

**ADDENDUM 001**

**TO THE**

**DLR Group**  
**Architecture Engineering Design**  
33 East 33<sup>rd</sup> Street, Fourth Floor  
New York, New York 10016  
Telephone 913-897-7811

PROJECT MANUAL AND DRAWINGS

FOR

December 9, 2022

REBID DUTCHESS STADIUM NEW LEFT FIELD CLUBHOUSE,  
SEATING BOWL, & RESTROOM BUILDING  
FISHKILL, NEW YORK

DLR Group Project No. 57-21113-00

FOR COMBINED CONTRACT

NOTICE TO BIDDERS: The Construction Manager's & Owner's revisions to the Bid Documents are attached.

NOTICE TO BIDDERS: The Project Manual and Drawings for the above referenced project are hereby amended as follows:

**PROJECT MANUAL**

- ITEM NO. 1    SECTION 000110-TABLE OF CONTENTS
  - a.    Section 000110 is revised and reissued with Addendum 001 dated December 9, 2022.
  
- ITEM NO. 2    SECTION 011000-SUMMARY
  - a.    Add Section 011000 issued with Addendum 001 dated December 9, 2022.
  
- ITEM NO. 3    SECTION 012300-ALTERNATES
  - a.    Section 012300 is revised and reissued with Addendum 001 dated December 9, 2022.
  
- ITEM NO. 4    SECTION 033300-ARCHITECTURAL CONCRETE
  - a.    Section 03300 is issued with Addendum 001 dated December 9, 2022.
  
- ITEM NO. 5    SECTION 057500-DECORATIVE FORMED METAL
  - a.    Section 057500 is revised and reissued with Addendum 001 dated December 9, 2022.
  
- ITEM NO. 6    SECTION 064116-PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS
  - a.    Section 064116 is revised and reissued with Addendum 001 dated December 9, 2022.
  
- ITEM NO. 7    SECTION 064216-FLUSH WOOD PANELING
  - a.    Section 064216 is revised and reissued with Addendum 001 dated December 9, 2022.
  
- ITEM NO. 8    SECTION 093013-CERAMIC TILING
  - a.    Section 093013 is issued with Addendum 001 dated December 9, 2022.
  
- ITEM NO. 9    SECTION 095123-ACOUSTICAL TILE CEILINGS
  - a.    Section 095123 is revised and reissued with Addendum 001 dated December 9, 2022.

- ITEM NO. 10 SECTION 096513-RESILIENT BASE AND ACCESSORIES  
a. Section 096513 is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 11 SECTION 096519-RESILIENT TILE FLOORING  
a. Section 096519 is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 12 SECTION 096566-RESILIENT ATHLETIC FLOORING  
a. Section 096566 is issued with Addendum 001 dated December 9, 2022.
- ITEM NO. 13 SECTION 096723-RESINOUS FLOORING  
a. Section 096723 is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 14 SECTION 096813-TILE CARPETING  
a. Section 096813 is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 15 SECTION 099123-INTERIOR PAINTING  
a. Section 099123 is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 16 SECTION 102800-TOILET BATH AND LAUNDRY ACCESSORIES  
a. Section 102800 is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 17 SECTION 123661.16-SOLID SURFACING COUNTERTOPS  
a. Section 123661.16 is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 18 SECTION 123661.19-QUARTZ AGGLOMERATE COUNTERTOPS  
a. Section 123661.19 is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 19 SECTION 283111-FIRE-ALARM SYSTEMS  
a. Section 283111 is revised and reissued with Addendum 001 dated December 9, 2022

## **DRAWINGS**

- ITEM NO. 20 SHEET G0.01.ii - INDEX OF DRAWINGS  
a. Sheet G0.01.ii is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 21 SHEET G1.0.ii – CONSTRUCTION PHASING PLAN  
a. Sheet G1.0.ii is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 22 SHEET AS1.1.ii – ARCHITECTURAL SITE PLAN  
a. Sheet AS1.1.ii is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 23 SHEET AS1.1.ii-ALT – ARCHITECTURAL SITE PLAN - ALTERNATES  
a. Sheet AS1.1.ii is revised and reissued with Addendum 001 dated December 9, 2022.
- ITEM NO. 24 SHEET AS2.1.ii – FIELD WALL & FENCING PLAN  
a. Sheet AS2.1.ii is issued with Addendum 001 dated December 9, 2022.
- ITEM NO. 25 SHEET A1.1A.ii – FLOOR PLAN - AREA A - LEVEL 1  
a. Sheet A1.1A.ii is revised and reissued with Addendum 001 dated December 9, 2022.

ITEM NO. 26 SHEET A4.2.ii – EXTERIOR ELEVATIONS

- a. Sheet A4.2.ii is revised and reissued with Addendum 001 dated December 9, 2022.

ITEM NO. 27 SHEET A9.10.ii – VERTICAL CIRCULATION DETAILS

- a. Sheet A9.10.ii is revised and reissued with Addendum 001 dated December 9, 2022.

ITEM NO. 28 SHEET ES1.1ii – ELECTRICAL SITE PLAN

- a. Sheet ES1.1ii is revised and reissued with Addendum 001 dated December 9, 2022.

END OF ADDENDUM 001

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REBID DUTCHESS STADIUM NEW LEFT FIELD CLUBHOUSE,  
SEATING BOWL, & RESTROOM BUILDING  
COUNTY PROJECT #RFB-DCB-18-22  
FISHKILL, NEW YORK

57-21113-00

ADDENDUM 01  
12.09.22

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## SECTION 011000 - SUMMARY

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work performed by Owner.
5. Work under Owner's separate contracts.
6. Owner's product purchase contracts.
7. Owner-furnished/Owner-installed (OFOI) products.
8. Contractor's use of site and premises.
9. Coordination with occupants.
10. Work restrictions.
11. Specification and Drawing conventions.

- B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.
2. Section 017300 "Execution" for coordination of Owner-installed products.

#### 1.3 DEFINITIONS

- A. Work Package: A group of specifications, drawings, and schedules prepared by the design team to describe a portion of the Project Work for pricing, permitting, and construction.

#### 1.4 PROJECT INFORMATION

- A. Project Identification: Dutchess Stadium New Left Field Clubhouse, Seating Bowl, & Restroom Building. County Project #RFB- DCB-18-22.
  1. Project Location: 1500 Route 9D, Fishkill, NY 12590

## SUMMARY

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- B. Owner: Dutchess County, 22 Market Street, Poughkeepsie, New York 12601.
- C. Architect: DLR Group, 33 East 33<sup>rd</sup> Street, Suite 401, New York, NY 10016
- D. Architect's Consultants: Architect has retained the following design professionals, who have prepared designated portions of the Contract Documents:
  - 1. Civil Engineer: HVEA Engineers, Beacon NY 12508
  - 2. Landscape Architect: Insite Engineering, Surveying & Landscape Architecture, P.C., 3 Garrett Place, Carmel, NY 10512
  - 3. Food Service: FoodLines, 110 S. 14th Street, Suite 200, Lincoln, Nebraska 68508.
  - 4. Field Consultant: FTE Sports, 8250 Pascal Drive, Punta Gorda, Florida 33950
- E. Construction Manager: C & S Companies.
  - 1. Construction Manager has been engaged for this Project to serve as an advisor to Owner and to provide assistance in administering the Contract for construction between Owner and Contractor, according to a separate contract between Owner and Construction Manager.
- F. Web-Based Project Software: Project software will be used for purposes of managing communication and documents during the construction stage.
  - 1. See Section 013100 "Project Management and Coordination." for requirements for using web-based Project software.

## 1.5 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and includes, but is not limited to, the following:
  - 1. The Project consists of selective demolition of the existing Dutchess Stadium for the construction of a new left field building at the same location and other Work indicated in the Contract Documents. The new left field building is 2 stories, "A" Assembly Occupancy, Construction Type II-B.
- B. Type of Contract:
  - 1. Project will be constructed under a single prime contract.

## 1.6 PHASED CONSTRUCTION

- A. Construct the Work in phases, with each phase substantially complete as indicated below. The Scope of Work identified for each Phase below is subject to change per the Alternates accepted by the Owner.

1. Phase 1: Phase 1 Work includes site demolition to the north and west of the Phase 1 Limit of Demolition line as indicated on sheet AD1.1, the new foundation and re-installation of the field light pole, the modifications to the field drainage system in left field,. The existing field wall shall not be damaged or disturbed during Phase 1 Construction. Temporary shoring shall be included for the existing field light pole as necessary to maintain existing field lighting levels until new pole is fully operational.
    - a. Commencement of Construction:
      - 1) Start Date: Work of this phase shall commence by March 1, 2023.
    - b. Substantial Completion of the field light pole and field drainage:
      - 1) By May 15th, 2023 .
  2. Phase 2: Phase 2 Work includes construction of the new Clubhouse Building and Party Deck, Hospitality Club, Concourse Toilet Building, new Parking Lot and Drive, and site improvements. The existing field wall shall not be damaged or disturbed during Phase 2 Construction.
    - a. Commencement of Construction:
      - 1) Start Date: Work of this phase shall commence by March 1, 2023.
    - b. Substantial Completion:
      - 1) By March 1, 2024
  3. Phase 3: Phase 3 Work includes but is not limited to seating bowls and cross aisle. Permanent connection between the new portion of the field drainage system to the existing system on the playing field shall be completed. Phase 3 work includes any work that would interfere with stadium and baseball operations during the baseball season.
    - a. Commencement of Construction:
      - 1) Start Date: Work of this phase shall commence on September 5, 2023, at the completion of the Hudson Valley Renegades 2023 Baseball Season.
    - b. Substantial Completion:
      - 1) By March 1, 2024
- B. Before commencing Work of each phase, submit an updated copy of Contractor's construction schedule, showing the sequence, commencement and completion dates, and move-out and -in dates of Owner's personnel for all phases of the Work.

1.7 WORK PERFORMED BY OWNER

- A. Cooperate fully with Owner, so work may be carried out smoothly, without interfering with or delaying Work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.
- B. Subsequent Work: Owner will perform the following additional work at site after Substantial Completion. Completion of that work will depend on successful completion of preparatory Work under this Contract.
  - 1. The Owner will furnish and install racks, rack mounted cable management, runways, network switches, patch panels (horizontal), patch panels (backbone) and patch cords tied into the Hawk Eye room as indicated in the Contract Documents
  - 2. Access Control as indicated in the Contract Documents
  - 3. Security System as indicated in the Contract Documents
  - 4. Audio Visual Installation as indicated in the Contract Documents.
  - 5. Site trees were felled by owner and remain on site. ~~General Construction Contract Contractor~~ shall remove stumps, trunks and branches from property.

1.8 OWNER-FURNISHED/OWNER-INSTALLED (OFOI) PRODUCTS

- A. The Owner will furnish and install products indicated.
- B. Owner-Furnished/Owner-Installed (OFOI) Products:
  - 1. As indicated in the Drawings.
  - 2. Access Control equipment and devices New Field Light Pole
  - 3. Security equipment and devices New field lighting fixtures and cross arm

1.9 OWNER-FURNISHED/CONTRACTOR-INSTALLED (OFCD) PRODUCTS

- A. The Owner will furnish and Contractor install products indicated.
- B. Owner-Furnished/Owner-Installed (OFCD) Products:
  - 1. As indicated in the Drawings.
  - 2. New field light pole w/ pre-wired cross arms furnished by owner and installed by contractor.
  - 3. Two new field lighting fixtures furnished by owner and installed by contractor.
  - 3.4. Owner furnished footing design for new field light pole shall be constructed by contractor.

1.91.10 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Restricted Use of Site: Each Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Limits on Use of Site: Limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Limits on Use of Site: Confine construction operations to areas indicated in the Contract Documents
  - 2. Driveways, Walkways and Entrances: Keep driveways parking areas, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.
- D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.101.11 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy Project site and adjacent building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
  - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
  - 2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.
  - 3. Maintain in operation all life safety provisions and devices (including, but not limited to, fire alarms, fire extinguishers, smoke detectors, heat sensors, emergency and exit lighting, defibrillators, and similar items).

1.11.12 WORK RESTRICTIONS

- A. Comply with restrictions on construction operations.
  - 1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work to between 7:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated. Work hours may be modified to meet Project requirements if approved by Owner and authorities having jurisdiction.
  - 1. Weekend Hours: Work Hours not within On-Site Work Hours shall be authorized by Owner and Project Coordinator.
  - 2. Early Morning Hours: Work Hours not within On-Site Work Hours shall be authorized by Owner and Project Coordinator.
  - 3. Work in Existing Building: Work Hours not within On-Site Work Hours shall be authorized by Owner and Project Coordinator. Hours for Utility Shutdown shall be coordinated with Project Coordinator.
  - 4. Hours for noisy activity: Work Hours not within On-Site Work Hours shall be authorized by Owner and Project Coordinator
- C. On-Site Work Day Restrictions: Do not perform work resulting in utility shutdowns or resulting in noisy activity on-site during work black-out days indicated in Document 003113 "Preliminary Schedules."
- D. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging for temporary utility services according to requirements indicated:
  - 1. Notify Construction Manager not less than two days in advance of proposed utility interruptions.
  - 2. Obtain Construction Manager's written permission before proceeding with utility interruptions.
- E. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.
  - 1. Notify Construction Manager not less than two days in advance of proposed disruptive operations.
  - 2. Obtain Construction Manager's written permission before proceeding with disruptive operations.
- F. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on Owner's property is not permitted.

1.12.13 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
  2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
  3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.
  4. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.
- C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- D. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
  2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
  3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SUMMARY

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## SECTION 012300 - ALTERNATES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

#### 1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
  - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
  - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

#### 1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
  - 1. Include, as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation, whether or not indicated as part of alternate.
- B. Execute accepted alternates under the same conditions as other Work of the Contract.
- C. Schedule: A Part 3 "Schedule of Alternates" Article is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Deduct Alternate No. 1: Remove Level 02 Indoor Club, Kitchen, Auxiliary Spaces, and Outdoor Seating Area

1. Base Bid: Construct the Level 02 enclosed Club, Kitchen, Auxiliary Spaces, Lobby, and outdoor Club seating area as indicated on the Drawings and Specifications.
2. Alternate: Remove the Work associated with the construction to build the Club, Kitchen, Auxiliary Spaces, Lobby and outdoor Club seating area and replace with an enlarged outdoor hospitality deck as indicated on the Drawings ('ALTERNATE #1 WORK AREA) and Specifications.

~~a. General Construction Contract Summary~~

- ~~1) Remove all Work for the construction of the Club on Level 02, including but not limited to, walls, roofs, doors, windows, and structural framing system as indicated in the ALTERNATE #1 WORK AREA. The Club seating bowl, armchairs, elevator, lobby stair, and chair lift shall also be removed. A new ramp and stair are required for the enlarged hospitality deck. Elevated split slab system shall be continuous over entirety of Level 01.~~

~~b. Plumbing Contract Summary~~

- ~~1) Remove all Work for the construction of the Club on Level 02, including but not limited to, plumbing fixtures, plumbing piping, and plumbing equipment as indicated in the ALTERNATE #1 WORK AREA. The enlarged outdoor hospitality deck requires additional area drains for storm water removal.~~

~~c. HVAC Contract Summary~~

- ~~1) Remove all Work for the construction of the Club on Level 02, including but not limited to, ductwork, diffusers/registers/grilles, and HVAC equipment as indicated in the ALTERNATE #1 WORK AREA.~~

~~d. Electrical Contract Summary~~

- ~~1) Remove all Work for the construction of the Level 02 Club, including but not limited to, lighting, power, audiovisual, security, and low voltage systems as indicated in the ALTERNATE #1 WORK AREA. Add lighting and power for enlarged hospitality deck.~~

~~B. Deduct Alternate No. 2: Remove Right Field Existing Clubhouse Improvements (Area B)~~

- ~~1. Base Bid: Improvements to the interior spaces of the existing Right Field Clubhouse to renovate the building into a visiting team facility as indicated on the Drawings and Specifications.~~
- ~~2. Alternate: Remove the Work associated with the improvements to the existing Right Field Clubhouse as indicated on the Drawings ('ALTERNATE #2 WORK AREA) and Specifications.~~
  - ~~a. General Construction Contract Summary~~
    - ~~1) Remove all Work shown in ALTERNATE #2 WORK AREA in the existing Clubhouse Building. Existing to Remain.~~
  - ~~b. Plumbing Contract Summary~~
    - ~~1) Remove all Work shown in ALTERNATE #2 WORK AREA in the existing Clubhouse Building. Existing to Remain.~~
  - ~~c. HVAC Contract Summary~~
    - ~~1) Remove all Work shown in ALTERNATE #2 WORK AREA in the existing Clubhouse Building. Existing to Remain.~~
  - ~~d. Electrical Contract Summary~~
    - ~~1) Remove all Work shown in ALTERNATE #2 WORK AREA in the existing Clubhouse Building. Existing to Remain.~~

~~C.B. Deduct Alternate No. 3: Remove Concourse Toilet Building~~

- ~~1. Base Bid: Construct new Concourse Toilet Building, adjacent to the new Left Field Clubhouse Building, as indicated on the Drawings and Specifications.~~
- ~~2. Alternate: Remove the Work associated with the construction of the new Concourse Toilet Building and replace with a concrete Plaza as indicated on the Drawings ('ALTERNATE #3 WORK AREA) and Specifications.~~
  - ~~a. General Construction Contract Summary~~
    - ~~1) Remove all Work for the construction of the Concourse Toilet Building, including but not limited to, walls, roof, doors, and structural frame system as indicated in the ALTERNATE #3 WORK AREA. Replace area with a concrete plaza.~~
  - ~~b. Plumbing Contract Summary~~

- ~~1) Remove all Work for the construction of the Concourse Toilet Building, including but not limited to, plumbing fixtures, plumbing piping, and plumbing equipment as indicated in the ALTERNATE #3 WORK AREA.~~

~~e. HVAC Contract Summary~~

- ~~1) Remove all Work for the construction of the Concourse Toilet Building, including but not limited to, ductwork, diffusers/registers/grilles, and HVAC equipment as indicated in the ALTERNATE #3 WORK AREA.~~

~~d. Electrical Contract Summary~~

- ~~1) Remove all Work for the construction of the Concourse Toilet Building, including but not limited to, lighting, power, and low voltage systems as indicated in the ALTERNATE #3 WORK AREA.~~

~~D. Deduct Alternate No. 4: Remove the New Bullpens~~

- ~~1. Base Bid: Construct new Bullpens near the existing scoreboard in left center field and the existing Clubhouse building in right field. Construct new turf bullpens, clay mounds and perimeter concrete curbs, lighting, and fence enclosures. Repair areas on field where existing Bullpens are removed. Complete all Work as indicated on the Drawings and Specifications.~~
- ~~2. Alternate: Remove the Work associated with the new Bullpens as indicated on the Drawings (ALTERNATE #4 WORK AREA) and Specifications. New field wall adjacent to the Work Area is not a part of this Alternate and shall be constructed.~~

~~a. General Construction Contract Summary~~

- ~~1) Remove all WORK to construct the new Bullpens as indicated in the ALTERNATE #4 WORK AREA. Existing Bullpens shall remain on the field.~~

~~b. Plumbing Contract Summary~~

- ~~1) Remove water lines and hose bib as indicated in the ALTERNATE #4 WORK AREA.~~

~~e. HVAC Contract Summary~~

- ~~1) No Work~~

~~d. Electrical Contract Summary~~

- ~~1) Remove all Work for the new Bullpens, including but not limited to, lighting, power, and low voltage as indicated in ALTERNATE #4 WORK AREA~~

E.C. Deduct Alternate No. 5: Asphalt Millings Parking Lot

1. Base Bid: Construct new Parking Lot as indicated on the Drawings and Specifications.
2. Alternate: Replace the asphalt parking lot and driveways with asphalt millings as indicated on the Drawings and Specifications.

~~a. General Construction Contract Summary~~

- ~~1) Replace the asphalt parking lot and driveways with asphalt millings as indicated on the Drawings and Specifications.~~

~~b. Plumbing Contract Summary~~

- ~~1) No Work~~

~~c. HVAC Contract Summary~~

- ~~1) No Work~~

~~d. Electrical Contract Summary~~

- ~~1) No Work~~

F.D. Alternate No. 6: NOT USED

G.E. Deduct Alternate No. 7: Remove Concrete Stadia Seating Bowl Extension

1. Base Bid: Construct the new concrete stadia, aisle handrails, bowl drainage and stadium seating as indicated on the Drawings and Specifications.
2. Alternate: Remove the Work associated with the concrete stadia, aisle handrails, and stadium seating and replace with a sloped berm as indicated on the Drawings ('ALTERNATE #7 WORK AREA) and Specifications.

~~a. General Construction Contract Summary~~

- ~~1) Remove all Work for the construction of the seating bowl extension as indicated in ALTERNATE #7 WORK AREA. New guardrail on the concourse shall be added as indicated in the drawings. New field wall at this seating area shall not be a part of this alternate.~~

~~b. Plumbing Contract Summary~~

- ~~1) Remove all area drains as indicated in ALTERNATE #7 WORK AREA. Storm drain main will remain for future area drains.~~

~~c. HVAC Contract Summary~~

- ~~1) No Work~~

~~d. — Electrical Contract Summary~~

~~1) — No Work~~

H.F. Alternate No. 8: Remove Terraced Concrete Stadia Seating Bowl

1. Base Bid: Construct the new terraced concrete stadia, aisle handrails, bowl drainage, and drink rails as indicated on the Drawings and Specifications.
2. Alternate: Remove the Work associated with the terraced concrete stadia, aisle handrails, and drink rails and replace with a sloped berm as indicated on the Drawings ('ALTERNATE #8 WORK AREA) and Specifications.

~~a. — General Construction Contract Summary~~

~~1) — Remove all Work for the construction of the seating bowl extension as indicated in ALTERNATE #8 WORK AREA. New guardrail on the concourse shall be added as indicated in the drawings. New field wall at this seating area shall not a part of this alternate.~~

~~b. — Plumbing Contract Summary~~

~~1) — Remove all area drains as indicated in ALTERNATE #8 WORK AREA. Storm drain main will remain for future area drains.~~

~~e. — HVAC Contract Summary~~

~~1) — No Work~~

~~d. — Electrical Contract Summary~~

~~1) — No Work~~

END OF SECTION 012300

## SECTION 033300 - ARCHITECTURAL CONCRETE

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Cast-in-place architectural concrete, including concrete finishes.
2. Requirements in Section 033000 "Cast-in-Place Concrete" apply to this Section.

#### 1.2 DEFINITIONS

- A. Cast-in-Place Architectural Concrete: Concrete that is exposed to view, is designated as architectural concrete, and that requires special concrete materials, formwork, placement, or finishes to obtain specified architectural appearance.
- B. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.
- C. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

#### 1.3 PREINSTALLATION MEETINGS

##### A. Preinstallation Conference: Conduct conference at Project site.

1. Require representatives of each entity directly concerned with cast-in-place architectural concrete to attend, including the following:
  - a. Contractor's superintendent.
  - b. Independent testing agency responsible for concrete design mixtures.
  - c. Ready-mix concrete manufacturer.
  - d. Cast-in-place architectural concrete Subcontractor.
2. Review the following:
  - a. Special inspection and testing and inspecting agency procedures for field quality control.
  - b. Construction joints, control joints, isolation joints, and joint-filler strips.
  - c. Reinforcement accessory installation.
  - d. Cold- and hot-weather concreting procedures.
  - e. Concrete finishes and finishing.
  - f. Curing procedures.
  - g. Forms and form-removal limitations.

- h. Shoring and reshoring procedures.
- i. Concrete repair procedures.
- j. Protection of cast-in-place architectural concrete.
- k. Initial curing and field curing of field test cylinders (ASTM C31/C31M).
- l. Protection of field-cured field test cylinders.

#### 1.4 ACTION SUBMITTALS

A. Product Data: For each of the following:

- 1. Color pigments.
- 2. Repair materials.

B. Shop Drawings:

- 1. Formwork: Prepared by, and signed and sealed by, a qualified professional engineer responsible for their preparation, detailing fabrication, assembly, and support of forms.
  - a. Show formwork construction, including form-liner layout, form-liner termination details, dimensioned locations of form-facing material joints, rustications, construction and contraction joints, form joint-sealant details, form-tie locations and patterns, inserts and embedments, cutouts, cleanout panels, and other items that visually affect cast-in-place architectural concrete.
    - 1) Included separate layout for formwork used in mockups.
    - 2) Indicate proposed schedule and sequence of stripping of forms, shoring removal, and reshoring installation and removal.
    - 3) Location of construction joints is subject to approval of Architect.

C. Samples: For each of the following materials:

- 1. Manufacturer's standard colors for color pigment.

D. Concrete Schedule: For each location of each Class of concrete indicated in "Concrete Mixtures" Article, including the following:

- 1. Concrete Class designation.
- 2. Location within Project.
- 3. Exposure Class designation.
- 4. Formed Surface Finish designation and final finish.
- 5. Curing process.

E. Placement Schedule: Submit before start of placement operations.

#### 1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For the following:



1. Installer: Include copies of applicable ACI certificates.
  2. Ready-mixed concrete manufacturer.
- B. Concrete Repair: Submit a written, detailed description of materials, methods, equipment, and sequence of operations to be used for repairing architectural concrete, including protection of surrounding materials and Project site.
1. If materials and methods other than those indicated are proposed for any repairs to architectural concrete, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project and Installer's ability to use such materials and methods properly.
- C. Minutes of preinstallation conference.

#### 1.6 QUALITY ASSURANCE

- A. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.
1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Installer Qualifications: An experienced cast-in-place architectural concrete installer, as evidenced by not less than five consecutive years' experience, specializing in installing cast-in-place architectural concrete similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
1. Provide written evidence of qualifications and experience.
  2. Include locations, descriptions, and photographs of completed projects, including name of architect, substantiating the quality of the installer's experience.
- C. Mockups: Before casting architectural concrete, build mockups, using the same procedures, equipment, materials, finishing procedures, and curing procedures that will be used for producing architectural concrete, to verify selections made under Sample submittals and to demonstrate typical joints, surface finish, color, texture, tolerances, and standard of workmanship. Build mockups to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups 48"x 48" in the location as directed by Architect.
  2. Demonstrate curing, cleaning, and protecting of cast-in-place architectural concrete, finishes, and contraction joints, as applicable.
  3. In presence of Architect, damage part of the exposed-face surface for each finish, color, and texture, and demonstrate materials and techniques proposed for repair to match adjacent undamaged surfaces.
  4. Obtain Architect's approval of mockups before casting architectural concrete.

5. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.7 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: As Specified in Section 033000 "Cast-in-Place Concrete."

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Comply with ASTM C94/C94M and **ACI 301 (ACI 301M)**.

#### 1.9 FIELD CONDITIONS

- A. Cold-Weather Placement: Comply with Section 033000 "Cast-in-Place Concrete."
- B. Hot-Weather Placement: Comply with Section 033000 "Cast-in-Place Concrete."

### PART 2 - PRODUCTS

#### 2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with **ACI 301 (ACI 301M)** unless modified by requirements in the Contract Documents.

#### 2.2 CONCRETE MATERIALS CC-01, CC-02

- A. Cementitious Materials: As specified in 033000 "Cast-in-Place Concrete."
- B. Aggregates: As specified in Section 033000 "Cast-in-Place Concrete."
- C. Air-Entraining Admixture: As specified in Section 033000 "Cast-in-Place Concrete."
- D. Chemical Admixtures: As specified in Section 033000 "Cast-in-Place Concrete," and certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
- E. Color Pigment: ASTM C979/C979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, nonfading, and resistant to lime and other alkalis.
  1. **Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. [Butterfield Color, Inc.](#)
  - b. [Euclid Chemical Company \(The\); an RPM company.](#)
  - c. [Scofield, a Business Unit of Sika Corporation.](#)
2. Source Limitations: Obtain color pigment from single source from single manufacturer.
  3. Color: As selected by Architect from manufacturer's full range.

## 2.3 CURING MATERIALS

- A. Comply with Section 0330000 "Cast-in-Place Concrete."
  1. For integrally colored concrete, curing materials to be approved by color pigment manufacturer.
  2. For concrete indicated to be sealed, curing materials to be compatible with sealer.

## 2.4 CONCRETE MIXING

- A. Ready-Mixed or Project-Site-Mixed Architectural Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M, and furnish batch ticket information.
  1. Clean equipment used to mix and deliver cast-in-place architectural concrete to prevent contamination from other concrete.
  2. For mixer capacity of **1 cu. yd. (0.76 cu. m)** or smaller, continue mixing at least 1-1/2 minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
  3. For mixer capacity larger than **1 cu. yd. (0.76 cu. m)**, increase mixing time by 15 seconds for each additional **1 cu. yd. (0.76 cu. m)**.
  4. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

## PART 3 - EXECUTION

### 3.1 INSTALLATION OF FORMWORK

- A. Comply with Section 031000 "Concrete Forming and Accessories" for formwork, embedded items, and shoring and reshoring, and as specified in this Section.
- B. Limit deflection of form-facing panels to not exceed **ACI 301 (ACI 301M)** requirements.
- C. Limit cast-in-place architectural concrete surface irregularities, as follows:
  1. Surface Finish-3.0: **ACI 117 (ACI 117M)** Class A, **1/8 inch (3.0 mm)**.
- D. Construct forms to result in cast-in-place architectural concrete that complies with **ACI 117 (ACI 117M)**.

- E. Chamfer exterior corners and edges of cast-in-place architectural concrete.
- F. Coat contact surfaces of wood rustications and chamfer strips with wood sealer before placing reinforcement, anchoring devices, and embedded items.

### 3.2 INSTALLATION OF REINFORCEMENT AND ACCESSORIES

- A. Comply with Section 032000 "Concrete Reinforcing" for fabricating and installing steel reinforcement and accessories.

### 3.3 JOINTS

- A. Construction Joints: Install construction joints true to line, with faces perpendicular to surface plane of cast-in-place architectural concrete, so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
  - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated.
  - 2. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at top of footings or floor slabs.
  - 3. Unless otherwise indicated on Drawings, locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
- B. Contraction Joints: Form weakened-plane contraction joints true to line, with faces perpendicular to surface plane of cast-in-place architectural concrete, so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Architect.
  - 1. Sawcut "V" Joints: Form contraction V-joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

### 3.4 CONCRETE PLACEMENT

- A. Comply with Section 033000 "Cast-in-Place Concrete."

### 3.5 FINISHING FORMED SURFACES

- A. Comply with Section 033000 "Cast-in-Place Concrete."
- B. As-Cast Surface Finishes: Comply with Section 033000 "Cast-in-Place Concrete" for the following:
  - 1. **ACI 301 (ACI 301M)** Surface Finish-3.0 (SF-3.0).

- C. Final Concrete Finish: Comply with Section 033000 "Cast-in-Place Concrete" for the following:
  - 1. Smooth-rubbed finish.
- D. Form-Liner Finish: Produce a textured surface free of pockets, streaks, and honeycombs, and of uniform appearance, color, and texture.
- E. Maintain uniformity of architectural concrete finishes over construction joints unless otherwise indicated.

### 3.6 CONCRETE CURING

- A. Comply with Section 033000 "Cast-in-Place Concrete" using identical curing procedures to that used for mockups.

### 3.7 REPAIR

- A. Comply with **ACI 301 (ACI 301M)**.
- B. Repair damaged finished surfaces of cast-in-place architectural concrete when repairing is approved by Architect.
- C. Match repairs to color, texture, and uniformity of surrounding surfaces and to repairs on approved mockups.
- D. Remove and replace cast-in-place architectural concrete that cannot be repaired to Architect's approval.

### 3.8 FIELD QUALITY CONTROL

- A. Comply with Section 033000 "Cast-in-Place Concrete."

### 3.9 CLEANING

- A. Clean cast-in-place architectural concrete surfaces after finish treatment to remove stains, markings, dust, and debris.
- B. Wash and rinse surfaces in accordance with concrete finish applicator's written instructions.
  - 1. Protect other Work from staining or damage due to cleaning operations.
  - 2. Do not use cleaning materials or processes that could change the appearance of cast-in-place architectural concrete finishes.

3.10 PROTECTION

- A. Protect corners, edges, and surfaces of cast-in-place architectural concrete from damage; use guards and barricades.
- B. Protect cast-in-place architectural concrete from staining, laitance, and contamination during remainder of construction period.

3.11 FINAL ACCEPTANCE

- A. Final acceptance of completed architectural concrete Work will be determined by Architect by comparing approved mockups with installed Work, when viewed at a distance of 20 feet (6 m).

END OF SECTION 033300

## SECTION 057500 - DECORATIVE FORMED METAL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Decorative-metal-clad on face of bar unit.

- B. Related Requirements:

- 1. Section 057000 "Decorative Metal" for decorative items made primarily from plate, bars, extrusions, tubes, castings, and other forms of metal, but which may include sheet metal components.
  - 2. Section 076100 "Sheet Metal Roofing" for items made of formed metal for roofing.
  - 3. Section 076200 "Sheet Metal Flashing and Trim" for items made of formed metal for flashings and trim.
  - 4. Section 077100 "Roof Specialties" for items made of formed metal for parapets and copings.

#### 1.3 COORDINATION

- A. Coordinate installation of anchorages for decorative formed metal items. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver items to Project site in time for installation.
- B. Coordinate installation of decorative formed metal with adjacent construction to ensure that wall assemblies, flashings, trim, and joint sealants, are protected against damage from the effects of weather, age, corrosion, and other causes of deterioration.

#### 1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Not Required

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product, including finishing materials.
- B. Shop Drawings: Show fabrication and installation details for decorative formed metal.
  - 1. Include plans, elevations, component details, and attachment details.
  - 2. Indicate materials and profiles of each decorative formed metal member, fittings, joinery, finishes, fasteners, anchorages, and accessory items.
- C. Samples for Initial Selection: For products involving selection of color, texture, or design.
- D. Samples for Verification: For each type of exposed finish required, prepared on 10-inch- square Samples of metal of same thickness and material indicated for the Work.
- ~~E. Delegated Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.~~

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: For decorative formed metal elements that house items specified in other Sections. Show dimensions of housed items, including locations of housing penetrations and attachments, and necessary clearances.
- B. Qualification Data: For Installer

#### 1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For statuary conversion coating copper-alloy finish to include in maintenance manuals.

#### 1.8 QUALITY ASSURANCE

- A. Installer Qualifications: A firm experienced in installing decorative formed metal similar to that indicated for this Project and with a record of successful in-service performance.
- B. Installer Qualifications: (See item A above).
- C. Mockup: Not Required



1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver decorative formed metal products wrapped in protective coverings and strapped together in suitable packs or in heavy-duty cartons. Remove protective coverings before they stain or bond to finished surfaces.
- B. Store products on elevated platforms in a dry location.

1.10 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls, columns, beams, and other construction contiguous with decorative formed metal by field measurements before fabrication and indicate measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 SHEET METAL

- A. General: Provide and install the pre-fab buyout material that is specified as MTL-01 & MT-02 on finish schedule in drawing set.

2.2 MISCELLANEOUS MATERIALS

- A. Backing Materials: Provided or recommended by decorative formed metal manufacturer.
- B. Laminating Adhesive: Adhesive recommended by metal fabricator that will fully bond metal to metal, will prevent telegraphing and oil-canning, and is compatible with substrate and noncombustible after curing.

2.3 GENERAL FINISH REQUIREMENTS

- A. Complete mechanical finishes of flat sheet metal surfaces before fabrication where possible. After fabrication, finish all joints, bends, abrasions, and other surface blemishes to match sheet finish.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Apply organic and anodic finishes to formed metal after fabrication unless otherwise indicated.
- D. Finish: Moz "Classic" in Penny Copper color as MTL-01 & Moz "Blendz/Patnia" in Patina 212D color as MTL-02. These are pre-fab buyout materials to be purchased and installed by this subcontractor.

- E. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## 2.4 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble decorative formed metal items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- B. Coordinate dimensions and attachment methods of decorative formed metal items with those of adjoining construction to produce integrated assemblies with closely fitting joints and with edges and surfaces aligned unless otherwise indicated.
- C. Form metal to profiles indicated, in maximum lengths to minimize joints. Produce flat, flush surfaces without cracking or grain separation at bends. Fold back exposed edges of unsupported sheet metal to form a 1/2-inch- (12-mm-) wide hem on the concealed side, or ease edges to a radius of approximately 1/32 inch (1 mm) and support with concealed stiffeners.
- D. Increase metal thickness or reinforce with concealed stiffeners, backing materials, or both, as needed to provide surface flatness equivalent to stretcher-leveled standard of flatness and sufficient strength for indicated use.
1. Support joints with concealed stiffeners as needed to hold exposed faces of adjoining sheets in flush alignment.
- E. Build in straps, plates, and brackets as needed to support and anchor fabricated items to adjoining construction. Reinforce decorative formed metal items as needed to attach and support other construction.
- E. Provide support framing, mounting and attachment clips, splice sleeves, fasteners, and accessories needed to install decorative formed metal items

## 2.5 METAL BASE (S.S. BASE)

- A. Form metal base from metal of type and thickness indicated below:
1. Stainless Steel Sheet: 0.050 inch (1.27 mm).
- a. Finish: No. 2B.
- b. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.

- c. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of decorative formed metal.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. Locate and place decorative formed metal items level and plumb and in alignment with adjacent construction. Perform cutting, drilling, and fitting required to install decorative formed metal.
  - 1. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the shop for required alterations, followed by complete refinishing, or provide new units as required.
- B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where needed to protect metal surfaces and to make a weathertight connection.
- C. Form tight joints with exposed connections accurately fitted together. Provide reveals and openings for sealants and joint fillers as indicated.
- D. Install concealed gaskets, joint fillers, insulation, sealants, and flashings, as the Work progresses, to make exterior decorative formed metal items weatherproof.
- E. Install concealed gaskets, joint fillers, sealants, and insulation, as the Work progresses, to make interior decorative formed metal items soundproof or lightproof as applicable to type of fabrication indicated.
- F. Corrosion Protection: Apply bituminous paint or other permanent separation materials on concealed surfaces where metals would otherwise be in direct contact with substrate materials that are incompatible or could result in corrosion or deterioration of either material or finish.
- G. Install decorative-formed-metal-clad doors and frames to comply with requirements specified in Section 081113 "Hollow Metal Doors and Frames."

3.3 ADJUSTING AND CLEANING

- A. Unless otherwise indicated, clean metals by washing thoroughly with water and soap, rinsing with clean water, and drying with soft cloths.
- B. Clean copper alloys according to metal finisher's written instructions in a manner that leaves an undamaged and uniform finish matching approved Sample.
- C. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
  - 1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.
- D. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit or provide new units.

3.4 PROTECTION

- A. Protect finishes of decorative formed metal items from damage during construction period. Remove temporary protective coverings at time of Substantial Completion.

END OF SECTION 057500

## SECTION 064116 - PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Plastic-laminate-clad architectural cabinets.
2. Cabinet hardware and accessories.
3. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-clad architectural cabinets that are not concealed within other construction.

##### B. Related Requirements:

1. Section 061053 "Miscellaneous Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing cabinets that are concealed within other construction before cabinet installation.
2. Section 123623.13 "Plastic-Laminate-Clad Countertops."

#### 1.2 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to support loads imposed by installed and fully loaded cabinets.
- B. Hardware Coordination: Distribute copies of approved hardware schedule specified in Section 087100 "Door Hardware" to manufacturer of architectural cabinets; coordinate Shop Drawings and fabrication with hardware requirements.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

#### 1.4 ACTION SUBMITTALS

##### A. Product Data: For each type of product.

1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.

##### B. Shop Drawings:

1. Include plans, elevations, sections, and attachment details.
2. Show large-scale details.
3. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
4. Show locations and sizes of cutouts and holes for items installed in plastic-laminate architectural cabinets.
5. Apply AWI Quality Certification Program label to Shop Drawings.

