

TERMINAL RAILWAY OFFICE ADDITION/RENOVATION

MOBILE, ALABAMA

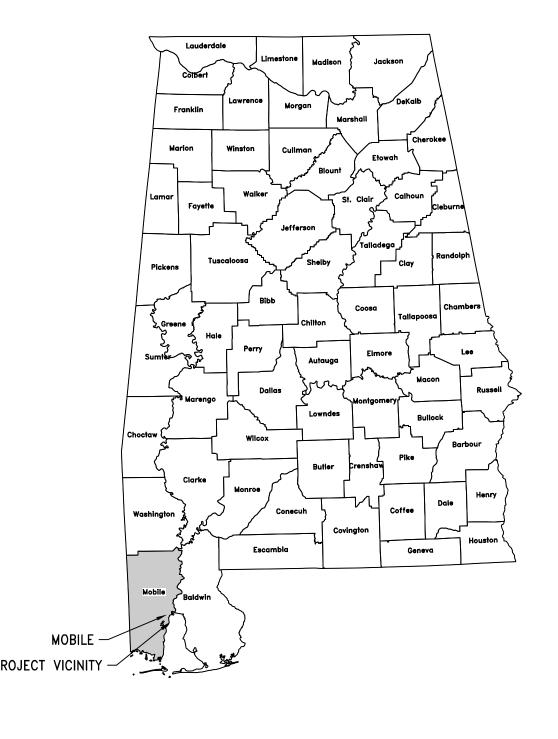
(11012-TASK 2 - AUGUST 2022)

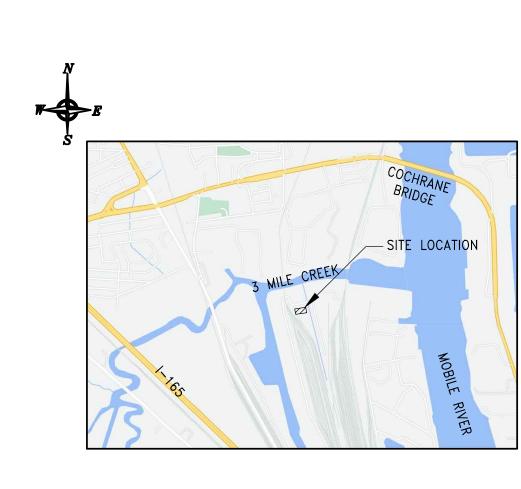
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LOCATION MAP

DRAWING SCHEDULE:

4146-CO - COVER SHEET

4146-BCS - BUILDING CODE SUMMARY

GENERAL NOTES GENERAL NOTES GENERAL NOTES

STAIR AND HAND RAIL DETAILS

EXISTING SITE PLAN

FOUNDATION PLAN

4146-F1A - PILE PLAN 4146-F2 - FOUNDATION PLAN

FOUNDATION PLAN

EXISTING AND DEMOLITION FLOOR PLAN

4146-S2 - NEW FLOOR & REFLECTED CEILING PLAN

 OFFICE MECHANICAL PLAN HVAC SCHEDULE & DETAILS

NEW ELECTRICAL SITE PLAN

4146-P1 - OFFICE PLUMBING PLAN

4146-P2 - PLUMBING SPECIFICATIONS

REFERENCE DRAWINGS: *BCM PROJECT 05-0002-39 SHT 2 OF 5 1981

FOR INFORMATION ONLY, ITS ACCURACY IS NOT GUARANTEED. THE CONTRACTOR IS SOLELY RESPONSIBLE TO VERIFY ALL LOCATIONS OF EQUIPMENT BEFORE

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| В | ISSUED FOR BID | 08/01/22 | MAD | JDG |
|------|----------------|----------|-----|-------|
| REV. | DESCRIPTION | DATE | BY | CHK'D |

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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION

126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

| COVER SHEET | | | |
|------------------|--------------|---------------|------------------------|
| ALE NTS | DRAWN BY CMG | DATE 03/05/22 | SHEET OF 22x34 REV. |
| 3 NO. 4146-22 | CMG | DATE 06/10/22 | DRAWING NUMBER 4146-C0 |

| COMMERCIAL PROJECT BUILDING CODE SUMMARY JANUARY, 2020 1. GENERAL INFORMATION | 5. BUILDING OCCUPANCY CLASSIFICATION HIGH HAZARD: NO SUBSTANCES LISTED IN SECTION 307 ARE TO BE STORED IN THE BUILDING EXCEPT AS NOTED: HAZARDOUS SUBSTANCES: N/A | LIFE SAFETY PLAN PROVIDE A LIFE SAFETY PLAN FOR ALL COMMERCIAL PROJECTS. AT A MINIMUM, THE LIFE SAFETY PLAN SHOULD ILLUSTRATE THE | |
|---|---|--|--|
| NAME OF PROJECT ASPA TERMINAL RAILWAY PROJECT ADDRESS 126 INDUSTRIAL CANAL ROAD PROPOSED USE MAINTENANCE SHOP | WITH PROVISIONS MADE PER CODE SECTION: MIXED OCCUPANCY YES; _X_ NO; SEPARATION REQUIRED: HOURS. PLEASE IDENTIFY ANY EXCEPTIONS WHICH YOU ARE USING: | OCCUPANT LOADS FOR ALL AREAS, EXIT LOCATIONS, EXIT ACCESS, EXIT CAPACITY, MAXIMUM TRAVEL DISTANCE, EXIT LIGHTS, EMERGENCY LIGHTS, FIRE EXTINGUISHERS, FIRE RATED ASSEMBLIES, ASSEMBLY AREA SEATING LAYOUT AND EXIT DISCHARGE. SECOND EMERGENCY ESCAPE REQUIRED FOR RESIDENTIAL & INSTITUTIONAL-1 OCCUPANCIES PROVIDED PER 1026. | MECHANICAL REQUIREMENTS COMPLIANCE WITH THE 2018 INTERNATIONAL MECHANICAL CODE IS REQUIRED. PROVIDE A COMPLETE MECHANICAL SCOPE-OF-WORK AND VENTILATION CALCULATIONS. |
| OWNER/AUTHORIZED AGENT ASPA ADDRESS 250 NORTH WATER ST. MOBILE AL 36602 PHONE 251-433-7260 FAX | INCIDENTAL USE AREAS (508.2)YES; _XNO NON-SEPARATED MIXED OCCUPANCY (508.3.):YES; _XNO THE REQUIRED TYPE OF CONSTRUCTION FOR THE BUILDING SHALL BE DETERMINED BY APPLYING THE MOST RESTRICTIVE HEIGHT AND AREA LIMITATIONS FOR THE APPLICABLE OCCUPANCIES TO THE ENTIRE BUILDING. SEPARATED MIXED OCCUPANCY (508.4):YES; _XNO EACH PART OF THE BUILDING MUST BE INDIVIDUALLY CLASSIFIED AS TO USE AND BE SEPARATED FROM ADJACENT USES BY FIRE | ACCESSIBILITY CHAPTER 11 DESIGN CONFORMS TO ICC/ANSI A117.1-2009:X_ YES NO, EXCEPTION: (RESTROOM PLANS AND ELEVATIONS SHALL BE PROVIDED AT A MINIMUM 3/16" =1'-0" SCALE) AN ACCESSIBLE ROUTE IS PROVIDED THROUGHOUT THIS BUILDING PER 1104 EXCEPT AS NOTED: | THE FOLLOWING ITEMS SHOULD BE IDENTIFIED AND LOCATED ON PLANS: ALL NEW AND EXISTING SUPPLY AND RETURN AIR DUCTWORK. ALL NEW AND EXISTING EQUIPMENT TOGETHER WITH EQUIPMENT SCHEDULES. RATED PARTITION AND FLOOR/ CEILING ASSEMBLY LOCATIONS AND INFORMATION. CLOTHES DRYER VENT ROUTING AND MAKE-UP AIR INFORMATION. |
| STATE LICENSE NO | BARRIER WALLS AND /OR HORIZONTAL ASSEMBLIES PER TABLE 508.4. THE SUM OF THE RATIOS OF THE ACTUAL FLOOR AREA OF EACH USE DIVIDED BY THE ALLOWABLE FLOOR AREA FOR EACH USE SHALL NOT EXCEED 1. INCIDENT AL USE AREAS (TABLE 509) YES;X NO | IS AN ACCESSIBLE ENTRANCES PROVIDED PER 1005: X YES NO, EXCEPTION: | CONDENSATE DRAIN ROUTING, DRAINING TO STORM, DRYWELL OR LANDSCAPED AREA. ALL FIRE AND SMOKE DAMPER AND DETECTOR LOCATIONS AND INSTALLATION INFORMATION. BATHROOM EXHAUST FANS, DUCT ROUTING AND CFM INFORMATION. |
| ARCHITECTURAL E-MAIL STRUCTURAL GARY D.E. COWLES | ALLOWABLE AREA AND HEIGHT (TABLE 503) ALLOWABLE AREA ALLOWABLE AREA PER FLOOR: 23,000 SQ. FT. / FLOOR | STRUCTURAL DESIGN PARAMETERS CLASSIFICATION OF BUILDING CATEGORY/USE GROUP I (I, II, III, IV) ROOF LIVE LOAD: 20 PSF ATTIC LOAD: 0 PSF MEZZANINE LOAD: 0 PSF FLOOR LOAD: 100 PSF | IF PLUMBING OR MECHANICAL EQUIPMENT IS INSTALLED ABOVE CEILING OR IN ATTIC SPACES, A FIXED LADDER OR COMMERCIAL GRADE 300 LB. CAPACITY DISAPPEARING STAIRWAY SHALL BE REQUIRED THE FOLLOWING DETAILS SHOULD BE PROVIDED: TIE-DOWN DETAILS FOR ALL EQUIPMENT EXPOSED TO THE HIGH WIND LOADS. |
| PLUMBING JOHN D. GLOVER MECHANICAL JOHN D. GLOVER SPRINKLER-STANDPIPE . E-MAIL jglover@cmg-a.com E-MAIL jglover@cmg-a.com E-MAIL . E-MAIL . | ACTUAL AREA PER FLOOR: | BUILDING EXPOSURE: \underline{C} WIND SPEED $\underline{161}$ MPH (ASCE 7-10) IMPORTANCE FACTOR: \underline{II} LOAD COMBINATIONS CONSIDERED AS PER 1605 \underline{X} YES $\underline{}$ NO BUILDING WILL BE DESIGNED AS: $\underline{}$ AN ENCLOSED BUILDING $\underline{}$ AN UNENCLOSED BUILDING | KITCHEN EQUIPMENT LAYOUT AND EXHAUST HOOD ANCHOR DETAILS UL INFORMATION FOR KITCHEN HOODS, GREASE EXHAUST AND PAINT SPRAY BOOTHS. PAINT SPRAY BOOTH EXHAUST, MAKE UP AIR AND SEQUENCE OF OPERATIONS. THE FOLLOWING MUST BE SIGNED AND SEALED BY AN ENGINEER: |
| DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE NAME GARY D.E. COWLES SIGNATURE 2.1 SPECIAL INSPECTIONS | ALLOWABLE HEIGHT: 55 FEET ACTUAL BUILDING HEIGHT: 22 FEET ALLOWABLE NUMBER OF STORIES: 3 STORIES ACTUAL NUMBER OF STORIES: 2 STORIES | METHOD OF DEBRIS PROTECTION TO GLAZED OPENINGS PER 1609.2: $\underline{\hspace{0.5cm}} X$ ASSUMED SOIL BEARING $\underline{\hspace{0.5cm}} 1200$ POUNDS / SQ. FT.; SOILS REPORT $\underline{\hspace{0.5cm}} X$ YES $\underline{\hspace{0.5cm}} NO$. PROVIDE A COMPONENTS AND CLADDING PRESSURE DIAGRAM ON THE CONSTRUCTION DOCUMENTS. | MECHANICAL PLANS FOR BUILDINGS OF MORE THAN 2500 S.F. ALL TYPE 1 (GREASE) EXHAUST HOOD DOCUMENTS ELECTRICAL REQUIREMENTS |
| A STATEMENT OF SPECIAL INSPECTIONS IS REQUIRED PER IBC SECTION 1704.3 AND SECTION 1704.5 AS A CONDITION OF PERMIT ISSUANCE. THE SCHEDULE SHALL INCLUDE ALL MATERIALS AND WORK NEEDING SPECIAL INSPECTIONS, THE INSPECTIONS TO BE PERFORMED AND THE NAMES OF INDIVIDUALS, APPROVED AGENCIES AND FIRMS CONDUCTING SUCH INSPECTIONS. IF NOT PROVIDED, EXPLAIN: | BUILDING USE AND OCCUPANT LOAD INCLUDE OCCUPANT LOAD CALCULATIONS FOR INSTITUTIONAL, ASSEMBLY, EDUCATIONAL, MULTISTORY PROJECTS, LARGE COMPLEX PROJECTS, AND MIXED OCCUPANCIES. | SPECIAL DETAILED REQUIREMENTS THE DESIGN PROFESSIONAL SHALL COMPLY WITH ANY SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY. PLEASE INDICATE ALL CONDITIONS THAT APPLY: 402 COVERED MALL BUILDING N/A | COMPLIANCE WITH THE 2017 NATIONAL ELECTRICAL CODE IS REQUIRED. THE FOLLOWING ITEMS SHOULD BE IDENTIFIED AND LOCATED ON PLANS: ELECTRICAL SERVICE, AND ALL ELECTRICAL PANELS, ALL APPLIANCES AND EQUIPMENT. ALL LUMINARIES AND OUTLETS (INCLUDING THOSE FOR HVAC). |
| 3. GENERAL CODE DATA 3.1 BUILDING AND FIRE CODES USED IN DESIGN (CHECK ALL THAT APPLY) X_2018 INTERNATIONAL BUILDING CODEX_2017 NATIONAL ELECTRICAL CODEX_2018 INTERNATIONAL MECHANICAL CODEX_2018 INTERNATIONAL PLUMBING CODE | PLEASE NOTE THE USE, AREA AND OCCUPANT LOAD OF EACH AREA ON THE LIFE SAFETY PLAN. BUILDING USE — OFFICE OCCUPANCY — B ALLOWABLE OCCUPANCY — 104 | 402 COVERED MALL BUILDING N/A 403 HIGH RISE BUILDINGS N/A 404 ATRIUMS N/A 405 UNDER GROUND BUILDINGS N/A 406 MOTOR-VEHICLE RELATED OCCUPANCIES N/A | ALL EQUIPMENT DISCONNECTING MEANS, TOGETHER WITH SIZES AND RATINGS. ELECTRICAL EQUIPMENT SHOULD BE SPECIFIED WITH: EQUIPMENT WORKING SPACE AND CLEARANCES SHOWN. LABELLING BY A RECOGNIZED ELECTRICAL TESTING LABORATORY. |
| 2018 INTERNATIONAL FIRE CODE 2015 INTERNATIONAL ENERGY CONSERVATION CODE (ASHRAE 90.1 2013) 2018 INTERNATIONAL EXISTING BUILDING CODE 2013 MOBILE COUNTY COASTAL CONSTRUCTION SUPPLEMENT | OCCUPANT LOAD SIGNAGE IN ASSEMBLY PER 1004.9; YES NO N/A FIRE PROTECTION REQUIREMENTS (TABLE 601) | 407 GROUP I-2 408 GROUP I-3 409 MOTION PICTURE PROJECTION ROOMS N/A | ELECTRICAL PANEL SCHEDULES SHOULD SHOW: ALL LOADS, VOLTAGES, PHASES, AND BUS SIZES IN AMPERES. PANELS SHOULD BE BALANCED AND SHOWN IN THE CIRCUIT DIRECTORY |
| 3.2 CONSTRUCTION DESCRIPTION NEW CONSTRUCTION RENOVATION (EXISTING BLDG.)TENANT BUILD-OUT X_ALTERATIONX_ ADDITIONUNOCCUPIED BUILDING | BUILDING ELEMENT: REQUIRED RATING ASSEMBLY REFERENCE* STRUCTURAL FRAME(COLUMNS, GIRDERS, TRUSSES): 0 | 410 STAGES & PLATFORMS, ETC. 411 SPECIAL AMUSEMENT BUILDINGS 412 AIRCRAFT RELATED OCCUPANCIES 413 COMBUSTIBLE STORAGE N/A N/A | CALCULATIONS FOR EACH PANEL FOR SERVICE, FEEDER AND BRANCH CIRCUITS. ALL BRANCH CIRCUIT CONDUCTORS AND CONDUIT SIZES. AMENDMENTS |
| SCOPE OF WORK BUILDING: PRE-ENGINEERED METAL BUILDING, GENERAL OFFICE AREA | NON-BEARING WALLS: EXTERIOR: 0 | 414 HAZARDOUS MATERIALS 415 HAZARDOUS OCCUPANCY GROUPS 416 APPLICATION OF FLAMMABLE FINISHES 417 DRYING ROOMS N/A N/A | PRIOR TO SUBMITTING THE CONSTRUCTION DOCUMENTS FOR REVIEW AND PERMITTING, THE DESIGN PROFESSIONAL SHOULD CONTACT THE MOBILE COUNTY INSPECTION DEPARTMENT TO OBTAIN A COPY OF THE MOST CURRENT AMENDMENTS ADOPTED BY THE MOBILE COUNTY COMMISSION. |
| MECHANICAL: NEW OFFICE SPLIT SYSTEM HEAT PUMP/AIR HANDLERS | OTHER RATED ELEMENTS (REFERENCE THE NOTES BELOW) | 418 ORGANIC COATINGS. 419 LIVE / WORK UNITS 420 GROUPS I-1, R-1, R-2, R-3 N/A N/A | |
| ELECTRICAL: NEW POWER AND LIGHTING FOR BUILDING | ELEMENT REQUIRED RATING ASSEMBLY REFERENCE* INTERIOR WALLS: BEARING: 0 NON-BEARING: 0 CEILING-FLOORS: | 421 HYDROGEN CUTOFF ROOMS 422 AMBULATORY CARE FACILITIES 423 STORM SHELTERS 424 CHILDREN'S PLAY STRUCTURES N/A N/A | |
| PLUMBING: PLUMBING WATER SUPPLY, FIXTURES, PLUMBING RISER AND FIXTURE DETAIL. | BEAMS: 0 COLUMNS: 0 CEILING-ROOFS: 0 | CONTRACTOR REQUIREMENTS THE DESIGN PROFESSIONAL WILL NOTIFY THE CONTRACTOR OF HIS RESPONSIBILITY UNDER SECTION 1704.4. | |
| EXTERIOR WALL MATERIALS AND INSTALLATION DETAILS MUST COMPLY WITH SECTIONS 1404 & 1405. PLEASE LIST THE SECTIONS THAT APPLY TO THE PROJECT: | SHAFTS-EXIT: | THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE INSPECTION DEPARTMENT AND THE OWNER PRIOR TO COMMENCEMENT OF THE WORK STATING THAT THEY ARE AWARE OF THEIR RESPONSIBILITY CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS: | |
| EXISTING BUILDINGS AND RENOVATIONS: THE BUILDING WILL REMAIN IN OPERATION DURING CONSTRUCTION: X YES; N NO IF YES, ADD PROVISIONS FOR RIGID SAFETY BARRIERS AND DUST BARRIERS TO PROTECT THE PUBLIC DURING CONSTRUCTION IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF IBC CHAPTER 33. IS THE WORK IN THIS BUILDING OR SPACE A CHANGE OF OCCUPANCY? N NO | OCCUPANCY SEPARATION: | CONTRACTOR'S SIGNATURE AT TIME OF PERMITTING: SAFETY GLAZING FOR HAZARDOUS LOCATIONS THE REQUIRED LOCATIONS OF TEMPERED SAFETY GLASS SHALL BE IDENTIFIED ON THE CONSTRUCTION DOCUMENTS AS PER SECTION 2406 SAFETY GLAZING. | |
| PROVIDE EVALUATION OF COMPLIANCE ALTERNATIVES IF REQUIRED. CONSISTENCY OF DOCUMENTATION VERIFY ALL SECTIONS AND DETAILS SHOWN ARE REFERENCED CORRECTLY TO THE CONSTRUCTION DOCUMENTS. REQUIRE ALL MANUFACTURER'S RECOMMENDATIONS BE FOLLOWED AND AVAILABLE ON JOBSITE. DELETE ANY NOTES, DETAILS, REFERENCES AND SPECIFICATIONS THAT ARE NOT APPLICABLE TO PROJECT. | NOTES: 1. ALL FIRE RATED WALLS SHALL BE IDENTIFIED ON PLANS BY LINE TYPE, HATCHING, ETC.; SHOW LEGEND. 2. IDENTIFY CODE SECTION WHEN USING ANY SPECIAL EXCEPTIONS, ETC. * REPRODUCE FULL UL. OR OTHER APPROVED AGENCIES DETAILS AND SPECIFICATIONS FOR RATED ASSEMBLIES/PENETRATIONS ON DRAWINGS.(STATEMENT OF REQUIRED CONFORMITY INSUFFICIENT) DRAFTSTOPPING | SAFETY GLASS LOCATIONS NOTED: X YES NO, EXCEPTION NO. PRE-ENGINEERED BUILDINGS AND TRUSSES COMPLETE STRUCTURAL PACKAGES MUST BE SUBMITTED PRIOR TO OBTAINING THE BUILDING PERMIT. THE SUBMITTALS MUST BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF ALABAMA. | |
| 4. BUILDING DATA CONSTRUCTION TYPE IA IB IIA _X IIB IIIA IIIB IV VA VB MIXED CONSTRUCTION _X NO YES CONSTRUCTION TYPES SPRINKLERS X NO YES PARTIAL SYSTEM TYPE 13 13R 13D | DRAFTSTOPPING IN FLOOR YES _X_ NO DRAFTSTOPPING IN ATTIC YES _X_ NO DISTANCE TO PROPERTY LINE FROM EXTERIOR WALL (TABLE 602) (SITE PLAN AND LIFE SAFETY PLAN MUST ILLUSTRATE THIS INFORMATION) FIRE SEPARATION DISTANCE: NORTH WALL: FT.; SOUTH WALL: FT.; EAST WALL: FT.; WEST WALL: FT. FIRE RESISTANCE RATING: NORTH WALL: HRS.; SOUTH WALL: HRS.; EAST WALL: HRS.; WEST WALL: HRS. | FIRE DEPARTMENT REQUIREMENTS THE DESIGN PROFESSIONAL SHALL PROVIDE THE REQUIRED WATER SUPPLY FOR THE BUILDING. PLEASE INITIAL THE METHOD USED FOR DETERMINING THE REQUIRED WATER SUPPLY AS NOTED BELOW: REQUIRED WATER SUPPLY1750 GPM @20 _ PSIIFC METHOD USED THE INSURANCE SERVICE OFFICE (ISO) METHOD; IOWA STATE UNIVERSITY (ISU) METHOD; ILLINOIS INSTITUTE OF TECHNOLOGY (IIT) METHOD, OR THE INTERNATIONAL FIRE CODE (IFC). | |
| STANDPIPES X NO YES WET DRY CLASS COMBINED BUILDING HEIGHT 22 FEET 2 NUMBER OF STORIES HEIGHT INCREASE (504) MEZZANINE: X NO YES HIGH RISE X NO YES ATRIUM X NO YES BASEMENT X NO YES | LIFE SAFETY SYSTEMS IN CODE COMPLIANCE: 1008 EMERGENCY LIGHTING:X _ YES; NO; EXCEPTIONS: 1013 EXIT SIGNS:X _ YES; NO; EXCEPTIONS: 907 FIRE ALARM: YES;X _ NO; EXCEPTIONS: 1010.1.9 DOOR OPERATIONS:X _ YES; NO 1010.1.9.5 BOLT LOCKS:X _ YES; NO 1010.1.10 PANIC HARDWARE:X _ YES; NO; EXCEPTIONS: | PLUMBING FIXTURES PROVIDE A TABLE ON THE CONSTRUCTION DOCUMENTS SHOWING THE NUMBER OF REQUIRED FIXTURES AND THE NUMBER OF FIXTURES PROVIDED PER TABLE 2902.1 - MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES. THE PLUMBING DRAWINGS MUST BE SUBMITTED AND APPROVED BY THE MOBILE COUNTY HEALTH DEPARTMENT WILL RELEASE THE PLUMBING PERMIT. SEPARATE FACILITIES PROVIDED AS PER 2902.2: _X _YESNO, EXCEPTION NO | |
| | SMOKE DETECTION SYSTEMS:YES; _X_ NO; EXCEPTIONS: EXIT REQUIREMENTS EXIT ACCESS (1016 - 1021) NUMBER OF EXITS REQUIRED: _2 | ENERGY COMPLIANCE THE CONTRACT DOCUMENTS MUST ILLUSTRATE COMPLIANCE WITH THE 2015 INTERNATIONAL ENERGY CONSERVATION CODE. THE CONTRACTOR MAY SUBMIT A CERTIFICATE OF COMPLIANCE AS PER THE IECC SECTION R403.1.1. | |
| | STAIR WIDTH UNITS REQUIRED: 31.2 INCHES STAIR WIDTH UNITS PROVIDED: 144 INCHES DIAGONAL RULE: DESIGN COMPLIES WITH SECTION 1017:YESX_NO TRAVEL DISTANCE (TABLE 1017.2) ALLOWABLE TRAVEL DISTANCE: 200FT. ACTUAL TRAVEL DISTANCE (MAXIMUM):96 FT. | | |

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SPACES WITH ONE MEANS OF EGRESS (TABLE 1006.2.1)

FOR BUILDINGS WITH ONE MEANS OF EGRESS, I HAVE CHECKED THE OCCUPANT LOAD AND THE COMMON PATH OF TRAVEL AGAINST THE REQUIREMENTS OF SECTION 1006: ____ YES \underline{X} NO

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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION

126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

| BUILDING CODE SUMMARY | | | | |
|-----------------------|--------------|---------------|-------------------------|--|
| NTS | DRAWN BY CMG | DATE 03/05/22 | SHEET OF 22x34 REV. | |
| 3 NO. 4146-22 | CMG | DATE 06/10/22 | DRAWING NUMBER 4146-BCS | |

GENERAL NOTES

- 1. NO PROVISION OF ANY REFERENCED STANDARD SPECIFICATION, MANUAL OR CODE (WHETHER OR NOT SPECIFICALLY INCORPORATED BY REFERENCE IN THE CONTRACT DOCUMENTS) SHALL BE EFFECTIVE TO CHANGE THE DUTIES AND RESPONSIBILITIES OF OWNER, CONTRACTOR, ENGINEER, SUPPLIER, OR ANY OF THEIR CONSULTANTS, AGENTS, OR EMPLOYEES FROM THOSE SET FORTH IN THE CONTRACT DOCUMENTS. NOR SHALL IT BE EFFECTIVE TO ASSIGN TO THE STRUCTURAL ENGINEER OF RECORD OR ANY OF THE STRUCTURAL ENGINEER OF RECORD'S CONSULTANTS, AGENTS, OR EMPLOYEES ANY DUTY OR AUTHORITY TO SUPERVISE OR DIRECT THE FURNISHING OR PERFORMANCE OF THE WORK OR ANY DUTY OR AUTHORITY TO UNDERTAKE RESPONSIBILITIES CONTRARY TO THE PROVISIONS OF THE CONTRACT DOCUMENTS.
- 2. CONTRACT DOCUMENTS INCLUDE, BUT ARE NOT LIMITED TO, THE STRUCTURAL DOCUMENTS (DRAWINGS AND SPECIFICATIONS), BUT DO NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS, OR MATERIAL PREPARED AND SUBMITTED BY THE CONTRACTOR.
- 3. 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 AT THE DATE OF TAKING BIDS, UNLESS SPECIFICALLY STATED OTHERWISE.
- 4. CONTRACT DOCUMENTS SHALL GOVERN IN THE EVENT OF A CONFLICT WITH THE CODE OF PRACTICE OR SPECIFICATIONS OF ACI, PCI, AISC, SJI OR OTHER STANDARDS. WHERE A CONFLICT OCCURS WITHIN THE CONTRACT DOCUMENTS, THE STRICTEST REQUIREMENT SHALL GOVERN.
- 5. MATERIAL, WORKMANSHIP, AND DESIGN SHALL CONFORM TO THE REFERENCED BUILDING CODE.
- 6. CONTRACTOR SHALL COORDINATE THE STRUCTURAL DOCUMENTS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DOCUMENTS. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY OR OMISSION. FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS SEE THE ARCHITECTURAL DRAWINGS.
- 7. CONTRACTOR SHALL OBTAIN AND COORDINATE EDGE OF SLAB DIMENSIONS, OPENING LOCATIONS AND DIMENSIONS, DEPRESSED SLAB LOCATIONS AND EXTENTS, SLAB SLOPES, CURB LOCATIONS, AND CMU WALL LOCATIONS. STRUCTURAL ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY OR OMISSION.
- 8. CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY.
- 9. CONTRACTOR HAS SOLE RESPONSIBILITY FOR MEANS, METHODS, SAFETY, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.
- 10. THE STRUCTURE IS STABLE ONLY IN ITS COMPLETED FORM. TEMPORARY SUPPORTS REQUIRED FOR STABILITY DURING ALL INTERMEDIATE STAGES OF CONSTRUCTION SHALL BE DESIGNED, FURNISHED, AND INSTALLED BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTIBILITY ANALYSIS, AND ERECTION PROCEDURES, INCLUDING DESIGN AND ERECTION OF FALSEWORK, TEMPORARY BRACING, ETC.
- 11. CONTRACTOR HAS SOLE RESPONSIBILITY TO COMPLY WITH ALL OSHA REGULATIONS.
- 12. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED. ELECTRONIC DRAWING FILES WILL NOT BE PROVIDED TO THE CONTRACTOR.
- 13. SUBMIT SHOP DRAWINGS WHICH ADEQUATELY DEPICT THE STRUCTURAL ELEMENTS AND CONNECTIONS SHOWN IN THE CONTRACT DOCUMENTS. REVIEW OF SHOP DRAWINGS SHALL BE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS REGARDING ARRANGEMENT AND SIZES OF MEMBERS AND THE CONTRACTOR'S INTERPRETATION OF THE DESIGN LOADS AND CONTRACT DOCUMENT DETAILS. REVIEW OF SUBMITTALS OR SHOP DRAWINGS BY THE STRUCTURAL ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW AND CHECK ALL SUBMITTALS AND SHOP DRAWINGS BEFORE SUBMITTING TO THE STRUCTURAL ENGINEER. REVIEW OF SUBMITTALS OR SHOP DRAWINGS BY THE STRUCTURAL ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. 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.
- 14. WHERE A SECTION OR DETAIL IS SHOWN OR DETAILED FOR ONE CONDITION, IT SHALL APPLY TO ALL SIMILAR AND LIKE CONDITIONS. DETAILS LABELED "TYPICAL" ON THE DRAWINGS APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR. THE CONTRACTOR SHALL CONSIDER ALL OF THE CONTRACT DOCUMENTS IN DETERMINING SIMILAR AND LIKE CONDITIONS.
- 15. SIGNATURE AND REGISTRATION SEAL OF THE STRUCTURAL ENGINEER THAT MAY BE AFFIXED TO THESE DRAWINGS RELATES ONLY TO THE STRUCTURAL DESIGN OF THE PROJECT.

CODE/DESIGN CRITERIA

- 1. STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE 2018 BUILDING CODE, WITH LATEST AMENDMENTS.
- 2. GRAVITY LOADS
 - 2.1 UNIFORM FLOOR LIVE LOADS (REDUCED AS ALLOWED BY THE BUILDING CODE):

FLOOR 80 PSF STAIRS 100 PSF

WIND LOADS: SEE TABLE ON THIS SHEET

3. ESTIMATED DEFLECTIONS (IN INCHES) ARE AS FOLLOWS:

WHERE, L = SPAN LENGTH (IN INCHES) BETWEEN CENTERLINES OF SUPPORTS. FOR CANTILEVERS, L IS TWICE THE LENGTH OF THE CANTILEVER.)

- 4. SPECIAL INSPECTIONS:
 - 4.1 THE FOLLOWING TYPES OF WORK REQUIRE SPECIAL INSPECTION: FOUNDATION ANCHORS & REINFORCING STEEL, STRUCTURAL STEEL, AND LIGHT GAUGE STEEL FRAMING.

REINFORCEMENT

- 1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, PREFABRICATED, UNLESS NOTED OTHERWISE. NO FIELD BURNING ALLOWED.
- 2. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 AND HAVE MINIMUM SIDE AND END LAPS OF 12". CHAIRS TO BE PLACED 2'-0" O.C.. INDIVIDUAL CHAIRS SHOULD BE ABLE TO SUPPORT 200 LB. LOAD WITHOUT CRUSHING. WIRE MUST RETURN TO PROPER PLACEMENT AFTER BEING STEPPED ON.
- 3. SUBMIT SHOP DRAWINGS WHICH ADEQUATELY DEPICT THE REINFORCING BAR SIZES AND PLACEMENT. WRITTEN DESCRIPTION OF REINFORCEMENT WITHOUT ADEQUATE SECTIONS, ELEVATIONS, AND DETAILS IS NOT ACCEPTABLE.
- 4. PROVIDE DOWELS FROM FOUNDATIONS THE SAME SIZE AND NUMBER AS THE VERTICAL WALL OR COLUMN REINFORCING, UNLESS NOTED OTHERWISE.
- 5. PLACE REINFORCEMENT AS FOLLOWS, UNLESS NOTED OTHERWISE:
 - 5.1 CAST-IN-PLACE (NON POST-TENSIONED) CONCRETE REINFORCEMENT COVER

- 5.2 MASONRY REINFORCING STEEL SHALL BE PLACED IN THE CENTER OF CMU CELLS, UNLESS NOTED OTHERWISE.
- 6. REINFORCEMENT SHALL BE SPLICED ONLY AT LOCATIONS SHOWN OR NOTED IN THE STRUCTURAL DOCUMENTS, EXCEPT REINFORCEMENT MARKED "CONTINUOUS" CAN BE SPLICED AT LOCATIONS DETERMINED BY CONTRACTOR. SPLICES AT OTHER LOCATIONS SHALL BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER. REINFORCING STEEL SPLICES SHALL BE AS FOLLOWS. UNLESS NOTED OTHERWISE:

CONCRETE REINFORCEMENT: CLASS B TENSION LAP MASONRY REINFORCEMENT: 48 BAR DIAMETERS

- 7. ADHESIVE FOR REINFORCING DOWELS IN EXISTING CONCRETE SHALL BE EITHER THE HIT HY150 INJECTION ADHESIVE SUPPLIED BY HILTI FASTENING SYSTEMS, THE EPCON SYSTEM CERAMIC 6 EPOXY ADHESIVE SUPPLIED BY ITW RAMSET/RED HEAD, POWER-FAST EPOXY INJECTION GEL SUPPLIED BY POWERS FASTENING, OR APPROVED EQUAL. MINIMUM EMBEDMENT LENGTH SHALL BE 24 BAR DIAMETERS, UNLESS NOTED OTHERWISE.
- 8. REINFORCING STEEL SHALL BE FREE FROM GREASE, MUD, EXCESSIVE RUST OR OTHER COATINGS THAT WILL DESTROY OR REDUCE BOND STRENGTH. REINFORCING STEEL IN ALL FOOTINGS, WALLS, BOND BEAMS AND PILASTERS SHALL BE MADE WITH BENT BARS WITH A MINIMUM SPLICE LENGTH OF 48 BAR DIAMETERS. PROVIDE GALV. ANCHOR BOLTS SET IN CONCRETE FOR ANCHORING STEEL OR WOOD TO CONCRETE.

CAST-IN-PLACE CONCRETE

- 1. CONCRETE WORK SHALL CONFORM TO ACI 318 AND CRSI STANDARDS.
- 2. CONCRETE SHALL HAVE THE FOLLOWING MINIMUM SPECIFIED 28-DAY COMPRESSIVE STRENGTH:

ALL CONCRETE SHALL MEET ALL OF THE FOLLOWING REQUIREMENTS SPECIFIED.

CLASS "A" CONCRETE SHALL BE USED FOR ALL WORK INCLUDED IN THIS CONTRACT, AND CLASS "AC" SHALL BE USED FOR PUMPING.

- 3. REFER TO ARCHITECTURAL DRAWINGS FOR MOLDS, GROOVES, ORNAMENTS, CLIPS OR GROUNDS REQUIRED TO BE ENCASED IN CONCRETE AND FOR LOCATION OF FLOOR FINISHES AND SLAB DEPRESSIONS.
- 4. CONSTRUCTION JOINT LOCATIONS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. NO HORIZONTAL CONSTRUCTION JOINTS ARE PERMITTED EXCEPT THOSE SHOWN ON THE STRUCTURAL DRAWINGS.
- 5. DEFECTIVE AREAS IN CONCRETE INCLUDING, BUT NOT LIMITED TO, HONEY-COMBING, SPALLS, AND CRACKS WITH WIDTHS EXCEEDING 0.01 INCH SHALL BE REPAIRED. EXTENT OF DEFECTIVE AREA TO BE DETERMINED BY THE STRUCTURAL ENGINEER.

PROVIDE (1) SET OF CYLINDERS, (4) FROM EACH 50 CUBIC YARDS.

| CLA | SS | MAX. WATER PER BAG OF CEMENT | MIN. CEMENT PER CUBIC YARD | MIN. COMPRESSIVE STRENGTH IN 28 DAYS | SLUMP RANGE |
|-----|----|---------------------------------|-------------------------------|---|-------------|
| А | | 5.5 | 6.5 | 4,000 PSI | 2"-4" |
| A | 2 | 6.0 | 8.0 | 4,000 PSI | 5"-7" |

FOUNDATION

- 1. FOUNDATION DESIGN IS BASED ON AN ALLOWABLE BEARING PRESSURE OF 1,200 PSF AND TIMBER PILE SUPPORTED COLUMN FOOTINGS. STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR SUBSURFACE CONDITIONS ENCOUNTERED IN THE FIELD DIFFERENT FROM THOSE ASSUMED FOR DESIGN.
- 2. GEOTECHINCAL/INSPECTION AGENCY SHALL CERTIFY THE BEARING MEDIUM.
- 3. DENSIFY BUILDING AREAS AND A MINIMUM OF 5'-0" OUTSIDE THE BUILDING PERIMETER USING A VIBRATORY ROLLER.
- 4. SOIL COMPACTION 100% STANDARD PROCTOR DENSITY. ALL FILL SHALL BE COMPACTED IN 8" LOOSE LIFTS. COMPACTION TESTING SHALL BE PERFORMED ON EACH LIFT. ALL REPORTS SHALL BE SUBMITTED TO THE ENGINEER.
- 5. BACKFILL SHALL BE A SAND CLAY GRANULAR MATERIAL WITH LESS THAN 30% PASSING THE #200 SIEVE AND A LIQUID LIMIT OF LESS THAN 25.
- 6. ALL CONCRETE MUST CURE FOR A MINIMUM OF 7 DAYS BEFORE ANY LOAD IS PLACED ON CONCRETE. INSTALL CURING COMPOUND ON ALL EXPOSED CONCRETE SURFACES. CONCRETE SHALL BE CURED WITH MEMBRANE 30% SOLIDS COMPOUND, SPRAY APPLIED.
- 7. PROVIDE (1) SET OF CYLINDERS, (4) FROM EACH 50 CUBIC YARDS.
- 8. FOR SITE PREPARATION SEE SOUTHERN EARTH SCIENCES, GEOTECHINCAL REPORT PROJECT #: M22-264.

PRE-ENGINEERED METAL BUILDING NOTES:

- 1. SEE ALSO SPECIFICATIONS. WHERE SPECIFICATIONS CONFLICT OR ARE DUPLICATED THE MORE RESTRICTIVE OF THE ENGINEERING SPECS WILL GOVERN.
- 2. BUILDING DIMENSIONS SHALL BE AS SHOWN ON THE DRAWINGS AND SHALL BE DESIGNED AS FOLLOWS AND IN ACCORDANCE WITH THE 2018 BUILDING CODE:
- A. DEAD LOAD OF STRUCTURE
- B. WIND LOAD 159 MPH (3 SECOND GUST) (RISK CATEGORY II) (EXPOSURE B)
- C. ROOF LIVE LOAD = 20 PSF
- D. COLLATERAL LOAD = 5 PSF
- E. MAJOR STRUCTURAL COMPONENTS, INCLUDING RIGID FRAMES, BEAMS AND COLUMN WHICH SUPPORT A TRIBUTARY ROOF AREA GREATER THAN 600 SQUARE FEET SHALL BE DESIGNED ON THE BASIS OF A REDUCED LIVE LOAD IN ACCORDANCE WITH THE APPLICABLE CODE.
- F. BUILDING SHALL BE CERTIFIED BY BUILDING MANUFACTURER FOR 159 MPH WIND LOAD. PLANS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY AN ALABAMA PROFESSIONAL ENGINEER.
- 3. DEFLECTIONS SHALL BE LIMITED AS FOLLOWS:

PRIMARY FRAMING

L/240 FOR LIVE LOAD

H/180 FOR WIND LOAD

H/180 FOR WIND LOAD

SECONDARY FRAMING L/360 FOR ROOF DEAD LOAD + ROOF LIVE LOAD.

- 4. ROOF IS A PRE-FINISHED GALVALUME ROOF. COMPLETE AS PER MANUFACTURER'S STANDARDS. COLOR SHALL BE CHOSEN BY THE OWNER.
- 5. ALL ROOF PANEL FASTENERS SHALL BE "EXTENDED LIFE" WITH EITHER A ZINC/ALUMINUM/MANGANESE ALLOY CASTING OR A 302 STAINLESS STEEL CAP OVER THE CARBON STEEL HEAD AND STANDARD SEALING WASHER.
- 6. BUILDING TRIM SHALL BE IN ACCORDANCE WITH BUILDING MANUFACTURERS STANDARD. COLOR OF TRIM SHALL BE CHOSEN BY OWNER.
- 7. ALL STRUCTURAL STEEL SHALL RECEIVE A SHOP COAT OF BUILDING MANUFACTURER'S STANDARD SHOP PAINTING SYSTEM.
- 8. THE BUILDING SHALL BE INSULATED AS SHOWN ON THE DRAWINGS.
- 9. ALL ANCHOR BOLT SIZES AND LOCATIONS SHALL BE AS PER BUILDING MANUFACTURER'S CERTIFIED DRAWINGS.
- 10. D BRACING IN ROOF AND WALLS SHALL BE PROVIDED USING ROD TYPE X-BRACING OR WIND FRAMES.
- 11. ERECTION DRAWINGS AND SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER FOR REVIEW PRIOR TO FABRICATION.

