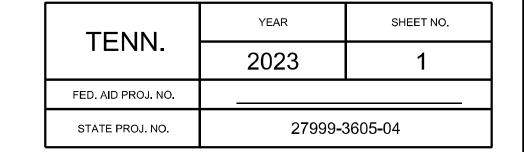
Michelle Digitally signed by Michelle Dennis Dennis Date: 2023.11.15 07:19:48 -06'00'

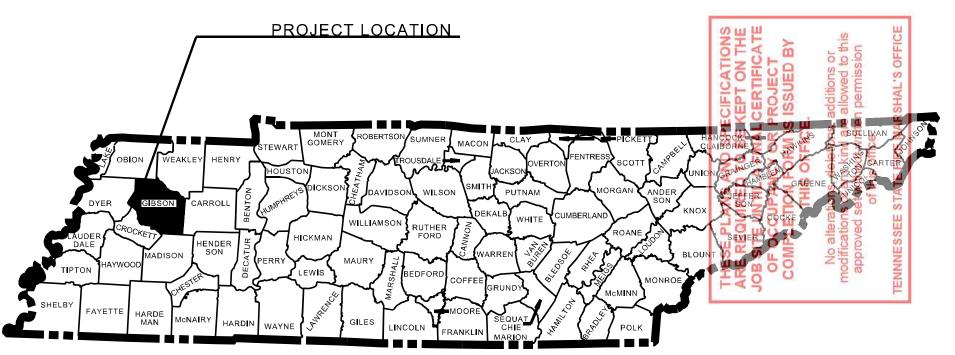
STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION BUREAU OF ENGINEERING

GIBSON COUNTY

1248 B MANUFACTURERS ROW TRENTON, TN 38382

CONSTRUCTION





PROJECT NO. 27999-3605-04 CONSTRUCTION

CHECKED BY SEE SHEET NO. 1A

SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED JANUARY 1, 2015 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

TDOT C.E. MANAGER 1 OR

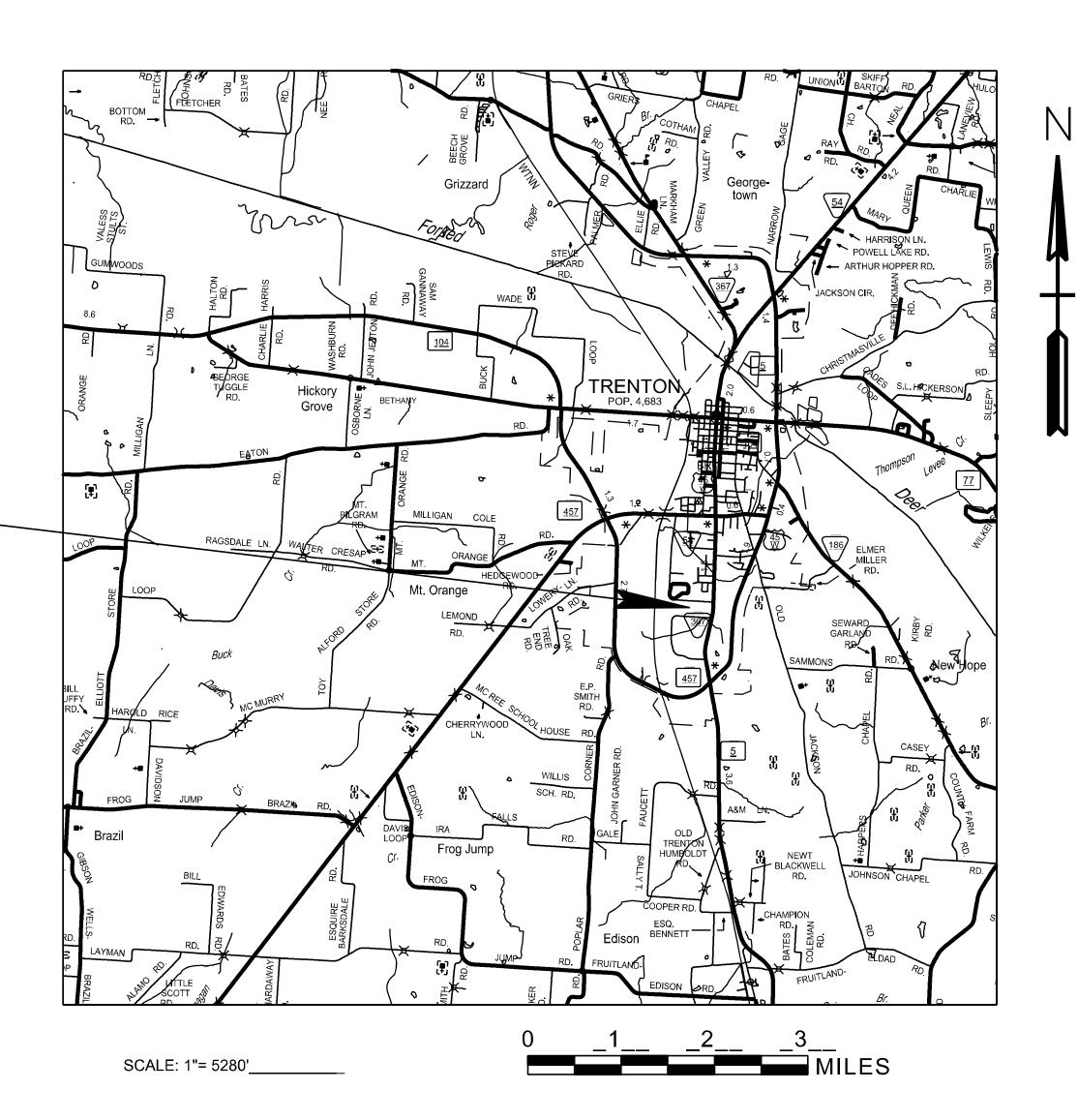
TDOT TRANSPORTATION MANAGER 1: KEN HAMPTON