~~C. Samples: For each exposed product and for each color and texture specified, in manufacturer's or manufacturer's standard size.~~

~~D.C. Samples for Initial Selection: For each type of exposed finish, if not providing basis-of design products.~~

~~E.D. Samples for Verification: For the following:~~

1. Plastic Laminates: 8 by 10 inch, for each type, color, pattern, and surface finish required.
  - a. Provide one sample applied to core material with specified edge material applied to one edge.
2. Thermally Fused Laminate (TFL) Panels: 8 by 10 inches, for each color, pattern, and surface finish.
  - a. Provide edge banding on one edge.
3. Corner Pieces:
  - a. Cabinet-front frame joints between stiles and rails and at exposed end pieces, 18 inches high by 18 inches wide by 6 inches deep.
  - b. Miter joints for standing trim.
4. Exposed Cabinet Hardware and Accessories: One full-size unit for each type and finish.

## 1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and Installer.

B. Product Certificates: For the following:

1. Composite wood products.
2. Thermally fused laminate panels.
3. High-pressure decorative laminate.
- ~~4. Glass.~~
- 5.4. Adhesives.

C. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

- D. Field quality-control reports.

#### 1.6 CLOSEOUT SUBMITTALS

#### 1.7 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- B. Installer Qualifications: Licensed participant in AWT's Quality Certification Program
- C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
  - 1. Build mockups of typical architectural cabinets as agreed upon with architect
  - 2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver cabinets until painting and similar finish operations that might damage architectural cabinets have been completed in installation areas. Store cabinets in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

#### 1.9 FIELD CONDITIONS

- A. Environmental Limitations without Humidity Control: Do not deliver or install cabinets until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.
- B. Environmental Limitations with Humidity Control: Do not deliver or install cabinets until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 43 and 70 percent during the remainder of the construction period.
- C. Field Measurements: Where cabinets are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Locate concealed framing, blocking, and reinforcements that support cabinets by field measurements before being enclosed/concealed by construction, and indicate measurements on Shop Drawings.
- D. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

## PART 2 - PRODUCTS

### 2.1 ARCHITECTURAL CABINET MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, Mfgs to be proven, reputable, and capable to provide all cabinets shown in the drawing set.

### 2.2 PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

- A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of cabinets indicated for construction, finishes, installation, and other requirements.

1. The Contract Documents contain requirements that are more stringent than the referenced quality standard. Comply with requirements of Contract Documents in addition to those of the referenced quality standard.

- ~~1.~~ 2. Provide labels from AWI certification program indicating that woodwork and installation complies with requirements of grades specified.

- B. Architectural Woodwork Standards Grade: Premium

- C. Type of Construction: Frameless ~~Face-frame~~

- D. Door and Drawer-Front Style: Flush overlay.

1. Reveal Dimension: 1/2 inch

- E. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by quality standard.

- F. Laminate Cladding for Exposed Surfaces:

1. Horizontal Surfaces: Grade HGS
  2. Postformed Surfaces: Grade HGP.
  3. Vertical Surfaces: Grade HGS
  4. Edges: PVC edge banding, 3.0 mm thick, matching laminate in color, pattern, and finish.

### PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

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5. Pattern Direction: ~~As indicated on drawings.~~ Vertically for drawer fronts, doors, and fixed panels

G. Materials for Semiexposed Surfaces:

1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, NEMA LD 3, Grade VGS NEMA LD
  - a. Edges of Plastic-Laminate Shelves: PVC edge banding, 3.0 mm thick, matching laminate in color, pattern, and finish.
  - b. For semi-exposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS
2. Drawer Sides and Backs: Thermally fused laminate panels with PVC or polyester edge banding-
3. Drawer Bottoms: Thermally fused laminate panels.

H. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.

I. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.

1. Join subfronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners

J. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:

1. As indicated by laminate manufacturer's designations, PL-01, PL-02, PL-03, PL-04.
2. Match Architect's sample, or equal.
- ~~3. As selected by Architect from laminate manufacturer's full range in the following categories:~~
  - ~~a. Solid colors, matte finish.~~
  - ~~b. Solid colors with core same color as surface, matte finish.~~
  - ~~c. Wood grains, matte finish.~~
  - ~~d. Patterns, gloss matte finish.~~

## 2.3 WOOD MATERIALS

A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.

1. Wood Moisture Content: 4 to 9 percent.

- B. Composite Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.
1. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130
  2. Particleboard (Medium Density): ANSI A208.1, Grade M-2-Exterior Glue.
  3. Softwood Plywood: DOC PS 1, medium-density overlay.
  4. Thermally Fused Laminate (TFL) Panels: Particleboard or MDF finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

## 2.4 FIRE-RETARDANT-TREATED MATERIALS

- A. Fire-Retardant-Treated Materials, General: Where fire-retardant-treated materials are indicated, use materials that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products in accordance with test method indicated by a qualified testing agency.
1. Use treated materials that comply with requirements of referenced quality standard. Do not use materials that are warped, discolored, or otherwise defective.
  2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
  3. Identify fire-retardant-treated materials with appropriate classification marking of qualified testing agency in the form of removable paper label or imprint on surfaces that will be concealed from view after installation.
- B. Fire-Retardant-Treated Lumber and Plywood: Products with a flame-spread index of 25 or less when tested according to ASTM E84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
1. Kiln-dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.
  2. Mill lumber before treatment and implement procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of architectural cabinets.
- C. Fire-Retardant Particleboard: Made from softwood particles and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 25 or less in accordance with ASTM E84.
1. For panels 3/4 inch thick and less, comply with ANSI A208.1 for Grade M-2 except for the following minimum properties: modulus of rupture, 1600 psi; modulus of elasticity, 300,000 psi; internal bond, 80 psi; and screw-holding capacity on face and edge, 250 and 225 lbf, respectively.

2. For panels 13/16 to 1-1/4 inches thick, comply with ANSI A208.1 for Grade M-1 except for the following minimum properties: modulus of rupture, 1300 psi; modulus of elasticity, 250,000 psi; linear expansion, 0.50 percent; and screw-holding capacity on face and edge, 250 and 175 lbf, respectively.

- D. Fire-Retardant Fiberboard: MDF panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 200 or less in accordance with ASTM E84.

## 2.5 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in Section 087100 "Door Hardware."

~~B. Butt Hinges: 2 3/4 inch, five knuckle steel hinges made from 0.095 inch thick metal, and as follows:~~

- ~~1. Semiconcealed Hinges for Flush Doors: ANSI/BHMA A156.9, B01361.~~
- ~~2. Semiconcealed Hinges for Overlay Doors: ANSI/BHMA A156.9, B01521.~~

~~C.B. Frameless Concealed Hinges (European Type): ANSI/BHMA A156.9, B01602, 135 degrees of opening, self-closing.~~

~~D.C. Back-Mounted Pulls: ANSI/BHMA A156.9, B02011. Matt black color.~~

~~E. Wire Pulls: Back mounted (as spec'd on drawings).~~

~~F.D. Catches: Magnetic catches, ANSI/BHMA A156.9, B03141~~

~~G.E. Adjustable Shelf Standards and Supports: ANSI/BHMA A156.9, B04071; with shelf rests, B04081~~

~~H.F. Shelf Rests: ANSI/BHMA A156.9, B04013; metal~~

~~I.G. Drawer Slides: ANSI/BHMA A156.9.~~

- ~~1. Standard Duty (Grade 1 and Grade 2): Undermount~~
- ~~2.1. Heavy-Duty (Grade 1HD-100 and Grade 1HD-200): Side mount.~~
  - a. Type: Full extension.
  - b. Material: Galvanized steel ball bearing slides.
  - c. Motion Feature: Push to open and Self-closing mechanism.
- ~~3. Pencil drawers not more than 3 inches high and not more than 24 inches wide, provide 50 lb load capacity.~~

- 4.2. General-purpose drawers more than 3 inches high, but not more than 6 inches high and not more than 24 inches wide, provide 75 lb load capacity.
- 5.3. File drawers more than 6 inches high or more than 24 inches wide, provide 100 lb load capacity.
- 6.4. Lateral file drawers more than 6 inches (150 mm) high and more than 24 inches but not more than 30 inches wide, provide 150 lb load capacity.
7. ~~Computer keyboard tray, provide 75 lb load capacity.~~

J. ~~Slides for Sliding Glass Doors: ANSI/BHMA A156.9, B07063; aluminum.~~

K.H. Door Locks: ANSI/BHMA A156.11, E07121.

L.I. Drawer Locks: ANSI/BHMA A156.11, E07041.

M.J. Door and Drawer Silencers: ANSI/BHMA A156.16, L03011.

N. ~~Float Glass for Cabinet Doors: ASTM C1036, Type I, Class 1 (clear), Quality Q3.~~

1. ~~Thickness: 4.0 mm~~

O. ~~Tempered Float Glass for Cabinet Doors: ASTM C1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality Q3, 6 mm thick unless otherwise indicated.~~

1. ~~Tint Color: (No tint)~~

2. ~~Unframed Glass Doors: Seam exposed edges seamed before tempering.~~

P. ~~Mirror Glass for Cabinet Doors: ASTM C1503, Mirror, Quality Q3.~~

1. ~~Thickness: 4.0 mm.~~

Q. ~~Decorative Glass for Cabinet Doors: Provide decorative glass complying with Section 088113 "Decorative Glass Glazing."~~

R. ~~Tempered Float Glass for Cabinet Shelves: ASTM C1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality Q3; with exposed edges seamed before tempering, 6 mm thick.~~

1. ~~Tint Color: (no tint).~~

S.K. Grommets for Cable Passage: 2-1/2 inch (OD, molded-plastic grommets and matching plastic caps with slot for wire passage.

1. Color: Black

T.L. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with ANSI/BHMA A156.18 for ANSI/BHMA finish number indicated.

1. Satin Stainless Steel: ANSI/BHMA 630.

U.M. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in ANSI/BHMA A156.9.

## 2.6 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln-dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.
- C. Fabricate architectural cabinets to dimensions, profiles, and details indicated.

## C.2.7 FABRICATION

D.A. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

- ~~1. Notify Architect seven days in advance of the dates and times architectural cabinet fabrication will be complete.~~
- 2.1. Trial fit assemblies at manufacturer's shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.

E.B. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

~~F. Install glass to comply with applicable requirements in Section 088000 "Glazing" and in GANA's "Glazing Manual."~~

- ~~1. For glass in frames, secure glass with removable stops.~~
- ~~2. For exposed glass edges, polish and grind smooth.~~

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.

#### 3.2 INSTALLATION

- A. Architectural Woodwork Standards Grade: Install cabinets to comply with quality standard grade of item to be installed.
- B. Assemble cabinets and complete fabrication at Project site to extent that it was not completed in the shop.
- C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with wafer-head cabinet installation screws.
- D. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch using concealed shims.
  - 1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
  - 2. Install cabinets without distortion so doors and drawers fit openings and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.

#### 3.3 FIELD QUALITY CONTROL

- A. Inspections: Provide inspection of installed Work through AWI's Quality Certification Program certifying that woodwork, including installation, complies with requirements of the Architectural Woodwork Standards for the specified grade.
  - 1. Inspection entity shall prepare and submit report of inspection.

#### 3.4 ADJUSTING AND CLEANING

- A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects. Where not possible to repair, replace architectural cabinets. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean cabinets on exposed and semi-exposed surfaces.

REBID DUTCHESS STADIUM NEW LEFT FIELD CLUBHOUSE,  
SEATING BOWL, & RESTROOM BUILDING  
COUNTY PROJECT #RFB-DCB-18-22  
FISHKILL, NEW YORK

57-21113-00

ADDENDUM 01  
12.09.22

END OF SECTION 064116

PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

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## SECTION 064216 - FLUSH WOOD PANELING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Installation Flush pre-fab buyout wood panel boards (wood wall surfacing).
- 2. Fire-retardant-treated installation materials.

- B. Related Requirements:

- 1. Section 057000 "Decorative Metal" for metal reveals at wood paneling.
- 2. Section 061053 "Miscellaneous Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing paneling that is concealed within other construction before paneling installation.

#### 1.3 ALLOWANCES

- ~~A. Wood Veneer Allowance: Wood veneer for paneling is part of Wood Veneer Allowance. Allowance includes the cost of veneer that is wasted due to selection, cutting, and trimming.~~

#### 1.4 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that paneling can be installed as indicated.

#### 1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

#### 1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.



1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- B. Shop Drawings: For flush wood paneling.
  1. Include plans, elevations, sections, and attachment details.
  2. Show details full size.
  3. Show locations and sizes of furring and blocking, including concealed blocking specified in other Sections.
  4. For paneling produced from premanufactured sets, show finished panel sizes, set numbers, sequence numbers within sets, and method of cutting panels to produce indicated sizes.
  5. Apply AWI Quality Certification
- C. Samples: For each exposed product and for each color and finish specified, in manufacturer's or fabricator's standard size.
- ~~D. Samples for Initial Selection: For each type of exposed finish.~~

#### 1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: For each type of product.
- C. Quality Standard Compliance Certificates: AWI Quality Certification Program.
- D. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

#### 1.8 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who have a record of successful in-service performance.
  1. Shop Certification: AWI's Quality Certification Program accredited participant.
- B. Installer Qualifications: AWI's Quality Certification Program accredited participant.
- ~~C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
  1. Build mockups of typical shiplap paneling as shown on Drawings
  2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.~~

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver paneling until painting and similar operations that might damage paneling have been completed in installation areas. Store paneling in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.10 FIELD CONDITIONS

- A. Environmental Limitations without Humidity Control: Do not deliver or install paneling until building is enclosed, wet-work is complete, and HVAC system is operating and will maintain temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.
- B. Environmental Limitations with Humidity Control: Do not deliver or install paneling until building is enclosed, wet-work is complete, and HVAC system is operating and will maintain temperature between 60 and 90 deg F and relative humidity between [25 and 55] [43 and 70] [17 and 5 percent during the remainder of the construction period.
- C. Field Measurements: Where paneling is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - 1. Locate concealed framing, blocking, and reinforcements that support paneling by field measurements before being enclosed/concealed by construction and indicate measurements on Shop Drawings.
- D. Established Dimensions: Where paneling is indicated to fit to other construction, establish dimensions for areas where woodwork is to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

PART 2 - PRODUCTS

2.1 PANELING INSTALLERS

- A. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for installation of pref-fab buyout wood siding products specified on finish plan in drawing set. of paneling

2.2 PANELING, GENERAL

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of flush wood paneling (wood-veneer wall surfacing) indicated for construction, finishes, installation, and other requirements.

FLUSH WOOD PANELING

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1. The Contract Documents contain requirements that are more stringent than the referenced woodwork quality standard. Comply with requirements of Contract Documents in addition to those of the referenced quality standard.

## 2.3 FLUSH WOOD PANELING

1. No matching is required between adjacent shiplap siding panels. Select and arrange panels for similarity of grain pattern and color between adjacent panels.
- B. Panel Core Construction: Basis of design – Delta Millwork “Old Souls” reclaimed look shiplap siding boards.
1. Thickness: (As indicated on product info for above-mentioned prefab buy-out product).
- C. Assemble panels by gluing and concealed fastening.

## 2.4 FIRE-RETARDANT-TREATED MATERIALS

- A. Fire-Retardant-Treated Materials, General: Where fire-retardant-treated materials are indicated, use materials that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
1. Use treated materials that comply with requirements of referenced quality standard. Do not use materials that are warped, discolored, or otherwise defective.
  2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
  3. Identify fire-retardant-treated materials with appropriate classification marking of qualified testing agency in the form of removable paper label or imprint on surfaces that will be concealed from view after installation.
- B. Fire-Retardant-Treated Lumber and Plywood: Products with a flame-spread index of 25 or less when tested according to ASTM E84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
1. Kiln-dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.
  2. Mill lumber after treatment within limits set for wood removal that do not affect listed fire-test-response characteristics, using a woodworking shop certified by testing and inspecting agency.
  3. Mill lumber before treatment and implement procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of paneling.

- C. Basis of design – Delta Millwork “Old Souls” reclaimed look shiplap siding boards.

## 2.5 INSTALLATION MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln-dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls.
- C. Installation Adhesive: Product recommended by panel fabricator for each substrate for secure anchorage.
- D. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- E. Arrange paneling in shop or other suitable space in proposed sequence for examination by Architect. Mark units with temporary sequence numbers to indicate position in proposed layout.
  - 1. Lay out one elevation at a time if approved by Architect.
  - 2. Notify Architect seven days in advance of the date and time when layout will be available for viewing.
  - 3. Provide lighting of similar type and level as that of final installation for viewing layout unless otherwise approved by Architect.
  - 4. Rearrange paneling as directed by Architect until layout is approved.
  - 5. Do not trim end units and other nonmodular-size units to less than modular size until after Architect's approval of layout. Indicate trimming by masking edges of units with nonmarking material.
  - 6. Obtain Architect's approval of layout before start of assembly. Mark units and Shop Drawings with assembly sequence numbers based on approved layout.
- F. Complete fabrication, including assembly, to maximum extent possible, before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
  - 1. Notify Architect seven days in advance of the dates and times paneling fabrication will be complete.
- G. Shop cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Before installation, condition paneling to humidity conditions in installation areas.
- B. Before installing paneling, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

#### 3.2 INSTALLATION

- A. Grade: Install paneling to comply with quality standard grade of paneling to be installed.
- B. Install paneling level, plumb, true in line, and without distortion. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches. Install with no more than 1/16 inch in 96-inch vertical cup or bow and 1/8 inch in 96-inch horizontal variation from a true plane.
  - 1. For flush boards with revealed joints, install with variations in reveal width, alignment of top and bottom edges, and flushness between adjacent panels not exceeding 1/16 inch.
- C. Anchor panel boards to supporting substrate with blind nailing or per mfg specific recommendation.
  - 1. Do not use face fastening unless otherwise indicated as allowed.
- D. Complete finishing work specified in this Section to extent not completed at shop or before installation of paneling. Fill nail holes with matching filler where exposed.
  - 1. Apply specified finish coats, including stains and paste fillers if any, to exposed surfaces where only sealer/prime coats are shop applied.

#### 3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective paneling, where possible, to eliminate defects. Where not possible to repair, replace paneling. Adjust for uniform appearance.
- B. Clean paneling on exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 064216

## SECTION 093013 - CERAMIC TILING

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Porcelain tile.
2. Glazed wall tile.
3. Tile backing panels.
4. Waterproof & crack isolation membranes.

##### B. Related Requirements:

1. Section 079200 "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.
2. Section 099123 "Interior Painting" for color match
3. Section 092900 "Gypsum Board" for cementitious backer units.

#### 1.2 DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. Face Size: Actual tile size, excluding spacer lugs.
- C. Module Size: Actual tile size plus joint width indicated.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
  1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

- C. Samples for Initial Selection: For tile, grout, and accessories involving color selection.
- D. Samples for Verification:
  - 1. Full-size units of each type and composition of tile and for each color and finish required.
  - 2. Full-size units of each type of trim and accessory for each color and finish required.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: For each type of product.
- C. Product Test Reports: For tile-setting and -grouting products.

#### 1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
  - 2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

#### 1.7 QUALITY ASSURANCE

- A. Installer Qualifications:
  - 1. Installer is a Five-Star member of the National Tile Contractors Association or a Trowel of Excellence member of the Tile Contractors' Association of America.
  - 2. Installer employs only Ceramic Tile Education Foundation Certified Installers or installers recognized by the U.S. Department of Labor as Journeyman Tile Layers for Project.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.

## 1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations for Tile: Obtain tile of each type from single source or producer.
  - 1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from single manufacturer and each aggregate from single source or producer.
  - 1. Obtain setting and grouting materials, except for unmodified Portland cement and aggregate, from single manufacturer.
  - 2. Obtain waterproof membrane and crack isolation membrane, except for sheet products, from manufacturer of setting and grouting materials.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer:
  - 1. Waterproof membrane.
  - 2. Crack isolation membrane.
  - 3. Cementitious backer units.

### 2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
  - 1. Provide tile complying with Standard grade requirements unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced



by TCNA installation methods specified in tile installation schedules, and other requirements specified.

- C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- D. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer unless otherwise indicated.
  - 1. Where tile is indicated for installation in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

## 2.3 TILE PRODUCTS

### A. Porcelain Tile Type: (T-01)

- 1. Product: Concept Surfaces, “Vapor”
- 2. Color: Clay
- 3. Tile Size: 24” x 48”
- 4. Thickness: 3/8 inch (9.5 mm).
- 5. Finish: Matte
- 6. Installation Method: Horizontal Running Bond, 1/3 offset.
- 7. Dynamic Coefficient of Friction: Not less than 0.42.
- 8. Grout Color: As selected by Architect from manufacturer's full range.
- 9. Trim Units:
  - a. External Corners: Provide Schluter -JOLLY trim profile, satin nickel anodized finish
  - b. Internal Corners: Field-buttet square corners.
  - c. Exposed Top Edge: Provide Schluter - JOLLY trim profile, satin nickel anodized finish

### B. Porcelain Tile Type: (T-05)

- 1. Product: Caesar Join
- 2. Color: Chimney
- 3. Tile Size: 12” x 24”
- 4. Thickness: 3/8
- 5. Finish: Matte

6. Installation Method: Horizontal Running Bond, 1/3 offset.
7. Dynamic Coefficient of Friction: Not less than 0.42.
8. Grout Color: As selected by Architect from manufacturer's full range.
9. Trim Units:
  - a. External Corners: Provide Schluter -JOLLY trim profile, satin nickel anodized finish
  - b. Internal Corners: Field-buttet square corners.
  - c. Exposed Top Edge: Provide Schluter - JOLLY trim profile, satin nickel anodized finish

C. Glazed Wall Tile Type: Mosaic Ceramic Tile Type (T-02)

1. Product: Daltile, Color Wheel Collection – Linear
2. Color: Matte Desert Gray
3. Tile Size: 4” x 16”
4. Thickness: 3/8”
5. Finish: Matte
6. Install: Vertical Stackboard.
7. Grout Color: As selected by Architect from manufacturer's full range.
8. Mounting:
  - a. Factory, back mounted.
9. Trim Units:
  - a. External Corners: Provide Schluter -JOLLY trim profile, satin nickel anodized finish
  - b. Internal Corners: Field-buttet square corners.
  - c. Exposed Top Edge: Provide Schluter - JOLLY trim profile, satin nickel anodized finish

D. Glazed Wall Tile Type: Ceramic Tile Type (T-03)

1. Product: Daltile, Color Wheel Collection
2. Color: Artic White Matte
3. Tile Size: 3” x 6”
4. Thickness: 3/8”
5. Finish: Matte
6. Install: Stackboard.
7. Grout Color: As selected by Architect from manufacturer's full range.

8. Trim Units:
  - a. External Corners: Provide Schluter -JOLLY trim profile, satin nickel anodized finish
  - b. Internal Corners: Field-buttet square corners.
  - c. Exposed Top Edge: Provide Schluter - JOLLY trim profile, satin nickel anodized finish
  
- E. Glazed Wall Tile Type: Mosaic Ceramic Tile Type (T-04)
  1. Product: Design and Direct Source, “Cev Opaque Brick
  2. Color: White
  3. Tile Size: 2” x 10”
  4. Thickness: 9mm
  5. Finish: Glossy
  6. Install: Stackboard.
  7. Grout Color: As selected by Architect from manufacturer's full range.
  8. Trim Units:
    - a. External Corners: Provide Schluter -JOLLY trim profile, satin nickel anodized finish
    - b. Internal Corners: Field-buttet square corners.
    - c. Exposed Top Edge: Provide Schluter - JOLLY trim profile, satin nickel anodized finish
  
- F. Glazed Wall Tile Type: Mosaic Ceramic Tile Type (T-06)
  1. Product: Emser Tile, “Passion”
  2. Color: Azul
  3. Tile Size: 3” x 8”
  4. Thickness: 10mm
  5. Finish: Glossy
  6. Install: Vertical Stackboard.
  7. Grout Color: As selected by Architect from manufacturer's full range.
  8. Trim Units:
    - a. External Corners: Provide Schluter -JOLLY trim profile, satin nickel anodized finish
    - b. Internal Corners: Field-buttet square corners.

- c. Exposed Top Edge: Provide Schluter - JOLLY trim profile, satin nickel anodized finish

## 2.4 TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A118.9 or ASTM C1325, Type A, in maximum lengths available to minimize end-to-end butt joints.
  1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
    - a. Georgia-Pacific Gypsum LLC.
    - b. USG Corporation.
  2. Thickness: 1/2 inch (12.7 mm).

## 2.5 WATERPROOF MEMBRANES

- A. General: Manufacturer's standard product that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
- B. Waterproof Membrane, Fabric-Reinforced, Fluid-Applied: System consisting of liquid-latex rubber or elastomeric polymer and continuous fabric reinforcement.
  1. Basis-of-Design Product: Subject to compliance with requirements, provide Custom Building Products ; “RedGard” Waterproofing and Anti-Fracture Membrane. or a comparable product by one of the following:
    - a. Laticrete International, Inc.
    - b. MAPEI Corporation.

## 2.6 SETTING MATERIALS

- A. Thin Bed (Thinset) Mortar Installations (Horizontal Applications Between 3/32-inch and 3/16-inch thick after beat-in):
  1. Polymer-Modified Cementitious Mortar:
    - a. Application: Used for the installation of interior and exterior floor and wall
      - 1) Vitreous, semi-vitreous or nonvitreous tile (ceramic, mosaic, quarry, and cement body tile);
      - 2) Impervious porcelain tile; and
      - 3) Natural stone veneer and stone tile

- b. Description: Premium-grade (best quality grade), single-component, ultra-high-performance, polymer-modified Portland cement mortar conforming to A118.15 shear bond strength requirements.
  - c. Products:
    - 1) Basis of Design Product: “MegaFlex Crack Prevention Mortar” manufactured by Custom Building Products, or equal products by one of the following manufacturers:
      - a) “254 Platinum” manufactured by Laticrete International
      - b) “Ultraflex 3” manufactured by Mapei Corp.
  2. Polymer-Modified Full Contact Mortar:
    - a. Application: Used for interior and exterior wet and dry area medium bed (horizontal applications – between 3/8-inch and 3/4-inch thick after beat-in) installations of ceramic floor tile and stone measuring 15 inches square and larger
    - b. Description: Regular-setting, polymer-modified mortar conforming to ANSI A118.15 shear bond strength requirements, and specifically designed to bond and support large tile without back buttering.
    - c. Products:
      - 1) Basis of Design Product: “Complete Contact Fortified Mortar” manufactured by Custom Building Products, or equal products by one of the following manufacturers:
        - a) “Laticrete Sure Set” manufactured by Laticrete International
        - b) “Ultracontact” manufactured by Mapei Corp.
- B. Medium Bed Mortar Installations (Horizontal Applications between 3/8 inch and 3/4 inch thick after beat-in):
1. Application: Used for the installation of the large-format dimensional tile.
  2. Description: Regular-setting, polymer-modified mortar conforming to A118.15 shear bond strength requirements.
  3. Products:
    - 1) Basis of Design Product: “Marble, Granite & Travertine Premium Medium Bed Mortar” manufactured by Custom Building Products, or equal products by one of the following manufacturers:
      - a) “Laticrete 4-XLT” manufactured by Laticrete International
      - b) “Ultraflex LFT” manufactured by Mapei Corp.
- C. Polymer-Modified Cementitious Grout:
1. Application: Used for the installation of interior or exterior narrow grout joints from 1/16inch up to 1/8inch wide, and especially with;
    - a. Highly glazed or polished tile
    - b. Glass mosaic tile grout installations
  2. Description: Premium-grade, pre-mixed, non-sanded Portland cement grout conforming to ANSI AA118.6, and having a specifically-tailored, integrally-mixed antimicrobial agent.
  3. Products:
    - 1) Basis of Design Product: “Prism SureColor Grout” manufactured by Custom Building Products, or equal products by one of the following manufacturers:
      - a) “Laticrete PermaColor” manufactured by Laticrete International
      - b) “Ultracolor” manufactured by Mapei Corp.
    - 2) Color(s): as indicated on drawings.

## 2.7 GROUT MATERIALS

- A. High-Performance Tile Grout: ANSI A118.7.
  - 1. Product : Subject to compliance with requirements; provide the following:
    - a. TEC/ H.B. Fuller Construction Products Inc; TEC Power Grout
  - 2. Polymer Type:
    - a. Acrylic resin or styrene-butadiene rubber in liquid-latex form for addition to prepackaged dry-grout mix.

## 2.8 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

## 2.9 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
  - 1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other

- substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
2. Verify that concrete substrates for tile floors installed with thinset mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
    - a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
    - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
  3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
  4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

### 3.3 INSTALLATION OF CERAMIC TILE

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
- B. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- C. Where accent tile differs in thickness from field tile, vary setting-bed thickness so that tiles are flush.
- D. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.

1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.

E. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:

1. Wall and Floor Tile: 1/8 inch

### 3.4 ADJUSTING AND CLEANING

- A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.
- B. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
  1. Remove grout residue from tile as soon as possible.
  2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

### 3.5 PROTECTION

- A. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- B. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

END OF SECTION 093013



## SECTION 095123 - ACOUSTICAL TILE CEILINGS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

A. Section Includes:

1. Acoustical tiles for interior ceilings.
2. Fully concealed, direct-hung, suspension systems.

B. Related Requirements:

- ~~1. Section 095113 "Acoustical Panel Ceilings" for ceilings consisting of mineral base and glass fiber base acoustical panels and exposed suspension systems.~~
- ~~2. Section 095133 "Acoustical Metal Pan Ceilings" for ceilings consisting of metal pan units with exposed and concealed suspension systems.~~

- C. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- B. Sustainable Design Submittals:

~~C. Samples: For each exposed product and for each color and texture specified, 6 inches in size.~~

~~D.C.~~ Samples for Initial Selection: For components with factory-applied finishes, if not providing basis-of-design products.

~~E.D.~~ Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of sizes indicated below:

1. Acoustical Tiles: Set of full-size Samples of each type, color, pattern, and texture.
2. Concealed Suspension-System Members: 6-inch-long Sample of each type.
3. Exposed Moldings and Trim: Set of 6-inch-long Samples of each type and color.
4. Seismic Clips: Full size.

~~F. Delegated Design Submittal: For seismic restraints for ceiling systems.~~

- ~~1. Include design calculations for seismic restraints including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.~~

## 1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
1. Ceiling suspension-system members.
  2. Structural members to which suspension systems will be attached.
  3. Method of attaching hangers to building structure.
    - a. Furnish layouts for cast-in-place anchors, clips, and other ceiling attachment devices whose installation is specified in other Sections.
  4. Carrying channels or other supplemental support for hanger-wire attachment where conditions do not permit installation of hanger wires at required spacing.
  5. Size and location of initial access modules for acoustical tile.
  6. Items penetrating finished ceiling and ceiling-mounted items including the following:
    - a. Lighting fixtures.
    - b. Diffusers.
    - c. Grilles.
    - d. Speakers.
    - e. Sprinklers.
    - f. Access panels.
    - g. Perimeter moldings.
  7. Show operation of hinged and sliding components adjacent to acoustical tiles.
  8. Minimum Drawing Scale: 1/8 inch = 1 foot
- B. Qualification Data: For testing agency.
- C. Product Test Reports: For each acoustical tile ceiling, for tests performed by a qualified testing agency.
- D. Evaluation Reports: For each acoustical tile ceiling suspension system and anchor and fastener type, from ICC-ES.
- E. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For finishes to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, attic stock, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Acoustical Ceiling Units: Full-size tiles equal to one carton per 10,000 feet.
  2. Suspension-System Components: Quantity of each concealed grid and exposed component equal to 5 percent of quantity installed.

1.8 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
1. Build mockup of typical ceiling area as shown on Drawings.
  2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical tiles, suspension-system components, and accessories to Project site and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical tiles, permit them to reach room temperature and a stabilized moisture content.

1.10 FIELD CONDITIONS

- A. Environmental Limitations: Do not install acoustical tile ceilings until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical tile ceiling installation.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

#### A. Source Limitations:

1. Armstrong or approved equal for items that are specified (see finish schedule).
- ~~2. Suspended Acoustical Tile Ceilings: Obtain each type of acoustical ceiling tile and its suspension system from single source from single manufacturer.~~

### 2.2 PERFORMANCE REQUIREMENTS

- #### A. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Flame-Spread Index: Class A according to ASTM E1264.
  2. Smoke-Developed Index: 50 or less.
- #### B. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Indicate design designations from UL or from the listings of another qualified testing agency.

### 2.3 ACOUSTICAL TILES: ACT-01, ACT-02, ACT-03 (See drawings)

- #### A. Acoustical Tile Standard: Provide manufacturer's standard tiles of configuration indicated that comply with ASTM E1264 classifications as designated by type, form, pattern, acoustical rating, and light reflectance unless otherwise indicated.
1. Type and Form: Type III, mineral base with painted finish.
  2. Pattern: fissured and as indicated by manufacturer's designation
- #### B. Color: As indicated on Drawings
- #### C. Light Reflectance (LR): LR as indicated in product spec.
- #### D. Ceiling Attenuation Class (CAC): CAC as indicated in product spec.
- #### E. Noise Reduction Coefficient (NRC): NRC as indicated in product spec.

- F. Articulation Class (AC): AC indicated in product spec.
- G. Edge/Joint Detail: Square
- H. Thickness: 5/8 inch
- I. Modular Size: As indicated in a on drawing.
- J. Antimicrobial Treatment: Manufacturer's standard broad spectrum, antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D3273, ASTM D3274, or ASTM G21 and evaluated according to ASTM D3274 or ASTM G21.

## 2.4 METAL SUSPENSION SYSTEM

- A. Metal Suspension-System Standard: Provide manufacturer's standard, direct-hung, fully concealed, metal suspension system and accessories of type, structural classification, and finish indicated that complies with applicable requirements in ASTM C635/C635M.
  - 1. High-Humidity Finish: Where indicated, provide coating tested and classified for "severe environment performance" according to ASTM C635/C635M.
- B. Suspension System: Main and cross runners roll formed from and capped with cold-rolled steel sheet, prepainted, electrolytically zinc coated, or hot-dip galvanized.
  - 1. Structural Classification: Intermediate
  - 2. Access: Upward with initial access openings of size indicated below and located throughout ceiling within each module formed by main and cross runners, with additional access available by progressively removing remaining acoustical tile.

## 2.5 ACCESSORIES

- A. Attachment Devices: Size for five times the design load indicated in ASTM C635/C635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
  - 1. Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing according to ASTM E488/E488M or ASTM E1512 as applicable, conducted by a qualified testing and inspecting agency.
    - a. Corrosion Protection: Carbon-steel components zinc plated according to ASTM B633, Class SC 1 (mild) service condition.
  - 2. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory

devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to times that imposed by ceiling construction, as determined by testing according to ASTM E1190, conducted by a qualified testing and inspecting agency.

- B. Wire Hangers, Braces, and Ties: Provide wires as follows:
1. Zinc-Coated, Carbon-Steel Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper.
  2. Stainless-Steel Wire: ASTM A580/A580M, Type 304, nonmagnetic.
  3. Size: Wire diameter sufficient for its stress at three times hanger design load (ASTM C635/C635M, Table 1, "Direct Hung") will be less than yield stress of wire, but not less than 0.106-inch diameter wire.
- C. Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.
- D. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.
- E. Angle Hangers: Angles with legs not less than 7/8 inch wide; formed with 0.04-inch- (1-mm-) thick, galvanized-steel sheet complying with ASTM A653/A653M, G90 (Z275) coating designation; with bolted connections and 5/16-inch- diameter bolts.
- ~~F. Seismic Stabilizer Bars: Manufacturer's standard perimeter stabilizers designed to accommodate seismic forces.~~
- ~~G. Seismic Struts: Manufacturer's standard compression struts designed to accommodate lateral forces.~~
- ~~H. Seismic Clips: Manufacturer's standard seismic clips designed to secure acoustical tiles in place during a seismic event.~~

## 2.6 METAL EDGE MOLDINGS AND TRIM (AS NEEDED, SEE DRAWING DETAILS)

- A. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations complying with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for of suspension-system runners.
1. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.
  2. Finish: Painted white
- B. Extruded-Aluminum Edge Moldings and Trim: Where indicated, provide manufacturer's extruded-aluminum edge moldings and trim of profile indicated or referenced by manufacturer's designations, including splice plates, corner pieces, and attachment and other clips, complying with seismic design requirements.

1. Baked-Enamel or Powder-Coat Finish: Minimum dry film thickness of 1.5 mils. Comply with ASTM C635/C635M and coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

## 2.7 ACOUSTICAL SEALANT

- A. Acoustical Sealant: As specified in Section 079219 "Acoustical Joint Sealants."

## 2.8 MISCELLANEOUS MATERIALS

- ~~A. Acoustical Tile Adhesive: Type recommended in writing by acoustical tile manufacturer, bearing UL label for Class 0-25 flame spread.~~
- ~~B. Staples: 5/16 inch long, divergent point staples.~~

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing and substrates to which acoustical tile ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine acoustical tiles before installation. Reject acoustical tiles that are wet, moisture damaged, or mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Testing Substrates: Before adhesively bonding tiles to wet-placed substrates such as cast-in-place concrete or plaster, test and verify that moisture level is below tile manufacturer's recommended limits.
- B. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width tiles at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.
- C. Layout openings for penetrations centered on the penetrating items.

### 3.3 INSTALLATION OF SUSPENDED ACOUSTICAL TILE CEILINGS

- A. Install suspended acoustical tile ceilings according to ASTM C636/C636M, [seismic design requirements](#), and manufacturer's written instructions.
- B. Suspend ceiling hangers from building's structural members and as follows:
1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
  2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
  3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
  4. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
  5. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
  6. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
  7. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
  8. Do not attach hangers to steel deck tabs.
  9. Do not attach hangers to steel roof deck. Attach hangers to structural members.
  10. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
  11. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
- C. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical tiles.
1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
  2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends. Miter corners accurately and connect securely.
  3. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- D. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.



- E. Arrange directionally patterned acoustical tiles as follows:
  - 1. Install tiles with pattern running in one direction parallel to long axis of space.
- F. Install acoustical tiles in coordination with suspension system and exposed moldings and trim. Place splines or suspension-system flanges into kerfed edges of tiles so tile-to-tile joints are interlocked.
  - 1. Fit adjoining tiles to form flush, tight joints. Scribe and cut tiles for accurate fit at borders and around penetrations through ceiling.
  - 2. Hold tile field in compression by inserting leaf-type, spring-steel spacers between tiles and moldings, spaced 12 inches o.c.

### 3.4 ERECTION TOLERANCES

- A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet, non-cumulative.
- B. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet, non-cumulative.

### 3.5 FIELD QUALITY CONTROL

~~A. Special Inspections: Engage a qualified special inspector to perform the following special inspections:~~

- ~~1. Periodic inspection during the installation of suspended ceiling grids according to ASCE/SEI 7.~~

~~B. Testing Agency: Engage a qualified testing agency to perform tests and inspections.~~

C.A. Perform the following tests and inspections of completed installations of acoustical tile ceiling hangers and anchors and fasteners in successive stages and when installation of ceiling suspension systems on each floor has reached 20 percent completion, but no tiles have been installed. Do not proceed with installations of acoustical tile ceiling hangers for the next area until test results for previously completed installations of acoustical tile ceiling hangers show compliance with requirements.

- 1. Within each test area, testing agency will select one of every 10 power-actuated fasteners and postinstalled anchors used to attach hangers to concrete and will test them for 200 lbf of tension; it will also select one of every two postinstalled anchors used to attach bracing wires to concrete and will test them for 440 lbf of tension.
- 2. When testing discovers fasteners and anchors that do not comply with requirements, testing agency will test those anchors not previously tested until 20 pass consecutively and then will resume initial testing frequency.

