ADDENDUM

CSO
ARCHITECTURE · INTERIOR DESIGN

ADDENDUM NO: 02

PROJECT: Noblesville East Middle School Site Building

PROJECT NO: 2024078 DATE: 01/24/2025 BY: Nick Wissing

This Addendum is issued in accordance with the provisions of "The General Conditions of the Contract for Construction," Article 1, "Contract Documents" and becomes a part of the Contract Documents as provided therein. This Addendum includes:

Addendum Pages: **ADD 1 of 6 through ADD 6 of 6**

Attached Documents: **Pre-Bid Meeting Agenda, Pre-Bid Meeting Sign-In Sheet**

Attached Drawings: **C000, C200, C300, C301, C302, C400, C401, C801, C900, L101, A201, A202, A301, A501, P101, P201, P401, M201, E201, E601, T100, T201**

Attached Specifications: **00 42 02**
09 67 23
22 40 00
32 31 19

PART 0 - GENERAL INFORMATION

NONE

PART 1 - BIDDING REQUIREMENTS

NONE

PART 2 - SPECIFICATIONS

2.1 00 42 02 – SUPPLEMENTARY BID FORM

A. Insert spec section in its entirety

2.2 09 67 23 – RESINOUS FLOORING

A. Replace spec section in its entirety.

2.3 10 28 00 – TOILET, BATH, AND LAUNDRY ACCESSORIES

A. Insert the following in paragraph 2.03.D – Automatic Hand Dryer

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3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Bobrick Washroom Equipment, Inc
   b. Saniflow Corp.

2.4 22 40 00 – PLUMBING FIXTURES

A. Insert spec section in it's entirety.

2.5 32 31 19 – DECORATIVE FENCING AND GATES

A. Reissue specification in it's entirety.

PART 3 - DRAWINGS

3.1 C000 – TITLE SHEET

A. Modified Drawing Index to identify the revised sheets & dates under this Addendum (clouded)

B. Added private infrastructure table per the City of Noblesville TAC Comments.

C. Added stormwater sewer table per the City of Noblesville TAC Comments.

3.2 C200 – OVERALL SETBACK PLAN (NEW SHEET)

A. Added new overall setback plan sheet per the City of Noblesville TAC Comments.

3.3 C300 – GRADING PLAN

A. Modified grading to provide minimum cover over storm pipes.

3.4 C301 – GRADING PLAN

A. Modified grading along retaining wall / near tennis courts

3.5 C302 – GRADING PLAN

A. Modified grading along new tennis court path and labeled as Alternate #1

3.6 C400 – DRAINAGE PLAN

A. Modified slopes and inlet/outlet locations to provide minimum cover over storm pipes.

B. Added Nyloplast Inlet near tennis courts

C. Specified trench drain model

3.7 C401 – DRAINAGE PROFILES

A. Added drainage profiles and stormwater infrastructure tables per the City of Noblesville TAC Comments.

3.8 C801 – SITE DETAILS

A. Added new plan sheet with trench drain details included

3.9 C900 – STORMWATER POLLUTION PREVENTION PLAN

A. Added riprap locations for stormwater inlets/outlets.

3.10 L101 – MATERIALS & NOTES PLAN

A. Reissue sheet in its entirety.

3.11 A201 – FLOOR PLAN

A. Reissue sheet in its entirety.

3.12 A202 – REFLECTED CEILING PLANS

A. Reissue sheet in its entirety.

3.13 A301 – BUILDING ELEVATION AND SECTIONS

A. Reissue sheet in its entirety.

3.14 A501 – DOORS, FRAMES AND DETAILS

A. Revise door glazing type for door 106 to read "-".

3.15 P101 - CONCESSIONS BUILDING – PLUMBING UNDERSLAB

A. Revise underslab piping.
B. Reissue sheet in its entirety.

3.16 P201 – CONCESSION BUILDING – PLUMBING

A. Revise mechanical room layout.
B. Relocate hand sink in concession area.
C. Revise plane note #5.
D. Reissue sheet in its entirety.

3.17 P401 – DETAILS AND SCHEDULES – PLUMBING

A. Add SK-1 to fixture rough-in schedule.
B. Revise detail C – BACKFLOW PREVENTIR.
C. Reissue sheet in its entirety.

3.18 M201 – CONCESSIONS BUILDING - MECHANICAL

A. Reissue sheet in its entirety.

3.19 E201 – CONCESSIONS BUILDING - ELECTRICAL

A. Reissue sheet in its entirety.

3.20 E601 – SCHEDULES - ELECTRICAL

A. Reissue sheet in its entirety.

3.21 T100 – SITE PLAN - TELECOM

A. Reissue sheet in its entirety.

3.22 T201 – CONCESSIONS BUILDING - TELECOM

A. Reissue sheet in its entirety.

PART 4 - OTHER ITEMS

NONE

PART 5 - QUESTIONS AND ANSWERS

5.1 Question: Combo bids were mentioned during the pre-bid but there isn't a form for it. Can I get clarification?

A. The combo bid form is being issued as part of this addendum.

5.2 Question: Should the owner's contingency allowance of $100,000 be included in our base bid.

A. Yes, this allowance should be included in the base bid.

5.3 Question: Assuming the electrical contractor's scope will be to rough-in data? Is there a Systems/Data/Communication proprietary that the owner wants to use for both projects and if so, will the owner be working directly with them? Example, structured cabling, access control, and security cameras.

A. All grounding, conduit, and pathways are by contractor and all cabling and devices are by the owner.

5.4 Question: Can we get a better idea where the new 6' height black PVC fence starts and stops to the west of the new building? Pages L101 isn't incredibly clear.

A. This is being clarified in the drawings as part of this addendum.

5.5 Question: Does the metal handrail shown in details 6 & 7/L600 get installed on 1 side of the stair or both?

A. Refer to the notes on revised L101 issued as part of this addendum.

5.6 Question: Can we please get some more information on the site cast in place concrete walls besides the few spot elevations on C300? Can we get TW and TF elevations at each corner/end of walls?

A. This is being clarified in the drawings as part of this addendum.

5.7 Question: Detail 2/A301 appears to show batt insulation at the soffit level of the area between the 2 block buildings as well as insulation at the attic level. Are there 2 rows of insulation between the buildings? 1 row? 0 rows?

A. There is 2 rows of insulation for a small portion between the two buildings. It is meant to be an insulated chase for plumbing to get from one side to the other. It is represented in 3/A301 and 6/A401.

5.8 Question: Detail 2/A301 calls for a 24x40 self-closing and latching non-rated draft-stopping door above the restroom building. Is there a similar door above the storage building side?

A. Yes, there are two of these doors. The keynotes for the second door were added to2/A301 as part of Addendum #01.

5.9 Question: Details 2, 3, & 4/A501 have WS1 shelves. WS1 does not show up on the Casework schedule on the same page. Can we get some direction on what WS1 represents and who is responsible to furnish/install?

