORKING ORDER AT THE COMPLETION OF THE WORK.
- ANY MATERIAL, EQUIPMENT, OR APPURTENANCES, WHICH DO NOT COMPLY WITH THE DRAWINGS AND/OR SPECIFICATION REQUIREMENTS, OR WHICH IS NOT NEW, OR WHICH IS DAMAGED PRIOR TO ACCEPTANCE BY THE DESIGN PROFESSIONAL, SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIALS, EQUIPMENT AND/OR APPURTENANCE OR PUT IN ACCEPTABLE WORKING CONDITION, TO THE SATISFACTION OF THE DESIGN PROFESSIONAL.

- EQUIPMENT AND SYSTEMS SHALL BE ELECTRICALLY AND MECHANICALLY CORRECT. ALL EQUIPMENT AND SYSTEMS SHALL OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION AS DETERMINED BY THE DESIGN PROFESSIONAL. ELIMINATE ANY OBJECTIONABLE NOISE OR VIBRATION PRODUCTION AND TRANSMISSION TO OCCUPIED PORTIONS OF THE BUILDING BY ANY SYSTEM OR EQUIPMENT, TO THE SATISFACTION OF THE DESIGN PROFESSIONAL AND OWNER.
- MECHANICAL EQUIPMENT SHALL BE IDENTIFIED BY MEANS LEGIBLY AND PERMANENTLY MARKED TO INDICATE ITS PURPOSE. (NEC 110-22)
- ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE THE UNDERWRITER'S LABORATORY OR OTHER NRTL LABEL.

RECORD AS-BUILT DOCUMENTS

- RECORD DRAWINGS:
 - DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN A FULL SET OF RECORD DRAWINGS AND MAKE REVISIONS TO SHOW THE ACTUAL INSTALLATION WHERE INSTALLATION VARIES FROM THAT SHOWN ORIGINALLY. GIVE PARTICULAR ATTENTION TO INFORMATION ON CONCEALED ELEMENTS THAT ARE DIFFICULT TO IDENTIFY OR MEASURE AND RECORD LATER. RECORD DATA AS SOON AS POSSIBLE AFTER OBTAINING IT. MARK RECORD DRAWINGS WITH RED INK.
 - PROVIDE SPECIFIC IDENTIFICATION OF THE FOLLOW, AS APPLICABLE:
 - DIMENSIONAL CHANGES TO DRAWINGS
 - REVISIONS TO DETAILS SHOWN ON DRAWINGS
 - FINAL LOCATIONS & DEPTHS OF INSTALLED UNDERGROUND UTILITIES
 - REVISIONS TO ROUTING OF PIPING, CONDUITS, DUCTWORK, ETC.
 - REVISIONS TO ELECTRICAL CIRCUITRY.
 - CHANGES MADE BY CHANGE ORDERS AND/OR CONSTRUCTION DIRECTIVES. INDICATE CHANGE ORDER NUMBERS, DIRECTIVE IDENTIFICATION NUMBERS AND/OR SIMILAR IDENTIFICATIONS.
 - DETAILS NOT ON ORIGINAL CONTRACTS.
 - REVISIONS TO EQUIPMENT SCHEDULES TO INDICATE ACTUAL MANUFACTURER'S MODEL AND INDICATE THE EQUIPMENT DEVIATED FROM THE SCHEDULED BASIS OF DESIGN.
 - FINAL SUBMITTED AS-BUILT DRAWINGS SHALL INCLUDE AN ENTIRE SET OF PROPERLY MARKED CONTRACT DRAWINGS, AS PER ABOVE, WITH EACH SHEET CLEARLY MARKED WITH THE CONTRACTORS NAME, DATE AND "AS-BUILT DRAWINGS".

CLOSEOUT

- AT THE COMPLETION OF WORK, PROVIDE THE OWNER WITH TWO (2) SEPARATE INSTANT REVISIONS TO EMPLOYERS FOR EACH SYSTEM INSTALLED AND THE OPERATION OF ALL EQUIPMENT. NOTIFY THE OWNER OF THE DATE OF EACH MEETING 2 WEEKS IN ADVANCE SO THE OWNER MAY COORDINATE ATTENDANCE.
- UNCONDITIONALLY GUARANTEE IN WRITING ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY OWNER.
- AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUPPLY THE OWNER WITH AS-BUILT DOCUMENTATION, O&M MANUALS, COPIES OF EQUIPMENT WARRANTIES, WIRING DIAGRAMS AND NAMEPLATE DATA. (REFER TO TRADE SPECIFIC GENERAL NOTES FOR ADDITIONAL CLOSEOUT DOCUMENTATION REQUIREMENTS). PROVIDE THREE (3) HARD COPY SETS WITH RIGID BINDERS.

CUTTING, PATCHING, AND PROTECTION

- CUTTING & PATCHING
 - CUT AND PATCH WALLS, CEILING, FLOORS AND OTHER ASSEMBLIES AND SURFACES AS REQUIRED TO PERFORM THE REQUIRED WORK. RESTORE ALL SURFACES TO MATCH EXISTING. DO NOT CUT STRUCTURAL MEMBERS.
 - MAINTAIN INTEGRITY OF ANY FIRE-RATED WALLS, FLOORS OR CEILING PENETRATED BY EQUIPMENT, CONDUIT, WIRING, PIPING, ETC. SEAL SUCH PENETRATIONS USING APPROVED UL-LISTED PRODUCTS AND METHODS TO MAINTAIN FIRE RATING.

SUBMITTALS & SHOP DRAWINGS

- PREPARE AND SUBMIT A SUBMITTAL SCHEDULE WHICH SHALL INCLUDE A LIST OF PRODUCTS TO BE SUBMITTED AND INDICATE THE PRODUCT MANUFACTURER, MODEL, AND DATE THE INFORMATION WILL BE SUBMITTED TO THE ENGINEER.
- AFTER ACCEPTANCE OF THE SUBMITTAL SCHEDULE, SUBMIT SHOP DRAWINGS AND SUBMITTALS AND OBTAIN ACCEPTANCE OF THE ENGINEER BEFORE ANY EQUIPMENT IS ORDERED OR WORK IS ACCOMPLISHED.
 - SUBMITTALS MAY EITHER BE SUBMITTED VIA MAIL AS PRINTED HARD COPIES OR VIA EMAIL AS DIGITAL FILES (PDF). IF HARD COPIES ARE PROVIDED, SUBMIT THREE (3) COPIES. ENGINEER WILL RETAIN ONE (1) COPY FOR THEIR FILE AND RETURN TWO (2) COPIES WITH REVIEW COMMENTS.
 - SUBMITTALS SHALL BE IN THE FORM OF CLEARLY LEGIBLE MANUFACTURERS CATALOGS, COAG-GENERATED DRAWINGS, PAMPHLETS, TECHNICAL DATA, TEST INFORMATION, AND/OR INSTALLATION INSTRUCTIONS. CLEARLY INDICATE THE LOCATION, SERVICE AND FUNCTION OF EACH PARTICULAR ITEM. IDENTIFICATION SHALL BE CLEARLY MADE WITH SPECIFIC MODEL NUMBERS HIGHLIGHTED AND ACCESSORIES HIGHLIGHTED.
 - SUBMITTALS SHALL BE COMPLETELY REFERENCED AND IDENTIFIED. DESCRIPTIVE INFORMATION AND DATA SHALL BE COMPLETE. SUBMITTALS WHICH ONLY SHOW PARTIAL OR GENERAL INFORMATION WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR RESUBMISSION.
 - SHOP DRAWINGS AND SUBMITTALS WHICH ARE PREPARED BY SUB-CONTRACTORS AND VENDORS SHALL BE CHECKED AND COORDINATED BY THE CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER. CONTRACTOR SHALL CHECK THESE DRAWINGS AND SUBMITTALS WITH RESPECT TO MEASUREMENTS, MATERIALS, IDENTIFICATIONS, AND DETAILS SO AS TO ASCERTAIN THAT THEY CONFORM TO THE INTENT OF THE CONTRACT DOCUMENTS AND MAKE ANY CORRECTIONS BEFORE SUBMISSION TO THE ENGINEER.
 - CONTRACTOR SHALL INFORM THE DESIGN PROFESSIONAL IN WRITING OF ANY DEVIATIONS IN THE SHOP DRAWINGS AND SUBMITTALS WHERE THE SUBMITTED ITEM DEVIATES FROM THE CONTRACT DOCUMENTS. THIS WRITTEN ADVISORY SHALL ACCOMPANY THE INITIAL SUBMITTAL AND SHALL STATE THE REASONS FOR THE DEVIATIONS.
 - THE DESIGN PROFESSIONAL WILL ONLY ACCEPT AN INDIVIDUAL SUBMITTAL PACKAGE AFTER ALL ITEMS WITHIN THAT PACKAGE ARE REVIEWED, CORRECTED AND ACCEPTED FOR USE. PARTIAL ACCEPTANCE OF VARIOUS ITEMS COMBINED WITHIN A SINGLE SUBMITTAL PACKAGE WILL NOT BE MADE. THE CONTRACTOR IS ENCOURAGED TO PROVIDE INDIVIDUAL SUBMITTAL PACKAGES FOR EACH TYPE OF SYSTEM WHICH IS TO BE CONSIDERED FOR USE RATHER THAN PROVIDING A SINGLE SUBMITTAL PACKAGE THAT CONTAINS MULTIPLE ITEMS. THE DESIGN PROFESSIONAL SHALL NOT ASSUME ANY RESPONSIBILITY FOR DELAYS IN ORDERING EQUIPMENT WHEN MULTI-TIMED SUBMITTAL PACKAGES ARE PROVIDED AND ACCEPTANCE OF PORTIONS OF THE SUBMITTAL PACKAGE POTENTIALLY DELAY ACCEPTANCE OF OTHER PORTIONS OF THAT SAME PACKAGE.
- THE DESIGN PROFESSIONAL WILL CHECK THE SHOP DRAWINGS AND SUBMITTALS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE ARCHITECT'S/ENGINEER'S ACCEPTANCE OF THE SHOP DRAWINGS AND SUBMITTALS DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING ALL SPECIFIC REQUIREMENTS OF THE EQUIPMENT AND INSTALLATION NOT LISTED IN THE SUBMITTAL BUT REQUIRED BY THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DIMENSIONS THAT ARE TO BE CONFORMED AT THE JOB SITE, FOR COORDINATION IN THE ORDERING AND ASSEMBLY OF SYSTEMS AND EQUIPMENT, FOR INFORMATION THAT PERTAINS SOLELY TO FABRICATION PROCESSES OR TO TECHNIQUES OF CONSTRUCTION, AND FOR COORDINATION OF THE WORK OF ALL TRADES.
- THE FOLLOWING SPECIFIC ITEMS AND INFORMATION SHALL BE INCLUDED IN ALL SHOP DRAWINGS AND SUBMITTALS:
 - CAPACITY AND PERFORMANCE DATA AS SHOWN ON THE EQUIPMENT SCHEDULES OR AS SPECIFIED.
 - COMPLETE DESCRIPTIVE DATA ON THE SYSTEMS, EQUIPMENT AND SPECIALTIES WHICH ARE SPECIFIED, SCHEDULED, OR SHOWN, SO THAT COMPLIANCE WITH THE CONTRACT DOCUMENTS CAN BE DETERMINED.
 - ELECTRICAL WIRING DIAGRAMS (POWER AND CONTROL) FOR ELECTRIC MOTOR DRIVEN EQUIPMENT.
 - SUPPLEMENTAL SUPPORT SYSTEMS/STRUCTURES INCLUDING EQUIPMENT DESCRIPTION, INFORMATION AND DETAILS.
 - DIMENSIONAL DATA.
- IN ADDITION TO THE EQUIPMENT REFERENCED ABOVE, THE FOLLOWING PROJECT-SPECIFIC ITEMS SHALL BE PROVIDED WITH SHOP DRAWINGS AND/OR SUBMITTALS:
 - FIRESTOPPING SYSTEMS, WITH DETAILS, THAT WILL MEET THE UL RATING OF THE ASSEMBLY BEING PENETRATED.
 - SYSTEMS AND EQUIPMENT WHICH HAVE BEEN INSTALLED WITHOUT HAVING BEEN ACCEPTED BY THE DESIGN PROFESSIONAL MAY BE REJECTED AND SHALL BE REPLACED WITH PRODUCTS THAT ARE ACCEPTABLE.
 - AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUPPLY THE OWNER WITH AS-BUILT DOCUMENTATION, O&M MANUALS, COPIES OF EQUIPMENT WARRANTIES, WIRING DIAGRAMS AND NAMEPLATE DATA. (REFER TO MECHANICAL, ELECTRICAL AND/OR PLUMBING GENERAL NOTES FOR ADDITIONAL CLOSEOUT DOCUMENTATION REQUIREMENTS). PROVIDE THREE (3) HARD COPY SETS WITH A RIGID BINDER.

MECHANICAL GENERAL NOTES

INSTALLATION REQUIREMENTS

- DO NOT LOCATE ANY ITEMS REQUIRING ACCESS IN AN INACCESSIBLE LOCATION UNLESS AN APPROVED ACCESS DOOR IS PROVIDED.
- INSTALL PIPE SLEEVES IN WALLS AND FLOORS WHERE PIPES PENETRATE. PROVIDE ALL NECESSARY HANGERS, SUPPORTS AND ANCHORS FOR ALL PIPING, DUCTWORK AND EQUIPMENT.
- ALL DUCTWORK SHALL BE CONCEALED IN WALLS OR CEILING SPACE, WHERE ANY ITEMS CANNOT BE CONCEALED, SURFACE RACEWAY MAY BE CONSIDERED FOR USE ONLY AFTER PRIOR APPROVAL OF LOCATION BY DESIGN PROFESSIONAL.
- INSTALL DUCTWORK AND PIPING SO AS NOT TO ENCROACH ON REQUIRED CLEARANCES ABOVE OR AROUND ELECTRICAL PANELS. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF PANELS.
- ALL NEW DUCTWORK SPACE ALLOCATIONS SHALL BE VERIFIED PRIOR TO INSTALLING. IN ADDITION, FIELD VERIFY REQUIREMENTS FOR DUCT TRANSITIONS SHOWN AND NOT SHOWN ON THE CONTRACT DRAWINGS. COORDINATE SPACE REQUIREMENTS WITH THE OTHER CONTRACTORS AND SUB-CONTRACTORS.
- INSTALL FIRE DAMPERS IN DUCTS THAT PENETRATE FIRE RATED WALLS, FLOORS AND CEILING. INSTALLATIONS SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AS TO MAINTAIN DAMPER UL-RATING AFTER INSTALLATION. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL FIRE RATED ASSEMBLIES.
- ALL MASONRY PENETRATIONS SHALL BE CORE DRILLED FROM THE FINISHED FACE. THE USE OF PERCUSSION ROTARY DRILLS SHALL BE PROHIBITED.

