B I D A D D E N D U M 0 3

The items set forth herein, whether of omission, addition, substitution, or clarification are to be included in and form a part of the construction documents for the project listed above.

This Addendum consists of the following Parts:

Part 1	Divisions #0-1, Bidding and Contract Requirements	
Part 2	Technical Changes, Architectural, Structural, Civil & Abatement	
Part 3	Technical Changes, Plumbing, Mechanical and Electrical	Not Used
Part 4	Drawing Changes, Architectural / Civil / Abatement	
Part 5	Drawing Changes, Structural	
Part 6	Drawing Changes, Plumbing, Mechanical and Electrical	Not Used
Part 7	Clarifications	
Part 8	New Issues – List of Included Documents	

PART 1 DIVISIONS #0-1, BIDDING AND CONTRACT REQUIREMENTS

1.1 011000 MULTIPLE CONTRACT SUMMARY

a. Modify Part 011000 Roofing Construction Contract 1.10-a-3-b as follows: Removal and disposal of miscellaneous equipment and accessories including equipment not shown if impacting work to be demolished (i.e. skylights, EF, curbs). Roofing Contractor shall coordinate with MEP trades as required for their removal of rooftop MEP equipment. Removal of rooftop MEP equipment shall be by MEP trades as indicated on the MEP demolition drawings. MEP trades shall be responsible for keeping the school watertight during the removals (temporary curb covers, etc.). The Roofing Contractor shall remove the equipment curbs, any associated wood blocking and flashings, and shall be responsible for keeping the school watertight during this work.

b. Modify Part 011000 Roofing Construction Contract 1.10-a-5-o as follows: Provide and install all gutters, downspouts, supports, and tie into site drainage components for a complete system. Roofing Contractor shall coordinate with General Contractor for tying into underground drainage work.

PART 2 TECHNICAL CHANGES, ARCHITECTURAL, STRUCTURAL, CIVIL AND ABATEMENT

2.1 033000 CAST IN PLACE CONCRETE

a. Replace entire Section 033000 with attachment.

2.2 086200 PLASTIC UNIT SKYLIGHTS

a. Omit this specification section. Refer to 077200 for information on Plastic Unit Skylights.

PART 4 DRAWING CHANGES, ARCHITECTURAL / CIVIL / ABATEMENT

4.1 DRAWING T-1 – COVER SHEET

a. Omit Drawing S403 from the Drawing List

b. Add the following Drawings to the Drawing List:
    a. A531 – Signage
    b. M111C – First Floor Piping Demo Plan – Part C
    c. M111D – First Floor Piping Demo Plan – Part D

4.2 DRAWING AA151 FIRST FLOOR ASBESTOS ABATEMENT PLAN
    a. See revised Drawing AA151 with clarifications to the scope of work including areas of ACM removals and anti-sweat tar removals. Refer also to the Abatement Report for locations of work.

4.3 DRAWING A901 – PARTITION TYPES
    a. Modify Wall Type 0FX – Wall Type '0F4' shall be changed/renamed to '0F3' 3-5/8" steel studs at 16" O.C.

4.4 DRAWING A910 WINDOW TYPES
    a. See attached Drawing A910 – Window Types

PART 5 DRAWING CHANGES, STRUCTURAL

5.1 Attached please find the following revised Structural Drawings with modifications and/or additional information clouded:
Drawing S101 – New Addition Foundation Plan
Drawing S103 – New Addition Wall Framing
Drawing S105 – New Addition Clerestory Roof Framing
Drawing S106 – Part D Admin Level Floor Plan
Drawing S107 – Part A&B Roof Plan
Drawing S301 – Building Sections
Drawing S302 – Building Sections
Drawing S303 – Wall Sections
Drawing S402 – Classroom 500/508 Structural Alterations
Drawing S501 – New Addition Foundation Details
Drawing S502 – New Addition Slab Details
Drawing S503 – Structural Steel Connection Details
Drawing S504 – Open Web Joist and Cold Formed Metal Detail
Drawing S953 – Pool Infill at Life Skills Rm 250 (Add-Alt #3)

PART 7 CLARIFICATIONS

7.1 See attached Sign-In Sheet from the Pre-Bid Walk Thru

7.2 Estimated Contract Values for the purposes of bonding are as follows:
A. Contract #1 – General Construction…….. $17MM – $19MM
B. Contract #2 – Abatement…….. $1.5MM – $2MM
C. Contract #3 – Roofing…….. $3MM – 4.5MM
D. Contract #4 – Plumbing and Fire Protection…… $1.5MM – $1.75MM
E. Contract #5 – Mechanical (HVAC)……..…… $6MM – $6.5MM
F. Contract #6 – Electrical…… $3.75MM – 4MM

7.3 Roof Drain Clarification – The plumbing contractor shall furnish and connect the new roof drains to the storm drain lines inside the school building, working in coordination with the Roofing Contractor, who shall install the drain flashings. Only cast iron domes shall be

used at the new roof drains per specification section 077200.

7.4 Roof Eave Clarification – All perimeter eaves at existing building and new addition shall have built up wood blocking for anchoring of the fascia.

7.5 RFI Question – Drawing A531 shows a raised border on the sign drawings. There is also an image of a "snaplock frame". Please advise which is being quoted. Frame or Raised Border?
RFI Response – Provide raised border signs. Snaplock frame not required.

7.6 RFI Question – Drawing sheet A310 shows letters “cut from panels,” but the specs call for stainless steel, stud-mounted letters. Please confirm which approach is correct. Additionally, could you provide the letter height, thickness, and font?
RFI Response – Provide brushed stainless steel, stud mounted letters. Height = 12 inches; Thickness = 1 inch; Font = Arial.

7.7 RFI Question – Reference 011000 Roofing Construction Contract, 3. Demo has the roofing contractor removing the rooftop equipment including EF, curbs…Shouldn’t the mechanical rooftop equipment be removed by the mechanical contractor. Same goes for the electrical, and plumbing scopes? Roofer can remove the curbs and supports, but the rooftop MEPs should be handled by the other contractors.
RFI Response – Removal of rooftop MEP equipment shall be by MEP trades as indicated on the MEP demolition drawings (P103, M103, E103, etc.). MEP trades shall be responsible for keeping the school watertight during the removals (temporary curb covers, etc.). The Roofing Contractor shall remove the curbs, any associated wood blocking and flashings, and shall be responsible for keeping the school watertight during this work.

7.8 Reference 011000 Roofing Construction Contract, 5. New Work, note o calls for the roofing contractor to provide and install site drainage. Please confirm that the roofing contract only owns connecting into the site drainage boots if shown/required. Roofer doesn’t own the site drainage systems.
RFI Response – Confirming that the Roofing Contractor owns connecting to site drainage components at boots. The General Contractor is responsible for below-grade site drainage systems.

7.9 RFI Question – Does the roofing contract only all the work shown on A250, A251, A252, A253 & A254 including the masonry (brick replacement, grouting, parging, etc.), CFMF, batt insulation, blocking, and sheathing?

a. Who owns the aluminum panels per 20/A251?
b. Who owns providing & installing the eveco ventilator per 38/A253?
c. Who owns the ladder modifications per 39/A253 and new ladder per 43/A253?
d. Who owns the guard railing per 47/A253?
e. Who owns the roof access stairs per 48/A253?
f. Who owns the duct wrap per 49&50/A254?
g. Who owns the interior skylight well work (gypsum sheathing & painting) per 46/A253?
h. Please confirm that the pipe portal per 41/A253 will be provided by others.

RFI Response – Roof contractor shall be responsible to perform the work for the items listed above with the following exceptions: The installation of the skylight shafts shall be by the General Contractor (gypsum board, tape and paint at the skylights). MEP trades shall provide supports for rooftop pipes and conduits as they install them.

7.10 RFI Question – Reference A805, A806 & A807, who owns the roof edge/parapet CFMF, batt insulation, sheathing, and blocking at the new addition?
RFI Response – The Roofing Contractor shall supply roof insulation, gutter blocking and sheet metal. The General Contractor shall be responsible for the CFMF parapet, wood blocking, plywood behind the fascia and soffit, gypsum board and batt insulation behind gypsum board.

7.11 RFI Question – Reference 5,8&11/A806 and 2&4/A807, please confirm that the General Contractor owns the thermal breaks, wall cladding supports, sheathing, blocking, wall/soffit AVB, and related wall/soffit insulation. Roofer owns the fascia and related sheet metal flashings only.
RFI Response – The General Contractor is responsible for the above referenced thermal breaks, wall cladding supports, wall sheathing, blocking, wall and soffit AVB, rigid insulation at wall and soffit. Roofing contractor responsible for the fascia and sheet metal flashings.

7.12 RFI Question – 075323 lists the roofing contractor to carry 500 SF of concrete deck repair in the base bid. Concrete deck repair is not listed in 012200 for Contract #3, or on the bid form.
RFI Response – Surface repairs, to the concrete decks, are specified in Section 075323, paragraphs 1.2.A.8 ; 2.3.H and 3.3. Section 011000 tells the Roofing Contractor to include all work in this specification section.

7.13 RFI Question – Please provide a project schedule for the entire project. When is the roofing work expected to occur?
RFI Response – See Milestone Schedule provided in Bid Addendum #2.

7.14 RFI Question – Are we using specification 077200 or 086200 for the plastic unit skylights?
RFI Response – Refer to 077200 for plastic unit skylights. Section 086200 shall be omitted.

7.15 RFI Question – Drawings S403, A910 is missing from our set but is listed on the drawing manifest – please provide this drawing if it is to be included in our scope
RFI Response – Drawing S403 does not exist and shall be omitted from the Drawing List. See attached Drawing A910 with information on Window Types.

7.16 RFI Question – Drawing A601C is included twice in the set – please confirm this is an error.
RFI Response – Confirmed, this is an error. The Drawings 601C included in the Bid Set are both the same.

7.17 Drawings A531, M111C & M111D are included in the drawing set but not listed on the drawings manifest. Please confirm these are to be included in our scope.
RFI Response – Confirming that Drawings A531, M11C and M111D are included in the scope of the Project. Drawing Cover Sheet shall be revised to include these drawings.

7.18 RFI Question – Please provide elevations for doors HM4, HM5 & HM6 & HM7
RFI Response – See attached Drawing A910

7.19 RFI Question – Door #611 does not have any other information listed other than its size. Please advise on the door & frame types to be used
RFI Response – Door 611 is Type 'F', Stained Wood Door, Painted Hollow Metal Frame, no fire rating, wireless card access.

7.20 RFI Question – Door type DWSP appears at tags EC401, EC410 & EC430 but is not in the elevations. Please confirm this is to be a double WSP door
RFI Response – Confirmed, DWSP is a double WSP door.

7.21 RFI Question – Door tags #SA1, #SC1, #SC2 & #513 are listed in the door hardware schedule in spec section 087100 but are not listed in the door schedule itself. If these doors are to be included, please advise on their details.
RFI Response – Omit doors SA1, SC1, SC2, and 513 from the door hardware schedule.

7.22 RFI Question – The plumbing chase partitions are not labeled on drawing A430. Please advise on their types
RFI Response – New plumbing chase walls shall be constructed with 3-5/8" studs - Type '0F3' and/or '0P3' throughout.

7.23 RFI Question – Bathroom room numbers on the part plans (ie bathrooms 127B & 127G on A200B) do not coincide with the enlarged plans on A430. Please confirm the scope as called out by the enlarged plan are "typical" regardless of the room numbering discrepancies.
RFI Response – Yes, scope called out on enlarged plan as typical shall apply.

7.24 RFI Question – Bathrooms 422A & 422B do not have an enlarged plan call out. Please advise.
RFI Response – Toilet Rooms 422A and 422B shall be similar to 420A and 420B. Refer to 1/A433.

7.25 RFI Question – Which enlarged bathroom plan should be used for the bathroom in classroom 442 on A201C?
RFI Response – Toilet Room in Classroom 442 shall be similar to Toilet Room 425A in Classroom 425 – See 2/A433.

7.26 RFI Question – There appears to be a new partition behind items DF & ADF at room FAC 513 on A201D – if this is a new wall, please advise on which type it is.
RFI Response – This is a new furring wall for the plumbing equipment at the drinking fountains. Provide wall type '0F3'

7.27 RFI Question – Are details on A812 to be used at the VRF units only or should it be included at the UV units as well? Detail 1/A812 is labeled as "Typ Vertical UV Plan Detail"
RFI Response – These details are for the vertical unit ventilators. The exterior wall details shall be considered as "similar" for the horizontal UV units. The interior stud/gyp.board surround is only required at the vertical UV units.

7.28 RFI Question – Drawing A600B has vertical lines running plan north & south in corridor C103 which look like soffit/fascia lines but do not have any tags. What detail should be included here if any?
RFI Response – Those lines represent a bulkhead for dropping the ACT ceiling in this area. Refer to detail 5/A611

7.29 RFI Question – Partition tag 0F3 is called out on A601D at corridor C400 – what is the intention here?
RFI Response – The '0F3' tag is referring to a bulkhead – see detail 5/A611

7.30 RFI Question – Drawings in the A500 series call out for LVT-1 in the classrooms but the schedule on A530 calls them to be LVT-3C – which is correct?
RFI Response – Provide LVT-1 at Early Education spaces 501, 502, 503, 504, 505, 513, 514, and 520. All other classrooms shall be LVT-3C.

7.31 RFI Question – Single use restrooms call out for floor finish PT4 but the finish schedule on A530 calls for PT5 - which is correct?
RFI Response – Provide PT-4 at Early Education single toilets 517A, 517B, 519A, 519B. All other single toilets shall be PT-5.

7.32 RFI Question – Room 508 is not listed on the finish schedule on A530 – please advise
RFI Response – Classroom 508 shall have the same finishes as adjacent Classroom 504. LVT flooring, rubber base, painted gyp board walls, ACT ceiling.

7.33 RFI Question – The typical finish plan on A530 calls for offices to receive carpet in offices but JAF Office 334 on A502B is called out as LVT- which is correct?
RFI Response – JAF Office 334 shall be LVT.

7.34 RFI Question – Drawing A530 lists WOM as floor finish in the vestibules but WOM Is not in the legend. Is this a Walk Off Mat?
RFI Response – Provide walk-off mats at vestibule 601A, 601B.

7.35 RFI Question – Collab rooms on the A500 series call for PT-1 & PT-2 wall finish & PTB-1 wall base but the finish schedule on A530 calls for painted walls & rubber base – which is correct?
RFI Response – Provide painted walls and rubber base at the interior of the Collab rooms.

7.36 RFI Question – Offices on the A500 series call for RB-1 wall base but finish schedule on A530 calls for PTB-1 base – which is correct?
RFI Response – Provide RB-1 these areas.

PART 8 NEW ISSUES

1.	Bid Walk-Thru Sign In Sheet	(5 Pages) 8.5x11
2.	Specifications 033000 – Cast-In-Place Concrete	(22 Pages) 8.5x11
3.	Drawing AA151 – First Floor Asbestos Abatement Plan	(1 Page) 30x42
4.	Drawing A910 – Window Types	(1 Page) 30x42
5.	Drawing S101 – New Addition Foundation Plan	(1 Page) 30x42
6.	Drawing S103 – New Addition Wall Framing	(1 Page) 30x42
7.	Drawing S105 – New Addition Clerestory Roof Framing	(1 Page) 30x42
8.	Drawing S106 – Part D Admin Level Floor Plan	(1 Page) 30x42
9.	Drawing S107 – Part A&B Roof Plan	(1 Page) 30x42
10.	Drawing S301 – Building Sections	(1 Page) 30x42
11.	Drawing S302 – Building Sections	(1 Page) 30x42
12.	Drawing S303 – Wall Sections	(1 Page) 30x42
13.	Drawing S402 – Classroom 500/508 Structural Alterations	(1 Page) 30x42

14.	Drawing S501 – New Addition Foundation Details	(1 Page) 30x42
15.	Drawing S502 – New Addition Slab Details	(1 Page) 30x42
16.	Drawing S503 – Structural Steel Connection Details	(1 Page) 30x42
17.	Drawing S504 – Open Web Joist and Cold Formed Metal Detail	(1 Page) 30x42
18.	Drawing S953 – Pool Infill at Life Skills Rm 250 (Add-Alt #3)	(1 Page) 30x42

****** END OF BID ADDENDUM #3 ******

the Palombo Group

PRE-BID WALK THRU MEETING

AGENDA

Orange Ulster BOCES

2022 CAPITAL IMPROVEMENT PROJECT

Emanuel Axelrod Special Education Center

Additions and Alterations

Tuesday, November 12, 2024 – 3:30PM

1. SIGN IN SHEET

2. INTRODUCTIONS – THE PALOMBO GROUP

   Orange Ulster BOCES - OWNERS
   KG+D – ARCHITECTS
   THE PALOMBO GROUP – CONSTRUCTION MANAGERS
   HAZARDOUS MATERIALS MONITORING - QuEST

3. DATE / TIME / LOCATION OF WHERE BIDS ARE DUE

   Thursday December 5th 2:00PM
   Orange Ulster BOCES, District Office
   Attention: Business / Administration Office
   53 Gibson Road Goshen, New York 10924

All proposals shall be sealed and in an opaque envelope distinct on the outside as follows:

Emanuel Axelrod Special Education Center
Additions and Alterations
Bid Opening Date: December 5, 2024 @ 2PM
Name of Bidder
Contract Number and Trade
Marked "SEALED BID"

If mailing your bid, please make sure you leave plenty of time for it to arrive at district office by **11:45am**. Make sure the envelope is marked "Sealed Bid", OUBOCES Bid Number RFB-OUB-CP04-2024– Emanuel Axelrod Special Education Center Additions and Alterations

4. BID DOCUMENT AVAILIBILITY

   - Digital download can be obtained by REVplans, 28 Church Street, Unit #7, Warwick, NY 10990 for $100.00
   - Please note Rev (www.revplans.com) is the designated location and means for distributing and obtaining all bid package information. All bidders are urged to register to ensure receipt of all necessary information, including bid addenda.

