

**Indian River County
Purchasing Division
1800 27th Street
Vero Beach, FL 32960
Phone (772) 226-1416**



ADDENDUM NO. 4

Date: **September 25, 2023**

Project Name: **Traffic Operations Facility, IRC-2104**

Bid Number: **2023059**

Bid Opening Date: **Wednesday, October 11, 2023 at 2:00 PM**

The information and documents contained in this addendum are hereby incorporated in the Bid Documents. **This addendum must be acknowledged where indicated on the Bid Form, or the bid may be declared non-responsive.**

The following questions have been received:

- Question 1. Spec 13125 / 2.2 N calls for the primer on steel to be red oxide. 2.5 G says all exposed primary and secondary framing members have galvanized finish. Is our primary and secondary steel to be red oxide or galvanized?
- Answer 1. Parking structure secondary and primary steel to be galvanized.**
- Question 2. Note 10 on S-6 says all secondary framing members and connectors, not limited to purlins and girts at exterior roofs with open sides to be hot dipped galvanized. We do not offer hot dip galvanizing for secondary steel because it is too thin. Secondary is G-90 cold rolled galvanized. Primary steel can be hot dipped. Please advise?
- Answer 2. Secondary members may be G-90 cold rolled galvanized and primary frames hot dipped galvanized.**
- Question 3. Spec 13125 / 2.2 H and I call for bolts and nuts to be zinc coating (galvanized). 2.5 E says provide plain finish bolts for structural framing components that are primed for finish painted. If building structures are not galvanized, do you want plain finish or galvanized bolts and nuts?
- Answer 3. Galvanized bolts only for galvanized parking structures.**
- Question 4. Spec 13125 / 2.6 A 7 calls for uplift rating to be FM I-90. Is this building supposed to be designed for Factory mutual uplift I-90 or is this supposed to be UL-90?
- Answer 4. Uplift rating shall meet or exceed the component and cladding pressures based on the FBC wind loading for 160 mph.**

- Question 5. Spec 13125 / 2.7 C calls for the downspouts to be formed from .063 thick material which is between 16 and 15 gauge material. Normal metal building downspouts are 26 gauge, but can be supplied as 24 gauge. This is the heaviest Nucor offers. Please advise?
- Answer 5. Metal building downspouts shall be 24 gauge in lieu or .063 as stated in Specification Section 13125, 2.7 ACCESSORIES, C. Downspouts. All other items in paragraph 2.7 C shall remain as specified and apply to the Bid.**
- Question 6. Spec 13125 / 2.7 B 3 calls for strainers in the gutter. Nucor does not offer or recommend strainers. Please advise?
- Answer 6. Strainers shall be Deleted from Specification Section 13125, 2.7 ACCESSORIES, B. Gutters. All other items in paragraph 2.7 B shall remain as specified and apply to the Bid.**
- Question 7. Plans or specs do not say what drift they want for main frame deflection. Standard is H/60. Is standard ok to use?
- Answer 7. Standard H/60 is acceptable.**
- Question 8. Plans show a 16' eave height on buildings with a 13'-6" clear under portal frames at low sides. If we can't get 13'-6" clear under portal frames at this eave height, do we raise the eave height till we get this clearance?
- Answer 8. Yes, Eave height at low end MUST BE A MINIMUM OF 13'-6" CLEAR.**
- Question 9. Model number specified is not valid and cannot be crossed over. Vendor is unable to determine what model number was intended in place of this one. Please provide valid information for Hand Wash Station requested.
- Answer 9. A new specification provided. The plumbing sizing did not change. See sheet P0.1.**
- Question 10. Do these roll up doors need to have a 1-hour fire rating? The spec is calling for ESD20 with fire rating but you cannot get a 1-hour fire rating on the ESD20. I am waiting on confirmation from Cornell to see if there is a fire rated option for a 2x14 as the rep could not locate one and it may have to be specially engineered if fire rating needed.
- Answer 10. No 1-hour rating is required for Overhead Doors. Specification Section 08331, 2.07 DOOR ASSEMBLY, B. Performance Requirements; Delete Item 1. All other items in paragraph 2.07 B shall remain as specified and apply to the Bid.**
- Question 11. None of the sign companies listed in the specs are in business, except ARK Ramos, and they do not make the specified signs. Please confirm scope (31) signs. Please confirm substitute sign manufacturers to replace non-existing or inappropriate scope manufacturers are fine.
- Answer 11. Substitute sign manufacturers to replace non-existing or inappropriate scope manufacturers are acceptable.**
- a. The signage list on Sheet A6.11 has been revised – no signage for the parking structures is required. Sign Scope to be (29) signs, See revised Signage List, Sheet A6.11.
 - b. All signs to meet ADA requirements.
 - c. Exact wording to be approved by Owner.
 - d. Per question 54: Include a maximum load capacity of 46 Occupants for room 104 Break Room.

- Question 12. Are there any irrigation plans? Do you know what the source of water will be?
Answer 12. There will be no irrigation system provided for the new complex. The existing irrigation system will be removed in demolition.
- Question 13. Per the meeting minutes, it was noted references need to be supplied in Section 00445, Qualifications. I cannot find Section 00445, do you mean Section 00456, Qualifications Questionnaire and the references as listed in "Similar Projects"??
Answer 13. Yes, references need to be supplied in Section 00456 -3, Table for similar projects.
- Question 14. I do not see any callouts for solid surface, is the breakroom PLAM counters with PLAM cabinetry? Do we need to stick with the specs: 5-knuckle hinges, 3MM edge banding, 5-year warranty?, etc.
Answer 14. SECTION 12355, 1.2 SUMMARY, A, 1 and 2 call out Plastic Laminate Cabinetry and Countertops. Cabinetry, countertops, hardware, and accessories shall be as specified in SECTION 12355.
- Question 15. We request Section 00458 - List of Subcontractors be submitted to the owner and architect within 48 of the bid submission.
Answer 15. Section 00458 is a required document of the Bid Package. Failure to submit within the Bid Package would be deemed an incomplete Bid and disqualified. After bid opening additions, changes or substitutions can be requested in writing to Owner.
- Question 16. There is an existing County Complex at site located north of the existing parking lot to be renovated. Please confirm this building needs to remain operational during the construction of the new facility.
Answer 16. Yes, the County Road & Bridge Department is located north of this project and shares the parking lot as well. Both the Road & Bridge complex and the parking lot are to remain open during construction of the new facility.
- Question 17. Existing conditions shows numerous equipment and debris at the location of the project. Please confirm all equipment and debris will be removed by County prior to Construction Start.
Answer 17. All equipment and debris will be removed by County prior to Construction Start.
- Question 18. The existing County Complex has a parking lot area east of the building. Please indicate if this parking lot can be used for subcontractor labor force parking.
Answer 18. The existing parking lot located on the west side of the complex can be used for subcontractor labor force parking.
- Question 19. Instruction to Bidders Article 13.01 indicates that the Bid Form cannot be modified. Article 14.03 indicates that the quantities of work in the Bid Schedule are approximate and not guaranteed. In the event there is a conflict between the Bid Schedule quantities and the actual amount in the Civil Drawings, please explain how the information can be inputted accurately if the Bid Schedule cannot be modified.
Answer 19. Please see the revised Itemized Bid Schedule as some items have changed with this addendum. Do not change quantities. Every Bidder bids the same quantities.
- Question 20. The Owner Bid Form does not provide a line item to allocate cost for surveying related to the building. Please indicate where to allocate this cost.
Answer 20. Cost for surveying shall be covered within the Division 1 Line Item.

- Question 21. Please confirm there is not Asbestos at the existing buildings to be demolished.
Answer 21. There have been no studies or reports provided for possible asbestos at the existing facility.
- Question 22. Technical Provisions include Section 02413 Horizontal Directional Boring. Civil drawings do not reference any horizontal directional boring. Please clarify where directional boring is required for this project.
Answer 22. There is no Directional boring proposed for the project.
- Question 23. Drawing C6 does not indicate Drainage Structure DS-10 connecting to an existing drainage system. Please clarify.
Answer 23. DS-10 will connect to the existing storm line as shown. DS-10 will provide for (N), (S) inverts matching exist. line
- Question 24. Technical Provision Section 570 Performance Turf page 22 of 71 indicates to match existing under the "items of Payment" section. Drawing C12 indicates the sod to be Bahia Grass. Please confirm the existing sod on site if Bahia Grass.
Answer 24. Sod will be Bahia.
- Question 25. Drawing C13 shows Specifications for root barrier. Drawing C12 does not layout any root barrier. Please provide layout of root barrier if applicable.
Answer 25. Root Barrier Detail is generic detail put in place in case needed. Root barriers not anticipated for project.
- Question 26. Technical Specification 550 Fencing indicate 24'-30' Opening. Civil drawings show an approximate opening of 30' wide for both gates. Please clarify width of rolling gates.
Answer 26. Width of gates = 30FT to match width of drives.
- Question 27. Bid Form does not have a line item under Sitework to allocate the cost of the chain link fencing (not rolling gates) shown on drawing C5. Please clarify where to allocate this cost.
Answer 27. The revised Bid Form has new fencing items. Item 550-10-222 was added for 6' chain link fence, quantity of 248 LF. Another new item is 550-60-211 , single 5' gate.
- Question 28. Drawing C6 indicates new asphalt at the Covered Parking B area. Drawing A3.12 and S-6 indicate a 6" concrete slab. Please clarify paving for Covered Parking B.
Answer 28. Slab for Parking Structure Building per S-6. Paving will be concrete slab.
- Question 29. Drawing C6 indicates to refer to MEPs for Generator Pad elevations. MEP drawings do not have this information. Please provide details for Generator Pad.
Answer 29. Generator Slab elevation to be 25.50. See Attachment SK-1 for Generator Slab design.
- Question 30. Door Details on A6.20 & A6.21 and Window Details on A6.22 indicates a self-adhering membrane, typical of all masonry openings. General Notes on A6.22 indicates it can be a liquid applied product. Please provide specifications for this liquid applied product or cementitious applied product.
Answer 30. Liquid Applied Membrane Basis of Design, Protecto-Wrap LWM200. See revised Window and Door Details Sheets A6.20 , A6.21, A6.22 and attached LWM 200 Technical Data Sheet.

Question 31. Specification 09310 indicates waterproofing at tile locations. Please clarify the following:
1- Is waterproofing required behind all wall tile applications?
2- Is waterproofing required below all flooring ceramic tile?
3- Provide specifications for waterproofing if applicable to scope.

Answer 31. Per Specification SECTION 09310 CERAMIC TILE provide waterproofing at locations as notes in the following:

3.4 WATERPROOFING INSTALLATION

A. Install waterproofing to comply with ANSI A108.13 and waterproofing manufacturer's written instructions to produce waterproof membrane of uniform thickness bonded securely to substrate. All Walls to receive ceramic tile shall have a waterproof membrane extended underneath the floor tile a minimum of 12 inches, and up the wall a minimum of 12 inches, to provide a watertight condition at the floor to wall transition.

B. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

Waterproof Membrane Basis of Design shall be Laticrete 9235 Waterproofing Membrane. See Laticrete 9235 Waterproofing Membrane Data Sheet DS-236-1021.

Question 32. Architectural Project Manual includes Specification 07621 Anchortite Fascia. Architectural drawings do not show this type of fascia. Roofing details show a coping cap. Please confirm Specification 07621 is not applicable to project.

Answer 32. SECTION 07621 ANCHORTITE FASCIA is not applicable to project. Coping Cap material and finish shall be provided per SECTION 07620 SHEET METAL FLASHING AND TRIM. See revised Sheet A4.20.

Question 33. Drawing A2.20 indicates 3" rigid insulation with an R Value of R-20. A 3" thick rigid board will provide 17.4 R value. In order to get an R-20 value the thickness would need to be 3.5" thick. Please clarify thickness and R-value for roof insulation.

Answer 33. Rigid Insulation for Transportation Building to be 3.5" thick with R- value of 20. See revised drawing Sheet A2.20.

Question 34. Specification 07551 Section 2.7E and Section 3.3I mention a cover board for the 3-Ply modified bitumen roofing system. Roofing details on A2.22 do not indicate a cover board. Please clarify if a cover board is required on top of the insulation.

Answer 34. Per Specification SECTION 07551 2.7E and Section 3.3I cover board is required on top of the insulation board.

Question 35. Note 1 on drawing A2.20 indicate the conductor head boxes to be 12"x8"x12". Detail on A2.22 indicates the conductor head boxes to be 16"x8"x12". Please clarify dimensions of conductor head box.

Answer 35. Conductor Head Boxes to be 16" x 8" x 12" per Detail 01 on A2.22. Note 1 revised on Sheet A2.20.

Question 36. Detail 3 on A2.22 indicates the rainwater leaders to be Schedule 40 which is assumed to be PVC. Specification 07710 Section 2.3 indicates the downspouts to be aluminum. Please confirm material of downspouts.

Answer 36. Transportation Building Rain Water Leaders to be Schedule 40 (PVC). Metal Building Parking Structure Rain Water Leader design is by Metal Building Manufacturer as noted on Sheets A3.11 & A3.12.

Question 37. Door schedule on A6.10 indicates doors 119 and 119B to be aluminum storefront systems. Please confirm these are aluminum storefront and are not hollow metal doors.

Answer 37. Doors 119 & 119A (note there is no door 119B) are Storefront doors. See revised Sheet A6.10 for Door Type and Door Schedule revisions.

Question 38. Specification 08211 Flush Wood Doors Section 2.4 indicates louvers for wood doors. Door Schedule on A6.10 do not show louvers on wood doors. Please confirm louvers are not applicable to wood doors.

Answer 38. Louvers are not applicable for wood doors.

Question 39. Drawing A6.10 indicates Window Type A Basis of Design as Kawneer FG623-LMI Insulated Impact Resistant. Specification 08800 Glazing Section 1.4D does not provide values for U-Factor, Solar Heat Gain Coefficient; and Solar Optical Properties for the glazing. Please provide these values. Note drawing A6.10 is indicating insulated glass.

Answer 39. Specification SECTION 08800 GLAZING, 1.4 PERFORMANCE REQUIREMENTS, D, glazing shall be Grey, insulated, impact low-E. SHGC=.82, U=1.25, VLT .76

Question 40. Drawing A6.10 calls out the aluminum storefront systems to be anodized "AN" finish. Specification 08411 Section 2.8 indicates the finish to be powder coat AAMA 2605 White. Please clarify the finish on the Aluminum Window/Storefront Systems.

Answer 40. Aluminum Storefront Systems to be "Clear Anodized Finish". Specification 08411 SECTION 2.8 ALUMINUM FINISHES, C Shall be revised to read "

A. Clear Anodized Finish:

1. Clear anodic finish over uniformly cleaned and lightly etched aluminum surface.

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See revised Sheet A6.10, Schedules, A6.22; Window Details.

Question 41. Specification 08411 section 2.3E indicate flashing at windows. Please confirm flashing is only required at sill locations as indicated on detail 2 on A6.22.

Answer 41. Flashing is only required at sill locations as indicated on Detail 02 on Sheet A6.22.

Question 42. Drawing A2.10 Construction Legend includes a one-hour assembly wall. Floor plans do not show any one-hour assemblies. Please confirm this is not applicable to project.

Answer 42. Drawing A2.10 Construction Legend has been Revised. 1 Hour Rated Assembly is not applicable.

Question 43. Please confirm there is no stucco on masonry walls at Warehouse 125 and 126 as shown on A2.10. Please confirm there is no stucco nor furring and drywall on masonry walls at Sign Shop 120 and Signal Shop 124 as shown on A2.10.

Answer 43. See Finish Schedule Sheet A6.11, Rooms 120, 124 125, 126: CMU walls where called out are listed to have tooled joints and painted finish.

Question 44. Please clarify if the exposed steel and metal deck at Signal Shop 124 and Mechanical 123 need to be spray painted.

- Answer 44.** See Sheet A6.11 Finish Schedule. Exposed steel and metal deck at Signal Shop 124 & Mechanical Room 123 are listed to be painted. Exposed steel and metal deck to be spray painted.
- Question 45. Sections on A4.20 indicate a painted coping cap. Please confirm this is a factory painted cap and not field painted coping cap.
- Answer 45.** Aluminum Coping Cap to be aluminum finish per SECTION 07620 SHEET METAL FLASHING AND TRIM. See Sheet A4.20 for revisions.
- Question 46. Please provide specifications for concrete colored floor sealer and provide quantity of coats to apply.
- Answer 46.** Concrete Floor Sealer Basis of Design Specifications are as follows:
- a. Sign Shop 120, Storage 120A, Mechanical 123, and Signal Shop 124:
 - I. Primer - SILIKAL RU 380.
 - II. Topcoat - SILIKAL RE 71 - Clear.
 - b. Warehouse (A/C) 125 and Warehouse 126:
 - I. SILIKAL 62 CS SL – Monocolor.
- Question 47. Specification 09310 Ceramic Tile indicates a 2"x2"x5/16" flooring tile and 4.5"x4.5"x5/16" wall tile by Daltile. Daltile has a wide range of tile for these applications. Please provide model numbers / series / collection that is applicable for the Daltile ceramic tile.
- Answer 47.** Specification SECTION 09310 CERAMIC TILE, 2.2. TILE PRODUCTS
Daltile ceramic tiles shall be:
- B. Porcelain Floor Tile: 2"x2"x5/16" Keystone ColorBody Porcelain Mosaic, Tile Price Group 1 and 2, Standard Pattern DP3005.
 - C. Glazed Wall Tile: 4.5"x4.5"x5/16", Color Wheel Classic Glazed Ceramic Wall Tile Price Group 1 and 2.
- Question 48. Specification 09310 Section 2.7C indicates a grout sealer. Section 3.8 indicates an epoxy grout for the ceramic floor tile. Please confirm a grout is not applicable for epoxy grout. Confirm grout sealer is only applicable for wall-tile applications.
- Answer 48.** Specification SECTION 09310, 2.7 MISCELLANEOUS MATERIALS, C, grout sealer is not applicable for floor tile epoxy grout as stated in 3.8 FLOOR TILE INSTALLATION SCHEDULE, A, 3.. Grout sealer is only applicable for wall-tile applications.
- Question 49. Drawing A5.10 does not show elevations for all the shower room walls. Please confirm all walls within Men's Shower 116A and Women's Shower 118A will be full height tile of 8 ft.
- Answer 49.** Men's Shower 116A and Women's Shower 118A Shower Room walls called out to have full height tile finish. See Sheet A5.20 Details 01 & 02 and Sheet A6.11 Finish Schedule.
- Question 50. Specification 09651 indicates Azrock by Tarkett Commercial Flooring for the VCT. This tile is discontinued and has been replaced with Tarkett VCT II. Please confirm Tarkett VCT II would be an acceptable VCT.
- Answer 50.** Tarkett VCT II is an acceptable VCT. Tarkett VCT II shall comply with Specification SECTION 09651.
- Question 51. Specification 09651 Section 3.4B item 1 indicates 5 coats of protective floor polish for the VCT. Please confirm if this is required for this project.
- Answer 51.** Yes. As noted in the Specification Section 09651 Section 3.4B item 1: 5 coats of protective floor polish is required for the VCT.

Question 52. Specification 09681 provide a list of manufacturers for carpet tile. All these manufacturers have a wide range of different carpet tiles. Please provide dimensions and model number / series / collection of the Carpet Tile Basis of Design.

Answer 52. **Carpet Tile Basis of Design:**
Manufacturer: Interface
Pattern: Silk Route/Custom Colors to be Selected by Owner
Style: 19904 Tufted Development, Multi, Strike-off
Size: 24" x 24"

Question 53. Architectural Specification 104400 Identifying Devices section 2.2B item 1 indicates Capacity Signs. Architectural drawing A6.11 Sign Chart does not address capacity signs and nor does Life Safety Drawing A1.10. Please provide quantity of capacity signs if applicable to project.

Answer 53. **See Revised Sheet A6.11 Sign List for Capacity Sign for Break Room 104: Max. Occupancy 46. Also see Question 11.**

Question 54. The listed local Florida Signage companies on Specification 10449 section 2.1 item A & are no longer in business. The other two (2) listed companies are out of State suppliers of material only. Please confirm it would be acceptable to use local manufacturers/installers for this scope of work.

Answer 54. **Specification SECTION 10440 2.1 MANUFACTURERS, Item A, substitute sign manufacturers to replace non-existing or inappropriate scope manufacturers are acceptable. Acceptable to use local manufacturers/installers for this scope of work.**
a. The signage list on Sheet A6.11 has been revised – no signage for the parking structures is required. Sign Scope to be (29) signs, See revised Signage List, Sheet A6.11.
b. All signs to meet ADA requirements.
c. Exact wording to be approved by Owner.

Question 55. Drawing 5.10 indicates a refrigerator and microwave. Bid documents do not provide specifications for these appliances. Please confirm these will be provided and installed by Owner.

Answer 55. **Appliances referenced in the plans are N.I.C.**

Question 56. Drawing M2.1 shows rectangular and spiral exposed ductwork at the Warehouse, Sign Shop and Signal Shop. Please indicate if this ductwork needs to be internally insulated or externally insulated.

Answer 56. **All exposed duct work to be single wall metal. No insulation required.**

Question 57. Please provide specifications for the boots to connect the roof downspouts to the site storm system.

Answer 57. **See revised Sheet A2.22; Detail 03A Downspout Collector Detail.**

Question 58. Bid documents do not indicate the requirement for a Firemen Radio Booster System (BDA) for the new facility. Please confirm this is not required.

Answer 58. **BDA system testing and installation if needed, to be done after the building is constructed. BDA design is not part of MEP design scope.**

Question 59. Bid documents do not provide any information in regards to the following Site Electrical. Please clarify: Please provide location of FPL transformer. Confirm FPL will be providing and installing the transformer. Confirm FPL will be providing and installing the transformer pad. Provide layout/design of FPL underground primary conduits from transformer to FPL point of connection. Confirm FPL will be supplying all primary conduits and electrical subcontractor will be responsible for installation only. Provide layout/design for telecommunications underground conduits (data and TV) from location of building main telecommunication room to service provider point of connection.

Answer 59. The contractor is responsible for coordinating these items with FPL and the necessary utilities.

Question 60. Please clarify if the structured cabling (DATA/TV) to be provided by the General Contractor. If so, please provide the following information. Please indicate what type of cable are required, CAT 6 and RG6 coaxial cable? Please provide basis of design for the patch panel. Please provide basis of design for the IT Rack. Please confirm that each data outlet will have 4/ea. cable drops.

**Answer 60. CAT 6 cables for data/phones 4 drops at each location
Run CAT 6 to TV for YouTube TV service
(AR3100) APC NetShelter SX, Server Rack Enclosure, 42U, Black, 1991H x 600W x 1070D mm**

Question 61. Light Poles: Please provide specifications for the new light poles. Please indicate if the light poles to be installed as direct burial method or with a concrete base.

Answer 61. Light pole specifications and detail was added to Sheet E1.1.

Question 62. Electrical drawings do not have circuit designation for the hand dryers at the restrooms. Please provide circuitry for the hand dryers shown on sheet A5.10.

Answer 62. Circuits were added on Sheet E3.1 for hand dryers.

Question 63. Please confirm all CCTV cameras are to be provided and installed by the Owner. If this scope of work is by General Contractor, please provide the following information. Please indicate if the cameras need to be National Defense Authorization Act (NDAA) certified. Please provided basis of design and acceptable manufacturers. Please indicate if the recording method will be via a network video recorder (NVR) or cloud base. Please confirm the recording time.

Answer 63. County to provide wiring and security cameras under a separate contract once new building is erected. Low voltage security camera location, contractor to provide junction box with 3/4" conduit stubbed out from wall 6" above ceiling. Coordinate mounting height with Owner.

Question 64. According to the Big Ass Fans (BAF) website, the BAF Powerefoil D have 3 different controls options; standard controller, integrations (BAS) or BAFCon upgrade. Please confirm what type of control method is required.

Answer 64. Standard controller.

Question 65. Legend notes on sheet C4a indicates two (2) existing poles and pull boxes to be removed along associated conduits and wires. Please clarify the following: Are the conduits and wires to be removed to the power source? Or just to be abandoned in place? If the conduits and wires are to be removed to the power source, provide the following information:

a. Where is the location of the panelboard feeding these light poles?

b. If the panelboard is located inside a building, please provide layout of the building, indicate if walls or ceilings need to be removed and if the work inside the building can be performed during working hours or after working hours.

Answer 65. Conduits and wires will be removed to the power source.

Question 66. Please provide conduits sizes, number of conduits and total run for the Telephone and TV services.

Answer 66. At the exterior provide 2 sets of 2" for both TV and Telephone from Service location to Data Room. Use cable trays in the ceiling for all low voltage cabling.

Question 67. Electrical Drawings do not indicate a Fire Alarm system for the Building. Please confirm this is not required.

Answer 67. No fire alarm system will be installed as a part of this contract.

Question 68. Since Pay Item 160-4C quantity is 413 SY, I thought the 7" pavement about it would be 413 SY as well. At 7", our max yield will be 46.5SF/CY thus 413 CY would pave 19,205 SF or 2,134 SY. Maybe the 400-2-10 quantity should be 80 CY if you want to use the Class II structural item.

Answer 68. The quantity for Pay Item 400-2-10 in CY units should be 80.

Question 69. Can you please provide the Subcontractor list form in Excel format.

Answer 69. No. The provided Subcontractor list form in the Bid Documents shall be used. Bidder may note "see attached" on the Section 00458 form, and attach an excel document containing, at a minimum, the information required on the Section 00458 form.

Question 70. Drawing C4b shows a second building being demolished on Phase II. Please clarify what is the intended use of this building while Phase I Construction is underway and indicate if this building will be occupied.

Answer 70. The existing Supply Building (second building) will be occupied during Phase I Construction. The Buildings Sign Making Shop and Warehouse Storage currently occupies the building. The front office staff will be relocated to this building so Phase I demolition can take place on the existing Traffic Office Building

Question #71: Drawing C12, landscaping note #1 call for re-using existing irrigation system for new landscaping. Existing layout is required to accurately price this scope of work. If existing layout is not available, we suggest the owner provide an allowance for this scope so all contractors pricing is leveled equally.

Answer 71: Existing Irrigation is operated by IRC. EOR has no documents of existing layout. Also reference Question/Answer #12.

Question #72: Drawings E2.1, E2.2. & E3.1 shows (4) 'Big Fans'. Drawings do not show routing of power to these fans, they look to be branched to Panel 'B' (as shown on E2.1), yet drawing E5.1 (panel schedule) does not reflect this. Please provide additional details as well as if these "Big Fans" are owner supplied & contractor installed or contractor provided and contractor installed.

Answer #72: Circuit to fans shown on Sheet E2.1. Circuits B-6-28. Big Ass 16 Fan/72" diameter in the unconditioned Warehouse are supplied and installed by Contractor.

Question #73: Drawing E2.1 , Storage room 111 shows a light fixture labeled 'D', however. Luminaire schedule on E0.1 shows this to be a different type (as shown for closet). Please clarify what type of fixture applies to storage room 111.

Answer #73: Storage Room 111 to have fixture type "A".

Question #74: Drawing E2.1 shows there are no light fixtures at closet 110 & storage 120A. Please clarify that these rooms are to remain without any light fixtures.

Answer #74: Storage Room 120A to have a type "D" fixture. Storage Room 110 to have a 2x2 lay-in (LT-22-L40-835). Each room to have vacancy wall mounted switch.

ATTACHMENTS: Revised Itemized Bid Schedule

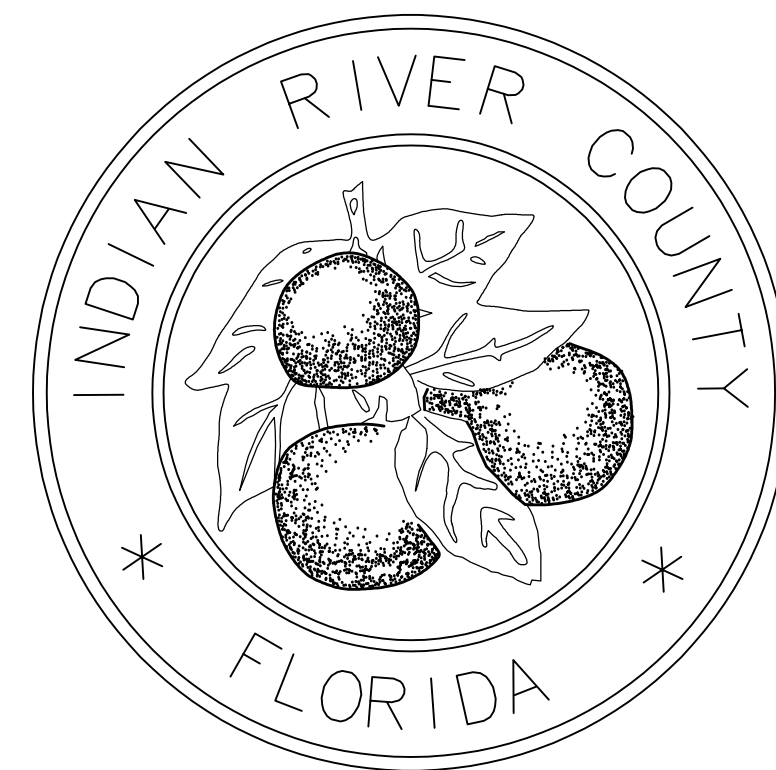
Revised Sheets:

- Cover
- Index of Drawings
- A2.10 Floor Plan
- A2.20 Roof Plan
- A2.22 Roof Details
- A2.30 Enlarged Plans
- A2.40 Reflected Ceiling Plan
- A4.10 Building Sections
- A4.20 Wall Sections
- A5.10 Interior Elevations
- A6.10 Door & Window Schedules
- A6.11 Finish Schedule
- A6.20 Door Details
- A6.21 Door Details
- A6.22 Window Details
- E1.1 Site Plan – Electrical
- E3.1 Power Plan
- E5.1 Electrical Panel Schedules and Risers
- P0.1 Plumbing Notes
- SK 1 Generator Slab

Specification:

- Technical Data Sheet LWN200
- Technical Data Sheet DS-236
- Technical Data Sheet – SILIKAL RU 380/RE 71
- Guide Specification – SILIKAL 62CS SL
- Big Ass Fan Specifications

NEW TRAFFIC OPERATIONS FACILITY FOR INDIAN RIVER COUNTY



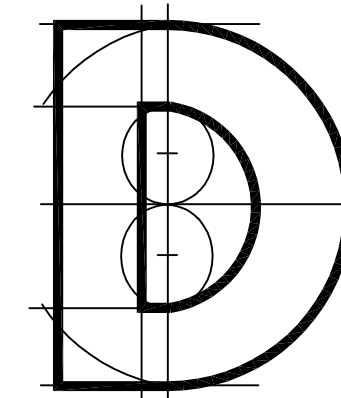
4548 41st ST
VERO BEACH, FLORIDA

JUNE 30, 2023

BID SET

Sept. 20, 2023

ADDENDUM #3

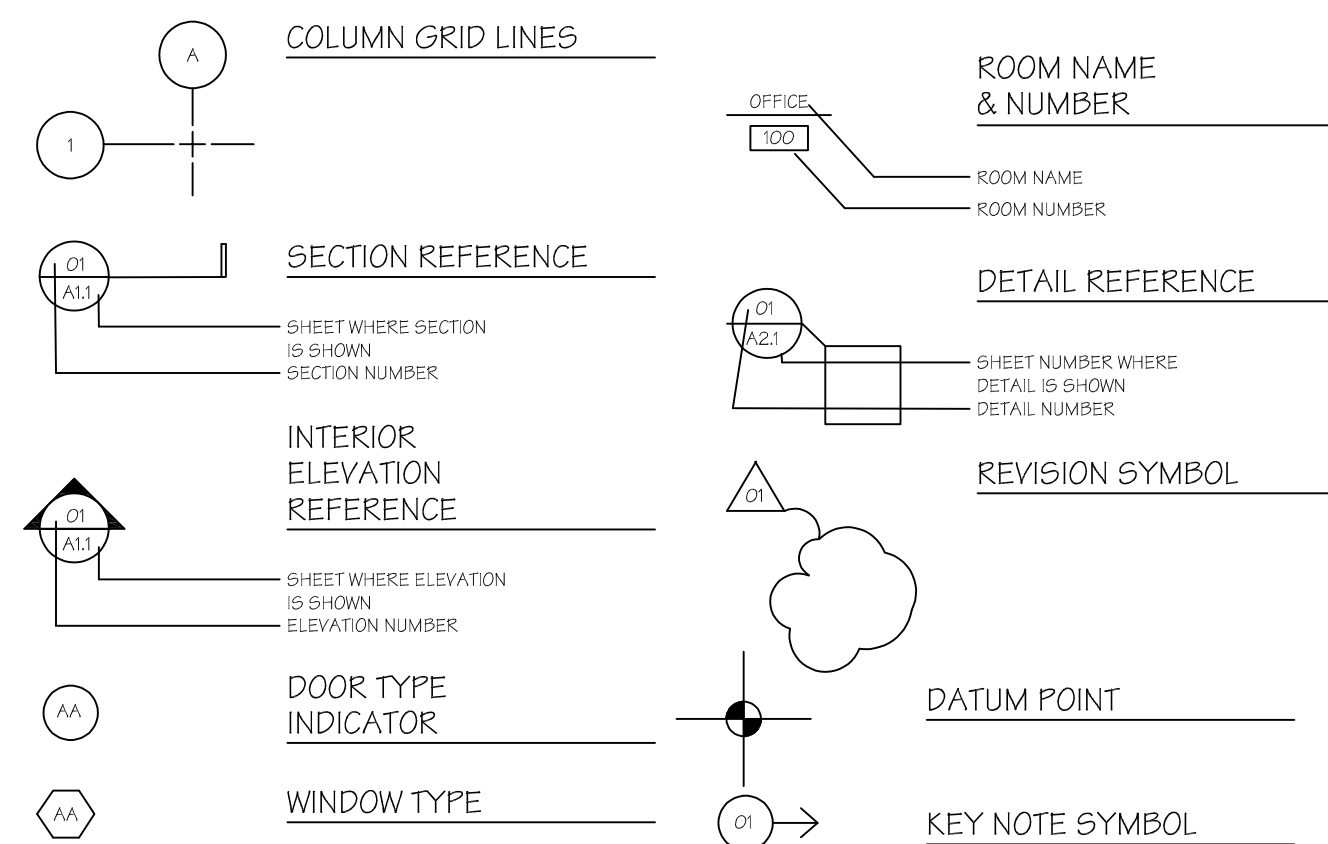


DONADIO

& Associates, Architects P.A.

2001 9th Ave, Suite 308
Vero Beach, FL 32960
Tel. 772.794.2929
Fax. 772.562.8600
www.donadio-arch.com
License No. AA0002238

ARCHITECTURAL SYMBOLS



CIVIL ENGINEER
MBV ENGINEERING, INC.

2455 14th Ave..
Vero Beach, Florida 32960
Tel.: 772-569-0035
Fax.: 772-778-3617

STRUCTURAL ENGINEER
M L ENGINEERING INC.

2030 37th Avenue
Vero Beach, Florida 32960
Tel.: 772/569-1257
Fax.: 772/569-4041

MECHANICAL & ELECTRICAL ENGINEER
KAMM CONSULTING, INC.

1408 Orange Ave
Ft. Pierce, FL 34950
Tel.: 772/595-1744
Fax.: 772/595-1745

INDEX OF DRAWINGS

I/O	Dwg. No	Drawing Name	Issue Date	Re-issue Date
<input checked="" type="checkbox"/>	A0.10	Cover Sheet		09/20/23
<input checked="" type="checkbox"/>	A0.20	Index of Drawings/ General Notes		09/20/23

CIVIL & LANDSCAPE DRAWINGS

I/O	Dwg. No	Drawing Name	Issue Date	Re-issue Date
<input type="checkbox"/>	C1	Geometric Site Plan	03/21/22 03/21/22	

ARCHITECTURAL DRAWINGS

I/O	Dwg. No	Drawing Name	Issue Date	Re-issue Date ¹	Re-issue Date ²	Re-issue Date ³	Re-issue Date ³	Re-issue Date ⁴
<input type="checkbox"/>	A1.10	Life Safety Plan/ UL Design Details	03/21/22	06/04/22			06/30/23	
<input type="checkbox"/>	A1.11	Code Review	03/21/22	06/04/22		07/18/22		
<input checked="" type="checkbox"/>	A2.10	Floor Plan - Building	03/21/22	06/04/22	06/30/22	07/18/22		09/20/23
<input type="checkbox"/>	A2.11	Floor Plans- Covered Parking	03/21/22					
<input checked="" type="checkbox"/>	A2.20	Roof Plan - Building	03/21/22		06/30/22	07/18/22		09/20/23
<input type="checkbox"/>	A2.21	Roof Plans- Covered Parking	03/21/22					
<input checked="" type="checkbox"/>	A2.22	Roof Details	03/21/22		06/30/22	07/18/22		09/20/23
<input checked="" type="checkbox"/>	A2.30	Enlarged Floor Plan	03/21/22		06/30/22	07/18/22		09/20/23
<input checked="" type="checkbox"/>	A2.40	Reflected Ceiling Plan	03/21/22			07/18/22		09/20/23
<input type="checkbox"/>	A3.10	Building Elevations	03/21/22		06/30/22	07/18/22		
<input type="checkbox"/>	A3.11	Covered Parking Elevations - A	03/21/22	06/04/22				
<input type="checkbox"/>	A3.12	Covered Parking Elevations - B	03/21/22	06/04/22				
<input checked="" type="checkbox"/>	A4.10	Building Sections	03/21/22		06/30/22	07/18/22		09/20/23
<input checked="" type="checkbox"/>	A4.20	Wall Sections	03/21/22		06/30/22	07/18/22		09/20/23
<input checked="" type="checkbox"/>	A5.10	Interior Elevations/ ADA Details	03/21/22			07/18/22		09/20/23
<input checked="" type="checkbox"/>	A6.10	Schedules/ Door & Window Types	03/21/22		06/30/22	07/18/22		09/20/23
<input checked="" type="checkbox"/>	A6.11	Schedule/ Room Finishes	03/21/22		06/30/22	07/18/22		09/20/23
<input checked="" type="checkbox"/>	A6.20	Door Details	03/21/22			07/18/22		09/20/23
<input checked="" type="checkbox"/>	A6.21	Window Details	03/21/22			07/18/22		09/20/23
<input checked="" type="checkbox"/>	A6.22	Door Details	03/21/22			07/18/22		09/20/23

STRUCTURAL DRAWINGS

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<input type="checkbox"/>	S-1	Building 1 Foundation Plan	03/21/22	07/18/22	07/05/22	06/30/23
<input type="checkbox"/>	S-2	Roof Framing Plan	03/21/22		07/05/22	
<input type="checkbox"/>	S-3	Building Sections & Details	03/21/22			
<input type="checkbox"/>	S-4	Building Sections & Details	03/21/22		07/05/22	
<input type="checkbox"/>	S-5	Schedules & General Notes	03/21/22			
<input type="checkbox"/>	S-6	Covered Parking Foundation Plans	03/21/22			

MECHANICAL DRAWINGS

I/O	Dwg. No	Drawing Name	Issue Date	Re-issue Date	Re-issue Date	Re-issue Date
<input type="checkbox"/>	MO.1	Mechanical Notes	03/21/22		06/22/22	06/30/23
<input type="checkbox"/>	M2.1	Floor Plan	03/21/22		06/22/22	
<input type="checkbox"/>	M6.1	Mechanical Schedules	03/21/22		06/22/22	

ELECTRICAL DRAWINGS

I/O	Dwg. No	Drawing Name	Issue Date	Re-issue Date	Re-issue Date	Re-issue Date	Re-issue Date
<input type="checkbox"/>	E0.1	Electrical Notes, Legend	03/21/22		06/22/22	06/30/23	
<input checked="" type="checkbox"/>	E1.1	Site Lighting Plan	03/21/22		06/22/22		09/20/23
<input type="checkbox"/>	E1.2	Site Power Plan	03/21/22		06/22/22		
<input type="checkbox"/>	E2.1	Lighting Floor Plan	03/21/22		06/22/22		
<input type="checkbox"/>	E2.2	Lighting Control Plan	03/21/22		06/22/22		
<input checked="" type="checkbox"/>	E3.1	Power Plan	03/21/22		06/22/22		09/20/23
<input checked="" type="checkbox"/>	E5.1	Electrical Panel & Riser Diagrams	03/21/22		06/22/22		09/20/23

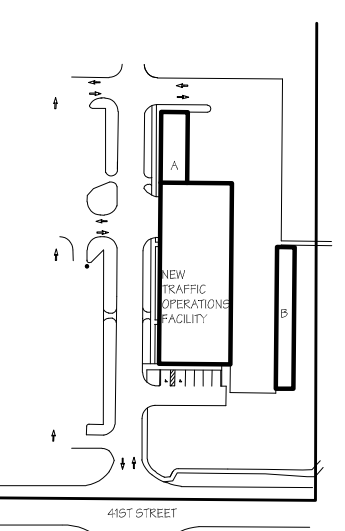
PLUMBING DRAWINGS

I/O	Dwg. No	Drawing Name	Issue Date	Re-issue Date	Re-issue Date	Re-issue Date	Re-issue Date
<input checked="" type="checkbox"/>	PO.1	Plumbing Notes & Schedule	03/21/22		06/22/22	06/30/23	09/20/23
<input type="checkbox"/>	P2.1	Sanitary Plan	03/21/22		06/22/22		
<input type="checkbox"/>	P3.1	Domestic Water Plan	03/21/22		06/22/22		
<input type="checkbox"/>	P5.1	Sanitary Stack and Risers	03/21/22		06/22/22		



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32967

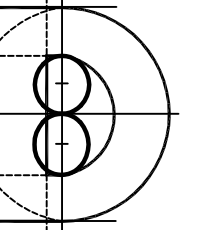
Key Plan:



Issues:

No.	Date:	Description:
A.	07-19-2021	SCHEMATIC DESIGN
B.	07-27-2021	CONSULTANT REVIEW
C.	10-21-2021	SCHEMATIC DESIGN PKG
D.	11-10-2021	SITE PLAN SUBMITTAL
E.	12-06-2021	PROGRESS SET
F.	01-04-2022	BLDG SECTION REV
G.	02-22-2022	BID / PERMIT SET
H.	03-07-2022	SITE PLAN RE-SUBMISSION
I.	03-21-2022	PERMIT SET
J.	06-04-22	FIRE DEPT. COMMENT RESPONSE
K.	06-30-2022	DRAWING UPDATES
L.	07-18-2022	RESPONSE
M.	06-30-2023	BID SET
N.	09-20-23	ADDENDUM #3 RESPONSE

Architect:



DONADIO & Associates, Architects P.A.

2001 9th Avenue, Suite 508
Vero Beach, FL 32903
Tel: 772.734.2929
Fax: 772.562.0600
License No. AA00022220
www.donadio-arch.com

Consultants:

Drawing Title:

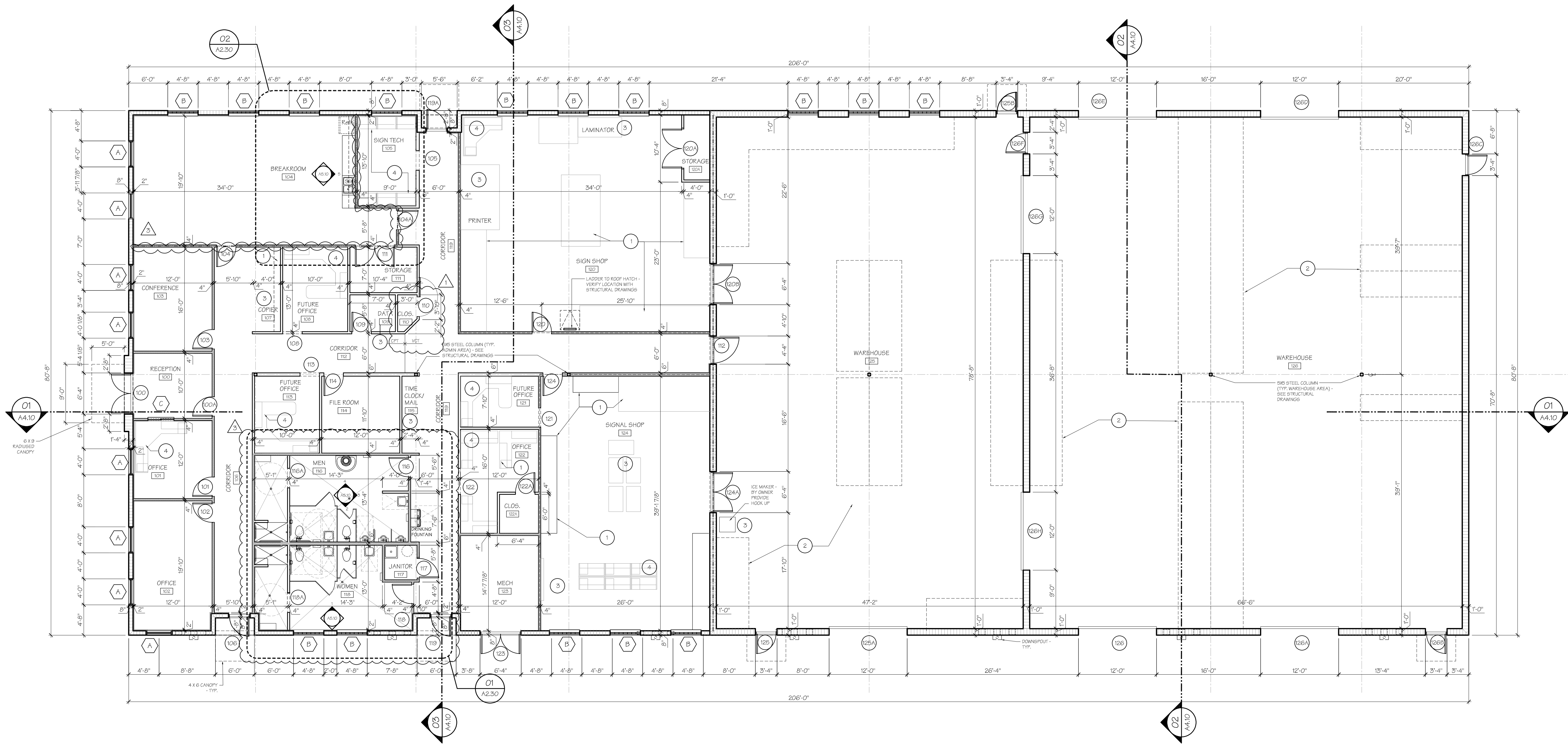
FLOOR PLAN



Dwg. File:	JLH
XREF File:	
Plot File:	
Project No.:	2021-20
Sheet No.:	

Cert. No.: 12,456

Date Signed: _____ A2.10



01 FLOOR PLAN

FLOOR AREA

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

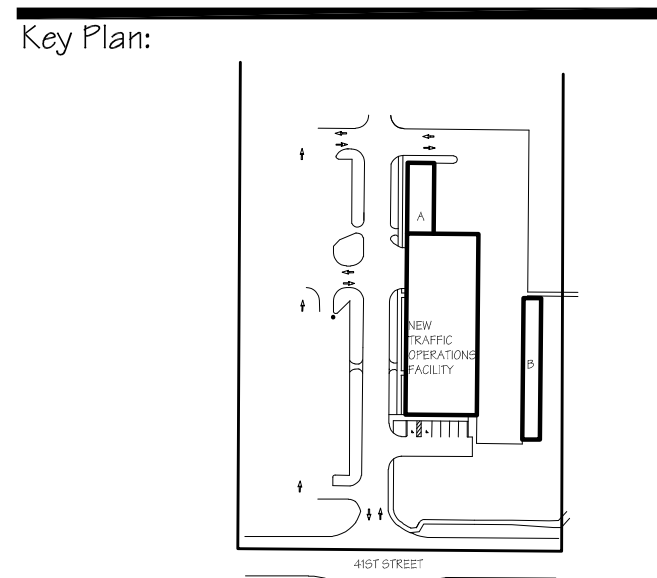
OFFICE / SHOP	7,206 S.F.
WAREHOUSE	9,411 S.F.
GROSS TOTAL	16,617 S.F.

CONSTRUCTION LEGEND

- EXTERIOR 8" CMU WALL W/ 5/8" DRYWALL ON 1/2" METAL FURRING CHANNELS.
- NON-RATED 2 HR. RATED
12" CMU WALL W/ TOOLED JOINTS - 2 HR. RATED TYPE D-2 - WHERE SHOWN.
FULL HEIGHT AND FIRE STOPPED, SEE PLANS FOR LOCATION.
- TWO (2) HOUR RATED ASSEMBLY U-411:
3/8" GALV. METAL STUDS 20 GAUGE @ 24" O.C. WITH 2 LAYERS 5/8" DRYWALL BOTH SIDES AND SOUND BATTS INSULATION; CONSTRUCT FULL HEIGHT W/ FIRESTOPPING AS REQUIRED.
- ONE HOUR RATED ASSEMBLY U-46B:
3/8" (6" WHERE NOTED) GALV. METAL STUDS 20 GAUGE @ 24" O.C. WITH 5/8" DRYWALL BOTH SIDES AND SOUND BATTS INSULATION; CONSTRUCT FULL HEIGHT W/ FIRESTOPPING.
- 3/8" (6" WHERE NOTED) GALV. METAL STUDS 20 GAUGE @ 24" O.C. WITH 5/8" DRYWALL BOTH SIDES AND SOUND BATTS INSULATION; CONSTRUCT FULL HEIGHT.

GENERAL NOTES

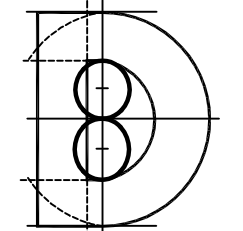
- 1 BUILT-IN CABINETS BY OWNER WHERE NOTED
- 2 PALLET RACK STORAGE SYSTEM BY OWNER; COORDINATE LOCATION WITH OWNER.
- 3 EQUIPMENT BY OWNER
- 4 ALL MODULAR FURNITURE PROVIDED BY OWNER - INSTALLED BY G.C.



Issues:

No.	Date	Description
A.	12-16-21	ROOF PLAN
B.	02-22-22	SITE PLAN APPROVAL
C.	03-21-22	PERMIT SET
D.	06-30-22	DRAWING UPDATES
I.	06-30-2022	DRAWING UPDATES
J.	07-18-2022	BLDG DEPT COMMENT RESPONSE
K.	06-30-23	BID SET
N.	09-20-23	ADDENDUM #3 RESPONSE

Architect:



DONADIO & Associates, Architects P.A.

