# WATER TREATMENT FACILITY PRETREATMENT SYSTEM

## FOR THE

# CITY OF BALDWIN

## HABERSHAM COUNTY, GEORGIA

**APRIL 2024**

*MAYOR*

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*OWNER:*

**CITY OF BALDWIN**
**CITY HALL**
**186 US HIGHWAY 441**
**BALDWIN, GA. 30511**
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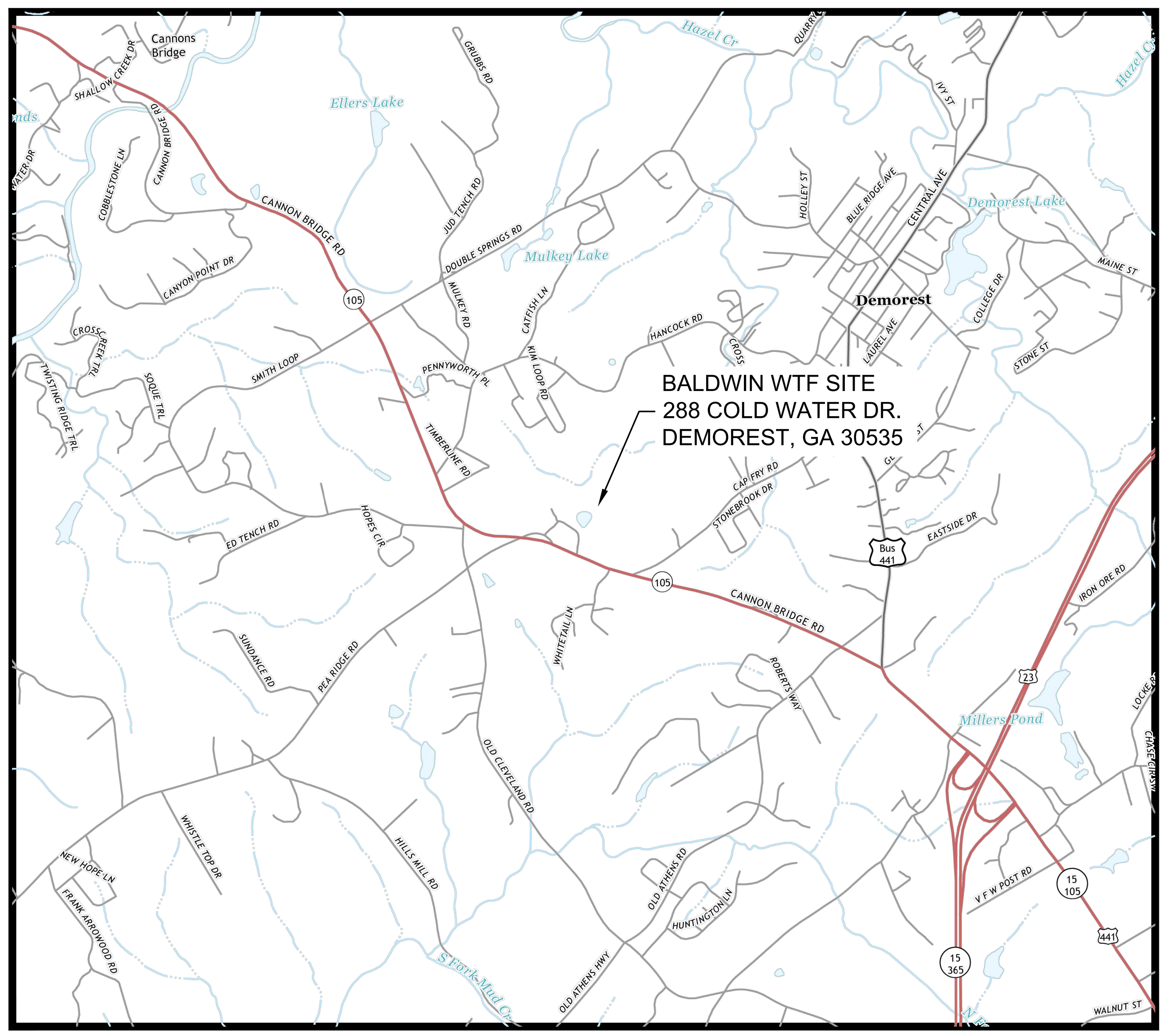


**PROJECT MAP**
N.T.S.

| SHEET INDEX | |
|---|---|
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| DATE | NO. | DESCRIPTION |
|---|---|---|
| 04/16/24 | 0 | RELEASED FOR BID |
| 05/03/24 | 1 | REVISED PER ADDENDUM 1 |

GEORGIA REGISTERED NO. 35581 PROFESSIONAL 4/12/24 ENGINEER GREGORY K. BENNETT

STAMP

**G1**
SHEET NO.

PATH & FILE: Z:\PROJECTS\20\20043-Baldwin Pretreatment System\Design Stage\20043 Base.dwg

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.

*PROJECT ENGINEER:*

EMI ENGINEERING MANAGEMENT
Experience ▪ Trust ▪ Solutions
303 Swanson Drive, Lawrenceville, GA 30043
phone 770-962-1387 fax # 770-962-8010
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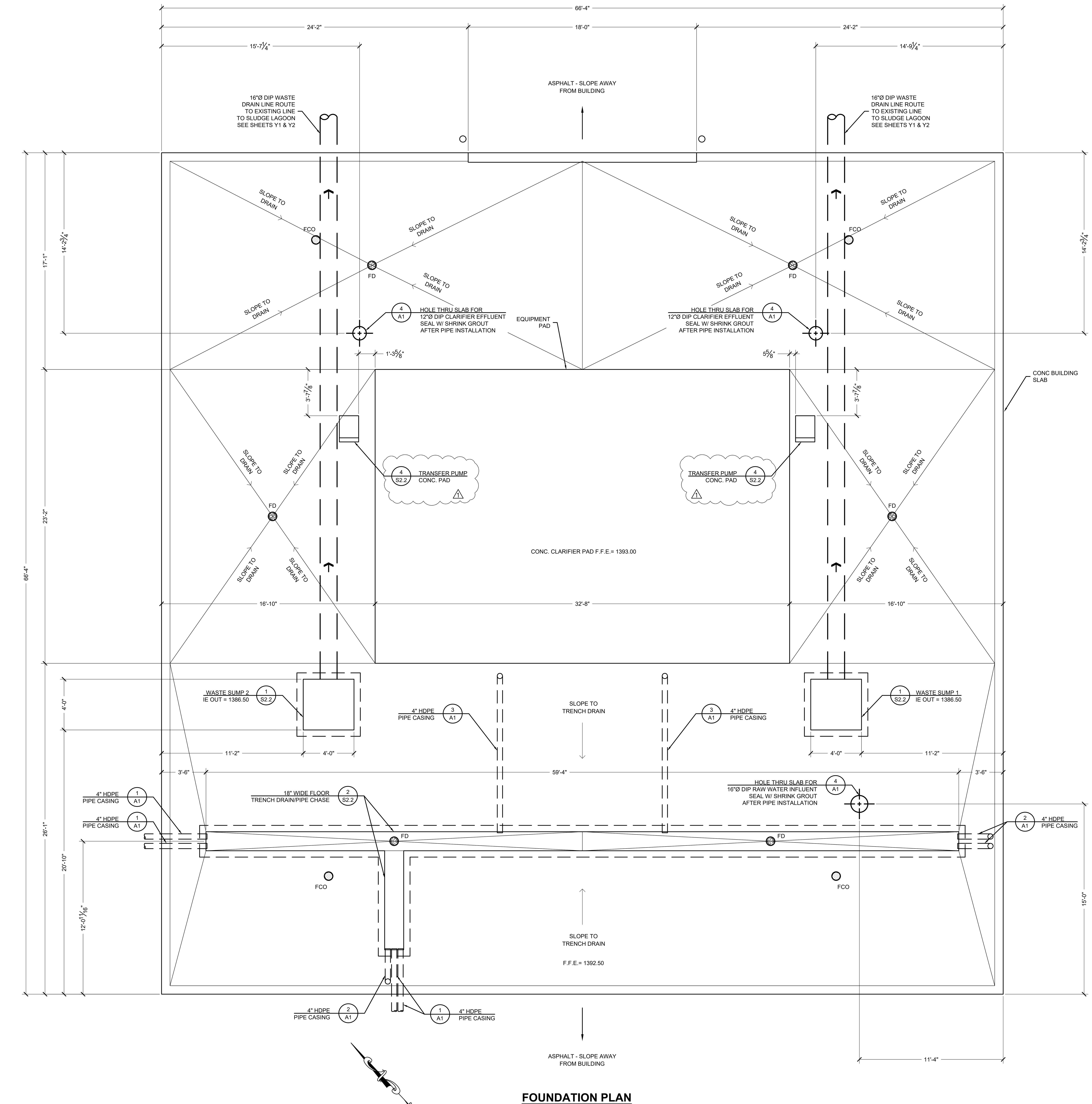
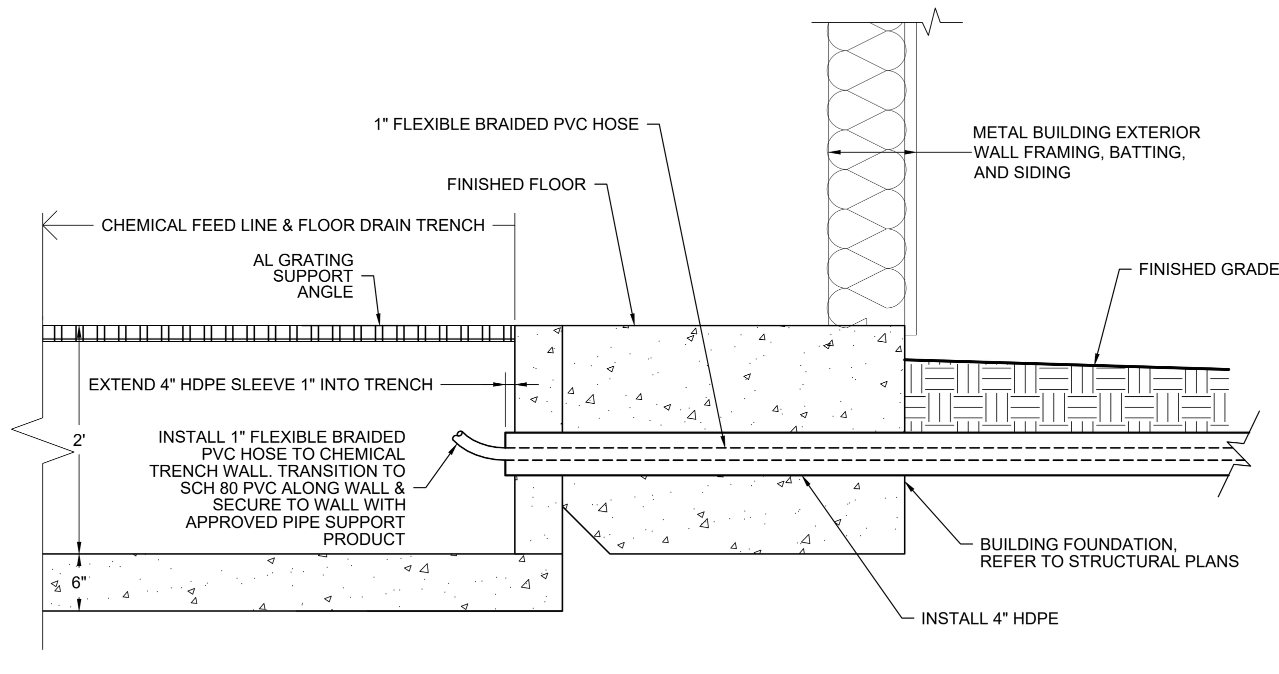
*PROJECT CONTACT: GREG BENNETT, P.E.*



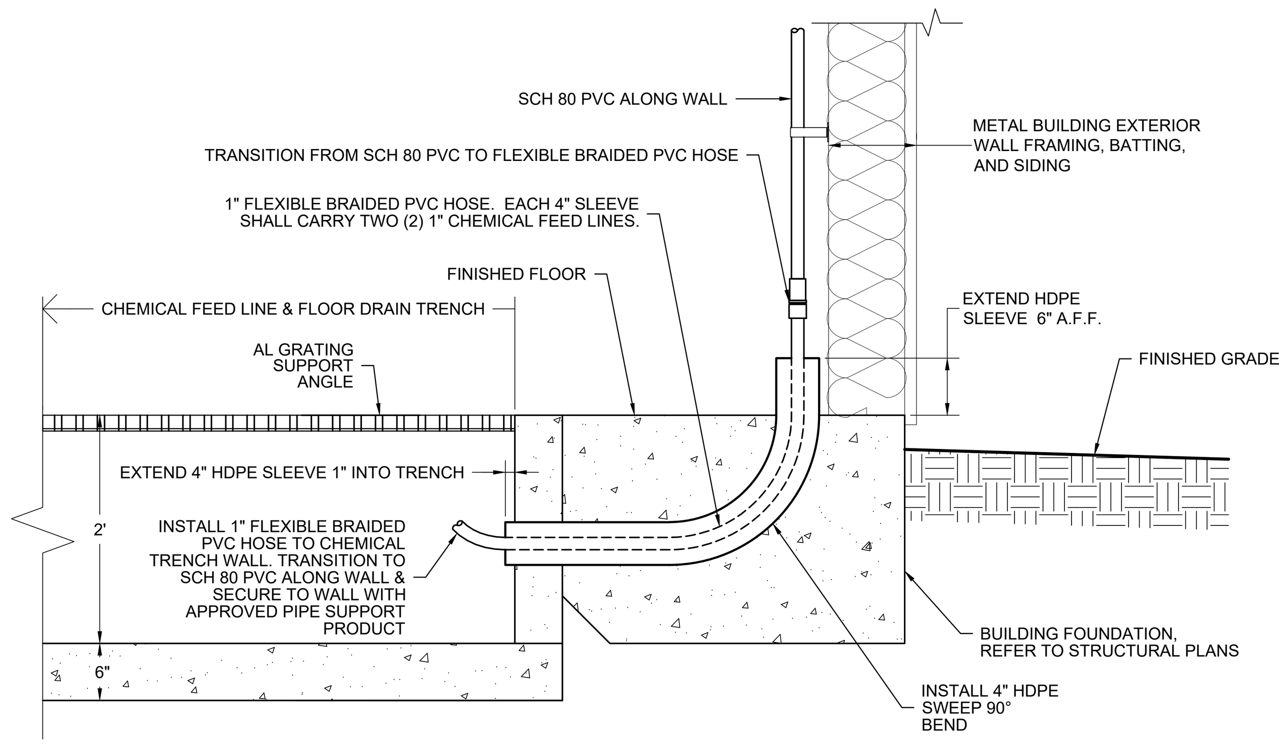

FOUNDATION PLAN

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



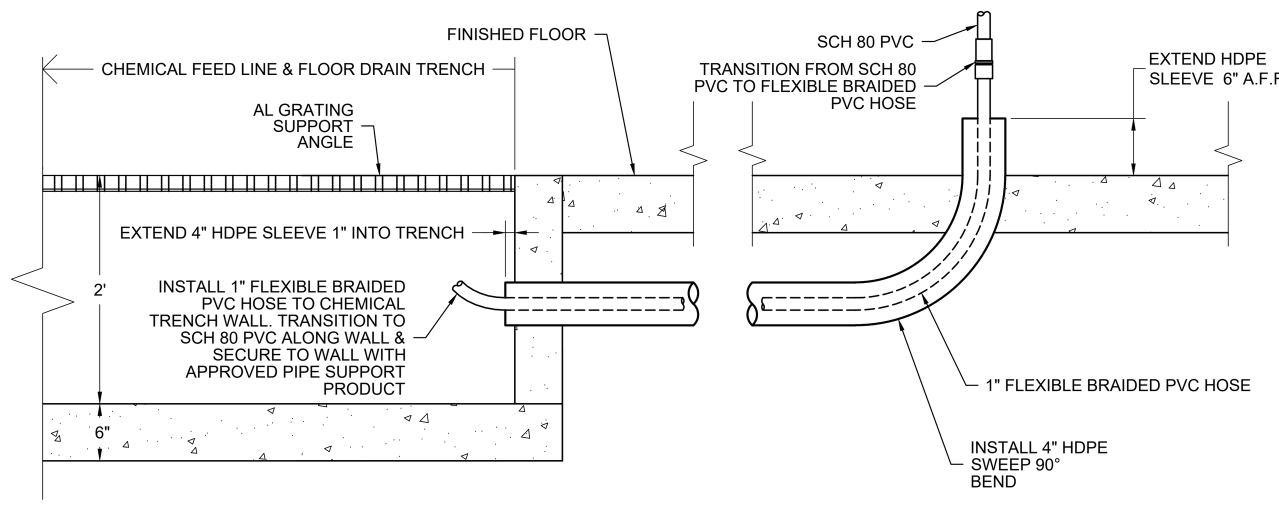

1 A1 **4" HDPE PIPE CASING TO BUILDING EXTERIOR**

SCALE: NTS



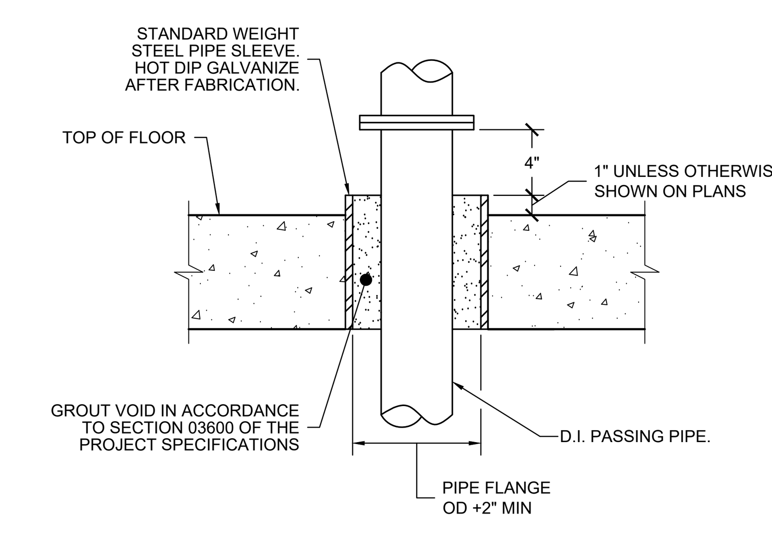

2 A1 **4" HDPE PIPE CASING TO BUILDING INTERIOR**

SCALE: NTS




3 A1 **4" HDPE PIPE CASING @ CLARIFICATION UNIT**

SCALE: NTS




4 A1 **FLOOR PIPE PENETRATION**

SCALE: NTS



| DATE | NO | DESCRIPTION |
|---|---|---|
| 04/16/24 | 0 | RELEASED FOR BID |
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REVISION

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WATER TREATMENT FACILITY PRETREATMENT SYSTEM
FOR THE
CITY OF BALDWIN
HABERSHAM COUNTY, GEORGIA

PRETREATMENT BUILDING FOUNDATION LAYOUT & DETAILS

SHEET TITLE

| DESIGN BY | DRAWN BY | CHECKED BY |
|---|---|---|
| GKB | DFW | GKB |

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 35581 GREGORY K. BENNETT 4/14/24

STAMP

4/19/2023
DATE
20043
JOB NUMBER
z:\projects
FILE LOCATION

PATH & FILE: Z:\PROJECTS\20\20043-Baldwin Pretreatment System\Design Stage\20043 Architectural

SHEET

A1

## DESIGN:

BUILDING CODE: INTERNATIONAL BUILDING CODE 2018 (IBC) W/GEORGIA STATE AMENDMENTS

WIND:

$V_{ULT}$: 107 MPH
$V_{ASD}$: 82.9 MPH
RISK CATAEGORY: II
EXPOSURE CATEGORY: B
INTERNAL PRESSURE COEFFICIENT: ±0.18

COMPONENTS AND CLADDING ELEMENTS NOT SPECIFICALLY DESIGNED ON THESE DRAWINGS SHALL BE DESIGNED ACCORDING TO THE WIND PRESSURES STIPULATED BY IBC 2018 FOR THE TRIBUTARY AREA OF THE SPECIFIC COMPONENT.

SEISMIC:

RISK CATEGORY II
$I_e = 1.0$ $I_p = 1.0$
$S_S = 0.228$ $S_1 = 0.091$
SITE CLASS = D
$S_{DS} = 0.243$ $S_{D1} = 0.144$
SEISMIC DESIGN CATEGORY = C

BASE SEISMIC FORCE-RESISTING SYSTEM(S):
- BY METAL BUILDING MANUFACTURER

SNOW

GROUND SNOW LOAD = 15 PSF
Is = 1.0
FLAT ROOF SNOW LOAD = 10.5 PSF
SNOW EXPOSURE FACTOR Ce = 1.0
SNOW THERMAL FACTOR Ct = 1.0

SHEET INDEX:



## FOUNDATIONS:

1. FOOTINGS SHALL BEAR ON SOIL CAPABLE OF SUSTAINING AN ASSUMED NET ALLOWABLE BEARING PRESSURE OF 2.5 KSF FOR INDIVIDUAL COLUMN FOOTINGS AND 2.5 KSF FOR CONTINUOUS WALL FOOTINGS UNDER FULL SERVICE LIVE AND DEAD LOAD.
2. THE SITE SHALL BE PREPARED IN ACCORDANCE WITH CIVIL DRAWINGS, PROJECT SPECIFICATIONS, AND "GEOTECHNICAL INVESTIGATION" REPORT PREPARED BY SAILORS ENGINEERING ASSOCIATES, INC. (PROJECT NO. 241-053 DATED MARCH 13 2024). A QUALIFIED GEOTECHNICAL ENGINEER SHALL VERIFY ALL ASSUMPTIONS AND REPORT ANY VARIATIONS OR DISCREPANCIES TO THE ENGINEER.
3. THE FOOTINGS HAVE BEEN POSITIONED AT THE ESTIMATED ELEVATION WHICH WILL PROVIDE SUITABLE BEARING. HOWEVER, IF ADEQUATE BEARING CAPACITY IS NONEXISTENT AT THESE ESTIMATED ELEVATIONS, THE FOOTING SHALL BE LOWERED TO AN ELEVATION WHERE THE PRESCRIBED SAFE BEARING CAPACITY EXISTS (AS RECOMMENDED BY A QUALIFIED GEOTECHNICAL ENGINEER).
4. FOOTINGS MAY BE CAST INTO AN EARTH-FORMED TRENCH IF SOIL CONDITIONS PERMIT.
5. EXCAVATION FOR FOOTINGS SHALL BE CUT TO ACCURATE SIZE AND DIMENSIONS AS SHOWN ON PLANS. ALL SOIL BELOW SLABS AND FOOTINGS SHALL BE PROPERLY COMPACTED AND SUBGRADE BROUGHT TO A REASONABLE TRUE AND LEVEL PLANE BEFORE PLACING CONCRETE.
6. IN AREA OF THE BUILDING, EXISTING ORGANIC MATERIAL, UNSUITABLE SOIL, ABANDONED FOOTINGS AND ANY OTHER EXISTING UNSUITABLE MATERIALS SHALL BE REMOVED. ANY CUT AND FILL REQUIREMENTS SPECIFIED BY CIVIL SHALL BE AS INSTALLED PURSUANT TO THE GEOTECHNICAL REPORT NOTED IN ITEM 2 OF THIS SECTION.
7. FOOTING CONCRETE SHALL BE CAST ON THE SAME DAY THE EXCAVATION IS APPROVED. IF THE BEARING SURFACE IS ALLOWED TO BECOME DISTURBED IN ANY WAY, IT SHALL BE REWORKED TO THE SATISFACTION OF AN INDEPENDENT TESTING AGENCY PRIOR TO CASTING OF THE CONCRETE.
8. ALL EXCAVATIONS AND STRUCTURE BEARING PADS SHALL BE INSPECTED BY AN INDEPENDENT TESTING AGENCY PRIOR TO CONCRETE PLACEMENT. THE INDEPENDENT TESTING AGENCY SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL.
9. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 1'-6" BELOW FINAL GRADE FOR FROST PROTECTION.
10. NO EXCAVATION SHALL BE CLOSER THAN AT A SLOPE OF 2:1 (2 HORIZONTAL TO 1 VERTICAL) TO A FOOTING. PROVIDE SHORING AND PROTECTION FOR EXCAVATION BANKS AS NECESSARY TO PRESERVE SAFETY AND PREVENT CAVING.
11. ALL BEARING STRATA SHALL BE ADEQUATELY DRAINED BEFORE FOUNDATION CONCRETE IS PLACED.
12. BACKFILL AGAINST WALLS SHALL BE PLACED IN 8" LIFTS AND SHALL BE DEPOSITED EVENLY AGAINST EACH SIDE OF WALL UNTIL THE LOWER FINAL GRADE IS REACHED. BACKFILL SHALL NOT BE PLACED AGAINST WALLS DEPENDENT UPON TOP AND BOTTOM SLABS/FOUNDATION FOR SUPPORT UNTIL SUCH SLABS HAVE ATTAINED MINIMUM SUFFICIENT BRACING AND SHORING FOR ALL WORK DURING THE CONSTRUCTION PROCESS. RETAINING WALLS ARE NOT DESIGNED TO CANTILEVER AT ANY TIME UNLESS EXPLICITLY NOTED ON DRAWINGS.
13. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE DRAINAGE SYSTEM FOR ALL BACKFILL CONDITIONS PER CIVIL AND ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
14. COLUMN FOOTINGS AND WALL FOOTINGS SHALL BE POURED MONOLITHIC WITH TOPS OF ADJACENT FOOTINGS AT THE SAME ELEVATION.
15. THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN ANY FOOTING WITHOUT PRIOR WRITTEN APPROVAL FROM ENGINEER.

## MISCELLANEOUS:

1. THE FOLLOWING NOTES APPLY TO ALL PROJECT RELATED STRUCTURAL DRAWINGS. THIS INCLUDES THESE DRAWINGS, FIELD SKETCHES AND RESPONSES TO REQUESTS FOR INFORMATION (RFIS), UNLESS OTHERWISE INDICATED.
2. THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS.REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. STRUCTURAL DRAWINGS SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS; CONTRACTOR IS RESPONSIBLE FOR COORDINATING PERTINENT ASPECTS OF ALL DISCIPLINES INTO THEIR SHOP DRAWINGS AND WORK, AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR OMISSIONS.
4. NO OPENINGS OR MODIFICATIONS SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ARCHITECT.
5. NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ARCHITECT.
6. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL DESIGN, ADEQUACY, SAFETY AND STABILITY OF TEMPORARY BRACING AND SHORING THAT MAY BE REQUIRED AS A RESULT OF THE CONTRACTORS CONSTRUCTION METHODS AND/OR SEQUENCES. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED ON THE STRUCTURAL FRAMING. APPLIED CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF ANY STRUCTURAL BUILDING ELEMENT.
7. THE CONTRACTORS CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION LIFECYCLE.
8. DO NOT SCALE THESE DRAWINGS; USE DIMENSIONS. FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS, SEE ARCHITECTURAL DRAWINGS.
9. THE CONTRACTOR SHALL INFORM THE PROFESSIONAL OF RECORD IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY OF SUCH DEVIATION BY THE PROFESSIONAL OF RECORD, REVIEW OF SHOP DRAWINGS, PRODUCT DATA, ETC. UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE PROFESSIONAL OF RECORD OF SUCH DEVIATION AT THE TIME OF SUBMISSION AND THE ARCHITECT HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.
10. WHERE A SECTION OR DETAIL IS CUT ON THE PLAN, IT IS UNDERSTOOD TO BE REPRESENTATIVE OF ALL LIKE OR SIMILAR CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND WORK.
11. AT ALL TIMES THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOBSITE INCLUDING SAFETY OF PERSONS AND PROPERTY. THE ARCHITECTS OR ENGINEERS PRESENCE AT THE JOB SITE OR REVIEW OF WORK DOES NOT IMPLY CONFIRMATION OF THE ADEQUACY OF THE CONTRACTORS MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLIANCE WITH OSHA REGULATIONS.
12. CONSULT ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR LOCATION, SIZES, AND EXTENT OF CHASES, INSERTS, RECESSES, RIDGES, FINISHES, DEPRESSIONS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS.
13. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER OF RECORD IN WRITING OF ALL CONDITIONS ENCOUNTERED IN THE FIELD THAT ARE CONTRADICTORY TO THOSE SHOWN ON THE STRUCTURAL DRAWINGS.
14. STRUCTURAL CONTRACT DOCUMENTS SHALL NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS, OR ANY MATERIAL PREPARED AND SUBMITTED BY THE CONTRACTOR OR SUBCONTRACTOR.
15. REFERENCE TO STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION OR ASSOCIATION, OR TO CODES OF LOCAL OR STATE AUTHORITIES, SHALL MEAN THE LATEST STANDARD, CODE, SPECIFICATION OR TENTATIVE SPECIFICATION ADOPTED AND PUBLISHED AT THE DATE OF TAKING BIDS, UNLESS SPECIFICALLY STATED OTHERWISE.
16. SEE ARCHITECTURAL DRAWINGS FOR FLOOR ELEVATIONS, SLOPE, AND LOCATION OF DEPRESSED FLOOR AREAS. THE CONTRACTOR SHALL COMPARE STRUCTURAL SECTIONS WITH THE ARCHITECTURAL SECTIONS AND REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO FABRICATING OR INSTALLING STRUCTURAL MEMBERS.
17. PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON THESE DRAWINGS. OPENINGS 1'-4" IN WIDTH OR LENGTH (AND LESS) ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. THE GENERAL CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ALL REQUIRED OPENINGS. ALL MECHANICAL OPENING LOCATIONS, UNIT OPERATING WEIGHTS, AND SIZES SHALL BE VERIFIED WITH THE MECHANICAL CONTRACTOR PRIOR TO FABRICATION. ANY DEVIATION FROM THE OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION FOR APPROVAL.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES IN ORDER TO COMPLY WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS.