WOOD PILING:

- 1. TIMBER PILES SHALL BE THE SIZE SHOWN ON THE DRAWINGS AND SHALL CONFORM TO ASTM 25. ALL PILES SHALL BE TREATED WITH 0.8 #/CF OF AWPA PRESERVATIVE FOR THE FULL LENGTH OF PILE.
- 2. THE CONTRACTOR SHALL BASE HIS BID ON THE QUANTITIES AND LENGTHS AS SHOWN ON THE CONTRACT DRAWINGS. IF ADDITIONAL PILE LENGTH IS REQUIRED, BASED ON DRIVING DURING INSTALLATION, THE CONTRACTOR SHALL ADD PILES AS REQUIRED AT THE BID UNIT PRICE PER FOOT.
- 3. PILES WILL BE MEASURED FOR PENETRATION ON THE BASIS OF LENGTHS ALONG THE AXIS OF THE PILE IN PLACE BELOW THE CUT-OFF ELEVATION. IF THE ENGINEER AUTHORIZED DRIVING TO STOP BEFORE A PILE REACHES THE SPECIFIED PENETRATION DEPTH, THE EXCESS CUT-OFF SHALL BE MEASURED AS THE DIFFERENCE BETWEEN THE SPECIFIED LENGTH AND THE ACTUAL LENGTH OF PILE DRIVEN BELOW CUT-OFF. MEASUREMENTS SHALL BE TO THE NEAREST 1/10 FT. THE COST TO CUT OFF PILES TO THE APPROPRIATE ELEVATION SHALL BE INCLUDED IN THE BID UNIT PRICE.
- 4. PILES SHALL BE DRIVEN ACCURATELY IN CORRECT LOCATIONS, TRUE TO LINE BOTH LATERALLY AND LONGITUDINALLY, AND TO VERTICAL, BATTER, AND SKEW LINES AS INDICATED ON THE DRAWINGS. A LATERAL DEVIATION FROM CORRECT LOCATION AT THE CUT-OFF ELEVATION SHALL NOT EXCEED 2" WITHOUT PULLING. A VARIATION IN SLOPE FROM THAT SPECIFIED OF NOT MORE THAN 1/4" PER FOOT WILL BE PERMITTED. THE CORRECT POSITION OF PILES AS TO LOCATION, PLUMBNESS, BATTER, AND SKEW SHALL BE MAINTAINED BY THE USE OF TEMPLATES AND JIGS TO SUPPORT PILES WITHOUT DAMAGE; THE DETAILS OF WHICH SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO DRIVING PILES. IN ADDITION TO DRIVING TEMPLATES, PLACING AND MAINTAINING PILES WITHIN ACCEPTABLE LIMITS SHALL BE THE CONTRACTOR'S COMPLETE RESPONSIBILITY. ANY PILE OUT OF POSITION SHALL BE PULLED AND REDRIVEN AS DIRECTED AT NO ADDITIONAL COST TO THE OWNER.
- 5. CONTRACTOR SHALL, TO THE BEST OF HIS ABILITY, MONITOR THE ADJACENT EXISTING STRUCTURES, UTILITIES, ETC. FOR ANY SIGNS OF DAMAGE DURING PILE INSTALLATION. THE EXISTING STRUCTURE SHALL BE MONITORED FOR MOVEMENT DURING DRIVING OPERATIONS.
- 6. THE CONTRACTOR SHALL USE A HAMMER OF A SIZE AND TYPE SUITABLE FOR THE DRIVING CONDITIONS TO BE ENCOUNTERED BUT IN NO CASE SHALL THE RAM WEIGHT BE LESS THAN 3,000 LBS. OR HAVE A RATED ENERGY OF LESS THAN 7,260 FT. LBS. THE HAMMER SHALL BE OPERATED AT ALL TIMES AT THE PRESSURE AND SPEED RECOMMENDED BY THE MANUFACTURER. BOILER OR COMPRESSOR CAPACITY SHALL BE SUFFICIENT TO OPERATE THE HAMMER CONTINUOUSLY AT FULL RATED SPEED. PILES SHALL BE PROTECTED DURING DRIVING BY A CUSHION AND CAP OF APPROVED DESIGN. PILE DRIVERS SHALL HAVE FIRMLY SUPPORTED LEADS EXTENDING TO THE LOWEST POINT THE HAMMER MUST REACH TO DRIVE THE PILES TO CUT-OFF ELEVATION WITHOUT THE USE OF A FOLLOWER. EACH PILE SHALL BE DRIVEN CONTINUOUSLY AND WITHOUT VOLUNTARY INTERRUPTION UNTIL THE REQUIRED DEPTH OF PENETRATION RATE PER BLOW HAS BEEN ATTAINED. DEVIATION FROM THIS PROCEDURE WILL BE PERMITTED ONLY IN CASE THE DRIVING IS STOPPED BY CAUSES WHICH COULD NOT REASONABLY HAVE BEEN ANTICIPATED. A PILE WHICH CANNOT BE DRIVEN TO THE REQUIRED DEPTH BECAUSE OF AN UNDERGROUND OBSTRUCTION SHALL BE PULLED AND REDRIVEN IF THE OBSTRUCTION CAN BE REMOVED OR PENETRATED OR THE PILE SHALL BE CUT-OFF, WHICHEVER IS DIRECTED BY THE ENGINEER. A PILE WHICH HAS NOT REACHED THE REQUIRED PENETRATION RATE PER BLOW WHEN THE TIP HAS BEEN DRIVEN TO THE CUT-OFF ELEVATION SHALL BE DRIVEN TO A DEPTH SUFFICIENT TO DEVELOP THE REQUIRED PENETRATION RATE PER BLOW. A PILE WHICH HAS REACHED THE REQUIRED PENETRATION RATE PER BLOW AND THE TOP IS BELOW THE CUT-OFF ELEVATION SHALL BE PROVIDED TO THE ENGINEER FOR FOOTING MODIFICATIONS. THE PENETRATION PER BLOW WHICH IS USED AS AN INDICATION OF THE BEARING CAPACITY OF THE PILE IS DEPENDENT UPON THE TYPE OF DRIVING EQUIPMENT USED AND OTHER FACTORS, AND IT WILL IN EVERY CASE BE DETERMINED BY THE ENGINEER. PILES WHICH HAVE UPLIFTED AFTER DRIVING SHALL BE REDRIVEN TO GRADE AFTER CONCLUSION OF OTHER DRIVING ACTIVITY IN THAT GENERAL AREA. UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, NO PILE SHALL BE DRIVEN WITHIN 100 FT. OF CONCRETE LESS THAN 7 DAYS OLD.
- 7. A PILE WHICH HAS NOT REACHED THE REQUIRED PENETRATION RATE PER BLOW WHEN THE TIP HAS BEEN DRIVEN TO THE CUT-OFF ELEVATION SHALL BE OVER DRIVEN AS DIRECTED TO A DEPTH SUFFICIENT TO DEVELOP THE REQUIRED PENETRATION RATE PER BLOW.
- 8. UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, NO PILE SHALL BE DRIVEN WITHIN 100 FT. OF CONCRETE LESS THAN 7 DAYS OLD.
- 9. A STATIC LOAD TEST WILL NOT BE REQUIRED. PILING SHALL BE DRIVEN TO THE STATED LOADING REQUIREMENTS BASED ON BLOW COUNT OBSERVATION AND FOLLOWING THE FORMULA: DR=(2*E)/(S+0.1).

DR = SAFE BEARING VALUE IN TONS
S = AVERAGE PENETRATION PER BLOW IN INCHES(MINIMUM LAST 10-20 BLOWS)

- E = ENERGY PER BLOW OF HAMMER IN FOOT-TON'S (PRODUCT OF W*H FOR SINGLE-ACTING HAMMER)
- W = WEIGHT OF STRIKING PARTS OF HAMMER IN TONS
- H = HEIGHT OF FALL IN FEET
- 10. ALL PILES DAMAGED DURING HANDLING OR DRIVING SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.

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TERMINAL RAILWAY
OFFICE ADDITION/RENOVATION

126 INDUSTRIAL CANAL ROAD
MOBILE, ALABAMA

GENERAL NOTES

| AS NOTED | DRAWN BY | CMG | O/O/OO | SHEET | OF ____ OF ___ | PROPERTY | CMG | O/O/OO | DRAWING NUMBER | A146-G1

Z:\4100-4199\4146-ASPA TRR Office Expansion\Design\4146-G1.dwg, 8/1/20

STRUCTURAL STEEL GENERAL NOTES

REFERENCE SPECIFICATIONS

- 1. STRUCTURAL STEEL WORK SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS
- 2. STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN" (1989) AND "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (1992).
- 3. HIGH STRENGTH BOLTING SHALL BE IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS OR A490 BOLTS" (1994).
- 4. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STANDARD D1.1, LATEST EDITION.

MATERIALS

- 8. STRUCTURAL STEEL "W", "WT" AND "S" SHAPES SHALL CONFORM TO ASTM A992, GRADE 50. ALL CHANNELS, ANGLES AND PLATES SHALL CONFORM TO ASTM A572 GR 50 UNLESS NOTED OTHERWISE OR APPROVED EQUAL
- 9. HIGH STRENGTH BOLTS, NUTS AND HARDENED WASHERS SHALL CONFORM TO ASTM A325. ASTM A563 DH. AND ASTM F436 RESPECTIVELY. MACHINE BOLTS AND NUTS SHALL CONFORM TO ASTM A307, AND PLAIN WASHERS SHALL CONFORM TO ANSI B18.22.1. BOLTS, NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED.
- 10. WELDING ELECTRODES USED FOR FIELD CONNECTIONS SHALL CONFORM TO AWS A5.1, CLASS E70XX UNLESS NOTED OTHERWISE ON THE DRAWINGS. WELDING ELECTRODES USED FOR SHOP CONNECTIONS SHALL CONFORM TO AWS A5.1 WITH A MINIMUM ELECTRODE TENSILE STRENGTH OF 70 KSI, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

FABRICATION AND ERECTION

- 1. NO TEMPORARY ERECTION BOLTS OTHER THAN HIGH STRENGTH BOLTS SHALL BE USED DURING ERECTION OF THE MEMBERS REQUIRING HIGH STRENGTH BOLTS.
- 2. WHEN CONNECTIONS REQUIRE FIELD PREPARATION OF BOLT HOLES, THE HOLES SHALL BE DRILLED OR PUNCHED, AND THE DIAMETER OF THE BOLT HOLES SHALL BE ${\it H}_{\rm 6}$ INCH GREATER THAN THE NOMINAL BOLT DIAMETER.
- 3. FIELD CORRECTING OF FABRICATED STEEL BY GAS CUTTING SHALL NOT BE PERMITTED ON MAJOR STRUCTURAL FRAMING MEMBERS WITHOUT PRIOR APPROVAL OF THE
- 4. ALL ANGLE AND STRUCTURAL TEE BRACING SHALL HAVE $\frac{1}{16}$ INCH DRAW PER 10 FEET OF LENGTH. MAXIMUM DRAW SHALL BE $\frac{3}{16}$ INCH AND NO DEDUCTION SHALL BE MADE FOR LENGTHS LESS THAN 10 FEET.
- 5. FILLET WELD SIZES, IF NOT CALLED OUT ON THE DRAWINGS, SHALL BE $\frac{3}{16}$ INCH MINIMUM UNLESS TABLE J2.4 OF AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS — ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN" REQUIRES A LARGER
- 6. SLIP CRITICAL HIGH STRENGTH BOLTED CONNECTIONS SHALL BE INSTALLED AND TIGHTENED THROUGH THE USE OF "TURN-OF-THE-NUT" TIGHTENING AS PROVIDED IN THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS. ALL NON-SLIP CRITICAL BOLTS MAY BE TIGHTENED TO A "SNUG-TIGHT" CONDITION AS DEFINED BY AISC.
- 7. THE CONTRACTOR SHALL NOT CUT OR ALTER STRUCTURAL MEMBERS WITHOUT THE APPROVAL OF THE ENGINEER.
- 8. ERECTOR SHALL PROVIDE ALL TEMPORARY SHORING AND BRACING NEEDED FOR STABILITY UNTIL STRUCTURE IS COMPLETE.
- 9. PAINTED SURFACES THAT HAVE BEEN DAMAGED BY WELDING, CUTTING, BURNING, SHEARING OR OTHER DAMAGE INCURRED DURING TRANSIT OR ERECTION SHALL BE REPAIRED TO PROVIDE A FINISH IN ACCORDANCE WITH SPECIFICATIONS.

CONNECTIONS

- 1. BOLTED CONNECTIONS FOR SECONDARY STRUCTURAL MEMBERS (PURLINS, GIRTS, STAIR FRAMING, STAIR BRACING, TOE PLATE, HANDRAIL, LADDERS, ETC) SHALL BE BOLTED WITH HIGH STRENGTH BOLTS CONFORMING TO ASTM A325, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- 2. WHEN CONNECTION DETAILS ARE NOT SHOWN ON THE DRAWINGS, CONNECTIONS SHALL BE DESIGNED IN ACCORDANCE WITH AISC SPECIFICATIONS.
- 3. HIGH STRENGTH BOLT SIZES SHALL BE $\frac{3}{4}$ INCH DIAMETER (UNO) EXCEPT THAT TOE PLATES, HANDRAIL AND LADDERS SHALL BE BOLTED WITH % INCH DIAMETER BOLTS.
- 4. FIELD CONNECTIONS SHALL BE MADE WITH GALVANIZED ASTM-A325 HIGH STRENGTH BOLTS, BEARING TYPE CONNECTIONS WITH THREADS EXCLUDED FROM SHEAR PLANE. CONNECTIONS SHALL BE MADE WITH 34" DIA. BOLTS UNLESS
- 5. ALL SHOP CONNECTIONS SHALL BE WELDED. BEAM CONNECTIONS SHALL USE TABLE III, CASE 1 WELD A, WITH TABLE II BOLTED CONNECTIONS. WELDING SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS AND AWS D1.1 STRUCTURAL WELDING CODE USING E70XX ELECTRODES.
- MINIMUM NUMBER OF BOLTS IN CONNECTIONS NOT OTHERWISE DETAILED. DIAGONAL ANGLE BRACING - 3 TO DEVELOP 50% OF MEMBER STRENGTH BEAMS (WF & CHANNEL) - MAXIMUM NO. MEMBER WILL ACCOMMODATE.
- 7. ALL WELDED JOINTS SHALL BE WELDED CONTINUOUSLY. MINIMUM WELD SIZE SHALL BE $\frac{1}{4}$ " FILLET.
- 8. ALL ANCHOR BOLTS SHALL BE GALVANIZED.

DETAILS

- 1. HOLES FOR %" BOLTS SHALL BE $^{1}\%_{6}$ " DIA., HOLES FOR $^{3}\!4$ " BOLTS SHALL BE $^{13}\!\!/_{6}$ " DIA. AND FOR $^{7}\!\!/_{8}$ " BOLTS SHALL BE $^{15}\!\!/_{6}$ " DIA. UNLESS NOTED OTHERWISE.
- 2. BRACING MEMBERS MEETING AT A POINT SHALL HAVE THEIR GRAVITY AXIS MEETING AT ONE POINT IF PRACTICABLE. IF NOT, PROVISIONS SHALL BE MADE FOR BENDING STRESSES DUE TO ECCENTRICITY.
- 3. CLIP ANGLES AND GUSSET PLATES SHALL BE 3/8" THICK UNLESS NOTED
- 4. COLUMN BASES AND SPLICED ENDS SHALL BE MILLED OR SAW CUT TO PROVIDE
- 5. BRACING: ALL RECESSED DIMENSIONS (i.e. -6, -8 ETC.) ARE NOMINAL DIMENSIONS FOR MEMBER CLEARANCE ONLY. THE FABRICATOR AND DETAILER SHALL PROVIDE FOR CLEARANCE AT BOLTS, PLATES, AND ANY OTHER INTERFERENCES.

COATINGS

- 1. ALL STEEL SURFACES TO BE PAINTED SHALL BE BLAST CLEANED TO NEAR-WHITE CONDITION IN ACCORDANCE WITH SSPC-SP 10-82.
- 2. ALL STEEL SURFACES, EXCEPT MACHINED ITEMS, OR NOTED OTHERWISE, SHALL BE PAINTED. PAINTING SYSTEM AS FOLLOWS:
- 3. PRIME COAT SHOP APPLIED. PRIME WITH ONE COAT OF INORGANIC ZINC WITH MIL. DFT. CARBO ZINC 11 AS MANUFACTURED BY CARBOLINE, OR AN APPROVED EQUAL.
- 4. INTERMEDIATE COAT SHOP APPLIED. ONE COAT OF EPOXY PRIMER WITH 3 TO MIL. DFT. CARBOLINE 893
- 5. TOP COAT SHOP APPLIED. TOP COAT IS ONE (1) COAT OF HIGH BUILD VINYL WITH 4 MIL. DFT. POLYCLAD 134HS AS MANUFACTURED BY CARBOLINE, OR AN

LIGHT GAUGE GALVANIZED METAL STUDS AND **PURLINS:**

- 1. DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH AISI "SPECIFICATION FOR THE DESIGN OF COLD FORMED STRUCTURAL MEMBERS" AND SHALL CONFORM TO ASTM A570, A611 AND/OR A446.
- 2. JOINTS AND CONNECTIONS SHALL BE MADE WITH SCREWS OR BOLTS. PROVIDE BRIDGING. BLOCKING AND ACCESSORIES AS RECOMMENDED BY LIGHT GAUGE STEEL MANUFACTURER.
- 3. ALL COLD-FORMED STEEL FRAMING, CONNECTORS ETC. SHALL RECEIVE A G-90 GALVANIZED
- 4. 8" 12GA WALL C-GIRTS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: A. DEPTH = 8 in
- B. WIDTH = 3.0 in
- C. RETURN = 0.625 in
- D. GAUGE = 12
- E. AREA = 1.47 in^2 F. $lx = 14.4 in^4$
- G. $Sx = 3.59 in^3$ H. Fy = 50 ksi
- 5. 10" 12GA C-PURLINS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES
- A. DEPTH = 10 in
- B. WIDTH = 3.0 in C. RETURN = 0.625 in
- C. GAUGE = 12
- D. AREA = 1.68 in^2
- E. $lx = 24.3 in^3$
- F. $Sx = 4.86 in^3$
- G. Fy = 50 ksi
- 3.625" 30MIL DRYWALL STUDS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES
 - A. DEPTH = 3.625 in B. WIDTH = 1.25 in
- C. THICKNESS = 30 MIL
- D. AREA = 0.20 in^2
- E. $lx = 0.398 in^3$
- F. $Sx = 0.110 \text{ in}^3$
- G. Fy = 33 ksi

WIND LOADING NOTES: (ASCE 7-16, ULTIMATE WIND LOADS)

- 1. BASIC WIND VELOCITY 159 MPH 2. RISK CATEGORY II.
- 3. WIND EXPOSURE B, MEAN ROOF HEIGHT 20 FT 4. INTERNAL PRESSURE COEFFICIENT +/-0.18
- 5. CORNER DISTANCE, "A" = 3.0 FT

MAIN FRAME WIND RESISTING SYSTEM (MWFRS)

| ` , | | | | |
|--------|-----------------|----------------------|----------------------|--|
| AREA | | INTERIOR ZONE | END ZONE | |
| WALL C | WINDWARD | 26.6 PSF | 40.1 PSF | |
| WALLS | LEEWARD | INCLUDED IN WINDWARD | INCLUDED IN WINDWARD | |
| | WINDWARD | -33.6 PSF | -48.2 PSF | |
| ROOF | LEEWARD | -21.2 PSF | -27.4 PSF | |
| | ERHANG ORCH" | -53.5 PSF | -68.3 PSF | |

COMPONENTS AND CLADDING ROOF: (LOADING IN PSF) ZONE 2 (EDGE) ZONE 3 (CORNER) (-) (+) TRIBUTARY AREA (ft²)

| 10 20 | 18.5 17.4 | 45.5 44.4 | 18.5 17.4 | 76.4 68.2 | 18.5 17.4 | 114.9 95.2 |
|-----------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| 100 | 16.0 | 41.7 | 16.0 | 49.4 | 16.0 | 49.3 |
| WALLS: (LOADING IN PSF) | , | | • | | | |
| , | ZONE 4 (I | NTERIOR) | ZONE 5 | (EDGE/CO | RNER) | |
| TRIBUTARY AREA (ft ²) | (+) | (-) | (- | +) (| <u>(</u> –) | |

45.1

43.3

41.7

39.8

35.5

55.5

51.9

43.3

41.7

39.8

35.5

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OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

TERMINAL RAILWAY

GENERAL NOTES 0/0/00 AS NOTED CMG HECKED BY 4146-G2 4146-22 0/0/00

EARTHWORK SPECIFICATIONS

1. **GENERAL REQUIREMENTS**

1.1. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH THE SPECIFICATIONS STATED HEREIN.

2. SITE CLEARING

- 2.1. THE WORK INCLUDED UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL THE LABOR, TOOLS, EQUIPMENT, MATERIAL, SERVICES, AND SUPERVISION NECESSARY FOR THE REMOVAL, CLEARING, GRUBBING, AND DISPOSAL OF EXISTING UTILITY LINES, VEGETATION, FOUNDATIONS, PAVEMENT, MISCELLANEOUS STRUCTURES, DEBRIS, AND OTHER ITEMS WITHIN THE CONTRACT LIMITS SHOWN ON THE DRAWINGS AND SPECIFIED.
- 2.2. ANY CONCRETE, METAL, PAVEMENT, OR ANY OTHER ITEM, WHICH WILL NOT BECOME PART OF FINAL FACILITY, SHALL BE REMOVED.
- 2.3. THE REMOVAL AND DISPOSAL WORK REQUIRED UNDER THIS SECTION SHALL BE PERFORMED IN SUCH A MANNER SO AS NOT TO DAMAGE ANY EXISTING STRUCTURES THAT ARE TO REMAIN AND ANY DAMAGE THERETO CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
- 2.4. REMOVED MATERIALS AS NOTED HEREIN OR AS MAY BE DESIGNATED BY THE ENGINEER SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE NEATLY STOCKPILED AS DIRECTED.

 MATERIAL SPECIFIED TO BE DISPOSED OF SHALL BECOME THE CONTRACTOR'S PROPERTY AND SHALL BE DISPOSED OF OFF OWNER'S PROPERTY. CARE SHALL BE TAKEN TO AVOID DROPPING ANY REMOVED MATERIALS IN THE WATER AND ANY SUCH MATERIALS ENTERING THE WATER SHALL BE IMMEDIATELY REMOVED.
- 2.5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALL NECESSARY DETAILS OF THE EXISTING CONSTRUCTION AS RELATIVE TO ITS EFFECTS ON HIS WORK.

2.6. EROSION CONTROL.

- 2.6.1. DURING THIS SITE CONSTRUCTION PROCESS AND UNTIL ALL SITE DRAINAGE IMPROVEMENTS ARE OPERATIONAL; THE CONTRACTOR SHALL MAINTAIN AN EROSION CONTROL SYSTEM SATISFACTORY TO THE ENGINEER, OWNER, AND ADEM. EROSION CONTROL SHALL CONSIST OF SILT FENCES, 10' WIDE SEDIMENT DITCH, SEDIMENT TRAPS AROUND INLETS, HAY WATTLES (IF ADDITIONAL BMPS ARE REQUIRED) TO PREVENT THE TRANSPORTATION OF SEDIMENTS IN STORM WATER RUNOFF TO THE SURFACE WATERS.
- 2.6.2. THE CONTRACTOR SHALL PROVIDE, ESTABLISH, MAINTAIN, AND INSTALL EROSION CONTROL AS REQUIRED BY THE OWNER, MOBILE COUNTY AND ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT.
- 2.6.3. ALL EROSION CONTROL SHALL BE MAINTAINED AND INSPECTED WEEKLY BY THE ENGINEER (QCP) DURING THE CONTRACT PERIOD, AND UNTIL CONTRACT ACCEPTANCE. ALL DAILY WALK THROUGHS FOR TRASH BY CONTRACTOR.
- 2.6.3.1. THE CONTRACTOR SHALL EXAMINE THE SITE AND SITE CONDITIONS DAILY AND REPAIR AS REQUIRED.
- 2.6.3.2. ONCE THE WORK HAS BEGUN ON A SECTION IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL ALL EROSION DURING CONSTRUCTION. THIS MAY INCLUDE, BUT IS NOT LIMITED TO, SEEDING, SODDING, FENCES, BERMS, DIKES, DRAINS, NETTING, SAND BAGS, ETC., AS SPECIFIED HEREIN.
- 2.6.4. ALL PRACTICES AND MATERIALS SHALL CONFORM TO THE ALABAMA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION, AND ALABAMA HANDBOOK FOR EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT ON CONSTRUCTION SITES AND URBAN AREAS, LATEST EDITION.
- 2.6.5. ALL MATERIALS SHALL COMPLY WITH THE PLANS AND SPECIFICATIONS. CERTAIN MATERIALS CAN BE SUBSTITUTED IF AUTHORIZED BY THE ENGINEER.
- 2.6.5.1. NO HAY BALES WILL BE USED.
- 2.6.5.2. SILT FENCES, TYPE "A" SHALL CONSIST OF A WOVEN WIRE FABRIC MOUNTED ON POSTS WITH A POLYMERIC FILTER FABRIC ATTACHED TO THE FENCE FABRIC. FILTER FABRIC SHALL BE A POLYMERIC FABRIC FORMED FROM A PLASTIC YARN OF A LONG CHAIN SYNTHETIC POLYMER COMPOSED OF AT LEAST 85% BY WEIGHT OF PROPYLENE ETHYLENE, AMIDE, ESTER, OR VINYLEDENECHLORIDE AND SHALL CONTAIN STABILIZERS TO MAKE THE FILAMENTS RESISTANT TO DETERIORATION FROM ULTRAVIOLET AND HEAT EXPOSURE FOR AT LEAST SIX MONTHS. FOR INSTALLATION, PLACE BOTTOM 8" OF FABRIC IN A 6" DEEP (MIN) TRENCH LAPPING TOWARD THE UPSLOPE SIDE. THEN IT SHALL BE BACKFILLED WITH COMPACTED SOIL. ALL SILT FENCING IS TO REMAIN IN PLACE UNTIL LANDSCAPING HAS BEEN COMPLETED AND SITE IS FULLY STABILIZED.

2.6.6. PERFORMANCE REQUIREMENTS

- 2.6.6.1. SAND BAGS SHALL BE SECURELY FASTENED WHEN PLACED. THE BAGS SHALL HAVE A THICKNESS OF APPROXIMATELY 6". SILT FENCES SHALL BE CONSTRUCTED AT LOCATIONS AS REQUIRED. FIELD SPLICES CAN BE MADE BY OVERLAPPING THE FABRIC A MINIMUM OF 3 FT. AND SECURELY FASTENING THE FABRIC TO THE WIRE FENCE. CONTRACTOR SHALL MAINTAIN THE FENCE UNTIL THE CONTRACT HAS BEEN ACCEPTED. IF THE FABRIC SHOULD BECOME DAMAGED AN ADDITIONAL LAYER OF FABRIC CAN BE ATTACHED WITH AT LEAST A 3 FT. OVERLAP.
- 2.6.6.2. TEMPORARY DRAINAGE SUMPS OR SEDIMENT BASINS CAN BE CONSTRUCTED NEAR THE ENDS OF DRAINAGE STRUCTURES OR DITCHES TO CONTROL SILTING. SUMPS SHALL BE CLEANED PERIODICALLY BY THE REMOVAL OF THE SILT TO KEEP THE SUMP FUNCTIONAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE SITE AND ALL ADJACENT SURFACE WATERS FROM ANY AND ALL EROSION. IF EROSION DOES OCCUR, THE CONTRACTOR SHALL REPAIR ALL DAMAGE AND PROVIDE ALL ADDITIONALLY NEEDED TOPSOIL AT THE CONTRACTOR'S EXPENSE.
- 2.7. MULCHING & GRASSING IS REQUIRED WITHIN 10 DAYS PRIOR TO COMPLETION OF GRADING.
- .7.1. ALL DISTURBED AREAS, NOT SPECIFICALLY DESIGNATED TO RECEIVE A STONE SURFACE OR IMPERVIOUS AREA, SHALL BE COVERED WITH 4" OF TOPSOIL IN ACCORDANCE WITH SECTION 650 OF THE ALDOT STANDARD SPECIFICATIONS. THE AREAS SHALL THEN BE PREPARED AND FERTILIZED IN ACCORDANCE WITH SECTION 651 OF THE ALDOT STANDARD SPECIFICATIONS. FERTILIZER, COMMERCIAL 8_8_8, SHALL BE PLACED AT THE RATE OF 0.75 TON/ACRE. THE AREAS SHALL BE GRASSED AND MULCHED IN ACCORDANCE WITH SECTIONS 652, 656, 657, OR 658. THE SEED MIX AND MULCH SHALL BE OF A TYPE COMPATIBLE WITH THE TIME OF YEAR OR PLACEMENT AND SHALL BE SUBMITTED TO THE

ENGINEER FOR APPROVAL PRIOR TO PLACEMENT.

- 2.7.2. THE AREAS TO BE GRASSED SHALL INCLUDE, BUT ARE NOT LIMITED TO, ALL OF THE DISTURBED AREAS IN THE CONSTRUCTION ZONES.
- .7.3. CONTRACTOR WILL BE REQUIRED TO REMOVE ALL SILT FENCES PRIOR TO SITE STABILIZATION.

3. SITE INFORMATION

3.1. SOIL REPORT — EARTHWORK INCLUDING EXCAVATION/FILL SHALL BE IN ACCORDANCE WITH SESI. GEOTECHNICAL REPORT, PROJECT NO. M22—264.

4. EXCAVATION

4.1. GENERAL

4.1.1. THE TERM "EXCAVATION" USED HEREINAFTER IS DEFINED AS "UNCLASSIFIED EXCAVATION". EXCAVATION OF EVERY DESCRIPTION, REGARDLESS OF MATERIAL ENCOUNTERED WITHIN THE LIMITS OF THE PROJECT, SHALL BE PERFORMED TO THE LINES AND GRADES INDICATED OR SPECIFIED. SUITABLE EXCAVATED MATERIAL SHALL BE STOCKPILED OR TRANSPORTED TO AND PLACED IN FILL AREAS WITHIN THE LIMITS OF THE WORK. (DURING CONSTRUCTION, EXCAVATION AND FILLING SHALL BE PERFORMED IN A MANNER AND SEQUENCE THAT WILL PROVIDE DRAINAGE AT ALL TIMES.)

4.2. STOCKPILING.

4.2.1. GENERALLY, IT WILL BE NECESSARY TO STOCKPILE EXCAVATED MATERIALS PRIOR TO FINAL PLACEMENT OR DISPOSAL. SUITABLE MATERIALS SHALL BE KEPT SEGREGATED FROM UNSATISFACTORY MATERIALS AND CONTAINED BY SILT FENCING. ONCE EXCAVATED, ALL MATERIALS ARE TO BE TRUCKED OFF—SITE AND SHALL ONLY BE ON SITE LONG ENOUGH TO BE LOADED INTO TRUCK. SINCE THE ENTIRE PROJECT BOUNDARY IS CONTAINED WITH SILT FENCING, NO ADDITIONAL BMPS WILL BE PLACED AROUND THE STOCKPILING. ONCE MATERIAL IS IMPORTED OR EXCAVATED, THE MATERIAL WILL BE GRADED THROUGHOUT THE SITE OR HAULED—OFF SITE AS SOON AS POSSIBLE SO NO ADDITIONAL BMPS ARE REQUIRED.

4.3. STRUCTURES.

4.3.1. EXCAVATION FOR STRUCTURES SHALL BE MADE ACCURATELY TO THE LINES, GRADES, AND ELEVATIONS SHOWN OR AS DIRECTED. TRENCHES AND FOUNDATION PITS SHALL BE OF SUFFICIENT SIZE TO PERMIT THE PLACEMENT AND REMOVAL OF FORMS FOR THE FULL LENGTH AND WIDTH OF STRUCTURE FOOTINGS AND FOUNDATIONS AS SHOWN. EXCAVATION TO THE FINAL GRADE LEVEL SHALL NOT BE MADE UNTIL JUST BEFORE THE CONCRETE IS TO BE PLACED.

4.4. TRENCHES.

4.4.1. GENERAL.

PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCE ENCOUNTERED SO THAT PIPE CAN BE LAID TO THE ALIGNMENT AND DEPTH SHOWN ON THE DRAWINGS. BRACE AND SHORE ALL TRENCHES, WHERE REQUIRED, IN ACCORDANCE WITH THE SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, DEPARTMENT OF LABOR. MAKE ALL EXCAVATIONS BY OPEN CUT UNLESS OTHERWISE SPECIFIED OR INDICATED ON THE DRAWINGS.

4.4.2. WIDTH OF TRENCHES.

4.4.2.1. EXCAVATE TRENCHES SUFFICIENTLY WIDE TO ALLOW PROPER INSTALLATION OF PIPE, FITTINGS, AND OTHER MATERIALS AND NOT LESS THAN 12" CLEAR OF PIPE ON EITHER SIDE AT ANY POINT. DO NOT WIDEN TRENCHES BY SCRAPING OR LOOSENING MATERIALS FROM THE SIDES. WHERE SUPPORTS, SHEETING, AND BRACING ARE REQUIRED, TRENCH MAY BE OF EXTRA WIDTH TO PERMIT THE PLACING OF THE TRENCH SUPPORTING MATERIAL.

4.4.3. TRENCH EXCAVATION IN EARTH.

EARTH EXCAVATION INCLUDES ALL EXCAVATION OF WHATEVER SUBSTANCE ENCOUNTERED. IN LOCATIONS WHERE PIPE IS TO BE BEDDED IN EARTH EXCAVATED TRENCHES, FINE GRADE THE BOTTOM OF SUCH TRENCHES TO ALLOW FIRM BEARING FOR THE BOTTOM OF THE PIPE ON UNDISTURBED EARTH. WHERE ANY PART OF THE TRENCH HAS BEEN EXCAVATED BELOW THE GRADE OF THE PIPE, FILL THE PART EXCAVATED BELOW SUCH GRADE WITH PIPE BEDDING MATERIAL AND COMPACT AT THE CONTRACTOR'S EXPENSE.

5. BACKFILL

5.1. GENERAL.

1.1. UNLESS OTHERWISE SPECIFIED OR INDICATED ON THE DRAWINGS, USE SUITABLE MATERIAL FOR BACKFILL, WHICH WAS REMOVED IN THE COURSE OF MAKING THE CONSTRUCTION EXCAVATIONS.

5.2. MATERIAL.

- 5.2.1. APPROVED SELECTED MATERIALS AVAILABLE FROM THE EXCAVATIONS MAY BE USED FOR BACKFILLING AROUND STRUCTURES. OBTAIN MATERIAL NEEDED IN ADDITION TO THAT OF CONSTRUCTION EXCAVATIONS FROM APPROVED SITES OR OTHER APPROVED DEPOSITS. FURNISH ALL BORROW MATERIAL NEEDED FOR THE WORK. PLACE AND COMPACT ALL MATERIAL, WHETHER FROM THE EXCAVATION OR BORROW, TO MAKE A DENSE, STABLE FILL. USE FILL MATERIAL WHICH CONTAINS NO VEGETATION, MASSES OF ROOTS, INDIVIDUAL ROOTS OVER 18" LONG OR MORE THAN ½" IN DIAMETER, STONES OVER 4" IN DIAMETER, OR POROUS MATTER.
- 5.2.2. THE CONTRACTOR SHALL REPORT ALL QUANTITIES OF BACKFILL MATERIAL TO BRING SUB GRADE TO FINAL LEVEL. BORROW MATERIAL WILL BE USED ONLY WHEN AUTHORIZED OR DIRECTED BY THE ENGINEER.
- 5.2.3. SELECTION OF BORROW MATERIAL. BORROW MATERIAL SHALL BE A GOOD CLEAN MATERIAL WITH NOT MORE THAN 20% (BY WEIGHT) PASSING THE NO. 200 SIEVE. BORROW MATERIAL SHALL BE OBTAINED FROM APPROVED OFF_SITE SOURCES BY THE CONTRACTOR. SERVICE RECORDS OF THE SOURCE AND ANALYSIS OF THE MATERIAL BY A REPUTABLE LABORATORY SHALL BE SUBMITTED TO THE ENGINEER.

5.3. PLACING BACKFILL.

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- 5.3.1. DO NOT PLACE BACKFILL AGAINST OR ON STRUCTURES UNTIL THEY HAVE ATTAINED SUFFICIENT STRENGTH TO SUPPORT THE LOADS (INCLUDING CONSTRUCTION LOADS) TO
- WHICH THEY WILL BE SUBJECTED WITHOUT DISTORTION, CRACKING, OR OTHER DAMAGE USE THE BEST OF THE EXCAVATED MATERIALS IN BACKFILLING WITHIN 2 FT. OF THE STRUCTURE. AVOID UNEQUAL SOIL PRESSURES BY DEPOSITING THE MATERIAL EVENLY AROUND THE STRUCTURE.
- 5.3.3. PLACE FILL AND BACKFILL IN LAYERS NOT MORE THAN 6" THICK, EXCEPT AS SPECIFIED OTHERWISE HEREIN, AND COMPACT EACH LAYER EVENLY TO THE SPECIFIED DENSITY. DO NOT BACKFILL AGAINST CONCRETE WITHOUT ENGINEER'S APPROVAL.

5.4. TRENCH BACKFILL

5.4.1. GENERAL

UNLESS OTHERWISE SPECIFIED OR INDICATED ON THE DRAWINGS, USE SUITABLE MATERIAL FOR BACKFILL, WHICH WAS REMOVED IN THE COURSE OF MAKING THE CONSTRUCTION EXCAVATIONS. START BACKFILLING AS SOON AS PRACTICABLE AFTER THE PIPES HAVE BEEN LAID OR THE STRUCTURES HAVE BEEN BUILT AND ARE STRUCTURALLY ADEQUATE TO SUPPORT THE LOADS, INCLUDING CONSTRUCTION LOADS, TO WHICH THEY WILL BE SUBJECTED, AND PROCEED UNTIL ITS COMPLETION. WITH THE EXCEPTION MENTIONED BELOW IN THIS PARAGRAPH, DO NOT BACKFILL TRENCHES AT PIPE JOINTS UNTIL AFTER THAT SECTION OF THE PIPELINE HAS SUCCESSFULLY PASSED ANY SPECIFIED TEST REQUIRED. SHOULD THE CONTRACTOR WISH TO MINIMIZE THE MAINTENANCE OF LIGHTS AND BARRICADES AND THE OBSTRUCTION OF TRAFFIC, HE MAY, AT HIS OWN RISK, BACKFILL THE ENTIRE TRENCH AS SOON AS PRACTICABLE AFTER INSTALLATION OF PIPE, AND THE RELATED STRUCTURES HAVE ACQUIRED A SUITABLE DEGREE OF STRENGTH. HE SHALL, HOWEVER, BE RESPONSIBLE FOR REMOVING AND LATER REPLACING SUCH BACKFILL, AT HIS OWN EXPENSE, SHOULD HE BE ORDERED TO DO SO IN ORDER TO LOCATE AND REPAIR OR REPLACE LEAKING OR DEFECTIVE JOINTS OR PIPE.

5.4.2. MATERIALS.

THE NATURE OF THE MATERIALS WILL GOVERN BOTH THEIR ACCEPTABILITY FOR BACKFILL AND THE METHODS BEST SUITED FOR THEIR PLACEMENT AND COMPACTION IN THE BACKFILL. BOTH ARE SUBJECT TO THE APPROVAL OF THE ENGINEER. PLACE NO STONE OR ROCK FRAGMENT LARGER THAN 4" IN GREATEST DIMENSION IN THE BACKFILL. DROP NO LARGE MASSES OF BACKFILL MATERIAL INTO THE TRENCH IN SUCH A MANNER AS TO ENDANGER THE PIPELINE. USE A TIMBER GRILLAGE TO BREAK THE FALL OF MATERIAL DROPPED FROM A HEIGHT OF MORE THAN 5 FEET. EXCLUDE PIECES OF BITUMINOUS PAVEMENT FROM THE BACKFILL UNLESS THEIR USE IS EXPRESSLY PERMITTED.

5.4.3. ZONE AROUND PIPE.

PLACE BEDDING MATERIAL TO THE LEVEL SHOWN ON THE DRAWINGS AND WORK MATERIAL CAREFULLY AROUND THE PIPE TO ENSURE THAT ALL VOIDS ARE FILLED. FOR BACKFILL UP TO A LEVEL OF 2 FT. OVER THE TOPS OF THE PIPE, USE ONLY SELECTED MATERIALS CONTAINING NO ROCKS, CLODS, OR ORGANIC MATERIALS. PLACE THE BACKFILL AND COMPACT THOROUGHLY UNDER THE PIPE HAUNCHES AND UP TO THE MID_LINE OF THE PIPE IN LAYERS NOT EXCEEDING 6" IN DEPTH. PLACE EACH LAYER AND TAMP CAREFULLY AND UNIFORMLY SO AS TO ELIMINATE THE POSSIBILITY OF LATERAL DISPLACEMENT. PLACE AND COMPACT THE REMAINDER OF THE ZONE AROUND THE PIPE AND TO A HEIGHT OF 1 FT. ABOVE THE PIPE IN LAYERS NOT EXCEEDING 6" AND COMPACT TO A MAXIMUM DENSITY OF AT LEAST 95% AS DETERMINED BY ASTM D1557 MODIFIED.

5.4.4. TAMPING.

DEPOSIT AND SPREAD BACKFILL MATERIALS IN UNIFORM, PARALLEL LAYERS NOT EXCEEDING 12" THICK BEFORE COMPACTION. TAMP EACH LAYER BEFORE THE NEXT LAYER IS PLACED TO OBTAIN A THOROUGHLY COMPACTED MASS. FURNISH AND USE. IF NECESSARY, AN ADEQUATE NUMBER OF POWER-DRIVEN TAMPERS, EACH WEIGHING AT LEAST 20 POUNDS, FOR THIS PURPOSE. TAKE CARE THAT THE MATERIAL CLOSE TO THE BANK, AS WELL AS IN ALL OTHER PORTIONS OF THE TRENCH, IS THOROUGHLY COMPACTED. WHEN THE TRENCH WIDTH AND THE DEPTH TO WHICH BACKFILL HAS BEEN PLACED ARE SUFFICIENT TO MAKE IT FEASIBLE. AND IT CAN BE DONE EFFECTIVELY AND WITHOUT DAMAGE TO THE PIPE, BACKFILL MAY, ON APPROVAL, BE COMPACTED BY THE USE OF SUITABLE ROLLERS, TRACTORS, OR SIMILAR POWERED EQUIPMENT INSTEAD OF BY TAMPING. FOR COMPACTION BY TAMPING (OR ROLLING). THE RATE AT WHICH BACKFILL MATERIAL IS DEPOSITED IN THE TRENCH SHALL NOT EXCEED THAT PERMITTED BY THE FACILITIES FOR ITS SPREADING. LEVELING, AND COMPACTING AS FURNISHED BY THE CONTRACTOR. WET THE MATERIAL BY SPRINKLING, IF NECESSARY, TO ENSURE PROPER COMPACTION BY TAMPING (OR ROLLING). PERFORM NO COMPACTION BY TAMPING (OR ROLLING) WHEN THE MATERIAL IS TOO WET FROM RAIN OR APPLIED WATER TO BE COMPACTED PROPERLY.

5.4.5. TRENCH COMPACTION.

5.4.5.1. COMPACT BACKFILL IN PIPE TRENCHES TO THE MAXIMUM DENSITY AS SHOWN ON THE DRAWINGS OR AS LISTED IN THE SOILS REPORT AND THESE SPECIFICATIONS WITH A MOISTURE CONTENT WITHIN THE RANGE OF VALUES OF MAXIMUM DENSITY AS

6. PREPARATION OF SUBGRADE

- 6.1. GROUND SURFACE ON WHICH FILL IS TO BE PLACED SHALL BE STRIPPED OF LIVE, DEAD, OR DECAYED VEGETATION, RUBBISH, DEBRIS, BOULDERS, AND OTHER UNSATISFACTORY MATERIAL; PLOWED, DISKED, OR OTHERWISE BROKEN UP; PULVERIZED; AND MOISTENED OR AERATED AS REQUIRED JUST PRIOR TO PLACEMENT OF FILL MATERIALS TO ASSURE ADEQUATE BOND BETWEEN FILL MATERIAL AND THE PREPARED GROUND SURFACE. THE EXPOSED GROUND SURFACE OF AREA GRADED TO ELEVATIONS AS NOTED ABOVE SHALL BE SCREENED AND GRATED TO CLEAN NATIVE SOIL MATERIAL.
- 6.2. SAND FILL REQUIRED TO ATTAIN DESIGN ELEVATIONS AND PARTICLE SIZE MIX SHALL BE PROVIDED AND INSTALLED.

7. SUBBASE PREPARATION

7.1. CONSTRUCTION.

7.1.1. THE FINAL LIFT FOR SUB GRADE SHALL NOT BE MORE THAN 6" IN DEPTH. SUB GRADE SHALL BE SHAPED TO LINE, GRADE AND CROSS SECTION, AND COMPACTED AS SPECIFIED. THIS OPERATION SHALL INCLUDE PLOWING, DISKING, AND ANY MOISTENING OR AERATING REQUIRED TO OBTAIN PROPER COMPACTION. SOFT OR OTHERWISE UNSATISFACTORY MATERIAL SHALL BE REMOVED AND REPLACED WITH SATISFACTORY EXCAVATED MATERIAL OR OTHER APPROVED MATERIAL AS DIRECTED. AFTER ROLLING, THE SURFACE OF THE SUB

BASES FOR BASE SHALL NOT SHOW DEVIATION GREATER THAN ¼" WHEN TESTED WITH A 10' STRAIGHTEDGE APPLIED BOTH PARALLEL AND AT RIGHT ANGLES TO THE CENTERLINE OF THE AREA. THE ELEVATION OF THE FINISHED SUB BASE SHALL NOT VARY MORE THAN 0.05 FT. FROM THE ESTABLISHED GRADE AND APPROVED CROSS SECTION.

7.2. COMPACTION.

7.2.1. COMPACTION SHALL BE ACCOMPLISHED BY SHEEPS FOOT ROLLERS, PNEUMATIC TIRED ROLLERS, STEEL WHEELED ROLLERS, VIBRATORY COMPACTORS, OR OTHER APPROVED FOUIPMENT.

8. <u>FINISHING</u>

8.1. THE SURFACE OF ALL EXCAVATIONS, FILLS, AND SUB GRADES SHALL BE FINISHED TO A REASONABLY SMOOTH AND COMPACT SURFACE SUBSTANTIALLY IN ACCORDANCE WITH THE LINES, GRADES, AND CROSS SECTIONS OR ELEVATIONS SHOWN. THE DEGREE OF FINISH FOR ALL GRADED AREAS SHALL BE WITHIN 0.1 FT. OF THE GRADES AND ELEVATIONS INDICATED.

9. <u>SUBBASE AND FILL PROTECTION</u>

9.1. DURING CONSTRUCTION, FILLS AND EXCAVATIONS SHALL BE KEPT SHAPED AND DRAINED. DITCHES AND DRAINS ALONG SUB GRADE SHALL BE MAINTAINED IN SUCH A MANNER AS TO DRAIN EFFECTIVELY AT ALL TIMES. THE FINISHED SUB GRADE SHALL NOT BE DISTURBED BY TRAFFIC OR OTHER OPERATION AND SHALL BE PROTECTED AND MAINTAINED BY THE CONTRACTOR IN A SATISFACTORY CONDITION UNTIL BASE COURSE IS PLACED. THE STORAGE OR STOCKPILING OF MATERIALS ON THE FINISHED SUB GRADE WILL NOT BE PERMITTED. NO BASE COURSE SHALL BE LAID UNTIL THE SUB GRADE HAS BEEN CHECKED AND APPROVED, AND IN NO CASE SHALL BASE BE PLACED ON A MUDDY, SPONGY, OR FROZEN SUB GRADE.

10. DISPOSAL OF UNSUITABLE OR EXCESS MATERIAL

10.1. GENERAL.

10.1.1. THE CONTRACTOR SHALL DISPOSE OF ALL UNSUITABLE OR EXCESS MATERIALS RESULTING FROM THE EXCAVATION THAT ARE NOT PERMITTED OR REQUIRED IN THE FILLS OR REQUIRED IN OTHER FEATURES OF THE WORK. MATERIALS SHALL BE DISPOSED OF OFF THE OWNER'S PROPERTY.