D.B. Acoustical tile ceiling hangers, anchors, and fasteners will be considered defective if they do not pass tests and inspections.

E.C. Prepare test and inspection reports.

### 3.6 ADJUSTING

- A. Clean exposed surfaces of acoustical tile ceilings, including trim and edge moldings. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.
- B. Remove and replace tiles and other ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095123

## SECTION 096513 - RESILIENT BASE AND ACCESSORIES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Thermoset-rubber base.
  - ~~2. Rubber stair accessories.~~
  - ~~3.2. Rubber molding accessories.~~

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified, not less than 12 inches long.
- C. Samples for Initial Selection: For each type of product indicated.
- D. Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 12 inches long.
- E. Product Schedule: For resilient base and accessory products. Use same designations indicated on Drawings.

#### 1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

## 1.5 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
  - 1. Coordinate mockups in this Section with mockups specified in other Sections.
  - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer.

## 1.7 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not, in spaces to receive resilient products during the following periods:
  - 1. 48 hours before installation.
  - 2. During installation.
  - 3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer.
- C. Install resilient products after other finishing operations, including painting, have been completed.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

### 2.2 THERMOSET-RUBBER BASE <All items with RB-X designation on drawings>

- A. Product Standard: ASTM F1861, Type TS (rubber, vulcanized thermoset), Group I (solid, homogeneous).
  - 1. Style and Location:
    - a. Style A, Straight: Provide in areas with carpet

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- b. Style B, Cove: Provide in areas with resilient floor coverings and exposed concrete.
- B. Thickness: 0.125 inch
- C. Height: 4 inches, as indicated on Drawings.
- D. Lengths: Coils in manufacturer's standard length
- E. Outside Corners: Job formed or preformed.
- F. Inside Corners: Job formed or preformed.
- G. Colors: As indicated on drawing finish schedule.

### ~~2.3 RUBBER STAIR ACCESSORIES~~

- ~~A. Fire Test Response Characteristics: As determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.~~
- ~~1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.~~
- ~~B. Stair Treads: ASTM F2169.~~
- ~~1. Type: (rubber, thermoplastic).~~
- ~~2. Class: (smooth, flat).~~
- ~~3. Group: 1 (embedded abrasive strips) with contrasting color for the visually impaired.~~
- ~~4. Nosing Style: Square, adjustable to cover angles between 60 and 90 degrees~~
- ~~5. Nosing Height: 2 inches~~
- ~~6. Thickness: 1/4 inch and tapered to back edge.~~
- ~~7. Size: Lengths and depths to fit each stair tread in equal length units.~~
- ~~8. Integral Risers: Smooth, flat; in height that fully covers substrate.~~
- ~~C. Separate Risers: Smooth, flat; in height that fully covers substrate; produced by same manufacturer as treads and recommended by manufacturer for installation with treads.~~
- ~~1. Style: Toeless, by length matching treads.~~
- ~~2. Thickness: 0.125 inch, manufacturer's standard.~~
- ~~D. Stringers: Height and length after cutting to fit risers and treads and to cover stair stringers, produced by same manufacturer as treads, and recommended by manufacturer for installation with treads.~~
- ~~1. Thickness: 0.125 inch or manufacturer's standard.~~
- ~~E. Landing Tile: Matching treads; produced by same manufacturer as treads and recommended by manufacturer for installation with treads.~~

~~F. — Locations: Provide rubber stair accessories in areas indicated.~~

~~G. — Colors and Patterns: As indicated by manufacturer's designations.~~

## ~~2.4 — VINYL STAIR ACCESSORIES~~

~~A. — Fire Test Response Characteristics: As determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.~~

~~1. — Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.~~

~~B. — Stair Treads: ASTM F2169, Type TV (vinyl, thermoplastic).~~

~~1. — Class: (smooth, flat)~~

~~2. — Group: [1 (embedded abrasive strips)] [2 (with contrasting color for the visually impaired)].~~

~~3. — Nosing Style: Square, adjustable to cover angles between 60 and 90 degrees.~~

~~4. — Nosing Height: 2 inches.~~

~~5. — Thickness: 1/4 inch~~

~~6. — Size: Lengths and depths to fit each stair tread in one piece or, for treads exceeding maximum lengths manufactured, in equal length units.~~

~~7. — Integral Risers: Smooth, flat; in height that fully covers substrate.~~

~~C. — Separate Risers: Smooth, flat; in height that fully covers substrate; produced by same manufacturer as treads and recommended by manufacturer for installation with treads.~~

~~1. — Style: Toeless, by length matching treads.~~

~~2. — Thickness: 0.125 inch or manufacturer's standard~~

~~D. — Stringers: Height and length after cutting to fit risers and treads and to cover stair stringers, produced by same manufacturer as treads, and recommended by manufacturer for installation with treads.~~

~~1. — Thickness: 0.125 inch or manufacturer's standard~~

## 2.52.3 RUBBER MOLDING ACCESSORY

A. Description: Rubber stair-tread nosing, cap for cove carpet, cap for cove resilient floor covering, carpet bar for tackless installations, carpet edge for glue-down applications nosing for carpet, nosing for resilient floor covering, reducer strip for resilient floor covering, joiner for tile and carpet, and transition strips.

B. Profile and Dimensions: As indicated on any drawing details.

C. Locations: Provide rubber molding accessories in areas indicated on drawings.

#### 2.62.4 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.
- C. Stair-Tread Nose Filler: Two-part epoxy compound recommended by resilient stair-tread manufacturer to fill nosing substrates that do not conform to tread contours.
- D. Metal Edge Strips: Extruded aluminum with mill finish, nominal 2 inches wide, of height required to protect exposed edges of flooring, and in maximum available lengths to minimize running joints.
- E. Floor Polish: Provide protective, liquid floor-polish products recommended by resilient stair-tread manufacturer.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
  - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
  - 1. Installation of resilient products indicates acceptance of surfaces and conditions.

#### 3.2 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F710.
  - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing.
4. Moisture Testing: Perform tests so that each test area does not exceed [200 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
  - a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of [3 lb of water/1000 sq. ft. in 24 hours.
  - b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install resilient products until materials are the same temperature as space where they are to be installed.
  1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.
- E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

### 3.3 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.
- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.



- G. Preformed Corners: Install preformed corners before installing straight pieces.
- H. Job-Formed Corners:
  - 1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches in length.
    - a. Form without producing discoloration (whitening) at bends.
  - 2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches in length.
    - a. Miter or cope corners to minimize open joints.

### 3.4 RESILIENT ACCESSORY INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient accessories.
- B. Resilient Stair Accessories:
  - 1. Use stair-tread-nose filler to fill nosing substrates that do not conform to tread contours.
  - 2. Tightly adhere to substrates throughout length of each piece.
  - 3. For treads installed as separate, equal-length units, install to produce a flush joint between units.
- C. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

### 3.5 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.
- B. Perform the following operations immediately after completing resilient-product installation:
  - 1. Remove adhesive and other blemishes from surfaces.
  - 2. Sweep and vacuum horizontal surfaces thoroughly.
  - 3. Damp-mop horizontal surfaces to remove marks and soil.
- C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Floor Polish: Remove soil, adhesive, and blemishes from resilient stair treads before applying liquid floor polish.
  - 1. Apply one coat(s).

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- E. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

## SECTION 096519 - RESILIENT TILE FLOORING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Solid vinyl floor tile (LVT-1, LVT-2, etc.)
- ~~2. Rubber athletic floor tile. (RAF-1).~~ Rubber stair nosing.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For each type of resilient floor tile.
  - 1. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
  - 2. Show details of special patterns.

~~C. Samples: Full-size units of each color, texture, and pattern of floor tile required.~~

- ~~1. For heat-welding bead, manufacturer's standard-size Samples, but not less than 9 inches long, of each color required.~~

~~D.C.~~ Samples for Initial Selection: For each type of floor tile indicated, if not providing basis-of design product.

~~E.D.~~ Samples for Verification: Full-size units of each color and pattern of floor tile required.

- 1. For heat-welding bead, manufacturer's standard-size Samples, but not less than 9 inches long, of each color required.

~~F.E.~~ Welded-Seam Samples: For seamless-installation technique indicated and for each floor covering product, color, and pattern required; with seam running lengthwise and in center of 6-by-9-inch Sample applied to a rigid backing and prepared by Installer for this Project.

G.F. Product Schedule: For floor tile. For all floor designations LVT-1, LVT-2, etc. ~~or RAF-1 as~~ shown on drawings.

#### 1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

#### 1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

#### 1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Floor Tile: Furnish 5% attic stock of each type, color, and pattern of floor tile installed.

#### 1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

1. Engage an installer who employs workers for this Project who are trained or certified by floor tile manufacturer for installation techniques required.

B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Coordinate mockups in this Section with mockups specified in other Sections.

a. Size: Minimum 25 sq. ft for each type, color, and pattern in location to be determined later in the field.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F. Store floor tiles on flat surfaces.

1.9 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, in spaces to receive floor tile during the following periods:
1. 48 hours before installation.
  2. During installation.
  3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer.
- C. Close spaces to traffic during floor tile installation.
- D. Close spaces to traffic for 48 hours after floor tile installation.
- E. Install floor tile after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- ~~A. Fire Test Response Characteristics: For resilient floor tile, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.~~
- ~~1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm~~

2.2 SOLID VINYL FLOOR TILE – (LVT-1, LVT-2 etc.)

- A. Basis-of-Design Products: As Indicated in Drawings
- B. Tile Standard: ASTM F1700.
1. Class: As indicated by product designation in spec.
  2. Type: Smooth or embossed surface as specified.
- C. Thickness: ~~(As indicated on spec.)~~ Reference Basis-of-Design Products as indicated on drawings.

D. Size: ~~(As indicated on spec.)~~ Reference Basis-of-Design Products as indicated on drawings.

E. Seamless-Installation Method: Heat welded or chemically bonded as directed by manufacturer's instructions where applicable.

### 2.3 RUBBER STAIR ACCESSORIES

A. Basis-of-Design Product: Nora stair nosing, T 5049 E/F

B. Compatibility: Stair Nosing must be compatible with LVT stair tread finish.

C. Limited Wear Warranty: 5 years

D. Surface: Smooth

E. Color: Manufacturer's standard colors.

~~E.F.~~ Location: Interior Stair with LVT treads.

### 2.32.4 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.

C. Seamless-Installation Accessories:

1. Heat-Welding Bead: Manufacturer's solid-strand product for heat welding seams.

a. Colors: As selected by Architect from manufacturer's full range to contrast with floor tile

2. Chemical-Bonding Compound: Manufacturer's product for chemically bonding seams.

### 2.42.5 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 2.52.6 PREPARATION

- A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates: Prepare according to ASTM F710.
1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
  2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
  3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing.
  4. Moisture Testing: Perform tests so that each test area does not exceed [~~200~~500] sq. ft. and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
    - a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
    - b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install floor tiles until materials are the same temperature as space where they are to be installed.
1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.
- b.E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

#### 2.62.7 FLOOR TILE INSTALLATION

- A. Comply with manufacturer's written instructions for installing floor tile.
- B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.

1. Lay tiles square with room axis in pattern indicated on drawings.
- C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
  1. Lay tiles with grain direction [in pattern of colors and sizes indicated on drawings.
- D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
- E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.
- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.
- G. Adhere floor tiles to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.
- H. Seamless Installation:
  1. Heat-Welded Seams: Comply with ASTM F1516. Rout joints and heat weld with welding bead to fuse sections permanently into a seamless flooring installation. Prepare, weld, and finish seams to produce surfaces flush with adjoining flooring surfaces.
  2. Chemically Bonded Seams: Bond seams with chemical-bonding compound to fuse sections permanently into a seamless flooring installation. Prepare seams and apply compound to produce tightly fitted seams without gaps, overlays, or excess bonding compound on flooring surfaces.

#### 2.72.8 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.
- B. Perform the following operations immediately after completing floor tile installation:
  1. Remove adhesive and other blemishes from surfaces.
  2. Sweep and vacuum surfaces thoroughly.
  3. Damp-mop surfaces to remove marks and soil.
- C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Cover floor tile until Substantial Completion.



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RESILIENT TILE FLOORING

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## SECTION 096566 - RESILIENT ATHLETIC FLOORING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Rubber floor tile.
  - 2. Rubber sheet flooring.
- B. Related Requirements:
  - 1. Section 096513 "Resilient Base and Accessories" for wall base and accessories installed with resilient athletic flooring.

#### 1.3 COORDINATION

- A. Coordinate layout and installation of flooring with floor inserts for gymnasium equipment.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Show installation details and locations of the following:
  - 1. Border tiles.
  - 2. Floor patterns.
  - 3. Layout, colors, widths, and dimensions of game lines and markers.
  - 4. Locations of floor inserts for athletic equipment installed through flooring.
  - 5. Seam locations for sheet flooring.
- C. Samples for Initial Selection: For each type of resilient athletic flooring, if not providing basis-of-design product.
- D. Samples for Verification: For each type, color, and pattern of flooring specified, **6-inch- (150-mm-)** square in size and of same thickness and material indicated for the Work.
  - 1. Seam Samples: For each vinyl sheet flooring color and pattern required; with seam running lengthwise and in center of **6-by-9-inch (150-by-230-mm)** Sample applied to a rigid backing and prepared by Installer for this Project.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For sheet vinyl flooring Installer.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For resilient athletic flooring to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Floor Tile: Furnish no fewer than 1 box for each 50 boxes or fraction thereof, of each type, color, pattern, and size of floor tile installed.
  2. Sheet Flooring: Furnish full-width rolls of not less than **10 linear feet (3 linear m)** for each **500 linear feet (150 linear m)** or fraction thereof, of each type, color, and pattern of flooring installed.

1.8 QUALITY ASSURANCE

- A. Sheet Vinyl Flooring Installer Qualifications: An experienced installer who has completed sheet vinyl flooring installations using seaming methods indicated for this Project and similar in material, design, and extent to that indicated for this Project; who is acceptable to manufacturer; and whose work has resulted in installations with a record of successful in-service performance.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storing.
- B. Store materials to prevent deterioration.
1. Store tiles on flat surfaces.
  2. Store rolls upright.

1.10 FIELD CONDITIONS

- A. Adhesively Applied Products:
1. Maintain temperatures during installation within range recommended in writing by manufacturer, but not less than **70 deg F (21 deg C)** or more than **95 deg F (35 deg C)**, in spaces to receive flooring 48 hours before installation, during installation, and 48 hours after installation unless longer period is recommended in writing by manufacturer.

2. After postinstallation period, maintain temperatures within range recommended in writing by manufacturer, but not less than **55 deg F (13 deg C)** or more than **95 deg F (35 deg C)**.
  3. Close spaces to traffic during flooring installation.
  4. Close spaces to traffic for 48 hours after flooring installation unless manufacturer recommends longer period in writing.
- B. Install flooring after other finishing operations, including painting, have been completed.

## PART 2 - PRODUCTS

### 2.1 RUBBER FLOOR TILE RAF-02

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
1. Mondo.
  2. Robbins Sports Surfaces.
  3. Tarkett Sports; a division of the Tarkett Group.
- B. Description: Athletic flooring consisting of modular rubber tiles with smooth edges for adhered application.
- C. Material: Rubber.
- D. Traffic-Surface Texture: Hammered
- E. Size: Manufacturer's standard-size square tile.
- F. Thickness: 3.5mm
- G. Color and Pattern: As indicated on drawings.
- H. Border: Interlocking, beveled-edge tiles, of same material as floor tile; with bevels that transition from thickness of floor tile to surface below it; with straight outside edges; for use where flooring corners and edges do not abut vertical surfaces.
1. Border Color and Pattern: As indicated on drawings.

### 2.2 RUBBER SHEET FLOORING RAF-01

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings, or equal.
- B. Description: Rubber athletic flooring provided as rolled goods for adhered installation.
- C. Material: Rubber wear layer and rubber shock-absorbent layer, vulcanized together.

- D. Traffic-Surface Texture: Smooth.
- E. Roll Size: Not less than 48 inches (1219 mm) wide by longest length that is practical to minimize splicing during installation.
- F. Thickness: 8mm.
- G. Color and Pattern: As indicated on drawings.

### 2.3 ACCESSORIES

- A. Trowelable Leveling and Patching Compound: Latex-modified, hydraulic-cement-based formulation approved by flooring manufacturer.
- B. Adhesives: Water-resistant type recommended in writing by manufacturer for substrate and conditions indicated.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances, moisture content, and other conditions affecting performance of the Work.
  - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of flooring.
- B. Concrete Substrates: Prepare according to ASTM F710.
  - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
  - 2. Alkalinity Testing: Perform pH testing according to ASTM F710. Proceed with installation only if pH readings are not less than 7.0 and not greater than 8.5.
  - 3. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft. (18.6 sq. m), and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

- a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of **3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m)** in 24 hours.
  - b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
- C. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended in writing by manufacturer. Do not use solvents.
- D. Use trowelable leveling and patching compound to fill cracks, holes, and depressions in substrates.
- E. Move flooring and installation materials into spaces where they will be installed at least 48 hours in advance of installation unless manufacturer recommends a longer period in writing.
1. Do not install flooring until it is the same temperature as space where it is to be installed.
- F. Sweep and vacuum clean substrates to be covered by flooring immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, and dust. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.3 FLOORING INSTALLATION, GENERAL

- A. Comply with manufacturer's written installation instructions.
- B. Scribe, cut, and fit flooring to butt neatly and tightly to vertical surfaces, equipment anchors, floor outlets, and other interruptions of floor surface.
- C. Extend flooring into toe spaces, door reveals, closets, and similar openings unless otherwise indicated.
- D. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating subfloor markings on flooring. Use nonpermanent, nonstaining marking device.

### 3.4 FLOOR TILE INSTALLATION

- A. Lay out tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
  1. Lay tiles square with room axis.
- B. Discard broken, cracked, chipped, or deformed tiles.

- C. Adhered Floor Tile: Adhere products to substrates using a full spread of adhesive applied to substrate to comply with adhesive and flooring manufacturers' written instructions, including those for trowel notching, adhesive mixing, and adhesive open and working times.
  - 1. Provide completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

### 3.5 SHEET FLOORING INSTALLATION

- A. Unroll sheet flooring and allow it to stabilize before cutting and fitting.
- B. Lay out sheet flooring as follows:
  - 1. Maintain uniformity of flooring direction.
  - 2. Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least **6 inches (150 mm)** away from parallel joints in flooring substrates.
  - 3. Match edges of flooring for color shading at seams.
  - 4. Locate seams according to approved Shop Drawings.
- C. Adhere products to substrates using a full spread of adhesive applied to substrate to comply with adhesive and flooring manufacturers' written instructions, including those for trowel notching, adhesive mixing, and adhesive open and working times.
  - 1. Provide completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.
- D. Vinyl Sheet Flooring Seams: Prepare and finish seams to produce surfaces flush with adjoining flooring surfaces.
  - 1. Heat-Welded Seams: Comply with ASTM F1516. Rout joints and use welding bead to permanently fuse sections into a seamless flooring.
  - 2. Chemically Bonded Seams: Comply with ASTM F693. Seal seams to prevent openings from forming between cut edges and to prevent penetration of dirt, liquids, and other substances into seams.

### 3.6 CLEANING AND PROTECTION

- A. Perform the following operations immediately after completing flooring installation:
  - 1. Remove adhesive and other blemishes from flooring surfaces.
  - 2. Sweep and vacuum flooring thoroughly.
  - 3. Damp-mop flooring to remove marks and soil after time period recommended in writing by manufacturer.
- B. Protect flooring from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.

REBID DUTCHESS STADIUM NEW LEFT FIELD CLUBHOUSE,  
SEATING BOWL, & RESTROOM BUILDING  
COUNTY PROJECT #RFB-DCB-18-22  
FISHKILL, NEW YORK

57-21113-00

ADDENDUM 01  
12.09.22

1. Do not move heavy and sharp objects directly over flooring. Protect flooring with plywood or hardboard panels to prevent damage from storing or moving objects over flooring.

END OF SECTION 096566



## SECTION 096723 - RESINOUS FLOORING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Resinous flooring.
- 2. Integral cove base accessories.

- B. Related Sections:

- 1. Section 071800 "Traffic Coatings" for vehicular-traffic-bearing, elastomeric flooring systems.
- 2. Section 096623 "Resinous Matrix Terrazzo Flooring" for thinset, epoxy-matrix terrazzo.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site

- 1. Review manufacturer's written instructions for substrate preparation and environmental conditions affecting resinous flooring installation.
- 2. Review details of integral cove bases.
- 3. Review manufacturer's written instructions for installing resinous flooring systems.
- 4. Review protection measures for adjacent construction and installed flooring, floor drainage requirements, curbs, base details, and so forth.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- 1. Include manufacturer's technical data, installation instructions, and recommendations for each resinous flooring component required.

- B. Sustainable Design Submittals:

~~C.~~ ~~Samples: For each resinous floor system required and for each color and texture specified, 6 inches square in size, applied to a rigid backing by Installer for this Project.~~

~~D.C.~~ ~~Samples for Initial Selection: For each type of exposed finish required, if not providing basis-of-design product.~~

~~E.D.~~ ~~Samples for Verification: For each resinous flooring system required and for each color and texture specified, 6 inches square, applied to a rigid backing by Installer for this Project.~~

## 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Material Certificates: For each resinous flooring component.
- C. Material Test Reports: For each resinous flooring system, by a qualified testing agency.
- D. Field quality-control reports.

## 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For resinous flooring to include in maintenance manuals.

## 1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
  - 1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply resinous flooring systems indicated.
- B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
  - 1. Apply full-thickness mockups on 96-inch-square floor are in area TBD later with Architect.
    - a. Include 96-inch length of integral cove base with inside and outside] corner.
  - 2. Simulate finished lighting conditions for Architect's review of mockups.
  - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  - 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.

## 1.9 FIELD CONDITIONS

- A. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring installation.
- B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring installation.
- C. Close spaces to traffic during resinous flooring installation and for 24 hours after installation unless manufacturer recommends a longer period.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Flammability: Self-extinguishing in accordance with ASTM D635.

### 2.2 RESINOUS FLOORING (RF-01 AND RF-02)

- A. Resinous Flooring System: Abrasion-, impact-, and chemical-resistant, aggregate-filled, resin-based monolithic floor surfacing designed to produce a seamless floor and integral cove base.
  - 1. Basis of Design Products: Subject to compliance with requirements, provide the following, [or equal](#):
    - a. RF-01: Stonehard; "Stoneclad UT".
    - b. RF-02: Stonhard; "Stoneclad TM".
- B. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, from single source from single manufacturer. Obtain secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from manufacturer recommended in writing by manufacturer of primary materials.
- C. System Characteristics:
  - 1. Color and Pattern: As selected on drawing finish schedule

2. Wearing Surface: Manufacturer's standard wearing surface
  3. Overall System Thickness: 1/4 inch
- D. System Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested in accordance with test methods indicated:
1. Compressive Strength: minimum in accordance with ASTM C579.
  2. Tensile Strength: minimum in accordance with ASTM C307.
  3. Flexural Modulus of Elasticity: minimum in accordance with ASTM C580.
  4. Water Absorption: percent maximum in accordance with ASTM C413.
  5. Shrinkage: percent maximum in accordance with ASTM C531.
  6. Indentation: percent maximum in accordance with MIL-D-3134J.
  7. Impact Resistance: No chipping, cracking, or delamination and not more than 1/16-inch permanent indentation in accordance with MIL-D-3134J.
  8. Resistance to Elevated Temperature: No slip or flow of more than 1/16 inch in accordance with MIL-D-3134J.
  9. Abrasion Resistance: maximum weight loss in accordance with ASTM D4060.
  10. Hardness: Shore D in accordance with ASTM D2240.
  11. Critical Radiant Flux: 0.45 W/sq. cm or greater in accordance with NFPA 253.
- E. Primer: Type recommended in writing by resinous flooring manufacturer for substrate and resinous flooring system indicated.
1. Products: (See 2.2 section A above for basis of design products).
- F. Waterproofing Membrane: Type recommended in writing by resinous flooring manufacturer for substrate and resinous flooring system indicated.
- G. Reinforcing Membrane: Flexible resin formulation that is recommended in writing by resinous flooring manufacturer for substrate and resinous flooring system indicated and that inhibits substrate cracks from reflecting through resinous flooring.
1. Provide fiberglass scrim embedded in reinforcing membrane.
- H. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended in writing by manufacturer for installation indicated.
- I. Body Coats:
1. Products: See 2.2 section A above for basis of design
- J. Grout Coat: See 2.2 section A above for basis of design
1. Products: See 2.2 section A above for basis of design
- K. Topcoats: Sealing or finish coats.
1. Products: See 2.2 section A above for basis of design

### 2.3 INTEGRAL COVE BASE ACCESSORIES

- A. Precast, Integral Cove Base: Impact-resistant, polymer-resin, cove base moldings with a grit profile to promote adhesion of resinous flooring and recommended in writing by resinous flooring manufacturer.
  - ~~1. Radius Cove: Cove molding with approximately 1-inch radius for adhesive installation at floor-to-wall joint as substrate to receive resinous flooring system to form an integral cove base.~~
  - 2.1. Radius Cove Base: 6 4-inch- high base molding that provides approximately 1-inch radius cove at floor-to-wall joint; for adhesive installation as substrate for resinous flooring system to form an integral cove base.
    - a. Preformed Inside and Outside Corners: Provide manufacturer's standard square inside and square 3/4- to 1-inch outside corners.
- B. Installation Adhesive: As recommended in writing by accessory manufacturer.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
  - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resinous flooring systems.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Prepare and clean substrates in accordance with resinous flooring manufacturer's written instructions for substrate indicated to ensure adhesion.
- B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring.
  - 1. Roughen concrete substrates as follows:
    - a. Comply with requirements in SSPC-SP 13/NACE No. 6, with a Concrete Surface Profile of 3 or greater in accordance with ICRI Technical Guideline No. 310.2R, unless manufacturer's written instructions are more stringent.

2. Repair damaged and deteriorated concrete in accordance with resinous flooring manufacturer's written instructions.
  3. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
    - a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
    - b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75percent relative humidity level measurement.
  4. Alkalinity and Adhesion Testing: Perform tests recommended in writing by resinous flooring manufacturer. Proceed with installation only after substrate alkalinity is not less than 6 or more than 8 Insert number pH unless otherwise recommended in writing by flooring manufacturer,
- C. Patching and Filling: Use patching and fill material to fill holes and depressions in substrates in accordance with manufacturer's written instructions.
1. Control Joint Treatment: Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring in accordance with manufacturer's written instructions.
- D. Resinous Materials: Mix components and prepare materials in accordance with resinous flooring manufacturer's written instructions.

### 3.3 INSTALLATION

- A. Apply components of resinous flooring system in accordance with manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness specified.
1. Coordinate installation of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
  2. Cure resinous flooring components in accordance with manufacturer's written instructions. Prevent contamination during installation and curing processes.
  3. Expansion and Isolation Joint Treatment: At substrate expansion and isolation joints, comply with resinous flooring manufacturer's written instructions.
- B. Primer: Apply primer over prepared substrate at spreading rate recommended in writing by manufacturer.
- C. Waterproofing Membrane: Apply waterproofing membrane, in thickness recommended in writing by manufacturer.
1. Apply waterproofing membrane to integral cove base substrates.

D. Reinforcing Membrane: Apply reinforcing membrane to substrate cracks

~~E. Integral Cove Base Accessories: Adhesively install precast accessories before applying flooring coats and in accordance with manufacturer's written instructions.~~

~~F.E.~~ Field-Formed Integral Cove Base: Apply cove base mix to wall surfaces before applying flooring coats. Apply in accordance with manufacturer's written instructions and details, including those for taping, mixing, priming, troweling, sanding, and topcoating of cove base. Round internal and external corners.

1. Integral Cove Base: ~~6~~ 4 inches high.

~~G.F.~~ Self-Leveling Body Coats: Apply self-leveling slurry body coats in thickness specified for flooring system.

1. Aggregates: Broadcast aggregates at rate recommended in writing by manufacturer. After resin is cured, remove excess aggregates to provide surface texture indicated.

~~H.G.~~ Troweled or Screeded Body Coats: Apply troweled or screeded body coats in thickness specified for flooring system. Hand or power trowel and grout to fill voids. When body coats are cured, remove trowel marks and roughness using method recommended in writing by manufacturer.

~~H.H.~~ Grout Coat: Apply grout coat to fill voids in surface of final body coat.

~~J.I.~~ Topcoats: Apply topcoats in number indicated for flooring system specified, at spreading rates recommended in writing by manufacturer, and to produce wearing surface specified.

### 3.4 FIELD QUALITY CONTROL

~~A. Material Sampling: Owner may, at any time and any number of times during resinous flooring installation, require material samples for testing for compliance with requirements.~~

~~1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in presence of Contractor.~~

~~2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data.~~

~~3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reinstall flooring materials to comply with requirements.~~

~~B.A. Core Sampling: At Owner's direction and at locations designated by Owner, take one core sample per 1000 sq. ft. of resinous flooring, or portion of, to verify thickness. For each sample that fails to comply with requirements, take two additional samples. Repair damage caused by coring. Correct deficiencies in installed flooring as indicated by testing.~~

3.5 PROTECTION

- A. Protect resinous flooring from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by resinous flooring manufacturer.

END OF SECTION 096723



## SECTION 096813 - TILE CARPETING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

A. Section Includes:

1. Modular carpet tile.

B. Related Requirements:

1. Section 024119 "Selective Demolition" for removing existing floor coverings.
2. Section 096513 "Resilient Base and Accessories" Section 096519 "Resilient Tile Flooring" for resilient wall base and accessories installed with carpet tile.
- ~~3. Section 096816 "Sheet Carpeting" for carpet roll goods.~~

#### 1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to carpet tile installation including, but not limited to, the following:
  - a. Review delivery, storage, and handling procedures.
  - b. Review ambient conditions and ventilation procedures.
  - c. Review subfloor preparation procedures.
  - d. Review tile and pattern directions desired for each carpet tile type

#### 1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include manufacturer's written data on physical characteristics, durability, and fade resistance.
2. Include manufacturer's written installation recommendations for each type of substrate.

B. Shop Drawings: For carpet tile installation, plans showing the following:

1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet tiles.
2. Carpet tile type, color, and dye lot.
3. Type of subfloor.
4. Type of installation.
5. Pattern of installation.
6. Pattern type, location, and direction.
7. Pile direction.
8. Type, color, and location of insets and borders.
9. Type, color, and location of edge, transition, and other accessory strips.
10. Transition details to other flooring materials.

~~C.~~ ~~Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.~~

- ~~1. Carpet Tile: Full-size Sample.~~
- ~~2. Exposed Edge, Transition, and Other Accessory Stripping: 12-inch-long Samples.~~

~~D.C.~~ Samples for Initial Selection: For each type of carpet tile, [if not providing basis-of-design products](#).

1. Include Samples of exposed edge, transition, and other accessory stripping involving color or finish selection.

~~E.D.~~ Samples for Verification: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.

1. Carpet Tile: Full-size Sample.
2. Exposed Edge, Transition, and Other Accessory Stripping: 12-inch-long Samples.

~~F.E.~~ Product Schedule: For carpet tile. Use same designations indicated on Drawings.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For carpet tile, for tests performed by a qualified testing agency.
- C. Sample Warranty: For special warranty.

## 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For carpet tiles to include in maintenance manuals. Include the following:

1. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
2. Precautions for cleaning materials and methods that could be detrimental to carpet tile.

#### 1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, attic stock, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  1. Carpet Tile: Full-size units equal to 10% percent of amount installed for each type indicated.

#### 1.8 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who is certified by the International Certified Floorcovering Installers Association at the Commercial II certification level.
- ~~B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
  1. Build mockups at locations and in sizes shown on Drawings.
  2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.~~

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Comply with the Carpet and Rug Institute's CRI 104.

#### 1.10 FIELD CONDITIONS

- A. Comply with the Carpet and Rug Institute's CRI 104 for temperature, humidity, and ventilation limitations.
- B. Environmental Limitations: Do not deliver or install carpet tiles until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at levels planned for building occupants during the remainder of the construction period.
- C. Do not install carpet tiles over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet tile manufacturer.

- D. Where demountable partitions or other items are indicated for installation on top of carpet tiles, install carpet tiles before installing these items.

#### 1.11 WARRANTY

- A. Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.
1. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate, vandalism, or abuse.
  2. Failures include, but are not limited to, the following:
    - a. More than 10 percent edge raveling, snags, and runs.
    - b. Dimensional instability.
    - c. Excess static discharge.
    - d. Loss of tuft-bind strength.
    - e. Loss of face fiber.
    - f. Delamination.
  3. Warranty Period: 10 years from date of Substantial Completion.

#### PART 2 - PRODUCTS

##### 2.1 CARPET TILE CPT-1, CPT-2, CPT-3

~~A. List basis of design here~~ Basis of Design Products: as indicated on drawings, or equal.

~~B.A.~~ Color: As indicated on finish schedule in drawing set.

~~C.B.~~ Pattern: As indicated in drawing set.

~~D.C.~~ Fiber Content: As delineated in carpet specification

~~E.D.~~ Size: As delineated in carpet specification

~~F.E.~~ Applied Treatments

~~1. Antimicrobial Treatment: Manufacturer's standard treatment that protects carpet tiles as follows:~~

~~a. Antimicrobial Activity: Not less than 2 mm halo of inhibition for gram positive bacteria, not less than 1 mm halo of inhibition for gram negative bacteria, and no fungal growth, according to AATCC 174.~~

~~G.F.~~ Performance Characteristics:

1. Appearance Retention Rating: Heavy traffic, 3.0 minimum according to ASTM D7330.
2. Colorfastness to Crocking: Not less than 4, wet and dry, according to AATCC 165.

## 2.2 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.
- B. Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products and subfloor conditions indicated, that comply with flammability requirements for installed carpet tile, and are recommended by carpet tile manufacturer for releasable installation.
- C. Metal Edge/Transition Strips: Extruded aluminum with mill finish of profile and width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance.
- B. Examine carpet tile for type, color, pattern, and potential defects.
- C. Concrete Slabs: Verify that finishes comply with requirements specified in Section 033000 "Cast-in-Place Concrete" and that surfaces are free of cracks, ridges, depressions, scale, and foreign deposits.
  1. Moisture Testing: Perform tests so that each test area does not exceed [200-1000 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
    - a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of [3 lb of water/1000 sq. ft. in 24 hours.
    - b. Relative Humidity Test: Using in situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
    - c. Perform additional moisture tests recommended in writing by adhesive and carpet tile manufacturers. Proceed with installation only after substrates pass testing.

~~D. Wood Subfloors: Verify the following:~~

- ~~1. Underlayment over subfloor complies with requirements specified in Section 061600 "Sheathing."~~
- ~~2. Underlayment surface is free of irregularities and substances that may interfere with adhesive bond or show through surface.~~

~~E. Metal Subfloors: Verify the following:~~

- ~~1. Underlayment surface is free of irregularities and substances that may interfere with adhesive bond or show through surface.~~

~~F.D. Painted Subfloors: Perform bond test recommended in writing by adhesive manufacturer.~~

~~G.E. Proceed with installation only after unsatisfactory conditions have been corrected.~~

### 3.2 PREPARATION

- A. General: Comply with the Carpet and Rug Institute's CRI 104 and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile.
- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider, and protrusions more than 1/32 inch unless more stringent requirements are required by manufacturer's written instructions.
- C. Concrete Substrates: Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by adhesive and carpet tile manufacturers.
- D. Metal Substrates: Clean grease, oil, soil and rust, and prime if recommended in writing by adhesive manufacturer. Rough sand painted metal surfaces and remove loose paint. Sand aluminum surfaces, to remove metal oxides, immediately before applying adhesive.
- E. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

### 3.3 INSTALLATION

- A. General: Comply with the Carpet and Rug Institute's CRI 104, Section 10, "Carpet Tile," and with carpet tile manufacturer's written installation instructions.
- B. Installation Method: As recommended in writing by carpet tile manufacturer
- C. Maintain dye-lot integrity. Do not mix dye lots in same area.
- D. Maintain pile-direction patterns recommended in writing by carpet tile manufacturer

- E. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.
- F. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- G. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on carpet tile as marked on subfloor. Use nonpermanent, nonstaining marking device.
- H. Install pattern parallel to walls and borders.

### 3.4 CLEANING AND PROTECTION

- A. Perform the following operations immediately after installing carpet tile:
  - 1. Remove excess adhesive and other surface blemishes using cleaner recommended by carpet tile manufacturer.
  - 2. Remove yarns that protrude from carpet tile surface.
  - 3. Vacuum carpet tile using commercial machine with face-beater element.
- B. Protect installed carpet tile to comply with the Carpet and Rug Institute's CRI 104, Section 13.7.
- C. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION 096813

## SECTION 099123 - INTERIOR PAINTING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following interior substrates:
  - 1. Concrete.
  - 2. Concrete masonry units (CMUs).
  - 3. Steel and iron.
  - 4. Galvanized metal.
  - 5. Wood.
  - 6. Gypsum board.
  - 7. Acoustic panels and tiles.
  - 8. Cotton or canvas insulation covering.
- B. Related Requirements:
  - 1. Section 051200 "Structural Steel Framing" for shop priming structural steel.
  - 2. Section 055000 "Metal Fabrications" for shop priming metal fabrications.
  - 3. Section 055113 "Metal Pan Stairs" for shop priming metal pan stairs.
  - 4. Section 055116 "Metal Floor Plate Stairs" for shop priming metal floor plate stairs.
  - 5. Section 055119 "Metal Grating Stairs" for shop priming metal grating stairs.
  - 6. Section 055213 "Pipe and Tube Railings" for shop priming pipe and tube railings.
  - 7. Section 099600 "High-Performance Coatings" for tile-like coatings.
  - 8. Section 099300 "Staining and Transparent Finishing" for surface preparation and the application of wood stains and transparent finishes on interior wood substrates.

#### 1.3 DEFINITIONS

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.
- B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.



- C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.
- D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.
- E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D523.
- F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D523.
- G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D523.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
  - 2. Indicate VOC content.

#### ~~B. Sustainable Design Submittals:~~

- ~~1. Product Data: For paints and coatings, indicating VOC content.~~
- ~~2. Laboratory Test Reports: For paints and coatings, indicating compliance with requirements for low emitting materials.~~
- ~~3. Health Product Declaration: For each product.~~
- ~~4. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.~~
- ~~5. MRe2 Environmental Product Declaration Product Language: Products shall be selected with a preference to products that have product specific environmental product declaration documentation.~~
- ~~6. EQe2 Low Emitting Materials: The VOC content of all adhesives, sealants, paints and coatings in this Section shall not exceed the VOC limits established in Division 01 Sustainable Design sections.~~
- ~~7. 90% by volume of all interior paints and coatings applied on site must comply with the emissions testing per standard method CDPH v1.2 2017 for 14 days and provide 3<sup>rd</sup> party proof of test results.
  - ~~a. Approved 3<sup>rd</sup> party documentation UL GreenGuard Certificate of similar document indicating same information~~~~

#### ~~C.B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.~~

- ~~1. Submit Samples on rigid backing, 8 inches (200 mm) square.~~
- ~~2. Apply coats on Samples in steps to show each coat required for system.~~
- ~~3. Label each coat of each Sample.~~
- ~~4. Label each Sample for location and application area.~~

D.C. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

#### 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Paint: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

#### 1.6 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Architect will select one surface to represent surfaces and conditions for application of each paint system.
    - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
    - b. Other Items: Architect will designate items or areas required.
  2. Final approval of color selections will be based on mockups.
    - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
  3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
1. Maintain containers in clean condition, free of foreign materials and residue.
  2. Remove rags and waste from storage areas daily.