## SUBMITTALS:

1. STRUCTURAL DRAWINGS GIVE REPRESENTATIVE DETAILS AND ARE NOT INTENDED TO SHOW ALL CONDITIONS THAT MAY BE PRESENT. SHOP DRAWINGS SHALL DETAIL ALL CONDITIONS IN ACCORDANCE WITH THE SPECIFIC REQUIREMENTS AS INDICATED IN THE PROJECT DOCUMENTS.
2. CONTRACTOR SHALL SUBMIT A SCHEDULE OF SHOP DRAWING SUBMITTAL DATES TO ARCHITECT AT LEAST 30 DAYS PRIOR TO FIRST SUBMITTAL. FAILURE TO SUBMIT DRAWINGS ON DESIGNATED DATE MAY IMPACT REVIEW SCHEDULE.
3. ANY MATERIALS OR PRODUCTS SUBMITTED FOR APPROVAL THAT ARE DIFFERENT FROM THE MATERIALS OR PRODUCTS SPECIFIED IN THE STRUCTURAL CONTRACT DOCUMENTS WILL BE CONSIDERED ONLY IF THE FOLLOWING CRITERIA ARE SATISFIED:
   A. A COST SAVINGS TO THE OWNER IS DOCUMENTED AND SUBMITTED WITH THE REQUEST.
   B. THE MATERIAL OR PRODUCT HAS BEEN APPROVED BY THE INTERNATIONAL CODE COUNCIL (ICC) AND THE ICC-ES REPORT IS SUBMITTED WITH THE REQUEST. SUBMITTALS NOT SATISFYING THE ABOVE CRITERIA WILL NOT BE CONSIDERED.
4. REVIEW OF SUBMITTALS OR SHOP DRAWINGS BY THE STRUCTURAL ENGINEER OF RECORD DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW AND CHECK SHOP DRAWINGS BEFORE SUBMITTAL TO THE STRUCTURAL ENGINEER OF RECORD. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS AND DIMENSIONS SPECIFIED IN THE CONTRACT DOCUMENTS.
5. COMPLETE SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL FABRICATED AND SPECIALTY BUILDING COMPONENTS INCLUDING (BUT NOT LIMITED TO) WINDOW SYSTEMS, CANOPY SYSTEMS, AND METAL STAIRS. SHOP DRAWINGS SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF GEORGIA.
6. ALL APPROVED SUBMITTALS, INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, SHALL BE MADE AVAILABLE ON THE JOBSITE FOR REVIEW BY THE INSPECTOR.
7. REPRODUCTION OF CONTRACT DOCUMENTS FOR USE AS SHOP DRAWINGS IS NOT PERMITTED.

## CONCRETE:

1. ALL CONCRETE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318-14.
2. CEMENT USED SHALL BE TYPE I OR III CONFORMING TO ASTM C-150. CONCRETE SHALL DEVELOP A MINIMUM 28 DAY STRENGTH AND DENSITY AS FOLLOWS:

| | STRENGTH (PSI) | DENSITY (PCF) |
|---|---|---|
| ALL ELEMENTS | 4000 | 145 - 150 |

3. AGGREGATE SHALL BE WELL GRADATED AND SHALL CONFORM TO THE FOLLOWING:

| | |
|---|---|
| ALL ELEMENTS (DENSITY 145 - 150 PCF) | 1" COARSE AGGREGATE (ASTM C-33) |

4. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS FOR REVIEW IN ADVANCE OF CONCRETE PLACEMENT. CONCRETE MIX DESIGN SHALL INCLUDE ALL STRENGTH DATA NECESSARY TO SHOW COMPLIANCE WITH THE PROJECT SPECIFICATIONS BY EITHER THE TRIAL BATCH OR FIELD EXPERIENCE METHOD AND SHALL BE CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF GEORGIA. RESULTS OF ALL COMPRESSIVE STRENGTH TEST SHALL BE MADE AVAILABLE AT THE JOB SITE FOR REVIEW BY THE INSPECTOR.
5. ALL MIXING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE.
6. NO ADDITIONAL WATER SHALL BE ADDED TO CONCRETE AT THE JOB SITE.
7. MINIMUM CONCRETE COVER UNLESS NOTED OTHERWISE:

| | |
|---|---|
| A. #11 BARS AND SMALLER: | 3/4 INCHES |
| B. UNFORMED SURFACE IN CONTACT WITH THE GROUND: | 3 INCHES |
| C. C. BASEMENT WALLS: | 2 INCHES EXTERIOR<br>3/4 INCHES INTERIOR |
| D. FORMED SURFACES EXPOSED TO EARTH OR WEATHER: | |
| #6 BARS AND LARGER: | 2 INCHES |
| #5 BARS AND SMALLER: | 1 1/2 INCHES |
| E. FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER: | |
| BEAMS, GIRDERS AND COLUMNS: | 1 1/2 INCHES |
| SLABS, WALLS, AND JOISTS: | 3/4 INCHES |

8. SLAB-ON-GRADE SHALL BE SAW CUT NO MORE THAN 12 HOURS AFTER CONCRETE HAS BEEN FINISHED. CONTRACTOR TO SUBMIT LAYOUT AND CONSTRUCTION SCHEDULE ("SOFT-CUT" INTERNATIONAL OR SIM.)
9. PLACEMENT OF CONCRETE, COLD WEATHER AND HOT WEATHER PRECAUTIONS, MATERIAL AND PROPORTIONING REQUIREMENTS, REBAR COVER AND DETAILING SHALL CONFORM TO REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE (ACI) 318-14.
10. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS FOR SLAB FINISHES, SLAB DEPRESSIONS, ELEVATIONS AND ENCASED OR EMBEDDED ITEMS.
11. PIPES AND CONDUITS EMBEDDED IN CONCRETE SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
    A. NO MATERIAL HARMFUL TO CONCRETE (SUCH AS , BUT NOT LIMITED TO, ALUMINUM) IS PERMITTED.
    B. NO EMBEDMENT OR PENETRATION WHICH IMPAIRS THE STRUCTURAL STRENGTH OR INTEGRITY IS PERMITTED.
    C. CONDUITS AND PIPES SHALL NOT HAVE A DIAMETER THAT EXCEEDS 1/3 THE OVERALL THICKNESS OF THE STRUCTURAL ELEMENT IN WHICH THEY ARE EMBEDDED.
    D. MINIMUM CENTER TO CENTER SPACING SHALL NOT BE CLOSER THAN 3 DIAMETERS OR WIDTHS.
    E. PLACEMENT SHALL OCCUR ABOVE BOTTOM LAYER OF REINFORCEMENT AND BELOW TOP LAYER OF REINFORCEMENT AND SHALL NOT CAUSE REINFORCEMENT TO BE CUT, BENT OR DISPLACED IN ANY MANNER.
    F. PLACEMENT SHALL MAINTAIN A MINIMUM CLEARANCE FROM REINFORCEMENT OF 3 REINFORCING BAR DIAMETERS OR 3/4" FROM WELDED WIRE FABRIC REINFORCEMENT.
    G. PLUMBING AND ELECTRICAL CONDUITS SHALL BE PLACED BELOW SLAB ON GRADE.
12. UNLESS NOTED OTHERWISE, PROVIDE CONTROL JOINTS IN SLABS ON GRADE NOT TO EXCEED 15 FEET ON CENTER IN EACH DIRECTION, UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER.
13. FORMING SHALL BE OF WOOD, STEEL, OR FIBERGLASS OF SATISFACTORY QUALITY AND CONDITION.
14. NO ADMIXTURES SHALL BE ADDED TO THE CONCRETE UNLESS APPROVED BY THE ENGINEER.
15. REINFORCING SHALL CONFORM TO ASTM A615, GR60 UNLESS NOTED OTHERWISE.
16. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 GRADE 60.
17. REINFORCING STEEL AND ACCESSORIES SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 (MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES) AND CRSI MSP-1 (MANUAL OF STANDARD PRACTICE), LATEST EDITION.
18. ALL "CONTINUOUS" REINFORCEMENT SHALL HAVE MINIMUM LAP OF "B" TYPE (ACI 318-14, SECTION 25.5.2) AT SPLICES UNLESS NOTED OTHERWISE.
19. PROVIDE REINFORCING CHAIRS FOR ALL SLAB-ON-GRADE REINFORCING.
20. SUBMIT REINFORCING PLACEMENT AND DETAIL (SHOP) DRAWINGS FOR REVIEW. NO REINFORCING BARS SHALL BE INSTALLED UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND RETURNED.
21. ALL REINFORCING SHALL BE SUPPORTED IN FORMS SPACED WITH NECESSARY ACCESSORIES AND SHALL BE SECURELY WIRED TOGETHER IN ACCORDANCE WITH CRSI "MANUAL OF STANDARD PRACTICE" (27TH EDITION).
22. WHERE WELDED WIRE FABRIC REINFORCEMENT IS SPECIFIED IN SLABS ON GRADE PLACEMENT SHALL BE 1" BELOW TOP OF SLAB. OVERLAP EACH REINFORCING SHEET TWO FULL PANELS AND TIE CROSS WIRES ON EACH SIDE.
23. SCHEDULED OR DETAILED REINFORCING STEEL SHALL NOT BE TACK WELDED FOR ANY REASON. WELDED REINFORCING STEEL AND/OR SPLICES ARE PERMITTED ONLY WHERE SHOWN ON DRAWINGS. WHERE WELDING IS PERMITTED IT SHALL CONFORM TO AWS D1.4, STRUCTURAL WELDING CODE - REINFORCING STEEL.
24. BASE PLATES, ANCHOR RODS, SUPPORT ANGLES, ETC. BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 4" OF CONCRETE.
25. WHERE FOOTINGS, WALLS, OR OTHER STRUCTURAL ELEMENTS INTERSECT, CORNER OR TEE, PROVIDE CORNER BARS WITH REQUIRED LAP LENGTHS TO PROVIDE CONTINUITY OF HORIZONTAL STEEL REINFORCING UNLESS NOTED OTHERWISE.

## PRE-ENGINEERED METAL BUILDING:

1. FRAMES SHALL NOT EXCEED L/240 VERTICAL DEFLECTION UNDER TOTAL LOAD.
2. STORY DRIFT SHALL BE LIMITED TO H/240 HORIZONTAL.
3. METAL BUILDING DESIGNER SHALL PROVIDE MAXIMUM AND MINIMUM VERTICAL AND HORIZONTAL REACTIONS FROM METAL BUILDING COLUMNS TO BUILDING FOUNDATIONS.
4. METAL BUILDING DESIGNER SHALL INCLUDE FRAMING SUPPORT FOR ALL OPENINGS, VENEER, CANOPIES, AWNINGS, & OTHER COMPONENTS IMPARTING LOAD TO THE STRUCTURE.



| DATE | NO | DESCRIPTION |
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EMI ENGINEERING MANAGEMENT
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WATER TREATMENT FACILITY
PRETREATMENT SYSTEM
FOR THE
CITY OF BALDWIN
HABERSHAM COUNTY, GEORGIA

PROJECT

STRUCTURAL NOTES

SHEET TITLE

| DESIGN BY | DRAWN BY | CHECKED BY |
|---|---|---|
| STS | STS | WJP |

GEORGIA REGISTERED STRUCTURAL ENGINEER WILLIAM JOHN PELTIER
4/12/2024

STAMP

4/12/2024
DATE
JOB NUMBER
FILE LOCATION
PATH & FILE:

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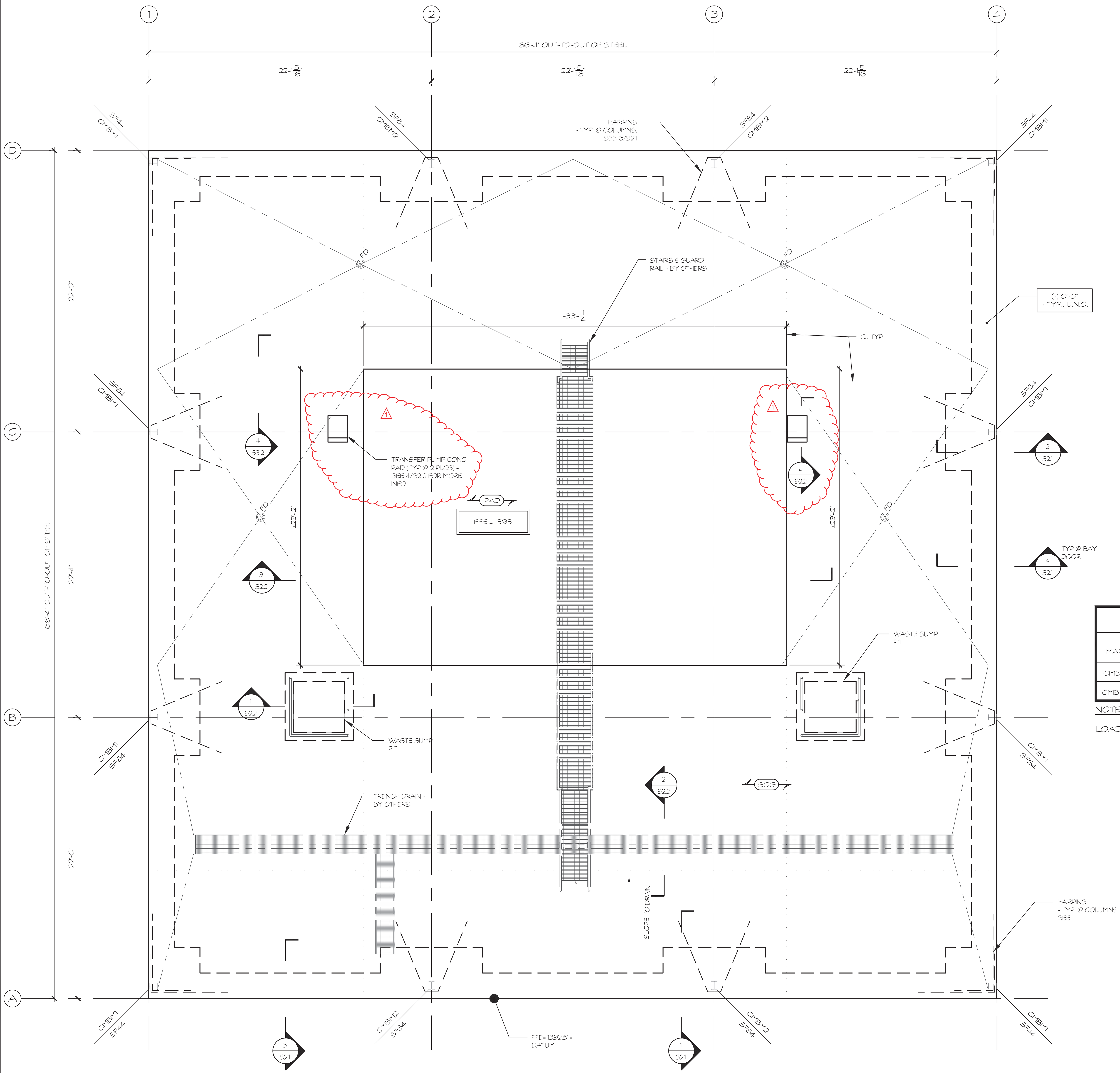
S0.1




SLAB & FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

TYPICAL SLAB & FOUNDATION NOTES:

1. SOG — SLAB ON GRADE SHALL BE 6" CONC SLAB (4000 PSI) ON VAPOR RETARDER ON 4" GAB (GRADED AGGREGATE BASE) W/ #4 @ 12" O.C. E.W. 2" CLEAR FROM TOP, UNO ON PLAN. ALL SLOPES SHALL BE ACCOMPLISHED BY SLOPING BOTTOM AND TOP OF SLAB AT THE SAME RATE, (SEE 6/S2.1). SEE ARCH DRAWINGS FOR FFE.
2. PAD — EQUIPMENT PAD SHALL BE 12" CONC SLAB (4000 PSI) W/ #5 @ 12" O.C. TOP BARS, E.W. 2" CLEAR FROM TOP & #5 @ 12" O.C BOTT. BARS 2" CLEAR FROM BOTT. SEE CIVIL DRAWINGS FOR FFE.
3. "CJ" — INDICATES CONTROL JOINTS IN SLAB. ALIGN JOINTS WITH EQUIPMENT PAD EDGE. SEE GENERAL NOTES AND S2.1 FOR ADDITIONAL INFORMATION.
4. -X'-XX" — INDICATES TOP OF FOOTING ELEVATION. T/FTG. = FFE, U.N.O.
5. "CMBMx" INDICATES COLUMNS DESIGNED BY METAL BUILDING MANUFACTURER
6. FOUNDATIONS HAVE BEEN DESIGNED BASED ON ASSUMED LOADING FROM METAL BUILDING. WJPA SHALL REVIEW THE PRE-ENGINEERED SHOP DRAWINGS FOR ACTUAL LOADS PRIOR TO CONSTRUCTION OF THIS STRUCTURE. SUBMIT SHOP DRAWINGS FOR FINAL REVIEW AND COORDINATION.

NOTE TO CONTRACTOR:

THE CONTRACTOR SHALL REFER TO THE PLUMBING, MECHANICAL, & ELECTRICAL DRAWINGS AND NOTE THE LOCATION OF ALL UNDERGROUND OR UNDER FLOOR PIPING & CONDUITS. THE CONTRACTOR SHALL INCORPORATE ALL FOOTING STEPS NECESSARY PER THE REQUIREMENTS OF ALL UNDERGROUND OR UNDER FLOOR PLUMBING, MECHANICAL, AND ELECTRICAL PIPING. THE CONTRACTOR SHALL REFER TO THE FOUNDATION DETAILS 8 THRU 10 ON S2.1 WHEN PERFORMING THIS WORK.

## SLAB FOOTING SCHEDULE (INDICATED AS "SFX")

| MARK | SIZE | REINFORCING | REMARKS |
|---|---|---|---|
| SF44 | 4'-0" x 4'-0" x 2'-0" | (4) #5 SW BOT, (4) #5 LW BOT | |
| SF64 | 6'-0" x 4'-0" x 2'-0" | (6) #5 SW BOT, (4) #5 LW BOT | |
| SF84 | 8'-0" x 4'-0" x 2'-0" | (8) #5 SW BOT, (4) #5 LW BOT | |

## PRE-ENGINEERED COLUMN LOAD SCHEDULE*

| MARK | MAX VERT | MIN VERT | LATERAL THRUST | ANCHOR RODS |
|---|---|---|---|---|
| CMBM1 | 8.7 KIPS | -3.5 KIPS | -2.2 KIPS | (4) AR1 |
| CMBM2 | 17.1 KIPS | -6.4 KIPS | 10.1 KIPS | (4) AR2 |

NOTE:

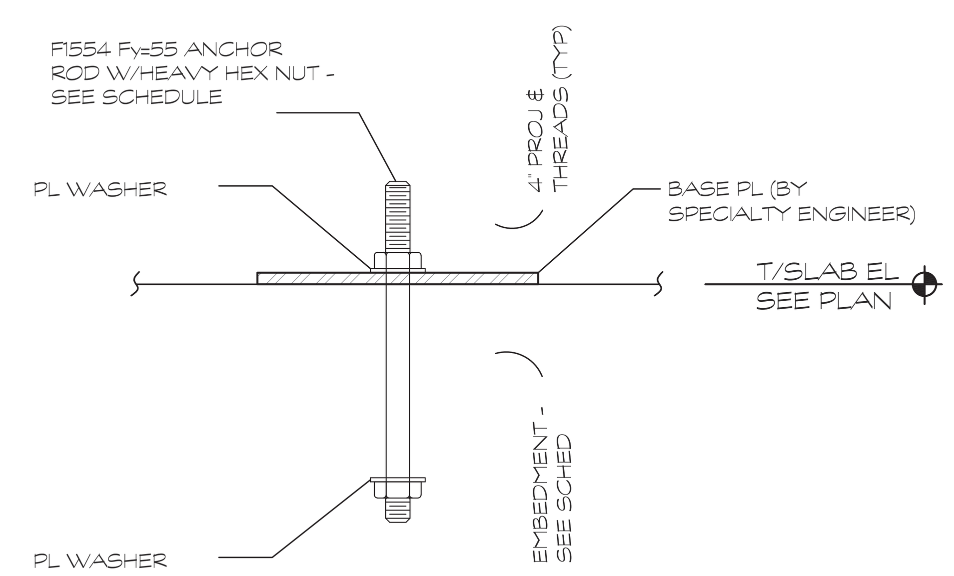
LOADS SHOWN ARE MAX REACTIONS - SEE PRE-ENGINEERED BUILDING DRAWINGS

## ANCHOR ROD SCHEDULE

| MARK | ANCHOR ROD SIZE | EMBEDMENT |
|---|---|---|
| AR1 | 5/8" Ø AR (GRADE 55) | 12" |
| AR2 | 3/4" Ø AR (GRADE 55) | 14" |

NOTE:

SEE PRE-ENGINEERED BUILDING DRAWINGS FOR BASE PLATE AND ANCHOR ROD SPACINGS



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PROJECT

FOUNDATION PLAN

SHEET TITLE

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|---|---|---|
| STS | STS | WJP |

GEORGIA REGISTERED No. SE000054 STRUCTURAL ENGINEER WILLIAM JOHN PELTIER
4/25/2024

STAMP

4/12/2024
DATE
JOB NUMBER
FILE LOCATION
PATH & FILE:

S1.1

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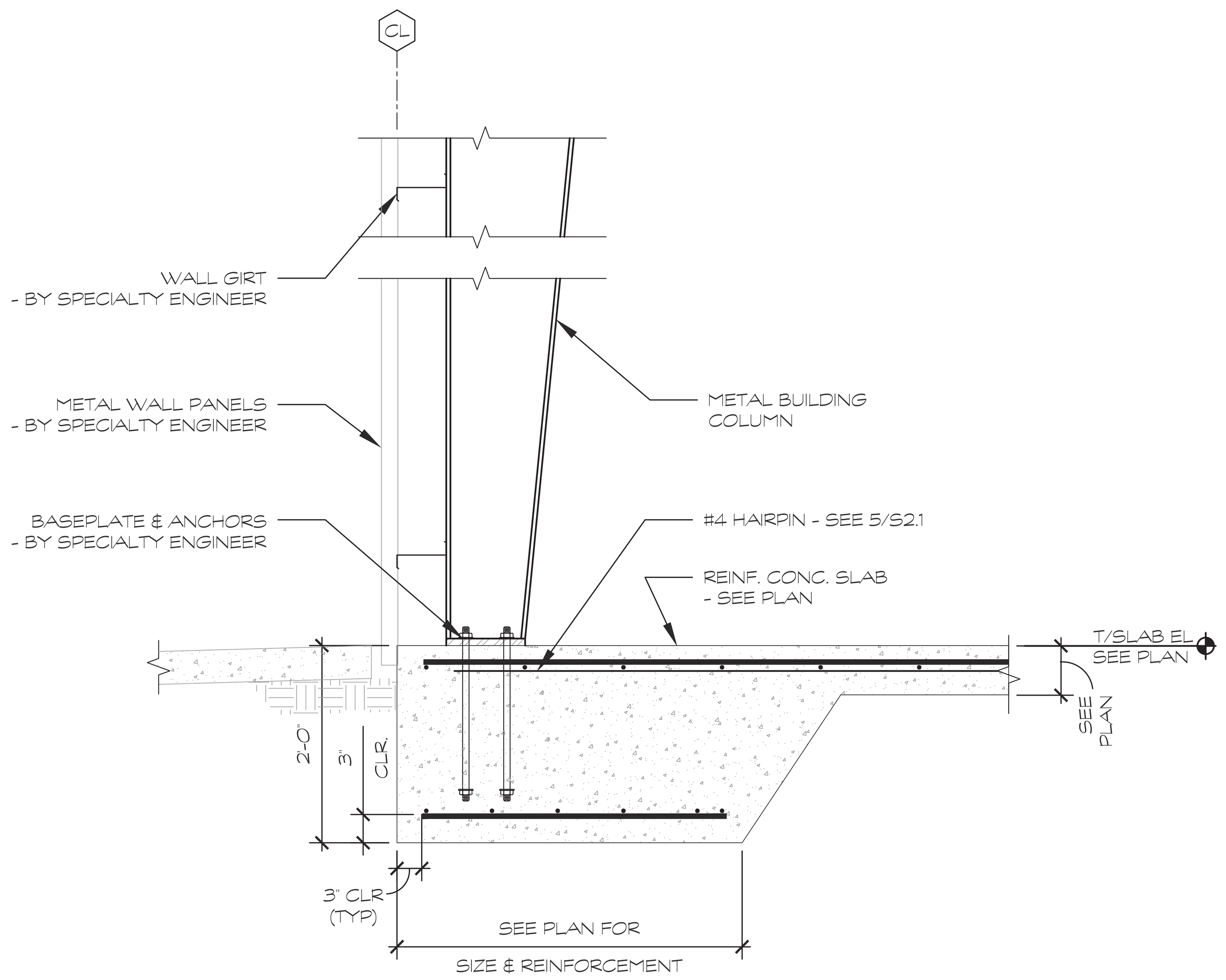
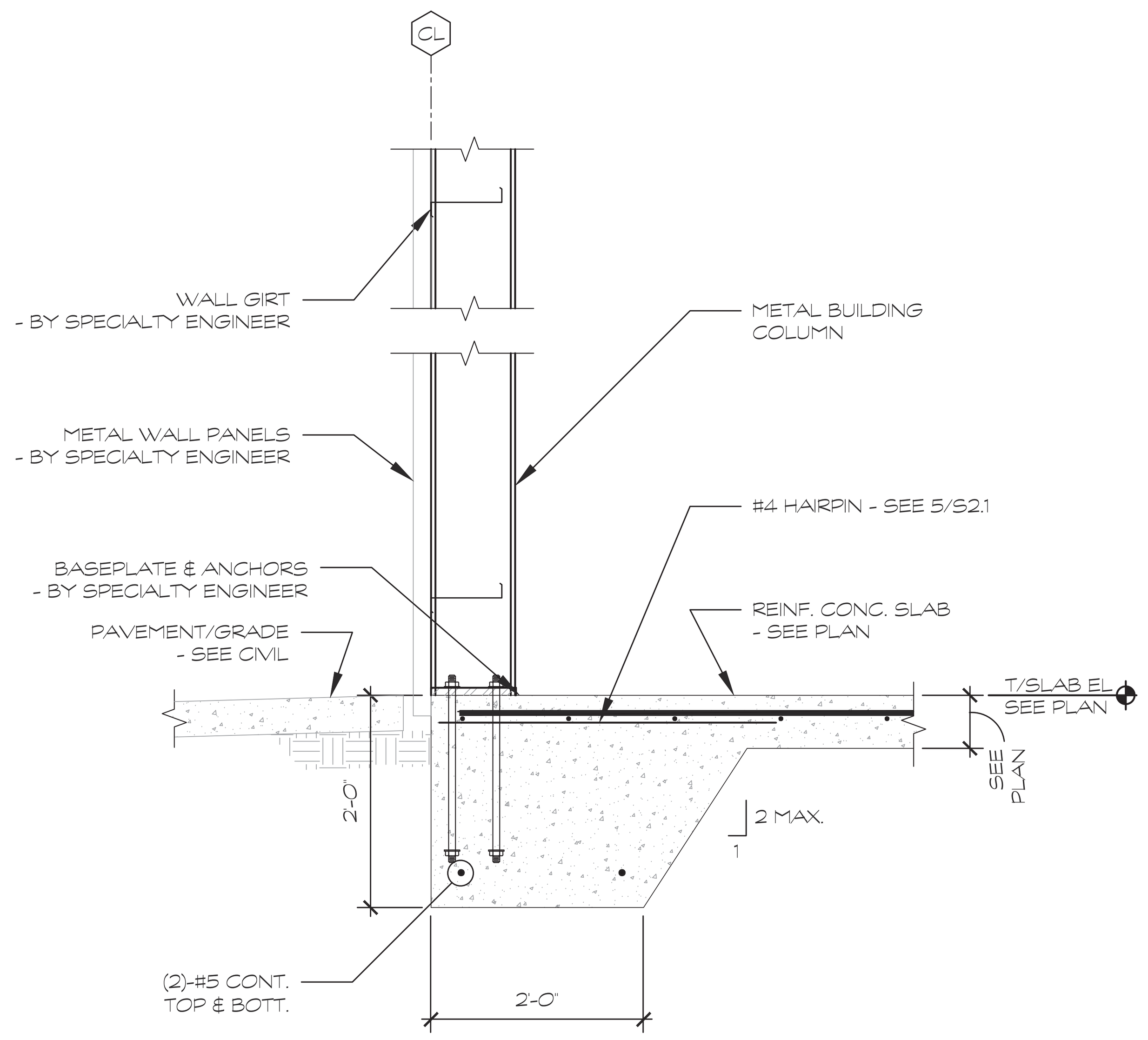
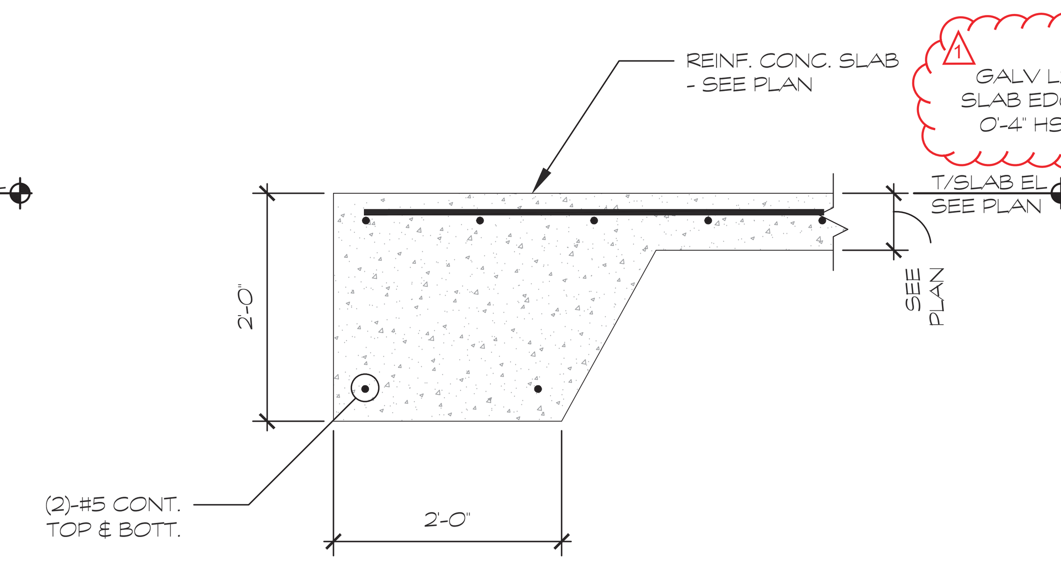


