

**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. 3. 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. 3 electronically you may not change it in any way except to format it to print on your printer.

The due date and time for bids is changed by this addendum. See below for new bid due date and time for bids.

CHANGES TO THE DRAWINGS

A. DRAWING NO. A-308 - WALL SECTIONS:

- 1) On Drawing No. A-308, Wall Section 20, provide a bond beam with brick relieving angle at elevation 27'-4-1/4" above the First Floor datum. Refer to similar brick relieving angle at Wall Section 8/A303.

B. DRAWING NO. A-401 - DOOR SCHEDULE:

- 1) CLARIFICATION: On Drawing No. A-401, under Door Opening C112, DELETE reference to Jamb Detail 5/A421. The Jamb Detail is 21/A421 in addition to the other jamb details referenced.
- 2) CLARIFICATION: On Drawing No. A-401, under Door Opening B113, DELETE reference to one of the referenced jamb details, 31/A421. The reference was a typographical error and should be 21/A421.

C. DRAWING NO. A-434 - CURTAINWALL/STOREFRONT ELEVATIONS:

- 1) CLARIFICATION: On Drawing No. A-434, Window Type W-20, the frame information located below the frame number did not print. Window Type W-20 is "Storefront Exterior (6" depth).

D. DRAWING NO. A-439 - CURTAINWALL/STOREFRONT ELEVATIONS:

- 1) CLARIFICATION: On Drawing No. A-439, Window Type W-42, DELETE the reference to Head Detail 12/A442. The Head Detail at Window Type W-42 is 17/A442.

E. DRAWING NO. A-442 - CURTAINWALL/STOREFRONT ELEVATIONS:

- 1) CLARIFICATION: On Drawing No. A-442, Detail 5, the partition type below the sill of Window Type W-40 is 8" CMU and not gypsum board and metal stud as shown on Detail 5/A442. Refer to attached copy of Sketch No. SKA-004 dated 1/31/11.

F. DRAWING NO. A-443 - CURTAINWALL AND STOREFRONT ALUMINUM FRAME DETAILS:

- 1) CLARIFICATION: On Drawing No. A-443, Detail 2, some of the graphics in the detail did not print. Refer to the attached copy of revised Sketch No. SKA-001 dated 1/31/11.
- 2) On Drawing No. A-443, Detail 13, REVISE the corner detail to make the corner enclosure the correct size as indicated on attached copy of Sketch No. SKA-002 dated 1/31/11.

G. DRAWING NO. P-000 - PLUMBING NOTES AND SYMBOLS:

- 1) On Water Heater Schedule, DELETE reference to A. O. Smith Model Cyclone-XHE, Commercial Model BTH-300 and REPLACE with two (2) PVI Model 299 SS A-PN Platinum condensing type water heaters with stainless steel tank, 299,000btuh input, 341gph recovery, 70 gallons of usable storage, and 94% efficiency.

H. DRAWING NO. P-100.2 - LOWER LEVEL PLUMBING PLAN PART B:

- 1) On the Lower Level Plumbing Plan Part B, ADD a water meter for the irrigation system as indicated on attached copy of Sketch No. SKP-100.2-1 dated 2/4/11.

CHANGES TO THE PROJECT MANUAL

A. SECTION 00 01 10 – TABLE OF CONTENTS:

- 1) In Volumes 1, 2, and 3, on Page 00 01 10-6, under Division 22-PLUMBING, ADD a listing for Section 22 34 00 to read as follows:

"22 34 00 - Fuel-Fired, Domestic Water Heaters"

B. SECTION 00 11 16 – INVITATION TO BIDDERS/LEGAL NOTICE:

- 1) On Page 00 11 16-1, REVISE the bid due date for Bid Packages BP-103 thru BP-110 to read as follows:

"BID PACKAGES (BP-103 thru BP-110): BIDS DUE: (Thursday) **MARCH 3**, 2011 TIME: 1:00 PM"

- 2) On Page 00 11 16-1, REVISE the bid due date for Bid Packages BP-111 thru BP-117 to read as follows:

"BID PACKAGES (BP-111 thru BP-117): BIDS DUE: (Friday) **MARCH 4**, 2011 TIME: 1:00 PM"

C. SECTION 00 21 13 – INSTRUCTION TO BIDDERS:

- 1) On Page 00 21 13-7, in Article 3.6, REVISE Paragraph B to read as follows:

"B. All requests for clarification (information) shall be made as soon as possible but in no case later than Wednesday February 16, 2011."

D. SECTION 00 24 19 – SPECIAL INSTRUCTIONS, PROPOSAL REQUIREMENTS, AND BID PACKAGES:

- 1) In Section 00 24 19, in Bid Package No. 111 - General Trades, REPLACE the current "Immersive Theater Bid Breakdown" with the attached revised "Immersive Theater Bid Breakdown" dated 10 February 2011 consisting of two (2) pages inclusive.

E. SECTION 22 34 00 – FUEL-FIRED, DOMESTIC-WATER HEATERS:

- 1) ADD Section 22 34 00 consisting of 10 pages inclusive to Volume 3 of 3 of the Project Manual (copy attached).

RESPONSES TO BID RFIS

BID RFI No. B-018 (Dated 1/31/2011)

QUESTION: Item # 21 Touch Dynamic Inc, needs to know which software will be used for the install in order to quote it properly: Please specify the software to be used.

RESPONSE: Glastonbury District POS software is "Food Service Solutions".

BID RFI No. B-019 (Dated 1/27/2011)

QUESTION: Please clarify scope of work item # 60 for bid package # 104. Do we own excavation for gas line only? Who supplies & installs pipe?

RESPONSE: BP-104, Sitework Contractor shall be responsible to provide the excavation and backfill required for the installation of the CNG gas piping up to the meter. CNG will furnish and install the gas piping from the main to the meter. BP-104, Sitework Contractor is responsible to layout, schedule and coordinate the installation of the gas piping with CNG, and remove any existing abandoned utilities necessary for the installation of the gas line.

BID RFI No. B-021 (Dated 1/24/2011)

QUESTION: Is it possible to obtain the CAD files for the site / civil drawings prior to bid? If this is possible; please provide direction on obtaining the CAD files.

RESPONSE: No, it is not possible to obtain CAD drawings before the bid.

BID RFI No. B-022 (Dated 1/27/2011)

QUESTION: Permits – Confirm that plumbing – HVAC permits and the State fee will be required to be paid by the trade contractor and not waived by the town.

RESPONSE: The Town assessment of the Building Permit fee is waived for this project. The State assessment will be paid by the Town on behalf of the contractors. The contractors will not have to pay any Building Permit fees.

BID RFI No. B-023 (Dated 1/26/2011)

QUESTION: The Spec. section 01 91 13 is listed in our bid package # 107 Page # 1 Item # 5 but is not available in the specification PDF. File on your website. Please provide.

RESPONSE: Refer to Addendum No. 1 – "See attached Section 01 91 13 – General Commissioning Requirements."

BID RFI No. B-025 (Dated 1/31/2011)

QUESTION: Column C11 on S410 is shown to start at basement level. C11 at grid D-11 begins at 1st floor and D.711 at 2nd floor. Column C19 on S410 is scheduled for grid N-135 but shows on plan at N-13. Column C8 on S410 is shown to start at 1st floor, but TS post shown to start at basement level on S100.1. Are these separate from C8 or does C8 start at basement.

