

**EAST HARTFORD-GLASTONBURY
ELEMENTARY MAGNET SCHOOL PHASE 2
GLASTONBURY, CONNECTICUT
STATE PROJECT NOS. 054-0095 MAG/N/PS & 054-0096 MAG/N/PS
GLASTONBURY BID NO. GL-2011-04**

The following changes to the Drawings and Project Manual shall become a part of the Contract Documents superseding previously issued Drawings and Specifications to the extent modified by this Addendum No. 5. Bidders shall ensure this addendum is acknowledged in the appropriate space provided on the Bid Form when submitting their bid.

NOTICE TO ALL PLAN HOLDERS:

If you received this Addendum No. 5 electronically you may not change it in any way except to format it to print on your printer.

CHANGES TO THE DRAWINGS

A. SURVEY - BOUNDARY MAP/EXISTING CONDITIONS PLAN:

- 1) In Set 1 of 2 of the Drawings, REMOVE the "Boundary Map/Existing Conditions Plan" and INSERT the revised "Boundary Map/Existing Conditions Plan" (copy attached) dated 2-22-11.

B. DRAWING NO. A-101.2 - FIRST FLOOR PLAN - PART B:

- 1) On First Floor Plan-Part B, in Media Center/B101, ADD indication of table and study carrels as shown on Partial Floor Plan Sketch SK-101.2 (copy attached) dated 2/10/11.

C. DRAWING NO. A-307 - WALL SECTIONS:

- 1) On Wall Section 18/A-307, REVISE access ladder as indicated on REVISED Wall Section Sketch SKA-A307-1 (copy attached) dated 2/22/11.

D. DRAWING NO. MP-100.1 – LOWER LEVEL HVAC PLAN:

- 1) Revise location of 3" drain to new 6" hub drain as indicated on Sketch SK-MP-100.1-1, dated 2/21/11 (copy attached).

E. DRAWING NO. MP-100.2 – LOWER LEVEL HVAC PLAN:

- 1) Remove a portion of the 3" drain and associated information from evaporative condenser to the duplex sump pump pit in Lower Level. Duplex sump pit no longer exists. See Sketch SK-MP-100.1-1 (copy attached) dated 2/21/11 for revised location of 3" drain.

F. DRAWING NO. M-204 – DETAIL No.1 - PARTIAL MECHANICAL SITE PLAN:

- 1) Revise location of 3" drain into Lower Level as indicated on Sketch SK-M-204-1 dated 2/21/11 (copy attached).

- 2) REVISE piping arrangement at evaporative condenser to eliminate a flexible piping connection and to include a 3" gate valve in unit drain. INDICATE a reference to a new evaporative condenser detail.
 - 3) ADD clarification for material and installation of evaporative condenser drain in Note #2. DELETE original note relating to piping material, etc. from MP-100.2 as indicated on Sketch SK-MP-100.2-1 dated 2/21/11 (copy attached).
- G. DRAWING NO. M-302 – HVAC FLOW & CONTROL DIAGRAMS:
- 1) REVISE Normally Closed (NC) heating coil 3-way control valves to Normally Open (NO) as indicated on Sketch SK-M-302-1 through SK-M-302-3, dated 2/21/11 (copies attached).
- H. DRAWING NO. M-303 – HVAC FLOW & CONTROL DIAGRAMS:
- 1) REVISE Normally Closed (NC) heating coil 3-way control valves to Normally Open (NO) on Sketches SK-M-303-1 and SK-M-303-2, dated 2/21/11 (copy attached).
- I. DRAWING NO. M-406 –MECHANICAL DETAILS:
- 1) ADD Detail No. 8 - "Evaporative Condenser Piping Arrangement" as indicated on Sketch SK-M-406-1, dated 2/21/11 (copy attached).
- J. DRAWING NO. E-001 - ELECTRICAL SITE PLAN:
- 1) Under "Keyed Notes", DELETE Note No. 8 in its entirety and ADD the following new Note No. 8 in lieu thereof:
"8. Provide five (5) underground four (4) inch conduits from Nutmeg Lane to the building IDF Room."
 - 2) Under "Keyed Notes", ADD new Note No. 9 to read as follows:
"9. Provide a spare four (4) inch conduit that parallels the site lighting electrical conduit from the building Electrical Room to the School Sign located along Oak Street."
 - 3) Under "Keyed Notes", ADD new Note No. 10 to read as follows:
"10. Provide 2 #12, 1#12G in ¾" Conduit from panel RP-B for heat trace for plumbing pipes at ACCH-1."
- K. DRAWING NO. E-002 – ELECTRICAL LIGHTING FIXTURE SCHEDULE:
- 1) ADD Fixture Types B4D and D4D as indicated on Sketch SK-E-002 dated 2/21/11 (copy attached).
- L. DRAWING NO. E-101.3 – FIRST FLOOR POWER PLAN:
- 1) ADD PA speakers in Cafeteria/C122 as indicated on Sketch SK-E-101.2-1 dated 2/21/11 (copy attached).
 - 2) ADD PA speakers in Gymnasium/C101 as indicated on Sketch SK-E-101.2-2 dated 2/21/11 (copy attached).
- M. DRAWING NO. E-110 – ELECTRICAL ROOF PLAN:
- 1) REVISE Electrical Roof Plan as indicated on revised Drawing No. E-110, dated 2/24/11 (copy attached).

N. DRAWING NO. E-701 FIRST FLOOR LIGHTING PLAN:

- 1) REVISE Science, Arts and Music room light fixture tags as indicated on Sketch SK-E-701.3 dated 2/21/11 (copy attached).

CHANGES TO THE PROJECT MANUAL

A. SECTION 00 01 10 – TABLE OF CONTENTS:

- 1) In Volumes 1, 2, and 3, on Page 00 01 10-7, under Division 26-ELECTRICAL, ADD new section to read as follows:

"26 55 61 - Theatrical Lighting"

B. SECTION 00 43 13 – BID BOND:

- 1) DELETE the existing Bid Bond form from the end of the section and INSERT the new Bid Bond in its place (copy attached).

C. SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS:

- 1) CLARIFICATION: On Page 01 50 00-7, in Article 3.3, Paragraph I, the construction of the project sign shall be in accordance with Sketch SK-01 50 00-1 (copy attached).

D. SECTION 05 50 00 – METAL FABRICATIONS:

- 1) On Page 05 50 00-1, in Article 1.2, ADD new Paragraphs G and H to read as follows:

"G. Metal floor plate and supports."

"H. Planetarium ladder and hooks."

"I. Knox-box rapid entry system."

- 2) On Page 05 50 00-7, ADD new Article 2.12 - METAL FLOOR PLATE to read as follows and renumber subsequent articles accordingly:

"2.12 METAL FLOOR PLATE

A. Fabricate from rolled-steel floor plate of thickness indicated below:

1. Thickness: 1/4-inch.

B. Provide steel angle supports as indicated."

- 3) On Page 05 50 00-8, ADD new Article 2.13 - PLANETARIUM LADDER AND HOOKS to read as follows and renumber subsequent articles accordingly:

"2.13 PLANETARIUM LADDER AND HOOKS

A. Ladder: Type 1A Revolution XE Extension Ladder Model 22 manufactured by Little Giant Ladder Systems, Website: www.littlegiantladder.com; aluminum ladder with MAG4 hinges and Rock Locks; complies with applicable OSHA and ANSI A14.2 standards; limited lifetime warranty:

1. Weight Capacity: 300-lbs.
2. Minimum Extension Height: 11'-0".
3. Maximum Extension Height: 19'-0".
4. Minimum A-frame Height: 5'-0".
5. Maximum A-frame Height: 9'-0".
6. Width at Base: 27-1/2 inches.

B. Hooks: Ladder Hook Model No. 2480 (without wheels) manufactured by Qual-Craft Industries, Telephone: 781-344-1000, Website: www.qualcraft.com; adjusts to fit between top two (2) ladder rungs; fits single or extension aluminum ladders with round or "D" rung styles; furnish ladder with two (2) hooks."

- 4) On Page 05 50 00-8, ADD new Article 2.14 - KNOX-BOX RAPID ENTRY SYSTEM to read as follows and renumber subsequent articles accordingly:

"2.14 KNOX-BOX RAPID ENTRY SYSTEM

"A. Knox-Box Rapid Entry System: Knox-Box 3200 Series Hinged Door Model for recessed mounting manufactured by Knox Company, Telephone: 800-552-5669, Website: www.knoxbox.com; 1/4-inch plate steel housing, 1/2-inch thick steel door with interior gasket seal and stainless steel door hinge; 7 by 7 inch flange for recessed mounting; box and lock UL listed; lock has 1/8-inch thick stainless steel dust cover with tamper seal mounting capability; holds keys, access cards and other small items; finish with manufacturer's standard coating system - color as selected by Architect.

"B. Recessed Mounting Kit: Knox-Box Recessed Mounting Kit (RMK) Model No. 3290; consisting of a shell housing and mounting hardware to be cast-in-place in new concrete or masonry construction."

E. SECTION 10 14 00 – SIGNAGE:

- 1) On Page 10 14 00-4, in Article 2.3, REVISE Paragraph A to read as follows:

"A. Basis-of-Design Product: Subject to compliance with requirements, provide Fusion 01 Signage manufactured by Takeform Architectural Graphics or a comparable product acceptable to the Architect."

- 2) CLARIFICATION: Refer to "Fusion 1 Drawing Match" (copy attached) prepared by signage manufacturer to be used in coordination with Drawing No. A-920.

F. SECTION 11 51 23 – LIBRARY STACK SYSTEMS:

- 1) On Page 11 51 23-4, in Article 2.2, in Paragraph A, Subparagraph 1, ADD new Sub-subparagraph c to read as follows:

"c. Footer: Four (4) inch high separate piece finished in color - Blue Bell 09."

G. SECTION 26 51 00 – INTERIOR LIGHTING:

- 1) On Page 26 51 00-8, in Article 2.5, Paragraph A, REVISE Subparagraph 6 to read as follows:

"6. Remote Test: For light fixtures located 12' above finished floor provide switch in hand-held remote device aimed in direction of tested unit initiates coded infrared signal. Signal reception by factory-installed infrared receiver in tested unit triggers simulation of loss of its normal power supply, providing visual confirmation of either proper or failed emergency response."

H. SECTION 26 55 61 – THEATRICAL LIGHTING:

1) In Volume 3 of the Project Manual, ADD new Section 26 55 61 (copy attached) consisting of 12 pages inclusive.

I. SECTION 27 51 16 – PUBLIC ADDRESS AND MASS NOTIFICATION SYSTEMS:

1) In Volume 3 of the Project Manual, DELETE existing Section 27 51 16 and INSERT new Section 27 51 16 (copy attached) consisting of 20 pages inclusive.

J. SECTION 48 14 00 – SOLAR ENERGY ELECTRICAL POWER GENERATION EQUIPMENT:

1) In Volume 3 of the Project Manual, DELETE existing Section 48 14 00 and INSERT new Section 48 14 00 (copy attached) consisting of 14 pages inclusive.

RESPONSES TO BID RFIS

A. SKETCHES ASSOCIATED WITH BID RFIS:

1) Refer to attached Sketches SKA-005 (RFI No. B-337), SKA-005A (RFI No. B-337), SKA-005B (RFI No. B-337), SKA-005C (RFI No. B-337), SSK-6 (RFI No. B-097), SSK-7 (RFI No. B-304), SSK-9 (RFI No. B-120), SSK-10 (RFI No. B-060), SSK-6 (RFI No. B-097), SSK-11 (RFI No. B-337), SSK-12 (RFI No. B-321), SSK-13 (RFI No. B-337), SSK-14 (RFI No. B-060), SSK-6 (RFI No. B-097), SSK-15 (RFI No. B-275), and SSK-16 (RFI No. B-275) that have been issued as part of answered RFIs.

RFI No. B-006, (Dated 1/27/2011)

QUESTION: Reference Section 08 44 13, Drwg A-431 thru A-443. Numerous frames do not show any head or sill details to reference. Please Provide. [Example Types W3, W4, W5, W6, W7, W8 on Drwg A-432]

RESPONSE: Head and jamb details are keyed in on the A3 series wall section drawings and are not required in both places. For the bidders convenience we additionally made a list of the detail references found on the wall sections and keyed them to the A43 series window types below.

W-1	13/A441 SIM.	12/A442	SEE DWG.
W-2	13/A441 SIM.	12/A442 SIM.	SEE DWG.
W-3	16/A442	13/A442	SEE DWG.
W-4	2/A442	1/A442	SEE DWG.
W-5	7/A441 SIM.	6/A441	SEE DWG.
W-6	7/A441	8/A441	SEE DWG.
W-7	7/A441	8/A441	SEE DWG.
W-8	5/A443 SIM.	20/A442 SIM.	SEE DWG.
W-9	RE: DOOR SCH.	RE: DOOR SCH.	SEE DWG.
W-10	5/A443	20/A442	SEE DWG.
W-11	5/A443 SIM.	20/A442 SIM.	SEE DWG.
W-12	2/A442	1/A442	SEE DWG.

W-13	11/A442 SIM.	1/A442 SIM.	SEE DWG.
W-14	2/A443 SIM.	8/A441	SEE DWG.
W-15	7/A441	8/A441	SEE DWG.
W-16	2/A442	1/A442	SEE DWG.
W-17	13/A441 SIM.	DOOR HEAD-15/A442	DOOR JAMB
		FRAME HEAD-15/A442 SIM.	14/A442 SIM.
			FRAME JAMB
			35/A422
W-18	2/A443	13/A442	SEE DWG.
W-18A	2/A443 SIM.	13/A442 SIM.	SEE DWG.
W-32	19/A442	18/A442	SEE DWG.
W-39	8/A442	40 & 42/A422	21/A421
			41/A422 SIM.
			42/A422 SIM.
W-42	SEE DWG.	17/A442	SEE DWG.
W-43	11/A442 SIM.	9/A442 SIM.	SEE DWG.

RFI No. B-008, (Dated 1/27/2011)

QUESTION: Reference Section 01 23 00 & Drwg A-432 / A434. Both Window Types W14 and W24 make reference to Alternate #9. Alternate #9 in Section 01 23 00 states Not Used. Please Clarify.

RESPONSE: Clerestories to be included in base bid.

RFI No. B-014, (Dated 1/27/2011)

QUESTION: Please clarify: On the second floor where there is a peaked roof (for example A102.1 Area A Second Floor) do the CMU partitions that are not rated or not shear walls, extend up to the deck and follow the slope? There are quite a few Type 1F partitions here that are not rated. Are there any partitions that terminate a course or so above the ceiling?

RESPONSE: The majority of the partitions must extend to the underside of the deck as shown on the contract documents. After further review the column enclosures for floors 1 and 2 on the associated following column lines may terminate at one course above the finished ceiling provided they are properly braced and secured in place per the requirements of the contract documents. A/2, E/2, K.5/9, G/9.9, F.4/15, J.5/15, N/12, N/11.2, K.1/11.3.

RFI No. B-016, (Dated 1/28/2011)

QUESTION: RE: Glazing Notes, Please confirm that types C and G is spandrel glass specified in 2.8.

RESPONSE: As noted in the "Glazing Legend" as indicated on the Window Type Sheet "Type C" is as specified in section 08 80 00 - 2.8. "Type G" glazing is to be 1/4" thickness, tempered glass with an opaque coating. Verify glass thickness with manufacturer.

RFI No. B-017, (Dated 1/28/2011)

QUESTION: 1. Do the retaining walls on 2/A-202 at the ramp get the same colored parging as the rest of the exposed exterior concrete?

QUESTION: 2. On 3/A-203, the interior walls of the areaway (existing), are noted as being parged. Section 9/A-303 only references the portion on the exterior of the areaway, not the portions below the grating. Can you please clarify if the new and existing walls of the areaway below the grating are to be parged?

QUESTION: 3. Details such as 22 & 25/A-309 indicate vertical foundation insulation but the note in the parentheses says, (provide 36" of min. length vertical at foundations and/or horizontal under floor slab). The and/or is unclear. The details only indicate vertical. Can you confirm if we are to provide only the insulation as illustrated or if we are to provide horizontal insulation 36" in from the foundation, even if not illustrated?

RESPONSE:

1. The grade meets the top of the ramp so there should be little to no exposed foundation at the outside edge of Ramp R1-1. The contract documents require all exterior exposed concrete foundation surfaces to be parged so any remaining exposed portions of the ramp wall must be parged.
2. Section 10/A304 indicates the foundation wall below the grating. Yes, all exposed exterior foundation wall surfaces for the new and existing foundations must be parged per the contract documents. This includes the new and existing areaway walls also.
3. The insulation must extend for a minimum of 36". Provide the insulation vertical first wherever possible for the full 36". If the foundation height does not allow for the full 36" vertical insulation due to any obstruction such as the intersection of the top of the footing with the foundation wall then provide as much as possible vertical and the remainder of the insulation must be provided horizontally under the slab for a total vertical and horizontal dimension of 36".

RFI No. B-024, (Dated 1/31/2011)

QUESTION: A-920 shows sign types H, J, K, L O&T that are not shown on any of the floor plans. Spec section 10 14 00 2.4 Video Surveillance signs are not shown on any floor plan. Spec section 10 14 00 2.2 B&C cast plaque says size to be decided. Is there a size we should assume for our quote?

RESPONSE:

1. A-920-Sign Type Question: Not all sign types located on A-920 are used in the project. Types H, J, K are not used. Provide (1) Type L sign in each of the following spaces: Gymnasium and Immersive Theater. Sign Type O is used at B209 and is noted on the door schedule. Provide (1) Type T sign in each of the following spaces: Gymnasium, Cafeteria and Immersive Theater.
2. Provide two "Video Surveillance Signs" - Install per owner's direction.
3. Plaque to be priced as 36" x 48".

RFI No. B-031, (Dated 1/31/2011)

QUESTION: Where would we find the specs for the unperforated metal wall panels. Attached is the RN-21 perforated panel pattern designated as metal panel type WP-1. Which drawing references where this panel is to be installed.

RESPONSE: Delete reference to the un-perforated metal panels in 09 84 47. Provide the specified perforated metal panels in 09 84 47. Perforated metal panels can be referenced from Details 1, 2 & 3 on A-816 and Detail 17 on A-306. Insulated metal panels are also located in the Gallery Soffit above Door Opening B104 which match the insulated metal panels of the exterior and are specified in the Project Manual Section 07 42 13 - Metal Wall Panels.

RFI No. B-033, (Dated 1/31/2011)

QUESTION: Kindly clarify which metal panels are furnished and installed by BP-109 and which are furnished and installed by BP-111

RESPONSE: BP-111 General Trades shall provide Metal Wall Panel System for (WP-1) Interior Metal Panel Soffit at the Gallery & Main Lobby. BP – 109, Roofing, Flashing & Metal Panels , shall provide all exterior metal wall panels.

RESPONSE: Existing drawings are not available. No shake-on waterproofing is required. Access to the site and existing building will be available the week of 2/7/11 thru 2/16/11. Contractors should call ahead to the Construction Manager at the Job Site Trailer to schedule a walk through.

RFI No. B-036, (Dated 1/31/2011)

QUESTION: B-036 part 1: I have a number of questions pertaining to the demolition scope as outlined in Special Instruction (SI) # 9.

- a. You list a lot of items in the instruction but they don't appear on demolition plans A000.1, A000.2, A001.1 and A001.2. Items such as concrete ramp, retaining walls, existing paved surfaces, concrete pads and sidewalks, and statements such as all work required for the new building, site utilities and site improvements. Without the benefit of the phase 1 scope of work currently underway, it would seem that this instruction could be more concise. Could you agree that the scope of demolition required encompasses the work as indicated on the drawings noted above, rather than the "ambiguous all encompassing but not indicated anywhere" wording in the instruction? Site Package 104, SI #44 seems to assign them some of the same non-identified items outside the building footprint as well.

RESPONSE: Scope of work refers to items as noted on the Demolition Plans and Existing Site Conditions. There is a Mandatory Prebid Conference for all Prime Bidders. Contractors are responsible to visit the site and verify the existing site conditions. Due to snow cover, we will have some site photos available for viewing to help visualize the existing site conditions. In reference to BP-104 Sitework, SI#44 this is refers to the existing abandon utilities and underground structures should they conflict with the new work.

- b. There are a number of General Notes on the demolition plans referenced in the question above. Can we assume none of these are applicable? If not will the phase 1 scope or work be available for our review and well as the ability to conduct a site inspection of the existing building?

RESPONSE: Refer to response above.

- c. This instruction indicates we are responsible for core drilling and sawcutting of the existing slab for new work "and all other work required for the construction of the building, site utilities and site improvements." The demolition drawings clearly indicate the new major openings for ductwork and steel columns penetrating the existing floor system. Core drilling is not specifically noted on the drawings. I understand from the structural drawings and SI's that we are to core drill for most of the new rebar dowels noted structurally. Can you please confirm trade contractors such as plumber (SI #35), fire protection (SI #?), and electrical (SI #?) and HVAC (SI #?) will be responsible for all core drilling for their pipes through both the existing elevated floor slabs and the foundation walls?

RESPONSE: Reference Section 00 24 19 – Proposal Requirements and Special Instructions, Bid Packages, Page 6, Item 3. Cutting & Patching: Contractors shall be responsible for all cutting and patching as required for work under their Bid Package, reference Section 01 73 29 – Cutting and Patching.

- d. Site Package 104, SI #28 indicates they are responsible for excavation and backfill for all underground mechanical, plumbing, fire protection, electrical utilities, including structures. Can you confirm this includes the excavation and backfill within the existing structure where new underground lines are noted for installation once the existing concrete is removed under our scope of work? This would cover part of legend note 6 on the demolition drawings indicating excavation work.

RESPONSE: In reference to Legend Note 6 on Demolition Drawings; Under Bid Package BP-105 - Concrete the Concrete Contractor shall be responsible to cut/core drill and remove the existing concrete slab. Under Bid Package BP-104 Sitework shall be responsible for excavation and backfill of all MEP trenches within the building footprint, and excavation and backfill of all footings, foundations, slabs, retaining walls, etc.

- e. Site Package 104, SI #23 indicates they are responsible for all excavation, subgrade, drainage and backfill for all building footings, foundations and slabs. Can you confirm this includes the excavation and backfill within the existing structure where new footings and foundations are indicated once the existing concrete is removed under our scope of work? This would cover part of legend note 6 on the demolition drawings indicating excavation

RESPONSE: Yes, BP-104 Sitework is responsible for all excavation and backfill.

B-036 part 2: Site Package 104, SI #30 states they are responsible to provide a vapor retarder beneath all slabs on grade and elsewhere specified. Concrete Package 105, SI #33 indicates it is in our trade package. Can you please confirm who is responsible for this item?

RESPONSE: Reference BID RFI No. B-074: The Concrete Contractor shall be responsible for the Vapor Barrier. NOTE: BP-104 Site Work & Site Improvements, Special Instructions, DELETE in its Entirety Item #30.

B-036 part 3: Concrete Package 105, SI #21 states we are responsible for concrete ramps, retaining walls, concrete stairs and cheek walls, footings, foundation walls, slab on grade, etc. Site Package 104, SI#67 states the site contractor is responsible for the new concrete ramp and retaining walls, including the trench drain in the ramp. Can you please clarify these responsibilities more precisely? Items that can be identified and assigned "specifically" are: stairs and cheek walls located on L-101, work legend item #9; ramp and wall as noted on S101.2 and 9/S201; and retaining walls on S100.1 and 1/S100.4.

RESPONSE: Reference BID RFI No.075: BP-105 Concrete, Special Instructions, Item #9 refers to the Selective Demolition Work. Reference BP-105, Special Instructions, Item #21 Concrete Contractor shall to provide the retaining walls and ramps. NOTE: Under BP-104 Site Work, Special Instructions REVISE Item #67 to READ: Site Contractor shall be responsible to furnish and install the trench drains in coordination with the Concrete Contractor installation of the retaining walls and ramp.

B-036 part 4: Drawing S100.2 indicates underpinning of two existing footings adjacent to the new elevator pit installation. Underpinning is not referenced in the specifications or assigned specifically in the Special Instructions. Can you please confirm which trade contractor is to perform the underpinning work? Can a performance specification be provided as well? The information regarding the process on 6/S201 is a little confusing and refers to an alternate for 16' spaces, which doesn't really apply since the

pad footings are only about 10' long along the sides being underpinned. Waiting 14 days for the concrete to cure between placing the segments is also considerably longer than usual.

RESPONSE: The 16'-0" between alternate spaces of underpinning means that you can underpin both footings C-10 and D-10 at the same time. 14 days cure time between placing the segments is required. (CW / 2-9-11)

B-036 part 5: Can you please clarify alternate #2 regarding the outdoor classroom? It states to eliminate the brick seat wall with cast stone cap at the outdoor dining terrace. In Site Package 104, SI #61 you indicate the brick seat wall with cast stone cap is fully the responsibility of the site contractor. In the concrete SI's this wall is not specifically addressed in SI #21 so it could be assumed the concrete work is by us. The seat wall is located on L-102 and detailed on L-501. Can you please confirm how the scope for this item should be assigned across the site contractor, concrete contractor and mason contractor's bid packages?

Reference BID RFI No. 173: Under Bid Package BP-104 Sitework, Item 61 DELETE the words: "Brick Seat wall with Cast Stone Cap", and Add a new paragraph: Sitework Contractor shall be responsible for excavation, subgrade and backfill for brick seat wall. Under Bid Package BP-105 Concrete, Item 21 Concrete Contractor shall be responsible to provide foundation for brick seat wall. Under Bid Package BP-106 Masonry & Stone, Item #9 Masonry Contractor shall be responsible to provide Brick Seat wall with Cast Stone Cap.

B-036 part 6: Our SI #10 indicates the requirement to locate the existing rebar at the existing columns with special equipment prior to core drilling. Can you confirm this is only required at the column core drilling and not at any other core drilling required? Drawing S101.0, note 6 is a bit confusing. It starts out by talking about MEP slab penetrations and then turns into core drilling into the columns, with no period and new sentence. Can this note be rewritten more clearly? (See 1.b. above for clarification of other assignments for core drilling.) If note 6 applies to all MEP core drilling penetrations and note 5 on the same drawing applies to cored penetrations as well, will this mean that the entire floor plan will have to be laid out and all MEP penetrations placed and sleeved prior to our placing the new 12" slab on top? Is this what is intended? If yes, who will layout all the walls and locate the desired core locations? If the requirement for locating rebar in the existing slab applies, it may become necessary to move interior walls in numerous locations to eliminate the conflicts.)

RESPONSE: Note 5 on S101.0 "All penetrations shown in new slab plan," refers to forming the slab openings shown on 1/S101.0. Note 6 on S101.0 should be changed to read "...locate steel in the new slab prior to core drilling..." and refers to any cores cut after the new slab is placed. (CW / 2-15-11)

B-036 part 7. Our SI #22 sounds as though you expect us to confirm the existing top of concrete elevation for consistency prior to submitting our bid. Is this your expectation or can we believe the existing concrete is 12" lower than what is expected and perform a survey prior to actually beginning the work to determine if the slab is in fact level or approximately level, and thus requiring minimal additional concrete to meet the elevations noted on the drawings?

RESPONSE: Reference Megson & Heagle Surveyor's drawing as issued as part of Addendum No. 5, identifying the existing elevations on the top of the existing concrete slab.

B-036 part 8. Our package in SI #6 indicates we are completely responsible for section 035416 – Hydraulic Cementitious Underlayment. After reviewing the specifications and looking at the drawings, I

don't see where this scope would apply. The main and upper level floors are all new. The basement slabs are all utility spaces. Can you please confirm what scope is anticipated with this product? Possibly to touch up the floor patches in the basement spaces? The section states it is below finish floor coverings? The specification also refers to a "sound mat" in section 2.2, accessories?

RESPONSE: Hydraulic cementitious underlayment is intended to be used to level concrete slabs to receive finish materials that are outside the flooring manufacturers' tolerances for flatness.

B-036 part 9. Our package is assigned section 328400 – Planting Irrigation. SI #55 states to include this section as it relates to the work of this bid package. After reading this specification section and looking at the plans, I don't see any related work by our trade package. Can you please be specific about what you would be expecting us to do? At most drawing IR-1 might include a housekeeping pad for the booster pump, if located in the basement.

RESPONSE: Under BP-105 Concrete – Delete item # 55 in its entirety.

B-036 part 10. Drawing S101.0, in the notes area, refers to shoring loads and shoring to remain in place until the new slab has adequate strength to support the loads it will be subjected to once the shoring is removed. We are provided with little information about the existing floor slab construction. Has the slab been evaluated with a determination made regarding its current load carrying capacities? Are these notes and loads attempting to tell us the existing floor has no capacity? Our SI #22 states we are responsible to layout, form, reinforcing and raised concrete building slab located over the existing basement slab. It does not mention any requirement to shore the existing floor slab prior to placing the new slab on top. Is it your intention to have the concrete trade contractor design and install any needed shoring? If yes, can you make sure you respond to the capacity questions above as well?

RESPONSE: The existing concrete slab is assumed to have no strength and shall be used as a form only. Shoring shall be in place prior to pouring the concrete slab, during the pour and until the slab attains a compressive strength of $f'c=5000$ psi, demonstrated through cylinder tests by an approved testing agency. Shoring loads are given for your use in "Notes" on S101.0. (CW / 2-9-11)

B-036 part 11. Section 3/S101.0 indicates dowels into the existing perimeter wall with a note to match the size of the horizontal bars in the slab (See Plan). On the plan on both the long and short dimensions of the exterior walls, it indicates #4 at 10" T. The size and spacing of the top and bottom slab bars are not the same in all instances. Can you please confirm if the only bars required per section 3/S101.0 are the #4 at 10" o.c. at the top of the slab or if we should be adding more bars? If more bars are required, do we match the top, the bottom or both? Can you also confirm whether these holes can be drilled with rotary percussion drills, not cored?

RESPONSE: Section 3/S101.0 refers to the #4 @ 10"o.c. top bars shown in the Level 1 Concrete Slab Plan at all sides of the plan. This detail also refers to the #6 and #7 top bars at Column Line 12 only. The holes may not be drilled with rotary percussion drills, or any other reciprocating equipment as shown in Note 7 on S101.0. (CW / 2-9-11)

B-036 part 12. Please respond to the following questions from Section 033000 – Cast in Place Concrete.

- a. Item 3.18, Field Quality Control lists a number of tests that will be performed. Item A indicates the Owner will engage a special inspector and testing and inspection agency to perform field tests and inspections and prepare reports. Can you please confirm the Owner will be paying for all the testing in this section? More specifically item (B) Moisture proofing permeability; and (E) floor flatness and levelness.

RESPONSE: The Independent Testing Agency will be hired direct by the Owner at no cost to the Contractor.

- b. Item 3.18.B.5 indicates if the permeability tests on the slab moisture proofing admixture fail, the General Trades Contractor is responsible for meeting the design performance specification with a topical moisture proofing additive. Is this correct? This conflicts with the information in our bid package SI #34.

RESPONSE: Under 3.18 Field Quality Control, para B. Item No.5 – Replace the words “General Trades Contractor” with “Concrete Contractor.

- c. Item 3.12 refers to concrete topping placement. Other than possible corrective work, can you please confirm where this item might apply to the project? It isn't intended for the 12" tick overlay slab on the existing deck, is it? Item 3.12.D under surface finish refers to a shake-on waterproofing at the Mechanical Room. The mechanical room on this project is an existing slab area with no topping slab indicated. Can you please confirm what work, if any, is required in these specification references?

RESPONSE: Yes, section 03300 Item 3.12 does refer to the 12" slab poured on Level 1, it does not refer to work in the Mechanical Room. (CW / 2-9-11)

- d. Item 2.7 indicates fiber reinforcement. None of the concrete mixes in item 2.14 indicate fiber reinforcement. Can you confirm there is no fiber reinforced concrete on the project?

RESPONSE: There is no fiber reinforcement required on this project. (CW / 2-9-11)

- e. Can you please confirm the concrete mix design for the 12" topping slab over the existing elevated concrete floor? The 5000 psi mix in item 2.14.C indicates it is for elevated or suspended slabs. I just want to make sure this is the mix for this location.

RESPONSE: Yes, use mix design in item 2.14.C for 12" topping slab, f'c = 5000 psi. (CW / 2-9-11)

- f. All of the floor finishes in the lower level with the exception of the stairwells indicate the floor finish as sealed concrete (SC). Item 2.13.F.6 indicates to use slab moisture proofing admixture in all slabs on grade and elevated or suspended slabs located inside the building. Can you confirm if it is necessary to use the admixture in the slab on grade patches and infills at the lower level rooms?

RESPONSE: No, admixture is not required for lower level (basement) slab on grade patches and infills.

- g. Item 3.15A & B talks about penetrating liquid floor treatments and seal coat. Can you please confirm if this is the treatment that is required on all rooms noted on A910? In specification section 090600 – Schedule of Finishes, SC merely states to reference the specifications, making it unclear if the reference should be to the concrete specification or the painting specification Section 099123, item 2.8.A.

RESPONSE: Reference the Concrete Specification 03 30 00 for required SC.

- h. The majority of the concrete floors that remain exposed and are indicated as SC on the finish schedule also happen to be existing floors in the lower level of the existing structure to remain. Can you confirm if we are supposed to be treating these “existing” areas as well? If yes, is there any information available on the current condition of these slabs?

RESPONSE: Lower level (basement) existing concrete floors do not require “SC” seal coat.