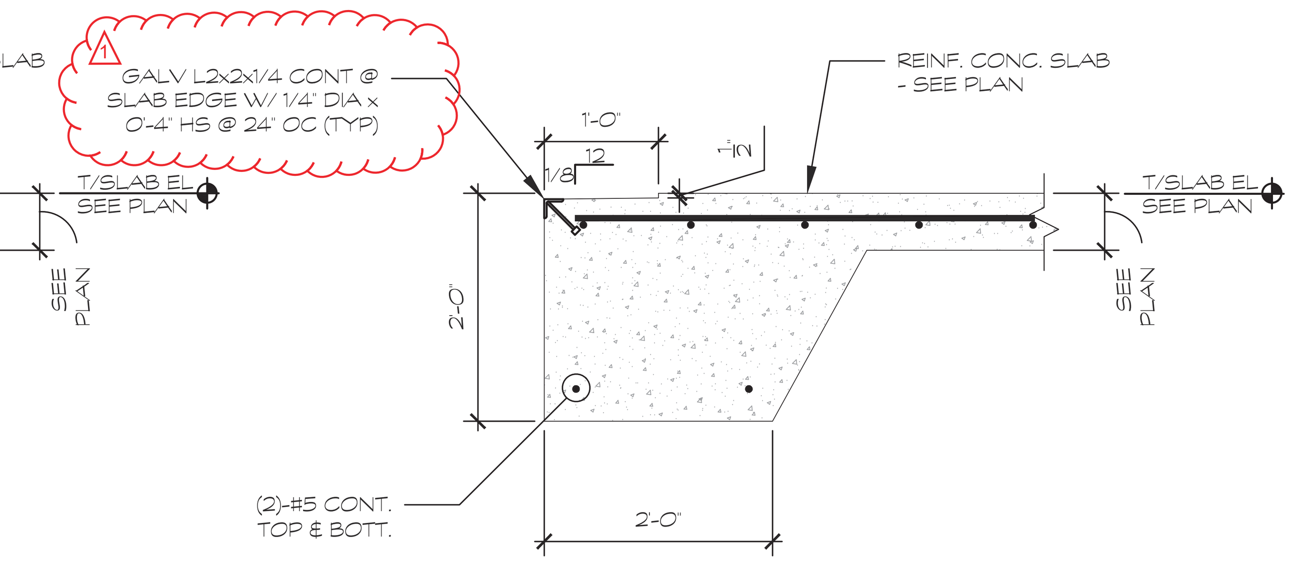

1 S2.1 SECTION
SCALE: 3/4" = 1'-0"



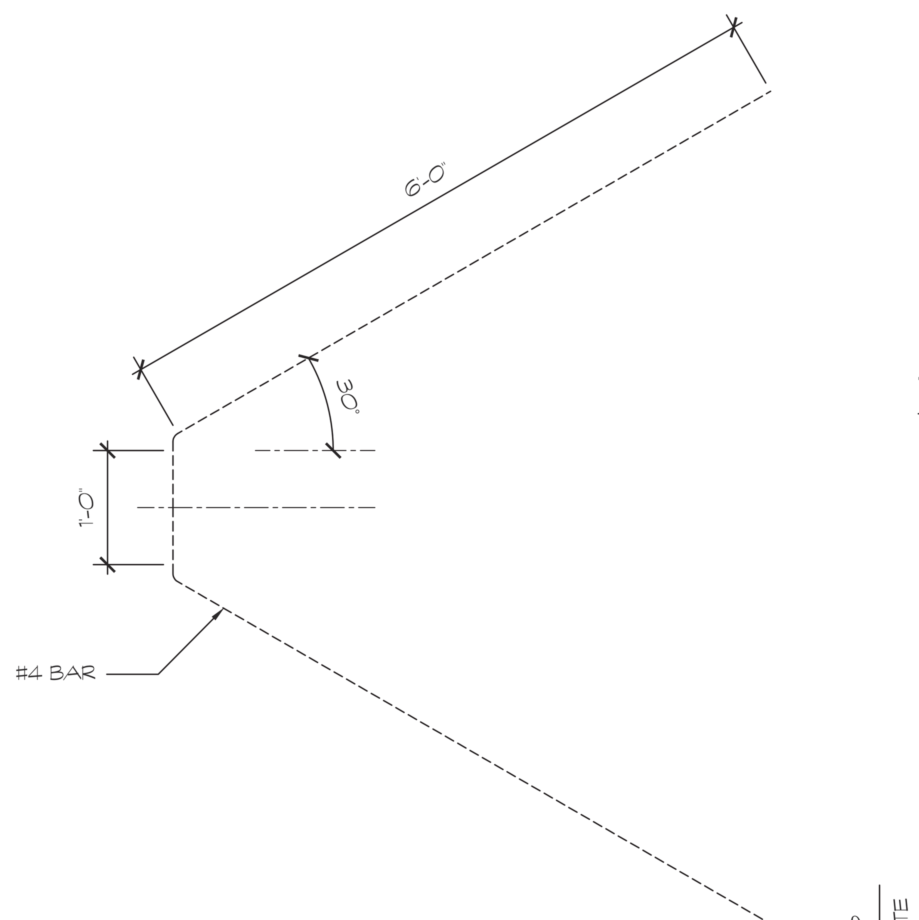

2 S2.1 SECTION
SCALE: 3/4" = 1'-0"



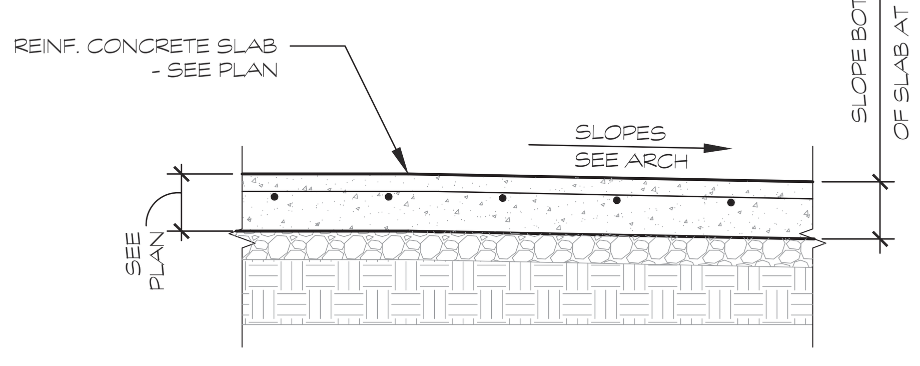

3 S2.1 SECTION
SCALE: 3/4" = 1'-0"




4 S2.1 SECTION - RECESS THRESHOLD @ OVERHEAD DOOR
SCALE: 3/4" = 1'-0"

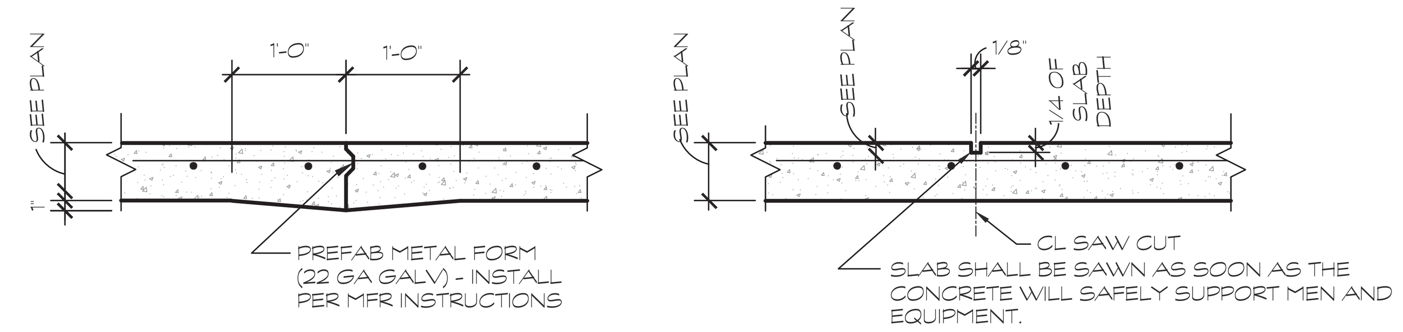



5 S2.1 HAIRPIN DETAIL
SCALE: NTS




NOTE:
1. REINF. TO BE POSITIONED WITHIN SLAB DEPTH W/PREFABRICATED CHAIRS.
2. COORDINATE SLOPES AND LOCATIONS TO ALL FLOOR DRAINS WITH ARCHITECTURAL DRAWINGS.

6 S2.1 TYP SLOPED SLAB-ON-GRADE DETAIL
SCALE: NTS

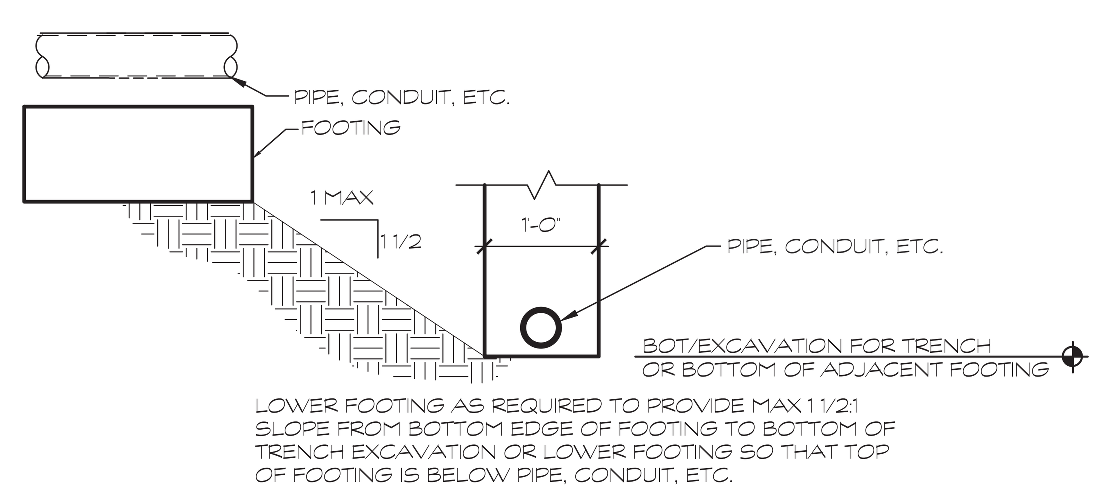



TYP CONSTRUCTION JOINTS

TYP SAWED CONTROL JOINT

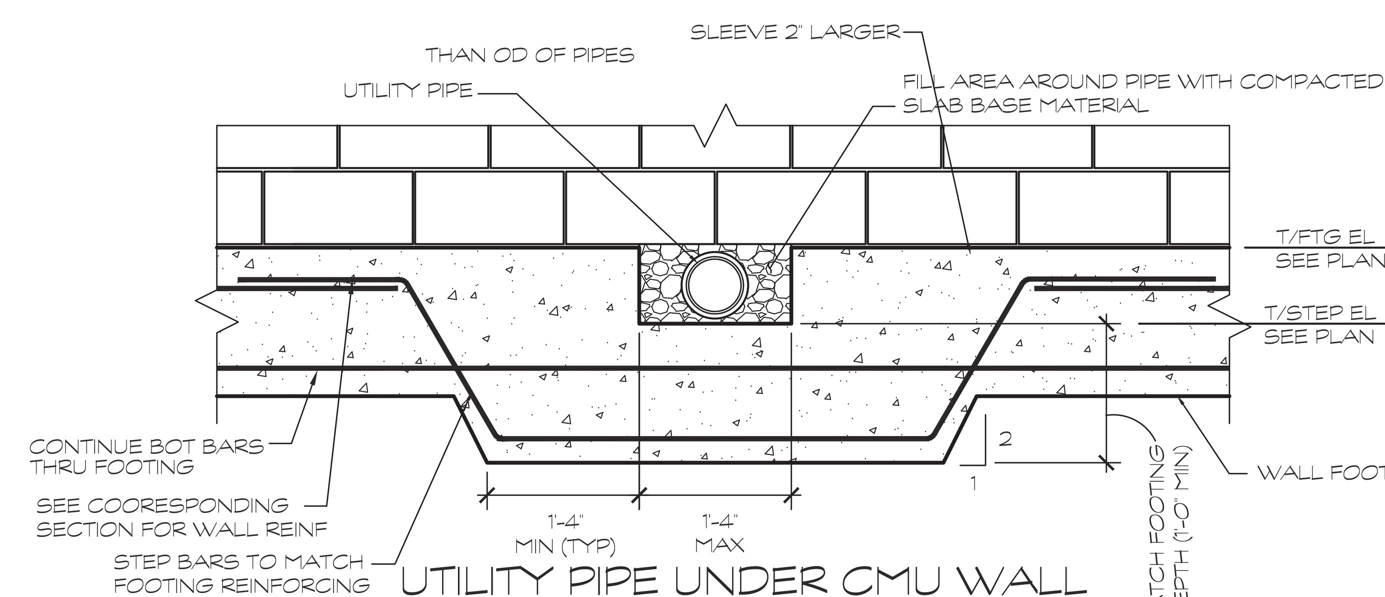
NOTE: USE CONSTRUCTION JOINT IN LIEU OF CONTROL JOINT WHENEVER A POUR STOP IS REQUIRED OR WHERE INDICATED ON THE PLAN.

7 S2.1 TYP SLAB-ON-GRADE JOINT DETAILS
SCALE: 3/4" = 1'-0"



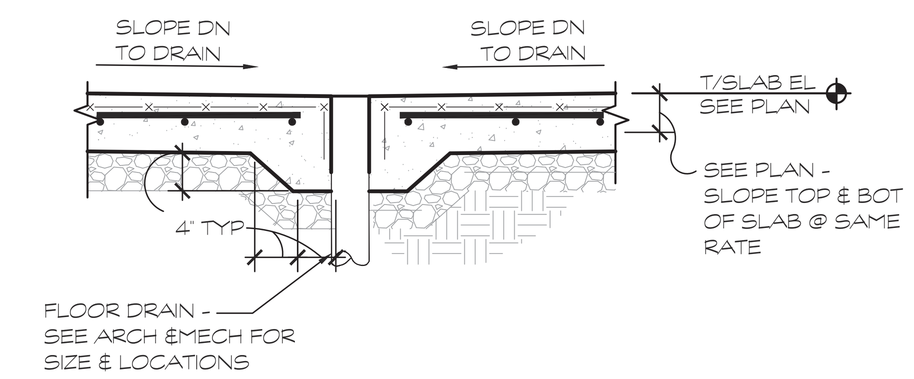

LOWER FOOTING AS REQUIRED TO PROVIDE MAX 1 1/2:1 SLOPE FROM BOTTOM EDGE OF FOOTING TO BOTTOM OF TRENCH EXCAVATION OR LOWER FOOTING SO THAT TOP OF FOOTING IS BELOW PIPE, CONDUIT, ETC.

8 S2.1 TYP FOUNDATION INFLUENCE DETAIL
SCALE: NTS

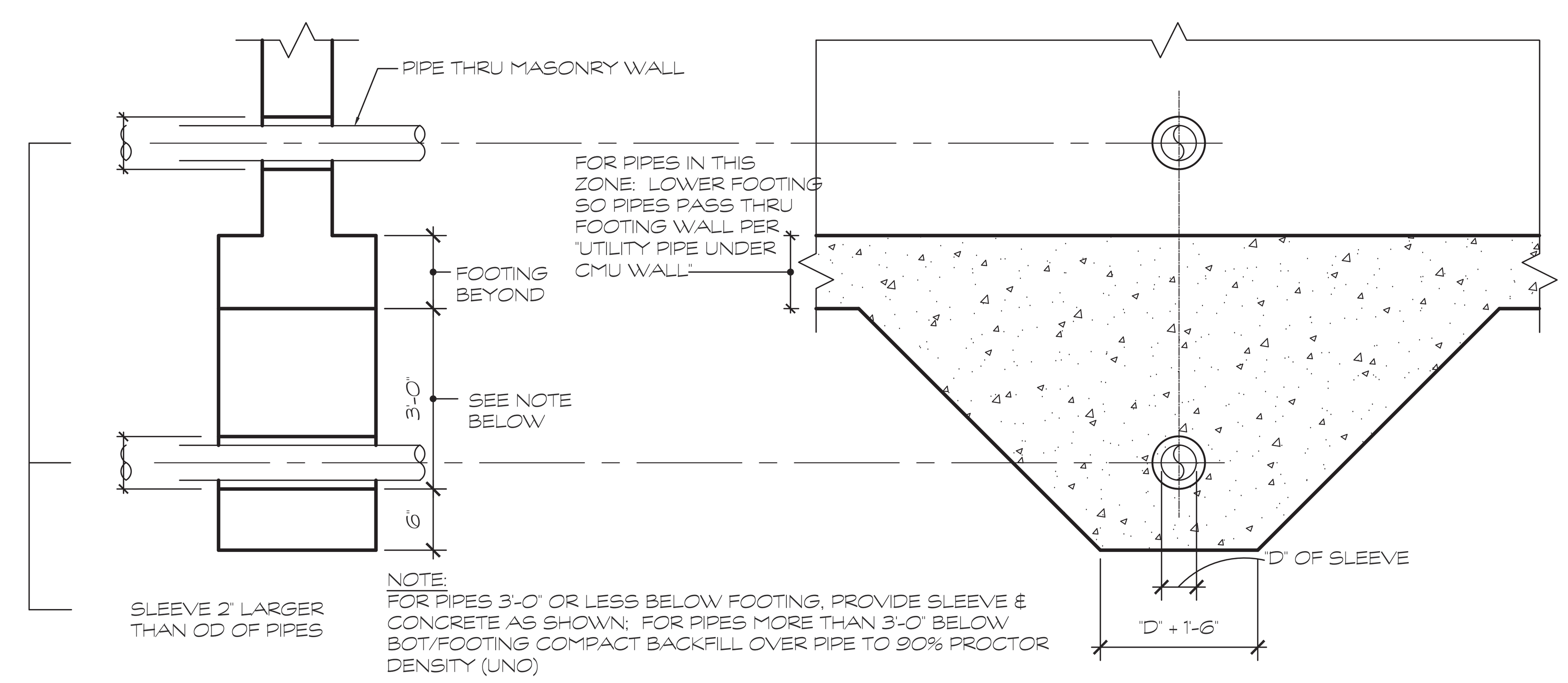



UTILITY PIPE UNDER CMU WALL

9 S2.1 TYP FOUNDATION DETAIL @ UTILITY PIPES
SCALE: NTS




11 S2.1 SLAB DRAIN DETAIL
SCALE: 3/4" = 1'-0"




NOTE:
FOR PIPES 3'-0" OR LESS BELOW FOOTING, PROVIDE SLEEVE & CONCRETE AS SHOWN. FOR PIPES MORE THAN 3'-0" BELOW BOT/FOOTING COMPACT BACKFILL OVER PIPE TO 90% PROCTOR DENSITY (UNO)

EXCAVATION TRANSVERSE TO WALL FTG

10 S2.1 TYP FOUNDATION DETAIL @ UTILITY PIPES
SCALE: NTS



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PROJECT

SECTIONS & DETAILS
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GEORGIA REGISTERED PROFESSIONAL ENGINEER STRUCTURAL WILLIAM JOHN PELTIER
STAMP

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DATE
JOB NUMBER
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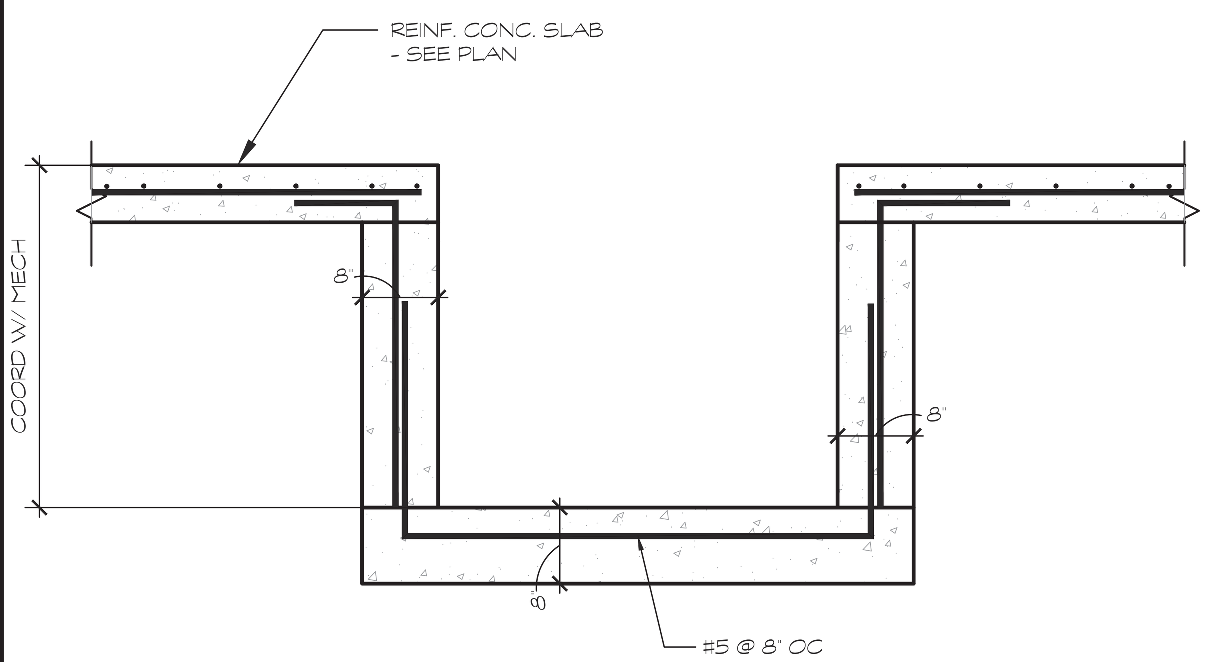
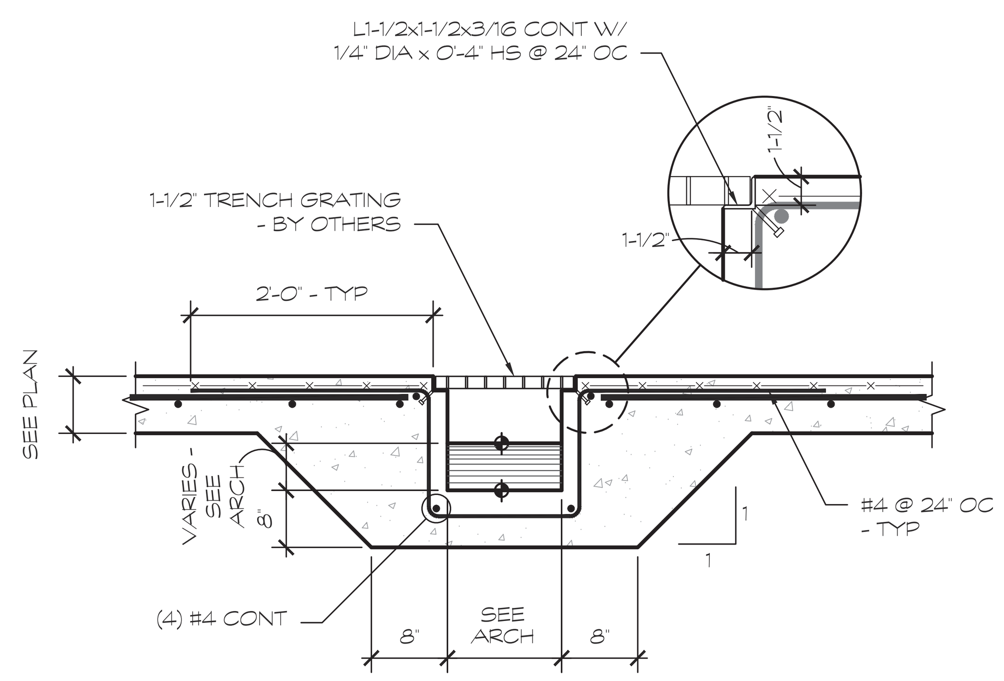
PATH & FILE:

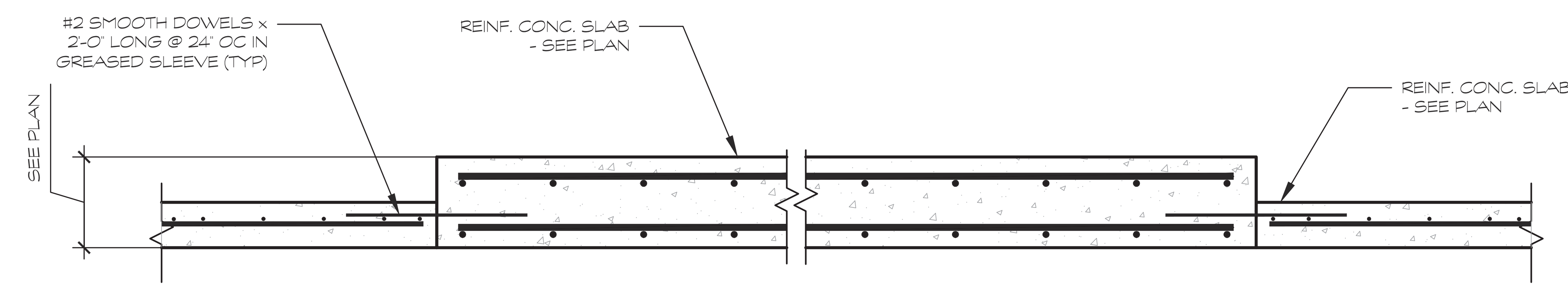
SHEET
S2.1




1 / S22 SECTION
SCALE: 3/4" = 1'-0"