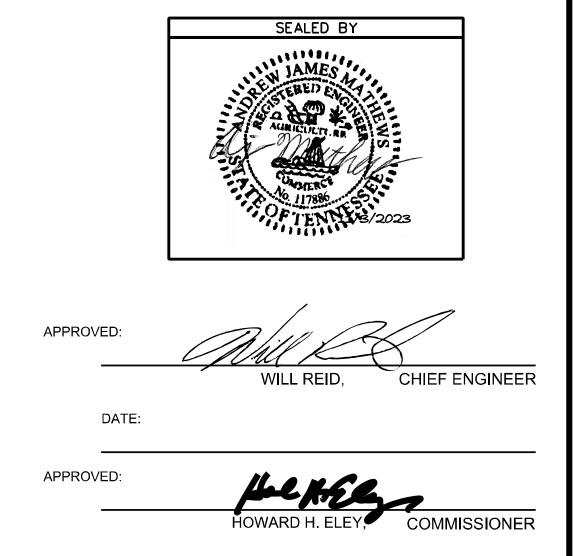
DESIGNED BY: SEE SHEET NO. 1A

DESIGNER: SEE SHEET NO. 1A

PIN NO.

27999-3605-04 (DESIGN) 131119.0





	S. DEPARTMENT OF TRANSPO EDERAL HIGHWAY ADMINISTI	_
•	EDERAL MONWAY ADMINISTR	VATION
APPRO	VED:	
	DIVISION ADMINISTRATOR	DATE

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	ITEM NO.	DESCRIPTION	UNIT	QUANTITY
	607-65.20	SITE PREPARATION	EACH	1
<u> </u>	680-02.01	BUILDING (FOUNDATION AND STRUCTURE)	EACH	1
	680-02.02	BUILDING (INTERIOR CONSTRUCTION)	EACH	1
	717-01	MOBILIZATION	LS	1

- INCLUDING BUT NOT LIMITED TO REMOVAL OF EXISTING STRUCTURES, SITE WORK, AND SITE UTLITY WORK.
- INCLUDING BUT NOT LIMITED TO INSTALLATION OF NEW FOUNDATIONS, FLOOR SLABS, PRE-ENGINEERED METAL BUILDING, MECHANICAL UNITS, AND OVERHEAD BAY LIGHTING
- INCLUDING BUT NOT LIMITED TO CONSTRUCTION OF INTERIOR FRAMING, PLUMBING, OFFICE LIGHTING, AND INTERIOR BUILD OUT OF ELECTRICAL WORK.

PROJECT DESIGNERS

ARCHITECT: WOLD/HFR DESIGN

RON FRANKS 214 CENTERVIEW DRIVE, STE 300 BRENTWOOD, TN 37207

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STRUCTURAL ENGINEER: SSR, INC.

AJ MATHEWS, PE 2995 SIDCO DRIVE NASHVILLE, TN 37204

MECHANICAL ENGINEER: SSR, INC.

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PLUMBING ENGINEER: SSR, INC.

WALTER BLALACK, PE 2650 THOUSAND OAKS BLVD, SUITE 4200 MEMPHIS, TN 38118

ELECTRICAL ENGINEER: SSR, INC.

GREG LOBO, PE 2650 THOUSAND OAKS BLVD, SUITE 4200 MEMPHIS, TN 38118

TECHNOLOGY ENGINEER: SSR, INC.

GREG LOBO, PE 2650 THOUSAND OAKS BLVD, SUITE 4200 MEMPHIS, TN 38118

LOCAL OFFICIALS

FIRE CHIEF

BRYAN CATHEY 1246 MFG ROW TRENTON, TN 38382 (731) 723-9228

BUILDING INSPECTOR

RICHARD BAILEY 309 S COLLEGE STREET, SUITE A TRENTON, TN 38382 (731) 855-7663 PROJECT NO. 27999-3605-04

PIN NO. 131119

BY DATE

OF SCHIPTION

PROJECT NO. 27999-3605-04

PIN NO. 131119

EX. 27999-3605-04

B MANUFACTURERS ROW, TRENTON, TN 38382

SEPTEMBER 2

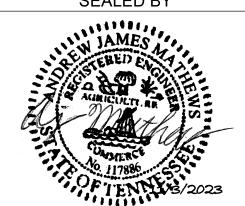
214 Centerview Drive Suite 300

Brentwood, TN, 37027

Brentwood, TN 37027
woldae.com phone: 615.370.8500
fax: 615.370.8530

Smith Seckman Reid, Inc 2650 Thousand Oaks Boulevard, Suite 4200 Memphis, TN 38118 (901) 683-3900 FAX: (901) 683-3990 www.ssr-inc.com

SEALED BY



THESE PLANS AND SPECIFICATIONS ATE OF TENNESSEE ARE REQUIRED TO BE KEPT ON THE DEPARTMENT OF JOB SITE UNTIL A FINAL CERTIFICATE TRANSPORTATION OF OCCUPANCY OR PROJECT COMPLETION FORM IS ISSUED BY THIS OFFICE.