11. MEASUREMENT

- 11.1. THE UNIT OF MEASUREMENT FOR MATERIAL WILL BE THE CUBIC YARD FOR ALL "CHANGE ORDER" YARDAGE. "CHANGE ORDER" YARDAGE OF MATERIAL TO BE PAID FOR WILL BE THE NUMBER OF CUBIC YARDS OF MATERIAL BASED UPON TRUCK BED MEASUREMENT AND PAYMENT BY LOAD TICKETS.
- 11.2. THE UNIT OF MEASUREMENT FOR EXCESS MATERIAL WILL BE THE CUBIC YARD. YARDAGE WILL BE THE NUMBER OF CUBIC YARDS BASED UPON TRUCK BED MEASUREMENT.

12. <u>SUBSIDIARY OBLIGATIONS</u>

12.1. GENERAL

12.1.1. THE FOLLOWING OPERATIONS AND CONSTRUCTION WILL NOT BE MEASURED FOR DIRECT PAYMENT, BUT WILL BE CONSIDERED SUBSIDIARY OBLIGATIONS OF THE CONTRACTOR, AND WILL BE COVERED UNDER THE CONTRACT PRICES FOR THE STRUCTURES INVOLVED OR UNDER THE UNIT PRICES PER YARD AS SPECIFIED BELOW.

12.2. EXCAVATION.

12.2.1. EXCAVATION FOR DRAINAGE STRUCTURES, FOUNDATIONS, AND OPERATIONS REQUIRED IN CONNECTION THEREWITH, INCLUDING BRACING OR SHEETING, DRAINAGE, AND PUMPING, WILL BE COVERED UNDER THE CONTRACT LUMP SUM PRICE FOR DRAINAGE STRUCTURES OR THE SUBJECT STRUCTURE.

12.3. BACKFILL.

12.3.1. BACKFILL FOR DRAINAGE STRUCTURES AND OTHER STRUCTURES BELOW GRADE, INCLUDING ATTENDANT OPERATIONS, WILL BE COVERED UNDER THE CONTRACT LUMP SUM PRICE FOR DRAINAGE STRUCTURES OR THE SUBJECT STRUCTURE.

12.4. FILL.

12.4.1. FILL CONSTRUCTION INCLUDING THE PREPARATION OF GROUND SURFACE FOR PLACEMENT OF FILL UP TO THE FINISHED SUB GRADE ELEVATION WILL BE COVERED UNDER THE CONTRACT LUMP SUM PRICE FOR EXCAVATION OR BORROW.

12.5. SUB GRADE PREPARATION.

12.5.1. SUB GRADE PREPARATION, INCLUDING DRESSING, SHAPING, WETTING, AERATING, AND COMPACTING OF THE SUB GRADE, WILL BE COVERED UNDER THE CONTRACT LUMP SUM PRICE FOR EXCAVATION OR BORROW.

12.6. WATER

12.6.1. WATER USED FOR SPRINKLING AND WETTING MATERIALS DURING CONSTRUCTION IN CONNECTION WITH COMPACTION OF FILLS, UNLESS OTHERWISE SPECIFIED, WILL BE COVERED UNDER THE CONTRACT LUMP SUM PRICE FOR EXCAVATION OR BORROW.

12.7. DISPOSAL

12.7.1. DISPOSAL OF UNSUITABLE MATERIAL SHALL BE MOVED AND STORED AS DIRECTED BY THE OWNER.

12.8. DEWATERING

12.8.1. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TYPE OF DEWATERING, IF REQUIRED.

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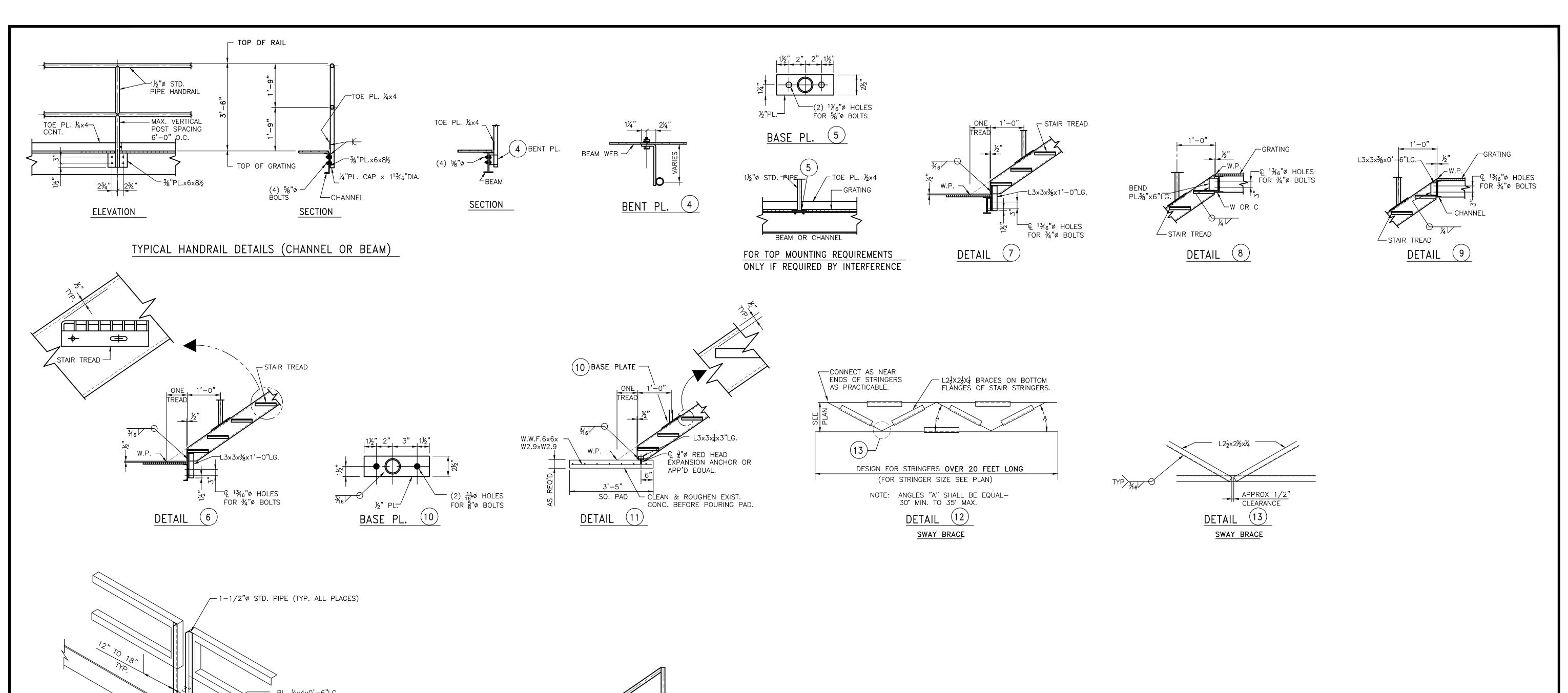
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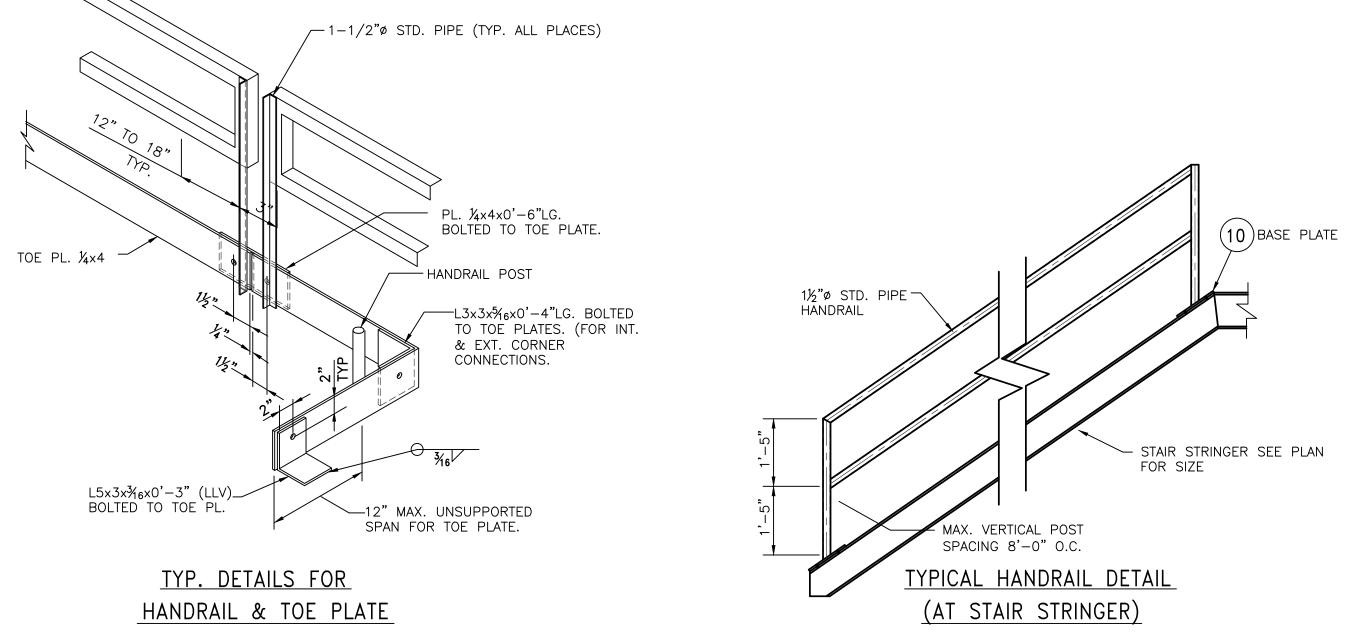
TERMINAL RAILWAY
OFFICE ADDITION/RENOVATION

126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

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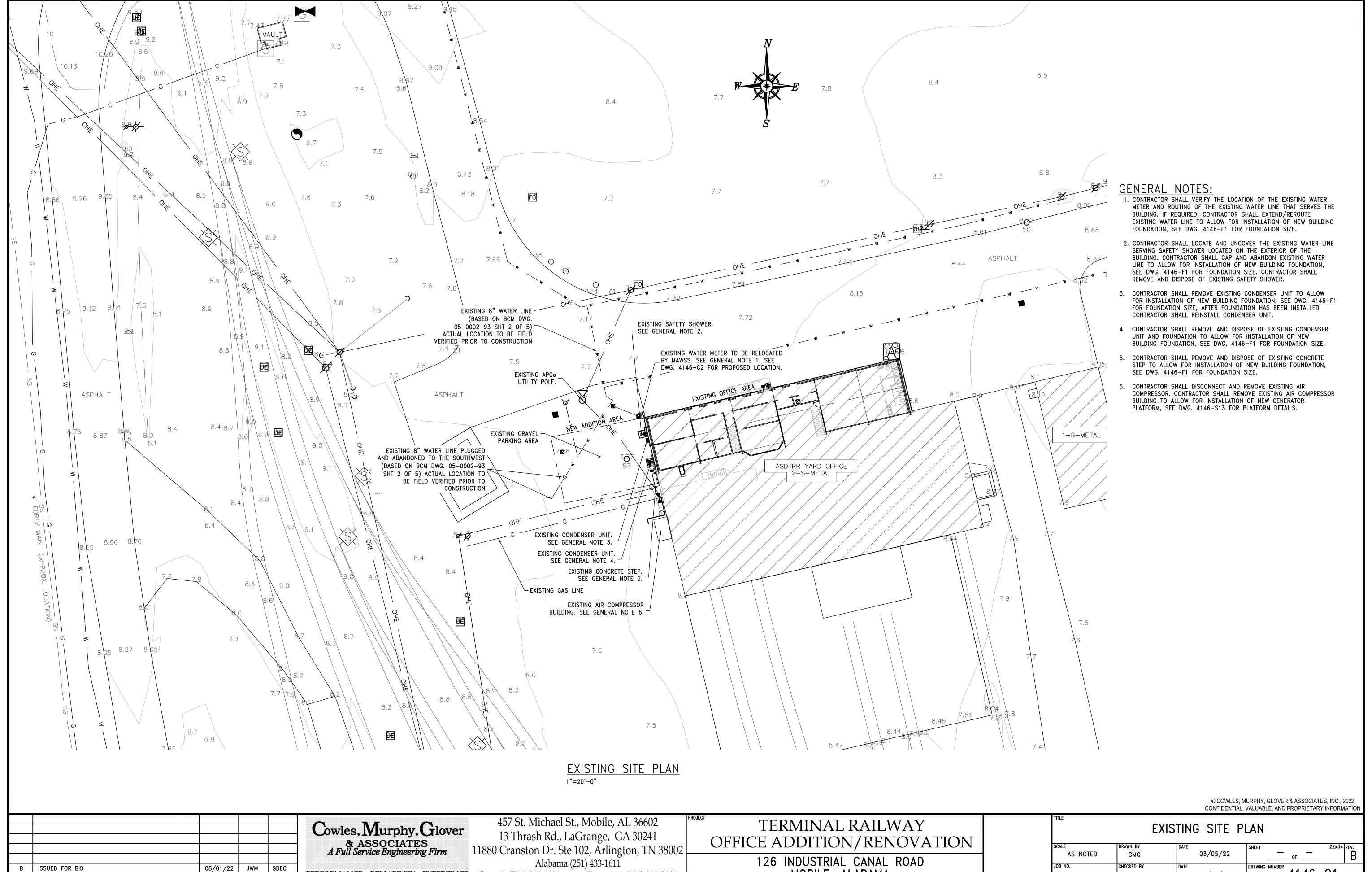
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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD

MOBILE, ALABAMA

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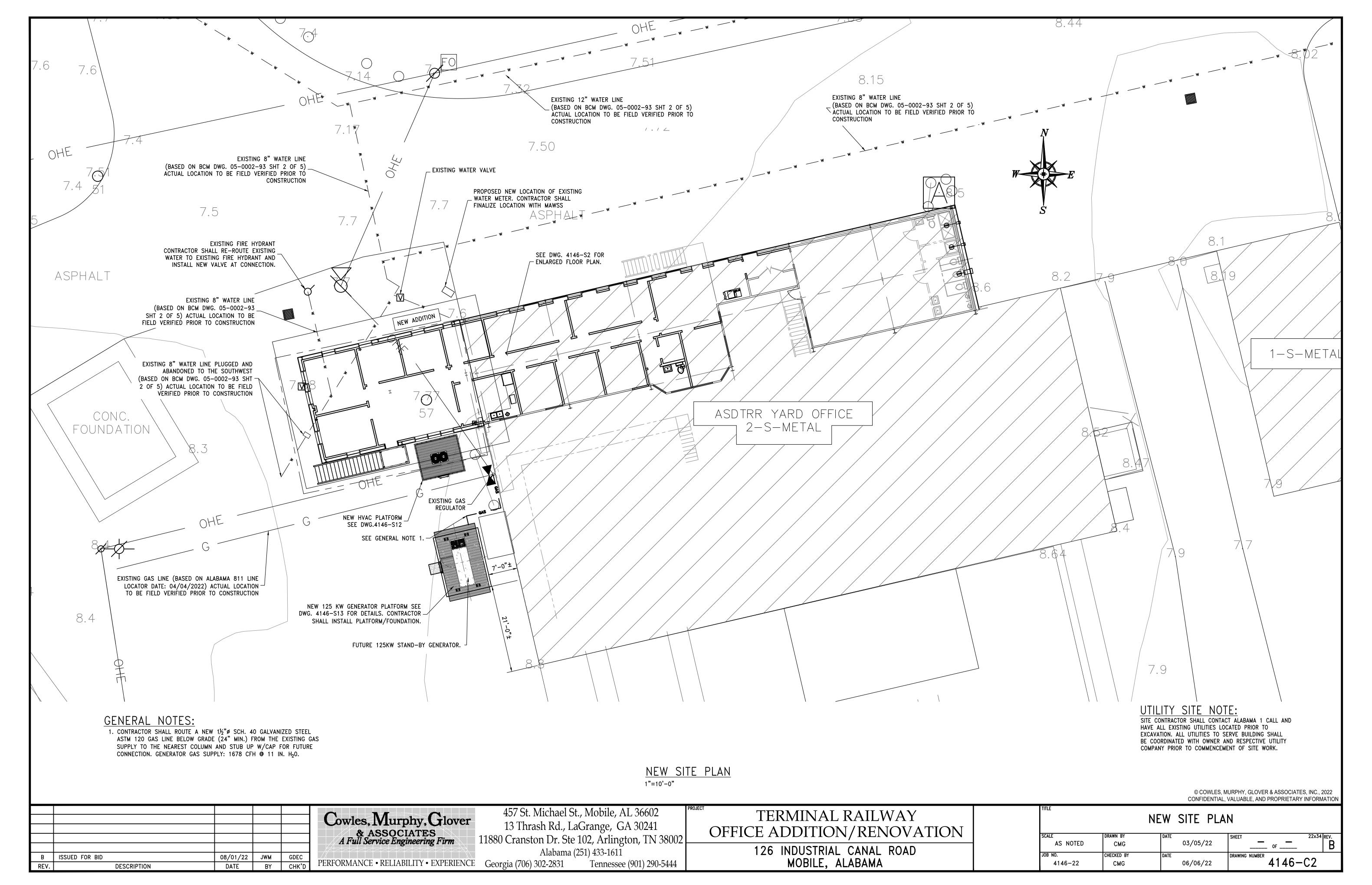
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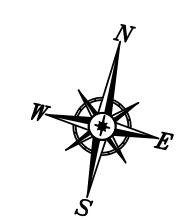
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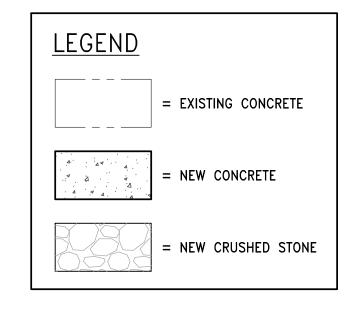


| FOU | INDATION SCHEDULE |
|------|-----------------------------|
| TYPE | NOTES |
| Α | SEE DETAIL 1 ON DWG 4146-F2 |
| В | SEE DETAIL 2 ON DWG 4146-F2 |
| С | SEE DETAIL 3 ON DWG 4146-F2 |
| D | SEE DETAIL 4 ON DWG 4146-F3 |
| E | SEE DETAIL 5 ON DWG 4146-F3 |

18'-9" PROVIDE (4) #6 DOWELS @ 15" LONG EMBEDDED 63/4" INTO EXISTING FOOTING W/ HILTI-HY200 EPOXY. MINIMUM COVER OF 4" MINIMUM, MINIMUM HORIZONTAL SPACING OF 16" AND MINIMUM VERTICAL SPACING OF 4" (TYP). CONTRACTOR SHALL NOTIFY E.O.R. IF ANY DISCREPANCY ARISES. EXISTING FOUNDATION **EXISTING** FOUNDATION 10'-3" 2'-4" PROVIDE (6) #6 DOWELS 9 15" LONG EMBEDDED $6\frac{3}{4}$ " INTO EXISTING FOOTING W/HILTI-HY200 EPOXY. MINIMUM COVER OF 4" 18'-9" ¹1'−6" MINIMUM, MINIMUM HORIZONTAL SPACING OF 22"
AND MINIMUM VERTICAL SPACING OF 4" (TYP).
CONTRACTOR SHALL NOTIFY E.O.R. IF ANY
DISCREPANCY ARISES. FOUNDATION PLAN

BID ALTERNATE: IN LIEU OF CRUSHED

GRAVEL, PROVIDE 6" SLAB-ON-GRADE
WITH 4x4-W4xW4 WWF- SEE BID
ALTERNATE SLAB-ON-GRADE DETAIL
THIS SHEET.

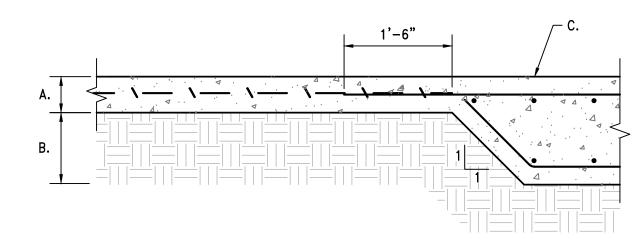


CRUSHED STONE DETAIL

GENERAL NOTES:

A. 6 INCHES 301A-020: CRUSHED AGGREGATE BASE, TYPE B, PLANT MIXED

B. IN-SITU SOIL



BID ALTERNATE SLAB-ON-GRADE DETAIL

GENERAL NOTES:

A. 6" SLAB-ON-GRADE W/ 4x4-W4xW4 WWF (MIN. 3" CLEAR COVER)

B. IN-SITU SOIL

C. TYPICAL FOOTING WITH ADDITIONAL TURNDOWN WHERE SLAB IS PRESENT. EXTEND TOP MAT OF REBAR 1'-6" INTO SLAB.

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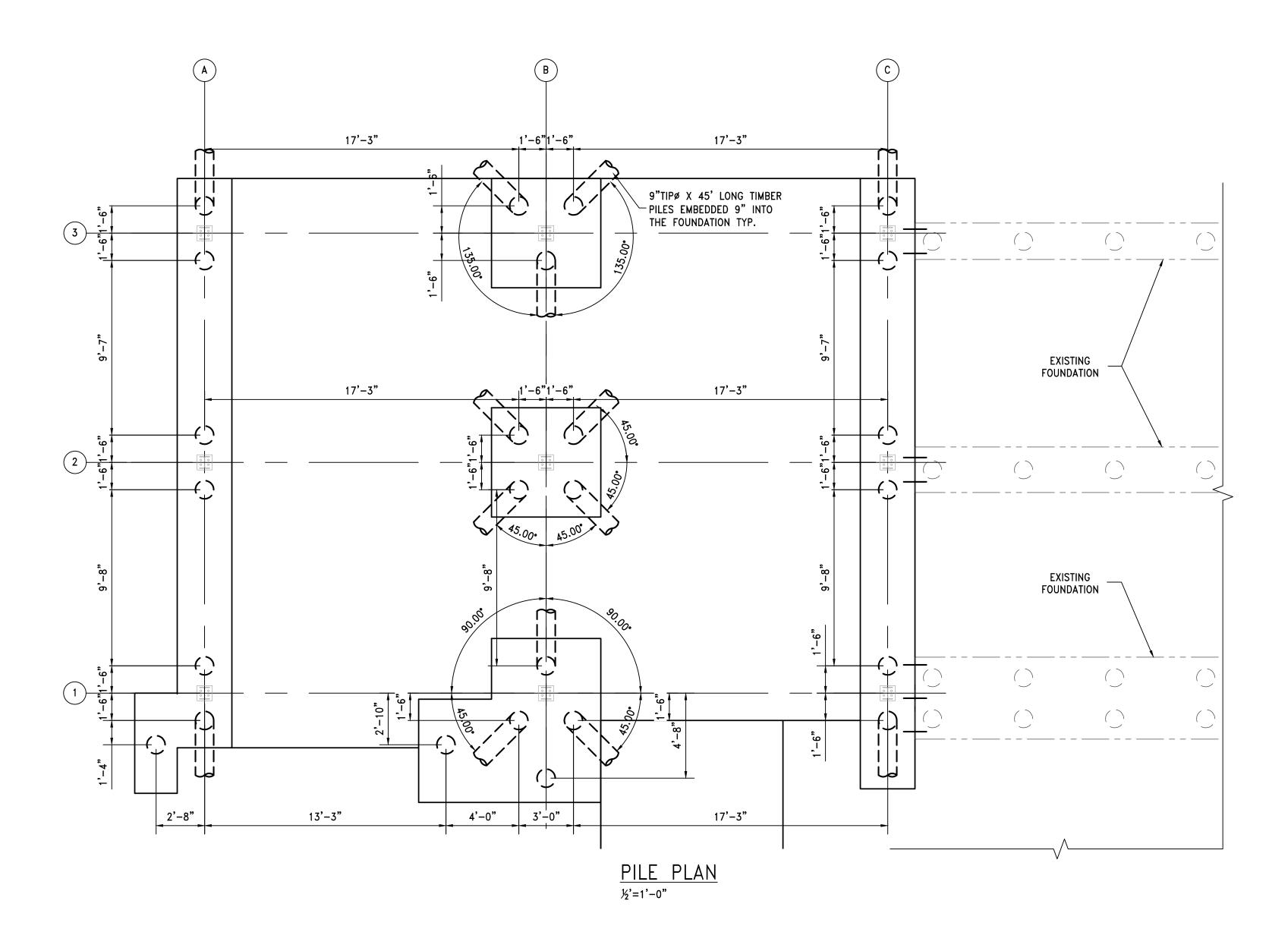
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½'=1'-0"

TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

| FOUNDATION PLAN | | | | | | | | | |
|-------------------|--------------------|---------------|------------------------|--|--|--|--|--|--|
| AS NOTED | DRAWN BY JWM | DATE 04/07/22 | SHEET OF B | | | | | | |
| OB NO. 4146-22 | CHECKED BY GDEC | DATE 04/07/22 | DRAWING NUMBER 4146-F1 | | | | | | |





| <u>LEGEND</u> | |
|---------------|---------------------|
| | = EXISTING CONCRETE |
| | = NEW CONCRETE |

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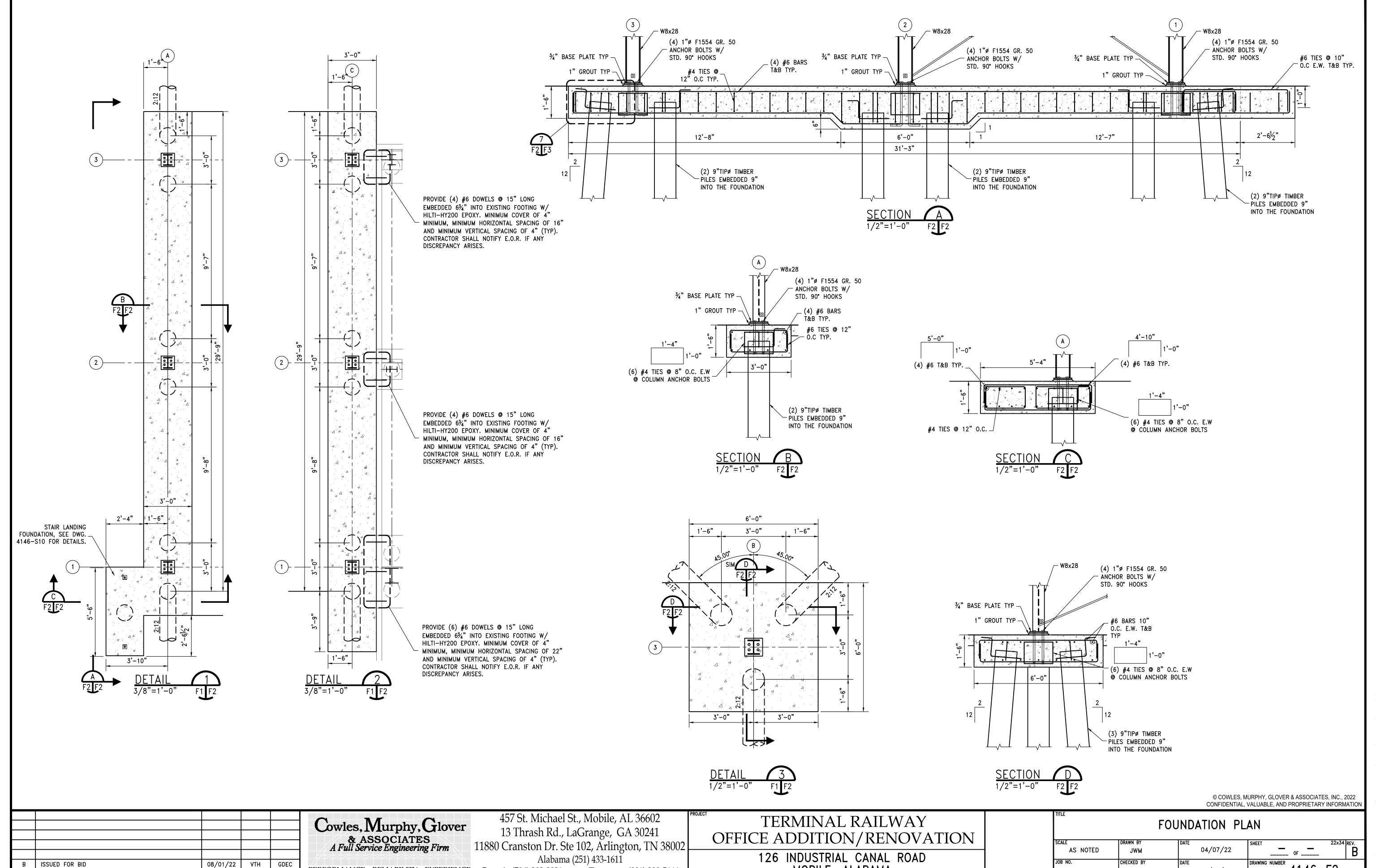
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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

| PILE PLAN | | | | | | | | | |
|-------------------|-----------------|---------------|-------------------------|---|--|--|--|--|--|
| AS NOTED | DRAWN BY JWM | DATE 04/07/22 | SHEET OF | 3 | | | | | |
| ов no. 4146-22 | CHECKED BY GDEC | DATE 04/07/22 | DRAWING NUMBER 4146-F1A | | | | | | |



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DESCRIPTION

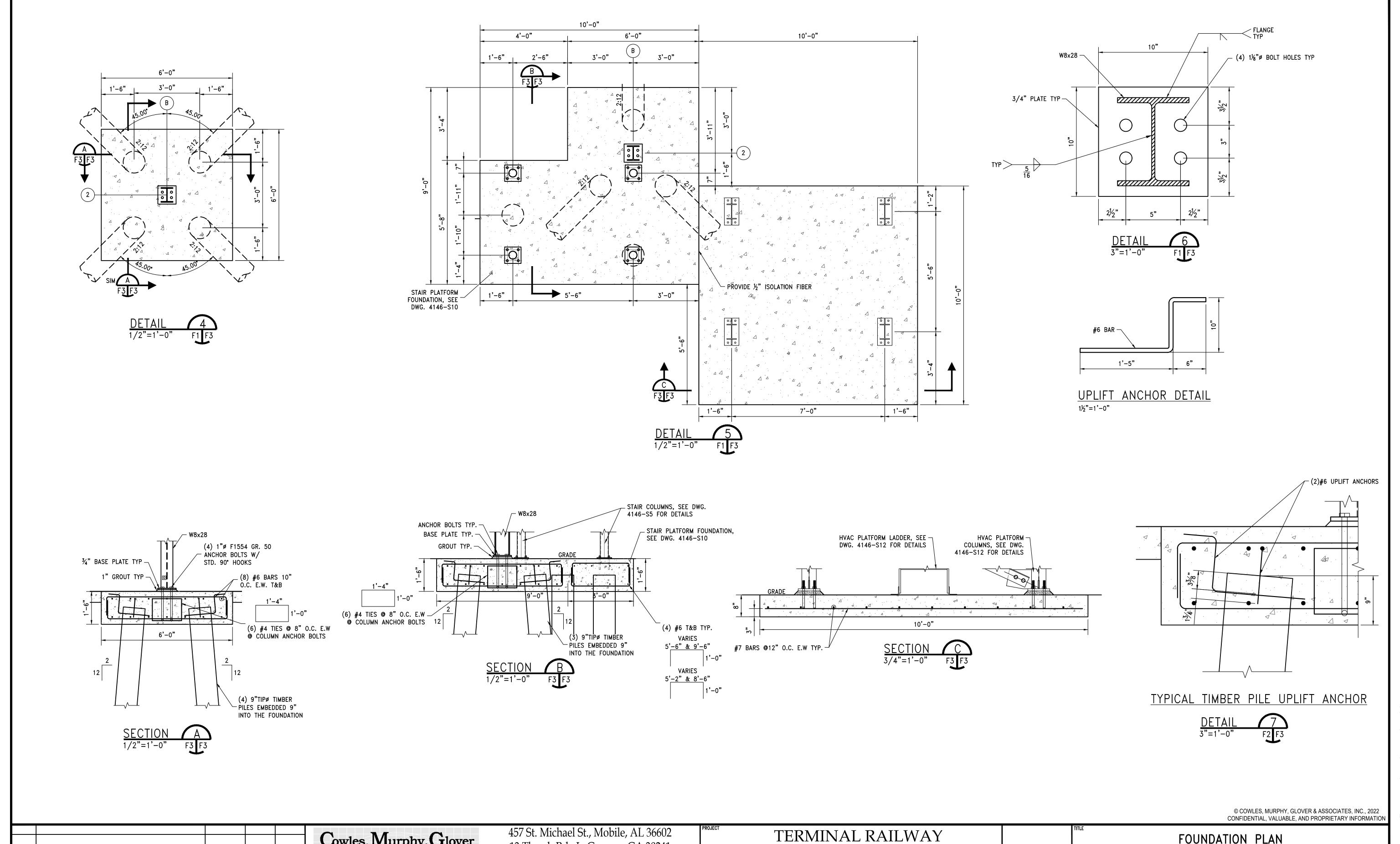
MOBILE, ALABAMA

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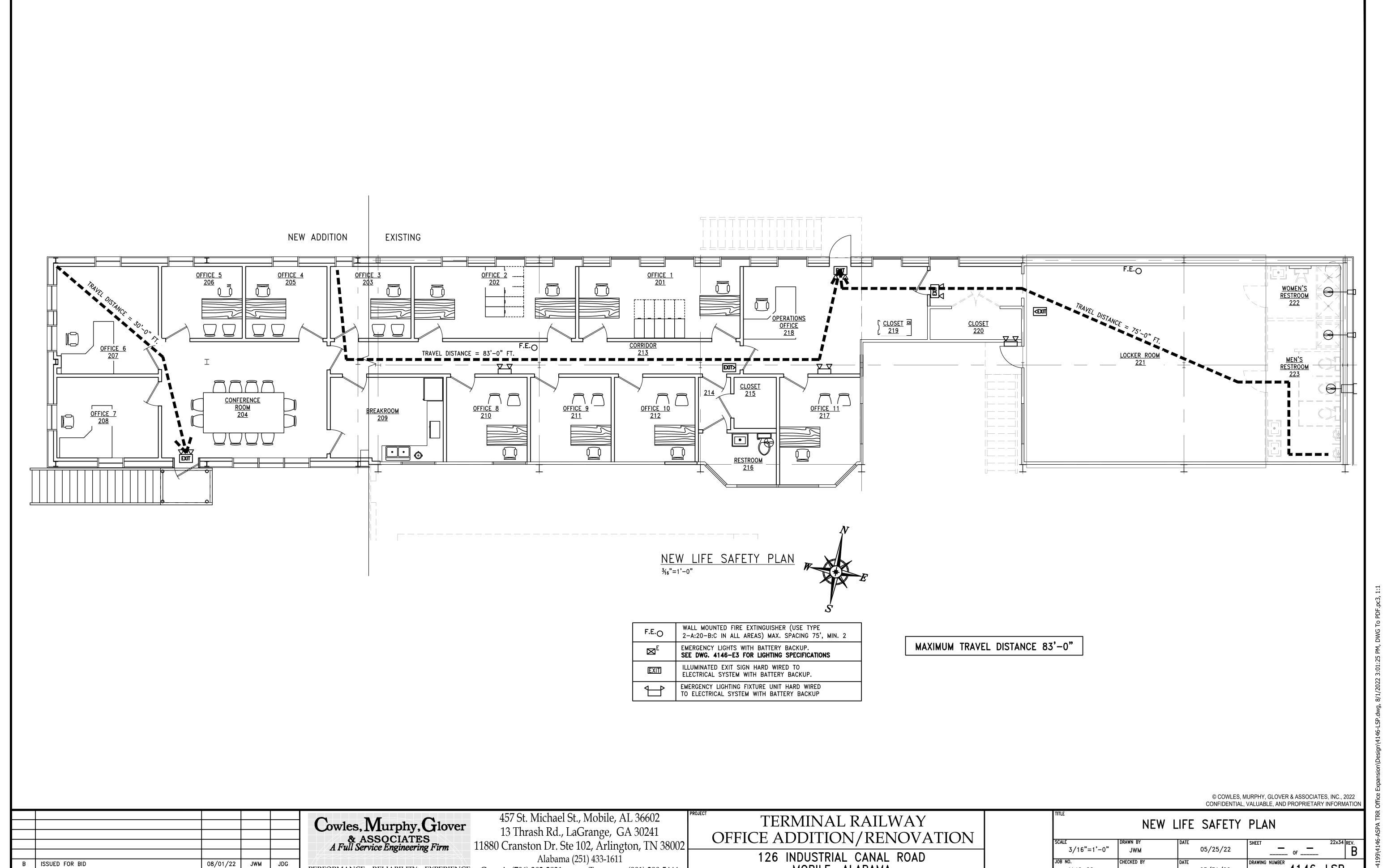
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OFFICE ADDITION/RENOVATION

126 INDUSTRIAL CANAL ROAD
MOBILE, ALABAMA

| FOUNDATION PLAN | | | | | | | | |
|-------------------|--------------------|---------------|------------------------|--|--|--|--|--|
| AS NOTED | DRAWN BY JWM | 04/07/22 | SHEET OF B | | | | | |
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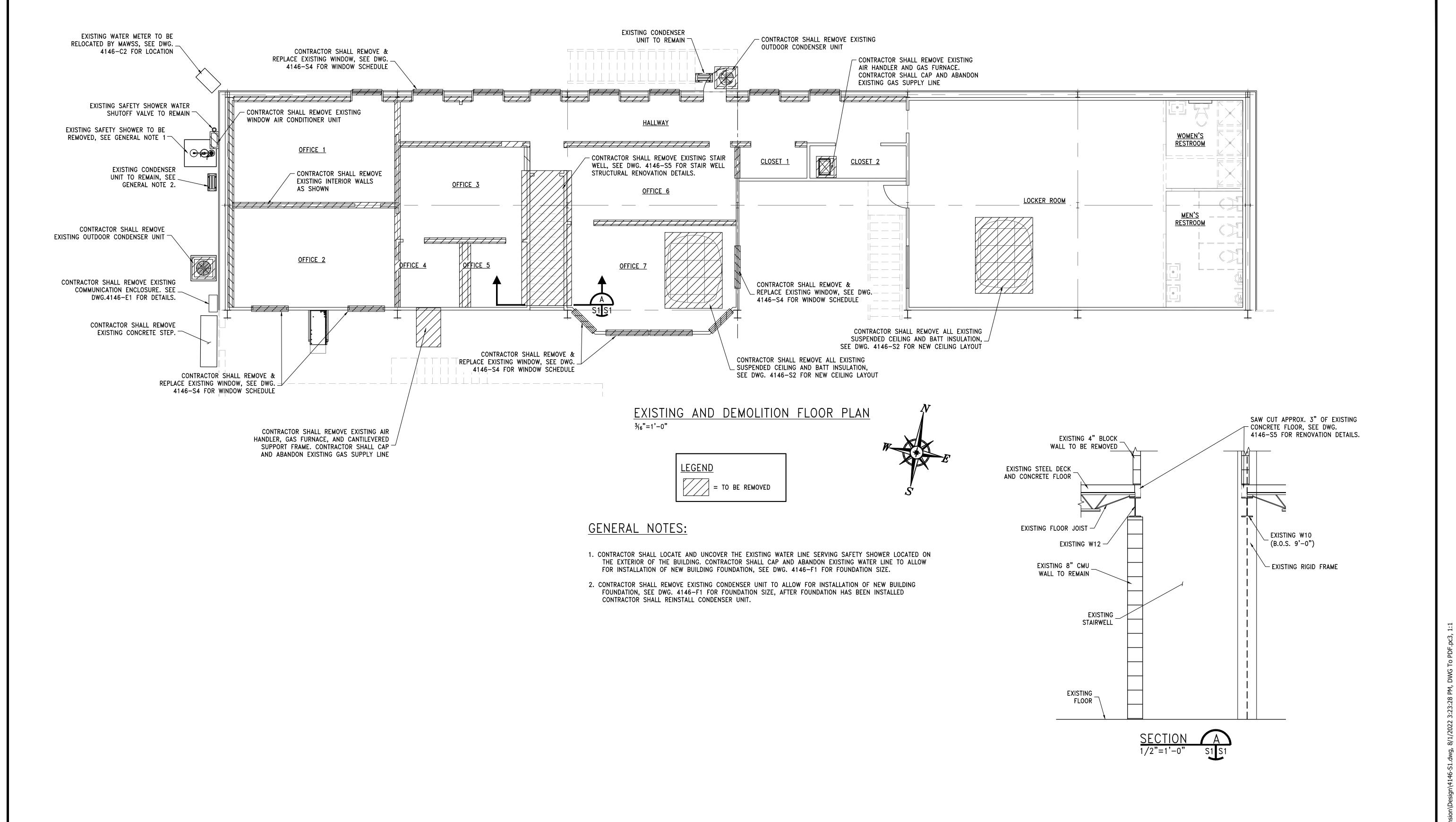
MOBILE, ALABAMA

4146-LSP

05/31/22

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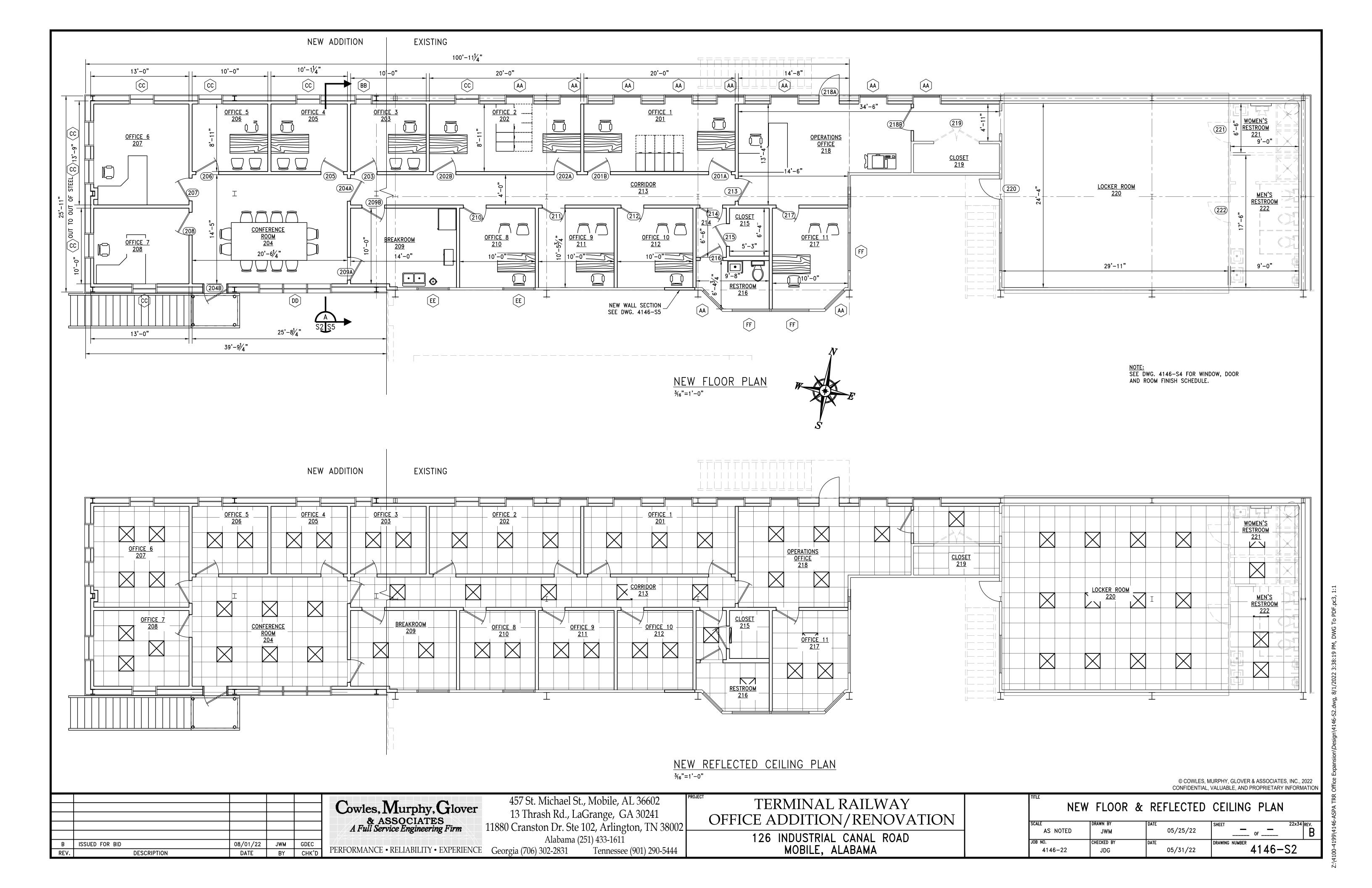
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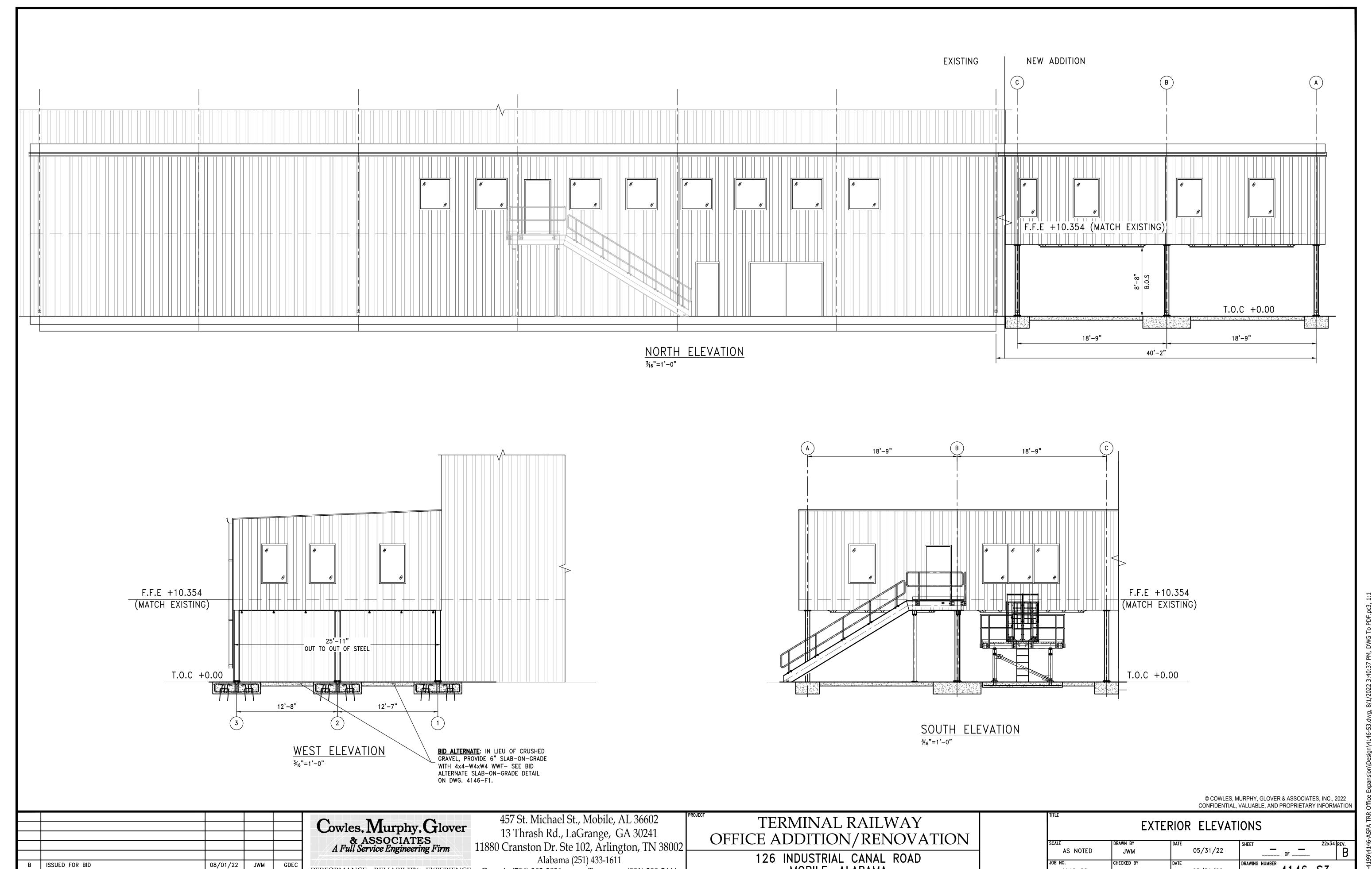
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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

| EXIS | STING AND | DEMOLITION | FLOOR | PLAN | |
|----------------------|----------------|---------------|----------------|-------|------------|
| SCALE 3/16"=1'-0" | DRAWN BY JWM | DATE 05/25/22 | SHEET | OF | 22x34 REV. |
| JOB NO. 4146-22 | CHECKED BY JDG | DATE 05/31/22 | DRAWING NUMBER | 4146- | S1 |





