OAK CONTRACTING LLC
Builders

ADDENDUM NO. 2

February 12, 2020

TO: ALL PLANHOLDERS

RE: HIGH SCHOOL #13

This addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated January 7, 2020. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

Addendum No.2 consists of two hundred thirty four (234) pages, including this cover letter.

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11 February 20

Addendum No. 2

High School #13

Howard County Public School System
Bid Number: 016.20.B4

The following is intended to clarify, correct, revise, and restate various parts of the Drawings and Specifications all of which shall form part of this Contract.

Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bid to be considered as non-responsive.

CHANGES TO SPECIFICATIONS:

01 8000 LIST OF DRAWINGS

ADD The following drawings to Volume 1:
C-79 PRIVATE SEWER PROFILES & CHARTS" TO DRAWING LIST
C-80 SEWER AND WATER MAIN EXTENSIONS TITLE SHEET
C-81 SEWER AND WATER MAIN EXTENSIONS PLAN
C-82 SEWER AND WATER MAIN EXTENSIONS PLAN
C-83 SEWER AND WATER MAIN EXTENSIONS PLAN
C-84 WATER MAIN PROFILE, CHART AND NOTES
C-85 WATER MAIN EXTENSIONS PROFILES, CHARTS AND NOTES
C-86 WATER MAIN EXTENSIONS PROFILE, CHART AND NOTES
C-87 WATER MAIN EXTENSIONS PROFILE, CHART AND NOTES
C-88 WATER MAIN EXTENSIONS PROFILES, CHARTS AND NOTES
C-89 8" SEWER MAIN EXTENSION AND 2" WHC PROFILES
C-90 RIDGLEYS RUN ROAD PROFILE
C-91 MISSION ROAD WIDENING SECTIONS

ADD The following drawings to Volume 3:
P-507 RISER DIAGRAMS

05 4000 COLD FORMED METAL FRAMING

REPLACE Entire specification section, with the attached specification, 05 4000 COLD FORMED METAL FRAMING, dated 11 February 20.

05 5000 METAL FABRICATIONS

REVISE 2.11 GALVANIZED SHEET METAL CAVITY CLOSURE

From: Where shown in details and where required, provide 3 1/2" X 2 1/2" X 10 gauge bent galvanized steel angle, placed long leg vertical, in cavities.

To: Where shown in details and where required, provide 10 gauge bent galvanized steel angle in wall cavities.

06 2000 FINISH CARPENTRY

DELETE the following line item from 1.02 Scope:

Display case shelving

08 7100 DOOR HARDWARE

REVISE Hardware Group No. 01 For use on Door #(s):

From: 010
To: 010A

DELETE Door 016A from Hardware Group No. 02A For use on Door #(s).

DELETE Door 701 from Hardware Group No. 04E For use on Door #(s).

DELETE Door 119C from Hardware Group No. 05B For use on Door #(s).

DELETE The following items from Hardware Group No. 05E For use on Door #(s):

1	EA	ELECTRIC STRIKE	6400 FSE 12/24 VAC/VDC
1	EA	MULTITECT READER	BY SECURITY INTEGRATOR
1	EA	POWER SUPPLY	PS902 KL 900

DELETE OPERATIONAL DESCRIPTION in its entirely from Hardware Group No. 05E.

REVISE Hardware Group No. 08A For use on Door #(s) to read as follows:

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY EPT	628	IVE
1	EA	POWER TRANFER	EPT 10 CON	689	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-98-NL-OP-110MD-COM 24 VDC	626	VON
1	EA	RIM CYLINDER	AS REQUIRED	626	MED
1	EA	SFIC CORE	TO MATCH EX SYSTEM	626	MED
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	MOUNTING PLATE	4110-18	689	LCN
1	EA	CUSH SHOE SUPPORT	4110-30	689	LCN
1	EA	BLADE STOP SPACER	4110-61	689	LCN
1	EA	PERIMETER GASKETING	BY ALUMINUM DOOR MANUFACTERER		
1	EA	DOOR SWEEP	8197AA	AA	ZER
1	EA	THRESHOLD	545A	A	ZER
1	EA	WIRE HARNESS	CON-192P		SCH
1	EA	WIRE HARNESS	CON-XX AS REQUIRED		SCH
1	EA	WIRE HARNESS	CON-6		SCH
1	EA	DOOR CONTACT	BY SECURITY INTEGRATOR "DOOR AND FRAME TO BE PREPPED FOR DOOR CONTACT"	BLK	SCE
1	EA	POWER SUPPLY	PS904-2RS KL900	LGR	SCE

DELETE Door 121C from Hardware Group No. 09B For use on Door #(s).

DELETE Door 113 from Hardware Group No. 09H For use on Door #(s).

DELETE Door H23 from Hardware Group No. 10H For use on Door #(s).

ADD Door H22A to Hardware Group No. 10H For use on Door #(s).

ADD Door 119C to Hardware Group No. 28 For use on Door #(s).

REVISE Hardware Group No. 28 For use on Door #(s) to read as follows:

Provide each SGL door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	5BBI HW 4.5X4.5 NPR	652	IVE
1 EA	PANIC HARDWARE	LD-98-L-2SI-17	626	VON
1 EA	RIM CYLINDER	AS REQUIRED	626	MED
1 EA	SFIC CORE	TO MATCH EX SYSTEM	626	MED
1 EA	ELECTRIC STRIKE	6300 FSE 12/24VAC/VDC	630	VON
1 EA	SURFACE CLOSER	4111 EDA	689	LCN
1 EA	KICK PLATE	8400 10"X2"LDW B-CS	630	IVE
1 EA	WALL STOP	WS406/407CCV	626	IVE
1 EA	GASKETING	488FSBK PSA	BK	ZER
1 EA	MULTITECT READER	BY SECURITY INTEGRATOR	BLK	SCE
1 EA	POWER SUPPLY	PS902 KL900	LGR	SCE

09 2216 NON-STRUCTURAL METAL FRAMING

REPLACE Entire specification section, with the attached specification, 09 2216 NON-STRUCTURAL METAL FRAMING, dated 11 February 20.

10 1400 SIGNAGE

ADD Article below:

2.09 Vinyl wall mural

Where required at Wayfinding Details 11/A-712, provide vinyl wall mural. Contractor shall provide five different murals.

Vinyl wall mural shall be from the "Luxuriant" line of fabric-backed murals as manufactured by Murals Your Way (1.888.558.0279). Vinyl wall mural shall be a non-woven wall covering, 15 oz./lineal yard, with smooth surface texture. Color shall be bright white with maximum range: 80 DE. Artwork for each of the five murals shall be provided by Owner. Note that five different custom designs will be provided. See A-710 and A-711 for locations. Ink shall be the manufacturer's standard UV protected ink with a 20 year indoor fade resistance.

After installation of vinyl wall mural, provide a topcoat of water-based polyurethane as recommended by manufacturer.

The manufacturer shall certify that the vinyl wallcovering supplied meets Federally specified limits for flame, smoke development and flash over according to the required ASTM-E84 and NFPA286 tests. Flame Spread Index: 20 (Class A 0-25) ASTM E84 98, Smoke Development: 185 (Class A 0-450) ASTM E84 98

ADD Paragraph below to Article 3.02 Attachment:

For vinyl wall mural, apply one coat of primer sealer to substrate surfaces. Allow to dry. Lightly sand smooth. Vacuum clean surfaces free of loose particles. Wash impervious surfaces with tetra-sodium phosphate, rinse and neutralize; wipe dry. Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces for finishing. Do not adhere mural to wall surface without properly prepping the wall to be "mural ready".

23 7322 AIR-HANDLING UNITS WITH COILS

REVISE Paragraph 2.3.H.1

From: Dampers: Airfoil design, galvanized steel, blades minimum 14 gauge and frames minimum 16 gage, opposed-blade action with metal compressible jamb seals and extruded vinyl blade edge seals. Blades shall rotate on stainless steel sleeve bearings. Damper blade lengths shall not exceed 60 inches. Leakage rate shall not exceed 3 cfm per sq ft at one inch wg. Equal to Tampco Model 1000 Series.

To: Dampers: Airfoil design, extruded aluminum damper frame and blades, opposed-blade action with metal compressible jamb seals and extruded EPDM blade edge seals. Blades shall rotate on stainless steel sleeve bearings with hexagonal drive rod. Damper blade lengths shall not exceed 60 inches. Leakage rate shall not exceed 3 cfm per sq ft at one inch wg. Equal to Tampco Model 1000 Series.

26 0519 WIRES AND CABLES

ADD Article 2.6 as follows:

2.6 Mineral insulated cable, Type MI

A. Cable: UL 2196 listed for fire resistance; mineral-insulated, metal-sheathed Type MI cables, factory-assembled of one or more conductors as shown on the drawings, insulated and enclosed in a seamless liquid- and gas-tight continuous copper sheath, equal to Pentair Building Solutions "System 1850."

1. Conductors: Solid copper with cross-section area corresponding to standard AWG sizes.
2. Sheath: Seamless soft-drawn copper jacket.
3. Insulation: Compressed magnesium oxide, providing space for conductors. Thickness at least 55 mils for cable 14 AWG through 250 kcmil.

4. Ratings: Cable shall comply with NEC Article 332 and the other applicable provisions of NFPA 70, and shall be UL classified as having a two-hour fire resistance rating.
5. Accessories for termination: Corresponding to the diameter of sheath and number of conductors.

B. Provide units factory-cut to size, complete with both end terminals, shipped on a reel.

REVISE Article 3.4 Installing exterior wiring, subparagraph 3.4.A.2, as follows:

From: Exterior lighting circuits: Copper, No. 10 minimum, with an extra No. 10 (minimum) bare copper ground conductor.

To: Exterior lighting circuits: Copper, No. 10 minimum.

DELETE Paragraph 3.7.E under Article 3.7 Installing mc luminary cable.

ADD Article 3.8 as follows:

3.8 Installing mineral insulated cable, Type MI

A. When cables are cut in the field, seal the ends with standard sealing compound and PVC type.

B. Prevent damage to the cable from blows with sharp instruments or pulling over sharp objects. Do not permit cable to kink or snarl.

C. Cable installation:

1. Support on trapeze hangers or clip directly to beams or ceilings using clips or straps available from the manufacturer.
2. For fire-rated circuits, secure the cable to a two-hour fire rated surface, using supports no more than three feet on centers.
3. Where subject to potential damage, protect cables with angle iron, channel, or short pieces of conduit.
4. Bending: Use hickeys available from the manufacturer. The recommended minimum bend radius is five (5) times the cable diameter.
5. When forming part of a circuit, single-conductor cables shall be run close together with sheaths touching throughout the length of the run, as recommended by the manufacturer.

D. Terminating the cable:

1. Terminate with glands and seals, available from the manufacturer, approved for the application, and following the manufacturer's recommendations. At ordinary locations, use standard termination and sealing compound.
2. Use stripping tools, pot wrenches, crimping and compressing tools, available from the manufacturer, and designed for the purpose, to prepare the cable and install the glands and seal assemblies.

3. Upon completion of the terminations, check the insulation resistance of the cable with a 500-volt insulation tester. Resistance value shall be submitted for review by the Architect.

E. Splicing the cable:

1. Cable may be spliced in a junction box. Install a standard termination on the end(s) of the cable entering the box. The box shall be accessible to comply with NFPA 70 requirements.
2. A straight-through joint as supplied by the manufacturer and installed in accordance with manufacturer's recommendations may be used.
3. Fire-rated joints shall be installed by the manufacturer.

F. Connections to ferrous enclosures: When using single-conductor cables, heating by induction and hysteresis will occur if precautions are not taken to prevent this effect. Substitute a brass plate, 0.25-inch minimum thickness, for the steel of the box, by cutting out the box section containing the knockouts or entry holes, and fixing the brass plate securely to the box with a minimum of four bolts."

26 2413 SWITCHBOARDS

REVISE Article 2.3 Quick-connect generator switchboard, Paragraph 2.3.C as follows:

From: Main bus continuous: 1200 ampere rating.
To: Main bus continuous: 3000 ampere rating.

26 3213 GENERATORS, WEATHER-PROTECTED

REVISE Article 1.12 Maintenance service, Paragraph 1.12.A as follows:

From: Initial maintenance service: Beginning at Substantial Completion, provide 12 months, equal to warranty period, full maintenance by skilled employees of manufacturer's designated service organization. Include quarterly exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

To: Initial maintenance service: Beginning at Substantial Completion, provide 5 years, equal to warranty period, full maintenance by skilled employees of manufacturer's designated service organization. Include quarterly exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

26 5568 ATHLETIC FIELD LIGHTING

ADD Article 1.2 Submittals, Paragraph 1.2.M as follows:

M. LEED submittal:

1. Product data:
   a. Energy and Atmosphere (EA), Prerequisite "Minimum Energy Performance": For minimum energy performance.
   c. Sustainable Sites (SS), Credit "Light Pollution Reduction": For light pollution reduction.

27 0500 TELECOMMUNICATIONS PATHWAYS AND SPACES

REVISE Article 2.01 Materials, Subparagraph K.3 as follows:

From: 3. Large Capacity In-floor box
   a. Wiremold EFB6S with flush mounted cover.
To: 3. Large Capacity In-floor box
   a. Wiremold EFB6S-OG (on-grade) with flush mounted cover.

27 4000 IP VIDEO DISTRIBUTION SYSTEM

REVISE Paragraph 2.04

From:
A. 32" LED Commercial Grade Display
   1. NEC V323-2
B. 42" LED Commercial Grade Display
   1. NEC V423-AVT
C. 46" LED Commercial Grade Display
   1. NEC V463-AVT
D. 55" LED Commercial Grade Display
   1. NEC V552-AVT
E. 65" LED Commercial Grade Display
   1. NEC V651-AVT
F. 75" LED Commercial Grade Display
   1. NEC V801-AVT
G. Provide articulating wall mount appropriately sized for each display.

To:
A. 32" LED Commercial Grade Display
   1. NEC V323-3
B. 42" LED Commercial Grade Display
   1. LG 42LX53OS
C. 46" LED Commercial Grade Display
   1. NEC V484-AVT2
D. 55" LED Commercial Grade Display
   1. NEC V554Q
E. 65" LED Commercial Grade Display
   1. NEC V654Q
F. 75" LED Commercial Grade Display

1. NEC C751Q

G. Provide articulating wall mount appropriately sized for each display.

28 3100 FIRE DETECTION AND ALARM SYSTEMS

DELETE Paragraph 2.14.D under Article 2.14 Wire and wiring system.

CHANGES TO DRAWINGS:

G011, G022 AND G033 - DRAWING LIST

ADD The following to drawing list for Volume 1:

C-79 PRIVATE SEWER PROFILES & CHARTS" TO DRAWING LIST
C-80 SEWER AND WATER MAIN EXTENSIONS TITLE SHEET
C-81 SEWER AND WATER MAIN EXTENSIONS PLAN
C-82 SEWER AND WATER MAIN EXTENSIONS PLAN
C-83 SEWER AND WATER MAIN EXTENSIONS PLAN
C-84 WATER MAIN PROFILE, CHART AND NOTES
C-85 WATER MAIN EXTENSIONS PROFILES, CHARTS AND NOTES
C-86 WATER MAIN EXTENSIONS PROFILE, CHART AND NOTES
C-87 WATER MAIN EXTENSIONS PROFILE, CHART AND NOTES
C-88 WATER MAIN EXTENSIONS PROFILES, CHARTS AND NOTES
C-89 8" SEWER MAIN EXTENSION AND 2" WHC PROFILES
C-90 RIDGLEYS RUN ROAD PROFILE
C-91 MISSION ROAD WIDENING SECTIONS

ADD The following to drawing list for Volume 3:

P-503 RISER DIAGRAMS
P-504 RISER DIAGRAMS
P-505 RISER DIAGRAMS
P-506 RISER DIAGRAMS
P-507 RISER DIAGRAMS
T-126 TECHNOLOGY - SECOND FLOOR PLAN - AREA 'F'

REVISE The following to drawing numbers found in Volume 3:

From: M-124 SECOND FLOOR PLAN AREA 'E'
To: M-125 SECOND FLOOR PLAN AREA 'E'

From: M-150 STADIUM BUILDING
To: M-151 STADIUM BUILDING

From: T-124 TECHNOLOGY - SECOND FLOOR PLAN - AREA 'F'
To: T-125 TECHNOLOGY - SECOND FLOOR PLAN - AREA 'E'

C-1 TITLE SHEET

ADD Thirteen sheets (C-79 thru C-91) to the Sheet Index, see above for sheet names.

C-2 OVERALL KEY PLAN

REVISE Elevation of High School Building

From: 292.5
To: 296.5

C-28 DETAIL SHEET

REVISE The following note on Detail 5/C-28 WALKWAY MACADAM PAVING DETAIL as follows:
the note for 3" BINUMINOUS SURACE COURSE (TYPE SF)

From: 3" BITUMINOUS SURACE COURSE (TYPE SF)

To: 3" BITUMINOUS SURACE COURSE IN TWO LAYERS (TYPE SF)
1" TOPPING COURSE OVER
2" LEVELING COURSE

C-37 STORM DRAIN PROFILES AND STRUCTURE SCHEDULE (ROADS)

REPLACE Entire drawing with attached C-37 STORM DRAIN PROFILES AND STRUCTURE SCHEDULE (ROADS), dated 11 February 20 to reflect the following changes:

REVISE Public Road Structure Schedule – I-2 and I-10 invert in and I-20 invert out.
ADD E-4, E-5, R-1, and R-2 to the Public Road Structure Schedule.

C-38 STORM DRAIN PROFILES (SITE)

REPLACE Storm Drain Profice for for I-13 to E-8 per sketch ADD_2_C1, dated 11 February 20.

C-40 STORM DRAIN PROFILES, STRUCTURE SCHEDULE (SITE)
REPLACE Entire drawing with attached C-40 STORM DRAIN PROFILES, STRUCTURE SCHEDULE (SITE), dated 11 February 20 to reflect the following changes:

REVISE High School #13 Structure Schedule – M-1, M-25 and M26 top elevation
REVISE High School #13 Structure Schedule – M-3 invert out
REVISE High School #13 Structure Schedule – M-29 inverts in and out
REVISE High School #13 Structure Schedule – M-30 invert in

C-47 HANDICAP RAMP DETAILS
REPLACE Entire drawing with attached C-47 HANDICAP RAMP DETAILS), dated 11 February 20 to reflect the following changes:

ADD Sidewalk labels.

C-50 CISTERN TANK DETAILS and NOTES

REVISE Note in two locations as follows:

From: Ø96" REINFORCED HDPE BULKHEAD W/Ø30" HDPE STUB
Ø30" INV = 285.20'
Ø12" INV = 280.16'
Ø96" INV = 280.00'

To: Ø96" REINFORCED HDPE BULKHEAD W/Ø HDPE STUB
Ø30" INV = 281.20'
Ø12" INV = 281.20'
Ø96" INV = 276.00'

REVISE Note in two locations as follows:

From: Ø96" REINFORCED HDPE BULKHEAD W/Ø24" HDPE STUB
Ø24" INV = 285.70'
Ø96" INV = 280.00'

To: Ø96" REINFORCED HDPE BULKHEAD W/Ø24" HDPE STUB
Ø24" INV = 281.70'
Ø96" INV = 276.00'

C-54 CISTERN LAYOUT AND PROFILE

REVISE Elevation of High School Building

From: 292.5
To: 296.5

ADD Slopes and elevations on sidewalk per sketch ADD_2_C2, dated 11 February 20

C-72 – PRIVATE WATER AND SEWER PROFILES
REPLACE Entire drawing with attached C-47 HANDICAP RAMP DETAILS), dated 11 February 20 to reflect the following changes:

REVISE Structure Schedule and Water profiles.

C-79 PRIVATE SEWER PROFILES & CHARTS
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

C-80 SEWER AND WATER MAIN EXTENSIONS TITLE SHEET
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

C-81 SEWER AND WATER MAIN EXTENSIONS PLAN
ADD Sheet to set of Bid and Construction Documents. See attached .

C-82 SEWER AND WATER MAIN EXTENSIONS PLAN
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

C-83 SEWER AND WATER MAIN EXTENSIONS PLAN
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

C-84 WATER MAIN PROFILE, CHART AND NOTES
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

C-85 WATER MAIN EXTENSIONS PROFILES, CHARTS AND NOTES
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

C-86 WATER MAIN EXTENSIONS PROFILE, CHART AND NOTES
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

C-87 WATER MAIN EXTENSIONS PROFILE, CHART AND NOTES
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

C-88 WATER MAIN EXTENSIONS PROFILES, CHARTS AND NOTES
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

C-89 8" SEWER MAIN EXTENSION AND 2" WHC PROFILES
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

C-90 RIDGLEYS RUN ROAD PROFILE
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

C-91 MISSION ROAD WIDENING SECTIONS
ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20.

A-116 FLOOR PLAN - FIRST FLOOR - AREA 'F'

REVISE Type 'C' locker count in Team Room 1 (F900), Team Room 2 (F902), Team Room 3 (F904)

From: 32
To: 31

REVISE Type 'B' locker count in Men's LKRS (F803) and Women's LKRS (F801)

From: 165
To: 166

REVISE Type 'C' locker count in Team Room 4 (F915)

From: 32
To: 30

A-121 FLOOR PLAN - SECOND FLOOR - AREA 'A'

REVISE Type 'A' locker count note in bottom right hand corner.

From: 139
To: 146

A-122 FLOOR PLAN - SECOND FLOOR - AREA 'B'

REVISE Type 'A' locker count note in bottom right hand corner.

From: 176
To: 187

A-131 FLOOR PLAN - THIRD FLOOR - AREA 'A'

REVISE Type 'A' locker count note in bottom right hand corner.

From: 133
To: 147

A-132 FLOOR PLAN - THIRD FLOOR - AREA 'B'

REVISE Type 'A' locker count note in bottom right hand corner.

From: 149
To: 151

A-151 ATHLETIC BUILDINGS - AREA 'J'

REVISE Location of floor drain in J S02 Meter/Storage as shown on attached sketch ADD_2_A1, dated 11 February 20.

ADD Floor drain in J S01 Tickets shown on attached sketch ADD_2_A1, dated 11 February 20.

A-220 ROOF DETAILS

REPLACE Detail 1/A-220 with attached sketch ADD_2_A3 dated 11 February 20, which shows the arrow for the 3/4" diameter S.S. anchor bolt in the correct location.

A-400 EXTERIOR ELEVATIONS

REVISE Reference on detail 4/A-400 'WEST-FACING ELEVATION (SERVICE AREA)'

From: 'SEE 2A/ A-418 FOR WEST-FACING AREA 'B' ELEVATION'
To: 'SEE 1/ A-419 FOR WEST-FACING AREA 'B' ELEVATION'

REVISE Note on 2/A-411 'NORTH-FACING ELEVATION (AREA 'A')'

From: '2'-0" H. CAST ALUM. NUMBERS WITH BAKE ENAMEL FINISH FONT SHALL BE 'FUTURA' SEE DETAIL 5/A-430'

To: '2'-0" H. CAST ALUM. LETTERS WITH BAKE ENAMEL FINISH FONT SHALL BE 'FUTURA' SEE DETAIL 5/A-430'

REVISE Note on 2/A-413 'EAST-FACING ELEVATION (AREAS 'F' & 'G')'

From: '2'-0" H. CAST ALUM. NUMBERS WITH BAKE ENAMEL FINISH FONT SHALL BE 'FUTURA' SEE DETAIL 5/A-430'

To: '2'-0" H. CAST ALUM. LETTERS AND NUMBERS WITH BAKE ENAMEL FINISH FONT SHALL BE FUTURA' SEE DETAIL 5/A-430'

REVISE Reference on 1/A-419 'WEST-FACING ELEVATION (AREAS 'C' & 'B')'

From: 'PREFINISHED STEEL GATE SEE 4A/A-420.'
To: 'PREFINISHED STEEL GATE SEE 9/A-882.'

A-510 NORTH-FACING THREE STORY WALL SECTIONS

REVISE Note on sections 1, 2 and 3/A-510 as shown below:

From: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AT TOP OF WALLS, ABOVE WINDOW HEADS, AND BELOW WINDOW SILLS (TYP.)

To: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AROUND ALL OPENINGS, AT TOP AND BOTTOM OF ALL WALLS, AND AT END OF WALLS (TYP.)

A-511 SOUTH-FACING THREE STORY WALL SECTIONS

REVISE Note on sections 1,2 and 3/A-511 as shown below:

From: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AT TOP OF WALLS, ABOVE WINDOW HEADS, AND BELOW WINDOW SILLS (TYP.)

To: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AROUND ALL OPENINGS, AT TOP AND BOTTOM OF ALL WALLS, AND AT END OF WALLS (TYP.)

A-513 THREE-STORY WALL SECTIONS

REVISE Note on sections 1,2 and 3/A-513 as shown below:

From: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AT TOP OF WALLS, ABOVE WINDOW HEADS, AND BELOW WINDOW SILLS (TYP.)

To: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AROUND ALL OPENINGS, AT TOP AND BOTTOM OF ALL WALLS, AND AT END OF WALLS (TYP.)

A-516 AUDITORIUM WALL SECTIONS

REVISE Note on sections 1 and 2/A-516 as shown below:

From: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AT TOP OF WALLS, ABOVE WINDOW HEADS, AND BELOW WINDOW SILLS (TYP.)

To: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AROUND ALL OPENINGS, AT TOP AND BOTTOM OF ALL WALLS, AND AT END OF WALLS (TYP.)

A-517 AREAS 'D' & 'E' WALL SECTIONS

REVISE Note on sections 3,4 and 5/A-517 as shown below:

From: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AT TOP OF WALLS, ABOVE WINDOW HEADS, AND BELOW WINDOW SILLS (TYP.)

To: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AROUND ALL OPENINGS, AT TOP AND BOTTOM OF ALL WALLS, AND AT END OF WALLS (TYP.)

A-518 GYMNASIUM WALL SECTIONS

REVISE Note on sections 1,2 and 3/A-518 as shown below:

From: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AT TOP OF WALLS, ABOVE WINDOW HEADS, AND BELOW WINDOW SILLS (TYP.)

To: 8" MINERAL WOOL INSULATION BEHIND METAL WALL PANELS AROUND ALL OPENINGS, AT TOP AND BOTTOM OF ALL WALLS, AND AT END OF WALLS (TYP.)

A-519 WALL SECTION DETAILS

REPLACE Entire drawing with attached A-519 WALL SECTION DETAILS, dated 11 February 20 to reflect the following changes:

DELETE Detail 1E/A-519 ABOVE STL. TUBE W/ CHANNEL LINTEL

ADD Air barrier membrane to detail 2A/A-519.

REVISE Notes on detail 2A/A-519 TYP. INSULATED METAL PANEL HEAD DETAIL as follows:

From: 3" GALV. MTL. TRACK

To: 3" x 3" 10 GA. GALVANIZED SHEET METAL - FASTEN W/ 1/4" DIA. x 2-1/4"L. CORROSION RESISTANT HEX HEAD MASONRY FASTENERS SPACED AT 16" O.C. (MAX) & 2" MAX FROM EACH END.

From: NOTE: SEE 2D/A-613 FOR TYPICAL ALUMINUM CURTAIN WALL SYSTEM DETAILS
To: NOTE: SEE 2D/A-611 FOR TYPICAL ALUMINUM CURTAIN WALL SYSTEM DETAILS

ADD Air barrier membrane to detail 2B/A-519.

REVISE Notes on detail 2B/A-519 TYP. INSULATED METAL PANEL SILL DETAIL as follows:

From: 3" GALV. MTL. TRACK

To: 3" x 3" 10 GA. GALVANIZED SHEET METAL - FASTEN W/ 1/4" DIA. x 2-1/4"L. CORROSION RESISTANT HEX HEAD MASONRY FASTENERS SPACED AT 16" O.C. (MAX) & 2" MAX FROM EACH END.

From: 'NOTE: SEE 2E/A-613 FOR TYPICAL ALUMINUM CURTAIN WALL SYSTEM DETAILS'
To: 'NOTE: SEE 2E/A-611 FOR TYPICAL ALUMINUM CURTAIN WALL SYSTEM DETAILS'

DELETE '3" GALV. MTL. TRACK' from detail 2C/A-519 INSULATED METAL PANEL TRANSITION SILL DETAIL.

REPLACE The 3" galvanized metal track with 3" x 3" 10 gauge galvanized sheet metal angle on detail 2D/A-519 INSULATED METAL PANEL TRANSITION SILL DETAIL

REVISE Detail 2E/A-519 to note 'MINERAL WOOL INSULATION IN BETWEEN SUBGIRTS (8" FROM HEAD AND SILL)'
REPLACE The 3" galvanized metal track with 3" x 3" 10 gauge galvanized sheet metal angle on detail 2E/A-519 INSULATED METAL PANEL SCUPPER DETAIL

ADD Air barrier membrane to detail 2F/A-519.
REVISE Detail 2F/A-519 to note 'MINERAL WOOL INSULATION IN BETWEEN SUBGIRTS (8" FROM HEAD)'
REPLACE The 3" galvanized metal track with 3" x 3" 10 gauge galvanized sheet metal angle on detail 2F/A-519 INSULATED METAL PANEL INTEGRATED LOUVER HEAD DETAIL

ADD Air barrier membrane to detail 2G/A-519.
REVISE Detail 2G/A-519 to note 'MINERAL WOOL INSULATION IN BETWEEN SUBGIRTS (8" FROM SILL)'
REPLACE The 3" galvanized metal track with 3" x 3" 10 gauge galvanized sheet metal angle on detail 2G/A-519 'INSULATED METAL PANEL INTEGRATED LOUVER SILL DETAIL'

ADD Detail 2H/A-519.

A-527 ELEVATOR A SECTION AND DETAILS (PENTHOUSE)

REVISE Reference at door head on 2/A-527 WALL SECTION THRU ELEVATOR A to read as follows:

From: ##/A-###
To: 1C/A-519 OPP. HAND

REVISE Reference at parapet on 2/A-527 WALL SECTION THRU ELEVATOR A to read as follows:

From: ##/A-###
To: 3/R-2 OPP. HAND

ADD Reference 3/R-2 at other parapet on 2/A-527 WALL SECTION THRU ELEVATOR A

A-553 PRESS BOX DETAILS:

ADD Detail 4/A-553 PRESS BOX SECTION as shown on attached sketch ADD_2_A3, dated 11 February 20.

A-580 MISCELLANEOUS DETAILS

DELETE Note on 3A/A-580 DETAIL AT WALL that read as follows:

CONTINUOUS 1"X2" FURRING STRIP FOR ANCHORAGE OF SINGLE LOCKER ROW TO WALL BEHIND. ATTACHED LOCKERS TO FURRING STRIPS W/ SCREW FASTENERS ONLY

A-601 DOOR SCHEDULE - DOORS 010-152

REVISE Door 119C HARDWARE SET as follows:

From: HW-05B
To: HW-28.

REVISE Door 125C HARDWARE SET as follows:

From: HW-12
To: HW-28.

REVISE Door 127C HARDWARE SET as follows:

From: HW-12
To: HW-28.

A-602 DOOR SCHEDULE - DOORS 200-280

REVISE Door 239C HARDWARE SET as follows:

From: HW-02F
To: HW-02E

A-604 DOOR SCHEDULE - DOORS 700-X26

REVISE Drawing title for 1/A-604 DOOR SCHEDULE as follows:

From: 800-915
To: 700-915.

REVISE Door 239C HARDWARE SET as follows:

From: HW-02F
To: HW-05C.

REVISE Door number for door leading from EXTERIOR to WRESTLING ROOM to read as follows:

From: 908B
To: 906B

A-610 HOLLOW METAL FRAME ELEVATIONS

ADD The following verbiage to the end of Note 2. for General Hollow Metal Frame Notes:

U.L. RATING IS FOR FRAME, GLASS, DOOR AND HARDWARE.

A-611 FRAME DETAILS

REPLACE Entire drawing with attached A-611 FRAME DETAILS, dated 11 February 20 to reflect the following changes:

REVISE Note on 2A/A-611 TYP. CURTAINWALL MASONRY HEAD DETAIL to reference sunscreen shades.

REVISE Location of air barrier membrane on detail 2B/A-611 MASONRY SILL DETAIL W/ PROJECTED CMU and note for 4" X 4" 10 GA. GALVANIZED SHEET METAL.

REVISE Location of air barrier membrane on detail 2C/A-611 MASONRY SILL DETAIL W/ SPECIAL SHAPE BRICK and note for 4" X 4" 10 GA. GALVANIZED SHEET METAL.

REPLACE The 3" metal track in detail 2D/A-611 with a 3" x 3" 10 gauge metal angle with air barrier membrane and revise note to reference sunscreen shades.

ADD A continuous 14 ga. galvanized plate secured to the underside of lintel with (2) 0.157" diameter powder actuated fasteners at 16" o.c. to detail 2D/A-611.

REPLACE The 3" metal track in detail 2E/A-611 with a 3" x 3" 10 gauge metal angle with air barrier membrane.

REVISE Note on detail 2F/A-611 TYPICAL SILL DETAIL for 3-1/2" X 3-1/2" 10 GA. GALVANIZED SHEET METAL.

REVISE Note on detail 2L/A-611 SILL DETAIL for 4" X 4" 10 GA. GALVANIZED SHEET METAL.

REVISE Note on detail 2M/A-611 'SILL DETAIL' for 4" X 4" 10 GA. GALVANIZED SHEET METAL.

A-612 ALUMINUM CURTAIN WALL SYSTEM FRAME ELEVATIONS

REVISE detail reference found on LEGEND as follows:

From: INDICATES FRAME DETAILS ON 3/A/611
To: INDICATES FRAME DETAILS ON 1/A/613

REVISE General Curtain Frame Note 5 as follows:

From: AT ALL EXTERIOR FRAMES, GLAZING AND HOLLOW METAL PANELS SHALL BE INSTALLED ON EXTERIOR SIDE OF FRAME UNLESS OTHERWISE NOTED.

To: AT ALL EXTERIOR FRAMES, GLAZING AND INSULATED FILL PANELS SHALL BE INSTALLED ON EXTERIOR SIDE OF FRAME UNLESS OTHERWISE NOTED.

REVISE General Curtain Frame Note 6 as follows:

From: SEE 3/A-611 FOR ALUMINUM CURTAINWALL SYSTEM FRAME DETAILS.
To: SEE 3/A-613 FOR ALUMINUM CURTAINWALL SYSTEM FRAME DETAILS.

A-614 ALUMINUM STOREFRONT SYSTEM ELEVATIONS

ADD A removable center mullion (dashed) with the following note to details 1,3,5, and 6 on 1/A-614: 'REMOVABLE CENTER MULLION WHERE SHOWN ON SCHEDULE (TYP.)'

REVISE Drawing label

From: 2/A-613 ALUMINUM STOREFRONT HEAD/ JAMB/ SILL CONDITIONS
To: 2/A-614 ALUMINUM STOREFRONT HEAD/ JAMB/ SILL CONDITIONS

REVISE Drawing label

From: 3/A-613 ALUMINUM STOREFRONT HEAD/ JAMB/ SILL CONDITIONS
To: 3/A-614 ALUMINUM STOREFRONT HEAD/ JAMB/ SILL CONDITIONS

REVISE Note on detail 2D/ A-614

From: '1/2" GDW (FULL HT.) ON 3-5/8" MET. STUDS AT 16" O.C. MAX. FOR TRIFAB 451 FRAMES AND ON 6-5/8" MTL. STUDS AT 16" O.C. (MAX) FOR 1600 UT FRAMES (BRACE DIAGONALLY AT 4'-0" O.C. MAX.)'

To: '5/8" GDW (FULL HT.) ON 3-5/8" MET. STUDS AT 16" O.C. MAX. FOR TRIFAB 451 FRAMES AND ON 6-5/8" MTL. STUDS AT 16" O.C. (MAX) FOR 1600 UT FRAMES (BRACE DIAGONALLY AT 4'-0" O.C. MAX.)'

ADD Detail 2F/ A-614 STOREFRONT SILL AT GDW DETAIL. See attached sketch ADD_2_A4 2/A-614 ALUMINUM STOREFRONT HEAD/JAMB/SILL CONDITIONS, dated 11 February 20.

A-615 INSULATED TRANSLUCENT FIBERGLASS WINDOW SYSTEM ELEVATIONS

REPLACE Entire drawing with attached A-614 ALUMINUM STOREFRONT SYSTEM ELEVATIONS, dated 11 February 20 to reflect the following changes:

REVISE Note on detail 2B/A-615 SILL DETAIL AT MASONRY for 4" X 4" 10 GA. GALVANIZED SHEET METAL.

ADD Air barrier membrane to detail 2C/A-615 HEAD DETAIL AT ALUM. SIDING.

ADD Air barrier membrane to detail 2D/A-615 SILL DETAIL AT ALUM. SIDING.

REPLACE The 3" metal track in detail 2E/A-615 with a 3" x 3" 10 gauge metal angle with air barrier membrane.

REVISE Note on detail 2E/A-615 HEAD DETAIL AT METAL PANEL for insulation.

REPLACE The 3" metal track in detail 2F/A-615 with a 4" x 4" 10 gauge metal angle with air barrier membrane.

REVISE Detail label
From: 2E/A-615 JAMB DETAIL AT MASONRY
To: 2G/A-615 JAMB DETAIL AT MASONRY

REVISE Note on detail 2G/A-615 JAMB DETAIL AT MASONRY for 10 GA. GALVANIZED SHEET METAL

ADD Air barrier membrane to detail 2G/A-615 JAMB DETAIL AT MASONRY.

REPLACE 5-1/2" foil faced batt insulation with 3-3/4" spray polyurethane foam (SPF) insulation on wall primer (typ.) on detail 2H/A-615 'JAMB DETAIL AT ALUM. SIDING.'

ADD Air barrier membrane to detail 2H/A-615 JAMB DETAIL AT ALUM. SIDING.

REPLACE The 3" metal track in detail 2J/A-615 with a 3" x 3" 10 gauge metal angle with air barrier membrane.

REVISE Note on detail 2J/A-615'JAMB DETAIL AT METAL PANEL for insulation.

From: BATT INSULATION IN BETWEEN SUBGIRTS (8" FROM HEAD)

To: MINERAL WOOL INSULATION IN BETWEEN SUBGIRTS (8" FROM HEAD)

A-700 INTERIOR ELEVATIONS - COMMONS

DELETE Double door and frame in the middle of the elevation from 2B SOUTH-FACING ELEVATION

A-703 INTERIOR ELEVATIONS - AUDITORIUM

REPLACE Detail 3/A-703 GUARDRAIL ELEVATION, with attached sketch ADD_2_A5 , dated 11 February 20.

REPLACE Detail 4/A-703 GUARDRAIL ELEVATION. with attached sketch ADD_2_A5 , dated 11 February 20.

A-726 - MISC. DETAILS

REVISE Section detail callout on 4/A-726 to read as follows:

From: 1/A-726
To: 2/A-726

A-730 - SCIENCE CASEWORK ELEVATIONS AND SCHEDULE

REVISE Note on A/A-730 to read as follows:

From: 8"H. BOX CURB - SEE 2/A-731
To: 8"H. BOX CURB - SEE 2/A-731 AND 3/A-731

A-731 - SCIENCE CASEWORK ELEVATIONS AND DETAILS

REVISE Reference for B/A-731 to read as follows:
From: B/A-731
To: L/A-731

REVISE Note on L/A-731 to read as follows:

From: 8"H. BOX CURB - SEE 2/A-731
To: 8"H. BOX CURB - SEE 2/A-731 AND 3/A-731

REPLACE Detail 3/A-731 see attached sketch ADD_2_A6, dated 11 February 20.

A-800 ENLARGED TOILET ROOM SCHEDULE AND DETAILS

REVISE Item #1 on the TOILET ROOM ACCESSORY SCHEDULE & NOTES

From: TOILET TISSUE DISPENSER
BOBRICK B-2740
MOUNT 20" A.F.F TO CENTERLINE OF OUTLET

To: TOILET TISSUE DISPENSER (MULTI-ROLL)
CASCADES DOUBLE JRT JUNIOR MODEL #4212
MOUNT 30" AFF TO BOTTOM
(MOUNT BOTTOM 18" ABV. GRAB BARS WHERE PROVIDED BUT NO HIGHER THAN 48" AFF -TYP.)

REVISE Item #3 on the TOILET ROOM ACCESSORY SCHEDULE & NOTES

From: PAPER TOWEL DISPENSER
KIMBERLY-CLARK D2 HARD ROLL TOWEL DISPENSER (09073)
MOUNT 40" AFF TO BOTTOM
(**NOTE**: FRONT DISPENSING LEVER SHALL BE MOUNTED NO HIGHER THAN 48" AFF)

To: PAPER TOWEL DISPENSER
CASCADES EASY ROLL OUT MODEL 10105
MOUNT 48" AFF TO CENTERLINE
(**NOTE**: FRONT DISPENSING ARM SHALL BE MOUNTED NO HIGHER THAN 48" AFF)

A-900 FINISH SCHEDULE - (ROOMS 010 -109)

ADD Note for base in room A 016 COMMONS

'G' PORCELAIN TILE

A-910 FLOORING FINISH

REVISE Title of detail 6/A-913 'FLOORING FINISH OVERALL PLAN THIRD FLOOR'

From: '6/A-913 TYPICAL CERAMIC TILE PLAN AT STAIRS.'
To: '2/A-913 TYPICAL CERAMIC TILE PLAN AT STAIRS.'

REVISE Title of detail 2/A-913 'FLOORING FINISH OVERALL PLAN THIRD FLOOR'

From: '2/A-913 QUARRY TILE TO VCT.'
To: '6/A-913 QUARRY TILE TO VCT.'

S-124 LOW ROOF FRAMING PLAN - AREA 'D'

ADD Bearing plate "BP6" for W24X68 (+14-0") bearing on pier P17 along column line S.9 per sketch ADD_2_S3, dated 11 February 20.

S-201 GENERAL NOTES AND FOUNDATION DETAILS

DELETE The following from the REINFORCING STEEL paragraph under GENERAL NOTES

CONCRETE ENGINEERED REINFORCING FIBERS SHALL BE POLYPROPYLENE, COLLATED, FIBRILLATED FIBERS FROM FIBERMESH, INC. INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

REVISE The following from the STRUCTURAL STEEL paragraph under GENERAL NOTES

From: PROVIDE 2 MILS OF ONE OF THE FOLLOWING SHOP PAINTS: NO. 769 GREY PRIMER MANUFACTURED BY RUST-OLEUM CORPORATION; NO. 769 GREY PRIMER MANUFACTURED BY TNEMEC COMPANY AND WETSALL PRIMER MANUFACTURED BY FARBOIL COMPANY.

To: SEE SPECIFICATIONS FOR STEEL PRIMER AND PROTECTIVE COATINGS.

S-302 TYPICAL FRAMING DETAILS

DELETE Note from detail 16 BEAM LINTEL AT MASONRY WALL that says the following:

"BOTTOM PLATE NOT REQUIRED WHEN BOTTOM FLANGE IS EQUAL TO CMU WIDTH AT WALLS WITHOUT BIRCK VENEER"

REVISE Detail 16 BEAM LINTEL AT MASONRY WALL revised to show beam lintel bottom 5/16" continuous plate shall extend to 1/2" from outside face of insulated metal panel per sketch ADD_2_S1, dated 11 February 20, dated 11 February 20.

REVISE Detail 17 TYPICAL BEAM LINTEL WITH HUNG PLATE revised to show beam lintel hung 5/16" continuous plate shall extend to 1/2" from outside face of insulated metal panel per sketch ADD_2_S2, dated 11 February 20, dated 11 February 20.

S-305 TYPICAL FRAMING DETAILS detail 3

REVISE Detail 1 FOLDING PARTITION SUPPORT AT FLOOR to indicate size of hung W00 beam shall be W8x31 per sketch ADD_2_S4, dated 11 February 20.

S-403 ROOF FRAMING DETAILS

REVISE Detail 2 FOLDING PARTITION SUPPORT AT ROOF JOIST BEARING to indicate size of hung W00 beam shall be W8x31 per sketch Add_2_S5, dated 11 February 20.

REVISE Detail 3 FOLDING PARTITION SUPPORT AT ROOF to indicate size of hung W00 beam shall be W8x31 per sketch Add_2_S6, dated 11 February 20.

EQ-114 FURNITURE AND EQUIPMENT PLAN - FIRST FLOOR - AREA 'D'

ADD Comment for line items 15 and 20 to read as follows:

In contract. Contractor to provide.

M-001 MECHANICAL SYMBOLS AND ABBREVIATIONS

REVISE Building design criteria as shown in sketch ADD_2_M1, dated 11 February 20.

M-111 FIRST FLOOR PLAN AREA 'A'

REPLACE Entire drawing with attached M-111FIRST FLOOR PLAN AREA 'A', dated 11 February 20 to reflect the following changes:

ADD General note B per revised drawing.
REVISE Low pressure ductwork located downstream of supply air terminal units per revised drawing.

M-112 FIRST FLOOR PLAN AREA 'B'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

REVISE Low pressure ductwork located downstream of supply air terminal units per sketch ADD_2_M2, dated 11 February 20.

M-113 FIRST FLOOR PLAN AREA 'C'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

REVISE Low pressure ductwork located downstream of supply air terminal unit per sketch ADD_2_M3, dated 11 February 20.

M-114 FIRST FLOOR PLAN AREA 'D'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

M-115 FIRST FLOOR PLAN AREA 'E'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

ADD Size to supply diffuser serving fan coil unit FCU-2-30 per sketch ADD_2_M4, dated 11 February 20.

M116 FIRST FLOOR PLAN AREA 'F'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

M-117 FIRST FLOOR AREA 'G'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

REVISE Fan coil unit FCU-1-2 and associated ductwork per sketch ADD_2_M5, dated 11 February 20.

M-118 FIRST FLOOR AREA 'H'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

REVISE Airflow for EG serving room E – A275 from 425 CFM to 200 CFM.

M-122 SECOND FLOOR PLAN AREA 'B'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

M-123 SECOND FLOOR PLAN AREA 'C'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

M-125 SECOND FLOOR PLAN AREA 'E'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

REVISE Ductwork serving STOR – EG22C, CONTROL ROOM – EG22A and STOR – EG22B per sketch ADD_2_M6, dated 11 February 20.

M-131 THIRD FLOOR PLAN AREA 'A'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

REVISE Airflow for EG serving room E – A375

From: 225 CFM
To: 250 CFM

REVISE Ductwork serving MINI AUDITORIUM /TESTING – A373 per sketch ADD_2_M7, dated 11 February 20.

M-132 THIRD FLOOR PLAN ARAE 'B'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

REVISE Air devices serving room E – B345 per sketch ADD_2_M8, dated 11 February 20.

M-133 – THIRD FLOOR PLAN AREA 'C'

ADD General note B reading

"B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY; INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS."

REVISE Ductwork located in CORR – C032 per sketch ADD_2_M9, dated 11 February 20.

M-140 PART ROOF PLAN – LOW ROOF

REVISE Notes at OA intake ventilators per sketch ADD_2_M10, dated 11 February 20.

M-141 PART ROOF PLAN – HIGH ROOF

REVISE Notes at OA intake ventilators per sketch ADD_2_M11, dated 11 February 20.

MP-114 FIRST FLOOR PLAN AREA 'D'

REVISE Labeling of pipes in DRAMA – D506 per sketch ADD_2_M12, dated 11 February 20.

M-503 – DETAILS AND DIAGRAMS

REVISE Diagram 10/M503 per sketch ADD_2_M13, dated 11 February 20.

M-601 SCHEDULES

REVISE Unit configurations in Dedicated Outdoor Air System Schedule per sketches ADD_2_M20, ADD_2_M21 and ADD_2_M22, dated 11 February 20.

M-606 SCHEDULES

REVISE Performance requirements for sound attenuators 12R and 16R1 per sketch ADD_2_M14, dated 11 February 20.

REVISE Description/Capacity for Air-Cooled Chiller ACC-1 and ACC-2, Expansion Tank ET-1, and Expansion Tank ET-2 in Miscellaneous Equipment Schedule per sketch ADD_2_M14, dated 11 February 20.

M-607 SCHEDULES

REVISE Performance requirements for exhaust fan EF-15 per sketch ADD_2_M15, dated 11 February 20.

REVISE Control designations for exhaust fans EF-S-1, EF-S-2, EF-S-3 and EF-S-4 per sketch ADD_2_M15 dated 11 February 20.

M-701 AUTOMATIC TEMPERATURE CONTROLS AND SYMBOLS LIST

REVISE Global and Local Outdoor Air Temperature and Humidity Sensors sequence of operation per sketch ADD_2_M16, dated 11 February 20.

M-702 AUTOMATIC TEMPERATURE CONTROLS

REVISE Paragraph C in Carbon Dioxide Monitoring and Control System (CDMCS) sequence of operation to read as follows:

From: ALL COMPONENTS OF THE CDMCS (EXCLUDING EACH SENSOR SUITE PANELS VACUUM PUMP SYSTEM) SHALL BE CONTINUOUSLY ENERGIZED.

To: ALL COMPONENTS OF THE CDMCS SHALL BE CONTINUOUSLY ENERGIZED AT ALL TIMES.

REVISE Paragraph B.1. in Typical Four-Pipe Fan Coil Unit sequence of operation to read as follows:

From: PRIOR TO ENTERING INTO THE OCCUPIED CYCLE, THE DDC SYSTEMS TIME SCHEDULING PROGRAM SHALL PLACE THE FAN COIL UNIT INTO EITHER THE

WARM-UP, COOL-DOWN, OR RECIRCULATION CYCLE AS DESCRIBED WITHIN THIS PARAGRAPH. COMPANION EXHAUST FANS SHALL BE DEENERGIZED DURING THESE CYCLES.

To: PRIOR TO ENTERING THE OCCUPIED CYCLE, THE DDC SYSTEMS TIME SCHEDULING PROGRAM SHALL PLACE THE FAN COIL UNIT INTO EITHER THE WARM-UP, COOL-DOWN, OR RECIRCULATION CYCLE AS DESCRIBED WITHIN THIS PARAGRAPH.

ADD Domestic Water Submeter diagram and sequence of operation per sketch ADD_2_M17, dated 11 February 20.

M-703 AUTOMATIC TEMPERATURE CONTROLS

REPLACE Entire drawing with attached M-703 AUTOMATIC TEMPERATURE CONTROLS, dated 11 February 20 to reflect the following changes:

REVISE Diagram and sequence of operation for Dedicated Outdoor Air System (Space Conditioning + Ventilation Airflow) to clarify intent.

REVISE Diagram and sequence of operation for Dedicated Outdoor Air System (Variable Ventilation Airflow Only) to clarify intent.

M-705 AUTOMATIC TEMPERATURE CONTROLS

REVISE Paragraph A.5. in Building Chilled Water System to read as follows:

From: THE ATC CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND WIRING ALL CONTROL EQUIPMENT SUPPLIED WITH THE CHILLER INCLUDING SWITCHES, RELAYS, DEVICES, AND/OR INTERFACES TO ACCOMPLISH THE CHILLERS SEQUENCE OF OPERATION. PROVIDE CONTROL INTERFACE BETWEEN THE DDC SYSTEM, CHILLERSS CONTROL PANELS, AND ALL ASSOCIATED COMPONENTS PROVIDING INPUT TO OR RECEIVING OUTPUT FROM THE CHILLERS' CONTROL PANELS.

To: EACH CHILLER SHALL HAVE THE ABILITY TO OVERRIDE DDC PUMP OPERATION UNDER THE CHILLER MANUFACTURER'S REQUIRED "FREEZE AVOIDANCE" MODE OF OPERATION AND ENABLE/DISABLE ITS ASSOCIATED PRIMARY CHILLED WATER PUMP INDEPENDENT OF OUTDOOR AIR TEMPERATURE. PROVIDE CONNECTION BETWEEN THE DDC SYSTEM AND EACH CHILLERS' CONTROLLER TO OBTAIN ASSOCIATED PUMP OVERRIDE ENABLE AND DISABLE CONTROL POINTS.

M-706 AUTOMATIC TEMPERATURE CONTROLS

REPLACE Entire drawing with attached M-706 AUTOMATIC TEMPERATURE CONTROLS, dated 11 February 20 to reflect the following changes:

REVISE DDC – Input/Output Point Schedule per revised drawing.

REVISE Diagram and sequence of operation for Dedicated Outdoor Air System (Constant Ventilation Airflow Only) to clarify intent per revised drawing.

M-707 AUTOMATIC TEMPERATURE CONTROLS

ADD Points associated with "Domestic Water Submeter" in the DDC – Input/Output Point Schedule" per sketch ADD_2_M18, dated 11 February 20.

REVISE Points associated with "CO2 Monitoring & Control System" in the DDC – Input/Output Point Schedule" per sketch ADD_2_M18, dated 11 February 20.

REVISE Points associated with "Dedicated OA Unit (Ventilation Only)" in the DDC – Input/Output Point Schedule" per sketch ADD_2_M19, dated 11 February 20.

REVISE Points associated with "Dedicated OA Unit (Vent + Conditioning)" in the DDC – Input/Output Point Schedule" per sketch ADD_2_M19, dated 11 February 20.

P-113 FIRST FLOOR PLAN AREA 'C'

REVISE Underground gas service per sketch ADD_2_P1, dated 11 February 20.

REVISE Piping, cleanouts and concrete at grease interceptor per sketch ADD_2_P1, dated 11 Feb 20.

P-502 DETAILS & DIAGRAMS

REVISE Detail 10/P502 per sketches ADD_2_P2 and ADD_2_P3, dated 11 February 20.

P-507 RISER DIAGRAMS

ADD Sheet to set of Bid and Construction Documents. See attached drawing, dated 11 February 20, dated 11 February 20.

F-111 FIRST FLOOR PLAN

ADD General note C to read as follows:

C. DO NOT INSTALL PIPING OR SPRINKLER HEADS BELOW HORIZONTAL CONCEALED FAN COIL UNITS.

F-121 SECOND FLOOR PLAN

ADD General note C to read as follows:

C. DO NOT INSTALL PIPING OR SPRINKLER HEADS BELOW HORIZONTAL CONCEALED FAN COIL UNITS.

F-131 THIRD FLOOR PLAN

ADD General note C to read as follows:

C. DO NOT INSTALL PIPING OR SPRINKLER HEADS BELOW HORIZONTAL CONCEALED FAN COIL UNITS.

E0-100 SYMBOLS LIST

ADD General Note F. per sketch ADD_2_E1, dated 11 February 20.

E0-206 POLE DETAILS AND SCHEDULES

REVISE Transformer TTB to TTP on detail 11/E0-206 per sketch ADD_2_E33, dated 11 February 20.

REVISE Note for 800A ECB on detail 11/E0-206 per sketch ADD_2_E33, dated 11 February 20.

EL-111 FIRST FLOOR PLAN AREA 'A' LIGHTING

REVISE Exit signs in Corridors A 014 and A 015 per sketch ADD_2_E2, dated 11 February 20.

EL-115 FIRST FLOOR PLAN AREA 'E' LIGHTING

REVISE Exit signs in Corridor E 060 per sketch ADD_2_E3, dated 11 February 20.

DELETE "Note 4 TYPICAL OF 5" in Corridor E070.

EL-116 FIRST FLOOR PLAN AREA 'F' LIGHTING

REVISE Room controller for Women F 712 to a power pack.

EL-117 FIRST FLOOR PLAN AREAS 'G' & 'H' LIGHTING

ADD Exit sign in Training G 808 per sketch ADD_2_E4, dated 11 February 20.

EL-122 SECOND FLOOR PLAN AREA 'B' LIGHTING

ADD Plug load receptacle switchpack controller in CTE Career Academy Comp. Sci. 1 B 246 for a total of 4 controllers in this room.

ADD Plug load receptacle switchpack controller in CTE Career Academy Comp. Sci. 2 B 250 for a total of 4 controllers in this room.

EL-123 SECOND FLOOR PLAN AREA 'C' LIGHTING

ADD Specific Note 3 tagging Type J2 lighting fixture in Corridor C 022 near Special Education Resource 6 (S.E. RES 6) C 218.

EL-150 STADIUM & STORAGE BUILDINGS

REVISE Power pack serving Women JS03, Toile JS05, Men's JS04 and Stor JS01A to room controllers and provide plug load switchpack to control exhaust fans serving associated rooms per sketch ADD_2_E31, dated 11 February 20.

DELETE Contactor and timer switch controlling exhaust fans located in Stor JS01A. Exhaust fans to be controlled by plug load switchpack per sketch ADD_2_E32, dated 11 February 20.

EP-111 FIRST FLOOR PLAN AREA 'A' POWER

DELETE Floor box located in Main Office A 100 per sketch ADD_2_E5, dated 11 February 20.

EP-112 FIRST FLOOR PLAN AREA 'B' POWER

REVISE Dryer receptacle in Storage B 140A from NEMA type 6-30R to NEMA type 14-30R.

EP-113 FIRST FLOOR PLAN AREA 'C' POWER

DELETE Display case receptacle in Corridor C012 near Staff Lounge 1 per sketch ADD_2_E6, dated 11 February 20.

EP-114 FIRST FLOOR PLAN AREA 'D' POWER

ADD Quad receptacle mounted in audio/visual wall box in Dance D 508 per sketch ADD_2_E7, dated 11 February 20.

EP-115 FIRST FLOOR PLAN AREA 'E' POWER

REVISE Specific notes 1, 6, 7, 8, 9, 10, 11, and 12 per sketch ADD_2_E8, dated 11 February 20.

REVISE Specific notes tagging floor boxes in Auditorium E 703 per sketch ADD_2_E8, dated 11 February 20.

DELETE Floor boxes on Stage E 505 per sketch ADD_2_E8, dated 11 February 20.

EP-117 FIRST FLOOR PLAN AREAS 'G' & 'H' POWER

ADD Electrical provisions for FCU-1-2 in Health Classroom 1 G 804 and for FCU-1-3 in Health Classroom 2 G 802 per sketch ADD_2_E9, dated 11 February 20.

REVISE Room number in Exterior P.E. Storage (EXT. P.E. S) from FX25 to G X23.

EP-121 SECOND FLOOR PLAN AREA 'A' POWER

DELETE Display case receptacle in Corridor A 024 near Classroom 15 A 278 and associated Specific Note 3.

EP-122 SECOND FLOOR PLAN AREA 'B' POWER

DELETE Display case receptacle in Corridor B 024 near Classroom 7 B 262 per sketch ADD_2_E10, dated 11 February 20.

REVISE Room number in Elevator Equipment (ELEV EQ)

From: B 267
To: B 267A

EP-123 SECOND FLOOR PLAN AREA 'C' POWER

REVISE Specific note 3

From: RECEPTACLES MOUNTED IN SCIENCE CASEWORK AND WIRING CONCEALED IN CASEWORK.

To: RECEPTACLES MOUNTED IN SCIENCE CASEWORK AND WIRING SHALL BE CONCEALED IN CASEWORK.

REVISE Branch circuit for FCU-6-4 in Life Science Classroom 3 C 230 as follows:

From: M2C-5
To: M2C-10

REVISE Branch circuit for FCU-6-6 in Life Science Classroom 2 C 226 as follows:

From: M2C-10
To: M2C-9

REVISE Branch circuit for FCU-6-7 in Life Science Classroom 1 C 224 as follows:

From: M2C-7
To: M2C-11

DELETE Display case receptacle in Corridor C 022 near S.E. Resource 5 (ALS) C 242.

DELETE Display case receptacle in Corridor C 026 near S.E. Resource 6 C 218.

EP-131 THIRD FLOOR PLAN AREA 'A' POWER

DELETE Power provisions for skylights in Workroom A 305 per sketch ADD_2_E11, dated 11 February 20.

DELETE Display case receptacle in Corridor A 034 near Classroom 40 A 378.

REVISE Specific Note 9 to read:

"NOT USED."

EP-132 THIRD FLOOR PLAN AREA 'B' POWER

ADD Specific Note 6 to skylight diffuser controllers in Seminar 3 B 341 per sketch ADD_2_E12, dated 11 February 20.

DELETE Display case receptacle in Corridor B 034 near Classroom 33 B 362.

REVISE Name of room name B 353

From: Planning 3 B 353
To: Planning 4 B 353

EP-133 THIRD FLOOR PLAN AREA 'C' POWER

REVISE Specific note 3 as follows:

From: RECEPTACLES MOUNTED IN SCIENCE CASEWORK AND WIRING TO CONCEALED IN CASEWORK.

To: RECEPTACLES MOUNTED IN SCIENCE CASEWORK AND WIRING SHALL BE CONCEALED IN CASEWORK.

ADD Specific note 12 to read:

"CONNECT TO SHUNT-TRIP MAIN BREAKER IN PANEL SERVING THIS ROOM."

REVISE In Physical Science Classroom 1 C 324, Physical Science Classroom 2 C 326, Physical Science Classroom 3 C 330, Physical Science Classroom 4 C 332, Earth/Space Science Classroom 3 C340, and Earth/Space Science Classroom 4 C 342, change specific note tagging emergency power off (EPO) push-button in each room

From: Specific note 9
To: Specific note 12

DELETE Display case receptacle in Corridor C 032 near Classroom 22 C 344.

DELETE Display case receptacle in Corridor C 036 near Professional Development C 316.

EP-141 PART ROOF PLAN HIGH ROOF

REVISE AHU-6 (SUPPLY) motor to 23.8MCA-30MOP-480V 3 phase.

EP-202 PART PLAN MECHANICAL/ ELECTRICAL ROOM

ADD Electric meter #41 in Electric CV03B per sketch ADD_2_E30, dated 11 February 20.

EP-204 – MEZZANINE LEVEL

REVISE AHU-2 (SUPPLY) motor to 38.4MCA-45MOP-480V 3 phase per sketch ADD_2_E27, dated 11 February 20.

REVISE Disconnect switch serving AHU-2 (SUPPLY) to note 1 per sketch ADD_2_E27, dated 11 February 20.

EP-205 PART FIRST FLOOR PLAN PROPOSED FEEDER ROUTES

REVISE Feeder route of feeder EL1C1-1 serving Panel EL2C per sketch ADD_2_E13, dated 11 February 20.

EF-201 FIRE ALARM DIAGRAM

REVISE Location of fire alarm control panel (FACP) on fire alarm riser diagram per sketch ADD_2_E14, dated 11 February 20.

E-601 POWER RISER DIAGRAM

REVISE Feeder EL1C1-1 serving Panel EL2C to be Type MI cable when not run underground per sketch ADD_2_E15, dated 11 February 20.

REVISE Feeder EL1C1-2 serving Panel EL1F to be Type MI cable when not run underground per sketch ADD_2_E16, dated 11 February 20.

REVISE Panel S2R1F2 to be two-section, in lieu of single-section.

REVISE Specific Note 3 to read as follows:

From: PROVIDE 3P-100A ELECTRONIC TRIP CIRCUIT BREAKER WITH AUXILIARY CONTACTS TO SERVE GENERATOR EMERGENCY / LIFE SAFETY LOADS. MOUNT CIRCUIT BREAKER WITHIN GENERATOR ENCLOSURE AND MAKE ALL CONNECTIONS. COORDINATE LOCATION OF CIRCUIT BREAKER WITH GENERATOR MANUFACTURER.

To: PROVIDE 3P-100A ELECTRONIC TRIP CIRCUIT BREAKER WITH KIRK KEY INTERLOCK WITH GENERATOR DOCKING STATION, AUXILIARY CONTACTS TO SERVE GENERATOR EMERGENCY / LIFE SAFETY LOADS. MOUNT CIRCUIT BREAKER WITHIN GENERATOR ENCLOSURE AND MAKE CONNECTIONS. COORDINATE LOCATION OF CIRCUIT BREAKER WITH GENERATOR MANUFACTURER.

E-602 POWER RISER DIAGRAM

REVISE Transformers TER and TER1E from 9 kVA to 15 kVA on Schedule of Transformers per sketch ADD_2_E17, dated 11 February 20.

E-604 SCHEDULES

REVISE Wiring Panel Schedule EL1C1 per sketch ADD_2_E18, dated 11 February 20.

REVISE Wiring Panel Schedule EL1C2 per sketch ADD_2_E19, dated 11 February 20.

REVISE Wiring Panel Schedule EL1F per sketch ADD_2_E20, dated 11 February 20.

REVISE Wiring Panel Schedule EL2C per sketch ADD_2_E21, dated 11 February 20.

REVISE Wiring Panel Schedule ER per sketch ADD_2_E22, dated 11 February 20.

REVISE Wiring Panel Schedule ER1E per sketch ADD_2_E23, dated 11 February 20.

E-605 SCHEDULES

REVISE Wiring Panel Schedule M2C per sketch ADD_2_E24, dated 11 February 20.

REVISE Wiring Panel Schedule M3A, circuit 26 description to read as follows:

From: SKYLIGHTS A306, A 307, A309
To: SKYLIGHTS A 307, A309

E-606 SCHEDULES

REVISE Wiring Panel Schedule R1E3, circuit 20, to read as follows:

From: REC - FLOORBOXES E505
To: SPARE

REVISE Wiring Panel Schedule R2A, circuit 68 description to read as follows:

From: VRT-1-1,VRT-1-2,VRT-2-1
To: VRT-1-1,VRT-1-2,VRT-3-1

E-610 SCHEDULES

REVISE Wiring Panel Schedule S1R2ER per sketch ADD_2_E25, dated 11 February 20.

E-611 SCHEDULES

REVISE Wiring Panel Schedule S2M1F. per sketch ADD_2_E26, dated 11 February 20.

REVISE Wiring Panel Schedule S2M1B per sketch ADD_2_E28, dated 11 February 20.

REVISE Wiring Panel Schedule S2R1B per sketch ADD_2_E29, dated 11 February 20.

T-001 TECHNOLOGY SITE PLAN

REPLACE Entire drawing with attached T-001 TECHNOLOGY SITE PLAN, dated 11 February 20 to reflect the following changes:

REVISE to indicate Verizon/Comcast/County fiber and Howard County work from Route 1 to HS13 Limit of Disturbance along Ridgley Run Road.

T-111 TECHNOLOGY FIRST FLOOR PLAN - AREA 'A'

REVISE Floor boxes in Main Office A 100

From: Wiremold EFB6S
To: Wiremold EFB6S-OG (on-grade)

REVISE Floor box in Conference A 101H

From: Wiremold EFB6S
To: Wiremold EFB6S-OG (on-grade)

REVISE Floor box in Conference A 108C
From: Wiremold EFB6S
To: Wiremold EFB6S-OG (on-grade)

REVISE Floor box in S.E. Conference A 152

From: Wiremold EFB6S
To: Wiremold EFB6S-OG (on-grade)

T-112 TECHNOLOGY FIRST FLOOR PLAN AREA B

REVISE Floor boxes in CTE Engineer/ Tech Ed 1 B 119, CTE Engineer/ Tech Ed 2 B 125 and CTE Engineer/ Tech Ed 3 B 127 as follows:

From: Wiremold EFB6S
To: Wiremold EFB6S-OG (on-grade)

T-115 TECHNOLOGY FIRST AND SECOND FLOOR PLANS AREA E

REVISE Floor boxes in Electronic E 602

From: Wiremold EFB6S
To: Wiremold EFB6S-OG (on-grade)

REVISE Floor box in Auditorium E 703

From: Wiremold EFB6S
To: Wiremold EFB6S-OG (on-grade)

T-116 TECHNOLOGY FIRST FLOOR PLAN - AREA 'F'

REPLACE Entire drawing with attached T-116 TECHNOLOGY FIRST FLOOR PLAN - AREA 'F', dated 11 February 20 to reflect the following changes:

REVISE Notes for Gymnasium floor box as shown on drawing.

ADD Detail T2/T116 WIREMOLD 880W3 FLOOR BOX INSTALLATION.

T-506 TECHNOLOGY GYMNASIUM SOUND SYSTEM

REPLACE Entire drawing with attached T-506 TECHNOLOGY GYMNASIUM SOUND SYSTEM, dated 11 February 20 to reflect the following changes:

REVISE Detail 1 Tesiraforte AVB AI to Tesiraforte DAN AI.

T-507 TECHNOLOGY CAFETERIA SOUND SYSTEM

REPLACE Entire drawing with attached T-507 TECHNOLOGY CAFETERIA SOUND SYSTEM, dated 11 February 20 to reflect the following changes:

DELETE Projector and screen from Detail 2 notes.

T-510 CCTV SYSTEM

REPLACE Entire drawing with attached T-510 CCTV SYSTEM, dated 11 February 20 to reflect the following changes:

REVISE Details 3 and 4.

END OF ADDENDUM NO. 2

Attachments:

Specification Sections

05 4000	COLD FORMED METAL FRAMING
09 2216	NON-STRUCTURAL METAL FRAMING

Sketches

ADD_2_C1 thru C2
ADD_2_A1 thru A6
ADD_2_S1 thru S6
ADD_2_M1 thru M22
ADD_2_P1 thru P3
ADD_2_EX
ADD_2_E1 thru E33

30"x42" drawings

C-37	STORM DRAIN PROFILES AND STRUCTURE SCHEDULE (ROADS)
C-40	STORM DRAIN PROFILES,STRUCTURE SCHEDULE (SITE)
C-47	HANDICAP RAMP DETAILS
C-72	PRIVATE SEWER PROFILES & CHARTS
C-79	PRIVATE SEWER PROFILES & CHARTS
C-80	SEWER AND WATER MAIN EXTENSIONS TITLE SHEET
C-81	SEWER AND WATER MAIN EXTENSIONS PLAN
C-82	SEWER AND WATER MAIN EXTENSIONS PLAN
C-83	SEWER AND WATER MAIN EXTENSIONS PLAN
C-84	WATER MAIN PROFILE, CHART AND NOTES
C-85	WATER MAIN EXTENSIONS PROFILES, CHARTS AND NOTES
C-86	WATER MAIN EXTENSIONS PROFILE, CHART AND NOTES
C-87	WATER MAIN EXTENSIONS PROFILE, CHART AND NOTES
C-88	WATER MAIN EXTENSIONS PROFILES, CHARTS AND NOTES
C-89	8" SEWER MAIN EXTENSION AND 2" WHC PROFILES
C-90	RIDGLEYS RUN ROAD PROFILE
C-91	MISSION ROAD WIDENING SECTIONS
A-519	WALL SECTION DETAILS
A-611	FRAME DETAILS
A-615	INSULATED TRANSLUCENT FIBERGLASS WINDOW SYSTEM ELEVATIONS
M-111	FIRST FLOOR PLAN AREA 'A'
M-703	AUTOMATIC TEMPERATURE CONTROLS
M-706	AUTOMATIC TEMPERATURE CONTROLS
P-507	RISER DIAGRAMS
T-001	TECHNOLOGY SITE PLAN
T-116	FIRST FLOOR PLAN - AREA 'F'
T-506	TECHNOLOGY GYMNASIUM SOUND SYSTEM
T-507	TECHNOLOGY CAFETERIA SOUND SYSTEM
T-510	CCTV SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this section.

1.2 SCOPE

A. The Contractor shall furnish all labor, materials, equipment and services necessary for and reasonably incidental to the furnishing and installation of all cold-formed metal framing as shown on the drawings and/or called for in these Specifications.

1.3 SECTION INCLUDES

A. Load-bearing steel stud system at exterior masonry walls.

B. Load-bearing steel joists in lintel assemblies, floor framing, trusses, and rafters used as sloped roof framing.

C. Prefabricated Columns.

1.4 RELATED WORK

A. Division 5 Structural Metals.

1.5 REFERENCES

A. Work shall meet the requirements of the following standards:
1. American Iron and Steel Institute – A.I.S.I.
   - AISI S100 -Design of Cold Formed Steel Structural Members.
   - S240 – Standard for Cold-formed Steel Structural Framing.
2. American Welding Society (A.W.S.)
   - D.1.1 - Structural Welding Code
   - D.1.3 - Specifications for Welding Sheet in Structures
3. American Society for Testing and Materials (ASTM).
   - A 653 - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process, Structural (Physical) Quality
   - A 924 - General Requirements for the Steel Sheet, Metallic-Coated by the Hot-Dip Process
   - A 780 - Practice for the Repair of Damaged Hot-Dip Galvanized Coatings
   - B 766 - Electrodeposited Coatings of Cadmium
   - C 955 – Standard Specification for Cold-Formed Steel Structural Framing Members
   - C1007 - Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories
4. Brick Institute of America (BIA) Technical Notes
   - 28B - Brick Veneer Steel Stud Walls
   -
5. American Society of Civil Engineers
   - ASCE 7 - Minimum Design Loads for Buildings and Other Structures

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B. The most stringent requirements shall govern in conflicts between specified codes and standards. All components and cladding shall be designed utilizing exposure "C".

1.6 DESIGN REQUIREMENTS

A. Employ and pay for services of a Structural Engineer registered in the State of Maryland to provide engineering data required for submittals and to certify manufacturer's submitted products will meet design requirements.

B. Design system to meet performance requirements and regulatory requirements.

1.7 PERFORMANCE REQUIREMENTS

A. Framing: Wall, floor and MEP support system assemblies shall meet the structural criteria indicated in the contract documents.

B. Steel Studs: Steel studs shall be of a configuration and gage to provide sufficient stiffness, as controlled by the maximum allowable deflection, under full live load, dead load and wind load of L/600 when secured to masonry veneer and L/360 in all other areas.

C. Spacing of exterior wall studs shall never be less than 16" o.c. to accommodate wall insulation. Provide multiple studs as required to satisfy all design requirements.

D. Contractor shall coordinate spacing of studs, locations of wall openings and locations of diagonal bracing with MEP drawings.

E. Connections (member to member and member to structure) shall be thoroughly examined and designed.

F. Wall bridging shall be designed to provide resistance to minor axis bending and rotation of all wall studs including multiple jamb studs.

G. Additional bracing/bridging beyond that shown on the drawings shall be provided as necessary in order to assure adequate bracing of truss members. Truss design shall verify adequacy/inadequacy of roof deck system to provide required bracing for roof rafters and trusses.

H. Provide additional joists, wall studs, tracks, bracing, connections, etc. beyond that which is presently shown on the contract documents as necessary to assure the roof, MEP systems support, and exterior wall system, etc. are complete and sufficient to meet all of the requirements of the local building code and ASCE 7.

1.8 SUBMITTALS

Submittals shall be in complete accordance with Section 01 3300 / SUBMITTAL PROCEDURES.

A. Product Data: Catalog cuts showing materials and each component's dimensions and sectional properties.

B. Shop Drawings: Indicate member sizes and spacings. Illustrate materials, shop coatings, steel thicknesses, details of fabrication, details of attachment to adjoining work, size, location, spacing of fasteners for attaching framing to itself, details of attachment to the structure, accessories and their installation, and critical installation procedures. Drawings may include plans, elevations, sections, and details.
   1. Shop and field assembly details including cutting and connections; Type and location of welding, bolting and fastening devices.

2. If prefabricated framing is utilized, include individual panel drawings for each condition including configuration, dimensions, materials, attachments and panel location.
3. Provide reinforcement details for holes cut through structural studs for each product.

C. Samples: Samples (when requested) shall be representative pieces of all framing component parts and accessories. Pieces shall be 12 inches long and tagged with name of the Project, name of Contractor, and name of part.

D. Certification: Statement from framing manufacturer certifying that materials conform to requirements of Contract Documents.

E. Calculations: Engineering calculations shall be prepared verifying the assembly's ability to meet or exceed design requirements as required by local codes and authorities.

F. The Contractor shall submit the following for review:
1. Shop drawings, together with complete erection drawings, indicating all fasteners and weld types, sizes and locations.
2. Calculations sealed by a Structural Engineer registered in Maryland for building components and connections required by the contract drawings and for all connections of the cold formed metal framing components to each other and to the building frame.

G. Only shop drawings bearing the stamp of review of the Structural Engineers and Architects shall be used by the contractor for fabrication and erection.

H. Shop and Erection Drawings shall not be reprints of the Contract Drawings. They shall, in the opinion of the Architect, be complete in all details and they shall locate, size, and mark all members. Details shall clearly indicate a manner of making all typical and special connections, amount of bearing, and shall accurately indicated the member's location relative to walls, spandrel sections, openings or other construction features. Erection drawings shall include a Field Weld Schedule, and sections and details covering all field welds required for the finished structure.

I. Figured and field dimensions only shall be used; scaling drawings not permitted. The Contractor shall verify all dimensions and be responsible for coordinating same. Any conflict shall be referred to the Architect for decision prior to proceeding with fabrication of the work affected.

J. The review of the Shop drawings is limited to design intent only. No responsibility for a detailed check of information is assumed by the Architect by virtue of such approval.

K. Research Reports:

1. For cold-formed steel framing.
2. Steel framing manufacturer to have a third-party evaluation report for its products that are reviewed to the local building code or its model code (IBC 2018 and AISI S100).

1.9 <u>LEED requirements</u>

A. Recycled Content

Some specified materials contain percentages of post-consumer and pre-consumer waste materials. Contractor shall provide LEED credit verification as per Section 01 3300 / SUBMITTAL PROCEDURES.

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B. Regional Materials

Some specified building materials are extracted, processed, and manufactured within 100 miles of the project site. Contractor shall provide LEED credit verification as per Section 01 3300 / SUBMITTAL PROCEDURES.

1.10 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacture of products specified in this Section with minimum 3 years documented experience, and a member in good standing of the Steel Framing Industry Association (SFIA) or be a part of a similar organization that provides verifiable code compliance program.

1. Products to be certified under an independent third-party inspection program administered by an agency accredited by IAS to ICC-ES AC98 IAS Accreditation Criteria for Inspection Agencies.

B. Installer: Welders shall be certified under provisions of AWS for structural welding and specific qualifications for sheet steel.

C. Design Engineer: Registered Structural Engineer and licensed in the State of Project location, and experienced in the structural design of cold-formed framing systems.

1.11 INSPECTION AND QUALITY CONTROL

A. All inspections and tests shall meet the requirements of IBC 2018.

B. Product Tests: Mill certificates or data from a qualified independent testing agency**[, or in-house testing with calibrated test equipment,]** indicating steel sheet complies with requirements, including base-steel thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.

C. Contractor shall provide effective full time quality control over all fabrication and erection activities.

D. As directed by Architect, owner's testing agency may inspect the maintenance of a quality control program including spot checking weldments and welding procedures in accordance with A.W.S. standards.

E. Comply with the following AISI specifications and standards:

1. AISI S100 – North American Specification for the Design of Cold-Formed Steel Structural Members.
2. AISI S240 – North American Standard for Cold-Formed Steel Structural Framing.

F. Inspection by owner's testing agency is not intended to be comprehensive or complete. Full responsibility for quality control shall remain with the Contractor.

G. The owner shall employ an inspection agency approved by the engineer to inspect and test the shop and field welding and screw connections of the cold-formed framing system components to themselves and to the metal supporting structure. See paragraph 3.7.

1.12 REGULATORY REQUIREMENTS

A. Conform to applicable provisions of the Building Code shown on Drawing A-1.

B. Cold-Formed Steel Framing Standards: Unless more stringent requirements are indicated, framing shall comply with AISI S100 and AISI S240.

1.13 DELIVERY. STORAGE AND HANDLING

A. Protect and store cold-formed steel framing from corrosion, moisture staining, deformation, and other damage during delivery, storage, and handling as required in AISI S202, "Code of Standard Practice for Cold-Formed Steel Structural Framing."

B. Deliver in manufacturer's unopened containers or bundles, color identified with metal thickness and grade of steel.

C. Store off ground in a dry ventilated space or protect with suitable waterproof coverings.

D. Handle and lift components and prefabricated panels in a manner to prevent, damage, distortion, and undue stress.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Cold-formed metal framing

1. Marino\Ware
2. ClarkDietrich
3. Or approved equal

2.2 COLD-FORMED STEEL STUDS. FLOOR AND CEILING RUNNERS. JOISTS. LINTEL ASSEMBLIES

A. Product Standard: AISI S240; "C" shaped load bearing framing members.

B. All galvanized studs 12, 14, and 16 gauge and all joists shall be formed from steel that corresponds to the minimum requirements of ASTM A653, Type H, Grade 50, Class I with a minimum yield of 50,000 psi.

C. All galvanized studs less than or equal to 18 gauge; all galvanized track, bridging, end closures and accessories shall be formed from steel that corresponds to the requirements of ASTM A653, Type H, Grade 33, with a minimum yield of 33,000 psi.

D. All studs, joists, track, bridging and accessories shall be formed from steel having a CP60: G-60 **(Z180)**, **A60 (ZF180)**, **AZ50 (AZM150)**, **or GF30 (ZGF90)** protective coating meeting the requirements of ASTM A653.

E. Galvanizing Repair Paint: High zinc-dust content paint for repair of damaged galvanized surfaces complying with ASTM A780.

2.3 PROPERTIES

A. The physical and structural properties listed by MARINO /WARE or ClarkDietrichshall be considered the minimum permitted for all cold-formed metal framing members. Specifically, the following minimum properties, calculated in accordance with the latest A.I.S.I. Specification shall be provided: Ix (in.4), Area

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(in.2), rx(in.), Fy(KSI), Resisting Moment (in.-lb). Follow ASTM A653.

B. Per AISI, standard knockouts are 1-1/2" x 4" and are punched 12" (East and Central) and 24" (West) from the leading edge and every 24" after that.

2.4 ACCESSORIES

A. Provide standard steel runners (tracks), slip tracks, slide blocks, blocking, lintels, clip angles, shoes, reinforcements, and accessories.

B. Accessories shall be as recommended by framing manufacturer for applications indicated and as required to provide complete and substantial framing system.

2.5 FASTENERS

A. Fasteners shall be of sufficient size to ensure strength of connection. Minimum edge distance shall be 1/2" for all screws and pins and 1" for all bolts.

B. Steel Drill Screws: Screws shall have rust inhibitive coating (cadmium or zinc plating, ASTM B 766) suitable for the installation in which they are being used.

C. Power Actuated Drive Pins.

D. Expansion Bolts: , except lead, fiber, and plastic shields are not permitted.

2.6 FINISH TOUCH-UP

A. Zinc Rich Paint: In accordance with ASTM A 780, adhering to LEED VOC requirements.

B. Prime Paint: Similar to that used by framing manufacturer, adhering to LEED VOC requirements.

2.7 FABRICATION

A. Framing components may be prefabricated into panels for erection. Fabricate panels plumb, square, true to line and braced against racking.

B. With each type of metal framing required, provide standard steel runners (tracks), blocking, lintels, clip angles, shoes, reinforcements, fasteners, and accessories recommended by the manufacturer and as shown on drawings for applications indicated and required to provide a complete and substantial metal framing system.

C. Cut all framing components squarely or at an angle to fit squarely against abutting members. Hold members firmly in position until properly fastened. Wire tying of framing components in structural applications is not permitted. Torch cutting of load bearing studs is not permitted. Slicing of load bearing members is not permitted.

D. The final configuration of all metal stud truss diagonals shall be coordinated with the mechanical equipment and ductwork layout. See mechanical / electrical / architectural / and structural drawings for location and extent.

E. Perform shop and field welding in accordance with AWS D1.1, AWS D1.3, and AISI Manual Section 4.2.

F. Provide insulation equal to that specified elsewhere in all double jamb studs and double header members which will not be accessible to the insulation contractor. After fabrication and installation.

PART 3 - EXECUTION

3.1 VERIFICATION OF CONDITIONS

A. Inspection: Prior to installation, inspect work of all other trades. Verify that all such work is complete and accurate to the point where this installation may properly commence in strict accordance with the contract documents and approved framing shop drawings.

3.2 DISCREPANCIES

A. Immediately notify Architect of all discrepancies.

B. Do not proceed with installation in areas of discrepancies until such discrepancy has been fully resolved.

3.3 INSTALLATION - STUD SYSTEM

A. General:
1. Install cold-formed steel framing in accordance with ASTM C1007, AISI S240, and manufacturer's written instructions unless more stringent requirements are indicated.
2. Erect framing and panels plumb, level and square in strict accordance with the approved shop drawings and ASTM C 1007.
3. Temporary bracing shall be provided until erection is completed.

B. Runner Tracks: Install continuous tracks sized to match studs. Align tracks accurately to layout at base and tops of studs. Securely anchor abutting pieces of track to a common structural element of butt-welded or spliced together. Secure tracks to supporting structure as recommended by stud manufacturer for type of construction involved, except do not exceed 16" on center spacing for nail or power-driven fasteners, nor 12" on center for other types of attachment. Provide fasteners at corners and ends of tracks.
1. Maximum penetration into the concrete structure shall be 3/4", or structure shall be x-rayed in order to avoid hitting any post-tensioning tendons.

C. Stud Placement: Secure Placement: Secure studs to top and bottom runner tracks by fastening at both inside and outside flanges by welding.
1. Set studs plumb, except as needed for diagonal bracing or required for non-plumb walls or warped surfaces and similar requirements. Where stud system is attached to the building frame, shim between frame and stud as required.
2. Where stud system abuts structural columns or walls, including masonry walls, anchor ends of stiffeners to supporting structure.
3. Provide double studs at panel intersections, corner, doors, windows, control joints, etc.

D. Reinforced Framing:
1. Install supplementary framing, blocking and bracing in metal framing system wherever walls or partitions are indicated to support fixtures, equipment, services, casework, heavy trim, and furnishings, and similar work requiring attachment to the wall or partition. Where type of supplementary support is not otherwise indicated, comply with stud manufacturer's recommendation and industry standards in each case, considering weight or loading resulting from

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item supported.

2. Frame wall openings larger than 2'-0" square with double stud at each jamb of frame except where more than 2 are either shown on the contract drawings or indicated in manufacturer's instructions. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with stud shoe or by welding; space jack studs same as full-height studs of wall. Connect jamb studs together by straps or welds not more than 4' -0" o.c. vertically on both faces of studs.
3. Frame both sides of expansion and control joints with separate studs; do not bridge the joint with components of stud system.
4. Install horizontal stiffeners in stud system, space at not more than 4'-0" o.c. vertically. Horizontal bracing shall consist of 1-1 /2" wide by 16 gauge galvanized u-bracing attached to studs with 1" x 1" x 16 gauge clip angle and (4) – 10 gage Tek Screws.
5. Solid bridging is to be placed at each end of wall, adjacent to wall openings, and at other locations in the stud system as required by the contract documents. Solid bridging shall consist of full depth. 16 gauge galvanized track attached to studs with 1" x 1" x 16 gauge clip angles and (4) - 10 gage Tek Screws.

E. Holes that are field cut into steel framing members shall be within the limitations of the product and its design. Provide reinforcement where holes are cut through load bearing members in accordance with the manufacturer's recommendations for the product.

F. Align axially loaded members vertically to allow for full transfer of loads. Vertical alignment shall be maintained at floor/ wall intersections unless alternate provisions for transfer are made.

3.4 INSTALLATION - JOISTS, LINTEL ASSEMBLIES

A. Install level and plumb, complete with bracing and reinforcing as indicated on drawings. Provide not less than 1-1 /2" end bearing and 3-1 /2" bearing at intermediate supports. Provide full bearing surface shims as required for leveling.

B. Reinforce ends with end clip, steel hangers, steel angle clips, steel stud section, or as otherwise recommended by joist manufacturer.

C. Where required, reinforce joists at interior supports with single short length of joist section located directly over interior support, snap on shoe, 30% side piece lapped reinforcement, or other method recommended by joist manufacturer.

D. Secure joists to interior support systems to prevent lateral movement of bottom flange.

E. Locate joists directly over bearing studs or provide a load distribution member to transfer loads.

F. Provide web stiffeners at reaction points, and at points concentrated loads.

G. Install joists with web area perpendicular to bearing surface.

H. Provide bridging, either steel strap or solid, as shown on the Design calculations.

I. Provide additional joists under parallel partitions where partition length exceeds 1/2 of joist span.

J. Provide additional framing around floor/roof openings which are larger than joist spacing.

K. Provide end blocking at all bearing walls where joists ends are not otherwise restrained from rotation.

L. Build joist ends solidly into masonry construction prior to placing load on joist.

M. Install bridging and reinforcement similar to stud installation.

N. Limitations for field cut holes shall be per paragraph 2.3.B above.

3.5 TOLERANCES

A. Vertical alignment (plumbness) of studs shall be within 1/960 (1/8 inch in 10 ft.) of the span.

B. Horizontal alignment (levelness) of walls shall be within 1/960 (1/8 inch in 10 ft.) of their respective lengths.

C. Spacing of the studs shall be more than 1 /8 inch from the designed spacing, provided that the cumulative error does not exceed the requirements of the finishing material.

D. Squareness of the prefabricated panels shall be not more than 1/8 inch out of square within the length of that panel.

E. Vertical alignment (plumbness) of trusses shall be within 1/50 of the height or 2 inches -- whichever is less as required in AISI S214.

3.6 INSPECTION

A. Comply with inspection requirements of Section 01 4000, Quality Control Services.

B. Inspect fabrication and installation for compliance with ASTM C 1007.

C. Review Contractor's quality control program.

D. Inspect shop and field welding of cold-formed metal framing components to each other and to structural metal framing, including compliance with AWS standards.

E. These inspections shall include wall and truss plumbness, bridging & bracing, roof deck & drywall attachment, and other system components.

3.7 ADJUSTMENTS

A. Finish Touch-Up: After installation, wire brush and clean scarred areas, welds, rust spots and other steel bared by fabrication and erection procedures.

B. Touch-up surfaces using zinc rich paint on galvanized steel and paint equal to that used by the manufacturer on painted steel members.

C. In areas where shop-painted surfaces are to be exposed, apply touch-up paint to blend into adjacent surfaces.

3.8 PROTECTION OF INSTALLED WORK

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A. Do not apply loads until bridging, bracing, strapping, and web reinforcement are securely in place.

B. Do not overload the floor system during construction. Prevent concentrated floor or roof loads, such as stacking of heavy building materials, unless adequate additional means for carrying these loads are provided.

C. If diaphragm rated components are used in lieu of bridging, then do not apply loading until their installation. If components on one side only, then the other flanges should be bridged with suitable bridging. Bridging may be removed or left in place when diaphragm rated components are installed.

3.9 CONTRACTOR'S RESPONSIBILITY

A. Submit copies of all reports indicating conformance and exceptions to contract documents in a timely fashion to Construction Manager for distribution to design consultants, owner, subcontractors and other interested parties.

B. Final Report: The Inspection Agency shall prepare a written report that summarizes the work inspected during the course of the project, and certifies that the work meets the requirements of the contract documents, specifications, and all governing agencies.

C. The third-party testing agency retained by the Owner will circulate test results and other inspection reports. Contractor is responsible to distribute all reports to their subcontractors, suppliers and other interested parties. Additionally, Contractor is required to resolve all deficient items presented in results and reports at no additional costs to the Owner. Additional testing costs shall be borne by the Contractor.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Non-load bearing steel framing systems for interior gypsum board assemblies.
2. Suspension systems for interior gypsum ceilings, soffits, and grid systems.

B. Related Requirements:

1. Section 05 40 00 "Cold-Formed Metal Framing" for exterior and interior load-bearing and exterior non-load bearing wall studs; floor joists; roof rafters and ceiling joists; and roof trusses.

1.3 DESIGN REQUIREMENTS

A. Employ and pay for services of a Structural Engineer to provide engineering data required for submittals and to certify manufacturer's submitted products will meet design requirements.

B. Design system to meet performance requirements and regulatory requirements.

1. Governing Building Code: IBC 2018.
2. American Society of Civil Engineers: ASCE 7-16 -- Minimum Design Loads for Buildings and Other Structures.

1.4 LEED REQUIRMENTS

A. LEED Requirement for Recycled Content of Products: Provide cold-formed metal framing products with an average recycled content of steel materials so post-consumer recycled content plus one half of pre-consumer recycled content is not less than 50 percent. LEED Credit.

B. LEED Requirement for Regional Materials: Provide cold-formed metal framing manufactured and fabricated at facilities situated within a 100-mile radius of the Project location. LEED Credit.

1.5 PERFORMANCE REQUIREMENTS

A. Framing: Wall and ceiling assemblies shall meet the structural criteria indicated in the contract documents.

B. All interior wall studs shall be designed to support 5 psf lateral load plus all gravity loads as specified in the contract drawings. All bulkhead and ceiling framing shall be designed to support minimum 10 psf live load in addition to the self weight of the structure and all MEP systems.

C. Steel Studs: Steel studs shall be of a configuration and gauge to provide sufficient stiffness, as controlled

by the maximum allowable deflection, under full live load, dead load and wind load of L/240 in all other areas.

1.6 SUBMITTALS

A. Product Data: Catalog cuts showing materials and each component's dimensions and sectional properties.

B. Shop Drawings: Indicate member sizes and spacings. Illustrate materials, shop coatings, steel thicknesses, details of fabrication, details of attachment to adjoining work, size, location, spacing of fasteners for attaching framing to itself, details of attachment to the structure, accessories and their installation, and critical installation procedures. Drawings may include plans, elevations, sections, and details.

1. Shop and field assembly details including cutting and connections; Type and location of welding, bolting and fastening devices.
2. If prefabricated framing is utilized, include individual panel drawings for each condition including configuration, dimensions, materials, attachments and panel location.
3. Provide reinforcement details for holes cut through structural studs for each product.

C. Certification: Statement from framing manufacturer certifying that materials conform to requirements of Contract Documents.

D. Calculations: Engineering calculations shall be prepared verifying the assembly's ability to meet or exceed design requirements as required by local codes and authorities.

E. The Contractor shall submit the following for review:
1. Shop drawings, together with complete erection drawings, indicating all fasteners and weld types, sizes and locations.
2. Calculations sealed by a Structural Engineer registered in Maryland for building components and connections required by the contract drawings and for all connections of the framing components to each other and to the building frame.

F. Only shop drawings bearing the stamp of review of the Structural Engineers and Architects shall be used by the contractor for fabrication and erection.

G. Evaluation Reports: For equivalent gauge steel studs and runners, submit evaluation reports certified under an independent third-party inspection program administered by an agency accredited by IAS to ICC-ES AC98 accreditation criteria for inspection agencies.

H. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified in accordance with the product-certification program of the Steel Framing Industry Association (SFIA) or a similar organization that provides a verifiable code-compliance program.

I. LEED Submittals:

1. Recycled Content Product Data for LEED Credit: For metal framing products having recycled steel content, provide documentation indicating percentages by weight of post-consumer and pre-consumer recycled content.
   a. Include statement indicating costs for each product having recycled content.
2. Regional Materials Product Data for LEED Credit: For metal framing products having regional

material content, provide documentation identifying the locations of manufacturer and location of extraction, recovery, or harvest of primary raw materials.
a. Include statement indicating cost for each product with regional material content.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

C. Design framing systems in accordance with AISI S220, "North American Specification for the Design of Cold-Formed Steel Framing - Nonstructural Members," unless otherwise indicated.

2.2 FRAMING SYSTEMS

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Framing Members, General: Comply with AISI S220 for conditions indicated.

1. Steel Sheet Components: Comply with AISI S220 requirements for metal unless otherwise indicated.
2. Protective Coating: Comply with AISI S220; Coating with equivalent corrosion resistance of ASTM A 653/A 653M, G40, hot-dip galvanized unless otherwise indicated. Galvannealed products are unacceptable.
   a. Coating shall demonstrate equivalent corrosion resistance with an evaluation report acceptable to authorities having jurisdiction.
   b. Product: ClarkDietrich; DiamondPlus® Coating on ProSTUD and ProTRAK [**20**].