SHEET INDEX

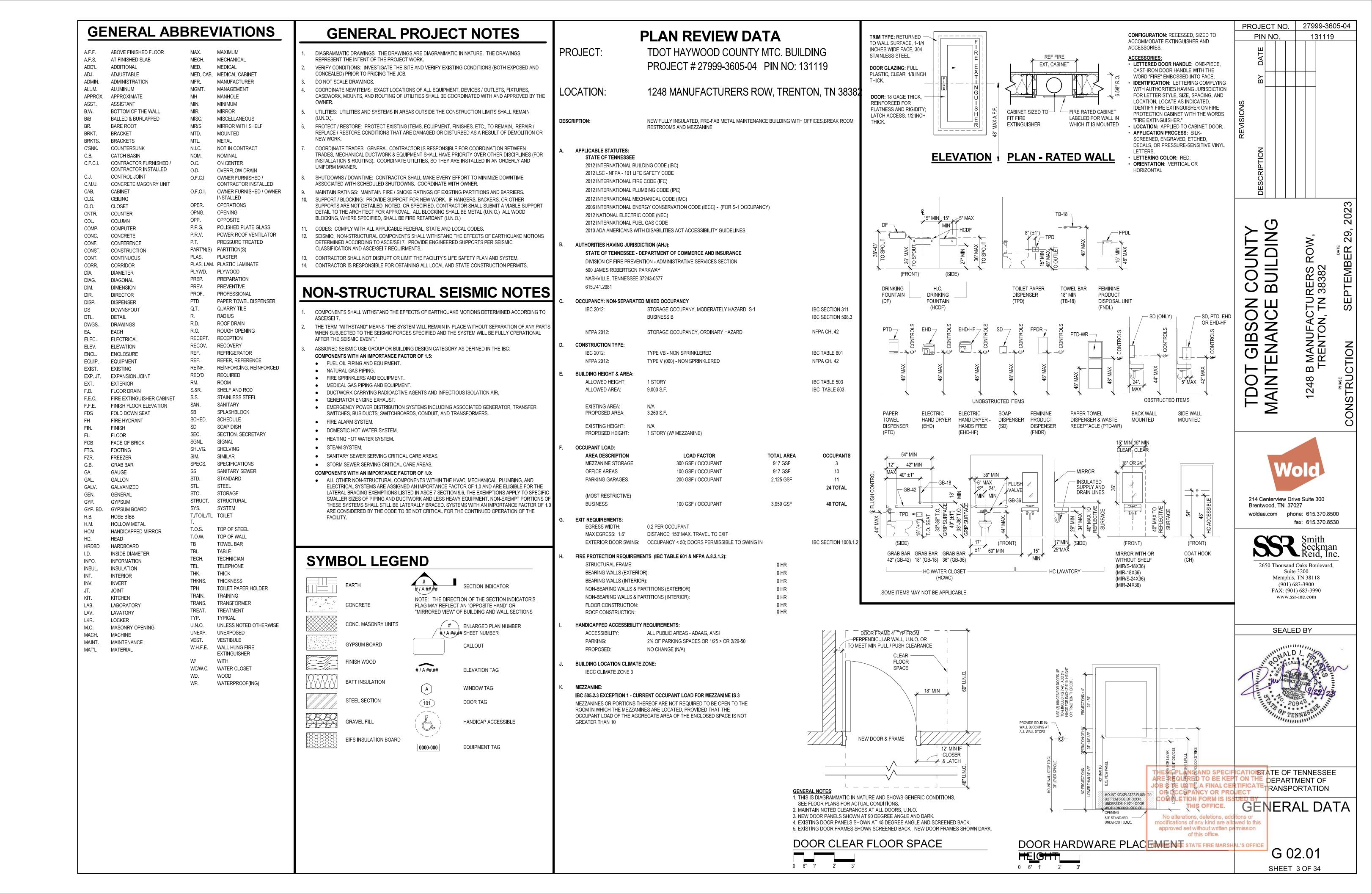
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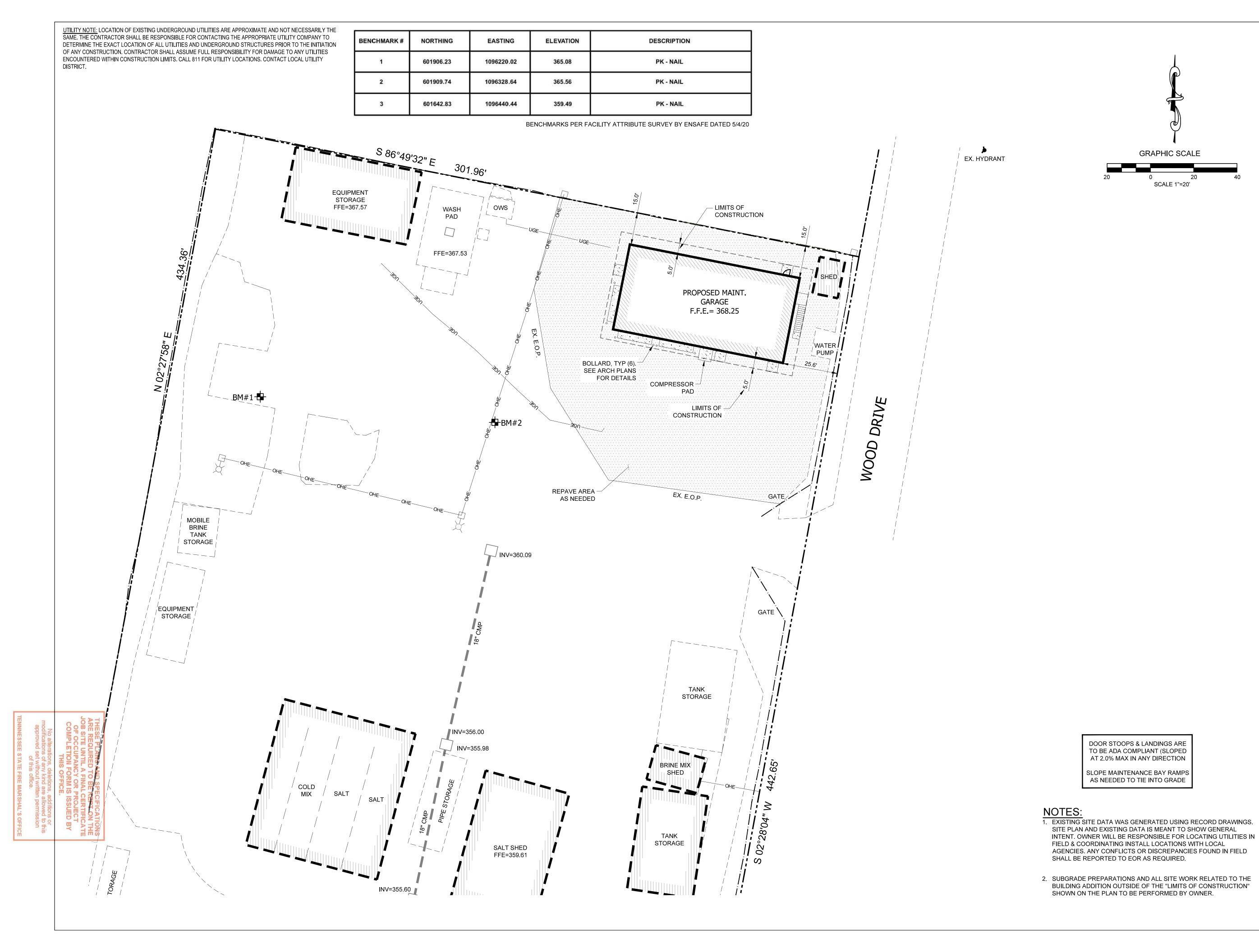
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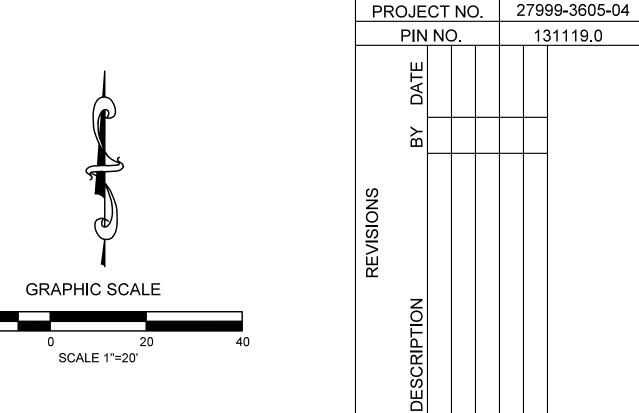
TENNNESSEE STATE FIRE MARSHAL'S OFFICE UANTITIES