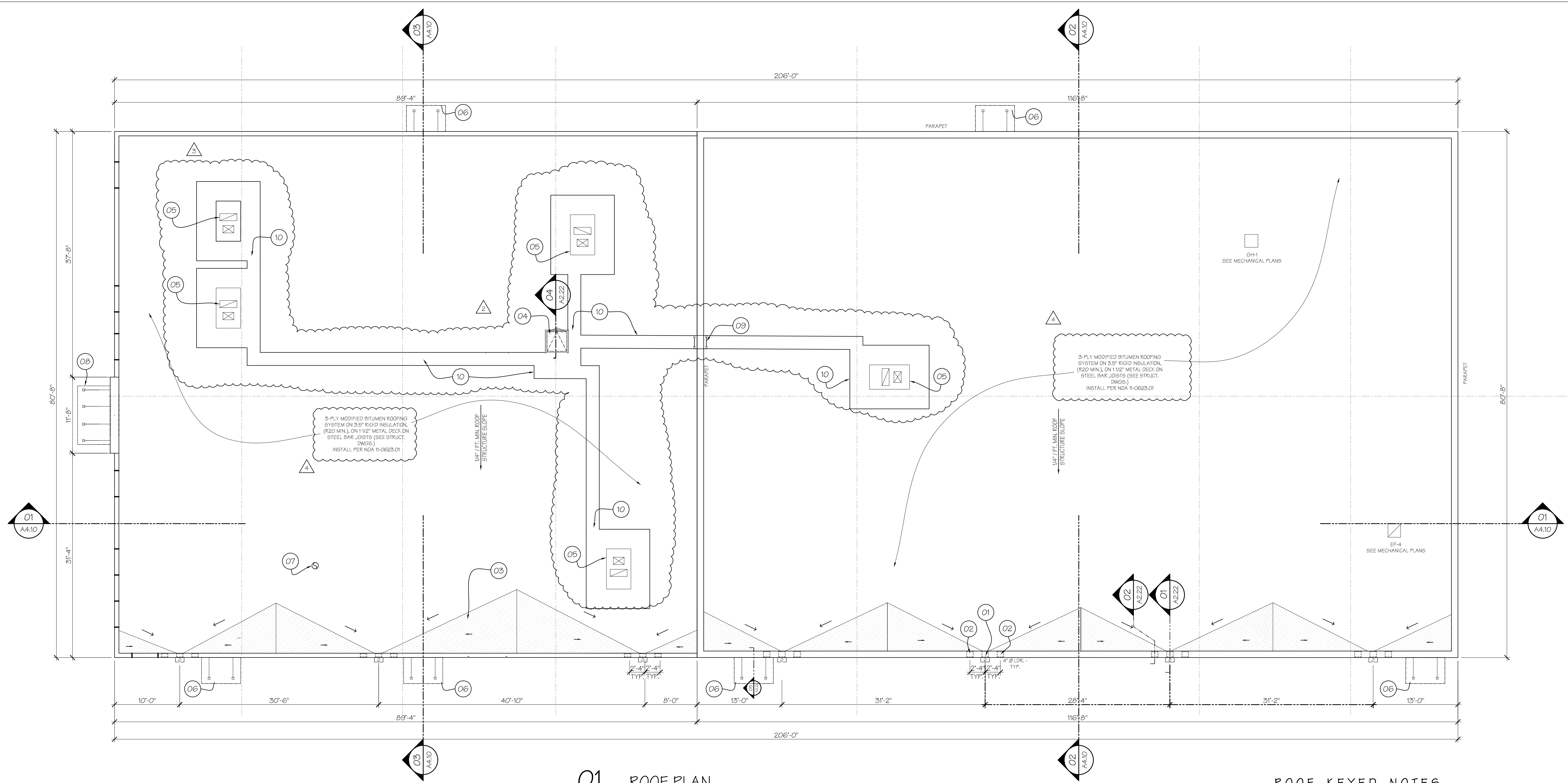
2001 3th Avenue, Suite 508
Vero Beach, FL 32960
Tel: 772-794-2829
Fax: 772-252-8600
License No. AA00002226
www.donadioarch.com

Consultant:

Drawing Title:
ROOF PLAN

Dwg. File:
JLH
XREF File:
TD
Project No.:
2021-20
Sheet No.:

Cert. No.: 12,456
Date Signed: **A2.20**



ROOF DRAIN CALCULATIONS

01 ROOF PLAN SCALE: 1/8" = 1'-0"

ROOF DRAINAGE CALCULATIONS

Scupper sizes are based on a 100 yr. storm, 5" per hour rainfall intensity.
FBC 2020 – Plumbing, FBC Section 1106.

I. Scupper Size Calculations – Upper Roof

- Area of roof to be drained.**
116'-8" x 80'-8" = 9411 SF s.f.
- Number of Scuppers**
Four (4) scuppers for upper roof section:
Each scupper will drain: 9411 sq. ft. ÷ 4 = **2353 sq. ft.**
- Size of Scupper:**
One (1) 12" weir length x 4" head will drain 5384 sq.ft.
Use 12" x 8" scuppers throughout.

II. Leader Size Calculations – Upper Roof

- Number of Leaders**
Four (4) leaders for upper roof section:
Each leader will drain: 9411 sq. ft. ÷ 4 = **2353 sq. ft.**
- Size of Leader:**
FBC Table 1106.2(1).
One (1) 4" diameter leader will drain 3,680 sq.ft.
Use 4" diameter leaders throughout.

III. Scupper Size Calculations – Lower Roof

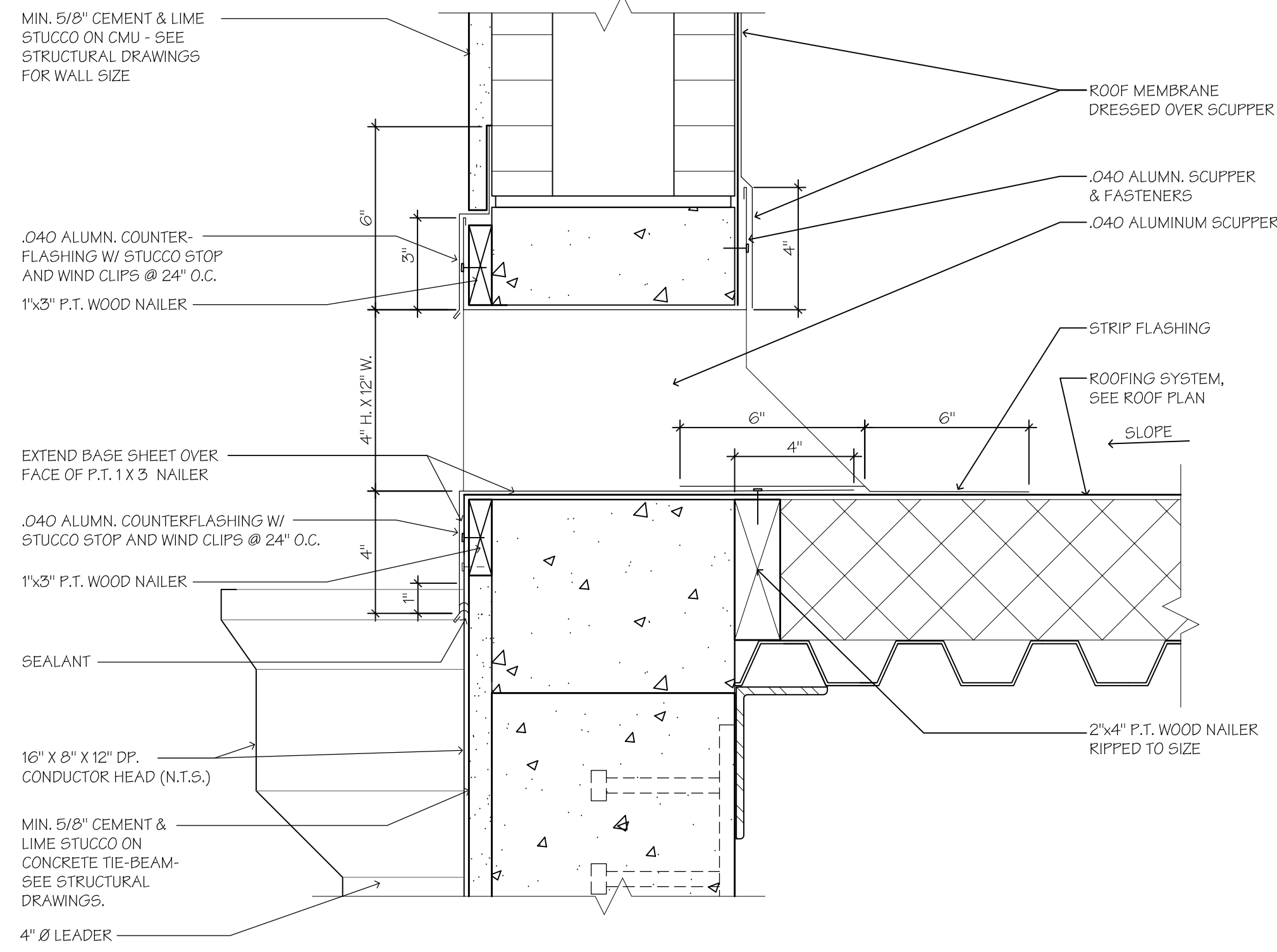
- Area of roof to be drained.**
89'-4" x 80'-8" = 7206 SF s.f.
- Number of Scuppers**
Three (3) scuppers for lower roof section:
Each scupper will drain: 7206 sq. ft. ÷ 3 = **2402 sq. ft.**
- Size of Scupper:**
One (1) 12" weir length x 4" head will drain 5384 sq.ft.
Use 12" x 8" scuppers throughout.

IV. Leader Size Calculations – Lower Roof

- Number of Leaders**
Three (3) leaders for lower roof section:
Each leader will drain: 7206 sq. ft. ÷ 3 = **2402 sq. ft.**
- Size of Leader:**
FBC Table 1106.2(1).
One (1) 4" diameter leader will drain 3,680 sq.ft.
Use 4" diameter leaders throughout.

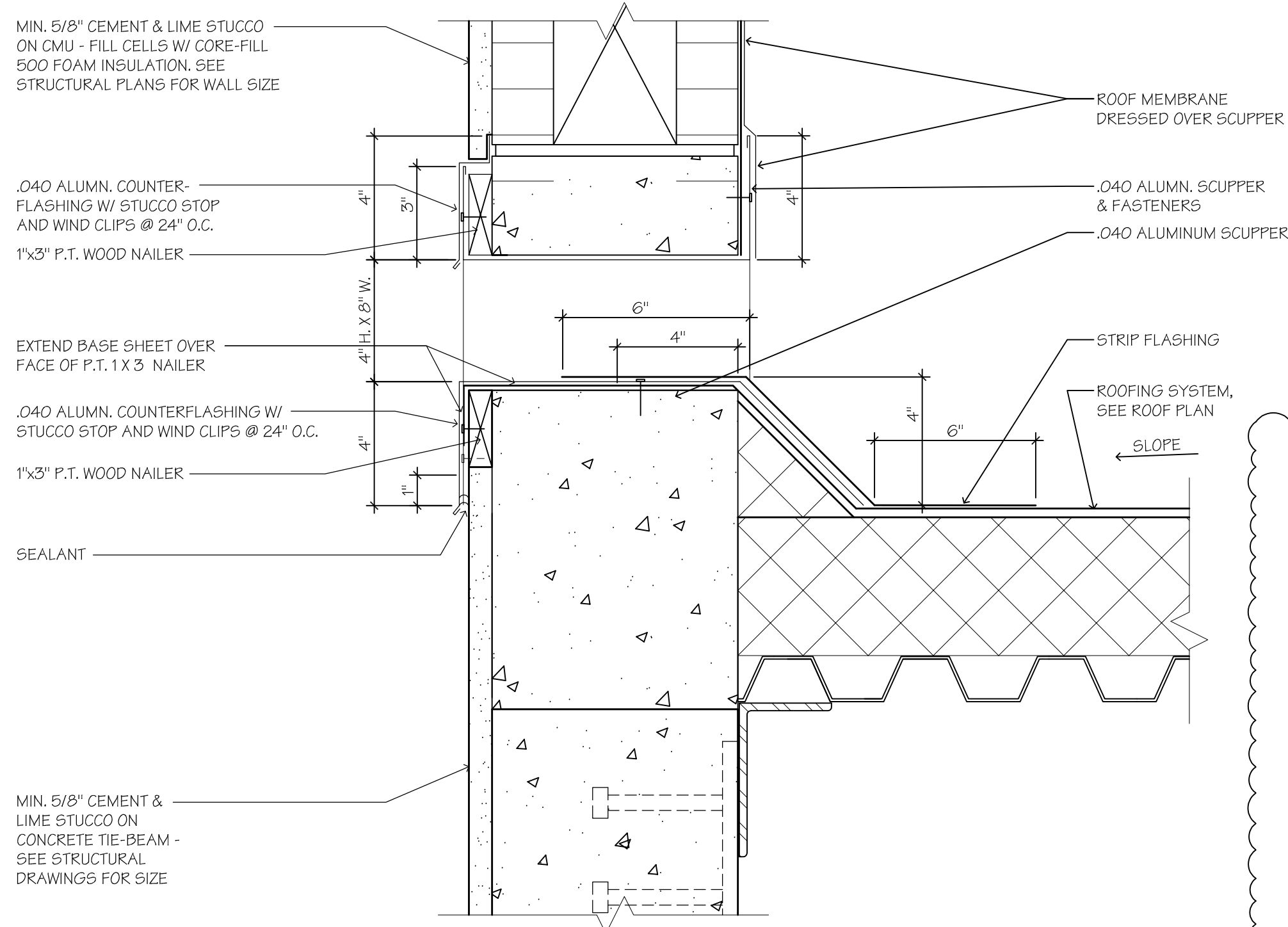
ROOF KEYED NOTES

- 01 12" WIDE X 4" HIGH SCUPPER AND 16" X 8" X 12" DP. CONDUCTOR HEAD. SET SCUPPER BOTTOM FLUSH WITH ROOF SURFACE AT PARAPET WALL. SEE DETAIL 01/A2.21.
- 02 8" WIDE X 4" HIGH OVERFLOW SCUPPER. SET BOTTOM AT 2" MIN. TO 4" MAX. ABOVE ROOF SURFACE AT PARAPET WALL. SEE DETAIL 02/A2.21.
- 03 SHADED AREAS DENOTE TAPERED INSULATION TO DIRECT WATER TO SCUPPERS, TYPICAL.
- 04 3'-0" X 3'-0" ROOF HATCH W/ ALUM. GUARDRAIL & SAFETY POST, SEE DET. 04/A2.21.
VERTICAL STEEL LADDER:
• 3/8" X 2" FLAT SIDE BARS @ MIN. 16" APART (CLEAR).
• 1 3/16" DIAM. ROUND RUNGS @ MAX. 12" APART (CENTER TO CENTER).
• 3/8" X 2" FLAT BAR ANGLE STAND OFF BRACKETS @ TOP, BOTTOM AND TWO EQUIDISTANT INTERMEDIATE LOCATIONS. CLEARANCE FROM CENTERLINE OF RUNG TO WALL SURFACE SHALL BE 7" MINIMUM.
- PROVIDE BILCO BL-5-4 MILD STEEL VERTICAL LADDER OR APPROVED EQUAL. CONTRACTOR SHALL PROVIDE FULL SHOP DRAWINGS.
- 05 ROOF TOP A/C UNIT, SEE MECHANICAL DRAWINGS. VERIFY LOCATION WITH STRUCTURAL DRAWINGS.
- 06 6'-0" X 4'-0" SUSPENDED ALUMINUM CANOPY OVER DOOR/ DOOR OPENING, SEE DETAIL 05/A2.21.
- 07 EXHAUST FAN ROOF JACK.
- 08 CUSTOM SUSPENDED RADIUSED ALUM. CANOPY, SEE MANUFACTURERS SHOP DRAWINGS.
- 09 ALUM. FIXED LADDER OVER PARAPET, COMPLIANT WITH ANSII/AIA A14.3-2008, AMERICAN NATIONAL STANDARD (ANS) FOR LADDERS. LADDER TO HAVE A GRATING PLATFORM ABOVE PARAPET AND SHALL BE BRACKETED TO BOTH SIDES OF PARAPET. LADDER SHALL NOT BE ATTACHED TO ROOF. SUBMIT SHOP DRAWINGS FOR APPROVAL.
- 10 COORDINATE LOCATION OF WALKWAYS WITH MECHANICAL PLANS. WALKWAYS SHALL BE DESIGNED IN ACCORDANCE W/ FBC REQUIREMENTS.



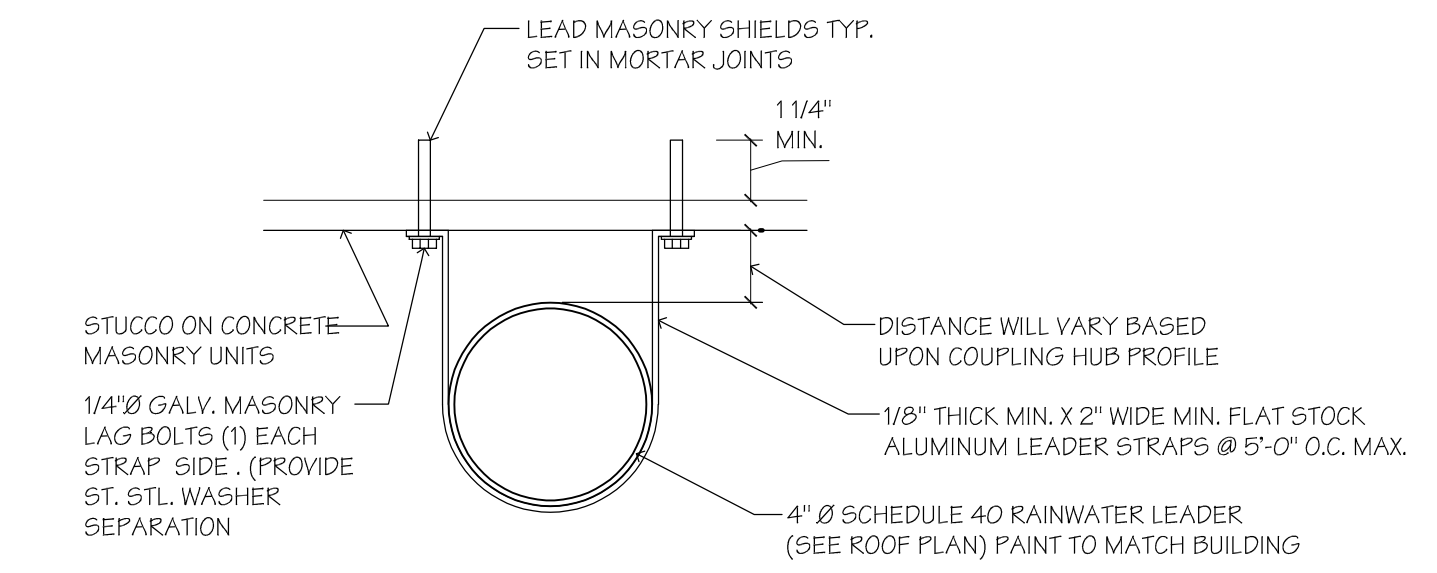
01 SCUPPER DETAIL

SCALE: 3" = 1'-0"



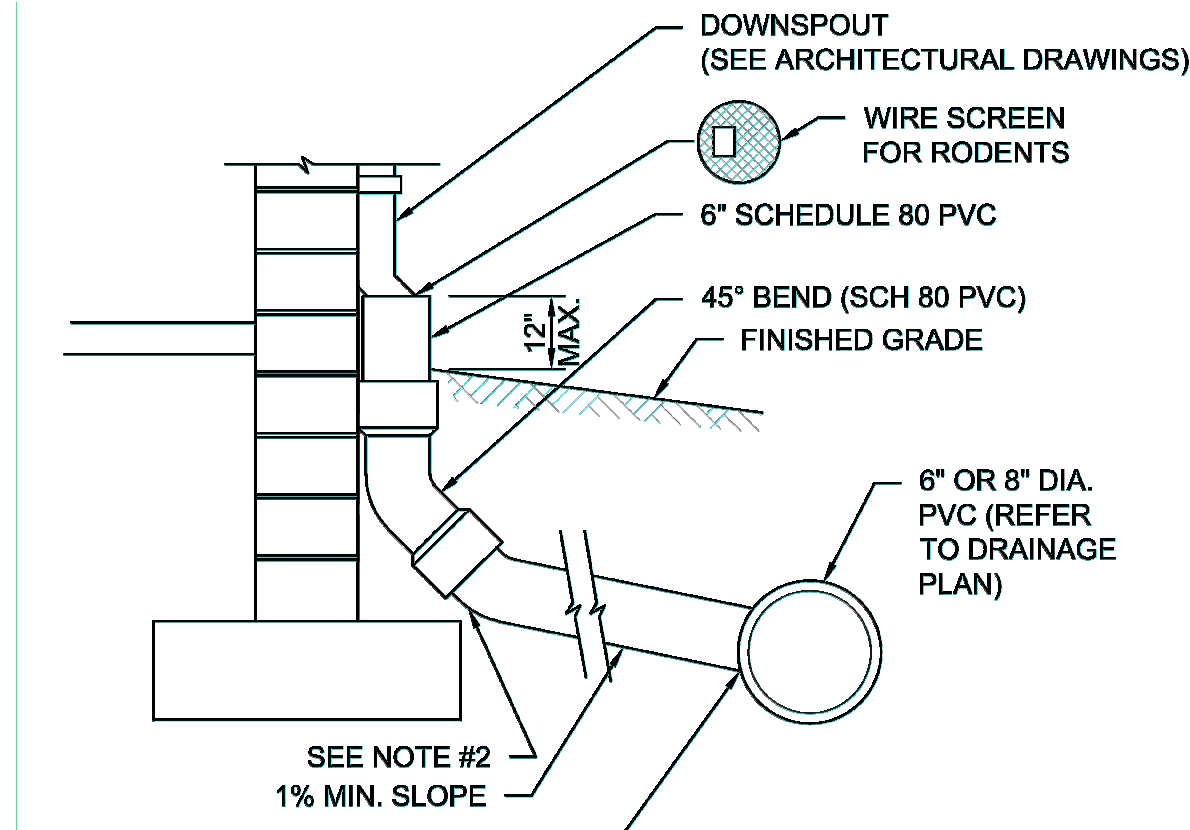
02 OVERFLOW SCUPPER DETAIL

SCALE: 3" = 1'-0"



03 RAIN LEADER DETAIL

SCALE: 3" = 1'-0"

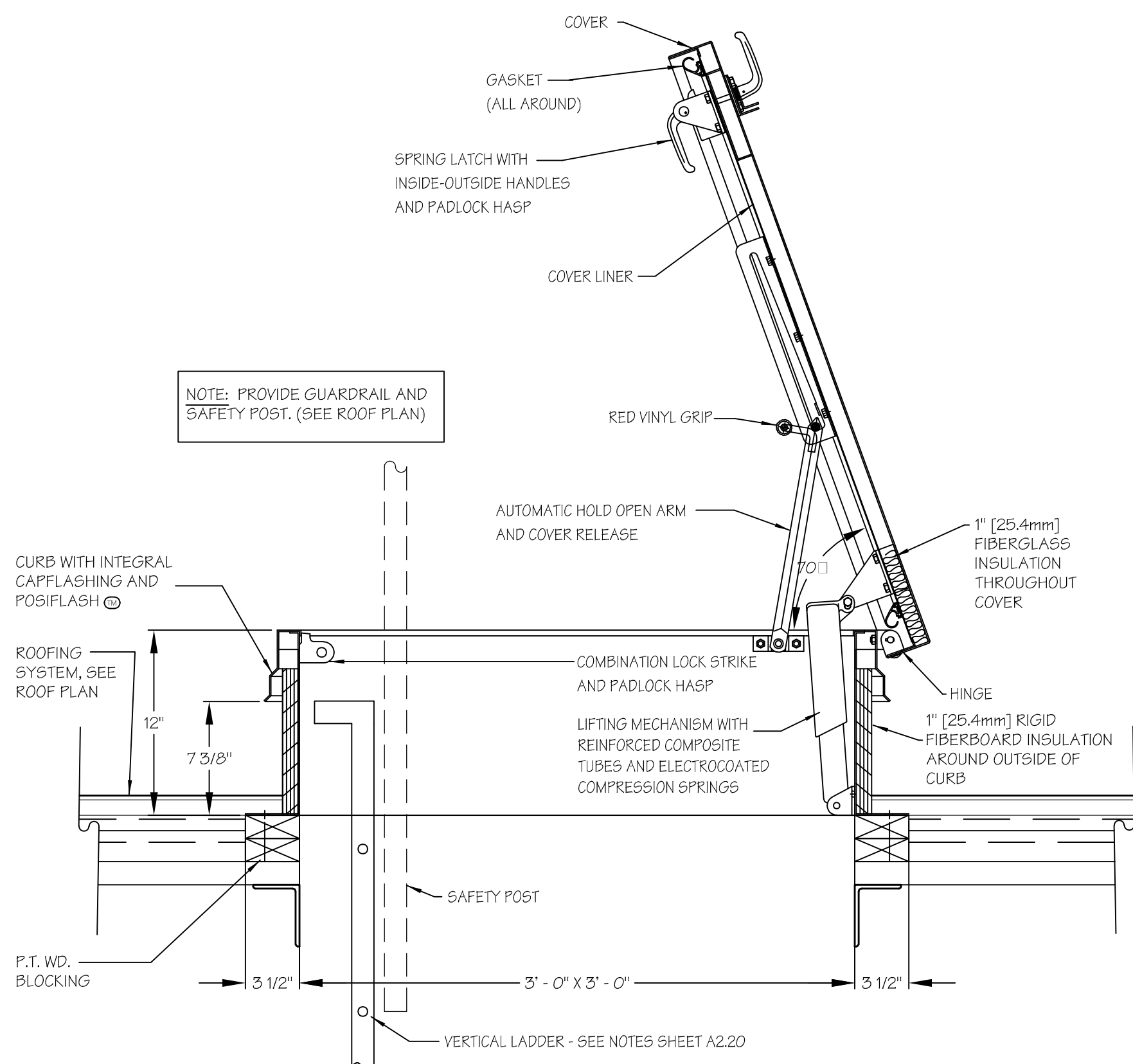


NOTES:

- PIPE MUST BE SCHEDULE 80 PVC.
- THE DOWNSPOUT COLLECTOR DRAIN SHALL BE INSTALLED BEFORE THE DOWNSPOUTS ARE INSTALLED ON THE BUILDING. SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO AND INCLUDING THE RODENT SCREEN. BUILDING CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONNECTION AT THE POINT OF THE RODENT SCREEN.

03A DOWNSPOUT COLLECTOR DETAIL

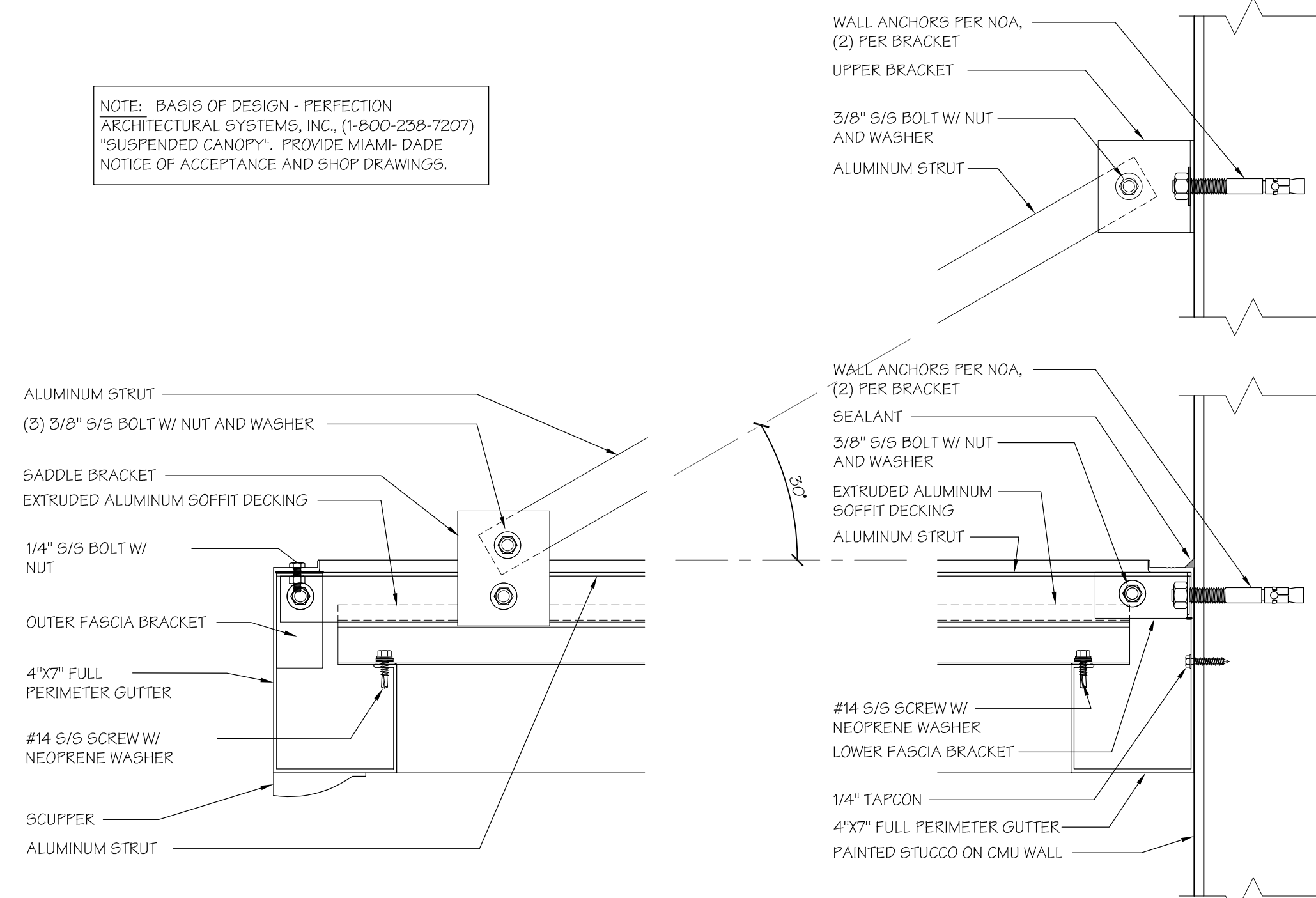
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04 ROOF HATCH DETAIL

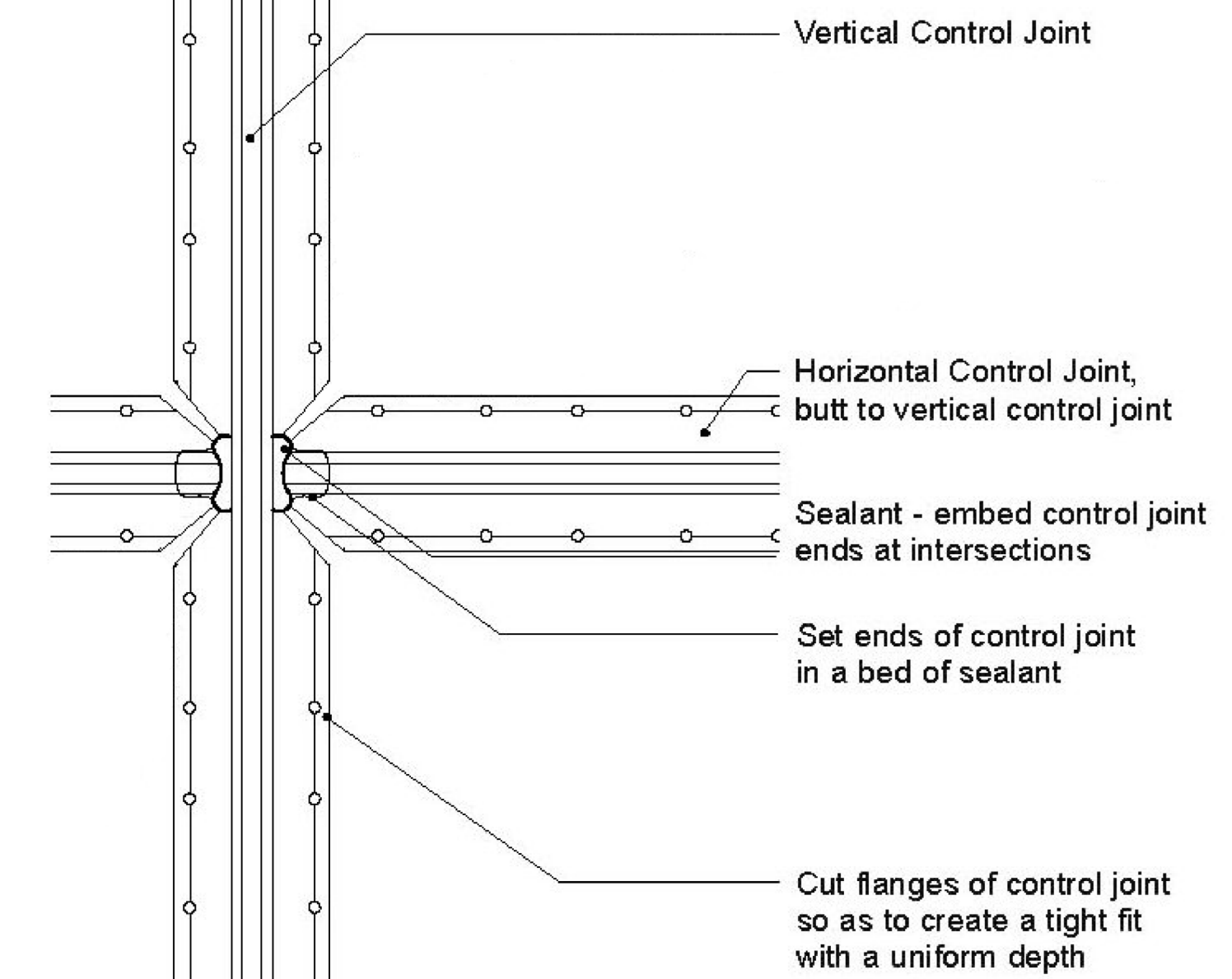
BILCO 5/HZ NOA 20-1104.24 OR EQUAL

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

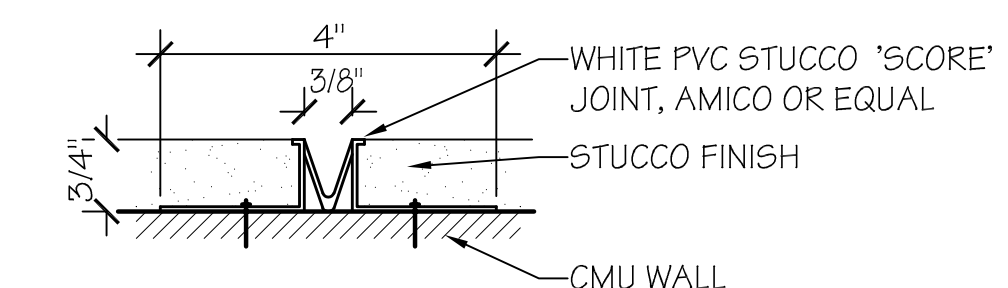


05 CANOPY DETAIL

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



Control Joint Intersection Sealant Detail

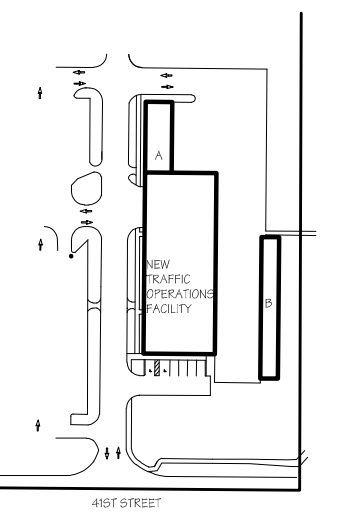


'Score' Joint Section (horiz. or vert.) - NO SCALE

01 TYPICAL STUCCO 'SCORE' JOINT DETAILS

Scale: 3" = 1'-0"

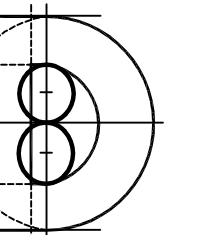
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Issues:

No.	Date	Description
A.	12-16-21	ORIGIN
B.	02-22-22	BID/PERMIT SET
C.	03-21-22	PERMIT SET
D.	06-30-22	DRAWING UPDATES
L.	06-30-2022	DRAWING UPDATES
J.	07-18-2022	RESPONSE
K.	06-30-23	BID SET
N.	09-20-23	ADDENDUM #3 RESPONSE

Architect:



DONADIO & Associates, Architects P.A.

2001 3th Avenue, Suite 508 Vero Beach, FL 32960
Tel: 772-794-2829
Fax: 772-262-8600
License No. AW0002226
www.donadioarch.com

Consultant:

Drawing Title:

ROOF & MISC. DETAILS

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XREF File: XREF
TD
Project No.: 2021-20
Sheet No.:

Cert. No.: 12,456

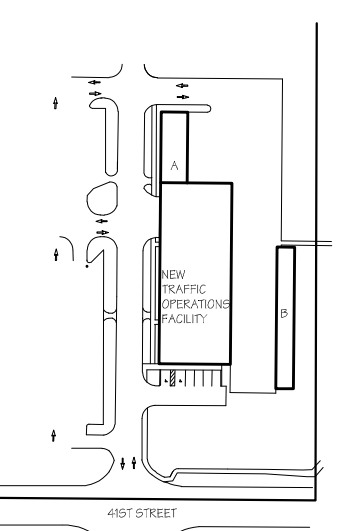
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A2.22



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32967

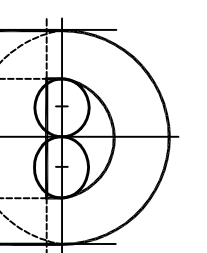
Key Plan:



Issues:

No.	Date:	Description:
A.	07-19-2021	SCHEMATIC DESIGN
B.	07-27-2021	CONSULTANT REVIEW
C.	10-21-2021	SCHEMATIC DESIGN PKG
D.	12-06-2021	PROGRESS SET
E.	03-21-2022	PERMIT SET
F.	06-30-2022	DRAWING UPDATES
G.	07-18-2022	BIDDING DEPT COMMENT RESPONSE
H.	06-30-2023	BID SET
N.	09-20-23	ADDENDUM #3 RESPONSE

Architect:



DONADIO
& Associates, Architects P.A.

2001 9th Avenue, Suite 508
Vero Beach, FL 32903
Tel: 772.734.2329
Fax: 772.256.2400
License No. AA00022250
www.donadio-arch.com

Consultants:

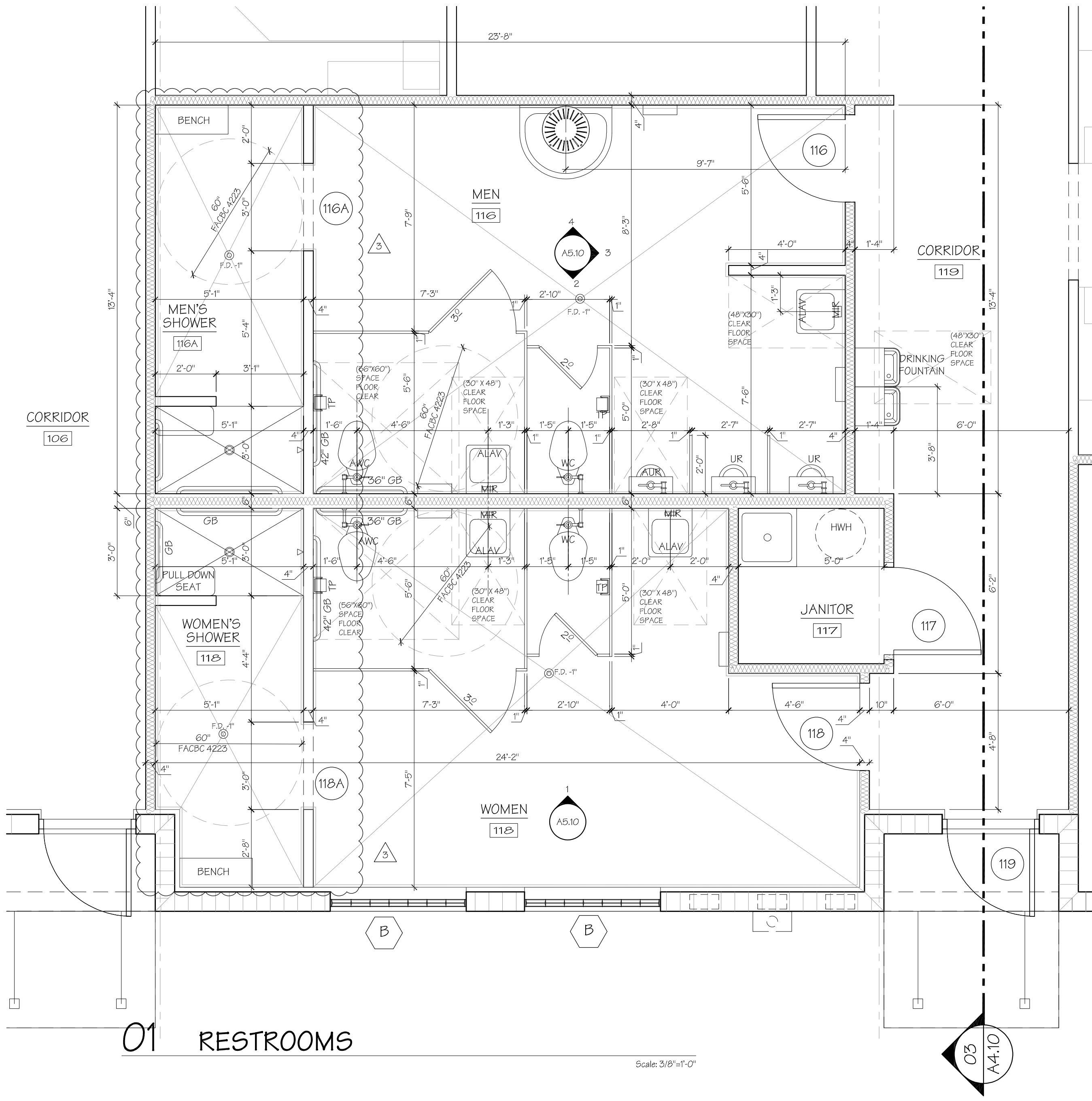
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ENLARGED PLANS

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Plot File:
2021-20
Sheet No.:

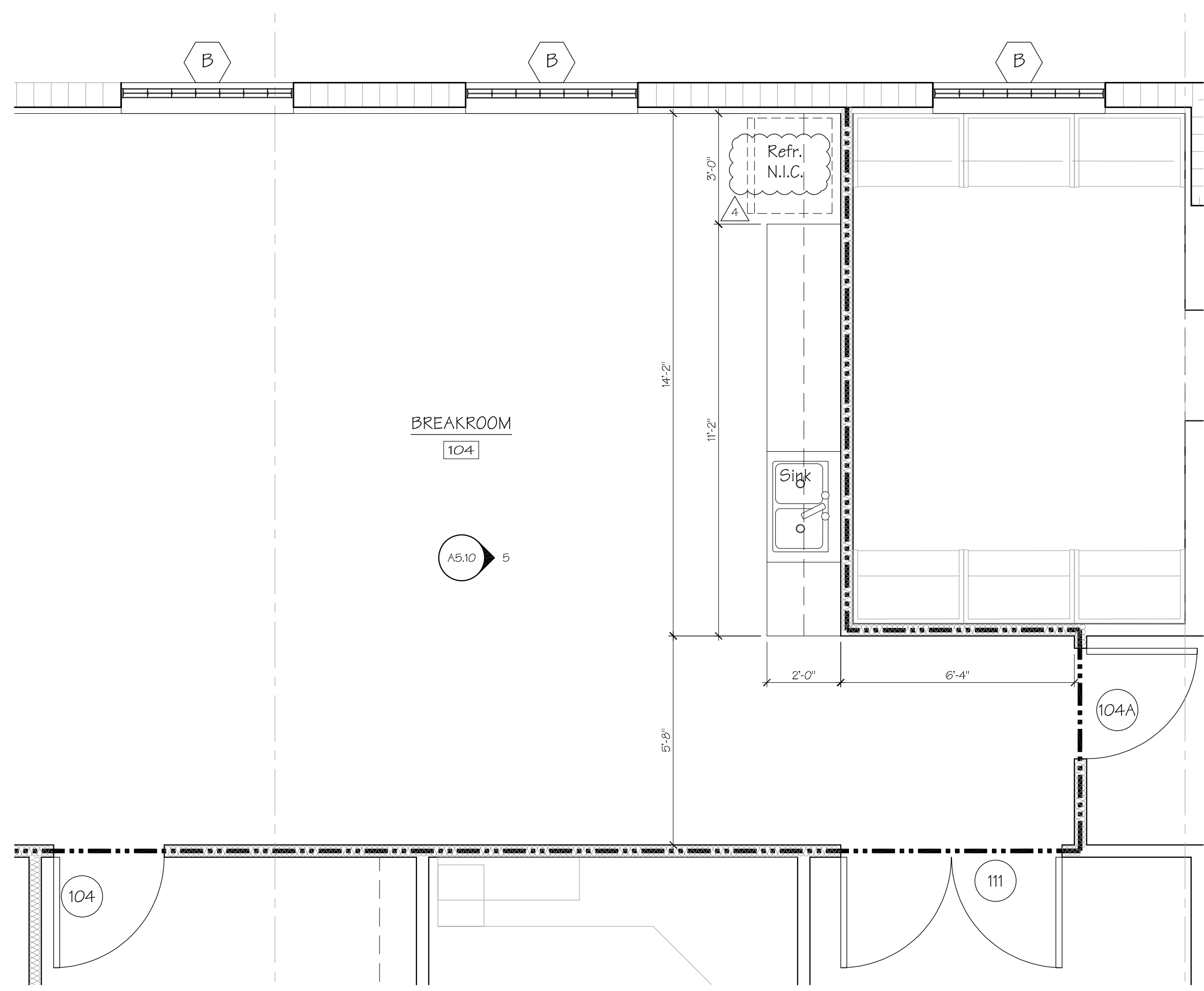
Cert. No.: 12,456

Date Signed: A2.30



01 RESTROOMS

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



02 BREAKROOM

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

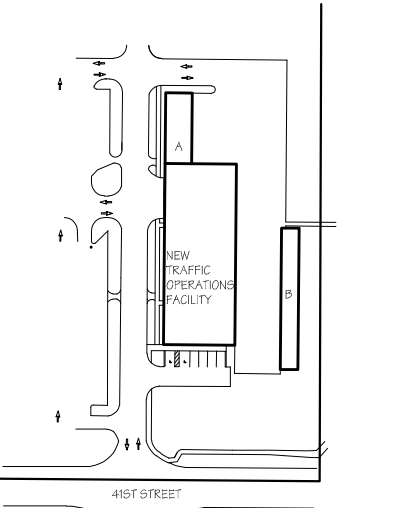
CONSTRUCTION LEGEND

- EXTERIOR 8" CMU WALL W/ 5/8" DRYWALL ON 1-1/2" METAL FURRING CHANNELS.
- NON-RATED 2 HR. RATED 12" CMU WALL W/ TOOLED JOINTS - 2 HR. RATED TYPE D-2 - WHERE SHOWN. FULL HEIGHT AND FIRE STOPPED. SEE PLANS FOR LOCATION.
- TWO (2) HOUR RATED ASSEMBLY: U 411- 3/8" GALV. METAL STUDS 20 GAUGE @ 24" O.C. WITH 2 LAYERS 5/8" DRYWALL BOTH SIDES AND SOUND BATTS INSULATION; CONSTRUCT FULL HEIGHT W/ FIRESTOPPING AS REQUIRED.
- ONE HOUR RATED ASSEMBLY: U 465 - 3/8" GALV. METAL STUDS 20 GAUGE @ 24" O.C. WITH 5/8" DRYWALL BOTH SIDES AND SOUND BATTS INSULATION; CONSTRUCT FULL HEIGHT W/ FIRESTOPPING.
- 3/8" (6" WHERE NOTED) GALV. METAL STUDS 20 GAUGE @ 24" O.C. WITH 5/8" DRYWALL BOTH SIDES AND SOUND BATTS INSULATION; CONSTRUCT FULL HEIGHT.



4548 41st Street
Vero Beach FL
32967

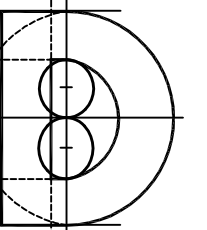
Key Plan:



Issues:

No.	Date	Description
A.	07-19-2021	SCHEMATIC DESIGN
B.	10-21-2021	SCHEMATIC DESIGN PKG
C.	12-06-2021	PROGRESS SET
D.	03-21-22	PERMIT SET
E.	06-04-22	FIRE DEPT. COMMENT RESPONSE
F.	07-18-2022	BLDG DEPT COMMENT RESPONSE
G.	06-30-23	BID SET
N.	09-20-2023	ADDENDUM #3 RESPONSE

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DONADIO
& Associates, Architects P.A.