B-036 part 13. Stair #2 has me a bit confused. (I’m referencing the sections as cut on the enlarged plan view on 4/S100.4.) Can you please address the following questions:

- a. I understand the full mat slab at elevation minus 11’- 7” with the concrete walls noted on 6/S202. I also understand the outer masonry walls are those that continue up from the mat and support the outer walls of stair #2 at the first floor level. What I don’t understand is why section 9/S313 is cut on column line 9. It seems this line would need a concrete wall from the mat up to finish floor unless you are using the CMU wall as a foundation with earth on one side and the stairwell on the other. Can you confirm if a concrete wall is needed along this line? Can you confirm it from Line E to F.1 along line 9?

RESPONSE: At locations where 9/S313 is cut, the CMU wall will sit on the mat slab.

- b. On S100.2 in a box just above this stair it states all footings are minus 4’- 0” unless otherwise noted. If the mat footing is at minus 11’- 7”, shouldn’t there be a series of stepped footings along the curved wall on lines E.2 to E.6?

RESPONSE: Top of footing at the curved wall on lines E.2 to E.6 shall match top of footing of the existing basement wall.

- c. On drawing S101.3 the bottom of footing elevation appears to be dropping as you head towards the stair mat slab but near line “H” on line “9” the footing elevation goes up instead of down. Can you confirm this? The elevation is noted as minus 6’- 0” with no other steps to meet the mat which is at minus 11’- 7”.

RESPONSE: You are correct. On S101.3, the bottom of footing elevation between H and G.3 on E should read [-8’-0”] instead of [-6’-0”]. On S100.4, there should be two additional steps in the footing between G and F.1, down to *[-11’-7”].

- d. Architecturally there are no good sections cut through this stair. The enlarged stair plan on 1/A601 cuts cross-section 1/A610, but this section doesn't provide any information regarding the foundation walls or any waterproofing requirements. Can you please confirm if the foundation walls around the lower level portion of the stair require waterproofing?

RESPONSE: This Statement is incorrect. There are many good sections cut through the stair. Re: 35/A313, 38/A314 AND 39/A315

B-036 part 14. Stairs #1 and #2 have CMU installed on the inside faces of the stairwells in front of the concrete walls. The architectural drawings indicate what appear to be ties anchored to the face of the wall. Can you confirm if the intent is to use dovetail slots or mechanically fastened wall ties at these locations?

RESPONSE: Dovetail slots should be used at these locations.

B-036 part 15. The elevator pit as noted on 7 & 8/A602 indicates waterproofing on the foundation walls to the bottom of the footing. No waterproofing is indicated or under the mat slab of the pit. Is this what is desired?

RESPONSE: Correct, no waterproofing is required under the mat.

B-036 part 16. The plans reference the waterproofing as "sheet" membrane waterproofing on sections 35/A313, 38/A314 and 8/A602. The specification section assigned, 071416 is entitled Cold Fluid-Applied Waterproofing. Can you confirm that these drawing sections should read "Cold Fluid-Applied"?

RESPONSE: Delete reference to "Sheet" membrane and provide cold applied as specified.

B-036 part 17. Section 071416 – Cold Fluid-Applied Waterproofing refers to Insulation drainage panels in item 1.3.A and 3.6.A. It further indicates the insulation is in Section 072100 – Thermal Building Insulation. The product is not identified in section 072100. Sections 35/A313 and 38/S314 at stair #2 indicate drainage board over 2" rigid insulation over sheet membrane waterproofing. Can you please confirm if a drainage mat or drainage board insulation should be used and provide the necessary specification for the selected product?

RESPONSE: Provide "drainage board insulation".

B-036 part 18. On drawings S101.1, there is a retaining wall noted on line "2" to the left of line "E". The section reference is 3/S201. Can you confirm if this is correct? According to the site plan there is no masonry wall or slab here and the top of the wall slopes from elevation 72.5' to 74.7'.

RESPONSE: 3/S201 is correct. See 35/A-207 for elevation.

B-036 part 19. Can you confirm the following items regarding the retaining walls creating the ramp into the lower level as noted on drawing S101.4 at the north end of building area A.

- a. There are no sections through these walls architecturally. Exterior elevation 2/A202 shows these walls and indicates they are concrete and indicates to refer to the structural drawings. Section 2/S100.4 indicates there are dovetail slots on the exposed ramp side face of this wall. Can you confirm the requirement for the dovetail slots?

RESPONSE: Dovetail slots are not required.

- b. The back side of these retaining walls do not indicate any waterproofing but do indicate a Mirafi Miradrain 6000 drainage mat. I didn't see this drainage mat in the specifications for the site drainage systems. Can you confirm that the site contractor is responsible for installing this item?

RESPONSE: Yes, BP-104 Sitework shall be responsible for the drainage mat at the retaining walls as per the contract documents.

B-036 part 20. We are assigned section 055000 – Metal Fabrications as it pertains. After reviewing the section completely, it is unclear what you might be expecting from us. Can you please provide a concise description of the work you will want us to perform from this section?

RESPONSE: As indicated on the Bid Documents.

RFI No. B-037, (Dated 2/1/2011)

QUESTION: Plan Sheet S100.4 refers to detail 6 on S-202. There is no detail 6 on S-202. Please issue a detail.

RESPONSE:

See duplicated detail # 1 on bottom on drawing S202, it should be detail # 6.

RFI No. B-039, (Dated 2/1/2011)

QUESTION: Which bid package is to include construction photos, as per 01 32 33?

RESPONSE: All BP are responsible for photos under their scope of work in coordination's with BP-111 General trades for LEED requirements.

RFI No. B-040, (Dated 1/31/2011)

QUESTION: Door # S2.0 shown on A100.1 at stair # 2, and Door # S1-0 shown on A100.2 at stairs # 2. Both doors are not listed in the door schedule. Please provide all the missing information.

RESPONSE: Both door openings are shown on the Door Schedule Drawing A-401 (Upper left corner of the sheet) at the "Lower Level" portion of the schedule.

RFI No. B-043, (Dated 2/1/2011)

QUESTION: Please state if BP-117 is to the Hitachi Protector and DA-Lite protection screen.

RESPONSE: BP-117 Electrical shall be responsible to furnish and install the projector, Scissor Lift and screen as shown on Drawing E-205, Detail 10.

RFI No. B-046, (Dated 2/1/2011)

QUESTION: Detail 2/A.622 shows a galvanized railing to the painted checkered plate catwalk. Does the railing need to be galvanized?

RESPONSE: 1. A-622, Detail #2: Delete reference to the galvanizing shown at the steel guardrail. Galvanizing is not required at the dome access guards.

RFI No. B-047, (Dated 1/31/2011)

QUESTION: Details 3 and 4/A.602 shows ramps # 1 & # 2 at platform C103. Both details refer to detail 3/A.622 similar. Detail 3/A622 shows the railing to be galvanized. Is galvanized necessary for an interior railing? The detail does say "Similar", there is only one person who knows what the similar means, and that is the architect. For the sake of all bidders please ask the Architect to share with us what he considers to be similar.

RESPONSE: 1. The similar note on the detail reference refers to the galvanizing. Galvanizing is not required at the interior. Galvanizing is required at the exterior.

RFI No. B-050, (Dated 1/31/2011)

QUESTION: Drawing E – 001 Note 8 says to provide alternate pricing for additional conduits from Oak St. I do not see this listed as alternate? Are 3-4" conduits to Oak St concrete encased?

RESPONSE: 1. Delete "Note 8" - (3) Underground 4" Conduits from Oak Street to the Building IDF Room.

RFI No. B-060, (Dated 2/2/2011)

QUESTION: Elev. 16/A-206 indicates brick veneer at the gable. Elev. 1/A-201 indicates this gable is on the 10 or 10.1 line. There is no section on the A drawings to indicate the composition of this wall. There is a section on the S drawings but it is not clear if the steel is meant to support a brick/CMU exterior wall. Please provide section thru this gable.

RESPONSE: Refer to the attached SKA-003A & SKA-003B for the additional Wall section through the gable and through the Gallery Wall / Metal Soffit.

RFI No. B-061, (Dated 2/2/2011)

QUESTION: Referring to drawing A-102.3, there is a masonry wing wall on the 9-Line from F to G. Section 33/A-312 indicates that this wall consists of brick-CMU-metal panel. This is in conflict with Elev. 41/A-208 which indicates that there is brick on the inside face of this wall, not metal panel. Please Clarify.

RESPONSE: 1. The Wall Section 33/A-312 is correct. Provide metal panel on the inside face of the wall. Delete reference to the brick for the main part of the wall on 41/A-208. The column enclosure at the end of the wall on column line G/9 still receives brick and CMU back up on two sides of the column. Brick returns for the full depth of wall-1'-5 ¼" at the end face of the wall.

RFI No. B-061A, (Dated 1/27/2011)

QUESTION: Please clarify: On the second floor where there is a peaked roof (for example A102.1 Area A Second Floor) do the CMU partitions that are not rated or not shear walls, extend up to the deck and follow slope? There are quite a few Type 1F partitions here that are not rated. Are there any partitions that terminate a course or so above the ceiling?

RESPONSE: The majority of the partitions must extend to the underside of the deck as shown on the contract documents. After further review the column enclosures for floors 1 and 2 on the associated following column lines may terminate at one course above the finished ceiling provided they are properly braced and secured in place per the requirements of the contract documents. A/2, E/2, K.5/9, G/9.9, F.4/15, J.5/15, N/12, N/11.2, K.1/11.3.

RFI No. B-063, (Dated 2/1/2011)

QUESTION: Note 3 on sheet S101 says all top of footings to be -4'0" UNO. When you look at the column schedule sheet S401, most or all of the columns that show up S101.3 have a base plate elevation of -1'0". To accomplish this piers and or pilasters will be required, but none are shown. Please provide pier and or pilaster requirements.

RESPONSE: See typical detail 1/S401.1 for pier details. All "P1" Piers called out on plan shall be 24" square.

RFI No. B-069, (Dated 2/1/2011)

QUESTION: Section 05 73 00 specifics glass railing, please provide a drawing number and detail number that shows the glass railings.

RESPONSE:

Omit reference to "Glass Railing". There are no "Glass Railings" on the project.

RFI No. B-078, (Dated 2/3/2011)

QUESTION: Reference drawings L101 & A101.1 near column line 2 on the West side of the building there is fence on top of the 27'-10'8" retaining wall. The same wall is shown on L101 and the plane note says see structural drawings. Please provide a detail for the fence and clarify whose bid package this is in?

RESPONSE: Fence to be per "Work Item #22" on Drawing L-101

RFI No. B-085, (Dated 2/2/2011)

QUESTION: Spec section 12 35 53 calls for all casework to be phenolic. However details on the A8 series drawings call for wood or Plastic laminated Casework. Clarify specifications to be used for what specific casework.

RESPONSE: Casework in Science Room B118 & B118A to be provided per specification section 12 35 53. Millwork in other classrooms to be provided per specification section 06 40 23.

RFI No. B-097, (Dated 2/4/2011)

QUESTION: 1) Please verify the T.S. posts in plan 4/S120 should be TS 8x8x3/8 at radius of 21'04. TS 6x6x3/8 are at radius 20'-1'8. 2) Please size column shown at grid E-10 on plans S101.2 & 102.2. 3) Please clarify details at 2nd floor column grid D10.1 a W24 beam is shown bearing on top of column, yet at roof this column is shown to continue up to that level are the (2) separate columns at this grid? 4) Please clarify base details at columns along exterior walls on S101.1 & S101.2 do they bear on existing slab, requiring drilling anchor bolts or bear on new concrete sub requiring shorter anchor bolts than typical details as S402?.

RESPONSE:

1. Correct
2. C1 as shown on S410, W8x40 that frames under the W21x44.
3. W24x68 at D-10.1 should have a moment connection on either side of the HSS16 column. Column is continuous.
4. See attached typical detail at new columns on existing basement wall, SSK-6.

RFI No. B-099, (Dated 2/4/2011)

QUESTION: Special instructions – Electrical calls for us to handle the complete security system, but detail is provided for security cabling only. Please confirm the scope of work plus provide the specs for the cameras and other equipment as necessary.

RESPONSE: Security Cameras & Equipment will be specified during the FF&E Phase of the project.

RFI No. B-105, (Dated 2/3/2011)

QUESTION: Scope item # 63. Please clarify scope item # 63 and the correct terminology for what you are looking for. I think you are looking for – are floor hatches for the inner and outer dome catwalk. Is this correct? The last thing you would want is to have an ironwork installing a roof hatch. I also want to refer you to a previous RFI. Drawing A101.2 shows 4 hatches drawing S120 shows two and PL-1 shows two. Please confirm quantities.

RESPONSE: Under Bid Package BP-107 Steel/Misc. Metals, Item #63, refer to Addendum No.1, under Section 00 24 19, Item #2, clarifying BP-107, Item #63 to READ: Access Hatches. There are a total of Four (4) Hatches.

RFI No. B-107, (Dated 2/3/2011)

QUESTION: Scope of work item # 11 Planetarium Catwalk and gratings. 1) Is this the same item as the inner and outer dome access catwalk? 2) The dome access catwalk is checkered plate and not grating. Please clarify?

RESPONSE: Under Bid Package BP-107 Steel & Misc Metals, Item #11 REPLACE the word "Grating" with the words "Plated Decking". Note: (Refer to Detail 4/S120 showing the plated decking on the dome access catwalk.)

RFI No. B-113, (Dated 2/4/2011)

QUESTION: A. Section 3/S401 indicates the S.O.G. isolation joint. Section 11/S401.1 details the slab replacement for the new column footings indicated on drawings S100.1 & S100.2, but does not indicate the isolation joint. Will this isolation joint be required at these new footings in section 11/S401.1? Also, will saw cut control joints be required within the slab replacement areas on the column lines?

B. Section 11/S401.1 indicates the top of the new footing directly below the slab on grade. With the B.F.E. of -2'-10" and a footing depth of 1'-10", less the 6" thick slab; this leaves a 6" space between the top of footing and bottom of slab.

Can we extend the slab on grade replacement to the top of the new footing?

RESPONSE: A. Use isolation joint on 11/S401.1 similar to isolation joint on 10/S401.1. Saw cut control joints at slab replacement areas to match the existing control joints. B. Bottom of INTERIOR footing notes on S100.1 and S100.2 should be corrected to read " ALL BOTTOM OF FOOTING ELEVATIONS @ INTERIOR SHALL MATCH B/EXIST. FTG (-2'-5" V.I.F.) U.O.N"

RFI No. B-122, (Dated 2/3/2011)

QUESTION: Selective demolition scope of work. Bid Package No. 104 Site (Scope item 44), and Bid Package 105 Concrete (scope item 9). There appears to be an overlap in the two scopes. Because demolition is divided amongst several bid packages, a matrix denoting all demolition items and the bid package responsible for that demolition would clear up this issue.

RESPONSE: To clarify the scopes of work between BP-104 Site work and BP-105 Concrete: Revise BP-105, Item #9, DELETE the last words of the last sentence "~~site utilities and site improvements~~".

RFI No. B-124, (Dated 2/7/2011)

QUESTION:

1. Areaway #1 and #2 Drawings S100.1 & A100.1 1. The length of the two areaway's do not agree between the architectural and structural drawings. Please correct dimensions.
 2. Drawing A100.1 indicates pilasters within the areaways. The structural drawings do not indicate any pilasters.
 3. The plan or sections do not indicate drilling and grouting dowels into the existing at the footings and walls. If dowels are to be drilled and grouted, will they be for each horizontal or one row in the center?
 4. Will waterstop Rx be required between the new foundations and the existing?
 5. Section 10/A304 indicates that the exposed portion of the existing foundation wall within the areaway is to be parged. Is there waterproofing on the existing foundation to be removed? If so, who's responsible for removing the existing waterproofing?
 6. If there is existing waterproofing, it will be disturbed beyond the new walls. Who is responsible for repairing the waterproofing?
 7. Is there waterproofing on the exterior of the areaway's? If so, who performs this work?
- Bid package 1.05, scope of work item #19 indicates waterproofing at the elevator pit and Stair #2 only.

RESPONSE: 1&2: See corrected S100.1 and SS-K2 (attached.)
3: See typical detail at new/existing slabs and walls, SSK-1 (attached.)

RFI No. B-127 (Dated 2/10/2011)

QUESTION: The instructions to Bidders 00 21 13 -1 Item # 6 Bidders Qualifications – Immersive Theater Equipment and Dome (Section 00 45 13.13) is listed as a document that is to be included in all bids, however the form itself seems specific to only certain bid packages. There are also several questions on this form that are similar to the Bidder's Qualifications & Questionnaire (Section 00 45 13). Please advise if this form must be included in with all bid proposals. If not please list the bid packages that this form pertains to.

RESPONSE: In Reference to Section 00 21 13 Item # 6 Bidder Qualifications for Immersive Theater and Dome (Section 00 45 13 .13) ONLY Bid Package BP-111 is required to include this section with their Bid Proposal. Also reference RFI No. B-318 for clarification regarding (Section 00 45 13 .13)

RFI No. B-132, (Dated 2/7/2011)

QUESTION: The bid form states that Alternate # 9 is "Not used" but drawing A-110.3 shows the roof clerestory as alternate # 9. Are the clerestories to be included or excluded in our base bid?

RESPONSE: Delete all references to Alternate # 9 in the drawings. The work for the roof clerestories over Rooms C108, C110 and C112 is included as part of the base bid. The specification is correct. Alternate No. 9 is not used.

RFI No. B-133, (Dated 2/7/2011)

QUESTION: Are the metal wall panels at the top of the "silo" at the planetarium to be curved or can they be segmented? Also at the section shown on detail 18 on A-307 it appears the panel is continuous with no breaks from soffit to ridge. Will breaks be allowed at transitions?

RESPONSE: The metal wall panels are required to be radiused and/or curved as shown on the contract documents and not segmented. Breaks will be allowed at the outside corner transitions to radiused and/or curved panels as the mitered corners are difficult to achieve within radiused and/or curved panels. Provide the appropriate radiused extruded aluminum trim pieces at the corner breaks as recommended by the metal panel manufacturer for a watertight installation.

RFI No. B-134, (Dated 2/7/2011)

QUESTION: VESTIBULE B125 & CANOPY **1)** PLEASE PROVIDE A SECTION THROUGH THE NEW FOUNDATION AT THE VESTIBULE **2)** PLEASE PROVIDE PIER TYPE AND DETAILS FOR THE CANOPY PIER

RESPONSE: 1. See attached sketch SSK-8 (areas above Level 1 are not shown for clarity, but have not changed from bid doc's.) 2. There are no piers for the foundation at the canopy adjacent to Vestibule B125.

RFI No. B-142, (Dated 2/7/2011)

QUESTION:

4. Section A210 Please confirm the following with respect to the Construction Manager' schedule and sequencing:

- a.) The gypsum ceiling (elevation 35' per 18/A307), painting, and associated MEP' above the domes will be installed before both domes are installed.
- b.) Please confirm the outer dome will be installed, with a schedule lag for the architectural & MEP work, before the inner dome is installed. This would mean the dome contractor will make two trips to install two domes.

RESPONSE: 4a. Correct. Also, the curtain walls and glazing will be complete. All surfaces above and around the outer dome will be complete and clean (drywall, windows, etc.) before the outer dome is installed. Some systems hang on the bottom of the outer dome (HVAC, Fire Protection, etc.); they need to be completed, painted if necessary and cleaned before the inner dome is installed. Then the inner dome is installed. 4b. Correct. 2 trips for the domes.

Note: In question above, it indicates 35" but I believe you mean 35'.

RFI No. B-149, (Dated 2/7/2011)

QUESTION: Please confirm that BP – 107 will provide the gates, including hardware, (Type G on Drawing A411) at the stairwells. These gates are similar to the guardrail system shown in detail 2/A-622.

RESPONSE: Yes, BP-107 structural Steel & Misc. Metals is responsible to provide the gates and hardware.

RFI No. B-150, (Dated 2/7/2011)

QUESTION: BP # 111 Item 6 lists 08 90 00 Louvers and Vents "As it pertains". BP # 116 Items 6 & 26 both state to provide the louvers "complete". Please confirm BP-116 is responsible for this complete scope of work.

RESPONSE: Refer to Spec Section 00 24 19 Proposal Requirements and Special Instructions, Item # 20 Louvers / Dampers for Contractor Responsibilities related to Louvers.

RFI No. B-157, (Dated 2/7/2011)

QUESTION: Bid Package #104 and Bid Package #111 were both assigned Spec 116633 Athletic Equipment. This spec is for site athletic equipment. Please confirm Bid Package #104 is responsible for this complete scope of work.

RESPONSE: Reference Bid Package BP-104 Site work, under Item #6 and Item #72 Contractor shall be responsible to provide Athletic Equipment, (reference Section 11 66 33). Under Bid Package BP-111, Item #6 DELETE in its entirety Section 11 66 33 - Athletic Equipment - Complete, and DELETE Item #69 in its entirety.

RFI No. B-163, (Dated 2/7/2011)

QUESTION: Bid Package #111 and Bid Package #112 were both assigned Spec 124813 Floor Mats and Frames. Please confirm Bid Package #111 is responsible for this complete scope of work.

RESPONSE: Under Bid Package BP-111 General Trades, Item #6, Section 12 48 13 - Complete, Contractor shall be responsible to furnish and install Floor Mats. Under Bid Package BP-112 Flooring, Item #6, Section 12 48 13 - As it Pertains, Contractor shall be responsible to assist Bid Package BP-105 Concrete Contractor to set floor mat angle frame in conjunction as related to final finish floor tile.

RFI No. B-164, (Dated 2/7/2011)

QUESTION: Bid Package #111 Item 80: Please clarify which Bid package is responsible to provide the flooring inside the elevator. Spec 14 24 00 Para 2.9A specifies two elevators in one pit. The drawing show one elevator. Please clarify.

RESPONSE: 1. Elevator Contractor is responsible for the installation of the VCT within the elevator cab. 2. Provide one elevator as indicated on the drawings.

RFI No. B-169, (Dated 2/8/2011)

QUESTION: I am having difficulty locating roof section cuts along column line F between 9 and 10.4 and also along column line 9 between F and E. Can you point me in the right direction?

RESPONSE: For the two roof section cuts along the column lines stated in the RFI question provide similar roof section cut 14/A-111 for both conditions/locations. The top of the roof edge height matches adjacent Wall Section 33/A312 which is 29'-2 5/8". Also, the wall construction is the 1'-3" wide typical exterior wall construction utilized in the majority the project which is 4" brick, air space, 2" rigid insulation, air/vapor barrier and 8" CMU for both locations.

RFI No. B-170, (Dated 2/7/2011)

QUESTION: Please clarify the aluminum door type. Specification 084113-13 item 2.6 notes EFCO's D318 DuraStile Medium Stile door, which have 3-1/2" top and side rails. This conflicts with door elevations FG, FG2, FG3 & FG5 on A-411 which are showing doors with 6" top and side rails. EFCO has a D518 door that has 5" top and side rails, is this a consideration?

RESPONSE: Provide the EFCO "Heavy" 6" top and side rails as indicated on the drawings.

RFI No. B-173, (Dated 2/9/2011)

QUESTION: Scope Item # 60 States that we furnish and install brick seat wall with caps, ramps and concrete stairs with cheek walls. Bid Package 105 states # 21 that we excavate and backfill only.

RESPONSE: Under Bid Package BP-104 Sitework, Item 61 DELETE the words: "Brick Seat wall with Cast Stone Cap" and Add new paragraph: Sitework Contractor shall be responsible for excavation, subgrade and backfill for brick seat wall. Under Bid Package BP-105 Concrete, Item 21 Concrete Contractor shall be responsible to provide foundation for brick seat wall. Under Bid Package BP-106 Masonry & Stone, Item #9 Masonry Contractor shall be responsible to provide Brick Seat wall with Cast Stone Cap.

RFI No. B-176, (Dated 2/8/2011)

QUESTION: Please clarify the Type of panels to be installed in the Musing Room shown on Sheet A800. Wenger Absorber and diffuser panels are specified, however there is no spec section. Also, please clarify the type of fabric to be wrapped around the absorber and diffuser panels. Wegner usually specifies a 3" thick absorber panel and type 1 diffusers.

RESPONSE: Wenger acoustical panels to be installed in the Music Classroom – Model #'s are indicated on Interior elevations #4, 5 & 6 on drawing A-800. Provide manufacturer's standard fabric.

RFI No. B-180, (Dated 2/9/2011)

QUESTION: Special Instructions Note # 42. Please consider moving this to the case work contractor.

RESPONSE: REVISE SCOPE OF WORK for Bid Packages BP-108 & BP-111:
Under Bid Package BP-111 General Trades - DELETE in its Entirety Item #42.
Under Bid Package BP-108 Arch Millwork/Casework - ADD New Item # 25, Contractor shall be responsible to provide Solid Maple Caps and Marble Caps on guardrails and handrails as per the contract documents.

RFI No. B-182, (Dated 2/9/2011)

QUESTION: We believe this should be part of lab casework contractor's package.

RESPONSE: BP-111 General Trades, refer to Item 50 as it pertains to work under this bid package. Also, under Bid Package BP-108 Arch Millwork & Casework, ADD Item #26 - Contractor shall note all laminates used in Corridors, Lobbies, Stairs, Elevators, etc. are to be "Fire-Rated High Pressure Laminate.

RFI No. B-183, (Dated 2/9/2011)

QUESTION: Please clarify whether the cleaning for glass entrances, curtain walls is by the general trades or aluminum trade. It is covered in both bid packages.

RESPONSE: Under Bid Package BP-111 General Trades, Item #124 references final cleaning of the windows, storefronts & curtain walls, this shall consist of wiping down the frames and sills from dirt and

dust. Under Bid Package BP-110 Glass & Glazing Windows, Storefronts & Entrances, Item #19 is responsible for final cleaning of the inside and outside of all windows and glass.

RFI No. B-184, (Dated 2/9/2011)

QUESTION: Is it part of the site work contractor to remove and dispose the bituminous paving. Bid Package 105 #9 removed existing surfaces.

RESPONSE: Under BP-105 Concrete Item # 6 DELETE spec section 32 84 00 in its entirety. Under BP-105 concrete item # 9 DELETE the words existing paved surfaces.

RFI No. B-186, (Dated 2/9/2011)

QUESTION: Please consider moving the solid surface sills to the casework BP.

RESPONSE: Under BP-108 – Architectural Millwork + Casework add new item # 26. Contractor shall furnish and install all solid surface sills. Under BP-111 General Trades Item # 44 DELETE the words “Solid Surface Sill”

RFI No. B-192, (Dated 2/8/2011)

QUESTION: Elevation 41 on A208 shows face brick while referenced section 33 on A312 shows 2" foam panel. Which would be the correct facing for this elevation?

RESPONSE: Refer to previous response provided for BID RFI B-061.

RFI No. B-196, (Dated 2/11/2011)

QUESTION: As the Immersive Theater dome spec's are currently written, Spitz is "locked-out" from offering it's own dome products (inner 40 ft. dome screen and outer 48.5 ft dome). The current spec's mandate a competitor (AstroTech) dome products only. This will result in a non-competitive bid situation with a negative bid result for the Town of Glastonbury. Spitz has produced hundreds of school planetarium domes worldwide and has been the dome screen of choice of most discerning customers, such as IMAX. Modify spec #11-54-23 to allow for equivalent (or superior) dome products to be bid by Spitz. Extend bid due date by 10 days.

RESPONSE: Issue has been reviewed with the Client and the "AstroTech" dome specification represents the selected dome system.

RFI No. B-199, (Dated 2/8/2011)

QUESTION: Room B106 Gallery, Drawing # A-903 calls for accent strips. Please clarify what material strips are made from Terrazzo or Porcelain tile. Room B207 Schedule calls for CPT # 1 Drawing A-902.2 shows porcelain tile. Please Clarify.

RESPONSE: 1. Metal Accent Strips
2. Porcelain Tile

RFI No. B-202, (Dated 2/8/2011)

QUESTION: Are the bookcases and benches shown in elev. 4/A801 curved or can we price them as straight segmented sections? This will make a big difference in price.

RESPONSE: Bookshelves can be segmented as long as the top surfaces and side panels are extended to curve to give appearance of continuous curved shelving.

RFI No. B-205, (Dated 2/8/2011)

QUESTION: Please clarify the type of panels to be installed in the music room shown on sheet A800. Wenger Absorber and Diffuser panels are specified, however there is no spec section. Also please clarify the type of fabric to be wrapped around the absorber and diffuser panels. Wenger usually specifies a 3" thick absorber panel and type 1 diffusers.

RESPONSE: Wenger acoustical panels to be installed in the Music Classroom – Model #'s are indicated on Interior elevations #4, 5 & 6 on drawing A-800. Provide manufacturer's standard fabric.

RFI No. B-215, (Dated 2/9/2011)

QUESTION: Please provide specification for the 2" Insulated Panel. Products specified in 09 84 47 is not an insulated panel. This section covers panels at the immersive theater.

1a. Which package installs the stainless steel flashing?

1b. Which package installs the wood blocking?

2 Galvanized steel angles, steel tubing, metal cold framing and 5/8" fiberglass reinforced sheathing are typically performed by other trades. Can these items be eliminated from bid package No. 109?

2a. Will the plumbing contractor install the roof drain bowl? Is it correct to assume that roofer will flash drain and install clamping ring and basket?

4. Which package installs the alum thru-wall flashing?

5. Where are the roof pavers on this project?

6. Please clarify how insulation is attached to the roof deck.

A. All layers fastened with screw and plates.

B. Substrate board fastened with screw and plates and all layers above to be set in adhesive.

C. Substrate board and insulation fastened with screw and plates and cover board set in adhesive.

RESPONSE: Refer to Addendum No.4 ADDED Spec Section 07 42 16 - Insulated Core-Metal Wall Panels. (NOTE: Also see related BID RFI's No. B-031, B-033 & B-335.)

1a. RESPONSE: Refer to BID RFI No. 026-Stainless steel Flashing is by the Masonry Bid Package as referenced under BP-106 Masonry & Stone, Special Instructions Item 9.

1b. RESPONSE: Refer to Spec Section 00 24 19 Proposal Requirements, Page 16, Item #16 Wood Blocking.

2. RESPONSE: Work to remain under Bid Package BP-109 - Roofing, Flashing & Metal Panels

2a. RESPONSE: YES

4. RESPONSE: Bid Package BP – 106 Masonry

5. RESPONSE: Refer to Roof Plan Drawings General Notes: "H".

6. RESPONSE: Substrate board to be fastened with screw and plates and all layers above to be set in adhesive in accordance with requirements of FM Approvals' "RoofNav" for specified Windstorm Resistance Classification.

RFI No. B-216, (Dated 2/9/2011)

QUESTION: 1.2 – C “plumbing, backflow, master valve & piping by plumber” who supplies 2” 825y backflow and master valve?

RESPONSE: By BP-115 Plumbing

RFI No. B-218, (Dated 2/9/2011)

QUESTION: 2.9 – A “Provide Sleeves” Drawing # IR-1 “The general contractor shall be responsible for P.O.C., power to controller, sleeving & conduits” Who is responsible for sleeving?

RESPONSE: On Drawing IR-1 DELETE “General Contractor” and insert by “Electrical Contractor”.

RFI No. B-225, (Dated 2/9/2011)

QUESTION: 07 54 19 paragraph 2.8 & 3.8: Where are the flexible walkways to be installed? 07 54 19 , paragraph 2.9 & e.9: Where are the concrete pavers to be installed? Please clarify.

RESPONSE: Provide walkways per layout indicated on drawings A110.2 & A110.3. NO Concrete pavers required.

RFI No. B-227, (Dated 2/9/2011)

QUESTION: Are the permit fees waived on this project?

RESPONSE: Building permit fees are paid by the owner (including State Building Official education fee).

RFI No. B-228, (Dated 2/9/2011)

QUESTION: 4.1/J: Combination Bids will NOT be accepted, unless otherwise indicated on the bid form. Does this infer a new bid form may be issued in a subsequent addenda allowing combination bids? Allow combination bids.

RESPONSE: No combination bids are allowed. None will be allowed in the future.

RFI No. B-230, (Dated 2/9/2011)

QUESTION: Reference Bid Package No.'s 108 & 111. Both packages include responsibility for specification section 125651 Library Furniture. Please advise what Bid Package should include this work.

RESPONSE: Section 12 56 51 shall be by BP – 111 General Trades. Under Bp-108 Architectural Millwork Item # 6 DELETE in its entirety reference to Section 12 56 51 Library Furniture complete.

RFI No. B-231, (Dated 2/8/2011)

QUESTION: Reference Bid Package No.'s 104 & 111. Both packages include responsibility for specification section 116633 Athletic Equipment. Please advise what Bid Package should include this work.

RESPONSE: See RFI B-157 – Under BP 111 DELETE item # 69 in its entirety.

RFI No. B-233, (Dated 2/8/2011)

QUESTION: Floor Mat sizes are not indicated, please advise.

RESPONSE: Please see general finish note 24 on drawing A910. Entrance mats should be size of room indicated.

RFI No. B-239, (Dated 2/15/2011)

QUESTION: Please clarify who is responsible for furnishing and/or installing the continuous angle and angle clips for all three details shown on 4/S403. Please be specific with each application.

RESPONSE: On Detail 4/S403 the continuous angle and clips shall be the responsibility of BP-106 Masonry.

RFI No. B-241, (Dated 2/15/2011)

QUESTION: Should an allowance be carried for CL&P fees, this is an unknown cost until CL&P is on site to observe the scope of their work.

RESPONSE: Owner will pay CL+P fees.

RFI No. B-242, (Dated 2/10/2011)

QUESTION: We cannot find outlined in the Bid documents any indication of specific Veneers (Oak, Maple Etc.) or the specific grade and layup (a grade plain Sawn, vertical match grain etc.) to be used on the casework/ millwork (BP # 108)
We do find language regarding the core material and types of glues to be used. (064023-5-2.1 A-D) including FSC , recycled Product, Low Emitting Materials NAUF etc.)