RESPONSE: Column D-11 should be C13 on S410. There is no column at D.7-11. Column N-13.5 on S410 is N-13, C19. Columns B.6-1 and C.4-1 are C8 columns that sit on piers in the foundation wall and start at Level 1, and should not show up on S100.1.

BID RFI No. B-026 (Dated 1/31/2011)

QUESTIONS: Which BP is responsible to furnish and install stainless steel flashings in masonry?

RESPONSE: Stainless steel flashing is by the Masonry Bid package as referenced under BP-106 Masonry & Stone, Special Instructions Item # 9.

BID RFI No. B-027 (Dated 1/31/2011)

QUESTION: Which BP is responsible to furnish and install the powder coated metal downspout boots?

RESPONSE: The metal downspout boots are furnished and installed by the Site Contractor, under BP-104 Site Work & Site Improvements; reference BP-104, Special Instructions, Item # 54.

BID RFI No. B-028 (Dated 1/31/2011)

QUESTIONS: Is BP-109 to hire a plumber to install the roof drains and overflow drains or is it your intention to mutually have us coordinate locations in construction with our tapered insulation layout? Please clarify.

RESPONSE: Refer to Section 00 24 19 – Proposal Requirements and Special Instructions, under C – Special Instructions, Item # 14. **e. Plumbing Contractor** shall be responsible to furnish and install the roof drains and roof deck pans as specified. **Plumbing Contractor** shall be responsible to coordinate the installation of the roof drains with the Roofing Contractor for proper installation with the roof system.

BID RFI No. B-029 (Dated 1/31/2011)

QUESTIONS: Who is to furnish and install the manufactured roof expansion joints referenced in Spec. Section 07 71 29? There is no Spec. Section 07 71 29 in our documents. Kindly clarify.

RESPONSE: Under Bid Package BP – 108 Roofing, under Special Instructions ADD Item # 34 Roofing Contractor shall be responsible to furnish and install roof expansion joints, reference Drawing No. A-112/Detail 18 and Drawings No. A-110.1, A-110.2 & A-110.3.

BID RFI No. B-030 (Dated 1/31/2011)

QUESTIONS: Will the equipment support curbs for the C/U's be provided by division 23 as stated in the spec or by BP109 as stated in Special Instructions # 23?

RESPONSE: Roof curbs for all mechanical equipment are by BP-116 Mechanical/HVAC, reference BP-116, under Special Instructions, Item # 28, and Under Section 00 24 19 – Proposal Requirement Item # 15 Paragraph C. Note: Under BP-109, Special Instructions, Item # 23 – DELETE in its entirety and REPLACE to read as follows: "Roofing Contractor shall be responsible for wood blocking for Condensing Unit Curbs, and Roofing Contractor shall coordinate installation of curbs by Mechanical/HVAC Contractor."

BID RFI No. B-032 (Dated 1/31/2011)

QUESTIONS: If we are to provide edge protection to be used by all contractors, we will have to insist upon them signing our release and agreeing to maintain – Please confirm.

RESPONSE: All Contractors will be required to sign a release for the Roofing Contractor prior to performing any work on the roof. The Roofing Contractor will be responsible for the inspections as deemed necessary by the Roofing Contractor's Safety Program and in compliance with the OSHA standards, and the Roofing Contractor will be responsible for the necessary maintenance. All Contractors will be held accountable for the cost of any required repairs due to damage caused by that Contractor.

BID RFI No. B-034 (Dated 1/31/2011)

QUESTIONS: Who furnishes and installs the roof hatches and heat and smoke vents referenced in 07 72 00? Where are the specifics from these items to be found?

RESPONSE: The roof hatches shall be furnished and installed by BP-109 Roofing.

BID RFI No. B-035 (Dated 1/31/2011)

QUESTIONS: Are there any drawings of the existing building? Is the existing building available for inspection? Spec Section 03 30 33, 3.12 D calls for a shake on waterproofing, but no spec is given. Please provide a spec.

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.

BID RFI No. B-038 (Dated 2/01/2011)

QUESTIONS: Sheet L-102, Legend 30 – for "Brick Seat Wall" refers to detail on L-501, which indicates "see grading plan for top of wall elevation". Grading plans L-201 & L-202 do not indicate a top of wall elevation. The walls appear to be level with sidewalk grade. Please provide additional info on brick wall elevation.

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

BID RFI No. B-042 (Dated 2/01/2011)

QUESTIONS: BP – 111 is to provide Peerless CMJ500 ceiling plate but Note # 1 on Drawings E101.1 to E102.2 states the Electrical Contractor is to provide the ceiling plate. Please state if BP – 111 or BP-117 is to provide the ceiling plate.

RESPONSE: BP-111 General Trades, DELETE Special Instruction Item # 36. Reference Drawing E101.1 and E102.2 Note # 1 by Electrical Contractor, part of BP-117 Electrical.

BID RFI No. B-043 (Dated 2/01/2011)

QUESTIONS: Please state if BP-117 is to provide the Hitachi Projector 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-401, Detail 10.

BID RFI No. B-048 (Dated 2/01/2011)

QUESTIONS: 05 50 00 – 6 Part 2.7 bollards. Please confirm all bollards are by the site contractor.

RESPONSE: YES, bollards are to be furnished and installed under BP-104 Sitework.

BID RFI No. B-051 (Dated 2/01/2011)

QUESTIONS: The specifications on sheet S401 differ spec Section 03 30 00.2.14 A thru E. Which are we supposed to use?

RESPONSE: Use mix designs shown in the specifications. New 12” slab on existing concrete deck shall be considered an elevated slab, f’c= 5000psi.

BID RFI No. B-052 (Dated 2/01/2011)

QUESTIONS: Section 11 40 00 Item 20 specs call for 2, equipment schedule call for 1. Floor plan shows 2. Please clarify.

RESPONSE: There are (2) Item No. 20 required. The second unit is not tagged.

BID RFI No. B-053 (Dated 2/01/2011)

QUESTIONS: Section 11 40 00 Item 24 specs call for 2, equipment schedule calls for lot, floor plan shows 3. Please clarify.

RESPONSE: See RFI # B-058. Unit adjacent to the clean dish table is shown in error. It should be the second #50 hot food cart, two (2) required.

BID RFI No. B-055 (Dated 2/01/2011)

QUESTIONS: Section 11 40 00 Item 37 specs call for 2 doubles, floor plan shows 3 lockers. Clarify.

RESPONSE: Spec's and schedule list quantity - 2 in Error. Should be quantity – 3 double lockers.

BID RFI No. B-056 (Dated 2/01/2011)

QUESTIONS: Section 11 40 00 Item 44 specs call for United Showcase, equipment schedule lists Biass Smith. Please clarify.

RESPONSE: Manufacturer to be United Showcase as shown in specs.

BID RFI No. B-057 (Dated 2/01/2011)

QUESTIONS: On drawing right side above counter # 30 appears (48). Please clarify what this is.

RESPONSE: Item # 48 is shown in error it has been incorporated into item # 49.

BID RFI No. B-058 (Dated 1/31/2011)

QUESTIONS: Section 11 40 00 Item 50 specs call for 2 equipment schedule calls for 2, I can only find one on the floor plan. Please clarify.