5. PROJECT OVERVIEW

1. Contract 1 General Construction Work
2. Contract 2 Abatement Construction Work
3. Contract 3 Roofing Construction Work
4. Contract 4 Plumbing Construction Work
5. Contract 5 Mechanical Construction Work
6. Contract 6 Electrical Construction Work

6. TRADE ESTIMATES

1.	Contract 1 General Construction Work	$ 17,000,000 to $ 19,000,000
2.	Contract 2 Abatement Construction Work	$ 1,500,000 to $ 2,000,000
3.	Contract 3 Roofing Construction Work	$ 3,000,000 to $ 4,500,000
4.	Contract 4 Plumbing Construction Work	$ 1,500,000 to $ 1,750,000
5.	Contract 5 Mechanical Construction Work	$ 6,000,000 to $ 6,500,000
6.	Contract 6 Electrical Construction Work	$ 3,750,000 to $ 4,000,000

7. MISCELLANEOUS REQUIRMENTS

- PERFORMANCE AND PAYMENT BONDS ARE REQUIRED
- ALL ADDENDUM MUST BE ACKNOWLEDGED ON THE BID FORM
- PROJECT LABOR AGREEMENT
- PRE-BID RFI PROCEDURES (Deadline Tuesday Nov 26th 12pm)
- OWNER FURNISHED MATERIAL / SYSTEMS
- SCHEDULE
    - New Addition continuous construction
    - Roofs installed during summer
    - Abatement removed during summer, less isolated areas (ie Zone 10)
    - Classroom scope will continue 2nd shift throughout the year
    - Common spaces (hallways, gym, auditorium ect) installed during summer

7. GENERAL DISCUSSION – Q&A

8. SITE VISIT

the Palombo Group

Sign In Sheet

Meeting: OUBOCES Axelrod – Pre-Bid Walk Thru Meeting
Date: 11/12/2024 3:30 PM

Name	Company/Trade	Cell/Email
Dawn Ryan	TPG/CM	845-594-5328/dryan@thepalombogroup.com
Scott Butler	TPG/CM	845-332-0202/sbutler@thepalombogroup.com
Piotr Archacki	TPG/CM	845-743-5996/parchacki@thepalombogroup.com
ARBEE	STEEL	845 5443940 ARBEE.STEELDETAILER@
Jerry D'Onofrio	HAUSER BROS PLUMBING HVAC	845-359-1[illegible] jdonofrio@HAUSER BROS.COM
MARCIN OLCZARSKI	NIRAM INC - GC/ACM	CTKIME NIRAM.COM
MARIO SPIROSKI	UNIMAK/GC	estimating@unimakllc.com 973-249-4455 973-478-4925
Alex Henle	Wallkill Group	estimating@wallkillgroup.com 973-512-4862
MIKE ADAMS	BEAM ENTERPRISES, INC.	MIKE@BEAMENTERPRISESINC.COM 201-522-5995
Ken Lunte	Protex Inc	845-219-4065 klunte@protexinc.net
Peter Reilly	Titan Roofing	preilly@titanroofing.com

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Dawn Ryan	TPG/CM	845-594-5328/dryan@thepalombogroup.com
Scott Butler	TPG/CM	845-332-0202/sbutler@thepalombogroup.com
Piotr Archacki	TPG/CM	845-743-5996/parchacki@thepalombogroup.com
David Lutter	Gerard ME?	
Scott Ziegler	Gerard MEP	
Mark Coleman	OUBOCES	
Matt Garvey	Andron	
Keith Bligh	OCS Industries	845-692-8450 estimating@ocsindustries.com
David Campbell	PDC	413 510 6543 dcampbell@profdrywall.com
Derek Barry	PDC	413 316 0631 Dbarry@profdrywall.com
Jacek Ugnski	Milcon Constr	jucinski@milconconstruction.com
Harry Rotolo	Rotolo Elec	HRotolo@Rotoloelectric.com.
Joe Jasiel	MOS HVAC-R INC	914.760.3196 JoeJMOSHVAC.com
Dave Lukeski	Barrett, Inc.	203-744-2780 estimating@barrettroofing.com
Jessica Hora	Ferrari & Sons Inc	8455222590 Jessica@ferrariandsonsinc.com
Andrew Allison	KG+D	

the Palombo Group

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Scott Butler	TPG/CM	845-332-0202/sbutler@thepalombogroup.com
Piotr Archacki	TPG/CM	845-743-5996/parchacki@thepalombogroup.com
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Andrea Bessette	Interstate Waste Services	845608 1796 abessette@interstatewaste.com
Emmanuel Cocucci	Greenwood - Indstvies	845 806 0664 ecocucci@greenwood-industries.com
ABE LAZKEG	SK Improvements	862 462 32 25 abe@skimprovements.com
Stepan Kryzhanovskyy	SK Improvements Corp	201 873-2225 STEPAN@SKimpeovementscorp.com
Alex Katerynyuk	SK Improvements Corp	201 442 1086 Alex@skimprovementscorp.com
Matt Buono	Armistead Mechanical	201-419-2004 mrbuono@armistead-ny.com
JOHN BARONE	INTERNATIONAL Asbestos Removal Inc.	9175778819 JBARONE@IARONLINE.COM

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.

B. Related Requirements:
   1. Section 031000 "Concrete Forming and Accessories" for form-facing materials, form liner, insulating concrete forms, and waterstops.
   2. Section 032000 "Concrete Reinforcing" for steel reinforcing bars and welded-wire reinforcement.

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, and other pozzolans materials subject to compliance with requirements.

B. 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.

1.4 ACTION SUBMITTALS

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

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments. Include the following:
   1. Mixture identification.
   2. Minimum 28-day compressive strength.
   3. Durability exposure class.
   4. Maximum w/cm.
   5. Calculated equilibrium unit weight, for lightweight concrete.
   6. Slump limit.
   7. Air content.
   8. Nominal maximum aggregate size.
   9. Indicate amounts of mixing water to be withheld for later addition at Project site if permitted.
   10. Intended placement method.

C. Preconstruction Testing: Concrete mixture design submissions shall include laboratory trial testing data for each concrete mixture.
   1. Include the following information in each test report:
      a. Admixture dosage rates.
      b. Slump.
      c. Air content.
      d. Seven-day compressive strength.
      e. 28-day compressive strength.

D. Cold Weather Submittals
   1. In addition to the requirements of 1.4.B, contractor shall submit alternate design mixtures for use during cold weather periods.

2. Concrete Temperature Log: Contractor shall record and maintain a log of the concrete temperature for the duration of the cold weather protection period.
    a. Temperature readings should be recorded on an hourly basis during work hours and every 3 hours during non-work hours.
    b. This log should be kept on the job site and be accessible to inspection personnel during work hours.
    c. The temperature log shall be submitted to the engineer for inclusion in project records upon completion of the monitoring period.

E. Shop Drawings:
1. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending and placement. Indicate bar sizes, lengths, material, grade, bar schedule, stirrups spacing, bent bar diagrams, bar arrangement, splice and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
2. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
    a. Location of construction joints is subject to approval of the Architect/Engineer.

F. 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. Final finish for floors.
6. Curing process.
7. Floor treatment if any.

1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each of the following, signed by manufacturers:
1. Cementitious materials.
2. Admixtures.
3. Curing compounds.
4. Floor and slab treatments.
5. Bonding agents.
6. Adhesives.
7. Vapor retarders.
8. Joint-filler strips.
9. Repair materials.

B. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

C. Floor surface flatness and levelness measurements indicating compliance with specified tolerances.

D. Field quality-control reports.

E. Minutes of preinstallation conference.

1.6 QUALITY ASSURANCE

A. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products that complies with ASTM C94 requirements for production facilities and equipment.
   1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

B. Source Limitations: Obtain each type or class of cementitious material from the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code – Reinforcing Steel."

D. Mockups: Full-size physical assemblies that are constructed on-site either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
   1. Laboratory Mockups: Full-size physical assemblies constructed and tested at testing facility to verify performance characteristics.
   2. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as freestanding temporary built elements or as indicated in-place portions of permanent construction if approved by Architect/Engineer, consisting of multiple products, assemblies, and subassemblies, with cutaways enabling inspection of concealed portions of the Work.
      a. Include each system, assembly, component, and part of the exterior wall and roof to be constructed for the Project. Colors of components shall be those selected by the Architect/Engineer for use in the Project.
   3. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes; doors; windows; millwork; casework; specialties; furnishings and equipment; and lighting.
   4. Product Mockups: Mockups that may include multiple products, materials, or systems specified in a single Section.
   5. In-Place Mockups: Mockups constructed on-site in their actual final location as part of permanent construction.

E. Mockups for SF-2.0 are not required unless opted otherwise. Mockups for SF-3.0 are required.

F. Pre-Installation Conference for Concrete Construction: Pre-installation conference shall be required on any project that contains 100 cu. yds. or more of concrete.
   1. Contractor shall be responsible for planning and coordination of meeting agenda and notification of participants. The meeting shall be scheduled prior to the first scheduled concrete pour for the project.
   2. Personnel to Attend: Contractor's project manager, owner's representative, concrete subcontractor, architect, engineer, testing lab supervisor, pumping contractor, concrete producer's quality control director, inspection agency personnel, and construction manager, if applicable, and anyone else with the need to know.
   3. Suggested Agenda Items shall include but are not limited to: Project Information and Participants, Construction Sequence and Process, Base/Subbase preparation and acceptance, Site Access, Formwork and

Removal, Placing Concrete – equipment and procedures, Consolidation, Finishing, Jointing, Curing and Sealing, Protection of Concrete, Hot and Cold Weather precautions, QA/QC, Inspection and Testing, Special Inspections, etc.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94/C94M and ACI 301.

B. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

C. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil and other contaminants.

1.8 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 301 and ACI 306.1.

B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1.

PART 2 – PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 unless modified by requirements in the Contract Documents.

2.2 CONCRETE MATERIALS

A. Cementitious Materials:

1. Portland Cement: ASTM C150, Type I/II, gray.
2. Fly Ash: ASTM C618, Class C or F.
3. Slag Cement: ASTM C989, Grade 100 or 120.

B. Normal-Weight Aggregates: ASTM C33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size:

Sieve Size	% Passing by Weight
2½”	-
2"	-
1½”	100
1"	93-100
½”	27- 58
¼”	0-8

2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

Sieve Size	% Passing by Weight
3/8”	100
No. 4	90-100
8	75-100
16	50-85
30	25-60
50	10-30
100	1-10

C. Lightweight Aggregate: ASTM C330, 3/4-inch nominal maximum aggregate size.
D. Air-Entraining Admixture: ASTM C260.
E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
   1. Water-Reducing Admixture: ASTM C494, Type A.
   2. Mid-Range, Water-Reducing Admixture (MWRA): ASTM C494, Type A.
   3. High-Range, Water-Reducing Admixture: ASTM C494, Type F.
   4. Water-Reducing and Retarding Admixture: ASTM C494, Type B and D.
   5. Non-Corrosive, Non-Chloride Accelerator: ASTM C494, Type C or E.
   6. High-Range, Water-Reducing and Retarding Admixture: ASTM C494, Type G.
   7. Plasticizing and Retarding Admixture: ASTM C1017, Type II.
F. Water and Water Used to Make Ice: ASTM C94, potable.
G. Waterproofing Admixture: For use in liquid-tight and water storage tank structure.
   1. Grace Construction Products: Darapel
   2. Xypex Chemical Corporation: Admix C-1000 or C-2000.

2.3 VAPOR RETARDERS
A. Sheet Vapor Retarders: ASTM E1745, Class A; not less than 10 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive tape.
   1. Provide 15 mil thick vapor retarder subjected to traffic from ready-mixed concrete trucks, concrete buggies, or laser screeds.
   2. Provide 20 mil thick vapor retarder where slab will be covered by moisture sensitive flooring.
   3. Pipe boots: Construct pipe boots from vapor barrier membrane and seam tape.

2.4 LIQUID FLOOR TREATMENTS
A. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces.
   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. BASF Corporation.
      b. Euclid Chemical Company (The); an RPM company.

2.5 CURING MATERIALS
A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
B. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

   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. ChemMasters.
b. Dayton Superior.
c. Euclid Chemical Company (The), an RPM company.
d. L&M Construction Chemicals, Inc.
e. Meadows, W. R., Inc.
f. Sika Corporation.

C. Moisture-Retaining Cover: ASTM C171, polyethylene film burlap-polyethylene sheet.
1. Color:
a. Ambient Temperature Below 50 deg F: Black.
b. Ambient Temperature between 50 deg F and 85 deg F: Any color.
c. Ambient Temperature Above 85 deg F: White.

D. Curing Paper: Eight-feet-wide paper, consisting of two layers of fibered kraft paper laminated with double coating of asphalt.
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. Fortifiber Building Systems Group.

E. Water: ASTM C94, Potable

F. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 1, Class B, dissipating.

G. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, 18 to 25 percent solids, nondissipating certified by curing compound manufacturer to not interfere with bonding of floor covering.

H. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A, minimum 25 percent total solids.

I. Clear, Non-yellowing, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A, minimum 25 percent total solids.

J. Concrete Floor Cleaner and Stripper:
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. Burke by Edoco.
b. Dayton Superior Corporation.
c. Euclid Chemical Company.
d. Kaufman Products, Inc.
e. L&M Construction Chemicals, Inc.

K. Penetrating Liquid Densifier and Sealer: Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; colorless; that penetrates, hardens, and densifies concrete surfaces.
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. Burke by Edoco.
b. Dayton Superior Corporation.
c. Euclid Chemical Company.
d. Kaufman Products, Inc.
e. L&M Construction Chemicals, Inc.

2.6 RELATED MATERIALS

A. Expansion and Isolation Joint Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber.

B. Bonding Agent:

1. Non-load bearing fresh-hard: ASTM C881, Type II, Grade 2 for horizontal and Grade 3 for vertical surfaces.
   a. Class: Provide appropriate class for installation surface temperature.
2. Load bearing Fresh-hard: ASTM C881, Type V, Grade 2 for horizontal and Grade 3 for vertical surfaces.
   a. Class: Provide appropriate class for installation surface temperature.

C. Floor Slab Protective Covering: Eight-feet-wide cellulose fabric.

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. McTech Group, Inc.; EZcover.

2.7 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4000 psi at 28 days when tested according to ASTM C 109.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109.

2.8 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301.

1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash or Other Pozzolans: 25 percent by mass.

2. Slag Cement: 50 percent by mass.
3. Total of Fly Ash or Other Pozzolans, Slag Cement: 50 percent by mass, with fly ash or pozzolans not exceeding 25 percent by mass.
4. Total of Fly Ash or Other Pozzolans: 35 percent by mass with fly ash or pozzolans not exceeding 25 percent by mass.

C. Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.

D. Admixtures: Use admixtures in accordance with manufacturer's written instructions.
1. Use water-reducing, high-range water reducing or plasticizing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious ratio below 0.50.

2.9 CONCRETE MIXTURES

A. Class A: Class A: Structural Normal-weight concrete used for footings, foundation walls and piers, grade beams, and tie beams, not exposed or above grade.
1. Exposure Class: ACI 318 F1.
2. Minimum Compressive Strength: 4000 psi at 28 days.
3. Maximum w/cm: 0.50.
4. Slump Limit: 4 inches, ±1 inch without water reducing admixtures; 5 inches, ±1 inch after addition of WRA or MWRA.
5. Air Content: 5.0 percent, plus or minus 1.5 percent at point of delivery

B. Class B: Structural Normal-weight concrete used for above grade walls, partially exposed foundation walls and piers, retaining walls, and tank walls.
1. Exposure Class: ACI 318 F2.
2. Minimum Compressive Strength: 4500 psi at 28 days.
3. Maximum w/cm: 0.45.
4. Slump Limit: 4 inches, ±1 inch without water reducing admixtures; 5 inches, ±1 inch after addition of WRA or MWRA.
5. Air Content: 6.0 percent, plus or minus 1.5 percent at point of delivery

C. Class C: Structural Normal-weight concrete used for interior slabs-on-ground.
1. Exposure Class: ACI 318 F0
2. Minimum Compressive Strength: 4000 psi at 28 days.
3. Maximum w/cm: 0.44.
4. Minimum Cementitious Materials Content: 540lb/cu. yd.
5. Slump Limit: 4 inches, ±1 inch without water reducing admixtures; 5 inches, ±1 inch after addition of WRA or MWRA; or 7 inches, ±1 inch after addition of HRWRA.
6. Air Content: No air entrainement.
   a. Do not use an air-entraining admixture or allow total air content to exceed 3 percent for concrete used in trowel-finished floors.

D. Class D: Structural Normal-weight concrete used for exterior slabs, mat foundations, parking garages and concrete paving.
1. Exposure Class: ACI 318 F3
2. Minimum Compressive Strength: 5000 psi at 28 days.
3. Maximum w/cm: 0.42.
4. Minimum Cementitious Materials Content: 564 lb/cu. yd.

5. Slump Limit: 4 inches, ±1 inch without water reducing admixtures, 5 inches, ±1 inch after addition of WRA or MWRA, or 7 inches, ±1 inch after addition of HRWRA.
6. Air Content: 6.0 percent, plus or minus 1.5 percent at point of delivery.

E. Class E: Structural Normal-weight concrete used for interior suspended slabs.
1. Minimum Compressive Strength: 4000 psi at 28 days.
2. Maximum w/cm: 0.44.
3. Minimum Cementitious Materials Content: 540 lb/cu. yd.
4. Slump Limit: 4 inches, ±1 inch without water reducing admixtures; 5 inches, ±1 inch after addition of WRA or MWRA; or 7 inches, ±1 inch after addition of HRWRA.
5. Air Content: No air entrainement.
   a. Do not use an air-entraining admixture or allow total air content to exceed 3 percent for concrete used in trowel-finished floors.

F. Class F: Structural lightweight concrete used for interior suspended slabs.
1. Minimum Compressive Strength: 4000 psi at 28 days or as indicated.
2. Calculated Equilibrium Unit Weight: 115 lb/cu. ft., plus or minus 3 lb/cu. ft. as determined by ASTM C567/C567M.
3. Slump Limit: 4 inches, ±1 inch without water reducing admixtures; 5 inches, ±1 inch after addition of WRA or MWRA; or 7 inches, ±1 inch after addition of HRWRA.
4. Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery.

G. Class G: Normal-weight concrete used for interior concrete toppings and overlays.
1. Minimum Compressive Strength: 5000 psi at 28 days.
2. Minimum Cementitious Materials Content: 610 lb/cu. yd.
3. Maximum w/cm: 0.42
4. Slump Limit: 4 inches, ±1 inch without water reducing admixtures; 5 inches, ±1 inch after addition of WRA or MWRA; or 7 inches, ±1 inch after addition of HRWRA.
5. Air Content: No air entrainement.
6. Do not use an air-entraining admixture or allow total air content to exceed 3 percent for concrete used in trowel-finished toppings.
7. Aggregate for thin toppings and overlays (<2'') shall be 3/8'' nominal.