A. WS1 shows up in the equipment schedule.

5.10 Question: Are we to supply a defibrillator with the defibrillator cabinet?

A. Yes, a defibrillator is to be supplied with the cabinet. This is being clarified on the schedule as part of this addendum.

5.11 Question: I'm having difficulty locating which doors the fixed louvers are associated with on sheet A501—could you clarify this?

A. Refer the mechanical sheets for locations of exterior louvers and sizes.

5.12 Question: I didn't receive a specification sheet for the louver screening fence in Addendum 1. Would you be able to provide this?

A. This specification section is being added as part of this addendum.

5.13 Question: The specification calls for a "flake floor" system and the finish legend calls for a "quarts" floor. Can you please clarify?

A. The specifications are being updated as part of this addendum.

5.14 Question: Can you confirm that the mechanical enclosure added in addendum 1 needs to be Ameristar Escelon II Majestic, 3 rail fence to match the decorative gate between the buildings?

A. The mechanical enclosure fence is the Ametco Eclipse Inclined product which is a Decorative Aluminum louver style fence. This has been updated in the specification as part of this addendum.

END ADDENDUM

PRE-BID MEETING AGENDA

CSO
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NOBLESVILLE EAST MIDDLE SCHOOL SITE BUILDING
NOBLESVILLE SCHOOLS
January 21, 2025

1. Introductions
    a. Owner's Key Staff
        i. David Hortemiller, Chief Financial Officer
        ii. Roy Wallace, Director of Buildings and Grounds
        iii. Vicki Flook, Operations
        iv. Nick Verhoff, Owner's Representative
    b. Design Team
        i. ARCHITECT: CSO Architects, 317-848-7800
            1. Principal in Charge: Brad Krohn, bkrohn@csoinc.net
            2. Project Manager: Nick Wissing, nwissing@csoinc.net
2. Project Scope and Schedule
    a. Scope
        i. Demolition of existing site building.
        ii. Construction of new site building including restrooms, concessions, ticketing, mechanical and storage.
    b. Allowances to be included within your bid:
        i. General Contingency Allowance of $100,000.
    c. Alternates (Issued in Addendum #01)
            1. Alternate No. 1 – Additional Hardscape
    d. Schedule:
        i. See section 01 10 00 – SUMMARY. Start on or after March 3rd, 2025 and substantially complete by December 31, 2025.
3. Bidding Documents available at Eastern Engineering
4. Bids
    a. Bid is a Single Prime Contract.
        i. **Bids are due 2:00 PM local time, Wednesday, February 4th, 2025** at the Educational Services Center, 18025 River Road, Noblesville, IN 46062
        ii. Clearly mark on your sealed bid envelope the project name along with your company name.
        iii. School Board awards contract on February 18, 2025.
    b. Bid Submissions must include the following:
        i. Complete 00 42 00 - Bid Form. Provide two copies.
        ii. Completed and signed Form 96 "General Bid for Public Work". Provide one copy.
        iii. Completed State Board of Accounts Financial Statement. Provide one copy.

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iv. Completed Non-Discrimination Affidavit. Provide one copy.

v. 5% bid bond. Provide one copy.

c. Post bid submissions within 24 hours of two lowest bidders

i. 00 43 33 – Schedule of Subcontractors, Manufacturers and Products to be submitted with 24 hours after notification by CSO.

d. Contracts for each project/bid package include the following:

i. 100% Bid Bonds and Performance Bonds

ii. Tax exempt (Indiana sales taxes)

5. Project Manual

a. All Contractors shall be required to utilize a web-based project management software provided by the owner/architect.

b. Bidders must be in compliance with Indiana General Assembly's House Enrollment Act #1019. See specification sections 00 22 00 and 00 73 00.

6. Site Visits during Bidding Phase

a. To arrange site visits, contact Roy Wallace, roy_wallace@nobl.k12.in.us, phone: (317) 776-5910.

7. Questions

8. Tour

MEETING SIGN-IN SHEET

CSO
ARCHITECTURE · INTERIOR DESIGN

DATE: 01/21/2025 MEETING LOCATION: Noblesville East Middle School

PROJECT: Noblesville East Middle School Site Building PROJECT NUMBER: CSO 2024078

Participants Sign-In: (Please Print)

Name: Brian Turley	Company: R. Chavez Const. Co.				
Phone: 317-646-0291	Cell:	Email: BTurley@RChavezConstruction.com			
Name: Brian Chavez	Company: R Chavez Construction				
Phone: 317-677-4663	Cell:	Email: brchavez@rchavezconstruction.com			
Name: Don Myers	Company: Myers Construction Mgmt				
Phone: 317-773-3590	Cell: 317-710-4657	Email: don@Myerscm.com			
Name: TIM HILL	Company: R.E. DIMOND				
Phone: 317-634-4672	Cell: 317-800-4368	Email: tim.hill@redimond.com			
Name: Chad Arnold	Company: Myers Construction Management Inc				
Phone: 317-773-3590	Cell: 317-716-7615	Email: chad@myerscm.com			
Name: Alex Mills	Company: Gilliatte General Construction				
Phone: 317-714-8340	Cell:	Email: amills@gilliatte.com			
Name: Fred Pearson	Company: Context Design				
Phone:	Cell:	Email:			
Name: Nick Grovey	Company: JBM Contractors Corp				
Phone: 317-840-6272	Cell: —	Email: nickg@jbmcontractorscorp.com			
Name: Jonathon Pasyk	Company: CEC				
Phone: 317-431-9640	Cell:	Email: JPasyk@cecinc.com			
Name: Aaron Newton	Company: CSO				
Phone:	Cell:	Email: anewton@csoinc.net			
Name: Morganne Walker	Company: CSO Architects				
Phone:	Cell:	Email: mwalker@csoinc.net			
Name:	Company:				
Phone:	Cell:	Email:			

SECTION 00 42 02 - SUPPLEMENTARY BID FORM – COMBINATION BID

FOR (PROJECTS): Noblesville East Middle School Site Building
Noblesville High School Softball Site Building

TO (OWNER): Noblesville Schools
18025 River Road
Noblesville, IN 46062

BY (CONTRACTOR):

COMPANY NAME _____

ADDRESS _____

CONTACT PERSON _____

MOBILE PHONE _____

EMAIL _____

BID SUBMISSION CHECKLIST:

Each Bid shall contain the following documents for consideration as a complete bid:

- ☐ 00 41 00 Completed Form 96 (1 Copy)
- ☐ 00 42 01 Completed Bid Form(s) (2 Copies)
- ☐ 00 43 00 Bid Bond (1 Copy)
- ☐ 00 45 13 Financial statements (1 Copy)

Pursuant to notices given, the undersigned proposes to complete the Work of the Project according to Bidding Documents prepared by CSO Architects, Inc., 8831 Keystone Crossing, Indianapolis, Indiana, for the sum of

BASE BID: _____ $ _____
(amount in words)

ADDENDA:

The undersigned acknowledges receipt of the following Addenda and agrees that this proposal includes all items mentioned in such Addenda:

No. _____

ALLOWANCES:

The undersigned acknowledges that the base bid amount includes the following allowances:

Contingency Allowance: $ _____

COMPLETION OF WORK:

The undersigned guarantees, if awarded the contract, to complete the work not later than date(s) established in Section 01 10 00 SUMMARY OF WORK. Please indicate that date or an alternate date on the line below.