RESPONSE: The second Item # 50 should be in place of the # 24 rack shown adjacent to the clean dish tables.

BID RFI No. B-059 (Dated 2/01/2011)

QUESTIONS: Section 11 40 00 Item # 55 for C. the specs are confusing, no lids or casters, then lids and casters. Please clarify.

RESPONSE: Change # 55 to: Rubbermaid (2) Model 2620 w/2610-60 lid and 2640 casters. (6) 2632 no lid & 2620 casters. (1) # 1305 Tilt Truck (Not Shown on Drawings).

BID RFI No. B-066 (Dated 2/01/2011)

QUESTIONS: Reference 21/A621. Please confirm that the 2" nosing shown is tile by the tile contractor.

RESPONSE: Yes, the tile shown on the stairs is by the Flooring Contractor, part of BP -112 flooring.

BID RFI No. B-071 (Dated 2/01/2011)

QUESTIONS: Reference 05 51 00-6 Part 2.6 "Steel Framed Stairs". The Architect has specified pre-manufactured, pre-engineered steel pan stairs. Please confirm that custom steel pan stairs are acceptable. Also confirm that fresh concrete for stair pans and landings is by the concrete subcontractor.

RESPONSE: Yes, the concrete for the stair pans and landings are by the Concrete Contractor, part of BP-105 Concrete.

BID RFI No. B-072 (Dated 2/02/2011)

QUESTIONS: Part 2.11 Metal downspout boots. Please advise if this is furnished only or furnished and installed. If they are installed by misc. metals and if they are set below grade please clarify that the site contractor will excavate as necessary.

RESPONSE: The metal downspout boots are furnished and installed by the Site Contractor under BP-104 Site Work & Site Improvements; reference BP-104, Special Instructions, Item # 54.

BID RFI No. B-073 (Dated 2/02/2011)

QUESTIONS: 00 24 19 .9A tells the steel contractor to provide an as-built survey of the anchor bolts. Item 47 in BP-105 tells the concrete contractor to provide the same survey. Which contractor is to provide the survey?

RESPONSE: The Concrete Contractor is responsible for the building foundation and field survey of the anchor bolt placement. The Steel Contractor will provide the anchor bolts and shop drawing of the anchor bolt layout to the Concrete Contractor. The Steel Contractor is responsible for the anchor bolt as-built survey, for verification of location and if any required concrete or steel modifications are required based on the actual locations and specified tolerances.

BID RFI No. B-074 (Dated 2/02/2011)

QUESTIONS: Item 30 in the site scope and Item 33 of the concrete scope both call for the contractor to furnish and install the vapor barrier. Which contractor is to provide the vapor barrier?

RESPONSE: The Concrete Contractor shall be responsible for the vapor barrier. NOTE: BP-104 Site Work & Site Improvements, Special Instructions, DELETE Item # 30 in its entirety.

BID RFI No. B-075 (Dated 2/02/2011)

QUESTIONS: This site scope, item 67 and the concrete scope, item 9, call for the respective contractors to furnish and install retaining walls and ramps. Which contractor is to do this work?

RESPONSE: BP-105 Concrete, Special Instructions, Item # 9 refers to the Selective Demolition Work. Reference BP-105, Special Instructions, Item # 21 Concrete Contractor shall 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."

BID RFI No. B-076 (Dated 2/03/2011)

QUESTIONS: Please provide additional information regarding scope of work item # 5 regarding commissioning. In that specification section page 8, item 3.2 it notes F. Measures of building pressurization at all exterior doors. Would this be the commissioning item described in our scope of work? If so would standard manufacturing testing be sufficient for this requirement? If this is not the commissioning referred to in the specification, please describe what the requirements is.

RESPONSE: Measurements of building pressurization should be completed after all systems are balanced per plans. These measurements should be completed by TAB contractor.

BID RFI No. B-100 (Dated 2/04/2011)

QUESTIONS: A101.1 shows 18 Type W4 in area A (or building A). W4/A431 shows an 8'-4" masonry opening. The lintel schedule on S402 shows lintels for masonry openings up to 8'-0". Since no hung lintels are shown on the structural drawings at these locations one assume that a loose lintel would be necessary to support the face brick. Please advise what the steel bidders should be at 8'-4" mo type W4 windows.

RESPONSE: The window head details are keyed into the wall sections. Also refer to our response to RFI B-006 which provides the sill and head detail references on the Window Types. The head detail was not referenced in the RFI question but appears to be 1/A442. Detail 1/A442 shows a bond beam and steel angle lintel. According to Item #3 in the Lintel Schedule on Drawing G001 the bond beam lintel will span openings up to 8'-8" and the steel angle will span openings up to 8'-0". For Detail 1/A442 and the 8'-4" openings the steel angle specified for 8'-0" is also acceptable for the 8'-4" opening.

BID RFI No. B-101 (Dated 2/04/2011)

QUESTIONS: Please note Elevations 2/A202, 3/A203, 15/A206 and 32/A207. All of these elevations show brick relieving angles. Detail 8/A303 also shows a brick relieving angle, no angle sizes or fastening detail have been provided. (No details were noted on the structural nor were any section cuts provided on the structural plans. 1) Please assign his work to a bid package. 2) Please provide a detail indicating angle size finish, fastening method and anchor spacing.

RESPONSE: Relieving angles by BP-107 Steel/Misc Metals.

BID RFI No. B-102 (Dated 2/04/2011)

QUESTIONS: The door schedule on A402 that door # C226 is a louvered door for the alternate # 2, Screen wall. Detail 24/A421 shows a HSS 2 ½ x 2 ½ tube and plate frame. Which bid package is the door frame in? The door schedule on A402 shows the door as a 3'x7'-2 door where as the plane notes call out a special size of 5'8" x 5'6". What is the correct door size?

RESPONSE: Part 1 of Question: Tube and plate frame shall be furnished and installed by BP – 107 Steel & Misc Metals. Louver Door to be furnished and installed by BP-109 Roofing & Metal Panels.

Part 2 of Question: The statement in the RFI question is incorrect. The door schedule on A402 indicates the door as one size in the remarks column which is correct. There are no additional plan notes as mentioned in the RFI question.

BID RFI No. B-104 (Dated 2/04/2011)

QUESTION: At elevation 1/A812 terrarium detail 6/A820 and look thru fish tank 5/A820. Please confirm that the correct details are 6/A822 and 5/A822.

RESPONSE: Detail 1/A812: At Fish Tanks DELETE reference to Detail 5/A820. Use Detail 5/A822 as noted on 7/A800 instead. Detail 1/A812: At Terrarium DELETE reference to Detail 6/A820. Use Detail 6/A822 as noted on 13/A802 instead.

BID RFI No. B-106 (Dated 2/04/2011)

QUESTION: Detail 9/A837 shows a low partition support. I can't find this section referenced anywhere on the plans. Does this detail apply to this project? If so where would it apply?

RESPONSE: The low partition support was incorrectly referenced from Detail 5 on Drawing A442. We revised this detail to reflect the correct 8" CMU low partition under the sill at W-40 therefore the low partition support is not required at this location. Refer to the attached SKA-004.

BID RFI No. B-129 (Dated 2/07/2011)

QUESTION: VII. Safety + Health, E. – What is and how do I find the OSHA recordable incident rate and lost workday incident rate for the last 3 years?