GENERAL DEMOLITION NOTES

- THE DRAWINGS ARE DRAWN TO GENERALLY INDICATE THE DEMOLITION REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION, BUT ARE NOT ALL INCLUSIVE. THE FULL EXTENT OF DEMOLITION WORK MUST BE DETERMINED IN THE FIELD BASED ON THE ACTUAL CONDITIONS ENCOUNTERED AND AS NOTED OTHERWISE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DEMOLITION AND REMOVAL OF ALL EXISTING MATERIALS AND SYSTEMS INDICATED FOR REMOVAL. FURTHERMORE THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ASSOCIATED CUTTING, REMOVAL, PATCHING, AND REPAIR OF EXISTING FLOORS, WALLS, CEILING, ROOF CONSTRUCTION, AND SITE WORK.
- MATERIALS RESULTING FROM DEMOLITION AND REMOVAL OPERATIONS SHALL BE COMPLETELY REMOVED FROM THE SITE, UNLESS NOTED OTHERWISE ON THE DRAWINGS OR REQUESTED BY THE OWNER, AND SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE MATERIAL SHALL BE RECYCLED OR DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
- STORAGE OF DEBRIS AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS SHALL NOT BE PERMITTED TO BE STORED ON SITE, UNLESS NOTED OTHERWISE.
- WHEN AN EXISTING ITEM IS REMOVED (I.E., CONTROL, DUCT, PIPE, EQUIPMENT, ETC.), THE ACCOMPANYING SEALANT, SUPPORTS, AND ALL ANCHORS SHALL ALSO BE REMOVED. ALL SEALANT RESIDUE SHALL BE COMPLETELY REMOVED AND THE WALLS CLEANED AND REPAIRED TO MATCH ADJACENT WALL SURFACES.
- PROTECT ALL FLOORS, WALLS, CEILING AND FURNISHINGS THROUGHOUT THE DEMOLITION AREA. ANY DAMAGE TO THE AREA AS A RESULT OF DEMOLITION SHALL BE REPAIRED TO MATCH EXISTING CONDITIONS.
- WHERE EQUIPMENT, PIPING AND/OR CONDUIT IS BEING REMOVED, AND HOLES OR MARKED SURFACES ARE LEFT, PATCH TO MATCH THE EXISTING SURFACE. THE ENTIRE WALL OR CEILING SHALL THEN BE PAINTED IN A COLOR TO MATCH THE ORIGINAL COLOR. PAINTING MATERIAL AND METHODS SHALL BE AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

CLOSEOUT

- CUTTING & PATCHING
 - CUT AND PATCH WALLS, CEILING, FLOORS AND OTHER ASSEMBLIES AND SURFACES AS REQUIRED TO PERFORM THE REQUIRED WORK. RESTORE ALL SURFACES TO MATCH EXISTING. DO NOT CUT STRUCTURAL MEMBERS.
 - MAINTAIN INTEGRITY OF ANY FIRE-RATED WALLS, FLOORS OR CEILING PENETRATED BY EQUIPMENT, CONDUIT, WIRING, PIPING, ETC. SEAL SUCH PENETRATIONS USING APPROVED UL-LISTED PRODUCTS AND METHODS TO MAINTAIN FIRE RATING.

DUCTWORK SYSTEMS

- ALL DUCT SIZES SHOWN ON THE PLANS ARE NET FREE AREA. WHERE DUCT SIZES ARE SHOWN ON PLANS IN DUCTWORK THAT CONTAIN INTERNAL DUCT LINER, THE DIMENSION SHOULD BE CONSIDERED THE "INSIDE CLEAR DIMENSIONS". DUCTS SHALL BE CONSTRUCTED WITH THE CURVES AND BENDS SO AS TO AFFECT AN EASY FLOW OF AIR. ALL ELBOWS SHALL BE ROUND OR SQUARE WITH TURNING VANES. DUCT SPLITTERS SHALL BE USED WHERE MANY DUCTS SPLIT. ALL BRANCH DUCTS SHALL HAVE A 45 DEGREE ENTRY TAP. ALL TRANSITIONS FROM ONE DUCT SIZE TO ANOTHER SHALL HAVE A MAXIMUM OF A 15 DEGREE ANGLE. ALL JOINTS SHALL BE CAULKED WITH AN APPROVED DUCT SEALANT.
- ALL NEW DUCTS INSTALLED WITHIN THE BUILDING ENVELOPE ARE TO BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS MANUAL FOR THE SYSTEM PRESSURE CLASSIFICATION. UNLESS NOTED OTHERWISE, ALL RIGID DUCT SYSTEMS INSTALLED WITHIN THE BUILDING ENVELOPE TO BE CONSTRUCTED TO GALVANIZED STEEL (ASTM A 653/A 653M).
- FLEXIBLE AIR DUCT SYSTEMS SHALL BE CLASS 1, UL-181 AIR DUCT AS MANUFACTURED BY CERTAINTED OR JP LAMBORN CO. INSTALLATION SHALL BE IN ACCORDANCE WITH SMACNA STANDARDS AND MANUFACTURER'S SPECIFICATIONS INCLUDING HANGERS AND SPACING. INSTALL ONLY WHERE SHOWN ON THE DRAWINGS. DO NOT PENETRATE WALLS, CEILING OR FLOORS WITH THE FLEXIBLE DUCTS. FLEXIBLE DUCTWORK WITHIN THE BUILDING ENVELOPE, SHALL HAVE A MINIMUM INSULATION VALUE OF R-5.
- ALL DUCTWORK SYSTEMS SHALL BE PROVIDED WITH HANGER SIZES AND SPACING IN ACCORDANCE WITH TABLE 4-11 AND TABLE 4-2 OF THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS MANUAL FOR RECTANGULAR AND ROUND DUCTWORK, RESPECTIVELY. MAXIMUM SPACING FOR RECTANGULAR DUCTWORK HANGERS TO BE 10'-0" AND MAXIMUM SPACING FOR ROUND DUCTWORK HANGERS TO BE 12'-0".

INSULATION

- PROVIDE INSULATION AS PER MECHANICAL INSULATION SCHEDULE.
- AS PER IMC 2021, SECTION 604.4.2, DUCT WRAP INSULATION SYSTEMS SHALL BE PROVIDED WITH SUFFICIENT THICKNESS SUCH THAT THE REQUIRED R-VALUE LISTED WITHIN THE MECHANICAL INSULATION SCHEDULE IS MAINTAINED ASSUMING AN INSTALLED COMPRESSION OF 25%.

AIR DUCT ACCESSORIES

- ALL FIRE DAMPERS SHALL BE DYNAMIC CLOSURE TYPE-B CURTAIN STYLE WITH BLADES OUTSIDE OF THE AIRSTREAM. THEY SHALL HAVE BEEN SUCCESSFULLY TESTED TO U.L. STANDARD 555 - 4TH EDITION AS TO THEIR ABILITY TO CLOSE UNDER DYNAMIC WIND CONDITIONS AND THEY SHALL BEAR THE U.L. LABEL STATING THAT THEY ARE SUITABLE FOR THAT APPLICABLE DYNAMIC CLOSURE FIRE DAMPER PRESSURES OF 8" W.G. DYNAMIC CLOSURE TYPE-B DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION. ALL FIRE DAMPERS SHALL MEET THE REQUIREMENTS OF NFPA-90A AND SHALL BE PROVIDED FROM THE MANUFACTURER IN A FACTORY-INSTALLED MOUNTING SLEEVE. (BASIS OF DESIGN: GREENHECK #DFD-150X TYPE-B)
- PROVIDE VOLUME DAMPERS AT POINTS ON SUPPLY, RETURN, AND EXHAUST SYSTEMS WHERE BRANCHES EXTEND FROM LARGER DUCTS. DAMPERS ARE TO BE INSTALLED AT A MINIMUM OF TWO DUCT DIAMETERS FROM FITTING. WHEN DAMPERS ARE INSTALLED IN DUCTS HAVING DUCT LINER, INSTALL DAMPERS WITH HAT CHANNELS OF SAME DEPTH AS LINER, AND TERMINATE LINER WITH NOSING AT HAT CHANNEL. DAMPER MATERIAL SHALL MATCH DUCT CONSTRUCTION.

MECHANICAL GENERAL NOTES

INSTALLATION REQUIREMENTS

- DO NOT LOCATE ANY ITEMS REQUIRING ACCESS IN AN INACCESSIBLE LOCATION UNLESS AN APPROVED ACCESS DOOR IS PROVIDED.
- INSTALL PIPE SLEEVES IN WALLS AND FLOORS WHERE PIPES PENETRATE. PROVIDE ALL NECESSARY HANGERS, SUPPORTS AND ANCHORS FOR ALL PIPING, DUCTWORK AND EQUIPMENT.
- ALL DUCTWORK SHALL BE CONCEALED IN WALLS OR CEILING SPACE, WHERE ANY ITEMS CANNOT BE CONCEALED, SURFACE RACEWAY MAY BE CONSIDERED FOR USE ONLY AFTER PRIOR APPROVAL OF LOCATION BY DESIGN PROFESSIONAL.
- INSTALL DUCTWORK AND PIPING SO AS NOT TO ENCROACH ON REQUIRED CLEARANCES ABOVE OR AROUND ELECTRICAL PANELS. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF PANELS.
- ALL NEW DUCTWORK SPACE ALLOCATIONS SHALL BE VERIFIED PRIOR TO INSTALLING. IN ADDITION, FIELD VERIFY REQUIREMENTS FOR DUCT TRANSITIONS SHOWN AND NOT SHOWN ON THE CONTRACT DRAWINGS. COORDINATE SPACE REQUIREMENTS WITH THE OTHER CONTRACTORS AND SUB-CONTRACTORS.
- INSTALL FIRE DAMPERS IN DUCTS THAT PENETRATE FIRE RATED WALLS, FLOORS AND CEILING. INSTALLATIONS SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AS TO MAINTAIN DAMPER UL-RATING AFTER INSTALLATION. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL FIRE RATED ASSEMBLIES.
- ALL MASONRY PENETRATIONS SHALL BE CORE DRILLED FROM THE FINISHED FACE. THE USE OF PERCUSSION ROTARY DRILLS SHALL BE PROHIBITED.

TESTING & BALANCING

- OPERATE, TEST AND BALANCE THE HEATING, AND AIR CONDITIONING SYSTEMS. THE ENTIRE MECHANICAL CONTROLS SYSTEMS SHALL BE ADJUSTED AND BALANCED AND PUT IN OPERATING CONDITION TO CAUSE THE EQUIPMENT TO MAINTAIN THE TEMPERATURES IN ACCORDANCE WITH THE INTENT OF THESE SPECIFICATIONS. OPERATE AND TEST THE EQUIPMENT THROUGH SUMMER AND WINTER SEASON. ALL AIR BALANCING SHALL BE DONE BY A PROPERLY QUALIFIED NEBB OR AABC MECHANIC, IN PRESENCE OF OWNER'S REPRESENTATIVES. PROVIDE CERTIFIED WRITING AIR BALANCING WATER BALANCING REPORT TO ENGINEER. PROVIDE EQUIPMENT START-UP REPORTS TO ENGINEER.

DUCTWORK SYSTEMS

- ALL DUCT SIZES SHOWN ON THE PLANS ARE NET FREE AREA. WHERE DUCT SIZES ARE SHOWN ON PLANS IN DUCTWORK THAT CONTAIN INTERNAL DUCT LINER, THE DIMENSION SHOULD BE CONSIDERED THE "INSIDE CLEAR DIMENSIONS". DUCTS SHALL BE CONSTRUCTED WITH THE CURVES AND BENDS SO AS TO AFFECT AN EASY FLOW OF AIR. ALL ELBOWS SHALL BE ROUND OR SQUARE WITH TURNING VANES. DUCT SPLITTERS SHALL BE USED WHERE MANY DUCTS SPLIT. ALL BRANCH DUCTS SHALL HAVE A 45 DEGREE ENTRY TAP. ALL TRANSITIONS FROM ONE DUCT SIZE TO ANOTHER SHALL HAVE A MAXIMUM OF A 15 DEGREE ANGLE. ALL JOINTS SHALL BE CAULKED WITH AN APPROVED DUCT SEALANT.
- ALL NEW DUCTS INSTALLED WITHIN THE BUILDING ENVELOPE ARE TO BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS MANUAL FOR THE SYSTEM PRESSURE CLASSIFICATION. UNLESS NOTED OTHERWISE, ALL RIGID DUCT SYSTEMS INSTALLED WITHIN THE BUILDING ENVELOPE TO BE CONSTRUCTED TO GALVANIZED STEEL (ASTM A 653/A 653M).
- FLEXIBLE AIR DUCT SYSTEMS SHALL BE CLASS 1, UL-181 AIR DUCT AS MANUFACTURED BY CERTAINTED OR JP LAMBORN CO. INSTALLATION SHALL BE IN ACCORDANCE WITH SMACNA STANDARDS AND MANUFACTURER'S SPECIFICATIONS INCLUDING HANGERS AND SPACING. INSTALL ONLY WHERE SHOWN ON THE DRAWINGS. DO NOT PENETRATE WALLS, CEILING OR FLOORS WITH THE FLEXIBLE DUCTS. FLEXIBLE DUCTWORK WITHIN THE BUILDING ENVELOPE, SHALL HAVE A MINIMUM INSULATION VALUE OF R-5.
- ALL DUCTWORK SYSTEMS SHALL BE PROVIDED WITH HANGER SIZES AND SPACING IN ACCORDANCE WITH TABLE 4-11 AND TABLE 4-2 OF THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS MANUAL FOR RECTANGULAR AND ROUND DUCTWORK, RESPECTIVELY. MAXIMUM SPACING FOR RECTANGULAR DUCTWORK HANGERS TO BE 10'-0" AND MAXIMUM SPACING FOR ROUND DUCTWORK HANGERS TO BE 12'-0".

INSULATION

- PROVIDE INSULATION AS PER MECHANICAL INSULATION SCHEDULE.
- AS PER IMC 2021, SECTION 604.4.2, DUCT WRAP INSULATION SYSTEMS SHALL BE PROVIDED WITH SUFFICIENT THICKNESS SUCH THAT THE REQUIRED R-VALUE LISTED WITHIN THE MECHANICAL INSULATION SCHEDULE IS MAINTAINED ASSUMING AN INSTALLED COMPRESSION OF 25%.