1**A**

SHEET 2 OF 34







COUNTY BUILDING TDOT GIBSON (MAINTENANCE F

1248 B MANUFACTURERS ROW TRENTON, TN 38382 DATE SEPTEMBER 29



Brentwood, TN 37027 woldae.com phone: 615.370.8500 fax: 615.370.8530

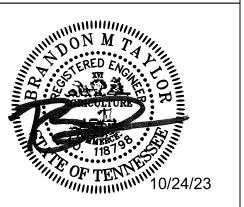
2650 Thousand Oaks Boulevard,

Suite 4200 Memphis, TN 38118 (901) 683-3900 FAX: (901) 683**-**3990 www.ssr-inc.com

SEALED BY

DOOR STOOPS & LANDINGS ARE TO BE ADA COMPLIANT (SLOPED AT 2.0% MAX IN ANY DIRECTION

SLOPE MAINTENANCE BAY RAMPS AS NEEDED TO TIE INTO GRADE

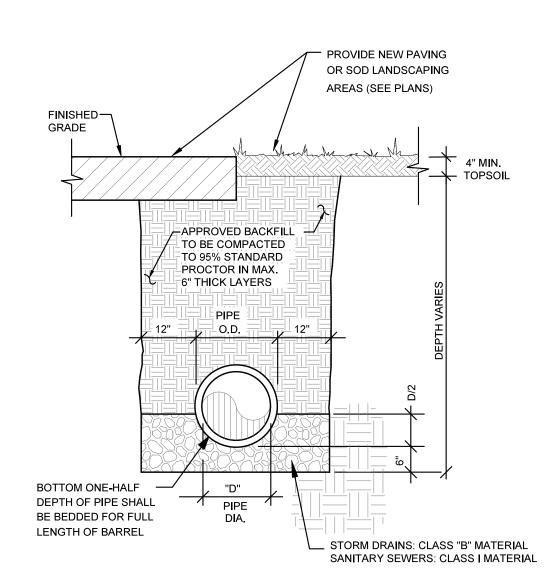


STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

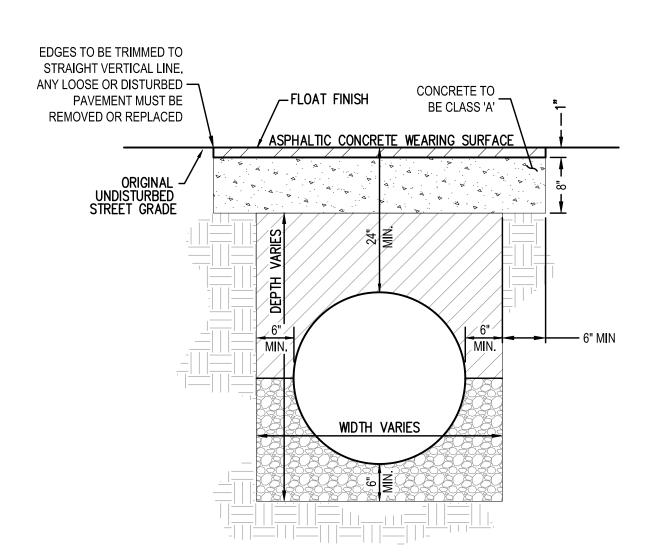
SITE PLAN C1.0

SHEET 4 OF 34

UTILITY NOTE: LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND NOT NECESSARILY THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE UTILITY COMPANY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND UNDERGROUND STRUCTURES PRIOR TO THE INITIATION OF ANY CONSTRUCTION. CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION LIMITS. CALL 1-800-351-1111 FOR UTILITY LOCATIONS. CONTACT LOCAL UTILITY DISTRICT.