RESPONSE: Contact your company Safety Representative.

BID RFI No. B-144 (Dated 2/07/2011)

QUESTION: Bid Package #111 Item 116: Please consider reassigning the basketball pavement markings, installed on bituminous concrete, to Bid Package 104.

RESPONSE: Bid Package BP-111 General Trades, Item #116 DELETE scope of work to provide Basketball Pavement Markings.
Bid Package BP-104 Sitework, ADD Item #73: "Contractor shall provide Basketball Pavement Markings as part of BP-104 scope of work."

BID RFI No. B-145 (Dated 2/07/2011)

QUESTION: Drawing A821, Details 14, 16, 17 & 18: Confirm all fabric tack surfaces at millwork/casework are by BP -108.

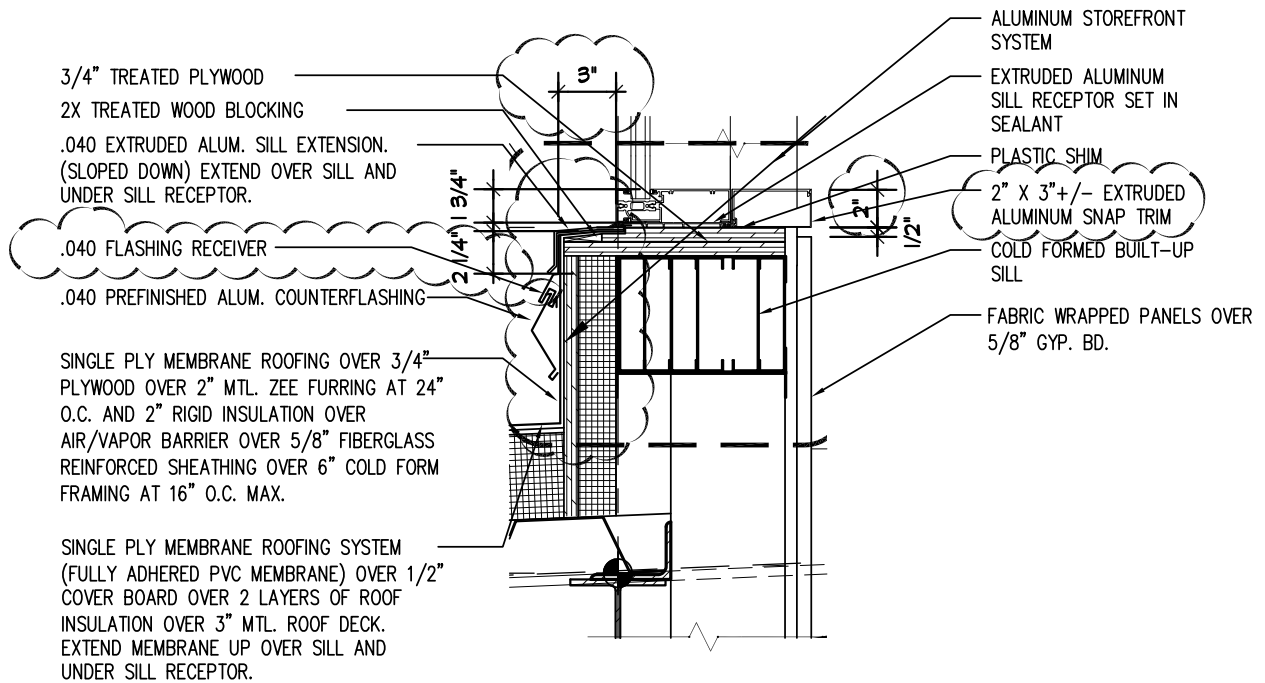
RESPONSE: Drawing A-821, Details 14, 16 & 18, Fabric Tack Surfaces at millwork/casework shall be provided by BP-108 Architectural Millwork/Casework.

BID RFI No. B-151 (Dated 2/07/2011)

QUESTION: Bid Package #111 Item 117: Please consider reassigning the gymnasium game lines which are specified in 09 68 13 Para 3.5, to BP-112.

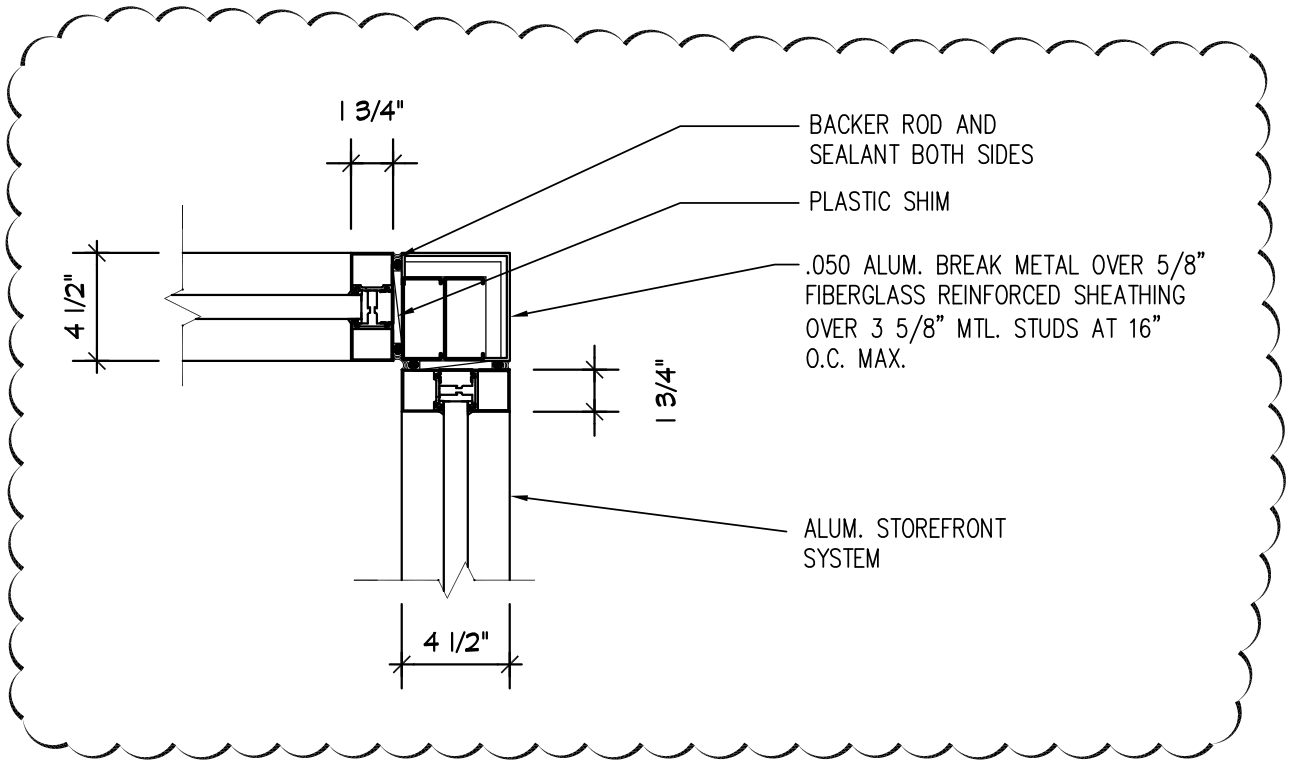
RESPONSE: No, gymnasium game lines shall remain part of the scope of work under BP-111.

