PROJECT NO. CWA 2023-01 February 21, 2025

ADDENDUM NO. 3

IRONDALE FIRE STATION No. 3

THIS ADDENDUM IS DIRECTED TO ALL PRIME BIDDERS, AND ALL OTHERS TO WHOM DRAWINGS AND SPECIFICATIONS HAVE BEEN ISSUED.

THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS. THE FOLLOWING CONDITIONS TAKE PRECEDENCE OVER ANY CONFLICTING CONDITIONS IN THE DRAWINGS AND SPECIFICATIONS. THE DRAWINGS AND SPECIFICATIONS ARE HEREBY AMENDED IN THE FOLLOWING PARTICULARS.

GENERAL:

1. Per Birmingham E911, the new site address is 2920 Alton Rd.

DRAWINGS

1. C1.0 Site Layout Plan:
   a. Modified sidewalk and retaining wall near east side of building
   b. Added 6" curb and turndown edge dumpster enclosure
2. C2.0 Site Grading Plan:
   a. Updated retaining wall grades near east side of building
   b. Updated spot elevations near dumpster enclosure
   c. Added note regarding settlement monitoring
3. C2.1 Site Drainage Plan: Added dumpster floor drain and 4" sanitary line to septic tank
4. C3.0 Site Utility Plan:
   a. Added Flexstorm Insert to grate inlet connected to underground detention system
   b. Added Notes 2-4 with City of Birmingham Stormwater Dept. requirements
5. C4.1 Erosion Control Plan – Intermediate:
   a. Removed row of silt fence on the uphill side of the onsite sewer treatment area. This should also be removed from the initial phase (sheet C4.0).
   b. Added topsoil, temporary seeding, and mulching to the onsite sewer treatment area

c. Changed from single to double row of silt fence around the perimeter of the site

d. Added special note 3 regarding turbidity monitoring requirements

6. C4.2 Erosion Control Plan – Final:
   a. Changed temporary seeding callouts to permanent seeding and removed surface roughening from final phase.
   b. Added special note 3 regarding turbidity monitoring requirements
7. C5.2 Details:
   a. Changed sump depth requirements for underground detention inlets to 48"
   b. Note: Lane Enterprises StormKeeper Stormwater Chambers is an approved solution
8. C5.4 Details:
   a. Added mulching, temporary, and permanent seeding detail
   b. Added diversion berm detail
   c. Added Headwall detail for structure #A1
9. S1.0 General Notes: ISE Logik CWPA 800 is an approved equal for crystalline waterproofing
10. A2.01 Overall Floor Plan: Added 70 linear feet of guardrail to east retaining wall
11. A2.30 - Dumpster Enclosure Plan & Details: Added metal canopy over the dumpster
12. A2.21 Enlarged Plan Block B (Dorm): Change wall type of wall between Watch 105 and Office 107 to S6AA (6" thick stud with drywall).
13. A4.10 Finish Notes & Schedule:
    a. Change the floor finish in Room 141 Aux Room to CPT-2
    b. Change the floor finish in Room 140 Apparatus Bays 140 to Polished Concrete. See new specification section 03 35 43 Concrete Polishing & Dyeing
14. A5.03 Stair Details: Added section detail of guardrail at east retaining wall
15. A6.01 Exterior Elevations: Added elevation of guardrail at east retaining wall
16. A12.01 Reflected Ceiling Plans: Berridge L Panel is an approved substitution for the Vesta HD3 Panel
17. FS1.01 Food Equipment Schedule:
    a. Food Equipment Schedule: Change Item 120 Millwork Base Counter quantity to two (2)
    b. Food Equipment Schedule: Remove Item 126 Millwork Base Counter
18. M0.2 Mechanical Schedules: Added ECH-4 Ceiling Heater

19. M0.5 Mechanical Controls & Details: Added flue / intake cap detail
20. M1.1 Mechanical Floor Plan: Added flue and intake pipes
21. M1.2 Mechanical Roof Plan: Added concentric flue for hot water heaters
22. P0.1 Plumbing Schedules and Notes: Edited P-4, P-5, P-7. Changed WH-1, WH-2, WH-3 to gas
23. P0.2 Plumbing Details: Added water heater specification
24. P2.1 Pressure Piping – Floor Plan: changes related to switching to gas hot water heaters
25. P3.1 Plumbing – Enlarged Plans: Edited layout in Pressure Mech Room Plan
26. E002 Lighting Fixture Schedule and Details: Changed fixture tag 'UC' to UC2'.
27. E201Level 1 Plan Lighting:
    a. Moved Panel 'P1' into Janitor Closet #110.
    b. Added location for LCP Panel.
28. E202 Level 1 Plan Power:
    a. Moved Panel 'P1' into Janitor Closet #110.
    b. Added location for LCP Panel.
29. E203 Level 1 Plan Auxiliary:
    a. Added fire alarm panel location in Watch Room. Panel shall be recessed in wall.
    b. Added power for FACP.
    c. Added smoke detector in front of FACP.
    d. Moved Panel 'P1' into Janitor Closet #110
    e. Added location for LCP Panel.
30. E301 Electrical Riser Diagram & Panel Schedules: Added / Modified circuit breaker arrangements in Panel Schedules as shown.
31. E004 Electrical Details: Revised and issued in Addendum no. 2 but the changes were not noted. See below:
    a. Added Lighting Control Wiring Diagram #3.
    b. Updated panel names and notes at Lighting Control Wiring Diagram #1, #2, and #4.
    c. Added approved Lighting Control Panel Manufacturers to LCP Detail.

SPECIFICATIONS

1. 00 01 10 – Table of Contents: Updated to add 10 75 00 Flagpoles, deleted 06 40 00 Architectural Woodwork, added 12 32 16 Manufactured Plastic-Laminate-Clad Casework, added 03 35 43 Concrete Polishing & Dyeing

2. 01 21 00 – Allowances:

    a. Corrected units of measure for Allowance nos. 10 and 11 and removed erroneous language regarding excavation.

    b. Added Allowance no. 14 for French drain installation

    c. Added Allowance no. 15 for BWWB fees

3. 01 22 00 Unit Prices: Added Item no. 12 for French drain installation

4. 03 35 43 Concrete Polishing & Dyeing: Added specification for polishing concrete in the Apparatus Bay 140

5. 04 21 13.13 – Brick Veneer Masonry: change mortar basis of design to Freedom "Champagne Buff". Contact Corey McDonald at Southern Clay Brick for pricing (205) 910-6813.

6. 06 40 00 – Architectural Woodwork: deleted specification. See 12 32 16.

7. 08 11 16 – Interior Aluminum Doors and Frames: Under 2.1, Tubelite is an approved manufacturer

8. 08 35 13 – Four Fold Doors: JUS Doors, Model 93 is NOT an approved equal / manufacturer

9. 08 43 13 – Aluminum Framed Storefronts: Under 2.1, Tubelite is an approved manufacturer

10. 10 75 00 – Flagpole: See the attached specification

11. 12 32 16 - Manufactured Plastic-Laminate-Clad Casework: added specification.

12. 23 57 68 – Radiant Heating: Combustion Research Corporation, Omega II DI is NOT an approved equal

REQUESTS FOR INFORMATION (RFIs)

1. *A4.30 Storefront / Window Types & Details:*

    a. *Elevation B1 has sunshades but doesn't specify what kind. Please confirm this should be an outrigger type sunshade.*

    Answer: Sunshades should be outrigger type

    b. *Sunshades are not offered for front set storefront. Please confirm that elevation B1 is to be center set storefront to allow for sunshades.*

    Answer: Elevation B1 should be center set storefront

    c. *Please advise if ALL storefront elevations should be center set in lieu of front set or only change B1 to front set.*

Answer: Only window type B1 should be center set

1. *Plans call for drywall at bottom of trusses. The trusses are 4'-0' on center , the drywall will not span 4'-0'.*

   Answer: Install Armstong Framewall (basis of design) suspended ceiling system. Approved equals: USG, CertainTeed, Rockfon

2. *Plan calls out Japanese Maple @ 10' HT. Plant schedule call them out a 9'.*

   Answer: 10' height

3. *Plans calls out Sioux Crape Myrtle as multi trunk. Plant schedule calls them out as standard.*

   Answer: All Crape Myrtles are Standard (Single Trunk)

4. *Plans calls out Natchez Crape Myrtle as standard. Schedule calls them out as multi trunk.*

   Answer: All Crape Myrtles are Standard (Single Trunk)

5. *Plans calls out 66 Dwarf Yaupon. Schedule calls for 95.*

   Answer: Change plant schedule to 66 Dwarf Yaupon Hollies

6. *Please confirm interior storefront type VP1 on A4.30 is not a sliding window. If it is a sliding window please provide active and fixed designations.*

   Answer: Type VP1is not a sliding window. See 4/A4.30.

7. *Can you verify the Owner furnished in the food service please? The FS schedule on the drawings and specs contradict each other on who is supplying the items? Items in question: 122, 123, 127,128*

   Answer: The food equipment schedule on FS1.01 is correct. See items below:

   a. 122 Range: Contractor provided, contractor installed
   b. 123 Exhaust Hood: Contractor provided, contractor installed
   c. 127: Should read "Reach-in Refrigerator." See information listed for 128 in the specifications and 127 on the drawing schedule. Contractor provided, contractor installed
   d. 128: Item 128 in the specifications should be item 127

8. *Please verify paint type to be used in restrooms.*

   Answer: See specification section 09 90 00 – Paints and Coatings:

PRIMER: (This primer only, spray-applied) ProMar 200 Zero VOC Interior Latex Primer, B28W02600 or High Build Interior Latex Primer, B28W08601

FINISH: (2 coats) Pro Industrial Water based Catalyzed Epoxy, Gloss, B73-300 Series / B73V00300 Hardener (Eg-Shel finish, B73-360 Series

9. *Please confirm exact location of LCP*

   Answer: The LCP shall be located in Janitor Closet 110.

10. *In sheet E004, Lighting Control Panel Wiring Diagram #1 indicates that CAT5e cable should be routed through 3/4" conduit. Please confirm if all cable routing will be 3/4" conduit. This is because the price may increase due to this, and typically, 3/4" conduit is only used to reach the accessible ceiling.*

    Answer: Conduit with low voltage wiring may be stubbed up to above the accessible ceiling and terminated with a smooth bushing. Low Voltage cable may be installed "free air" above the accessible ceiling as required. In areas with an exposed ceiling, conduit shall be run to the nearest accessible ceiling before being terminated.

11. *In sheet E201 - Lighting Plan shows that MECH / ELE Room is controlled by LCP but also is controlled by a single pole switch, please confirm which control is the correct.*

    Answer: This room shall be controlled with an on-off switch only. Do not run lights in this room through the LCP.

12. *For circuit 17 panel P1 - Flag Pole lights on the Panel Schedule specifies that wire size should be #12, but in Sheet E101 - Site Plan Electrical in general notes it specifies that all site lights should be #8-1"C, please confirm the correct wire size.*

    Answer: Wire size shall be #12 per panel schedule.

13. *There is not FACP on plans, please confirm the exact location.*

    Answer: FACP shall be recessed and installed in the Watch Room in room separating it from the adjacent office. Wall depth shall be increased to a 6" wall. Provide 2#12, 1#12G-3/4"C. to 20/1 Lock-On Breaker at Panel 'PEQ'..

14. *In plan sheet E101 note 2, please confirm if lightning protection for the Fire Alarm circuit will be necessary.*

    Answer: Yes. Lightning protection is required on fire alarm wiring as called for.

15. *Note 5 in plan sheet E101 indicates that we must install an empty conduit from the fire vault to panel RP2, but panel RP2 is not in the drawings, can you please clarify this note?*

Answer: Conduit shall be terminated at Panel P1.

16. *Can you clarify if the clearing contract outside of this contract, includes stump removal?*

    Answer: The General Contractor is responsible for removing the remaining stumps

17. *Specification section 012100 - Allowances, Page six.*

    Item J. Allowance 10 - Sod, paragraph a. is calling for undercut & Backfill

    Item k - Allowance 11 Mud Sills. Paragraph is referring to Allowance 10 for Square Yd of Sod in Place.

    Answer: See revised 01 21 00 – Allowances for correction of units.

18. *We have been asked by a steel fabricator and erector if the AISC certification is a requirement for this project.*

    Answer: See Addendum no. 2. Yes, this is STUCTURALLY ACCEPTABLE, provided, the contractor pays for the owner's testing agent to shop inspect welds.

19. *Please refer to the Plan Sheet Notes on Sheet A2.2. Who is to provide and install the following items:*

    a. *Item #2 – Wall Rack equal to "Geargrid Corp – 5' Wash Center*
    b. *Item #3 – Wall Rack equal to Geargrid Corp – 5' Broom Center*
    c. *Item #6 – Mobile PPE Racks equal to Geargrid "Mobile 3-pack, 20"w x 20"d x 83.25"h"*

    Answer: The Plan Sheet Notes refer to both A2.20 and A2.21. These items are to be purchased and installed by the GC. GearGrid is the basis of design.

20. *The upper tower section shown on Sheet A6.01 appears to be EIFS around the Type "J" windows. But it does no show up on the Section cut 3/A7.01 and there are no specs. Also, it is calling for scratch coat on metal lath behind the stone veneer which I would also expect to find in the EIFS spec.*

    Answer: The siding around the 'J' windows is prefinished break metal. See Detail 11/A4.30 and 6/A4.30. The scratch coat and metal lath is the standard detail for manufactured stone with metal studs.

21. *Are the roof panels intended to be 16" wide or 11-1/2" wide?*

    Answer: Standing seam roof panels shall be 16" wide. See 07 61 13 – Standing Seam Metal Roofing specification.

22. *Sheet C1.0 shows two (2) retaining walls at the building with notes referring to the Architectural Plans for information on the guardrail at the top of the wall. These*

retaining walls are not shown in the Architectural Plans. Please provide information on the type guardrail needed at the tops of these walls.

Answer: See revised A2.01, A5.03, and A6.01

23. *Detail 15 on Sheet L5 shows a 20' Flagpole at the Plaza Plan. There are no specs for this Flagpole. Please provide specifications.*

    Answer: See attached specification

24. *Is this Birmingham Water works, or Irondale water?*

    Answer: Birmingham Water Works

25. *Stormwater: The Vertical Headwall does not appear to be correctly drawn. The sides should be more winged out so the slope can wrap around it. Please advise.*

    Answer: See detail on the revised sheet C5.4

26. *The civil drawing C3.0 calls out for the underground fire main piping to be C-900 plastic piping but the specification section (331416) Part #3, 3.2 letter J calls for the piping to be ductile piping. Please, advise on which pipe to be installed for this project.*

    Answer: Ductile iron pipe will be required from the tap to the backflow preventer and C-900 pipe can be for fire service piping beyond the backflow preventer

27. *Will there be any grade plate requirements where the fill is being placed?*

    Answer: Settlement monitoring plates and monitoring by a licensed surveyor are the responsibility of the contractor.

28. *Is the site going to be unclassified, or will there be any allowances for rock, both mass and trench?*

    Answer: The site will be unclassified to the "cut line" as defined by the specs, and unit price allowances for rock as provided in Allowance Numbers 7 and 8 listed in the specifications.

29. *Is the material from the cut areas onsite considered suitable to use in fill areas?*

    Answer: Refer to the geotechnical report.

30. *Can crushed concrete with no debris be used to bed and backfill storm drains, excluding the underground detention system.*

    Answer: No. Quarry aggregate is required.

31. *The geotech reports mentions the possibility of needing to install french drains, or subsurface drainage. Is there any detail to price this in the bid, or would it be handled through an allowance?*

Answer: An allowance for French drains will be included via addendum.

32. *Can we get clarification for backfilling the underground detention system: what elevation does the backfill need to be 57 stone before changing to engineered fill, and does this change in the concrete paving areas?*

    Answer: No. 57 stone is required to 12" minimum above the chambers per the detail. Engineered fill compacted per the specifications is allowed above this elevation for all areas.

33. *Who is responsible for purchasing the meters?*

    Answer: The contractor is responsible for purchasing the water meters from Birmingham Water Works.

34. *Sheet S2.1, Foundation Plan, Note 19 states to see general notes for information concerning Shear Wall Hold Downs. I could not find this information on General Notes.*

    Answer: Please refer to "SHEAR WALL PANEL CONSTRUCTION" on S1.2.

35. *Sheet A4.21 details 11 & 12. These details show a bent plate at head and jamb. Please provide information on these bent plates.*

    Answer: Please refer to Section 4 on S4.2. Provide Rolled Galv. L8x6x1/2 LLV for masonry veneer angle. Weld stop bars as noted in section. Provide curved steel plate (18"x3/8"xCONT) under Concrete/Masonry and Brick. Shop weld L8x6x1/2 to plate. Attach L8x6x1/2 to wall as shown in 4/S4.2. Anchor decorative 3/8" plate to head and jamb with two rows 3/8"x4" machine screws in countersunk hole in steel plate @18". Head of screws to be flush with outside face of plate.

36. *Sheet S4.1 detail 2. This detail show a 3/4" Headed Stud x 24". One of my structual steel fabricators stated the longest 3/4" headed stud was 16". Please advise.*

    Answer: It will be structurally acceptable to extend headed studs by welding another headed stud to end of first stud.

37. *Sheet S4.2, detail 3. This detail shows a 1/2" square bar welded to Galvanized angle. What is length of 1/2" square bars. This also occurs at detail 4.*

    Answer: Bar shall be 5" long for the 6" angle. Install bar perpendicular to wall. The bar will aid the brick veneer from "sliding" down the angle.

38. *Sheet S2.1, Foundation Notes*

    1. Finish Floor Elevation is 0'-0", UNO.

    2. Item 2, Top of Footing elevation should be -2'-0" UNO in lieu of 0'-0" as shown

    Answer: Several of the footings are poured monolithic with the slab thus a top of footing elevation of 0'-0". Several footings are dropped per the sections below

the finish floor thus "unless noted". All Footings under Masonry Walls are -2'-0" BFF (min). Coordinate with sections and plans for footing elevations.

39. *In regards to thickened slab detail, is Dayroom 122 the only place it occurs?*

    Answer: Thickened Slab detail on S1.3 shall be used between the corridor (C1-3) and rooms (146,147) as shown in plan.

40. *Sealed Concrete Spec Section is missing from the spec book. Please advise.*

    Answer: There is no sealed concrete specification. Sikagard 300 HD WD is called out on A4.10 as the basis of design. See 03 35 43 Concrete Polishing & Dyeing for Apparatus Bay flooring.

41. *The Birmingham Water Works Board (BWWB) is unable to provide an estimate of the cost to attach the 6" and 2" water lines because the application for the required water main extension has not been submitted.*

    Answer: See the revised 01 21 00 Allowances specification.

42. Does this project have a monument sign?

    Answer: No, the project does NOT have a monument sign.

43. Signage: We have been unable to locate a spec for this sign shown on 4/A6.01. Also, is it illuminated?

    Answer: There is no specification for the building signs. Yes, the signs are illuminated, see E201 & E202.

44. *Food Equipment: Please confirm all equipment shown on the food equipment schedule on FS1.01 will be purchased by the owner and does not need to be purchased by GC.*

    Answer: The only food equipment purchased by the owner is listed on the Food Equipment Schedule on FS1.01 as "by owner." All other equipment to be purchased and installed by the GC.

45. Millwork: We have been unable to locate interior elevations for the Millwork in Day Room 122.

    Answer: There is no millwork in the Day Room 122.

46. *Can Crushed Concrete and Asphalt be used as structural fill material?*

    Answer: Asphalt material cannot be utilized as structural fill. Crushed concrete may be utilized as structural fill but must meet the requirements as outlined in the geotechnical report and specifications for compaction, maximum particle size, placement depth, etc.

47. *Item 127 / 128: Is Item 127 the residential refrigerator/freezer(s) as indicated on the drawing or are they Item 128 per the specs? Additionally, which model number is correct (WRS588FIH2 or WRS588FIHZ)?*

48. Answer: 127 Should read "Reach-in Refrigerator." See information listed for 128 in the specifications and 127 on the drawing schedule. Contractor provided, contractor installed. WRS588FIHZ is correct.

49. *Item 101: This dumpster is not tagged on the floor plan. Should we still account for it?*

    Answer: No, the trash dumpster is provided by the owner

50. *Item 120: Are there two (2) base counters or one (1)? The floor plan shows two (2).*

    Answer: There are five (5) base counters. See A11.03. Item 120 quantity should be two (2). Item 126 is not used.

51. *Items 122, 123, and 128: Are these by Owner as stated in the specs or by KEC as indicated on the equipment schedule?*

    Answer: The only food equipment purchased by the owner is listed on the Food Equipment Schedule on FS1.01 as "by owner." All other equipment to be purchased and installed by the GC.

52. *Item 104, trash receptacle by owner: Are there three (3) or one (1)? The drawing shows one (1) while the specs mention one (1) and three (3).*

    Answer: There is one (1) and it will be provided by the owner.

53. *Item 115: Model number differs between the written specs and the equipment schedule. Which is correct?*

    Answer: Pre-rinse faucet B-0113-ADF12-B is correct.

54. *Item 118: Model number differs between the written specs and the equipment schedule. Which is correct?*

    Answer: Ice Maker MAS033SA1/B-530S is correct.

END OF ADDENDUM NO. 3

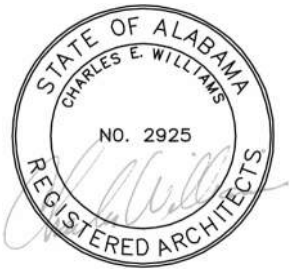

TABLE OF CONTENTS FOR PROJECT MANUAL

VOLUME 1 OF 2

DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 1 – GENERAL REQUIREMENTS

DIVISION 10 – SPECIALTIES

DIVISION 11 – EQUIPMENT

DIVISION 12 – FURNISHINGS

VOLUME 2 OF 2

DIVISION 21 – FIRE SUPPRESSION

DIVISION 22 – PLUMBING

DIVISION 23 - HEATING VENTILATING AND AIR CONDITIONING

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

DIVISION 31 - SITE

DIVISION 32 - LANDSCAPE

DIVISION 33 - UTILITIES

END OF TABLE OF CONTENTS FOR PROJECT MANUAL

SECTION 01 21 00

ALLOWANCES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Division-1 Specification sections, apply to work of this section.

1. Coordinate allowance work with related work to ensure that it is completely integrated and interfaced with related work.

1.2 DESCRIPTION OF REQUIREMENTS:

A. Definitions and Explanations: Certain requirements of the work related to each allowance are shown and specified in contract documents. The allowance has been established in lieu of additional requirements for that work, and further requirements thereof (if any) will be issued by change order.

B. Types of allowances scheduled herein for the work included the following:

1. Lump sum allowances.

C. Selection and Purchase:

1. At earliest feasible date after award of Contract, advise Architect/Engineer of scheduled date when final selection and purchase of each product or system described by each allowance must be accomplished in order to avoid delays in performance of the work.

2. As requested by the Architect/Engineer, obtain and submit proposals for the work of each allowance for use in making final selections; include recommendations for selection which are relevant to the proper performance of the work.

3. Purchase products and systems as specified, and as selected (in writing) by the Architect/Engineer.

4. Submit proposals and recommendations, for purchase of products or systems of allowances, in form specified for change orders.

D. Change Order Data: Include in each change order proposal both the quantities of products being purchased and unit costs, along with total

amount of purchases to be made. Where requested, furnish survey-of-requirements data to substantiate quantities. Indicate applicable taxes, delivery charges, amounts of applicable trade discounts, and other relevant details as requested by the Architect.

1. Each change order amount for allowances shall be based on the unit price difference between the actual purchase amount and the allowance, multiplied by the final measure or count of work-in-place, with reasonable allowances, where applicable, for cutting losses, tolerances, mixing wastes, normal product imperfections and similar margins.

2. Include 10% overhead and profit separately, in the Contractor's Base Bid, and not as part of Allowances.

3. When requested, prepare explanations and documentation to substantiate the quantities, costs, and margins as claimed.

E. Change Order Mark-Up:

1. Except as otherwise indicated, comply with provisions of General Conditions. For each allowance, Contractor's claims for increased costs (for either purchase amount or Contractor's handling, labor, installation, overhead, and profit), because of a change in scope or nature of the allowance work as described in contract documents, must be submitted within 60 days of initial change order authorizing work to proceed on that allowance; otherwise, such claims will be rejected.

2. Where it is not economically feasible to return unused material to the manufacturer/supplier for credit, prepare unused material for the Owner's storage, and deliver to the Owner's storage space as directed. Otherwise, disposal of excess material is the Contractor's responsibility.

F. Time and Allowance Amounts:

1. Nothing in the Bid or Contract Documents shall be so constructed or interpreted as to provide a Contract time extension, due to use or non-use of any Allowance amount.

2. Nothing in the Bid or Contract Documents shall be so constructed or interpreted as to allow unused Allowances or any portion thereof, nor any overhead and profit therefore to be retained by or paid to the Contractor.

   a. Amount of unused allowances be returned shall include unused amount plus 10% overhead and profit.

PART 2 – PRODUCTS

Not Applicable

PART 3 – EXECUTION

3.1 SCHEDULE OF ALLOWANCES:

A. **Allowance No. 1 –** Contingency Allowance:

1. Allow a lump sum of **$350,000.00** for additional work, as directed by the Architect and Owner, including purchase, any applicable taxes and fees, and all related costs.

2. Include overhead and profit of at least 10% in Base Bid, and not as part of Allowance.

B. **Allowances No. 2 –** Excavate and haul off unsuitable materials from below the cut line:

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications. The contractor will only be able to utilize these allowances when the required excavation exceeds what is required by the Specifications and as directed by the Owner's Geotechnical Engineer. This allowance is not to be used to correct subgrade damage caused by construction traffic or contractor neglect.

   The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

   a. Unit Price Item No. 1 – Undercut and Backfill of Unsuitable Material.

      200 cy x $ _____ per cy = _____.

C. **Allowances No. 3 –** Replace with crushed stone (ALDOT 825B or #57)

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications.

   The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

   a. Unit Price Item No. 2 – Replacement with crushed stone:

200 tons x $ _____ per ton = _____.

D. **Allowances No. 4 –** Replace with suitable material from offsite source

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications.

   The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

   a. Unit Price Item No. 3 – Replacement with offsite suitable material:.

      200 cubic yards x $ _____ per cy = _____.

E. **Allowances No. 5 –** Surge Material (ALDOT #1 Stone)

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications.

   The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

   a. Unit Price Item No. 4 –Tons (TN) of crushed stone.

      100 tons x $ _____ per ton = _____.

F. **Allowances No. 6 –** Stabilization Fabric

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications.

   The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

   a. Unit Price Item No. 5 – Stabilization Fabric:

      300 square yards x $ _____ per sy = _____.

G. **Allowances No. 7 –** Topsoil

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications.

   The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

   a. Unit Price Item No. 6 – Provide additional topsoil.

50 cubic yards x $ _____ per cy = _____.

H. **Allowances No. 8 –** Rock, Masonry or Concrete Excavation in Trenches and Pits

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications. The contractor will only be able to utilize these allowances when the required excavation exceeds what is required by the Specifications and as directed by the Owner's Geotechnical Engineer. This allowance is not to be used to correct subgrade damage caused by construction traffic or contractor neglect.

   The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

   a. Unit Price Item No. 7 – Cubic Yard (CY) of rock, masonry, or concrete excavated.

      50 cubic yards x $ _____ per cy = _____.

I. **Allowances No. 9 –** Rock, Masonry or Concrete Excavation in Open Excavation

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications. The contractor will only be able to utilize these allowances when the required excavation exceeds what is required by the Specifications and as directed by the Owner's Geotechnical Engineer. This allowance is not to be used to correct subgrade damage caused by construction traffic or contractor neglect.

   The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

   a. Unit Price Item No. 8 – Cubic Yard (CY) of rock, masonry, or concrete excavated.

      50 cubic yards x $ _____ per cy = _____.

J. **Allowances No. 10 –** Sod

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications

   The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

a. Unit Price Item No. 9 – Square yard (SY) of sod, in place.

50 square yards x $ _____ per sy = _____.

K. **Allowances No. 11 –** Mud Footings

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications.

The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

a. Unit Price Item No. 10 – Cubic yard (CY) of concrete, in place.

50 cubic yards x $ _____ per cy = _____.

L. **Allowances No. 12 –** Sidewalk

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications.

The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

a. Unit Price Item No. 11 – Square Foot (SF) of sidewalk installed.

50 square yards x $ _____ per sy = _____.

M. **Allowance No. 13 –** Radio and Paging System Allowance**:**

1. Allow a lump sum of **$45,000.00** for the purchase and installation of the radio and paging system, as directed by the Architect and Owner, including any applicable taxes and fees, and all related costs.

2. Include overhead and profit of at least 10% in Base Bid, and not as part of Allowance.

N. **Allowance No. 14 –** French Drain**:**

1. The following items will be included as an allowance based on units and quantities along with the unit prices provided per the specifications.

The contractor will only use this allowance when properly authorized prior to performing the additional work paid for from the allowance.

a. Unit Price Item No. 12 – linear foot (lf) of French drain installed.

50 linear feet x $ _____ per lf = _____.

O. **Allowance No. 15 –** Aid to Construction for Birmingham Water Works

1. Include a lump sum allowance of $75,000 for use to pay for Tap Fees, System Development Fees and materials required to be purchased direct from BWWB. Installation will remain the responsibility of the contractor as a part of the base bid amount.

2. Include overhead and profit of at least 10% in Base Bid, and not as part of Allowance.

END OF SECTION 01 21 00

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SECTION 01 22 00

UNIT PRICES

PART 1 – GENERAL

1.1 SUMMARY

A. This section specifies administrative and procedural requirement for unit prices.

1. A unit price is an amount proposed by Bidders, as a price per unit of measurement for materials and/or services that will be added to or deducted from the Contract Sum by Change Order in the event the estimated quantities of Work required by the Contract Documents are increased or decreased, in accordance the General Conditions and/or other provisions of the Bid and Contract Documents.
2. Unit prices shall include all necessary material, labor, fees, layout, supervision (field and home office), general expenses, insurance, bonds, overhead, profit and applicable taxes, for unit item of work in place.
3. Refer to other Division 1 Sections and individual Specification Sections for construction activities requiring the establishment of unit prices. Methods of approval, verification, measurement and payment for unit prices are specified in those sections.

B. Related work specified elsewhere includes: None

C. Schedule:

1. A "Unit Price Schedule" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials and methods described under each unit price.
2. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.

PART 2 – PRODUCTS

2.1 Not Applicable.

PART 3 – EXECUTION

3.1 ITEMIZED UNIT PRICE SCHEDULE:

A. **Item No. 1 – Excavation and haul off of unsuitable materials**

1. Description: Remove unsuitable soils from below the "cut line" elevation and legally dispose of off-site, in accordance with Section 31 20 00 - "Earth Moving".
2. Unit of Measure: Cubic yard (CY) of earth excavated.

B. **Item No. 2 – Replacement with crushed stone**

1. Description: include all cost associated with the purchasing, transporting, installation and compacting of ALDOT #57 stone or dense-graded aggregate base material for soil stabilization and/or backfill, in accordance with Section 31 20 00 - "Earth Moving".
2. Unit of Measure: Tons (TN) of crushed stone.

C. **Item No. 3 – Replacement with offsite suitable material**

1. Description: include all cost associated with purchasing, importing, placing and compacting of material conforming to the project specifications from an offsite source in the event that adequate suitable material is not present on the project site, in accordance with Section 31 20 00 - "Earth Moving".
2. Unit of Measure: Cubic yard (CY) of earth compacted in place.

D. Item No. 4 – Surge Material (ALDOT #1 Stone)

1. Description: include all cost associated with purchasing, importing, placing and compacting ALDOT #1 stone for soil stabilization, in accordance with Section 31 20 00 - "Earth Moving".
2. Unit of Measure: Tons (TN) of crushed stone.

E. Item No. 5 – Stabilization Fabric

1. Description: include all cost associated with the purchase and installation of geogrid for soil stabilization. This material shall be Tensar BX1100 (Tensar Biaxial type 1) or approved equal, in accordance with Section 31 20 00 - "Earth Moving".
2. Unit of Measure: Square Yards (SY) of fabric installed

F. Item No. 6 – Topsoil

1. Description: Provide additional topsoil from offsite locations, in accordance with Section 31 20 00 "Earth Moving", and applicable portions of other sections.
    a. Unit of Measure: Cubic yard (CY) of topsoil, in place.

G. Item No. 7 – Rock, Masonry, or Concrete Excavation in Trenches and Pits

1. Description: Remove rock, masonry, and/or concrete encountered in trenches and pits, below elevations indicated, and legally dispose of offsite, in accordance with Section 31 20 00 "Earth Moving".
2. Unit of Measure: Cubic Yard (CY) of rock, masonry, or concrete excavated.

H. Item No. 8 – Rock, Masonry, or Concrete Excavation in Open Excavation

1. Description: Remove rock, masonry, and/or concrete encountered in open excavations, below elevations indicated, and legally dispose of off-site, in accordance with Section 31 20 00 - Earth Moving".
2. Unit of Measure: Cubic Yard (CY) of rock, masonry, or concrete excavated.

I. Item No. 9 – Sod

1. Description: Provide additional sod as directed, including fine grading, soil amendments, fertilizers, sod, maintenance, etc., as specified in Division 32.
2. Unit of Measure: Square yard (SY) of sod, in place.

J. Item No. 10 – Concrete Mud Footings

1. Description: Provide additional concrete mud footings, in addition to any mud footings indicated on the Drawings, as specified in Division 3, as directed, where required by the Project Geotechnical Consultant due to any existing unsuitable soils.
2. Unit of Measure: Cubic yard (CY) of concrete mud footings, in place.
3. Note: This unit price is not applicable to cost of mud footings that are required due to over-excavation, or due to not pouring footings the same date they are excavated, or other reasons indicated in Section 31 20 00 - "Earth Moving," or Section 03 30 00 - "Cast-in-Place Concrete".

K. Item No. 11 – Concrete Sidewalk

1. Description: Install concrete sidewalk not otherwise shown on drawings, in location directed by Architect.

2. Unit of Measure: Square Foot (SF) of sidewalk installed.

L. Item No. 12 – French Drain

1. Description: 12" minimum wide trench 3' deep, covered with a non-woven geotextile with a 4" diameter perforated pipe installed in the bottom and

backfilled with #57 crushed stone. The drain should slope to the nearest drainage ditch or stormwater culvert/catch basin.

2. Unit of Measure: Linear Foot (LF) of French drain installed.

END OF SECTION 01 22 00

SECTION 03368
CONCRETE POLISHING AND DYEING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes stained concrete finish for interior concrete floors denoted on Finish Schedule as PC (Polished Concrete).
B. Furnish all labor, material, equipment and services necessary for the dry diamond grinding and polishing of concrete floors.
C. Applying densifying impregnator/sealer and polishing to specified sheen level and aggregate exposure.
D. Concrete must be cured a minimum of 28 days prior to polishing.

1.3 REFERENCES

A. American Concrete Institute (ACI):
   1. ACI302.1R-89, Guide for Concrete Floor and Slab Construction.

B. American Society for Testing and Materials:
   1. ASTM C779, Standard Test Method for Abrasion of Horizontal Concrete Surfaces.
   2. ASTM C805, Impact Strength.
   3. ASTM G23-81, Ultraviolet Light & Water Spray.
   4. ASTM 1028, Co-efficient of Friction.
   5. ASTM C 150, Type I, II Portland cement conformity, depending on soil conditions.
   6. ASTM C 33, Aggregate conformity.

C. Other Tests:
   1. Reflectivity.

1.4 SUBMITTALS

A. Submit the following in accordance with Submittal Procedures in Division 1 Sections.

B. Product data for each grinding machine, including all types of grinding heads, dust extraction system, joint filler, concrete densifying impregnator, penetrating sealer, and any other chemicals used in the process.

C. Applicators qualification data.

D. Polished concrete samples: size 3x3 for each Polished Concrete finish required.

E. Maintenance procedures for Polished Concrete using diamond impregnated cleaning pads.

1.5 QUALITY ASSURANCE

A. Certified Contractors:
   1. Pre-qualified contractors meeting **ALL** requirements set forth within specifications.
   2. No substitutions will be allowed or approved.

B. Pre Pour Installation Conference: Conduct conference at project site to comply with requirements in Division 1 Sections "Special Conditions" and "Administrative Requirements".

C. Provide project names, addresses, contact names, phone numbers of at least (5) three projects of similar scope, projects greater than 50,000 sq ft, completed by the installer.

D. Installer/applicator shall be certified by concrete grinding/polishing equipment, chemical manufacturer and caulking manufacturer.

E. Installer/applicator shall provide adequate number of skilled workmen who are thoroughly trained and experienced in the necessary craft.

F. Manufacturer's Certification: Provide a letter of certification from both the equipment and chemical manufacturer stating that the installer is a Certified Contractor and is familiar with proper procedures and installation requirements recommended by the manufacturer.

G. Mock-ups:
   1. General Contractor to notify applicator 7 days prior to pour to schedule finish of mock-up.
   2. Reserve 100 square feet for each color and finish at location adjacent to floor that will receive polish, but will be covered with another flooring material. Mock-up floor shall be placed on the same day, preferably the same pour as the floors to receive polish.
   3. Install mock-ups to verify selections made under sample submittal and to demonstrate methods and workmanship proposed for the project. If mock-up not possible, submitted samples will be accepted as demonstrated methods & workmanship.

4. Aggregate selected must be tested to ensure it will accept polish.
5. If stand alone mockup required, form should be clean and free from extraneous substance and be at least a 12' x 12' with a level plywood bottom on level ground with unobstructed access around all four sides.
6. Control joints should be included in mock-up. Sawing performed by General Contractor can begin as soon as the surface is firm enough not to displace any of the aggregate.
7. Edges should be included in mock-up.
8. Approved mock-ups may become part of the completed work if undisturbed at time of substantial completion.

H. Protection: General Contractor shall protect areas to receive polished concrete finish at all times during construction to prevent oils, dirt, metal, excessive water and other potentially damaging materials from affecting the finished concrete surface. Protection measures listed below shall begin immediately after the concrete slab is poured:
1. All hydraulic powered equipment shall be diapered to avoid staining of the concrete.
2. All vehicle parking shall be prohibited on the finish slab area. If necessary to complete their scope of work, drop cloths shall be placed under vehicles at all times.
3. No pipe cutting machine shall be used on the finish floor slab.
4. Steel shall not be placed on the finish slab to avoid rusting.
5. Acids and acidic detergents will not come in contact with slab.
6. All painters will use drop cloths on the concrete. If paint gets on the concrete, it must be immediately removed.
7. All trades will be informed that the slab must be protected at all times.

I. Environmental Limitations
1. Comply with manufacturers written instructions for substrate temperature and moisture content, ambient temperature and humidity, ventilation and other conditions affecting chemical performance.

L. Flatness and levelness:
a. Finish Concrete shall have a minimum Floor Flatness rating of at least 40.
b. Finish Concrete shall have a minimum Floor Levelness rating of at least 30.
c. Finish Concrete shall be cured a minimum of 28 days or at which point equipment can be put on the slab and does not displace aggregate.

M. Application of finish system shall take place a minimum of 21 days prior to fixture & trim installation and/or substantial completion.

N. Finish Concrete area shall be closed to traffic during finish floor application and after application, for the time as recommended by manufacturer.

O. Concrete Mix Design:
1. Concrete Mixture shall be 3000 PSI or higher, non air entrained.
   a. Any admixtures, plasticizers, slag, fly ash or anything taking the place of Portland based cement shall be kept to a minimum.
   b. The cement shall be Portland Cement Type I, conforming to ASTM C 150.
   c. Maintain concrete temperature below 85 degrees. Keep concrete as cool and moist for as long as possible. In essence, decrease rate of hydration and drying to minimize cracking.
   d. Wet cures are most suitable, but if this cannot be achieved, use a penetrating, dissipating or wax based cure and seal. Do not use a denisifier/hardner material due to the grinding of the floor after 6 days.
   e. All mix designs must be approved by Architect. Send all approved mix designs to Applicator.
   f. The Engineer/Architect shall determine the saw cut patterns, color and layout.
   g. Color loads for integral color should never be smaller than 3 cubic yards.
   h. Use on source for cement, aggregates and pozzolans throughout the job. Monitor and control incoming material consistency. Do not use calcium chloride-based admixtures. Non-chloride admixtures may be used.
   i. Wash out all drums before loading. Keep slumps consistent with a maximum of 4. Minimize driver added water maintaining a .45 water content ratio.
   j. Place concrete to achieve as true and smooth a top surface as possible. Mounds, or dips are not acceptable. GC shall control overall flatness and levelness, including on sloping areas to within tolerances permitted by specification – ASTM E1155.
   k. Slab shall be protected from indention and footprints during pour and curing.

PART 2 PRODUCTS

2.1 POLISHING MATERIALS

A. Three-phase 480 Volt generator.
B. 3 head or 4 head counter rotating, variable speed, electric floor grinding/polishing machines with at least 600 pounds down pressure. For example: HTC 950RX, HTC 800 HD, SASE PDG 8000, Husqvarna PG 820. No substitutions allowed.
C. HTC/Pullman Dust extraction system, pre-separator, and squeegee attachments with minimum flow rating of 322 cubic feet per minute such as the HTC 75D, HTC 86D, T8600, T12600, Bull 500, Bull 1250 & T55 or C5500. No substitutions allowed.
D. Grinding tools:
    1. Metal bonded diamonds 16, 25, 40, 80, 150 and/or 300 grits.
    2. Resin bonded diamonds 100, 200, 400 and 800 grits.
E. Grinding Pads for Edges
    1. 30, 60, and 120 grits.
    2. 100, 200,400, and 800 grits.
F. Hand Grinder with dust extraction attachment and pads.
G. Densifier: a Concrete Hardener chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; colorless which hardens and densifies concrete surfaces to protect against abrasion, dusting, and absorption of liquids.
    1. Pentra-Sil (NL); Lithium Silicate; Convergent Technologies
    2. Consolideck LS; Lithium Silicate; Prosoco
    3. Ameripolish 3D HS; Lithium Silicate; Ameripolish, Inc.
    4. Scofield Formula One Lithium Densifier; L.M. Scofield Company
    5. Approved equal

H. Control Joint and Saw Cut Filler, two part polyurea.
    1. Euclid Quickjoint 200
    2. Hi-Tech HT-PE85
    3. Metzger McQuire RS-88
    4. Approved equal

I. Stain Guard: Protect from debris and contaminants.
    1. Ameripolish 3D SP Guard; Ameripolish, Inc.
    2. Consolideck LSGuard; PROSOCO
    3. Scofield Formula One Guard-W; L.M. Scofield Company
    4. Approved equal

J. Diamond Impregnated Polishing Pads
    1. Twister Polishing Pad; HTC
    2. TRIFECTA Polishing Pad; SASE Company
    3. Approved equal

2.2 STAINING MATERIAL: Not used

2.3 EPOXY COATING:

A. Basis of Design: CSS Emulsion- concentrated solvent sealer by Elite Crete Systems.
B. Location: Apparatus Bay
C. Manufacturers: Substitutions per Division 1 based on Architect approval.