MOBILE, ALABAMA

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4146-S3

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4146-22

05/31/22

| | ROOM FINISH SCHEDULE | | | | | | | | | | |
|------|----------------------|-------|------|---|---|-----|---|-------|--------|-----------------------------|--|
| | | S. | ш | | W | ALL | | CEIL | _ING | | |
| ROOM | | FLOOR | BASE | N | S | Ε | W | MAT'L | HEIGHT | REMARKS | |
| 201 | OFFICE 1 | VCT | VB | 2 | 1 | 1 | 1 | LI | 8' | | |
| 202 | OFFICE 2 | VCT | VB | 2 | 1 | 1 | 1 | LI | 8' | | |
| 203 | OFFICE 3 | VCT | VB | 2 | 1 | 1 | 1 | LI | 8' | | |
| 204 | CONFERENCE ROOM | VCT | VB | 1 | 2 | 1 | 1 | LI | 8' | | |
| 205 | OFFICE 4 | VCT | VB | 2 | 1 | 1 | 1 | LI | 8' | | |
| 206 | OFFICE 5 | VCT | VB | 2 | 1 | 1 | 1 | LI | 8' | | |
| 207 | OFFICE 6 | VCT | VB | 2 | 1 | 1 | 2 | LI | 8' | | |
| 208 | OFFICE 7 | VCT | VB | 1 | 2 | 1 | 2 | LI | 8' | | |
| 209 | BREAKROOM | VCT | VB | 1 | 2 | 1 | 1 | LI | 8' | | |
| 210 | OFFICE 8 | VCT | VB | 1 | 2 | 1 | 1 | LI | 8' | | |
| 211 | OFFICE 9 | VCT | VB | 1 | 2 | 1 | 1 | LI | 8' | | |
| 212 | OFFICE 10 | VCT | VB | 1 | 2 | 1 | 1 | LI | 8' | | |
| 213 | CORRIDOR | VCT | VB | 1 | 1 | 1 | 1 | LI | 8' | | |
| 214 | CORRIDOR | VCT | VB | 1 | 1 | 1 | 1 | LI | 8' | | |
| 215 | CLOSET | VCT | VB | 1 | 1 | 1 | 1 | LI | 8' | | |
| 216 | RESTROOM | VCT | СВ | 3 | 3 | 3 | 3 | LI | 8' | | |
| 217 | OFFICE 11 | VCT | VB | 1 | 2 | 2 | 1 | LI | 8' | | |
| 218 | OPERATIONS OFFICE | VCT | VB | 2 | 1 | 1 | 1 | LI | 8' | | |
| 219 | CLOSET | EX | EX | 4 | 4 | 4 | 4 | LI | 8' | | |
| 220 | CLOSET | EX | EX | 4 | 4 | 4 | 4 | LI | 8' | | |
| 221 | LOCKER ROOM | EX | EX | 4 | 4 | 4 | 4 | LI | 8' | | |
| 222 | WOMEN'S RESTROOM | EX | EX | 4 | 4 | 4 | 4 | LI | 8' | TOILET PARTITIONS TO REMAIN | |
| 223 | MEN'S RESTROOM | EX | EX | 4 | 4 | 4 | 4 | LI | 8' | TOILET PARTITIONS TO REMAIN | |

ROOM FINISH SCHEDULE KEY NOTES

- 1. 3%" METAL STUD WALL FRAMING WITH %" PAINTED GYPSUM WITH 3½" BATT INSULATION
- 2. 3%" METAL STUD WALL FRAMING WITH 5%" PAINTED GYPSUM WITH SPRAY FOAM INSULATION
- 3. 35%" METAL STUD WALL FRAMING WITH 5%" MOISTURE RESISTANT PAINTED GYPSUM WITH 31/2" BATT INSULATION AND 1/4" FRP 4'-0" HIGH WITH 3" OF BATT INSULATION
- 4. EXISTING WALLS TO REMAIN

FLOORING:

VINYL COMPOSITION TILE

EXISTING TO REMAIN ΕX

CEILING:

ARMSTRONG TILE #1728 FINE FISSURED 2'X2'X5/8" MINERAL BOARD, WHITE, SQUARE EDGE DETAIL, $6\frac{1}{4}$ " BATT INSULATION.

BASE:

CB 6" HIGH CERAMIC BASE

VINYL BASE

EXISTING TO REMAIN

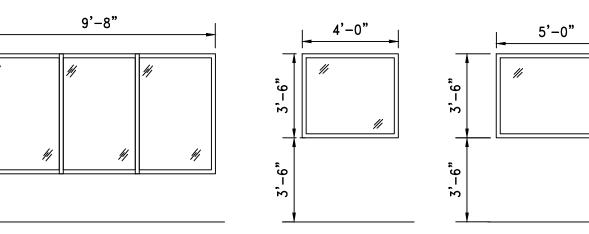
| DOOR # | RATING | DOOR SIZE | DOOR MATERIAL | FRAME MATERIAL | HARDWARE | REMARKS |
|--------|--------|---------------|---------------------------|----------------|---|------------------------------------|
| 201A | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 201B | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 202A | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 202B | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 203 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 204A | NONE | 3'-0" x 7'-0" | SCWD | METAL | DOOR CLOSER, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "C" |
| 204B | 60 PSF | 3'-0" x 7'-0" | METAL DOOR WITH POLY CORE | METAL | ENTRY LOCKSET W/ DEADBOLT, DOOR CLOSER, 1½ PAIR S.S. BUTT HINGES, VINYL DOOR SEAL, NEOPRENE SWEEP, SADDLE THRESHOLD | CT/IR GLASS-SEE DOOR TYPE "A" |
| 205 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 206 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 207 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 208 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 209A | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 209B | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 210 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 211 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 212 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 213 | NONE | 3'-0" x 7'-0" | SCWD | METAL | DOOR CLOSER, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "C" |
| 214 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, DOOR CLOSER, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 215 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "B" |
| 216 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | SEE DOOR TYPE "D" |
| 217 | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "C" |
| 218A | 60 PSF | 2'-8" x 7'-0" | METAL DOOR WITH POLY CORE | METAL | EXISTING DOOR & HARDWARE TO REMAIN | EXISTING DOOR & HARDWARE TO REMAIN |
| 218B | NONE | 3'-0" x 7'-0" | SCWD | METAL | PRIVACY LOCK SET, 1½ PAIR S.S. BUTT HINGES | IR GLASS-SEE DOOR TYPE "C" |
| 219 | NONE | 6'-0" x 7'-0" | SCWD | METAL | EXISTING DOOR & HARDWARE TO REMAIN | EXISTING DOOR & HARDWARE TO REMAIN |
| 220 | 60 PSF | 2'-8" x 7'-0" | METAL DOOR WITH POLY CORE | METAL | EXISTING DOOR & HARDWARE TO REMAIN | EXISTING DOOR & HARDWARE TO REMAIN |
| 221 | NONE | 2'-8" x 7'-0" | SCWD | METAL | DOOR CLOSER, 1½ PAIR S.S. BUTT HINGES | EXISTING DOOR & HARDWARE TO REMAIN |
| 222 | NONE | 2'-8" x 7'-0" | SCWD | METAL | DOOR CLOSER, 1½ PAIR S.S. BUTT HINGES | EXISTING DOOR & HARDWARE TO REMAIN |

-ALL EXTERIOR GLASS TO BE CLEAR TEMPERED, IMPACT RESISTANT, MEETING WIND REQUIREMENT OF 161 MPH. -ALL EXTERIOR DOORS SHALL BE AIR TIGHT AND WEATHER TIGHT. (DOORS SHALL PERMIT LESS THAN 0.01 CU.FT./MIN. OF OUTSIDE AIR)

WINDOW SCHEDULE NOTES:

- CLEAR TEMPERED
 IMPACT RESISTANT: 161 WIND REQUIREMENT MIN.
 VINYL FRAME FIXED
- 4. U-FACTOR: 1.250
- 5. SHGC: 0.82 6. WINDOW TYPE AA, EE, AND FF ARE REPLACING EXISTING. CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO PLACING ORDER.

 \bigcirc DD



STOREFRONT KAWNEER IR 501 STOREFRONT KAWNEER IR 501 CLEAR INSULATED-LOW-E #2 CLEAR INSULATED-LOW-E #2 HURRICANE RESISTANT GLAZÏNG HURRICANE RESISTANT GLAZÎNG

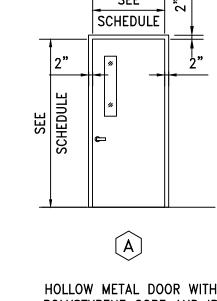
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GLAZING. **SEE NOTE 6.**

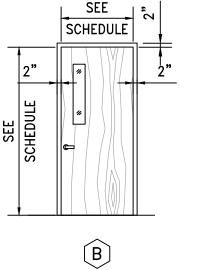
EE

STOREFRONT KAWNEER IR 501
CLEAR INSULATED-LOW-E #2
HURRICANE RESISTANT
STOREFRONT KAWNEER IR 501
CLEAR INSULATED-LOW-E #2
HURRICANE RESISTANT GLAZING. **SEE NOTE 6.**

FF



HOLLOW METAL DOOR WITH POLYSTYRENE CORE AND IR TOP WINDOW $(6"W \times 30"H)$



OTHERWISE.

3. NL = NIGHTLATCH4. SS = STAINLESS STEEL

6. IR = IMPACT RESISTANT

CT = CLEAR TEMPERED

DOOR SCHEDULE NOTES:

2. SCWD = SOLID CORE WOOD DOOR

PRE-FINISHED, STANDARD COLOR STAINED.

GENERAL: PROVIDE WALL BUMPERS FOR ALL DOORS.

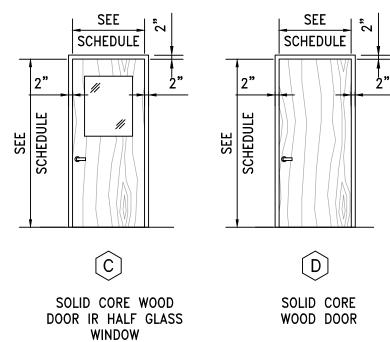
1. DOOR FIRE RATING — RATING SHALL BE 30 MIN, UNLESS NOTED

2B. WOOD DOORS TO BE ROTARY NATURAL BIRCH, FACTORY

5. ALL DOORS NOT TYPE A OR B TO BE FLUSH, UNLESS NOTED OTHERWISE.

2A. WOOD DOORS TO HAVE HOLLOW METAL FRAME

SOLID CORE WOOD DOOR IR TOP WINDOW $(6"W \times 30"H)$



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BB

STOREFRONT KAWNEER IR 501

CLEAR INSULATED-LOW-E #2

HURRICANE RESISTANT GLAZÏNG

AA

STOREFRONT KAWNEER IR 501

CLEAR INSULATED-LOW-E #2

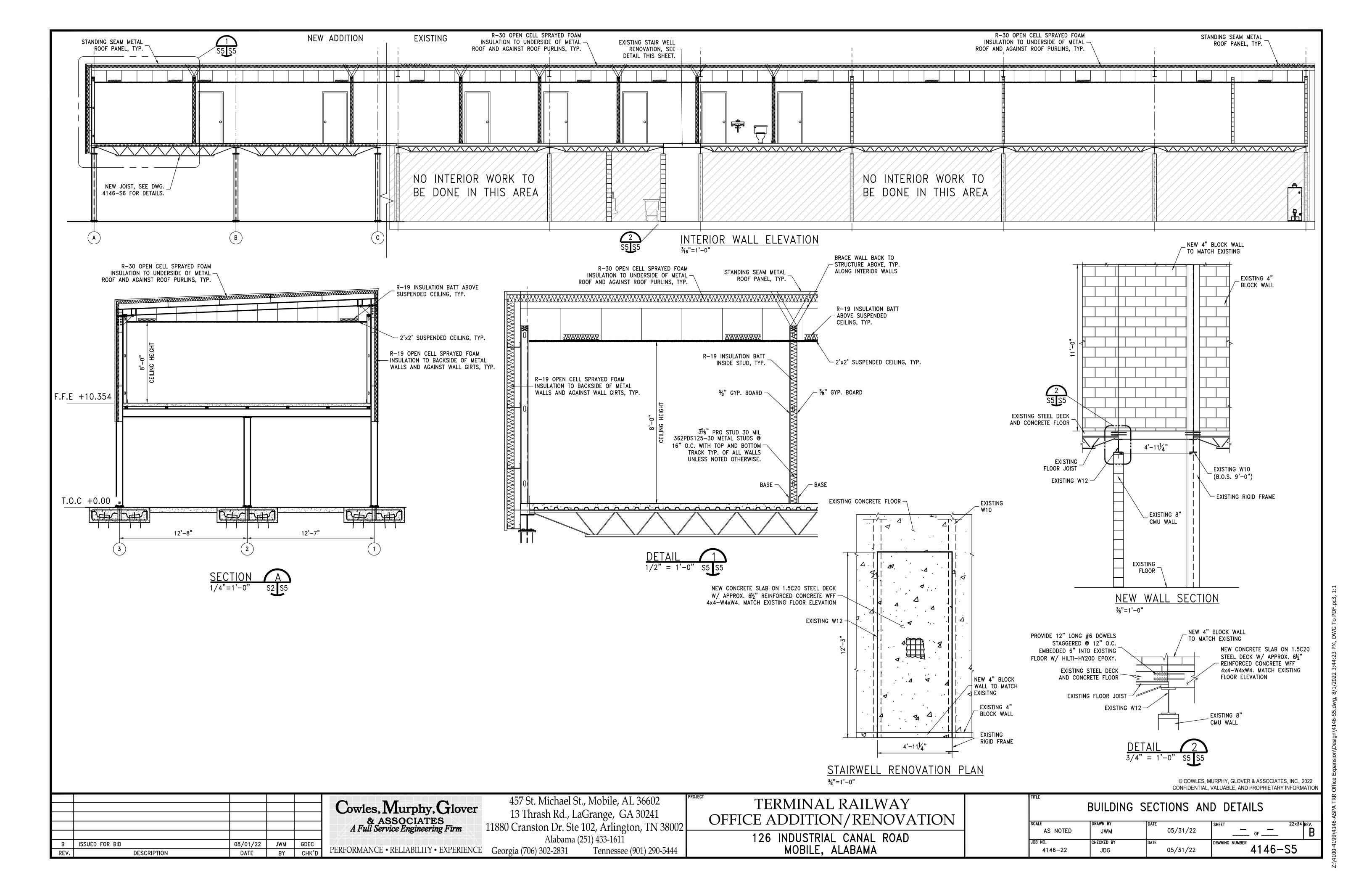
HURRICANE RESISTANT

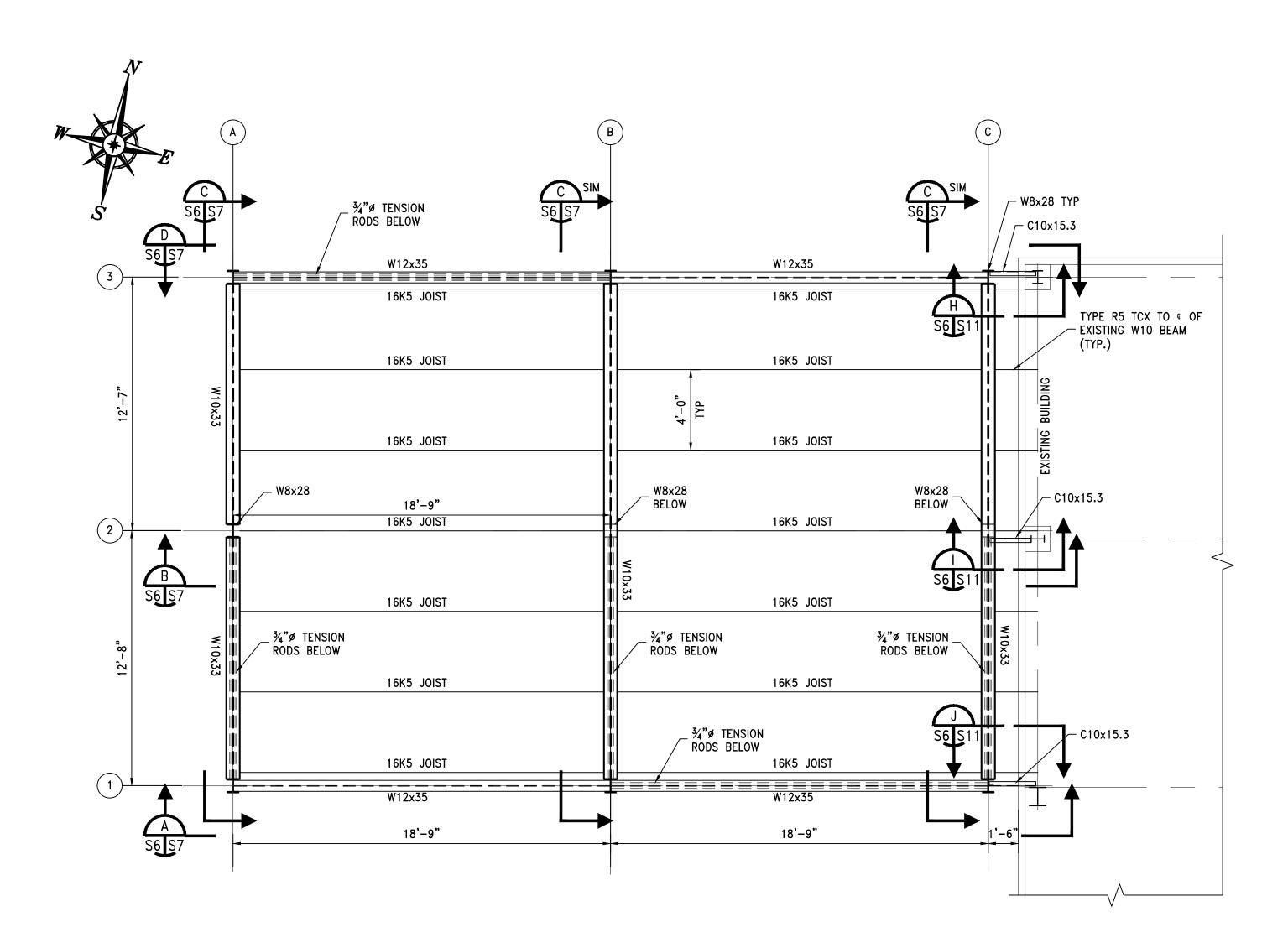
GLAZING. **SEE NOTE 6.**

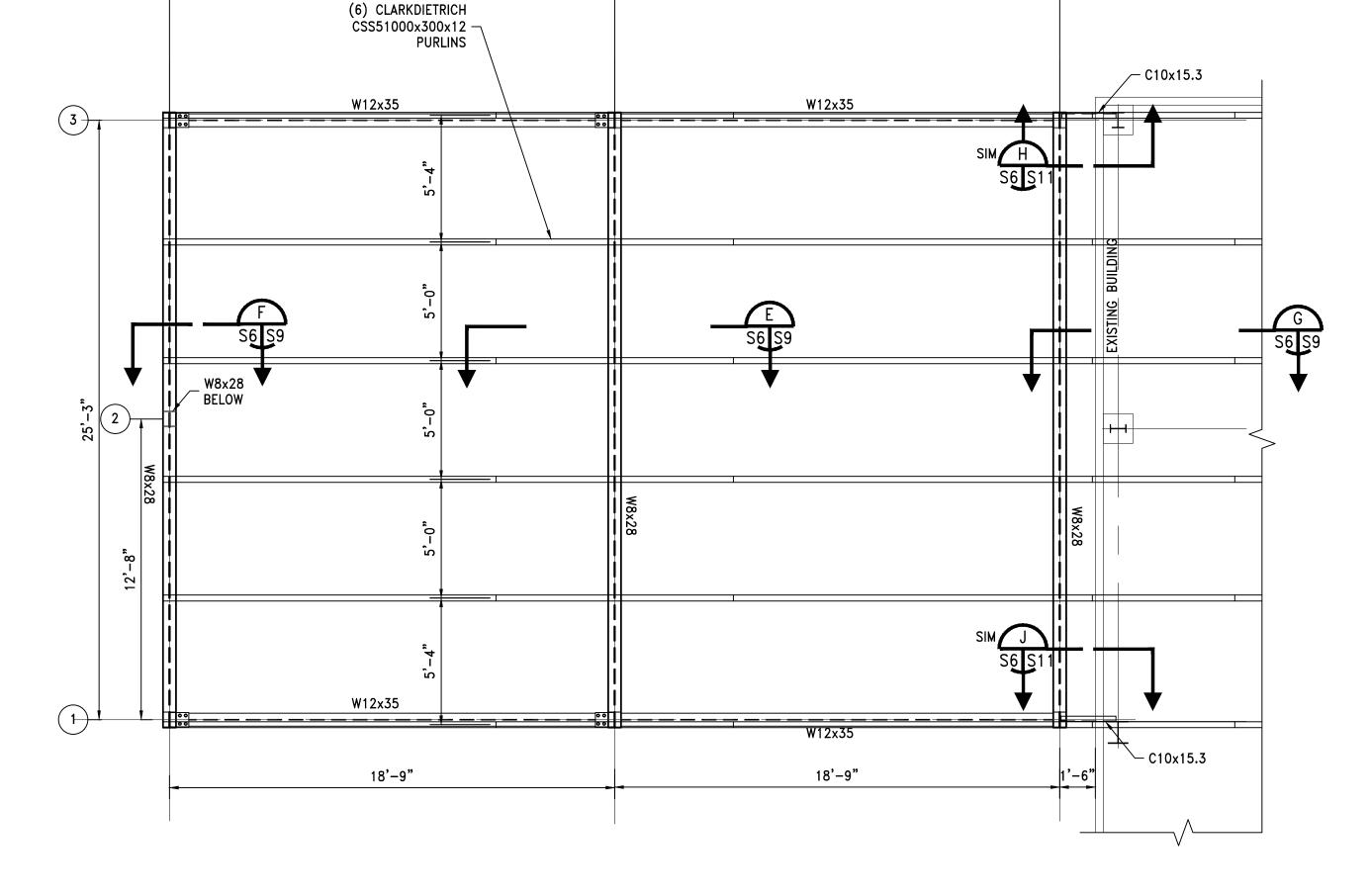
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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

| TITLE | DOOR AND |) WINDOW S | CHEDULE | |
|--------------------|-------------------|---------------|-----------------------|------------|
| AS NOTED | DRAWN BY JWM | DATE 05/31/22 | SHEET OF | 22x34 REV. |
| JOB NO. 4146-22 | CHECKED BY JDG | DATE 05/31/22 | DRAWING NUMBER 4146-S | 34 |







OFFICE FLOOR STRUCTURAL PLAN VIEW 1/4"=1'-0"

ROOF STRUCTURAL PLAN VIEW 1/4"=1'-0"

NOTE:

CONTRACTOR SHALL VERIFY ROOF PURLIN SPACING AND SHALL NOTIFY E.O.R. IF ANY DISCREPANCY ARISES.

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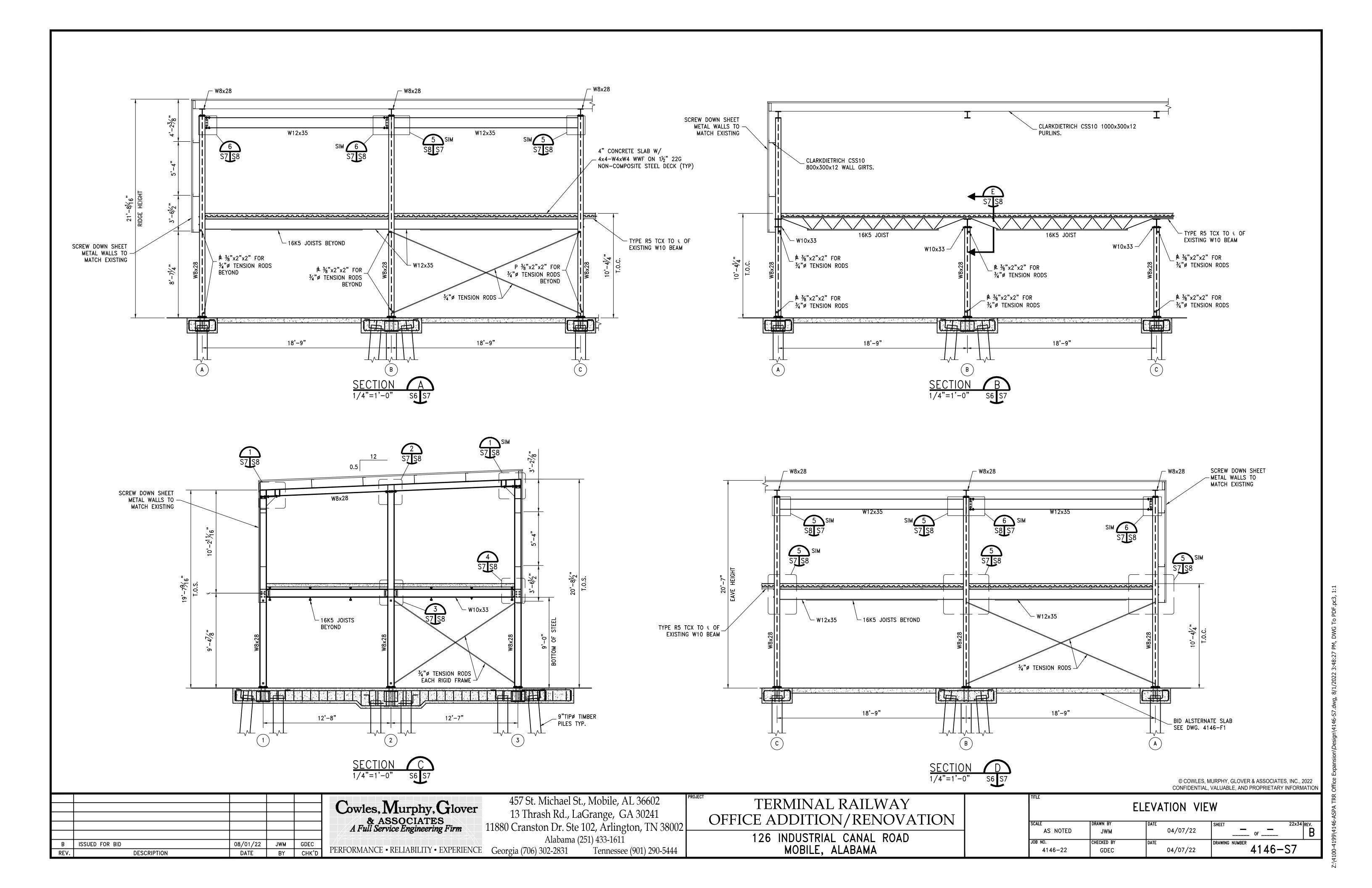
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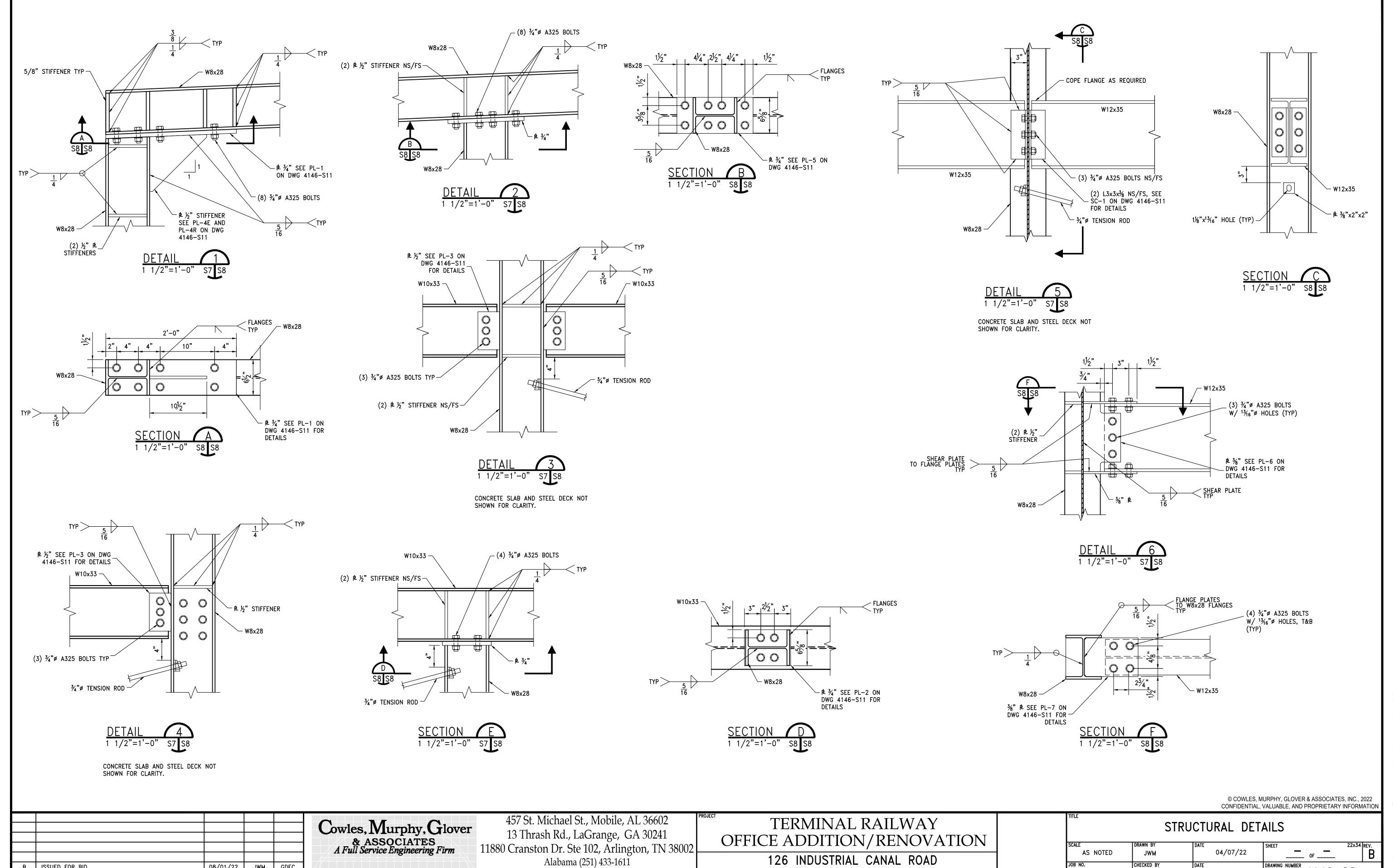
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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

PLAN VIEW 04/07/22 AS NOTED JWM HECKED BY 4146-S6 04/07/22 4146-22





MOBILE, ALABAMA

JWM GDEC

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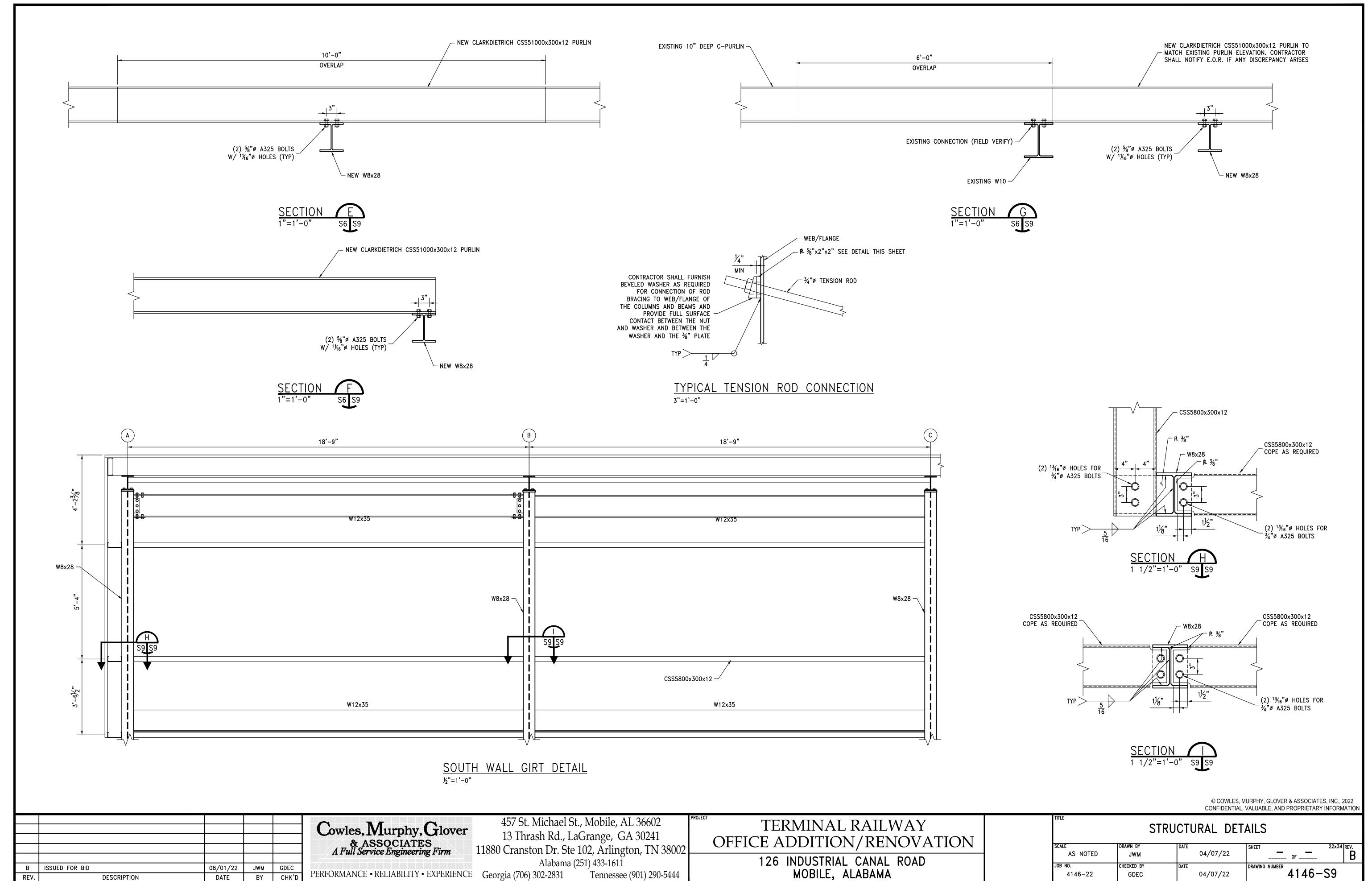
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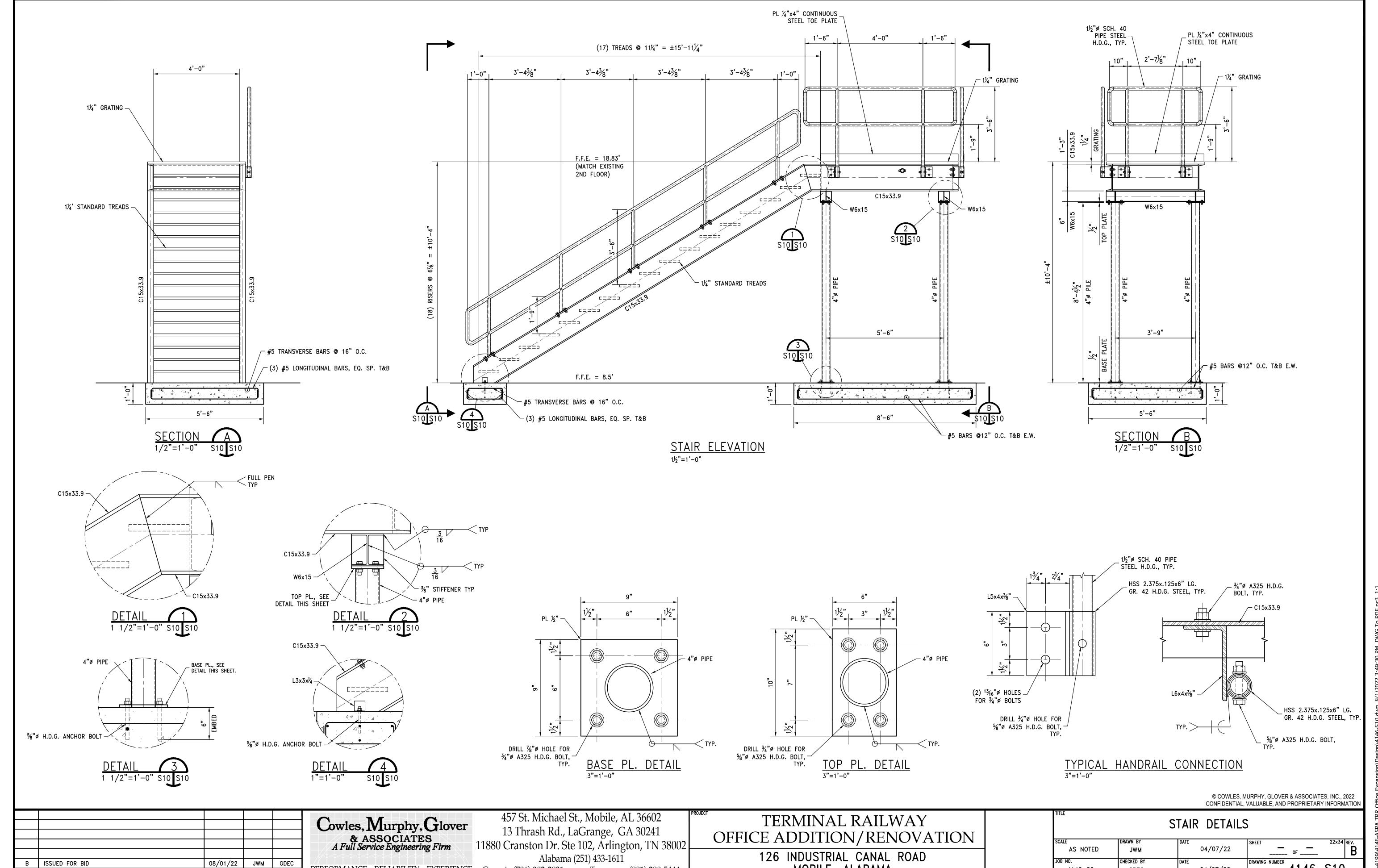
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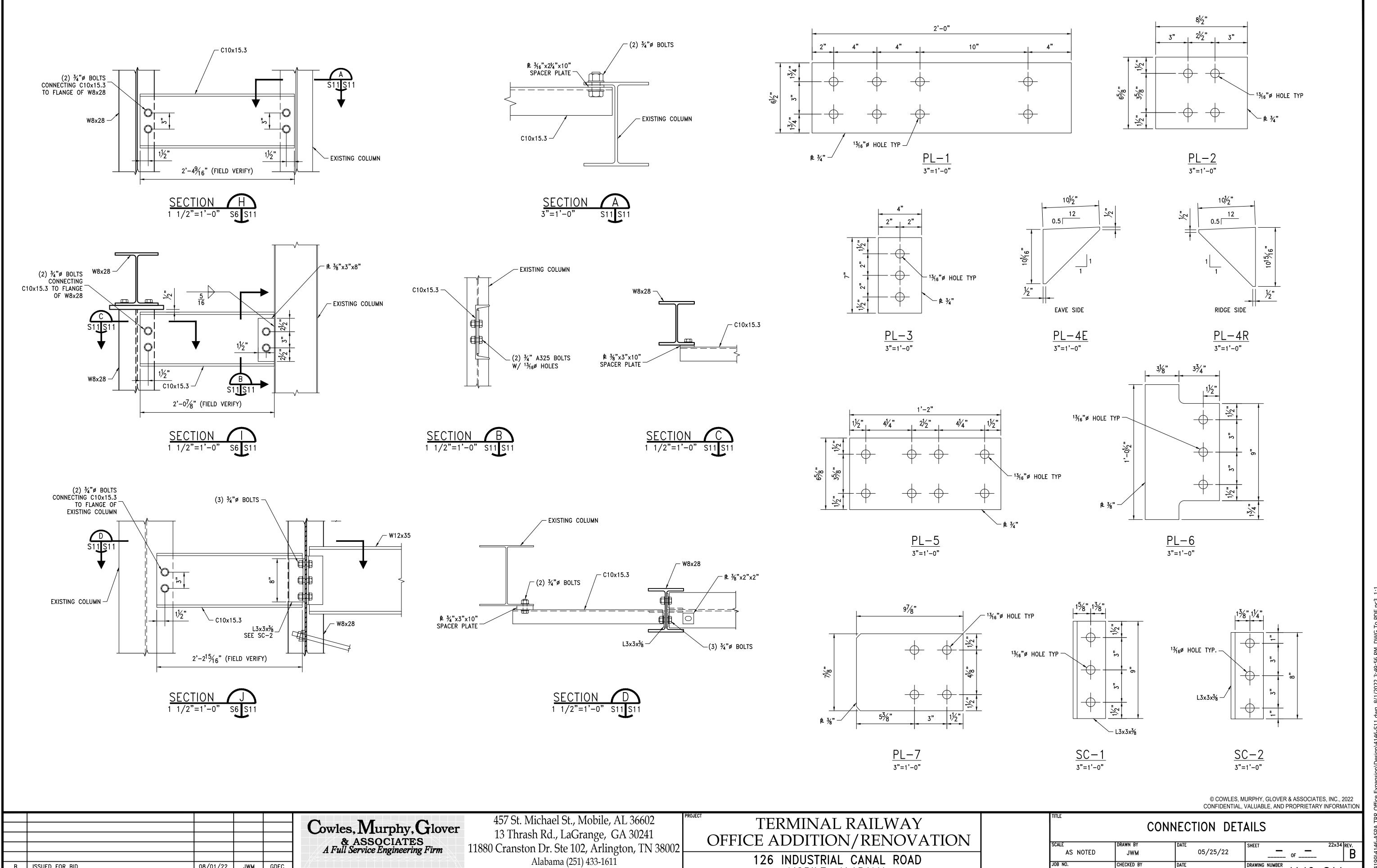
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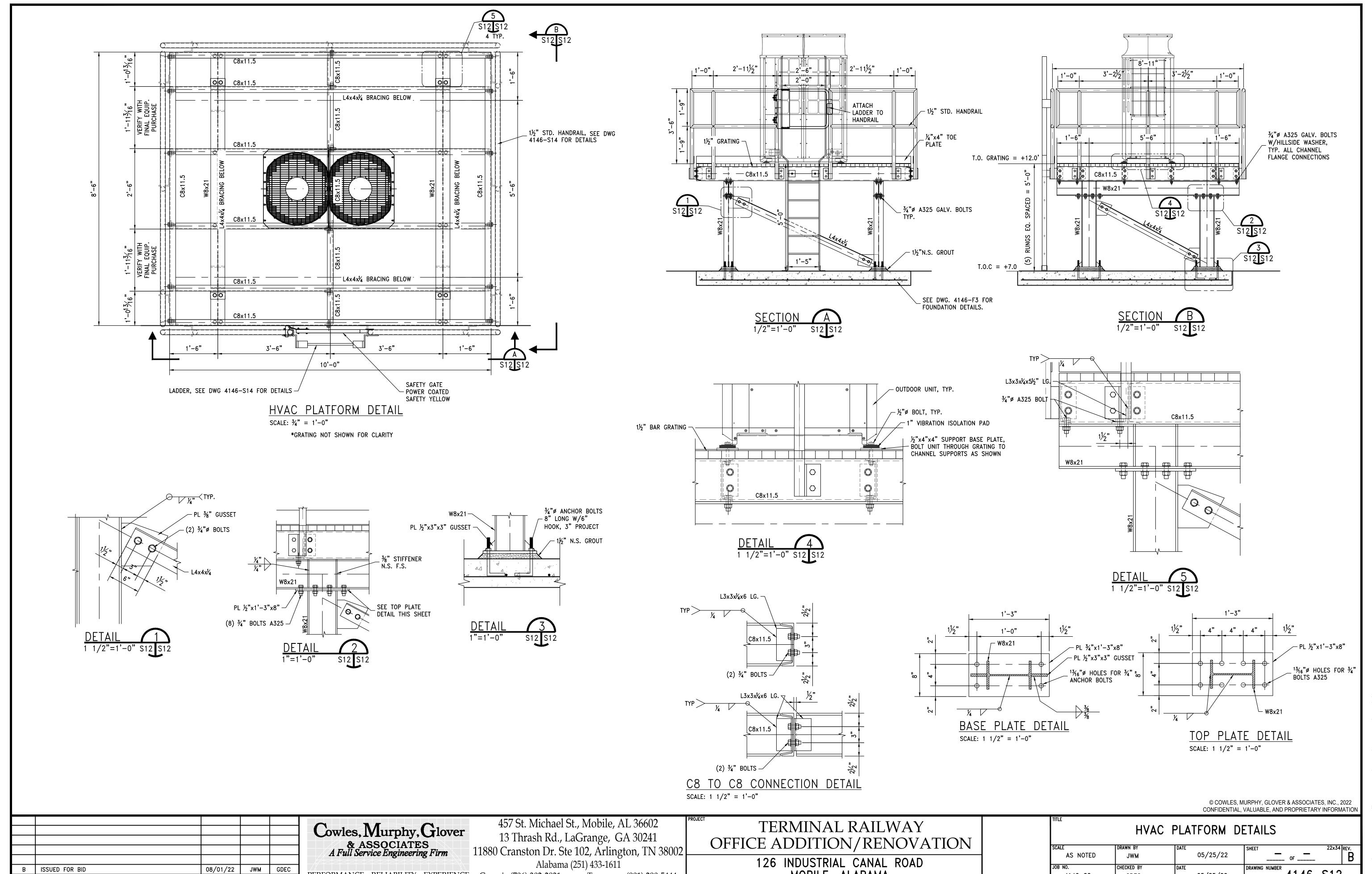
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4146-22