END OF ADDENDUM NO. 3



2 SILL
1 1/2" = 1'-0"

FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE: EAST HARTFORD GLASTONBURY	DATE: 1/31/11
	DRAWING TITLE: RE: 2/A443	PROJECT NO.: H090230.000
DRAWN BY: GCC	SCALE: NTS	DWG. NO.: SKA-001

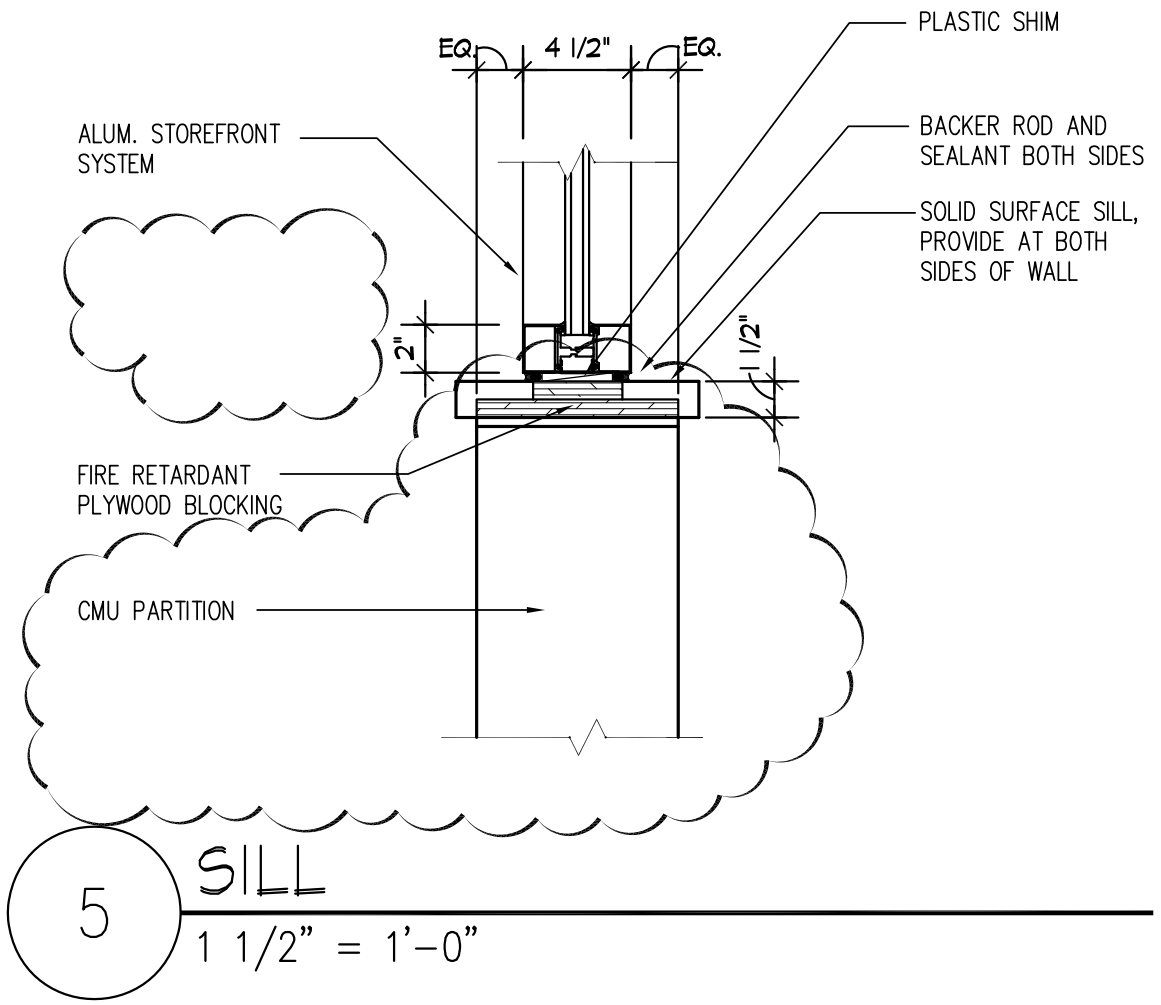


13

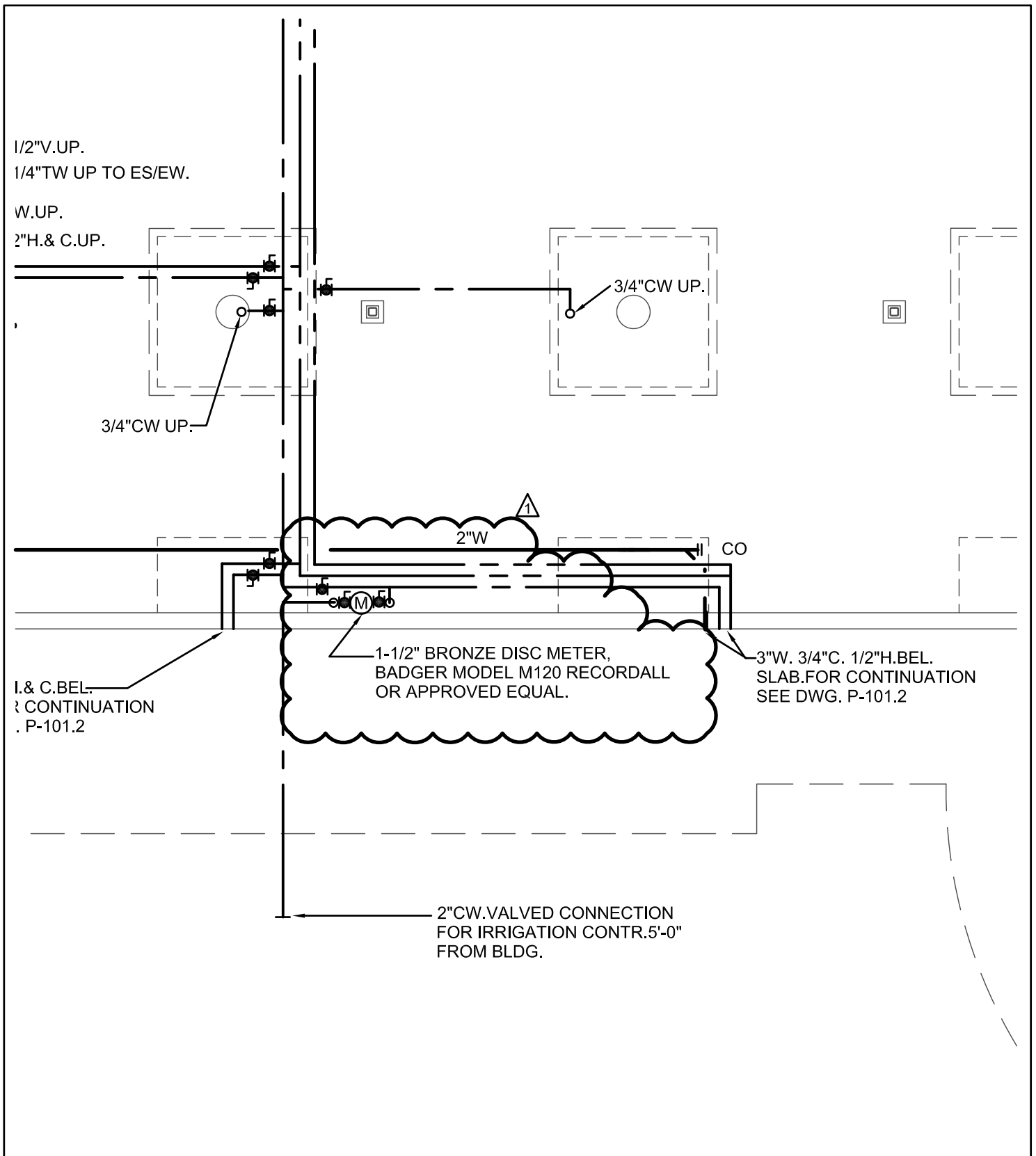
CORNER MULLION

1 1/2" = 1'-0"

FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE: EAST HARTFORD GLASTONBURY	DATE: 1/31/11
	DRAWING TITLE: RE: 13/A443	PROJECT NO.: H090230.000
DRAWN BY: GCC	SCALE: AS NOTED	DWG. NO.: SKA-002



FLETCHER THOMPSON ELEVATING DESIGN SHAPING SOLUTIONS ARCHITECTURE ENGINEERING INTERIOR DESIGN THREE CORPORATE DRIVE SHELTON, CONNECTICUT 06484-6244	PROJECT TITLE: EAST HARTFORD GLASTONBURY	DATE: 2/7/11
	DRAWING TITLE: RE: 5/A442	PROJECT NO.: H090230.000
DRAWN BY: GCC	SCALE: AS NOTED	DWG. NO.: SKA-004



BID PACKAGE - SPECIAL INSTRUCTIONS

Part of Bid Package (BP-111 General Trades) EAST HARTFORD / GLASTONBURY ELEMENTARY MAGNET SCHOOL

IMMERSIVE THEATER

SUBCONTRACTOR BIDDER NAME: _____

IMMERSIVE THEATER BID BREAKDOWN

The Amounts provided in the breakdown below are to be the Actual Amount in which the General Trades Contractor will issue a (purchase order or contract) to the supplier or subcontractor.

The following shall include all labor, material, equipment, and supervision, startup, commissioning and training as required per the contract documents.

- 1. Provide Spitz Scidome HD Cove-Mount Digital Astronomy System for 40ft tilt dome.**

Material Cost: _____ Supplier/Contractor _____

Labor Cost: _____ Supplier/Contractor _____

- 2. Provide 40ft Tilt Inner Dome with Cove light pan.**

Material Cost: _____ Supplier/Contractor _____

Labor Cost: _____ Supplier/Contractor _____

- 3. Provide 50ft Horizontal Outer Dome.**

Material Cost: _____ Supplier/Contractor _____

Labor Cost: _____ Supplier/Contractor _____

- 4. Theater Control System, controlling all sub-systems in the theater.**

Material Cost: _____ Supplier/Contractor _____

Labor Cost: _____ Supplier/Contractor _____

- 5. Surround Audio System**

Material Cost: _____ Supplier/Contractor _____

Labor Cost: _____ Supplier/Contractor _____

- 6. Media Production Suite, digital production workstation with hardware and software for complete show production, (note: 120v power by Electrical Contractor as part of BP-117 – Electrical).**

Material Cost: _____ Supplier/Contractor _____

Labor Cost: _____ Supplier/Contractor _____

BID PACKAGE - SPECIAL INSTRUCTIONS

IMMERSIVE THEATER BID BREAKDOWN

The Amounts provided in the breakdown below are to be the Actual Amount in which the General Trades Contractor will issue a (purchase order or contract) to the supplier or subcontractor.

7. **Media Production Suite/Auxiliary Equipment, used for audio and video production but not part of the production workstation, (note: 120v power by Electrical Contractor as part of BP-117 – Electrical).**

Material Cost: _____ Supplier/Contractor _____

Labor Cost: _____ Supplier/Contractor _____

8. **Full-Color LED Cove Lighting System, including fixtures, equipment and low voltage wire and terminations, (note: 120v power by Electrical Contractor as part of BP-117 – Electrical).**

Material Cost: _____ Supplier/Contractor _____

Labor Cost: _____ Supplier/Contractor _____

9. **Ellipsoid Public Address Spot Lights for speaker presentation, including equipment and low voltage wire and terminations, (note: 120v power by Electrical Contractor as part of BP-117 – Electrical).**

Material Cost: _____ Supplier/Contractor _____

Labor Cost: _____ Supplier/Contractor _____

10. **Instructional Package Video Projection System required for classroom applications, including fixtures, equipment and low voltage wire, floor boxes and terminations, (note: 120v power by Electrical Contractor as part of BP-117 – Electrical).**

Material Cost: _____ Supplier/Contractor _____

Labor Cost: _____ Supplier/Contractor _____

11. **Theater Control Console by Architectural Millwork / Casework Contractor part of Bid Package BP-108.**

IMMERSIVE THEATER TOTAL BID AMOUNT: \$ _____

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. Commercial, gas-fired, high-efficiency, condensing type storage domestic-water heaters.
- B. Domestic-water heater accessories.

1.3 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Commercial domestic-water heaters shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
 - 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."

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: For each type and size of domestic-water heater indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- C. LEED Submittal:
 - 1. Product Data for Prerequisite EA 2: Documentation indicating that units comply with ASHRAE/IESNA 90.1, Section 7, "Service Water Heating."
- D. Shop Drawings:
 - 1. Wiring Diagrams: For power, signal, and control wiring.
- E. Seismic Qualification Certificates: For fuel-fired, domestic-water heaters, 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.
- F. Product Certificates: For each type of commercial, gas-fired domestic-water heater, from manufacturer.
- G. Domestic-Water Heater Labeling: Certified and labeled by testing agency acceptable to authorities having jurisdiction.
- H. Source quality-control reports.
- I. Field quality-control reports.
- J. Operation and Maintenance Data: For fuel-fired, domestic-water heaters to include in emergency, operation, and maintenance manuals.
- K. Warranty: Sample of special warranty.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. ASHRAE/IESNA 90.1 Compliance: Fabricate and label fuel-fired, domestic-water heaters to comply with ASHRAE/IESNA 90.1.
- C. ASME Compliance:
1. Where ASME-code construction is indicated, fabricate and label commercial, domestic-water heater storage tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
 2. Where ASME-code construction is indicated, fabricate and label commercial, finned-tube, domestic-water heaters to comply with ASME Boiler and Pressure Vessel Code: Section IV.
- D. NSF Compliance: Fabricate and label equipment components that will be in contact with potable water to comply with NSF 61, "Drinking Water System Components - Health Effects."

1.6 COORDINATION

- A. Coordinate sizes and locations of concrete bases with actual equipment provided.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of fuel-fired, domestic-water heaters that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

- a. Structural failures including storage tank and supports.
- b. Faulty operation of controls.
- c. Deterioration of metals, metal finishes, and other materials beyond normal use.

Warranty Summary : Storage tank will be covered by a seven-year warranty covering manufacturing or material defects, leaks and /or the production of rusty water. Tank coverage will include failure due to scale buildup with no provision or condition for maintenance or inspections and no limitations on water chemistry.