RESPONSE: THERE IS NO WOOD VENEER USED IN EITHER SECTION 123553 (LABORATORY CASEWORK IS PHENOLIC) AND SECTION 064023 REFERENCES PLASTIC LAMINATE AND SOLID SURFACE MATERIALS.

RFI No. B-243, (Dated 2/10/2011)

QUESTION: Drwg M-501, There are (2) CUH-1 listed in the schedule, they are different models. Which are which?

RESPONSE: Refer to style column on schedule, in room Vest C107 CUH-1 is exposed. All other units are fully recessed as noted on drawings.

RFI No. B-244, (Dated 2/10/2011)

QUESTION: I did not see a Fin-Tube radiation spec or a fan-coil unit spec?

RESPONSE: Specification section 23 82 19 will be provided in the upcoming Addendum No. 4. Provide bare element fin-tube radiation and appurtenance in accordance with the schedule on M-502

and install in accordance with details on the M-400 Series drawings and with Manufacturer's installation instructions.

RFI No. B-245, (Dated 2/10/2011)

QUESTION: Drwg M-503, There are units AC-2/ACCU-2 & AC-4/ACCU-4 listed but not shown on the drawings, please advise where these are located...

RESPONSE: There are no AC-2 & AC-4 on the project, they were eliminated during design.

RFI No. B-246, (Dated 2/10/2011)

QUESTION: Drwg M-101.3, There is a note for the FT-1 that states the 1" hws&r feeding the fin-tube is to be pre-insulated pipe. Is this the intent or can it be type "K" copper as stated in the spec for under slab piping, section 232113-12, ??

RESPONSE: The intent is to use the pre-insulated piping for the fin tube as noted on drawings.

RFI No. B-247, (Dated 2/10/2011)

QUESTION: Regarding the two brick seat walls - there is no 'top of wall' shown on plans. Please clarify.

RESPONSE: The top of wall elevation for both brick seat walls is 76.5, so that they will be at seat height. Reference B-038.

RFI No. B-248, (Dated 2/10/2011)

QUESTION: Detail shows auto flush but none shown on drawings, are they required.

RESPONSE: Auto-Flushes are battery operated, please ignore detail.

RFI No. B-250, (Dated 2/10/2011)

QUESTION: Is the wiring of the voice/data and security systems part of the base bid?

RESPONSE: Yes, voice/data and security systems are a part of the base bid. Please refer to IT drawings (T-Series) for IT locations and requirements.

RFI No. B-251, (Dated 2/10/2011)

QUESTION: Our Spec's apparently are missing the signature page # 2 normally included with Bid Bond AIA Doc. A310 – 1970. Our bonding agent requires advise if she can substitute the signature page (add-in) to the existing doc. Also clarify if the "Certificate & Document's authority's to be signed by Owner and not the G.C.

RESPONSE: Bid Bond Form will be provided in Addendum # 5.

RFI No. B-252, (Dated 2/10/2011)

QUESTION: Please verify the light gage bent in detail 4/S403 is not a part of bid package 107.

RESPONSE: Same as BID RFI B=239

On Detail 4/S403 the continuous angle and clips shall be the responsibility of BP-106 Masonry.

RFI No. B-253, (Dated 2/10/2011)

QUESTION: What will be the electrical wiring requirements for a booster pump if provided? Is this included as an alternative or base bid.

RESPONSE: Please refer to the electrical drawing E-001 for booster pump wiring information. It is fed from panel RP-B.

RFI No. B-254, (Dated 2/10/2011)

QUESTION: 00 24 19 A23 conflicts with 23 74 14 1.3 I+J in regards to motor starter/controller and VFD's which is correct? Who supplies what and who installs (mount)?

RESPONSE: Motor starter, controller and VFD's shall be furnish by BP-116 and installed by BP-117.

RFI No. B-255, (Dated 2/10/2011)

QUESTION: Please provide requirements for the control wiring of the smart boards and projectors as furnished by owner.

RESPONSE: Please refer to IT drawings (T-series) for control wiring of smart boards and projectors.

RFI No. B-256, (Dated 2/10/2011)

QUESTION: A25 indicates to provide heat trace for mechanical and plumbing. Do not see any indication on drawings where heat trace will be required or where power will originate from. Please advise.

RESPONSE: Please refer to electrical site plan E-001 for heat tracing for mechanical unit ACCH-1.

RFI No. B-257, (Dated 2/10/2011)

QUESTION: Unit price No. 2 does not indicate fixture type. Please advise.

RESPONSE: Exterior fixture type Y1 and Y2. Kindly refer to fixture schedule on sheet E-001 for description and catalog number.

RFI No. B-258, (Dated 2/10/2011)

QUESTION: Unite price No. 3 does not indicate clock type. Please advise.

RESPONSE: Innovation wireless clock "210001" or approved equal. Kindly refer to spec section 27 53 13 for list of acceptable manufacturers.

RFI No. B-259, (Dated 2/10/2011)

QUESTION: Planetarium Lighting – How does the Electrical Contractor know what to include in regards to the wiring and control wiring for the planetarium. Will a drawing and information be supplied prior to bid? Should this be an allowance?

RESPONSE: Please refer to planetarium drawings (PL-Series), E302, E303 and spec section 11 54 00 for list of equipment required for the planetarium.

RFI No. B-262, (Dated 2/10/2011)

QUESTION: Clock Systems – No riser drawings is indicated. Will one be provided?

RESPONSE: No riser diagram will be provided for clock system.

RFI No. B-264, (Dated 2/10/2011)

QUESTION: Corridor B104 has the following symbol: mech (J) ERP-11. Is the extent of the electrical requirements for VAV Units in the locations shown by this symbol? Are VAV Units wired together with low voltage by the Temperature Control Contractor?

RESPONSE: The electrician is responsible for powering all VAV boxes, a cluster of approximately 10 VAV boxes can be put on a single circuit (panel designated by the homerun on the J-Box) The electrician provides power from panel to low voltage transformer (120 – 24vdc) and controls contractor provides the necessary low voltage wiring.

RFI No. B-265, (Dated 2/10/2011)

QUESTION: Can the TVSS shown mounted outside of the switchboard be factory installed within the switchboard?

RESPONSE: Yes it is acceptable to factory install the TVSS within the switchboard.

RFI No. B-266, (Dated 2/10/2011)

QUESTION: Light fixture type D2M as located in the Immersive Theater and at the entrance to stair # 1 is not indicated at the light fixture schedule shown on drawing E002. Please advise catalog No. and Manufacturer.

RESPONSE: D2M Light Fixture is the same as D2 but it also includes a battery backup for emergency egress lighting. Please refer to “Lighting General Notes – A” on sheet E-002.

RFI No. B-267, (Dated 2/10/2011)

QUESTION: Specifications indicate to refer to cable tray schedule on drawings. There does not appear to be such a schedule. Please advise.

RESPONSE: Kindly disregard the note in the spec sections.

RFI No. B-271(Dated 2/10/2011)

QUESTION: Noted Specs for concrete – Flatness, Cracks, etc. Floor covering specs states – “ Perform all floor Prep.....Will there be an allowance for Prep? Suggest an allowance based in a formula so all bidders on the same page.

RESPONSE: No allowances.

RFI No. B-272, (Dated 2/11/2011)

QUESTION: 1) Please verify no decking is required between column line “E” to “D.7” from lines 7 to 9 on drawing S102.2. Architecturals show roof extending from E.6 to D.7 in that area. Drawing S110.4 shows no detail at that area as well. 2). Section 3/S313 refers to sections 1,2,3/S310 for additional info at outrigger’s sections 1,2,3 show an MC13 and TS outriggers. Drawing S102.2 along grid 12.2 does not show an MC13, is it required? 3). Also drawing S102.2 shows WF outriggers at (2) columns. Do these beams get cut down to 8” at end to carry TS.10x4 as shown in section 2/S310? If so provide reinforcing detail.

RESPONSE:

1. 3" deep, 20 gage, Type NS Metal Roof Deck is required on S102.2 in the following areas:
 - a. The canopy roof east of C.L. A.3 and between C.L. 10.1 and 12.
 - b. The classroom roof south of C.L. 11 and between C.L. F and A.3.
- 3" deep, 20 gage, Type NS Metal Roof Deck is required on S102.3 in all areas not hatched to show Type NSA roof deck.
 - c. The media center roof west of C.L. d.7 and between C.L. 7 and 9.
2. Yes, MC13 is required as shown in section 1,2,3 on S310.
3. No, cantilever sections at columns on 12.2 are HSS8x8's as shown in 3/S210, typical.

RFI No. B-273, (Dated 2/11/2011)

QUESTION: Please clarify CWT-M Glass Tile series name.

RESPONSE: Please see finish Schedule 09 06 00 CWT-M Series: Legacy Glass, Color: Wedgewood LG07

RFI No. B-274, (Dated 2/11/2011)

QUESTION: 1) Please verify ¼” raised plate decking is required at roof framing (6/S301) as shown cut on drawing S102.2. 2) Please clarify TS8x8x1/2 between grid line L.2 & K.5 along line 11 on drawings S102.3 is not required architectural details show screen wall stopping West of line L.2. 3) Please clarify section 7/S311 cut along line 11 on dwg S102.3. Section shows W.F. framing at a lower elevation than high roof. No framing is shown on plan S102.3, plus grid line 12 is shown in section? 4) Please clarify section 1/S314 cut along line 2 on Dwg S110.1. Section shows a TS 16x12 w/MC 18 on top. Plan shows a W18x35. Section 39/A315 shows a wide flg. Beam with a plate on top.

RESPONSE:

1. 1/4" plate decking is not req'd at roof. 6/S301 should not be cut on S102.2.
2. Yes, HSS8x8 is required.
3. Correct. 7/S311 should be cut on S102.3 on column line 12 between M and L.2.

4. Low beam shown on plan on S110.1 as "W18x35 (L)" should read "HSS16x12x5/8 + MC18 (L)"

RFI No. B-275, (Dated 2/11/2011)

QUESTION: Please verify top of steel elevations. Drawing S110.2 shows hatched areas T.O.S. at 28' - 0 3/8. Section 4/A302 cut along line "2" shows T.O.S. at beam 28' - 7 7/8. This would put the TS10x4, 4' - 2'2 down slope from line D.7 below the 28'-0 3/8 T.O.S. adjacent to it. Similarly there would be no T.S. post as noted along D.7 where it meets the W21H & W14 low North of line 10.1.

RESPONSE: Please see attached sketches SSK-15 and SSK-16.

RFI No. B-276, (Dated 2/11/2011)

QUESTION: Please clarify plan on S110.3 show W14+MC8's adjacent to grid line 10.1 section 1/S313 cut below at 2nd floor does not show any MC at roof level beam. Please also verify no additional steel is required at W14's on S102.3, section 26/A310 seems to suggest an angle on top flange.

RESPONSE: MC13 is required as shown on plan Bent plate 3/8xCONT. required at W14x22's parallel to column line 10.1 on S102.3.

RFI No. B-279, (Dated 2/10/2011)

QUESTION: 1.) The Specs mention Sarnafil products. Is Sarnafil a proprietary product which was noted upon or are other manufacturers acceptable as an approved equal as per the State/Gov bid low requirements? **2)** If Sarnafil is proprietary does this mean that Sarnafil will allow non certified contractors to become certified for this particular Job?

RESPONSE:

- 1.) YES
- 2.) To be determined by Sarnafil

RFI No. B-280, (Dated 2/11/2011)

QUESTION: Drawing A000.2 indicates 5 areas to be demoed for new work on column lines 10.1 and 11. Drawing A100.2 indicates columns in 4 or the 5 locations stated above. Sheet S410 indicates these columns to start at around elevation -1'0"

Do these columns exist in the lower level as shown on the Architect's drawings?

If the columns start at the existing slab, can we assume they will be shimmed and grouted?

RESPONSE: See Addendum for updates to drawings A000.2 and A100.2 related to removal of concrete and installation of new columns. All columns that start on the existing slab level will be shimmed and grouted.

RFI No. B-284, (Dated 2/11/2011)

QUESTION:

- 1). Should Item 41 be by vendor?
- 2). Insurance on umbrella is very high at 100,000 will that be lowered
- 3). Please forward list of bidders at meeting.

RESPONSE:

1. Item #41 is by BP-113 Kitchen Equipment
2. To Be Determined.
3. List of Bidders is on the Town of Glastonbury website:
<http://www.glastonbury-ct.gov/index.aspx?page=441>

RFI No. B-285, (Dated 2/11/2011)

QUESTION: This spec section appears in both bid packages # 111 General Trades and package # 109 Roof Flashing + Metal Panels. Both are noted to be “complete”. Please clarify “both scopes”. 09 84 47 is noted to be WP-1 which relates to product + manufacturer. This is located by room finish schedule “inside” the building. Confirm all exterior metal panels are by package # 109 + interior ones are by # 111.

RESPONSE: Under Bid Package BP-109, Item #6 - DELETE in its entirety reference to Section 09 84 47 – Modular Metal Wall Panels - Complete. Under Bid Package BP=109, Item #6 - ADD Section 07 42 16 - Insulated Core Metal Wall Panels - Complete; (see. Addendum No. 4, Section 07 42 16 - Insulated Core Metal Wall Panels). Also, for further clarification reference BID RFI No. B-031 & RFI No. B-033).

RFI No. B-286, (Dated 2/11/2011)

QUESTION: Finish Schedule notes ACP – Acoustical curved panel by Decoustics. The location is noted to be in the lobby of the Planetarium on pg. 09 06 00 – 17. There is conflicting info on the room finish schedule. Confirm ACP – does not exist or clarify product, spec and location.

RESPONSE: FINISH SCHEDULE DRAWING A910 INDICATES P-11 ON ALL WALLS AND FB-1 TO COVER ACP ACOUSTICAL WALL PANELS. PLEASE REFER TO ELEVATION DRAWING 10/A802 FOR MORE INFORMATION.

RFI No. B-287, (Dated 2/11/2011)

QUESTION: Please see this detail. There are 2 beam infills noted. General Trades package will frame + sheath @ the beam. Who will do the AVB + rigid at these locations as well as other locations similar throughout the project. Please consider having the mason do the rigid + AVB @ these specific locations due to sequencing and compliance with manuf. Installation instructions.

RESPONSE: See RFI B-288

RFI No. B-288, (Dated 2/11/2011)

QUESTION: Sim to question # 3 – Sequencing + “Systems” compliance AVB should be done by one sub/sub with one “manufacturer”. If broken up there may be compliance issues.

RESPONSE: On Masonry walls AVB and rigid insulation shall be by BP-106 Masonry.

RFI No. B-289, (Dated 2/11/2011)

QUESTION: Please clarify that spec section 07 26 36 (AVB) noted as it pertains in BP # 106 + 111 that the intent is that each bid package will apply this product on it’s specific backup system. BP-111

will apply to sheathing + mason will apply to block. Please also consider HC – 003 + HC 004 questions.

RESPONSE: Reference RFI No. B-288

RFI No. B-291, (Dated 2/11/2011)

QUESTION: Drawing (detail) indicates AFB-XX. Please provide specific number.

RESPONSE: PLEASE USE AFB-01.

RFI No. B-293, (Dated 2/11/2011)

QUESTION: Section 29/A311 indicates AFB above windows but does not call out for this. Please clarify these panels are consistent with the other elevations & sections.

RESPONSE: YES, PLEASE PROVIDE AFB ABOVE ENTIRE RUN OF WINDOWS PER DWG 2/A812.

RFI No. B-294, (Dated 2/11/2011)

QUESTION: Please see elevation noted on column line 11 there are columns “above”. What material will wrap these columns? Confirm there is no fabric wrapped panels @ these locations.

RESPONSE: CORRECT THERE IS NO FABRIC WRAPPED PANELS ON THE COLUMNS. COLUMNS ARE TO RECEIVE 5/8 GYP OVER METAL STUDS PAINTED CP-1 TO MATCH CEILING AND ADJACENT WINDOW FRAMES FOR MORE INFORMATION SEE WINDOW DETAIL W30 ON DRAWING A435

RFI No. B-299, (Dated 2/8/2011)

QUESTION: Please advise if BP-111 General Trades is responsible for managing, monitoring and dispose of excess site materials and spoils and contaminants.

RESPONSE: There is no contaminated soils to be disposed of work was performed under Phase 1 of the project.

RFI No. B-301, (Dated 2/9/2011)

QUESTION: 1) Specification makes reference to custom graphics (2.1 B.11) for mat. EM-1. Floor finish plans do not show mats, nor extent of rounds mat (specs do indicate 1 dimension 66”) 2) 09 06 00 – pg 17+18 indicate that EM-1 and EM-2 are to be located for us on the acoustical panels – Is this your intention?

RESPONSE: 1) No custom graphics use EM-2 in lieu of EM-1. Please see general finish note 24 on drawing A910. Entrance mats should be size of room indicated. 2) No. Please see finish schedule for location of entry mats.

RFI No. B-302, (Dated 2/9/2011)

QUESTION: Drawing A-102.3 – The wall between the gallery and vestibule shows a section 23/A309. A309 does not have any section 23.

RESPONSE: Refer to wall section 23 on Drawing A-309 located just above wall section 25 on the same sheet.

RFI No. B-303, (Dated 2/9/2011)

QUESTION:

1. 19/A821 – Which bid package provides and install the solid surface locker tops?
2. 8/A822 – Fish Tank; Which bid package provides and installs the solid surface top the hardwood trim and plastic trim?
3. 6/A822 Terrarium; which bid package provides and install the solid surface tops hardwood trim and plastic trim?
4. 1, 2, 3 ,17/A836 display cases, light box – which bid package provides + install the wood trim?

RESPONSE: In response to all questions No.1 thru No.4 above, Bid Package BP-108 Arch Millwork / Casework, shall be responsible to furnished and installed (reference BP-108, Item #8).

RFI No. B-304, (Dated 2/9/2011)

QUESTION: Please provide a detail for the ridge line.

RESPONSE: See attached Sketch SSK-7.

RFI No. B-308, (Dated 2/10/2011)

QUESTION: 16/A2.06 Brick gable in foreground; Please provide cut section Corresp. Structural Section. If on Column Line 10 or 10.1 – Angle for brick is missing. A1.02.1 or A1.02.2 – Please provide section thru stair wall between Column Line F/9 – F/10.

RESPONSE: For brick gables please refer to Response to BID RFI B-060 and associated sketches. For section at Stair, please refer to Response to RFI B-169.

RFI No. B-311, (Dated 2/10/2011)

QUESTION: Section 01 23 00, 3.1 I States Alternate # 9 is not used. A110.3 states clerestory units are to be Alternate # 9. Please clarify if Alternate # 9 is used or if clerestory units are part of base bid.

RESPONSE: Clerestory units are to be included in the base bid.

RFI No. B-321, (Dated 2/14/2011)

QUESTION: Please clarify section 6/S312 calls for a L6x6 on to flange of beam. Section 25/A-309 shows 1/3 Angle at roof top 1/3 vertical support steel, all galv. in addition to an angle on top flange of beam. Please size for structurals if required and if so are they galvanized.

RESPONSE: Please see attached sketch SSK-12, Which clarifies detail at 6/S312

RFI No. B-324, (Dated 2/14/2011)

QUESTION: There are two specifications for the bathroom mirrors, 08 83 00 and 10 28 13. Please advise which one prevails.

RESPONSE: Refer to drawing A-501. Provide full height mirrors per section 08 83 00. Provide mirrors above sinks per section 10 28 13.

RFI No. B-329, (Dated 2/10/2011)

QUESTION: Clarify gas pipe sizes. P-001 shows 6"+2 ½ , P-100.1 shows 6"+2 ½ 6" + 3", P-100.2 shows 6", P-303 shows 8' + 3.

RESPONSE: P-001 6" & 3"
P-100.1, 6" & 3"
P-100.2, 6" & 3"
P-303, 6" & 3"

RFI No. B-330, (Dated 2/10/2011)

QUESTION: Can PEX tube be used for under slab trap primer piping in lieu of copper.

RESPONSE: PEX tubing is acceptable to use for trap primer piping.

RFI No. B-335, (Dated 2/11/2011)

QUESTION: BP 109 roof and BP-111 General Trades each curtain Spec Section 09 84 47 complete Modular Metal Wall Systems. Question which BP own the 2" insulated Metal panel on detail 18 or A307.

RESPONSE: Refer to BID RFI No. B-033: BP-111 General Trades, shall provide Metal Wall Panel System for (WP-1) Interior Metal Panel Soffit at the Gallery & Main Lobby. BP-109 Roofing, Flashing & Metal Panels, shall provide all Exterior Metal Wall Panels. (Note: Also see related BID RFI No. B-031).

RFI No. B-336, (Dated 2/11/2011)

QUESTION: Ref: Spec section 28 05 00 – Intrusion Detection - Cannot locate product information in Specs. Please clarify or identify areas where security product info can be found.

RESPONSE: The Security System Equipment will be bid out later as part of the Owner FF&E.

RFI No. B-337, (Dated 2/11/2011)

QUESTION: Could a wall section be provided for the exterior wall along column line N/12 – N/11 (Corresp. Structural also)

RESPONSE: See attached wall sections – SKA-005, SKA-005A, SKA-005B, SKA-005C, SSK-11 & SSK-13.

RFI No. B-339, (Dated 2/11/2011)

QUESTION: On the Bid Form Alternate # 4 – Eliminate louvered Screen wall @ roof on A110.3 there are screen walls in two locations on line G and Line 11. Are both of these part of the Alternate. Line G is the only one that says it is Alt. # 4.

RESPONSE: YES

RFI No. B-341, (Dated 2/16/2011)

QUESTION: 1) 4" RD-1 + 4" OFRD between column lines 9.6+9.8 / E.2 + D.7 they show the storm pipe on P-102.2 but nothing on P-101.2 and P-100.2. 2) Drawing P-001 scale 1/8" = 1' is not correct. 3) Drawing P-101.3 arts room 111 has P 4B nothing on schedule.

RESPONSE: Refer to attached clarifications and sketches SKP – 100.2-2 & SKP – 101.2-1.

RFI No. B-343, (Dated 2/8/2011)

QUESTION: S410 Col schedule shows (16) Columns penetrating thru slab in the basement Architectural drawings. A100.1, A100.2 show (18). How many are there.

RESPONSE: "See Addendum 4 for updated Architectural and Demolition drawings that reflect correct number of slab penetrations."

RFI No. B-344, (Dated 2/8/2011)

QUESTION: S100.4 on the foundation plan shows the ramp to be an 8" concrete slab on grade. L-101 shows the ramp heavy duty bituminous ramp.

RESPONSE: Provide "Heavy Duty Bituminous paving" as indicated on drawing L-101.

RFI No. B-345, (Dated 2/8/2011)

QUESTION: Bid Form Alternate # 9 say's not used while on drawing W14, W24 are called out as Alternate # 9. Please verify.

RESPONSE: Delete all references to Alternate # 9 in the drawings. The work for the roof clerestories over Rooms C108, C110 and C112 is included as part of the base bid. The specification is correct. Alternate No. 9 is not used.

RFI No. B-347, (Dated 2/11/2011)

QUESTION: Ref: Columns @ Grid lines B.6-1 and C.4-1. Plan S-101.1 shows ¼" thick. Column schedule S-410 (Column type C8) shows 3/8" thick. Which is correct>

RESPONSE: 3/8" Thickness

RFI No. B-348, (Dated 2/15/2011)

QUESTION: Drawing A910 in room B106 "Gallery" under ceiling finishes WP-1 is shown for part of the ceiling. Reference spec section 09 06 00 under wall types the WP-1 is in the Immersive Theater.

RESPONSE: That is correct there is no WP-1 in the gallery.

RFI No. B-349, (Dated 2/11/2011)

QUESTION: 1) Please verify roof hatches noted in Item # 63 spec 00 74 16 – 6 BP-107 are not to be furnished or installed by BP-107. Does bid RFI no. 34 in Addendum 3 confirm this? 2) Please provide locations of AESS Steel. This is noted in 05 12 00 but not shown in Drawings.

RESPONSE: Yes, refer to Bid RFI No. B-034.

RFI No. B-350, (Dated 2/11/2011)

QUESTION: BP-104 Item 67 states that site contractor provides concrete ramp + retaining walls. BP-105 item 21 states that concrete contractor does this work.

RESPONSE: See RFI B-075: Ref addendum No. 3.

RFI No. B-351, (Dated 2/14/2011)

QUESTION: Please verify what BP is to furnish & Install the steel framing for fish tank cabinets 7/A800, and what is PRL-1? Please provide details, is it just individual T.S. frames spaced 3'-0" apart, or is there framing between them at top sim. to bottom, as in section 6/A822. 2) Please verify what bid package is to furnish & Install aluminum ladders in 18/A307? Is continuous curved track a part of the ladder system or is it in a separate bid package?

RESPONSE:

BP- 107 Steel & Misc Metals shall be responsible to furnish and install the Silo Aluminum ladders and track.

RFI No. B-352, (Dated 2/14/2011)

QUESTION: In a previous RFI – (B151) the game line are by the installing contractor. This is a poured in place floor. Why would you involve a 2nd contractor? You already have the gamelines by paint in Sec. 09 67 66. Please clarify. Thanks.

RESPONSE: Reference RESPONSE to RFI B-281 Upon further review of Bid Packages BP-111 General Trades and BP-112 Flooring: 1. Reference Bid RFI No. B-151 VOID Response in its entirety and replace with the following. 2. Under BP-111 General Trades - DELETE Item #117 in its entirety. 3. Under BP-112 Flooring - ADD New Item #27 to READ: Contractor shall be responsible to clean, prep, prime and finish paint interior Gymnasium Floor Line Painting as specified per Section 09 67 66, Para 3.5 Game Lines and Markers, Reference Drawing A-841.

RFI No. B-355, (Dated 2/6/2011)

QUESTION: With regard to the shoring requirements of the existing slab: 1) What is the live load the existing slab can handle? 2) Are there any test reports or information on the raised concrete slab that can be made available to the bidders? 3) Is it the engineers intent to provide point shoring or structural continuous shoring?

RESPONSE:

1. The existing slab has been physically evaluated and we determined that it has no live load capacity. Its weight must be shored to support construction activities prior to placement of the new slab.

2. All testing was conducted by IMTL and Soil Testing.
3. Please see response to RFI B-213.

RFI No. B-356, (Dated 2/16/2011)

QUESTION: Drawing 3/A801 Interior Elevations Elevation 3/A801 Admin. Area is not tagged on the First Floor Plan Part B on Drawing A-101.2. This same Elevation is shown on 5/A802 and is tagged on the First Floor Plan Part B. Should the elevation 3/A801 Admin Area be deleted?

RESPONSE: YES PLEASE ELIMINATE ELEVATION 3/A801.

RFI No. B-357, (Dated 2/16/2011)

QUESTION: Drawing 5/A801 Media Centre Workroom The counter and backsplash in this elevation is tagged "Solid Surface counter and backsplash SS-1". The Interior Finish Schedule on drawing A910 lists the Finishes for the B113 Library Workroom casework as PL-1 / PL-2. Please let me know if this counter top and backsplash should be Solid Surface or Plastic Laminate?

RESPONSE: PLEASE USE SOLID SURFACE SS-1 PER THE ELEVATIONS ON CASEWORK IN B113 LIBRARY WORKROOM.

RFI No. B-358, (Dated 2/16/2011)

QUESTION: Drawing A910 Interior Finish Schedule the Room Finish Schedule has Room 113A Book Storage tagged as having Casework PL -1 / PL the First Floor Plan - Part B on drawing A-101.2 is not showing any casework in this room and I not find an elevation drawing for Room 113A Book Storage. Please let me know if there is casework required for Room 113A Book Storage and provide me with plan and elevation drawing.

RESPONSE: THERE IS NO CASEWORK IN BOOK STORAGE ROOM 113A.

RFI No. B-359, (Dated 2/16/2011)

QUESTION: Drawing 4/A801 Media Centre B101 The upholstered seat cushions in this elevation are tagged as FB-5. When I look at the Schedule for Finishes Section 090600 we have FB-1, FB-2, FB-3 and FB-4 listed as the fabrics for this project. Please provide me with the information for the fabric FB-5 and can you also let me know what kind of

RESPONSE: PLEASE USE FB-3 ON UPHOLSTERED BENCH IN MEDIA CENTER ELEVATION FOAM SHOULD BE HIGH DENSITY / FIRM HR FOAM.

RFI No. B-360, (Dated 2/16/2011)

QUESTION: Drawing 20/A821 Science Classroom Base Cabinet: Sink The counter top is noted as 1 1/2" thick at the front edge and a 3/4" thick backsplash. In the specifications for Section 064023 Interior Architectural Woodwork, 2.7 Countertops, C. Solid Surface Material Tops: 1/4" thick, solid-surfacing material laminated to 3/4 inch thick particleboard with front edge built up 3/4 inch thick, solid-surfacing material.

1. Front: 1 - inch laminated bullnose

2. Backsplashes: 3/4 inch thick, solid-surfacing material; slightly eased at edge.

Should we follow the drawings and make the Solid Surface countertops 1 1/2" thick at the front edge or should we follow the specifications and make the countertops 1" thick at the front edge?

RESPONSE: PLEASE FOLLOW DETAIL 20/A821 AND MAKE NOSING 1 1/2" THICK.

RFI No. B-361, (Dated 2/14/2011)

QUESTION: I am a subcontractor bidding on this project. A note on A100.1 says to "provide spray fireproofing protection for the new stl. beams at the underside of the first floor level slab and at the new columns at the lower level." Is there the requirement to treat any columns higher in the building?

RESPONSE: No, noted fireproofing required for basement "Storage Occupancy" and separation of the "Educational Occupancy" above.

RFI No. B-362, (Dated 2/15/2011)

QUESTION: Spec Section 22 66 00 -4 Chemical Waste systems – has a neutralization tank are we to assume that in rooms B-118 + B118A that the P-4A sinks are to have acid waste piping with neutralization tanks? Does not show that acid neutralization tanks or call for AW pipe.

RESPONSE: There is no acid waste or neutralization on the project.

RFI No. B-363, (Dated 2/16/2011)

QUESTION: There are ceiling finish conflicts between the drawings and finish schedule. Please see attached list and clarify the correct finishes.

RESPONSE: Please use reflected ceiling plans for ceiling types. See attached.

RFI No. B-364, (Dated 2/16/2011)

QUESTION:

1. Who is responsible for the low voltage cabling.
2. Who provides and installs the cove lighting fixtures, wiring, power supplies.
3. Theater Control (operator's) Console finish.
4. Clarify Dome finish.
5. Clarify 2.10 Vestibule Lighting
6. Clarify location of Instructional Projector on Drawing PL-1

RESPONSE:

1. Under BP-111 General Trades, the Planetarium Subcontractor shall be responsible to furnish the low voltage cable and A/V floor boxes, installation by B-117 Electrical.
2. Under BP-111 General Trades, the Planetarium Subcontractor shall be responsible to furnish Cove Lighting per Section 11 54 00, para 2.9, (reference Special Instructions under BP-111. Item 101) installation by Bid Package BP-117 Electrical. On the Immersive Theater Bid Breakdown Form under Item#8 - Labor Cost: by BP-117 Electrical.
3. Theater Control Console Finish shall be Plastic Laminate finish to be Wilsonart - 4623-60 Graphite Nebula.
4. Under Section 11 54 23, page 13, para L. 3. Add to the end of the sentence: Astrotech dome finish for the projection surface shall be painted on site by the factory tech with an achromatic finish, and shall have an overall reflectance of 0.45, or a mutually agreed upon finish.

5. Vestibule Lighting - Omit fixture type D2M as indicated on Drawing E-701.2 in "Light Lock" spaces B121 & B124. Provide lighting as indicated on drawing PL-1 and PL-5. and specification section 11 54 00 Section 2.10 "Light Lock Lighting" page 19.
6. Instructional Projector to be mounted on a ceiling type mount, beneath the cove trough on the inside of the theater. Conduit 6.2.1 and circuit 5.1E shall also be located inside the theater dome, located on rear wall directly below lighting trough.

RFI No. B-365, (Dated 2/23/2011)

QUESTION: There are questions regarding section 088000-1.9b Extra Stock. The first is regarding the extra stock being maintained by the Installer. Does this mean that the extra stock will be stored at the installer's facility and if so does there need to be insurance maintained for this? In addition who will pay for the installation for glass replaced under non-warranty situations? Should for bidding purposes we take the most used size and consider that as the "extra stock", will this be acceptable to account for the owner's probability of breakage calculations? Would the owner/Architect consider a specified allowance to be carried through the first year with any remaining value not used deducted from the outstanding retainage?

RESPONSE: 1) YES, YES 2) Non-warranty installation – paid by owner. 3) Yes, most used size.