AIR DUCT ACCESSORIES

- ALL FIRE DAMPERS SHALL BE DYNAMIC CLOSURE TYPE-B CURTAIN STYLE WITH BLADES OUTSIDE OF THE AIRSTREAM. THEY SHALL HAVE BEEN SUCCESSFULLY TESTED TO U.L. STANDARD 555 - 4TH EDITION AS TO THEIR ABILITY TO CLOSE UNDER DYNAMIC WIND CONDITIONS AND THEY SHALL BEAR THE U.L. LABEL STATING THAT THEY ARE SUITABLE FOR THAT APPLICABLE DYNAMIC CLOSURE FIRE DAMPER PRESSURES OF 8" W.G. DYNAMIC CLOSURE TYPE-B DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION. ALL FIRE DAMPERS SHALL MEET THE REQUIREMENTS OF NFPA-90A AND SHALL BE PROVIDED FROM THE MANUFACTURER IN A FACTORY-INSTALLED MOUNTING SLEEVE. (BASIS OF DESIGN: GREENHECK #DFD-150X TYPE-B)
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FIRE PROTECTION GENERAL NOTES

GENERAL SYSTEM REQUIREMENTS:

- TOTAL SYSTEM DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL WORK SHALL BE IN COMPLIANCE WITH THE SPECIFICATIONS, THE DRAWINGS, AND NFPA-13. WHERE THERE ARE DISCREPANCIES BETWEEN THE SPECIFICATIONS AND NFPA-13 SHALL BE GOVERN. THE DRAWINGS AND SPECIFICATIONS ARE DIAGRAMMATIC AND SHOW THE INTENT OF THE DESIGN. ACTUAL CONFIGURATION, LAYOUT, QUANTITIES, ETC IS THE RESPONSIBILITY OF THE CONTRACTOR.
- THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED TO PROVIDE THE PRESCRIBED DENSITY UNIFORMLY OVER THE MOST REMOTE AREA COVERED BY THE CALCULATIONS AND SHALL BE SUBMITTED WITH THE SHOP DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL SPRINKLER SYSTEM REQUIREMENTS.
- THE ENTIRE RENOVATED PORTION OF THE BUILDING SHALL BE SPRINKLERED. THIS SHALL INCLUDE THE CONCEALED COMBUSTIBLE SPACES, REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF CONCEALED COMBUSTIBLE SPACES.
- THE SPRINKLER CONTRACTOR SHALL REVIEW ALL PROJECT DRAWINGS AND COORDINATE THE INSTALLATION OF THE PIPING WITH ALL OTHER TRADES FOR THE PROJECT. REFER TO THE ARCHITECTURAL PLANS FOR CEILING FINISH TYPES AND LOCATION OF STRUCTURAL STEEL. THE HEAD LAYOUT IS PROVIDED TO SHOW INTENT. ADDITIONAL HEADS MAY BE NEEDED BECAUSE OF BULKHEADS. REFER TO MECHANICAL DRAWINGS FOR DETAILS THAT MAY REQUIRE HEADS UNDERNEATH.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING SIGNED AND SEALED DRAWINGS, SUBMITTALS AND HYDRAULIC CALCULATIONS TO AUTHORITY HAVING JURISDICTION (AHJ) PRIOR TO START OF ANY WORK. CONTRACTOR SHALL REVISE AND RESUBMIT TO AHJ AS MAY BE REQUIRED.

SYSTEM PERFORMANCE REQUIREMENTS

- INCLUDE 10-PERCENT MARGIN OF SAFETY FOR AVAILABLE WATER FLOW AND PRESSURE.
- INCLUDE LOSSES THROUGH WATER-SERVICE PIPING, VALVES AND BACKFLOW PREVENTERS.
- SPRINKLER OCCUPANCY HAZARD CONDITIONS, AS FOLLOWS:
 - BUILDING SERVICE AREAS: ORDINARY HAZARD, GROUP 1
 - ELECTRICAL EQUIPMENT ROOMS: ORDINARY HAZARD, GROUP 1
 - GENERAL STORAGE AREAS: ORDINARY HAZARD, GROUP 1
 - MECHANICAL EQUIPMENT ROOMS: ORDINARY HAZARD, GROUP 1
 - OFFICE AND PUBLIC AREAS: LIGHT HAZARD.
- MINIMUM DENSITY FOR AUTOMATIC SPRINKLER PIPING DESIGN SHALL BE AS LISTED IN THE LATEST VERSION OF NFPA-13, OR AS FOLLOWS, WHICHEVER IS HIGHER:
 - LIGHT HAZARD OCCUPANCY: 0.10 GPM OVER 1500 SQUARE FEET.
 - ORDINARY HAZARD, GROUP 1 OCCUPANCY: 0.15 GPM OVER 1500 SQUARE FEET.
 - ORDINARY HAZARD, GROUP 2 OCCUPANCY: 0.20 GPM OVER 1500 SQUARE FEET.
 - SPECIAL OCCUPANCY HAZARD: AS DETERMINED BY THE AUTHORITIES HAVING JURISDICTION.
- MAXIMUM PROTECTION AREA PER SPRINKLER SHALL BE AS LISTED IN THE LATEST VERSION OF NFPA-13, OR AS FOLLOWS, WHICHEVER IS LOWER:
 - OFFICE SPACE: 225 SQUARE FEET.
 - OFFICE SPACE: 120 SQUARE FEET.
 - STORAGE AREAS: 130 SQUARE FEET.
 - MECHANICAL EQUIPMENT ROOMS: 130 SQUARE FEET.
 - ELECTRICAL EQUIPMENT ROOMS: 130 SQUARE FEET.
 - OTHER AREAS: ACCORDING TO NFPA-13 RECOMMENDATIONS, UNLESS OTHERWISE INDICATED.

PROJECT DATA:

- FLOW TEST INFORMATION WAS NOT AVAILABLE. CONTRACTOR TO PERFORM FLOW TEST OR ARRANGE TO HAVE THE FLOW TEST PERFORMED. FLOW TEST SHALL BE CONDUCTED NO MORE THAN 12 MONTHS PRIOR TO WORKING PLAN SUBMITTAL PER NFPA 13, SECTION 23.2.

MATERIALS:

- THE WET SPRINKLER DISTRIBUTION SYSTEM SHALL BE BLACK SCHEDULE 10 PIPE WITH ROLL GROOVED FITTINGS AND SCHEDULE 40 THREADED PIPE WITH MALLEABLE-IRON THREADED FITTINGS.
- SPRINKLER HEADS SHALL BE CENTERED IN CEILING TILES AND LOCATED SYMMETRICALLY WITH LIGHTING FIXTURES AND DIFFUSERS AS SHOWN.
- THE SPRINKLER HEAD SPACING AND LOCATIONS IN THE ENTIRE SPRINKLER SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH NFPA-13.

PLUMBING GENERAL NOTES

INSTALLATION REQUIREMENTS

- DO NOT LOCATE ANY ITEMS REQUIRING ACCESS IN AN INACCESSIBLE LOCATION UNLESS AN APPROVED ACCESS DOOR IS PROVIDED.
 - INSTALL PIPE SLEEVES IN WALLS AND FLOORS WHERE PIPES PENETRATE. PROVIDE ALL NECESSARY HANGERS, SUPPORTS AND ANCHORS FOR ALL PIPING AND EQUIPMENT.
 - ALL PIPING SHALL BE CONCEALED IN WALLS, CEILING SPACE OR SOFFITS.
 - INSTALL PIPING SO AS NOT TO ENCROACH ON REQUIRED CLEARANCES ABOVE OR AROUND ELECTRICAL PANELS. REFER TO ELECTRICAL DRAWINGS.
- ### TESTING:
- OPERATE, TEST PLUMBING SYSTEMS AND PUT IN OPERATING CONDITION TO CAUSE THE EQUIPMENT TO FUNCTION IN ACCORDANCE WITH THE TRUE INTENT OF THESE SPECIFICATIONS.
 - WHEN ROUGHING WORK FOR RAIN WATER PIPING IS COMPLETED AND BEFORE CONNECTION OF FIXTURES OR DRAINS, THE SYSTEM SHALL BE SUBJECT TO A WATER TEST BY PLUGGING UP ALL OPENINGS AND FILLING ALL OF THE LINES TO THE ROOF LEVEL. ANY DEFECTS SHALL BE CORRECTED.

PIPING SYSTEMS

- ALL RAIN WATER PIPING ABOVE AND BELOW THE GROUND SHALL BE SCH. 40 DWV PVC PLASTIC PIPE WITH SOLVENT WELD JOINTS AND FITTINGS (PVC CELLULAR FOAM CORE PIPE SHALL NOT BE PERMITTED) OR SERVICE WEIGHT CAST IRON OR NO-HUB CAST IRON.
- ALL RAIN WATER PIPING IN RETURN AIR PLENUM CEILING OR THROUGH FIRE RATED ASSEMBLIES SHALL BE SERVICE WEIGHT CAST IRON OR NO-HUB CAST IRON. ALL RAIN WATER PIPING BEING HEAT TRACED SHALL BE SERVICE WEIGHT CAST IRON OR NO-HUB CAST IRON.
- ALL SANITARY AND VENT PIPING BELOW THE GROUND SHALL BE SCH. 40 DWV PVC PLASTIC PIPE WITH SOLVENT WELD JOINTS AND FITTINGS (PVC CELLULAR FOAM CORE PIPE SHALL NOT BE PERMITTED). MAKE ALL JOINTS WATER TIGHT AND GASTIGHT.

INSULATION SYSTEMS

- INSULATE ALL ROOF DRAIN (RW) PIPING, ALL INTERIOR ROOF DRAIN BODIES, AND ALL FITTINGS. PIPE INSULATION SHALL BE RIGID FIBERGLASS WITH WHITE KRAFT BROWN TISSUE ALUMINUM FOIL, K = 0.23 @ 75 F., REINFORCED WITH FIBERGLASS YARN, SUITABLE FOR PAINTING, MANVILLE MICRO-LOK 650 WITH AP-T JACKET OR APPROVED EQUAL. FITTINGS SHALL BE INSULATED WITH MOLDED ONE-PIECE P.V.C. COVERS WITH FIBERGLASS INSULATION, MANVILLE ZESTON 25/50 OR EQUAL.

IDENTIFICATION & LABELING

- OPERATE, TEST PLUMBING SYSTEMS AND PUT IN OPERATING CONDITION TO CAUSE THE EQUIPMENT TO FUNCTION IN ACCORDANCE WITH THE TRUE INTENT OF THESE SPECIFICATIONS.

MISCELLANEOUS PROJECT REQUIREMENTS

- PROVIDE STEEL WALL PLATES NOT LESS THAN 1/8 GAUGE FOR PLASTIC PIPING RUN THROUGH FRAMING MEMBERS (WOOD OR METAL) TO WITHIN ONE INCH OF THE EDGE OF THE FRAMING. WHERE PLASTIC AND COPPER PIPING RUNS THROUGH METAL FRAMING MEMBERS, IT SHALL BE PROTECTED FROM ABRASION CAUSED BY EXPANSION AND CONTRACTION OF THE PIPING OR MOVEMENT OF THE FRAMING.



20 N. Doughty Avenue
Somerville, NJ 08876
t 908.722.2300
f 908.722.2201

usaarchitects.com

Paul R. Swartz, AIA
Arnold T. Christopher Jr., AIA
Peter C. Campiano, AIA
Andrew P. Adornato, AIA

Susan M. Dehart, AIA
James McLaughlin, AIA
Marlene Borusso, AIA



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Engineered Systems and Building Consultants

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20 N. Doughty Avenue
Somerville, NJ 08876
t 908.722.2300
f 908.722.7201

usaarchitects.com

Paul R. Swartz, AIA Susan M. Dehart, AIA
Armand T. Christopher, Jr., AIA James McAuliffe, AIA
Peter C. Campisano, AIA Marlene Borruso, AIA
Andrew P. Adornato, AIA



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804 Seven Bridge Road, Route 209

East Stroudsburg, PA 18301

T: 570-421-2025

mail@strunk-albert.com

www.strunk-albert.com

Christopher T. Strunk, P.E.

PA P.E. # 080014 NJ P.E. # 24 CE 05547000

NY P.E. # 10079-01 DE P.E. # 24214

TN P.E. # 123248 CT P.E. # 14332

SC P.E. # 39067 MD P.E. # 58301

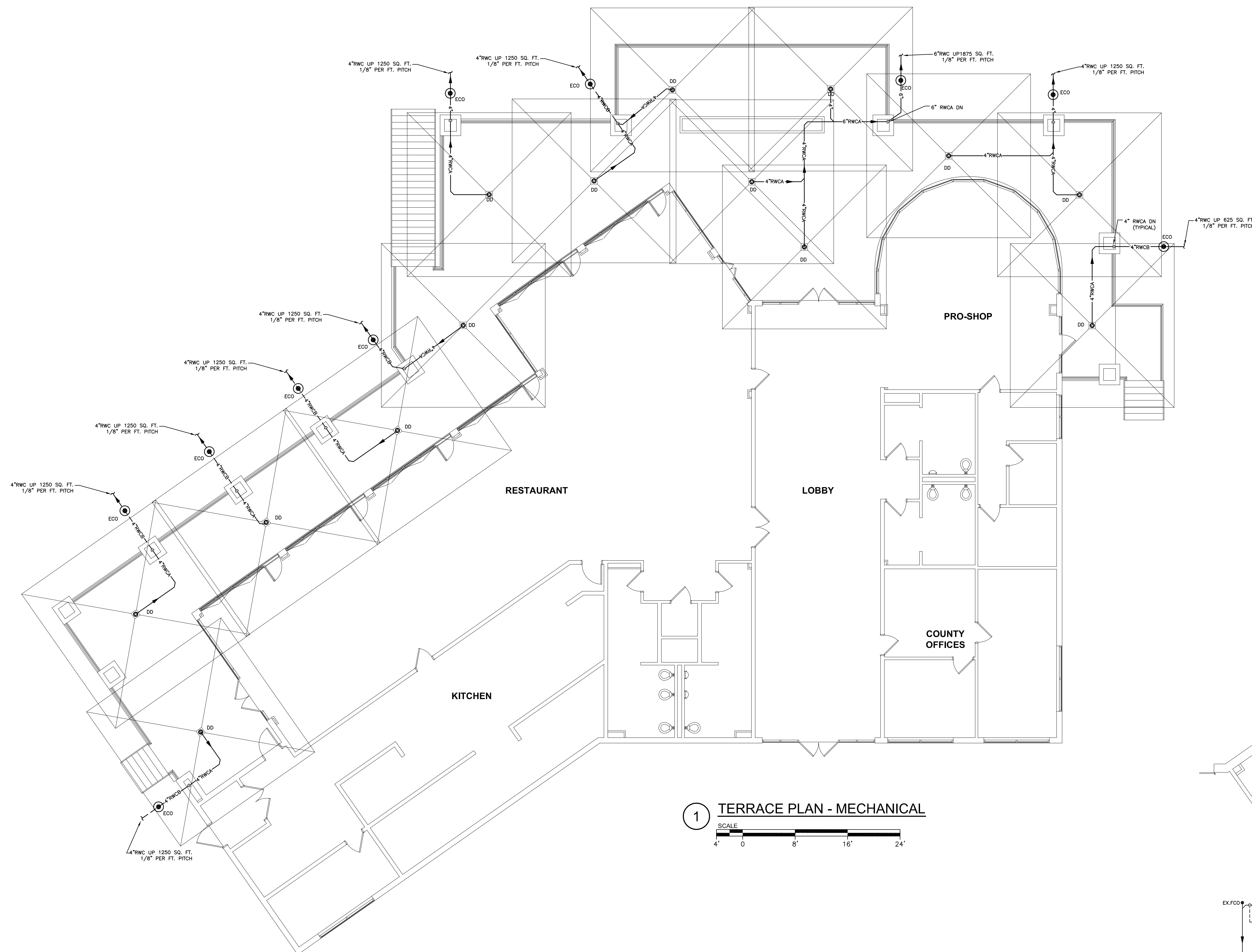
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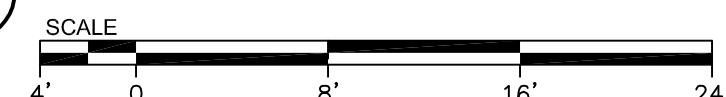
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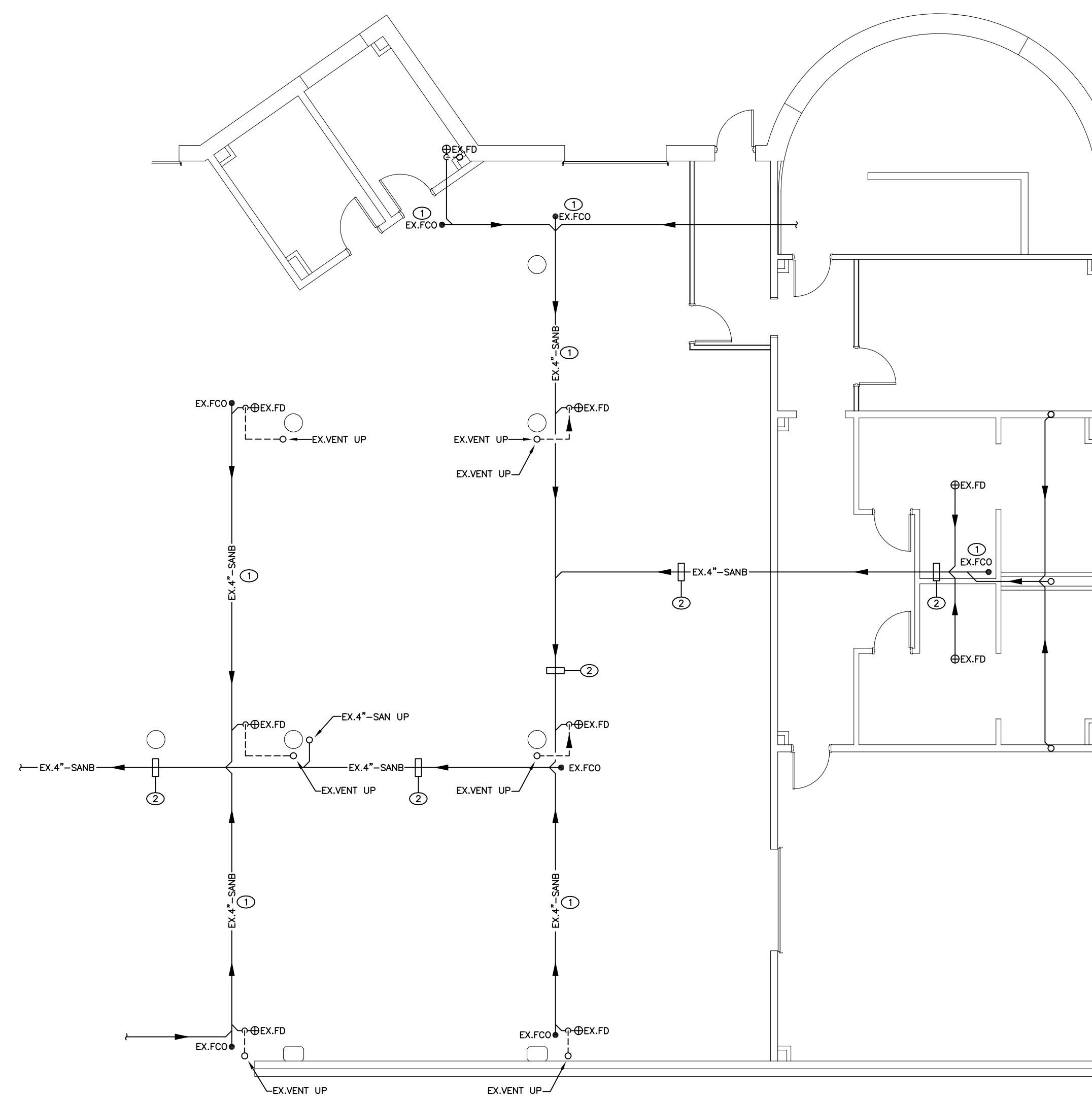