2 / S22 SECTION
SCALE: 3/4"=1'-0"




3 / S22 SECTION
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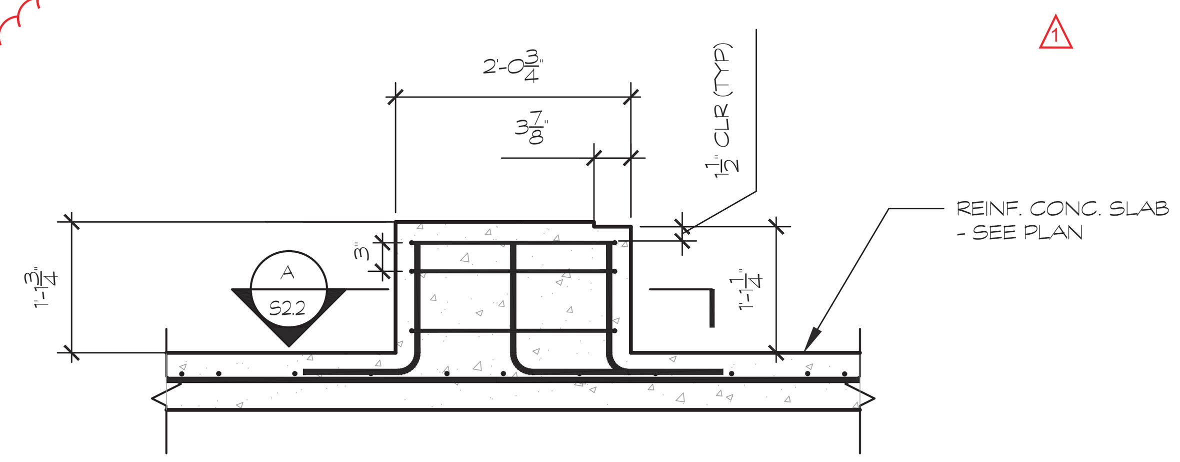


4 / S22 SECTION
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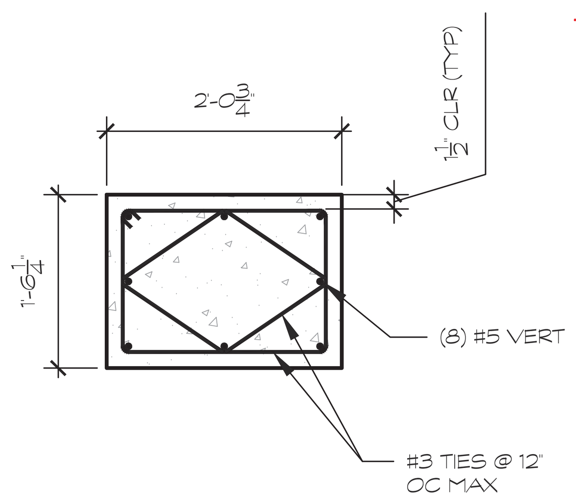


A / S22 SECTION
SCALE: 3/4"=1'-0"



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## CONTROL AND ONE LINE DIAGRAMS

| | |
|---|---|
| | CONDUCTORS CONNECTED |
| | CONDUCTORS NOT CONNECTED |
| | CONNECTION POINT |
| XX | TERMINAL POINT FOR OUTGOING CONDUCTORS, WITH IDENTIFICATION. "XX" DENOTES CONTRACTOR ASSIGNED. |
| MCP/3 | MAGNETIC-ONLY CIRCUIT BREAKER (MCP), WITH CURRENT RATING |
| 100/30 | CIRCUIT BREAKER, THERMAL-MAGNETIC UNLESS OTHERWISE NOTED, WITH FRAME SIZE AND TRIP RATING |
| FU# SIZE | FUSE WITH SIZE AND OPTIONAL IDENTIFICATION. |
| 30 AMP | DISCONNECT SWITCH. RATING OPTIONAL. 30 AMP 600V MINIMUM UNLESS OTHERWISE NOTED. |
| M | MOTOR (PHASES AS REQUIRED) |
| WATTS | SPACE HEATER, WATTAGE AS INDICATED. |
| PRI-V VA SEC-V | CONTROL POWER TRANSFORMER, PRIMARY AND SECONDARY VOLTAGE SHOWN. SIZE AS SHOWN OR SPECIFIED. |
| P/S | CURRENT TRANSFORMER. PRIMARY/SECONDARY TURNS RATIO SHOWN. |
| | HORN |
| OHMS | RESISTOR: OPTIONAL VALUE SHOWN |
| | RECTIFIER |
| | TRIAD |
| | SURGE SUPPRESSOR |
| 10mF | CAPACITOR: OPTION VALUE SHOWN |
| INDICATORS X STATUS | X = LENS COLOR; DIRECT CONNECTION; A = AMBER, B = BLUE, G = GREEN, R = RED, W = WHITE |
| X STATUS | PUSH TO TEST<br>TEST VOLTAGE TERMINAL SHOWN |
| TEST C DESCPTN | REMOTE TEST<br>TEST BUS TERMINAL SHOWN |
| THERMAL OL | RELAY COIL WITH OPTIONAL PREFIX.<br>OL = THERMAL OVERLOAD RELAY |
| METER ETM | METER WITH ALPHA IDENTIFIERS:<br>ETM = ELAPSED TIME METER |
| INTERLOCK CONTACTS 12 CR, 9 CR | CONTROL RELAY CONTACTS WITH NUMERIC PREFIX. |
| 5 TR INST, 6 TR INST | TIME DELAY RELAY INSTANTANEOUS CONTACTS WITH NUMERIC PREFIX. |
| CB# SIZE 800AF/600AT | LOW VOLTAGE POWER CIRCUIT AND BREAKER DRAWOUT TYPE, FRAME TRIP SHOWN |
| CB# SIZE 50AF/40AT | MOULDED CASE CIRCUIT BREAKER, FRAME AND TRIP ID SHOWN |
| | LIGHTNING ARRESTOR AND GROUND |
| 300A | DISCONNECT OR ISOLATING SWITCH: CONTINUOUS RATING SHOWN |
| CB# SIZE MCP/7A | MAGNETIC-ONLY CIRCUIT BREAKER (MCP), DRAWOUT TYPE, WITH CURRENT RATING |
| FUSE SWITCH | FUSED SWITCH: FUSE AND SWITCH CONTINUOUS RATINGS SHOWN |
| KVA Z% PRI-V TO SEC-V | POWER TRANSFORMER: PRIMARY & SECONDARY VOLTAGES, %Z, SIZE SHOWN |
| KVA Z% PRI-V TO SEC-V | ISOLATION TRANSFORMER PRIMARY & SECONDARY VOLTAGES, %Z, SIZE SHOWN |
| [N] PRI PWDG SEC SWDG | POTENTIAL TRANSFORMER PRIMARY & SECONDARY VOLTAGES & WINDINGS SHOWN. (x) UNITS |
| 250/5 3 | CURRENT TRANSFORMER: RATIO SHOWN (3 INDICATES NO. OF CT'S) |
| SW | METER SWITCH, xS:<br>AS – AMMETER SWITCH<br>VS – VOLTMERE SWITCH<br>FS – FREQUENCY SWITCH |
| DEV SPAN UNIT | METER:<br>A – AMMETER<br>W – WATTMETER<br>KWH – WATT-HOUR METER<br>F – FREQUENCY METER<br>VAR – VAR METER<br>V – VOLTMETER |
| #M # [N] | ANSI C37.2 DEVICE |
| | WINDING CONFIGURATION: PER ANSI DELTA |
| | WYE (GROUNDED) |
| | I/A OR PLC ANALOG INPUT OR OUTPUT |
| 1 FVNR | FULL VOLTAGE, NON-REVERSING MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED |

## GROUNDING SYMBOLS

| | |
|---|---|
| | GROUND ROD, 3/4" x 10'-0", COPPERCLAD (UNLESS OTHERWISE NOTED) |
| | GROUND ROD AND WELL |
| | COMPRESSION TYPE GROUNDING BOND TO MOTOR CASING OR EQUIPMENT |
| GG | BARE COPPER GROUNDING CONDUCTOR – #6 UNLESS OTHERWISE NOTED. |
| G | BURIED BARE COPPER GROUNDING CONDUCTOR – #4/0 UNLESS OTHERWISE NOTED |
| | CADWELD CONNECTION TO GROUND RING |

## GENERAL ABBREVIATIONS

| | |
|---|---|
| AR | ALARM RELAY |
| AS | AMMETER SELECTOR SWITCH |
| A, AMP | AMP(S), AMPERE(S) |
| AC | ALTERNATING CURRENT |
| AFF | ABOVE FINISHED FLOOR |
| AHAP | AS HIGH AS POSSIBLE |
| AIC | AMPS INTERRUPTING CAPACITY, SYMM. |
| AL | ALUMINUM |
| AT | AMPERE TRIP |
| AF | AMPERE FRAME |
| AUTO | AUTOMATIC |
| AUX | AUXILIARY |
| AWG | AMERICAN WIRE GAUGE |
| BC | BARE COPPER CONDUCTOR |
| BKR | BREAKER |
| C | CONDUCTOR/CONTACTOR |
| CAP | CAPACITOR |
| CB | CIRCUIT BREAKER |
| CKT | CIRCUIT |
| CLG | CEILING |
| CR | CONTROL RELAY |
| CND | CONDUIT |
| CONC | CONCRETE |
| CS | CONTROL SWITCH |
| CONT | CONTROL |
| CPT | CONTROL POWER TRANSFORMER |
| CT | CURRENT TRANSFORMER |
| CU | COPPER |
| D | DIAMETER |
| DB | DUCT BANK |
| DC | DIRECT CURRENT |
| DET | DETAIL |
| DIAG | DIAGRAM |
| DPSH | DIFFERENTIAL PRESSURE SWITCH |
| DS | DISCONNECT SWITCH |
| DWG | DRAWING |
| EA | EACH |
| EC | ELECTRICAL CONTRACTOR |
| EF | EXHAUST FAN |
| EL | ELEVATION |
| ELEC | ELECTRIC(AL) |
| EMER | EMERGENCY |
| ENCL | ENCLOSURE/ENCLOSED |
| EP | EXPLOSION PROOF |
| EQUIP | EQUIPMENT |
| EX | EXISTING |
| FCP | FURNISHED WITH EQUIPMENT PANEL |
| FDR | FEEDER |
| FLA | FULL LOAD AMPS |
| FPP | FIBER OPTIC DISTRIBUTION PANEL |
| FS | FLOW SWITCH |
| FU | FUSE |
| FUT | FUTURE |
| FVNR | FULL VOLTAGE NON-REVERSING |
| FVR | FULL VOLTAGE REVERSING |
| GALV | GALVANIZED |
| GEN | GENERATOR |
| GFR | GROUND FAULT RELAY |
| GRD | GROUND |
| GRS | GALVANIZED RIGID STEEL |
| H | HIGH |
| HGT | HEIGHT |
| HH | HANDHOLE |
| HID | HIGH INTENSITY DISCHARGE |
| HP | HORSEPOWER |
| HS | HAND STATION (SWITCH) |
| HVAC | HEATING, VENTILATION, AND AIR CONDITIONING |
| HZ | HERTZ (CYCLES PER SECOND) |
| HOA | HAND/OFF/AUTO |
| HMH | HIGH VOLTAGE MANHOLE |
| ID | INSIDE DIAMETER |
| IMC | INDIVIDUAL MOTOR CONTROLLER |
| INTLK | INTERLOCK |
| INST | INSTANTANEOUS |
| INSTR | INSTRUMENT |
| I/O | INPUT-OUTPUT |
| JB | JUNCTION BOX |
| KV | KILOVOLT |
| KVA | KILOVOLT-AMPERE |
| KVAR | KILOVOLT-AMPERE REACTIVE |
| KW | KILOWATT |
| KWH | KILOWATT-HOUR |
| KAIC | KILO AMPERE INTERRUPTING CURRENT |
| L-O-R | LOCAL-OFF-REMOTE |
| L | LONG |
| LC | LIGHTING CONTACTOR |
| LCS | LOCAL CONTROL STATION |
| LP | LIGHTING PANEL |
| LOS | LOCK-OUT STOP |
| LSL | LEVEL SWITCH LOW |
| LSO | LIMIT SWITCH OPEN |
| LSC | LIMIT SWITCH CLOSED |
| LTG | LIGHTING |
| LV | LOW VOLTAGE |
| LSH | LEVEL SWITCH HIGH |
| M | MOTOR CONTACTOR |
| mA | MILLIAMPERE |
| MAX | MAXIMUM |
| MCB | MAIN CIRCUIT BREAKER |
| MCC | MOTOR CONTROL CENTER |
| MCP | MOTOR CONTROL PANEL/ MOTOR CIRCUIT PROTECTOR |
| MECH | MECHANICAL |
| MFR | MANUFACTURE(R) |
| MH | MANHOLE |
| MIC | MICROPHONE |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| mM | MILLIMETER |
| mV | MILLIVOLT |
| MCM | MILLI CIRCULAR MILLS |
| MOP | MOTOR OPERATOR PANEL |
| MPR | MOTOR PROTECTION RELAY |
| MCB | MAIN CIRCUIT BREAKER |
| MTR | MOTOR |
| MVS | MEDIUM VOLTAGE STARTER |
| N/A | NOT APPLICABLE |
| NC | NORMALLY CLOSED |
| NEUT,N | NEUTRAL |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN |
| NOM | NOMINAL |
| NP | NAMEPLATE |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| OD | OUTSIDE DIAMETER |
| OH | OVERHEAD |
| OL'S | OVERLOADS |
| OT | OIL TIGHT |
| P | POLE |
| PA | PUBLIC ADDRESS |
| PB | PUSHBUTTON, PULLBOX |
| PE | PHOTO ELECTRIC CELL |
| PF | POWER FACTOR |
| PH | PHASE |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PM | PHASE MONITOR |
| PNL | PANEL |
| PP | POWER PANEL |
| PR | PAIR |
| PRI | PRIMARY |
| PS | PRESSURE SWITCH |
| PT | POTENTIAL TRANSFORMER |
| PVC | POLYVINYL CHLORIDE |
| PWR | POWER |
| QSH | SHEAR PIN LIMIT SWITCH |
| RCPT | RECEPTACLE |
| RCT | REACTOR |
| REF | REFERENCE |
| REQD | REQUIRED |
| RMS | ROOT MEAN SQUARE |
| RTD | RESISTANCE TEMPERATURE DETECTOR |
| SCH | SCHEDULE |
| SEC | SECONDARY |
| SEL | SELECTOR |
| SPDT | SINGLE POLE DOUBLE THROW |
| SPEC | SPECIFICATION |
| SPHTR | MOTOR SPACE HEATER |
| SPKR | SPEAKER |
| SS | SPEED SWITCH |
| SUB | SUBSTATION |
| SW | SWITCH |
| SYMM | SYMMETRICAL |
| SYS | SYSTEM |
| SV | SOLENOID OPERATED VALVE |
| SPB | SIGNAL PULL BOX |
| TCB | TERMINAL CABINET |
| TB | TERMINAL BOX |
| TEL | TELEPHONE |
| TEMP | TEMPERATURE |
| TFR | TRANSFORMER |
| TH | THERMOSTAT |
| TJB | TERMINAL JUNCTION BOX |
| TSH | TEMPERATURE SWITCH HIGH |
| TV | TELEVISION |
| TYP | TYPICAL |
| TR | TIMING RELAY |
| TVSS | TRANSIENT VOLTAGE SURGE SUPPRESSOR |
| TSP | TWISTED SHIELDED PAIR |
| UG | UNDERGROUND |
| UH | UNIT HEATER |
| UON | UNLESS OTHERWISE NOTED |
| V | VOLT |
| VA | VOLT AMPERE |
| VAR | VOLT AMPERE REACTIVE |
| VFD | VARIABLE FREQUENCY DRIVE |
| VSH | VIBRATION SWITCH |
| W | WATT, WIRE, WIDE |
| W/ | WITH |
| W/O | WITHOUT |
| WP | WEATHERPROOF |
| WSH | OVERLOAD TORQUE SWITCH |
| ZS | POSITION (LIMIT) SWITCH |
| ZSH | POSITION (LIMIT) SWITCH OPEN |
| ZSL | POSITION (LIMIT) SWITCH CLOSED |

## GENERAL NOTES

1. SCOPE:

A. FURNISH ALL LABOR, MATERIAL, EQUIPMENT AND TOOLS REQUIRED TO COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEM INCLUDING BUT NOT LIMITED TO WIRING, BOXES, LIGHT FIXTURES, PANELS, SWITCHES, RECEPTACLES, DISCONNECTS, STARTERS, AND ALL OTHER WORK INDICATED ON THE DRAWINGS OR AS SPECIFIED HEREIN.

B. OBTAIN ALL PERMITS, INSPECTIONS, AND APPROVALS AS REQUIRED BY THE LOCAL AUTHORITIES HAVING JURISDICTION AND DELIVER CERTIFICATE OF APPROVAL TO THE GENERAL CONTRACTOR. ALL ASSOCIATED FEES SHALL BE PAID BY THE CONTRACTOR.

C. ALL MATERIALS AND EQUIPMENT OF THE ELECTRICAL SYSTEM NECESSARY FOR ITS PROPER OPERATION, BUT NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, SHALL BE FURNISHED AND INSTALLED WITHOUT ADDITIONAL CHARGE.

D. WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2023 NATIONAL ELECTRICAL CODE, THE LATEST STANDARD BUILDING CODE, NFPA 820, AND LOCAL AUTHORITIES HAVING JURISDICTION.

2. ALL SUBSTITUTIONS FOR EQUIPMENT AND MATERIAL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

3. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL OTHER TRADES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACTUAL LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC. AND COORDINATE THE INSTALLATION ACCORDINGLY.

4. UNLESS OTHERWISE NOTED ON THE DRAWINGS, CONTRACTOR SHALL ROUTE 3 #12 IN 3/4" CONDUIT TO ALL 120V, 20A, 1P LOADS (LIGHTS, RECEPTACLES, ETC) AS SHOWN IN THE PANELBOARD SCHEDULES.

5. DO NOT INSTALL CONDUITS ON EXTERIOR OF BUILDING WALLS, UNLESS APPROVED BY THE ENGINEER.

6. ALL EXTERIOR CONNECTIONS TO PANELS, INSTRUMENTS, BOXES, ETC. SHALL USE WATER TIGHT, MYERS TYPE HUBS. ALL CONNECTIONS SHALL ENTER FROM BOTTOM.

8. ALL EXTERIOR AND INTERIOR CONDUIT SHALL BE ALUMINUM RIGID. ALL UNDERGROUND CONDUIT SHALL BE PVC-40 WITH RIGID GALVANIZED STEEL ELBOWS.

9. FLEXIBLE CONDUIT SHALL BE METALLIC AND SHLL NOT EXCEED 3 FEET.

10. CONTRACTOR SHALL LABEL ALL CONDUCTORS AND PROVIDE TERMINATIONS TO CONTROL PANELS, INSTRUMENTS, ETC.

11. THE FOLLOWING SCADA WORK SHALL BE DONE BY PROCESSWORX, LLC AND PAID FOR BY THE CONTRACTOR:
- INCORPORATING NEW TRIDENT SYSTEM INTO EXISTING HMI, INCLUDING BUT NOT LIMITED TO, HMI SCREEN UPGRADES, PLC PROGRAMMING, CHEMICAL CONTROL, FLOW RATES, AND COORDINATING WITH WESTECH.

CONTACT MR. CARY HESTER AT 678-570-4652 FOR COSTS.

## MOTOR AND EQUIPMENT SYMBOLS

| | |
|---|---|
| M | MOTOR CONNECTION |
| | MOTOR STARTER, INDIVIDUAL--NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY |
| | COMBINATION MOTOR STARTER--NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY |
| | UNLESS OTHERWISE NOTED, DISCONNECT SWITCHES ARE HEAVY DUTY, SINGLE THROW, WITH NEMA 4X ENCLOSURE. MOUNT AT 4'-8" TO CENTER UON. |
| | DISCONNECT, NON-FUSED. PROVISION FOR CLASS R FUSES. |
| | FIELD INSTRUMENT CONNECTION |
| | NEMA 4X START/STOP HAND STATION MOUNTED TO HANDRAIL |
| $ | 120V, 20A, 1P TOGGLE SWITCH. MOUNT 48" AFF UNO. |
| | DUPLEX 120V RECEPTACLE, 120V, 20A, 1P. MOUNT 18" AFF UNO.<br>– ALL OUTDOOR RECEPTACLES SHALL BE GFCI, WP<br>– ALL RECEPTACLES ADJACENT TO SINKS OR WATER SHALL BE GFCI |
| $m | 120V MOTOR RATED TOGGLE SWITCH, NEMA 4X SS. |
| J | JUNCTION BOX |

## CIRCUIT AND RACEWAY SYMBOLS

| | |
|---|---|
| | RACEWAY OR WIRING SYSTEM ABOVE FLOOR LEVEL BELOW CEILING, EXPOSED UON. |
| PBD A-1,3,5 | HOME RUN – SEE PANELBOARD SCHEDULE FOR CIRCUIT INFORMATION<br>EXAMPLE: HOME TO PANELBOARD PBD A, CIRCUITS 1, 3, AND 5 |
| | LIGHTING, RECEPTACLE, AND MISCELLANEOUS BRANCH CIRCUITING NOT SPECIFIED IN RACEWAY SCHEDULE: RUNS WITHOUT HATCH LINES SHALL CONTAIN TWO WIRES OF MINIMUM SIZE (#12) REQUIRED BY THE SPECS FOR THAT SYSTEM. OTHER CONDUCTOR QUANTITY SPECIFIED WITH HATCH LINES:<br>NEUTRAL CONDUCTOR (#12), IF USED--HALF STROKE<br>PHASE CONDUCTORS #12, AS APPLICABLE--FULL STROKE<br>#12 MINIMUM EQUIPMENT GROUNDING CONDUCTOR ALWAYS REQUIRED. FOR MINIMUM SIZE PERMITTED REFER TO NEC TABLE 250-95.<br>CONDUIT FILL PER NEC OR MINIMUM SIZE OF 3/4 INCH EXPOSED, 1 INCH ALL OTHER INSTALLATIONS, EXCEPT FLEX – 3/4 INCH. |


ESAD PROJECT #23061

ESAD, LLC
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
PH: 678-469-5196




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REVISION


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phone 770-962-1387 fax # 770-962-8010
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WATER TREATMENT FACILITY PRETREATMENT SYSTEM
FOR THE
CITY OF BALDWIN
HABERSHAM COUNTY, GEORGIA

ELECTRICAL LEGEND, NOTES AND ABBREVIATIONS

SHEET TITLE

| DESIGN BY | DRAWN BY | CHECKED BY |
|---|---|---|
| DMZ | AP | DMZ |

GEORGIA PROFESSIONAL ENGINEER 4/26/24 DAVID M. ZIMMER

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4/19/2023
DATE

20043
JOB NUMBER

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FILE LOCATION

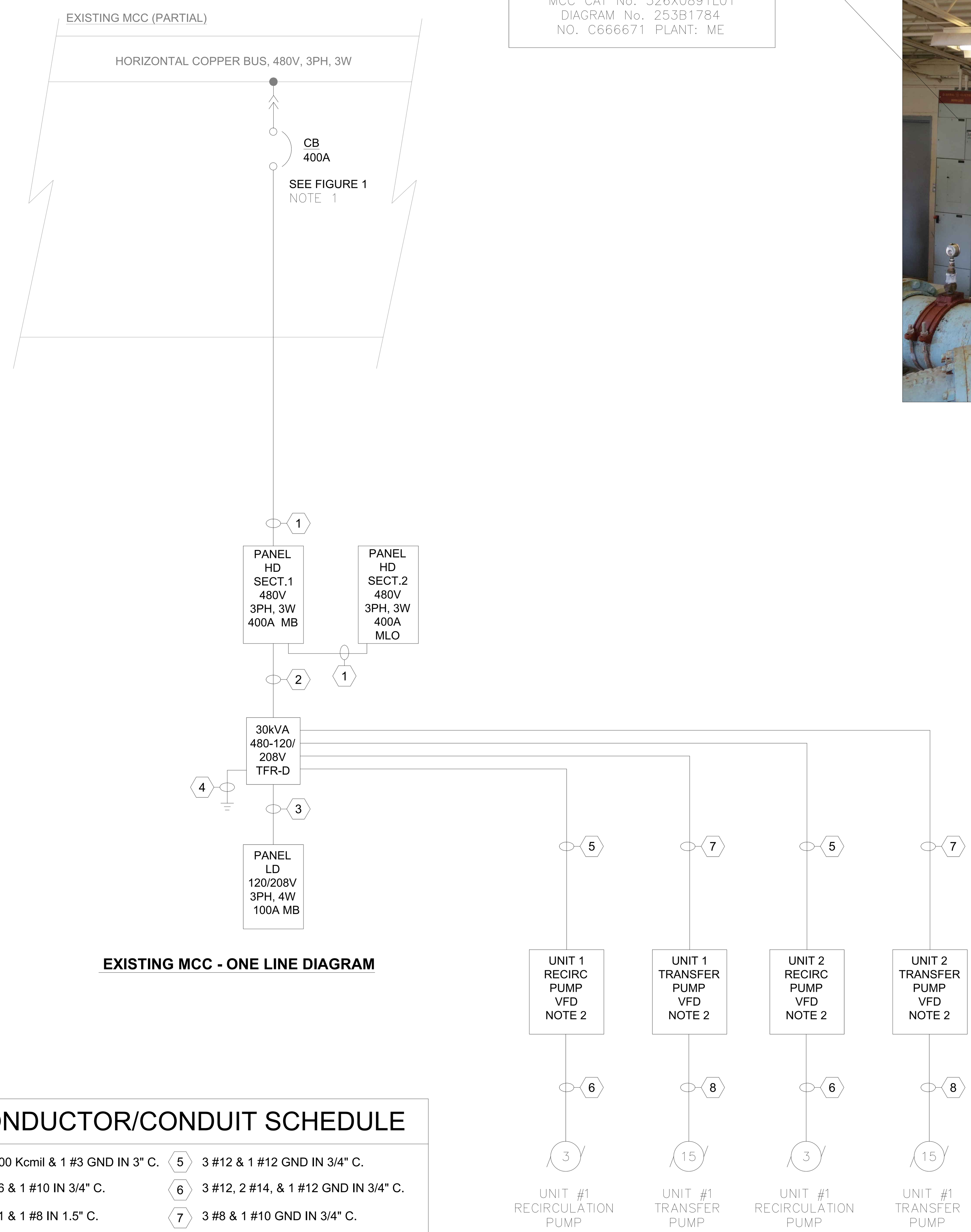
E1

SHEET

PATH & FILE: E:\ESAD, LLC\Projects\23061-EM Baldwin WTP\Drawings\E-1 Legend

GENERAL ELECTRIC 8000 LINE
MOTOR CONTROL CENTER
460V, 3 PHASE, 60 HZ
25 KAIC
MCC CAT No. 526X0891L01
DIAGRAM No. 253B1784
NO. C666671 PLANT: ME

NOTES:
1. CONTRACTOR SHALL INSTALL A NEW 400A, 480V, 3P CIRCUIT BREAKER IN THE EXISTING MOTOR CONTROL CENTER FOR POWER TO NEW PANEL HD LOCATED IN THE NEW BUILDING. NEW BREAKER SHALL INCLUDE NEW BUCKET, STAB, AND ALL OTHER COMPONENTS / MODIFICATIONS TO ALLOW THE NEW BREAKER TO FIT INTO THE EXISTING SPACE. NEW BREAKER SHALL BE OF THE SAME MANUFACTURER AND HAVE THE SAME AIC RATING AS THE EXISTING BREAKERS.
2. VFDs ARE PROVIDED BY WESTECH AND SHALL BE INSTALLED BY THE CONTRACTOR.




