

## Tuerk House - Phase-4 RM Sovich Architecture

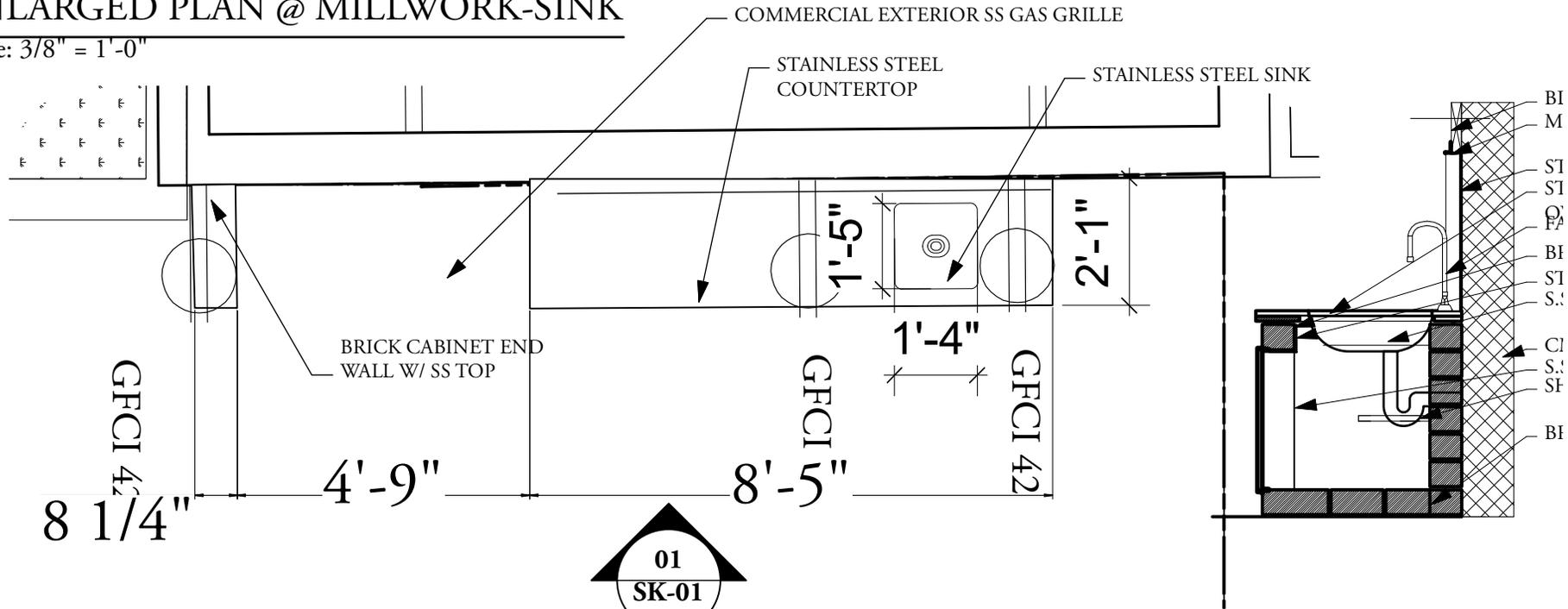
PROJECT MEMBERS		COMPANY NAME	CODE
Architect	RM Sovich Architecture	RMSA	
Construction Manager	FinneyLynn LLC	FLL	
Civil Engineer	-		
Structural Engineer	Skarda & Associates, Inc.	SKA	
MEP Engineer	Ceca	Ceca	
Kitchen Consultant	-		
Interior design			
Contractor	Trionfo Builders, Inc.	TBI	

Item #	RFI#	Name	Date received	Generated by	Dwg / Spec #	Description/question	Conflicting Sheet/ Spec #	Date/ Forwarded to	Date/ Received from	Arch/Engineer Response Date	Arch/ Engineer Response Date	Arch / Engineer Response	Revised drawings/Spec.	Responsibility	Status	ADDENDUM #
1	1	Kim	8/25/23	TBI		Please provide more details on the steps from the penthouse to the roof.						Stair is a non penetrating stair system. Attachment detail if required will be provided once shop drawings are submitted. Refer to specification sheet on section 055000 - non penetrating roof top stair system.		Architect	Closed	ADD#01
2	1	Kim	8/25/23	TBI		2. There is no roof spec. Please provide more detail regarding both roofs.						For the shade roof refer to specification on section 074000. For the canopy roof see the attached spec section 07 53 23 ADHERED EPDM ROOF.	Roof Specification + SK230831-02	Architect	New Item	ADD#01
3	1	Kim	8/25/23	TBI		3. There are metal guardrails @ Ashburton St main entrance det D6/A2.01, and at stepped seating det B6/A2.5. both are called to be painted. However, ASI-07/5.A calls for stainless steel. Please advise if any railing needs to be field painted.						Provide stainless steel per ASI-07/5.		Architect	Closed	ADD#01
4	1	Kim	8/25/23	TBI		4. Trellis structures, at front & side entrances and rear yard call for clear satin finish on cedar. Please advise what type of finish is to be provided.						Provide clear satin finish.		Architect	Closed	ADD#01
5	1	Kim	8/25/23	TBI		5. The trellis on the front of the building, A2.03 shows the columns and some framing out of steel. I don't see any more detail on the structural drawings about this trellis though as far as steel sizes and elevations. Please advise.		8/25/23 SKA				See the attached Structural drawing S1.05.	S1.05	Structural	Closed	ADD#01
6	1	Kim	8/25/23	TBI		6. Is western red cedar fine for the trellis infill?						Yes.		Architect	Closed	ADD#01
7	1	Kim	8/25/23	TBI		7. I am looking at A2.04 to get an idea of the lengths needed for trellis. B3, far left, looks to be like 5'-3" 2x4s. When I go to section B6 & D2, these same 2x4s appears to be 5'-11". Which drawing is correct. Pictured attached below. Section B6 & D2 show this same trellis below the trellis to the left.						The governing dimension is 12'-6 between centerline of column. The length of 2x4 horizontal frame should be about 12'-1/2". See the attached sketch.	SK-280830-01	Architect	Closed	ADD#01
8	1	Kim	8/25/23	TBI		8. Does the crawl space need to be sprinkled?						No need to sprinkler the crawl space.		Architect	Closed	ADD#01
9	1	Kim	8/25/23	TBI		9. There are no materials specified for exterior steel. Please provide a spec.		8/25/23 SKA				See the steel structural specification on S0.01	S0.01	Structural	Closed	ADD#01
10	1	Kim	8/25/23	TBI		10. Feeder to shed: On drawing E5.0, it shows a new feeder from panel DP to shed panel S-1A, On drawing E4.2, it shows the location of panel S-1A and DP panel. These are shown in two details. There is no reference to show where the utility room 117B is in relation to the shed. I need to know the distance to the shed. Will this feeder be installed underground? What is the route?		8/25/23 Ceca				Feeder shall be installed underground per code. We have shown Room 117 on Telephone and electric location plan.		MEP	Closed	ADD#01
11	1	Kim	8/25/23	TBI		11. Planter Junction box. On drawing E4.1 it shows junction boxes in the planters. Only one of the planters has a receptacle (GFI). Confirm that there aren't any additional receptacles needed for the planters.		8/25/23 Ceca				Only one receptacle as It is shown on E4.2.		MEP	Closed	ADD#01
12	1	Kim	8/25/23	TBI		12. There are more light fixtures shown on the light fixture schedule than what is shown on drawing E4.1. Light fixtures CL-1 and FI-1 are not shown. Confirm that that is correct.		8/25/23 Ceca				Drawings are supplemental to each other. Fixtures are located on architectural lighting location plan. Refer to A4.1.		MEP	Closed	ADD#01
13	1	Kim	8/25/23	TBI		13. On drawing E0 it states: OUTDOOR WIRING - USE THE FOLLOWING WIRING METHODS 1) RIGID ALUMINUM METAL CONDUIT WITH WATERPROOF COMPRESSION COUPLING WITH INSULATED THROAT. Since it is stating that the aluminum conduit is using couplings and connectors, confirm the Aluminum EMT wiring method and not Rigid Aluminum.		8/25/23 Ceca				Confirmed.		MEP	Closed	ADD#01



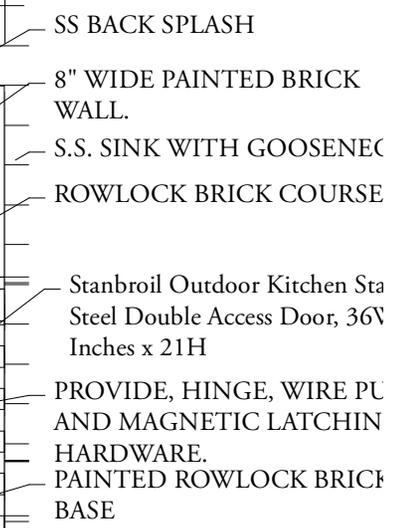
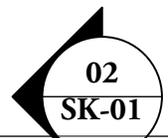
# 00 ENLARGED PLAN @ MILLWORK-SINK

Scale: 3/8" = 1'-0"