1 TERRACE PLAN - MECHANICAL



DRAWING NOTES - NEW

- 1 EXISTING UNDER-SLAB SANITARY PIPE TO REMAIN.
- 2 CONTRACTOR SHALL SCOPE/CAMERA EXISTING SANITARY LINE WITHIN AREA INDICATED. FOLLOWING THIS PROCEDURE, CONTRACTOR SHALL SUPPLY THE OWNER AND DESIGN PROFESSIONAL WITH VIDEO OF SCOPING PROCESS FOR REVIEW.



2 PARTIAL FLOOR PLAN - SANITARY & VENT



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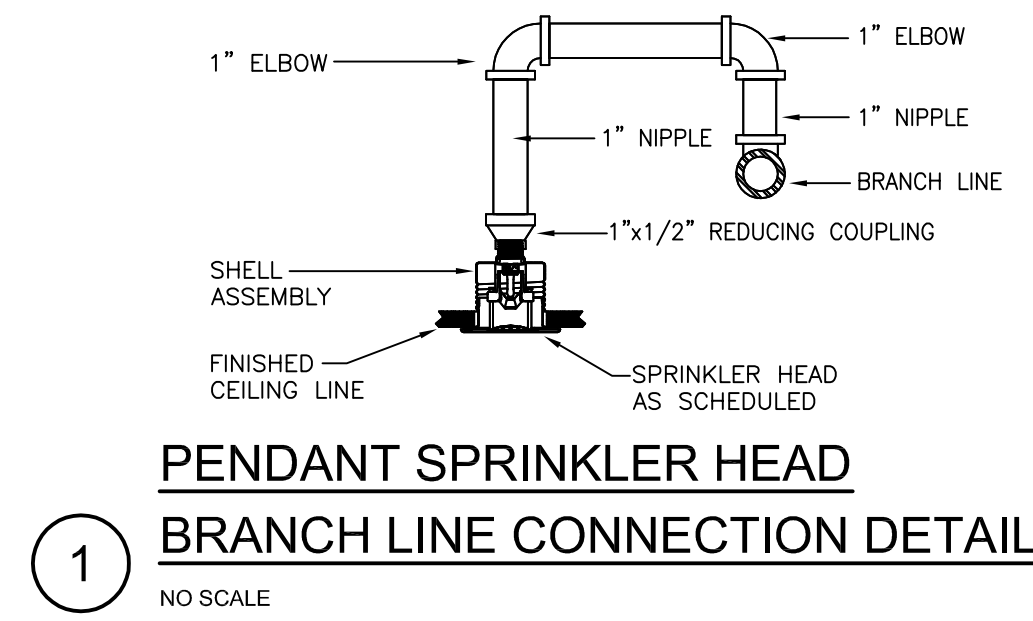
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2	09.21.23	ISSUED FOR BID

Drawing Title
**TERRACE PLAN,
PARTIAL LOWER LEVEL
PLAN - SANITARY, VENT
& STORM**

Scale
As Indicated USA Project No.
2023-038

Drawing Date
09.21.23 Drawing No.

Drawn By
RFC Checked By
CTS M-101

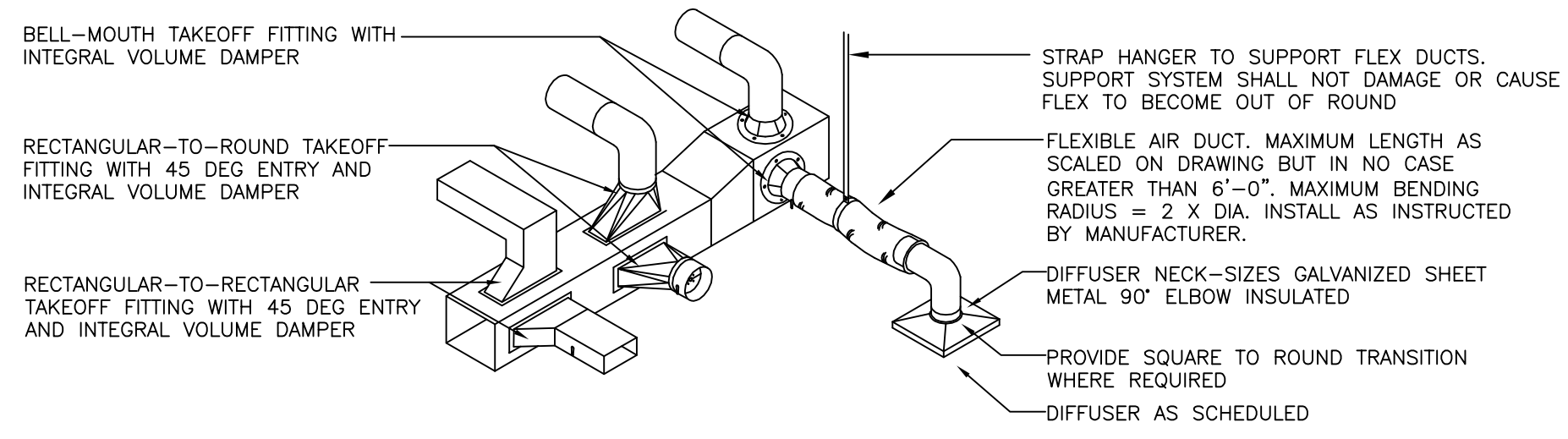


PLUMBING FIXTURE SCHEDULE						
FIXTURE	MANUFACTURER	TYPE	MODEL	TRIM NO.	REMARKS	FIXTURE SPECIFIC NOTES
DD	ZURN	GARAGE FLOOR DECK DRAIN	Z-547-C	-	CAST IRON BODY, HEAVY DUTY WIDE FLANGE COLLAR WITH HEAVY DUTY DUCTILE IRON TRACTOR GRATE. GASKET SEAL BETWEEN BODY AND COLLAR. PIPE SIZE PER PLAN. PROVIDE WITH JR SMITH ASSE 1072 COMPLIANT MODEL 2692 QUAD CLOSE TRAP SEAL DEVICE.	-
ECO	JR SMITH	EXTERIOR CLEANOOUT	4231-M	-	PIPE SIZE PER PLAN, INSTALL LEVEL AND FLUSH WITH CONCRETE	-

FIXTURE SPECIFIC NOTES:
1. ALTERNATE MANUFACTURERS ZOELLER AND LIBERTY.

SPRINKLER HEAD SCHEDULE							
SYMBOL	MANUFACTURER	MODEL	TEMPERATURE RATING	FINISH	THREAD SIZE NPT	K-FACTOR	NOTES:
•	VIKING	VK462	ORDINARY 150F	WHITE	1/2"	5.6	QUICK RESPONSE CONCEALED PENDANT SPRINKLER HEAD AND COVER PLATE.

* OR EQUIVALENT BY VIKING, TYCO, RELIABLE, STAR, VICTAULIC, AND GRINNELL ARE ALSO ACCEPTABLE.
NOTE: ALL EXPOSED SPRINKLER PIPING TO BE PAINTED BY THE CONTRACTOR. COLOR AS SELECTED BY THE ARCHITECT.



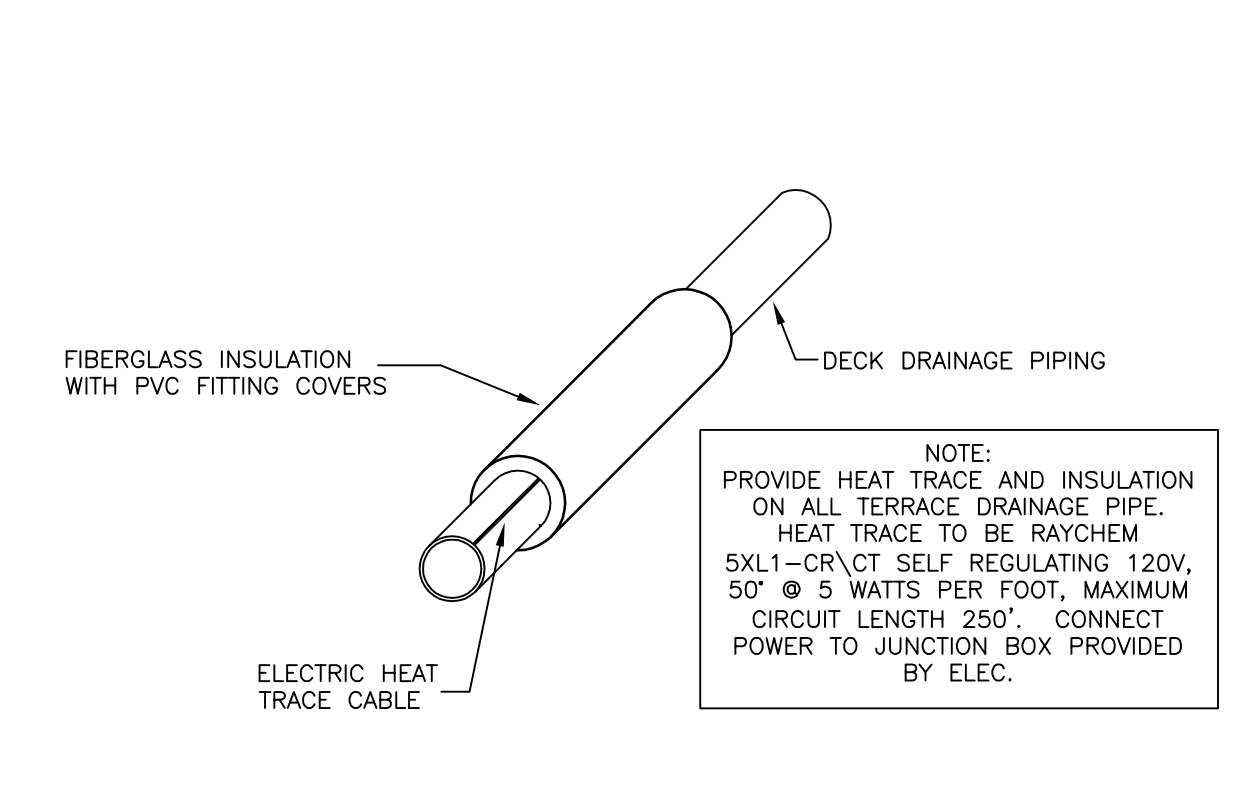
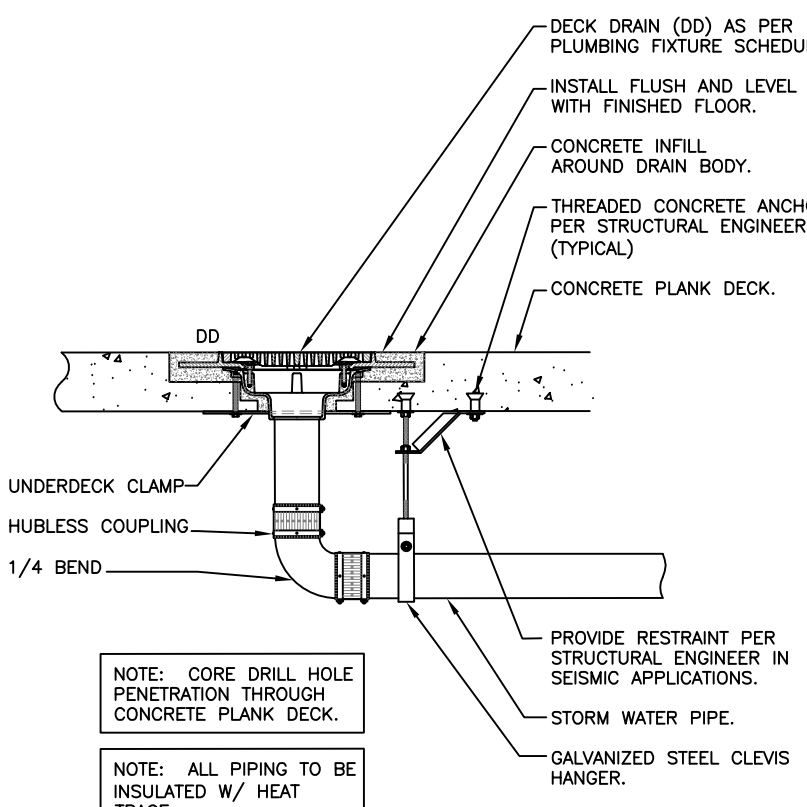
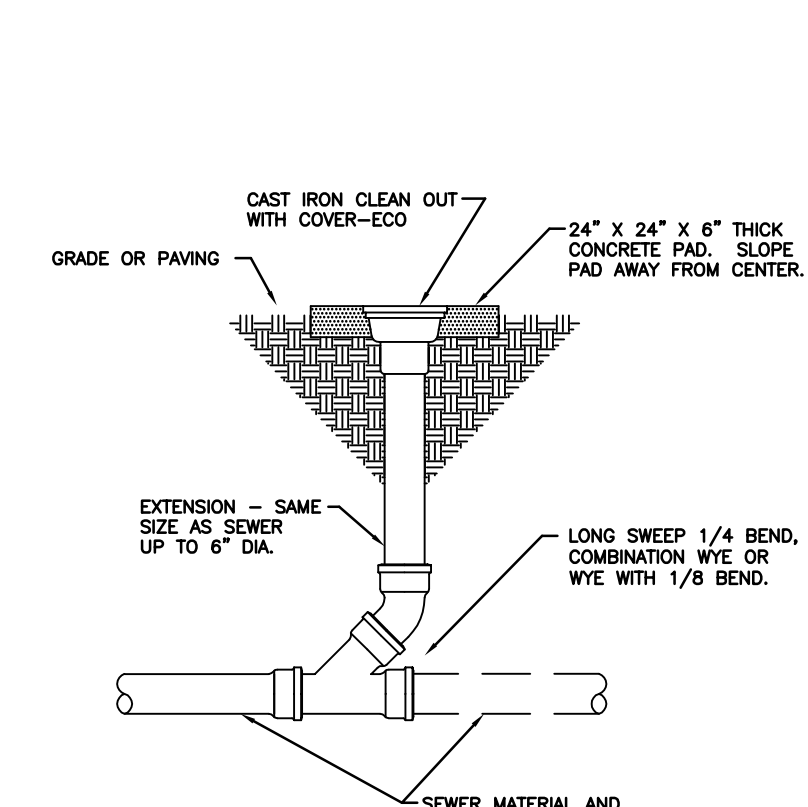
GRILLE AND DIFFUSER SCHEDULE									
SYMBOL	MANUFACTURER	MODEL	SIZE	FRAME STYLE	PATTERN	MATERIAL	FINISH	VOLUME DAMPER	
A			24"x24"	LAY-IN	4-WAY BLOW	STEEL	SELECTED BY ARCH	NO	