Proposed Date of Completion:_____

ALTERNATE BIDS:

The undersigned also proposes to furnish or to omit all labor and materials necessary to complete work as required by the “Alternate Bids”, as provided for in the drawings and specifications as follows:

East Midde School Alternate No. 1 – Additional Hardsurface.

_____ Add/Deduct $ _____

Noblesville High School Softball Alternate No. 1 – Masonry Entry With Decorative Metal Gate

_____ Add/Deduct $ _____

Noblesville High School Softball Alternate No. 2 – Bollard Lighting

_____ Add/Deduct $ _____

Noblesville High School Softball Alternate No. 3 – Site Pavement Area 1

_____ Add/Deduct $ _____

Noblesville High School Softball Alternate No. 4 – Site Pavement Area 2

_____ Add/Deduct $ _____

Noblesville High School Softball Alternate No. 5 – Site Pavement Area 3

_____ Add/Deduct $ _____

Noblesville High School Softball Alternate No. 6 – Site Pavement Area 4

_____ Add/Deduct $ _____

BIDDER'S SIGNATURE:

IN TESTIMONY WHEREOF, the Bidder (an individual) has hereunto set his hand this

_____day of _____, 201__.

_____
(Individual)

IN TESTIMONY WHEREOF, the Bidder (a firm) have hereunto set their hands this

_____day of _____, 201__.

Firm Name:_____

By _____

By _____

IN TESTIMONY WHEREOF, the Bidder (a Corporation) has caused this proposal to be signed by its President and Secretary and affixed its corporate seal this

_____day of _____, 201__.

Name of Corporation:_____

President _____

Secretary _____

OATH AND AFFIRMATION:

I affirm under the penalties of perjury that the foregoing facts and information are true and correct to the best of my knowledge and belief.

Subscribed and sworn to before me by _____

this _____day of _____, 201__.

My Commission expires _____.

_____
Notary Public

SECTION 09 67 23 - RESINOUS FLOORING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes:

~~1. Full rejection double broadcast epoxy flooring system.~~
2. High-performance Quartz seamless flooring system.
3. Precast, Integral Cove Base.

B. Related Sections include the following:

1. Division 03 Section "Cast-in-Place Concrete" for concrete substrates to receive resinous flooring
2. Division 07 Section "Joint Sealants" for joint-sealant materials and installation of sealant materials at joints in resinous flooring systems.

1.03 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. Samples: For each resinous floor system required and for each color and texture specified, 12 inches square in size, applied to a rigid backing by Installer for this project.

C. Samples for Initial Selection: For each type of exposed finish required.

D. Samples for Verification: Each resinous flooring system required, 12 inches square, applied to a rigid backing by Installer for this Project. Where finishes involve normal color and texture variations, include Sample sets showing the full range of variations expected.

E. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.

F. Material Test Reports: From a qualified independent testing agency indicating and interpreting test results of the resinous flooring's reaction to chemicals and other reagents and substantiating compliance with requirements.

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

1.04 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.

1.05 CLOSEOUT SUBMITTALS

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

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer (applicator) who has specialized in installing resinous flooring similar in material, design, and extent to that indicated for this Project and who is acceptable to resinous flooring manufacturer.

1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to install resinous flooring systems specified.

B. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, and sealing or finish coats, through one source from a single manufacturer. Provide secondary materials including patching and fill material, joint sealant, and repair materials of type and from source recommended by manufacturer of primary materials.

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. Apply full-thickness mockups on 96-in-square floor area selected by Architect.

a. Include 96-in length of integral cove base with inside and outside corner.

2. Simulate finished lighting conditions for Architects 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.

1.07 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.

B. Store materials to comply with manufacturer's written instructions to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects.

1.08 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 application and for not less than 24 hours after application, unless manufacturer recommends a longer period.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

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

B. Resinous Flooring: Abrasion, impact-and-chemical-resistant, high performance, resin-based, monolithic floor surfacing designed to procedcue a seamless floor.

C. System Characteristics:

1. Color and Pattern: As indicated by manufacturer.
2. Slip Resistance: Provide slip resistant finish.

2.02 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

~~1. Terroxy Resin Systems by Terrazzo and Marble Supply Co.~~
2. General Polymers.
3. Stonhard.
~~4. Tnemec Company, Inc.~~
5. Duraflex, Inc.
6. Sherwin Williams
~~7. Sika Corporation; Flooring.~~
8. Torginol
9. Elite Crete Systems, Inc.

2.03 MATERIALS

A. Resinous Flooring: Abrasion-, impact-, and chemical-resistant, aggregate-filled, resin-based monolithic floor surfacing designed to produce a seamless floor and integral cove base.

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. VOC Content of Resinous Flooring: Provide resinous flooring systems, for use inside the weatherproofing system, that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24)].

1. 1. Resinous Flooring: 100 g/L.

D. Reinforcing Membrane: Manufacturer's flexible resin recommended for crack isolation to help prevent substrate cracks from reflecting through resinous flooring.

1. Provide fiberglass scrim embedded in reinforcing membrane.

E. Waterproofing minimum thickness 40 mils.

F. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.

G. Joint Sealant: Type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated.

H. 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. System Chemical Resistance: As indicated by system designation and components.

2.04 HIGH-PERFORMANCE RESINOUS FLOORING ~~EPOXY RESINOUS FLOORING SYSTEM (DECORATIVE FLAKES)~~

A. Basis-of-Design Product: Subject to compliance with requirements, another manufacturer's product of a similar and equivalent nature is to be approved in writing by Architect during the Bidding Phase. Equivalent is defined, in the Architect's sole judgment, as containing differences that do not materially or aesthetically detract from the design concept or intended performance. Provide products as indicated on drawings or similar and equivalent product by one of the following:

1. ~~Primer: Series 224 Deco-Fleck applied with a walking trowel and back rolled at a rate of 6.4 mil (250 sq.ft. per gallon) and broadcast with chosen decorative flake.~~
2. ~~Intermediate/Broadcast Coat: Series 224 Deco-Fleck applied at 12.0mil (130 sq.ft. per gallon) and broadcast with chosen flake.~~
3. ~~2nd Broadcast Coat: Series 224 Deco-Fleck applied at 12.0mil (130 sq.ft. per gallon) and broadcast with chosen flake.~~
4. ~~Grout Coat: Series 224 Deco-Fleck applied at 16.0-20.0 mils (80-100 sq.ft. per gallon) and back rolled.~~
5. ~~Finish: Series 247/248 Everthane applied at 2.3-3.0 mils.~~
6. ***Primer: Resuprime 3579 at 250 sq. ft. per gallon.***

7. 1st Receiver Coat: Resuflor 3561 at 140-145 sq. ft. per gallon
8. 1st Broadcast: GP5900F to excess at 0.4 lbs. per sq. ft.
9. 2nd Receiver Coat: Resuflor 3561 at 65-70 sq. ft. per gallon
10. 2nd Broadcast: GP5900F to excess at 0.4 lbs. per sq. ft.
11. Grout Coat: Resuflor 3746 at 100 sq. ft. per gallon.
12. Topcoat: Resuflor 3746 at 200 sq. ft. per gallon.