05/25/22



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DESCRIPTION

MOBILE, ALABAMA

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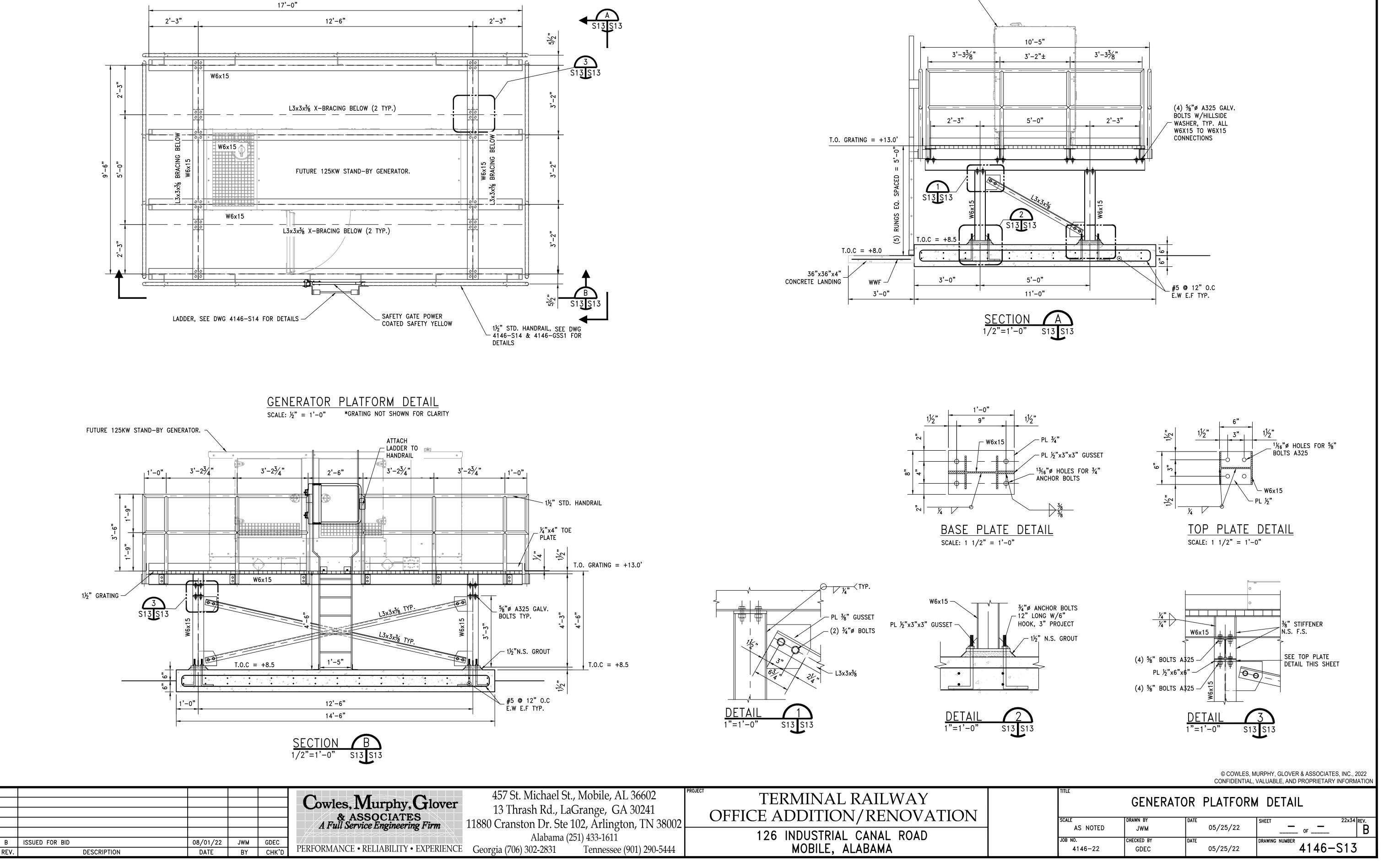
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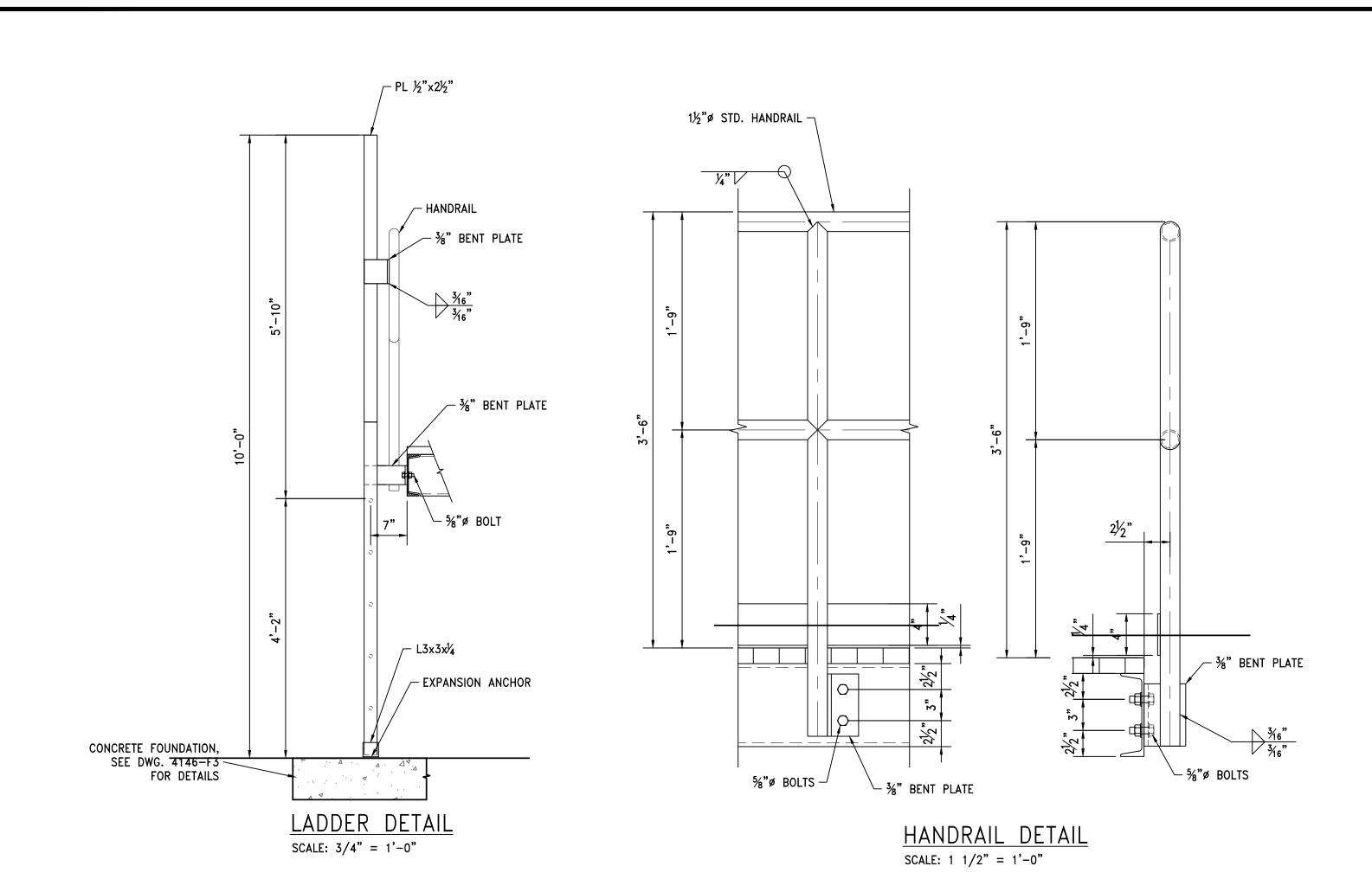
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FUTURE 125KW STAND-BY GENERATOR.



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| | | | | | & ASSOCIATES A Full Service Engineering Firm |
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| REV. | DESCRIPTION | DATE | BY | CHK'D | PERFORMANCE • RELIABILITY • EXPE |

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13 Thrash Rd., LaGrange, GA 30241

11880 Cranston Dr. Ste 102, Arlington, TN 38002

Alabama (251) 433-1611

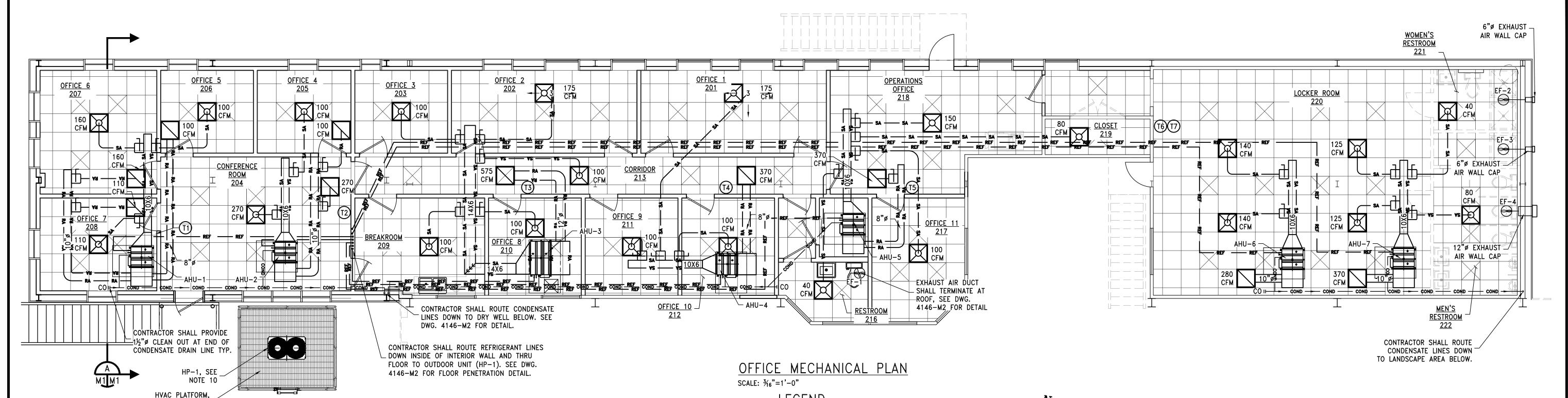
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TERMINAL RAILWAY
OFFICE ADDITION/RENOVATION

126 INDUSTRIAL CANAL ROAD
MOBILE, ALABAMA

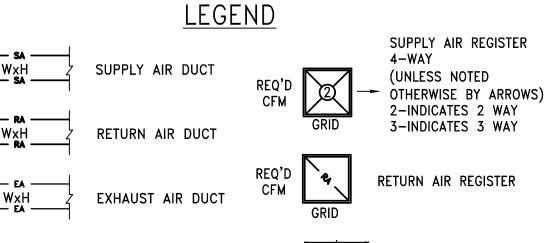
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| AS NOTED | DRAWN BY JWM | DATE | 05/25/22 | SHEET OF 22x34 REV. |
| OB NO. 4146-22 | CHECKED BY GDEC | DATE | 05/25/22 | DRAWING NUMBER 4146-S14 |

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| BRA | NCH DUC | T SCHEDULE | |
|-----------|-----------------------|----------------------------|---------|
| CFM | AIR DEVICE SIZE | DUCT CONNECTION SIZE | REMARKS |
| 40 | 6" X 6" | 6"ø | SUPPLY |
| 50 | 6" X 6" | 6"ø | SUPPLY |
| 75 | 6" X 6" | 6"ø | SUPPLY |
| 80 | 6" X 6" | 6"ø | SUPPLY |
| 100 | 6" X 6" | 6"ø | SUPPLY |
| 110 | 6" X 6" | 6"ø | SUPPLY |
| 125 | 6" X 6" | 6"ø | SUPPLY |
| 140 | 6" X 6" | 6"ø | SUPPLY |
| 150 | 6" X 6" | 6"ø | SUPPLY |
| 175 | 9" X 9" | 8"ø | SUPPLY |
| 200 | 9" X 9" | 8"ø | SUPPLY |
| 225 | 9" X 9" | 8 " ø | SUPPLY |
| 250 | 9" X 9" | 8"ø | SUPPLY |
| 0-125 | 8" X 8" | 8"ø | RETURN |
| 126-250 | 12" X 12" | 8"ø | RETURN |
| 251-450 | 12" X 12" | 10"ø | RETURN |
| 451-800 | 16" X 16" | 12" X 12" | RETURN |
| 801-1100 | 18" X 18" | 14" X 14" | RETURN |
| 1101-1500 | 20" X 20" | 16" X 16" | RETURN |
| 1501-2000 | 22" X 22" | 18" X 18" | RETURN |

* - DUCT SIZE AS SHOWN IN SCHEDULE UNLESS NOTED ON PLAN.



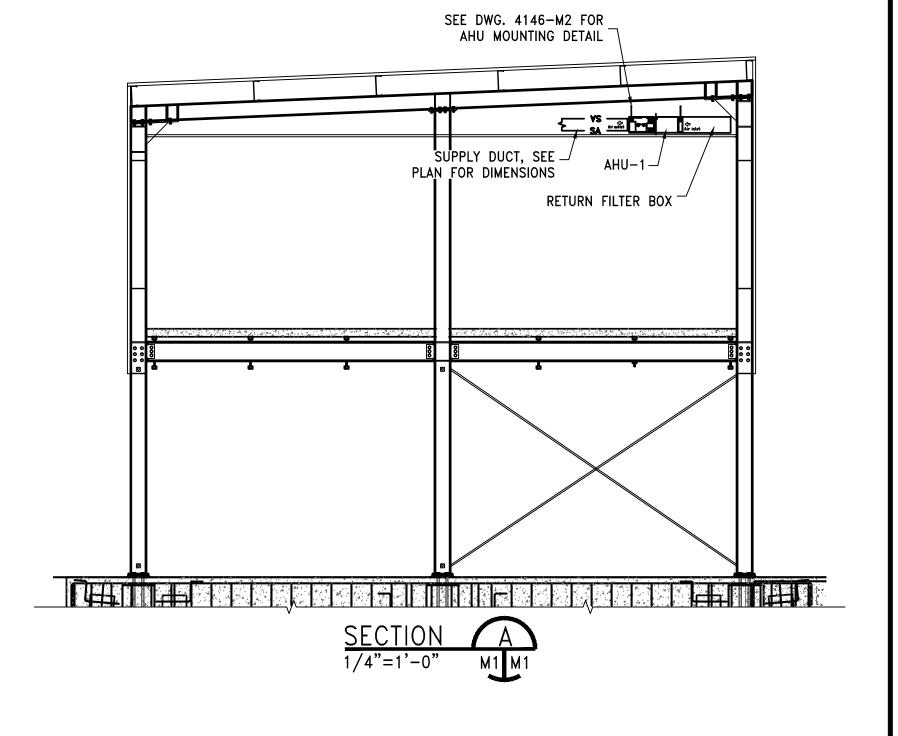
EXHAUST FAN (EF) AIR HANDLER UNIT (AHU) --- CONDENSATE DRAIN THERMOSTAT CLEAN OUT

NOTES: (SEE DWG. 4146-M3 FOR ADDITIONAL SPECIFICATIONS)

- 1. ALL MECHANICAL WORK SHALL BE IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODES, 2018.
- 2. AIR FLOW (SUPPLY & RETURN) ARE 1000 FPM & 800 FPM. FLOW RATE BASED ON 7 AIR CHANGES PER HOUR.
- 3. MAIN DUCTWORK SHALL BE GALVANIZED SHEET METAL PER SMACNA STANDARDS. DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS. ALL DUCTWORK SHALL BE ROUTED ABOVE SUSPENDED CEILING.

CEILING CONCEALED

- 4. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED PER SMACNA STANDARDS. DUCTWORK SHALL INCLUDE BALANCING DAMPER AT EACH SUPPLY/RETURN AND TURNING VANES AS SHOWN AND @ ALL 90° TURNS BOTH VERTICAL AND HORIZONTAL.
- 5. EXHAUST FANS SHALL BE VENTED TO THE OUTSIDE OF BUILDING. CONNECT FAN TO LIGHT SWITCH. SEE DWG 4146-M2 FOR EXHAUST FAN SCHEDULE.
- 6. SEE DWG. 4146-M2 FOR SYSTEM SCHEDULES. APPROVED MANUFACTURER ARE TRANE CITYMULTI-MITSUBISHI, DAIKIN, AND PANASONIC. SUBMIT A VALUE ENGINEERED ANALYSIS FOR OTHERS MANUFACTURERS WITH BID FOR CONSIDERATION.
- 7. ALL CONTROL WIRING AND INTERFACES WITH ANCILLARY EQUIPMENT BY CONTRACTOR. AIR HANDLERS SHALL BE CONTROLLED USING A SEVEN DAY PROGRAMMABLE THERMOSTAT CONTROLLER WITH LOCKABLE CLEAR BOX COVER.
- 8. CONTRACTOR SHALL FURNISH AND INSTALL ALL UNITS SHALL HAVE INTEGRAL CONTROLLERS WITH OVERLOAD PROTECTION AND DISCONNECT FUNCTIONS PER N.E.C.
- 9. CONTRACTOR SHALL ROUTE CONDENSATE AND DRAIN LINES TO NEAREST LANDSCAPED AREA, VIA 1-1/2" DRAIN. AIR HANDLER UNITS SHALL BE PROVIDED WITH DRAIN PAN LEVEL SENSORS. DRAIN PAN LEVEL SENSORS SHALL SHUT OFF UNIT TO PREVENT DRAIN PAN OVERFLOW.
- 10. HEAT PUMP (HP-1) MOUNTED ON PLATFORM, SEE DWG.4146-S12. SECURE UNIT TO PLATFORM AT EACH CORNER WITH MECHANICAL FASTENERS. REFRIGERANT PIPING SHALL BE ROUTED BELOW GRADE IN 6" PVC SCH. 40 CONDUIT AND BE EXTENDED TO TURN UP AT THE NEAREST COLUMN AND UP TO THE RESPECTIVE UNIT FOR CONNECTION. SEAL BOTH ENDS OF UNDER GROUND CONDUIT TO BE WEATHER AND RODENT PROOF.



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| В | ISSUED FOR BID | 08/01/22 | MAD | JDG |
| REV. | DESCRIPTION | DATE | BY | CHK'D |

SEE DWG 4146-S12

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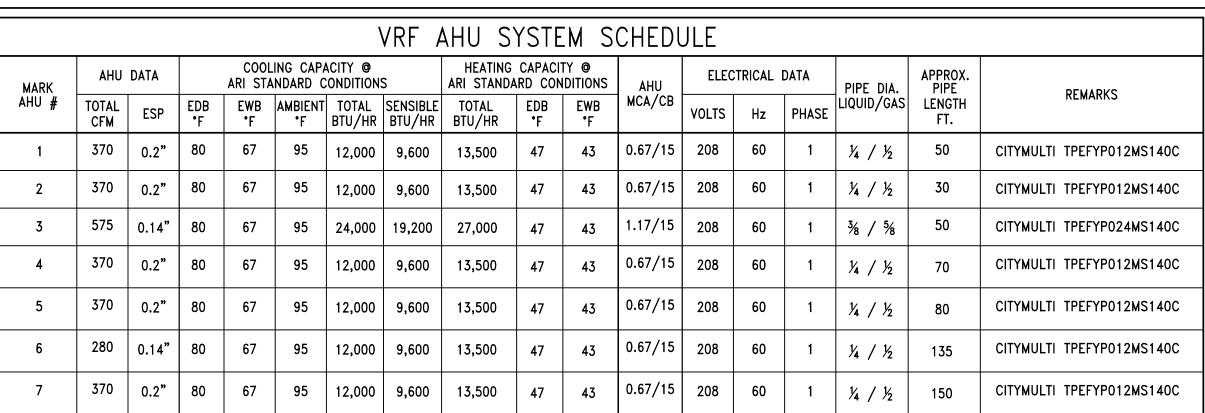
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Tennessee (901) 290-5444

TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD

MOBILE, ALABAMA

| TITLE | OFFIC | CE MECHANIC | CAL PLAN | |
|--------------------|-----------------|---------------|--------------------|------------|
| SCALE AS NOTED | DRAWN BY MAD | DATE 03/30/22 | SHEET OF | 22x34 REV. |
| JOB NO. 4146-22 | CHECKED BY JDG | DATE 06/06/22 | DRAWING NUMBER 414 | 46-M1 |



| С | FLOOR PIPE PENETRATION DETAIL N.T.S. | |
|----------|--|----------------------------|
| 0C 0C 0C | 4" CONCRETE COVER W/ CAST-IN STEEL HANDLE GRADE 36" DIA. x 48" LONG CONCRETE PIPE. CLEAN LOOSE PEA GRAVEL | 2" CONDENSATE — DRAIN PIPE |

CONCRETE

INSULATION FOR

REFRIGERATION LINE TYP.

REFRIGERATION LINE TYP.

5%"ø ASTM⁻

A449 BOLTS

ESCUTCHEON PLATE

AND SEALANT TYP.

PIPE SLEEVE TYP.

EXISTING C-PURLINS — EXISTING C-PURLINS ≈5'-0"± -∠2"x2"x¼" TYP. [−] %"ø ASTM ∠2"x2"x¼" TYP. A449 BOLTS -3/8" THREADED - 3/8" THREADED ROD, TYPICAL ROD, TYPICAL. SUPPORTS, NUTS & LOCKWASHERS SUPPORT AHU ACCORDING END VIEW TO MANUFACTURER SIDE VIEW RECOMMENDATIONS

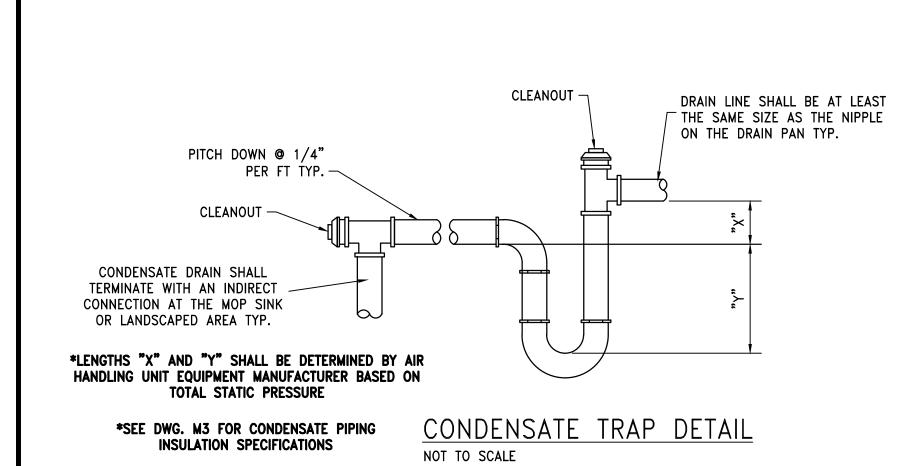
> AIR HANDLER UNIT (AHU) MOUNTING DETAIL N.T.S.

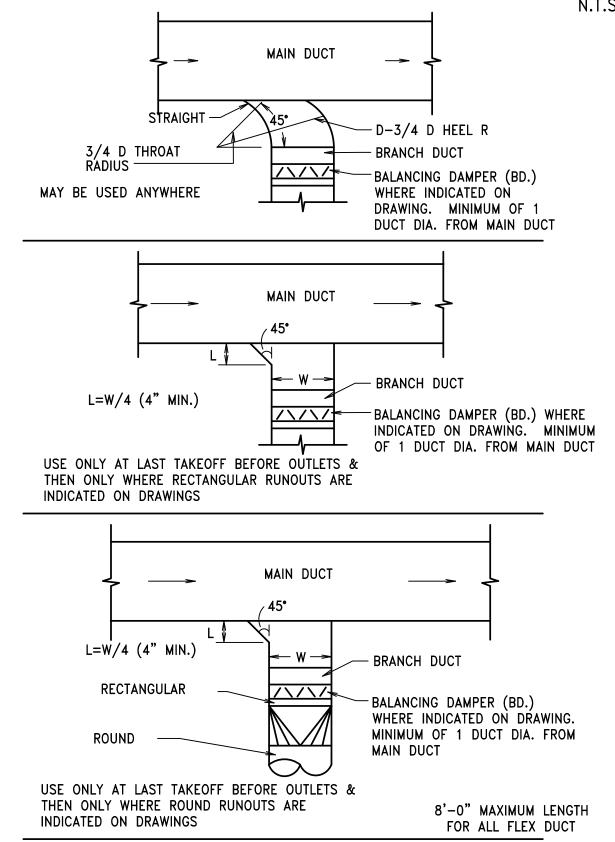
| OUTDOOR VRF HEAT PUMP SCHEDULE | | | | | | | | | | | | | |
|--------------------------------|---|-----------|-----------|---------------|-----------------|-----------------|---|-----------|--------|-------|---------|-------|---------------------------------------|
| MARK | COOLING CAPACITY @ HEATING CAPACITY @ AHRI STANDARD CONDITIONS AHRI STANDARD CONDITIONS | | | | | | S AHRI STANDARD CONDITIONS HP ELECTRICAL DATA | | HP | | REMARKS | | |
| HP # | DUCTED/ NON-DUCTED | EDB °F | EWB *F | AMBIENT *F | TOTAL BTU/HR | TOTAL BTU/HR | EDB °F | EWB °F | MCA/CB | VOLTS | Hz | PHASE | REMARKS |
| 1 | 13.8/15.1 | 80 | 67 | 95 | 96,000 | 108,000 | 47 | 43 | 40/50 | 208 | 60 | 3 | MITSUBISHI ELECTRIC TUHYP0963AN40A |

1. OUTDOOR COILS MUST BE COATED WITH AN ANTI-CORROSION COATING EXCEEDING ASTM B117 SALT SPRAY TEST FOR A MINIMUM OF 10,000 HOURS.

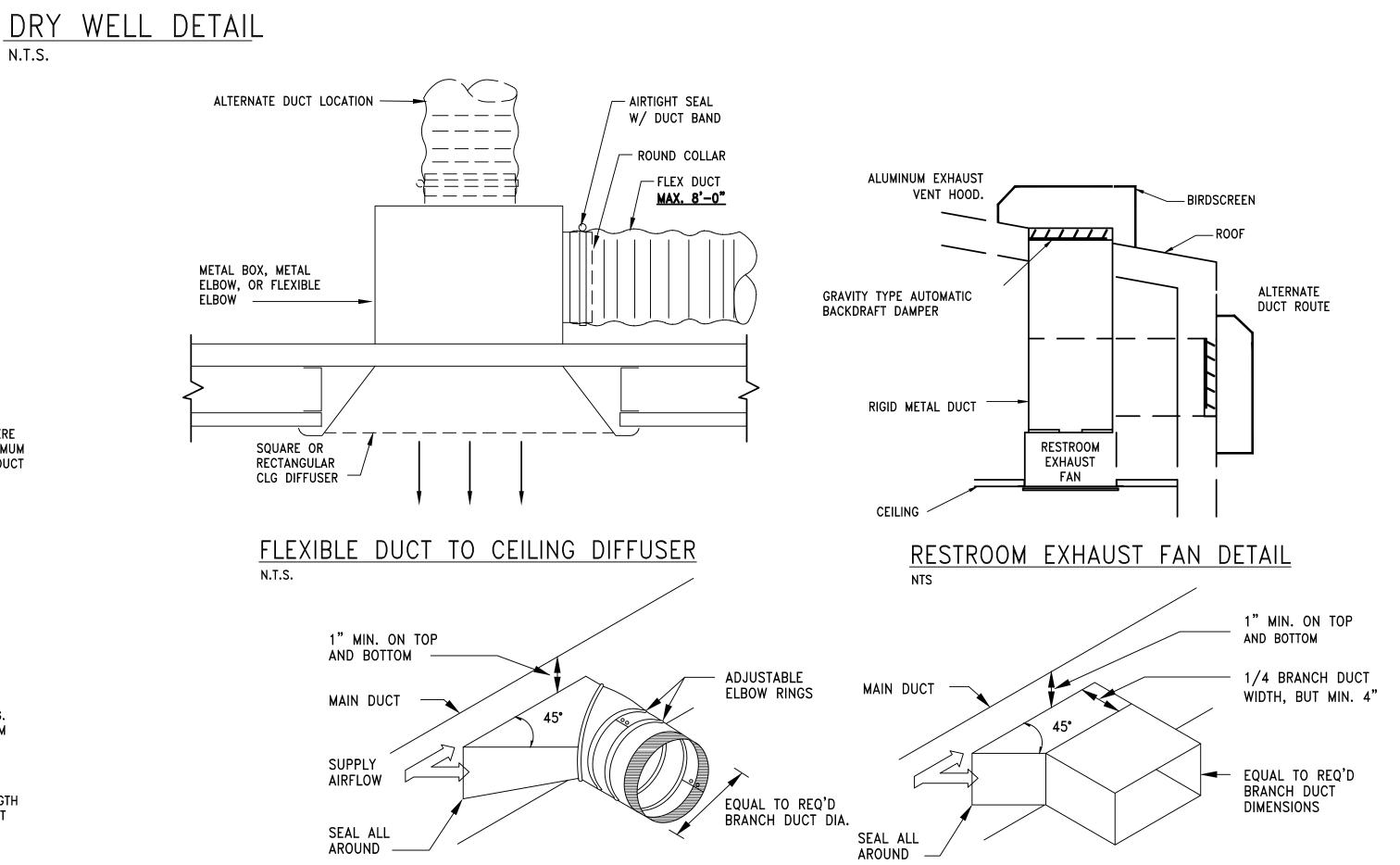
| EXHAUST FAN SCHEDULE | | | | | | |
|----------------------|-----|---------|----------------|--|--|--|
| MARK | СҒМ | V/A | REMARKS | | | |
| EF-1 | 70 | 120/1.1 | TWIN CITY T100 | | | |
| EF-2 | 170 | 120/1.8 | TWIN CITY T200 | | | |
| EF-3 | 50 | 120/1.1 | TWIN CITY T100 | | | |
| EF-4 | 350 | 120/2.6 | TWIN CITY T400 | | | |

- 1. EXHAUST FANS SHALL BE TWIN CITY OR ENGINEER APPROVED EQUAL
- 2. EXHAUST FANS SHALL BE EQUIP WITH UNIT MOUNTED SPEED CONTROLLER





TYPICAL BRANCH CONNECTION



TYPICAL BRANCH TAKE-OFF FITTING

B ISSUED FOR BID 08/01/22 MAD DESCRIPTION

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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD

MOBILE, ALABAMA

HVAC SCHEDULE & DETAILS 03/30/22 SCALE MAD HECKED BY 4146-M2 4146-22 06/06/22

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1.1 SCOPE OF WORK

A. THE WORK CONSISTS OF FURNISHING ALL LABOR, MATERIALS AND INCIDENTALS NECESSARY FOR A COMPLETELY FUNCTIONAL SYSTEM. IN GENERAL, THE WORK SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO THE FOLLOWING MAJOR SUBDIVISIONS.

DUCTWORK, GRILLES, AND DIFFUSERS VRF HEAT PUMPS EXHAUST FANS

TEMPERATURE CONTROLS

1.2 CODES, FEES, PERMITS A. THE CONTRACTOR SHALL COMPLY WITH ALL COUNTY, DISTRICT, MUNICIPAL, OR LOCAL BUILDING CODE, INTERPRETATIONS. BUILDING PERMITS AND ASSESSMENTS OF FEES FOR BUILDING PERMITS. AND ORDINANCES.

B. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS, INSPECTIONS, AND CERTIFICATES OF INSPECTION. CERTIFICATES OF INSPECTION SHALL BE DELIVERED TO THE ENGINEER UPON COMPLETION OF THE

C. THE CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS OF ALL COUNTY, DISTRICT, MUNICIPAL, OR LOCAL BUILDING CODES, INTERPRETATIONS, BUILDINGS PERMITS TO INCLUDE BUT NOT BE LIMITED TO:

ASHRAE, 1994 "EQUIPMENT" - CHAPTER 1, DUCT CONSTRUCTION SMACNA STANDARDS FOR DUCT CONSTRUCTION INTERNATIONAL BUILDING CODE - 2018 INTERNATIONAL MECHANICAL CODE - 2018 INTERNATIONAL PLUMBING CODE - 2018 NFPA-90A (1999) - INSTALLATION OF AIR CONDITIONING AND VENTILATION SYSTEMS LOCAL MUNICIPAL CODES

1.3 RESPONSIBILITY OF BIDDER

A. EACH BIDDER SHALL VISIT THE SITE OF THE PROPOSED WORK AND FULLY ACQUAINT HIMSELF WITH CONDITIONS RELATING TO THE CONSTRUCTION REQUIREMENTS SO THAT HE MAY FULLY UNDERSTAND THE FACILITIES, DIFFICULTIES AND RESTRICTIONS CONTINGENT UPON THE EXECUTION OF THE WORK UNDER THIS CONTRACT. THE FAILURE OR OMISSION OF ANY BIDDER TO RECEIVE OR EXAMINE ANY FORM, INSTRUMENT, ADDENDUM OR OTHER DOCUMENT SHALL IN NO WAY RELIEVE ANY BIDDER FROM HIS OBLIGATIONS WITH RESPECT TO HIS BID OR THE CONTRACT. THE SUBMISSION OF A BID SHALL BE TAKEN AS PRIMA FACIA EVIDENCE OF COMPLIANCE WITH THIS PARAGRAPH AND THAT HE HAS INCLUDED IN HIS PROPOSAL EVERY ITEM OF COST NECESSARY FOR A COMPLETE INSTALLATION OF AIR CONDITIONING, HEATING AND VENTILATION OPERATIONS STRICTLY AS PLANNED, SPECIFIED, AND INTENDED.

1.4 SUB-DIVISIONS OF WORK

A. EACH SUB-DIVISION OF WORK INCLUDES FURNISHING AND INSTALLING ALL MATERIALS TO MAKE THAT PART OF WORK COMPLETE, AND SHALL COMPRISE ALL AUXILIARIES, SETTING OF EQUIPMENT, SLEEVES THROUGH BUILDING CONSTRUCTION WHERE REQUIRED AND ETC., ALL IN COMPLETE COORDINATION WITH GENERAL CONTRACTOR AND IN COOPERATION WITH OTHER TRADES. IT IS CONTEMPLATED THAT ALL SUB-DIVISIONS OF WORK WHEN COMPLETED WILL FORM HEATING, AIR CONDITIONING, AND VENTILATION SYSTEM FOR THIS PROJECT.

A. THE DRAWINGS FOR THE HEATING, VENTILATING AND AIR CONDITIONING FOR THIS JOB ARE DIAGRAMMATIC. THE CONTRACTOR SHALL MAKE HIS OWN MEASUREMENTS AT THE SITE AND IN THE BUILDINGS DURING CONSTRUCTION AND INSTALL THE SYSTEMS AS THE WORK PROGRESSES IN SUCH A MANNER THAT THE EQUIPMENT, PIPING, CONDUIT, PANELS, AND DUCTWORK WILL FIT INTO THE FINISHED SPACE PROVIDED MAINTAINING HEADROOM; AND BE NEATLY INSTALLED. ALL EQUIPMENT AND ITS INTERCONNECTING PIPING, DUCTWORK, CONDUIT, ETC., SHALL BE PROVIDED.

B. DUE TO DIFFERENCES BETWEEN VARIOUS MANUFACTURERS, IT IS NOT PRACTICABLE TO SHOW EXACT DIMENSIONS OF UNITS, NOR TO SHOW OR SPECIFY ALL MINOR DETAILS OF EQUIPMENT. CONTRACTOR SHALL PROVIDE ALL VALVES, FITTINGS AND ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION, WHETHER OR NOT SPECIFICALLY MENTIONED OR SHOWN.

C. EQUIPMENT SHALL NOT BE ACCEPTABLE IF OPERATED IN EXCESS OF THE RECOMMENDED AND PUBLISHED RATINGS OF THE MANUFACTURER.

D. CONTRACTOR SHALL SUBMIT ALL HVAC EQUIPMENT FOR ENGINEER APPROVAL PRIOR TO PURCHASING

A. THE CONTRACTOR SHALL FURNISH ALL SPECIAL FOUNDATIONS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING WHICH HE INSTALLS AND WHICH ARE SEPARATE AND DISTINCT FROM BUILDING CONSTRUCTION AS SHOWN BY ARCHITECTURAL DRAWINGS.

1.7 SAFETY PROVISIONS

A. CONTRACTOR SHALL BE REQUIRED AT ALL TIMES TO PERFORM HIS WORK IN STRICT ACCORDANCE WITH THE WILLIAMS-STEIGER OCCUPATIONAL HEALTH AND SAFETY ACT OF 1970.

B. EQUIPMENT WITH ANY PROJECTING OR ROTATING PARTS SHALL BE TOTALLY ENCLOSED OR PROPERLY GUARDED.

1.8 NOISE AND VIBRATION

A. THIS CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ELIMINATION OF ALL NOISES OR VIBRATIONS TRANSMITTED TO OCCUPIED AREAS FROM EQUIPMENT WHICH HE MAY INSTALL. THIS APPLIES PARTICULARLY TO AIRBORNE NOISES IN DUCTWORK, VIBRATION AND NOISES IN PIPING, AND VIBRATION FROM MECHANICAL EQUIPMENT TRANSMITTED THROUGH BASES TO BUILDING STRUCTURE.

B. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL FLEXIBLE CONNECTORS FOR DUCTWORK CONNECTED TO MOTOR DRIVEN EQUIPMENT.

C. CONTRACTOR SHALL CLOSELY COORDINATE WORK FOR LOCATION OF MECHANICAL EQUIPMENT AND ROOF OPENINGS.

1.9 MOTORS AND STARTERS

A. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING IN PLACE OF ALL ELECTRIC MOTORS REQUIRED FOR THE OPERATION OF ALL HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT. ELECTRICAL CONTRACTOR TO PROVIDE ALL POWER WIRING AND CONDUIT REQUIRED FOR THE OPERATION OF ELECTRICAL MOTORS AS SPECIFIED. ELECTRIC MOTORS SHALL BE SELECTED IN SIZES AS REQUIRED TO PROPERLY OPERATE THE EQUIPMENT FURNISHED BUT IN NO CASE SMALLER THAN THOSE INDICATED ON EQUIPMENT SCHEDULES. VERIFY ALL ELECTRICAL CHARACTERISTICS FROM ELECTRICAL DRAWINGS BEFORE RELEASING MOTORS FOR SHIPMENT. ELECTRIC MOTORS SHALL HAVE A SERVICE FACTOR OF 1.15 AND POWER FACTOR IN ACCORDANCE WITH ASHRAE 90-75.

B. THIS CONTRACTOR SHALL FURNISH ALL MAGNETIC MOTOR STARTERS REQUIRED TO OPERATE HEATING, VENTILATING, AND AIR CONDITIONING EQUIPMENT AND TURN OVER TO THE ELECTRICAL CONTRACTOR FOR INSTALLATION. ALL MOTOR STARTERS SHALL BE PROVIDED WITH: 1. 1 THERMAL OVERLOAD PER PHASE LEG.

2. A 110 VOLT COIL AND A HAND-OFF-AUTOMATIC SWITCH, IF MOTORS ARE SUBJECT TO ELECTRICAL INTERLOCK UNLESS OTHERWISE SPECIFIED.

C. IF EQUIPMENT IS PROVIDED WITH R.L.A. IN EXCESS OF DESIGN CONDITIONS THE MECHANICAL CONTRACTOR SHALL STAND THE EXPENSE OF ASSOCIATED ELECTRICAL CHANGES.

D. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO PROVIDE THERMAL OVERLOADS OF THE PROPER SIZE AS REQUIRED BY THE ACTUAL MOTOR NAMEPLATE AMPS. MOTOR STARTERS SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND THE LOCAL UTILITY SERVICE

A. ALL EQUIPMENT FURNISHED WITHOUT FACTORY PAINT OR GALVANIZED FINISH SHALL BE THOROUGHLY CLEANED AND GIVEN A PRIME COAT, THEN A FINISH COAT OF PAINT IN A COLOR AS SELECTED BY ARCHITECT/ENGINEER. ANY EQUIPMENT FINISH THAT IS DAMAGED OR CHIPPED, SHALL BE SPOT PAINTED TO MATCH EXISTING SURFACE. ANY MISCELLANEOUS METALS USED BY THIS CONTRACTOR THAT ARE NOT GALVANIZED SHALL BE GIVEN TWO COATS OF PAINT IN COLOR SPECIFIED BY ARCHITECT. ANY RUSTY OR CORRODED FINISHES SHALL BE THOROUGHLY CLEANED AND PAINTED TWO COATS OF PAINT-ONE PRIME AND ONE FINISH COAT.

1.11 TESTS AND GUARANTEES

A. AFTER COMPLETION OF HIS WORK, AND WHEN THE BUILDING IS READY FOR OCCUPANCY, THIS CONTRACTOR SHALL OPERATE THE AIR CONDITIONING OR HEATING SYSTEM FOR A PERIOD OF TWO DAYS. DURING THE TESTS, THE CONTRACTOR SHALL ADJUST CONTROLS, OUTLETS, ETC.

B. THE CONTRACTOR SHALL REPEAT OPERATIONAL SEQUENCE DURING HEATING AND/OR COOLING SEASON, WHICHEVER HAD NOT BEEN SUBJECT TO PRIOR TEST PERIOD.