C. Stud and Runners: AISI S220. Use either steel studs and runners or equivalent gauge steel studs and runners.

1. Steel Studs and Runners:
   a. Product: ClarkDietrich; ProSTUD and ProTRAK [**30 mil (20 DW) 33 ksi (227 MPa)**] [**33 mil (20 STR) 33 ksi (227 MPa)**] with Smart Edge technology or comparable product.
   b. Minimum Base-Steel Thickness: [0.0296 inch (20 gauge)] [0.033 inch (20 gauge)] unless otherwise indicated.
   c. Depth: 3 5/8" unless otherwise indicated.
2. Equivalent Gauge Steel Studs and Runners:
   a. Product: ClarkDietrich; ProSTUD and ProTRAK 20 (20 EQ) 70 ksi (483 MPa) with Smart Edge technology or comparable product.
   b. Minimum Base-Steel Thickness: 0.0181 inch (20 gauge) equivalent) unless otherwise indicated.
   c. Depth: 3 5/8" unless otherwise indicated.

D. Slip-Type Head Joints: Where indicated, provide the following:

1. Double-Runner System. AISI S220 top runners, inside runner with 2 inch deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.

E. Backing Plate: Proprietary fire-retardant-treated wood blocking and bracing in width indicated.

1. Product: ClarkDietrich; Danback Fire-Retardant Treated Wood Backing Plate [**D16F**] [**D24F**] or comparable product.

F. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

1. Product: ClarkDietrich; Backing Plate or comparable product.
2. Minimum Base-Steel Thickness: 0.0296 inch (20 gauge).

G. Cold-Rolled U-Channel Bridging: Steel, 0.053 inch (16 gauge) minimum base-steel thickness, with minimum 1/2 inch wide flanges.

1. Product: ClarkDietrich; Cold Formed U-Channel and Channel Clip (CC33) Bridging Clip or comparable product.
2. Depth: 1 ½ inches
3. Clip Angle: Not less than 1 ½ by 1 ½ inches, 0.0538 inch (16 gauge) thick, galvanized steel.

H. Hat-Shaped, Rigid Furring Channels: AISI S220.

1. Product: ClarkDietrich; Furring Channel or comparable product.
2. Minimum Base-Steel Thickness: 0.018 inch (25 gauge)
3. Depth: 7/8 inch

I. Resilient Furring Channels: ½ inch deep, steel sheet members designed to reduce sound transmission.

1. Minimum Base-Steel Thickness: 0.018 inch (25 gauge).
2. Configuration: Asymmetrical or hat shaped.
3. Products: Subject to compliance with requirements, provide one of the following:
   a. ClarkDietrich: RC Deluxe (RCSD).
   b. Phillips Manufacturing Company; RC-2 Resilient Sound Channel.

J. Cold-Rolled Furring Channels: 0.053 inch (16 gauge) uncoated-steel thickness, with minimum 1/2 inch wide flanges.

1. Depth: As indicated on drawings.
2. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum uncoated-steel thickness of 0.0296 inch (20 gauge).
3. Tie-wire: ASTM A 641 /A 641 M, Class 1 zinc coating, soft temper, 0.062 inch diameter wire, or double strand of 0.048 inch diameter wire.

K. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1 ¼ "wall attachment flange of 3/4 inch, minimum uncoated metal thickness of 0.018 inch (25 gauge), and depth required to fit insulation thickness indicated.

1. Product: ClarkDietrich; Z-Furring Channel or comparable product.

2.3 SUSPENSION SYSTEMS

A. Tie Wire: ASTM A 641 /A 641 M, Class 1zinc coating, soft temper, 0.062 inch diameter wire, or double strand of 0.048 inch diameter wire.

B. Wire Hangers: ASTM A 641 /A 641 M, Class I zinc coating, soft temper, 0.16 inch in diameter.

C. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-steel thickness of 0.053 inch (16 gauge) and minimum ½ inch wide flanges.

1. Depth: 1 ½ inches unless otherwise indicated.

D. Furring Channels (Furring Members):

1. Cold-Rolled Channels: 0.053 inch (16 gauge) uncoated steel thickness, with minimum ½ inch wide flanges, ¼ inch deep.
2. Steel Studs and Runners: AISI S220.
   a. Minimum Base-Steel Thickness: 0.018 inch (25 gauge) unless otherwise indicated.
   b. Depth: As indicated on Drawings.
3. Equivalent Gauge Steel Studs and Runners: AISI S220
   a. Product: ClarkDietrich; ProSTUD and ProTRAK 25 (25 EQ) 50 ksi (345 MPa) with Smart Edge technology, or comparable product.
   b. Minimum Base-Steel Thickness: 0.015 inch (25 gauge equivalent)
   c. Depth: As indicated on Drawings.
4. Hat-Shaped, Rigid Furring Channels: AISI S220, 7/8 inch deep.
   a. Product: ClarkDietrich; Hat-Shaped, Rigid Furring Channels, or comparable product.
   b. Minimum Base-Steel Thickness: 0.0296 inch (20 gauge)

E. Grid Suspension System for Gypsum Board Ceilings: ASTM C 645, direct hung system composed of main beams and cross furring members that interlock.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. Armstrong World Industries, Inc.: Drywall Grid Systems
   b. Chicago Metallic Corporation; Drywall Grid System
   c. USG Corporation; Drywall Suspension System

2.4 AUILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

B. Isolation Strip at Exterior Walls: Provide one of the following:

1. Asphalt Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt) nonperforated.
2. Foam Gasket. Adhesive backed, closed cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suite steel stud size.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welding hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the work.

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

3.2 PREPARATION

A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the work and that hangers will develop their full strength.

3.3 INSTALLATION. GENERAL

A. Installation Standard: ASTM C 754

1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation

B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

C. Install bracing at terminations in assemblies

D. Do not bridge building control and expansion joists with non-load bearing steel farming members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types

1. Single Layer Application: 16 inches o/c unless otherwise indicated.
2. Multilayer Application: 16 inches o/c unless otherwise indicated.
3. Tile Backing Panels: 16 inches o/c unless otherwise indicated.

B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior walls.

C. Install studs so flanges within framing system point in same direction.

D. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.

1. Slip-Type Head Joints: Where framing extends to over head structural supports, install to

produce joints at tops of framing systems that prevent axial loading of finished assemblies.

2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
   a. Install two studs at each jamb unless otherwise indicated.
   b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2 inch clearance from jamb stud to allow for installation of control joint in finished assembly.
   c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
4. Fire-Resistance Rated Partitions: Install framing to comply with fire-resistance rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
5. Sound-Rated Partitions: Install framing to comply with sound rated assembly indicated.

E. Direct Furring:

1. Attached to concrete or masonry with stud nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o/c.

F. Z-Furring Members

1. Erect insulation, specified in Section 07 21 00 "thermal Insulation", vertically and hold in place with Z-furring members spaced 24 inches o/c.
2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stud nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o/c.
3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches from corner and cut insulation to fit.

G. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.5 INSTALLING SUSPENSION SYSTEMS.

A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

1. Hangers: 48 inches o/c.
2. Carrying Channels (Main Runners): 48 inches o/c
3. Furring Channels (Furring Members): 24 inches o/c

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:

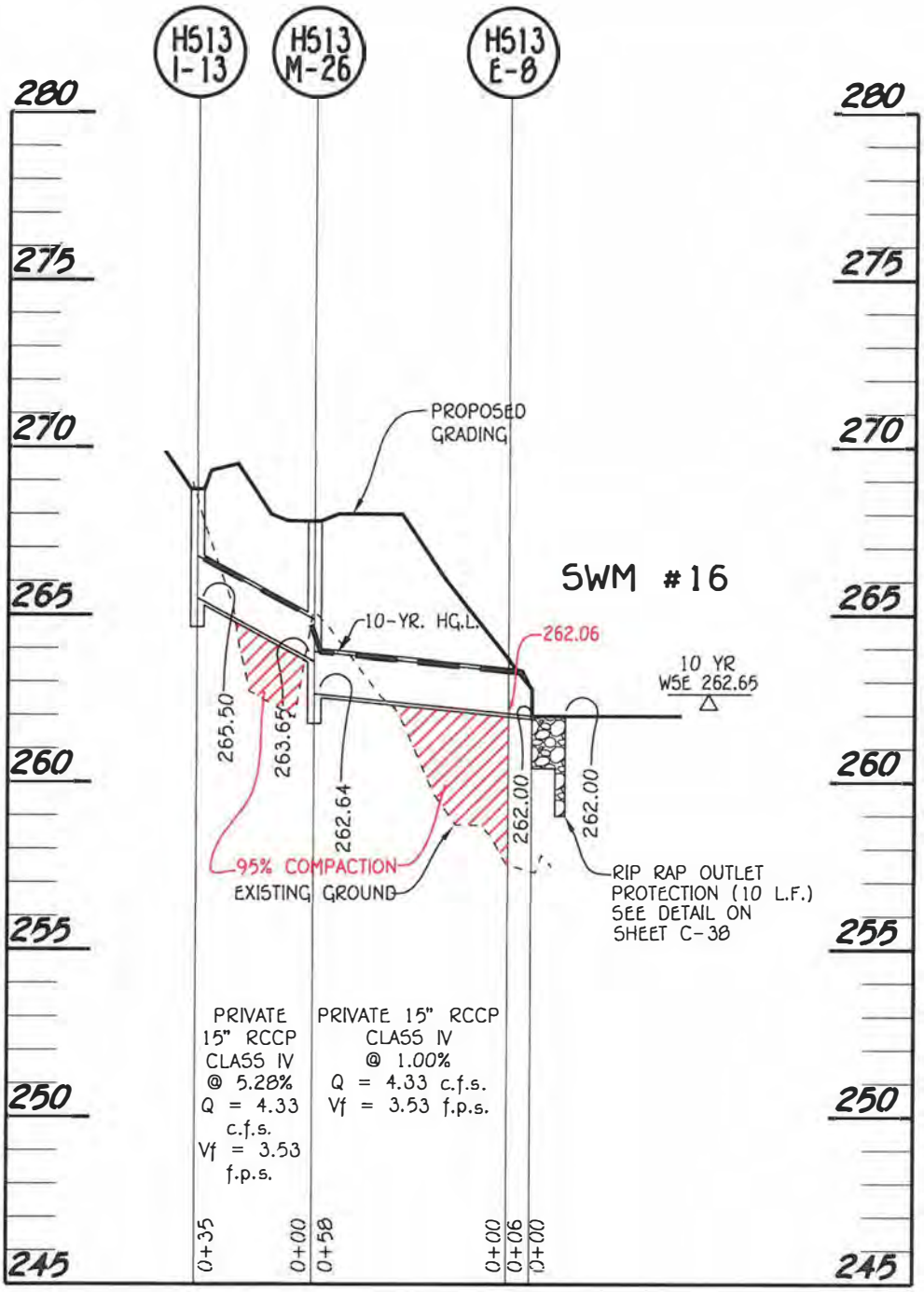
1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
   a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
   a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
3. Wire hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate.
4. Do not attach hangers to steel roof deck.
5. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
6. Do not connect or suspend steel framing from ducts, pipes or conduit.

D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

E. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt- cut to fit into wall track.

F. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION



STORM DRAIN PROFILE

SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'

C-38 STORM DRAIN PROFILES (SIZE)

2 ADD

HIGH SCHOOL #13

JESSUP, MARYLAND

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

date
11 FEB 20

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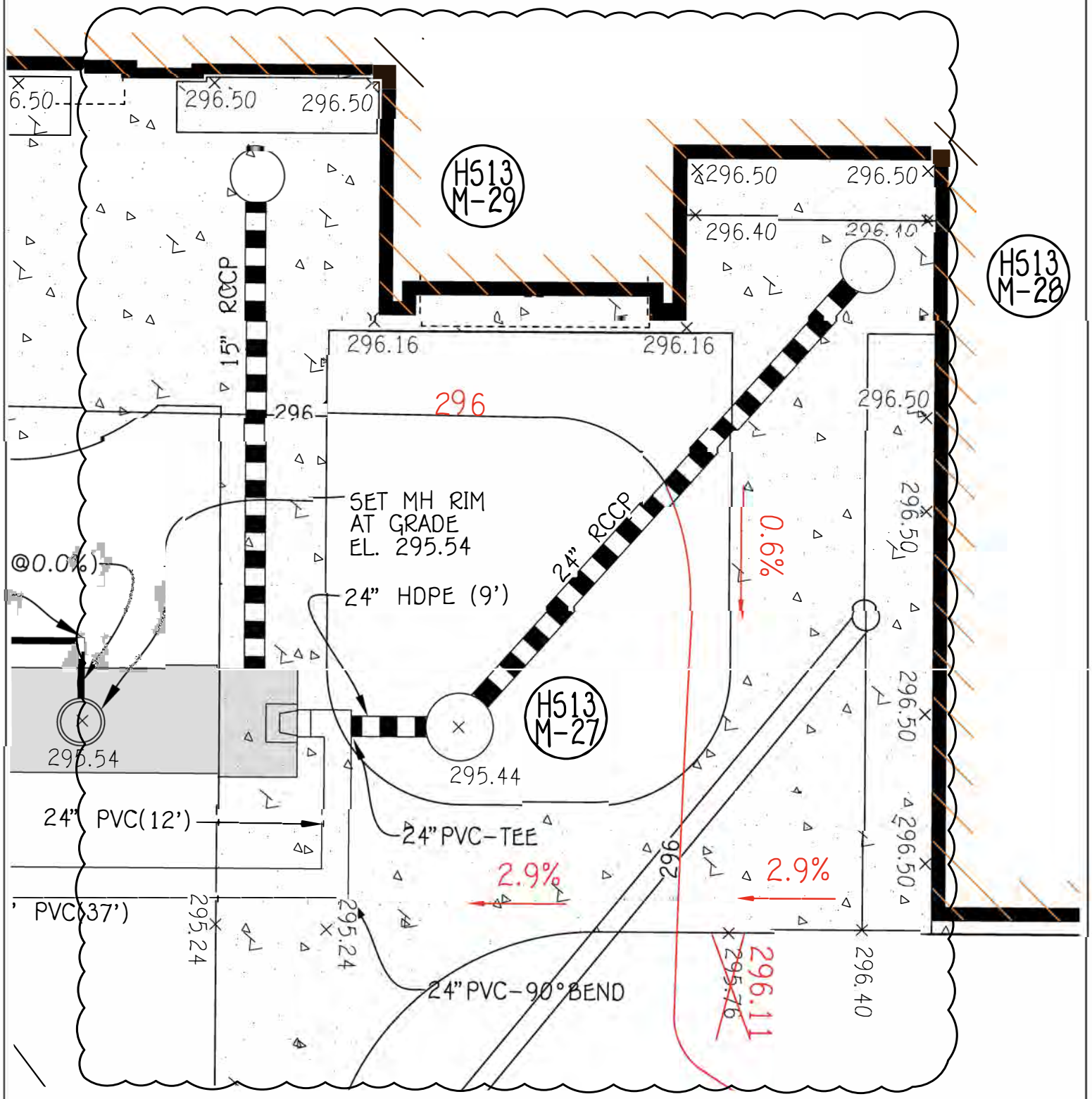

C-54 CISTERN LAYOUT AND PROFILE

2 ADD

HIGH SCHOOL #13

JESSUP, MARYLAND

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

date
11 FEB 20

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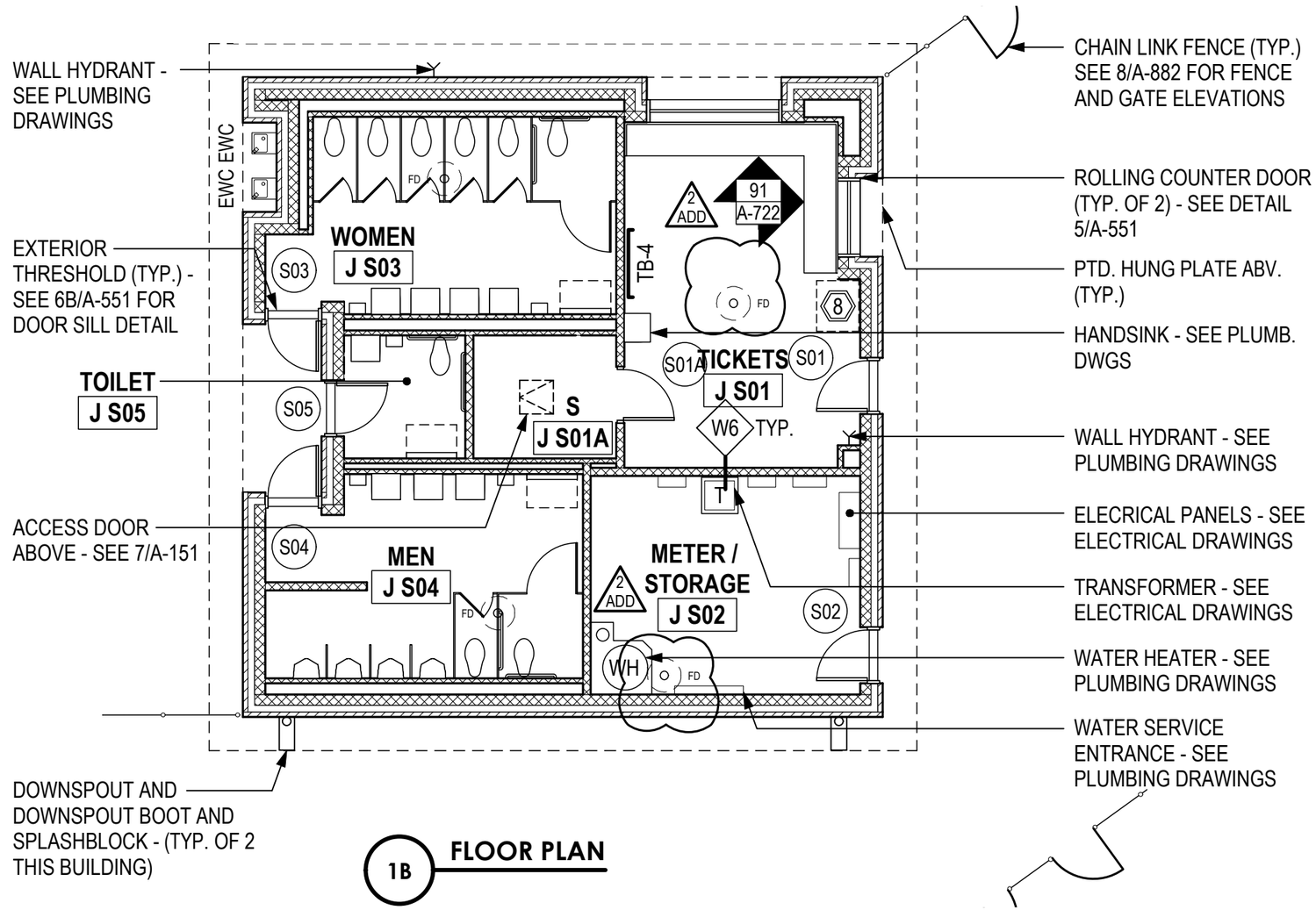


1B FLOOR PLAN

1 / A-151 **STADIUM BUILDING PLANS**

SCALE: 1/8" = 1'-0"

date 11 FEB 20

dwg ADD_2_A1

tca architects

1369 Generals Highway • Crownsville, Maryland 21032

HIGH SCHOOL #13

JESSUP, MARYLAND

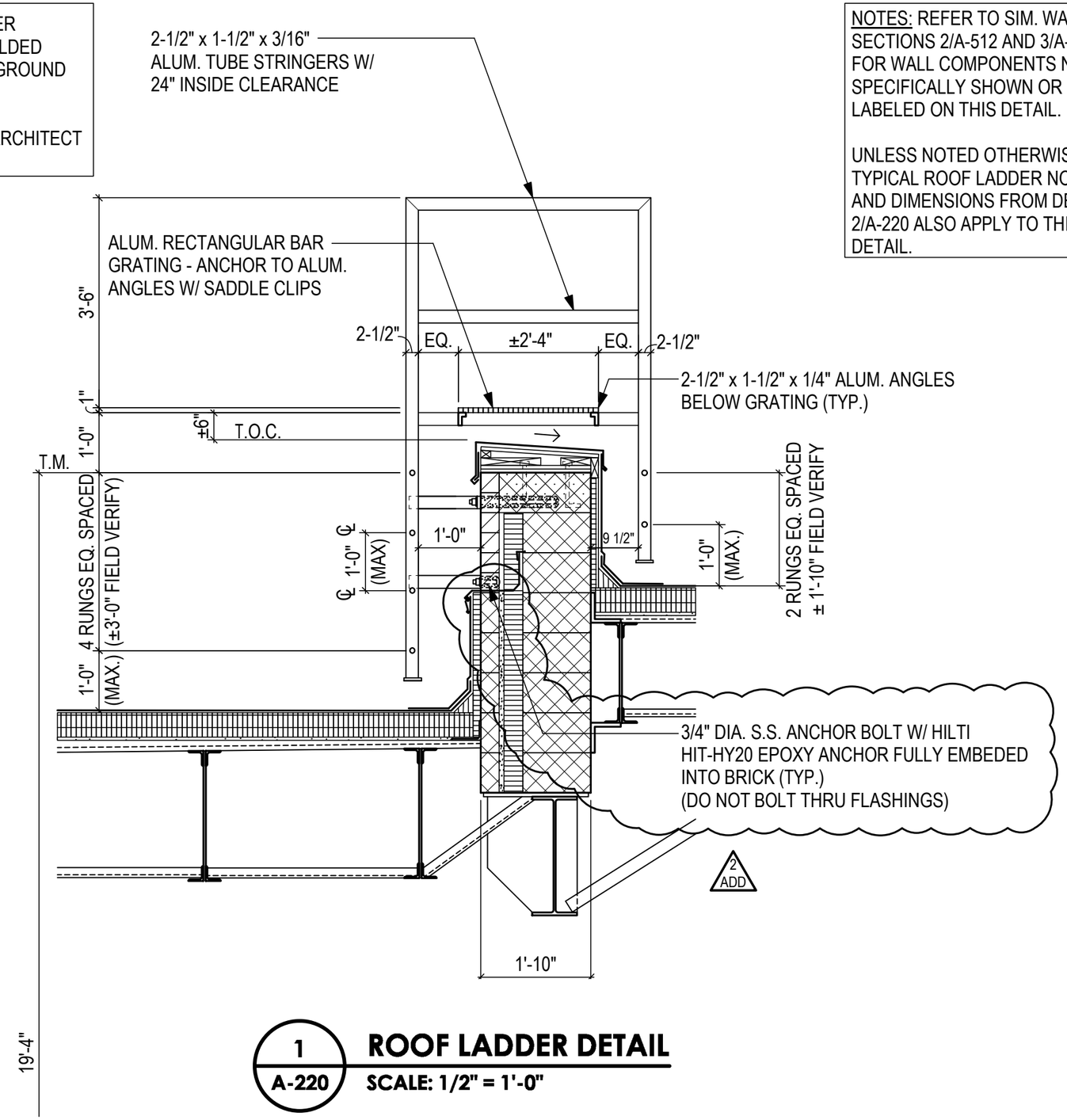
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

NOTES: ALL ALUM. LADDER COMPONENTS TO BE WELDED TOGETHER AND WELDS GROUND SMOOTH.

SUBMIT SHOP DWG. TO ARCHITECT PRIOR TO FABRICATION.

NOTES: REFER TO SIM. WALL SECTIONS 2/A-512 AND 3/A-512 FOR WALL COMPONENTS NOT SPECIFICALLY SHOWN OR LABELED ON THIS DETAIL.

UNLESS NOTED OTHERWISE, TYPICAL ROOF LADDER NOTES AND DIMENSIONS FROM DETAIL 2/A-220 ALSO APPLY TO THIS DETAIL.



1 / A-220 **ROOF LADDER DETAIL**

SCALE: 1/2" = 1'-0"

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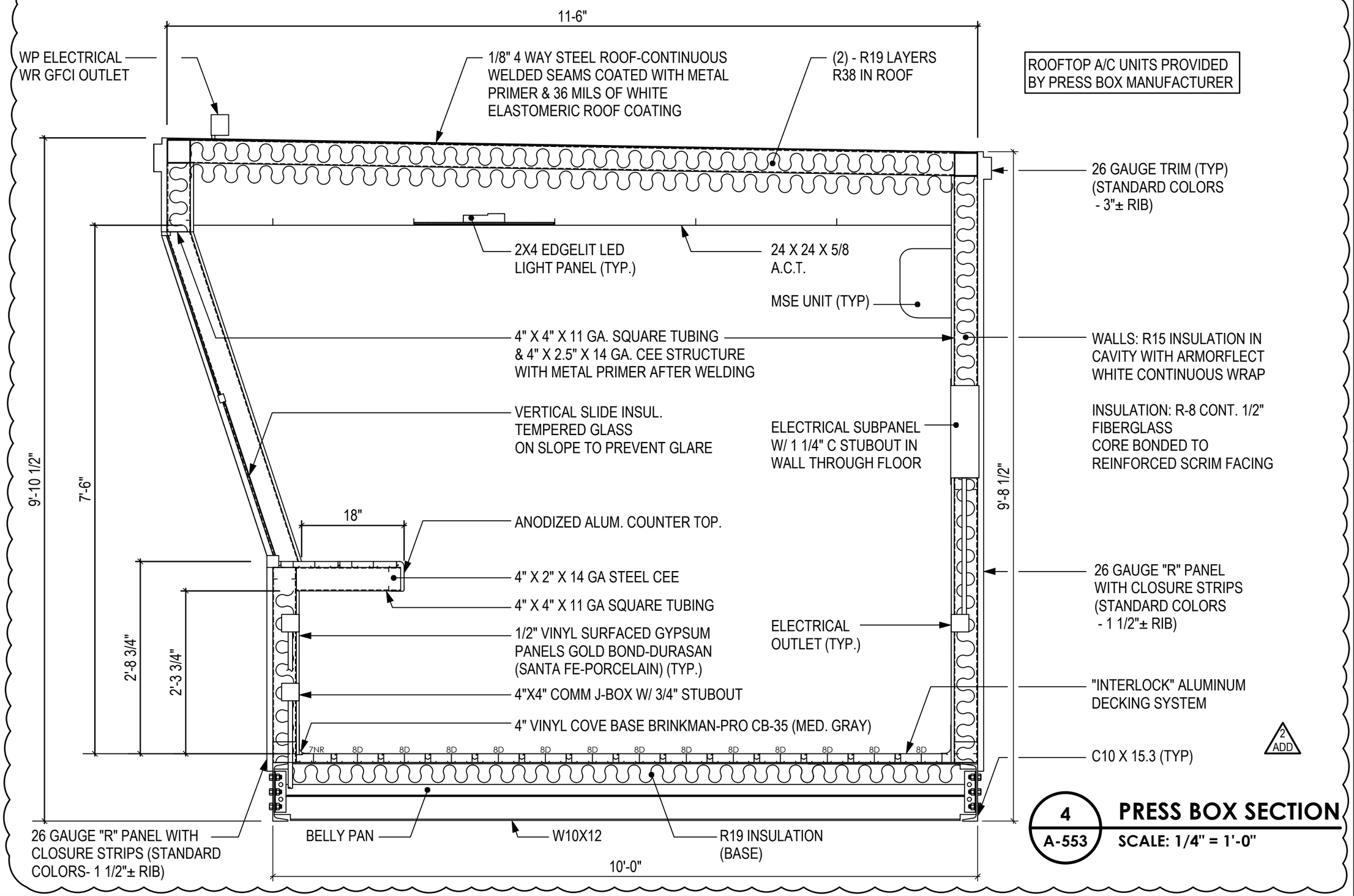

4
A-553

PRESS BOX SECTION

SCALE: 1/4" = 1'-0"

date 11 FEB 20

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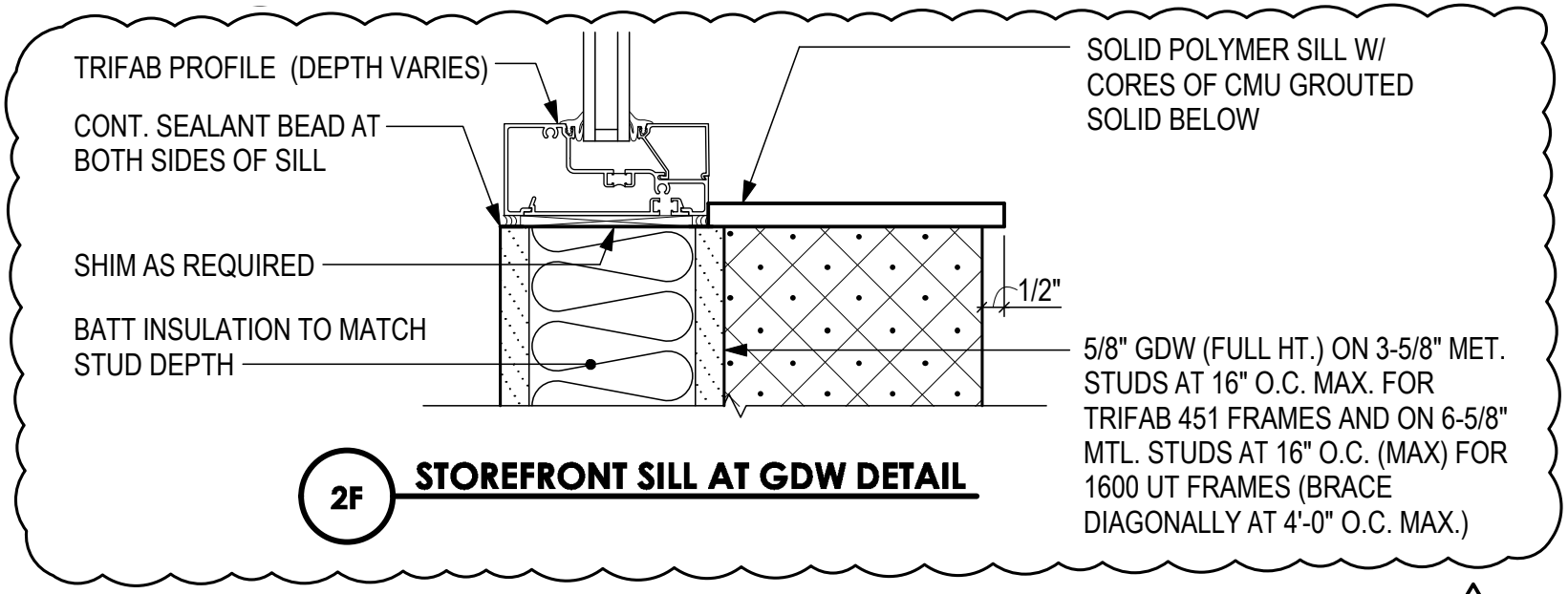

2F **STOREFRONT SILL AT GDW DETAIL**

2 ADD

2 / A-614 **ALUMINUM STOREFRONT HEAD/JAMB/SILL CONDITIONS**

SCALE: 3" = 1'-0"

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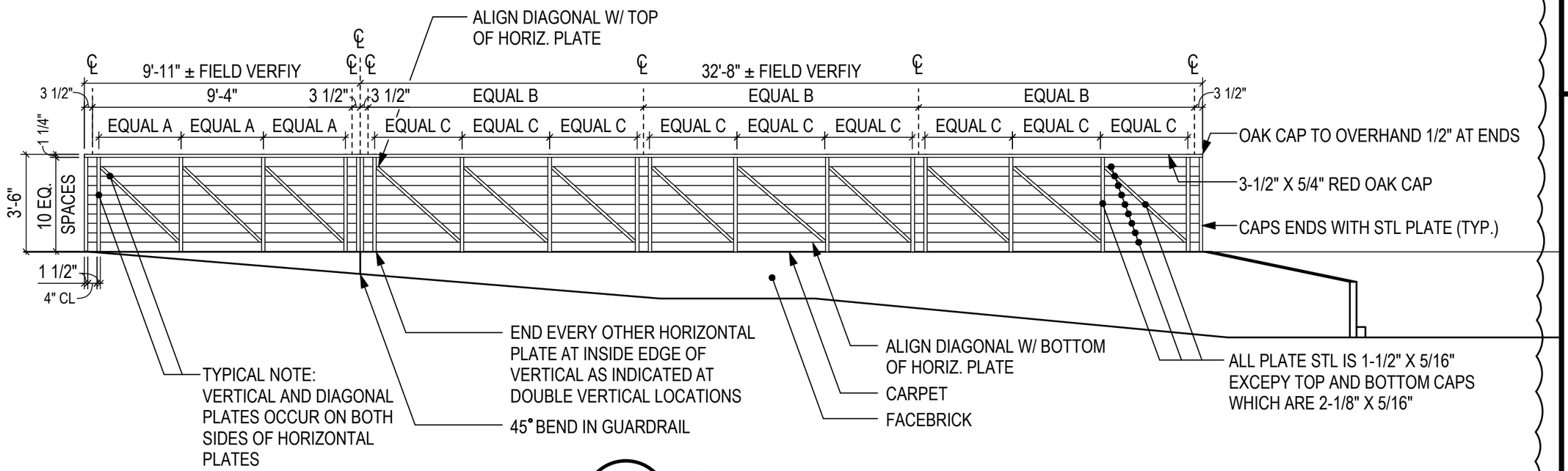
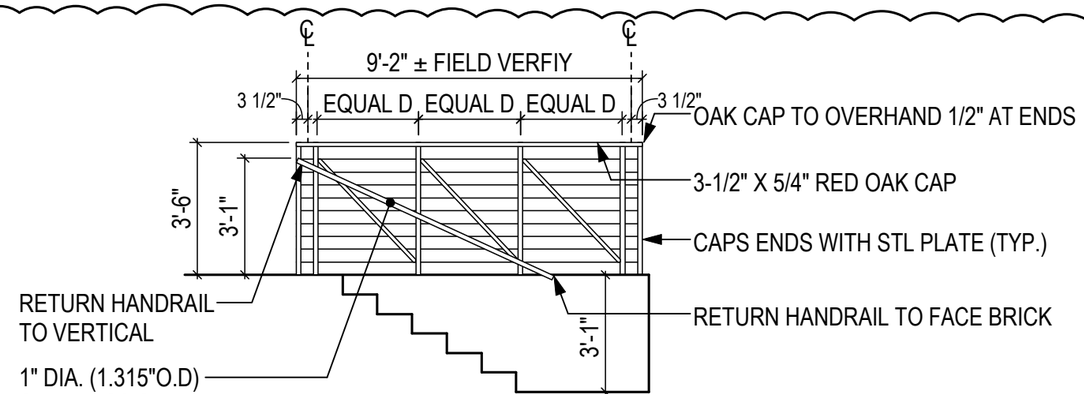


3 / A-703 GUARDRAIL ELEVATION

SCALE: 1/4" = 1'-0"

2 ADD



4 / A-703 GUARDRAIL ELEVATION

SCALE: 1/4" = 1'-0"

2 ADD

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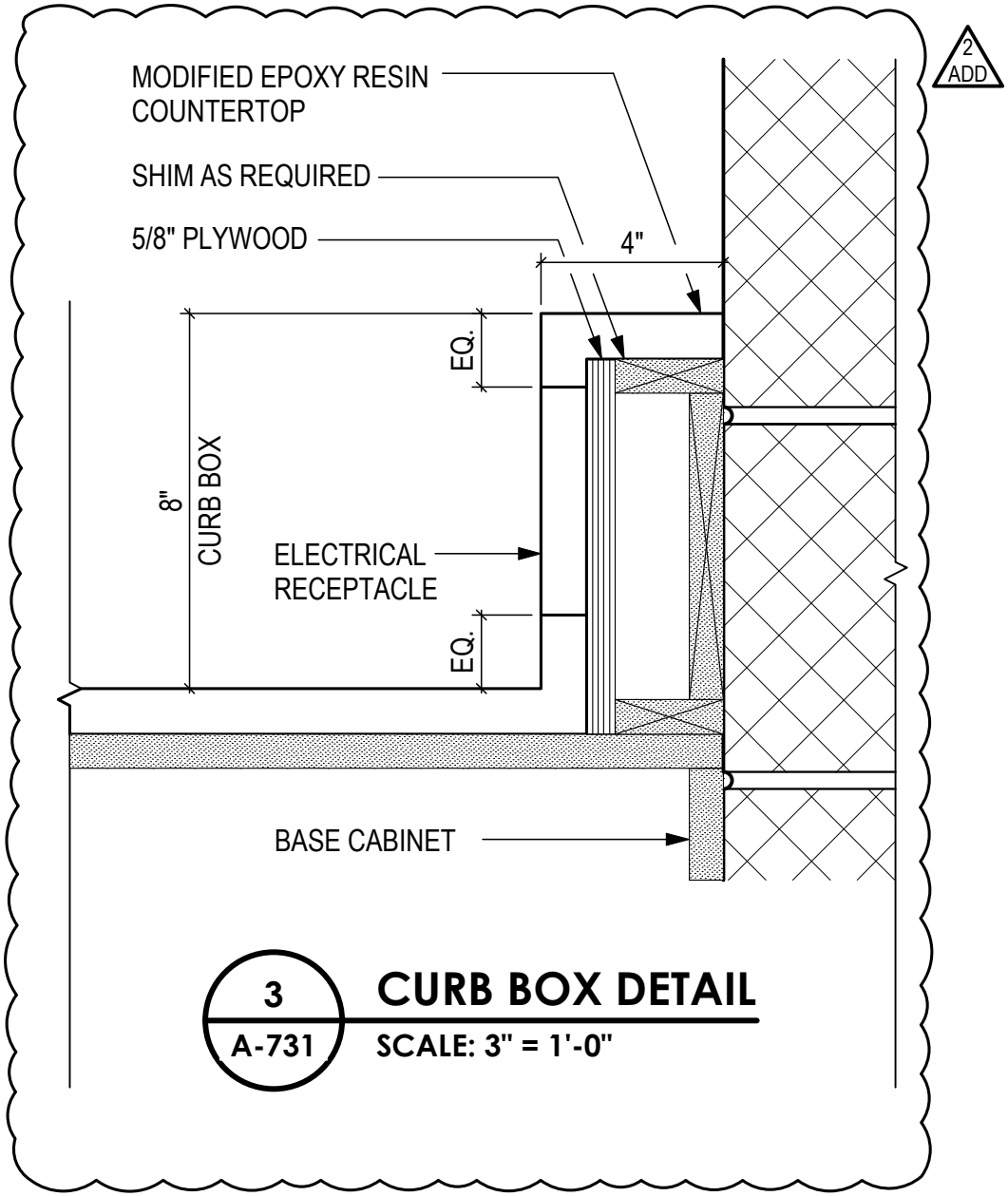

3
A-731

CURB BOX DETAIL

SCALE: 3" = 1'-0"

date 11 FEB 20

dwg ADD_2_6

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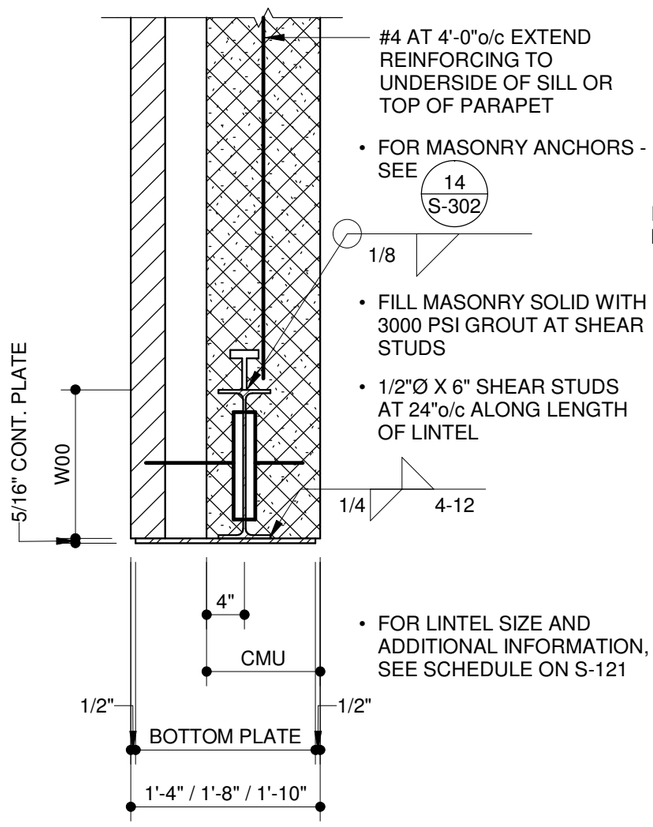
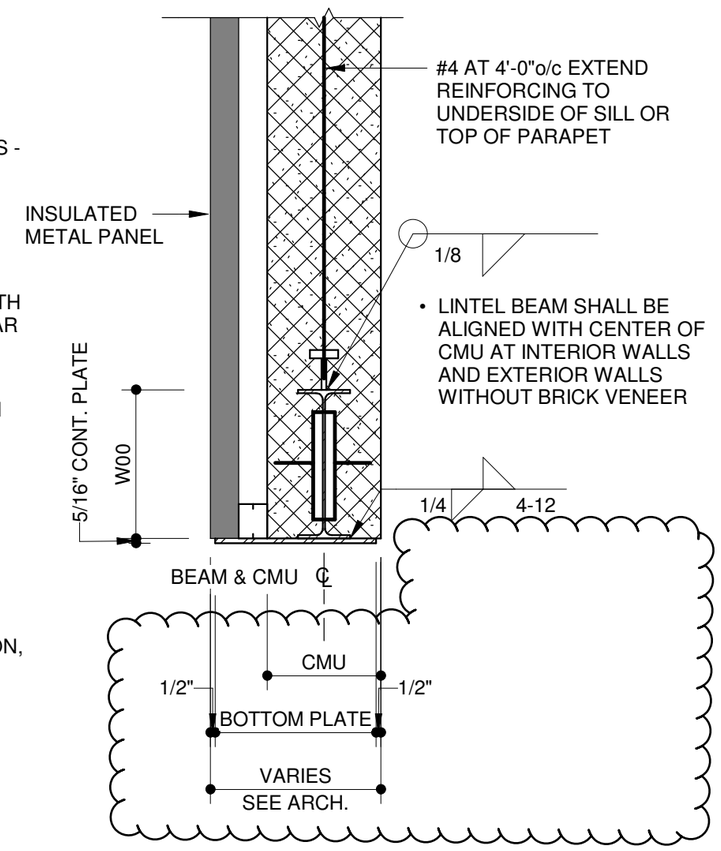


DETAIL AT BRICK ABOVE LINTEL



DETAIL AT PANEL ABOVE LINTEL

16 / S-302 BEAM LINTEL AT MASONRY WALL

3/4" = 1'-0"

date 11 FEB 20

dwg ADD_2_S1

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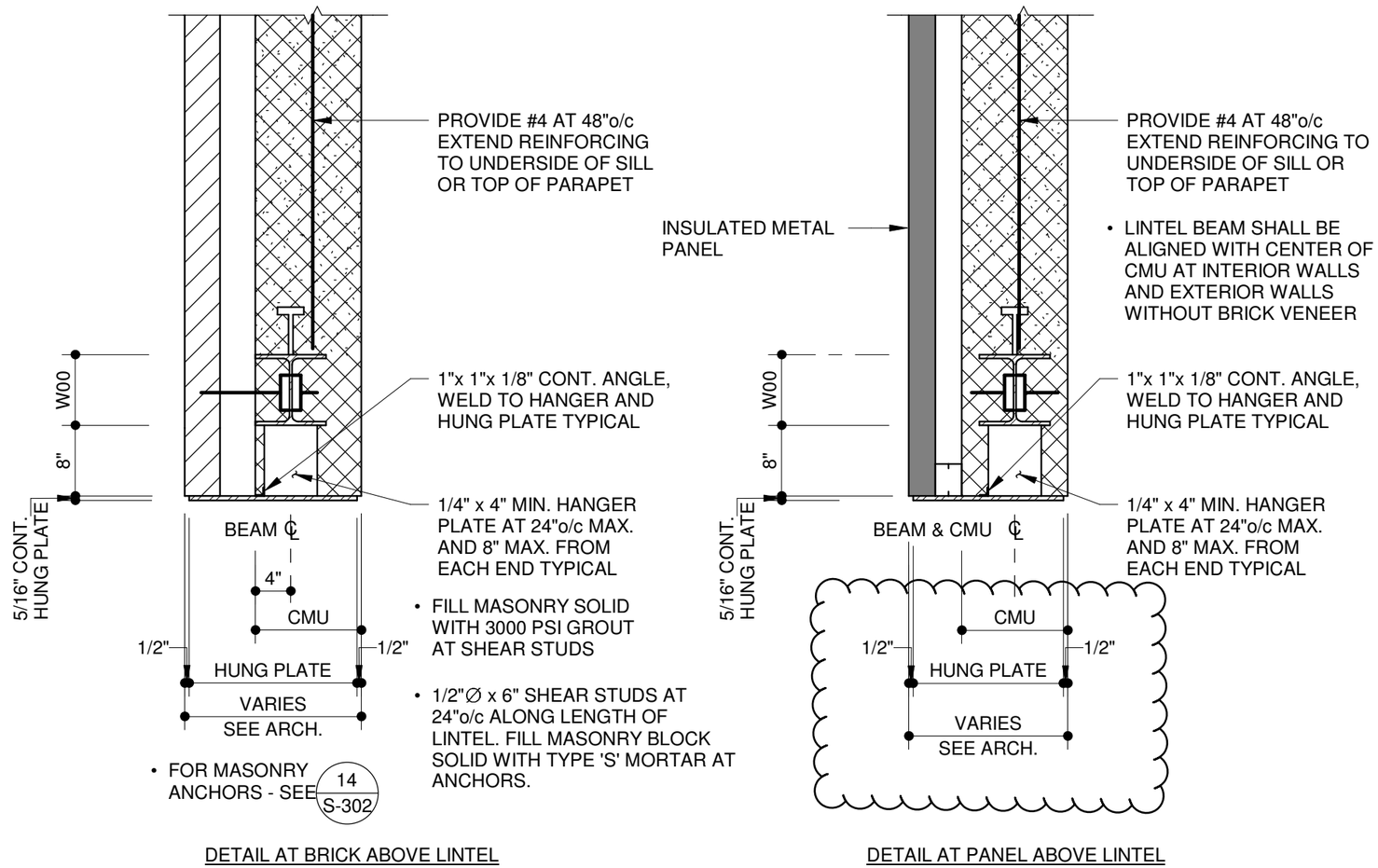

17
S-302
TYPICAL BEAM LINTEL WITH HUNG PLATE
3/4" = 1'-0"

date
11 FEB 20

dwg
ADD_2_S2

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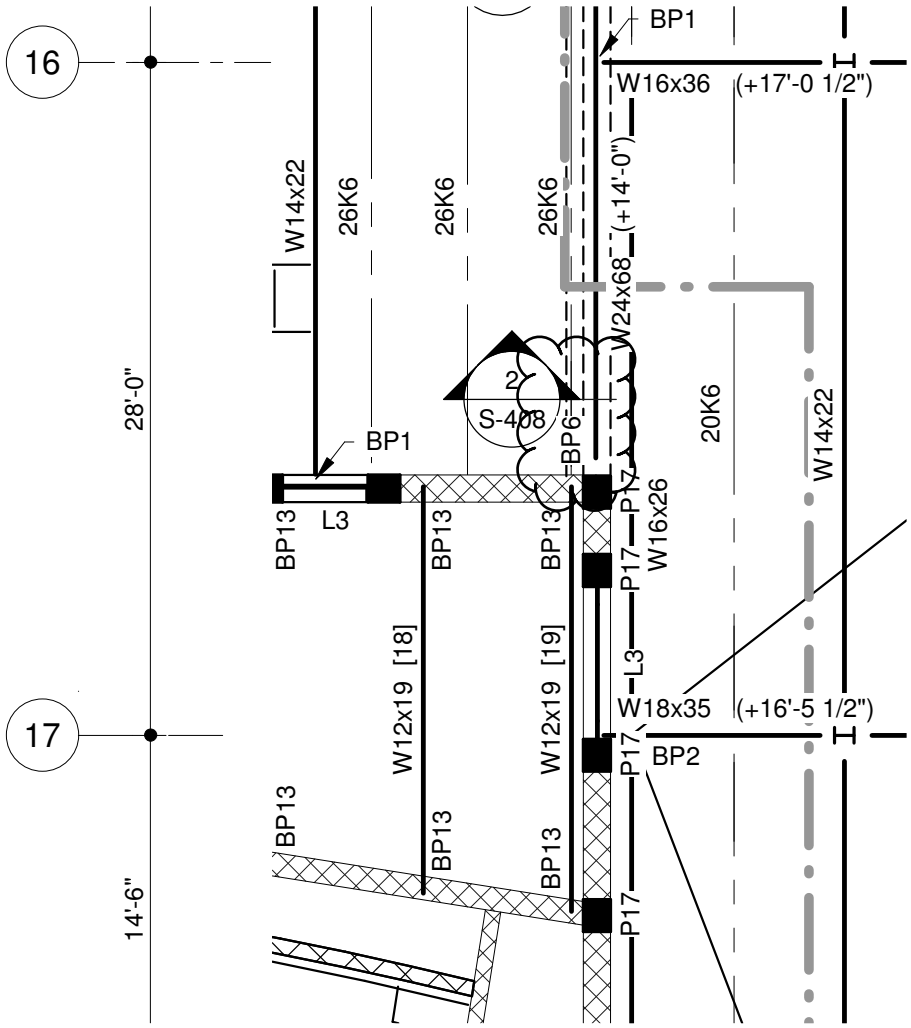

1
S-124

PART LOW ROOF FRAMING PLAN - D

1/8" = 1'-0"

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dwg
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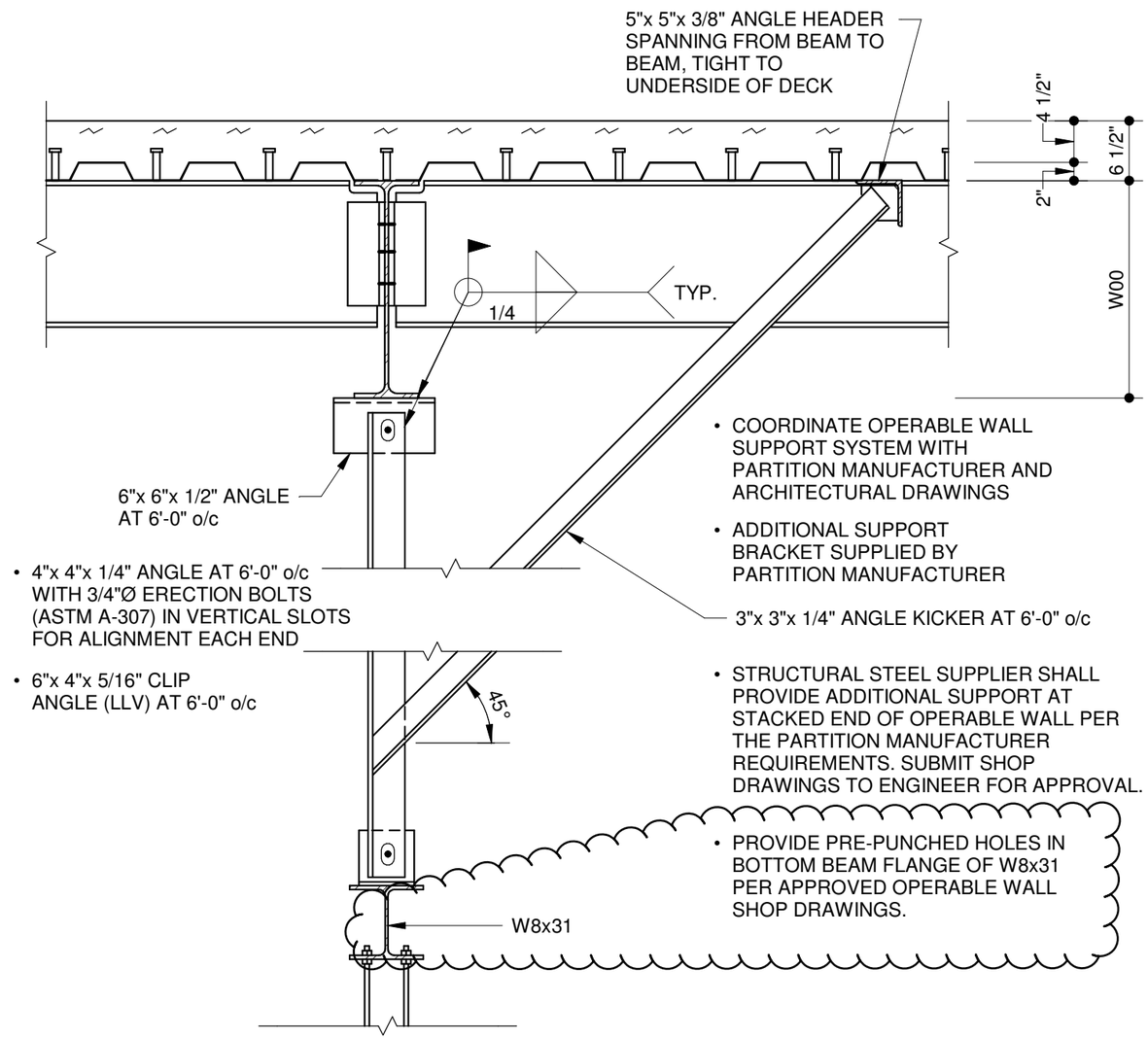

1
S-305

FOLDING PARTITION SUPPORT AT FLOOR

3/4" = 1'-0"

date 11 FEB 20

dwg ADD_2_S4

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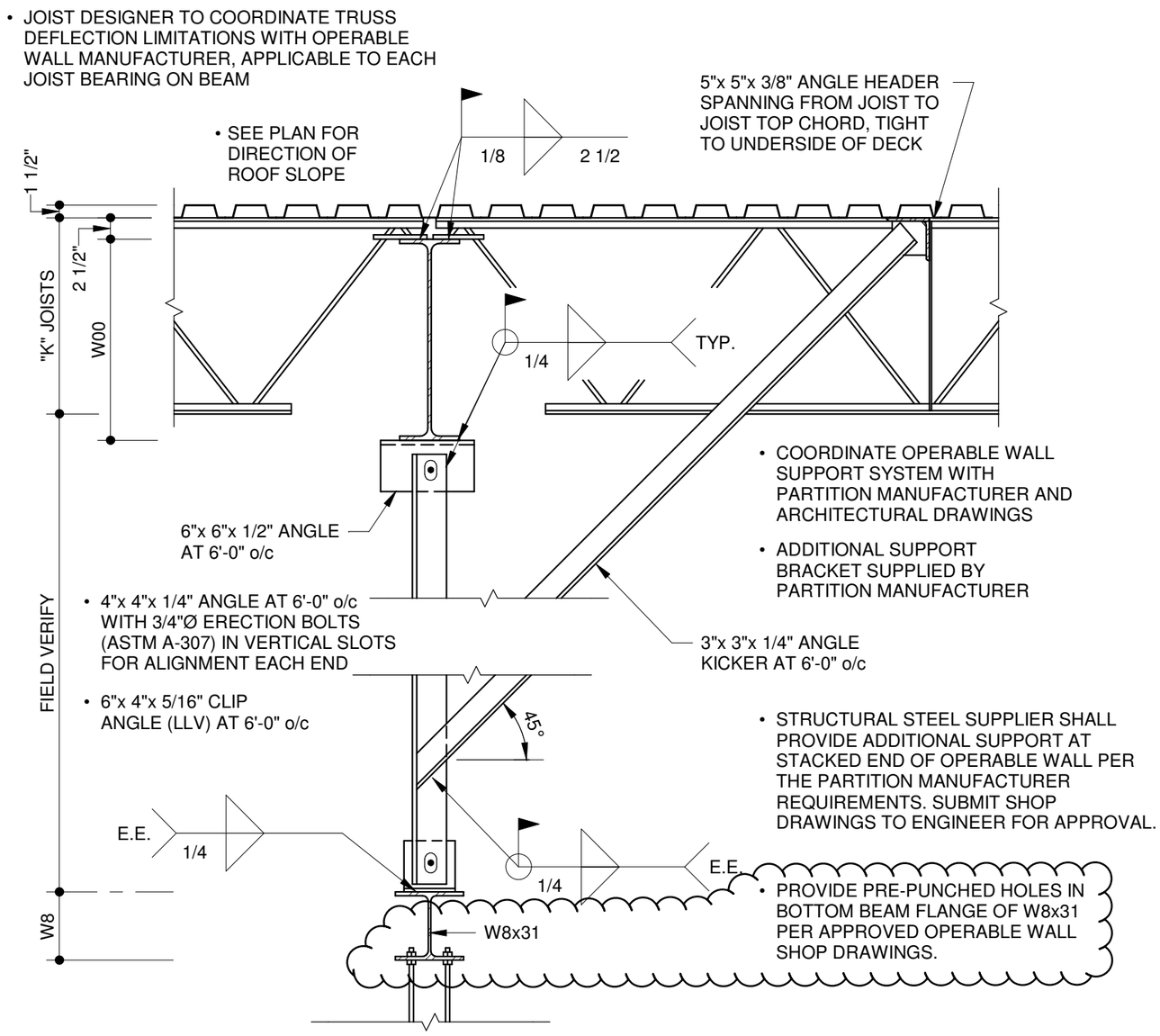

2
S-403

FOLDING PARTITION SUPPORT AT ROOF JOIST BEARING

3/4" = 1'-0"

date 11 FEB 20

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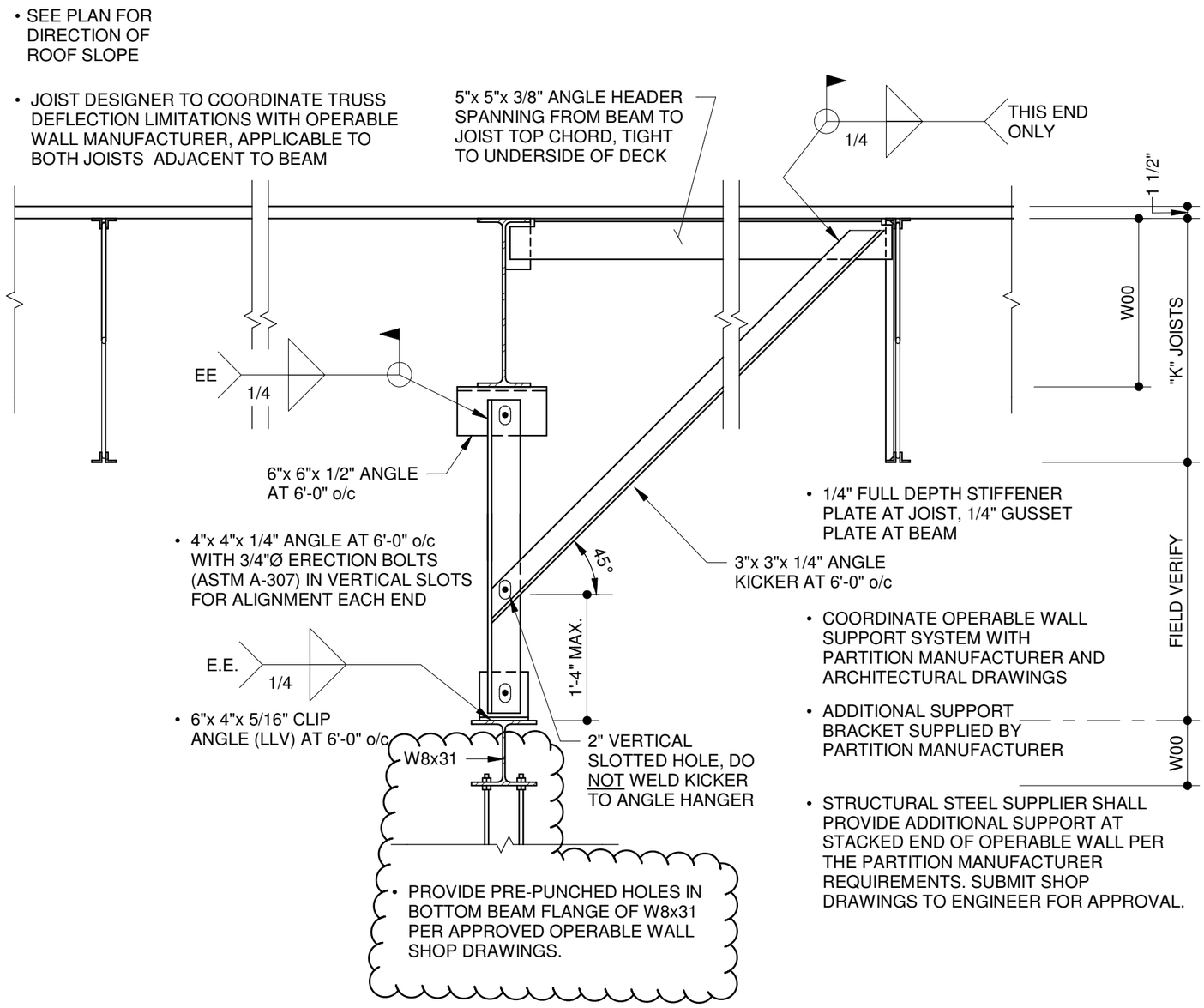

3
S-403
FOLDING PARTITION SUPPORT AT ROOF
3/4" = 1'-0"

date Checker
dwg ADD_2_S6

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BUILDING DESIGN CRITERIA

GLAZING "U" COEFFICIENT:

0.38 BTU/(HR)(SQ. FT.)(DEG. F) (S, E & W EXPOSURES)
0.38 BTU/(HR)(SQ. FT.)(DEG. F) (N EXPOSURES)
0.23 BTU/(HR)(SQ. FT.)(DEG. F) (GYMNASIUM)

2 ADD

GLASS SHADING COEFFICIENT:

0.30 (S, E & W EXPOSURES)
0.41 (N EXPOSURES)
0.38 (GYMNASIUM)

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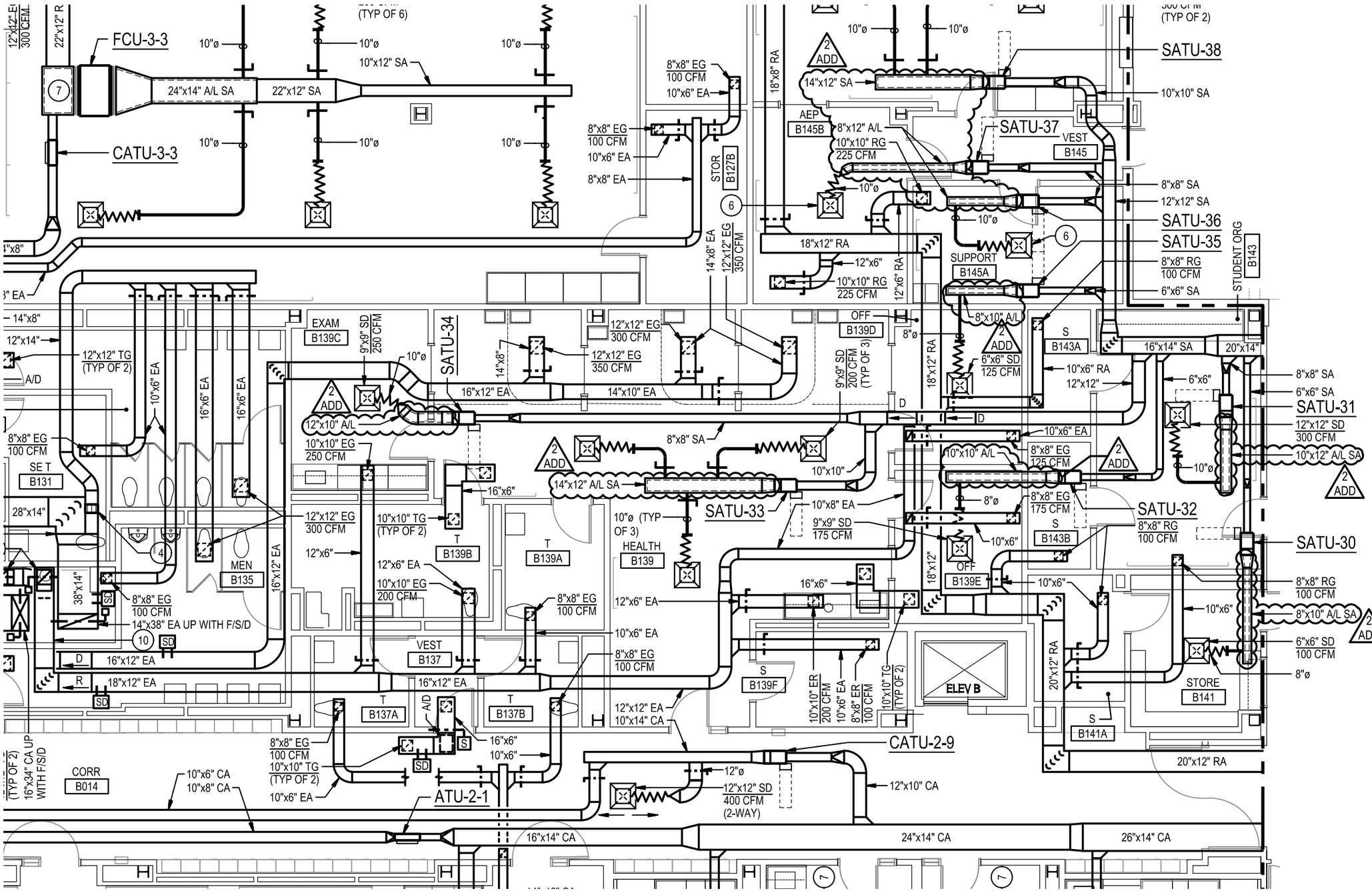

FIRST FLOOR PLAN - AREA 'B'

SCALE: 1/8"=1'-0"

REFERENCE NORTH

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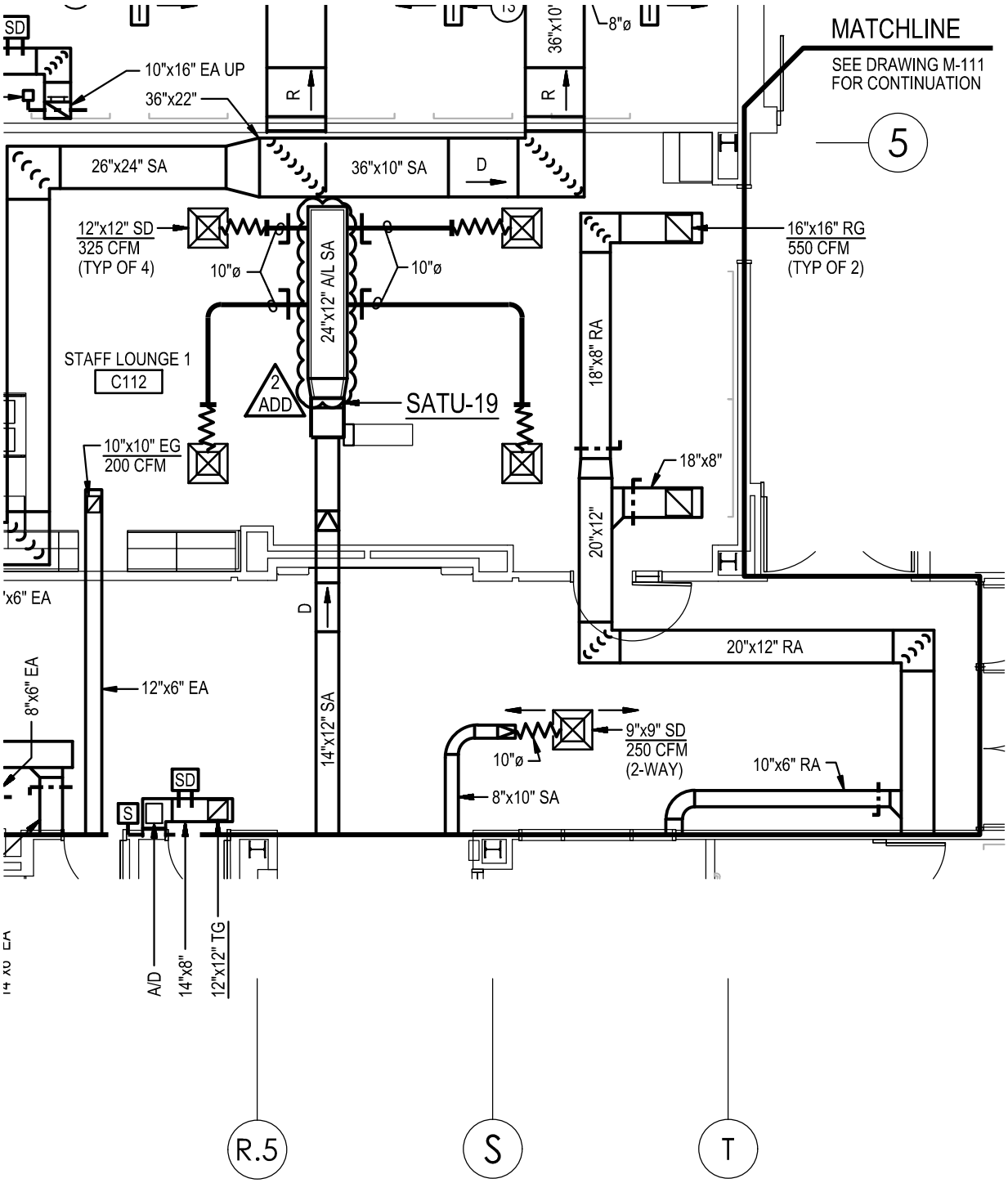

FIRST FLOOR PLAN - AREA 'C'

SCALE: 1/8"=1'-0"

REFERENCE NORTH

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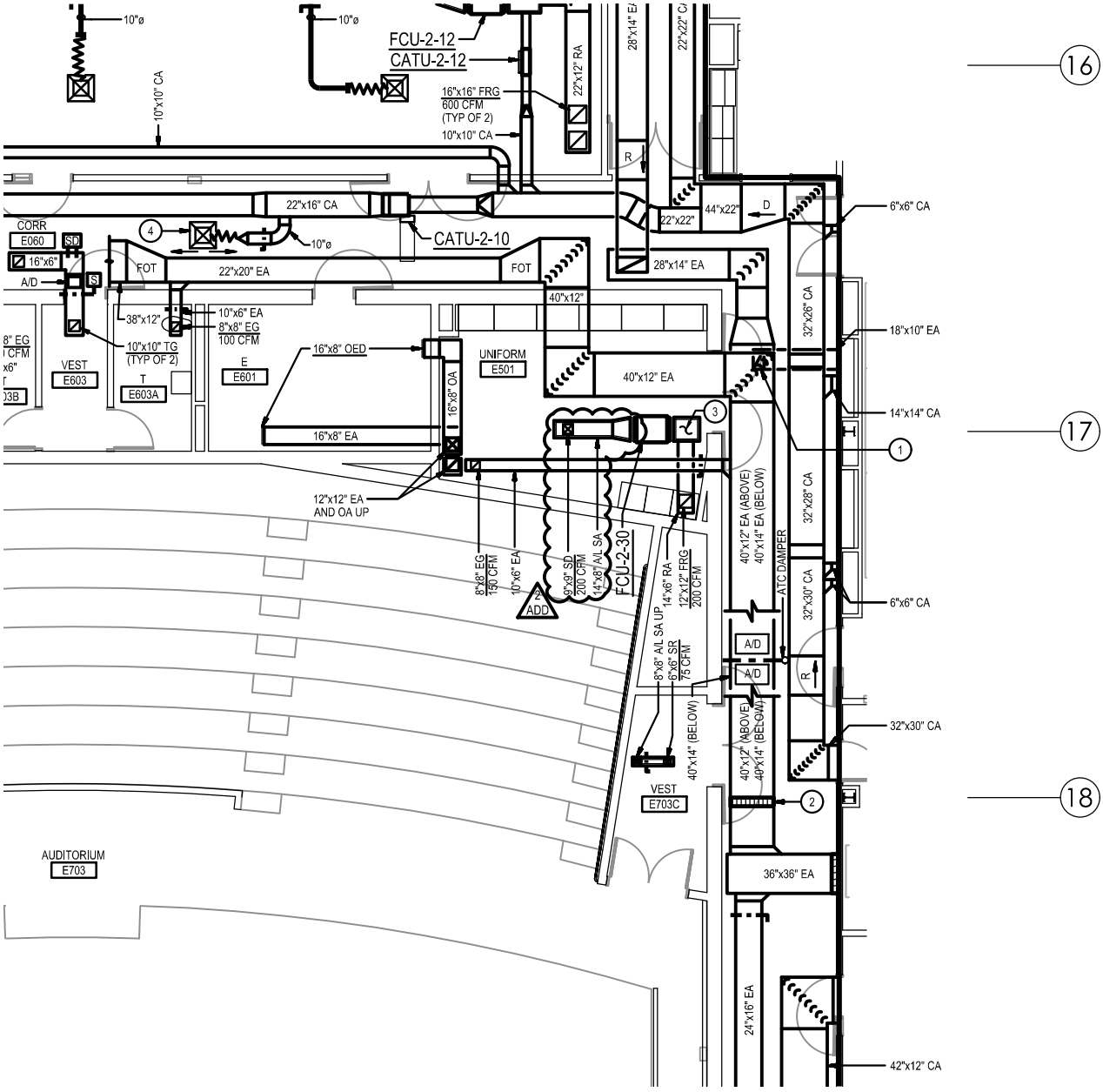
dwg ADD_2_M3



FIRST FLOOR PLAN - AREA 'E'

SCALE: 1/8"=1'-0"

REFERENCE NORTH

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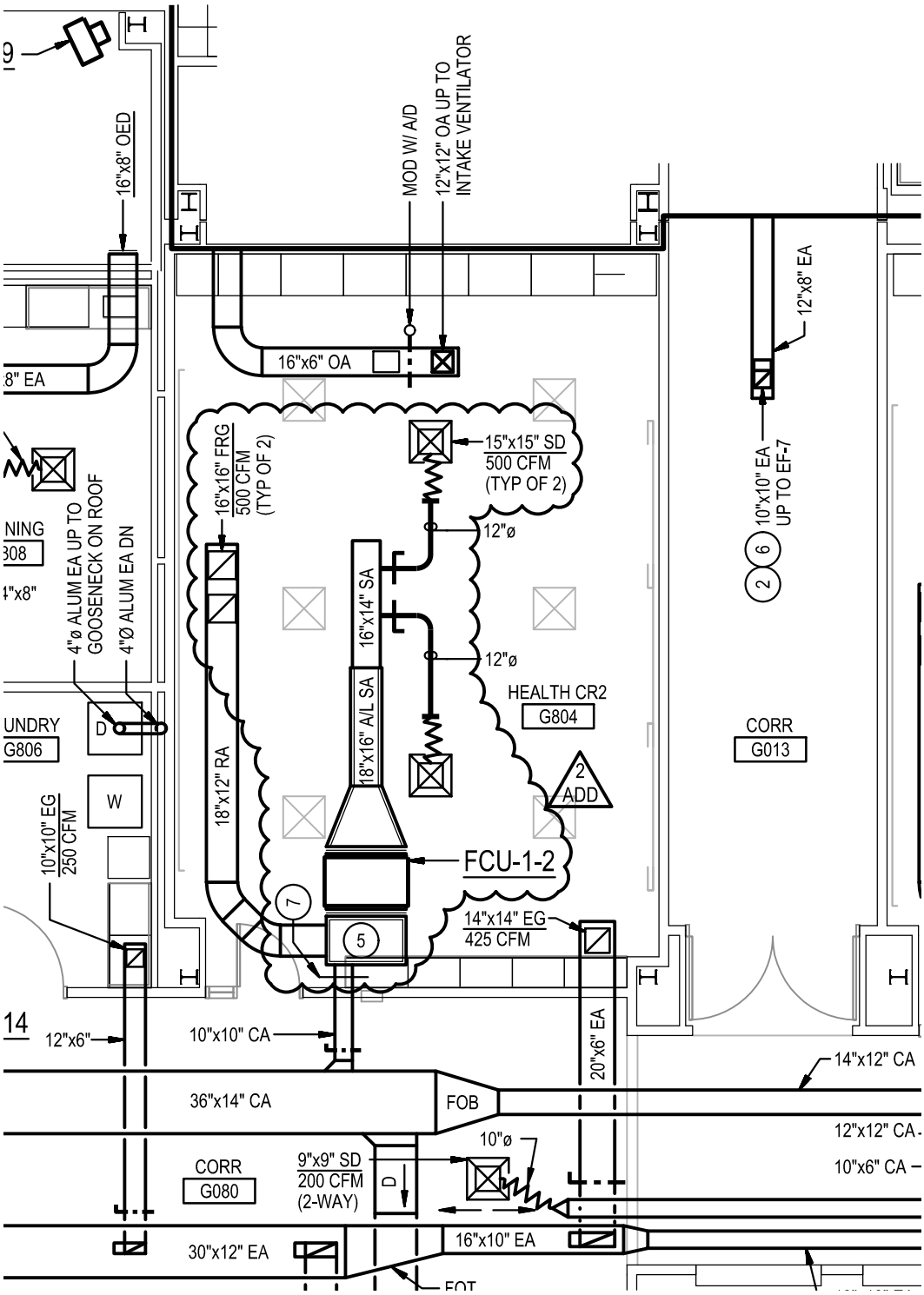
date 11 FEB 20

dwg ADD_2_M4



FIRST FLOOR PLAN - AREA 'G'

SCALE: 1/8"=1'-0"

REFERENCE NORTH

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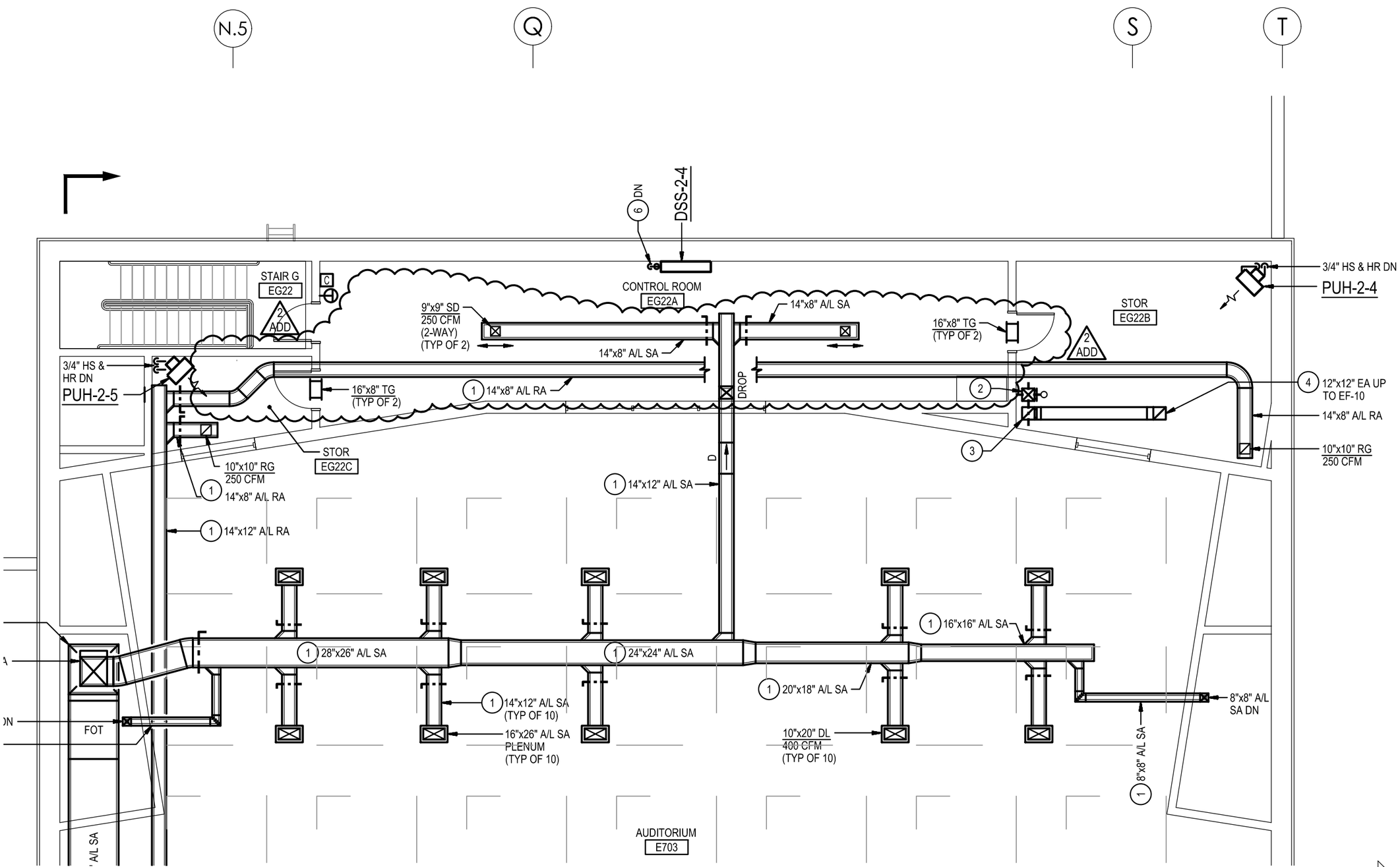
dwg ADD_2_M5



SECOND FLOOR PLAN - AREA 'E'

SCALE: 1/8"=1'-0"

REFERENCE
NORTH

date 11 FEB 20

dwg ADD_2_M6

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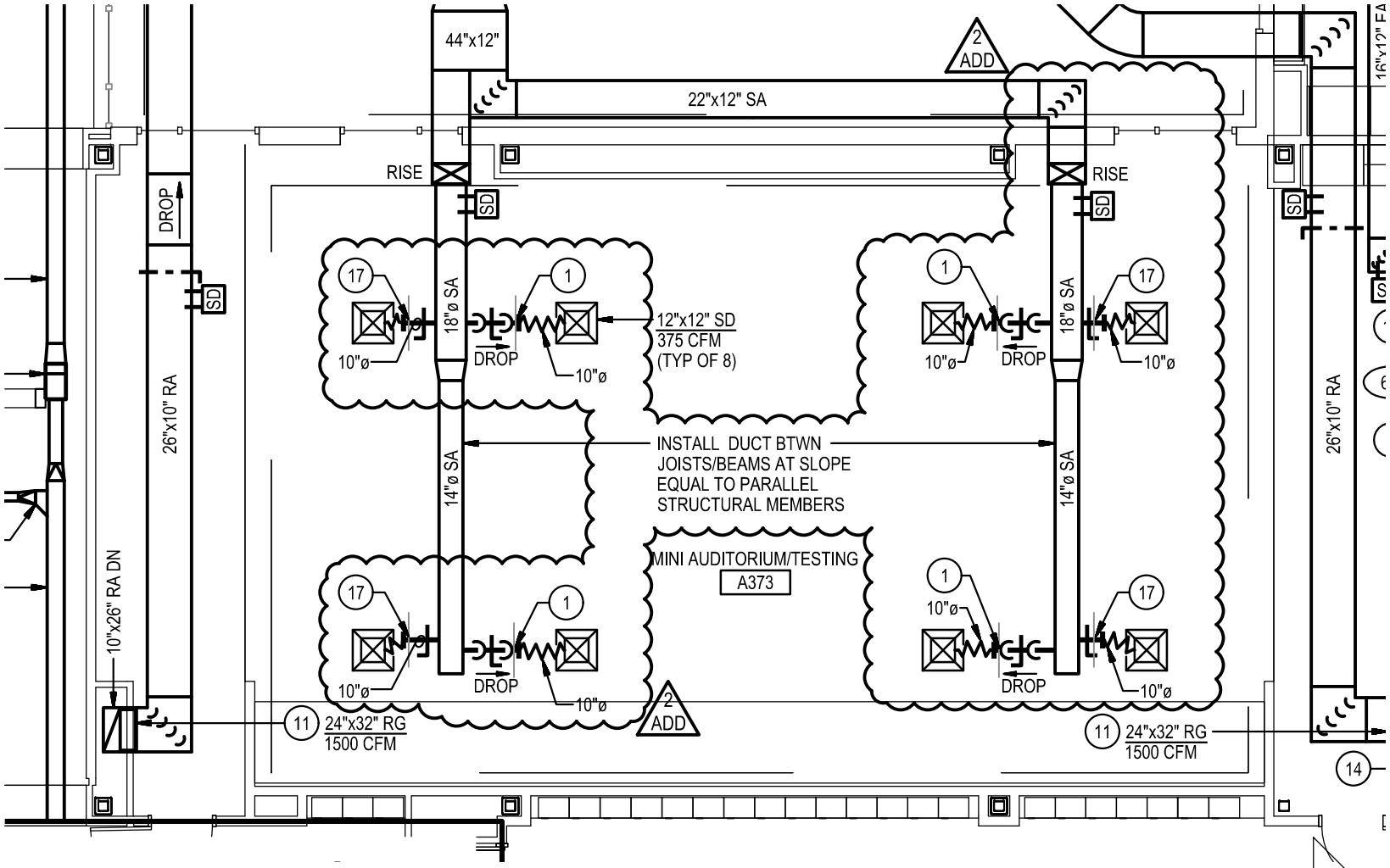
SPECIFIC NOTES:

16 AIRFLOW MEASURING STATION.

2 ADD 17 DUCT THRU JOISTS.



THIRD FLOOR PLAN - AREA 'A'

SCALE: 1/8"=1'-0"

date 11 FEB 20

dwg ADD_2_M7

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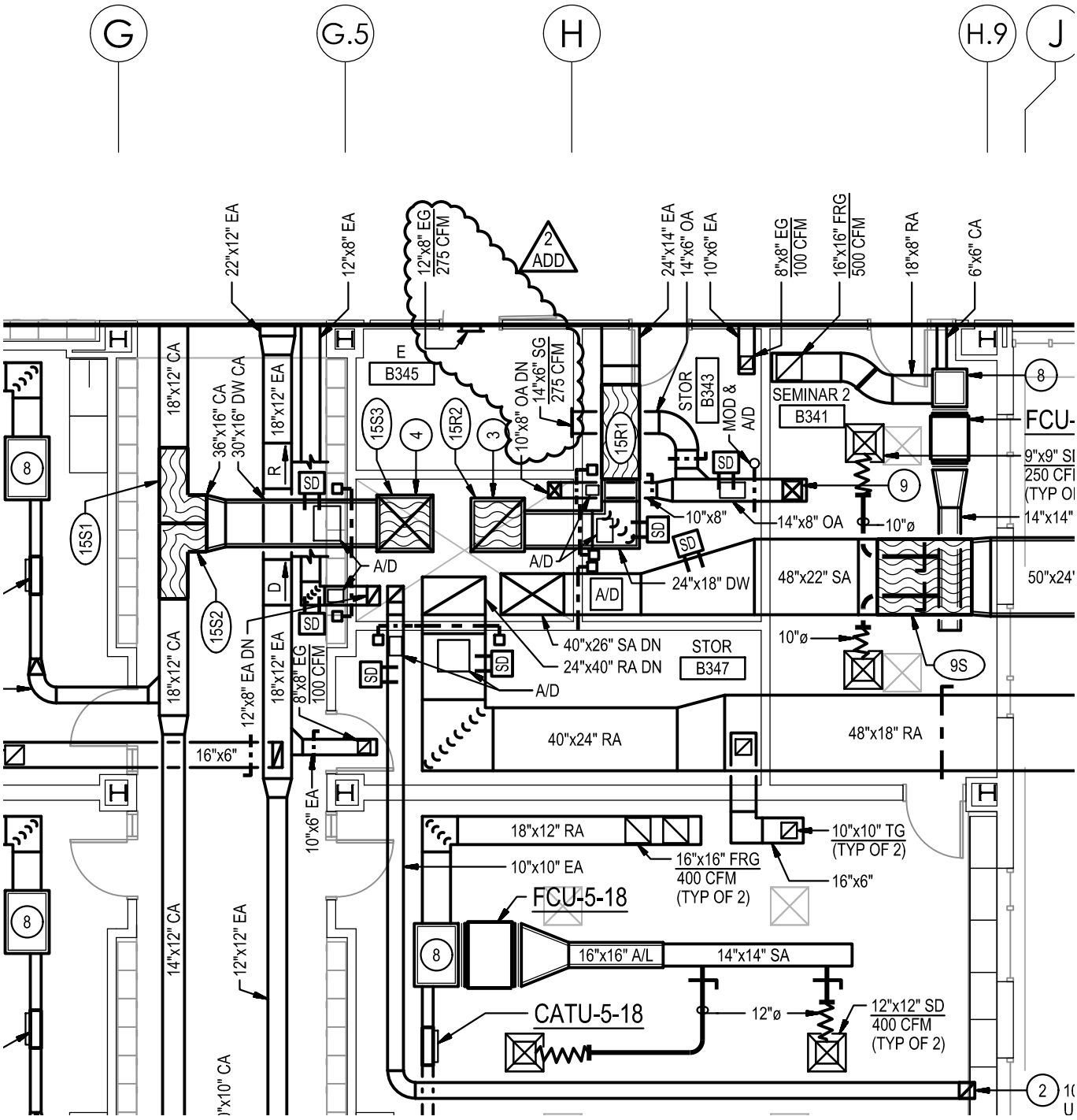

THIRD FLOOR PLAN - AREA 'B'

SCALE: 1/8"=1'-0"

REFERENCE NORTH

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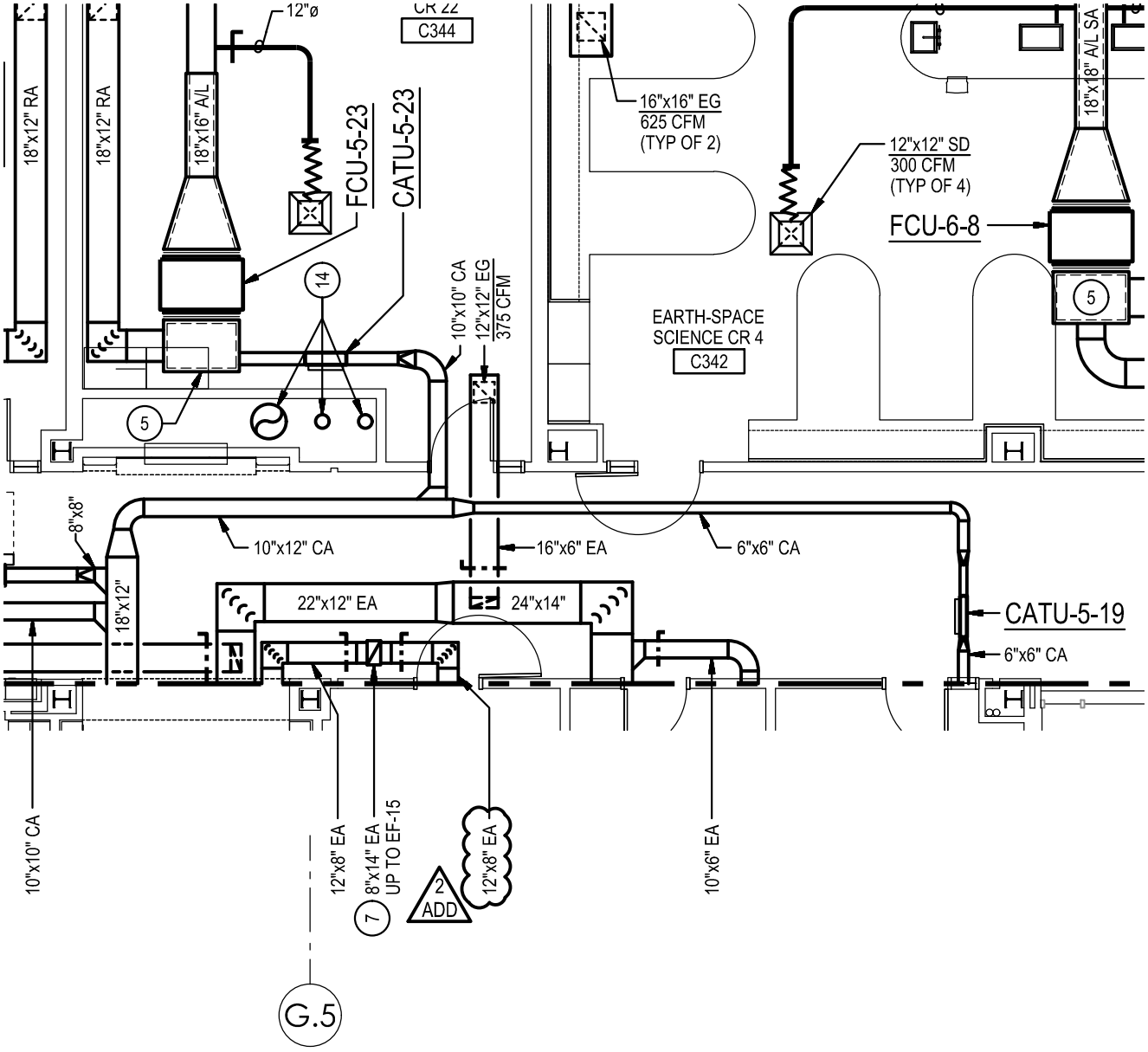
dwg ADD_2_M8



THIRD FLOOR PLAN - AREA 'C'

SCALE: 1/8"=1'-0"