NOTES:
1. CONTRACTOR TO COORDINATE ALL FRAME STYLES WITH CEILING CONSTRUCTION.
2. GRILLES AND DIFFUSERS SHALL NOT EXCEED AN NC VALUE GREATER THAN 25.
3. PROVIDE SQUARE TO ROUND TRANSITIONS WHERE REQUIRED.
SUBJECT TO COMPLIANCE WITH THESE SPECIFICATIONS; OTHER MANUFACTURERS THAT MAY PROVIDE EQUIPMENT INCLUDE TITUS OR KRUEGER.

MECHANICAL INSULATION SCHEDULE					
SERVICE	MATERIALS	MIN R-VALUE (BTU/(H*F*FT2))	INSULATION JACKET/FINISH	VAPOR BARRIER	ACCEPTABLE PRODUCT
HVAC DUCTWORK: S/A (WARM SIDE OF ENVELOPE)	MINERAL-FIBER BLANKET	R-5	FSK FLAME RETARDED VAPOR BARRIER WITH 25/50 FLAME SPREAD / SMOKE DEVELOPED RATING	YES	KNAUF "ATMOSPHERE DUCT WRAP"

NOTE: INSULATION VALUES LISTED ARE MINIMUM REQUIREMENTS FOR THIS PROJECT AND MAY EXCEED THE MINIMUM REQUIREMENTS REQUIRED BY THE ENERGY SUBCODE.

PLUMBING FIXTURE SCHEDULE						
FIXTURE	MANUFACTURER	TYPE	MODEL	TRIM NO.	MOUNTING HEIGHTS	REMARKS
WH	JR SMITH	FREEZE PROOF WALL HYDRANT	5609QT-WC	EXPOSED HOSE CONNECTION	MOUNT AT 30" AFG (COORDINATE IN FIELD)	PROVIDE WITH VACUUM BREAKER. LENGTH BASED ON WALL THICKNESS TO WARM SIDE OF INSULATION, ADD ADDITIONAL 2" TO LENGTH FOR WALL CLAMP



Paul R. Swartz, AIA
Armand T. Christopher, Jr., AIA
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Marlene Borruso, AIA

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804 Seven Bridge Road, Route 209
East Stroudsburg, PA 18301
T: 570-421-2025
mail@strunk-albert.com
www.strunk-albert.com
Christopher T. Strunk, P.E.
PA P.E. # 080014 NJ P.E. # 24 CE 05547000
NY P.E. # 002079-01 DE P.E. # 24214
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Drawing Title
DETAILS & SCHEDULES

Scale As indicated	USA Project No. 2023-038
Drawing Date 09.21.23	Drawing No. M-500
Drawn By RFC	Checked By CTS

GENERAL PROJECT NOTES

CONTRACT DOCUMENTS

- THE TERM "CONTRACTOR" WHICH IS USED WITHIN THESE DRAWINGS AND SPECIFICATIONS MEANS THE SINGLE PRIME CONTRACTOR OR FIRM AWARDED THE SINGLE CONTRACT FOR THE PROJECT. REFERENCES TO VARIOUS OTHER CONTRACTOR ENTITIES (I.E. MECHANICAL CONTRACTOR (MC), ELECTRICAL CONTRACTOR (EC), PLUMBING CONTRACTOR (PC), GENERAL CONTRACTOR (GC), ETC.) SHALL BE UNDERSTOOD TO MEAN A SUB-CONTRACTOR TO THE PRIME CONTRACTOR. THE PRIME CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING ALL WORK SPECIFIED HEREWITHIN.
- THE ASSIGNED TRADE RESPONSIBILITY NOTED WITH THESE DRAWINGS AND/OR SPECIFICATIONS IS THE ENGINEER'S RECOMMENDATION, WHERE NO SPECIFIC DELINEATION OF TRADE RESPONSIBILITY IS NOTED, THE TRADE NORMALLY RESPONSIBLE FOR THE WORK INDICATED SHALL BE RESPONSIBLE FOR PROVIDING THOSE ITEMS IN THEIR ENTIRETY. THE PRIME CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR THE PROPER COORDINATION AND COMMUNICATION BETWEEN SUBCONTRACTORS, WHETHER IN AGREEMENT WITH THE TRADE RESPONSIBILITY NOTED OR MODIFIED AS DESIRED, SUCH THAT ALL ITEMS NOTED WITHIN THE COMPLETE SET OF CONSTRUCTION DOCUMENTS ARE PROVIDED AS PART OF THE SINGLE PRIME CONTRACT.
- THE WORK IS GENERALLY INDICATED ON THE DRAWINGS BUT ADDITIONAL RELATED INFORMATION AND DETAILS MAY APPEAR ON OTHER PROJECT DOCUMENTS AND/OR SPECIFICATIONS. ALL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE COMPLEMENTARY. NOTIFY THE DESIGN PROFESSIONAL OF ANY DISCREPANCIES BETWEEN ANY OF THE DRAWINGS AND/OR SPECIFICATIONS PRIOR TO INSTALLATION.
- THE DRAWINGS ARE DIAGRAMATIC IN NATURE AND INDICATE THE GENERAL CONFIGURATION OF THE WORK. ALL WORK THAT WILL BE REQUIRED FOR THE ACTUAL INSTALLATION IS NOT NECESSARILY INDICATED DUE TO THE SCALE OF THE DRAWINGS. COORDINATE THE ACTUAL INSTALLATION WITH THE OWNER WITH ALL OTHER BUILDING SYSTEM COMPONENTS AND OTHER TRADES AND PROVIDE ALL NECESSARY COORDINATION, OFFSETS, ACCESSORIES, MATERIALS, ETC. AS PART OF THE WORK.
- THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO DESCRIBE A COMPLETE OPERATING SYSTEM. ALL LABOR MATERIALS, ETC., WHICH IS NOT SPECIFIED OR INDICATED BUT IS NECESSARY FOR THE OPERATION AND COMPLETION OF A PROPERLY OPERATING SYSTEM SHALL BE THE TRUE INTENT OF THE SPECIFICATIONS AND DRAWINGS AND AS INTERPRETED BY THE DESIGN PROFESSIONAL, SHALL BE FURNISHED AS A PART OF THE CONTRACT, AS THOUGH IT WERE SPECIFICALLY DETAILED AND DESCRIBED.

BIDDING

- BIDDERS SHALL CAREFULLY EXAMINE SPECIFICATIONS AND DRAWINGS, VISIT THE SITE OF PROPOSED WORK AND OBSERVE ALL EXISTING CONDITIONS AND LIMITATIONS AND INCLUDE ANY WORK REQUIRED DUE TO THE EXISTING CONDITIONS AND LIMITATIONS. REQUEST CLARIFICATIONS FROM THE DESIGN PROFESSIONAL PRIOR TO BIDDING. SUBMISSION OF A BID SHALL INDICATE THAT BIDDER IS FAMILIAR WITH EXISTING CONDITIONS TO BE MET IN EXECUTION OF THE WORK AND HAS INCLUDED SUCH WORK IN HIS BID. FAILURE TO VISIT AND INSPECT THE EXISTING CONDITIONS SHALL NOT BE A VALID REASON FOR AUTHORIZATION OF A CHANGE ORDER.

CONSTRUCTION PROCESS

- DIMENSIONS, GRADES, ELEVATIONS AND LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. VERIFY ALL LINES, GRADES AND DIMENSIONS PRIOR TO STARTING THE WORK. ALL NECESSARY REQUIREMENTS, SURVEY, LINES, GRADES, AND ELEVATIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. VERIFY ALL LINES AND GRADES WITH THE LOCAL CONTROLLING AGENCY, AHJ OR OTHER PARTY WHERE REQUIRED.
- THE INSTALLATION OF ALL WORK SHALL BE COORDINATED WITH OTHER TRADES. IF CONFLICTS ARE FOUND THEY SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN PROFESSIONAL PRIOR TO BEGINNING OF INSTALLATION OF THE WORK.
- PERIODICALLY AND AT THE COMPLETION OF THE WORK, REMOVE FROM THE BUILDING AND SITE ALL RUBBISH AND ACCUMULATED MATERIALS, AND LEAVE THE WORKPLACE IN A CLEAN, ORDERLY AND ACCEPTABLE CONDITION. PROVIDE DUMPSTERS, TRASH CONTAINERS, HAULING AND APPROVED DISPOSAL FEES ASSOCIATED WITH THE WORK. CLEAN ALL INSTALLED MATERIALS AND EQUIPMENT OF PAINT SPLASHES, GRAZE STAINS, DUST, FINGER MARKS, AND ALL OTHER UNSIGHTLY MARKS PRIOR TO SUBSTANTIAL COMPLETION INSPECTION.

CODES AND PERMITS

- MAKE APPLICATION TO THE LOCAL INSPECTION AUTHORITY BEFORE ANY WORK COMMENCES AND FURNISH A COPY TO THE DESIGN PROFESSIONAL FOR RECORD.
- UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL OBTAIN AND PAY FOR ALL THIRD-PARTY REVIEW FEES, BUILDING PERMITS, INSPECTIONS, TESTS, AND CERTIFICATES RELATING TO THE WORK AS REQUIRED BY THE APPLICABLE AUTHORITIES HAVING JURISDICTION. ALL INSPECTION CERTIFICATES SHALL BE DELIVERED TO THE DESIGN PROFESSIONAL AND BECOME PROPERTY OF THE OWNER.
- PERFORM ALL WORK IN COMPLIANCE WITH THE CODES, LAWS, ORDINANCES, RULES OR REGULATIONS OF FEDERAL, STATE OR LOCAL AUTHORITIES, AND ALL LOCAL UTILITY COMPANIES HAVING JURISDICTION OVER THE PREMISES. ALL SUCH CODES, LAWS, ORDINANCES, RULES AND REGULATIONS ARE HEREBY INCORPORATED AND MADE A PART OF THESE SPECIFICATIONS. REQUEST CLARIFICATIONS FROM THE DESIGN PROFESSIONAL REGARDING DISCREPANCIES BETWEEN RELEVANT CODES AND THE DRAWINGS AND SPECIFICATIONS PRIOR TO BIDDING. SUBMISSION OF A BID SHALL INDICATE THAT BIDDER IS FAMILIAR WITH THE APPLICABLE CODE REQUIREMENTS AND HAS INCLUDED SUCH WORK IN THE BID.
 - INTERNATIONAL MECHANICAL CODE: IMC 2021
 - NATIONAL ELECTRICAL CODE: NEC 2020 (NFPA-70)
 - FIRE PROTECTION CODE: APPLICABLE EDITION NFPA 13 (REFER TO STATE LISTING OF ADOPTED CODE.)
 - INTERNATIONAL BUILDING CODE: IBC 2021, NJ EDITION

- ALL WORK PERFORMED ON THIS PROJECT AND ALL EQUIPMENT FURNISHED FOR THIS PROJECT SHALL BE IN CONFORMANCE WITH THE REGULATIONS AND REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA). THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH OSHA REGULATIONS. ALL PURCHASED EQUIPMENT SHALL BE DESIGNED, MANUFACTURED, AND FURNISHED WITH THE NECESSARY ACCESSORIES TO MEET OSHA REQUIREMENTS. ALL CONSTRUCTION FACILITIES, INCLUDING LADDERS, PLATFORMS, GUARD RAILS, SAFETY FEATURES, ETC. SHALL MEET OSHA REQUIREMENTS.
- ### PRODUCTS AND MATERIALS
- EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR TYPE AND CAPACITY OF EQUIPMENT USED. MANUFACTURER'S INSTRUCTIONS SHALL BE CONSIDERED PART OF THE SPECIFICATIONS. TYPE, CAPACITY AND APPLICATION OF EQUIPMENT SHALL BE SUITABLE AND SHALL OPERATE SATISFACTORILY FOR THE PURPOSES INTENDED.
 - EQUIPMENT USED AS THE BASIS-OF-DESIGN AS INDICATED ON THE DRAWINGS DEFINES THE GENERAL SPACE REQUIREMENTS, WEIGHTS AND RELATED SERVICES (ELECTRICAL SERVICES, PIPING CONNECTIONS, ETC.). PROVIDE EQUIPMENT OF SIMILAR SIZE, REQUIREMENTS AND CLEARANCES WHICH SHALL NOT NECESSITATE REVISIONS TO THE BUILDING CONSTRUCTION OR OTHER TRADES. IF REVISIONS ARE REQUIRED DUE TO SUBSTITUTION THE CONTRACTOR SHALL PAY ALL COSTS FOR ANY REQUIRED REVISIONS. NO REVISIONS SHALL BE MADE WITHOUT DESIGN PROFESSIONAL'S WRITTEN APPROVAL.
 - ALL MATERIALS, EQUIPMENT AND SYSTEMS SPECIFIED OR REQUIRED FOR THE COMPLETION OF THE WORK SHALL BE COMPLETELY SATISFACTORY AND ACCEPTABLE IN OPERATION, PERFORMANCE, AND CAPACITY. NO APPROVAL, EITHER WRITTEN OR VERBAL, OF ANY DRAWINGS, DESCRIPTIVE DATA OF SAMPLES OF SUCH MATERIAL, EQUIPMENT AND/OR APPURTENANCES, SHALL RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PROVIDE SYSTEMS IN COMPLETE WORKING ORDER AT THE COMPLETION OF THE WORK.
 - ANY MATERIAL, EQUIPMENT, OR APPURTENANCES, WHICH DO NOT COMPLY WITH THE DRAWINGS AND/OR SPECIFICATION REQUIREMENTS, OR WHICH IS NOT NEW, OR WHICH IS DAMAGED PRIOR TO ACCEPTANCE BY THE DESIGN PROFESSIONAL, SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIALS, EQUIPMENT AND/OR APPURTENANCE OR PUT IN ACCEPTABLE WORKING CONDITION, TO THE SATISFACTION OF THE DESIGN PROFESSIONAL.