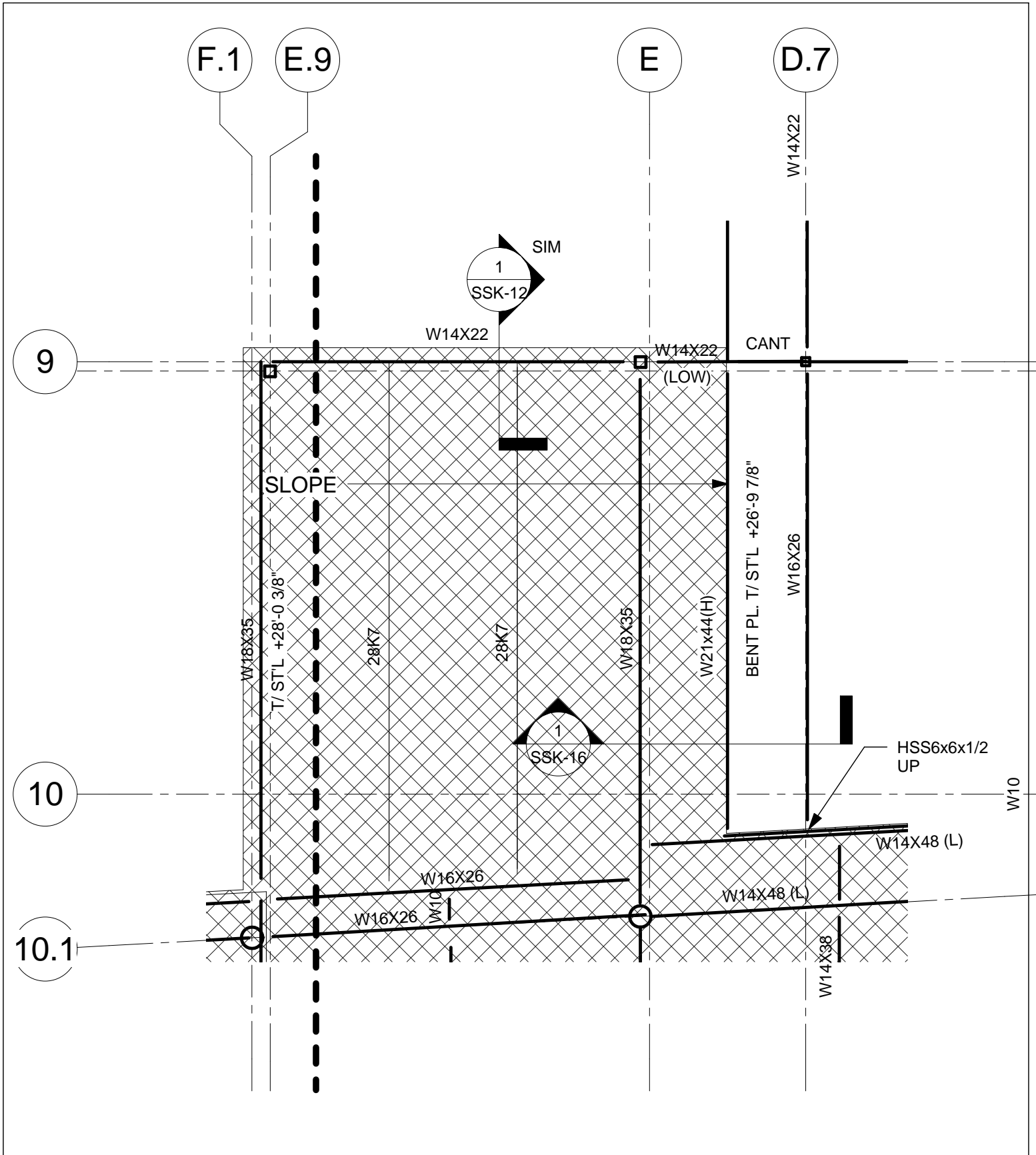
RFI No. B-366, (Dated 2/23/2011)

QUESTION: Pertaining to the B.F.E. at the "Immersive Theater". Based on the responses in Addendum # 4. Are we to assume that the entire addition has a B.F.E. matching the existing basement? If so, the columns on the inner footing will require piers. Please provide details. If the footings are to step up to -4'6" please provide a plan indicating the footing steps.

RESPONSE: 1. No, Bottom of footing at 1/S120 is (-4'-0") unless otherwise noted as shown on 1/S120. Footing on C.L. 12 is T/FTG to match existing.

2. Columns at interior footing on 1/S120 do not require piers as shown on 8/S313.

END OF ADDENDUM NO. 5



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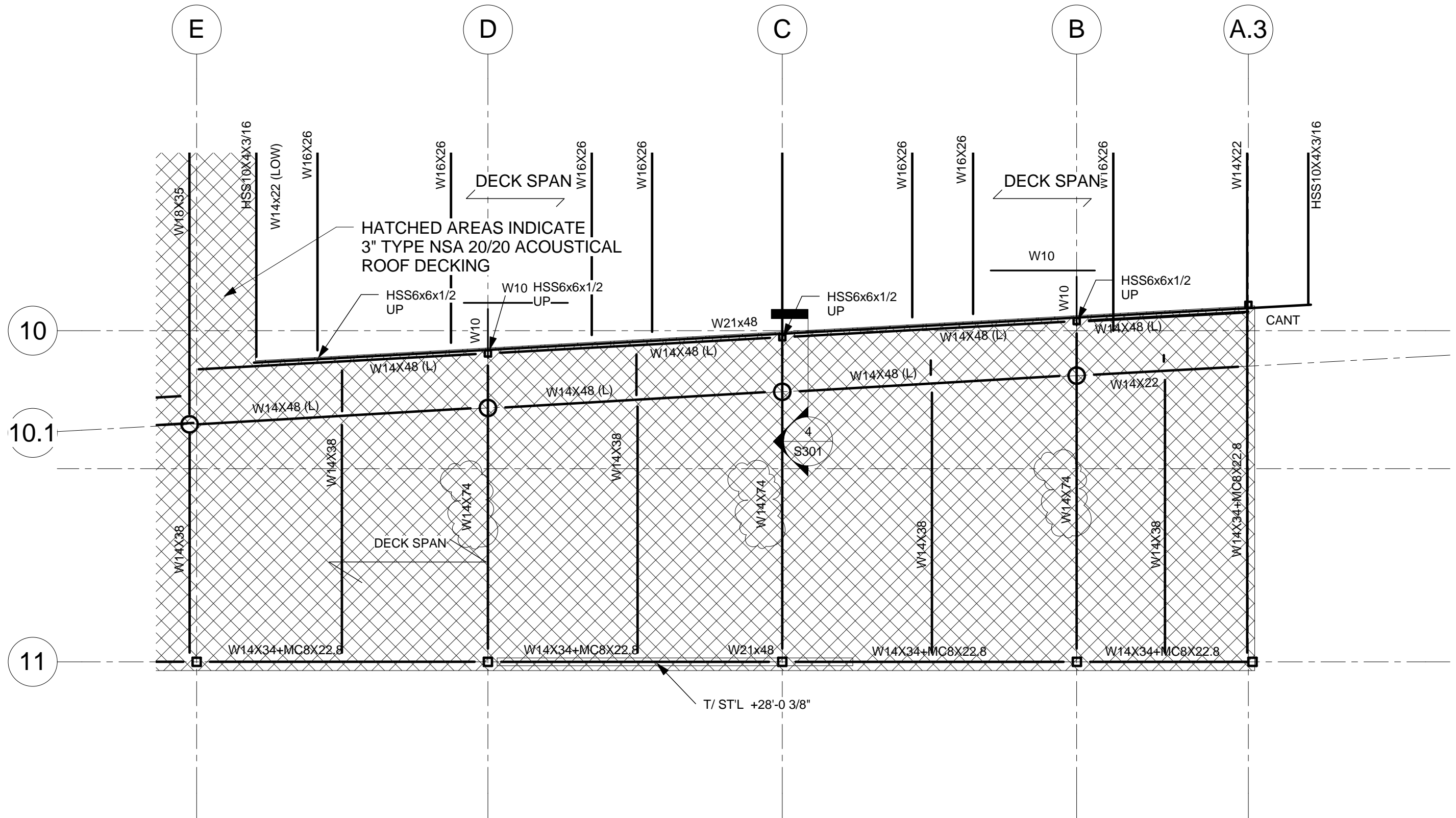
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 SCHOOL

PARTIAL FRAMING PLAN

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Checked by	CMW

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Scale



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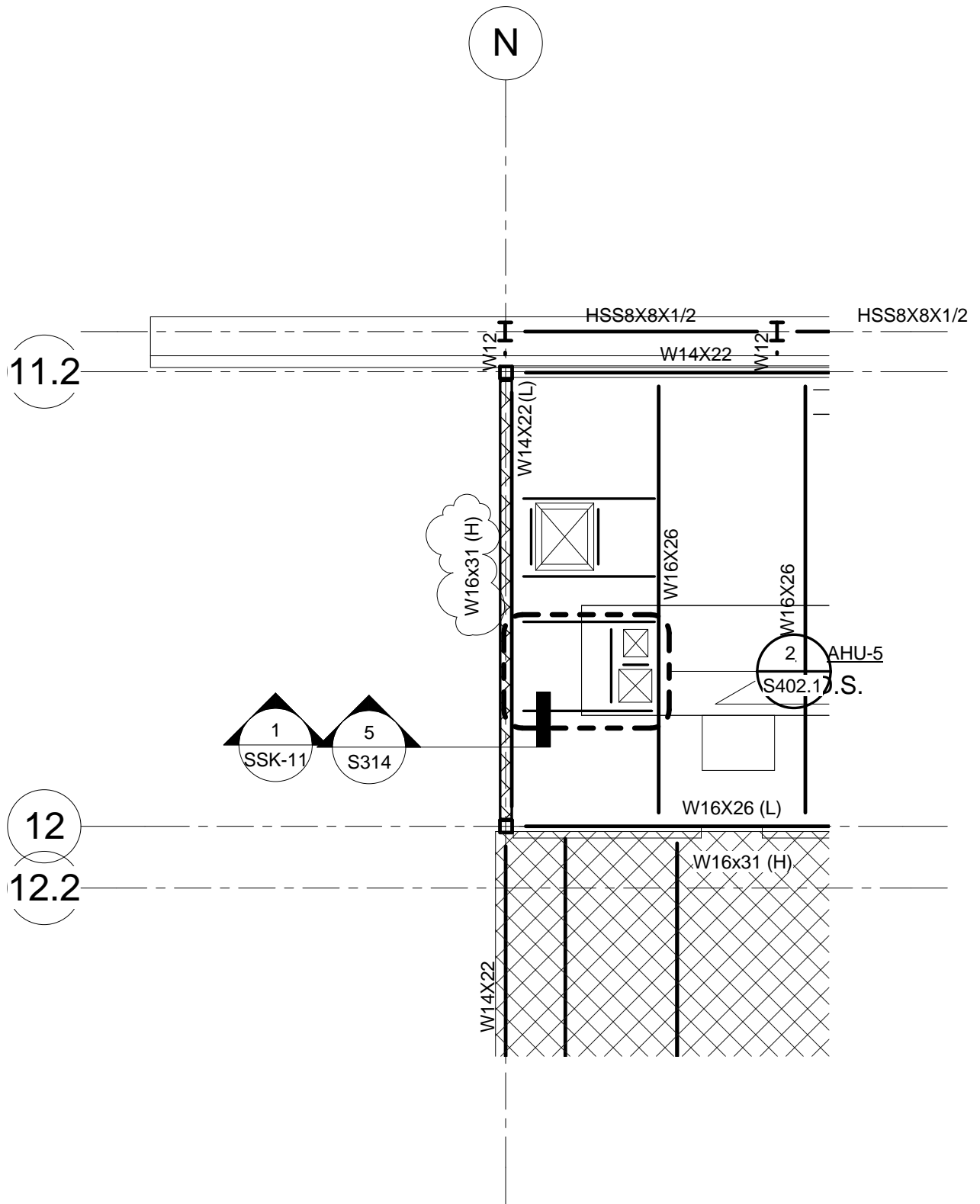
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PARTIAL FRAMING PLAN

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PARTIAL FRAMING PLAN

Project number H090230

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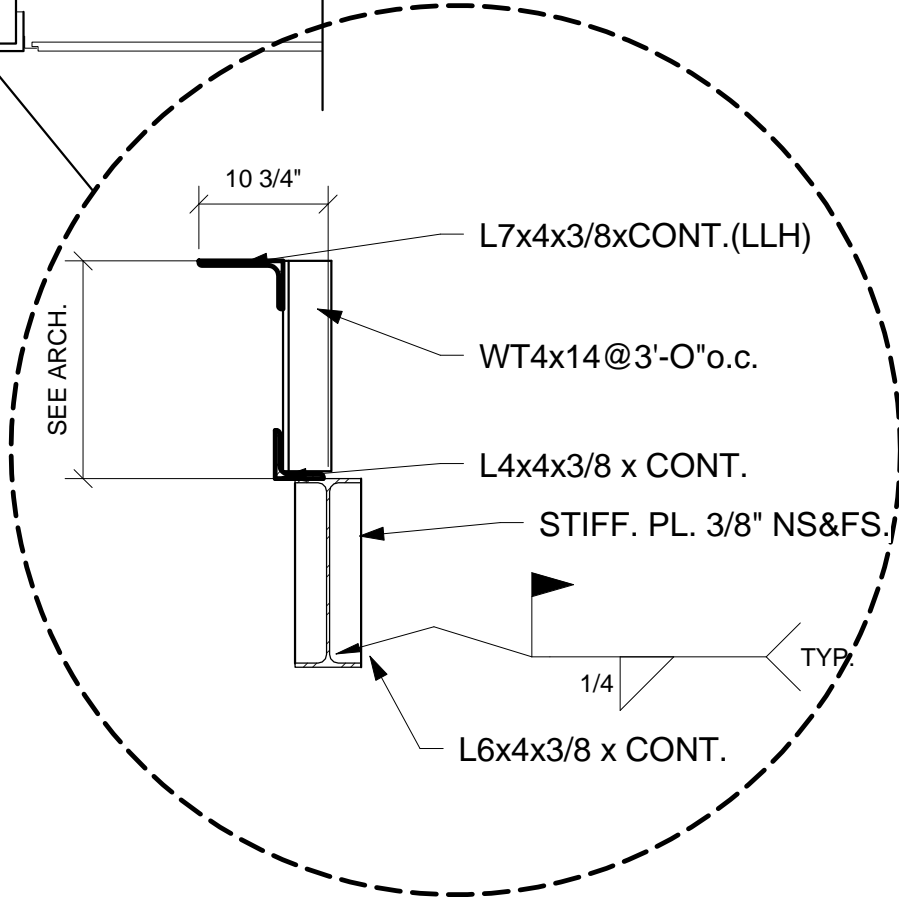
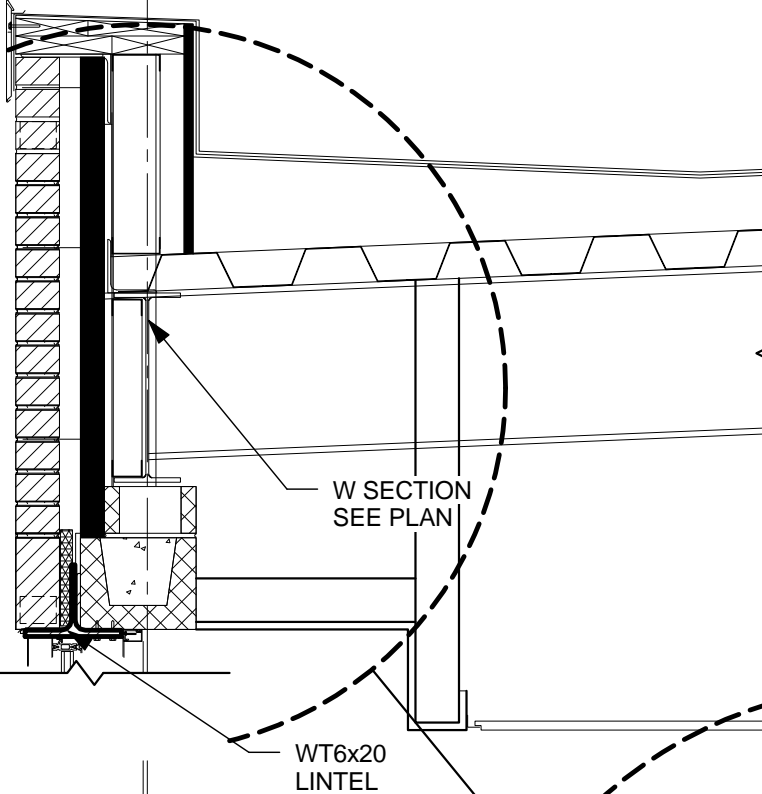
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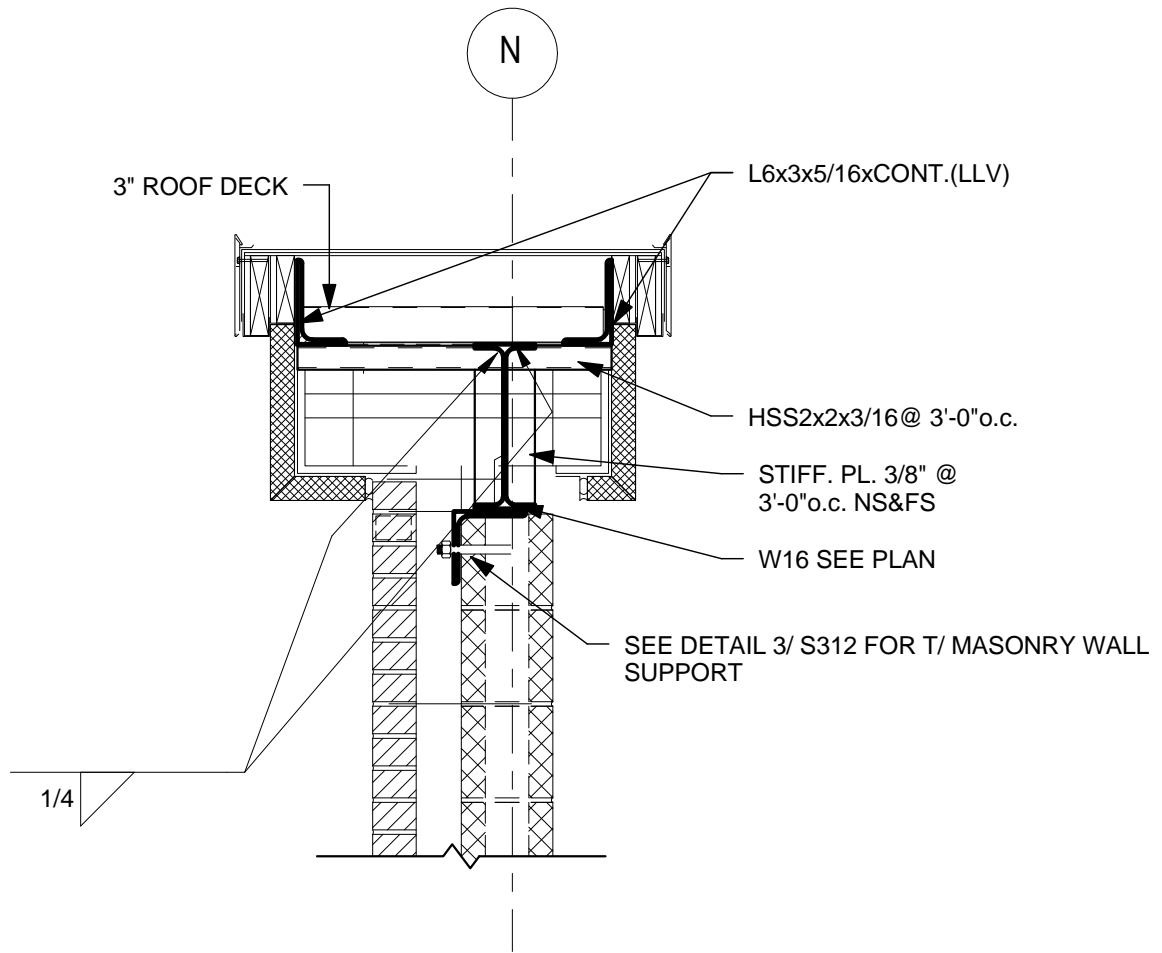
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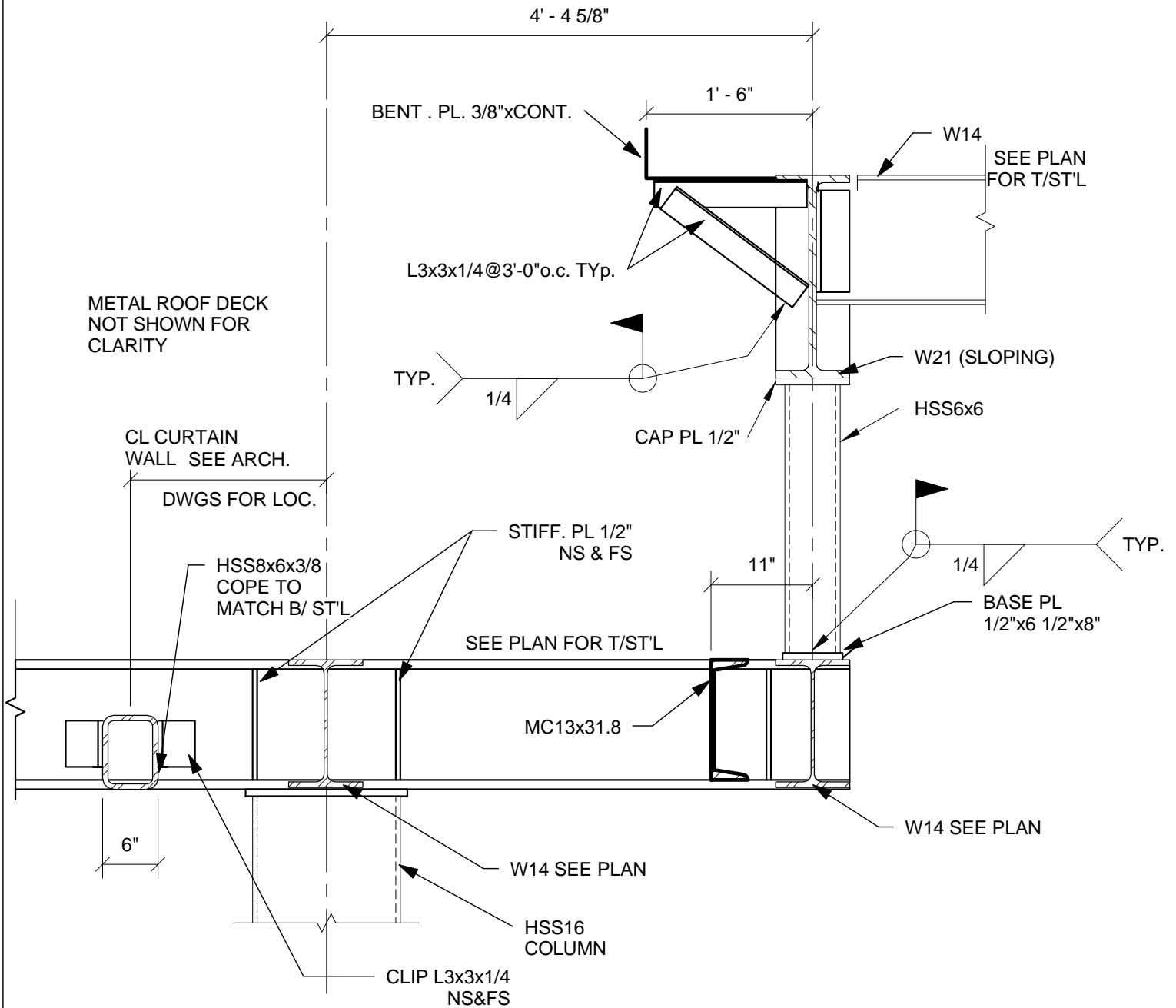
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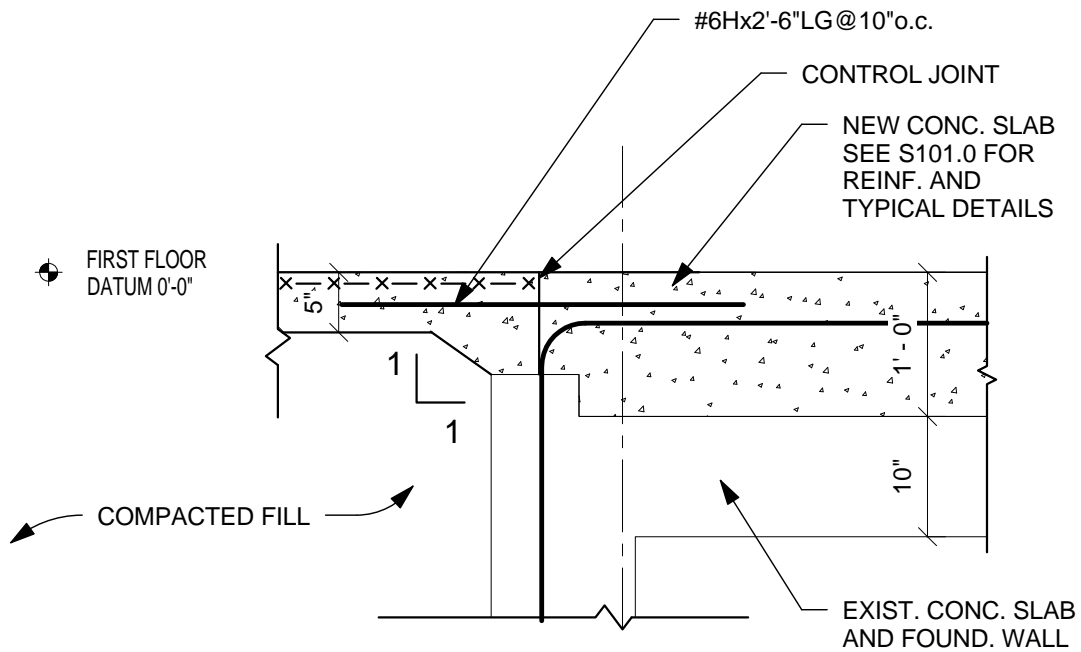
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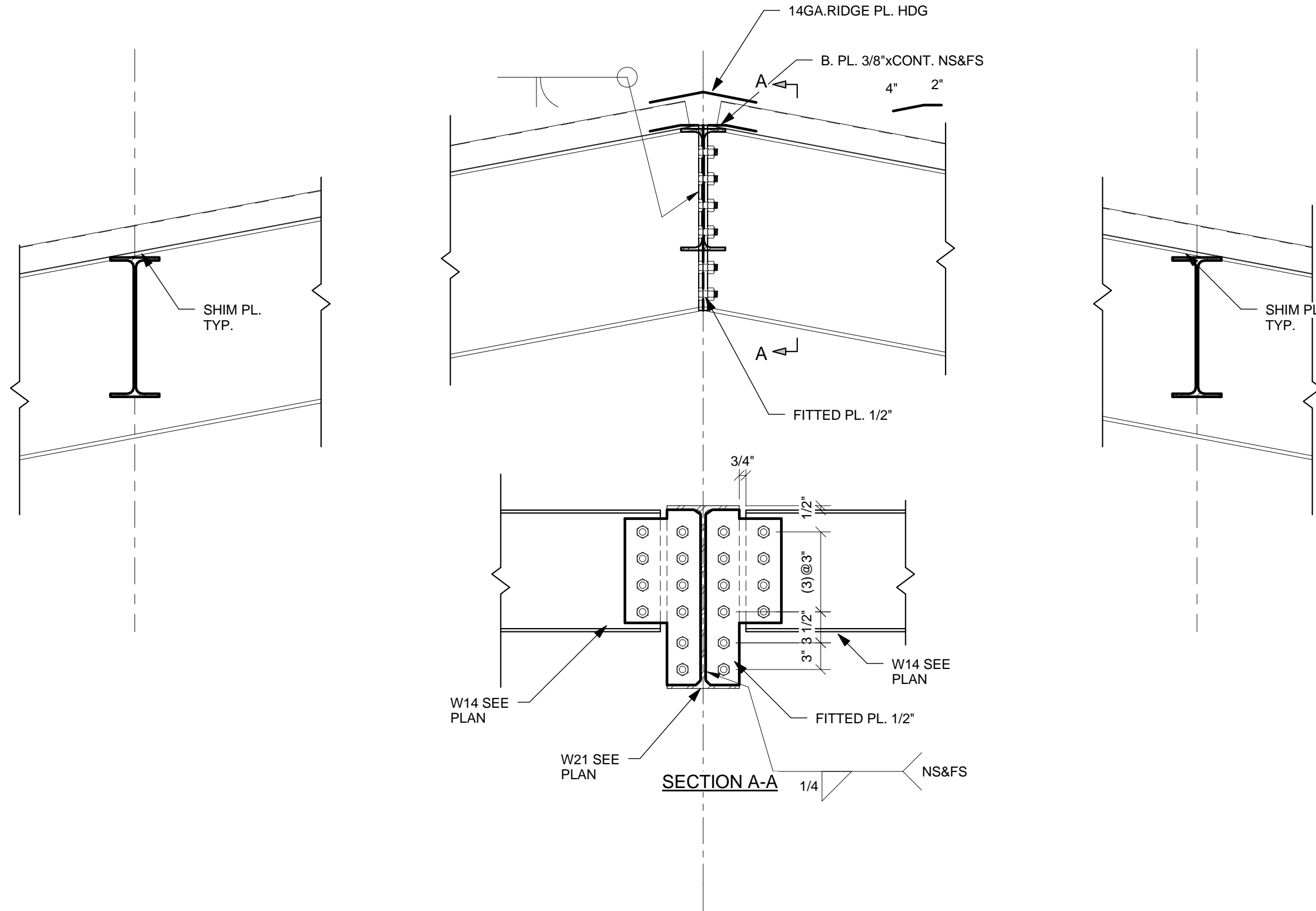
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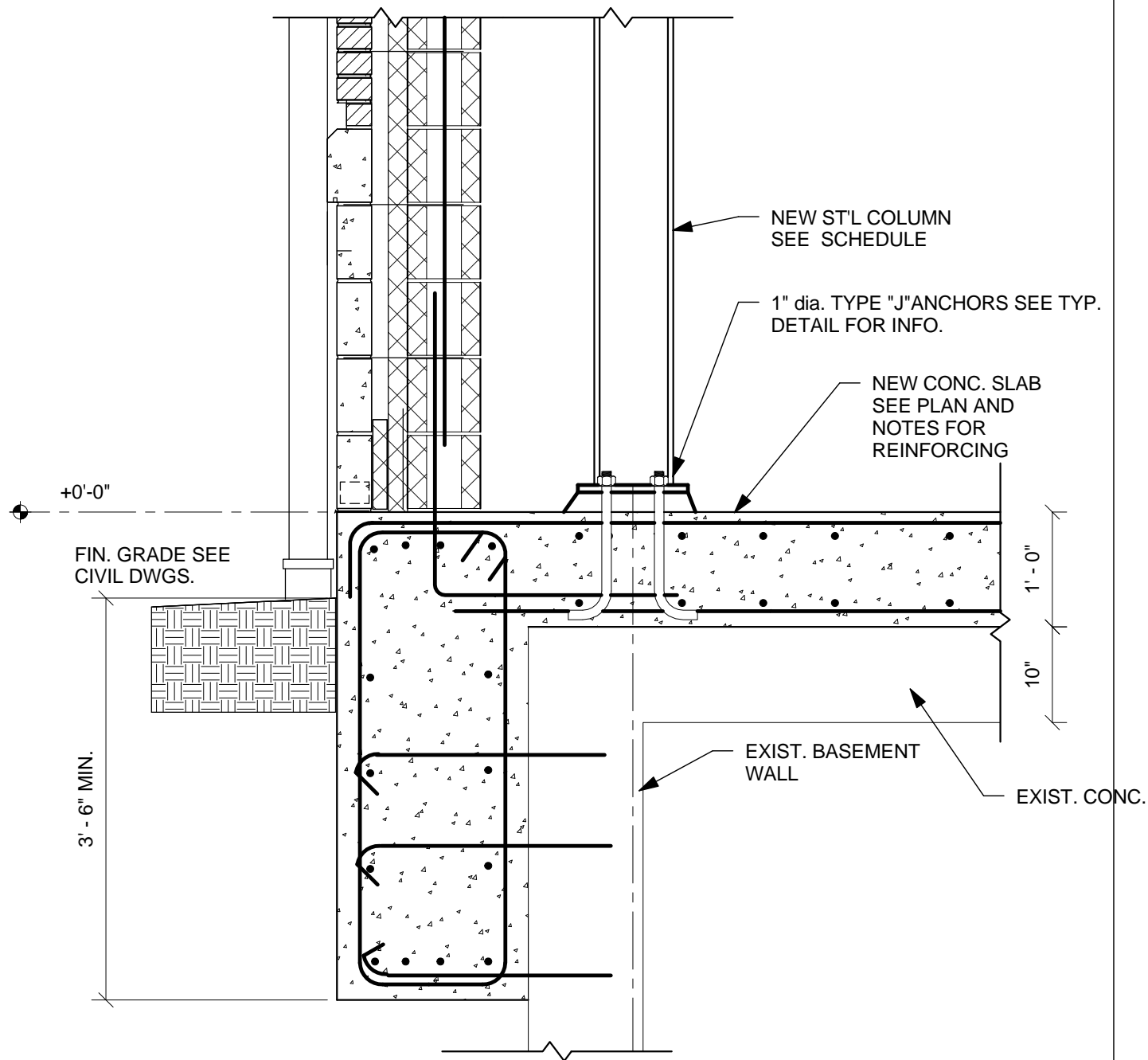
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SECTION @ RIDGE

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Scale: 1" = 1'-0"