## 1.8 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products listed in the Interior Materials Schedule on sheet A13.0 or an approved equal by one of the following:
  - 1. Behr Process Corporation.
  - 2. Benjamin Moore & Co.
  - 3. Diamond Vogel Paints.
  - 4. Dulux (formerly ICI Paints); a brand of AkzoNobel.
  - 5. Glidden Professional.
  - 6. Kwal Paint; Comex Group.
  - 7. PPG Architectural Finishes, Inc.
  - 8. Sherwin-Williams Company (The).
- B. Products: Subject to compliance with requirements, provide product listed in the Interior Material Schedule on sheet A13.0 for the paint category indicated. [Obtain each paint product from single source from single manufacturer](#)

### 2.2 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:
  - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. VOC Content: For field applications that are inside the weatherproofing system, verify paints and coatings comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 50 g/L.
3. Dry-Fog Coatings: 150 g/L.
4. Primers, Sealers, and Undercoaters: 100 g/L.
5. Rust-Preventive Coatings: 100 g/L.
6. Zinc-Rich Industrial Maintenance Primers: 100 g/L.
7. Pretreatment Wash Primers: 420 g/L.
8. Shellacs, Clear: 730 g/L.
9. Shellacs, Pigmented: 550 g/L.

- D. Low-Emitting Materials: For field applications that are inside the weatherproofing system, verify 90 percent of paints and coatings comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- E. Colors: As noted on Interior Materials Schedule on sheet A13.0

## 2.3 SOURCE QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:
1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
  2. Testing agency will perform tests for compliance with product requirements.
  3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
1. Concrete: 12 percent.
  2. Masonry (Clay and CMUs): 12 percent.

## INTERIOR PAINTING

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3. Wood: 15 percent.
  4. Gypsum Board: 12 percent.
- C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- E. Proceed with coating application only after unsatisfactory conditions have been corrected.
1. Application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
- F. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer[.] [ but not less than the following:]
1. SSPC-SP 2.
  2. SSPC-SP 3.
  3. SSPC-SP 7/NACE No. 4.
  4. SSPC-SP 11.

- G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- I. Wood Substrates:
  - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
  - 2. Sand surfaces that will be exposed to view, and dust off.
  - 3. Prime edges, ends, faces, undersides, and backsides of wood.
  - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
- J. Cotton or Canvas Insulation Covering Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
  - 1. Use applicators and techniques suited for paint and substrate indicated.
  - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
  - 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  - 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

- E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
1. Paint the following work where exposed in occupied spaces:
    - a. Equipment, including panelboards.
    - b. Uninsulated metal piping.
    - c. Uninsulated plastic piping.
    - d. Pipe hangers and supports.
    - e. Metal conduit.
    - f. Plastic conduit.
    - g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
    - h. Other items as directed by Architect.
  2. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

### 3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
1. Contractor shall touch up and restore painted surfaces damaged by testing.
  2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

### 3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.6 INTERIOR PAINTING SCHEDULE

- A. Concrete – Smooth (Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place):
1. Epoxy Systems (Water Based)
    - a. Eg-Shel/Low Luster:
      - 1) 1st Coat: S-W Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series.
      - 2) 2nd Coat: S-W Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
- B. Masonry – (CMU – Concrete, Split Face, Scored, Smooth, High Density, Low Density, Fluted, Stucco)
1. Epoxy System (Water Based)
    - a. Eg Shel/Low Luster Finihs:
      - 1) 1st Coat: S-W Pro Industrial Heavy Duty Block Filler, B42W00150 (16.0-21.0 mils wet, 8.0-10.5 mils dry per coat).
      - 2) 2nd Coat: S-W Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series.
      - 3) 3rd Coat: S-W Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
- C. Metal - Non-Ferrous- (Galvanized and Aluminum):
1. Latex Systems:
    - a. Semi-Gloss Finish:
      - 1) 1st Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
      - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
- D. Metal - (Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous and Ornamental Iron, Structural Iron, Ferrous Metal).
1. Latex Systems:
    - a. Semi-Gloss Finish:
      - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).
      - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.



- 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
- E. Metal – (Exposed Ceilings - Structural Steel, Joists, Trusses, Beams).
1. Dryfall Waterborne Topcoats:
    - a. Flat Finish:
      - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).
      - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Flat, B42-181 Series.
      - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Flat, B42-181 Series (6.0-9.0 mils wet, 1.5-2.3 mils dry per coat)
- F. Wood Substrates: Wood trim.
1. Institutional Low-Odor/VOC Latex System MPI INT 6.3V:
    - a. Prime Coat: Primer, latex, for interior wood, MPI #39.
    - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    - c. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 2), MPI #144.
- G. Gypsum Board Substrates:
1. Institutional Low-Odor/VOC Latex System MPI INT 9.2M:
    - a. Eg-Shel/Satin Finish:
      - 1) 1st coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
      - 2) 2nd coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series.
      - 3) 3rd coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series (4 mils wet, 1.7 mils dry per coat).
    - b. Flat Finish:
      - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
      - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series.
      - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series (4 mils wet, 1.6 mils dry per coat).
- H. Acoustic Panels and Tiles:
1. Institutional Low-Odor/VOC Latex System MPI INT 9.3D:

- a. Prime Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
- b. Topcoat: Latex, interior, institutional low odor/VOC, flat (MPI Gloss Level 1), MPI #143.

I. Cotton or Canvas Insulation-Covering Substrates: Including pipe and duct coverings.

1. Institutional Low-Odor/VOC Latex System MPI INT 10.1D:

- a. Prime Coat: Primer sealer, latex, interior, MPI #50.
- b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
- c. Topcoat: Latex, interior, institutional low odor/VOC, flat (MPI Gloss Level 1), MPI #143.

3.7 PAINT COLOR SCHEDULE

Surface	Color	Sheen
A. Interior Color Selections:		
1. Exposed Concrete and Precast Concrete Ceilings, including conduits, junction boxes, pendants, pipe, fittings, ducts, diffusers, grilles, registers, etc.:	As noted on Drawings	Eggshell
2. Concrete Walls:	As noted on Drawings	Eggshell
3. CMU Walls:	As noted on Drawings	Eggshell
4. Exposed Structure: Steel Deck, Joists, Bridging, Structural Steel, Conduits, Junction Boxes, Pendants, Pipe, Fittings, Ducts, Diffusers, Grilles, Registers, etc.:	As noted on Drawings	Eggshell
5. Exposed Joists:	As noted on Drawings	Semi-Gloss
6. Steel Columns:	As noted on Drawings	Semi-Gloss
7. Other Structural Steel:	As noted on Drawings	Semi-Gloss
8. Wood Base:	As noted on Drawings	Eggshell
9. Telecomm Plywood Backing Panels:	Match surface on which it occurs	
10. Wall Access Doors:	Match Surface on which it occurs	
11. Ceiling Access Doors:	Match Surface on which it occurs	
12. Gypsum Board:	As noted on Drawings	Eggshell
13. Ceiling Suspension:	Match Grid	
14. Mechanical and Electrical Items: Registers, Grilles, Steel-Encased Heating Units, Heating and Water Pipes, Electrical Conduits, Outlet boxes and panelboard fronts exposed in finished rooms	Match surface on which it occurs	

REBID DUTCHESS STADIUM NEW LEFT FIELD CLUBHOUSE,  
SEATING BOWL, & RESTROOM BUILDING  
COUNTY PROJECT #RFB-DCB-18-22  
FISHKILL, NEW YORK

57-21113-00

ADDENDUM 01  
12.09.22

15. Inside of Ductwork Exposed to View  
Through Registers and Grilles:

Black

Flat

END OF SECTION 099123

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Public-use washroom accessories.
2. Public-use shower room accessories.
3. Hand dryers.
4. Childcare accessories.
5. Custodial accessories.

B. Related Requirements:

1. Section 088300 "Mirrors" for frameless mirrors.

1.2 ALTERNATES

- A. See Section 012300 "Alternates" for description of alternates affecting items specified in this Section.

1.3 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.
- B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
1. Include electrical characteristics.

1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For manufacturer's special warranties.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For accessories to include in maintenance manuals.

1.7 WARRANTY

- A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, visible silver spoilage defects.
  2. Warranty Period: 15 years from date of Substantial Completion.
- B. Manufacturer's Special Warranty for Hand Dryers: Manufacturer agrees to repair or replace hand dryers that fail in materials or workmanship within specified warranty period.
1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Structural Performance: Design accessories and fasteners to comply with the following requirements:
1. Grab Bars: Installed units are able to resist 250 lbf (1112 N) concentrated load applied in any direction and at any point.
  2. Shower Seats: Installed units are able to resist 360 lbf (1601 N) applied in any direction and at any point.

2.2 PUBLIC-USE WASHROOM ACCESSORIES

- A. Toilet Tissue (Roll) Dispenser (TTD):
1. Basis-of-Design Product: Subject to compliance with requirements, provide Bobrick Washroom Equipment, Inc; B-4288 or a comparable product by one of the following:
    - a. ASI American Specialties, Inc.; ASI Group.
    - b. Bradley Corporation.
    - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
  2. Description: Roll-in-reserve dispenser with hinged front secured with tumbler lockset.
  3. Mounting: Surface mounted.

4. Operation: Noncontrol delivery with theft-resistant spindle.
5. Capacity: Designed for 4-1/2- or 5-inch- (114- or 127-mm-) diameter tissue rolls.
6. Material and Finish: Stainless steel, ASTM A480/A480M No. 4 finish (satin).

B. Paper Towel (Folded) Dispenser (PTD):

1. Basis-of-Design Product: Subject to compliance with requirements, provide Bobrick Washroom Equipment, Inc; B-4262 or a comparable product by one of the following:
  - a. ASI American Specialties, Inc.; ASI Group.
  - b. Bradley Corporation.
  - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
2. Mounting: Surface mounted.
3. Minimum Capacity: 400 C-fold or 525 multifold towels.
4. Material and Finish: Stainless steel, ASTM A480/A480M No. 4 finish (satin).
5. Lockset: Tumbler type.

C. Combination Towel (Folded) Dispenser/Waste Receptacle (CU):

1. Basis-of-Design Product: Subject to compliance with requirements, provide Bobrick Washroom Equipment, Inc; B-3942 or a comparable product by one of the following:
  - a. ASI American Specialties, Inc.; ASI Group.
  - b. Bradley Corporation.
  - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
2. Description: Combination unit for dispensing C-fold or multifold towels, with removable waste receptacle.
3. Mounting: Semirecessed.
  - a. Designed for nominal 6-inch (150-mm) wall depth.
4. Minimum Towel-Dispenser Capacity: 600 C-fold or 800 multifold paper towels.
5. Minimum Waste-Receptacle Capacity: 12 gal. (45.4 L).
6. Material and Finish: Stainless steel, ASTM A480/A480M No. 4 finish (satin).
7. Liner: Reusable, vinyl waste-receptacle liner.
8. Lockset: Tumbler type for towel-dispenser compartment and waste receptacle.

D. Automatic Soap Dispenser (SD):

1. Basis-of-Design Product: Subject to compliance with requirements, provide Bobrick Washroom Equipment, Inc; B-2013 or a comparable product by one of the following:
  - a. ASI American Specialties, Inc.; ASI Group.
  - b. Bradley Corporation.
  - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
  - d. Sloan Valve Company.

- e. Stern Engineering Ltd.
  2. Description: Automatic dispenser with infrared sensor to detect presence of hands; battery powered; designed for dispensing soap in lather form.
  3. Mounting: Surface mounted.
- E. Grab Bar:
  1. Mounting: Flanges with concealed exposed fasteners.
  2. Material: Stainless steel, 0.05 inch (1.3 mm) thick.
    - a. Finish: Smooth, ASTM A480/A480M No. 4 finish (satin) on ends and slip-resistant texture in grip area.
  3. Outside Diameter: 1-1/4 inches (32 mm) 1-1/2 inches (38 mm).
  4. Configuration and Length: Straight, 36 inches (914 mm) long.
- F. Sanitary-Napkin Disposal Unit (SND):
  1. Basis-of-Design Product: Subject to compliance with requirements, provide Bobrick Washroom Equipment, Inc; B-270 or a comparable product by one of the following:
    - a. ASI American Specialties, Inc.; ASI Group.
    - b. Bradley Corporation.
    - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
  2. Mounting: Surface mounted.
  3. Door or Cover: Self-closing, disposal-opening cover.
  4. Receptacle: Removable.
  5. Material and Finish: Stainless steel, ASTM A480/A480M No. 4 finish (satin).
- G. Mirror Unit (MR):
  1. Basis-of-Design Product: Subject to compliance with requirements, provide Bobrick Washroom Equipment, Inc; B-290 Series or a comparable product by one of the following:
    - a. ASI American Specialties, Inc.; ASI Group.
    - b. Bradley Corporation.
    - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
  2. Frame: Stainless steel angle, 0.05 inch (1.3 mm) thick.
    - a. Corners: Welded and ground smooth.
  3. Size: 24 inches (61cm) x 36 inches (91cm).
  4. Hangers: Manufacturer's standard rigid, tamper and theft resistant.

## 2.3 PUBLIC-USE SHOWER ROOM ACCESSORIES

### A. Shower Curtain Rod (SCR):

1. Basis-of-Design Product: Subject to compliance with requirements, provide Bobrick Washroom Equipment, Inc; B-207 or a comparable product by one of the following:
  - a. ASI American Specialties, Inc.; ASI Group.
  - b. Bradley Corporation.
  - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
2. Description: 1-inch- (25.4-mm-) outside diameter, straight rod.
3. Configuration: As indicated on Drawings
4. Mounting Flanges: Concealed fasteners; in manufacturer's standard material and finish.
5. Rod Material and Finish: Stainless steel, ASTM A480/A480M No. 4 finish (satin).

### B. Shower Curtain (SCR):

1. Basis-of-Design Product: Subject to compliance with requirements, provide Bobrick Washroom Equipment, Inc; 204-2 or a comparable product by one of the following:
  - a. ASI American Specialties, Inc.; ASI Group.
  - b. Bradley Corporation.
  - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
2. Size: Minimum 6 inches (152 mm) wider than opening by 72 inches (1829 mm) high.
3. Material: Vinyl, minimum 0.006 inch (0.15 mm) thick, opaque, matte.
4. Color: White.
5. Grommets: Corrosion resistant at minimum 6 inches (152 mm) o.c. through top hem.
6. Shower Curtain Hooks: Stainless steel, spring wire curtain hooks with snap fasteners, sized to accommodate specified curtain rod. Provide one hook per curtain grommet.

### C. Folding Shower Seat (SH SEAT):

1. Basis-of-Design Product: Subject to compliance with requirements, provide Bobrick Washroom Equipment, Inc; B-5181 or a comparable product by one of the following:
  - a. ASI American Specialties, Inc.; ASI Group.
  - b. Bradley Corporation.
  - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
2. Configuration: L-shaped seat, designed for wheelchair access.
3. Seat: Phenolic or polymeric composite of slat-type or one-piece construction in color as selected by Architect.
4. Mounting Mechanism: Stainless steel, ASTM A480/A480M No. 4 finish (satin).
5. Dimensions: 33 inches (838 mm) x 22 inches (559 mm).

### D. Robe Hook (RH):



1. Basis-of-Design Product: Subject to compliance with requirements, provide Bradley Corporation; B-7672 or a comparable product by one of the following:
  - a. ASI American Specialties, Inc.; ASI Group.
  - b. Bobrick Washroom Equipment, Inc.
  - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
2. Description: Double-prong unit.
3. Material and Finish: Stainless steel, ASTM A480/A480M No. 7 finish (polished).

## 2.4 HAND DRYERS

### A. High-Speed Air Dryer (HD):

1. Basis-of-Design Product: Subject to compliance with requirements, provide Dyson Airblade V, or a comparable product by one of the following:
  - a. [ASI American Specialties, Inc.; ASI Group.](#)
  - b. [American Dryer, Inc.](#)
  - c. [Bobrick Washroom Equipment, Inc.](#)
  - d. [Bradley Corporation.](#)
  - e. [Dyson Inc.](#)
  - f. [Excel Dryer Inc.](#)
  - g. [Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.](#)
  - h. [World Dryer Corporation.](#)
  - i. [Saniflow Corporation, a Mediclinics Company](#)
2. Description: High-speed, unheated-air hand dryer for rapid hand drying.
3. Mounting: Surface mounted.
  - a. Protrusion Limit: Installed unit protrudes maximum **4 inches (102 mm)** from wall surface if leading edge is between 27 and 80 inches above the finished floor.
4. Operation: Infrared-sensor activated with timed power cut-off switch.
  - a. Average Dry Time: 12 seconds.
  - b. Automatic Shut Off: At 60 seconds.
5. Maximum Sound Level: 80 dB.
6. Cover Material and Finish: Molded plastic, gray.
7. Electrical Requirements: 115 V, 13 A, 1500 W.

## 2.5 CHILDCARE ACCESSORIES

### A. Diaper-Changing Station (BCS):

1. Basis-of-Design Product: Subject to compliance with requirements, provide Koala Kare Products; Bobrick Washroom Equipment, Inc.; KB200 or a comparable product by one of the following:
  - a. ASI American Specialties, Inc.; ASI Group.
  - b. Bradley Corporation.
  - c. [Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.](#)
  - e-d. [Saniflow Corporation, a Medclinics Company](#)
2. Description: Horizontal unit that opens by folding down from stored position and with child-protection strap.
  - a. Engineered to support minimum of 200-lb (90.72-kg) static load when opened.
3. Mounting: Surface mounted, with unit projecting not more than 4 inches (102 mm) from wall when closed.
4. Operation: By pneumatic shock-absorbing mechanism.
5. Material and Finish: HDPE in manufacturer's standard color.
6. Liner Dispenser: Provide built-in dispenser for disposable sanitary liners.

B. Diaper-Changing Station (BCS-R):

1. Basis-of-Design Product: Subject to compliance with requirements, provide Koala Kare Products; Bobrick Washroom Equipment, Inc.; KB110-SSRE or a comparable product by one of the following:
  - a. ASI American Specialties, Inc.; ASI Group.
  - b. Bradley Corporation.
  - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
2. Description: Horizontal unit that opens by folding down from stored position and with child-protection strap.
  - a. Engineered to support minimum of 200-lb (90.72-kg) static load when opened.
3. Mounting: Recessed, with unit projecting not more than 1 inch (25 mm) from wall when closed.
4. Operation: By pneumatic shock-absorbing mechanism.
5. Material and Finish: Stainless steel, ASTM A480/A480M No. 4 finish (satin), exterior shell with rounded plastic corners; HDPE interior in manufacturer's standard color.
6. Liner Dispenser: Provide built-in dispenser for disposable sanitary liners.

2.6 CUSTODIAL ACCESSORIES

A. Custodial Mop and Broom Holder (US):

1. Basis-of-Design Product: Subject to compliance with requirements, provide Bobrick Washroom Equipment, Inc; B-239 or a comparable product by one of the following:
  - a. ASI American Specialties, Inc.; ASI Group.
  - b. Bradley Corporation.
  - c. Gamco Commercial Restroom Accessories; Bobrick Washroom Equipment, Inc.
2. Description: Unit with shelf, hooks, and holders beneath shelf.
3. Length: 34 inches (864 mm).
4. Hooks: Four.
5. Mop/Broom Holders: Three, spring-loaded, rubber hat, cam type.
6. Material and Finish: Stainless steel, ASTM A480/A480M No. 4 finish (satin).
  - a. Shelf: Not less than nominal 0.05-inch- (1.3-mm-) thick stainless steel.

## 2.7 MATERIALS

- A. Stainless Steel: ASTM A240/A240M or ASTM A666, Type 304, 0.031-inch- (0.8-mm-) minimum nominal thickness unless otherwise indicated.
- B. Steel Sheet: ASTM A1008/A1008M, Designation CS (cold rolled, commercial steel), 0.036-inch- (0.9-mm-) minimum nominal thickness.
- C. Galvanized-Steel Sheet: ASTM A653/A653M, with G60 (Z180) hot-dip zinc coating.
- D. Galvanized-Steel Mounting Devices: ASTM A153/A153M, hot-dip galvanized after fabrication.
- E. Fasteners: Screws, bolts, and other devices of same material as accessory unit, unless otherwise recommended by manufacturer or specified in this Section, and tamper and theft resistant where exposed, and of stainless or galvanized steel where concealed.
- F. Chrome Plating: ASTM B456, Service Condition Number SC 2 (moderate service).
- G. Mirrors: ASTM C1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

## 2.8 FABRICATION

- A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.
- B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
  - 1. Remove temporary labels and protective coatings.
- B. Grab Bars: Install to comply with specified structural-performance requirements.
- C. Shower Seats: Install to comply with specified structural-performance requirements.

3.2 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
- B. Clean and polish exposed surfaces according to manufacturer's written instructions.

END OF SECTION 102800

## SECTION 123661.16 - SOLID SURFACING COUNTERTOPS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

A. Section Includes:

1. Solid surface material countertops.
2. Solid surface material backsplashes.
3. Solid surface material end splashes.
4. Solid surface material apron fronts.
- ~~5. Solid surface material sinks.~~

B. Related Requirements:

1. Section 224100 "Residential Plumbing Fixtures" for non-integral sinks, sinks, and plumbing fittings.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For countertop materials and sinks.

~~B. Sustainable Design Submittals:~~

- ~~C.B.~~ Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.

1. Show locations and details of joints.
2. Show direction of directional pattern, if any.

~~D.C.~~ Samples for Initial Selection: For each type of material exposed to view, if not providing basis of design products.

~~E.D.~~ Samples for Verification: For the following products:

1. Countertop material, 6 inches square.
2. Wood trim, 8 inches long.

~~3. One full size solid surface material countertop, with front edge and backsplash, 8 by 10 inches, of construction and in configuration specified.~~

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For solid surface material countertops to include in maintenance manuals. Include Product Data for care products used or recommended by Installer and names, addresses, and telephone numbers of local sources for products.

#### 1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate countertops similar to that required for this Project, and whose products have a record of successful in-service performance.

- B. Installer Qualifications: Fabricator of countertops.

~~C. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for fabrication and execution.~~

~~1. Build mockup of typical countertop as shown on Drawings.~~

~~2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.~~

#### 1.7 FIELD CONDITIONS

- A. Field Measurements: Verify dimensions of countertops by field measurements ~~after base cabinets are installed but~~ before countertop fabrication is complete.

#### 1.8 COORDINATION

- A. Coordinate locations of utilities that will penetrate countertops or backsplashes.

### PART 2 - PRODUCTS

#### 2.1 SOLID SURFACE COUNTERTOP MATERIALS

- A. Solid Surface Material: Homogeneous-filled plastic resin complying with ICPA SS-1.

#### SOLID SURFACING COUNTERTOPS

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1. Type: Provide Standard type unless Special Purpose type is indicated.
- ~~2. Integral Sink Bowls: Comply with CSA B45.5/IAPMO Z124.~~
- ~~3.2. Colors and Patterns: Basis-of-design products As designated on finish schedule in drawing set. SSM-01, SSM-02~~

- B. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue
- C. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

## 2.2 COUNTERTOP FABRICATION

- A. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WT's "Architectural Woodwork Standards."

1. Grade: Premium.

- B. Configuration:

1. Front: Straight, slightly eased at top (See drawings)
2. Backsplash: Straight, slightly eased at corner
3. End Splash: ~~None~~ Matching backsplash

- C. Countertops: 1/2-inch- with front edge built up with same material.

~~D. Countertops: 1/4 inch (6.4 mm) thick, solid surface material laminated to 3/4 inch (19 mm) thick particleboard with [wood trimmed exposed edges] [exposed edges built up with 3/4 inch (19 mm) thick, solid surface material] [exposed edges faced with 1/4 inch (6.4 mm) thick, solid surface material].~~

~~E.D. Backsplashes: 3/4-inch~~

~~F.E. Fabricate tops with shop-applied edges and backsplashes, if possible. Comply with solid surface material manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.~~

1. Fabricate with loose backsplashes for field assembly, if shop assembly is not possible.
- ~~2. Install integral sink bowls in countertops in the shop.~~

~~G.F. Joints: Fabricate countertops without joints, if possible.~~

~~H.G. Joints: Fabricate countertops in sections for joining in field, with invisible joints at locations to be approved by architect.~~

1. Joint Locations: Not within 18 inches of a sink or cooktop and not where a countertop section less than 36 inches long would result, unless unavoidable.

~~I.H. Cutouts and Holes:~~

1. Undercounter Plumbing Fixtures: Make cutouts for fixtures in shop using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves.
  - a. Provide vertical edges, slightly eased at juncture of cutout edges with top and bottom surfaces of countertop and projecting 3/16 inch into fixture opening.
2. Counter-Mounted Plumbing Fixtures: Prepare countertops in shop for field cutting openings for counter-mounted fixtures. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.
3. Fittings: Drill countertops in shop for plumbing fittings, undercounter soap dispensers, and similar items.
4. Counter-Mounted Cooktops: Prepare countertops in shop for field cutting openings for cooktops. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.

### 2.3 INSTALLATION MATERIALS

- A. Adhesive: Product recommended by solid surface material manufacturer.
- B. Sealant for Countertops: Comply with applicable requirements in Section 079200 "Joint Sealants."

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates to receive solid surface material countertops and conditions under which countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of countertops.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install countertops level to a tolerance of 1/8 inch in 8 feet, 1/4 inch maximum. Do not exceed 1/64-inch difference between planes of adjacent units.
- B. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Pre-drill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.



- C. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.
- D. Secure countertops to subtops with adhesive according to solid surface material manufacturer's written instructions. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
- E. Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.
- F. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.
- G. Install aprons to backing and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears. Fasten by screwing through backing. Predrill holes for screws as recommended by manufacturer.
- H. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.
  - 1. Seal edges of cutouts in particleboard subtops by saturating with varnish.
- I. Apply sealant to gaps at walls; comply with Section 079200 "Joint Sealants."

END OF SECTION 123661.16

## SECTION 123661.19 - QUARTZ AGGLOMERATE COUNTERTOPS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

A. Section Includes:

1. Quartz agglomerate countertops.
2. Quartz agglomerate backsplashes.
3. Quartz agglomerate end splashes.
4. Quartz agglomerate apron fronts.

B. Related Requirements:

1. Section 224100 "Residential Plumbing Fixtures" for sinks and plumbing fittings.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For countertop materials.

~~B. Sustainable Design Submittals:~~

- ~~C.B.~~ Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.

1. Show locations and details of joints.
2. Show direction of directional pattern, if any.

~~D.C.~~ Samples for Initial Selection: For each type of material exposed to view.

~~E.D.~~ Samples for Verification: For the following products:

1. Countertop material, 6 inches square.
2. Wood trim, 8 inches long.
3. ~~One full-size quartz agglomerate countertop, with front edge and backsplash, 8 by 10 inches of construction and in configuration specified.~~

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For quartz agglomerate countertops to include in maintenance manuals. Include Product Data for care products used or recommended by Installer and names, addresses, and telephone numbers of local sources for products.

#### 1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate countertops similar to that required for this Project, and whose products have a record of successful in-service performance.
- B. Installer Qualifications: Fabricator of countertops.
- ~~C. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for fabrication and execution.
  - 1. Build mockup of typical countertop as shown on Drawings.
  - 2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.~~

#### 1.7 FIELD CONDITIONS

- A. Field Measurements: Verify dimensions of countertops by field measurements after base cabinets are installed but before countertop fabrication is complete.

#### 1.8 COORDINATION

- A. Coordinate locations of utilities that will penetrate countertops or backsplashes.

### PART 2 - PRODUCTS

#### 2.1 QUARTZ AGGLOMERATE COUNTERTOP MATERIALS

- A. Quartz Agglomerate: Solid sheets consisting of quartz aggregates bound together with a matrix of ~~filled plastic resin and complying with ICPA SS-1, except for composition of polymers, resins, and pigment and complying with ISFA 3-01.~~

### QUARTZ AGGLOMERATE COUNTERTOPS

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~~1. Basis of design product to go here~~ Basis-of-Design Products as indicated in drawings, or equal.

~~2.1.~~ Colors and Patterns: As indicated by specification on finish schedule.

- B. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.
- C. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

## 2.2 COUNTERTOP FABRICATION

- A. Fabricate countertops according to quartz agglomerate manufacturer's written instructions and the AWI/AWMAC/WI's "Architectural Woodwork Standards."
  - 1. Grade: Premium
- B. Configuration:
  - 1. Front: Straight, slightly eased at top with separate apron (See drawing details)
  - 2. Backsplash: Slightly eased at corner.
  - 3. End Splash: Matching backsplash
- C. Countertops: 1/2-inch- with front edge built up with same material.
- D. Backsplashes: 3/4-inch.
- E. Fabricate tops with shop-applied edges and backsplashes unless otherwise indicated. Comply with quartz agglomerate manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.
  - 1. Fabricate with loose backsplashes for field assembly.
- F. Joints: Fabricate countertops without joints.
- G. Joints: Fabricate countertops in sections for joining in field, with invisible joints at locations indicated.
  - 1. Joint Locations: Not within 18 inches of a sink or cooktop and not where a countertop section less than 36 inches long would result, unless unavoidable.
  - 2. Joint Type: Bonded, 1/32 inch or less in width.
- H. Cutouts and Holes:
  - 1. Undercounter Plumbing Fixtures: Make cutouts for fixtures, in shop, using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves.

- a. Provide vertical edges, slightly eased at juncture of cutout edges with top and bottom surfaces of countertop and projecting 3/16 inch into fixture opening.
2. Counter-Mounted Plumbing Fixtures: Prepare countertops in shop for field cutting openings for counter-mounted fixtures. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.
3. Fittings: Drill countertops in shop for plumbing fittings, undercounter soap dispensers, and similar items.
4. Counter-Mounted Cooktops: Prepare countertops in shop for field cutting openings for cooktops. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.

### 2.3 INSTALLATION MATERIALS

- A. Adhesive: Product recommended by quartz agglomerate manufacturer.
- B. Sealant for Countertops: Comply with applicable requirements in Section 079200 "Joint Sealants."

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates to receive quartz agglomerate countertops and conditions under which countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of countertops.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install countertops level to a tolerance of 1/8 inch in 8 feet, 1/4 inch maximum. Do not exceed 1/64-inch difference between planes of adjacent units.
- B. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with quartz agglomerate manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
- C. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.

- D. Secure countertops to subtops with adhesive according to quartz agglomerate manufacturer's written instructions. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with quartz agglomerate manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
- E. Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.
  - 1. Clamp units to temporary bracing, supports, or each other to ensure that countertops are properly aligned and joints are of specified width.
- F. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.
- G. Install aprons to backing and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears. Fasten by screwing through backing. Predrill holes for screws as recommended by manufacturer.
- H. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.
  - 1. Seal edges of cutouts in particleboard subtops by saturating with varnish.
- I. Apply sealant to gaps at walls; comply with Section 079200 "Joint Sealants."

END OF SECTION 123661.19

## SECTION 283111 - FIRE-ALARM SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

1. Fire-alarm control panel.
2. Manual fire-alarm boxes.
3. System smoke detectors.
4. Heat detectors.
- 4-5. [Carbon monoxide detectors](#)
- 5-6. Notification appliances.
6. ~~Firefighters' two-way telephone communication service.~~
7. Remote annunciator.
8. Addressable interface device.
9. Digital alarm communicator transmitter.

#### 1.3 DEFINITIONS

- A. LED: Light-emitting diode.
- B. NICET: National Institute for Certification in Engineering Technologies.

#### 1.4 SYSTEM DESCRIPTION

- A. Stadium has existing fire alarm system. Tie right field building fire alarm system into existing stadium fire alarm system. Provide additional equipment as needed for a complete operating system.
- B. Noncoded, UL-certified addressable system, with multiplexed signal transmission, dedicated to fire-alarm service only.

#### 1.5 SUBMITTALS

- A. General Submittal Requirements:

## FIRE-ALARM SYSTEMS

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1. Shop Drawings shall be prepared by persons with the following qualifications:
  - a. Trained and certified by manufacturer in fire-alarm system design.
  - b. NICET-certified fire-alarm technician, Level III minimum.
- B. Product Data: For each type of product indicated.
- C. Shop Drawings: For fire-alarm system. Include plans, elevations, sections, details, and attachments to other work.
  1. Comply with recommendations in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72.
  2. Include voltage drop calculations for notification appliance circuits.
  3. Include battery-size calculations.
  4. Include performance parameters and installation details for each detector, verifying that each detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
  5. Include plans, sections, and elevations of heating, ventilating, and air-conditioning ducts, drawn to scale and coordinating installation of duct smoke detectors and access to them. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators. Locate detectors according to manufacturer's written recommendations.
  6. Include voice/alarm signaling-service equipment rack or console layout, grounding schematic, amplifier power calculation, and single-line connection diagram.
  7. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits.
- D. Qualification Data: For qualified Installer.
- E. Field quality-control reports.
- F. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:
  1. Comply with the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
  2. Provide "Record of Completion Documents" according to NFPA 72 article "Permanent Records" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter.
  3. Record copy of site-specific software.
  4. Provide "Maintenance, Inspection and Testing Records" according to NFPA 72 article of the same name and include the following:
    - a. Frequency of testing of installed components.
    - b. Frequency of inspection of installed components.
    - c. Requirements and recommendations related to results of maintenance.
    - d. Manufacturer's user training manuals.



5. Manufacturer's required maintenance related to system warranty requirements.
6. Abbreviated operating instructions for mounting at fire-alarm control panel.
7. Copy of NFPA 25.

G. Submittals to Authorities Having Jurisdiction: In addition to distribution requirements for submittals specified in Division 1 Section "Submittal Procedure" make an identical submittal to the authorities having jurisdiction. To facilitate review, include copies of annotated Contract Drawings as needed to depict component locations. Resubmit if required to make clarifications or revisions to obtain approval. Upon receipt of comments from authorities having jurisdiction, submit a copy of comments and approval to the Engineer for review.

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Personnel shall be trained and certified by manufacturer for installation of units required for this Project.
- B. Installer Qualifications: Installation shall be by personnel certified by NICET as fire-alarm Level III technician.
- C. Source Limitations for Fire-Alarm System and Components: Obtain fire-alarm system from single source from single manufacturer. Components shall be compatible with, and operate as, an extension of existing system.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

#### 1.7 PROJECT CONDITIONS

- A. Interruption of Existing Fire-Alarm Service: Do not interrupt fire-alarm service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary guard service according to requirements indicated:
  1. Notify Owner no fewer than two weeks in advance of proposed interruption of fire-alarm service.
  2. Do not proceed with interruption of fire-alarm service without the Owner's written permission.

#### 1.8 SEQUENCING AND SCHEDULING

- A. Existing Fire-Alarm Equipment: Maintain existing equipment fully operational until new equipment has been tested and accepted. As new equipment is installed, label it "NOT IN SERVICE" until it is accepted. Remove labels from new equipment when put into service and label existing fire-alarm equipment "NOT IN SERVICE" until removed from the building.

- B. Equipment Removal: After acceptance of new fire-alarm system, remove existing disconnected fire-alarm equipment and wiring.

#### 1.9 SOFTWARE SERVICE AGREEMENT

- A. Comply with UL 864.
- B. Technical Support: Beginning with Substantial Completion, provide software support for one year.
- C. Upgrade Service: Update software to latest version at Project completion. Install and program software upgrades that become available within one year from date of Substantial Completion. Upgrading software shall include operating system. Upgrade shall include new or revised licenses for use of software.
  - 1. Provide two weeks notice to Owner to allow scheduling and access to system and to allow Owner to upgrade computer equipment if necessary.

#### 1.10 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Lamps for Strobe Units: Quantity equal to 10 percent of amount installed, but no fewer than 1 unit.
  - 2. Smoke Detectors: Quantity equal to 5 percent of amount of each type installed, but no fewer than 1 unit of each type.
  - 3. Detector Bases: Quantity equal to 2 percent of amount of each type installed, but no fewer than 1 unit of each type.
  - 4. Keys and Tools: One extra set for access to locked and tamperproofed components.
  - 5. Audible and Visual Notification Appliances: One of each type installed.
  - 6. Fuses: Two of each type installed in the system.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide systems by one of the following:
  - 1. Edwards Systems Technology; a division of GE Infrastructure
  - 2. NOTIFIER; a Honeywell company.
  - 3. Siemens Building Technologies, Inc.; Fire Safety Division.
  - 4. SimplexGrinnell LP; a Tyco International company.

### FIRE-ALARM SYSTEMS

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- B. Manufacturers: Subject to compliance with requirements, provide notification devices by one of the following:
1. One of the system manufacturers listed above.
  2. Gentex Corporation
  3. Wheelock Inc
- C. Manufacturers: Subject to compliance with requirements, provide digital alarm communicator transmitters by one of the following:
1. One of the systems manufacturers listed above.
  2. Silent Knight.

## 2.2 SYSTEMS OPERATIONAL DESCRIPTION

- A. Fire-alarm signal initiation shall be by one or more of the following devices and systems:
1. Manual stations.
  2. Heat detectors.
  3. Smoke detectors.
  4. Duct smoke detectors.
  5. Automatic sprinkler system water flow.
  6. Heat detectors in elevator shaft and pit.
  7. Fire-extinguishing system operation.
- B. Fire-alarm signal shall initiate the following actions:
1. Continuously operate alarm notification appliances.
  2. Identify alarm at fire-alarm control panel and remote annunciators.
  3. Transmit an alarm signal to the remote alarm receiving station.
  4. Unlock electric door locks in designated egress paths.
  5. Release fire and smoke doors held open by magnetic door holders.
  6. Activate voice/alarm communication system.
  7. Close smoke dampers in air ducts of designated air-conditioning duct systems.
  8. Recall elevators to primary or alternate recall floors.
  9. Record events in the system memory.
- C. Supervisory signal initiation shall be by one or more of the following devices and actions:
1. Valve supervisory switch.
  2. Elevator shunt-trip supervision.
- D. System trouble signal initiation shall be by one or more of the following devices and actions:
1. Open circuits, shorts, and grounds in designated circuits.
  2. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.

3. Loss of primary power at fire-alarm control panel.
  4. Ground or a single break in fire-alarm control panel internal circuits.
  5. Abnormal ac voltage at fire-alarm control panel.
  6. Break in standby battery circuitry.
  7. Failure of battery charging.
  8. Abnormal position of any switch at fire-alarm control panel or annunciator.
- E. System Trouble and Supervisory Signal Actions: Initiate notification appliance and annunciate at fire-alarm control panel **and remote annunciators**. Record the event on system printer.

## 2.3 FIRE-ALARM CONTROL PANEL

- A. General Requirements for Fire-Alarm Control Panel:
1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864 and listed and labeled by an NRTL.
    - a. System software and programs shall be held in flash electrically erasable programmable read-only memory (EEPROM), retaining the information through failure of primary and secondary power supplies.
    - b. Include a real-time clock for time annotation of events on the event recorder and printer.
  2. Addressable initiation devices that communicate device identity and status.
    - a. Smoke sensors shall additionally communicate sensitivity setting.
    - b. Temperature sensors shall additionally test for and communicate the sensitivity range of the device.
  3. Addressable control circuits for operation of mechanical equipment.
- B. Alphanumeric Display and System Controls: Arranged for interface between human operator at fire-alarm control panel and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and the programming and control menu.
1. Annunciator and Display: Liquid-crystal type, **3** line(s) of **80** characters, minimum.
  2. Keypad: Arranged to permit entry and execution of programming, display, and control commands.
- C. Circuits:
1. Initiating Device, Notification Appliance, and Signaling Line Circuits: NFPA 72, Class B.
    - a. Initiating Device Circuits: Style B.
    - b. Notification Appliance Circuits: Style Y.