2001 3th Avenue, Suite 508
Vero Beach, FL 32960
Tel: 772.794.2829
Fax: 772.262.8600
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Consultant:

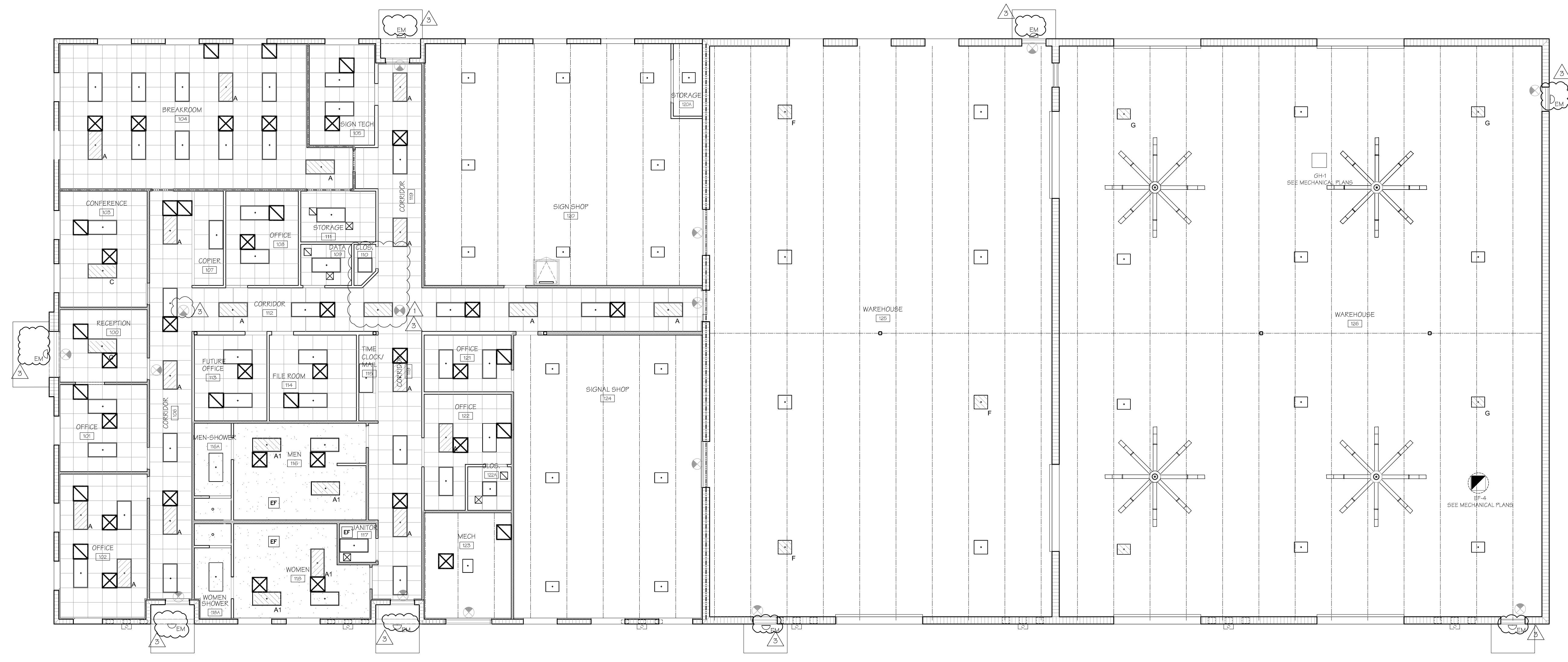
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REFLECTED CEILING PLAN

Dwg. File:
JLH
XREF File:
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Plot File:
2021-20
Sheet No.:

Cert. No.: 12,456

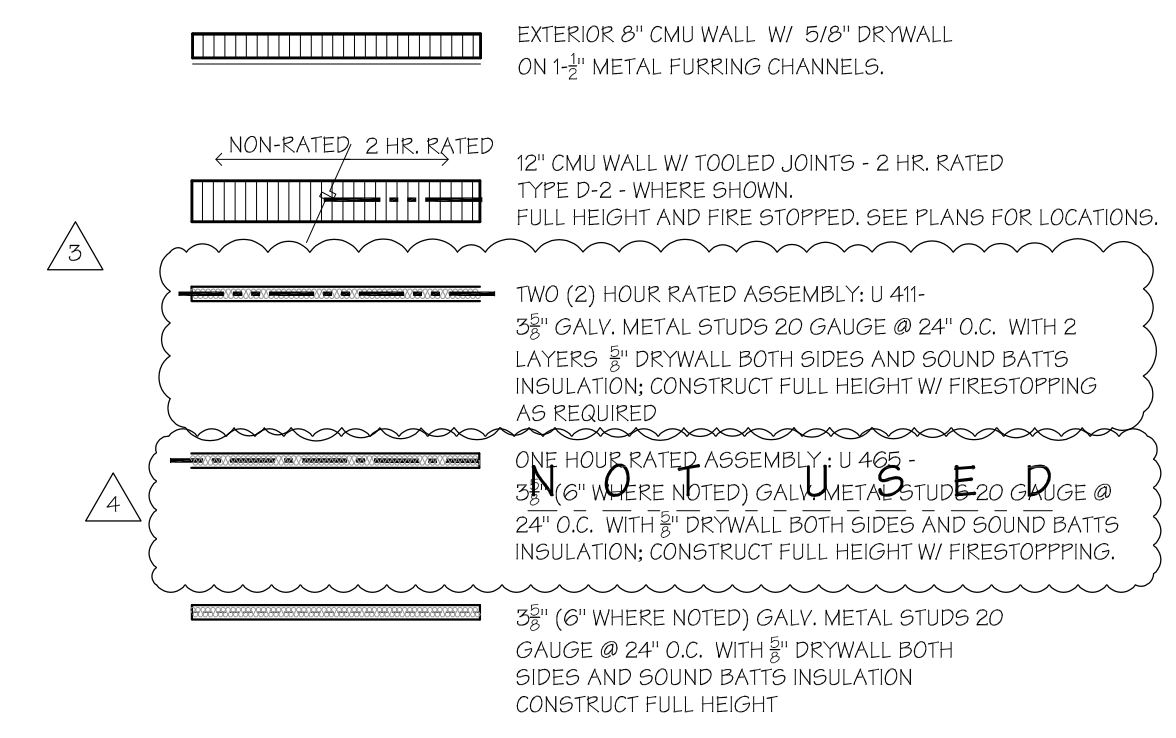
Date Signed: A2.40



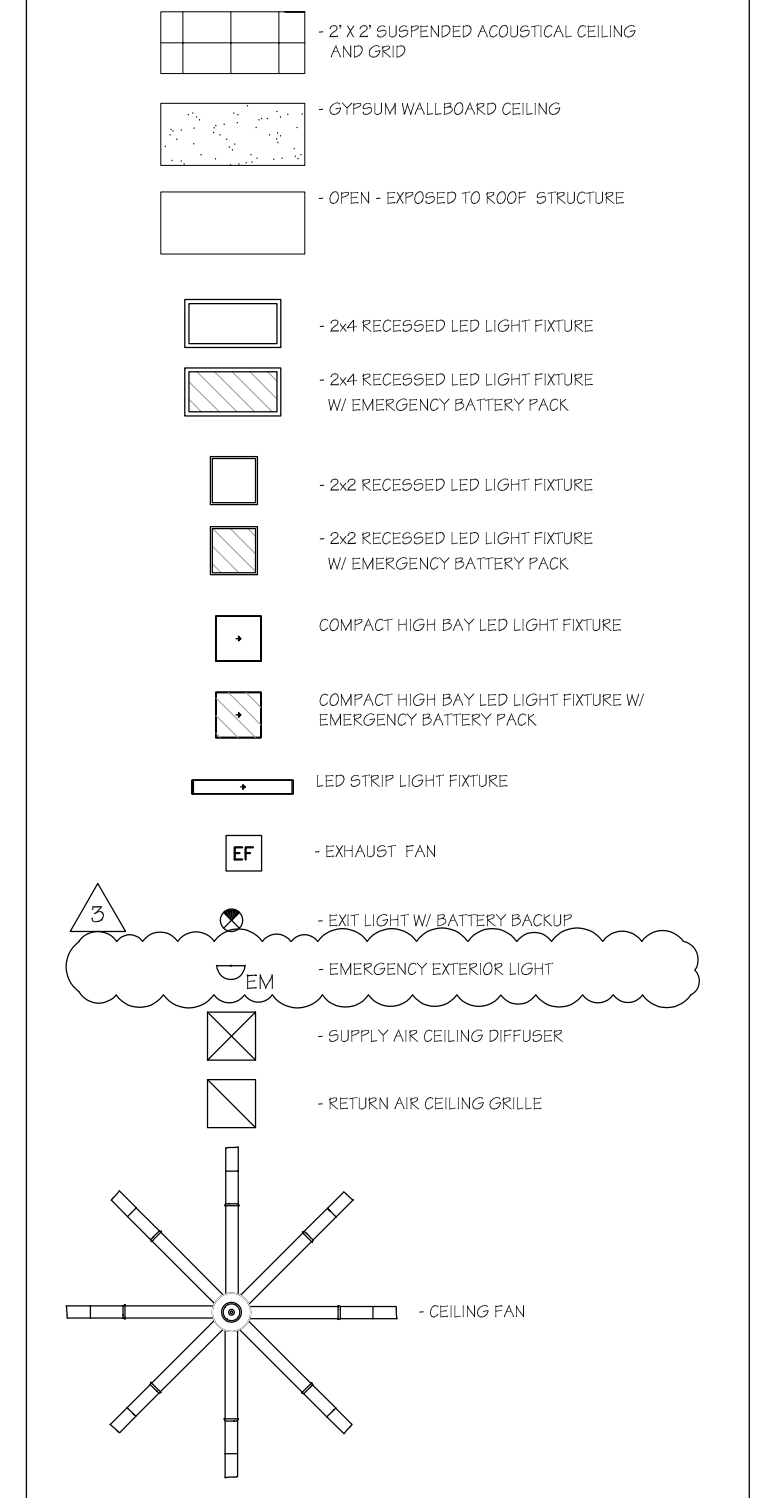
01 REFLECTED CEILING PLAN

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

CONSTRUCTION LEGEND

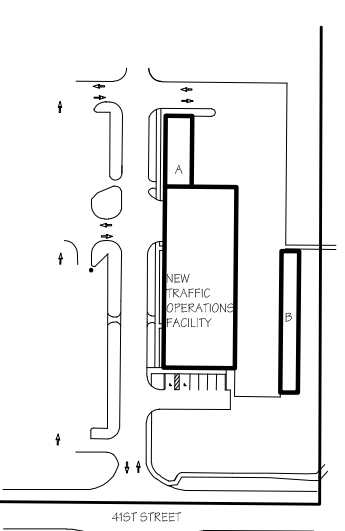


REFLECTED CEILING LEGEND



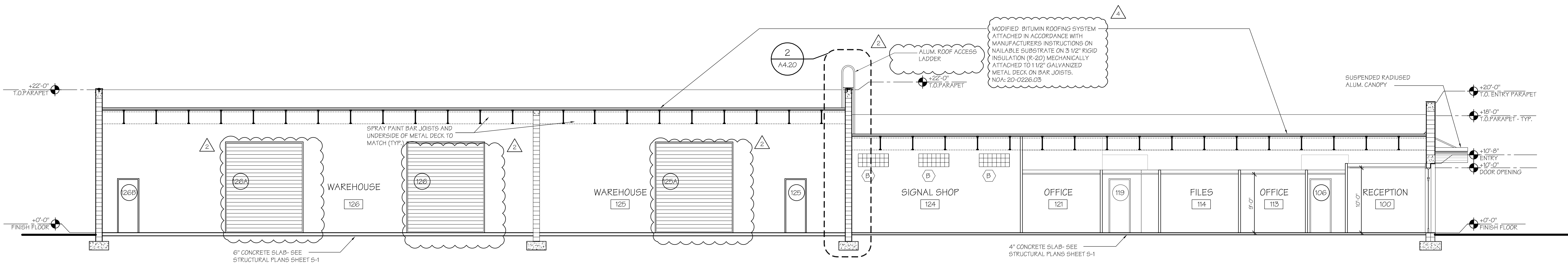


Key Plan:



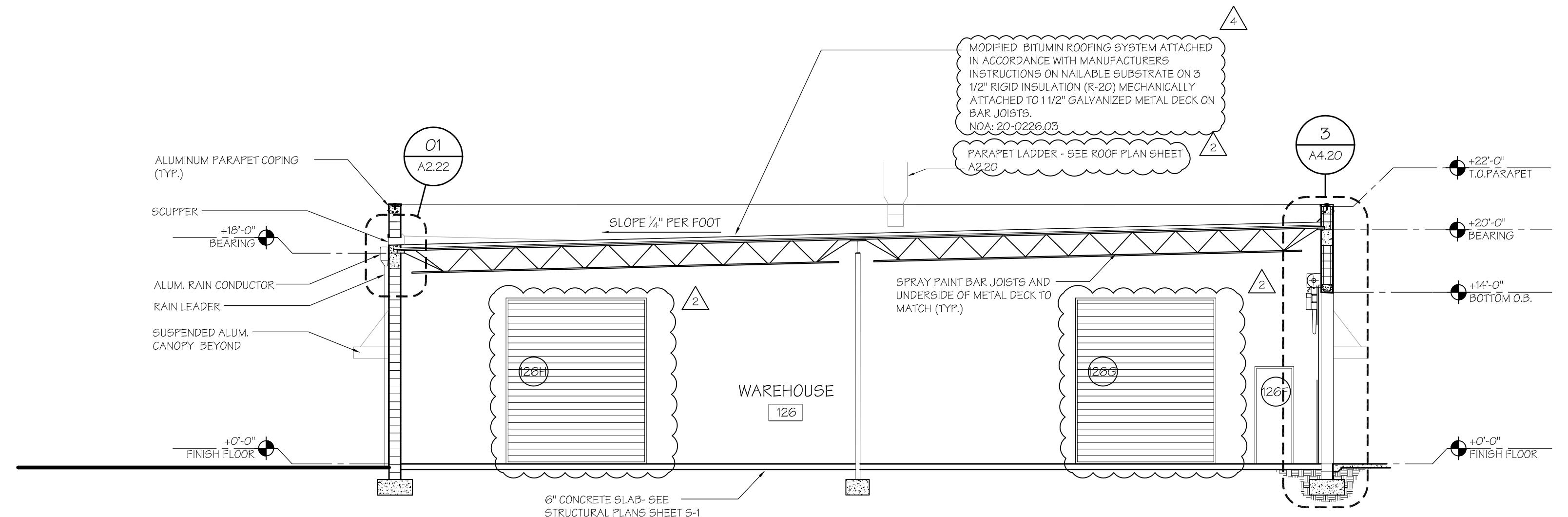
Issues:

No.	Date	Description
A.	12-21-2021	PROGRESS
B.	01-04-22	UPDATED
C.	02-22-22	BID/PERMIT SET
D.	03-21-22	PERMIT SET
E.	06-30-2022	DRAWING UPDATES
F.	07-18-2022	BID PERMIT COMMENT RESPONSE
H.	06-30-23	BID SET
N.	09-20-23	ADDENDUM #3 RESPONSE



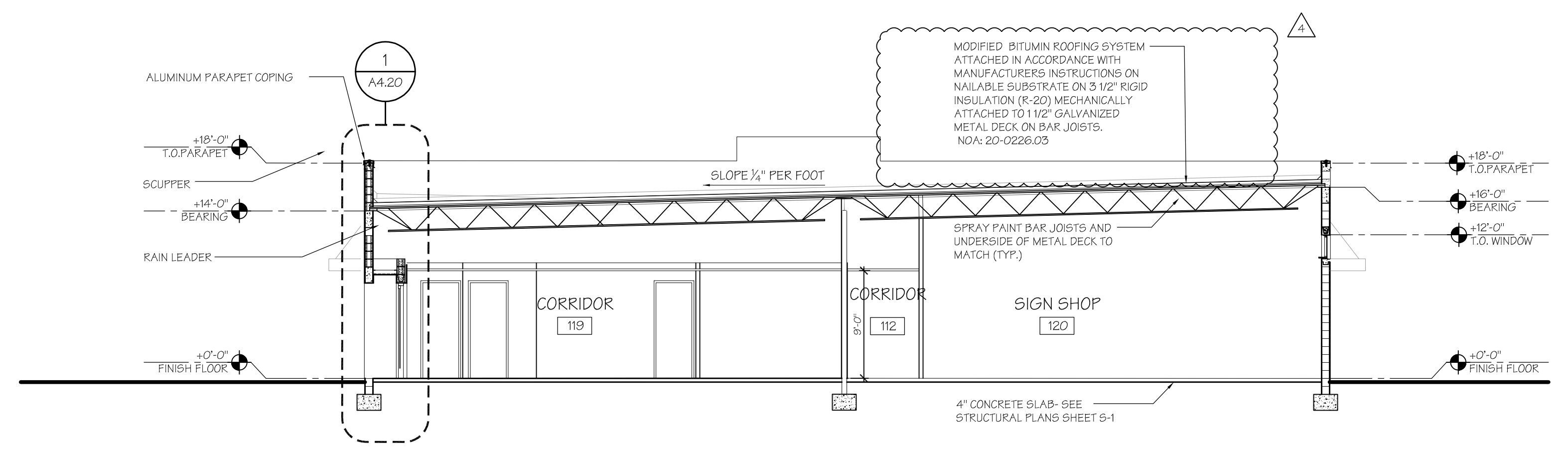
01 BUILDING SECTION

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



02 BUILDING SECTION

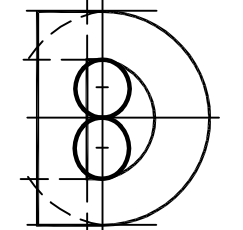
Scale: 1/8"=1'-0"



03 BUILDING SECTION

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

Architect:



DONADIO & Associates, Architects P.A.

2001 3th Avenue, Suite 508
Vero Beach, FL 32960
Tel: 772-784-2829
Fax: 772-262-8600
License No. AA00002226
www.donadioarch.com

Consultant:

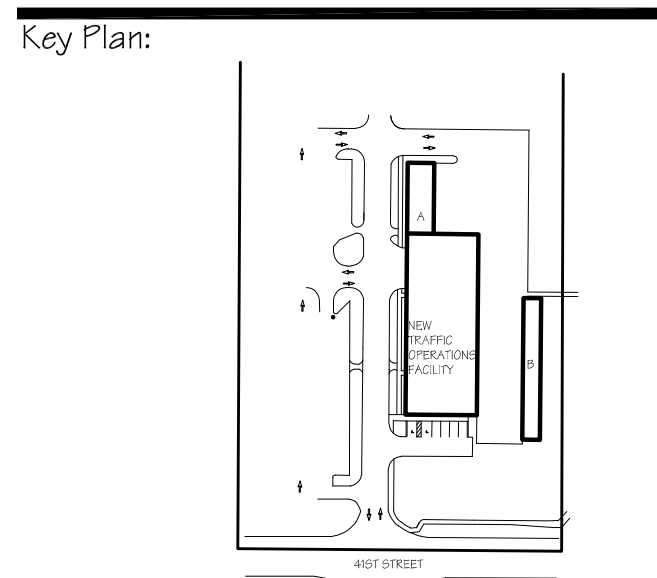
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BUILDING SECTIONS

Dwg. File: JLH
XREF File:
TD
Plot File:
2021-20
Sheet No.:

Cert. No.: 12,456

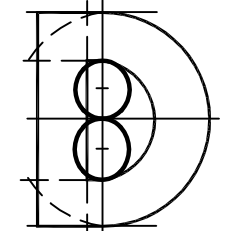
Date Signed: **A4.10**



Issues:

No.	Date	Description
A.	12-21-2021	PROGRESS
B.	01-04-22	UPDATED
C.	02-22-22	PERMIT SET
D.	03-07-2022	SITE PLAN RE-SUBMISSION
E.	03-21-22	PERMIT SET
F.	06-30-2022	DRAWING UPDATES
G.	07-18-2022	BDG DEPT COMMENT RESPONSE
H.	06-30-23	BID SET
N.	09-20-23	ADDENDUM #3 RESPONSE

Architect:



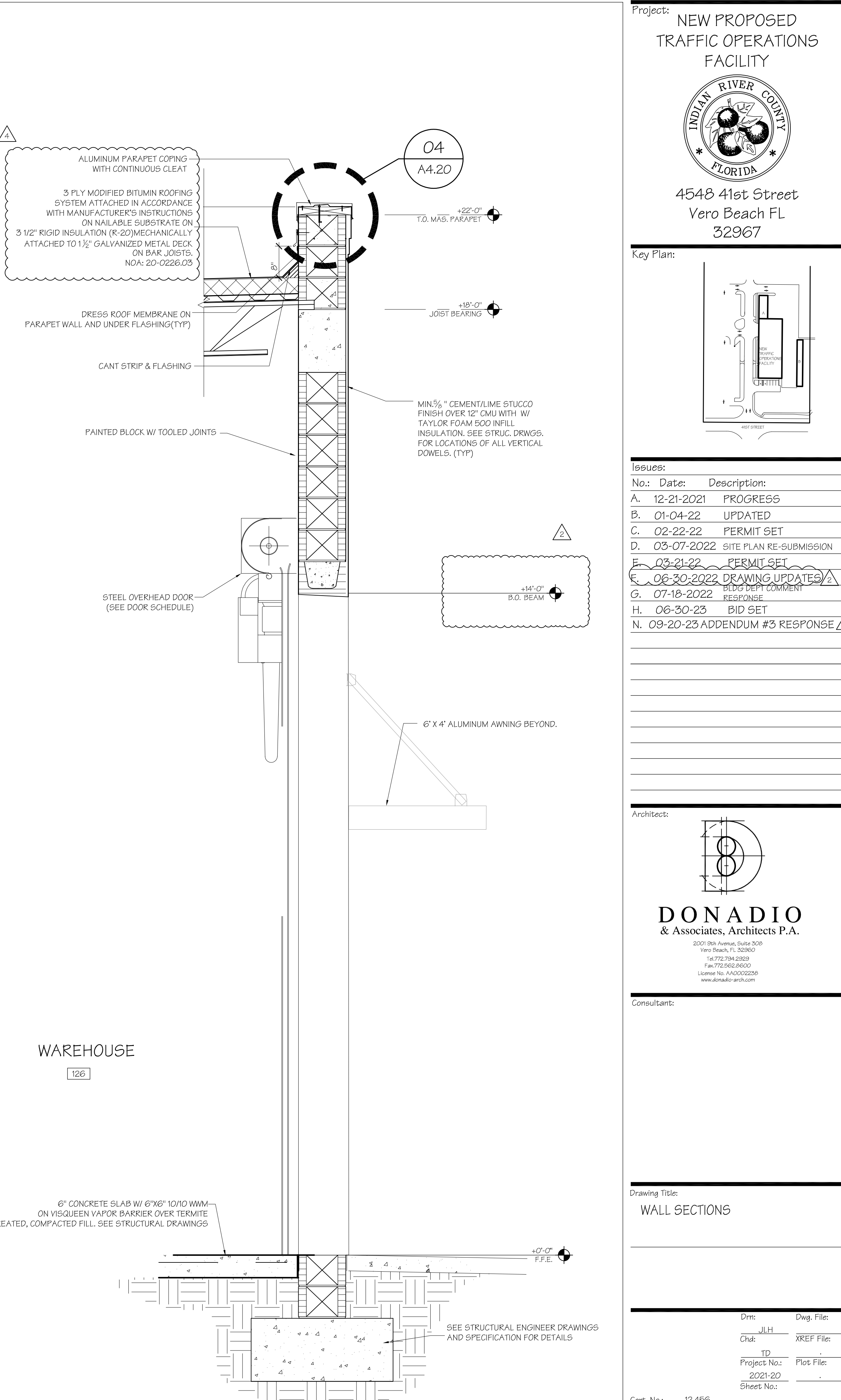
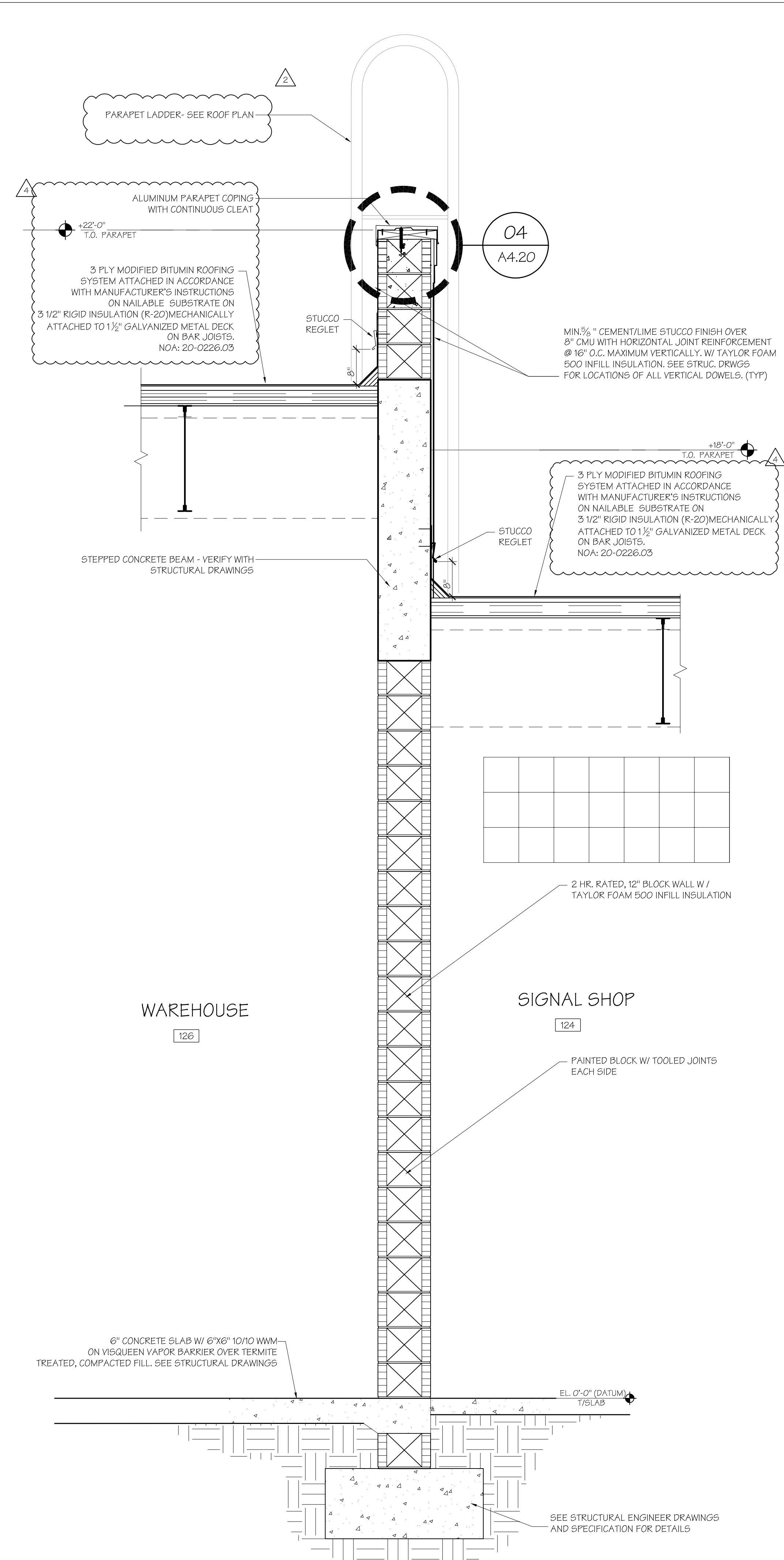
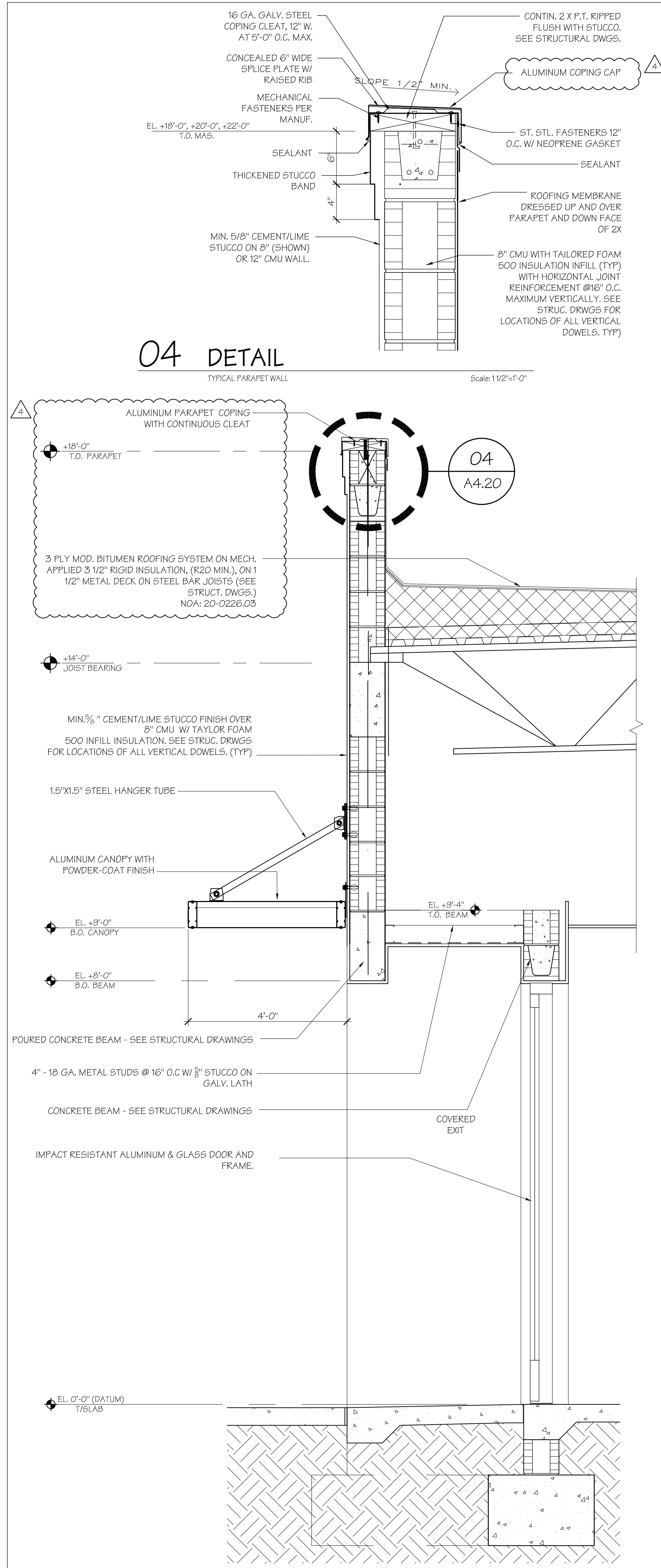
DONADIO & Associates, Architects P.A.
 2001 3th Avenue, Suite 508
 Vero Beach, FL 32960
 Tel: 772-794-2829
 Fax: 772-252-8600
 License No. AW0002226
 www.donadioarch.com

Consultant:

Drawing Title:
WALL SECTIONS

Dwn	Dwg. File
JLH	XREF File
TD	Plot File
2021-20	Sheet No.

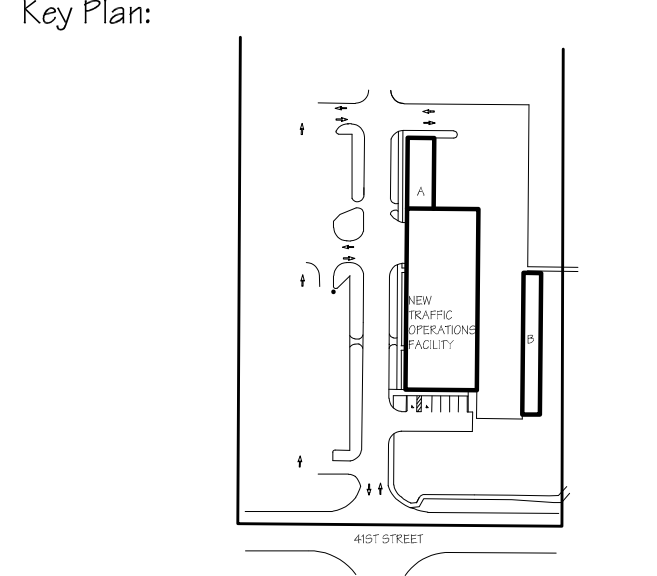
Cert. No.: 12,456
Date Signed: **A4.20**



01 WALL SECTION
Scale: 3/4"=1'-0"

02 WALL SECTION
Scale: 3/4"=1'-0"

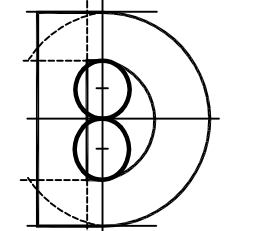
03 WALL SECTION
Scale: 3/4"=1'-0"



Issues:

No.	Date:	Description:
A.	07-19-2021	SCHEMATIC DESIGN
B.	07-27-2021	CONSULTANT REVIEW
C.	10-21-2021	SCHEMATIC DESIGN PKG
D.	12-06-2021	PROGRESS SET
E.	02-22-2022	BID/PERMIT SET
F.	03-21-2022	PERMIT SET
G.	07-18-2022	BIDS DEPT COMMENT RESPONSE
H.	06-30-2023	BID SET
N.	09-20-23	ADDENDUM #3 RESPONSE

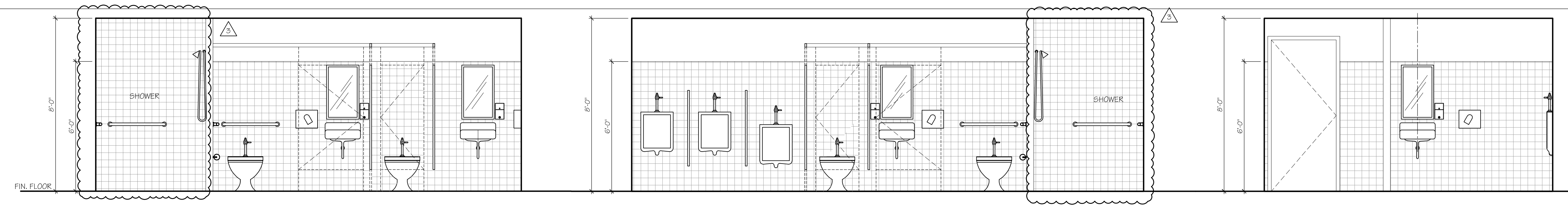
Architect:



DONADIO & Associates, Architects P.A.
2001 31st Avenue, Suite 208
Vero Beach, FL 32960
Tel: 772-794-2829
Fax: 772-252-8600
License No. AA00022265
www.donadioarch.com

Consultant:

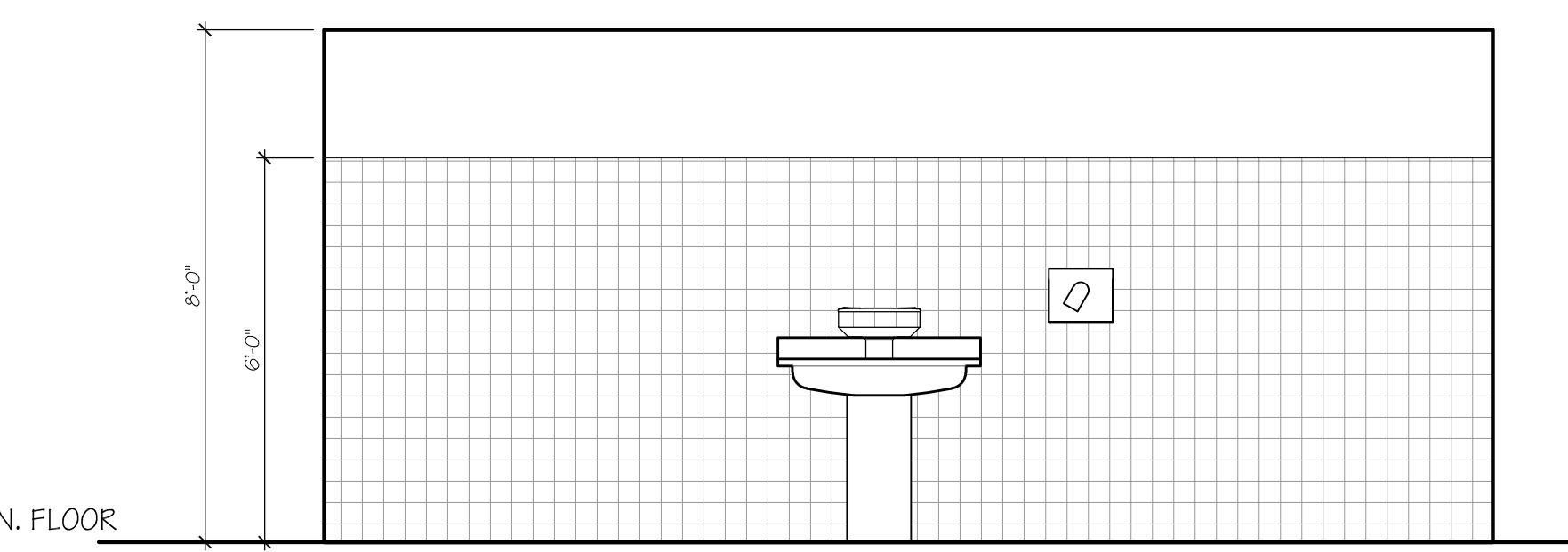
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XREF File: TD
Project No.: 2021-20
Sheet No.:
Cert. No.: 12,456
Date Signed: A5.10



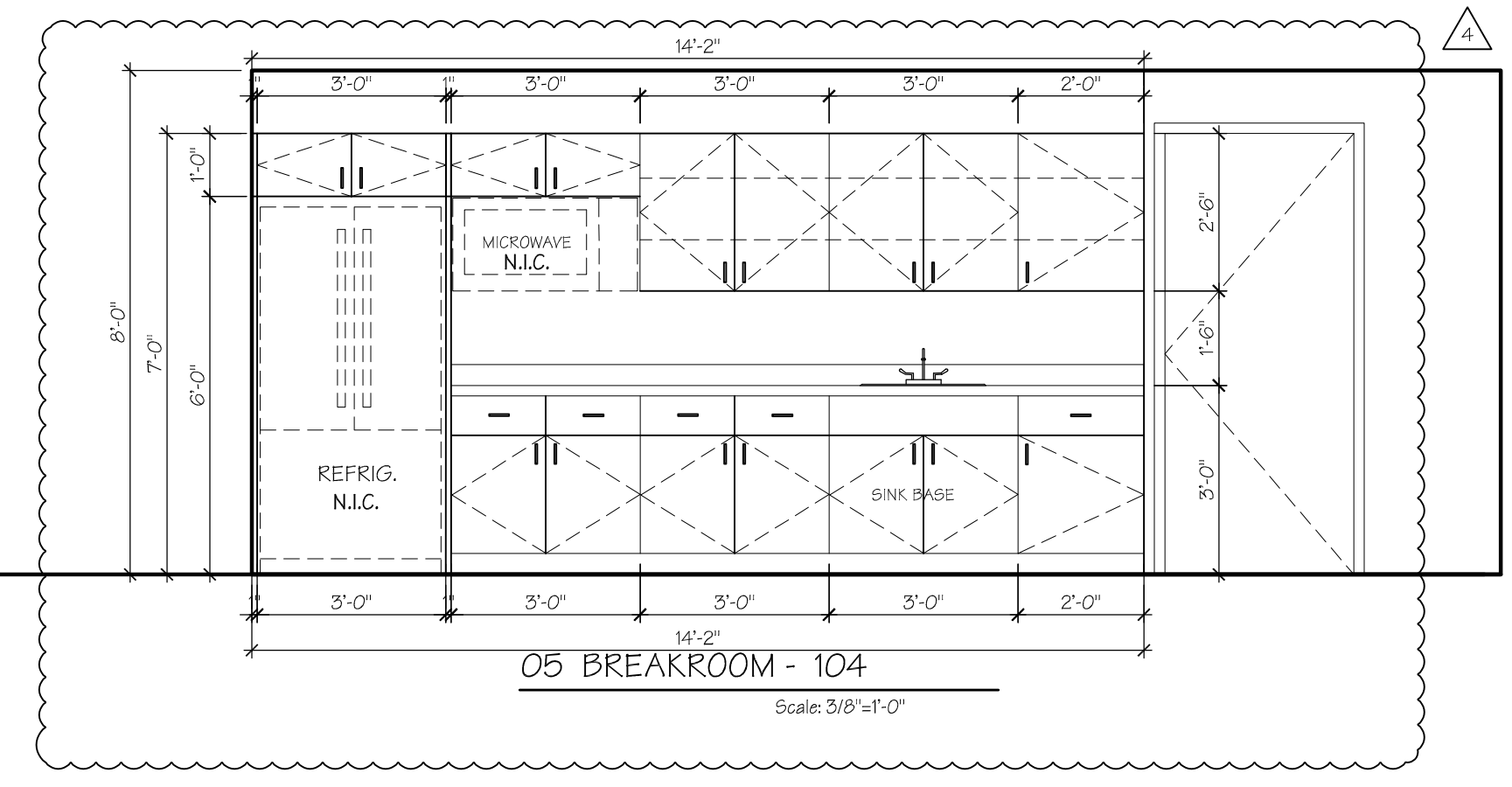
01 WOMENS RESTROOM - 118
Scale: 3/8"=1'-0"

02 MENS RESTROOM - 116
Scale: 3/8"=1'-0"

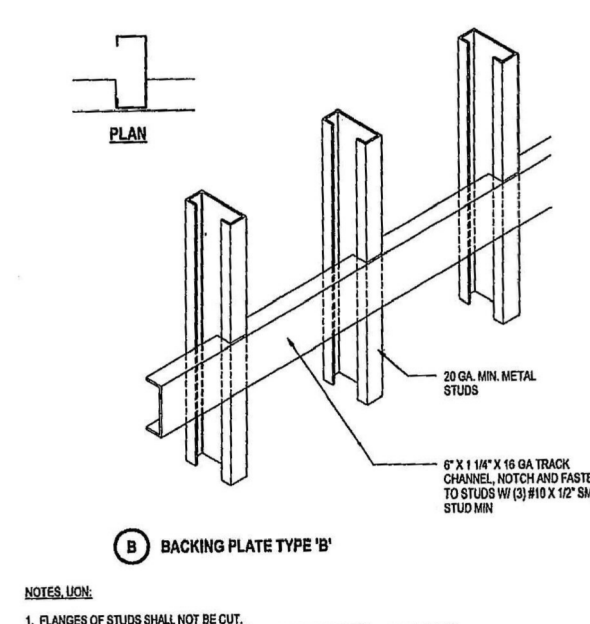
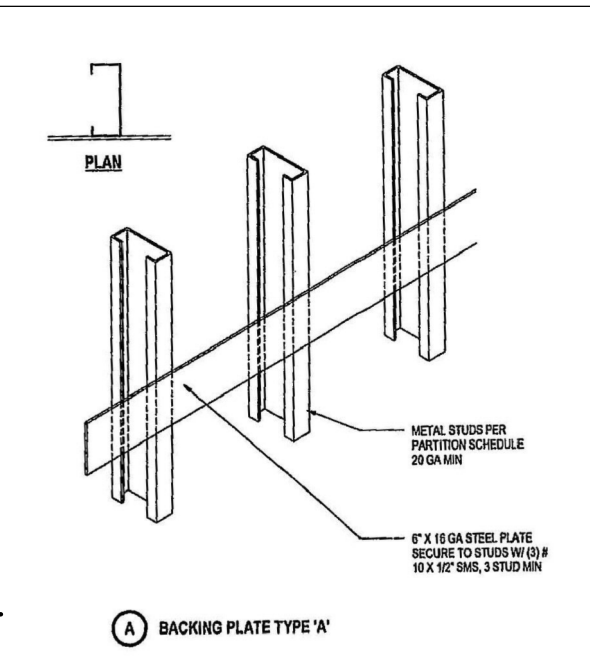
03 MENS RESTROOM - 116
Scale: 3/8"=1'-0"



04 MENS RESTROOM - 116
Scale: 3/8"=1'-0"



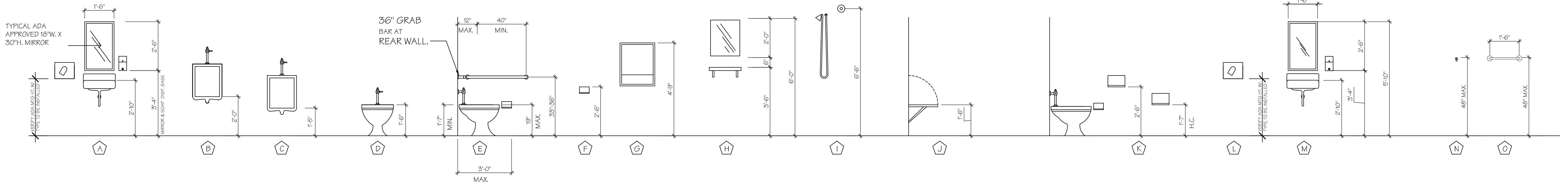
05 BREAKROOM - 104
Scale: 3/8"=1'-0"



NOTES:

- FLANGES OF STUDS WILL NOT BE SET.
- HEIGHT OF MOUNTING TOILET ACCESSORIES REFER TO SPECIFICATIONS FOR PROPER MOUNTING OF EQUIPMENT.

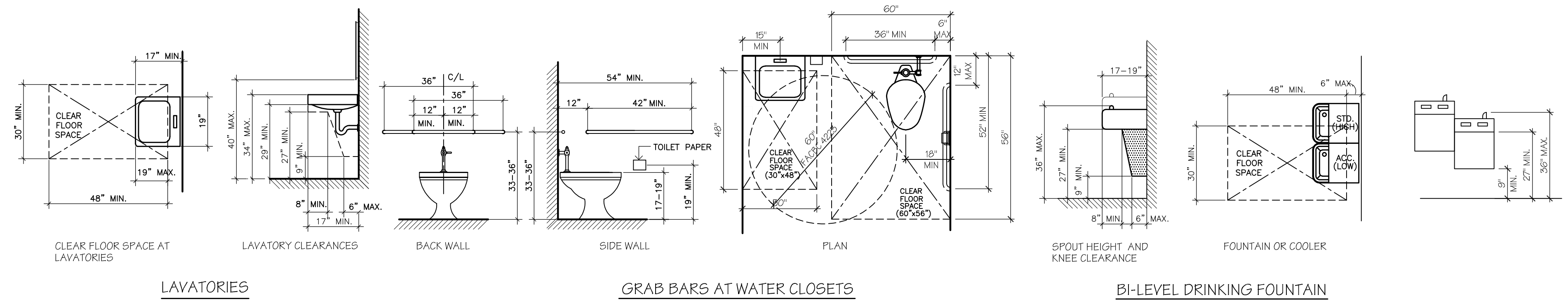
BACKING PLATE TYPE	EQUIPMENT	MOUNTING SCREWS
TYPE 'X'	TOILET ACCESSORIES	#10 SELF-TAPPING SCREWS
TYPE 'Y'	BASE CABINETS	#12 SELF-TAPPING SCREWS
TYPE 'Y'	WALL MOUNTING CABINETS	#14 SELF-TAPPING SCREWS
TYPE 'Y'	WALL MOUNTING EQUIPMENT	#14 SELF-TAPPING SCREWS
TYPE 'Y'	ACCESS ACCESSORIES	#14 SELF-TAPPING SCREWS
TYPE 'Y'	TOILET PARTITION BRACING	#14 SELF-TAPPING SCREWS
TYPE 'X'	GRAB BARS	PER MANUFACTURER
TYPE 'X'	HANDRAILS	PER MANUFACTURER



- A ADA APPROVED ACCESSIBLE BATHROOM ACCESSORIES: FRAMED MIRROR, LAV., SOAP DISP., ELECTRIC HAND DRYER - AS INDICATED IN DRAWINGS & SPECIFICATIONS
- B URINAL
- C ACCESSIBLE URINAL
- D WATER CLOSET
- E ACCESSIBLE WATER CLOSET WITH GRAB BARS AND TOILET TISSUE DISPENSER
- F SURFACE MOUNTED TOILET TISSUE DISPENSER, REFER TO SPECIFICATIONS
- G SANITARY NAPKIN VENDING MACHINE
- H FRAMELESS STAINLESS STEEL MIRROR AND BOOK UTILITY SHELF (NOT USED)
- I SHOWER CURTAIN ROD @ 6'-6" A.F.F. HANDICAPPED SHOWER HEAD SEE SPECIFICATIONS.
- J ADA FOLDING SHOWER SEAT
- K SANITARY NAPKIN DISPOSAL UNIT AT ALL FEMALE TOILET STALLS & RESTROOMS
- L SURFACE MOUNTED ELECTRIC HAND DRYER
- M WALL MOUNTED LAVATORY, FRAMED MIRROR AND SOAP DISPENSER
- N ADA CLOTHES HOOK
- O ADA TOWEL BAR

GENERAL NOTES:

- REFER TO FIXTURE AND ACCESSORY LEGEND FOR MOUNTING HEIGHTS (THIS SHEET)
- GROUT AROUND ALL WALL PENETRATIONS AFTER INSTALLATION OF RESTROOM FIXTURES AND EQUIPMENT, AND PROVIDE CAULKING AS NECESSARY.
- PROVIDE SOAP DISPENSER AT ALL LAVATORIES.
- PROVIDE SANITARY NAPKIN DISPOSALS IN ALL FEMALE TOILET STALLS.
- LOCATE SHUT-OFF VALVES ACCESS PANELS UNDERNEATH LAVATORY COUNTERS. PAINT TO MATCH WALL TILE FINISH AND CAULK PERIMETER OF PANEL (COLOR TO MATCH GROUT.)
- CONTRACTOR SHALL CAULK PERIMETER OF TOILET ACCESSORIES.
- HOT WATER AND DRAIN PIPES UNDER LAVATORIES OR SINKS SHALL BE INSULATED OR OTHERWISE PROTECTED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES OR SINKS.
- THE STRUCTURAL STRENGTH OF GRAB BARS AND SHOWER SEATS SHALL BE DESIGNED AND SUPPORTED AS TO WITHSTAND A LOAD OF NOT LESS THAN 250 POUNDS APPLIED AT ANY POINT, DOWNWARD OR HORIZONTALLY.
- ALL TOILET PARTITIONS ARE TO BE 6'-10" A.F.F. TO TOP OF HEADRAIL, 5'-10" A.F.F. TO THE TOP OF PANEL AND 1'-0" A.F.F. TO THE BOTTOM OF PANEL.
- PRIVACY PANELS BETWEEN URINALS TO BE 4'-8" A.F.F. TO THE TOP OF PANEL AND 1'-2" A.F.F. TO THE BOTTOM.