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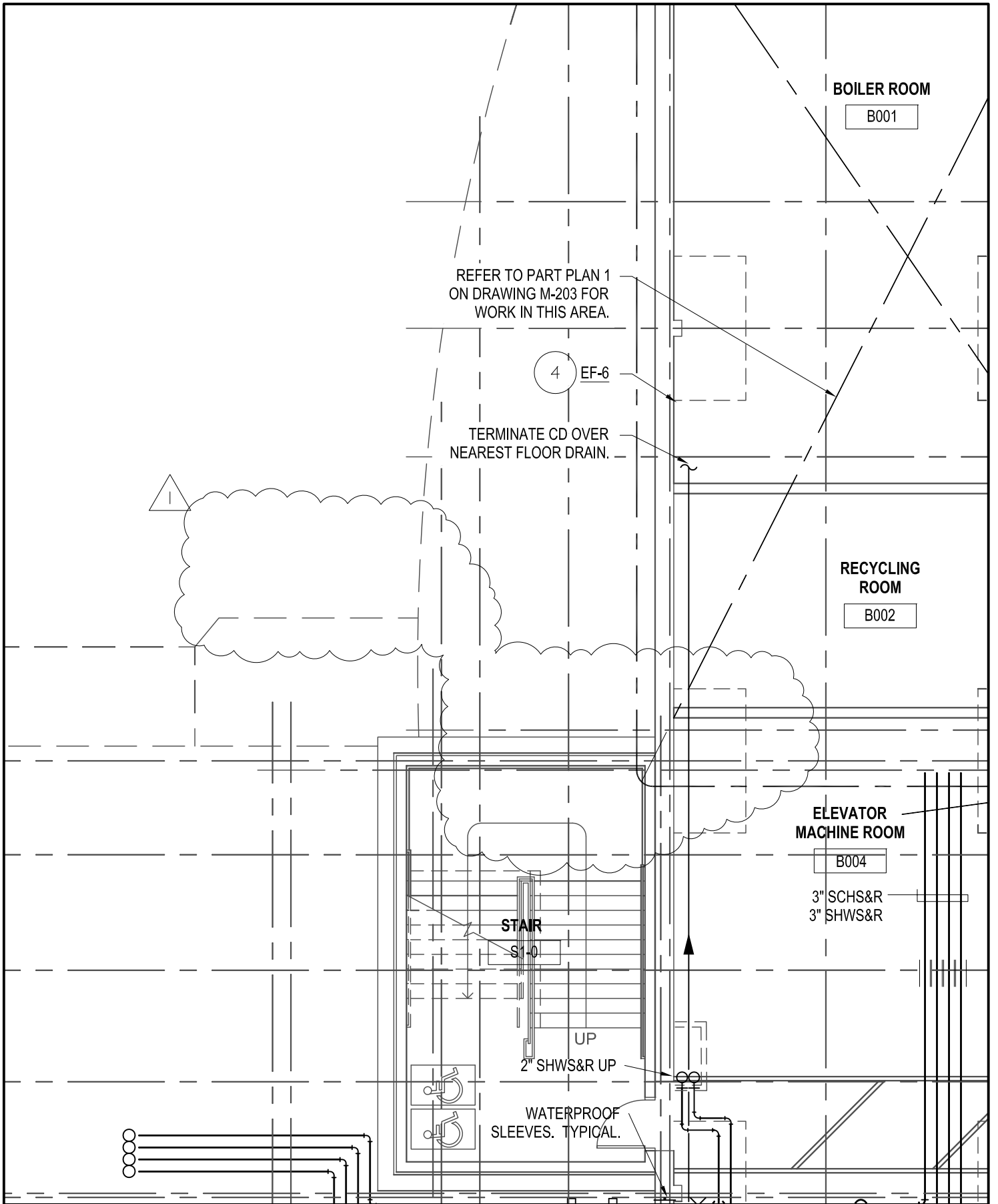
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SECTION @ COLUMN

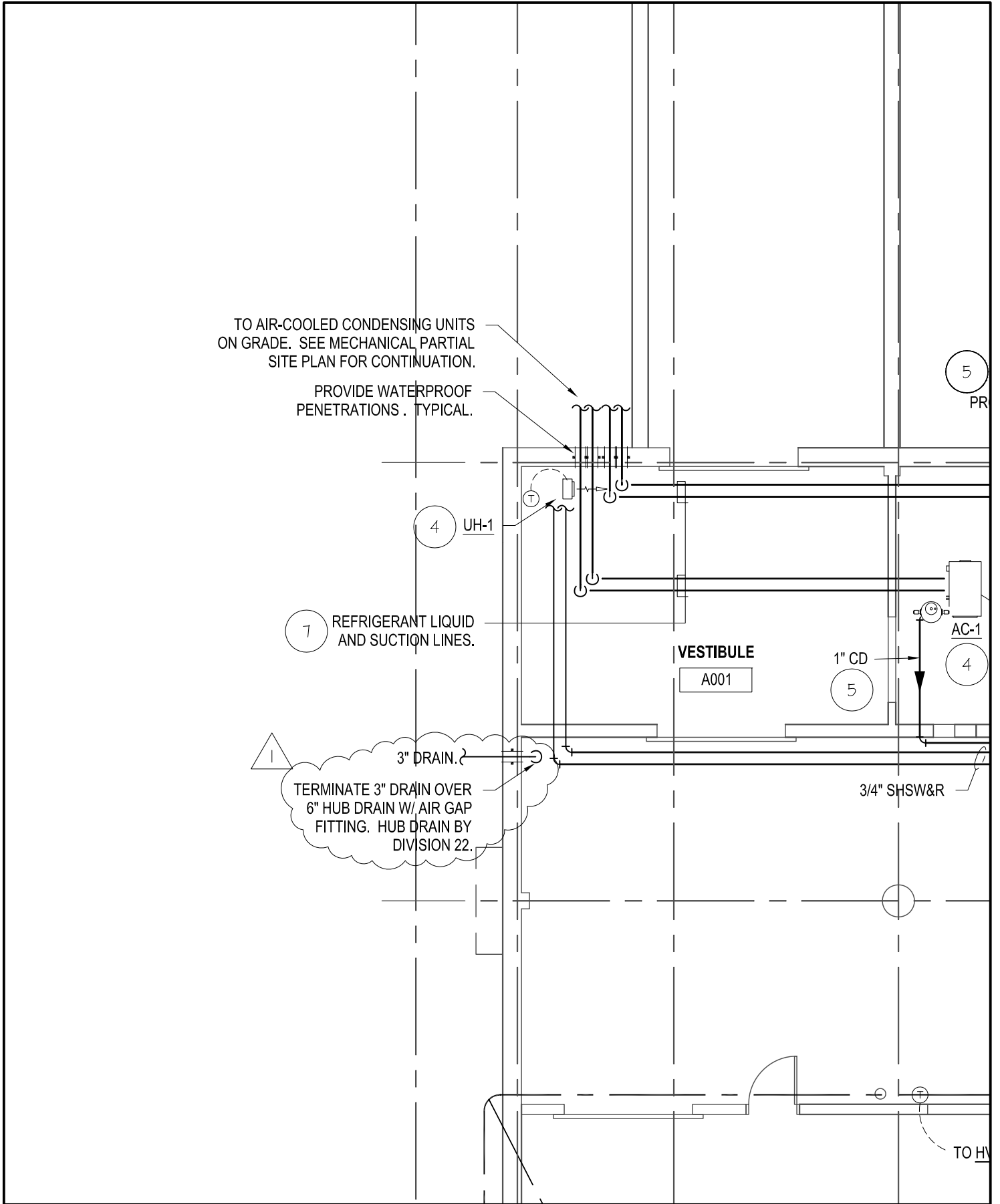
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SSK-6

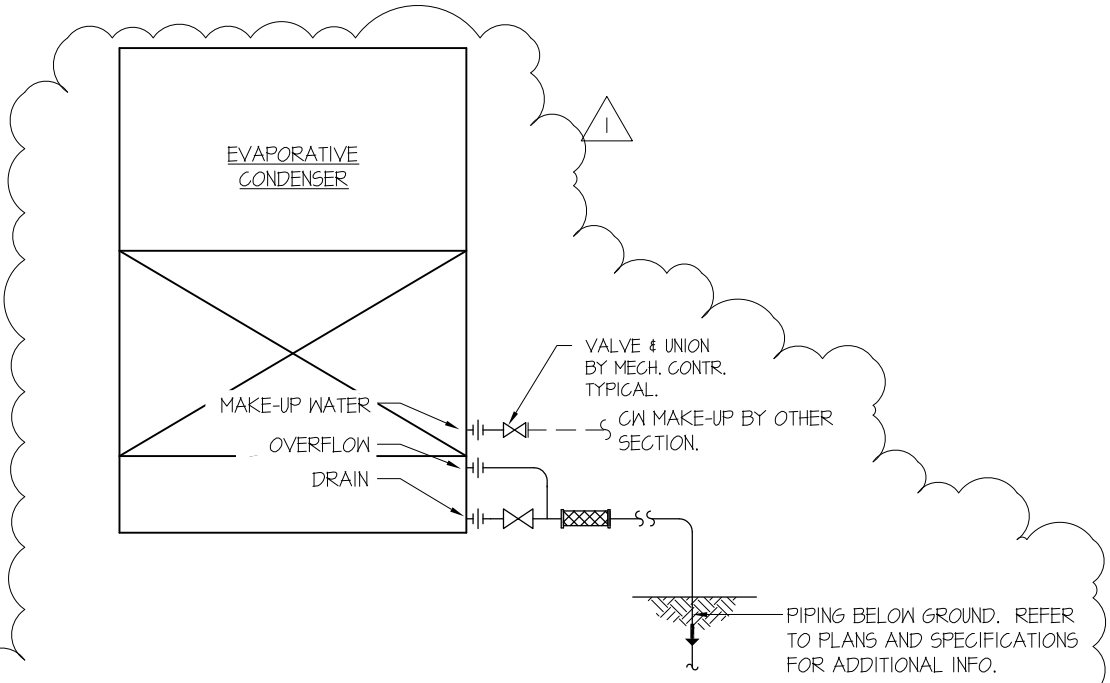
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FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE:	GLASTONBURY EAST HARTFORD	DATE:	2/21/11
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	DRAWN BY:	PMS	SCALE:	1/8" = 1'-0"
			DWG. NO.:	SK-MP-100.2-1



FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE:	GLASTONBURY EAST HARTFORD	DATE:	2/21/11
	DRAWING TITLE:	LOWER LEVEL PLAN - PART 'A'	PROJECT NO.:	H090230.06
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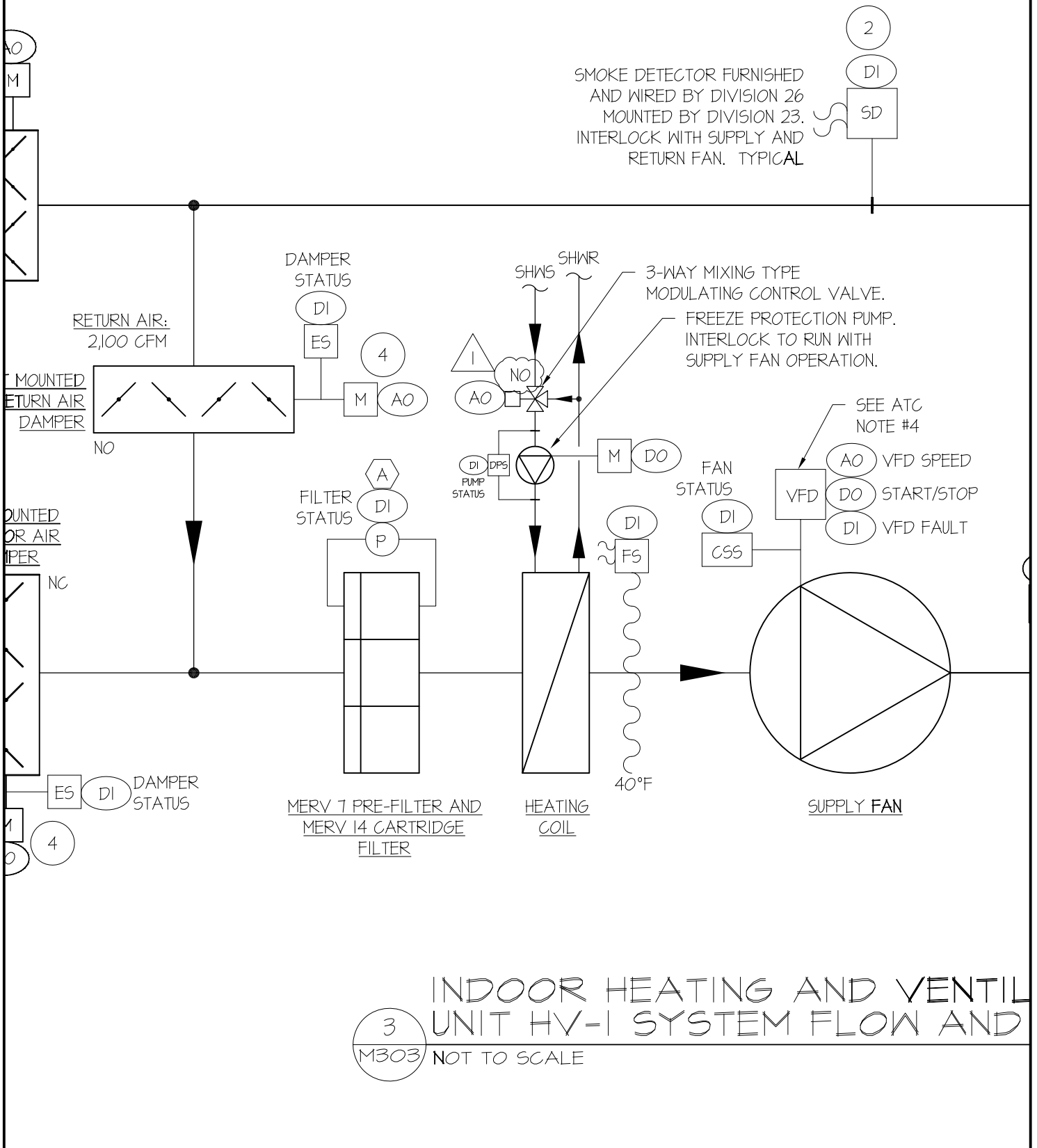
1. INSTALL UNIT IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
2. THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE APPROVED UNIT CONFIGURATION AND ADJUST PIPING ARRANGEMENT AS REQUIRED.
3. SET UNIT DEAD LEVEL IN BOTH DIRECTIONS.
4. SUPPORT PIPE SO NO WEIGHT RESTS ON UNIT.
5. ADJUST BLEED VALVE FOR PROPER AMOUNT OF WATER TO BE WASTED, AS RECOMMENDED BY THE WATER TREATMENT CONTRACTOR.
6. THE MECH. CONTRACTOR SHALL PROVIDE ALL OTHER NECESSARY FIELD PIPING, WIRING, ETC... BETWEEN THE COMPONENTS OF THE CHILLER PACKAGE. COORDINATE WITH THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND SPECIFICATIONS.

8
M406

EVAPORATIVE CONDENSER PIPING ARRANGMENT
NOT TO SCALE

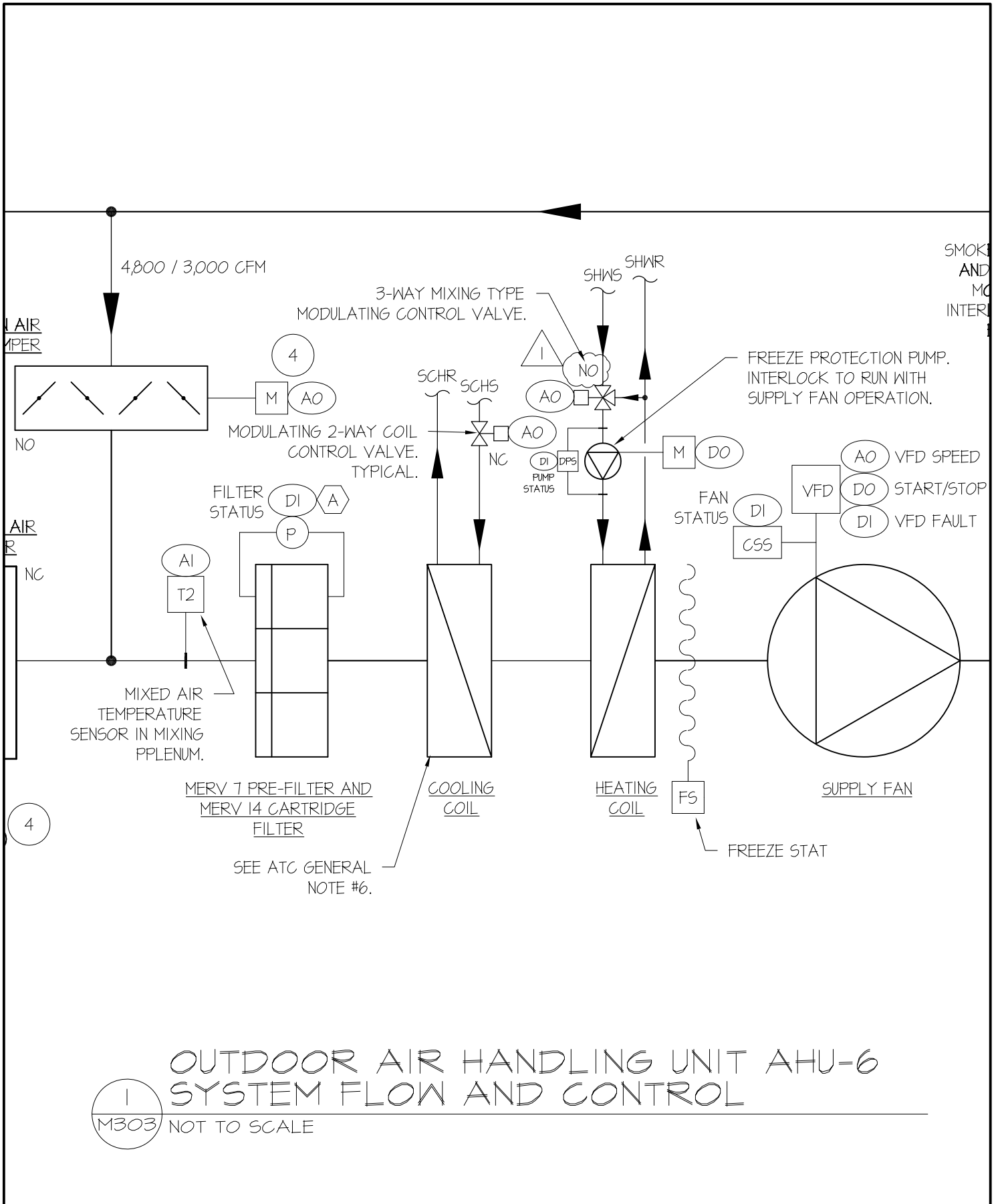
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M40

FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE:	GLASTONBURY EAST HARTFORD	DATE:	2/21/11
	DRAWING TITLE:	EVAPORATIVE COND. DETAIL	PROJECT NO.:	H090230.06
	DRAWN BY:	PMS	SCALE:	NTS
			DWG. NO.:	SK-M-406-1



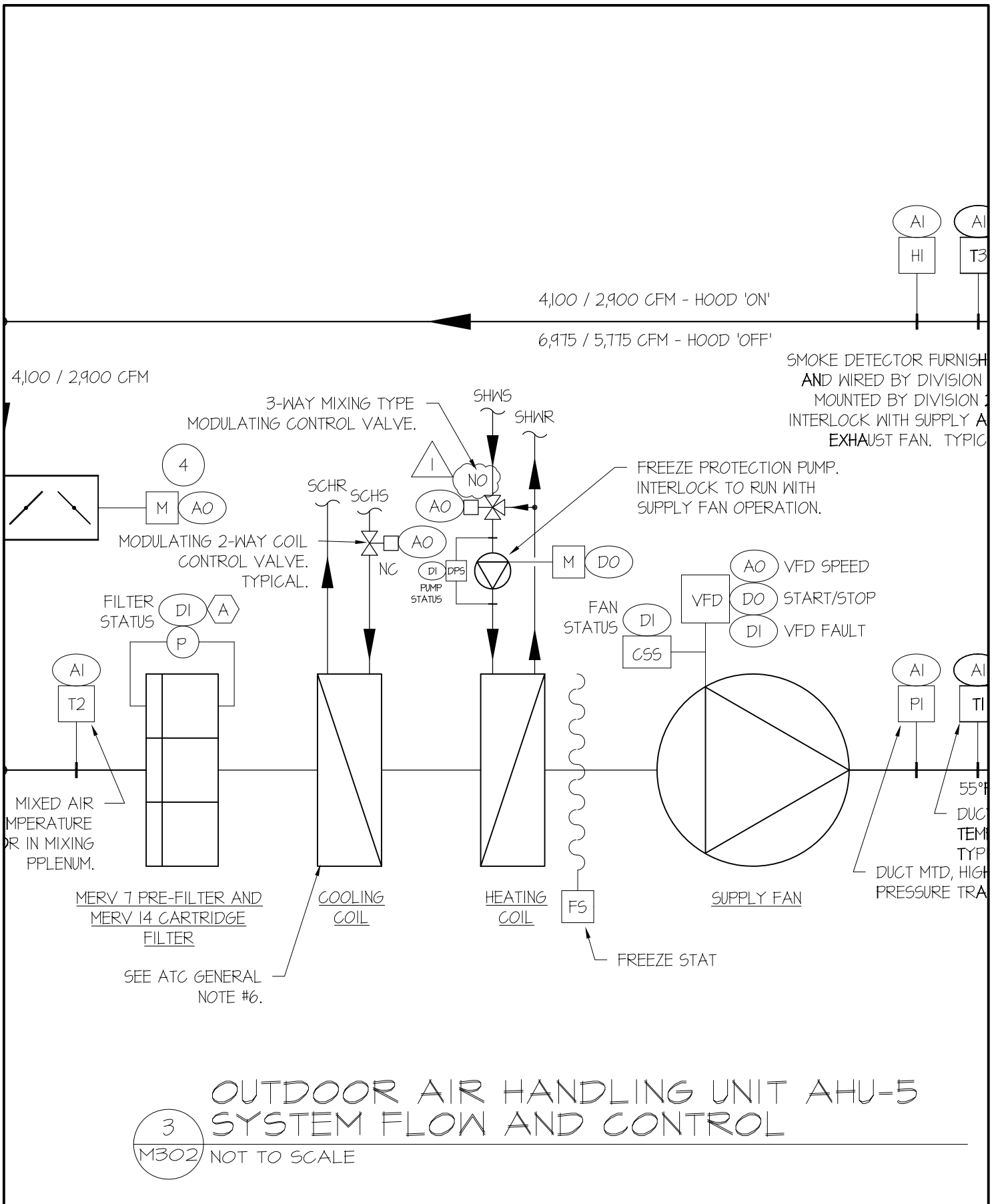
3 INDOOR HEATING AND VENTILATING UNIT HV-1 SYSTEM FLOW AND CONTROL
 M303 NOT TO SCALE

FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE: GLASTONBURY EAST HARTFORD	DATE: 2/21/11
	DRAWING TITLE: HVAC FLOW & CONTROL DIA.	PROJECT NO.: H090230.06
	DRAWN BY: PMS	DWG. NO.: SK-M-303-2

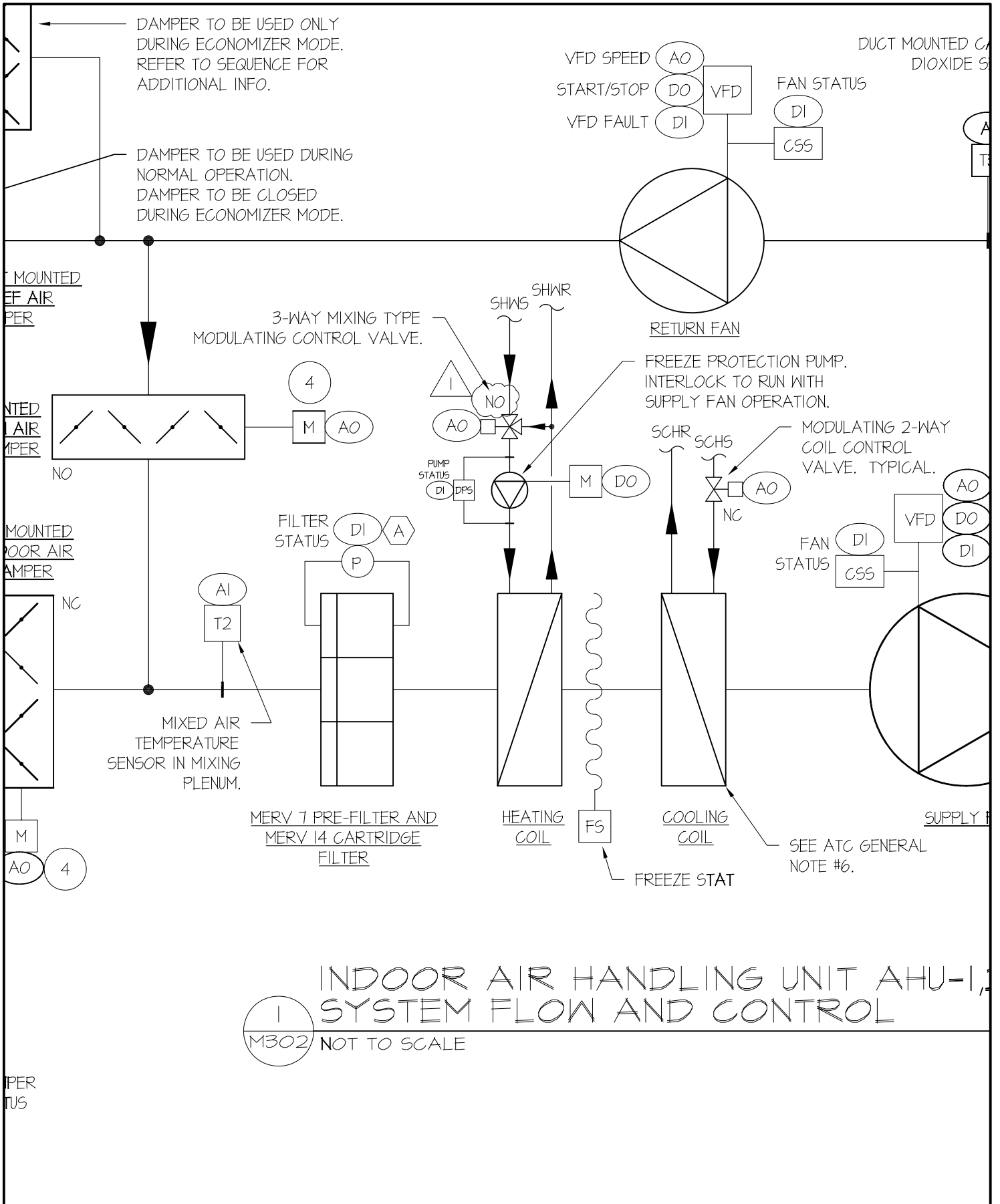


OUTDOOR AIR HANDLING UNIT AHU-6 SYSTEM FLOW AND CONTROL

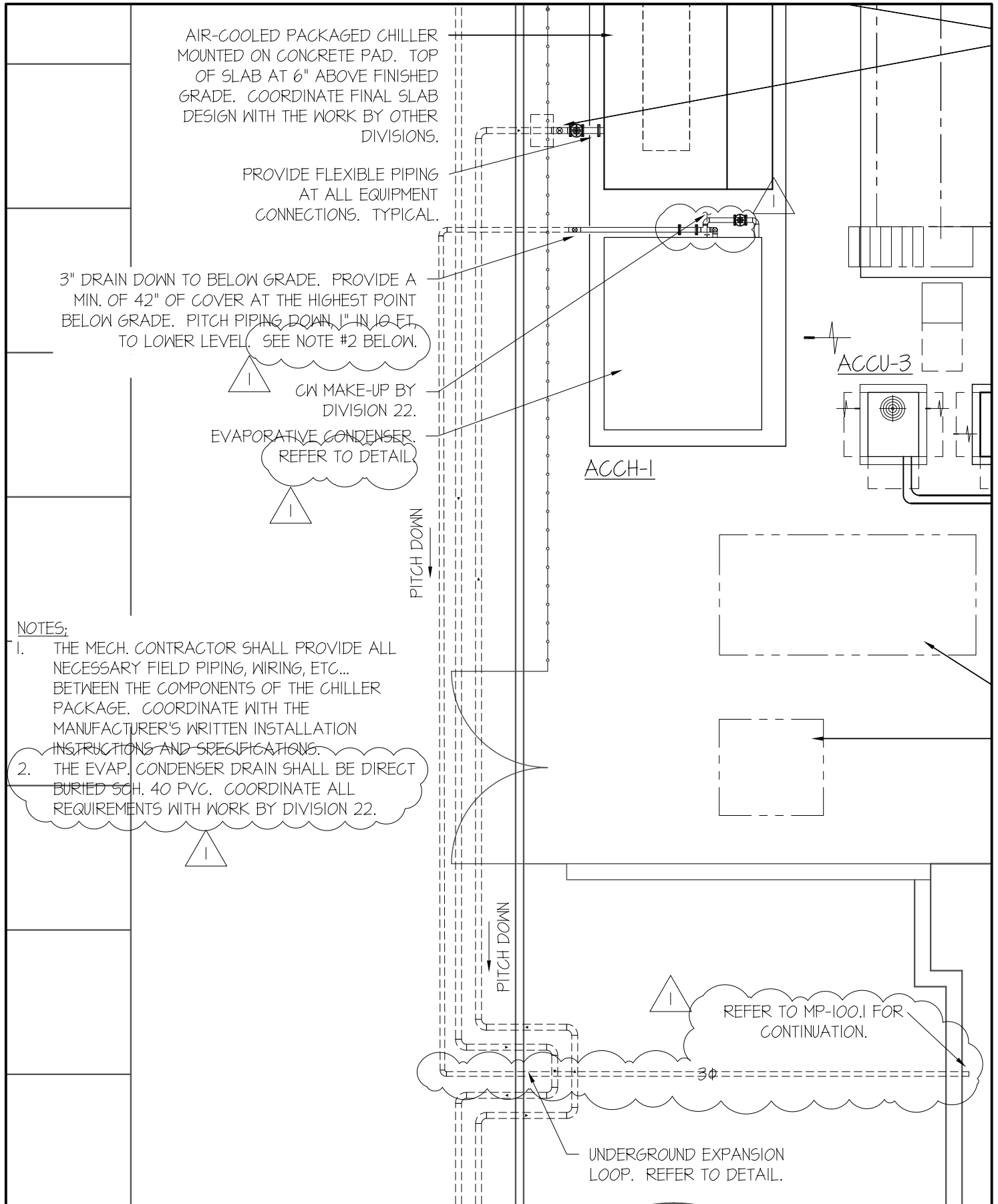
FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE: GLASTONBURY EAST HARTFORD	DATE: 2/21/11
	DRAWING TITLE: HVAC FLOW & CONTROL DIA.	PROJECT NO.: H090230.06
DRAWN BY: PMS	SCALE: NTS	DWG. NO.: SK-M-303-1



FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE: GLASTONBURY EAST HARTFORD	DATE: 2/21/11
	DRAWING TITLE: HVAC FLOW & CONTROL DIA.	PROJECT NO.: H090230.06
DRAWN BY: PMS	SCALE: NTS	DWG. NO.: SK-M-302-3



FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE: GLASTONBURY EAST HARTFORD	DATE: 2/21/11
	DRAWING TITLE: HVAC FLOW & CONTROL DIA.	PROJECT NO.: H090230.06
	DRAWN BY: PMS	SCALE: NTS



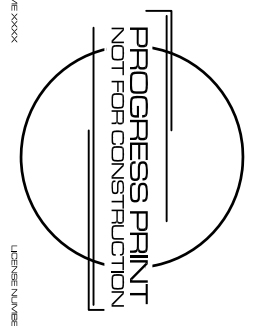
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	DRAWING TITLE:	PART. MECH. SITE PLAN	PROJECT NO.:	H090230.06
	DRAWN BY:	PMS	SCALE:	1/8" = 1'-0"
			DWG. NO.:	SK-M-204-1

SHARLTON, CONNECTICUT 803-825-6500
HARTFORD, CONNECTICUT 860-846-0888
SOMERSET, NEW JERSEY 783-807-8800
NEW YORK, NEW YORK 212-699-4787
MIAMI, FLORIDA 305-897-4280
BOSTON, MASSACHUSETTS 617-524-0800



THE DRAWING AND DESIGN ONLY. AS A PROFESSIONAL CONSULTANT, THE FIRM AND ITS DESIGNERS SHALL NOT BE LIABLE FOR CONSTRUCTION DEFECTS OR FOR THE PERFORMANCE OF THE WORK. THE CLIENT IS RESPONSIBLE FOR THE PROPER PROJECT AND SHALL NOT BE LIABLE FOR CONSTRUCTION DEFECTS OR FOR THE PERFORMANCE OF THE WORK. THE CLIENT IS RESPONSIBLE FOR THE PROPER PROJECT AND SHALL NOT BE LIABLE FOR CONSTRUCTION DEFECTS OR FOR THE PERFORMANCE OF THE WORK.