PART 3 EXECUTION

3.1 PREPARATION

A. Installer shall examine and approve concrete substrate for conditions affecting performance of finish. General Contractor shall correct conditions that are found to be out of compliance with the requirements of this section. Repairs are not acceptable unless specifically approved on a case-by-case basis by the Architect.
B. Verify that base slab meet finish and surface profile requirements listed in Division 3, Section "Cast in Place Concrete".
C. Provide floor clean of materials and debris.
D. Protect adjacent surfaces as required to prevent damage by the concrete polishing procedure.
E. Setup grinding machine, dust extraction system, tooling, and generator.
F. Ensure floor cured to accept polishing application.

3.2 POLISHED CONCRETE APPLICATION

A. Applicator shall examine the areas and conditions under which work of this section will be provided and the General Contractor shall correct conditions detrimental to the timely and proper completion of the work and the Applicator shall not proceed until unsatisfactory conditions are resolved.
B. Fill construction joints and cracks with filler products as specified in accordance with manufacturers instructions colored to match (or contrast) with concrete color as specified by architect. All control joint and decorative saw cut filling must be preformed prior to grinding application.

C. Grind the concrete floor to within 2 -3 inches of walls with 16, 25, 40 and 80 grit removing construction debris, floor slab imperfections and until there is a uniform scratch pattern and desired concrete aggregate exposure is achieved. Vacuum the floor thoroughly using a squeegee vacuum attachment. Utilize the least aggressive diamond tooling necessary to remove all debris and to achieve uniform scratch pattern.

D. Grind the edges with 30, 60, and 120 grit grinding pads, prior to grinding the floor with each step on the larger diamond grinder, removing all of the scratches from the previous grit. Vacuum the floor thoroughly after each grind, using a squeegee vacuum attachment.

E. Grind the floor to within 2 - 3 inches of walls with metal bonded diamond grits of 150 and/or 300, grinding 90 degrees from each previous grind and removing all the scratches from the previous grit. Vacuum the floor thoroughly after each grind, using a squeegee vacuum attachment.

F. Polish the floor with resin bonded diamond grits of 100, 200, 400, first polishing the edges (if specified) with pads of the same grit and then the field of the floor, removing all scratches from the previous grit. After each polish, clean the floor thoroughly using a vacuum with a squeegee attachment. After the 400 grit polishing step thoroughly clean the floor with a mop or auto-scrubber to prepare for dye (if specified).

G. (If Specified) Apply dye color per Manufacturer's recommendations. Apply 2 coats of dye to achieve desired coloration.

H. Apply densifying impregnator undiluted as per manufacturer's specifications and guidelines. Cover the entire work area liberally and allow to sit for 10 minutes. Apply again to areas where the densifying impregnator has soaked in and allow to sit for an additional 30 minutes. Squeegee excess material off the floor.

I. Polish the floor with resin bonded diamond grit of 800, first polishing the edges (If specified) with pads of the same grit and then the field of the floor, removing all scratches from the previous grit. After polishing, clean the floor thoroughly using clean water and an auto-scrubber or a mop and a wet vacuum.

J. Apply CSS Emulsion with a microfiber applicator and burnish with a fine, 800 grit, or very fine, 1500 grit, diamond impregnated cleaning pad.

K. Upon completion, the work shall be ready for final inspection and acceptance by the customer.

3.3 PROTECTION

A. Plywood slab protection in traffic corridors, entry ways, and dining room shall be provided by and maintained by General Contractor throughout construction until the polishing contractor takes ownership of the floor.

PART 4 SCHEDULES

4.1 SHEEN

A. Polished Concrete Level 2 (Medium Gloss Finish):
   1. At a distance of 30 to 50 feet, the floor will reveal moderate reflection.
      a. Yield a 40-60 degree sheen, as measured by a Horiba IG-310

4.2 EXPOSED AGGREGATE

A. Minimal exposure, Salt and Pepper

4.3 EDGES

A. Polished
B. Edge Tint

4.4 STAIN COLOR: None

END OF SECTION 03368

SECTION 10 75 00

FLAGPOLES

PART 1-GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of the section

B. Related work specified elsewhere includes:

1. Section 03 30 00 – Cast-in-Place Concrete

1.2 SUMMARY

A. Extent and location of each type of flagpole is shown on the Drawings; (1) One required.

B. Work under this Section includes ground set flagpole, bas, lightning protection and ground, fittings, accessories, concrete footing, and all other items necessary or required for a complete and properly functioning installation.

1.3 SUBMITTALS:

A. Product Data: Submit manufacturer's technical data accessories, finishes and installation instructions for each type of flagpole required.

1.4 QUALITY ASSURANCE:

A. Manufacturing Standards: Provide each flagpole as a complete unit, produced by a single manufacturer, including fittings, accessories, bases and anchorage devices.

B. Design Criteria: Provide flagpoles and installations constructed to withstand a 90-mph wind velocity minimum when flying one flag of appropriate size. Use heavy pipe sizes if required for flagpole type and height shown.

C. Pole Construction: Construct pole and ship to site in one piece of possible. If more than one piece is necessary, provide smug-fitting, precision joints with self-aligning, internal splicing sleeve arrangement for weather tight, hairline field joints.

1.5 DELIVERY, STORAGE and HANDLING:

A. Spiral wrap flagpoles with heavy Kraft paper or other protective wrapping and prepare for shipments in hard fiber tube or other protective container.

B. Deliver flagpoles and accessories completely identified for installation procedure. Handle and store flagpoles to prevent damage or soiling.

PART 2-PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

1. American Flagpole & Flag Co.
2. American Flagpole; a Kearney-National Inc. company.
3. Atlantic Fiberglass Products, Inc.
4. Baartol Company.
5. Concord Industries, Inc.
6. Eder Flag Manufacturing Company, Inc.
7. Ewing Flagpoles.
8. Lingo Inc.; Acme Flagpole Company Division.
9. Millerbernd Manufacturing Company.
10. Morgan-Francis; Division of Original Tractor Cab Co., Inc.
11. PLP Composite Technologies, Inc.
12. Pole-Tech Company Inc.
13. U.S. Flag & Flagpole Supply, LP.
14. USS Manufacturing Inc.

2.2 FLAGPOLE TYPE:

A. Aluminum Flagpoles: Fabricate aluminum flagpoles from seamless extruded tubing complying with ASTM B 241, alloy 6063-T6, having a minimum wall thickness indicated, tensile strength not less than 35,000 psi and a yield point of 30,000 psi. Heat-treat and age-harden flagpoles after fabrication.

1. Provide tapered aluminum tube flagpole; for flying one flag.

2. Exposed Height: Provide (1) one 20-foot flagpole.

3. Manufacturer- Basis of Design: American Flagpole. Provide complete with all standard and specified accessories.

   a. Catalog No. – ESS30B41-AA

   b. Exposed height: 20 ft.

   c. Butt Diameter: 4 in.

   d. Wall Thickness: 0.125 in.

   e. Set depth: 3 ft.

   f. Total length: 33 ft.

   g. Taper: 11'-0"

   h. Top diameter: 3 in.

   i. Wind Speed: 60 mph max. with flag; 90 mph without flag

   j. Flag Size: 3'x 5'

   k. Standard Finish: Anodized, clear

2.3 FLAGPOLE MOUNTING:

A. Provide manufacturer's standard base system for the type flagpole installation required.

   1. Foundation Tube: For ground-set [verify] flagpoles, provide 16-gage minimum galvanized corrugated steel tube, or 12-gage minimum rolled steel tube, sized to suit flagpole and installation. Furnish complete with welded steel bottom base and support plate, lighting ground spike, and steel centering wedges, all welded construction. Provide loose hardwood wedges at top for plumbing pole after erection. Galvanized steel parts after assembly, including foundation tube.

      a. Provide manufacturer's standard spun aluminum collar, finished to match flagpole.

2.4 SHAFT FINISH:

A. Aluminum: Fine, directional, mechanical Satin polish (NAAMM-32), finished as follows:

1. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm, or thicker.

2.5 FITTINGS:

A. Finial Ball: Manufacturer's standard flush seam ball, size as indicated or, if not indicated, to match pole butt diameter.

1. Finish to match flagpole.

B. Truck: Ball-bearing non-fouling, revolving, double-track assembly of cast metal, finished to match pole shaft.

C. Cleats: One 9" heavy duty cast aluminum cleat with stainless steel fasteners, finished to match pole shaft.

D. Halyards: Provide one continuous halyard for each flagpole, as follows:

1. Nylon, braided, with metal core; Size 3/8" (No. 12)

E. Halyard Flag Snaps: Provide 2 swivel snaps per halyard; Chromium-plated bronze.

PART 3 - EXECUTION

3.1 INSTALLATION:

A. Excavation: Excavate for foundation concrete to neat clean lines in undisturbed soil. Provide forms where required due to unstable soil conditions. Remove wood, loose soil, rubbish and other foreign matter from excavation, and moisten earth before placing concrete.

B. Concrete: Refer to Section 03 30 00 – Cast-in-Place Concrete, for 3,000 psi concrete and related requirements.

1. Place concrete immediately after mixing. Perform chuting to avoid segregation of mix. Compact concrete in place by use of vibrators to consolidate. Moist-cure exposed concrete for not less than 7 days, or use a non-staining curing compound in freezing weather.

2. Finish trowel exposed concrete surfaces to smooth, dense surface. Provide positive slope for water runoff to base perimeter.

C. Flagpole Installation: Install flagpoles as shown and in compliance with final shop drawings and manufacturer's written instructions and recommendations.

1. Provide positive lightning ground for each flagpole installation.

a. Paint portions of ground-set flagpole below grade with a heavy coat of bituminous paint, and allow to properly dry and cure, prior to setting in place and pouring concrete.

END OF SECTION 10 75 00

SECTION 12 32 16

MANUFACTURED PLASTIC-LAMINATE-CLAD CASEWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Special Conditions and Division 1 - Specification sections, apply to work of this section.

1.2 WORK INCLUDED

A. The extent of manufactured casework systems as shown on drawings, schedules, and specified herein. Where specific materials, finishes, construction details, and hardware are specified herein, the casework contractor shall be held in strict accordance. All items shall be as provided, and publicly cataloged, by the manufacturers to assure physical and dimensional integrity of the system and ready access to additional systems components for a minimum of ten (10) years after completion of this contract. Product from companies not meeting this requirement will not be accepted. It is the intent of the owner and architect and construction manager to have this specification section furnished by one contractor. The work includes fabrication and installation of.

B. Furnish and install all fixed, modular, flexible rail mounted, and mobile laminate clad casework, tops, accessories and components, fillers and related items shown on drawings and herein specified. All built-in and modular plastic laminate countertops, splashes as specified herein and detailed on architectural drawings.

C. Provide QCP Registered Certificate upon request at time of bid, and as a part of Shop Drawings.

D. Furnish and install all locks for cabinet doors and drawers as indicated on elevations of the architectural drawings.

E. Furnish and install all keyboard trays as shown on the drawings.

F. Furnish and install closet shelving and rods as indicated on Drawings and herein specified.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Sinks and service fixtures, service and waste lines and all connections, vents, electrical service fixtures, hoods and ducting within or adjacent to casework, or otherwise required in all areas. Furnished and installed under Mechanical and Electrical Divisions 23 and 26.

B. Any & all type required and indicated Base molding: Furnished and installed under Finishes Division 9.

C. Appliances, unless specifically noted on plans or in other Sections shall be included in this section.

D. Furnishing, installing and connecting of service supply lines and conduits within equipment and casework and all final connections.

E. Installing all utility service outlet accessory fittings and fixtures furnished by casework contractor, pulling of wire and connecting of electrical fixtures in service lines, provision of ground fault protection for circuits requiring such.

F. Furnishing, installing and connecting all traps, tailpieces, backflow prevention devices and special plumbing fittings and piping of unusual nature to meet local codes even though not specifically called for in specifications or shown on drawings.

G. Furnishing and installing of all framing, bucks, metal grounds or reinforcements in walls, floors, ceilings to adequately support and anchor casework and related equipment.

H. Furnishing and installation of all rigid or flexible conduit, wire, pulling of wire, fittings, special electrical equipment, data and accessories including boxes, receptacles; flush plates required at the circulation desk .

I. General Contractor or Owner shall furnish hoisting or elevator service, where available, at no charge to casework contractor.

1.4 SYSTEM DESCRIPTION

A. All manufactured casework shall be pre-engineered, and cataloged in a nationally published catalog. Manufacturers submitting for approval must provide printed catalog information documenting this performance feature; no exceptions will be allowed.

1.5 QUALITY ASSURANCE

A. All manufactured casework systems, countertops and related items herein specified shall be furnished be one contractor to insure single source responsibility, and integration with other building trades.

B. All manufacturers herein listed, shall show evidence of a minimum of five (5) years experience in providing manufactured casework systems for similar types of projects.

C. Manufacturer shall produce evidence of adequate facilities and personnel required to perform on this project. Financial stability of manufacturer shall be evidenced by readily providing a material performance bond if required.

D. Refer to Division 1 Section "Special Conditions" for additional information and requirements related to minimum experience requirements.

E. Manufactured casework systems must conform to design, quality of materials, workmanship and function and finishes and colors as shown on drawings and specified herein. Any manufacturers not meeting this AWI certification are prohibited from bidding, no exceptions.

F. Provide independent laboratory testing documenting that the support rail and interfacing components when tested in strict accordance with the requirements of seismic construction codes, all components met or exceeded the requirements as set forth by the codes. All bidders must provide a copy of test to architect ten days prior to bid date.

G. All proposed casework shall meet the following minimums loads / design strengths:

1. Racking Test (must exceed 975 lbs.)

2. Front Joint Load Test (must exceed 635lbs.)

3. Uniform Load Shelf Test (must exceed 1140 lbs.)

4. Isolated Shelf Clip Load Test (must exceed 225 lbs.)

5. Static Load Test (must exceed 1800 lbs with no cabinet failure)

6. Draw Side Joint Test (must exceed 425 lbs.)

7. Draw Front Joint Test (must exceed 925lbs.)

H. Provide independent laboratory testing documenting that the support rail and interfacing components when tested in strict accordance with the requirements of seismic construction codes, all components will meet or exceed the requirements as set forth by the codes.

I. The owner requires the following minimal depths for the plastic laminate cabinets to allow certain items needing to be stored to fit completely inside the cabinets. These measurements shall be determined from the inside back of the cabinet, to the front side edge of the cabinet.

1. All 13" deep open cabinets & 14" deep door cabinets shall have an 11-1/2" inside clear dimension.

2. All 15" deep open cabinets & 16" deep door cabinets shall have a 13-1/2" inside clear

3. All 17" deep open cabinets & 18" deep door cabinets shall have a 15-1/2" inside clear dimension.

4. All 23" deep open cabinets & 24" deep door cabinets shall have a 21-1/2" inside clear dimension.

5. All 28" deep open cabinets & 29" deep door cabinets shall have a 26-1/2" inside clear dimension.

6. All drawers depths shall be two inches are less from the back of the cabinet. All bidders must provide documentation to the architect stating their casework is in compliance with these requirements ten (10) days prior to the bid date.

J. The Architect and Owner reserve the right to randomly select one 36" wide base cabinet and one 36" wide wall cabinet and one 36" wide tall cabinet from each manufacturer during installation and cut apart to determine if the product installed meets the written specification. The casework manufacturer shall include the price to replace these units in their bid. If the product fails to comply with specifications the casework manufacturer and/or supplier shall be responsible for all necessary corrections until compliant with requirements, at no additional cost to the Owner.

1.6 SUBMITTALS

A. Product Data:

1. In addition to the general conditions as relates to prior approvals, submit complete manufacturer's data; elevations, details and sections;

manufacturer's installation and maintenance instructions; sample warranties and guarantees; and samples of cabinets and components are required upon Architect's request.

B. Samples:

1. Submit samples of casework manufacturer's standard decorative laminate colors, patterns, and textures for exposed and semi-exposed materials for architect's selection. Samples of other materials or hardware shall be made available if requested.

2. Architect may request representative full-size samples for evaluation prior to approval. Samples may be impounded by architect/owner until completion of project to ensure compliance with specifications.

3. Submit copy of Seismic testing report.

C. Shop Drawings / Production Drawings:

1. Submit production drawings for all casework systems and countertops and required equipment, ends, cross-sections, face modular values, service run spaces and location of services.

2. Include layout of units with relation to surrounding walls, doors, windows, and other building components.

3. Coordinate production drawings with other work and trades involved.

1.7 PRODUCT HANDLING

A. Deliver casework and countertops only after wet operations in building are completed.

B. Store completed casework and countertops in a ventilated place, protected from the weather, with relative humidity range of 20% to 50%.

C. Protect finished surfaces from soiling and damage during handling and installation.

D. General Contractor shall be responsible for protection of all casework and tops after installation is completed.

E. Refer to Division 1 Sections "Summary of Work" and "Special Conditions" for additional information and requirements regarding stored materials.

1.8 JOB CONDITIONS

A. Humidity and Temperature Controls: Before the delivery and installation of casework and equipment, building conditions shall be as follows:

1. The building shall be secure and weather tight, with windows and doors installed, heat and air conditioning systems functional.

2. Walls and openings shall be plumb, straight and square. Concrete floors shall be level within acceptable trade tolerances. Specifically the floor must be within 1/8" of level per 10 foot run, non-accumulative, when tested with a straight edge in any one direction.

3. Flooring required to be placed under casework and equipment must be installed.

4. Wood or metal blocking (wall grounds) shall be installed within partitions prior to delivery of casework and furnishings to allow for immediate installation on delivery.

5. General Contractor shall have heat and air conditioning systems providing consistent temperature and humidity conditions as required. Related humidity must be maintained at not less than 25%, nor more than 55%. Temperatures must not range lower than 65 degrees F, not to exceed 80 degrees F in areas of material installation.

6. All overhead mechanical, electrical or plumbing rough-in work shall be complete.

7. Any “wet” operation performed by other trades must be complete prior to delivery.

8. Ceiling grids (with or without ceiling tiles), overhead soffits, duct work and lighting shall be installed.

9. Painting shall be complete.

10. General Contractor shall provide a secure storage area within the building that is clean, dry well ventilated, and protected from direct sunlight and broom clean.

1.9 WARRANTY

A. Special Project Warranty/Guarantee: All plastic laminate casework, all other products herein specified, and all materials and workmanship shall be guaranteed by the manufacturer for a period of 5 years from the date of project Substantial Completion.

1. Any defective materials and/or workmanship shall be reported by the Owner and shall be promptly repaired or replaced by the manufacturer subject to Owner's approval and at no expense to the owner, within 15 days thereafter.

2. In the event the manufacturer fails to make repairs or replacements in compliance with requirements, the Owner may elect to have repairs made by others at the expense of the manufacturer and with no effect on any remaining warranty or guarantee.

B. In-Service Training Seminar:

1. The casework system contractors shall conduct a one day in-service training seminar for all staff, including facility maintenance personnel. The program will be held prior to move in or at the convenience of owner representatives.

2. Seminar shall include orientation of use of casework system(s), maintenance of casework and description of modularity and /or relocation of system components.

C. The Warranty and Guarantee shall be in addition to and run concurrent with other warranties and guarantees made by the Contractor under the requirements of the Contract Documents, and shall not be construed to limit or otherwise deprive the Owner of any other rights the Owner may have for remedy.

PART 2 – PRODUCTS

2.1 PLASTIC LAMINATE CASEWORK

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Casework Systems:

a. Cabinets By Design; Duluth, GA

b. Case Systems, Inc.; Midland, MI

c. Interior Wood Specialties, Inc.; Highpoint, NC

d. LSI Corporation of America, Inc.; Minneapolis, MN

e. Stevens Industries, Inc.; Teutopolis, IL

f. TMI Systems Design Corporation; Dickinson, ND (Basis of design)

g. Westmark Products, Inc.; Tacoma, WA

h. Remmert & Company; Tuscaloosa, AL

i. RPA, Inc.

j. Phipps Cabinets, Inc.

k. Tailored Living, LLC

2. Plastic Laminate: Subject to compliance with requirements, provide solid, stippled, textured, and/or patterned high pressure decorative laminates of one of the following:

a. Formica Corporation.

b. Micarta Division, Westinghouse Electric Corporation.

c. Nevamar Division, International Paper Co.

d. Ralph Wilson Plastics Co.

e. or Approved equal

B. General:

1. For purpose of determining minimum performance and quality standards for the plastic laminate casework herein specified, the drawings and specifications are based on manufacturer's literature from TMI SYSTEMS DESIGN CORPORATION; Dickinson, North Dakota; Phone: 1-800-456-6716, by one of the above named preapproved manufacturers, for all fixed, modular, flexible rail mounted, mobile plastic laminate casework, plastic laminate tops, and accessories. Construction and features shall be in accordance with TMI catalog, fixed modular, flexible rail mounted, and mobile plastic laminate casework, tops and accessories. Products of other manufacturers may be considered for preapproval based on

complete and properly submitted request indicating compliance with all requirements of this specification and submitting all required documents and guarantees to architect at least 10 days prior to Bid date. Any deviations from this specification shall be listed. Proof of equivalency shall be the sole responsibility of the proposer. Refer to Division 1 Section "Special Conditions" for additional information and requirements regarding submittals and substitutions. Any additional preapproved manufacturers will be issued by the Architect in writing or by addendum only.

2. All flexible wall and under counter cabinets, under counter support brackets, that are an integral part of the system, shall be provided with "ADA Justable" hardware package allowing for component placement in strict compliance with Accessibility Guidelines of the Americans with Disabilities Act (ADA-AG), as required. All units shall be readily adjustable to accommodate specialized ADA-AG height requirements when needed and returned to more traditional stand-up and/or sit-down heights when needs change. All changes may be accomplished without special tools or procedures and with no alterations to building construction and/or finishes. Flexible systems not meeting this requirement will be rejected; no exceptions. Manufacturer to provide brochure to the architect specifically depicting ADA-AG requirements and system compliance ten days prior to bid opening.

B. Substitutions:

1. It is the intent of this specification to establish performance and quality criteria consistent with pre-established standards of design and function herein described. Casework systems not meeting these minimum standards will not be accepted.

2. Where specific materials finish options, construction details, modularity, hardware and test data are specified herein, the casework storage system will be held in strict compliance. Substitutions will be considered prior to bid date provided request is submitted to the Architect in writing no later than ten (10) days prior to bid date; substitution request shall list any and all deviations from this specification. Acceptable substitutions be issued by the Architect in writing or by addendum only.

2.2 MATERIALS

A. Core Materials:

1. Particleboard up to 7/8 inch thick: Industrial Grade average 47-pound density particleboard, ANSI A 208.1-1993, M-3.

2. Particleboard 1 inch thick and thicker: Industrial Grade average 47-pound density particle-board, ANSI A 208.1-1993, M-2.

3. MR Moisture Resistant Particleboard: Average 47-pound density particleboard, ANSI A 208.1 1-1993, M-3.

4. Medium Density Fiberboard: Average 47-pound density grade, ANSI A 208.2.

5. Grade A-B Plywood

B. Hardboard: 1/4 inch thick prefinished hardboard, CS-251.

C. Decorative Laminates:

1. High-pressure decorative laminate VGS (.028), NEMA Test LD 3-1995. for vertical surfaces.

2. High-pressure decorative laminate HGS (.048), NEMA Test LD 3-1995 for horizontal surfaces.

3. High-pressure decorative laminate HGP (.039), NEMA Test LD 3-1995 for post formed tops.

4. High-pressure cabinet liner CLS (.020), NEMA Test LD 3-1995.where required for balance construction of closed cabinets and herein specified.

5. High-pressure backer BKH (.048), (.039), (.028), NEMA Test LD3-1995. where required for balance construction of closed cabinets.

6. Thermally fused melamine laminate, NEMA Test LD 3-1995 where required for open and closed cabinet interiors to create balance construction.

D. Laminate Color Selection: Maximum 1 color per unit face and 5 colors per project.

E. Edging Materials:

1. 1 mm PVC banding, where required and herein specified.

2. 3mm PVC banding, machine profiled to 1/8 inch radius where required and herein specified.

2.3 SPECIALTY ITEMS

A. Metal Parts:

1. Countertop support brackets, under-counter support frames, legs and miscellaneous metal parts shall be furniture steel, welded, degreased, cleaned, treated and epoxy powder painted. Color shall be as selected by Architect, from these three color offerings: Dove Grey, Frosty White, or Light Beige.

B. Hinges:

1. Furnish five knuckle, epoxy powder coated, institutional grade, 2-3/4 inch overlay type with hospital tip.0.095 inch thick. ANSI-BHMA standard A156.9, Grade 1.

   a. Doors 48 inch and over in height shall have 3 hinges per door.

   b. Provide a magnetic door catch with maximum 5 pound pull provided, attached with screws and slotted for adjustment.

C. Pulls:

1. Door and drawer front pulls, brushed chrome, 96mm spacing on screws, or equivalent priced pulls selected by Architect after bidding. Pull design shall comply with the Accessibilities Guidelines of the Americans with Disabilities Act (ADA-AG).

D. Drawer Slides:

1. Regular, knee space and pencil slides shall be 100-pound load rated epoxy coated steel, bottom corner mounted with smooth and quiet nylon rollers and have a positive stop both directions with self-closing feature. Paper storage units shall have 150-pound load rated epoxy coated steel slides.

2. File: Full extension, Shall have 150-pound load rated epoxy coated steel, bottom corner mounted with smooth and quiet nylon rollers and have positive stop both directions with self-closing feature.

E. Adjustable Shelf Supports:

1. Injection molded transparent polycarbonate friction shall fit into cabinet end panels and vertical dividers, adjustable on 32mm centers. Each shelf support shall have 2 integral support pins, 5mm diameter, to interface pre-

drilled holes, and to prevent accidental rotation of support. The support shall automatically adapt to 3/4 inch or 1 inch thick shelving and provide a non-tip feature for shelving. Supports may be field fixed if desired. Structural load to 1200 pounds (300 pounds per support) without failure.

F. Locks:

1. Shall be National #M49054, removable core, disc tumbler, cam style lock with strike, as part of a grand master keying system. Keys in each room where lockable cabinets occur shall be keyed alike and master keyed. Furnish 2 keys per lock and 5 grand master keys. Lock for sliding 3/4 inch doors shall be a disc type plunger lock, sliding door type with strike, keyed alike and master keyed. Lock for sliding glass/acrylic doors shall be a ratchet type sliding showcase lock, keyed alike and master keyed.

2. Automatic door bolt shall be equivalent to Hafele #530-1604, used to secure inactive door on all locked cabinets.

G. Sliding Door Track: Shall be extruded, anodized aluminum double channel.

H. Coat Rods: Shall be 1 inch diameter, 14-gauge chrome plated steel installed in captive mounting hardware.

I. Closet rods & closet Shelves:

1. Closet rods shall be 1 inch diameter plated steel. The shelves shall be ¾ inch Melamine covered plywood with 1 mm PVC edging all four sides.

J. File Suspension System:

1. Shall be extruded plastic file suspension rails. File followers, or other split bottom hardware, will not be acceptable. Provide one file suspension system for every required file drawer.

K. Mirrors: To be 1/4 inch thick polished mirror plate, with edge and back sealer.

2.4 FABRICATION:

A. Fabricate casework, countertops and related products to dimensions, profiles, and details shown.

B. Cabinet Body Construction:

1. Tops and bottoms are glued and doweled to cabinet sides and internal cabinet components such as fixed horizontals, rails and verticals. Minimum 6 dowels each joint for 24 inch deep cabinets and a minimum of

4 dowels each joint for 12 inch deep cabinets or Mod-Eez Fasteners installed per AWI Guidelines.

a. Tops, bottoms and sides of all cabinets are 3/4 inch thick particleboard core.

2. Cabinet backs: 1/4 inch thick pre-finished hardboard or 1/2 inch particleboard. Wall and tall cabinets are provided with a 1 inch x 1-3/4 inch PVC mounting strip used to secure the cabinet to the wall.

a. Exposed back on fixed or movable cabinets: 3/4 inch particleboard with the exterior surface finished in VGS laminate as selected.

b. Flexible rail mounted cabinet backs: 3/4 inch thick particleboard structurally doweled into cabinet sides and top panels.

3. Fixed base and tall units have an individual factory-applied base, constructed of 3/4 inch exterior grade plywood. Base is 96mm (nominal 4 inch) high unless otherwise indicated on the drawing.

4. Base units, except sink base units: Full sub-top. Sink base units are provided with open top, a welded steel/epoxy painted sink rail full width at top front edge concealed behind face rail/doors, a split back removable access panel.

5. Side panels and vertical dividers shall receive adjustable shelf hardware at 32mm line boring centers. Mount door hinges, drawer slides and pull-out shelves in the line boring for consistent alignment.

6. Exposed and semi exposed edges

a. Edging: 1mm PVC

7. Adjustable shelf core: one inch thick particleboard for all shelves

a. Front edge: 1mm PVC.

8. Interior finish, units with open Interiors:

a. Top, bottom, sides, horizontal and vertical members, and adjustable shelving faces with thermally fused melamine laminate with matching prefinished back.

9. Interior finish, units with closed and exposed Interiors:

a. Top, bottom, sides, horizontal and vertical members, and adjustable shelving faces with thermally fused melamine laminate with matching prefinished back.

10. Exposed ends:

    a. Faced with VGS high-pressure decorative laminate.

11. Wall unit bottom:

    a. Faced with thermally fused melamine laminate.

12. Wall and tall unit tops:

    a. Top surface is faced with thermally fused melamine laminate.

13. Balanced construction of all laminated panels is mandatory. Unfinished core stock surfaces, even on concealed surfaces (excluding edges), not permitted.

C. Drawers:

1. Sides, backs and sub fronts: Minimum 1/2 inch thick particleboard, laminated with thermally fused melamine doweled and glued into sides. Top edge banded with 1mm PVC.

2. Drawer bottom: Minimum 1/2 inch thick particleboard laminated with thermally fused melamine, screwed directly to the bottom edges of drawer box. 1/4" thick drawer bottoms will ONLY be accepted IF FULLY ENCASED BY SIDES.

3. Paper storage drawers: Minimum 3/4 inch thick particleboard sides, back, and sub front laminated with thermally fused melamine. Minimum 1/2 inch thick particleboard drawer bottoms screwed directly to the bottom edges of the drawer box. Provide PVC angle retaining bar at the rear of the drawer. 1/4" thick drawer bottoms will ONLY be accepted IF FULLY ENCASED BY SIDES.

D. Door/Drawer Fronts:

1. Core: 3/4 inch thick particleboard.

2. Provide double doors in opening in excess of 24 inches wide.

3. Faces:

    a. Exterior: VGS High-pressure decorative laminate.

    b. Interior: High-pressure cabinet liner CLS.

4. Door/drawer edges: 3mm PVC, external edges and outside corners machine profiled to 1/8 inch radius.

5. Miscellaneous Shelving:

    a. Core material: 3/4 inch or 1 inch particleboard.

    b. Exterior: VGS High-pressure decorative laminate.

    c. Edges: 3mm PVC, external edges and outside corners machine profiled to inch radius

2.5 COUNTERTOPS

A. Laminate Tops: All shall be nominal 1" thick laminate clad countertops as shown on the drawings and shall be constructed with 1" particleboard core or moisture resistant particleboard as called for and have a laminated top face with GP50 (.050) high pressure decorative laminate, with BK20 backer underside. Furnish moisture resistant particleboard tops and splashes at all sink locations. Moisture resistant particleboard cores shall extend 36" of either side of center line of sink. Provide tight joint fasteners where needed. All exposed edges, including edges of backsplash where used, shall have 3mm PVC banding, machine applied with waterproof hot melt adhesive. Exposed edges and corners shall be machine profiled to 1/8" radius for safety. Edging color shall be as selected by architect. Furnish 4" high back splashes where indicated.

2.6 COLOR SELECTION:

A. Laminate Color Selection: Exteriors

1. Selected from the full range of Wilsonart® stock color charts for cabinet faces, exposed ends, open interiors, and countertops.

B. Hinge and Pull Color Selection:

1. Selected from stock colors matched to White, Beige, Gray, Black and Chrome.

C. Miscellaneous Hardware Color Selection (support brackets, table frames, rail):

1. Selected from stock colors matched to White, Beige, Gray and Black.

D. 1mm PVC Edge Banding Color Selection:

1. Selected from 1mm PVC stock colors matched to White, Beige, Gray and Black or a color matching Wilson-Art Stock VGS laminates, if available.

E. 3mm PVC Edge Banding Color Selection:

1. Selected from 3mm PVC stock VGS laminate colors matched to White, Beige, Gray and Black or a color matching Wilson-Art Stock VGS laminates, if available

F. The interior cabinet material color for all fully enclosed cabinets only to be selected from manufacturer's full color range.

PART 3 - EXECUTION

3.1 INSPECTION:

A. The casework contractor shall examine the job site and the conditions under which the work under this section is to be performed, and notify the building owner in writing of unsatisfactory conditions. Do not proceed with work under this Section until satisfactory conditions have been corrected in a manner acceptable to the installer.

3.2 SITE EXAMINATION

A. Verification by supplier required prior to installation to ensure that site condition are ready to receive system and dimensions are in compliance with manufacturer instructions.

3.3 PREPARATION

A. Condition casework to average prevailing humidity conditions in installation areas prior to installing.

3.4 INSTALLATION

A. Erect casework, plumb, level, true and straight with no distortions. Shim as required. Where laminate clad casework abuts other finished work, scribe and cut to accurate fit.

B. Adjust casework and hardware so that doors and drawers operate smoothly without warp or bind.

C. Repair minor damage per plastic laminate manufacturer's recommendations. Replace other damaged cabinets or materials.

3.5 CLEANING:

A. Leave cabinets broom clean inside and out. Wipe off fingerprints, pencil marks, and surface soil etc., in preparation for final cleaning by the building owner.

B. Remove and dispose of all packing materials and related construction debris.

END OF SECTION 12 32 16

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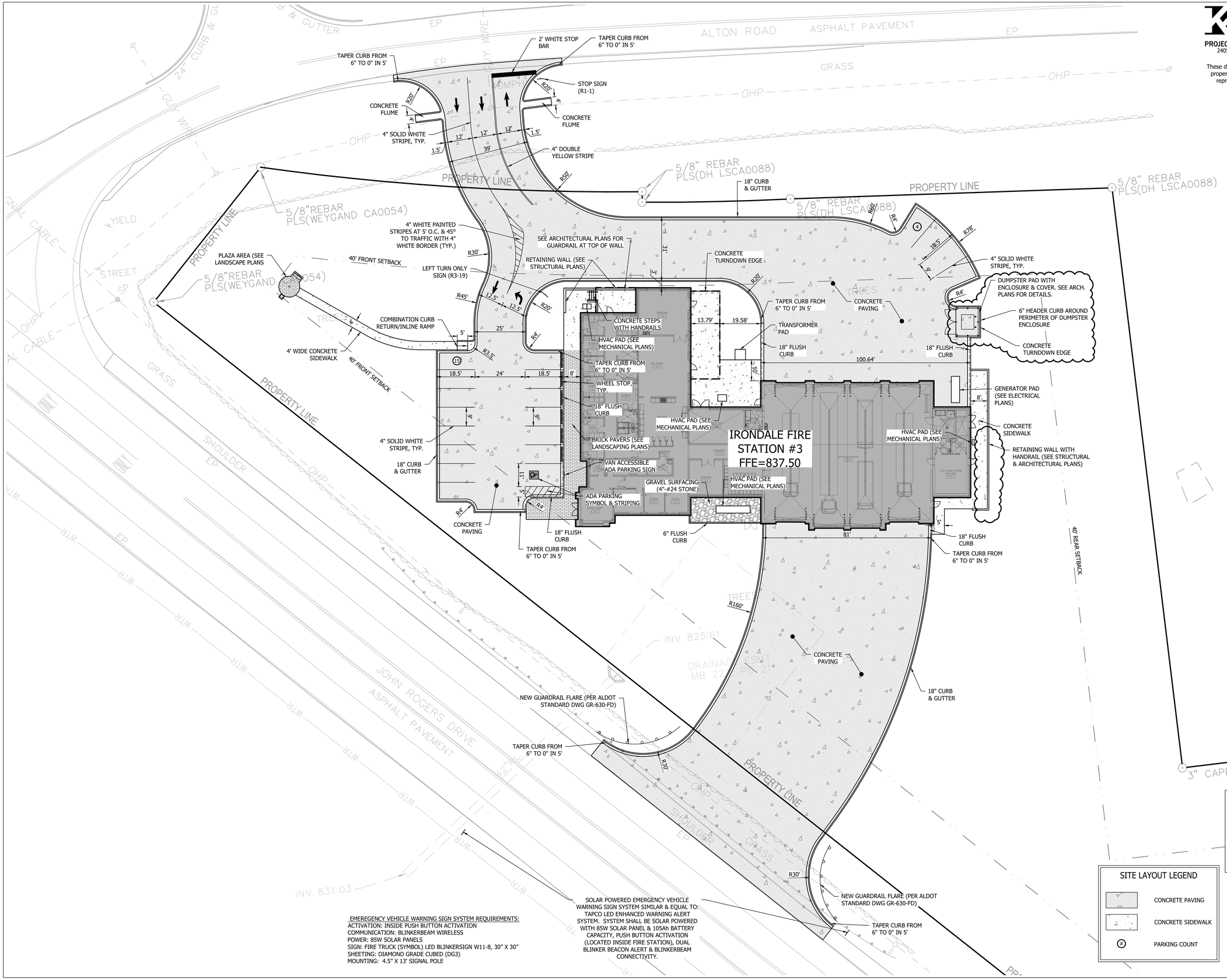


EMEREGENCY VEHICLE WARNING SIGN SYSTEM REQUIREMENTS:
ACTIVATION: INSIDE PUSH BUTTON ACTIVATION
COMMUNICATION: BLINKERBEAM WIRELESS
POWER: 85W SOLAR PANELS
SIGN: FIRE TRUCK (SYMBOL) LED BLINKERSIGN W11-8, 30" X 30"
SHEETING: DIAMOND GRADE CUBED (DG3)
MOUNTING: 4.5" X 13' SIGNAL POLE

ZONING: AG (AGRICULTURAL)
SETBACKS: FRONT: 40'
REAR: 40'
SIDE: 15'
PARKING: 1 PER 400 SF GFA
(GFA = 7,555 SF)
19 SPACES REQUIRED
19 SPACES PROVIDED
1 ADA SPACE REQUIRED
1 ADA SPACE PROVIDED

SITE LAYOUT LEGEND
- CONCRETE PAVING
- CONCRETE SIDEWALK
- (#) PARKING COUNT

0 20 40
SCALE: 1"=20'

KADRE ENGINEERING
PO BOX 101205
IRONDALE, ALABAMA 35210
CONTACT: Curtis Walker
Tel + 205.795.3434
PROJECT NO. 24056

Revisions

No.	Date	Description
1	2/19/25	ADDENDUM #3

ALABAMA LICENSED No. 31679 PROFESSIONAL ENGINEER Curtis Walker 2/19/25

100% CD'S

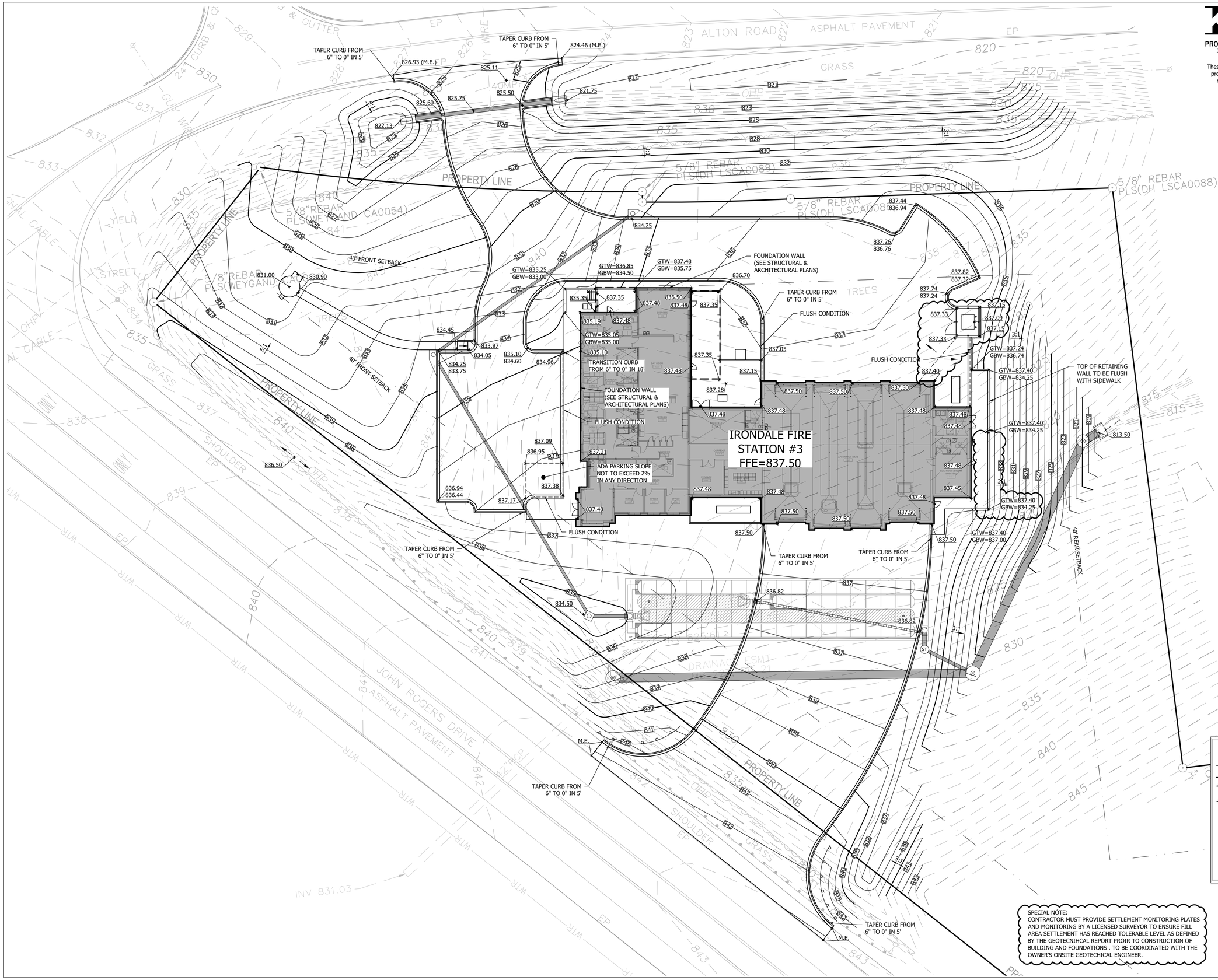
IRONDALE FIRE STATION #3

2101 JOHN ROGERS DR
BIRMINGHAM, AL 35210
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700 FAX: 205-250-0515

SHEET TITLE: SITE LAYOUT PLAN
PROJECT NUMBER: CWA No. 2023-01
DATE: 8/30/24
DRAWN BY: WCW | CHECKED BY: CIE

SHEET NUMBER C1.0



SPECIAL NOTE:
CONTRACTOR MUST PROVIDE SETTLEMENT MONITORING PLATES AND MONITORING BY A LICENSED SURVEYOR TO ENSURE FILL AREA SETTLEMENT HAS REACHED TOLERABLE LEVEL AS DEFINED BY THE GEOTECNIHCAL REPORT PROIR TO CONSTRUCTION OF BUILDING AND FOUNDATIONS . TO BE COORDINATED WITH THE OWNER'S ONSITE GEOTECHICAL ENGINEER.