H. Class H: Normal-weight concrete used for exterior site improvements (aprons, landing, equipment pads, tank pads generator pads, sidewalks, etc.).
1. Minimum Compressive Strength: 3500 psi at 28 days.
2. Maximum w/cm: 0.55.
3. Minimum Cementitious Materials Content: 564 lb/cu. yd.
4. Slump Limit: 4 inches, ±1 inch without water reducing admixtures; 5 inches, ±1 inch after addition of WRA or MWRA
5. Air Content: 6.0 percent, plus or minus 1.5 percent at point of delivery.

2.10 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M and furnish batch ticket information.

PART 3 - EXECUTION

3.1 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.
   1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.
   3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

3.2 INSTALLATION OF VAPOR RETARDER

A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder in accordance with ASTM E1643 and manufacturer's written instructions.
   1. Install vapor retarder with longest dimension parallel with direction of concrete pour.
   2. Face laps away from exposed direction of concrete pour.
   3. Lap vapor retarder over footings and grade beams not less than 6 inches, sealing vapor retarder to concrete.
   4. Lap joints 6 inches and seal with manufacturer’s recommended tape.
   5. Terminate vapor retarder at the top of floor slabs, grade beams, and pile caps, sealing entire perimeter to floor slabs, grade beams, foundation walls, or pile caps.
   6. Seal penetrations in accordance with vapor retarder manufacturer's instructions.
   7. Protect vapor retarder during placement of reinforcement and concrete.
      a. Repair damaged areas by patching with vapor retarder material, overlapping damages area by 6 inches on all sides, and sealing to vapor retarder.

3.3 JOINTS

A. Construct joints true to line, with faces perpendicular to surface plane of concrete.
B. Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.
   1. Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Architect/Engineer.
   2. Place joints perpendicular to main reinforcement.
      a. Continue reinforcement across construction joints unless otherwise indicated.
      b. Do not continue reinforcement through sides of strip placements of floors and slabs.
   3. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
   4. Locate joints for beams, slabs, joists, and girders at third points of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
   5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.

6. Space vertical joints in walls not more than thirty (30') feet apart in straight runs, unless otherwise indicated on Drawings. Locate vertical joints beside piers integral with walls, near corners, and in concealed locations where possible.

C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of concrete thickness as follows:
1. Grooved Joints: Form control joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of control joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.

D. Isolation Joints in Slabs-on-Ground: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
1. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface, where joint sealants are indicated.
2. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints:
1. Install dowel bars and support assemblies at joints where indicated on Drawings.
2. Lubricate or asphalt coat one-half of dowel bar length to prevent concrete bonding to one side of joint.

3.4 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.
1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.

B. Notify Architect/Engineer and testing and inspection agencies 24 hours prior to commencement of concrete placement.

C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect/Engineer in writing, but not to exceed the amount indicated on the concrete delivery ticket.
1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, but not to exceed the amount indicated on the concrete delivery ticket.
1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

E. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.
   1. If a section cannot be placed continuously, provide construction joints as indicated.
   2. Deposit concrete to avoid segregation.
   3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
   4. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301.
      a. Do not use vibrators to transport concrete inside forms.
      b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer.
      c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
      d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
   1. Do not place concrete floors and slabs in a checkerboard sequence.
   2. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
   3. Maintain reinforcement in position on chairs during concrete placement.
   4. Screed slab surfaces with a straightedge and strike off to correct elevations.
   5. Level concrete, cut high areas, and fill low areas.
   6. Slope surfaces uniformly to drains where required.
   7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
   8. Do not further disturb slab surfaces before starting finishing operations.

3.5 FINISHING FORMED SURFACES

A. As-Cast Surface Finishes:
   1. ACI 301 Surface Finish SF-1.0: As-cast concrete texture imparted by form-facing material.
      a. Patch voids larger than 1-1/2 inches wide or 1/2 inch deep.
      b. Remove projections larger than 1 inch.
      c. Tie holes do not require patching.
      d. Surface Tolerance: ACI 117 Class D.
      e. Apply to concrete surfaces not exposed to public view.
   2. ACI 301Surface Finish SF-2.0: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams.
      a. Patch voids larger than 3/4 inch wide or 1/2 inch deep.
      b. Remove projections larger than 1/4 inch.
      c. Patch tie holes.
      d. Surface Tolerance: ACI 117 Class B.

e. Locations: Apply to concrete surfaces exposed to public view.

3. ACI 301 Surface Finish SF-3.0:
   a. Patch voids larger than 3/4 inch wide or 1/2 inch deep.
   b. Remove projections larger than 1/8 inch.
   c. Patch tie holes.
   d. Surface Tolerance: ACI 117 Class A.
   e. Locations: Apply to concrete surfaces to receive a rubbed finish, or to be covered with a coating or covering material applied directly to concrete.

B. Rubbed Finishes: Remove forms as early as permitted by Article 3.9 Removal of Forms and perform necessary repairs and patches.
   1. Smooth Rubbed Finish – If specified, produced smooth-rubbed finish no later than the day following form-work removal. Wet the surface and rub it with an abrasive such as carborundum brick until uniform color and texture are produced. If insufficient cement paste can be drawn from the concrete itself by the rubbing process, use a grout made with cementitious materials from the same sources as used for in-place concrete.
   2. Grout-Cleaned Rubbed Finish – If grout-cleaned rubbed finish is specified, begin cleaning operations after contiguous surfaces are completed and accessible. Do not clean surfaces as Work progresses. Wet the surface and, unless otherwise specified, apply grout consisting of 1 part by volume portland cement and 1-1/2 parts of sand meeting the requirements of ASTM C144 or ASTM C404, with sufficient water to produce a consistency of thick paint. Scrub grout into voids and remove excess grout.
   3. Cork-Floated Finish – if cork-floated finish is specified, remove ties, burrs, and fins. Wet the surface and, unless otherwise specified, apply stiff grout of 1 part portland cement and 1 part sand meeting the requirements of ASTM C144 or ASTM C404 to fill voids. Use sufficient water to produce a stiff consistency. Compress grout into voids. Produce the final finish with cork float, using a swirling motion.

C. Final Concrete Finish: Concrete

D. Related Unformed Surfaces:
   1. At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a color and texture matching adjacent formed surfaces.
   2. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.6 FINISHING FLOORS AND SLABS

A. Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish:
   1. While still plastic, texture concrete surface that has been screeded and bull-floated or darbied.
   2. Use stiff brushes, brooms, or rakes to produce a profile depth of 1/4 inch in one direction.
   3. Apply scratch finish to surfaces to receive concrete floor toppings or to receive mortar setting beds for bonded cementitious floor finishes.

C. Float Finish:

1. When bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operation of specific float apparatus, consolidate concrete surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats.
2. Repeat float passes and re-straightening until surface is left with a uniform, smooth, granular texture and complies with ACI 117 tolerances for conventional concrete.
3. Apply float finish to surfaces to receive trowel finish, to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

D. Trowel Finish:
1. After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel.
2. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.
3. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
4. Do not add water to concrete surface.
5. Do not apply hard-troweled finish to concrete, which has a total air content greater than 3 percent.
6. Apply a trowel finish to surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
7. Finish and measure surface, so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.- long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/8 inch.

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces. While concrete is still plastic, slightly scarify surface with a fine broom perpendicular to main traffic route.
1. Coordinate required final finish with Architect/Engineer before application.
2. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, pads, and locations indicated on Drawings.
1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.
2. Coordinate required final finish with Architect/Engineer before application.

G. Slip-Resistive Finish: Before final floating, apply slip-resistive aggregate or aluminum granule finish to concrete stair treads, platforms, ramps as indicated on Drawings
1. Apply in accordance with manufacturer's written instructions and as follows:
    a. Uniformly spread 25 lb/100 sq. ft. of dampened slip-resistive aggregate or aluminum granules over surface in one or two applications.
    b. Tamp aggregate flush with surface, but do not force below surface.
    c. After broadcasting and tamping, apply float finish.
    d. After curing, lightly work surface with a steel wire brush or an abrasive stone and water to expose slip-resistive aggregate or aluminum granules.

3.7 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling In:
   1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
   2. Mix, place, and cure concrete, as specified, to blend with in-place construction.
   3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations:
   1. Coordinate sizes and locations of concrete bases with actual equipment provided.
   2. Construct concrete bases 4 inches high unless otherwise indicated on Drawings, and extend base not less than 6 inches in each direction beyond the maximum dimensions of supported equipment unless otherwise indicated on Drawings, or unless required for seismic anchor support.
   3. Minimum Compressive Strength: 4000 psi at 28 days.
   4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
   5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete substrate.
   6. Prior to pouring concrete, place and secure anchorage devices.
      a. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
      b. Cast anchor-bolt insert into bases.
      c. Install anchor bolts to elevations required for proper attachment to supported equipment.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items.
   1. Cast-in inserts and accessories, as shown on Drawings.
   2. Screed, tamp, and trowel finish concrete surfaces.

3.8 CONCRETE CURING

A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
   1. Comply with ACI 301 and ACI 306.1 for cold weather protection during curing.
      a. Concrete curing protection period when cold weather concreting is in effect shall be a minimum of 3 days.
   2. Comply with ACI 301 and ACI 305.1 for hot-weather protection during curing.
   3. Maintain moisture loss no more than 0.2 lb/sq. ft. x h before and during finishing operations.

B. Curing Formed Surfaces: Comply with ACI 308.1 as follows:
   1. Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces.

2. Cure concrete containing color pigments in accordance with color pigment manufacturer's instructions.
3. If forms remain during curing period, moist cure after loosening forms.
4. If removing forms before end of curing period, continue curing for remainder of curing period, as follows:
    a. Continuous Fogging: Maintain standing water on concrete surface until final setting of concrete.
    b. Continuous Sprinkling: Maintain concrete surface continuously wet.
    c. Absorptive Cover: Pre-dampen absorptive material before application; apply additional water to absorptive material to maintain concrete surface continuously wet.
    d. Water-Retention Sheeting Materials: Cover exposed concrete surfaces with sheeting material, taping, or lapping seams.
    e. Membrane-Forming Curing Compound: Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.
        1) Recoat areas subject to heavy rainfall within three hours after initial application.
        2) Maintain continuity of coating and repair damage during curing period.

C. Curing Unformed Surfaces: Comply with ACI 308.1 as follows:
1. Begin curing immediately after finishing concrete.
2. Interior Concrete Floors:
    a. Floors to Receive Floor Coverings Specified in Other Sections: Contractor has option of the following:
        1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.
            a) Lap edges and ends of absorptive cover not less than 12-inches.
            b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.
        2) Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive.
            a) Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
            b) Cure for not less than seven days.
        3) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:
            a) Water.
            b) Continuous water-fog spray.
    b. Floors to Receive Penetrating Liquid Floor Treatments: Contractor has option of the following:
        1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.

a) Lap edges and ends of absorptive cover not less than 12 inches.
b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.

2) Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive.
a) Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
b) Cure for not less than seven days.

3) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:
a) Water.
b) Continuous water-fog spray.

c. Floors to Receive Polished Finish: Contractor has option of the following:
1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.
a) Lap edges and ends of absorptive cover not less than 12 inches.
b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.

2) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:
a) Water.
b) Continuous water-fog spray.

d. Floors to Receive Chemical Stain:
1) As soon as concrete has sufficient set to permit application without marring concrete surface, install curing paper over entire area of floor.
2) Install curing paper square to building lines, without wrinkles, and in a single length without end joints.
3) Butt sides of curing paper tight; do not overlap sides of curing paper.
4) Leave curing paper in place for duration of curing period, but not less than 28 days.

e. Floors to Receive Urethane Flooring:
1) As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.
2) Rewet absorptive cover, and cover immediately with polyethylene moisture-retaining cover with edges lapped 6 inches and sealed in place.
3) Secure polyethylene moisture-retaining cover in place to prohibit air from circulating under polyethylene moisture-retaining cover.

4) Leave absorptive cover and polyethylene moisture-retaining cover in place for duration of curing period, but not less than 28 days.

f. Floors to Receive Curing Compound:
   1) Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.
   2) Recoat areas subjected to heavy rainfall within three hours after initial application.
   3) Maintain continuity of coating, and repair damage during curing period.
   4) Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound does not interfere with bonding of floor covering used on Project.

g. Floors to Receive Curing and Sealing Compound:
   1) Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller in accordance with manufacturer's written instructions.
   2) Recoat areas subjected to heavy rainfall within three hours after initial application.
   3) Repeat process 24 hours later, and apply a second coat. Maintain continuity of coating, and repair damage during curing period.

3.9 REMOVAL OF FORMS

A. The forms shall be removed in such a manner as to ensure the complete safety of the structure or improvements.

B. Forms shall not be disturbed until the concrete has sufficiently hardened and acquired sufficient strength to support its own weight and the load upon it.

C. Form removal shall comply with the following schedule:

Structural Element	Atmospheric Temperature	
	Above 60°F	Between 60°F and 40°F
Walls, column and beam sides	3 Days	4 Days
Suspended Slab Bottoms	5 Days	6 Days
Beam and Girder Bottoms	7 Days	10 Days

D. No backfilling or imposing of other forces or loads shall be permitted before the concrete has attained its design strength.

E. After the removal of forms where concrete is exposed to view, the entire surface shall be rubbed to provide a homogeneous surface and defective surfaces shall be repaired and patched to meet the minimum surface finish class specified in section 3.5.

F. Metal ties shall be cut back at least three-quarters (¾”) inch and spaces filled. Patches shall be properly cured, color matched, and otherwise treated to obtain as near a permanent homogeneous surface as practicable.

3.10 TOLERANCES

A. Conform to ACI 117.

3.11 APPLICATION OF LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment in accordance with manufacturer's written instructions.
   1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
   2. Do not apply to concrete that is less than seven days old.
   3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing.
   4. Rinse with water; remove excess material until surface is dry.
   5. Apply a second coat in a similar manner if the surface is rough or porous.

B. Sealing Coat: Uniformly apply a continuous sealing coat of curing and sealing compound to hardened concrete by power spray or roller in accordance with manufacturer's written instructions.

3.12 FIELD QUALITY CONTROL

A. Special Inspections:
   1. Where Special Inspections are required and listed on the plans, the owner will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.
   2. Where Special Inspections are not required, the contractor shall engage a qualified testing and inspecting agency, at contractor’s expense, to perform tests and inspections and to submit reports as outlined in section 3.12.B

B. Testing Agency:
   1. Testing agency shall be responsible for providing curing container for composite samples on Site and verifying that field-cured composite samples are cured in accordance with ASTM C31/C31M.
   2. Testing agency shall immediately report to Architect/Engineer, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents.
   3. Testing agency shall report results of tests and inspections, in writing, to Owner, Architect/Engineer, Contractor, and concrete manufacturer within 48 hours of inspections and tests.
      a. Test reports shall include reporting requirements of ASTM C31/C31M, ASTM C39/C39M, and ACI 301, including the following as applicable to each test and inspection:
         1) Project name.
         2) Name of testing agency.
         3) Names and certification numbers of field and laboratory technicians performing inspections and testing.
         4) Name of concrete manufacturer.
         5) Date and time of inspection, sampling, and field testing.
         6) Date and time of concrete placement.
         7) Location in Work of concrete represented by samples.
         8) Date and time sample was obtained.
         9) Truck and batch ticket numbers.
         10) Design compressive strength at 28 days.

11) Concrete mixture designation, proportions, and materials.
12) Field test results.
13) Information on storage and curing of samples before testing, including curing method and maximum and minimum temperatures during initial curing period.
14) Type of fracture and compressive break strengths at seven days and 28 days.

C. Batch Tickets: For each load delivered, submit three copies of batch delivery ticket to testing agency, indicating quantity, mix identification, admixtures, design strength, aggregate size, design air content, design slump at time of batching, and amount of water that can be added at Project site.

D. Inspections: Required inspections to be performed by qualified testing agency. Project specific special inspections required are listed on the contract plans.
1. Headed bolts and studs.
2. Verification of use of required design mixture.
3. Concrete placement, including conveying and depositing.
4. Curing procedures and maintenance of curing temperature.
5. Verification of concrete strength before removal of shores and forms from beams and slabs.

E. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C172/C172M shall be performed in accordance with the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
2. Slump: ASTM C143/C143M:
   a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
   b. Perform additional tests when concrete consistency appears to change.
3. Slump Flow: ASTM C1611/C1611M:
   a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
   b. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C231/C231M pressure method, for normal-weight concrete; ASTM C173/C173M volumetric method, for structural lightweight concrete.
   a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C1064/C1064M:
   a. One test hourly when air temperature is above 40 deg F and below or 80 deg F and above, and one test for each composite sample.
6. Unit Weight: ASTM C567/C567M fresh unit weight of structural lightweight concrete.
   a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
7. Compression Test Specimens: ASTM C31/C31M:
   a. Cast, initial cure in field for 3 days, then laboratory cure one set of four (4) 6-inch by 12-inch cylinder specimens for each composite sample.
      1) Where maximum coarse aggregate size does not exceed 1¼ inches, five (5) 4-inch by 8-inch cylinder specimens for each

composite sample may be cast in-lieu of 6-inch by 12-inch specimens.

8. Compressive-Strength Tests: ASTM C39/C39M.
   a. For each set, test one (1) specimen at seven days, two (2) specimens at 28 days, and hold one (1) specimen in reserve for later testing if required.
      1) Where 4-inch by 8-inch cylinders are cast, test three (3) specimens at 28 days.
9. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
10. Test results shall be reported in writing to Architect/Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspection agency, location of concrete batch in work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for each test performed.
11. Additional Tests:
    a. Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect/Engineer.
    b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Architect/Engineer.
       1) Acceptance criteria for concrete strength shall be in accordance with ACI 301 section 1.6.6.3.
12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
13. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

F. Measure floor and slab flatness and levelness in accordance with ASTM E1155 within 24 hours of completion of floor finishing and promptly report test results to Architect/Engineer.

G. Tightness Testing of Environmental Containment & Water Storage Structures:
   1. Comply with the requirements of ACI 350.1 and this section.
   2. The Contractor shall provide all labor, materials, and devices to seal off pipe openings, in a manner acceptable to the Engineer, for testing the water tightness of the structure.
   3. Structures shall be tested before backfilling and before equipment is installed. Each unit shall be tested separately, and if necessary, shall be bulkheaded from adjacent units. No structure shall be tested until the concrete is at least twenty-eight (28) days old.
   4. Any and all leaks, including, but not limited to those caused by form ties, construction joints, expansion joints, shrinkage cracks, wall embedment,

honeycombing, etc. shall be repaired by the Contractor to the satisfaction of the Engineer, and the unit shall be retested until no leaks are present.