REVISION	DATE
ADD #4	02.21.11
XXX	XXX
XXX	XXX

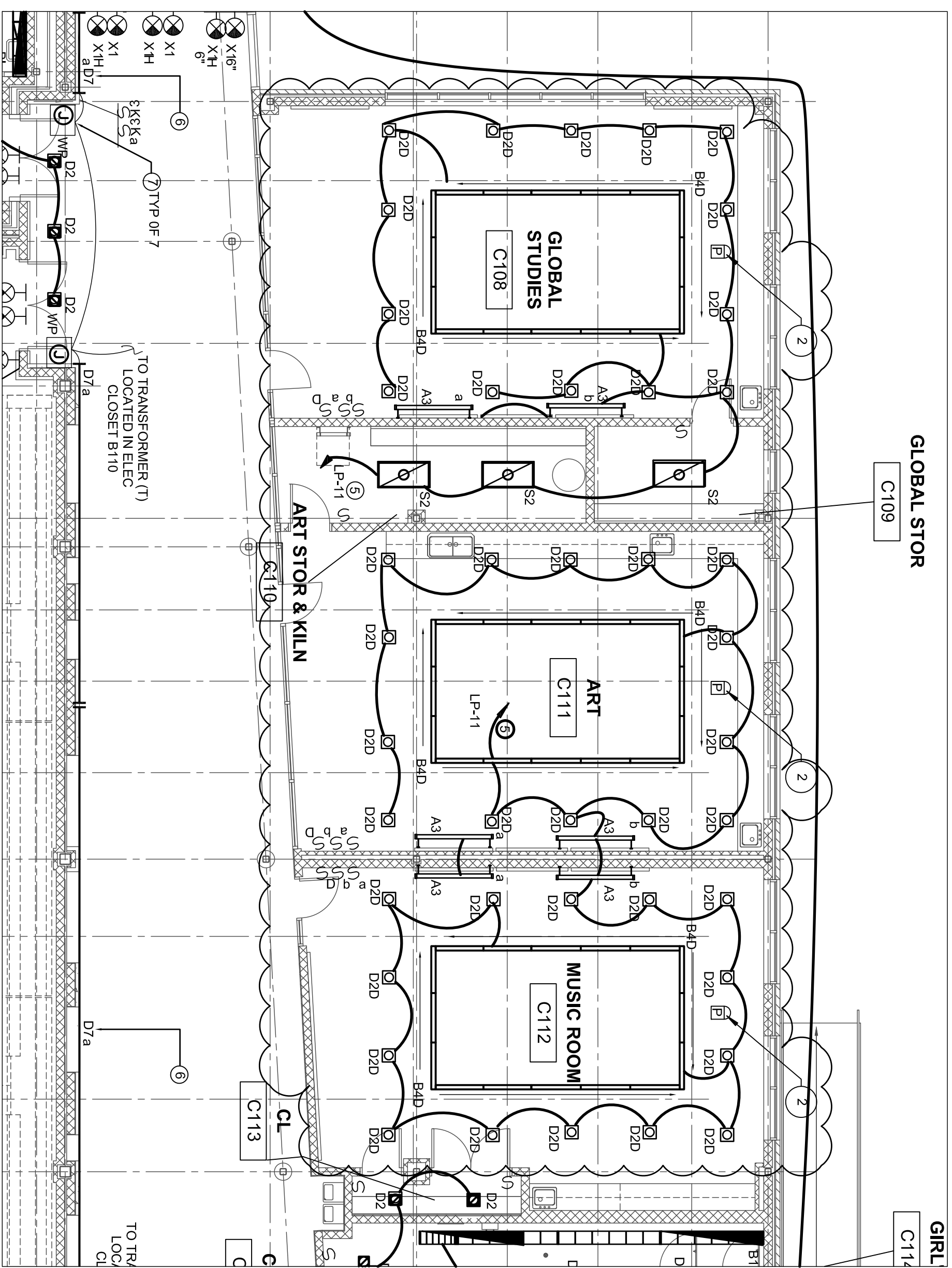


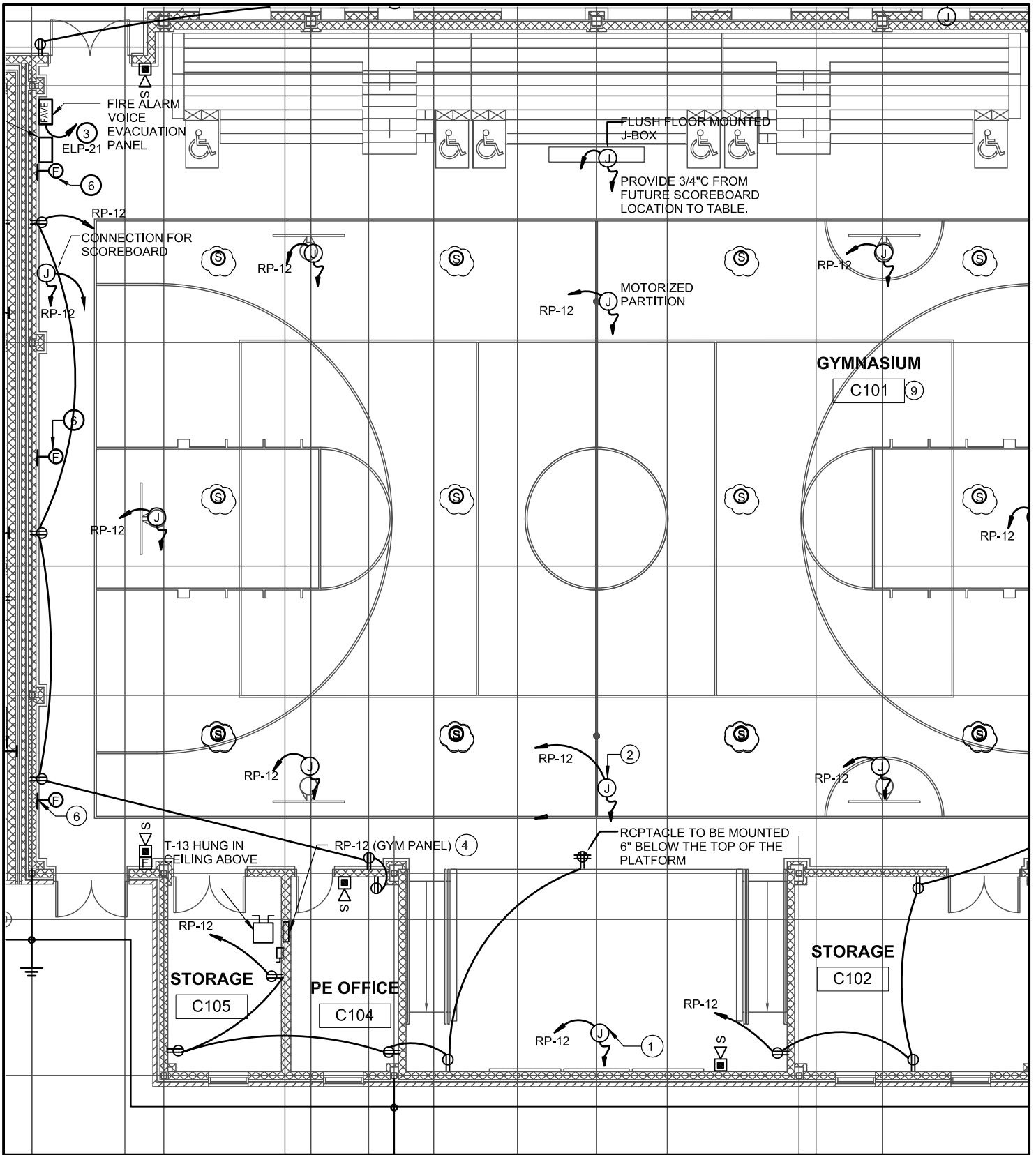
PROJECT MANAGER: J. COSTA
DESIGNER: C. KRUSHINSKY
PROJECT ARCHITECT / ENGINEER: M. HOLST
DRAWN BY: G. COLLETTE
CHECKED BY: APW

GLASTONBURY EAST
HARTFORD
ELEMENTARY
MAGNET SCHOOL
95 OAK STREET,
GLASTONBURY, CT

DRAWING TITLE:
FIRST FLOOR LIGHTING PLAN

DATE: JULY 1, 2010
SCALE: 1/8" = 1'-0"
PROJECT NUMBER: H090230
DRAWING: SK-E701.3



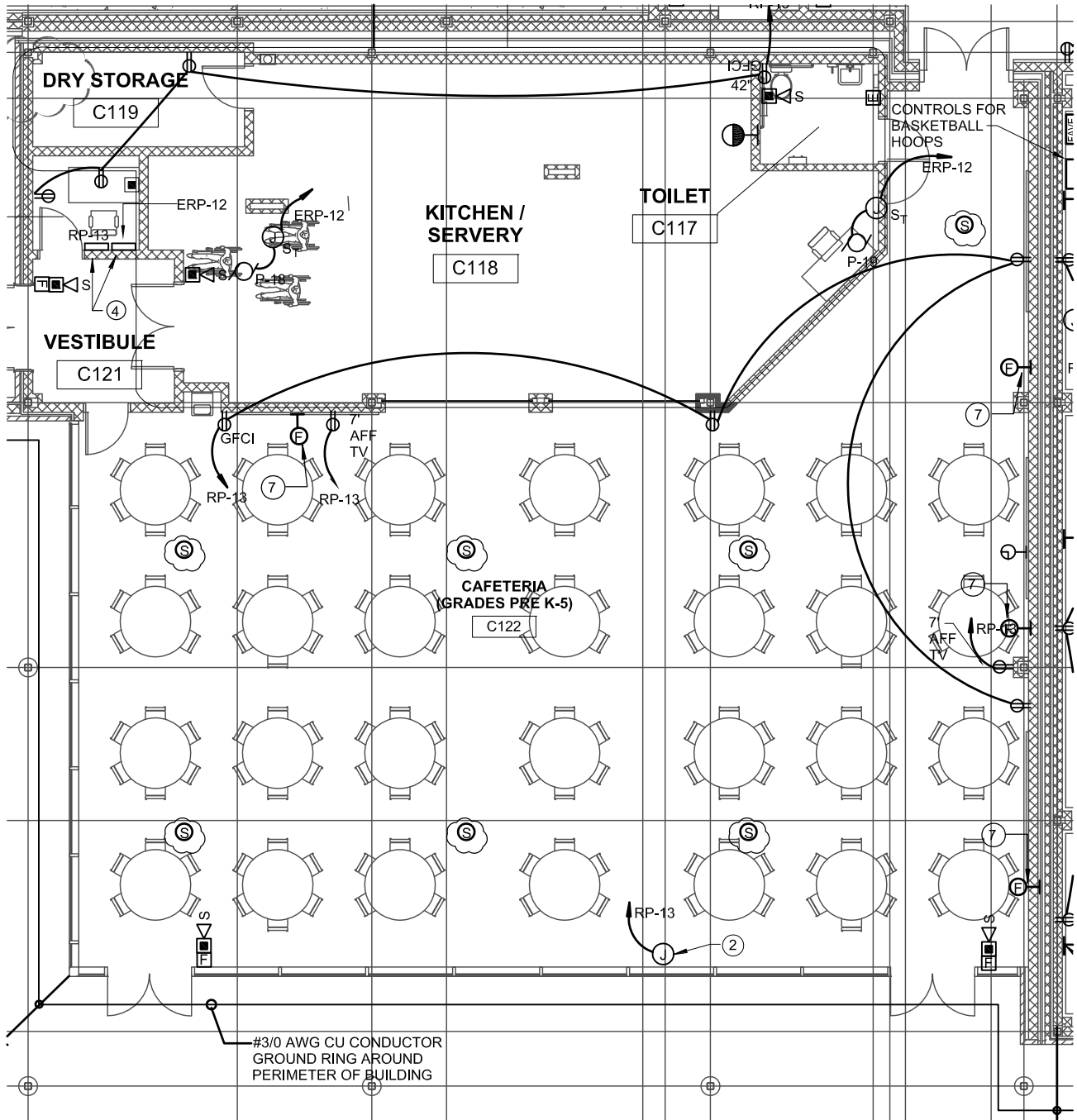


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	DRAWN BY:	APW	SCALE:	1/8" = 1'-0"
			DWG. NO.:	SK-E-101.2-2

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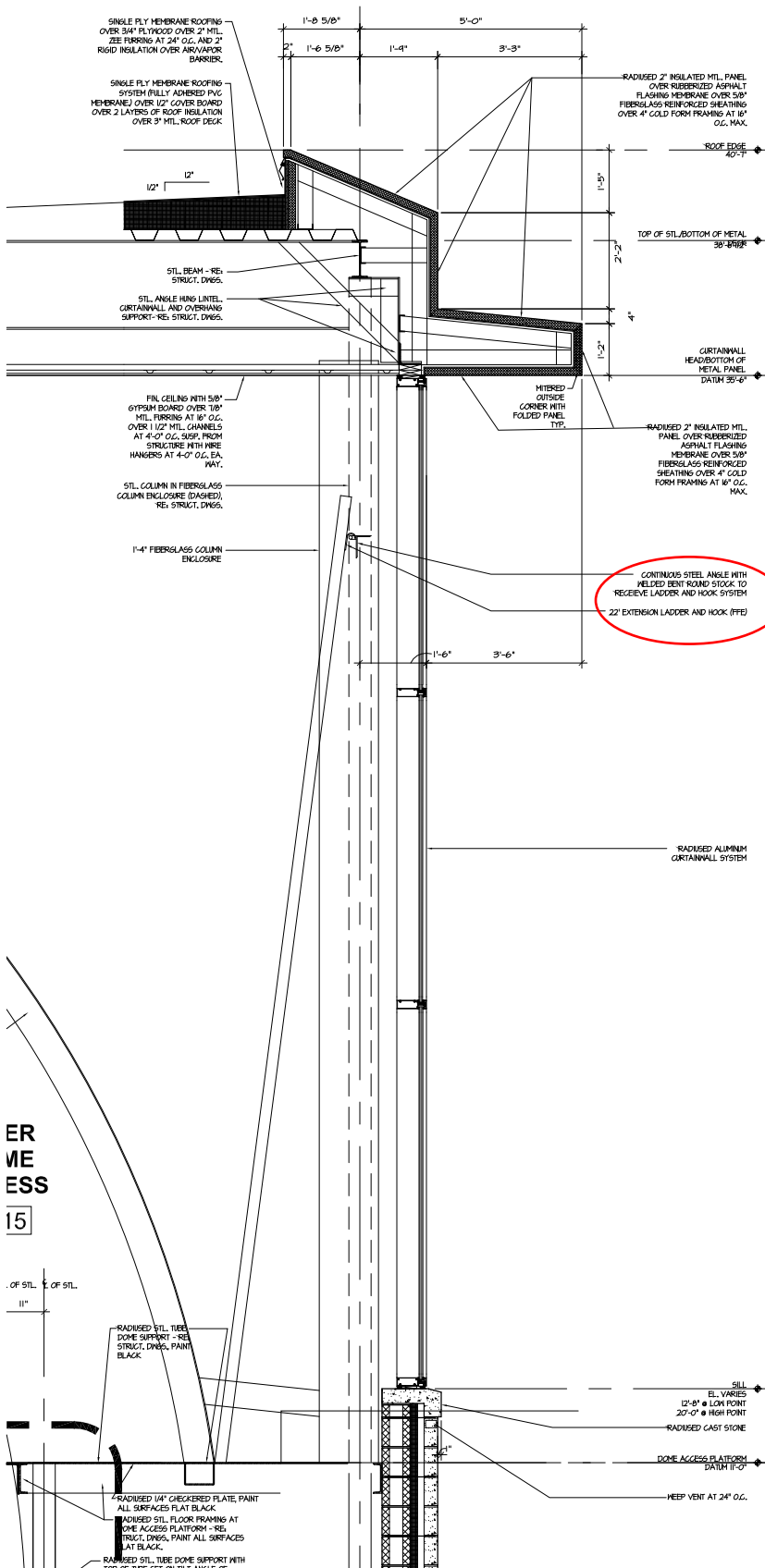
FIXTURE TAG	ACCEPTABLE MANUFACTURER	LAMPS	BALLAST	WATTAGE	MOUNTING	VOLTAGE	DESCRIPTION	LOCATION	REMARKS
B4	MARK ARCHITECTURAL LIGHTING SL4-SLOT4-FLUSH-4-UNIV-15HO-EBIS-277 -FA	(1) TSHO835 FS4WTT5835EEO	ELECTRONIC BALLAST	62	RECESSED	277	MARK ARCHITECTURAL LIGHTING SLOT 4 SERIES. SNAP IN FROSTED CLEAR ACRYLIC LENS. 2" WIDE LONG NARROW CHANNELS OF LIGHT FOR OPTIMAL ILLUMINATION	STAIRS	
BAW	MARK ARCHITECTURAL LIGHTING SL4T-SLOT4T-4-UNIV-15HO-EBIS-277		BATTERY BACK UP BALLAST ELECTRONIC DIMMING BALLAST	62	RECESSED	277	SAME AS BA WITH BATTERY BACK UP EMERGENCY BALLAST	STAIRS	
BAD	MARK ARCHITECTURAL LIGHTING SL4T-SLOT4T-4-UNIV-15HO-EBIS-277		ELECTRONIC DIMMING BALLAST	62	RECESSED	277	SAME AS BA WITH DIMMING BALLAST		REMOVE TENSHT AS
D2	LITHONIA GOTHAM LIGHTOLIER LITHONIA LP8FN32TR1Z77	CFU32TR1	ELECTRONIC BALLAST	32	RECESSED	277	RECESSED COMPACT FLUORESCENT DOWNLIGHT. NOMINAL 6 INCH DIAMETER APERTURE WITH MAXIMUM 11 INCH RECESS DEPTH HOUSING. FULL ALUMINUM REFLECTORS.	DOWNLIGHTS IN RESTROOMS, TOILETS	
D2D	LITHONIA GOTHAM LIGHTOLIER LITHONIA LP8FN32TR1Z77	CFU32TR1	ELECTRONIC DIMMING BALLAST	32	RECESSED	277	RECESSED COMPACT FLUORESCENT DOWNLIGHT. NOMINAL 6 INCH DIAMETER APERTURE WITH MAXIMUM 11 INCH RECESS DEPTH HOUSING. FULL ALUMINUM REFLECTORS. D2D SAME AS D2 WITH DIMMING BALLAST		

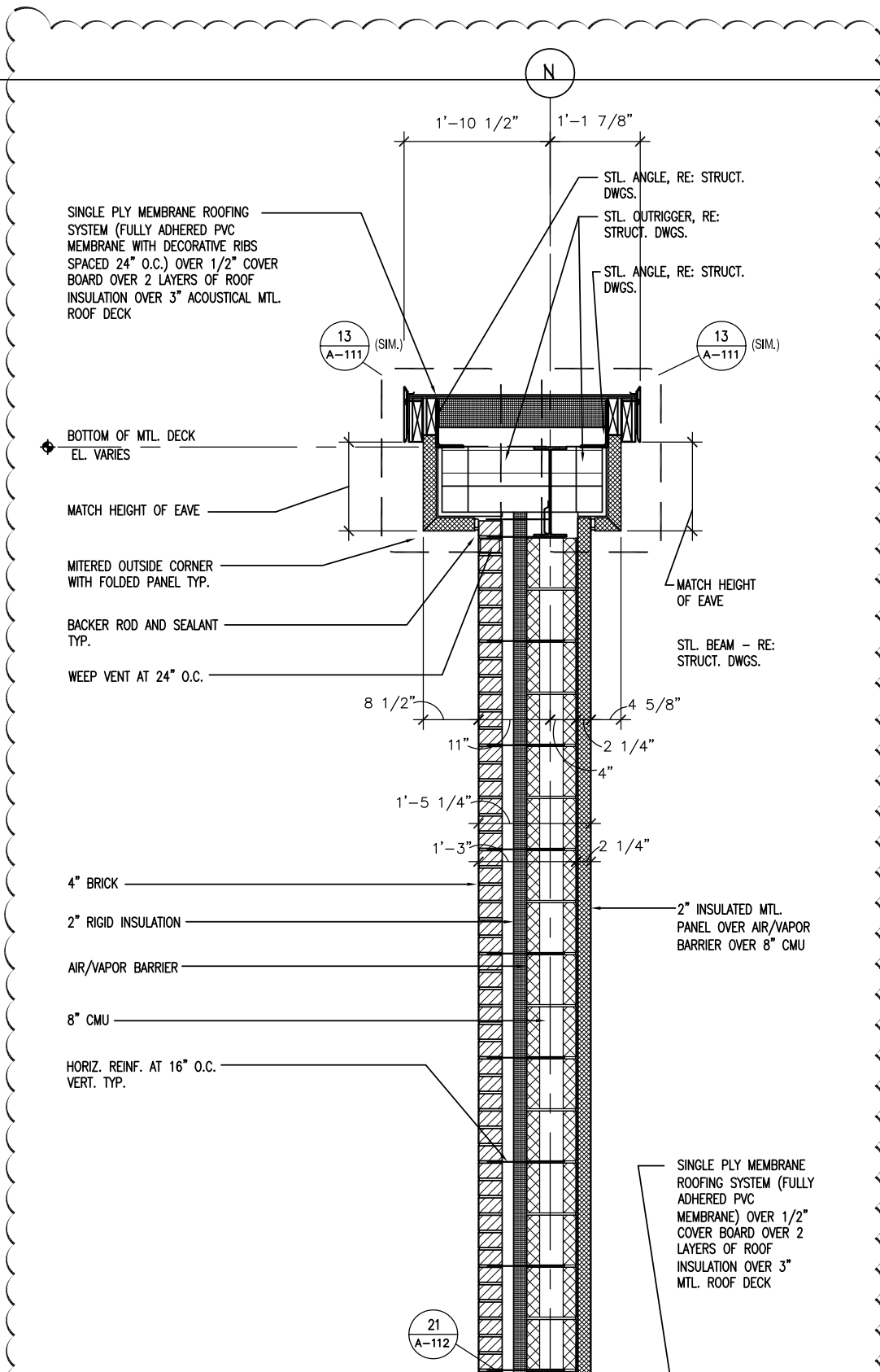
FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244		PROJECT TITLE: GEHEMIS DRAWING TITLE: ELECTG FIXTURE SCHEDULE DRAWN BY: APV SCALE: 1/8" = 1'-0"		DATE: 21 February, 2011 PROJECT NO.: H090230 DWG. NO.: SK-E-002	
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FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE: GEHEMS	DATE: 22 February, 2011
	DRAWING TITLE: FIRST FLOOR POWER PLAN	PROJECT NO.: H090230
	DRAWN BY: APW	SCALE: 1/8" = 1'-0"
		DWG. NO.: SK-E-101.2-1

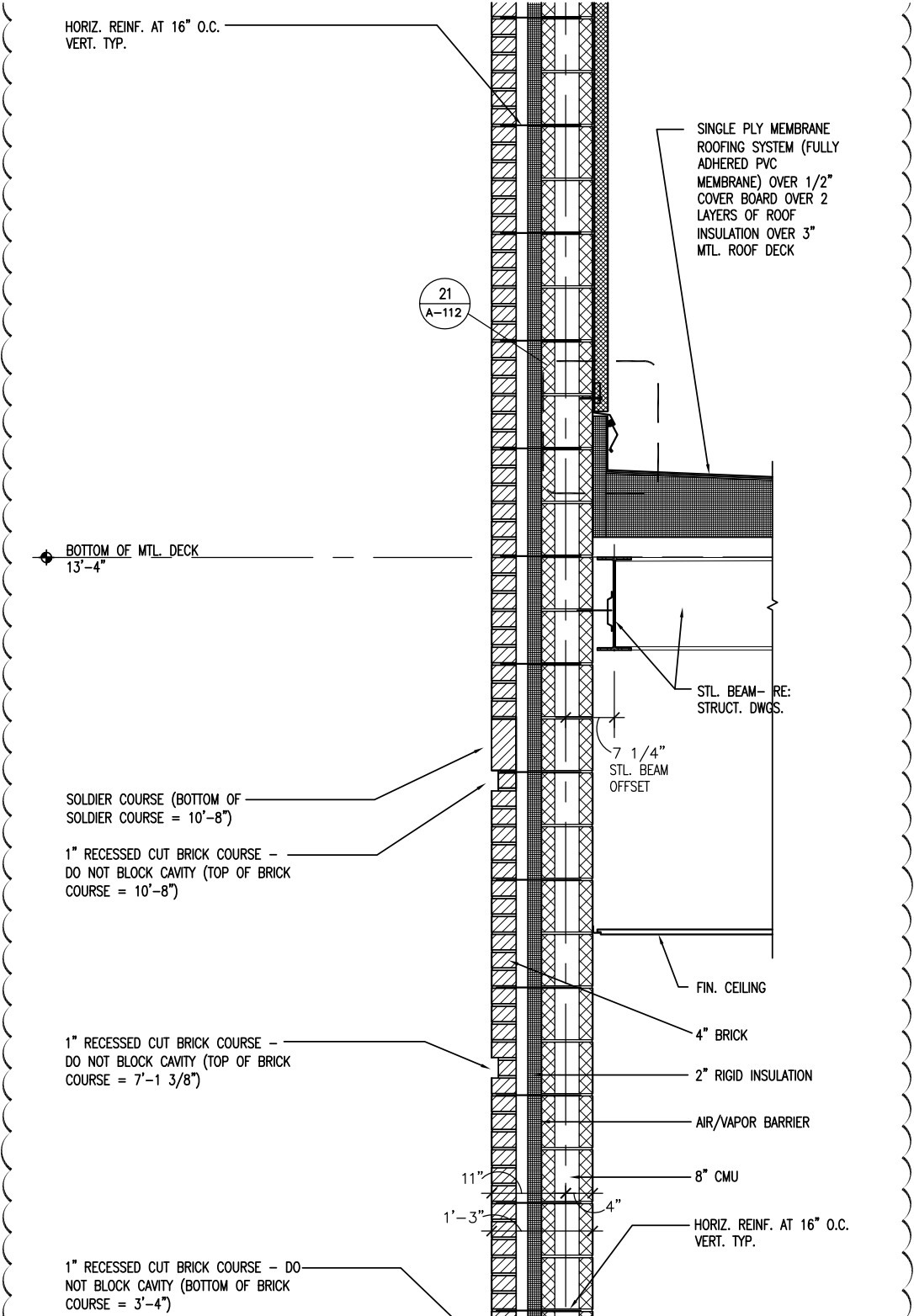
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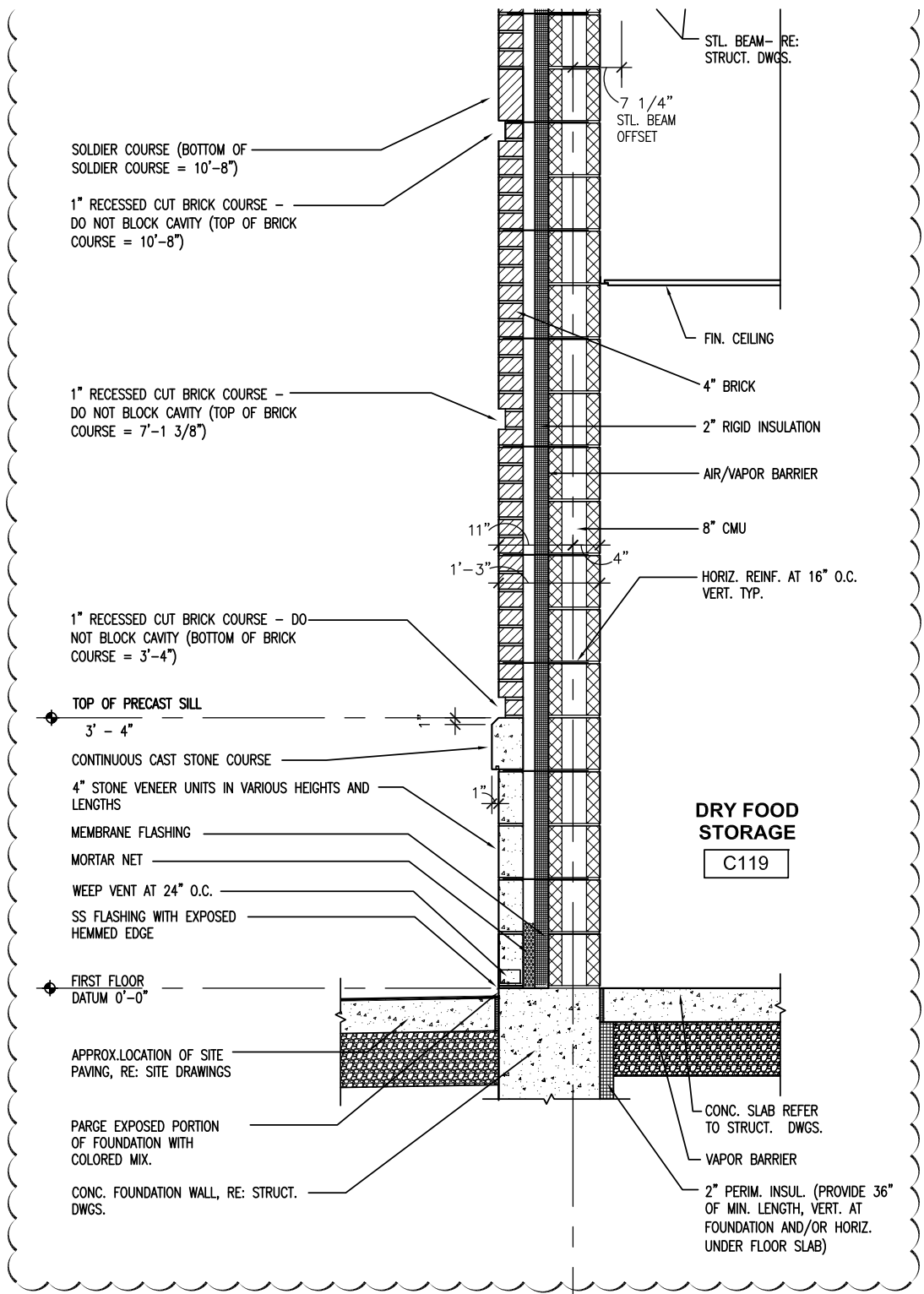
REFER TO SKA-005A AND 005B FOR PORTIONS OF THIS SAME WALL SECTION

FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE: EAST HARTFORD GLASTONBURY	DATE: 2/21/11
	DRAWING TITLE: WALL SECTION PART 3	PROJECT NO.: H090230.000
DRAWN BY: GCC	SCALE: NTS	DWG. NO.: SKA-005C



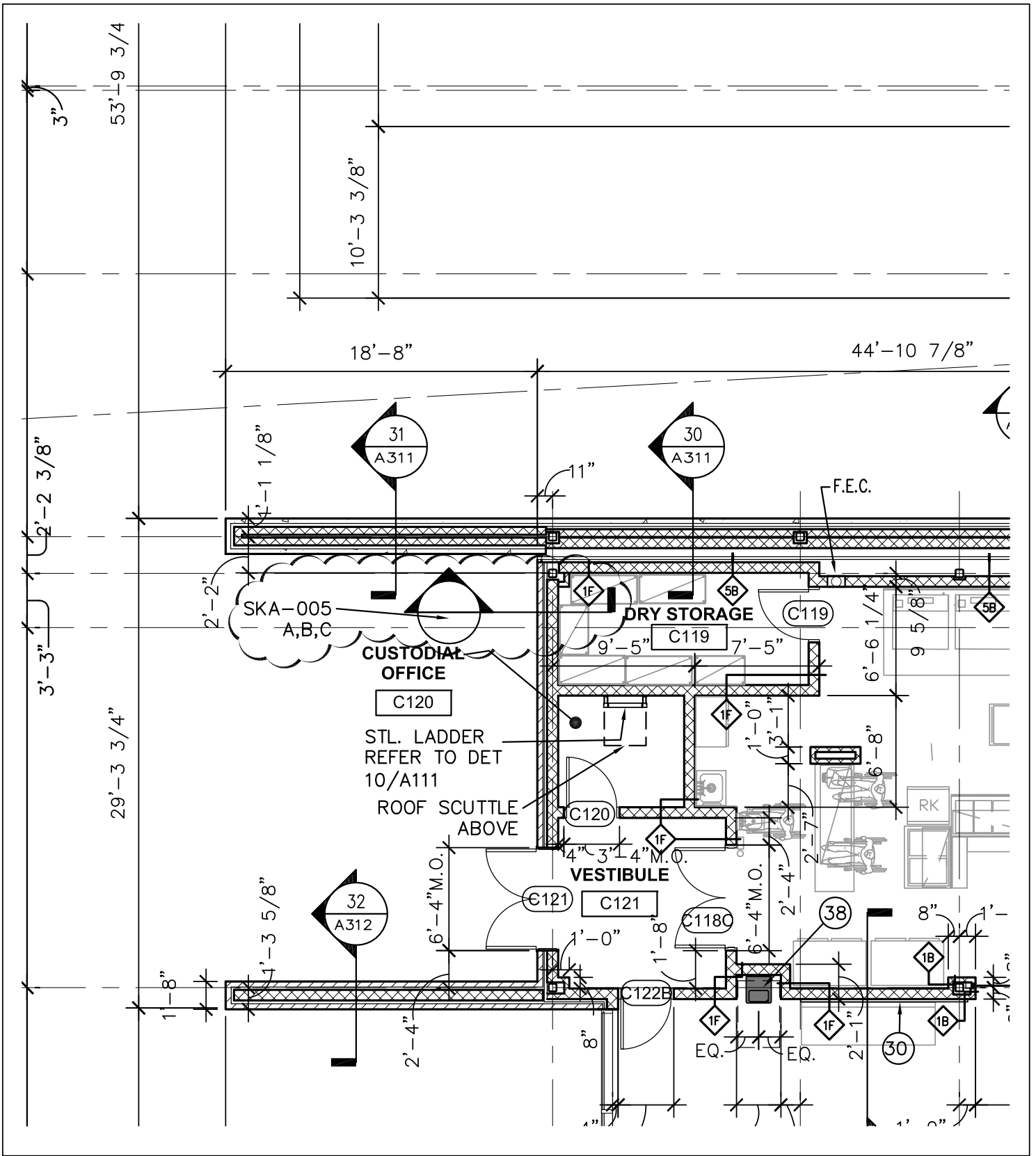
REFER TO SKA-005A AND 005C FOR
PORTIONS OF THIS SAME WALL SECTION

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	DRAWING TITLE: WALL SECTION PART 2	PROJECT NO.: H090230.000
DRAWN BY: GCC	SCALE: NTS	DWG. NO.: SKA-005B



REFER TO SKA-005B AND 005C FOR PORTIONS OF THIS SAME WALL SECTION

FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE:	EAST HARTFORD GLASTONBURY	DATE:	2/21/11	
	DRAWING TITLE:	WALL SECTION PART 1	PROJECT NO.:	H090230.000	
	DRAWN BY:	GCC	SCALE:	1/2" = 1'-0"	DWG. NO.:



FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE: EAST HARTFORD GLASTONBURY	DATE: 2/21/11
	DRAWING TITLE: RE: FLOOR PLAN A-101.3	PROJECT NO.: H090230.000
	DRAWN BY: GCC	SCALE: 1/8" = 1'-0"

Project Sign

Refer to Sign layout design included in specification section 01 50 00.
Detail is for sign construction only. Orientation to be per layout design.
Provide shop drawing for final approval prior to fabrication.