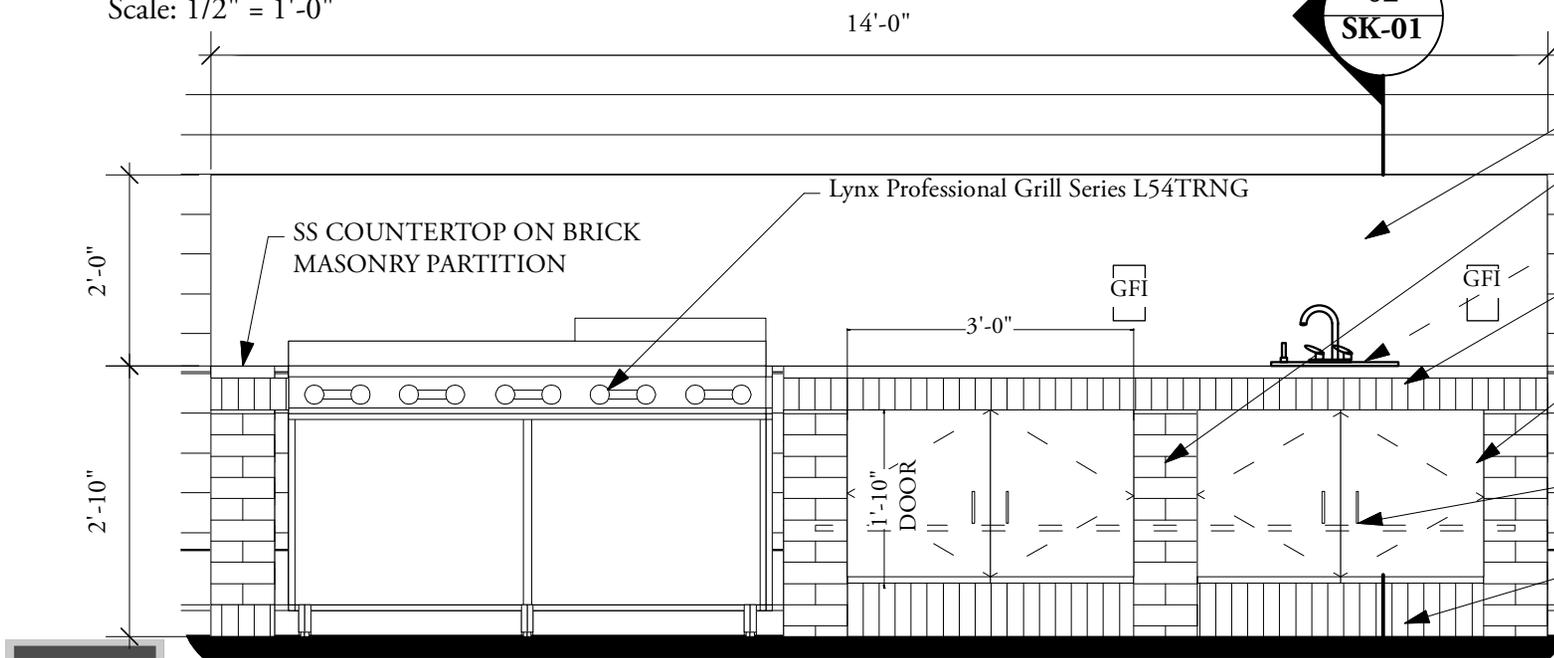
# 02 SECTION @ M

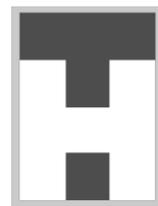
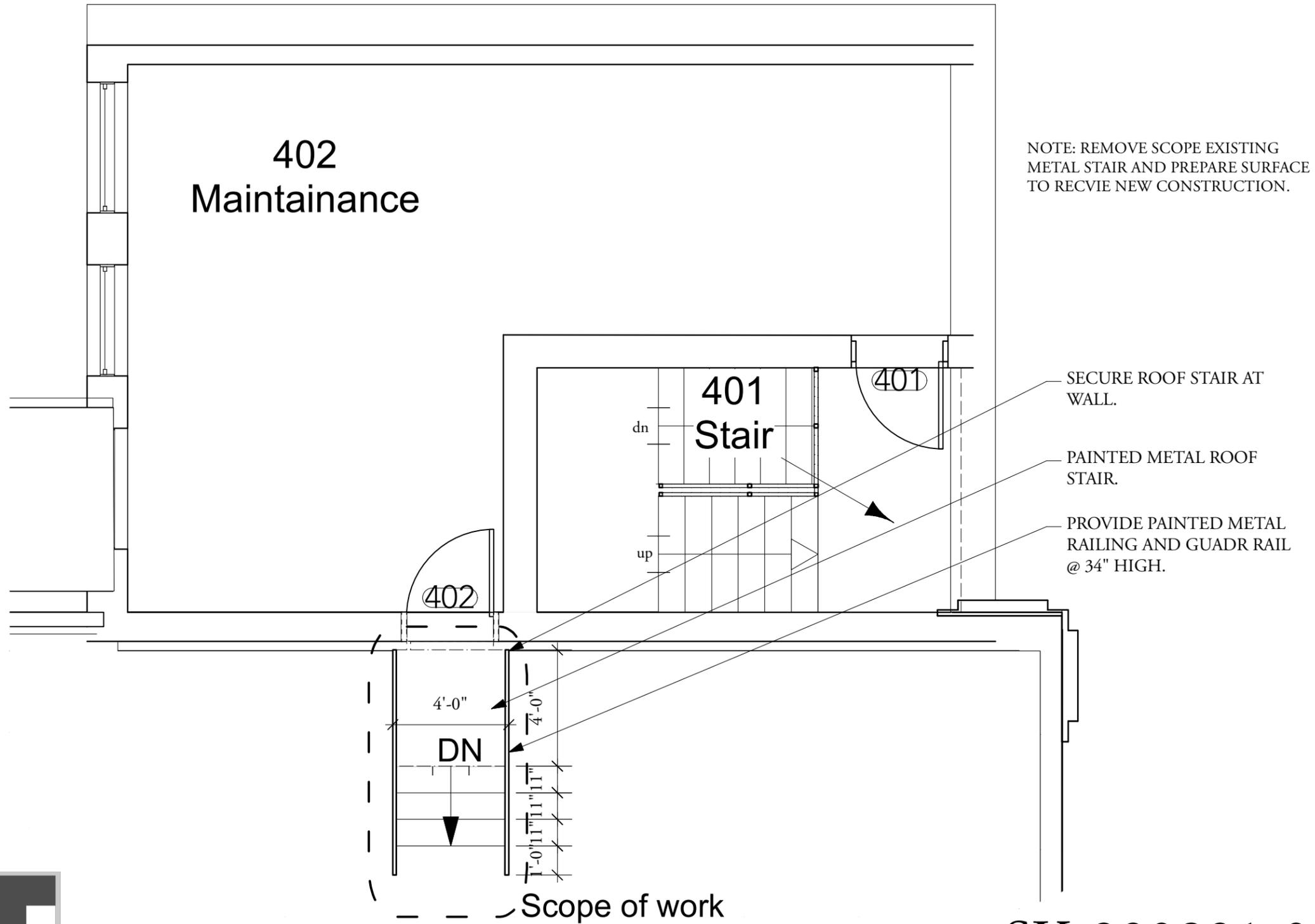
Scale: 1/2" = 1'-0"