LAVATORIES

GRAB BARS AT WATER CLOSETS

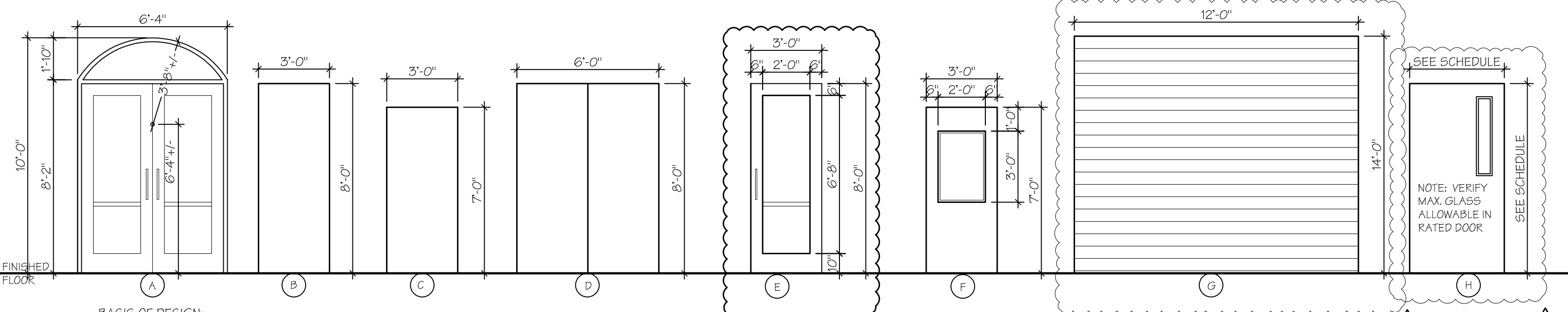
BI-LEVEL DRINKING FOUNTAIN

DOOR SCHEDULE - BUILDING #1

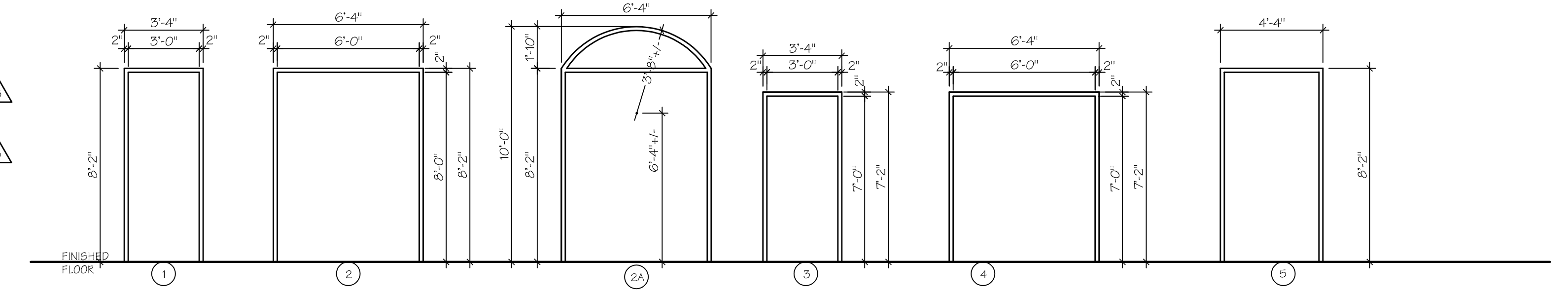
DOOR NUMBER	DOOR SIZE		DOOR				FRAME				THRESHOLD	FIRE RATING (IN MINUTES)	HARDWARE GROUP	REMARKS	DOOR NUMBER		
	WIDTH X HEIGHT	THICKNESS	DOOR TYPE	MATERIAL	GLASS	FINISH	FRAME TYPE	MATERIAL	SILL	STRIKE JAMB						HINGE JAMB	TRANSOM
100	(2) 3'-0" X 8'-0"	1 3/4"	A	SF	IRG	AN	2A	AL						ADA	03		100
100A	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							14		100A
101	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							16		101
102	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							16		102
103	3'-0" X 7'-0"	1 3/4"	F	SOW	TP	F	3	HM							17		103
104	3'-0" X 7'-0"	1 3/4"	H	SOW	RG	F	3	HM						90	19	RATED	104
104A	3'-0" X 7'-0"	1 3/4"	H	SOW	RG	F	3	HM						90	19	RATED	104A
105	3'-0" X 7'-0"	1 3/4"	B	HM	-	F	1	HM							02	GYP. OPENING	105
106	3'-0" X 8'-0"	1 3/4"	B	HM	-	F	1	HM							02	GYP. OPENING	106
107	NOT USED														02	GYP. OPENING	107
108	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							12		108
109	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							14	180° HINGE	109
110	3'-0" X 7'-0"	1 3/4"	D	SOW	-	F	4	HM							07	RATED	110
111	(2) 3'-0" X 7'-0"	1 3/4"	D	SOW	-	F	4	HM							11	RATED	111
112	4'-0" X 8'-0"	1 3/4"	H	HM	RG	F	5	HM							02	GYP. OPENING	112
113	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							17		113
114	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							02	GYP. OPENING	114
115	NOT USED														02	GYP. OPENING	115
116	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							15		116
116A	3'-0" X 7'-0"	1 3/4"	C.O.					GYP							02	GYP. OPENING W/ 6" CT WAINSCOT - WRAP JAMB	116A
117	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	4	HM							15		117
118	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	4	HM							15		118
118A	3'-0" X 7'-0"	1 3/4"	C.O.					GYP							02	GYP. OPENING W/ 6" CT WAINSCOT - WRAP JAMB	118A
119	3'-0" X 8'-0"	1 3/4"	E	SF	IRG	AN	1	AL							04		119
119A	3'-0" X 8'-0"	1 3/4"	E	SF	IRG	AN	1	AL							04		119A
120	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							11		120
120A	(2) 3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	4	HM							10		120A
120B	(2) 3'-0" X 8'-0"	1 3/4"	C	SOW	-	F	4	HM							09	RATED	120B
121	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							02	GYP. OPENING	121
122	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							02	GYP. OPENING	122
122A	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							16		122A
123	(2) 3'-0" X 8'-0"	1 3/4"	D	HM	-	F	2	HM							05		123
124	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							11		124
124A	(2) 3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	4	HM							08	RATED	124A
125	3'-0" X 8'-0"	1 3/4"	B	HM	-	F	1	HM							06		125
125A	12'-0" X 14'-0"	-	G	-	-	F	-	-						01	OVERHEAD DOOR	125A	
125B	3'-0" X 8'-0"	1 3/4"	B	HM	-	F	1	HM							06		125B
126	12'-0" X 14'-0"	-	G	-	-	F	-	-						01	OVERHEAD DOOR	126	
126A	12'-0" X 14'-0"	-	G	-	-	F	-	-						01	OVERHEAD DOOR	126A	
126B	3'-0" X 8'-0"	1 3/4"	B	HM	-	F	1	HM							06		126B
126C	3'-0" X 8'-0"	1 3/4"	B	HM	-	F	1	HM							06		126C
126D	12'-0" X 14'-0"	-	G	-	-	F	-	-						01	OVERHEAD DOOR	126D	
126E	12'-0" X 14'-0"	-	G	-	-	F	-	-						01	OVERHEAD DOOR	126E	
126F	3'-0" X 7'-0"	1 3/4"	C	SOW	-	F	3	HM							14		126F
126G	12'-0" X 14'-0"	-	G	-	-	F	-	-						01	OVERHEAD DOOR	126G	
126H	12'-0" X 14'-0"	-	G	-	-	F	-	-						01	OVERHEAD DOOR	126H	

AL = ALUMINUM HCW = HOLLOW CORE WOOD HM = HOLLOW METAL SFG = SAFETY GLASS PL = PLASTIC LAMINATE RG = RATED GLASS (FIRE LIGHT PLUS)
 ALG = ALUMINUM & GLASS SCW = SOLID CORE WOOD STL = STEEL FRE = FRENCH SINGLE LITE SF = STOREFRONT F = FACTORY FINISH
 LVR = FULL LOUVER WD = WOOD TP = TEMPERED WR = WIRE GLASS BV = BIRCH VENEER P = PAINT
 CL = CHAIN LINK GYP = GYPSUM BOARD AN = ANODIZED - CLEAR IRG = IMPACT RATED GLASS K = KYNAR

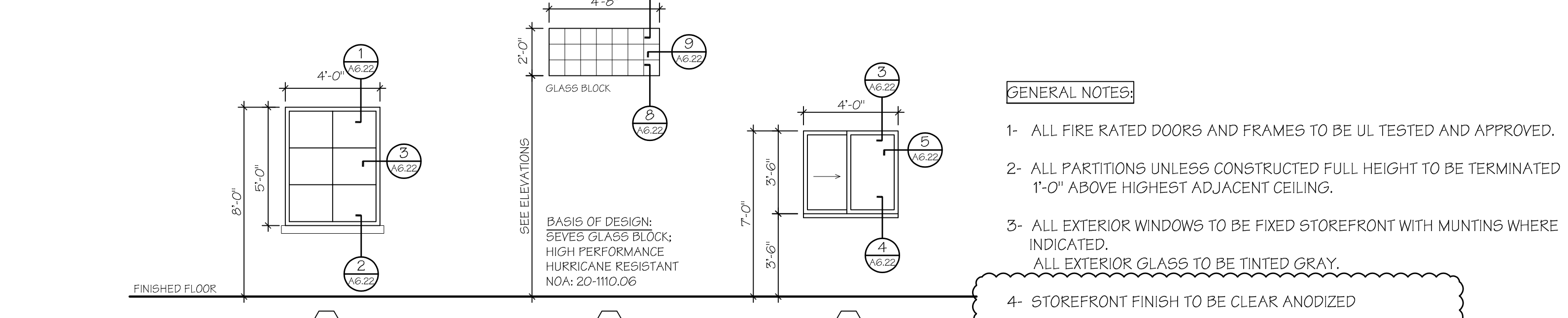
Hardware Group No.	Provide each RU door(s) with the following:	Hardware Group No. 06	Provide each SGL door(s) with the following:	Hardware Group No. 08	Provide each PR door(s) with the following:		
Hardware Group No. 01	QTY DESCRIPTION CATALOG NUMBER FINISH MFR ALL HARDWARE BY DOOR MANUFACTURER	Hardware Group No. 06	QTY DESCRIPTION CATALOG NUMBER FINISH MFR 4 EA HINGE SB811 4.5 X 4.5 NRP 630 IVE 1 EA PANIC HARDWARE CD-HH-99-L-06-299F-SMB 626 VON 1 EA RIM CYLINDER 20-057 ICX 626 SCH 1 EA MORTISE CYLINDER 20-061 ICX 626 SCH 1 EA CORE AS REQUIRED 626 SCH 1 EA SURFACE CLOSER 4040XP SCUSH 689 LCN 1 EA KICK PLATE 8400 10" X 2" LDW B-CS 630 IVE 1 EA RAIN DRIP 11A A ZER 1 EA GASKETING 8144SBK PSA 38A BK ZER 1 EA DOOR SWEEP 38A A ZER 1 EA THRESHOLD 566A A ZER	Hardware Group No. 08	QTY DESCRIPTION CATALOG NUMBER FINISH MFR 6 EA HINGE SB811 4.5 X 4.5 630 IVE 1 SET CONST LATCHING BOLT FB61P 630 IVE 1 EA DUST PROOF STRIKE DP2 626 IVE 1 EA CLASSROOM LOCK N070RPD RHO 626 SCH 1 EA COORDINATOR COR X FL 626 IVE 2 EA SURFACE CLOSER 4040XP RW62A 689 LCN 2 EA KICK PLATE 8400 10" X 1" LDW B-CS 630 IVE 2 EA WALL STOP WS406/407CVX 630 IVE 1 EA GASKETING 488SBK PSA 1 BK ZER 1 EA FLAT ASTRAGAL BY DOOR SUPPLIER 566A A ZER	Hardware Group No. 08	QTY DESCRIPTION CATALOG NUMBER FINISH MFR 6 EA HINGE SB811 4.5 X 4.5 630 IVE 1 SET CONST LATCHING BOLT FB61P 630 IVE 1 EA DUST PROOF STRIKE DP2 626 IVE 1 EA CLASSROOM LOCK N070RPD RHO 626 SCH 1 EA COORDINATOR COR X FL 626 IVE 2 EA SURFACE CLOSER 4040XP RW62A 689 LCN 2 EA KICK PLATE 8400 10" X 1" LDW B-CS 630 IVE 2 EA WALL STOP WS406/407CVX 630 IVE 1 EA GASKETING 488SBK PSA 1 BK ZER 1 EA FLAT ASTRAGAL BY DOOR SUPPLIER 566A A ZER



01 DOOR TYPES Scale: 1/4" = 1'-0"



02 FRAME TYPES Scale: 1/4" = 1'-0"



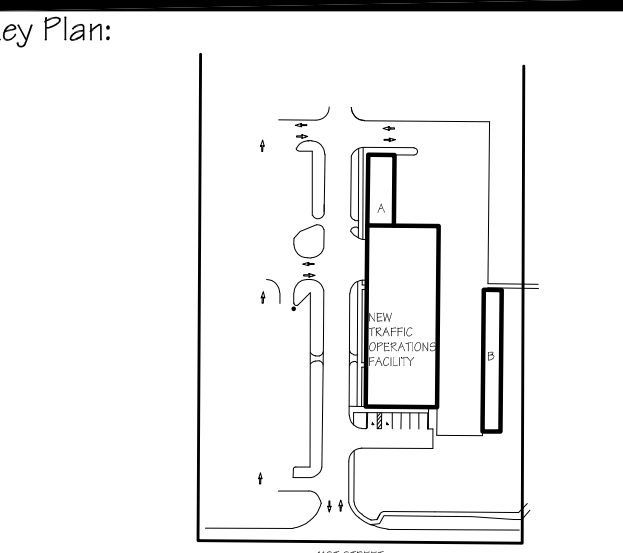
03 WINDOW TYPES Scale: 1/4" = 1'-0"

Hardware Group No.	Provide each RU door(s) with the following:	Hardware Group No. 15	Provide each SGL door(s) with the following:	Hardware Group No. 17	Provide each SGL door(s) with the following:
Hardware Group No. 02	QTY DESCRIPTION CATALOG NUMBER FINISH MFR CASED OPEN FRAME	Hardware Group No. 15	QTY DESCRIPTION CATALOG NUMBER FINISH MFR 3 EA HINGE SB811 4.5 X 4.5 652 IVE 1 EA CLASSROOM LOCK N070RPD RHO 626 SCH 1 EA SURFACE CLOSER 4040XP 689 LCN 3 EA KICK PLATE 8400 10" X 2" LDW B-CS 630 IVE 1 EA WALL STOP WS406/407CVX 630 IVE 3 EA SILENCER SR84 630 IVE	Hardware Group No. 17	QTY DESCRIPTION CATALOG NUMBER FINISH MFR 3 EA HINGE SB811 4.5 X 4.5 652 IVE 1 EA ENTRANCE/OFFICE LOCK NDS09P RHO 626 SCH 1 EA WALL STOP WS406/407CCV SR84 630 IVE 3 EA SILENCER SR84 630 IVE

GENERAL NOTES:
 1- ALL FIRE RATED DOORS AND FRAMES TO BE UL TESTED AND APPROVED.
 2- ALL PARTITIONS UNLESS CONSTRUCTED FULL HEIGHT TO BE TERMINATED 1'-0" ABOVE HIGHEST ADJACENT CEILING.
 3- ALL EXTERIOR WINDOWS TO BE FIXED STOREFRONT WITH MUNTING WHERE INDICATED. ALL EXTERIOR GLASS TO BE TINTED GRAY.
 4- STOREFRONT FINISH TO BE CLEAR ANODIZED

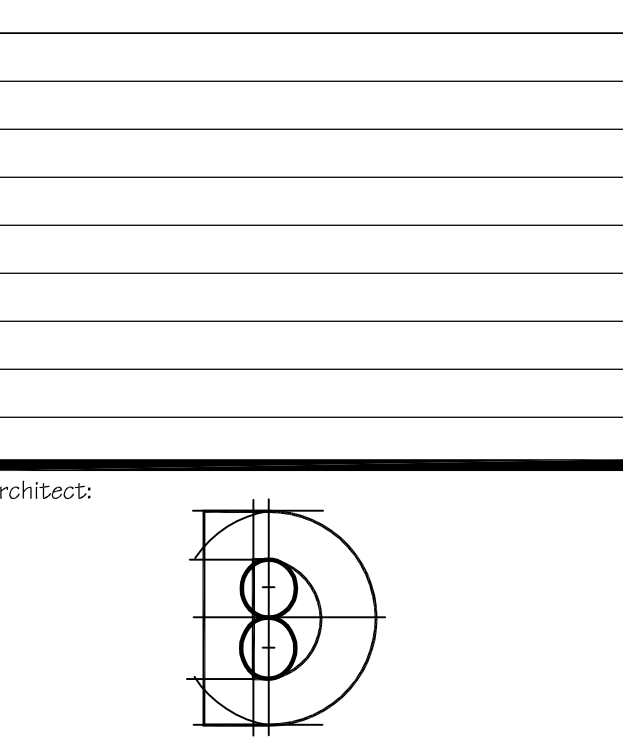
Project: NEW PROPOSED TRAFFIC OPERATIONS FACILITY

4548 41st Street Vero Beach FL 32967



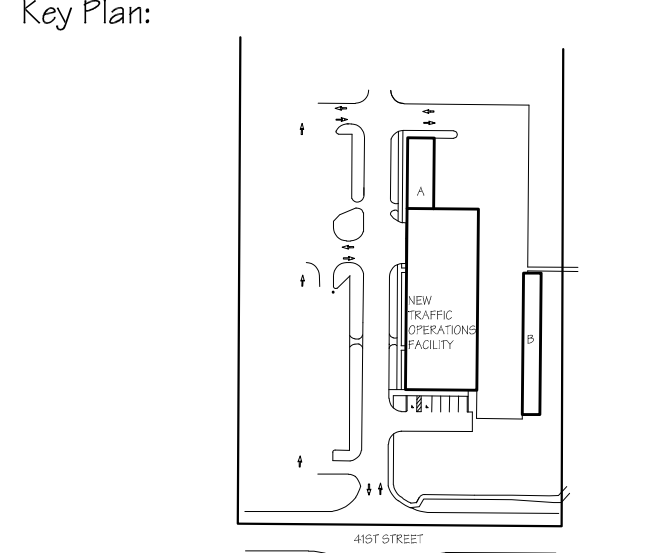
Issues:

No.	Date	Description
A.	08-10-21	CLIENT REVIEW
B.	10-07-21	SCHEDULE UPDATES
C.	10-21-21	SCHEMATIC DESIGN PKG
D.	12-06-21	PROGRESS SET
E.	02-22-22	BID/PERMIT SET
F.	03-21-22	PERMIT SET
G.	06-30-2022	DRAWING UPDATES
H.	07-05-2022	BIDDING COMMENT RESPONSE
I.	08-30-23	BID SET
N.	09-20-23	ADDENDUM #3 RESPONSE



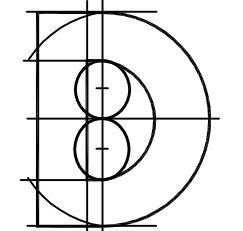
DONADIO & Associates, Architects P.A.
 2001 9th Avenue, Suite 200B Vero Beach, FL 32960
 Tel: 772.738.2289 Fax: 772.562.8600
 License No. AA00022549 www.donadioarch.com

Consultant:
 Drawing Title: DOOR SCHEDULE
 Dwn: JLH Dwg. File:
 Cld: XREF File:
 TID Plot File:
 Project No.: 2021-20
 Sheet No.:
 Cert. No.: 12,456
 Date Signed: A6.10



- Issues:
- | No. | Date | Description |
|-----|------------|----------------------------|
| A. | 08-10-21 | CLIENT REVIEW |
| B. | 10-21-21 | SCHEMATIC DESIGN PKG |
| C. | 12-06-2021 | PROGRESS SET |
| D. | 02-22-22 | BID/ PERMIT SET |
| E. | 03-21-22 | PERMIT SET |
| F. | 06-30-2022 | DRAWING UPDATES |
| G. | 07-18-2022 | BLDG DEPT COMMENT RESPONSE |
| I. | 08-30-23 | BID SET |
| N. | 09-20-23 | ADDENDUM #3 RESPONSE |

Architect:



DONADIO & Associates, Architects P.A.

2001 3th Avenue, Suite 508
Vero Beach, FL 32960
Tel: 772-794-2829
Fax: 772-252-8600
License No. A40002226
www.donadioarch.com

Consultant:

Drawing Title:
ROOM FINISH SCHEDULE

Dwg. File: JLH
XREF File:
TD
Project No.: 2021-20
Sheet No.:
Cert. No.: 12,456
Date Signed: A6.11

ROOM NUMBER	ROOM NAME / LOCATION	FLOOR		WALL								CEILING			REMARKS	ROOM NUMBER
		MATERIAL	BASE	NORTH		SOUTH		EAST		WEST		MATERIAL	FINISH	HEIGHT		
				MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH					
100	RECEPTION	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		100
101	OFFICE	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		101
102	OFFICE	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		102
103	CONFERENCE	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		103
104	BREAK ROOM	VCT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		104
105	SIGN TECH	VCT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		105
106	SOUTH CORRIDOR	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		106
107	COPIER	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		107
108	FUTURE OFFICE	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		108
109	DATA	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		109
110	CLOSET	VCT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		110
111	STORAGE	VCT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		111
112	CENTRAL CORRIDOR	CPT/ACT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		112
113	FUTURE OFFICE	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		113
114	FILE ROOM	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		114
115	TIME CLOCK / MAIL	VCT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		115
116	MENS RESTROOM	CT	CTB	MRB	CT	MRB	CT	MRB	CT	MRB	CT	GYP	PNT	8'-0"	8'-0" W/ANSOS; CERAMIC TILE FLOORS NON-SLIP AND SEALED.	116
116A	MENS SHOWER	CT	CTB	CBB	CT	CBB	CT	CBB	CT	CBB	CT	GYP	PNT	8'-0"	CERAMIC TILE FLOORS NON-SLIP, FULL HT. CERAMIC TILE BENCH W/ GRIP.	116A
117	JANITOR	VCT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		117
118	WOMENS RESTROOM	CT	CTB	MRB	CT	MRB	CT	MRB	CT	MRB	CT	GYP	PNT	8'-0"	8'-0" W/ANSOS; CERAMIC TILE FLOORS NON-SLIP AND SEALED.	118
118A	WOMENS SHOWER	CT	CTB	CBB	CT	CBB	CT	CBB	CT	CBB	CT	GYP	PNT	8'-0"	CERAMIC TILE FLOORS NON-SLIP, FULL HT. CERAMIC TILE BENCH W/ GRIP.	118A
119	NORTH CORRIDOR	VCT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		119
120	SIGN SHOP	SLC	RB	CMU	PNT	GYP	PNT	GYP	PNT	CMU	PNT	EXP	PNT	VARIES	TOOLED JOINTS	120
120A	STORAGE	SLC	RB	CMU	PNT	GYP	PNT	GYP	PNT	CMU	PNT	EXP	PNT	VARIES		120A
121	FUTURE OFFICE	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		121
122	OFFICE	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		122
122A	CLOSET	CPT	RB	GYP	PNT	GYP	PNT	GYP	PNT	GYP	PNT	ACT	F	9'-0"		122A
123	MECHANICAL	SLC	---	GYP	PNT	GYP	PNT	CMU	PNT	GYP	PNT	EXP	PNT	VARIES		123
124	SIGNAL SHOP	SLC	RB	CMU	PNT	GYP	PNT	CMU	PNT	GYP	PNT	EXP	PNT	VARIES	TOOLED JOINTS	124
125	WAREHOUSE (A/C)	SLC	---	CMU	PNT	CMU	PNT	CMU	PNT	CMU	PNT	EXP	PNT	VARIES	TOOLED JOINTS	125
126	WAREHOUSE	SLC	---	CMU	PNT	CMU	PNT	CMU	PNT	CMU	PNT	EXP	PNT	VARIES	TOOLED JOINTS	126

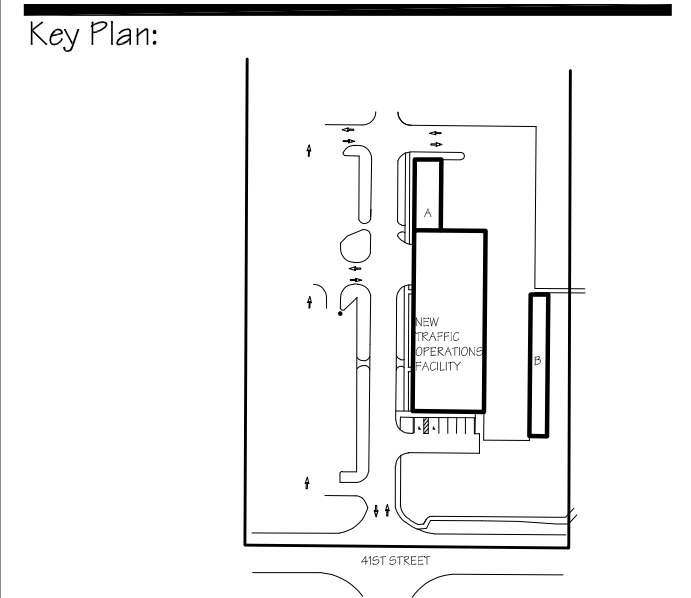
COVERED PARKING STRUCTURES																	
100-A	COVERED PARKING "A"	C	---	---	---	---	---	---	---	---	---	---	EXP	F	VARIES	CONC FLOOR/ EXPOSED STRUCTURE. PROVIDE ELEC. FOR FUTURE	100-A
100-B	COVERED PARKING "B"	C	---	---	---	---	---	---	---	---	---	---	EXP	F	VARIES	CONCRETE FLOOR/ EXPOSED STRUCTURE	100-B

FLOOR		BASE		WALL				CEILING			FINISH	
LN	-LINOLEUM	SLC	-SEALED CONCRETE W/ COLORED SEALEX	RB	-RUBBER BASE	GYP	-GYPSUM BOARD	GYP	-GYPSUM BOARD	F	-PAINT	
CT	-CERAMIC TILE	WDF	-WOOD FLOOR	WB	-WOOD BASE	MRB	-MOISTURE RESISTANT BOARD	ACT	-ACOUSTICAL TILE	F	-FACTORY	
C	-CONCRETE	VCT	-VINYL COMPOSITION TILE	CTB	-CERAMIC TILE BASE	CBB	-CEMENTIOUS BACKER BOARD	VNP	-VENEER PLASTER	STN	-STAIN	
CMT	-CERAMIC MOSAIC TILE			ST		ST	-CERAMIC TILE	EXP	-EXPOSED STRUCTURE	S	-SEALED	
CPT	-CARPET			CMU		STC	-STRUCCO	WDC	-WOOD CEILING			
STL	-STEEL			WSP	-WOOD PANELING	C	-CONCRETE					

TRAFFIC OPERATIONS BUILDING INTERIOR SIGN CHART

ROOM#	ROOM NAME / LOCATION
100	RECEPTION
101	OFFICE
102	OFFICE
103	CONFERENCE
104	BREAK ROOM
105	SIGN TECH
106	SOUTH CORRIDOR
107	COPIER
108	FUTURE OFFICE
109	DATA
110	CLOSET
111	STORAGE
112	CENTRAL CORRIDOR
113	FUTURE OFFICE
114	FILE ROOM
115	TIME CLOCK / MAIL
116	MENS RESTROOM
117	JANITOR
118	WOMENS RESTROOM
119	NORTH CORRIDOR
120	SIGN SHOP
120A	STORAGE
121	FUTURE OFFICE
122	OFFICE
122A	CLOSET
123	MECHANICAL
124	SIGNAL SHOP
125	WAREHOUSE (A/C)
126	WAREHOUSE

ROOM LOAD CAPACITY SIGNAGE	
104	BREAK ROOM 46 OCCUPANTS



Issues:

No.	Date	Description
A.	08.10.21	CLIENT REVIEW
B.	12-06-2021	PROGRESS SET
C.	02-22-22	BID/PERMIT SET
D.	03-21-22	PERMIT SET
E.	07-05-2022	BID/DEPT COMMENT RESPONSE
F.	06-30-23	BID SET
N.	09-20-23	ADDENDUM #3 RESPONSE

Architect:



DONADIO & Associates, Architects P.A.
2021 9th Avenue, Suite 208
Vero Beach, FL 32960
Tel: 772-794-2100
Fax: 772-762-8000
License No. AA0002258
www.donadioarch.com

Consultant:

Drawing Title:
DOOR DETAILS

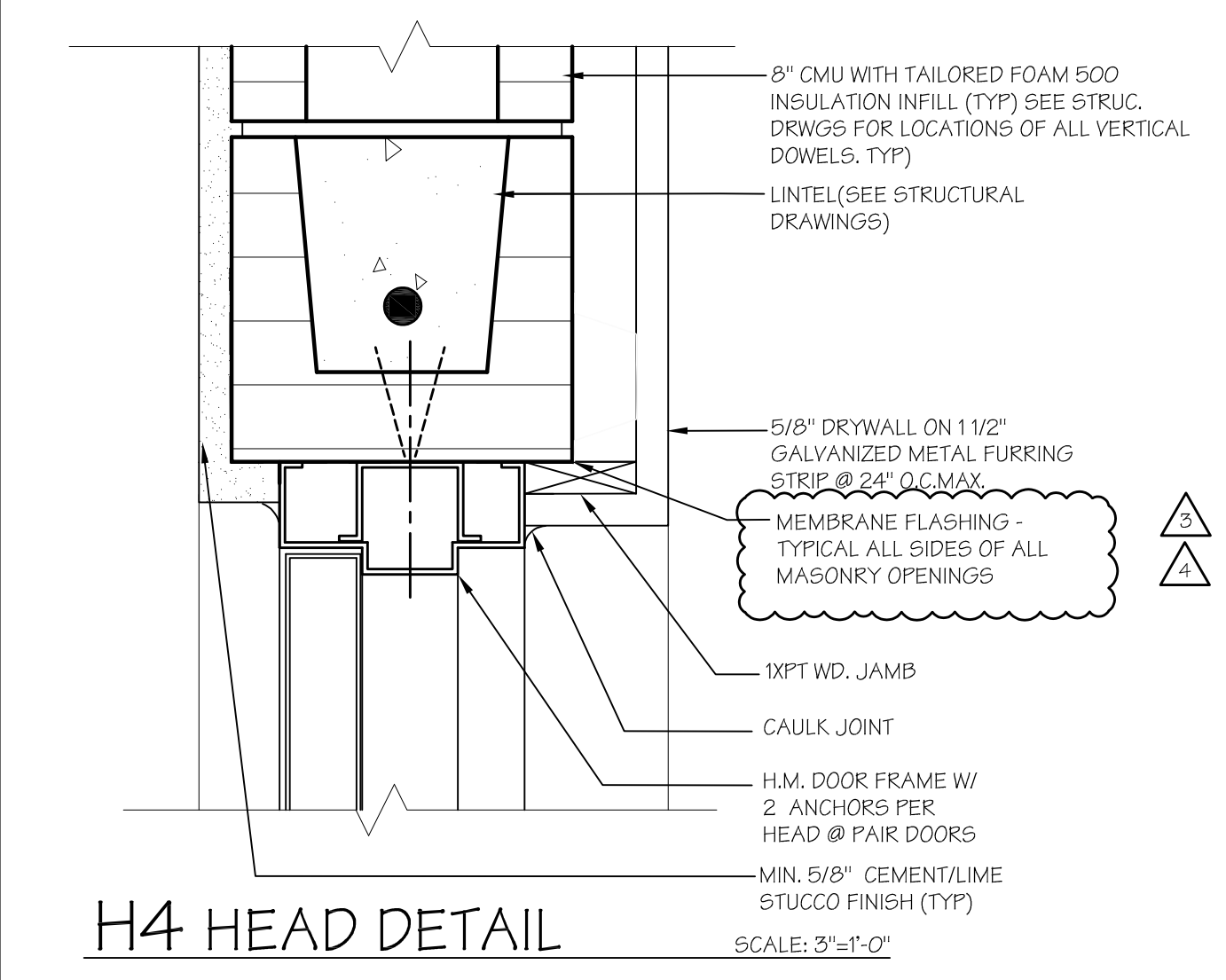
Drawn:	JLH	Dwg. File:	
Checked:	TD	XREF File:	
Project No.:	2021-20	Plot File:	
Sheet No.:			

Cert. No.: 12456
Date Signed: _____

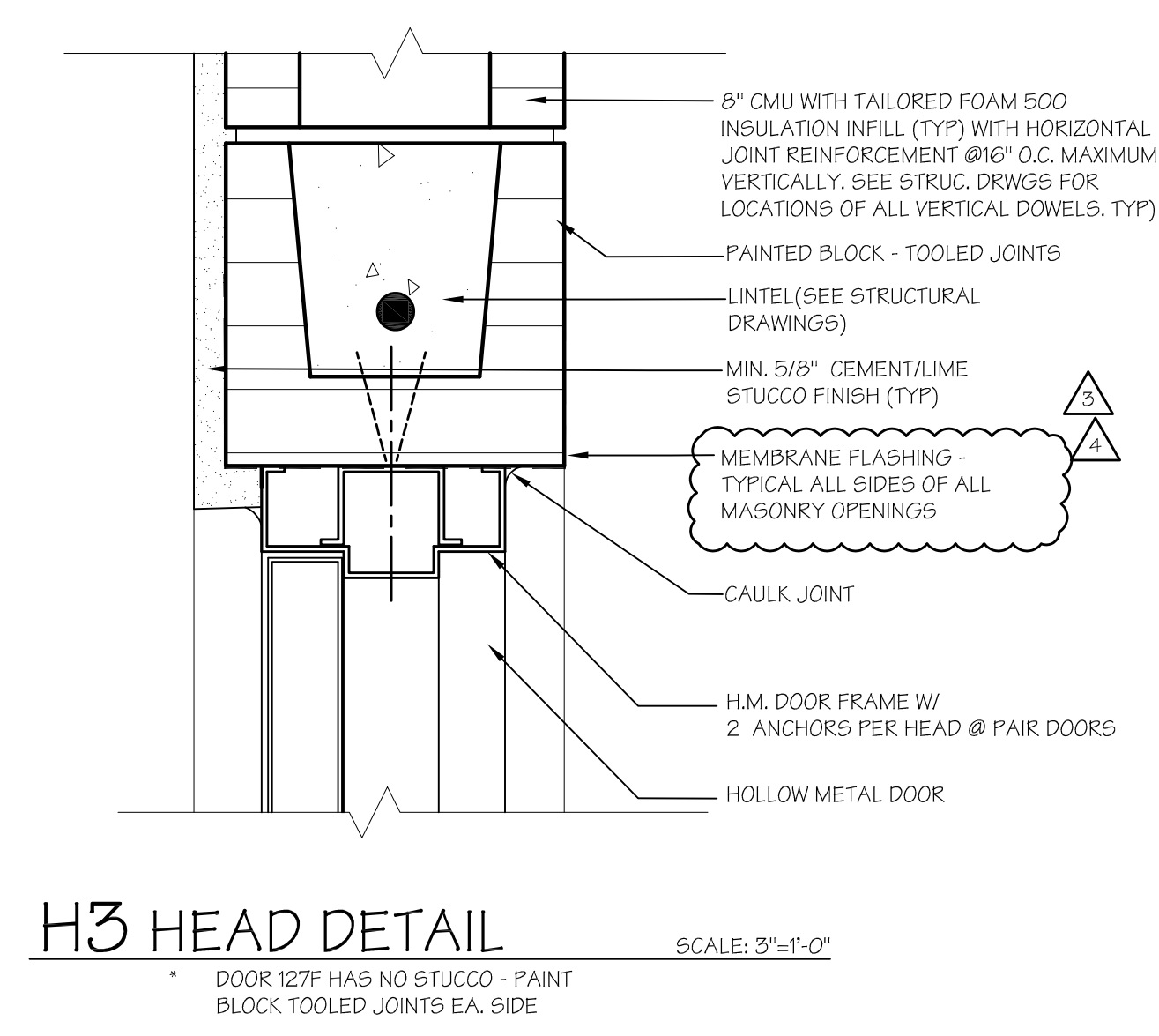
A6.20

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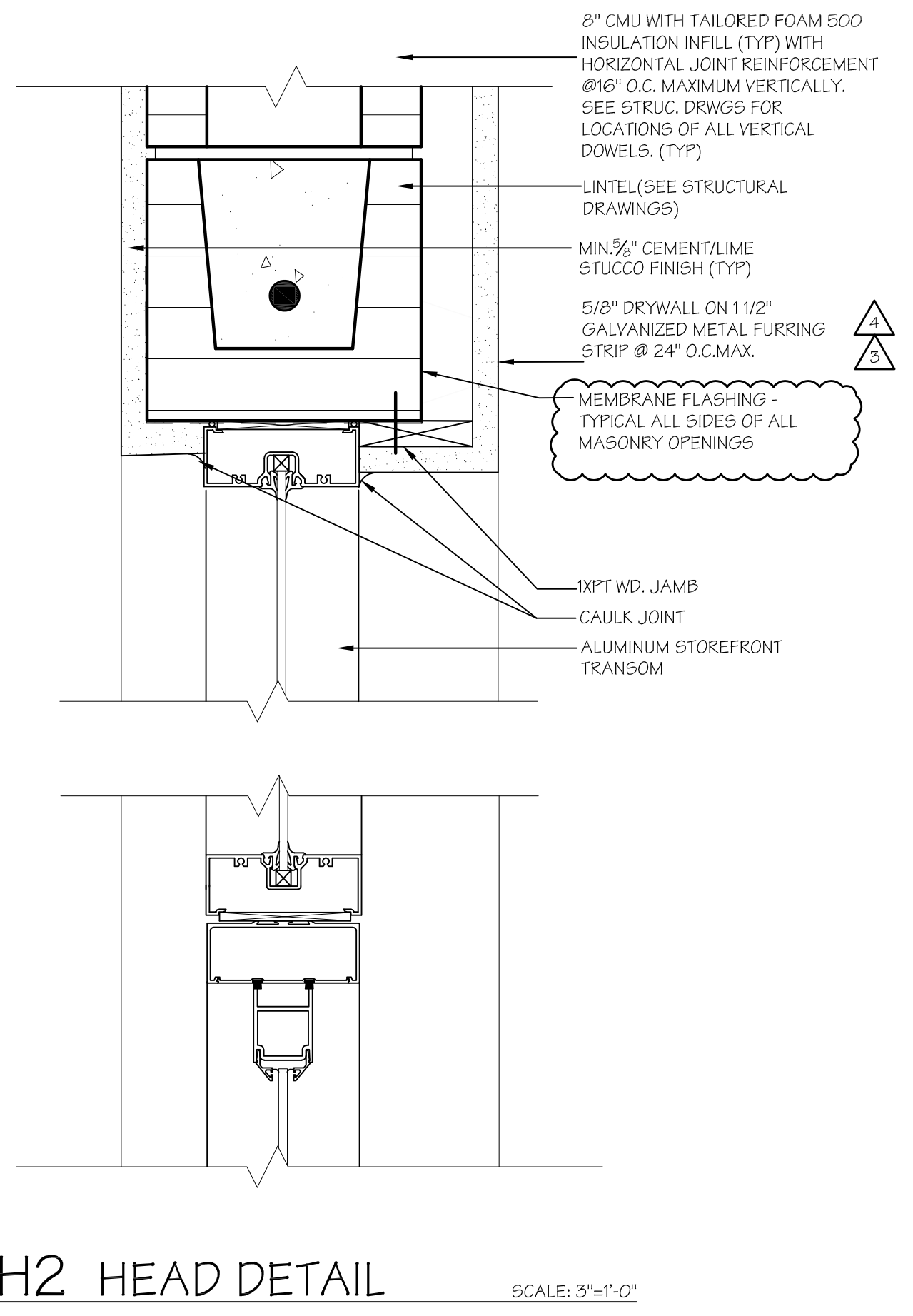
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- INSTALL PRODUCT IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



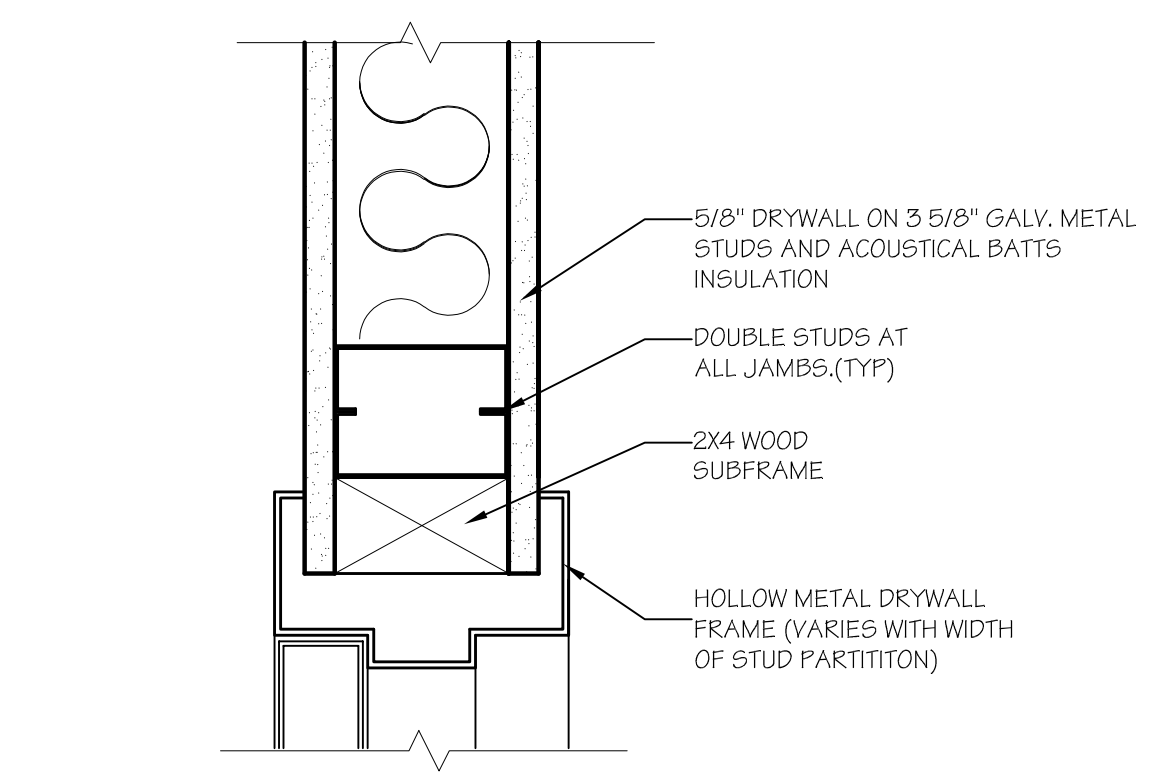
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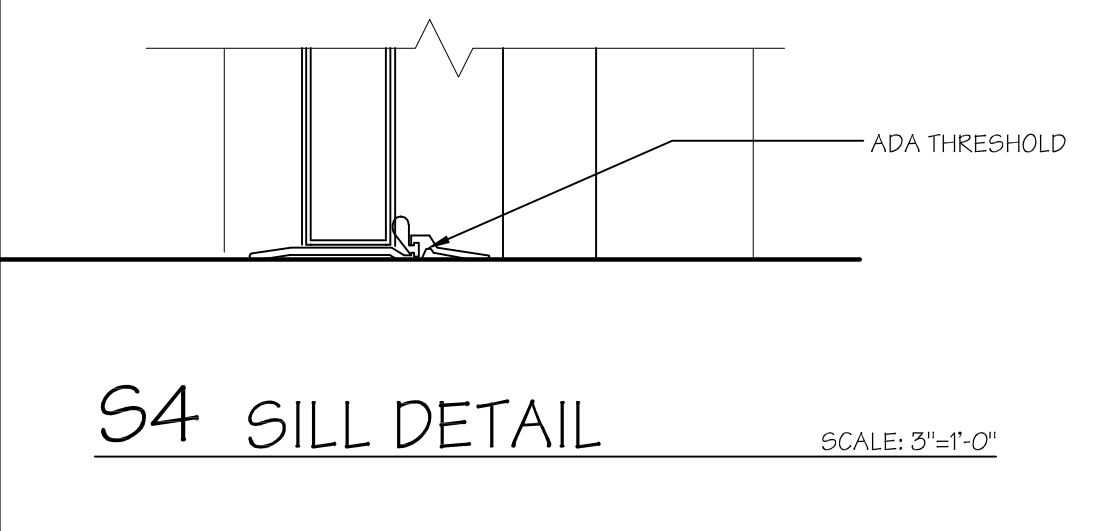
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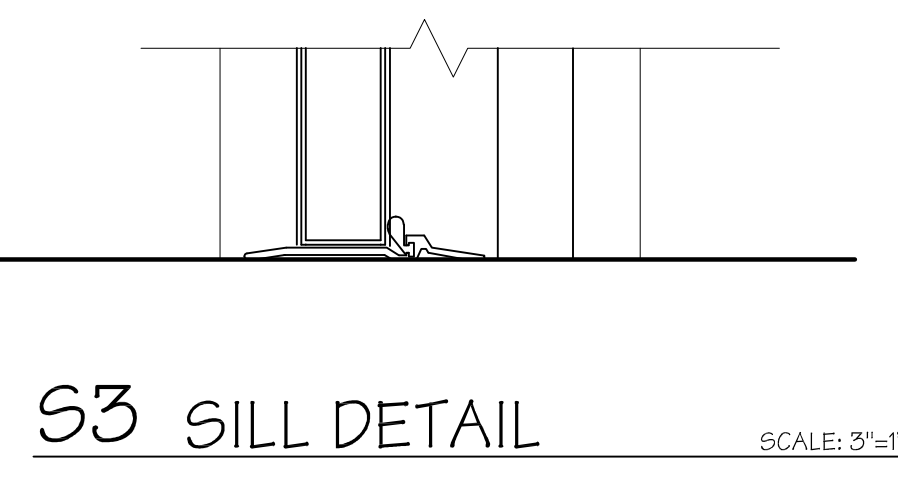
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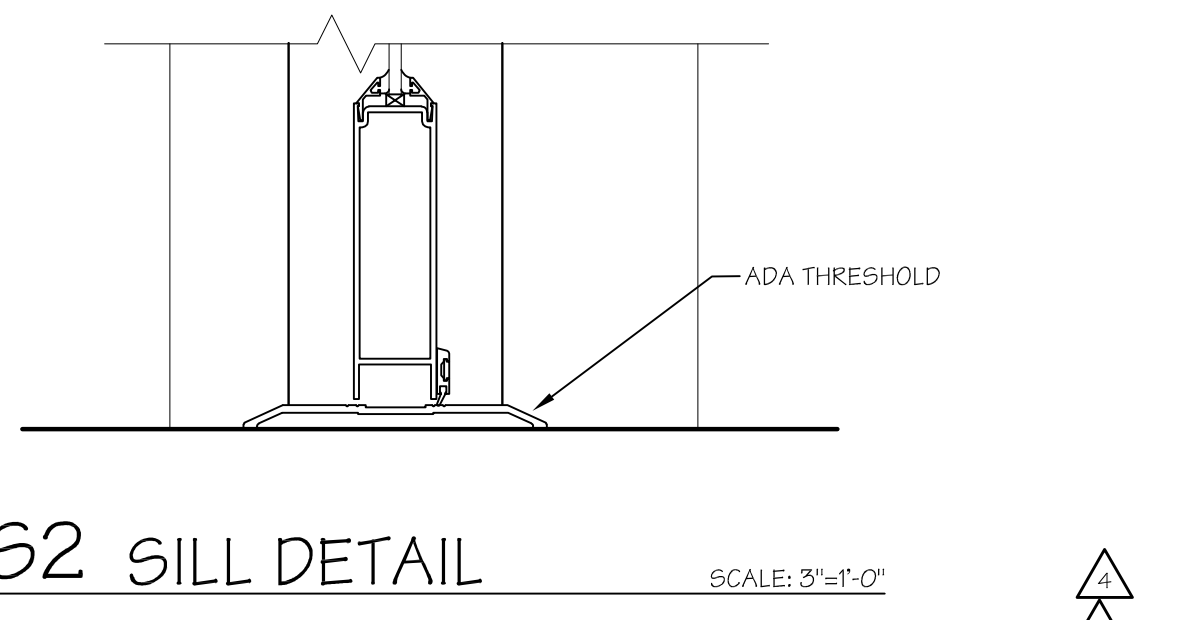
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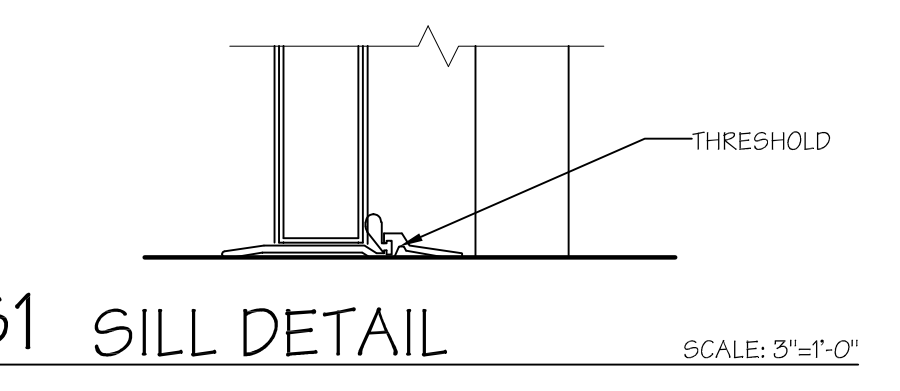
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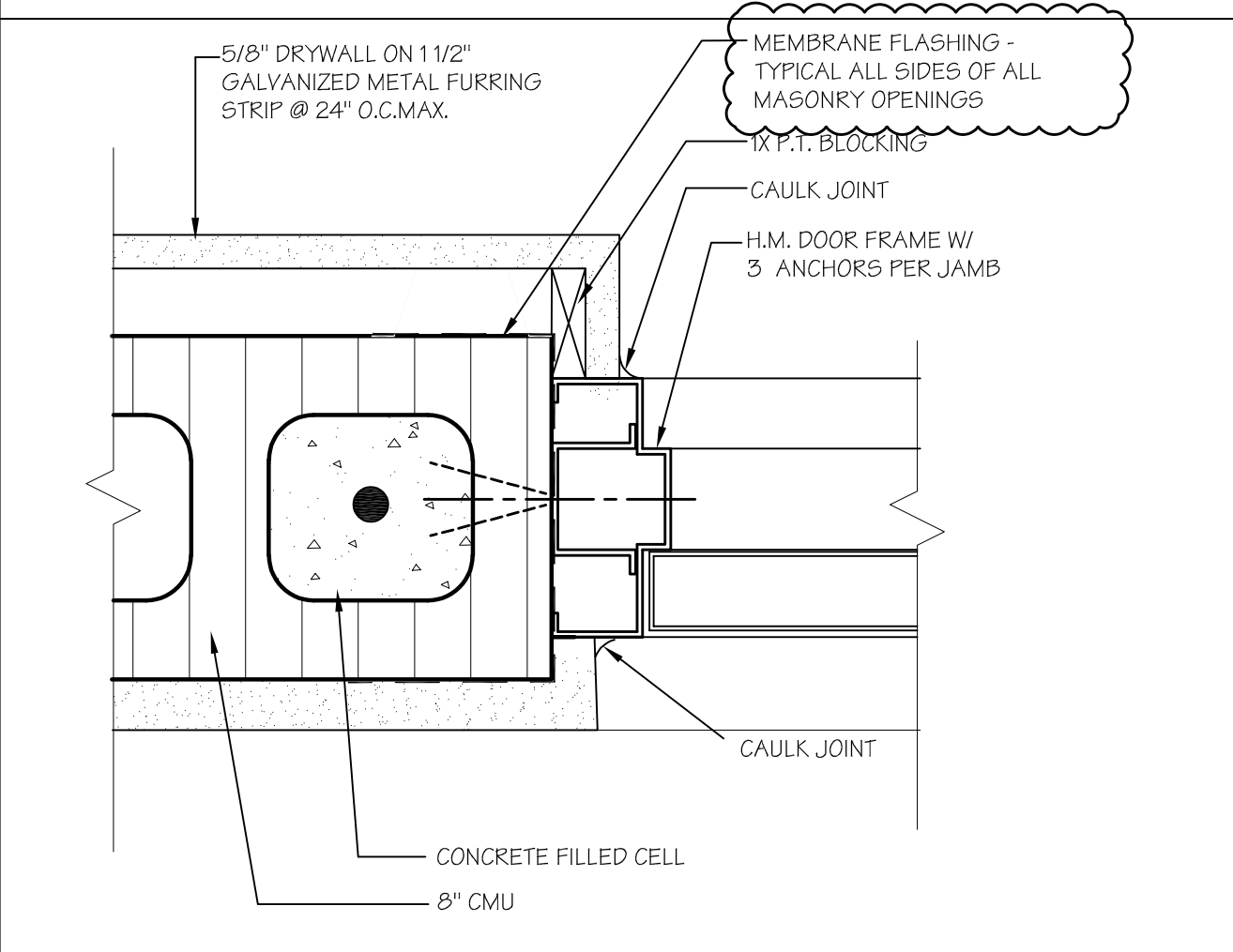
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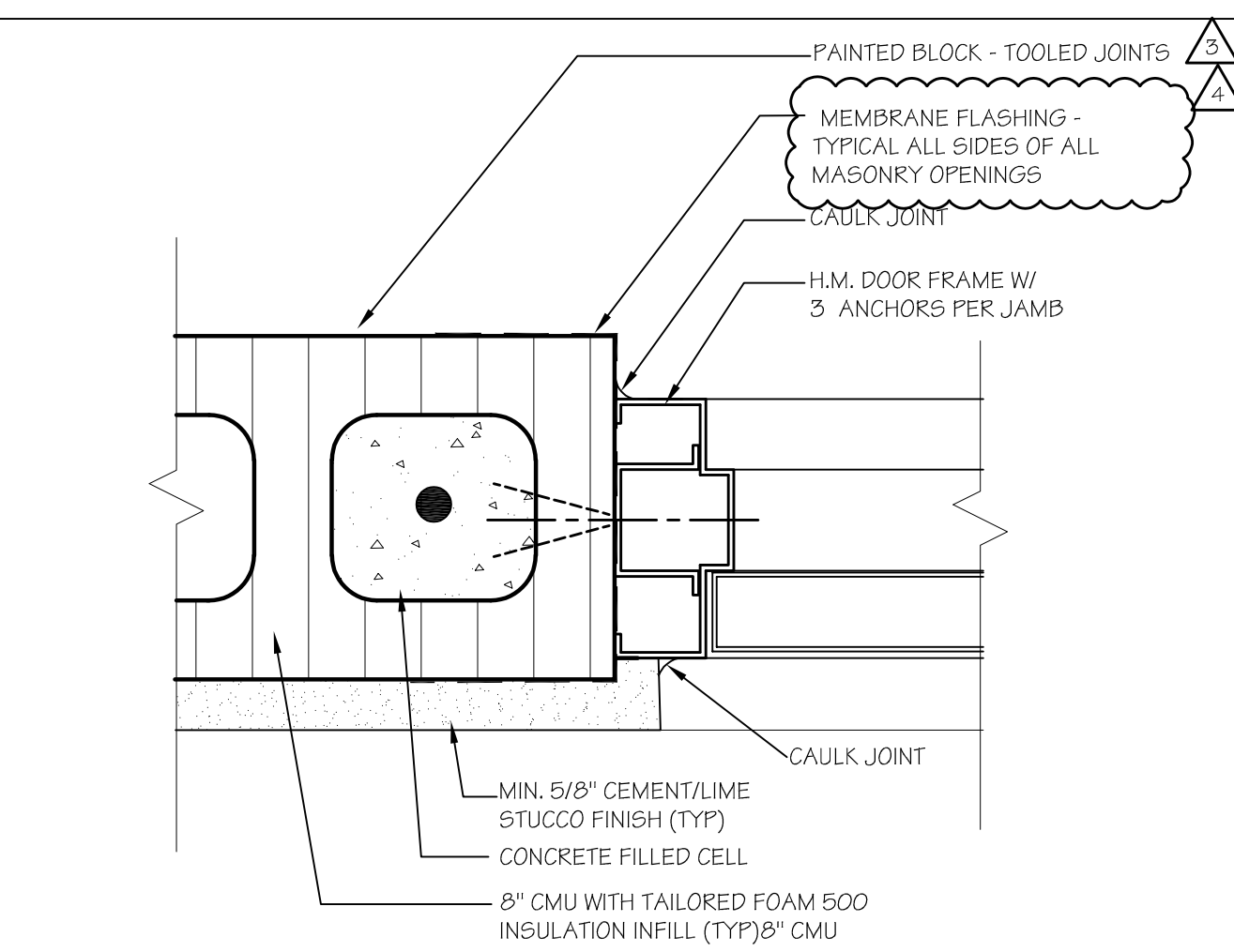
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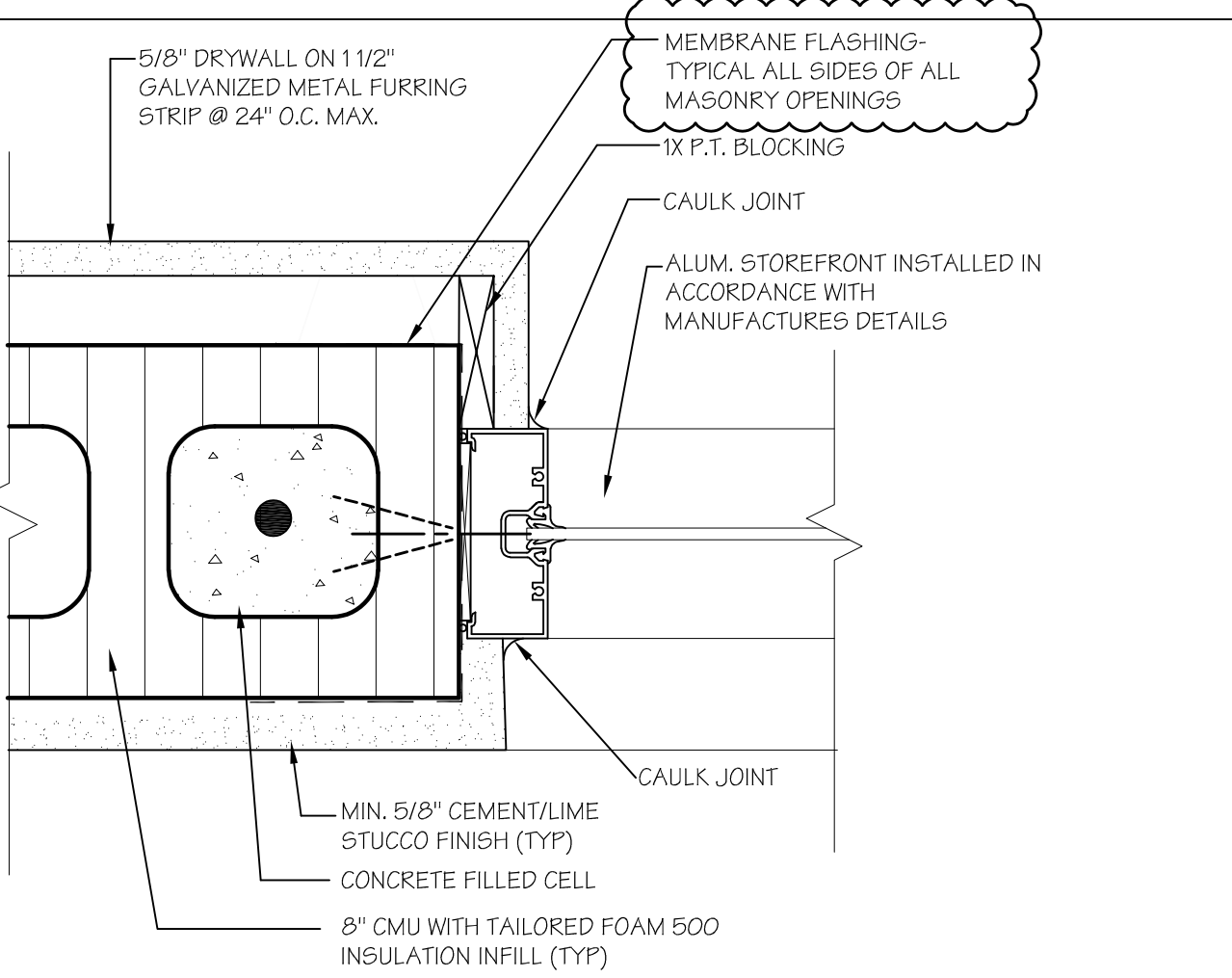
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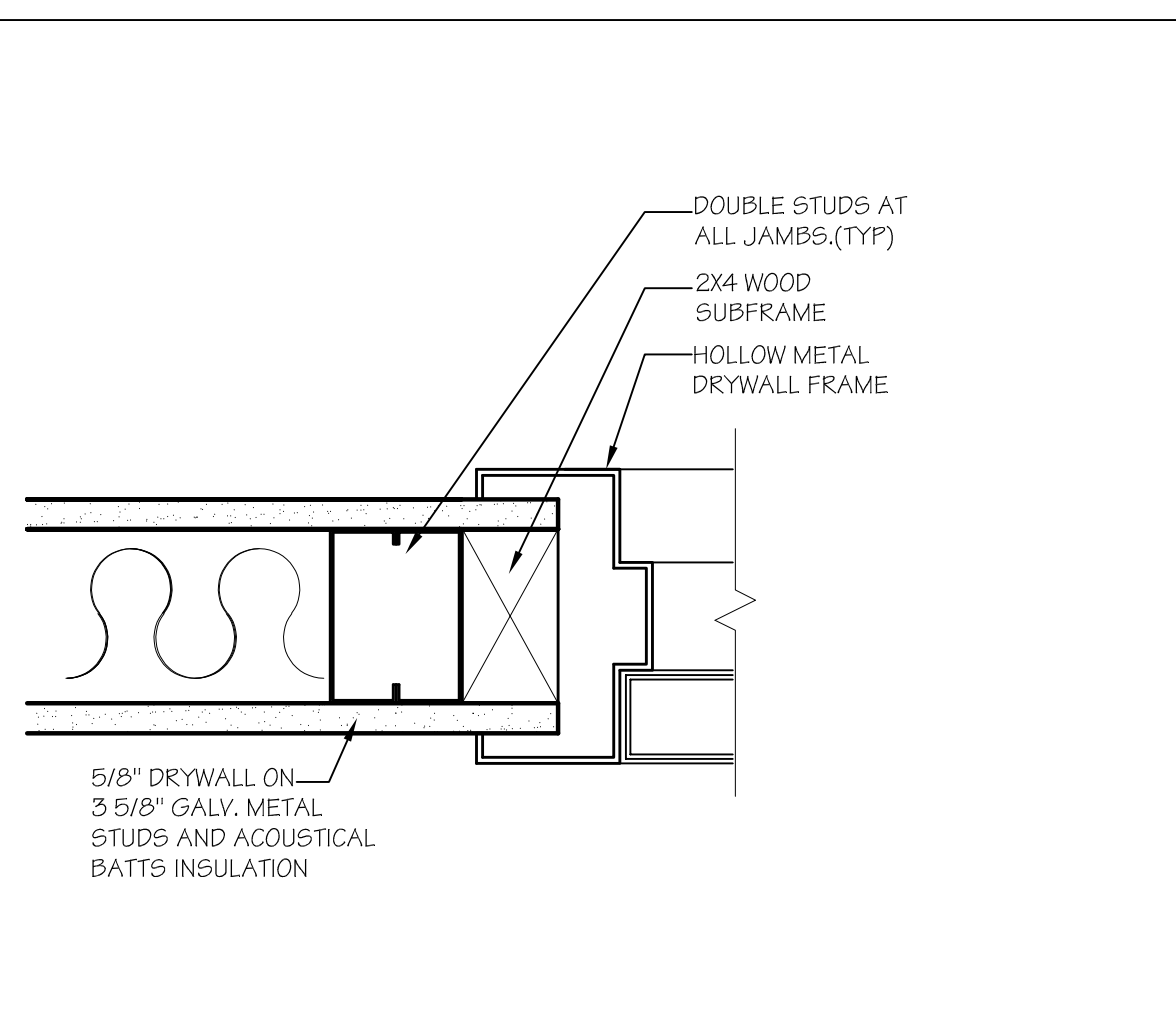
J4 JAMB DETAIL