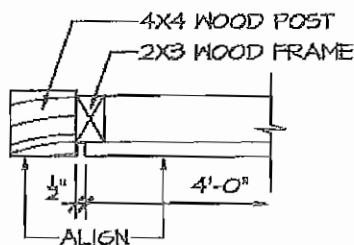
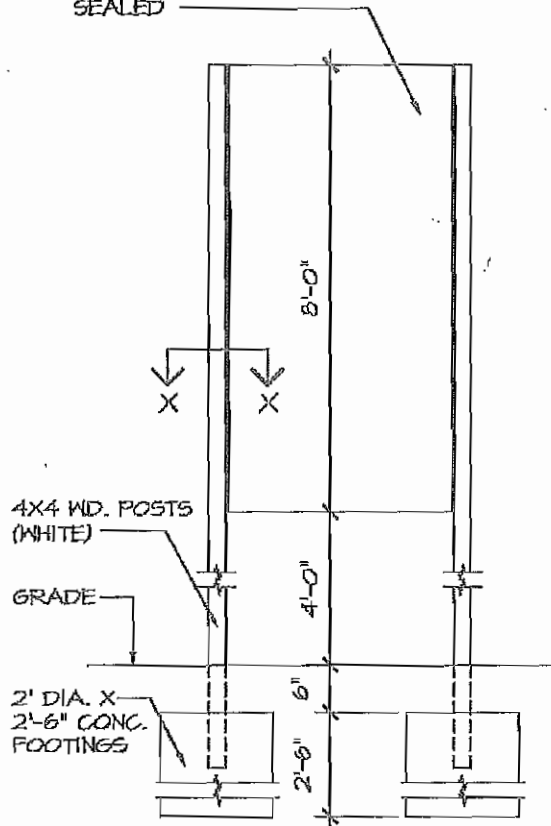
CONSTRUCTION

WOOD POSTS AND FRAME:
CONSTRUCTION GRADE SOUTHERN PINE.
WOOD POSTS: PRESSURE TREATED

ALL FASTENERS HOT DIPPED
GALVANIZED OR STAINLESS STEEL.

ALL WOOD SURFACES: PAINTED,
INCLUDING BACK OF SIGN, 1 COAT
PRIMER & 2 COATS FINISH PAINT, COLOR
AS SELECTED

PLYWOOD: EXTERIOR TYPE 3/4" THICK
APA MARKED, MEDIUM DENSITY
OVERLAY BOTH FACES. ALL EDGES
SEALED

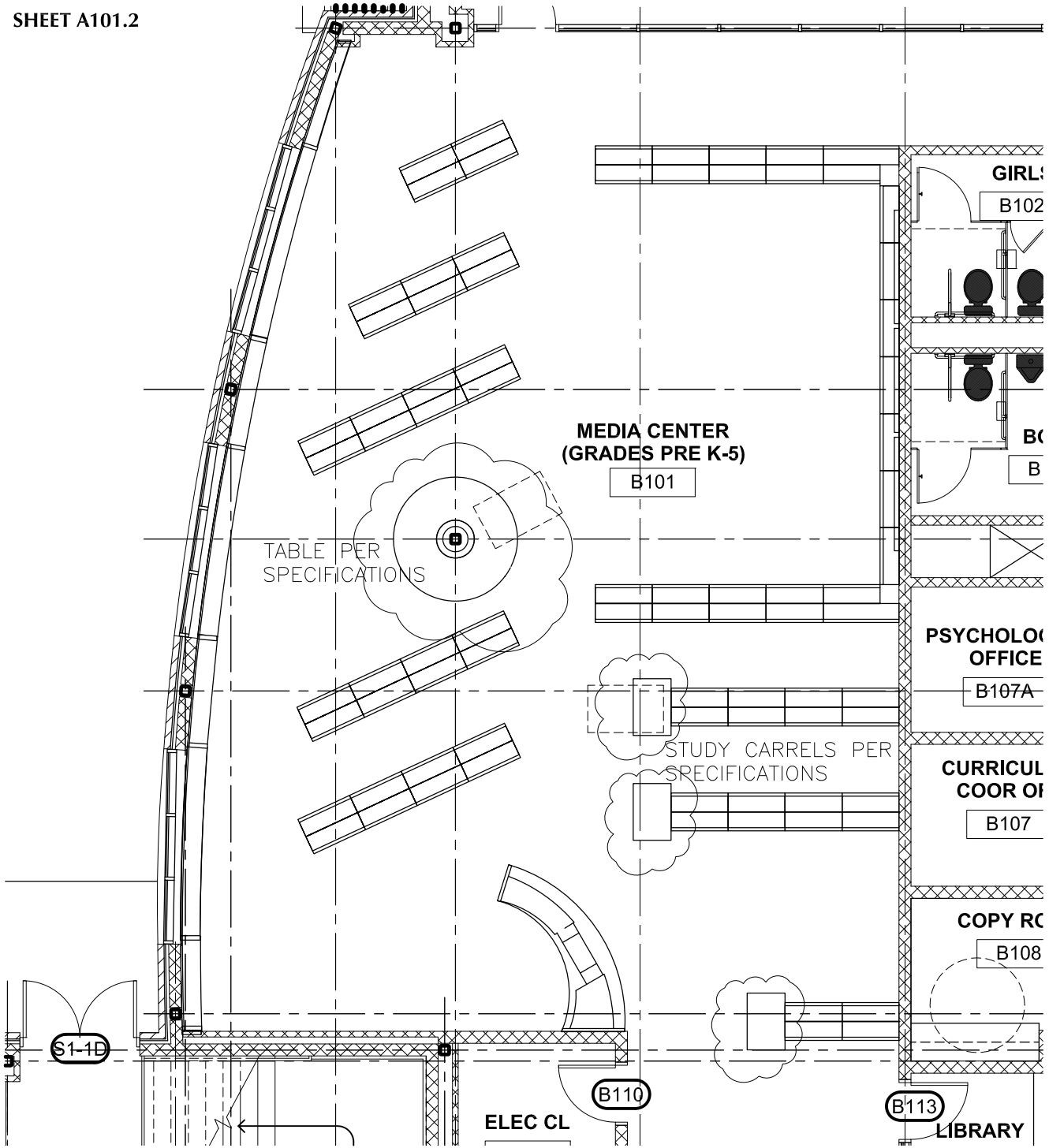


DETAIL X-X
SCALE: NOT TO SCALE

SKETCH SK-01 50 00-1

2/22/11

SHEET A101.2



FLETCHERTHOMPSON
ELEVATING DESIGN | SHAPING SOLUTIONS

FLETCHER-THOMPSON, INC.
THREE CORPORATE DRIVE
SHELTON, CT 06484-6244

PROJECT TITLE: **G .E.H. ELEMENTARY MAGNET SCHOOL** DATE: 2/10/2011

DWG. TITLE: **FIRST FLOOR PLAN - PART B**

PROJECT NO.: H090230

DRAWN BY: K.RYAN

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

DWG. NO.: SK-101.2

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 SECTION INCLUDES

- A. Preamplifiers.
- B. Power amplifiers.
- C. Transfer to standby amplifier.
- D. Microphones.
- E. Volume limiter/compressors.
- F. Control console.
- G. Equipment cabinet.
- H. Equipment rack.
- I. Telephone paging adapters.
- J. Tone generator.
- K. Monitor panel.
- L. Loudspeakers.
- M. Noise-operated gain controllers.
- N. Microphone and headphone outlets.
- O. Battery backup power unit.
- P. Conductors and cables.
- Q. Raceways.

1.3 DEFINITIONS

- A. Channels: Separate parallel signal paths, from sources to loudspeakers or loudspeaker zones, with separate amplification and switching that permit selection between paths for speaker alternative program signals.
- B. VU: Volume unit.
- C. Zone: Separate group of loudspeakers and associated supply wiring that may be arranged for selective switching between different channels.

1.4 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design supports and seismic restraints for control consoles, equipment cabinets and racks, and components, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Seismic Performance: Supports and seismic restraints for control consoles, equipment cabinets and racks, and components shall withstand the effects of earthquake motions determined according to ASCE-7I.
 - 1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: For each type of product indicated.
- C. Shop Drawings: For supports and seismic restraints for control consoles, equipment cabinets and racks, and components. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, required clearances, method of field assembly, components, and location and size of each field connection.
 - 2. Console layouts.
 - 3. Control panels.
 - 4. Rack arrangements.
 - 5. Calculations: For sizing backup battery.
 - 6. Wiring Diagrams: For power, signal, and control wiring.
 - a. Identify terminals to facilitate installation, operation, and maintenance.
 - b. Single-line diagram showing interconnection of components.
 - c. Cabling diagram showing cable routing.

- D. Delegated-Design Submittal: For supports and seismic restraints for control consoles, equipment cabinets and racks, and components indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 - 1. Detail fabrication and assembly of supports and seismic restraints for control consoles, equipment cabinets and racks, and components.
- E. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings are shown and coordinated with each other, using input from installers of the items involved.
- F. Qualification Data: For qualified installer and testing agency.
- G. Seismic Qualification Certificates: For control consoles, equipment cabinets and racks, accessories, and components, from manufacturer.
 - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- H. Field quality-control reports.
- I. Operation and Maintenance Data: For public address and mass notification systems to include in emergency, operation, and maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this project.
 - 1. Personnel certified by NICET as Audio Systems Level III Technician.
- B. Testing Agency Qualifications: Qualified agency, with the experience and capability to conduct testing indicated.
 - 1. Testing Agency's Field Supervisor: Currently certified by NICET at Level III to supervise on-site testing.
- C. Source Limitations: Obtain public address and mass notification systems from single source from single manufacturer.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- E. Comply with NFPA 70.

1.7 COORDINATION

- A. Coordinate layout and installation of system components and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

1.8 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Microphone: Three (3).
 - 2. Desk Stand(s): One (1).

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - 1. Alpha Communications.
 - 2. Altec Lansing Technologies, Inc.
 - 3. Atlas Sound LP.
 - 4. Bogen Communications, Inc.
 - 5. Dukane Communication Systems; part of GE Infrastructure, Security.
 - 6. Edwards Signaling & Security Systems; part of GE Infrastructure, Security.
 - 7. Electro-Voice; Telex Communications, Inc.
 - 8. Federal Signal Corporation; Electrical Products Division.
 - 9. Peavey Electronics.
 - 10. Rauland-Borg Corporation.
 - 11. Whelen Engineering Company, Inc.
 - 12. Inter-M Multi-PA.
 - 13. Rane Corp.

2.2 FUNCTIONAL DESCRIPTION OF SYSTEM

- A. System Functions:
 - 1. Selectively connect any zone to any available signal channel.
 - 2. Selectively control sound from microphone outlets and other inputs.
 - 3. "All-call" feature shall connect the all-call sound signal simultaneously to all zones regardless of zone or channel switch settings.

4. Telephone paging adapter shall allow paging by dialing an extension from any local telephone instrument and speaking into the telephone.
5. Produce a program-signal tone that is amplified and sounded over all speakers, overriding signals currently being distributed.
6. Reproduce high-quality sound that is free of noise and distortion at all loudspeakers at all times during equipment operation including standby mode with inputs off; output free of non-uniform coverage of amplified sound.

2.3 GENERAL EQUIPMENT AND MATERIAL REQUIREMENTS

- A. Compatibility of Components: Coordinate component features to form an integrated system. Match components and interconnections for optimum performance of specified functions.
- B. Equipment: Comply with UL 813. Equipment shall be modular, using solid-state components, and fully rated for continuous duty unless otherwise indicated. Select equipment for normal operation on input power usually supplied at 110 to 130 V, 60 Hz.
- C. Equipment Mounting: Where rack, cabinet, or console mounting is indicated, equipment shall be designed to mount in a 19-inch housing complying with TIA/EIA-310-D.
- D. Weather-Resistant Equipment: Listed and labeled by a qualified testing agency for duty outdoors or in damp locations.

2.4 PREAMPLIFIERS

- A. Preamplifier: Separately mounted.
- B. Preamplifier: Integral to power amplifier.
- C. Output Power: Plus 4 dB above 1 mW at matched power-amplifier load.
- D. Total Harmonic Distortion: Less than one (1) percent.
- E. Frequency Response: Within plus or minus 2 dB from 20 to 20,000 Hz.
- F. Input Jacks: Minimum of two (2). One (1) matched for low-impedance microphone; the other matchable to cassette deck, CD player, or radio tuner signals without external adapters.
- G. Minimum Noise Level: Minus 55 dB below rated output.
- H. Controls: On-off, input levels and master gain.

2.5 POWER AMPLIFIERS

- A. Mounting: Rack.
- B. Output Power: 70-V balanced line. 80 percent of the sum of wattage settings of connected for each station and speaker connected in all-call mode of operation, plus an allowance for future stations.
- C. Total Harmonic Distortion: Less than three (3) percent at rated power output from 50 to 12,000 Hz.
- D. Minimum Signal-to-Noise Ratio: 60 dB, at rated output.
- E. Frequency Response: Within plus or minus 2 dB from 50 to 12,000 Hz.
- F. Output Regulation: Less than 2 dB from full to no load.
- G. Controls: On-off, input levels, and low-cut filter.
- H. Input Sensitivity: Matched to preamplifier and to provide full-rated output with sound-pressure level of less than 10 dynes/sq. cm impinging on speaker microphone or handset transmitter.

2.6 TRANSFER TO STANDBY AMPLIFIER

- A. Monitoring Circuit and Sensing Relay: Detect reduction in output of power amplifier of 40 percent or more and, in such event, transfer load and signal automatically to standby amplifier.

2.7 MICROPHONES

- A. Paging Microphone:
 - 1. Type: Dynamic, with cardioid polar characteristic.
 - 2. Impedance: 150 ohms.
 - 3. Frequency Response: Uniform, 50 to 14,000 Hz.
 - 4. Output Level: Minus 58 dB, minimum.
 - 5. Finish: Satin chrome.
 - 6. Cable: C25J.
 - 7. Mounting: Desk stand with integral-locking, press-to-talk switch.

2.8 VOLUME LIMITER/COMPRESSOR

- A. Minimum Performance Requirements:
 - 1. Frequency Response: 45 to 15,000 Hz, plus or minus 1 dB minimum.
 - 2. Signal Reduction Ratio: At least a 10:1 and 5:1 selectable capability.
 - 3. Distortion: 1 percent, maximum.

4. Rated Output: Minimum of plus 14 dB.
5. Inputs: Minimum of two (2) inputs with variable front-panel gain controls and VU or decibel meter for input adjustment.
6. Rack mounting.

2.9 CONTROL CONSOLE

- A. Cabinet: Modular, desktop; complying with TIA/EIA-310-D.
- B. Housing: Steel, 0.0478-inch minimum, with removable front and rear panels. Side panels are removable for interconnecting side-by-side mounting.
- C. Panel for Equipment and Controls: Rack mounted.
- D. Controls:
 1. Switching devices to select signal sources for distribution channels.
 2. Program selector switch to select source for each program channel.
 3. Switching devices to select zones for paging.
 4. All-call selector switch.
- E. Indicators: A visual annunciation for each distribution channel to indicate source being used.
- F. Self-Contained Power and Control Unit: A single assembly of basic control, electronics, and power supply necessary to accomplish specified functions.
- G. Spare Positions: 20 percent spare zone control and annunciation positions on console.
- H. Microphone jack.

2.10 EQUIPMENT CABINET

- A. Comply with TIA/EIA-310-D.
- B. House amplifiers and auxiliary equipment at each location.
- C. Cabinet Housing:
 1. Constructed of 0.0478-inch steel, minimum, with front- and rear-locking doors and standard TIA/EIA-310-D-compliant, 19-inch racks.
 2. Arranged for floor or wall mounting as indicated.
 3. Sized to house all equipment indicated, plus spare capacity.
 4. Include 20 percent minimum spare capacity for future equipment in addition to space required for future cassette deck and CD player.
- D. Power Provisions: A single switch in cabinet shall disconnect cabinet power distribution system and electrical outlets, which shall be uniformly spaced to accommodate ac-power cords for each item of equipment.

- E. Ventilation: A low-noise fan for forced-air cabinet ventilation. Fan shall be equipped with a filtered input vent and shall be connected to operate from 105- to 130-V ac, 60 Hz; separately fused and switched; arranged to be powered when main cabinet power switch is on.

2.11 EQUIPMENT RACK

- A. Racks: 19 inches standard, complying with TIA/EIA-310-D.
- B. Power-Supply Connections: Compatible plugs and receptacles.
- C. Enclosure Panels: Ventilated rear and sides and solid top. Use louvers in panels to ensure adequate ventilation.
- D. Finish: Uniform, baked-enamel factory finish over rust-inhibiting primer.
- E. Power-Control Panel: On front of equipment housing, with master power on-off switch and pilot light; and with socket for 5-A cartridge fuse for rack equipment power.
- F. Service Light: At top rear of rack with an adjacent control switch.
- G. Vertical Plug Strip: Grounded receptacles, 12 inches o.c.; the full height of rack.
- H. Maintenance Receptacles: Duplex convenience outlets supplied independent of vertical plug strip and located in front and bottom rear of rack.
- I. Spare Capacity: 20 percent in rack for future equipment.

2.12 TELEPHONE PAGING ADAPTER

- A. Adapters shall accept voice signals from telephone extension dialing access and automatically provide amplifier input and program override for preselected zones.
 - 1. Minimum Frequency Response: Flat, 200 to 2500 Hz.
 - 2. Impedance Matching: Adapter matches telephone line to public address equipment input.
 - 3. Rack mounting.

2.13 TONE GENERATOR

- A. Generator shall provide clock and program interface with public address and mass notification system.
- B. Signals: Minimum of seven distinct, audible signal types including wail, warble, high/low, alarm, repeating and single-stroke chimes, and tone.
- C. Pitch Control: Chimes and tone.

- D. Volume Control: All outputs.
- E. Activation-Switch Network: Establishes priority and hierarchy of output signals produced by different activation setups.
- F. Mounting: Rack.

2.14 MONITOR PANEL

- A. Monitor power amplifiers.
- B. Components: VU or dB meter, speaker with volume control, and multiple-position rotary selector switch.
- C. Selector Switch and Volume Control: Selective monitoring of output of each separate power amplifier via VU or dB meter and speaker.
- D. Mounting: Rack.

2.15 LOUDSPEAKERS

A. Cone-Type Loudspeakers:

1. Minimum Axial Sensitivity: 91 dB at one (1) meter, with 1-W input.
2. Frequency Response: Within plus or minus 3 dB from 50 to 15,000 Hz.
3. Size: Eight (8) inches with 1-inch voice coil and minimum 5-oz ceramic magnet.
4. Minimum Dispersion Angle: 100 degrees.
5. Rated Output Level: 10 W.
6. Matching Transformer: Full-power rated with four taps. Maximum insertion loss of 0.5 dB.
7. Surface-Mounting Units: Ceiling, wall, or pendant mounting, as indicated, in steel back boxes, acoustically dampened. Front face of at least 0.0478-inch steel and whole assembly rust proofed and shop primed for field painting.
8. Flush-Ceiling-Mounting Units: In steel back boxes, acoustically dampened. Metal ceiling grille with white baked enamel.

B. Horn-Type Loudspeakers:

1. Type: Single-horn units, double-reentrant design, with minimum full-range power rating of 15 W.
2. Matching Transformer: Full-power rated with four standard taps. Maximum insertion loss of 0.5 dB.
3. Frequency Response: Within plus or minus 3 dB from 250 to 12,000 Hz.
4. Dispersion Angle: 130 by 110 degrees.
5. Mounting: Integral bracket.
6. Units in Hazardous (Classified) Locations: Listed and labeled for environment in which they are located.

2.16 NOISE-OPERATED GAIN CONTROLLER

- A. Gain controller shall be designed to continuously sense space noise level and automatically adjust signal level to local speakers.
- B. Frequency Response: 20 to 20,000 Hz, plus or minus 1 dB.
- C. Level Adjustment Range: 20 dB minimum.
- D. Maximum Distortion: One (1) percent.
- E. Control: Permits adjustment of sensing level of device.

2.17 OUTLETS

- A. Volume Attenuator Station: Wall-plate-mounted autotransformer type with paging priority feature.
 - 1. Wattage Rating: 10 W unless otherwise indicated.
 - 2. Attenuation per Step: 3 dB, with positive off position.
 - 3. Insertion Loss: 0.4 dB maximum.
 - 4. Attenuation Bypass Relay: Single pole, double throw. Connected to operate and bypass attenuation when all-call, paging, program signal, or prerecorded message features are used. Relay returns to normal position at end of priority transmission.
 - 5. Label: "PA Volume."
- B. Microphone Outlet: Three-pole, polarized, locking-type, microphone receptacles in single-gang boxes. Equip wall outlets with brushed stainless-steel device plates. Equip floor outlets with gray tapered rubber or plastic cable nozzles and fixed outlet covers.
- C. Headphone Outlet (for the Hearing Impaired): Microphone receptacles in single-gang boxes. Equip wall outlets with brushed stainless-steel device plates. Equip floor outlets with gray tapered rubber or plastic cable nozzles and fixed-outlet covers.

2.18 BATTERY BACKUP POWER UNIT

- A. Unit shall be rack mounted, consisting of time-delay relay, sealed lead-calcium battery, battery charger, on-off switch, "normal" and "emergency" indicating lights, and adequate capacity to supply maximum equipment power requirements for one (1) hour of continuous full operation.
- B. Unit shall supply public address equipment with 12- to 15-V dc power automatically during an outage of normal 120-V ac power.
- C. Battery shall be on float charge when not supplying system and to transfer automatically to supply system after three to five seconds of continuous outage of normal power, as sensed by time-delay relay.

- D. Unit shall automatically retransfer system to normal supply when normal power has been reestablished for three to five seconds continuously.

2.19 CONDUCTORS AND CABLES

- A. Jacketed, twisted pair and twisted multi-pair, untinned solid copper.
 - 1. Insulation for Wire in Conduit: Thermoplastic, not less than 1/32-inch thick.
 - 2. Microphone Cables: Neoprene jacketed, not less than 2/64-inch thick, over shield with filled interstices. Shield No. 34 AWG, tinned, soft-copper strands formed into a braid or approved equivalent foil. Shielding coverage on conductors is not less than 60 percent.
 - 3. Plenum Cable: Listed and labeled for plenum installation.

2.20 RACEWAYS

- A. Conduit and Boxes: Comply with Section 26 05 33.
 - 1. Outlet boxes shall be not less than two (2) inches wide, three (3) inches high, and 2-1/2 inches deep.

2.21 GYMNASIUM SOUND SYSTEM

- A. Provide Sound System as manufactured by Rane or equal, configured as follows:
 - 1. Pre-Amplifier: Rane MLM82S Line Mixer or equal.
 - 2. Amplifier: Samson SX1800 or equal.
 - 3. Equalizer: Rane ME30S micrographic Equalizer or equal.
 - 4. Rack mountable CD player: Paso / Teac PCD200i or equal.
- B. Provide Equipment Rack, Model EWR-16-22SD as manufactured by Middle Atlantic, or equal.
 - 1. Provide rack shelf model U1.
 - 2. Provide power distribution model PD-920R-NS.
- C. Provide Speakers as follows:
 - 1. Provide two (2) speakers; model R.5-66Z manufactured by Community, or equal.
 - a. Provide wall mount bracket.
- D. Provide Peavey Microphones:
 - a. Pro Comm PCX U-12, Handheld System CH A1
- E. The Contractor shall provide assisted listening systems as manufactured by Listen Technologies Corporation, or equal, configuration as follows:
 - 1. Provide one (1) LT800-072 Stationary Transmitter
 - 2. Thirty-five (35) LR400-072 Display receiver
 - 3. Thirty-five (35) LA362 Rechargeable Batteries
 - 4. Five (5) LA166 Neckloop Headphone
 - 5. Thirty (30) LA 164 Ear Speaker

6. One (1) LA 326 Rack Mounting Kit
7. One (1) LA311 Drop-in Charging Carrying Case
8. One (1) LA122 Universal Antenna Kit
9. One (1) LA304 ADA Compliance Signage Kit

2.22 CAFETERIA SOUND SYSTEM

- A. Provide Sound System as manufactured by Rane or equal, configured as follows:
 1. Pre-Amplifier: Rane MLM82S Line Mixer or equal.
 2. Amplifier: Samson SX1800 or equal.
 3. Equalizer: Rane ME30S micrographic Equalizer or equal.
 4. Rack mountable CD player: Paso / Teac PCD200i or equal.
- B. Provide Speakers as follows:
 1. Provide two (2) JBL installed main speakers model PD5212/64
 - a. Provide wall mount bracket
- C. Provide Peavey Microphones:
 1. Two (2) Pro Comm PCX U-12, Handheld System CH A6 & A8
 - a. Provide rack mount kit.
- D. Provide assisted listening systems as manufactured by Listen Technologies Corporation, or equal, configured as follows:
 1. Provide one (1) LT800-072 Stationary Transmitter
 2. Twelve (12) LR400-072 Display Receiver
 3. Two (2) LA166 Neckloop Headphones
 4. Twelve (12) LA164 Ear Speaker
 5. One (1) LA122 Universal Antenna Kit
 6. One (1) LA326 Rack Mounting Kit
 7. One (1) LA311 Drop-in Charging Carrying Case
 8. Twelve (12) LA 362 Rechargeable Batteries
 9. One (1) LA304 ADA Compliance Signage Kit
- E. Provide Equipment Rack, Model S12DG, as manufactured by Middle Atlantic, or equal.
 1. Provide rack shelf model U1.
 2. Provide power distribution model PD-920R-NS

2.23 IMMERSIVE THEATER SOUND SYSTEM

- A. Provide assisted listening systems as manufactured by Listen Technologies Corporation, or equal, configured as follows:
 1. Provide one (1) LT800-072 Stationary Transmitter
 2. Twelve (12) LR400-072 Display Receiver
 3. Two (2) LA166 Neckloop Headphones
 4. Twelve (12) LA164 Ear Speaker
 5. One (1) LA122 Universal Antenna Kit
 6. One (1) LA326 Rack Mounting Kit
 7. One (1) LA311 Drop-in Charging Carrying Case
 8. Twelve (12) LA 362 Rechargeable Batteries

- 9. One (1) LA304 ADA Compliance Signage Kit
- B. Provide Equipment Rack, Model S12DG, as manufactured by Middle Atlantic, or equal.
 - 1. Provide rack shelf model U1.
 - 2. Provide power distribution model PD-920R-NS

2.24 INTERIOR SPEAKERS:

- A. Corridor, Classroom and Office 25V speakers shall be model number R3805-25-S, as manufactured by Lowell, or equal.
 - 1. Provide Recessed Backbox 8XD4
 - 2. Provide ceiling Support LBS8-R1
- B. Horn Speakers, indoor/outdoor horn loudspeaker, Atlas/Soundolier # APF-15T Horn Speaker. Flush mount, as indicated on drawings, double re-entrant type. Has 180 degree dispersion. Handles 15 watts RMS. Frequency response range: 600 – 14,000 Hz. With built-in vari-tap 25V/70V line-matching transformer. Heavy-gauge aluminum alloy construction. Baffle shall be Vandal-proof and Tamper-proof. Special strength aluminum alloy construction, with baffle front backed up by heavy gauge perforated steel screen, Atlas/Soundolier # VP161A-APF Surface backbox shall be Atlas/Soundolier # SE161-R6, recessed backbox shall be Atlas/Soundolier # 193-8-6.

2.25 EXTERIOR SPEAKERS:

- A. Horn Speakers, indoor/outdoor horn loudspeaker, Atlas/Soundolier #APF-15T Horn Speaker. Double re-entrant type. Has 180 degree dispersion. Handles 15 watts RMS. Frequency response range 600 – 14,000 Hz. With built-in vari-tap 25V/70V line matching transformer. Heavy-gauge aluminum construction. Baffle shall be Vandal-proof and tamper-proof. Special strength aluminum alloy construction, with baffle front backed up by heavy-gauge perforated steel screen, Atlas/Soundolier # VP161A-APF. Surface backbox shall be Atlas/Soundolier #SE161-R6, recessed backbox shall be Atlas/Soundolier #193-8-6.

2.26 SPEAKER CABLING:

- A. Provide and terminate all cabling per manufactures' recommendations for a completely operational system as specified.
- B. At all backbox locations, cables shall have a minimum 18" service loop coiled in backbox.
- C. Public Address System Cabling:
 - 1. Sound/Speaker cabling shall be home-run and looped directly to applicable headend termination board, as specified. All cable runs shall be free from in-line splices. Insulate all cable shields *(at field device end) from field grounds by cutting and taping shields.
 - a. Classroom speaker feed, office speakers, conference room speakers, work room speakers, exterior horn speakers, and others areas that they have

only one (1) public address speaker or feed shall each be individually home-run, without splices, back to the headend. Provide 22 AWG stranded shielded speaker cables.

- b. Hallways and other areas that have multiple speakers may have a maximum of eight (8) speakers per speaker loop home-run, without splices, back to their respective sound headend. Provide 18 AWG-stranded speaker cables.
- c. Horn Speaker areas that have multiple speakers may have a maximum of four (4) speakers per speaker loop home run, without splices, back to their respective sound headend. Provide 18 AWG-stranded speaker cables.

- D. Terminate speaker cables on dual row plastic terminal strips. Mount terminal strip cabinet. Provide stainless steel jumper clips to zone speakers as follows:
 - 1. Hallways
 - 2. Classroom
 - 3. Offices
 - 4. Exterior
 - 5. Cafeteria
 - 6. Media Center
 - 7. Gymnasium
- E. Wire shall be run in conduit in exposed areas and closets. Ty wrap cable in cabinet to form neat and professional cable bundle.

2.27 GROUNDING:

- 1) Except where specifically indicated otherwise, all exposed non-current carrying metallic parts of the communications system shall be grounded. This may be accomplished via a driven ground rod, cold water pipe or building power ground. If the building power ground is used, a separate ground conductor shall be used from the equipment to the grounding grid. All grounding shall be done with #6 solid copper wires or larger. The contractor shall use every effort to insure system stability and safety.

2.28 SPEAKER INSTALLATION:

- A. Interior speakers shall be tapped as follows:
 - 1. Tap Corridor and Cafeteria/Kitchen Speakers at 1 Watt.
 - 2. Tap Classroom Speakers at ½ Watt
 - 3. Tap Gymnasium Speakers at 15 Watts
 - 4. Tap Office at ½ Watt
 - 5. Tap Exterior horn at 15 Watt

PART 3 - EXECUTION

3.1 WIRING METHODS

- A. Wiring Method: Install cables in raceways and cable trays except within consoles, cabinets, desks, and counters, and except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Conceal raceway and cables except in unfinished spaces.
 - 1. Install plenum cable in environmental air spaces, including plenum ceilings.
 - 2. Comply with requirements for raceways and boxes specified in Section 26 05 33.
- B. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.
- C. Wiring within Enclosures: Bundle, lace, and train cables to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

3.2 INSTALLATION OF RACEWAYS

- A. Comply with requirements in Section 26 05 33 for installation of conduits and wireways.
- B. Install manufactured conduit sweeps and long-radius elbows whenever possible.

3.3 INSTALLATION OF CABLES

- A. Comply with NECA 1.
- B. General Cable Installation Requirements:
 - 1. Terminate conductors; no cable shall contain unterminated elements. Make terminations only at outlets and terminals.
 - 2. Splices, Taps, and Terminations: Arrange on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures. Cables may not be spliced.
 - 3. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
 - 4. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
 - 5. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
 - 6. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used.
- C. Open-Cable Installation:

1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
 2. Suspend speaker cable not in a wireway or pathway a minimum of eight (8) inches above ceiling by cable supports not more than 60 inches apart.
 3. Cable shall not be run through structural members or be in contact with pipes, ducts, or other potentially damaging items.
- D. Separation of Wires: Separate speaker-microphone, line-level, speaker-level, and power wiring runs. Install in separate raceways or, where exposed or in same enclosure, separate conductors at least 12 inches apart for speaker microphones and adjacent parallel power and telephone wiring. Separate other intercommunication equipment conductors as recommended by equipment manufacturer.