# 01 ELEVATION @ MILLWORK-SINK

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

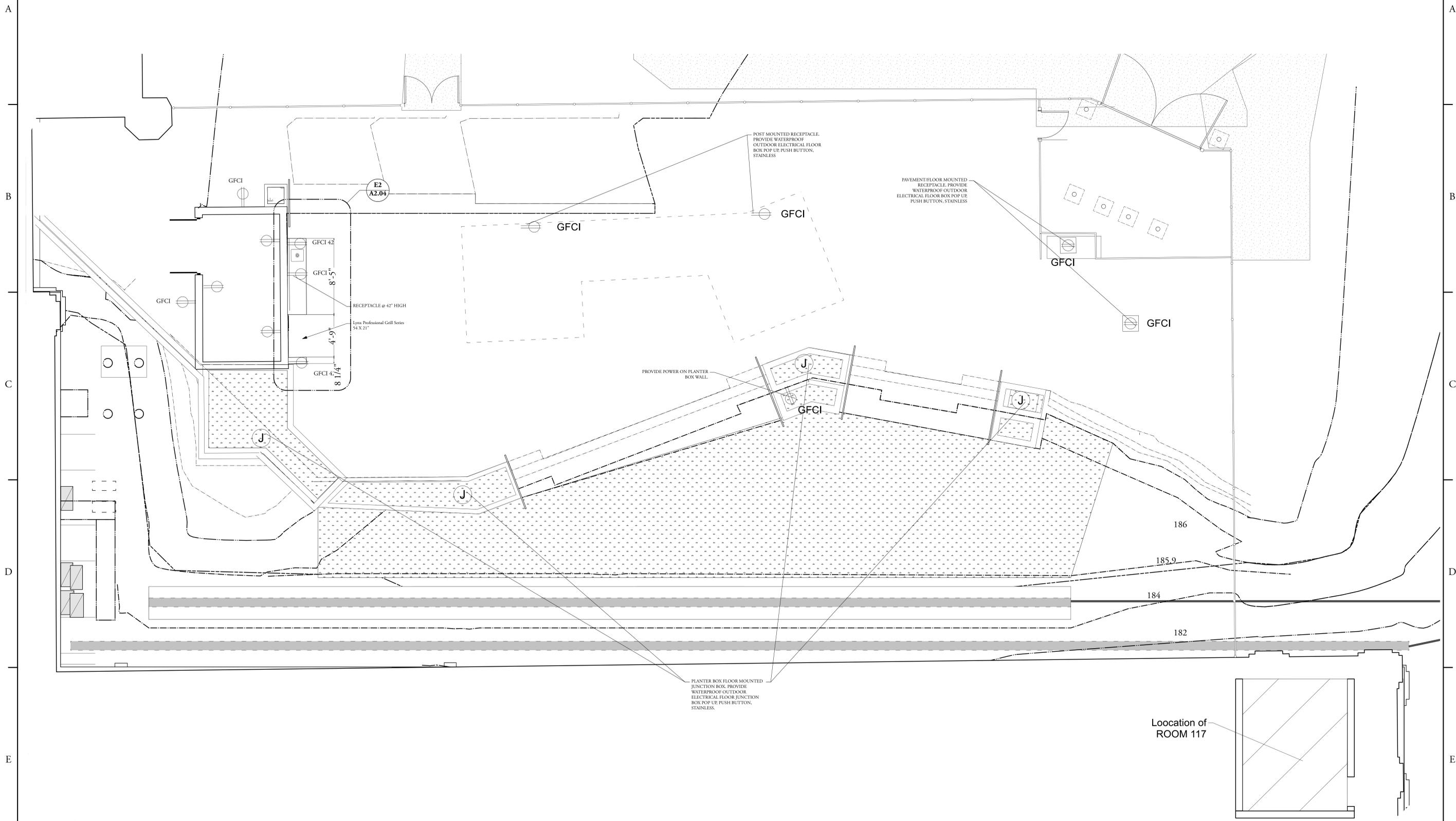








**GENERAL NOTES:**  
 1. ALL RECEPTACLES SHALL BE GRAY IN COLOR AND RECEIVE STAINLESS STEEL COVER PLATES.



**SITE ELECTRIC LOCATION PLAN**  
 Scale: 1/4" = 1'-0"

No.	Date	Appr	Revision Notes
1	11/2/21		AD-01

No.	Date	Issue Notes

**STRUCTURAL ENGINEER:**  
 Skarda & Associates, Inc.  
 2439 N. Charles St.  
 Baltimore, MD 21218



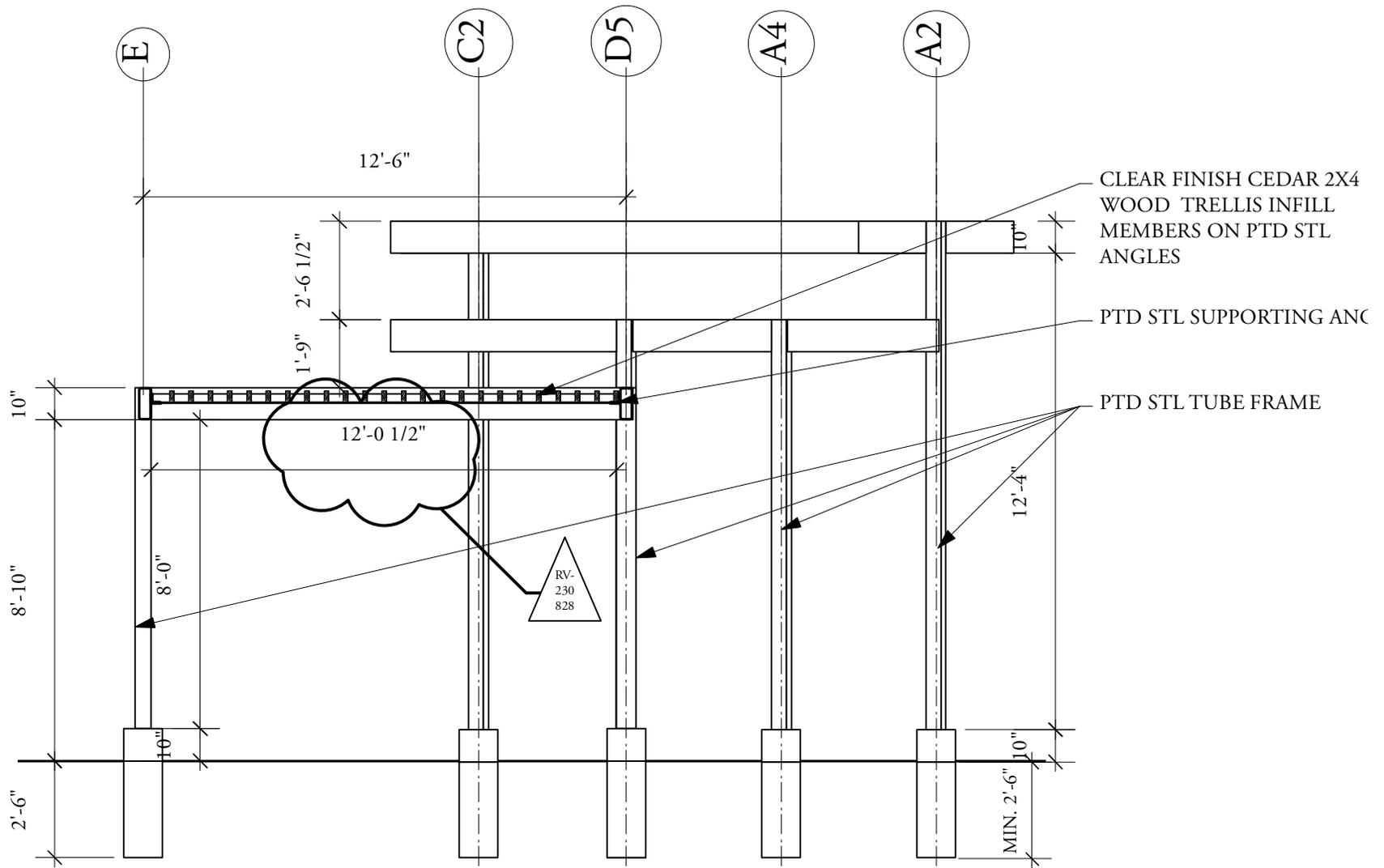
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 office@rmsarchitecture.com

**Tuerk House - Phase 4**

Issued for:	BIDDING AND PERMIT
Issued date:	08/03/2023
PRINT DATE:	August 31, 2023
PROJECT #	22010
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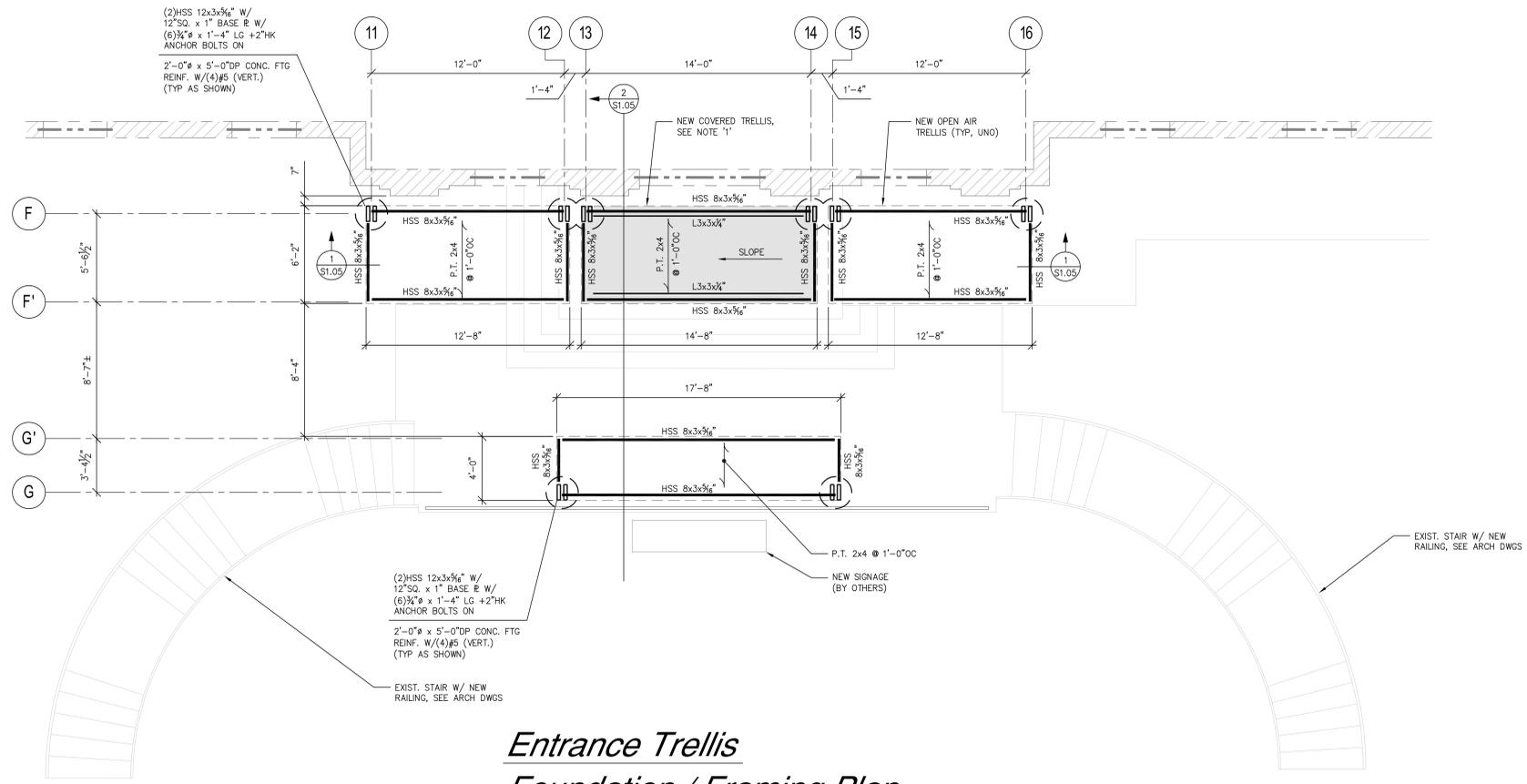
**A1.03**