J3 JAMB DETAIL



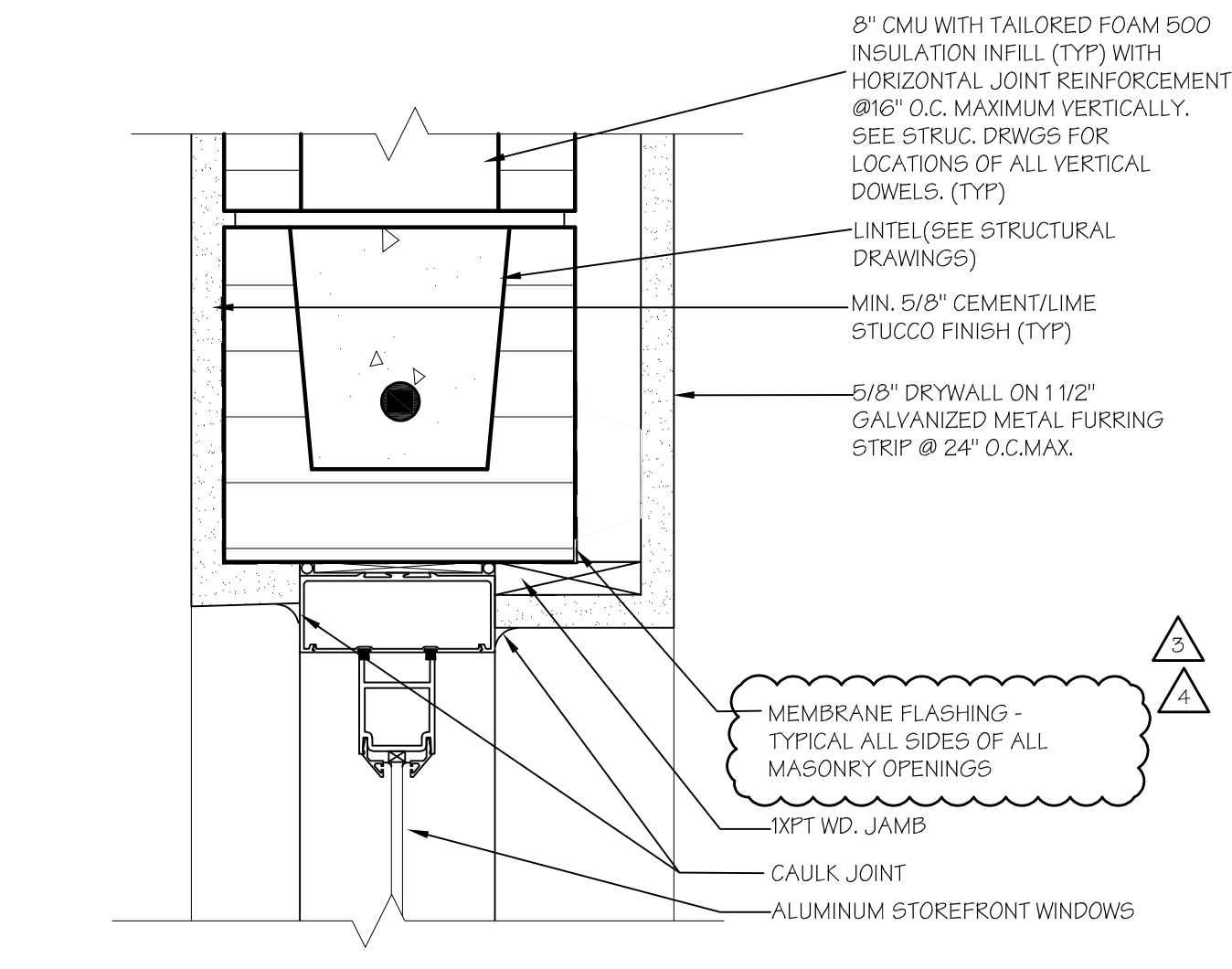
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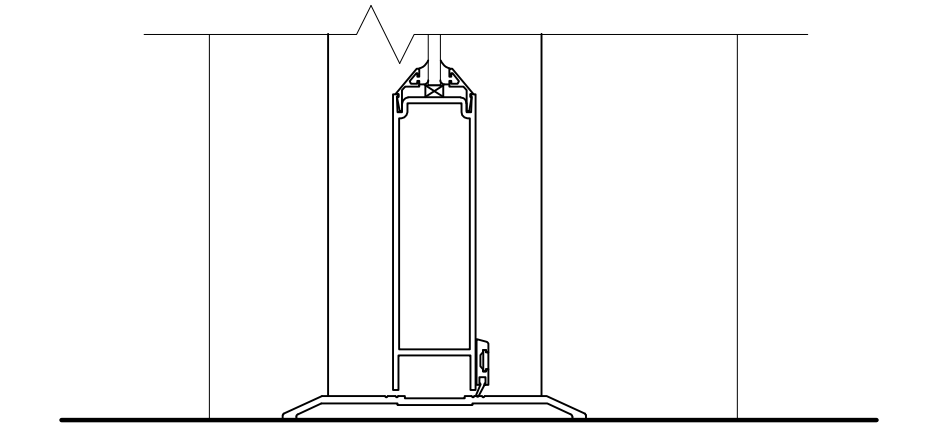
J1 JAMB DETAIL

GENERAL NOTES:

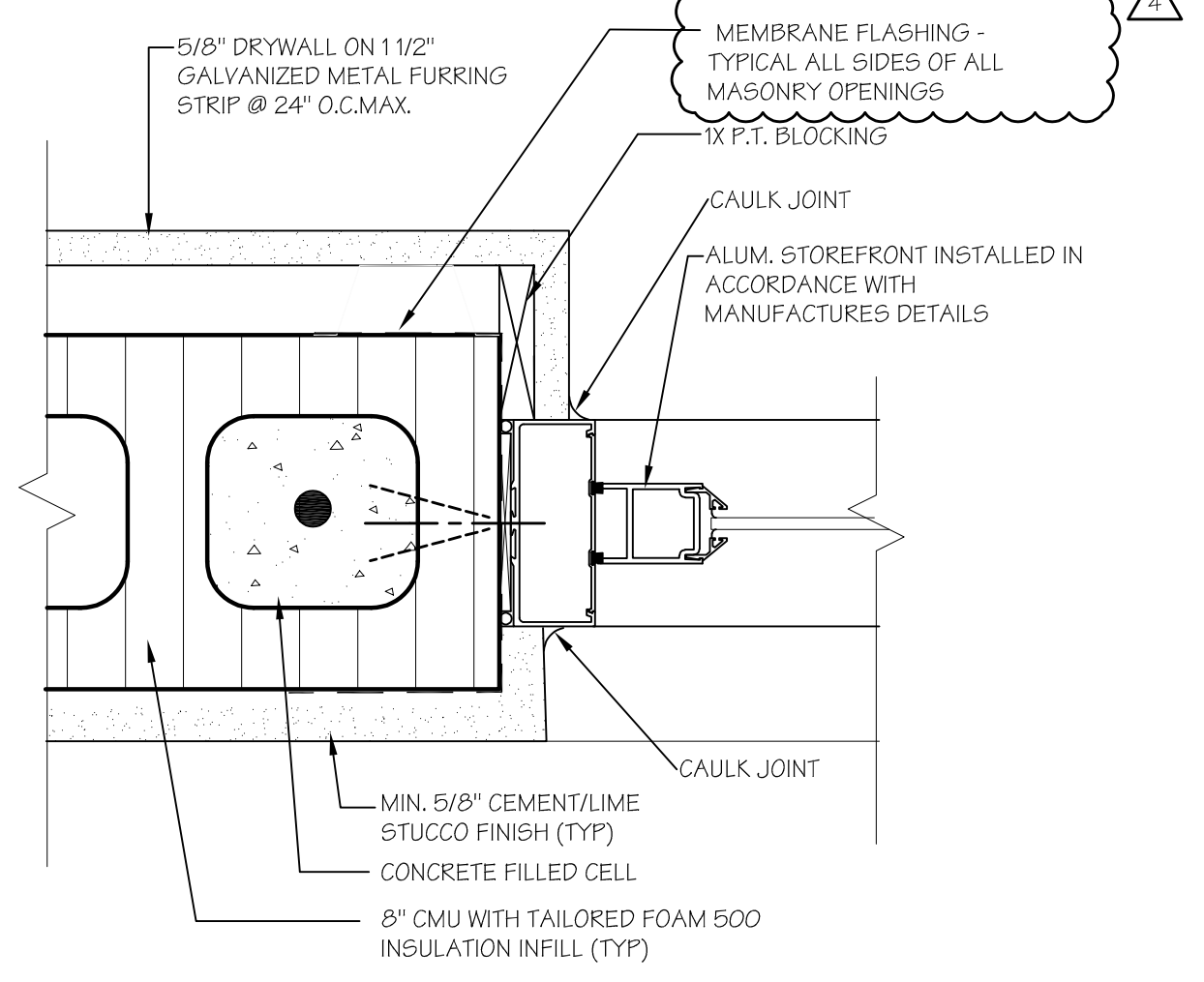
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- INSTALL PRODUCT IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



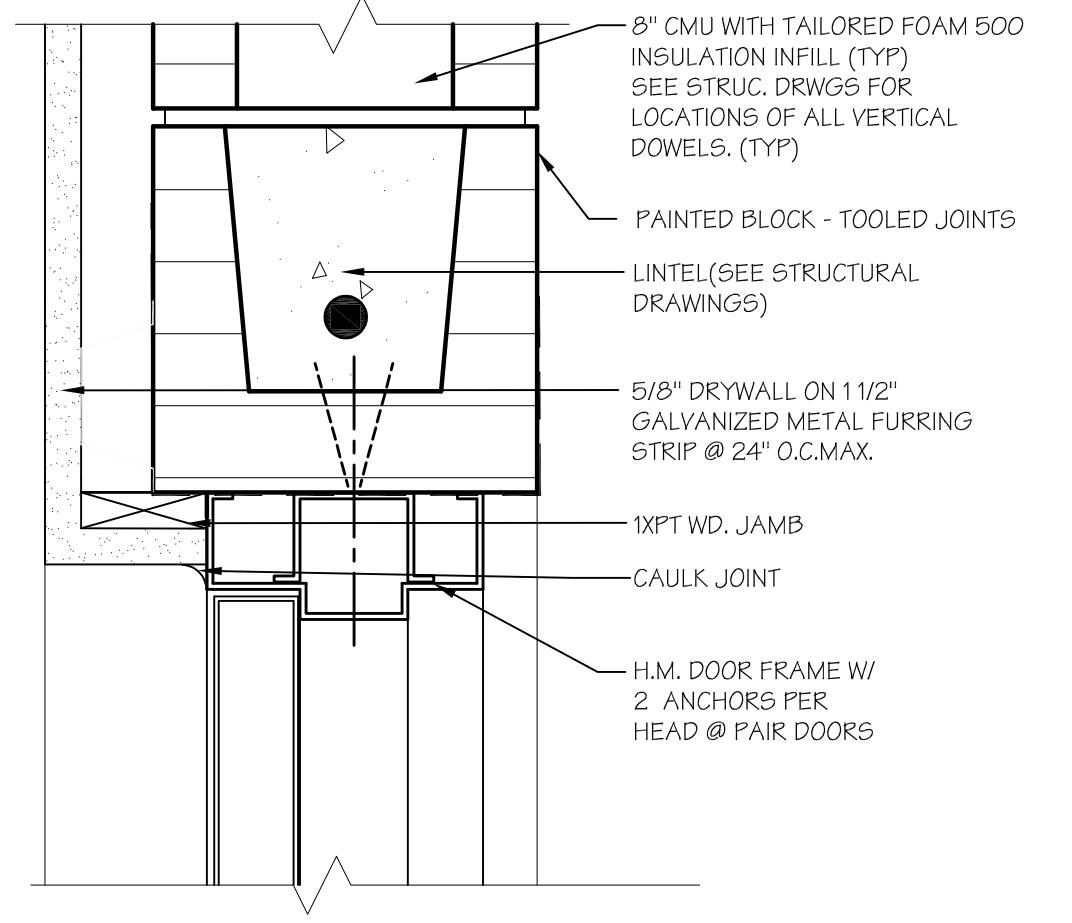
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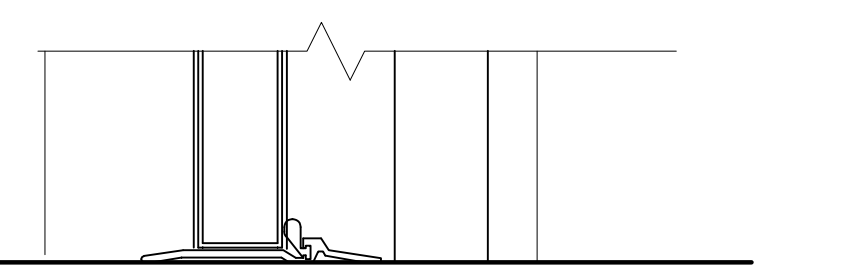
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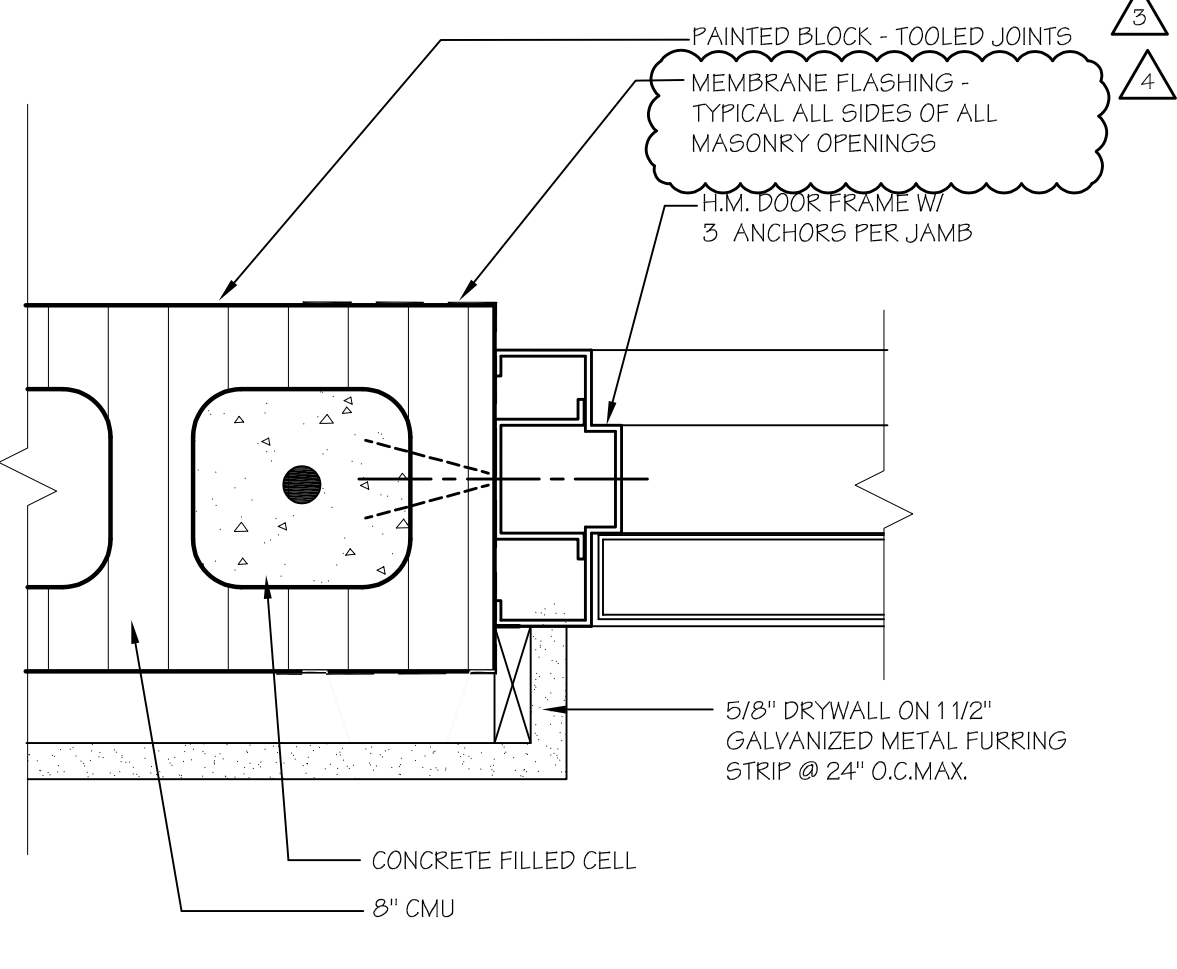
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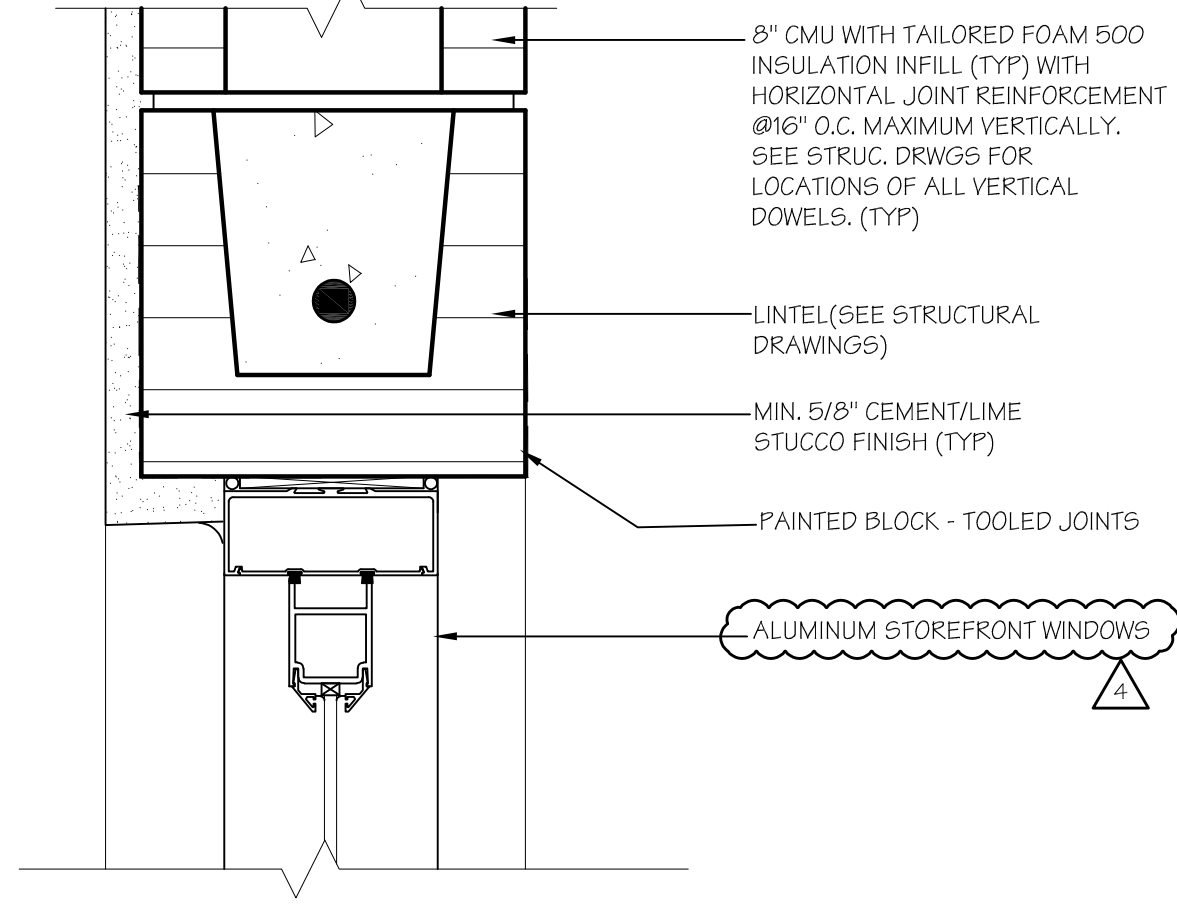
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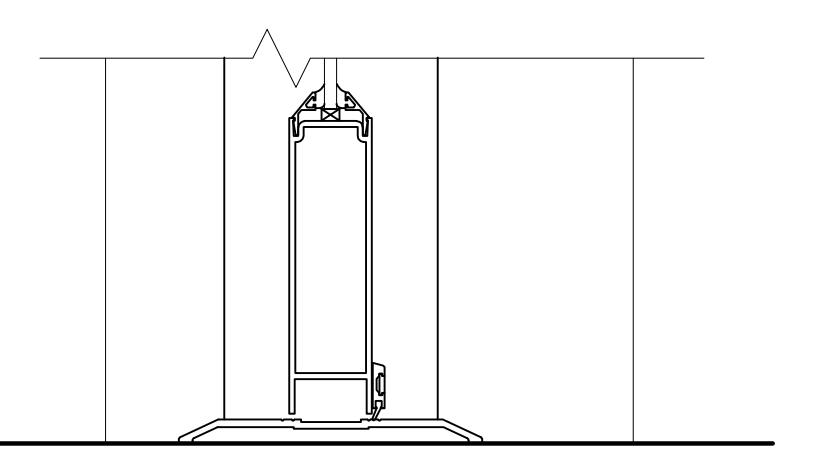
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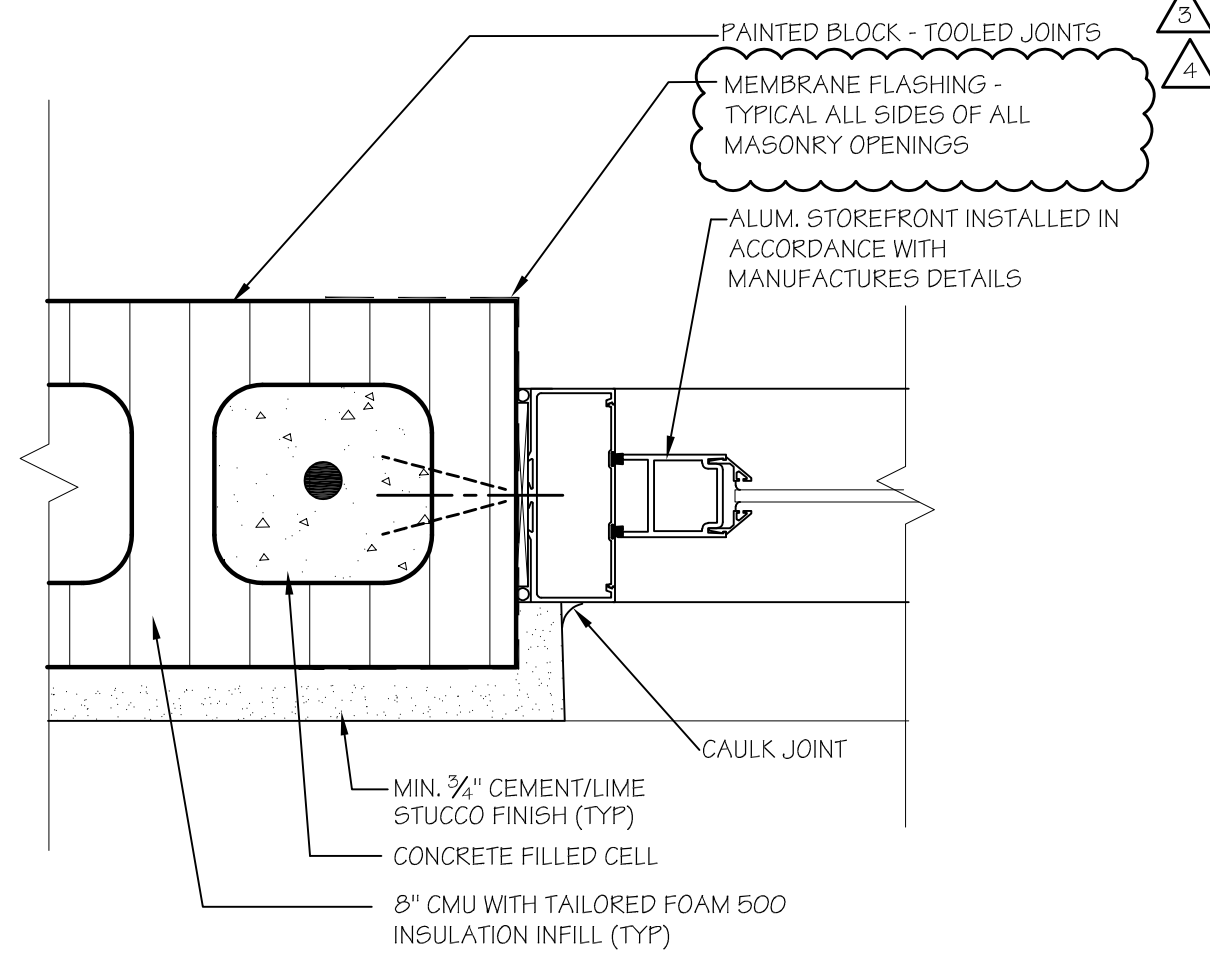
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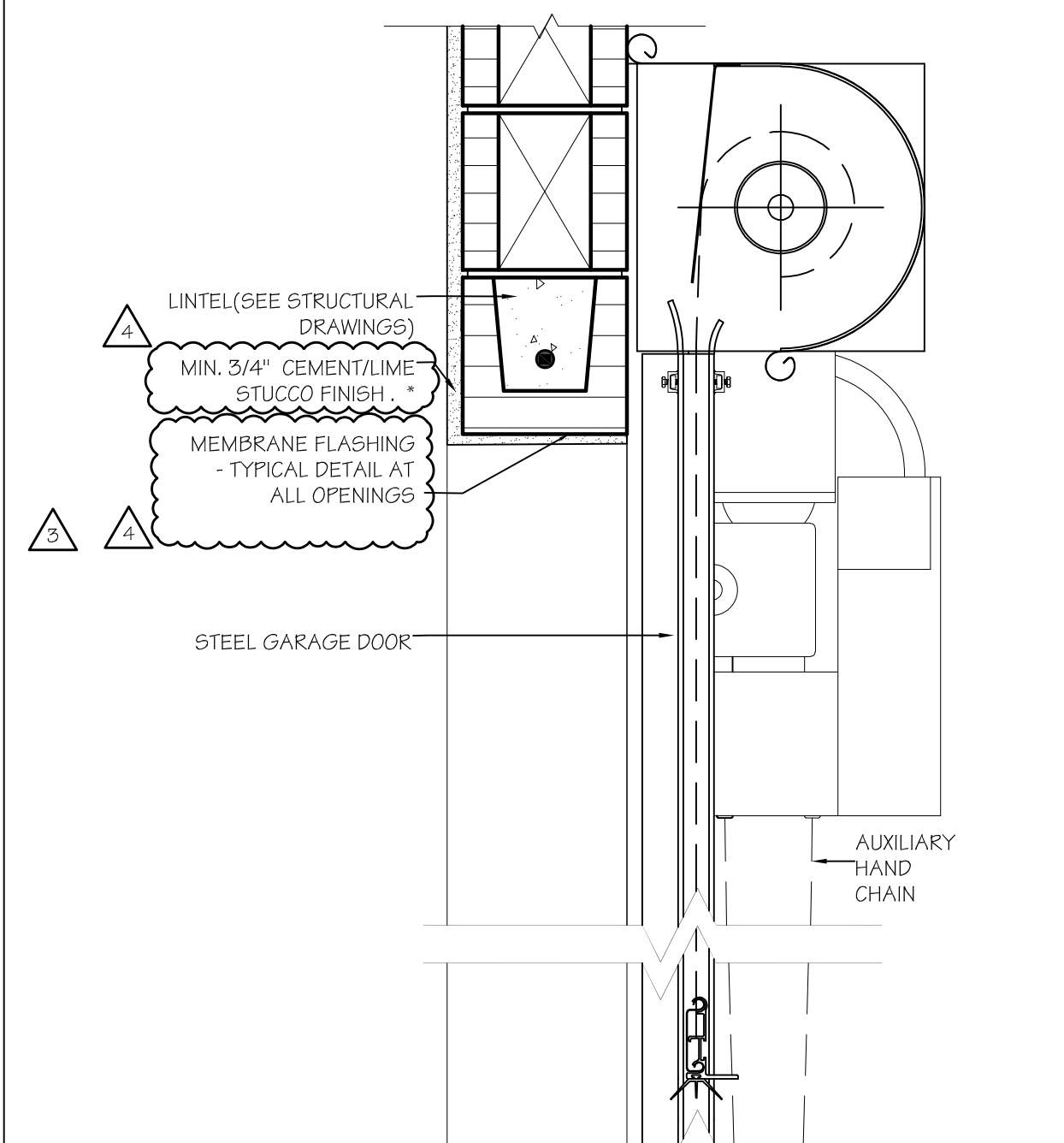
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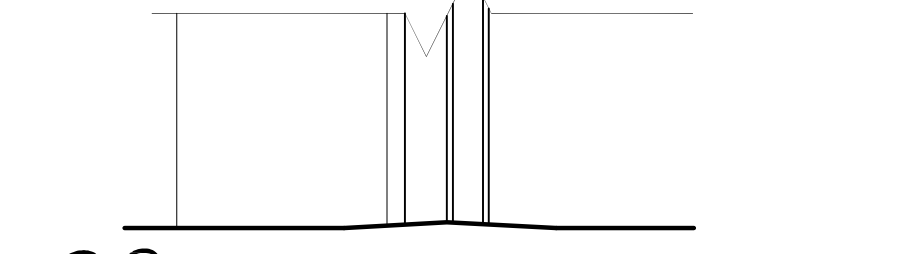
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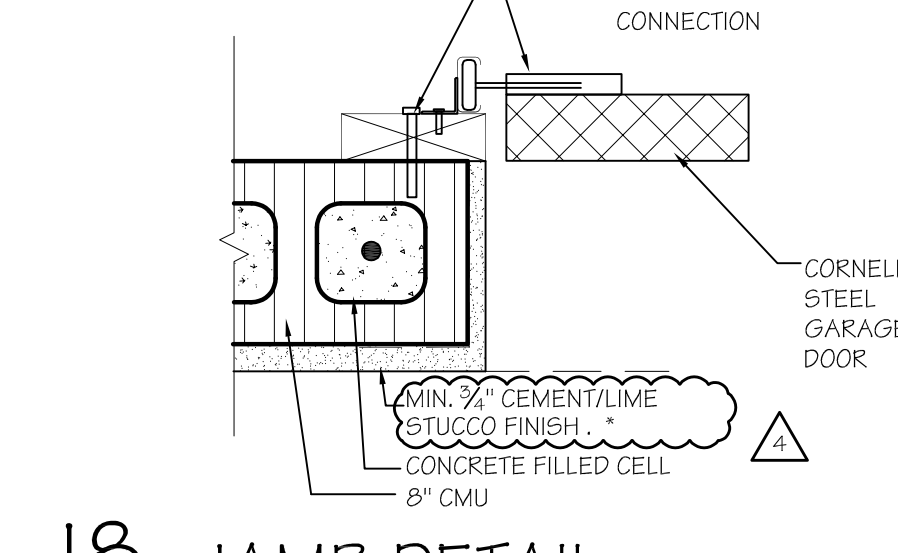
J7 JAMB DETAIL SCALE: 3\"/>



H8 HEAD DETAIL SCALE: 1 1/2\"/>

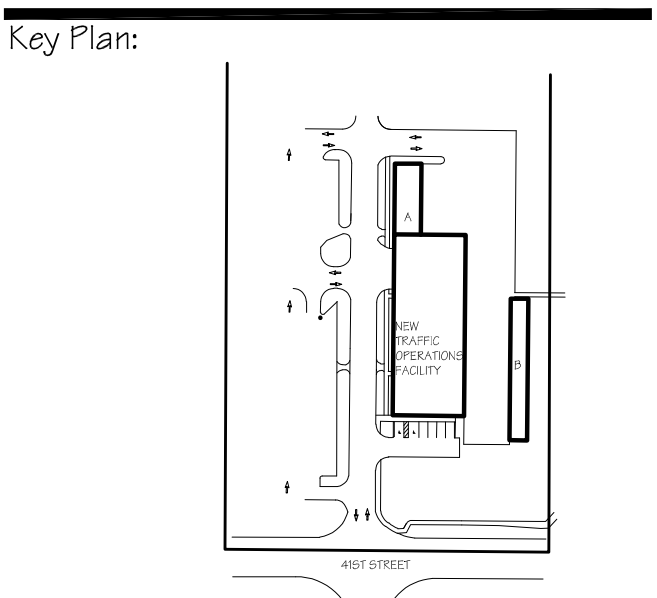


S8 SILL DETAIL SCALE: 1 1/2\"/>



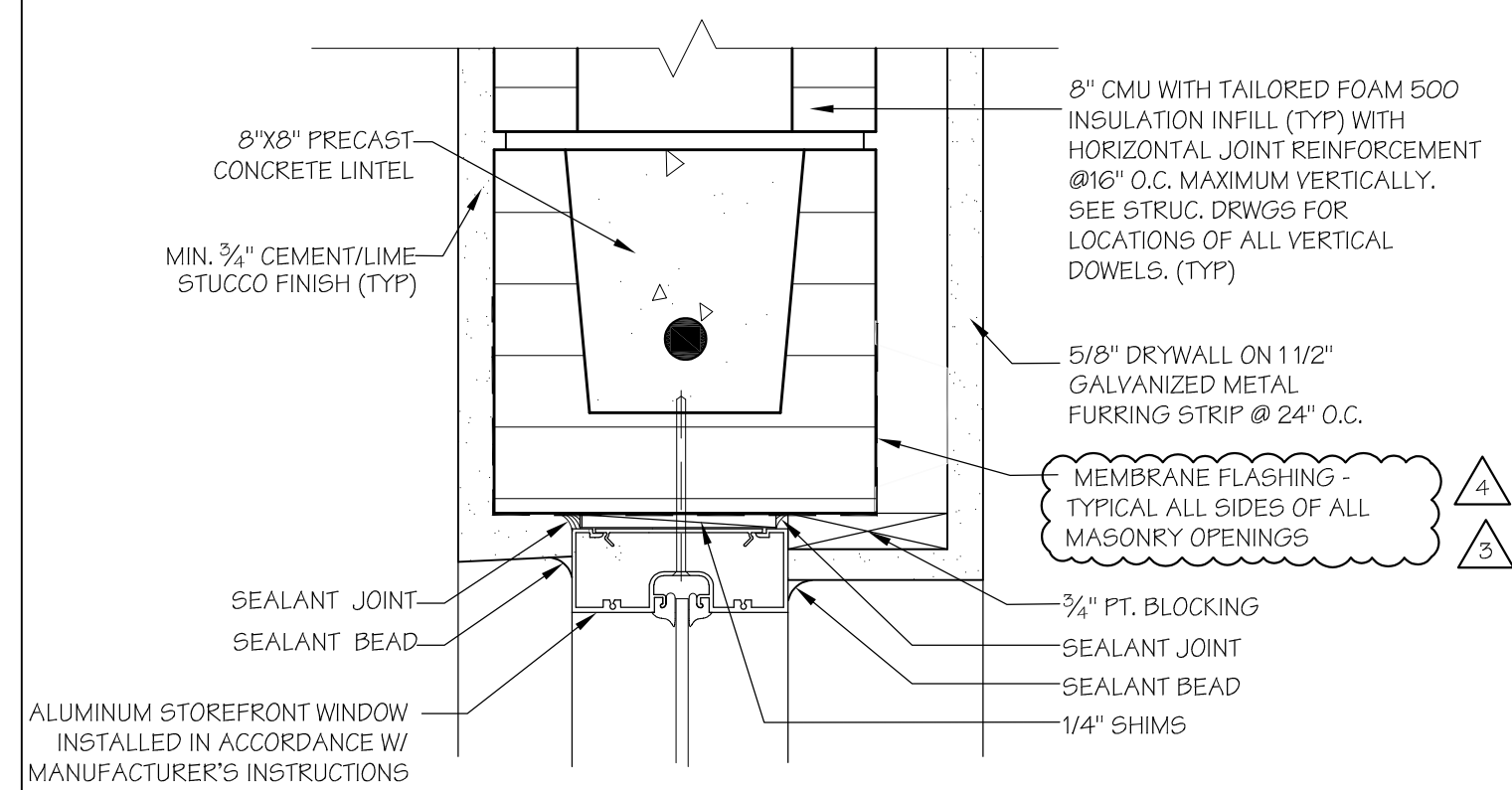
J8 JAMB DETAIL SCALE: 1 1/2\"/>

* O.H. DOORS 126G AND 126H WILL HAVE NO STUCCO FINISH. WALLS WILL BE TOOLED JOINTS AND PAINTED FINISH.

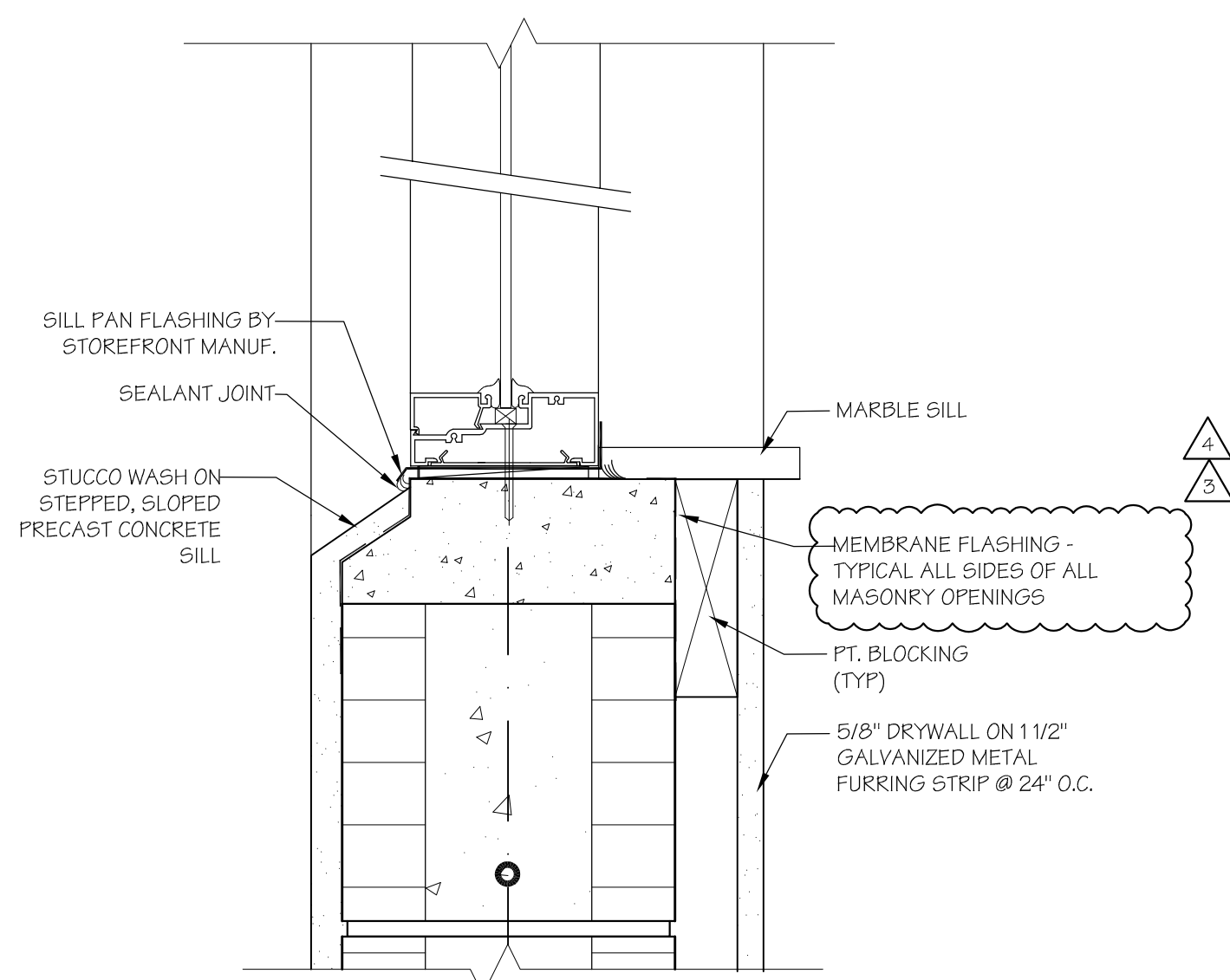


Issues:

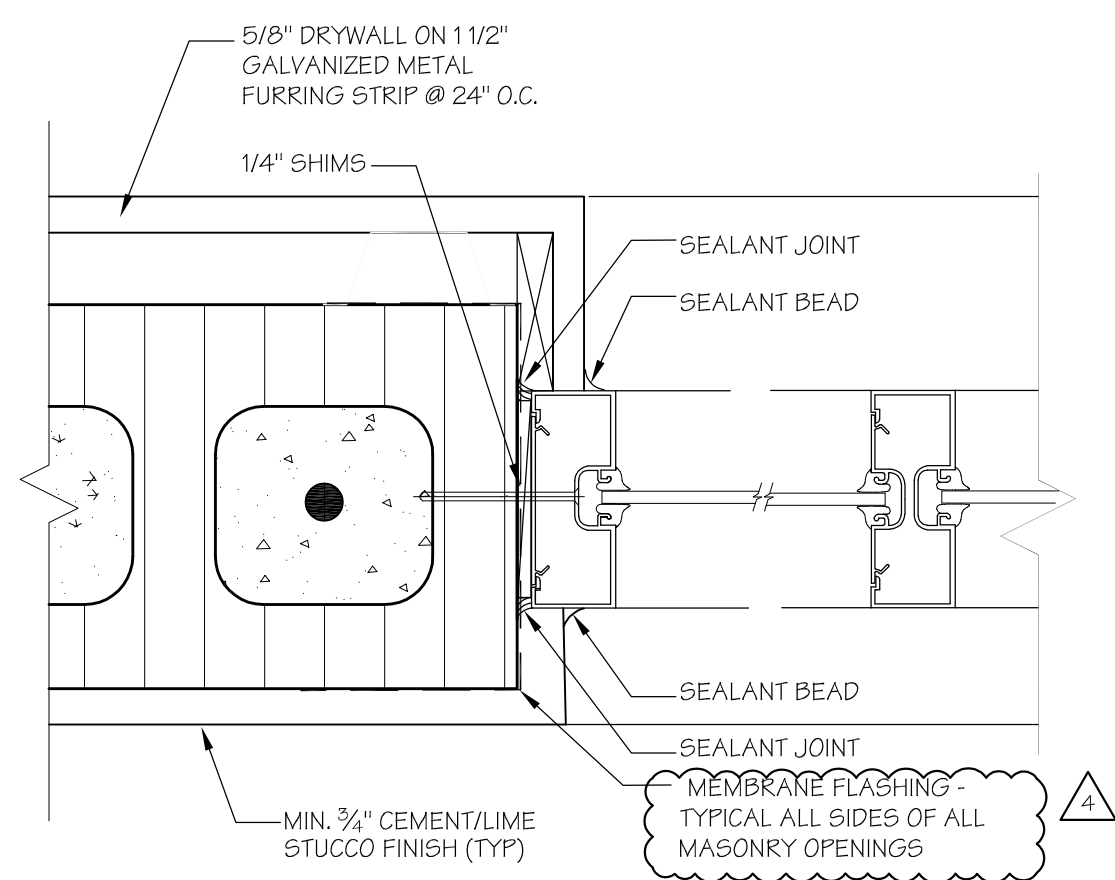
No.:	Date:	Description:
A.	08.10.21	CLIENT REVIEW
B.	12-06-2021	PROGRESS SET
C.	03-21-22	PERMIT SET
D.	07-05-2022	BID SET COMMENT RESPONSE
E.	06-30-23	BID SET
N.	09-20-23	ADDENDUM #3 RESPONSE



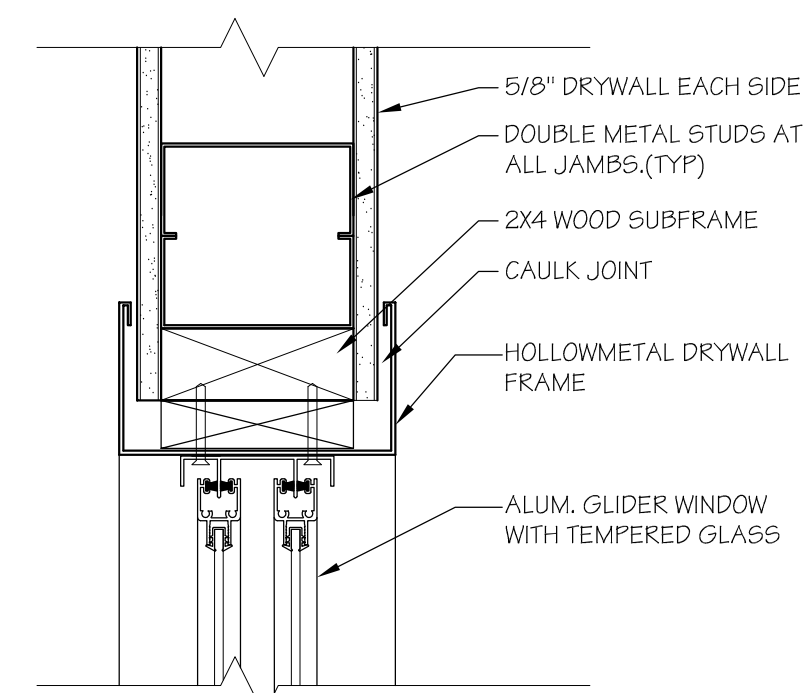
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A6.22