~~B. Decorative Flake Color: As indicated on drawings.~~

~~C. Chemical Resistance: As indicated by system designation and components indicated above.~~

D. Scheduled Transition Strips – Anodized Aluminum:

1. Schluter Deco
2. Schluter Schiene

E. Base: 4-inch- high integral cove base where indicated on drawings.

2.05 INTEGRAL COVE BASE ACCESSORIES

A. Precast, Integral Cove Base: Impact-resistant, polymer-resin, cover 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.

PART 3 - EXECUTION

3.01 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.

3.02 PREPARATION

A. Inspection: Prior to commencing Work, thoroughly examine all underlying and adjoining work, surfaces and conditions upon which Work is in any way dependent for perfect results. Report all conditions which affect Work. No "waiver of responsibility" for incomplete, inadequate or defective underlaying and adjoining work, surfaces and conditions will be considered, unless notice of such unsatisfactory conditions has been filed and agreed to in writing before Work begins. Commencement of Work constitutes acceptance of surfaces.

B. Surface Preparation: Remove all surface contamination, loose or weakly adherent particles, laitance, grease, oil, curing compounds, paint, dust and debris by blast track method or approved mechanical means (acid etch not allowed). If surface is questionable, try a test patch. Create a minimum surface profile for the system specified in accordance with the methods described in ICRI No. 03732 to achieve profile numbers as follows:

1. 1. Thin film, to 10 mils CSP-1 to CSP-3
2. 2. Thin and medium films, 10 to 40 mils CSP-3 to CSP-5
3. 3. Self-leveling mortars, to 3/16" CSP-4 to CSP-6
4. 4. Mortars and laminates, to 1/4" or more CSP-5 to CSP-10

C. Prepare and clean substrate in accordance with resinous flooring manufacturer's written instructions for substrate indicated to ensure adhesion. Provide clean, dry, and neutral substrate for resinous flooring application.

D. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminates incompatible with resinous flooring.

1. Roughen concrete substrates as follows:

    a. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
    b. 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 test areas evenly spaced in installation areas.

    a. Test concrete slab per ASTM F2170, if 80% RH or greater use moisture mitigation system that meets ASTM F3010 with perm rating of less than 0.10 perm similar to Terroxy IC Moisture Guard. Concrete Surface Profile should be CSP 3-5 prior to applying.
    b. Anhydrous Calcium Chloride Test: ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
    c. Relative Humidity Test: Using in situ probes, ASTM F2170. Proceed with installation only after substrates have a maximm 75 percent relative humidity level measurement.
    d. Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.

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 pH unless otherwise recommended in writing by flooring manufacturer.
5. Comply with ASTM C 811 requirements unless manufacturer's written instructions are more stringent.

6. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written recommendations.

E. Patching and Filling: Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.

1. Control Joint Treatment: Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written instructions.

F. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.

~~3.03 APPLICATION OF EPOXY RESINOUS FLOORING~~

~~A. General: Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.~~

~~1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate and optimum intercoat adhesion.~~
~~2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.~~
~~3. At substrate expansion and isolation joints, provide sealant joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations.~~

~~B. Apply primer and resinous coating over prepared substrate at manufacturer's recommended spreading rate.~~

~~C. Apply waterproofing membrane over entire substrate surface in mechanical mezzanine according to manufacturer's recommended thickness.~~

~~1. Apply waterproofing membrane to integral cove base substrates.~~

~~D. Apply reinforcing membrane to substrate cracks.~~

~~E. Integral Cove Base: Apply cove base mix to wall surfaces at locations indicated. Round internal and external corners. Install cove base according to manufacturer's written instructions and details including taping, mixing, priming, troweling, sanding, and topcoating of cove base.~~

~~F. Apply self-leveling slurry body coats in thickness indicated for flooring system.~~

~~G. Apply sealing or finish coat(s), including grout coat, if any, of type recommended by resinous flooring manufacturer to produce finish indicated. Apply in number of coats and at spreading rates recommended in writing by manufacturer.~~

~~H. Saw cut at doors and floor transitions.~~

3.04 APPLICATIONS

A. Install resinous floor over properly prepared concrete surface in strict accordance with the manufacturer's directions.

1. Install the primer and/or base coats over thoroughly cleaned and prepared concrete.
2. Install topcoat over flooring after excess aggregate has been removed.
3. Maintain a slab temperature of 60°F to 80°F for 24 hours minimum before applying floor topping, or as instructed by manufacturer.

B. Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.

1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
3. At substrate expansion and isolation joints, comply with resinous flooring manufacturer's written instructions.

C. Sealant: Saw cut resinous floor topping at expansion joints in concrete slab. Fill sawcuts with sealant prior to final seal coat application. Follow manufacturer's written recommendations.

D. Apply primer over prepared substrate at manufacturer's recommended spreading rate.

E. Slip Resistant Finish: Provide grit for slip resistance.

F. Apply topcoats in number indicated for flooring system and at spreading rates recommended in writing by manufacturer.

3.05 FIELD QUALITY CONTROL

A. Core Sampling: Owner may take 1 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 2 additional samples. Repair damage caused by coring and correct deficiencies at no additional cost to Owner.

3.06 CLEANING AND PROTECTING

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.

B. Clean resinous flooring not more than 4 days before dates scheduled for inspections intended to establish date of Substantial Completion in each Project area. Use cleaning materials and procedures recommended in writing by resinous flooring manufacturer.

END OF SECTION

SECTION 22 40 00 – PLUMBING FIXTURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Faucets.
2. Flushometers.
3. Toilet seats.
4. Protective shielding guards.
5. Fixture supports.
6. Water closets.
7. Urinals.
8. Lavatories.
9. Sinks.

B. Related Sections include the following:

1. Division 22 Section "Drinking Fountains and Water Coolers."

1.2 SUBMITTALS

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

B. Shop Drawings: Diagram power, signal, and control wiring.

C. Operation and maintenance data.

1.3 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Regulatory Requirements: Comply with requirements in ICC A117.1, "Accessible and Usable Buildings and Facilities"; Public Law 90-480, "Architectural Barriers Act"; and Public Law 101-336, "Americans with Disabilities Act"; for plumbing fixtures for people with disabilities.