3.4 INSTALLATION

- A. Match input and output impedances and signal levels at signal interfaces. Provide matching networks where required.
- B. Identification of Conductors and Cables: Color-code conductors and apply wire and cable marking tape to designate wires and cables so they identify media in coordination with system wiring diagrams.
- C. Equipment Cabinets and Racks:
1. Group items of same function together, either vertically or side by side, and arrange controls symmetrically. Mount monitor panel above the amplifiers.
 2. Arrange all inputs, outputs, interconnections, and test points so they are accessible at rear of rack for maintenance and testing, with each item removable from rack without disturbing other items or connections.
 3. Blank Panels: Cover empty space in equipment racks so entire front of rack is occupied by panels.
- D. Volume Limiter/Compressor: Equip each zone with a volume limiter/compressor. Install in central equipment cabinet. Arrange to provide a constant input to power amplifiers.
- E. Wall-Mounted Outlets: Flush mounted.
- F. Floor-Mounted Outlets: Conceal in floor and install cable nozzles through outlet covers. Secure outlet covers in place. Trim with carpet in carpeted areas.
- G. Conductor Sizing: Unless otherwise indicated, size speaker circuit conductors from racks to loudspeaker outlets not smaller than No. 18 AWG and conductors from microphone receptacles to amplifiers not smaller than No. 22 AWG.
- H. Weatherproof Equipment: For units that are mounted outdoors, in damp locations, or where exposed to weather, install consistent with requirements of weatherproof rating.
- I. Speaker-Line Matching Transformer Connections: Make initial connections using tap settings indicated on Drawings.

- J. Connect wiring according to Section 26 0519.

3.5 GROUNDING

- A. Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.
- B. Signal Ground Terminal: Locate at main equipment cabinet. Isolate from power system and equipment grounding.
- C. Install grounding electrodes as specified in Section 26 05 26.

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Tests and Inspections:
 - 1. Schedule tests with at least seven days' advance notice of test performance.
 - 2. After installing public address and mass notification systems and after electrical circuitry has been energized, test for compliance with requirements.
 - 3. Operational Test: Perform tests that include originating program and page messages at microphone outlets, preamplifier program inputs, and other inputs. Verify proper routing and volume levels and that system is free of noise and distortion.
 - 4. Signal-to-Noise Ratio Test: Measure signal-to-noise ratio of complete system at normal gain settings as follows:
 - a. Disconnect microphone at connector or jack closest to it and replace it in the circuit with a signal generator using a 1000-Hz signal. Replace all other microphones at corresponding connectors with dummy loads, each equal in impedance to microphone it replaces. Measure signal-to-noise ratio.
 - b. Repeat test for each separately controlled zone of loudspeakers.
 - c. Minimum acceptance ratio is 50 dB.
 - 5. Distortion Test: Measure distortion at normal gain settings and rated power. Feed signals at frequencies of 50, 200, 400, 1000, 3000, 8000, and 12,000 Hz into each preamplifier channel. For each frequency, measure distortion in the

paging and all-call amplifier outputs. Maximum acceptable distortion at any frequency is three (3) percent total harmonics.

6. Acoustic Coverage Test: Feed pink noise into system using octaves centered at 500 and 4000 Hz. Use sound-level meter with octave-band filters to measure level at five locations in each zone. For spaces with seated audiences, maximum permissible variation in level is plus or minus 2 dB. In addition, the levels between locations in same zone and between locations in adjacent zones must not vary more than plus or minus 3 dB.
7. Power Output Test: Measure electrical power output of each power amplifier at normal gain settings of 50, 1000, and 12,000 Hz. Maximum variation in power output at these frequencies must not exceed plus or minus 1 dB.
8. Signal Ground Test: Measure and report ground resistance at public address equipment signal ground. Comply with testing requirements specified in Section 26 05 26.

- E. Inspection: Verify that units and controls are properly labeled and interconnecting wires and terminals are identified. Prepare a list of final tap settings of paging speaker-line matching transformers.
- F. Public address and mass notification systems will be considered defective if they do not pass tests and inspections.
- G. Prepare test and inspection reports.
 1. Include a record of final speaker-line matching transformer-tap settings, and signal ground-resistance measurement certified by installer.

3.7 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
 1. Verify that electrical wiring installation complies with manufacturer's submittal and installation requirements.
 2. Complete installation and startup checks according to manufacturer's written instructions.

3.8 ADJUSTING

- A. On-Site Assistance: Engage a factory-authorized service representative to provide on-site assistance in adjusting sound levels, resetting transformer taps, and adjusting controls to meet occupancy conditions.
- B. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two (2) visits to project during other-than-normal occupancy hours for this purpose.

3.9 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain the public address and mass notification systems and equipment.

END OF SECTION

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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. This Section includes equipment for stage lighting systems, including fixtures, lamps, dimmers, controls, and distribution components.
- B. Related Sections include the following:
 - 1) Theater Rigging and Equipment: Related on-stage components.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: For fixtures, lamps, distribution components, and control systems, including dimensions and data on features and components. Include data on ratings and features of devices.
- C. Shop Drawings: Detail dimmer racks showing arrangements, characteristics, and circuit assignments of various modules. Include elevation views of front panels indicating devices and controls. Include illustrations and dimensioned outline drawings.
 - 1) Wiring Diagrams: Detail wiring for power and control systems and differentiate between manufacturer-installed and field-installed wiring.
- D. Manufacturer Certificates: Signed by manufacturers certifying that they comply with requirements. Include evidence of manufacturing experience.
- E. Field Test Reports: Indicate and interpret test results for compliance with performance requirements.
- F. Maintenance Data: For fixtures, distribution components, software operating manuals, instructional videotapes, and controls to include in maintenance manuals specified in Division 01.
- G. Record Data: Show connections and circuit and channel assignments.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who is an authorized representative of the stage lighting manufacturer for both installation and maintenance of units required for this Project.
- B. Manufacturer Qualifications: A firm experienced in manufacturing equipment similar to that indicated for this Project that maintains technical support service available by toll-free

telephone number. Service capable of providing user with training, parts, and emergency maintenance and repair support with 24 hours' maximum response time.

- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- D. Comply with NFPA 70.

1.5 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1) Dimmer Modules: One of each type and rating installed.
 - 2) Lamps: 1 for every 10 of each ANSI code, type, and rating installed. Furnish at least one of each type.
 - 3) Glass Roundels: One for every three of each type and color installed. Furnish at least one of each type.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - 1) Fixtures:
 - a) Altman Stage Lighting Co., Inc.
 - b) Colortran, Inc.
 - c) ETC.
 - d) Strand Lighting.
 - 2) Lamps:
 - a) GE Lighting.
 - b) GTE's Sylvania Lighting; GTE Electrical Products.
 - c) OSRAM Sylvania, Inc.
 - d) Philips Lighting Company.
 - 3) Control Equipment:
 - a) Colortran, Inc.
 - b) Electronic Theatre Controls, Inc.
 - c) Electronics Diversified, Inc.
 - d) Strand Lighting.

- 4) Distribution Equipment:
 - a) Colortran, Inc.
 - b) Electronic Theatre Controls, Inc.
 - c) Electronics Diversified, Inc.
 - d) Strand Lighting.

2.2 FIXTURES AND DISTRIBUTION COMPONENTS, GENERAL

- A. Metal Parts: Free from burrs, sharp corners, and edges.
- B. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.
- C. Fixture Doors and Other Internal Access: Smooth operating, free from light leakage under operating conditions, and arranged to permit relamping without use of tools. Arrange doors, lenses, diffusers, and other pieces to prevent accidental falling during relamping and when secured in operating position.
- D. Pigtail: Factory-wired, 36-inch- long, three-wire cord and plug connector assembly with cord encased in woven fiberglass or silicone tubing.
- E. Plug Connectors: Two-pole, three-wire, 20-A, twist-locking type.
- F. Pipe Clamps: Malleable iron, suitable for clamping fixtures or items to pipe from 3/4 to 2 inches in OD. Arrange fixture clamps for horizontal rotation of yoke for aiming and equipped with T-bolt to lock alignment.
- G. Safety Cables: Heavy-duty, flexible steel, 30-inch nominal length, with spring clip at one end and steel ring at other.
- H. Lamp Sockets: Relampable without disturbing focus adjustment or alignment.
- I. Fixture Ventilation Openings: Baffled against light leaks.
- J. Fixture Operating Controls and Handles: Thermally insulated.
- K. Lenses: Borosilicate glass in silicone mountings.
- L. Framing Shutters: Stainless steel, four way, with each blade in a separate plane under adjustable tension mounting. Blades adjust plus or minus 30 degrees of rotation in gate, for 120-degree-minimum total angular rotation between adjacent blades.
- M. Color Filter Frame Holder: Attached to front of fixture.
- N. Fixture Yoke: Rigid metal, arranged for vertical aiming of unit and equipped with T-bolt or hand screw to lock alignment.

2.3 FIXTURES

- A. General: Listed under UL 1573.
- B. Standard Features: Equip each fixture with pigtail, yoke with pipe clamp, safety cable for batten mounting, and filter holder.

- C. Ellipsoidal Spotlights: Accommodate 500- to 1000-W lamp rating. Unit has framing shutters and pattern slot with three pattern holders for each fixture. Minimum cosine illumination performance ratings when operated with ANSI code FEL lamp are as follows:
 - 1) 171,000 beam candlepower with 20-degree field angle spotlight.
 - 2) 48,000 beam candlepower with 40-degree field angle spotlight.
- D. Zoom Ellipsoidal Spotlights: Accommodate 500- to 1000-W lamp rating. Unit has framing shutters and pattern slot. Operator adjustable from 25- to 50-degree field angle. Label field angle adjustment scale on instrument housing for field reference.
 - 1) Minimum Cosine Illumination: 82,000 beam candlepower when operated with ANSI code FEL lamp at 35-degree field angle.
 - 2) Pattern Holders: Three for each fixture.
- E. Fresnel Lens Spotlights: 6-inch lens and 500- to 1000-W lamp rating. Housing is die cast and extruded aluminum, with hinged front for relamping.
 - 1) Illumination Performance: 175,000 beam candlepower with 12.5-degree field angle spotlight when operated with ANSI code EGT lamp in spot focus. Produce 12,000 beam candlepower with 74.6-degree field angle spotlight when operated with fixture in flood focus.
 - 2) Accessories: Two, four-leaf barn doors for every three fixtures.
- F. Follow Spotlight: Adjustable lenses in metal housing, with the following features:
 - 1) Lamp: Quartz-projector type.
 - 2) Adjustable underslung base stand mounted on 3-inch, locking-type, rubber-tired, ball-bearing casters.
 - 3) Adjustable lamp-holder/socket assembly with precision tuning adjustment and relampable without tools.
 - 4) Three-leaf, full-range mechanical dimmer.
 - 5) Adjustable iris and framing shutters.
 - 6) Automatic color boom.
 - 7) Removable 25-foot power cable.
 - 8) Iris Open, Spot-Focus Performance: 800,000 beam candlepower with 7.2-degree field angle.
 - 9) Iris Open, Flood-Focus Performance: 330,000 beam candlepower with 12.2-degree field angle.

2.4 LAMPS

- A. Comply with the standard of the ANSI C78 series that is applicable to each type of lamp. Where lamps of designated type, characteristics, and wattage are not indicated, provide lamps recommended by manufacturer of fixture in highest wattage for which fixture is listed.

2.5 DISTRIBUTION COMPONENTS

- A. Connector Strip: Factory-wired wireway and receptacle assembly.
 - 1) Wireway: Steel or extruded aluminum, with removable cover and internal terminal block. Nominal cross-section dimensions of 3 by 4-1/2 inches.
 - 2) Receptacles: Pigtail mounted, 18 inches long, with strain relief at wireway wall penetration.
 - 3) Receptacles: Flush mounted in wireway cover.
 - 4) Receptacle Wiring: Connect to terminal blocks with 125 deg C, cross-linked, polyethylene-insulated, identification-labeled wire.
 - 5) Terminal Blocks: Molded-barrier type, with screw lugs to suit supply conductors.
 - 6) Mounting Hardware: Furnished with each unit, permits surface, single-pipe-bracket, or double-pipe-bracket mounting.
- B. Plugging Boxes: Factory-wired wireway and receptacle assembly, 24 inches long, unless otherwise indicated, and with the following features:
 - 1) Wireway: Steel or extruded aluminum, with nominal cross-section dimensions of 3 by 4-1/2 inches; and with removable cover.
 - 2) Receptacles: Pigtail mounted, 18 inches long, with strain relief at wireway wall penetration.
 - 3) Receptacles: Flush mounted in wireway cover.
 - 4) Receptacle Wiring: Connect to terminal blocks with 125 deg C, cross-linked, polyethylene-insulated, identification-labeled wire.
 - 5) Terminal Blocks: Molded-barrier type, with screw lugs to suit supply conductors.
 - 6) Mounting Hardware: Furnished with each unit, permits surface or pipe-bracket mounting.
- C. Floor Pockets: Flush-mounted, receptacle outlet assembly.
 - 1) Box: 0.0598-inch steel sheet, 10 inches deep.
 - 2) Cover Plate: Steel, cast iron, or cast aluminum with nonskid safety tread surface and self-closing door with cable notches.

2.6 LIGHTING CONTROL SYSTEM

- A. Description: Microprocessor-based, modular system consisting of dimmer and control modules operated from remote-control stations and a control console.
 - 1) Comply with UL 508.
 - 2) Comply with USITT DMX 512 for data transmission.
- B. Dimmers: Modular solid-state units that operate smoothly over their operating ranges without audible lamp noise or radio-frequency interference at any setting. Units incorporate two consecutive dimmers per phase, each with circuit breaker. Modules are dead front, draw-out mounted in a steel cabinet and are removable without use of tools.
 - 1) Non-Dim Units: On-off relay control only. Capable of serving inductive loads, such as motors or high-intensity-discharge fixtures.

- 2) Dimmer Cabinet: Factory wired.
 - 3) Surge Protection: Modules withstand power-line surges of 6000 V/3000 A according to IEEE C62.41, "Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits."
 - 4) Filter each dimmed circuit to provide a minimum 350-microsecond, current-rise time at a 90-degree conduction angle at 50 percent of rated dimmer capacity. At any load within rating, rate of current rise shall not exceed 30 mA/microsecond, measured from 10 to 90 percent of load current wave form.
- C. Control System: 3-1/2-inch disc drive and microprocessor-based control system with a nonvolatile system memory to adjust dimmer channel settings for different scenes, to patch dimmers to channels, and to manually or automatically change dimmer settings from one preset scene to another.
- D. Control Console: Tabletop unit. Includes system manual and programming controls, memory units, and indicating devices. Console features include the following:
- 1) Servicing access through hinged top panel.
 - 2) Grand master level control.
 - 3) Blackout switch.
 - 4) 24 submaster level controls with overlapping pile-on performance.
 - 5) Bump buttons for momentary control of channels or submasters. One for each submaster level control.
 - 6) Two cross-fade controls for split dipless fade between scenes, each with its own fade progress indicator.
 - 7) One set of scene level controls for each of two scenes when used in two-scene preset mode. When used in multiple single-channel scene memory mode, controls set levels into memory for expanded single scenes. Provide each set with same quantity of scene level controls as is used for submaster level controls.
 - 8) Multibutton keypad for programming in multiscene memory mode.
 - 9) Fade time control for assigning fade time to cues, with individual cue adjustment from 1 to 300 seconds, minimum.
 - 10) Light-emitting diode, liquid-crystal display, or computer monitor cathode-ray tube with associated display controls, to display operating menus and memory readout.
 - 11) Controls for setting levels into memory.
 - 12) Cord and connector for connecting console to outlets for console power and control.
- E. System Operation: Selectable between multichannel, two-scene preset and twice that number of channel single-scene memory. Console features include electronic patching of control signals for up to 512 dimmers and off-line data storage using internal 3-1/2-inch disc drive unit. Operational capability includes the following:
- 1) Live and blind programming.
 - 2) Special effects programmability for automatic operation of lights in pulsating, sequential dimming and brightening, and other special operating modes. Special effects menu displays operator guidance for programming and individual step levels.

- 3) Signal from fire alarm control panel that automatically brings selected circuits to fully on or fully bright condition, overriding normal dimming and on-off controls.
 - 4) Inserting cues between designated cues without renumbering.
 - 5) Out-of-sequence playback of cues.
 - 6) Houselights and stage lights controlled from console by assigning their dimmers or non-dim on-off controls to a channel.
 - 7) Memory retention of programmed cues for minimum of one year after power outage.
 - 8) Automatic sequential execution of programmed cues.
 - 9) Printing cues using parallel or serial printer port, cable, and printer. Cable and printer are not included with this system.
- F. Console Power and Control Outlets: Multiple receptacle matched to connector on console connector cord.
- G. House Control Station: Architectural-type, multichannel, remote dimmer slide control station with the following features:
- 1) Basic system controls designated houselights, stage lights, and other lights.
 - 2) Stage light controls compatible with basic dimming and control system.
 - 3) Flush mounting.
 - 4) Brushed-aluminum wall plate.
 - 5) Six channel slider potentiometer controls.
 - 6) Master slider potentiometer that controls lights on all channels proportionally from completely dimmed to degree of brightness that corresponds to individual slider positions.
 - 7) Fully on switch that turns all channels on at full brightness regardless of slider position.
 - 8) Take control/off switch that places station in control of all channels and sets lighting to levels dictated by channel and master slider controls.
 - 9) Legend on face of wall plate that identifies item as "House Control Station" and identifies function of each slider and switch position and with slider positions individually graduated from 0 to 10.
 - 10) Flush wall mounted, unless otherwise indicated.
- H. Entry Station: Push button activates and deactivates indicating light and presets scene of basic lighting control system.
- 1) Light-emitting-diode indicating light illuminates when preset command is executed.
 - 2) Station labeled "Entry."
 - 3) Flush wall mounted, unless otherwise indicated.
- I. Key-Entry Station: Key-operated switch controls station to activate and deactivate indicating light and preset scene of basic lighting control system.
- 1) Light-emitting-diode indicating light illuminates when preset command is executed.

- 2) Station labeled "Entry."
 - 3) Flush wall mounted, unless otherwise indicated.
- J. Emergency Light Control Station: Push button activates indicating light and brings selected dimmers to fully bright condition. Operating push button a second time returns dimmers to previous setting.
- 1) Indicating light on in emergency mode.
 - 2) Station labeled "Emergency Lights."
 - 3) Flush wall mounted, unless otherwise indicated.

2.7 FINISHES

- A. Manufacturer's standard, unless otherwise indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's written instructions and Section 26 05 00.
 - 1) Set permanently mounted items level, plumb, and square with ceilings and walls.
 - 2) Indicated mounting heights are to bottom of unit for suspended items and to center of unit for wall-mounted items.
- B. Mount and connect fixtures, and install and connect plugging boxes and connector strips.
 - 1) If arrangement is not indicated, install so each fixture, dimmer, house lighting circuit, control channel, and outlet circuit can be operated and the complete system demonstrated in all operating modes.

3.2 IDENTIFICATION

- A. Identify components and power and control wiring according to Section 26 05 53.
- B. Label each fixture, lighting outlet, and dimmer module with unique designation. Make designations on elevated components readable from floor.

3.3 WIRING

- A. Install wiring as specified in Section 26 05 19 for hard-wired connections. Install wiring in raceway except cable and plug connections.
- B. Install power wiring with a separate neutral for each output circuit from main dimmer and for each house and stage lighting circuit.
- C. Wiring in Enclosures: Bundle, train, and support.
- D. Ground equipment.

- 1) Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including electrical connections, and to test, adjust, and program lighting control system.
- B. Reports: Prepare a schedule of lighting outlets by number; indicate circuits, dimmers, connected fixtures, and control channel assignments. Prepare a schedule of control settings and circuit assignments for house control channels. Prepare written reports of tests and observations. Report defective materials and workmanship and unsatisfactory test results. Include records of repairs and adjustments made.
- C. Test Labeling: After satisfactory completion of tests and inspections, apply a label to tested components indicating test results, date, and responsible organization and person.
- D. Schedule visual and mechanical inspections and electrical tests with at least seven days' advance notice.
- E. Visual and Mechanical Inspections and Tests: As follows:
 - 1) Inspect each fixture, outlet, module, control, and item of equipment for defects, finish failure, corrosion and physical damage, nationally recognized testing laboratory labeling, and nameplate.
 - 2) Exercise and perform operational tests on mechanical parts and operable devices according to manufacturer's written instructions.
 - 3) Check tightness of electrical connections with torque wrench calibrated within previous six months.
 - 4) Verify proper protective device settings, fuse types, and ratings.
 - 5) Record results of inspections and tests.
- F. Electrical Tests: Perform tests according to manufacturer's written instructions. Exercise caution when testing devices containing solid-state components. Include the following:
 - 1) Continuity tests of circuits.
 - 2) Operational Tests: Connect each outlet to a fixture and a dimmer output circuit so each dimmer module, dimmer control and output circuit, outlet, and fixture in a typical operating mode will be sequentially tested. Set and operate controls to demonstrate fixtures, outlets, dimmers, and controls in a sequence that cues and reproduces actual operating functions for a typical system of the size and scope installed. Include operation and control of houselights and control of stage lights from each control location and station, including optional plug-in control console outlet locations. Record fixture and outlet assignments, control settings, operations, cues, and observations of performance.
- G. Correct deficiencies disclosed by inspections and tests, and retest deficient items. Verify that specified requirements are met.

3.5 CLEANING AND ADJUSTING

- A. Occupancy Adjustments: Conduct three on-site visits to help make program changes and system and equipment adjustments within one year of Substantial Completion.
- B. Repair scratches and mars of finish to match original finish. Clean fixtures, devices, and equipment internally and externally using methods and materials recommended by manufacturers.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain lighting equipment as specified below:
 - 1) Train Owner's maintenance personnel on procedures and schedules for troubleshooting, servicing, and maintaining equipment.
 - 2) Review data in maintenance manuals.
 - 3) Schedule training with Owner, through Architect, with at least seven days' advance notice.
- B. Video Training: Provide an S-VHS format submaster and two VHS copies of an instructional videotape covering features, capabilities, operation, and maintenance of installed lighting control system. Illustrate actual equipment and related functions. Show cause-and-effect sequences during operation. Cross-reference instruction manuals throughout. Follow same order of presentation as instruction manual. Include the following:
 - 1) Control Console Introduction: As follows:
 - a) Describe controls and features.
 - b) Demonstrate software and review instruction manuals.
 - c) Demonstrate setup of unit and related equipment.
 - d) Initialize and set defaults.
 - e) Review maintenance procedures and schedules.
 - 2) Control Console Operation: As follows:
 - a) Describe controls and features.
 - b) Demonstrate elementary on-off operation.
 - c) Set manual cues.
 - d) Electronically patch dimmer to channels.
 - e) Set manual, two-scene preset operation.
 - f) Demonstrate fundamental memory operation.
 - g) Set and record simple cues.
 - h) Demonstrate recall and playback, revising cues and scenes, use of submasters, split cues, storing and recalling programs, setting up special effects, printing out cues, and setting up and running system for a typical event or performance.
 - i) Show how to get help.

3) Dimmer Bank: As follows:

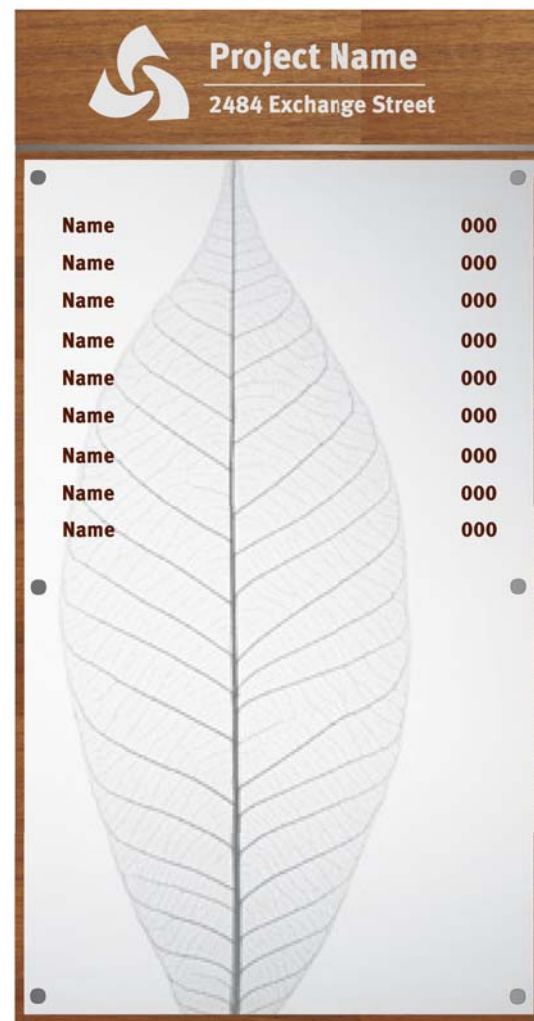
- a) Describe features, functions, and safety and security precautions.
- b) Demonstrate dimmer module features, dip switches, non-dim function, and racking system.
- c) Check loads against dimmer capacity ratings.
- d) Set basic power-in and power-out connections.
- e) Demonstrate basic maintenance; need for qualified electrician for internal maintenance; basic maintenance schedule; techniques for keeping terminals properly tightened, filter screens clean, and overheat sensors checked; and techniques for performing other required servicing.
- f) Demonstrate adjustment of control cards. Describe warranty and show how to get help.

C. System Troubleshooting: As follows:

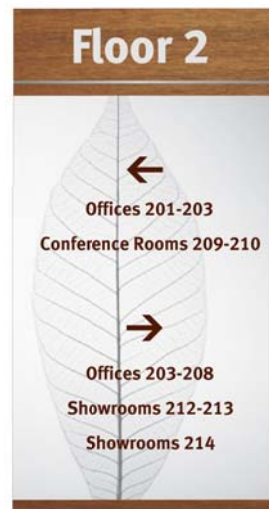
- 1) Demonstrate troubleshooting procedure for common software, programming, control console, dimmer bank, and distribution system problems.
- 2) Show how to get help.

END OF SECTION

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Type A F01-F-ABB
22"w X 42.25"h
Accommodates Insert



Type B F01-C-W1
11"w X 20.94"h
Accommodates Insert



Type D F01-B-R1
8.5"w X 17.44 "h
Accommodates Insert



Type E F01-B-G2-BC
8.5"w X 8.94"h



Type E.2 F01-B-G2-BC
8.5"w X 8.94"h
Accommodates Insert



Type E.3 F01-B-F2
8.5"w X 7.69"h
Accommodates Insert

352

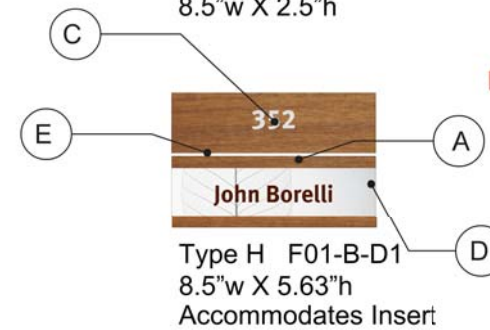
Type F F01-A-BH
5"w X 2.5"h

352

Type G F01-B-BH
8.5"w X 2.5"h



Type J F01-B-F2S
8.5"w X 9.81"h



Type H F01-B-D1
8.5"w X 5.63"h
Accommodates Insert



Type L WB
8.5"w X 3"h
Accommodates Insert
Wall

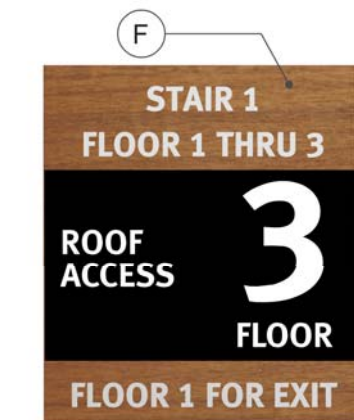
352

Thomas Finley
General Manager

Type I F01-B-G1
8.5"w X 8.94"h
Accommodates Insert



Type M F01-D-BA-F
14.25"w X 5"h
Double Sided



Type N LD3
13"w X 15"h



Type C V711-3S
44"w X 7"h
Double Sided, Accommodates Insert

Fusion 1 Drawing Match

Fusion 01

Face Material

(A) **Macchiato Walnut LW6932**

Backer Material

(B) **Not Available**

Metal Accent

(E) **Natural**

Raised Copy

(C) **Not yet specified
Satin Silver CO601**

Insert

(D) **Image 23
Espresso CO402**

(F) Acrylic Construction:
Digitally Printed to resemble
project finishes

FusionTM
SIGNAGE FOR INTERIOR SPACES

takeformTM
Architectural Graphics
One Mahar Way, Medina, New York, 14103
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takeform.net

AIA[®] Document A310[™] – 1970

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we
(Here insert full name and address or legal title of Contractor)

as Principal, hereinafter called the Principal, and
(Here insert full name and address or legal title of Surety)

a corporation duly organized under the laws of the State of as Surety, hereinafter called
the Surety, are held and firmly bound unto
(Here insert full name and address or legal title of Owner)

Town of Glastonbury
2155 Main Street
Glastonbury, CT 06033

as Obligeé, hereinafter called the Obligeé; in the sum of (\$), for the payment of
which sum well and truly to be made, the said Principal and the said Surety, bind
ourselves, our heirs, executors, administrators, successors and assigns, jointly and
severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for
(Here insert full name, address and description of project)

East Hartford - Glastonbury Elementary Magnet School
95 Oak Street
Glastonbury, CT 06033

NOW, THEREFORE, if the Obligeé shall accept the bid of the Principal and the
Principal shall enter into a Contract with the Obligeé in accordance with the terms of
such bid, and give such bond or bonds as may be specified in the bidding or Contract
Documents with good and sufficient surety for the faithful performance of such Contract
and for the prompt payment of labor and material furnished in the prosecution thereof, or
in the event of the failure of the Principal to enter such Contract and give such bond or
bonds, if the Principal shall pay to the Obligeé the difference not to exceed the penalty
hereof between the amount specified in said bid and such larger amount for which the
Obligeé may in good faith contract with another party to perform the Work covered by
said bid, then this obligation shall be null and void, otherwise to remain in full force and
effect.

Signed and sealed this day of ,

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

(Witness)

(Principal) (Seal)

(Title)

(Witness)

(Surety)

(Title) (Seal)

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PAGE 1

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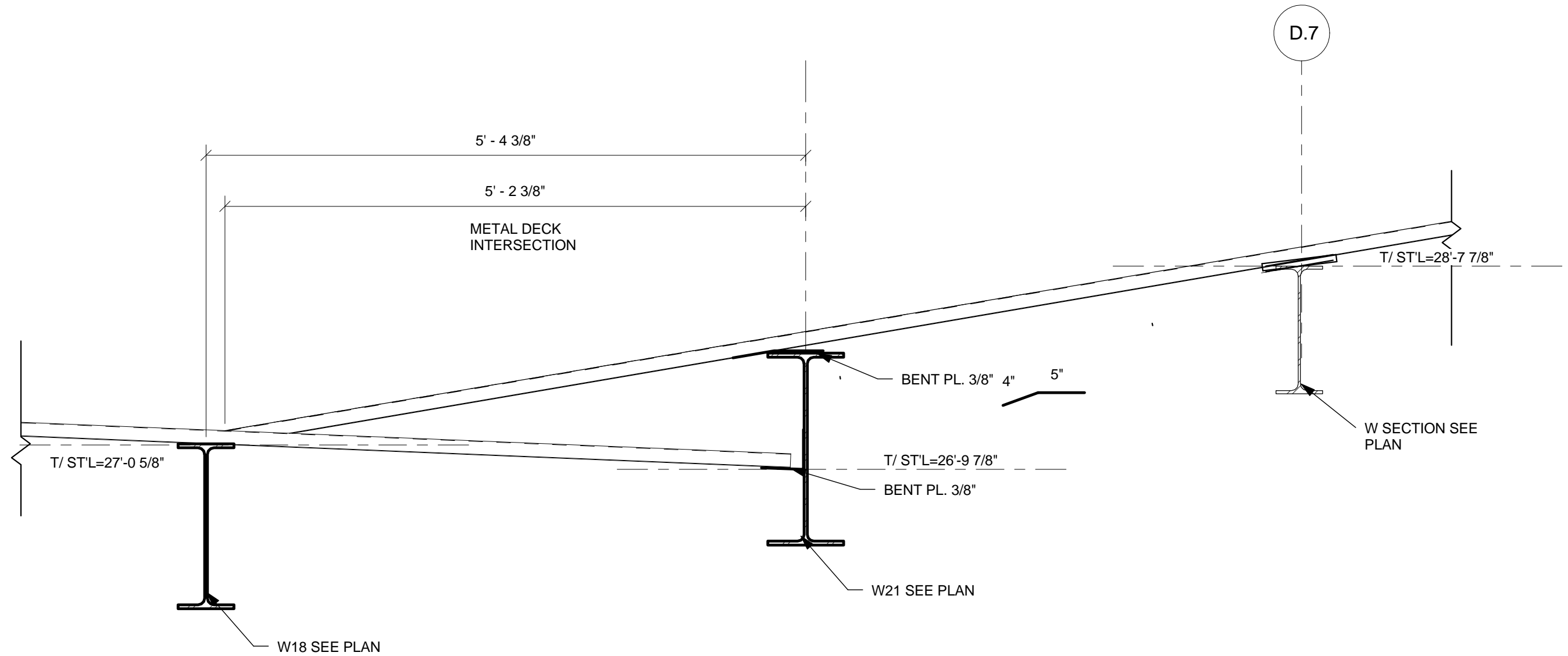
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(Signed)

(Title)

(Dated)



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 NAPLES, FLORIDA 239 - 687 - 1220
 BOSTON, MASSACHUSETTS 617 - 524 - 5200

**EAST HARTFORD
 GLASTONBURY ELEMENTARY
 MAGNET SCHOOL**

No.	Description	Date

SECTION

Project number	H090230
Date	FEB. 22, 2011
Drawn by	JAS
Checked by	CMW

SSK-16

Scale: 1" = 1'-0"