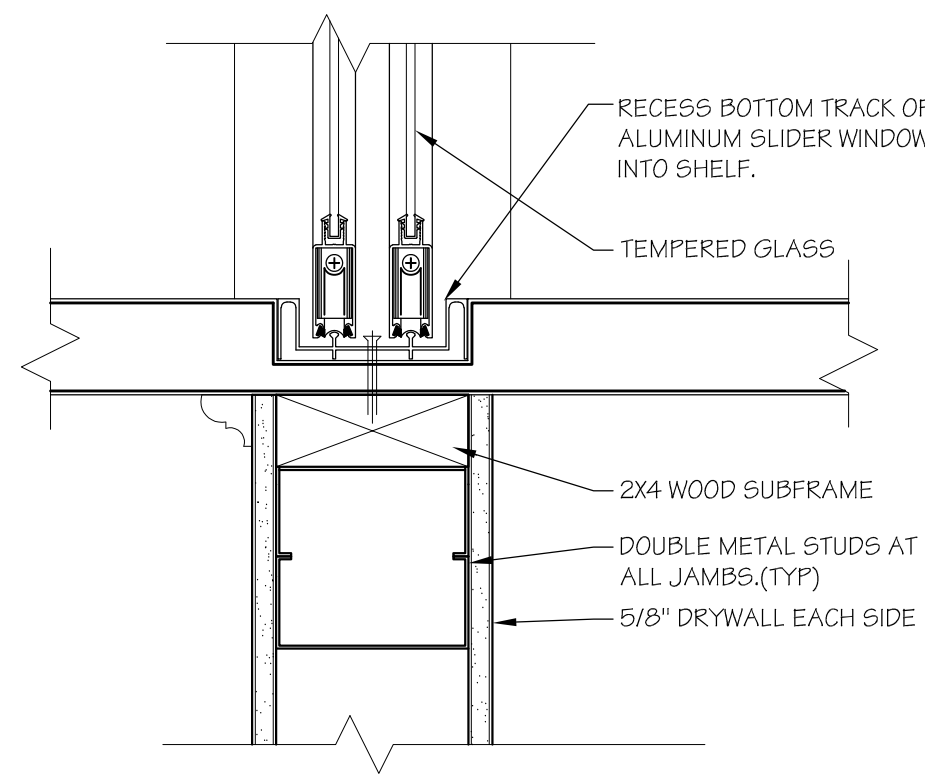
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SCALE: 3/8"=1'-0"
A6.22



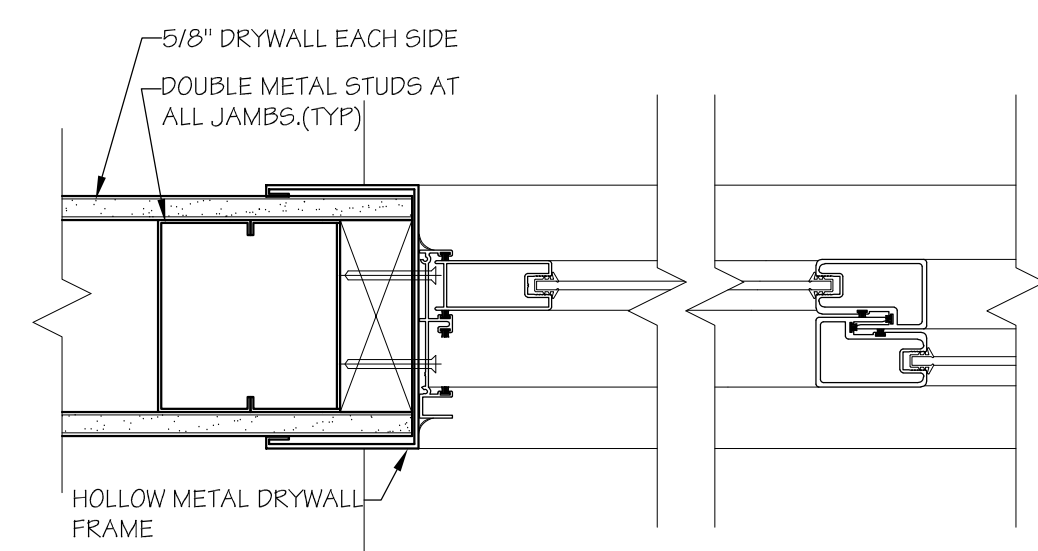
3 DETAIL JAMB
SCALE: 3/8"=1'-0"
A6.22



3 DETAIL HEAD
SCALE: 3/8"=1'-0"
A6.22



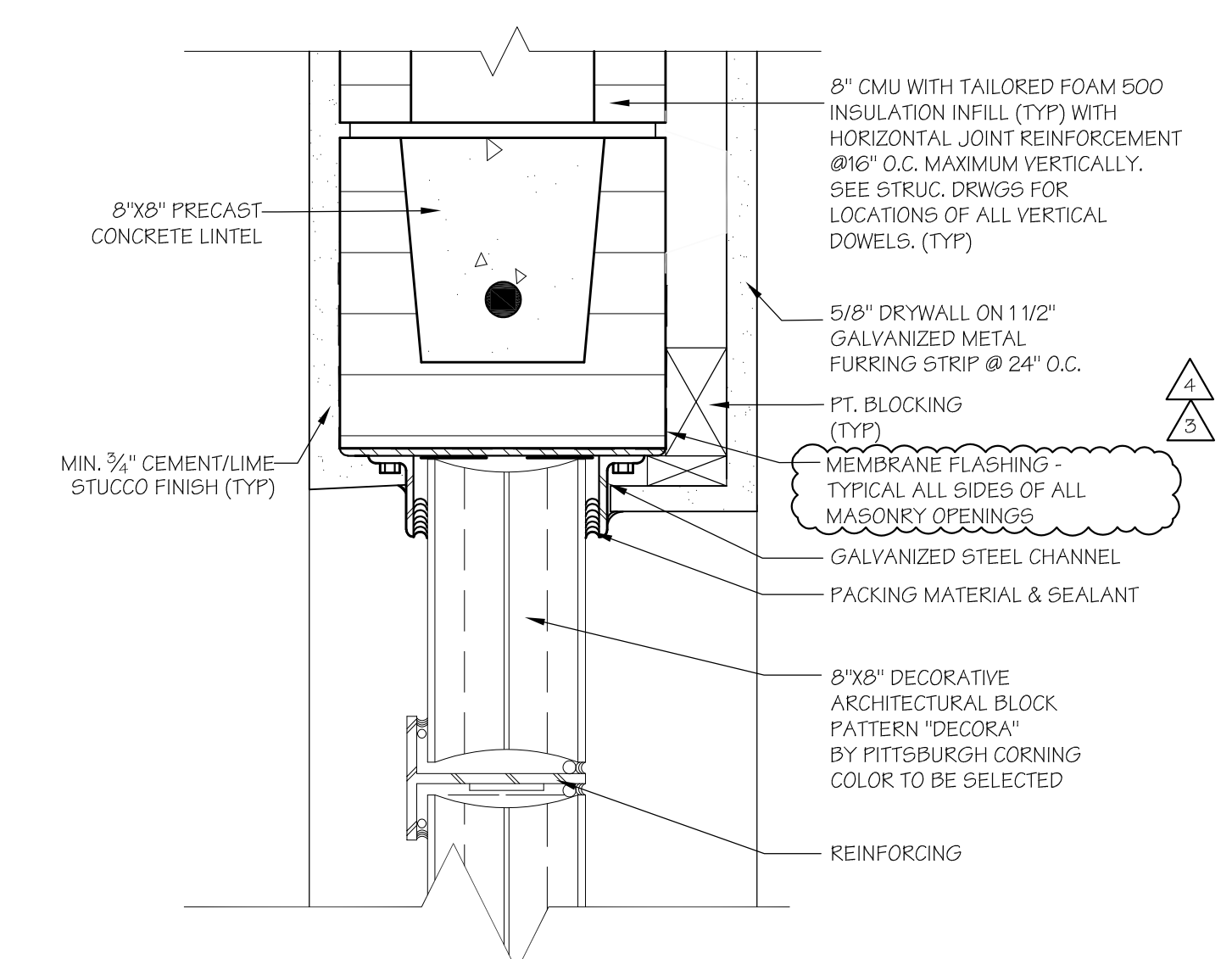
4 DETAIL SILL
SCALE: 3/8"=1'-0"
A6.22



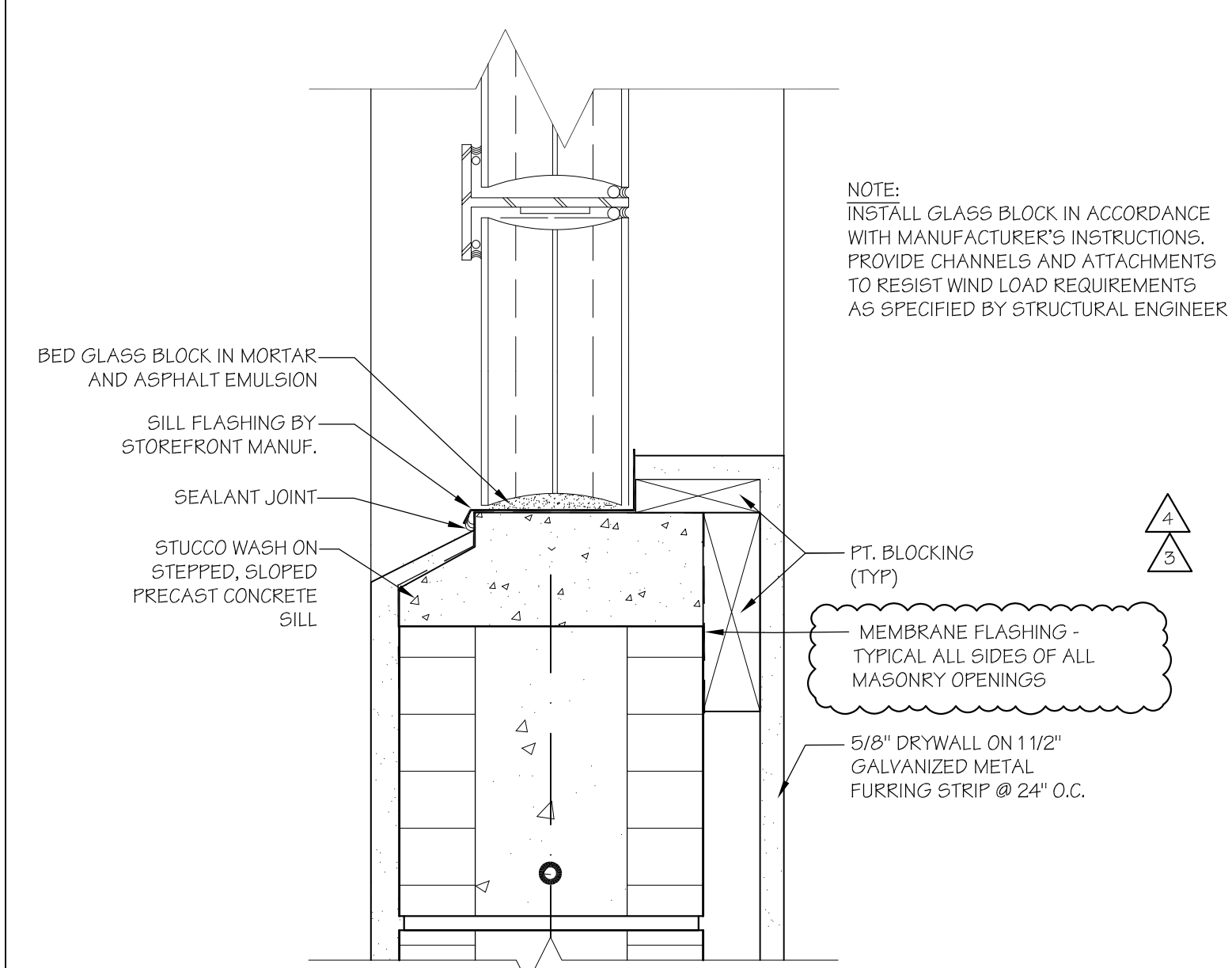
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A6.22

GENERAL NOTES:

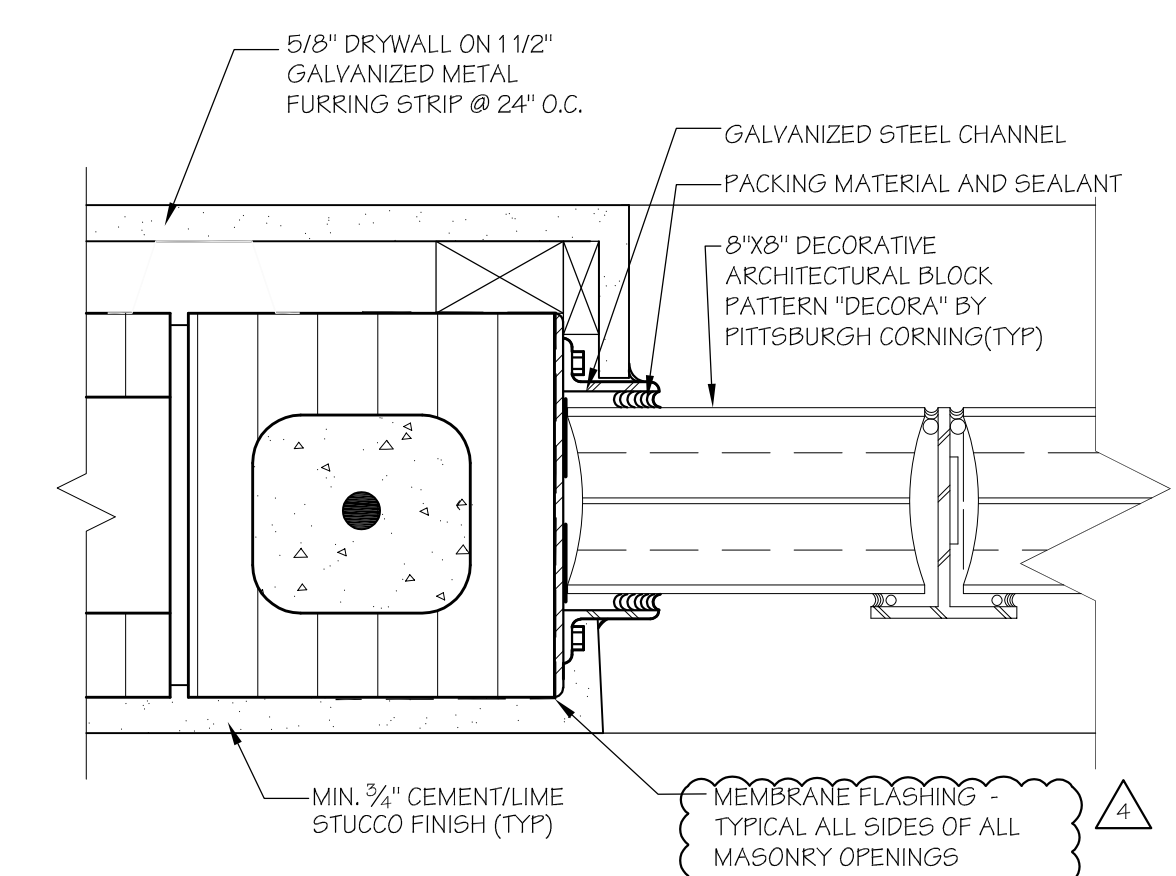
- INSTALL LIQUID APPLIED FLASHING AT ALL EXTERIOR MASONRY OPENINGS PER FBC 1405.4.
- INSTALL PRODUCT IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



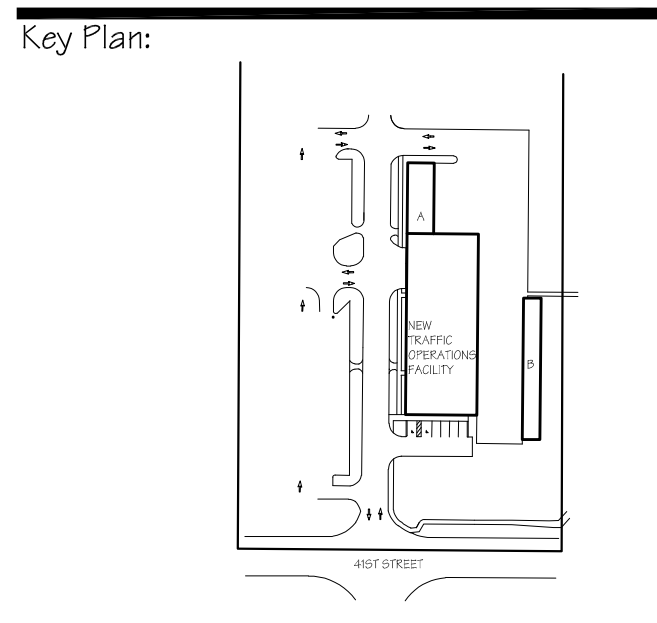
7 DETAIL HEAD
SCALE: 3/8"=1'-0"
A6.22



8 DETAIL SILL
SCALE: 3/8"=1'-0"
A6.22



9 DETAIL JAMB
SCALE: 3/8"=1'-0"
A6.22



Issues:

No.	Date	Description
A.	08.10.21	CLIENT REVIEW
B.	12-06-2021	PROGRESS SET
C.	02-22-22	BID/PERMIT SET
D.	03-21-22	PERMIT SET
E.	07-05-2022	BLDG DEPT COMMENT RESPONSE
F.	08-30-23	BID SET
N.	09-20-23	ADDENDUM #3 RESPONSE



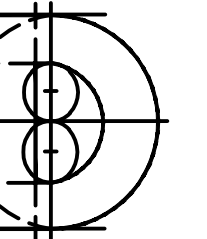
4548 41st Street
Vero Beach FL
32967

Key Plan:

Issues:

No.:	Date:	Description:
A.	03-21-22	PERMIT SET
B.	06-01-22	BDC RESPONSE
C.	06-22-22	BDC RESPONSE
D.	08-29-23	COORDINATION
E.	09-11-23	RFI

Architect:



DONADIO & Associates, Architects P.A.

2001 9th Avenue, Suite 308
Vero Beach, FL 32960
Tel: 772.784.2929
Fax: 772.362.8600
License No. AA0002238
www.donadio-arch.com

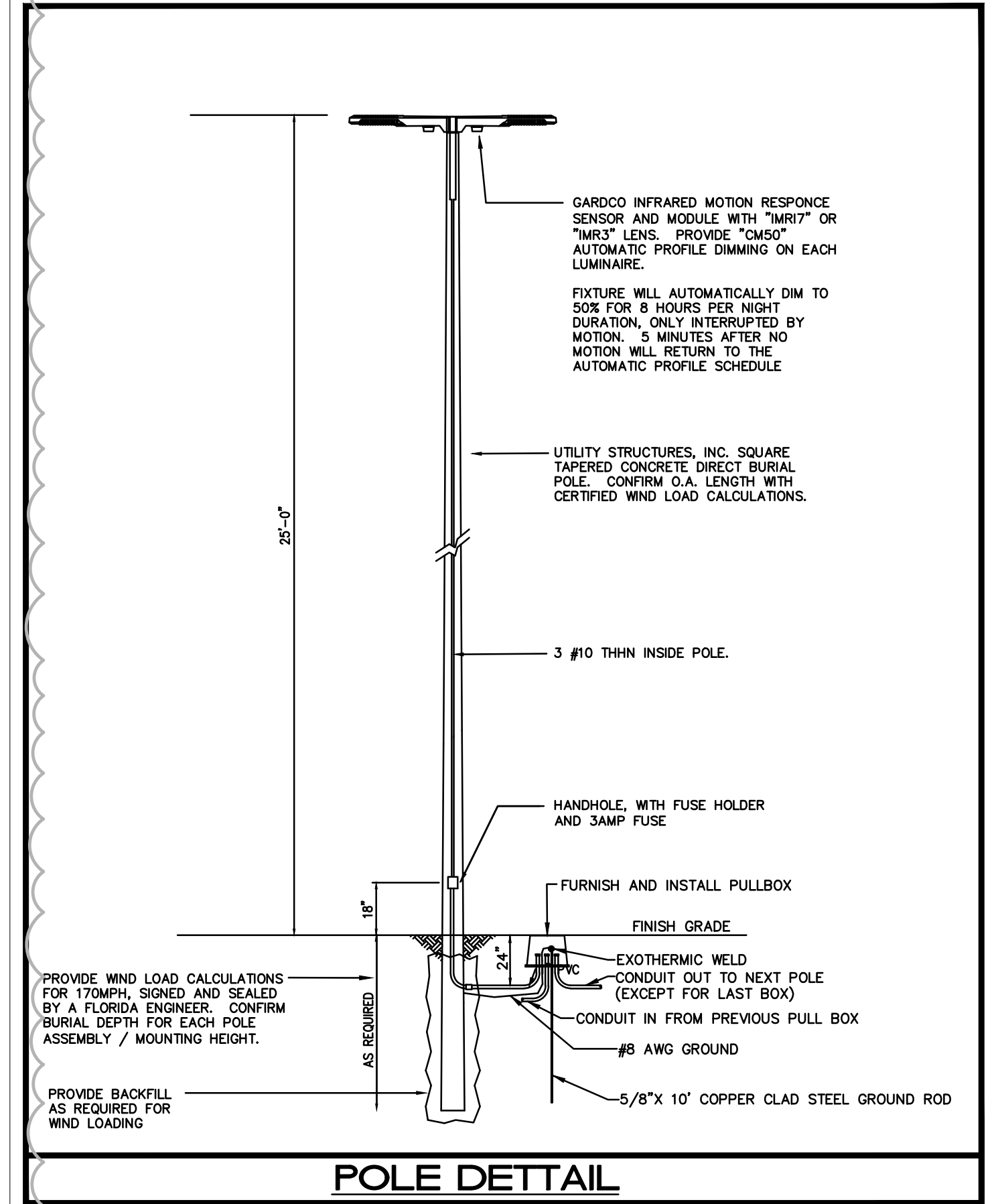
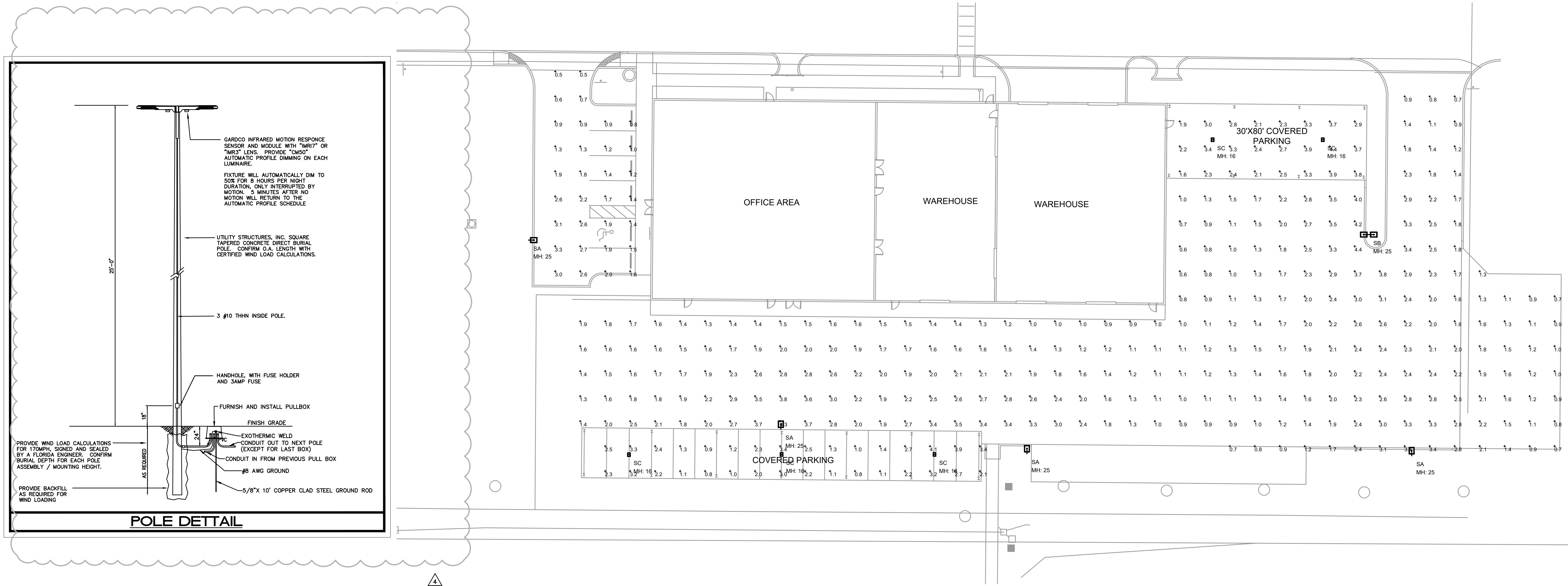
Consultant:

Drawing Title:

SITE LIGHTING PLAN

Drw: JLH
Chd: XREF
Project No.: TD
2021-20
Sheet No.:
Cert. No.: 12,456
Date Signed: **E1.1**

signed



Equipment Schedule

Project: BDC TRANSPORTATION SITE 11/30/2021

Symbol	Qty	Label	DESCRIPTION	Art. Linc. Lumens	LF	Lot's Width	Foot Candles
☐	1	SA	Control by Sign	1400	0.00	0.00	0.00
☐	1	SB	Control by Sign	2800	0.00	0.00	0.00
☐	1	SC	Control by Sign	4200	0.00	0.00	0.00

Calculation Summary

Project: BDC TRANSPORTATION SITE 11/30/2021

Label	Calc Type	Units	Min	Max	Min	Max	Min	Max
SITE # PARKING_Plane	Minimum	Ft	1.24	4.4	0.5	2.08	0.00	0.00

SITE LIGHTING PLAN

1"=20'-11" NORTH

ISSUED FOR PERMIT 06-29-23

KAMM CONSULTING PROJECT #: 2021-0432
PROJECT MANAGER: DUANE MILLAR

KAMM Consulting 1408 Orange Avenue
Fort Pierce, Florida 34950
Phone 772.595.1744
bbrown@kammconsulting.com
Certification of Authorization #8189

PRINCIPAL
Bradley L. Brown Florida License #58232

date

signed

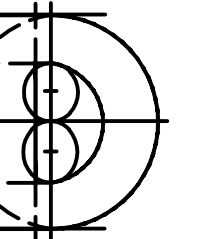


Key Plan:

Issues:

No.:	Date:	Description:
A.	03-21-22	PERMIT SET
B.	06-01-22	BDC RESPONSE
C.	06-22-22	BDC RESPONSE
D.	08-29-23	COORDINATION
E.	09-11-23	RFI

Architect:



DONADIO & Associates, Architects P.A.

2001 9th Avenue, Suite 308
Vero Beach, FL 32960
Tel 772.784.2929
Fax 772.562.8600
License No. AA0002238
www.donadio-arch.com

Consultant:

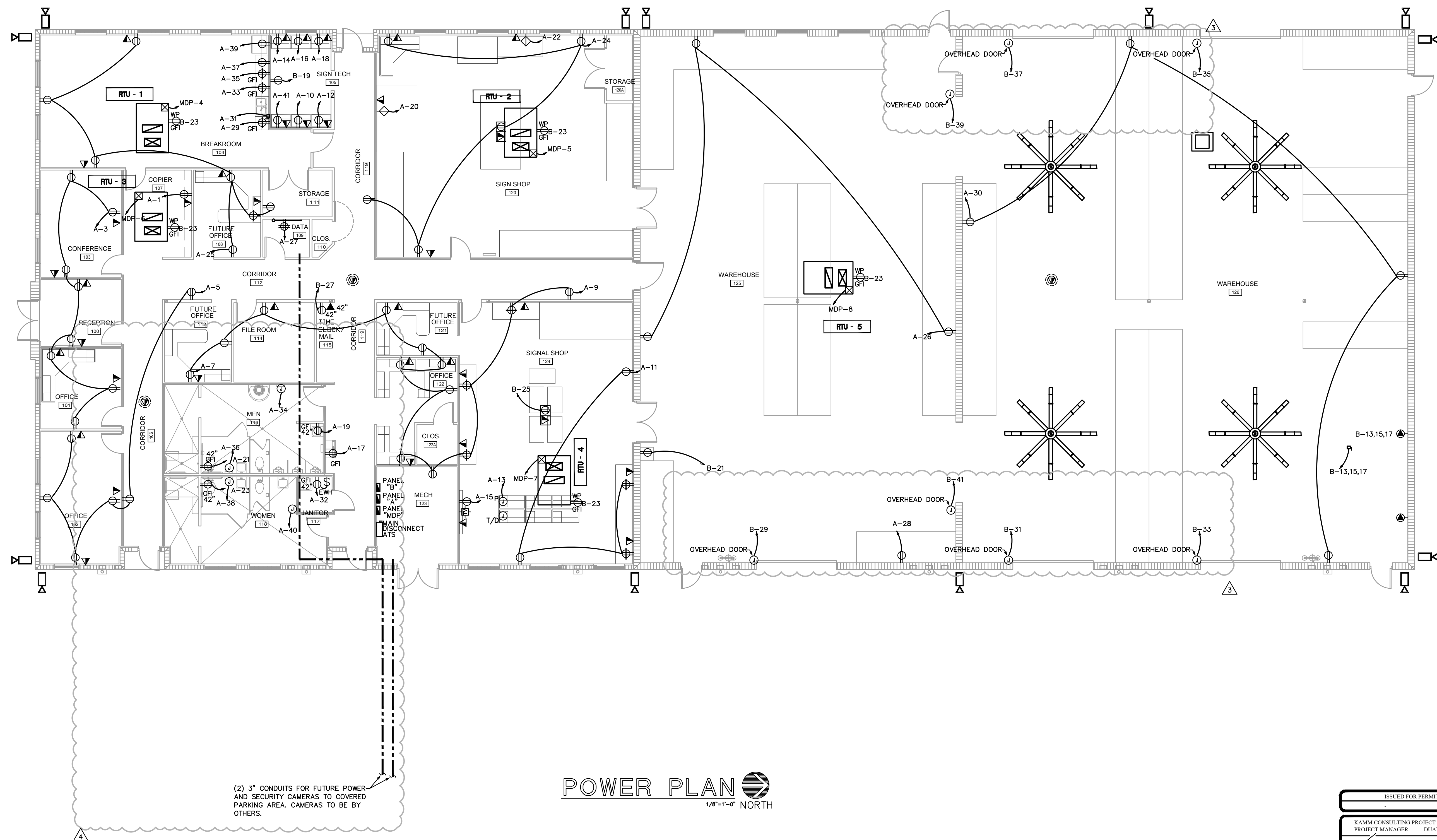
Drawing Title:

**POWER PLAN
FLOOR PLAN**

Issued For Permit	06-29-23
DRN:	Dwg. File:
Chd:	XREF File:
TD:	PLOT File:
Project No.:	2021-20
Sheet No.:	

Cert. No.: 12,456

Date Signed: **E3.1**



(2) 3" CONDUITS FOR FUTURE POWER AND SECURITY CAMERAS TO COVERED PARKING AREA. CAMERAS TO BE BY OTHERS.

POWER PLAN
1/8"=1'-0" NORTH

ISSUED FOR PERMIT		06-29-23
KAMM CONSULTING PROJECT #: 2021-0432		
PROJECT MANAGER: DUANE MILLAR		
KAMM Consulting	1408 Orange Avenue	Fort Pierce, Florida 34950
	Phone 772.595.1744	bbrown@kammconsulting.com
PRINCIPAL	Florida License #58232	date
Bradley L. Brown		signed



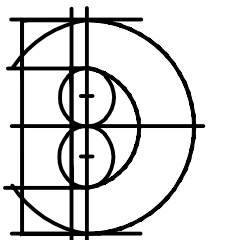
4548 41st Street
Vero Beach FL
32967

Key Plan:

Issues:

No.:	Date:	Description:
A.	03-21-22	PERMIT SET
B.	06-01-22	BDC RESPONSE
C.	06-22-22	BDC RESPONSE
D.	08-29-23	COORDINATION
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& Associates, Architects P.A.

2001 9th Avenue, Suite 308
Vero Beach, FL 32960
Tel 772.784.2929
Fax 772.562.8600
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Consultant:

Drawing Title:

RISER DIAGRAM

Cert. No.: 12,456

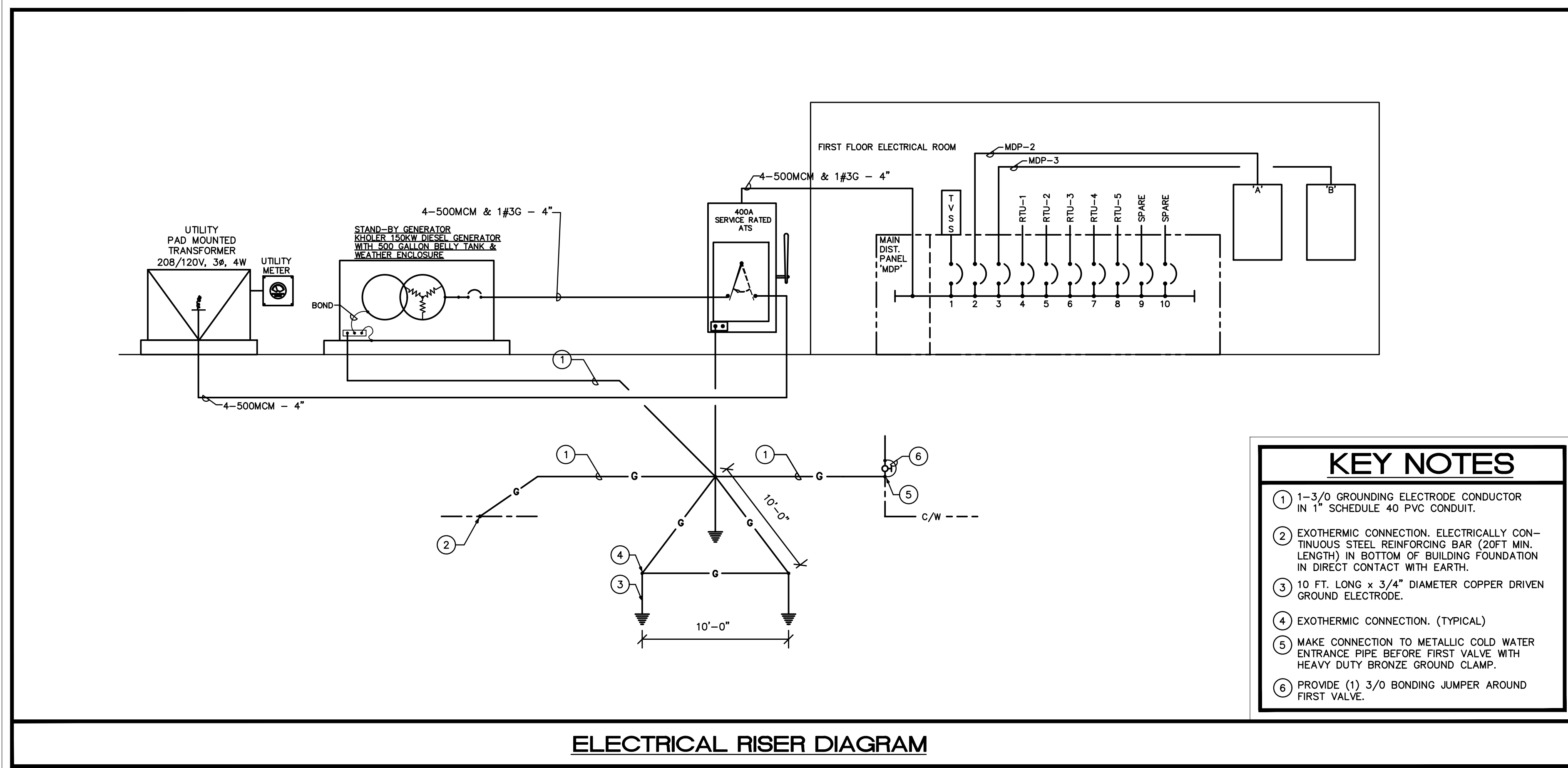
Date Signed:

E5.1

SCHEDULE OF DISTRIBUTION PANEL "MDP"									
MAIN: 400 AMP / 3 POLE, MLO					VOLTAGE: 208/120V, 3ø, 4 WIRE				
SPEC: SQUARE D TYPE I-LINE OR APPROVED EQUIVALENT					AIC SYMM: 65,000				
DESIGNATION	DESCRIPTION	CIRCUIT BREAKER FRAME	TRIP	POLES	FEEDER	A PHASE KVA	B PHASE KVA	C PHASE KVA	NOTES
MDP-1	TVSS			3					
MDP-2	PANEL A	200		3	4#3/0 & 1#2G - 2-1/2"	12.2	11.0	10.2	
MDP-3	PANEL B	200		3	4#3/0 & 1#2G - 2-1/2"	4.0	4.0	3.0	
MDP-4	RTU-1	30		2	4#10 & 1#10G - 3/4"		4.1	4.1	
MDP-5	RTU-2	30		3	4#8 & 1#10G - 1"	4.1	4.1	4.1	
MDP-6	RTU-3	90		3	4#3 & 1#8G - 1-1/4"	9.3	9.3	9.3	
MDP-7	RTU-4	30		3	4#10 & 1#10G - 3/4"	2.7	2.7	2.7	
MDP-8	RTU-5	60		3	4#3 & 1#8G - 1-1/4"	8.3	8.3	8.3	
MDP-9	SPARE	100		3					
MDP-10	SPARE	100		3					
						40.6	43.5	41.7	KVA PER PHASE
						338.3	362.5	347.5	AMPS PER PHASE
								125.8	TOTAL KVA

SCHEDULE OF BRANCH CIRCUIT PANEL "A"																
MAIN: 200 AMP / 3 POLE MAIN CIRCUIT BREAKER					VOLTAGE: 208/120V, 3ø, 4 WIRE											
SPEC: SQUARE D TYPE "NQDD" OR APPROVED EQUIVALENT					AIC SYMM: 22,000											
MOUNTING: SURFACE																
DESCRIPTION	WIRE	GND.	COND.	TRIP	CKT.	A PHASE KVA	B PHASE KVA	C PHASE KVA	CKT.	TRIP	COND.	GND.	WIRE	DESCRIPTION		
COPIER	#12	#12	1/2"	20	1	0.8	1.0		2	20	1/2"	#12	#12	LIGHTS		
RECEPT.	#12	#12	1/2"	20	3			1.0	1.0		4	20	1/2"	#12	#12	LIGHTS
RECEPT.	#12	#12	1/2"	20	5			1.0	1.0	1.0	8	20	1/2"	#12	#12	LIGHTS
RECEPT.	#12	#12	1/2"	20	7	1.0	1.0				10	20	1/2"	#12	#12	RECEPT.
RECEPT.	#12	#12	1/2"	20	9			1.0	0.8		14	20	1/2"	#12	#12	RECEPT.
RECEPT.	#12	#12	1/2"	20	11			1.0	0.8	1.0	18	20	1/2"	#12	#12	RECEPT.
WORK STATIONS	#12	#12	1/2"	20	13	1.0	1.0				22	20	1/2"	#12	#12	RECEPT.
MONITOR	#12	#12	1/2"	20	15			0.8	0.8		26	20	1/2"	#12	#12	RECEPT.
WATER FOUNTAIN	#12	#12	1/2"	20	17			1.0	0.8	1.0	30	20	1/2"	#12	#12	RECEPT.
RECEPT.	#12	#12	1/2"	20	19	1.0	1.0				34	20	1/2"	#12	#12	RECEPT.
RECEPT.	#12	#12	1/2"	20	21			1.0	1.0		38	20	1/2"	#12	#12	RECEPT.
RECEPT.	#12	#12	1/2"	20	23			1.0	1.0		42	20	1/2"	#12	#12	RECEPT.
RECEPT.	#12	#12	1/2"	20	25	1.0	1.0				46	20	1/2"	#12	#12	RECEPT.
RECEPT.	#12	#12	1/2"	20	27			1.0	1.0		50	20	1/2"	#12	#12	RECEPT.
RECEPT.	#12	#12	1/2"	20	29			0.8	1.0	3.0	54	20	1/2"	#12	#12	RECEPT.
RECEPT.	#12	#12	1/2"	20	31	0.8	1.0				58	20	1/2"	#12	#12	RECEPT.
RECEPT.	#12	#12	1/2"	20	33			0.8	0.8		62	20	1/2"	#12	#12	HAND DRYER
RECEPT.	#12	#12	1/2"	20	35			0.8	0.8		66	20	1/2"	#12	#12	HAND DRYER
RECEPT.	#12	#12	1/2"	20	37	0.8	0.8				70	20	1/2"	#12	#12	HAND DRYER
RECEPT.	#12	#12	1/2"	20	39			0.8	0.8		74	20	1/2"	#12	#12	HAND DRYER
RECEPT.	#12	#12	1/2"	20	41			0.8	1.0		78	20	1/2"	#12	#12	SPARE
						13.0	12.6	12.0	KVA PER PHASE							
						108.3	105.0	100.0	AMPS PER PHASE							
								37.6	TOTAL KVA							

SCHEDULE OF BRANCH CIRCUIT PANEL "B"																
MAIN: 200 AMP / 3 POLE MAIN CIRCUIT BREAKER					VOLTAGE: 208/120V, 3ø, 4 WIRE											
SPEC: SQUARE D TYPE "NQDD" OR APPROVED EQUIVALENT					AIC SYMM: 22,000											
MOUNTING: SURFACE																
DESCRIPTION	WIRE	GND.	COND.	TRIP	CKT.	A PHASE KVA	B PHASE KVA	C PHASE KVA	CKT.	TRIP	COND.	GND.	WIRE	DESCRIPTION		
EXTERIOR RECEPTACLES	#12	#12	1/2"	20	1	0.2	1.0				2	20	3/4"	#10	#10	SITE LIGHTING
EXTERIOR RECEPTACLES	#12	#12	1/2"	20	3			0.2	1.0		4	20	3/4"	#10	#10	SITE LIGHTING
EXTERIOR RECEPTACLES	#12	#12	1/2"	20	5			0.2	0.6	0.6	6	20	1"	#12	3/12	FAN
EXTERIOR RECEPTACLES	#12	#12	1/2"	20	7	0.2	0.6				8	20	1"	#12	3/12	FAN
EXTERIOR RECEPTACLES	#12	#12	1/2"	20	9			0.2	0.6		10	20	1"	#12	3/12	FAN
EXTERIOR RECEPTACLES	#12	#12	1/2"	20	11			0.2	0.6	0.2	12	20	1"	#12	3/12	FAN
ROOF EXHAUST FAN	3/12	1/12	1/2"	20	13	0.6	0.6				14	20	3/4"	#10	#10	SITE LIGHTING
RECEPTACLE	#12	#12	1/2"	20	15			0.6	0.6		16	20	1"	#12	3/12	FAN
ICE MACHINE	#12	#12	1/2"	20	17			0.6	0.6	0.6	18	20	1"	#12	3/12	FAN
RECEPTACLE	#12	#12	1/2"	20	19	1.0	1.0				20	20	1"	#12	3/12	FAN
ROOF RECEPTACLES	#12	#12	1/2"	20	21			1.0	0.6		22	20	1"	#12	3/12	FAN
FLOOR RECEPTACLE	#12	#12	1/2"	20	23			0.8	0.6	0.6	24	20	1"	#12	3/12	FAN
TIME CLOCK	#12	#12	1/2"	20	25	0.2	0.6				26	20	1"	#12	3/12	FAN
OVERHEAD DOOR	#12	#12	1/2"	20	27			0.1	0.6		28	20	1"	#12	3/12	FAN
OVERHEAD DOOR	#12	#12	1/2"	20	29			0.6	1.0		30	20	1"	#12	3/12	FAN
OVERHEAD DOOR	#12	#12	1/2"	20	31	0.6	1.0				32	20	1"	#12	3/12	FAN
OVERHEAD DOOR	#12	#12	1/2"	20	33			0.6	1.0		34	20	1"	#12	3/12	FAN
OVERHEAD DOOR	#12	#12	1/2"	20	35			0.6	1.0		36	20	1"	#12	3/12	FAN
OVERHEAD DOOR	#12	#12	1/2"	20	37	0.6	1.0				38	20	1"	#12	3/12	FAN
OVERHEAD DOOR	#12	#12	1/2"	20	39			0.6	1.0		40	20	1"	#12	3/12	FAN
OVERHEAD DOOR	#12	#12	1/2"	20	41			0.6	1.0		42	20	1"	#12	3/12	FAN
						4.2	4.2	3.2	KVA PER PHASE							
						35.0	35.0	26.6	AMPS PER PHASE							
								11.6	TOTAL KVA							



- KEY NOTES**
- 1-3/0 GROUNDING ELECTRODE CONDUCTOR IN 1" SCHEDULE 40 PVC CONDUIT.
 - EXOTHERMIC CONNECTION, ELECTRICALLY CONTINUOUS STEEL REINFORCING BAR (20FT MIN. LENGTH) IN BOTTOM OF BUILDING FOUNDATION IN DIRECT CONTACT WITH EARTH.
 - 10 FT. LONG x 3/4" DIAMETER COPPER DRIVEN GROUND ELECTRODE.
 - EXOTHERMIC CONNECTION. (TYPICAL)
 - MAKE CONNECTION TO METALLIC COLD WATER ENTRANCE PIPE BEFORE FIRST VALVE WITH HEAVY DUTY BRONZE GROUND CLAMP.
 - PROVIDE (1) 3/0 BONDING JUMPER AROUND FIRST VALVE.

ELECTRICAL RISER DIAGRAM

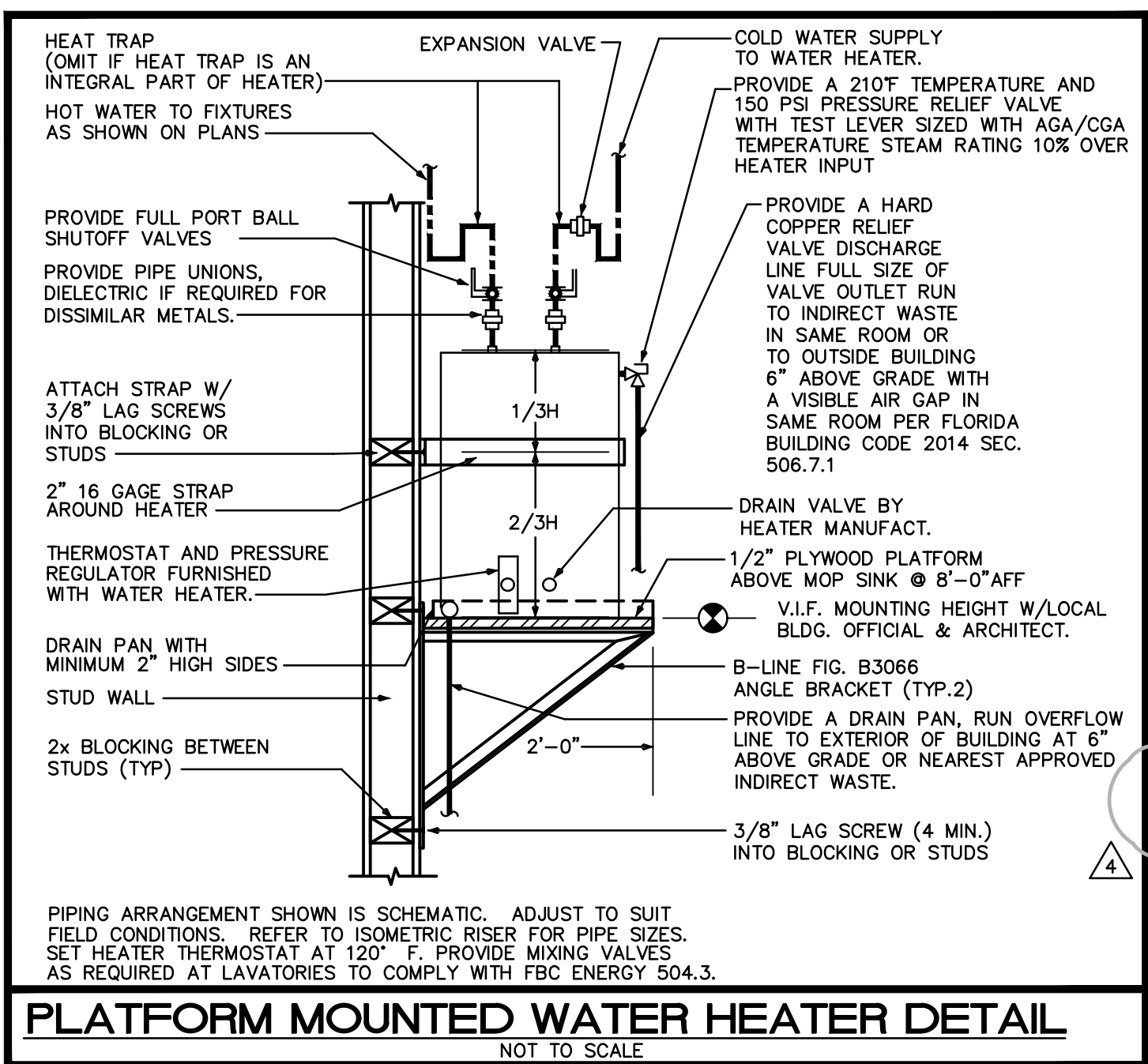
ISSUED FOR PERMIT 06-29-23

KAMM CONSULTING PROJECT #: 2021-0432
PROJECT MANAGER: DUANE MILLAR

KAMM Consulting 1408 Orange Avenue
Fort Pierce, Florida 34950
Phone 772.595.1744
bbrown@kammconsulting.com
Certification of Authorization #8189

PRINCIPAL: Bradley L. Brown Florida License #58232

Drw: JLH
Chd: XREF File:
TD
Project No.: 2021-20
Sheet No.:
Date Signed: 12,456



PLATFORM MOUNTED WATER HEATER DETAIL
NOT TO SCALE

PLUMBING FIXTURE SCHEDULE

LAV	LAVATORY, AMERICAN STANDARD DECLYN WALL HUNG #0321.075 WHITEWITH T&S BRASS B-2701-VF05 FAUCET, CONTRACTOR TO SUPPLY CONCEALED ARM SUPPORT CARRIER FOR MOUNTING OF LAVATORY. WADE MODEL # 520-M36.
HLAV	HANDICAP LAVATORY, AMERICAN STANDARD, LUCERNE WALL HUNG LAVATORY MODEL #0356.028. WHITE, WITH T&S BRASS FAUCET BS-2701-VF05. CONTRACTOR TO SUPPLY CONCEALED ARM SUPPORT CARRIER FOR MOUNTING OF LAV. WADE MODEL # 520-M36. SUPPLY PLUMBEREX MODEL #4333 INSULATION KIT. MUST MEET A.D.A. CODE.
WC	WATER CLOSET, FLUSH VALVE BOWL; WALL MOUNTED, SIPHON JET ACTION VITREOUS CHINA, ELONGATED RIM AND 1-1/2" TOP SPUD, AMERICAN STANDARD AFWALL 2257.103, 1.28 GPF TOILET WITH A SLOAN ROYAL #111 FLUSH VALVE AND A CENTOCO #1500CC OPEN FRONT SEAT LESS COVER.
HWC	HANDICAPPED WATER CLOSET, FLUSH VALVE BOWL; WALL MOUNTED, SIPHON JET ACTION VITREOUS, CHINA ELONGATED RIM AND 1-1/2" TOP SPUD, AMERICAN STANDARD AFWALL 2257.103, 1.28 GPF TOILET WITH A SLOAN ROYAL #111 FLUSH VALVE AND A CENTOCO #1500CC OPEN FRONT SEAT LESS COVER.
UR	URINAL AMERICAN STANDARD, WASHBROOK #6501.010, FLUSH VALVE SLOAN ROYAL #186-1, WALL MOUNTED, WHITE URINAL, WALL CARRIER, WADE # 400AM11-M36. MUST MEET A.D.A. CODE.
HUR	URINAL AMERICAN STANDARD, ALLBROOK #6541.132, FLUSH VALVE SLOAN ROYAL #186-1, WALL MOUNTED, WHITE URINAL, WALL CARRIER, WADE # 400AM11-M36. MUST MEET A.D.A. CODE.
HSH	HANDICAPPED SHOWER, MIXING VALVE HOT AND COLD WATER, SHOWER MIXING VALVE SHALL BE A SYMMONS ORIGIN MODEL #9603-PLR TEMPTROL PRESSURE BALANCED SHOWER VALVE TO INCLUDE A 2.5 GPM FLOW RESTRICTOR AND INTEGRAL SERVICE STOPS.
FD	FLOOR DRAIN, WADE MODEL # 1103-TY-STD5
HAND WASHER	HANDWASH STATION, ACORN MODEL #3543DBS FOOT OPERATED
SK	(2) COMPARTMENT SINK DAYTON BY ELKAY #D23322 S/S SINK, T&S BRASS FAUCET MODEL #B-0199-01-N05 WITH RETRACTABLE SPRAY.
MOP SK	FIAT MSB MODEL # 2424 MOLDED TERRAZZO BASIN WITH DRAIN BODY AND STRAINER. FIAT SERVICE SINK FAUCET MODEL #830-AA, WITH FIAT 832-AA HOSE AND HOSE BRACKET DISCHARGE; PAIL HOOK AND TOP BRACE; VACUUM BREAKER, FIAT #889-CC MOP HANGER AND BP SPLASH CATCHER/WALL GUARD.
HDF/DF	HANDICAP/DRINKING FOUNTAIN, ELKAY BI-LEVEL WALL MOUNTED BARRIER FREE MODEL # E25TL8C.7.0 GPH, WADE 440-AM11-M36 CARRIER AS REQUIRED. 115V, 4.5 A. MUST MEET A.D.A. CODE.
EW	WATER HEATER SHALL BE 30 GAL. ELECTRIC 208V, 1 PHASE, 4.5 KW. LOCHINVAR TALL MODEL ETT-030-KD.
RECIRC PUMP	TACO RECIRC. PUMP, MODEL 111 BRONZE CASTING , 115V, 1/8 HP, 2.0 AMP WITH "00" TIMER AQUSTAT.
EYE WASH	EYE WASH, ACORN MODEL SO460. NO DRAIN REQUIRED.