1.12 SHOP DRAWINGS

A. MATERIALS AND EQUIPMENT SCHEDULES SHALL BE SUBMITTED AS SOON AS PRACTICABLE BUT NOT LATER THAN THIRTY (30) DAYS AFTER THE DATE OF AWARD OF CONTRACT, AND BEFORE COMMENCEMENT OF INSTALLATION OF ANY MATERIAL OR EQUIPMENT. A COMPLETE SCHEDULE OF THE MATERIAL AND EQUIPMENT PROPOSED FOR INSTALLATION SHALL BE SUBMITTED FOR APPROVAL. THE SCHEDULE SHALL INCLUDE CATALOGS, CUTS, DIAGRAMS, DRAWINGS, SPECIFICATIONS AND SUCH OTHER DESCRIPTIVE DATA AS MAY BE REQUIRED BY THE ENGINEER. ALL MATERIALS REQUIRED TO BE SUBMITTED FOR APPROVAL UNDER THIS SECTION SHALL BE SUBMITTED AT ONE TIME. PARTIAL SUBMITTALS WILL NOT BE CONSIDERED. THEY WILL BE RETURNED AS "NOT APPROVED"

B. SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL ON THE FOLLOWING ITEMS OF EQUIPMENT: SUBJECT DRAWINGS SHALL INCLUDE ALL DATA PERTINENT TO THE PERFORMANCE AND INSTALLATION OF ALL EQUIPMENT.

AIR DISTRIBUTION DEVICES - GRILLES, DIFFUSERS, DAMPERS TEMPERATURE CONTROLS INSULATION MATERIALS VRF HEAT PUMPS EXHAUST FANS

1.13 QUALITY OF MATERIALS AND EQUIPMENT

A. IT IS NOT THE INTENT OF THESE SPECIFICATIONS TO LIMIT MATERIAL AND/OR EQUIPMENT SELECTIONS TO ONE MANUFACTURER; HOWEVER, THE ENGINEER RESERVES THE RIGHT TO BE THE FINAL AND SOLE JUDGE WITH REGARD TO

B. APPROVALS OF EQUIPMENT IS BASED ON CAPACITIES, EQUALITY OF WORKMANSHIP AND COMPONENTS, OR GENERAL AND SPECIAL CONSTRUCTION FEATURES. APPROVAL OF EQUIPMENT DOES NOT RELIEVE THE CONTRACTOR OF COORDINATION RESPONSIBILITY WITH OTHER TRADES. EQUIPMENT SHALL FIT WITHIN THE PHYSICAL SPACE OF EQUIPMENT SHOWN AND HAVE SAME GENERAL CONNECTION AS THAT SHOWN ON DRAWINGS. PROPER CLEARANCES SHALL BE MAINTAINED FOR SERVICING AND MAINTAINING EQUIPMENT.

C. WHERE EQUIPMENT SUBMITTED VARIES FROM THE GENERAL ARRANGEMENT OF THAT SPECIFIED, CONTRACTOR SHAL SUBMIT DETAILED SHEET METAL AND EQUIPMENT BROCHURES. SHOP DRAWINGS SHALL INDICATE ANY AND ALL SHEET METAL, ELECTRICAL, PIPING AND STRUCTURAL CHANGES REQUIRED TO FACILITATE CHANGE. ANY AND ALL ADDITIONAL COSTS INCURRED BY CHANGES WILL BE BORNE BY THIS CONTRACTOR.

PART 2 PRODUCTS

2.1 REFRIGERANT PIPING

A. PIPING SHALL BE TYPE "K" HARD DRAWN COPPER, ASTM SPEC. B280, AND SHALL BE MILL CLEANED, DRIED, AND

B. FITTINGS SHALL BE EXTRA HEAVY WROUGHT COPPER IN ACCORDANCE WITH ANSI B9.1 WITH JOINTS SOLDERED USING A HIGH CONTENT SILVER ALLOY SOLDER.

C. INSTALLATION SHALL BE IN ACCORDANCE WITH UNIT MANUFACTURER'S REQUIREMENTS WITH ALL PIPING SECURED TO WALLS AND CEILINGS WITH APPROVED GALVANIZED HANGERS AND CLAMPS. ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH ANSI STANDARD B31.5 FOR REFRIGERANT PIPING.

D. INSULATE REFRIGERANT SUCTION LINE WITH 3/4" WALL FOAMED PLASTIC INSULATION SLIPPED OVER TUBING AND ALL JOINTS THOROUGHLY SEALED. PAINT INSULATION WITH TWO COATS OF ACRYLIC PROTECTIVE PAINT WHERE INSULATION IS EXPOSED TO WEATHER. PROTECT INSULATION WITH METAL SADDLES AND SHIELDS AT ALL HANGER

E. ALL REFRIGERANT PIPING ROUTED BELOW GRADE SHALL BE ROUTED IN 6" PVC CONDUIT WITH ENDS SEALED TO BE RODENT PROOF.

F. SUSPEND PIPING AS REQUIRED WITH APPROVED PIPE HANGERS AT 8'-0" ON CENTER.

G. IF FIELD PIPING IS USED, PIPING DIAGRAMS SHALL BE SUBMITTED BY UNIT MANUFACTURER SHOWING PIPE SIZES, TRAPS, SERVICE VALVES, ETC., REQUIRED FOR PROPER OPERATION OF EQUIPMENT. PRE-CHARGED TUBING MAY BE USED AT CONTRACTOR'S OPTION.

H. TEST REFRIGERANT SYSTEM AT 300 PSI BEFORE CHARGING SYSTEM WHERE UNITS ARE TO BE FIELD CHARGED. SYSTEM IS TO BE THOROUGHLY PURGED AND EVACUATED BEFORE CHARGING WITH REFRIGERANT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. IF FACTORY PRE-CHARGED TUBING IS USED, UNIT SHALL BE CHECKED AND MONITORED FOR PROPER CHARGE AND EFFICIENT OPERATION.

2.2 EXHAUST FAN

A. ALL EXHAUST FANS SHALL BEAR THE AMCA SEAL OF APPROVAL AND SHALL BE CURRENTLY LISTED IN THE CURRENT AMCA DIRECTORY.

B. EXHAUST FAN FOR TOILET ROOMS SHALL BE CEILING MOUNTED TYPE FANS WITH 1/2" THICK ACOUSTICAL LINED STEEL HOUSING, DIRECT DRIVE CENTRIFUGAL FAN, BACK DRAFT DAMPER AND INTEGRAL ALUMINUM CEILING GRILLE. FAN CONTROL SHALL BE BY SEPARATE WALL MOUNTED SWITCH. FANS SHALL BE EQUAL TO BROAN LOSONE SELECT. 2.3 CONTROL OPERATIONS

A. GENERAL SPACE TEMPERATURE SHALL BE CONTROLLED BY WALL MOUNTED THERMOSTATS LOCATED WITHIN THE SPACES AS INDICATED ON DRAWINGS. THERMOSTAT SUBBASE SHALL INCLUDE A SYSTEM SELECTOR SWITCH (OFF-HEAT-AUTO-COOL) AND FAN SWITCH (AUTO-ON) AND BE PROVIDED BY THE AIR CONDITIONING EQUIPMENT MANUFACTURER. THERMOSTATS SHALL BE 7-DAY PROGRAMMABLE AND HAVE BATTERY BACK-UP WITH NIGHT LOW AND HIGH LIMIT SETTINGS.

B. WIRING: ALL CONTROL WIRING EXTERNAL TO THE AIR CONDITIONING EQUIPMENT SHALL BE INSTALLED BY THE CONTROL SUB-CONTRACTOR UNDER THE DIRECT SUPERVISION OF THE HVAC SUBCONTRACTOR.

NOTE: ALL WIRING REQUIRED FOR EQUIPMENT OPERATIONS SHALL BE BY THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL ALSO PROVIDE ALL CONDUIT AS REQUIRED FOR CONTROL WIRING.

C. TEST ALL UNITS FOR TWO (2) 8-HOUR DAYS UNDER THE SUPERVISION OF MANUFACTURER'S REPRESENTATIVE, WHO SHALL MAKE ALL NECESSARY ADJUSTMENTS AND INSTRUCT DESIGNATED OPERATING PERSONNEL IN OPERATION AND MAINTENANCE OF EQUIPMENT AND CONTROLS.

2.4 CONTROLS

A. CONTRACTOR SHALL FURNISH AND INSTALL ALL RELAYS, TRANSFORMERS, CONTACTS, ETC., AS REQUIRED TO CONTROL AUTOMATICALLY THE HEATING AND AIR CONDITIONING EQUIPMENT. SUBMIT CONTROL DRAWINGS FOR STANDARD GAS CODE COMPLETE WITH ALL NECESSARY APPURTENANCES. APPROVAL. CONTROL DRAWINGS SHALL BE COMPLETE AND SHALL INDICATE COMPLETE CONTROL SEQUENCE OF OPERATION.

B. ALL CONTROL WIRING SHALL BE INSTALLED IN CONDUIT AND SHALL BE SIZED AS RECOMMENDED BY UNIT MANUFACTURER. ALL WIRING SHALL BE COLOR CODED TO MATCH SYSTEM WIRING DIAGRAMS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE ELECTRICAL SECTION OF THIS SPECIFICATION.

A. THE SIZES, RUNS, AND CONNECTIONS OF DUCTS SHALL BE AS INDICATED. ADHERE TO DRAWINGS AS CLOSELY AS POSSIBLE. THE RIGHT IS RESERVED, HOWEVER, IF REQUIRED TO MEET STRUCTURAL OR OTHER INTERFERENCES, TO VARY RUN AND SHAPE OF DUCTS AND OFFSETS DURING PROGRESS OF WORK, AT NO EXTRA COST TO THE OWNER. DUCTWORK SPECIFIED HEREIN SHALL HAVE RECTANGULAR CROSS SECTION, UNLESS OTHERWISE INDICATED.

B. MATERIALS — METHODS OF CONSTRUCTION: DETAILS OF CONSTRUCTION AND MATERIALS NOT SPECIFIED HEREIN SHALL BE IN ACCORDANCE WITH SMACNA LOW VELOCITY AND ASHRAE "GUIDE" RECOMMENDATIONS. FABRICATE DUCTWORK IN WORKMANLIKE MANNER WITH AIRTIGHT JOINTS PRESENTING SMOOTH SURFACE ON INSIDE, NEATLY FINISHED ON OUTSIDE. SEAL ALL DUCT JOINTS AIRTIGHT BEFORE INSULATION IS APPLIED. CONSTRUCT DUCTWORK AIR EXTRACTORS, SPIN-IN TAPS WITH AIR SCOOPS, TURNING VANES, SPLITTER DAMPERS, ETC., TO EASE AIR FLOW AND BALANCING OF AIR. UNLESS OTHERWISE INDICATED, WHERE SQUARE ELBOWS HAVE TO BE USED, PROVIDE FIXED DEFLECTORS. CONSTRUCT, BRACE AND SUPPORT DUCTS IN MANNER THAT THEY WILL NOT SAG OR VIBRATE TO ANY PERCEPTIBLE EXTENT WHEN FANS ARE OPERATING AT MAXIMUM SPEED AND CAPACITY. DUCTWORK SHALL BE GALVANIZED SHEET STEEL UNLESS OTHERWISE SPECIFIED. DISTANCE BETWEEN JOINTS OF ANY SIZE DUCT SHALL NOT EXCEED 8'.

D. FLEXIBLE DUCTWORK SHALL NOT EXCEED 8' IN LENGTH, BE EQUAL TO THERMAFLEX TYPE M-KE-R6 OR J.P. LAMBORN MHP-R6 WITH 1"-1 LB. DENSITY INSULATION WITH METALIZED FILM VAPOR BARRIER, AND CONFORM TO UL-181 AS A CLASS I DUCT.

E. SHEET METAL GAUGES FOR RECTANGULAR DUCT CONSTRUCTION SHALL BE:

| STEEL U.S. STD.GAUGE | MAXIMUM SIZE INCHES | TYPE OF TRANSVERSE JOINT CONN. | BRACING |
|-------------------------|------------------------|---|---------------|
| 26 | UP TO 12 | S-DRIVE, POCKET OR BAR CLIPS, | NONE |
| • | | ON 7'-10" CENTERS | |
| 24 | 13 TO 24 | S-DRIVE, POCKET OR BAR CLIPS, ON 7'-10" CENTERS | NONE |
| 24 | 25 TO 30 | S-DRIVE, POCKET OR BAR CLIPS ON 7'-10" CENTERS | 1X1X1/8" ANGL |
| • | | | |

F. DUCT SUPPORT: SUPPORT HORIZONTAL DUCTS WITH HANGERS SPACED NOT MORE THAN 8' APART, PLACE HANGERS AT CHANGES IN DIRECTIONS. USE STRAP HANGERS FOR DUCTS UP TO 30" WIDE, ANGLE HANGERS FOR DUCTS OVER 30" WIDE. MAKE STRAP HANGERS 1" BY 16-GAUGE MINIMUM, EXTENDED DOWN BOTH SIDES OF DUCT AND TURN UNDER BOTTOM 2" MINIMUM, FASTEN SIDES AND BOTTOM WITH SHEET METAL SCREWS.

G. PROVIDE FLEXIBLE DUCT CONNECTIONS BETWEEN DUCTS AND A/C UNIT. CONNECTORS SHALL BE CONSTRUCTED OF 29 OUNCE NEOPRENE-COATED FIBERGLASS APPROXIMATELY 6" WIDE. BORDERED BY CRIMPING TO SHEET METAL AND FASTENED TO DUCTS WITH SCREWS NOT MORE THAN 2" ON CENTERS.

2.6 DAMPERS

A. PROVIDE SPLITTER AND DEFLECTING VANES FOR CONTROL OF AIR VOLUME AND DIRECTION, AND FOR BALANCING SYSTEM WHERE INDICATED, SPECIFIED, DIRECTED OR REQUIRED

B. DAMPERS OF SAME MATERIALS AS DUCT, AT LEAST ONE GAUGE HEAVIER THAN DUCT, REINFORCED WHERE DIRECTED, SHALL HAVE AN ACCESSIBLE LOCATION INDICATING QUADRANT, LOCKING DEVICE FOR ADJUSTING AND LOCKING DAMPERS IN POSITION.

C. STIFFEN DUCT AT DAMPER LOCATION, INSTALL DAMPER IN MANNER TO PREVENT RATTLING.

2.7 GRILLES AND DIFFUSERS

A. SUPPLY AND RETURN AIR GRILLES AND DIFFUSERS SHALL BE SIZED NOT TO EXCEED A N.C. LEVEL OF (35). GRID CEILING DIFFUSER SHALL BE EQUAL TO TITUS SERIES TDC-AA TYPE WITH 24"X24" LAY-IN PANEL SUPPLY DIFFUSER WITH BALANCING DAMPER OF SIZE, DISCHARGE FLOW PATTERN AND CAPACITY AS INDICATED ON DRAWINGS. GYP. OR RIGID CEILING DIFFUSERS INSTALLED IN RIGID CEILINGS SHALL BE EQUAL TO TITUS SERIES TDC-AA TYPE SUPPLY DIFFUSER BORDER TYPE 1 WITH BALANCING DAMPER OF SIZE AND CAPACITY AS INDICATED ON DRAWINGS. (UNLESS SHOWN ON DRAWINGS.)

B. CEILING RETURN AIR GRILLES SHALL BE EQUAL TO TITUS SERIES 50F. GRILLES SHALL BE OF ALUMINUM CONSTRUCTION WITH 1/2"x1/2"x1/2" ALUMINUM GRID. GRILLE SHALL BE 90% FREE AREA (MINIMUM). PROVIDE WITH OPPOSED BLADE DAMPER. WALL RETURN GRILLES SHALL BE EQUAL TO TITUS 350FL (FILTER GRILL TO BE 350FLF1). SIZE AND CAPACITY SHALL BE AS INDICATED ON DRAWINGS. (UNLESS SHOWN ON

DRAWINGS.

C. SIDEWALL REGISTERS SHALL BE EQUAL TO TITUS SERIES 272RS WITH OPPOSED BLADE DAMPER. (UNLESS SHOWN ON DRAWINGS.)

D. INSTALL AND FASTEN CEILING DIFFUSER AND RETURN AIR GRILLES AS PER MANUFACTURER'S DETAILED DRAWINGS, USE GASKETS TO MAKE AIRTIGHT JOINTS WITH ADJOINING CONSTRUCTION, JOIN NEATLY WITH ADJOINING FINISHED SURFACE.

2.8 INSULATION

A. EXTERIOR DUCT INSULATION SHALL BE APPLIED OUTSIDE OF ALL HEATING AND AIR CONDITIONING DUCTWORK IN ACCORDANCE WITH SMACNA STANDARDS. INSULATION SHALL BE CONSTRUCTED OF GLASS FIBER AND SHALL BE 1 POUND DENSITY, 2" THICK AND COMPLY WITH NFPA BULLETINS 90A AND 90B (MINIMUM R VALUE = 6). INSULATION SHALL BE WRAPPED AND SHALL BE SECURED WITH DUCT BANDS. ALL JOINTS IN INSULATION SHALL BE BUTTED TOGETHER AND BRUSHED WITH

2.9 NATURAL GAS PIPING (N.I.C.)

A. ALL PIPING ABOVE GRADE SHALL BE SCHEDULE 40 BLACK STEEL ASTM 120. FITTINGS SHALL BE 150 POUNDS BLACK MALLEABLE SCREW PATTERN FOR ALL SIZES 2" AND SMALLER.

B. PIPING BELOW GRADE SHALL BE SCHEDULE 40 BLACK STEEL WITH BLACK WELDED FITTINGS SHALL BE PROTECTED BY MILL WRAPPING, REPUBLIC EXTRU—COAT OR APPROVED EQUAL. FITTINGS AND FIELD JOINTS SHALL BE FIELD WRAPPED AFTER TESTING WITH EXTRU-TAPE OR EQUAL TO 6" ABOVE FINISHED GRADE.

C. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH NFPA RECOMMENDATIONS AND SOUTHERN

D. GAS COCKS SHALL BE INSTALLED BEFORE EACH PIECE OF EQUIPMENT IS CONNECTED TO THE

E. HORIZONTAL PIPING SHALL GRADE WITH A SLOPE OF 1" IN 40'-0" TO DROP LEGS AT ALL LOW POINTS AS REQUIRED. DRIPS SHALL BE PROVIDED AT ALL LOW POINTS AND AT BOTTOM OF RISERS. DRIPS SHALL BE SAME SIZE AS THE PIPING WHERE INSTALLED AND SHALL BE MINIMUM OF 8"

F. USE GROUND JOINTS IN ALL SCREW PIPING JOINTS AND 150 POUND FLANGES IN ALL WELDED JOINT PIPING WHERE REQUIRED.

PART 3 EXECUTION

3.1 TESTING AND BALANCING

A. THE HEATING AND VENTILATING SUBCONTRACTOR SHALL SUBMIT TO THE OWNER/ENGINEER A RECORD OF THE CAPACITIES OF EACH GRILLE, REGISTER, AND EQUIPMENT OPENING AS DETERMINED BY THE TEST AFTER FINAL ADJUSTMENTS HAVE BEEN MADE WITH A NOTATION FOR THE FINAL SETTING AND AVERAGE VELOCITY THROUGH EACH OUTLET AS DETERMINED BY READINGS OF A VELOMETER TAKEN AT SEVERAL POINTS AT THE FACE OF THE REGISTER OR OPENING. AIR DELIVERY THROUGH SUPPLY OUTLETS SHALL BE CONSIDERED EQUAL TO THAT QUANTITY AS PUBLISHED IN THE MANUFACTURER'S TABLES. RETURN AIR THROUGH RETURN AIR GRILLES SHALL BE CONSIDERED AS EQUAL TO THE PRODUCT OF THE VELOMETER VELOCITY AND EFFECTIVE AREA OF THE REGISTER. TEST AND BALANCE BOTH HVAC SYSTEMS WITH DUCTWORK PRIOR TO INSTALLATION OF FINISHED CEILING. ONCE CEILINGS HAVE BEEN INSTALLED THE BALANCING DEVICES AND DUCTWORK SHALL NOT BE ACCESSIBLE FOR THIS PROCEDURE.

B. THERMOSTATS FOR THE AIR CONDITIONING EQUIPMENT SHALL BE PROVIDED AS PART OF THAT EQUIPMENT, AND CONNECTED UP BY THE ELECTRICAL SUBCONTRACTOR, AND IS TESTED BY THE HVAC SUBCONTRACTOR.

3.2 CLEANING VENTILATING SYSTEMS

A. ALL DUCTS SHALL BE THOROUGHLY CLEANED AND BLOWN OUT TO PREVENT ANY DEBRIS FROM DAMAGING FAN WHEELS OR DISCHARGING THROUGH DIFFUSERS WHEN SYSTEMS ARE PLACED IN OPERATIONS. ALL TEMPORARY CONNECTIONS REQUIRED FOR BLOWING OUT THE SYSTEM, CHEESECLOTH FOR ALL DUCT OPENINGS, AND ANY OTHER EQUIPMENT OR LABOR FOR CLEANING SHALL BE PROVIDED BY THE HEATING AND VENTILATING SUBCONTRACTOR. ALL FILTERS SHALL BE RENEWED AFTER VENTILATING SYSTEMS HAVE BEEN CLEANED. THE COST OF RENEWAL SHALL BE BORNE BY THE GENERAL CONTRACTOR.

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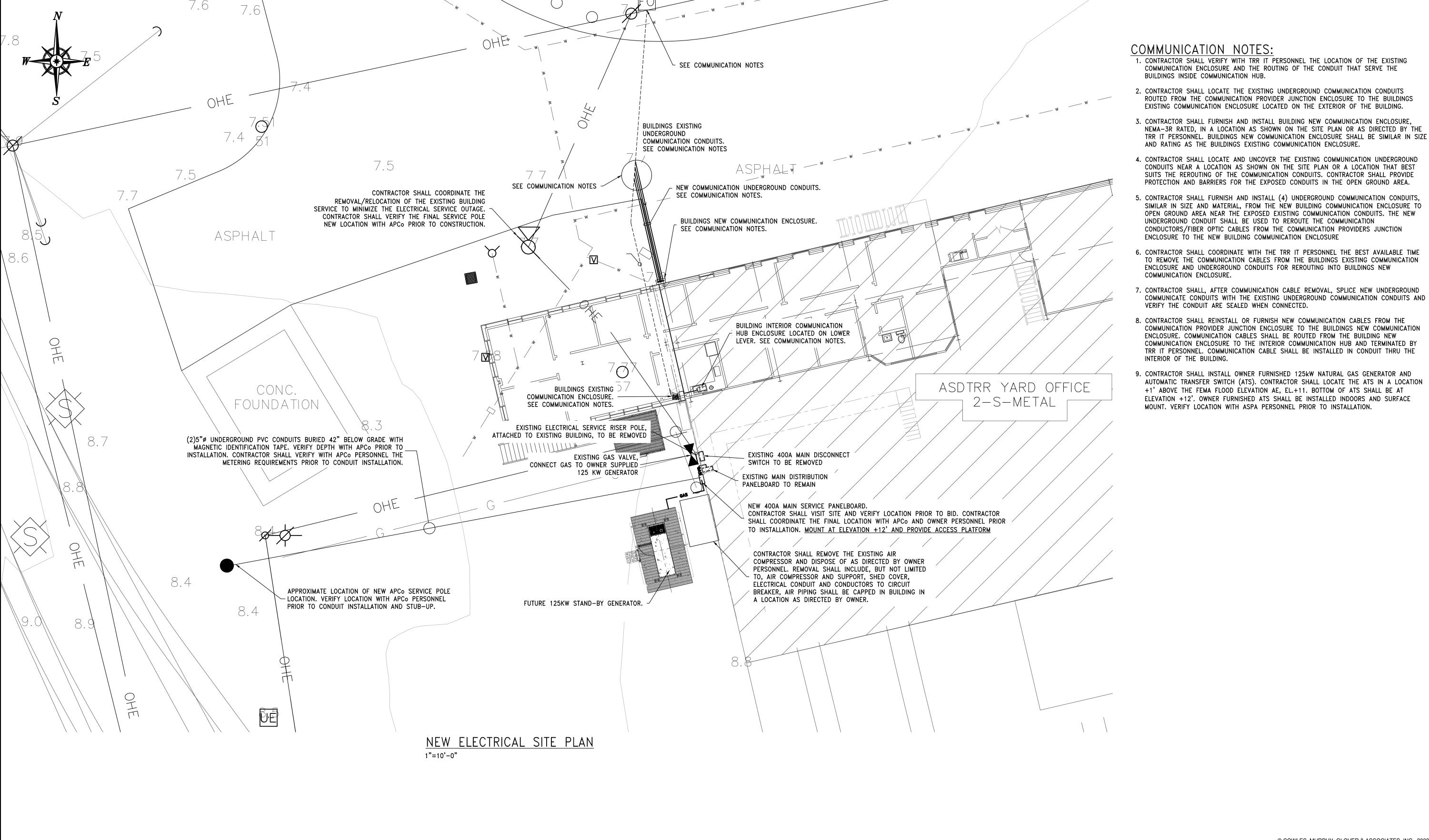
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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD

MOBILE, ALABAMA

HVAC SPECIFICATIONS 05/17/22 NTS MAD HECKED BY 4146-M3 4146-22 05/31/22



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| REV. | DESCRIPTION | DATE | BY | CHK'D | PERFORMANCE • RELIABILITY • EXPERIENCE | Georgia (706) 302-2831 |

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TERMINAL RAILWAY
OFFICE ADDITION/RENOVATION

126 INDUSTRIAL CANAL ROAD

MOBILE, ALABAMA

| | NEW E | LECTRICAL SIT | E PLAN |
|--------------------|-----------------|---------------|------------------------|
| SCALE AS NOTED | RCC | DATE 03/30/22 | SHEET OF 22x34 REV. |
| JOB NO. 4146-22 | CHECKED BY JJM | DATE 07/01/22 | DRAWING NUMBER 4146-E1 |

| | ELECTRICAL SYMBOL LEGEND |
|-------------------|---|
| SYMBOL | DESCRIPTION |
| F ₁ | METALUX #22PD-40-PB1-L840-U, 2x2 LED RECESSED, BEVEL SHIELDING, 0-10V DIMMIMG, 33W (4,000 LUMENS) OR ENGINEER APPROVED EQUAL. |
| F2 | METALUX #22PD-30-PB1-L840-U, 2x2 LED RECESSED, BEVEL SHIELDING, 0-10V DIMMING 25W (3,000 LUMENS) OR ENGINEER APPROVED EQUAL. |
| F3 | METALUX #22PD-50-PB1-L840-U, 2x2 LED RECESSED, BEVEL SHIELDING, 0-10V DIMMING 42W (5,000 LUMENS) OR ENGINEER APPROVED EQUAL. |
| F4 | METALUX #2SNLED-LD5-30HL-LW-UNV-L840-CD1-U ENGINEER, LED SURFACE FIXTURE, FULL FROST LENS-WIDE SPREAD, 4000K, 28W (2,975 LUMENS) OR APPROVED EQUAL. |
| J | JUNCTION BOX WITH COVER |
| ▽ ▽ EXIT | EXIT LED FIXTURE EXITRONIX #VLED-U-WH-EL90-G2. BATTERY BACKUP EXIT LIGHT WITH EMERGENCY LED LAMPS, MOUNT 12" BELOW CEILING OR ENGINEER APPROVED EQUAL. |
| | EXITRONIX #LED-52-WH-G2, LED BATTERY BACK-UP, 2 WATT LAMPS, SELF-TEST/SELD-DIAGNOSTUCS, MOUNT 9' A.F.F. OR ENGINEER APPROVED EQUAL |
| SM | SENSORWORX #SWX-221-1, CEILING MOUNT OCCUPANCY SENSOR, LOW VOLTAGE, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), SMALL MOTION 360°. |
| (LM) | SENSORWORX #SWX-222-1, CEILING MOUNT OCCUPANCY SENSOR, LOW VOLTAGE, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), LARGE MOTION 360°. |
| LVS | SENSORWORX #SWX-801-WH, DECORATOR LOW VOLTAGE WALL SWITCH, MOMENTARY OPERATION, WHITE. |
| LYD | SENSORWORX #SWX-803-WH, DECORATOR LOW VOLTAGE DIMMER (0-10V) WALL SWITCH, MOMENTARY OPERATION, WHITE. |
| [AX] | SENSORWORX #SWX-900-AX, POWER PACK CONTROLLER, LINE VOLTAGE, 120/277V, SINGLE RELAY +150mA SUPPLY |
| SWX | SENSORWORX #SWX-121-WH, OCCUPANCY SENSOR, LINE VOLTAGE, WALL SWITCH, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), 1-POLE:AUTO ON (OCCUPANCY), WHITE |
| SWD | SENSORWORX #SWX-121-D-WH, 0-10V DIMMING OCCUPANCY SENSOR, LINE VOLTAGE, WALL SWITCH, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), 1-POLE:AUTO ON (OCCUPANCY), WHITE |
| SWX SWS | SENSORWORX #SWX-122-WH, OCCUPANCY SENSOR, LINE VOLTAGE, WALL SWITCH, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), 2-POLE: PARTIAL ON, W/#SWX-831-SC, SIDECAR SWITCH, WHITE, 2-GANG |
| | NEMA-1/3R DISTRIBUTION PANEL, SEE SCHEDULE |
| ∕M∕ _{EF} | BATHROOM EXHAUST FAN TO BE SWITCHED FROM WALL MOUNTED SWITCH. |

ELECTRICAL GENERAL NOTES:

THE CONTRACTOR AFTER THE BID HAS BEEN ACCEPTED.

1. ALL ELECTRICAL WORK SHALL BE INSTALLED AS REQUIRED BY THE NATIONAL ELECTRIC CODE (N.E.C.) AND ANY STATE, CITY AND/OR LOCAL CODE REQUIREMENTS. THE MORE STRINGENT CODE REQUIREMENT SHALL BE UTILIZED AND VERIFIED WITH THE LOCAL INSPECTION APPROVAL AGENCY. (DEFINITION "CODE" — STATE, CITY AND/OR LOCAL CODE REQUIREMENTS)

SCALE: $\frac{3}{16}$ "=1'-0"

- 2. CONTRACTOR SHALL INSTALL ALL GROUNDING AS REQUIRED BY THE NATIONAL ELECTRIC CODE (N.E.C.) AND ANY STATE, CITY AND/OR LOCAL CODE REQUIREMENTS. THE MORE STRINGENT CODE REQUIREMENT SHALL BE UTILIZED AND VERIFIED WITH THE LOCAL INSPECTION APPROVAL AGENCY.
- 3. CONTRACTOR SHALL (PRIOR TO BID)

 (a) VISIT THE JOB/CONSTRUCTION SITE AND FIELD VERIFY ALL EXISTING CONDITIONS

 (b) TAKE ALL CONSIDERATIONS INTO ACCOUNT AT THE TIME OF BID. NO CONSIDERATIONS WILL BE GRANTED TO

4. ALL LIGHT FIXTURES SHOWN/LISTED IN LIGHTING FIXTURE SCHEDULE SHALL BE 10-DAY PRE-APPROVED BY THE ENGINEER PRIOR TO BID.

- 5. ALL ELECTRICAL SWITCHES SHALL BE INSTALLED AS PER N.E.C. ARTICLE 404 AND AS REQUIRED BY CODE. LIGHT SWITCHES AND COVERS SHALL BE WHITE UNLESS NOTED OTHERWISE BY THE ARCHITECT.
- 6. ALL RECEPTACLES AND COVERS SHALL BE INSTALLED AS PER N.E.C. ARTICLE 406 AND AS REQUIRED BY CODE. LIGHT SWITCHES AND COVERS SHALL BE WHITE UNLESS NOTED OTHERWISE BY THE ARCHITECT.
- 7. ALL ELECTRICAL METALLIC TUBING (EMT), RIGID NON-METALLIC CONDUIT, FLEXIBLE METALLIC CONDUIT, FLEXIBLE NON-METALLIC CONDUIT, 'SEALTIGHT' TYPE CONDUITS AND ALL OTHER CONDUITS THAT DO NOT CONTAIN A REQUIRED CODE SIZED GROUND WIRE SHALL HAVE A REQUIRED CODE SIZED BOND WIRE INSTALLED WITH THE CIRCUIT CONDUCTORS.
- 8. RECEPTACLES INSTALLED WITHIN 6'-0" OF SINKS OR WATER SHALL BE CONNECTED TO A GROUND FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER OR TO A GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE.
- 9. CONTRACTOR SHALL FURNISH AND INSTALL WEATHER PROOF G.F.C.I. RECEPTACLE AT AN ACCESSIBLE LOCATION NEAR ALL HVAC EQUIPMENT IN ACCORDANCE WITH N.E.C. ARTICLE 210.63 AND AS REQUIRED BY CODE. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THESE RECEPTACLES IN THE FIELD REGARDLESS OF THE PLAN LAYOUT.
- 10. CONTRACTOR SHALL, PRIOR TO BID AND ROUGH-IN, FIELD VERIFY ALL HVAC ELECTRICAL REQUIREMENTS AGAINST THE PLAN REQUIREMENTS. FAILURE TO VERIFY AND NOTIFY ENGINEER/ARCHITECT PRIOR TO ROUGH-IN SHALL INDICATE THAT THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THE DESIGN AND INSTALLATION REQUIREMENTS.
- 11. CONTRACTOR SHALL FURNISH AND INSTALL ALL AC UNITS SHALL HAVE INTEGRAL CONTROLLERS WITH OVERLOAD PROTECTION AND DISCONNECT FUNCTIONS PER N.E.C. CONTRACTOR SHALL INSTALL GFI DUPLEX SERVICE RECEPTACLES NEAR CONDENSER UNIT. PROVIDE MOTOR STARTERS WITH OVERLOAD PROTECTION AND DISCONNECT FUNCTIONS FOR AIR HANDLERS, IF NOT PROVIDED BY MECHANICAL CONTRACTOR.
- 12. CONTRACTOR SHALL FURNISH AND INSTALL NON-FUSED DISCONNECT SWITCHES AT EACH WATER HEATER. DISCONNECT SWITCH SHALL BE RATED AS REQUIRED BY THE EQUIPMENT SERVED.
- 13. SEE REFERENCE DRAWING 4146-E3 FOR OFFICE LIGHTING CONTROL PLAN.

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| RFV. | DESCRIPTION | DATE | RY | CHK,D |

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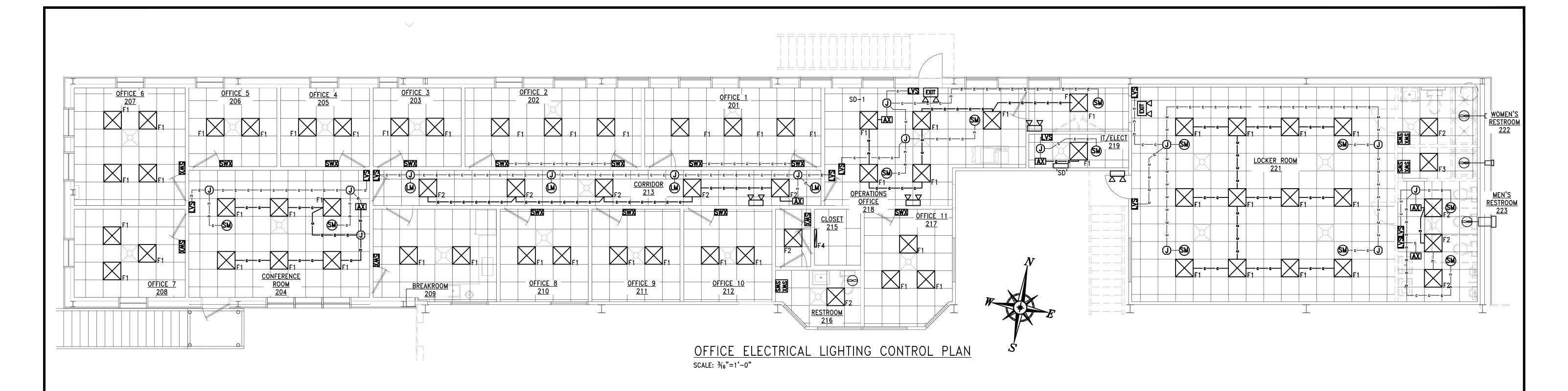
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OFFICE ADDITION/RENOVATION

126 INDUSTRIAL CANAL ROAD
MOBILE, ALABAMA

| | OFFICE E | LECTRICAL LIGH | HTING PLAN | |
|--------------------|-----------------|----------------|------------------------|-----------|
| SCALE AS NOTED | DRAWN BY JDG | DATE 03/30/22 | SHEET 2 OF | 2x34 REV. |
| JOB NO. 4146-22 | CHECKED BY JJM | DATE 07/01/22 | DRAWING NUMBER 4146-E2 | 2 |



| | ELECTRICAL SYMBOL LEGEND |
|------------------|--|
| SYMBOL | DESCRIPTION |
| F ₁ | METALUX #22PD-40-PB1-L840-U, 2x2 LED RECESSED, BEVEL SHIELDING, 0-10V DIMMIMG, 33W (4,000 LUMENS) OR ENGINEER APPROVED EQUAL. |
| F2 | METALUX #22PD-30-PB1-L840-U, 2x2 LED RECESSED, BEVEL SHIELDING, 0-10V DIMMING 25W (3,000 LUMENS) OR ENGINEER APPROVED EQUAL. |
| F3 | METALUX #22PD-50-PB1-L840-U, 2x2 LED RECESSED, BEVEL SHIELDING, 0-10V DIMMING 42W (5,000 LUMENS) OR ENGINEER APPROVED EQUAL. |
| F4 | METALUX #2SNLED-LD5-30HL-LW-UNV-L840-CD1-U ENGINEER, LED SURFACE FIXTURE, FULL FROST LENS-WIDE SPREAD, 4000K, 28W (2,975 LUMENS) OR APPROVED EQUAL. |
| J | JUNCTION BOX WITH COVER |
| EXIT | EXIT LED FIXTURE EXITRONIX #VLED-U-WH-EL90-G2. BATTERY BACKUP EXIT LIGHT WITH EMERGENCY LED LAMPS, MOUNT 12" BELOW CEILING OR ENGINEER APPROVED EQUAL. |
| | EXITRONIX #LED-52-WH-G2, LED BATTERY BACK-UP, 2 WATT LAMPS, SELF-TEST/SELD-DIAGNOSTUCS, MOUNT 9' A.F.F. OR ENGINEER APPROVED EQUAL |
| SM | SENSORWORX #SWX-221-1, CEILING MOUNT OCCUPANCY SENSOR, LOW VOLTAGE, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), SMALL MOTION 360°. |
| (M) | SENSORWORX #SWX-222-1, CEILING MOUNT OCCUPANCY SENSOR, LOW VOLTAGE, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), LARGE MOTION 360°. |
| LVS | SENSORWORX #SWX-801-WH, DECORATOR LOW VOLTAGE WALL SWITCH, MOMENTARY OPERATION, WHITE. |
| [AX] | SENSORWORX #SWX-900-AX, POWER PACK CONTROLLER, LINE VOLTAGE, 120/277V, SINGLE RELAY +150mA SUPPLY |
| SWX | SENSORWORX #SWX-121-WH, OCCUPANCY SENSOR, LINE VOLTAGE, WALL SWITCH, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), 1-POLE:AUTO ON (OCCUPANCY), WHITE |
| SWX SWS | SENSORWORX #SWX-122-WH, OCCUPANCY SENSOR, LINE VOLTAGE, WALL SWITCH, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), 2-POLE: PARTIAL ON, INCLUDES #SWX-831-SC, SIDECAR SWITCH, WHITE, 2-GANG |
| | NEMA-1/3R DISTRIBUTION PANEL, SEE SCHEDULE |
| √M _{EF} | BATHROOM EXHAUST FAN TO BE SWITCHED FROM WALL MOUNTED SWITCH. |
| | |

ELECTRICAL GENERAL NOTES:

- 1. ALL ELECTRICAL WORK SHALL BE INSTALLED AS REQUIRED BY THE NATIONAL ELECTRIC CODE (N.E.C.) AND ANY STATE, CITY AND/OR LOCAL CODE REQUIREMENTS. THE MORE STRINGENT CODE REQUIREMENT SHALL BE UTILIZED AND VERIFIED WITH THE LOCAL INSPECTION APPROVAL AGENCY. (DEFINITION "CODE" - STATE, CITY AND/OR LOCAL CODE REQUIREMENTS)
- 2. CONTRACTOR SHALL INSTALL ALL GROUNDING AS REQUIRED BY THE NATIONAL ELECTRIC CODE (N.E.C.) AND ANY STATE, CITY AND/OR LOCAL CODE REQUIREMENTS. THE MORE STRINGENT CODE REQUIREMENT SHALL BE UTILIZED AND VERIFIED WITH THE LOCAL INSPECTION APPROVAL AGENCY.
- 3. CONTRACTOR SHALL (PRIOR TO BID)
- (a) VISIT THE JOB/CONSTRUCTION SITE AND FIELD VERIFY ALL EXISTING CONDITIONS (b) TAKE ALL CONSIDERATIONS INTO ACCOUNT AT THE TIME OF BID. NO CONSIDERATIONS WILL BE GRANTED TO
- THE CONTRACTOR AFTER THE BID HAS BEEN ACCEPTED.
- 4. ALL LIGHT FIXTURES SHOWN/LISTED IN LIGHTING FIXTURE SCHEDULE SHALL BE 10-DAY PRE-APPROVED BY THE
- 5. ALL ELECTRICAL SWITCHES SHALL BE INSTALLED AS PER N.E.C. ARTICLE 404 AND AS REQUIRED BY CODE. LIGHT SWITCHES AND COVERS SHALL BE WHITE UNLESS NOTED OTHERWISE BY THE ARCHITECT.
- 6. ALL RECEPTACLES AND COVERS SHALL BE INSTALLED AS PER N.E.C. ARTICLE 406 AND AS REQUIRED BY CODE. LIGHT SWITCHES AND COVERS SHALL BE WHITE UNLESS NOTED OTHERWISE BY THE ARCHITECT.
- 7. ALL ELECTRICAL METALLIC TUBING (EMT), RIGID NON-METALLIC CONDUIT, FLEXIBLE METALLIC CONDUIT, FLEXIBLE NON-METALLIC CONDUIT, 'SEALTIGHT' TYPE CONDUITS AND ALL OTHER CONDUITS THAT DO NOT CONTAIN A REQUIRED CODE SIZED GROUND WIRE SHALL HAVE A REQUIRED CODE SIZED BOND WIRE INSTALLED WITH THE CIRCUIT CONDUCTORS.
- 8. RECEPTACLES INSTALLED WITHIN 6'-0" OF SINKS OR WATER SHALL BE CONNECTED TO A GROUND FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER OR TO A GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE.
- 9. CONTRACTOR SHALL FURNISH AND INSTALL WEATHER PROOF G.F.C.I. RECEPTACLE AT AN ACCESSIBLE LOCATION NEAR ALL HVAC EQUIPMENT IN ACCORDANCE WITH N.E.C. ARTICLE 210.63 AND AS REQUIRED BY CODE. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THESE RECEPTACLES IN THE FIELD REGARDLESS OF THE
- 10. CONTRACTOR SHALL, PRIOR TO BID AND ROUGH-IN, FIELD VERIFY ALL HVAC ELECTRICAL REQUIREMENTS AGAINST THE PLAN REQUIREMENTS. FAILURE TO VERIFY AND NOTIFY ENGINEER/ARCHITECT PRIOR TO ROUGH-IN SHALL INDICATE THAT THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THE DESIGN AND INSTALLATION REQUIREMENTS.
- 11. CONTRACTOR SHALL FURNISH AND INSTALL ALL AC UNITS SHALL HAVE INTEGRAL CONTROLLERS WITH OVERLOAD PROTECTION AND DISCONNECT FUNCTIONS PER N.E.C. CONTRACTOR SHALL INSTALL GFI DUPLEX SERVICE RECEPTACLES NEAR CONDENSER UNIT. PROVIDE MOTOR STARTERS WITH OVERLOAD PROTECTION AND DISCONNECT FUNCTIONS FOR AIR HANDLERS, IF NOT PROVIDED BY MECHANICAL CONTRACTOR.
- 12. CONTRACTOR SHALL FURNISH AND INSTALL NON-FUSED DISCONNECT SWITCHES AT EACH WATER HEATER. DISCONNECT SWITCH SHALL BE RATED AS REQUIRED BY THE EQUIPMENT SERVED.
- 13. SEE REFERENCE DRAWING 4146-E2 FOR OFFICE LIGHTING ELECTRICAL REQUIREMENTS.