REFERENCE
NORTH

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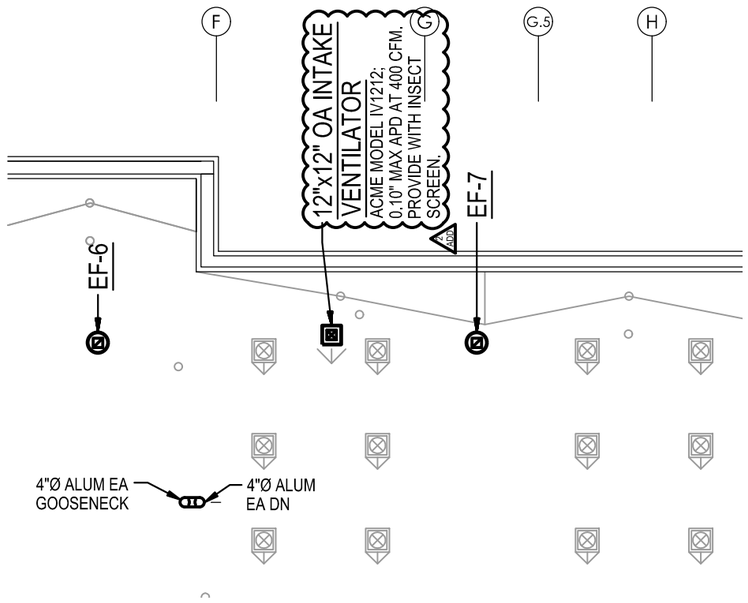
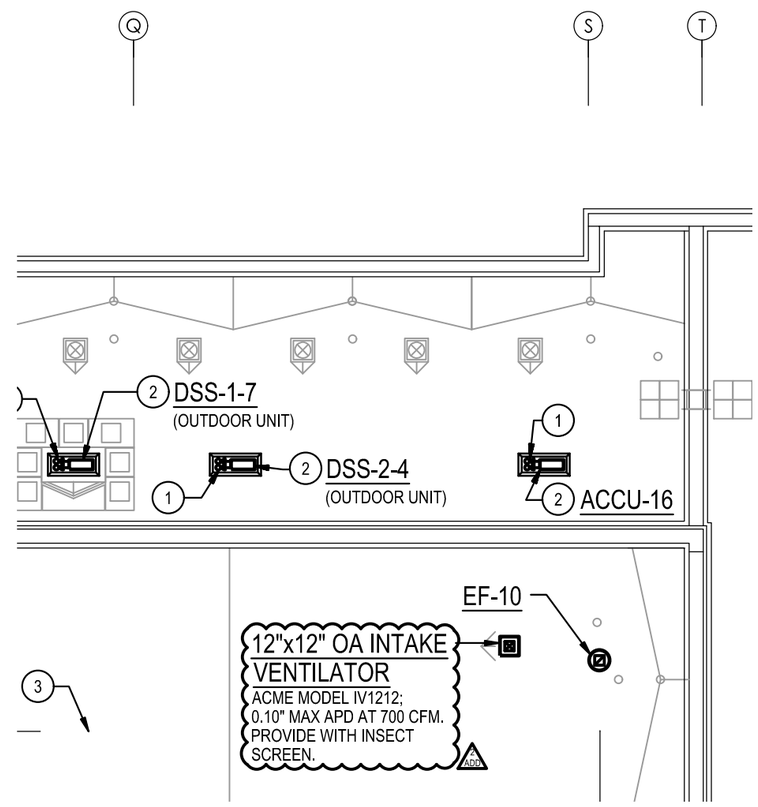
dwg
ADD_2_M9





PART ROOF PLAN - LOW ROOF

SCALE: 1/16"=1'-0"

REFERENCE NORTH

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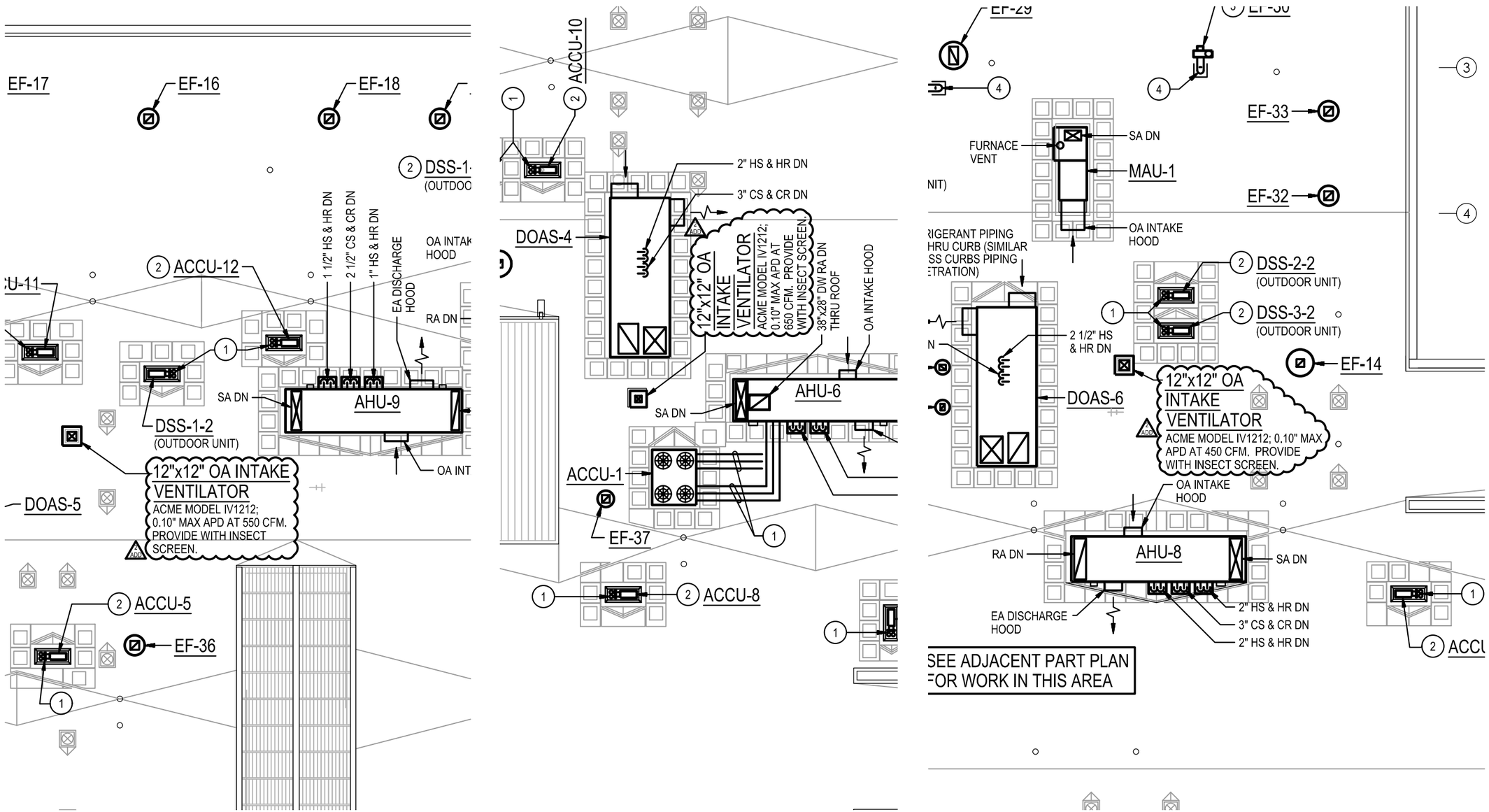

ROOF PLAN - HIGH ROOF

SCALE: 1/16"=1'-0"

REFERENCE NORTH

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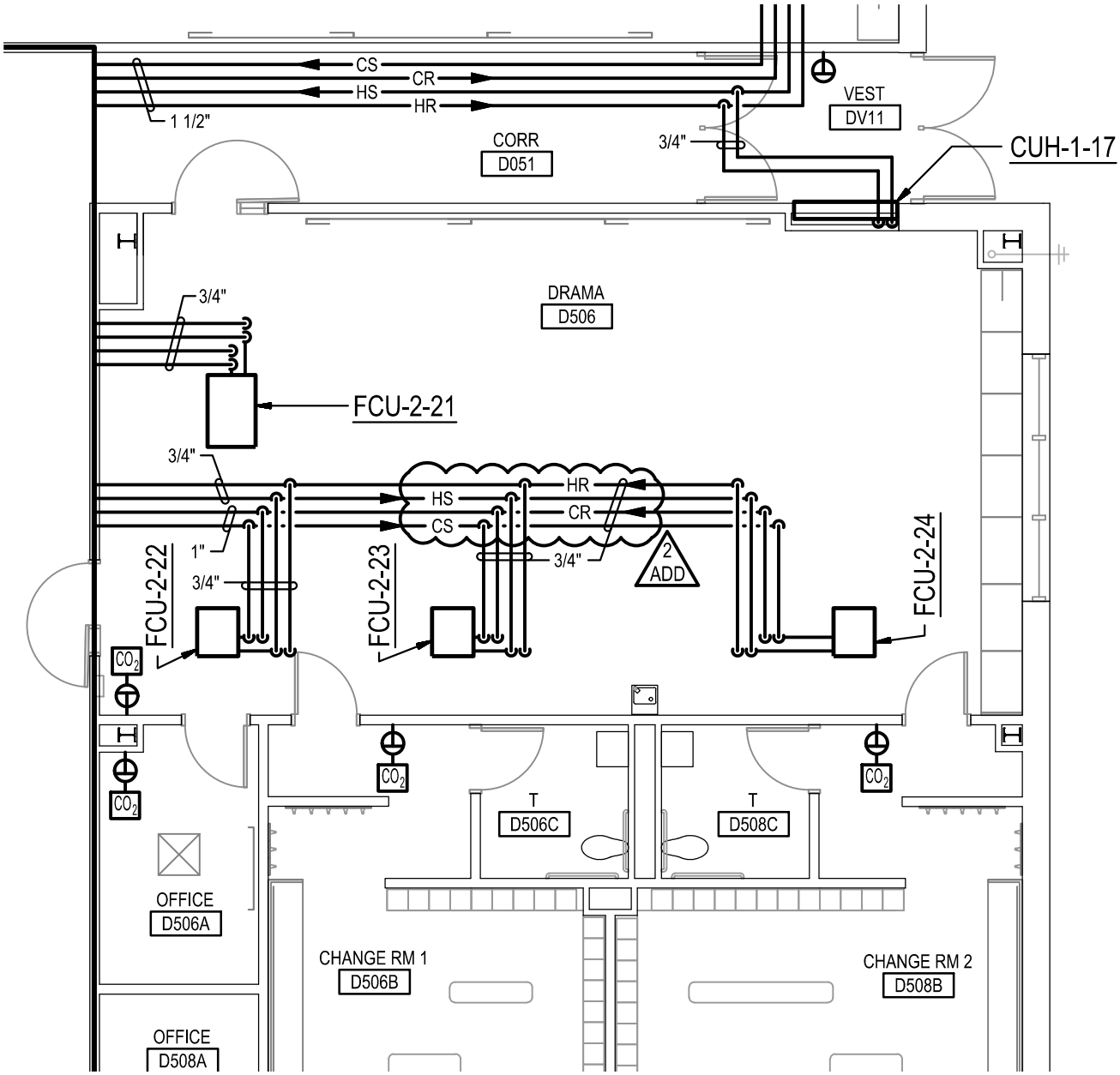

FIRST FLOOR PLAN - AREA 'D'

SCALE: 1/8"=1'-0"

REFERENCE NORTH

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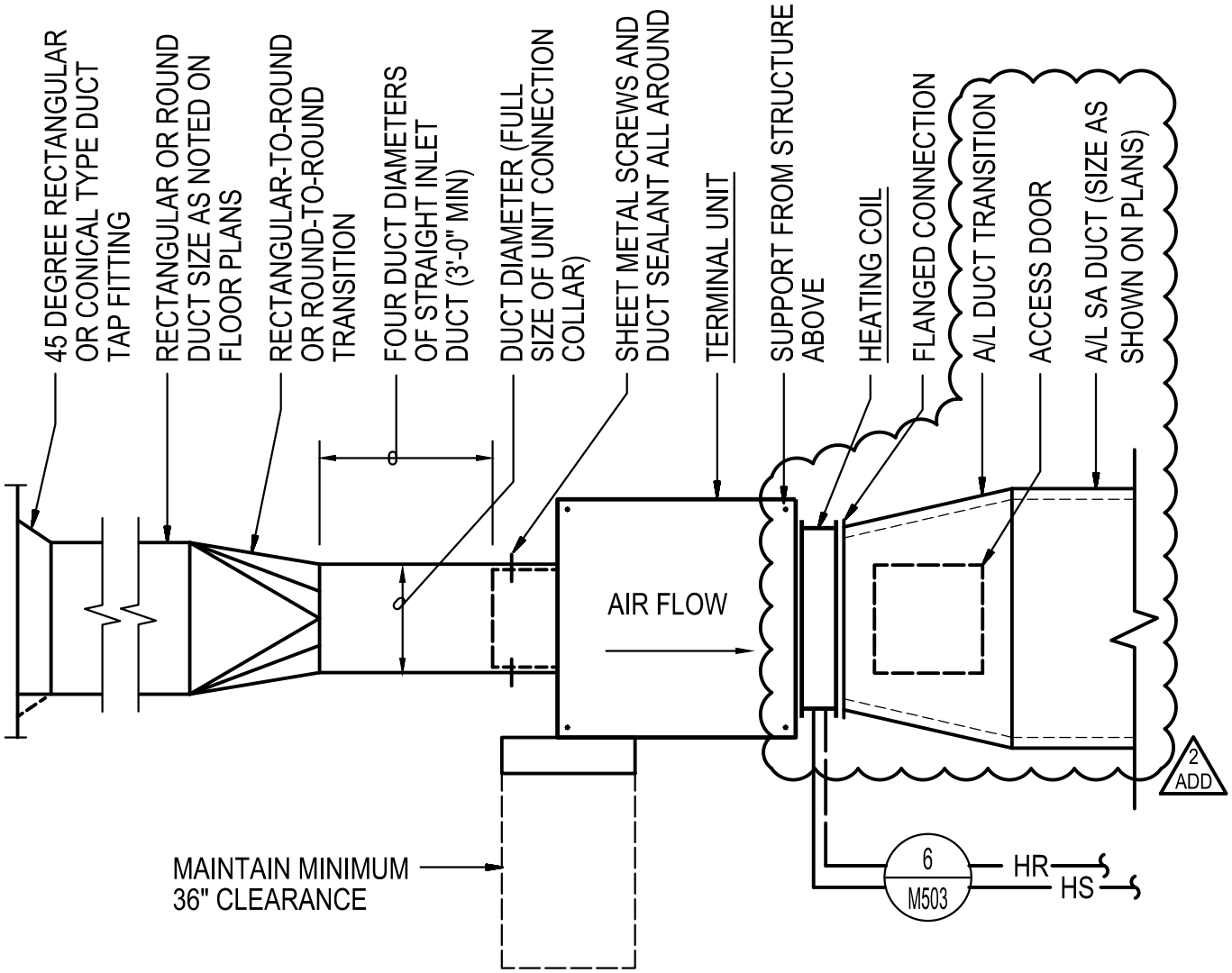

DETAIL 10/M503

DUCT CONNECTIONS TO SINGLE DUCT TERMINAL UNIT

NOT TO SCALE

HIGH SCHOOL #13 **JESSUP, MARYLAND** **HOWARD COUNTY PUBLIC SCHOOL SYSTEM**	tca|architects 1369 Generals Highway • Crownsville, Maryland 21032	**date** 11 FEB 20 **dwg** ADD_2_M13

MISCELLANEOUS EQUIPMENT SCHEDULE

DESIGNATION	DESCRIPTION/CAPACITY	MANUFACTURER AND MODEL NO.
AIR-COOLED CHILLERS ACC-1 AND ACC-2	HIGH-EFFICIENCY AIR-COOLED CHILLERS WITH VFD CONTROL OF FANS AND COMPRESSOR; R-134A; 10.1 MIN EER (FULL LOAD), 17.5 IPLV (AHRI) EVAPORATOR: 55.9 DEG F EWT, 44 LWT; 20 FT HD MAX WPD (2 ADD); 590 GPM, 293 TONS MIN NET COOLING CAPACITY, 0.00010 FOULING FACTOR, 100-PERCENT WATER. CONDENSER: AIR-COOLED TO MATCH EVAPORATOR; 95 DEG F AMBIENT AIR TEMPERATURE ELECTRICAL: 480V-3PH, SINGLE POINT POWER CONNECTION (EXCLUDING EVAPORATOR HEATER AND CONTROLS); 557A MCA, 700A MOP; 65,000 AMP (MIN) FAULT CURRENT RATING.	DAIKIN AWV-018-A
EXPANSION TANK ET-1 (HEATING WATER)	VERTICAL EXPANSION/COMPRESSION TANK SERVING HEATING WATER SYSTEM; (2 ADD) 185 GALLON TANK VOLUME, 30" DIAMETER x 81" TALL; 25 PSIG INITIAL CHARGE	TACO MODEL CA-700 (2 ADD)
EXPANSION TANK ET-2 (CHILLED WATER)	VERTICAL EXPANSION/COMPRESSION TANK SERVING CHILLED WATER SYSTEM; 79 GALLON TANK VOLUME, 24" DIAMETER x 58" TALL; 25 PSIG INITIAL CHARGE (2 ADD)	TACO MODEL CA-300 (2 ADD)

SOUND ATTENUATOR SCHEDULE

DESIG	UNIT SERVED	AIRFLOW (CFM)	TYPE	DIMENSIONS (IN)					MAX SP (IN WC)	APPROX VELOCITY (FPM)	DYNAMIC INSERTION LOSS IN DECIBELS OCTAVE BAND CENTER FREQUENCIES (Hz)							AIR FLOW GENERATED NOISE (NOTE 1) OCTAVE BAND CENTER FREQUENCIES (Hz)							VIBRO-ACOUSTIC MODEL NUMBER (UON)	NOTES
				A	B	C	I	O			125	250	500	1000	2000	4000	8000	125	250	500	1000	2000	4000	8000		
12S2	DOAS-2	3,200	SUPPLY	42	12	60	12	48	0.25	914	9	12	20	26	28	24	16	39	37	28	35	27	10	11	RED-MV-F4	1,2,3
12R	DOAS-2	8,350	RETURN	36	36	60	36	24	0.25	928 (2 ADD)	11	20	28	42	48	35	23	39	37	28	35	27	10	11	RED-MV-F7	1,2,3
13S1	DOAS-3	2,025	SUPPLY	18	24	60	21	39	0.25	675	9	12	20	26	28	24	16	39	37	28	35	27	10	11	RED-MV-F4	1,2,3
16S2	DOAS-6	8,400	SUPPLY	48	30	60	-	-	0.25	840	10	25	39	42	37	30	20	53	47	46	45	43	38	33	RD-MV-F7	1,3
16R1	DOAS-6	8,000	RETURN	48	30	60	39	21	0.25	800 (2 ADD)	12	21	27	29	34	25	18	39	37	28	35	27	10	11	(2 ADD) RED-MV-FZ	1,2,3
16R2	DOAS-6	8,000	RETURN	48	30	60	-	-	0.25	800	10	25	39	42	37	30	20	53	47	46	45	43	38	33	RD-MV-F7	1,3

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FAN SCHEDULE

DESIG	AREA SERVED	DUTY	CFM	SP (IN WC)	FAN RPM	HP (WATTS)	MAX SONES	WHEEL DIA (IN)	FAN TYPE	DRIVE	TWIN CITY MODEL NO.	ELECTRICAL	CONTROL
EF-14	TOILETS - A111, A113 & TA115	EXHAUST	700	0.50	1000	1/4	10	14.5	ROOF DOWNBLAST	DIRECT	DCRD 140	120V-1PH	A
EF-15	ELEC - B243 & B345	EXHAUST	550 2 ADD	0.50	1450 2 ADD	1/8	10	10.9	ROOF DOWNBLAST	DIRECT	DCRD 095 2 ADD	120V-1PH	B
EF-16	EARTH-SPACE SCIENCE CR 4 - C342 (PURGE)	EXHAUST	1000	0.25	625	1/4	10	17.9	ROOF DOWNBLAST	DIRECT	DCRD 170	120V-1PH	C
EF-17	EARTH-SPACE SCIENCE CR 2 - C240 (PURGE)	EXHAUST	1000	0.25	625	1/4	10	17.9	ROOF DOWNBLAST	DIRECT	DCRD 170	120V-1PH	C
EF-S-1	MEN - JS04	EXHAUST	300	0.25	625	1/3	5	7.8	CEILING EXHAUSTER	DIRECT	T 500	120V-1PH	H
EF-S-2	WOMEN - JS03	EXHAUST	300	0.25	625	1/3	5	7.8	CEILING EXHAUSTER	DIRECT	T 500	120V-1PH	H
EF-S-3	STOR - JS01A	EXHAUST	300	0.25	625	1/3	5	7.8	CEILING EXHAUSTER	DIRECT	T 500	120V-1PH	H
EF-S-4	TOILET - JS05	EXHAUST	300	0.25	625	1/3	5	7.8	CEILING EXHAUSTER	DIRECT	T 500	120V-1PH	H
													2 ADD

NOTES:

1. PROVIDE WITH UNIT MOUNTED DISCONNECT SWITCH.
2. PROVIDE WITH UNIT MOUNTED SOLID STATE SPEED CONTROLLER.
3. PROVIDE WITH BACKDRAFT DAMPER.
4. PROVIDE WITH WATERPROOF HOUSING, DRAIN IN FAN SCROLL, QUICK OPENING ACCESS DOOR, AMCA TYPE "B" SPARK RESISTANT CONSTRUCTION, AND ALUMINUM BACKDRAFT DAMPER. ALL PARTS EXPOSED TO THE AIRSTREAM SHALL BE EPOXY COATED.
5. PROVIDE FAN WITH SPARK PROOF MOTOR.
6. PROVIDE ALUMINUM BACKDRAFT DAMPER AT INLET AND OUTLET OF FAN.
7. FAN MOTOR SHALL BE SUITABLE FOR USE WITH VARIABLE FREQUENCY DRIVE CONTROLLER.
8. PROVIDE FAN WITH EXPLOSION-PROOF MOTOR.

CONTROLS:

A. ZONE OCCUPIED / UNOCCUPIED
B. ROOM TEMPERATURE SENSOR(S) AND COMPANION OA DAMPER(S)
C. LOCAL SWITCH 0-3 HOUR TIMER SWITCH (BY ELECTRICAL)
D. INTERLOCK WITH KILN HOOD EXHAUST FAN
E. INTERLOCK WITH FUME HOOD CONTROLS
F. INTERLOCK WITH KITCHEN HOOD CONTROLS
G. CONTINUOUS OPERATION
2 ADD H. INTERLOCK WITH LIGHTING OCCUPANCY CONTROLS (BY ELECTRICAL)

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LOCAL OA TEMPERATURE SENSOR WITH SUNSHIELD

GLOBAL OA TEMPERATURE SENSOR

LOCAL HUMIDITY SENSOR

LOCAL HUMIDITY SENSOR

GLOBAL AND LOCAL OUTDOOR AIR TEMPERATURE AND HUMIDITY SENSORS

A. A 'GLOBAL' OUTDOOR AIR TEMPERATURE AND HUMIDITY SENSORS SHALL BE USED FOR CONTROL OF HVAC CONTROL FUNCTIONS FOR HVAC EQUIPMENT THAT REQUIRE IT. EACH AHU, DOAS, BOILER, OR OTHER PIECE OF EQUIPMENT THAT REQUIRES OUTSIDE AIR TEMPERATURE AND/OR HUMIDITY TO ACHIEVE ITS SEQUENCE OF OPERATION SHALL HAVE 'LOCAL' SENSORS CONNECTED TO THE LOCAL CONTROLLER TO BE USED FOR BACKUP ON THE FAILURE OF THE GLOBAL OUTDOOR AIR TEMPERATURE OR HUMIDITY SENSORS.

B. IF THE GLOBAL OUTDOOR AIR TEMPERATURE OR HUMIDITY VALUE DOES NOT CHANGE OVER A 78 MINUTE PERIOD, OUTDOOR AIR TEMPERATURE OR HUMIDITY CONTROL SHALL REVERT TO THE LOCAL SENSORS CONNECTED TO THE LOCAL CONTROLLER. WHEN THE GLOBAL OUTDOOR AIR TEMPERATURE OR HUMIDITY CHANGES TWICE WITHIN AN HOUR, CONTROL VIA THE GLOBAL OUTDOOR AIR TEMPERATURE OR HUMIDITY SENSORS SHALL RESUME.

2 ADD

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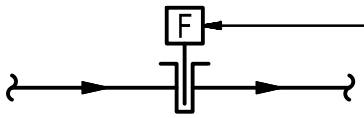

DOMESTIC WATER SUBMETER

(TYPICAL)

ALL DOMESTIC WATER SUBMETERS SHALL BE CONTINUOUSLY MONITORED AND TRENDED THROUGH THE DDC SYSTEM

2
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DDC – INPUT/OUTPUT POINT SCHEDULE

SYSTEM APPARATUS OR AREA POINT DESCRIPTION	INPUT TO DDC – ANALOG: TEMPERATURE	PRESSURE	CFM	FLOW	RELATIVE HUMIDITY	POSITION	CONCENTRATION (CO OR CO2)	SPEED	CO2 DIFFERENTIAL	INPUT TO DDC – BINARY: STATUS	CURRENT SENSING RELAY	SMOKE DETECTORS	FREEZESTAT	EMERGENCY SWITCH	FILTER DP	END SWITCH	LOCAL SWITCH ACTIVATION	ALARM	CURRENT SENSING TRANSDUCER	OUTPUT FROM DDC – ANALOG: SETPOINT ADJUSTMENT	POSITION	HUMIDITY	CO2 CONCENTRATION	OUTPUT FROM DDC – BINARY: OFF/ON	OPEN-CLOSE	HEATING-COOLING	SYSTEM FEATURES – ALARMS: FAILURE	HIGH ANALOG	LOW ANALOG	HIGH BINARY	HIGH BINARY	FAULT (GENERAL)	SYSTEM FEATURES – PROGRAMS: TIME SCHEDULING (OCC/UNOCC)	LEAD/LAG	WARM UP / COOL DOWN / RECIRC	REDUCED OCCUPANCY CYCLE	ECONOMIZER	GENERAL: COLOR GRAPHICS	INTERFACE W/ EQUIPMENT CONTROLS	SUPPLEMENTARY NOTES
ELEVATOR SUMP PUMPS										X								X														X							X	X	
LOW TEMP REFRIG/FREEZER ALARM	X																												X										X		
CARBON MONOXIDE DETECTOR							X			X								X														X							X	X	
2 ADD **DOMESTIC WATER SUBMETER**				X																																			X		TYPICAL
EXTERIOR LIGHTING																									X								X						X		
PHOTOCELL				X																																					LIGHT LEVEL INPUT TO DDC
AIRFLOW MEASURING STATION			X																	X																					
EA ATC DAMPER																					X																				
CO2 MONITORING & CONTROL SYSTEM																																							X		
ROOM CO2 DIFFERENTIAL									X											X								X												X	
2 ADD **DOMESTIC HW SYSTEM**																																	X						X		
CIRCULATOR PUMP										X	X														X		X														TYP OF 2

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DDC – INPUT/OUTPUT POINT SCHEDULE

SYSTEM APPARATUS OR AREA POINT DESCRIPTION	INPUT TO DDC																	OUTPUT FROM DDC						SYSTEM FEATURES										GENERAL			SUPPLEMENTARY NOTES
	ANALOG									BINARY								ANALOG				BINARY		ALARMS						PROGRAMS							
	TEMPERATURE	PRESSURE	CFM	FLOW	RELATIVE HUMIDITY	POSITION	CONCENTRATION (CO OR CO2)	SPEED	CO2 DIFFERENTIAL	STATUS	CURRENT SENSING RELAY	SMOKE DETECTORS	FREEZESTAT	EMERGENCY SWITCH	FILTER DP	END SWITCH	LOCAL SWITCH ACTIVATION	ALARM	CURRENT SENSING TRANSDUCER	SETPOINT ADJUSTMENT	POSITION	HUMIDITY	CO2 CONCENTRATION	OFF/ON	OPEN-CLOSE	HEATING-COOLING	FAILURE	HIGH ANALOG	LOW ANALOG	HIGH BINARY	HIGH BINARY	FAULT (GENERAL)	TIME SCHEDULING (OCC/UNOCC)	LEAD/LAG	MORNING WARM UP / COOL DOWN	REDUCED OCCUPANCY CYCLE	ECONOMIZER	COLOR GRAPHICS	INTERFACE W/ EQUIPMENT CONTROLS		
COOLING COIL CONTROL VALVE																				X																		
LOCAL OA TEMP SENSOR	X																																					BACK-UP FOR GLOBAL SENSOR 2 ADD
ENTHALPY WHEEL OA & EA BYPASS DAMPERS																	X								X													
DOAS ELECTRIC RESISTANCE HEATERS										X	X																											WITH CURRENT SWITCH
ENTHALPY WHEEL VFD								X		X	X									X				X			X				X						X	HARDWIRE INTERFACE W/ VFD
HX FACE & BYPASS DAMPERS																	X					X																
OA, EA, AND RECIRCULATION DAMPERS																	X								X		X											
PREHEAT COIL CONTROL VALVE																				X																		
COOLING COIL CONTROL VALVE																				X																		
LOCAL OA TEMP SENSOR	X																																					BACK-UP FOR GLOBAL SENSOR 2 ADD
DOAS ELECTRIC RESISTANCE HEATERS										X	X																											WITH CURRENT SWITCH
ENTHALPY WHEEL VFD								X		X	X									X				X			X				X						X	HARDWIRE INTERFACE W/ VFD
HX FACE & BYPASS DAMPERS																	X					X																
LL STATIC PRESSURE SENSOR		X																										X										

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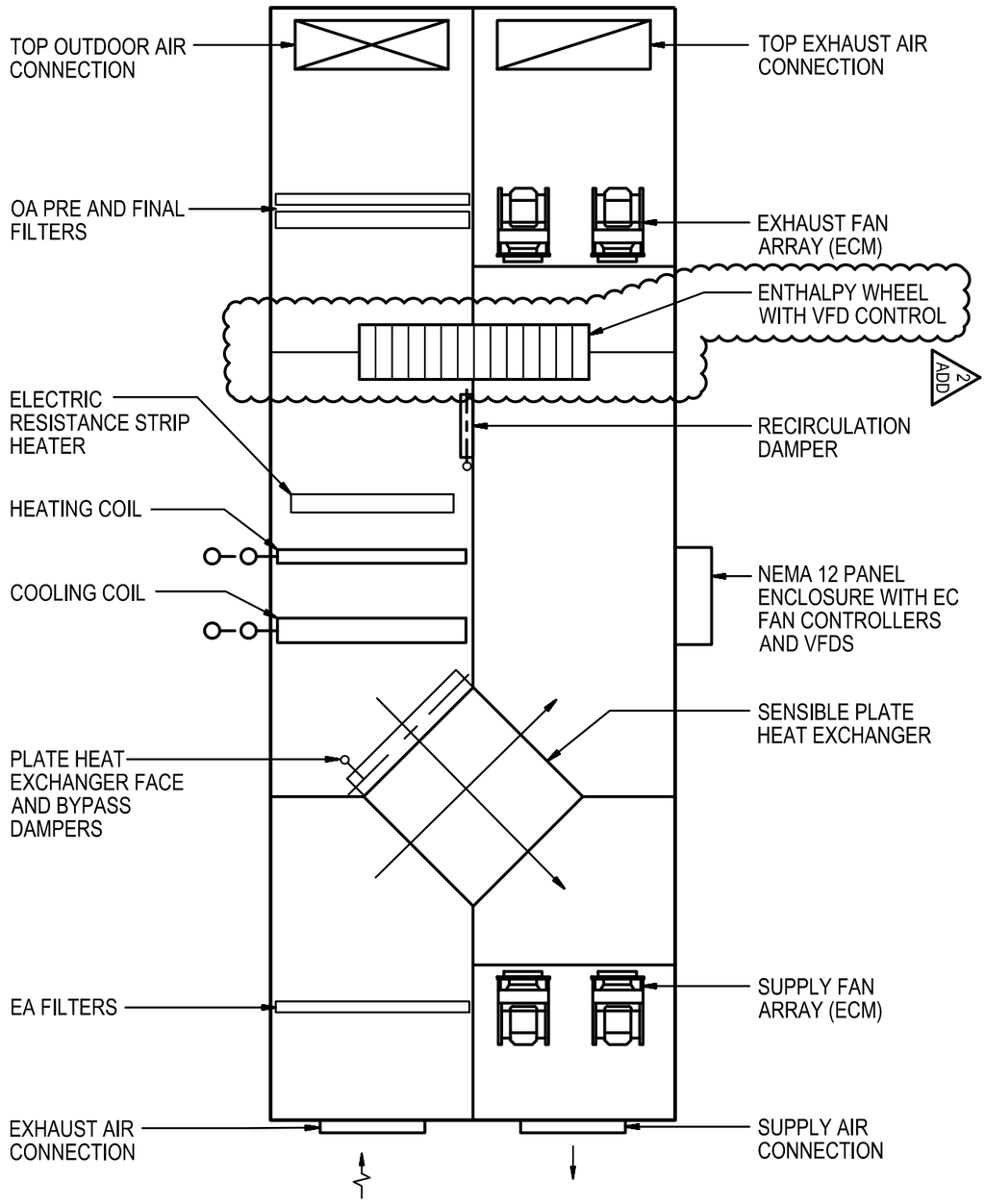
INDOOR UNIT CONFIGURATION - DOAS-1

FLOOR PLAN COMPONENT VIEW

NOT TO SCALE



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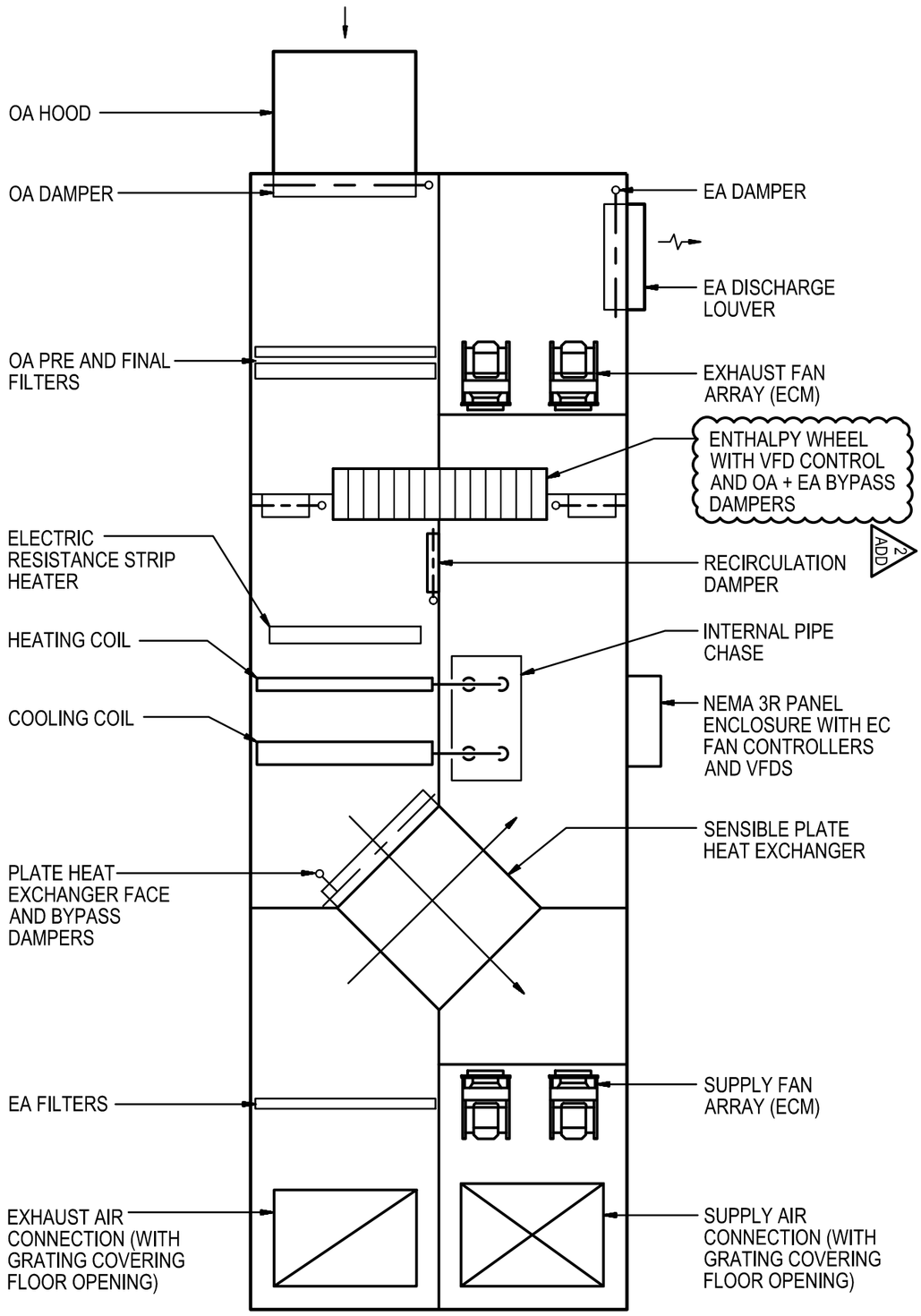

OUTDOOR UNIT CONFIGURATION - DOAS-4 AND 5

FLOOR PLAN COMPONENT VIEW

NOT TO SCALE

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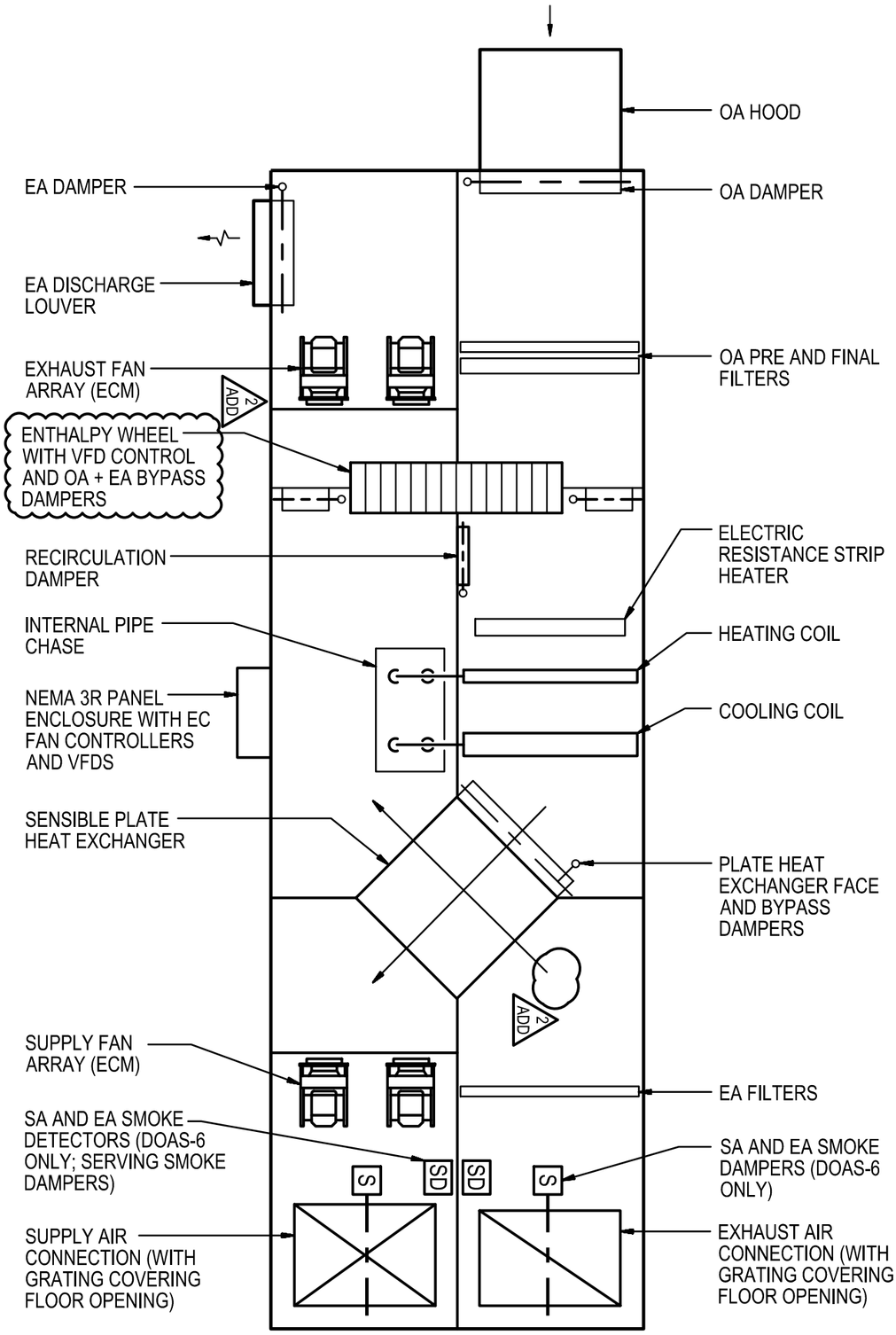

OUTDOOR UNIT CONFIGURATION - DOAS-2, 3, AND 6

FLOOR PLAN COMPONENT VIEW

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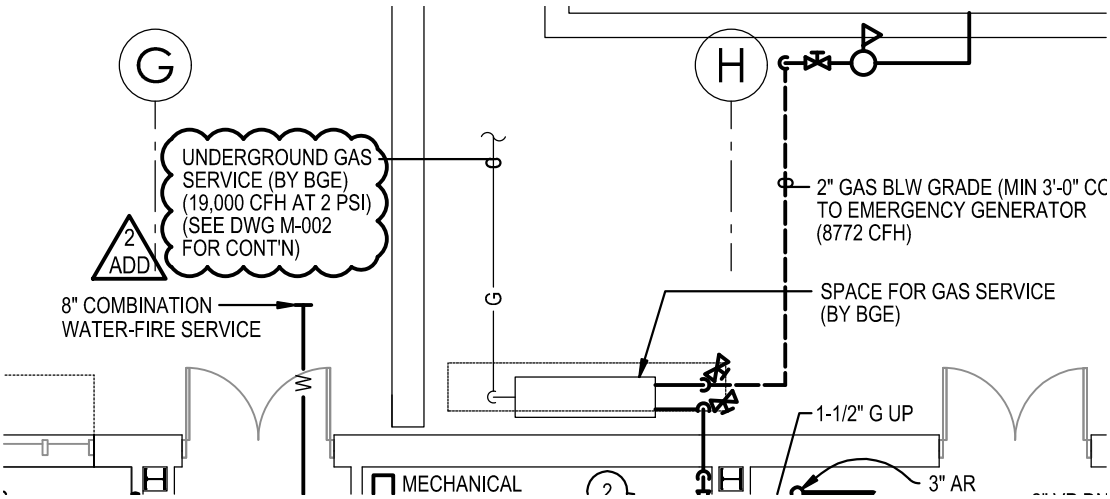

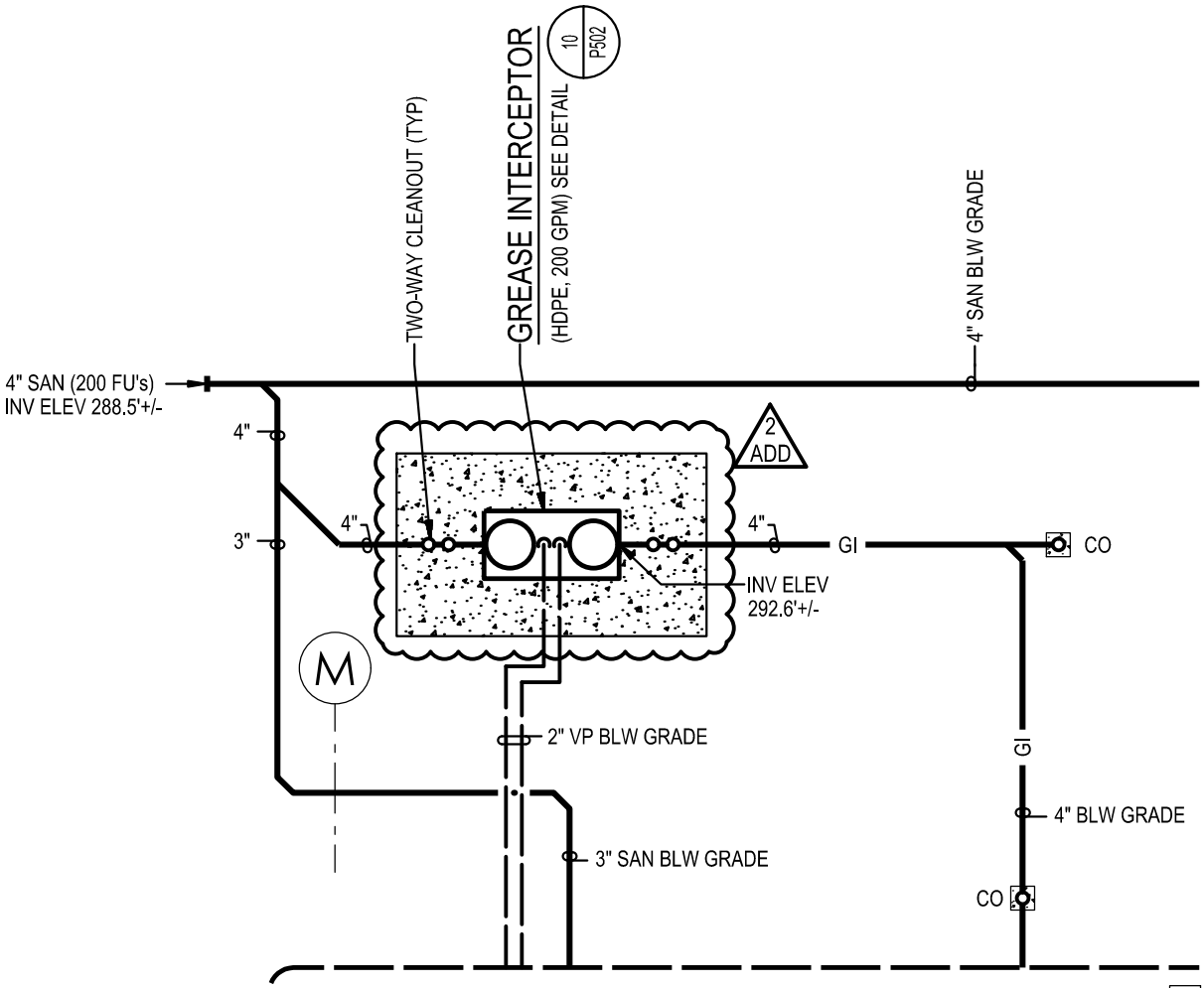

FIRST FLOOR PLAN - AREA 'C'

SCALE: 1/8"=1'-0"

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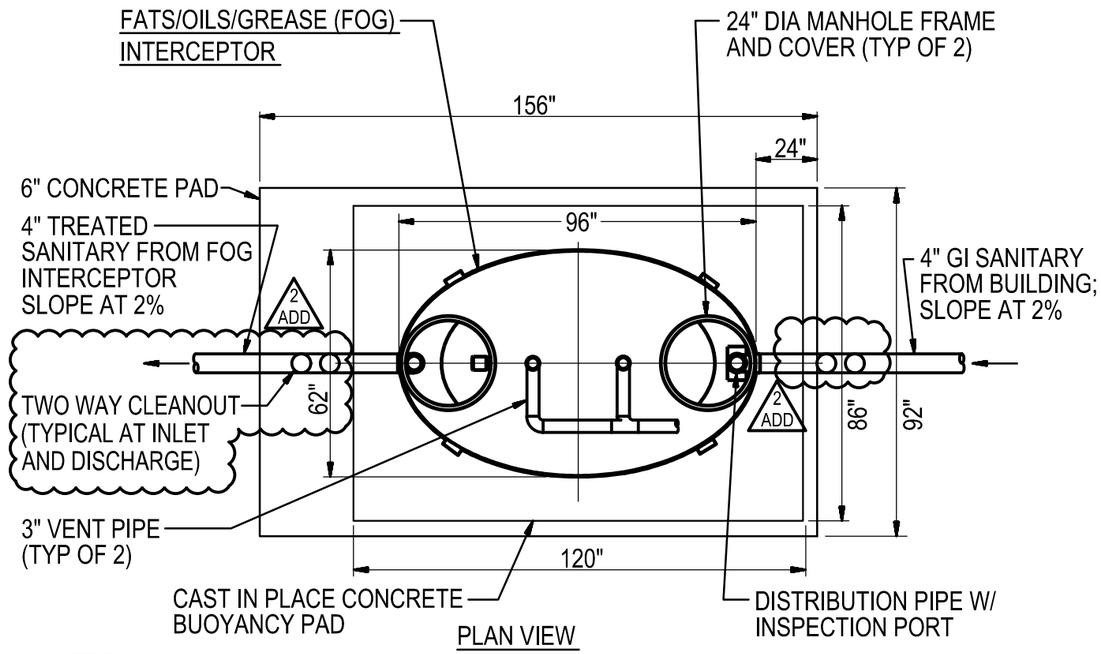

PLAN VIEW

NOTES:

1. IN ADDITION TO THE INFORMATION SHOWN IN THIS DETAIL, FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. INLET/OUTLET AND VENT CONNECTIONS SHALL BE NO-HUB OR THREADED.
3. EXCAVATION, TRENCHING AND BACKFILLING RELATING TO THE INTERCEPTOR PERFORMED BY SITE CONTRACTOR.
4. INSTALLATION OF INTERCEPTOR INCLUDING MANWAY RISERS AND PROVIDING BUOYANCY PAD BY SITE CONTRACTOR.
5. INSTALLATION OF CONCRETE PAD ABOVE INTERCEPTOR INCLUDING MANHOLE FRAME AND COVER BY SITE CONTRACTOR.
6. INLET/OUTLET AND VENT PIPING ASSOCIATED WITH INTERCEPTOR PROVIDED BY DIV. 22

IAMPO/ANSI Z1001-2007 APPROVED

INTERCEPTOR SIZ
50 GPM AND 30 MII
INTERNATIONAL PI

DETAIL 10/P502

FATS/OILS/GREASE INTERCEPTOR (GRAVITY RETENTION TYPE)
(BELOW GRADE INSTALLATION)

NOT TO SCALE

REFERENCE NORTH

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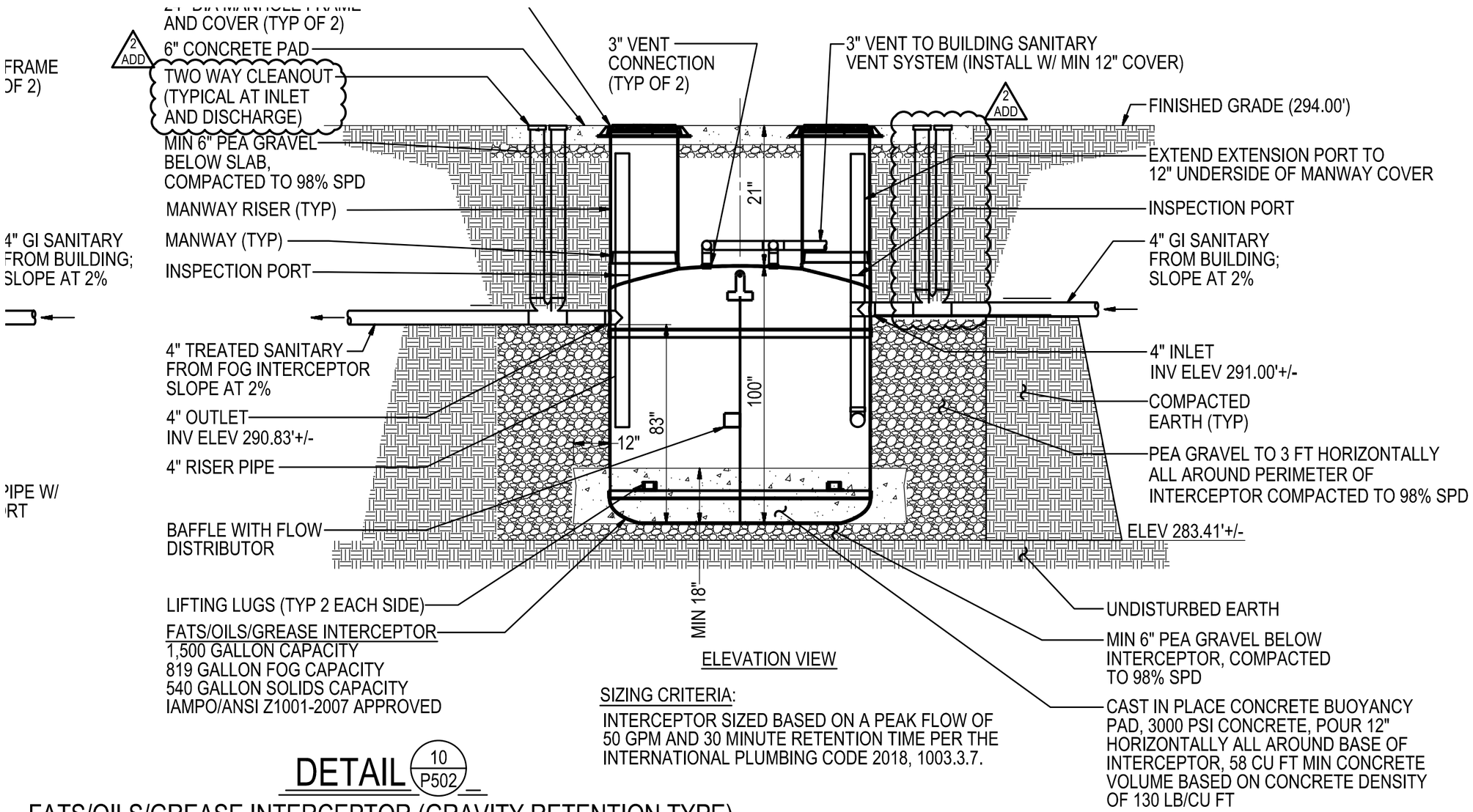

ELEVATION VIEW

SIZING CRITERIA:

INTERCEPTOR SIZED BASED ON A PEAK FLOW OF 50 GPM AND 30 MINUTE RETENTION TIME PER THE INTERNATIONAL PLUMBING CODE 2018, 1003.3.7.

DETAIL 10/P502

FATS/OILS/GREASE INTERCEPTOR (GRAVITY RETENTION TYPE) (BELOW GRADE INSTALLATION)

NOT TO SCALE

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L1 LIGHTING CONTROL SCHEME. REFER TO LIGHTING CONTROLS DIAGRAMS ON DRAWINGS EL-240 AND EL-241 FOR CONTROL SEQUENCE.

GENERAL NOTES:

A. REFER TO ARCHITECTURAL ELEVATIONS FOR ADDITIONAL MOUNTING HEIGHT INFORMATION.

B. MOUNTING HEIGHTS ARE CENTERLINE TO WIRING DEVICES UNLESS OTHERWISE INDICATED.

C. MOUNTING HEIGHTS ARE TO BOTTOM OF LIGHTING FIXTURES UNLESS OTHERWISE INDICATED.

D. PROVIDE DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT.

E. CONDUIT SERVING ELECTRICAL DEVICES LOCATED AT EXTERIOR WALLS SHALL BE RUN FROM EACH DEVICE WITHIN CMU BLOCK WALL TO NEAREST ACCESSIBLE CEILING SPACE. CONDUIT SHALL NOT BE INSTALLED IN CAVITY SPACES WITHIN WALLS.

2 ADD

F. THE FOLLOWING PANELBOARDS ARE IN STORAGE ROOMS:

- PANELS R1A AND PANEL S1R1A IN STORAGE A 108E
- PANEL R1B6 IN ART STORAGE B 132B
- PANEL R1E2 IN STORAGE E 503
- PANEL R1F1 IN STORAGE G 800A
- PANEL S2R1F3 IN STORAGE F 910
- PANEL EL2C IN STORAGE C 234.

PROVIDE A PLACARD OR SIGN FOR PANELBOARDS AND ELECTRICAL EQUIPMENT WITH OVERCURRENT DEVICES IN STORAGE ROOMS TO READ: "DO NOT STORE EASILY IGNITABLE MATERIAL WITHIN THIS VICINITY."

TEMPORARY POWER POLES

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2 ADD

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PROVIDE A PLACARD OR SIGN FOR PANELBOARDS AND ELECTRICAL EQUIPMENT WITH OVERCURRENT DEVICES IN STORAGE ROOMS TO READ: "DO NOT STORE EASILY IGNITABLE MATERIAL WITHIN THIS VICINITY."

TEMPORARY POWER POLES

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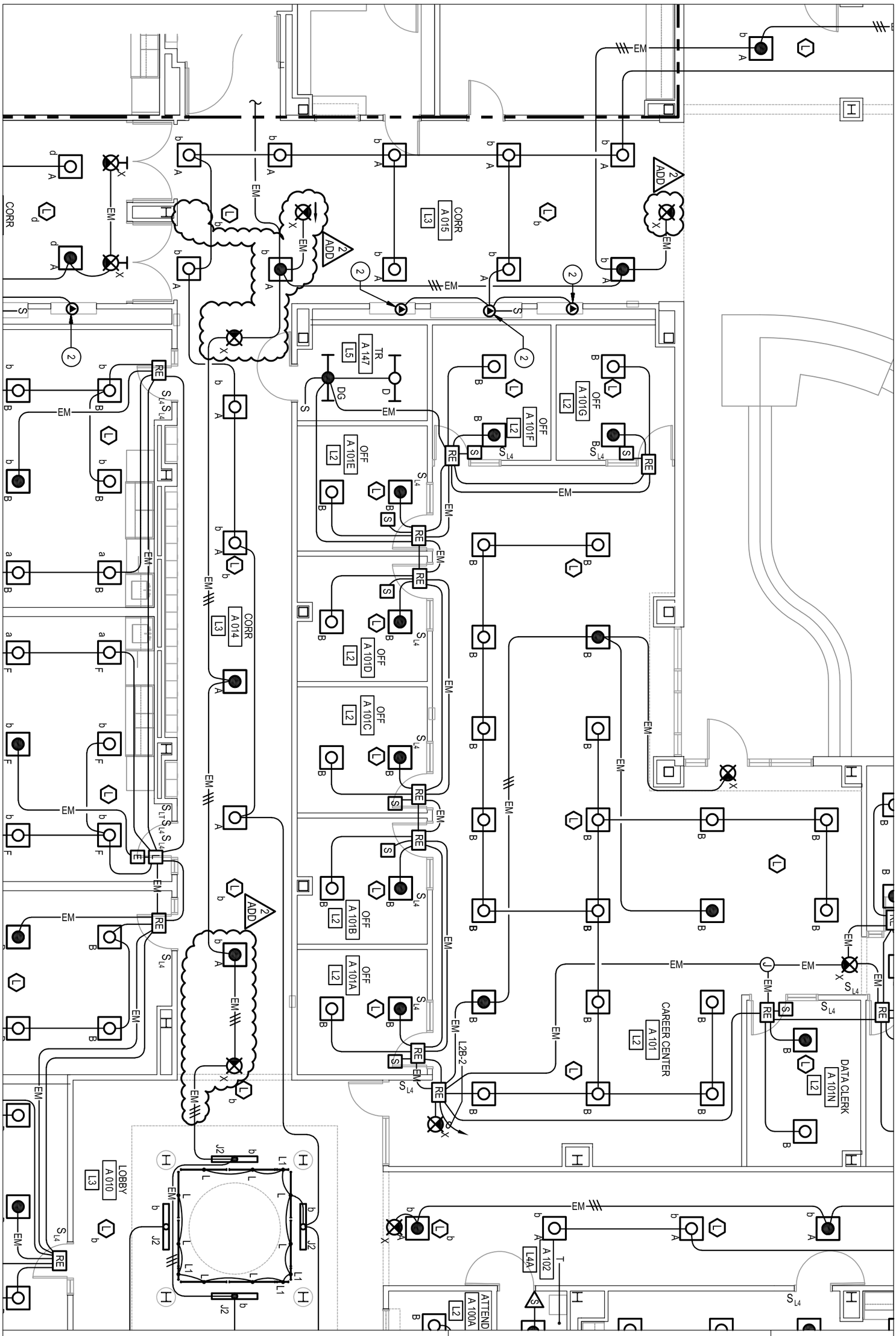

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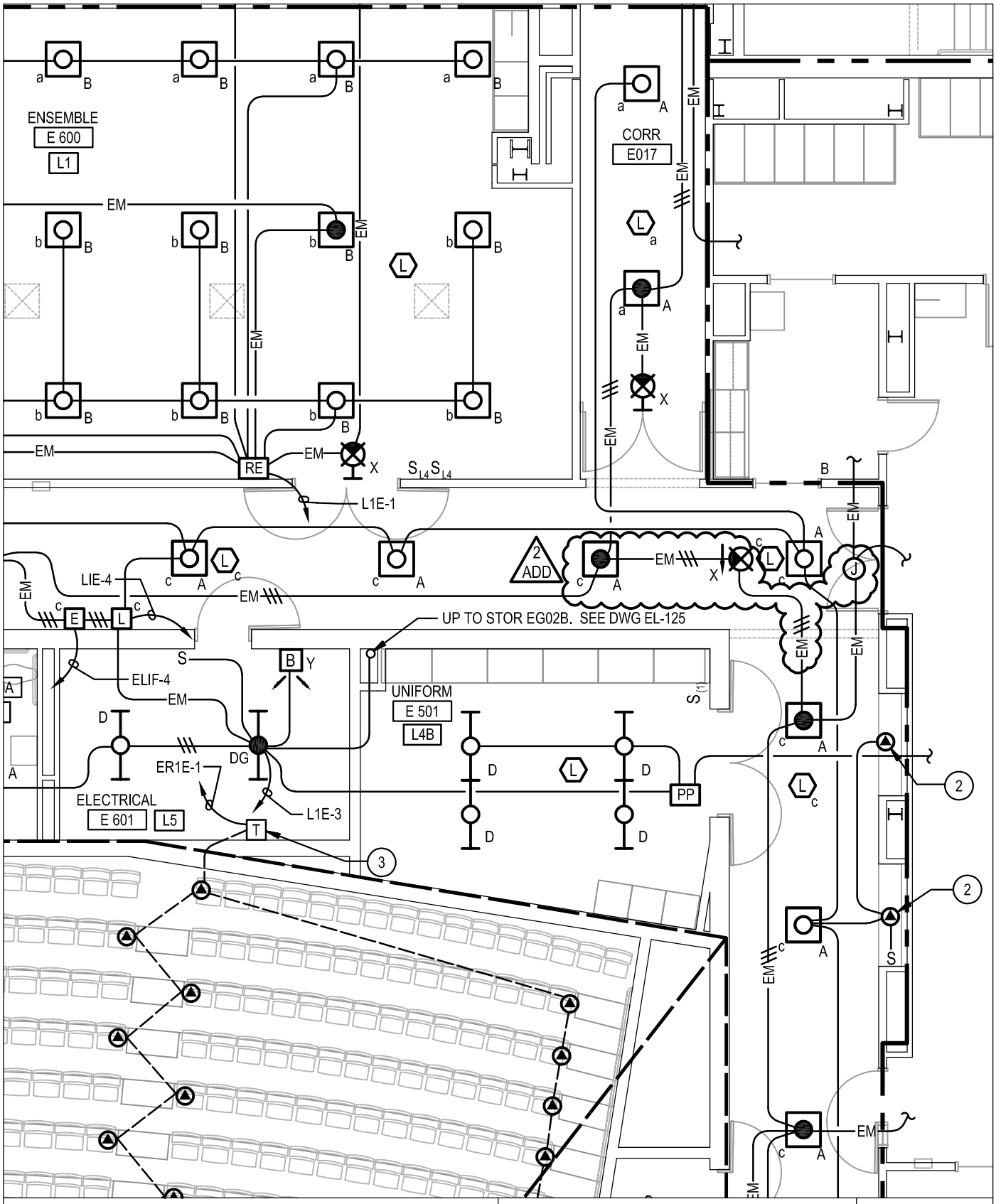

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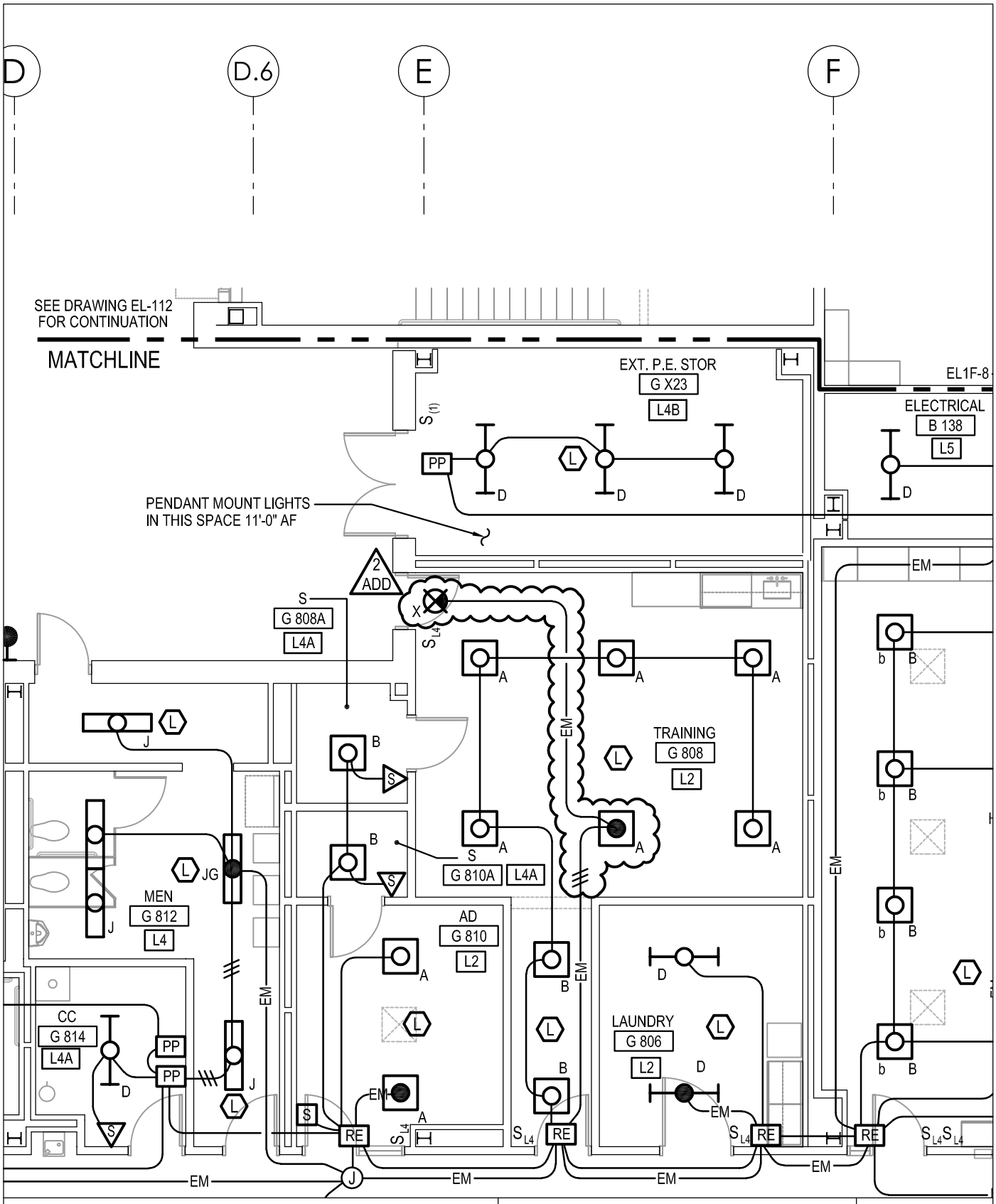

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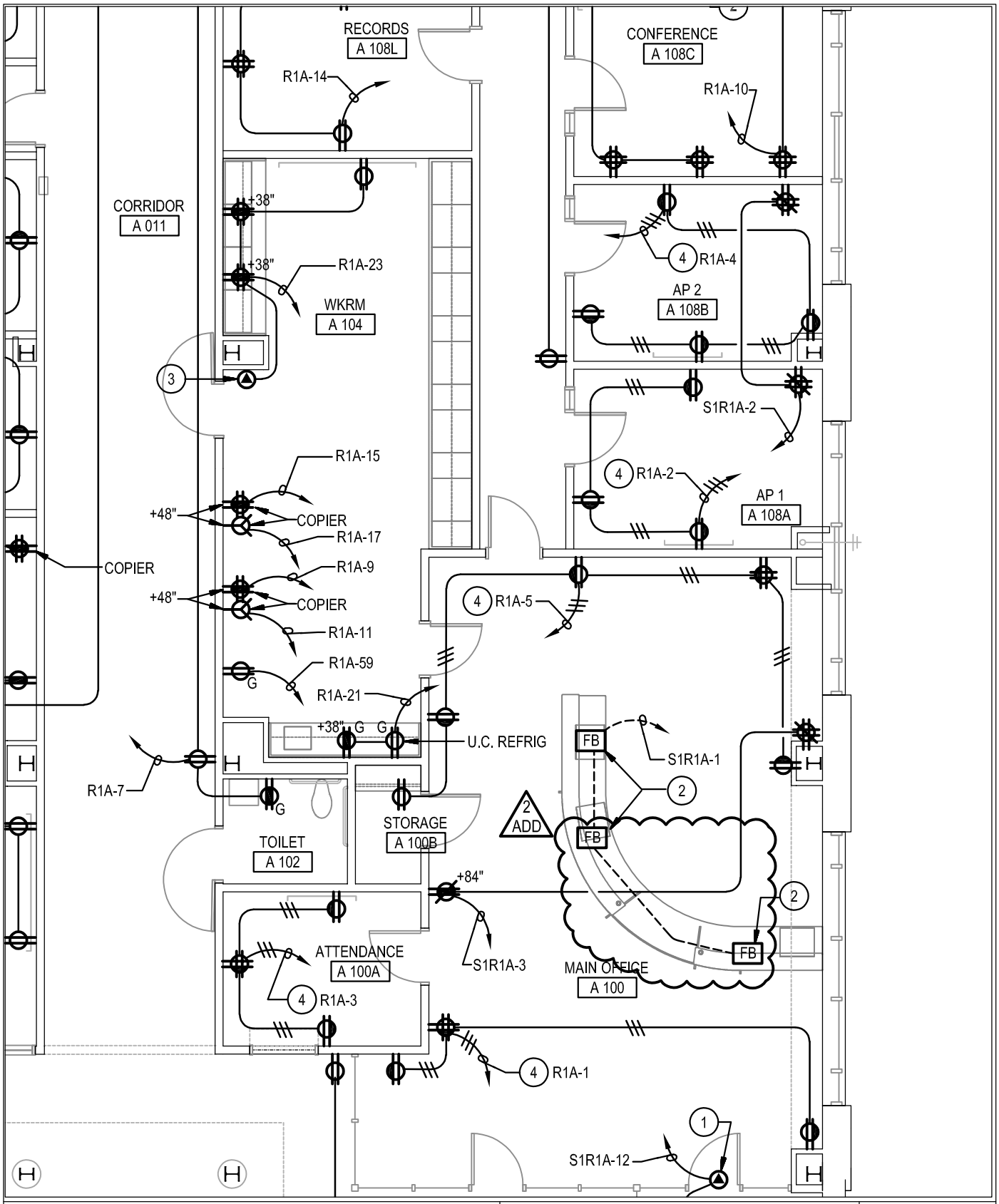

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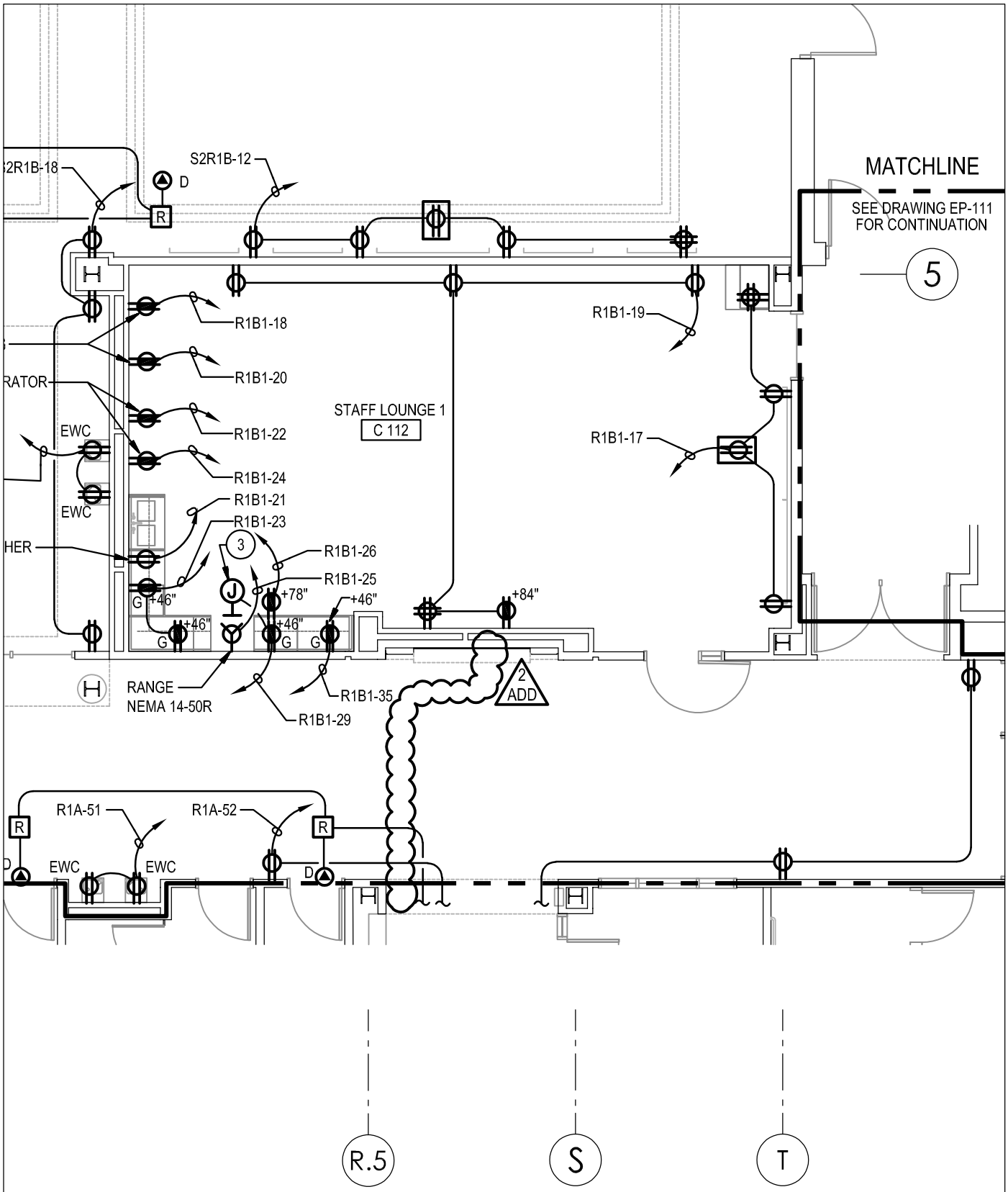

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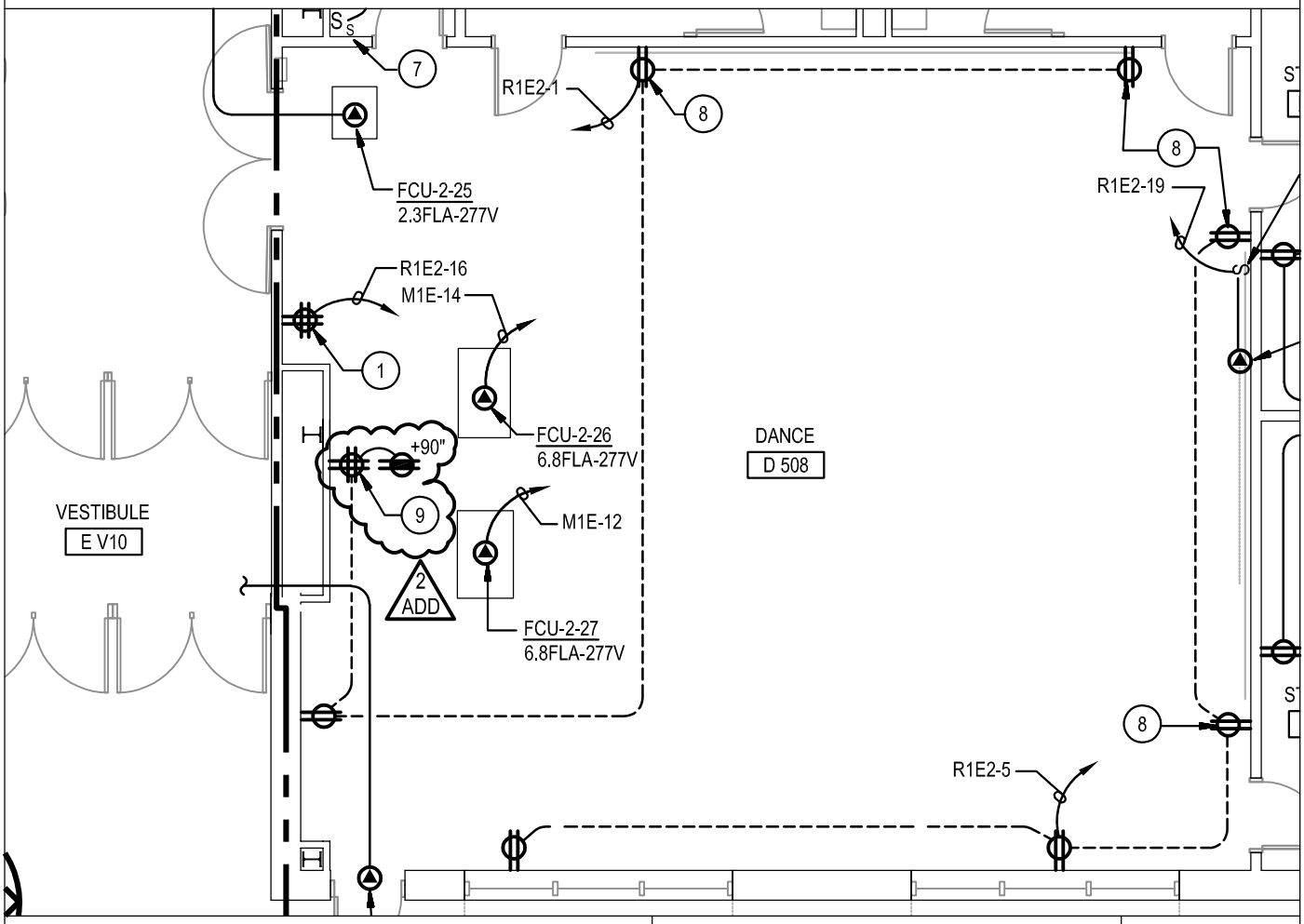
ADD_2_E6

SPECIFIC NOTES:

1. PROVIDE QUAD RECEPTACLE MOUNTED IN EQUIPMENT RACK ER-1 (DANCE 1).
2. PROVIDE QUAD RECEPTACLE MOUNTED IN EQUIPMENT RACK ER-1 (INSTRUMENTAL MUSIC).
3. PROVIDE QUAD RECEPTACLE MOUNTED IN EQUIPMENT RACK ER-1 (CHORAL).
4. RUN CONTROLLED RECEPTACLES THROUGH RECEPTACLE SWITCH PACK. REFER TO LIGHTING PLAN FOR ADDITIONAL INFORMATION.
5. CONNECT TO DOOR HARDWARE CONTROLLER. REFER TO TECHNOLOGY DRAWINGS FOR ADDITIONAL WORK.
6. CONNECT TO SKYLIGHT DIFFUSER CONTROLLER 0.1A-277V.
7. INSTALL SKYLIGHT DIFFUSER CONTROL SWITCH FURNISHED BY SKYLIGHT MANUFACTURER.
8. MOUNT RECEPTACLE HORIZONTALLY 8" ABOVE FINISHED FLOOR.
9. PROVIDE QUAD RECEPTACLE MOUNTED IN FLUSH 6-GANG WALL BOX. REFER TO DRAWINGS AV114 AND AV001 FOR ADDITIONAL INFORMATION. (2 ADD)



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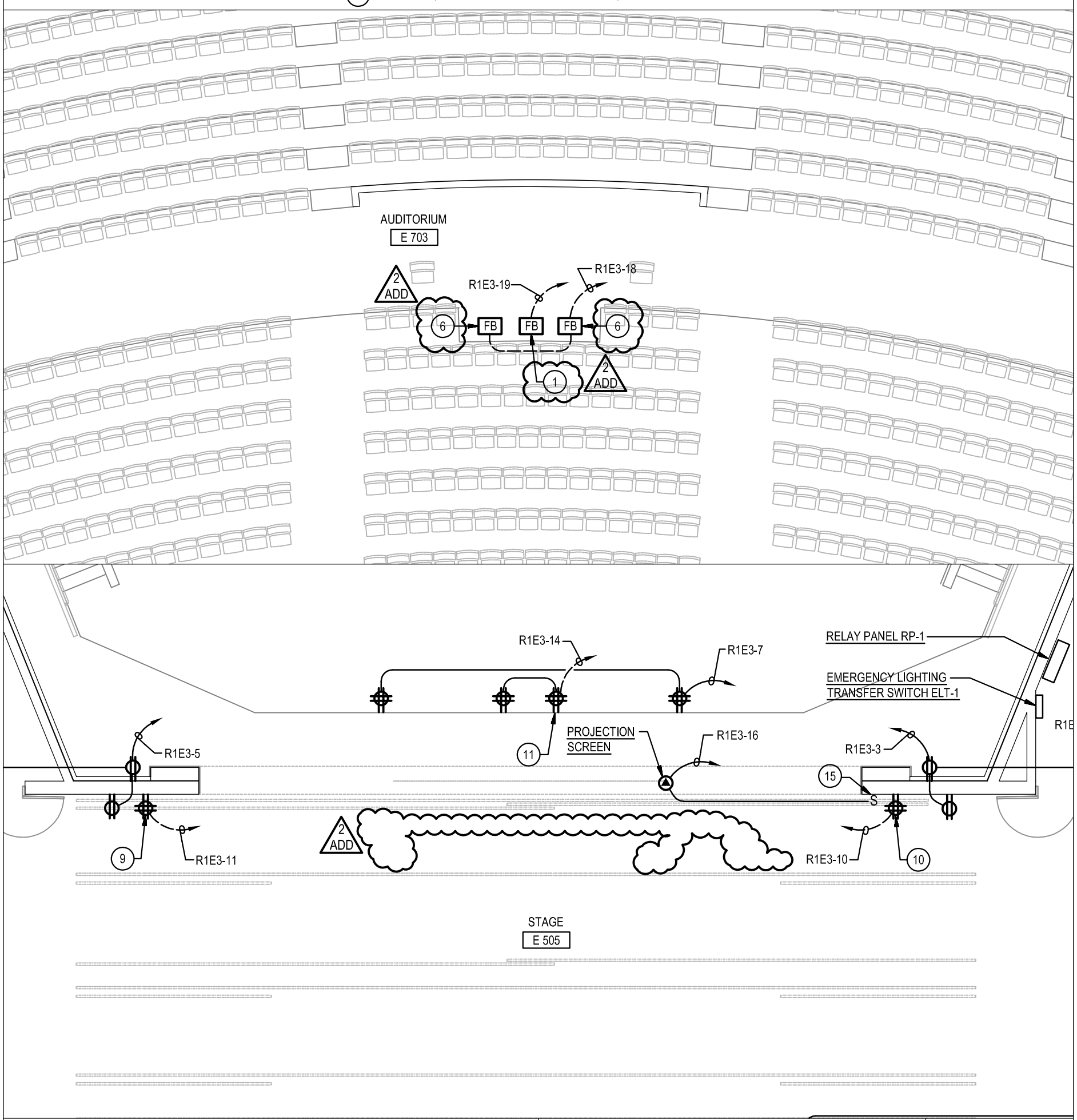
SPECIFIC NOTES:

1. PROVIDE QUAD RECEPTACLE IN FLOOR BOX. FLOOR BOX SPECIFIED ON TECHNOLOGY DRAWINGS. REFER TO TECHNOLOGY DRAWINGS FOR ADDITIONAL WORK. (2 ADD)
2. CONNECT TO DOOR HARDWARE CONTROLLER. REFER TO TECHNOLOGY DRAWINGS FOR ADDITIONAL WORK.
3. PROVIDE RECEPTACLE RECESSED INTO THE SIDE OF THE DISPLAY CASE LIGHT BOX.
4. REFER TO THEATER AND TECHNOLOGY DRAWINGS FOR ADDITIONAL WORK.
5. PROVIDE RECEPTACLES MOUNTED IN EQUIPMENT RACK ER-1.
6. PROVIDE QUAD RECEPTACLE IN FLOOR BOX. FLOOR BOX SPECIFIED ON AUDIO AND VISUAL (A/V) DRAWINGS. REFER TO A/V DRAWINGS FOR ADDITIONAL WORK.
7. PROVIDE QUAD RECEPTACLE WITH DN1 OUTLET (A/V).
8. PROVIDE QUAD RECEPTACLE WITH DN2 OUTLET (A/V).
9. PROVIDE QUAD RECEPTACLE WITH AV2 OUTLET (A/V). (2 ADD)
10. PROVIDE QUAD RECEPTACLE WITH AV1 OUTLET (A/V).
11. PROVIDE QUAD RECEPTACLE WITH AV3 OUTLET (A/V).
12. PROVIDE QUAD RECEPTACLE WITH PS OUTLET (THEATER).
13. PROVIDE QUAD RECEPTACLE MOUNTED IN EQUIPMENT RACK ER-L1.