GRADING LEGEND

501	MINOR CONTOUR
500	MAJOR CONTOUR
500.00	SPOT ELEVATION
500.50 / 500.00	TOP OR CURB ELEV / BOTTOM OF CURB ELEV
GTW	FINISHED GRADE ELEV ON HIGH SIDE OF WALL
GBW	FINISHED GRADE ELEV ON LOW SIDE OF WALL
M.E.	MATCH EXISTING ELEV

N

0 20 40

SCALE: 1"=20'

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Revisions

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ALABAMA LICENSED No. 31679 PROFESSIONAL ENGINEER Curtis Walker 2/19/25

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IRONDALE FIRE STATION #3

2101 JOHN ROGERS DR
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CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700 FAX: 205-250-0515

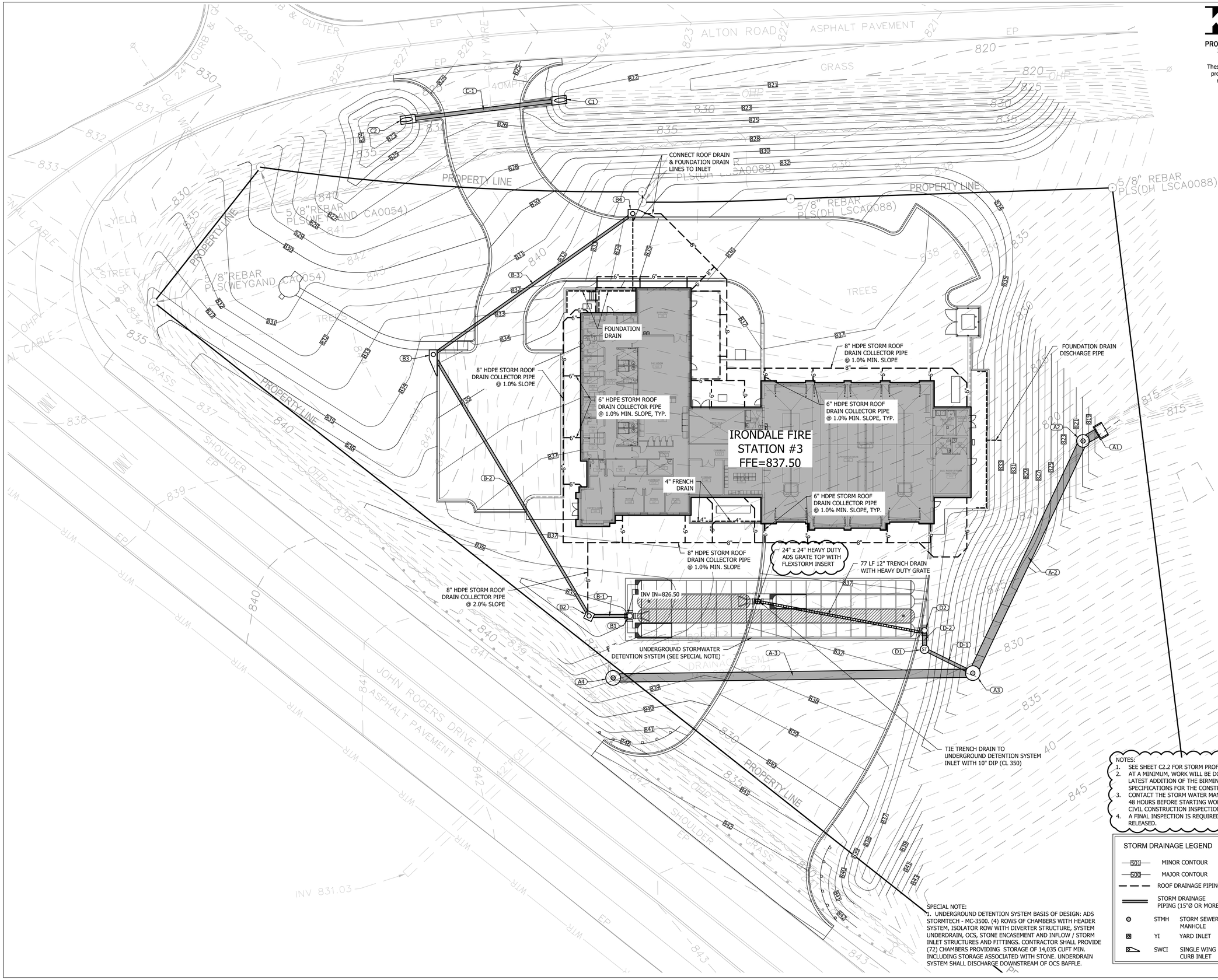
SHEET TITLE: **SITE GRADING PLAN**

PROJECT NUMBER: **CWA No. 2023-01**

DATE: **8/30/24**

DRAWN BY:	CHECKED BY:
WCW	CIE

SHEET NUMBER **C2.0**



NOTES:
1. SEE SHEET C2.2 FOR STORM PROFILE INFORMATION.
2. AT A MINIMUM, WORK WILL BE DONE IN ACCORDANCE WITH THE LATEST ADDITION OF THE BIRMINGHAM STANDARDS AND SPECIFICATIONS FOR THE CONSTRUCTION OF PUBLIC WORKS PROJECTS.
3. CONTACT THE STORM WATER MANAGEMENT OFFICE AT 205-297-8168, 48 HOURS BEFORE STARTING WORK TO SCHEDULE STORMWATER AND CIVIL CONSTRUCTION INSPECTIONS.
4. A FINAL INSPECTION IS REQUIRED BEFORE THE PROJECT CAN BE RELEASED.

SPECIAL NOTE:
1. UNDERGROUND DETENTION SYSTEM BASIS OF DESIGN: ADS STORMTECH - MC-3500. (4) ROWS OF CHAMBERS WITH HEADER SYSTEM, ISOLATOR ROW WITH DIVERTER STRUCTURE, SYSTEM UNDERDRAIN, OCS, STONE ENCASEMENT AND INFLOW / STORM INLET STRUCTURES AND FITTINGS. CONTRACTOR SHALL PROVIDE (72) CHAMBERS PROVIDING STORAGE OF 14,035 CUFT MIN. INCLUDING STORAGE ASSOCIATED WITH STONE. UNDERDRAIN SYSTEM SHALL DISCHARGE DOWNSTREAM OF OCS BAFFLE.

STORM DRAINAGE LEGEND

501	MINOR CONTOUR	
500	MAJOR CONTOUR	
	ROOF DRAINAGE PIPING	
	STORM DRAINAGE PIPING (15"Ø OR MORE)	
STMH	STORM SEWER MANHOLE	
YI	YARD INLET	
SWCI	SINGLE WING CURB INLET	

N

0 20 40

SCALE: 1"=20'

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PROJECT NO. 24056

Revisions

No.	Date	Description
1	2/19/25	ADDENDUM #3

ALABAMA LICENSED No. 31679 PROFESSIONAL ENGINEER CURTIS WALKER
Curtis Walker
2/19/25

100% CD'S

IRONDALE FIRE STATION #3

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CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700 FAX: 205-250-0515

SHEET TITLE: SITE DRAINAGE PLAN

PROJECT NUMBER: CWA No. 2023-01

DATE: 8/30/24

DRAWN BY:	CHECKED BY:
WCW	CIE

SHEET NUMBER

C2.1

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CONTACT: Curtis Walker
Tel + 205.795.3434

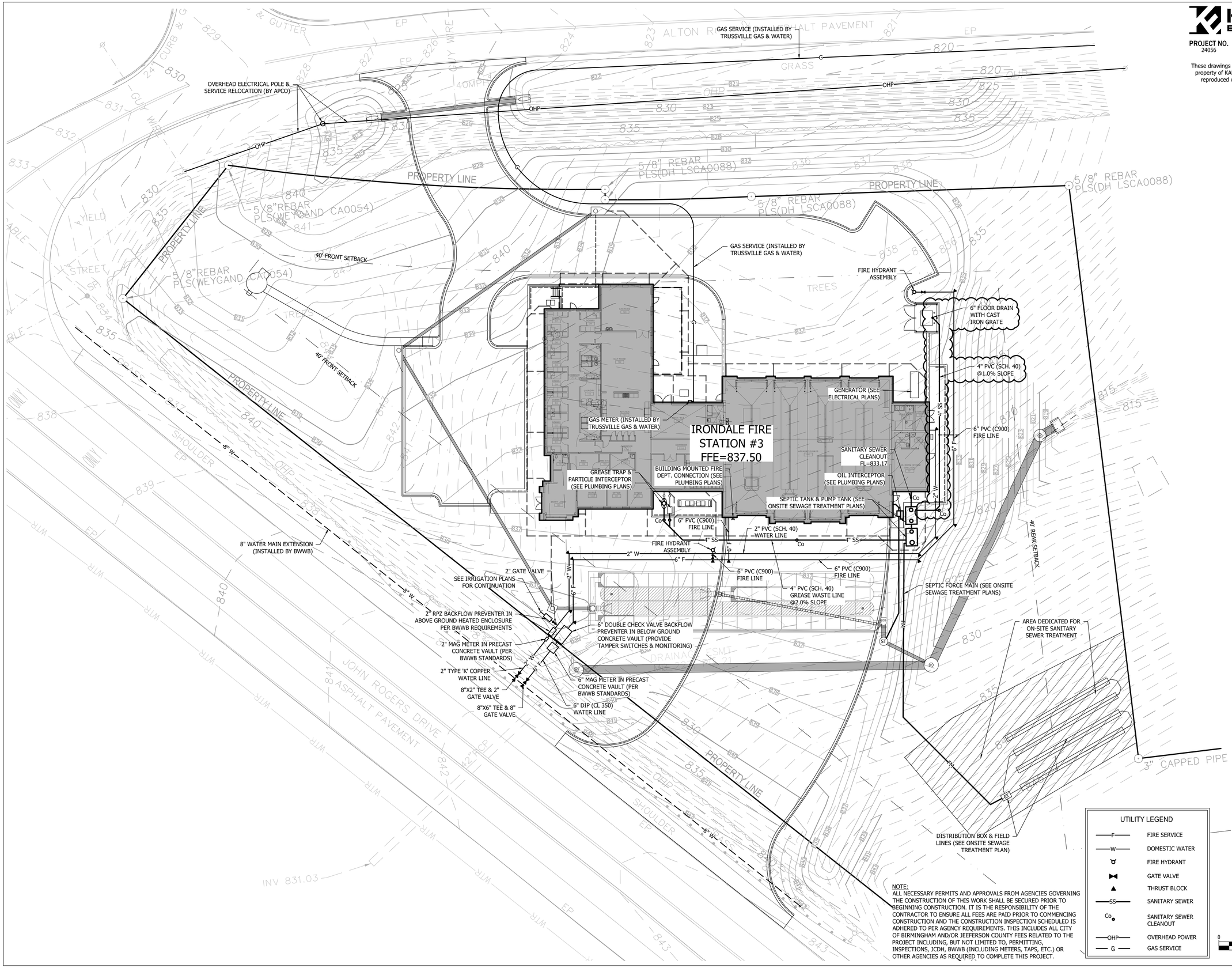
Revisions		
No.	Date	Description
1	2/12/25	ADDENDUM #2
2	2/19/25	ADDENDUM #3

ALABAMA LICENSED PROFESSIONAL ENGINEER No. 31679 Curtis Walker 2/19/25

100% CD'S

IRONDALE FIRE STATION #3

2101 JOHN ROGERS DR
BIRMINGHAM, AL 35210
CITY OF IRONDALE



UTILITY LEGEND

—F—	FIRE SERVICE
—W—	DOMESTIC WATER
	FIRE HYDRANT
	GATE VALVE
	THRUST BLOCK
—SS—	SANITARY SEWER
Co	SANITARY SEWER CLEANOUT
—OHP—	OVERHEAD POWER
— G —	GAS SERVICE

NOTE:
ALL NECESSARY PERMITS AND APPROVALS FROM AGENCIES GOVERNING THE CONSTRUCTION OF THIS WORK SHALL BE SECURED PRIOR TO BEGINNING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ALL FEES ARE PAID PRIOR TO COMMENCING CONSTRUCTION AND THE CONSTRUCTION INSPECTION SCHEDULED IS ADHERED TO PER AGENCY REQUIREMENTS. THIS INCLUDES ALL CITY OF BIRMINGHAM AND/OR JEEFERSON COUNTY FEES RELATED TO THE PROJECT INCLUDING, BUT NOT LIMITED TO, PERMITTING, INSPECTIONS, JCDH, BWWB (INCLUDING METERS, TAPS, ETC.) OR OTHER AGENCIES AS REQUIRED TO COMPLETE THIS PROJECT.

N

0 20 40
SCALE: 1"=20'

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700 FAX: 205-250-0515

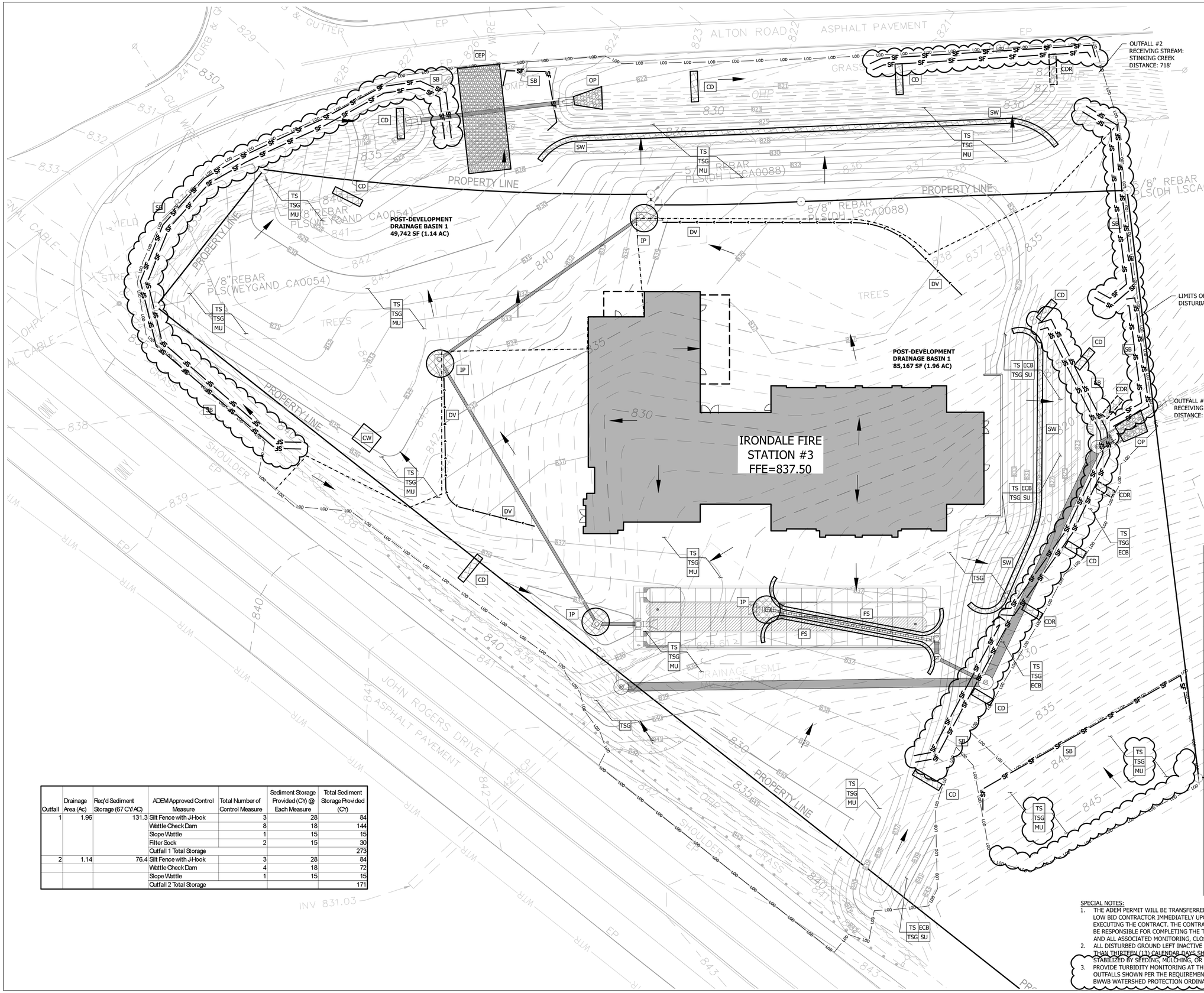
SHEET TITLE:
SITE UTILITY PLAN

PROJECT NUMBER:
CWA No. 2023-01

DATE:
8/30/24

DRAWN BY:	CHECKED BY:
WCW	**CIE**

SHEET NUMBER
C3.0



Outfall	Drainage Area (Ac)	Req'd Sediment Storage (67 CY/ AC)	ADEM Approved Control Measure	Total Number of Control Measure	Sediment Storage Provided (CY) @ Each Measure	Total Sediment Storage Provided (CY)
1	1.96	131.3	Silt Fence with J-Hook	3	28	84
			Wattle Check Dam	8	18	144
			Slope Wattle	1	15	15
			Filter Sock	2	15	30
			Outfall 1 Total Storage			273
2	1.14	76.4	Silt Fence with J-Hook	3	28	84
			Wattle Check Dam	4	18	72
			Slope Wattle	1	15	15
			Outfall 2 Total Storage			171

EROSION CONTROL LEGEND

SF	SB	SILT FENCING
	IP	SILT SAVER / DANDY SACK INLET PROTECTION
	CD	CHECK DAM - WATTLE
	CDR	CHECK DAM - ROCK
	SW	SLOPE WATTLE
	CEP	CONSTRUCTION EXIT PAD
	OP	OUTLET PROTECTION
	TSG	TOPSOIL
	ECB	EROSION CONTROL BLANKET
	CW	CONCRETE WASHOUT
	PS	PERMANENT SEEDING
	TS	TEMPORARY SEEDING
	MU	MULCHING
	SU	SURFACE ROUGHENING
	SOD	SODDING
	DV	DIVERSION BERM
	LS	LANDSCAPING

SPECIAL NOTES:

1. THE ADEM PERMIT WILL BE TRANSFERRED TO THE LOW BID CONTRACTOR IMMEDIATELY UPON EXECUTING THE CONTRACT. THE CONTRACTOR WILL BE RESPONSIBLE FOR COMPLETING THE TRANSFER AND ALL ASSOCIATED MONITORING, CLOSEOUT, ETC.
2. ALL DISTURBED GROUND LEFT INACTIVE FOR MORE THAN THIRTEEN (13) CALENDAR DAYS SHALL BE STABILIZED BY SEEDING, MULCHING, OR OTHER BMP.
3. PROVIDE TURBIDITY MONITORING AT THE TWO OUTFALLS SHOWN PER THE REQUIREMENTS OF THE BWWB WATERSHED PROTECTION ORDINANCE.

0 20 40
SCALE: 1"=20'

KADRE ENGINEERING
PO BOX 101205
PROJECT NO. 24056
IRONDALE, ALABAMA 35210
CONTACT: Curtis Walker
Tel + 205.795.3434

Revisions		
No.	Date	Description
1	2/19/25	ADDENDUM #3

ALABAMA LICENSED No. 31679 PROFESSIONAL ENGINEER Curtis Walker CURTIS IAN WALKER 2/19/25

100% CD'S

IRONDALE FIRE STATION #3

2101 JOHN ROGERS DR
BIRMINGHAM, AL 35210
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700 FAX: 205-250-0515

SHEET TITLE:
EROSION CONTROL PLAN - INTERMEDIATE

PROJECT NUMBER:
CWA No. 2023-01

DATE:
8/30/24

DRAWN BY:	CHECKED BY:
WCW	**CIE**

SHEET NUMBER
C4.1

KADRE ENGINEERING
PO BOX 101205
IRONDALE, ALABAMA 35210
CONTACT: Curtis Walker
Tel + 205.795.3434

PROJECT NO. 24056

Revisions		
No.	Date	Description
1	2/19/25	ADDENDUM #3

ALABAMA LICENSED No. 31679 PROFESSIONAL ENGINEER Curtis Walker CURTIS W. WALKER 2/19/25

100% CD'S

IRONDALE FIRE STATION #3

2101 JOHN ROGERS DR
BIRMINGHAM, AL 35210
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700 FAX: 205-250-0515

SHEET TITLE:
EROSION CONTROL PLAN - FINAL

PROJECT NUMBER:
CWA No. 2023-01

DATE:
8/30/24

DRAWN BY:	CHECKED BY:
WCW	CIE

SHEET NUMBER
C4.2

IRONDALE FIRE STATION #3
FFE=837.50

OUTFALL #2
RECEIVING STREAM: STINKING CREEK
DISTANCE: 718'

OUTFALL #1
RECEIVING STREAM: STINKING CREEK
DISTANCE: 695'

LIMITS OF DISTURBANCE

PROPERTY LINE

ALTON ROAD

JOHN ROGERS DRIVE

EROSION CONTROL LEGEND

SF	SB	SILT FENCING
	IP	SILT SAVER / DANDY SACK INLET PROTECTION
	CD	CHECK DAM - WATTLE
	CDR	CHECK DAM - ROCK
	SW	SLOPE WATTLE
	CEP	CONSTRUCTION EXIT PAD
	OP	OUTLET PROTECTION
	TSG	TOPSOIL
	ECB	EROSION CONTROL BLANKET
	CW	CONCRETE WASHOUT
	PS	PERMANENT SEEDING
	TS	TEMPORARY SEEDING
	MU	MULCHING
	SU	SURFACE ROUGHENING
	SOD	SODDING
	DV	DIVERSION BERM
	LS	LANDSCAPING

SPECIAL NOTES:
1. THE ADEM PERMIT WILL BE TRANSFERRED TO THE LOW BID CONTRACTOR IMMEDIATELY UPON EXECUTING THE CONTRACT. THE CONTRACTOR WILL BE RESPONSIBLE FOR COMPLETING THE TRANSFER AND ALL ASSOCIATED MONITORING, CLOSEOUT, ETC.
2. PROVIDE TURBIDITY MONITORING AT THE TWO OUTFALLS SHOWN PER THE REQUIREMENTS OF THE BWWB WATERSHED PROTECTION ORDINANCE.

N

0 20 40
SCALE: 1"=20'

KADRE ENGINEERING
PO BOX 101205
IRONDALE, ALABAMA 35210
CONTACT: Curtis Walker
Tel + 205.795.3434

PROJECT NO. 24056

Revisions		
No.	Date	Description
1	2/19/25	ADDENDUM #3

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	JOSEPH LEACH 470-432-1615 JOSEPH.LEACH@ADSPIPE.COM
ADS SALES REP	BRAGG KNOTT 205-504-3745 BRAGG KNOTT
PROJECT NO.	S427886

ADS Advanced Drainage Systems, Inc.

SiteAssist® FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

IRONDALE FIRE STATION

BIRMINGHAM, AL, USA

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/% THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
10. MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
11. ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTEXTILE PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-800-821-6710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

PROPOSED LAYOUT

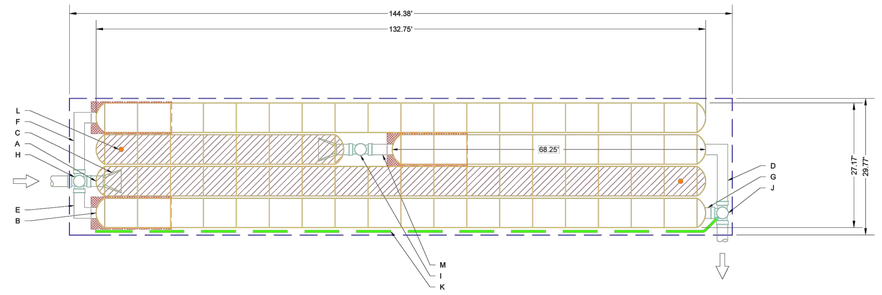
70	STORMTECH MC-3500 CHAMBERS
10	STORMTECH MC-3500 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	% STONE VOID
14,163	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
4,298	SYSTEM AREA (ft²)
348	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS

838.08	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
832.08	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
831.58	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
831.58	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
831.58	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
831.08	TOP OF STONE
830.08	TOP OF MC-3500 CHAMBER
827.54	24" TOP MANIFOLD/CONNECTION INVERT
826.50	24" ISOLATOR ROW PLUS CONNECTION INVERT
826.50	24" BOTTOM MANIFOLD/CONNECTION INVERT
826.33	BOTTOM OF MC-3500 CHAMBER
825.58	UNDERDRAIN INVERT
825.58	BOTTOM OF STONE

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.05"	
PREFABRICATED END CAP	B	24" TOP CORED END CAP, PART#: MC3500IEPP24TC / TYP OF ALL 24" TOP CONNECTIONS	14.48"	
FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP (TYP 2 PLACES)		
MANIFOLD	D	24" x 24" BOTTOM MANIFOLD, ADS N-12	2.06"	
MANIFOLD	E	24" x 24" TOP MANIFOLD, ADS N-12	14.48"	
MANIFOLD	F	24" x 24" TOP MANIFOLD, ADS N-12	14.48"	
PIPE CONNECTION	G	24" BOTTOM CONNECTION	2.05"	
NYLOPLAST (INLET W/ ISO PLUS ROW)	H	30" DIAMETER (48" SUMP DEPTH REQUIRED)		17.0 CFS IN
NYLOPLAST (INLET W/ ISO PLUS ROW)	I	30" DIAMETER (48" SUMP DEPTH REQUIRED)		8.5 CFS IN
NYLOPLAST (OUTLET)	J	30" DIAMETER (48" SUMP DEPTH REQUIRED)		14.0 CFS OUT
UNDERDRAIN	K	6" ADS N-12 DUAL WALL CORRUGATED HDPE UNDERDRAIN		
INSPECTION PORT	L	4" SEE DETAIL (TYP 2 PLACES)		
CONNECTION	M	24" TOP CONNECTION, ADS N-12	14.48"	



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 17.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

IRONDALE FIRE STATION — BIRMINGHAM, AL, USA — DATE: 08/14/24 — DRAWN: CLB — CHECKED: N/A — PROJECT #: S427886

DATE	BY	CHK	DESCRIPTION
09/16/24	EEH	DRW	REVISE PER ECM MARKUP

StormTech® Chamber System — 1-800-821-6710 | WWW.STORMTECH.COM

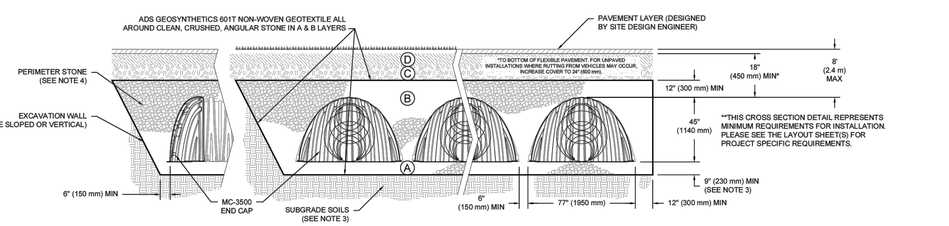
4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473

SHEET 2 OF 6

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

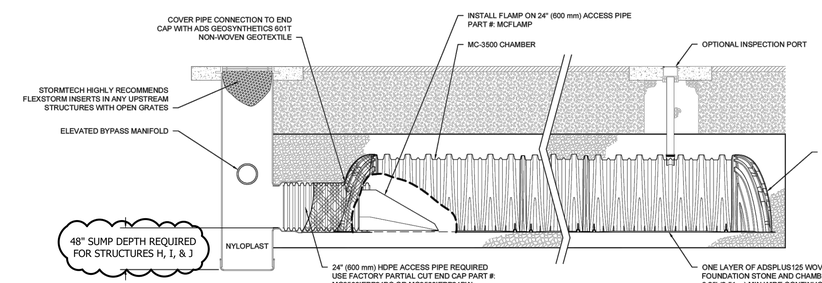
IRONDALE FIRE STATION — BIRMINGHAM, AL, USA — DATE: 08/14/24 — DRAWN: CLB — CHECKED: N/A — PROJECT #: S427886

DATE	BY	CHK	DESCRIPTION
09/16/24	EEH	DRW	REVISE PER ECM MARKUP

StormTech® Chamber System — 1-800-821-6710 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473

SHEET 3 OF 6



MC-3500 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

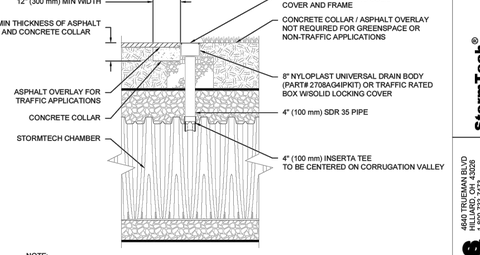
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)
NTS

IRONDALE FIRE STATION — BIRMINGHAM, AL, USA — DATE: 08/14/24 — DRAWN: CLB — CHECKED: N/A — PROJECT #: S427886

DATE	BY	CHK	DESCRIPTION
09/16/24	EEH	DRW	REVISE PER ECM MARKUP

StormTech® Chamber System — 1-800-821-6710 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473

SHEET 4 OF 6

ALABAMA LICENSED PROFESSIONAL ENGINEER No. 31679 CURTIS WALKER — 2/19/25

100% CD'S

IRONDALE FIRE STATION #3

2101 JOHN ROGERS DR
BIRMINGHAM, AL 35210
CITY OF IRONDALE

CWA CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700
FAX: 205-250-0515

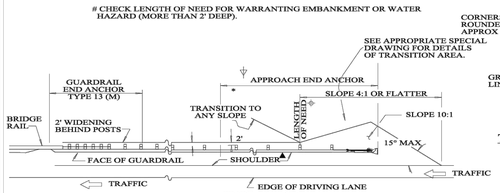
SHEET TITLE: DETAILS

PROJECT NUMBER: CWA No. 2023-01

DATE: 8/30/24

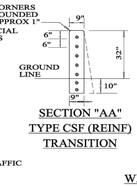
DRAWN BY: WCW — CHECKED BY: CIE

SHEET NUMBER C5.2



TYPE 5 FLARE

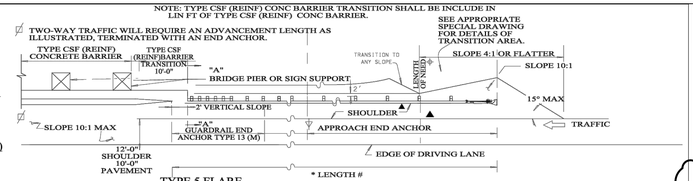
WHEN HAZARD LOCATED WITHIN 4' OF EDGE OF NORMAL SHOULDER



SECTION "AA"

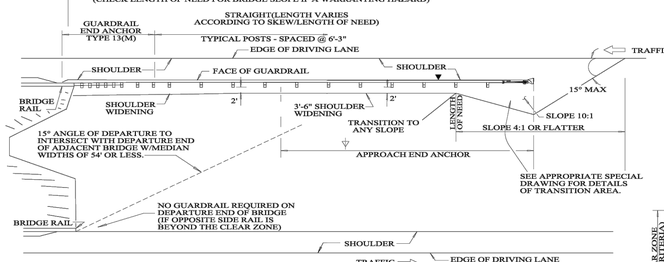
TYPE CSF (REINF)

TRANSITION



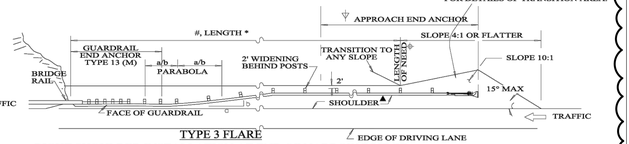
TYPE 5 FLARE

WHEN HAZARD LOCATED WITHIN 4' OF EDGE OF NORMAL SHOULDER



TYPE 2 FLARE

MEDIAN INSTALLATION AT END OF DUAL FULL WIDTH BRIDGES (ADJUST AS SHOWN ON TYPE 3 FLARE FOR NARROW BRIDGES)



TYPE 3 FLARE

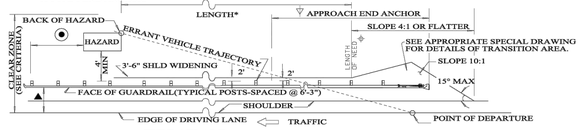
RIGHT SHOULDER INSTALLATION AT END OF NARROW BRIDGE

(BRIDGE WIDTH DOES NOT INCLUDE SHOULDERS)

*NOTE:
LENGTH OF NEED FOR PRIMARY AND SECONDARY HAZARD WIDTH:
- (50 MPH OR GREATER) 75' MINIMUM FOR TYPE 20 ENERGY ABSORBING ANCHOR, 150' MINIMUM FOR ALL OTHER APPROACH ANCHORS.
- (UP TO 45 MPH) 75' MINIMUM FOR ALL APPROACH ANCHORS.

NOTE:
ANY APPROVED END ANCHOR THAT HAS BEEN DESIGNED TO FUNCTION PROPERLY IN THE SITE CONDITIONS GIVEN MAY BE USED.SEE SPECIFIC END ANCHOR DETAIL DRAWINGS FOR DESIGN CRITERIA AND INSTALLATION GUIDELINES.

◉ TWO-WAY TRAFFIC WITHIN THE CLEAR ZONE WILL REQUIRE AN APPROACH END ANCHOR AND APPROPRIATE GUARDRAIL FOR LENGTH OF NEED. ONE WAY TRAFFIC WILL REQUIRE A TYPE 8 END ANCHOR.



TYPE 4 FLARE

STANDARD HAZARD INSTALLATION WHEN HAZARD LOCATED 4'OR GREATER FROM EDGE OF NORMAL SHOULDER

WHERE GUARDRAIL IS TERMINATED IN CLOSE PROXIMITY TO A CUT EMBANKMENT, USE APPROPRIATE EMBANKMENT TERMINATING END ANCHOR.

GENERAL NOTES

1. WHERE FEASIBLE, THE FLATTENING OF WARRANTING SLOPES IS PREFERABLE TO REQUIRING GUARDRAIL.
2. THE EMBANKMENT WARRANTY CRITERIA SHOWN IS INTENDED PRIMARILY FOR HIGHER TRAFFIC VOLUME (OVER 3000 ADT) AND HIGHER SPEED DESIGN RURAL TYPE ROADS. IN GENERAL, IT IS NOT COST EFFECTIVE TO REQUIRE GUARDRAIL ON THE LOWER TRAFFIC VOLUME ROADS AT EVERY WARRANTING LOCATION.
3. GAPS LESS THAN 200' BETWEEN GUARDRAIL INSTALLATIONS SHOULD BE AVOIDED. IN SUCH CASES GUARDRAIL SHOULD BE CONTINUOUS.
4. WHERE GUARDRAIL IS REQD. FOR EMBANKMENT, IT SHALL BE EXTENDED THE FULL LENGTH OF NEED PLUS A LENGTH OF ADVANCEMENT (APPROACH END ANCHOR).
5. IF THE DISTANCE FROM EDGE OF TRAVEL LANE TO FACE OF OBSTACLE IS LESS THAN THE "CLEAR ZONE" GUARDRAIL IS WARRANTED, PROVIDED THE OBSTACLE CANNOT BE REMOVED, RELOCATED OR MADE BREAK-AWAY, AND THE HAZARD OF HITTING THE GUARDRAIL IS LESS SEVERE THAN THAT OF HITTING THE OBSTACLE.
6. ▲ FACE OF GUARDRAIL SHOULD (WHERE PRACTICAL) BE LOCATED A MIN. OF 4' FROM THE EDGE OF PAVEMENT, OR LOCATED AT THE EDGE OF SHOULDER, WHICHEVER IS GREATER.

NOT TO SCALE

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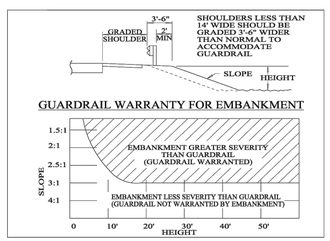
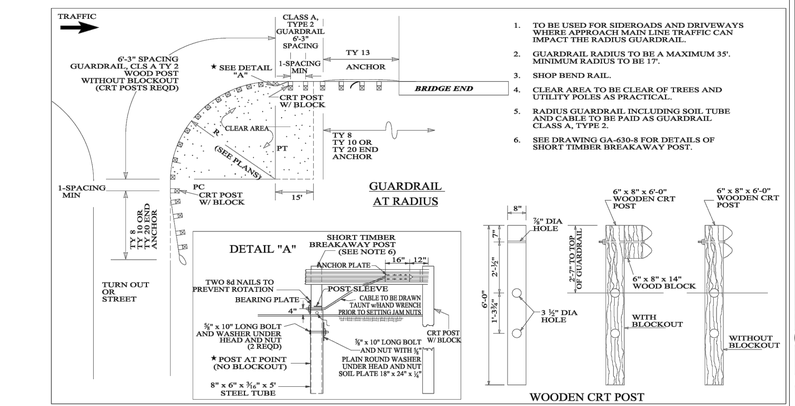
DESIGN SPEED	DESIGN ADT	FILL SLOPES			CUT SLOPES		
		6:1 OR FLATTER	5:1 TO 4:1	3:1	3:1	4:1 TO 5:1	6:1 OR FLATTER
40 MPH OR LESS	UNDER 750	7-10	7-10	**	7-10	7-10	7-10
	750-1500	10-12	12-14	**	10-12	10-12	10-12
	1500-6000	12-14	14-16	**	12-14	12-14	12-14
	OVER 6000	14-16	16-18	**	14-16	14-16	14-16
45 - 50 MPH	UNDER 750	10-12	12-14	**	8-10	8-10	10-12
	750-1500	14-16	16-20	**	10-12	12-14	14-16
	1500-6000	16-18	20-26	**	12-14	14-16	16-18
	OVER 6000	20-22	24-28	**	14-16	18-20	20-22
55 MPH	UNDER 750	12-14	14-18	**	8-10	10-12	10-12
	750-1500	16-18	20-24	**	10-12	14-16	16-18
	1500-6000	20-22	24-30	**	14-16	16-18	20-22
	OVER 6000	22-24	26-32*	**	16-18	20-22	22-24
60 MPH	UNDER 750	16-18	20-24	**	10-12	12-14	14-16
	750-1500	20-24	26-32*	**	12-14	16-18	20-22
	1500-6000	26-30	32-40*	**	14-18	18-22	24-26
	OVER 6000	30-32*	36-44*	**	20-22	24-26	26-28
65-70 MPH	UNDER 750	18-20	20-26	**	10-12	14-16	14-16
	750-1500	24-26	28-36*	**	12-16	18-20	20-22
	1500-6000	28-32*	34-42*	**	16-20	22-24	26-28
	OVER 6000	30-34*	38-46*	**	22-24	26-30	28-30

CLEAR ZONE DISTANCES (IN FEET FROM EDGE OF DRIVING LANE)

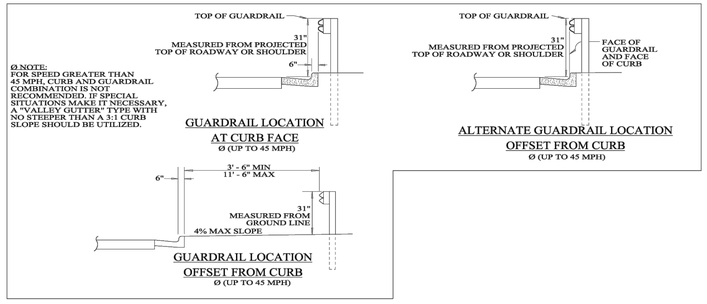
* CLEAR ZONE DISTANCES SHOULD BE PROVIDED AS SHOWN ON NEW CONSTRUCTION AND RECONSTRUCTION PROJECTS. WHERE LIMITED AREA EXISTS CLEAR ZONES MAY BE LIMITED TO 30' FOR PRACTICALITY IF NOT IN A HIGH ACCIDENT PROBABILITY AREA.
** SINCE RECOVERY IS LESS LIKELY ON THE UNSHIELDED, TRAVERSABLE 3:1 SLOPES, FIXED OBJECTS SHOULD NOT BE PRESENT IN THE VICINITY OF THE TOE OF THESE SLOPES. CLEAR RECOVERY AREA OF 10' MIN SHOULD BE PROVIDED AT THE TOE OF SLOPE IF RIGHT-OF-WAY PERMITS.