5. All repairs shall be as specified herein, and the cost of all repairs and retesting shall be borne entirely by the contractor at no additional cost to the Owner.
   a. Submit for acceptance the proposed repair methods, materials, and modifications needed to assure that the Work will meet the tightness requirement of Contract Documents.
   b. For Concrete with crystalline waterproofing admixture, consult with admixture manufacturer for recommendations prior to initiating repair work and comply with any manufacturer requirements.
6. The cost for obtaining the source (supply) for test water required under this work shall be the responsibility of the Contractor and shall conform to requirements of the Owner which may include but are not limited to cross connection control and metering.

3.13 PROTECTION

A. Protect concrete surfaces as follows:
   1. Protect from petroleum stains.
   2. Diaper hydraulic equipment used over concrete surfaces.
   3. Prohibit vehicles from interior concrete slabs.
   4. Prohibit use of pipe-cutting machinery over concrete surfaces.
   5. Prohibit placement of steel items on concrete surfaces.
   6. Prohibit use of acids or acidic detergents over concrete surfaces.
   7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.
   8. Protect concrete surfaces scheduled to receive surface hardener or polished concrete finish using Floor Slab Protective Covering.

END OF SECTION 033000

1 FIRST FLOOR ABATEMENT PLAN
NTS

ASBESTOS ABATEMENT LEGEND

- REMOVE AND DISPOSE OF ACM 2' x 4' SUSPENDED CEILING TILE THROUGHOUT THE ENTIRE 1969 PORTION OF THE BUILDING. REMOVE FLOOR TILE AND MASTIC AT DESIGNATED LOCATIONS. REFER TO DEMOLITION DRAWING A151.
- REMOVE ONE SIDE OF WET WALLS TO EXPOSE PLUMBING/HEATING INSULATION TSI. REMOVE HARD CEILING IN AREAS ABOVE BATHROOMS AND WATER CLOSETS. DISPOSE OF ACM CONTAINING MUDDED JOINT COMPOUND AND PACKING WITHIN WALLS AND CEILING.
- DIAGONAL HATCH INDICATES AREAS TO REMOVE AND DISPOSE OF 12" X 12" ACM FLOOR TILE AND MASTIC DOWN TO SUBSTRATE AT DESIGNATED LOCATIONS. REFER TO NOTE 5.

  AT CLASSROOMS 402, 404, 406, 408, 410, 414, 416, 418, 420, 422 - REMOVE AND DISPOSE OF ACM CONTAINING SINK ANTI-SWEAT TAR ON METAL SINKS. CLASSROOMS 402, 404, 406, 408, 410, 414, 416, 418, 420, 422 DO NOT HAVE ACM FLOORING REMOVAL INCLUDED IN THE SCOPE. REFER TO 'APPENDIX A' IN ABATEMENT REPORT FOR LOCATIONS
- AREAS THAT ARE OUT OF SCOPE OF WORK

ASBESTOS ABATEMENT NOTES

NOTE: THE FOLLOWING NOTES PERTAIN TO THE SECTION OF THE BUILDING CONSTRUCTED AND/OR RENOVATED IN 1969.

1. ASBESTOS ABATEMENT CONTRACTOR RESPONSIBLE FOR REMOVING ONE SIDE OF THE WET WALL TO ACCESS ACM PIPE INSULATION AND/OR MUDDED JOINT PACKING/ELBOWS/FITTINGS, ETC. AND REMOVING ENTIRELY AND DISPOSING OF THE TSI MATERIAL). ASBESTOS ABATEMENT CONTRACTOR IS ALSO RESPONSIBLE FOR COMPLETE REMOVAL AND DISPOSAL OF THE HARD CEILINGS IN THE BATHROOMS AND ALL ACM PIPE INSULATION AND OR MUDDED JOINT PACKING/ELBOWS/FITTINGS/ETC.
2. ASBESTOS ABATEMENT CONTRACTOR IS RESPONSIBLE FOR COMPLETE REMOVAL AND DISPOSAL OF ALL SUSPENDED CEILING TILES THROUGHOUT THE 1969 SECTION OF THE BUILDING. AFTER REMOVAL OF THE SUSPENDED CEILING TILES, ABATEMENT CONTRACTOR IS RESPONSIBLE FOR COMPLETE REMOVAL AND DISPOSAL OF ALL ACM PIPE INSULATION AND/OR MUDDED JOINT PACKING/ELBOWS/FITTINGS/ETC. THROUGHOUT THE ENTIER 1969 SECTION OF THE BUILDING.
3. ASBESTOS CONTRACTOR IS RESPONSIBLE FOR TOTAL AND COMPLETE REMOVAL AND DISPOSAL OF ANTI-SWEAT TAR ADHERED TO SINKS WHERE INDICATED ON THE PLANS.
4. ASBESTOS CONTRACTOR IS RESPONSIBLE FOR TOTAL AND COMPLETE REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING CEMENTITIOUS WINDOW SILLS.
5. ASBESTOS CONTRACTOR IS RESPONSIBLE FOR TOTAL AND COMPLETE REMOVAL AND DISPOSAL OF NON-FRIABLE ACM FLOOR TILE AND MASTIC AT LOCATIONS INDICATED ON THE PLANS

REFER TO ASBESTOS SPECIFICATIONS 020800 SECTION 3.17 FOR A MORE DETAILED DESCRIPTION OF THE ABATEMENT WORK

ORANGE-ULSTER BOCES
AXELROD - MAIN BUILDING ADDITIONS + ALTERATIONS
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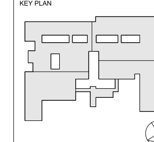
285 MAIN STREET MOUNT KISCO . NEW YORK . 10549
P:914.666.5900 KGDARCHITECTS.COM

NY SED PROJECT CONTROL NO:
44-90-00-00-0-009-036

BID ISSUE

QuES&T Quality Environmental Solutions & Technologies, Inc.
1376 NYS Route 9
Wappingers Falls, NY 12590
TEL.: (845) 298-6031
FAX (845) 298-1325

KEY PLAN



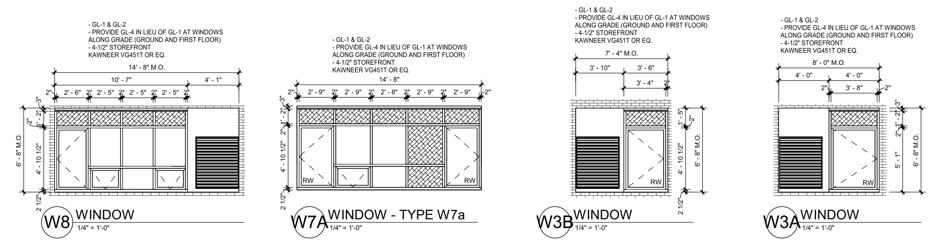
Professional Seal
STATE OF NEW YORK ANTHONY NICHOLAS MELUSO 067937 LICENSED PROFESSIONAL ENGINEER
EXPIRATION DATE OF REGISTRATION: NOVEMBER 30, 2025

No.	Date	Issue
3	11/15/2024	BID ADDENDUM 3
2	11/04/2024	BID ADDENDUM 1
1	10/25/2024	BID ISSUE

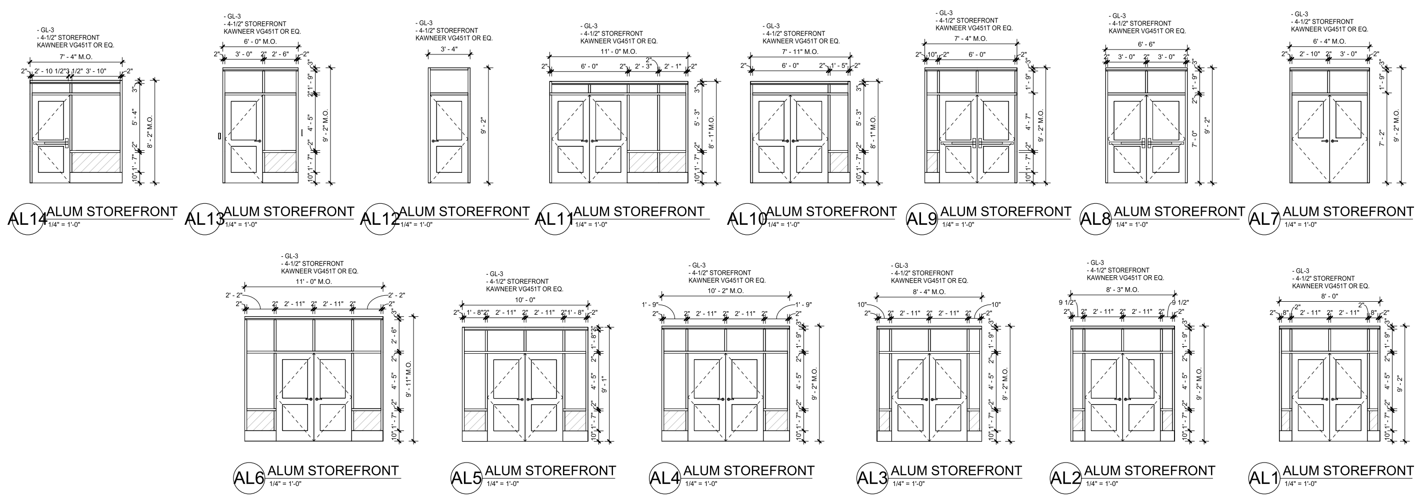
Sheet Title
First Floor Asbestos Abatement Plan

Job No.	Date
44-90-00-00-0-009-036	10/25/2024
Scale	Drawn / Checked
AS NOTED	AM/RL

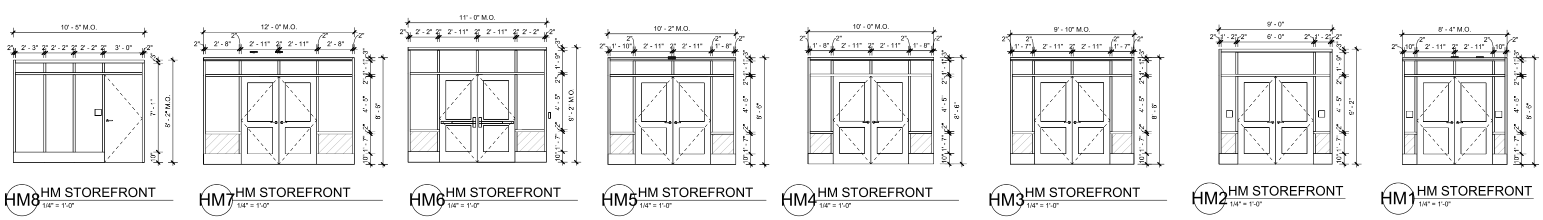
Sheet Number
AA151



WINDOW FRAME TYPES



EXTERIOR ALUMINUM STOREFRONT TYPES



INTERIOR HOLLOW METAL STOREFRONT TYPES

GENERAL NOTES

1. RESCUE WINDOWS ARE DEMARCATED BY THE "RW" SYMBOL. RFER TO CODE COMPLIANCE AND LIFE SAFETY PLANS FOR RESCUE WINDOW LOCATIONS.

2. RESCUE WINDOWS TO HAVE SIGN TYPE R-1 OR R-2 FROM SHEET A531 ADHERED TO GLASS PANE

3. REFER TO DOOR SCHEDULE FOR DOOR TYPES WITHIN STOREFRONTS

GLAZING NOTES:

GL-1
1 INCH INSULATED TEMPERED GLASS
- OUTBOARD LITE: 1/4" CLEAR TEMPERED, LOW-E ON SECOND SURFACE
- 1/2" AIR SPACE, ARGON FILLED
- INBOARD LITE: 1/4" CLEAR TEMPERED

GL-2
SPANDREL GLAZING
- OUTBOARD LITE: 1/4" CLEAR HEAT STRENGTHENED FLOAT GLASS, LOW-E ON SECOND SURFACE
- 1/2" AIR SPACE, ARGON FILLED
- INBOARD LITE: 1/4" CLEAR HEAT STRENGTHENED FLOAT GLASS, SILICONE COATING ON #4 SURFACE

GL-3
1-1/16 INCH INSULATED LAMINATED GLASS – SCHOOL GUARD
- OUTBOARD LITE: 1/4" CLEAR TEMPERED, LOW-E ON SECOND SURFACE
- 3/8" AIR SPACE, ARGON FILLED
- INBOARD LITE: 7/16" CLEAR SECURITY GLAZING SCHOOL GUARD

GL-4
1 INCH INSULATED TEMPERED GLASS WITH SECURITY FILM
- OUTBOARD LITE: 1/4" CLEAR TEMPERED, LOW-E ON SECOND SURFACE
- 1/2" AIR SPACE, ARGON FILLED
- INBOARD LITE: 1/4" CLEAR TEMPERED WITH SECURITY FILM

INTERIOR GLAZING:

NON-FIRE RATED DOORS, TRANSOMS, SIDELIGHTS AND BORROWED LITES = 1/4" CLEAR LAMINATED GLASS (TWO LITES ANNEALED GLASS LAMINATED WITH 0.060 INTERLAYER)

SECURITY GLAZING = PROVIDE SCHOOL GUARD GLASS OR SIM.

FIRE RATED DOORS TRANSOMS, SIDELIGHTS AND BORROWED LITES = LAMINATED CERAMIC GLAZING 5/16" THICKNESS FIRE-LITE PLUS PREMIUM OR EQ. FOR FIRE RATING INDICATED

FIRE RATED DOORS TRANSOMS, SIDELIGHTS AND BORROWED LITES = PILKINGTON PYROSTOP OR SIM. FOR FIRE RATING INDICATED

ALL INTERIOR GLAZING SIZES AND TYPES ARE TO COMPLY WITH NFPA 80 AND/OR ASTM E110 THROUGHOUT

ORANGE-ULSTER BOCES

AXELROD - MAIN BUILDING ADDITIONS + ALTERATIONS

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NY SED PROJECT CONTROL NO:
44-90-00-00-0-009-036

BID ISSUE

KEY PLAN

Professional Seal

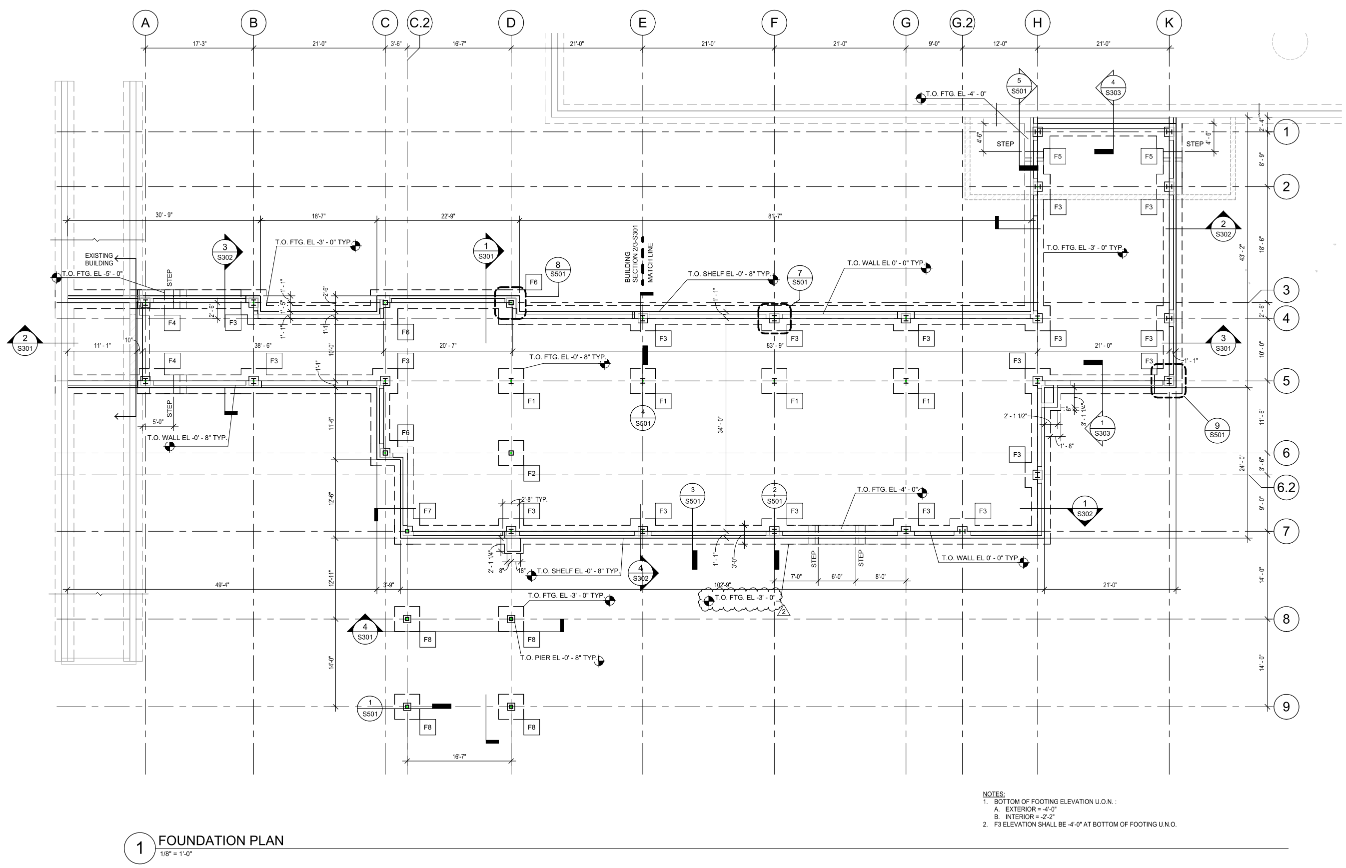
No.	Date	Issue
2	11/15/2024	BID ADDENDUM #3
1	10/25/2024	BID ISSUE

Sheet Title
WINDOW TYPES

Job No.	Date
2023-1013	10/25/2024
Scale	Drawn / Checked
AS NOTED	Author Checker

Sheet Number
A910

Structural Foundation Schedule							
Mark	Length	Width	Thickness	Elevation at Bottom	Footing Pier Size	Base Plate Mark	Count
F1	4' - 0"	4' - 0"	1' - 6"	-2' - 2"	-	BP1	4
F2	4' - 0"	4' - 0"	1' - 6"	-2' - 2"	-	BP3	1
F3	4' - 0"	4' - 0"	1' - 0"	-4' - 0"	1'-6"x1'-6"	BP1	18
F4	4' - 0"	4' - 0"	1' - 0"	-6' - 0"	1'-6"x1'-6"	BP1	2
F5	4' - 0"	4' - 0"	1' - 0"	-5' - 0"	1'-6"x1'-6"	BP1	2
F6	4' - 0"	4' - 0"	1' - 0"	-4' - 0"	1'-6"x1'-6"	BP3	4
F7	4' - 0"	4' - 0"	1' - 0"	-4' - 0"	1'-6"x1'-6"	BP2	1
F8	4' - 0"	4' - 0"	1' - 0"	-4' - 0"	1'-2"x1'-2"	BP2	4



NOTES:
1. BOTTOM OF FOOTING ELEVATION U.O.N. :
A. EXTERIOR = -4'-0"
B. INTERIOR = -2'-2"
2. F3 ELEVATION SHALL BE -4'-0" AT BOTTOM OF FOOTING U.N.O.