- ALL EQUIPMENT AND SYSTEMS SHALL BE ELECTRICALLY AND MECHANICALLY CORRECT. ALL EQUIPMENT AND SYSTEMS SHALL OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION AS DETERMINED BY THE DESIGN PROFESSIONAL. ELIMINATE ANY OBJECTIONABLE NOISE OR VIBRATION PRODUCED AND TRANSMITTED THROUGHOUT THE BUILDING BY ANY SYSTEM OR EQUIPMENT. TO THE SATISFACTION OF THE DESIGN PROFESSIONAL AND OWNER.
 - LABEL EACH DISCONNECT MEANS LEGIBLY AND PERMANENTLY MARKED TO INDICATE ITS PURPOSE. (NEC 110-22)
 - ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BEAR THE UNDERWRITER'S LABORATORY OR OTHER NRTL LABEL.
- ### RECORD AS-BUILT DOCUMENTS

- RECORD DRAWINGS:
 - DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN A FULL SET OF CONTRACT DRAWINGS AND MARK THESE RECORD PRINTS TO SHOW THE ACTUAL INSTALLATION WHERE INSTALLATION VARIES FROM THAT SHOWN ON THE ORIGINAL DRAWINGS. ATTENTION TO INFORMATION ON CONCEALED ELEMENTS THAT WOULD BE DIFFICULT TO IDENTIFY OR MEASURE AND RECORD LATER. RECORD DATA AS SOON AS POSSIBLE AFTER OBTAINING IT. MARK RECORD DRAWINGS WITH RED INK.
 - PROVIDE SPECIFIC IDENTIFICATION OF THE FOLLOW, AS APPLICABLE:
 - DIMENSIONAL CHANGES TO DRAWINGS
 - REVISIONS TO DETAILS SHOWN ON DRAWINGS
 - FINAL LOCATIONS & DEPTHS OF INSTALLED UNDERGROUND UTILITIES
 - REVISIONS TO ROUTING OF PIPING, CONDUITS, DUCTWORK, ETC.
 - REVISIONS TO ELECTRICAL CIRCUITRY.
 - CHANGES MADE BY CHANGE ORDERS AND/OR CONSTRUCTION DIRECTIVES. INDICATE CHANGE ORDER NUMBERS, DIRECTIVE IDENTIFICATION NUMBERS AND/OR SIMILAR IDENTIFICATIONS.
 - DETAILS NOT ON ORIGINAL CONTRACTS.
 - REVISIONS TO EQUIPMENT SCHEDULES TO INDICATE ACTUAL MANUFACTURER AND MODEL NUMBER OF EQUIPMENT IF SUCH EQUIPMENT DEVIATED FROM THE SCHEDULED BASIS OF DESIGN.
- FINAL SUBMITTED AS-BUILT DRAWINGS SHALL INCLUDE AN ENTIRE SET OF PROPERLY MARKED CONTRACT DRAWINGS, AS PER ABOVE, WITH EACH SHEET CLEARLY MARKED WITH THE CONTRACTORS NAME, DATE AND "AS-BUILT DRAWINGS".

CLOSEOUT

- AT THE COMPLETION OF WORK, PROVIDE THE OWNER WITH TWO (2) SEPARATE INSTRUCTIONAL SESSIONS TO EMPLOYEES FOR EACH SYSTEM INSTALLED AND THE OPERATION OF ALL EQUIPMENT. NOTIFY THE OWNER OF THE DATE OF EACH MEETING 2 WEEKS IN ADVANCE SO THE OWNER MAY ATTEND AND PROVIDE ATTENDING PERSONNEL WITH NECESSARY INFORMATION.
- UNCONDITIONALLY GUARANTEE IN WRITING ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY OWNER.
- AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUPPLY THE OWNER WITH AS-BUILT DOCUMENTATION, O&M MANUALS, COPIES OF EQUIPMENT WARRANTIES, WIRING DIAGRAMS AND NAMEPLATE DATA. (REFER TO TRADE SPECIFIC GENERAL NOTES FOR ADDITIONAL CLOSEOUT DOCUMENTATION REQUIREMENTS). PROVIDE THREE (3) HARD COPY SETS WITHIN A RIGID BINDER.

CUTTING, PATCHING, AND PROTECTION

- CUTTING & PATCHING
 - CUT AND PATCH WALLS, CEILINGS, FLOORS AND OTHER ASSEMBLIES AND SURFACES AS REQUIRED TO PREPARE FOR THE REMOVAL WORK. RESTORE ALL SURFACES TO MATCH EXISTING. DO NOT CUT STRUCTURAL MEMBERS.
- MAINTAIN INTEGRITY OF ANY FIRE-RATED WALLS, FLOORS OR CEILINGS PENETRATED BY EQUIPMENT, CONDUIT, WIRING, PIPING, ETC. SEAL SUCH PENETRATIONS USING APPROVED UL-LISTED PRODUCTS AND METHODS TO MAINTAIN FIRE RATING.

SUBMITTALS & SHOP DRAWINGS

- PREPARE AND SUBMIT A SUBMITTAL SCHEDULE WHICH SHALL INCLUDE A LIST OF ALL SUBMITTALS TO BE SUBMITTED AND INDICATE THE PRODUCT MANUFACTURER, MODEL, AND DATE THE INFORMATION WILL BE SUBMITTED TO THE ENGINEER.
- AFTER ACCEPTANCE OF THE SUBMITTAL SCHEDULE, SUBMIT SHOP DRAWINGS AND SUBMITTALS AND OBTAIN ACCEPTANCE OF THE ENGINEER BEFORE ANY EQUIPMENT IS ORDERED OR WORK IS COMMENCED.
 - SUBMITTALS MAY EITHER BE SUBMITTED VIA MAIL AS PRINTED HARD COPIES OR VIA EMAIL AS DIGITAL FILES (PDF). IF HARD COPIES ARE PROVIDED, SUBMIT THREE (3) COPIES. IF DIGITAL FILES ARE PROVIDED, SUBMIT ONE (1) COPY FOR THEIR FILE AND RETURN TWO (2) COPIES WITH REVIEW COMMENTS.
 - SUBMITTALS SHALL BE IN THE FORM OF CLEARLY LEGIBLE MANUFACTURER'S CATALOGS, CAD-GENERATED DRAWINGS, PAMPHLETS, TECHNICAL DATA, TEST INFORMATION, AND/OR INSTALLATION INSTRUCTIONS. CLEARLY INDICATE THE LOCATION, SERVICE AND FUNCTION OF EACH PARTICULAR ITEM. IDENTIFICATION SHALL BE CLEARLY MADE WITH SPECIFIC MODEL NUMBERS HIGHLIGHTED AND ACCESSORIES HIGHLIGHTED.
 - SUBMITTALS SHALL BE COMPLETELY REFERENCED AND IDENTIFIED, DESCRIPTIVE INFORMATION AND DATA SHALL BE COMPLETE. SUBMITTALS WHICH ONLY SHOW PARTIAL OR GENERAL INFORMATION WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR RESUBMISSION.
 - SHOP DRAWINGS AND SUBMITTALS WHICH ARE PREPARED BY SUB-CONTRACTORS AND VENDORS SHALL BE CHECKED AND COORDINATED BY THE CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER. CONTRACTOR SHALL CHECK THESE DRAWINGS AND SUBMITTALS WITH RESPECT TO MEASUREMENTS, MATERIALS, IDENTIFICATIONS, AND DETAILS SO AS TO MAKE CERTAIN THAT THEY CONFORM TO THE INTENT OF THE CONTRACT DOCUMENTS AND MAKE ANY CORRECTIONS BEFORE SUBMISSION TO THE ENGINEER.
 - CONTRACTOR SHALL INFORM THE DESIGN PROFESSIONAL, IN WRITING, OF ANY DEVIATIONS IN THE SHOP DRAWINGS AND SUBMITTALS WHERE THE SUBMITTED ITEM DEVIATES FROM THE CONTRACT DOCUMENTS. THIS WRITTEN ADVISORY SHALL ACCOMPANY THE INITIAL SUBMITTAL AND SHALL STATE THE REASONS FOR THE DEVIATIONS.
 - THE DESIGN PROFESSIONAL WILL ONLY ACCEPT AN INDIVIDUAL SUBMITTAL PACKAGE AFTER ALL ITEMS WITHIN THAT PACKAGE ARE REVIEWED, CORRECTED AND ACCEPTED FOR USE. PARTIAL ACCEPTANCE OF VARIOUS ITEMS COMBINED WITHIN A SINGLE SUBMITTAL PACKAGE WILL NOT BE MADE. THE CONTRACTOR IS ENCOURAGED TO PROVIDE INDIVIDUAL SUBMITTAL PACKAGES FOR EACH TYPE OF SYSTEM WHICH IS TO BE CONSIDERED FOR USE RATHER THAN PROVIDING A SINGLE SUBMITTAL PACKAGE THAT CONTAINS MULTIPLE ITEMS. THE DESIGN PROFESSIONAL SHALL NOT ASSUME ANY RESPONSIBILITY FOR DELAYS IN ORDERING EQUIPMENT WHEN MULTI-ITEMED SUBMITTAL PACKAGES ARE PROVIDED AND ACCEPTANCE OF PORTIONS OF THE SUBMITTAL PACKAGE POTENTIALLY DELAY ACCEPTANCE OF OTHER PORTIONS OF THAT SAME PACKAGE.
- THE DESIGN PROFESSIONAL WILL CHECK THE SHOP DRAWINGS AND SUBMITTALS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE ARCHITECTS/ENGINEERS ACCEPTANCE OF THE SHOP DRAWINGS AND SUBMITTALS DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING ALL SPECIFIC REQUIREMENTS OF THE EQUIPMENT AND INSTALLATION NOT LISTED IN THE SUBMITTAL, BUT REQUIRED BY THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DIMENSIONS THAT ARE TO BE CONFIRMED AT THE JOB SITE. FOR COORDINATION IN THE ORDERING AND ASSEMBLY OF SYSTEMS AND EQUIPMENT, FOR INFORMATION THAT PERTAINS SOLELY TO FABRICATION PROCESSES OR TO TECHNIQUES OF CONSTRUCTION, AND FOR COORDINATION OF THE WORK OF ALL TRADES.
- THE FOLLOWING SPECIFIC ITEMS AND INFORMATION SHALL BE INCLUDED IN ALL SHOP DRAWINGS AND SUBMITTALS:
 - CAPACITY AND PERFORMANCE DATA AS SHOWN ON THE EQUIPMENT SCHEDULES OR AS SPECIFIED.
 - COMPLETE DESCRIPTIVE DATA ON THE SYSTEMS, EQUIPMENT AND SPECIALTIES WHICH ARE SPECIFIED, SCHEDULED, OR SHOWN, SO THAT COMPLIANCE WITH THE CONTRACT DOCUMENTS CAN BE DETERMINED.
 - ELECTRICAL WIRING DIAGRAMS (POWER AND CONTROL) FOR ELECTRIC MOTOR DRIVEN EQUIPMENT.
 - SUPPLEMENTAL SUPPORT SYSTEMS/STRUCTURES INCLUDING EQUIPMENT DESCRIPTION, INFORMATION AND DETAILS.
 - DIMENSIONAL DATA.
 - IN ADDITION TO THE EQUIPMENT REFERENCED ABOVE, THE FOLLOWING PROJECT-SPECIFIC ITEMS SHALL BE PROVIDED WITH SHOP DRAWINGS AND/OR SUBMITTALS.
 - FIRESTOPPING SYSTEMS, WITH DETAILS, THAT WILL MEET THE UL RATING OF THE ASSEMBLY BEING PENETRATED.
 - SYSTEMS AND EQUIPMENT WHICH HAVE BEEN INSTALLED WITHOUT HAVING BEEN ACCEPTED BY THE DESIGN PROFESSIONAL MAY BE REJECTED AND SHALL BE REPLACED WITH PRODUCTS THAT ARE ACCEPTABLE.
 - AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUPPLY THE OWNER WITH AS-BUILT DOCUMENTATION, O&M MANUALS, COPIES OF EQUIPMENT WARRANTIES, WIRING DIAGRAMS AND NAMEPLATE DATA. (REFER TO MECHANICAL, ELECTRICAL AND/OR PLUMBING GENERAL NOTES FOR ADDITIONAL CLOSEOUT DOCUMENTATION REQUIREMENTS). PROVIDE THREE (3) HARD COPY SETS WITHIN A RIGID BINDER.