C. Regulatory Requirements: Comply with requirements in Public Law 102-486, "Energy Policy Act," about water flow and consumption rates for plumbing fixtures.

D. NSF Standard: Comply with the latest adopted version of NSF 61, "Drinking Water System Components--Health Effects," for fixture materials that will be in contact with potable water.

E. Select combinations of fixtures and trim, faucets, fittings, and other components that are compatible.

F. Comply with the following applicable standards and other requirements specified for plumbing fixtures:

1. Stainless-Steel Sinks: ASME A112.19.3.
2. Vitreous-China Fixtures: ASME A112.19.2M.
3. Water-Closet, Flush Valve Trim: ASME A112.19.5.
4. Water-Closet, Flushometer Tank Trim: ASSE 1037.

G. Comply with the following applicable standards and other requirements specified for lavatory/sink faucets:

1. Backflow Protection Devices for Faucets with Hose-Thread Outlet: ASME A112.18.3M.
2. Faucets: ASME A112.18.1.
3. Hose-Connection Vacuum Breakers: ASSE 1011.
4. Integral, Atmospheric Vacuum Breakers: ASSE 1001.
5. NSF Potable-Water Materials: NSF 61.

H. Comply with the following applicable standards and other requirements specified for miscellaneous fittings:

1. Atmospheric Vacuum Breakers: ASSE 1001.
2. Brass and Copper Supplies: ASME A112.18.1.
3. Brass Waste Fittings: ASME A112.18.2.
4. Manual-Operation Flushometers: ASSE 1037.
5. Plastic Tubular Fittings: ASTM F 409.
6. Supply Fittings: ASME A112.18.1.

I. Comply with the following applicable standards and other requirements specified for miscellaneous components:

1. Flexible Water Connectors: ASME A112.18.6.
2. Grab Bars: ASTM F 446.
3. Hose-Coupling Threads: ASME B1.20.7.
4. Off-Floor Fixture Supports: ASME A112.6.1M.
5. Pipe Threads: ASME B1.20.1.
6. Plastic Toilet Seats: ANSI Z124.5.
7. Supply and Drain Protective Shielding Guards: ICC A117.1.

PART 2 - PRODUCTS

2.1 FLUSH VALVE WATER CLOSETS

A. Water Closets; WC-1 and WC-2 :

1. Basis-of-Design Product: Subject to compliance with requirements, provide American Standard “Afwall FloWise” 2257.001, or a comparable by the following:

a. Kohler Co.
b. Sloan.
c. Zurn Plumbing Products Group.

2. Description: Wall-mounting, back-outlet, vitreous-china fixture designed for flushometer valve operation.

    a. Style: Flushometer valve.
    b. Bowl Type: Elongated with siphon-jet design.
    c. Height: Refer to the plumbing fixture schedule on the Drawings.
    d. Design Consumption: 1.28 gal./flush.
    e. Color: White.

2.2 WATER CLOSET FLUSHOMETERS

A. Water Closet; WC-1 and WC-2 :

1. Basis-of-Design Product: Subject to compliance with requirements, provide Sloan 111-1.28-DFB or a comparable product by one of the following:

    a. Zurn Plumbing Products Group; Commercial Brass Operation.

2. Description: Flushometer for water-closet type fixture. Include brass body with corrosion and chlorine resistant internal components, dual-filtered bypass, synthetic rubber diaphragm assembly, non-hold-open feature, control stop with check valve, vacuum breaker, copper or brass tubing, and polished chrome-plated finish on exposed parts.

    a. Internal Design: Diaphragm operation.
    b. Style: Exposed.
    c. Inlet Size: NPS 1.
    d. Trip Mechanism: Oscillating, lever-handle actuator.
    e. Consumption: 1.28 gal/flush.
    f. Tailpiece Size: NPS 1-1/2 and standard length to top of bowl.

2.3 FIXTURE SUPPORTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Josam Company.
2. Smith, Jay R. Mfg. Co.
3. Tyler Pipe; Wade Div.
4. Watts Drainage Products Inc.; a div. of Watts Industries, Inc.
5. Zurn Plumbing Products Group; Specification Drainage Operation.

B. Water-Closet Supports; WC-1 and WC-2 :

1. Description: Combination carrier designed for accessible and standard mounting height of wall-mounting, water-closet-type fixture. Include single or double, vertical or horizontal, hub-less waste fitting as required for piping arrangement; faceplates; couplings with gaskets; feet; and fixture bolts and hardware matching fixture. Include additional extension coupling, faceplate, and feet for installation in wide pipe space.

2.4 TOILET SEATS

A. Toilet Seats; WC-1 and WC-2 :

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   a. Bemis Manufacturing Company.
   b. Church Seats.
   c. Olsonite Corp.

2. Description: Toilet seat for water-closet-type fixture.

   a. Material: Molded, solid plastic.
   b. Configuration: Open front less cover.
   c. Size: Elongated.
   d. Hinge Type: Stainless steel, self-sustaining check hinge.
   e. Class: Extra heavy-duty, commercial.
   f. Color: White.

2.5 URINALS

A. Urinals; UR-1 and UR-2 :

1. Basis-of-Design Product: Subject to compliance with requirements, provide American Standard “Washbrook FloWise” 6590.001 or a comparable product by one of the following:

   a. Kohler Co.
   b. Sloan.
   c. Zurn Plumbing Products Group.

2. Description: Wall-mounting, back-outlet, vitreous-china fixture designed for flushometer valve operation.

   a. Type: Washout.
   b. Strainer or Trapway: Stainless steel strainer with integral trap.
   c. Design Consumption: 0.5 gal./flush.
   d. Color: White.
   e. Supply Spud Size: NPS 3/4.
   f. Outlet Size: NPS 2.

2.6 URINAL FLUSHOMETERS

A. Urinal; UR-1 and UR-2 :

1. Basis-of-Design Product: Subject to compliance with requirements, provide Sloan 186-0.5-DFB or a comparable product by one of the following:

   a. Zurn Plumbing Products Group; Commercial Brass Operation.

2. Description: Flushometer for urinal type fixture. Include brass body with corrosion and chlorine resistant internal components, dual-filtered bypass, synthetic rubber diaphragm assembly, non-hold-open feature, control stop with check valve, vacuum breaker, copper or brass tubing, and polished chrome-plated finish on exposed parts.

    a. Internal Design: Diaphragm operation.
    b. Style: Exposed.
    c. Inlet Size: NPS 3/4.
    d. Trip Mechanism: Oscillating, lever-handle actuator.
    e. Consumption: 0.5 gal./flush.
    f. Tailpiece Size: NPS 3/4 and standard length to top of bowl.

2.7 FIXTURE SUPPORTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Josam Company.
2. Smith, Jay R. Mfg. Co.
3. Tyler Pipe; Wade Div.
4. Watts Drainage Products Inc.; a div. of Watts Industries, Inc.
5. Zurn Plumbing Products Group; Specification Drainage Operation.