- c. Signaling Line Circuits: Style 4.
    - d. Install no more than 90% of the circuit capacity of addressable devices on each signaling line circuit.
  2. Cancel fire-alarm control panel indication and system reset if the alarm is not verified.
- D. Notification Appliance Circuit: Operation shall sound in a pattern that is acceptable to the authority having jurisdiction.
- E. Elevator Recall:
  1. Smoke detectors at the following locations shall initiate automatic elevator recall.
    - a. Elevator lobby detectors except the lobby detector on the designated floor.
    - b. Smoke detector in elevator machine room.
    - c. Smoke detectors in elevator hoistway.
  2. Elevator lobby detectors located on the designated recall floors shall be programmed to move the cars to the alternate recall floor.
  3. Water-flow alarm connected to sprinkler in an elevator shaft and elevator machine room shall shut down elevators associated with the location without time delay.
    - a. Water-flow switch associated with the sprinkler in the elevator pit may have a delay to allow elevators to move to the designated floor.
- F. Door Controls: Door hold-open devices that are controlled by smoke detectors at doors in smoke barrier walls shall be connected to fire-alarm system.
- G. Remote Smoke-Detector Sensitivity Adjustment: Controls shall select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and change those settings. Allow controls to be used to program repetitive, time-scheduled, and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system memory, and print out the final adjusted values on system printer.
- H. Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to a remote alarm station.
- I. Voice/Alarm Signaling Service: Central emergency communication system with redundant microphones, preamplifiers, amplifiers, and tone generators provided as a special module that is part of fire-alarm control panel.
  1. Indicated number of alarm channels for automatic, simultaneous transmission of different announcements to different zones or for manual transmission of announcements by use of the central-control microphone. Amplifiers shall comply with UL 1711 and be listed by an NRTL.

- a. Allow the application of and evacuation signal to indicated number of zones and, at same time, allow voice paging to the other zones selectively or in any combination.
  - b. Programmable tone and message sequence selection.
  - c. Standard digitally recorded messages for "Evacuation" and "All Clear."
  - d. Generate tones to be sequenced with audio messages of type recommended by NFPA 72 and that are compatible with tone patterns of notification appliance circuits of fire-alarm control panel.
2. Status Annunciator: Indicate the status of various voice/alarm speaker zones and the status of firefighters' two-way telephone communication zones.
  3. Preamplifiers, amplifiers, and tone generators shall automatically transfer to backup units, on primary equipment failure.
- J. Printout of Events: On receipt of signal, print alarm, supervisory, and trouble events. Identify zone, device, and function. Include type of signal (alarm, supervisory, or trouble) and date and time of occurrence. Differentiate alarm signals from all other printed indications. Also print system reset event, including same information for device, location, date, and time. Commands initiate the printing of a list of existing alarm, supervisory, and trouble conditions in the system and a historical log of events.
- K. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory and digital alarm communicator transmitters shall be powered by 24-V dc source.
1. Alarm current draw of entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.
- L. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.
1. Batteries: Sealed lead calcium, sealed, valve-regulated, recombinant lead acid, or vented, wet-cell pocket, plate nickel cadmium.
- M. Instructions: Computer printout or typewritten instruction card mounted behind a plastic or glass cover in a stainless-steel or aluminum frame. Include interpretation and describe appropriate response for displays and signals. Briefly describe the functional operation of the system under normal, alarm, and trouble conditions.

## 2.4 MANUAL FIRE-ALARM BOXES

- A. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes shall be finished in red with molded, raised-letter operating instructions in contrasting color; shall show visible indication of operation; and shall be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.

1. Double-action mechanism requiring two actions to initiate an alarm, pull-lever type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to fire-alarm control panel.
2. Station Reset: Key- or wrench-operated switch.
3. Indoor Protective Shield: Factory-fabricated clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm.

## 2.5 SYSTEM SMOKE DETECTORS

### A. General Requirements for System Smoke Detectors:

1. Comply with UL 268; operating at 24-V dc, nominal.
2. Detectors shall be compatible with system.
3. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control panel.
4. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.
5. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
6. Integral Visual-Indicating Light: LED type indicating detector has operated and power-on status.
7. Remote Control: Unless otherwise indicated, detectors shall be analog-addressable type, individually monitored at fire-alarm control panel for calibration, sensitivity, and alarm condition and individually adjustable for sensitivity by fire-alarm control panel.
  - a. Rate-of-rise temperature characteristic shall be selectable at fire-alarm control panel for 15 or 20 deg F (8 or 11 deg C) per minute.
  - b. Fixed-temperature sensing shall be independent of rate-of-rise sensing and shall be settable at fire-alarm control panel to operate at 135 or 155 deg F (57 or 68 deg C).
  - c. Provide multiple levels of detection sensitivity for each sensor.

### B. Photoelectric Smoke Detectors:

1. Detector address shall be accessible from fire-alarm control panel and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control panel, having the designated access level, shall be able to manually access the following for each detector:
  - a. Primary status.
  - b. Device type.
  - c. Present average value.
  - d. Present sensitivity selected.
  - e. Sensor range (normal, dirty, etc.).

### C. Ionization Smoke Detector:

1. Detector address shall be accessible from fire-alarm control panel and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control panel, having the designated access level, shall be able to manually access the following for each detector:
  - a. Primary status.
  - b. Device type.
  - c. Present average value.
  - d. Present sensitivity selected.
  - e. Sensor range (normal, dirty, etc.).

D. Duct Smoke Detectors: Photoelectric type complying with UL 268A.

1. Detector address shall be accessible from fire-alarm control panel and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control panel, having the designated access level, shall be able to manually access the following for each detector:
  - a. Primary status.
  - b. Device type.
  - c. Present average value.
  - d. Present sensitivity selected.
  - e. Sensor range (normal, dirty, etc.).
3. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with the supplied detector.
4. Each sensor shall have multiple levels of detection sensitivity.
5. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.
6. Relay Fan Shutdown: Rated to interrupt fan motor-control circuit.

~~2.6 NONSYSTEM SMOKE DETECTORS~~

~~A. Single Station Smoke Detectors:~~

- ~~1. Comply with UL 217; suitable for NFPA 101, residential occupancies; operating at 120-V ac [with 9-V dc battery as the secondary power source. Provide with "low" or "missing" battery chirping sound device].~~
- ~~2. Auxiliary Relays: One [Form C rated at 0.5 A] [Form A and one Form C, both rated at 0.5 A].~~
- ~~3. Audible Notification Appliance: Piezoelectric sounder rated at 90 dBA at 10 feet (3 m) according to UL 464.~~
- ~~4. Visible Notification Appliance: 177-ed strobe.~~
- ~~5. Heat sensor, 135 deg F (57 deg C) [combination rate of rise and ]fixed temperature.~~
- ~~6. Test Switch: Push to test; simulates smoke at rated obscuration.~~
- ~~7. Tandem Connection: Allow tandem connection of number of indicated detectors; alarm on one detector shall actuate notification on all connected detectors.~~



- ~~8. Plug-in Arrangement: Detector and associated electronic components shall be mounted in a plug-in module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.~~
- ~~9. Self Restoring: Detectors shall not require resetting or readjustment after actuation to restore them to normal operation.~~
- ~~10. Integral Visual Indicating Light: LED type indicating detector has operated [and power-on status].~~

~~B. Single Station Duct Smoke Detectors:~~

- ~~1. Comply with UL 268A; operating at 120 V ac.~~
- ~~2. Sensor: LED or infrared light source with matching silicon cell receiver.
  - ~~a. Detector Sensitivity: Smoke obscuration between 2.5 and 3.5 percent/foot (0.008 and 0.011 percent/mm) when tested according to UL 268A.~~~~
- ~~3. Base Mounting: Detector and associated electronic components shall be mounted in a twist lock module that connects to a fixed base. The fixed base shall be designed for mounting directly to air duct. Provide terminals in the fixed base for connection to building wiring.
  - ~~a. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with the supplied detector.~~~~
- ~~4. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.~~
- ~~5. Relay Fan Shutdown: Rated to interrupt fan motor control circuit.~~

2.72.6 HEAT DETECTORS

- A. General Requirements for Heat Detectors: Comply with UL 521.
- B. Heat Detector, Combination Type: Actuated by either a fixed temperature of **[135 deg F (57 deg C)]** ~~<Insert temperature>~~ or a rate of rise that exceeds **[15 deg F (8 deg C)]** ~~<Insert temperature>~~ per minute unless otherwise indicated.
  1. Mounting: **[Adapter plate for outlet box mounting] [Twist-lock base interchangeable with smoke-detector bases].**
  2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control panel.
- C. Heat Detector, Fixed-Temperature Type: Actuated by temperature that exceeds a fixed temperature of **[190 deg F (88 deg C)]** ~~<Insert temperature>~~.
  1. Mounting: **[Adapter plate for outlet box mounting] [Twist-lock base interchangeable with smoke-detector bases].**

2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control panel.

D. Continuous Linear Heat-Detector System:

1. Detector Cable: Rated detection temperature [**155 deg F (68 deg C)**]-<Insert temperature>. NRTL listed for "regular" service and a standard environment. Cable includes two steel actuator wires twisted together with spring pressure, wrapped with protective tape, and finished with PVC outer sheath. Each actuator wire is insulated with heat-sensitive material that reacts with heat to allow the cable twist pressure to short-circuit wires at the location of elevated temperature.
2. Control Unit: Two-zone or multizone unit as indicated. Provide same system power supply, supervision, and alarm features as specified for fire-alarm control panel.
3. Signals to Fire-Alarm Control Panel: Any type of local system trouble shall be reported to fire-alarm control panel as a composite "trouble" signal. Alarms on each detection zone shall be individually reported to central fire-alarm control panel as separately identified zones.
4. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control panel.

## 2.7 CARBON MONOXIDE DETECTORS

A. Description: Carbon monoxide detector listed for connection to fire-alarm system.

B. Performance Criteria:

1. Regulatory Requirements:

- a. NFPA 72
- b. NFPA 720.
- c. UL 2075.

2. General Characteristics:

- a. Mounting: Adapter plate for outlet box mounting.
- b. Testable by introducing test carbon monoxide into sensing cell.
- c. Detector must provide alarm contacts and trouble contacts.
- d. Detector must send trouble alarm when nearing end-of-life, power supply problems, or internal faults.
- e. Locate, mount, and wire in accordance with manufacturer's written instructions.
- f. Provide means for addressable connection to fire-alarm system.
- g. Test button simulates alarm condition.

4.—N

## 2.8 NOTIFICATION APPLIANCES

- A. General Requirements for Notification Appliances: Individually addressed, connected to a signaling line circuit, equipped for mounting as indicated and with screw terminals for system connections.
- B. General Requirements for Notification Appliances: Connected to notification appliance signal circuits, zoned as indicated, equipped for mounting as indicated and with screw terminals for system connections.
1. Combination Devices: Factory-integrated audible and visible devices in a single-mounting assembly, equipped for mounting as indicated and with screw terminals for system connections.
- C. Chimes, Low-Level Output: Vibrating type, 75-dBA minimum rated output.
- D. Chimes, High-Level Output: Vibrating type, 81-dBA minimum rated output.
- E. Horns: Electric-vibrating-polarized type, 24-V dc; with provision for housing the operating mechanism behind a grille. Comply with UL 464. Horns shall produce a sound-pressure level of 90 dBA, measured **10 feet (3 m)** from the horn, using the coded signal prescribed in UL 464 test protocol.
- F. Visible Notification Appliances: Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum **1-inch- (25-mm-)** high letters on the lens.
1. Rated Light Output:
    - a. ~~[15] [30] [75] [110] [177]~~ ~~<Insert value>~~ ed. Initial setting shall be assumed to be 110 cd.
    - b. 15/30/75/110 cd, selectable in the field by contractor based upon actual area of required coverage.
  2. Mounting: Wall mounted unless otherwise indicated.
  3. For units with guards to prevent physical damage, light output ratings shall be determined with guards in place.
  4. Flashing shall be in a temporal pattern, synchronized with other units.
  5. Strobe Leads: Factory connected to screw terminals.
  6. Mounting Faceplate: Factory finished, ~~[red]~~ ~~[white]~~ white.
- G. Voice/Tone Notification Appliances:
1. Appliances shall comply with UL 1480 and shall be listed and labeled by an NRTL.
  2. High-Range Units: Rated 2 to 15 W.
  3. Low-Range Units: Rated 1 to 2 W.

4. Mounting: Factory finished faceplate, wall-mount or ceiling-mount as indicated on the Drawings; semi-recessed, except where identified as surface mounted on the Drawings ~~[Flush] [semirecessed] [or] [surface mounted and bidirectional]~~.
5. Matching Transformers: Tap range matched to acoustical environment of speaker location.

## ~~2.9~~ FIREFIGHTERS' TWO-WAY TELEPHONE COMMUNICATION SERVICE

~~A. Dedicated, two way, supervised, telephone voice communication links between fire alarm control panel, the fire command center, and remote firefighters' telephone stations. Supervised telephone lines shall be connected to talk circuits by controls in a control module. Provide the following:~~

- ~~1. Common talk type for firefighter use only.~~
- ~~2. Selective talk type for use by firefighters and fire wardens.~~
- ~~3. Controls to disconnect phones from talk circuits if too many phones are in use simultaneously.~~
- ~~4. Audible Pulse and Tone Generator, and High Intensity Lamp: When a remote telephone is activated, it causes audible signal to sound and high intensity lamp to flash.~~
- ~~5. Selector panel controls shall provide for simultaneous operation of up to six telephones in selected zones. Indicate ground faults and open or shorted telephone lines on the panel front by individual LEDs.~~
- ~~6. Display: [Graphic] [Liquid crystal digital] to indicate location of caller.~~
- ~~7. Remote Telephone Cabinet: Flush or surface mounted cabinet as indicated, factory standard red finish, with handset.~~
  - ~~a. Install one piece handset to cabinet with vandal resistant armored cord. Silk screened or engraved label on cabinet door, designating [ "Fire Warden Phone" or ] "Fire Emergency Phone."~~
  - ~~b. With "break glass" type door access lock.~~
- ~~8. Remote Telephone Jack Stations: Single gang, stainless steel plate mounted plug, engraved [ "Fire Warden Phone" or ] "Fire Emergency Phone."~~
- ~~9. Handsets: <Insert number> [push to talk type] sets [ with noise canceling microphone] stored in a cabinet [adjacent to fire alarm control panel] [in the fire command center].~~

## ~~2.102.9~~ MAGNETIC DOOR HOLDERS

- A. Description: Units are equipped for wall or floor mounting as indicated and are complete with matching doorplate.
1. Electromagnet: Requires no more than 3 W to develop **25-lbf (111-N)** holding force.
  2. Wall-Mounted Units: Flush mounted unless otherwise indicated.
  3. Rating: 24-V ac or dc.
  4. Rating: 120-V ac.

- B. Material and Finish: Match door hardware.

#### 2.112.10 REMOTE ANNUNCIATOR

- A. Description: Annunciator functions shall match those of fire-alarm control panel for alarm, supervisory, and trouble indications. Manual switching functions shall match those of fire-alarm control panel, including acknowledging, silencing, resetting, and testing.
1. Mounting: ~~Flush~~~~Surface~~ Flush cabinet, NEMA 250, Type 1.
- B. Display Type and Functional Performance: Alphanumeric display and LED indicating lights shall match those of fire-alarm control panel. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.

#### 2.122.11 ADDRESSABLE INTERFACE DEVICE

- A. Description: Microelectronic monitor module, NRTL listed for use in providing a system address for alarm-initiating devices for wired applications with normally open contacts.
- B. Integral Relay: Capable of providing a direct signal ~~to elevator controller to initiate elevator recall~~~~to circuit breaker shunt trip for power shutdown~~~~<Insert functions>~~.

#### 2.132.12 DIGITAL ALARM COMMUNICATOR TRANSMITTER

- A. Digital alarm communicator transmitter shall be acceptable to the remote central station and shall comply with UL 632 and be listed and labeled by an NRTL.
- B. Functional Performance: Unit shall receive an alarm, supervisory, or trouble signal from fire-alarm control panel and automatically capture ~~[one]~~ ~~[two]~~ telephone line(s) and dial a preset number for a remote central station. When contact is made with central station(s), signals shall be transmitted. If service on ~~[either]~~ line is interrupted for longer than 45 seconds, transmitter shall initiate a local trouble signal and transmit the signal indicating loss of telephone line to the remote alarm receiving station over the remaining line. Transmitter shall automatically report telephone service restoration to the central station. If service is lost on both telephone lines, transmitter shall initiate the local trouble signal.
- C. Local functions and display at the digital alarm communicator transmitter shall include the following:
1. Verification that both telephone lines are available.
  2. Programming device.
  3. LED display.
  4. Manual test report function and manual transmission clear indication.
  5. Communications failure with the central station or fire-alarm control panel.
  6. ~~<Insert local function>~~.

- D. Digital data transmission shall include the following:
1. Address of the alarm-initiating device.
  2. ~~{Address}{Zone}~~ of the supervisory signal.
  3. ~~{Address}{Zone}~~ of the trouble-initiating device.
  4. Loss of ac supply or loss of power.
  5. Low battery.
  6. Abnormal test signal.
  7. Communication bus failure.
  8. ~~<Insert signal to be transmitted>~~.
- E. Secondary Power: Integral rechargeable battery and automatic charger.
- F. Self-Test: Conducted automatically every 24 hours with report transmitted to central station.

#### 2.142.13 RADIO ALARM TRANSMITTER

- A. Transmitter shall comply with NFPA 1221 and shall be listed and labeled by an NRTL.
- B. Comply with 47 CFR 90.
- C. Description: Manufacturer's standard commercial product; factory assembled, wired, tested, and ready for installation and operation.
1. Packaging: A single, modular, NEMA 250, Type 1 metal enclosure with a tamper-resistant flush tumbler lock.
  2. Signal Transmission Mode and Frequency: VHF or UHF 2-W power output, coordinated with operating characteristics of the established remote alarm receiving station designated by Owner.
  3. Normal Power Input: 120-V ac.
  4. Secondary Power: Integral-sealed, rechargeable, 12-V battery and charger. Comply with NFPA 72 requirements for battery capacity; submit calculations.
  5. Antenna: Omnidirectional, coaxial half-wave, dipole type with driving point impedance matched to transmitter and antenna cable output impedance. Wind-load strength of antenna and mounting hardware and supports shall withstand ~~{100 mph (160 km/h)}~~ ~~<Insert wind speed>~~ with a gust factor of 1.3 without failure.
  6. Antenna Cable: Coaxial cable with impedance matched to the transmitter output impedance.
  7. Antenna-Cable Connectors: Weatherproof.
  8. Alarm Interface Devices: Circuit boards, modules, and other auxiliary devices, integral to the transmitter, matching fire-alarm and other system outputs to message-generating inputs of the transmitter that produce required message transmissions.
- D. Functional Performance: Unit shall receive an alarm, supervisory, or trouble signal from fire-alarm control panel or from its own internal sensors or controls and shall automatically transmit signal along with a unique code that identifies the transmitting station to the remote alarm receiving station. Transmitted messages shall correspond to standard designations for fire-

reporting system to which the signal is being transmitted and shall include separately designated messages in response to the following events or conditions:

1. Transmitter Low-Battery Condition: Sent when battery voltage is below 85 percent of rated value.
2. System Test Message: Initiated manually by a test switch within the transmitter cabinet, or automatically at an optionally preselected time, once every 24 hours, with transmission time controlled by a programmed timing device integral to transmitter controls.
3. Transmitter Trouble Message: Actuated by failure, in excess of one-minute duration, of the transmitter normal power source, derangement of the wiring of the transmitter, or any alarm input interface circuit or device connected to it.
4. Local Fire-Alarm-System Trouble Message: Initiated by events or conditions that cause a trouble signal to be indicated on the building system.
5. Local Fire-Alarm-System Alarm Message: Actuated when the building system goes into an alarm state. Identifies device that initiated the alarm.
6. Local Fire-Alarm-System Supervisory-Alarm Message: Actuated when the building alarm system indicates a supervisory alarm.

#### 2-152.14 SYSTEM PRINTER

- A. Printer shall be listed and labeled by an NRTL as an integral part of fire-alarm system.

#### 2-162.15 DEVICE GUARDS

- A. Description: Welded wire mesh of size and shape for the manual station, smoke detector, gong, or other device requiring protection.
  1. Factory fabricated and furnished by manufacturer of device.
  2. Finish: Paint of color to match the protected device.

#### 2-172.16 WIRE AND CABLE

- A. Wire and cable fire alarm systems shall be UL listed and labeled as complying with NFPA 70, Article 760.
- B. Signaling Line Circuits traveling from the FACP through a zone or zones other than the zone served: Twisted, shielded pair, NFPA 70 Article 760, Classification CI, for power-limited fire alarm signal service. UL listed as Type FPL or FPLP, and complying with requirements in UL 1424 and UL 2196 for a 2-hour rating.
- C. Signaling Line Circuits [**within the zone served**]: Twisted, shielded pair, NFPA 70 Article 760, for power-limited fire alarm signal service. UL listed as Type FPL or FPLP, and complying with requirements in UL 1424.
- D. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation.

1. Low-Voltage Circuits: No. 16 AWG, minimum
2. Line-Voltage Circuits: No. 12 AWG, minimum.

### PART 3 - EXECUTION

#### 3.1 WIRING METHODS

- A. Wiring Method: Install cables in raceways meeting the requirements for branch circuit wiring as specified in Division 26 Section "Raceways and Boxes for Electrical Systems:" in all locations except as follows:
1. Cable is not required to be installed in raceway where concealed in an accessible space above finished ceilings. Install plenum cable in environmental air spaces, including plenum ceilings. Provide sleeves as specified in Division 26 Section "Common Work Results for Electrical Systems" where cable passes through walls. See Open-Cable Installation below.
- B. Wiring within Enclosures: Bundle, lace, and train cables to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

#### 3.2 INSTALLATION OF RACEWAYS

- A. Comply with requirements in Division 26 Section "Raceway and Boxes for Electrical Systems" for installation of conduits and wireways.
- B. Install manufactured conduit sweeps and long-radius elbows whenever possible.

#### 3.3 INSTALLATION OF CABLES

- A. Comply with NECA 1.
- B. General Requirements:
1. Terminate conductors; no cable shall contain unterminated elements. Make terminations only at outlets and terminals.
  2. Splices, Taps, and Terminations: Arrange on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures. ~~{Cables may not be spliced}~~~~{Splices allowed only where extending existing cable}.~~
  3. Secure and support cables at intervals not exceeding 60 inches (1520 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
  4. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.



5. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
6. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used.

C. Open-Cable Installation.

1. Utilize cable tray where available.
2. Suspend cable not in a cable tray or pathway a minimum of 6 inches (200 mm) above ceiling by cable supports not more than 60 inches (1524 mm) apart.
3. Cable shall not be run through structural members or be in contact with pipes, ducts, or other potentially damaging items.
4. Route cable parallel or perpendicular to building structure.

3.4 EQUIPMENT INSTALLATION

A. Comply with NFPA 72 for installation of fire-alarm equipment.

B. Equipment Mounting: Install fire-alarm control panel on concrete base with tops of cabinets not more than 72 inches (1830 mm) above the finished floor. Comply with requirements for concrete base specified in Division 03 Section "Cast-in-Place Concrete Miscellaneous Cast-in-Place Concrete."

1. Install seismic bracing. Comply with requirements in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
2. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch (450-mm) centers around the full perimeter of concrete base.
3. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete floor.
4. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
5. Install anchor bolts to elevations required for proper attachment to supported equipment.

C. Equipment Mounting: Install fire-alarm control panel on finished floor with tops of cabinets not more than 72 inches (1830 mm) above the finished floor.

1. Comply with requirements for seismic-restraint devices specified in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
2. Comply with requirements for seismic-restraint devices specified in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."

D. Connecting to Existing Equipment: Verify that existing fire-alarm system is operational before making changes or connections.

1. Connect new equipment to existing control panel in existing part of the building.

2. Connect new equipment to existing monitoring equipment at the supervising station.
  3. Expand, modify, and supplement existing [control] and [monitoring] equipment as necessary to extend existing [control] and [monitoring] functions to the new points. New components shall be capable of merging with existing configuration without degrading the performance of either system.
- E. Smoke- or Heat-Detector Spacing:
1. Comply with NFPA 72, "Smoke-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for smoke-detector spacing.
  2. Comply with NFPA 72, "Heat-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for heat-detector spacing.
  3. Smooth ceiling spacing shall not exceed **30 feet (9 m)** <del>Insert distance</del>.
  4. Spacing of detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas shall be determined according to Appendix A **for Appendix B** in NFPA 72.
  5. HVAC: Locate detectors not closer than **3 feet (1 m)** ~~5 feet (1.5 m)~~ from air-supply diffuser or return-air opening.
  6. Lighting Fixtures: Locate detectors not closer than **12 inches (300 mm)** from any part of a lighting fixture.
- F. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend the full width of duct.
- G. Heat Detectors in Elevator Shafts: Coordinate temperature rating and location with sprinkler rating and location.
- H. Single-Station Smoke Detectors: Where more than one smoke alarm is installed within a dwelling or suite, they shall be connected so that the operation of any smoke alarm causes the alarm in all smoke alarms to sound.
- I. Remote Status and Alarm Indicators: Install near each smoke detector and each sprinkler water-flow switch and valve-tamper switch that is not readily visible from normal viewing position.
- J. Audible Alarm-Indicating Devices: Install not less than **6 inches (150 mm)** below the ceiling. Install bells and horns on flush-mounted back boxes with the device-operating mechanism concealed behind a grille.
- K. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least **6 inches (150 mm)** below the ceiling.
- L. Device Location-Indicating Lights: Locate in public space near the device they monitor.
- M. Fire-Alarm Control Panel: Surface mounted, with tops of cabinets not more than **72 inches (1830 mm)** above the finished floor.
- N. Annunciator: Install with top of panel not more than **72 inches (1830 mm)** above the finished floor.

- O. Antenna for Radio Alarm Transmitter: Mount to building structure where indicated. Use mounting arrangement and substrate connection that will resist 100-mph (160-km/h) wind load with a gust factor of 1.3 without damage.

### 3.5 CONNECTIONS

- A. For fire-protection systems related to doors in fire-rated walls and partitions and to doors in smoke partitions, comply with requirements in Division 08 Section "Door Hardware." Connect hardware and devices to fire-alarm system.
  - 1. Verify that hardware and devices are NRTL listed for use with fire-alarm system in this Section before making connections.
- B. Make addressable connections with a supervised interface device to the following devices and systems. Install the interface device less than 3 feet (1 m) from the device controlled. Make an addressable confirmation connection when such feedback is available at the device or system being controlled.
  - 1. Alarm-initiating connection to smoke-control system (smoke management) at firefighter smoke-control system panel.
  - 2. Alarm-initiating connection to stairwell and elevator-shaft pressurization systems.
  - 3. Smoke dampers in air ducts of designated air-conditioning duct systems.
  - 4. Alarm-initiating connection to elevator recall system and components.
  - 5. Alarm-initiating connection to activate emergency lighting control.
  - 6. Alarm-initiating connection to activate emergency shutoffs for gas and fuel supplies.
  - 7. Supervisory connections at valve supervisory switches.
  - 8. Supervisory connections at low-air-pressure switch of each dry-pipe sprinkler system.
  - 9. Supervisory connections at elevator shunt trip breaker.
  - 10. Supervisory connections at fire-pump power failure including a dead-phase or phase-reversal condition.
  - 11. Supervisory connections at fire-pump engine control panel.

### 3.6 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."
- B. Install framed instructions in a location visible from fire-alarm control panel.

### 3.7 GROUNDING

- A. Ground fire-alarm control panel and associated circuits; comply with IEEE 1100. Install a ground wire from main service ground to fire-alarm control panel.

3.8 FIELD QUALITY CONTROL

- A. Contractor shall confirm whether field tests must be witnessed by the AHJ prior to performing tests. ~~Field tests shall be witnessed by Architect [authorities having jurisdiction] <Insert names or titles of witnesses>.~~
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections.
1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Tests and Inspections:
1. Visual Inspection: Conduct visual inspection prior to testing.
- a. Inspection shall be based on completed Record Drawings and system documentation that is required by NFPA 72 in its "Completion Documents, Preparation" Table in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter.
- b. Comply with "Visual Inspection Frequencies" Table in the "Inspection" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.
2. System Testing: Comply with "Test Methods" Table in the "Testing" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
3. Test audible appliances for the public operating mode according to manufacturer's written instructions. Perform the test using a portable sound-level meter complying with Type 2 requirements in ANSI S1.4.
4. Test audible appliances for the private operating mode according to manufacturer's written instructions.
5. Test visible appliances for the public operating mode according to manufacturer's written instructions.
6. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
- E. Reacceptance Testing: Perform reacceptance testing to verify the proper operation of added or replaced devices and appliances.
- F. Fire-alarm system will be considered defective if it does not pass tests and inspections.
- G. Prepare test and inspection reports.

- H. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.
- I. Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

### 3.9 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain fire-alarm system.
  - 1. Train Owner's maintenance personnel on programming equipment for starting up and shutting down, troubleshooting, servicing, and maintaining the system and equipment.
  - 2. Train a minimum of ten (10) employees of Owner.
  - 3. Under this contract, conduct a total of twelve (12) hours (minimum) of on-site training as specified in instructions to Owner's employees in Division 01 Section "Demonstration and Training." Training shall be divided into two (2) separate sessions on two (2) separate days if requested by Owner. The first session shall provide two (2) hours of basic training. The second session shall provide eight (8) hours of in-depth training. Coordinate training agenda, dates, and times directly with Owner.
  - 4. Conduct training on installed equipment after acceptance testing.
  - 5. Train on system operation, including manual control of output functions from FACU.
  - 6. Train on testing of system, including logging of system tests, field test of devices, and response to common troubles.
  - 7. Refer to Division 01 Section "Demonstration and Training", including ~~excluding~~ requirements related to video recording.
  - 8. Allow Owner to record training.

### 3.10 ADJUSTING

- A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to three (3) visits to Project outside normal occupancy hours for this purpose for each building. Include a minimum of 12 hours of on-site labor designated for this purpose plus all necessary travel time and expenses.
- B. Annual Test and Inspection: Through the first year after date of Substantial Completion, test the fire alarm system complying with the testing and visual inspection requirements in NFPA 72. Perform tests and inspections listed for monthly, quarterly, semiannual, and annual periods. Use forms developed for initial tests and inspections.
- A. ~~[Engage a factory-authorized service representative to train] [Train] Owner's maintenance personnel to adjust, operate, and maintain fire-alarm system.~~

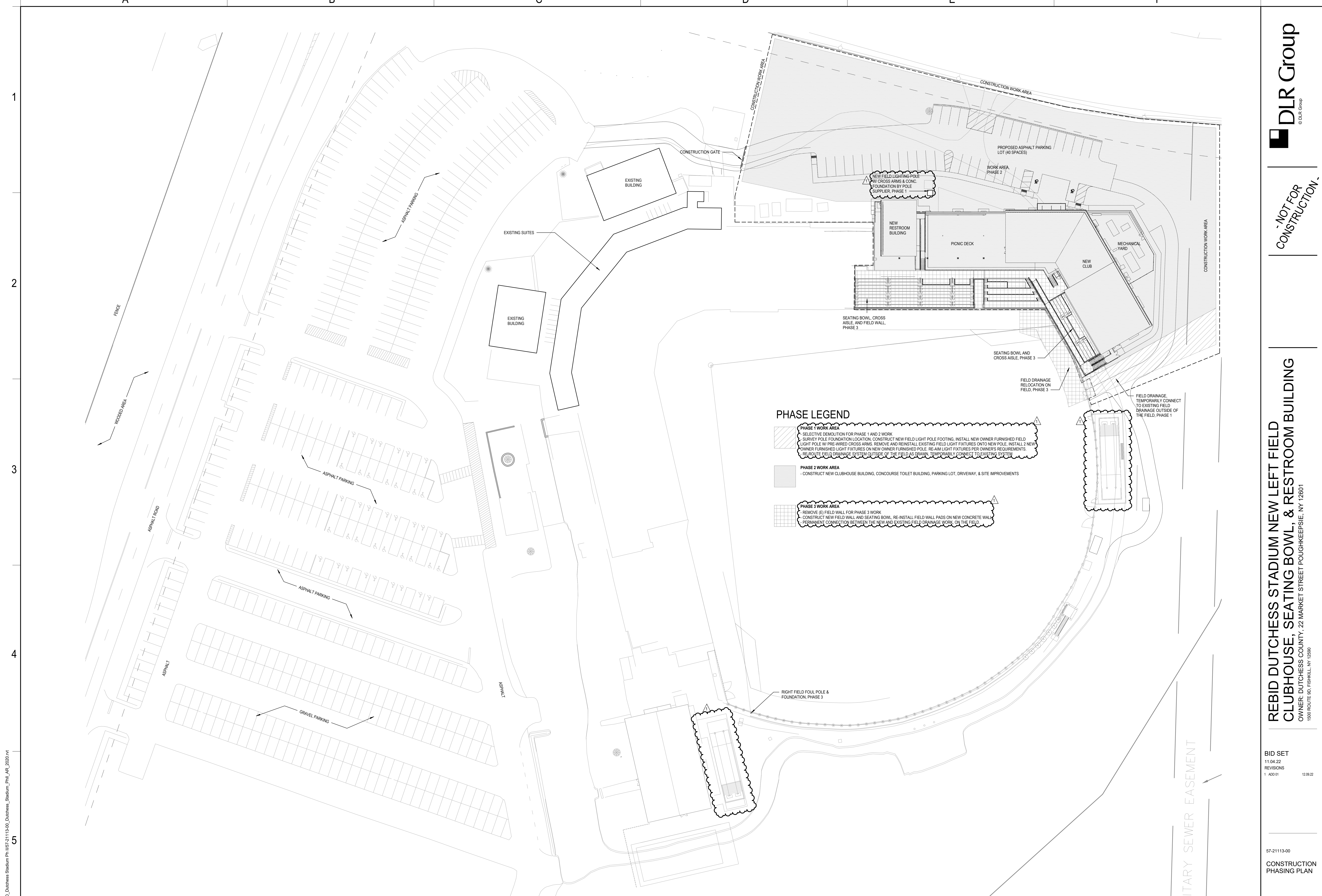
REBID DUTCHESS STADIUM NEW LEFT FIELD CLUBHOUSE,  
SEATING BOWL, & RESTROOM BUILDING  
COUNTY PROJECT #RFB-DCB-18-22  
FISHKILL, NEW YORK

57-21113-00

ADDENDUM 01  
12.09.22

END OF SECTION 283111





**PHASE LEGEND**

- PHASE 1 WORK AREA**
  - SELECTIVE DEMOLITION FOR PHASE 1 AND 2 WORK
  - SURVEY POLE FOUNDATION LOCATION, CONSTRUCT NEW FIELD LIGHT POLE FOOTING, INSTALL NEW OWNER FURNISHED FIELD LIGHT POLE W/ PRE-WIRED CROSS ARMS, REMOVE AND REINSTALL EXISTING FIELD LIGHT FIXTURES ONTO NEW POLE, INSTALL 2 NEW OWNER FURNISHED LIGHT FIXTURES ON NEW OWNER FURNISHED POLE, RE-AM LIGHT FIXTURES PER OWNER'S REQUIREMENTS
  - RE-ROUTE FIELD DRAINAGE SYSTEM OUTSIDE OF THE FIELD AS DRAWN, TEMPORARILY CONNECT TO EXISTING SYSTEM
- PHASE 2 WORK AREA**
  - CONSTRUCT NEW CLUBHOUSE BUILDING, CONCOURSE TOILET BUILDING, PARKING LOT, DRIVEWAY, & SITE IMPROVEMENTS
- PHASE 3 WORK AREA**
  - REMOVE (E) FIELD WALL FOR PHASE 3 WORK
  - CONSTRUCT NEW FIELD WALL AND SEATING BOWL, RE-INSTALL FIELD WALL PADS ON NEW CONCRETE WALL
  - PERMANENT CONNECTION BETWEEN THE NEW AND EXISTING FIELD DRAINAGE WORK ON THE FIELD

**NOT FOR CONSTRUCTION**

**REBID DUTCHESS STADIUM NEW LEFT FIELD CLUBHOUSE, SEATING BOWL, & RESTROOM BUILDING**  
OWNER: DUTCHESS COUNTY, 22 MARKET STREET Poughkeepsie, NY 12601

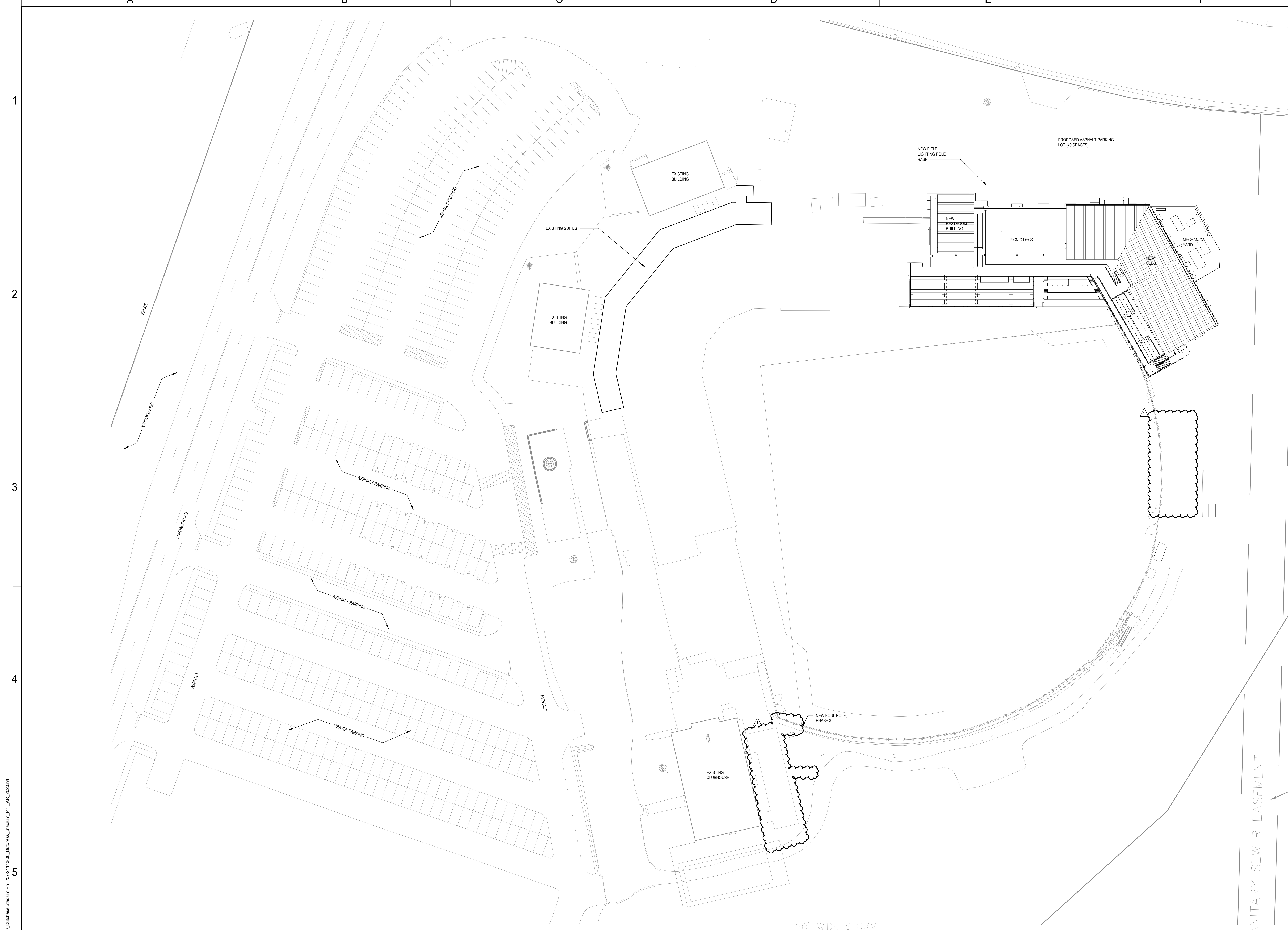
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**CONSTRUCTION PHASING PLAN**