POWER PLAN-PH-4



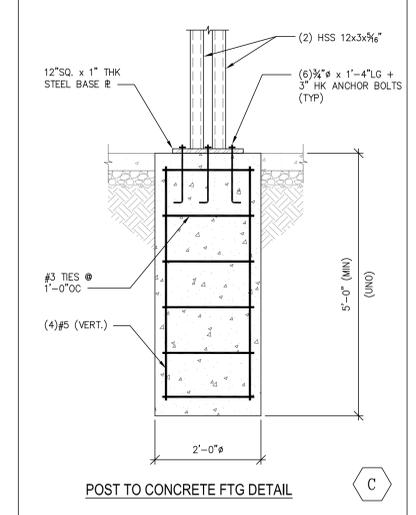
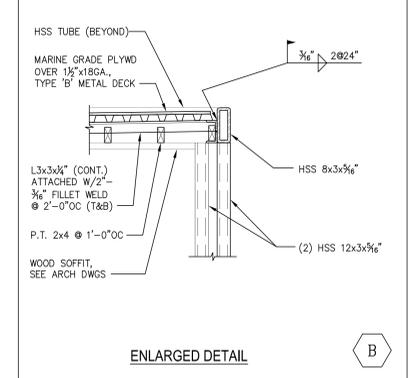
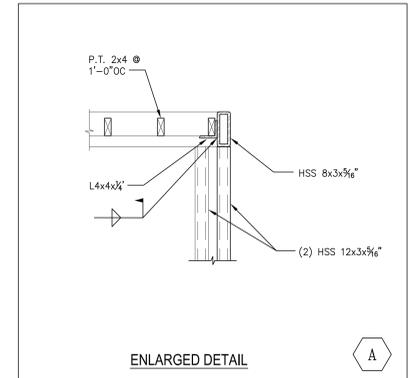
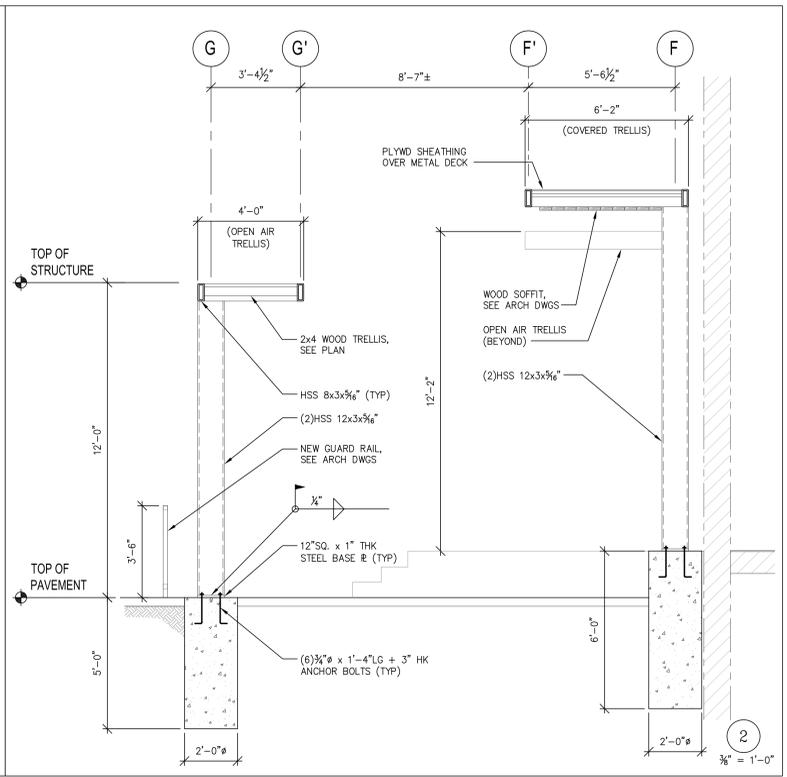
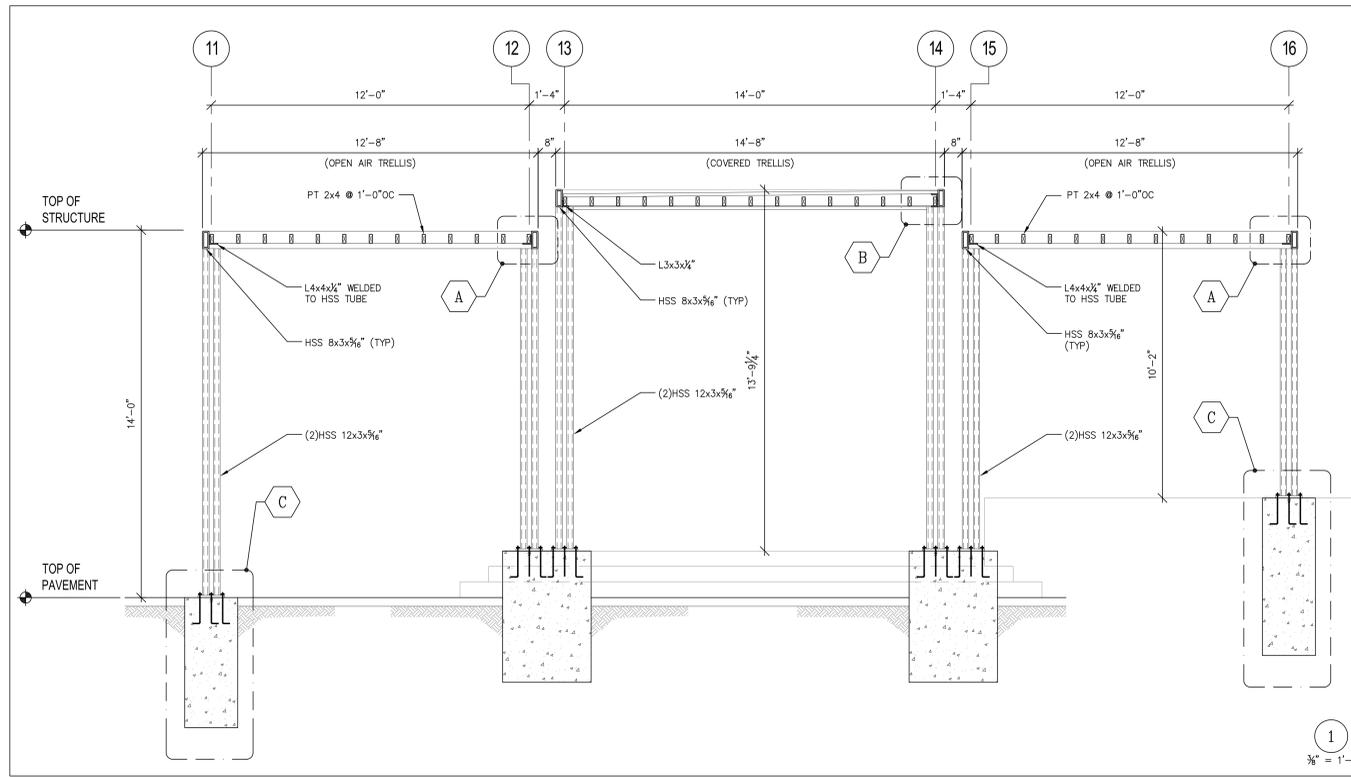
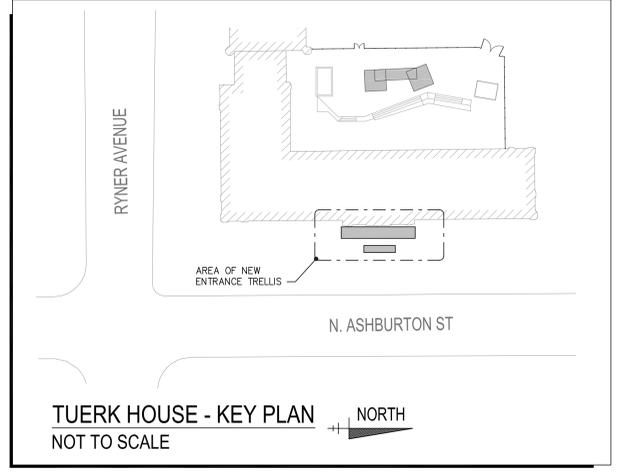
**SECTION @ REAR TRELLIS**

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



**Entrance Trellis**  
**Foundation / Framing Plan**  
 1/4" = 1'-0"

1. [Symbol] : INDICATES AREA OF COVERED TRELLIS WITH 1/2"x18GA, TYPE B METAL DECK.