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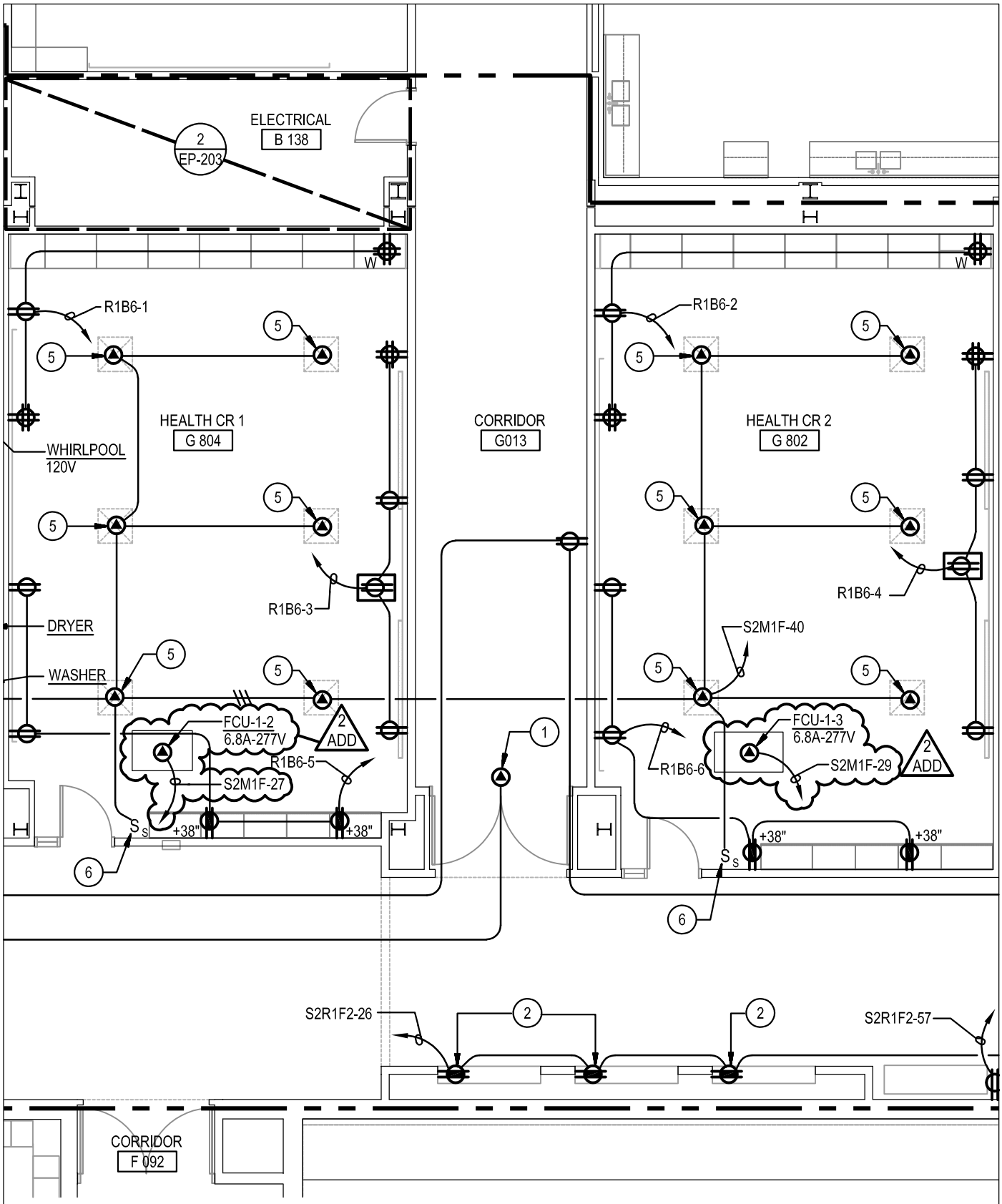

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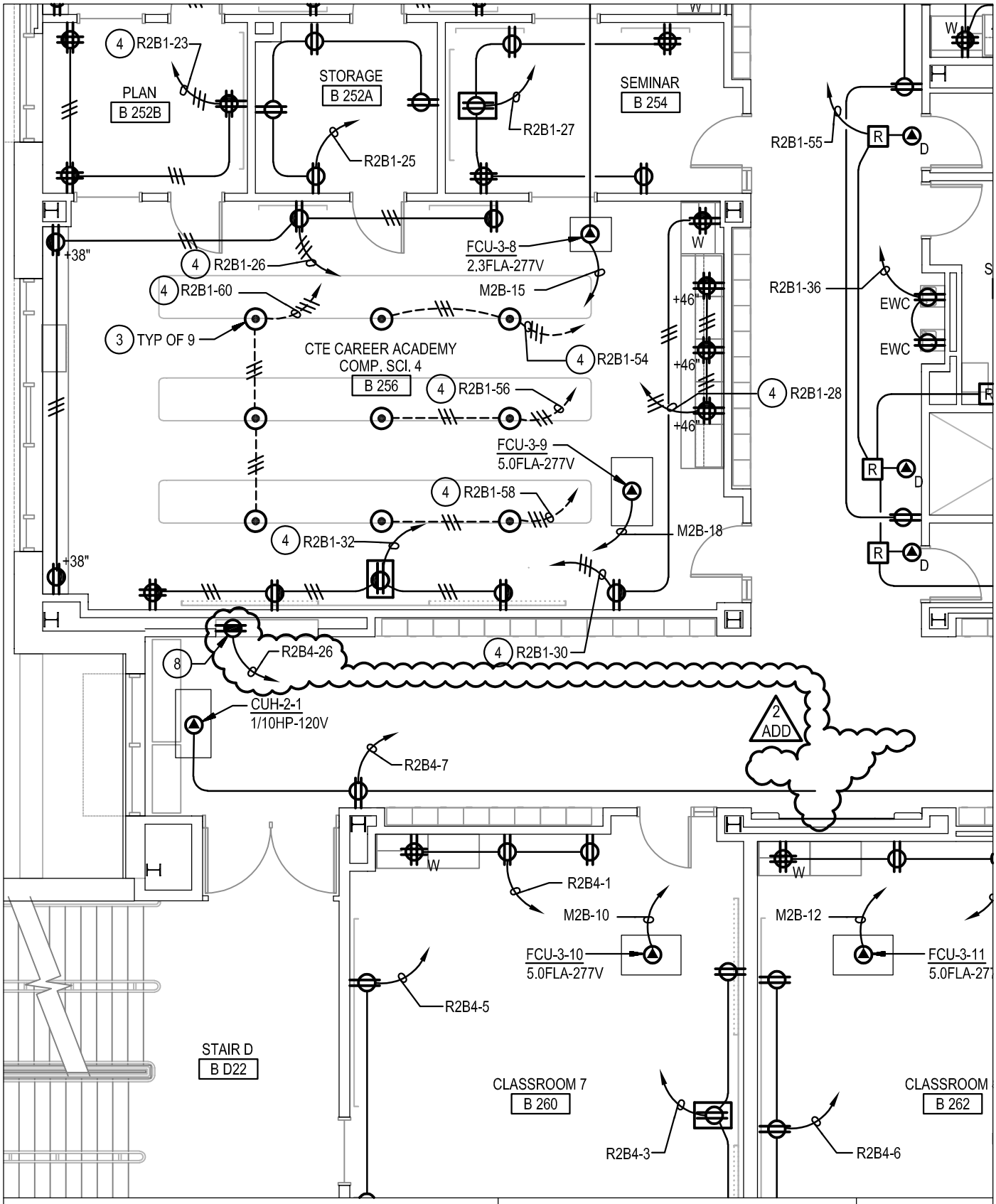
dwg
ADD_2_E9



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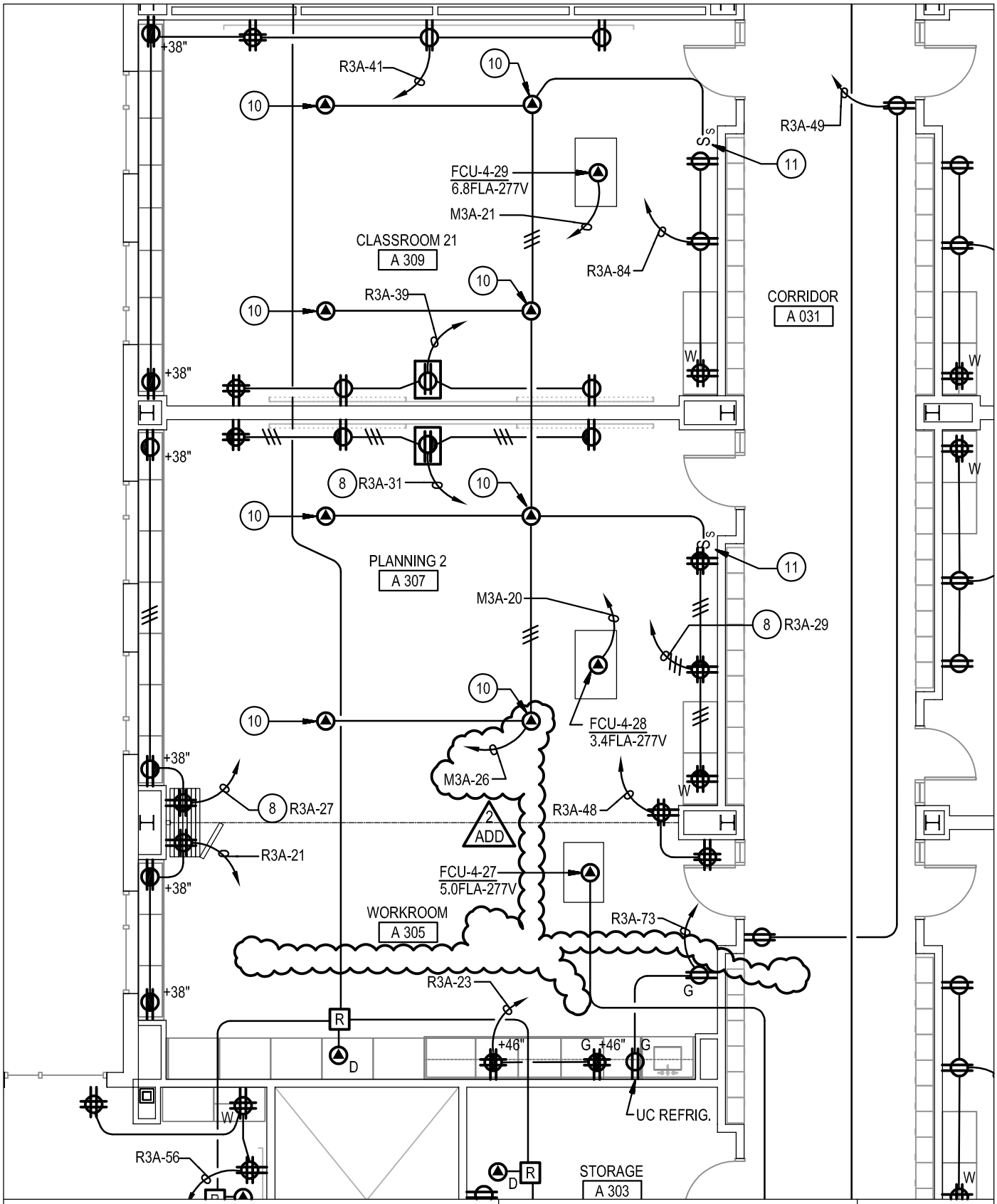
dwg
ADD_2_E10



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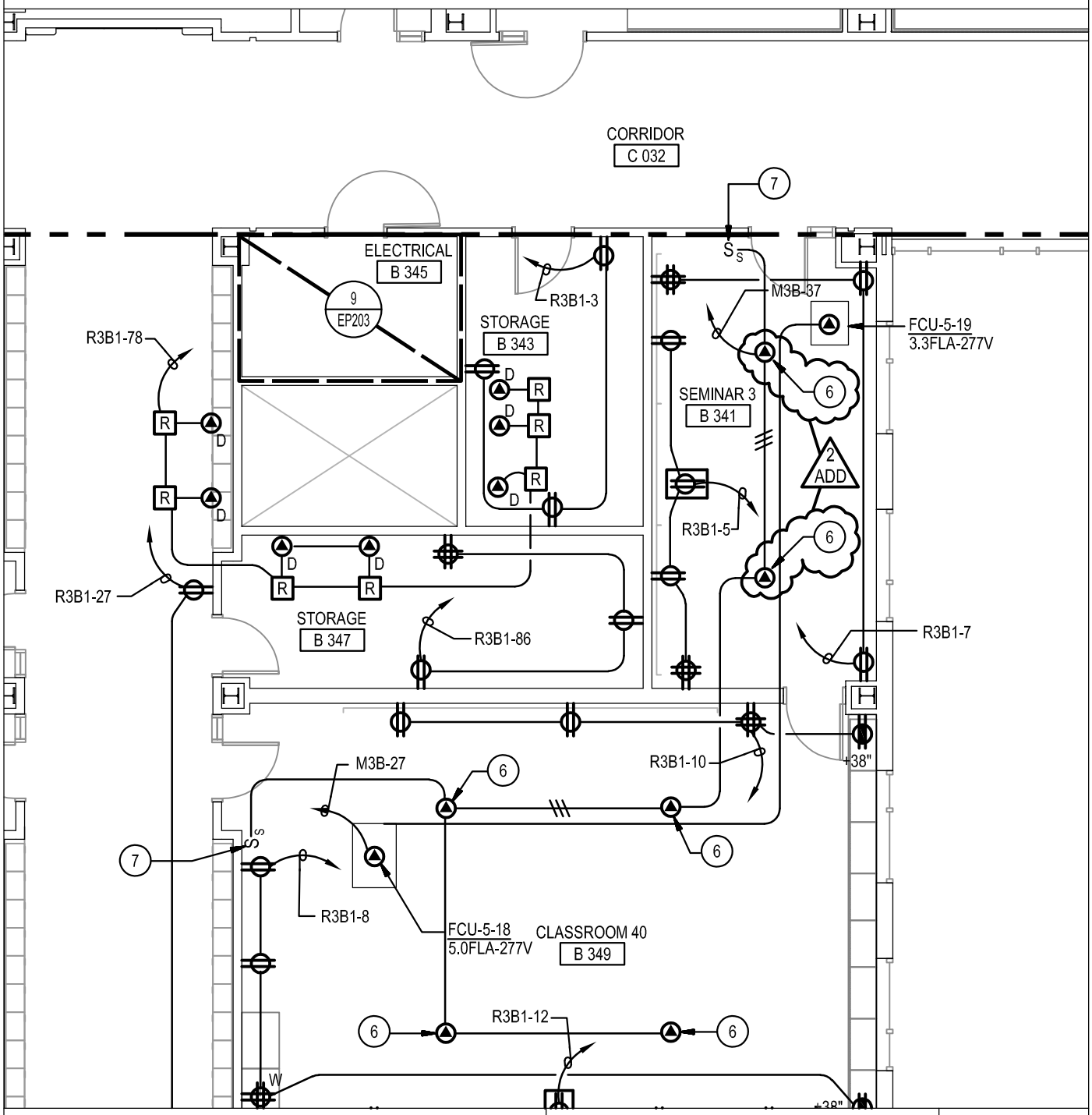
dwg ADD_2_E11

SPECIFIC NOTES:

6 CONNECT TO SKYLIGHT DIFFUSER CONTROLLER 0.1A-277V.

7 INSTALL SKYLIGHT DIFFUSER CONTROL SWITCH FURNISHED BY SKYLIGHT MANUFACTURER.



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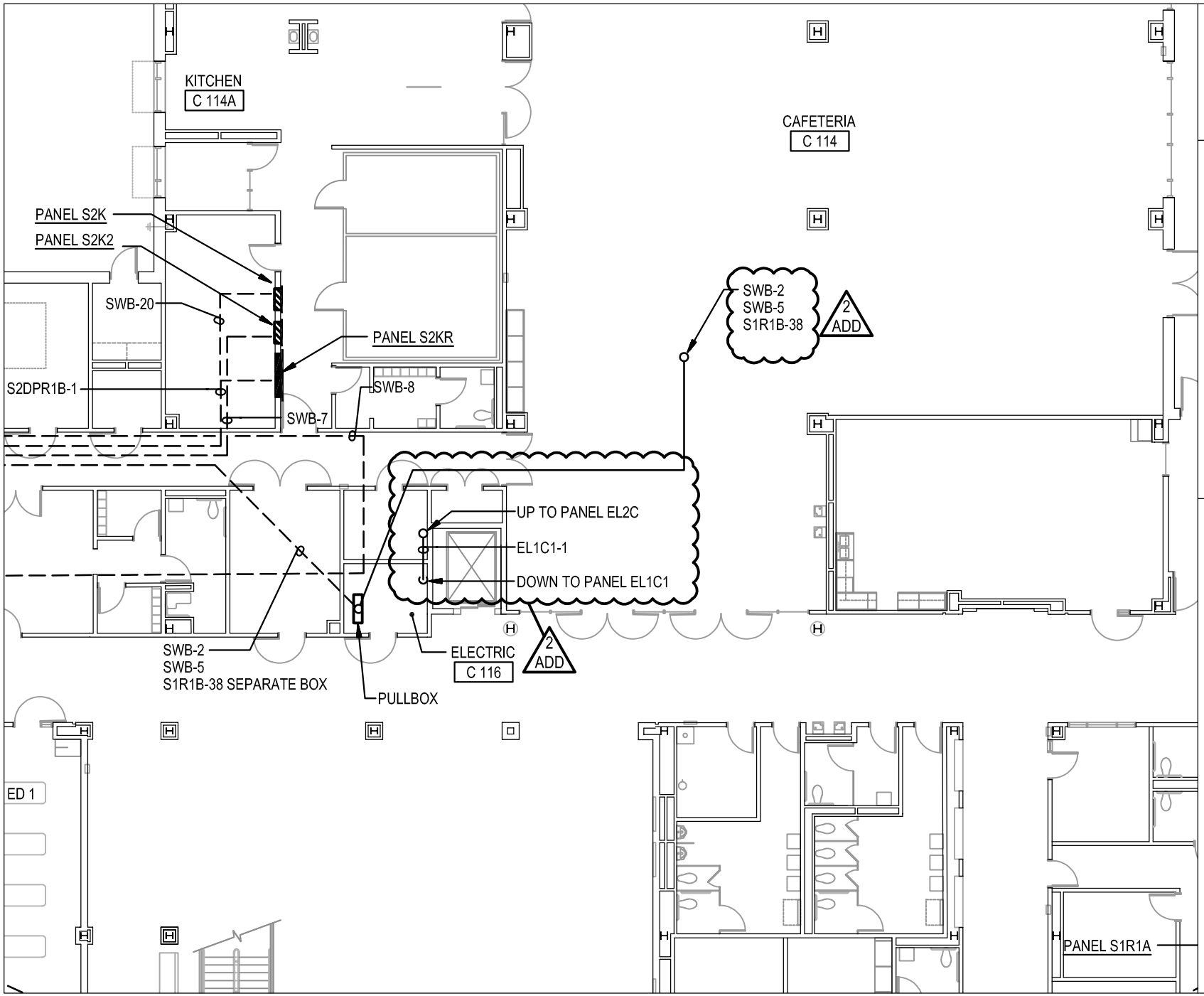
dwg ADD_2_E12



date
11 FEB 20

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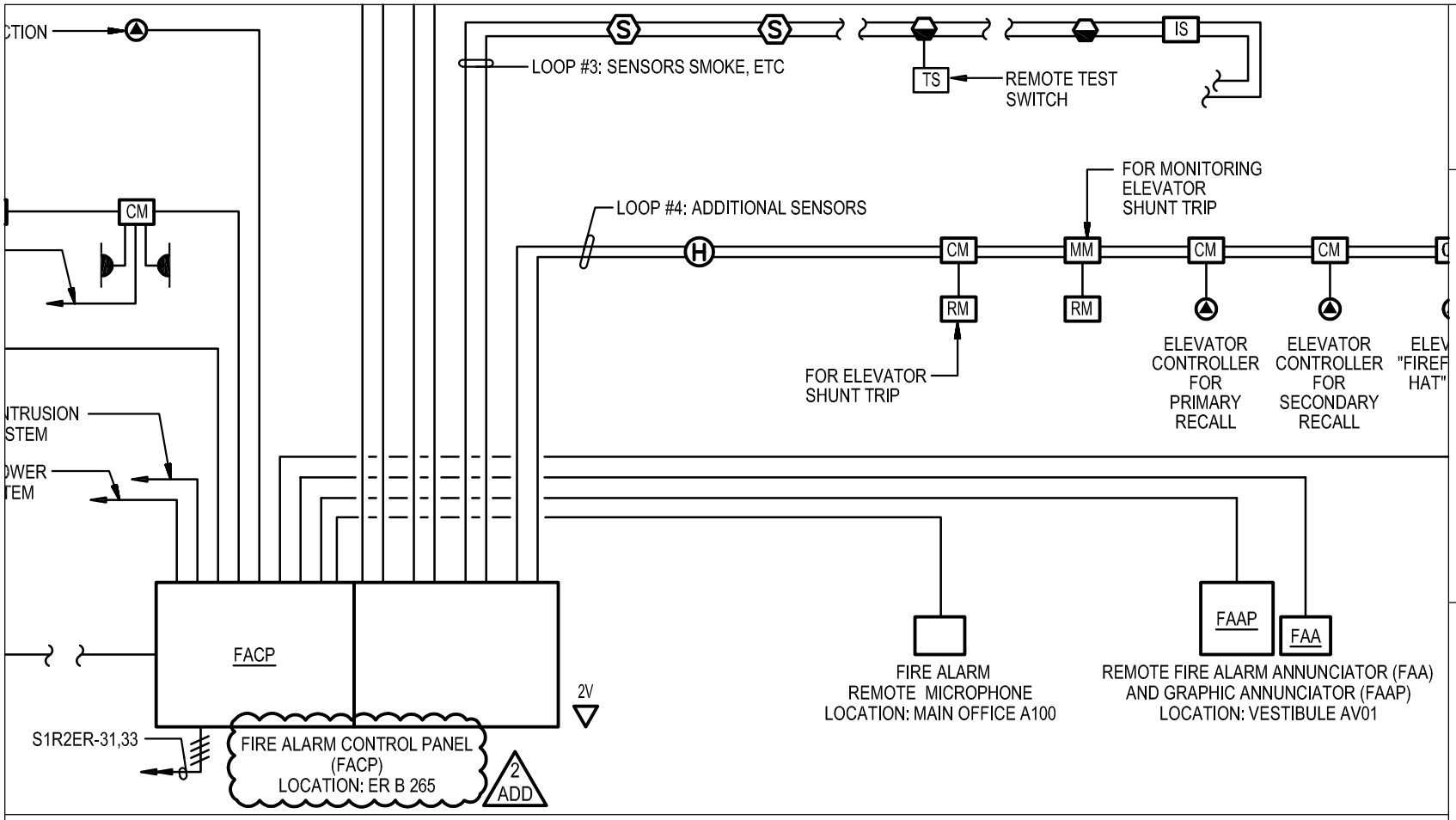

GENERAL NOTES (FIRE ALARM):

1. REFER TO DRAWINGS FOR QUANTITY AND LOCATION OF DEVICES.
2. PROVIDE WIRING AS RECOMMENDED BY FIRE ALARM SYSTEM MANUFACTURER.
3. PROVIDE FIRE ALARM WIRING IN RED EMT CONDUIT.
4. MOUNT DEVICES IN RED OUTLET BOX.

1
EF-201

FIRE ALARM RISER DIAGRAM

NOT TO SCALE

date 11 FEB 20

dwg ADD_2_E14

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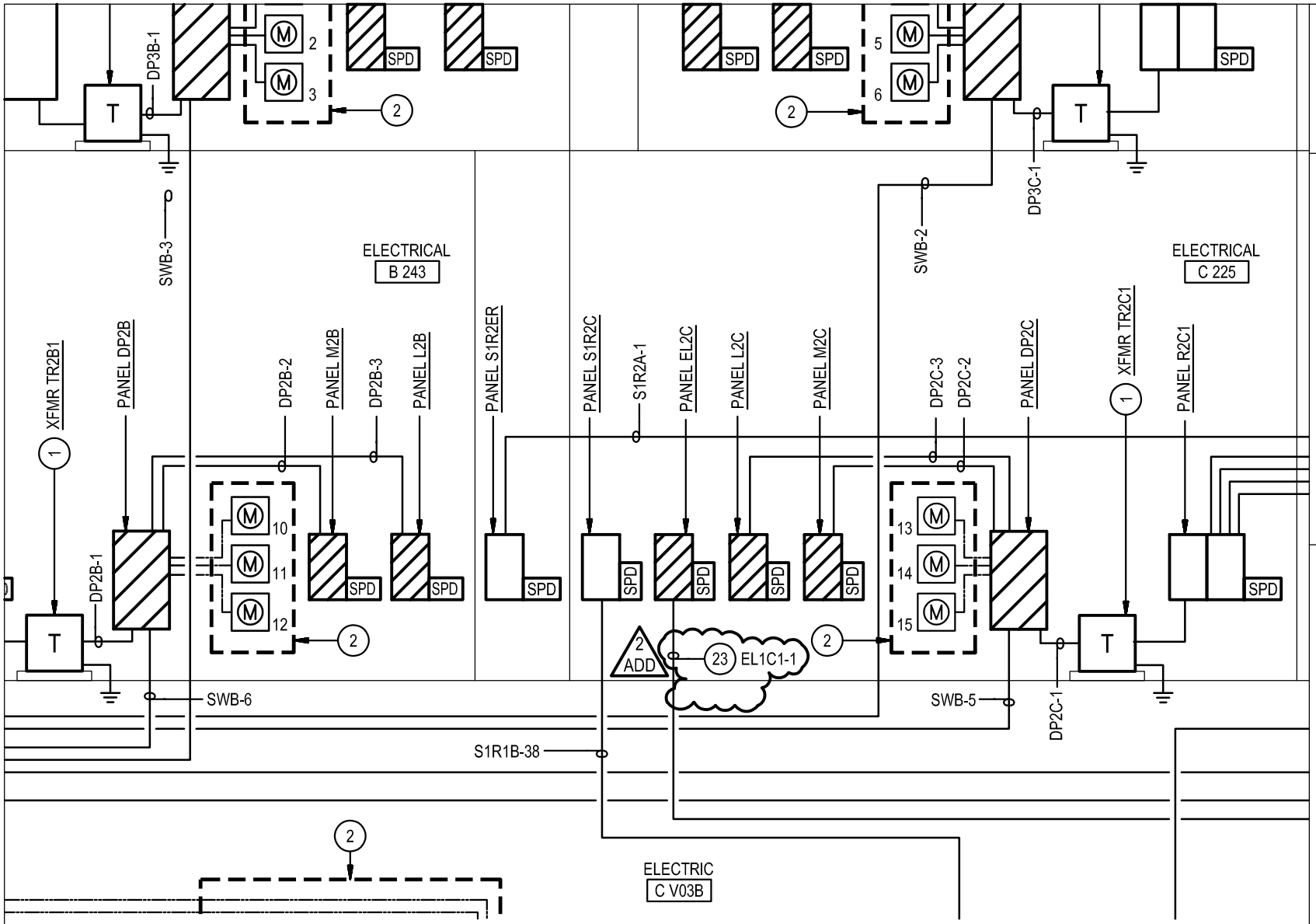

SPECIFIC NOTES:

ADD 23 EMERGENCY FEEDER AS NOTED SHALL BE TYPE MI CABLE WHEN NOT RUN UNDERGROUND.

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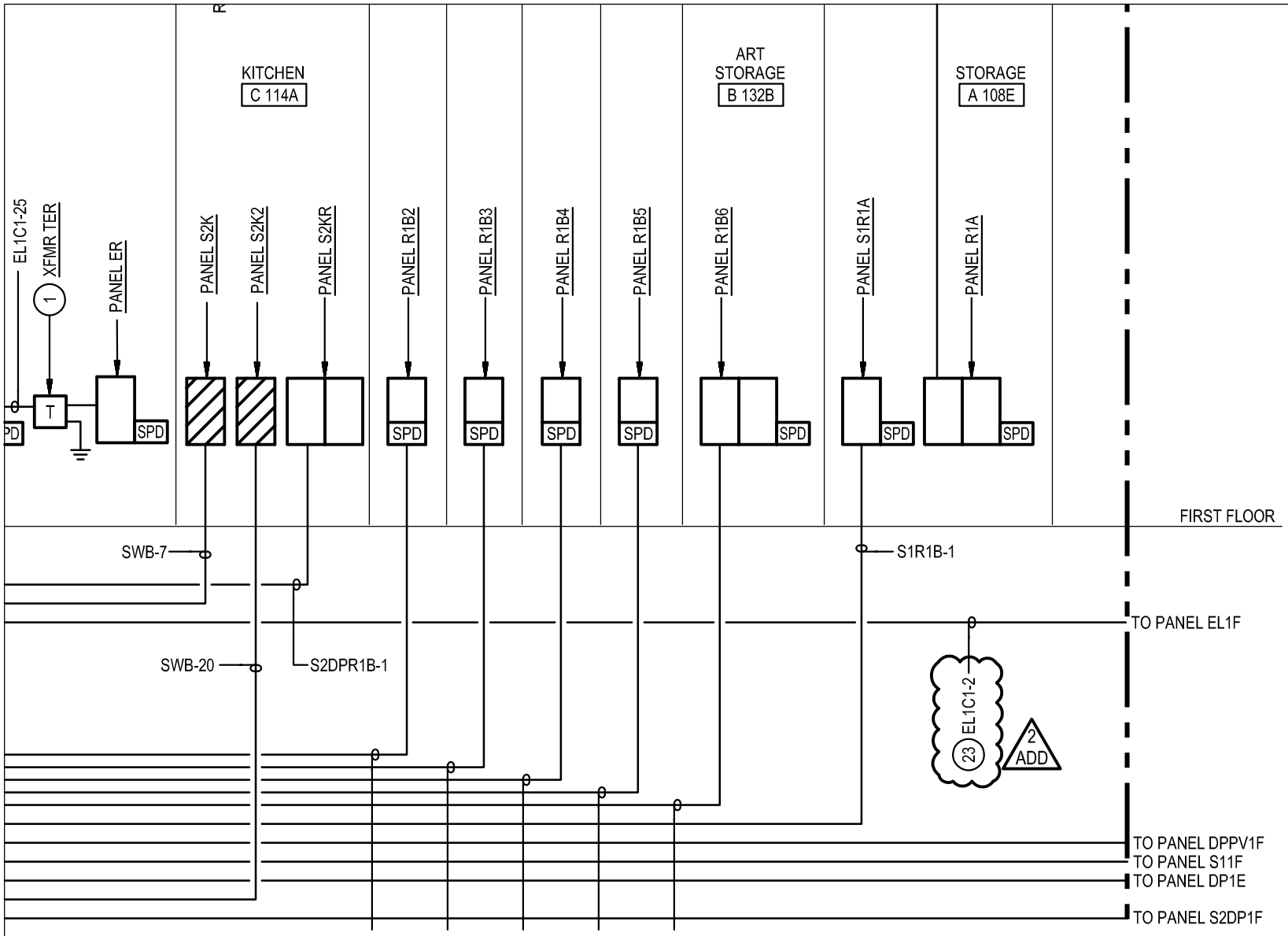

SPECIFIC NOTES:

2 ADD

23 EMERGENCY FEEDER AS NOTED SHALL BE TYPE MI CABLE WHEN NOT RUN UNDERGROUND.

date 11 FEB 20

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HOWARD COUNTY PUBLIC SCHOOL SYSTEM

SCHEDULE OF TRANSFORMERS

TRANSFORMER DESIG.	TRANSFORMER KVA	LOCATION	PRIMARY FEEDER	SECONDARY TAP WIRING & CONDUIT (NOTE A)	GROUNDING ELECTRODE CONDUCTOR	EQUIPMENT SERVED
TDPR1B	150	ELECT CV03B	SWB-11	2 SETS: (4 #250 + #1/0 SSBJ - 3"C)	#1/0	PANEL DPR1B
TS2DPR1B	112.5	ELECT CV03B	SWB-13	4 #500 + #1/0 SSBJ - 4"C	#1/0	PANEL S2DPR1
TS1R1B	112.5	ELECT CV03B	S1DP1B-3	4 #500 + #1/0 SSBJ - 4"C	#1/0	PANEL S1R1B
2 ADD TER	15	ELECT C116	EL1C1-25	4 #8 + #8 SSBJ - 3/4"C	#8	PANEL ER
TS1R1F	45	ELECT B138	S11F-1	4 #1/0 + #6 SSBJ - 2"C	#6	PANEL S1R1F
TS2DPR1F	112.5	ELECT B138	S2DP1F-3	4 #500 + #1/0 SSBJ - 4"C	#1/0	PANEL S2DPR1
2 ADD TER1E	15	ELECT B138	EL1F-1	4 #8 + #8 SSBJ - 3/4"C	#8	PANEL ER1E
TDPR1E	300	ELECT E601	DP1E-2	3 SETS: (4 #400 + #3/0 SSBJ - 3-1/2"C)	#3/0	PANEL DPR1E
TR1E4	30	WORK SHOP E507B	DP1E-1	4 #3 + #8 SSBJ - 1-1/ 2"C	#8	PANEL R1E4
TR2A	112.5	ELECT A275	DP2A-1	4 #500 + #1/0 SSBJ - 4"C	#1/0	PANEL R2A
TR2B1	112.5	ELECT B243	DP2B-1	4 #500 + #1/0 SSBJ - 4"C	#1/0	PANEL R2B1
TR2C1	75	ELECT C225	DP2C-1	4 #250 + #2 SSBJ - 3"C	#2	PANEL R2C1
TS1R2A	45	ELECT A275	S12A-1	4 #1/0 + #6 SSBJ - 2"C	#6	PANEL S1R2A
TR3A	112.5	ELECT A375	DP3A-1	4 #500 + #1/0 SSBJ - 4"C	#1/0	PANEL R3A
TDPR3B	150	ELECT B345	DP3B-1	2 SETS: (4 #250 + #1/0 SSBJ - 3"C)	#1/0	PANEL DPR3B
TR3C1	75	ELECT C325	DP3C-1	4 #250 + #2 SSBJ - 3"C	#2	PANEL R3C1
TSR	45	METER/STOR JS02	SM-13	4 #1/0 + #6 SSBJ - 2"C	#6	PANEL SR
TBB	9	SS ENCLOSUIRE	SM-25	4 #10 + #8 SSBJ - 3/4"C	#8	PANEL BB
TTP	500	TEMP OUTDOOR	TP	4 SETS: (4 #500 + #2/0 SSBJ - 3-1/2"C)	#3/0	(2) 800A ECB'S

TRANSFORMER GENERAL NOTES:

A. TRANSFORMER SECONDARY TAP: CONDUCTORS INDICATED REFLECT PHASE, NEUTRAL (IN WYE-CONFIGURATION), AND SUPPLY-SIDE BONDING JUMPER (SSBJ) IN ACCORDANCE WITH NEC ARTICLES 450, 240.21, AND 250.30.

B. TRANSFORMER TYPES: GENERAL PURPOSE TYPE: STANDARD DOE 2016 ENERGY EFFICIENT TRANSFORMER

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HIGH SCHOOL #13
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WIRING PANEL SCHEDULE EL1C1

277 / 480 VOLTS | 3 PHASE 4 WIRE | 125 AMP BUS | SURFAC

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø A Ø		KVA / Ø B Ø		KVA / Ø C Ø		CIR-CUIT	POLE	DESCRIPTION
1	1	PANEL EL2C	4#8+	3	50	4.7	4.2					2	2	PANEL EL1F
-	3		#10G-					4.6	4.7			-	4	
-	5		3/4"C							2.6	3.7	-	6	
7	7	LTG - AREA C	#10-3/4"C	1	20	1.7	0.9					8	8	LTG - AREA B
9	9	LTG - AREA A	#10-3/4"C	1	20			1.6	0.1			10	10	LTG - ELEV EQ
11	11	LTG - CORRIDOR AREAS A & B	#10-3/4"C	1	20					1.7		12	12	SPARE
13	13	PANEL EL1C2	4#8+	3	50	1.2						14	14	SPARE
-	15	2 ADD	#10G-					1.4				16	16	SPARE
-	17		3/4"C							0.8		18	18	SPARE
19	19	SPARE		1	20		-					20	20	SPACE AND PROVISIONS
21	21	SPARE		1	20				-			22	22	SPACE AND PROVISIONS
23	23	SPARE		1	20						-	24	24	SPACE AND PROVISIONS
25	25	PANEL ER	3#10+	3	30	1.0	-					26	26	SPD
-	27	(VIA XFMR TER) 2 ADD	#10G-					0.5	-			-	28	
-	29		3/4"C							0.0	-	-	30	
						8.6	5.1	8.1	4.8	5.1	3.7			
						13.7		12.9		8.8				

CONNECTED LOAD = 35.4 KVA

DEMAND LOAD = 35.4 KVA

MIN AIC RATING = 14,000 AMPS SYMMETRICAL

PROVIDE FUSIBLE TYPE PANELBOARD

MAIN

LOC

date 11 FEB 20

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HIGH SCHOOL #13

JESSUP, MARYLAND

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

VIRING PANEL SCHEDULE EL1C2 (OUTDOOR LIGHTING)

3 PHASE 4 WIRE — 125 AMP BUS — SURFACE MOUNTED

	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø A Ø		B Ø		C Ø		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
	#10-3/4"C	1	20	0.7	0.1					2	2	LTG - CONTACTORS	#12-3/4"C	1	20
	#10-3/4"C	1	20			1.0				4	4	SPARE		1	20
	2#8+#8G	2	20					0.4		6	6	SPARE		1	20
	-1-1/4"C			0.4						8	8	SPARE		1	20
	2#8+#8G	2	20			0.4				10	10	SPARE		1	20
	-1-1/4"C							0.4		12	12	SPARE		1	20
	-	1	-	-	-					14	14	SPD	4#8+	3	25 (2 ADD)
	-	1	-			-	-			-	16		#8G-		
	-	1	-					-	-	-	18		3/4"C		
				1.1	0.1	1.4	0.0	0.8	0.0						
				1.2		1.4		0.8							

3.4 KVA

3.4 KVA

14,000 AMPS SYMMETRICAL

PROVIDE FUSIBLE TYPE PANELBOARD

MAIN FUSE 50 AMPS (2 ADD)

LOCATION ELEC C116

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HIGH SCHOOL #13
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HOWARD COUNTY PUBLIC SCHOOL SYSTEM

WIRING PANEL SCHEDULE EL1F

277 / 480 VOLTS | 3 PHASE 4 WIRE | 100 AMP BUS | SURFACE MOUNTED

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø A Ø		KVA / Ø B Ø		KVA / Ø C Ø		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
1	1	PANEL ER1E	3#10+	3	30	0.3	2.0					2	2	LTG - E601, E501, D500, D500B	#12-3/4"C	1	20
-	3	(VIA XFMR TER1E) 2 ADD	#10G-					0.9	2.6			4	4	LTG - AREAS E & F	#10-3/4"C	1	20
-	5		3/4"C							1.3	1.6	6	6	LTG - CORR G080, E070	#10-3/4"C	1	20
7	7	SPARE		1	20		1.9					8	8	LTG - AREAS F & G, PENTHOUSE	#10-3/4"C	1	20
9	9	SPARE		1	20				1.2			10	10	LTG - GYM, AUX GYM, WREST	#10-3/4"C	1	20
11	11	SPARE		1	20						0.8	12	12	LTG - B136, B140,B139,B135,B12	#10-3/4"C	1	20
13	13	SPARE		1	20		-					14	14	SPACE AND PROVISIONS	-	1	-
15	15	SPARE		1	20				-			16	16	SPACE AND PROVISIONS	-	1	-
17	17	SPARE		1	20						-	18	18	SPACE AND PROVISIONS	-	1	-
19	19	SPARE		1	20		-					20	20	SPACE AND PROVISIONS	-	1	-
21	21	SPARE		1	20				-			22	22	SPACE AND PROVISIONS	-	1	-
23	23	SPARE		1	20						-	24	24	SPACE AND PROVISIONS	-	1	-
25	25	SPACE AND PROVISIONS	-	1	-	-	-					26	26	SPD	4#8+	3	25 2 ADD
27	27	SPACE AND PROVISIONS	-	1	-			-	-			-	28		#8G-		
29	29	SPACE AND PROVISIONS	-	1	-					-	-	-	30		3/4"C		
						0.3	3.9	0.9	3.8	1.3	2.4						
						4.2		4.7		3.7							

CONNECTED LOAD = 12.6 KVA

DEMAND LOAD = 12.6 KVA

MIN AIC RATING = 14,000 AMPS SYMMETRICAL

PROVIDE FUSIBLE TYPE PANELBOARD

MAIN FUSE 50 AMPS

LOCATION ELEC B138

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HIGH SCHOOL #13

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HOWARD COUNTY PUBLIC SCHOOL SYSTEM

WIRING PANEL SCHEDULE EL2C

3 PHASE 4 WIRE 125 AMP BUS SURFACE MOUNTED

	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø A Ø		B Ø		C Ø		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
	#10-3/4"C	1	20	2.1	2.1					2	2	LTG - 2ND FLOOR AREAS A & C	#10-3/4"C	1	20
& C	#10-3/4"C	1	20			2.2	1.9			4	4	LTG - 2ND FLOOR AREA B	#10-3/4"C	1	20
	#10-3/4"C	1	20					1.5	1.1	6	6	LTG - MEDIA CENTER	#10-3/4"C	1	20
		1	20		0.5					8	8	LTG - STAIR B	#10-3/4"C	1	20
		1	20				0.5			10	10	LTG - STAIR C	#10-3/4"C	1	20
		1	20							12	12	SPARE		1	20
		1	20		-					14	14	SPD	4#8+	3	25
		1	20				-			-	16		#8G-		
		1	20						-	-	18		3/4"C		
				2.1	2.6	2.2	2.4	1.5	1.1						
				4.7		4.6		2.6							

2 ADD

11.9 KVA

11.9 KVA

14,000 AMPS SYMMETRICAL

PROVIDE FUSIBLE TYPE PANELBOARD

MAIN FUSE 50 AMPS

LOCATION STOR C234

date 11 FEB 20

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HIGH SCHOOL #13

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WIRING PANEL SCHEDULE ER

3 PHASE 4 WIRE — 100 AMP BUS — SURFACE MOUNTED

	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø A Ø		B Ø		C Ø		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
	#12-3/4"C	1	20	1.0						2	2	SPARE		1	20
	#10-3/4"C	1	20			0.5				4	4	SPARE		1	20
		1	20							6	6	SPARE		1	20
		1	20		-					8	8	SPACE AND PROVISIONS	-	1	-
		1	20				-			10	10	SPACE AND PROVISIONS	-	1	-
		1	20						-	12	12	SPACE AND PROVISIONS	-	1	
	-	1	-	-	-					14	14	SPD	4#8+	3	25 (2 ADD)
	-	1	-			-	-			-	16		#8G-		
	-	1	-					-	-	-	18		3/4"C		
				1.0	0.0	0.5	0.0	0.0	0.0						
				1.0		0.5		0.0							

1.5 KVA

1.5 KVA

10,000 AMPS SYMMETRICAL

+ PROVIDE GFCI CIRCUIT BREAKER

PROVIDE FUSIBLE TYPE PANELBOARD

MAIN FUSE 50 AMPS (2 ADD)

LOCATION ELEC C116

date 11 FEB 20

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WIRING PANEL SCHEDULE ER1E

3 PHASE 4 WIRE — 100 AMP BUS — SURFACE MOUNTED

WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø A Ø		KVA / Ø B Ø		KVA / Ø C Ø		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
#12-3/4"C	1	20	0.2	0.1					2	2	FIRE ALARM BOOSTER PNL	#12-3/4"C	1	20
#10-3/4"C	1	20			0.2	0.7			4	4	LTG - AUDITORIUM	#8-3/4"C	1	20
#10-3/4"C	1	20					0.3	1.0	6	6	ELEVATOR CAB LIGHTS	#10-3/4"C	1	20
	1	20							8	8	SPARE		1	20
	1	20							10	10	SPARE		1	20
	1	20							12	12	SPARE		1	20
-	1	-	-	-					14	14	SPD	4#8+	3	25
-	1	-			-	-			-	16		#8G-		
-	1	-					-	-	-	18		3/4"C		
			0.2	0.1	0.2	0.7	0.3	1.0						
			0.3		0.9		1.3							

2 ADD

2 ADD

2.5 KVA

2.5 KVA

10,000 AMPS SYMMETRICAL

PROVIDE FUSIBLE TYPE PANELBOARD

MAIN FUSE 50 AMPS

LOCATION ELEC E601

date 11 FEB 20

dwg ADD_2_E23

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HIGH SCHOOL #13

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HOWARD COUNTY PUBLIC SCHOOL SYSTEM

WIRING PANEL SCHEDULE M2C

277 / 480 VOLTS | 3 PHASE 4 WIRE | 125 AMP BUS | SURFACE MOUNTED

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø A Ø	KVA / Ø B Ø	KVA / Ø C Ø	CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
1	1	FCU-5-15	#12-3/4"C	1	15	1.9	0.9		2	2	FCU-5-16	#12-3/4"C	1	15
3	3	FCU-4-17 & FCU-4-18	#12-3/4"C	1	15		1.3	0.9	4	4	FCU-5-17	#12-3/4'C	1	15
5	5	FCU-6-1 2 ADD	#12-3/4"C	1	15			1.9	0.6	6	6	FCU-6-5	#12-3/4'C	1	15
7	7	FCU-6-2	#12-3/4"C	1	15	1.9	1.9			8	8	FCU-6-3	#12-3/4"C	1	15
9	9	FCU-6-6	#12-3/4"C	1	15		1.9	1.9		10	10	FCU-6-4	#12-3/4"C	1	15
11	11	FCU-6-7	#12-3/4"C	1	15			1.9		12	12	SPARE		1	20
13	13	SPARE		1	15					14	14	SPARE		1	20
15	15	SPARE		1	15					16	16	SPARE		1	20
17	17	SPARE		1	15					18	18	SPARE		1	20
19	19	SPARE		1	15		-			20	20	SPACE AND PROVISIONS	-	1	-
21	21	SPARE		1	15			-		22	22	SPACE AND PROVISIONS	-	1	-
23	23	SPARE		1	15				-	24	24	SPACE AND PROVISIONS	-	1	-
25	25	SPACE AND PROVISIONS	-	1	-	-	-			26	26	SPD	4#8+	3	30
27	27	SPACE AND PROVISIONS	-	1	-		-	-		-	28		#8G-		
29	29	SPACE AND PROVISIONS	-	1	-			-	-	-	30		3/4"C		
						3.8	2.8	3.2	2.8	3.8	0.6				
						6.6		6.0		4.4					

CONNECTED LOAD = 17.0 KVA

DEMAND LOAD = 17.0 KVA

MIN AIC RATING = 25,000 AMPS SYMMETRICAL

MAIN BREAKER 100 AMPS

LOCATION ELEC C225

date 11 FEB 20

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HIGH SCHOOL #13

JESSUP, MARYLAND

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

WIRING PANEL SCHEDULE S1R2ER

120 / 208 VOLTS | 3 PHASE 4 WIRE | 225 AMP BUS | SURFACE MOUNTED

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø AØ		BØ		CØ		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
1	1	REC - ER B265	#12-3/4"C	1	20	0.8	0.4					2	2	REC - ER B265	#12-3/4"C	1	20
3	3	REC - ER B265	#12-3/4"C	1	20			0.8	0.4			4	4	REC - ER B265	#12-3/4"C	1	20
5	5	REC - ER B265	#12-3/4"C	1	20					0.8	0.4	6	6	REC - ER B265	#12-3/4"C	1	20
7	7	REC - ER B265	#12-3/4"C	1	20	0.8	0.9					8	8	REC - EQUIP RACK	2#12+#12G	2	20
9	9	SECURITY PANEL	#12-3/4"C	1	20			0.8	0.9			-	10		-3/4"C		
11	11	DOOR POWER SUPPLY	#12-3/4"C	1	20					0.1	0.6	12	12	REC - EQUIP RACK	2#12+#12G	2	20
13	13	SPARE		1	20		0.6					-	14		-3/4"C		
15	15	REC - EQUIP RACK	2#12+#12G	2	20			0.6	0.6			16	16	REC - EQUIP RACK	2#12+#12G	2	20
-	17		-3/4"C							0.6	0.6	-	18		-3/4"C		
19	19	REC - EQUIP RACK	2#12+#12G	2	20	0.6	0.6					20	20	REC - EQUIP RACK	2#12+#12G	2	20
-	21		-3/4"C					0.6	0.6			-	22		-3/4"C		
23	23	REC - EQUIP RACK	2#12+#12G	2	20					0.6	1.1	24	24	DSS-1-2 (OUTDOOR)	2#12+#12G	2	15
-	25		-3/4"C			0.6	1.1					-	26		-3/4"C		
27	27	REC - EQUIP RACK	2#12+#12G	2	20			0.9	1.1			28	28	DSS-3-1 (OUTDOOR)	2#12+#12G	2	15
-	29		-3/4"C							0.9	1.1	-	30		-3/4"C		
31	31	++ FIRE ALARM EQUIP	#12-3/4"C	1	20++	0.8	2.6					32	32	DSS-2-1 (OUTDOOR)	2#8+#10G	2	40
33	33	++ FIRE ALARM EQUIP	#12-3/4"C	1	20++			0.8	2.6			-	34		-3/4"C		
35	35	SPARE		1	20							36	36	SPARE		1	20
37	37	SPARE		1	20							38	38	SPARE		1	20
39	39	SPARE		1	20							40	40	SPARE		1	20
41	41	SPARE		1	20							42	42	SPARE		1	20
43	43	SPARE		1	20							44	44	SPARE		1	20
45	45	SPARE		1	20							46	46	SPARE		1	20
47	47	SPARE		1	20							48	48	SPARE		1	20
49	49	SPACE AND PROVISIONS	-	1	-	-	-					50	50	SPD	4#8+	3	30
51	51	SPACE AND PROVISIONS	-	1	-			-	-			-	52		#8G-		
53	53	SPACE AND PROVISIONS	-	1	-					-	-	-	54		3/4"C		
						3.6	6.2	4.5	6.2	3.0	3.8						
						9.8		10.7		6.8							

2 ADD

CONNECTED LOAD = 27.3 KVA

DEMAND LOAD = 24.7 KVA

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

2 ADD ++ PAINT CIRCUIT BREAKER RED

MAIN BREAKER 125 AMPS

LOCATION ER B265

date 11 FEB 20

dwg ADD_2_E25

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HIGH SCHOOL #13

JESSUP, MARYLAND

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

WIRING PANEL SCHEDULE S2M1F

277 / 480 VOLTS | 3 PHASE 4 WIRE | 400 AMP BUS | SURFACE MOUNTED

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø A Ø		B Ø		C Ø		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
1	1	DOAS-1	4#8+	3	45	11.6	3.1					2	2	AHU-1 (SUPPLY)	4#12+	3	15
-	3		#10G-					11.6	3.1			-	4		#12G-		
-	5		1"C							11.6	3.1	-	6		3/4"C		
7	7	AHU-2 (SUPPLY)	4#8+	3	45	10.6	3.1					8	8	AHU-1 (RETURN)	4#12+	3	15
-	9		#10G-					10.6	3.1			-	10		#12G-		
-	11		1"C							10.6	3.1	-	12		3/4"C		
13	13	AHU-2 (RETURN)	4#10+	3	30	7.3	6.4					14	14	AHU-6 (SUPPLY)	4#10+	3	30
-	15		#10G					7.3	6.5			-	16		#10G-		
-	17		3/4"C							7.3	6.5	-	18		3/4"C		
19	19	AHU-6 (RETURN)	4#10+	3	20	4.4	1.0					20	20	EPUH-1-2	4#12+	1	15
-	21		#10G-					4.4	1.0			-	22	ELECTRICAL G 822 (2 ADD)	#12G-		
-	23		3/4"C							4.4	1.0	-	24		3/4"C		
25	25	FCU-1-1	#12-3/4"C	1	15	1.9	1.7					26	26	AHU-4 (SUPPLY)	4#12+	3	15
27	27	FCU-1-2	#12-3/4"C	1	15			1.4	1.7			-	28		#12G-		
29	29	FCU-1-3	#12-3/4"C	1	15					1.9	1.7	-	30		3/4"C		
31	31	SPARE		1	15		1.7					32	32	AHU-4 (RETURN)	4#12+	3	15
33	33	SPARE		1	15				1.7			-	34		#12G-		
35	35	SPARE		1	15						1.7	-	36		3/4"C		
37	37	SPD	4#8+	3	30	-	0.4					38	38	SKYLIGHTS G800	#12-3/4"C	1	20
-	39		#8G-					-	0.4			40	40	SKYLIGHTS G802, G804, G810	#12-3/4"C	1	20
-	41		3/4"C							-		42	42	SPARE		1	20
						35.8	17.4	35.3	17.5	35.8	17.1						
						53.2		52.8		52.9							

CONNECTED LOAD = 158.9 KVA

DEMAND LOAD = 158.9 KVA

MIN AIC RATING = 25,000 AMPS SYMMETRICAL

2 ADD MAIN BREAKER 300 AMPS

LOCATION ELEC B138

date 11 FEB 20

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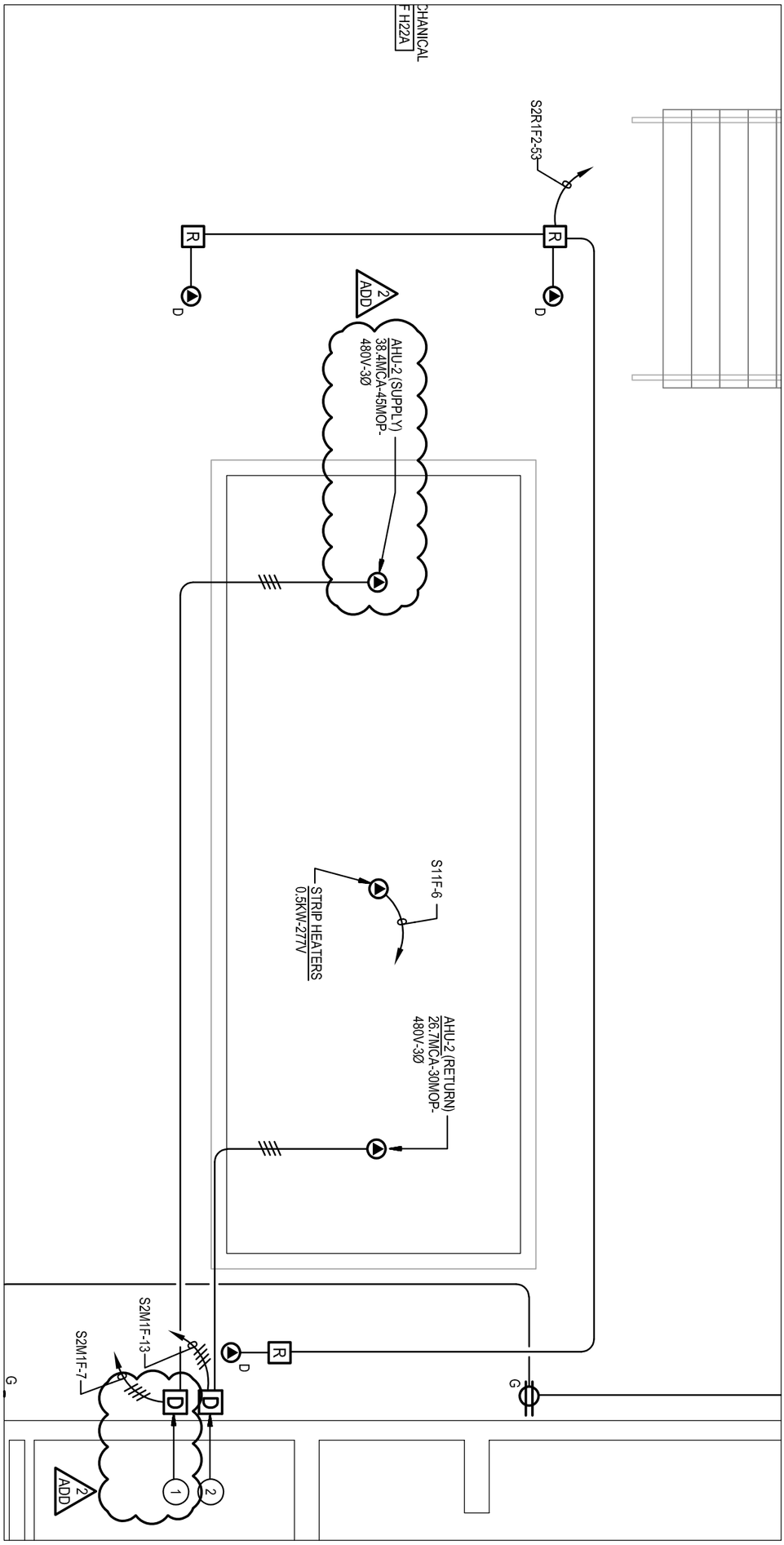
HIGH SCHOOL #13

JESSUP, MARYLAND

HOWARD COUNTY PUBLIC SCHOOL SYSTEM



HIGH SCHOOL #13

JESSUP, MARYLAND

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

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date
11 FEB 20

dwg
ADD_2_E27

WIRING PANEL SCHEDULE S2M1B

277 / 480 VOLTS — 3 PHASE 4 WIRE — 250 AMP BUS — SURFACE MOUNTED

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø A Ø		B Ø		C Ø		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
1	1	PUMP P-7	3#8+	3	60	7.2						2	2	SPARE		3	15
-	3	SECONDARY CHILLED WATER	#10G-					7.2				-	4				
-	5		1"C							7.2		-	6				
7	7	PUMP P-8	3#8+	3	60	7.2	0.4					8	8	JOCKEY PUMP	3#12+	3	15
-	9	SECONDARY CHILLED WATER	#10G-					7.2	0.4			-	10		#12G-		
-	11		1"C							7.2	0.4	-	12		3/4"C		
13	13	PUMP P-9	3#8+	3	60	7.2						14	14	SPARE		3	15
-	15	SECONDARY CHILLED WATER	#10G-					7.2				-	16				
-	17		1"C							7.2		-	18				
19	19	SPARE		1	15							20	20	SPARE		1	20
21	21	FCU-5-5 (2 ADD)	#10-3/4"C	1	15			1.4				22	22	SPARE		1	20
23	23	FCU-5-6 & FCU-5-7	#12-3/4"C	1	15					1.3		24	24	SPARE		1	20
25	25	SPARE		1	15							26	26	SPARE		1	20
27	27	SPARE		1	15							28	28	SPARE		1	20
29	29	SPARE		1	15							30	30	SPARE		1	20
31	31	SPACE AND PROVISIONS	-	1	-	-	-					32	32	SPACE AND PROVISIONS	-	1	-
33	33	SPACE AND PROVISIONS	-	1	-			-	-			34	34	SPACE AND PROVISIONS	-	1	-
35	35	SPACE AND PROVISIONS	-	1	-					-	-	36	36	SPACE AND PROVISIONS	-	1	-
37	37	SPACE AND PROVISIONS	-	1	-	-	-					38	38	SPD	4#8+	3	30
39	39	SPACE AND PROVISIONS	-	1	-			-	-			-	40		#8G-		
41	41	SPACE AND PROVISIONS	-	1	-					-	-	-	42		3/4"C		
						21.6	0.4	23.0	0.4	22.9	0.4						
						22.0		23.4		23.3							

CONNECTED LOAD = 68.7 KVA

DEMAND LOAD = 47.1 KVA

MIN AIC RATING = 65,000 AMPS SYMMETRICAL

MAIN BREAKER 250 AMPS

LOCATION MECH CV03A

date 11 FEB 20

dwg ADD_2_E28

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HIGH SCHOOL #13

JESSUP, MARYLAND

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

WIRING PANEL SCHEDULE S2R1B

120 / 208 VOLTS — 3 PHASE 4 WIRE — 225 AMP BUS — SURFACE MOUNTED

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø A Ø		B Ø		C Ø		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
1	1	+ REC - VENDING C114	#10-3/4"C	1	20+	1.0	0.5					2	2	REC - MICROWAVE C114	#10-3/4"C	1	20
3	3	+ REC - VENDING C114	#10-3/4"C	1	20+			1.0	0.5			4	4	REC - MICROWAVE C114	#10-3/4"C	1	20
5	5	+ REC - VENDING C114	#10-3/4"C	1	20+					1.0	0.5	6	6	REC - MICROWAVE C114	#10-3/4"C	1	20
7	7	+ REC - VENDING C114	#10-3/4"C	1	20+	1.0	0.5					8	8	REC - MICROWAVE C114	#10-3/4"C	1	20
9	9	REC - MECH CV03A	#12-3/4"C	1	20			0.8	1.0			10	10	+ REC - EWC C114	#8-3/4"C	1	20+
11	11	REC - MECH CV03A	#12-3/4"C	1	20					1.0	1.2	12	12	REC - CAFETERIA C114	#8-3/4"C	1	20
13	13	REC - MECH CV03A	#10-3/4"C	1	20	0.8	0.4					14	14	REC - MECH CV03A	#12-3/4"C	1	20
15	15	REC - MECH CV03A	#12-3/4"C	1	20			0.8	0.4			16	16	REC - MECH CV03A	#12-3/4"C	1	20
17	17	EF-4, EF-5	#12-3/4"C	1	20					0.7	0.8	18	18	REC - CAFETERIA C114	#8-3/4"C	1	20
19	19	SPARE		1	20							20	20	SPARE 2 ADD		1	20
21	21	SPARE		1	20							22	22	SPARE		1	20
23	23	SPARE		1	20							24	24	SPARE		1	20
25	25	SPARE		1	20							26	26	SPARE		1	20
27	27	SPARE		1	20							28	28	SPARE		1	20
29	29	SPARE		1	20							30	30	SPARE		1	20
31	31	SPACE AND PROVISIONS	-	1	-	-	-					32	32	SPACE AND PROVISIONS		1	-
33	33	SPACE AND PROVISIONS	-	1	-			-	-			34	34	SPACE AND PROVISIONS		1	-
35	35	SPACE AND PROVISIONS	-	1	-					-	-	36	36	SPACE AND PROVISIONS		1	-
37	37	SPACE AND PROVISIONS	-	1	-	-	-					38	38	SPD	4#8+	3	30
39	39	SPACE AND PROVISIONS	-	1	-			-	-			-	40		#8G-		
41	41	SPACE AND PROVISIONS	-	1	-					-	-	-	42		3/4"C		
						2.8	1.4	2.6	1.9	2.7	2.3						
						4.2		4.5		5.0							

CONNECTED LOAD = 13.7 KVA

DEMAND LOAD = 11.9 KVA

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

+ PROVIDE GFCI CIRCUIT BREAKER

MAIN BREAKER 100 AMPS

LOCATION MAIN ELEC CV03B

date 11 FEB 20

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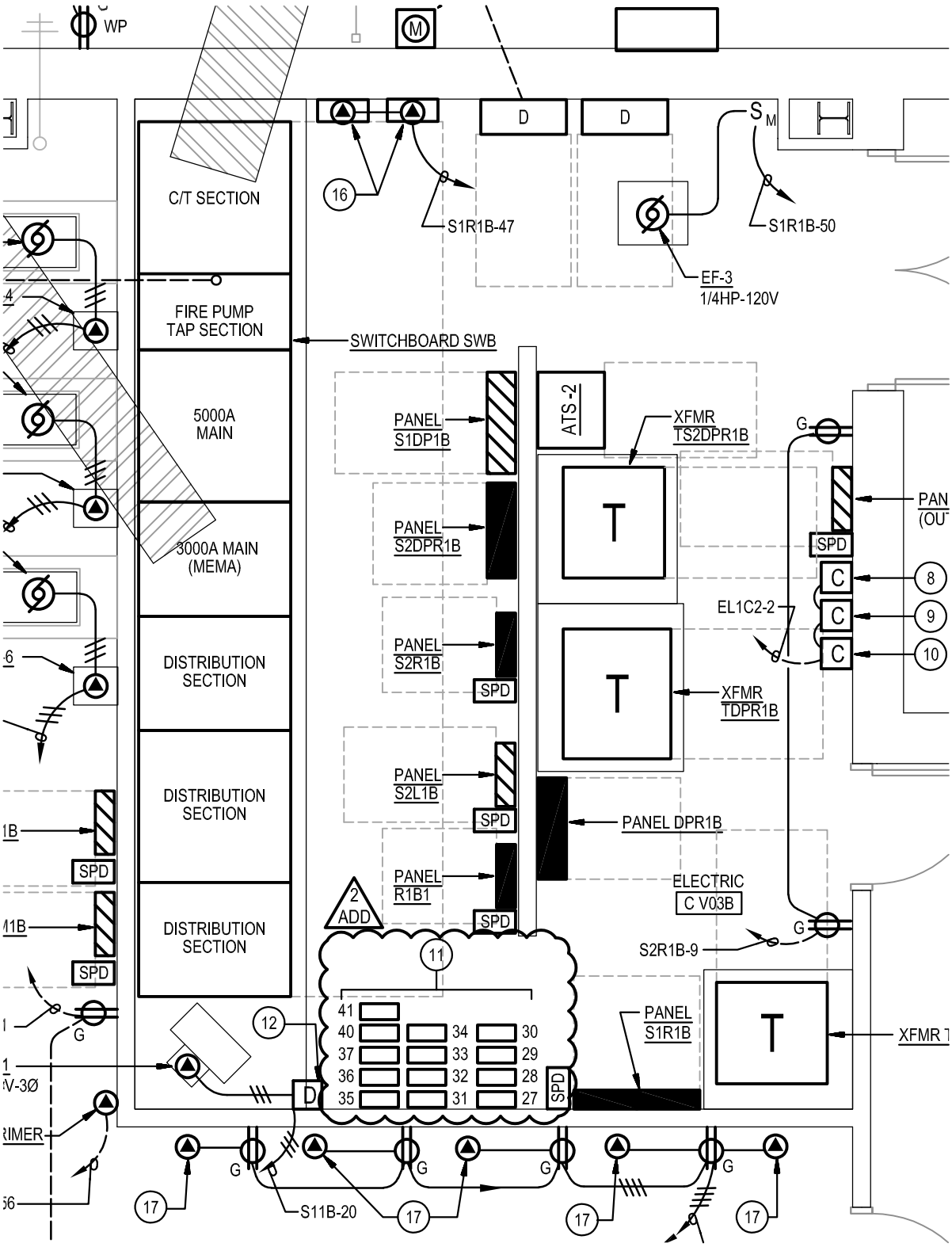
HOWARD COUNTY PUBLIC SCHOOL SYSTEM



HIGH SCHOOL #13

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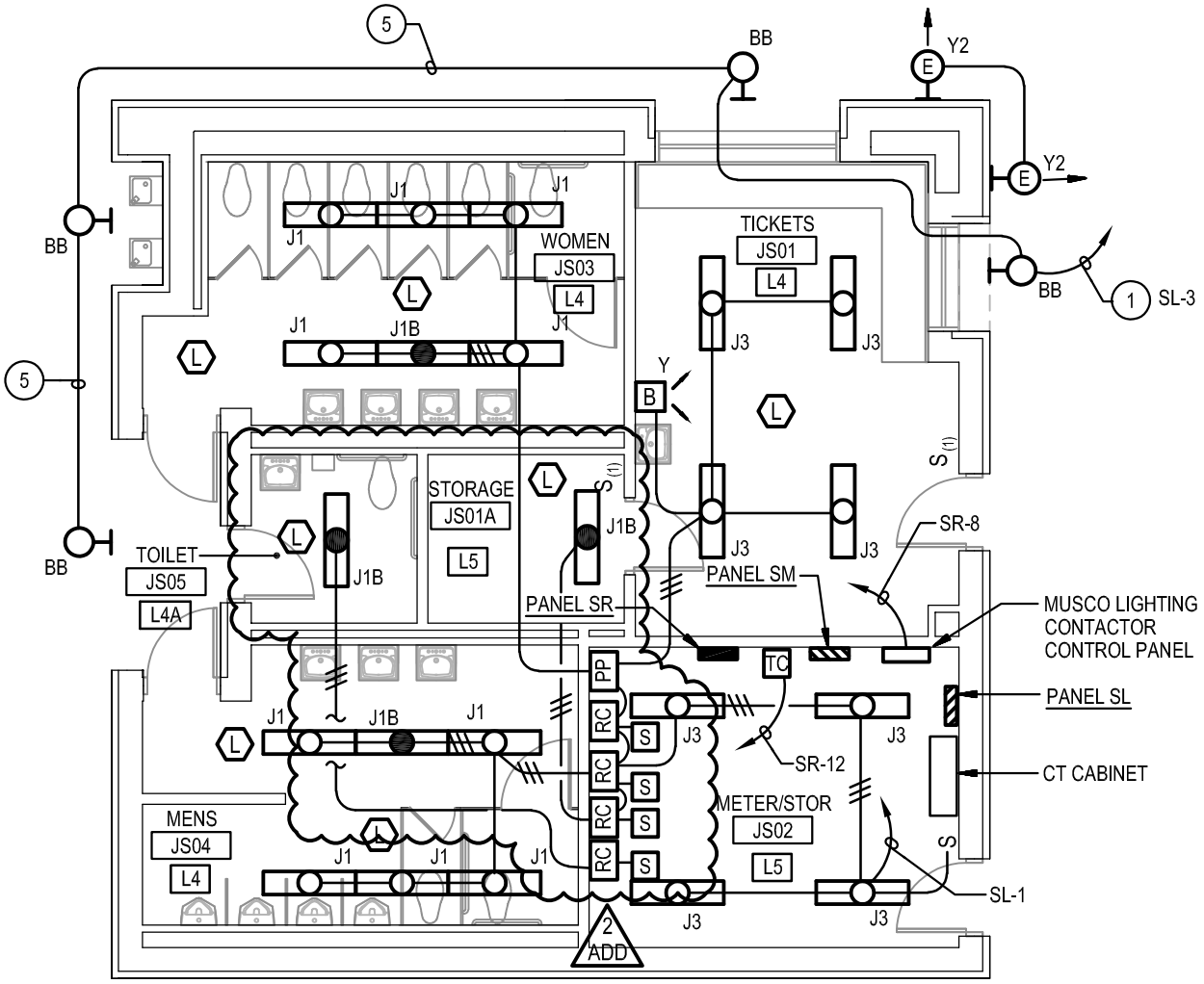
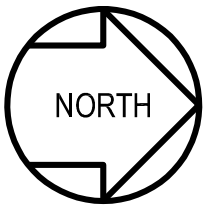


STADIUM BUILDING - LIGHTING

SCALE: 1/8"=1'-0"



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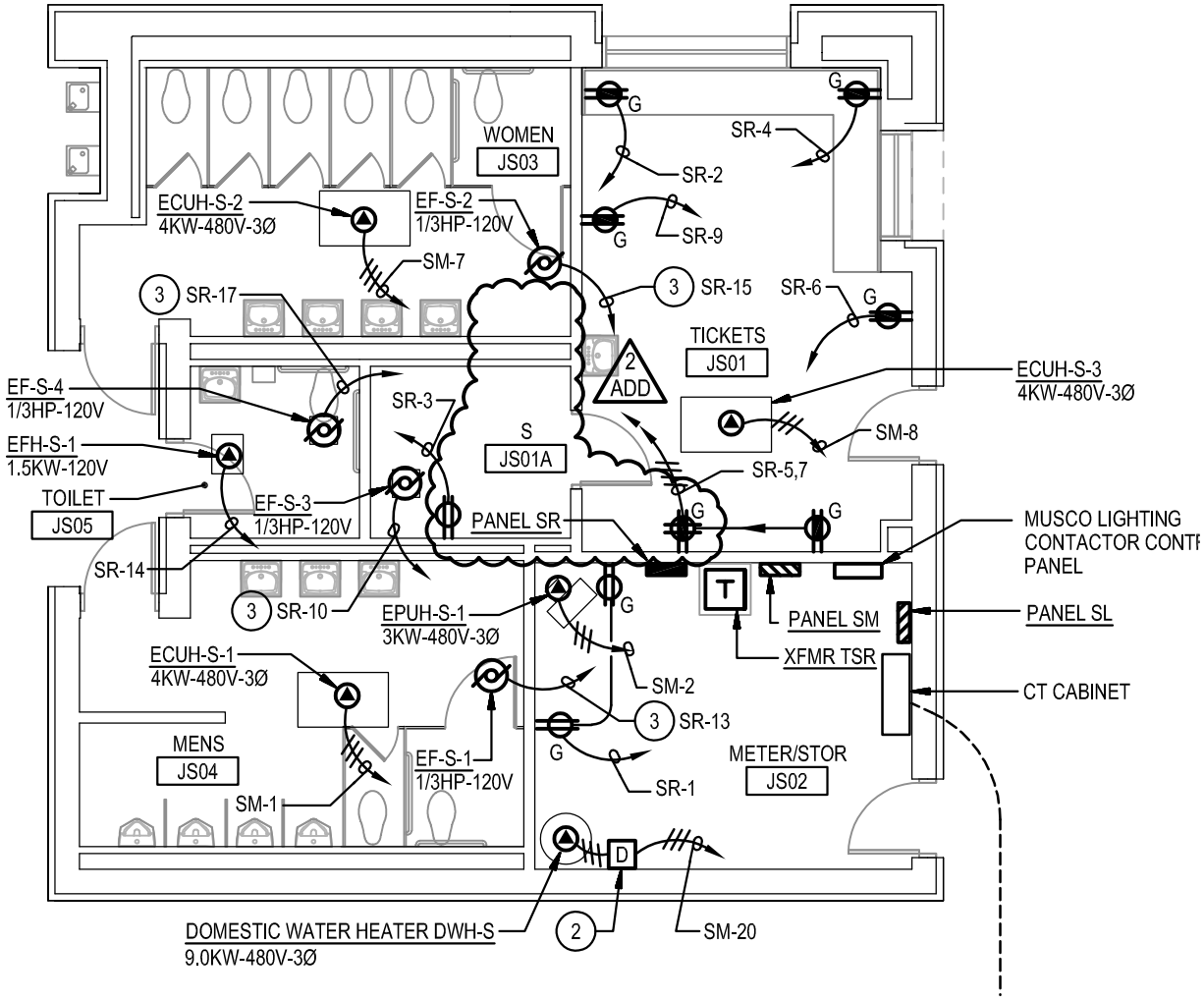
dwg ADD_2_E31

SPECIFIC NOTES:

1. RUN CIRCUIT VIA TIMECLOCK.
2. PROVIDE 3P-30A-600V NON-FUSED DISCONNECT SWITCH.
3. RUN CIRCUIT VIA PLUG LOAD SWITCHPACK CONTROLLER LOCATED IN STORAGE JS01A.
4. NOT USED.
5. RUN CONDUIT AND WIRING WITHIN INTERIOR OF BUILDING.

2 ADD



STADIUM BUILDING -POWER

SCALE: 1/8"=1'-0"

NORTH

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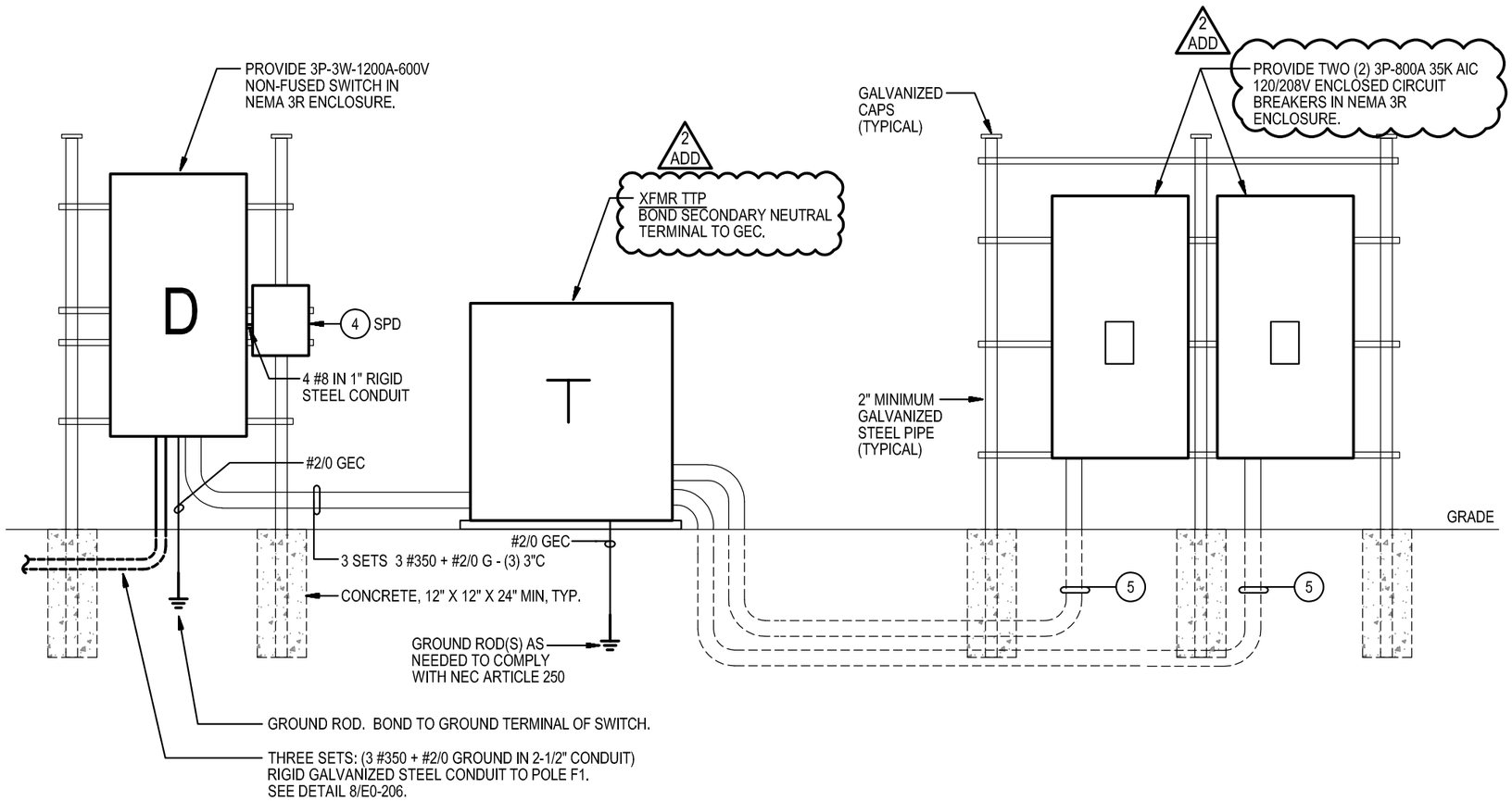
dwg ADD_2_E32



GENERAL OUTDOOR EQUIPMENT FOR TEMPORARY SERVICE NOTES:

1. REMOVE TEMPORARY POWER UPON COMPLETION OF PROJECT.
2. LOCATE TEMPORARY POWER MINIMUM OF 10'-0" FROM TRANSFORMER.
3. REMOVE TEMPORARY POLES AND OVERHEAD WIRING BACK TO MISSION ROAD.
4. COORDINATE WITH BGE FOR REMOVAL OF TEMPORARY SERVICE UPON COMPLETION OF PROJECT.

11
E0-206

DETAIL

OUTDOOR EQUIPMENT FOR TEMPORARY SERVICE

NOT TO SCALE

date 11 FEB 20

dwg ADD_2_E33

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HIGH SCHOOL #13

JESSUP, MARYLAND

HOWARD COUNTY PUBLIC SCHOOL SYSTEM

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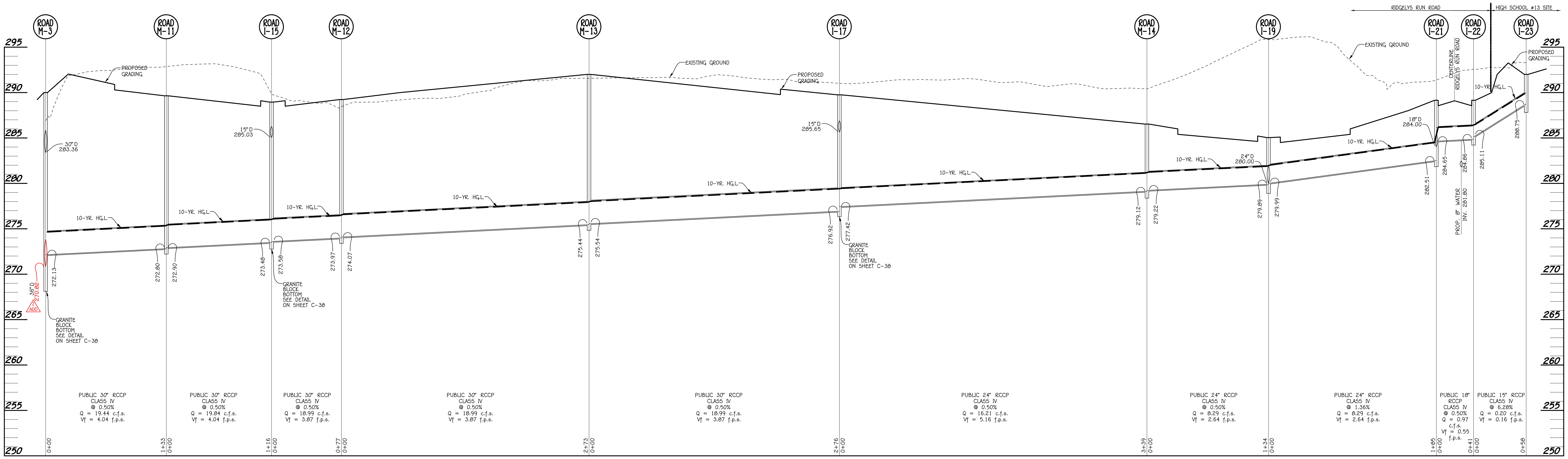
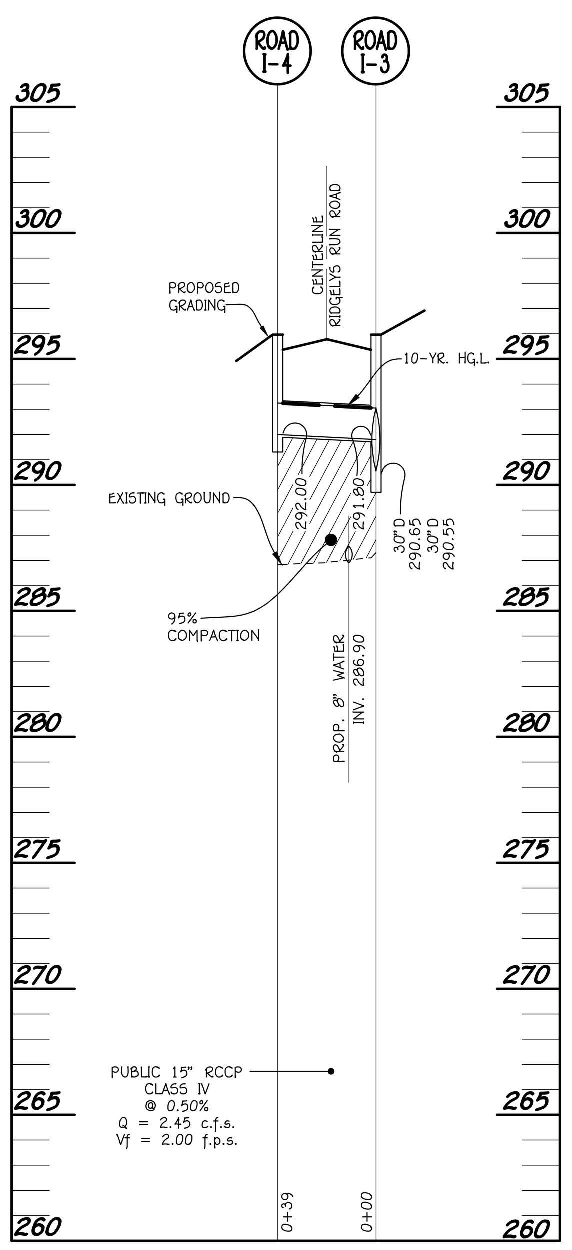
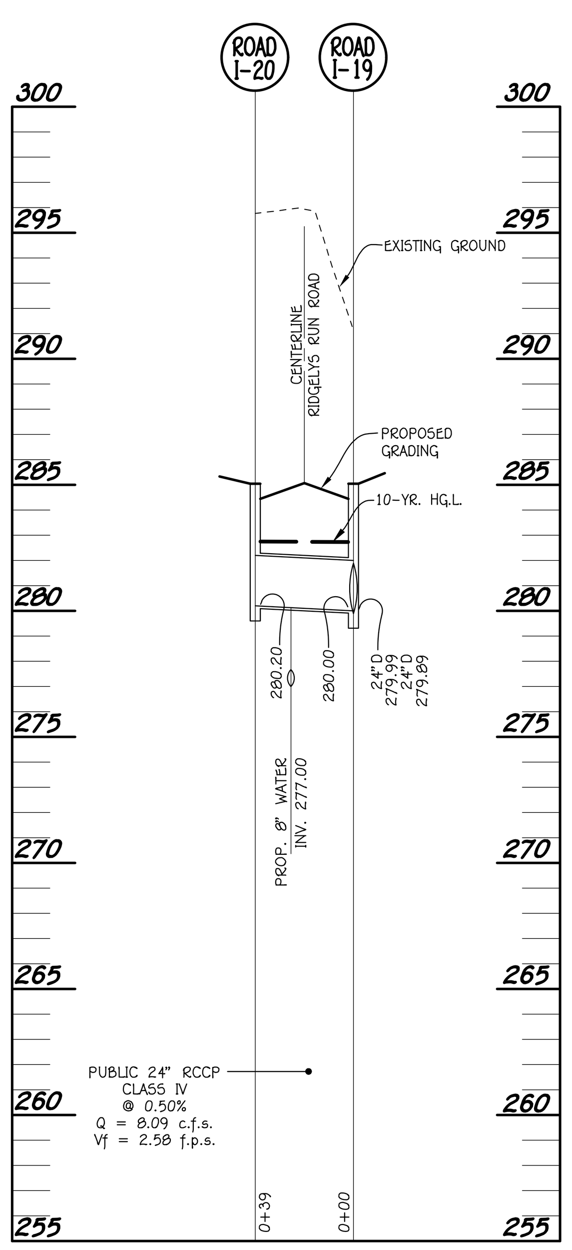


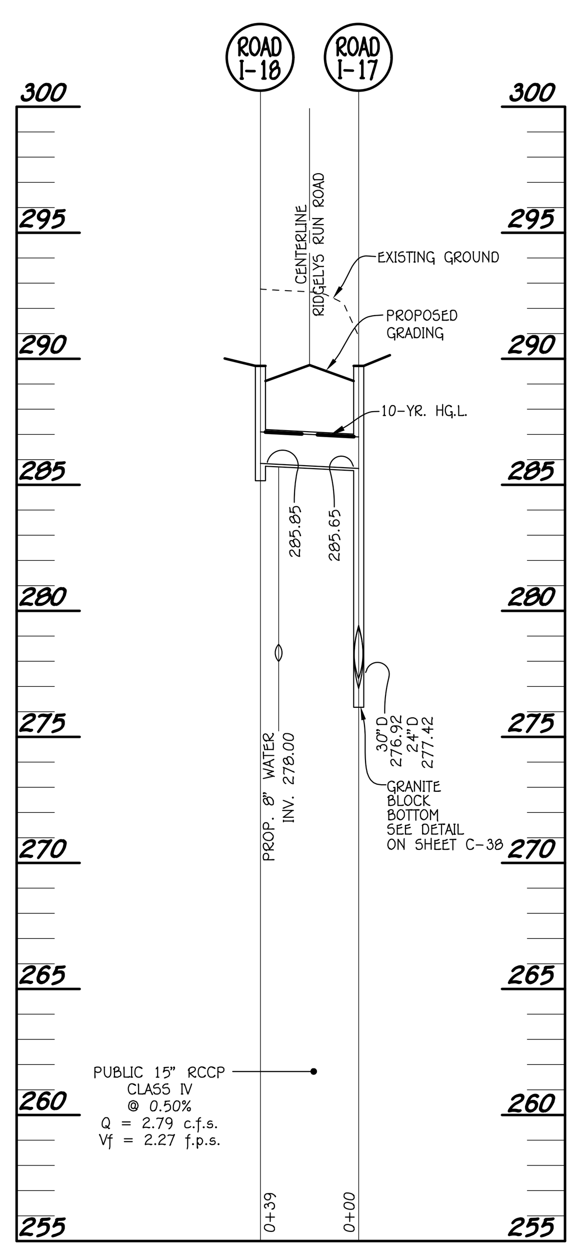
STORM DRAIN PROFILE
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



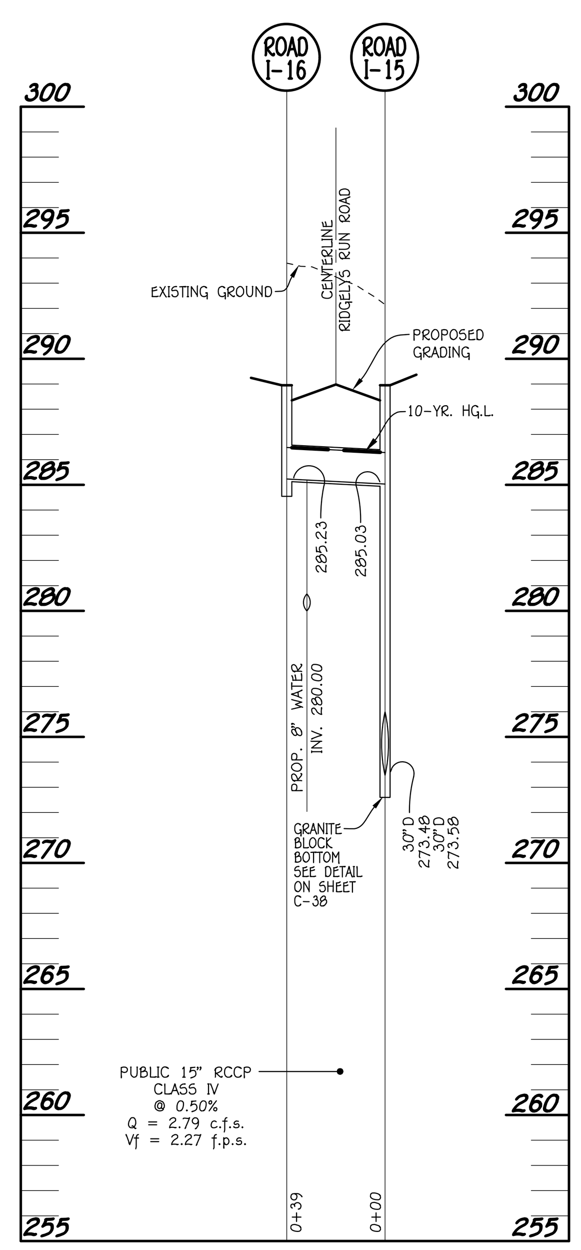
STORM DRAIN PROFILE
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



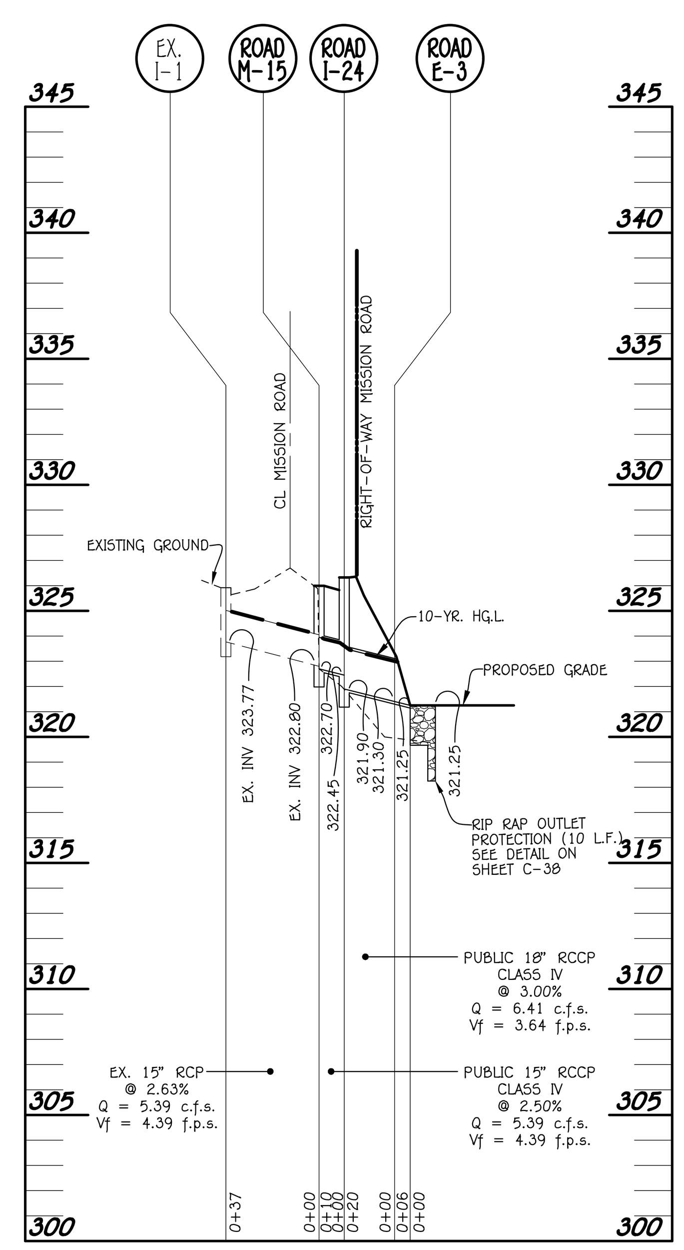
STORM DRAIN PROFILE
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



STORM DRAIN PROFILE
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



STORM DRAIN PROFILE
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



STORM DRAIN PROFILE
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'

PUBLIC ROAD STRUCTURE SCHEDULE

STRUCTURE SCHEDULE

STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV.IN	INV.OUT	COORDINATES	WIDTH	TYPE	REMARKS
ROAD I-1	PUBLIC	291.91	285.66 (30")	284.21 (30")	℄ STA. 18+80 LEFT 18'	2.50'	A-10 INLET	D-4.03
ROAD I-2	PUBLIC	291.91	286.62 (30")	286.52 (30")	℄ STA. 18+80 RIGHT 18'	3.50'	A-10 INLET	D-4.03
ROAD I-3	PUBLIC	295.96	291.80 (15"), 290.65 (30")	290.55 (30")	℄ STA. 16+00 RIGHT 18'	3.50'	A-10 INLET	D-4.03
ROAD I-4	PUBLIC	295.96	–	292.00 (15")	℄ STA. 16+00 LEFT 18'	2.50'	A-10 INLET	D-4.03
ROAD I-5	PUBLIC	302.17	296.89 (24")	296.39 (30")	℄ STA. 11+72 RIGHT 18'	3.50'	A-10 INLET	D-4.03
ROAD I-6	PUBLIC	302.17	297.38 (24")	297.28 (24")	℄ STA. 11+72 LEFT 18'	2.50'	A-5 INLET	D-4.02
ROAD I-7	PUBLIC	304.11	299.51 (18"), 299.11 (24")	299.01 (24")	℄ STA. 10+38 LEFT 18'	2.50'	A-5 INLET	D-4.02
ROAD I-8	PUBLIC	306.11	301.95 (18")	301.85 (18")	℄ STA. 9+00 LEFT 18'	2.50'	A-5 INLET	D-4.02
ROAD I-9	PUBLIC	308.40	304.00 (15")	303.75 (18")	℄ STA. 7+50 LEFT 18'	2.50'	A-10 INLET	D-4.03
ROAD I-10	PUBLIC	308.40	–	304.39 (15")	℄ STA. 7+50 RIGHT 18'	2.50'	A-10 INLET	D-4.03
ROAD I-11	PUBLIC	316.44	311.75 (15"), 311.74 (24")	310.50 (30")	℄ STA. 3+64 RIGHT 18'	3.50'	A-5 INLET	D-4.02
ROAD I-12	PUBLIC	316.44	–	311.94 (24")	℄ STA. 3+64 LEFT 18'	2.50'	A-10 INLET	D-4.03
ROAD I-13	PUBLIC	320.17	–	316.50 (15")	N 543,491.38 E 1,365,172.65	2.50'	A-5 INLET	D-4.02
ROAD I-14	PRIVATE	313.88	309.69 (24")	306.24 (24")	N 542,898.48 E 1,365,766.80	2.50'	DBL S INLET	D-4.25
ROAD I-15	PUBLIC	288.95	285.03 (15"), 273.58 (30")	273.48 (30")	℄ STA. 21+13.73 LEFT 18'	3.50'	A-5 INLET	D-4.02
ROAD I-16	PUBLIC	288.95	–	285.23 (15")	℄ STA. 21+13.73 RIGHT 18'	2.50'	A-5 INLET	D-4.02
ROAD I-17	PUBLIC	289.72	285.65 (15"), 277.42 (24")	276.92 (30")	℄ STA. 27+34 LEFT 18'	3.50'	A-10 INLET	D-4.03
ROAD I-18	PUBLIC	289.72	–	285.85 (15")	℄ STA. 27+34 RIGHT 18'	2.50'	A-10 INLET	D-4.03
ROAD I-19	PUBLIC	285.04	279.99 (24"), 280.00 (24")	279.89 (24")	℄ STA. 32+01.81 LEFT 18'	2.50'	A-5 INLET	D-4.02
ROAD I-20	PUBLIC	285.04	–	280.20 (24")	℄ STA. 32+01.81 RIGHT 18'	2.50'	A-10 INLET	D-4.03
ROAD I-21	PUBLIC	289.15	284.65 (18"), 284.00 (18")	282.51 (24")	℄ STA. 33+87 LEFT 18'	2.50'	A-10 INLET	D-4.03
ROAD I-22	PUBLIC	289.15	285.11 (15")	284.86 (18")	℄ STA. 33+87 RIGHT 18'	2.50'	A-10 INLET	D-4.03
ROAD I-23	PRIVATE	292.00	–	288.75 (15")	N 541,386.45 E 1,366,899.82	2.58'	SINGLE WR INLET	D-4.32
ROAD I-24	PUBLIC	326.64	322.45 (15")	321.90 (18")	N 543,691.55 E 1,365,535.87	2.50'	A-5 INLET	D-4.02
ROAD M-1	PUBLIC	273.50	267.42 (36")	266.40 (36")	N 542,887.24 E 1,366,597.54	5'	STD. MANHOLE	G - 5.13
ROAD M-2	PUBLIC	282.50	269.47 (36")	268.77 (36")	N 542,861.07 E 1,366,591.72	5'	STD. MANHOLE	G - 5.13
ROAD M-3	PUBLIC	291.00	283.36 (30"), 272.13 (30")	270.82 (36")	N 542,834.90 E 1,366,585.95	5'	STD. MANHOLE	G - 5.13
ROAD M-4	PUBLIC	297.26	292.40 (30")	292.30 (30")	℄ STA. 15+20 RIGHT 21.3'	5'	STD. MANHOLE	G - 5.13
ROAD M-5	PUBLIC	299.20	294.31 (30")	294.21 (30")	℄ STA. 13+86 RIGHT 21.6'	5'	STD. MANHOLE	G - 5.13
ROAD M-6	PUBLIC	293.50	289.41 (30")	289.31 (30")	N 542,804.23 E 1,365,510.19	5'	STD. MANHOLE	G - 5.13
ROAD M-7	PUBLIC	310.00	304.09 (30")	300.31 (30")	℄ STA. 7+07 RIGHT 37.24'	5'	STD. MANHOLE	G - 5.13
ROAD M-8	PUBLIC	316.88	309.50 (30")	309.40 (30")	℄ STA. 5+58 RIGHT 29.0'	5'	STD. MANHOLE	G - 5.13
ROAD M-9	PUBLIC	318.54	315.06 (15")	314.02 (15")	℄ STA. 2+00 RIGHT 10.4'	4'	STD. MANHOLE	G - 5.12
ROAD M-10	PUBLIC	323.35	315.98 (15")	315.88 (15")	℄ STA. 0+35 RIGHT 9.0'	4'	STD. MANHOLE	G - 5.12
ROAD M-11	PUBLIC	289.64	272.90 (30")	272.80 (30")	℄ STA. 20+02 LEFT 14.3'	5'	STD. MANHOLE	G - 5.13
ROAD M-12	PUBLIC	289.23	274.07 (30")	273.97 (30")	℄ STA. 21+87 LEFT 12.9'	5'	STD. MANHOLE	G - 5.13
ROAD M-13	PUBLIC	292.02	275.54 (30")	275.44 (30")	℄ STA. 24+59 LEFT 13.0'	5'	STD. MANHOLE	G - 5.13
ROAD M-14	PUBLIC	286.53	279.22 (24")	279.12 (24")	℄ STA. 30+73 LEFT 23.2'	4'	STD. MANHOLE	G - 5.12
ROAD M-15	PUBLIC	325.99	322.80 (EX.15")	322.70 (15")	N 543,699.46 E 1,365,531.61	4'	STD. MANHOLE	G - 5.12
ROAD E-1	PUBLIC	270.50	–	266.00 (36")	N 542,899.95 E 1,366,618.54	36"	TYPE 'A' HEADWALL	D - 5.11
ROAD E-2	PUBLIC	291.56	–	289.00 (30")	N 542,782.74 E 1,365,522.86	30"	CONC. END SECTION	D - 5.51
ROAD E-3	PUBLIC	322.80	–	321.25 (18")	N 543,672.68 E 1,365,546.43	18"	CONC. END SECTION	D - 5.51
ROAD E-4	PRIVATE	265.10	–	260.10 (48")	N 543,087.67 E 1,366,547.78	48"	TYPE 'C' HEADWALL	D - 5.21
ROAD E-5	PRIVATE	287.47	–	284.90 (30")	N 542,650.49 E 1,365,663.63	30"	CONC. END SECTION	D - 5.51
ROAD R-1	PRIVATE	269.60	264.17 (6")	261.30 (48")	N 543,051.03 E 1,366,523.42	–	–	SEE SHEET C-59
ROAD R-2	PRIVATE	292.50	–	285.65 (30")	N 542,719.17 E 1,365,660.00	30"	MODIFIED 'K' INLET	SEE SHEET C-41

ADDENDUM #1: ADDED 4 STRUCTURES

tca|architects
1369 Generals Highway • Crownsville, Maryland 21032

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

IAC CD REVIEW	8 OCTOBER 19
BUILDING PERMIT	7 JANUARY 20
ADDENDUM NO. 2	11 FEBRUARY 20
BID AND CONSTRUCTION	7 JANUARY 20

STORM DRAIN PROFILES AND STRUCTURE SCHEDULE (ROADS)

C-37

OF 91
PROJECT NO.

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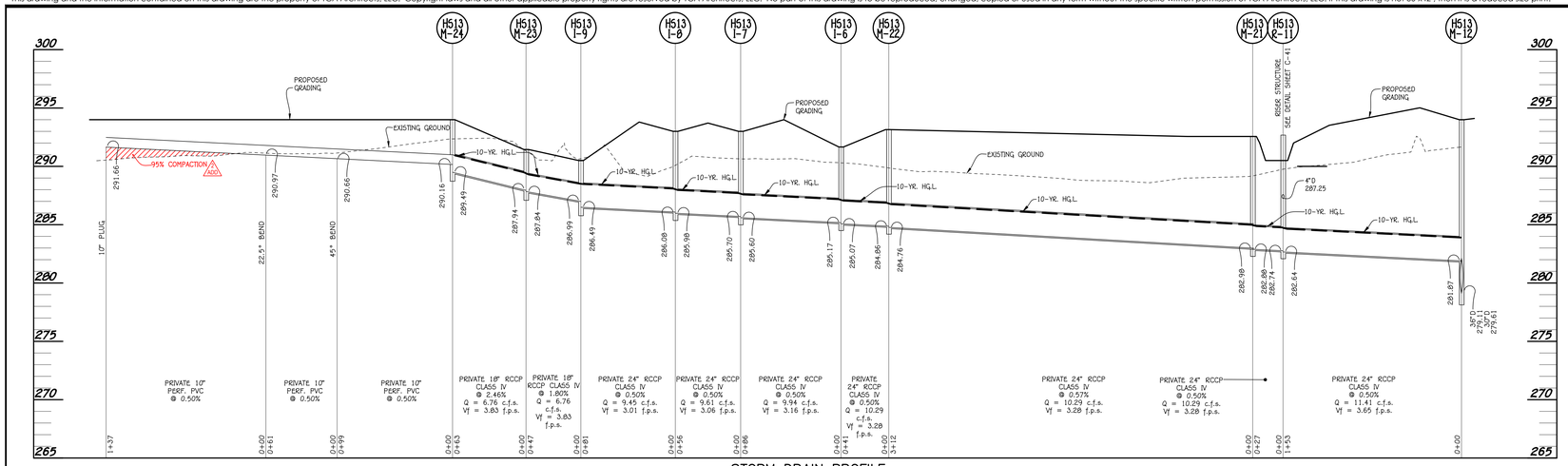
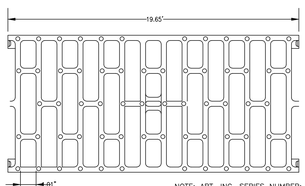
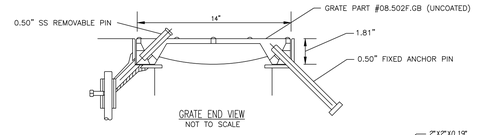


STORM DRAIN PROFILE

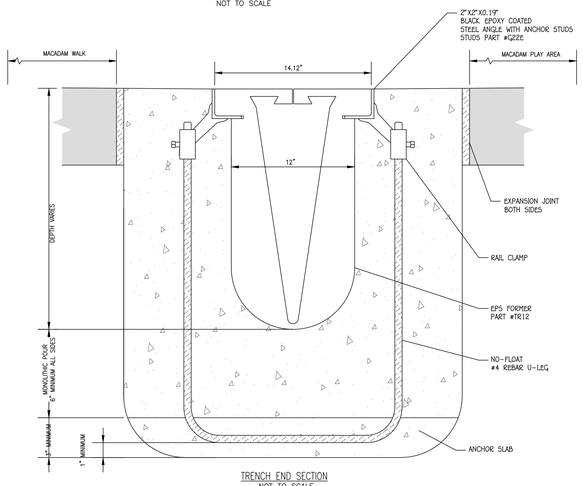


NOTE: ABT, INC. SERIES NUMBER: TR12-12.502E.GB-G22E

GRATE TOP VIEW
NOT TO SCALE



GRATE END VIEW
NOT TO SCALE



TRENCH END SECTION
NOT TO SCALE

TRENCH DRAIN

C-40

NO SCALE

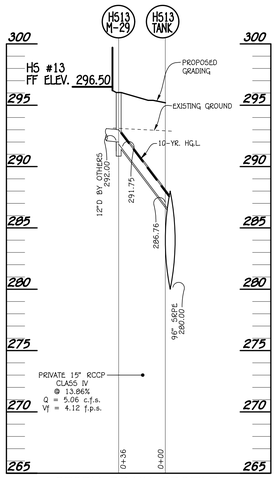
1. TRENCH DRAIN PARTS AND DETAILS SHALL CONFORM TO ABT, INC. PRODUCTS.