SEE GENERAL NOTE NO 2, DWG GR-630-FD (SHEET 1 OF 2)



1. TO BE USED FOR SIDEROADS AND DRIVEWAYS WHERE APPROACH MAIN LINE TRAFFIC CAN IMPACT THE RADIUS GUARDRAIL.
2. GUARDRAIL RADIUS TO BE A MAXIMUM 35'. MINIMUM RADIUS TO BE 17'.
3. SHOP BEND RAIL.
4. CLEAR AREA TO BE CLEAR OF TREES AND UTILITY POLES AS PRACTICAL.
5. RADIUS GUARDRAIL INCLUDING SOIL TUBE AND CABLE TO BE PAID AS GUARDRAIL CLASS A, TYPE 2.
6. SEE DRAWING GA-630-8 FOR DETAILS OF SHORT TIMBER BREAKAWAY POST.



NOT TO SCALE

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KADRE ENGINEERING
PO BOX 101205
PROJECT NO. 24056
IRONDALE, ALABAMA 35210
CONTACT: Curtis Walker
Tel + 205.795.3434

Revisions

No.	Date	Description
1	2/12/25	ADDENDUM #2
2	2/19/25	ADDENDUM #3

ALABAMA LICENSED No. 31679 PROFESSIONAL ENGINEER Curtis Walker REGISTERED CURTIS IAN 2/19/25

100% CD'S

TABLE MU-1: MULCHING MATERIALS AND APPLICATION RATES		
MATERIAL	RATE PER ACRE (PER 1,000 SQ.FT.	NOTES
STRAW WITH SEED	1 1/2 - 2 TONS (70 LBS - 90 LBS)	SPREAD BY HAND OR MACHINE TO ATTAIN 75% GROUNDCOVER; ANCHOR WHEN SUBJECT TO BLOWING.
STRAW ALONE (NO SEED)	2 1/2 - 3 TONS (115 LBS - 160 LBS)	SPREAD BY HAND OR MACHINE; ANCHOR WHEN SUBJECT TO BLOWING.
WOOD CHIPS	5-6 TONS (225 LBS - 270 LBS)	TREAT WITH 12 LBS. NITROGEN/TON.
BARK	35 CUBIC YARDS (0.8 CUBIC YARD)	CAN APPLY WITH MULCH BLOWER.
PINE STRAW	1-2 TONS (45 LBS - 90 LBS)	SPREAD BY HAND OR MACHINE; WILL NOT BLOW LIKE STRAW.
PEANUT HULLS	10-20 TON (450 LBS - 900 LBS)	WILL WASH OFF SLOPES. TREAT WITH 12 LBS. NITROGEN/TON.

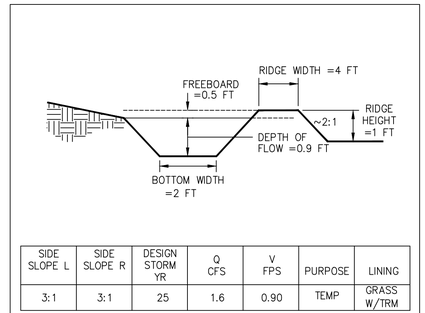
TABLE TS-1: COMMONLY USED PLANTS FOR TEMPORARY COVER				
SPECIES	SEEDING RATE PER AC PLS	NORTH	CENTRAL	SOUTH
MILLET, BROWNTOP, OR GERMAN	40 LBS	MAY 1 - AUG 1	APR 1 - AUG 15	APR 1 - AUG 15
RYE	3 BU	SEPT 1 - NOV 15	SEPT 15 - NOV 15	SEPT 15 - NOV 15
RYEGRASS	30 LBS	AUG 1 - SEPT 15	SEPT 1 - OCT 15	SEPT 1 - OCT 15
SORGHUM - SUDAN HYBRIDS	40 LBS	MAY 1 - AUG 1	APR 15 - AUG 1	APR 1 - AUG 15
SUNDANGRASS	40 LBS	MAY 1 - AUG 1	APR 15 - AUG 1	APR 1 - AUG 15
WHEAT	3 BU	SEPT 1 - NOV 1	SEPT 15 - NOV 15	SEPT 15 - NOV 15
COMMON BERMUDAGRASS	10 LBS	APR 1 - JULY 1	MAR 15 - JULY 15	MAR 1 - JULY 15
CRIMSON CLOVER	10 LBS	SEPT 1 - NOV 1	SEPT 1 - NOV 1	SEPT 1 - NOV 1

TABLE PS-1: COMMONLY USED PLANTS FOR PERMANENT COVER WITH SEEDING RATES AND DATES				
SPECIES	SEEDING RATE PER AC PLS	NORTH	CENTRAL	SOUTH
BAHIAGRASS, PENSACOLA	40 LBS	--	MAR 1 - JULY 1	FEB 1 - NOV 1
BERMUDAGRASS, COMMON	10 LBS	APR 1 - JULY 1	MAR 15 - JULY 15	MAR 1 - JULY 15
BAHIAGRASS, PENSACOLA	30 LBS	--	MAR 1 - JULY 1	MAR 1 - JULY 15
BERMUDAGRASS, COMMON	5 LBS	--	MAR 1 - JULY 1	MAR 1 - JULY 15
BERMUDAGRASS, HYBRID (LAWN TYPES)	SOLID SOD	ANYTIME	ANYTIME	ANYTIME
BERMUDAGRASS, HYBRID (LAWN TYPES)	SPRIGS 1/SQ FT	MAR 1 - AUG 1	MAR 1 - AUG 1	FEB 15 - SEPT 1
FESCUE, TALL	40 - 50 LBS	SEPT 1 - NOV 1	SEPT 1 - NOV 1	--
SERICEA	40 - 60 LBS	MAR 15 - JULY 15	MAR 1 - JULY 15	FEB 15 - JULY 15
SERICEA & COMMON BERMUDAGRASS	40 - 60 LBS 10 LBS	MAR 15 - JULY 15	MAR 1 - JULY 15	FEB 15 - JULY 15
SWITCHGRASS, ALAMO	4 LBS	APR 1 - JUN 15	MAR 15 - JUN 15	MAR 15 - JUN 15

PLS MEANS PURE LIVE SEED AND IS USED TO ADJUST SEEDING RATES. FOR EXAMPLE: TO PLANT 10 LBS PLS OF A SPECIES WITH GERMINATION OF 80% AND 10% INERT MATERIAL -> 10 LBS / 0.70 = 14.3 LBS.

NOTES:
1. ANY DISTURBED AREA, MUST BE PLANTED OR OTHERWISE PROVIDED WITH GROUND COVER, MATERIALS, DEVICES, AND/OR STRUCTURES SUFFICIENT TO RESTRAIN ALL FORMS OF EROSION, TO THE MAXIMUM EXTENT PRACTICABLE WITHIN FOURTEEN (14) DAYS OF STOPPING WORK.
2. CONTRACTOR TO COORDINATE PERMANENT SEEDING WITH OWNER.

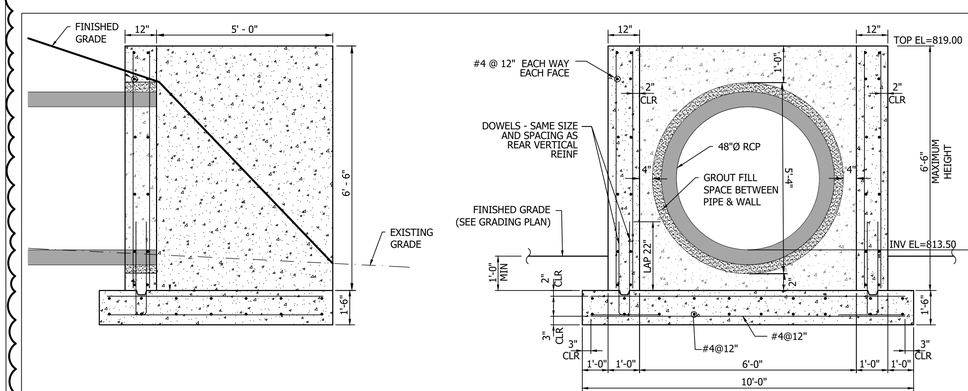
MULCHING, TEMPORARY SEEDING, & PERMANENT SEEDING DIRECTIONS



SIDE SLOPE L	SIDE SLOPE R	DESIGN STORM YR	Q CFS	V FPS	PURPOSE	LINING
3:1	3:1	25	1.6	0.90	TEMP	GRASS W/TRM

NOTES:
1. STABILIZE DIVERSION DITCH WITH ECB, TSG, AND PS PER EROSION CONTROL NOTES UPON INSTALLATION.

DV DIVERSION



HEADWALL DETAIL - STRUCTURE A1

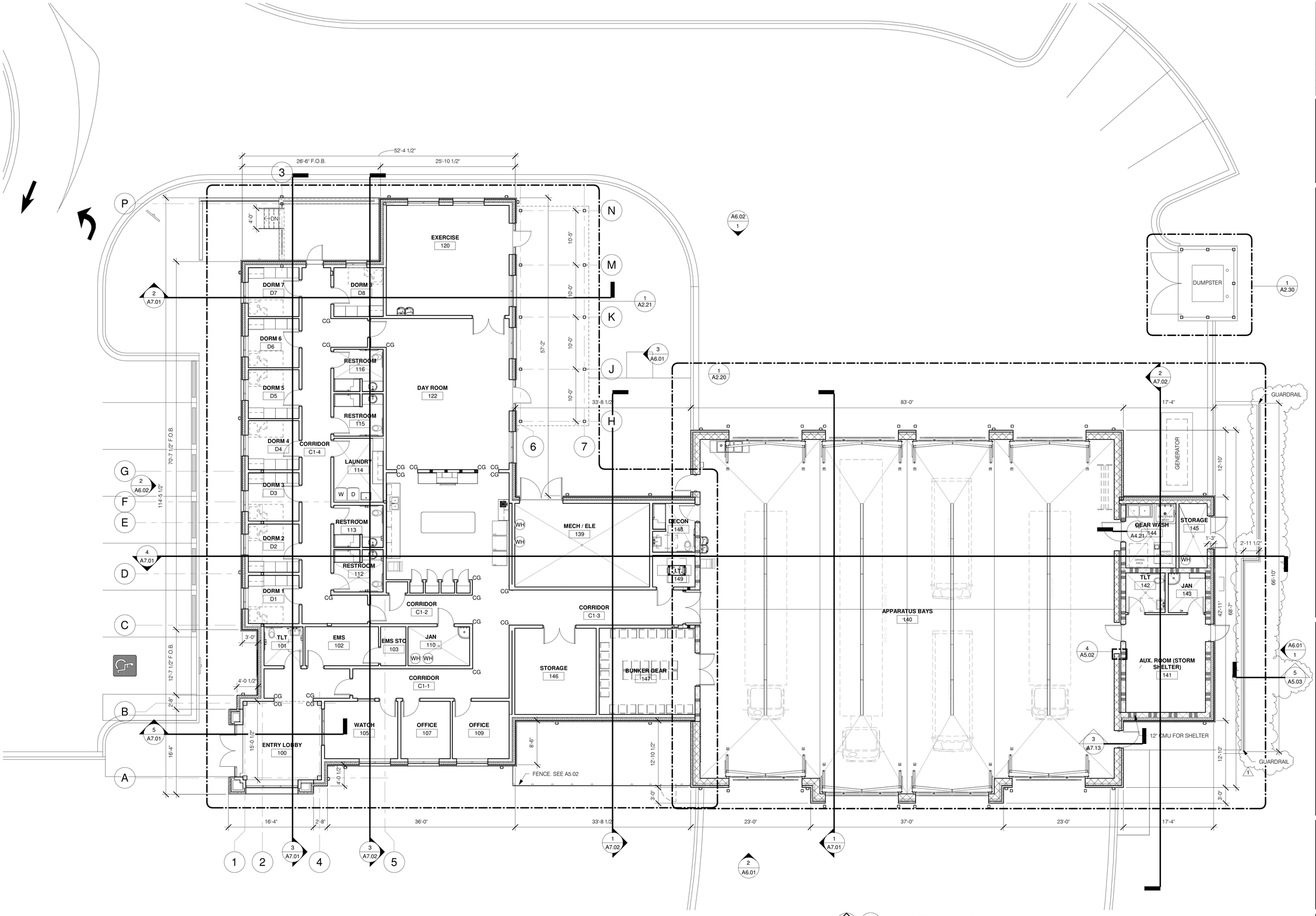
IRONDALE FIRE STATION #3

2101 JOHN ROGERS DR
BIRMINGHAM, AL 35210
CITY OF IRONDALE

CWA
CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700
FAX: 205-250-0515

SHEET TITLE: DETAILS
PROJECT NUMBER: CWA No. 2023-01
DATE: 8/30/24
DRAWN BY: WCW
CHECKED BY: CIE

SHEET NUMBER
C5.4



1 A2.01 COMPOSITE FLOOR PLAN
1/8" = 1'-0"

Revisions		
No.	Date	Description
1	2/18/25	ADDENDUM 3

STATE OF ALABAMA
CHARLES A. WILLIAMS
NO. 2925
REGISTERED ARCHITECT
SEAL

100% CDS

IRONDALE FIRE STATION #3

2920 ALTON RD
BIRMINGHAM, AL 35210
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700
FAX: 205-250-0515

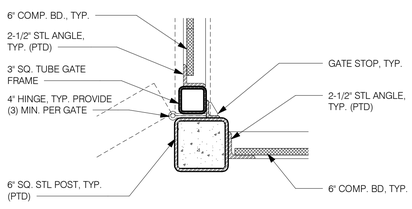
SHEET TITLE:
OVERALL FLOOR PLAN

PROJECT NUMBER:
CWA No. 2023-01

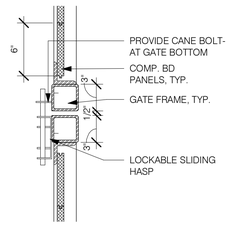
DATE:
08/30/24

DRAWN BY:	CHECKED BY:
CSV	CW

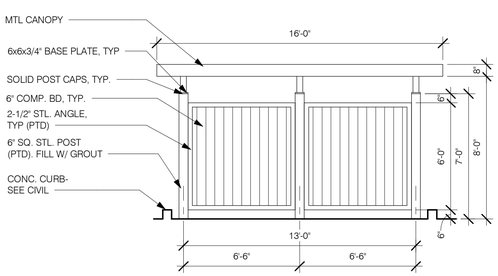
SHEET NUMBER
A2.01



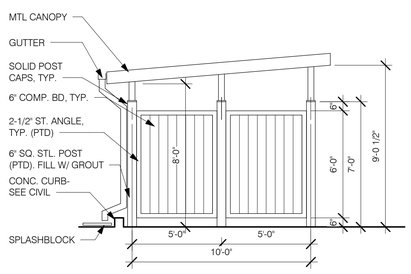
6 A2.30 GATE DETAIL @ POST
1 1/2" = 1'-0"



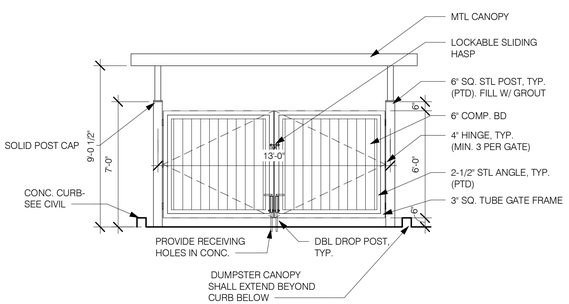
5 A2.30 GATE DETAIL- LATCH
1 1/2" = 1'-0"



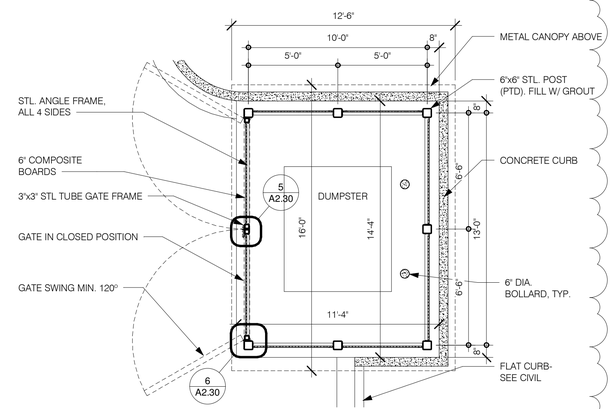
4 A2.30 DUMPSTER ELEV- REAR
1/4" = 1'-0"



3 A2.30 DUMPSTER ELEV- SIDE
1/4" = 1'-0"



2 A2.30 DUMPSTER ELEV- GATE
1/4" = 1'-0"



1 A2.30 DUMPSTER FENCE PLAN
1/4" = 1'-0"

Revisions		
No.	Date	Description
1	2/18/25	ADDENDUM 3

STATE OF ALABAMA
REGISTERED ARCHITECT
NO. 2925
SEAL

100% CDS

IRONDALE FIRE STATION #3

2920 ALTON RD
BIRMINGHAM, AL 35210
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700
FAX: 205-250-0515

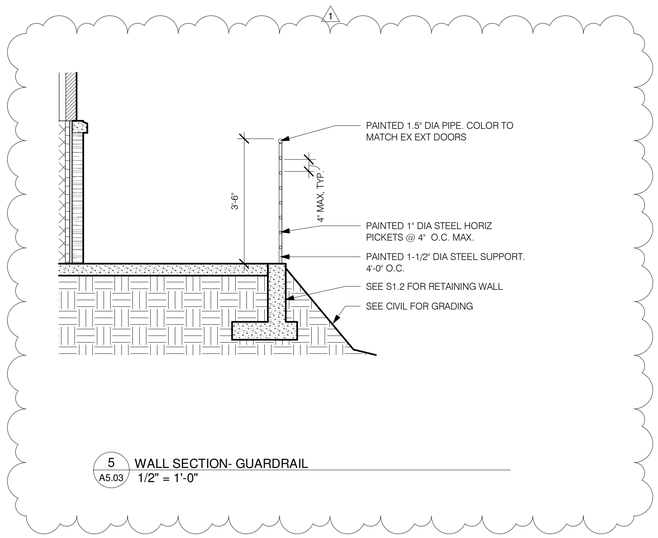
SHEET TITLE:
DUMPSTER ENCLOSURE PLAN & DETAILS

PROJECT NUMBER:
CWA No. 2023-01

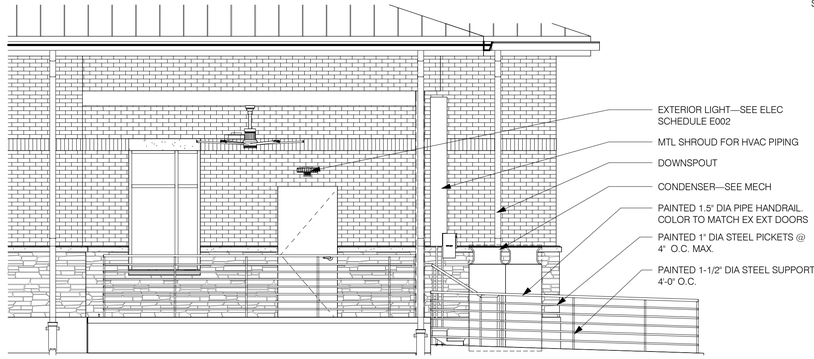
DATE:
08/30/24

DRAWN BY:	CHECKED BY:
CSV	CW

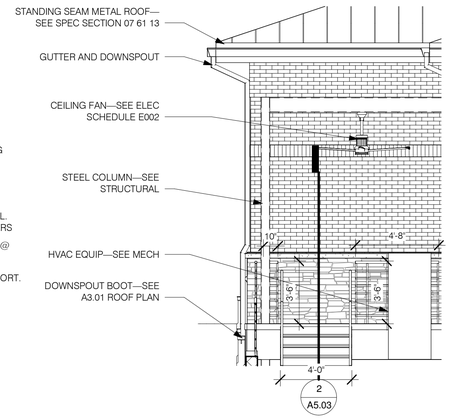
SHEET NUMBER
A2.30



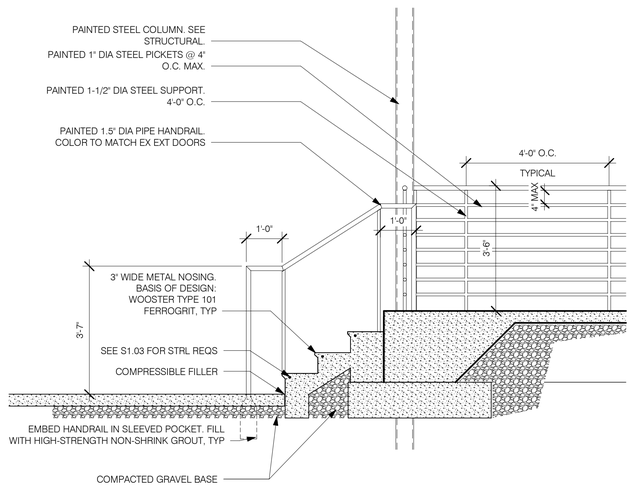
5 A5.03 WALL SECTION- GUARDRAIL
1/2" = 1'-0"



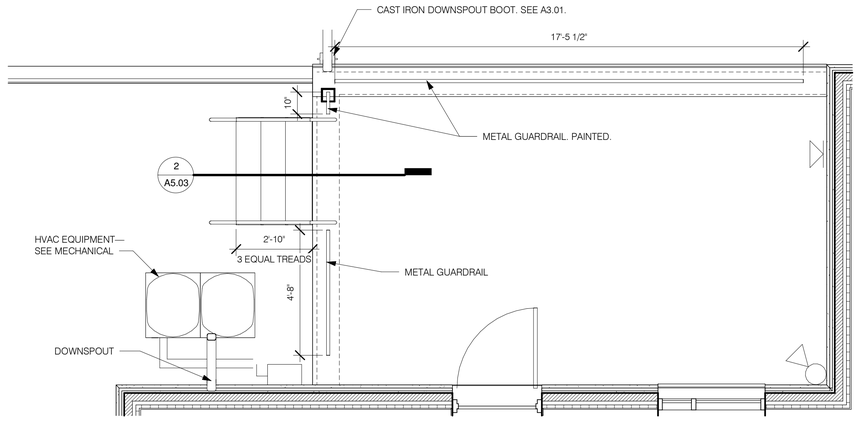
4 A5.03 PORCH WEST
1/4" = 1'-0"



3 A5.03 PORCH NORTH
1/4" = 1'-0"



2 A5.03 STAIR SECTION
1/2" = 1'-0"



1 A5.03 STAIR DETAILS
3/8" = 1'-0"

Revisions		
No.	Date	Description
1	2/18/25	ADDENDUM 3

STATE OF ALABAMA
CHARLES R. WILLIAMS
NO. 2925
REGISTERED ARCHITECTS
SEAL

100% CDS

IRONDALE FIRE STATION #3

2920 ALTON RD
BIRMINGHAM, AL 35210
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH
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PH: 205-250-0700
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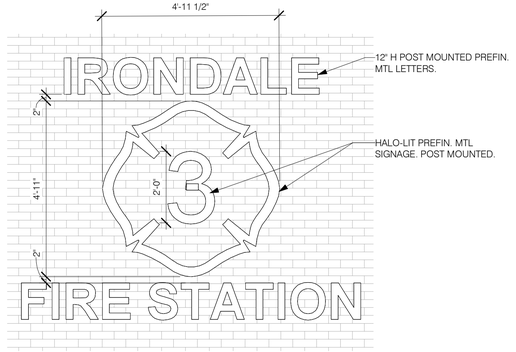
SHEET TITLE:
STAIR DETAILS

PROJECT NUMBER:
CWA No. 2023-01

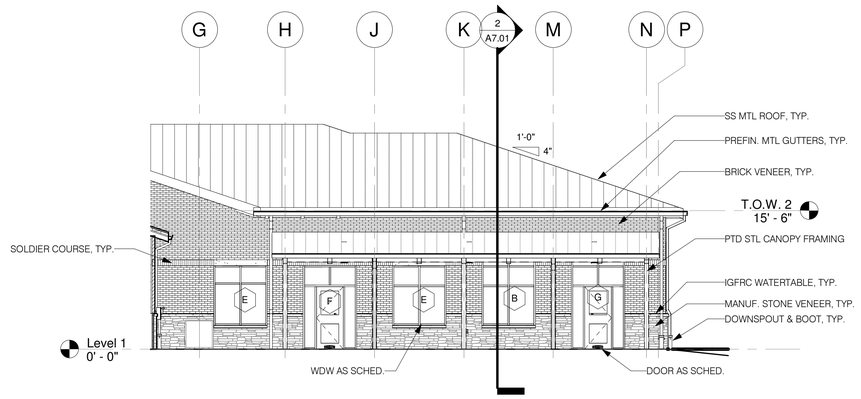
DATE:
08/30/24

DRAWN BY:	CHECKED BY:
RM	**CSV**

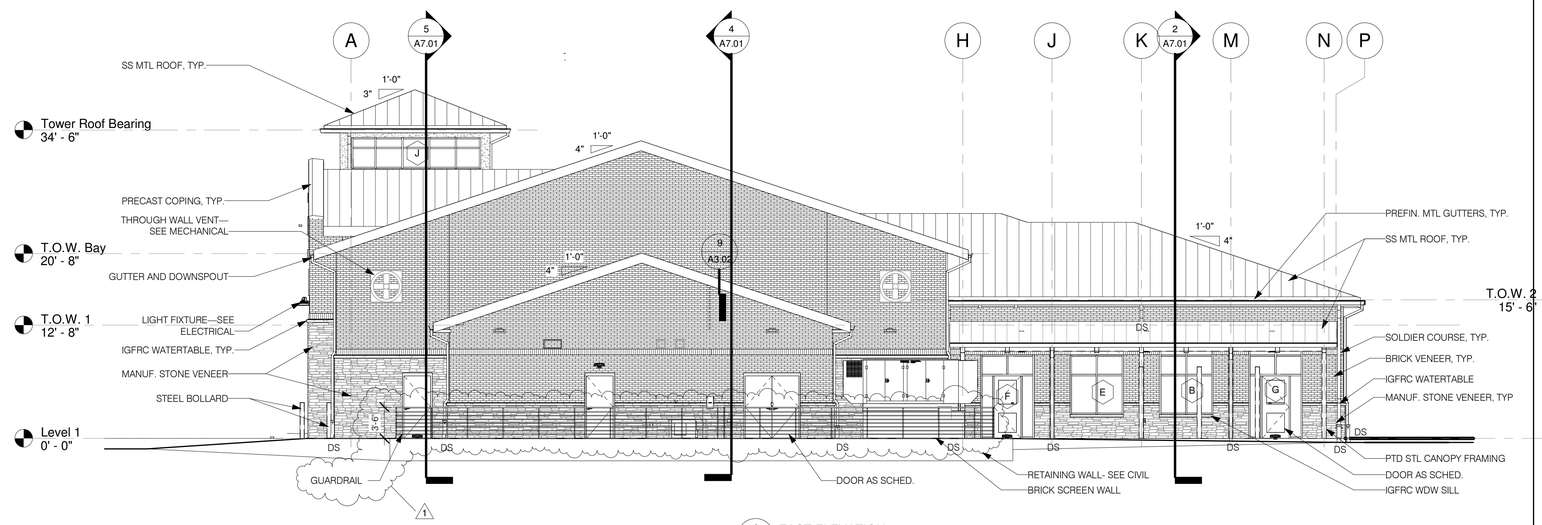
SHEET NUMBER
A5.03



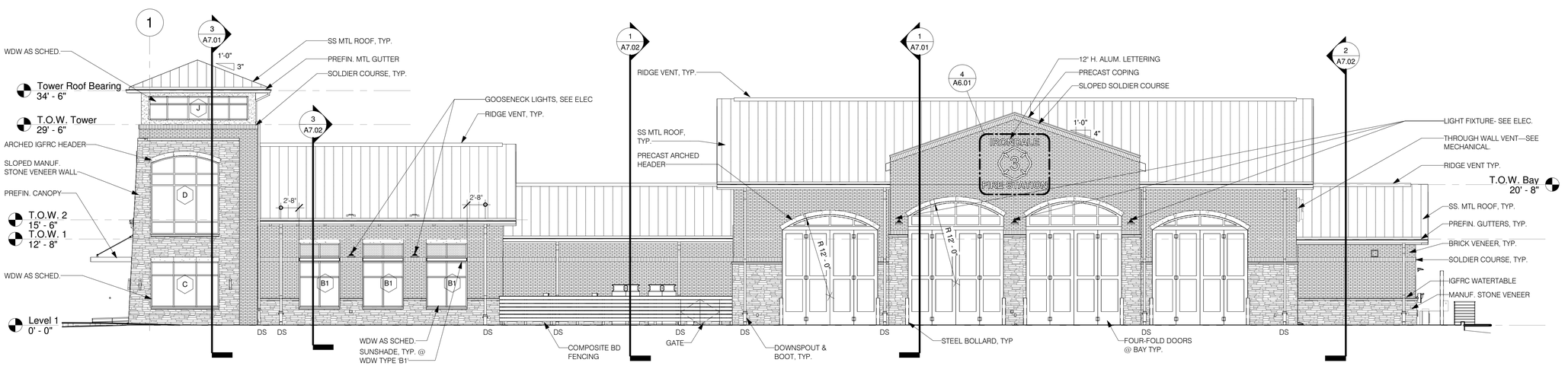
4 A6.01 EXT. SIGNAGE DETAIL
1/2" = 1'-0"



3 A6.01 EAST ELEVATION (PARTIAL)
1/8" = 1'-0"



1 A6.01 EAST ELEVATION
1/8" = 1'-0"



2 A6.01 NORTH ELEVATION
1/8" = 1'-0"

Revisions		
No.	Date	Description
1	2/18/25	ADDENDUM 3

STATE OF ALABAMA
CHARLES V. WILLIAMS
No. 2925
REGISTERED ARCHITECT
SEAL

100% CDS

IRONDALE FIRE STATION #3

2920 ALTON RD
BIRMINGHAM, AL 35210
CITY OF IRONDALE

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PH: 205-250-0700
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3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222

SHEET TITLE:
EXTERIOR ELEVATIONS

PROJECT NUMBER:
CWA No. 2023-01

DATE:
08/30/24

DRAWN BY:	CHECKED BY:
CSV	CW

SHEET NUMBER
A6.01

SPLIT ENERGY RECOVERY UNIT

TYPE:
INDOOR, CONSTANT VOLUME, HORIZONTAL DRAW-THRU, WITH DX COOLING COIL, ELECTRIC HEAT, HOT GAS RE-HEAT COIL, ENERGY RECOVERY WHEEL, AND MATCHED CONDENSING UNIT.

REFRIGERANT: R454B

NOTES:
1. COOLING CAPACITY IS NET CAPACITY @ 95°F AMBIENT.
2. UNIT SHALL BE ASHRAE 90.1 - 2013 COMPLIANT.

* CFM LISTED FOR KITCHEN HOOD OFF / KITCHEN HOOD ON
**DUAL CIRCUIT: CIRCUIT 1 - SPP, CIRCUIT 2 - ELECTRIC HEAT

ACCESSORIES:
1. 2" THICK THROWAWAY FILTERS, MERV 13.
2. INVERTER DUTY RATED MOTORS
3. DIRECT DRIVE SUPPLY & EXHAUST FAN.
4. VARIABLE FREQUENCY DRIVE FOR SUPPLY & EXHAUST FAN.
5. HINGED ACCESS DOORS.
6. STAINLESS STEEL DRAIN PAN.
7. HOT GAS REHEAT COIL.
8. SINGLE DX CIRCUIT WITH TWO STAGE MANIFOLD COOLING.
9. REFRIGERANT LEAK DETECTION SYSTEM BY MANUFACTURER (SEE CONTROLS).

COMPONENTS

1. INTAKE SECTION WITH OUTSIDE AIR CONNECTION WITH AUTO DAMPERS.
2. FILTER SECTION WITH ANGLED FILTERS.
3. ENERGY RECOVERY WHEEL SECTION.
4. ELECTRIC HEAT SECTION.
5. DX COOLING COIL.
6. ACCESS SECTION.
7. DIRECT DRIVE PLENUM FAN IN SUPPLY FAN SECTION WITH HORIZONTAL DISCHARGE.
8. DIRECT DRIVE PLENUM FAN IN EXHAUST FAN SECTION WITH HORIZONTAL DISCHARGE.

MARK	SUPPLY FAN			EXHAUST FAN			SUMMER			WINTER			ELECTRICAL					ELECTRIC HEAT		DX COOLING COIL				WEIGHT (LBS)	ACCESSORIES	BASIS OF DESIGN	
	*CFM	W.G. E.S.P.	HP	* CFM	W.G. E.S.P.	HP	OUTSIDE AIR EAT (DB/WB)	OUTSIDE AIR LAT (DB/WB)	EXHAUST ENTERING (DB/WB)	OUTSIDE AIR EAT (DB/WB)	OUTSIDE AIR LAT (DB/WB)	EXHAUST ENTERING (DB/WB)	V	PH	Hz	** MCA	** MOCP	INPUT (kW)	STAGES	LAT (DB/WB)	TOTAL (MBH)	SENSIBLE (MBH)	NOM. TONS			MANUFACTURER	MODEL
ERU-1	1450 / 2120	1.2"	3	1320 / 1360	1.2"	1.5	95.0°F / 78.0°F	84.4°F / 70.6°F	75.0°F / 62.5°F	17.0°F / 15.0°F	43.3°F / 39.6°F	70.0°F / 58.0°F	208	3	60	27 / 94.3	40 / 100	26	SCR	53.8°F / 53.0°F	112.3	74.2	10	2510	1,2,3,4,5,6,7,8,9	TRANE	CSAA006

INDOOR HEAT PUMP UNIT - VARIABLE REFRIGERANT SCHEDULE

AIR HANDLER UNIT TYPE:
1. 4-WAY CEILING CASSETTE.
2. INDOOR, WALL MOUNTED.
3. CONCEALED ABOVE CEILING.

NOTES:
1. AIRFLOW RATED AT HIGH FAN SPEED.
2. COOLING CAPACITY RATED AT 95°F.
3. HEATING CAPACITY RATED AT 17°F.
4. ALL REFRIGERANT PIPING JOINTS TO BE BRAZED AND LEAK TESTED.
5. SIZE AND ROUTING OF REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.

ACCESSORIES:
1. 3-POLE DISCONNECT SWITCH.
2. HARD WIRED UNIT CONTROLLER.
3. FULL PORT BALL VALVES & SCHRADER VALVES WITH FLARED CONNECTIONS.
4. WASHABLE AIR FILTER (PROVIDE (1) EXTRA FILTER PER AC UNIT).
5. INTEGRAL CONDENSATE LIFT MECHANISM.
6. HARD WIRED UNIT CONTROLLER.
7. CONDENSATE PUMP (120/1/60) - 1 GPH @ 33 FT. HD.

MARK	TYPE	AIRFLOW (CFM)	E.S.P. (IN.-W.G.)	NOMINAL TONNAGE	CONNECTED TO: OUTDOOR UNIT	COOLING CAPACITY TOTAL (MBH)	COOLING CAPACITY SENSIBLE (MBH)	COOLING CAPACITY EAT (DB°F/WB°F)	DX HEATING CAPACITY TOTAL (MBH)	DX HEATING CAPACITY EAT (DB°F)	DIMENSIONS	ELECTRICAL V	PH	HZ	MCA (A)	MOCP (A)	ACCESSORIES	BASIS OF DESIGN
IHP-1-1	2	315	0.6	0.5	OHP-1	7.5	6.2	75.0/62.5	9.0	70	23 x 23 x 9	208 V	1	60	0.28 A	15 A	1,2,3,4,5,6	TRANE
IHP-1-2	2	315	0.6	0.5	OHP-1	7.5	6.2	75.0/62.5	9.0	70	23 x 23 x 9	208 V	1	60	0.28 A	15 A	1,2,3,4,5,6	TRANE
IHP-1-3	2	315	0.6	0.5	OHP-1	7.5	6.2	75.0/62.5	9.0	70	23 x 23 x 9	208 V	1	60	0.28 A	15 A	1,2,3,4,5,6	TRANE
IHP-1-4	2	315	0.6	0.5	OHP-1	7.5	6.2	75.0/62.5	9.0	70	23 x 23 x 9	208 V	1	60	0.28 A	15 A	1,2,3,4,5,6	TRANE
IHP-1-5	2	315	0.6	0.5	OHP-1	7.5	6.2	75.0/62.5	9.0	70	23 x 23 x 9	208 V	1	60	0.28 A	15 A	1,2,3,4,5,6	TRANE
IHP-1-6	2	315	0.6	0.5	OHP-1	7.5	6.2	75.0/62.5	9.0	70	23 x 23 x 9	208 V	1	60	0.28 A	15 A	1,2,3,4,5,6	TRANE
IHP-1-7	2	315	0.6	0.5	OHP-1	7.5	6.2	75.0/62.5	9.0	70	23 x 23 x 9	208 V	1	60	0.28 A	15 A	1,2,3,4,5,6	TRANE
IHP-1-8	2	315	0.6	0.5	OHP-1	7.5	6.2	75.0/62.5	9.0	70	23 x 23 x 9	208 V	1	60	0.28 A	15 A	1,2,3,4,5,6	TRANE
IHP-1-9	3	885	0.6	1.5	OHP-1	16.9	16.8	75.0/62.5	20.0	70	44 x 29 x 10	208 V	1	60	2.88 A	15 A	1,2,3,4,5,6	TRANE
IHP-2-1	3	1270	0.6	2.5	OHP-2	28	25.8	75.0/62.5	33.0	70	56 x 29 x 10	208 V	1	60	4.25 A	15 A	1,2,3,4,6,7	TRANE
IHP-2-2	3	1270	0.6	2.5	OHP-2	28	25.8	75.0/62.5	33.0	70	56 x 29 x 10	208 V	1	60	4.25 A	15 A	1,2,3,4,6,7	TRANE
IHP-2-3	3	1270	0.6	2.5	OHP-2	28	25.8	75.0/62.5	33.0	70	56 x 29 x 10	208 V	1	60	4.25 A	15 A	1,2,3,4,6,7	TRANE
IHP-2-4	2	600	0.6	1.0	OHP-2	11.2	9.7	75.0/62.5	13.1	70	23 x 23 x 9	208 V	1	60	0.39 A	15 A	1,2,3,4,5,6	TRANE
IHP-2-5	3	885	0.6	1.5	OHP-2	16.9	16.8	75.0/62.5	19.4	70	44 x 29 x 10	208 V	1	60	2.88 A	15 A	1,2,3,4,6,7	TRANE
IHP-3-1	3	1270	0.6	3.0	OHP-3	33.7	28.3	75.0/62.5	40.0	70	56 x 29 x 10	208 V	1	60	4.25 A	15 A	1,2,3,4,6,7	TRANE
IHP-3-2	2	335	0.6	0.75	OHP-3	11.2	8.1	75.0/62.5	13.5	70	23 x 23 x 9	208 V	1	60	0.29 A	15 A	1,2,3,4,5,6	TRANE
IHP-3-3	2	335	0.6	0.75	OHP-3	11.2	8.1	75.0/62.5	13.5	70	23 x 23 x 9	208 V	1	60	0.29 A	15 A	1,2,3,4,5,6	TRANE
IHP-3-4	2	335	0.6	0.75	OHP-3	11.2	8.1	75.0/62.5	13.5	70	23 x 23 x 9	208 V	1	60	0.29 A	15 A	1,2,3,4,5,6	TRANE
IHP-3-5	3	885	0.6	1.5	OHP-3	16.9	16.8	75.0/62.5	20.0	70	44 x 29 x 10	208 V	1	60	2.88 A	15 A	1,2,3,4,5,6	TRANE
IHP-3-6	1	300	0.6	0.75	OHP-3	7.5	6.2	75.0/62.5	9.0	70	23 x 23 x 9	208 V	1	60	0.28 A	15 A	1,2,3,4,5,6	TRANE

OUTDOOR HEAT PUMP - VARIABLE REFRIGERANT SCHEDULE

TYPE:
1. OUTDOOR HEAT PUMP, VRF, HEAT RECOVERY

NOTES:
1. UNIT TO BE PROVIDED WITH HAIL GUARDS.
2. MANUFACTURER MUST BE CERTIFIED, LISTED, AND LABELED PER AHRI 1230.
3. SYSTEM RATING BASED ON DESIGN AMBIENT CONDITIONS FOR HEATING AND COOLING.
4. CONDENSING UNITS MUST HAVE AUTO CHANGEOVER FUNCTIONS.
5. CONDENSING UNITS MUST HAVE FULLY MODULATING INVERTER COMPRESSORS.
6. SUBMITTED PERFORMANCE DATA MUST BE FULLY DERATED FOR ALL COMPONENTS AND ACCESSORIES, INCLUDING, BUT NOT LIMITED TO, LINE LENGTH, VERTICAL SEPERATION, CONNECTION RATIO, AND DESIGN.
7. REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE FITTED WITH LOCKING TYPE TAMPER RESISTANT CAPS.
8. PROVIDE SEPARATE POWER CONNECTION WITH DISCONNECT SWITCH AT EACH OUTDOOR UNIT SECTION (DISCONNECT SWITCH PROVIDED BY ELECTRICAL).
9. ALL REFRIGERANT PIPING JOINTS TO BE BRAZED AND LEAK TESTED.

MARK	TYPE	COOLING CAPACITY (MBH)	COOLING AMBIENT (DB°F)	HEATING CAPACITY (MBH)	HEATING AMBIENT (WB°F)	ELECTRICAL VOLTAGE	PH	HZ	MCA	MOCP	EFFICIENCY EER	IEER	COP @ 17°F	BASIS OF DESIGN MANUFACTURER	MODEL
OHP-1	1	96	95°F	108	43°F	208 V	3	60	44 A	70 A	13.7	26.5	3.9	TRANE	TURYE096
OHP-2	1	120	95°F	135	43°F	208 V	3	60	56 A	90 A	12.6	25.0	3.7	TRANE	TURYE120
OHP-3	1	96	95°F	108	43°F	208 V	3	60	44 A	70 A	13.7	26.5	3.9	TRANE	TURYE096

BRANCH SELECTOR BOX SCHEDULE

NOTES:
1. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE BALL VALVES AND CAP ANY PIPING CONNECTION NOT USED.
3. PROVIDE BALL VALVES WITH SCHRADER VALVE IN EACH PIPE CONNECTION TO THE CONTROLLER ON THE INLET AND OUTLET.
4. PROVIDE DISCONNECT SWITCH FOR EACH BRANCH SELECTOR BOX.
5. PROVIDE CONDENSATE PUMP (120/1/60) - 1 GPH @ 33 FT. HD.