GENERAL DEMOLITION NOTES

- THE DRAWINGS ARE DRAWN TO GENERALLY INDICATE THE DEMOLITION REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION, BUT ARE NOT ALL INCLUSIVE. THE FULL EXTENT OF DEMOLITION WORK MUST BE DETERMINED IN THE FIELD BASED ON THE EXISTING CONDITIONS AND AS REQUIRED FOR THE SATISFACTORY PROVISION AND PROPER EXECUTION OF THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DEMOLITION AND REMOVAL OF ALL EXISTING MATERIALS AND SYSTEMS INDICATED FOR REMOVAL. FURTHERMORE THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ASSOCIATED CUTTING, REMOVAL, PATCHING, AND REPAIR OF EXISTING FLOORS, WALLS, CEILINGS, ROOF CONSTRUCTION, AND SITE WORK.
- MATERIALS RESULTING FROM DEMOLITION AND REMOVAL OPERATIONS SHALL BE COMPLETELY REMOVED FROM THE SITE, UNLESS NOTED OTHERWISE ON THE DRAWINGS OR REQUESTED BY THE OWNER, AND SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE MATERIAL SHALL BE RECYCLED OR DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
- STORAGE OF DEBRIS AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS SHALL NOT BE PERMITTED TO BE STORED ON SITE, UNLESS COORDINATE WITH THE ATTENDING PERSONNEL WITH THE DESIGN PROFESSIONAL. IN AREAS WITH EXPOSED STRUCTURE, EMT CONDUIT SHALL BE USED AND SHALL BE FINISHED TO MATCH ADJACENT SURFACES.
- PROVIDE WIRING AND FINAL ELECTRICAL CONNECTIONS, INCLUDING ANY DISCONNECTS REQUIRED BY THE N.E.C., TO ALL EQUIPMENT FURNISHED UNDER OTHER TRADE SECTIONS. PROVIDE A COMPLETE SYSTEM READY TO OPERATE. WHERE FUSED OR NON-FUSED SAFETY SWITCHES ARE REQUIRED, THEY SHALL BE HEAVY DUTY.
- RUN EMERGENCY POWER CONDUCTORS IN SEPARATE RACEWAY FROM NORMAL POWER CONDUCTORS.
- ALL LOW VOLTAGE "DC" WIRING TO ANY EMERGENCY HEAD OR EXIT FIXTURE SHALL BE A MINIMUM #10 AWG.
- SPLICE CIRCUIT WIRES AS REQUIRED TO MAINTAIN INTEGRITY OF PORTIONS OF EXISTING CIRCUITS REMAINING AFTER THE RENOVATIONS. ALL SPLICES SHALL BE IN JUNCTION BOXES.
- PROVIDE COMPLETE GROUNDING SYSTEM, PER APPLICABLE SECTIONS OF NEC, ARTICLE 250.

PANELBOARDS

- FOR CIRCUITS OTHER THAN SHOWN ON PLANS, IF REQUIRED, USE EXISTING AVAILABLE. SPARE CIRCUIT BREAKERS IN EXISTING PANELBOARDS, OR PROVIDE NEW CIRCUIT BREAKER(S) AS REQUIRED IN EXISTING AVAILABLE SPACES.

LIGHTING

- SUPPORT LUMINAIRES DIRECTLY FROM BUILDING STRUCTURE. NO LUMINAIRE SHALL DEFEND TO A SUSPENDED GRID CEILING FOR SUPPORTS. PROVIDE MINIMUM OF (2) SUPPORT WIRES FOR LAY-IN GRID FIXTURES LOCATED AT DIAGONAL CORNERS. PROVIDE ADDITIONAL FRAMING, UNISTRUT OR SUPPORTS REQUIRED TO INSTALL OR SUPPORT LUMINAIRES FROM BUILDING STRUCTURE. STRAPS, CABLES OR CHAINS FOR SUSPENDED FIXTURES. CONFIRM LUMINAIRE WEIGHT AND MOUNTING REQUIREMENTS PRIOR TO EQUIPMENT OF MOUNTING BOX AND/OR ANY ADDITIONALLY REQUIRED SUPPORTS.
- DO NOT REMOVE ANY PROTECTIVE COVERING FROM LUMINAIRES UNTIL ALL CONSTRUCTION IS COMPLETE AND AREA IS FREE FROM DIRT AND DUST.
- ANY SUBSTITUTIONS OF LUMINAIRES AND/OR BALLASTS/DRIVERS AND/OR LAMPS/LED'S MAY ADVERSELY AFFECT LIGHTING PERFORMANCE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO GUARANTEE THE PERFORMANCE OF ANY ITEMS USED OTHER THAN THOSE SPECIFIED. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION. MANUFACTURERS MAY OFFER EQUIVALENT LUMINAIRES, PROVIDED THE PHOTOMETRICS, APPEARANCE AND PERFORMANCE MATCH THE SPECIFIED LUMINAIRES. PHOTOMETRIC PERFORMANCE OF SUBSTITUTIONS SHALL BE PROVIDED.
- PROVIDE LUMINAIRES WITH INTEGRAL DISCONNECT AS PER NEC 410.130.G.

WIRING DEVICES

- DUPLEX RECEPTACLES: 20AMP/125VOLT, NEMAS-20R UNLESS NOTED, PASS & SEYMOUR CRBS362. PROVIDE SPECIAL TYPES WHERE INDICATED (GF, TAMPER RESISTANT, USB, ISOLATED GROUND, TVSS, ETC.)
- WIRING DEVICES SHALL BE NYLON BODY WITH MATCHING NYLON COVER PLATE, COLOR SELECTED BY DESIGN PROFESSIONAL.

FIRE ALARM

- PROVIDE NEW EQUIPMENT WHERE INDICATED, FULLY INTEGRATED WITH THE EXISTING BUILDING FIRE ALARM SYSTEM.
 - NEW FIRE ALARM DEVICES IN THE AREAS BEING RENOVATED SHALL CONFORM TO THE LATEST NFPA AND ADA REQUIREMENTS. PROVIDE ADDITIONAL POWER SUPPLIES AND ADDITIONAL ZONE MODULES, AS REQUIRED TO ACCOMMODATE NEW ALARM DEVICES.
 - WHERE APPLICABLE, MAINTAIN ALL EXISTING DEVICES IN OPERATION UNTIL NEW DEVICES AND SYSTEM ARE OPERATIONAL.
 - PROVIDE ALL EQUIPMENT NECESSARY FOR THE PROPER OPERATION OF THE SYSTEM WHETHER OR NOT DESCRIBED HEREIN OR SHOWN ON THE DRAWINGS.
 - FIRE ALARM PRODUCTS AND TECHNICAL SUPERVISION SHALL BE PROVIDED BY THE EXISTING SYSTEM MANUFACTURER/VENDOR.
 - SUBMIT SIGNED AND SEALED (NICET CERTIFIED) RISER DIAGRAM DRAWINGS, BATTERY CALCULATIONS AND DEVICE SHOP DRAWINGS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ) PRIOR TO THE START OF ANY WORK. CONTRACTOR SHALL REVISE AND RESUBMIT TO AHJ AS MAY BE REQUIRED TO OBTAIN APPROVAL TO BEGIN INSTALLATION.
 - FURNISH ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THE FIRE DETECTION SYSTEM. SYSTEM SHALL BE WIRED, CONNECTED, TESTED, AND LEFT IN FIRST CLASS OPERATING CONDITION.
 - VERIFY AT THE SITE THE EXACT COMPONENTS REQUIRED, AND PROVIDE ALL NECESSARY HARDWARE/SOFTWARE AND INTERCONNECTIONS WITH THE EXISTING FIRE ALARM SYSTEM.
 - PROVIDE MANUFACTURERS TECHNICAL SUPERVISION OR SPECIAL COMPONENTS REQUIRED TO TEST AND PROGRAM SYSTEM FOR PROPER OPERATION.

ELECTRICAL GENERAL NOTES

IDENTIFICATION & LABELING

- INSTALL WIRING WITH COLOR CODING TO IDENTIFY CONDUCTORS BY VOLTAGE SYSTEM AND PHASE. PROVIDE LABELS TO IDENTIFY CIRCUIT NUMBERS.
- LABEL ALL DEVICES (SWITCHES, RECEPTACLES, CONTROL STATIONS, ETC.), ON COVER, WITH PANEL AND CIRCUIT NUMBER DESIGNATION. LABEL PANELBOARD DISCREPANCY WITH CIRCUIT DESCRIPTION AND AREA SERVED. LABEL JUNCTION BOXES WITH CIRCUIT SOURCE AND DESTINATION.
- LABEL EACH PANELBOARD, SWITCHBOARD, MCC, MOTOR STARTER WITH AN ENGRAVED ADHESIVE-BAKED PLASTIC LAMINATE LABEL. WHITE BACKGROUND WITH 1/4" HIGH BLACK LETTERS. IDENTIFY USING SAME TAG AS LISTED ON DRAWINGS AND INCLUDE VOLTAGE/ PHASE.
- WHERE CIRCUIT BREAKERS OR FUSES ARE APPLIED IN COMPLIANCE WITH THE SERIES COMBINATION RATINGS MARKED ON THE EQUIPMENT BY THE MANUFACTURER, THE EQUIPMENT ENCLOSURE(S) SHALL BE LEGIBLY MARKED TO INDICATE THE EQUIPMENT HAS BEEN APPLIED WITH A SERIES COMBINATION RATING.
- ARC-FLASH (NEC 110-16): ALL ELECTRICAL EQUIPMENT THAT IS LIKELY TO BE ENERGIZED SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. ARC FLASH WARNING LABEL SHALL BE ADHESIVE-APPLIED PRINTED POLYESTER OR VINYL, WHITE BACKGROUND WITH COLORED IMPRINT, 2" X 4" MINIMUM SIZE, TO READ: "WARNING - ARC FLASH & SHOCK HAZARD - APPROPRIATE PERSONAL PROTECTION EQUIPMENT REQUIRED".

WIRING METHODS

- WIRING METHODS SHALL CONSIST OF 600V INSULATED COPPER CONDUCTORS, #12 AWG MINIMUM AND INCLUDE THE FOLLOWING OPTIONS, EACH IN ACCORDANCE WITH N.E.C. APPLICATIONS:
 - TYPE "MC" CABLE, MINIMUM 12/2 - 4 GROUND IN CONCEALED SPACE.
 - 1/2" THIN/THIN INSULATED CONDUCTORS IN ELECTRICAL METALLIC TUBING, INDOORS.
- ALL CIRCUITS SHALL INCLUDE A SEPARATE NEUTRAL CONDUCTOR AND GREEN GROUND CONDUCTOR, UNLESS OTHERWISE INDICATED.
- ALL CONDUIT SHALL BE 3/4" OR LARGER.
- PROVIDE PULL BOXES, SIZE AND QUANTITY AS REQUIRED, SO THAT THERE ARE NO MORE THAN (3) CONSECUTIVE 90° ELBOWS IN A CONDUIT RUN. COORDINATE CIRCUIT ROUTING TO AVOID NEW AND/OR EXISTING EQUIPMENT, PIPING, DUCTWORK, STRUCTURAL MEMBERS, AND OTHER OBSTRUCTIONS.
- ALL WIRING SYSTEMS SHALL BE RUN CONCEALED ABOVE CEILINGS, IN WALLS OR BELOW FLOORS EXCEPT WHERE NOTED. ALL WIRING DEVICES SHALL BE INSTALLED RECESSED IN WALLS, FLOORS OR CEILINGS. WHERE IT IS NECESSARY TO BUILD UP STRUCTURES TO CONCEAL DEVICES AND WIRING, SURFACE RACEWAY MAY BE USED, PROVIDED IT IS FINISHED TO MATCH ADJACENT SURFACES, AND WITH PRIOR APPROVAL OF THE DESIGN PROFESSIONAL. IN AREAS WITH EXPOSED STRUCTURE, EMT CONDUIT SHALL BE USED AND SHALL BE FINISHED TO MATCH ADJACENT SURFACES.
- PROVIDE WIRING AND FINAL ELECTRICAL CONNECTIONS, INCLUDING ANY DISCONNECTS REQUIRED BY THE N.E.C., TO ALL EQUIPMENT FURNISHED UNDER OTHER TRADE SECTIONS. PROVIDE A COMPLETE SYSTEM READY TO OPERATE. WHERE FUSED OR NON-FUSED SAFETY SWITCHES ARE REQUIRED, THEY SHALL BE HEAVY DUTY.
- RUN EMERGENCY POWER CONDUCTORS IN SEPARATE RACEWAY FROM NORMAL POWER CONDUCTORS.
- ALL LOW VOLTAGE "DC" WIRING TO ANY EMERGENCY HEAD OR EXIT FIXTURE SHALL BE A MINIMUM #10 AWG.
- SPLICE CIRCUIT WIRES AS REQUIRED TO MAINTAIN INTEGRITY OF PORTIONS OF EXISTING CIRCUITS REMAINING AFTER THE RENOVATIONS. ALL SPLICES SHALL BE IN JUNCTION BOXES.
- PROVIDE COMPLETE GROUNDING SYSTEM, PER APPLICABLE SECTIONS OF NEC, ARTICLE 250.

PANELBOARDS

- FOR CIRCUITS OTHER THAN SHOWN ON PLANS, IF REQUIRED, USE EXISTING AVAILABLE. SPARE CIRCUIT BREAKERS IN EXISTING PANELBOARDS, OR PROVIDE NEW CIRCUIT BREAKER(S) AS REQUIRED IN EXISTING AVAILABLE SPACES.

LIGHTING

- SUPPORT LUMINAIRES DIRECTLY FROM BUILDING STRUCTURE. NO LUMINAIRE SHALL DEFEND TO A SUSPENDED GRID CEILING FOR SUPPORTS. PROVIDE MINIMUM OF (2) SUPPORT WIRES FOR LAY-IN GRID FIXTURES LOCATED AT DIAGONAL CORNERS. PROVIDE ADDITIONAL FRAMING, UNISTRUT OR SUPPORTS REQUIRED TO INSTALL OR SUPPORT LUMINAIRES FROM BUILDING STRUCTURE. STRAPS, CABLES OR CHAINS FOR SUSPENDED FIXTURES. CONFIRM LUMINAIRE WEIGHT AND MOUNTING REQUIREMENTS PRIOR TO EQUIPMENT OF MOUNTING BOX AND/OR ANY ADDITIONALLY REQUIRED SUPPORTS.
- DO NOT REMOVE ANY PROTECTIVE COVERING FROM LUMINAIRES UNTIL ALL CONSTRUCTION IS COMPLETE AND AREA IS FREE FROM DIRT AND DUST.
- ANY SUBSTITUTIONS OF LUMINAIRES AND/OR BALLASTS/DRIVERS AND/OR LAMPS/LED'S MAY ADVERSELY AFFECT LIGHTING PERFORMANCE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO GUARANTEE THE PERFORMANCE OF ANY ITEMS USED OTHER THAN THOSE SPECIFIED. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION. MANUFACTURERS MAY OFFER EQUIVALENT LUMINAIRES, PROVIDED THE PHOTOMETRICS, APPEARANCE AND PERFORMANCE MATCH THE SPECIFIED LUMINAIRES. PHOTOMETRIC PERFORMANCE OF SUBSTITUTIONS SHALL BE PROVIDED.
- PROVIDE LUMINAIRES WITH INTEGRAL DISCONNECT AS PER NEC 410.130.G.

WIRING DEVICES

- DUPLEX RECEPTACLES: 20AMP/125VOLT, NEMAS-20R UNLESS NOTED, PASS & SEYMOUR CRBS362. PROVIDE SPECIAL TYPES WHERE INDICATED (GF, TAMPER RESISTANT, USB, ISOLATED GROUND, TVSS, ETC.)
- WIRING DEVICES SHALL BE NYLON BODY WITH MATCHING NYLON COVER PLATE, COLOR SELECTED BY DESIGN PROFESSIONAL.