No.	Date	Appr	Revision Notes

No.	Date	Issue Notes

STRUCTURAL ENGINEER:  
 Skarda & Associates, Inc.  
 2439 N. Charles St.  
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 SA# 23334

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**Tuerk House - Phase 4**

PROJECT: SA# 23334

Issued for:	BIDDING AND PRICING SET
Issued date:	08/03/2023
PRINT DATE:	August 03, 2023

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Professional Certification:  
 I certify that these documents were prepared by or approved by me and I am a duly licensed professional engineer under the laws of the state of Maryland.  
 License No.: 200863  
 Exp. Date: March 19, 2025

**S1.05**  
 TRELLIS STRUCTURAL PLANS,  
 SECTIONS AND DETAILS

SECTION 07 53 23 EPDM ADHERED ROOFING SYSTEM

PART 1 GENERAL

The project includes the provision of a complete Firestone EcoWhite™ Platinum™ EPDM Membrane Roofing System.

1.01 SUMMARY

- A. Furnish and install elastomeric sheet roofing system, including:
  - 1. Roofing manufacturer's requirements for the specified warranty.
  - 2. Preparation of roofing substrates.
  - 3. Wood nailers for roofing attachment.
  - 4. Vapor barrier.
  - 5. Insulation.
  - 6. Elastomeric EPDM membrane roofing.
  - 7. Metal roof edging and copings.
  - 8. Flashings.
  - 9. Walkway pads.
  - 10. Other roofing-related items specified or indicated on the drawings or otherwise necessary to provide a complete weatherproof roofing system.
- B. Disposal of demolition debris and construction waste is the responsibility of Contractor. Perform disposal in manner complying with all applicable federal, state, and local regulations.
- C. Comply with the published recommendations and instructions of the roofing membrane manufacturer, at <http://manual.fsbp.com> .
- D. Commencement of work by the Contractor shall constitute acknowledgement by the Contractor that this specification can be satisfactorily executed, under the project conditions and with all necessary prerequisites for warranty acceptance by roofing membrane manufacturer. Any modification of the Contract Sum will be made in accordance with the stipulations of the Contract Documents stated elsewhere.

1.02 RELATED SECTIONS

- A. Rough Carpentry: Wood nailers associated with roofing and roof insulation.
- B. Sheet Metal Flashing and Trim: Formed metal flashing and trim items associated with roofing.
- C. Roof Accessories: Roof hatches, vents, and manufactured curbs.
- D. Plumbing Piping and Roof Drains.

1.03 REFERENCES

- A. Referenced Standards: These standards form part of this specification only to the extent they

are referenced as specification requirements.

1. ASTM C 1177/C 1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2006.
2. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2013.
3. ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.
4. ASTM D 4637 - Standard Specification for EPDM Sheet used in Single-Ply Roof Membrane; 2004.
5. ASTM D 4811 - Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing; 2004.
6. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2013a.
7. ASTM E 136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.
8. FM 1-28 - Design Wind Loads; Factory Mutual System; 2007.
9. FM 1-29 - Roof Deck Securement and Above Deck Roof Components; Factory Mutual System; 2006.
10. FM 4470 - Approval Standard - Class I Roof Covers; current version.
11. PS 1 - Construction and Industrial Plywood; 2009.
12. PS 20 - American Softwood Lumber Standard; 2010.
13. SPRI ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems; 2007. (ANSI/SPRI ES-1).

#### 1.04 SUBMITTALS

##### A. Product Data:

1. Provide membrane manufacturer's printed data sufficient to show that all components of roofing system, including insulation and fasteners, comply with the specified requirements and with the membrane manufacturer's requirements and recommendations for the system type specified; include data for each product used in conjunction with roofing membrane.
2. Where UL or FM requirements are specified, provide documentation that shows that the roofing system to be installed is UL-Classified or FM-approved, as applicable; include data itemizing the components of the classified or approved system.
3. Installation Instructions: Provide manufacturer's instructions to installer, marked up to show exactly how all components will be installed; where instructions allow installation options, clearly indicate which option will be used.

##### B. Shop Drawings: Provide:

1. The roof membrane manufacturer's standard details customized for this project for all relevant conditions, including flashings, base tie-ins, roof edges, terminations, expansion

joints, penetrations, and drains.

- C. Pre-Installation Notice: Copy to show that manufacturer's required Pre Installation Notice (PIN) has been accepted and approved by the manufacturer.
- D. Executed Warranty as a requirement of project close-out.
- E. Specimen Warranty: Submit prior to starting work.
- F. Samples: Submit samples of each product to be used.

**1.05 QUALITY ASSURANCE**

- A. Applicator Qualifications: Roofing installer shall have the following:
  - 1. Current Firestone Master Contractor status.
  - 2. At least five years experience in installing specified system.
  - 3. Capability to provide payment and performance bond to building owner.
  - 4. Pre-Installation Conference: Before start of roofing work, Contractor shall hold a meeting to discuss the proper installation of materials and requirements to achieve the warranty.
  - 5. Require attendance with all parties directly influencing the quality of roofing work or affected by the performance of roofing work.
  - 6. Notify Architect and Owner's Representative well in advance of meeting.

**1.06 DELIVERY, STORAGE AND HANDLING**

- A. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact and legible.
- B. Store materials clear of ground and moisture with weather protective covering.
- C. Keep combustible materials away from ignition sources.

**1.07 WARRANTY**

- A. Comply with all warranty procedures required by manufacturer, including notifications, scheduling, and inspections.
- B. Warranty: Firestone 30 year Platinum Red Shield Limited Warranty covering membrane, roof insulation, and membrane accessories.

Warranty Duration	Membrane Thickness, required minimums
30 year	0.090 RubberGard Platinum EPDM or EcoWhite Platinum EPDM

1. Limit of Liability: No dollar limitation.
2. Scope of Coverage: Repair leaks in the roofing system caused by:
  - a. Ordinary wear and tear of the elements.
  - b. Manufacturing defect in Firestone brand materials.
  - c. Defective workmanship used to install these materials.
  - d. Damage due to winds up to 100 mph.
3. Not Covered:
  - a. Damage due to winds in excess of 100 mph.
  - b. Damage due to hurricanes or tornadoes.
  - c. Hail.
  - d. Intentional damage.
  - e. Unintentional damage due to normal rooftop inspections, maintenance, or service.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Acceptable Manufacturer - Roofing System: Firestone Building Products Co., Carmel, IN. [www.firestonebpc.com](http://www.firestonebpc.com).
  1. Roofing systems manufactured by others may be acceptable provided the roofing system is completely equivalent in materials and warranty conditions and the manufacturer meets the following qualifications:
    - a. Specializing in manufacturing the roofing system to be provided.
    - b. Minimum ten years of experience manufacturing the roofing system to be provided.
    - c. Able to provide a no dollar limit, single source roof system warranty that is backed by corporate assets in excess of one billion dollars.
    - d. ISO 9002 certified.
    - e. Able to provide isocyanurate insulation that is produced in own facilities.
- B. Manufacturer of Insulation and Cover Board: Same manufacturer as roof membrane.
- C. Manufacturer of Metal Roof Edging: Same manufacturer as roof membrane.
  1. Metal roof edging products by other manufacturers are not acceptable.
  2. Field- or shop-fabricated metal roof edgings are not acceptable.
- D. Substitution Procedures: See Instructions to Bidders.
  1. Submit evidence that the proposed substitution complies with the specified requirements.

### 2.02 ROOFING SYSTEM DESCRIPTION

- A. Roofing System:
  1. Membrane: **Firestone EcoWhite™ Platinum™ EPDM Membrane**
  2. Thickness: As specified elsewhere.
  3. Membrane Attachment: Fully adhered.
  4. Slope: Deck is sloped but not enough; provide additional slope of 1/4 inch per foot (1:48) by means of tapered insulation.
  5. Comply with applicable local building code requirements.
  6. Provide assembly having Underwriters Laboratories, Inc. (UL) Class A Fire Hazard

Classification.

7. Provide assembly complying with Factory Mutual Corporation (FM) Roof Assembly Classification, FM DS 1-28 and 1-29, and meeting minimum requirements of FM 1-90 wind uplift rating.

**B. Insulation:**

1. Provide a Total System R Value: R-30 or greater.
2. Maximum Board Thickness: 2 inches (50 mm); use as many layers as necessary; stagger joints in adjacent layers.