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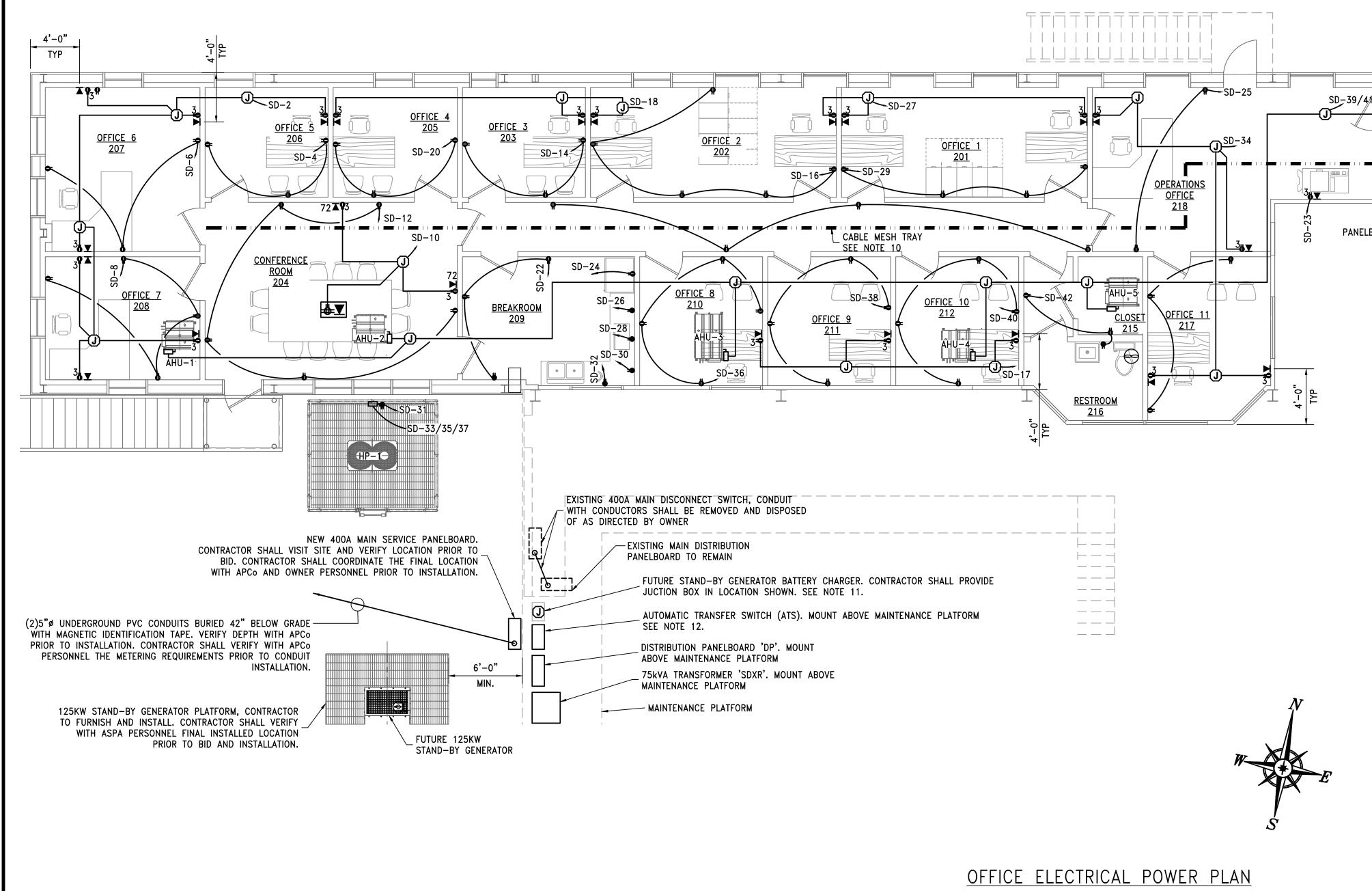
B ISSUED FOR BID 08/01/22 RCC JJM DESCRIPTION BY

Cowles, Murphy, Glover & ASSOCIATES
A Full Service Engineering Firm

457 St. Michael St., Mobile, AL 36602 13 Thrash Rd., LaGrange, GA 30241 11880 Cranston Dr. Ste 102, Arlington, TN 38002 Alabama (251) 433-1611 PERFORMANCE • RELIABILITY • EXPERIENCE Georgia (706) 302-2831 Tennessee (901) 290-5444

TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

OFFICE ELECTRICAL LIGHTING CONTROL PLAN 03/30/22 AS NOTED JDG HECKED BY 4146-E3 07/01/22 4146-22



| | ELECTRICAL SCHEDULE |
|-----------------------|---|
| SYMBOL | DESCRIPTION |
| H | DATA JACK DUPLEX J-BOX WITH CONDUIT TO OVERHEAD CEILING. (2) CAT6 DATA CABLES ROUTED TO IT ROOM. TERMINATIONS BY OTHERS. |
| = | DUPLEX RECEPTACLE. 110 VOLT GROUNDING TYPE, FLUSH WALL MTD. 18" A.F.F. UNLESS NOTED OTHERWISE. |
| 2 € | (2) DUPLEX RECEPTACLE. 110 VOLT GROUNDING TYPE, FLUSH WALL MTD. 18" A.F.F. UNLESS NOTED OTHERWISE. |
| 3 → | (3) DUPLEX RECEPTACLE. 110 VOLT GROUNDING TYPE, FLUSH WALL MTD. 18" A.F.F. UNLESS NOTED OTHERWISE. |
| ⇒ WT | GROUND FAULT DUPLEX RECEPTACLE. FLUSH WALL MTD. 42" A.F.F. UNLESS NOTED OTHERWISE. WT IS FOR WEATHER TIGHT ENCLOSURE WHERE APPLICABLE |
| ₩.▼ | (2)DUPLEX RECEPTACLE AND (1)DUPLEX DATA CONNECTION IN FLUSH MOUNTED FLOOR BOX. CONNECT RECEPTACLES TO GROUND FAULT CIRCUIT BREAKER. (2) CAT6 CABLE TO DATA POIN |
| | NON-FUSED DISCONNECT SWITCH, NEMA-3R, SIZED AS REQUIRED |
| | NEMA-12 OR NEMA-1 DISTRIBUTION PANEL, SEE SCHEDULE |
| J | JUNCTION BOX WITH COVER |
| | |

SCALE: $\frac{3}{16}$ "=1'-0"

<u>219</u>

PANELBOARD

1. ALL ELECTRICAL WORK SHALL BE INSTALLED AS REQUIRED BY THE NATIONAL ELECTRIC CODE (N.E.C.) AND ANY STATE, CITY AND/OR LOCAL CODE REQUIREMENTS. THE MORE STRINGENT CODE REQUIREMENT SHALL BE UTILIZED AND VERIFIED WITH THE LOCAL INSPECTION APPROVAL AGENCY. (DEFINITION "CODE" - STATE, CITY AND/OR LOCAL CODE REQUIREMENTS)

LOCKER ROOM

- 2. CONTRACTOR SHALL INSTALL ALL GROUNDING AS REQUIRED BY THE NATIONAL ELECTRIC CODE (N.E.C.) AND ANY STATE, CITY AND/OR LOCAL CODE REQUIREMENTS. THE MORE STRINGENT CODE REQUIREMENT SHALL BE UTILIZED AND VERIFIED WITH THE LOCAL INSPECTION APPROVAL AGENCY.
- 3. ALL RECEPTACLES AND COVERS SHALL BE INSTALLED AS PER N.E.C. ARTICLE 406 AND AS REQUIRED BY CODE. LIGHT SWITCHES AND COVERS SHALL BE WHITE UNLESS NOTED OTHERWISE BY THE ARCHITECT.
- 4. ALL ELECTRICAL METALLIC TUBING (EMT), RIGID NON-METALLIC CONDUIT, FLEXIBLE METALLIC CONDUIT, FLEXIBLE NON-METALLIC CONDUIT, 'SEALTIGHT' TYPE CONDUITS AND ALL OTHER CONDUITS THAT DO NOT CONTAIN A REQUIRED CODE SIZED GROUND WIRE SHALL HAVE A REQUIRED CODE SIZED BOND WIRE INSTALLED WITH THE CIRCUIT
- 5. RECEPTACLES INSTALLED WITHIN 6'-0" OF SINKS OR WATER SHALL BE CONNECTED TO A GROUND FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER OR TO A GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE.
- 6. CONTRACTOR SHALL FURNISH AND INSTALL WEATHER PROOF G.F.C.I. RECEPTACLE AT AN ACCESSIBLE LOCATION NEAR ALL HVAC EQUIPMENT IN ACCORDANCE WITH N.E.C. ARTICLE 210.63 AND AS REQUIRED BY CODE. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THESE RECEPTACLES IN THE FIELD REGARDLESS OF THE PLAN LAYOUT.
- 7. CONTRACTOR SHALL, PRIOR TO BID AND ROUGH-IN, FIELD VERIFY ALL HVAC ELECTRICAL REQUIREMENTS AGAINST THE PLAN REQUIREMENTS. FAILURE TO VERIFY AND NOTIFY ENGINEER/ARCHITECT PRIOR TO ROUGH-IN SHALL INDICATE THAT THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THE DESIGN AND INSTALLATION REQUIREMENTS.
- 8. CONTRACTOR SHALL FURNISH AND INSTALL ALL AC UNITS SHALL HAVE INTEGRAL CONTROLLERS WITH OVERLOAD PROTECTION AND DISCONNECT FUNCTIONS PER N.E.C. CONTRACTOR SHALL INSTALL GFI DUPLEX SERVICE RECEPTACLES NEAR CONDENSER UNIT. PROVIDE MOTOR STARTERS WITH OVERLOAD PROTECTION AND DISCONNECT FUNCTIONS FOR AIR HANDLERS, IF NOT PROVIDED BY MECHANICAL CONTRACTOR.
- 9. CONTRACTOR SHALL FURNISH AND INSTALL NEW IT SERVER RACK IN IT/ELECT ROOM 219 AS DIRECTED BY THE OWNER. CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF THE IT SERVER RACK WITH OWNER PERSONNEL PRIOR TO
- 10. CONTRACTOR SHALL FURNISH AND INSTALL CABLE MESH TRAY SYSTEM IN OFFICE AREA FOR DATA CABLE ROUTING AND SUPPORT TO IT ROOM. CABLE MESH TRAY SHALL BE CABLOFIL, BY LEGRAND, #CF150-30 OR APPROVED EQUAL. CONTRACTOR SHALL FURNISH AND INSTALL THE REQUIRED SUPPORTS, GROUND STRAPS, FITTINGS AND CABLE MESH TRAY. CABLE MESH TRAY SHALL BE INSTALLED OVER THE CEILING AND LOCATED FOR EASY ACCESS. LOCATE CABLE MESH TRAY AS DIRECTED BY IT PERSONNEL.
- 11. BATTERY CHARGER NOT IN THIS CONTRACT. BATTERY CHARGER CONDUIT AND CONDUCTORS SHALL BE INSTALLED AND TERMINATED IN A JUNCTION BOX LOCATED AS SHOWN ON PLANS.
- 12. CONTRACTOR SHALL FURNISH AND INSTALL NEW KOHLER #KSS-AMTA-260-S (OR APPROVED EQUAL) AUTOMATIC TRANSFER SWITCH WITH GENERATOR MONITORING SYSTEM FOR FUTURE 125kW STAND-BY GENERATOR INSTALLATION. 125kW STAND-BY GENERATOR SHALL BE A FUTURE ADDITION BY OTHERS.

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RESTROOM

<u>RESTROOM</u>

| | | | | | | 457 St. Michael S |
|------|----------------|----------|-----|-------|--|-------------------------------------|
| | | | | | Cowles, Murphy, Glover | 13 Thrash Rd., I |
| | | | | | & ASSOCIATES A Full Service Engineering Firm | 11880 Cranston Dr. St |
| В | ISSUED FOR BID | 08/01/22 | RCC | JJM | | Alabama |
| REV. | DESCRIPTION | DATE | BY | CHK'D | PERFORMANCE • RELIABILITY • EXPERIENCE | ^E Georgia (706) 302-2831 |

457 St. Michael St., Mobile, AL 36602 13 Thrash Rd., LaGrange, GA 30241 11880 Cranston Dr. Ste 102, Ärlington, TN 38002 Alabama (251) 433-1611 Tennessee (901) 290-5444

TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

| TITLE | OFFICE I | ELECTRICAL PO | WER PLAN | |
|--------------------|--------------|---------------|----------------------|------------|
| SCALE AS NOTED | DRAWN BY RCC | DATE 03/30/22 | SHEET OF | 22x34 REV. |
| JOB NO. 4146-22 | CHECKED BY | DATE 06/10/22 | DRAWING NUMBER 4146- | -E4 |

| | MARK CERVICE BANEL "RR" | | AI | <u> </u> | יטט | אוע | 30 | | | (277 | / +0 |) | JP, | | <u> </u> | | | | |
|-----|-------------------------------|------------|-------|----------|--------|-------|-------|---------|--------|-------|-------|----|--------|-------|----------|-----|------|-------------|-----|
| СКТ | MARK: SERVICE PANEL "DP" LOAD | Ιрр | LVKED | IEEEDI | ED /CC | NDUIT | l p | HASE (k | \/ A \ | ВПУСЕ | (kVA) | | FEEDE | D /CO | NDIIIT | DDE | VNED | LOAD | СКТ |
| # | DESCRIPTION | | | | | SIZE | | B | C | A | B | С | FEED | | | _ | | DESCRIPTION | # |
| 1 | 75kVA | | | | | | 25.0 | | | _ | | | _ | _ | _ | - | - | SPACE | 2 |
| 3 | 480V-120/208V SECOND | 3 | 150 | 2/0 | 6 | 2" | | 25.0 | | | - | | _ | _ | _ | - | - | SPACE | 4 |
| 5 | FLOOR TRANSFORMER | | | | | | | | 25.0 | | | - | _ | _ | _ | - | - | SPACE | 6 |
| 7 | SPACE | - | _ | _ | _ | _ | _ | | | - | | | _ | _ | _ | - | - | SPACE | 8 |
| 9 | SPACE | - | _ | _ | - | - | | - | | | - | | - | _ | _ | - | - | SPACE | 10 |
| 11 | SPACE | - | - | - | _ | - | | | _ | | | _ | - | _ | _ | - | - | SPACE | 12 |
| 13 | SPACE | - | - | _ | - | - | _ | | | - | | | - | _ | _ | - | - | SPACE | 14 |
| 15 | SPACE | - | - | _ | - | - | | - | | | ı | | - | - | _ | - | - | SPACE | 16 |
| 17 | SPACE | - | _ | _ | _ | 1 | | | - | | | - | - | - | _ | - | - | SPACE | 18 |
| | | | | | | | 69.25 | | 69.25 | _ | - | _ | | | | | | | 1 |
| | | T | OTAL | (kVA) | ØA _ | 25.00 | øB | 25.00 | øC _ | 25.00 | | | GH PH | | | | (| 90.3 | |
| | | | TOTAL | CONN | NECTE | LOAI | (kVA) | 75.0 | | | | T(| OTAL L | OAD (| (AMPS |) | 9 | 90.2 | |

| | | F | | 1EL | BO | ٩RD | SC | HEDI | JLE | (120 |)/20 |)8V | Зø, | 4 | W) | | | | |
|-----|---------------------------|----------|----------|----------|-------------|--------|--------|---------|-------|-------|--------|-------|------------|-------|------|----------------|------|---------------------------|------|
| | MARK: "SD" | I | | I | / | | _ | | | | - () | | I | - / | | | | | T |
| CKT | LOAD | | | | | NDUIT | | HASE (V | | PHAS | E (VA) | | FEEDE | | | - | | | CK1 |
| # | DESCRIPTION | <u> </u> | TRIP | - | GRD | | A | В | С | A | В | С | FEED | GRD | | <u> </u> | TRIP | | # |
| 1 | RM 201-219 LIGHTING | 1 | 20 | 10 | 12 | 1/2" | 1,500 | | | 1,620 | | | 10 | 12 | 1/2" | 1 | 20 | RM 206-207 DATA RECEPT | 2 |
| 3 | RM 220-222 LIGHTING | 1 | 20 | 10 | 12 | 1/2" | | 770 | | | 540 | | 10 | 12 | 1/2" | 1 | 20 | RM 206 RECEPT | 4 |
| 5 | SPARE | 1 | 20 | _ | <u> </u> | - | | | _ | | | 720 | 10 | 12 | 1/2" | 1 | 20 | RM 207 RECEPT | 6 |
| 7 | SPARE | 1 | 20 | _ | _ | - | - | | | 720 | | | 10 | 12 | 1/2" | 1 | 20 | RM 208 RECEPT | 8 |
| 9 | SPACE | _ | _ | _ | _ | - | | _ | | | 1,440 | | 10 | 12 | 1/2" | 1 | 20 | RM 204 DATA RECEPT | 10 |
| 11 | SPACE | _ | _ | _ | _ | ı | | | _ | | | 900 | 10 | 12 | 1/2" | 1 | 20 | RM 204 RECEPT | 12 |
| 13 | SPACE | _ | _ | _ | - | ı | ı | | | 540 | | | 10 | 12 | 1/2" | 1 | 20 | RM 203 RECEPT | 14 |
| 15 | SPACE | - | _ | _ | - | 1 | | _ | | | 900 | | 10 | 12 | 1/2" | 1 | 20 | RM 202 RECEPT | 16 |
| 17 | RM 210-212 DATA RECEPT | 1 | 20 | 10 | 12 | 1/2" | | | 1,620 | | | 1,620 | 10 | 12 | 1/2" | 1 | 20 | RM 202/203/205 DATA RECEP | 18 |
| 19 | IT QUAD RECEPT | 1 | 20 | 10 | 12 | 1/2" | 720 | | | 540 | | | 10 | 12 | 1/2" | 1 | 20 | RM 205 RECEPT | 20 |
| 21 | IT QUAD RECEPT | 1 | 20 | 10 | 12 | 1/2" | | 720 | | | 540 | | 10 | 12 | 1/2" | 1 | 20 | RM 209 RECEPT | 22 |
| 23 | COPIER RECEPT | 1 | 20 | 10 | 12 | 1/2" | | | 1,200 | | | 1,200 | 10 | 12 | 1/2" | 1 | 20 | RM 209 REFRIG RECEPT | 24 |
| 25 | RM 218 RECEPT | 1 | 20 | 10 | 12 | 1/2" | 360 | | | 180 | | | 10 | 12 | 1/2" | 1 | 20 | RM 209 CONTER RECEPT | 26 |
| 27 | RM 201/202 DATA RECEPT | 1 | 20 | 10 | 12 | 1/2" | | 1,620 | | | 1,100 | | 10 | 12 | 1/2" | 1 | 20 | RM 209 MICROWAVE RECEPT | 28 |
| 29 | RM 201 RECEPT | 1 | 20 | 10 | 12 | 1/2" | | | 720 | | | 180 | 10 | 12 | 1/2" | 1 | 20 | RM 209 COUNTER RECEPT | 30 |
| 31 | HP-1 RECEPT | 1 | 20 | 10 | 12 | 1/2" | 360 | | | 1,200 | | | 10 | 12 | 1/2" | 1 | 20 | RM 209 COFFEE RECEPT | 32 |
| 33 | | | | | | | | 4,805 | | | 1,620 | | 10 | 12 | 1/2" | 1 | 20 | RM 201/217/218 DATA RECEP | T 34 |
| 35 | HP-1 | 3 | 50 | 6 | 10 | 1" | | | 4,805 | | | 720 | 10 | 12 | 1/2" | 1 | 20 | RM 210 RECEPT | 36 |
| 37 | | | | | | | 4,805 | | | 720 | | | 10 | 12 | 1/2" | 1 | 20 | RM 211 RECEPT | 38 |
| 39 | | 1_ | | | | 1/99 | - | 540 | | | 720 | | 10 | 12 | 1/2" | 1 | 20 | RM 212 RECEPT | 40 |
| 41 | AHU-1 - AHU-5 | 2 | 20 | 10 | 12 | 1/2" | | | _ | | | 540 | 10 | 12 | 1/2" | 1 | 20 | RM 215-216 RECEPT | 42 |
| 43 | SPACE | | _ | _ | _ | - | _ | | | | | | _ | _ | _ | 1 | 20 | SPARE | 44 |
| 45 | SPACE | - | _ | _ | _ | - | | _ | | | | | - | - | - | 1 | 20 | SPARE | 46 |
| 47 | SPACE | 1- | _ | _ | | - | | | _ | | | | _ | _ | _ | - | _ | SPACE | 48 |
| 49 | SPACE | 1- | _ | _ | _ | _ | - | | | | | | _ | _ | _ | - | _ | SPACE | 50 |
| 51 | SPACE | | _ | _ | | - | | _ | | | | | _ | _ | _ | - | _ | SPACE | 52 |
| 53 | GENERATOR BATTERY CHARGER | 1 | 20 | 10 | 12 | 1/2" | | | 840 | | | | | _ | _ | - | _ | SPACE | 54 |
| | | | <u> </u> | <u>I</u> | 1 | | 7 7/15 | 8,455 | | 5 520 | 6,860 | 5,880 | | | | | | | |
| | | T | OTAL | (kVA) | øA <u>1</u> | 3.265 | | 15.315 | | 15.06 | 0,000 | HI | J GH PH | - | | _ | | 27.6 | |
| | | | TOTAL | CONI | NECTE | D LOAI | (kVA) | 43.64 | | | | TO | OTAL L | OAD (| AMPS |) <u> </u> | 1 | 21.2 | |

NOTES:
CONTRACTOR SHALL VERIFY WITH THE OWNER THE REQUIRED CIRCUIT BREAKERS TO BE FURNISHED WITH PANELBOARD PRIOR TO PURCHASE AND INSTALLATION.

| | | | | | | PAN | ELBOA | RD C | OORDI | NATION | SCH | EDULE | | |
|------|---------|----------|---------|---|------|-------|---------|--------|--------|---------|---------|------------|---------|-----------------|
| MARK | TYPE | MOUNTING | VOLTAGE | ø | WIRE | MAIN | SERVICE | kAIC | BUS | NEUTRAL | C/B | Ī | EEDER | |
| | | | | | | | RATED | RATING | RATING | RATING | TYPE | CONDUCTORS | GROUND | CONDUIT |
| MDP | NEMA-12 | SURFACE | 480/277 | 3 | 4 | 400MB | YES | 35 | 400 | 400 | BOLT-ON | (4)600MCM | (1)#2/0 | (2)5":(1-SPARE) |
| DP | NEMA-12 | SURFACE | 480/277 | 3 | 4 | MLO | NO | 35 | 250 | 250 | BOLT-ON | (4)250MCM | (1)#2 | (1)3" |
| OD2 | NEMA-12 | SURFACE | 120/208 | 3 | 4 | 250MB | NO | 18 | 250 | 250 | BOLT-ON | (4)#250MCM | (1)#4 | (1)3" |

- ALL BUSSING COPPER, INCLUDING NEUTRAL AND GROUND.
 - ALL LUGS 100 AMPS AND GREATER SHALL BE COPPER.
 - ALL LUGS ON CIRCUIT BREAKERS GREATER THAN 400 AMPS SHALL BE COPPER.

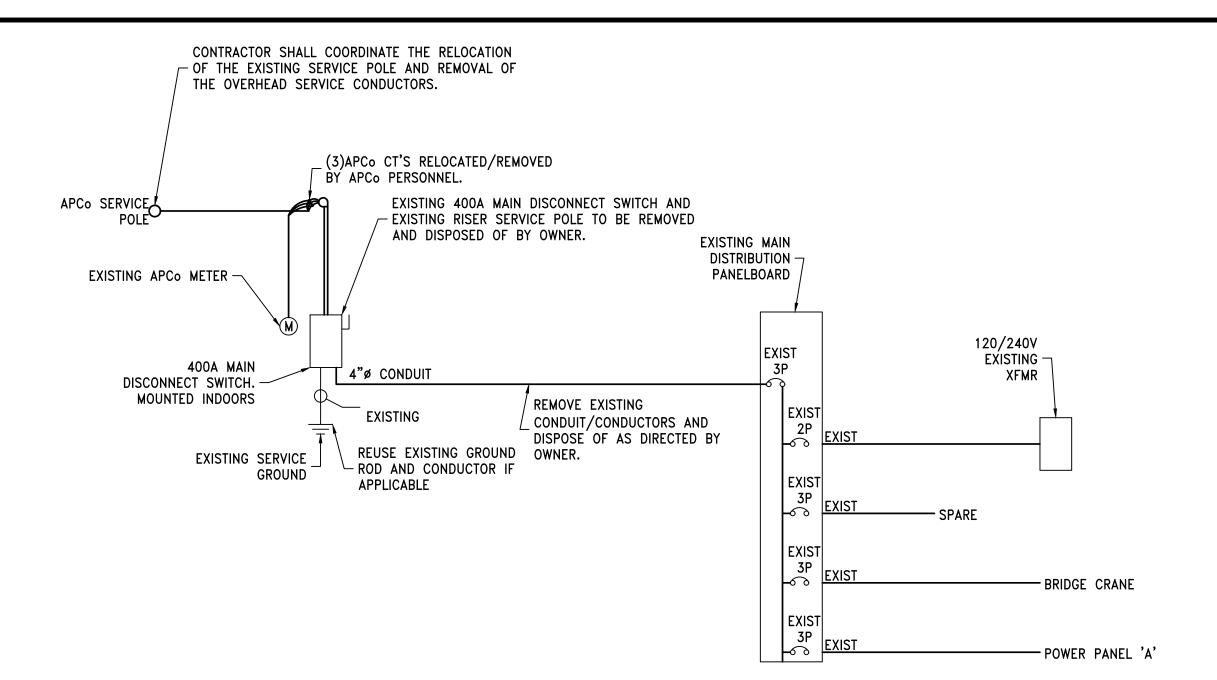
| | | | | | Cowles, Murphy, Glover & ASSOCIATES A Full Service Engineering Firm | 11880 Cranston Dr. S |
|------|----------------|----------|-----|-------|---|------------------------|
| В | ISSUED FOR BID | 08/01/22 | RCC | JJM | DEDECON (AN ICE DEL LA DIL IEW ENDEDHEN ICE | Alabam |
| REV. | DESCRIPTION | DATE | BY | CHK'D | PERFORMANCE • RELIABILITY • EXPERIENCE | Georgia (706) 302-2831 |

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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD

MOBILE, ALABAMA

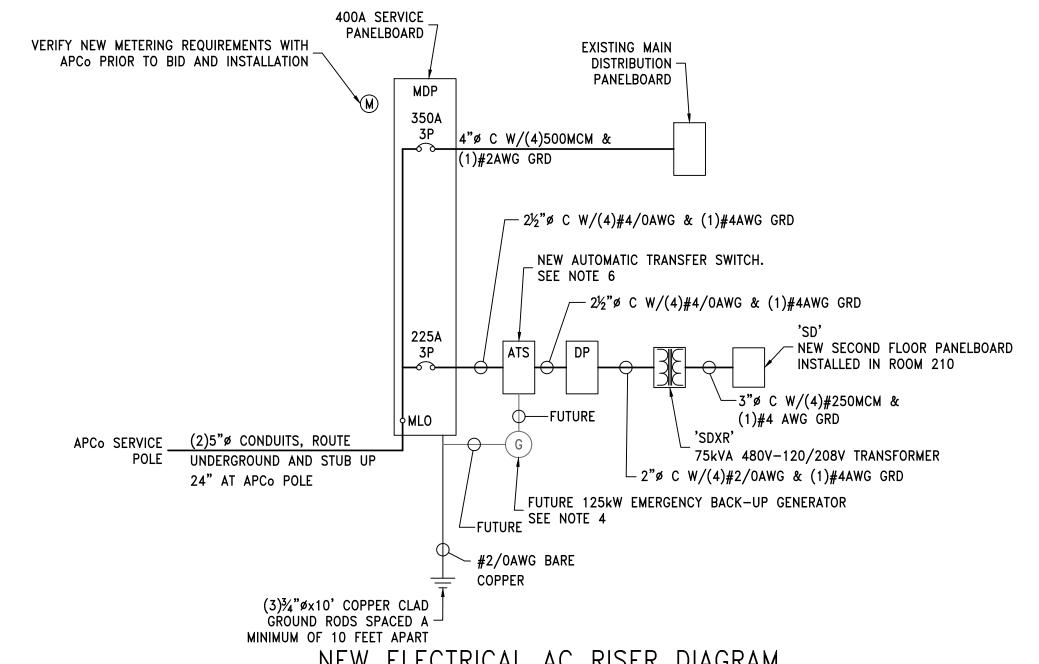
ELECTRICAL AC-ONE-RISER DIAGRAM JDG 03/30/22 AS NOTED HECKED BY 4146-E5 4146-22 06/10/22



EXISTING ELECTRICAL AC RISER DIAGRAM WITH DEMO NOTES

SCALE:N.T.S.

- 1. CONTRACTOR SHALL COORDINATE THE REMOVAL OF THE EXISTING ELECTRICAL SERVICE EQUIPMENT WITH APCO/OWNER REPRESENTATIVE AND THE INSTALLATION OF THE NEW ELECTRICAL SERVICE EQUIPMENT AS TO MINIMIZE THE ELECTRICAL SERVICE OUTAGE.
- 2. CONTRACTOR SHALL VERIFY WITH APCO PERSONNEL THE REQUIREMENTS FOR A NEW FACILITY METERING EQUIPMENT LOCATION AND INSTALL AS PER APCO REQUIREMENTS.



NEW ELECTRICAL AC RISER DIAGRAM

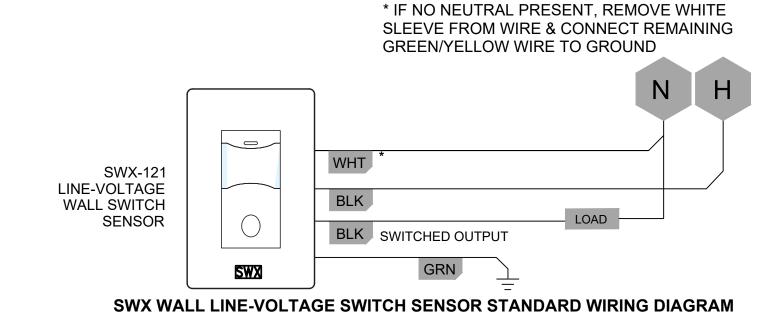
125kW STAND-BY GENERATOR SHALL BE A FUTURE ADDITION BY OTHERS.

NOTES:

1. CONTRACTOR SHALL COORDINATE THE REMOVAL OF THE EXISTING ELECTRICAL SERVICE EQUIPMENT WITH APCO/OWNER REPRESENTATIVE AND THE INSTALLATION OF THE NEW ELECTRICAL SERVICE EQUIPMENT AS TO MINIMIZE THE

- 2. CONTRACTOR SHALL VERIFY WITH APCO PERSONNEL THE REQUIREMENTS FOR A NEW FACILITY METERING EQUIPMENT LOCATION AND INSTALL AS PER APCO REQUIREMENTS.
- 3. CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE LOCATION OF THE NEW MAIN SERVICE PANELBOARD PRIOR TO BID 4. STAND-BY GENERATOR NOT IN THIS CONTRACT. STAND-BY GENERATOR CONDUIT AND CONDUCTORS SHALL NOT BE
- INSTALLED UNDER THIS CONTRACT. 5. BATTERY CHARGER NOT IN THIS CONTRACT. BATTERY CHARGER CONDUIT AND CONDUCTORS SHALL BE INSTALLED AND
- TERMINATED IN A JUNCTION BOX LOCATED AS SHOWN ON 4146-E4. 6. CONTRACTOR SHALL FURNISH AND INSTALL NEW KOHLER #KSS-AMTA-260-S (OR APPROVED EQUAL) AUTOMATIC TRANSFER SWITCH WITH GENERATOR MONITORING SYSTEM FOR FUTURE 125kW STAND-BY GENERATOR INSTALLATION.

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COMMON

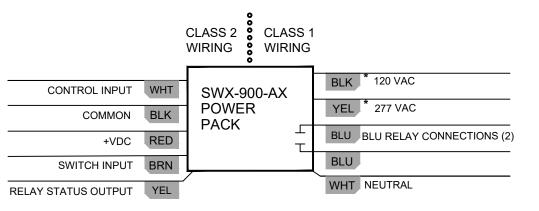
STANDARD WIRING DIAGRAM

LVS

SWX-801 SWITCH

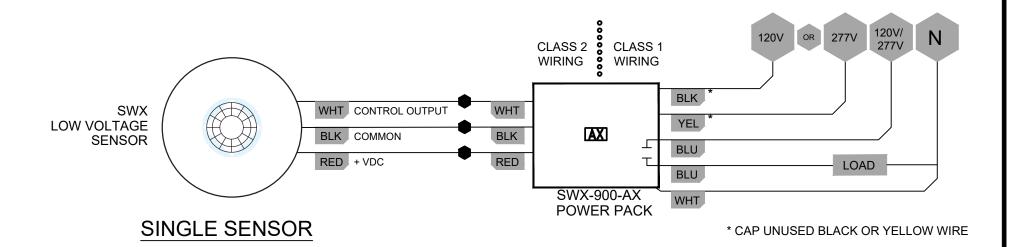
SWITCH OUTPUT

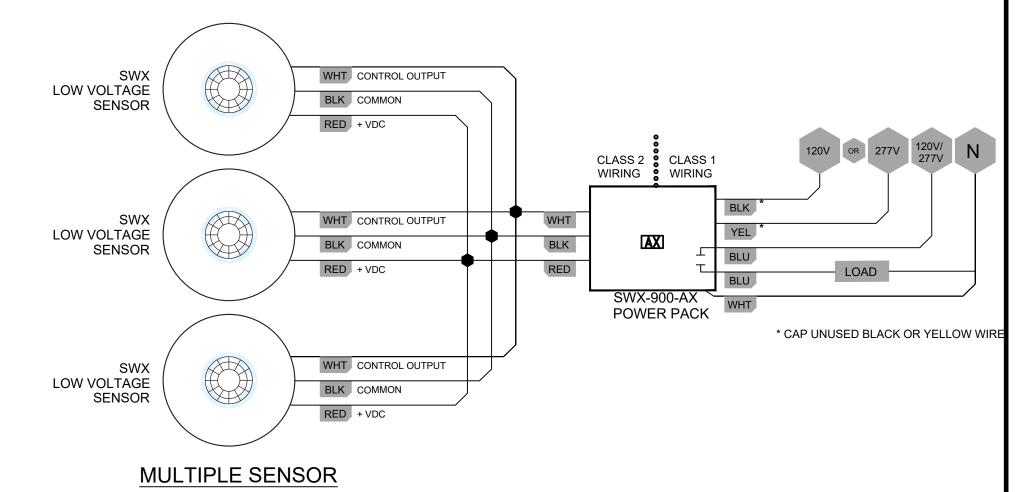
RELAY STATUS INPUT



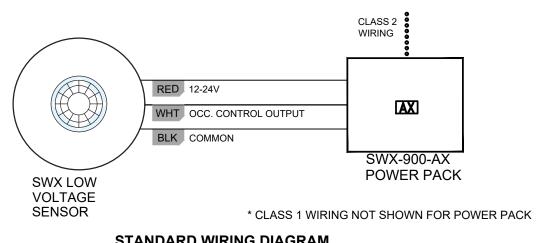
* CAP UNUSED BLACK OR YELLOW WIRE

SWX - 900 - AX POWER PACK STANDARD WIRING DIAGRAM





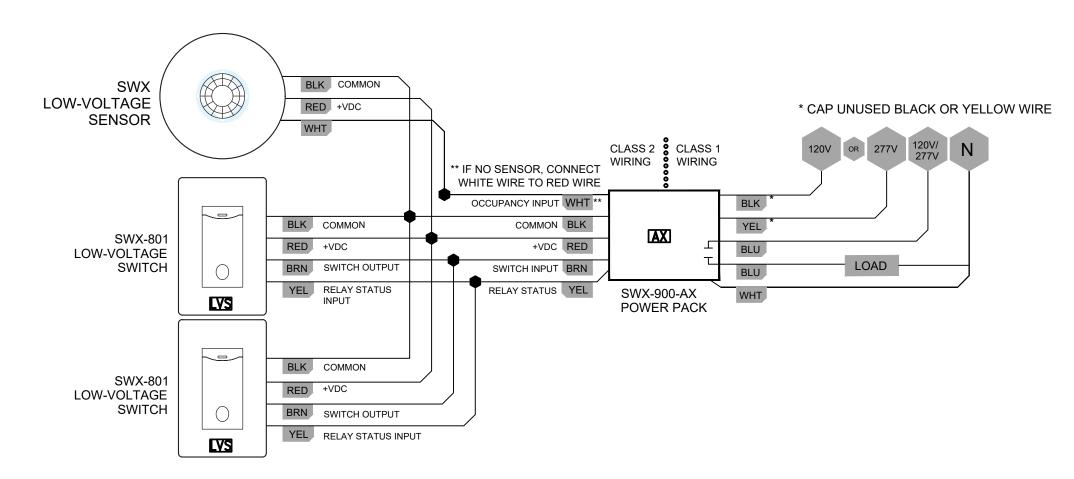




STANDARD WIRING DIAGRAM

SWX SIDECAR SWITCH (SWX-831-SC) WALL SWITCH BLK SWITCHED OUTPUT SENSOR w/ SIDECAR YEL SWITCHED OUTPUT OUTPUT GRY SWITCHED OUTPUT SWX SWX SWX-122 **INCLUDES UNIT** 121-SC AND * IF NO NEUTRAL PRESENT, REMOVE WHITE SLEEVE FROM WIRE SWX-831-SC & CONNECT REMAINING GREEN/YELLOW WIRE TO GROUND

> SWX WALL LINE-VOLTAGE SWITCH SENSOR WITH SIDE-CAR STANDARD WIRING DIAGRAM (2-POLE WIRING)



3-WAY, MANUAL ON (VACANCY) OR AUTOMATIC ON (OCCUPANCY) CONTROL WIRING DIAGRAM

| | ELECTRICAL SYMBOL LEGEND |
|--------|--|
| SYMBOL | DESCRIPTION |
| SM | SENSORWORX #SWX-221-1, CEILING MOUNT OCCUPANCY SENSOR, LOW VOLTAGE, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), SMALL MOTION 360°. |
| (LM) | SENSORWORX #SWX-222-1, CEILING MOUNT OCCUPANCY SENSOR, LOW VOLTAGE, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), LARGE MOTION 360°. |
| LVS | SENSORWORX #SWX-801-WH, DECORATOR LOW VOLTAGE WALL SWITCH, MOMENTARY OPERATION, WHITE. |
| [AX] | SENSORWORX #SWX-900-AX, POWER PACK CONTROLLER, LINE VOLTAGE, 120/277V, SINGLE RELAY +150mA SUPPLY |
| SWX | SENSORWORX #SWX-121-WH, OCCUPANCY SENSOR, LINE VOLTAGE, WALL SWITCH, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), 1-POLE:AUTO ON (OCCUPANCY), WHITE |
| SWX | SENSORWORX #SWX-122-WH, OCCUPANCY SENSOR, LINE VOLTAGE, WALL SWITCH, PASSIVE DUAL TECHNOLOGY (PIR/ACOUSTIC), 2-POLE: PARTIAL ON, INCLUDES #SWX-831-SC, SIDECAR SWITCH, WHITE, 2-GANG |

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| В | ISSUED FOR BID | 08/01/22 | RCC | JJM | DI |
|------|----------------|----------|-----|-------|----|
| REV. | DESCRIPTION | DATE | BY | CHK'D | PE |

Cowles, Murphy, Glover & ASSOCIATES
A Full Service Engineering Firm

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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD

MOBILE, ALABAMA

OFFICE ELECTRICAL POWER PLAN 03/30/22 RCC AS NOTED HECKED BY 4146-E6 4146-22 06/10/22

ELECTRICAL SPECIFICATIONS:

PART 1 - GENERAL SCOPE

FURNISHING OF ALL LABOR, MATERIAL, EQUIPMENT, SUPPLIES, AND SERVICES NECESSARY TO CONSTRUCT AND INSTALL THE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. WORK SHALL INCLUDE BUT IS NOT NECESSARILY LIMITED TO THE FOLLOWING ITEMS:

LIGHTING INSTALLATION/TERMINATION INTERIOR/EXTERIOR CIRCUIT DISTRIBUTION MAIN SERVICE PANELBOARD PANELBOARD INSTALLATION/TERMINATION EQUIPMENT INSTALLATION/TERMINATION RECEPTACLE INSTALLATION/TERMINATION CONDUIT INSTALLATION CONDUCTOR INSTALLATION/TERMINATION

JOB CONDITIONS

EXISTING CONDITIONS: ALL UTILITIES, EXISTING SYSTEMS, AND CONDITIONS SHOWN ON THE PLANS AS EXISTING ARE APPROXIMATE, AND THE CONTRACTOR SHALL VERIFY BEFORE ANY WORK IS STARTED.

CODES, PERMITS AND INSPECTIONS

THE INSTALLATION SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND ORDINANCES APPLICABLE TO ELECTRICAL INSTALLATION AND WITH THE REGULATIONS OF THE LATEST ACCEPTED PUBLISHED EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C. 2017) WHERE SUCH REGULATIONS DO NOT CONFLICT WITH THOSE LAWS AND ORDINANCES. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTION FEES, AND AFTER COMPLETION OF THE WORK, SHALL FURNISH THE ARCHITECT A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE APPLICABLE LOCAL INSPECTION AUTHORITIES. ANY CHARGES BY A UTILITY FOR PROVIDING SERVICE AS SHOWN SHALL BE INCLUDED IN THE BID AND PAID BY THE CONTRACTOR.

STANDARDS OF MATERIALS AND WORKMANSHIP

ALL MATERIALS SHALL BE NEW AND SHALL BE LISTED AND APPROVED BY THE UNDERWRITERS' LABORATORIES. INC., IN EVERY CASE WHERE A STANDARD HAS BEEN ESTABLISHED FOR A PARTICULAR TYPE OF MATERIAL IN QUESTION. ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT APPEARANCE.

SHOP DRAWINGS

THE CONTRACTOR SHALL SUBMIT A LIST OF ITEMS PROPOSED FOR USE. HE SHALL ALSO SUBMIT CATALOG DATA AND SHOP DRAWINGS ON PROPOSED SYSTEMS AND THEIR COMPONENTS, PANELBOARDS, SAFETY SWITCHES, LIGHTING FIXTURES, AND WIRING DEVICES. WHERE SUBSTITUTIONS ALTER THE DESIGN OR SPACE REQUIREMENTS, THE CONTRACTOR SHALL DEFRAY ALL ITEMS OF COST FOR THE REVISED DESIGN AND CONSTRUCTION INCLUDING COSTS TO ALL ALLIED TRADES INVOLVED.

TYPE OF PERMANENT ELECTRICAL SERVICE

NEW ELECTRICAL SERVICE SHALL BE 277/480 VOLTS, 3 PHASE, 4 WIRE SERVED FROM AN UNDERGROUND ALABAMA POWER COMPANY (APCo) SERVICE. CONTRACTOR SHALL VERIFY ALL DETAILS OF ELECTRICAL SERVICE WITH THE APCO PRIOR TO BID. CONTRACTOR SHALL BE RESPONSIBILITY FOR THE INSTALLATION OF THE SERVICE UNDERGROUND CONDUIT AS REQUIRED BY APCO AND SHOWN ON THE CONTRACT PLANS, 4146-E1. INTERFACE WITH OTHER CONTRACTS IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COOPERATE WITH ALL OTHER CRAFTS WORKING ON THIS PROJECT. ALL CUTTING, TRENCHING, BACKFILL, AND STRUCTURAL REMOVALS TO PERMIT ENTRY OF THE ELECTRICAL SYSTEM COMPONENTS SHALL BE DONE BY THIS CONTRACTOR. ALL PATCHING AND FINISHING SHALL BE DONE BY THE GENERAL CONTRACTOR.

EQUIPMENT FURNISHED UNDER OTHER SECTIONS

THE CONTRACTOR SHALL FURNISH AND INSTALL COMPLETE ELECTRICAL ROUGHING-IN AND CONNECTION TO ALL EQUIPMENT FURNISHED UNDER OTHER SECTIONS AS INDICATED ON DRAWINGS. THE CONTRACTOR SHALL VERIFY AND INSTALL PROPER SIZE SERVICE AS REQUIRED FOR ALL ACTUAL EQUIPMENT PURCHASED. ALL SUCH EQUIPMENT SHALL BE SET IN PLACE AS WORK OF OTHER SECTIONS.

FIRE ALARM SYSTEM

CONTRACTOR SHALL FURNISH AND INSTALL FIRE DETECTION SYSTEM AS REQUIRED BY THE NATIONAL FIRE PROTECTION ASSOCIATION. SYSTEM SHALL BE A NEW FULLY FUNCTIONING ADDRESSABLE FIRE ALARM SYSTEM WITH VOICE EVACUATION NOTIFICATION AS WELL AS VISUAL AND HORN NOTIFICATION. FIRE DETECTION SYSTEM SHALL HAVE ALARM BELLS/HORNS IN HALLWAYS AND AS REQUIRED BY LOCAL FIRE MARSHALL OR A.H.J.. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY DRAWINGS TO OBTAIN PERMITS FOR FIRE SYSTEM INSTALLATION. AN ELECTRONIC AUTOCAD FILE OF THE FLOOR PLAN WILL BE PROVIDED TO THE CONTRACTOR FOR LOCATING ALL FIRE DETECTION SYSTEM ALARM BELLS, PULL STATIONS, CONTROL PANELS, ETC. BIDDERS ARE TO PROVIDE TAMPER SWITCHES AT THE BACKFLOW VALVES NEAR THE STREET AS WELL AS RELAYS FOR THE SPRINKLER SYSTEM FLOW SWITCH (FLOW SWITCH BY SPRINKLER SUBCONTRACTOR), THE KITCHEN HOOD SUPPRESSION SYSTEM, AND ALL HVAC DUCT DETECTORS IN ADDITION TO OTHER REQUIREMENTS OF THE REFERENCED CODES. ALL FIRE ALARM CONTRACTORS MUST SUBMIT THROUGH A BIDDING ELECTRICAL CONTRACTOR WHO SHALL INCLUDE ALL BOXES, CONDUIT, WIRE, ETC. TO COMPLETE THE FIRE ALARM PACKAGE. THE ALARM CONTRACTOR IS REQUIRED TO SUBMIT TO THE ARCHITECT AND THE LOCAL CITY FIRE INSPECTOR SHOP DRAWINGS OF THE CODE COMPLIANT SYSTEM STAMPED BY A QUALIFIED FIRE ALARM ENGINEER/DESIGNER ACCEPTABLE TO THE LOCAL FIRE INSPECTOR.