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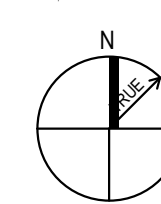
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**ARCHITECTURAL SITE PLAN**

SCALE: 1" = 30'-0"

20' WIDE STORM

OVERFLOW SANITARY SEWER EASEMENT

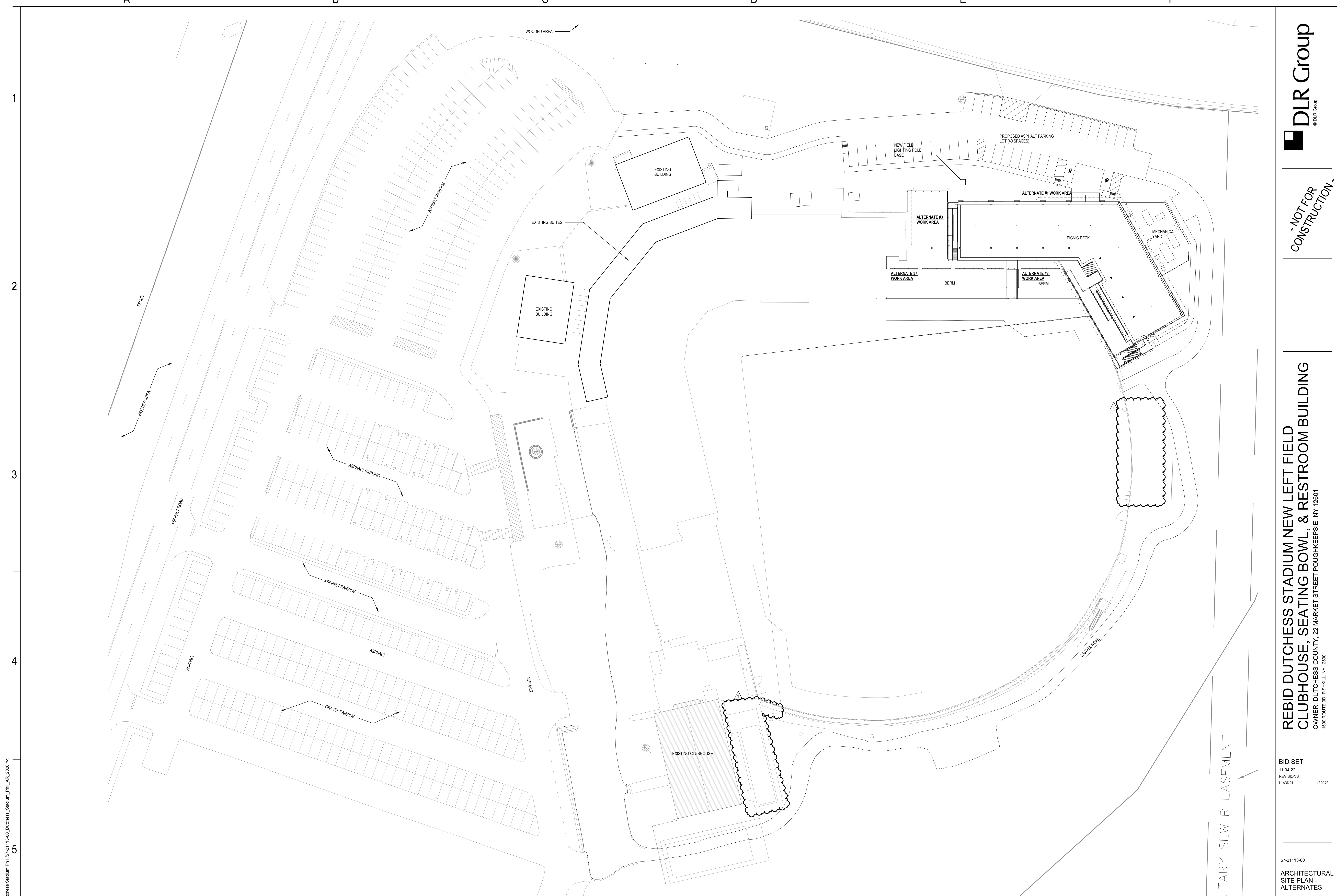
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CONSTRUCTION

**REBID DUTCHESS STADIUM NEW LEFT FIELD CLUBHOUSE, SEATING BOWL, & RESTROOM BUILDING**  
OWNER: DUTCHESS COUNTY, 22 MARKET STREET Poughkeepsie, NY 12601  
1500 ROUTE 90, FISHKILL, NY 12590

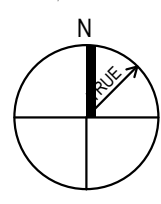
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ARCHITECTURAL  
SITE PLAN

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**ARCHITECTURAL SITE PLAN-ALTERNATE**

SCALE: 1" = 30'-0"

20' WIDE STORM

OVERFLOW SANITARY SEWER EASEMENT



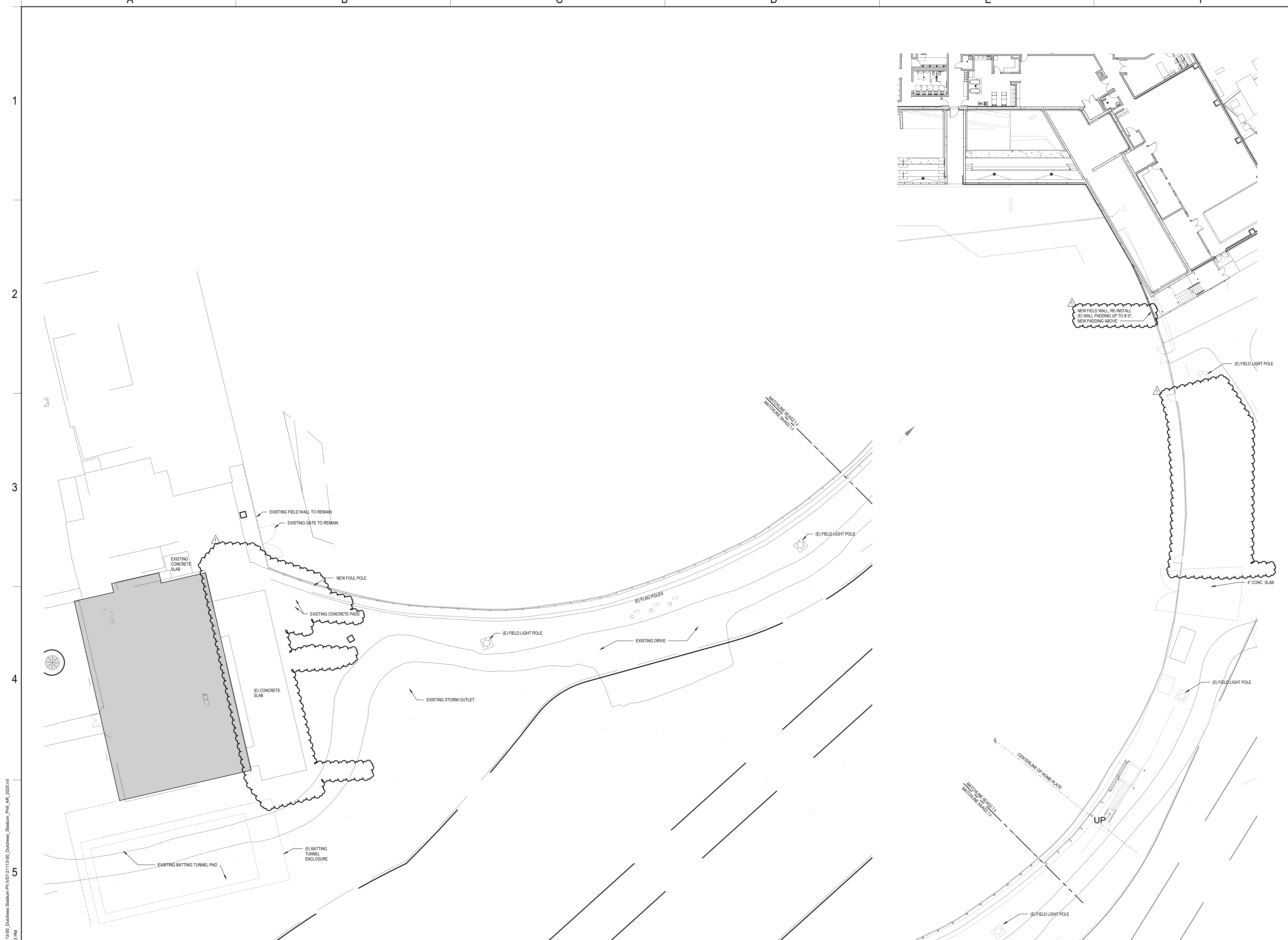
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 OWNER: DUTCHESS COUNTY, 22 MARKET STREET Poughkeepsie, NY 12601  
 1500 ROUTE 90, FISHKILL, NY 12590

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 ARCHITECTURAL SITE PLAN - ALTERNATES

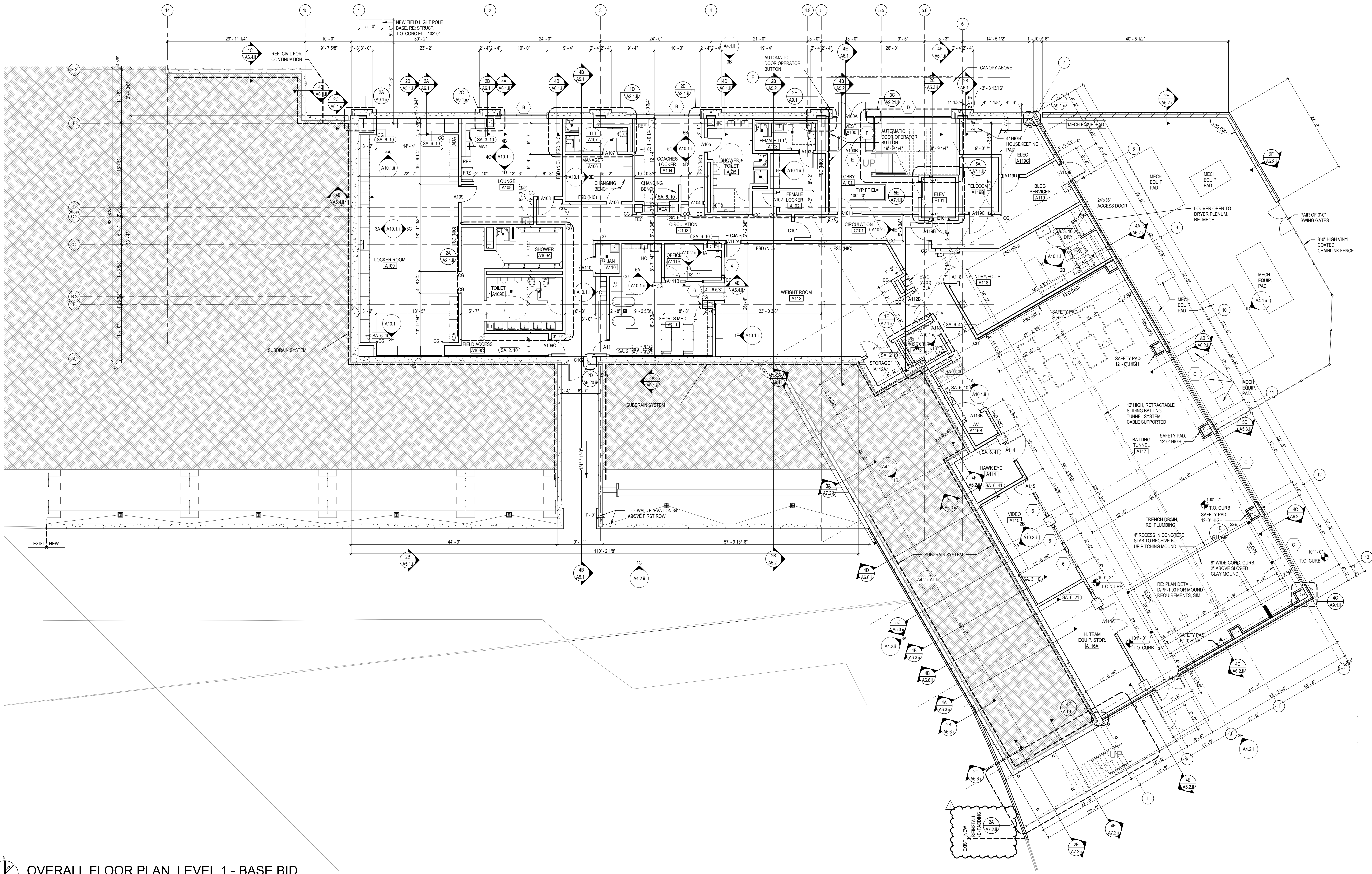
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2 ENLARGED PLAN - RIGHT FIELD BULLPEN  
 AS2.1.i SCALE: 1/16" = 1'-0"

1 ENLARGED PLAN - LEFT FIELD BULLPEN  
 AS2.1.j SCALE: 1/16" = 1'-0"



**OVERALL FLOOR PLAN, LEVEL 1 - BASE BID**  
SCALE: 1/8" = 1'-0"

**REFERENCE KEYNOTES**

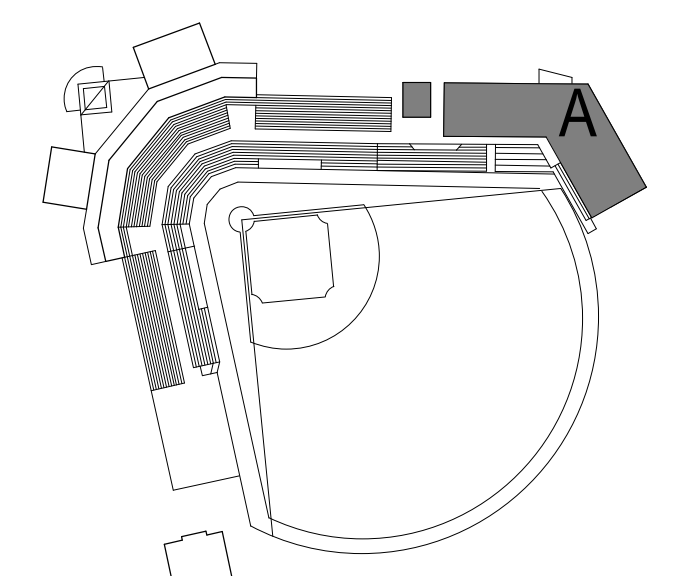
**⑥ SHEET NOTES**

**GENERAL ARCHITECTURAL NOTES**

**KEY PLAN**

- 1 INFILL OR PATCH AND REPAIR CONCRETE SLAB AREA
- 2 PATCH AND REPAIR WALL
- 3 REFERENCE FINISH PLANS FOR CONCRETE JOINTING PATTERN
- 4 FULLY-GROUT COLLAR JOINT

1. ALL INTERIOR CMU WALLS SHALL BE 8 INCHES NOMINAL THICKNESS, UNLESS NOTED OTHERWISE.
2. WALL TYPES SHALL BE DESIGNATED ON FLOOR PLANS THUS: (XX, X, XX), SEE SHEET A4.1 FOR WALL TYPES. ALL INTERIOR PARTITIONS ARE WALL TYPE SA 6.20 UNLESS NOTED OTHERWISE.
3. ALL MASONRY WALLS AND INTERIOR STUD WALLS SHALL EXTEND TO UNDERSIDE OF WOOD TRUSS BOTTOM CHORD ABOVE UNLESS NOTED OTHERWISE. SEE REFLECTED CEILING PLAN NOTES.
4. PROVISIONS SHALL BE MADE AT ALL FULL HEIGHT NON-BEARING WALLS FOR 1-INCH VERTICAL MOVEMENT OF THE BUILDING STRUCTURE WITHOUT TRANSFER OF COMPRESSION LOADS TO WALL. FILL IRREGULARITIES BETWEEN TOP OF WALL AND DECK ABOVE WITH MINERAL WOOL INSULATION OR FIRE STOPPING MATERIALS AS REQUIRED TO MEET FIRE RATING OF RESPECTIVE WALLS. SEE DETAILS ON SHEET A11.1.
5. SEE STRUCTURAL DRAWINGS FOR BRACING OF NON-LOAD BEARING MASONRY WALLS.
6. FURNISH AND INSTALL FIRE-TREATED WOOD BLOCKING OR METAL BACKING PLATE IN METAL STUD PARTITIONS FOR THE PROPER ANCHORAGE OF ALL WALL ATTACHED ITEMS, IE TOILET ACCESSORIES, CASWORK, MILLWORK, WALL-MOUNTED FIXTURES, MARKER BOARDS, TACK BOARDS, DOOR STOPS, AUDIO VISUAL BRACKETS, AND OTHER WALL ATTACHED ITEMS.
7. GYPSUM BOARD SURFACES SHALL BE ISOLATED WITH CONTROL JOINTS WHERE SHOWN ON DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS.
8. MASONRY CONTROL JOINTS (CJ) AND CONTROL JOINTS ABOVE (CIA) SHALL BE LOCATED AS SHOWN ON THE FLOOR PLAN AND BUILDING ELEVATIONS, AND WHERE LARGE PLUMBING VENTS OR RISERS OCCUR IN SINGLE WYTHE MASONRY WALLS, AND WHERE MASONRY WALLS BEARING ON THE CONCRETE FLOOR SLAB ABUT MASONRY WALLS BEARING ON CONCRETE FOOTINGS OR AS INDICATED ON DRAWINGS.
9. "MB" AND "TB" INDICATE MARKER BOARDS AND TACK BOARDS ON PLANS. THE LENGTH PRECEDES THE DESIGNATION (EXAMPLE 16 MB). ALL BOARDS ARE 4'-0" TALL. SEE WALL ELEVATIONS OR SPECIFICATIONS FOR MOUNTING HEIGHT.
10. EXTEND FURRING CHANNELS AND GYPSUM BOARD UP 4 INCHES ABOVE FINISHED CEILING ON CMU WALLS.
11. SCRIBE GYPSUM WALL BOARD OF WALLS AND PARTITIONS TO IRREGULARITIES OF DECK ABOVE. SEAL TIGHTLY AROUND ALL PENETRATIONS.
12. PROVIDE SEISMIC BRACING FOR SUSPENDED CEILINGS OR AS SHOWN ON THE DRAWINGS.
13. DEPRESS CONCRETE SLAB @ ALL SHOWERS 1/2" RE: STRUCTURAL DETAILS. SLOPE GROUT FILL 1/4" PER FOOT TO DRAIN.



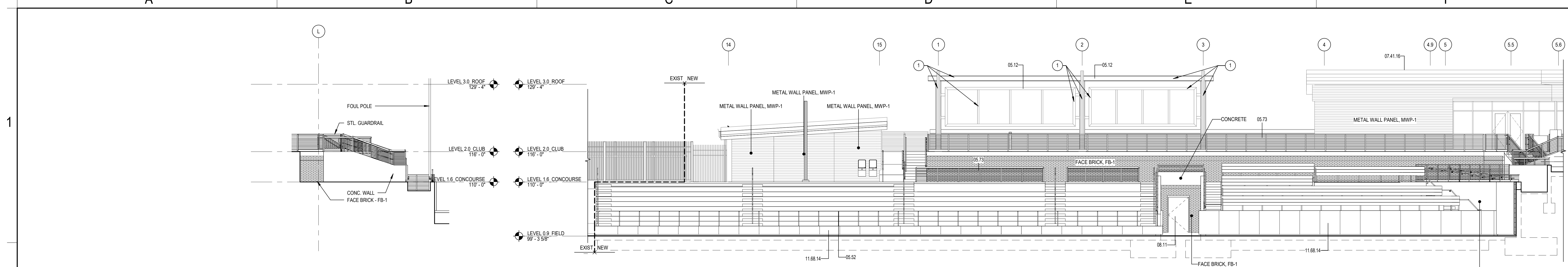
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OWNER: DUTCHESS COUNTY, 22 MARKET STREET Poughkeepsie, NY 12601

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11.04.22  
REVISIONS  
1 ADD 01 12.09.22

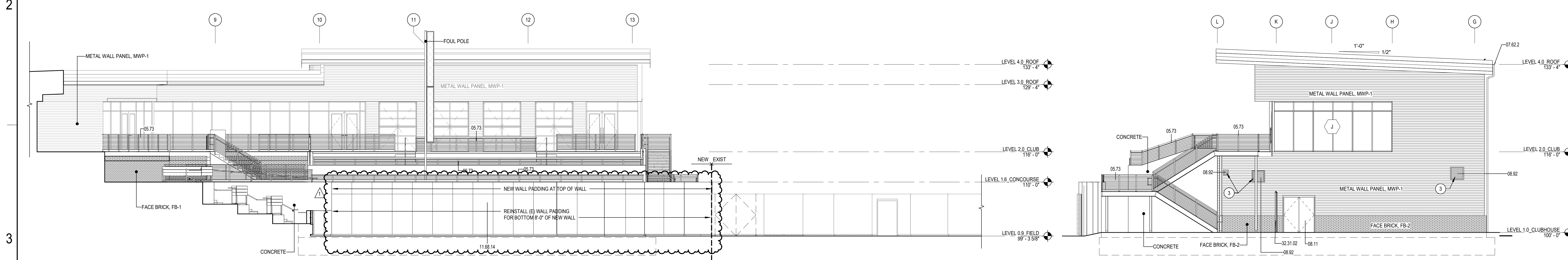
57-21113-00  
FLOOR PLAN - AREA A - LEVEL 1

A1.1A.ii



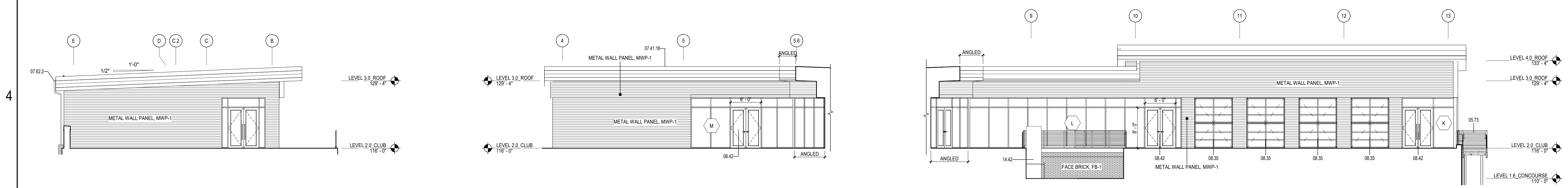
1B **SOUTHEAST ELEVATION**  
A4.2.i SCALE: 1/8" = 1'-0"

1C **SOUTHEAST ELEVATION**  
A4.2.j SCALE: 1/8" = 1'-0"



3A **SOUTH ELEVATION**  
A4.2.i SCALE: 1/8" = 1'-0"

3E **EAST ELEVATION**  
A4.2.j SCALE: 1/8" = 1'-0"



4A **SOUTHWEST ELEVATION**  
A4.2.i SCALE: 1/8" = 1'-0"

4C **SOUTHEAST ELEVATION - CLUB**  
A4.2.j SCALE: 1/8" = 1'-0"

4D **SOUTH ELEVATION - CLUB**  
A4.2.j SCALE: 1/8" = 1'-0"

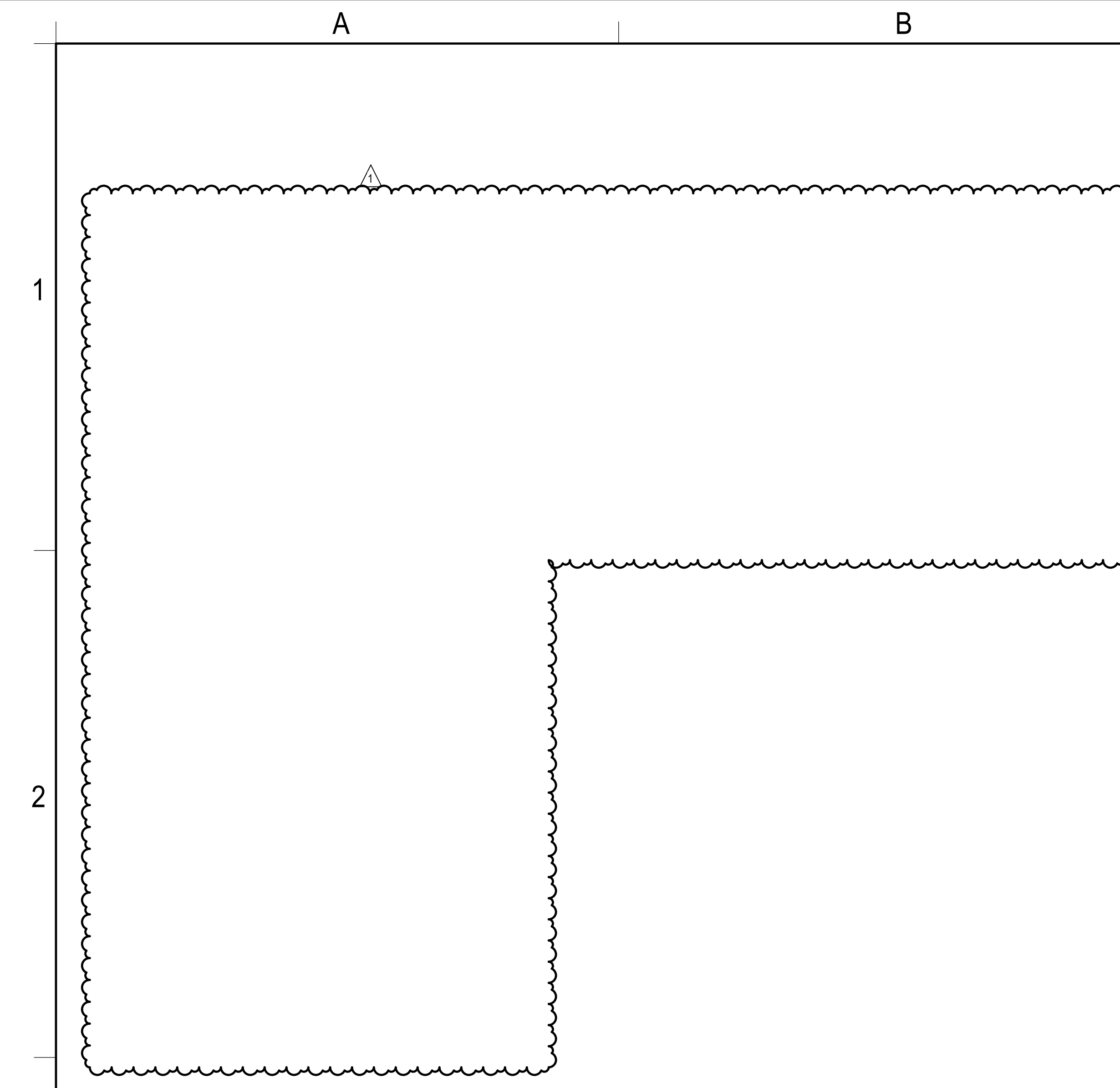
**REFERENCE KEYNOTES**

- 05.12 STRUCTURAL STEEL FRAMING
- 05.52 PIPE RAILING
- 05.73 DECORATIVE METAL RAILING
- 07.41.16 STANDING-SEAM METAL ROOF PANELS
- 07.62.2 FORMED METAL GUTTER
- 08.11 HOLLOW METAL DOOR AND FRAME, PAINT
- 08.35 FOLDING DOOR
- 08.42 ALUMINUM-FRAMED ENTRANCE
- 08.92 FIXED LOUVER
- 11.68.14 SAFETY PADDING
- 14.42 WHEELCHAIR LIFT
- 32.31.02 CHAIN LINK GATE

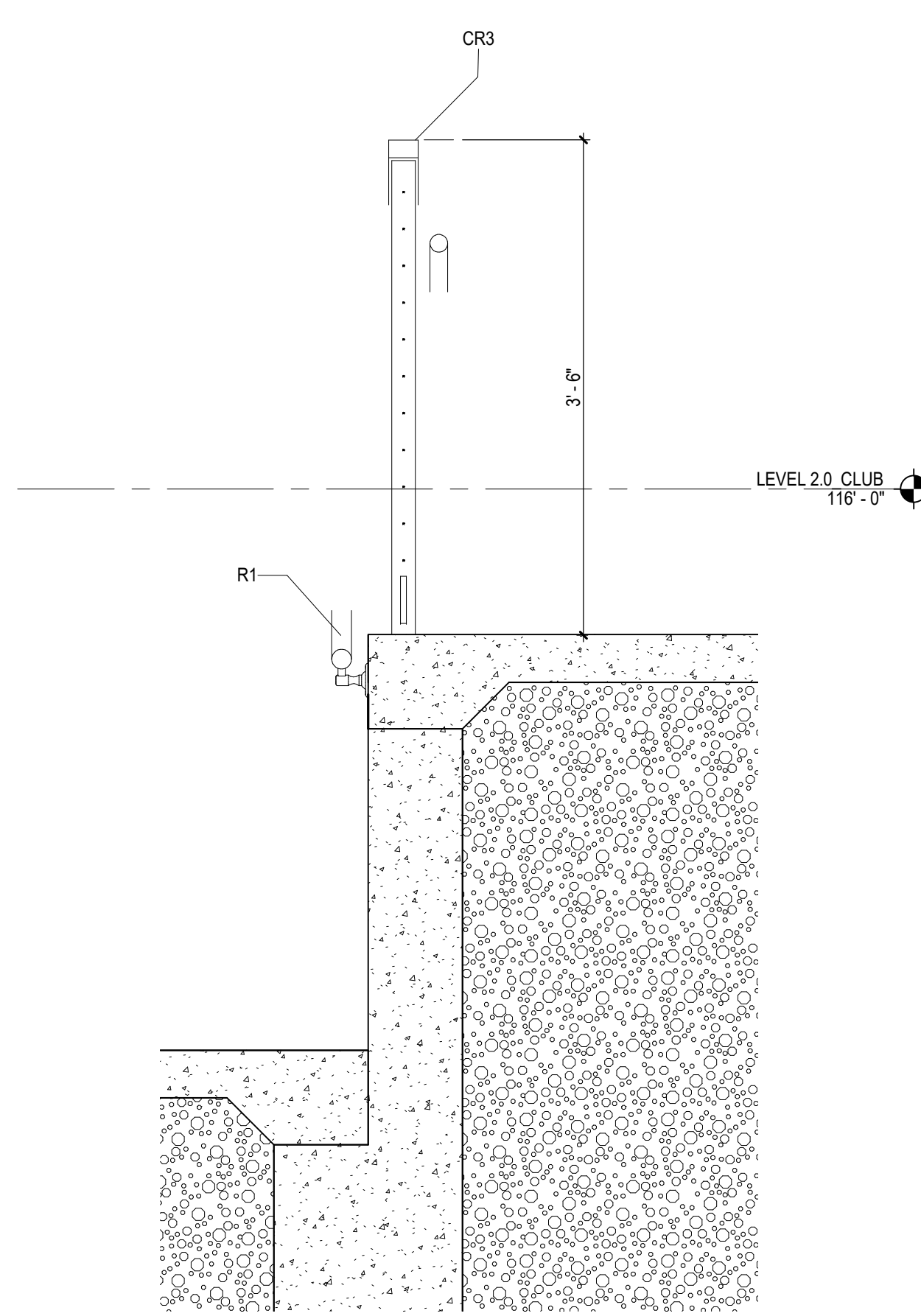
**SHEET NOTES**

- 1 PAINT STEEL STRUCTURE AND FRAMES HPC-06.
- 2 BRICK LEDGE
- 3 PAINT LOUVER HPC TO MATCH WALL PANELS, TYP.

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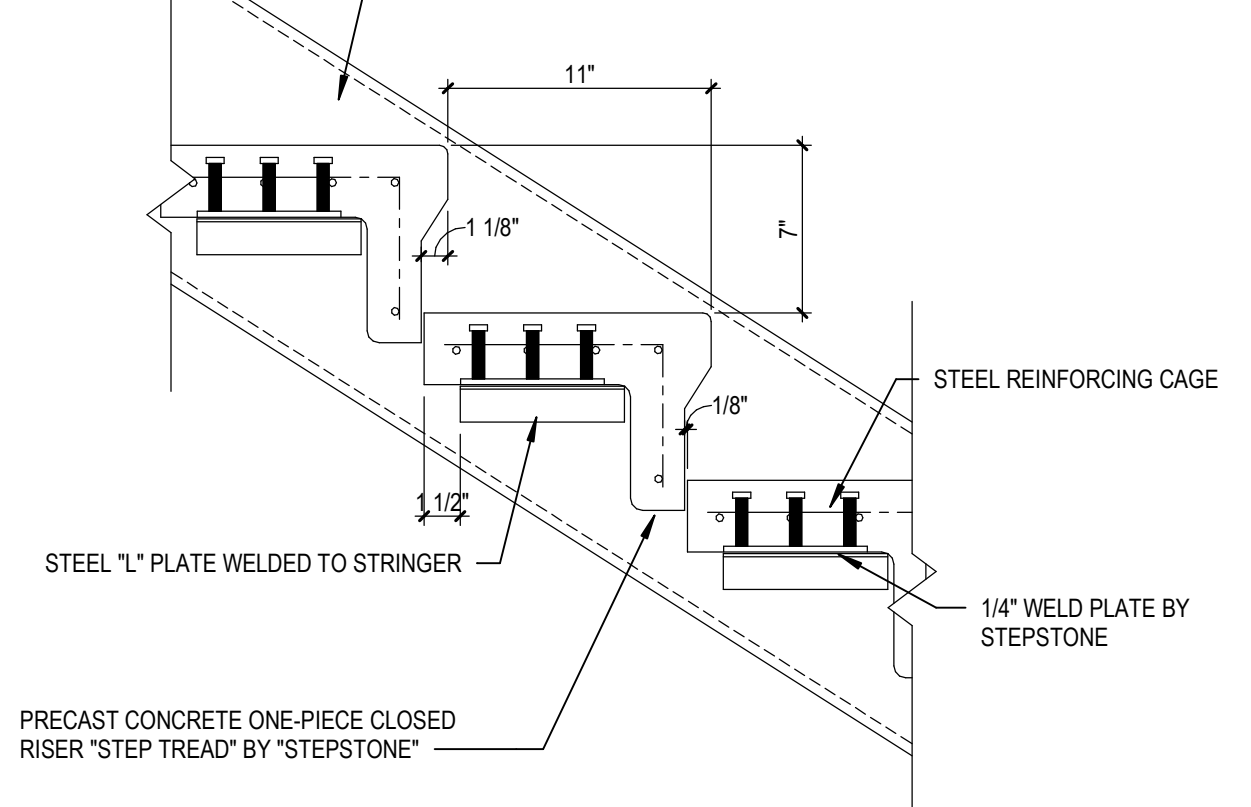
1C CIP CONCRETE TREAD DETAIL  
A9.10.ii SCALE: 1 1/2" = 1'-0"



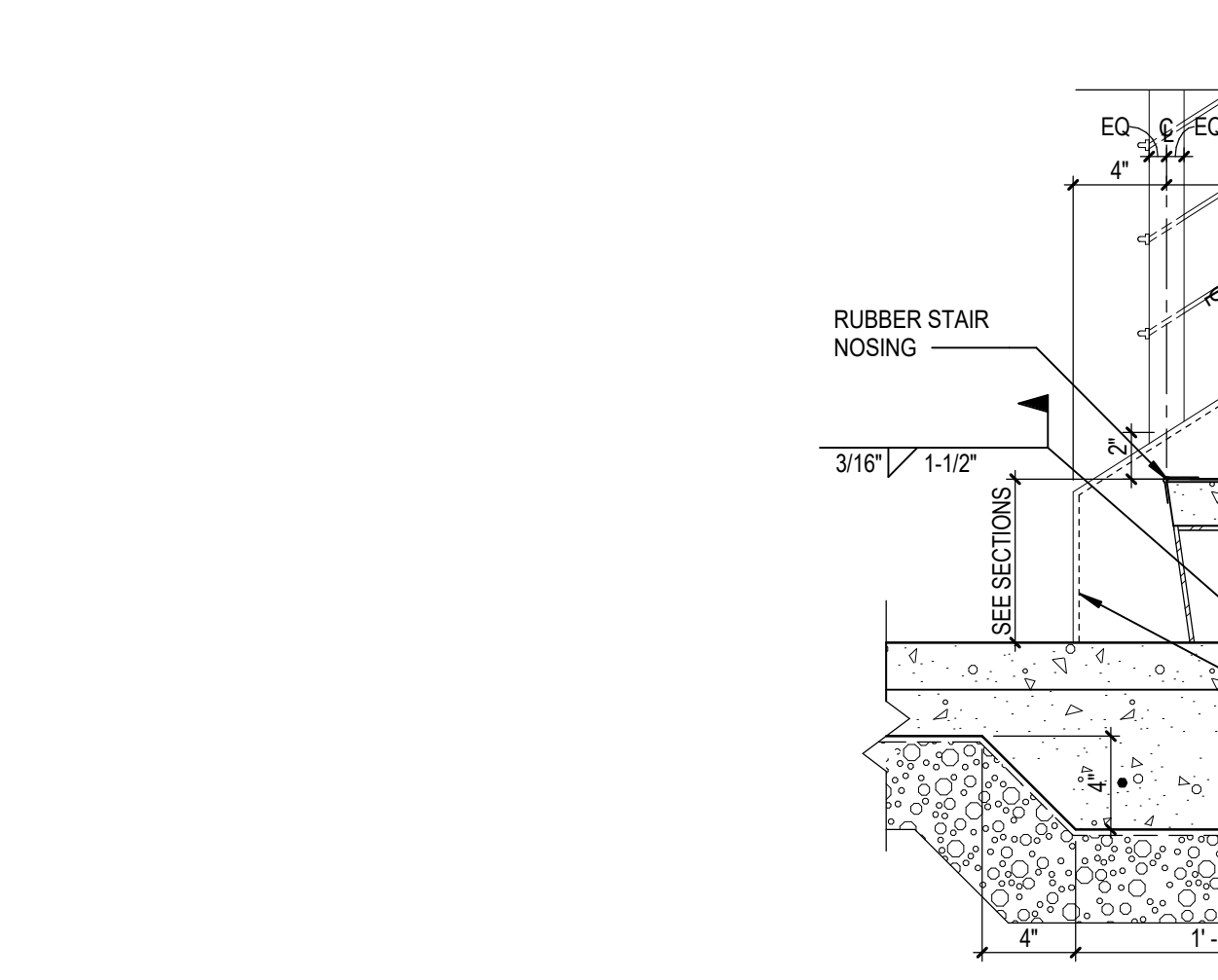
3C EXT RAMP WALL DETAIL  
A9.10.ii SCALE: 1" = 1'-0"