B. Urinal Supports; UR-1 and UR-2 :

1. Description: Type I, urinal carrier with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture for wall-mounting, urinal-type fixture. Include steel uprights with feet.

2.8 LAVATORIES

A. Lavatories; L-1 :

1. Basis-of-Design Product: Subject to compliance with requirements, provide American Standard “Lucerne” 0355.012 or a comparable product by one of the following:

    a. Kohler Co.
    b. Sloan.
    c. Zurn Plumbing Products Group.

2. Description: Accessible, wall-mounting, vitreous-china fixture.

    a. Size: 20 by 18 inches rectangular.
    b. Faucet Hole Punching: Three holes, 2-inch centers.
    c. Color: White.
    d. Overflow: Front.
    e. Construction: Self-draining deck area with contoured back and side splash shields.

3. Subject to compliance with requirements, provide trim products by one of the following:

    a. McGuire Manufacturing Company.

b. Engineered Brass Company.
c. Keeney Manufacturing Company.

4. Lavatory Trim

a. Supplies: Chrome-plated copper with 1/2" NPT x 3/8” OD loose key stops.
b. Drain: Grid with ADA compliant offset waste.
c. Drain Piping: NPS 1-1/4 chrome-plated cast-brass P-trap with cleanout; NPS 1-1/4 17-gauge tubular brass waste to wall; and wall escutcheon.

2.9 LAVATORY FAUCETS

A. Lavatory Faucets; L-1 :

1. Basis-of-Design Product: Subject to compliance with requirements, provide Chicago W8W-DB6AE1-317ABCP or a comparable product by one of the following:

a. T & S Brass and Bronze Works, Inc.
b. Zurn Plumbing Products Group; Commercial Brass Operation.

2. Description: Manual-control mixing valve. Coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor.

a. Body Material: Commercial, solid brass.
b. Finish: Polished chrome plate.
c. Maximum Flow Rate: 1.5 gpm.
d. Mixing Valve: Two-handle.
e. 6-1/4” swing spout.
f. Centers: 8-inch.
g. Mounting: Wall, exposed.
h. Valve Handles: Wristblades with color coded index button.
i. Inlet(s): NPS 1/2 male shank.
j. Spout Outlet: Aerator.
k. Operation: Quarter-turn compression, renewable, manual.

2.10 PROTECTIVE SHIELDING GUARDS

A. Protective Shielding Pipe Covers; L-1 :

1. Basis-of-Design Product: Subject to compliance with requirements, provide Truebro 103 E-Z or a comparable product by one of the following:

a. Insul-Tect Products Co.; a Subsidiary of MVG Molded Products.
b. Plumberex Specialty Products Inc.

2. Description: Manufactured plastic wraps for covering plumbing fixture hot and cold-water supplies and trap and drain piping. Comply with Americans with Disabilities Act (ADA) requirements.

a. Material: Molded vinyl.
b. Nominal Thickness: 1/8” constant wall.

c. UV Protection: Required.
d. Fasteners: Internal, reusable fasteners.
e. Color: White.

2.11 FIXTURE SUPPORTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Josam Company.
2. Smith, Jay R. Mfg. Co.
3. Tyler Pipe; Wade Div.
4. Watts Drainage Products Inc.; a div. of Watts Industries, Inc.
5. Zurn Plumbing Products Group; Specification Drainage Operation.

B. Lavatory Supports; L-1 :

1. Description: Type II, lavatory carrier with concealed arms and tie rod for wall-mounting, lavatory-type fixture. Include steel uprights with feet.

2.12 THREE COMPARTMNENT SINKS

A. Three Compartment Sinks; SK-1 :

1. Basis-of-Design Product: Subject to compliance with requirements, provide Elkay WNSF83724 or a comparable product by one of the following:

a. Just Manufacturing Company.
b. Franke Group.

2. Description: One-bowl, counter-mounting, stainless-steel type sink.

a. Overall Dimensions: 75 by 27 1/2 by 44 inches.
b. Metal Thickness: 14-gauge type 304 stainless steel.
c. Faucet Hole Punching: 2 holes, 8-inch centers.
d. Bowl Dimensions: 24 by 24 by 14 inches.
e. Drain: 3-1/2-inch stainless steel crumb cup; Elkay LKAD35.

1) Location: Rear Center

3. Subject to compliance with requirements, provide trim products by one of the following:

a. McGuire Manufacturing Company.
b. Engineered Brass Company.
c. Keeney Manufacturing Company.

4. Sink Trim

a. Supplies: Chrome-plated copper with 1/2" NPT x 3/8” OD loose key stops.
b. Drain Piping: NPS 1-1/2 chrome-plated cast-brass P-trap with cleanout; NPS 1-1/2 17-gauge tubular brass waste to wall; and wall escutcheon.

2.13 THREE COMPARTMENT SINK FAUCETS

A. Three Compartment Sink Faucets; SK-1 :

1. Basis-of-Design Product: Subject to compliance with requirements, provide Chicago 201-AE35ABCP or a comparable product by one of the following:

   a. T & S Brass and Bronze Works, Inc.
   b. Zurn Plumbing Products Group; Commercial Brass Operation.

2. Description: Sink faucet without spray. Coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor.

   a. Body Material: Commercial, solid brass.
   b. Finish: Polished chrome plate.
   c. Maximum Flow Rate: 1.5 gpm.
   d. Mixing Valve: Two-handle.
   e. Centers: 8 inches.
   f. Mounting: Deck, concealed.
   g. Handle(s): Lever with color coded index button.
   h. Inlet(s): NPS 1/2 male shank.
   i. Spout Type: 9” swing, solid brass.
   j. Spout Outlet: Aerator.
   k. Operation: Quarter-turn, renewable compression, manual.

2.14 MOP SINKS

A. Mop Sinks; MS-1 :

1. Basis-of-Design Product: Subject to compliance with requirements, provide Fiat MSB-2424 or a comparable product by one of the following:

   a. Swan.
   b. Stern-Williams.

2. Description: One-bowl, floor-mounting, molded stone utility sink.

   a. Overall Dimensions: 24 by 24 by 10 inches.
   b. Drain: 3-inch I.P.S. cast brass with 16-gauge stainless steel dome strainer and lint basket.
   c. Accessories:

      1) Hose and Bracket: Stainless steel hose bracket, spring-loaded rubber grip, 30” long heavy duty 5/8-inch rubber hose; Fiat 832 AA.
      2) Mop Hanger: Stainless steel mop hanger bracket, 24 by 3 inches, 3-spring loaded rubber grips; Fiat 889 CC.
      3) Stainless steel wall guards: Heavy gauge stainless steel, two/three panels as required; Fiat MSG 2424.

2.15 MOP SINK FAUCETS

A. Mop Sink Faucets; MS-1 :

1. Basis-of-Design Product: Subject to compliance with requirements, provide Chicago 897-RFC or a comparable product by one of the following:

   a. T & S Brass and Bronze Works, Inc.
   b. Zurn Plumbing Products Group; Commercial Brass Operation.