2. GRATING – TR08.B-08.502F.GB-G22E GRATES SHALL COMPLY WITH ALL THE REQUIREMENTS OF AASHTO M306.

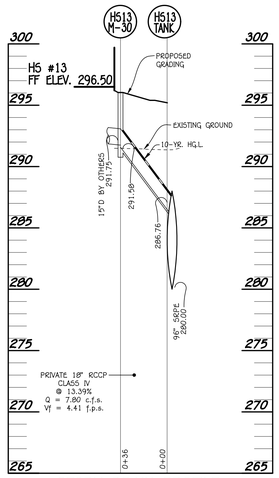
3. FORMS – TR08.B FORMWORK ASSEMBLY MUST BE PREVENTED FROM FLOATING DURING CONCRETE PLACEMENT WITHOUT PENETRATING THE SUB GRADE. FORMWORK TO BE ANCHORED TO THE EARTH USING STEEL NO-FLOAT LEGS AND AN ANCHOR SLAB POUR. TIE WIRES THAT ASSURE CONSTANT FRAME SPACING AND GRATE SEAT DIMENSION TO BE PROVIDED.

4. BLACK EPOXY COATED 2.0" x 2.0" x 0.19" STEEL ANGLE CONFORMING TO ASTM A36. STANDARD HEADED CONCRETE ANCHOR STUDS BISECT GRATE RETAINER ANCHOR LUGS PROVIDING A TRUE ANCHORING DEVICE EVERY 9.84". GRATE FRAMES TO PROVIDE A MINIMUM OF 1.25 SQUARE INCHES CONCRETE BEARING WITH 3.25 SQUARE INCHES OF CONCRETE CONTACT PER INCH OF TRENCH LENGTH. GRATES ARE RETAINED NON-RIGIDLY AT ALL CORNERS. NON-THREADED REMOVABLE 0.5" STAINLESS STEEL PINS LOCATED ON 3.28' CENTERS ALONG THE FRAMES BISECTED BY 0.5" NON-REMOVABLE GRATE RETAINING DEVICE ON 3.28' CENTERS. GRATE RETAINER PERFORMANCE SHALL NOT DEGRADE WITH SERVICE LOADS OR THERMAL CYCLING.

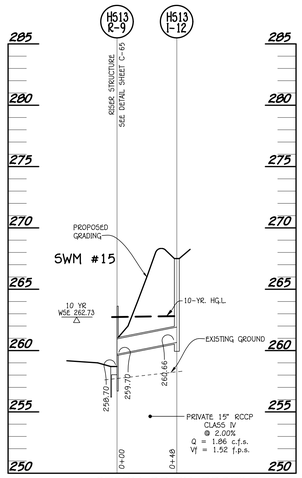
5. POST CONSTRUCTION INSPECTION: FORMWORK IS TO BE FULLY REMOVED, WITHOUT EXCEPTION, TO ALLOW FOR INSPECTION AND IF NEEDED REPAIR OF ANY VOIDS OR CONCRETE CONSOLIDATION ISSUES BELOW FRAME, TRENCH WALLS AND INVERT. GRATE AND GRATE RETAINER SHALL BE PERFORMED TO ENSURE THAT ALL GRATES AND RETAINERS ARE INSTALLED AND ARE PROPERLY SEATED IN PLACE.



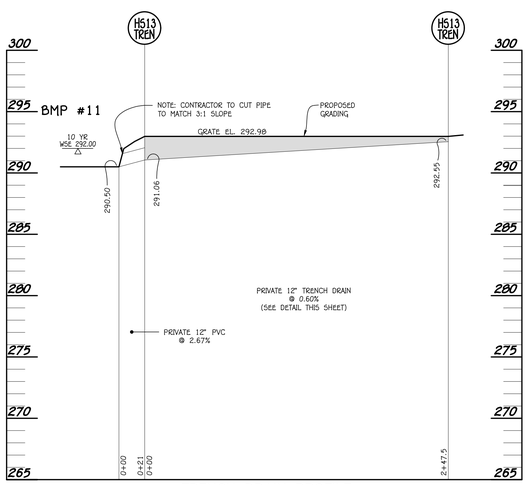
STORM DRAIN PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'



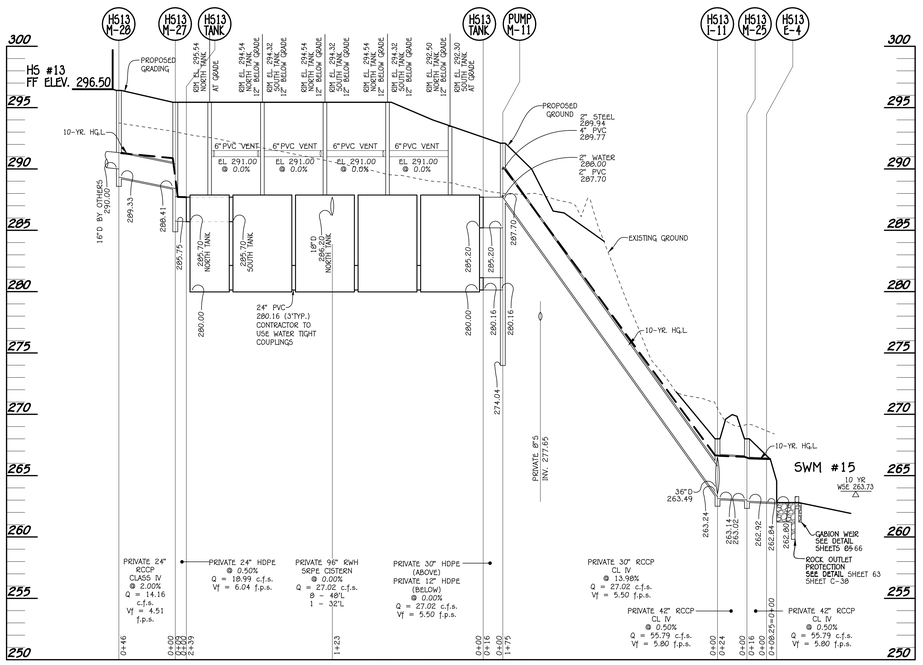
STORM DRAIN PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'



STORM DRAIN PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'



TRENCH DRAIN PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'



STORM DRAIN PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'

HIGH SCHOOL #13 STRUCTURE SCHEDULE

STRUCTURE SCHEDULE

STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV.IN	INV.OUT	COORDINATES	WIDTH	TYPE	REMARKS
H513 I-1	PRIVATE	289.61	–	286.26 (18")	N 542369.24 E 1366018.47	2.50'	A-5 INLET	D-4.02
H513 I-2	PRIVATE	294.24 *	287.40 (24")	284.18 (24")	N 542481.87 E 1365841.14	2.58'	5 INLET W/ RET. GRATE	D-4.24 & D-4.34
H513 I-3	PRIVATE	294.24 *	288.40 (18")	287.90 (24")	N 542505.44 E 1365937.76	2.58'	5 INLET W/ RET. GRATE	D-4.24 & D-4.34
H513 I-4	PRIVATE	294.24 *	288.95 (15")	288.70 (18")	N 542519.66 E 1365996.47	2.58'	5 INLET W/ RET. GRATE	D-4.24 & D-4.34
H513 I-5	PRIVATE	292.70	–	289.26 (15")	N 542556.56 E 1366047.05	2.50'	A-5 INLET	D-4.02
H513 I-6	PRIVATE	291.66 *	285.17 (24")	285.07 (24")	N 541403.61 E 1366577.26	2.58'	5 INLET W/ RET. GRATE	D-4.24 & D-4.34
H513 I-7	PRIVATE	293.00 *	285.70 (24")	285.60 (24")	N 541344.99 E 1366639.86	2.58'	5 INLET W/ RET. GRATE	D-4.24 & D-4.34
H513 I-8	PRIVATE	293.00 *	286.08 (24")	285.98 (24")	N 541314.99 E 1366688.09	2.58'	5 INLET W/ RET. GRATE	D-4.24 & D-4.34
H513 I-9	PRIVATE	290.50 *	286.99 (18")	286.49 (24")	N 541281.52 E 1366761.74	2.58'	5 INLET W/ RET. GRATE	D-4.24 & D-4.34
H513 I-10	PRIVATE	292.75 *	–	289.50 (15")	N 541854.96 E 1366550.57	2.58'	5 INLET W/ RET. GRATE	D-4.24 & D-4.34
H513 I-11	PRIVATE	268.00 *	263.49 (36"), 263.24 (30")	263.14 (42")	N 541932.87 E 1366164.86	4'	5 INLET W/ RET. GRATE	D-4.24 & D-4.34
H513 I-12	PRIVATE	267.50 *	–	260.66 (15")	N 541678.36 E 1366041.88	2.58'	5 INLET W/ RET. GRATE	D-4.24 & D-4.34
H513 I-13	PRIVATE	268.75 *	–	265.50 (15")	N 542078.01 E 1365744.72	2.58'	5 INLET W/ RET. GRATE	D-4.24 & D-4.34
H513 M-1	PRIVATE	269.30 ADD.	264.80 (30")	262.12 (30")	N 542057.42 E 1365987.93	5'	STD. MANHOLE	G - 5.13
H513 M-2	PRIVATE	280.00	275.20 (30")	266.60 (30")	N 542074.67 E 1366019.40	5'	STD. MANHOLE	G - 5.13
H513 M-3	PRIVATE	292.10	280.56 (30")	ADD. 280.46 (30")	N 542171.51 E 1366100.34	5'	STD. MANHOLE	G - 5.13
H513 M-4	PRIVATE	291.02	282.32 (18"), 281.96 (30")	281.86 (30")	N 542423.15 E 1366039.36	5'	STD. MANHOLE	G - 5.13
H513 M-5	PRIVATE	293.67	282.44 (30")	282.34 (30")	N 542493.15 E 1366066.77	5'	STD. MANHOLE	G - 5.13
H513 M-6	PRIVATE	293.62	283.28 (30")	283.18 (30")	N 542636.67 E 1366032.78	5'	STD. MANHOLE	G - 5.13
H513 M-7	PRIVATE	293.78	289.33 (15"), 286.83 (15"), 284.12 (24")	283.62 (30")	N 542652.36 E 1366097.52	5'	STD. MANHOLE	G - 5.13
H513 M-8	PRIVATE	293.84	289.33 (15"), 286.68 (15"), 285.07 (24")	284.97 (24")	N 542692.37 E 1366252.66	4'	STD. MANHOLE	G - 5.12
H513 M-9	PRIVATE	293.80	289.33 (15"), 286.27 (15"), 287.00 (18")	285.52 (24")	N 542713.46 E 1366349.70	4'	STD. MANHOLE	G - 5.12
H513 M-10	PRIVATE	294.19	286.85 (15")	286.75 (15")	N 542736.05 E 1366442.95	4'	STD. MANHOLE	G - 5.12
H513 M-11	PRIVATE	292.10	285.20 (30"), 280.16 (12")	287.70 (30")	N 542118.87 E 1366223.39	5'	STD. MANHOLE	G - 5.13
H513 M-12	PRIVATE	294.00	279.61 (30"), 281.87 (24")	279.11 (36")	N 541885.50 E 1366508.08	5'	STD. MANHOLE	G - 5.13
H513 M-13	PRIVATE	292.67	289.10 (15"), 279.89 (30")	279.79 (30")	N 541893.73 E 1366541.68	5'	STD. MANHOLE	G - 5.13
H513 M-14	PRIVATE	292.43	288.87 (18"), 285.03 (24"), 280.94 (24")	280.44 (30")	N 541919.72 E 1366648.95	5'	STD. MANHOLE	G - 5.12
H513 M-15	PRIVATE	290.25	282.03 (24")	281.93 (24")	N 541966.16 E 1366840.63	4'	STD. MANHOLE	G - 5.12
H513 M-16	PRIVATE	291.11	285.30 (15"), 284.67 (24")	284.57 (24")	N 542015.27 E 1366808.74	4'	STD. MANHOLE	G - 5.12
H513 M-17	PRIVATE	293.66	287.81 (15"), 286.23 (24")	286.13 (24")	N 542217.94 E 1366779.63	4'	STD. MANHOLE	G - 5.12
H513 M-18	PRIVATE	293.66	287.81 (15"), 287.51 (18")	287.01 (24")	N 542369.43 E 1366742.93	4'	STD. MANHOLE	G - 5.12
H513 M-19	PRIVATE	294.11	288.33 (18")	288.23 (18")	N 542508.20 E 1366709.30	4'	STD. MANHOLE	G - 5.12
H513 M-20	PRIVATE	293.97	290.16 (10")	289.49 (18")	N 541833.04 E 1366665.48	4'	STD. MANHOLE	G - 5.12
H513 M-21	PRIVATE	292.56	282.98 (24")	282.88 (24")	N 541727.79 E 1366470.47	4'	STD. MANHOLE	G - 5.12
H513 M-22	PRIVATE	293.15	284.86 (24")	284.76 (24")	N 541423.52 E 1366540.76	4'	STD. MANHOLE	G - 5.12
H513 M-23	PRIVATE	291.44	287.94 (18")	287.84 (18")	N 541303.15 E 1366803.79	4'	STD. MANHOLE	G - 5.12
H513 M-24	PRIVATE	293.97	290.16 (10")	289.49 (18")	N 541359.63 E 1366775.41	4'	STD. MANHOLE	G - 5.12
H513 M-25	PRIVATE	268.00 ADD.	263.02 (42")	262.92 (42")	N 541908.40 E 1366162.78	6'	STD. MANHOLE	G - 5.13
H513 M-26	PRIVATE	268.00 ADD.	263.65 (15")	262.64 (15")	N 542043.63 E 1365739.25	4'	STD. MANHOLE	G - 5.12
H513 M-27	PRIVATE	295.44	288.41 (24")	285.75 (24")	N 542170.54 E 1366438.30	4'	STD. MANHOLE	G - 5.12
H513 M-28	PRIVATE	296.34	290.00 (16")	289.33 (24")	N 542210.70 E 1366459.54	4'	STD. MANHOLE	G - 5.12
H513 M-29	PRIVATE	290.40	ADD. 292.00 (12")	ADD. 291.75 (15")	N 542206.43 E 1366413.94	4'	STD. MANHOLE	G - 5.12
H513 M-30	PRIVATE	290.40	291.75 (15") ADD.	291.56 (18")	N 542182.20 E 1366303.69	4'	STD. MANHOLE	G - 5.12
H513 R-1A	PRIVATE	294.65 *	289.65 (4"), 289.65 (4")	289.55 (15")	N 542694.72 E 1366087.44	3'	MOD. K INLET	SEE SHEET C-26
H513 R-1B	PRIVATE	294.65 *	289.65 (4"), 289.65 (4")	289.55 (15")	N 542734.74 E 1366252.58	3'	MOD. K INLET	SEE SHEET C-26
H513 R-1C	PRIVATE	294.65 *	289.65 (4"), 289.65 (4")	289.55 (15")	N 542755.82 E 1366339.62	3'	MOD. K INLET	SEE SHEET C-26
H513 R-2A	PRIVATE	292.15 *	287.15 (4")	287.05 (15")	N 542609.85 E 1366107.50	3'	MOD. K INLET	SEE SHEET C-26
H513 R-2B	PRIVATE	292.00 *	287.00 (4"), 287.00 (4")	286.90 (15")	N 542649.86 E 1366272.64	3'	MOD. K INLET	SEE SHEET C-26
H513 R-2C	PRIVATE	292.32 *	287.32 (4"), 287.32 (4")	287.22 (18")	N 542670.95 E 1366359.68	3'	MOD. K INLET	SEE SHEET C-26
H513 R-2D	PRIVATE	292.23 *	287.23 (4")	287.13 (15")	N 542713.12 E 1366494.25	3'	MOD. K INLET	SEE SHEET C-26
H513 R-3	PRIVATE	293.12 *	288.62 (4"), 288.62 (4")	288.52 (18")	N 542499.55 E 1366073.73	3'	MOD. K INLET	SEE SHEET C-26
H513 R-4A	PRIVATE	293.60 *	288.10 (4"), 288.10 (4")	288.00 (15")	N 542360.78 E 1366707.35	3'	MOD. K INLET	SEE SHEET C-26
H513 R-4B	PRIVATE	293.60 *	288.10 (4"), 288.10 (4")	288.00 (15")	N 542209.35 E 1366744.04	3'	MOD. K INLET	SEE SHEET C-26
H513 R-5	PRIVATE	291.61 *	285.59 (4"), 285.59 (4")	285.49 (15")	N 542006.68 E 1366793.18	3'	MOD. K INLET	SEE SHEET C-26
H513 R-6	PRIVATE	291.98 *	286.36 (4"), 286.36 (4")	285.26 (24")	N 541964.68 E 1366638.09	3'	MOD. K INLET	SEE SHEET C-26
H513 R-7	PRIVATE	288.00 *	282.75 (4"), 282.75 (4")	282.65 (18")	N 542458.87 E 1365985.75	3'	MOD. K INLET	SEE SHEET C-26
H513 R-8	PRIVATE	286.20 *	279.75 (4")	279.65 (24")	N 542428.71 E 1365712.00	3'	MOD. K INLET	SEE SHEET C-26
H513 R-9	PRIVATE	266.15	–	258.00 (60")	N 541727.75 E 1366046.30	–	RISER STRUCTURE	SEE SHEET C-26
H513 R-10	PRIVATE	266.00	278.74 (24")	278.64 (24")	N 541921.18 E 1365862.47	–	RISER STRUCTURE	SEE SHEET C-26
H513 R-11	PRIVATE	292.68 *	282.74 (24"), 287.25 (4")	282.64 (24")	N 541940.72 E 1365867.23	3'	MOD. K INLET	SEE SHEET C-26
H513 E-1	PRIVATE	264.46	–	261.90 (30")	N 542049.72 E 1365973.91	30"	CONC. END SECTION	D - 5.51
H513 E-2	PRIVATE	285.12	–	283.00 (24")	N 542474.99 E 1365788.89	24"	CONC. END SECTION	D - 5.51
H513 E-3	PRIVATE	287.53	–	286.00 (18")	N 542402.89 E 1365988.50	18"	CONC. END SECTION	D - 5.51
H513 E-4	PRIVATE	266.34	–	262.80 (42")	N 541892.78 E 1366159.37	42"	CONC. END SECTION	D - 5.51
H513 E-5	PRIVATE	282.80	–	279.30 (24")	N 542430.12 E 1365672.94	24"	TYPE 'A' HEADWALL	D - 5.11
H513 E-6	PRIVATE	263.00	–	258.50 (48")	N 541861.41 E 1365851.45	48"	TYPE 'C' HEADWALL	D - 5.21
H513 E-7	PRIVATE	263.40	–	257.40 (60")	N 541708.31 E 1366003.88	60"	TYPE 'C' HEADWALL	D - 5.21
H513 E-8	PRIVATE	263.31	–	262.00 (15")	N 542035.42 E 1365796.89	15"	CONC. END SECTION	D - 5.51

*- DENOTES GRATE ELEVATION

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HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

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IAC CD REVIEW 8 OCTOBER 19
BUILDING PERMIT 7 JANUARY 20
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STORM DRAIN PROFILES, STRUCTURE SCHEDULE (SITE)

C-40

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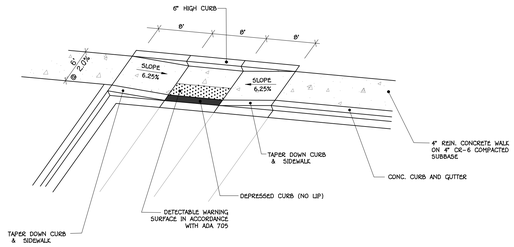
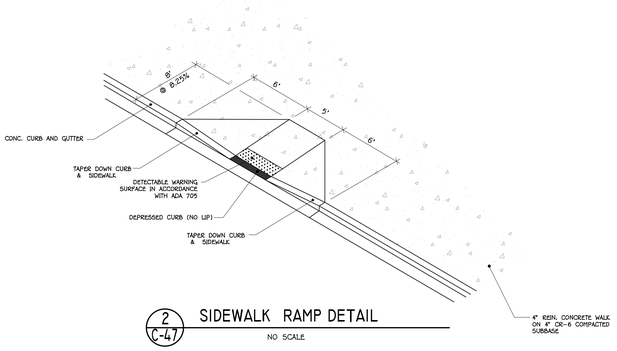


1 C-47 SIDEWALK RAMP DETAIL

NO SCALE



2 C-47 SIDEWALK RAMP DETAIL

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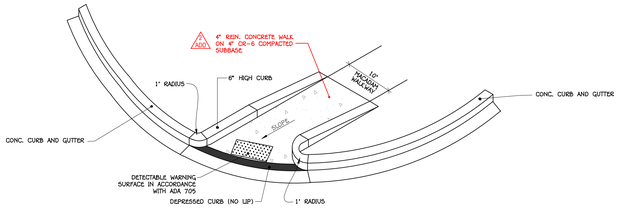

3 C-47 SIDEWALK RAMP DETAIL

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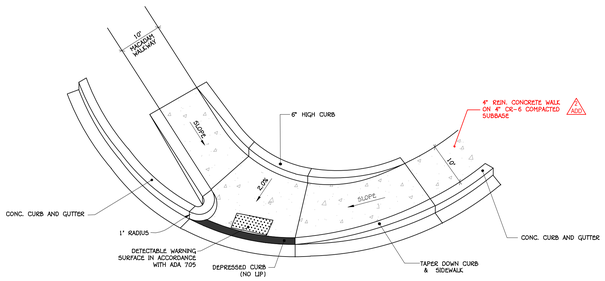

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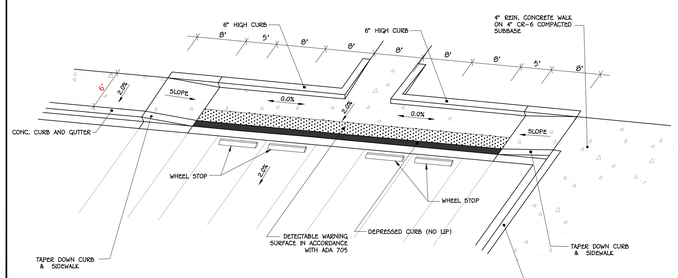

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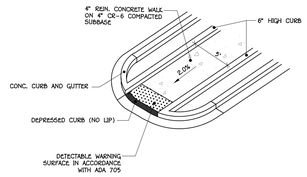

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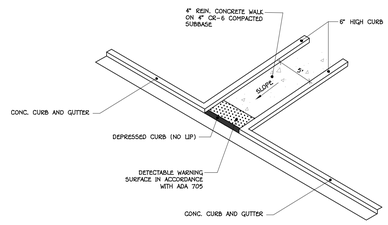

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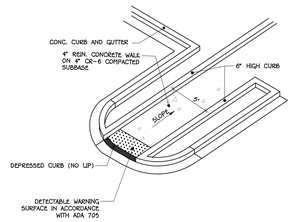

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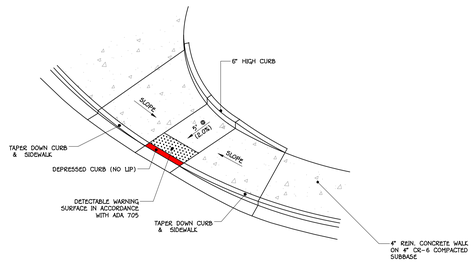

9 C-47 SIDEWALK RAMP DETAIL

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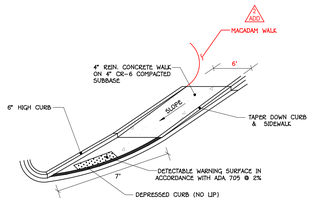

10 C-47 SIDEWALK RAMP DETAIL

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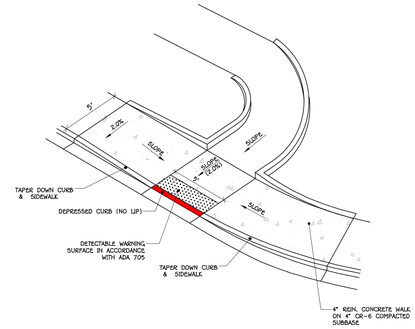

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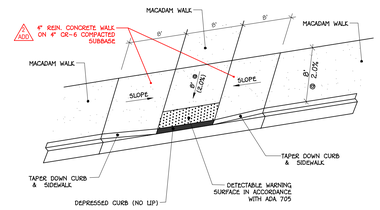

12 C-47 SIDEWALK RAMP DETAIL

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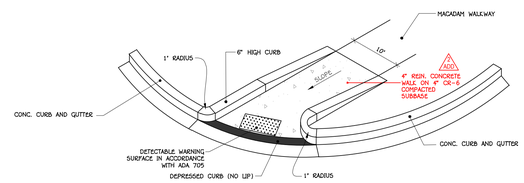

13 C-47 SIDEWALK RAMP DETAIL

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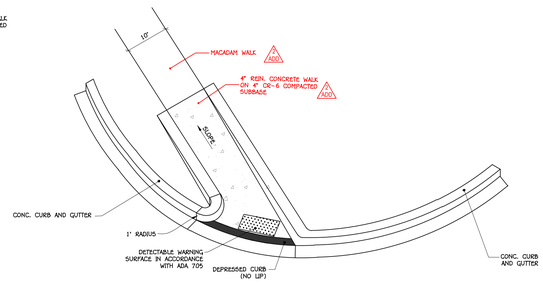

14 C-47 SIDEWALK RAMP DETAIL

NO SCALE

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STATE OF MARYLAND
CHARLES J. CARVER, JR.
No. 13281
PROFESSIONAL ENGINEER

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HANDICAP RAMP DETAILS

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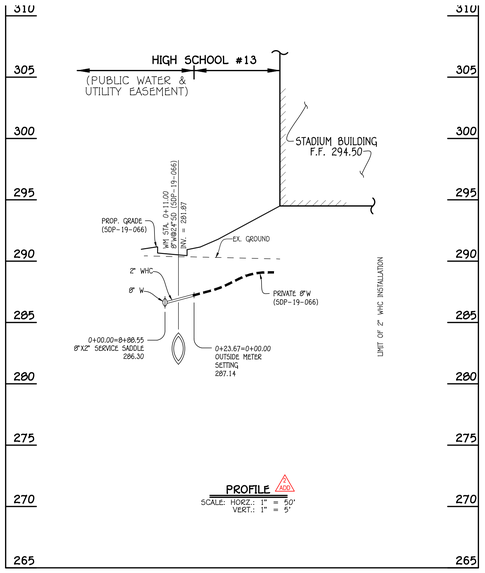
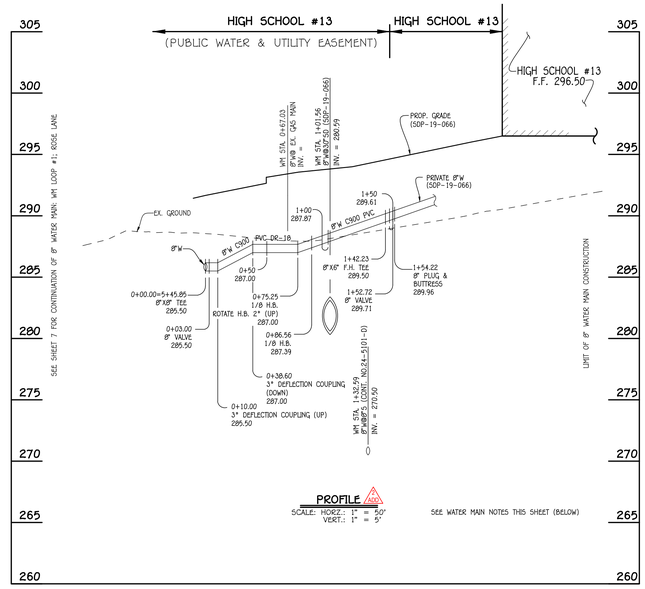
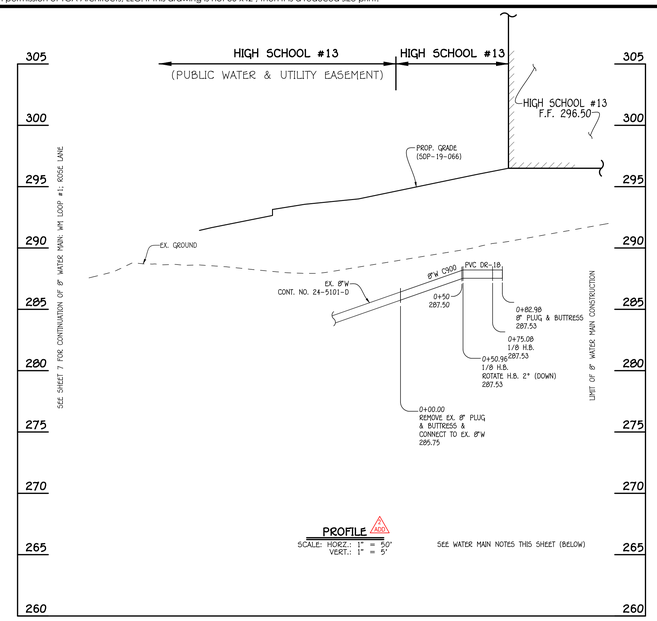


2" WHC: TO STADIUM BUILDING



8" WATER MAIN: TO HIGH SCHOOL



8" WATER MAIN: TO HIGH SCHOOL

W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN: TO HIGH SCHOOL			
0+00.00	8"X8" TEE	542,253.48	1,366,056.81
0+03.00	8" VALVE	542,250.56	1,366,057.52
0+10.00	3" DEFLECTION COUPLING (UP)	542,243.76	1,366,059.16
0+38.60	3" DEFLECTION COUPLING (DOWN)	542,215.96	1,366,065.90
0+75.25	1/8 H.B. (ROTATE H.B. 2" UP)	542,180.35	1,366,074.53
0+86.56	1/8 H.B.	542,174.46	1,366,084.17
1+42.23	8"X6" FH TEE	542,187.57	1,366,138.29
1+48.72	8" VALVE	542,189.10	1,366,144.60
1+53.97	8" PLUG & BUTTRESS	542,190.33	1,366,149.70

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STATE OF MARYLAND
CHARLES J. CARTER
No. 21288
PROFESSIONAL ENGINEER

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HIGH SCHOOL #13
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PRIVATE WATER PROFILES & CHARTS

C-72

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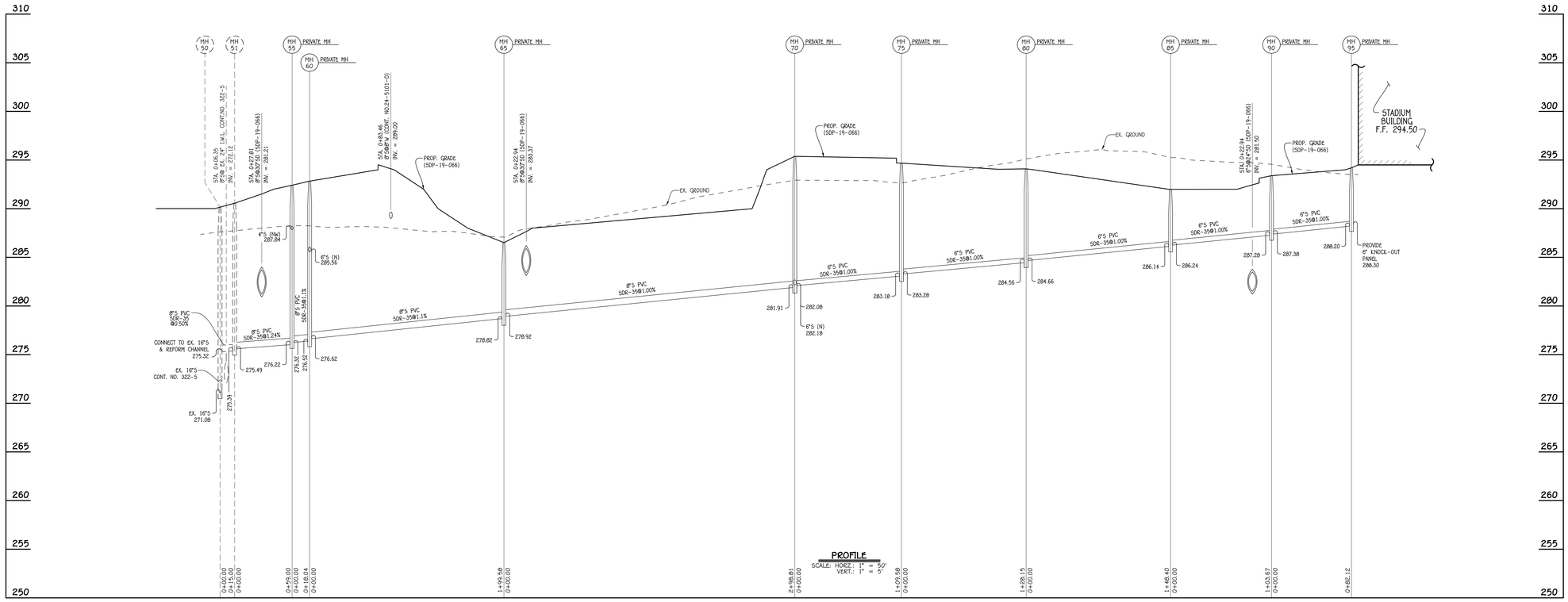
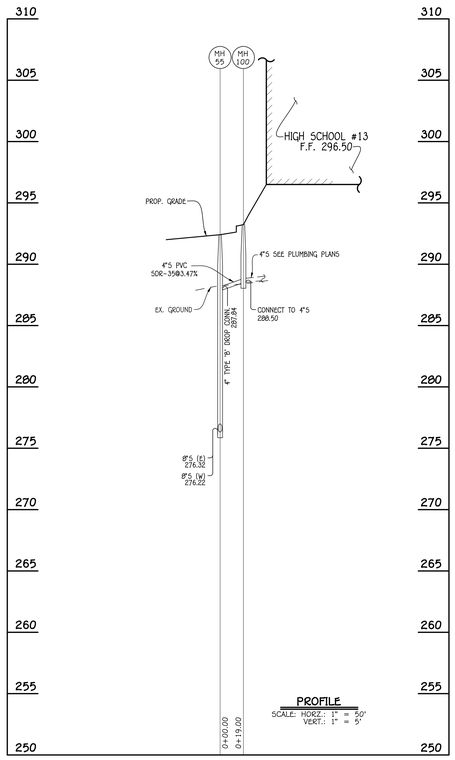
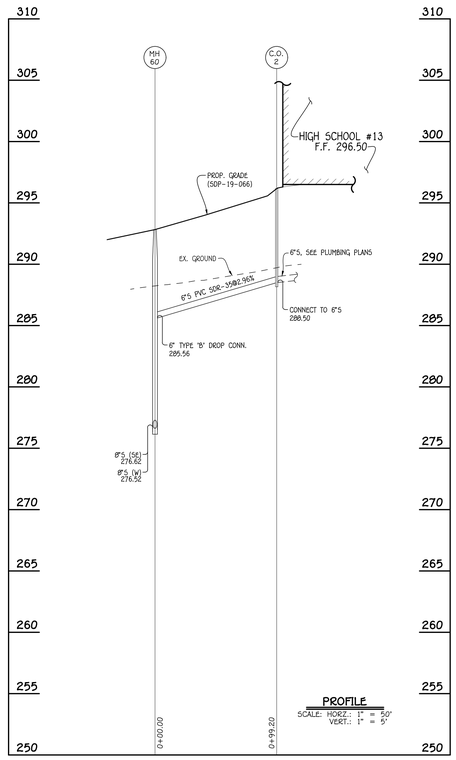


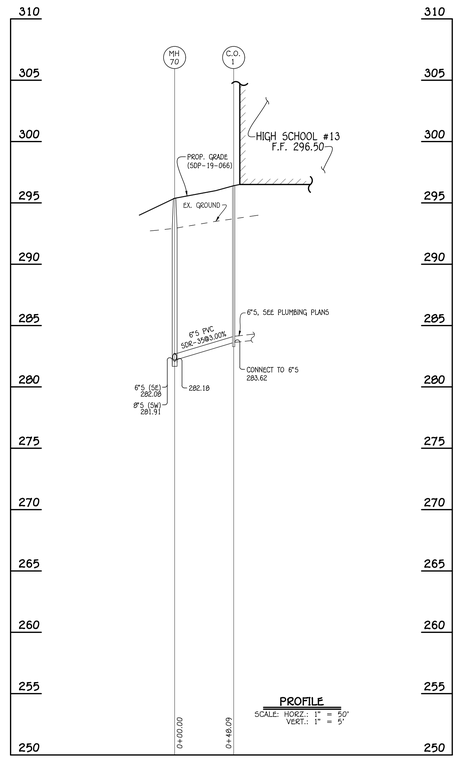
SEWER MAIN: TO HIGH SCHOOL BUILDING



4" SEWER MAIN: TO HIGH SCHOOL BUILDING



6" SEWER MAIN: TO HIGH SCHOOL BUILDING



6" SEWER MAIN: TO HIGH SCHOOL BUILDING

MANHOLE TABULATION CHART

NO.	NORTHING	EASTING	RIM ELEVATION
55	542,277.59	1,366,093.56	292.41
60	542,265.94	1,366,107.33	292.83
65	542,071.97	1,366,154.33	286.51
70	542,142.33	1,366,444.74	295.38
75	542,035.83	1,366,470.54	394.68
80	542,066.01	1,366,595.09	294.09
85	542,027.84	1,366,738.49	291.99
90	541,927.09	1,366,762.90	293.39
95	541,886.80	1,366,834.46	294.20
100	542,292.10	1,366,105.83	293.23

NOTE: SET MH RIMS FLUSH W/PROPOSED GRADE.

CLEAN-OUT TABULATION CHART

NO.	NORTHING	EASTING	RIM ELEVATION
1	542,185.71	1,366,465.50	296.40
2	542,289.30	1,366,203.74	296.20

NOTE: SET CLEAN-OUT TOPS FLUSH W/PROPOSED GRADE.

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STATE OF MARYLAND
CHARLES J. CARTER
No. 13280
PROFESSIONAL ENGINEER

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revisions

ADD. 2 — ADDENDUM NO. 2 11 FEBRUARY 20

BID AND CONSTRUCTION 7 JANUARY 20

PRIVATE SEWER PROFILES & CHARTS

ADD. 2

C-79

ADD. 2

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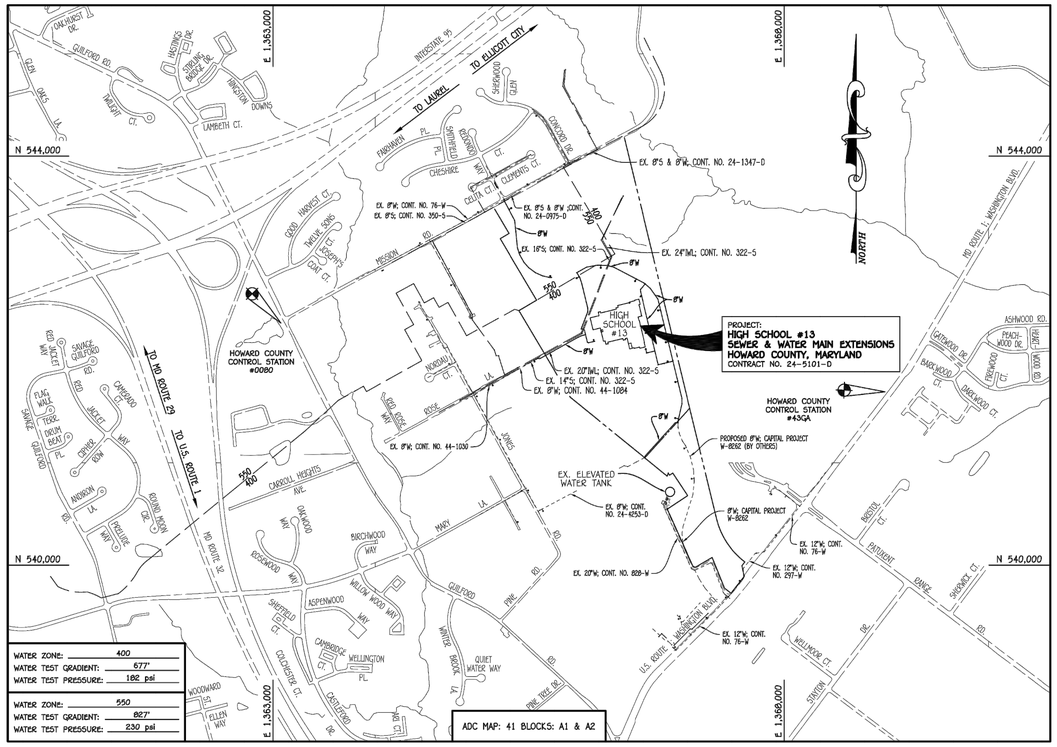
QUANTITIES

ITEM	ESTIMATED	AS-BUILT QUANTITIES	AS-BUILT TYPE	AS-BUILT SUPPLIER
8"S; PVC; SDR-35	15 L.F.			
MANHOLES	2 EACH			
8"W; C900 PVC DR-18	6,038 L.F.			
6"W; C900 PVC DR-18	381 L.F.			
2" WHC	24 L.F.			
8"X2" SADDLE SERVICE	1 EACH			
8"X8" TAPPING SLEEVE	2 EACH			
8"X8" TEE	7 EACH			
8"X6" FJL TEE	15 EACH			
8" TAPPING VALVE	2 EACH			
8" VALVE	18 EACH			
6" VALVE	15 EACH			
8" PLUG & BUTTRESS	3 EACH			
1/8 BEND	8 EACH			
1/16 BEND	5 EACH			
1/32 BEND	23 EACH			
1" DEFLECTION COUPLING	17 EACH			
2" DEFLECTION COUPLING	10 EACH			
3" DEFLECTION COUPLING	27 EACH			
CONTINUITY TEST STATION	15 EACH			
FIRE HYDRANTS	15 EACH			
NAME OF UTILITY CONTRACTOR:				
SURVEY & DRAFTING DIVISION AS-BUILT DATE:				

BENCHMARK INFORMATION

B.M.#1 – HOWARD COUNTY CONTROL STATION #0080 – HORIZONTAL – NA'83)
(LOCATED ALONG THE WEST SIDE OF GUILFORD ROAD, APPROX. 19.5' SOUTHWEST OF POLE NUMBER 271362)
N 542,366.884
E 1,363,076.043
ELEVATION = 282.408 – VERTICAL – (NAVD '88)

B.M.#2 – HOWARD COUNTY CONTROL STATION #43GA – HORIZONTAL – (NAD '83)
(LOCATED ALONG WASHINGTON BLVD., APPROX. 61.2' EAST OF POLE NO. 334747)
N 541,797.033
E 1,369,199.968
ELEVATION = 240.967 – VERTICAL – (NAVD '88)



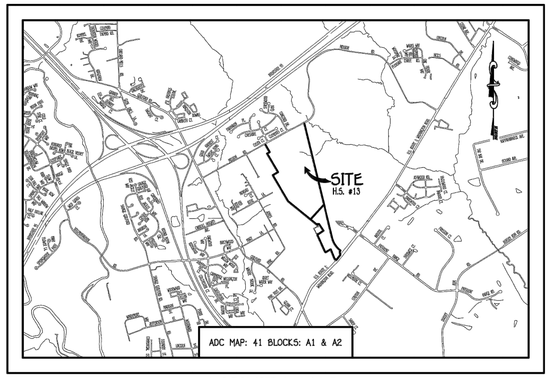
WATER ZONE:	400
WATER TEST GRADIENT:	677'
WATER TEST PRESSURE:	182 psi
WATER ZONE:	550
WATER TEST GRADIENT:	827'
WATER TEST PRESSURE:	230 psi

TYPE OF BUILDING:	NEW HIGH SCHOOL
NUMBER OF PARCELS:	1
SEWER SHED:	LITTLE PATUXENT
TREATMENT PLANT:	LITTLE PATUXENT RECLAMATION PLANT SAVAGE, MARYLAND

LOCATION MAP

SCALE: 1" = 600'

PLAN REFERENCE NUMBERS:
F-19-086 (ROAD & RECORD PLAT)
SDP-19-068
ECP-19-026



VICINITY MAP

SCALE: 1" = 2000'

GENERAL NOTES

PART A
1. APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
2. TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON OR ABOUT OCTOBER, 2018 BY FISHER, COLLINS & CARTER, INC.
3. HORIZONTAL AND VERTICAL SURVEY CONTROLS:
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/91' AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 0080 & NO. 43GA.
ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS.
4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
5. CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF THE ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
6. FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
7. WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
8. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
AT&T
BGE (CONTRACTOR SERVICES) 410-637-8713
BGE (EMERGENCY) 410-685-0123
BUREAU OF UTILITIES 410-313-4900
COLONIAL PIPELINE CO 410-795-1390
MISS UTILITY 1-800-257-7777
STATE HIGHWAY ADMINISTRATION 410-531-5533
VERIZON . . . . . 1-800-743-0033 / 410-224-9210
9. TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
10. CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE CONSTRUCTION OF THE MAIN.
11. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)-313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.

PART B: WATER MAIN GENERAL NOTES
1. ALL WATER MAINS SHALL BE AWWA C900 PVC; DR-14.
2. TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-0" OF COVER UNLESS OTHERWISE NOTED.
3. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
4. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
5. FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1009 OF THE STANDARD SPECIFICATIONS.
6. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
7. TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL D.I.P. AND PVC WATER MAINS IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL.
8. FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.
9. UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SEVENTEEN (17) POUND SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSES. ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON.
10. PROPER ASSEMBLY OF GASKETED PVC PIPE JOINTS: THE MANUFACTURER'S INSERTION LINE OF GASKETED PVC PIPE JOINTS INDICATES THE MAXIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. AFTER ASSEMBLY OF THE JOINT, THE INSERTION LINE SHALL REMAIN VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE THE MAXIMUM AND MINIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. THE CONTRACTOR SHALL NOT OVER INSERT OR OVER HOME THE SPIGOT INTO THE BELL OF PVC PIPE.
11. ALL CHANGES IN HORIZONTAL OR VERTICAL DIRECTION OF PVC WATER PIPE SHALL BE MADE WITH STANDARD BENDS, 5-DEGREE SWEEPS OR HIGH DEFLECTION(HD) COUPLINGS. NO BENDING OF THE PIPE OR DEFLECTING OF PVC PIPE JOINTS IS PERMITTED. WHERE HIGH DEFLECTION COUPLINGS OR 5-DEGREE SWEEPS ARE PERMITTED, THE CONTRACTOR SHALL PROVIDE ONE FULL PIPE LENGTH (20 FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP, TAKING CARE NOT TO USE COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING.

PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL OF 3-DEGREES (1 1/2-DEGREE ON EITHER END OF THE COUPLING), SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C905, SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTEED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL.

FIVE DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR-18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (IPEX) BLUE BRUTE DR-18 OR EQUAL.

12. WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C900 PVC PIPELINES, THE CONTRACTOR SHALL INSERT DEVICES FOR THE PREVENTION OF OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH ON BELL JOINT ON BOTH SIDES OF THE HIGH DEFLECTION COUPLINGS AND 5-DEGREE SWEEPS. BELL STOPS SHALL BE PLACED AT THE PROPER INSERTION LINE FOR THE FITTING. THE BELL STOP SHALL BE MANUFACTURED OF DUCTILE IRON AND INCORPORATE AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELL STOPS SHALL BE SEGRES 5000 MEGA-STOP, AS MANUFACTURED BY EBAA IRON, INC. OR APPROVED EQUAL.

PART C: SEWER MAIN GENERAL NOTES
1. ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
2. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
3. FORCE MAINS SHALL BE D.I.P. ONLY.
4. MANHOLES SHOWN WITH 12" AND 18" WALLS ARE FOR BRICK MANHOLES ONLY.
5. MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
6. HOUSE(S) WITH THE SYMBOL "CALS" INDICATES THAT CELLAR CANNOT BE SERVED.

DEVELOPER'S CERTIFICATION

" I/WE HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

SIGNATURE OF DEVELOPER _____ DATE _____

ENGINEER'S CERTIFICATION

" I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF ENGINEER _____ DATE _____

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE HOWARD COUNTY DESIGN MANUAL – VOLUME IV: STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION AND AS SHOWN ON THE ROAD CONSTRUCTION PLAN, F-19-086 & AS SHOWN ON THESE PLANS.

SIGNATURE OF DEVELOPER _____ DATE _____

GP-20-

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY HOWARD SOIL CONSERVATION DISTRICT.

APPROVED:

HOWARD SOIL CONSERVATION DISTRICT _____ DATE _____

LEGEND

SYMBOL	DESCRIPTION
	EX. WATER MAIN
	EX. SEWER MAIN
	EX. SEWER MANHOLE
	EX. SEWER, WATER & UTILITY EASEMENT
	EX. FIRE HYDRANT
	EX. VALVE
	PROP. WATER MAIN
	PROP. SEWER MAIN
	PROP. SEWER MANHOLE
	PROP. SEWER, WATER & UTILITY EASEMENT
	PROP. WHC
	PROP. SHC
	PROP. FIRE HYDRANT
	PROP. VALVE

CONTRACT NO. 24-5101-D
HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

CONTRACT PURCHASER
HOWARD COUNTY MARYLAND
3430 COURT HOUSE DRIVE
GEORGE HOWARD BUILDING
ELLICOT CITY, MARYLAND 21043
ATTN: MR. JAMES IRVIN
410-313-3300

DEVELOPER
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
9020 MENDENHALL COURT
SUITE "C"
COLUMBIA, MARYLAND 21045
ATTN: MR. DAN LUBELEY
410-313-6805

0' 50' 100' 200'
SCALE: 1" = 50'

CONTRACT NO. 24-5101-D
HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES _____ DATE _____

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION _____ DATE _____

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE IS 7/16/20.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK – 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 – 2855

#12043
STATE OF MARYLAND
PAUL W. KREBBEL
No. 12043
PROFESSIONAL ENGINEER
PAUL W. KREBBEL

DESIGNED BY : D.T.A./J.G.J.				
DRAWN BY : D.T.A./J.G.J.				
CHECKED BY : D.T.A./J.G.J.				
DATE : FEBRUARY, 2020	BY	NO.	REVISION	DATE

SEWER & WATER MAIN EXTENSIONS
TITLE SHEET

600' SCALE MAP NO. 42/43 BLOCK NO. 24/19
F.C.C. WORK ORDER NO. 10027
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 24-5101-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 1 OF 10

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(410) 461 – 2855

STATE OF MARYLAND
PAUL W. KREBBEL
No. 12043
PROFESSIONAL ENGINEER

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

ADDENDUM NO. 2
11 FEBRUARY 20

BID AND CONSTRUCTION
7 JANUARY 20

SEWER AND WATER MAIN EXTENSIONS TITLE SHEET

C-80

80 OF 91
PROJECT NO.

I:\2010\10027\Engineering\Dwgs\10027-4003 Sewer & Water Contract No. 44-5101-D\Finals\10027-4003 sewer & water contract plan.dwg

I:\2010\10027\Engineering\Dwgs\10027 CD-80-89 WATER AND SEWER.dwg, CD-80, 2/7/2020 4:35:48 PM, 1:1

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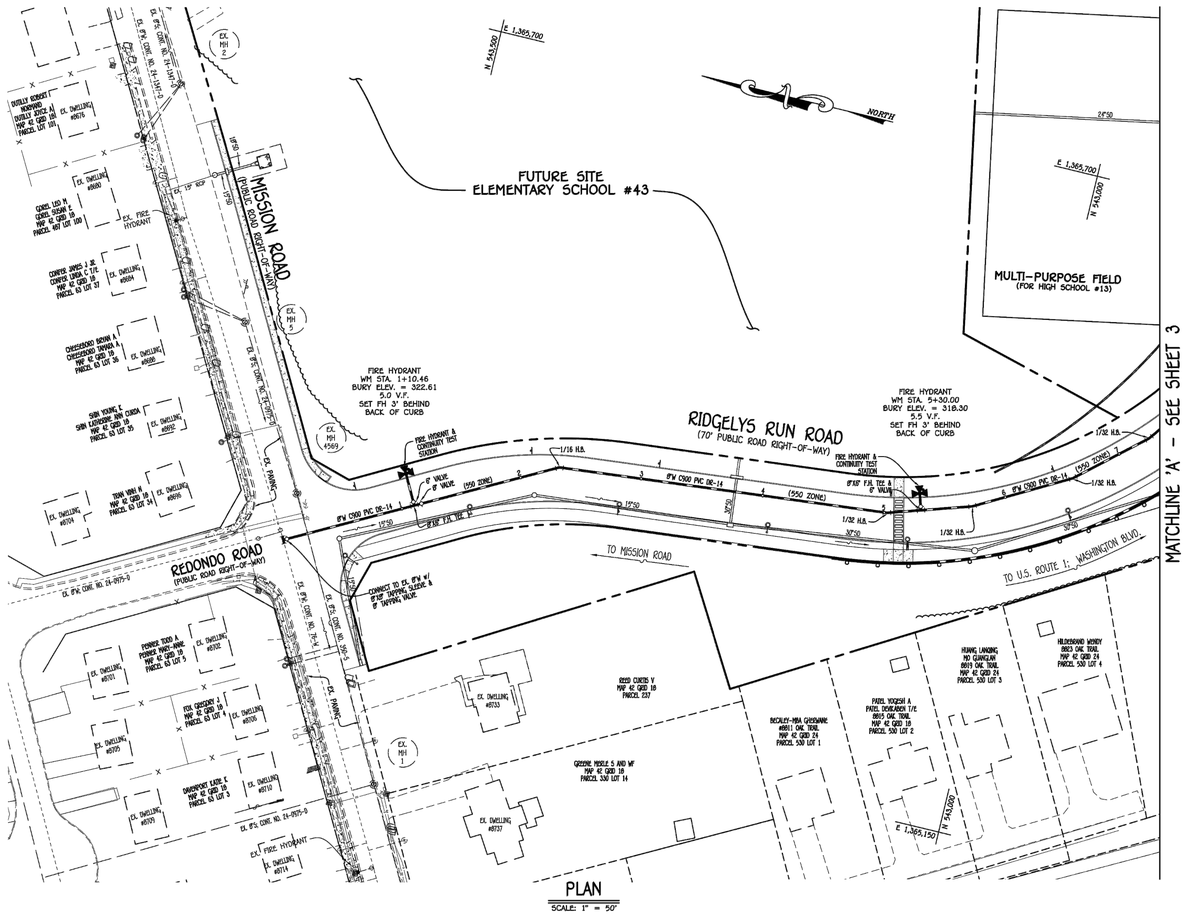

PLAN
SCALE: 1" = 50'

0' 50' 100' 200'
SCALE: 1" = 50'

CONTRACT NO. 24-5101-D
HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE IS 7/16/20.	#12043 STATE OF MARYLAND PAUL W. KRIEBEL PROFESSIONAL ENGINEER	DESIGNED BY : D.T.A./J.G.J. DRAWN BY : D.T.A./J.G.J. CHECKED BY : D.T.A./J.G.J. DATE : FEBRUARY, 2020	BY	NO.	REVISION	DATE	SEWER & WATER MAIN EXTENSIONS PLAN 600' SCALE MAP NO. 42/43 BLOCK NO. 24/19 F.C.C. WORK ORDER NO. 10027 FILE NAME : SEWER & WATER MAIN EXTENSION PLAN	HIGH SCHOOL #13 SEWER & WATER MAIN EXTENSIONS CONTRACT NO. 24-5101-D SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 2 OF 10
CHIEF, BUREAU OF UTILITIES DATE	CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2855									

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STATE OF MARYLAND
PAUL W. KRIEBEL
No. 12043
PROFESSIONAL ENGINEER

FISHER, COLLINS & CARTER, INC.
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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

ADDENDUM NO. 2
11 FEBRUARY 20

BID AND CONSTRUCTION
7 JANUARY 20

SEWER AND WATER MAIN EXTENSIONS PLAN
A ADD.

C-81
A ADD.

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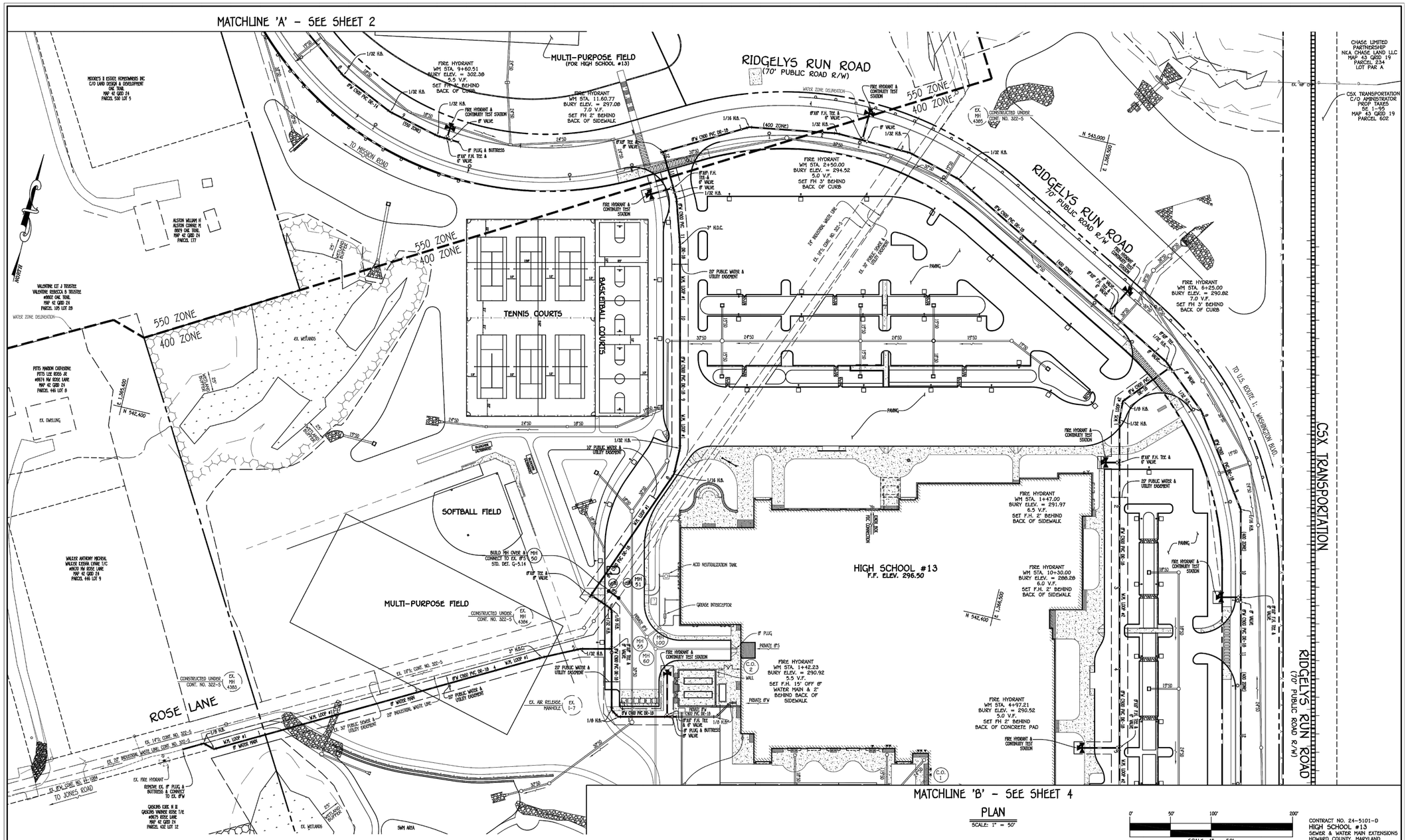

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES — DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

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ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

#12043
STATE OF MARYLAND — PAUL WALTER CORBEL — No. 12043 — PROFESSIONAL ENGINEER
PAUL W. CORBEL

DESIGNED BY :	D.T.A./J.G.J.
DRAWN BY :	D.T.A./J.G.J.
CHECKED BY :	D.T.A./J.G.J.
DATE :	FEBRUARY, 2020

BY	NO.	REVISION	DATE

SEWER & WATER MAIN EXTENSIONS
PLAN

600' SCALE MAP NO. 42/43 BLOCK NO. 24/19
F.C.C. WORK ORDER NO. 10027
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 24-5101-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 3 OF 10

CONTRACT NO. 24-5101-D
HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

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STATE OF MARYLAND — JAMES J. CROSTON — No. 43281 — PROFESSIONAL ENGINEER

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HIGH SCHOOL #13
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HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

ADDENDUM NO. 2
11 FEBRUARY 20

BID AND CONSTRUCTION
7 JANUARY 20

SEWER AND WATER MAIN EXTENSIONS PLAN

C-82

82 OF 91
PROJECT NO.

I:\2010\10027\Engineering\Dwgs\10027-4003 Sewer & Water Contract No. 44-5101-D\Finals\10027-4003 sewer & water contract plan.dwg

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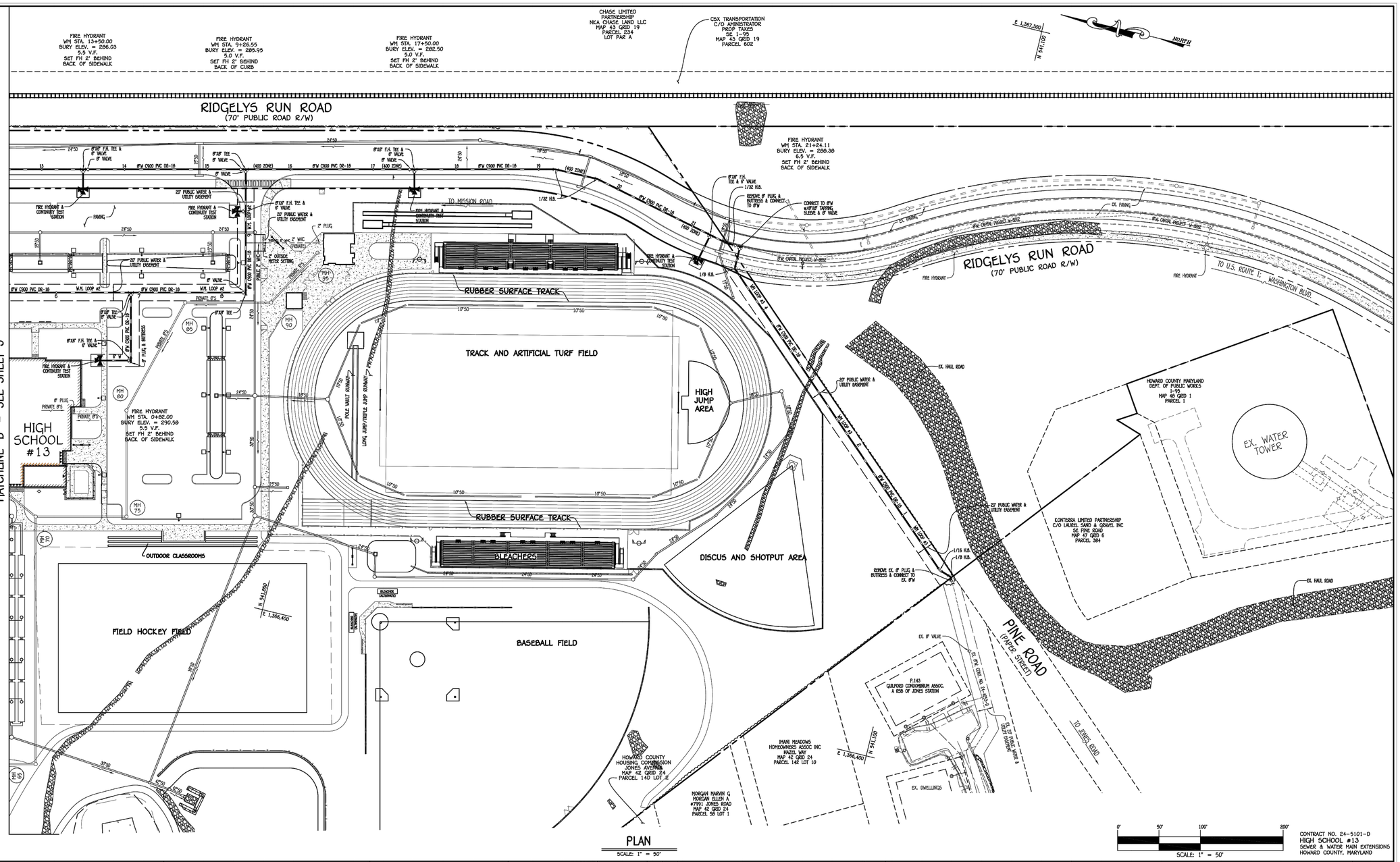

PLAN
SCALE: 1" = 50'

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE 5 7/16/20.	#12043 STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER PAUL W. KRIEBEL	DESIGNED BY : D.T.A./J.G.J.				SEWER & WATER MAIN EXTENSIONS PLAN	HIGH SCHOOL #13 SEWER & WATER MAIN EXTENSIONS CONTRACT NO. 24-5101-D SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
		FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2855		DRAWN BY : D.T.A./J.G.J.				600' SCALE MAP NO. 42/43 BLOCK NO. 24/19		
				CHECKED BY : D.T.A./J.G.J.				F.C.C. WORK ORDER NO. 10027		SHEET 4 OF 10
CHIEF, BUREAU OF UTILITIES DATE	CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE			DATE : FEBRUARY, 2020	BY	NO.	REVISION	DATE	FILE NAME : SEWER & WATER MAIN EXTENSION PLAN	

CONTRACT NO. 24-5101-D
HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

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STATE OF MARYLAND PROFESSIONAL ENGINEER No. 12043

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ADDENDUM NO. 2 11 FEBRUARY 20
BID AND CONSTRUCTION 7 JANUARY 20

SEWER AND WATER MAIN EXTENSIONS PLAN

C-83

83 OF 91
PROJECT NO.

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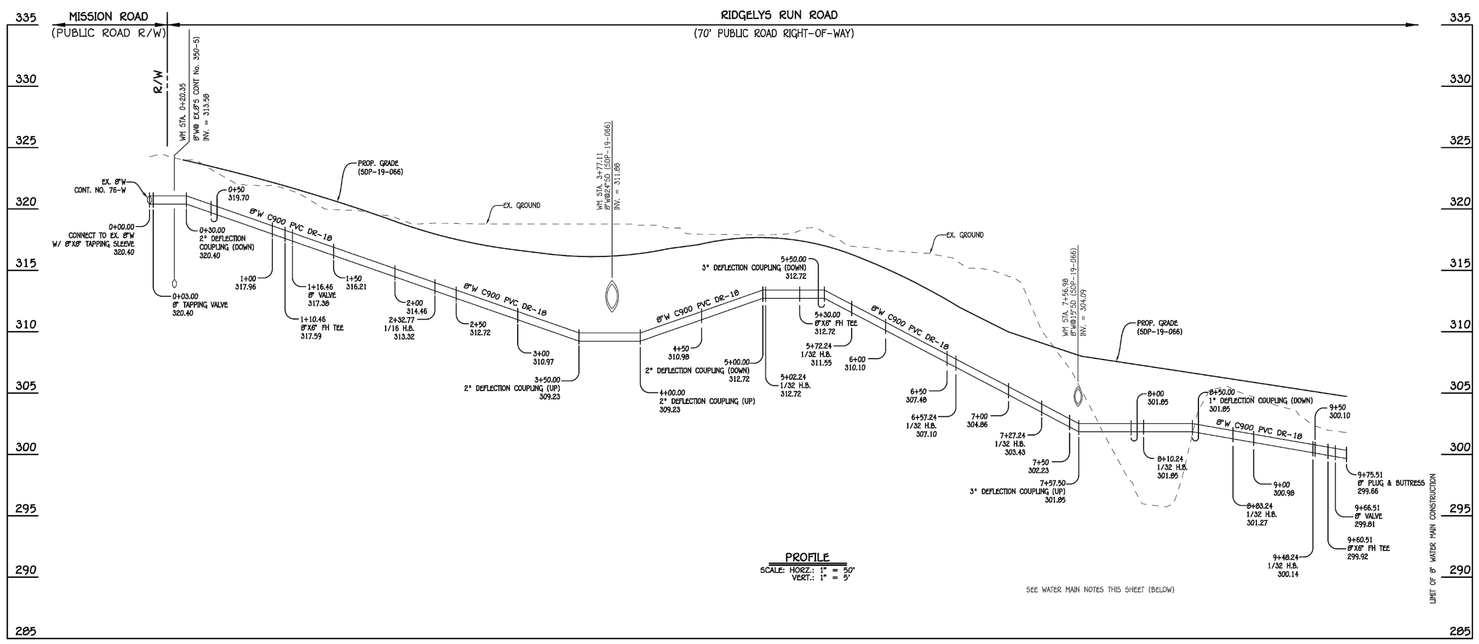

8" WATER MAIN: RIDGELYS RUN ROAD: FROM MISSION ROAD

WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN: RIDGELYS RUN ROAD			
0+00.00	8"X8" TAPPING SLEEVE	543,575.24	1,365,255.63
0+03.00	8" TAPPING VALVE	543,572.60	1,365,257.05
0+30.00	2" DEFLECTION COUPLING (DOWN)	543,548.84	1,365,269.87
1+10.46	8"X6" FH TEE	543,478.01	1,365,308.06
1+16.46	8" VALVE	543,472.73	1,365,310.90
2+32.77	1/16 H.B.	543,370.34	1,365,366.08
3+50.00	2" DEFLECTION COUPLING (UP)	543,253.69	1,365,377.78
4+00.00	2" DEFLECTION COUPLING (UP)	543,203.94	1,365,382.76
5+00.00	2" DEFLECTION COUPLING (DOWN)	543,104.44	1,365,392.74
5+02.24	1/32 H.B.	543,102.22	1,365,392.96
5+30.00	8"X6" FH TEE	543,075.80	1,365,401.50
5+50.00	3" DEFLECTION COUPLING (DOWN)	543,056.78	1,365,407.67
5+72.24	1/32 H.B.	543,035.63	1,365,414.52
6+57.24	1/32 H.B.	542,951.48	1,365,456.09
7+27.24	1/32 H.B. (ESTIMATE 11.25" DOWN)	542,908.80	1,365,502.18
7+57.50	3" DEFLECTION COUPLING (UP)	542,890.76	1,365,526.49
7+76.98	1" DEFLECTION COUPLING (DOWN)	542,879.16	1,365,542.13
8+10.24	1/32 H.B.	542,859.34	1,365,568.84
8+50.00	1" DEFLECTION COUPLING (DOWN)	542,843.07	1,365,605.12
8+83.24	1/32 H.B.	542,829.47	1,365,635.45
9+48.24	1/32 H.B.	542,814.58	1,365,698.72
9+60.51	8"X6" FH TEE	542,813.92	1,365,710.97
9+66.51	8" VALVE	542,813.60	1,365,716.96
9+75.51	8" PLUG & BUTTRESS	542,813.11	1,365,725.95

WATER MAIN NOTES:

1. ALL WATER MAINS SHALL BE AWWA C900 PVC PIPE; DR-18.
2. ALL PIPE BEDDING, TRACERE WIRE, LOCATING TAPE AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV - WATER AND SEWER STANDARDS FOR AWWA C900 PVC WATER PIPE INSTALLATION.
3. DEFLECTION COUPLINGS SHALL BE CERTAIN-TEED PVC HIGH DEFLECTION COUPLINGS.
4. ALL WATER HOUSE CONNECTIONS AND TAPS SHALL BE PERFORMED USING A SADDLE.

0' 50' 100' 200'
SCALE: 1" = 50'

CONTRACT NO. 24-5101-D
HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

#12043
STATE OF MARYLAND
PAUL W. KRIEBEL
No. 12043
PROFESSIONAL ENGINEER

DESIGNED BY : D.T.A./J.G.J.			
DRAWN BY : D.T.A./J.G.J.			
CHECKED BY : D.T.A./J.G.J.			
DATE : FEBRUARY, 2020	BY	NO.	REVISION	DATE

WATER MAIN EXTENSIONS
PROFILE, CHART & NOTES

600' SCALE MAP NO. 42/43 BLOCK NO. 24/19
F.C.C. WORK ORDER NO. 10027
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 24-5101-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 5 OF 10

tca|architects
13169 Generals Highway • Crownsville, Maryland 21032

STATE OF MARYLAND
PAUL W. KRIEBEL
No. 12043
PROFESSIONAL ENGINEER

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

ADD. ADDENDUM NO. 2
11 FEBRUARY 20

BID AND CONSTRUCTION
7 JANUARY 20

WATER MAIN PROFILE, CHART AND NOTES
ADD.

C-84
ADD.

84 OF 91
PROJECT NO.

I:\2010\10027\Engineering\Dwgs\10027 CD-88-89 WATER AND SEWER.dwg, CD-84, 2/7/2020 4:39:24 PM, 1:1

I:\2010\10027\Engineering\Dwgs\10027-4003 Sewer & Water Contract No. 44-5101-D\Final\10027-4003 sewer & water contract plan.dwg

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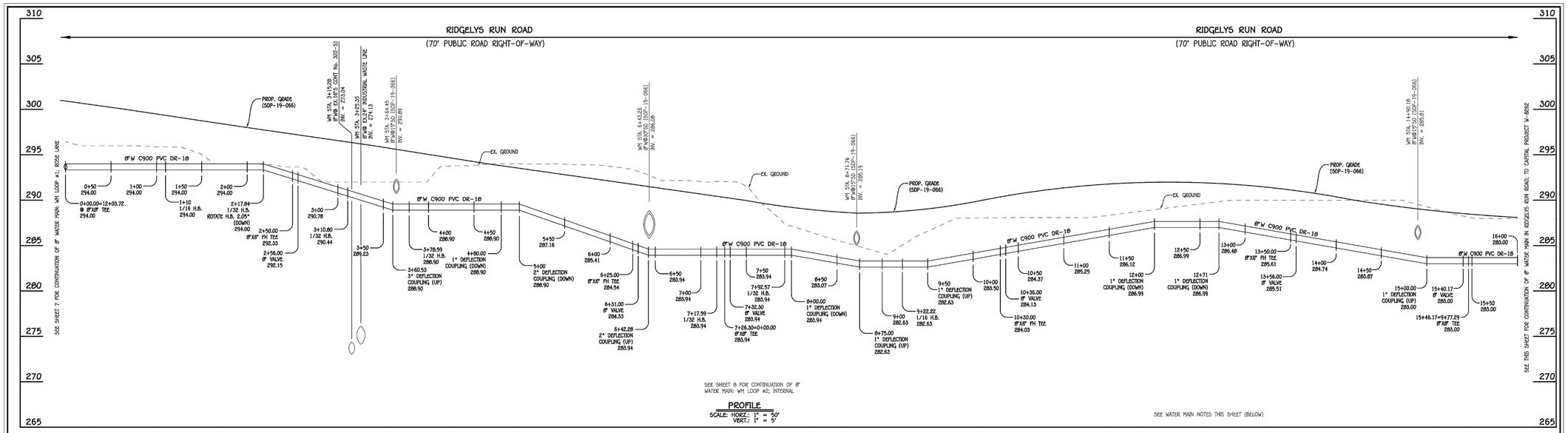
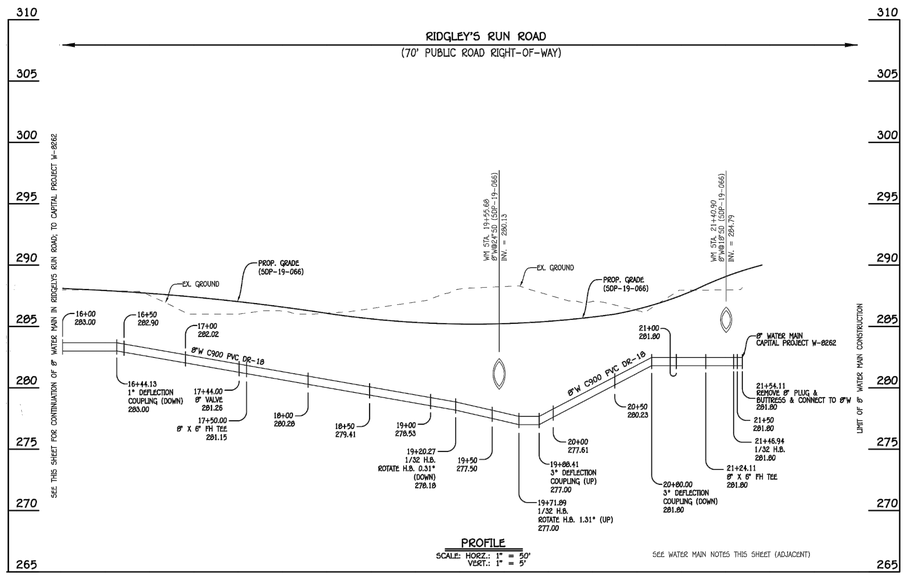


8" WATER MAIN: RIDGELYS RUN ROAD; TO CAPITAL PROJECT W-8262

SEE SHEET 8 FOR CONTINUATION OF 8" WATER MAIN: WM LOOP #2; INTERNAL



8" WATER MAIN: RIDGELYS RUN ROAD; TO CAPITAL PROJECT W-8262

WATER MAIN TABULATION CHART

W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN: RIDGELYS RUN ROAD; TO CAPITAL PROJECT W-8262			
0+00.00	8"X8" TEE	542,860.79	1,365,972.56
1+10.00	1/16 H.B.	542,915.07	1,366,068.24
2+17.84	1/32 H.B. (ROTATE H.B. 2.05° DOWN)	542,932.95	1,366,174.59
2+50.00	8"X6" FH TEE	542,932.22	1,366,206.74
2+56.00	8" VALVE	542,932.09	1,366,212.73
3+10.80	1/32 H.B.	542,930.84	1,366,267.52
3+60.53	3" DEFLECTION COUPLING (UP)	542,918.19	1,366,315.61
3+78.59	1/32 H.B.	542,913.59	1,366,333.08
5+00.00	2" DEFLECTION COUPLING (DOWN)	542,857.11	1,366,440.95
6+25.00	8"X6" FH TEE	542,798.97	1,366,551.20
6+31.00	8" VALVE	542,796.17	1,366,556.51
6+42.28	2" DEFLECTION COUPLING (UP)	542,790.93	1,366,566.50
7+17.59	1/32 H.B.	542,755.89	1,366,633.16
7+26.30	8"X8" TEE	542,750.19	1,366,639.75
7+32.30	8" VALVE	542,746.26	1,366,644.29
7+92.57	1/32 H.B.	542,706.82	1,366,689.86
8+00.00	1" DEFLECTION COUPLING (DOWN)	542,700.77	1,366,694.17
8+75.00	1" DEFLECTION COUPLING (UP)	542,639.64	1,366,737.62
9+22.22	1/16 H.B.	542,601.16	1,366,764.98
9+50.00	1" DEFLECTION COUPLING (UP)	542,574.16	1,366,771.52
10+30.00	8"X6" FH TEE	542,496.41	1,366,790.36
10+36.00	8" VALVE	542,490.58	1,366,791.77
12+00.00	1" DEFLECTION COUPLING (DOWN)	542,331.19	1,366,830.39
12+71.00	1" DEFLECTION COUPLING (DOWN)	542,282.59	1,366,842.17
13+50.00	8"X6" FH TEE	542,185.41	1,366,865.71
13+56.00	8" VALVE	542,179.57	1,366,867.13
15+00.00	1" DEFLECTION COUPLING (UP)	542,039.62	1,366,901.03
15+40.17	8" VALVE	542,000.58	1,366,910.49
15+46.17	8"X8" TEE	541,994.75	1,366,911.91
16+44.13	1" DEFLECTION COUPLING (DOWN)	541,899.55	1,366,934.97
17+44.00	8" VALVE	541,802.48	1,366,958.49
17+50.00	8"X6" FH TEE	541,796.65	1,366,959.90
19+20.27	1/32 H.B. (ROTATE H.B. 0.31° DOWN)	541,631.17	1,367,000.00
19+71.89	1/32 H.B. (ROTATE H.B. 1.31° UP)	541,579.56	1,367,000.57
19+80.41	3" DEFLECTION COUPLING (UP)	541,563.44	1,366,998.91
20+80.00	3" DEFLECTION COUPLING (DOWN)	541,474.12	1,366,976.65
21+24.11	8"X6" FH TEE	541,431.11	1,366,966.09
21+46.94	1/32 H.B.	541,408.84	1,366,961.84
21+54.11	CONNECT TO 8"W	541,401.67	1,366,961.83

WATER MAIN NOTES:

1. ALL WATER MAINS SHALL BE AWWA C900 PVC PIPE; DR-18.
2. ALL PIPE BEDDING, TRACER WIRE, LOCATING TAPE AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV – WATER AND SEWER STANDARDS FOR AWWA C900 PVC WATER PIPE INSTALLATION.
3. DEFLECTION COUPLINGS SHALL BE CERTAIN-TEED PVC HIGH DEFLECTION COUPLINGS.
4. ALL WATER HOUSE CONNECTIONS AND TAPS SHALL BE PERFORMED USING A SADDLE.

0' 50' 100' 200'
SCALE: 1" = 50'

CONTRACT NO. 24-5101-D
HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND	I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE IS 7/16/20.	#12043 STATE OF MARYLAND PAUL W. KRIEBEL REGISTERED PROFESSIONAL ENGINEER	DESIGNED BY : D.T.A./J.G.J.			
		FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTENNIAL SQUARE OFFICE PARK – 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042 (410) 461 – 2855	PAUL W. KRIEBEL	DRAWN BY : D.T.A./J.G.J.			
				CHECKED BY : D.T.A./J.G.J.			
CHIEF, BUREAU OF UTILITIES DATE	CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE			DATE : FEBRUARY, 2020	BY	NO.	REVISION DATE

WATER MAIN EXTENSIONS
PROFILES, CHARTS & NOTES

600' SCALE MAP NO. 42/43 BLOCK NO. 24/19
F.C.C. WORK ORDER NO. 10027
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 24-5101-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 6 OF 10

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FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK – 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 – 2855

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

1 ADDENDUM NO. 2 11 FEBRUARY 20

BID AND CONSTRUCTION 7 JANUARY 20

WATER MAIN EXTENSIONS PROFILES, CHARTS AND NOTES 1

C-85 1

85 OF 91
PROJECT NO.

I:\2010\10027\Engineering\Dwgs\10027 CD-80-89 WATER AND SEWER.dwg, CD-85, 2/7/2020 4:39:59 PM, 1:1
I:\2010\10027\Engineering\Dwgs\10027-4003 Sewer & Water Contract No. 44-5101-D\Finals\10027-4003 sewer & water contract plan.dwg

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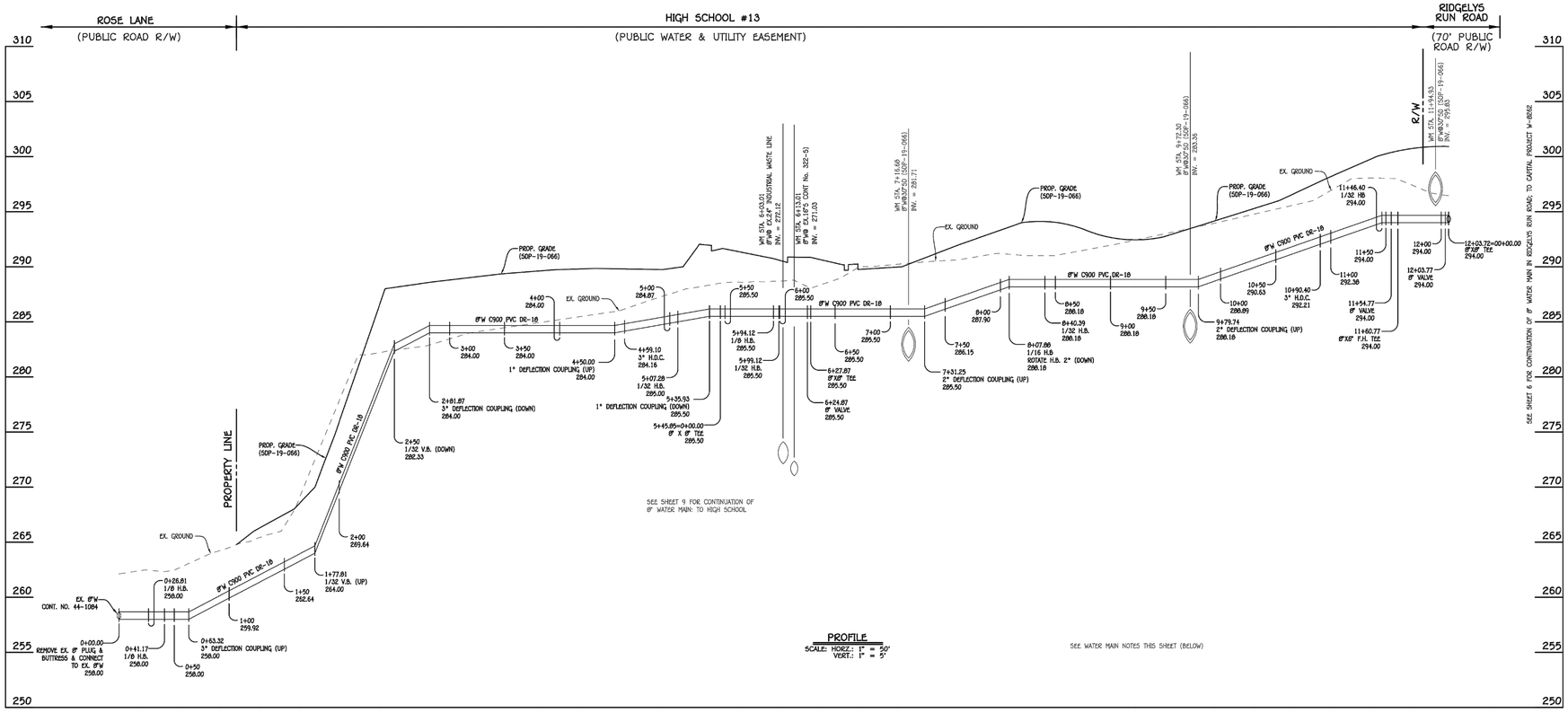

PROFILE
SCALE: HORIZ.: 1" = 50'
VERT.: 1" = 5'

SEE WATER MAIN NOTES THIS SHEET (BELOW)

8" WATER MAIN: WATER MAIN LOOP #1; ROSE LANE

WATER MAIN TABULATION CHART

W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN: WATER MAIN LOOP #1; ROSE LANE			
0+00.00	CONNECT TO EX. 8"W	542,009.18	1,365,572.28
0+26.81	1/8 H.B.	542,022.44	1,365,595.58
0+41.17	1/8 H.B.	542,018.60	1,365,609.42
0+63.32	3" DEFLECTION COUPLING (UP)	542,029.42	1,365,628.75
1+77.81	1/32 V.B. (UP)	542,095.31	1,365,728.67
2+50.00	1/32 V.B. (DOWN)	542,120.55	1,365,791.67
2+61.87	3" DEFLECTION COUPLING (DOWN)	542,136.11	1,365,819.49
4+50.00	1" DEFLECTION COUPLING (UP)	542,218.19	1,365,966.22
4+59.10	3" HOR. DEFLECTION COUPLING	542,222.63	1,365,974.16
5+07.28	1/32 H.B.	542,243.93	1,366,017.39
5+35.93	1" DEFLECTION COUPLING (DOWN)	542,250.67	1,366,045.23
5+47.84	8"X8" TEE	542,253.48	1,366,056.81
5+94.12	1/8 H.B.	542,298.46	1,366,045.91
5+99.12	1/32 H.B.	542,301.06	1,366,041.64
6+24.87	8" VALVE	542,310.22	1,366,017.57
6+27.87	8"X8" TEE	542,311.29	1,366,014.77
7+31.25	2" DEFLECTION COUPLING (UP)	542,407.90	1,366,051.54
8+07.88	1/16 H.B.	542,479.52	1,366,078.80
8+40.39	1/32 H.B.	542,512.03	1,366,078.50
9+79.74	2" DEFLECTION COUPLING (UP)	542,647.46	1,366,045.69
10+90.40	3" HOR. DEFLECTION COUPLING	542,755.01	1,366,019.84
11+46.40	1/32 H.B.	542,808.27	1,366,002.36
11+54.77	8" VALVE	542,815.56	1,365,998.22
11+60.77	8"X6" F.H. TEE	542820.78	1,365,995.26
12+03.77	8" VALVE	542,858.18	1,365,974.04
12+06.77	8"X8" TEE	542,860.79	1,365,972.56

WATER MAIN NOTES:
1. ALL WATER MAINS SHALL BE AWWA C900 PVC PIPE; DR-18.
2. ALL PIPE BEDDING, TRACER WIRE, LOCATING TAPE AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV - WATER AND SEWER STANDARDS FOR AWWA C900 PVC WATER PIPE INSTALLATION.
3. DEFLECTION COUPLINGS SHALL BE CERTAIN-TEED PVC HIGH DEFLECTION COUPLINGS.
4. ALL WATER HOUSE CONNECTIONS AND TAPS SHALL BE PERFORMED USING A SADDLE.

0' 50' 100' 200'
SCALE: 1" = 50'

CONTRACT NO. 24-5101-D
HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES — DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

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FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

#12043
STATE OF MARYLAND — PAUL WALTER EBERSEL — No. 12043 — PROFESSIONAL ENGINEER
PAUL W. EBERSEL

DESIGNED BY : D.T.A./J.G.J.
DRAWN BY : D.T.A./J.G.J.
CHECKED BY : D.T.A./J.G.J.
DATE : FEBRUARY, 2020

BY	NO.	REVISION	DATE

WATER MAIN EXTENSIONS
PROFILE, CHART & NOTES

600' SCALE MAP NO. 42/43 BLOCK NO. 24/19
F.C.C. WORK ORDER NO. 10027
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 24-5101-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 7 OF 10

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1369 Generals Highway • Crownsville, Maryland 21032

STATE OF MARYLAND — PAUL WALTER EBERSEL — No. 12043 — PROFESSIONAL ENGINEER

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions
ADDENDUM NO. 2 11 FEBRUARY 20
BID AND CONSTRUCTION 7 JANUARY 20

WATER MAIN EXTENSIONS PROFILE, CHART AND NOTES

C-86

86 OF 91
PROJECT NO.

I:\2010\10027\Engineering\Dwgs\10027-4003 Sewer & Water Contract No. 44-5101-D\Finals\10027-4003 sewer & water contract plan.dwg

I:\2010\10027\Engineering\Dwgs\10027 CD-80-89 WATER AND SEWER.dwg, CD-86, 2/7/2020 4:40:38 PM, 1:1

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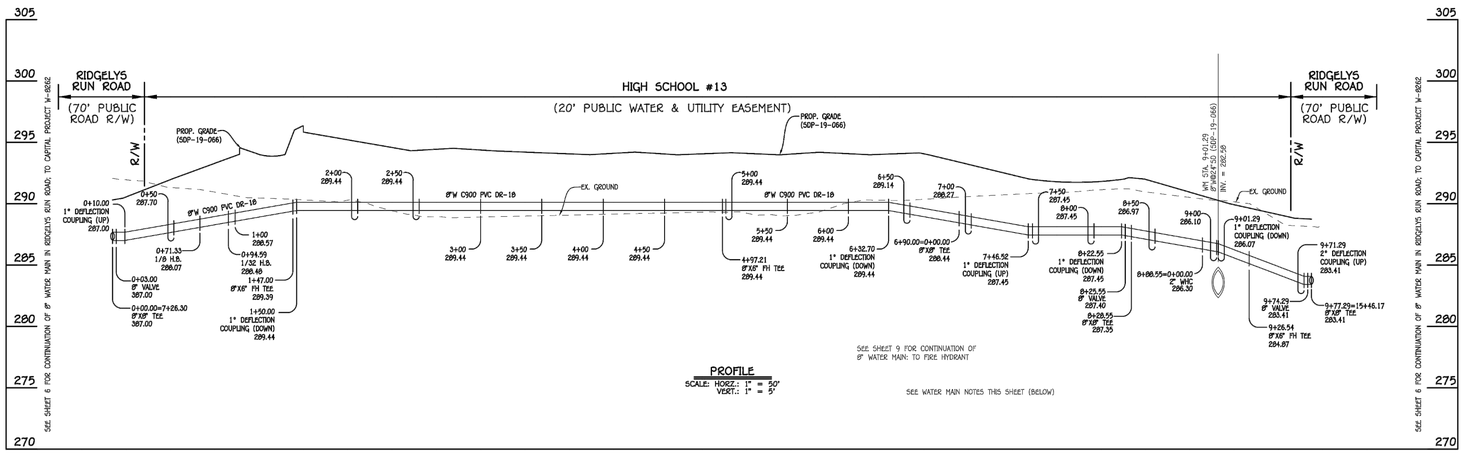

PROFILE
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

SEE SHEET 9 FOR CONTINUATION OF 8" WATER MAIN: TO FIRE HYDRANT

SEE WATER MAIN NOTES THIS SHEET (BELOW)

8" WATER MAIN: WATER MAIN LOOP #2; INTERNAL

WATER MAIN TABULATION CHART

W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN: WATER MAIN LOOP #3			
0+00.00	8"X8" TEE	542,750.19	1,366,639.75
0+03.00	8" VALVE	542,747.92	1,366,637.79
0+10.00	1" DEFLECTION COUPLING (UP)	542,742.63	1,366,633.21
0+71.33	1/8 H.B.	542,696.26	1,366,593.08
0+94.59	1/32 H.B.	542,673.04	1,366,594.51
1+47.00	8"X8" F.H. TEE	542,622.10	1,366,606.86
1+50.00	1" DEFLECTION COUPLING (DOWN)	542,619.19	1,366,607.56
4+97.21	8"X8" F.H. TEE	542,281.75	1,366,689.32
6+32.70	1" DEFLECTION COUPLING (DOWN)	542,150.06	1,366,721.23
6+90.00	8"X8" TEE	542,094.37	1,366,734.72
7+46.52	1" DEFLECTION COUPLING (UP)	542,039.44	1,366,748.03
8+22.55	1" DEFLECTION COUPLING (DOWN)	541,965.55	1,366,765.93
8+25.55	8" VALVE	541,962.64	1,366,766.64
8+28.55	8"X8" TEE	541,959.72	1,366,767.34
8+88.55	2" WHC	541,973.85	1,366,825.66
9+01.29	1" DEFLECTION COUPLING (DOWN)	541,976.85	1,366,838.04
9+26.54	8"X6" F.H. TEE	541,982.80	1,366,862.59
9+71.29	2" DEFLECTION COUPLING (UP)	541,993.34	1,366,906.08
9+74.29	8" VALVE	541,994.04	1,366,908.99
9+77.29	8"X8" TEE	541,994.75	1,366,911.91

WATER MAIN NOTES:
1. ALL WATER MAINS SHALL BE AWWA C900 PVC PIPE: DR-18.
2. ALL PIPE BEDDING, TRACER WIRE, LOCATING TAPE AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV - WATER AND SEWER STANDARDS FOR AWWA C900 PVC WATER PIPE INSTALLATION.
3. DEFLECTION COUPLINGS SHALL BE CERTAIN-TEED PVC HIGH DEFLECTION COUPLINGS.
4. ALL WATER HOUSE CONNECTIONS AND TAPS SHALL BE PERFORMED USING A SADDLE.