GENERAL NOTES:
 (1) - FIXTURES SHALL BE AS SHOWN OR EQUAL.
 (2) - ALL FIXTURES SHALL COMPLY WITH TABLE 604.4 OF FBC 2020
 (3) - ALL FIXTURE TRIM PACKAGES INCLUDING BUT NOT LIMITED TO TRAP, ANGLE STOP, FLUSH VALVE, SUPPLY TUBES, AND CLEANOUT COVER PLATES SHALL BE OF THE SAME FINISH AS THE ABOVE SPECIFIED FAUCET AND PER ARCHITECTURAL FINISH SCHEDULE.
 (4) - ALL FIXTURES SHALL BE ROUGHED IN PER MANUFACTURER CUT SHEET TO MAINTAIN UNIFORMITY.

CONDENSATE DRAIN PIPE SIZING

HVAC EQUIPMENT CAPACITY	MINIMUM CONDENSATE PIPE DIAMETER
UP TO 20 TONS OF REFRIGERATION	1"
OVER 21 TONS TO 40 TONS OF REFRIGERATION	1-1/4"
OVER 41 TONS TO 60 TONS OF REFRIGERATION	1-1/2"
OVER 61 TONS TO 100 TONS OF REFRIGERATION	2"
OVER 101 TONS TO 250 TONS OF REFRIGERATION	3"
OVER 251 TONS & LARGER OF REFRIGERATION	4"

PLUMBING NOTES

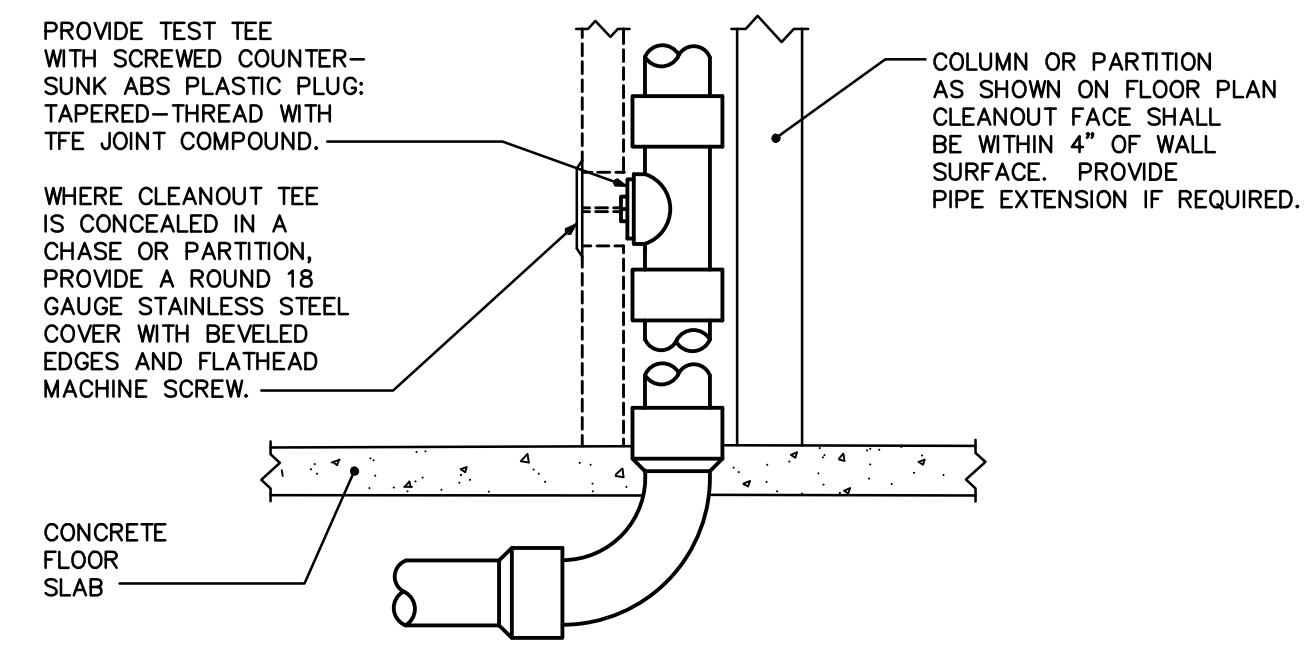
- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE SCOPE OF WORK. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH THE FLORIDA BUILDING CODE 6TH EDITION (2020) - PLUMBING, APPLICABLE LOCAL CODES, RULES, AND ORDINANCES.
- PLUMBING CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.
- ALL MATERIALS SHALL BE NEW AND OF GOOD QUALITY.
- ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY-OPERATIONAL. ALL EXCAVATION AND BACKFILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
- REQUIRED INSURANCE SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
- PLUMBING CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTIONS AND TESTS. PLUMBING CONTRACTOR SHALL OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT. PLUMBING CONTRACTOR MUST BE PRESENT FOR ALL INSPECTIONS OF HIS WORK BY REGULATORY AUTHORITIES.
- CONTRACTOR SHALL SUBMIT TO ARCHITECT/ENGINEER, FOR REVIEW & APPROVAL, FIVE (5) SETS OF MANUFACTURER'S CUT SHEETS FOR EACH FIXTURE, PIPING/FITTING MATERIAL AND EQUIPMENT ITEM WITH ASSOCIATED CONTROLS, THAT ARE INCLUDED IN THE CONTRACT.
- DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE FOR THE EXACT LOCATION OF FIXTURES, PIPING, EQUIPMENT, ETC.
- ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION. REPORT ANY DISCREPANCY TO ARCHITECT/ENGINEER PRIOR TO BEGINNING CONSTRUCTION.
- VERIFY LOCATION, SIZE, DIRECTION OF FLOW AND INVERT ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION. ADVISE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- WATER DISTRIBUTION PIPING ABOVE AND BELOW GROUND SHALL BE TYPE "L" COPPER. ALTERNATE PIPING & FITTING MATERIALS MAY BE USED IN ACCORDANCE WITH FLORIDA BUILDING CODE 6TH EDITION (2020) - PLUMBING, TABLES 605.3, 605.4 & 605.5, WHEN APPROVED BY ENGINEER OF RECORD AND LOCAL AUTHORITY HAVING JURISDICTION. PROVIDE ALTERNATE FOR CPVC PIPING & FITTINGS EQUAL TO LUBRIZOL CORZAN OR FLOW-GUARD GOLD. PROVIDE ALTERNATE FOR PEX TYPE "A" PIPING & FITTINGS EQUAL TO UPONOR. ALTERNATES ARE PERTINENT FOR WATER SERVICES KNOWN OR DETERMINED TO HAVE ACIDIC CHARACTERISTICS OR OTHER PARTICULAR CIRCUMSTANCES AS DEEMED APPROPRIATE BY DIRECTIVE FROM THE OWNER. CONTRACTOR SHALL PERFORM A WATER TEST TO DETERMINE WATER CHEMISTRY PRIOR TO ANY WORK OR PIPING INSTALLATION AND SHALL SUBMIT TEST RESULTS TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL. DISINFECTION OF POTABLE WATER SYSTEM SHALL COMPLY WITH FLORIDA BUILDING CODE 6TH EDITION (2020) - PLUMBING, SECTION 610. ALL WATER PIPING & FITTINGS SHALL BE OF DOMESTIC MANUFACTURE, SPECIFICALLY IN THE UNITED STATES OF AMERICA.
- SOIL, WASTE, VENT, AND RAINWATER (DWV) PIPING & FITTINGS SHALL BE CAST IRON OR PVC, WHERE CODE ALLOWS. PVC MAY NOT BE USED THRU RATED ASSEMBLIES OR IN PLENUMS. PVC PIPING SHALL BE SOLID-CORE ONLY; FOAM-CORE PIPING SHALL NOT BE ACCEPTED. CAST IRON PIPING & FITTINGS SHALL BEAR THE CISPI-301 MARK. ALL DWV PIPING & FITTINGS SHALL BE OF DOMESTIC MANUFACTURE, SPECIFICALLY IN THE UNITED STATES OF AMERICA.
- ALL FIXTURES MUST BE PROVIDED WITH READILY ACCESSIBLE ANGLE STOPS AND APPROPRIATELY MARKED ACCESS PANELS (WHERE REQUIRED). COORDINATE LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
- PROVIDE APPROVED WATER HAMMER ARRESTORS FOR ALL (GROUP) PLUMBING FIXTURES, SIZED & LOCATED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS & PDI-WH201.
- PROVIDE DIELECTRIC COUPLINGS OR FLANGES BETWEEN ALL DISSIMILAR METALS IN PIPING AND EQUIPMENT CONNECTIONS.
- ISOLATE COPPER PIPING FROM METALLIC HANGERS OR SUPPORTS WITH ISOLATOR PADS OR NON-CONDUCTIVE MATERIAL.
- ALL FIRE RATED FLOOR AND WALL PENETRATIONS SHALL BE PROPERLY PROTECTED FROM FIRE, SMOKE AND WATER PENETRATION BY FILLING ANNULAR SPACE BETWEEN PIPING AND SLEEVES WITH INTUMESCENT CAULK, TO ACHIEVE THE SAME RATING AS WALLS OR FLOORS, AS PART OF THE PLUMBING CONTRACTOR'S WORK.
- PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF ACCEPTANCE BY OWNER. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED.
- PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES. ACCESS PANELS IN RATED WALLS SHALL MAINTAIN THE SAME RATING AND SHALL MATCH THE FINISH OF THE WALL IN WHICH IT IS INSTALLED.
- PROVIDE COMBINATION CLEANOUT PLUG AND COVER PLATE OR ACCESS PANEL FOR ALL WALL CLEANOUTS. FINISH TO MATCH NEARBY FIXTURE TRIM.
- NO COMBUSTIBLE MATERIAL SHALL BE INSTALLED IN MECHANICAL ROOMS NOR IN CEILING SPACES WHERE USED AS RETURN AIR PLENUMS.
- NO WATER, SANITARY OR DRAINAGE PIPING SHALL BE INSTALLED IN ELECTRICAL OR ELEVATOR EQUIPMENT ROOMS.
- ALL CONTROL VALVES SHALL BE TAGGED AND MARKED. A REPRODUCIBLE DIAGRAM LOCATING ALL VALVES SHALL BE FURNISHED FOR OWNER/OPERATOR.
- CONDENSATE DRAIN PIPING SHALL BE TYPE "L" COPPER WITH ARMAFLEX INSULATION AND A VAPOR-BARRIER JACKET PER FLORIDA BUILDING CODE 6TH EDITION (2020) - ENERGY CONSERVATION, TABLE C403.2.8. PVC WITHOUT INSULATION IS ACCEPTABLE FOR RISERS AND BELOW GRADE PIPING. WHEN USED IN A RETURN AIR PLENUM, PVC PIPING WITH INSULATION IS ACCEPTABLE IN LOCATIONS WHERE ALLOWED BY LOCAL CODES. CONDENSATE PIPING SHALL NOT DRAIN ONTO THE ROOFING SYSTEM NOR ANY OF ITS COMPONENTS. CONDENSATE PIPING ARRANGEMENT IS EXEMPT FROM MINIMUM EQUIPMENT CLEARANCE REQUIREMENTS PER FLORIDA BUILDING CODE 6TH EDITION (2020), SECTION 1522.3.5. ALL HORIZONTAL RAINWATER PIPING RUN ABOVE FINISHED FLOOR THAT RECEIVES CONDENSATE DISCHARGE SHALL BE INSULATED WITH ARMAFLEX AND A VAPOR-BARRIER JACKET.
- HOT WATER PIPING INSULATION SHALL BE PROVIDED IN ACCORDANCE WITH FLORIDA BUILDING CODE 6TH EDITION (2020) - PLUMBING, TABLE 607.5 & FLORIDA BUILDING CODE 6TH EDITION (2020) - ENERGY CONSERVATION, TABLE C403.2.8. CONTRACTOR SHALL USE ARMAFLEX OR EQUAL WHERE APPLICABLE. WHERE DOMESTIC WATER TEMPERATURES CAN CAUSE SWEATING, ALL COLD WATER PIPING SHALL BE INSULATED WITH ARMAFLEX INSULATION AND A VAPOR-BARRIER JACKET, PER FLORIDA BUILDING CODE 6TH EDITION (2020) - ENERGY CONSERVATION, TABLE C403.2.8.
- AIR ADMITTANCE VALVES MAY BE USED AS AN ALTERNATE TO VENT PIPING THRU ROOF WHERE ACCEPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION. INSTALLATION METHODS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
- PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.
- STUDOR MINI/MAXI AIR ADMITTANCE VALVES MAY BE USED AS AN ALTERNATE TO VENT PIPING THRU ROOF WHERE ACCEPTABLE BY THE PLUMBING OFFICIAL AND LOCAL CODES. INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
- ALL HORIZONTAL RAINWATER PIPING THE RECEIVES CONDENSATE DISCHARGE FROM AIR CONDITIONING EQUIPMENT SHALL BE INSULATED WITH 1" THK. ARMAFLEX.
- PLUMBING PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, FIRE SPRINKLER, STRUCTURAL AND CIVIL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. PIPING MODIFICATIONS SUCH AS OFFSETS, BENDS, TRANSITIONS, AND SIZES SHALL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. CHANGES IN PIPE SIZES AND ROUTING SHALL BE REQUIRED BY THE CONTRACTOR TO AVOID CONFLICTS AND TO ADAPT TO EXISTING FIELD CONDITIONS PROVIDED THAT INSTALLATION MEETS ALL APPLICABLE CODES.
- SUPPLY TRAP PRIMER FOR ALL FLOOR DRAINS, FLOOR SINKS, HUB DRAINS, ETC. SHOWN ON PLANS.
- CONTRACTOR TO FIELD VERIFY ALL SUPPLY PRESSURE REQUIREMENTS AND LIMITATIONS. PROVIDE PRESSURE REDUCING VALVE IF REQUIRED.
- ANY REFERENCE OR APPLICATION OF DENTAL COMPRESSED AIR AS NOTED ON THIS PLAN IS NOT USED OR INTENDED FOR LIFE-SUPPORT PURPOSES SUCH AS RESPIRATORS, PIPER MACHINES, ANALGESIC, ANESTHESIA, ETC. THE ONLY USE IS AS INCIDENTAL AIR DISCHARGE INTO THE ORAL CAVITY AND NOT A PRIMARY OR SECONDARY SOURCE OF AIR TO SUSTAIN LIFE.

PLUMBING SHEET INDEX

SHEET#	DESCRIPTION
P0.1	PLUMBING NOTES, LEGENDS, AND DETAILS
P.1	SANITARY PLAN
P3.1	DOMESTIC WATER PLAN
PS.1	PLUMBING ISOMETRICS

PLUMBING LEGEND

CO	CLEAN OUT	---	SANITARY SEWER PIPING
S.O.V.	SHUT-OFF VALVE	---	VENT PIPING
COTC	CLEAN OUT TO GRADE	---	DOMESTIC COLD WATER PIPING
FS	FLOOR SINK	---	HOT WATER PIPING (110")
CW	DOMESTIC COLD WATER	---	HOT WATER PIPING (140")
HW	DOMESTIC HOT WATER	---	HOT WATER RECIRCULATING PIPING
HWR	DOMESTIC HOT WATER RECIRCULATING	---CD---	CONDENSATE PIPING
HWB	HOSE BIBB	---CA---	COMPRESSED AIR PIPING
VTR	VENT THRU ROOF	---T&P---	TEMPERATURE AND PRESSURE RELIEF
	GLOBE VALVE	---SD---	STORM DRAIN PIPING
	BACKFLOW PREVENTOR LEAD FREE, PRE FBC PL 608.1	---G---	GAS PIPING
	GAS COCK	---	PIPE RISE UP
	WATER HAMMER ARRESTER (PDI No.)	---	PIPE DOWN OR DROP
	FLOOR DRAIN	---	CAPPED END OF PIPE
		---	POINT OF CONNECTION
		---	P-TRAP



WALL CLEANOUT DETAIL
NOT TO SCALE

SHOCK ARRESTOR SCHEDULE

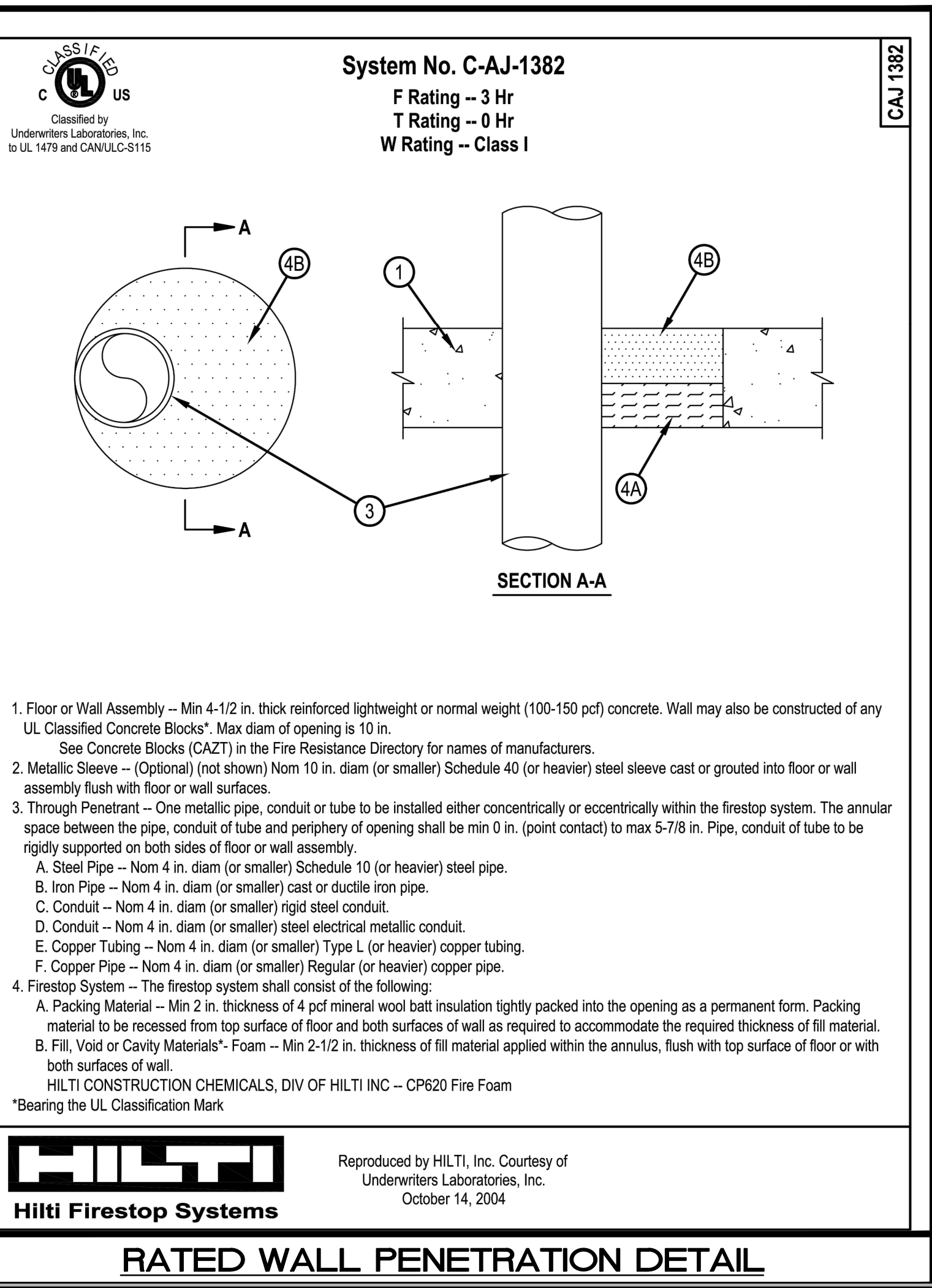
P.D.I. DESIGNATION	MANUF. & MODEL	FIXTURE UNITS	CONNECTION
A	SIOUX CHIEF 652-A	1-11	1/2"
B	SIOUX CHIEF 653-B	12-32	3/4"
C	SIOUX CHIEF 654-C	33-60	1"

SIOUX CHIEF SHOCK ARRESTORS APPROVED FOR INSTALLATION WITH NO ACCESS DOOR REQUIRED. CONFORMS TO ANSI/ASSE 1010 STANDARDS.

SLOPE OF HORIZ. DRAINAGE PIPE

SIZE (inches)	MINIMUM SLOPE (inch per foot)
2-1/2 or less	1/4
3 to 6	1/8
8 or larger	1/16

TABLE 704.1 OF THE FLORIDA PLUMBING CODE 2020



HILTI
 Hilti Firestop Systems
 Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. October 14, 2004
RATED WALL PENETRATION DETAIL

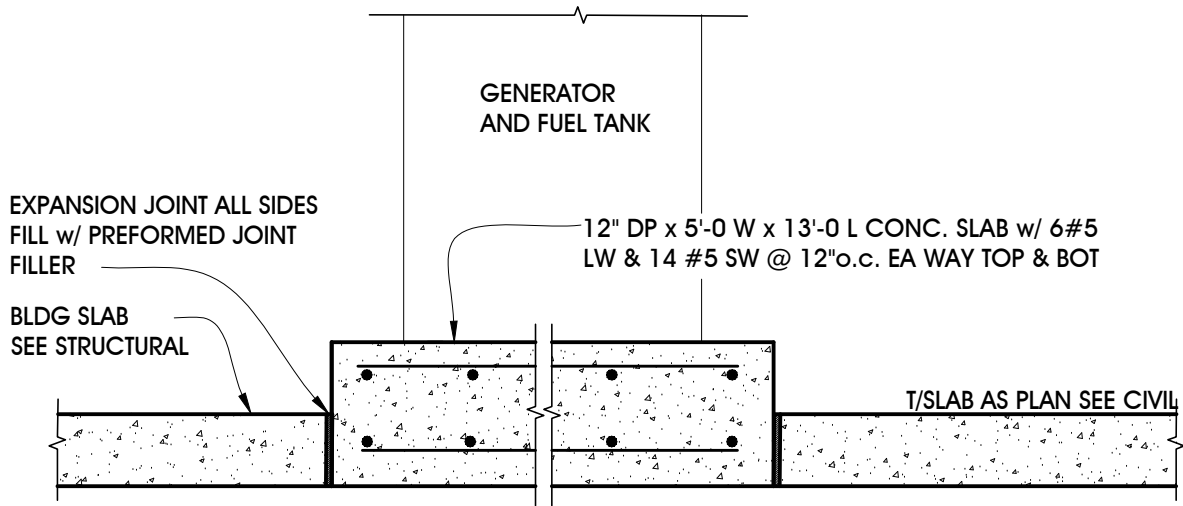
Project: **NEW PROPOSED TRAFFIC OPERATIONS FACILITY**
INDIAN RIVER COUNTY FLORIDA
 4548 41st Street
 Vero Beach FL 32967

Key Plan:
 Issues:
 No.: Date: Description:
 A. 03-21-22 PERMIT SET
 B. 06-01-22 BDC RESPONSE
 C. 06-22-22 BDC RESPONSE
 D. 08-29-23 COORDINATION
 E. 09-11-23 RFI

Architect:
DONADIO & Associates, Architects P.A.
 2001 9th Avenue, Suite 308
 Vero Beach, FL 32960
 Tel 772.764.2929
 Fax 772.362.8800
 License No. AA0002328
 www.donadio-arch.com

Consultant:
KAMM Consulting
 1408 Orange Avenue
 Fort Pierce, Florida 34950
 Phone 772.595.1744
 bbrown@kammconsulting.com
 Certification of Authorization #8189

Dwg. File: JLH XREF File:
 Chd: TD Plot File:
 Project No.: 2021-20
 Sheet No.:
 Cert. No.: 12.456
 Date Signed: **P0.1**



GENERATOR & FUEL TANK SLAB SECTION

$\frac{3}{4}'' = 1'-0''$

NOTES

1. ACTUAL LOCATION OF GENERATOR & SLAB TO BE COORDINATED BY ARCH.
2. PROVIDE SAW CUTS IN BLDG SLAB FROM EACH RE-ENTRANT CORNER OF GENERATOR SLAB, TYPICAL x 4.
3. REFER TO DESIGN DOCS FOR ALL DESIGN AND CONSTRUCTION NOTES.

RFI #1 GENERATOR & FUEL TANK SLAB SECTION

SHEET NO: SK-1 OF 1 SHEETS	ISSUE DATE: 09-18-23	JOB NAME: IRC TRAFFIC OPERATIONS FACILITY 4548 41st Street, Vero Beach, FL 32967	THE SEALING AND SIGNATURE OF THE ENGINEER IS REQUIRED FOR ANY AND ALL USE OF THIS DRAWING WITHOUT EXPRESS CONSENT OR PERMISSION OF THE ENGINEER. ANY REVISIONS OR CHANGES TO THIS DRAWING SHALL BE SUBJECT TO LEGAL ACTION BY M.E. ENG., INC.	ML ENGINEERING, INC. Consulting Structural Engineer 2030 37th Avenue Vero Beach, Florida 32960 Phone: 772.569.1257 Fax: 772.569.4041
	DWN BY: S.C.B., M.L.			
	CHKD BY: Mike Lue	TITLE: GENERATOR & FUEL TANK SLAB		
	JOB #: 21-224			



TECHNICAL DATA SECTION 1

Properties	Test Method	Test Results
Color		Teal (blueish green)
Permeabilities	ASTM D 1653B	Inverted: 13.23 @ 30 mil dry/14.98 @ 20 mil dry Standard: 8.64 @ 30 mil dry/6.74 @ 20 mil dry
Water Penetration	ASTM E 331	Passed 15 psf/DP80
Temperature Cycling	ASTM E 2264-05	Passed at Level 3, thermal cycling at 0°F to 180° F (-18°C to 82°C)
Hydrostatic Pressure Over Cracks	ASTM C 836-95	35.45 Bursting Pressure (ft H ₂ O)
Low Temperature Flexibility & Crack bridging	ASTM C 836, Section 6.7	No cracking or damage was observed
Adhesion Strength	ASTM C 836, Section 6.10	Average 2.634 lbf/in
Resistance to Water	ASTM D 2939, Section 15	No softening or loss of adhesion
Extensibility after heat aging	ASTM C 836, Section 6.12	No breaking, cracking or tearing of the film was observed
Extensibility after resistance to Decay	ASTM E 154	No rupture, cracking or pinholes were observed
Color Fastness of Surface Coating	ASTM D 2565	No change was observed after 1000 hours of exposure
Resistance to Mold Growth	ASTM D 3273-94	No mold growth was observed
Water Absorption 7 Days Exposure	ASTM D 471	38.8% @ 30 mil dry 34.6% @ 20 mil dry
Tensile @ Peak	ASTM D 412	71 psi @ 30 mil dry 73 psi @ 20 mil dry
Elongation @ Break	ASTM D 412	597% @ 30 mil dry 604% @ 20 mil dry
VOC	ASTM D 3792	Contains <190 gm/l voc
Weight		9 lbs/gallon
Coverage		Up to 65 square feet per gallon @ 30 mil wet
Service Temperature		40°F to 120°F (4°C to 49°C)
Application Temperature		40°F (4°C) and rising
Drying time @ 77°F (25°C), 50% RH		Temperature & humidity dependent Touch: within an hour
Flammability		The product is an aqueous solution and will not burn. If the liquid is allowed to evaporate, the solid residue will burn.
Peel-Off Strength LWM200 on CMU Block	ABAA T0002-2019/ ASTM D 4541	535 psi
Peel-Off Strength Portland Cement Based Stucco on LWM200 on CMU Block	ABAA T0002-2019/ ASTM D 4541	35 psi

TECHNICAL DATA - SECTION 2		
AAMA 714-19		
Properties	Test Method	Test Results
Adhesion Strength Peel Adhesion Req. \geq 5 pli	AAMA 714 § 5.1 ASTM C 794	CMU 13 pli Cement Mortar Slabs 12 pli Plywood APA Grade Exposure 1 13 pli
Water Penetration Resistance Around Nails (Pass/Fail)	AAMA 714 § 5.2 & § 5.3	1. As Received Pass 2. Thermal Cycling Pass
Accelerated Aging 1. Peel Adhesion Req. \geq 5 pli 2. Appearance	AAMA 714 § 5.3 ASTM G 154 ASTM C 794	1. Cement Mortar Slab 10 pli 2. Appearance Pass (No change)
Elevated Temperature 1. Peel Adhesion Req. \geq 5 pli 2. Appearance	AAMA 714 § 5.4 ASTM C 794	1. Cement Mortar Slab 10 pli 2. Appearance Pass (No change)
Thermal Cycling 1. Peel Adhesion Req. \geq 5 pli 2. Appearance	AAMA 714 § 5.5 ASTM C 794	1. Cement Mortar Slab 11 pli 2. Appearance Pass (No change)
Crack Bridging Ability No cracking, splitting, pinholes or other conditions in the area of the joint in the substrates	AAMA 714 § 5.7 AAMA 711 § 5.8 ASTM C1305	See Low Temperature Flexibility & Crack Bridging in Section One above
Water Immersion 1. Peel Adhesion Req. \geq 5 pli 2. Appearance	AAMA 714 § 5.7 AAMA 714 § 5.8 ASTM C 794	1. Anodized Aluminum 11 pli 2. Appearance Pass (No change)

PACKAGING

1 gallon and 5 gallon containers (larger containers available upon request)

DESCRIPTION

LWM200™ is a liquid applied waterproofing membrane that is a non-hazardous, water-based non-bituminous, environmentally friendly, elastomeric polymer dispersion waterproofing membrane.

FEATURES

- One coat application (based upon a 30 mil wet application)
- No primer required
- Will stop water leaks in non-structural cracks
- Can be applied to damp openings
- Allows for easy reapplications and repairs
- Continuous coating, eliminates seams
- Paintable, UV stable, will not emulsify
- Standard color is teal (bluish green)
- Apply with brush or roller
- Reduces potential for mold growth
- Permeable
- Compatible with most commonly used building and window substrates, such as OSB, plywood, CMU, vinyl, aluminum, DensGlass Gold®, Huber Zip Wall® sheathing, treated lumber and various foam insulated products
- Can be applied on green concrete
- Will accept direct application of Stucco

USES

LWM200 is specifically designed for the demanding requirements of waterproofing window, door and CMU openings; recessed window and door openings; an air barrier/weather resistant barrier on exterior sheathing products; and to waterproof commercial and residential foundations.

LIMITATIONS

Do not let product freeze. Do not dilute liquid applied waterproofing membrane. Store indoors at temperatures above 40°F (4°C). Protecto Wrap recommends the ambient temperature should be 32°F (0°C) and rising before application. Do not leave product in direct sun light. Do not leave container open when not using liquid applied waterproofing membrane. Do not use during rain or snow storms.

SHELF LIFE

LWM200 has a minimum 12 month shelf life if stored in original unopened containers (some separation may occur and should be re-mixed thoroughly prior to use using a standard paddle mixer).

STORAGE

Store indoors at temperatures above 40°F (4°C) in original unopened containers.

PREPARATION

Repair all structural deficiencies before applying **LWM200**. All surfaces should be clean and free of any frost, dirt, debris or other contaminants. Protect areas or surfaces not to be coated, such as doors, windows and floors, prior to applying **LWM200**.

Non-structural gaps and cracks up to 1/16" can be sealed with **LWM200**. Gaps and cracks 1/8" to 1/4" must be sealed with **Protecto Sealant 25XL**. Gaps and cracks 1/4" to 3/8" must be filled. Gaps larger than 3/8" must be repaired prior to applying **LWM200**.

APPLICATION

LWM200 may be applied with a brush or roller without dilution. A minimum total wet application of 30 mils and a surface with 10 or less pinholes per square foot is required for a waterproofing system using a brush, roller, or spray application.

A spray applied version of **LWM200 Liquid Waterproofing Membrane** is available upon request. Call your Protecto Wrap Representative for additional information. For commercial and residential foundation applications, use the spray applied version. For a spray application, and depending upon sprayer equipment used, the recommended orifice size is 0.027 to 0.031 inches with a minimum pressure of 1800 psi. Equipment cleans up with water.

LWM200 provides a suitable substrate for direct stucco application. For best results the base coat should be applied as a thin coat and slightly drier than if being applied directly to CMU. Heavy coat may slump if the mixture is too wet. Bonding agents should not be necessary; however, if they are used they should be latex based.

Specific installation instructions and detail drawings can be found at www.protectowrap.com.

LWM200's water based formula allows it to be applied over green concrete. The American Concrete Institute defines green concrete as concrete which has set but has not appreciably hardened.

CLEAN UP

Tools and surfaces can be cleaned with soap and water if **LWM200** is not cured.

CAUTION

Protecto Wrap Company recommends the use of protective gloves and safety glasses. **LWM200** contains Latex polymers.

LIMITED WARRANTY

LWM200 is covered by the Protecto Wrap Company Standard 10 Year Limited Warranty.

PROTECTO WRAP COMPANY
1955 South Cherokee Street
Denver, CO 80223
(303) 777-3001 • (800) 759-9727
FAX (303) 777-9273
www.protectowrap.com



9235 Waterproofing Membrane

DS-236-1021

**Globally Proven
Construction Solutions**



1. PRODUCT NAME

9235 Waterproofing Membrane

2. MANUFACTURER

LATICRETE International, Inc.
1 LATICRETE Park North
Bethany, CT 06524-3423 USA

Telephone: +1.203.393.0010, ext. 1235

Toll Free: 1.800.243.4788, ext. 1235

Fax: +1.203.393.1684

Website: laticrete.com

3. PRODUCT DESCRIPTION

9235 Waterproofing Membrane is an easy to install, thin, load-bearing waterproofing membrane designed specifically for the special requirements of ceramic tile, stone and brick installations. It's a perfect solution for wet areas and continuous water submersion applications.

9235 Waterproofing Membrane is a thin (.02" [.5mm]), load bearing, flexible, liquid applied waterproofing membrane system consisting of a liquid rubber polymer that is cold applied with an integral reinforcing fabric to provide a seamless waterproof membrane. It's quickly applied with a paint brush or long nap paint roller to form a flexible, seamless waterproofing membrane that bonds to a wide variety of substrates (including both common and less ordinary commercial substrates). 9235 Waterproofing Membrane also contains antimicrobial protection to inhibit the growth of mold and mildew. Equipped with Microban Anti-Microbial Protection

Uses

- Swimming pools, fountains & water features
- Shower pans, stalls and tub surrounds
- Bathrooms & laundries (industrial, commercial & residential)
- Spas and hot tubs
- Kitchens & Food Processing Areas
- Terraces & balconies over unoccupied spaces
- Countertops
- Facades
- Steam rooms (when used in conjunction with a vapor barrier)

Advantages

- Equipped with anti-microbial technology - Inhibits the growth of stain-causing bacteria on the waterproofing membrane.
- Safe - No solvents and non-flammable. Interior and exterior use.
- Vertical and horizontal surfaces (including ceilings).
- Thin—only 0.02" (0.5 mm) thick when cured.
- Anti-fracture protection of up to 1/8" (3 mm) over shrinkage and other non-structural cracks.
- "Extra Heavy Service" rating per TCNA performance levels (RE: ASTM C627 Robinson Floor Test).
- IAPMO and ICC Approval.
- Applies quickly with a paint brush or roller—no special mixing or application equipment needed.
- Fast cure—normally ready in hours for finishes.
- Install tile brick and stone directly onto membrane.
- UL GREENGUARD GOLD certified.
- Easy cleanup—just use water while fresh.
- Protects concrete & reinforcing steel from corrosion.

Suitable Substrates

- Concrete
- Cement Mortar Bed
- Cement Plaster
- Concrete and Brick Masonry
- Exterior Glue Plywood (Interior Only)
- Gypsum Wallboard
- Ceramic Tile and Stone
- Cement Terrazzo
- Cement Backer Board
- Gypsum Wallboard (Interior use only, non-wet areas)
- Self-Leveling and Patching Compounds

Packaging

- 6GAL (23L) PAIL
- 2GAL (7.6L) CARTON

Approximate Coverage

Full Unit: 300 ft² (27.8 m²)
Mini Unit: 75 ft² (7 m²)

Shelf Life

Factory sealed containers of this product are guaranteed to be of first quality for two (2) years if stored at temperatures >32°F (0°C) and <110°F (43°C) and off the ground in a dry area.

Limitations

- Do not use as a primary roofing membrane over occupied space. For more information in installation of tile over wood decks, or, over occupied or finished spaces please refer to TDS 157 “Exterior Installation of Tile and Stone Over Occupied Space.”
- Allow wet mortars to cure for 7 days at 70°F (21°C) prior to installing 9235 Waterproofing Membrane.
- Use LATAPOXY® 300 Adhesive for installing green marble or water sensitive stone, resin-backed stone or tile and agglomerates.
- Do not use over expansion joints, structural cracks or cracks with vertical differential movement.
- Do not use over cracks >1/8" (3 mm) in width|Do not use as a vapor barrier (especially in steam rooms)
- Not for use directly over particle board, luan, Masonite®, or hardwood floors.|Use white mortar for white or light-colored marble or stone.
- Do not expose unprotected membrane to sun or weather for >30 days.
- Do not expose to negative hydrostatic pressure, excessive vapor transmission, rubber solvents or ketones.
- Must be covered with ceramic tile, stone, brick, dry pack thick bed mortars (non-submerged applications), terrazzo or other traffic-bearing course.
- Use protection board for temporary cover.
- Obtain approval by local building code authority before using product in shower pan applications.
- Follow all applicable building codes having jurisdiction.
- Do not install directly over single layer wood floors, plywood tubs/showers/ fountains or similar constructs.
- Not for use under self-leveling underlayments or decorative wear surfaces.
- Not for use beneath cement or other plaster finishes. Consult with the plaster manufacturer for their recommendations when a waterproof membrane is required under plaster finishes.

Cautions

- Consult SDS for safety information.

- Surface temperature must be >45°F (7°C) during installation and for 24 hours thereafter
- Protect from traffic or water until fully cured
- Allow membrane to cure fully (typically 7 days @ 70°F/21°C) before flood testing; flood test prior to applying tile or stone
- Cold weather will require a longer cure time

4. TECHNICAL DATA



Applicable Standard

- ANSI A118.10
- ANSI A118.12
- Germany Tile Association (ZDB) 02–1988
- FHA4900.1 Section 615.5
- Federal Specification TT-C–00555

Physical Properties

Physical Property	Test Method	9235 Waterproofing Membrane
Fungus Resistance	ANSI A118.10 (4.1)	Pass
Seam Strength	ANSI A118.10 (4.2)	>95 lbs/inch width (>166.4 N/cm width)
Breaking Strength	ANSI A118.10 (4.3)	2400 lbs/in ² (16.5 MPa)
Dimensional Stability	ANSI A118.10 (4.4)	No Change
Waterproofness	ANSI A118.10 (4.5)	Pass
Shear Strength	ANSI A118.10 (5.6)	280 psi (1.9 MPa)
System Performance	ANSI A118.10 (6); ASTM C627; TCA Rating [^]	Cycles 1–14 "EXTRA HEAVY"
Water Permeance	Fed. Spec. TT-C-00555 (Mod.)	Excellent (E)
Water Vapor Transmission	ASTM E96–80 (Inverted Water Method)	2.4 grains/h•ft ² (1.6 g/h•m ²)
Water Vapor Permeance	ASTM E96–80 (Inverted Water Method)	2.9perms (165.5 ng/Pa•s•m ²)
Elongation	ASTM D751–89	20–30%
Thickness (+/-)	LIL 1013–92	0.02" (0.5 mm)
Chemical Resistance NA=Not Affected	Full Immersion 90 day	Brine Solution NA Sugar Solution NA Milk NA 10% Citric Acid NA 3.5% HCl Acid NA 5% Acetic Acid NA 1 %Alkali NA Toluol Softens Urine NA CaCl ₂ NA

Service Temperature	LIL 1016–92	-20°–280°F (-29°–138°C)
Crack Suppression	ANSI A118.12.5.4	Pass 1/8" (3 mm)

^ Tile Council of North America Service Rating Categories

The data in the above table shall be used by the Project Design Professional to determine suitability, placement, building code conformance and over-all construct appropriateness of a given installation assembly.

Specifications subject to change without notification. Results shown are typical but reflect test procedures used. Actual field performance will depend on installation methods and site conditions.

5. INSTALLATION

Approvals

- ICC Evaluation Service Report ESR–1058
- IAPMO/Uniform Plumbing Code File No. 3524 (shower pan liner)
- Michigan State Construction Code Commission Certificate of Acceptability No. 1234 P–A
- Oregon Building Codes Agency Ruling No. 92–12P
- Allegheny County Plumbing Advisory Board Article XV
- Los Angeles Board of Building And Safety Commissioners Approval M–980031
- City of Orlando—Certificate of Acceptability
- Singapore Institute of Standards and Industrial Research
- UL GREENGUARD Gold

The following overview provides basic installation information. Refer to Data Sheet WPAF.5 (included in unit) for complete instructions or visit

www.laticrete.com.

Surface Preparation

Surface temperature must be 45 – 90°F (7 – 32°C) during application

and for 24 hours after installation. All substrates must be structurally sound, clean and free of dirt, oil, grease, paint, laitance, efflorescence, concrete sealers or curing compounds. Make rough or uneven concrete smooth to a wood float or better

finish with a LATICRETE® underlayment. Do not level with gypsum or asphalt based products. Maximum deviation in plane must not exceed 1/4" in 10 ft (6 mm in 3 m) with no more than 1/16" in 1 ft (1.5 mm in 0.3 m) variation between high spots. Dampen hot, dry surfaces and sweep off excess water—installation may be made on a damp surface. New concrete slabs shall be damp cured and a minimum of 14 days old before application. Maximum amount of moisture in the concrete substrate should not exceed 5 lbs./1000ft² (283 μ/s□m) 24 hrs. per

ASTM F1869 or 75% relative humidity as measured with moisture probes per ASTM F-2170.

1. Installer must verify that deflection under all live, dead and impact loads of interior plywood floors does not exceed industry standards of L/360 for ceramic tile and brick or L/480 for stone installations where L=span length.
2. Minimum construction for interior plywood floors: **SUBFLOOR:** 5/8" (15 mm) thick exterior glue plywood, either plain with all sheet edges blocked or tongue and groove, over bridged joints spaced 16" (400 mm) o.c. maximum; fasten plywood 6" (150 mm) o.c. along sheet ends and 8" (200 mm) o.c. along intermediate supports with 8d ring-shank, coated or hot dip galvanized nails (or screws); allow 1/8" (3 mm) between sheet ends and 1/4" (6 mm) between sheets edges; all sheet ends must be supported by a framing member; glue sheets to joints with construction adhesive; **UNDERLAYMENT:** 5/8" (15 mm) thick exterior glue plywood fastened 6" (150 mm) o.c. along sheet ends and 8" (200 mm) **Expansion Joints** o.c. in the panel field (both directions) with 8d ring-shank, coated or hot dip galvanized nails (or screws); allow 1/8" (3 mm) to 1/4" (6 mm) between sheets and 1/4" (6 mm) between sheet edges and any abutting surfaces; offset underlayment joints from joints in subfloor and stagger joints between sheet ends; glue underlayment to subfloor with construction adhesive. Refer to Technical Data Sheet 152 "Requirements for Direct Bonding of Ceramic or Stone Tiles Over Wood Floors" for complete details.

Pre-Treat Cracks & Joints

Apply a liberal coat^^ of 9235 Waterproofing Membrane Liquid approximately 8" (200 mm) wide over substrate cracks, cold joints, control joints and board joints using a paint brush or roller (heavy napped roller cover). Place 6" (150 mm) wide Waterproofing/Anti-Fracture Fabric into the wet 9235 Waterproofing Membrane Liquid. Press down on Waterproofing/Anti-Fracture Fabric with brush or roller until the 9235 Waterproofing Membrane Liquid "bleeds" through from below. Then apply another liberal coat^^ of 9235 Waterproofing Membrane Liquid over the entire surface of the Waterproofing/Anti-Fracture Fabric.

Pre-Treat Coves, Corners & Seams

Apply a liberal coat^^ of 9235 Waterproofing Membrane Liquid approximately 8" (200 mm) wide over substrate coves, corners, seams, joints and changes in plane using a paint brush or roller (heavy napped roller cover). Fold 6" (15 cm) wide Waterproofing/Anti-Fracture Fabric in half and place it into the coat^^ of wet 9235 Waterproofing Membrane Liquid. Flash Waterproofing/Anti-Fracture Fabric 3" (75 mm) up walls and other vertical surfaces. Press down on Waterproofing/Anti-Fracture Fabric with brush or roller until the 9235 Waterproofing Membrane Liquid "bleeds" through from below. Then apply another liberal coat^^ of 9235 Waterproofing Membrane Liquid over the entire surface of the Waterproofing/Anti-Fracture Fabric.

Pre-Treat Drains

Drains must be of the clamping ring type, with weepers

and as per ASME A112.6.3. Cut a square of Waterproofing/Anti-Fracture Fabric approximately 38" x 38" (965 mm x 965 mm). In the center of the Waterproofing/Anti-Fracture Fabric square, cut a hole that matches the diameter of the drain throat as closely as possible. Apply a liberal coat^{^^} of 9235 Waterproofing Membrane Liquid around and over the bottom half of drain clamping ring. Center the circular cutout over the drain throat and imbed the Waterproofing/Anti-Fracture Fabric square into the 9235 Waterproofing Membrane Liquid, encircling the drain throat as closely as possible. Cover with a second coat^{^^} of 9235 Waterproofing Membrane Liquid. When dry, apply a LATASIL™ bead where the Waterproofing/Anti-Fracture Fabric square cutout meets the drain throat. Be sure not to block weep holes on the clamping ring drain with the LATAIL. Install top half of drain clamping ring.

Pre-Treat Penetrations

Pack any gaps around pipes, lights or other penetrations with a compressible backer rod and LATASIL. Apply a liberal coat^{^^} of 9235 Waterproofing Membrane Liquid around penetration opening. Imbed pieces of 6" (150 mm) wide Waterproofing/Anti-Fracture Fabric into 9235 Waterproofing Membrane Liquid. Cover with a second coat^{^^} of 9235 Waterproofing Membrane Liquid. When dry, seal flashing with LATASIL.

Expansion Joints

Pre-treat

Apply a liberal coat^{^^} of 9235 Waterproofing Membrane Liquid around and down into substrate expansion joints. Loop 6" (150 mm) wide Waterproofing/Anti-Fracture Fabric down into joint to accommodate all potential movement. Cover with a second layer of 9235 Waterproofing Membrane Liquid^{^^}.

Crack Isolation (Partial Coverage)

Crack suppression must be applied a minimum of 3 times the width of the tile or stone being installed. The tile installed over the crack cannot be in contact with the concrete.

Follow TCNA Method F125 for the treatment of hairline cracks, shrinkage cracks, and saw cut or control joints: Apply a liberal coat^{^^} of 9235 Waterproofing Membrane liquid to a minimum of three (3) times the width of the tile and immediately apply the Waterproofing/Anti-Fracture Fabric into the wet liquid. Press firmly with brush or roller to allow complete "bleed through" of liquid. Immediately apply another liberal coat^{^^} of 9235 Waterproofing Membrane liquid over the fabric and allow to dry.

If waterproofing is required, in addition to crack suppression, the entire field must be treated and a third coat of 9235 Waterproofing liquid must be applied over the entire treated area after the first coat has dried. Treat closest joint to crack, saw cut, or cold joint with LATASIL™.

Main Application Waterproofing

Allow any pre-treated areas to dry to the touch. Apply a liberal coat^{^^} of 9235 Waterproofing Membrane Liquid with brush or roller over substrate including pre-treated areas. Lay Waterproofing/Anti-Fracture Fabric into wet

9235 Waterproofing Membrane Liquid and smooth out any wrinkles. Press Waterproofing/Anti-Fracture Fabric with brush or roller until 9235 Waterproofing Membrane Liquid "bleeds" through to surface. Lap seams approximately 2" (50 mm). Flash 9235 Waterproofing Membrane up over pre-treated coves and corners, so such areas have two layers of Waterproofing/Anti-Fracture Fabric. Apply another liberal coat^{^^} of 9235 Waterproofing Membrane Liquid over Waterproofing/Anti-Fracture Fabric to saturate it. Let topcoat dry to the touch, approximately 1–3 hours @ 70°F (21°C) and 50% RH. Apply another liberal coat^{^^} of 9235 Waterproofing Membrane Liquid to seal entire surface. When last coat has dried to the touch, inspect final surface for pinholes, voids, thin spots or other defects. Use additional 9235 Waterproofing Membrane Liquid to seal defects.

^{^^} Wet coat thickness is 15 – 22 mils (0.4 – 0.6 mm) consumption per coat is -0.01/gal/ft² (-0.4 L/m²); coverage per coat is – 100 ft²/gal (-2.5m²/L). Use wet film gauge to check thickness

Interior CBU and Gypsum Wallboard

Waterproofing/Anti-Fracture Fabric and the third coat of 9235 Waterproofing Membrane Liquid may be omitted from main applications over interior walls and other vertical surfaces made with cementitious backer units (CBU) or gypsum wallboard. However, coves, corners, seams and board joints must be pre-treated as described above.

Protection

Provide protection for newly installed membrane, even if covered with a thin bed ceramic tile, stone or brick installation, against exposure to rain or other water for a minimum of 5 days @ 70°F (21°C) and 50% RH.

Flood Testing

Allow membrane to cure fully before flood testing, typically 7 days @ 70°F (21°C) and 50% RH. Cold and/or wet conditions will require a longer curing time. For more information for flood testing requirements and procedures refer to TDS 169 "Flood Testing Procedures" found at www.laticrete.com

Installing Finishes

Once 9235 Waterproofing Membrane has dried to the touch, ceramic tile, stone or brick may be installed by the thin bed method with a Latex or Polymer Fortified Thin-Set Mortar. Allow 9235 Waterproofing Membrane to cure 7 days at 70°F (21°C) and 50% RH before covering with, thick bed mortar, screeds, toppings, coatings, epoxy adhesives, terrazzo or moisture sensitive resilient or wood flooring. DO NOT use solvent-based adhesives directly on 9235 Waterproofing Membrane.

Drains & Penetrations

Allow for a minimum 1/4" (6 mm) space between drains, pipes, lights or other penetrations and surrounding ceramic tile, stone or brick. Use LATASIL and foam backer rod to seal space—do not use a grout or joint filler mortar.

Control Joints

Ceramic tile, stone and brick installations must include sealant filled joints over any control joints in the substrate. However, the sealant filled joints can be

offset horizontally, by as much as one tile width from the substrate control joint location, to coincide with the grout joint pattern.