MARK	ELECTRICAL V	PH	HZ	MCA (A)	MOCP (A)	NUMBER OF CONNECTIONS	WEIGHT (LBS)	BASIS OF DESIGN
BCU-1	208	1	60	1.1	20	12	109	TRANE
BCU-2	208	1	60	0.55	20	6	109	TRANE
BCU-3	208	1	60	0.74	20	8	109	TRANE

CEILING HEATER SCHEDULE

HEATER TYPE:
1. ELECTRIC CEILING HEATER.
2. BASIS OF DESIGN: MARKEL 3470

ACCESSORIES:
1. SURFACE MOUNTING.
2. UNIT MOUNTED THERMOSTAT.
3. DISCONNECT SWITCH.
4. HIGH LIMIT CONTROLS.
5. RADIAL DIFFUSER.

MARK	SIZE	ELECTRICAL V	PH	HZ	ACCESSORIES
ECH-1	3.5 KW	208	1	60	1,2,3,4,5
ECH-2	5 KW	208	1	60	1,2,3,4,5
ECH-3	3.5 KW	208	1	60	1,2,3,4,5
ECH-4	3.5 KW	208	1	60	1,2,3,4,5

2

CONDENSING UNIT SCHEDULE

TYPE:
1. AIR COOLED CONDENSING UNIT.

NOTES:
1. CAPACITY TO BALANCE RESPECTIVE INDOOR AC UNIT.
2. COOLING CAPACITY RATED AT 95°F.
3. UL LISTED, AHRI CERTIFIED.
4. REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE FITTED WITH LOCKING TYPE TAMPER-RESISTANT CAPS. ANY ACCESS DEVICE REQUIRED SHALL BE LEFT ON SITE WITH THE OWNER AT PROJECT CLOSE OUT.
5. MANIFOLD COMPRESSORS AND SINGLE REFRIGERANT CIRCUIT FOR TWO STAGE COOLING.

REFRIGERANT: R454B

ACCESSORIES:
1. PHASE PROTECTION.
2. MICROPROCESSOR CONTROLS.
3. ISOLATION VALVES.
4. LIQUID LINE REFRIGERANT FILTER DRIER.
5. ANTI SHORT CYCLE TIMER.
6. LOW AMBIENT CONTROL DOWN TO 0°F.
7. HAIL / VANDAL GUARDS.
8. THERMAL EXPANSION VALVE.
9. HOT GAS BYPASS WITH RAWAL DEVICE AT CONDENSING UNIT.

MARK	TYPE	NOMINAL TONS	ELECTRICAL V	PH	HZ	MCA (A)	MOCP (A)	EFFICIENCY	BASIS OF DESIGN MANUFACTURER	MODEL
CU-1	1	10	208 V	3	60	41	50	11.5 EER / 14.8 IEER	TRANE	TTA120

FAN SCHEDULE

FAN TYPE:
1. CEILING MOUNTED EXHAUST FAN.
2. CENTRIFUGAL SQUARE INLINE FAN - DIRECT DRIVE WITH SPRING ISOLATOR HANGERS.
3. PROPELLER WALL FAN - BELT DRIVE.
4. CENTRIFUGAL SQUARE INLINE FANE - BELT DRIVE WITH SPRING ISOLATOR HANGERS.

NOTES:
1. TIE WITH LIGHTS. COORDINATE WITH ELECTRICAL CONTRACTOR.
2. TIE TO EMERGENCY WALL SWITCH.
3. TIE WITH THERMOSTAT AND CO2 SENSOR ON WALL.
4. INTERLOCK WITH DRYER.

FAN ACCESSORIES:
1. BACKDRAFT DAMPER.
2. DISCONNECT SWITCH.
3. ALUMINUM CEILING EXHAUST GRILLE.
4. DIRECT DRIVE WITH FAN MOUNTED SOLID STATE SPEED CONTROL EC MOTOR W/ VFD FOR SOFT START.
5. 5A-120V FAN SPEED CONTROLLER.
6. FLEXIBLE CONNECTION.
7. WEATHERPROOF MOTOR ENCLOSURE.
8. WALL SWITCHES FOR SF-1 AND ALL ASSOCIATED AUTO DAMPERS AND CONTROLS TO BE ON EMERGENCY POWER.
9. EF-1 AND EF-2 TO BE PLACED ON EMERGENCY POWER.
10. MOTOR SIDE GUARD.
11. LINT TRAP.
12. HINGED ACCESS TO IMPELLAR.
13. SHALL MEET UL 705 FOR USE IN DRYER EXHAUST DUCT SYSTEMS PROVIDE ALARM ANNUCIATOR PANEL WITH SIGNAGE. PROVIDE SIGNAGE FOR FAN LOCATION.

MARK	FAN TYPE	NOTES	AIRFLOW (CFM)	E.S.P. (IN.-W.G.)	WHEEL SIZE (INCHES)	FAN RPM	MOTOR (HP / W)	ELECTRICAL V	PH	HZ	WEIGHT (LBS)	ACCESSORIES	BASIS OF DESIGN MANUFACTURER	MODEL
EF-1	1	1	70	0.167	8"	665	28 W	120 V	1	60	15	1,2,3,5,9	LOREN COOK	GC
EF-2	1	1	50	0.167	8"	566	23 W	120 V	1	60	15	1,2,3,5,9	LOREN COOK	GC
EF-3	1	1	120	0.167	8"	910	40 W	120 V	1	60	15	1,2,3,5	LOREN COOK	GC
EF-DRYER	4	4	120	0.5	10"	1730	125 W	120 V	1	60	30	2,11,12,13	LOREN COOK	SQNB
SF-1	2	2	250	0.25	10"	1608	0.25 HP	120 V	1	60	70	1,2,4,6,8	LOREN COOK	SQND
VF-1	3	3	6500	0.25	36"	635	1 HP	120 V	1	60	120	2,7,10	LOREN COOK	AWB
VF-2	3	3	6500	0.25	36"	635	1 HP	120 V	1	60	120	2,7,10	LOREN COOK	AWB

SIGNAGE FOR DRYER BOOSTER EXHAUST FAN ALARM (REFER TO ARCHITECTURAL SIGNAGE SPECIFICATION FOR COLOR AND SIZE OF THE SIGN AND TEXT). COORDINATE EXACT LOCATION OF SIGN WITH ARCHITECT.

DRYER BOOSTER EXHAUST FAN. VERIFY PROPER OPERATION. FAN IS LOCATED IN CEILING OF_____.

(CONTRACTOR TO ADD EXACT LOCATION OF FAN TO THE SIGN.)

AIR PURIFICATION SCHEDULE

FLOW	GPS MODEL	GPS QUANTITY	MINIMUM NEEDLE SPACING	VOLTAGE	WATTS	MOUNTING LOCATION	MINIMUM ION DENSITY (IONS/CC)
CV	GPS-IMOD	1 PER COOLING COIL	1 EVERY 3/4"	115	15	UNIT SERVED	40 MILLION PER 0.75"

NOTES:
1. BASIS OF DESIGN: GLOBAL PLASMA SOLUTIONS: APPROVED EQUALS BY PHENOMENAL AIRE, ACTIVE AIR, AIRGENICS AND BIOXGEN SUBJECT TO SPECIFICATION COMPLIANCE.
2. MOUNT GPS-IMOD TO AIR INLET SIDE OF COOLING COIL.
3. IF CONTRACTOR SUBSTITUTES BASIS OF DESIGN WITH ANOTHER MANUFACTURER, CONTRACTOR SHALL COORDINATE ALL ELECTRICAL AND MECHANICAL CHANGES.
4. BI-POLAR IONIZATION SYSTEMS REQUIRING PERISHABLE GLASS TUBES ARE NOT ACCEPTABLE.
5. ALL MANUFACTURER'S MUST PASS UL-867-2007 OZONE CHAMBER TESTING BY EITHER US OR ETL.
6. IONIZATION BAR TO HAVE A MINIMUM OF 1 NEEDLEPOINT EVERY 0.75" OF COIL WIDTH. SYSTEMS WITH NEEDLES FURTHER APART SHALL NOT BE ACCEPTABLE.
7. IONIZATION SYSTEMS WITH MULTIPLE ION MODULES MOUNTED TO A BAR SHALL NOT BE AN ACCEPTABLE SUBSTITUTE.
7. IONIZATION SYSTEMS THAT DO NOT USE EPOXY TO PROTECT THE ION CIRCUITRY SHALL NOT BE ACCEPTABLE.
9. IONIZATION OUTPUT SHALL BE A MINIMUM OF 40 MILLION IONS/CC FOR EVERY 0.75" OF COIL WIDTH.

*PROVIDE FOR THE FOLLOWING UNITS: ERU-1

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Revisions

No.	Date	Description
2	2/21/2025	ADDENDUM 3

100% CDS

IRONDALE FIRE STATION #3
INT. OF JOHN ROGERS DRIVE & ALTON ROAD
Birmingham, Alabama
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
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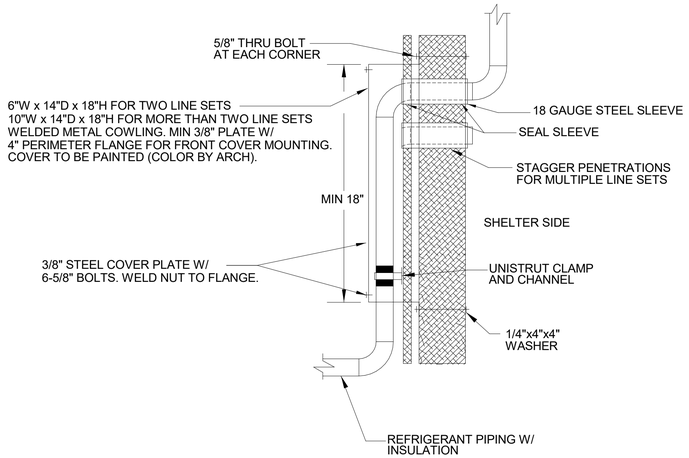
SHEET TITLE: MECHANICAL SCHEDULES
PROJECT NUMBER: CWA No. 2023-01
DATE: 08.30.24
DRAWN BY: LWH | CHECKED BY: JWS

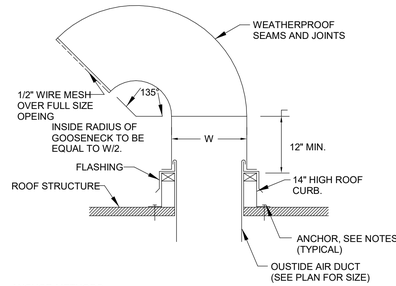
SHEET NUMBER
M0.2



ASSEMBLY SHALL MEET ICC 500 & FEMA 361 TESTING PROCEDURE

REFRIGERANT PIPING PENETRATION THRU STORM SHELTER PROTECTION DETAIL

NO SCALE

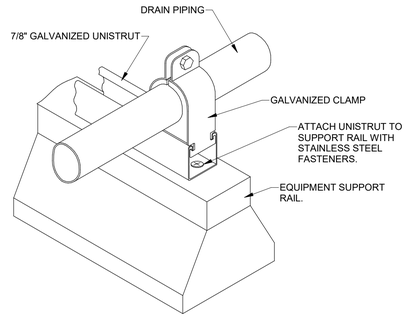


ANCHOR METHODS:

1. FOR STEEL STRUCTURES: ANCHOR CURB TO ROOF STRUCTURE WITH 1/4"-14 SELF DRILLING SCREWS, MINIMUM OF 1/2" OF THREADS SHALL BE SHOWING ON THE UNDERSIDE OF THE STRUCTURE. PROVIDE MINIMUM (4) FASTENERS PER SIDE, (TOTAL OF 16), EQUALLY SPACED ON EACH SIDE.
2. FOR CONCRETE STRUCTURES: ANCHOR CURB TO ROOF STRUCTURE WITH 3/8" HILTI EXPANSION ANCHORS, MINIMUM 2-1/2" ENGAGEMENT. PROVIDE MINIMUM (2) ANCHORS PER SIDE, (TOTAL OF 8), EQUALLY SPACED ON EACH SIDE.
3. ANCHOR HOOD TO CURB WITH A MINIMUM OF (4) 1/4"-14 SELF DRILLING SCREWS ON EACH SIDE OF THE HOOD (TOTAL OF 16 FASTENERS). ONE FASTENER SHALL BE INSTALLED 3" FROM EACH END ON THE SIDE OF THE HOOD AND THE OTHER TWO SHALL BE EQUALLY SPACED ALONG THE SIDE.

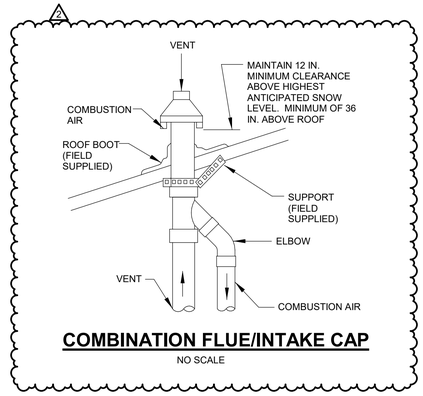
GOOSENECK INSTALLATION DETAIL

NO SCALE



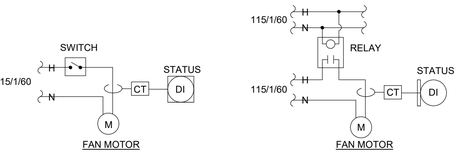
PIPING SUPPORT DETAIL

NO SCALE



COMBINATION FLUE/INTAKE CAP

NO SCALE



EXHAUST FAN CONTROLLED BY SWITCH. EXHAUST FAN CONTROLLED BY LIGHTING CIRCUIT.

EXHAUST FAN CONTROLS

NO SCALE

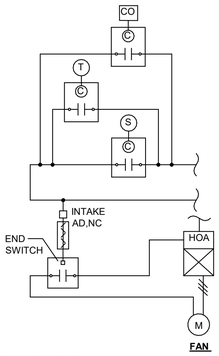
(SEE PLAN FOR EXACT UNIT CONFIGURATION)

ENERGY RECOVERY UNIT SCHEMATIC

NO SCALE

HVAC CONTROLS - GENERAL NOTES

1. MECHANICAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR EXACT QUANTITY AND LOCATIONS OF 120V CONTROL POWER NECESSARY TO CONTROL PANELS AND EQUIPMENT THROUGHOUT PROJECT.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR EXACT QUANTITY AND LOCATIONS OF 120V CONTROL POWER NECESSARY TO POWER AUTOMATIC CONTROL VALVES, AUTOMATIC DAMPER ACTUATORS, AND SMOKE DAMPER ACTUATORS.
3. ALL SMOKE DETECTORS ARE PROVIDED AND WIRED BY ELECTRICAL, INSTALLED BY MECHANICAL.
4. PROVIDE ALL NECESSARY RELAYS, SWITCHES, SENSORS, LOW VOLTAGE CONTROL WIRING, ACTUATORS, ETC. FOR A COMPLETE AND FUNCTIONAL CONTROL SYSTEM.
5. PROVIDE LOCKING COVERS ON ALL THERMOSTATS AND CONTROL DEVICES AS INDICATED ON THE FLOOR PLANS.

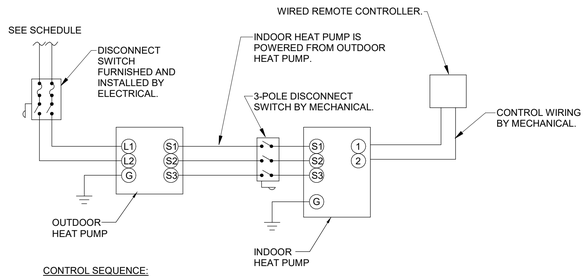


CONTROL SEQUENCE:

FAN:
VENTILATION FAN SHALL BE CONTROLLED BY A WALL MOUNTED THERMOSTAT AND A WALL MOUNTED SWITCH. THERMOSTAT SHALL BE SET TO 80°F (ADJ.), AND THE CARBON MONOXIDE SETPOINT SHALL BE 35 PPM. WHENEVER THE SWITCH IS ON OR THE TEMPERATURE RISES ABOVE SETPOINT OR THE CARBON MONOXIDE LEVEL RISES ABOVE SETPOINT, THE AUTOMATIC DAMPER ASSOCIATED WITH THE VENTILATION FAN SHALL OPEN AND THE VENTILATION FAN SHALL RUN.

VENTILATION FAN CONTROLS (VF-1 AND VF-2)

NO SCALE

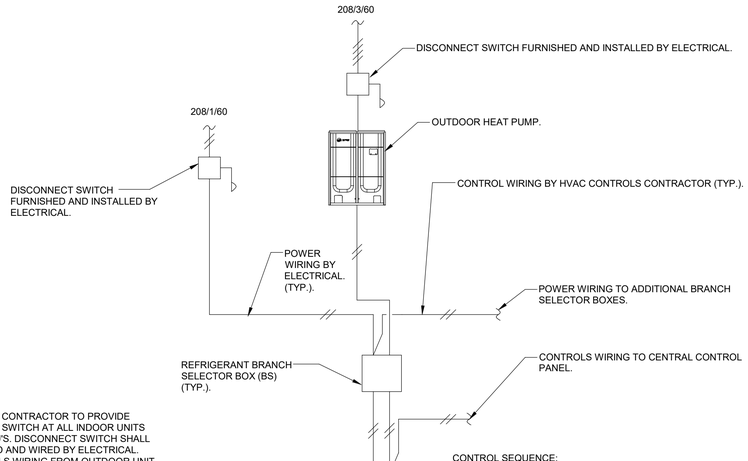


CONTROL SEQUENCE:

THE AC UNIT SHALL BE CONTROLLED BY A WIRED WALL MOUNTED REMOTE CONTROLLER. THE CONTROLLER SHALL CYCLE ON COMPRESSOR(S) TO MAINTAIN COOLING SETPOINT (74°F - ADJUSTABLE) AND HEATING SETPOINT (70°F - ADJUSTABLE). ALL MINI-SPLIT AC UNITS THAT SERVE ELECTRICAL AND IT ROOMS SHALL NOT SET THEIR TEMPERATURE BACK AT NIGHT. FOR ALL MINI-SPLIT AC UNITS THAT SERVE OFFICES, CLASSROOMS, ETC. SHALL SET THEIR TEMPERATURE BACK TO 4°F ABOVE SETPOINT IN SUMMER AND 4°F BELOW SETPOINT IN THE WINTER. COORDINATE WITH OWNER TO ESTABLISH OCCUPIED / UNOCCUPIED SCHEDULES.

DUCTLESS SPLIT SYSTEM CONTROLS

NO SCALE



NOTES:
1. MECHANICAL CONTRACTOR TO PROVIDE DISCONNECT SWITCH AT ALL INDOOR UNITS AND ALL MCU'S. DISCONNECT SWITCH SHALL BE INSTALLED AND WIRED BY ELECTRICAL.
2. ALL CONTROLS WIRING FROM OUTDOOR UNIT TO INDOOR UNITS AND MCU'S SHALL BE BY MECHANICAL CONTRACTOR.
3. ALL POWER WIRING TO ALL INDOOR UNITS AND BRANCH SELECTOR BOXES SHALL BE BY ELECTRICAL.

CONTROL SEQUENCE:
THE OUTDOOR HEAT PUMPS & INDOOR HEAT PUMPS SHALL BE STARTED / STOPPED BASED ON PROGRAMMABLE THERMOSTATS FOR EACH INDOOR UNIT.

OCCUPIED MODE:
THE AC UNIT SHALL BE CONTROLLED BY A WIRED WALL MOUNTED REMOTE CONTROLLER. THE INDOOR SUPPLY FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED HOURS. THE CONTROLLER SHALL CYCLE ON COMPRESSOR(S) TO MAINTAIN COOLING SETPOINT (75°F - ADJUSTABLE) AND HEATING SETPOINT (70°F - ADJUSTABLE). ALL INDOOR UNITS SHALL HAVE FULL INDIVIDUAL CONTROL AND WILL BE ABLE TO HEAT OR COOL INDEPENDENT OF WHAT MODE THE OTHER CONNECTED INDOOR UNITS ARE OPERATING IN.

UNOCCUPIED MODE:
THE CONTROLLER SHALL CYCLE ON THE SUPPLY FAN AND COMPRESSOR(S) TO MAINTAIN THE UNOCCUPIED SPACE SETPOINT (60°F HEATING / 80°F COOLING - ADJUSTABLE).

TYPICAL VARIABLE REFRIGERANT SYSTEM CONTROLS DIAGRAM

NO SCALE

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Revisions

No.	Date	Description
2	2/21/2025	ADDENDUM 3

100% CDS

IRONDALE FIRE STATION #3

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Birmingham, Alabama
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
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SHEET TITLE:
MECHANICAL CONTROLS & DETAILS

PROJECT NUMBER:
CWA No. 2023-01

DATE:
08.30.24

DRAWN BY:	CHECKED BY:
LWH	**JWS**

SHEET NUMBER
M0.5

GENERAL NOTES NOTES:

1. ALL DUCT WORK AND EQUIPMENT SHALL BE LOCATED BETWEEN THE CEILING AND BOTTOM OF THE TRUSSES UNLESS OTHERWISE SHOWN.

SHELTER OSA CALCULATIONS

Room	Room Type	Rp cfm / P	Pz People	Ra cfm/ft²	Az ft²	Vbz cfm	Ez	Voz cfm
AUX. ROOM (STORM SHELTER) 141	Conference / Meeting	5	50	0.00	287	250	1.00	250
TLT 142	Restroom	5	0	0.00	57	0	1.00	0
JAN 143	Janitor's Closet	5	0	0.00	54	0	1.00	0
						Total Required by SF-1:		250
						Total Provided by SF-1:		250

SIGNAGE FOR EMERGENCY VENTILATION FAN SWITCHES (REFER TO ARCHITECTURAL SIGNAGE SPECIFICATION FOR SIGN AND TEXT COLOR AND SIZE) (COORDINATE EXACT LOCATION WITH ARCHITECT).

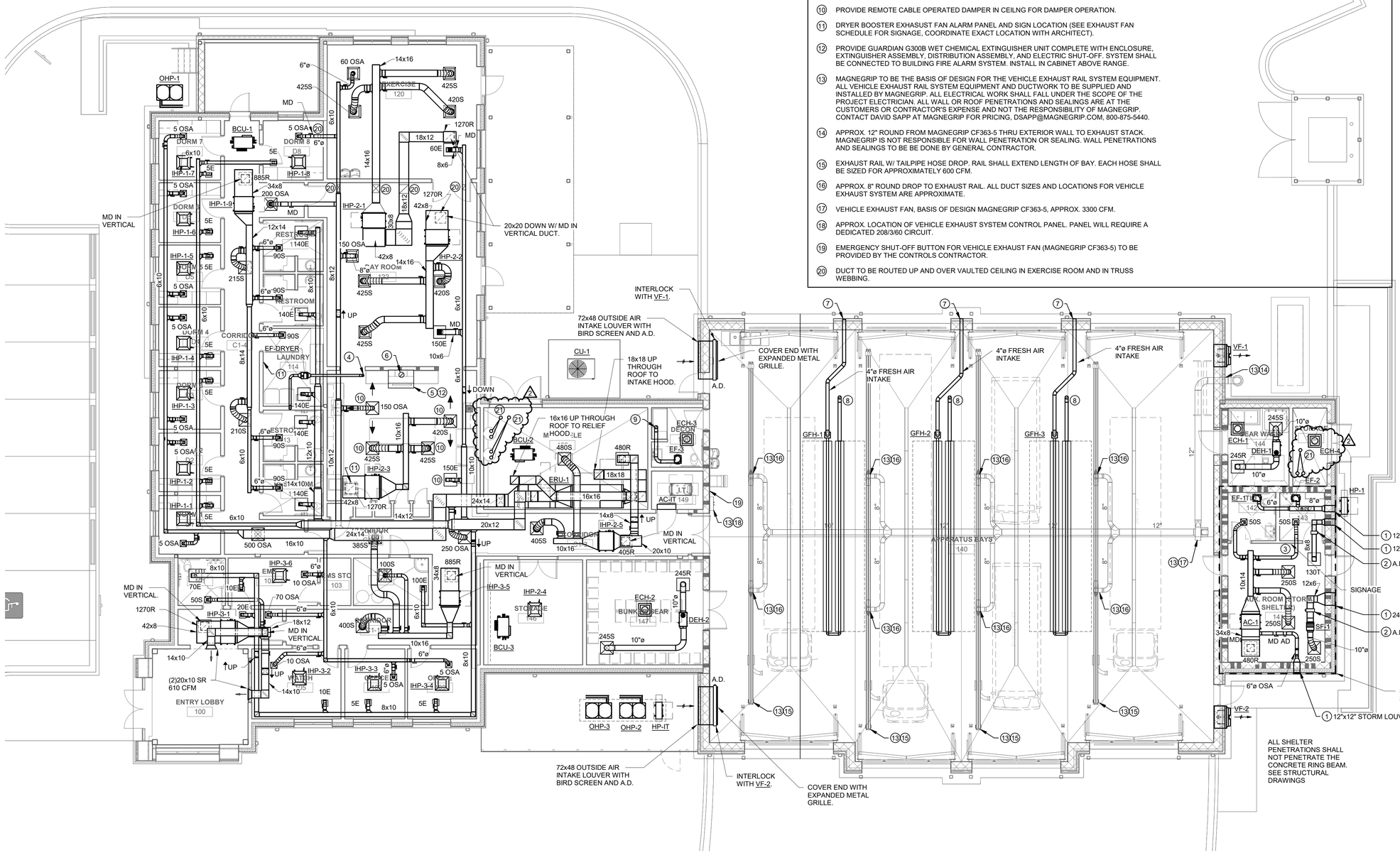
EMERGENCY VENTILATION FANS TO BE SWITCHED ON UPON A LOSS OF POWER IN THE SHELTER DURING A STORM EVENT.

ALL INTERIOR DOORS TO ROOMS IN SHELTER ARE TO BE OPENED IF EMERGENCY VENTILATION FANS ARE ON.

EMERGENCY VENTILATION FANS ARE TO BE SWITCHED OFF UPON POWER RESTORED.

KEYED NOTES:

1. HIGH IMPACT LOUVERS AND WEATHER LOUVERS. HIGH IMPACT LOUVERS SHALL MEET IMPACT TESTING CRITERIA FOR TORNADO SHELTERS IN ICC 500/FEMA 361. LOUVER TO BE RUSKIN XP500S-41S OR EQUAL. SEE DETAIL. WEATHER LOUVER SHALL BE INSTALLED ON EXTERIOR WALL WITH HIGH IMPACT LOUVER INSTALLED BEHIND WEATHER LOUVER. (EXTERIOR WALL APPLICATION ONLY).
2. NORMALLY CLOSED AUTO DAMPER TO REMAIN CLOSED WHEN POWERED CONTINUOUSLY. UPON THE LOSS OF POWER OR DE-ACTIVATION BY WALL SWITCH DURING STORM EVENT, THE DAMPERS SHALL OPEN. DAMPER TO RETURN TO NORMAL POSITION ONCE SWITCH IS DEACTIVATED OR POWER IS RESTORED.
3. WALL SWITCHES FOR SF-1 AND ALL ASSOCIATED AUTO DAMPERS TO BE ACTIVATED UPON THE LOSS OF POWER DURING A STORM EVENT. UPON THE ACTIVATION OF EITHER SWITCH. PROVIDE SIGNAGE OUTSIDE OF JANITOR 143, "EMERGENCY VENTILATION FAN SWITCHES" FOR SF-1. EF-1 AND EF-2 SHALL BE ON EMERGENCY POWER.
4. 4"ø DRYER EXHAUST UP TO GOOSENECK ON ROOF.
5. RESIDENTIAL STYLE KITCHEN HOOD WITH BUILT IN FAN, 800 CFM EXHAUST. PROVIDED BY OTHERS.
6. 10"ø EXHAUST DUCT UP TO GOOSENECK ON ROOF.
7. 4"ø COMBUSTION AIR INTAKE THRU EXTERIOR WALL TO MANUFACTURER'S APPROVED CAP WITH BIRDSCREEN. PROVIDE MATERIALS AND INSTALLATION PER MANUFACTURER.
8. 6"ø FLUE VENT UP THRU ROOF TO MANUFACTURER'S APPROVED CAP. PROVIDE MATERIALS AND INSTALLATION PER MANUFACTURER.
9. 6"ø EXHAUST DUCT UP TO GOOSNECK ON ROOF.
10. PROVIDE REMOTE CABLE OPERATED DAMPER IN CEILNG FOR DAMPER OPERATION.
11. DRYER BOOSTER EXHASUST FAN ALARM PANEL AND SIGN LOCATION (SEE EXHAUST FAN SCHEDULE FOR SIGNAGE, COORDINATE EXACT LOCATION WITH ARCHITECT).
12. PROVIDE GUARDIAN G300B WET CHEMICAL EXTINGUISHER UNIT COMPLETE WITH ENCLOSURE, EXTINGUISHER ASSEMBLY, DISTRIBUTION ASSEMBLY, AND ELECTRIC SHUT-OFF. SYSTEM SHALL BE CONNECTED TO BUILDING FIRE ALARM SYSTEM. INSTALL IN CABINET ABOVE RANGE.
13. MAGNEGRIP TO BE THE BASIS OF DESIGN FOR THE VEHICLE EXHAUST RAIL SYSTEM EQUIPMENT. ALL VEHICLE EXHAUST RAIL SYSTEM EQUIPMENT AND DUCTWORK TO BE SUPPLIED AND INSTALLED BY MAGNEGRIP. ALL ELECTRICAL WORK SHALL FALL UNDER THE SCOPE OF THE PROJECT ELECTRICIAN. ALL WALL OR ROOF PENETRATIONS AND SEALINGS ARE AT THE CUSTOMERS OR CONTRACTOR'S EXPENSE AND NOT THE RESPONSIBILITY OF MAGNEGRIP. CONTACT DAVID SAPP AT MAGNEGRIP FOR PRICING, DSAPP@MAGNEGRIP.COM, 800-875-5440.
14. APPROX. 12" ROUND FROM MAGNEGRIP CF363-5 THRU EXTERIOR WALL TO EXHAUST STACK. MAGNEGRIP IS NOT RESPONSIBLE FOR WALL PENETRATION OR SEALING. WALL PENETRATIONS AND SEALINGS TO BE BE DONE BY GENERAL CONTRACTOR.
15. EXHAUST RAIL W/ TAILPIPE HOSE DROP. RAIL SHALL EXTEND LENGTH OF BAY. EACH HOSE SHALL BE SIZED FOR APPROXIMATELY 600 CFM.
16. APPROX. 8" ROUND DROP TO EXHAUST RAIL. ALL DUCT SIZES AND LOCATIONS FOR VEHICLE EXHAUST SYSTEM ARE APPROXIMATE.
17. VEHICLE EXHAUST FAN, BASIS OF DESIGN MAGNEGRIP CF363-5, APPROX. 3300 CFM.
18. APPROX. LOCATION OF VEHICLE EXHAUST SYSTEM CONTROL PANEL. PANEL WILL REQUIRE A DEDICATED 208/3/60 CIRCUIT.
19. EMERGENCY SHUT-OFF BUTTON FOR VEHICLE EXHAUST FAN (MAGNEGRIP CF363-5) TO BE PROVIDED BY THE CONTROLS CONTRACTOR.
20. DUCT TO BE ROUTED UP AND OVER VAULTED CEILING IN EXERCISE ROOM AND IN TRUSS WEBBING.
21. 3" FLUE AND INTAKE PIPES FROM UNIT UP THRU ATTIC TO CONCENTRIC VENT ON ROOF. WHERE PLASTIC PIPING IS USED FOR VENTING GAS APPLIANCES, THE APPLIANCE SHALL BE LISTED FOR USE WITH SUCH VENTING MATERIALS AND THE APPLIANCE MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL IDENTIFY THE SPECIFIC PLASTIC PIPING MATERIAL. THE PLASTIC PIPE VENTING MATERIALS SHALL BE LABELED IN ACCORDANCE WITH PRODUCT STANDARDS SPECIFIED BY THE APPLIANCE MANUFACTURER OR LISTED AND LABELED IN ACCORDANCE WITH UL1738. COMPLY WITH 2021 IFGC 503.4 TYPE OF VENTING SYSTEM USED. SEE DETAIL 2



1 M1.1 MECHANICAL - FLOOR PLAN
1/8" = 1'-0"

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Project Number :
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Revisions		
No.	Date	Description
1	2/5/2025	Revision 1
2	2/21/2025	ADDENDUM 3

100% CDS

IRONDALE FIRE STATION #3

INT. OF JOHN ROGERS DRIVE & ALTON ROAD
Birmingham, Alabama
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
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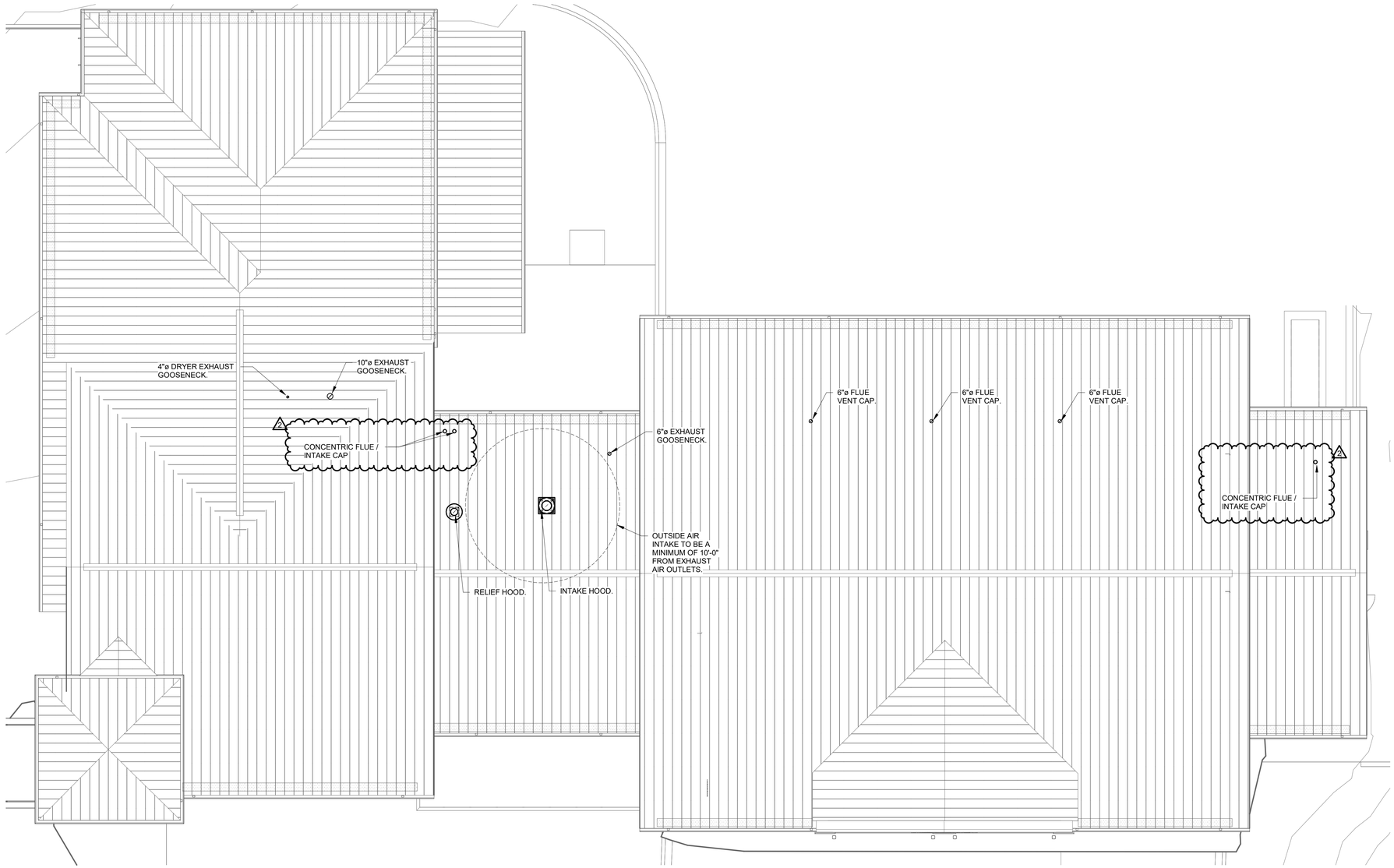
SHEET TITLE:
MECHANICIAL - FLOOR PLAN

PROJECT NUMBER:
CWA No. 2023-01

DATE:
08.30.24

DRAWN BY:	CHECKED BY:
LWH	JWS

SHEET NUMBER
M1.1



1 M1.2 MECHANICAL - ROOF PLAN
1/8" = 1'-0"

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Revisions

No.	Date	Description
1	2/5/2025	Revision 1
2	2/21/2025	ADDENDUM 3

ALABAMA
No. 24747
PROFESSIONAL
02-21-2025
ENGINEER
WADE STEWART
SEAL

100% CDS

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SHEET TITLE:
MECHANICAL ROOF PLAN

PROJECT NUMBER:
CWA No. 2023-01

DATE:
08.30.24

DRAWN BY:	CHECKED BY:
LWH	**JWS**

SHEET NUMBER
M1.2

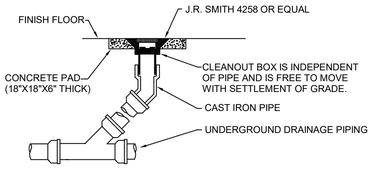
GENERAL NOTES

1. LOCATIONS OF UTILITIES SHOWN ON PLANS ARE APPROXIMATE. VERIFY WITH LOCAL UTILITY PRIOR TO BIDDING.
2. CONTRACTOR SHALL VERIFY EXACT LOCATION, SIZE, AND ELEVATION OF ALL EXISTING SERVICES PRIOR TO INSTALLING ANY NEW PIPE.
3. ALL OUTSIDE CLEANOUTS SHALL BE BROUGHT TO GRADE AND EMBEDDED IN 18"X18"X16" THICK CONCRETE PAD. (J.R. SMITH 4258 OR EQUAL.)
4. WHEREVER DISSIMILAR METALS ARE CONNECTED ON WATER LINES, A DIELECTRIC UNION SHALL BE USED.
5. ALL HORIZONTAL WATER AND VENT PIPING SHALL BE RUN ABOVE CEILING ON PLAN WHERE SHOWN UNLESS OTHERWISE NOTED.
6. ALL HORIZONTAL SANITARY PIPING IS RUN BELOW FLOOR ON PLAN WHERE SHOWN UNLESS OTHERWISE NOTED.
7. ALL WATER PIPING BELOW SLAB ON GRADE SHALL BE BENT UP AT ENDS SO THAT NO JOINTS OCCUR BELOW FLOOR.
8. ALL WATER PIPING INSTALLED IN EXTERIOR WALLS SHALL BE LOCATED ON THE INTERIOR SIDE OF THE EXTERIOR WALL INSULATION.
9. NO VENT THRU ROOF IS TO BE LOCATED WITHIN 10 FEET OF ANY BUILDING AIR INTAKES, PER CODE. COORDINATE WITH MECHANICAL AND GENERAL CONTRACTORS.
10. DOMESTIC WATER PIPING AND FIRE PROTECTION PIPING LOCATED ABOVE THE CEILING, SHALL BE INSTALLED BELOW CEILING INSULATION.
11. CONTRACTOR SHALL COORDINATE ALL SINKS WITH CASEWORK PRIOR TO ORDERING SINKS.
12. PROVIDE DISINFECTION OF WATER PIPING SYSTEM WITH CHLORINE SOLUTION AS PER CODE.
13. INSTALLATION OF BACKFLOW PREVENTER SHALL COMPLY WITH CURRENT INTERNATIONAL BUILDING CODE AND CURRENT INTERNATIONAL PLUMBING CODE.
14. ALL OVERHEAD WATER PIPING TO BE RUN BELOW INSULATION AT BOTTOM OF TRUSSES FOR FREEZE PROTECTION.
15. INSULATION ON ALL PIPING SHALL MEET SMOKE/ FLAME RATING OF 25 & 50.
16. NO JOINTS IN WATER PIPING BELOW SLAB.
17. THE LOCATION OF LAVATORIES AND WATER CLOSETS RELATIVE TO THE FINISHED WALL IS CRITICAL. REFER TO ARCHITECTURAL AND THE SPECIFICATIONS FOR ADDITIONAL INFORMATION. ALL WATER CLOSETS TO BE 18" FROM FINISH WALL TO CENTER OF WATER CLOSET.
18. WATER HAMMER ARRESTORS ARE REQUIRED TO PROTECT WATER PIPING SYSTEMS WHERE QUICK-CLOSING VALVES ARE UTILIZED. WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.
19. THESE DRAWINGS NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE PLUMBING SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL PARAMETERS GIVEN IN THESE DOCUMENTS SHALL BE STRICTLY CONFORMED WITH ANY ITEMS AND LABOR REQUIRED FOR A COMPLETE PLUMBING SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ANY ADDITIONAL COST TO THE PROJECT, CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND THE DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS.
20. COORDINATE PLUMBING PIPING WITH STRUCTURAL, PLUMBING, HVAC, AND ELECTRICAL. MAKE OFFSETS AND TRANSITIONS TO COORDINATE WITH OTHER TRADES WITHOUT ANY ADDITIONAL COST TO THE PROJECT.
21. COORDINATE ALL PLUMBING IN SLAB WITH BUILDING FOOTINGS.
22. NO PIPING TO BE RUN ABOVE ELECTRICAL PANELS. MAINTAIN ALL REQUIRED CLEARANCES.
23. CONTRACTOR SHALL VISIT JOB SITE AND VERIFY EXISTING CONDITIONS BEFORE SUBMITTING A PRICE, ORDERING MATERIALS OR PERFORMING ANY WORK. NOTIFY THE ARCHITECT OF ANY DEVIATION FROM PLUMBING PLAN.
24. SUPPORT PIPE AS REQUIRED BY THE CURRENT INTERNATIONAL PLUMBING CODE.
25. FIRESTOP ALL RATED WALL AND FLOOR PENETRATIONS. SEE ARCHITECTURAL DRAWINGS FOR RATED WALL AND FLOOR LOCATIONS.
26. OFFSET ALL VTR'S TO BACKSIDE OF ROOF RIDGE.
27. DO NOT BEGIN WORK UNTIL ELEVATION OF FINAL CONNECTION POINT IS VERIFIED AND GRADING OF ENTIRE SYSTEM CAN BE DETERMINED (EVEN IF FINAL CONNECTION IS SPECIFIED UNDER ANOTHER SECTION).