EXISTING MCC - ONE LINE DIAGRAM

NOTE 1

FIGURE 1 - EXISTING MCC

## CONDUCTOR/CONDUIT SCHEDULE

| | | | |
|---|---|---|---|
| 1 | 3-500 Kcmil & 1 #3 GND IN 3" C. | 5 | 3 #12 & 1 #12 GND IN 3/4" C. |
| 2 | 3 #6 & 1 #10 IN 3/4" C. | 6 | 3 #12, 2 #14, & 1 #12 GND IN 3/4" C. |
| 3 | 4 #1 & 1 #8 IN 1.5" C. | 7 | 3 #8 & 1 #10 GND IN 3/4" C. |
| 4 | 1 #6 GND IN 3/4" PVC C. | 8 | 3 #10, 2 #14 & 1 #10 GND IN 3/4" C. |

## PANEL HD SECTION 1

VOLTAGE: 480V AMPS: 400 MB MOUNTING: SURFACE
3 PHASE, 3 WIRE TOTAL LOAD: 81.4 KVA AIC: 42,000
NOTES: NEMA 12 / FEED THRU LUGS

| No. | SERVES | LTG | RCPT | MTR | A/C | KITCH | MISC | BRKR TRIP | P | PH A | PH B | PH C | P | BRKR TRIP | MISC | KITCH | A/C | MTR | RCPT | LTG | SERVES | No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | UNIT #1 TRANSFER PUMP VFD (15HP) | | | 5.90 | | | | 40 | 3 | 15.90 | | | 3 | 50 | 10.00 | | | | | | TRANSFORMER TFR-D 30kVA | 2 |
| 3 | | | | 5.90 | | | | | | | 15.90 | | | | 10.00 | | | | | | | 4 |
| 5 | | | | 5.90 | | | | | | | | 15.90 | | | 10.00 | | | | | | | 6 |
| 7 | UNIT #1 RECIRCULATION PUMP VFD (3HP) | | | 1.33 | | | | 15 | 3 | 1.33 | | | 3 | 15 | | | | | | | SPARE | 8 |
| 9 | | | | 1.33 | | | | | | | 1.33 | | | | | | | | | | | 10 |
| 11 | | | | 1.33 | | | | | | | | 1.33 | | | | | | | | | | 12 |
| 13 | UNIT #2 TRANSFER PUMP VFD (15HP) | | | 5.90 | | | | 40 | 3 | 5.90 | | | 3 | 20 | | | | | | | SPARE | 14 |
| 15 | | | | 5.90 | | | | | | | 5.90 | | | | | | | | | | | 16 |
| 17 | | | | 5.90 | | | | | | | | 5.90 | | | | | | | | | | 18 |
| 19 | UNIT #2 RECIRCULATION PUMP VFD (3HP) | | | 1.33 | | | | 15 | 3 | 1.33 | | | 3 | 20 | | | | | | | SPARE | 20 |
| 21 | | | | 1.33 | | | | | | | 1.33 | | | | | | | | | | | 22 |
| 23 | | | | 1.33 | | | | | | | | 1.33 | | | | | | | | | | 24 |
| 25 | EXHAUST FAN #1 MS-EF1 (3HP) | | | 1.33 | | | | 15 | 3 | 1.33 | | | | | | | | | | | SPACE | 26 |
| 27 | | | | 1.33 | | | | | | | 1.33 | | | | | | | | | | SPACE | 28 |
| 29 | | | | 1.33 | | | | | | | | 1.33 | | | | | | | | | SPACE | 30 |
| 31 | EXHAUST FAN #2 MS-EF2 (3HP) | | | 1.33 | | | | 15 | 3 | 1.33 | | | | | | | | | | | SPACE | 32 |
| 33 | | | | 1.33 | | | | | | | 1.33 | | | | | | | | | | SPACE | 34 |
| 35 | | | | 1.33 | | | | | | | | 1.33 | | | | | | | | | SPACE | 36 |
| 37 | SPACE | | | | | | | | | 0.00 | | | | | | | | | | | SPACE | 38 |
| 39 | SPACE | | | | | | | | | | 0.00 | | | | | | | | | | SPACE | 40 |
| 41 | SPACE | | | | | | | | | | | 0.00 | | | | | | | | | SPACE | 42 |
| | PRVOIDE WITH INTEGAL SURGE PROTECTION DEVICE | | | | | | | | | 27.12 | 27.12 | 27.12 | | | 30.00 | 0.00 | 0.00 | 51.36 | 0.00 | 0.00 | CONNECTED KVA 81.36 | |

NOTES:
1. PROVIDE WITH INTEGRAL SURGE PROTECTION DEVICE.
2. PROVIDE WITH FEED THRU LUGS.

## PANEL HD SECTION 2

VOLTAGE: 480V AMPS: 400 MLO MOUNTING: SURFACE
3 PHASE, 3 WIRE TOTAL LOAD: 79.9 KVA AIC: 42,000
NOTES: NEMA 12

| No. | SERVES | LTG | RCPT | MTR | A/C | KITCH | MISC | BRKR TRIP | P | PH A | PH B | PH C | P | BRKR TRIP | MISC | KITCH | A/C | MTR | RCPT | LTG | SERVES | No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 43 | UNIT HEATER #1 10 KW | | | | | | 3.33 | 20 | 3 | 6.66 | | | 3 | 20 | 3.33 | | | | | | UNIT HEATER #5 10 KW | 44 |
| 45 | | | | | | | 3.33 | | | | 6.66 | | | | 3.33 | | | | | | | 46 |
| 47 | | | | | | | 3.33 | | | | | 6.66 | | | 3.33 | | | | | | | 48 |
| 49 | UNIT HEATER #2 10 KW | | | | | | 3.33 | 20 | 3 | 6.66 | | | 3 | 20 | 3.33 | | | | | | UNIT HEATER #6 10 KW | 50 |
| 51 | | | | | | | 3.33 | | | | 6.66 | | | | 3.33 | | | | | | | 52 |
| 53 | | | | | | | 3.33 | | | | | 6.66 | | | 3.33 | | | | | | | 54 |
| 55 | UNIT HEATER #3 10 KW | | | | | | 3.33 | 20 | 3 | 6.66 | | | 3 | 20 | 3.33 | | | | | | UNIT HEATER #7 10 KW | 56 |
| 57 | | | | | | | 3.33 | | | | 6.66 | | | | 3.33 | | | | | | | 58 |
| 59 | | | | | | | 3.33 | | | | | 6.66 | | | 3.33 | | | | | | | 60 |
| 61 | UNIT HEATER #4 10 KW | | | | | | 3.33 | 20 | 3 | 6.66 | | | 3 | 20 | 3.33 | | | | | | UNIT HEATER #81 10 KW | 62 |
| 63 | | | | | | | 3.33 | | | | 6.66 | | | | 3.33 | | | | | | | 64 |
| 65 | | | | | | | 3.33 | | | | | 6.66 | | | 3.33 | | | | | | | 66 |
| 67 | SPACE | | | | | | | | | 0.00 | | | | | | | | | | | SPACE | 68 |
| 69 | | | | | | | | | | | 0.00 | | | | | | | | | | SPACE | 70 |
| 71 | | | | | | | | | | | | 0.00 | | | | | | | | | SPACE | 72 |
| 73 | SPACE | | | | | | | | | 0.00 | | | | | | | | | | | SPACE | 74 |
| 75 | | | | | | | | | | | 0.00 | | | | | | | | | | SPACE | 76 |
| 77 | | | | | | | | | | | | 0.00 | | | | | | | | | SPACE | 78 |
| 79 | SPACE | | | | | | | | | 0.00 | | | | | | | | | | | SPACE | 80 |
| 81 | SPACE | | | | | | | | | | 0.00 | | | | | | | | | | SPACE | 82 |
| 83 | SPACE | | | | | | | | | | | 0.00 | | | | | | | | | SPACE | 84 |
| | | | | | | | | | | 26.64 | 26.64 | 26.64 | | | 79.92 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | CONNECTED KVA 79.92 | |

## PANEL LD

VOLTAGE: 208Y/120V AMPS: 100 MB MOUNTING: SURFACE
3 PHASE, 4 WIRE TOTAL LOAD: 16.2 KVA AIC: 10,000
NOTES: NEMA 12

| No. | SERVES | LTG | RCPT | MTR | A/C | KITCH | MISC | BRKR TRIP | P | PH A | PH B | PH C | P | BRKR TRIP | MISC | KITCH | A/C | MTR | RCPT | LTG | SERVES | No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | INT. LIGHTS | 1.00 | | | | | | 20 | 1 | 1.50 | | | 1 | 20 | 0.50 | | | | | | UNIT #1 CONTROL PANEL | 2 |
| 3 | INT LIGHTS | 1.00 | | | | | | 20 | 1 | | 1.50 | | 1 | 20 | 0.50 | | | | | | UNITE #2 CONTROL PANEL | 4 |
| NOTE 1 5 | RECEPT (7) | | 1.26 | | | | | 20 | 1 | | | 1.76 | 1 | 20 | 0.50 | | | | | | MASTER CONTROL PANEL | 6 |
| NOTE 1 7 | RECEPT (5) | | 0.90 | | | | | 20 | 1 | 1.40 | | | 1 | 20 | 0.50 | | | | | | UNIT #1 TURBIDIMETER | 8 |
| 9 | POLY RECEPT. | | | | | | 1.00 | 20 | 1 | | 2.00 | | 1 | 20 | 1.00 | | | | | | UNIT #1 POLY UNIT | 10 |
| 11 | EXT. LIGHTS (14) | 1.40 | | | | | | 20 | 1 | | | 1.90 | 1 | 20 | 0.50 | | | | | | UNIT #2 TURBIDIMETER | 12 |
| 13 | WATER HEATER | | | | | | 2.50 | 30 | 2 | 3.50 | | | 1 | 20 | 1.00 | | | | | | UNIT #2 POLY UNIT | 14 |
| 15 | | | | | | | 2.50 | | | | 2.50 | | 1 | 20 | | | | | | | SPARE | 16 |
| 17 | LIGHTING CONTACTOR | | | | | | 0.10 | 20 | 1 | | | 0.10 | 1 | 20 | | | | | | | SPARE | 18 |
| 19 | SPARE | | | | | | | 20 | 1 | 0.00 | | | 1 | 20 | | | | | | | SPARE | 20 |
| 21 | SPARE | | | | | | | 20 | 1 | | | | 1 | 20 | | | | | | | SPARE | 22 |
| 23 | SPARE | | | | | | | 20 | 1 | | | 0.00 | 1 | 20 | | | | | | | SPARE | 24 |
| 25 | SPARE | | | | | | | 20 | 1 | 0.00 | | | 1 | 20 | | | | | | | SPARE | 26 |
| 27 | SPARE | | | | | | | 20 | 1 | | | | 1 | 20 | | | | | | | SPARE | 28 |
| 29 | SPARE | | | | | | | 20 | 1 | | | 0.00 | 1 | 20 | | | | | | | SPARE | 30 |
| 31 | SPARE | | | | | | | 20 | 1 | 0.00 | | | 1 | 20 | | | | | | | SPARE | 32 |
| 33 | SPARE | | | | | | | 20 | 1 | | 0.00 | | 1 | 20 | | | | | | | SPARE | 34 |
| 35 | SPARE | | | | | | | 20 | 1 | | | 0.00 | 1 | 20 | | | | | | | SPARE | 36 |
| 37 | SPARE | | | | | | | 20 | 1 | 0.00 | | | 1 | 20 | | | | | | | SPACE | 38 |
| 39 | SPARE | | | | | | | 20 | 1 | | 0.00 | | 1 | 20 | | | | | | | SPACE | 40 |
| 41 | SPARE | | | | | | | 20 | 1 | | | 0.00 | 1 | 20 | | | | | | | SPACE | 42 |
| | | | | | | | | | | 6.40 | 6.00 | 3.76 | | | 10.60 | 0.00 | 0.00 | 0.00 | 2.16 | 3.40 | CONNECTED KVA 16.16 | |

NOTES:
1. PROVIDE A GROUND FAULT CIRCUIT BREAKER RATED FOR RECEPTACLES.

ESAD PROJECT #23061


ESAD, LLC
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
PH: 678-469-5196




| DATE | NO. | DESCRIPTION |
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phone 770-962-1387 fax # 770-962-8010
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WATER TREATMENT FACILITY
PRETREATMENT SYSTEM
FOR THE
CITY OF BALDWIN
HABERSHAM COUNTY, GEORGIA

ONE LINE DIAGRAM
SHEET TITLE

DESIGN BY DMZ
DRAWN BY AP
CHECKED BY DMZ

GEORGIA REGISTERED No. 38080 PROFESSIONAL 4/26/24 ENGINEER DAVID M. ZIMMER

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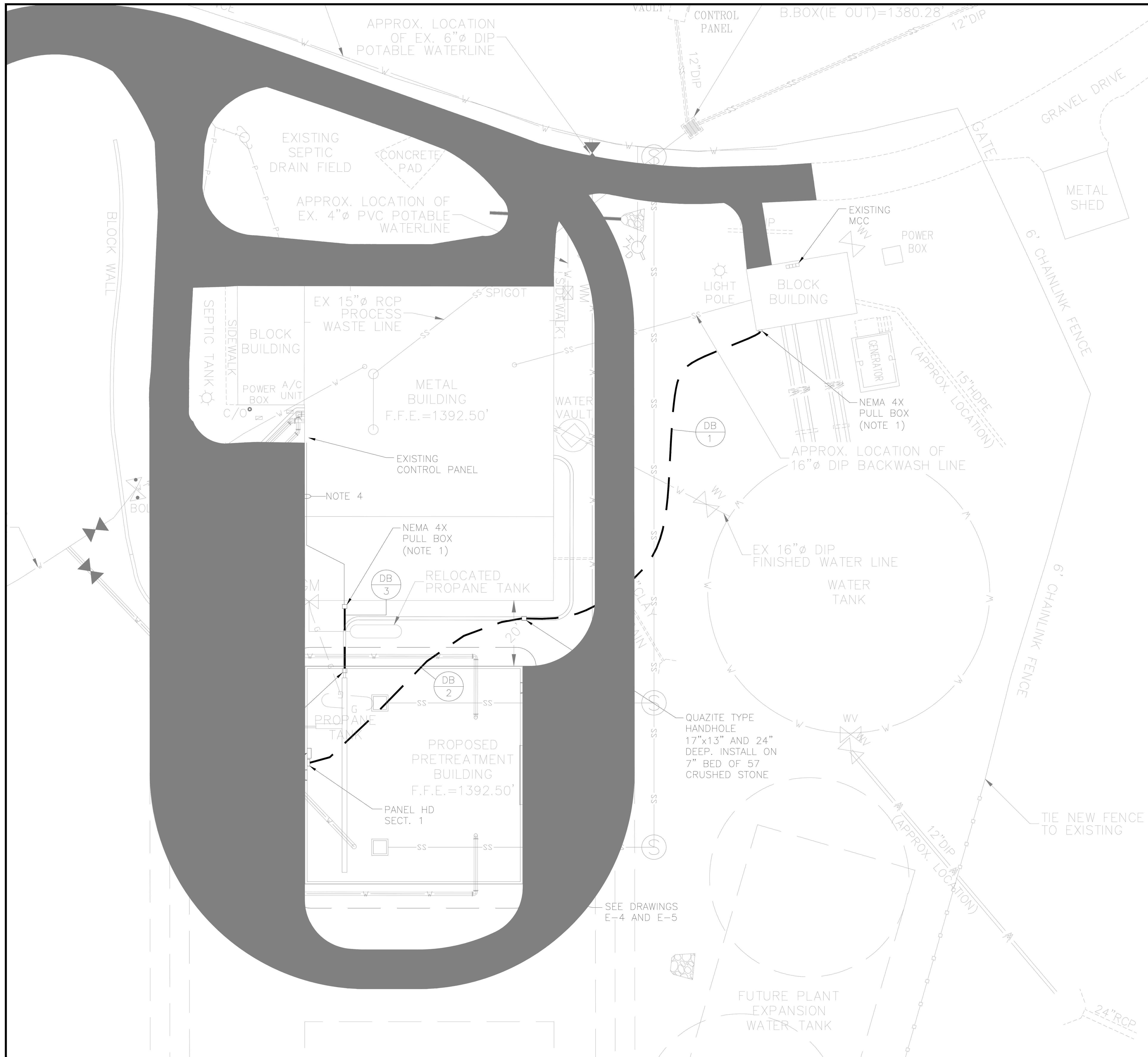
SHEET
E2




NOTES:

1. INSTALL NEMA 4X SS PULL BOX ON EXTERIOR WALL FOR TRANSITION OF DUCTBANK CONDUITS INTO BUILDING. MOUNT ON EXTERIOR WALL 36" ABOVE GRADE.
2. INSTALL NEMA 4X SS PULL BOX ON INTERIOR WALL FOR TRANSITION OF DUCTBANK CONDUITS INTO BUILDING. MOUNT ON INTERIOR WALL 36" ABOVE FLOOR.
3. ALL DUCTBANKS SHALL BE CONCRETE ENCASED REINFORCE UNDER ROAD WAYS.
4. ROUTE A CAT 6E ETHERNET CABLE IN 1"C. TO NEW CONTROL PANEL IN NEW FILTER BUILDING.

GRAPHIC SCALE

0 10 20 40 60

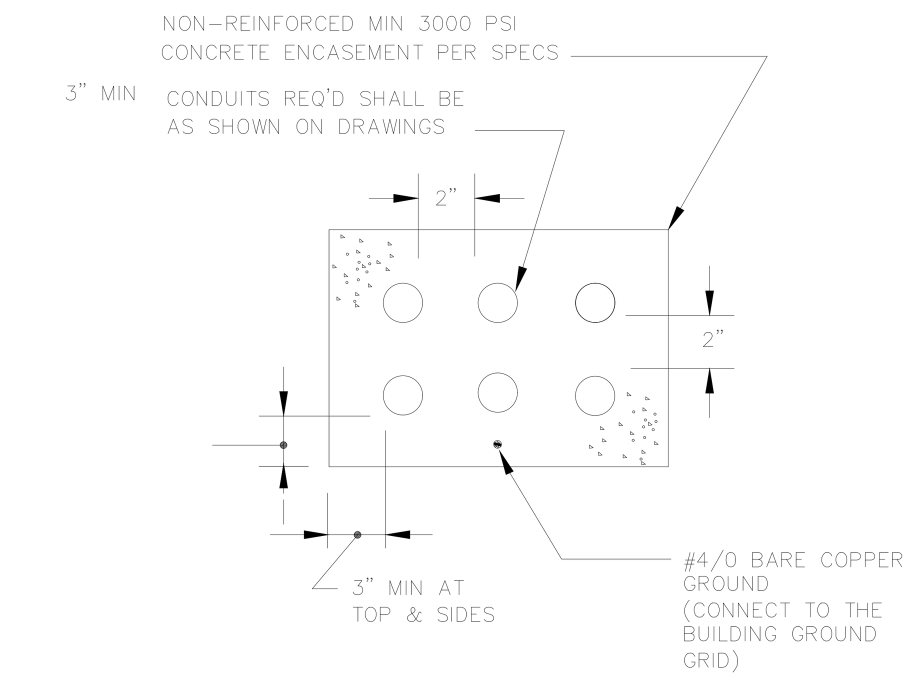
(IN FEET)

**ELECTRICAL SITE PLAN**
SCALE: 1" = 20'-0"

① ②
DUCT BANK 1
1 – 3" PVC C. (480V POWER)
2 – 3" PVC C. (SPARE)

① ②
DUCT BANK 2
1 – 3" PVC C. (480V POWER)
2 – 3" PVC C. (SPARE)

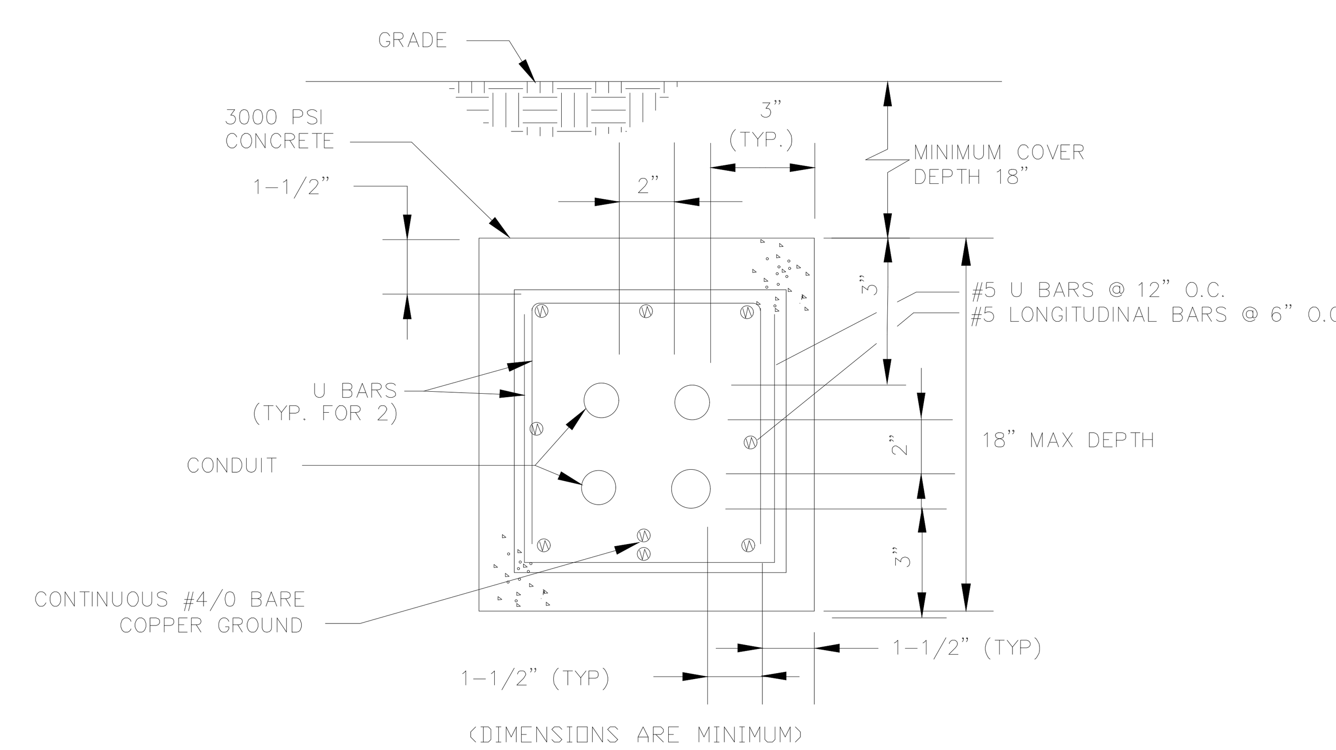
① ② ③ ④
DUCT BANK 3
1 – 2" RGS C. (CAT 6E ETHERNET)
2 – 2" PVC C. (SPARE)
3 – 2" PVC C. (SPARE)
4 – 2" PVC C. (SPARE)




NON-REINFORCED DUCT BANK SECTION

DETAIL A/E3

SCALE: NONE




(DIMENSIONS ARE MINIMUM)

NOTES:
1. INSTALL IN VERTICAL AND HORIZONTAL PLANES, AT TRANSITION, PROVIDE 24" X 24" BENT BARS FOR SPLICING.
2. PROVIDE REINFORCED DUCT BANK TO 2-FEET BEYOND STRUCTURE, BUILDING, OR ROAD.
3. PROVIDE REINFORCED DUCTS UNDER ROADS, BUILDINGS, AND STRUCTURES. AT BUILDINGS, INSTALL ABOVE OR BELOW THICKENED FOOTING AS REQUIRED. DO NOT PASS THROUGH THICKENED FOOTING. DUCTBANKS AT BUILDINGS AND STRUCTURES SHALL NOT BE LOW POINTS
4. SLOPE DUCTBANKS DOWN AND AWAY FROM BUILDING AND STRUCTURES.54. SPLICE LONGITUDINAL BARS 24", MINIMUM, WHERE REQUIRED.

REINFORCED DUCT BANK SECTION

DETAIL B/E3

SCALE: NONE


ESAD PROJECT #23061
ESAD, LLC
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
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**WATER TREATMENT FACILITY PRETREATMENT SYSTEM**
FOR THE
**CITY OF BALDWIN**
**HABERSHAM COUNTY, GEORGIA**

**ELECTRICAL SITE PLAN**
SHEET TITLE

| DESIGN BY | DRAWN BY | CHECKED BY |
|---|---|---|
| DMZ | AP | DMZ |

GEORGIA PROFESSIONAL ENGINEER DAVID M. ZIMMER 4/26/24

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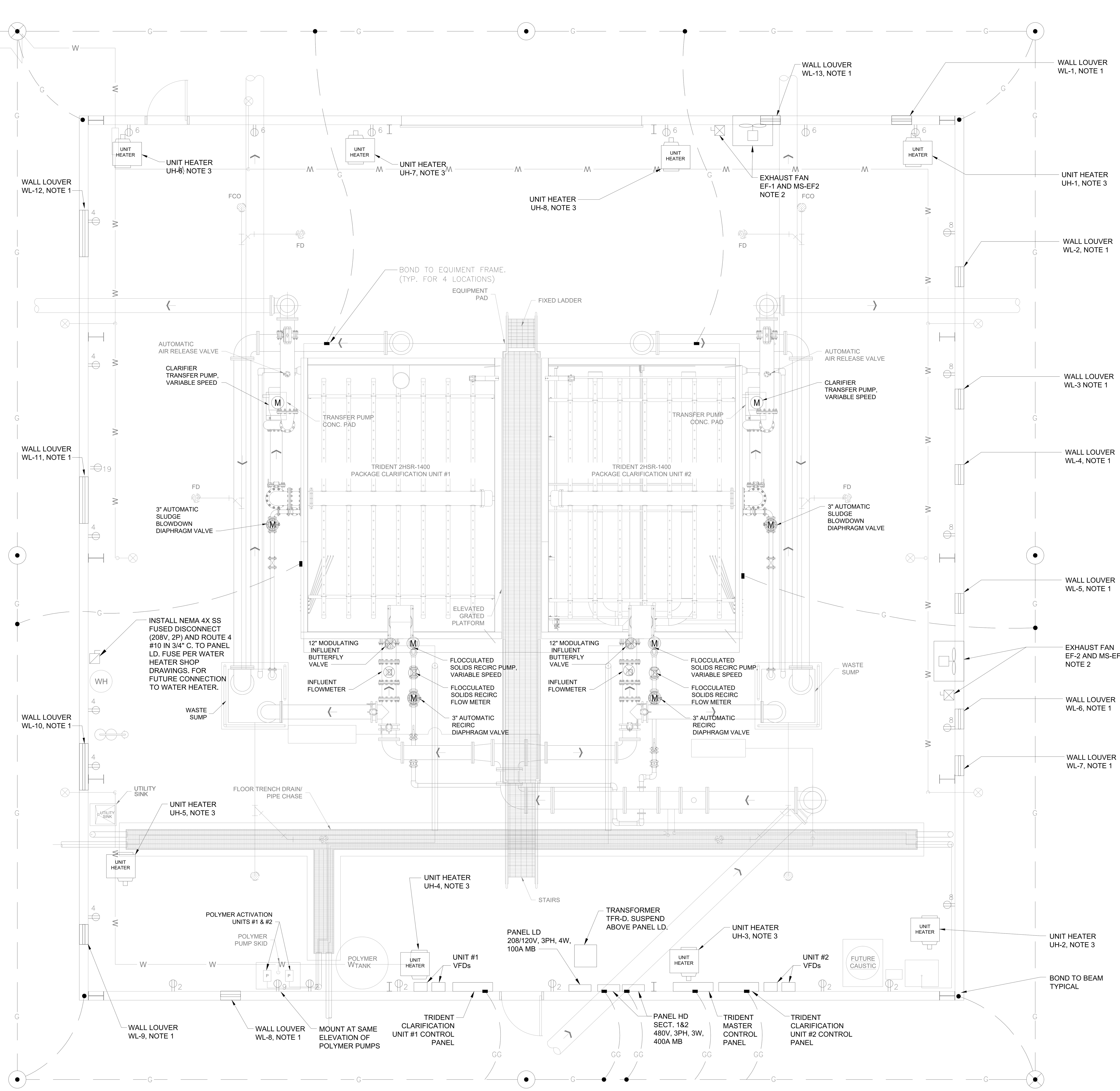
SHEET
E3




**BUILDING POWER AND GROUNDING** PLAN VIEW
SCALE: 1/4" = 1'-0"

NOTES:

1. PROVIDE A 120V, 1P, 1/8HP, NEMA 12, SQUARE D MOTOR TOGGLE SWITCH FOR EACH LOUVER. ROUTE 3 #12 IN 3/4" C. FROM LOUVER, TO TOGGLE SWITCH, AND THEN TO MOTOR STARTER MS-EF1 OR MS-EF2. FIELD COORDINATE WHICH STARTER WITH HVAC CONTRACTOR.
2. WALL MOUNTED EXHAUST FAN. CONTRACTOR SHALL INSTALL A COMBINATION MOTOR STARTER / DISCONNECT FOR THE 3HP, 480V, 3P EXHAUST FAN. SEE WIRING DIAGRAM ON 1-E.3 FOR REQUIREMENTS. ROUTE 3 #12 & 1 #12 GND IN 3/4" C. FROM MOTOR STARTER TO PANEL HD. INTERLOCK WITH LOUVERS.
3. ELECTRIC UNIT HEATER. PROVIDE 480V, 3P, 30A, NEMA 4X DISCONNECT UNDER HEATER. MOUNT APPROXIMATELY 5'-0" AFF AND LABEL. ROUTE 3 #12 & 1 #12 GND IN 3/4" CONDUIT FROM HEATER TO SWITCH AND THEN TO PANEL HD.
4. ALL CONDUIT SHALL BE RIGID ALUMINUM.
5. ALL RECEPTACLES SHOWN SHALL BE WP, 120V, DUPLEX, 20A WITH ALUMINUM PLATES. MOUNT 18" A.F.F.
6. ALL FREESTANDING EQUIPMENT (TRANSFORMERS) SHALL BE INSTALLED ON A 4" HOUSE KEEPING PAD.
7. CONTRACTOR SHALL ROUTE AS MUCH CONDUIT IN FLOOR. COORDINATE EXACT STUB UP LOCATIONS WITH HUBER SHOP DRAWINGS.
8. ALL CONDUIT SHALL ENTER ENCLOSURES (PANEL HD, PANEL LD, CONTROL PANELS, ETC. FROM BOTTOM OR SIDE. DO NOT ENTER FROM TOP.
9. CONTRACTOR SHALL NOTE THAT THE TRIDENT EQUIPMENT LOCATIONS ARE APPROXIMATE. FOR EXACT LOCATIONS, REFER TO TRIDENT SHOP DRAWINGS.
10. CONTRACTOR SHALL ROUTE 2 #12 & 1 #12 GND IN 3/4" C. TO ALL 120V, 1P, 20A LOADS INCLUDING, BUT NOT LIMITED TO, LIGHTS, UNIT HEATERS, SWITCHES, AND RECEPTACLES.
11. CONTRACTOR SHALL REFER TO WESTECH'S SHOP DRAWINGS FOR THE EXACT LOCATION OF ALL FIELD MOUNTED EQUIPMENT. THE LOCATIONS SHOWN ARE APPROXIMATE AND WILL DEVIATE FROM THE SHOP DRAWINGS.