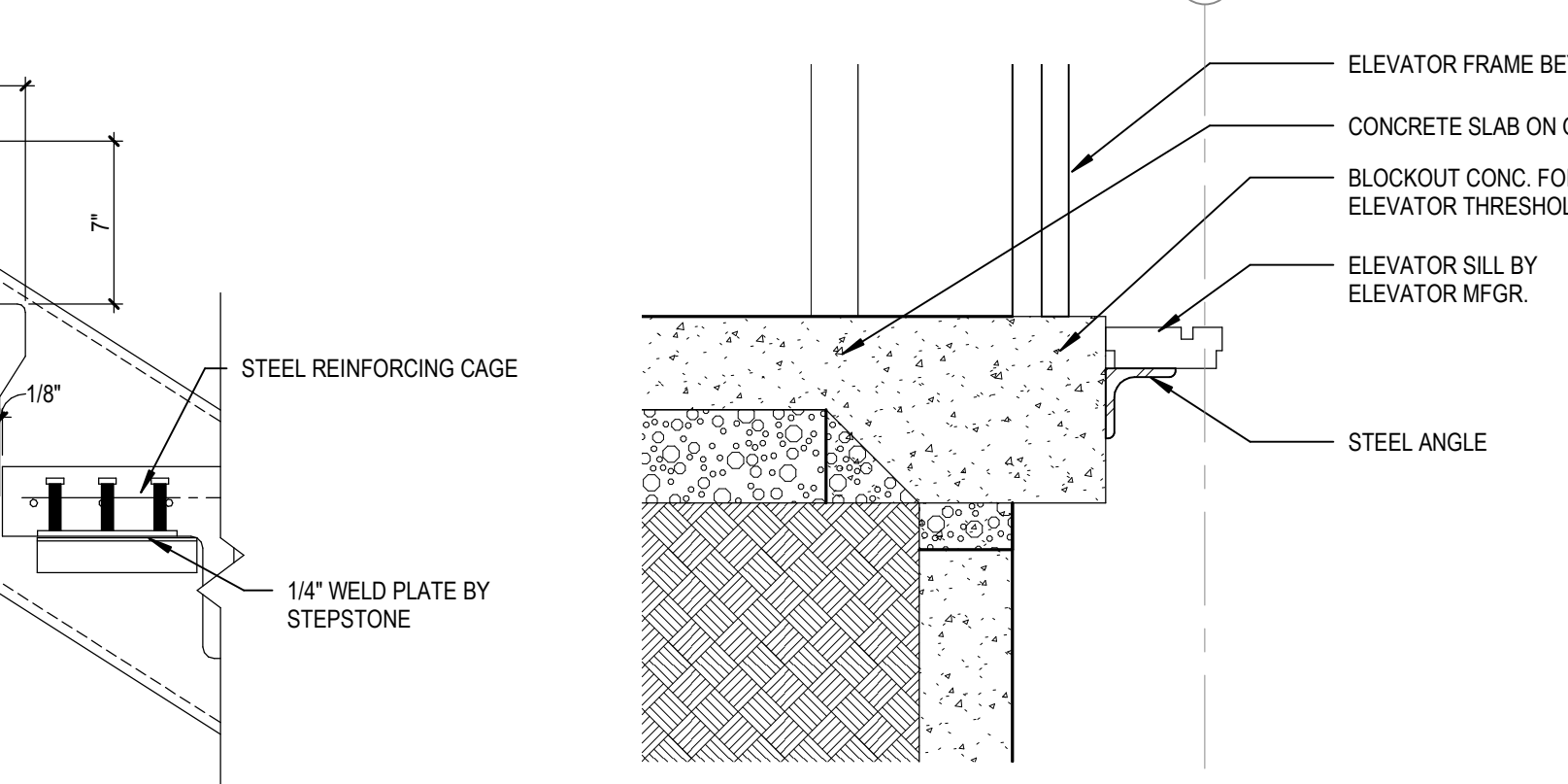
1D EXT STAIR AT LANDING  
A9.10.ii SCALE: 1 1/2" = 1'-0"



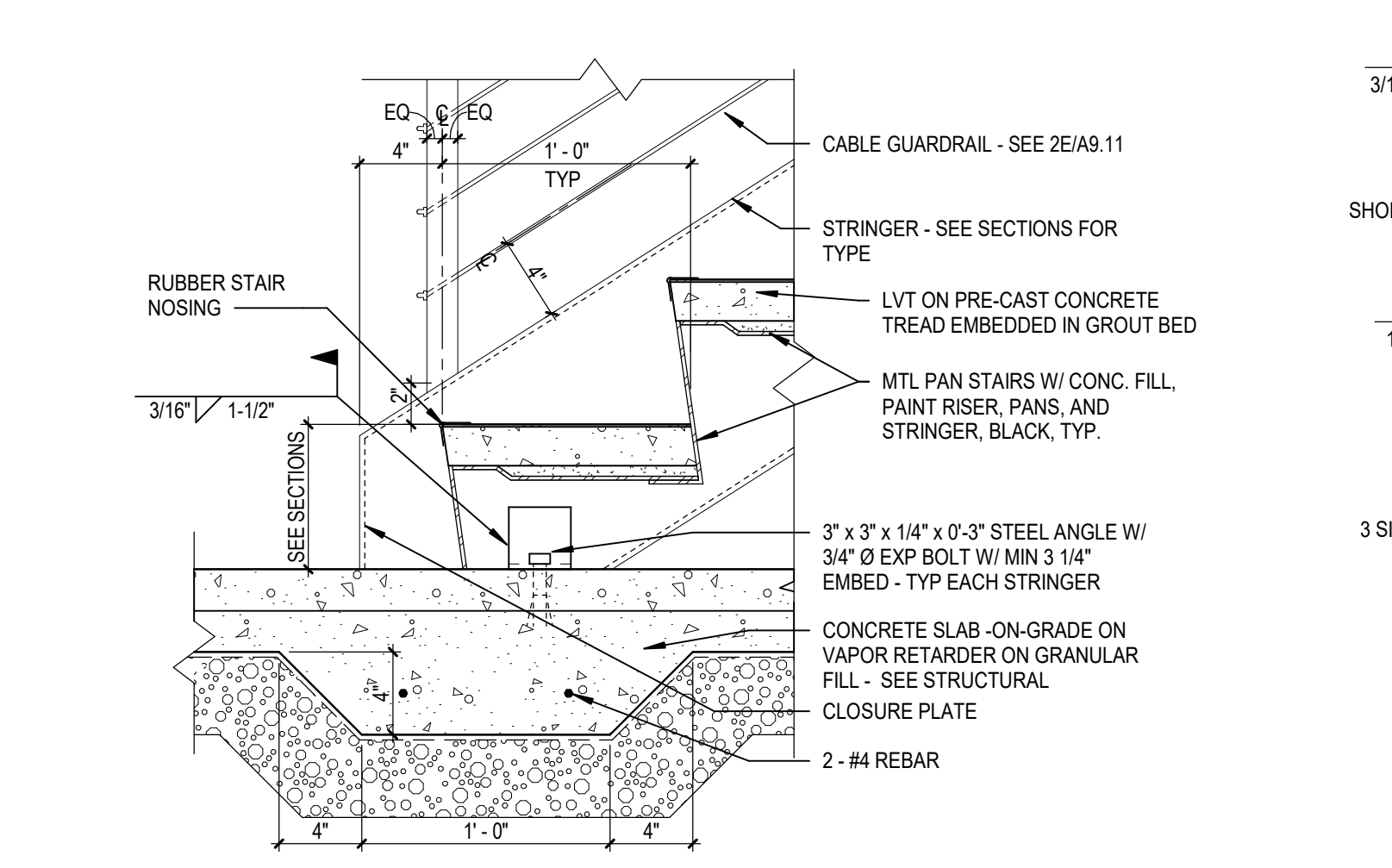
2D EXT STAIR AT CLOSED RISER TREAD  
A9.10.ii SCALE: 1 1/2" = 1'-0"



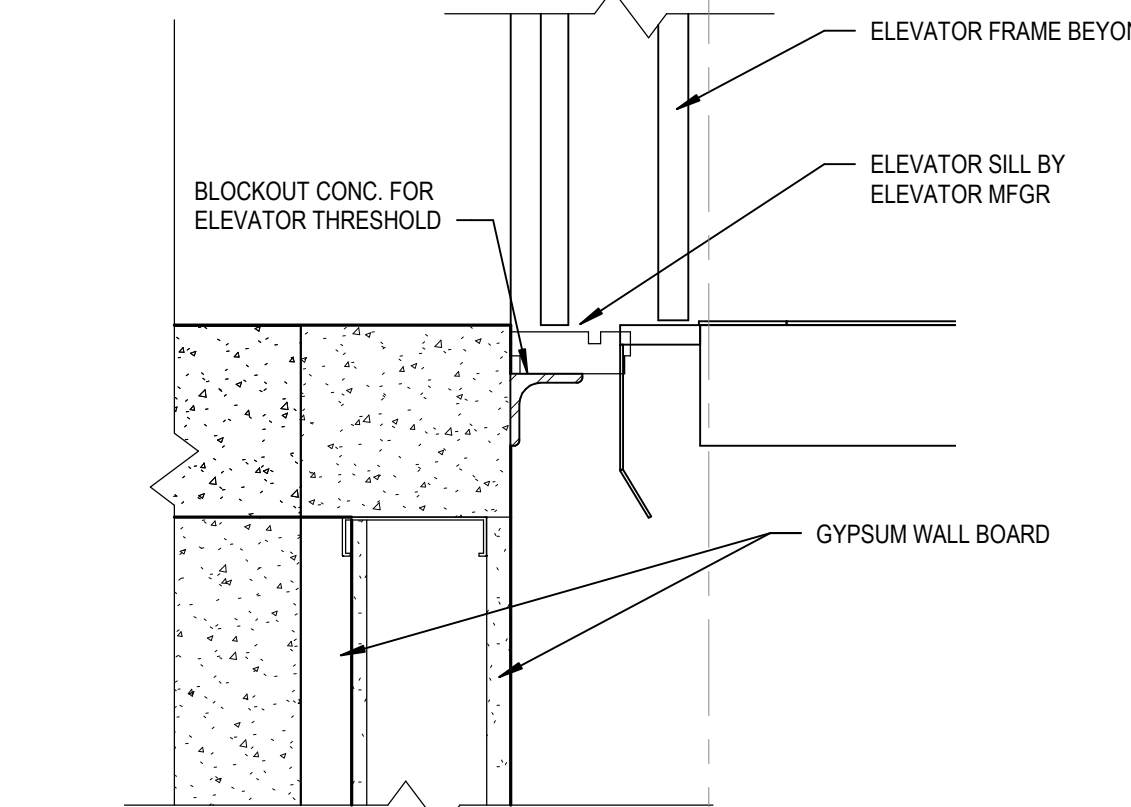
1E EXT STAIR TREAD END CONNECTION  
A9.10.ii SCALE: 1 1/2" = 1'-0"



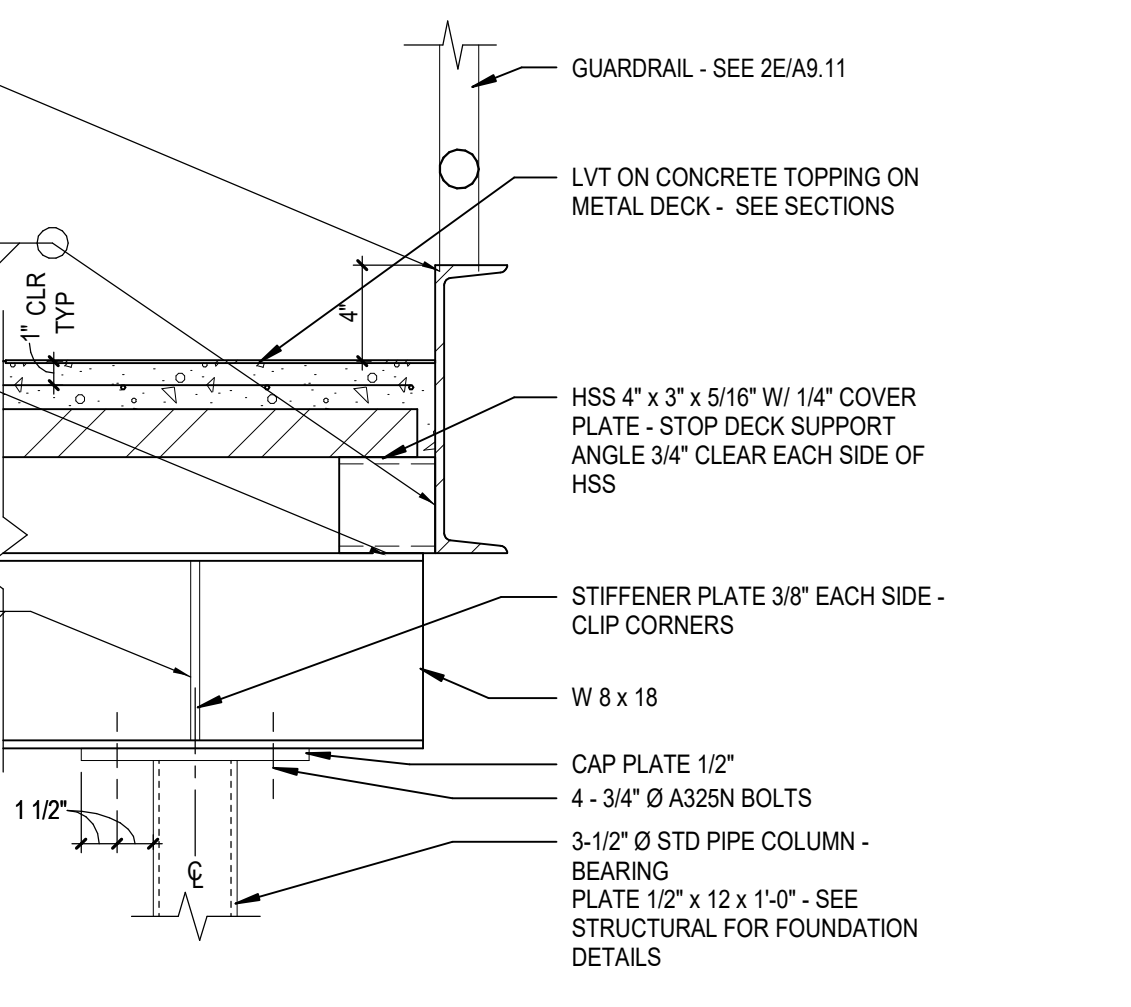
2E TYPICAL ELEVATOR THRESHOLD @ SLAB  
A9.10.ii SCALE: 1 1/2" = 1'-0"



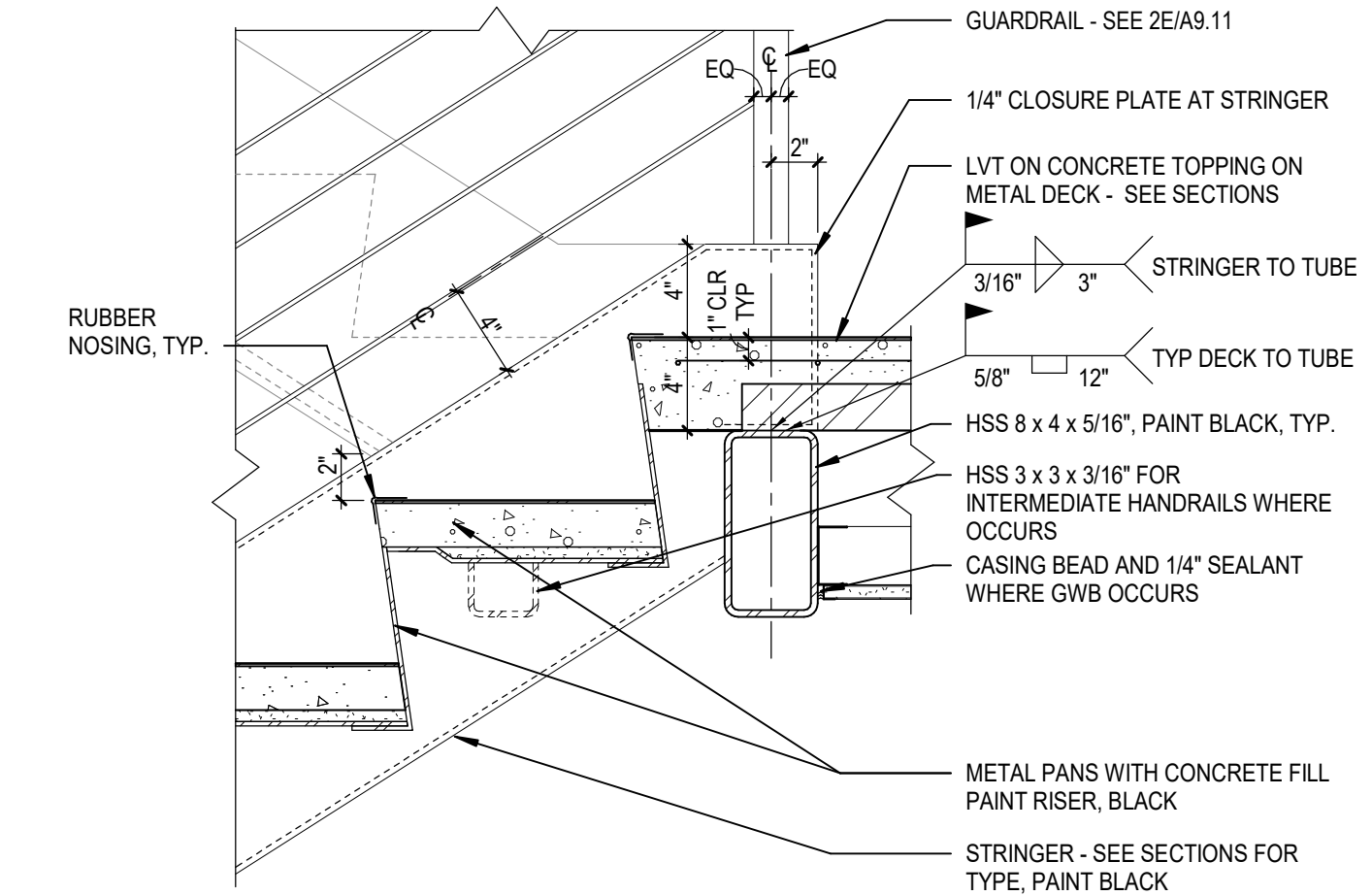
1F TYPICAL ELEVATOR HEAD  
A9.10.ii SCALE: 1 1/2" = 1'-0"



2F TYPICAL ELEVATOR THRESHOLD  
A9.10.ii SCALE: 1 1/2" = 1'-0"



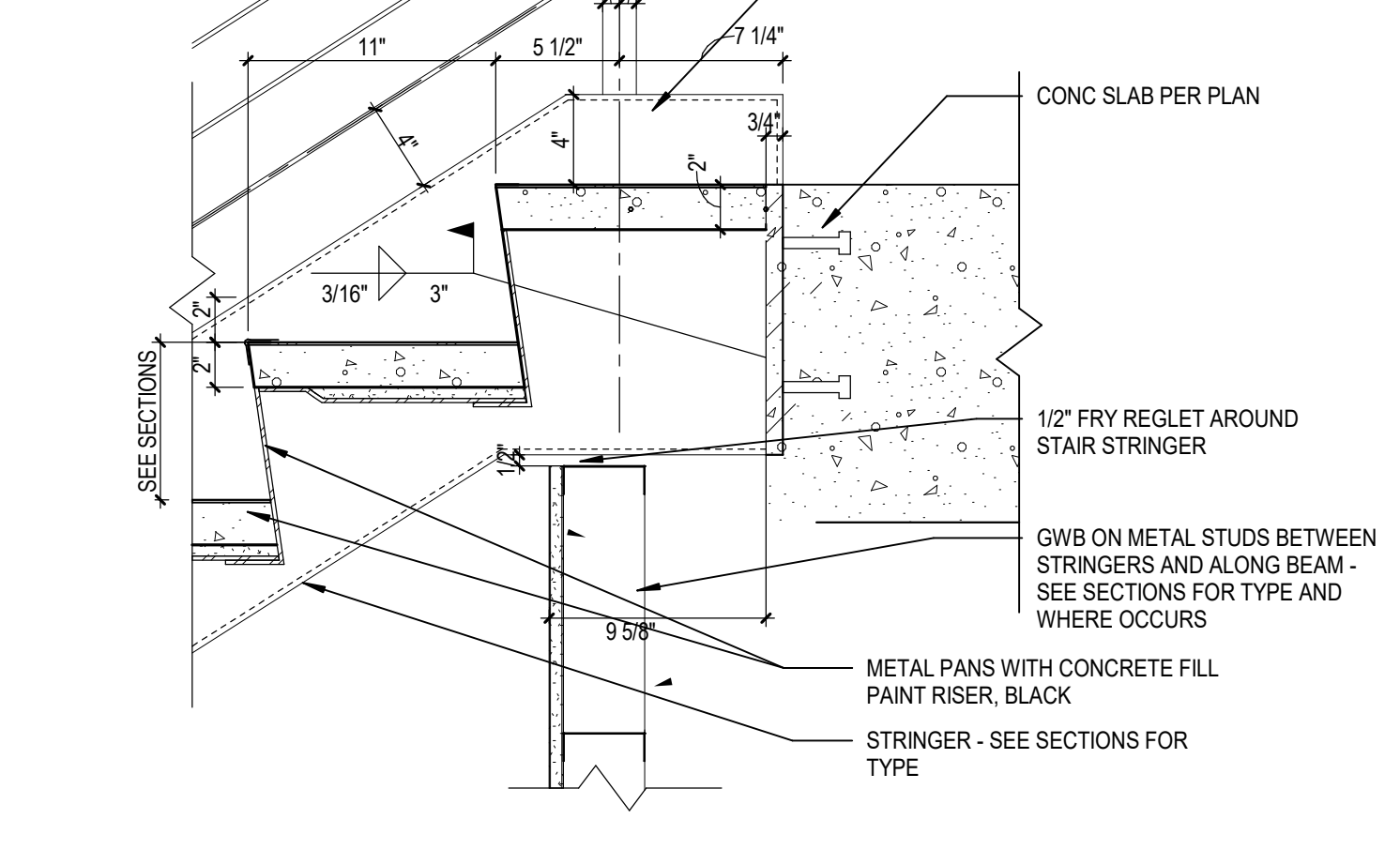
4D STAIR AT SLAB-ON-GRADE  
A9.10.ii SCALE: 1 1/2" = 1'-0"



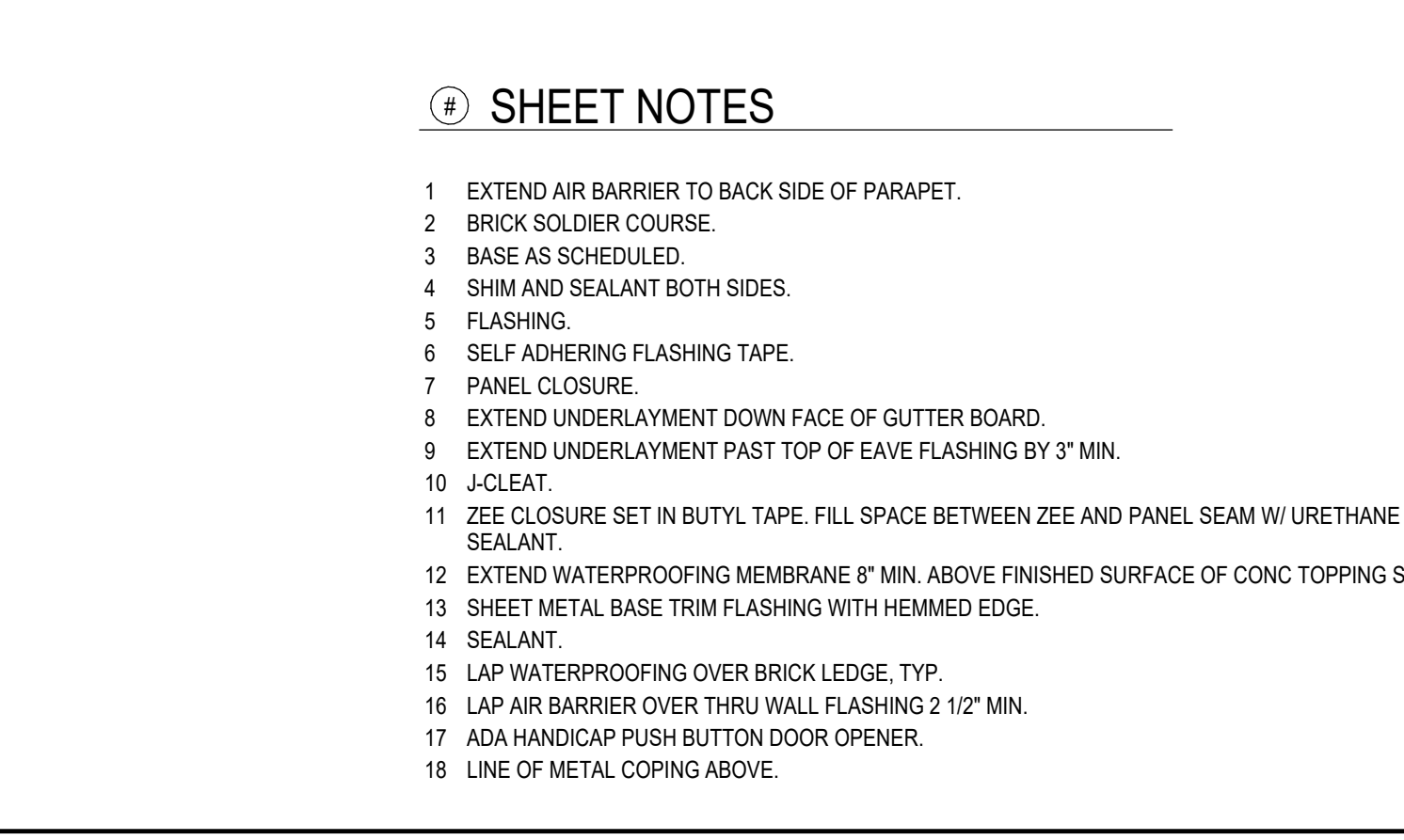
5D STAIR AT LANDING  
A9.10.ii SCALE: 1 1/2" = 1'-0"



4E STAIR LANDING BEARING  
A9.10.ii SCALE: 1 1/2" = 1'-0"



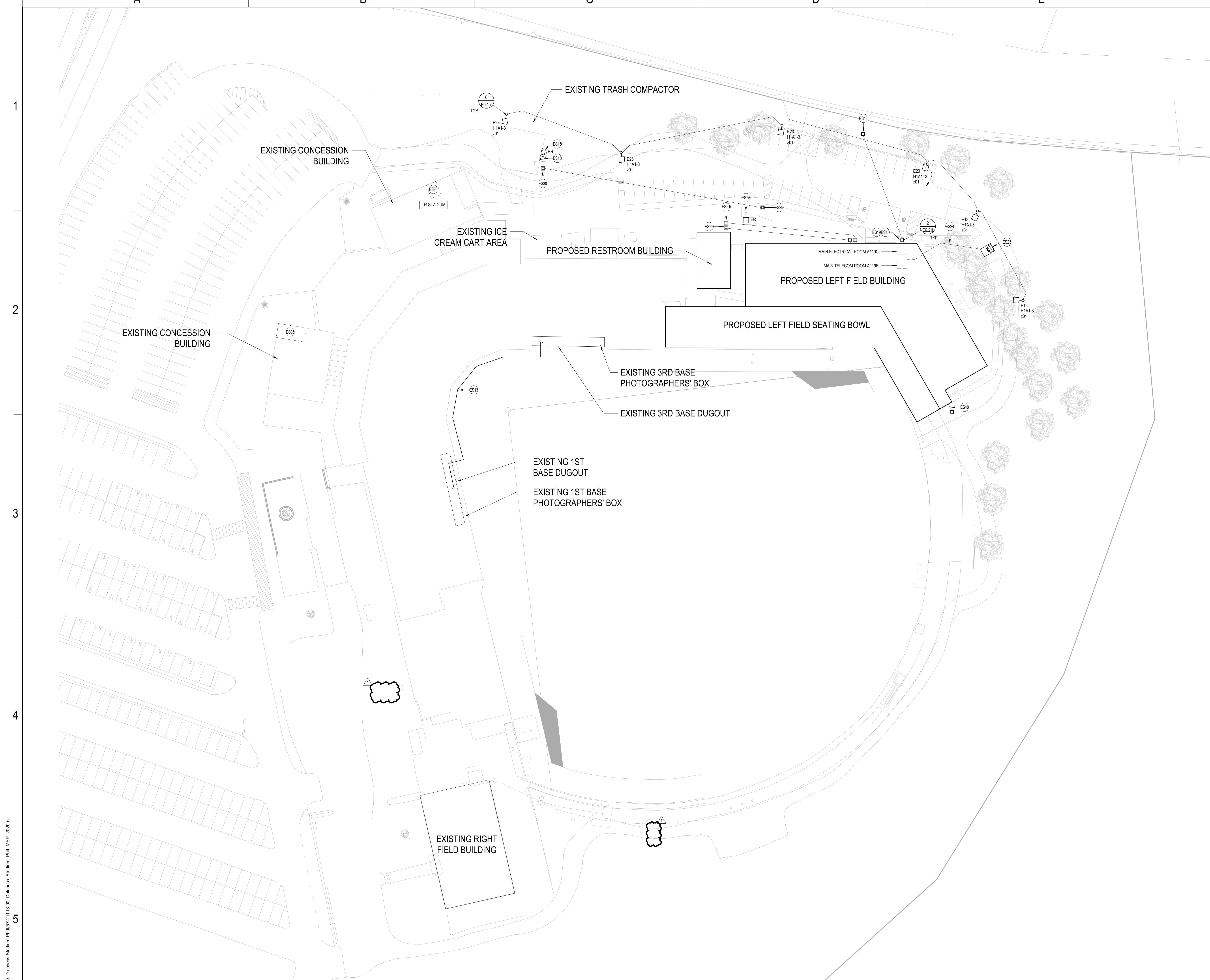
5E STAIR AT FLOOR  
A9.10.ii SCALE: 1 1/2" = 1'-0"



REFERENCE KEYNOTES

SHEET NOTES

- 1 EXTEND AIR BARRIER TO BACK SIDE OF PARAPET.
- 2 BRICK SOLDER COURSE.
- 3 BASE AS SCHEDULED.
- 4 SHIM AND SEALANT BOTH SIDES.
- 5 FLASHING.
- 6 SELF ADHERING FLASHING TAPE.
- 7 PANEL CLOSURE.
- 8 EXTEND UNDERLAYMENT DOWN FACE OF GUTTER BOARD.
- 9 EXTEND UNDERLAYMENT PAST TOP OF EAVE FLASHING BY 3" MIN.
- 10 J-CLEAT.
- 11 ZEE CLOSURE SET IN BUTYL TAPE. FILL SPACE BETWEEN ZEE AND PANEL SEAM W/ URETHANE SEALANT.
- 12 EXTEND WATERPROOFING MEMBRANE 8" MIN. ABOVE FINISHED SURFACE OF CONC TOPPING SLAB.
- 13 SHEET METAL BASE TRIM FLASHING WITH HEMMED EDGE.
- 14 SEALANT.
- 15 LAP WATERPROOFING OVER BRICK LEDGE. TYP.
- 16 LAP AIR BARRIER OVER THRU WALL FLASHING 2 1/2" MIN.
- 17 ADA HANDICAP PUSH BUTTON DOOR OPENER.
- 18 LINE OF METAL COPING ABOVE.



**GENERAL NOTES**

- A PROVIDE HANDHOLES FOR EXISTING CIRCUITS TO BE SPLICED/EXTENDED. COORDINATE LOCATION WITH SITE GRADING, HARDSCAPING, AND LANDSCAPING.
- B ALL HANDHOLE CONDUITS SHALL SLOPE DOWNAWAY FROM BUILDING(S) TO PREVENT WATER INTRUSION IN BUILDING.

**SHEET NOTES**

- ES13 ROUTE RIGID GALVANIZED CONDUIT(S) FOR (3) CIRCUITS FOR (2) EXISTING SLUMP PUMPS, EXISTING LIGHT FIXTURES, AND EXISTING RECEPTACLES FROM EXISTING PANEL IN FIRST BASE PHOTOGRAPHERS BOX TO THIRD BASE DUGOUT ALONG WALL BASE UNDER EXISTING PAVING. COORDINATE/VERIFY ROUTING WITH OWNER. FIELD VERIFY EXISTING FIXTURE/EQUIPMENT POWER REQUIREMENTS. PROVIDE 201 BREAKERS (OR SIZED PER EQUIPMENT REQUIREMENTS) IN EXISTING PANEL IN FIRST BASE PHOTOGRAPHERS BOX. UPDATE PANELBOARD DIRECTORY.
- ES15 RELOCATE EXISTING DISTRIBUTION PANEL FROM DEMOLISHED ELECTRICAL SHED TO LOCATION SHOWN. PROVIDE SUPPORTS AS REQUIRED. REPLACE DISTRIBUTION PANEL ENCLOSURE WITH WEATHERPROOF NEMA 3R ENCLOSURE THAT'S COMPATIBLE WITH AND FROM SAME MANUFACTURER AS DISTRIBUTION PANEL. RECONNECT ALL EXISTING CIRCUITS TO REMAIN TO DISTRIBUTION PANEL. PROVIDE PAD FOR EQUIPMENT.
- ES16 PROVIDE WEATHERPROOF 75KVA TRANSFORMER IN NEMA 3R ENCLOSURE TO REPLACE DEMOLISHED TRANSFORMER IN DEMOLISHED ELECTRICAL SHED. IT IS PERMISSIBLE TO REUSE EXISTING TRANSFORMER IF IT CAN BE MADE WEATHERPROOF WITH NEMA 3R ENCLOSURE MANUFACTURED BY THE SAME MANUFACTURER AS THE EQUIPMENT AND IS COMPATIBLE. PROVIDE EQUIPMENT PAD FOR TRANSFORMER.
- ES18 TELECOMMUNICATIONS SERVICE HANDHOLE. SEE CIVIL SHEETS FOR CONTINUATION.
- ES19 PROPOSED UNDERGROUND COMMUNICATIONS SERVICE CONDUIT ROUTING FOR FIBER CONNECTION AND ANALOG PHONE LINES). PROVIDE (2) 4-INCH CONDUITS WITH THREE (1) 1/4-INCH INNERDUTS AND (1) 1/4-INCH CONDUIT. ROUTE CONDUITS SLOPED DOWN AWAY FROM BUILDING TO HANDHOLE. PROVIDE PULLSTRING IN ALL CONDUITS. ROUTE CONDUITS UP INTO NW CORNER OF MAIN TELECOM ROOM A119B. REFER TO SHEET E2.1A.
- ES20 APPROXIMATE LOCATION OF EXISTING TELECOM DEMARCATION. ROUTE (2) EMPTY 4-INCH CONDUITS WITH PULLSTRING FROM THIS SPACE THRU EXISTING CONCESSION BUILDING EXTERIOR WALL AND DOWN EXTERIOR WALL AND UNDERGROUND HANDHOLE BY RESTROOM BUILDING. REFER TO NOTE ES21 THIS SHEET. COORDINATE ROUTING WITH OTHER TRADES.
- ES21 PROVIDE HANDHOLE FOR LOW-VOLTAGE CABLING. ROUTE (2) EMPTY 4-INCH CONDUITS WITH PULLSTRING FROM EXISTING CONCESSION BUILDING TELECOM DEMARCATION TO HANDHOLE. REFER TO NOTE ES20 THIS SHEET. ROUTE (4) EMPTY 4-INCH CONDUITS FROM MAIN TELECOM ROOM A119B IN LEFT FIELD BUILDING TO HANDHOLE.
- ES22 PROVIDE HANDHOLE FOR POWER TO RESTROOM BUILDING (ALTERNATE 3). ROUTE (2) EMPTY 2-INCH CONDUITS WITH PULLSTRING FROM MAIN ELECTRICAL ROOM A119C TO HANDHOLE.
- ES23 PROPOSED ELECTRICAL SECONDARY FROM UTILITY TRANSFORMER.
- ES24 RELOCATE EXISTING SPORTS LIGHTING FIXTURES ON NEW POLE. INSTALL ADDITIONAL FIXTURES AND CROSS-ARM BRACING AS DIRECTED BY OWNER AND OWNER SPORTS LIGHTING DESIGNER. REFER TO CIVIL AND ARCHITECTURE DRAWINGS TO COORDINATE EXACT LOCATION. SPLICE AND EXTEND EXISTING CIRCUIT(S) AND CONTROL(S) AS REQUIRED TO MAINTAIN PROPER OPERATION OF FIXTURES. AIM FIXTURES AS DIRECTED BY OWNER AND OWNER DESIGNER. REFER TO ARCHITECTURE AND STRUCTURAL DRAWINGS FOR COORDINATION REQUIREMENTS. PROVIDE GROUNDING FOR POLE AT NEW LOCATION.
- ES29 PROVIDE HANDHOLE AS SPLICE POINT FOR EXISTING CIRCUITS TO FROM DEMOLISHED ELECTRICAL SHED TO RELOCATED EQUIPMENT NEAR TRASH COMPACTOR. SIZE HANDHOLE TO ADEQUATELY ALLOW ALL EXISTING CIRCUITS TO REMAIN TO BE SPLICED. COORDINATE EXACT LOCATION OF HANDHOLE NEAR DEMOLISHED ELECTRICAL SHED AND WITH SITE GRADING AND LANDSCAPING.
- ES30 PROVIDE HANDHOLE TO PULL CONDUIT WIRE TO RELOCATED ELECTRICAL EQUIPMENT NEAR TRASH COMPACTOR.
- ES35 APPROXIMATE LOCATION OF EXISTING STADIUM MAIN ELECTRICAL ROOM WITH EXISTING MAIN DISTRIBUTION PANEL, MOP AND EXISTING PANELBOARD HP-2.
- ES48 PROVIDE (2) 3-INCH CONDUIT PATHWAYS WITH PULLSTRING FROM HANDHOLE TO HAWKEYE ROOM IN LEFT FIELD BUILDING. COORDINATE LOCATION(S) AND ROUTING WITH OWNER PRIOR TO INSTALLATION.