PLUMBING LEGEND

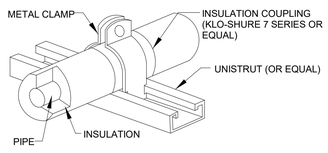
—— — ——	DOMESTIC COLD WATER	BFF	BELOW FINISHED FLOOR
—— — — ——	DOMESTIC HOT WATER SUPPLY		CAP ON END OF PIPE
—— — — — ——	DOMESTIC HOT WATER RETURN	TYP	TYPICAL
——	SOIL, WASTE, OR SANITARY SEWER	CO	CLEANOUT
— — — — — — —	VENT	FD	FLOOR DRAIN
—— A ——	COMPRESSED AIR	DN	DOWN
—— G ——	NATURAL GAS	P-#	PLUMBING FIXTURE
—— S ——	STORM PIPING	VS	VENT STACK
—— OIL ——	OIL WASTE PIPING	VSTR	VENT THROUGH ROOF
—— PI ——	PARTICLE INTERCEPTOR PIPING		BALL VALVE
	PIPE TURNING DOWN	MFD	MECHANICAL FLOOR DRAIN
	PIPE TURNING UP	WS	WASTE STACK
	TEE DOWN	HWR	HOT WATER RETURN
	TEE UP	HW	HOT WATER
CW	COLD WATER	ABV	ABOVE
WH - #	WATER HEATER	AFF	ABOVE FINISHED FLOOR
—— PI ——	PARTICLE INTERCEPTOR PIPING		

COMPRESSED AIR SPECIFICATION:
COMPRESSED AIR PIPING SYSTEM TO BE TRANSAIR, ALUMINUM PIPE, FITTINGS AND VALVES. SUPPORT IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. PIPING SYSTEM TO BE DRAINED DOWN TO LOWPOINTS , REFERENCE DESIGN.



DETAIL OF CLEANOUT TO GRADE

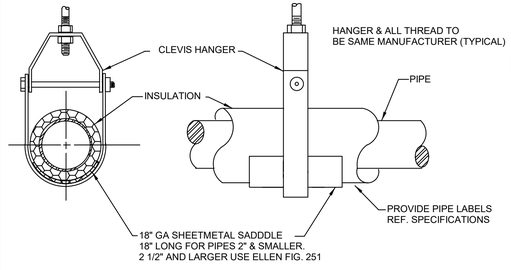
NO SCALE



NOTES:
1. APPLICATION: FOR STRUT MOUNTED, 4 INCH AND SMALLER, COFFEE PIPE WITH FOAMED PLASTIC (ARMAFLEX) OR FIBERGLASS INSULATION.
2. ALLOWED FOR HORIZONTAL OR VERTICAL INSTALLATION.
3. FOR COLD PIPE APPLICATION, APPLY ADHESIVE TO END OF FOAMED PLASTIC INSULATION PRIOR TO INSERTING INTO COUPLING.

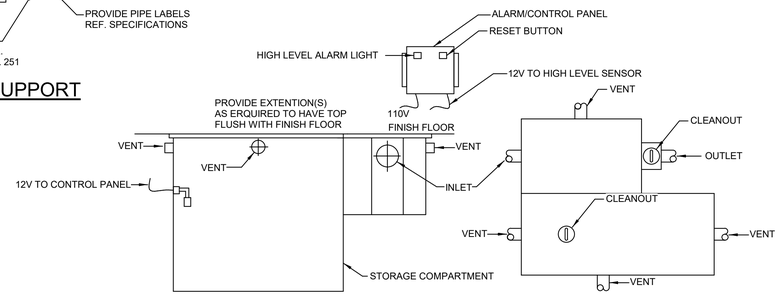
STRUT-MOUNTED PIPING SUPPORT INSULATION COUPLING DETAIL

NO SCALE



SUSPENDED PIPE SUPPORT

NO SCALE



DETAIL of OIL/WATER SEPARATOR

NO SCALE

PLUMBING FIXTURE SCHEDULE

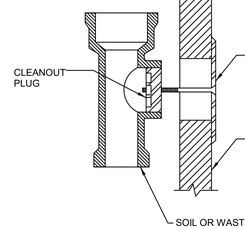
MARK	FIXTURE	WASTE	CW	HW	REMARKS
AC-1	AIR COMPRESSOR				INGERSOLL RAND PREMIUM SIMPLEX PACKAGE 2475 BARE, 80-GAL TANK, 175 PSIG, AS&S, 5 HP RECIP COMPRESSOR. PROVIDE WITH DRYER, POLYSEP PSG-7 OIL WATER SEPARATOR, FA75IG GENERAL PURPOSE FILTER AND FA75IH HIGH EFFICIENCY FILTER WITH AUTODRAIN. COORDINATE WITH ELECTRICAL. UNIT SHALL BE 208/3.
CB	DRAIN BOX	2"	-	-	PROVIDE A SIOUX CHIEF MODEL #696-3F DRAIN BOX, #696-LC LOUVERED COVER, #696-CF SECONDARY DRAINAGE FUNNEL, AND J.R. SMITH TRAP SEAL INSERT. BOX TO COME COMPLETE WITH WALL FLANGE AND LOUVER. PIPE INDIRECT IN WALL TO DRAIN BOX. COORDINATE EXACT LOCATION WITH ARCHITECT AND GC.
FD	FLOOR DRAIN	3"	-	-	J.R. SMITH #2010 WITH 6" ROUND NICKEL BRONZE GRATE. PROVIDE WITH J.R. SMITH TRAP INSERT.
FS-1	FLOOR SINK	4"	-	-	J.R. SMITH #3100, 8" SQUARE, PORCELAIN ENAMELED CAST IRON INTERIOR WITH 3/4 CAST IRON PORCELAIN ENAMELED GRATE AND DOME BOTTOM STRAINERS. PROVIDE WITH J.R. SMITH TRAP INSERT.
FS-2	FLOOR SINK	4"	-	-	J.R. SMITH #3200, 16" SQUARE, PORCELAIN ENAMELED CAST IRON INTERIOR WITH 3/4 CAST IRON PORCELAIN ENAMELED GRATE AND DOME BOTTOM STRAINERS. PROVIDE WITH J.R. SMITH TRAP INSERT.
GT-1	GREASE TRAP	4"	-	-	ZURN GMC-OMC-SMC50-300
HB	HOSE BIBB	-	3/4"	-	WOODFORD B-24 SERIES, ANTI-SIPHON VACUUM BREAKER CLOSE COUPLED, POLISHED CHROME. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. SUPPORT PIPING AND HOSE BIBB WITH UNI-STRUT MOUNTED TO THE STRUCTURE.
HR-A	HOSE REEL - AIR	-	-	-	REELCRAFT MODEL #7850 OLP COMPLETE WITH 50 FEET OF HOSE; MAXIMUM OPERATING PRESSURE OF 300 PSI. INSTALL PER MANUFACTURER'S INSTRUCTIONS. COORDINATE LOCATION AND MOUNTING HEIGHT WITH GENERAL CONTRACTOR.
HR-W	HOSE REEL - WATER	-	2"	-	CROKER 5000 SERIES ANGLE HOSE VALVE. VALVE SHALL BE COMPATIBLE WITH OWNERS EQUIPMENT.
MFD	MECHANICAL FLOOR DRAIN	4"	-	-	J.R. SMITH #2242 WITH SEDIMENT BUCKET. PROVIDE WITH J.R. SMITH TRAP INSERT.
OS-1	OIL/WATER SEPARATOR	4"	2"	-	J.R. SMITH #8599-50-100 COMPLETE WITH ANCHOR FLANGE, INSTALLATION SHALL COMPLY WITH REQUIREMENTS OF AUTHORITY HAVING JURISDICTION. PROVIDE 12" EXTENSION IF REQUIRED FOR INSTALLATION. PROVIDE CLEAN-OUT ACCESS. PROVIDE HIGH LEVEL SENSOR AND CONTROL PANEL.
P-1	WATER CLOSET - ADA COMPLIANT	4"	1"	-	FLOOR MOUNTED - KOHLER K-96057-SS-0 COMPLETE SLOAN ROYAL #111 FLUSH VALVE WITH YJ BRACKET AND CHURCH "DURA GUARD" MODEL # 2155 SSC SEAT.
P-2	LAVATORY - ADA COMPLIANT	1 1/4"	1/2"	1/2"	WALL HUNG - KOHLER K-2032 (20" X 18") COMPLETE, SYMMONS S-20-0 FAUCET, K7715 OUTLET WITH TAILPIECE, J.R. SMITH #700-M31-Z FIXTURE SUPPORT, MCGUIRE #165 SUPPLIES WITH STOPS AND MCGUIRE #8872 P-TRAP. INSULATE P-TRAP, STOPS AND SUPPLIES WITH "PRO-WRAP" BY MCGUIRE. MOUNT WITH RIM MAXIMUM 34" AFF. PROVIDE LAWLER 570 THERMOSTATIC MIXING VALVE MOUNTED BELOW LAVATORY. RUN 100° F WATER TO FAUCET. MUST MEET A.D.A. GUIDELINES.
P-3	LAVATORY	1 1/4"	1/2"	1/2"	COUNTERTOP - KOHLER K-2196-4 COMPLETE, SYMMONS S-20-0 FAUCET, MCGUIRE #8872 P-TRAP. MCGUIRE 165 SUPPLIES WITH STOPS. INSULATE ALL WITH "PRO-WRAP" BY MCGUIRE. PROVIDE LAWLER 570 THERMOSTATIC MIXING VALVE MOUNTED BELOW LAVATORY. RUN 100° F WATER TO FAUCET. MUST MEET A.D.A. GUIDELINES.
P-4	SHOWER VALVE AND SHOWER- ADA COMPLIANT	-	1/2"	1/2"	SHOWER BASE, WALLS, GRAB BARS, AND SEAT. PROVIDE INPCO 30"X30" BASE WITH FRONT TRENCH. PROVIDE SOLID SURFACE WALL PACKAGE COMPLETE WITH TRIM COMPLETE WITH TWO 30" GRAB BARS AND FOLDING BENCH SEAT. PROVIDE WOOD BACKING IN WALL FOR SEAT AND GRAB BAR SUPPORT. SHOWER CONTROLS SHALL BE ZURN MODEL C-96-500-B30-V-X, COLOR SELECTION OF UNIT AND WALLS BY ARCHITECT.
P-5	DOUBLE BOWL UTILITY SINK	1 1/2"	1/2"	1/2"	PROVIDE ELKAY SS82422, 2 BOWL UTILITY SINK WITH LK BASKET STRAINERS COMPLETE WITH T AND S MPQWLV-08-CR MINI-PRIME FAUCET. PROVIDE MCQUIRE 165 SUPPLIES WITH STOPS, MCGUIRE 8912 P TRAP, WITH CONTINUOUS WASTE AND TAILPIECE.
P-6	WASHING MACHINE BOX (COMMERCIAL)	1 1/2"	1/2"	1/2"	FURNISH AND SET IN PLACE UNDER ANOTHER SECTION. ROUGH AND CONNECT COMPLETE. PROVIDE BALL VALVE CUT OFF ON HOT AND COLD WATER SUPPLY INSTALL ABOVE CEILING A LINE SIZE RPZBP WITH STRAINER ON INLET SIDE OF BACKFLOW PREVENTER AND SHOCK ARRESTOR PDI SIZE "B" ON THE OUTLET SIDE. PIPE BACKFLOW PREVENTER WASTE THRU FACTORY MADE AIR GAP DOWN IN WALL TO TRENCH DRAIN.
P-7	STRETCHER HOSE DOWN	3"	1/2"	1/2"	STERN WILLIAMS CUSTOM, 48"X36" RECTANGULAR BASIN COMPLETE, T-35 HOSE WITH WALL HOOK, STAINLESS STEEL BACKSPLASH AND CHICAGO FAUCET #897 FAUCET.
P-8	WASHING MACHINE BOX (RESIDENTIAL)	1 1/2"	1/2"	1/2"	GUY GRAY # WB-2300, PROVIDE SHOCK ARRESTORS PDI SIZE "B" ABOVE CEILING ON HOT AND COLD WATER LINES.
P-9	MOP SINK	3"	1/2"	1/2"	STERN WILLIAMS #SBC-1700 (24" X 24") COMPLETE, T-35 HOSE WITH WALL HOOK, STAINLESS STEEL BACKSPLASH AND CHICAGO FAUCET #897 FAUCET.
P-10	WATER COOLER - ADA COMPLIANT	1 1/2"	1/2"	-	ELKAY # EZSTL8WSSK BI-LEVEL WATER COOLER WITH BOTTLE FILLER STATION. COMPLETE WITH STAINLESS STEEL CABINET AND WATERWAYS THAT ARE MANUFACTURED OF 100% LEAD FREE MATERIAL. J.R. SMITH #634 FIXTURE SUPPORT EBC TA150 P-TRAP AND EBC LA10 STOP WITH SUPPLY. FULLY INSULATE P-TRAP WITH EBC IK INSULATOR. INSTALL WITH LOWER SPOUT OUTLET MAXIMUM 36" AFF. MUST MEET A.D.A. INSTALL WITH BOTTLE FILLER. INSTALL COMPLETE. PROVIDE WITH ELKAY MODEL #LKAPREZL CANE APRON AS REQUIRED.
P-11	ICE MACHINE	-	1/2"	-	FURNISHED AND INSTALLED UNDER ANOTHER SECTION, ROUGH AND CONNECT COMPLETE, PROVIDE BALL VALVE STOP ON SUPPLY AND PIPE WASTE(S) TO FLOOR DRAIN. PROVIDE WATTS LF9D ON COLD WATER SUPPLY IF REQUIRED BY LOCAL CODES. PIPE RELIEF FULL SIZE TO FS.
P-12	UTILITY SINK	1 1/2"	1/2"	1/2"	ADVANCE TABCO #4-41-36, K-1 FAUCET, K-5 DRAIN, MCGUIRE #8912 P-TRAP.
PT-1	PARTICLE INTERCEPTOR	4"	-	-	STRIEM PS-50-S-M. MEDIUM, SCREEN, CAST IRON LOCKABLE MANHOLE COVER.
SD	SHOWER DRAIN	2"	-	-	J.R. SMITH #2010 WITH 4" ROUND STRAINER. PROVIDE WITH J.R. SMITH TRAP INSERT.
TD-1	TRENCH DRAIN	4"	-	-	PROVIDE JR SMITH 9960-M HEAVY DUTY CLASS E TRENCH WITH DUCTILE IRON SLOTTED GRATE. TERMINATE TRENCH WITH CATCH BASIN.
TD-2	TRENCH DRAIN	4"	-	-	PROVIDE SLOTTED TRENCH AT ICEMAKER JR SMITH 9930 WITH GRATE. GRATE TO BE CUT FOR INDIRECT WASTE BELOW ICEMAKER.
WH	WALL HYDRANT	-	3/4"	-	J.R. SMITH #5509-QT, WITH INTEGRAL BACKFLOW PREVENTER, LATCHING COVER, FREEZE-PROOF AND OF PROPER LENGTH FOR WALL IN WHICH INSTALLED, ALL BRONZE BOX. VALVE SEAT MUST BE ON BUILDING SIDE OF EXTERIOR WALL INSULATION. INSTALL WITH CENTER LINE 24" ABOVE FINISH GRADE. PROVIDE OWNER WITH ONE (1) LOOSE KEY FOR EACH WALL HYDRANT.

WATER HEATER SCHEDULE

MARK	FIXTURE	GAS/ ELEC INFO.	MODEL	REMARKS
TWH-1	TANKLESS WATER HEATER	208V, 1 PHASE; 5KW	EEMAX MODEL AM007240T	PROVIDE WITH INTEGRAL ASSE 1070 MIXING VALVE. PROVIDES 68°F TEMP. RISE AT 0.5 GPM. MOUNT BELOW LAVATORY WHERE SHOWN ON DRAWINGS. PIPE TO HW INLET OF FAUCET.
WH-1	WATER HEATER	199 CFH	SWR200N	LOCHINVARH SWR200N, 90 GALLON STORAGE, 41 GALLON RECOVERY AT 100°F RISE. NEW P&T RELIEF VALVE. SET OUTLET TEMPERATURE AT 140°F. INSTALL AS DETAILED ON DRAWINGS. 199 CFH. VERIFY VOLTAGE WITH ELECTRICAL SECTION.
WH-2	WATER HEATER	199 CFH	SWR200N	LOCHINVAR SWR200N, 90 GALLON STORAGE, 41 GALLON RECOVERY AT 100°F RISE. NEW P&T RELIEF VALVE. SET OUTLET TEMPERATURE AT 140°F. INSTALL AS DETAILED ON DRAWINGS. 199 CFH. VERIFY VOLTAGE WITH ELECTRICAL SECTION.
WH-3	WATER HEATER	199 CFH	SWR200N	LOCHINVAR SWR200N, 90 GALLON STORAGE, 41 GALLON RECOVERY AT 100°F RISE. NEW P&T RELIEF VALVE. SET OUTLET TEMPERATURE AT 140°F. INSTALL AS DETAILED ON DRAWINGS. 199 CFH. VERIFY VOLTAGE WITH ELECTRICAL SECTION.

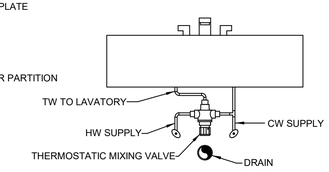
GAS EQUIPMENT SCHEDULE

EQUIPMENT NO.	DESCRIPTION	GAS PRESSURE REGULATOR		FLOW CFH	REMARKS
		INLET	OUTLET		
122	KITCHEN EQUIP. RANGE	2 PSI	7" WC	92	ROUGH AND CONNECT
GFH-1	HVAC EQUIPMENT	2 PSI	7" WC	150	ROUGH AND CONNECT
GFH-2	HVAC EQUIPMENT	2 PSI	7" WC	150	ROUGH AND CONNECT
GFH-3	HVAC EQUIPMENT	2 PSI	7" WC	150	ROUGH AND CONNECT
GENERATOR	HVAC EQUIPMENT	2 PSI	11" WC	2782	ROUGH AND CONNECT. 150 KW
SEE KITCHEN SCHEDULE FOR ADDITIONAL INFORMATION					



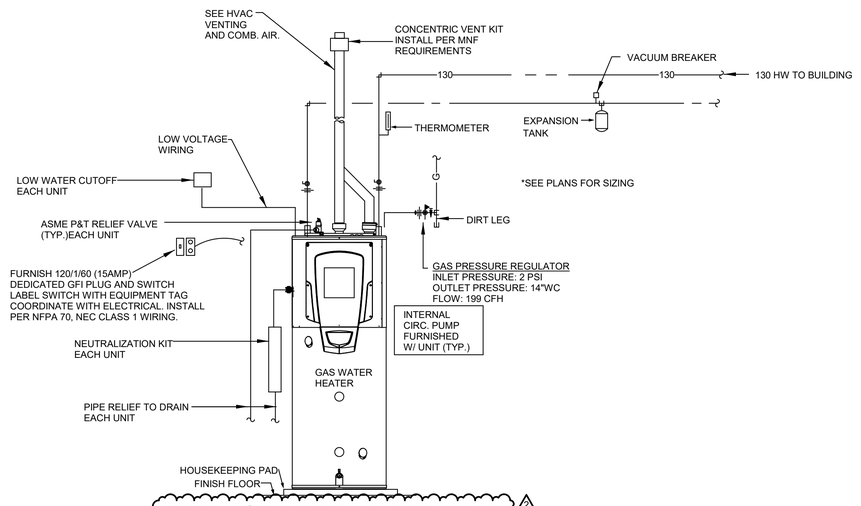
WALL CLEANOUT

NO SCALE



DETAIL OF TMV BELOW LAVATORY

NO SCALE



DETAIL OF WATER HEATER - WH-3

NO SCALE

Dewberry
2 Riverchase Office Plaza
Suite 205
Hoover, AL 352444
(205) 988-2069
www.dewberry.com

Project Number :
50171742

Revisions

No.	Date	Description
1	2/5/2025	Revision 1
2	2/21/2025	ADDENDUM 3

ALABAMA
No. 24747
PROFESSIONAL
02-21-2025
ENGINEER
WADE STEWART
SEAL

100% CDS

IRONDALE FIRE STATION #3

INT. OF JOHN ROGERS DRIVE & ALTON ROAD
Birmingham, Alabama
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700
FAX: 205-250-0515

SHEET TITLE:
PLUMBING SCHEDULES AND NOTES

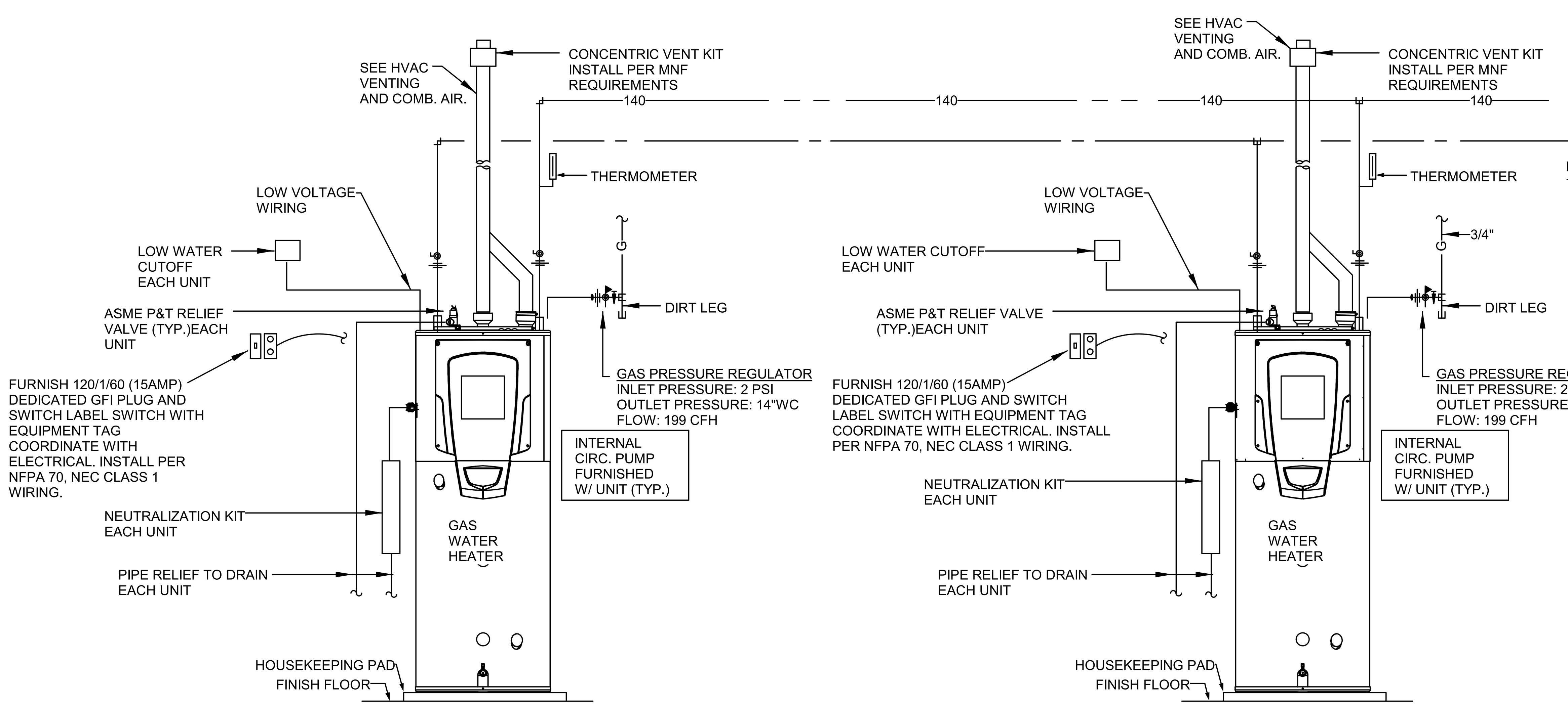
PROJECT NUMBER:
CWA No. 2023-01

DATE:
08.30.24

DRAWN BY:	CHECKED BY:
JTR	**CLJ**

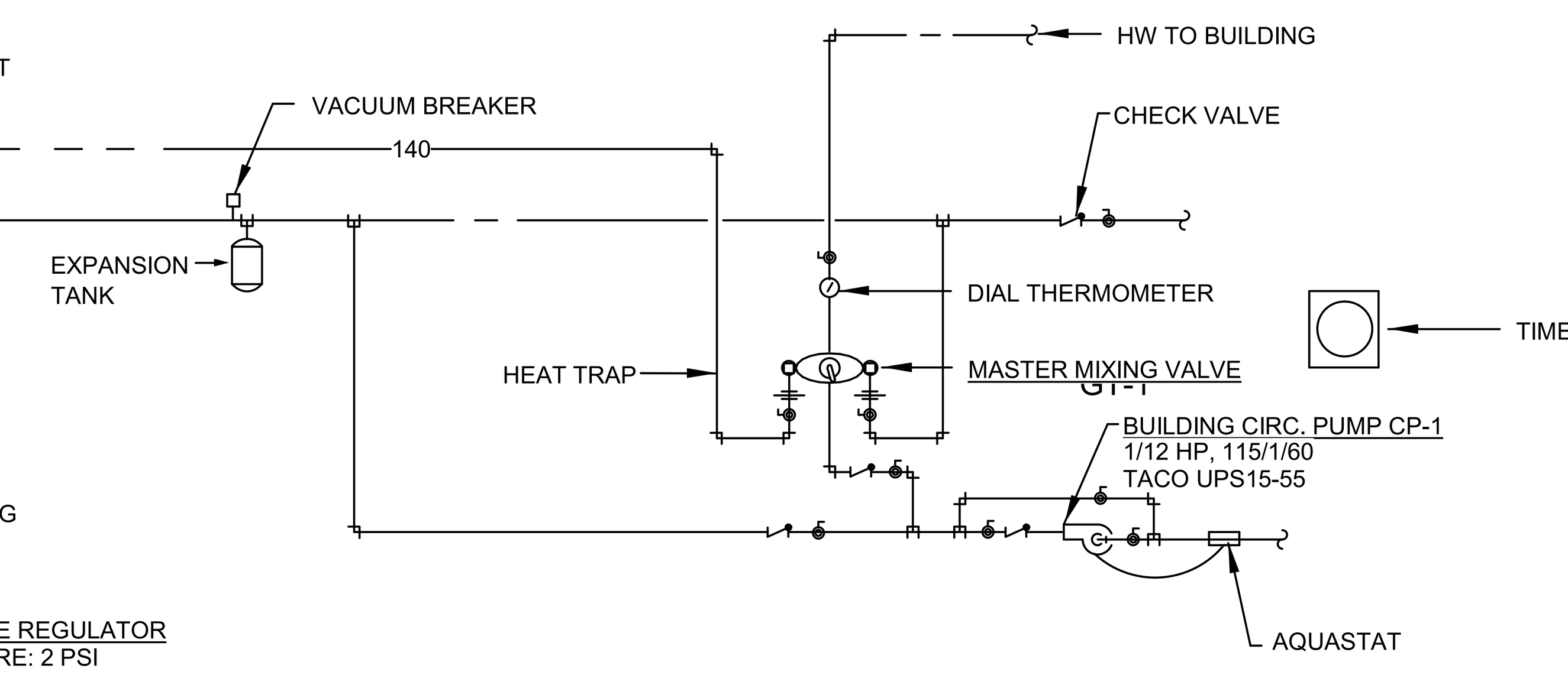
SHEET NUMBER

P0.1



DETAIL OF WATER HEATERS -WH-1 & 2

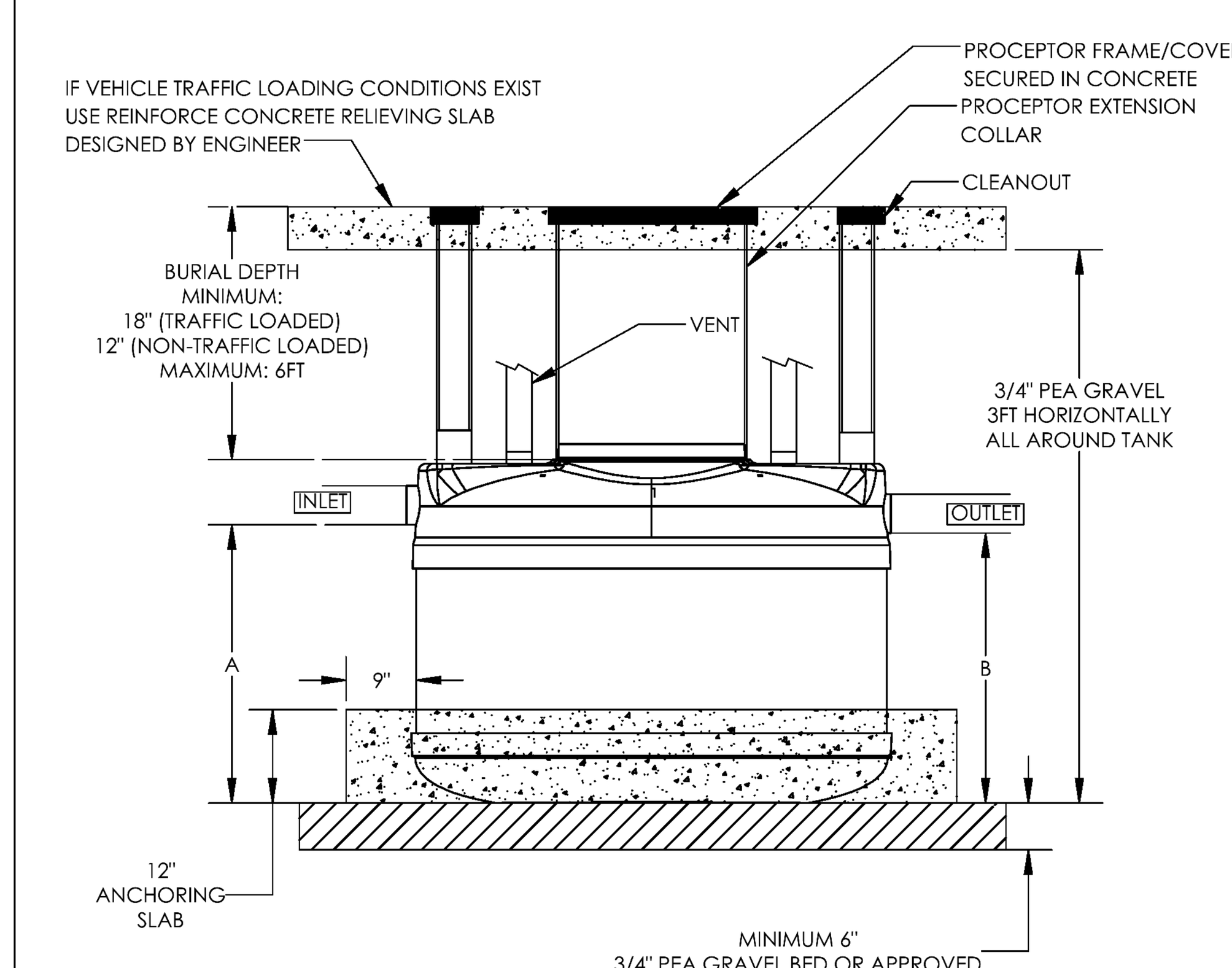
NO SCALE



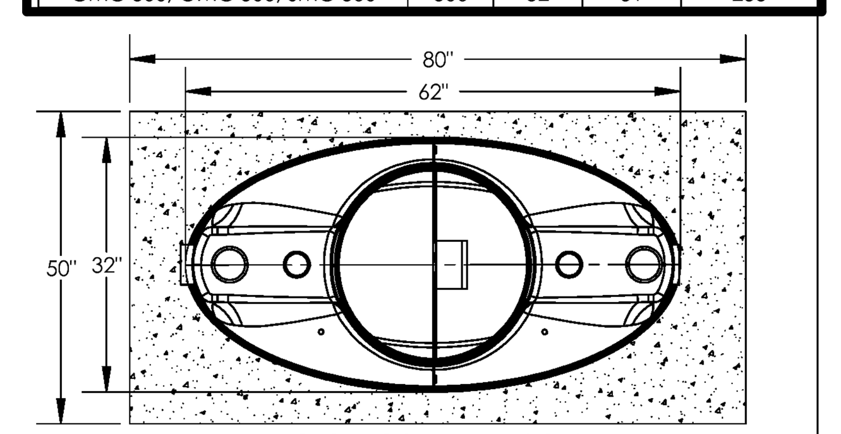
* SEE PLANS FOR SIZING

NOTES:

1. REFER TO INSTALLATION PROCEDURE AND INSTALLATION CHECKLIST
2. GEOTEXTILE FABRIC SHOULD BE USED IF THE NATIVE SOIL HAS SMALL PARTICLES AND MORE THAN 3% OF ITS WEIGHT PASSING THROUGH A #8 SIEVE (2.38mm SQUARE SCREEN OPENING) REGARDLESS OF THE BACKFILL MATERIAL
3. PROCEPTOR SEPARATORS MUST BE INSTALLED IN ACCORDANCE WITH ALL RELEVANT FEDERAL, PROVINCIAL/STATE, AND LOCAL CODES INCLUDING LOCAL PLUMBING CODE
4. US PATENT #5,746,912; CDN PATENT #2,195,822
5. ZURN GREENTURTLE RECOMMENDS THE INSTALLATION OF THE ANCHORING SLAB TO SECURE TANK DURING INSTALLATION. CAST IN PLACE ANCHORING SLAB TO USE AT LEAST 3000PSI CONCRETE POURED ALL AROUND TANK. APPROXIMATELY 16CU FT NEEDED
6. IF ANCHORING SLAB IS NOT INSTALLED IT IS THE INSTALLERS RESPONSIBILITY TO ENSURE THE TANK IS SECURED AND WILL NOT SHIFT OR MOVE DURING INSTALLATION
7. BACKFILL MATERIAL (PREFERRED TO BE 3/4" PEA GRAVEL, ALTERNATIVE TO BE 3/4" CRUSHED STONE) SHALL BE COMPACTED TO 98% SPD
8. VENTS TO BE CONNECTED TO VENTING SYSTEM, AS PER LOCAL CODES
9. CLEANOUTS TO BE CAPPED IN FIELD, AS PER LOCAL CODES
10. IF THE GROUND WATER TABLE IS MORE THAN ONE FOOT HIGHER THAN THE BOTTOM OF THE TANK, A CUSTOM DESIGN TANK AND PROPER ANTI BUOYANCY SLAB SHOULD BE USED. PLEASE CONTACT GT FOR MORE INFORMATION.



MODEL	VOLUME (US GAL)	INLET (A)	OUTLET (B)	WEIGHT (LBS)
GMC 50, OMC 50, SMC 50	50	12	11	130
GMC 100, OMC 100, SMC 100	100	20	19	150
GMC 150, OMC 150, SMC 150	150	33	32	175
GMC 200, OMC 200, SMC 200	200	36	35	205
GMC 250, OMC 250, SMC 250	250	44	43	230
GMC 300, OMC 300, SMC 300	300	52	51	255



ANCHORING SLAB DIMENSIONS

DWG. TITLE: INSTALL GMC-OMC-SMC 50-300

PROJECT:

Proceptor®

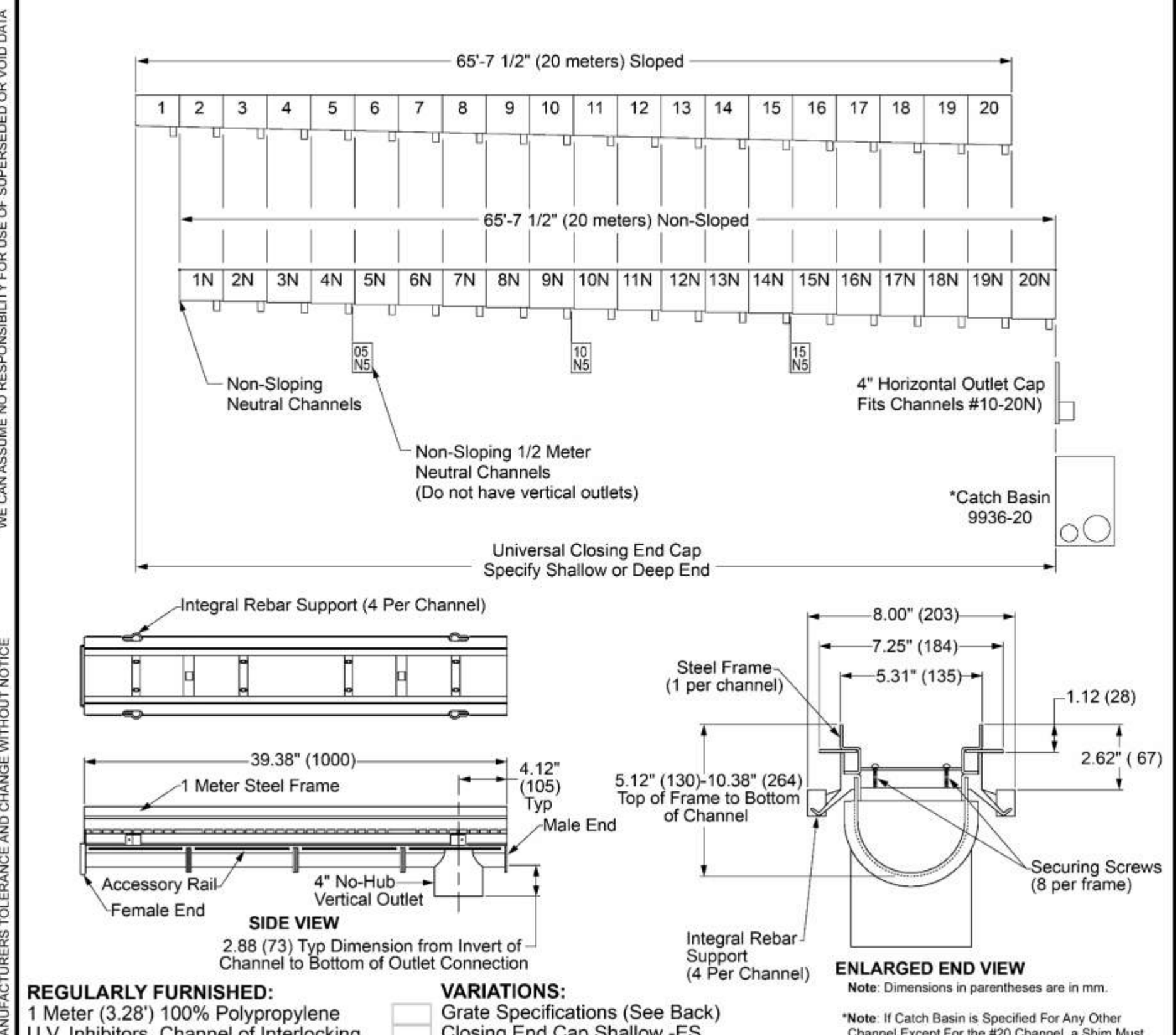
ZURN

SIZE A | DRAWING NOT TO SCALE | DWG #: 18-4716-S | REV. 2

SMITH® JAY R. SMITH MFG. CO.® MEMBER OF MORRIS GROUP INTERNATIONAL

LOCATION: TRENCH IN BAY

9931-HDF SERIES ENVIRO-FLO® II EXTRA HEAVY DUTY DRAIN SYSTEM



REGULARLY FURNISHED: 1 Meter (3.28') 100% Polypropylene U.V. Inhibitors. Channel of Interlocking Design with a Built-in Slope of 0.6% with Radiused Bottom along with Black Painted Steel Frame System. Supplied with Secured Grate.

EXTRA HEAVY RATED GRATING CLASS E

VARIATIONS: Grate Specifications (See Back); Closing End Cap Shallow -ES; Horizontal Outlet 4" -H4; Catch Basin Only 9936-20; End Frame -EF (Specify 1/2 or 1 meter long); Direction Change Coupling -MC; 4" NO-HUB Bottom Outlet Adaptor -BO***; Stainless Steel Frame

PATENT NO. 10,047,512

DRAWN BY: TWK | CHECKED BY: PACE | APPROVED BY: PACE | DATE: 8-11-94 | SCALE: NONE | SIZE: A | DRAWING NUMBER: 9931-HDF | REV: AA

WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR VOID DATA. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE.

REV.	DATE	DESCRIPTION	BY	CKD. BY
AA	9-8-23	Revised Variations	HS	CL
Z	9-10-19	Added Patent No.	TBW	PJ
Y	10-19-17	Added -HDF	TBW	PJ
X	6-1-17	Revised Variations	TBW	PJ

FIGURE NUMBER: 9931-HDF

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

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SMITH® JAY R. SMITH MFG. CO.® MEMBER OF MORRIS GROUP INTERNATIONAL, POST OFFICE BOX 3237, MONTGOMERY, ALABAMA 36109-0237 (USA) TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com

LOCATION: TRENCH IN BAY

9931-HDF SERIES ENVIRO-FLO® II EXTRA HEAVY DUTY DRAIN SYSTEM

Extra Heavy Duty DIN 19580/EN 1433 Load Class E: 135,000 lbs - 2,788 psi. For commercial solid tire traffic patterns, forklifts and impacts from steel struts or metal wheels.

- ☐ **9870-461-M** - 3 15/16 x 3/8 ductile iron slotted grate (34.10 sq. in)
- ☐ **9870-478-MADA** - longitudinal slot ductile iron grate (22.50 sq. in)

*****Note:** When installing the 9930-BO bottom outlet hub on channel #1, #1N, #2 or #2N, a slight modification is required to the hub due to the close proximity of the channel frame at the top of the channel to the accessory rail. This modification will require that the angled tabs on the clips at the top of the hub must be trimmed off. The clips will have to be pried over the accessory rail with a screwdriver. Refer to page 12 in the installation guide for more information on this modification.