1 FOUNDATION PLAN
1/8" = 1'-0"

ORANGE-ULSTER BOCES
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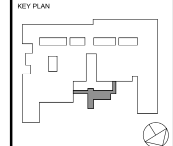
NY SED PROJECT CONTROL NO:
44-90-00-00-0-009-036

BID ISSUE

MHE ENGINEERING
33 Airport Center Drive, Suite 202 New Windsor, NY 12553 (845) 567-3100
111 Wheatfield Drive, Suite 1 Milford, PA 18337 (570) 296-2765

LEGEND
FOOTING TYPE
TOP OF ELEMENT ELEVATION RELATIVE TO FIRST FLOOR (0'-0")

KEY PLAN


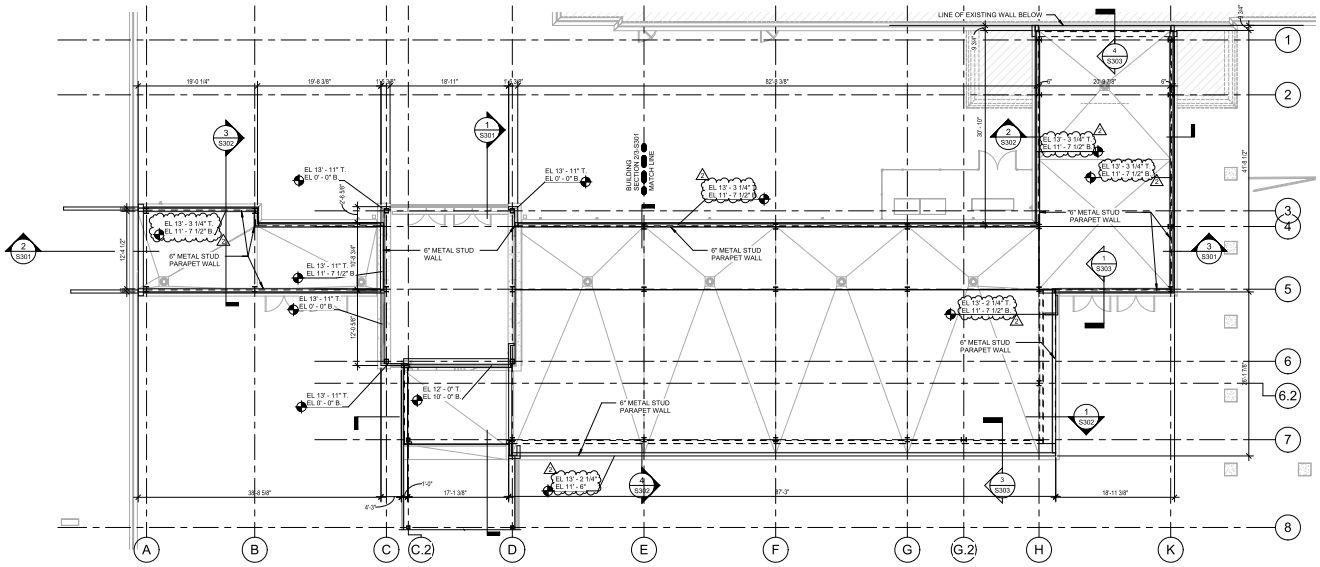
Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

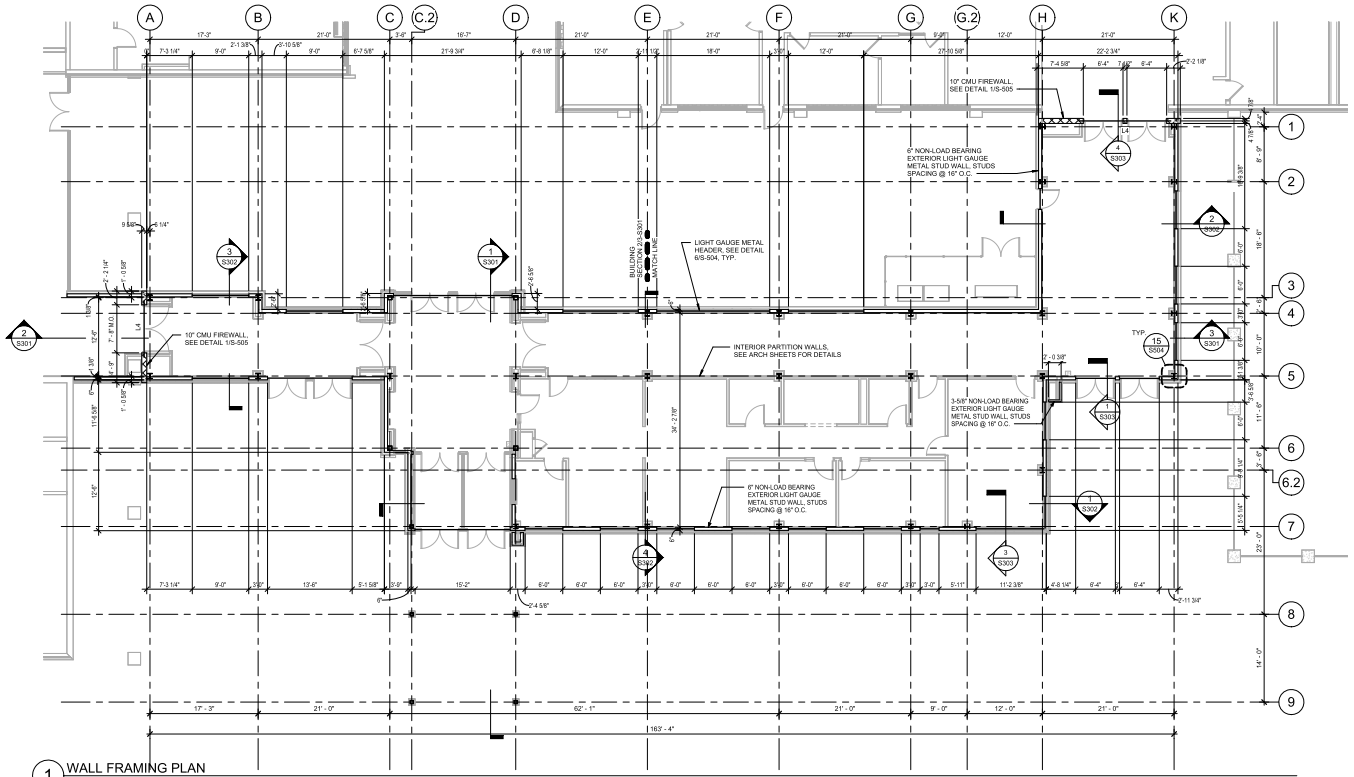
Sheet Title
NEW ADDITION - FOUNDATION PLAN

Job No. 2023-1013	Date 10/25/2024
Scale AS NOTED	Drawn / Checked Author Checker

Sheet Number
S101



2 CLERESTORY / PARAPET WALL FRAMING PLAN
1/8" = 1'-0"



1 WALL FRAMING PLAN
1/8" = 1'-0"

ORANGE-ULSTER BOCES

AXELROD - MAIN BUILDING ADDITIONS + ALTERATIONS

53 GIBSON ROAD
GOSHEN, NY 10924

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P 914.666.5900 KGDARCHITECTS.COM

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111 Wheatfield Drive, Suite 1 Milford, PA 18337 (570) 296-2765

NY SED PROJECT CONTROL NO:
44-90-00-00-0-009-036

BID ISSUE

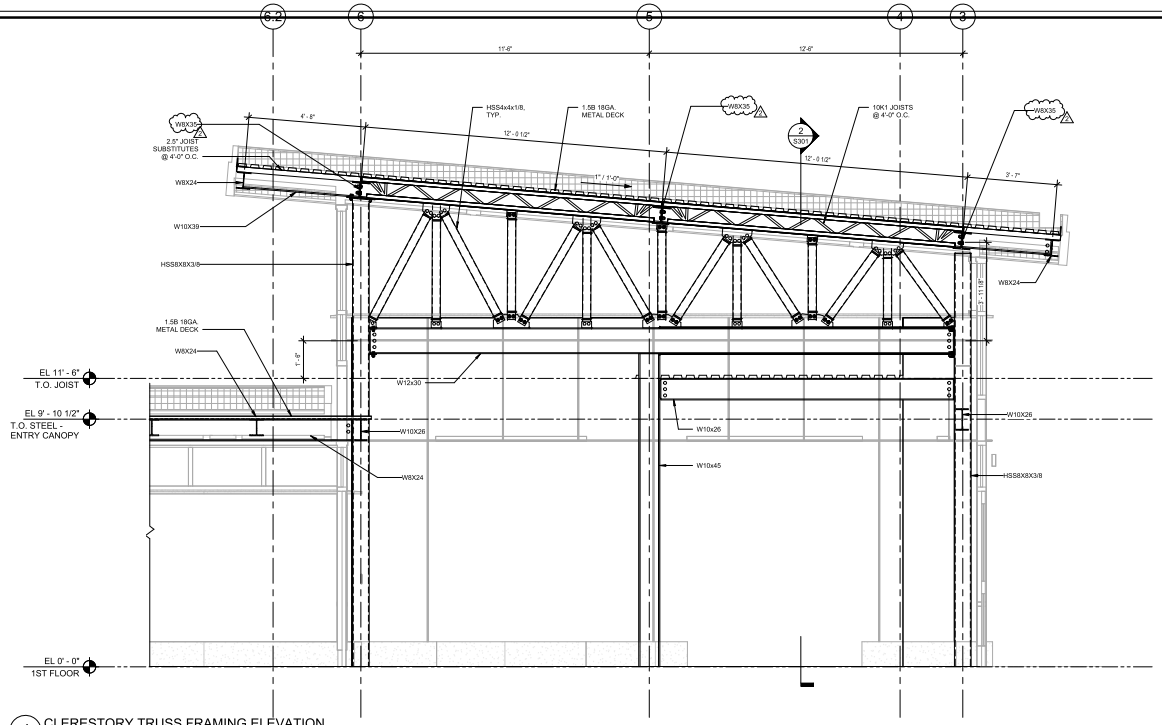
KEY PLAN

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

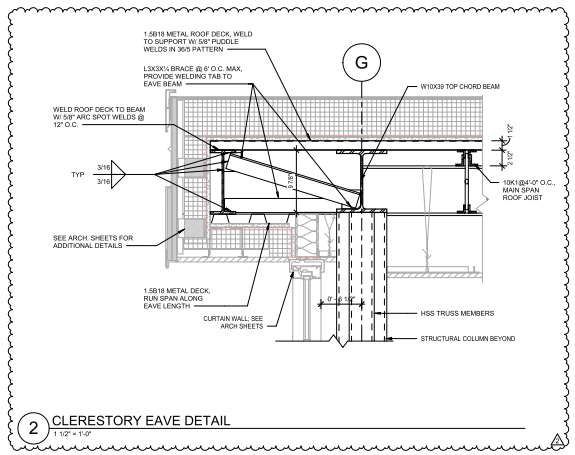
Sheet Title
NEW ADDITION - WALL FRAMING PLAN

Job No.	Date
2023-1013	10/25/2024
Scale: AS NOTED	Drawn / Checked: Author Checker

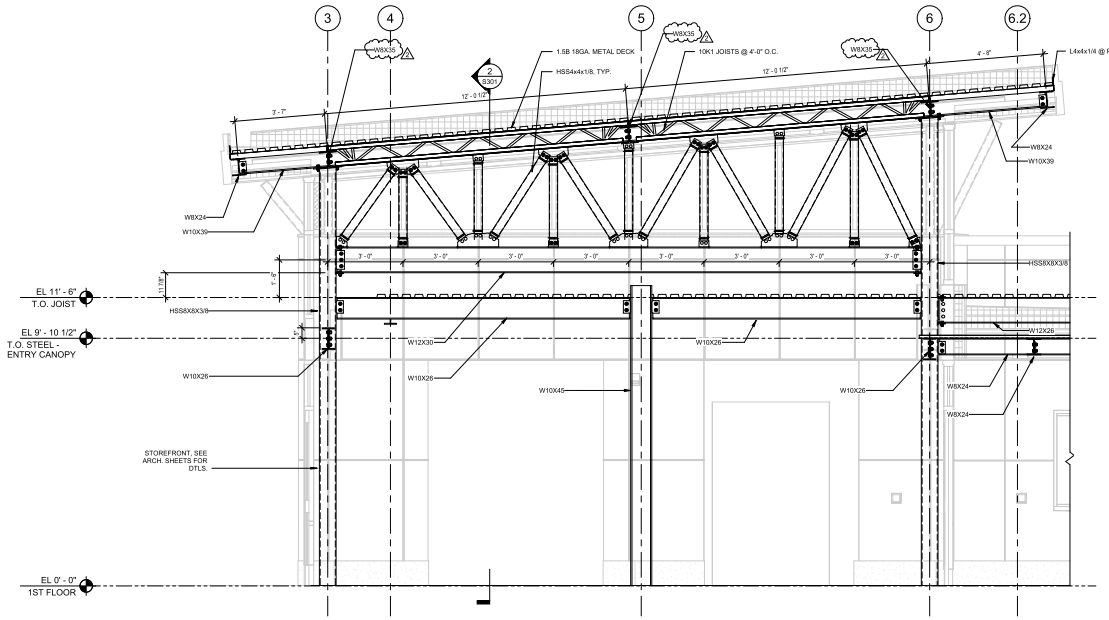
Sheet Number
S103



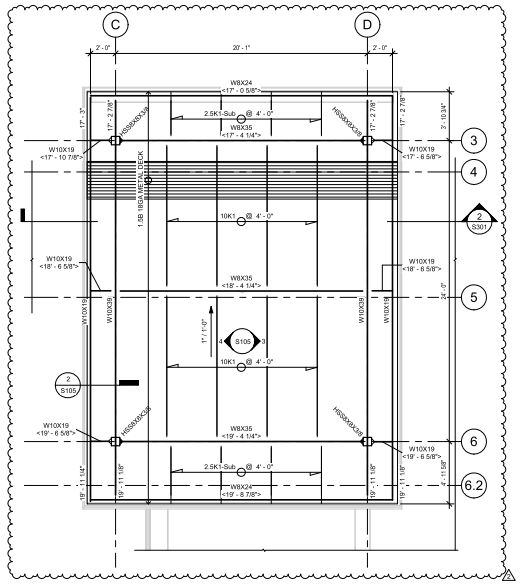
4 CLERESTORY TRUSS FRAMING ELEVATION
1/2" = 1'-0"



2 CLERESTORY EAVE DETAIL
1 1/2" = 1'-0"



3 Elevation 1 - c
1/2" = 1'-0"



1 CLERESTORY ROOF FRAMING PLAN
1/4" = 1'-0"

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AXELROD - MAIN BUILDING ADDITIONS + ALTERATIONS

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KEY PLAN

Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

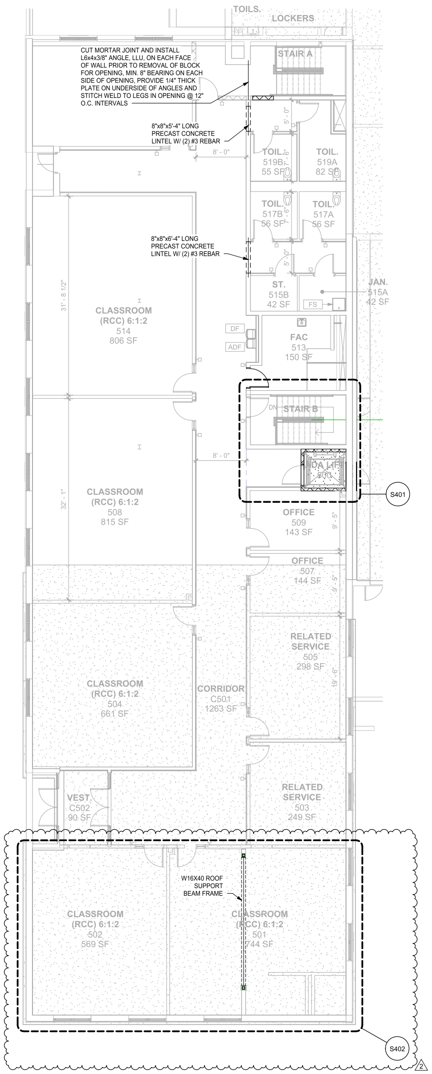
Sheet Title

NEW ADDITION - CLERESTORY ROOF FRAMING

Job No.	Date
2023-1013	10/25/2024
Scale	Drawn / Checked
AS NOTED	Author Checker

Sheet Number

S105



2 PART D - ADMIN LEVEL PLAN
1/8" = 1'-0"

ORANGE-ULSTER BOCES
AXELROD - MAIN BUILDING ADDITIONS + ALTERATIONS
53 GIBSON ROAD
GOSHEN, NY 10924

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KEY PLAN
AREA OF WORK

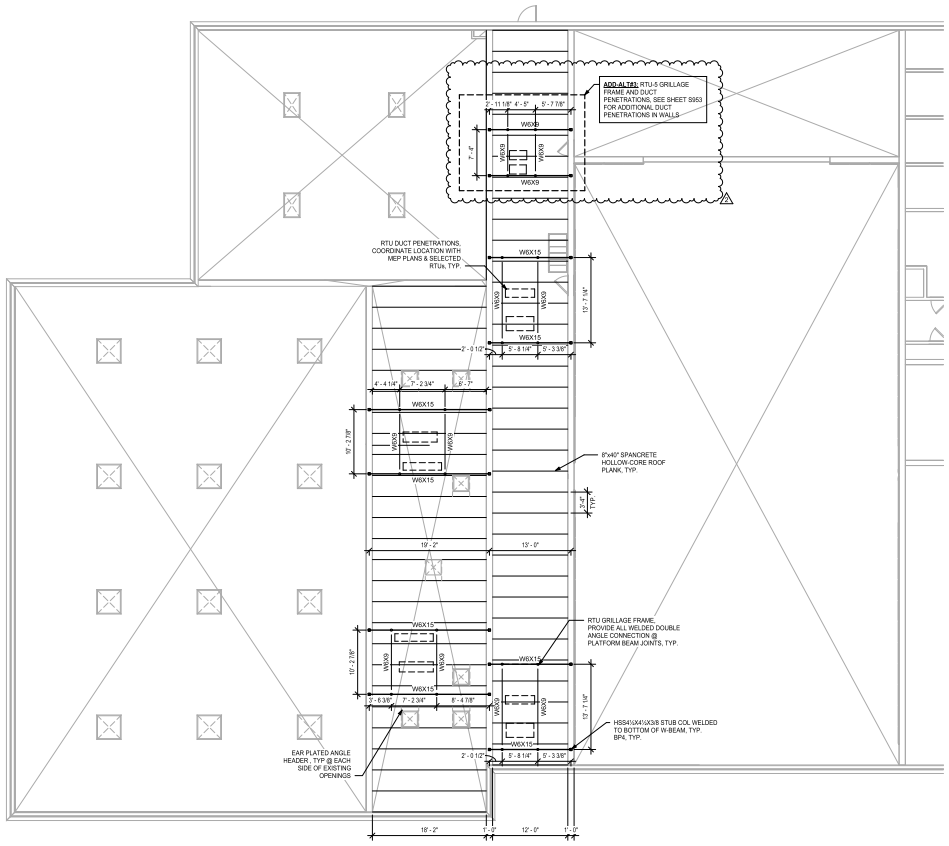
Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