Heat exchanger and combustion chamber will be covered by a five-year warranty covering manufacturing or material defects, leaks, and/or the production of rusty water.

Burner and all heater parts will be covered by a one-year warranty.

Initiation and /or continuation of warranty coverage will not be dependent upon annual inspections, regular replacement of anode rods, or water chemistry.

The entire heater will have a first year service policy, which will cover replacement labor and freight costs under certain conditions. Complete copies of all warranties and service policies; including all exclusions and conditions, will be presented to the owner as part of the submittal package. Warranties that exclude coverage in the presence of scale will not be accepted.

2. Warranty Periods: From date of Substantial Completion.

- a. Commercial, Gas-Fired, Storage, Domestic-Water Heaters:
 - 1) Storage Tank: Seven (7) years.
 - 2) Controls and Other Components: One (1) years.
- b. Compression Tanks: Five (5) years.

PART 2 - PRODUCTS

2.1 COMMERCIAL, GAS-FIRED, STORAGE, DOMESTIC-WATER HEATERS

- A. Commercial, Gas-Fired, High-Efficiency, Storage, Domestic-Water Heaters:

1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
2. Basis-of-Design Product: Subject to compliance with requirements, provide PVI Platinum 299SSAPN or comparable product as follows:
 - a. PVI
 - b. Pre-approved storage type condensing water heater with 436 grade SS ASME tank construction or equal
 - c. An equal alternate to the specified fire tube design is a prepiped and wired, skid mounted boiler and tank design. A complete CAD design must be presented for approval with the submittals showing piping layout, pipe sizes, bypass piping, isolation valves, balance valves, pipe insulation type and thickness, pump size and type (must be all bronze), boiler manufacturer and efficiency, electrical requirements, double wall heat exchanger selection, skid dimensions and tank specifications. Approved boiler manufacturers are AERCO (MLX-303) and Patterson Kelley (Mach C-300). Approved storage tank manufacturers (80 gallon capacity) are 316L or 90/10 copper nickel tanks from Hubbell - Model number BW80SS-340 Style A or equal by Patterson Kelley. Copper spray linings are not acceptable. Each tank will include a double wall heat exchanger and a bronze pump capable of delivering the required gph recovery along with a 3-way diverting valve mounted and wired to the tank thermostat. The pump supplied by the boiler manufacturer should be capable of generating the appropriate gpm to meet the stated recovery of 341 gpm and shall be wired to the tank thermostat along with the 3-way valve. Each skid mounted, pre-piped system shall comply with sections 2.1 A 3 - 8. If the alternate is accepted, the contractor is responsible regarding the coordination of all venting, gas pipe, footprint and electrical requirements. Any additional cost for motor starters and insulation shall be included in the submittal and are the contractor's responsibility.
3. Standard: ANSI Z21.10.3/CSA 4.3.
4. Description: Manufacturer's proprietary design to provide at least 94% percent combustion efficiency at optimum operating conditions.
5. Storage-Tank Construction: ASME code 436 grade stainless steel tank with 160 psi minimum working-pressure rating. The tank will be constructed of a 436 grade stainless steel approved by the ASME code, part HLW for use with potable waters. The tank will utilize no lining. No sacrificial anodes or electronic anodes will be required or used.
 - a. Tappings: Factory fabricated of materials compatible with tank. Attach tappings to tank before testing.
 - 1) NPS 2 and Smaller: Threaded ends according to ASME B1.20.1.
 - 2) NPS 2-1/2 and Larger: Flanged ends according to ASME B16.5 for steel and stainless-steel flanges and according to ASME B16.24 for copper and copper-alloy flanges.

- b. Interior Finish: Comply with NSF 61 barrier materials for potable-water tank linings, including extending finish into and through tank fittings and outlets.
 - c. Lining: 436 Stainless Steel ASME tank construction complying with NSF 61 barrier materials for potable-water tank linings, including extending lining into and through tank fittings and outlets.
6. Factory-Installed Storage-Tank Appurtenances:
- a. Anode Rod: not required
 - b. Dip Tube: Required unless cold-water inlet is near bottom of tank.
 - c. Drain Valve: Corrosion-resistant metal complying with ASSE 1005.
 - d. Insulation: Comply with ASHRAE/IESNA 90.1. Surround entire storage tank except connections and controls.
 - e. Jacket: corrosion-resistant polyethylene jacket.
 - f. Burner or Heat Exchanger: Comply with UL 795 or approved testing agency requirements for gas-fired, high-efficiency, domestic-water heaters and natural-gas fuel. Combustion will be provided by a pre-mix, fan assisted, ported stainless steel burner. The heating section will not be fabricated from austenitic stainless steel and will not be susceptible to chloride induced stress cracking.
 - g. Temperature Control: Electronic adjustable thermostat.
 - h. Safety Controls: Automatic, high-temperature-limit and low-water cutoff devices or systems. The heater will be equipped with electronic flame monitoring with pre-purge, electronic temperature control with digital temperature readout, two immersion temperature limiting devices.
 - i. Combination Temperature-and-Pressure Relief Valves: ANSI Z21.22/CSA 4.4-M. Include one (1) or more relief valves with total relieving capacity at least as great as heat input, and include pressure setting less than domestic-water heater working-pressure rating. Select one (1) relief valve with sensing element that extends into storage tank.
7. Venting: Water heater will be category IV, condensing, positive pressure appliance. Water heater will vent through either PVC or CPVC as dictated by the stored water temperature (sanitizing temperatures will require CPVC vent). Water heater will vent unassisted for 100 equivalent feet through four inch diameter pipe. Appliance will simultaneously be able to accept direct inlet combustion air through up to 100 equivalent feet of four inch diameter pipe.

B. Capacity and Characteristics:

- 1. Capacity: 70 gallons
- 2. Recovery: 341 gph at 140 degree temperature rise.
- 3. Temperature Setting: 140 degrees
- 4. Fuel Gas Input: 299,000 BTU
- 5. Gas Pressure Regulator:

- a. Inlet Pressure: minimum 4.5 inches water column.
 - b. Gas Pressure Required at Burner: min 4.5 inches water column.
6. Electrical Characteristics:
- a. Volts: 120 V
 - b. Phase: Single
 - c. Hertz: 60.
 - d. Full-Load Amperes: 6 A
7. Minimum Vent Diameter: 4 inches

2.2 DOMESTIC-WATER HEATER ACCESSORIES

A. Domestic-Water Compression Tanks:

1. Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. AMTROL Inc.
 - b. Flexcon Industries.
 - c. Honeywell International Inc.
2. Description: Steel, pressure-rated tank constructed with welded joints and factory-installed butyl-rubber diaphragm. Include air precharge to minimum system-operating pressure at tank.
3. Construction:
 - a. Tappings: Factory-fabricated steel, welded to tank before testing and labeling. Include ASME B1.20.1 pipe thread.
 - b. Interior Finish: Comply with NSF 61 barrier materials for potable-water tank linings, including extending finish into and through tank fittings and outlets.
 - c. Air-Charging Valve: Factory installed.
4. Capacity and Characteristics:
 - a. Working-Pressure Rating: 150 psig.
 - b. Capacity Acceptable: Four (4) gallons minimum.
 - c. Air Precharge Pressure: 40psig.