Iso Insulation Thickness [IN (mm)]	Insulation R Value*
1.00 (25.4)	5.7
1.50 (38.1)	8.6
1.75 (44.5)	10.0
2.00 (50.8)	11.4
2.30 (58.4)	13.2
2.50 (63.5)	14.4
2.80 (71.1)	16.2
3.00 (76.2)	17.4
3.25 (82.6)	18.9
3.50 (88.9)	20.5
3.75 (95.3)	22.0
4.00 (101.6)	23.6

*\*Long Term Thermal Resistance (LTTR) values provide a 15-Year time weighted average in accordance with ASTM 1289-13.*

Total Iso Insulation Thickness, nominal	System R Value
3.5 inches	20R
4.5 inches	25R
5.25 inches	30R
6.25 inches	35R

(Use of Firestone ISOGARD HD cover board can provide an additional 2.5 R vs. cover boards. [Example: 2.0 inch Iso (11.4 R) + 2.0 inch Iso (11.4 R) + .5 inch HD Iso cover board (2.5 R) = 25.3 R])

3. Base Layer: Polyisocyanurate foam board, non-composite.
  - a. Attachment: Mechanical fastening, Low-rise polyurethane adhesive.
4. Top Layer: Polyisocyanurate foam board, non-composite.
  - a. Attachment: Mechanical fastening, Low-rise polyurethane adhesive.

- C. Cover Board: High Density Polyisocyanurate Cover Board:
  - 1. Thickness: 0.5 inch (12.7mm).
  - 2. R-Value: 2.5 based on ASTM tests C158 and C177.
    - a. Attachment: Mechanical fastening, Low-rise polyurethane adhesive.

### 2.03 EPDM MEMBRANE MATERIALS

- A. Roofing and Flashing Membrane: White cured synthetic single-ply membrane composed of ethylene propylene diene terpolymer (EPDM) with the following properties:
  - 1. Thickness: 0.060 inch (1.5 mm).
  - 2. Nominal Thickness Tolerance: Plus/minus 10 percent.
  - 3. Sheet Width: Provide the widest available sheets to minimize field seaming.
  - 4. Acceptable Product: Firestone EcoWhite™ Platinum™ EPDM Membrane
- B. Membrane Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane manufacturer.
- C. Flashing Membrane: Self-curing, non-reinforced membrane composed of nonvulcanized EPDM rubber, complying with ASTM D 4811 Type II, and with the following properties:
  - 1. Thickness: 0.055 inch (1.4 mm).
  - 2. Color: Same as field membrane
  - 3. Acceptable Product: RubberGard EPDM FormFlash by Firestone.
- D. Self-Adhesive Flashing Membrane: Semi-cured 45 mil EPDM membrane laminated to 35 mil (0.9 mm) EPDM tape adhesive; QuickSeam Flashing by Firestone.
- E. Pre-Molded Pipe Flashings: EPDM, molded for quick adaptation to different sized pipes; Firestone EPDM Pipe Flashing.
- F. Self-Adhesive Lap Splice Tape: 35 mil (0.9 mm) EPDM-based, formulated for compatibility with EPDM membrane and high-solids primer; QuickSeam Splice Tape by Firestone.
- G. Splice Adhesive: Synthetic polymer-based, formulated for compatibility with EPDM membrane and metal surfaces; SA-1065 Splice Adhesive by Firestone.
- H. Bonding Adhesive: Neoprene-based, formulated for compatibility with EPDM membrane and wide variety of substrate materials, including masonry, wood, and insulation facings; Bonding Adhesive BA-2004 by Firestone.
- I. Adhesive Primer: Synthetic rubber based primer formulated for compatibility with EPDM membrane and tape adhesive, with VOC content less than 2.1 lb/gal (250 g/L); QuickPrime Plus LVOC by Firestone.
- J. Low Rise Foam Adhesive: Two-component, low-rise polyurethane adhesive designed to attach polyisocyanurate insulation to a variety of acceptable substrates; ISO Stick by Firestone.
- K. Seam Edge Treatment: EPDM rubber-based sealant, formulated for sealing exposed edges of

membrane at seams; Lap Sealant HS by Firestone.

- L. Pourable Sealer: Two-part polyurethane, two-color for reliable mixing; Pourable Sealer by Firestone.
- M. Water Block Seal: Butyl rubber sealant for use between two surfaces, not exposed; Water Block Seal by Firestone.
- N. Metal Plates and Strips Used for Fastening Membrane and Insulation: Steel with Galvalume coating; corrosion-resistance meeting FM 4470 criteria.
  - 1. Termination Bars: Aluminum bars with integral caulk ledge; 1.3 inches (33 mm) wide by 0.10 inch (2.5 mm) thick; Firestone Termination Bar by Firestone.
- O. Roof Walkway Pads: EPDM, 0.30 inch (7.6 mm) thick by 30 by 30 inches (760 by 760 mm) with EPDM tape adhesive strips laminated to the bottom; QuickSeam Walkway Pads by Firestone.
- P. Yellow Safety Strip: To designate areas of caution on the roof or around rooftop objects. 5.5 inches wide (140 mm) by 100 feet long (30 m) strip and nominal 30 mil (0.76 mm) thick yellow TPO membrane laminated to a white, cured, seam tape. Compatible with TPO and EPDM; QuickSeam Yellow Safety Strip by Firestone.

#### 2.04 ROOF INSULATION AND COVER BOARDS

- A. Polyisocyanurate Board Insulation: Closed cell polyisocyanurate foam with black glass reinforced mat laminated to faces, complying with ASTM C 1289 Type II Class 1, with the following additional characteristics:
  - 1. Thickness: As indicated elsewhere.
  - 2. Size: 48 inches (1220 mm) by 96 inches (2440 mm), nominal.
    - a. Exception: Insulation to be attached using adhesive or asphalt may be no larger than 48 inches (1220 mm) by 48 inches (1220 mm), nominal.
  - 3. R-Value (LTTR): 1.0 inch (25 mm) Thickness: 5.7, minimum.
  - 4. Compressive Strength: 20 psi (138 kPa) when tested in accordance with ASTM C 1289.
  - 5. Ozone Depletion Potential: Zero; made without CFC or HCFC blowing agents.
  - 6. Recycled Content: 19 percent post-consumer and 15 percent post-industrial, average.
  - 7. Acceptable Product: Resista polyiso board insulation by Firestone (optional, mold resistant material per ASTM D3273)
- B. High Density Polyisocyanurate Cover Board: Non-combustible, water resistant high density, closed cell polyisocyanurate core with coated glass mat facers, complying with ASTM D 1623, and with the following additional characteristics:
  - 1. Size: 48 inches (1220 mm) by 96 inches (2440 mm), nominal.
    - a. Exception: Board to be attached using adhesive or asphalt may be no larger than 48 inches (1220 mm) by 48 inches (1220 mm), nominal.
  - 2. Thickness: 0.5 inch (12.7mm).

3. R-Value: 2.5 based on ASTM tests C158 and C177.
4. Surface Water Absorption: <3%, maximum, when tested in accordance with ASTM C 209.
5. Compressive Strength: 120psi, when tested in accordance with ASTM 1621.
6. Density: 5pcf, when tested in accordance with ASTM 1622.
7. Factory Mutual approved for use with FM 1-60 and 1-90 rated roofing assemblies.
8. Mold Growth Resistance: Passed, when tested in accordance with ASTM D 3273.
9. Acceptable Product: ISOGARD HD Cover Board by Firestone.

## 2.05 VAPOR BARRIER

- A. Vapor Barrier Membrane: Comprised of SBS modified bitumen adhesive, factory-laminated to a tri-laminate woven, high-density polyethylene top surface. Release liner protecting adhesive.
  1. Intended for use as a direct to deck air/vapor barrier in roofing systems and may be used as a temporary roof membrane for up to ninety (90) days.
  2. Thickness: 0.0325" (0.826 mm) minimum, when tested in accordance with ASTM D 5147.
  3. Max Load at Break at 73 °F (23 °C): 64 lbf/in, MD (11 kN/m) 88 lbf/in, XMD (15 kN/m) when tested in accordance with ASTM D 5147.
  4. Low Temperature Flexibility: -30 °F (-34 °C) when tested in accordance with ASTM D 5147.
  5. Moisture Vapor Permeance, 0.02 Perms (0.92 Ng/Pa•s•m<sup>2</sup>) maximum, when tested in accordance with ASTM E 96.
  6. Air Permeability: 0.00114 ft<sup>3</sup>/min•ft<sup>2</sup> (0.007 L/sec•m<sup>2</sup>) maximum, when tested in accordance with ASTM E 2178.
- B. Acceptable Product: V-Force Vapor Barrier Membrane by Firestone.

## 2.06 METAL ACCESSORIES

- A. Metal Roof Edging and Fascia: Continuous metal edge member serving as termination of roof membrane and retainer for metal fascia; watertight with no exposed fasteners; mounted to roof edge nailer.
  1. Wind Performance:
    - a. Membrane Pull-Off Resistance: 100 lbs/ft (1460 N/m), minimum, when tested in accordance with ANSI/SPRI ES-1 Test Method RE-1, current edition.
    - b. Fascia Pull-Off Resistance: At least the minimum required when tested in accordance with ANSI/SPRI ES-1 Test Method RE-2, current edition.