HYDRAULIC CAPACITY AND DEEP END DEPTHS 9931 SYSTEM

CHANNEL NUMBER	DEEP END DEPTH IN.	MM.	SLOPE	SINGLE CHANNEL EST CFS	EST GPM	WEIGHT Lbs.
9931-1	5.50	140	0.6%	.29	130	23.02
9931-1N	5.50	140	0.0%	.29	130	23.02
9931-2	5.75	146	0.6%	.31	139	23.12
9931-2N	5.75	146	0.0%	.31	139	23.12
9931-3	6.00	152	0.6%	.34	153	23.32
9931-3N	6.00	152	0.0%	.34	153	23.32
9931-4	6.25	159	0.6%	.36	162	23.42
9931-4N	6.25	159	0.0%	.36	162	23.42
9931-5	6.50	165	0.6%	.39	175	23.52
9931-5N	6.50	165	0.0%	.39	175	23.52
9931-6	6.75	171	0.6%	.42	189	23.72
9931-6N	6.75	171	0.0%	.42	189	23.72
9931-7	7.00	178	0.6%	.45	202	23.92
9931-7N	7.00	178	0.0%	.45	202	23.92
9931-8	7.25	184	0.6%	.47	211	24.32
9931-8N	7.25	184	0.0%	.47	211	24.32
9931-9	7.50	191	0.6%	.49	220	24.32
9931-9N	7.50	191	0.0%	.49	220	24.32
9931-10	7.75	197	0.6%	.53	238	24.32
9931-10N	7.75	197	0.0%	.53	238	24.32
9931-11	8.00	203	0.6%	.56	251	24.52
9931-11N	8.00	203	0.0%	.56	251	24.52
9931-12	8.25	210	0.6%	.58	261	24.52
9931-12N	8.25	210	0.0%	.58	261	24.52
9931-13	8.50	216	0.6%	.61	274	24.92
9931-13N	8.50	216	0.0%	.61	274	24.92
9931-14	8.75	222	0.6%	.64	287	24.92
9931-14N	8.75	222	0.0%	.64	287	24.92
9931-15	9.00	229	0.6%	.67	301	25.12
9931-15N	9.00	229	0.0%	.67	301	25.12
9931-16	9.25	235	0.6%	.70	314	25.32
9931-16N	9.25	235	0.0%	.70	314	25.32
9931-17	9.50	241	0.6%	.73	328	25.32
9931-17N	9.50	241	0.0%	.73	328	25.32
9931-18	9.75	248	0.6%	.76	341	25.52
9931-18N	9.75	248	0.0%	.76	341	25.52
9931-19	10.00	254	0.6%	.79	355	25.72
9931-19N	10.00	254	0.0%	.79	355	25.72
9931-20	10.25	260	0.6%	.82	368	25.92
9931-20N	10.25	260	0.0%	.82	368	25.92

Note: Channel flow rates based on channels less grates and open ended.

DRAWN BY: TWK | CHECKED BY: PACE | APPROVED BY: PACE | DATE: 7-15-94 | SCALE: NONE | SIZE: A | DRAWING NUMBER: s9931-HDF-BS | REV: R

WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR VOID DATA. DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE.

REV.	DATE	DESCRIPTION	BY	CKD. BY
R	5-15-24	Added EN 1433	HS	PJ
Q	10-19-17	Added -HDF	TBW	MD
P	10-3-16	Revised Grates, Removed Note	TBW	MD
N	12-11-13	Revised Grates & Added Note	TBW	MD

FIGURE NUMBER: 9931-HDF-BS

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

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Lochinvar® HIGH EFFICIENCY BOILERS & WATER HEATERS

SHIELD™ WATER HEATER — Submittal Sheet SWH-Sub-08

SHIELD™ COMMERCIAL GAS WATER HEATER

Job Name: ____ Model No. ____
Location: ____ Type Gas: ____ BTU/Hr Input ____
Engineer: ____ Recovery Rate in GPH ____@____°F Rise
Agent/Wholesaler: ____ Equipment Tag(s): ____
Contractor: ____

NOTES:

Standard Features

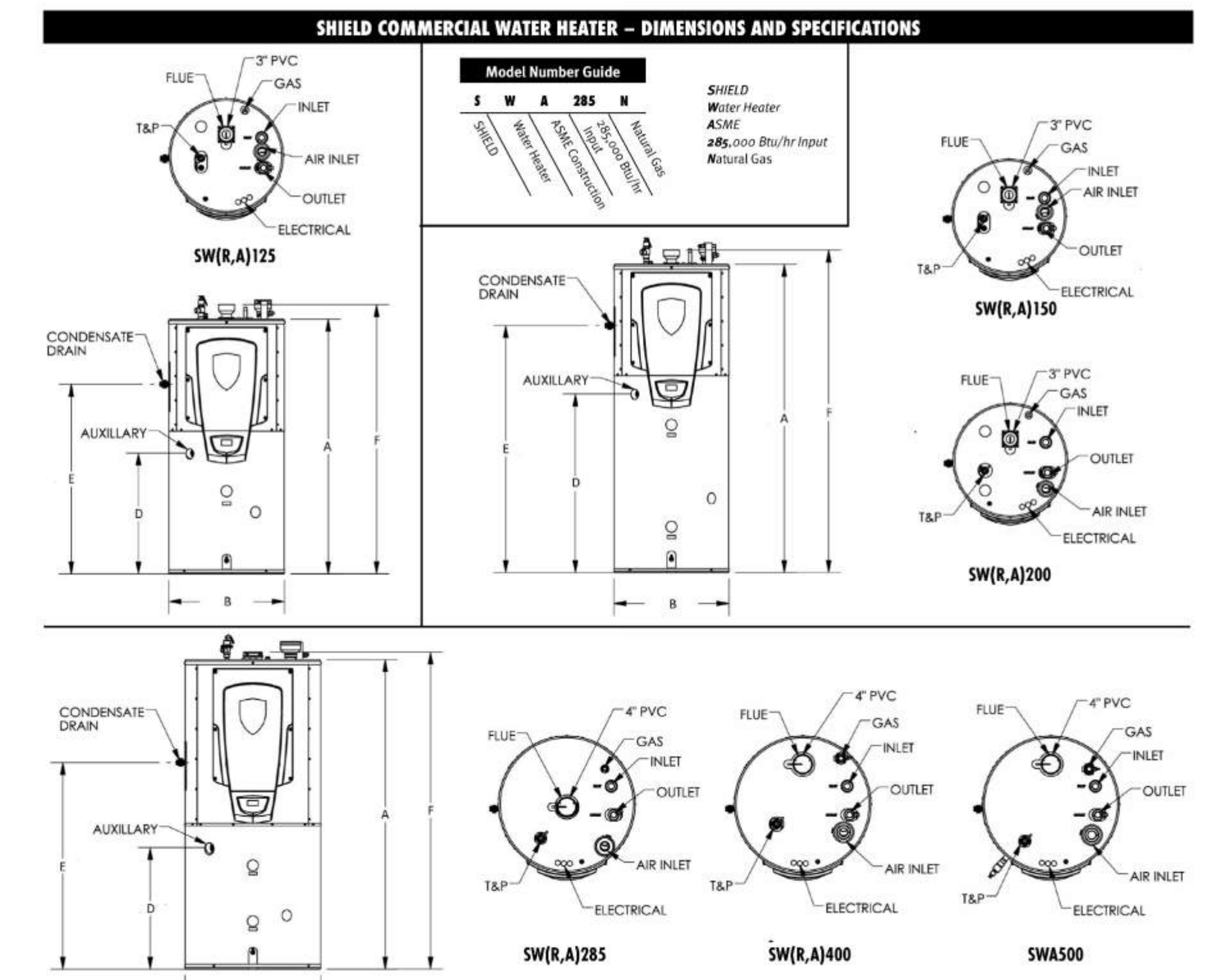
- Up to 96% Thermal Efficiency
- Modulating Burner with 5:1 Turndown
- Operates at Temperatures up to 180°F for Sanitizing Applications
- Stainless Steel Heat Exchanger
- Glass-Lined Steel Tank
- Magnesium Anode Rods
- 150 PSI Working Pressure
- ASME Construction (SWA150–500)
- ASME Temperature & Pressure Relief Valve
- Zero Clearances to Combustible Material
- Certified for Installation on Combustible Floors
- PVC, CPVC, Polypropylene and Stainless Steel Venting up to 150 Equivalent Feet
- Direct-Vent Sealed Combustion
- Rooftop and Sidewall Venting
- Advanced SMART CONTROL
  - LCD Display
  - Time Clock
  - Night Setback
  - Alarm Contacts
  - Runtime Contacts
  - Manual Reset High Limit
  - 3 Water Temperature Sensors
  - Flue Temperature Sensor
  - Contacts for Louvers
  - Adjustable Pump Delay
  - Security Protection
  - Enable/Disable Contacts
- Low-NOx Operation, meets SCAQMD Rule 1146.2
- Low Gas Pressure Operation
- Direct-Spark Ignition
- Brass Drain Valve
- 8-Foot Power Cord
- 3-Year Limited Warranty
- 1-Year Parts Warranty

Optional Equipment

- ☐ Audible Alarm Kit
- ☒ Concentric Vent Kit
- ☒ Condensate Neutralization Kit
- ☐ CON·X·US® Remote Connectivity
- ☐ Flow Switch
- ☒ Low Water Cutoff Kit
- ☐ Sidewall Vent Termination Kit

SHIELD™ COMMERCIAL WATER HEATERS

SHIELD COMMERCIAL WATER HEATER – DIMENSIONS AND SPECIFICATIONS



	Model Number	Btu/hr Input	Capacity (Gals.)	Thermal Eff.	GPH @ 100° Rise	1st Hour	A	B	D	E	F	Gas Conn.	Water Conn.	Air Inlet	Vent Size	Ship Wgt. (lbs.)
	Regular Construction															
○	SWR125N	125,000	65	96%	145	197	62 1/2"	28"	29-1/2"	46 1/2"	66"	1/2"	1-1/2"	3"	3"	560
○	SWR150N	150,000	90	96%	175	247	76"	28"	44"	61"	79-1/2"	1/2"	1-1/2"	3"	3"	700
⊗	SWR200N	199,000	90	96%	232	304	76"	28"	44"	61"	79-1/2"	1/2"	1-1/2"	3"	3"	725
○	SWR285N	285,000	110	95%	328	416	77-1/2"	34"	30-1/2"	51-3/4"	79-1/2"	1/2"	1-1/2"	4"	4"	800
○	SWR400N	399,000	110	95%	459	547	77-1/2"	34"	30-1/2"	51-3/4"	79-1/2"	1"	1-1/2"	4"	4"	850
	ASME Construction															
○	SWA150N	150,000	90	96%	175	247	76"	28"	44"	61"	79-1/2"	1/2"	1-1/2"	3"	3"	700
○	SWA200N	199,000	90	96%	232	304	76"	28"	44"	61"	79-1/2"	1/2"	1-1/2"	3"	3"	725
○	SWA285N	285,000	110	95%	328	416	77-1/2"	34"	30-1/2"	51-3/4"	79-1/2"	1/2"	1-1/2"	4"	4"	800
○	SWA400N	399,000	110	95%	459	547	77-1/2"	34"	30-1/2"	51-3/4"	79-1/2"	1"	1-1/2"	4"	4"	850
○	SWA500N	500,000	110	96%	582	670	77-1/2"	34"	30-1/2"	51-3/4"	79-1/2"	1"	1-1/2"	4"	4"	875

Change "N" to "L" for LP gas. Field convertible to LP Gas.A = ASME Construction / Check local and state codes for ASME requirements. Electrical Requirements: 120V/1PH/60Hz

All Information is subject to change without notice.

Lochinvar, LLC, 300 Maddox Simpson Parkway, Lebanon, Tennessee 37090, P: 615.889.8900 | F: 615.547.1000, Lochinvar.com

7/24—Printed in U.S.A.

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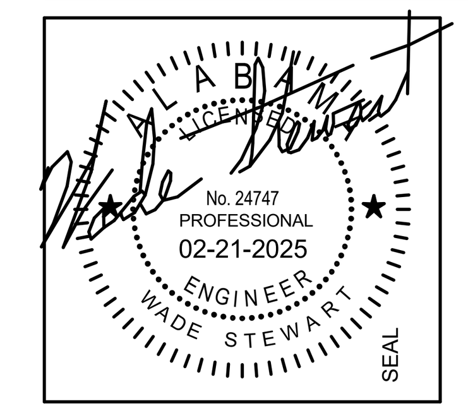
Project Number: 50171742

Revisions

No.	Date	Description
1	2/5/2025	Revision 1
2	2/21/2025	ADDENDUM 3



100% CDS

IRONDALE FIRE STATION #3

INT. OF JOHN ROGERS DRIVE & ALTON ROAD
Birmingham, Alabama
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES
ARCHITECTS
3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700
FAX: 205-250-0515

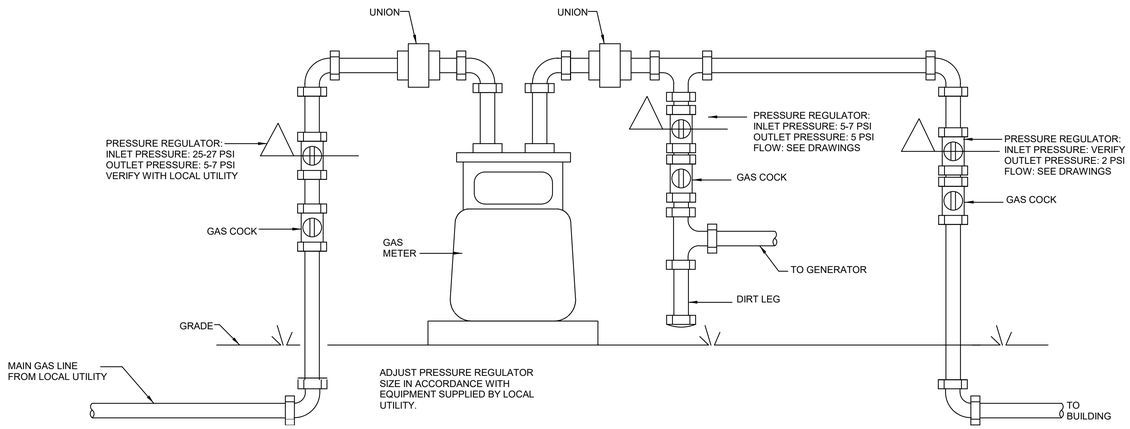
SHEET TITLE: **PLUMBING - DETAILS**

PROJECT NUMBER: **CWA No. 2023-01**

DATE: 08.30.24

DRAWN BY: JTR | CHECKED BY: CLJ

SHEET NUMBER: **P0.2**



GAS METER DETAIL

NO SCALE

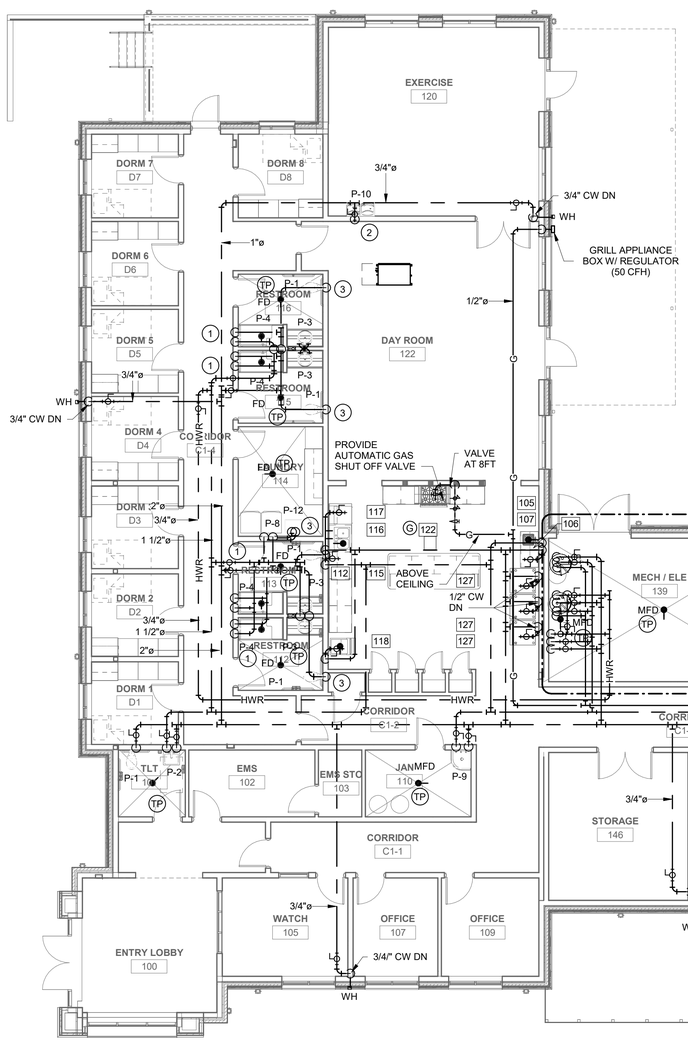
PRESSURE KEY NOTES

1. 1/2" CW, 1/2" HW DN.
2. 1/2" CW DN.
3. 1" CW DN

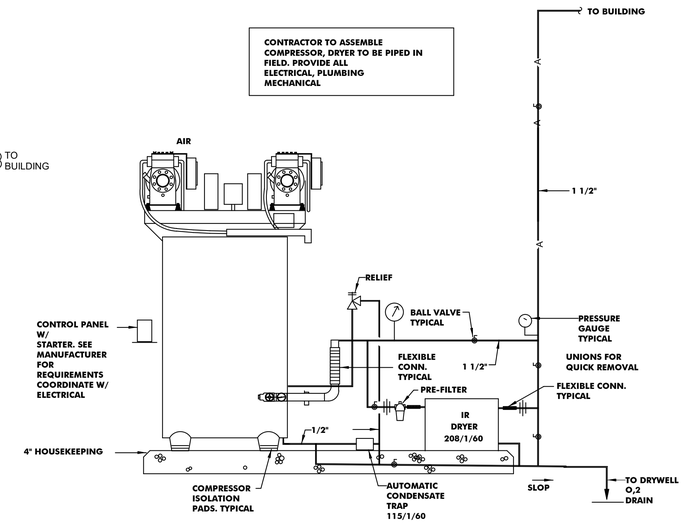
KITCHEN PLUMBING ROUGH-IN DATA

ITEM	QTY	DESCRIPTION	HW (IN)	CW (IN)	GAS (IN)	WASTE (IN)	REMARKS
P102	1	JANITORIAL SINK W/ FAUCET & MOP RACK	-	-	-	-	REFER TO MECHANICAL PLAN
P105	2	BUILT-IN HANDSINK W/SPLASH & IFAUCET	1/2	1/2	-	1 1/2	(MV)(CK)
P106	1	COFFEE BREWER	-	1/4	-	1 1/2	(BFP)
P107	1	MILLWORK BASE COUNTER W/ SINK	1/2	1/2	-	1 1/2	-
P112	1	MILLWORK BASE COUNTER W/ SINK	1/2	1/2	-	1 1/2	-
P115	1	BUILT-IN SINK W/FAUCET	1/2	1/2	-	2"	(MV)(CK)
P116	5	DISPOSER	-	1/2	-	2"	(BFP)
P117	1	DISHWASHER	-	1/2	-	2"	-
P118	1	ICE MAKER W/BIN	-	1/2	-	3/4(IR)	(BFP)
P122	1	6 EYE RANGE WITH OVEN	1/2	-	3/4	-	(G)
P127	3	REFRIG/ FRZR COMBO	1/2	-	-	-	-

(BFP) PROVIDE BFP. PIPE RELIEF TO DRAIN. (CK) PROVIDE CHECK VALVE ON COLD WATER, HOT WATER BRANCHLINE TO FAUCET.
(MV) PROVIDE MIXING VALVE (G) PROVIDE GAS CONNECTION

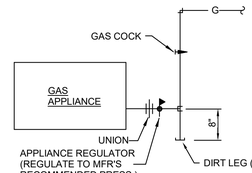


1 P2.1 PRESSURE PIPING - FLOOR PLAN
1/8" = 1'-0"



TYPICAL COMPRESSED AIR SYSTEM

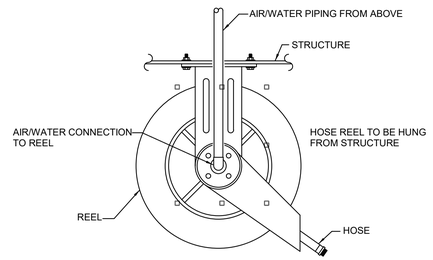
NO SCALE



NOTE:
ALL EXPOSED EXTERIOR PIPING TO BE PAINTED WITH TWO (2) COATS OF PAINT IN COMPLIANCE WITH LOCAL PLUMBING CODE AND LOCAL AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL COORDINATE EXACT PAINT COLOR WITH ARCHITECT AND AUTHORITY HAVING JURISDICTION.

TYP. GAS CONNECTION

NO SCALE



DETAIL OF HOSE REEL

NO SCALE

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www.dewberry.com

Project Number :
50171742

Revisions

No.	Date	Description
1	2/5/2025	Revision 1
2	2/21/2025	ADDENDUM 3

ALABAMA
No. 24747
PROFESSIONAL
02-21-2025
ENGINEER
WADE STEWART
SEAL

100% CDS

IRONDALE FIRE STATION #3

INT. OF JOHN ROGERS DRIVE & ALTON ROAD
Birmingham, Alabama
CITY OF IRONDALE

CWA
CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222
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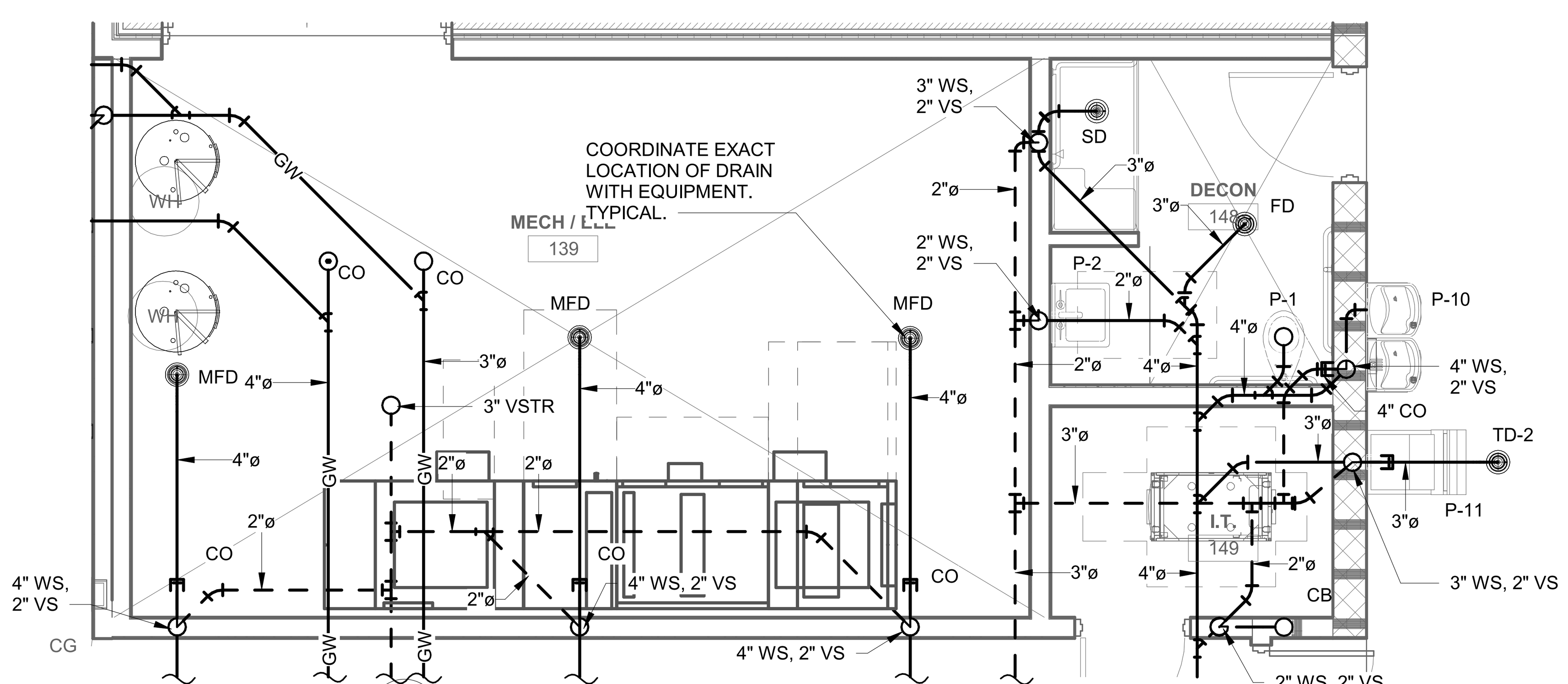
SHEET TITLE:
PRESSURE PIPING - FLOOR PLAN

PROJECT NUMBER:
CWA No. 2023-01

DATE:
08.30.24

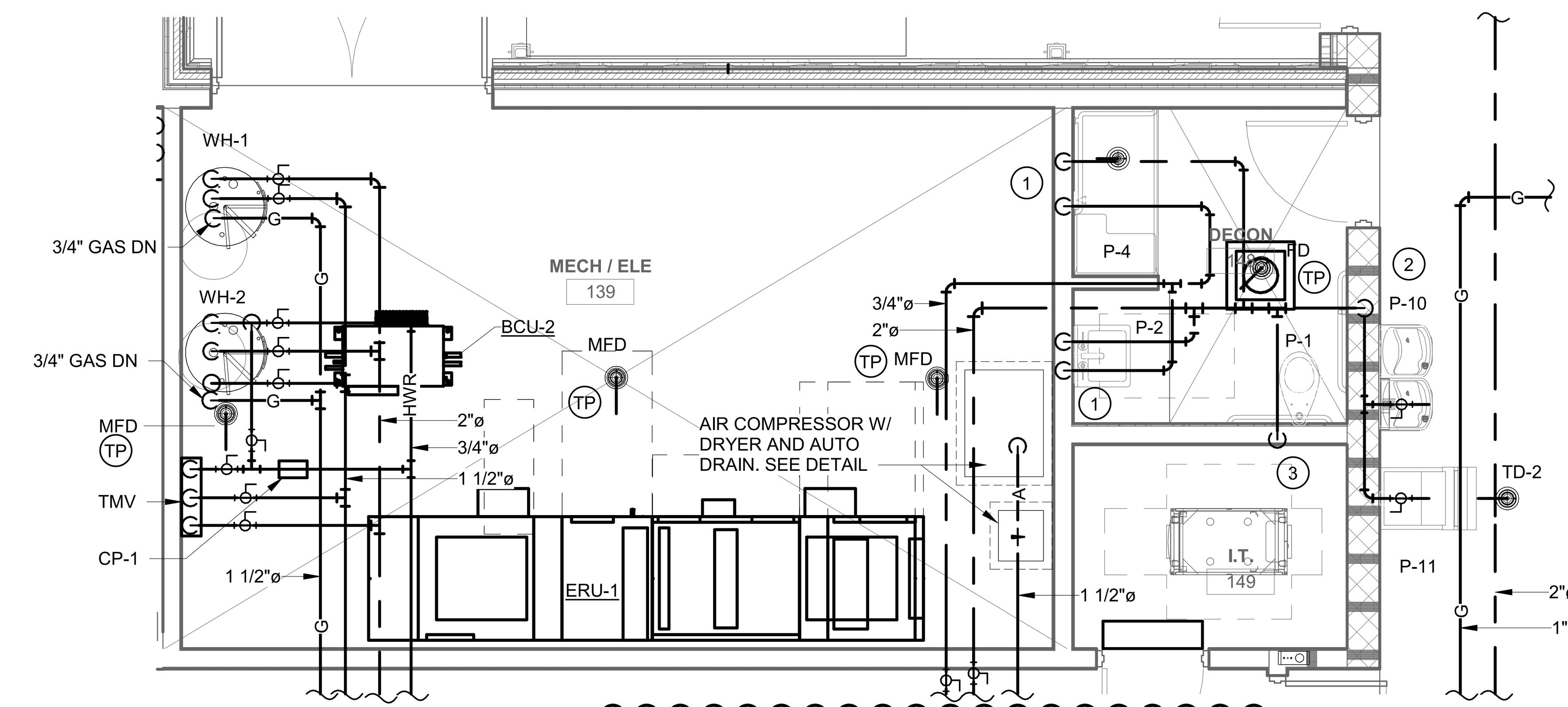
DRAWN BY:	CHECKED BY:
JTR	CLJ

SHEET NUMBER
P2.1



1 P3.1 ENLARGED - NON-PRESSURE MECH ROOM PLAN
1/4" = 1'-0"

CORRIDOR
C1-3



2 P3.1 ENLARGED - PRESSURE MECH ROOM PLAN
1/4" = 1'-0"

Dewberry
2 Riverchase Office Plaza
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NHoover, AL 352444
(205) 988-2069
www.dewberry.com

Project Number : 50171742

Revisions

No.	Date	Description
1	2/5/2025	Revision 1
2	2/21/2025	ADDENDUM 3

No. 24747 PROFESSIONAL ENGINEER WADE STEWART 02-21-2025 SEAL

100% CDS

IRONDALE FIRE STATION #3

INT. OF JOHN ROGERS DRIVE & ALTON ROAD
Birmingham, Alabama
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES
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BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700
FAX: 205-250-0515

SHEET TITLE: PLUMBING - ENLARGED PLANS

PROJECT NUMBER: CWA No. 2023-01

DATE: 08.30.24

DRAWN BY: JTR
CHECKED BY: CLJ

SHEET NUMBER
P3.1

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MOUNTING		MANUFACTURER	CATALOG NUMBER	L.E.D.			VOLTS	TOTAL WATTS
		TYPE	HEIGHT			LUMENS	COLOR	DRIVER QTY / TYPE		
X1	SINGLE FACE EDGE LIT L.E.D. EXIT SIGN WITH RED LETTERS AND DIRECTIONAL CHEVRONS AS SHOWN	UNIVERSAL	UNIVERSAL	DUAL LITE EXITRONIX CHLORIDE LITHONIA	LES-**-S-**-N-E-I-M APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	FURNISHED WITH UNIT			120	5
X2	DOUBLE FACE EDGE LIT L.E.D. EXIT SIGN WITH RED LETTERS AND DIRECTIONAL CHEVRONS AS SHOWN	UNIVERSAL	UNIVERSAL	DUAL LITE EXITRONIX CHLORIDE LITHONIA	LES-**-D-**-N-E-I-M APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	FURNISHED WITH UNIT			120	5
XD	WALL MOUNTED EXIT DISCHARGE LIGHT WITH INTEGRAL HEATER AND BATTERY	WALL	8'-0" AFF	LITHONIA EXITRONIX CHLORIDE LITHONIA	AFB-OLE-DDBTXD-UVOLT-LTP-SDRT-WT-CW APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	FURNISHED WITH UNIT		N/A	120	15
PL3	SINGLE HEAD LED SITE LIGHTING FIXTURE WITH TYPE III DISTRIBUTION, MOUNTED ON A 30'-0" SQUARE STRAIGHT STEEL POLE. FINISH TO BE SELECTED BY ARCHITECT.	POLE	30'-0"	McGRAW-EDISON GARDCO	FIXTURE: GLEON-SA4C-740-SL3-**-FF POLE: SSS4A30SFM4 APPROVED EQUAL	24,564	4000K	1	208	225
PL4	SINGLE HEAD LED SITE LIGHTING FIXTURE WITH TYPE IV DISTRIBUTION MOUNTED ON A 30'-0" SQUARE STRAIGHT STEEL POLE. FINISH TO BE SELECTED BY ARCHITECT.	POLE	30'-0"	McGRAW-EDISON GARDCO	FIXTURE: GLEON-SA4C-740-T4FT-**-FF POLE: SSS4A30SFM4 APPROVED EQUAL	23,340	4000K	1	208	225
PW4	WALL MOUNTED L.E.D. FLOOD LIGHT WITH TYPE IV DISTRIBUTION AND INTEGRAL DRIVER. U.L. LISTED FOR WET LOCATION. COLOR TO BE SELECTED BY THE ARCHITECT	WALL	14'-0"	McGRAW-EDISON GARDCO	GWC-SA1A-740-U-SL4-**-F APPROVED EQUAL	4,729	4000K	1	120	40
FL1	STANCHION MOUNTED ADJUSTABLE L.E.D. FLOOD LIGHT WITH NARROW SPOT DISTRIBUTION. FIXTURE TO BE U.L. LISTED FOR WET LOCATION. COLOR TO BE SELECTED BY THE ARCHITECT.	GROUND	SEE DETAIL	LITHONIA HUBBELL EATON GARDCO	DSXF1-LED-P1-40K-NSP-MVOLT-**-THK APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	2,876	4000K	120	1	21

GENERAL NOTES:

A. MANUFACTURER CATALOG NUMBERS ARE SHOWN FOR GENERAL DESCRIPTIVE PURPOSES AND TO ESTABLISH A STANDARD OF QUALITY. MANUFACTURERS LISTED AS "EQUAL" DOES NOT ENSURE NOR GUARANTEE APPROVAL OF ANY PRODUCT BY THE LISTED MANUFACTURER. FOR APPROVAL, FIXTURES MUST PROVIDE EQUAL PERFORMANCE RELATIVE TO DELIVERY OF LIGHTING, ENERGY USE, AND BE OF SIMILAR DESIGN AND CONSTRUCTION. REQUESTS FOR PRIOR APPROVAL OF FIXTURES NOT LISTED IN THIS SCHEDULE **MUST** BE RECEIVED BY THE ENGINEER A MINIMUM OF 10 DAYS PRIOR TO BID (SEE SPECIFICATIONS) FOR REVIEW BY THE ARCHITECT/ENGINEER. MANUFACTURERS APPROVAL THROUGH THIS PROCESS WILL BE LISTED IN AN ADDENDUM PRIOR TO BID. FIXTURES NOT LISTED IN AN ADDENDUM ARE NOT APPROVED.

B. CONTRACTOR SHALL PROVIDE LUMINAIRES COMPLETE WITH ALL OPTIONS AND ACCESSORIES REQUIRED FOR A COMLPETE INSTALLATION. ALL PRODUCTS SHALL BE U.L. LISTED.

C. PROVIDE PROPER LAMP FOR REFLECTOR ASSEMBLY SPECIFIED AND AS RECOMMENDED BY LUMINAIRE MANUFACTURER.

D. VERIFY CONSTRUCTION AND TYPE CEILINGS TO BE INSTALLED AND PROVIDE LUMINAIRES IN APPROPRIATE CONFIGURATION WITH ALL HARDWARE AND ACCESSORIES REQUIRED FOR A COMPLETE AND PROPER INSTALLATION.

E. PROVIDE LUMINAIRES WITH JOINING PLATES, END CAPS, CANOPIES, MOUNTING HARDWARE, ETC., AS REQUIRED FOR COMPLETE INSTALLATION.

F. EXIT LIGHTS SHALL BE PROVIDED WITH RED LETTERS REQUIRED BY LOCAL CODE AUTHORITY. FURNISH WITH CHEVRON DIRECTIONAL INDICATORS AS INDICATED AND/OR AS REQUIRED.

G. PROVIDE DEVICES FOR SECURING LAY-IN TYPE LUMINAIRES TO CEILING GRID TO COMPLY WITH ARTICLE 410 OF THE NATIONAL ELECTRICAL CODE.

H. FURNISH LINEAR LUMINAIRES IN CONTINUOUS ROWS OR PATTERNS AS INDICATED ON DRAWINGS. PROVIDE WITH CORNER, ANGLE, AND END PIECES AS REQUIRED FOR A COMPLETE FINISHED INSTALLATION.

SCHEDULE NOTES:

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MOUNTING		MANUFACTURER	CATALOG NUMBER	L.E.D.			VOLTS	TOTAL WATTS
		TYPE	HEIGHT			LUMENS	COLOR	DRIVER QTY / TYPE		
CF1	8'-0" PENDANT MOUNTED CEILING FAN WITH 6 BLADES. COLOR TO BE SELECTED BY THE ARCHITECT. FURNISHED WITH WALL MOUNTED CONTROLLER.	PENDANT	CEILING	BIG ASS FANS	FAN: MK-I61-08-18-06-**-100 WALL SWITCH: C-BTWC-03-04-00-US (FIXED WALL MOUNT)	---	---	N/A	120	50
CF2	OUTDOOR RATED 60" ROUND 6 BLADE CEILING FAN WITH LIGHT KIT. COLOR TO BE SELECTED BY THE ARCHITECT. FURNISHED WITH WALL MOUNTED CONTROLLER.	PENDANT	CEILING	BIG ASS FANS	FAN: MK-TRB1-062306-A786-I20 WALL SWITCH: C-BTWC-03-04-00-US (FIXED WALL MOUNT)	---	---	N/A	120	70
CF3	6'-0" PENDANT MOUNTED CEILING FAN WITH 6 BLADES. COLOR TO BE SELECTED BY THE ARCHITECT. FURNISHED WITH WALL MOUNTED CONTROLLER.	PENDANT	CEILING	BIG ASS FANS	FAN: MK-I61-06-18-06-**-100 WALL SWITCH: C-BTWC-03-04-00-US (FIXED WALL MOUNT)	---	---	N/A	120	50
P1	8'-0" PENDANT MOUNTED STRIP WITH SQUARE LENS AND INTEGRAL DRIVER. PROVIDE ALL THREAD DOWN RODS SECURES TO STRUCTURE AS REQUIRED	SURFACE	CEILING	METALUX COLUMBIA H.E. WILLIAMS LITHONIA	8T-SNLED-LD5-SLN/64SL-SLN-UNV-L835-CD-1 APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	6,063	3500K	1	120	45
P1E	SAME AS FIXTURE 'P1' EXCEPT WITH AN EMERGENCY BATTERY TO OPERATE FIXTURE FOR 90 MINUTES UPON LOSS OF POWER.	SURFACE	CEILING	METALUX COLUMBIA H.E. WILLIAMS LITHONIA	8T-SNLED-LD5-SLN/64SL-SLN-UNV-EL14W-L835-CD-1 APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	6,063	3500K	1	120	45
P2E	10'-0" PENDANT MOUNTED LIGHT FIXTURE WITH UP AND DOWN LIGHT. COLOR TO BE SELECTED BY THE ARCHITECT	PENDANT	VERIFY WITH ARCH DRAWINGS	PEERLESS FINELITE LUMENWERX	VMM9-LLP-10FT-MSL4-80CRI-35K-ID1350LMF-60/40-DARK-ZT-120-SCT-E10WLCP-F2-XX-**-DU APPROVED EQUAL APPROVED EQUAL	1350 PER FT	3500K	1	120	15 PER FT
P3	DECORATIVE PENDANT MOUNTED LUMINAIRE WITH 1 LAMP. PROVIDE AN ALLOWANCE OF $300 FOR EACH.	PENDANT	SEE ARCH DRAWINGS		TO BE SELECTED					
P4	2' x 2' SQUARE PENDANT MOUNTED LUMINAIRE WITH INTEGRAL DRIVER. COLOR TO BE SELECTED BY THE ARCHITECT. COLORS TO BE SELECTRD BY THE ARCHITECT	PENDANT	SEE ARCH DRAWINGS	PRUDENTIAL FINELITE LUMENWERX	BPR02-SQ-LIN-22-FLSH-LED35-SO-SAL-**-**- SC-UNV-SPM**-X3-DM01- APPROVED EQUAL APPROVED EQUAL	6,300	3500K	1	120	63
P5	3' x 3' SQUARE PENDANT MOUNTED LUMINAIRE WITH INTEGRAL DRIVER. COLOR TO BE SELECTED BY THE ARCHITECT. COLORS TO BE SELECTRD BY THE ARCHITECT	PENDANT	SEE ARCH DRAWINGS	PRUDENTIAL FINELITE LUMENWERX	BPR02-SQ-LIN-33-FLSH-LED35-SO-SAL-**-**- SC-UNV-SPM**-X3-DM01- APPROVED EQUAL APPROVED EQUAL	9,400	3500K	1	120	94
P6	4' x 4' SQUARE PENDANT MOUNTED LUMINAIRE WITH INTEGRAL DRIVER. COLOR TO BE SELECTED BY THE ARCHITECT. COLORS TO BE SELECTRD BY THE ARCHITECT	PENDANT	SEE ARCH DRAWINGS	PRUDENTIAL FINELITE LUMENWERX	BPR02-SQ-LIN-44-FLSH-LED35-SO-SAL-**-**- SC-UNV-SPM**-X3-DM01- APPROVED EQUAL APPROVED EQUAL	12,600	3500K	1	120	125
R1	6" ROUND L.E.D. DOWNLIGHT WITH SWITCHABLE LUMEN OUTPUT, CLEAR SEMI-DIFFUSE REFLECTOR AND INTEGRAL 0-10 VOLT DIMMABLE DRIVER	RECESSED	CEILING	LITHONIA PRESCOLITE H.E. WILLIAMS HALO	LDN6-AL02-SWW1-LO6-AR-LSS-WD-MVOLT-UGZ APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	1,500	3500K	1	120	20
R1E	SAME AS FIXTURE 'R1' EXCEPT WITH AN EMERGENCY BATTERY PACK TO OPERATE FIXTURE FOR 90 MINUTES UPON LOSS OF POWER	RECESSED	CEILING	LITHONIA PATHWAY H.E. WILLIAMS HALO	LDN6-AL02-SWW1-LO6-AR-LSS-WD-MVOLT-UGZ-EL APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	1,500	3500K	1	120	20
R2	RECESSED 2x2 L.E.D. FIXTURE WITH 0-10 VOLT DIMMABLE DRIVER	RECESSED	CEILING	METALUX COLUMBIA H.E. WILLIAMS LITHONIA	22EN-LD2-39-UNV-L835-CD1-U APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	3,979	3500K	1	120	35
R2E	SAME AS FIXTURE 'R2' EXCEPT WITH AN EMERGENCY BATTERY PACK TO OPERATE FIXTURE FOR 90 MINUTES UPON LOSS OF POWER	RECESSED	CEILING	METALUX COLUMBIA H.E. WILLIAMS LITHONIA	22EN-LD2-39-UNV-EL14W-L835-CD1-U APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	3,979	3500K	1	120	35
R3	RECESSED 2x4 L.E.D. FIXTURE WITH 0-10 VOLT DIMMABLE DRIVER	RECESSED	CEILING	METALUX COLUMBIA H.E. WILLIAMS LITHONIA	24EN-LD2-54-UNV-L835-CD1-U APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	5,410	3500K	1	120	45
R3E	SAME AS FIXTURE 'R3' EXCEPT WITH AN EMERGENCY BATTERY PACK TO OPERATE FIXTURE FOR 90 MINUTES UPON LOSS OF POWER	RECESSED	CEILING	METALUX COLUMBIA H.E. WILLIAMS LITHONIA	24EN-LD2-54-UNV-EL14W-L835-CD1-U APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	5,410	3500K	1	120	45
S1	4'-0" SURFACE MOUNTED L.E.D. STRIP WITH LENS AND INTEGRAL DRIVER	SURFACE	CEILING	LITHONIA METALUX H.E. WILLIAMS COLUMBIA	ZL1N-L48-SMR-5000LM-FST-MVOLT-35K-80CRI-WH APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	4,585	3500K	1	120	35
S1E	SAME AS FIXTURE 'S1' EXCEPT WITH AN EMERGENCY BATTERY TO OPERATE FIXTURE FOR 120 MINUTES UPON LOSS OF POWER.	SURFACE	CEILING	LITHONIA METALUX H.E. WILLIAMS COLUMBIA	ZL1N-L48-SMR-5000LM-FST-MVOLT-35K-80CRI-EM(2HR)-WH APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	4,585	3500K'	1	120	35
SH	6" ROUND RECESSED SHOWER LIGHT WITH INTEGRAL DRIVER. U.L. LISTED FOR WET LOCATION	RECESSED	CEILING	H.E. WILLIAMS PRESCOLITE PORTFOLIO LITHONIA	LSL60-L30C-8-35-DPL-DRV-120 APPROVED EQUAL APPROVED EQUAL APPROVED EQUAL	800	3500K	1	120	36
UC2	2'-0" UNDER CABINET LIGHT WITH INTEGRAL DRIVER	SURFACE	UNDER CABINET	KICHLER	6UCSK22NIT	735	3000K	N/A	120	10
UC1	30" UNDER CABINET LIGHT WITH INTEGRAL DRIVER	SURFACE	UNDER CABINET	KICHLER	6UCSK30NIT	1,000	3000K	N/A	120	10
W1	WALL MOUNTED 12" GOOSE NECK MOUNTED FIXTURE. U.L. LISTED FOR WET LOCATION. COLOR TO BE SELECTED BY THE ARCHITECT	WALL	SEE ARCH DRAWINGS	BOCK LIGHTING SPECTRUM	512-**-LAC02-**-GN17A-17-** APPROVED EQUAL	1500 - 2400	4000K	1	120	25
W2	WALL MOUNTED VANITY SCONCE. COLOR TO BE SELECTED BY THE ARCHITECT	WALL	SEE ARCH DRAWINGS	TGS WAC LIGHTING	MVR-24-24-C3000-BN APPROVED EQUAL	1,700	3000K	N/A	120	24
W3	WALL MOUNTED SCONCE WITH UP AND DOWNLIGHT. COLOR TO BE SELECTED BY THE ARCHITECT	WALL	SEE ARCH DRAWINGS	CONTECH BARRON LIGHTING	CY3T-3-40K-MVD2-AW-X-WF-BZ-RD APPROVED EQUAL	2,286	4000K	1	120	20
W4	WALL MOUNTED SCONCE WITH INTEGRAL DRIVER. U.L. LISTED FOR WET LOCATION. COLOR TO BE SELECTED BY THE ARCHITECT	WALL	SEE ARCH DRAWINGS	LITHONIA MCGRAW EDISON H.E. WILLIAMS	WST-LED-P2-40K-VW-120-** APPROVED EQUAL APPROVED EQUAL	3,201	4000K	1	120	30
W5	WALL MOUNTED SCONCE WITH UP AND DOWNLIGHT. COLOR TO BE SELECTED BY THE ARCHITECT	WALL	SEE ARCH DRAWINGS	CONTECH BARRON LIGHTING	CY3S-3-40K-MVD2-AW-X-WF-BZ APPROVED EQUAL	2,286	4000K	1	120	20
W6	WALL MOUNTED 20" GOOSE NECK MOUNTED FIXTURE. U.L. LISTED FOR WET LOCATION. COLOR TO BE SELECTED BY THE ARCHITECT	WALL	SEE ARCH DRAWINGS	BOCK LIGHTING SPECTRUM	520-**-LAH01-**-GN22H-22-** APPROVED EQUAL	3000 - 5000	4000K	1	120	45