B. Drain Pans: Corrosion-resistant metal with raised edge. Comply with ANSI/CSA LC 3. Include dimensions not less than base of domestic-water heater, and include drain outlet not less than NPS 3/4 with ASME B1.20.1 pipe threads or with ASME B1.20.7 garden-hose threads.

C. Piping-Type Heat Traps: Field-fabricated piping arrangement according to ASHRAE/IESNA 90.1.

- D. Heat-Trap Fittings: ASHRAE 90.2.
- E. Manifold Kits: Domestic-water heater manufacturer's factory-fabricated inlet and outlet piping for field installation, for multiple domestic-water heater installation. Include ball-, butterfly-, or gate-type shutoff valves to isolate each domestic-water heater and memory-stop balancing valves to provide balanced flow through each domestic-water heater.
 - 1. Comply with requirements for ball-, butterfly-, or gate-type shutoff valves specified in Section 22 05 23.
 - 2. Comply with requirements for balancing valves specified in Section 22 11 19.
- F. Gas Shutoff Valves: ANSI Z21.15/CSA 9.1-M, manually operated. Furnish for installation in piping.
- G. Gas Pressure Regulators: ANSI Z21.18/CSA 6.3, appliance type. Include 1/2-psig pressure rating as required to match gas supply.
- H. Automatic Gas Valves: ANSI Z21.21/CSA 6.5, appliance, electrically operated, on-off automatic valve.
- I. Combination Temperature-and-Pressure Relief Valves: Include relieving capacity at least as great as heat input, and include pressure setting less than domestic-water heater working-pressure rating. Select relief valves with sensing element that extends into storage tank.
 - 1. Gas-Fired, Domestic-Water Heaters: ANSI Z21.22/CSA 4.4-M.
- J. Pressure Relief Valves: Include pressure setting less than domestic-water heater working-pressure rating.
 - 1. Gas-Fired, Domestic-Water Heaters: ANSI Z21.22/CSA 4.4-M.
- K. Vacuum Relief Valves: ANSI Z21.22/CSA 4.4-M.
- L. Domestic-Water Heater Stands: Manufacturer's factory-fabricated steel stand for floor mounting, capable of supporting domestic-water heater and water. Provide dimension that will support bottom of domestic-water heater a minimum of 18 inches above the floor.
- M. Domestic-Water Heater Mounting Brackets: Manufacturer's factory-fabricated steel bracket for wall mounting, capable of supporting domestic-water heater and water.

2.3 SOURCE QUALITY CONTROL

- A. Factory Tests: Test and inspect assembled domestic-water heaters and storage tanks specified to be ASME-code construction, according to ASME Boiler and Pressure Vessel Code.

- B. Hydrostatically test commercial -water heaters **and** storage tanks to minimum of one and one-half times pressure rating before shipment.
- C. Domestic-water heaters will be considered defective if they do not pass tests and inspections. Comply with requirements in Section 01 40 00 for retesting and reinspecting requirements and Section 01 73 00 for requirements for correcting the Work.
- D. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 WATER HEATER INSTALLATION

- A. Water Heater Mounting: Install commercial domestic-water heaters on concrete base. Comply with requirements for concrete base specified in Section 03 30 53.
 - 1. Exception: Omit concrete bases for commercial domestic-water heaters if installation on stand, bracket, suspended platform, or directly on floor is indicated.
 - 2. Maintain manufacturer's recommended clearances.
 - 3. Arrange units so controls and devices that require servicing are accessible.
 - 4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
 - 5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete floor.
 - 6. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 7. Install anchor bolts to elevations required for proper attachment to supported equipment.
 - 8. Anchor domestic-water heaters to substrate.
- B. Install water heaters level and plumb, according to layout drawings, original design, and referenced standards. Maintain manufacturer's recommended clearances. Arrange units so controls and devices needing service are accessible.
 - 1. Install shutoff valves on domestic-water-supply piping to domestic-water heaters and on domestic-hot-water outlet piping. Comply with requirements for shutoff valves specified in Section 22 05 23.
- C. Install gas-fired, domestic-water heaters according to NFPA 54.
 - 1. Install gas shutoff valves on gas supply piping to gas-fired, domestic-water heaters without shutoff valves.
 - 2. Install gas pressure regulators on gas supplies to gas-fired, domestic-water heaters without gas pressure regulators if gas pressure regulators are required to reduce gas pressure at burner.

3. Install automatic gas valves on gas supplies to gas-fired, domestic-water heaters if required for operation of safety control.
 4. Comply with requirements for gas shutoff valves, gas pressure regulators, and automatic gas valves specified in Section 22 21 23.
- D. Install commercial domestic-water heaters with seismic-restraint devices. Comply with requirements for seismic-restraint devices specified in Section 22 05 48.
 - E. Install combination temperature-and-pressure relief valves in top portion of storage tanks. Use relief valves with sensing elements that extend into tanks. Extend commercial-water-heater relief-valve outlet, with drain piping same as domestic-water piping in continuous downward pitch, and discharge by positive air gap onto closest floor drain.
 - F. Install combination temperature-and-pressure relief valves in water piping for domestic-water heaters without storage. Extend commercial-water-heater relief-valve outlet, with drain piping same as domestic-water piping in continuous downward pitch, and discharge by positive air gap onto closest floor drain.
 - G. Install water-heater drain piping as indirect waste to spill by positive air gap into open drains or over floor drains. Install hose-end drain valves at low points in water piping for domestic-water heaters that do not have tank drains. Comply with requirements for hose-end drain valves specified in Section 22 11 19.
 - H. Install thermometer on outlet piping of domestic-water heaters. Comply with requirements for thermometers specified in Section 22 05 19.
 - I. Assemble and install inlet and outlet piping manifold kits for multiple domestic-water heaters. Fabricate, modify, or arrange manifolds for balanced water flow through each domestic-water heater. Include shutoff valve and thermometer in each domestic-water heater inlet and outlet, and throttling valve in each domestic-water heater outlet. Comply with requirements for valves specified in Section 22 05 23, and comply with requirements for thermometers specified in Section 22 05 19.
 - J. Install piping-type heat traps on inlet and outlet piping of domestic-water heater storage tanks without integral or fitting-type heat traps.
 - K. Fill domestic-water heaters with water.
 - L. Charge domestic-water compression tanks with air.

3.2 CONNECTIONS

- A. Comply with requirements for domestic-water piping specified in Section 22 11 16.
- B. Comply with requirements for fuel-oil piping specified in Section 23 21 13.
- C. Comply with requirements for gas piping specified in Section 22 21 23.
- D. Drawings indicate general arrangement of piping, fittings, and specialties.

- E. Where installing piping adjacent to fuel-fired, domestic-water heaters, allow space for service and maintenance of water heaters. Arrange piping for easy removal of domestic-water heaters.

3.3 IDENTIFICATION

- A. Identify system components. Comply with requirements for identification specified in Section 22 05 53.

3.4 FIELD QUALITY CONTROL

- A. 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.
 - 2. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
 - 3. Operational Test: After electrical circuitry has been energized, start units to confirm proper operation.
 - 4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Domestic-water heaters will be considered defective if they do not pass tests and inspections. Comply with requirements in Section 01 40 00 for retesting and reinspecting requirements and Section 01 73 00 for requirements for correcting the Work.
- C. Prepare test and inspection reports.

3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain commercial gas-fired water heaters.

END OF SECTION