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WATER TREATMENT FACILITY PRETREATMENT SYSTEM
FOR THE
CITY OF BALDWIN
HABERSHAM COUNTY, GEORGIA

BUILDING POWER AND GROUNDING

SHEET TITLE

| DESIGN BY | DRAWN BY | CHECKED BY |
|---|---|---|
| DMZ | AP | DMZ |

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JOB NUMBER
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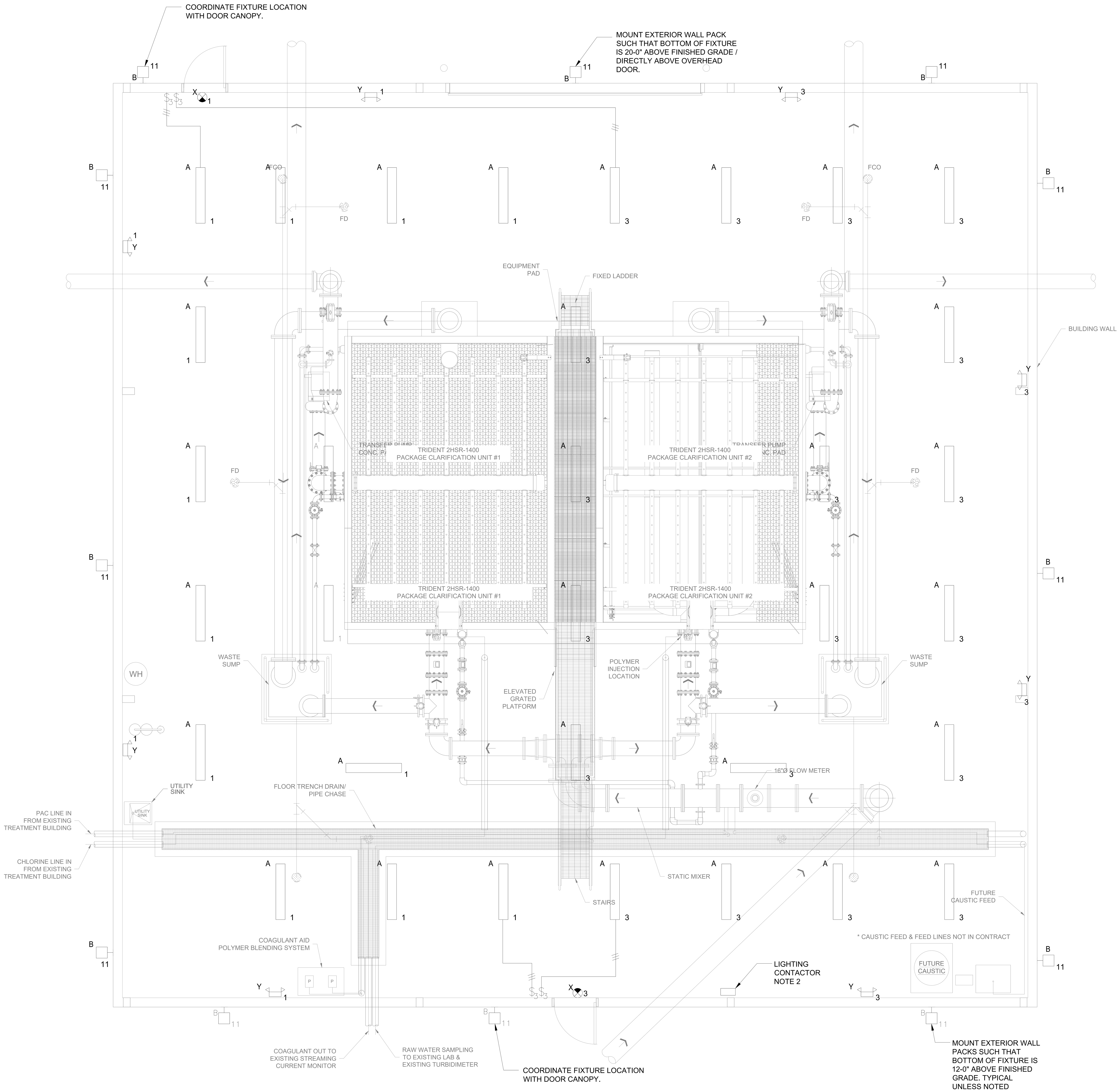
PATH & FILE: E:\ESAD, LLC\Projects\2306\-EM Baldwin WTP\Drawings\E-4 Filter Unit Building Plan_Power and Grounding

ESAD PROJECT #23061
ESAD, LLC
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
PH: 678-469-5196




**BUILDING LIGHTING** PLAN VIEW
SCALE: 1/4" = 1'-0"

NOTES:

1. ALL CONDUIT SHALL BE RIGID ALUMINUM.
2. PROVIDE ASCO 918 LIGHTING CONTACTOR WITH 4 - 20A, 1 POLES FOR EXTERIOR LIGHTS, NEMA 4X ENCLOSURE WITH H-O-A SWITCH, AND REMOTE PHOTOCELL. ROUTE 2 #14 IN 3/4" C. BETWEEN PHOTOCELL AND PANEL FOR AUTO CONTROL. ROUTE EXTERIOR LIGHTING CIRCUITS (LD-11) THROUGH CONTACTORS. LOCATE PHOTOCELL ON EXTERIOR WALL FACING NORTH.
3. THE 1'x4' LIGHT FIXTURES TYPE "A" SHALL BE MOUNTED APPROXIMATELY 15'-0" OFF THE FLOOR. FIXTURES SHALL BE MOUNTED AT THE SAME HEIGHT. FIELD LOCATE LIGHTS SUCH THAT THEY ARE NOT LOCATED ABOVE EQUIPMENT.
4. CONTRACTOR SHALL ROUTE AS MUCH CONDUIT IN FLOOR. COORDINATE EXACT STUB UP LOCATIONS WITH HUBER SHOP DRAWINGS.
5. DO NOT ROUTE CONDUIT EXPOSED ON WALL. DO NOT USE FLEX FOR CONNECTION TO FIXTURES..
6. CONTRACTOR SHALL ROUTE 2 #12 & 1 #12 GND IN 3/4" C. TO ALL 120V, 1P, 20A LOADS INCLUDING, BUT NOT LIMITED TO, LIGHTS, SWITCHES, AND RECEPTACLES.
7. SUSPEND TYPE A FIXTURES FROM CEILING SUCH THAT BOTTOM OF FIXTURE IS 14' -0" ABOVE FINISHED GRADE.

LIGHTING FIXTURE SCHEDULE

| | SYMBOL | DESCRIPTION | MANUFACTURER | MOUNTING | VOLT/PHASE | LAMP |
|---|---|---|---|---|---|---|
| | | 1'x4' LED, WET LOCATION WITH CORROSION RESISTANCE, FIBERGLASS HOUSING | LITHONIA CAT#FEM L48 6000LM IMAFL MD MVOLT GZ10 40K 80CRI STAINLESS STEEL LATCHES | CEILING | 120V/1PH | LED / INCLUDED |
| | | LED WALL PACK. DARK BRONZE LOCATED OUTDOORS (250W EQUIVALENT) | LITHONIA CAT #TWX2 54W/6950 LUMENS LED ALO 40K MVOLT DDBTXD (NO PHOTOCELL) | WALL | 120V/1PH | LED / INCLUDED |
| | | LED EXIT SIGN WITH INTEGRAL BATTERY PACK | LITHONIA CAT# ECR LED M6-120V | WALL OR CEILING | 120V/1PH | INCLUDED |
| Y | | EMERGENCY LIGHT WITH TWO (2) 5.4W LAMPS | LITHONIA CAT# ELM2-120V | WALL | 120V/1PH | INCLUDED |

ESAD PROJECT #23061


ESAD, LLC
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
PH: 678-469-5196

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WATER TREATMENT FACILITY PRETREATMENT SYSTEM
FOR THE
CITY OF BALDWIN
HABERSHAM COUNTY, GEORGIA

BUILDING LIGHTING
SHEET TITLE

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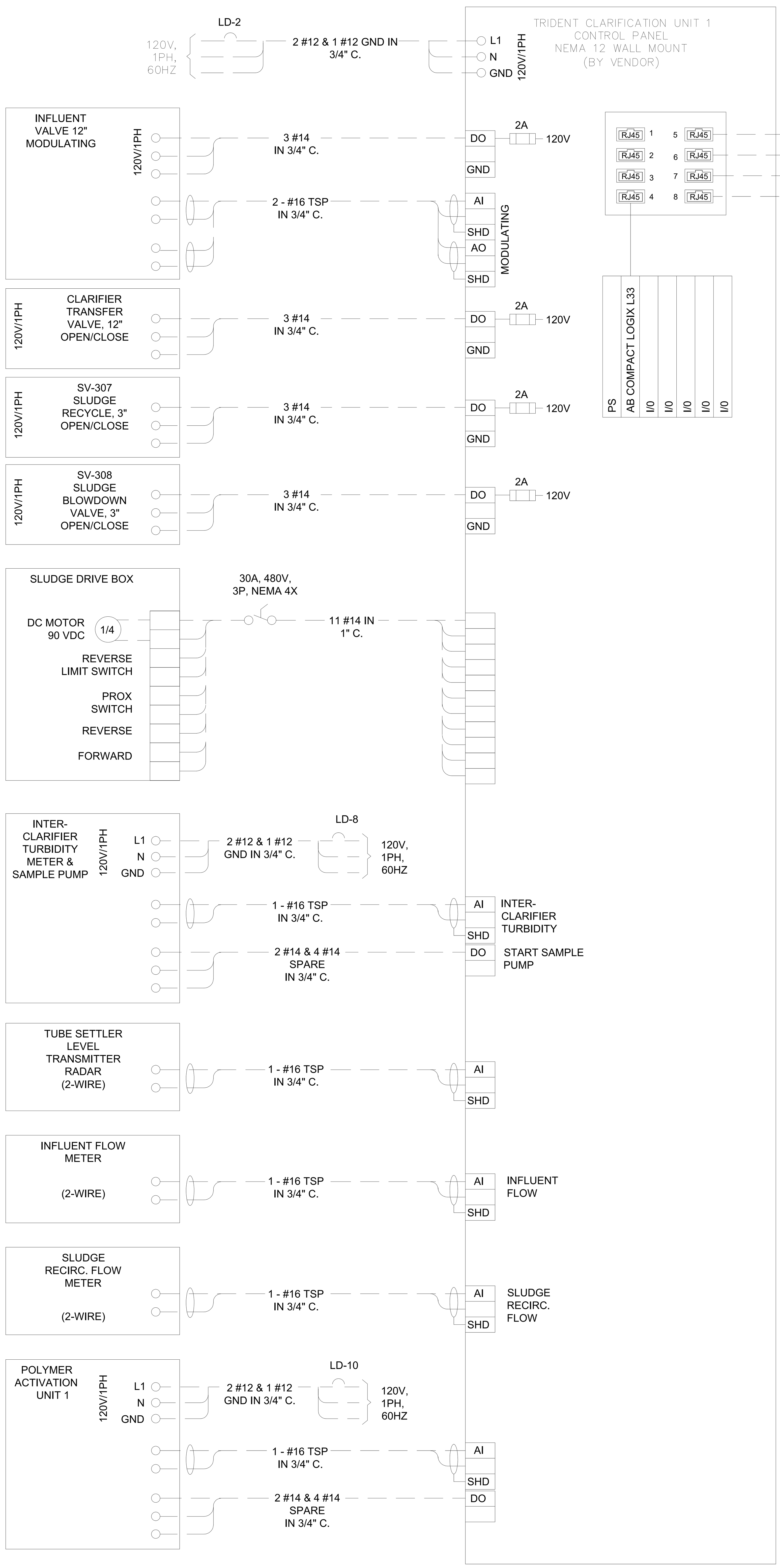
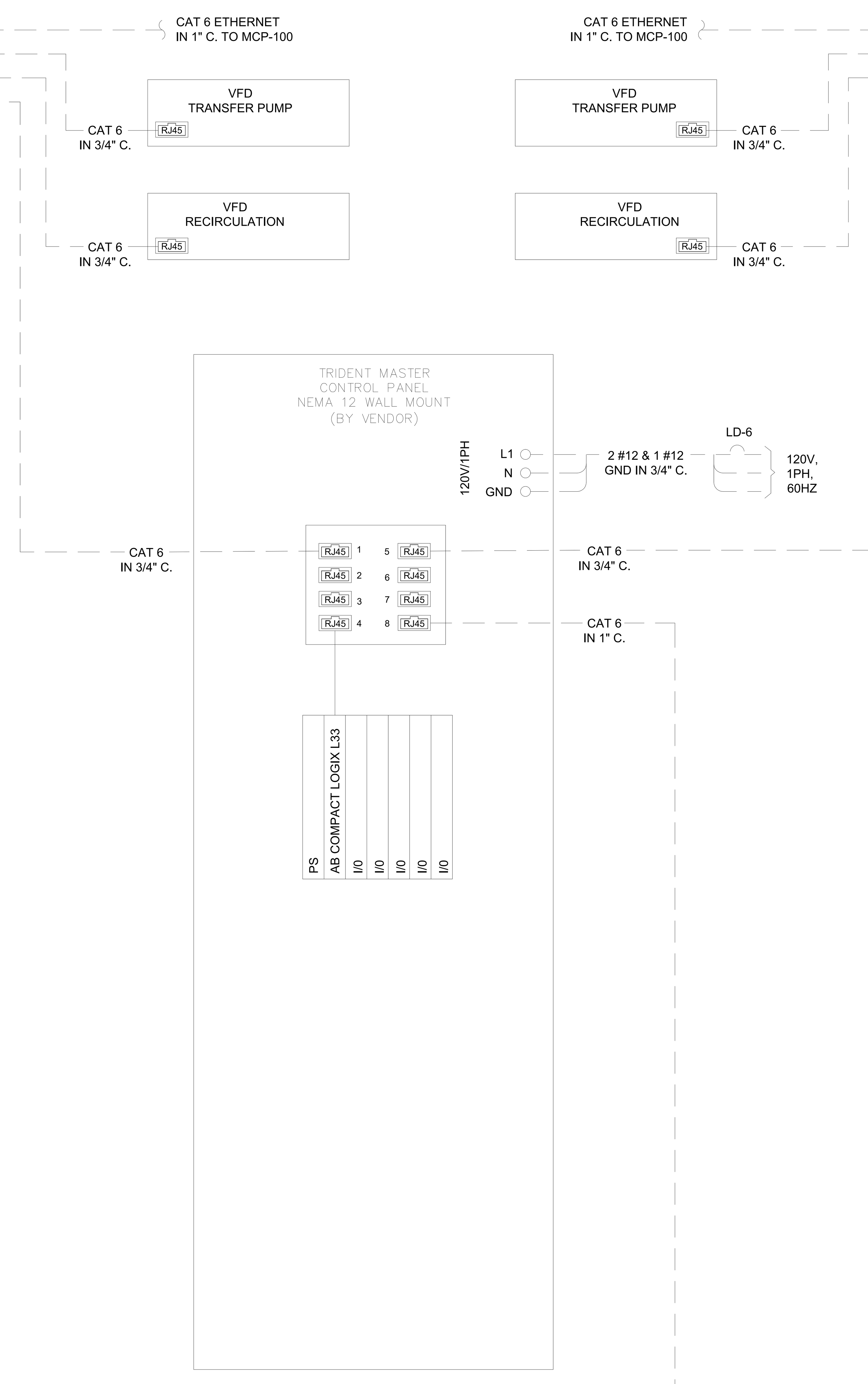


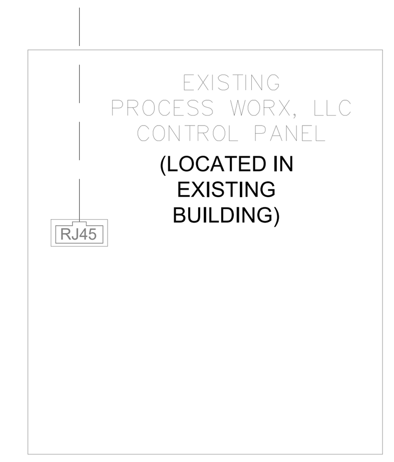

TRIDENT HSR CLARIFICATION UNIT #1

SCHEMATIC

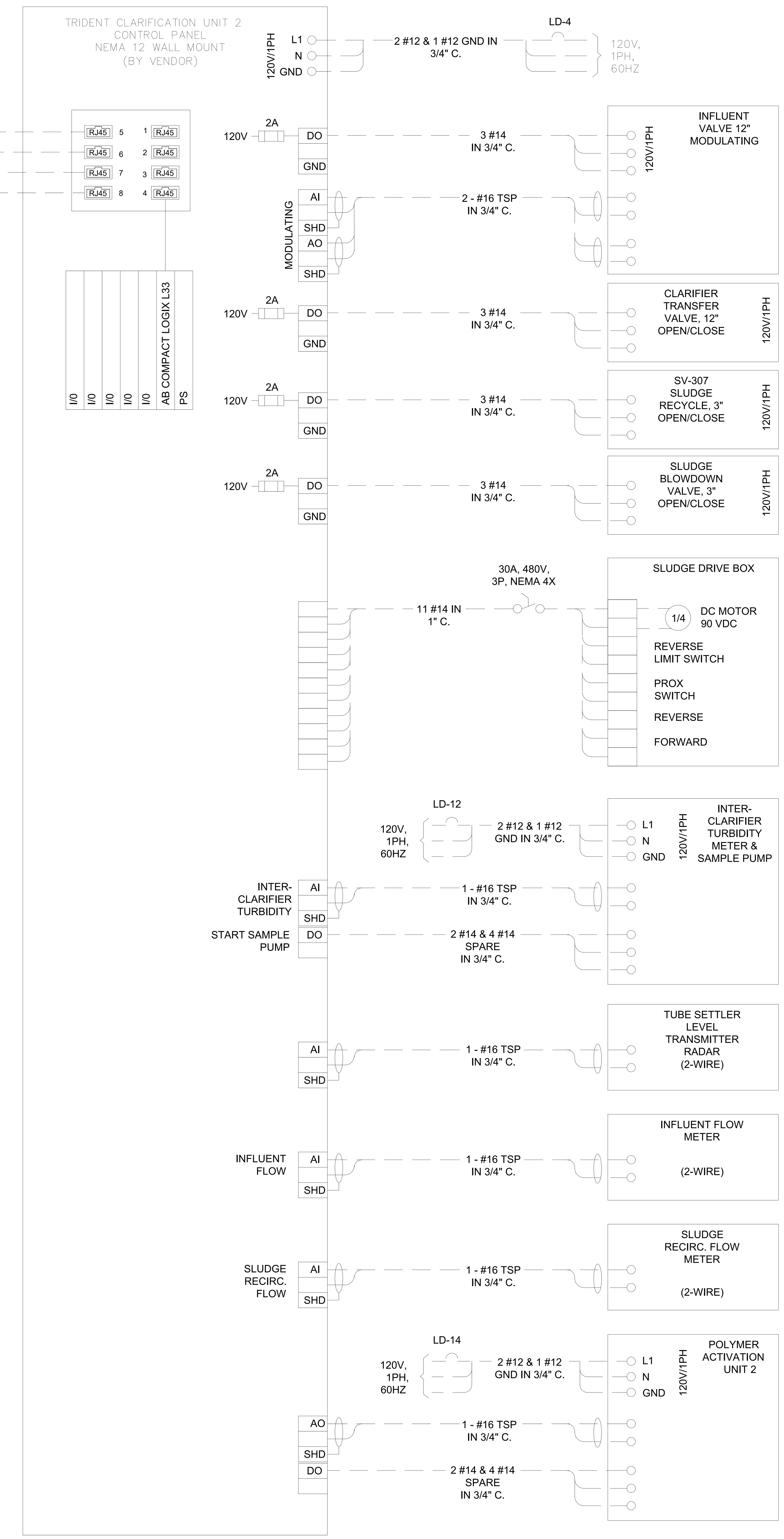



TRIDENT HSR MASTER CONTROL PANEL

SCHEMATIC




NOTES:
1. THE CONTRACTOR IS RESPONSIBLE FOR ALL INTERCONNECTING FIELD WIRING & CONDUIT AS SHOWN ON THE WESTECH SHOP DRAWINGS. SEE VENDOR SHOP DRAWINGS PRIOR TO INSTALLING CONDUIT AND CABLES.
2. THE CONTRACTOR SHALL PROVIDE WIRE LABELS ON EACH END OF THE CONTROL WIRES. WIRE LABELS SHALL BE BASED ON TERMINAL BLOCKS AS SHOWN ON WESTECH's SHOP DRAWINGS.
3. #14 CONTROL WIRING SHALL BE RED PER SPECIFICATIONS.
4. CONTRACTOR SHALL MOUNT ALL CONTROL PANEL AND TERMINATE ALL WIRES.




TRIDENT HSR CLARIFICATION UNIT #2

SCHEMATIC

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885 WOODSTOCK ROAD
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WATER TREATMENT FACILITY PRETREATMENT SYSTEM
FOR THE
CITY OF BALDWIN
HABERSHAM COUNTY, GEORGIA

SCHEMATICS

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GEORGIA PROFESSIONAL ENGINEER DAVID M. ZIMMER 4/26/24

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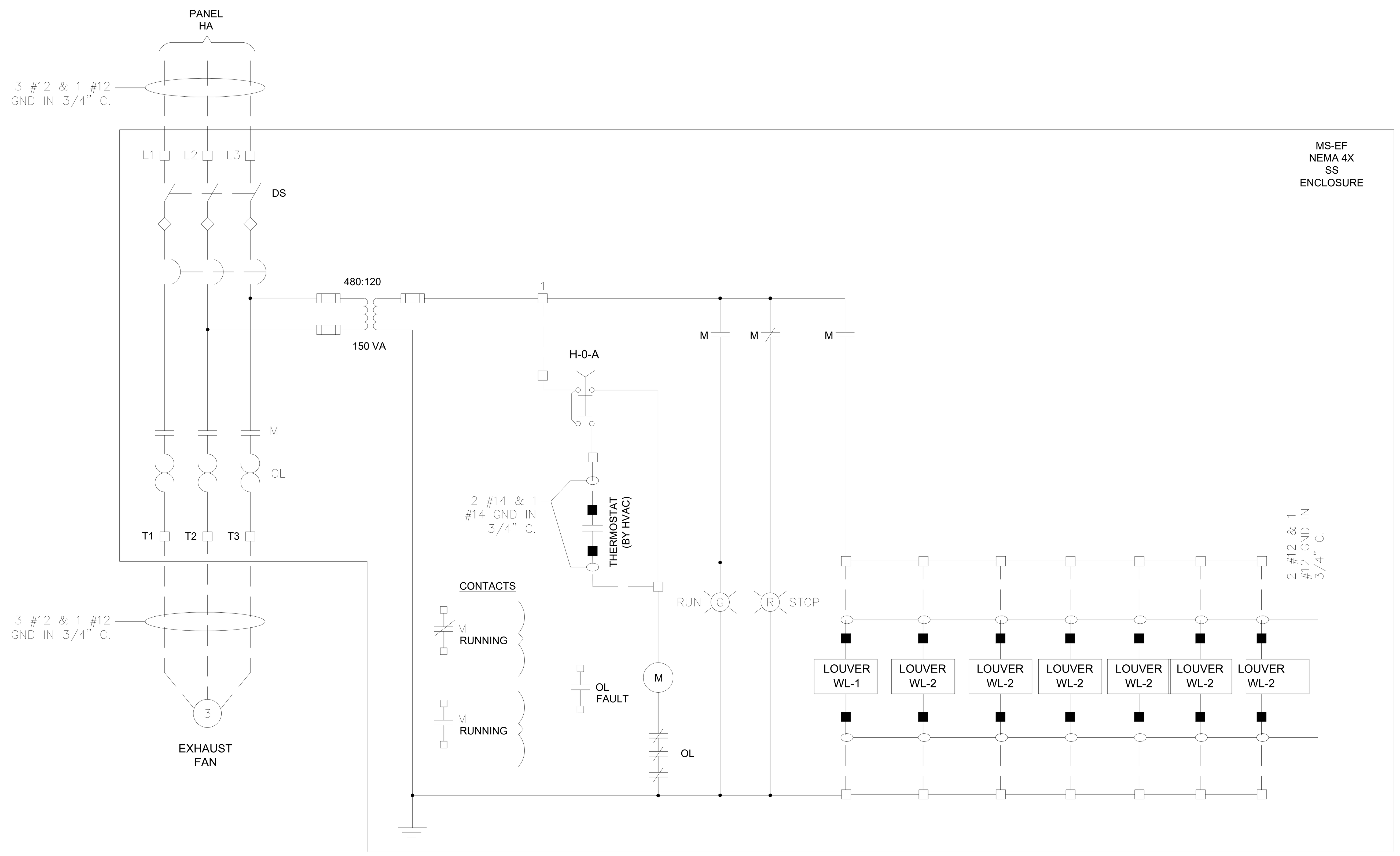
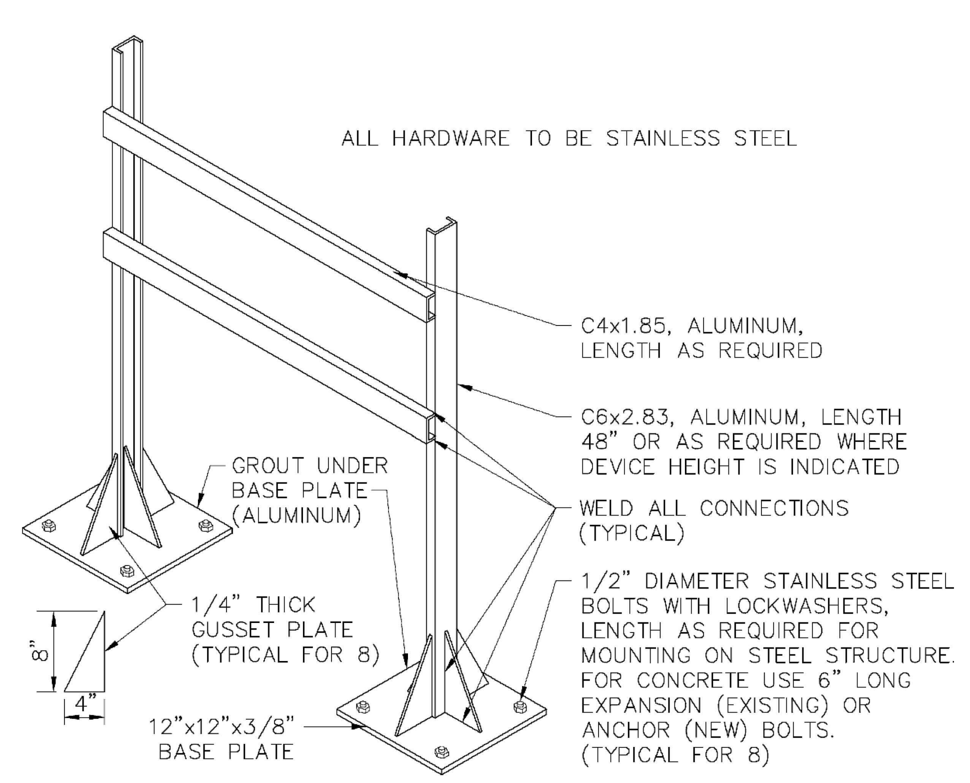
SHEET

E6




MS-EF1 & MS-EF2 SCHEMATIC

TYPICAL FOR 2

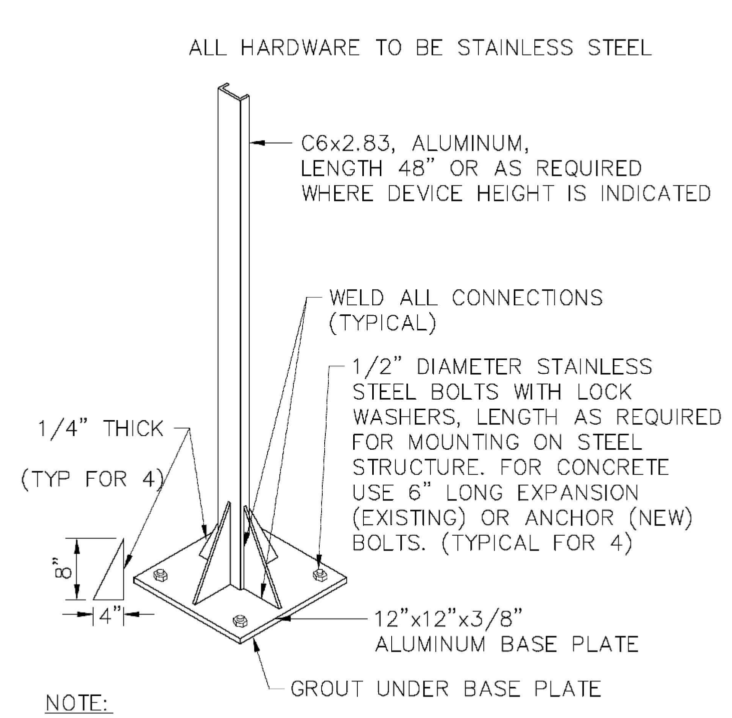



NOTE:
FOR ALUMINUM STANDS ONLY, PROVIDE BITUMINOUS PROTECTIVE COATING WHERE STAND COMES IN CONTACT WITH CONCRETE.