0' 50' 100' 200'
SCALE: 1" = 50'

CONTRACT NO. 24-5101-D
HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES — DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE 6 7/16/20.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

#12043
STATE OF MARYLAND PAUL WALTER KRIEBEL No. 12043 PROFESSIONAL ENGINEER

DESIGNED BY :	D.T.A./J.G.J.
DRAWN BY :	D.T.A./J.G.J.
CHECKED BY :	D.T.A./J.G.J.
DATE :	FEBRUARY, 2020

BY	NO.	REVISION	DATE

WATER MAIN EXTENSIONS
PROFILE, CHART & NOTES

600' SCALE MAP NO. 42/43 BLOCK NO. 24/19
F.C.C. WORK ORDER NO. 10027
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 24-5101-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 8 OF 10

tca|architects
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HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions
ADDENDUM NO. 2 11 FEBRUARY 20
BID AND CONSTRUCTION 7 JANUARY 20

WATER MAIN EXTENSIONS PROFILE, CHART AND NOTES

C-87

87 OF 91
PROJECT NO.

I:\2010\10027\Engineering\Dwgs\10027-CD-80-89 WATER AND SEWER.dwg, CD-87, 2/7/2020 4:41:12 PM, 1:1

I:\2010\10027\Engineering\Dwgs\10027-4003 Sewer & Water Contract No. 44-5101-D\Finals\10027-4003 sewer & water contract plan.dwg

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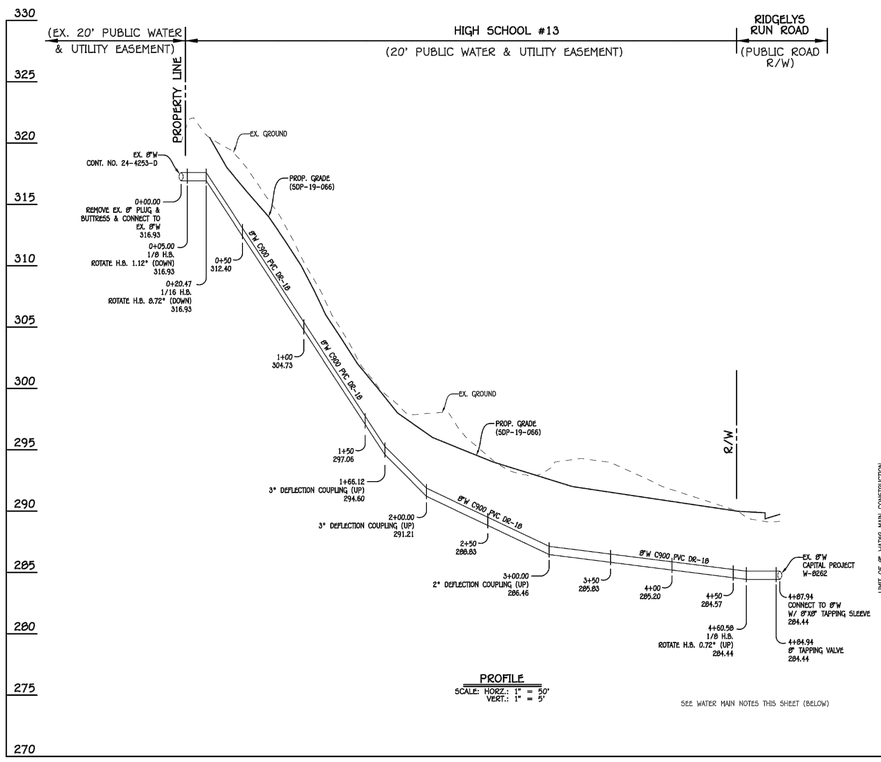
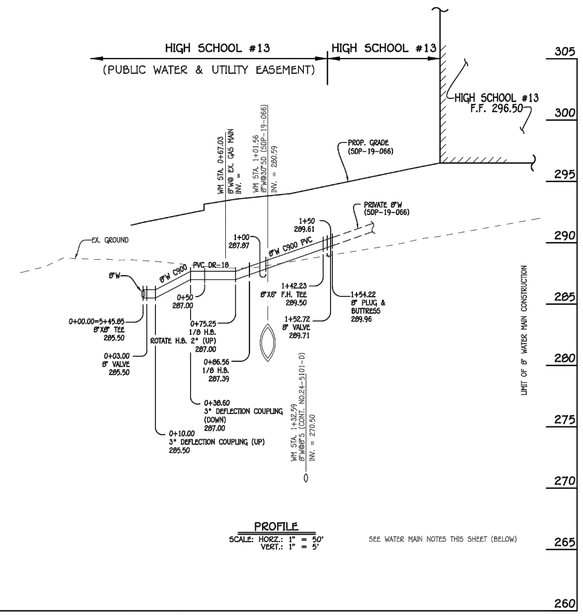
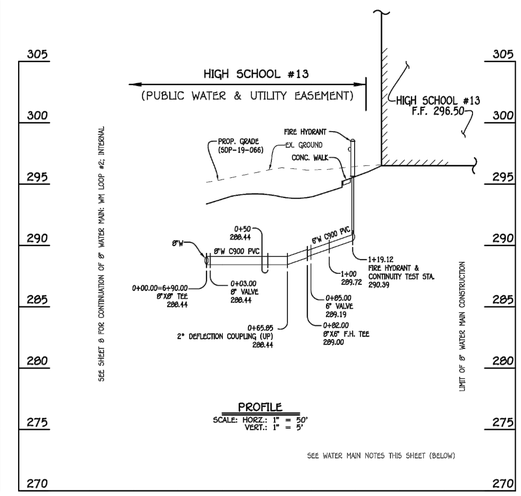


8" WATER MAIN: WATER MAIN LOOP #2; PINE ROAD



8" WATER MAIN: TO HIGH SCHOOL



8" WATER MAIN: TO FIRE HYDRANT

WATER MAIN TABULATION CHART

W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN: WATER MAIN LOOP #2; PINE ROAD			
0+00.00	CONNECT TO EX. 8"W	541,049.71	1,366,629.68
0+05.00	1/8 H.B.	541,052.13	1,366,634.05
0+20.47	1/16 H.B.	541,066.86	1,366,638.79
1+66.12	3" DEFLECTION COUPLING (UP)	541,174.74	1,366,736.64
2+00.00	3" DEFLECTION COUPLING (UP)	541,199.84	1,366,759.40
3+00.00	2" DEFLECTION COUPLING (UP)	541,273.91	1,366,826.58
4+60.58	1/8 H.B. (ROTATE H.B. 0.72° UP)	541,392.85	1,366,934.46
4+84.94	8" TAPPING VALVE	541,392.82	1,366,958.82
4+87.94	8"X8" TAPPING SLEEVE	541,392.81	1,366,961.83

W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN: TO HIGH SCHOOL			
0+00.00	8"X8" TEE	542,253.48	1,366,056.81
0+03.00	8" VALVE	542,250.56	1,366,057.52
0+10.00	3" DEFLECTION COUPLING (UP)	542,243.76	1,366,059.16
0+38.60	3" DEFLECTION COUPLING (DOWN)	542,215.96	1,366,065.90
0+75.25	1/8 H.B. (ROTATE H.B. 2° UP)	542,180.35	1,366,074.53
0+86.56	1/8 H.B.	542,179.46	1,366,084.17
1+42.23	8"X8" FH TEE	542,187.57	1,366,138.29
1+48.72	8" VALVE	542,189.10	1,366,144.60
1+53.97	8" PLUG & BUTTRESS	542,190.33	1,366,149.70

W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN: TO HIGH SCHOOL			
0+00.00	8"X8" TEE	542,094.37	1,366,734.72
0+03.00	8" VALVE	542,093.67	1,366,731.80
0+65.85	2" DEFLECTION COUPLING (UP)	542,078.87	1,366,670.72
0+82.00	8"X6" FH TEE	542,075.06	1,366,655.03
0+85.00	6" VALVE	542,077.98	1,366,654.32
1+19.12	FIRE HYDRANT	542,111.20	1,366,646.27

WATER MAIN NOTES:
1. ALL WATER MAINS SHALL BE AWWA C900 PVC PIPE; DR-18.
2. ALL PIPE BEDDING, TRACER WIRE, LOCATING TAPE AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV - WATER AND SEWER STANDARDS FOR AWWA C900 PVC WATER PIPE INSTALLATION.
3. DEFLECTION COUPLINGS SHALL BE CERTAIN-TEED PVC HIGH DEFLECTION COUPLINGS.
4. ALL WATER HOUSE CONNECTIONS AND TAPS SHALL BE PERFORMED USING A SADDLE.

0' 50' 100' 200'
SCALE: 1" = 50'

CONTRACT NO. 24-5101-D
HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES — DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE 8 7/16/20.

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CONTINENTAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

#12043
PAUL W. KRIEBEL

DESIGNED BY : D.T.A./J.G.J.
DRAWN BY : D.T.A./J.G.J.
CHECKED BY : D.T.A./J.G.J.
DATE : FEBRUARY, 2020

BY	NO.	REVISION	DATE

WATER MAIN EXTENSIONS
PROFILES, CHARTS & NOTES

600' SCALE MAP NO. 42/43 BLOCK NO. 24/19
F.C.C. WORK ORDER NO. 10027
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 24-5101-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 9 OF 10

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STATE OF MARYLAND PROFESSIONAL ENGINEER No. 12043

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HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions
ADDENDUM NO. 2 11 FEBRUARY 20
BID AND CONSTRUCTION 7 JANUARY 20

WATER MAIN EXTENSIONS PROFILES, CHARTS AND NOTES

C-88

88 OF 91
PROJECT NO.

t:\2010\10027\Engineering\Dwgs\10027-CD-88-89 WATER AND SEWER.dwg, CD-88, 2/7/2020 4:41:46 PM, 1:1

t:\2010\10027\Engineering\Dwgs\10027 Sewer & Water Contract No. 44-5101-D\Final\10027-4003 sewer & water contract plan.dwg

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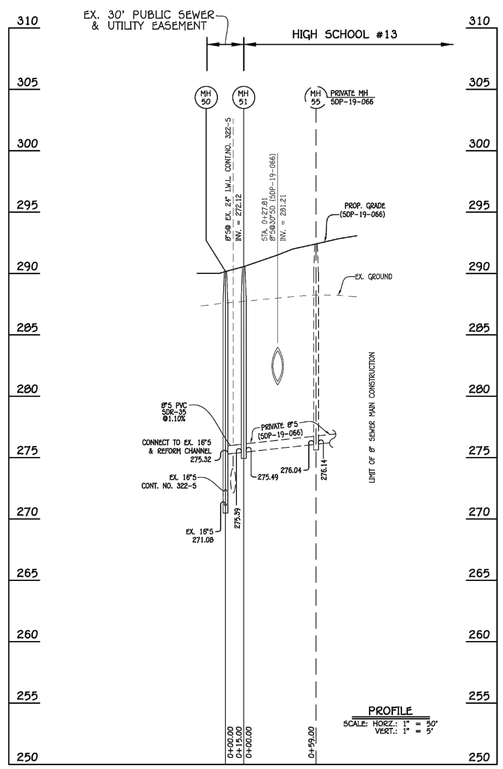
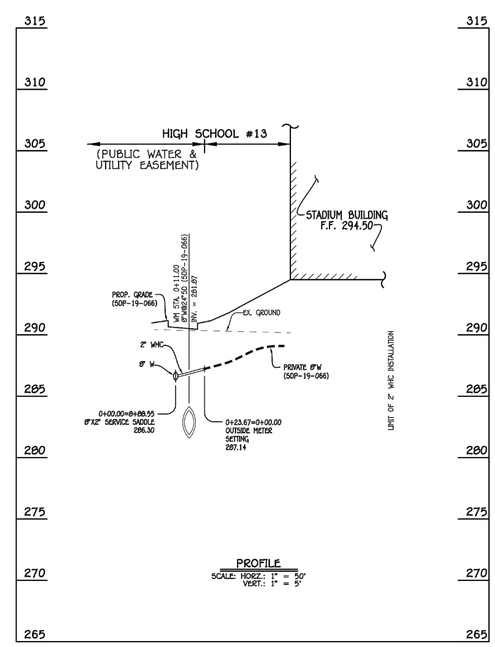


8" SEWER MAIN: TO HIGH SCHOOL BUILDING



2" WHC: TO STADIUM BUILDING

MANHOLE TABULATION CHART

NO.	NORTHING	EASTING	RIM ELEVATION
50	542,321.14	1,366,034.57	290.16
51	542,315.70	1,366,048.52	290.56

NOTE: SET MH RIMS FLUSH W/PROPOSED GRADE.

0' 50' 100' 200'
SCALE: 1" = 50'

CONTRACT NO. 24-5101-D
HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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(410) 461 - 2855

#12043
STATE OF MARYLAND PAUL WALTER KRIEBEL No. 12043 PROFESSIONAL ENGINEER
PAUL W. KRIEBEL

DESIGNED BY : D.T.A./J.G.J.
DRAWN BY : D.T.A./J.G.J.
CHECKED BY : D.T.A./J.G.J.
DATE : FEBRUARY, 2020

BY	NO.	REVISION	DATE

8" SEWER MAIN EXTENSION & 2" WHC: PROFILES

600' SCALE MAP NO. 42/43 BLOCK NO. 24/19
F.C.C. WORK ORDER NO. 10027
FILE NAME : SEWER & WATER MAIN EXTENSION PLAN

HIGH SCHOOL #13
SEWER & WATER MAIN EXTENSIONS
CONTRACT NO. 24-5101-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN
SHEET 10 OF 10

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HIGH SCHOOL #13
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HOWARD COUNTY PUBLIC SCHOOL SYSTEM

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ADDENDUM NO.2 11 FEBRUARY 20

8" SEWER MAIN EXTENSION AND 2" WHC PROFILES

C-89

89 OF 91
PROJECT NO.

I:\2010\10027\Engineering\Dwgs\10027-4003 Sewer & Water Contract No. 44-5101-D\Finals\10027-4003 sewer & water contract plan.dwg

I:\2010\10027\Engineering\Dwgs\10027 CD-89-89 WATER AND SEWER.dwg, CD-89, 2/7/2020 4:42:22 PM, 1:1

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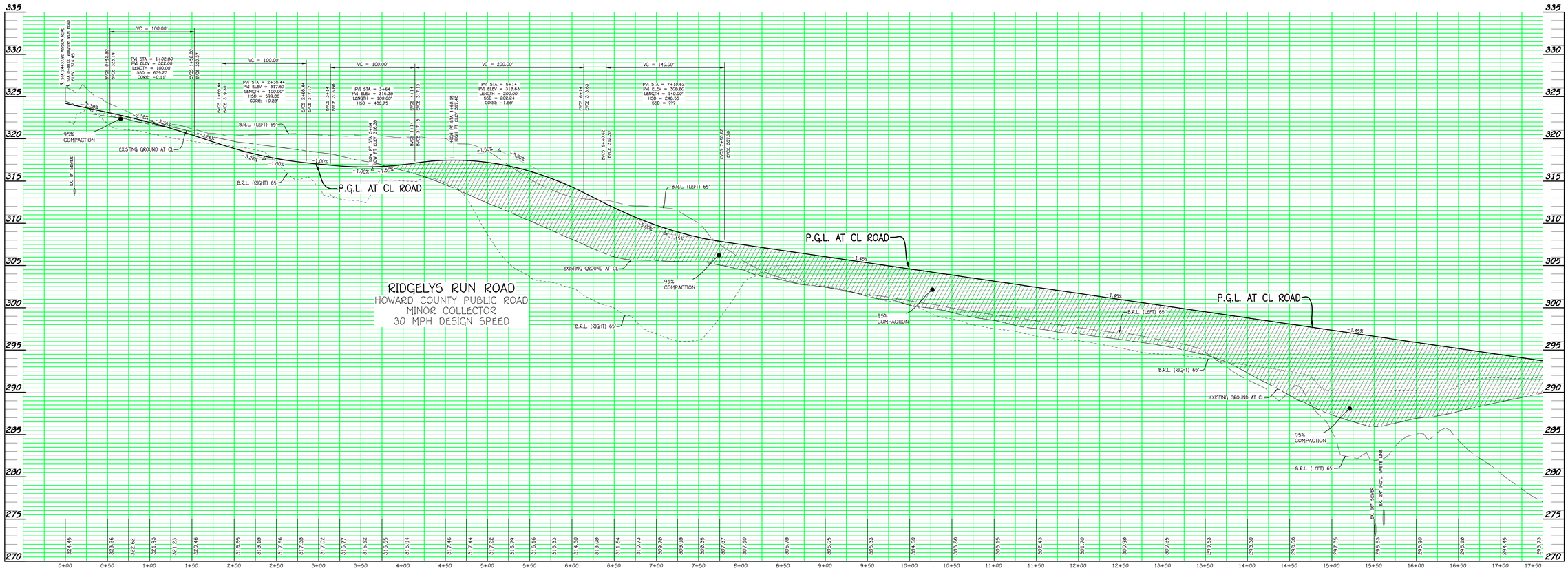

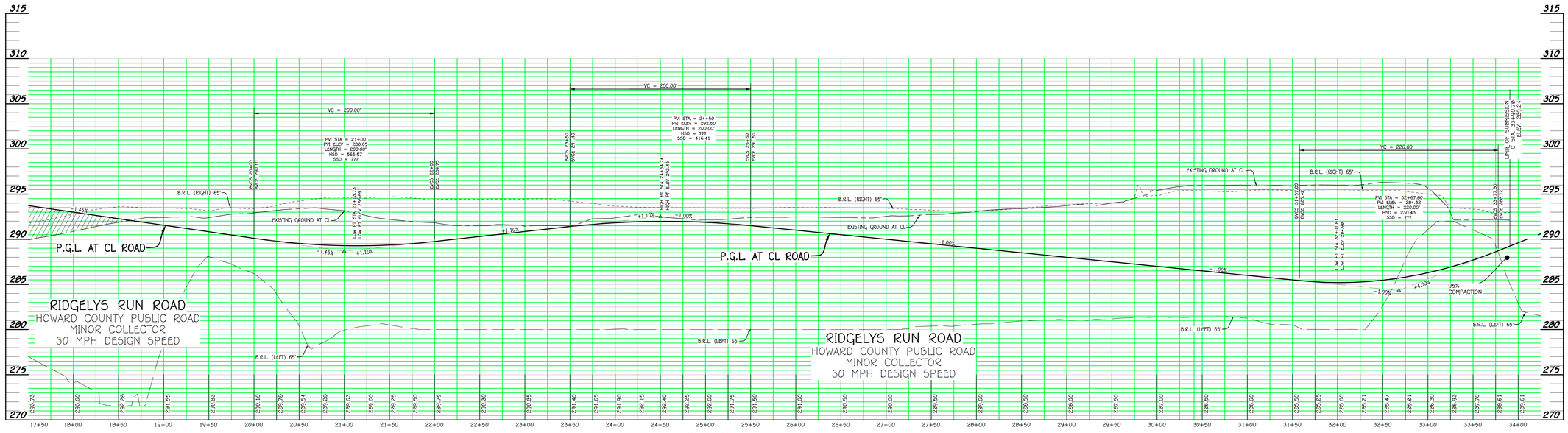

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STATE OF MARYLAND
CHRISTOPHER S. CARTER
No. 11294
PROFESSIONAL ENGINEER

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HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

ADDENDUM NO.2
11 FEBRUARY 20

RIDGLEYS RUN ROAD PROFILE

C-90

90 OF 91
PROJECT NO.

I:\2010\10027\Engineering\Dwgs\10027 CD-90-91 ROAD PROFILES.dwg, ADD-2 CD-90 ROAD PROFILE, 2/7/2020 3:59:33 PM, 1:1

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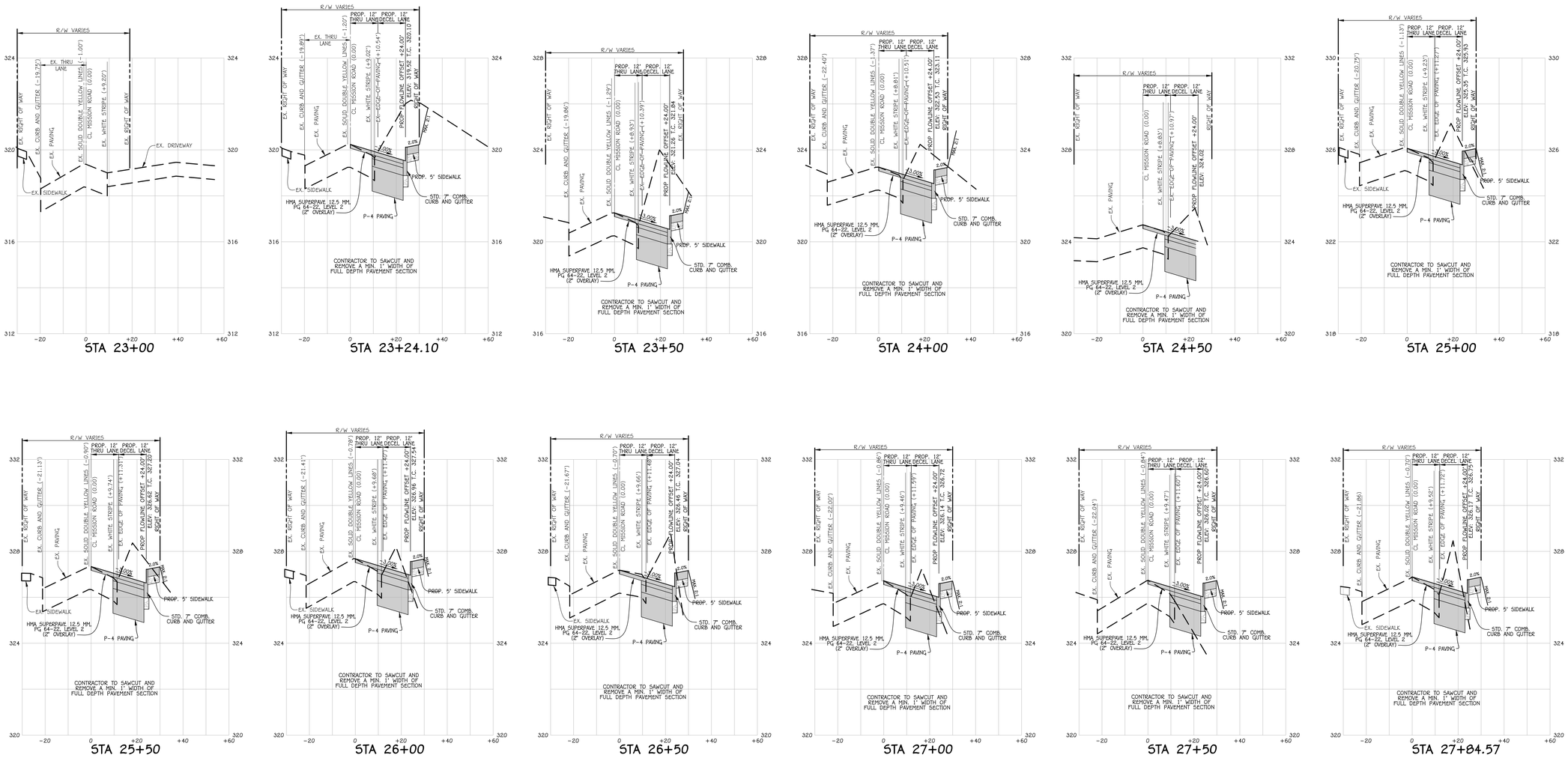

MISSION ROAD WIDENING SECTIONS

SCALE: HORIZ. : 1" = 20'
VERT. : 1" = 2'

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CHRISTOPHER J. CARTER
No. 12394
PROFESSIONAL ENGINEER

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JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

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ADD. ADDENDUM NO.2 11 FEBRUARY 20

MISSION ROAD WIDENING SECTIONS

C-91

91 OF 91
PROJECT NO.

I:\2010\10027\Engineering\Dwgs\10027 CD-90-91 ROAD PROFILES.dwg, ADD-2 CD-91 SECTIONS, 2/7/2020 4:00:27 PM, 1:1

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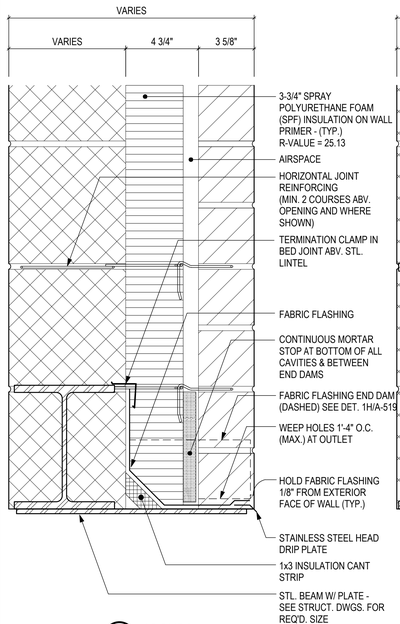
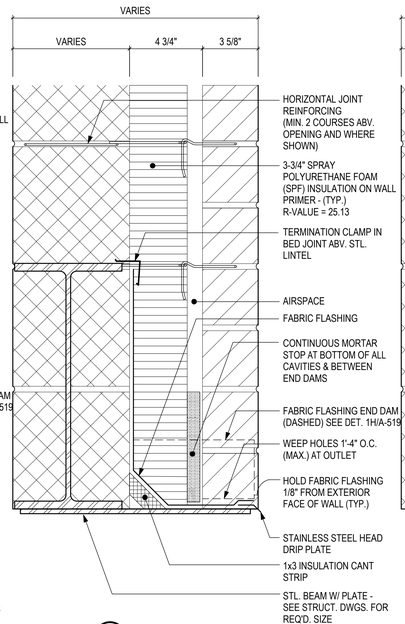
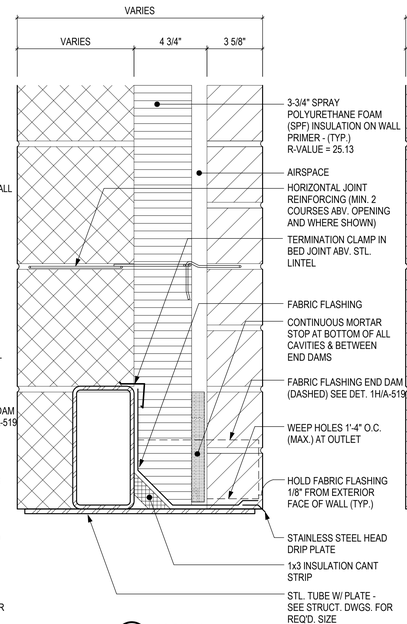


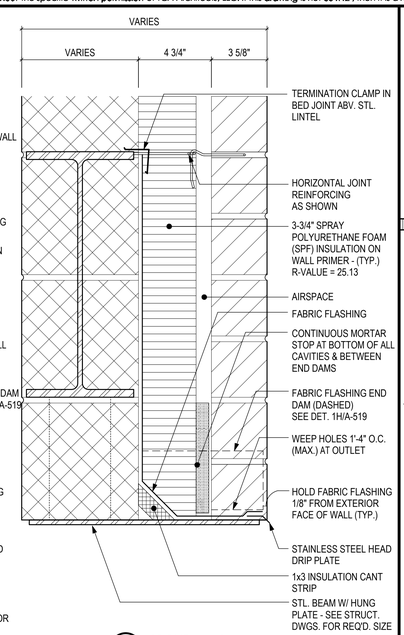
1A **ABOVE STL. BEAM LINTEL**
SCALE: 3" = 1'-0"



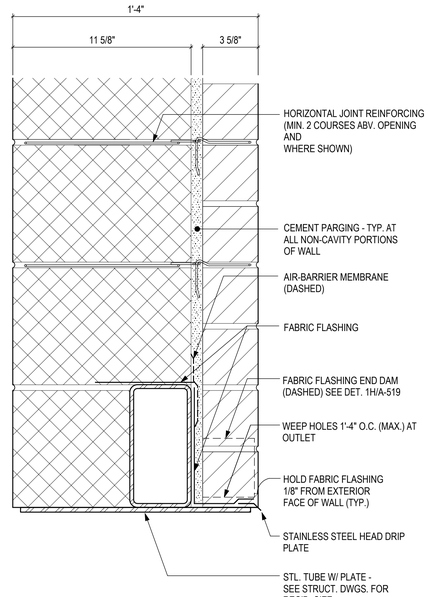
1B **ABOVE TALL STL. BEAM LINTEL**
SCALE: 3" = 1'-0"



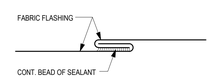
1C **ABOVE STL. TUBE LINTEL**
SCALE: 3" = 1'-0"



1D **ABOVE HUNG PLATE LINTEL**
SCALE: 3" = 1'-0"

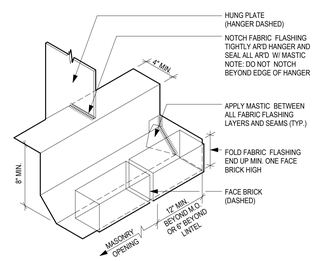


1F **ABOVE STL. BM. LINTEL AT NON-CAVITY WALL**
SCALE: 3" = 1'-0"



NOTE: ALL FABRIC FLASHING JOINTS ON PROJECT SHALL BE MADE WITH INTERLOCK SHOWN ABV.

1G **TYP. PITTSBURGH SEAL INTERLOCK PROFILE DETAIL**
SCALE: 1 1/2" = 1'-0"

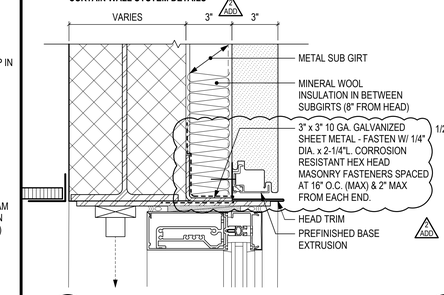


1H **TYP. FABRIC FLASHING END DAM DETAIL**
SCALE: 1 1/2" = 1'-0"

1 / A-519 **TYPICAL FLASHING DETAILS AT MASONRY OPENINGS**

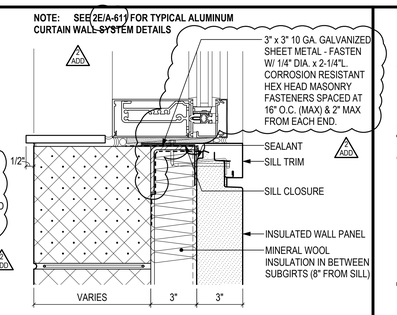
1E **NOT USED** ADD

NOTE: SEE 2D/A-611 FOR TYPICAL ALUMINUM CURTAIN WALL SYSTEM DETAILS

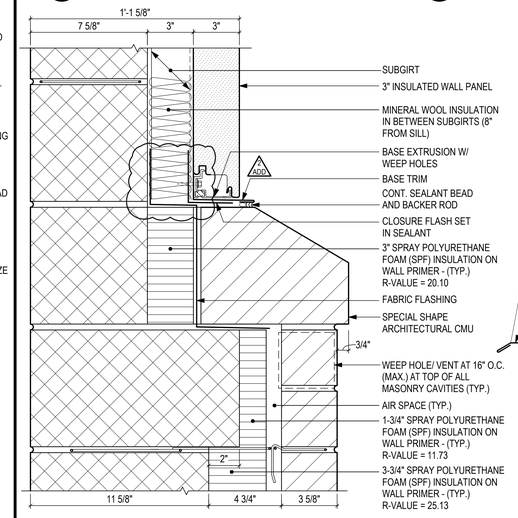


2A **TYP. INSULATED METAL PANEL HEAD DETAIL**
SCALE: 3" = 1'-0"

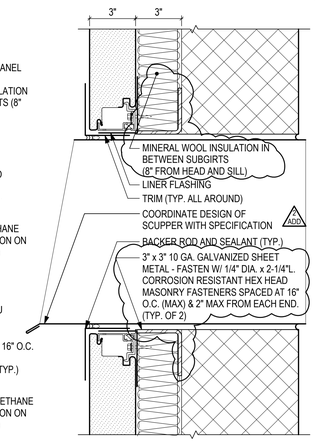
NOTE: SEE 2E/A-611 FOR TYPICAL ALUMINUM CURTAIN WALL SYSTEM DETAILS



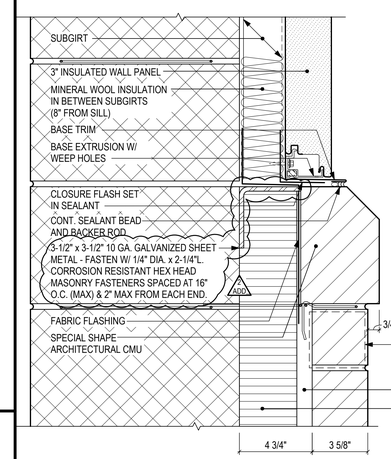
2B **TYP. INSULATED METAL PANEL SILL DETAIL**
SCALE: 3" = 1'-0"

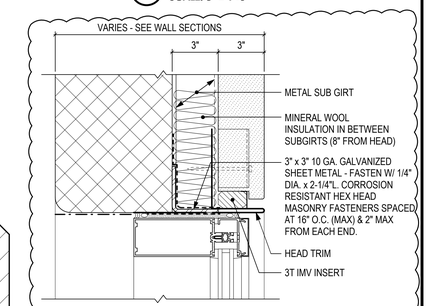


2C **INSULATED METAL PANEL TRANSITION SILL DETAIL**
SCALE: 3" = 1'-0"

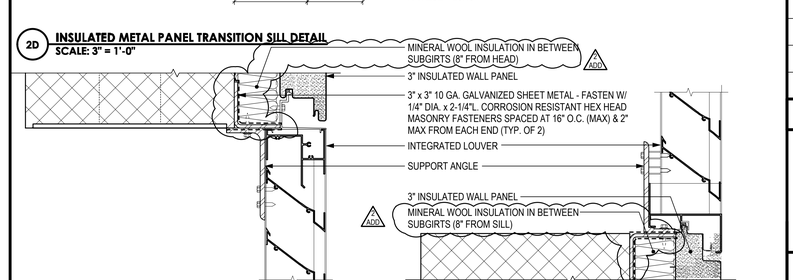


2E **INSULATED METAL PANEL SCUPPER DETAIL**
SCALE: 3" = 1'-0"





2H **INSULATED METAL PANEL JAMB DETAIL**
SCALE: 3" = 1'-0"

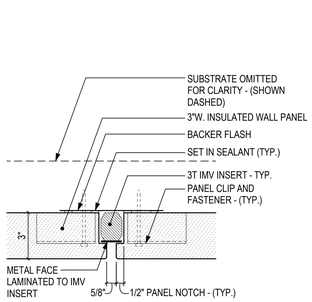


2D **INSULATED METAL PANEL TRANSITION SILL DETAIL**
SCALE: 3" = 1'-0"

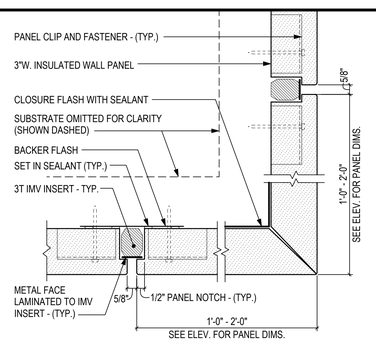
2F **INSULATED METAL PANEL INTEGRATED LOUVER HEAD DETAIL**
SCALE: 3" = 1'-0"

2G **INSULATED METAL PANEL INTEGRATED LOUVER SILL DETAIL**
SCALE: 3" = 1'-0"

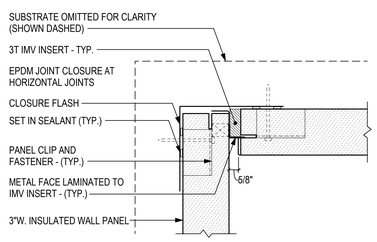
2 / A-519 **TYPICAL FLASHING DETAILS AT METAL WALL PANEL OPENINGS**



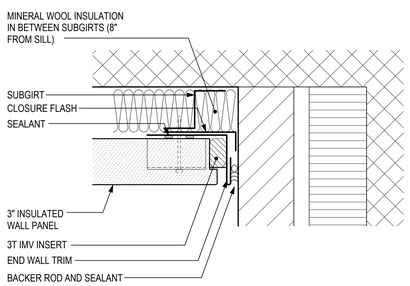
3A **VERTICAL JOINT DETAIL**
SCALE: 3" = 1'-0"



3B **OUTSIDE CORNER DETAIL**
SCALE: 3" = 1'-0"



3C **INSIDE CORNER DETAIL**
SCALE: 3" = 1'-0"



3D **END WALL DETAIL**
SCALE: 3" = 1'-0"

3 / A-519 **INSULATED METAL PANEL PLAN DETAILS**

Date: 2/11/20
Time: 10:31:35 AM

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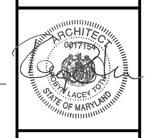

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

IAC CD REVIEW 8 OCTOBER 19	
BUILDING PERMIT 7 JANUARY 20	
ADD	ADDENDUM NO. 2 11 FEBRUARY 20
BID AND CONSTRUCTION 7 JANUARY 20	

WALL SECTION DETAILS

A-519

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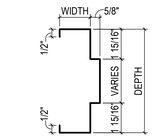
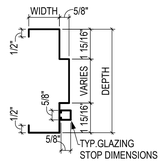
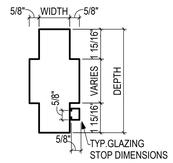


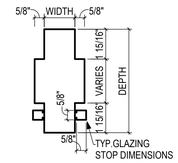
1 TYPICAL DOOR HEAD/JAMB



2 TYPICAL GLAZED HEAD/JAMB



3 GLAZED TO DOOR MULLION



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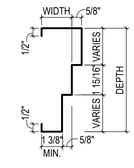
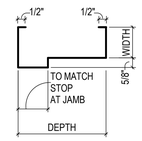
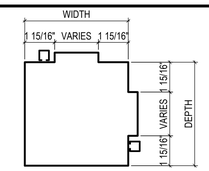


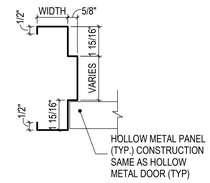
5 DOUBLE ACTING DOOR JAMB



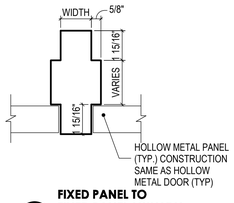
6 DOUBLE ACTING DOOR HEAD



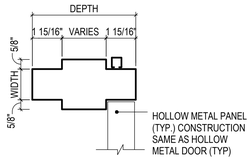
7 GLAZED CORNER MULLION



8 FIXED PANEL JAMB



9 FIXED PANEL TO FIXED PANEL MULLION



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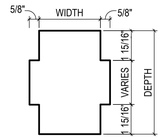
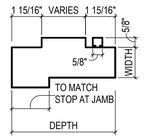
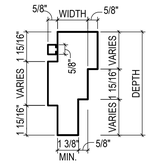


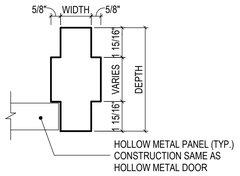
11 FRAME/MULLION



12 DOUBLE ACTING DOOR TO GLAZED HEAD



13 DOUBLE ACTING DOOR TO GLAZED JAMB

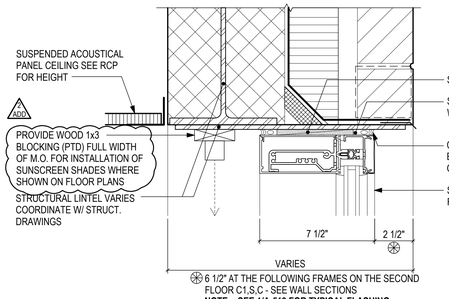


14 FIXED PANEL TO DOOR MULLION

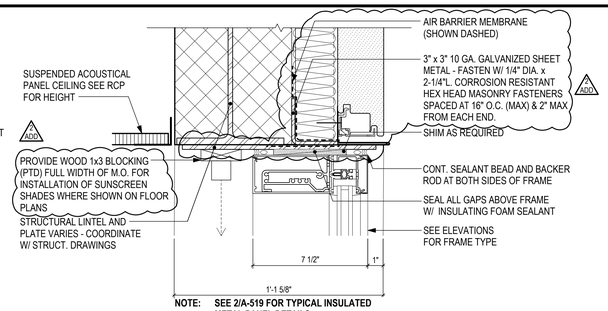
1 A-611 **HOLLOW METAL FRAME DETAILS**
SCALE: 3" = 1'-0"

GENERAL NOTES:

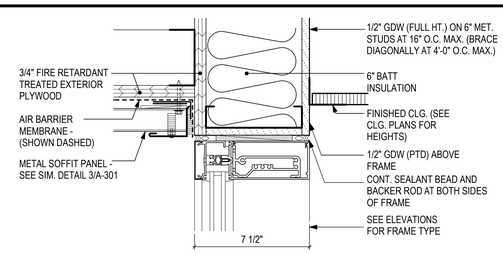
- DIMENSIONS OF FRAMING MEMBERS AT THERMAL BREAK HOLLOW METAL FRAMES ARE IDENTICAL TO NON-THERMAL FRAME MEMBERS INDICATED HERE.
- REFER TO HOLLOW METAL FRAME ELEVATIONS FOR LOCATIONS OF DETAILS



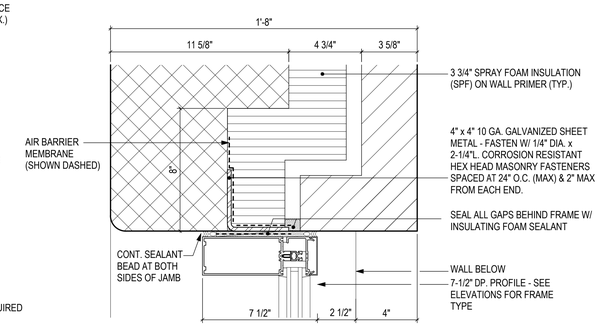
2A TYP. CURTAINWALL MASONRY HEAD DETAIL



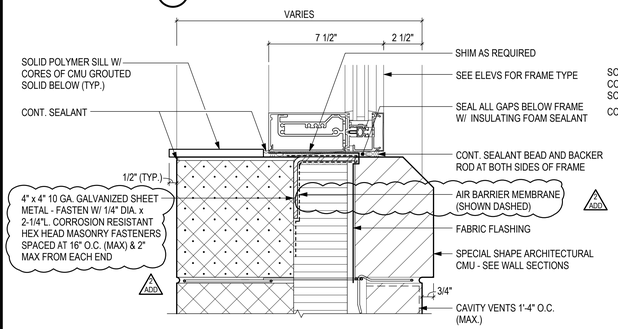
2D TYP. INSULATED METAL PANEL HEAD DETAIL



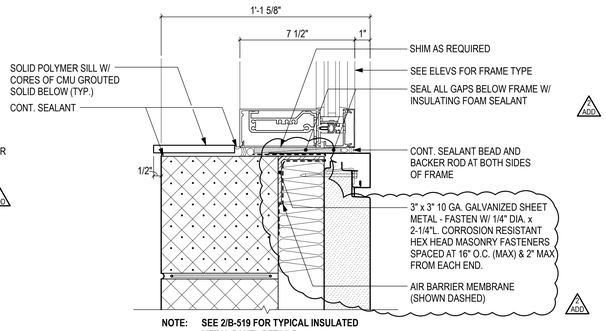
2G HEAD DETAIL



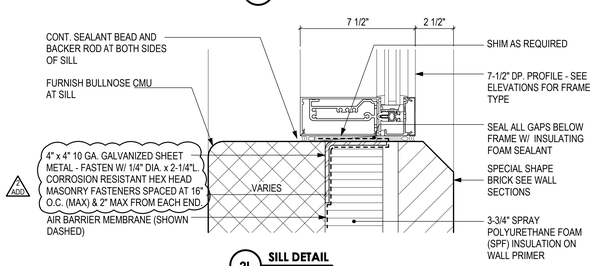
2H JAMB DETAIL



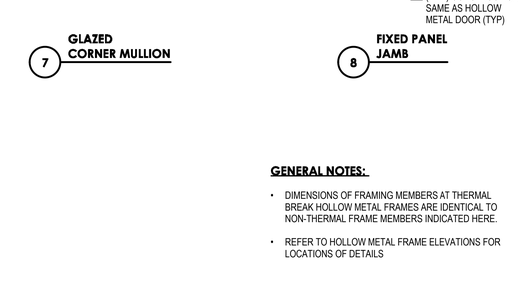
2B MASONRY SILL DETAIL W/ PROJECTED CMU



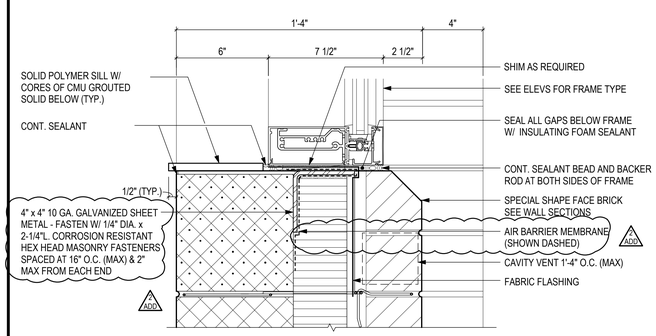
2E TYP. INSULATED METAL PANEL SILL DETAIL



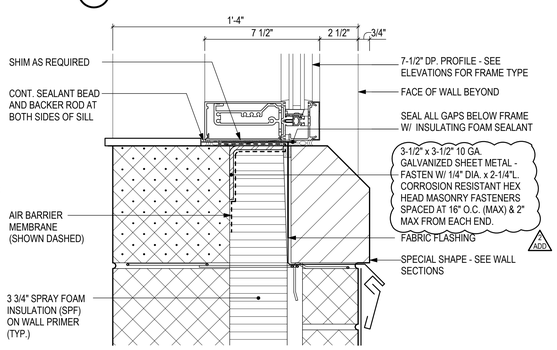
2L SILL DETAIL



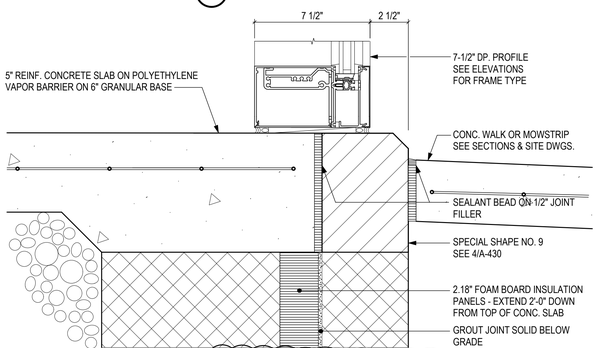
2J JAMB DETAIL



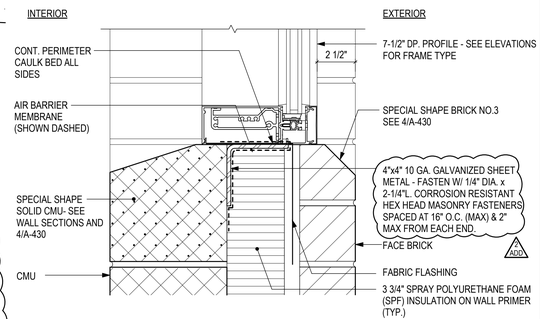
2C MASONRY SILL DETAIL W/ SPECIAL SHAPE BRICK



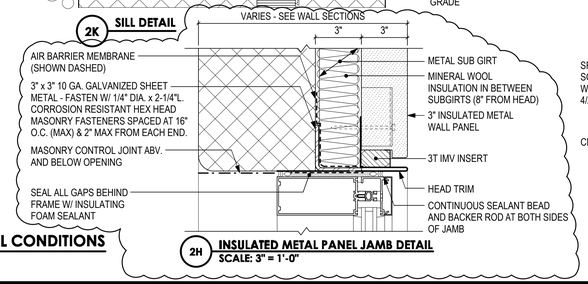
2F TYPICAL SILL DETAIL



2K SILL DETAIL



2M SILL DETAIL



2H INSULATED METAL PANEL JAMB DETAIL
SCALE: 3" = 1'-0"

2 A-611 **ALUMINUM CURTAIN WALL SYSTEM JAMB/HEAD/SILL CONDITIONS**
SCALE: 3" = 1'-0"

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ARCHITECT 017154 STEVE LACEY JR. STATE OF MARYLAND

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions
IAC CD REVIEW
8 OCTOBER 19
BUILDING PERMIT
7 JANUARY 20
ADD ADDENDUM NO. 2
11 FEBRUARY 20

BID AND CONSTRUCTION
7 JANUARY 20

FRAME DETAILS

A-611

PROJECT NO. 1801

Date: 2/11/20
Time: 3:19:59 PM

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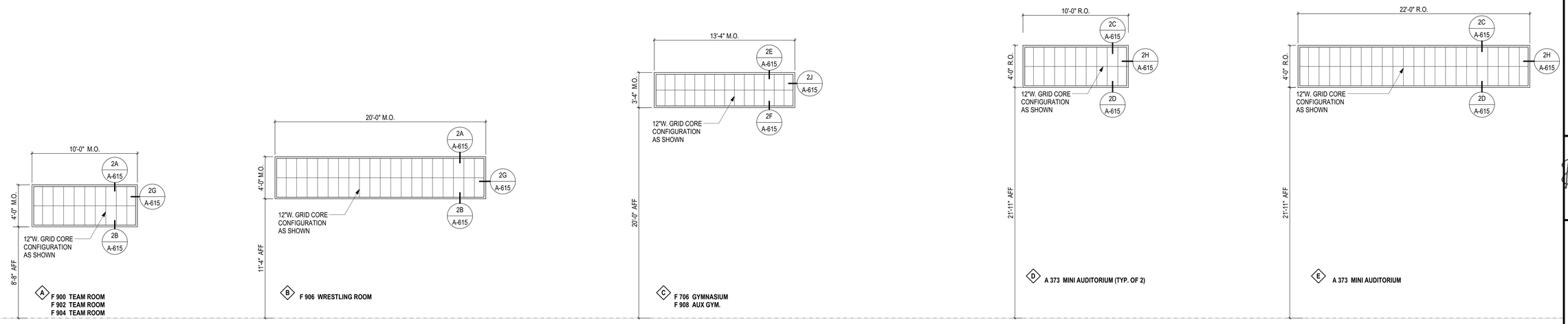
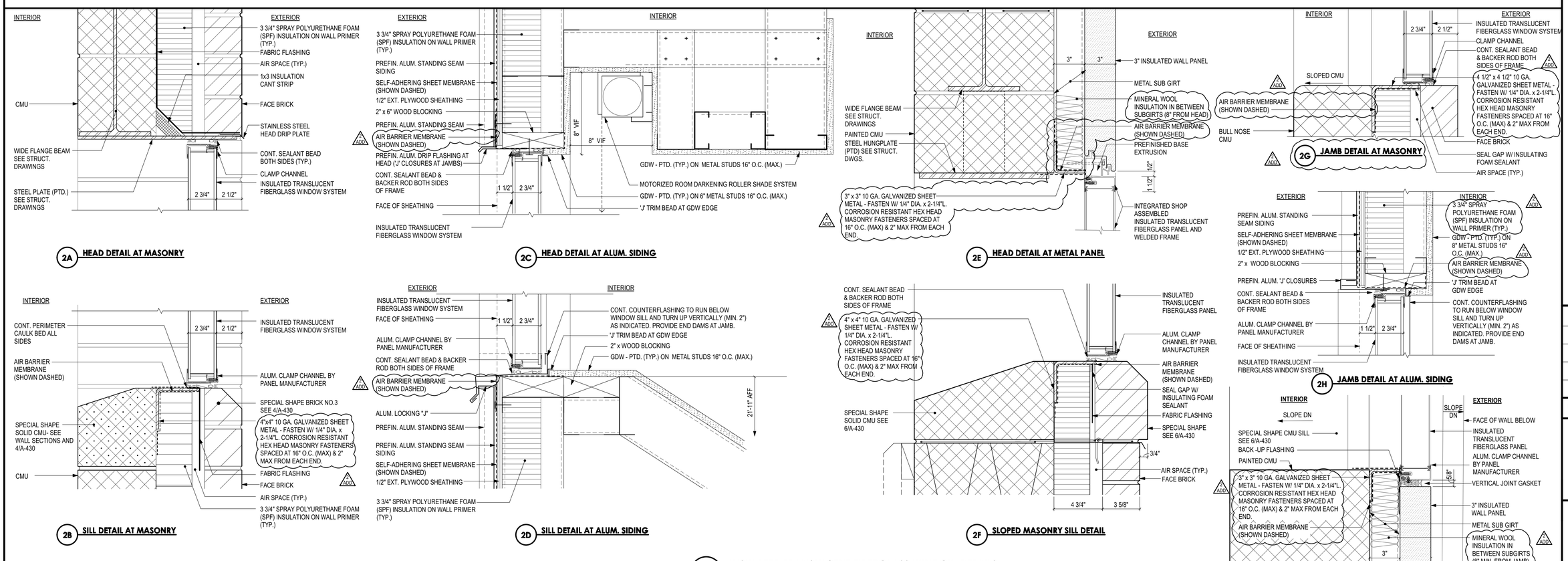


1 / A-615 INSULATED TRANSLUCENT FIBERGLASS WINDOW ELEVATIONS

SCALE: 1/4" = 1'-0"



2 / A-615 INSULATED TRANSLUCENT FIBERGLASS WINDOW DETAILS

SCALE: 3" = 1'-0"

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ARCHITECT 017154 JOHN A. LACEY JR. STATE OF MARYLAND

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

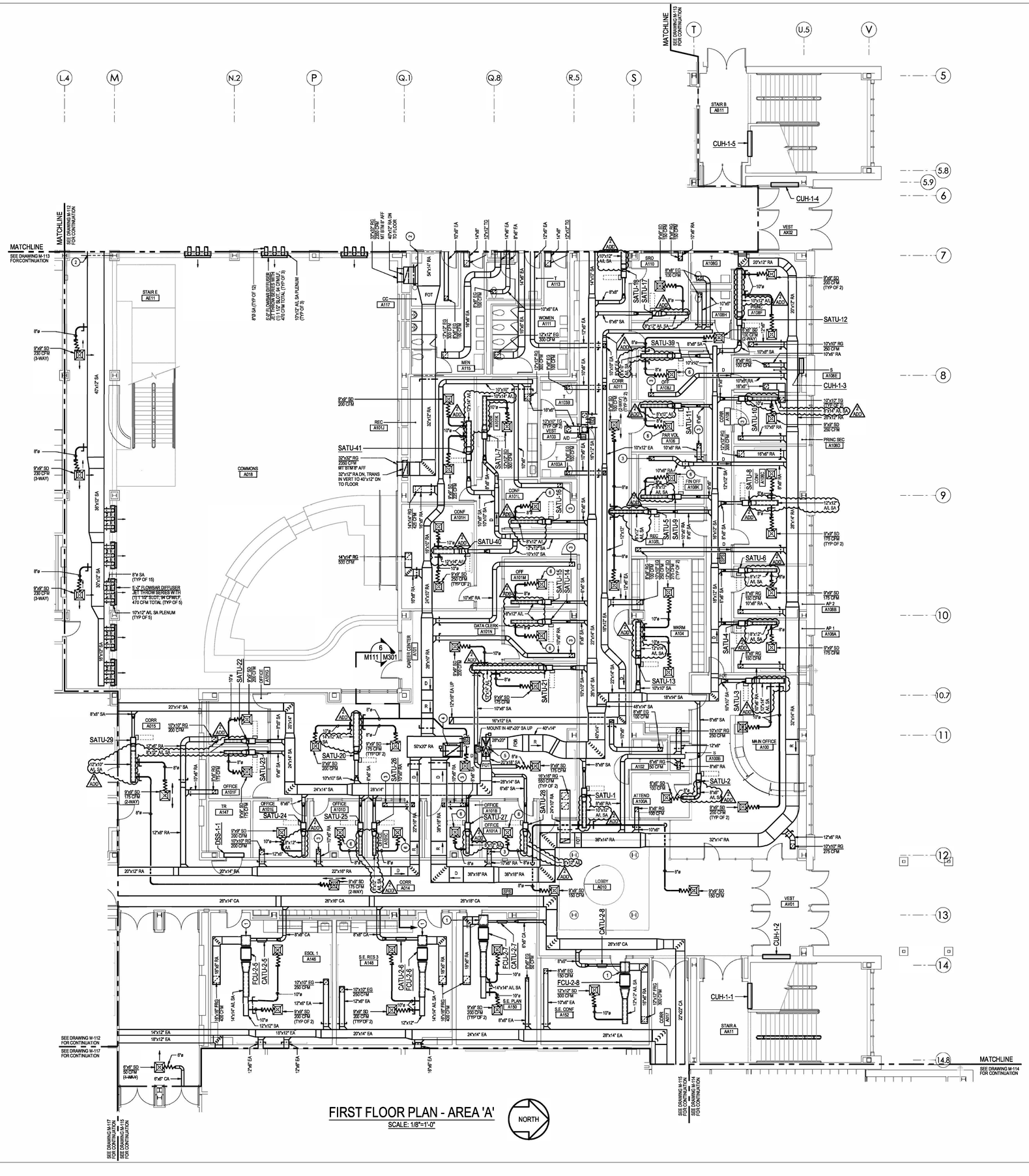
revisions
IAC CD REVIEW 8 OCTOBER 19
BUILDING PERMIT 7 JANUARY 20
ADD ADDENDUM NO. 2 11 FEBRUARY 20

BID AND CONSTRUCTION 7 JANUARY 20

INSULATED TRANSLUCENT FIBERGLASS WINDOW SYSTEM ELEVATIONS

A-615

Date: 2/12/20
Time: 8:16:01 AM



FIRST FLOOR PLAN - AREA 'A'

SCALE: 1/8"=1'-0"

NORTH

GENERAL NOTES:

A. DO NOT LOCATE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

B. THE CEILING CAVITY BENEATH ALL HORIZONTAL CONCEALED FAN COIL UNITS SHALL REMAIN FREE OF ALL OBSTRUCTIONS THAT WOULD RESTRICT THE CLEARANCE REQUIRED TO ACCOMMODATE THE REMOVAL A UNIT'S FAN ASSEMBLY: INCLUDING BUT NOT LIMITED TO PIPES, CONDUITS, CABLES AND SPRINKLER HEADS.

ADD1

SPECIFIC NOTES:

1. A/L RA PLENUM. FULL HEIGHT AND WIDTH OF UNIT CONNECTION BY LENGTH REQUIRED TO ACCOMMODATE RA DUCT CONNECTION. CONNECT TO UNIT WITH FLEXIBLE CONNECTION. PROVIDE WITH ACCESS DOOR IN BOTTOM OF PLENUM.
2. DUCT TIGHT TO UNDERSIDE OF STEEL.
3. 6"x6" RG; 125 CFM.
4. 36"x26" RA UP WITH F/S/D & A/D.
5. COMBINE 28"x20" SA AND 20"x18" SA UP INTO 46"x20" SA UP WITH F/S/D & A/D.
6. 6"x6" SD; 125 CFM.

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Professional Certification.
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland.
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Expiration date: 01-16-2021.

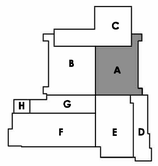
JPA PROJECT NO. 5840-18

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

IAC CD REVIEW 8 OCTOBER 19
BUILDING PERMIT 7 JANUARY 20
ADD1 ADDENDUM NO. 2 11 FEBRUARY 20
BID AND CONSTRUCTION 7 JANUARY 20

FIRST FLOOR PLAN AREA 'A'



KEY PLAN

8 4 0 8 16

SCALE: 1/8" = 1'-0"

M-111

3 OF 56
PROJECT NO. 1801

February 06, 2020 3:24 p.m.
Drawing: S:\Work-19\5-SCHWMCC\5-Kim_FT\CNG BRIGHE

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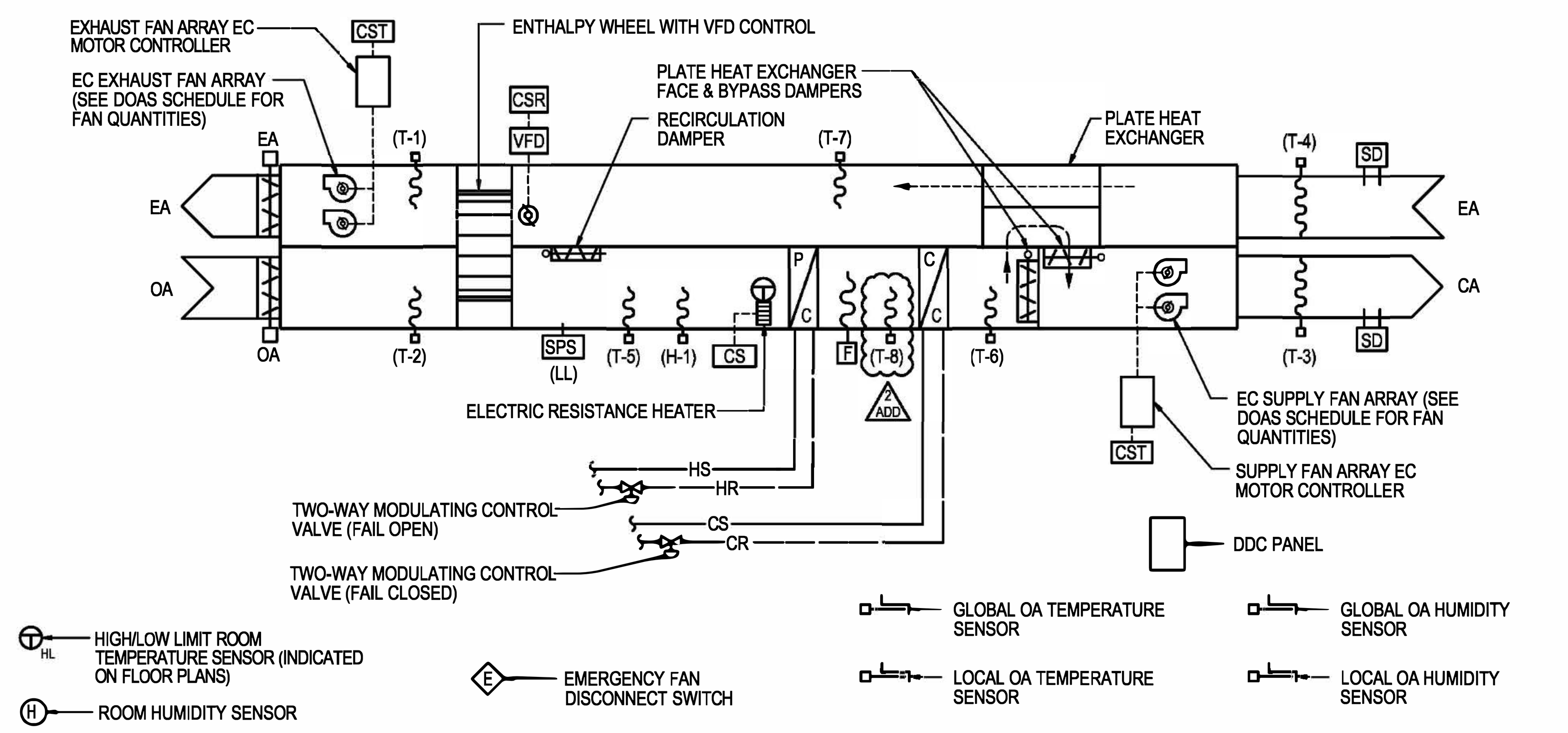


DEDICATED OUTDOOR AIR SYSTEM (SPACE CONDITIONING + VENTILATION AIRFLOW)

(DOAS-1)

A. UNIT IS CONTROLLED BY RESPECTIVE ZONE OCCUPIED-UNOCCUPIED SCHEDULE.

B. SUPPLY AND EXHAUST FANS SHALL OPERATE AT A CONSTANT AIRFLOW.

C. MORNING WARM-UP, COOL-DOWN, OR RECIRCULATION CYCLE (DEDICATED OUTDOOR AIR SYSTEM):

1. PRIOR TO ENTERING INTO THE OCCUPIED CYCLE, THE DDC SYSTEMS TIME SCHEDULING PROGRAM SHALL PLACE THE DEDICATED OUTDOOR AIR SYSTEM INTO EITHER THE WARM-UP, COOL-DOWN, OR RECIRCULATION CYCLE AS DESCRIBED WITHIN THIS PARAGRAPH. ASSOCIATED DUCT-MOUNTED HEATING COILS SHALL BE PLACED IN THEIR OCCUPIED CYCLE AND OPERATE AS DESCRIBED WITHIN THEIR ASSOCIATED SEQUENCE OF OPERATION.

2. WARM-UP OR COOL-DOWN CYCLES (HIGH/LOW LIMIT ROOM TEMPERATURE SENSOR ABOVE THE OCCUPIED COOLING SETPOINT OR BELOW THE OCCUPIED HEATING SETPOINT):

a. THE DDC SYSTEM SHALL PLACE THE DEDICATED OUTDOOR AIR SYSTEM INTO EITHER MORNING WARM-UP OR COOL-DOWN CYCLE. REQUIRED MODE OF OPERATION SHALL BE BASED ON THE HIGH/LOW LIMIT ROOM TEMPERATURE SENSOR READING (ABOVE OCCUPIED COOLING SETPOINT SHALL PLACE SYSTEM IN COOL-DOWN MODE AND BELOW OCCUPIED HEATING SETPOINT SHALL PLACE SYSTEM IN WARM-UP MODE).

b. UNDER BOTH THE WARM-UP AND COOL-DOWN CYCLES, THE UNIT SUPPLY FAN ARRAY SHALL BE ENERGIZED AND RUN CONTINUOUSLY. UNIT EXHAUST FAN ARRAY AND ENTHALPY WHEEL SHALL BE DEENERGIZED, OA AND EA DAMPERS SHALL BE CLOSED, AND RECIRCULATION DAMPER SHALL BE OPEN THROUGHOUT THESE CYCLES AT ALL TIMES.

c. UNDER WARM-UP MODE, DEDICATED OUTDOOR AIR SYSTEM SHALL PROVIDE A UNIT DISCHARGE TEMPERATURE OF 70 DEGREES F, WITH THE PLATE HEAT EXCHANGER FACE AND BYPASS DAMPERS POSITIONED TO FULL SUPPLY AIR BYPASS AROUND THE PLATE HEAT EXCHANGER.

d. DURING THE COOL-DOWN CYCLE, DEDICATED OUTDOOR AIR SYSTEM SHALL PROVIDE A UNIT DISCHARGE TEMPERATURE OF 55 DEGREES F, WITH THE HEAT EXCHANGER FACE AND BYPASS DAMPERS POSITIONED TO FULL SUPPLY AIR BYPASS AROUND THE PLATE HEAT EXCHANGER.

e. ONCE THE OCCUPIED TEMPERATURE SETPOINT IS REACHED, THE UNIT SHALL BE PLACED INTO THE RECIRCULATION CYCLE AS DESCRIBED BELOW UNTIL INDEXED TO THE OCCUPIED CYCLE THROUGH THE DDC SYSTEMS TIME SCHEDULING PROGRAM.

3. RECIRCULATION CYCLE (HIGH/LOW LIMIT ROOM TEMPERATURE IS WITHIN OCCUPIED HEATING AND COOLING SETPOINT RANGE):

a. DEDICATED OUTDOOR AIR SYSTEM HEATING COIL AND COOLING COIL CONTROL VALVES SHALL REMAIN CLOSED, OA AND EA DAMPERS SHALL REMAIN CLOSED, RECIRCULATION DAMPER SHALL BE POSITIONED OPEN, ENTHALPY WHEEL SHALL REMAIN DEENERGIZED, UNIT EXHAUST FAN ARRAY SHALL REMAIN DEENERGIZED, AND SUPPLY FAN ARRAY SHALL BE ENERGIZED 20 MINUTES (ADJUSTABLE) PRIOR TO THE SCHEDULED OCCUPANCY TIMEFRAME.

D. OCCUPIED CYCLE:

1. DOAS UNIT RECIRCULATION DAMPER SHALL BE PROVEN CLOSED THROUGHOUT THE OCCUPIED CYCLE.

2. OA AND EA DAMPERS SHALL BE PROVEN OPEN THROUGHOUT THE OCCUPIED CYCLE. ONCE PROVEN OPEN, SUPPLY FAN AND EXHAUST FAN ARRAYS SHALL BE ENERGIZED AND RUN CONTINUOUSLY THROUGHOUT THE OCCUPIED CYCLE.

3. UNIT DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE RESET BETWEEN 55 DEGREES F AND 70 DEGREES F TO MAINTAIN A MINIMUM OF ONE DUCT-MOUNTED HEATING COIL CONTROL VALVE CLOSED.

4. DOAS UNIT SHALL FUNCTION WITHIN ONE OF THE THREE OPERATING MODES DESCRIBED BELOW (HEATING, COOLING , OR DEHUMIDIFICATION) DURING THE OCCUPIED CYCLE. REQUIRED MODE OF OPERATION SHALL BE BASED ON OUTDOOR AIR TEMPERATURE, UNIT DISCHARGE TEMPERATURE SETPOINT, AND/OR ENTERING HEATING COIL DEWPOINT CONDITIONS.

5. HEATING MODE OPERATION:

a. UNIT SHALL BE PLACED INTO THE HEATING MODE OF OPERATION WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW THE UNIT'S DISCHARGE TEMPERATURE SETPOINT AND THE ENTERING HEATING COIL DEWPOINT TEMPERATURE IS 55 DEGREES F OR BELOW.

b. THE PLATE-AND-FRAME HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL BE POSITIONED FOR FULL SUPPLY AIRFLOW AROUND THE HEAT EXCHANGER.

c. ENTHALPY WHEEL SHALL BE ENERGIZED. OPERATING SPEED OF THE ENTHALPY WHEEL'S VFD SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE TEMPERATURE SETPOINT, SUBJECT TO AN ADJUSTABLE LOW LIMIT ENTHALPY WHEEL EA DISCHARGE TEMPERATURE SETPOINT (INITIAL LOW LIMIT TEMPERATURE SETPOINT SHALL BE 10 DEGREES F). ONCE LOW LIMIT TEMPERATURE IS REACHED, VFD SHALL MODULATE UNDER CONTROL OF THIS LOW LIMIT SETPOINT. VFD CONTROL SHALL REVERT TO UNIT DISCHARGE AIR TEMPERATURE CONTROL ONCE LOW LIMIT CONDITION IS ELIMINATED.

d. HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE TEMPERATURE SETPOINT.

e. COOLING COIL CONTROL VALVE SHALL BE CLOSED.

6. COOLING MODE OPERATION:

a. UNIT SHALL BE PLACED INTO THE COOLING MODE OF OPERATION WHEN THE OUTDOOR AIR TEMPERATURE IS ABOVE THE UNIT'S DISCHARGE TEMPERATURE SETPOINT, THE ENTERING HEATING COIL DEWPOINT TEMPERATURE IS 55 DEGREES F OR BELOW, AND THE ROOM HUMIDITY LEVEL IS BELOW 60-PERCENT RH.

b. THE PLATE-AND-FRAME HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL BE POSITIONED FOR FULL SUPPLY AIRFLOW AROUND THE HEAT EXCHANGER.

c. ENTHALPY WHEEL SHALL BE ENERGIZED. OPERATING SPEED OF THE ENTHALPY WHEEL'S VFD SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE TEMPERATURE SETPOINT.

d. HEATING COIL CONTROL VALVE SHALL BE CLOSED.

e. COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE TEMPERATURE SETPOINT.

7. DEHUMIDIFICATION MODE OPERATION:

a. UNIT SHALL BE PLACED INTO THE DEHUMIDIFICATION MODE OF OPERATION WHEN EITHER THE ENTERING HEATING COIL DEWPOINT TEMPERATURE IS 55 DEGREES F OR ABOVE, OR WHEN THE ROOM HUMIDITY LEVEL RISES ABOVE 60-PERCENT RH.

b. UNDER DEHUMIDIFICATION MODE, ASSOCIATED DUCT-MOUNTED HEATING COIL SENSOR HEATING SETPOINT SHALL BE INCREASED TO 73 DEGREES F. NOTE THAT ALL DEHUMIDIFICATION MODE TEMPERATURE SETPOINTS SHALL BE WRITTEN TO A PRIORITY THAT DOES NOT PERMIT FOR OVERRIDE BY HVAC TECHNICIANS. AS, THE DEHUMIDIFICATION SETPOINTS SHOULD NOT BE OVERRIDDEN, THE DDC CONTRACTOR SHALL UTILIZE A PRIORITY-7 TO WRITE AND RELEASE THE HEATING AND COOLING SETPOINTS.

c. THE PLATE-AND-FRAME HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL MODULATE IN OPPOSITION TO MAINTAIN THE UNIT DISCHARGE AIR TEMPERATURE SETPOINT.

d. ENTHALPY WHEEL SHALL BE ENERGIZED, WITH THE ENTHALPY WHEEL'S VFD OPERATING AT ITS MAXIMUM SPEED.

e. HEATING COIL CONTROL VALVE SHALL BE CLOSED.

f. COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN A COOLING COIL DISCHARGE TEMPERATURE OF 55 DEGREES F.

E. UNOCCUPIED CYCLE:

1. THE OA AND EA DAMPERS SHALL BE CLOSED AND RECIRCULATION DAMPER SHALL BE OPEN THROUGHOUT THE UNOCCUPIED CYCLE.

2. UNIT EXHAUST FAN ARRAY AND ENTHALPY WHEEL SHALL BE DEENERGIZED THROUGHOUT THE UNOCCUPIED CYCLE.

3. DURING THE UNOCCUPIED CYCLE, THE DEDICATED OUTDOOR AIR SYSTEM SUPPLY FAN ARRAY SHALL BE DEENERGIZED, UNLESS THE SPACE TEMPERATURE FALLS BELOW THE HIGH/LOW LIMIT ROOM TEMPERATURE SENSORS UNOCCUPIED HEATING SETPOINT OR RISES ABOVE THE HIGH/LOW LIMIT ROOM TEMPERATURE SENSORS UNOCCUPIED COOLING SETPOINT. ONCE EITHER OF THESE SETPOINT VALUES ARE EXCEEDED, THE DEDICATED OUTDOOR AIR SYSTEM SUPPLY FAN ARRAY SHALL BE TEMPORARILY ENERGIZED. THE HEATING COIL CONTROL VALVE SHALL BE POSITIONED TO MAINTAIN A 70 DEGREES F UNIT DISCHARGE TEMPERATURE DURING THE UNOCCUPIED CYCLE. THE COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN A 55 DEGREES F UNIT DISCHARGE TEMPERATURE DURING THE UNOCCUPIED CYCLE. DEENERGIZE THE DEDICATED OUTDOOR AIR SYSTEM SUPPLY FAN ARRAY ONCE THE UNOCCUPIED SETPOINTS OF THE HIGH/LOW LIMIT ROOM TEMPERATURE SENSOR ARE ACHIEVED.

4. ON A RISE IN BOTH THE HIGH/LOW LIMIT ROOM TEMPERATURE ABOVE 80 DEGREES F (ADJUSTABLE) AND ROOM HUMIDITY ABOVE THE UNOCCUPIED HUMIDITY SETPOINT (60-PERCENT RH; ADJUSTABLE), UNIT SHALL BE TEMPORARILY ENERGIZED AND OPERATE IN THE REDUCED OCCUPANCY CYCLE (AS DESCRIBED PREVIOUSLY) AND FUNCTION WITHIN THE DEHUMIDIFICATION MODE (AS DESCRIBED WITHIN THE OCCUPIED CYCLE). UNIT SHALL BE DEENERGIZED ONCE BOTH THE ROOM TEMPERATURE REACHES THE OCCUPIED COOLING SETPOINT AND THE ROOM HUMIDITY FALLS BELOW 50-PERCENT RH.

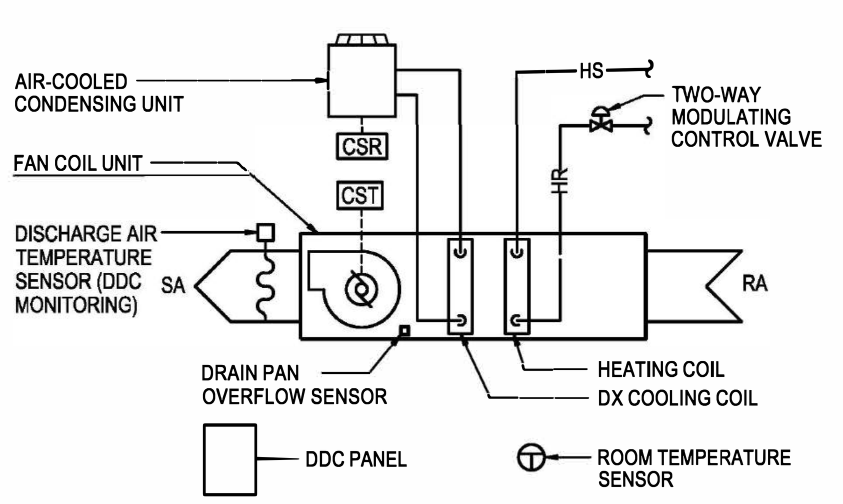
F. SAFETY AND EMERGENCY CONTROL:

1. WHENEVER THE EMERGENCY FAN DISCONNECT SWITCH IS THROWN OR LIMITATIONS ARE EXCEEDED BY ANY AIR DUCT SMOKE DETECTOR, FREEZESTAT, OR STATIC PRESSURE SENSOR, THE SUPPLY AND EXHAUST FAN ARRAYS AND THE ENTHALPY WHEEL SHALL BE DEENERGIZED, UNIT AND ENTHALPY WHEEL OA AND EA DAMPERS SHALL CLOSE, RECIRCULATION DAMPER SHALL OPEN, THE COOLING COIL CONTROL VALVE SHALL CLOSE, AND THE PREHEAT COIL CONTROL VALVE SHALL FAIL OPEN.

2. EMERGENCY DEVICES SHALL BE HARD-WIRED AND REQUIRE OPERATOR INTERVENTION TO RESET.

3. UNIT INTERIOR ELECTRIC RESISTANCE HEATERS SELF-CONTAINED CONTROLS SHALL BE ENABLED WHEN THE UNIT SUPPLY FAN IS DEENERGIZED AND THE OUTDOOR AIR TEMPERATURE IS BELOW 40 DEGREES F. DISABLE HEATERS SELF-CONTAINED CONTROL OPERATION WHEN UNIT SUPPLY FAN IS ENERGIZED OR WHEN THE OUTDOOR AIR TEMPERATURE IS 40 DEGREES F AND ABOVE.

2 ADD



FAN COIL UNIT WITH DX COOLING AND HOT WATER HEATING

A. GENERAL:

1. FAN COIL UNIT OPERATION IS CONTROLLED BY THE RESPECTIVE ZONE OCCUPIED/ UNOCCUPIED SCHEDULING AND SHALL BE ENERGIZED/ DEENERGIZED THROUGH THE DDC SYSTEM.

2. DISCHARGE TEMPERATURE SENSOR SHALL SEND SIGNAL TO THE DDC SYSTEM FOR MONITORING.

B. MORNING WARM-UP, COOL-DOWN, OR RECIRCULATION CYCLE:

1. PRIOR TO ENTERING INTO THE OCCUPIED CYCLE, THE DDC SYSTEMS TIME SCHEDULING PROGRAM SHALL PLACE THE FAN COIL UNIT INTO EITHER THE WARM-UP, COOL-DOWN, OR RECIRCULATION CYCLE AS DESCRIBED WITHIN THIS PARAGRAPH.

2. WARM-UP OR COOL-DOWN CYCLES (ROOM TEMPERATURE SENSOR ABOVE THE OCCUPIED COOLING SETPOINT OR BELOW THE OCCUPIED HEATING SETPOINT):

a. THE DDC SYSTEM SHALL PLACE THE FAN COIL UNIT INTO EITHER MORNING WARM-UP OR COOL-DOWN CYCLE. REQUIRED MODE OF OPERATION SHALL BE BASED ON THE ROOM TEMPERATURE SENSOR READING (ABOVE OCCUPIED COOLING SETPOINT SHALL PLACE SYSTEM IN COOL-DOWN MODE AND BELOW OCCUPIED HEATING SETPOINT SHALL PLACE SYSTEM IN WARM-UP MODE).

b. UNDER BOTH THE WARM-UP AND COOL-DOWN CYCLES, THE FAN COIL UNIT SUPPLY FAN SHALL BE ENERGIZED AND RUN CONTINUOUSLY.

c. UNDER THE WARM-UP CYCLE, THE HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE ROOM TEMPERATURE SENSORS OCCUPIED HEATING SETPOINT. UNDER COOL-DOWN MODE, THE DX COOLING COIL AND ASSOCIATED AIR-COOLED CONDENSING UNIT OPERATION SHALL BE STAGED AND MODULATE COMPRESSOR SPEED TO MAINTAIN THE ROOM TEMPERATURE SENSORS OCCUPIED COOLING SETPOINT.

d. ONCE THE OCCUPIED TEMPERATURE SETPOINT IS REACHED, THE FAN COIL UNIT SHALL BE PLACED INTO THE RECIRCULATION CYCLE AS DESCRIBED BELOW UNTIL INDEXED TO THE OCCUPIED CYCLE THROUGH THE DDC SYSTEMS TIME SCHEDULING PROGRAM.

3. RECIRCULATION CYCLE (ROOM TEMPERATURE IS WITHIN OCCUPIED HEATING AND COOLING SETPOINT RANGE):

a. HEATING COIL CONTROL VALVE SHALL REMAIN CLOSED, DX COOLING COIL AND ASSOCIATED AIR-COOLED CONDENSING UNIT SHALL BE DEENERGIZED, AND THE FAN COIL UNIT SUPPLY FAN SHALL BE ENERGIZED 20 MINUTES (ADJUSTABLE) PRIOR TO THE SCHEDULED OCCUPANCY TIMEFRAME.

C. OCCUPIED CYCLE:

1. THE UNIT SUPPLY FAN MOTOR SHALL REMAIN ENERGIZED AND RUN CONTINUOUSLY.

2. HEATING COIL CONTROL VALVE SHALL MODULATE THE MAINTAIN THE HEATING SETPOINT OF THE ROOM TEMPERATURE SENSOR.

3. AIR-COOLED CONDENSING UNIT ASSOCIATED WITH THE DX COOLING COIL SHALL MODULATE AND CYCLE TO MAINTAIN THE ROOM TEMPERATURE SENSORS COOLING SETPOINT.

4. PROVIDE CONTROL PROGRAMMING THAT PREVENTS THE HEATING COIL CONTROL VALVE FROM BEING OPEN AT THE SAME TIME THAT THE AIR-COOLED CONDENSING UNIT IS ENERGIZED.

D. UNOCCUPIED CYCLE:

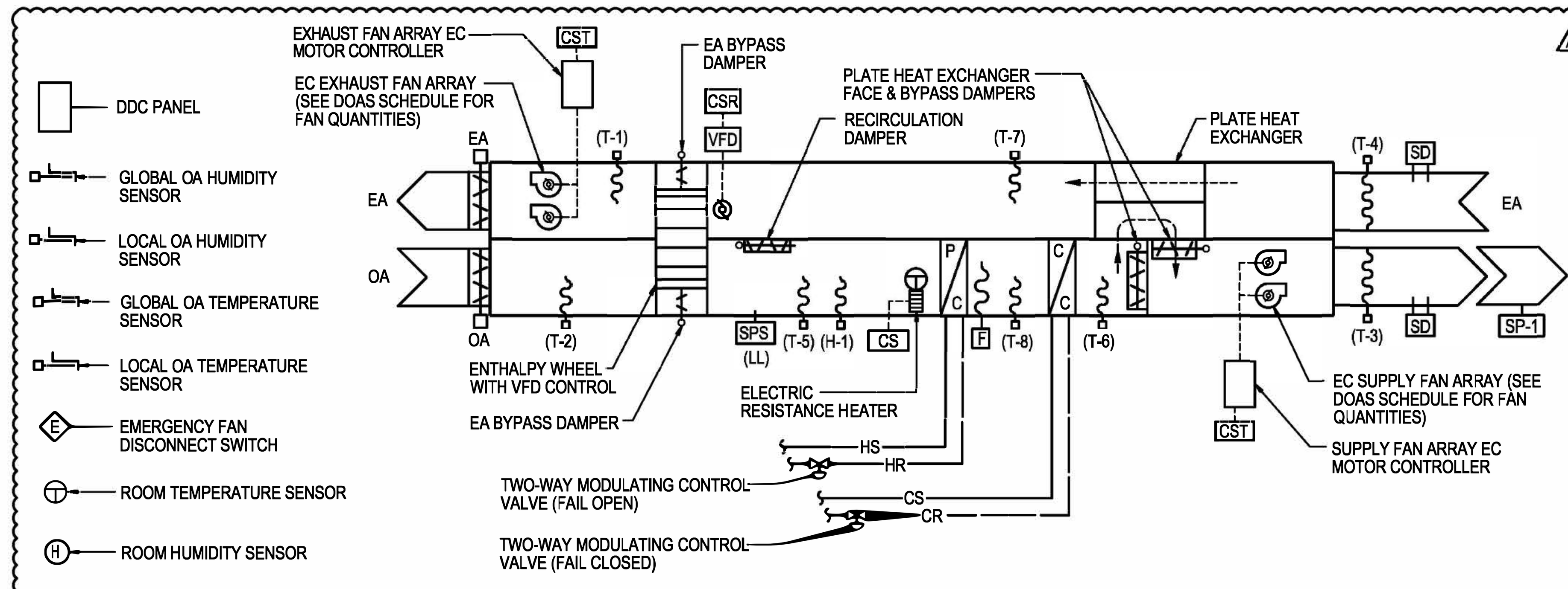
1. FAN COIL UNIT SUPPLY FAN SHALL NORMALLY BE DEENERGIZED, HEATING COIL TWO-WAY CONTROL VALVE SHALL NORMALLY BE CLOSED, AND AIR-COOLED CONDENSING UNIT SHALL NORMALLY BE DEENERGIZED DURING THE UNOCCUPIED CYCLE, UNLESS THE ROOM TEMPERATURE FALLS BELOW THE UNOCCUPIED HEATING SETPOINT OR RISES ABOVE THE UNOCCUPIED COOLING SETPOINT OF THE ROOM TEMPERATURE SENSOR.

2. ON A FALL IN SPACE TEMPERATURE BELOW THE UNOCCUPIED HEATING SETPOINT OF THE ROOM TEMPERATURE SENSOR, FAN COIL UNIT SUPPLY FAN SHALL BE TEMPORARILY ENERGIZED. HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE ROOM TEMPERATURE SENSORS UNOCCUPIED HEATING SETPOINT.

3. ON A RISE IN SPACE TEMPERATURE ABOVE THE UNOCCUPIED COOLING SETPOINT OF THE ROOM TEMPERATURE SENSOR, THE FAN COIL UNIT SUPPLY FAN SHALL BE TEMPORARILY ENERGIZED. AIR-COOLED CONDENSING UNIT ASSOCIATED WITH THE DX COOLING COIL SHALL MODULATE AND CYCLE TO MAINTAIN THE ROOM TEMPERATURE SENSORS UNOCCUPIED COOLING SETPOINT.

E. SAFETY CONTROLS:

1. IF THE DRAIN PAN OVERFLOW SENSOR SENSES WATER, THE SUPPLY FAN SHALL BE DEENERGIZED, AIR-COOLED CONDENSING UNIT SHALL BE DEENERGIZED, AND AN ALARM STATING THE SPECIFIC ALARM CONDITION (INCLUDING FAN COIL UNIT NUMBER) SHALL BE SENT TO THE DDC SYSTEM.



2 ADD

DEDICATED OUTDOOR AIR SYSTEM (VARIABLE VENTILATION AIRFLOW ONLY)

(DOAS-2 THRU DOAS-5)

A. UNIT IS CONTROLLED BY RESPECTIVE ZONE OCCUPIED-UNOCCUPIED SCHEDULE.

B. FAN MOTOR CONTROL:

1. WHEN ENERGIZED UNDER ANY MODE OF OPERATION, THE DDC SYSTEM SHALL MODULATE THE MOTOR SPEED OF ALL SUPPLY FANS EQUALLY (THROUGH THE SUPPLY FAN ARRAY EC MOTOR CONTROLLER) TO MAINTAIN THE SUPPLY DUCT STATIC PRESSURE SETPOINT OF THE SENSOR SP-1.

2. THE DDC SYSTEM SHALL MONITOR THE AIR INLET DAMPER POSITIONS ALL ASSOCIATED AIR TERMINAL UNITS AND RESET THE SETPOINT OF THE SUPPLY DUCT STATIC PRESSURE SENSOR SP-1 AT 5-MINUTE INTERVALS, SUCH THAT THE INLET DAMPER POSITION OF AT LEAST 10-PERCENT (ADJUSTABLE) OF ALL ASSOCIATED AIR TERMINAL UNITS ARE POSITIONED AT 100-PERCENT OPEN.

3. STATIC PRESSURE RESET SHALL OCCUR WITHIN AN ALLOWABLE SETPOINT RANGE THAT RESIDES WITHIN THE DDC SYSTEM. MINIMUM AND MAXIMUM SETPOINTS OF AVAILABLE RESET RANGE SHALL BE ADJUSTABLE AND BASED ON THE DESIGN STATIC PRESSURE SETPOINT VALUE OBTAINED DURING AIRFLOW BALANCING AS FOLLOWS:

a. MINIMUM ALLOWABLE STATIC PRESSURE SETPOINT: 25-PERCENT OF DESIGN STATIC PRESSURE SETPOINT OBTAINED DURING AIRFLOW BALANCING.

b. MAXIMUM ALLOWABLE STATIC PRESSURE SETPOINT: 110-PERCENT OF DESIGN STATIC PRESSURE SETPOINT OBTAINED DURING AIRFLOW BALANCING.

4. WHEN ENERGIZED, THE DDC SYSTEM SHALL MODULATE THE MOTOR SPEED OF ALL EXHAUST FANS EQUALLY (THROUGH THE EXHAUST FAN ARRAY EC MOTOR CONTROLLER) TO MAINTAIN A CONSTANT AIRFLOW DIFFERENTIAL BETWEEN THE SUPPLY AND EXHAUST FAN SYSTEMS, WITH THE AIRFLOW DIFFERENTIAL SETPOINT VARYING BASED ON OPERATING CYCLE. SUPPLY AND RETURN FAN AIRFLOW READINGS SHALL BE OBTAINED THROUGH EACH FAN ARRAYS EC MOTOR CONTROLLER.

C. MORNING WARM-UP/COOL-DOWN, UNOCCUPIED, AND "REDUCED OCCUPANCY" (MAINTENANCE) CYCLES:

1. UNIT SHALL NORMALLY BE DEENERGIZED THROUGHOUT THE MORNING WARM-UP/COOL-DOWN CYCLE, UNOCCUPIED CYCLE, AND REDUCED OCCUPANCY CYCLES, UNLESS A CALL FOR UNOCCUPIED DEHUMIDIFICATION IS REQUIRED.

2. SUPPLY FAN AND EXHAUST FAN ARRAYS AND ENTHALPY WHEEL SHALL BE DEENERGIZED AND ENTHALPY WHEEL OA AND EA BYPASS DAMPERS SHALL BE CLOSED.

3. OA AND EA ISOLATION DAMPERS SHALL BE CLOSED AND RECIRCULATION DAMPERS SHALL BE OPEN.

4. UNOCCUPIED DEHUMIDIFICATION MODE:

a. ON A RISE IN BOTH ROOM TEMPERATURE ABOVE 80 DEGREES F (ADJUSTABLE) AND CALCULATED AVERAGE ROOM HUMIDITY ABOVE THE UNOCCUPIED HUMIDITY SETPOINT (60-PERCENT RH; ADJUSTABLE), ALL FIVE VENTILATION ONLY DOAS UNITS SHALL BE TEMPORARILY ENERGIZED AND PLACED INTO THE INTO THE UNOCCUPIED DEHUMIDIFICATION MODE.

b. CALCULATED AVERAGE ROOM HUMIDITY SHALL BE A VIRTUAL ZONE HUMIDITY POINT COMPRISED OF THE AVERAGE READINGS OF ALL FIVE VENTILATION ONLY DOAS ROOM HUMIDITY SENSORS (DOAS-2 THROUGH DOAS-6). TO ALLEVIATE INACCURATE SENSOR READINGS, ANY ROOM HUMIDITY SENSOR READING THAT VARIES 20-PERCENT RH +/- (ADJUSTABLE) FROM THE CALCULATED AVERAGE HUMIDITY READING SHALL SHOULD NOT BE INCLUDED WITHIN THE ZONE AVERAGE HUMIDITY CALCULATION, WITH AN ALARM SENT TO THE DDC INDICATING THE SPECIFIC CONDITION AND ZONE HUMIDITY SENSOR ERROR.

c. UNDER THE UNOCCUPIED DEHUMIDIFICATION MODE, RECIRCULATION DAMPER SHALL CONTINUE TO BE POSITIONED OPEN AND OA AND EA DAMPERS SHALL REMAIN CLOSED. ONCE THE RECIRCULATION DAMPER IS PROVEN OPEN, THE SUPPLY FAN ARRAY SHALL BE TEMPORARILY ENERGIZED. EXHAUST FAN ARRAY AND ENTHALPY WHEEL SHALL REMAIN DEENERGIZED AND OA AND EA BYPASS DAMPERS SHALL REMAIN CLOSED. COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN A COOLING COIL DISCHARGE TEMPERATURE OF 55 DEGREES F. HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL BE POSITIONED FOR FULL SUPPLY AIRFLOW THROUGH THE PLATE-AND- FRAME HEAT EXCHANGER.

d. SUPPLY FAN ARRAY SHALL BE DEENERGIZED AND COOLING COIL CONTROL VALVE SHALL BE CLOSED ONCE THE CALCULATED AVERAGE ROOM HUMIDITY FALLS BELOW 50-PERCENT RH (INDEPENDENT OF ROOM TEMPERATURE).