GRAVITY PIPE BEDDING DETAIL N.T.S



TYPICAL REPAIR OF UTILITY CUTS IN PAVEMENT N.T.S

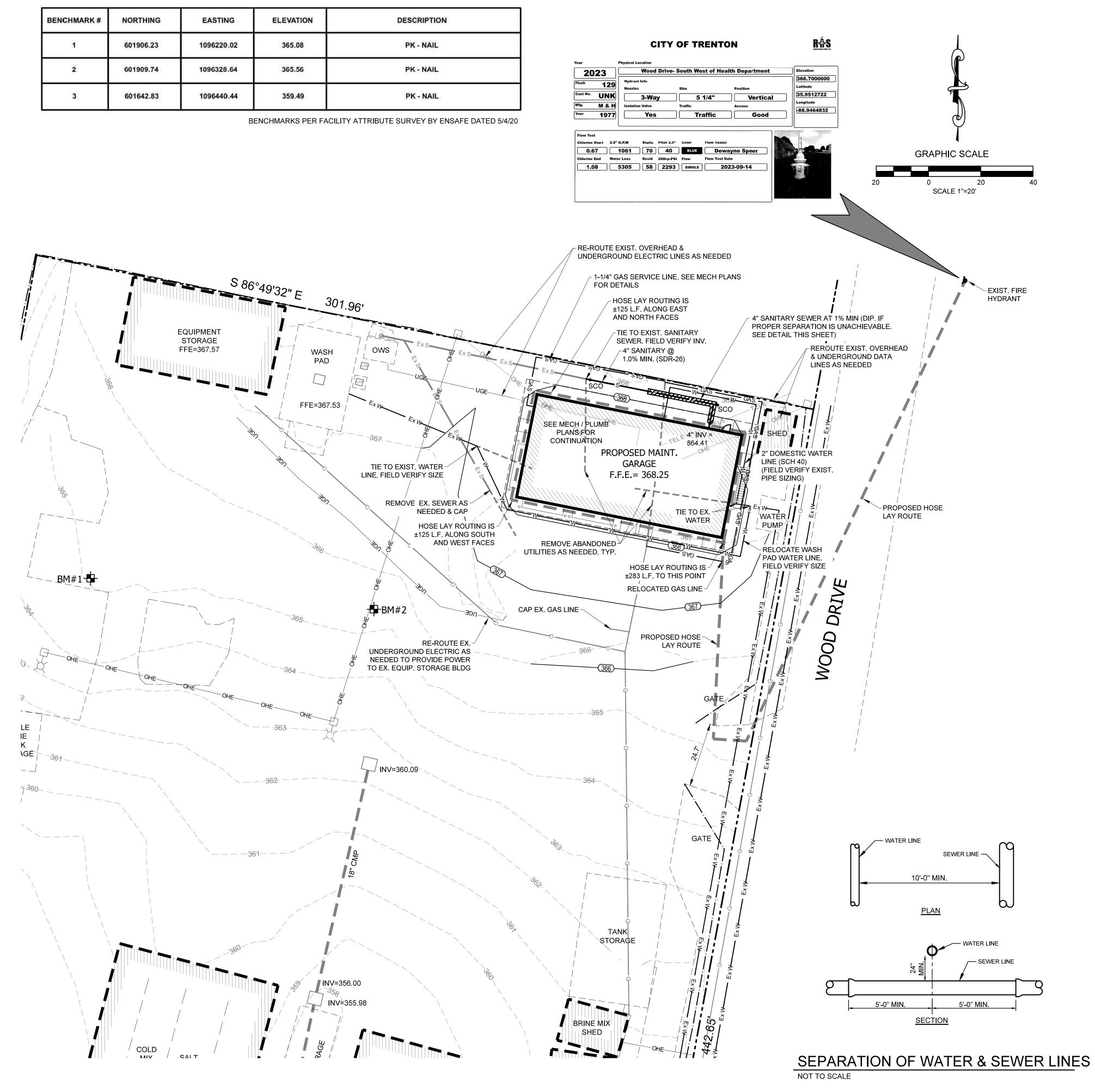
CONTRACTOR TO COORDINATE WITH LOCAL UTILITY DEPARTMENT ON WATER TAP & AS TO WHAT IS REQUIRED FOR FIRE HYDRANT ASSEMBLY (I.E. VALVE TYPES / LOCATIONS, BACKFLOW PREVENTER AND/OR ANY OTHER REQUIREMENTS ADOPTED)

THE SANITARY SEWER'S INVERT IS TO BE ±3.5'
BELOW FINISHED FLOOR ELEVATION UPON EXITING
FOUNDATION'S FOOTPRINT.