GROUNDING

PROVIDE GROUNDING AND BONDING SYSTEMS IN STRICT ACCORDANCE WITH THE LATEST ACCEPTED PUBLISHED EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C. 2017), EXCEPT WHERE MORE STRINGENT REQUIREMENTS ARE SPECIFIED HEREIN. INTER-CONNECTION OF NEUTRAL AND GROUND IS NOT PERMITTED EXCEPT AT SERVICE ENTRANCE EQUIPMENT. INSTALL GROUNDING CONDUCTORS TO PERMIT SHORTEST AND MOST DIRECT PATH TO GROUND. CONCEALED JOINTS SHALL BE MADE BY CADWELD METHOD. WHERE GROUNDING CONDUCTORS ARE IN RACEWAY, BOND CONDUCTOR AND RACEWAY AT BOTH ENDS. GROUNDING AND BONDING FITTINGS USED SHALL BE UL LISTED AND BE COMPATIBLE WITH METALS USED IN SYSTEM. SHEET METAL TYPE STRAP ARE NOT ACCEPTABLE.

A GREEN INSULATED GROUND CONDUCTOR SHALL BE RUN IN ALL BRACH CIRCUIT AND FEEDER CONDUIT WITH PHASE AND/OR NEUTRAL CONDUCTORS. GROUND CONDUCTOR SHALL BE SIZED PER NEC OR AS NOTED ON DRAWINGS. MINIMUM SIZE #12 AWG. CONDUIT BOX TO DEVICE STRAP OR YOKE SCREW CONNECTION IS NOT SUFFICIENT. PROVIDE AN INSULATED GROUNDING JUMPER FOR RECEPTACLE CIRCUITS.

GUARANTEE AND SERVICE

DESCRIPTION

UPON COMPLETION OF ALL TESTS AND ACCEPTANCE, THE CONTRACTOR SHALL FURNISH THE OWNER OF A WRITTEN GUARANTEE COVERING THE ELECTRICAL WORK DONE FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE. GUARANTEE INCLUDES EQUIPMENT CAPACITY AND PERFORMANCE RATINGS SPECIFIED WITHOUT EXCESSIVE NOISE LEVELS. UPON NOTICE FROM THE ARCHITECT OR THE OWNER, THE CONTRACTOR SHALL, DURING THE GUARANTEE PERIOD, RECTIFY AND REPLACE ANY DEFECTIVE MATERIAL OR WORKMANSHIP AND REPAIR ANY DAMAGE CAUSED THEREBY WITHOUT ADDITIONAL COST.

PART 2 - PRODUCTS (CON'T)

ALL EQUIPMENT AND MATERIALS SHALL HAVE RATINGS ESTABLISHED BY THE RECOGNIZED INDEPENDENT AGENCY OR LABORATORY. THE CONTRACTOR SHALL APPLY THE ITEMS USED ON THE PROJECT WITHIN THE RATINGS AND SUBJECT TO ANY STIPULATIONS OR EXCEPTIONS ESTABLISHED BY THE INDEPENDENT AGENCY OR LABORATORY. USE OF EQUIPMENT OR MATERIALS IN APPLICATIONS BEYOND THAT CERTIFIED BY THE AGENCY OR BEYOND THAT RECOMMENDED BY THE MANUFACTURER SHALL BE CAUSE FOR REMOVAL AND REPLACEMENT OF SUCH MISAPPLIED ITEMS.

RACEWAY AND FITTINGS

```
CONDUIT SYSTEMS: ACCEPTABLE TYPES OF CONDUIT:
    HOT DIPPED GALVANIZED RIGID STEEL (GRS)
                                                   (1/2" MIN. TRADE SIZE)
    ELECTRICAL METALLIC TUBING (EMT)
                                                    (1/2" MIN. TRADE SIZE)
                                                   (1/2" MIN. TRADE SIZE)
    POLYVINYL CHLORIDE - SCHEDULE 40 (PVC 40)
    FLEXIBLE METALLIC CONDUIT (FLEX)
                                                    (1/2" MIN. TRADE SIZE)
    LIQUID TIGHT FLEXIBLE METALLIC CONDUIT (LQFLEX) (1/2" MIN. TRADE SIZE)
    MC METAL CLAD CABLE (MC)
                                                    (#12AWG MIN TRADE SIZE)
```

EMT OR GRS SHALL BE THE MAIN HOME RUN RACEWAY FOR ELECTRICAL CIRCUITS FROM PANELBOARDS TO ELECTRICAL DEVICES AND/OR JUNCTION BOX. MC CABLE CAN BE USED AS A SECONDARY INTERIOR CIRCUIT RACEWAY FROM THE MAIN HOME RUN JUNCTION BOX TO RECEPTACLES AND/OR LIGHT FIXTURE. CONDUITS INSTALLED IN EARTH FILL, IN CONCRETE, OR IN SOLID MASONRY STRUCTURES SHALL BE PVC 40. WHERE PVC 40 IS USED, THE 90° ELBOWS RISING ABOVE GRADE OR EXTENDING THROUGH THE CONCRETE ENVELOPE SHALL BE GRS. CONDUITS INSTALLED IN MOIST AND/OR DAMP LOCATIONS SHALL BE PVC 40. CONDUITS SUBJECT TO MECHANICAL INJURY SHALL BE GRS. CONDUITS RUN CONCEALED IN THE HOLLOW SPACE OF NON-MASONRY WALL OR ABOVE SUSPENDED CEILINGS SHALL BE EMT. IN ALL CASES, CONDUITS/MC SHALL BE RUN AT RIGHT ANGLES TO OR PARALLEL WITH BUILDING LINES AND EXPOSED STRUCTURE. IN ALL CASES, CONDUIT/MC RUNS SHALL BE GROUPED TOGETHER WHERE POSSIBLE AND SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE. NOT FOR ANY SUSPENDED CEILING SUPPORT SYSTEM.

CONDUCTORS: ALL CONDUCTORS SHALL BE INSTALLED IN CONDUIT/MC. CONDUCTORS FOR BUILDING WIRING SHALL HAVE THHN/THWN, 600 VOLT INSULATION AND SHALL BE SOFT-DRAWN COPPER OF STANDARD AMERICAN WIRE GAUGE (AWG) SIZE. MINIMUM SIZE SHALL BE NO. 12. ALL WIRE NO. 8 AND LARGER SHALL BE STRANDED. ALL BRANCH CIRCUITS NO. 10 AND SMALLER SHALL BE WIRED WITH COLOR-CODED WIRE WITH THE SAME COLOR USED FOR A SYSTEM THROUGHOUT THE BUILDING. POWER FEEDERS AND BRANCH CIRCUITS LARGER THAN NO. 10 SHALL EITHER BE FULLY COLOR CODED OR SHALL HAVE BLACK INSULATION AND BE SIMILARLY COLOR CODED WITH TAPE OR PAINT IN ALL JUNCTION BOXES AND PANELS. TAPE OR PAINT SHALL COMPLETELY COVER THE FULL VISIBLE LENGTH OF CONDUCTOR INSULATION WITHIN THE BOX OR PANEL. COLOR CODING OF ALL CONDUCTORS SHALL BE AS FOLLOWS: BARE, GREEN OR GREEN W/YELLOW STRIP GROUNDING:

120/208V 3Ø CONDUCTORS: ØA-BLACK, ØB-RED, ØC-BLUE 277/480V 3Ø CONDUCTORS: ØA-BROWN, ØB-ORANGE, ØC-YELLOW 120/208V NEUTRAL: WHITE 277/480V NEUTRAL:

PART 3 - EXECUTION

CONTRACTOR SHALL TOUCH-UP OR REFINISH ALL ITEMS OF ELECTRICAL EQUIPMENT FURNISHED WITH A FACTORY FINISH COAT OF PAINT AND WHICH MAY HAVE BEEN DAMAGED REGARDLESS OF CAUSE.

BALANCE ALL SINGLE PHASE LOADS CONNECTED TO ALL PANELBOARDS TO ENSURE AN APPROXIMATE EQUAL DIVISION ON THESE LOADS ON MAIN POWER SUPPLY SERVING BUILDING. ALL TESTS SHALL BE MADE IN ACCORDANCE WITH THE LATEST STANDARDS OF THE IEEE AND THE NEC. THE INSTALLATION SHALL BE TESTED FOR PERFORMANCE, GROUNDS AND INSULATION RESISTANCE. "MEGGER" TYPE INSTRUMENTS SHALL BE USED. CONTRACTOR SHALL PERFORM CIRCUIT CONTINUITY AND OPERATIONAL TESTS ON ALL EQUIPMENT FURNISHED OR CONNECTED BY CONTRACTOR. THE TESTS SHALL BE MADE PRIOR TO FINAL INSPECTION. THE CONTRACTOR SHALL PROVIDE ALL TESTING EQUIPMENT AND ALL COSTS SHALL BE BORNE BY HIM. WRITTEN REPORTS SHALL BE MADE OF ALL TESTS. THESE REPORTS SHALL BE TURNED OVER TO THE ARCHITECT AT TIME OF FINAL INSPECTION. ALL FAULTS SHALL BE CORRECTED IMMEDIATELY.

CLEANING UP

THE CONTRACTOR SHALL REMOVE ALL OIL, GREASE, OR OTHER STAINS RESULTING FROM HIS WORK PERFORMED IN THE BUILDING OR THE EXTERIOR THEREOF.

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Cowles, Murphy, Glover & ASSOCIATES
A Full Service Engineering Firm B | ISSUED FOR BID 08/01/22 RCC JJM PERFORMANCE • RELIABILITY • EXPERIENCE Georgia (706) 302-2831

BY

457 St. Michael St., Mobile, AL 36602 13 Thrash Rd., LaGrange, GA 30241 11880 Cranston Dr. Ste 102, Arlington, TN 38002 Alabama (251) 433-1611

Tennessee (901) 290-5444

TERMINAL RAILWAY OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

| | | | | , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |
|-------------------|-----------------|-------|----------|---|
| ITLE | ELECT | RICAL | SPECIFIC | CATIONS |
| AS NOTED | DRAWN BY RCC | DATE | 03/30/22 | SHEET OF PREV. |
| OB NO. 4146-22 | CHECKED BY JJM | DATE | 06/10/22 | DRAWING NUMBER 4146-E7 |

POURED IN PLACE CONCRETE 3 - PHASE TRANSFORMER PAD

150KVA - 300KVA

No.4 bars #2 copper Primary Conduit — 1" chamfer — Ground Rod Installation Location Supplemental ground rod installation .-1/4" Meter Conduit SIDE VIEW

- 1. Reinforce with No. 4 bars with a 12" x 12" grid, 4 in. below top of pad except as shown above.
- 2. Concrete shall have a minimum ultimate 28 day compressive strength of not less than 3,000 pounds, pad shall be cured not less than 72 hours before transformer is installed.
- 3. Mounting surface shall be level, smooth and uniform with minimal irregularities.
- 4. This pad will also accommodate a 500 KVA transformer

Material/Installation Requirements

APCO to Furnish and Install

Primary cable riser.

APCO to Furnish, Customer to Install 2 - 5/8"x 10'CU Clad Ground Rods

Underground primary conductors.

Concrete pads for 3Ø transformers.

Material can be picked up at the address below:

Meter, Meter Cable, and C.T.'s.

Pad Mounted 3Ø Transformer

Customer to Furnish and Install

Conduit for building riser.

45 Schillinger Rd S - Mobile, AL 36608

650 Michigan Ave - Mobile, AL 36605

#2 Stranded CU Ground Bus Conductor (150')

Open and Close trenches per APCO specifications.

Customer owned service conduit and conductors.

Meter conduit and pull wire per APCO specifications.

5" schedule 40 PVC conduit, bends and couplings (2 runs).

If a 600A trans socket is required, it will have to be picked up at the address below:

5. All concrete shall be vibrated in forms to increase strength and prevent any voids or honeycomb in the finished pad.

Meter Socket (200A Feed Through, 320A Feed Through, 600A Trans Socket, or 1-Terminal CT Socket)

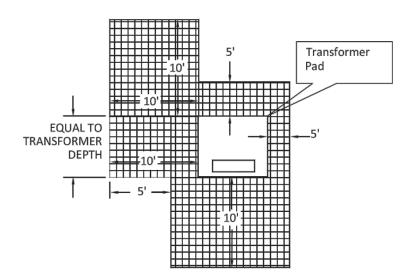
6. Maintain 2 in. of clear concrete between rebar and all outer surfaces.

TRANFORMER PAD NOTE: CONTRACTOR SHALL VERIFY TRANSFORMER PAD REQUIREMENTS WITH APCO PRIOR TO BID AND INSTALATION.

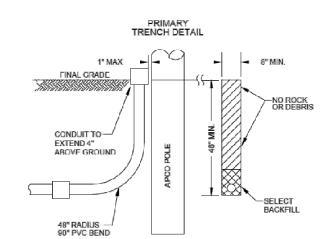
Please give APCO engineering 48 hour notice before you pick up APCO furnished material to ensure it is in stock and available

GENERAL REQUIREMENTS

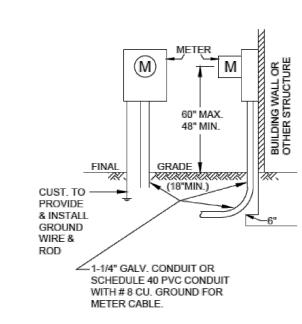
- 1. Customer's service entrance cable and conduits should be installed in the open window of the concrete pad. Conduits should be installed starting at the extreme right hand side of the window. Conduits should not be installed near the left hand dimension of the conduit window unless absolutely necessary.
- 2. Grounding is to be provided by enhanced grounding consisting of 100 ft. of #2 copper 7 strand conductor installed in the bottom of the trench or 32 ft. stacked sections of ground rod installed in both the primary and secondary sides of the concrete pad window. The ground rod locations are not dimensioned to allow maximum flexibility in locating the ground rods, but the separation between ground rods should be as great as possible.
- 3. The transformer pad should NOT be located near: fire escapes, doors, windows, ventilation ducts, within 4 ft. of fire hydrants, or under building overhangs. If possible the pad should be installed on ground that slopes away from the building. There should be no above ground obstructions such as air conditioners, walls shrubbery, trash bins, etc. in front of the transformer location. The transformer location must be accessible by large truck or crane.
- 4. There must be clear area around the transformer pad as detailed in the drawing below. The 10' X 10' area at the rear of the pad is necessary for the proper operation of the bayonet fuse of the transformer. The 10 ft. area in the front is necessary for



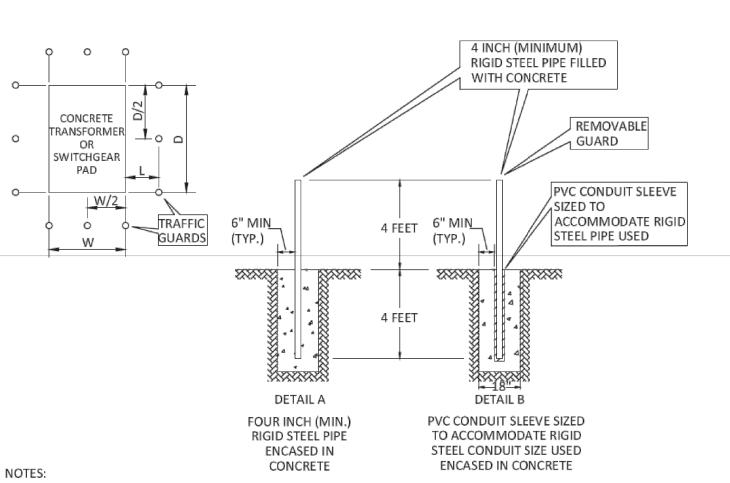
5. Trench for primary conduit to be a minimum of 48" deep with 12" minimum clearance from other utilities. See the below de-



6. Metering conduit shall be 1-1/4" rigid galvanized conduit or schedule 40 PVC and must be installed within the bounds of the secondary compartment. The location of a 13-Terminal Meter Socket shall be within 20' of a 120/208V 3Ø Transformer and within 50' of a 277/480V 3Ø Transformer. If the meter socket will not be placed on the building, it shall be installed on a 6" by 6" pressure treated lumber post. Exact location of APCO meter socket is to be determined by APCO engineering or service supervisor. See the below detail on Meter Socket installation.



- 7. The customer is required to install 2 runs of 5" schedule 40 conduit from the primary riser pole to the transformer pad. Leave a pull cord in both the primary and metering conduit.
- 8. If a feed through meter socket is to be used on a 277/480V service, the customer is responsible for providing and installing a disconnect on the line side of the meter socket. This allows for APCO personnel to safely remove the meter.
- 9. Pad forming and conduit trench must be inspected by APCO engineering before concrete is poured.
- 10. Leave 6' of service entrance conductors for connection by APCO to transformer terminals.
- 11. Owner will be required to furnish necessary rights-of-way for all APCO facilities including ingress and egress.
- 12. Protective barriers for the transformer shall be 4" minimum rigid galvanized pipe, 8' long, filled with concrete, extending 4' below and 4' above final grade located adjacent to pad as shown on the next page.



1. THIS DRAWING SHOWS A TYPICAL GUARD LAY-OUT FOR PAD-MOUNTED EQUIPMENT EXPOSED TO TRAFFIC ON ALL SIDES. INSTALL GUARDS ONLY ON THOSE SIDES EXPOSED TO VEHICULAR TRAFFIC. INSTALL CENTER POLE ONLY ON SIDES WHERE SPACING BETWEEN CORNER POLES DOES NOT PROVIDE ADEQUATE PROTECTION.

NOTE: IF INSTALLING A CENTER POLE ON THE DOOR SIDE OF THE PAD, THE W/2 DIMENSION AND THE L DIMENSION MAY NEED ADJUSTING TO AVOID INTERFERENCE WITH DOOR OPENING.

2. MAXIMUM TRAFFIC GUARD SPACING: W = PAD WIDTH + 6 INCHES*

L = 36 INCHES (MINIMUM) * ADD 6 IN. TO FRONT OF PAD (DOOR SIDE ONLY).

- 3. TRAFFIC GUARDS SHOULD BE LOCATED SO THERE WILL BE NO CONFLICT WITH THE INSTALLATION OR REMOVAL OF ELBOWS, FUSES, DOORS, ETC.
- 4. THE MAXIMUM HEIGHT OF TRAFFIC GUARDS ABOVE GRADE SHOULD BE FOUR (4) FT. IF THE TOP OF THE PAD-MOUNTED EQUIPMENT IS LESS THAN FOUR (4) FT. ABOVE GRADE, THE HEIGHT MAY BE REDUCED TO THE PAD-MOUNTED EQUIPMENT HEIGHT.
- 5. EITHER ARRANGEMENT, DETAIL A OR DETAIL B, IS AN ACCEPTABLE METHOD FOR TRAFFIC GUARD INSTALLATION.

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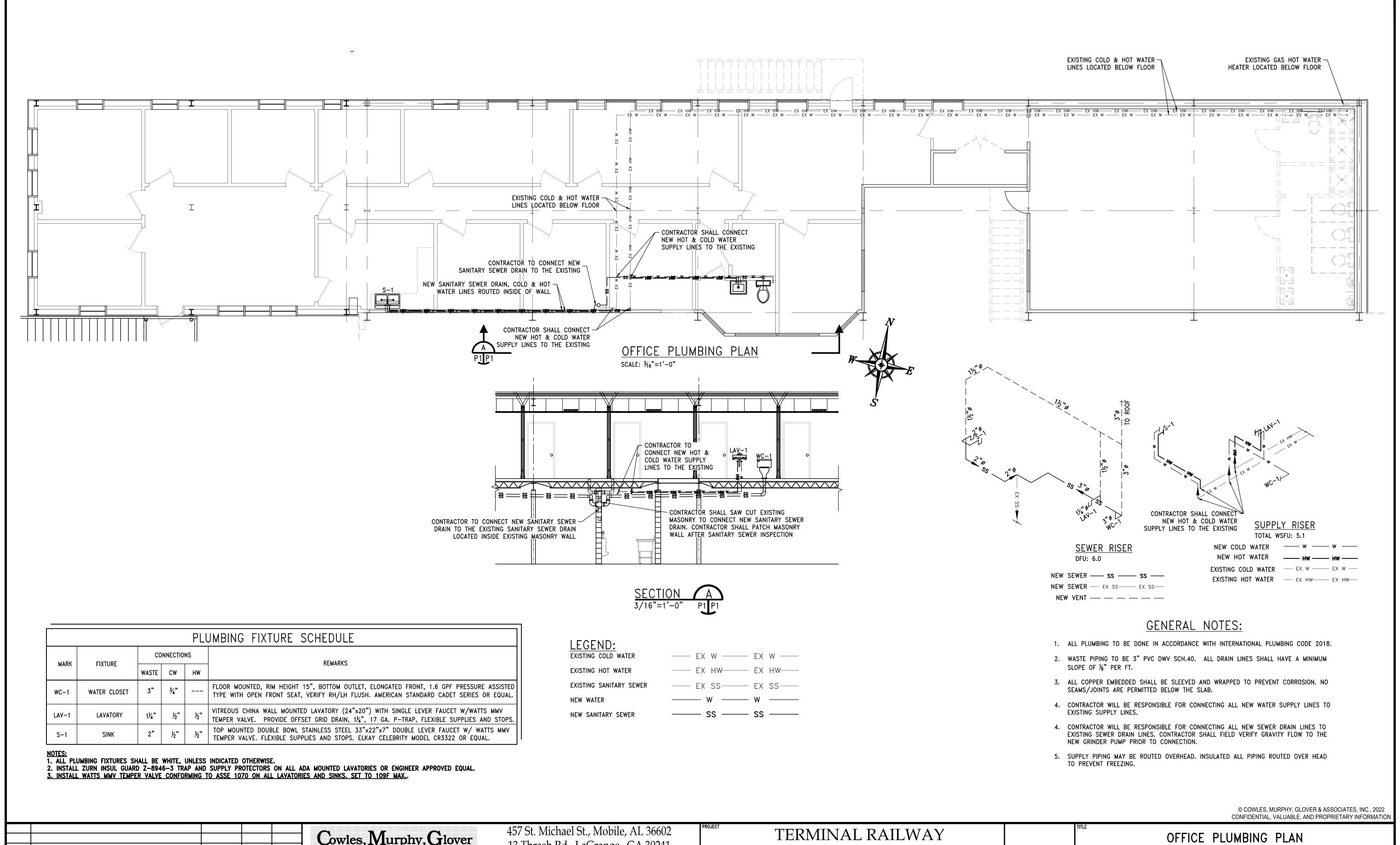
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TERMINAL RAILWAY OFFICE ADDITION/RENOVATION

126 INDUSTRIAL CANAL ROAD MOBILE, ALABAMA

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| APCo TRANSFORMER PAD REQUIREMENT | | | | | | |
|----------------------------------|------------|----------|----------------|------------|--|--|
| SCALE | DRAWN BY | DATE | SHEET | 22x34 REV. | | |
| AS NOTED | RCC | 03/30/22 | OF | _ B | | |
| JOB NO. | CHECKED BY | DATE | DRAWING NUMBER | . 50 | | |
| 4146-22 | JJM | 06/10/22 | 4146 | 5-E8 | | |



03/16/22 4146-P1 06/15/22

SCALE

4146-22

MAD

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OFFICE ADDITION/RENOVATION 126 INDUSTRIAL CANAL ROAD

MOBILE, ALABAMA

PLUMBING SPECIFICATIONS

PART 1 GENERAL PLUMBING PROVISIONS 1.1 SCOPE OF WORK

A. THE WORK TO BE PERFORMED UNDER THIS SECTION OF THE SPECIFICATION SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, TRANSPORTATION, CONSTRUCTION, FACILITIES, AND INCIDENTALS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF ALL PLUMBING WORK AS SHOWN AND INDICATED ON THE CONTRACT DRAWINGS, AND/OR SPECIFIED HEREIN WITH THE INTENT THAT THE INSTALLATION SHALL BE COMPLETE IN EVERY RESPECT AND READY FOR USE.

1.2 GUARANTEE

A. ALL MATERIALS AND EQUIPMENT PROVIDED AND/OR INSTALLED UNDER THIS SECTION OF THE SPECIFICATIONS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE WORK BY THE OWNER. SHOULD ANY TROUBLE DEVELOP DURING THIS PERIOD DUE TO DEFECTIVE MATERIALS OR FAULTY WORKMANSHIP, THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR AND MATERIALS TO CORRECT THE TROUBLE WITHOUT ANY COST TO THE OWNER.

1.3 CODES AND REGULATIONS

A. ALL WORK PERFORMED UNDER THIS SECTION SHALL CONFORM WITH ALL LOCAL GOVERNING REGULATIONS, AND IN CASE OF CONFLICTING REQUIREMENTS, THE MOST STRINGENT SHALL APPLY. MINIMUM REQUIREMENTS SHALL BE THE INTERNATIONAL PLUMBING CODE AS PUBLISHED BY THE INTERNATIONAL CODE COUNCIL (ICC). ALL ELECTRICALLY OPERATED EQUIPMENT SPECIFIED IN THIS SECTION SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE 2017.

B. SHOULD IT BE FOUND THAT ANY PART OF THE WORK SHOWN OR SPECIFIED IS NOT IN ACCORDANCE WITH LOCAL REGULATIONS, THE ARCHITECT SHALL BE SO ADVISED AT THE TIME OF BIDDING AND ALL WORK INSTALLED AS REQUIRED TO MEET THE LOCAL CODES.

C. THE CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS OF ALL COUNTY, DISTRICT, MUNICIPAL, OR LOCAL BUILDING CODES, INTERPRETATIONS, BUILDINGS PERMITS TO INCLUDE BUT NOT BE LIMITED TO:

- 1. INTERNATIONAL BUILDING CODE 2018
- 2. INTERNATIONAL MECHANICAL CODE 2018
- 3. INTERNATIONAL PLUMBING CODE 2018
- 4. INTERNATIONAL ENERGY CONSERVATION CODE 2018
- 5. LOCAL MUNICIPAL CODES

1.4 FEES AND PERMITS

A. THE PLUMBING SUBCONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES FOR INSPECTION, AND OTHER CHARGES THAT MAY BE NECESSARY FOR FULLY COMPLETING THE WORK. THE PLUMBING SUBCONTRACTOR SHALL MAKE ALL NECESSARY TESTS REQUIRED BY CITY, COUNTY, OR STATE AUTHORITIES, LEGAL REGULATIONS, AND/OR THE ENGINEER, AND RETURN TO THE ENGINEER ANY CERTIFICATES OF APPROVAL ISSUED IN THIS DISTRICT FOR PLUMBING WORK, ETC. SIGNED BY THE INSPECTOR IN CHARGE OF EACH PARTICULAR PART OF THE WORK.

1.5 RESPONSIBILITY OF BIDDER

A. EACH BIDDER SHALL VISIT THE SITE OF THE PROPOSED WORK AND FULLY ACQUAINT HIMSELF WITH CONDITIONS RELATING TO THE CONSTRUCTION REQUIREMENTS SO THAT HE MAY FULLY UNDERSTAND THE FACILITIES, DIFFICULTIES AND RESTRICTIONS CONTINGENT UPON THE EXECUTION OF THE WORK UNDER THIS CONTRACT. THIS INCLUDES THE VERIFICATION OF GRAVITY FLOW FROM THE NEW PLUMBING FIXTURES TO THE EXISTING SYSTEM PRIOR TO STARTING CONSTRUCTION. THE FAILURE OR OMISSION OF ANY BIDDER TO RECEIVE OR EXAMINE ANY FORM, INSTRUMENT, ADDENDUM OR OTHER DOCUMENT SHALL IN NO WAY RELIEVE ANY BIDDER FROM HIS OBLIGATIONS WITH RESPECT TO HIS BID OR THE CONTRACT. THE SUBMISSION OF A BID SHALL BE TAKEN AS PRIMA FACIA EVIDENCE OF COMPLIANCE WITH THIS PARAGRAPH AND THAT HE HAS INCLUDED IN HIS PROPOSAL EVERY ITEM OF COST NECESSARY FOR A COMPLETE INSTALLATION OF THE PLUMBING SYSTEM OPERATIONS STRICTLY AS PLANNED, SPECIFIED, AND INTENDED.

1.6 PIPING

A. PROVIDE PIPE SLEEVES THROUGH MASONRY CONSTRUCTION, AND INSTALL ESCUTCHEON PLATES AROUND EXPOSED PIPING IN ALL ROOMS.

B. SOIL, WASTE AND VENT LINES SHALL BE SCHEDULE 40 PVC-DWV IN ACCORDANCE WITH COMMERCIAL STANDARDS CS272-65 OR ASTM STANDARDS D2665-68. SOIL, WASTE, AND VENT LINES PENETRATING A FIRE RATED WALL OR FLOOR SHALL BE SERVICE WEIGHT CAST IRON AT THE POINT OF PENETRATION ONLY.

C. ALL PLASTIC PIPE SHALL BEAR THE NSF SEAL OF APPROVAL, AND SUCH OTHER MARKINGS AS REQUIRED BY THE AFOREMENTIONED STANDARDS.

D. ABOVE SLAB COLD WATER AND HOT WATER PIPING SHALL BE TYPE "L" HARD COPPER WITH SWEATED JOINTS, USING WROUGHT FITTINGS AND NON-CORROSIVE FLUX. BELOW SLAB COLD WATER PIPING SHALL BE TYPE "K" SOFT COPPER TUBING.

E. OPENINGS AND PENETRATIONS IN THE BUILDING ENVELOPE SHALL BE SEALED WITH CAULKING MATERIALS OR CLOSED WITH GASKETING SYSTEMS COMPATIBLE WITH THE CONSTRUCTION MATERIALS AND LOCATION TO ALLOW EXPANSION/ CONTRACTION TO INSURE THE BUILDING ENVELOPE IS SEALED IN ACCORDANCE WITH IECC 502.4.3.

1.7 PIPE SUPPORT

A. HANGERS: SUPPORT ALL SUSPENDED PIPING WITH CLEVIS TYPE HANGERS EQUAL TO GRINNELL #260, 4'-0" O.C. ARCHITECT SHALL APPROVE ALL METHODS OF ATTACHMENT OF HANGERS TO CONSTRUCTION. HANGERS IN CONTACT WITH COPPER PIPING SHALL BE COPPER, OR COPPER PLATED.

B. VERTICAL SUPPORT: STEEL BAR BASE CLAMPED TO PIPE OR GRIP STRUT CHANNEL WITH OFFSET CLAMPS. SUPPORT MEMBERS TO BE OF SAME MATERIAL AS SUPPORTED MATERIAL WHERE POSSIBLE.

1.8 PIPING PLACEMENT

A. PLACE IN MOST DIRECT MANNER PERMITTED BY CONSTRUCTION, FREE OF UNNECESSARY OFFSETS. CHANGES IN DIRECTION BY MEANS OF STANDARD FITTINGS

B. GRADE 2" WASTE LINES 1/4" PER FOOT AND 3" AND 4" WASTE LINES 1/8" PER FOOT FOR POSITIVE FLOW. SECURE ALL PIPING TO STRUCTURE.

C. SOIL PIPE: SUPPORT TO FIRM EARTH BELOW FLOOR SLABS.

1. CHANGES IN DIRECTION OF DRAINAGE PIPE SHALL BE MADE BY MEANS OF SUITABLE BENDS AND BRANCHES OF Y'S AND LONG SWEEPS. SHORT RADIUS QUARTER BENDS ARE PROHIBITED.

2. CONNECTIONS TO VERTICAL SOIL PIPE TO ALL CONNECTIONS IN HORIZONTAL SOIL PIPE TO BE MADE BY "Y" FITTINGS.

D. VENT PIPES:

1. MAIN SOIL PIPE STACKS TO BE EXTENDED UP THROUGH THE BUILDING FULL SIZE WITH INCREASER THROUGH ROOF PER CODE.

2. CONNECT BRANCH VENTS INTO MAIN STACKS WITH CONNECTIONS NOT LESS THAN 4 FEET ABOVE THE HIGHEST FIXTURE.

3. ALL VENT STACKS SHALL BE CONNECTED AT THE BOTTOM TO MAIN DRAINAGE SYSTEM AND ALL HORIZONTAL RUNS SHALL BE GRADED SO AS TO DISCHARGE ALL WATER OR CONDENSATION.

E. WATER PIPING: PLACE SUPPLY PIPES AS SHOWN OR AS DIRECTED IN NEAT ARRANGEMENT AND PARALLEL OR AT RIGHT ANGLES TO WALLS, JOISTS, FTC.

1. PLACE AIR CHAMBER EXTENSIONS 12" LONG ON TOP OF ALL RISERS AND ONE PIPE SIZE LARGER THAN THE RISER.

2. PLACE SHOCK ABSORBERS AT EACH FIXTURE GROUP AS RECOMMENDED BY MANUFACTURER. SHOCK ABSORBERS SHALL BE PDI CERTIFIED.

3. PLACE VALVES ON ALL WATER PIPE RISERS AND BRANCH LINES AT POINT WHERE RISERS AND BRANCH LINES CONNECT TO MAIN WATER LINES.

PART 2 PRODUCTS

2.1 WATER PIPING

A. ALL WATER PIPING, UNLESS OTHERWISE SHOWN OR SPECIFIED SHALL BE COPPER PIPE TYPE L OR K AS SPECIFIED HAVING A WALL THICKNESS OF NOT LESS THAN .035 INCHES. IT SHALL BE CLEAN, ROUND, STRAIGHT, AND TRUE TO SIZE, FREE FROM FLAWS AND OTHER DEFECTS.

B. ALL FITTINGS ON COPPER PIPE SHALL BE COPPER. THE PIPE AND FITTINGS SHALL BE THOROUGHLY CLEANED BEFORE INSERTING INTO THE JOINT AND THEN SOLDERED WITH LEAD FREE SOLDER.

2.2 GAS PIPING (NOT IN CONTRACT)

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A. ALL PIPING ABOVE GRADE SHALL BE SCHEDULE 40 BLACK STEEL ASTM 120. FITTINGS SHALL BE 150 POUND BLACK MALLEABLE SCREW PATTERN FOR ALL SIZES 2" AND SMALLER.

B. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH NFPA RECOMMENDATIONS AND THE INTERNATIONAL FUEL GAS CODE COMPLETE WITH ALL NECESSARY APPURTENANCES.

C. HORIZONTAL PIPING SHALL GRADE WITH A SLOPE OF 1" ON 40 FEET—0" TO DRIP LEGS AT ALL LOW POINTS AS REQUIRED. DRIPS SHALL BE PROVIDED AT ALL LOW POINTS AND AT BOTTOM OF RISERS. DRIPS SHALL BE SAME SIZE AS THE PIPING WHERE INSTALLED AND SHALL BE A MINIMUM OF 12" LONG.

D. USE GROUND JOINT UNIONS IN ALL SCREW PIPING JOINTS.

2.3 UNIONS

A. UNIONS SHALL BE PROVIDED ON INLET AND OUTLET OF ALL APPARATUS AND EQUIPMENT. WHERE VALVES ARE ADJACENT TO EQUIPMENT, UNIONS SHALL BE ON DOWNSTREAM SIDE OF VALVES.

B. UNIONS IN COPPER PIPE SHALL BE CAST BRONZE, WOG PATTERN, GROUND JOINT, 150

C. UNIONS IN STEEL PIPE SHALL BE MALLEABLE IRON, WOG FEMALE PATTERN BRASS SEAT, GROUND JOINT, 150 PSI TYPE.

D. UNIONS CONNECTING DISSIMILAR METALS SHALL BE DIELECTRIC TYPE.

2.4 VALVES AND COCKS

A. VALVES AND COCKS SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS, AND/OR WHERE FOUND TO BE NECESSARY FOR PROPER OPERATION OF THE SYSTEM. ALL BRANCHES FROM MAINS, AND ALL FIXTURES OR EQUIPMENT NOT HAVING STOPS SHALL BE PROVIDED WITH VALVES WHETHER SHOWN OR NOT.

B. ANGLE OR STRAIGHTWAY CHROMIUM PLATED STOPS ON THE SUPPLIES TO ALL FIXTURES ACCESSIBLE FROM THE SAME ROOM IN WHICH THE FIXTURES ARE LOCATED.

C. ALL VALVES SHALL BE THE PRODUCT OF ONE MANUFACTURER AS CATALOGED BY MILWAUKEE, STOCKHAM, CRANE, OR NIBCO.

D. FOR WATER PIPING, VALVES SHALL BE EQUAL TO 125 PSI SWP/200 PSI WOG NIBCO AS FOLLOWS:

1. GATE VALVES 1/2" TO 3" = S-111.

2. BALL VALVES 1/2" TO 2" = S-585.

3. CHECK VALVES 1/2" TO 3" = S-413W.

2.5 WALL HYDRANTS

A. WALL HYDRANTS SHALL BE BOX TYPE, 1/2", FREEZE PROOF, KEYED WITH NICKEL BRONZE FACE PLATE AND VACUUM BREAKER. MOUNT FLUSH WITH WALL. WALL HYDRANT SHALL BE EQUAL TO ZURN Z-1321.

2.6 THERMAL INSULATION WORK

A. ALL INSULATION WORK SHALL BE PERFORMED BY EXPERIENCED INSULATION APPLICATION MECHANICS THOROUGHLY FAMILIAR WITH AND EXPERIENCED IN THE APPLICATION OF INSULATION MATERIALS. ALL INSULATION MATERIALS SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDED METHODS. INSTALLATION AND FINISH OF INSULATION MATERIALS SHALL MEET WITH COMPLETE DATA FOR APPROVAL OF MATERIALS AND APPLICATION METHODS AS PROPOSED FOR USE. ALL PIPING SHALL BE PRESSURE TESTED AND ALL SURFACES SHALL BE THOROUGHLY CLEANED BEFORE COVERING IN APPLIED. INSULATION MATERIALS, INCLUDING SEALER, ADHESIVE, FINISHED, ETC., SHALL MEET NFPA STANDARDS WITH REGARD TO FLAME SPREAD AND SUPPORT OF COMBUSTION.

B. COLD WATER PIPING SHALL BE COVERED WITH 1" THICK HEAVY DENSITY FIBERGLASS SECTIONAL PIPE INSULATION EQUAL TO OWENS CORNING FIBERGLASS 25 ASJ/SSL, EXCLUDING PIPING BELOW GRADE OR CHROMIUM PLATED FIXTURE CONNECTIONS.

C. HOT WATER PIPING SHALL BE COVERED WITH HEAVY DENSITY FIBERGLASS SECTIONAL PIPE INSULATION EQUAL TO OWENS CORNING FIBERGLASS 25 ASJ/SSL AS FOLLOWS:

1. PIPE SIZES 1" TO <1-1/2"= 1" THICK.

2. PIPE SIZES 1-1/2" TO <4" = 1-1/2" THICK.

D. FITTINGS FOR THE ABOVE SHALL BE INSULATED WITH PREMOLDED FITTING INSULATION OF THE SAME MATERIAL AND THICKNESS AS THE ADJACENT INSULATION AND SHALL BE COVERED WITH A PREMOLDED PLASTIC (PVC) VAPOR BARRIER AND SEALED WITH VAPOR BARRIER LAGGING ADHESIVE. COVERING ADJACENT TO UNIONS AND OTHER POINTS OF TERMINATION SHALL BE FINISHED WITH THE PLASTIC MATERIAL NEATLY BEVELED.

E. IT SHALL BE THE RESPONSIBILITY OF THE INSULATION SUBCONTRACTOR TO COORDINATE HANGER LOCATIONS AND PREVENT CRUSHING OR BREAKING FINISHES.

F. CONTRACTOR SHALL INSULATE WATER SUPPLY ASSEMBLIES AND P-TRAP ASSEMBLY WITH ARMAFLEX 3/8" FOAM INSULATION KIT ON HANDICAPPED LAVATORIES.

2.7 FLOOR, WALL, AND CEILING PLATES

A. NICKEL PLATED FLOOR, WALL, AND CEILING PLATES SHALL BE PROVIDED ON ALL PIPES PASSING THROUGH FLOOR, CEILING, OR PARTITION. NICKEL OR CHROMIUM PLATED ESCUTCHEONS SHALL BE PROVIDED ON ALL FIXTURE SUPPLIES.

2.8 PLUMBING FIXTURES AND EQUIPMENT

A. PROVIDE ROUGHING—IN FOR AND CONNECT TO SUPPLY LINES, WASTE AND VENT LINES, ALL EQUIPMENT, FIXTURES, DRAINS, ETC., SPECIFIED HEREIN OR IN OTHER SECTIONS OF THE SPECIFICATIONS WHICH REQUIRE SUCH CONNECTIONS.

B. PROVIDE STOPS IN HOT AND COLD WATER CONNECTIONS TO EACH FIXTURE, EQUIPMENT ITEMS, ETC. WHERE NOT OTHERWISE SPECIFIED, STOPS SHALL BE SAME AS SPECIFIED HEREIN BEFORE FOR BALL VALVES. PROVIDE DEEP ESCUTCHEON ON ALL SINKS AND LAVATORIES WHERE WASTE PIPE GOES INTO WALL. ANCHOR ALL SUPPLIES FROM WALL SECURELY WITHIN WALL CONSTRUCTION.

C. PROVIDE STOPS FOR ALL FIXTURES. TRAPS FOR ALL FIXTURES SHALL BE 17-GAUGE CHROMIUM PLATED BRASS.

D. PLUMBING FIXTURES SHALL BE EQUAL TO AMERICAN STANDARD, CRANE OR KOHLER. NO OTHERS WILL BE ACCEPTED.

2.9 CLEANOUTS

A. PROVIDE IN CAST IRON SANITARY PIPING AT ALL CHANGES IN DIRECTION AT ENDS OF BRANCHES, AT INTERVALS NOT EXCEEDING 40' ON STRAIGHT RUNS, AND ELSEWHERE AS SHOWN. CLEANOUTS SHALL BE FULL OPENING TYPE COMPLETELY ACCESSIBLE. SIZE SAME AS LINES IN WHICH THEY OCCUR, BUT NOT LARGER THAN 4". TEES AND EXTENSIONS SHALL BE OF SAME WEIGHT AS PIPE. PLUGS SHALL BE COUNTERSUNK TYPE. CATALOG NUMBERS FROM JOSAM OR APPROVED EQUAL.

B. OUTSIDE CLEANOUTS TO GRADE SHALL BE BROUGHT UP FLUSH WITH FINISHED GRADE AND INSTALLED IN 14" X 14" X 4" CONCRETE PAD, CLEANOUT PLUG SHALL BE COUNTERSUNK.

C. IN TILE FLOORS: 56030-2, ADJUSTABLE, CAST IRON BODY WITH CADMIUM PLUG AND SATIN FINISHED SQUARE SCORIATED NIKALOY TOP; WHERE SOFT TILE OCCURS, PROVIDE 56030-12-2 RECESSED SQUARE NIKALOY COVER.

D. IN CONCRETE FLOORS: 58190, ADJUSTABLE HEAD, CAST IRON HEAD AND FERRULE WITH CADMIUM PLUG, ROUND LOOSE SET SCORIATED TRACTOR COVER.

E. IN OUTSIDE LINE: 58190 CAST IRON HEAD AND FERRULE WITH CADMIUM PLUG. TERMINATE AT GRADE OR PAVEMENT IN 14" X 14" X 4" CONCRETE PAD WITH TOOLED EDGES.

PART 3 EXECUTION

3.1 COMPLETION OF WORK

A. THIS CONTRACTOR SHALL ARRANGE FOR THE INSTALLATION OF ALL EQUIPMENT IN ORDER THAT IT PROGRESSES ALONG WITH THE GENERAL CONSTRUCTION OF THE BUILDING, AND IN NO CASE SHALL BE HOLD UP OTHER PHASES OF THE WORK DUE TO THE FACT HIS EQUIPMENT IS NOT PROPERLY INSTALLED.

3.2 TESTING

A. GENERAL: PERFORM ALL TESTS IN THE PRESENCE OF THE ARCHITECT OR HIS REPRESENTATIVE. TEST SHALL CONFORM TO LOCAL CODE REQUIREMENTS. FILE COPIES OF ALL TEST REPORTS IN DUPLICATE TO PHYSICAL PLANT.

B. SOIL, WASTE, AND VENT SYSTEMS: PLUG ALL OPENINGS, FILL ENTIRE SYSTEM WITH WATER TO POINT OF OVERFLOW AND HOLD FOR AT LEAST ONE HOUR BEFORE INSPECTION. SYSTEM MUST REMAIN FULL DURING THE TEST WITHOUT LEAKAGE. EACH VERTICAL STACK WITH ITS BRANCHES MAY BE TESTED SEPARATELY, BUT ANY PORTION TESTED MUST HAVE A 10' HEAD. PROVIDE TEST TEES AND PLUGS FOR ALL TESTS AS REQUIRED.

C. WATER SUPPLY SYSTEM: TEST AND SECURE ACCEPTANCE OF ENTIRE SYSTEM BEFORE THE PIPING OR HOT WATER HEATERS ARE OTHERWISE CONCEALED. TEST AS FOLLOWS: DISCONNECT AND CAP ALL OUTLETS TO PLUMBING FIXTURES AND ALL OTHER EQUIPMENT NOT DESIGNED FOR THE FULL TEST PRESSURE. FILL THE SYSTEM WITH WATER; APPLY 150 PSI HYDROSTATIC PRESSURE AND HOLD UNTIL INSPECTION IS COMPLETED. ALL PIPING THROUGHOUT SHALL BE TIGHT UNDER TEST. WATER PIPING SHALL REMAIN UNDER NORMAL WATER PRESSURE DURING CONSTRUCTION WHERE FREEZING CONDITIONS DO NOT EXIST.

3.3 DISAFFECTION

A. DISINFECT ALL DOMESTIC WATER PIPING IN ACCORDANCE WITH LOCAL HEALTH DEPARTMENT GUIDELINES.

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