DUAL SUPPORT STAND / UTILITY RACK

DETAIL A/E7

SCALE: NONE

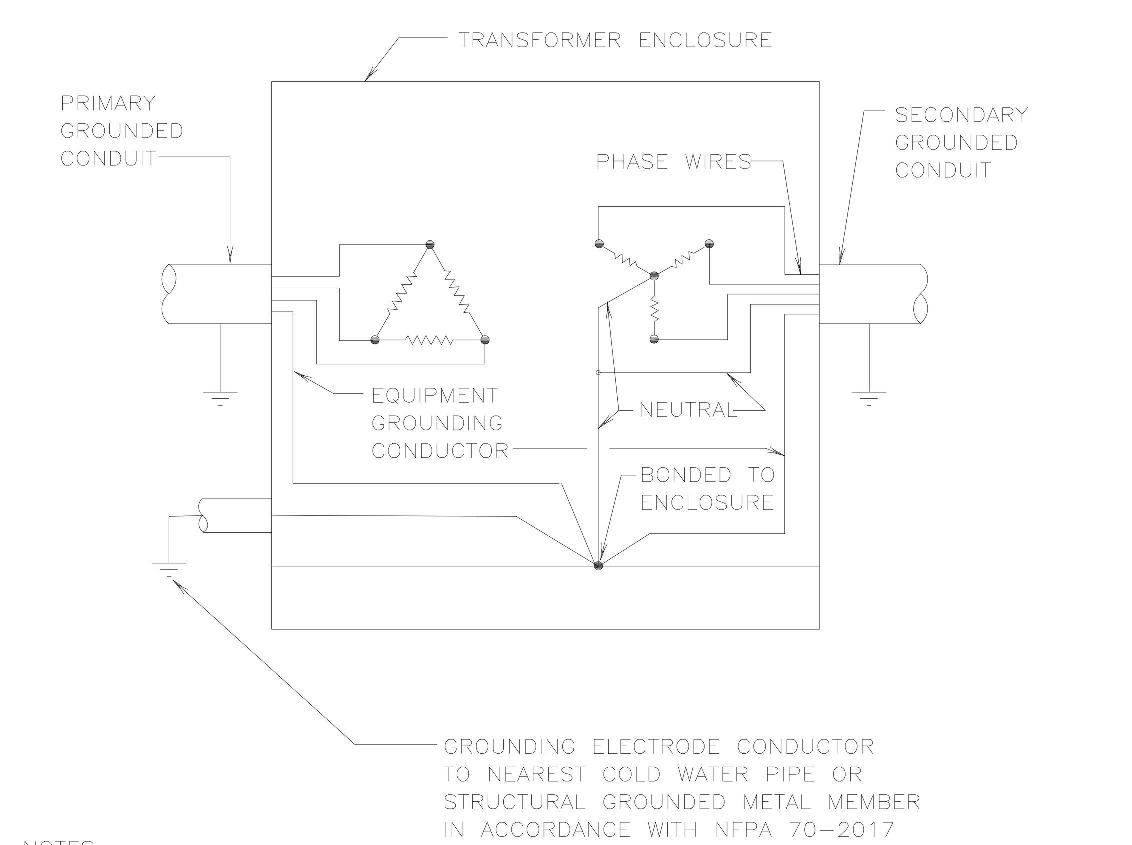



NOTE:
FOR ALUMINUM STANDS ONLY, PROVIDE BITUMINOUS PROTECTIVE COATING WHERE STAND COMES IN CONTACT WITH CONCRETE.

SINGLE SUPPORT STAND / UTILITY RACK

DETAIL B/E7

SCALE: NONE

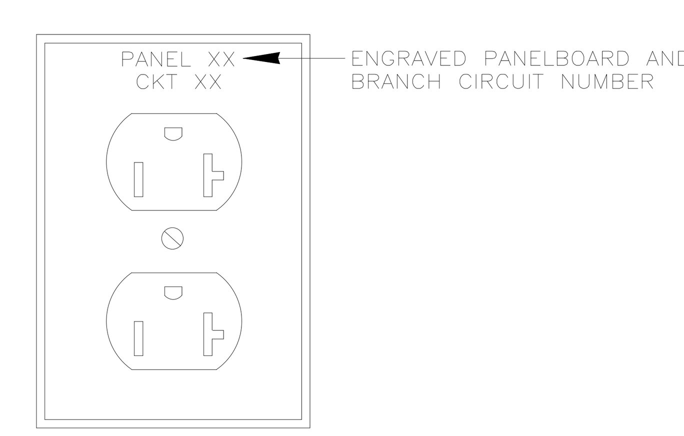



NOTES:
1. BONDING JUMPER SHALL BE SIZED IN ACCORDANCE WITH NFPA 70-2017, TABLE 250-66.
2. TRANSFORMER GROUNDING IS NOT SHOWN ON ONE LINE DIAGRAM. GROUND PER DETAIL.

GROUNDING CONNECTION FOR DRY-TYPE TRANSFORMERS

DETAIL C/E7

SCALE: NONE




COVER PLATE IDENTIFICATION

DETAIL D/E7

SCALE: NONE

NOTES:
1. ALL ELECTRICAL OUTLETS, LIGHT SWITCHES, TOGGLE SWITCHES, DISCONNECTS, ETC. SHALL INDICATE PANEL AND CIRCUIT NUMBER ON THE FRONT.
2. PRIOR TO LABELING, CONTRACTOR SHALL SUBMIT SAMPLE TO OWNER FOR APPROVAL.

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885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
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WATER TREATMENT FACILITY
PRETREATMENT SYSTEM
FOR THE
CITY OF BALDWIN
HABERSHAM COUNTY, GEORGIA

ELECTRICAL DETAILS

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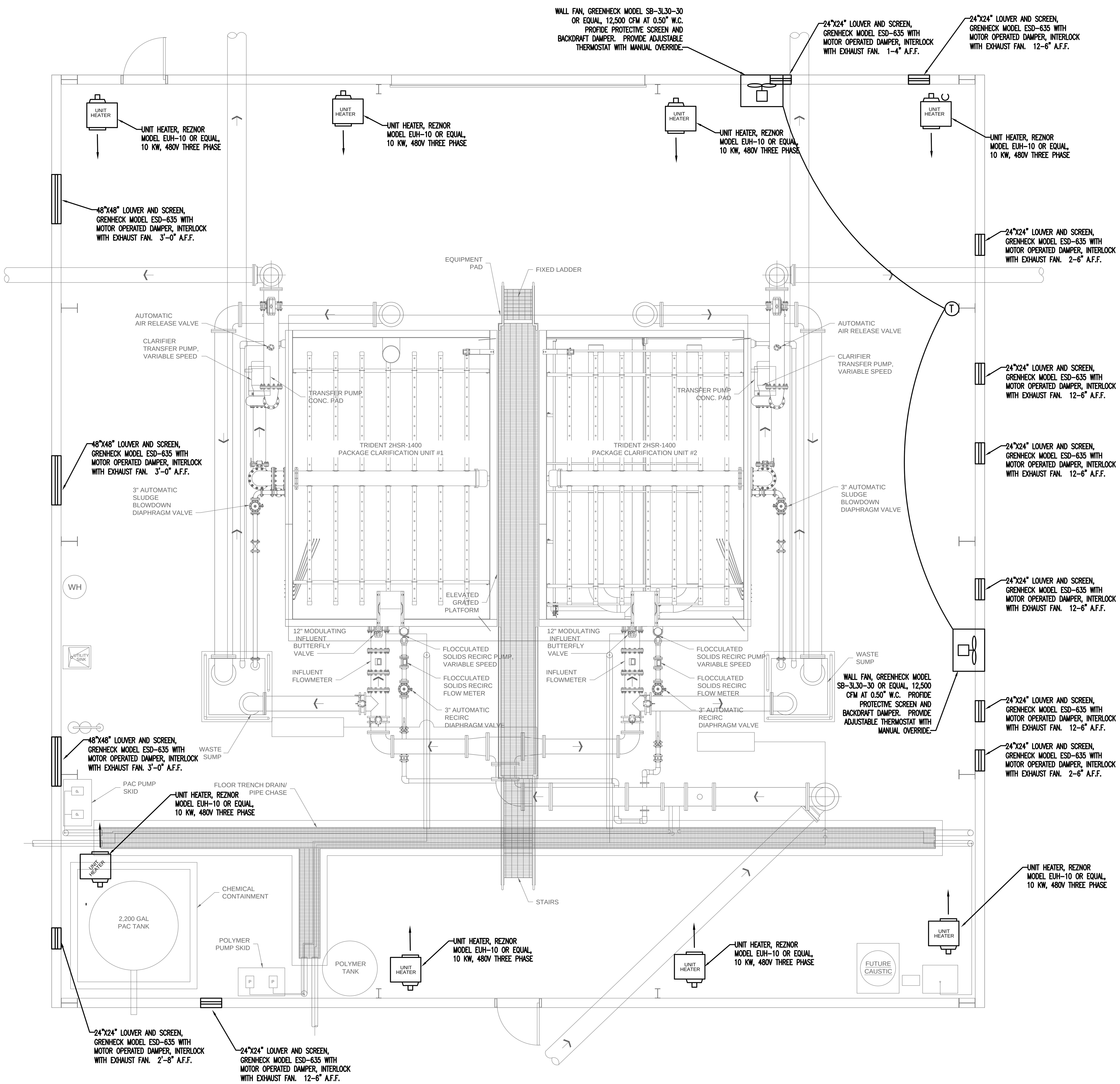
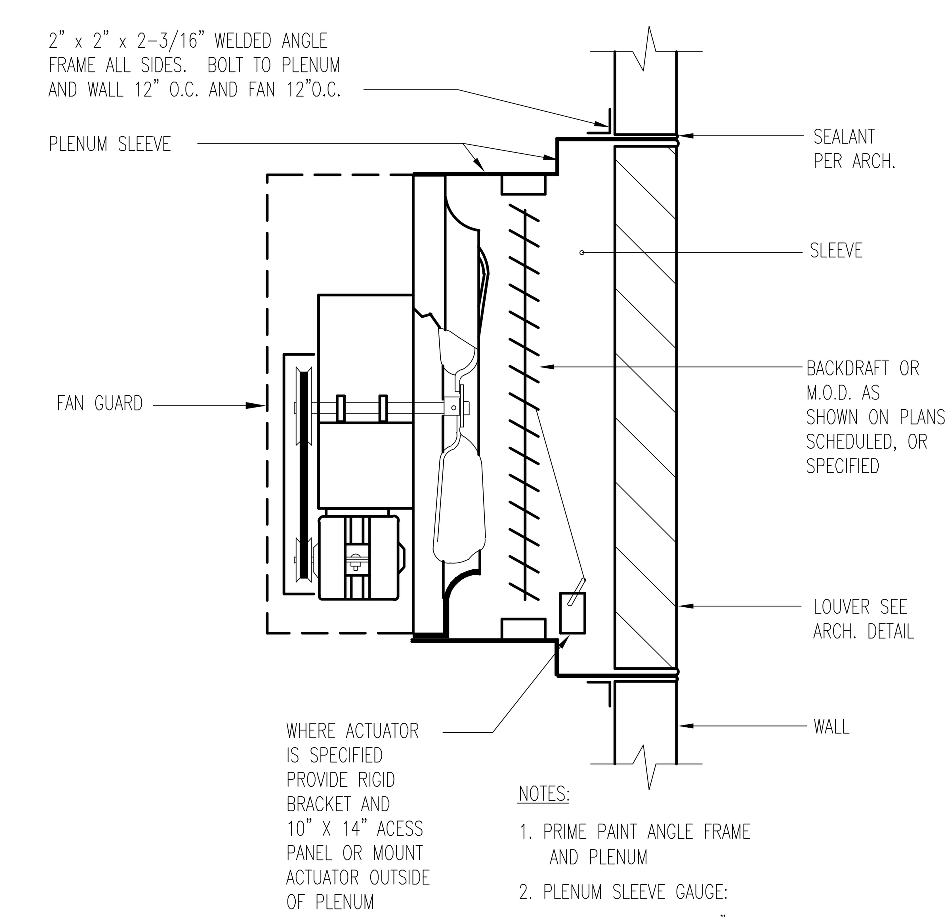



**BUILDING HVAC PLAN VIEW**
SCALE: 1/4" = 1'-0"

## HVAC SYMBOLS AND ABBREVIATIONS

| | | | |
|---|---|---|---|
| | SUPPLY AIR DUCT UP/DOWN | CHWR | CHILLED WATER RETURN |
| | RETURN/EXHAUST AIR DUCT UP/DOWN | CHWS | CHILLED WATER SUPPLY |
| | NEW DUCTWORK | CU-* | CONDENSING UNIT |
| | NEW DUCTWORK | DIA. | DIAMETER |
| | FLEXIBLE DUCT | EF-* | EXHAUST FAN |
| | VOLUME DAMPER | ES | EQUAL SPLIT |
| | SUPPLY DIFFUSER | F-* | FILTER |
| | RETURN OR EXHAUST GRILLE | FURN-* | FURNACE |
| T | THERMOSTAT | GA | GAUGE |
| P | PRESSURE SENSOR | OA | OUTSIDE AIR |
| S | SMOKE DETECTER | OE | OPEN ENDED DUCT |
| | FIRE DAMPER | SD | SPLITTER DAMPER |
| | FIRE/SMOKE DAMPER | U/G | UNDERGROUND |
| | PIPE TURNED DOWN | UH-* | UNIT HEATER |
| | PIPE TURNED UP | VD | VOLUME DAMPER |
| | BRANCH PIPE OFF MAIN | A/C-* | AIR CONDITIONING SYSTEM |
| CFM | CUBIC FEET PER MINUTE | AFF | ABOVE FINISHED FLOOR |
| | | AHU-* | AIR HANDLING UNIT |




NOTES:
1. PRIME PAINT ANGLE FRAME AND PLENUM
2. PLENUM SLEEVE GAUGE:
16 GAUGE FOR 12-24" FANS
14 " " 30-36" "
12 " " 42-48" "

WALL FAN INSTALLATION

JBCE PROJECT #24-30


J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Since 1997
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

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WATER TREATMENT FACILITY
PRETREATMENT SYSTEM
FOR THE
CITY OF BALDWIN
HABERSHAM COUNTY, GEORGIA

PRETREATMENT BUILDING
BUILDING PLAN - HVAC
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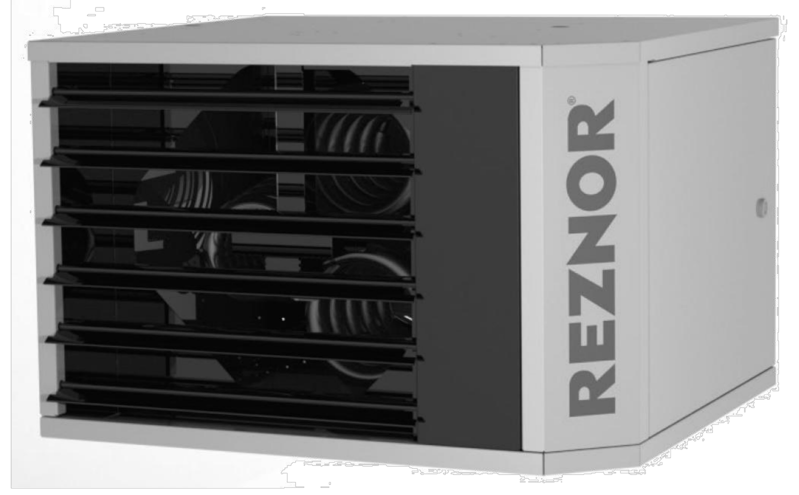
**REZNOR®**

Revision: EUH-TSL (08-23) REV-0

Supersedes: — (Original Version)

## TECHNICAL SPECIFICATIONS FOR MODEL EUH

### ELECTRIC RESISTIVE, LOW-STATIC AXIAL FAN, COMMERCIAL/INDUSTRIAL UNIT HEATERS

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**In keeping with our policy of continuous product improvement, we reserve the right to alter, at any time, the design, construction, dimensions, weights, etc., of equipment information shown here.**

### Technical Data

| Parameter | Unit of Measure | Unit Size (kW) 3 | 5 | 7 | 10 | 15 | 20 | 25 | 30 |
|---|---|---|---|---|---|---|---|---|---|
| Heating capacity | kW | 3 | 5 | 7 | 10 | 15 | 20 | 25 | 30 |
| | BTUh | 10,236 | 17,060 | 23,884 | 34,121 | 51,182 | 68,242 | 85,303 | 102,364 |
| Control amps, 24V | amp | 16 | | | | | | | |
| Fan motor size | HP | 0.03 | | | 0.07 | | 0.17 | | |
| Fan size | inch | 10 | | | 12 | 16 | | 18 | |
| Minimum air volume (limit cutout) | CFM | 125 | 158 | 296 | 191 | 263 | 357 | 446 | 504 |
| | $meter^3/minute$ | 3.54 | 4.476 | 8.38 | 5.40 | 7.44 | 10.11 | 12.63 | 14.27 |
| Maximum air volume | CFM | 431 | 479 | 740 | 957 | 1215 | 1290 | 1612 | 1663 |
| | $meter^3/minute$ | 12.20 | 13.56 | 20.90 | 27.10 | 34.40 | 36.53 | 45.65 | 47.09 |

| Parameter | Unit of Measure | Unit Size (kW) 3 | | | 5 | | | 7 | | | 10 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Voltage | | | | | | | | | | | |
| | | 208 | 240 | 480 | 208 | 240 | 480 | 208 | 240 | 480 | 208 | 240 | 480 |
| Nominal kW | kW | 3 | | | 5 | | | 7 | | | 10 | | |
| Actual kW | | 2.3 | 3.0 | | 4.0 | 5.3 | | 5.5 | 7.3 | | 7.5 | 9.9 | |
| Minimum current ampacity, 1Ph | amp | 11.6 | 13.3 | 6.9 | 19.9 | 22.9 | 11.7 | 27.3 | 31.4 | 16.0 | 37.0 | 42.2 | 21.3 |
| Full load amps, 1Ph* | | 11.1 | 12.8 | 6.4 | 19.4 | 22.4 | 11.2 | 26.8 | 30.9 | 15.5 | 36.5 | 41.7 | 20.8 |
| Minimum current ampacity, 3Ph | | 7.0 | 8.0 | 4.4 | 11.8 | 13.5 | 7.2 | 16.0 | 18.4 | 9.6 | 21.6 | 24.6 | 12.7 |
| Full load amps, 3Ph* | | 6.5 | 7.5 | 3.9 | 11.3 | 13.0 | 6.7 | 15.5 | 17.9 | 9.1 | 21.1 | 24.1 | 12.2 |
| Maximum overcurrent protection** | | 20.0 | 15.0 | | 25.0 | | 15.0 | 30.0 | | 20.0 | 45.0 | 50.0 | 30.0 |
| Temperature rise | °F | 22 | | | 33 | | | 32 | | | 33 | | |

*Includes fan motor.
**Circuit breaker size.

| Setting | Parameter | Unit of Measure | Unit Size (kW) 15 | | | 20 | | 25 | 30 |
|---|---|---|---|---|---|---|---|---|---|
| | | | Voltage | | | | | | |
| | | | 208 | 240 | 480 | 240 | 480 | 480 | 480 |
| — | Minimum current ampacity, 3Ph | amp | 32.5 | 37.4 | 19.3 | 49.4 | 25.4 | 31.4 | 37.4 |
| Low heat | Nominal kW | kW | 7.4 | 10.0 | | | | 15.0 | 20.0 |
| | Actual kW | | 5.6 | | | | | | |
| | Full load amps, 3Ph* | amp | 26.8 | 41.3 | 20.6 | 41.7 | 20.8 | 31.3 | 25.0 |
| | Maximum overcurrent protection** | | 40.0 | 45.0 | 25.0 | 60.0 | 40.0 | | 45.0 |
| | Temperature rise | °F | 19 | 26 | | 24 | | 29 | 28 |
| High heat | Nominal kW | kW | 15.0 | 15.0 | | 20.0 | | 25.0 | 30.0 |
| | Actual kW | | 11.3 | | | | | | |
| | Full load amps, 3Ph* | amp | 31.5 | 36.4 | 18.3 | 48.4 | 24.4 | 30.4 | 36.4 |
| | Maximum overcurrent protection** | | 40.0 | 45.0 | 25.0 | 60.0 | 40.0 | | 45.0 |
| | Temperature rise | °F | 39 | | | 49 | | | 57 |

*Includes fan motor.
**Circuit breaker size.




**REZNOR®**

Revision: EUH-TSL (08-23) REV-0

Supersedes: — (Original Version)

TECHNICAL SPECIFICATIONS FOR MODEL EUH

ELECTRIC RESISTIVE, LOW-STATIC AXIAL FAN, COMMERCIAL/INDUSTRIAL UNIT HEATERS




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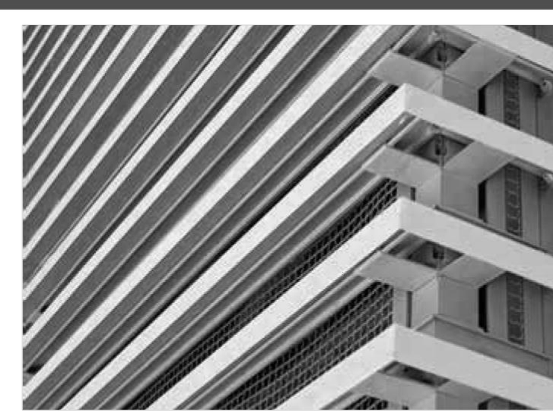
In keeping with our policy of continuous product improvement, we reserve the right to alter, at any time, the design, construction, dimensions, weights, etc., of equipment information shown here.


## Louver Selection Guide

GREENHECK
Building Value in Air.

In an effort to help located and select the louver you need, this catalog organizes the more than 100 standard Greenheck louver models into easily navigated categories, organized by your application requirements.



### Conventional Application Louvers

*Fixed Blade*

These conventional fixed blade louvers are among our most popular. All shown are AMCA Licensed for Air Performance and Water Penetration and may be applied in conventional intake or exhaust applications where provisions to manage water are present or some nuisance weather infiltration is acceptable or accounted for. These louvers shown are among the most economical options.

EDJ-401
4-inch depth
Stationary
Drainable Head
Extruded Aluminum
J-Blade

ESJ-401
4-inch depth
Stationary
Non-Drainable
Extruded Aluminum
J-Blade

56% Free Area

ESD-435
4-inch depth
Stationary
Drainable Blades
Drainable Head
Extruded Aluminum

ESJ-602
6-inch depth
Stationary
Non-Drainable
Extruded Aluminum
J-Blade

59% Free Area

ESD-635
6-inch depth
Stationary
Drainable Blades
Drainable Head
Extruded Aluminum



## Louver Selection Guide

GREENHECK
Building Value in Air.

| Louvers: Type | Model | Airflow: Free Area 48 x 48 in. (sq. ft.) | Free Area 48 x 48 in. (%) | Aesthetics: Depth (in.) | Blade Alignment | AMCA Certifications: Wind Driven Rain | Water Penetration | Air Performance | Sound | AMCA 540 | AMCA 550 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Drainable Blade *page 9* | EDD-401 | 8.22 | 51 | 4 | H | | ✓ | ✓ | | | |
| | EDD-601 | 8.21 | 51 | 6 | H | | ✓ | ✓ | | | |
| | EHM-601 | 7.91 | 49 | 6 | H | | ✓ | ✓ | | | |
| | ESD-202 | 6.01 | 38 | 2 | H | | ✓ | ✓ | | | |
| | ESD-403 | 8.00 | 50 | 4 | H | | ✓ | ✓ | | | |
| | ESD-435 | 8.92 | 56 | 4 | H | | ✓ | ✓ | | | |
| | ESD-603 | 8.36 | 52 | 6 | H | | ✓ | ✓ | | | |
| | ESD-635 | 9.41 | 59 | 6 | H | | ✓ | ✓ | | | |
| Drainable Head *page 10* | EDJ-401 | 8.32 | 52 | 4 | H | | ✓ | ✓ | | | |
| | EDJ-430 | 8.35 | 52 | 4 | H | | ✓ | ✓ | | | |
| | EDJ-601 | 8.69 | 54 | 6 | H | | ✓ | ✓ | | | |
| | EDK-402 | 8.49 | 53 | 4 | H | | ✓ | ✓ | | | |
| | EDK-430 | 8.80 | 55 | 4 | H | | ✓ | ✓ | | | |
| | ESD-430 DISCHARGE | 10.88 | 68 | 4 | H | | | | | | |
| | ESD-430 INTAKE | 7.66 | 48 | 4 | H | | | | | | |
| Non-Drainable *page 11* | ESJ-202 | 6.01 | 38 | 2 | H | | ✓ | ✓ | | | |
| | ESJ-401 | 8.44 | 53 | 4 | H | | ✓ | ✓ | | | |
| | ESJ-602 | 8.73 | 55 | 6 | H | | ✓ | ✓ | | | |
| | ESK-402 | 8.45 | 53 | 4 | H | | ✓ | ✓ | | | |
| Adjustable Blade *page 12* | EAD-401 | 6.54 | 41 | 4 | H | | ✓ | ✓ | | | |
| | EAD-601 | 7.34 | 46 | 6 | H | | ✓ | ✓ | | | |
| | EAD-635 | 8.73 | 55 | 6 | H | | ✓ | ✓ | | | |
| | EAH-401 | 6.48 | 41 | 4 | H | | ✓ | ✓ | | | |
| | EAH-690 (45° BLADE) | 6.32 | 40 | 6 | H | | | ✓ | | | |
| | EAH-690 (90° BLADE) | 10.87 | 68 | 6 | H | | | ✓ | | | |
| Combination Louver/Damper *page 13* | EAC-401 | 6.34 | 40 | 4 | H | | ✓ | ✓ | | | |
| | EAC-601 | 7.41 | 46 | 6 | H | | ✓ | ✓ | | | |
| | EACA-601 | 7.68 | 48 | 6 | H | | ✓ | ✓ | | | |
| | EACC-401 | 5.41 | 34 | 4 | H | | | | | | |
| | EACC-601 | 6.20 | 39 | 6 | H | | | | | | |
| | EACN-601 | 7.18 | 45 | 6 | H | | ✓ | ✓ | | | |
| | ECD-401 | 7.60 | 48 | 4 | H | | ✓ | ✓ | | | |
| | ECD-601 | 7.32 | 46 | 6 | H | | ✓ | ✓ | | | |
| | GCE-402 | 6.36 | 40 | 4 | H | | | | | | |
| | GCI-402 | 6.39 | 40 | 4 | H | | | | | | |



## Drainable Blade

GREENHECK
Building Value in Air.