FIRE ALARM

- PROVIDE NEW EQUIPMENT WHERE INDICATED, FULLY INTEGRATED WITH THE EXISTING BUILDING FIRE ALARM SYSTEM.
 - NEW FIRE ALARM DEVICES IN THE AREAS BEING RENOVATED SHALL CONFORM TO THE LATEST NFPA AND ADA REQUIREMENTS. PROVIDE ADDITIONAL POWER SUPPLIES AND ADDITIONAL ZONE MODULES, AS REQUIRED TO ACCOMMODATE NEW ALARM DEVICES.
 - WHERE APPLICABLE, MAINTAIN ALL EXISTING DEVICES IN OPERATION UNTIL NEW DEVICES AND SYSTEM ARE OPERATIONAL.
 - PROVIDE ALL EQUIPMENT NECESSARY FOR THE PROPER OPERATION OF THE SYSTEM WHETHER OR NOT DESCRIBED HEREIN OR SHOWN ON THE DRAWINGS.
 - FIRE ALARM PRODUCTS AND TECHNICAL SUPERVISION SHALL BE PROVIDED BY THE EXISTING SYSTEM MANUFACTURER/VENDOR.
 - SUBMIT SIGNED AND SEALED (NICET CERTIFIED) RISER DIAGRAM DRAWINGS, BATTERY CALCULATIONS AND DEVICE SHOP DRAWINGS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ) PRIOR TO THE START OF ANY WORK. CONTRACTOR SHALL REVISE AND RESUBMIT TO AHJ AS MAY BE REQUIRED TO OBTAIN APPROVAL TO BEGIN INSTALLATION.
 - FURNISH ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THE FIRE DETECTION SYSTEM. SYSTEM SHALL BE WIRED, CONNECTED, TESTED, AND LEFT IN FIRST CLASS OPERATING CONDITION.
 - VERIFY AT THE SITE THE EXACT COMPONENTS REQUIRED, AND PROVIDE ALL NECESSARY HARDWARE/SOFTWARE AND INTERCONNECTIONS WITH THE EXISTING FIRE ALARM SYSTEM.
 - PROVIDE MANUFACTURERS TECHNICAL SUPERVISION OR SPECIAL COMPONENTS REQUIRED TO TEST AND PROGRAM SYSTEM FOR PROPER OPERATION.

ABBREVIATIONS

A	AMPERES
AF	ABOVE FINISHED FLOOR
C	CONDUIT
CT	COUNTER HEIGHT - 44" AFF CT (UNLESS OTHERWISE NOTED)
EMT	ELECTRICAL METALLIC TUBING
GF	GROUND
GRND	GROUND
GRND	GROUND
IF	GROUND FAULT INTERRUPTER
KVA	KILOVOLT-AMPERE
KWH	KILOWATT
MIN	MINIMUM
N	NEUTRAL
PH	PHASE
P	POLE
V	VOLTS
WP	WEATHERPROOF

DATA & TELEPHONE

WAP	WIRELESS ACCESS POINT
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PAGING & INTERCOM

CS	CEILING SPEAKER
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FIRE ALARM SYSTEM

IN	INITIATING DEVICES
MP	MANUAL PULL STATION
NA	NOTIFICATION APPLIANCES
HM	HORN/STROBE WALL MOUNTED

WIRING DEVICES

R	SINGLE RECEPTACLE
R2	DUPLEX RECEPTACLE

LIGHTING

RE	EXISTING TO BE REMOVED
A	UPPERCASE SUBSCRIPT INDICATES LUMINAIRE TYPE
E	EXIT FIXTURE
EM	EMERGENCY LUMINAIRE INDICATOR

LIGHTING CONTROL COMPONENTS

\$	LINE VOLTAGE SINGLE POLE SWITCH
CS	DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR
LC	ON/OFF TOGGLE
PP	POWER/RELAY PACK

MISCELLANEOUS

DA	DRAWING NOTE INDICATOR
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20 N. Dougherty Avenue
Somerville, NJ 08876
t 908.722.2300
f 908.722.7201

usaarchitects.com

Paul R. Swartz, AIA
Armand T. Christopher Jr., AIA
Peter C. Campasano, AIA
Andrew P. Adornato, AIA

Susan M. Dehart, AIA
James McAffiffe, AIA
Marlene Borusso, AIA



Engineered Systems and Building Consultants

804 Seven Bridges Road, Room 209
East Stroudsburg, PA 18301

T: 570-421-2025
msh@strunk-albert.com
www.strunk-albert.com

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Christopher T. Strunk, P.E.
PA P.E. # 080014 NJ P.E. # 24 GE 0557000
TN P.E. # 0207041 CT P.E. # 24316
SC P.E. # 39967 MD P.E. # 58301
CO P.E. # 69950 KY P.E. # 35456

JRP JRP MSH
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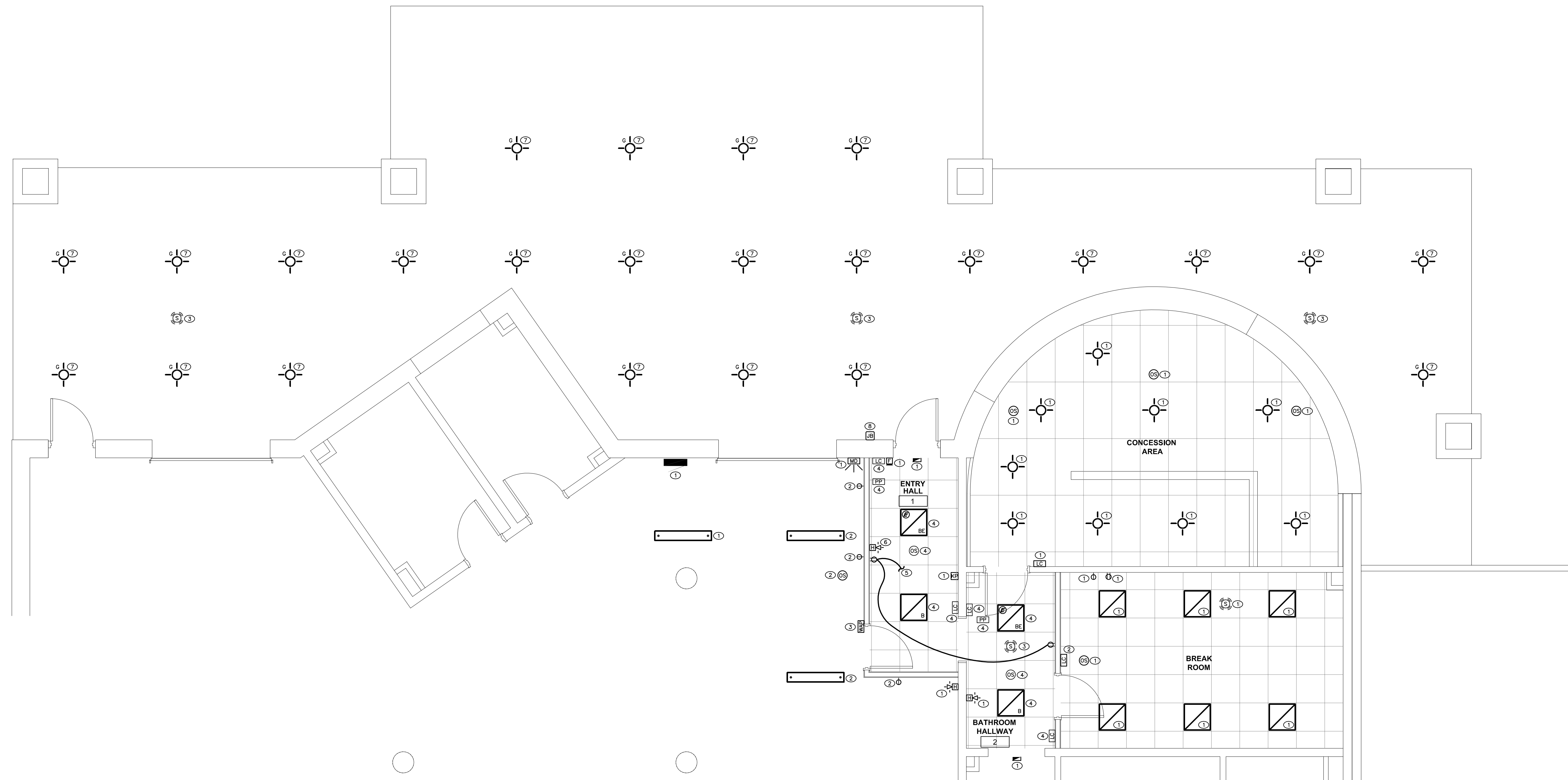
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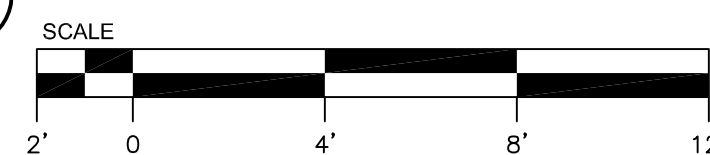
DRAWING NOTES - NEW

(GENERAL NOTE: MAINTAIN CIRCUIT CONTINUITY TO ALL EXISTING ITEMS THAT REMAIN)

- ① EXISTING ITEM, SHOWN FOR COORDINATION PURPOSES.
- ② NEW LOCATION OF EXISTING ITEM: REINSTALL EXISTING ITEM IN NEW LOCATION AS SHOWN. PROVIDE CONDUIT AND WIRING, SIZES, TYPES AND QUANTITIES TO MATCH EXISTING, FROM JUNCTION BOX, PROVIDED AS PER DEMOLITION NOTE BY SYMBOL, TO NEW LOCATION AND RECONNECT AS REQUIRED.
- ③ NEW LOCATION OF EXISTING ITEM: REINSTALL EXISTING ITEM IN LOCATION AS SHOWN, SPLICE/EXTEND EXISTING CONDUIT AND WIRING, REMAINING FROM REMOVAL OF EXISTING ITEM, TO LOCATION AND RECONNECT AS REQUIRED.
- ④ NEW LIGHTING: PROVIDE NEW LUMINAIRES, CONTROLS AND CONTROL COMPONENTS AS INDICATED. PROVIDE 3/4" CONDUIT WITH (2) #12, (1) #12 GRND FROM NEW LIGHTING AND CONTROLS BACK TO LINE SIDE OF BRANCH CIRCUIT SERVING LIGHTING IN ADJACENT AREA. REFER TO LIGHTING CONTROL WIRING DIAGRAM FOR ADDITIONAL INFORMATION.
- ⑤ NEW RECEPTACLE: PROVIDE NEW RECEPTACLES AS INDICATED. PROVIDE 3/4" CONDUIT WITH (2) #12, (1) #12 GRND BETWEEN RECEPTACLES AND BACK TO NEAREST EXISTING 120/208 VOLT PANEL. PROVIDE NEW 20 AMP, 1 POLE, 120 VOLT CIRCUIT BREAKER, COMPATIBLE WITH EXISTING EQUIPMENT, IN EXISTING PANEL. IF SPACE IS LIMITED, PROVIDE TANDEM CIRCUIT BREAKER AND REARRANGE EXISTING CIRCUITS AS REQUIRED. RELABEL PANEL DIRECTORY AS REQUIRED.
- ⑥ NEW FIRE ALARM DEVICE: PROVIDE NEW FIRE ALARM NOTIFICATION DEVICE COMPATIBLE WITH EXISTING FIRE ALARM EQUIPMENT. PROVIDE NEW WIRING FROM NEW DEVICE TO EXISTING FIRE ALARM CONTROL PANEL. PROVIDE ADDITIONAL POWER SUPPLY IF/AS REQUIRED FOR NEW DEVICES. COORDINATE ALL WORK WITH PRESENT FIRE ALARM SYSTEM SERVICE COMPANY.
- ⑦ NEW LIGHTING: PROVIDE NEW LUMINAIRE AS INDICATED. CONNECT NEW LUMINAIRE TO EXISTING CONDUIT AND WIRING REMAINING FROM REMOVAL OF EXISTING LUMINAIRE.
- ⑧ HEAT TRACE: PROVIDE JUNCTION BOX FOR CONNECTION TO DRAIN PIPING HEAT TRACE. PROVIDE 3/4" CONDUIT WITH (2) #12, (1) #12 GRND BETWEEN JUNCTION BOXES AND BACK TO NEAREST EXISTING 120/208 VOLT PANEL. PROVIDE NEW 20 AMP, 1 POLE, 120 VOLT CIRCUIT BREAKER, COMPATIBLE WITH EXISTING EQUIPMENT, IN EXISTING PANEL. IF SPACE IS LIMITED, PROVIDE TANDEM CIRCUIT BREAKER AND REARRANGE EXISTING CIRCUITS AS REQUIRED. RELABEL PANEL DIRECTORY AS REQUIRED. PROVIDE QUANTITY OF JUNCTION BOXES, BRANCH CIRCUIT CONDUIT AND WIRING AND CIRCUIT BREAKERS AS REQUIRED TO CONNECT A MAXIMUM OF 250' OF HEAT TRACE TO A SINGLE BRANCH CIRCUIT AND CIRCUIT BREAKER. EXACT QUANTITY OF CIRCUITS SHALL BE DETERMINED BY CONTRACTOR IN FIELD BASED ON DRAINAGE PIPING ROUTING AND LENGTHS OF HEAT TRACING BEING PROVIDED.
- ⑨ FLOOR BOX: DISCONNECT AND REMOVE EXISTING FLOOR BOX. EXISTING POWER CONDUIT AND WIRING AND COMMUNICATIONS CONDUIT AND WIRING SHALL REMAIN FOR CONNECTION TO NEW FLOOR BOX. PROVIDE NEW FLOOR BOX AS INDICATED IN DETAIL. CONNECT EXISTING POWER CONDUIT AND WIRING TO NEW FLOOR BOX. CONNECT EXISTING COMMUNICATIONS CONDUITS AND WIRING TO NEW COMMUNICATIONS DEVICES IN FLOOR BOX AS REQUIRED.



1 LOWER LEVEL PLAN - ELECTRICAL



• ALL EMERGENCY BATTERY UNITS, INTERNAL/REMOTE EMERGENCY BATTERY PACK AND EXIT LIGHTS SHALL BE CONNECTED TO THE CIRCUIT SERVING THE NORMAL LIGHTING IN THE AREA, AND CONNECTED AHEAD OF ANY LOCAL CONTROLS. ALL WIRING AND INSTALLATION SHALL COMPLY WITH NEC ARTICLE 700.12(F)(2).



20 N. Doughty Avenue
Somerville, NJ 08876
t 908.722.2300
f 908.722.7201

usaarchitects.com

Paul R. Swartz, AIA Susan M. Dehart, AIA
Armand T. Christopher Jr., AIA James McAuliffe, AIA
Peter C. Campisano, AIA Marlene Borruso, AIA
Andrew P. Adornato, AIA



Strunk-Albert Engineering
Engineered Systems and Building Consultants

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804 Seven Bridge Road, Route 209
East Stroudsburg, PA 18301
T: 570-421-2025
mail@strunk-albert.com
www.strunk-albert.com

Christopher T. Strunk, P.E.
PA P.E. # 080014 NJ P.E. # 24 CE 05547000
NY P.E. # 00079-01 DE P.E. # 24214
TN P.E. # 123248 CT P.E. # 14322
SC P.E. # 39967 MD P.E. # 58391
CO P.E. # 60950 KY P.E. # 35456

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No.	Date	Issue or Revision
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1.	09.21.23	ISSUED FOR BID

Drawing Title	
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Drawn By	Checked By
JRP	MSH