CONSULTING CONSTRUCTION ENGINEERING, LLC
1028 23rd Street South
Birmingham, Alabama 35205
Phone: (205) 352-2500 Δ Web: www.cce-eng.com
CCE No. Date: Feb 21, 2025
File: EG-02.dwg Time: 6:29:30 am

Revisions

No.	Date	Description
1	02.12.25	Addendum #2
2	02.21.25	Addendum #3

ALABAMA REGISTERED No. 31921 PROFESSIONAL ENGINEER JAMES L. BRITT 8/30/24 SEAL

100% CD'S

IRONDALE FIRE STATION #3
NW CORNER OF JOHN ROGERS DRIVE & ALTON ROAD
Birmingham, Alabama
CITY OF IRONDALE

CWA CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700
FAX: 205-250-0515

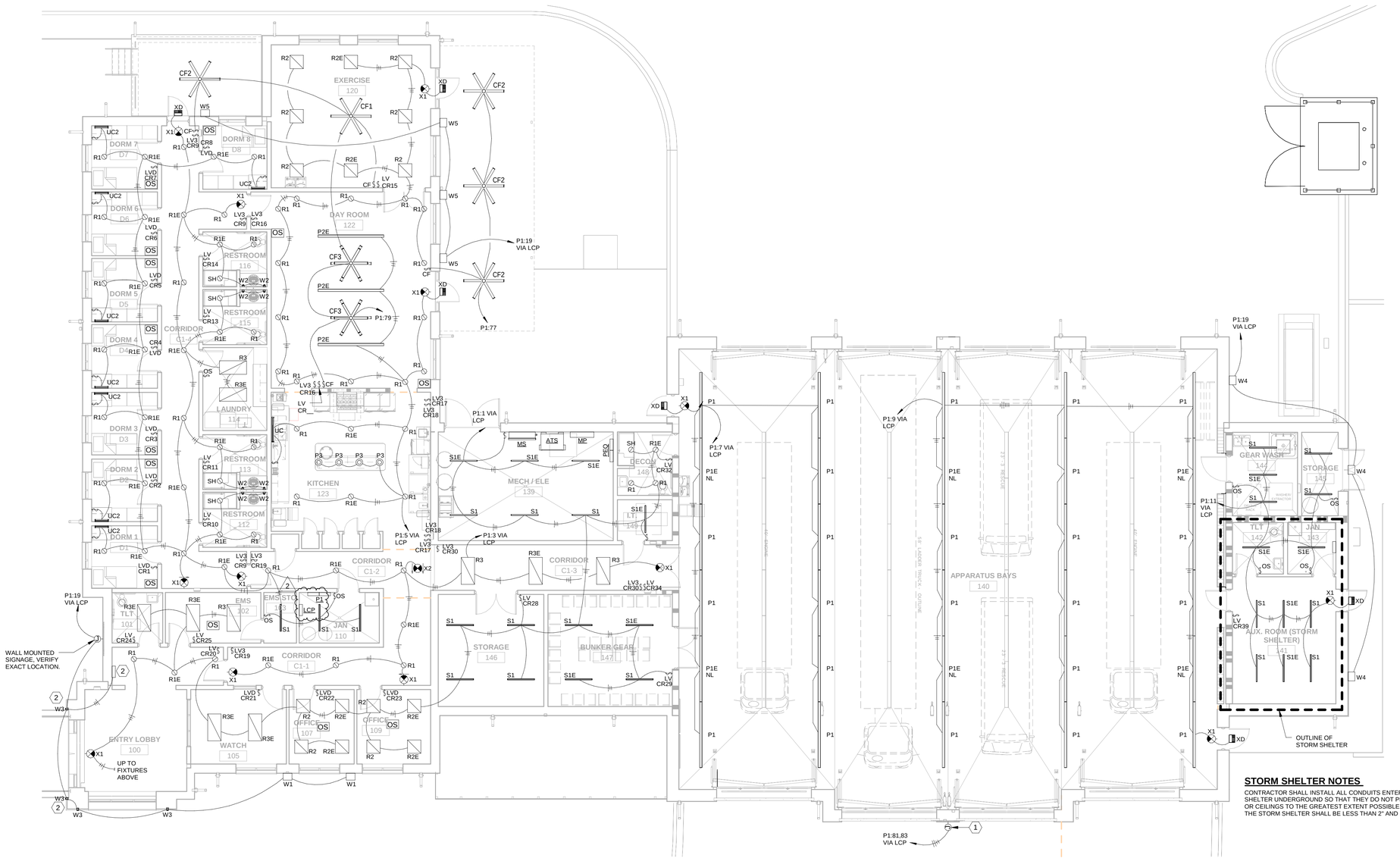
SHEET TITLE:
Lighting Fixture Schedule & Details

PROJECT NUMBER:
CWA No. 2023-01

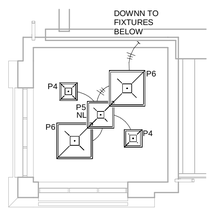
DATE:
08/30/24

DRAWN BY: **JLB** CHECKED BY: **JLB**

SHEET NUMBER
E002



Level 1 Plan - Lighting
1/8" = 1'-0"



Cupola Plan - Lighting
1/8" = 1'-0"

STORM SHELTER NOTES

CONTRACTOR SHALL INSTALL ALL CONDUITS ENTERING OR EXITING THE STORM SHELTER UNDERGROUND SO THAT THEY DO NOT PENETRATE STORM SHELTER WALLS OR CEILINGS TO THE GREATEST EXTENT POSSIBLE. ANY PENETRATION(S) REQUIRED IN THE STORM SHELTER SHALL BE LESS THAN 2" AND SHALL CONFORM TO ICC 500.

PLAN NOTES THIS SHEET:

1. JUNCTION BOX WITH (2) 120V. CIRCUITS FOR BUILDING MOUNTED SIGNAGE. HOMERUN THROUGH 'LCP' AS REQUIRED.
2. 120 VOLT, 500 WATT INVERTER MOUNTED ABOVE THE CEILING TO POWER SELECTED 'W3' LIGHTS UPON LOSS OF POWER. BATTERY TO BE CONNECTED AHEAD OF THE SWITCHLEG FOR CONTINUOUS POWER. PROVIDE ALL RELAYS AND ADDITIONAL HARDWARE REQUIRED.

GENERAL NOTES THIS SHEET:

A. CONNECT ALL EXIT SIGNS AND FIXTURES DESIGNATED 'NL' TO THE LOCAL LIGHTING CIRCUIT SHOWN AHEAD OF THE SWITCHLEG FOR CONTINUOUS OPERATION.

B. FIXTURES WITH AN INTEGRAL BATTERY PACK SHALL HAVE THE BATTERY CONNECTED AHEAD OF THE SWITCHLEG FOR CONTINUOUS POWER. BATTERY SHALL OPERATE FIXTURE UPON LOSS OF POWER.

C. REFER TO LIGHTING CONTROL SCHEDULE AND WIRING DIAGRAMS. LOW VOLTAGE WIRING AND AUXILIARY CABLING NOT SHOWN FOR CLARITY.

D. HOMRUNS FOR EACH LIGHTING CIRCUIT SHALL BE ROUTED THROUGH THE LIGHTING CONTROL PANEL AS REQUIRED FOR EACH AREA BEING SERVED BY A RELAY IN THE LCP.

CONSULTING CONSTRUCTION ENGINEERING, LLC
1028 23rd Street South
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CCE No. Date: Mar 21, 2024
File: 23CWA04.dwg Time: 2:25:10 pm

Revisions

No.	Date	Description
1	02/12/25	ADDENDUM #2
2	02/21/25	ADDENDUM #3

ALABAMA REGISTERED No. 31921 PROFESSIONAL ENGINEER JAMES L. BAILEY
8/30/24

100% CD'S

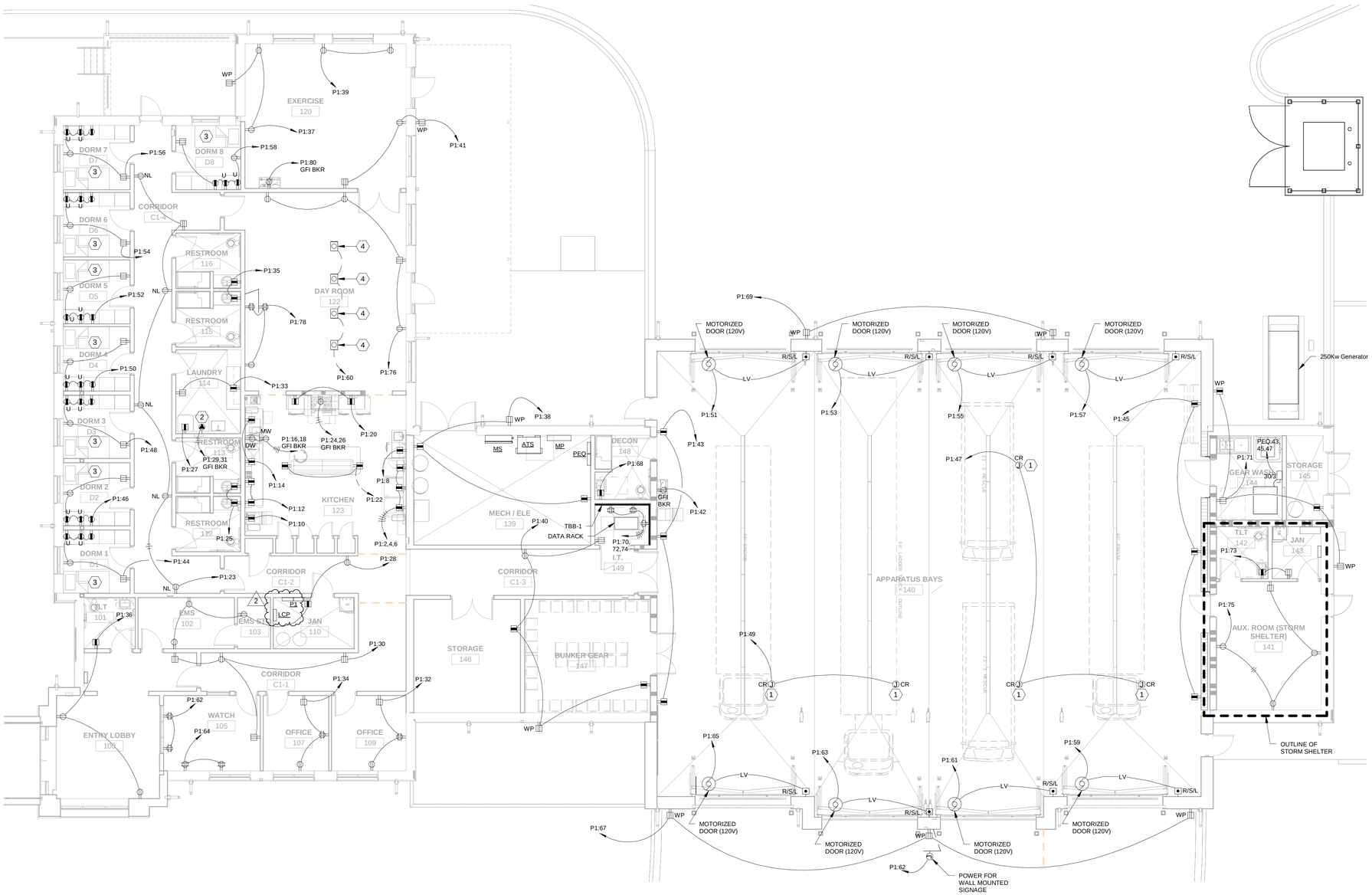
IRONDALE FIRE STATION #3

INT. OF JOHN ROGERS DRIVE & ALTON ROAD
Birmingham, Alabama
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700 FAX: 205-250-0515

SHEET TITLE: **Level 1 Plan - Lighting**
PROJECT NUMBER: **CWA No. 2023-01**
DATE: **08.30.24**
DRAWN BY: **JLB** CHECKED BY: **JLB**

SHEET NUMBER
E201



Level 1 Plan - Power
1/8" = 1'-0"

PLAN NOTES THIS SHEET:

1. CORD REEL MOUNTED TO STRUCTURE. VERIFY EXACT LOCATION WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN. REEL CRAFT #H-7122 OR APPROVED EQUAL.
2. VERIFY NEMA CONFIGURATION PRIOR TO PURCHASE.
3. ALL RECEPTACLES IN THIS ROOM SHALL BE TAMPER RESISTANT PER NEC 210.12(B).
4. SINGLE GANG FLOOR OUTLET WITH (1) DUPLEX RECEPTACLE. WIREMOLD 880 SERIES OR APPROVED EQUAL.

STORM SHELTER NOTES

CONTRACTOR SHALL INSTALL ALL CONDUITS ENTERING OR EXITING THE STORM SHELTER UNDERGROUND SO THAT THEY DO NOT PENETRATE STORM SHELTER WALLS OR CEILINGS TO THE GREATEST EXTENT POSSIBLE. ANY PENETRATION(S) REQUIRED IN THE STORM SHELTER SHALL BE LESS THAN 2" AND SHALL CONFORM TO ICC 500.

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CCE No. Date: Mar 21, 2024
File: 23CWA04.dwg Time: 2:25:10 pm

Revisions		
No.	Date	Description
1	02/12/25	ADDENDUM #2
2	02/21/25	ADDENDUM #3

ALABAMA REGISTERED No. 31921 PROFESSIONAL ENGINEER JAMES L. BOLEY
8/30/24

100% CD'S

IRONDALE FIRE STATION #3

INT. OF JOHN ROGERS DRIVE & ALTON ROAD
Birmingham, Alabama
CITY OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700
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SHEET TITLE: **Level 1 Plan - Power**

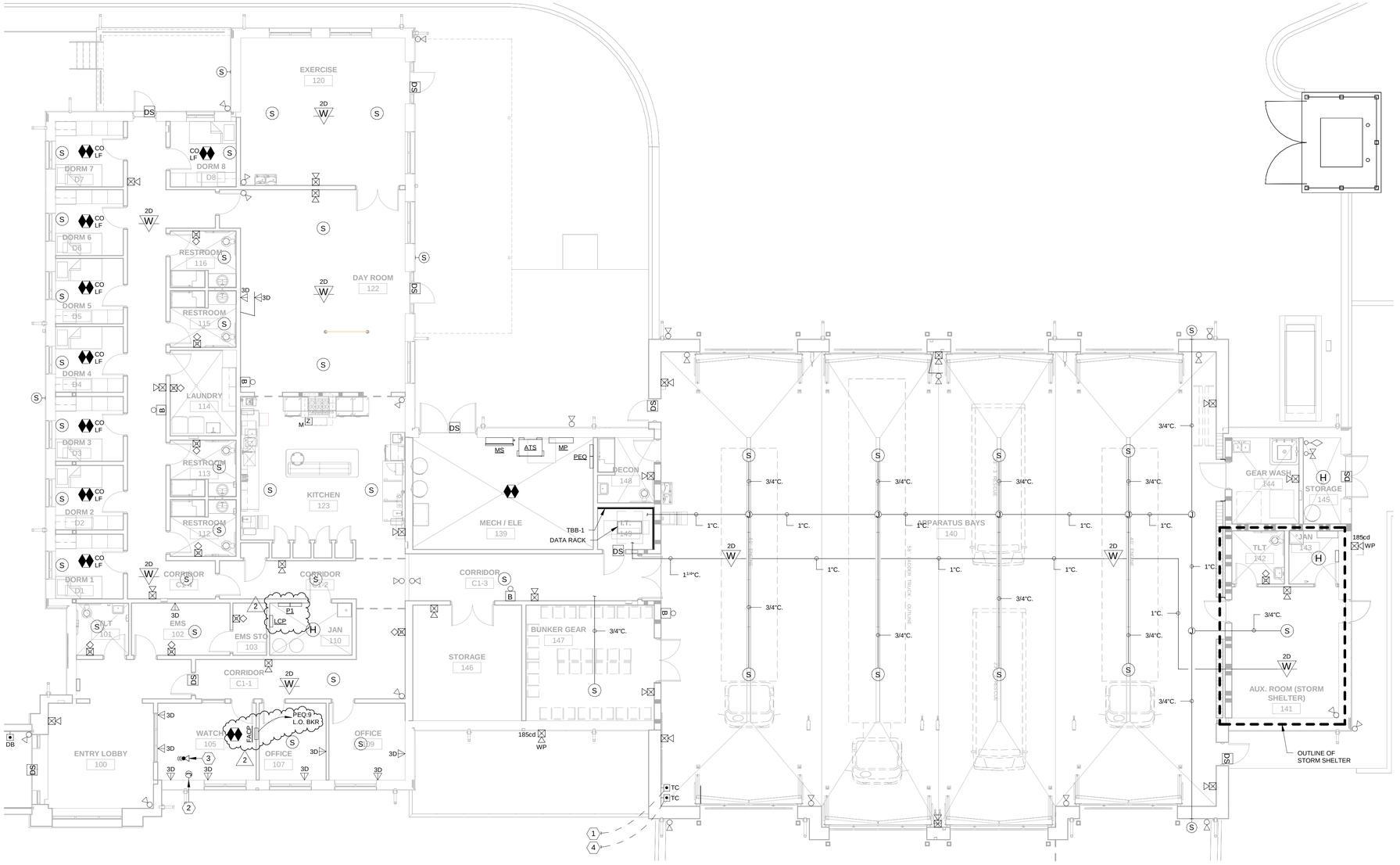
PROJECT NUMBER: **CWA No. 2023-01**

DATE: **08.30.24**

DRAWN BY:	CHECKED BY:
JLB	JLB

SHEET NUMBER

E202



Level 1 Plan - Auxiliary
1/8" = 1'-0"

PLAN NOTES THIS SHEET:

1. TRAFFIC CONTROL PUSH BUTTON. PROVIDE A 1"C. STUBBED FROM BUILDING TO TRAFFIC CONTROLLER LOCATED ON SITE. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
2. JUNCTION BOX WITH 1"C. STUBBED UP TO ABOVE CEILING FOR PAGING RADIO. TERMINATE WITH SMOOTH BUSING AND PROVIDE PULLWIRE. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
3. PROVIDE 1" CONDUIT PENETRATION THROUGH ROOF FOR ANTENNA. VERIFY EXACT LOCATION AND TERMINATE AS DIRECTED BY RADIO INASTALLER. WEATHER PROOF AND SEAL AS REQUIRED.
4. TRAFFIC CONTROL PUSHBUTTON FOR SOLAR POWERED BEACON LIGHTS AT ROADWAY. PROVIDE A 1"C. STUBBED FROM BUILDING TO SOLAR POWERED LIGHTS AT JOHN RODGERS DRIVE (SEE SHEET C1.0). CONTRACTOR SHALL BORE UNDER JOHN RODGERS DRIVE AS REQUIRED. COORDINATE WITH CIVIL SITE CONTRACTOR AS REQUIRED.

STORM SHELTER NOTES

CONTRACTOR SHALL INSTALL ALL CONDUITS ENTERING OR EXITING THE STORM SHELTER UNDERGROUND SO THAT THEY DO NOT PENETRATE STORM SHELTER WALLS OR CEILINGS TO THE GREATEST EXTENT POSSIBLE. ANY PENETRATION(S) REQUIRED IN THE STORM SHELTER SHALL BE LESS THAN 2" AND SHALL CONFORM TO ICC 500.

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File: 23CWA04.dwg Time: 2:25:10 pm

Revisions		
No.	Date	Description
1	02/12/25	ADDENDUM #2
2	02/21/25	ADDENDUM #3

ALABAMA REGISTERED No. 31921 PROFESSIONAL ENGINEER JAMES L. BOLEY
8/30/24

100% CD'S

IRONDALE FIRE STATION #3

INT. OF JOHN ROGERS DRIVE & ALTON ROAD
Birmingham, Alabama
CITY OF IRONDALE

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3601 8TH AVE. SOUTH
BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700
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SHEET TITLE: **Level 1 Plan - Auxiliary**

PROJECT NUMBER: **CWA No. 2023-01**

DATE: **08.30.24**

DRAWN BY:	CHECKED BY:
JLB	**JLB**

SHEET NUMBER

E203

PANEL:	PANEL AMPS	400	VOLTAGE:	SURFACE
PEQ	MAIN TYPE	M.L.O.	120 / 208, 3 PHASE, 4 WIRE, 60 HZ	NEMA 1
	MAIN BREAKER RATING	N/A	AIC RATING 22,000	LOCATION ELECTRICAL ROOM
TYPE:	SOLID NEUTRAL	100%	CALC FAULT CURRENT	FED FROM PANEL 'MP' - 400/3 BKR
BQL	GROUND BUS	100%	BREAKER FEATURES: **GFI** = GROUND FAULT CIRCUIT INTERRUPTER; **ST** = SHUNT TRIP; **TH** = TIE HANDLE	
			AF - ARC FAULT CIRCUIT INTERRUPTER; **LO** = LOCK-ON DEVICE	

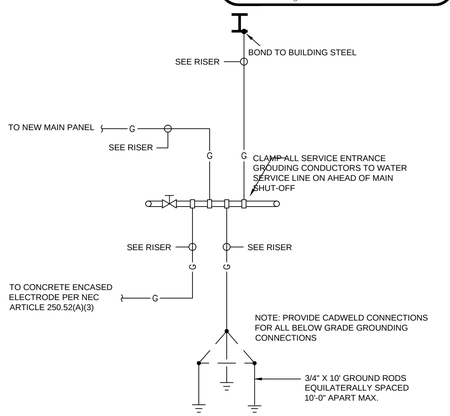
	CKT NO	BREAKER		LOAD TYPE	DESCRIPTION	WIRE SIZE	CKT LOAD	PHASE A	PHASE B	PHASE C	CKT LOAD	WIRE SIZE	DESCRIPTION	LOAD TYPE	BREAKER		CKT NO
ONE SECTION PANEL	1			EQUIP			2100	2526			426	#12	HP-1-1,2,3,4,5,6,7,8,9	A/C	20/2		2
	3	30/3		EQUIP	VEHICLE EXHAUST SYSTEM	#10	2100		2526		426			A/C			4
	5			EQUIP			2100			2807	707	#12	HP-2-1,2	A/C	20/2		6
	7	200		BQBC	VEHICLE EXHAUST SYSTEM PANEL	#12	1000	1707			707			A/C			8
	9	20/1	LO	MISC	FIRE ALARM CONTROL PANEL	#12	500		1126		626	#12	HP-2-3,4,5	A/C	20/2		10
	11	20/1		SPARE						626	626			A/C			12
	13	20/1		SPARE				666			666	#12	HP-3-1,2,3,4,5	A/C	20/2		14
	15	30/2		MTR	SEPTIC TANK CONTROL PANEL	3#10-1#10G.-1"C.	2400		3066		666			A/C			16
	17			MTR			2400			4150	1750	#12	ECH-1	HTG	20/2		18
	19	20/2		A/C	HP-1	3#12-1#12G.-1/2"C.	749	2499			1750			HTG			20
	21			A/C			749		3249		2500	#10	ECH-2	HTG	30/2		22
	23	20/2		A/C	HP-2	3#12-1#12G.-1/2"C.	1414			3914	2500			HTG			24
	25			A/C			1414	3164			1750	#12	ECH-3	HTG	20/2		26
	27	20/2		A/C	HP-IT	3#12-1#12G.-1/2"C.	915		2665		1750			HTG			28
	29			A/C			915			2067	1152	#12	DEH-1	EQUIP	20/1		30
	31	50/3		A/C	CU-1	4#6-1#10G.-1"C.	3936	5088			1152	#12	DEH-2	EQUIP	20/1		32
	33			A/C			3936		4119		183	#12	BCU-1,2,3	EQUIP	20/2		34
	35			A/C			3936			4119	183			EQUIP			36
	37	20/1		EQUIP	GFH-1,2,3,4,5	#12	864	2400			1536	#12	VF-1	MTR	20/1		38
	39			SPACE					1536		1536	#12	VF-2	MTR	20/1		40
	41			SPACE						557	557	#12	SF-1	MTR	20/1		42
SECTION TWO	43	20/3		MISC	DECON WASHER	#12	1000	1250			250	#12	WATER HEATER IGNITOR WH-1/2	WTR HTR	15/1		44
	45			MISC			1000		1500		500	#12	WATER HEATER IGNITOR WH-3	WTR HTR	15/1		46
	47			MISC			1000			3500	2500	#10	TWH-1	WTR HTR	30/2		48
	49	20/1		MTR	CONDENSATE TRAP PUMP	#12	200	2700			2500			WTR HTR			50
	51	20/2		MISC	IR DRYER	#12	1200		1200					SPACE			52
	53			MISC			1200			1200				SPACE			54
	55	30/3		MTR	AIR COMPRESSOR AC-1	#10	2100	2100						SPACE			56
	57			MTR			2100		2100					SPACE			58
	59			MTR			2100			2100				SPACE			60
	61							0						SPACE			62
	63								0					SPACE			64
	65									0				SPACE			66
	67							0						SPACE			68
	69								0					SPACE			70
	71									0				SPACE			72
	73							0						SPACE			74
	75								0					SPACE			76
	77									0				SPACE			78
	79							0						SPACE			80
	81								0					SPACE			82
	83									0				SPACE			84
						PHASE TOTALS		24100	23087	25040							

PANEL:	PANEL AMPS	300	VOLTAGE:	SURFACE
P1	MAIN TYPE	M.L.O.	120 / 208, 3 PHASE, 4 WIRE, 60 HZ	NEMA 1
	MAIN BREAKER RATING	N/A	AIC RATING 18,000	LOCATION ELECTRICAL RM
TYPE:	SOLID NEUTRAL	100%	CALC FAULT CURRENT	FED FROM PANEL MP - 250/3 BKR
BQL	GROUND BUS	100%	BREAKER FEATURES: **GFI** = GROUND FAULT CIRCUIT INTERRUPTER; **ST** = SHUNT TRIP; **TH** = TIE HANDLE	
			AF - ARC FAULT CIRCUIT INTERRUPTER; **LO** = LOCK-ON DEVICE	

	CKT NO	BREAKER		LOAD TYPE	DESCRIPTION	WIRE SIZE	CKT LOAD	PHASE A	PHASE B	PHASE C	CKT LOAD	WIRE SIZE	DESCRIPTION	LOAD TYPE	BREAKER		CKT NO
SECTION ONE	1	20/1		LTG	LIGHTS	#12	1200	2200			1000	#12	REFRIGERATOR	KIT	20/1		2
	3	20/1		LTG	LIGHTS	#12	1200		2200		1000	#12	REFRIGERATOR	KIT	20/1		4
	5	20/1		LTG	LIGHTS	#12	1200			2200	1000	#12	REFRIGERATOR	KIT	20/1		6
	7	20/1		LTG	LIGHTS	#12	1200	2800			1600	#12	COFFEE BREWER	KIT	20/1		8
	9	20/1		LTG	LIGHTS	#12	1200		1950		750	#12	ICE MACHINE	KIT	20/1		10
	11	20/1		LTG	BUILDING MOUNTED LIGHTS	#12	600			2100	1500	#12	KITCHEN APPLIANCE	KIT	20/1		12
	13	20/2		LTG	PARKING LOT LIGHTS	#8	1000	2500			1500	#12	KITCHEN APPLIANCE	KIT	20/1		14
	15			LTG			1000		2500		1500	#12	MICROWAVE	KIT	20/1	GFI	16
	17	20/1		LTG	FLAG POLE LIGHTS	#12	360			1560	1200	#12	DISHWASHER	KIT	20/1	GFI	18
	19	20/1		LTG	BUILDING MOUNTED LIGHTS	#12	1000	2500			1500	#12	KITCHEN APPLIANCE	KIT	20/1		20
	21	20/1			SPARE					1500	1500	#12	KITCHEN APPLIANCE	KIT	20/1		22
	23	20/1		RCPT	CORRIDOR C1-4 RECEPTS	#12	900			2400	1500	#10	RANGE	KIT	30/2	GFI	24
	25	20/1		RCPT	RESTROOM RECEPTS	#12	360	1860			1500			KIT			26
	27	20/1		RCPT	WASHER	#12	500		1040		540	#12	CORRIDOR C1-2 RECEPTS	RCPT	20/1		28
	29	30/2	GFI	RCPT	DRYER	#10	1500			2220	720	#12	CORR., WATCH, EMS RECEPTS	RCPT	20/1		30
	31			RCPT			1500	2220			720	#12	OFFICE 109 RECEPTS	RCPT	20/1		32
	33	20/1		RCPT	LAYNDRY RECEPTS	#12	540		1260		720	#12	OFFICE 110 RECEPTS	RCPT	20/1		34
	35	20/1		RCPT	RESTROOM RECEPTS	#12	360			900	540	#12	ENTRY, TOILET RECEPTS	RCPT	20/1		36
	37	20/1		RCPT	EXERCISE RECEPTS	#12	540	1080			540	#12	MECH/ELEC RECEPTS	RCPT	20/1		38
	39	20/1		RCPT	EXERCISE RECEPTS	#12	360		1080		720	#12	CORR., STOR., BUNKER RECEPTS	RCPT	20/1		40
	41	20/1		RCPT	EXERCISE RECEPTS	#12	540			1040	500	#12	APP. BAY WATER COOLER	RCPT	20/1	GFI	42
SECTION TWO	43	20/1		RCPT	APP. BAY RECEPTS	#12	540	1440			900	#12	DORM 1 RECPTS	RCPT	20/1	AF	44
	45	20/1		RCPT	APP. BAY RECEPTS	#12	540		1440		900	#12	DORM 2 RECPTS	RCPT	20/1	AF	46
	47	20/1		RCPT	CORD REELS	#12	900			1800	900	#12	DORM 3 RECPTS	RCPT	20/1	AF	48
	49	20/1		RCPT	CORD REELS	#12	600	1500			900	#12	DORM 4 RECPTS	RCPT	20/1	AF	50
	51	20/1		RCPT	MOTORIZED DOOR	#12	500		1400		900	#12	DORM 5 RECPTS	RCPT	20/1	AF	52
	53	20/1		RCPT	MOTORIZED DOOR	#12	500			1400	900	#12	DORM 6 RECPTS	RCPT	20/1	AF	54
	55	20/1		RCPT	MOTORIZED DOOR	#12	500	1400			900	#12	DORM 7 RECPTS	RCPT	20/1	AF	56
	57	20/1		RCPT	MOTORIZED DOOR	#12	500		1400		900	#12	DORM 8 RECPTS	RCPT	20/1	AF	58
	59	20/1		RCPT	MOTORIZED DOOR	#12	500			1220	720	#12	DAY ROOM FLOOR RECPTS	RCPT	20/1		60
	61	20/1		RCPT	MOTORIZED DOOR	#12	500	1500			1000	#12	WALL MOUNTED SIGNAGE	RCPT	20/1		62
	63	20/1		RCPT	MOTORIZED DOOR	#12	500		1220		720	#12	WATCH RECPTS	RCPT	20/1		64
	65	20/1		RCPT	MOTORIZED DOOR	#12	500			1220	720	#12	WATCH RECPTS	RCPT	20/1		66
	67	20/1		RCPT	EXTERIOR RECEPTS	#12	540	720			180	#12	DECON RECPT	RCPT	20/1		68
	69	20/1		RCPT	EXTERIOR RECEPTS	#12	360		720		360	#12	TBB RECPT	RCPT	20/1		70
	71	20/1		RCPT	GEAR, STOR., EXT. RECEPTS	#12	720			1080	360	#12	TBB RECPT	RCPT	20/1		72
	73	20/1		RCPT	TOILET, JAN. RECEPTS	#12	360	720			360	#12	TBB RECPT	RCPT	20/1		74
	75	20/1		RCPT	STORM SHELTER RECEPTS	#12	720		1440		720	#12	DAY ROOM RECEPTS	RCPT	20/1		76
	77	20/1		MTR	CEILING FANS	#12	600			1500	900	#12	DAY ROOM RECEPTS	RCPT	20/1		78
	79	20/1		MTR	CEILING FANS	#12	800	1300			500	#12	WATER COOLER	RCPT	20/1	GFI	80
	81	20/1		LTG	BLDG MOUNTED SIGNAGE	#12	1000		1000				SPACE				82
	83	20/1		LTG	BLDG MOUNTED SIGNAGE	#12	1000			1000			SPACE				84
						PHASE TOTALS		23740	20150	21640							

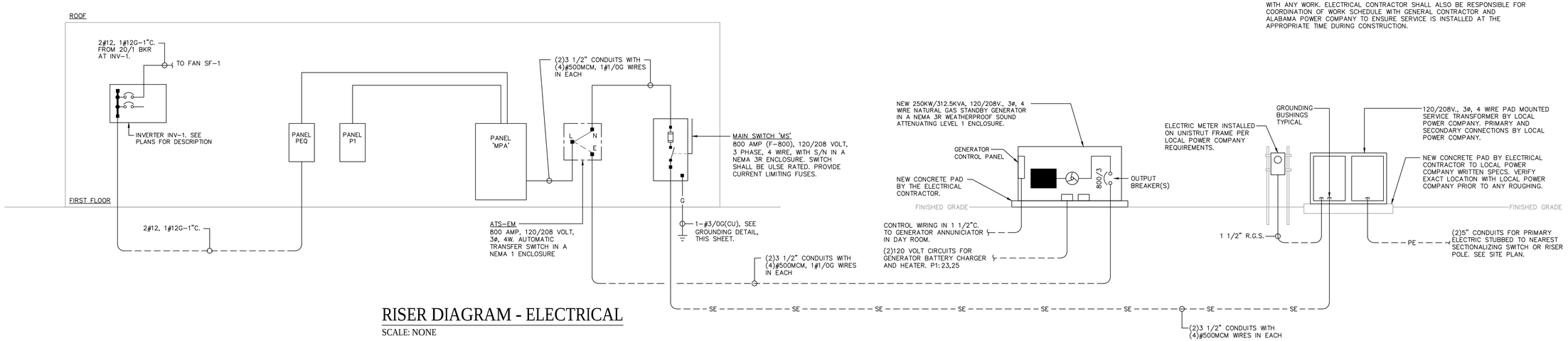
PANEL:	PANEL AMPS	800	VOLTAGE:	SURFACE
MP	MAIN TYPE	M.L.O.	120 / 208, 3 PHASE, 4 WIRE, 60 HZ	NEMA 1
	MAIN BREAKER RATING	N/A	AIC RATING 42,000	LOCATION ELECTRICAL ROOM
TYPE:	SOLID NEUTRAL	100%	CALC FAULT CURRENT	FED FROM MAIN SWITCH MS
CCB	GROUND BUS	100%	BREAKER FEATURES: **GFI** = GROUND FAULT CIRCUIT INTERRUPTER; **ST** = SHUNT TRIP; **TH** = TIE HANDLE	
			AF - ARC FAULT CIRCUIT INTERRUPTER; **LO** = LOCK-ON DEVICE	

	CKT NO	BREAKER		LOAD TYPE	DESCRIPTION	WIRE SIZE	CKT LOAD	PHASE A	PHASE B	PHASE C	CKT LOAD	WIRE SIZE	DESCRIPTION	LOAD TYPE	BREAKER		CKT NO
ONE SECTION PANEL	1	250/3		PANEL	PANEL P1	4#250MCM, 1#4G-3"C.	23740	27964			4224	4#4-1#6G-1 1/4"C.	OHP-1	A/C	70/3		2
				PANEL			20150		24374		4224			A/C			
				PANEL			21640			25864	4224			A/C			
	3	400/3		PANEL	PANEL PEQ	4#500MCM, 1#4G-3 1/2"C.	24100	29476			5376	4#3-1#6G-1 3/4"C.	OHP-2	A/C	90/3		4
				PANEL			23087		28463		5376			A/C			
				PANEL			25040			30416	5376			A/C			
	5				SPACE			4224			4224	4#4-1#6G-1 1/4"C.	OHP-3	A/C	70/3		6
									4224		4224			A/C			
										4224	4224			A/C			
	7				SPACE			5597			5597	4#6-1#10G-1"C.	ERU-1	A/C	60/3		8
									5597		5597			A/C			
										5597	5597			A/C			
	9				SPACE			0					SPACE				10
									0								
										0							
	11				SPACE			0					SPACE				12
									0								
										0							
	13				SPACE			0					SPACE				14
									0								
										0							
						PHASE TOTALS		67261	62658	66101							



SERVICE ENTRANCE GROUND DETAIL

NOT TO SCALE



RISER DIAGRAM - ELECTRICAL

SCALE: NONE

GENERAL NOTES THIS SHEET:

A. THE ELECTRIC CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS FOR THE ELECTRIC SERVICE WITH ALABAMA POWER COMPANY PRIOR TO PROCEEDING WITH ANY WORK. ELECTRICAL CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATION OF WORK SCHEDULE WITH GENERAL CONTRACTOR AND ALABAMA POWER COMPANY TO ENSURE SERVICE IS INSTALLED AT THE APPROPRIATE TIME DURING CONSTRUCTION.

CONSULTING CONSTRUCTION ENGINEERING, LLC
1028 23rd Street South
Birmingham, Alabama 35205
Phone: (205) 352-2500 Δ Web: www.cce-eng.com
CCE No. Date: Feb 21, 2025
File: ER-01.dwg Time: 6:26:27 am

Revisions		
No.	Date	Description
1	02.12.25	Addendum #2
2	02.21.25	Addendum #3

ALABAMA REGISTERED No. 31921 PROFESSIONAL ENGINEER JAMES L. BRITTON
8/30/24
SEAL

100% CD'S

IRONDALE FIRE STATION #3

JOHN ROGERS DRIVE & ALTON ROAD
Birmingham, Alabama
INT. OF IRONDALE

CHARLES WILLIAMS & ASSOCIATES ARCHITECTS
3601 8TH AVE. SOUTH BIRMINGHAM, ALABAMA 35222
PH: 205-250-0700 FAX: 205-250-0515

SHEET TITLE:
Electrical Riser Diagram & Panel Schedules

PROJECT NUMBER:
CWA No. 2023-01

DATE:
08/30/24

DRAWN BY:	CHECKED BY:
JLB	JLB

SHEET NUMBER
E301