Expansion Joints

Ceramic tile, stone and brick installations must include expansion joints at coves, corners, other changes in substrate plane and over any expansion joints in the substrate. Expansion joints in ceramic tile, stone or brickwork are also required at perimeters, at restraining surfaces, at penetrations and at the intervals described in Tile Council of North America, Inc. (TCNA) Handbook Installation Method EJ171. Use LATASIL and backer rod.

Cleaning

While wet, 9235 Waterproofing Membrane Liquid can be washed from tools with water.

6. AVAILABILITY AND COST

Availability

LATICRETE materials are available worldwide.

For Distributor Information, Call:

Toll Free: 1.800.243.4788
Telephone: +1.203.393.0010

For on-line distributor information, visit LATICRETE at laticrete.com

Cost

Contact a LATICRETE Distributor in your area.

7. WARRANTY

See 10. FILING SYSTEM:

- DS 025.0: 25 Year System Warranty
- DS 230.10: 10 Year System Warranty
- DS 230.13: 1 Year Product Warranty
- DS 230.15APD: LATICRETE 15 Year Tile & Stone System Warranty
- DS 230.99: LATICRETE Lifetime System Warranty (United States and Canada)

8. MAINTENANCE

LATICRETE and LATAPOXY grouts require routine cleaning with a neutral pH soap and water. All other LATICRETE and LATAPOXY materials require no maintenance but installation performance and durability may depend on properly maintaining products supplied by other manufacturers.

9. TECHNICAL SERVICES

Technical Assistance

Information is available by calling the LATICRETE Technical Service Hotline:

Toll Free: 1.800.243.4788, ext. 1235
Telephone: +1.203.393.0010, ext. 1235
Fax: +1.203.393.1948

Technical and Safety Literature

To acquire technical and safety literature, please visit our website at laticrete.com.

10. FILING SYSTEM

Additional product information is available on our website at laticrete.com. The following is a list of related documents:

- DS 230.13: LATICRETE Product Warranty
- DS 230.15: LATICRETE 15 Year System Warranty (United States and Canada)
- DS 025.0: LATICRETE 25 Year System Warranty (United States and Canada)
- DS 230.99: LATICRETE Lifetime System Warranty (United States and Canada)

LATICRETE International, Inc.

One LATICRETE Park North, Bethany, CT 06524-3423 USA • 1.800.243.4788 • +1.203.393.0010 • www.laticrete.com

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SILIKAL® RU 380 resin

Reactive medium-viscosity primer for absorbent and non-absorbent substrates/thin coatings



Expect more from your floor.

Properties

- Primer with very good adhesion on absorbent (concrete, cement screed) and non-absorbent substrates (tiles and metals)
- Rapid curing even at low temperatures
- Resin for building up a thin coating

Areas of application

SILIKAL® RU 380 resin is a medium-viscosity, solvent-free 2-component methacrylate resin system with very good adhesion on metals such as untreated steel, stainless steel (V2A), aluminium and galvanized sheet metal and other non-absorbent substrates. Curing and adhesion tests will generally have to be carried out.

Advice on application

Once the substrate has been inspected, it normally needs to be pre-treated. The surfaces must be dry, firm and load-bearing and also free of dust, oil and grease and other substances which could act as a separating layer. Steel substrates must be derusted and prepared to SA 2½ in accordance with DIN 55929. Non-ferrous metals must be cleaned and prepared by sanding down or blasting.

The necessary quantity of hardener must be adjusted in light of the temperature of the building. For the exact quantities, please refer to the "Hardener dosages" table.

You must not dose less than the given quantity of hardening powder, as this will jeopardize the curing process.

You must also avoid overdosing the hardening powder, as this can likewise lead to serious curing problems.

The material must be applied as soon as the hardening powder has finished dissolving in the resin components.

The mixing time is about 2 minutes.

Before any further finishing with subsequent MMA systems, the SILIKAL® RU 380 primer resin must be completely cured.

Processing is performed using a short-pile solvent-resistant paint roller. If applying SILIKAL® RU 380 resin as a thin coating, we recommend using short-pile plush mohair rollers.

Special advice:

SILIKAL® RU 380 resin reaches its final physical properties in terms of compressive strength, final adhesion etc. after a post-reaction period which may last several hours.

1. Priming

(Use in systems A – D)

Item	Component	Guideline recipe (% by weight)	Comments	Batch for 10 litre bucket	
				10 kg	10 litres
1	SILIKAL® RU 380 resin	100 %		10 kg	10 litres
	Total:	100 %	Average consumption: approx. 300 – 400 g/m²	10 kg	10 litres
2	SILIKAL® Hardening Powder	1.0 – 3 % related to item 1	See "Hardener dosages" table for quantities	100 – 300 g	

2. Thin coating

(Use in system A)

Item	Component	Guideline recipe (% by weight)	Comments	Batch for 10 litre bucket	
				6.5 kg	6.5 Ltr.
1	SILIKAL® RU 380 resin	65.0 %		6.5 kg	6.5 Ltr.
2	SILIKAL® Filler QM	30.0 %		3.0 kg	approx. 0.8 Ltr.
3	SILIKAL® Pigment	5.0 %		0.5 kg	
	Total:	100 %	Average consumption: approx. 500 – 600 g/m²	approx. 9.8 kg	approx. 7.3 Ltr.
4	SILIKAL® Hardening Powder	1.0 – 3 % related to item 1	See "Hardener dosages" table for quantities	65 – 195 g	

The thin coating can be sprinkled with coloured flakes, natural sand or coloured sand while still fresh.

After the SILIKAL® RU 380 resin has cured, a suitable sealant can be applied.

If using as a one-colour top coat, we recommend sealing with transparent SILIKAL® R 82 resin to make the thin coating easier to clean and improve its mechanical stability (scratch resistance).

Silikal product information

October 2017

Data sheet SILIKAL® RU 380

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Silikal GmbH

✉ Ostring 23
☎ +49 (0) 61 82 / 92 35-0
🌐 www.silikal.de

63533 Mainhausen, Germany
☎ +49 (0) 61 82 / 92 35-40
@ mail@silikal.de

SILIKAL® RU 380 resin

Reactive medium-viscosity primer for absorbent and non-absorbent substrates/thin coatings



Expect more from your floor.

Characteristics of RU 380 as delivered

Property	Measuring method	Approx. value
Viscosity		180 – 250 mPa · s
Density D ₄ ²⁰	EN ISO 2811-2	0.99 g/cm ³
Flash point	DIN 51 755	+10 °C
Pot life at +20 °C (100 g, 1.5 % pbw. hardening powder)		12 – 14 min.
Application temperature		0 °C to +30 °C

Hardener dosages

Temperature	Hardening powder % pbw. *	Pot life approx. min.	Hardening time approx. min.
+0 °C	3.0	32 – 36	50 – 60
+10 °C	2.0	18 – 22	45 – 55
+20 °C	1.5	12 – 14	35 – 45
+30 °C	1.0	10 – 12	30 – 40

* The quantity of hardening powder is always related to the quantity of resin.

👁 For further information, please refer to the separate product information sheet "SILIKAL® Hardening Powder".

Equipment cleaning

The equipment can be cleaned with ethyl acetate or SILIKAL® MMA cleaner immediately after use.

Safety advice

SILIKAL® RU 380 resin is highly flammable as delivered. Please refer to the current safety data sheet for information on how to handle the material safely.

CE-labelling

DIN EN 13 813 "Screed material and floor screeds - Screed material - Properties and requirements" (Jan. 2003) specifies requirements for screed material that is used for floor constructions in interiors.

Plastic coatings and sealers are also covered by this standard. Products that conform to the above standard are to be identified with the CE mark.

¹ Last two digits of the year in which the ce marking was affixed.

² NPD = No performance determined.

³ Refers to a smooth surface without broadcasting.

CE	
SILIKAL GmbH · Ostring 23 · 63533 Mainhausen · Germany	
10 ¹	
RU 380 - 001	
DIN EN 13813:2003-01	
Synthetic resin screed/coating for use in buildings. EN 13813 SR-AR1-B1.5-IR4 (structures according to Technical Information).	
Reaction to fire:	E _{fl}
Release of corrosive substances (Synthetic Resin Screed):	SR
Water permeability:	NPD ²
Wear resistance (Abrasion Resistance):	AR 1 ³
Bond strength:	B 1.5
Impact resistance:	IR 4
Sound insulation:	NPD ²
Sound absorption:	NPD ²
Thermal resistance:	NPD ²
Chemical resistance:	NPD ²

Silikal GmbH

✉ Ostring 23
☎ +49 (0) 61 82 / 92 35-0
🌐 www.silikal.de

63533 Mainhausen, Germany
☎ +49 (0) 61 82 / 92 35-40
@ mail@silikal.de

Silikal product information

October 2017

Data sheet SILIKAL® RU 380

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SILIKAL® R 71 / R 71 re resin

Reactive, hard, low-viscosity top coat resin for dry areas



Expect more from your floor.

SILIKAL® R 71 resin (SILIKAL® R 71 re resin) is a reactive, solvent-free, low-viscosity and almost non-yellowing 2-component methacrylic resin offering high hardness and good resistance to chemicals.

The extremely low viscosity enhances the penetrative capacity of the resin in sand-sprinkled surfaces. Its high hardness guarantees outstanding resistance to chemicals.

Application

SILIKAL® R 71 resin (SILIKAL® R 71 re resin) is employed primarily as a colourless, scratch-resistant top coat for decorative coloured flakes and coloured sand surfaces.

Compared with SILIKAL® R 71 resin, SILIKAL® R 71 re resin is characterized by a reduced blue fraction. SILIKAL® R 81 resin must be used for surfaces which are used wet in the food industry.

Advice on application

Once moderately sized batches (5 – 10 kg) have been mixed with the necessary quantity of hardener as laid down in the “**Hardener dosages**” table, the resin is immediately poured onto the surface and applied crosswise, preferably by means of a paint roller. Although it is possible to spread it roughly with a rubber blade first, the dwell time of the still liquid resin until final levelling on a coloured flake surface must not be too long, as this may partly dissolve and leave colour tracks behind.

To ensure the best possible properties, the minimum and maximum coating thickness must be observed. Material consumption for smooth coatings is approx. 400 g/m² per application and on areas sprinkled with SILIKAL® Filler QS 0.7 – 1.2 mm approx. 500 g/m². If the coating thickness is exceeded (more than 800 g/m²), the resin will tend to flake and yellow. If the thickness is too low, excessively high monomer loss may occur, leading to insufficient hardness or lower resistance.

Under braking strains the thermoplastic character of the surface may lead to tyre marks which in many cases can be removed again using suitable cleaning agents. It makes sense for the user to protect the surface against damage through careful use and care. In many cases it would be advisable to ensure that fork-lift trucks are driven appropriately, black tyres are exchanged for white ones and/or a surface care agent (e. g. SILIKAL® Protect) is used.

Special advice

Hard top coats must never be applied directly on very elastic coatings, e. g. SILIKAL® RV 368 or R 61 HW resin. In these cases a moderately elasticized intermediate coat made from SILIKAL® R 61, R 62 or R 81 resin must be applied, as otherwise movement caused by temperature will lead to hairline cracks forming in the top coat.

Pigmenting

Pigmenting is possible, but SILIKAL® R 72 has the better properties in this regard. If pigmentation is nevertheless essential, 10 % pbw. of SILIKAL® Pigment Powder is usually added. To avoid lumps in the pigment, it must first be dispersed with the same quantity of resin by means of a dissolver to eliminate lumps. After the dispersion process the residual quantity of resin is added to the new pigment paste until the total content of the mix is again 10 %. You must make particularly sure that pigments which are not made by Silikal are properly tested for their compatibility and storage stability.

1. Colourless top coat

Guideline recipe and batch quantities

Item	Component	Guideline recipe (% by weight)	Comments	Batch for 10 litre bucket	
				10 kg	10 litres
1	SILIKAL® R 71 resin / SILIKAL® R 71 re resin	100 %		10 kg	10 litres
	Total:	100 %	Average consumption: 400 – 500 g/m²	10 kg	10 litres
2	SILIKAL® Hardening Powder	1 – 5 % related to item 1	See “Hardener dosages” table for quantities	100 – 500 g	

SILIKAL® R 71 / R 71 re resin

Reactive, hard, low-viscosity top coat resin for dry areas



Expect more from your floor.

2. Pigmented top coat

(Use in systems A, E)

Guideline recipe and batch quantities

Item	Component	Guideline recipe (% by weight)	Comments	Batch for 10 litre bucket	
1	SILIKAL® R 71 resin / SILIKAL® R 71 re resin	90 %		9 kg	9 litres
2	SILIKAL® Pigment Powder	10 %		1 kg	
	Total:	100 %	Average consumption: 400 – 500 g/m²	10 kg	approx. 9.5 litres
3	SILIKAL® Hardening Powder	1 – 5 % related to item 1	See “Hardener dosages” table for quantities	90 – 450 g	

Characteristics of R 71 as delivered

Property	Measuring method	Approx. value
Viscosity at +20 °C	DIN 53 015	approx. 60 – 80 mPa · s
Flow time at +20 °C, 4 mm cup	DIN 53 211	18 – 21 sec.
Density D ₄ ²⁰	DIN 51 757	0.99 g/cm ³
Flash point	DIN 51 755	+10 °C
Pot life at +20 °C (100 g, 2 % pbw. hardening powder)		approx. 15 min.
Application temperature		-5 °C to +35 °C

Characteristics of R 71 in the hardened state

Property	Measuring method	Approx. value
Density	DIN 53 479	1.18 g/cm ³
Ultimate elongation	DIN 53 455	4 %
Shore-D	DIN 53 505	78 – 80 units
Water absorption, 4 days	DIN 53 495	125 mg (50 · 50 · 4 mm)
Water vapour permeability	DIN 53 122	1.05 · 10 ⁻¹¹ g/cm · h · Pa

Hardener dosages

Temperature	Hardening powder % pbw. *	Pot life approx. min.	Hardening time approx. min.
-5 °C	5.0	25	60
0 °C	4.0	17	40
+10 °C	3.0	15	30
+20 °C	2.0	15	30
+30 °C	1.0	8	15

* The quantity of hardening powder is always related to the quantity of resin.

👁 For further information, please refer to the separate product information sheet “SILIKAL® Hardening Powder”.



Other applicable documents	Data sheet	Page
SILIKAL® Hardening Powder	SILIKAL® Hardening Powder	86 – 87
General processing information	AVH	89 – 92
Chemical resistance	CBK	100 – 101
Information on safety and protection	SUS	102 – 103
Storage and transport	LUT	104 – 106
General cleaning advice	ARH	107 – 108

Silikal GmbH & Co. KG

✉ Ostring 23
☎ +49 (0) 61 82 / 92 35-0
🌐 www.silikal.de

D-63533 Mainhausen
☎ +49 (0) 61 82 / 92 35-40
✉ mail@silikal.de

Silikal product information

Issue 2.00.A

July 2006

Data sheet SILIKAL® R 71 / R 71 re

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Division 09 67 26 - Monocolor Flooring

PART 1 - GENERAL

1.01 Work Included

- A. Work described in this section includes surface preparation and installation of Silikal reactive resin industrial floor system. Silikal 62 SL is a fast curing, 100% reactive, solid color flooring system, free of isocyanates.
- B. See drawings for locations and quantities.

1.02 Related Work - Specified elsewhere

- A. Cast-in-place concrete (Section 03300)
 - 1. See Paragraph 1.08 - Requirements for New Concrete.
- B. Painting (Section 09900)

1.03 System Description

- A. The Silikal 62 SL is a 3-4mm (1/8"-3/16") thick troweled surfacing composite of Silikal 100% reactive binder resin and Silikal Fillers with specified Silikal primer and topcoat.
- B. The Silikal coating system shall cure completely and be available to normal operations in no more than 90 minutes at Temperatures as low as 0 °C. after application of the final coat.
- C. The finished Silikal floor coating system shall be uniform in color combinations, texture, and appearance. All edges that terminate at walls, floor discontinuities, and other embedded items shall be sharp, uniform, and cosmetically acceptable with no thick or ragged edges. The Contractor shall work out an acceptable masking technique to ensure the acceptable finish of all edges.
- D. See Paragraph 3.04 and/or 3.07 for number and thicknesses of each coat/layer in each system.
- E. All resins must be manufactured and tested under an ISO 9001 registered quality system and ISO 14001 ecology management system.

1.04 Quality Assurance

- A. Manufacturer Qualifications:
 - 1. Acceptable manufacturer: Silikal GmbH, Germany.
- B. Applicator Qualifications:
 - 1. Pre-qualification requirements: Only approved applicators, licensed by Silikal shall be considered for qualification. In no case will Silikal permit the application of any of its materials by untrained, non-approved Contractor or personnel.
 - 2. Each approved applicator shall have been qualified by the Manufacturer as knowledgeable in all phases of surface preparation.
 - 3. Each approved applicator must have three (3) years experience of installing resinous flooring systems and submit a list of five projects/references as a prequalification requirement. At least one of the five projects/ references must be of equal size, quantity, and magnitude to this project as a prequalification requirement. Owner has the option to personally inspect the projects/references to accept or reject any of the Contractors prior to bid time as a prequalification requirement.
- C. Subcontractor Qualifications:
 - 1. The only approved and specified subcontractors for this resurfacing work shall be for shot-blast cleaning of the concrete substrate.
- D. Acceptance Sample:
 - 1. Representative sample of the specified flooring system shall be submitted to the Owner prior to the bidding phase of the project. All bidders shall inspect the "acceptance sample" before submitting their bids.
 - 2. The installed flooring system shall be similar to the acceptance sample in thicknesses of respective filmlayers, color, texture, overall appearance and finish.

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E. Bond Testing:

1. Surface preparation efforts shall be evaluated by conducting Bond Tests at the site prior to application of the flooring system(s).
2. See paragraph 3.03 - B or consult with Material Manufacturer for specific procedure.

F. Pre-Job Meeting

1. Owner requires a Pre-Job Meeting with representatives of Owner, Contractor/Applicator, and Material Manufacturer in attendance. The agenda shall include a review and clarification of this specification, application procedures, quality control, inspection and acceptance criteria, and production schedules. Applicator is not authorized to proceed until this meeting is held or waived by Owner.

1.05 Reference Standards

- A. ACI 308 - Standard Practice for Curing Concrete
- B. ACI 302.1R-80 - Guide for Concrete Floor and Slab Construction
- C. HACCP International Food Safety Certification System. Certified as food safe and suitable for food facilities that operate a HACCP based Food Safety Program. Food Zone Classification: SSZ.
- D. SCAQMD Rule 1113 less than 100 grams per liter VOC. ASTM D 2369-07 actual VOC less than 15 grams per liter.
- E. ISO 9001: 2000 and ISO 14001: 2005 certified.

1.06 Submittals

- A. Acceptance Sample: As required by owner, one foot square (1 ft. by 1 ft.) sample of the specified acrylic flooring system applied to hardboard or similar backing for rigidity and ease of handling.
- B. Manufacturer's Literature: Descriptive data and specific recommendations for surface preparation, mixing, and application of materials.
- C. Manufacturer's Material Safety Data Sheets (MSDS) for each respective product to be used.
- D. Cleaning and Maintenance

1.07 Delivery, Storage, And Handling

- A. All material shall be delivered in original Manufacturer's sealed containers with all pertinent labels intact and legible.
- B. Store materials in dry protected area between 25° and 80° Fahrenheit. Keep out of direct sunlight. Protect from open flame; keep all containers grounded.
- C. Follow all Manufacturer's specific label instructions and prudent safety practices for storage and handling.

1.08 Project/Site Conditions

- A. Material, air, and surface temperatures shall be in the range of 32° to 85° Fahrenheit during application and cure, unless a special formulation is being used and Manufacturer has been consulted.
- B. Relative humidity in the specific location of the application shall be less than 85 percent and the surface temperature shall be at least 5 degrees above the dew point.
- C. Conditions required of new concrete to be coated.
 1. Concrete shall be moisture cured for a minimum of 7 days at 70° F. The concrete must be fully cured for a minimum of 28 days prior to application of the coating system pending moisture testing.
 2. Surface contaminants such as curing agents, membranes, or other bond breakers should not be used.
 3. Concrete shall have a "rubbed" finish; float or darby finish the concrete (a hard steel trowel is neither necessary nor desirable).
 4. Drains should be set to the concrete grade rather than raised to the finished grade of the topping.

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- D. Concrete shall have a moisture emission rate of no more than 5 lbs. per 1000 sq. ft. per 24 hour period as determined by proper Calcium Chloride Testing. Concrete R/H must be 85% or less as measured by protimeter. Readings greater than 5 by the Calcium Chloride method or 85% by protimeter, may require a preliminary treatment with Silikal RE42.
- E. Foodstuffs are the responsibility of the Owner and shall have been removed from the area of application by the Owner or his representatives.
- F. Vapor barriers and/or suitable means shall have been installed beneath grade slabs to prevent vapor transmission. Consult technical dept.
- G. Lighting: Provide permanent lighting or, if permanent lighting is not in place, owner shall simulate permanent lighting conditions during flooring application.

1.09 Warranty

- A. Silikal warrants that materials shipped to buyers are at the time of shipment substantially free from material defects and will perform substantially according to Silikal published literature if used strictly in accordance with Silikal’s pre-scribed procedures and prior to expiration date.
- B. Silikal’s liability with respect to this warranty is strictly limited to the value of the material purchased.
- C. Silikal has no responsibility for the application and processing of products and is under no circumstances liable to any third party whatsoever.

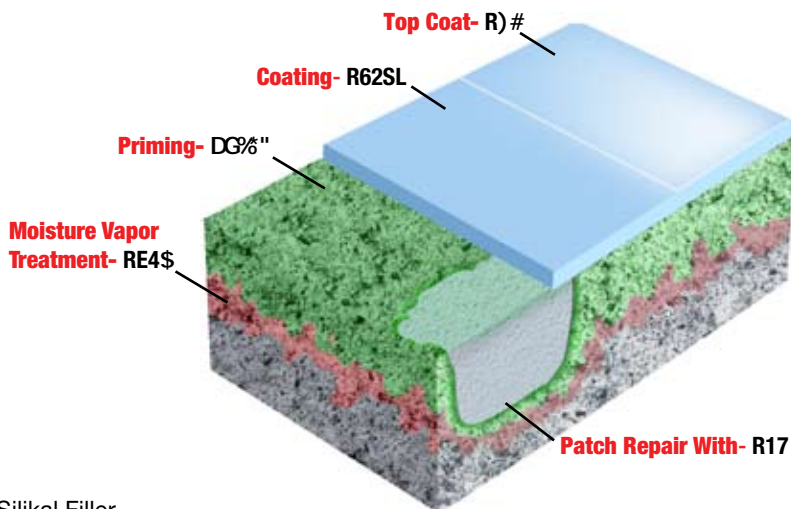
PART 2 - PRODUCTS

2.01 Acceptable Manufacturers

- A. Silikal GmbH, Germany

2.02 Materials

- A. Silikal 62 Self Leveling Monocolor Flooring
 - 1. Moisture Vapor Treatment (if required)
Silikal RE42
 - 2. Saturating Primer/Silikal Coat:
Silikal RU380
 - 3. Patching/Sloping (if required)
Silikal R17 Polymer Concrete
 - 4. Coving (if required):
Silikal HK31 with #10-#12 mesh dry silica sand.
 - 5. Topping:
Silikal R62 SL, consisting of Silikal R62 resin and Silikal Filler
 - 6. Topcoat(s):
Silikal R71 Colorless Silikal Topcoat Resin.
 - 7. Aluminium Oxide (if required)



*This diagram should be used only as a visual aid.

2.02.01 Product Performance Criteria

- A. Silikal RE42
 - 1. Percentage Reactive Resin 100%
 - Percentage Solids 100%
 - 2. Water Pressure Resistance (3 days at 72 psi) Passed
 - 3. Resistance to Diffusion Against H₂O 0.3g/m² • day
 - 4. Tensile Bond Strength 475 psi

Silikal America

609-B Fertilla Street Carrollton, GA 30117
 888.830.1404 770.830.9213
 www.silikalamerica.com info@silikalamerica.com

B. Silikal RU380

- 1. Percentage Reactive Resin 100%
- Percentage Solids 100%
- 2. Water Absorption, Wt. % (ASTM D570): less than 0.06
- 3. Tensile Strength, psi (ASTM D638)..... 3,550 psi.
- 4. Tensile Modulus, psi X 10 to the 5th (ASTM D638): 2.1
- 5. Coefficient of Thermal Expansion, in./in./deg. F (ASTM D696): 0.000035
- 6. Electrical Resistivity (ASTM D257):
- Volume Resistance, ohm-cm: 10¹⁵
- Surface Resistance, ohm: 10¹²
- 7. Water Vapor Transmission (DIN 53122), g/cm-hr-mm Hg X 10⁻⁹: 1.4

C. Silikal R17 Polymer Concrete

- 1. Percentage of reactive resin 100%
- 2. Water Absorption, Wt. % (ASTM D570): 0.02
- 3. Tensile Strength, psi (ASTM D638)..... 4,000 psi.
- 4. Tensile Modulus, psi X 10 to the 5th (ASTM D638): 1.2
- 5. Coefficient of Thermal Expansion, in./in./deg. F (ASTM D696) psi x10⁻⁶: 18
- 6. Compressive Strength, psi (ASTM C39) 9,200 psi.
- (ASTM C109) 11,000 psi.

D. Silikal R62 SL Topping

- 1. Percentage of reactive resin: 100%
- Percentage of solids: 100%
- 2. Water Absorption, Wt. % (ASTM D570): 0.04
- 3. Compressive Strength, psi (ASTM C109): 6,000-8,000 psi.
- (ASTM D695): 6,000 psi.
- 4. Tensile Strength, psi (ASTM D638): 3,625 psi.
- 5. Tensile Modulus, psi (ASTM D638): 720,000 psi.
- 6. Flexural Strength, psi (ASTM D790): 3,500 psi.
- 7. Coefficient of Thermal Expansion, in./in./deg. F (ASTM D696): 0.000019
- 8. Electrical Resistivity, (ASTM D257) Volume Resistance, ohm-cm: 10¹⁴
- 9. Chemical Resistance, ASTM D543:
- Effect of weak acids: none
- Effect of strong acids: slight
- Effect of alkalis: none
- Effect of salt solutions: none
- Effect of oil, grease: none
- Effect of sunlight (UV radiation): none

E. Silikal R71 Colorless Topcoat Resin

- 1. Percentage Reactive Resin: 100%
- Percentage Solids: 100%
- 2. Water Absorption, Wt. % (ASTM D570): 0.5
- 3. Tensile Strength, psi (ASTM D638): 3,555 psi.
- 4. Tensile Modulus, psi (ASTM D638): 210,000 psi.
- 5. Coefficient of Thermal Expansion (ASTM D696) in./in./deg. F: 0.000035

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6. Electrical Resistivity (ASTM D257):	
Volume Resistance, ohm-cm:	10 ¹⁵
Surface Resistance, ohm:	10 ¹²
7. Water Vapor Transmission (DIN 53122) g/cm-hr-mm Hg X 10 ⁻⁹ :.....	1.43
8. Chemical Resistance, ASTM D543:	
Effect of weak acids:	none
Effect of strong acids:	slight
Effect of alkalis:.....	none
Effect of salt solutions:	none
Effect of oil, grease:	none
Effect of sunlight (UV radiation):	none

2.02.02 Product Installation & Application Criteria

- A. All Silikal Material Systems Excepting Moisture Vapor Treatment:
 - 1. Pot Life at 68° F:..... 10-15 minutes
 - 2. Cure Time at 68° F:.....60 minutes
 - 3. Recoat Time at 68° F:..... 60-90 minutes

2.03 Mixes

- A. Follow manufacturer’s prescribed procedures and recommendations.

PART 3 - EXECUTION

3.01 Prework Inspection

- A. Examine all surfaces to be coated with Silikal material systems and report to the Owner and/or Engineer any conditions that will adversely affect the appearance or performance of these coating systems and that cannot be put into acceptable condition by the preparatory work specified in Paragraph 3.03.
- B. Do not proceed with application until the surface is acceptable or authorization to proceed is given by the Engineer.
- C. In the event that Applicator has employed all acceptable methods of surface preparation and cannot remedy adverse conditions that would lead to failure of the installation, Applicator shall withdraw from the contract and Owner will be financially responsible only for preparation efforts.

3.02 General

- A. Material storage area must be selected and approved by Applicator and Owner or his representative.
- B. Owner will furnish ___ V ___ Phase electricity and water for use by Applicator.
- C. If existing ventilation is inadequate, Applicator will provide sufficient ventilation to allow complete air exchange every five (5) minutes.
- D. Owner shall provide means for disposal of construction waste.
- E. Applicator will protect adjacent surfaces not to be coated with masking and/or covers. Owner’s equipment shall be protected from dust, cleaning solutions, and flooring materials.

3.03 Preparation

A. Surface Preparation - General

1. Concrete substrate must be clean and dry. Dislodge dirt, mortar spatter, paint overspray, and other dry surface accumulations and contamination by scraping, brushing, sweeping, vacuuming, and/or compressed air blow-down.
2. New concrete: See 1.08 - C for requirements.
3. Surfaces that are heavily contaminated shall be cleaned with the appropriate degreaser, detergent, or other appropriate cleaner/surfactant followed by thoroughly rinsing with fresh water to remove the accumulation prior to mechanical cleaning efforts. Mechanical cleaning will not remove such deposits, but only drive them deeper.
4. Concrete shall have a moisture emission rate of no more than 5 lbs. per 1000 sq. ft. per 24 hour period as determined by proper Calcium Chloride Testing and no more than 85% R/H as measured by Protimeter

B. Bond Testing

1. The applicator shall evaluate all surface preparation by conducting bond tests at strategic locations.
2. Mix six (6) ounces of the primer to be used in the application with 5% by volume Silikal Powder Hardener. Add #10-#12 mesh, dry quartz sand until an easily trowelable mixture is obtained. Apply palmsized patties 1/8" to 1/4" thick.
3. After one (1) hour at (68° F.), patties must be cured tack-free and cooled to ambient temperature of concrete. Remove patties with hammer and chisel and examine fracture/delamination plane. Concrete with fractured aggregate must be attached to the entire underside of the patty.
4. If only laitance or a small amount of concrete is attached or if interface between patty and substrate is tacky, further substrate preparation is required.
5. If further surface preparation is required, bond tests shall be conducted again when this has been completed.
6. If no amount or kind of surface preparation produces satisfactory bond tests, the applicator shall report that to the Owner, Engineer, and Manufacturer.

C. Mechanical Surface Preparation and Cleaning

1. All accessible concrete floor surfaces shall be mechanically blast cleaned using a mobile steel shot, dust recycling machine such as BLASTRAC®, or approved equivalent. All surface and embedded accumulations of paint, toppings, hardened concrete layers, laitance, power trowel finishes, and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a profile similar to 40 grit sandpaper and exposing the upper fascia of concrete aggregate.
2. Floor areas inaccessible to the mobile blast cleaning machines shall be mechanically abraded to the same degree of cleanliness, soundness, and profile using vertical disc scarifiers, starwheel scarifiers, needle guns, scabblers, or other suitably effective equipment.
3. After blasting, traces or accumulations of spent abrasive, laitance, removed toppings, and other debris shall be removed with brush or vacuum.
4. Conduct Bond Tests to check adequacy of surface preparation. See Paragraph 3.03 - B (Bond Testing).
5. Application of the respective specified material system(s) must be completed before any water or other contamination of the surface occurs.

3.04 Installation

A. Application of Silikal 62 SL flooring system consists of:

1. applying moisture vapor treatment (if required)
2. applying the primer,
3. applying coving (if required),
4. performing patching and sloping with polymer concrete (if required),
5. re-priming polymer concrete areas
6. applying the topping,
7. applying the topcoat(s),

Time for curing (45 - 60 minutes) shall be allowed between each coat.

Thicknesses are specified below and/or in Paragraph 3.07.

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- B.** Open only the containers of component materials to be use in each specific application as needed. Refer to Manufacturer's data sheets for pot-life/temperature relationship to determine size of batches to mix and mix ratios for each respective coat of the system.
- C.** Measure, add, and mix the Silikal BP-Powder Hardener into the respective resin components in the proportions recommended by the Material Manufacturer. Pot life is short, so mix only as much material at a time as can be easily and efficiently applied.

3.04.01 Moisture Vapor Treatment (if required)

- A.** Mix moisture vapor treatment products as recommended by manufacturer.
- B.** Pour out all resin onto the concrete surface and spread it with a squeegee. After a short operating time (appr. 10 minutes) the excess must be removed with the squeegee. The remaining resin can be rolled out with a lint free resin proof roller.
Resin films as well as the building of puddles have to be avoided!
The waiting time between the coats depends on the absorbency of the substrate and is normally between one and three hours. Before applying the second coat if required, the impregnation of the first coat into the substrate should be evident.
- C.** If required, repeat the above process.
During application of the treatment take care that there is no film building at the surface. The surface texture has to be maintained after every step.

3.04.02 Prime Coat

- A.** Mix primer components according to manufacturers instructions.
- B.** Pour the mixture batches onto the floor surface and use a 9" or 18" wide, 1/2" - 3/4" thick-napped, solvent resistant paint roller to roll out the material at a rate of 100 sq. ft./ gal. to form a uniform, continuous film, ensuring that all crevices, cracks, other surface discontinuities have been saturated and coated. Use a paint brush to reach areas inaccessible to the roller. Work quickly and deliberately; the pot life is short (10 -15 minutes). Do not leave any "puddles"; roll out any such accumulations.
- C.** Allow the primer coat to cure.
- D.** If any of the concrete has absorbed all of the primer or if the concrete still has a dry look, reprime these areas before applying the next layer.

3.04.03 Coving (if required)

- 1. Surface Preparation
 - A.** If concrete walls are to be painted prior to installation of cove base, the bottom portion of the walls shall remain uncoated to the height of the cove base to insure a proper bond to the concrete wall.
 - B.** If walls are constructed of a non-compatible material or if a coating exists, a backer board of 1/2" cement board cut to the desired height of the cove base needs to be installed. The top of the backer board should be cut at a 45° angle to create a "beveled" edge.
 - C.** If a backer board needs to be installed it shall be fastened using a high grade construction adhesive as well as counter sunk screws or concrete masonry anchors.
- 2. System Description
 - A.** Cove base shall be installed according to manufacturer's recommendations and shall be:
 - 1. Application area requires prime coat according to 3.04.02
 - 2. Trowel-On Cove Base consisting of a trowel applied radius/base mix with a termination strip installed at the top of the base.
 - B.** Cove base will receive a broadcast and top coat consistent with flooring system.

3.04.04 Patching/Sloping (If Required)

- A.** Mix polymer concrete components as recommended by the Material Manufacturer.
- B.** Use mixture to repair any damaged concrete, or to slope any areas as needed.
- C.** Once cured, material must be re-primed before next layer is applied.

3.04.05 Topping

- A. Size the batches, and mix according to Manufacturer's instructions. The entire batch should be poured and spread at once, i.e., do not let material set in pail.
- B. Spread the topping material with a gauge rake set to a depth of 3/16". Lightly trowel to a uniform thickness of 3/16" as necessary.
- C. Allow the topping to cure.

3.04.06 Top Coat

- A. Apply with clean rollers at a rate of 80 - 90 sq. ft./gal. in the same way as the Silikal Primer was applied as described in Paragraph 3.04.02.
- B. (If Required) Broadcast aluminium oxide, or other suitable material into wet topcoat resin; size and rate as determined by owner.
- C. Allow topcoat to cure. Floors without aluminium oxide broadcast may be lightly sanded if required. Vacuum all dust, paying particular attention to edges and corners.

3.04.07 Second Top Coat

- A. Apply with clean rollers at a rate of 100 - 125 sq. ft./gal. in the same way as the Silikal Primer was applied as described in Paragraph 3.04.02.
- B. Allow topcoat to cure.

3.05 Field Quality Control/Inspection

- A. Applicator shall request acceptance of surface preparation from the Engineer before application of the prime/seal coat.
- B. Applicator shall request acceptance of the prime coat from the Engineer before application of subsequent specified materials.

3.06 Cleaning

- A. Applicator shall remove any material spatters and other material that is not where it should be. Remove masking and covers taking care not to contaminate surrounding area.
- B. Applicator shall repair any damage that should arise from either the application or clean-up effort.

3.07 Coating Schedule

- A. Moisture vapor treatment shall be Silikal RE42 application rate shall be approximately 220 sq. ft. per gallon (approx. 7 mils)
- B. Primer shall be Silikal RU380 application rate shall be approx. 100 sq.ft. per gallon (approx. 16 mils).
- C. Patching/Sloping material shall be R17.
- D. Coving shall be Silikal HK31 per manufacturers recommendations.
- E. Body coat shall be Silikal R62 SL, applied with a gauge rake set at 1/8" for a rate of 40 sq. ft. per batch.
- F. Clear topcoat shall be Silikal R71 ; apply at the rate of 80 - 90 sq. ft. per gallon for the first coat and 90 - 120 sq. ft. per gallon for the second application.



Please refer to the data sheets for the relevant Silikal resins for the guideline recipes, material consumption, hardener quantities

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☎ 888.830.1404 📞 770.830.9213
🌐 www.silikalamerica.com @ info@silikalamerica.com

05-20 - 62 SL

Guide Specification

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SECTION 15831 - COMMERCIAL FANS (Basis of Design)

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. The ceiling-mounted circulation fan is the model scheduled with the capacities indicated. The fan shall be furnished with a remote control and SenseME™ Technology as manufactured by Big Ass Fans.
- B. Summary of Work
 - 1. Installation of the fan, wireless network, miscellaneous or structural metal work (if required), field electrical wiring, cable, conduit, fuses, and disconnect switches, other than those addressed in the installation scope of work, shall be provided by others. Installation services are available through Big Ass Fans. Consult the appropriate installation scope of work for information on the available installation options, overview of customer and installer responsibilities, and details on installation site requirements.

1.2 RELATED SECTIONS

- A. 15000 Heating, Ventilating, and Air Conditioning (HVAC)
- B. 16000 Electrical

1.3 REFERENCES

- A. International Organization for Standardization (ISO)
- B. National Electrical Code (NEC)
- C. National Fire Protection Association (NFPA)
- D. Underwriters Laboratory (UL)
- E. Nationally Recognized Testing Laboratory (NRTL)

1.4 SUBMITTALS

- A. Shop Drawings: Drawings detailing product dimensions, weight, and attachment methods
- B. Product Data: Specification sheets on the ceiling-mounted fan, specifying electrical and installation requirements, features and benefits, and controller information
- C. Revit Files: Files provided for architectural design
- D. Installation Guide: The manufacturer shall furnish a copy of all installation, operation, and maintenance instructions for the fan. All data is subject to change without notice.

1.5 QUALITY ASSURANCE

- A. Certifications
 - 1. Safety
 - a. The fan assembly, as a system, shall be Nationally Recognized Testing Laboratory (NRTL)-certified and built pursuant to the guidelines set forth by UL standard 507 and CSA standards 22.2 No. 60335-1 and 22.2 No. 113.
 - b. The fan assembly, as a system, shall be CE- and UKCA-compliant.
 - c. The fan motor shall be NRTL-certified and built pursuant to the following standards.
 - a. United States
 - a) UL 1004-1. Standard for Safety for Rotating Electrical Machines - Part 1 General Requirements.
 - b) UL 1004-3. Standard for Safety for Thermally Protected Motors.
 - c) UL 1004-7. Standard for Safety for Electronically Protected Motors.
 - 2. Sustainability Certification
 - a. ENERGY STAR® certification – ENERGY STAR Most Efficient 2021

- B. Manufacturer Qualifications
 1. The fan and any accessories shall be based on Big Ass Fans, which has a minimum of twenty (20) years of product experience.
 2. ISO 9001-compliant

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver product in original, undamaged packaging with identification labels intact. The fan shall be new, free from defects, and factory tested.
- B. The fan and its components must be stored in a safe, dry location until installation.

1.7 WARRANTY

- A. The manufacturer shall replace any products or components defective in material or workmanship, free of charge to the customer (including transportation charges within the USA, FOB Lexington, KY), pursuant to the complete terms and conditions of the Big Ass Fans Warranty in accordance to the following schedule:

Product	Period of Coverage
Indoor Fans	5 years

PART 2 PRODUCT

2.1 MANUFACTURER (BASIS OF DESIGN)

- A. Delta T LLC, dba Big Ass Fans, PO Box 11307, Lexington, Kentucky 40575.
Phone (877) 244-3267. Fax (859) 233-0139. Website: www.bigassfans.com

2.2 BIG ASS FANS i6

- A. Complete Unit
 1. Regulatory Requirements: The fan assembly, as a system, shall be NRTL-certified and built pursuant to relevant safety standards as described above.
 2. Sustainability Characteristics: The fan shall possess the ENERGY STAR® Most Efficient 2021 designation.
 3. Quality: The fan shall display good workmanship in all aspects of its construction. Field balancing of the airfoils shall not be necessary.
 4. Colors: Airfoil colors may be selected by the architect or owner as described in 2.2.C, "Airfoils."
- B. Mounting System
 1. Universal Mount
 - a. The universal mount shall be suitable for flat or sloped ceilings with heights ranging from 9–18 ft (2.7–5.5 m).
 - b. The fan shall be equipped with a mounting bracket, wiring cover and trim, downrod assembly, motor cover, and motor unit.
 - c. The fan shall be available with a diameter of 72" (1.8 m).
 - d. The fan shall include one (1) downrod. The length of the downrod may be selected at the time of order.
 - a. Six-inch (178-mm), 12-inch (508-mm), 24-inch (813-mm), 36-inch (914-mm), 48-inch (1219-mm), and 60-inch (1524-mm) downrods shall be available for 72-inch (1.8-m) fans.
- C. Airfoils
 1. The fan shall be equipped with six airfoils spanning a total diameter of 72" (1.8 m).
 2. Airfoils shall be made of aircraft-grade aluminum.
 - a. Airfoils shall be available in Black, White, Silver.
 - b. Airfoils shall be suitable for indoor and covered outdoor spaces.

- A. Motor
 - 1. The fan shall have an electronically commutated motor (ECM) rated for 100–277 VAC, single phase.
 - 2. The motor shall draw 41.6–73.3 watts depending on the speed at which the fan is operated and if a light is installed.
 - 3. The fan shall be designed for continuous operation in ambient temperatures of 32–104°F (0–40°C) and a humidity range of 20–90% (non-condensing).
 - 4. The fan’s motor unit and motor unit trim shall be available in a Black, White, Silver.
- B. Safety Cable
 - 1. The fan shall be equipped with a safety cable that provides an additional means of securing the fan assembly to the building structure. The safety cable shall be 2.4 mm in diameter and fabricated of aircraft stainless steel.
 - 2. Field construction of safety cables is not permitted.
- C. SenseME™ Technology
 - 1. The fan shall be equipped with SenseME Technology for smart automation and shall be able to wirelessly connect to local Ethernet networks or host a network. The fan’s Wi-Fi capability shall permit over-the-air firmware updates.
 - 2. SenseME Technology control features shall be managed by users via the Big Ass Fans mobile app. The Big Ass Fans mobile app shall be supported by Android™ and iOS® mobile devices.
 - 3. Big Ass Fans Mobile App Control Modes
 - a. Auto Mode
 - a. Motion Sensor. The fan and light automatically turn on and off depending on whether motion is detected in the room.
 - b. Temperature and Humidity Sensor. The sensor located in the Bluetooth® remote control monitors room temperature and humidity in order to automatically adjust the fan speed to achieve the user’s ideal thermal comfort level.
 - c. Learning. The fan automatically learns the user’s ideal temperature based on observing their manual adjustments to fan speed.
 - b. Scheduling. Sets precise schedules for fan and light control modes.
 - c. Whoosh® Mode. Silently varies fan speed to mimic cooling natural breezes.
 - d. Sleep Mode. Responds to changing conditions to provide customized comfort all night long.
 - e. Rooms. Enables users to group multiple fans in the same space for synchronized operation. Users shall be able to use the Big Ass Fans mobile app to automate fan and light functions or adjust settings manually.
 - f. Manual Speed Control. Speed settings range from 0 (Off) to 7 (High).
 - 4. Big Ass Fans Account. Allows for integrated controls between fans and smart thermostats located on the same Wi-Fi network.
- D. Display and Sound
 - 1. Changes to fan settings shall be confirmed with auditory feedback (a beep) and/or visual indication.
- E. Remote Control
 - 1. The fan shall be equipped with a compact Bluetooth remote control that allows intuitive operation of the fan speed and light brightness in the following modes:
 - a. Fan speeds 0 (Off) through 7 (High)
 - b. Auto Mode
 - 2. The remote shall be 1.5” wide x 5.7” tall x 0.8” thick (39 mm wide x 146 mm tall x 20 mm thick) and shall operate on a CR 2450 3 V lithium battery (included).
- F. Wall Control (Optional)
 - 1. The fan shall be equipped with a Bluetooth wall control, as specified by the architect or owner.
 - 2. The wall control shall allow intuitive operation of the fan speed and light brightness in the following modes:
 - a. Fan speeds 0 (Off) through 7 (High)
 - b. Auto Mode

3. The wall control shall be 1.77" wide x 4.25" tall x 1.69" thick (45 mm wide x 108 mm tall x 43 mm thick).
4. The wall control shall be made from durable polycarbonate and shall feature backlight illumination and a white finish.
5. The wall control shall have an operating voltage of 100–277 VAC, 1Φ, 50/60 Hz and shall draw < 0.2 W.
6. The wall control shall provide control of up to four fans.
7. The wall control shall install to a wall junction box using standard AC wiring and shall require a dedicated circuit.

PART 3 EXECUTION

3.1 PREPARATION

- A. The fan location must have an appropriate ceiling-mounted outlet box marked "Acceptable for Fan Support" of 70 lb (31.8 kg) or less. If there is not an appropriate outlet box already installed at the location, one must be installed on a ceiling joist or beam and be properly wired. Additional mounting options may be available. Consult the installation guide for additional details.
- B. The fan location must be free from obstacles such as lights, cables, or other building components.
- C. Check the fan location for proper electrical requirements.

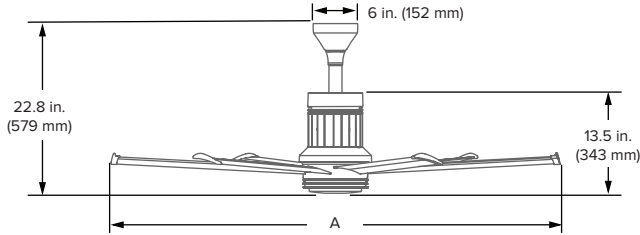
3.2 INSTALLATION

- A. Install the fan according to the manufacturer's installation guide, which includes acceptable mounting methods.
- B. Required Distances
 1. For 72-inch (1.8-m) fans, the airfoils must be at least 7 ft (2.1 m) above the floor.
 2. The airfoils must have at least 2 ft (0.6 m) clearance from all obstructions.
 3. The fan shall not be located in close proximity to the outputs of HVAC systems or radiant heaters.
- C. Install and set up the Big Ass Fans mobile app according to the manufacturer's instructions.

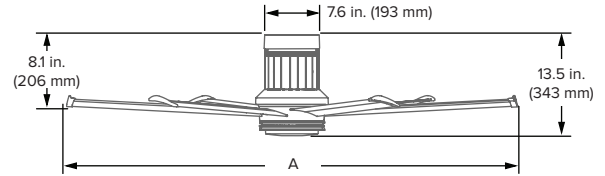
END OF SECTION 15831

i6

INSPIRED BY INDUSTRY, BUILT FOR COMFORT



Pictured with 6 in. (152 mm) downrod and light kit⁶



Pictured with flush mount and light kit⁶

Technical Specifications

Diameter (A)	Environment	CFM ^{1,2}	Efficiency (CFM/W) ²	Max Watts	Max Speed	Light Kit	Input Power	Weight ³	Sound Level ⁴
60 in. (1.5 m)	Indoor	9,676 ¹	260	35.4 W	170 RPM	1,770 lm 72.6 lm/W	100–277 VAC, 50/60 Hz, 1 Φ	34 lb (15.4 kg)	<35 dba at max speed
	Covered Outdoor (IPX5)	9,746 ¹	257	31.6 W					
72 in. (1.8 m)	Indoor	13,598	312	41.6 W	140 RPM				
	Covered Outdoor (IPX5)	13,860	318	42.2 W					
84 in. (2.1 m)	Indoor	15,576	370	40.2 W	110 RPM				
	Covered Outdoor (IPX5)	15,814	369	41 W					
96 in. (2.4 m)	Indoor	12,616 (16,211) ²	525	36 W	80 RPM				
	Covered Outdoor (IPX5)	12,849 (16,560) ²	534	36 W					

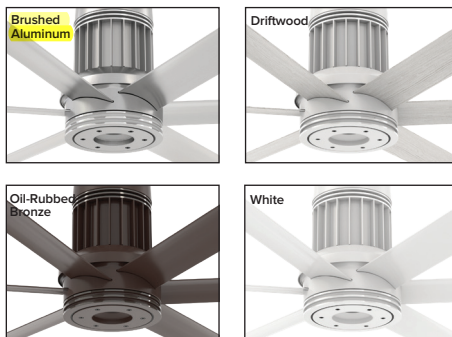
Construction Features

Airfoils	Motor and Hub	Remote	Onboard Sensors	Integrations ⁵	Mounting ⁶	Accessories
Made from aircraft-grade aluminum Tilted blade profile for optimum airflow spread	24 V DC motor and power supply housed in a three-piece cast aluminum hub with integrated airfoil retention system	"Point-anywhere" [™] pairing Integrated speed indicators Mount fixed to wall or with magnetic holder	Temperature, humidity, and motion sensors enable SenseME Technology	Voice control with Google Assistant or Amazon Alexa Works with home automation systems	Flat or sloped ceilings 8 ft (2.4 m) or taller Maximum slope: 33°	LED Light Kit 0–10 V module Optional downrod lengths available for ceilings over 14 ft (4.3 m)

Ordering Information

Diameter	Environment	Mount ⁷	Finish	Downrod ⁷	LED Light	0–10 V
MK-I61-05: 60 in. (1.5 m) MK-I61-06: 72 in. (1.8 m) MK-I61-07: 84 in. (2.1 m) MK-I61-08: 96 in. (2.4 m)	18: Indoor 19: Outdoor (Covered)	00: Flush 06: Standard	A727: Brushed Aluminum A728: Black A729: White A730: Oil-Rubbed Bronze A729F772: White with Driftwood	Blank: Flush I06: 6 in. (152 mm) I12: 12 in. (305 mm) I24: 24 in. (610 mm) I00: 36, 48, 60 in. (914, 1219, 1524 mm)	Blank: No LED Light S2: LED Light	Blank: No 0–10 V V54: 0–10 V (Sinking) V57: 0–10 V (Sourcing)

Finish Options



Black Finish with LED Light Kit



Remote



¹ 60 inch (1.5 m) fan measured with a 6 inch (152 mm) downrod. When direct-mounted, airflow and efficiency are 7122 cfm and 248 cfm/W (indoor) or 7105 cfm and 247 cfm/W (outdoor).
² 96 inch (2.4 m) fans are tested using the federally mandated test procedure (AMCA 230-15), which differs from the testing method used for 60, 72, and 84 inch fans. For comparative purposes only, the 96 inch (2.4 m) was tested using the small diameter method (shown in parentheses) and should not be used for compliance with federal regulations.
³ Weight does not include mount or downrod.
⁴ Actual results of sound measurements in the field may vary due to sound reflective surfaces and environmental conditions.
⁵ Google Assistant is a trademark of Google LLC, Amazon, Alexa and all related logos are trademarks of Amazon.com, Inc. or its affiliates.
⁶ Mount to an outlet box marked acceptable for fan support of 70 lb (31.8 kg).
⁷ Flush mount available on 60 in. (1.5 m) fans only, 6 in. (152 mm) downrod available on 60 and 72 in. (1.5 and 1.8 m) fans only, 96 in. (2.4 m) fans must use a 12 in. (305 mm) downrod minimum. 36, 48, and 60 in. (914, 1219, and 1524 mm) downrods ordered separately.



Lead times may vary. See full warranty for coverage information.



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