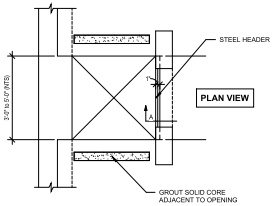
Sheet Title
PART D- ADMIN LEVEL PLAN

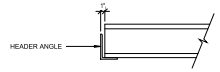
Job No. 2023-1013	Date 10/25/2024
Scale AS NOTED	Drawn / Checked Author Checker

Sheet Number
S106



1 1986 UPPER ROOF
1/8" = 1'-0"





SECT A

HEADER SUPPORT AT LARGE OPENING

STANDARD TWO EAR HEADER

ONE EAR HEADER

PLANK THK	PLANK THK	PLANK THK
6" PLANK	L4X4X3/8	PLT4"X1/2"X1'-1"
8" PLANK	L6X4X3/8	PLT4"X1/2"X1'-1"
10" PLANK	L7X4X1/2	PLT4"X5/8"X1'-1"
12" PLANK	L8X4X1/2	PLT4"X3/4"X1'-1"

PLANK HEADER TYPES

PRECAST HOLLOW CORE PLANK NOTES:
1. LAYOUT OF EXISTING HOLLOWCORE PLANK SHOWN IS CONCEPTUAL AND INTENDED TO BE UTILIZED FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL VERIFY PLANK LAYOUT, LOCATION OF ALL EXISTING ROOF PENETRATIONS, AND LOCATION OF PROPOSED PENETRATION IN FIELD PRIOR TO CONSTRUCTION AND PROVIDE DRAWINGS SHOWING ALL ITEMS TO ENGINEER TO REVIEW FOR IMPACTS ON STRUCTURE PRIOR TO PROCEEDING WITH WORK. NOTIFY ENGINEER AND ARCHITECT IMMEDIATELY IF EXISTING CONDITIONS VARY SIGNIFICANTLY FROM LAYOUT SHOWN.
2. PRIOR TO INSTALLATION OF DUCT PENETRATIONS CONTRACTOR SHALL EXPOSE CUT END OF PLANK IN PRESENCE OF STRUCTURAL ENGINEER TO VERIFY LOCATION, LAYOUT AND SIZE OF PRE-STRESSING STRANDS.
3. CONTRACTOR SHALL TEMPORARILY SHORE ALL PLANK DURING INSTALLATION OF NEW DUCT PENETRATIONS. SUBMIT SIGNED AND SEALED SHORING PLANS TO ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. BREAK OPEN PLANK CORES AND GROUT CELLS IMMEDIATELY ADJACENT TO ALL NEW PENETRATIONS. INSTALL EAR PLATE ANGEL SUPPORT HEADERS WHERE MORE THAN 50% OF PLANK IS REMOVED FOR PROPOSED OPENING.

2 LARGE OPENING SUPPORT HEADER DETAIL
1" = 1'-0"

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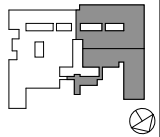
KEY PLAN



Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

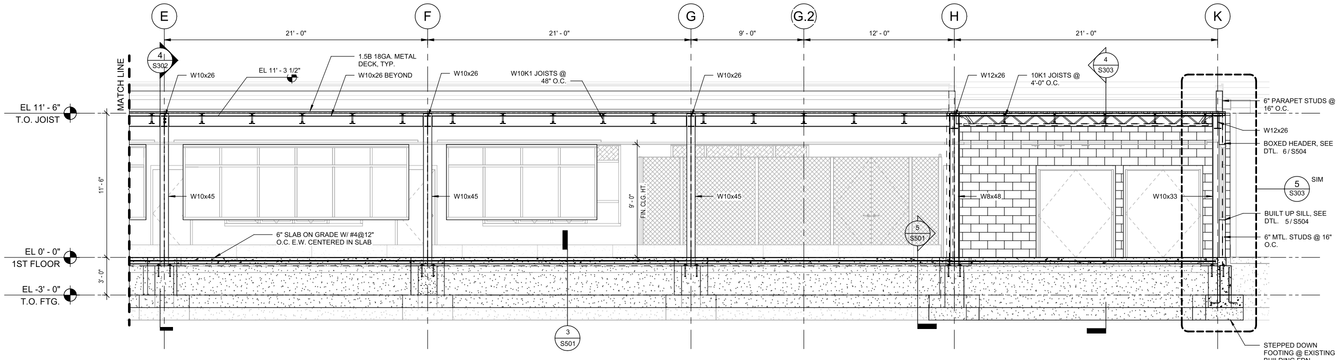
Sheet Title

PART A&B - ROOF PLAN

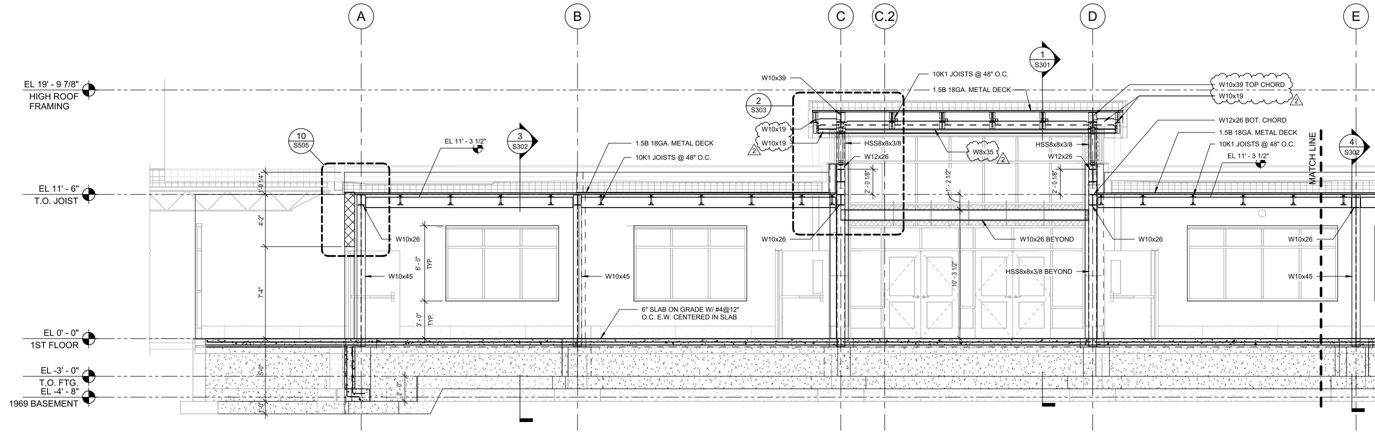
Job No.	Date
2023-1013	10/25/2024
Scale: AS NOTED	Drawn / Checked: Author Checker

Sheet Number

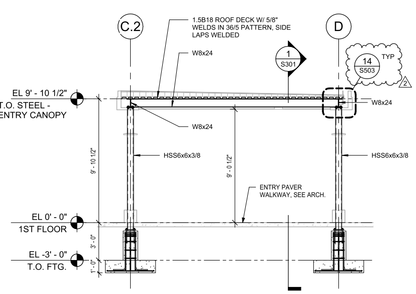
S107



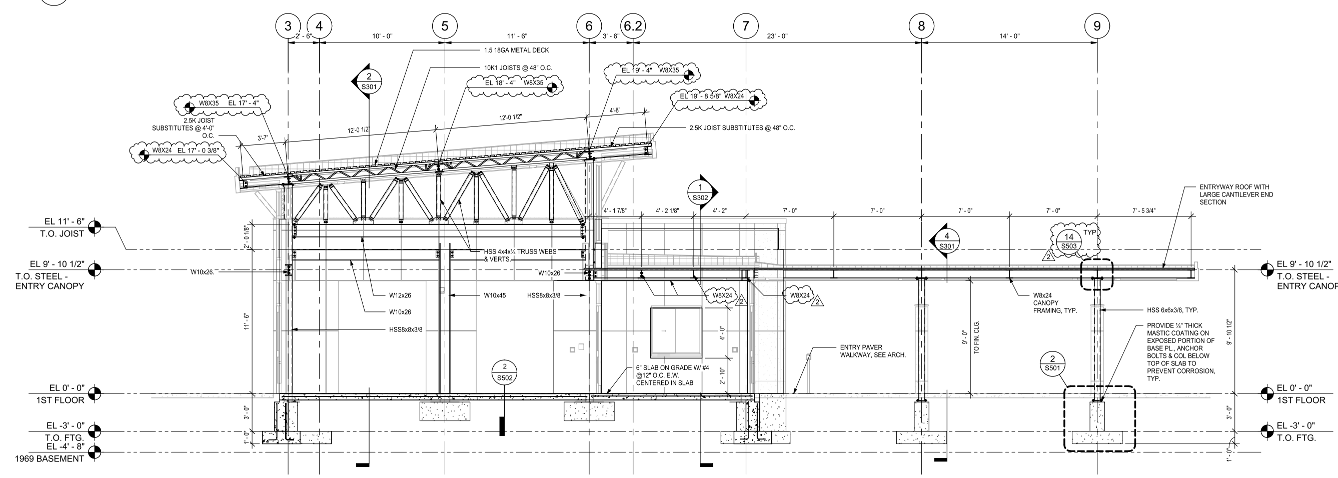
3 BLDG. SECTION - E-K
1/4" = 1'-0"



2 BLDG. SECTION - A-E
1/4" = 1'-0"



4 ENTRYWAY BLDG. SECTION2
1/4" = 1'-0"



1 ENTRYWAY BLDG. SECTION
1/4" = 1'-0"

ORANGE-ULSTER BOCES

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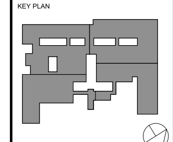
KEY PLAN



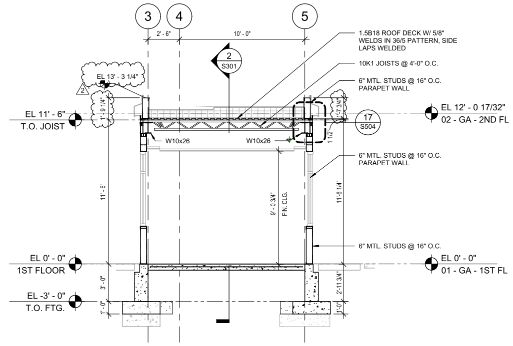
Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

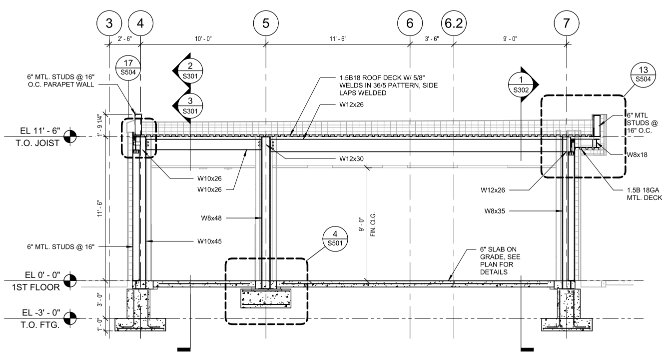
Sheet Title
BUILDING SECTIONS

Job No. 2023-1013	Date 10/25/2024
Scale AS NOTED	Drawn / Checked Author Checker

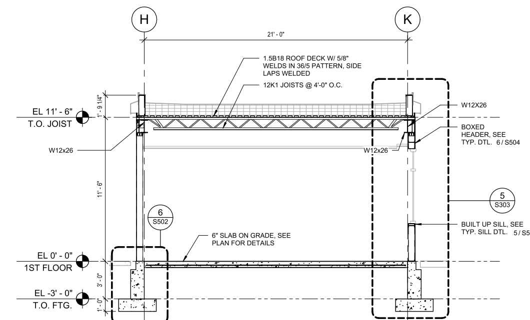
Sheet Number
S301



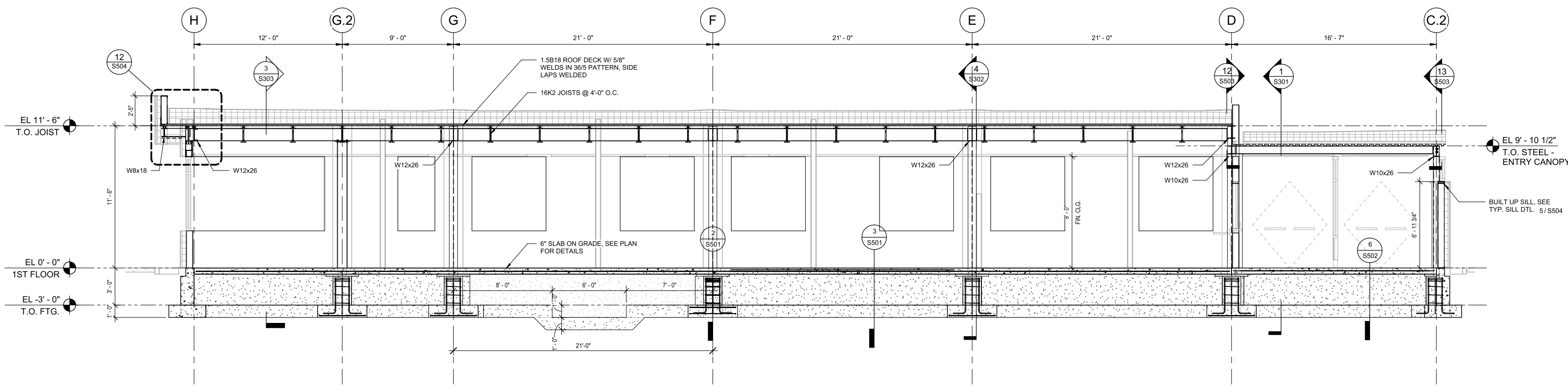
3 WEST CORRIDOR BLDG. SECTION
1/4" = 1'-0"



4 FRONT BUILDING CROSS SECTION
1/4" = 1'-0"



2 EAST CORRIDOR BLDG. SECTION
1/4" = 1'-0"



1 FRONT BUILDING SECTION
1/4" = 1'-0"

ORANGE-ULSTER BOCES
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53 GIBSON ROAD
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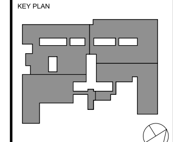
KEY PLAN



Professional Seal

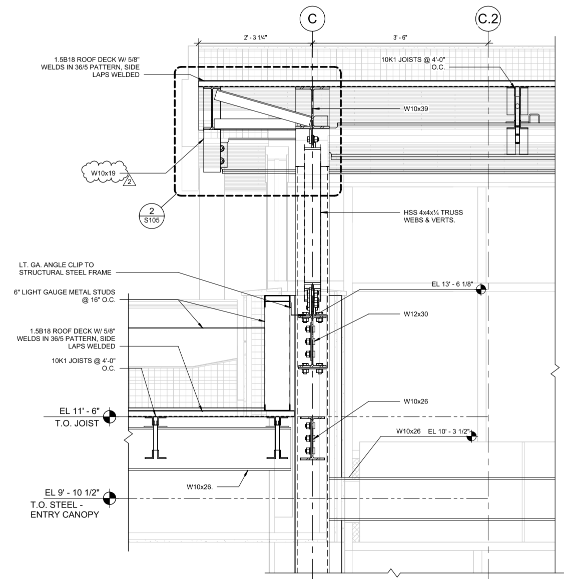
No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

Sheet Title

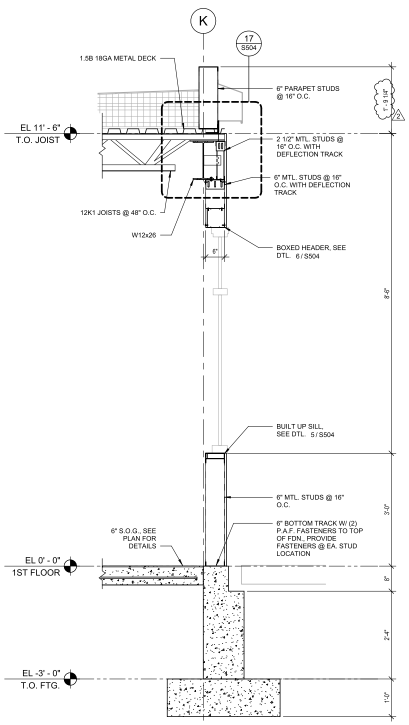
BUILDING SECTIONS

Job No. 2023-1013	Date 10/25/2024
Scale AS NOTED	Drawn / Checked Author Checker

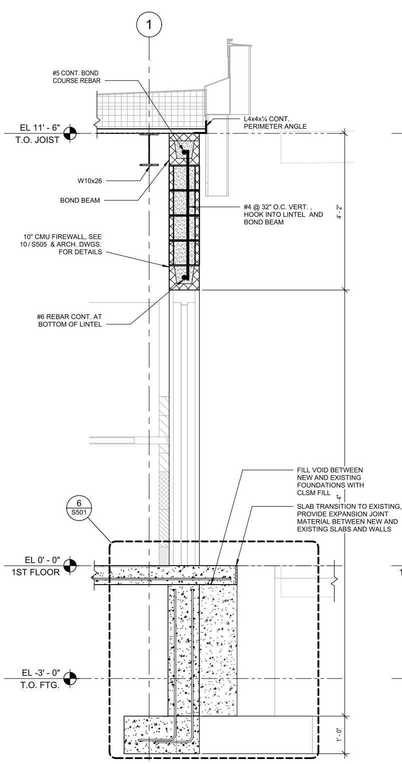
Sheet Number
S302



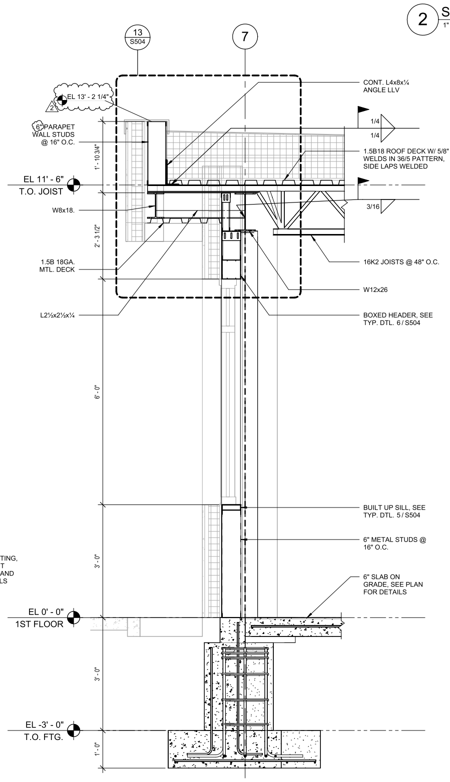
2 SECTION AT CLERESTORY
1" = 1'-0"