2. Description: Service sink faucet with check stops in shanks, vacuum breaker, hose-thread outlet, and pail hook.

   a. Body Material: Commercial, solid brass.
   b. Finish: Rough chrome plate.
   c. Mixing Valve: Two-handle.
   d. Centers: Adjustable.
   e. Mounting: Back/wall, exposed.
   f. Handle(s): Lever with color coded index button.
   g. Inlet(s): NPS 1/2 male shank, with integral check stops.
   h. Spout Type: Rigid, solid brass with wall brace.
   i. Spout Outlet: Hose thread.
   j. Vacuum Breaker: Integral with spout.
   k. Operation: Quarter-turn compression, renewable, manual.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Assemble plumbing fixtures, trim, fittings, and other components according to manufacturers' written instructions.

B. Install off-floor supports, affixed to building substrate, for wall-mounting fixtures.

1. Use carrier supports with waste fitting and seal for back-outlet fixtures.
2. Use carrier supports without waste fitting for fixtures with tubular waste piping.

C. Install wall-mounting fixtures with tubular waste piping attached to supports.

D. Install fixtures level and plumb according to roughing-in drawings.

E. Install water-supply piping with stop on each supply to each fixture to be connected to water distribution piping. Attach supplies to supports or substrate within pipe spaces behind fixtures. Install stops in locations where they can be easily reached for operation. All exposed supply piping shall be chrome-plated copper.

F. Install trap and tubular waste piping on drain outlet of each fixture to be directly connected to sanitary drainage system.

G. Install tubular waste piping on drain outlet of each fixture to be indirectly connected to drainage system.

H. Install flushometer valves for accessible water closets and urinals with handle mounted on wide side of compartment. Install other actuators in locations that are easy for people with disabilities to reach.

I. Install toilet seats on water closets.

J. Install traps on fixture outlets.

1. Exception: Omit trap on fixtures with integral traps.
2. Exception: Omit trap on indirect wastes, unless otherwise indicated.

K. Connect drain outlet hose from dishwasher to drain connection on disposer.

L. Install escutcheons at piping wall and ceiling penetrations in exposed, finished locations and within cabinets and millwork. Use deep-pattern escutcheons if required to conceal protruding fittings. Escutcheons are specified in Division 20 Section "Common Work Materials and Methods for Fire Suppression, Plumbing, and HVAC."

M. Set mop sink in leveling bed of cement grout. Grout is specified in Division 20 Section "Common Work Materials and Methods for Fire Suppression, Plumbing, and HVAC."

N. Seal joints between fixtures and walls, floors, and countertops using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color. Sealants are specified in Division 07 Section "Joint Sealants."

3.2 CONNECTIONS

A. Piping installation requirements are specified in other Division 20 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.

C. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."

D. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.3 FIELD QUALITY CONTROL

A. Verify that installed plumbing fixtures are categories and types specified for locations where installed.

B. Check that plumbing fixtures are complete with trim, faucets, fittings, and other specified components.

C. Inspect installed plumbing fixtures for damage. Replace damaged fixtures and components.

D. Test installed fixtures after water systems are pressurized for proper operation. Replace malfunctioning fixtures and components, then retest. Repeat procedure until units operate properly.

3.4 PROTECTION

A. Provide protective covering for installed fixtures and fittings.

B. Do not allow use of plumbing fixtures for temporary facilities unless approved in writing by Owner.

END OF SECTION

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SECTION 32 31 19 – DECORATIVE FENCING AND GATES

1.1 WORK INCLUDED

A. Ornamental Fencing:
1. Furnish and install all exterior fences and gates as indicated in or implied by the Contract Documents, including pickets, rails, posts, footings, gates, fasteners, and accessories required for a complete and full system.
2. Plans include a 20’ wide Opening building-to-building that shall be ornamental fencing. Of that opening, 17’ wide double-swing Gate condition shall be accommodated.

B. Decorative Aluminum Screen Fencing:
1. Furnish and install all exterior screen fences and gates as indicated in or implied by the Contract Documents, including pickets, rails, posts, footings, gates, fasteners, and accessories required for a complete and full system.

C. Related Work:
1. Division 03 “Cast-in-Place Concrete” for site cast-in-place concrete walls and stairs.
2. Division 31 "Earth Moving" for excavation, filling, and rough grading and for subsurface aggregate drainage and drainage backfill materials.
3. Division 32 “Concrete Paving” for flatwork requirements

1.2 WORK NOT INCLUDED

A. Access Management Controls and Egress Hardware:

1. Access management controls to be provided by owner.

1.3 QUALITY ASSURANCE

A. Provide option to match architectural patio and balcony railings. Refer to Architecture Plans and Specifications

B. General: Any discrepancy noted between Specifications, Plan drawings, and Details shall default to the greater quantity, material, or structural requirement.

C. Industry Standards:
1. ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
2. ASTM D523 - Test Method for Specular Gloss.
3. ASTM D822 - Weatherability of Powder Coatings
4. ASTM D2794 - Test Method for Resistance of Organic Coatings to The Effects of Rapid Deformation (Impact).
5. ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
6. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot Dip Process
7. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength and High-Strength Low-Alloy with Improved Formability

8. ASTM A36/A500 - Standard Specification Carbon Structural Steel and Cold-Formed Welded & Seamless Carbon Steel Tubing

1.4 SUBMITTALS

A. Before any of the materials of this Section are delivered to the job site, submit product literature and shop drawings to the Landscape Architect.

B. Shop Drawings shall include:
   1. Manufacturing and Installation details.
   2. Typical Fence and Gate Elevations.
   3. Gate Hardware components.
   4. Full Dimensional data.

C. Product Data: Manufacturer's cuts indicating material compliance and specified options.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Fence panels, gates, posts, and accessories shall be delivered to the job site in packed cartons, fully protected from wear and abuse in transit.

B. Each package shall be identified and shall bear the name of the Manufacturer.

C. Store all materials in a secure and dry area.

1.6 WARRANTY

A. Fence System and Finishes:
   1. Ten (10) year warranty against defects in workmanship and materials, as well as cracking, chipping, or peeling of finishes.

PART 2 - PRODUCTS

2.1 ORNAMENTAL FENCING **(Fence and gate system in alcove between buildings)**

A. Basis-of-design fencing:
   1. Manufacturer: Ameristar, Tulsa, OK, (800) 321-8724.
   2. Model: 'Escelon II' Majestic, 3-rail
   3. Format:
      a. Ornamental Fence and Gate
         1) 6'-0" height
         2) Three-rail horizontal appearance
   4. Gates: As indicated or implied in Plans. Swing conditions.
   5. Metal gate post locations shall be validated during submittal and shop drawing process.
   6. Color: Black, as selected from manufacturer's full range of standard colors.
   7. Non-standard Gate Hardware: Coordinate access management and egress gate hardware as required by design with Owner and applicable trades as identified in the Plans and Specification.