D. OCCUPIED CYCLE:

1. DOAS UNIT RECIRCULATION DAMPER SHALL BE PROVEN CLOSED THROUGHOUT THE OCCUPIED CYCLE.

2. OA AND EA DAMPERS SHALL BE PROVEN OPEN THROUGHOUT THE OCCUPIED CYCLE. ONCE PROVEN OPEN, SUPPLY FAN AND EXHAUST FAN ARRAYS SHALL BE ENERGIZED AND RUN CONTINUOUSLY THROUGHOUT THE OCCUPIED CYCLE.

3. DOAS UNIT SHALL FUNCTION WITHIN ONE OF THE FOUR OPERATING MODES DESCRIBED BELOW (HEATING, COOLING , ECONOMIZER, OR DEHUMIDIFICATION) DURING THE OCCUPIED CYCLE. REQUIRED MODE OF OPERATION SHALL BE BASED ON OUTDOOR AIR TEMPERATURE AND/OR ENTERING HEATING COIL DEWPOINT CONDITIONS.

4. HEATING MODE OPERATION:

a. UNIT SHALL BE PLACED INTO THE HEATING MODE OF OPERATION WHEN THE OUTDOOR TEMPERATURE IS BELOW 55 DEGREES F.

b. UNIT DISCHARGE TEMPERATURE SETPOINT SHALL BE 55 DEGREES F DURING HEATING MODE OPERATION.

c. THE PLATE-AND-FRAME HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL BE POSITIONED FOR FULL SUPPLY AIRFLOW AROUND THE HEAT EXCHANGER.

d. ENTHALPY WHEEL SHALL BE ENERGIZED. OPERATING SPEED OF THE ENTHALPY WHEEL'S VFD SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE TEMPERATURE SETPOINT, SUBJECT TO AN ADJUSTABLE LOW LIMIT ENTHALPY WHEEL EA DISCHARGE TEMPERATURE SETPOINT (INITIAL LOW LIMIT TEMPERATURE SETPOINT SHALL BE 10 DEGREES F). ONCE LOW LIMIT TEMPERATURE IS REACHED, VFD SHALL MODULATE UNDER CONTROL OF THIS LOW LIMIT SETPOINT. VFD CONTROL SHALL REVERT TO UNIT DISCHARGE AIR TEMPERATURE CONTROL ONCE LOW LIMIT CONDITION IS ELIMINATED.

e. ENTHALPY WHEEL EA AND OA BYPASS DAMPERS SHALL BE CLOSED.

f. HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE TEMPERATURE SETPOINT.

g. COOLING COIL CONTROL VALVE SHALL BE CLOSED.

5. COOLING MODE OPERATION:

a. UNIT SHALL BE PLACED INTO THE COOLING MODE OF OPERATION WHEN THE OUTDOOR TEMPERATURE IS ABOVE 70 DEGREES F AND THE ENTERING HEATING COIL DEWPOINT TEMPERATURE IS 55 DEGREES F OR BELOW.

b. UNIT DISCHARGE TEMPERATURE SETPOINT SHALL BE 70 DEGREES F DURING COOLING MODE OPERATION.

c. THE PLATE-AND-FRAME HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL BE POSITIONED FOR FULL SUPPLY AIRFLOW THROUGH THE HEAT EXCHANGER.

d. ENTHALPY WHEEL SHALL BE ENERGIZED, WITH THE ENTHALPY WHEEL'S VFD OPERATING AT ITS MAXIMUM SPEED.

e. ENTHALPY WHEEL EA AND OA BYPASS DAMPERS SHALL BE CLOSED.

f. HEATING COIL CONTROL VALVE SHALL BE CLOSED.

g. COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE TEMPERATURE SETPOINT.

6. ECONOMIZER MODE OPERATION:

a. UNIT SHALL BE PLACED INTO THE ECONOMIZER MODE OF OPERATION WHEN THE OUTDOOR TEMPERATURE IS BETWEEN 55 AND 70 DEGREES F, AND THE ENTERING HEATING COIL DEWPOINT TEMPERATURE IS 55 DEGREES F OR BELOW.

b. NO UNIT DISCHARGE TEMPERATURE SETPOINT SHALL BE UTILIZED DURING ECONOMIZER MODE OPERATION.

c. THE PLATE-AND-FRAME HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL BE POSITIONED FOR FULL SUPPLY AIRFLOW AROUND THE HEAT EXCHANGER.

d. ENTHALPY WHEEL SHALL BE DEENERGIZED.

e. ENTHALPY WHEEL EA AND OA BYPASS DAMPERS SHALL BE OPEN.

f. HEATING COIL CONTROL VALVE SHALL BE CLOSED.

g. COOLING COIL CONTROL VALVE SHALL BE CLOSED.

7. DEHUMIDIFICATION MODE OPERATION:

a. UNIT SHALL BE PLACED INTO THE DEHUMIDIFICATION MODE OF OPERATION WHEN THE ENTERING HEATING COIL DEWPOINT TEMPERATURE IS 55 DEGREES F OR ABOVE.

b. UNIT DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE RESET ON A SLIDING SCALE AND BE BASED ON OUTDOOR AIR TEMPERATURE DURING DEHUMIDIFICATION MODE OPERATION. LOWER END OF THE SLIDING SCALE SHALL BE A 55 DEGREES F UNIT DISCHARGE AIR TEMPERATURE BASED ON AN OUTDOOR AIR TEMPERATURE OF 55 DEGREES F AND BELOW. UPPER END OF THE SLIDING SCALE SHALL BE 70 DEGREES F DISCHARGE AIR TEMPERATURE BASED ON AN OUTDOOR AIR TEMPERATURE OF 70 DEGREES F AND ABOVE.

c. THE PLATE-AND-FRAME HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE AIR TEMPERATURE SETPOINT.

d. ENTHALPY WHEEL SHALL BE ENERGIZED, WITH THE ENTHALPY WHEEL'S VFD OPERATING AT ITS MAXIMUM SPEED.

e. ENTHALPY WHEEL EA AND OA BYPASS DAMPERS SHALL BE CLOSED.

f. HEATING COIL CONTROL VALVE SHALL BE CLOSED.

g. COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN A COOLING COIL DISCHARGE TEMPERATURE OF 55 DEGREES F.

E. SAFETY AND EMERGENCY CONTROL:

1. WHENEVER THE EMERGENCY FAN DISCONNECT SWITCH IS THROWN OR LIMITATIONS ARE EXCEEDED BY ANY AIR DUCT SMOKE DETECTOR, FREEZESTAT, OR STATIC PRESSURE SENSOR, THE SUPPLY AND EXHAUST FAN ARRAYS AND THE ENTHALPY WHEEL SHALL BE DEENERGIZED, UNIT AND ENTHALPY WHEEL OA AND EA DAMPERS SHALL CLOSE, RECIRCULATION DAMPER SHALL OPEN, THE COOLING COIL CONTROL VALVE SHALL CLOSE, AND THE PREHEAT COIL CONTROL VALVE SHALL FAIL OPEN.

2. EMERGENCY DEVICES SHALL BE HARD-WIRED AND REQUIRE OPERATOR INTERVENTION TO RESET.

3. UNIT INTERIOR ELECTRIC RESISTANCE HEATERS SELF-CONTAINED CONTROLS SHALL BE ENABLED WHEN THE UNIT SUPPLY FAN IS DEENERGIZED AND THE OUTDOOR AIR TEMPERATURE IS BELOW 40 DEGREES F. DISABLE HEATERS SELF-CONTAINED CONTROL OPERATION WHEN UNIT SUPPLY FAN IS ENERGIZED OR WHEN THE OUTDOOR AIR TEMPERATURE IS 40 DEGREES F AND ABOVE.

2 ADD

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Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2021.

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

IAC CD REVIEW 8 OCTOBER 19

BUILDING PERMIT 7 JANUARY 20

2 ADD ADDENDUM NO. 2 11 FEBRUARY 20

BID AND CONSTRUCTION 7 JANUARY 20

AUTOMATIC TEMPERATURE CONTROLS

M-703

February 07, 2020 8:37 a.m.
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DDC - INPUT/OUTPUT POINT SCHEDULE

SYSTEM APPARATUS OR AREA POINT DESCRIPTION	INPUT TO DDC – ANALOG									INPUT TO DDC – BINARY										OUTPUT FROM DDC – ANALOG				OUTPUT FROM DDC – BINARY			SYSTEM FEATURES – ALARMS						SYSTEM FEATURES – PROGRAMS					GENERAL			SUPPLEMENTARY NOTES
	TEMPERATURE	PRESSURE	CFM	FLOW	RELATIVE HUMIDITY	POSITION	CONCENTRATION (CO OR CO2)	SPEED	CO2 DIFFERENTIAL	STATUS	CURRENT SENSING RELAY	SMOKE DETECTORS	FREEZESTAT	EMERGENCY SWITCH	FILTER DP	END SWITCH	LOCAL SWITCH ACTIVATION	ALARM	CURRENT SENSING TRANSDUCER	SETPOINT ADJUSTMENT	POSITION	HUMIDITY	CO2 CONCENTRATION	OFF/ON	OPEN-CLOSE	HEATING-COOLING	FAILURE	HIGH ANALOG	LOW ANALOG	HIGH BINARY	HIGH BINARY	FAULT (GENERAL)	TIME SCHEDULING (OCC/UNOCC)	LEAD/LAG	WARM UP / COOL DOWN / RECIRC	REDUCED OCCUPANCY CYCLE	ECONOMIZER	COLOR GRAPHICS	INTERFACE W/ EQUIPMENT CONTROLS		
GLOBAL POINTS																																					X			
OA TEMPERATURE AND HUMIDITY	X				X																																			
EMERGENCY FAN DISCONNECT														X																										
GENERATOR TRANSFER SWITCH										X																														
HEATING WATER SYSTEM																								X									X					X			
HEATING WATER PUMPS										X	X													X			X							X							
HEATING WATER PUMP VFDS								X		X								X		X				X								X							X		HARDWIRE INTERFACE W/ VFD
DDC FLOW METER				X																X									X											
MINIMUM FLOW BYPASS VALVE																					X																			
DIFFERENTIAL PRESSURE SENSORS		X																		X								X													TYP OF 2
BOILERS										X														X			X							X					X		SEE NOTE 1, TYP OF 4
HS TEMPERATURE SENSORS	X																			X									X											
HR TEMPERATURE SENSOR	X																																							
LOCAL OA TEMPERATURE SENSOR	X																																							
BOILER ISOLATION VALVES																X									X															
BUILDING CHILLED WATER SYSTEM																								X									X					X			
CHILLED WATER PUMPS										X	X													X			X							X							
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ROOM TEMPERATURE SENSOR	X																			X								X	X											
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DISCHARGE TEMPERATURE SENSOR	X																																							DDC MONITORING
DRAIN PAN OVERFLOW SENSOR																														X										
DX / HEATING WATER FAN COIL UNITS																																	X		X			X			
SUPPLY FAN										X									X					X			X													
HEATING COIL CONTROL VALVE																					X																			
AIR-COOLED CONDENSING UNIT										X	X													X			X													
ROOM TEMPERATURE SENSOR	X																			X																				
DISCHARGE TEMPERATURE SENSOR	X																																							DDC MONITORING
DRAIN PAN OVERFLOW SENSOR																														X										
UNIT HEATERS																																					X			BOTH PUH AND CUH TYPES
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DUCTLESS SPLIT SYSTEMS																																					X			
TEMPERATURE SENSOR	X																											X												
EF WITH OCC/UNOCC CONTROL																																	X					X			FAN SEQUENCE A
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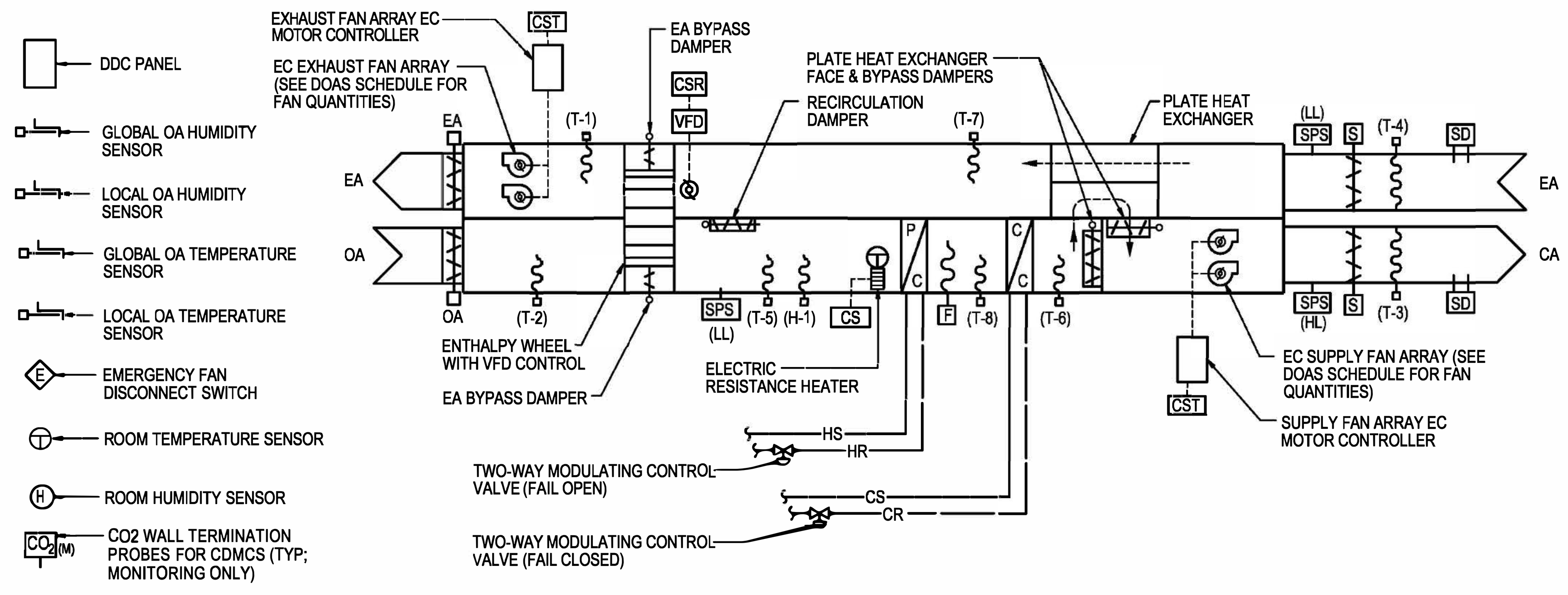
EF WITH CONTINUOUS OPERATION																																					X			FAN SEQUENCE G
EXHAUST FAN										X	X													X			X													
SINGLE DUCT TERMINAL UNITS																																					X			CONSTANT AND VARIABLE AIR VOLUME
ROOM TEMPERATURE SENSOR	X																			X													X		X					
DISCHARGE TEMP SENSOR	X																											X												
HEATING COIL CONTROL VALVE																					X																			
PRIMARY AIR DAMPER						X															X																			
AIRFLOW SENSOR			X																	X									X											
RETROFIT TERMINAL UNITS																																	X					X			CONSTANT AND VARIABLE AIR VOLUME
PRIMARY AIR DAMPER																					X																			
AIRFLOW SENSOR			X																	X																				
ROOM CO2 DIFFERENTIAL									X											X								X													VAV UNITS ONLY; SEE NOTE 2
ROOM TEMPERATURE SENSOR	X																			X																				VAV UNITS ONLY;
DUCT-MOUNTED HEATING COILS																																	X		X	X	X	X			DISCHARGE & ROOM TEMP CONTROL
DISCHARGE TEMPERATURE SENSOR	X																			X																				DISCHARGE TEMP CONTROL ONLY
ROOM TEMPERATURE SENSOR	X																			X																				ROOM TEMP CONTROL ONLY
HEATING COIL CONTROL VALVE																					X																			
KITCHEN HOOD EA + MAU												X		X																							X			MAU-1 AND EF-29
EXHAUST FAN										X	X													X			X													
KITCHEN HOOD CONTROL PANEL										X																														
KITCHEN HOOD HEAT SENSOR	X																			X																				
SUPPLY FAN										X	X													X			X													
DISCHARGE TEMP SENSOR	X																			X								X	X											
OA DAMPER																X									X															
INDIRECT GAS-FIRED BURNER										X										X												X								

NOTES:

1. IN ADDITION TO POINTS INDICATED, PROVIDE BACNET INTERFACE WITH MANUFACTURER'S CONTROLLER FOR REMOTE MONITORING THROUGH DDC SYSTEM. PROVIDE UP TO 10 MONITORING POINTS (SELECTED BY OWNER) FOR EACH PIECE OF EQUIPMENT.
2. PROVIDE BACNET INTERFACE WITH MANUACTURER'S CONTROLLERS AT SENSOR SUITES FOR OBTAINING ROOM CARBON DIOXIDE DIFFERENTIAL FOR EACH ROOM SERVED BY THE CO2 MONITORING AND CONTROL SYSTEM.



DEDICATED OUTDOOR AIR SYSTEM (CONSTANT VENTILATION AIRFLOW ONLY)

(DOAS-6)

A. UNIT IS CONTROLLED BY RESPECTIVE ZONE OCCUPIED-UNOCCUPIED SCHEDULE.

B. SUPPLY AND EXHAUST FANS SHALL OPERATE AT A CONSTANT AIRFLOW. SMOKE DAMPERS SHALL BE PROVEN OPEN PRIOR TO ENERGIZING THE SUPPLY AND EXHAUST FANS.

C. MORNING WARM-UP/COOL-DOWN, UNOCCUPIED, AND "REDUCED OCCUPANCY" (MAINTENANCE) CYCLES:

1. UNIT SHALL NORMALLY BE DEENERGIZED THROUGHOUT THE MORNING WARM-UP/COOL-DOWN CYCLE, UNOCCUPIED CYCLE, AND REDUCED OCCUPANCY CYCLES, UNLESS A CALL FOR UNOCCUPIED DEHUMIDIFICATION IS REQUIRED.
2. SUPPLY FAN AND EXHAUST FAN ARRAYS AND ENTHALPY WHEEL SHALL BE DEENERGIZED AND ENTHALPY WHEEL OA AND EA BYPASS DAMPERS SHALL BE CLOSED.
3. OA AND EA ISOLATION DAMPERS SHALL BE CLOSED AND RECIRCULATION DAMPERS SHALL BE OPEN.
4. UNOCCUPIED DEHUMIDIFICATION MODE:
   a. ON A RISE IN BOTH ROOM TEMPERATURE ABOVE 80 DEGREES F (ADJUSTABLE) AND CALCULATED AVERAGE ROOM HUMIDITY ABOVE THE UNOCCUPIED HUMIDITY SETPOINT (60-PERCENT RH; ADJUSTABLE), ALL FIVE VENTILATION ONLY DOAS UNITS SHALL BE TEMPORARILY ENERGIZED AND PLACED INTO THE INTO THE UNOCCUPIED DEHUMIDIFICATION MODE.
   b. CALCULATED AVERAGE ROOM HUMIDITY SHALL BE A VIRTUAL ZONE HUMIDITY POINT COMPRISED OF THE AVERAGE READINGS OF ALL FIVE VENTILATION ONLY DOAS ROOM HUMIDITY SENSORS (DOAS-2 THROUGH DOAS-6). TO ALLEVIATE INACCURATE SENSOR READINGS, ANY ROOM HUMIDITY SENSOR READING THAT VARIES 20-PERCENT RH +/- (ADJUSTABLE) FROM THE CALCULATED AVERAGE HUMIDITY READING SHALL SHOULD NOT BE INCLUDED WITHIN THE ZONE AVERAGE HUMIDITY CALCULATION, WITH AN ALARM SENT TO THE DDC INDICATING THE SPECIFIC CONDITION AND ZONE HUMIDITY SENSOR ERROR.
   c. UNDER THE UNOCCUPIED DEHUMIDIFICATION MODE, RECIRCULATION DAMPER SHALL CONTINUE TO BE POSITIONED OPEN AND OA AND EA DAMPERS SHALL REMAIN CLOSED. ONCE THE RECIRCULATION DAMPER IS PROVEN OPEN, THE SUPPLY FAN ARRAY SHALL BE TEMPORARILY ENERGIZED. EXHAUST FAN ARRAY AND ENTHALPY WHEEL SHALL REMAIN DEENERGIZED AND OA AND EA BYPASS DAMPERS SHALL REMAIN CLOSED. COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN A COOLING COIL DISCHARGE TEMPERATURE OF 55 DEGREES F. HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL BE POSITIONED FOR FULL SUPPLY AIRFLOW THROUGH THE PLATE-AND- FRAME HEAT EXCHANGER.
   d. SUPPLY FAN ARRAY SHALL BE DEENERGIZED AND COOLING COIL CONTROL VALVE SHALL BE CLOSED ONCE THE CALCULATED AVERAGE ROOM HUMIDITY FALLS BELOW 50-PERCENT RH (INDEPENDENT OF ROOM TEMPERATURE).

D. OCCUPIED CYCLE:

1. DOAS UNIT RECIRCULATION DAMPER SHALL BE PROVEN CLOSED THROUGHOUT THE OCCUPIED CYCLE.
2. OA AND EA DAMPERS SHALL BE PROVEN OPEN THROUGHOUT THE OCCUPIED CYCLE. ONCE PROVEN OPEN, SUPPLY FAN AND EXHAUST FAN ARRAYS SHALL BE ENERGIZED AND RUN CONTINUOUSLY THROUGHOUT THE OCCUPIED CYCLE.
3. DOAS UNIT SHALL FUNCTION WITHIN ONE OF THE FOUR OPERATING MODES (HEATING, COOLING , ECONOMIZER, OR DEHUMIDIFICATION) DURING THE OCCUPIED CYCLE. REQUIRED MODE OF OPERATION SHALL BE BASED ON OUTDOOR AIR TEMPERATURE AND/OR ENTERING COIL DEWPOINT CONDITIONS.
4. HEATING MODE OPERATION:
   a. UNIT SHALL BE PLACED INTO THE HEATING MODE OF OPERATION WHEN THE OUTDOOR TEMPERATURE IS BELOW 55 DEGREES F.
   b. UNIT DISCHARGE TEMPERATURE SETPOINT SHALL BE 55 DEGREES F DURING HEATING MODE OPERATION.
   c. THE PLATE-AND-FRAME HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL BE POSITIONED FOR FULL SUPPLY AIRFLOW AROUND THE HEAT EXCHANGER.
   d. ENTHALPY WHEEL SHALL BE ENERGIZED. OPERATING SPEED OF THE ENTHALPY WHEEL'S VFD SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE TEMPERATURE SETPOINT, SUBJECT TO AN ADJUSTABLE LOW LIMIT ENTHALPY WHEEL EA DISCHARGE TEMPERATURE SETPOINT (INITIAL LOW LIMIT TEMPERATURE SETPOINT SHALL BE 10 DEGREES F). ONCE LOW LIMIT TEMPERATURE IS REACHED, VFD SHALL MODULATE UNDER CONTROL OF THIS LOW LIMIT SETPOINT. VFD CONTROL SHALL REVERT TO UNIT DISCHARGE AIR TEMPERATURE CONTROL ONCE LOW LIMIT CONDITION IS ELIMINATED.
   e. ENTHALPY WHEEL EA AND OA BYPASS DAMPERS SHALL BE CLOSED.
   f. HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE TEMPERATURE SETPOINT.
   g. COOLING COIL CONTROL VALVE SHALL BE CLOSED.
5. COOLING MODE OPERATION:
   a. UNIT SHALL BE PLACED INTO THE COOLING MODE OF OPERATION WHEN THE OUTDOOR TEMPERATURE IS ABOVE 70 DEGREES F AND THE ENTERING HEATING COIL DEWPOINT TEMPERATURE IS 55 DEGREES F OR BELOW.
   b. UNIT DISCHARGE TEMPERATURE SETPOINT SHALL BE 70 DEGREES F DURING COOLING MODE OPERATION.
   c. THE PLATE-AND-FRAME HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL BE POSITIONED FOR FULL SUPPLY AIRFLOW THROUGH THE HEAT EXCHANGER.
   d. ENTHALPY WHEEL SHALL BE ENERGIZED, WITH THE ENTHALPY WHEEL'S VFD OPERATING AT ITS MAXIMUM SPEED.
   e. ENTHALPY WHEEL EA AND OA BYPASS DAMPERS SHALL BE CLOSED.
   f. HEATING COIL CONTROL VALVE SHALL BE CLOSED.
   g. COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE TEMPERATURE SETPOINT.
6. ECONOMIZER MODE OPERATION:
   a. UNIT SHALL BE PLACED INTO THE ECONOMIZER MODE OF OPERATION WHEN THE OUTDOOR TEMPERATURE IS BETWEEN 55 AND 70 DEGREES F, AND THE ENTERING HEATING COIL DEWPOINT TEMPERATURE IS 55 DEGREES F OR BELOW.
   b. NO UNIT DISCHARGE TEMPERATURE SETPOINT SHALL BE UTILIZED DURING ECONOMIZER MODE OPERATION.
   c. THE PLATE-AND-FRAME HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL BE POSITIONED FOR FULL SUPPLY AIRFLOW AROUND THE HEAT EXCHANGER.
   d. ENTHALPY WHEEL SHALL BE DEENERGIZED.
   e. ENTHALPY WHEEL EA AND OA BYPASS DAMPERS SHALL BE OPEN.
   f. HEATING COIL CONTROL VALVE SHALL BE CLOSED.
   g. COOLING COIL CONTROL VALVE SHALL BE CLOSED.
7. DEHUMIDIFICATION MODE OPERATION:
   a. UNIT SHALL BE PLACED INTO THE DEHUMIDIFICATION MODE OF OPERATION WHEN THE ENTERING HEATING COIL DEWPOINT TEMPERATURE IS 55 DEGREES F OR ABOVE.
   b. UNIT DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE RESET ON A SLIDING SCALE AND BE BASED ON OUTDOOR AIR TEMPERATURE DURING DEHUMIDIFICATION MODE OPERATION. LOWER END OF THE SLIDING SCALE SHALL BE A 55 DEGREES F UNIT DISCHARGE AIR TEMPERATURE BASED ON AN OUTDOOR AIR TEMPERATURE OF 55 DEGREES F AND BELOW. UPPER END OF THE SLIDING SCALE SHALL BE 70 DEGREES F DISCHARGE AIR TEMPERATURE BASED ON AN OUTDOOR AIR TEMPERATURE OF 70 DEGREES F AND ABOVE.
   c. THE PLATE-AND-FRAME HEAT EXCHANGER FACE AND BYPASS DAMPERS SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE AIR TEMPERATURE SETPOINT.
   d. ENTHALPY WHEEL SHALL BE ENERGIZED, WITH THE ENTHALPY WHEEL'S VFD OPERATING AT ITS MAXIMUM SPEED.
   e. ENTHALPY WHEEL EA AND OA BYPASS DAMPERS SHALL BE CLOSED.
   f. HEATING COIL CONTROL VALVE SHALL BE CLOSED.
   g. COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN A COOLING COIL DISCHARGE TEMPERATURE OF 55 DEGREES F.

E. SAFETY AND EMERGENCY CONTROL:

1. WHENEVER THE EMERGENCY FAN DISCONNECT SWITCH IS THROWN OR LIMITATIONS ARE EXCEEDED BY ANY AIR DUCT SMOKE DETECTOR, FREEZESTAT, OR STATIC PRESSURE SENSOR, THE SUPPLY AND EXHAUST FAN ARRAYS AND THE ENTHALPY WHEEL SHALL BE DEENERGIZED, UNIT AND ENTHALPY WHEEL OA AND EA DAMPERS SHALL CLOSE, RECIRCULATION DAMPER SHALL OPEN, THE COOLING COIL CONTROL VALVE SHALL CLOSE, AND THE PREHEAT COIL CONTROL VALVE SHALL FAIL OPEN.
2. EMERGENCY DEVICES SHALL BE HARD-WIRED AND REQUIRE OPERATOR INTERVENTION TO RESET.
3. UNIT INTERIOR ELECTRIC RESISTANCE HEATERS SELF-CONTAINED CONTROLS SHALL BE ENABLED WHEN THE UNIT SUPPLY FAN IS DEENERGIZED AND THE OUTDOOR AIR TEMPERATURE IS BELOW 40 DEGREES F. DISABLE HEATERS SELF-CONTAINED CONTROL OPERATION WHEN UNIT SUPPLY FAN IS ENERGIZED OR WHEN THE OUTDOOR AIR TEMPERATURE IS 40 DEGREES F AND ABOVE.

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James Posey Associates
Mechanical & Electrical Consulting Engineers
JPA PROJECT NO. 6840-18

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date: 01-16-2021.

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

IAC CD REVIEW 8 OCTOBER 19
BUILDING PERMIT 7 JANUARY 20
2 ADD — ADDENDUM NO. 2 11 FEBRUARY 20
BID AND CONSTRUCTION 7 JANUARY 20

AUTOMATIC TEMPERATURE CONTROLS

M-706

February 07, 2020 9:15 a.m.
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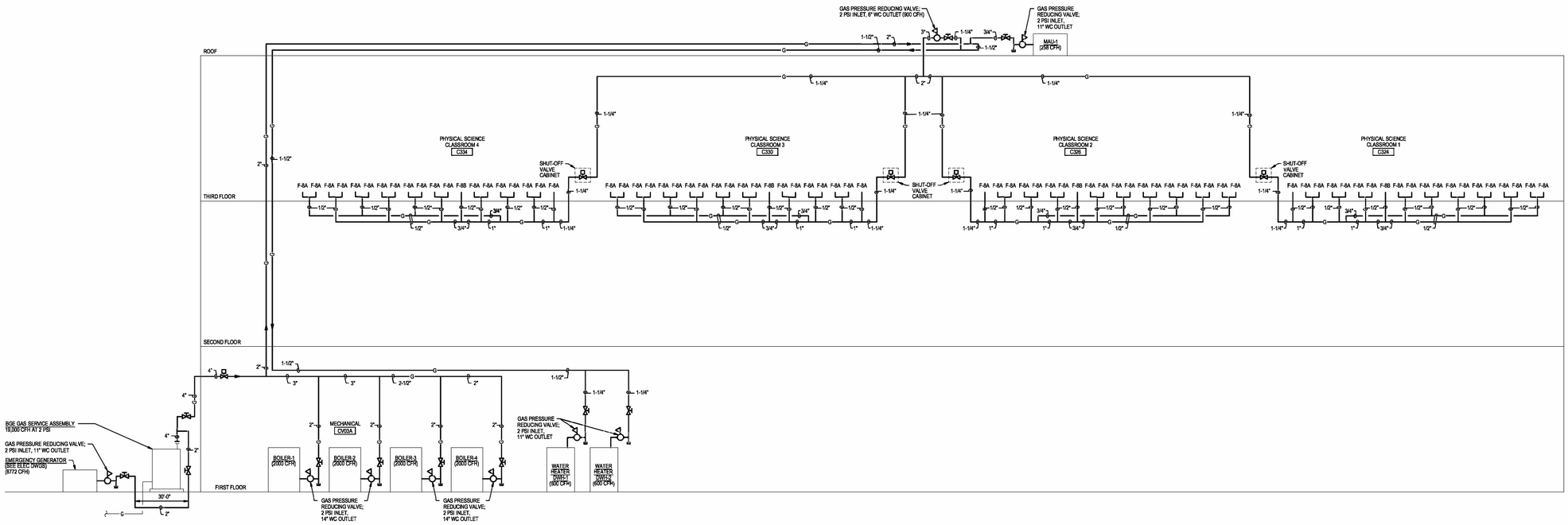

GAS RISER DIAGRAM

NOT TO SCALE

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February 07, 2020 9:55 a.m.
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JPA PROJECT NO. 5940-18

James Posey Associates
Engineering Your Vision
Mechanical & Electrical
Consulting Engineers
1410E Joh Bear Boulevard, Suite 320
Baltimore, Maryland 21117
tel 410-965-6060
jaimeposey.com

Professional Certification.
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 35895,
Expiration date: 01-16-2021.

HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

ADD 2 ADDENDUM NO. 2 11 FEBRUARY 20

BID AND CONSTRUCTION 7 JANUARY 20

RISER DIAGRAMS

P-507

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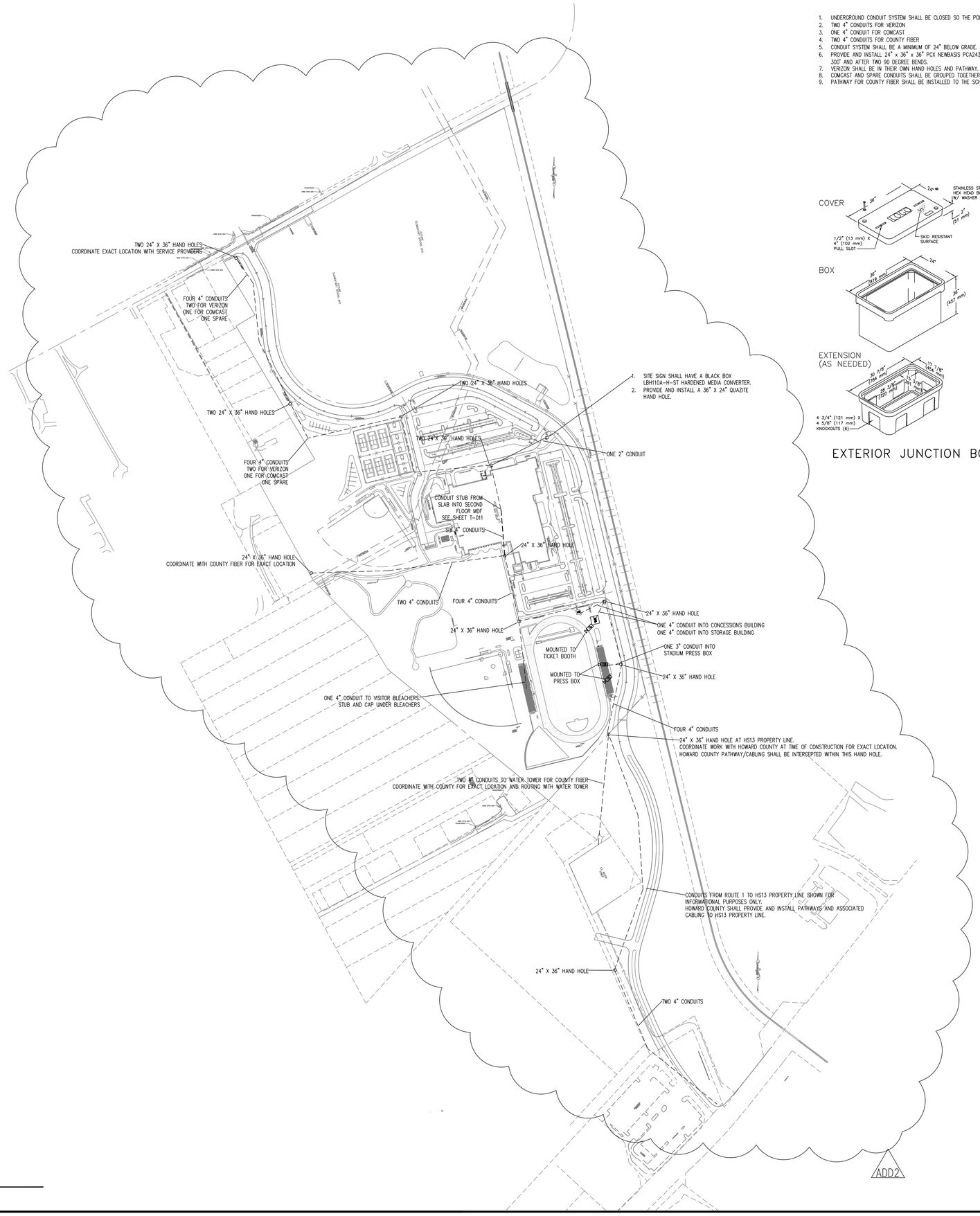
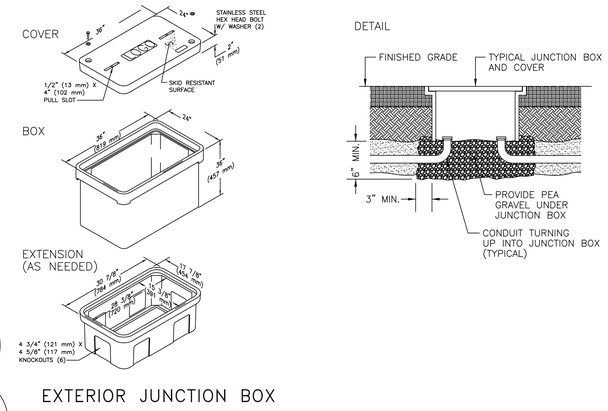
1. UNDERGROUND CONDUIT SYSTEM SHALL BE CLOSED SO THE POINT OF DEMARCATION FOR SERVICE PROVIDERS SHALL BE THE MDF ROOM.
2. TWO 4" CONDUITS FOR VERIZON
3. ONE 4" CONDUIT FOR COMCAST
4. TWO 4" CONDUITS FOR COUNTY FIBER
5. CONDUIT SYSTEM SHALL BE A MINIMUM OF 24" BELOW GRADE.
6. PROVIDE AND INSTALL 24" x 36" x 36" PCX NEWBASIS PCA243636-00006 HAND HOLE AT SERVICE PROVIDER DROP LOCATION, EVERY 300' AND AFTER TWO 90 DEGREE BENDS.
7. VERIZON SHALL BE IN THEIR OWN HAND HOLES AND PATHWAY.
8. COMCAST AND SPARE CONDUITS SHALL BE GROUPED TOGETHER.
9. PATHWAY FOR COUNTY FIBER SHALL BE INSTALLED TO THE SCHOOL AND TO THE WATER TOWER.



1. SITE SIGN SHALL HAVE A BLACK BOX LBH110A-H-ST HARDENED MEDIA CONVERTER.
2. PROVIDE AND INSTALL A 36" X 24" QUAZITE HAND HOLE.



EXTERIOR JUNCTION BOX

T1 TECHNOLOGY SITE PLAN
NO SCALE

Date: 11/2/18
Time: 4:28:28 PM

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TECHNOLOGY SITE PLAN

T-001

2_ OF _32
PROJECT NO. 1801

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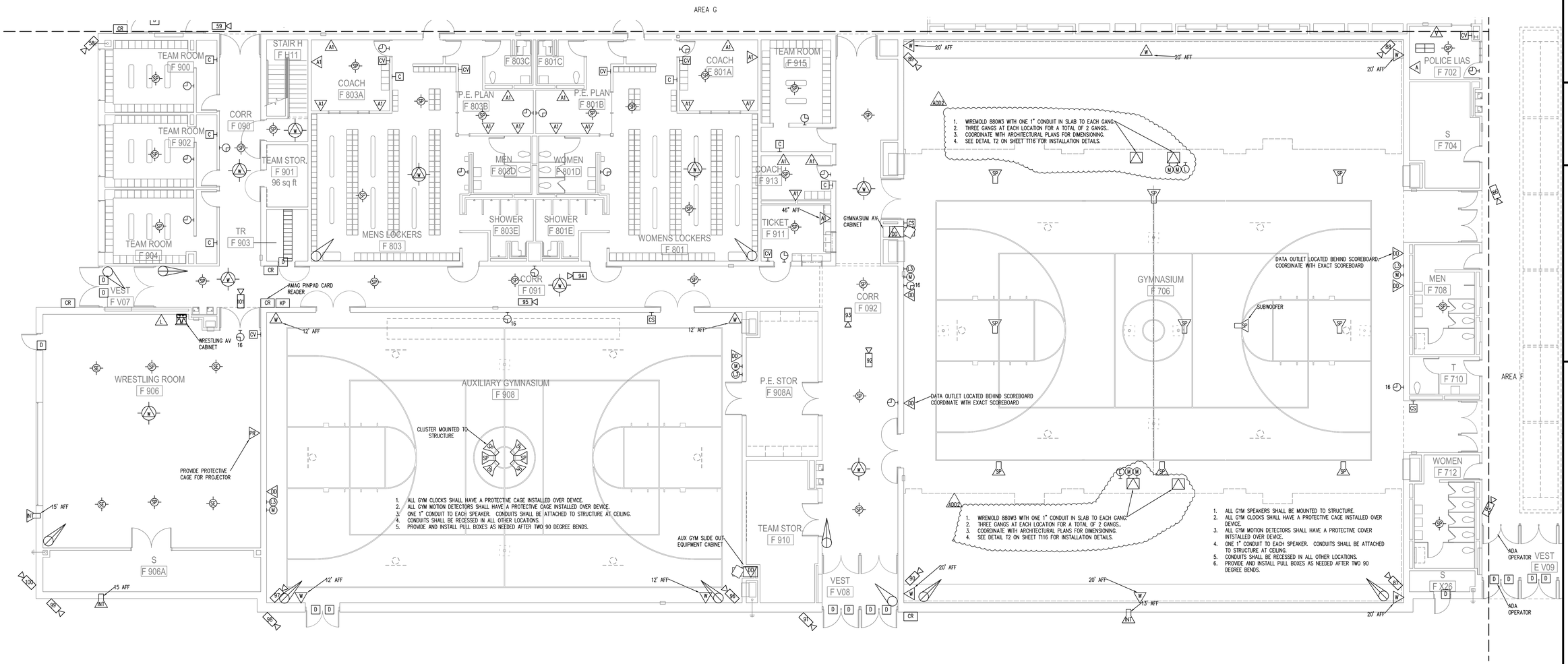
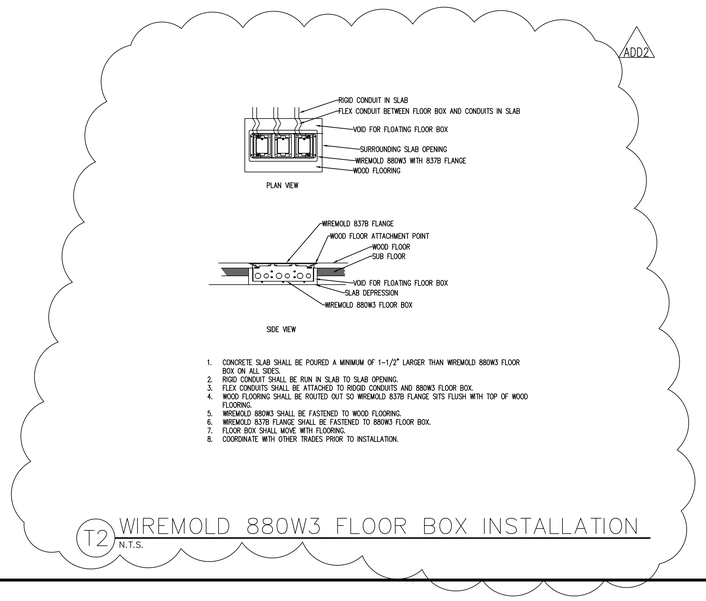
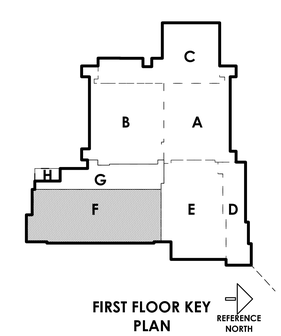


T1 FIRST FLOOR PLAN AREA "F"
1/8"=1'



T2 WIREMOLD 880W3 FLOOR BOX INSTALLATION
N.T.S.



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TECHNOLOGY FIRST FLOOR PLAN AREA F

T-116

11_ OF _32
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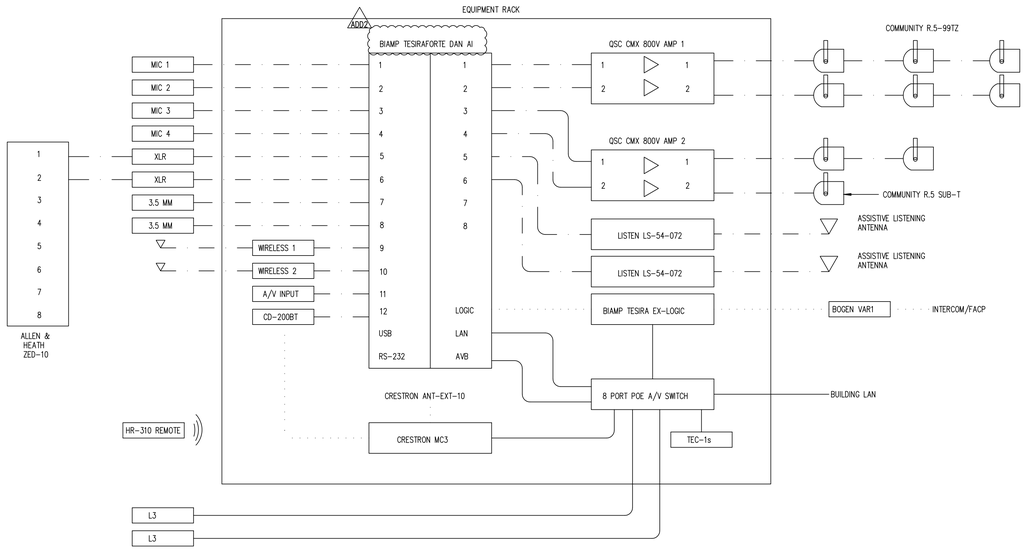
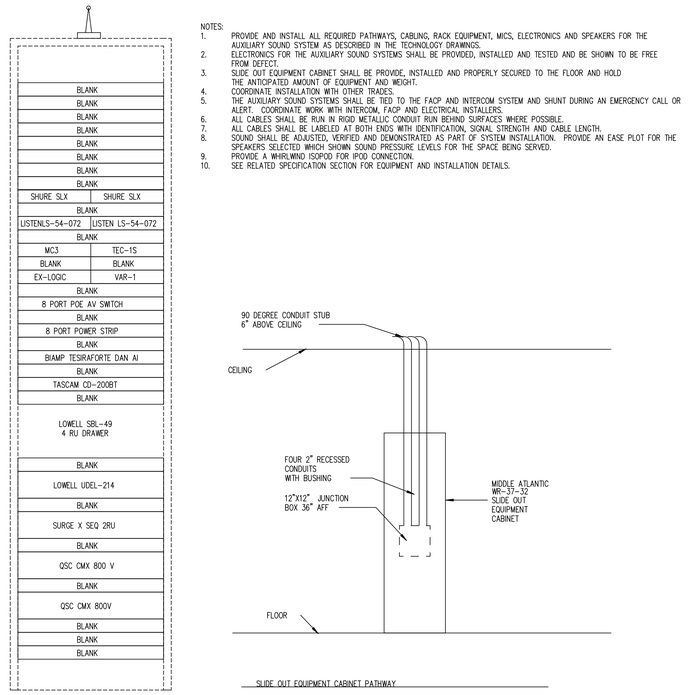
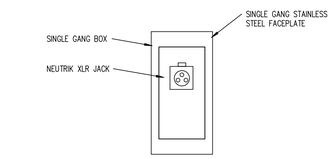


T1 GYM SOUND SYSTEM LINE DIAGRAM
N.T.S.

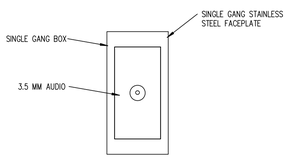


NOTES:
1. PROVIDE AND INSTALL ALL REQUIRED PATHWAYS, CABLING, RACK EQUIPMENT, MICS, ELECTRONICS AND SPEAKERS FOR THE AUXILIARY SOUND SYSTEM AS DESCRIBED IN THE TECHNOLOGY DRAWINGS.
2. ELECTRONICS FOR THE AUXILIARY SOUND SYSTEMS SHALL BE PROVIDED, INSTALLED AND TESTED AND BE SHOWN TO BE FREE FROM DEFECT.
3. SLIDE OUT EQUIPMENT CABINET SHALL BE PROVIDE, INSTALLED AND PROPERLY SECURED TO THE FLOOR AND HOLD THE ANTICIPATED AMOUNT OF EQUIPMENT AND WEIGHT.
4. COORDINATE INSTALLATION WITH OTHER TRADES.
5. THE AUXILIARY SOUND SYSTEMS SHALL BE TIED TO THE FACP AND INTERCOM SYSTEM AND SHUNT DURING AN EMERGENCY CALL OR ALERT. COORDINATE WORK WITH INTERCOM, FACP AND ELECTRICAL INSTALLERS.
6. ALL CABLES SHALL BE RUN IN RIGID METALLIC CONDUIT RUN BEHIND SURFACES WHERE POSSIBLE.
7. ALL CABLES SHALL BE LABELED AT BOTH ENDS WITH IDENTIFICATION, SIGNAL STRENGTH AND CABLE LENGTH.
8. SOUND SHALL BE ADJUSTED, VERIFIED AND DEMONSTRATED AS PART OF SYSTEM INSTALLATION. PROVIDE AN EASE PLOT FOR THE SPEAKERS SELECTED WHICH SHOWN SOUND PRESSURE LEVELS FOR THE SPACE BEING SERVED.
9. PROVIDE A WHIRLWIND ISOPOD FOR IPOD CONNECTION.
10. SEE RELATED SPECIFICATION SECTION FOR EQUIPMENT AND INSTALLATION DETAILS.

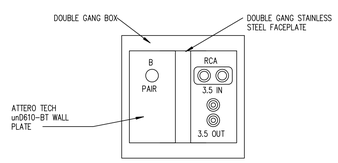
T2 GYM SOUND SYSTEM EQUIPMENT CABINET
N.T.S.



M M FACEPLATE



L L FACEPLATE



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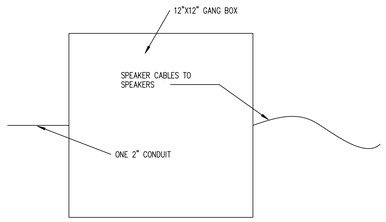

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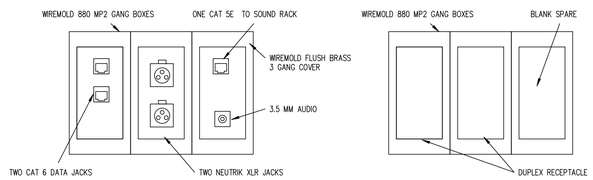
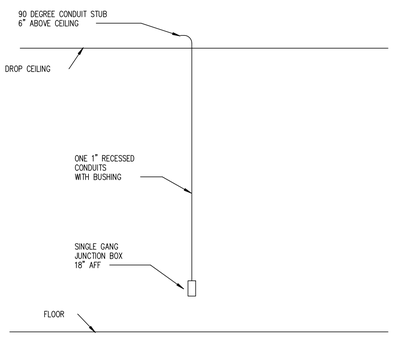
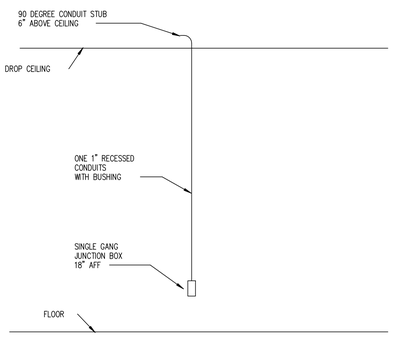


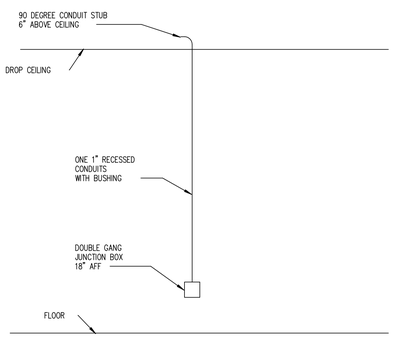
GYMNASIUM FLOORBOX FACEPLATE



M M PATHWAY



L L PATHWAY



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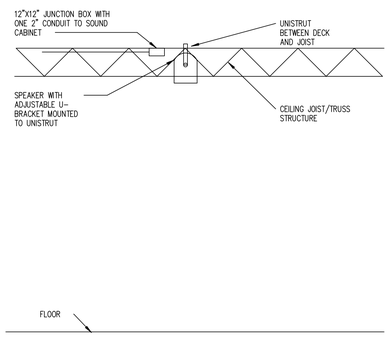
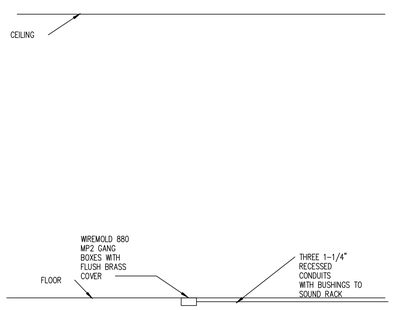


SP SP PATHWAY



GYMNASIUM FLOORBOX PATHWAY

T3 GYM SOUND SYSTEM PATHWAYS
N.T.S.

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11 FEBRUARY 20

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7 JANUARY 20

TECHNOLOGY
GYMNASIUM
SOUND SYSTEM

T-506

28 _ OF _32
PROJECT NO. 1801

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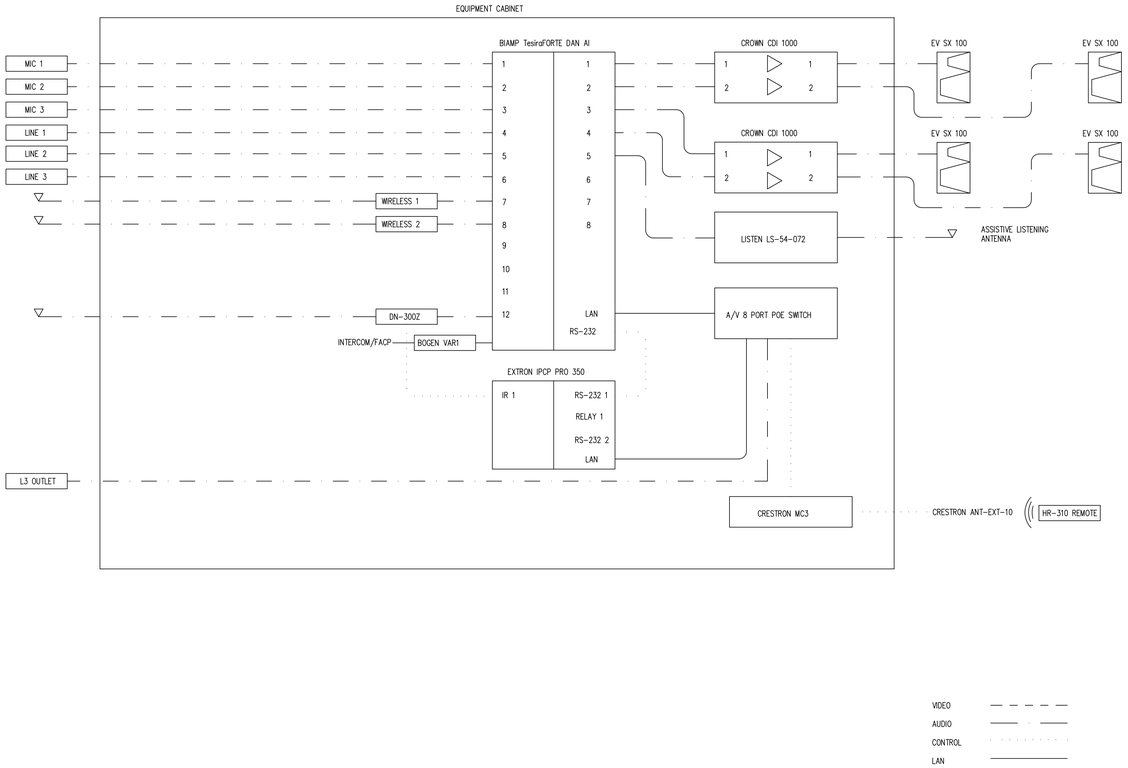
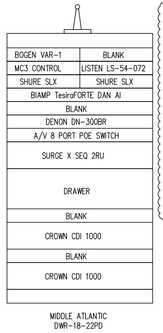
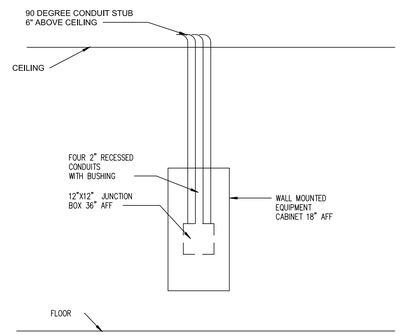


T1 CAFETERIA LINE DIAGRAM
N.T.S.

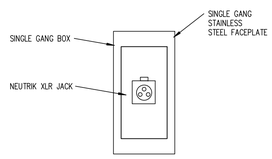


ADD2

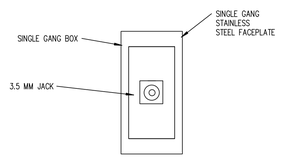
NOTES:
1. PROVIDE AND INSTALL ALL REQUIRED PATHWAYS, CABLING, RACK EQUIPMENT, MICS, ELECTRONICS AND SPEAKERS FOR THE A/V SYSTEM AS DESCRIBED IN THE TECHNOLOGY DRAWINGS.
2. ELECTRONICS FOR THE A/V SYSTEMS SHALL BE PROVIDED, INSTALLED AND TESTED AND BE SHOWN TO BE FREE FROM DEFECT.
3. EQUIPMENT CABINET SHALL BE PROVIDE, INSTALLED AND PROPERLY SECURED TO THE FLOOR AND HOLD THE ANTICIPATED AMOUNT OF EQUIPMENT AND WEIGHT.
4. THE A/V SYSTEM SHALL BE TIED TO THE FACP AND INTERCOM SYSTEM AND SHUNT DURING AN EMERGENCY CALL OR ALERT. COORDINATE WORK WITH INTERCOM, FACP AND ELECTRICAL INSTALLERS.
5. ALL CABLES SHALL BE RUN IN RIGID METALLIC CONDUIT RUN BEHIND SURFACES WHERE POSSIBLE.
6. ALL CABLES SHALL BE LABELED AT BOTH ENDS WITH IDENTIFICATION, SIGNAL STRENGTH AND CABLE LENGTH.
7. SOUND AND VIDEO SHALL BE ADJUSTED, VERIFIED AND DEMONSTRATED AS PART OF SYSTEM INSTALLATION. EDID AND HDCP SETTINGS SHALL BE ADJUSTED, VERIFIED AND RECORDED FOR VIDEO SIGNALS.
8. PROVIDE AN EASE PLOT FOR THE SPEAKERS SELECTED WHICH SHOWN SOUND PRESSURE LEVELS FOR THE SPACE BEING SERVED.
9. WORK MUST BE COORDINATED WITH ASSOCIATED ELECTRICAL COMPONENTS AND ARCHITECTURAL COMPONENTS.
10. SEE RELATED SPECIFICATION SECTION FOR EQUIPMENT AND INSTALLATION DETAILS.



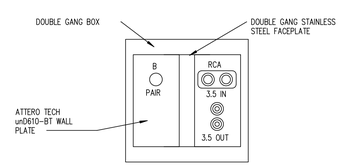
T2 CAFETERIA EQUIPMENT CABINET
N.T.S.



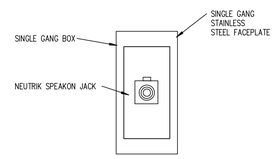
M M FACEPLATE



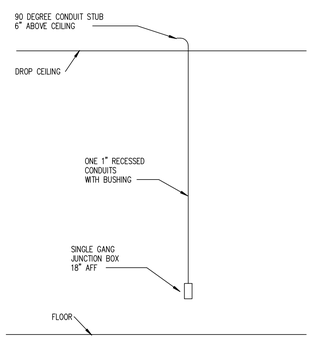
L L FACEPLATE



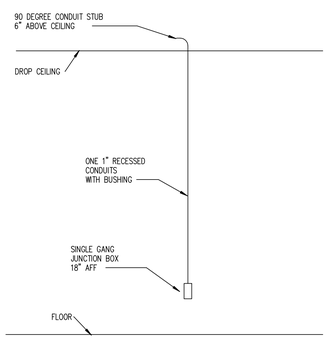
L3 L3 FACEPLATE



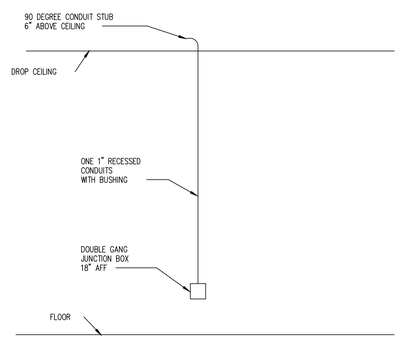
SP SP FACEPLATE



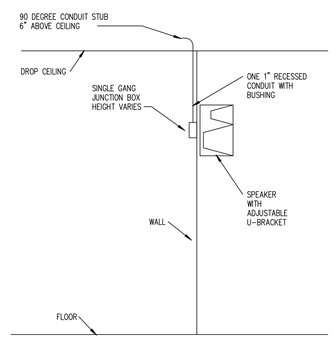
M M PATHWAY



L L PATHWAY



L3 L3 PATHWAY



SP SP PATHWAY

T3 CAFETERIA OUTLETS
N.T.S.

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TECHNOLOGY CAFETERIA AUDIO SYSTEM

T-507

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PROJECT NO. 1801

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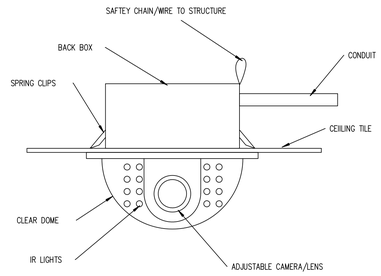
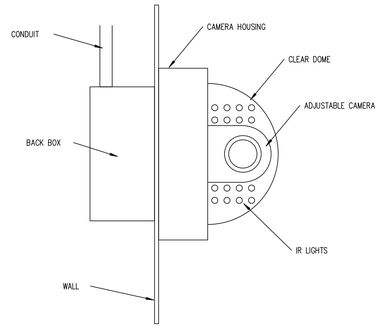
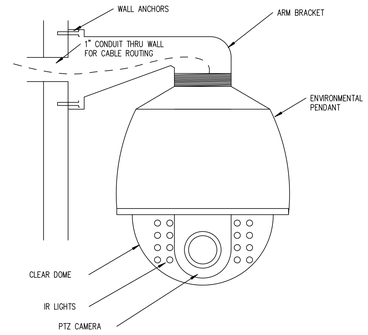


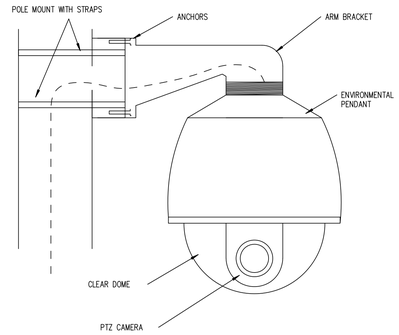
IN-CEILING FIXED IR CAMERA DETAIL



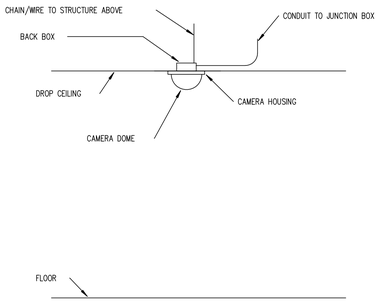
IN-WALL FIXED IR CAMERA DETAIL



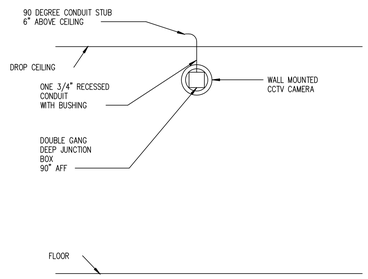
PTZ IR DOME CAMERA DETAIL



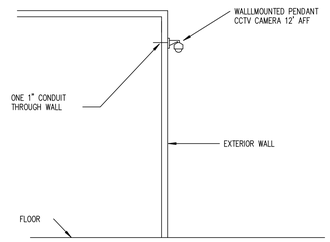
POLE MOUNT PTZ DOME CAMERA DETAIL



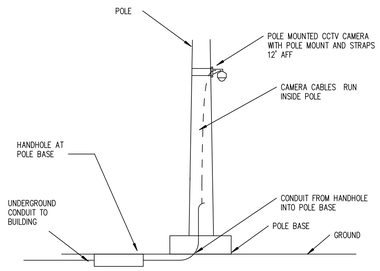
IN-CEILING CCTV CAMERA PATHWAY DETAIL



IN-WALL CCTV CAMERA PATHWAY DETAIL



EXTERIOR PENDANT CCTV CAMERA PATHWAY DETAIL



POLE MOUNTED CCTV CAMERA DETAIL

(COORDINATE EXACT POLE DETAIL AND INSTALLATION WITH EXACT POLE PROVIDED)

T1 CCTV SYSTEM PATHWAYS

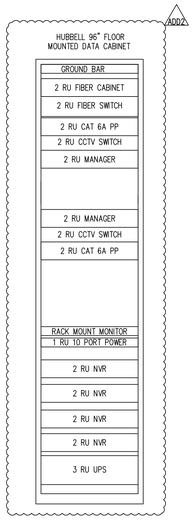
N.T.S.

	IN-CEILING INDOOR DOME	SURFACE MOUNT INDOOR DOME	SURFACE MOUNT OUTDOOR DOME	SURFACE MOUNT OUTDOOR DOME HI-RES	PENDANT OUTDOOR DOME HI-RES	PENDANT OUTDOOR DOME	
CAMERA #	4.0C-H5A-DC1-IR	4.0C-H5A-D1-IR	2.0C-H5A-D01-IR	6.0C-H5A-D01-IR	8.0C-H5A-DP1-IR	4.0C-H5A-DP1-IR	HEIGHT
1						X	13'-0"
2						X	13'-0"
3						X	13'-0"
4						X	13'-0"
5	X						CEILING
6	X						CEILING
7	X						CEILING
8	X						CEILING
9						X	13'-0"
10	X						CEILING
11	X						CEILING
12	X						CEILING
13	X						CEILING
14	X						CEILING
15						X	13'-0"
16		X					8'-0"
17						X	13'-0"
18	X						CEILING
19	X						CEILING
20						X	10'-0"
21						X	13'-0"
22	X						CEILING
23	X						CEILING
24	X						10
25		X					CEILING
26	X						CEILING
27	X						CEILING
28		X					8'-0"
29						X	13'-0"
30						X	13'-0"
31						X	13'-0"
32						X	13'-0"
33	X						CEILING
34	X						CEILING
35		X					8'-0"
36	X						CEILING
37	X						CEILING
38	X						CEILING
39						X	13'-0"
40	X						CEILING
41	X						CEILING
42						X	10'-0"
43	X						CEILING
44	X						CEILING
45	X						CEILING
46		X					10'-0"
47		X					10'-0"
48	X						CEILING
49	X						CEILING
50	X						CEILING
51	X						CEILING
52	X						CEILING
53	X						CEILING
54						X	13'-0"
55		X					8'-0"
56						X	13'-0"
56A						X	13'-0"
57						X	13'-0"
58						X	15'-0"
59	X						CEILING
60	X						CEILING
61	X						CEILING
62	X						CEILING
63	X						CEILING
64	X						CEILING
65	X						CEILING
66	X						CEILING
67	X						CEILING
68	X						CEILING
69		X					8'-0"
70	X						CEILING
71						X	15'-0"
72						X	15'-0"
73						X	15'-0"
74	X						CEILING
75	X						CEILING

	IN-CEILING INDOOR DOME	SURFACE MOUNT INDOOR DOME	SURFACE MOUNT OUTDOOR DOME	SURFACE MOUNT OUTDOOR DOME HI-RES	PENDANT OUTDOOR DOME HI-RES	PENDANT OUTDOOR DOME	
CAMERA #	4.0C-H5A-DC1-IR	4.0C-H5A-D1-IR	2.0C-H5A-D01-IR	6.0C-H5A-D01-IR	SEE BELOW	4.0C-H5A-DP1-IR	HEIGHT
76	X						CEILING
77						X	15'-0"
78						X	15'-0"
79						X	15'-0"
80	X						CEILING
81		X					10'-0"
82		X					10'-0"
83						X	13'-0"
84						X	13'-0"
85	X						CEILING
86	X						CEILING
87		X					20'-0"
88		X					20'-0"
89		X					20'-0"
90		X					20'-0"
91						X	13'-0"
92	X						CEILING
93	X						CEILING
94	X						CEILING
95	X						CEILING
96		X					12'-0"
97		X					12'-0"
98						X	13'-0"
99						X	15'-0"
100						X	15'-0"
101	X						CEILING
102	X						CEILING
103	X						CEILING
104	X						CEILING
105	X						CEILING
106		X					8'-0"
107	X						CEILING
108	X						CEILING
109	X						CEILING
110	X						CEILING
111		X					8'-0"
112	X						CEILING
113	X						CEILING
114	X						CEILING
115	X						CEILING
116	X						CEILING
117		X					CEILING
118	X						CEILING
119	X						CEILING
120		X					8'-0"
121	X						CEILING
122	X						CEILING
123	X						CEILING
124	X						CEILING
125	X						CEILING
126		X					8'-0"
127	X						CEILING
128	X						CEILING
129	X						CEILING
130	X						CEILING
131		X					8'-0"
132	X						CEILING
133	X						CEILING
134	X						CEILING
135	X						CEILING
136		X					8'-0"
137	X						CEILING
138	X						CEILING
139	X						CEILING
140	X						CEILING
141	X						CEILING
142		X					CEILING
143	X						CEILING
144	X						CEILING
145		X					8'-0"
146	X						CEILING
147	X						CEILING
148	X						CEILING
149	X						CEILING
150	X						CEILING
151		X					8'-0"
152		X					10'-0"
153		X					10'-0"
154				X			12'-0"
155				X			12'-0"
156					24C-H4A-3MH-270		CONCESSIONS
157					16L-H4PRO		PRESSBOX
158					16L-H4PRO		PRESSBOX

T2 CCTV SCHEDULE

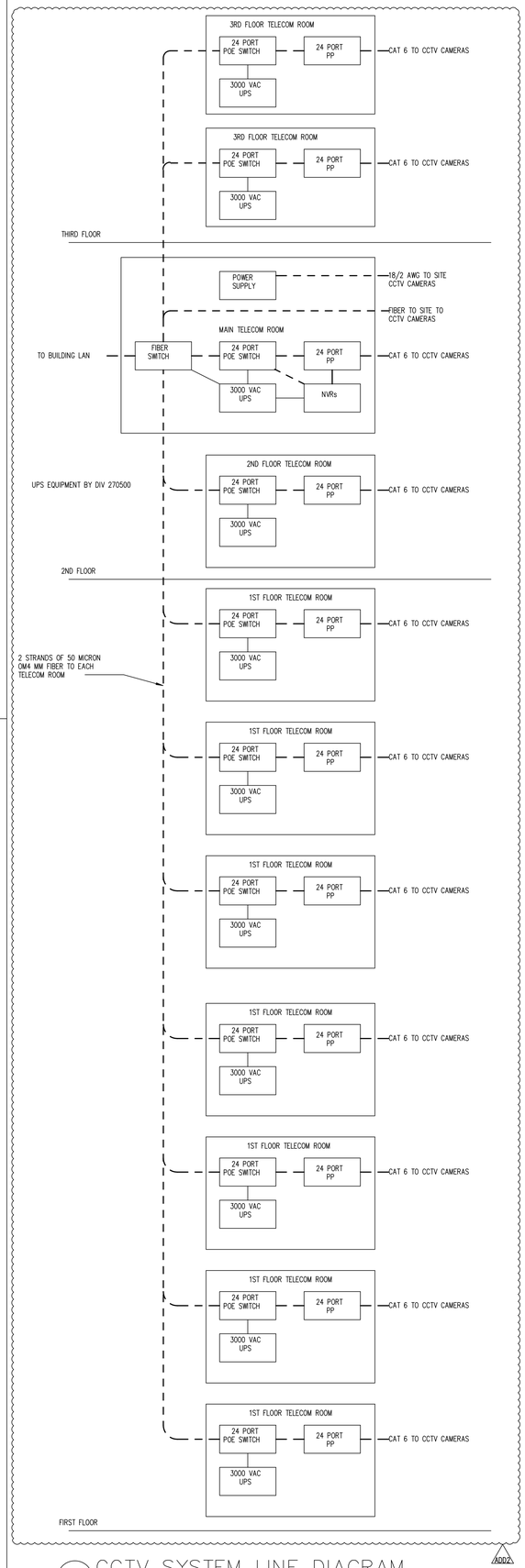
N.T.S.



1. PROVIDE AND INSTALL PATHWAYS, BACKBONE CABLES, HORIZONTAL CABLES, PATCH PANELS AND CONNECTORS FOR AN IP VIDEO SURVEILLANCE SYSTEM INFRASTRUCTURE.
2. PROVIDE AND INSTALL ALL COMPONENTS IN TELECOM ROOMS / IDFS FOR CAMERA CONNECTIONS TO PATCH PANELS.
3. PROVIDE AND INSTALL VIDEO SURVEILLANCE NVRS, SWITCHES, SOFTWARE AND CAMERAS.
4. ALL CABLES SHALL BE CLEARLY LABELED AT EACH END AND INCLUDE THE CABLE LENGTH AND UNIQUE LABEL.
5. ALL CABLES SHALL BE RUN IN CABLE TRAY, J-HOOKS NO MORE THAN 6' APART AND WITHIN EMT CONDUIT.
6. BACKBONE CABLES SHALL BE 50 MICRON OM4 MM FIBER FROM THE TER TO EACH TR.
7. HORIZONTAL CABLES UNDER 90 METERS SHALL BE CAT 6 UTP WITH 15' OF SLACK AT THE CAMERA END AND A TERMINATED MALE RJ-45.
8. HORIZONTAL CABLES OVER 90 METERS SHALL BE TWO STRANDS OF MM FIBER AND 18/2 AWG COPPER CABLE FOR POWER DISTRIBUTION.
9. MAKE ADJUSTMENTS AS NECESSARY TO PROVIDE THE INTENDED CAMERA COVERAGE AREA.
10. THE INFRASTRUCTURE INSTALLATION SHALL BE COORDINATED WITH THE OWNER, ELECTRICIAN AND LOW VOLTAGE CONTRACTOR.
11. PROVIDE COMPLETE SHOP DRAWINGS AND EQUIPMENT SUBMITTALS WHICH CLEARLY IDENTIFY EACH SPECIFIC PIECE OF EQUIPMENT, CABLE ROUTE, EQUIPMENT LOCATION AND SYSTEM INTERCONNECTIONS.
12. PROVIDE COMPLETE AS-BUILT DRAWINGS WHEN THE INSTALLATION IS CONSIDERED COMPLETE. PUNCH LIST ITEMS SHALL HAVE BEEN CORRECTED, TEST RESULTS PROVIDED. AS-BUILTS MUST INCLUDE DEVICE LOCATIONS, EQUIPMENT CONNECTIONS, WIRING DIAGRAMS AND PROGRAMMING INFORMATION. PROVIDE IN HARDCOPY AND AUTOCAD 2015 OR LATER FORMAT.
13. SEE CCTV SPECIFICATION SECTION FOR EQUIPMENT DETAILS.

T3 CCTVEQUIPMENT CABINET

N.T.S.



T4 CCTV SYSTEM LINE DIAGRAM

N.T.S.

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HIGH SCHOOL #13
JESSUP, MARYLAND
HOWARD COUNTY PUBLIC SCHOOL SYSTEM

revisions

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TECHNOLOGY
CCTV SYSTEM

T-510

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PROJECT NO. 1801

Date: 11/2/18
Time: 4:28:28 PM

Oak Contracting, LLC

High School #13 Addendum No. 2

Attachment A, February 12, 2020

This Attachment A portion of the addendum includes changes and clarifications to the Contract Documents as follows:

Item:

Changes to Specifications	6 pages
Revisions to Oak portion of Addenda #1	2 pages
Scope Clarification Details #14-#25	13 pages
Current Pre-bid RFI log	2 pages
Answered Pre-bid RFIs	51 pages

Changes to Specifications

00 2400 Cross-reference

00 2400 – Contract Package 7A

1. Add Specification Section 08 9119 Fixed Metal Louvers for the louvers at integrated metal wall panels.

00 2400 - Contract Package 16A

1. Change the title of Specification Section 11 6143 "Stage Curtains" to "Cyclorama Curtains"
2. Delete Specification Section 23 0913 – Instrumentation & Control Devices for HVAC

01 1000 – Summary of Work

1. Delete #2 in 1.04 A.

01 1113 Contract Packages

01 1113 – Contract Package 2A:

1. Item 2.1: Delete the 7th and 8th sentence and replace with the following: The Contractor shall use the specified drying agent included in Specification Section 31 2000 2.08 for drying of all material that does not meet the optimum moisture content required per the Contract Documents.

2. Add the following to item 2.7: Each utility crew shall consist of, at a minimum, one (1) excavator, one (1) excavator operator, one (1) pipe layer, one (1) roller/compactor and two (2) laborers.

3. Add the following to item 2.8: Each sitework crew shall consist of, at a minimum, one (1) excavator, one (1) excavator operator, one (1) off road truck, one (1) off-road truck driver, one (1) roller and one (1) roller operator. These crews will be required until such time that the grading for the sediment basins, staging areas, roadways, and building pad are completed.

4. Item 2.10 – In the 2nd sentence delete the word "CR-6" and replace with "stone material shown in detail 1 on Drawing C-31".

5. Item 2.10 – Insert the words "and remove" between the words "maintain" and "the"

6. Item 2.10 – Replace "Maintenance includes repair for usual and customary construction operations and for any weather events" with "Maintenance includes repair and/or replacement required due to weather events, usual and customary construction operations and all site, mechanical and electrical utility crossings."

7. Add the following to item 2.16: Maintenance includes repair and/or replacement required due to weather events, usual and customary construction operations and all site, mechanical and electrical utility crossings. Top of stone material shown in detail 2 on C-31 shall be placed under subgrade of future finished grade.

8. Add the following to item 2.17: Maintenance includes repair and/or replacement required due to weather events, usual and customary construction operations and all site, mechanical and electrical utility crossings.

9. Item 2.37: In the 2nd sentence insert the word "backfilling" between "footings" and "stone fill"

10. Delete 2.58 and replace with the following 2.58: The Contractor shall include an allowance of $250,000 to soil cement the building pad and Ridgely's run road at the direction of the Construction Manager. The Contractors Contract amount will be adjusted (up or down) for actual quantity used. This adjustment shall be calculated at a rate of $7.00 per sq yd. This rate is based off of furnishing and installing 5% soil cement at 1' deep. The Contractor shall present daily tickets to the Construction Manager.

11. Item 2.60: Add the following sentence: The Contractor is responsible for the pressbox in its entirety as shown on drawing A-553.

12. Item 2.80: 2. Replace the word "by" with "to".

13. Add item 2.81: 2.81 Spoils generated by others in the amount of 20,000 cu yds will be stockpiled in locations adjacent to the building as directed by the Construction Manager. The Contractor may reuse these spoils onsite for backfilling provided that the material meets all specification requirements. The Contractor shall import/haul off all material as required to meet design grades.

14. Item 2.6 Add the following sentence after the 2nd sentence.: "The wash rack shall be sized large enough to accommodate a triaxle vehicle."

01 1113 – Contract Package 3A:

1. Item 2.6. Add the following after the 1st sentence: If excavated material is unsuitable for use as backfill the Contractor shall stockpile material onsite where directed by the Construction Manager and shall import suitable material. If excavated material is too wet or too dry, the Contractor may remediate on site provided such remediation and subsequent placement and compaction of material can be completed in accordance with the construction schedule. The Contractor shall use the specified drying agent included in Specification Section 31 2000 2.08 for drying of all material that does not meet the optimum moisture content required per the Contract Documents.
2. Item 2.42: 2. Replace the word "by" with "to".

01 1113 – Contract Package 4A:

1. Item 2.36: 2. Replace the word "by" with "to".

01 1113 – Contract Package 5A:

1. Item 2.7: Delete the word "sleeves"

01 1113 – Contract Package 6A:

1. Item 2.39: Replace "9,000 hours" with "5,500 hours"
2. Add the following to item 2.40: Trash chutes shall be utilized for a period of 18 months and shall not be relocated once in installed in a location as directed by the Construction Manager.
3. Add the following to item 2.6: The Owner will deliver appliances to the appropriate rooms.
4. Item 2.51: 2. Replace the word "by" with "to".
5. Add the following item 2.54: 2.54 The Contractor shall anchor all Owner furnished metal shelving to the wall. Refer to items 15 & 16 in detail #2 on drawing EQ-011. The metal shelving will be furnished, assembled, and distributed to the appropriate rooms by the Owner.

01 1113 – Contract Package 7A:

1. Item 2.28: 2. Replace the word "by" with "to".

01 1113 – Contract Package 8A:

1. Item 2.24: 2. Replace the word "by" with "to".

01 1113 – Contract Package 9A:

1. Item 2.24: 2. Replace the word "by" with "to".

01 1113 – Contract Package 9E:

1. Item 2.19: 2. Replace the word "by" with "to".

01 1113 – Contract Package 11A:

1. Item 2.14: 2. Replace the word "by" with "to".

01 1113 – Contract Package 15A:

1. Item 2.14: Add the following words to the end of the 2nd sentence: "or shown to be integral to mechanical equipment"

2. Item 2.17: Add the following Sentence: The Contractor shall use the specified drying agent included in Specification Section 31 2000 2.08 for drying of all material that does not meet the optimum moisture content required per the Contract Documents.

3. Item 2.55: 2. Replace the word "by" with "to".

01 1113 – Contract Package 16A:

1. Item 2.1: Delete the words "lightning protection systems"

2. Item 2.2: Add the following sentence: See alternate #12.

3. Item 2.8: In the 2nd sentence replace the words "specifically assigned to others by the Contract Documents" with "specified in the mechanical specifications or shown to be integral to mechanical equipment"

4. Item 2.14: Add the following sentence: The Contractor shall use the specified drying agent included in Specification Section 31 2000 2.08 for drying of all material that does not meet the optimum moisture content required per the Contract Documents.

5. Item 2.18: Add the following words to the end of the sentence "included in this contract package"

6. Item 2.28: Add the following sentence: The generator shall be running for one (1) 12 hour shift each work day.

7. Item 2.34: Add the following sentence: The Contractor shall include ten (10) temporary connections in the base bid and an additional twenty (20) temporary connection for alternate #2 if accepted.

8. Item 2.43: 2. Replace the word "by" with "to".

01 1113 – All contract Packages

1. Item 1.25: Delete last sentence and replace with the following: Should the Contractor fall behind schedule, he shall within 48 hours of notification from the Construction Manager provide at no additional cost extended hours, multiple shifts, and additional recourses as necessary to recoup the delay and move the work forward in accordance with the Construction Schedule

2. Item 1.27: Add the following sentence: Power company charges include consumption charges for both temporary and permanent electrical services.

01 3100 - Progress Schedules

1. Add the following to 1.05:

   B. To the extent a contract requirement is not incorporated into any schedule submittal, acceptance of the schedule submittal does not relieve the contractor of its responsibility to adhere to the contract requirements.

01 5000 – Construction Facilities and Temporary Controls

1. Item 3.2 I. Replace the State construction sign template with the attached revised template.

96 in

72 in

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor

Building Bright Futures in Maryland

The State of Maryland and the (Name of County) **Board of Education are:**

(Name of Project)

at the

(Name of School)

Public School Construction Program

Architect: (Name of Achitect)

Contractor: (Name of Contractor)

The Maryland General Assembly

Adrienne A. Jones, Speaker of the House
Bill Ferguson, President of the Senate

Board of Public Works

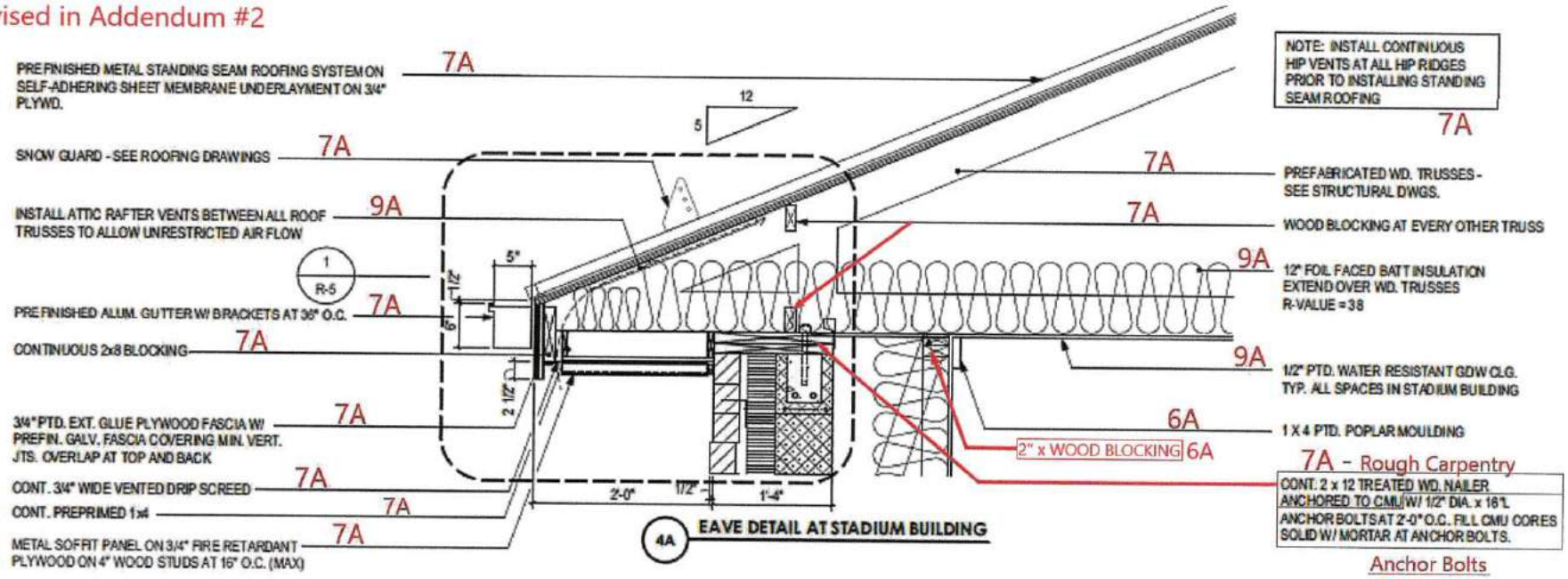
Larry Hogan, Governor
Peter Franchot, Comptroller
Nancy K. Kopp, Treasurer

Revisions to Oak portion of Addendum #1

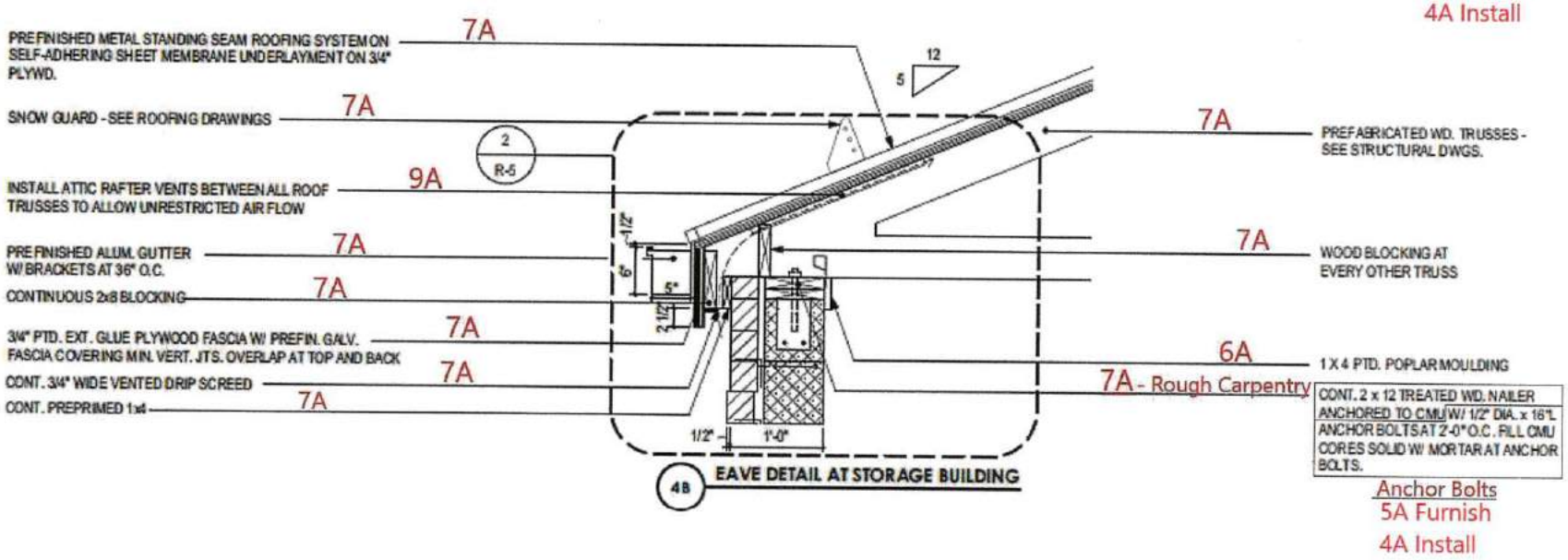
1. Scope Clarification Detail #05 has been revised and follows this page.
2. Delete Scope Clarification Detail #08 as revisions have been made to these details in Addendum #2
3. Delete Scope Clarification Detail #10 as revisions have been made to these details in Addendum #2
4. Item number 6. under **01 1113 - Contract Package 15A**: Replace "2.14" with "2.55"
5. Item number 7. under **01 1113 – Contract Package 6A**: Replace "2.52" with "2.53"
6. Pre-bid Meeting minutes Number 15. Replace references to Construction Waste Management and Indoor Air Quality Scope "1A" with "6A"

Addendum #1

Revised in Addendum #2



4A EAVE DETAIL AT STADIUM BUILDING



4B EAVE DETAIL AT STORAGE BUILDING

4 / A-551 **EAVE DETAILS**
SCALE: 1" = 1'-0"

Scope Clarification Detail #05
Typical throughout all details.

Addendum #2

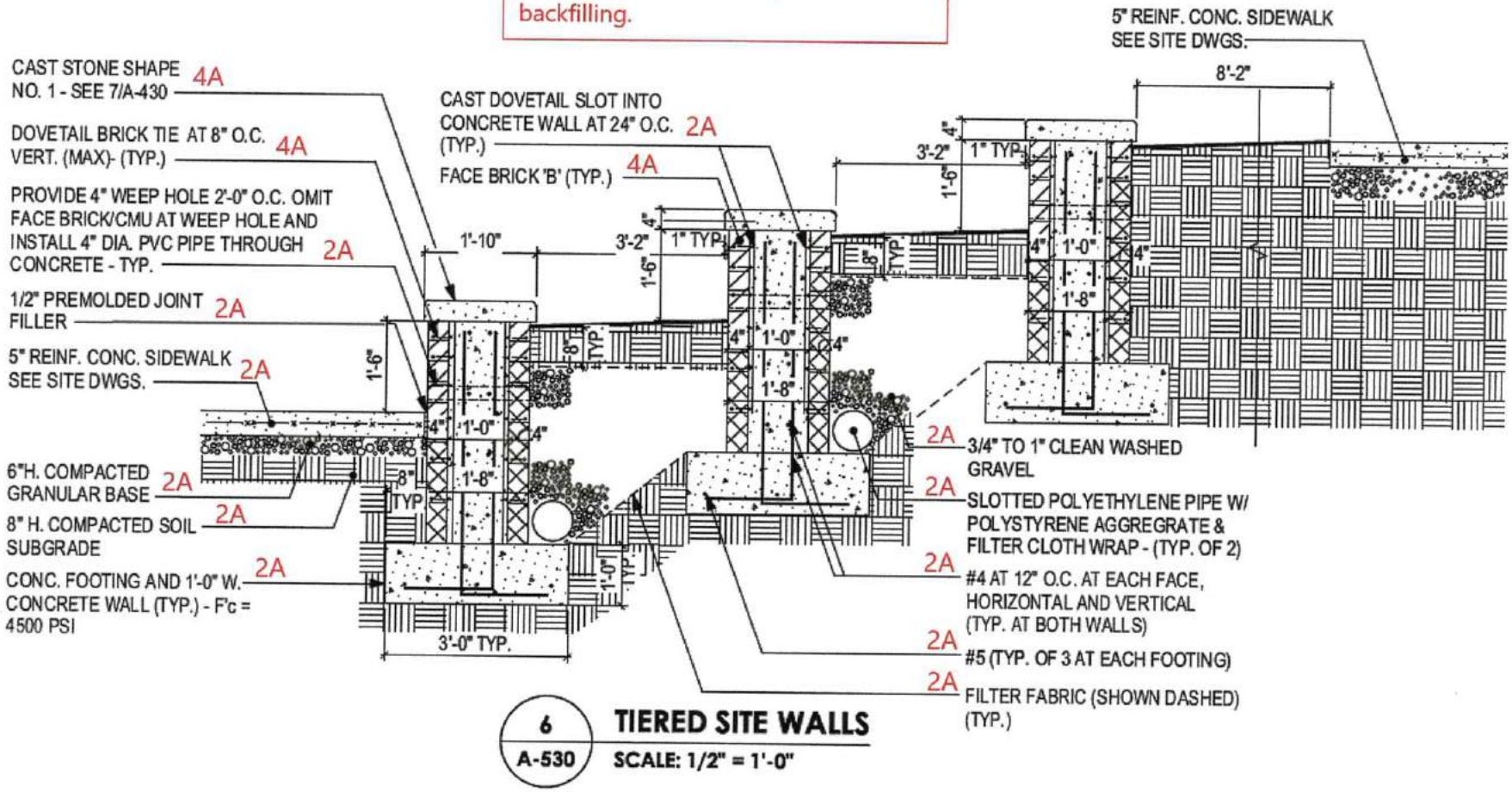
Scope Clarification Details

#14-25

Scope Clarification Details #1-13 were included in Addendum #1

Addendum #2

The 2A Contractor is responsible for all backfilling.