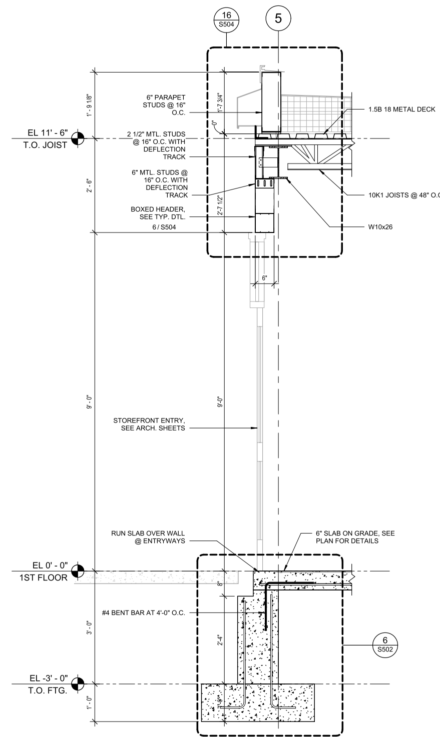
5 WALL SECTION AT EASTERN CORR.
3/4" = 1'-0"



4 WALL SECTION AT EAST FIREWALL
3/4" = 1'-0"



3 WALL SECTION AT FRONT CONF. RM. WALL
3/4" = 1'-0"



1 WALL SECTION AT EAST CORRIDOR ENTRY
3/4" = 1'-0"

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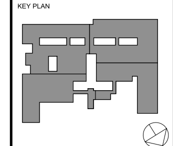
KEY PLAN



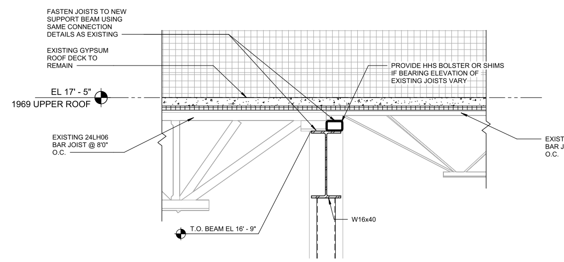
Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

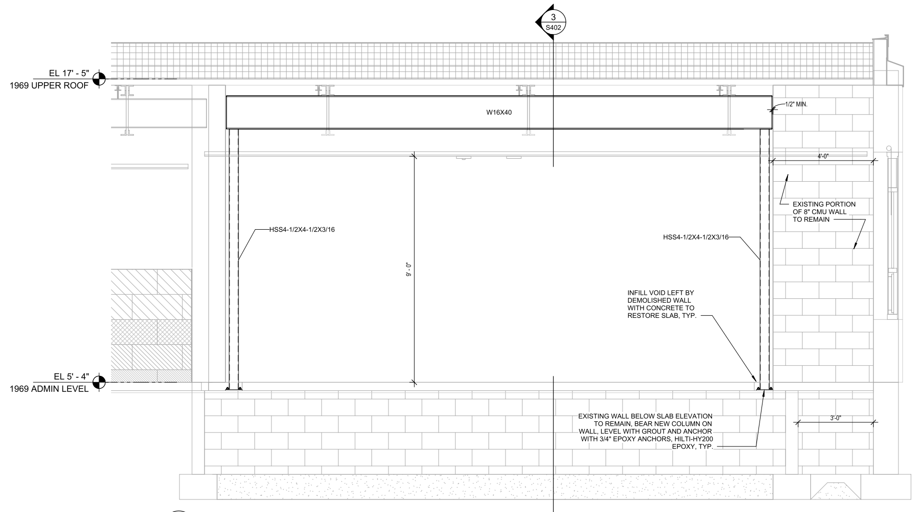
Sheet Title
WALL SECTIONS

Job No. 2023-1013	Date 10/25/2024
Scale AS NOTED	Drawn / Checked Author Checker

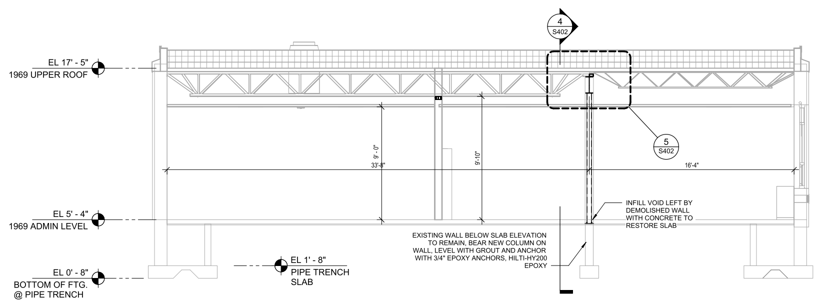
Sheet Number
S303



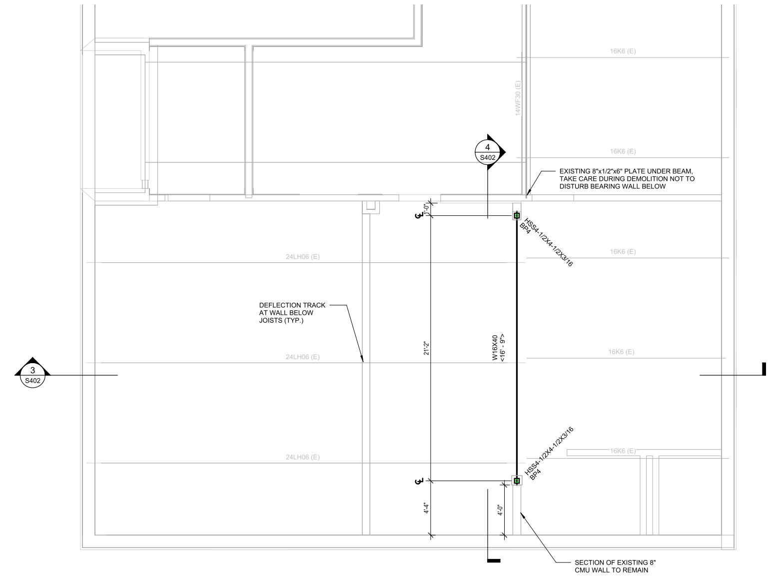
5 JOIST BEARING DETAIL
1" = 1'-0"



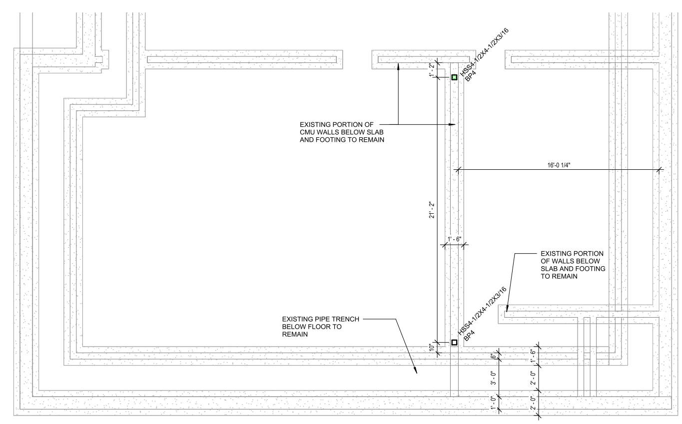
4 ROOF SUPPORT FRAME ELEVATION
1/2" = 1'-0"



3 CLASSROOM 508 SECTION
1/4" = 1'-0"



2 ROOF FRAMING AT CLASSROOM 500/508
1/4" = 1'-0"



1 FOUNDATION PLAN - CLASSROOMS 500/508
1/4" = 1'-0"

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KEY PLAN
AREA OF WORK

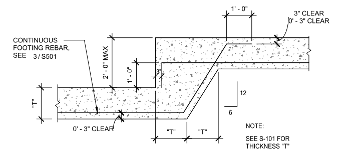
Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

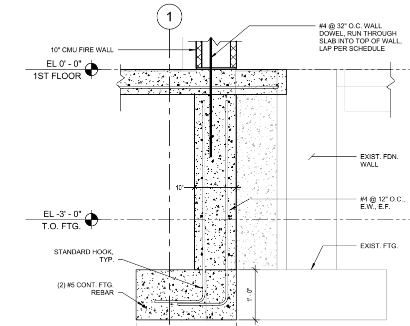
Sheet Title
CLASSROOM 500/508 STRUCTURAL ALTERATIONS

Job No. 2023-1013	Date 10/25/2024
Scale AS NOTED	Drawn / Checked Author Checker

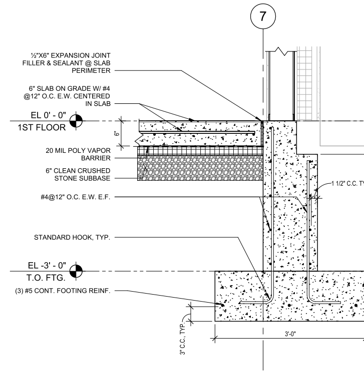
Sheet Number
S402



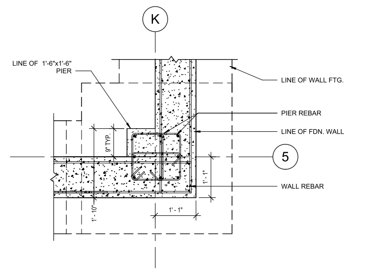
10 TYPICAL STEPPED FOOTING
1/2" = 1'-0"



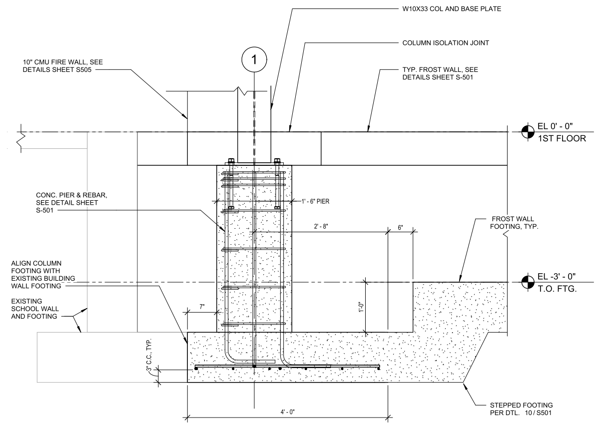
6 EAST FIREWALL FOUNDATION DETAIL
1" = 1'-0"



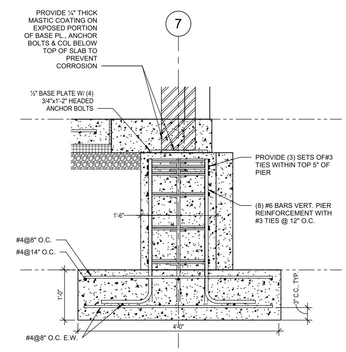
3 FROST WALL DETAIL
1" = 1'-0"



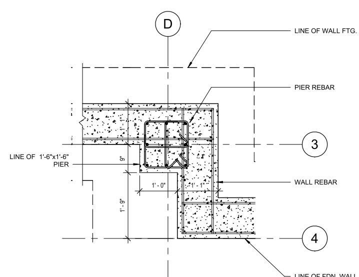
9 FOUNDATION CORNER DETAIL
3/4" = 1'-0"



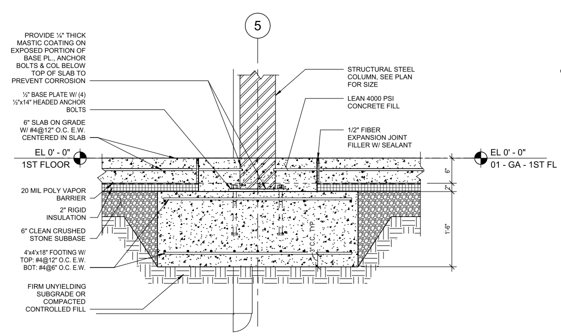
5 COL. PIER AND STEPPED FOOTING @ CONNECTION TO EXISTING BUILDING
1" = 1'-0"



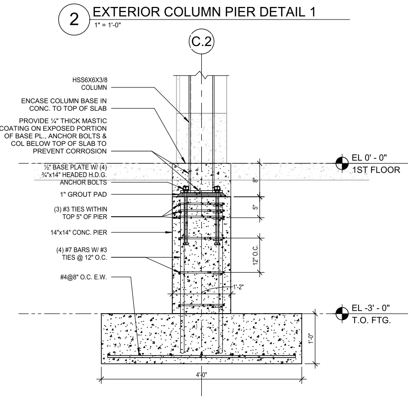
2 EXTERIOR COLUMN PIER DETAIL 1
1" = 1'-0"



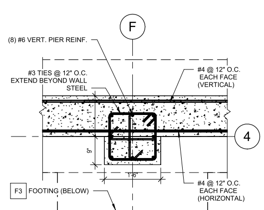
8 CLERESTORY CORNER COL. PIER DETAIL
3/4" = 1'-0"



4 ISOLATED FOUNDATION DETAIL
1" = 1'-0"



1 ENTRYWAY CROSS SECTION
1" = 1'-0"



7 TYP. EXTERIOR WALL PIER DETAIL
3/4" = 1'-0"

ORANGE-ULSTER BOCES

AXELROD - MAIN BUILDING ADDITIONS + ALTERATIONS

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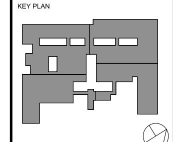
KG+D . ARCHITECTS PC
285 MAIN STREET MOUNT KISCO . NEW YORK . 10549
P:914.666.5900 KGDARCHITECTS.COM

NY SED PROJECT CONTROL NO:
44-90-00-00-0-009-036

BID ISSUE

MHE ENGINEERING
33 Airport Center Drive, Suite 202 New Windsor, NY 12553 (845) 567-3100
111 Wheatfield Drive, Suite 1 Milford, PA 18337 (570) 296-2765

KEY PLAN



Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

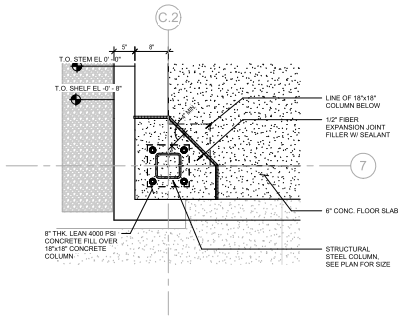
Sheet Title

NEW ADDITION - FOUNDATION DETAILS

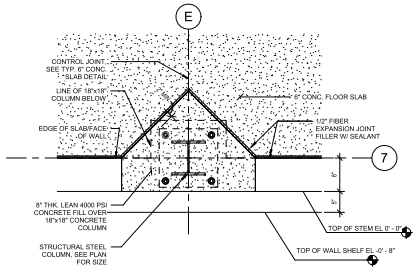
Job No. 2023-1013	Date 10/25/2024
Scale AS NOTED	Drawn / Checked Author Checker

Sheet Number

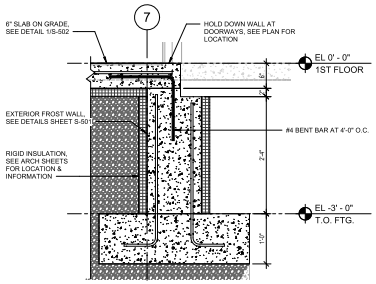
S501



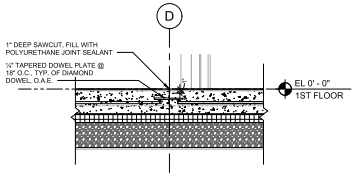
4 ISOLATION JOINT AT CORNER
1" = 1'-0"



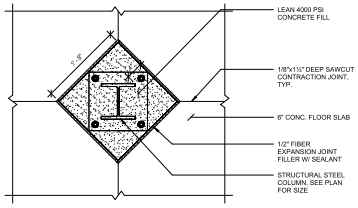
3 ISOLATION JOINT AT EXTERIOR WALL
1" = 1'-0"



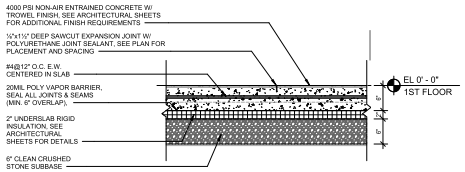
6 SLAB HOLD DOWN DETAIL @ ENTRYWAYS
1" = 1'-0"



2 TYP. CONSTRUCTION JOINT DETAIL
1" = 1'-0"



5 SLAB ISOLATION JOINT DETAIL
1" = 1'-0"



1 TYP. 6" CONC. SLAB DETAIL
1" = 1'-0"

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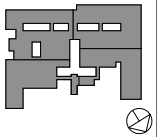
KEY PLAN



Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

Sheet Title

NEW ADDITION - SLAB DETAILS

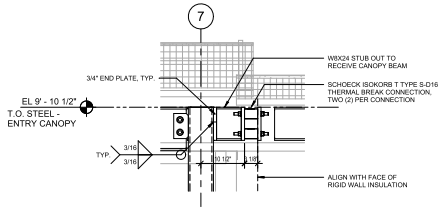
Job No.	Date
2023-1013	10/25/2024
Scale	Drawn / Checked
AS NOTED	Author Checker