- c. Provide product listed in current Factory Mutual Research Corporation Approval Guide with at least FM 1-270 rating.
2. Edge Member Height Above Nailer: 1-1/4 inches (31 mm).
3. Fascia Material and Finish: 24 gage, 0.024 inch (0.06 mm) galvanized steel with Kynar 500 finish in manufacturer's standard color; matching concealed joint splice plates; factory-installed protective plastic film.
4. Length: 144 inches (3650 mm).
5. Functional Characteristics: Fascia retainer supports while allowing for free thermal cycling of fascia.
6. Aluminum Bar: Continuous 6063-T6 alloy aluminum extrusion with pre-punched slotted holes; miters welded; injection molded EPDM splices to allow thermal expansion.
7. Anchor Bar Cleat: 20 gage, 0.036 inch (0.9 mm) G90 coated commercial type galvanized steel with pre-punched holes.
8. Fasteners: Factory-provided corrosion resistant fasteners, with drivers; no exposed fasteners permitted.
9. Special Shaped Components: Provide factory-fabricated pieces necessary for complete installation, including miters, scuppers, and end caps; minimum 14 inch (355 mm) long legs on corner pieces.
10. Scuppers: Welded watertight.
11. Accessories: Provide matching brick wall cap, downspout, extenders, and other special fabrications as shown on the drawings.
- B. Parapet Copings: Formed metal coping with galvanized steel anchor/support cleats for capping any parapet wall; watertight, maintenance free, without exposed fasteners; butt type joints with concealed splice plates; mechanically fastened as indicated; Firestone PTCE.
  1. Wind Performance:
    - a. At least the minimum required when tested in accordance with ANSI/SPRI ES-1 Test Method RE-3, current edition.
    - b. Provide product listed in current Factory Mutual Research Corporation Approval Guide with at least FM 1-90 rating.
  2. Description: Coping sections allowed to expand and contract freely while locked in place on anchor cleats by mechanical pressure from hardened stainless steel springs factory attached to anchor cleats; 8 inch (200 mm) wide splice plates with factory applied dual non-curing sealant strips capable of providing watertight seal.
  3. Material and Finish: 24 gage, 0.024 inch (0.06 mm) thick galvanized steel with Kynar 500 finish in manufacturer's standard color; matching concealed joint splice plates; factory-installed protective plastic film.
  4. Dimensions:

- a. Wall Width: As indicated on the drawings.
- b. Piece Length: Minimum 144 inches (3650 mm).
- c. Curved Application: Factory fabricated in true radius.
5. Anchor/Support Cleats: 20 gage, 0.036 inch (0.9 mm) thick prepunched galvanized cleat with 12 inch (305 mm) wide stainless steel spring mechanically locked to cleat at 72 inches (1820 mm) on center.
6. Special Shaped Components: Provide factory-fabricated pieces necessary for complete installation, including miters, corners, intersections, curves, pier caps, and end caps; minimum 14 inch (355 mm) long legs on corner, intersection, and end pieces.
7. Fasteners: Factory-furnished; electrolytically compatible; minimum pull out resistance of 240 pounds (109 kg) for actual substrate used; no exposed fasteners.

## 2.07 ACCESSORY MATERIALS

- A. Wood Nailers: PS 20 dimension lumber, Structural Grade No. 2 or better Southern Pine, Douglas Fir; or PS 1, APA Exterior Grade plywood; pressure preservative treated.
  1. Width: 3-1/2 inches (90 mm), nominal minimum, or as wide as the nailing flange of the roof accessory to be attached to it.
  2. Thickness: Same as thickness of roof insulation.

## PART 3 INSTALLATION

### 3.01 GENERAL

- A. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.
- B. Obtain all relevant instructions and maintain copies at project site for duration of installation period.
- C. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.
- D. Perform work using competent and properly equipped personnel.
- E. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.
- F. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 degrees F (15 to 25 degrees C).
- G. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.

1. Protect from spills and overspray from bitumen, adhesives, sealants and coatings.
2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
3. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.

H. Until ready for use, keep materials in their original containers as labeled by the manufacturer.

I. Consult membrane manufacturer's instructions, container labels, and Material Safety Data Sheets (MSDS) for specific safety instructions. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

### 3.02 EXAMINATION

A. Examine roof deck to determine that it is sufficiently rigid to support installers and their mechanical equipment and that deflection will not strain or rupture roof components or deform deck.

B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.

C. Examine roof substrate to verify that it is properly sloped to drains.

D. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptable of project conditions and requirements.

### 3.03 PREPARATION

A. Take appropriate measures to ensure that fumes from adhesive solvents are not drawn into the building through air intakes.

B. Prior to proceeding, prepare roof surface so that it is clean, dry, and smooth, and free of sharp edges, fins, roughened surfaces, loose or foreign materials, oil, grease and other materials that may damage the membrane.

C. Fill all surface voids in the immediate substrate that are greater than 1/4 inch (6 mm) wide with fill material acceptable insulation to membrane manufacturer.

D. Seal, grout, or tape deck joints, where needed, to prevent bitumen seepage into building.

### 3.04 VAPOR BARRIER INSTALLATION

A. All deck/deck cover substrates (except metal decks) must be primed prior to application. Use only primer supplied by membrane manufacturer.

B. Expanded Polystyrene, Extruded Polystyrene, Common Polyisocyanurate, Fiberglass, Wood Fiber, Perlite and existing single-ply roofs are not acceptable substrates for SBS bitumen adhesive.

C. Application can be made at ambient temperatures as low as 25 °F (-4 °C) as long as membrane has been stored in a heated area so that it will be between 50 °F (10 °C) and 100 °F (38 °C) at the time of application.

D. Install with minimum 3" (76.2 mm) side laps and 6" (152.4 mm) end laps.

- E. Roll in with a 75 lb (34 kg) roller to fully mate each roll to substrate, including all lap areas.

### 3.05 INSULATION AND COVER BOARD INSTALLATION

- A. Install insulation in configuration and with attachment method(s) specified in PART 2, under Roofing System.
- B. Install only as much insulation as can be covered with the completed roofing system before the end of the day's work or before the onset of inclement weather.
- C. Lay roof insulation in courses parallel to roof edges.
- D. Neatly and tightly fit insulation to all penetrations, projections, and nailers, with gaps not greater than 1/4 inch (6 mm). Fill gaps greater than 1/4 inch (6 mm) with acceptable insulation. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch (6 mm).
- E. Mechanical Fastening: Using specified fasteners and insulation plates engage fasteners through insulation into deck to depth and in pattern required by Factory Mutual for FM Class specified in PART 2 and membrane manufacturer, whichever is more stringent.
- F. Adhesive Attachment: Apply in accordance with membrane manufacturer's instructions and recommendations; "walk-in" individual roof insulation boards to obtain maximum adhesive contact.

### 3.06 SINGLE-PLY MEMBRANE INSTALLATION

- A. Beginning at low point of roof, place membrane without stretching over substrate and allow to relax at least 30 minutes before attachment or splicing; in colder weather allow for longer relax time.
- B. Lay out the membrane pieces so that field and flashing splices are installed to shed water.
- C. Install membrane without wrinkles and without gaps or fishmouths in seams; bond and test seams and laps in accordance with membrane manufacturer's instructions and details.
- D. Install membrane adhered to the substrate, with edge securement as specified.
- E. Adhered Membrane: Bond membrane sheet to substrate using membrane manufacturer's recommended bonding material, application rate, and procedures.
- F. Edge Securement: Secure membrane at all locations where membrane terminates or goes through an angle change greater than 2 in 12 inches (1:6) using mechanically fastened reinforced perimeter fastening strips, plates, or metal edging as indicated or as recommended by roofing manufacturer.
  - 1. Exceptions: Round pipe penetrations less than 18 inches (460 mm) in diameter and square penetrations less than 4 inches (200 mm) square.
  - 2. Metal edging is not merely decorative; ensure anchorage of membrane as intended by roofing manufacturer.

### 3.07 FLASHING AND ACCESSORIES INSTALLATION

- A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane manufacturer's recommendations and details.

- B. Metal Accessories: Install metal edgings, gravel stops, and copings in locations indicated on the drawings, with horizontal leg of edge member over membrane and flashing over metal onto membrane.
1. Follow roofing manufacturer's instructions.
  2. Remove protective plastic surface film immediately before installation.
  3. Install water block sealant under the membrane anchorage leg.
  4. Flash with manufacturer's recommended flashing sheet unless otherwise indicated.
  5. Where single application of flashing will not completely cover the metal flange, install additional piece of flashing to cover the metal edge.
  6. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, install an additional piece of self-adhesive flashing membrane over the metal lap to the top of the gravel stop; apply seam edge treatment at the intersections of the two flashing sections.
  7. When the roof slope is greater than 1:12, apply seam edge treatment along the back edge of the flashing.
- C. Scuppers: Set in sealant and secure to structure; flash as recommended by manufacturer.
- D. Roofing Expansion Joints: Install as shown on drawings and as recommended by roofing manufacturer.
- E. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Install weathertight flashing at all walls, curbs, parapets, curbs, skylights, and other vertical and sloped surfaces that the roofing membrane abuts to; extend flashing at least 8 inches (200 mm) high above membrane surface.
1. Use the longest practical flashing pieces.
  2. Evaluate the substrate and overlay and adjust installation procedure in accordance with membrane manufacturer's recommendations.
  3. Complete the splice between flashing and the main roof sheet with specified splice adhesive before adhering flashing to the vertical surface.
  4. Provide termination directly to the vertical substrate as shown on roof drawings.
- F. Roof Drains:
1. Taper insulation around drain to provide smooth transition from roof surface to drain. Use specified pre-manufactured tapered insulation with facer or suitable bonding surface to achieve slope; slope not to exceed manufacturer's recommendations.
  2. Position membrane, then cut a hole for roof drain to allow 1/2 to 3/4 inch (12 to 19 mm) of membrane to extend inside clamping ring past drain bolts.
  3. Make round holes in membrane to align with clamping bolts; do not cut membrane back to bolt holes.
  4. Apply sealant on top of drain bowl where clamping ring seats below the membrane