NOT FOR CONSTRUCTION

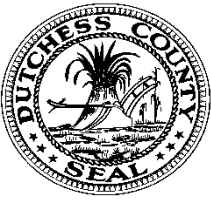
REBID DUTCHESS STADIUM NEW LEFT FIELD CLUBHOUSE, SEATING BOWL, & RESTROOM BUILDING  
OWNER: DUTCHESS COUNTY, 22 MARKET STREET Poughkeepsie, NY 12601  
1500 ROUTE 9D, FISHKILL, NY 12590

BID SET  
11.04.22  
REVISIONS  
1 - PG 2 - ADD 01 12.09.2022

57-21113-00  
ELECTRICAL SITE PLAN

ES1.1.ii

BM 360/62-21113-00\_Dutchess Stadium Ph 1157-21113-00\_Dutchess Stadium\_Ph1 MEP\_2020.rvt  
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Dutchess County Department of Public Works  
626 Dutchess Turnpike  
Poughkeepsie, NY 12603  
Email: [dpwcontracts@dutchessny.gov](mailto:dpwcontracts@dutchessny.gov)

**REBID Dutchess Stadium New Left Field Clubhouse, Seating Bowl & Restroom Building  
RFB-DCB-18-22**

**ADDENDUM # 1**

**To:** ALL PROSPECTIVE BIDDERS

**FROM:** Dutchess County Department of Public Works

**Date:** December 12, 2022

**Re:** Questions & Answers, Clarification, Revised Specifications and Drawings

The purpose of this addendum is to notify all prospective bidders of the following:

- Q1. Clarify Dwg AS1.11ii.....shows location of "new field lighting pole base"  
**A1. This is the new field light pole foundation, furnished by NGU. see attachment "C"**
- Q2. Dwg S3.7 ii detail 26 is a foundation for the foul pole ?  
**A2. This is the foundation for the new RF foul pole.**
- Q3. Is there a detail for the new light pole base ?  
**A3. The new field light pole base detail is furnished by NGU and issued in Addendum #1, see attachment "B".**
- Q4. GC takes old pole down and installs new pole.....is new pole furnished by the County ?  
**A4. Confirmed, new pole, new light fixtures, and new prewired cross arms are furnished by the County and Contractor installed. Contractor shall also remove all existing light fixtures and re-install on new pre wired cross arms on pole. The existing left field light pole will be removed, disassembled, and turned over to the owner for salvage. See the attachments.**

*See the attached Clarifications, revised Specifications and Drawings.*

**PLEASE INCLUDE A SIGNED COPY OF THE ADDENDUM IN YOUR BID  
RECEIPT OF ADDENDUM**

**END OF ADDENDUM #1**



Project		Catalog #		Type	
Prepared by		Notes		Date	



# Ephesus

## LUMASPORT 16

White LED Sports & Entertainment Luminaire

### Typical Applications

Pro Stadiums • University & Collegiate Stadiums

### Interactive Menu

- Dimensional Details [page 1](#)
- Ordering Information [page 2](#)
- Dimensional and Mounting Details [page 3](#)
- Performance and Optical Performance Data [page 4](#)
- Ordering Information for Accessories [page 5](#)
- Accessory Dimensions and Part Details [page 6](#)
- Example System Topology [page 8](#)

### Product Certification

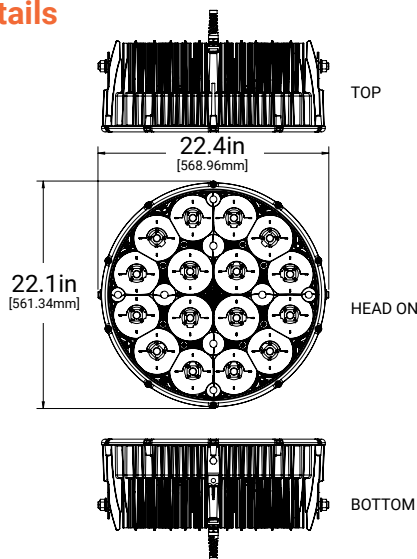
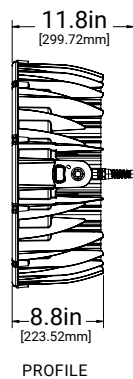


### Top Product Features

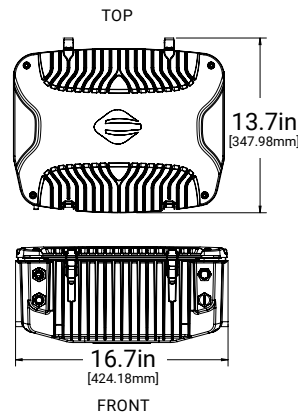
- Integrated Louver and Reflector Optics
- Redundant Dual Power
- Chip-On-Board (CoB) LEDs
- 2-Piece Ease of Assembly
- Custom Control Options

## Dimensional Details

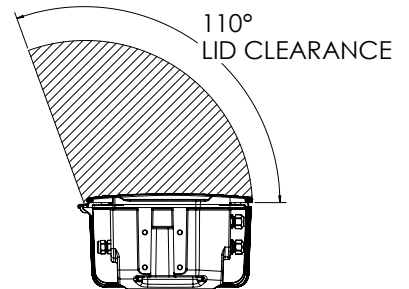
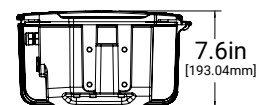
### LIGHT HEAD



### DRIVER BOX



### PROFILE



[Installation Instructions](#)

## Ordering Information - Luminaire

NOTE: A complete luminaire order requires a selection entry for **Brand, Family, Model, Power, Color, CCT, CRI, Optic, DC Cable, Voltage, Controls, Mount, AC Cable, Options, Packaging, and International Options.**

SAMPLE ORDER NUMBER: **EPH-LS-16-1200L-BLK-57-80-1R-D04-LV-AM-LY-A00-HEG-BP-ST**

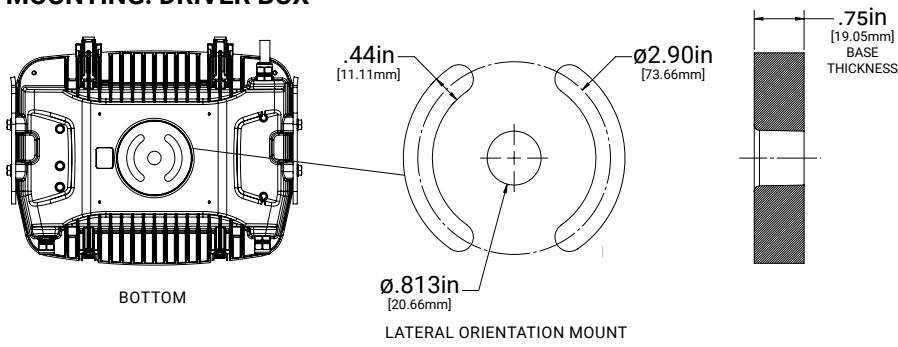
Brand	Family	Model	Power	Color	CCT	CRI	Optic	Light Head Cable (DC)
Brand	Family	Model	Power	Color <sup>2</sup>	CCT	CRI	Optic <sup>3</sup>	Light Head Cable (DC) <sup>4</sup>
EPH = Ephesus	LS = LumaSport	16 = 16 Optics	1200L = 1200W Local Power <sup>1</sup>	BLK = Black WHT = White	57 = 5700K	80 = 80 CRI	<b>1R</b> = Reflector: NEMA 2   11   21 <b>2R</b> = Reflector: NEMA 3   16   32 <b>3R</b> = Reflector: NEMA 2   15   27 <b>4R</b> = Reflector: NEMA 3   19   37 <b>5R</b> = Reflector: NEMA 3   25   37 <b>6W</b> = Reflector: NEMA 5   51   82 <b>1L</b> = Reflector + Louver: NEMA 2   11   22 <b>3L</b> = Reflector + Louver: NEMA 2   13   27 <b>5L</b> = Reflector + Louver: NEMA 3   20   38	<b>D04</b> = 4ft Cable, Standard <b>D10</b> = 10ft Cable
			Notes: (1) Local Power means that the light head is attached to the driver box with the yoke mount.	Notes: (2) Not coastal rated. Contact Ephesus for coastal luminaire options.			Notes: (3) Optic = NEMA TYPE; BEAM ANGLE; FIELD ANGLE. Additional optical performance data within spec sheet.	Notes: (4) DC Cable connecting the Light Head to the Driver Box.

Voltage	Controls	Mount	Power Cable (AC)	Options	Packaging	International Options
Voltage	Control	Mount	Power Cable (AC) <sup>5</sup>	Options	Packaging	International Options
LV = Low Voltage HV = High Voltage	AM = Wireless AirMesh LB = Wired DMX NC = No Control	LY = Local Yoke	A00 = No Cable, Standard A05 = 5ft Cable A10 = 10ft Cable A15 = 15ft Cable	HEG = No Visor   High Efficiency Glass Lens	BP = Bulk Packaging	ST = Standard
			Notes: (5) AC Cable connecting the Driver Box to the electrical power source.			

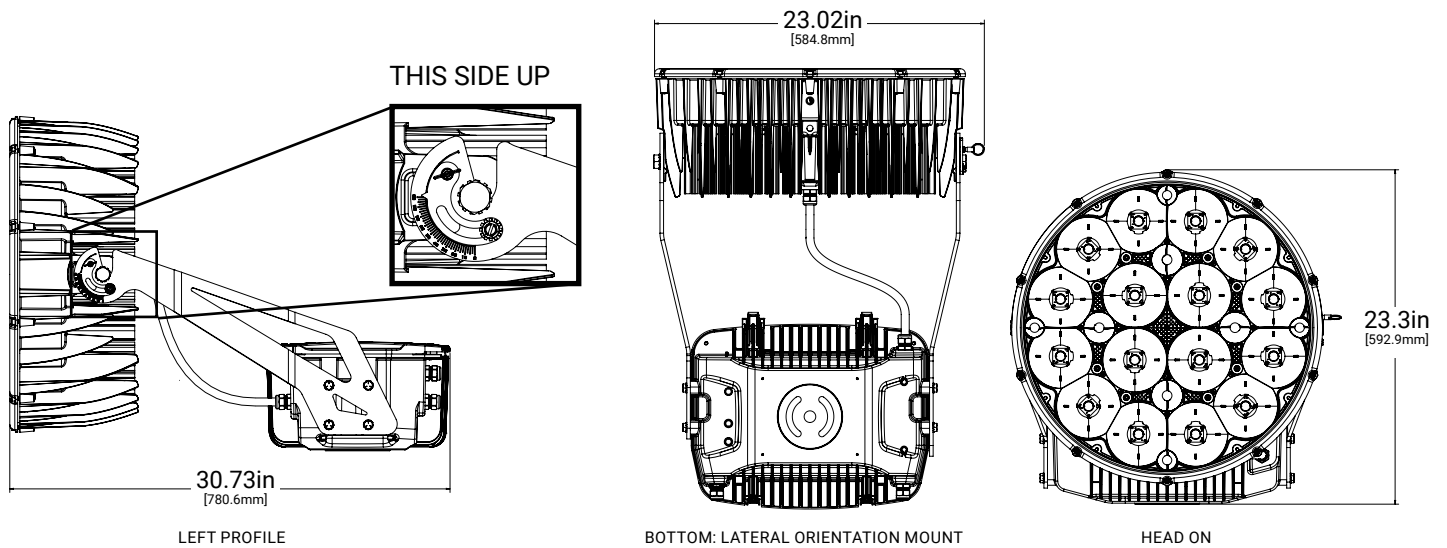
DesignLights Consortium® Qualified. Refer to [www.designlights.org](http://www.designlights.org) Qualified Products List under Family Models for details

Dimensional and Mounting Details

MOUNTING: DRIVER BOX



MOUNTING CONFIGURATION: LOCAL YOKE



Performance Data<sup>1</sup>

	LUMASPORT 16
Lumen Output Range <sup>2</sup>	143,050 - 158,312lm
Nominal Power <sup>3</sup>	1290W
Input Voltage (Low Voltage)	208-277VAC
Input Voltage (High Voltage)	347-480VAC
Efficacy Range <sup>2</sup>	113 - 123 lm/W
CRI <sup>4</sup>	80
TLCI <sup>3</sup>	75
CCT	5700K
Distribution (NEMA)	2,3,5
Dimming Range	DIM TO OFF, 10%-100%
Operating Temperature Range	-40°C to +40°C
Usage	INDOOR, OUTDOOR <sup>5</sup>
Mounting Options (1.5G RATED)	LOCAL YOKE
Electrical Certifications	FCC, UL8750, UL1598, DLC Standard (NANQSV)
Environmental Certifications <sup>6</sup>	ANSI C136.31-2010 1.5G, IP66, NEMA 4X
Surge	10kV
Effective Projected Area (EPA)	2.9 (sq. ft.)
Approximate Weight <sup>7</sup>	94.5 lbs

## NOTES:

- (1) Specifications are subject to change without notice.  
(2) Refer to Optical Performance Data.  
(3) Values are +/- 4% when luminaire is operated at 25°C ambient.  
(4) Values are +/- 2%  
(5) When driver box is mounted in upright position.  
(6) Light head meets NEMA4X Certification  
(7) Weight may vary depending on mounting bracket, light head and driver box selection.

## Electrical Performance Data

Product	Input Voltage Range (VAC)	Nominal Input Power (W)	Input Current (A)	Power Factor (>60% Load)	THD (>60% Load)	Inrush (A2s)	Inrush period (ms)	Peak Inrush (A)
LS-16-1200	208-277	1290 (1393 Max)	4.7 - 6.2 (6.2 Max)	> 0.9	< 20%	4.9	7.64	128
	347-480	1290 (1350 Max)	2.8 - 3.7 (4.7 Max)	> 0.9	< 20%	40.8	1.74	360

## Optical Performance Data

Optic	NEMA TYPE	CRI	CCT	Lumens	Input Power (W)	lm/W	Beam Angle	Field Angle
1R	NEMA 2	80	5700K	146502	1295	113.1	11.2	21.1
2R	NEMA 3	80	5700K	158312	1290	122.7	16.0	32.0
3R	NEMA 2	80	5700K	148543	1295	114.7	15.6	27.8
4R	NEMA 3	80	5700K	158622	1290	123.0	19.2	37.7
5R	NEMA 3	80	5700K	147160	1295	113.6	25.0	37.6
1L	NEMA 2	80	5700K	143050	1295	110.5	11.9	22.0
3L	NEMA 2	80	5700K	148543	1295	114.7	14.8	27.8
5L	NEMA 3	80	5700K	146800	1295	113.4	20.9	38.3
6W	NEMA 5	80	5700K	124398	1295	96.1	51.2	81.9

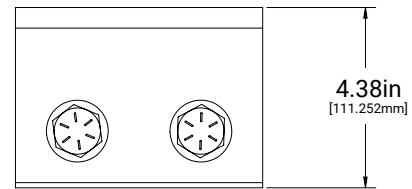
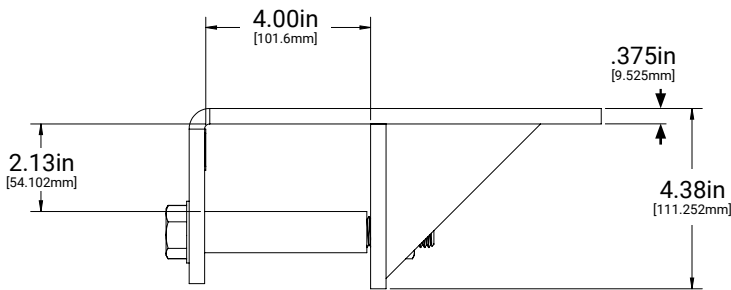
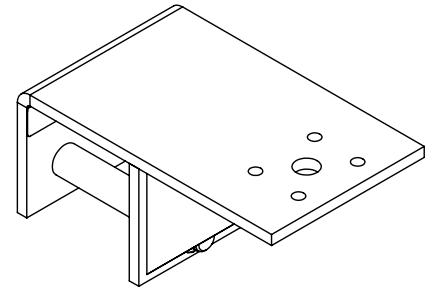
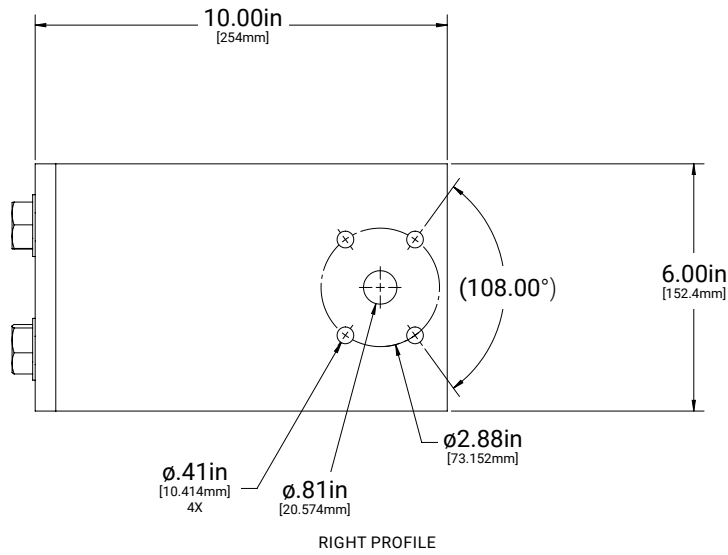
### Ordering Information for Accessories

NOTE: A complete accessory order requires a selection entry for **Brand, Accessory, Option**.

SAMPLE ORDER NUMBER: **EPH-HRDM34-025**

Brand	Accessory	Option	Intended Use
EPH = Ephesus	<b>DVGBRD</b> = Diving Board <sup>1</sup>  <b>HRDM34</b> = Mounting Hardware 3/4in diameter	<b>025</b> = .25in <sup>2</sup> <b>075</b> = .75in <sup>2</sup> <b>200</b> = 2in <sup>2</sup>	Designed to be used with the LUMASPORT 8, LUMASPORT 16 & LUMADAPT 8 luminaires only.  <b>HRDM34-025:</b> .25-.50in clamping thickness, use for diving board (DVGBRD) or other flat surfaces drilled for 3/4 hardware  <b>HRDM34-075:</b> .50-.75in clamping thickness, flat surfaces drilled for 3/4 hardware  <b>HRDM34-200:</b> 2.00in clamping thickness, use for 2in x 4in Cross arms that are drilled for 3/4 hardware
	Notes: (1) Additional mounting fastener hardware kit needed to attach a luminaire to the <b>DVGBRD</b> = Diving Board	Notes: (2) Option only available for use with <b>HRDM34</b>	

Diving Board (DVGBRD) Dimension and Part Details:



Diving Board Data

MODEL #	WEIGHT (LBS)
DVGBRD	15.1
DVGBRD + HRDM34-025	16.1

Diving Board Parts

DESCRIPTION	QUANTITY
Welded Bracket	1
Bolt Sleeve	2
3/4in-10 X 6in Structural Hex Bolt, Hot Dip Galvanized	2
3/4in Steel Flat Washer, Hot Dip Galvanized	2
3/4in Ext Tooth Washer, Steel, Magni-565 Grey Polycoat	2
3/4in-10 Structural Steel Hex Nut, Hot Dip Galvanized	2
Stainless Shim	1

**HRDM34 Dimension and Part Details:**

**HRDM34-025:**

.25-.50in clamping thickness, use for diving board (DVGBRD) or other flat surfaces drilled for 3/4 hardware

**HRDM34-075:**

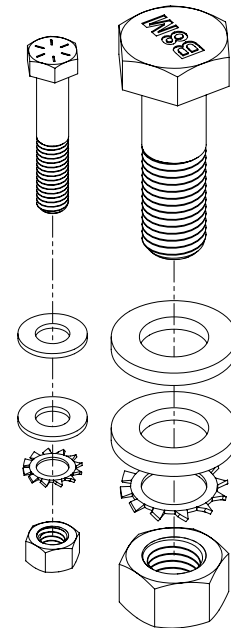
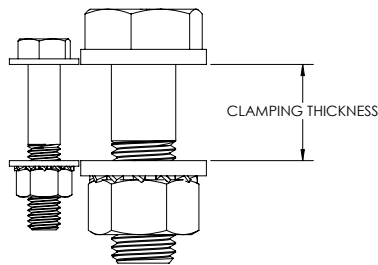
.50-.75in clamping thickness, flat surfaces drilled for 3/4 hardware

**HRDM34-200:**

2.00in clamping thickness, use for 2inx4in Cross arms that are drilled for 3/4 hardware

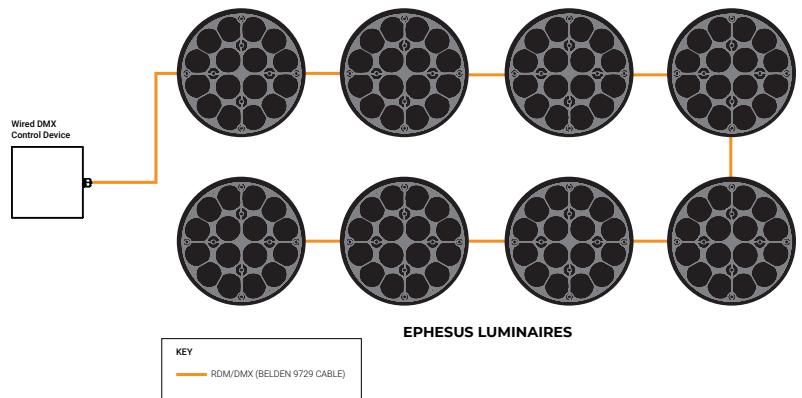
**HRDM34 Data**

MODEL #	WEIGHT (LBS)
HRDM34-025	1
HRDM34-075	1.5
HRDM34-200	2



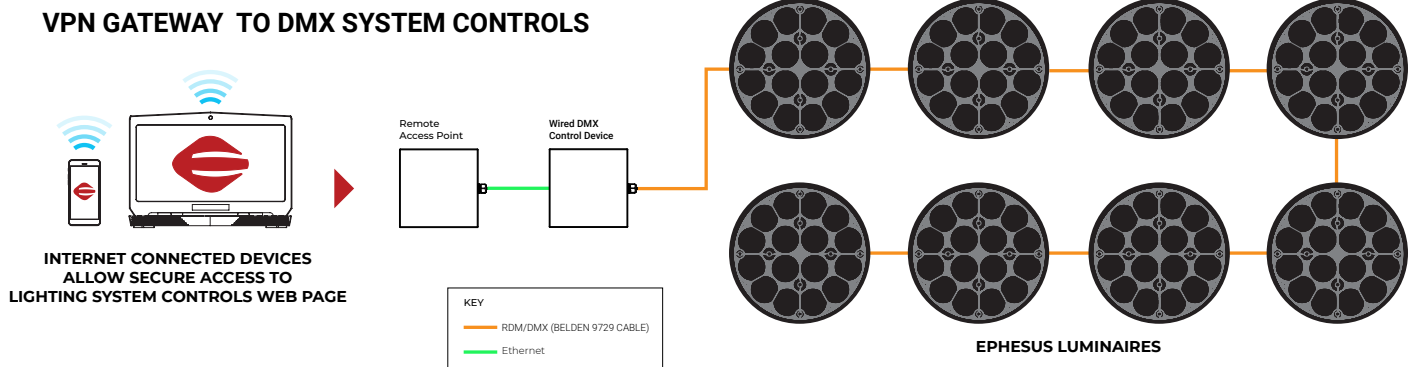
## Example System Topology (Wired DMX Controls)

Example system topology showing the LUMASPORT 16 System in a commonly used wired DMX Control Installation. Refer to the specifications and limitations of your wired DMX control device before installing this configuration.



## Example System Topology (Remote Access Point With Wired DMX Controls)

Example system topology showing the LUMASPORT 16 System in a commonly used remote access point with wired DMX Control Installation. Refer to the specifications and limitations of your wired DMX control device before installing this configuration. Note: Laptop and mobile device not included. A cellular network connection requires a cellular carrier network plan.



**NOTES:**

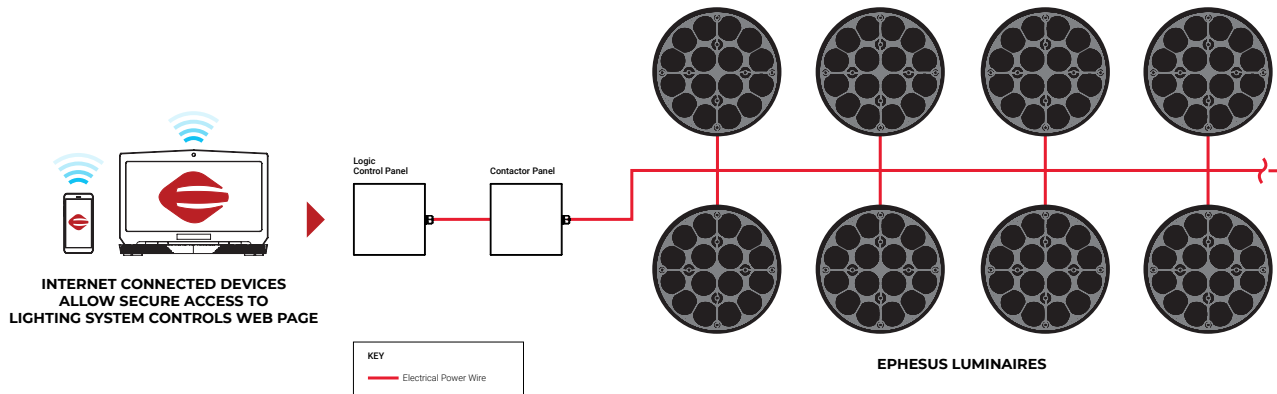
Remote Access Point requires either a wired internet connection at the lighting system site or through a cellular carrier network connection plan.



### Example System Topology (Contactor Controls)

Example system topology showing the LUMASPORT 16 System in a Wired Contactor Controls Installation.

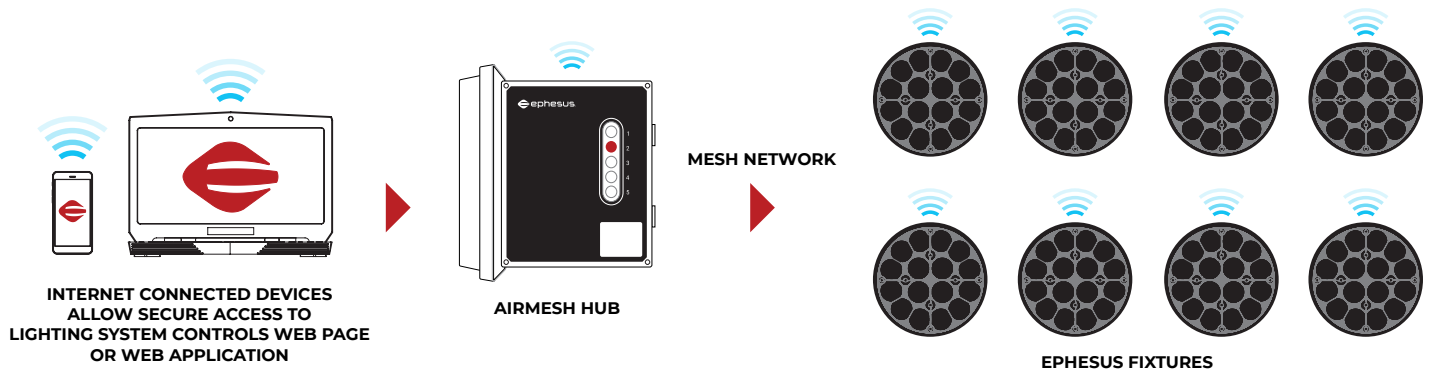
Note: Laptop and mobile device not included. A cellular network connection requires a cellular carrier network plan.

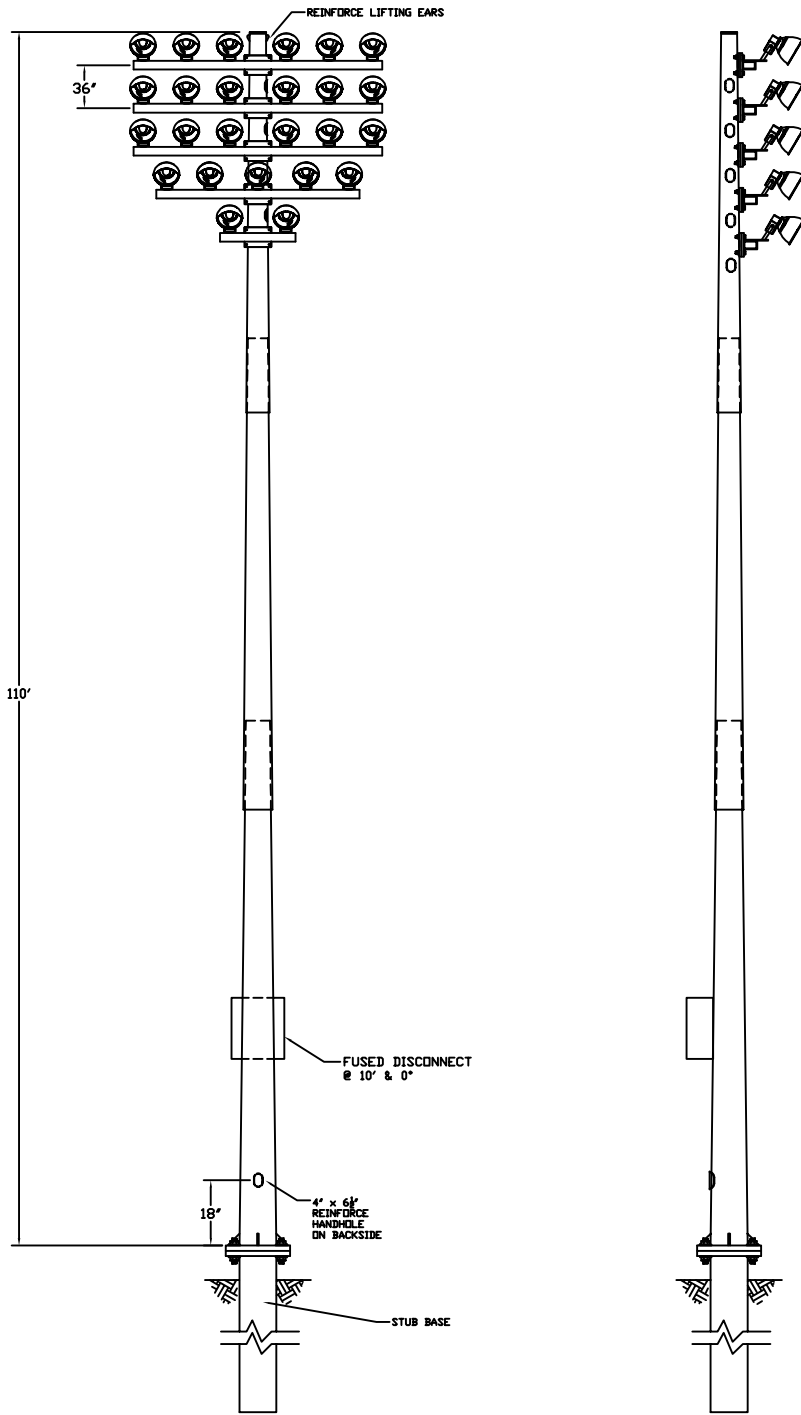


### Example System Topology (Wireless AirMesh Controls)

Example system topology showing the LUMASPORT 16 System in a Wireless AirMesh Control Installation.

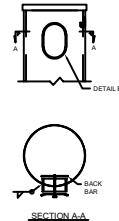
Note: Laptop and mobile device not included. A cellular network connection requires a cellular carrier network plan.



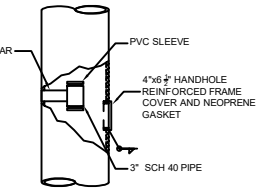
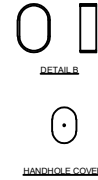


FRONT VIEW

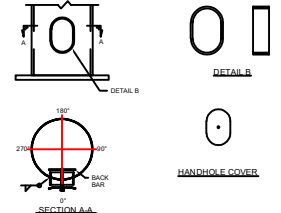
SIDE VIEW



3 X 5" REINFORCE HANDHOLE



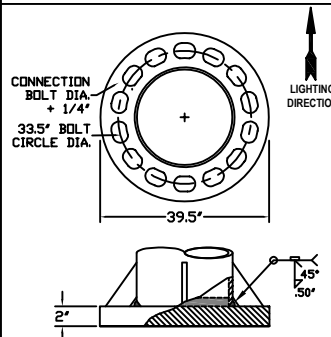
CABLE GUIDE



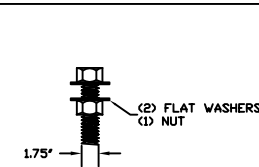
4 X 6 1/2" REINFORCE HANDHOLE

	BASE OD (in)	TOP OD (in)	WALL THK	LENGHT (ft)	WEIGHT (lbs)
TOP	17	13.35	.188	26.07	793
MID	21.45	16.2	.188	37.5	1419
BOTTOM	28	20.58	.250	53	3449

POLE DIMENSION



BASEPLATE



NOTE:  
CONNECTION BOLTS ARE FULLY GALVANIZED

CONNECTION BOLTS

COMPONENT	SPECIFICATION
POLE TOP	ASTM A572 GR. 65
POLE BOTTOM	ASTM A572 GR. 65
MISC. STEEL	ASTM A36
CONNECTION BOLTS	ASTM A325
BASE PLATE	ASTM A572 GR. 50

GENERAL NOTES:

1. ALL HARDWARE TO BE GALVANIZED TO ASTM A153.
2. POLE ASSEMBLY TO BE GALVANIZED TO ASTM A123.
3. ALL WELDING TO CONFORM TO AWS D1.1 MOST RECENT EDITION.
4. DESIGN INCORPORATE GUST FACTOR PER REF CODE.
5. REFER TO GENERAL INSTALLATION INSTRUCTIONS PRIOR TO ASSEMBLY.

FINISH:	WIND SPEED:	DESIGN CRITERIA:
<input type="checkbox"/> GALVANIZED	<input type="checkbox"/> 80 MPH <input type="checkbox"/> 110 MPH	<input type="checkbox"/> AASHTO LTS 3 <input type="checkbox"/> ASCE
<input type="checkbox"/> PAINTED	<input type="checkbox"/> 90 MPH <input type="checkbox"/> 120 MPH	<input checked="" type="checkbox"/> AASHTO LTS 6 <input type="checkbox"/> DSA
<input type="checkbox"/> PAINTED & GALV	<input checked="" type="checkbox"/> 100 MPH <input type="checkbox"/> MPH <input type="checkbox"/> IBC	<input type="checkbox"/> UBC

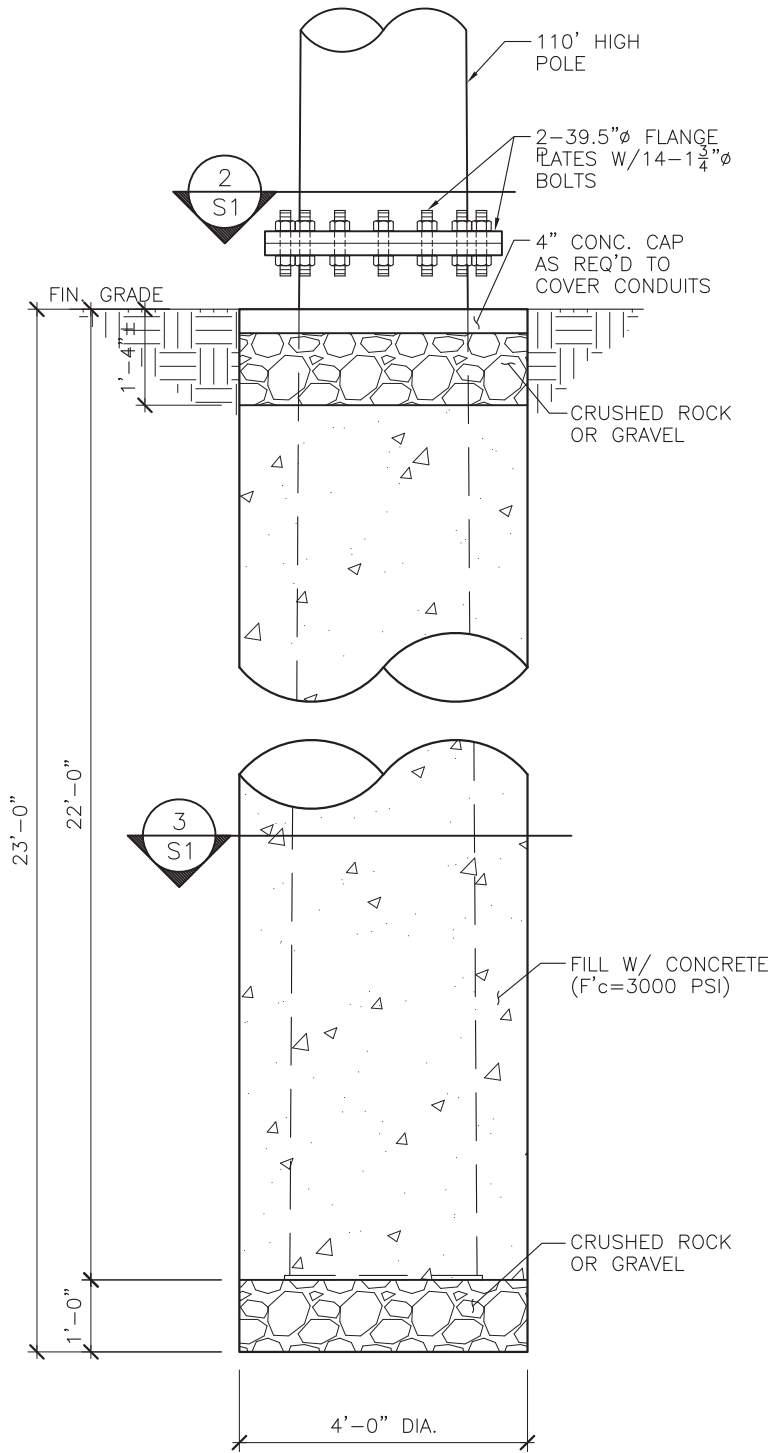
MATERIAL SPECIFICATIONS

DATE: 1/4/22	REV.:	CHECKED BY:	SCALE: NTS
DRAWING NUMBER: MSP110MSPSB	DRAWN BY: DR	QUOTE NUMBER: Q120720JV7	



PO BOX 14537  
HALTOM CITY, TX 76117  
METRO (817) 834-5538  
TOLL FREE (866) 724-4527  
FAX (817) 831-6088

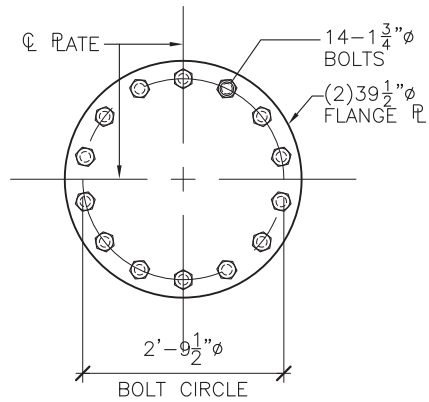
**HUDSON VALLEY RENEGADES  
NGU**



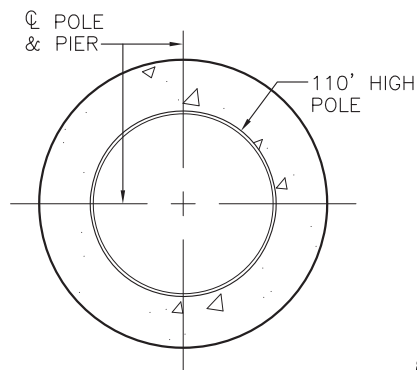
**1 LIGHT POLE PIER**  
SCALE: 3/8"=1'-0"

**GENERAL NOTES:**

1. DESIGN WIND PRESSURE ARE BASED ON A  $V_{ASD} = 100$  MPH WIND SPEED PER AASHTO LTS6 2013.
2. DRILLED PIER DESIGNED BASED ON THE REACTIONS PROVIDED BY MSM MAKERS. LIGHT POLE DESIGNED FOR A MOMENT OF 5.4 K-FT, HORIZONTAL LOAD OF 7.663 KIPS AND AN AXIAL LOAD OF 9.035 KIPS.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
4. DRILLED PIERS DESIGNS ARE BASED ON THE SOILS REPORT PREPARED BY TECTONIC ENGINEERING, REPORT #10239.04, DATED JULY 21, 2021.
5. CONTRACTOR SHALL MAINTAIN HOLE SIDEWALLS STABLE DURING DRILLING; REMOVE LOOSE MATERIAL; AND KEEP EXCAVATION FREE OF WATER. PLACE CONCRETE AS SOON AS POSSIBLE AFTER COMPLETION OF EXCAVATION. CONTRACTOR SHALL PROVIDE A MEANS TO KEEP THE POLE CENTERED IN THE PIER HOLE DURING CONCRETE PLACEMENT.



**2 SECTION**  
SCALE: 3/8"=1'-0"



**3 SECTION**  
SCALE: 3/8"=1'-0"



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STRUCTURAL ENGINEERS  
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FORT WORTH, TEXAS 76102  
PHONE: 817-332-1074  
tom@thesadlergroup.com

**CLIENT:**  
MAKER SALES AND MARKETING, LLC  
PO BOX 14537  
HALTOM CITY, TX 76117

**PROJECT:**  
DUTCHESS SAVINGS BANK STADIUM  
HUDSON VALLEY, NY

**PRODUCT:**  
110' POLE

**PROJECT NO.**  
21-688

**DATE:**  
1/6/22

**DRAWN BY:**  
JB

**SHEET NO.**  
S1