Sheet Number

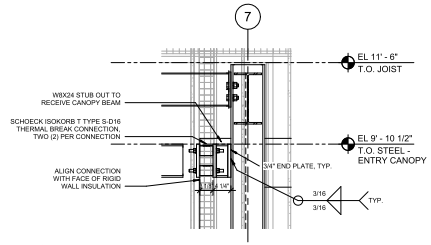
S502

BASE PLATE (BP) SCHEDULE

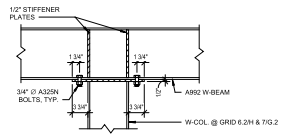
MARK	BASE PLATE			ANCHOR BOLTS				DETAIL	REMARK
	THICKNESS	"A"	"B"	SIZE	GRADE	EMBED	TYPE		
BP1	5/8"	14"	14"	3/4"	36	12" MIN.	HEADED	1 / S503	W10x45,W10x33,W8x48,W8x35
BP2	1/2"	10"	10"	3/4"	36	12" MIN.	HEADED	2 / S503	HSS6x6x3/8
BP3	5/8"	14"	14"	3/4"	36	12" MIN.	HEADED	2 / S503	HSS8x8x3/8
BP4	3/8"	8"	8"	3/4"	36	6" MIN.	EPOXY	2 / S503	HSS41/x41/x3/8

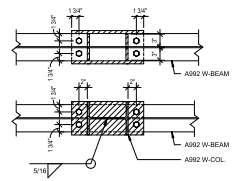


13 THERMAL BREAK CONNECTION DETAIL
1" = 1'-0"

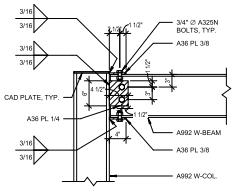


12 THERMAL BREAK CONNECTION DETAIL
1" = 1'-0"

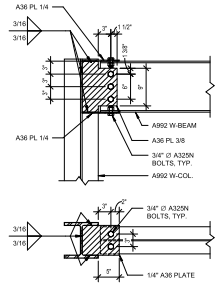




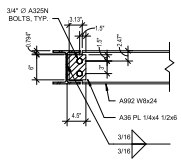
11 W-BEAM COLUMN CAP CONNECTION DETAIL
1" = 1'-0"



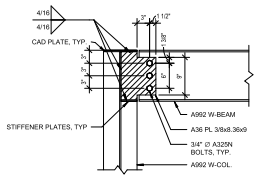
10 W-BEAM MOMENT CONNECTION - FLANGE
1" = 1'-0"



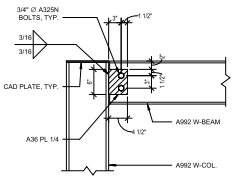
9 W-BEAM MOMENT CONNECTION - WEB
1" = 1'-0"



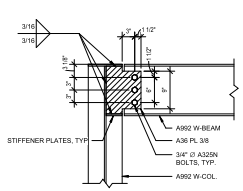
8 W8X24 ENTRY CANOPY SHEAR PLATE
1" = 1'-0"



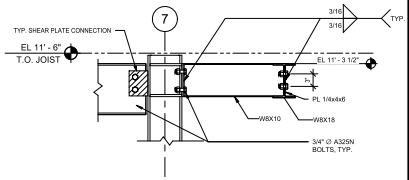
7 W12X26 BEAM SHEAR PLATE
1" = 1'-0"



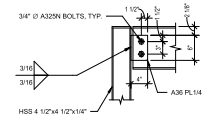
6 W-BEAM SHEAR PLATE - FLANGE
1" = 1'-0"



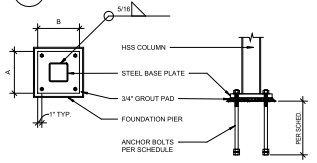
5 W-BEAM SHEAR PLATE - WEB
1" = 1'-0"



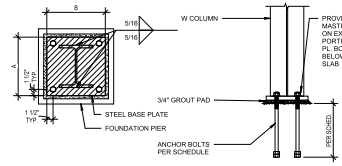
4 OVERHANG CANTILEVER CONNECTION DETAIL
1" = 1'-0"



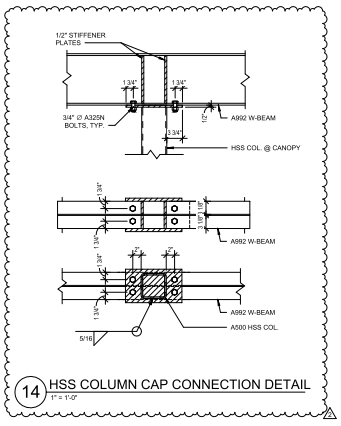
3 TYP. HSS CONNECTION DETAIL
1" = 1'-0"



2 HSS BASE PLATE DETAIL
1" = 1'-0"



1 W COL. BASE PLATE DETAIL
1" = 1'-0"



14 HSS COLUMN CAP CONNECTION DETAIL
1" = 1'-0"

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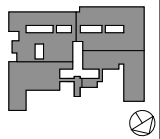
KEY PLAN



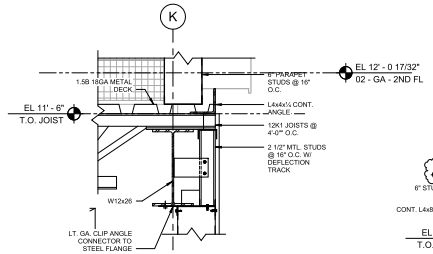
Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

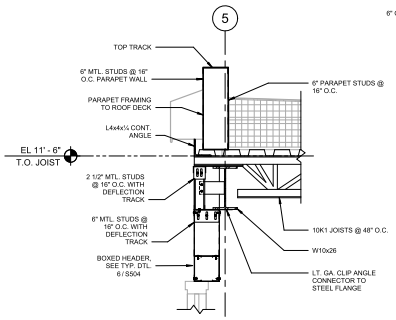
Sheet Title:
STRUCTURAL STEEL CONNECTION DETAILS

Job No.	Date
2023-1013	10/25/2024
Scale: AS NOTED	Drawn / Checked: Author Checker

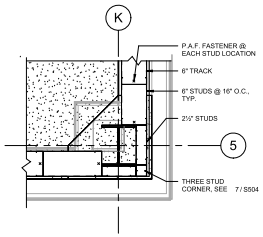
Sheet Number
S503



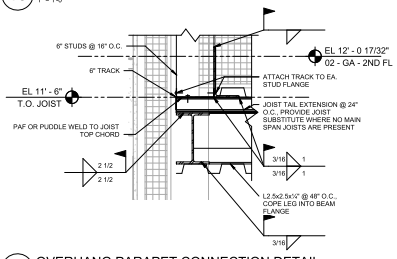
17 WALL FRAMING DETAIL @ ROOF
1 1/2" = 1'-0"



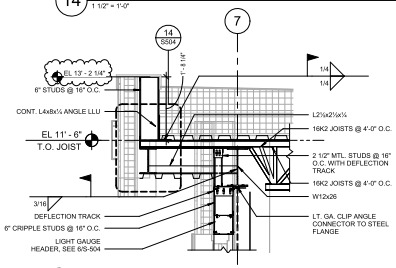
16 EAST CORRIDOR ENTRY WALL FRAMING DETAIL
1" = 1'-0"



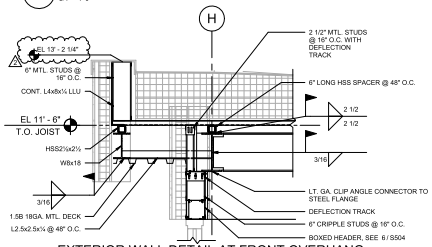
15 WALL FRAMING PLAN DETAIL - Callout 1
1" = 1'-0"



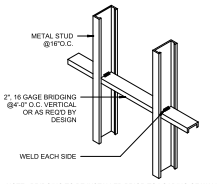
14 OVERHANG PARAPET CONNECTION DETAIL
1 1/2" = 1'-0"



13 EXTERIOR WALL DETAIL AT COL. LINE 7
3/4" = 1'-0"

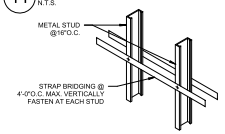


12 EXTERIOR WALL DETAIL AT FRONT OVERHANG AND PARAPET
3/4" = 1'-0"



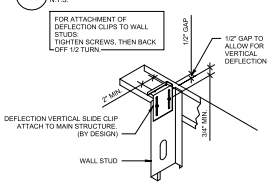
NOTE: BRIDGING TO BE INSTALLED PRIOR TO LOADING OF WALL
BRIDGING AND BRACING - SOLID BRIDGE

11 TYPICAL BRIDGING DETAIL
N.T.S.

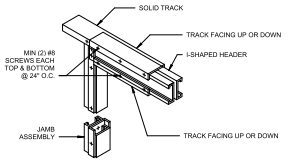


NOTE: BRIDGING TO BE INSTALLED PRIOR TO LOADING OF WALL
BRIDGING AND BRACING - BEARING WALL BRIDGING

10 TYPICAL BRACING DETAIL
N.T.S.

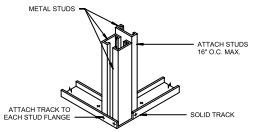


9 LT. GA. DEFLECTION TRACK
N.T.S.



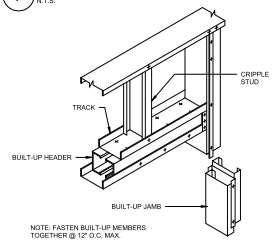
NOTE: FASTEN BUILT-UP MEMBERS AS REQ'D. BY DESIGN, PROVIDE WEB STIFFENERS AS REQ'D.

8 TYPICAL I-SHAPED HEADER DETAIL
N.T.S.



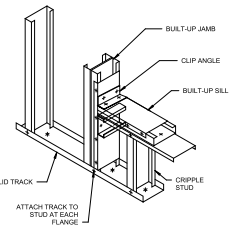
LOAD BEARING WALL - THREE STUD CORNER

7 TYPICAL WALL CORNER DETAIL
N.T.S.



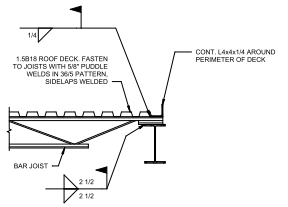
NOTE: FASTEN BUILT-UP MEMBERS TOGETHER @ 12" O.C. MAX.

6 TYPICAL BOXED HEADER TO JAMB
N.T.S.

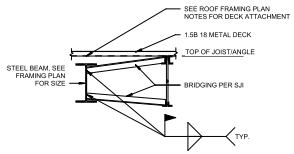


NOTE:
FASTEN BUILT-UP MEMBERS TOGETHER @ 12"O.C. MAX.
CURTAIN WALL - LARGE OPENING BUILT-UP SILL

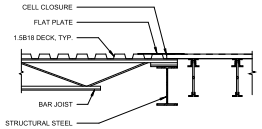
5 TYPICAL SILL DETAIL
N.T.S.



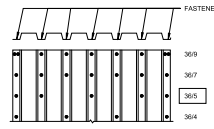
4 JOIST CONNECTION TO STEEL DETAIL
3/4" = 1'-0"



3 JOIST BRIDGING AT BEAM
3/4" = 1'-0"



2 DECK CHANGE OF DIRECTION DETAIL
3/4" = 1'-0"



NOTES:
1. SEE ROOF FRAMING PLAN AND SPECIFICATIONS FOR DECK GAUGE AND ATTACHMENT
2. SIDELAPS WELDED @ 12" O.C.

1 METAL DECK ATTACHMENT PATTERNS
1" = 1'-0"

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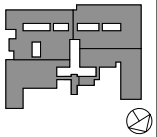
KEY PLAN



Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

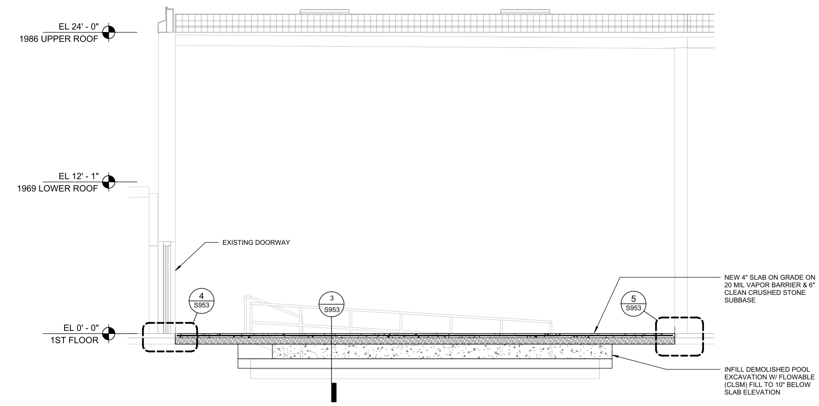
Sheet Title
OPEN WEB JOIST AND COLD FORMED METAL DETAILS

Job No.	Date
2023-1013	10/25/2024
Scale	Drawn / Checked
AS NOTED	Author Checker

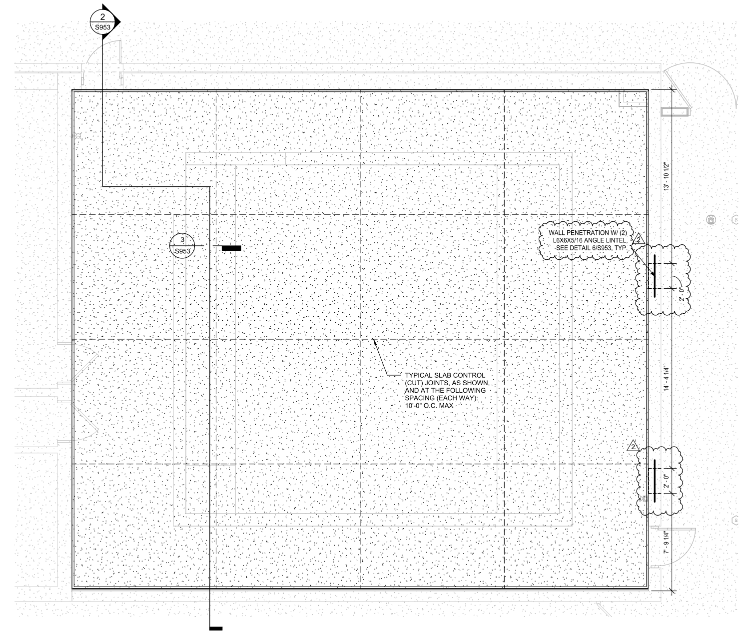
Sheet Number
S504

SEQUENCE OF CONSTRUCTION:

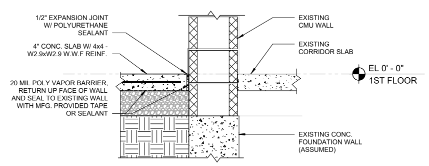
1. DEMOLISH EXISTING SLAB, POOL WALL AND APPURTENANCES TO LIMITS SHOWN ON ARCH DEMO PLANS. POOL WALLS AND ANY RIGID ELEMENTS BELOW EXISTING TOP OF SLAB WITHIN THE DEMO AREA SHOULD BE REMOVED TO A MINIMUM OF 10 " BELOW THE FINISHED FLOOR ELEVATION. ANY PIPING OR LINES BEING ABANDONED IN PLACE SHOULD BE GROUTED AND CAPPED.
2. FILL POOL AREA TO 10" BELOW F.F. WITH CLSM (FLOWFILL).
3. PLACE 6" OF SUBBASE MATERIAL, VAPOR BARRIER AND 4" CONC. SLAB ON GRADE WITH WWF REINF., SLAB TO TIED INTO THE EXISTING SLAB WITH DOWEL SYSTEM TO MITIGATE ANY DIFFERENTIAL SETTLEMENT ACROSS THE NEW/EXISTING FLOOR JOINT.



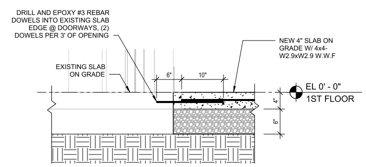
2 POOL INFILL SECTION
1/4" = 1'-0"



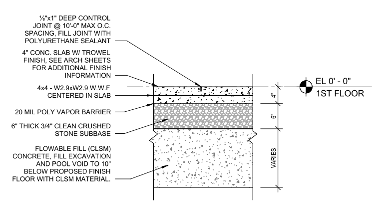
1 1ST FLOOR - POOL INFILL
1/4" = 1'-0"



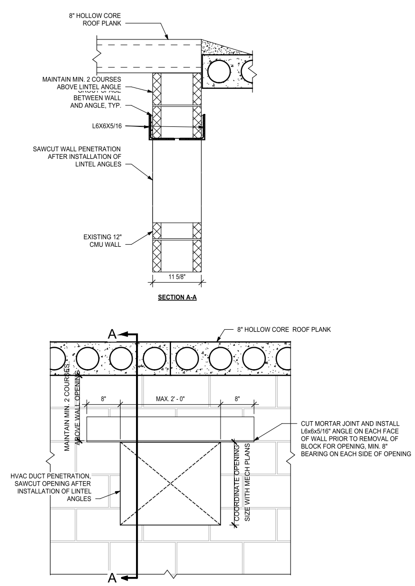
5 SLAB EDGE DETAIL
1" = 1'-0"



4 SLAB TRANSITION @ DOORWAYS
1" = 1'-0"



3 POOL INFILL DETAIL
1" = 1'-0"



6 WALL PENETRATION AND LINTEL DETAIL
1" = 1'-0"

ORANGE-ULSTER BOCES

AXELROD - MAIN BUILDING ADDITIONS + ALTERATIONS

53 GIBSON ROAD
GOSHEN, NY 10924

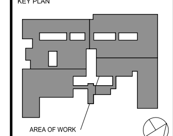
KG+D listen imagine build
KG+D . ARCHITECTS PC
285 MAIN STREET MOUNT KISCO . NEW YORK . 10549
P:914.666.5900 KGDARCHITECTS.COM

NY SED PROJECT CONTROL NO:
44-90-00-00-0-009-036

BID ISSUE

MHE ENGINEERING
33 Airport Center Drive, Suite 202 New Windsor, NY 12553 (845) 567-3100
111 Wheatfield Drive, Suite 1 Milford, PA 18337 (570) 296-2765

KEY PLAN



Professional Seal

No.	Date	Issue
2	11/15/24	BID ADDENDUM #3
1	10/25/24	BID ISSUE

Sheet Title

POOL INFILL AT LIFE SKILLS RM. 250 (ADD-ALT #3)

Job No.	Date
2023-1013	10/25/2024
Scale	Drawn / Checked
AS NOTED	Author Checker

Sheet Number
S953