8. Equals to be submitted prior to bidding. Manufacturer to have five (5) years experience manufacturing ornamental picket fencing.

B. Material
   1. Material for fence panels and posts shall conform to the requirements of ASTM A653/A653M
      a. Minimum yield strength: of 45,000 psi (310 MPa) and a
      b. Minimum zinc (hot-dip galvanized) coating weight of 0.90 oz/ft2 (276 g/m2),
      c. Coating Designation: G-90.
      d. Minimum of 50% of the material shall be derived from recycled scrap metal.

   2. Material for picket and posts.
      a. Picket spacing: 4” o.c. max, unless otherwise required by Code.
      b. Fence posts: No less than 3” x 12 Ga. unless otherwise recommended by the Manufacturer for strength and durability in the proposed use condition.
      c. Gate posts: No less than 4” x 12 Ga. unless otherwise recommended by the Manufacturer for strength and durability in the proposed use condition.
   3. Manufactured fence system shall be capable of meeting all vertical load, horizontal load, and infill performance requirements for Industrial weight fences under ASTM F2408, plus any local and state code requirements in the State of Indiana.

C. FABRICATION
   1. Pickets, rails and posts shall be pre-cut to specified lengths. Rails shall be pre-punched to accept pickets.
   2. Aligned pickets and rails shall be joined at each picket-to-rail intersection by Ameristar’s proprietary fusion welding process, thus completing the rigid panel assembly.
   3. The manufactured panels and posts shall be subjected to an inline electrodeposition coating (E-Coat) process consisting of a multi-stage pretreatment/wash (with zinc phosphate), followed by a duplex application of an epoxy primer and an acrylic topcoat. The minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils (0.058 mm). Meet or exceed the coating performance criteria of ASTM F2408).

D. Setting: Provide concrete footings consisting of Portland Cement, ASTM C 150, aggregates ASTM C33, and clean water. Mix materials to obtain concrete with a minimum 28-day compressive strength of 3,500 psi, 1" maximum size aggregate, 4” maximum slump, and 5% to 7% entrained concrete consisting of Portland Cement, ASTM C 150, aggregates ASTM C33, and clean water. Meet or exceed minimum footing depths for local frost conditions, unless more restrictive language is called for in Plans or Specifications.

2.2 DECORATIVE ALUMINUM SCREEN FENCING (Equipment screening west of EMS Building)

A. Decorative Aluminum Fences: Fences made from aluminum extrusions.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Ametco Eclipse Inclined, flanged louver blade providing 100 percent visual blocking.or comparable product by one of the following:

a. Ametco Manufacturing Corporation
b. Alumi-Guard, Inc.
c. Ameristar Fence Products.
d. BetaFence, USA LLC.
e. Delair Group, L.L.C.
f. East & West Alum Craft Ltd.
g. Elegant Aluminum Products, Inc.
h. Elite Fence Products, Inc.

i. Ideal Aluminum Products.
j. Iron Eagle Industries, Inc.
k. Master Halco.
l. Basteel Perimeter Systems

B. Posts: Square extruded tubes.

1. Type: 3 x 3 inch [76 by 76 mm] extruded tubular aluminum sections with solid aluminum caps.
2. Length: As indicated on Drawings.

C. Fence Panel:

1. Fixed louver bars: Extruded aluminum louver bars, [1-31/32 inches] [50 mm] wide, spaced at [1-13/16 inches] [46 mm]. Extend louver flange to allow 100 percent direct visual screening.
2. Cross bars: [1/2 by 1/8 inch] [13 by 3 mm] flat bars welded perpendicular to back side of louver bars and spaced at [18 inches] [457 mm].

D. Fasteners: Stainless steel bolts of type, size, and spacing as recommended by fence manufacturer for specific condition.

E. Fabrication: Assemble fences into sections by welding pickets to rails.

1. Fabricate sections with clips welded to rails for field fastening to posts.
2. Drill clips for fasteners before finishing.

F. Finish exposed welds to comply with NOMMA Guideline 1, Finish #2 - completely sanded joint, some undercutting and pinholes okay

G. Finish: Baked enamel or powder coating.

2.21 SWING GATES

A. Provide gates of type and size indicated on Drawings. Equip gates with manufacturer's standard hardware as required for complete functional operation.

B. Type: Hinged swinging single gate.

1. Construction: Welded frame fabricated from extruded aluminum tubing with aluminum fixed louver panels to match fencing material.
2. Nominal width: 36 inches wide

C. Hardware

1. Hinges: Size and type as determined by manufacturer. Provide 2 hinges for each leaf up to [6 feet] [1829 mm] high and 1 additional hinge for each additional [24 inches] [610 mm] in height or fraction thereof.
2. Latch: [3/4 inch] [19 mm] diameter slide bolt to accommodate padlock.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Inspection:
1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Remove any surface irregularities that may cause interference with the installation of the fence.
3. Verify that all fences may be installed in accordance with all pertinent codes and regulations, the original design, and the referenced standards.

B. Discrepancies:
1. Do not proceed with installations in areas of discrepancy until all such discrepancies have been fully resolved.

C. Preparation
1. All installation shall be laid out by the contractor in accordance with the construction plans. Posts shall be evenly spaced.

3.2 INSTALLATION

A. Posts:
1. All posts shall be set in minimum 16” diameter x 48” deep hole. After posts have been plumbed vertical, hole shall be filled with poured concrete.
2. Exposed surface of concrete shall be crowned to shed water. Contractor strongly recommended to prepare a mockup of this condition or have the first in-place footing inspected and approved prior to commencing work.
3. Recheck vertical and top alignment of posts. Make any necessary corrections.
4. Post spacing shall be on maximum 8’-0" centers, unless otherwise noted, and posts shall be evenly spaced between masonry columns and walls, respectively.

B. Rails, Pickets, and Gates:
1. Install rails and pickets in strict accordance with manufacturer's instructions and using manufacturer’s brackets. All components shall be plumb and level.
2. Completed panels shall be capable of supporting a 300 lb. load (applied at midspan) without permanent deformation.
3. All rail and upright intersections for gates shall be joined by welding.
4. Install gates plumb, level and secure for full opening without interference.
5. Attach gate hardware by means, which will prevent unauthorized removal.
6. Install post caps and other accessories to complete fence

C. Maintenance
1. When cutting or drilling rails or posts, adhere to the following steps to seal the exposed steel surfaces
    a. Remove all metal shavings from cut area
    b. Apply zinc-rich primer to thoroughly cover cut edge and/drilled hole; let dry
    c. Apply 2 coats of custom finish paint matching fence color

3.3 ADJUSTMENT

A. Adjust gates so that they are vertical, plumb, level, and secure for full opening without interference.

3.4 CLEANING

A. Clean fence with mild household detergent and clean water. Rinse well. Any concrete shall be removed using a 10% solution of muriatic acid, or other manufacturer approved cleaner, followed immediately by several rinses with clean water.

END OF SECTION