5. Install roof drain clamping ring and clamping bolts; tighten clamping bolts to achieve constant compression.
- G. Flashing at Penetrations: Flash all penetrations passing through the membrane; make flashing seals directly to the penetration.
1. Pipes, Round Supports, and Similar Items: Flash with specified pre-molded pipe flashings wherever practical; otherwise use specified self-curing elastomeric flashing.
  2. Pipe Clusters and Unusual Shaped Penetrations: Provide penetration pocket at least 2 inches (50 mm) deep, with at least 1 inch (25 mm) clearance from penetration, sloped to shed water.
  3. Structural Steel Tubing: If corner radii are greater than 1/4 inch (6 mm) and longest side of tube does not exceed 12 inches (305 mm), flash as for pipes; otherwise, provide a standard curb with flashing.
  4. Flexible and Moving Penetrations: Provide weathertight gooseneck set in sealant and secured to deck, flashed as recommended by manufacturer.

### 3.08 FINISHING AND WALKWAY INSTALLATION

- A. Install walkways at access points to the roof, around rooftop equipment that may require maintenance, and where indicated on the drawings.
1. Use specified walkway pads unless otherwise indicated.
- B. Walkway Pads: Adhere to the roofing membrane, spacing each pad at minimum of 1.0 inch (25 mm) and maximum of 3.0 inches (75 mm) from each other to allow for drainage.
1. If installation of walkway pads over field fabricated splices or within 6 inches (150 mm) of a splice edge cannot be avoided, adhere another layer of flashing over the splice and extending beyond the walkway pad a minimum of 6 inches (150 mm) on either side.
  2. Prime the membrane, remove the release paper on the pad, press in place, and walk on pad to ensure proper adhesion.

### 3.09 FIELD QUALITY CONTROL

- A. Inspection by Manufacturer: Provide final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes (i.e. not a sales person).
- B. Perform all corrections necessary for issuance of warranty.

### 3.10 CLEANING

- A. Clean all contaminants generated by roofing work from building and surrounding areas, including bitumen, adhesives, sealants, and coatings.
- B. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.
- C. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

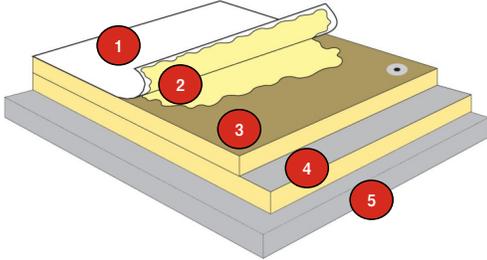
### 3.11 PROTECTION

- A. Where construction traffic must continue over finished roof membrane, provide durable protection and replace or repair damaged roofing to original condition.



**EcoWhite™ EPDM Membrane**  
Fully Adhered, LWIC Deck

30 Year  
Red Shield Platinum™  
Warranty



1. Firestone EcoWhite™ Platinum™ EPDM Membrane
2. Fully Adhered with Bonding Adhesive
3. Mechanically Attached or Adhered Cover Board (Optional for Platinum P, Required for Platinum PH and Platinum PHW)
4. Mechanically Attached or Adhered Insulation
5. Concrete Deck

Consult Firestone Technical Specifications, Guides and Details at [www.firestonebpco.com](http://www.firestonebpco.com)

**Slope Requirement**  
Positive slope required for warranty.<sup>5</sup>

**Construction Type**  
New construction or complete tear-off down to a sound structural deck.

**Building Height Limitation**  
Firestone EcoWhite™ EPDM Adhered Systems are limited to buildings 250' (76.2 m) or less..

**Use of Air Barrier**  
An air barrier is recommended for projects with large wall openings greater than 10% of the total wall area.

**Base Tie-Ins**  
Must be attached to substrates which provide a minimum of 200 lbf (1 kN) in any direction.

**Increased Wind Speed and Codes**  
Any wind speed coverage exceeding 55 mph (88 km/h) or projects with codes requirements must be reviewed by a Firestone Roof Systems Advisor.

**Deck Requirement**  
 Minimum 3000 psi Structural Concrete

**Fastener Type**  
 Firestone Heavy Duty Fastener  
 Firestone Concrete Drive Fastener  
 Firestone HailGard™ Fastener (with HailGard Composite Board or OSB only)

**Insulation Adhesive\***  
 Firestone I.S.O. Twin Pack™ Insulation Adhesive  
 Firestone I.S.O. Spray™ S Insulation Adhesive  
 Firestone I.S.O. Fix™ II Insulation Adhesive  
 Firestone I.S.O. Stick™ Insulation Adhesive

\*Note: Max. 4' x 4' boards must be used when attaching insulation with adhesives.

**Adhesive Attachment**  
 Bead Spacing: F: 12", P: 6", C: 4"  
 Full Application (I.S.O. Spray S Insulation Adhesive)

**Membrane Requirement**  
 EcoWhite Platinum EPDM, 0.090"

**Seaming Requirement**  
3" EcoWhite EPDM QuickSeam™ Splice Tape stripped in with EcoWhite EPDM QuickSeam 6" Flashing OR 6" EcoWhite EPDM QuickSeam Splice Tape in side and end laps. EcoWhite EPDM QuickSeam Joint Covers are required at all joints and at angle changes 1:12 or greater.

**Firestone Membrane Adhesive**  
 EPDM Bonding Adhesive BA-2004 (T)  
 Single-Ply LVOC Bonding Adhesive  
 Single-Ply LVOC Bonding Adhesive 1168

**Edge Metal System**  
 Firestone EdgeGard™ System  
 Firestone AnchorGard™ System  
 Firestone Coping System

Insulation (Top Layer)	4' x 8'	Coverboard (Optional for Platinum P, Required for Platinum PH and PHW)	4' x 8'
1.0" to 1.4" Firestone ISO 95+™ GL or RESISTA™ Insulation	16	Firestone ISOGARD™ HD Cover Board	16
1.5" to 1.9" Firestone ISO 95+ GL or RESISTA Insulation	16	¼" SECUROCK® Gypsum-Fiber or DensDeck® / (Prime)	16 16/(16)
2.0" to 4.0" Firestone ISO 95+ GL or RESISTA Insulation	16	½" SECUROCK Gypsum-Fiber or DensDeck / (Prime)	16 16/(16)
Firestone HailGard™ Composite Board	16	5/8" SECUROCK Gypsum-Fiber or DensDeck / (Prime)	16 16/(16)
Firestone ISOGARD™ HD Composite Board	16		

**Detail Description**

<b>Wall Terminations:</b>	Firestone Termination Bar with AP Sealant applied along the caulk lip. Surface mounted or inserted counter flashing may also be used in accordance with current Firestone 30 year details.
<b>Curb &amp; Wall Flashings:</b>	Curbs, walls, and expansion joints must be anchored with appropriate base tie-in detail, using QuickSeam Reinforced Perimeter Fastening Strip (RPF) and Batten Strip or 2" Metal Seam Plates. Curbs and walls must be flashed using one ply minimum 0.060" EcoWhite EPDM Membrane, EcoWhite EPDM QuickSeam Curb Flashing, or 18" EcoWhite EPDM QuickSeam SA Flashing, per current Firestone 30 year details.
<b>Corners:</b>	EcoWhite EPDM QuickSeam Corner Flashing or EcoWhite 12" QuickSeam Flashing may be used, per current Firestone 30 Year details.
<b>Roof Edges/Parapets:</b>	Firestone AnchorGard™ or EdgeGard™ Fascia or Drain Bar systems. ANSI/SPRI ES-1 rated edge metal may also be used.
<b>Penetrations:</b>	Flash with EcoWhite EPDM QuickSeam Pipe Flashing, EcoWhite EPDM QuickSeam Penetration Pocket, or EcoWhite EPDM QuickSeam Flashing, per current Firestone 30 Year details.

**Notes:**

1. Only Firestone brand products are covered in a Red Shield warranty.
2. Refer to the Firestone Technical Database at [www.firestonebpco.com](http://www.firestonebpco.com) for additional information regarding RubberGard EPDM Roof Systems.
3. Refer to the Firestone RoofGenuity™ tool to create roof assemblies with high-performance Firestone products at [www.RoofGenuity.com](http://www.RoofGenuity.com).
4. DensDeck is a registered trademark of Georgia-Pacific Gypsum LLC.
5. It is the installing contractor's responsibility to follow applicable building codes.
6. SECUROCK is a registered trademark of USG Corporation.

QS-EPDM-132

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Technical: 1-800-428-4511 • Sales: 1-800-428-4442 • [www.firestonebpco.com](http://www.firestonebpco.com)

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END OF SECTION 07 53 23

EPDM ADHERED ROOFING SYSTEM 07 53 23 - 15