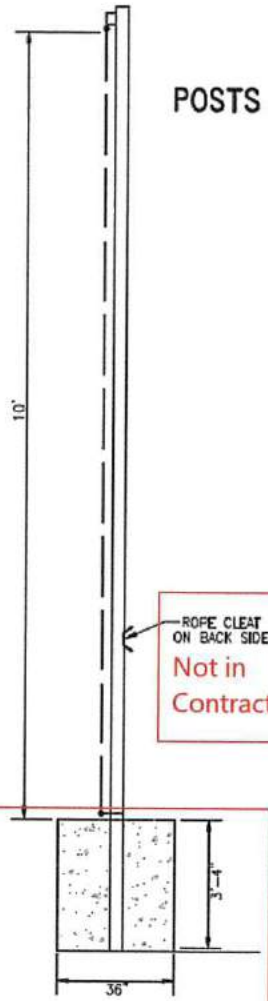


6 / A-530 **TIERED SITE WALLS**

SCALE: 1/2" = 1'-0"

Scope Clarification Detail #14

Addendum #2



Not in Contract

NET POLE ASSEMBLY

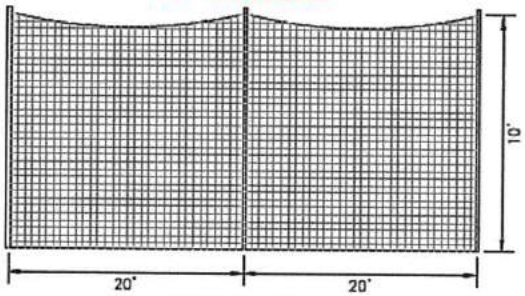
SCALE: 1" = 3'

Foundation and sleeve are in 2A Contract Package.

POSTS AND NETTING NOT IN CONTRACT

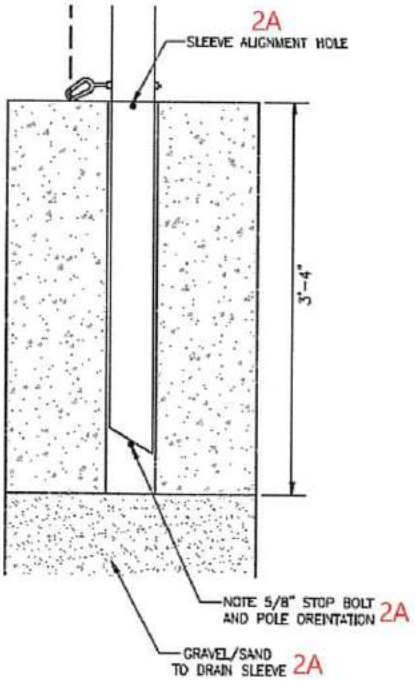
20' STRAIGHT BALL STOP IS SOLD IN UNITS OF 20 FEET. NETS ARE CUSTOM MANUFACTURED TO THE ACTUAL LENGTH REQUIRED. SEE EXAMPLE DESCRIBED BELOW. NET STRAIGHT NET POLES ARE 4" DIAMETER ALUMINUM TUBE WITH A 1/8" WALL THICKNESS. EACH POLE RESTS IN A 40" DEEP GALVANIZED STEEL GROUND SLEEVE. TO MINIMIZE SAG, THE NET IS SUPPORTED BY A VINYL COATED STEEL CABLE AT THE TOP. A SHORTER CABLE WOVEN THROUGH THE NET AT THE BOTTOM HELPS HOLD THE NET TO THE GROUND BETWEEN POLES. THE NET IS #504 KNOTLESS, NYLON NETTING WITH A BREAKING STRENGTH OF OVER 200 POUNDS.

Not in Contract



SCALE: 1" = 10'

BALL STOPS ARE SOLD IN 20 FOOT UNITS. FOR EXAMPLE, A 90 FOOT LONG BALL STOP WOULD REQUIRE FIVE 20 FOOT UNITS. THE NET WOULD BE CUSTOM MANUFACTURED TO THE REQUIRED 90 FOOT LENGTH. THIS BALL STOP WOULD COME WITH SIX NET POLES AND GROUND SLEEVES. POLES WOULD BE INSTALLED 18 FEET APART TO GIVE A FINISHED LENGTH OF 90 FEET. NETS LONGER THAN 120 FEET WILL BE SPLIT INTO TWO NETS OF EQUAL LENGTH TO BE LACED TOGETHER IN THE FIELD.



DIAMETER OF CONCRETE PIER WITH SLEEVE TO BE DETERMINED BY LOCAL ENGINEER AND MUST TAKE INTO ACCOUNT LOCAL SOIL CONDITIONS.

GROUND SLEEVE INSTALLATION

NOTE:
THE PROPER ORIENTATION OF THE 5/8" SLEEVE STOP BOLT DETERMINES THE PROPER ORIENTATION OF THE NET POLE. EACH SLEEVE HAS A 1/4" THROUGH HOLE AT THE TOP EDGE THROUGH WHICH STRING COULD BE TIED AS A VISIABLE REFERENCE TO HELP INSURE PROPER ALIGNMENT.

1. DIG HOLES FOR SLEEVES AT STAKED LOCATIONS. SIZE OF HOLES ARE DEPENDENT ON EQUIPMENT USED AND MUST TAKE INTO ACCOUNT SOIL CONDITIONS TO SUPPORT THE POLES.
2. POSITION AND LEVEL GRAVEL OR A CONCRETE BLOCK AT THE BOTTOM OF THE HOLE SO THAT THE SLEEVE OPENING RESTS AT THE PROPER HEIGHT AT THE SURFACE.
3. FIX AND SUPPORT THE SLEEVE IN POSITION WITH WIRE AND/OR SECTIONS OF REBAR TO PREVENT SLEEVE MOVEMENT DURING THE CONCRETE POUR.
4. DURING THE CONCRETE POUR, INSURE THE ALIGNMENT HOLES AT THE TOP OPENING OF THE SLEEVE REMAIN PROPERTY ALIGNED. THESE HOLES HELP ORIENT THE POLE ALIGNMENT PINS AT THE BOTTOM OF THE SLEEVES.

These sleeve detail notes are part of the 2A Contract Package.

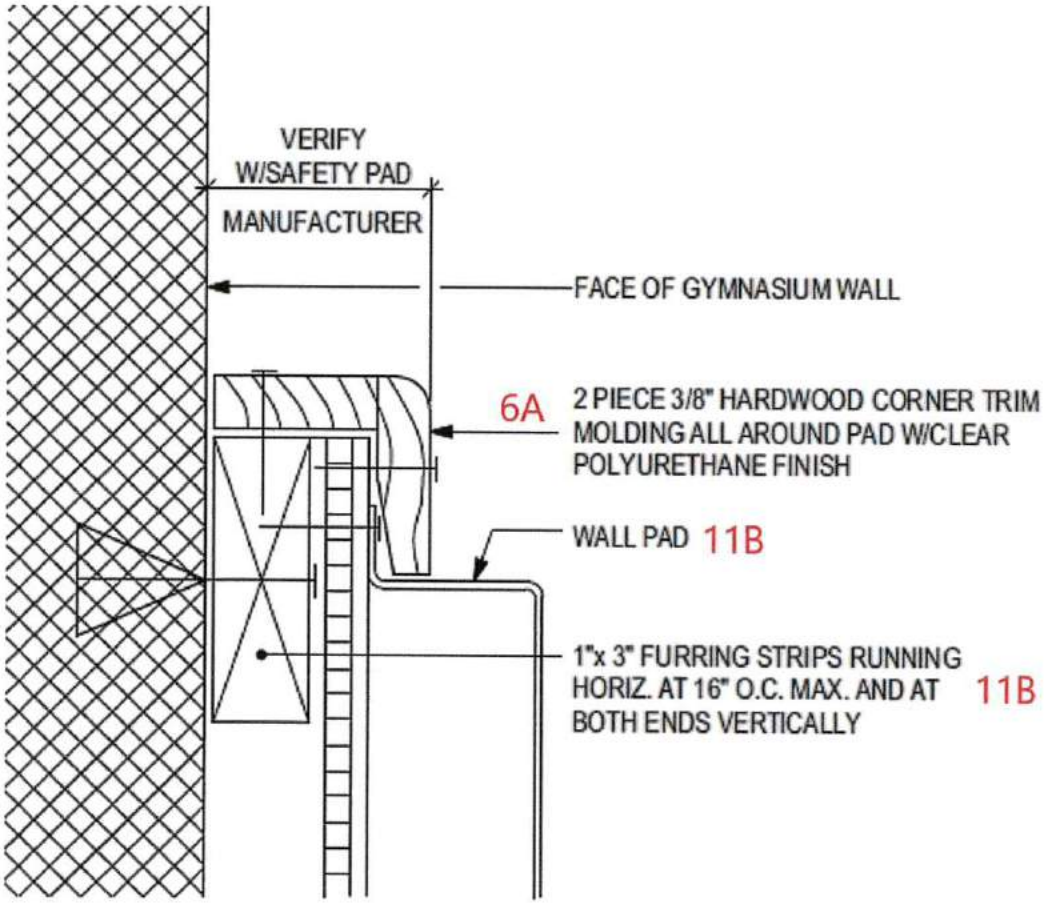
II
C-35

SAFETY NETTING DETAIL

SCALE: 1" = 1'

Scope Clarification Detail #15

Addendum #2



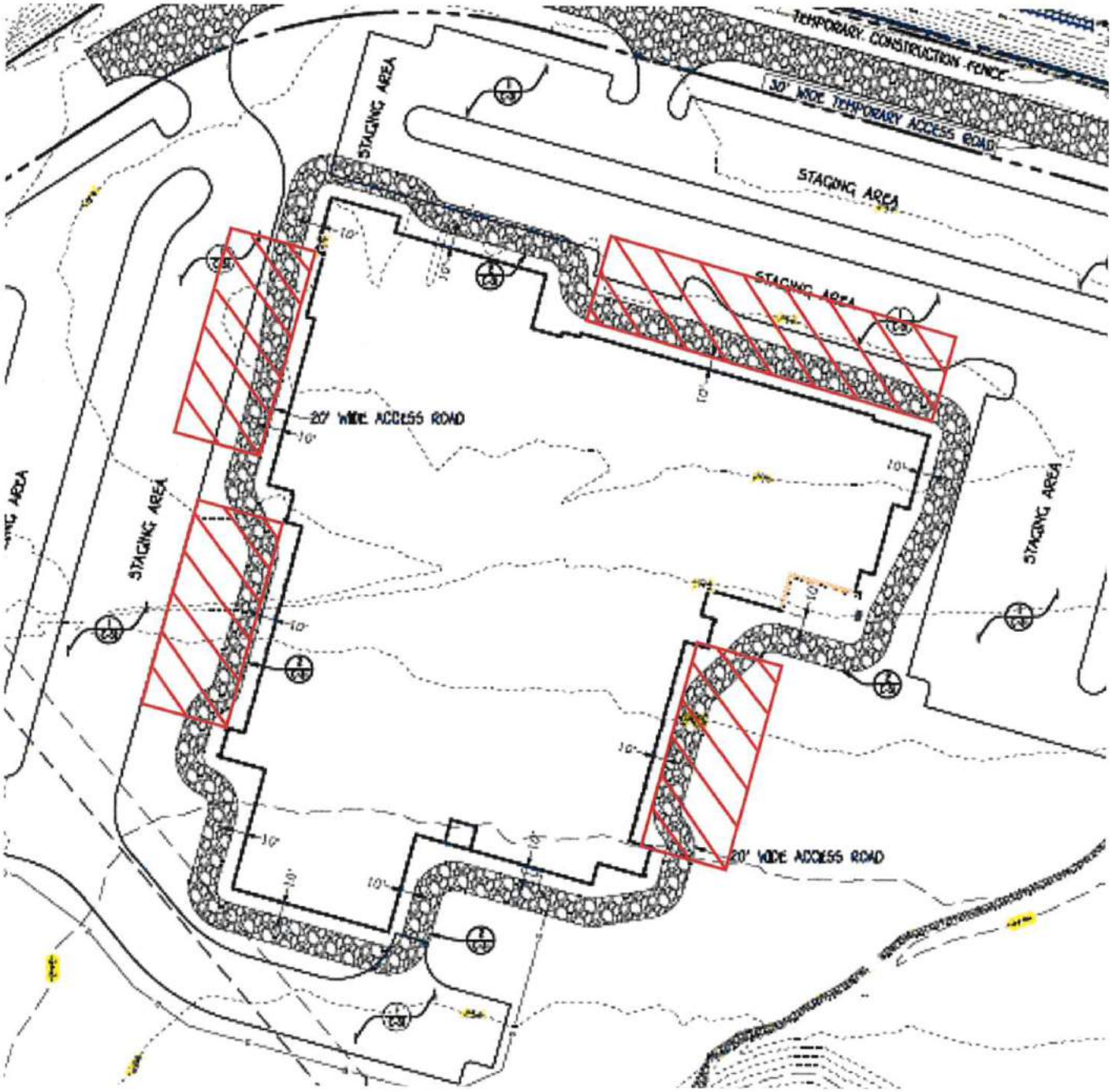
1 / A-580 **WALL PAD DETAIL**

Scope Clarification Detail #16

Addendum #2

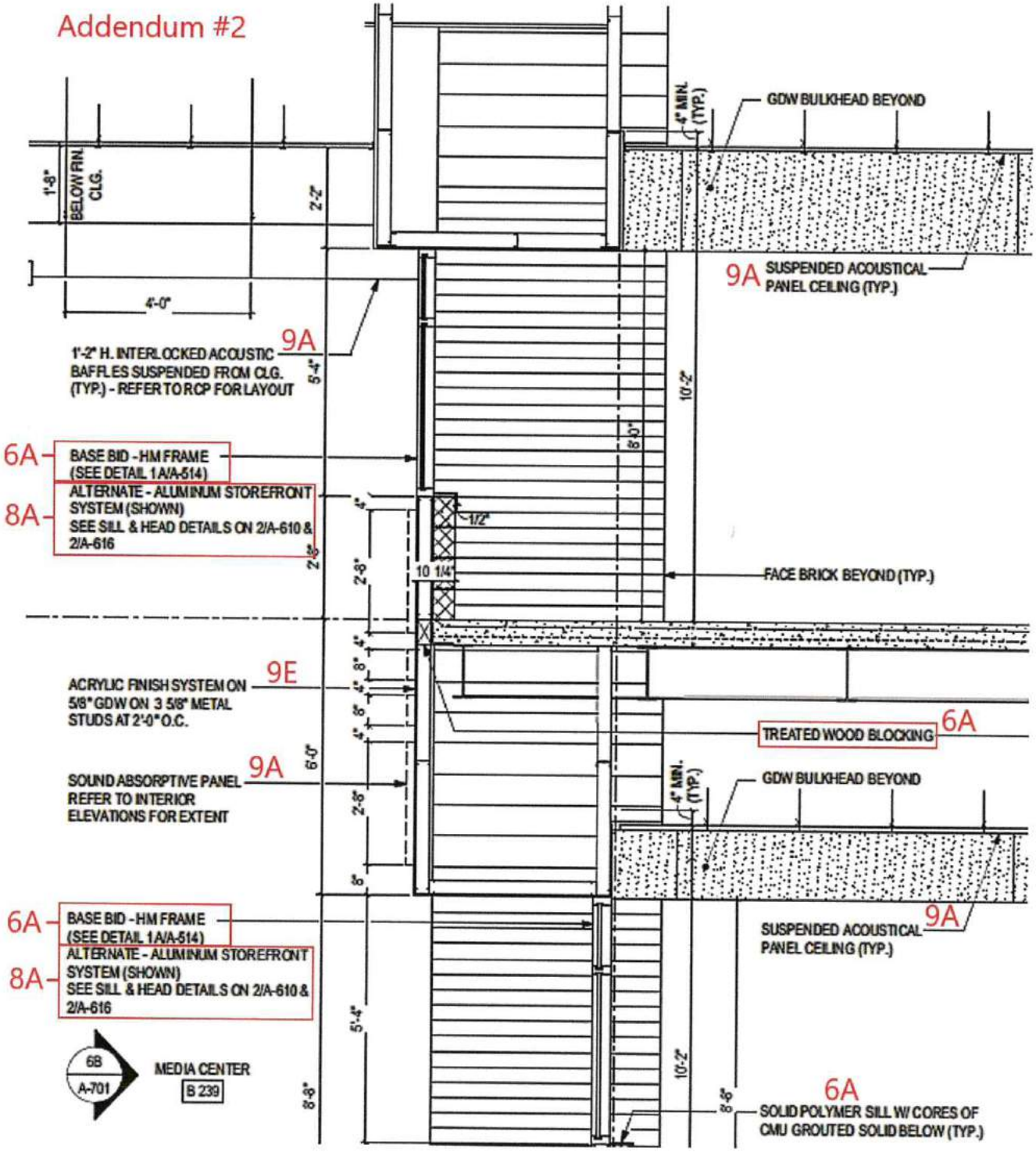
[Drawing C-31]

Scope Clarification Detail #17



The 5A Contractor is responsible to locate his crane as required to erect all steel from outside the building footprint. Potential crane locations may include but are not limited to the hatched areas shown on this scope clarification detail. Refer to Contract Package 5A Steel item 2.22.

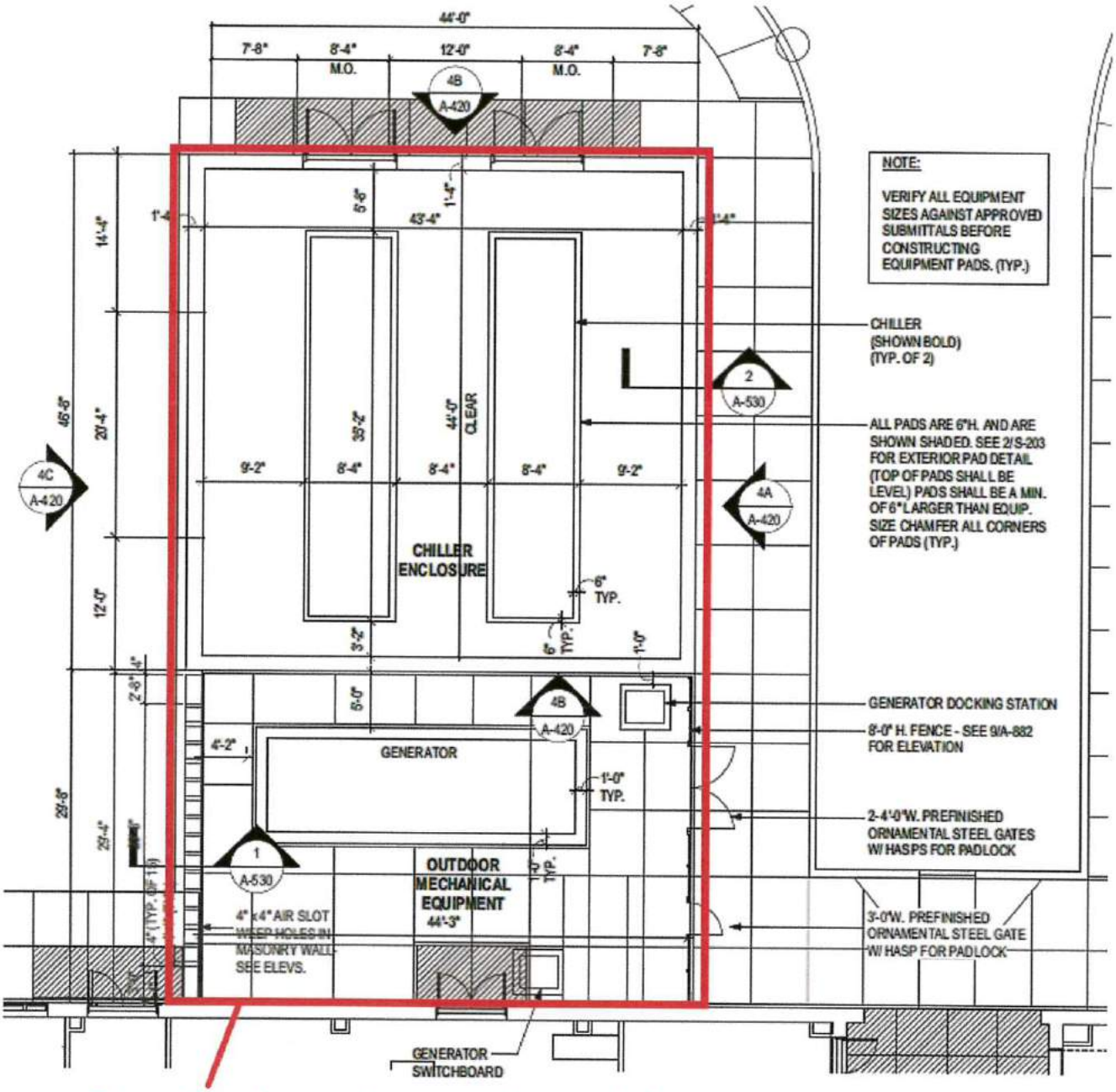
Addendum #2



1 / A-514 **WALL SECTION THRU COMMONS**
SCALE: 1/2" = 1'-0"

Scope Clarification Detail #18

Addendum #2

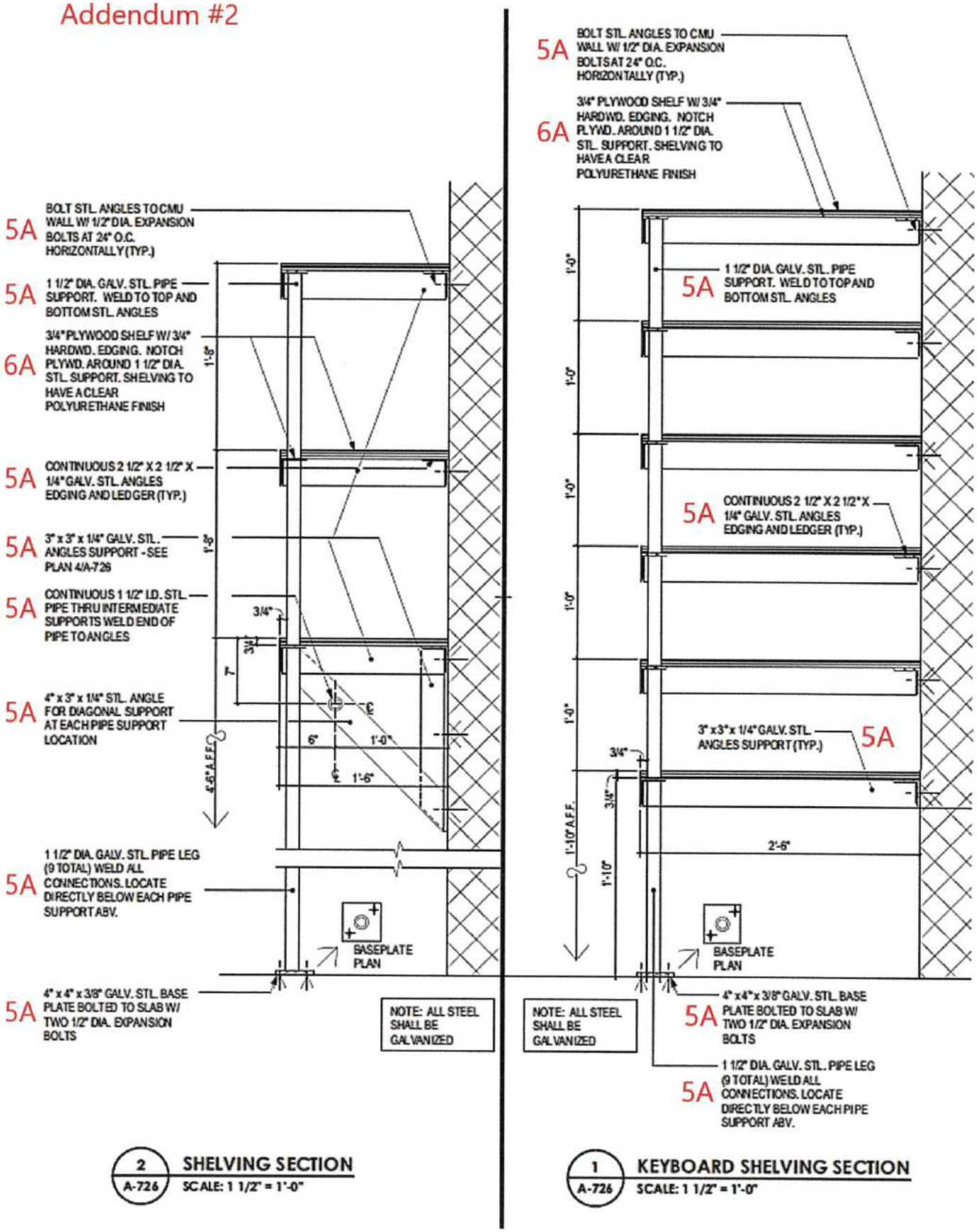


Extent of outdoor equipment enclosure which is considered part of the site.

2 / A-882 **CHILLER ENCLOSURE PLAN**
SCALE: 1/8" = 1'-0"

Scope Clarification Detail #19

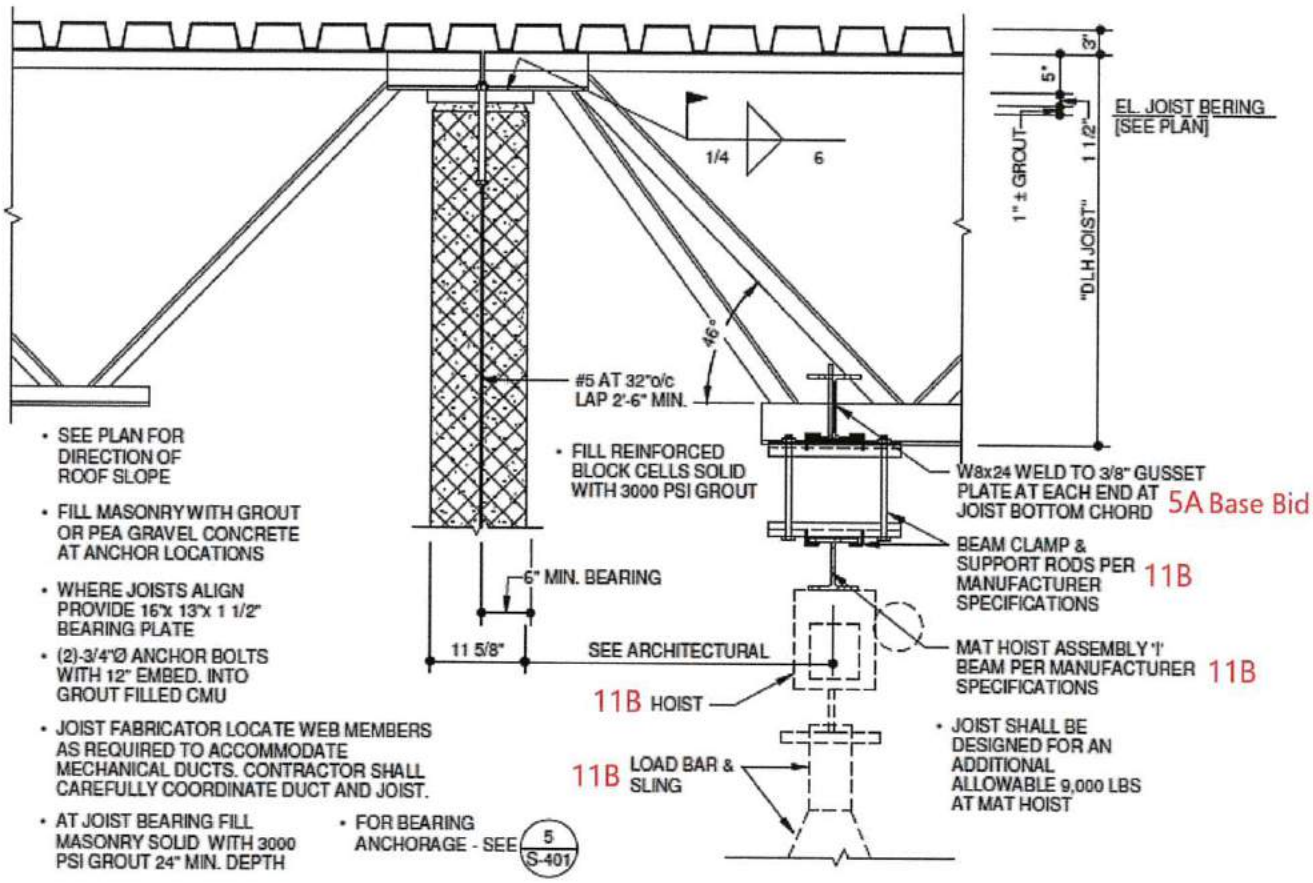
Addendum #2



Scope Clarification Detail #20

Addendum #2

Drawing S-403

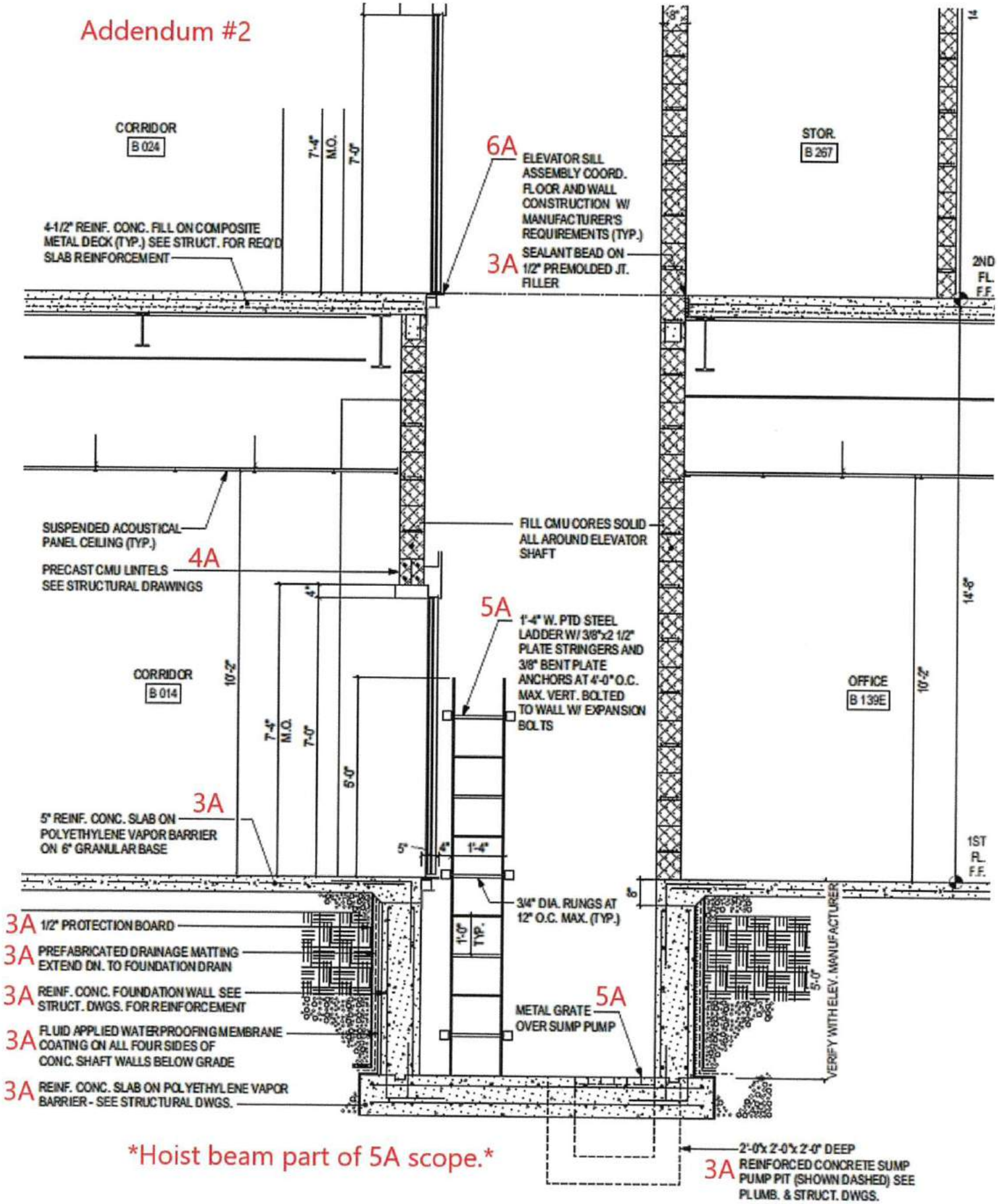


11B work refer to Alternate 8.

4 TYPICAL "DLH" JOIST BEARING AT INTERIOR WALL
3/4" = 1'-0"

Scope Clarification Detail #21

Addendum #2



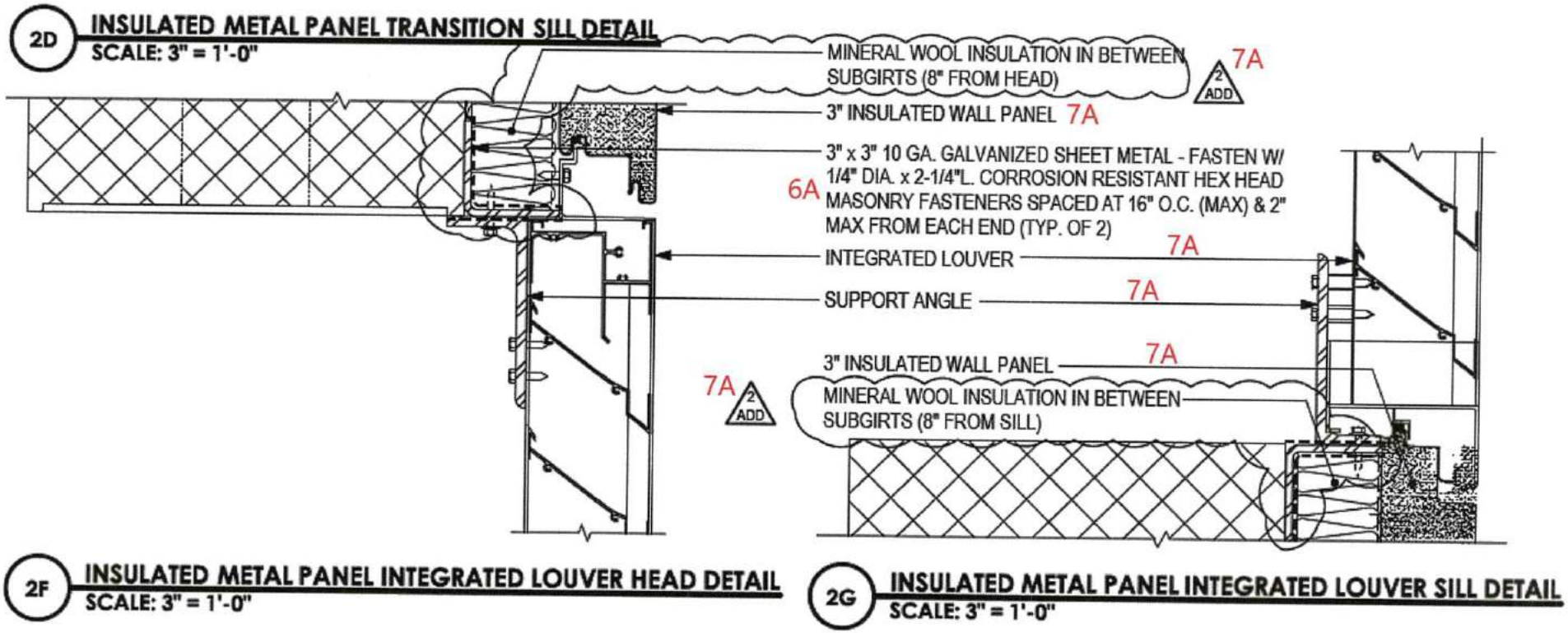
Hoist beam part of 5A scope.

4 / A-526 **WALL SECTION AT ELEVATOR B**
SCALE: 1/2" = 1'-0"

Typical throughout all details.

Scope Clarification Detail #22

Addendum #2



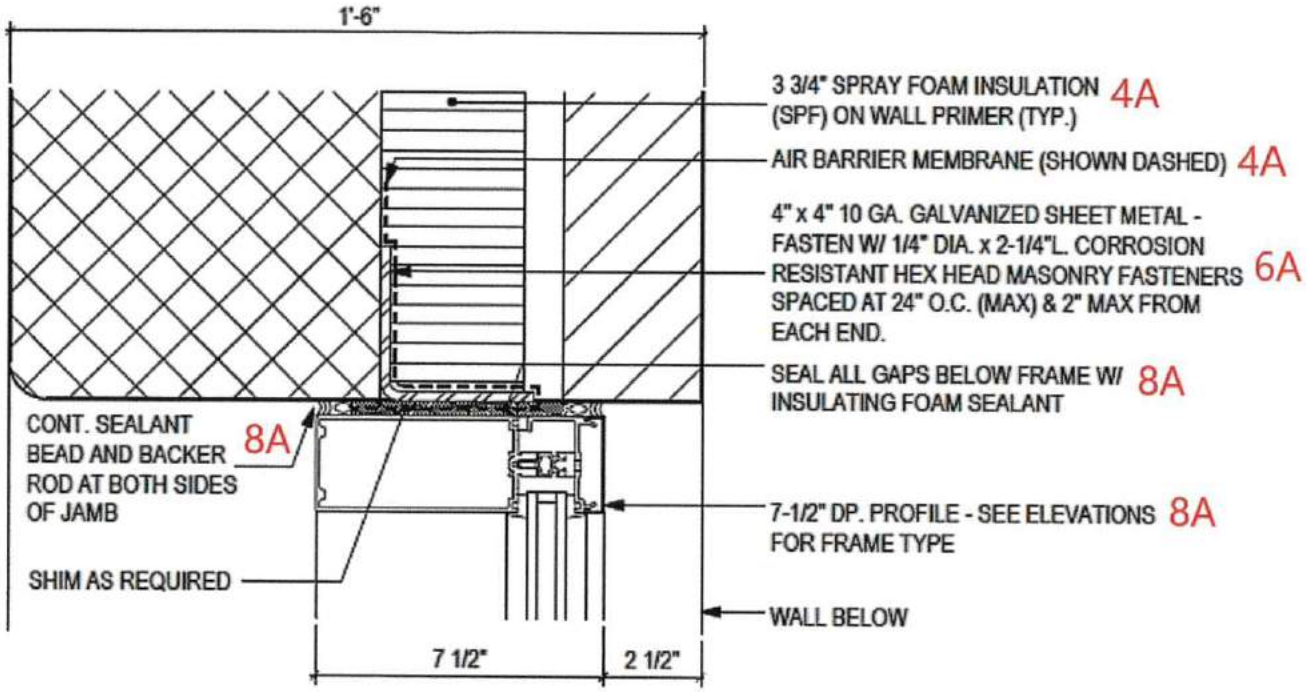
2 / A-519 **TYPICAL FLASHING DETAILS AT METAL WALL PANEL OPENINGS**

Typical throughout all details.

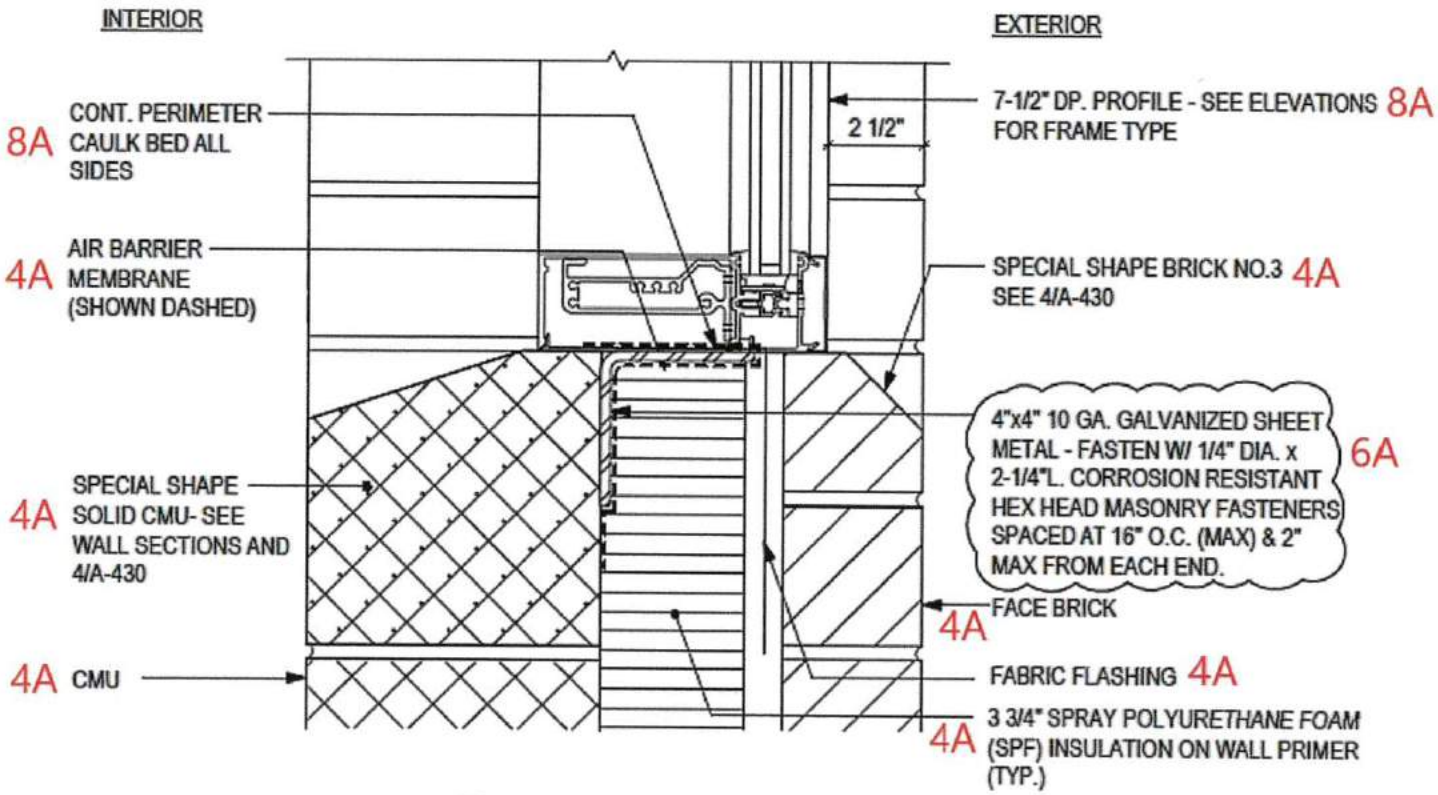
Scope Clarification Detail #23

Addendum #2

Drawing A-611



2J JAMB DETAIL

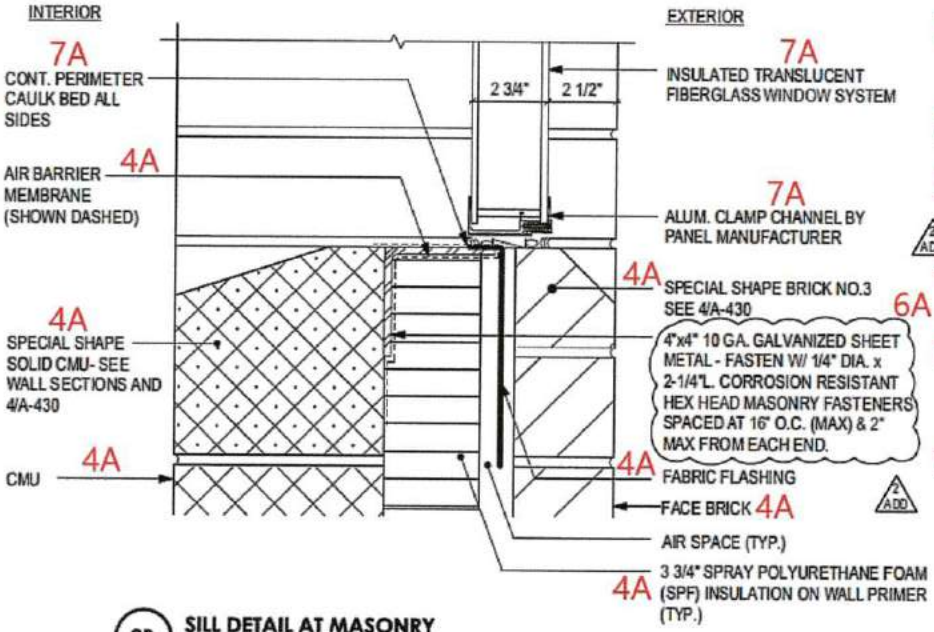


2M SILL DETAIL

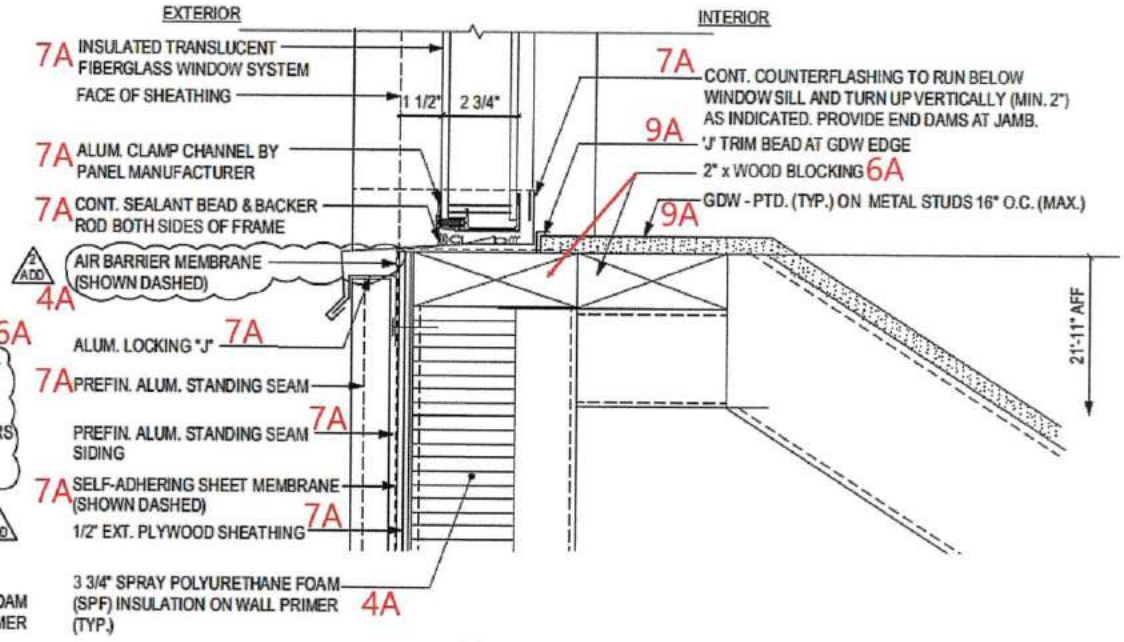
Typical throughout all details.

Scope Clarification Detail #24

Addendum #2



2B SILL DETAIL AT MASONRY



2D SILL DETAIL AT ALUM. SIDING

2
A-615

Typical throughout all details.

Scope Clarification Detail #25

HS #13 Pre-bid RFI log

RFI#	Date Recieved	Planholder	Ack. Reciept Date	Addenda #
PB-001	1/13/2020	Centria	1/13/2020	1
PB-002	1/17/2020	Autumn Contracting Inc.	1/17/2020	1
PB-003	1/17/2020	Grounded Electrical	1/17/2020	1
PB-004	1/17/2020	Canyon Contracting Inc.	1/20/2020	1
PB-005	1/20/2020	Grounded Electrical	1/21/2020	1
PB-006	1/21/2020	P.F. Flanagan	1/21/2020	2
PB-007	1/22/2020	WF Klingensmith	1/22/2020	2
PB-008	1/22/2020	Grounded Electrical	1/23/2020	2
PB-009	1/23/2020	Kinsley Manufacturing	1/24/2020	2
PB-010	1/27/2020	Debra's Glass (DGI)	1/28/2020	2
PB-011	1/27/2020	Grounded Electrical	1/28/2020	2
PB-012	1/27/2020	Utilities Unlimited	1/28/2020	2
PB-013	1/28/2020	Debra's Glass (DGI)	1/28/2020	2
PB-014	1/28/2020	Interstate	1/29/2020	2
PB-015	1/28/2020	Urban Zink	1/29/2020	2
PB-016	1/28/2020	Kinsley	1/29/2020	2
PB-017	1/28/2020	Interstate	1/29/2020	2
PB-018	1/29/2020	Atlascopco	1/29/2020	2
PB-019	1/29/2020	Kinsley	1/29/2020	2
PB-020	1/29/2020	Urban Zink	1/30/2020	2
PB-021	1/30/2020	Centria	1/31/2020	2
PB-022	1/30/2020	Kinsley	1/31/2020	
PB-023	1/31/2020	TJ Distributors	1/31/2020	
PB-024	1/31/2020	Brawner	1/31/2020	
PB-025	1/31/2020	Henley Construction	2/3/2020	
PB-026	2/1/2020	Grounded Electrical	2/3/2020	
PB-027	2/3/2020	Grounded Electrical	2/4/2020	
PB-028	2/4/2020	Altimate Electrical	2/4/2020	
PB-029	2/4/2020	Gray & Son	2/5/2020	
PB-030	2/4/2020	Kinsley	2/5/2020	
PB-031	2/4/2020	Chesapeake Glazing	2/5/2020	
PB-032	2/5/2020	Henley Construction	2/5/2020	
PB-033	2/4/2020	Master Care	2/5/2020	2
PB-034	2/4/2020	WF Klingensmith	2/5/2020	2
PB-035	2/5/2020	Gray & Son	2/6/2020	
PB-036	2/5/2020	Urban Zink	2/6/2020	
PB-037	2/5/2020	Interstate	2/6/2020	2
PB-038	2/5/2020	Interstate	2/6/2020	2
PB-039	2/5/2020	Grounded Electrical	2/6/2020	
PB-040	2/5/2020	Irwin Seating	2/6/2020	2
PB-041	2/6/2020	Gray & Son	2/6/2020	
PB-042	2/6/2020	Urban Zink	2/7/2020	
PB-043	2/6/2020	Grounded Electrical	2/7/2020	
PB-044	2/7/2020	Chesapeake Glazing	2/7/2020	
PB-045	2/7/2020	T.M.I.	2/7/2020	
PB-046	2/7/2020	Electrico	2/7/2020	
PB-047	2/7/2020	W.G. Tomko	2/7/2020	
PB-048	2/7/2020	Action Electrical	2/7/2020	
PB-049	2/7/2020	Grounded Electrical	2/7/2020	
PB-050	2/7/2020	Urban Zink	2/10/2020	2

HS #13 Pre-bid RFI log

PB-051	2/7/2020	Kinsley	2/10/2020	2
PB-052	2/7/2020	Denver Elek	2/10/2020	2
PB-053	2/7/2020	Urban Zink	2/10/2020	
PB-054	2/8/2020	Grounded Electrical	2/10/2020	
PB-055	2/7/2020	Grounded Electrical	2/10/2020	
PB-056	2/10/2020	Interstate	2/10/2020	
PB-057	2/10/2020	Glass Industries	2/10/2020	
PB-058	2/10/2020	Electrico	2/10/2020	
PB-059	2/11/2020	W.G. Tomko	2/11/2020	2
PB-060	2/11/2020	Altimate Electrical	2/11/2020	
PB-061	2/11/2020	Grounded Electrical	2/12/2020	
PB-062	2/11/2020	G.E. Tignall	2/12/2020	
PB-063	2/11/2020	Kinsley	2/12/2020	
PB-064	2/11/2020	Gray & Son	2/12/2020	
PB-065	2/12/2020	Bragunier	2/12/2020	
PB-066	2/12/2020	T.M.I.	2/12/2020	

Addendum #2

Responses to the following

Pre-bid RFI's

PB-006, PB-007, PB-008, PB-009, PB-010, PB-011, PB-012, PB-013, PB-014, PB-015, PB-016, PB-017, PB-018, PB-019, PB-020, PB-021, PB-033, PB-037, PB-038, PB-040, PB-050, PB-051, PB-052, PB-059.

OAK CONTRACTING LLC
Builders

Request For Information PB-006

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-006 **Date Created: 1/21/2020**

Answer Company	Answered By	Author Company	Authored By
TCA Architects 1369 General's Hwy Crownsville, MD 21032	Robyn Toth Phone: 410-266-7722 Fax:	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488

Co-Respondent **Author RFI Number**

Subject **Discipline** **Category**
Flanigan

Cc: Company Name **Contact Name** **Copies** **Notes**

Question **Date Required:**

Please review attached Pre-bid RFI # PB-006 and provide a response

Thank you,

Suggestion

Answer **Date Answered: 2/6/2020**

1. Detail 5 on C-28 should be utilized for paved play areas which would include the tennis and basketball court areas.

2. This detail references the different sections required depending on the CBR of the soil. Borings done for the road will be included in future addenda.

3. The construction plans F-19-086 are awaiting approval from Division of Land Development at Howard County and will be provided via addendum. The grading (on C-6) for the road as well as the paving section (Detail 28 on C-28) is shown on the plans but the profiles for the road will be included as an addendum. Detail for the road widening of Mission Road was shown on C-29.

Pre-bid RFI PB-006

Matt Lurz

From: Steve Krell
Sent: Tuesday, January 21, 2020 10:17 AM
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: RFI's for #13 High School New Construction

Thanks,

Steve Krell, CPE

From: Dymond, Amber
Sent: Tuesday, January 21, 2020 10:09 AM
To: Steve Krell <skrell@oakcontracting.com>
Cc: Dell, Ashley <adell@pflanigan.com>
Subject: RFI's for #13 High School New Construction

Steve,

Good morning. Please see below for the RFI's we have so far for this project, #13 High School New Construction.

1. What asphalt detail should be used for the tennis and basketball courts?
2. The plans state to reference to detail 28 on C-28 for the roadway construction detail, but this detail gives us a typical road section for public roads and does not highlight which CBR value and column to consider. Which column should be used for the roadway construction?
3. On sheet C-11, there is a note on the top left that states "Contractor Note: For road construction plans, see F-19-086." Where can these plans be found?

Amber Dymond
Estimator
(410) 467-5900 | (443) 869-1591

adymond@pflanigan.com | www.pflanigan.com
2444 Loch Raven Road, Baltimore, MD 21218

OAK CONTRACTING LLC
Builders

Request For Information PB-007

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-007 **Date Created: 1/22/2020**

Answer Company	Answered By	Author Company	Authored By
TCA Architects 1369 General's Hwy Crownsville, MD 21032	Robyn Toth Phone: 410-266-7722 Fax:	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488

Co-Respondent **Author RFI Number**

Subject **Discipline** **Category**

WF Klingensmith question

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please see attached Pre-bid RFI PB-007 and provide a response.

Suggestion

Answer **Date Answered: 2/6/2020**

Hadrian will remain an acceptable manufacturer for lockers for this project.

Pre-bid RFI PB-007

Bill Klingensmith

From:	Ed Johns <EJohns@steelproductsinc.com>
Sent:	Monday, January 20, 2020 5:32 PM
To:	'Robert_gill@hcpss.org'
Cc:	'skrell@oakcontracting.com'; Daniel_Lubeley@hcpss.org; 'dbarricklow@tca-architects.com'
Subject:	High School #13 Spec Section No.105113 Metal Lockers Approved Manufactures " Buy American steel Act Senate Bill 47
Attachments:	Scan_0302.pdf

See attached. Please address this issue in the next addendum issued on this project.
Any questions, please write. Thank you.

Regards,

R. Edward Johns
President
P: 301-340-0770 x 101
F: 301-424-1251
MDOT Certified Woman Owned Cert # 09-460
LDBE Cert # LD1995-0209-2017
SWaM Cert # 681669

Request For Information PB-008

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-008 **Date Created: 1/23/2020**

Answer Company	Answered By	Author Company	Authored By
TCA Architects 1369 General's Hwy Crownsville, MD 21032	Robyn Toth Phone: 410-266-7722 Fax:	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488

Co-Respondent **Author RFI Number**

Subject	Discipline	Category
Grounded Electrical		

Cc: Company Name	Contact Name	Copies	Notes
Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-008 and provide a response.

Thank you,

Suggestion

Answer **Date Answered: 2/6/2020**

1.
A. 32" LED Commercial Grade Display
   1. NEC V323-3
B. 42"LED Commercial Grade Display
   1. Delete
C. 48" LED Commercial Grade Display
   1. NEC V484-AVT2
D. 55" LED Commercial Grade Display
   1. NEC V554Q
E. 65" LED Commercial Grade Display
   1. NEC V654Q
F. 75" LED Commercial Grade Display
   1. NEC V754Q
G. Provide articulating wall mount appropriately sized for each display.

Pre-bid RFI #PB-008

GROUNDED ELECTRICAL

CONSTRUCTION

REQUEST FOR INFORMATION

Project:	High School #13	Attention:	Oak Construction	RFI #:	~~3~~
Subject:	General/Electrical	Date:	1/22/2020	Reply By:	ASAP

REQUEST

1. The NEC LED displays specified in 274000-2.04 are discontinued. Please indicate what we are to use instead.

RESPONSE

Copy To: _____

_____

Signed: _____

Date: _____

OAK CONTRACTING LLC
Builders

Request For Information PB-009

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-009 **Date Created: 1/24/2020**

Answer Company	Answered By	Author Company	Authored By
TCA Architects 1369 General's Hwy Crownsville, MD 21032	Robyn Toth Phone: 410-266-7722 Fax:	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488

Co-Respondent **Author RFI Number**

Subject	Discipline	Category
Kinsley		

Cc: Company Name	Contact Name	Copies	Notes
Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI and provide a response.

Thank you

Suggestion

Answer **Date Answered: 2/6/2020**

1. Details 2, 3 & 4 all reference detail 1/S-304. See detail 1/S-304 for angle and fastener information at beam bottom flange.
2. See detail 1 on sheets S-304, under beam and partially under beam for seat angle information connected to underside of slab at brace.
3. Please use steel primer list from specification 051200 Section 4.

Pre-bid RFI #PB-009

Matt Lurz

From: Steve Krell
Sent: Thursday, January 23, 2020 4:01 PM
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: High School #13 RFI

Thanks,

Steve Krell, CPE

From: Dave Spaulding
Sent: Thursday, January 23, 2020 4:00 PM
To: Steve Krell <skrell@oakcontracting.com>
Subject: High School #13 RFI

High School #13
Bid Package 5a Metals

Steve,
Please submit these RFI's to the design team for their review and response:

1. • On details 2, 3 and 4 on sheet S-305 an angle is shown which ties the bottom flange of the beam to the CMU wall. The closest typical detail is for angles of differing sizes at the non-load bearing conditions (1/S-304) but nothing at a load bearing location. Please supply the size and length of the angle as well as the fastener to be used at that condition.
2. • On details 2, 3 and 4 on sheet S-305 there is a seat angle for an angle brace. In similar details that seat is a header running from beam to beam. However on the aforementioned details these are attached to the underside of the deck. Please supply the size and length of these sear angles as well as the fastener to be used at that condition.
3. • Within the structural steel specifications (Section 051200) on page 4, item L there are 5 specific paints listed as the primer to be used for the structural steel. On page S-201 of the structural drawings in the GENERAL NOTES under the heading of STRUCTURAL STEEL there is a list of primers which varies from the one in the specs. Which list are we to use?

Thank you for your assistance,

Dave Spaulding
Project Estimator
p: +1 717-757-8841
dspaulding@kinsleyconstruction.com

KINSLEY

This email and any attachments may contain privileged and confidential information and are solely for the use of the sender's intended recipient(s). If you received this email in error, please notify the sender by reply email, do not disseminate the email or attachments and delete all copies and attachments. Thank you.

Request For Information PB-010

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-010 **Date Created: 1/28/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent

Author RFI Number

Subject
Debra's Glass (DGI)

Discipline

Category

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-010 and provide a response.

Suggestion

Answer **Date Answered: 2/7/2020**

No substitutions will be considered during the bid phase. Refer to the Specifications for the substitution request procedure.

Pre-bid RFI #PB-010

From: Steve Krell
To: Matt Lurz; Corey Wixsom
Cc: Ed Lurz
Subject: FW: High School #13
Date: Monday, January 27, 2020 8:28:04 AM
Attachments: image001.png

RFI

Thanks,

Steve Krell, CPE

From: Scott Rageotte
Sent: Monday, January 27, 2020 7:19 AM
To: Steve Krell <skrell@oakcontracting.com>
Subject: High School #13

Kawneer is the only specified aluminum supplier. Is the school department allowing equal substitutions form other manufactures?

Scott E. Rageotte | Lead Estimator

DGI
Debra's Glass, Inc.
255 N. Pleasant Ave. - Dallastown, PA 17313
P. 717.244.4622 - F. 717.244.1033 - C. 717.654.1997

Centria Authorized Dealer and Installer

OAK CONTRACTING LLC
Builders

Request For Information PB-011

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-011 **Date Created: 1/28/2020**

Answer Company	Answered By	Author Company	Authored By
TCA Architects 1369 General's Hwy Crownsville, MD 21032	Robyn Toth Phone: 410-266-7722 Fax:	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent **Author RFI Number**

Subject **Discipline** **Category**
Grounded Electric

Cc: Company Name	Contact Name	Copies	Notes
Oak Contracting, LLC	File	1	

Question **Date Required:**
Please review attached Pre-bid RFI #PB-011 and provide a response.

Suggestion

Answer **Date Answered: 2/6/2020**
1. Provide 2 section panelboard per schedule.
2. Provide 3 floor boxes to match T drawings. Refer to sketch ADD_2_E5.
3. Media Center is located on Second Floor drawing EP-122. There are no floor boxes, only poke-thru devices.
4. There are 12 poke-thru devices indicated by specific note 7 associated with T drawings. The remainder of the poke-thru devices are power only and detailed on detail 6/E503.
5. Notes for floor boxes have been revised. Refer to sketch ADD_2_E8.
6. Notes for floor boxes have been revised. Refer to sketch ADD_2_E8.
7. Floor boxes on stage have been deleted. Refer to sketch ADD_2_E8.

Pre-bid RFI PB-011

GROUNDED ELECTRICAL

CONSTRUCTION

REQUEST FOR INFORMATION

Project:	High School #13	Attention:	Oak Construction	RFI #:	X
Subject:	General/Electrical	Date:	1/27/2020	Reply By:	ASAP

REQUEST

1. Panel S2R1F2 shown on the riser diagram on drawing E-601 shows it as a 1 section panel, however Panel Schedule for S2R1F2 on drawing E-611 list the panel as a 2 section panel. Please clarify.
2. Power drawing EP-111 shows 4 floors boxes in main office A100, however T series Drawings T111 only shows 3 floor boxes. Please clarify.
3. Power Drawing EP-111 shows a floor box in Media Center A101 with note 2 indicating to reference the Technology drawings, there is no floor box in media center A101 on drawing T-111. Please clarify.
4. There are no notes shown on drawing EP-122 in Media Center B239 for the associated poke-throughs. The poke throughs are also not shown on the T series drawing T-122. What type of poke through is this? Are they only for power, or do they have LV requirement?
5. Is the floor box in Auditorium E703 shown with note 6 on drawing EP-115 the same as floor box in auditorium E703 on drawing T-115?
6. Is the floor box in Auditorium E703 shown with note 1 on drawing EP-115 the same as floor box in Auditorium E703 detail on drawing AV-112?
7. Drawing EP-115 shows 2 floor boxes on the stage E505, with note 16 referencing the Technology drawings, they are not shown on the T series drawings but they are shown on the Theater drawing TH-112.

Copy To: _____

Signed: Zach Rothfus, CPE, LEED AP BC+D

Date: 1/27/20

OAK CONTRACTING LLC
Buildere

Request For Information PB-012

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-012 **Date Created: 1/28/2020**

Answer Company	Answered By	Author Company	Authored By
TCA Architects 1369 General's Hwy Crownsville, MD 21032	Robyn Toth Phone: 410-266-7722 Fax:	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent **Author RFI Number**

Subject	Discipline	Category
Utilities Unlimited		

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-012 and provide a response.

Suggestion

Answer **Date Answered: 2/6/2020**

1. Missing profiles will be included in the addendum.

Pre-bid RFI #PB-012

From:	Steve Krell
To:	Matt Lurz; Corey Wixsom
Cc:	Ed Lurz
Subject:	RE: #13 High School
Date:	Monday, January 27, 2020 2:09:13 PM

RFI

Thanks,

Steve Krell, CPE

From: Jim Parrish
Sent: Monday, January 27, 2020 2:06 PM
To: Steve Krell <skrell@oakcontracting.com>
Subject: #13 High School

RE: RFI #~~X~~1
HS #13
Contract Package 2A – Sitework

Steve: There do not appear to be Profiles on the Civil Drawings for the proposed **Sanitary Sewer** and **Public Watermain**; except for the Profiles on plan sheet C-72, only showing the connections to the Building. Will this be addressed by Addendum?

Regards,
Jim

Jim Parrish, Project Manager
Utilities Unlimited, Inc.
410-442-1755, Ext. 13
410-365-1513 - iPhone

OAK CONTRACTING LLC
Builders

Request For Information PB-013

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-013 **Date Created: 1/28/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent **Author RFI Number**

Subject	Discipline	Category
Debra's Glass (DGI)		

Cc: Company Name	Contact Name	Copies	Notes
Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-013 and provide response.

Suggestion

Answer **Date Answered: 1/28/2020**

The work that is currently included in Contract Package 7A will remain and Contract Package 7A must be bid in its entirety.

Pre-bid RFI #PB-013

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: High School #13
Date: Tuesday, January 28, 2020 11:21:30 AM
Attachments: image001.png

Thanks,

Steve Krell, CPE

From: Scott Rageotte
Sent: Tuesday, January 28, 2020 11:09 AM
To: Steve Krell <skrell@oakcontracting.com>
Subject: High School #13

I got one question regarding the scopes.

Contract Package 7a "Roofing" includes the Metal Soffit Panels, Insulated Core Metal Panels and Translucent Panels. DGI is intending to pickup these items, but not the Roofing related items. Please confirm that this is acceptable. Also, should/will there be a Contract Package #7B to include these items?

Thank you.

Scott E. Rageotte | Lead Estimator

DGI
Debra's Glass, Inc.
255 N. Pleasant Ave. - Dallastown, PA 17313
P. 717.244.4622 - F. 717.244.1033 - C. 717.654.1997

Centria Authorized Dealer and Installer

Request For Information PB-014

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-014 **Date Created: 1/29/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent

Author RFI Number

Subject	Discipline	Category
Interstate		

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-014 and provide a response.

Suggestion

Answer **Date Answered: 2/7/2020**

No substitutions will be considered during the bid phase. Refer to the Specifications for the substitution request procedure.

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: RFI: #13 High School New Construction
Date: Tuesday, January 28, 2020 4:18:49 PM
Attachments: BENCHMARK_Designwall_4000_QuadCore_Data_Sheet_DW4000QC_NA.pdf

---

Thanks,

Steve Krell, CPE

From: David Choi
Sent: Tuesday, January 28, 2020 4:10 PM
To: Steve Krell <skrell@oakcontracting.com>
Subject: RFI: #13 High School New Construction

(RFI: Div.7A- Roofing)

Substitution Request- Insulated Core Metal Panels (Ref. Spec. Section 074216):
Please review that Benchmark Designwall 4000 Series FIP-3" thick is acceptable as an approved equal product based on Spec. Section 074216, Para. 2.02

Here is all information needed to submit a substitution request.

a. Name of the materials and description of the proposed substitute.
Benchmark Designwall 4000 Series Foamed-in-Place (FIP) Wall Panel System with Kingspan QuadCore® insulation core. This foamed-in-place with Quadcore Foam core system (free of Halogenated Flame Retardants (HFRs)) architectural wall panel has reveal options range from 1/8" tight to 6" allowing for the creation of shadows and accents. Available in either embossed, non-embossed or Shadowline, Drawings, cut sheets, performance and test data.
See the link below_Folder "Data Sheet_Discription_DW4000 – FIP"

b. List of projects of similar scope and photographs of existing installations.

c. Please share the project name and photo of the school you did last year in Loudon County.
See the link below_Folder "Photos of the Projects"

d. Drawings, cut sheets, performance and test data.
See the link below_Folder " Drawings and Details_DW4000 – FIP" and "Data Sheet_Discription_DW4000 – FIP"

e. Test reports indicating compliance with the performance criteria.
See the link below_Folder "Tests_DW4000 – FIP".

Link for the supported documents.
https://kingspangroup-my.sharepoint.com/:f:/g/personal/michael_marushka_kna_kingspan_net/Eqxh1yX_u_xDtLbrGNySEXsBCDrirc1z2k3IAIpsK7SIBw?e=greqZ0

OAK CONTRACTING LLC
Builders

Request For Information PB-015

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-015 **Date Created: 1/29/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent **Author RFI Number**

Subject **Discipline** **Category**
Urban Zink

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**
Please review attached Pre-bid RFI #PB-015 and provide a response.

Suggestion

Answer **Date Answered: 2/10/2020**
1. Contractor shall refer to drawing C-30 and 2A Contract Package item 2.55 for all work on and adjacent to the haul rd.
2. The LOD for the haul rd is clearly marked on drawing C-30.
3. Topsoil shall be tested and amended by the Contractor as required by the Contract Documents

Pre-bid RFI #PB-015

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: HS 13 Question
Date: Tuesday, January 28, 2020 1:53:57 PM
Attachments: image002.png

Please disregard the last email and replace with this one.

Thanks,

Steve Krell, CPE

From: Ben Dyer
Sent: Tuesday, January 28, 2020 12:49 PM
To: Steve Krell <skrell@oakcontracting.com>
Cc: Adam Zink <azink@urbanzink.com>; Amanda Nelson <anelson@urbanzink.com>; Sky Tharp <stharp@urbanzink.com>
Subject: HS 13 Question

Good Afternoon Steve,

Please consider the following as a request for information regarding HS 13:

Oak 1. Is the site contractor required to do any work on the existing haul road(s)?
TCA 2. If so, please provide sheets with the full extent of the LOD showing this.
   a. Please see sheet C-13. The LOD is not closed and no information is available for the remainder of the haul road next to Pine Road.
TCA 3. Please advise which amendments are needed to make the topsoil usable and what quantity of amendments is needed to do so. This can be very expensive.

Thanks,

Benjamin J. Dyer
Estimator
Urban N. Zink Contractor, Inc.
6924 Ebenezer Road | PO Box S
Chase, MD 21027

W: www.UrbanZink.com
E: bdyer@urbanzink.com
T: 410-335-3456
C: 443-602-5988

Request For Information PB-016

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-016 **Date Created: 1/29/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent

Author RFI Number

Subject	Discipline	Category
Kinsley		

Cc: Company Name	Contact Name	Copies	Notes
Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-016 and provide a response.

Suggestion

Answer **Date Answered: 2/7/2020**

1. Holes in pour stop screed angles for specified wall dowels shall be drilled in the field by the 5A Contractor. Layout of these holes to be provided by the 4A Contractor.
2. Holes in bent plate at slab edges for specified wall dowels shall be drilled in the field by the 5A Contractor. Layout of these holes to be provided by the 4A Contractor. Please Note: Dowels connecting slab CMU walls do not need to align with wall reinforcing. Contractor has the option to build CMU wall before or after floor construction.
3. The 5A Contractor is responsible to locate his crane as required to erect all steel from outside the building footprint. Potential crane locations may include but are not limited to the hatched areas shown on scope clarification detail #17 attached to this addendum. Refer to Contract Package 5A Steel item 2.22

Pre-bid RFI #PB-016

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: High School #13 RFI
Date: Tuesday, January 28, 2020 3:50:38 PM
Attachments: image649925.png

Thanks,

Steve Krell, CPE

From: Dave Spaulding
Sent: Tuesday, January 28, 2020 2:20 PM
To: Steve Krell <skrell@oakcontracting.com>
Subject: High School #13 RFI

High School #13
Bid Package 5a Metals

Steve,
Please submit these RFI's to the design team for their review and response:

TCA 1. • The drawings note that the "screed angle" (pourstop) is to have pre-punched holes for reinforcing. Joist and deck suppliers will not supply pourstop with pre-punched holes. Can these holes be drilled/punched on site by the 4a contractor to ensure that these holes are located where/as needed?

TCA 2. • The drawings note that slab edge bent plate is to have pre-punched holes for reinforcement. To decrease erection times and lower costs, a lot of this bent plate will arrive onsite already attached to the beam. You're working with two trades with differing tolerances. The odds are very poor that your pre-punched holes will line up exactly where they are needed. Can these holes be drilled on site by the 4a contractor to ensure that these holes are located where/as needed?

Oak 3. • Since all steel must be erected from outside the building footprint, can you provide a site logistics plan that shows crane pad locations?

Thank you for your assistance,

Dave Spaulding
Project Estimator
p: +1 717-757-8841
dspaulding@kinsleyconstruction.com

OAK CONTRACTING LLC
Builders

Request For Information PB-017

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-017 **Date Created: 1/29/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent

Author RFI Number

Subject	Discipline	Category
Interstate		

Cc: Company Name	Contact Name	Copies	Notes
Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-017 and provide a response.

Suggestion

Answer **Date Answered: 2/7/2020**

1. The 2A Contractor is responsible for the press box work in its entirety as shown drawing A-553.

Pre-bid RFI #PB-017

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: RFI: #13 High School New Construction
Date: Tuesday, January 28, 2020 4:21:56 PM

Thanks,

Steve Krell, CPE

From: David Choi
Sent: Tuesday, January 28, 2020 4:18 PM
To: Steve Krell <skrell@oakcontracting.com>
Subject: RFI: #13 High School New Construction

(RFI: Div.7A- Roofing)

Press Box Roof (Ref. Dwg A553):
Please clarify what package contractor is responsible to furnish and install roofing at Press Box including roof system, roof hatch, and roof railing.
If it belongs to 7A package, please clarify what type of roofing system for this roof.

Thanks
David S. Choi

INTERSTATE CORPORATION

16031 Industrial Drive
Gaithersburg, MD 20877
O) 240-660-2911 F) 240-660-2912

OAK CONTRACTING LLC
Builders

Request For Information PB-018

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-018 **Date Created: 1/30/2020**

Answer Company	Answered By	Author Company	Authored By
TCA Architects 1369 General's Hwy Crownsville, MD 21032	Robyn Toth Phone: 410-266-7722 Fax:	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent **Author RFI Number**

Subject **Discipline** **Category**

Atlascopco

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-018 and provide a response.

Suggestion

Answer **Date Answered: 2/6/2020**

1. See detail 2/A-921 for locations of Carpet/Slip resistant VCT and porcelain tile/treads in the commons space. The finish schedule indicates that A016 Commons shall receive Resilient Tile (VCT) as Base Bid for this space and that Epoxy Terrazzo is to be provided if Alternate is accepted.

Pre-bid RFI #PB-018

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: High School 13
Date: Wednesday, January 29, 2020 1:29:46 PM
Attachments: Outlook-sqrbpusy.png

Thanks,

Steve Krell, CPE

From: Sunil Handa
Sent: Wednesday, January 29, 2020 12:09 PM
To: Steve Krell <skrell@oakcontracting.com>
Cc: Michele Wixsom <mwixsom@oakcontracting.com>
Subject: High School 13

Steve :
Area 16 commons on floor pattern plan A921 it appears to be regular VCT however finish schedule shows Carpet / Slip resistant VCT and Porcelain tile / treads as floor finishes..no mention of VCT.
Wish to make sure you don't want slip resistant VCT in complete commons and not , as also shown , only at Ramps.

Thank You,

Sunil Handa
Atlascopco Construction Company, Inc.
dba ***ATLASCONCO GENERAL***

ATLASCONCO GENERAL

34 Hidden Field Dr
Gaithersburg, MD 20877
Telephone : (301) 704 2573.
Email: sunilcopco@hotmail.com

Request For Information PB-019

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-019 **Date Created: 1/30/2020**

Answer Company	Answered By	Author Company	Authored By
TCA Architects 1369 General's Hwy Crownsville, MD 21032	Robyn Toth Phone: 410-266-7722 Fax:	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent **Author RFI Number**

Subject	Discipline	Category
Kinsley		

Cc: Company Name	Contact Name	Copies	Notes
Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-019 and provide a response.

Suggestion

Answer **Date Answered: 2/6/2020**

1. Detail 8 and 9 are showing joist seat on beam. Steel plates are not required at K series joist bearing on beams.
2. No additional steel plates required on beam top flange at K series joist bearing.
3. Details 2 and 3 on S-403 show framing support for operable walls. Also see detail on 1/S-305.

Pre-bid RFI #PB-019

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: High School #13 RFI
Date: Wednesday, January 29, 2020 2:50:15 PM
Attachments: image302610.png

Thanks,

Steve Krell, CPE

From: Dave Spaulding
Sent: Wednesday, January 29, 2020 2:48 PM
To: Steve Krell <skrell@oakcontracting.com>
Subject: High School #13 RFI

High School #13
Bid Package 5a Metals

Steve,
Please submit these RFI's to the design team for their review and response:

1. Details 8 and 9/S-401 represent joist bearing at a steel beam. On the detail, small plates are shown on the top flange of the beam. After reviewing the drawings I have not come across this condition anywhere else. Is this intended to be part of the joist seat or are these individual plates added to the top flange of the beam? If there are individual plates on the beam, please supply dimensions, thickness, etc...
2. At the above mentioned detail, if these are plates added to the top flange of the beam, does this occur at every joist location? Or, does it only occur when 2 joists (or a joist and a beam) have ends that are directly opposed from one another?
3. Details 2 and 3/S-401 illustrate folding partition support. At each detail a note appears which reads "STRUCTURAL STEEL SUPPLIER SHALL PROVIDE ADDITIONAL SUPPORT AT STACKED END OF OPERABLE WALL PER THE PARTITION MANUFACTURER REQUIREMENTS". As we do not know the manufacturers requirements can you, for bidding purposes, give us the number of added supports or the frequency at which they will be required at the stacked ends?

Thank you for your assistance,

Dave Spaulding
Project Estimator
p: +1 717-757-8841
dspaulding@kinsleyconstruction.com

Request For Information PB-020

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-020 **Date Created: 1/30/2020**

Answer Company	Answered By	Author Company	Authored By
TCA Architects 1369 General's Hwy Crownsville, MD 21032	Robyn Toth Phone: 410-266-7722 Fax:	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent

Author RFI Number

Subject
Urban Zink

Discipline

Category

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-020 and provide a response.

Suggestion

Answer **Date Answered: 2/7/2020**

1. Topsoil on-site is referenced in the Geotechnical Report. See specifications
2. This detail references the different sections required depending on the CBR of the soil. Borings done for the road will be included in future addenda.
3. Detail will be provided via Addendum
4. The extent of the outdoor equipment enclosure is included in Scope clarification Detail# 19 in Addendum #2
5. The Contractor shall refer to Contract Package 2A item 2.10 as revised by addendum #2
7. Contractor shall refer to Scope Clarification Detail #15 included in Addendum #2
8. Contractor shall refer to Scope Clarification Detail #14 included in Addendum #2

Pre-bid RFI #PB-020

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: HS #13 RFI
Date: Wednesday, January 29, 2020 4:17:00 PM
Attachments: image002.png

Thanks,

Steve Krell, CPE

From: Ben Dyer
Sent: Wednesday, January 29, 2020 4:07 PM
To: Steve Krell <skrell@oakcontracting.com>
Cc: Adam Zink <azink@urbanzink.com>; Amanda Nelson <anelson@urbanzink.com>; Sky Tharp <stharp@urbanzink.com>
Subject: HS #13 RFI

Good Afternoon Steve,

Please consider the following as a request for information regarding High School #13:

TCA 1. What is the depth of the topsoil covering the site?
TCA 2. Detail 28 on C-28 shows various options for spec the public road paving. Please advise which spec we are to follow.
TCA 3. Brick Pavers Detail 1 & 3 on A-882, please provide specific details regarding the pavers and install of the pavers.
Oak 4. A-880 Shows site walls around mechanical pad. Please advise who owns this portion of the scope.
Oak 5. Staging Areas – If there is a conflict between the specs and the drawings, which are we to go by?
TCA 6. Please provide the details & specs for the outdoor scoreboard and who the approved manufacturers are going to be.
TCA 7. Detail 11 on C-35 indicates the Netting and Posts are in a separate contract. Please confirm. This is called out in the site contractors scope. Please advise it is included in the contract.
Oak 8. Detail 6 on A-530, the site walls for the outdoor classroom area. Please advise if 2A contractor is responsible for the footer? Who is responsible for the backfill of the wall?

Please let us know if you have any questions or concerns.

Regards,

Benjamin J. Dyer

Request For Information PB-021

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-021 **Date Created: 1/31/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent

Author RFI Number

Subject	Discipline	Category
Centria		

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-021 and provide a response.

Suggestion

Answer **Date Answered: 2/7/2020**

No substitutions will be considered during the bid phase. Refer to the Specifications for the substitution request procedure.

Pre-bid RFI #PB-021

From:	Steve Krell
To:	Matt Lurz; Corey Wixsom; Ed Lurz
Subject:	FW: HS 13 translucent panels (kalwall)
Date:	Thursday, January 30, 2020 3:19:54 PM
Attachments:	FWDS 3T - Major Industries Translucent details.pdf ATT00001.htm wallsystemtb.pdf ATT00002.htm

---

Thanks,

Steve Krell, CPE

From: Dominic P. Grecki
Sent: Thursday, January 30, 2020 3:18 PM
To: Steve Krell <skrell@oakcontracting.com>
Subject: HS 13 translucent panels (kalwall)

Steve,

I was told earlier this week (and was waiting for confirmation) by my upper management and engineer team that we are in the process of existing our relationship with kalwall and joining forces with Majors Industry (kalwal main competitor).

I'm being told that Major Industries has created a better integrated detail for us to work with, their pricing is much better and to be on the safe side I asked my installers locally about Majors and got an overwhelming positive review about this change. By the time we need to have panels on site, majors is telling us they will have fully tested system ready for install.

I'm attaching the details for your review. I'm not sure if you are up for changing at this point, which is pretty late, but with this news, I figured you should know.

Two options:
- we can still price with kalwall per our current agreement, which has not changed as of the writing of this email.
- you can write an rfi and addendum adding majors as an option for the integrated translucent panel. This will allow us to price out both options for the installers.

Again, I am sorry for throwing this your way so late but I figured we might still have time.

Request For Information PB-033

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-033 **Date Created: 2/5/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent **Author RFI Number**

Subject	Discipline	Category
Master Care		

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-033 and provide a response.

Suggestion

Answer **Date Answered: 2/7/2020**

No substitutions will be considered during the bid phase. Refer to the Specifications for the substitution request procedure.

Pre-bid RFI #PB-033

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: School #13
Date: Tuesday, February 4, 2020 3:45:35 PM
Attachments: New High School # 13 - Jessup, MD - Approval Request I- Section 096400 - Wood Flooring.pdf

---

Thanks,

Steve Krell, CPE

From: Ken Ackerson
Sent: Tuesday, February 4, 2020 3:40 PM
To: Steve Krell <skrell@oakcontracting.com>
Subject: School #13

Request for substitution attached.

Best Regards,
Ken

Ken Ackerson - Vice President, Commercial Sales
Master Care Flooring, Inc
Gymnasium / Restoration SPECIALISTS
4000 Coolidge Ave
Baltimore, Md. 21229
410-242-6401 office, my ext. 210
410-242-6808 fax
727-424-1243 cell
visit our website www.mastercarefloors.com

MasterCare
FLOORING

OAK CONTRACTING LLC
Builders

Request For Information PB-034

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-034 **Date Created: 2/5/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent **Author RFI Number**

Subject **Discipline** **Category**
W.F. Klingensmith

Cc: Company Name	Contact Name	Copies	Notes
Oak Contracting, LLC	File	1	

Question **Date Required:**
Please review attached Pre-bid RFI #PB-034 and provide a response.

Suggestion

Answer **Date Answered: 2/12/2020**
1. The galvanized sheet metal angle is part of Contract Package 6A.

Pre-bid RFI #PB-034

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: High School #13 - Bid RFI#2
Date: Tuesday, February 4, 2020 3:16:06 PM
Attachments: image003.png

Thanks,

Steve Krell, CPE

From: Bill Klingensmith
Sent: Tuesday, February 4, 2020 3:10 PM
To: Steve Krell <skrell@oakcontracting.com>
Cc: Matt Lurz <mlurz@oakcontracting.com>
Subject: High School #13 - Bid RFI#2

Steve,

1. Which contract package has the 3 ½ x 3 ½ and 4 x 4 10 GA galvanized sheet metal angles at the sills and jambs details shown on drawing A-611.

Thanks

Bill Klingensmith
President/Estimator
William F. Klingensmith, Inc.
7307 Baltimore Avenue Suite 209
College Park, Maryland 20740
Phone 301-699-6070
www.wfklingensmith.com
billk@wfklingensmith.com
WILLIAM F. KLINGENSMITH, INC.
GENERAL CONTRACTORS

Request For Information PB-037

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-037 **Date Created: 2/6/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent **Author RFI Number**

Subject	Discipline	Category
Interstate		

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-037 and provide a response.

Suggestion

Answer **Date Answered: 2/10/2020**

1. Post installed anchors are to be provided as specified to attach work included in this contract package.

Pre-bid RFI #PB-037

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: RFI: High School #13
Date: Wednesday, February 5, 2020 2:24:04 PM

Thanks,

Steve Krell, CPE

From: David Choi
Sent: Wednesday, February 5, 2020 2:20 PM
To: Steve Krell <skrell@oakcontracting.com>
Subject: RFI: High School #13

(RFI: Div.7A- Roofing)

Post Installed Anchors (Spec. Section 050519):
7A Package contractor supposed to furnish and install Post-installed Anchors (ref. 7A package 2.23, and 7A cross reference spec. section 050519), but they are not found/ shown on contract drawings; Please clarify it.

Thanks
David S. Choi

INTERSTATE CORPORATION

16031 Industrial Drive
Gaithersburg, MD 20877
O) 240-660-2911 F) 240-660-2912

Request For Information PB-038

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-038 **Date Created: 2/6/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Phillip Johnson Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent

Author RFI Number

Subject	Discipline	Category
Interstate		

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-038 and provide a response.

Suggestion

Answer **Date Answered: 2/10/2020**

1. See Addendum #2.

Pre-bid RFI #PB-038

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: RFI: High School #13
Date: Wednesday, February 5, 2020 2:34:41 PM

Thanks,

Steve Krell, CPE

From: David Choi
Sent: Wednesday, February 5, 2020 2:28 PM
To: Steve Krell <skrell@oakcontracting.com>
Subject: RFI: High School #13

(RFI: Div.7A- Roofing)

Fixed Metal Louvers (Spec. Section 089119):
Please confirm that Spec. Section 089119-Fixed Metal Louvers should be included in 7A package Cross- reference (Section 002400; Contract Package 7A) for meta louvers integrated to the metal wall panels.

Thanks
David S. Choi

INTERSTATE
CORPORATION

16031 Industrial Drive
Gaithersburg, MD 20877
O) 240-660-2911 F) 240-660-2912

Request For Information PB-040

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-040 **Date Created: 2/6/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent

Author RFI Number

Subject
Irwin Seating

Discipline

Category

Cc: Company Name	Contact Name	Copies	Notes
Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-040 and provide a response.

Suggestion

Answer **Date Answered: 2/10/2020**

1. All work that is included in Contract Package 11B will remain in Contract Package 11B.

Pre-bid RFI #PB-040

Irwin Seating Company®

Dedicating ourselves to customer satisfaction, employee well-being, and profitable growth.

2/5/2020

RFI – High School 13 – Auditorium Seating Package

Hello,

Section 126623 Telescoping Platform and Section 127100 Auditorium Seating are included in the Athletic Equipment Package. As a manufacturer of Telescoping and Fixed Seating, not athletic equipment, can there be a separate package for the Auditorium Seating? While we manufacture Telescopic Bleachers for the Gymnasium, 126613 Telescoping Bleachers can stay with the Athletic Equipment package as they are part of the Gymnasium, we are requesting that the seating designated for the Auditorium be a "stand alone" package. Because we don't manufacture the Athletic Equipment even though we're specified on the Auditorium Seating, we are precluded from bidding the 11B package.

Respectfully,

Kathleen Haldeman

410-349-7377

Representing the Irwin Seating Company

OAK CONTRACTING LLC Builders

Request For Information PB-050

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-050 **Date Created: 2/10/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent	Author RFI Number

Subject	Discipline	Category
Urban Zink		

Cc: Company Name	Contact Name	Copies	Notes
Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-050 and provide a response.

Suggestion

Answer **Date Answered: 2/10/2020**

1. The watering requirements noted in 2A scope item 2.63 shall be for the duration of the entire project.

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: HS #13 RFI
Date: Friday, February 7, 2020 1:23:48 PM
Attachments: image002.png

Pre-bid RFI #PB-050

Thanks,

Steve Krell, CPE

From: Ben Dyer
Sent: Friday, February 7, 2020 12:03 PM
To: Steve Krell <skrell@oakcontracting.com>
Cc: Amanda Nelson <anelson@urbanzink.com>; Adam Zink <azink@urbanzink.com>; Sky Tharp <stharp@urbanzink.com>
Subject: HS #13 RFI

Good Afternoon,

Please consider the following as a request for information regarding HS #13:

1. Do the watering requirements stated in 2A scope item 2.63 required only while 2A is onsite or during the entire project?

Thanks,

Benjamin J. Dyer
Estimator
Urban N. Zink Contractor, Inc.
6924 Ebenezer Road | PO Box S
Chase, MD 21027

W: www.UrbanZink.com
E: bdyer@urbanzink.com
T: 410-335-3456
C: 443-602-5988

Request For Information PB-052

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-052 **Date Created: 2/10/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent **Author RFI Number**

Subject	Discipline	Category
Denver Elek		

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-052 and provide a response.

Suggestion

Answer **Date Answered:**

No substitutions will be considered during the bid phase. Refer to the Specifications for the substitution request procedure.

To: Oak Contracting

RE: HCPSS High School #13

Please consider the following requests for information and allowing Johnson Controls to competitively bid the equipment per items/specification sections listed below;

1. The specification section regarding air-cooled refrigerant condensing units (23 63 13) references a minimum of one digital scroll compressor per condensing unit 25-tons and larger. JCI is not able to provide digital scroll compressors as an option. In lieu of digital scroll compressors, JCI could provide APR control or hot gas bypass on the condensing unit. If APR control or hot gas bypass is not an acceptable alternative, Johnson Controls will be unable to provide the condensing units over 25-tons and therefore will not be able to submit a competitive package bid for any equipment.
2. Can York Custom be added as an acceptable manufacturer for dedicated outdoor air system units (provided the side by side configuration can be achieved) per specification section 23 72 00?
3. Can York/JCI be added as an acceptable manufacturer for variable-refrigerant volume systems per specification section 23 81 28? Provided that only two manufacturers are listed that are represented by two of the other major manufacturers listed for all other equipment, York/JCI will not be able to submit a competitive package bid for any equipment if they cannot submit pricing for the VRV system. If York/JCI can be added as an acceptable manufacturer, additional time for training of Howard County personnel could be included in the bid.

Thank you,

Johnson Controls, Inc.
60 Loveton Circle
Sparks, MD 21152
Direct: 410-746-4168

Request For Information PB-059

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-059 **Date Created: 2/11/2020**

Answer Company	Answered By	Author Company	Authored By
Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Matt Lurz Phone: 410-828-1000 Fax: 410-828-7488	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent

Author RFI Number

Subject
W.G. Tomko

Discipline

Category

Cc:	Company Name	Contact Name	Copies	Notes
	Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-059 and provide a response.

Suggestion

Answer **Date Answered:**

No substitutions will be considered during the bid phase. Refer to the Specifications for the substitution request procedure.

Pre-bid RFI #PB-059

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: Howard County #13 High School
Date: Tuesday, February 11, 2020 8:31:48 AM
Attachments: Lee Pelco.vcf

Thanks,

Steve Krell, CPE

From: Lee Pelco
Sent: Tuesday, February 11, 2020 7:45 AM
To: Steve Krell <skrell@oakcontracting.com>
Cc: Albert Kish <akish@wgtomko.com>; Jack Barry <jbarry@wgtomko.com>
Subject: Howard County #13 High School

Steve,

We would like to propose AAON be added to the approved manufacturers for the AHU units spec section 237322 and Xetex be added to the approved manufacturers for the DOAS units spec section 237200. Both of these products would offer the project equal performance with competitive pricing. We have used these products on multiple Baltimore area school projects.

Thanks,

Lee Pelco
W.G. Tomko, Inc.
Chief HVAC Estimator
(724) 348-2000 x1716 Work
(412) 605-9927 Mobile
lpelco@wgtomko.com
2559 State Route 88
Finleyville, PA 15332
www.wgtomko.com

Request For Information PB-051

High School #13
Mission Road

Project # 1705
Tel: Fax:

RFI #: PB-051 **Date Created: 2/10/2020**

Answer Company	Answered By	Author Company	Authored By
TCA Architects 1369 General's Hwy Crownsville, MD 21032	Robyn Toth Phone: 410-266-7722 Fax:	Oak Contracting, LLC 1000 Cromwell Bridge Road Towson, MD 21286	Corey Wixsom Phone: 410-828-1000 Fax:

Co-Respondent **Author RFI Number**

Subject	Discipline	Category
Kinsley		

Cc: Company Name	Contact Name	Copies	Notes
Oak Contracting, LLC	File	1	

Question **Date Required:**

Please review attached Pre-bid RFI #PB-051 and provide a response.

Suggestion

Answer **Date Answered: 2/12/2020**

1. The beam in question is part of 5A scope. See addendum #2 for size and weight

2. See Scope Clarification Detail #21 in Addendum#2

Pre-bid RFI #PB-051

From: Steve Krell
To: Matt Lurz; Corey Wixsom; Ed Lurz
Subject: FW: High School #13 RFI
Date: Friday, February 7, 2020 9:31:31 AM
Attachments: image841346.png

Thanks,

Steve Krell, CPE

From: Dave Spaulding
Sent: Friday, February 7, 2020 9:28 AM
To: Steve Krell <skrell@oakcontracting.com>
Cc: Brian Strausbaugh <bstrausbaugh@hanoveriron.com>
Subject: High School #13 RFI

High School #13
Bid Package 5a Metals

Steve,
Please submit these RFI's to the design team for their review and response:

TCA 1. • Sheet S-131 and S-141 have a call out for the operable wall partitions (#1 and #2) with a detail cut of 1/S-305 as well as 2/S-403. The detail shows clips and hangers attached to the bottom flange of the structural beams (a W27 and a W30. However, the lower wide flange beam located below the angle hanger is listed only as a W00. Is this lower WF beam part of the 5a scope? If so, please supply the size and weight of this beam?

Oak 2. • Detail 4/S-403 shows us a mat hoist detail. While the W8x24 which spans between the bottom flange of the joists is sized nothing else is. Is anything below the W8x24 part of the 5a scope? If so, please supply sizing, weights and spacing for those items that are in the 5a scope.

Thank you

Dave Spaulding
Project Estimator
p: +1 717-757-8841
dspaulding@kinsleyconstruction.com

KINSLEY

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