- Drainable blades offer excellent resistance to water penetration
- Drain gutters located on every blade to capture water
- Integral downspouts located within the jambs to channel water downward to sloped sill for drainage away from the louver
- **EDD Series** incorporates dual drainable blades for additional water capture
- **EHM Series** incorporates recessed mullion design for continuous blade appearance for multi-width sections
- **Models ESD-435** and **ESD-635** lend 56% and 59% free area respectfully

EDD-401

EHM-601

ESD-403

ESD-435

ESD-603

ESD-635

| Model Name | Depth (in.) | Blade Style | Blade Thickness (in.) | Frame Thickness (in.) | AMCA Licensed Ratings | Free Area 4' x 4' Unit $ft^2$ | % | Beginning Point of Water Penetration (ft/min) | Pressure Drop @ 6,000 CFM Intake Velocity (in. wg) | Max Intake Volume Flow Rate (cfm) | Exhaust Volume Flow Rate @ 0.15 in. wg (cfm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EDD-401 | 4 | DD | 0.081 | 0.081 | AP, WP | 8.22 | 51 | 992 | 0.08 | 8154 | 8312 |
| EDD-601 | 6 | DD | 0.081 | 0.081 | AP, WP | 8.21 | 51 | 1107 | 0.08 | 9088 | 8399 |
| EHM-601 | 6 | DD | 0.081 | 0.081 | AP, WP | 7.91 | 49 | 1065 | 0.09 | 8424 | 6577 |
| ESD-202 | 2 | D | 0.063 | 0.063 | AP, WP | 6.01 | 38 | 1058 | 0.15 | 6359 | 5963 |
| ESD-403 | 4 | D | 0.081 | 0.081 | AP, WP | 8.00 | 50 | 1007 | 0.08 | 8056 | 8188 |
| ESD-435 | 4 | D | 0.081 | 0.081 | AP, WP | 8.92 | 56 | 989 | 0.06 | 8822 | 9219 |
| ESD-603 | 6 | D | 0.081 | 0.081 | AP, WP | 8.36 | 52 | 1027 | 0.08 | 8586 | 8359 |
| ESD-635 | 6 | D | 0.081 | 0.081 | AP, WP | 9.41 | 59 | 1250 | 0.06 | 11763 | 9964 |

DD = Dual Drainable, D = Drainable

AP = Air Performance, WP = Water Penetration



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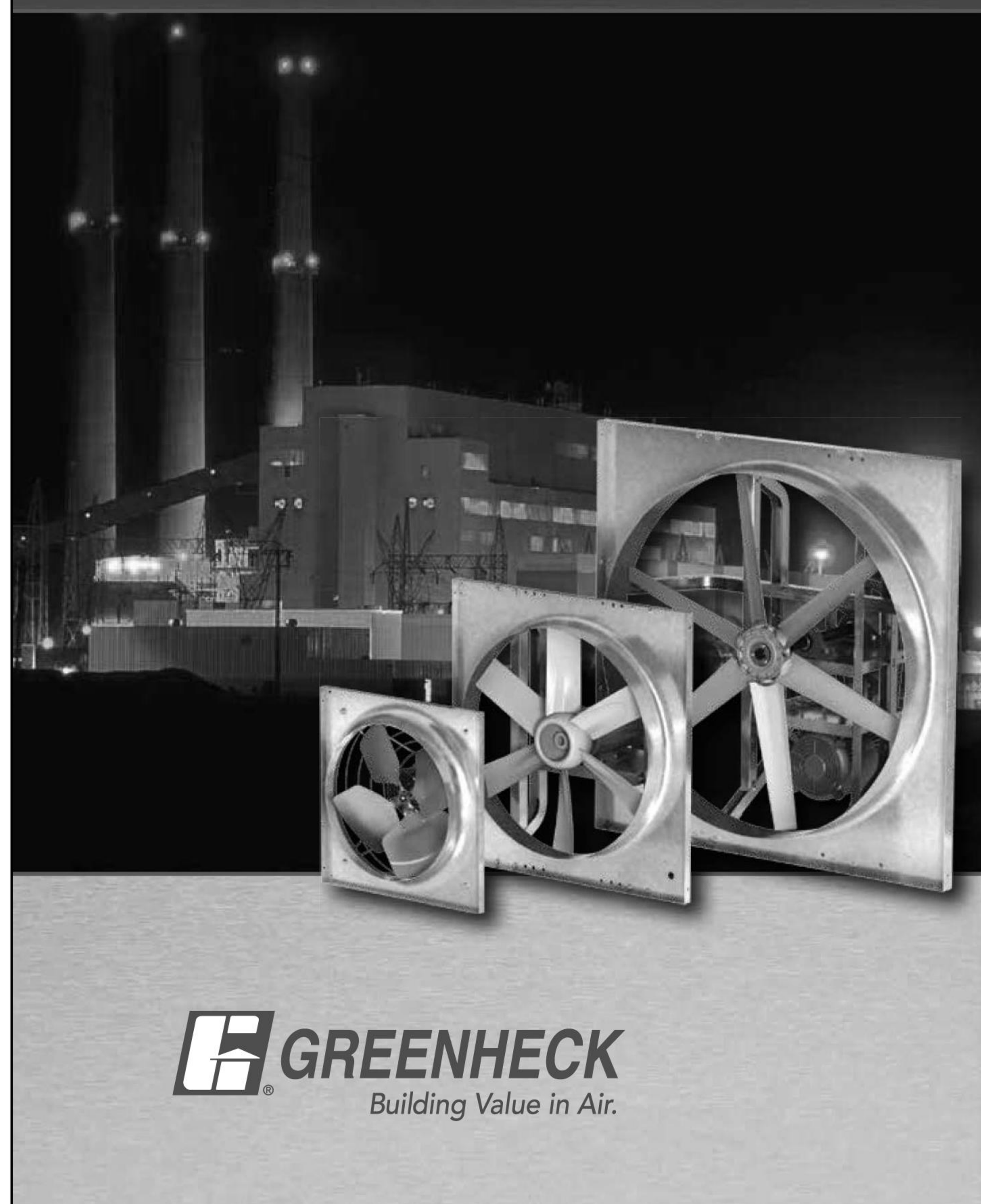
H2

# Sidewall Propeller Fans
## Belt and Direct Drive
### Exhaust, Supply and Reversible



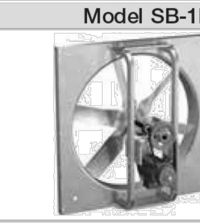
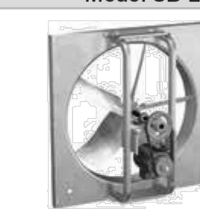
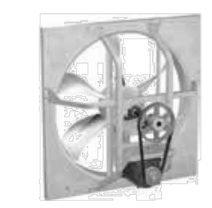
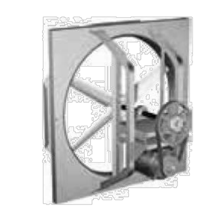
GREENHECK
Building Value in Air.

October 2015

## Belt Drive
### Construction and Material Data

GREENHECK Building Value in Air.

| | Level 1 | Level 2 | Level 3 and Reversible | |
|---|---|---|---|---|
| Model Sizes | 20 - 54 | 20 - 60 | 24 - 36 | 42 - 72 |
| Panel/Drive Frame | Galvanized steel with one-piece drawn venturi, bolted structural steel channels and one-piece motor/bearing plate | | | Galvanized steel with one-piece drawn venturi, bolted structural steel channels and two piece motor/bearing plate |
| | (paint optional) | | (all-welded panel/drive frame optional, paint optional) | |
| Propeller | Galvanized steel, riveted blades (aluminum optional) | Reinforced galvanized steel, riveted blades, keyed hub (excluding the 2L) | SB - Heavy duty, welded, reinforced, powder-coated steel blades. All with keyed hubs. | SB - Heavy duty, welded, reinforced, powder-coated steel blades. All with keyed hubs. SBC - Heavy duty, cast aluminum blades. All with keyed hubs. |
| Bearings | Stamped steel pillow blocks up to size 36 and cast pillow blocks for size 42 and larger | Cast iron pillow blocks with grease fittings | | |

| Material Gauges | | | | | | | Shaft Size | Max Motor Frame Size | Approx. Weight (lbs.) | Models |
|---|---|---|---|---|---|---|---|---|---|---|
| Fan Size | Fan Panel | Drive Frame | Propeller Hub L | Propeller Hub H | Propeller Blade L | Propeller Blade H | | | | |
| **Level 1** | | | | | | | | | | **Model SB-1H** |
| 20 | 18 | 14 | 14 | | 16 | 18 | 3/4 | 56 | 60 |  |
| 24 | 18 | 14 | 14 | | 16 | 18 | 3/4 | 56 | 70 | |
| 30 | 18 | 12 | 14 | 12 | 16 | | 3/4 | 56 | 95 | |
| 36 | 18 | 12 | 14 | 12 | 16 | | 3/4 | 145T | 110 | |
| 42 | 16 | 12 | 12 | 10 | 14 | | 1 | 145T | 150 | |
| 48 | 16 | 12 | 12 | 10 | 14 | | 1 | 145T | 175 | |
| 54 | 14 | 12 | 12 | 10 | 14 | | 1 | 145T | 205 | |
| **Level 2** | | | | | | | | | | **Model SB-2L** |
| 20 | 18 | 14 | 14 | | 16 | 18 | 3/4 | 143T | 65 |  |
| 24 | 18 | 14 | 14 | | 16 | 18 | 3/4 | 145T | 75 | |
| 30 | 18 | 12 | 14 | 12 | 16 | | 1 | 184T | 100 | |
| 36 | 18 | 12 | 14 | 12 | 16 | | 1 | 184T | 115 | |
| 42 | 16 | 12 | 12 | 10 | 14 | | 1 1/4 | 184T | 160 | |
| 48 | 16 | 12 | 12 | 10 | 14 | | 1 1/4 | 184T | 260 | |
| 54 | 16 | 12 | 12 | 10 | 14 | | 1 1/4 | 184T | 315 | |
| 60 | 14 | 12 | 10 | | 12 | | 1 1/2 | 215T | 370 | |
| **Level 3 and Reversible** | | | | | | | | | | **Model SB-3L** / **Model SBCR** |
| 24 | 18 | 14 | 12 | | *16 | | 3/4 | 145T | 90 |   |
| 30 | 16 | 12 | 12 | | *16 | | 1 | 184T | 140 | |
| 36 | 16 | 12 | 12 | | *16 | | 1 1/4 | 184T | 260 | |
| 42 | 14 | 12 | 10 | | *14 | | 1 1/2 | 215T | 320 | |
| 48 | 14 | 12 | 10 | | *14 | | 1 1/2 | 215T | 420 | |
| 54 | 14 | 10 | 10 | | *14 | | 1 1/2 | 254T | 590 | |
| 60 | 14 | 10 | 3/16 in. | | *12 | | 1 3/4 | 256T | 755 | |
| 72 | 12 | 10 | 3/16 in. | | *12 | | 2 | 256T | 1050 | |

Note: Approximate weight does not include accessories.
* SBCR uses cast aluminum propeller. Propeller blade gauge column does not apply.

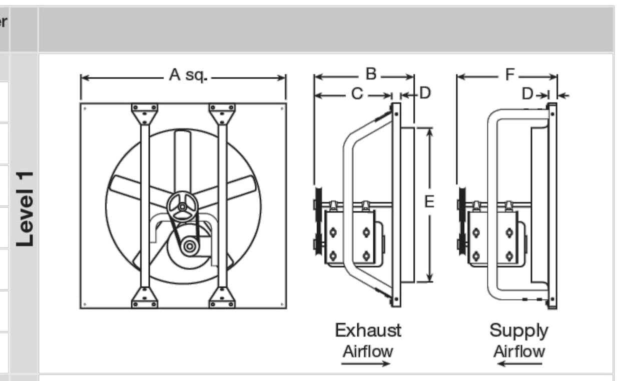


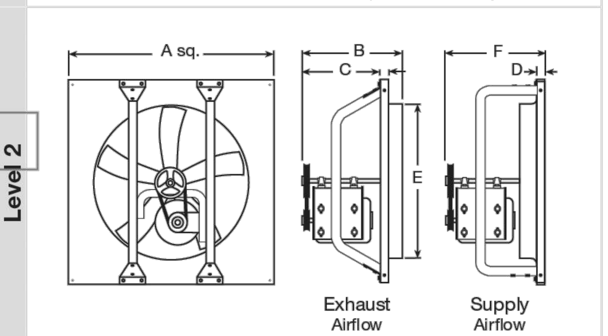
## Belt Drive
### Dimensional Data

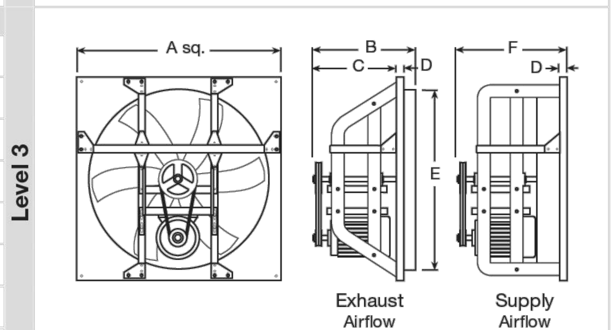
GREENHECK Building Value in Air.

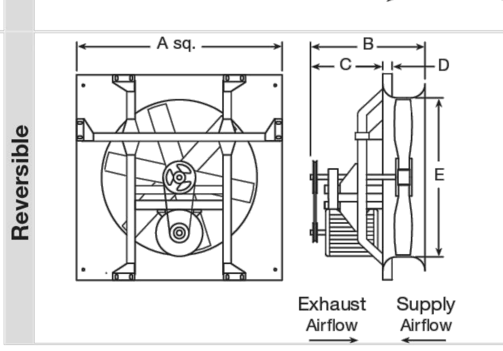
| Fan Size | A Panel** | B | C | D | E | F* | Damper Size** |
|---|---|---|---|---|---|---|---|
| **Level 1** | | | | | | | |
| 20 | 26 (660) | 19½ (495) | 16¼ (413) | 1 (25) | 20½ (521) | 20 (508) | 22 (559) |
| 24 | 32 (813) | 19½ (495) | 16⅛ (410) | 1¼ (32) | 24⅝ (625) | 20 (508) | 26 (660) |
| 30 | 38 (965) | 22½ (572) | 18¼ (464) | 1¼ (32) | 30⅝ (778) | 21 (533) | 32 (813) |
| 36 | 44 (1118) | 21½ (546) | 16½ (419) | 2 (51) | 36⅝ (930) | 23 (584) | 38 (965) |
| 42 | 50 (1270) | 25 (635) | 20 (508) | 2 (51) | 42¾ (1086) | 23 (584) | 44 (1118) |
| 48 | 56 (1422) | 25 (635) | 19 (483) | 2 (51) | 48¾ (1238) | 23 (584) | 50 (1270) |
| 54 | 62 (1575) | 25 (635) | 19½ (495) | 2 (51) | 55¼ (1403) | 24 (610) | 56 (1422) |
| **Level 2** | | | | | | | |
| 20 | 26 (660) | 19½ (495) | 16¼ (413) | 1 (25) | 20½ (521) | 20 (508) | 22 (559) |
| 24 | 32 (813) | 19½ (495) | 16⅛ (410) | 1¼ (32) | 24⅝ (625) | 20 (508) | 26 (660) |
| 30 | 38 (965) | 21½ (546) | 17¼ (438) | 1¼ (32) | 30⅝ (778) | 21 (533) | 32 (813) |
| 36 | 44 (1118) | 21½ (546) | 16½ (419) | 2 (51) | 36⅝ (930) | 22 (559) | 38 (965) |
| 42 | 50 (1270) | 25 (635) | 20 (508) | 2 (51) | 42¾ (1086) | 25½ (648) | 44 (1118) |
| 48 | 56 (1422) | 25 (635) | 19 (483) | 2 (51) | 48¾ (1238) | 25½ (648) | 50 (1270) |
| 54 | 62 (1575) | 26 (660) | 20½ (546) | 2 (51) | 55¼ (1403) | 24 (610) | 56 (1422) |
| 60 | 68 (1727) | 28 (711) | 21 7/16 (545) | 2 (51) | 61¼ (1556) | 24 (610) | 62 (1575) |
| **Level 3 & Reversible** | | | | | | | |
| 24 | 32 (813) | 19 (483) | 15⅝ (397) | 1¼ (32) | 24⅝ (625) | 20½ (521) | 26 (660) |
| 30 | 38 (965) | 21½ (546) | 17¼ (438) | 1¼ (32) | 30⅝ (778) | 20 (508) | 32 (813) |
| 36 | 44 (1118) | 28 (711) | 23 (584) | 2 (51) | 36⅝ (930) | 27 (686) | 38 (965) |
| 42 | 50 (1270) | 28 (711) | 23 (584) | 2 (51) | 42¾ (1086) | 29¼ (743) | 44 (1118) |
| 48 | 56 (1422) | 31½ (800) | 27½ (699) | 2 (51) | 48⅞ (1238) | 30½ (775) | 50 (1270) |
| 54 | 62 (1575) | 35¾ (908) | 30¼ (768) | 2 (51) | 55¼ (1403) | 36¼ (921) | 56 (1422) |
| 60 | 68 (1727) | 35 (889) | 28 7/16 (722) | 2 (51) | 61¼ (1556) | 35½ (902) | 62 (1575) |
| 72 | 82 (2083) | 35 (889) | 28¼ (718) | 2⅛ (54) | 73¼ (1861) | 35½ (902) | 74 (1880) |

All dimensions given in inches *(mm)*. **Square dimension.






## SB-30 Belt Drive
### Fabricated Propeller

GREENHECK Building Value in Air.

CFM values shown in black are the most efficient selections. Values shown in gray are not recommended.

| Model Number | Motor HP | Fan RPM | Max BHP | *Sones | 0.00 | 0.10 | 0.125 | 0.15 | 0.20 | 0.25 | 0.30 | 0.375 | 0.50 | 0.625 | 0.75 | 1.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | CFM / Static Pressure in Inches WG | | | | | | | | | | | |
| Level 1 Performance | | Max RPM L - 696 H - 882 | | | | Max Motor Frame Size - 56 | | | | | | | TS = RPM x 7.854 | | | |
| SB-1L30-4 | 1/4 | 390 | 0.16 | 9.5 | 6453 | | | | | | | | | | | |
| | | 448 | 0.25 | 10.9 | 7413 | 5790 | | | | | | | | | | |
| | | 475 | 0.30 | 11.6 | 7860 | 6394 | 5880 | | | | | | | | | |
| SB-1H30-4 | 1/4 | 503 | 0.17 | 9.4 | 5747 | 4619 | 4164 | | | | | | | | | |
| | | 577 | 0.25 | 11.8 | 6593 | 5682 | 5389 | 5018 | | | | | | | | |
| | | 610 | 0.30 | 12.6 | 6970 | 6129 | 5860 | 5559 | 4743 | | | | | | | |
| SB-1L30-3 | 1/3 | 491 | 0.33 | 12.1 | 8125 | 6742 | 6249 | | | | | | | | | |
| | | 523 | 0.40 | 13.0 | 8654 | 7427 | 6970 | 6503 | | | | | | | | |
| SB-1H30-3 | 1/3 | 631 | 0.33 | 13.1 | 7210 | 6396 | 6156 | 5888 | 5163 | | | | | | | |
| | | 675 | 0.41 | 14.1 | 7713 | 6950 | 6763 | 6515 | 5939 | 5160 | | | | | | |
| SB-1L30-5 | 1/2 | 564 | 0.50 | 14.3 | 9333 | 8261 | 7862 | 7436 | | | | | | | | |
| | | 598 | 0.60 | 15.5 | 9895 | 8898 | 8583 | 8185 | 7366 | | | | | | | |
| SB-1H30-5 | 1/2 | 725 | 0.50 | 15.5 | 8284 | 7571 | 7398 | 7213 | 6746 | 6145 | | | | | | |
| | | 769 | 0.60 | 16.9 | 8787 | 8112 | 7949 | 7785 | 7376 | 6876 | 6248 | | | | | |
| SB-1L30-7 | 3/4 | 645 | 0.75 | 17.2 | 10673 | 9766 | 9508 | 9190 | 8446 | 7562 | | | | | | |
| | | 685 | 0.9 | 18.7 | 11335 | 10496 | 10253 | 10009 | 9332 | 8622 | | | | | | |
| SB-1H30-7 | 3/4 | 827 | 0.75 | 19.1 | 9450 | 8819 | 8667 | 8515 | 8188 | 7779 | 7279 | 6326 | | | | |
| | | 882 | 0.90 | 22 | 10078 | 9484 | 9342 | 9199 | 8914 | 8560 | 8174 | 7424 | | | | |
| SB-1L30-10 | 1 | 696 | 0.94 | 19.2 | 11517 | 10696 | 10456 | 10217 | 9570 | 8874 | | | | | | |
| Level 2 Performance | | Max RPM L - 950 H - 1221 | | | | Max Motor Frame Size - 184T | | | | | | | TS = RPM x 7.854 | | | |
| SB-2L30-7 | 3/4 | 645 | 0.75 | 17.2 | 10673 | 9766 | 9508 | 9190 | 8446 | 7562 | | | | | | |
| | | 685 | 0.90 | 18.7 | 11335 | 10496 | 10253 | 10009 | 9332 | 8622 | | | | | | |
| SB-2H30-7 | 3/4 | 827 | 0.75 | 19.1 | 9450 | 8819 | 8667 | 8515 | 8188 | 7779 | 7279 | 6326 | | | | |
| | | 882 | 0.90 | 22 | 10078 | 9484 | 9342 | 9199 | 8914 | 8560 | 8174 | 7424 | | | | |
| SB-2L30-10 | 1 | 710 | 1.00 | 19.7 | 11748 | 10949 | 10714 | 10479 | 9872 | 9192 | 8383 | | | | | |
| | | 754 | 1.20 | 21 | 12477 | 11736 | 11519 | 11298 | 10806 | 10175 | 9528 | | | | | |
| SB-2H30-10 | 1 | 917 | 1.00 | 23 | 10478 | 9906 | 9768 | 9631 | 9357 | 9049 | 8680 | 8012 | | | | |
| | | 968 | 1.20 | 26 | 11061 | 10519 | 10385 | 10255 | 9996 | 9736 | 9403 | 8847 | 7570 | | | |
| SB-2L30-15 | 1-1/2 | 812 | 1.50 | 24 | 13436 | 12749 | 12570 | 12364 | 11954 | 11426 | 10838 | 9893 | | | | |
| | | 864 | 1.81 | 27 | 14297 | 13650 | 13489 | 13309 | 12923 | 12522 | 11971 | 11132 | | | | |
| SB-2H30-15 | 1-1/2 | 1048 | 1.50 | 29 | 11975 | 11474 | 11349 | 11227 | 10987 | 10747 | 10507 | 10029 | 9071 | | | |
| | | 1110 | 1.80 | 31 | 12683 | 12211 | 12092 | 11974 | 11747 | 11521 | 11294 | 10901 | 10090 | 9019 | | |
| SB-2L30-20 | 2 | 895 | 2.00 | 29 | 14810 | 14186 | 14030 | 13868 | 13496 | 13123 | 12633 | 11830 | | | | |
| | | 950 | 2.41 | 32 | 15720 | 15132 | 14985 | 14838 | 14503 | 14152 | 13790 | 13039 | 11760 | | | |
| SB-2H30-20 | 2 | 1152 | 2.00 | 33 | 13163 | 12708 | 12594 | 12480 | 12259 | 12041 | 11823 | 11483 | 10749 | 9811 | | |
| | | 1221 | 2.40 | 36 | 13951 | 13522 | 13414 | 13307 | 13095 | 12889 | 12683 | 12374 | 11734 | 10955 | 9980 | |
| Level 3 Performance | | Max RPM L - 1100 H - 1432 | | | | Max Motor Frame Size - 184T | | | | | | | TS = RPM x 7.854 | | | |
| SB-3L30-20 | 2 | 824 | 1.51 | 23 | 13052 | 12289 | 12098 | 11898 | 11483 | 11006 | 10403 | 9137 | | | | |
| | | 905 | 2.01 | 26 | 14335 | 13640 | 13467 | 13293 | 12924 | 12540 | 12102 | 11263 | 9366 | | | |
| | | 961 | 2.40 | 29 | 15222 | 14568 | 14404 | 14241 | 13905 | 13549 | 13167 | 12519 | 10795 | | | |
| SB-3H30-20 | 2 | 1076 | 1.53 | 30 | 11401 | 11026 | 10932 | 10833 | 10601 | 10369 | 10102 | 9652 | 8854 | 7967 | 6444 | |
| | | 1182 | 2.04 | 35 | 12524 | 12182 | 12097 | 12012 | 11820 | 11609 | 11398 | 11026 | 10338 | 9590 | 8780 | 5817 |
| | | 1260 | 2.46 | 38 | 13351 | 13030 | 12950 | 12870 | 12708 | 12510 | 12312 | 12015 | 11376 | 10705 | 9980 | 8065 |
| SB-3L30-30 | 3 | 1036 | 3.01 | 35 | 16410 | 15803 | 15651 | 15500 | 15196 | 14874 | 14544 | 13993 | 12801 | 11093 | | |
| | | 1100 | 3.61 | 41 | 17423 | 16852 | 16709 | 16566 | 16281 | 15991 | 15680 | 15201 | 14241 | 12775 | 11254 | |
| SB-3H30-30 | 3 | 1353 | 3.01 | 44 | 14336 | 14037 | 13963 | 13888 | 13739 | 13574 | 13390 | 13113 | 12580 | 11984 | 11343 | 9939 |
| | | 1432 | 3.53 | 49 | 15173 | 14891 | 14820 | 14750 | 14609 | 14468 | 14297 | 14036 | 13586 | 13022 | 12446 | 11176 |

Performance certified is for installation type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft (1.5 m) in a hemispherical free field calculated per AMCA Standard 301. Values are for installation type A: free inlet hemispherical sone levels. *Sones shown apply to the highest cataloged CFM in black type at each fan RPM. For selections at other CFM and static pressure points, refer to CAPS®, the Computer Aided Product Selection Program.



JBCE PROJECT #24-30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PRETREATMENT BUILDING
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|---|---|---|
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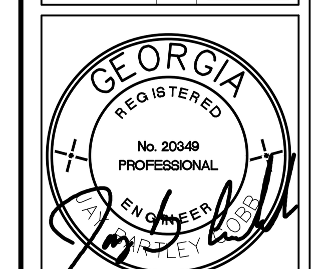


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