NOTES:

1. EXISTING SITE DATA WAS GENERATED USING RECORD DRAWINGS. SITE PLAN AND EXISTING DATA IS MEANT TO SHOW GENERAL INTENT. OWNER WILL BE RESPONSIBLE FOR LOCATING UTILITIES IN FIELD & COORDINATING INSTALL LOCATIONS WITH LOCAL AGENCIES. ANY CONFLICTS OR DISCREPANCIES FOUND IN FIELD SHALL BE REPORTED TO EOR AS REQUIRED.

2. SUBGRADE PREPARATIONS AND ALL SITE WORK RELATED TO THE BUILDING ADDITION OUTSIDE OF THE "LIMITS OF CONSTRUCTION" SHOWN ON THE PLAN TO BE PERFORMED BY OWNER.



PROJECT NO.

PIN NO.

씸

COUNTY BUILDING

TDOT GIBSON MAINTENANCE

214 Centerview Drive Suite 300

woldae.com phone: 615.370.8500

2650 Thousand Oaks Boulevard, Suite 4200 Memphis, TN 38118 (901) 683-3900

> FAX: (901) 683-3990 www.ssr-inc.com

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STATE OF TENNESSEE

DEPARTMENT OF

UTILITY PLAN

C2.0

SHEET 5 OF 34

TRANSPORTATION

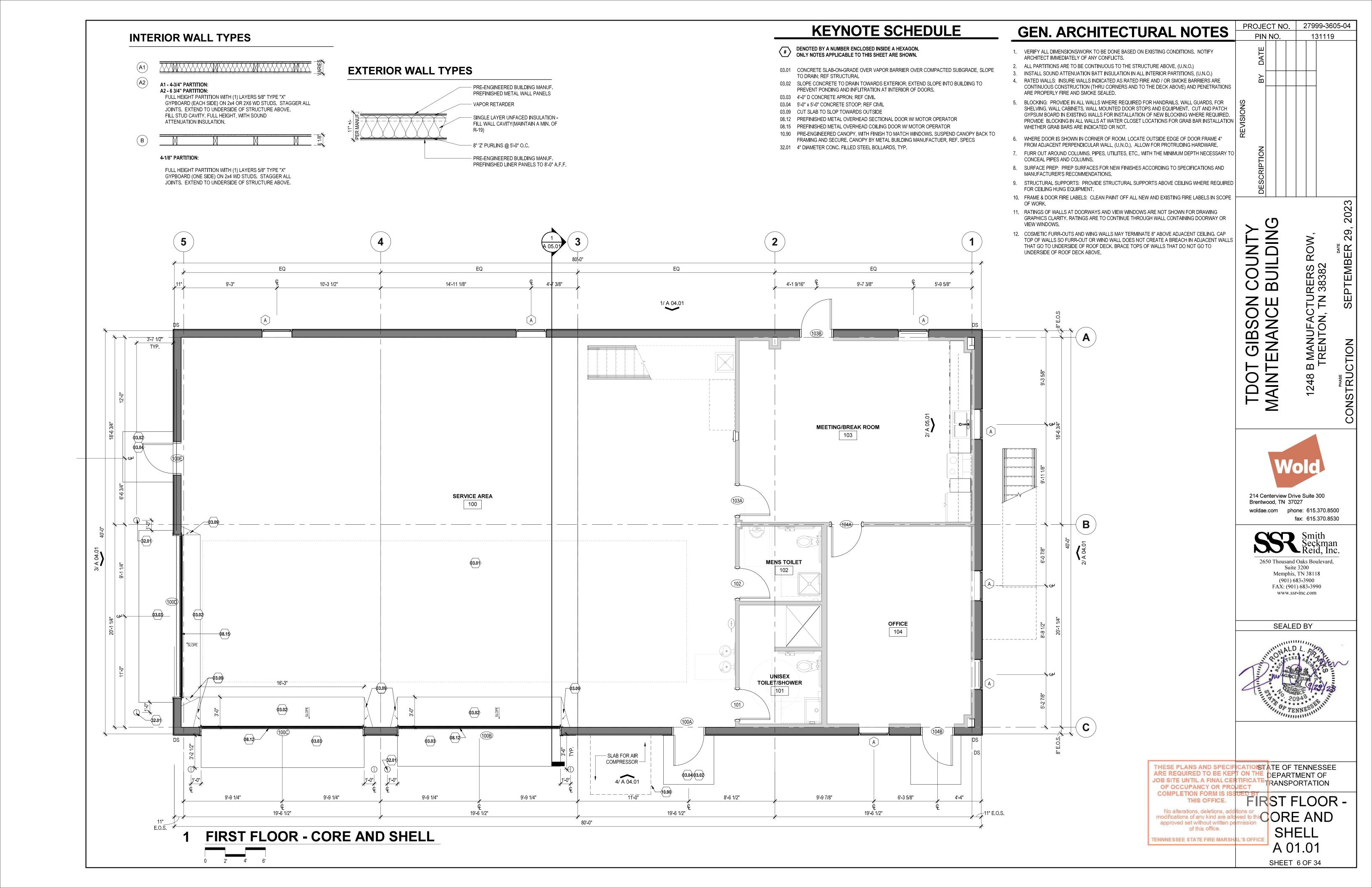
fax: 615.370.8530

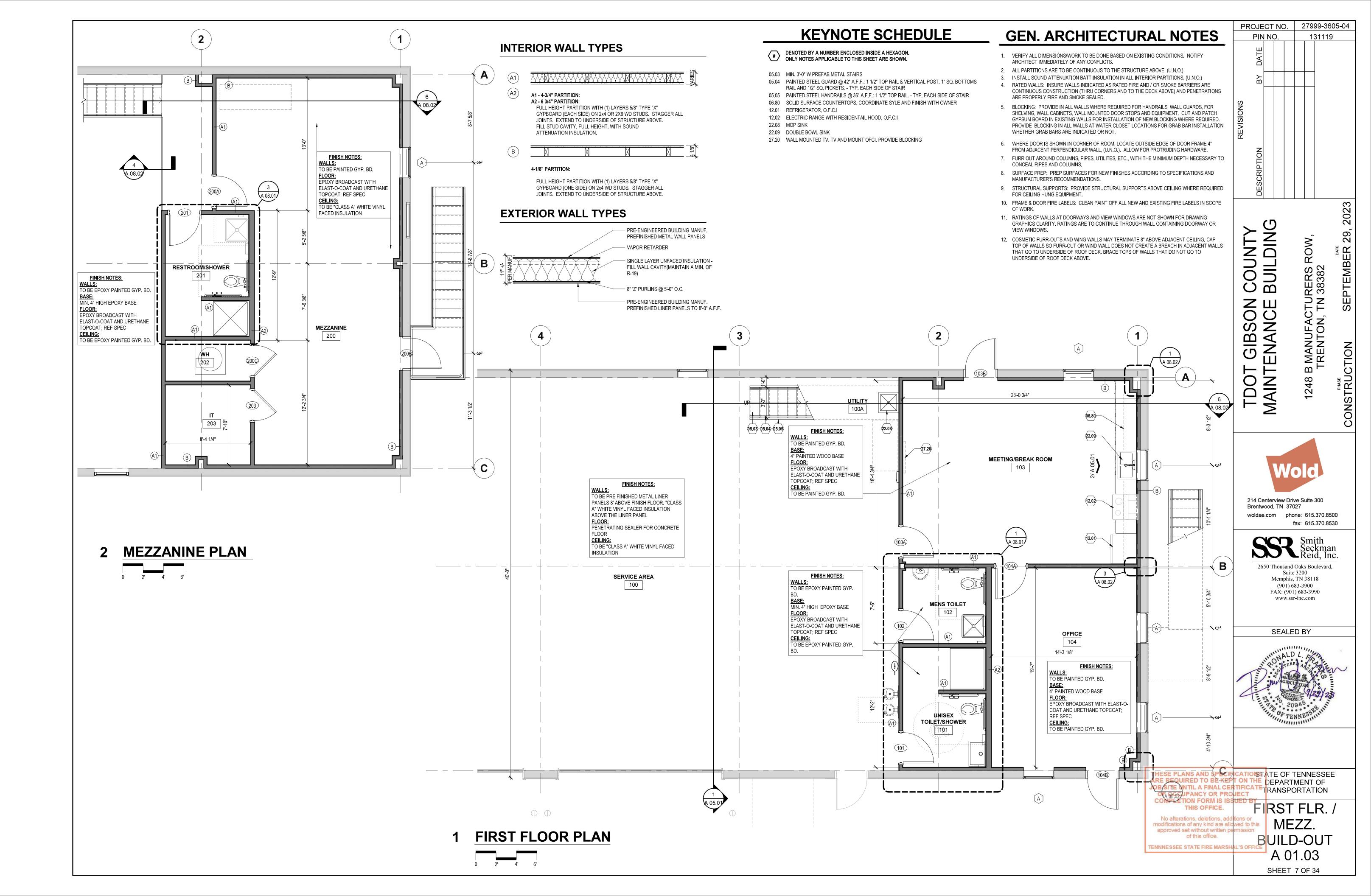
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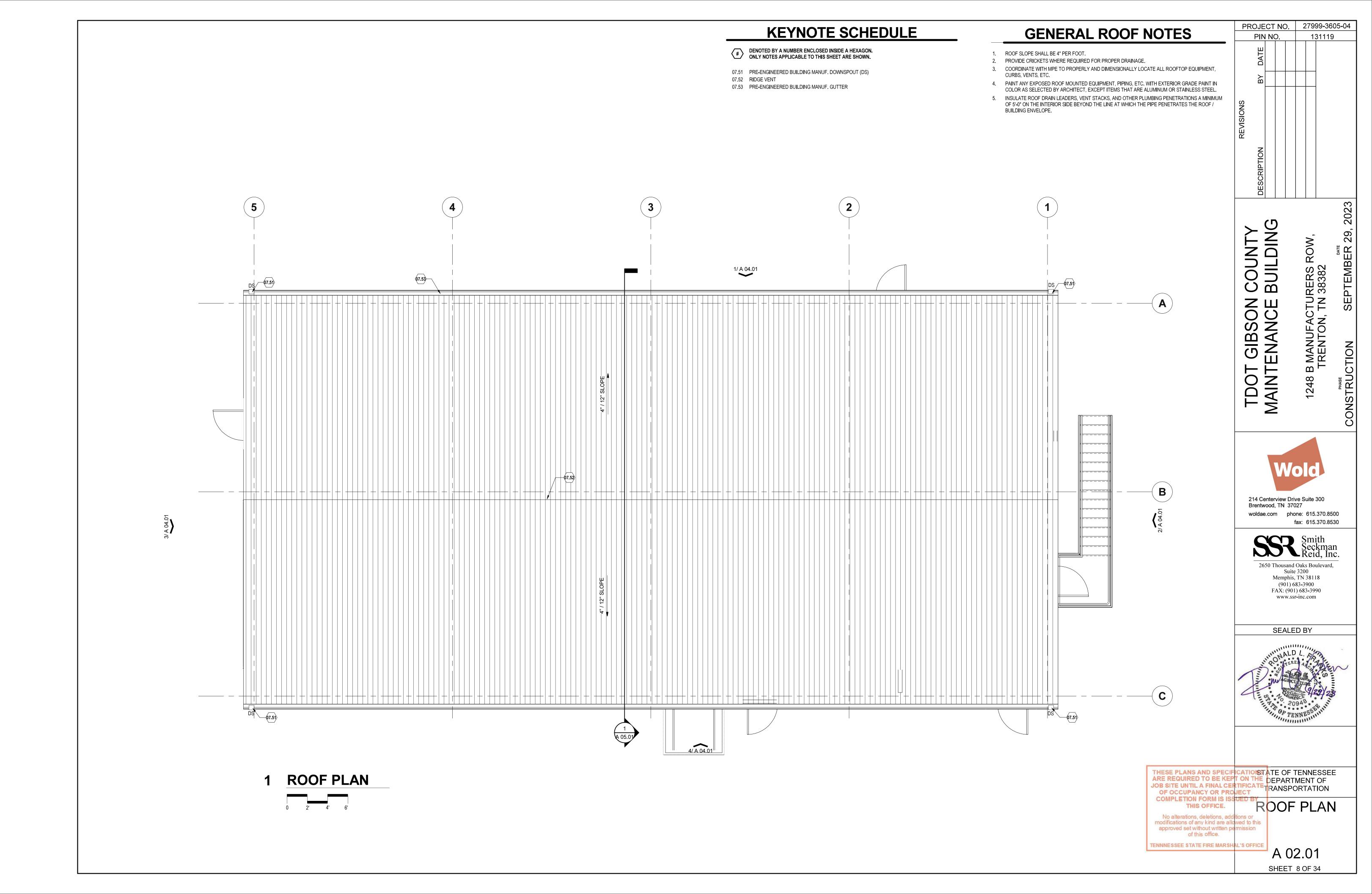
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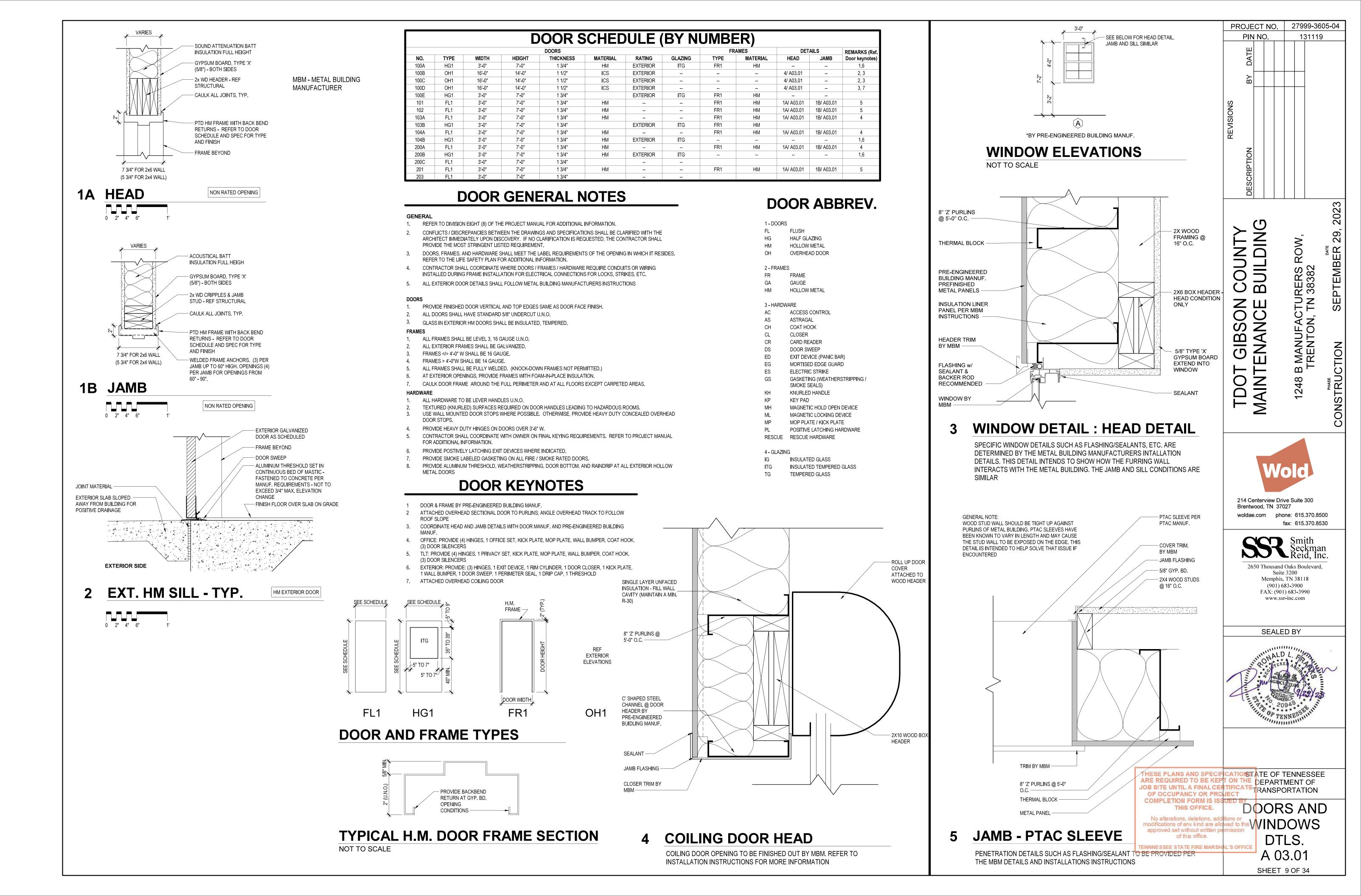
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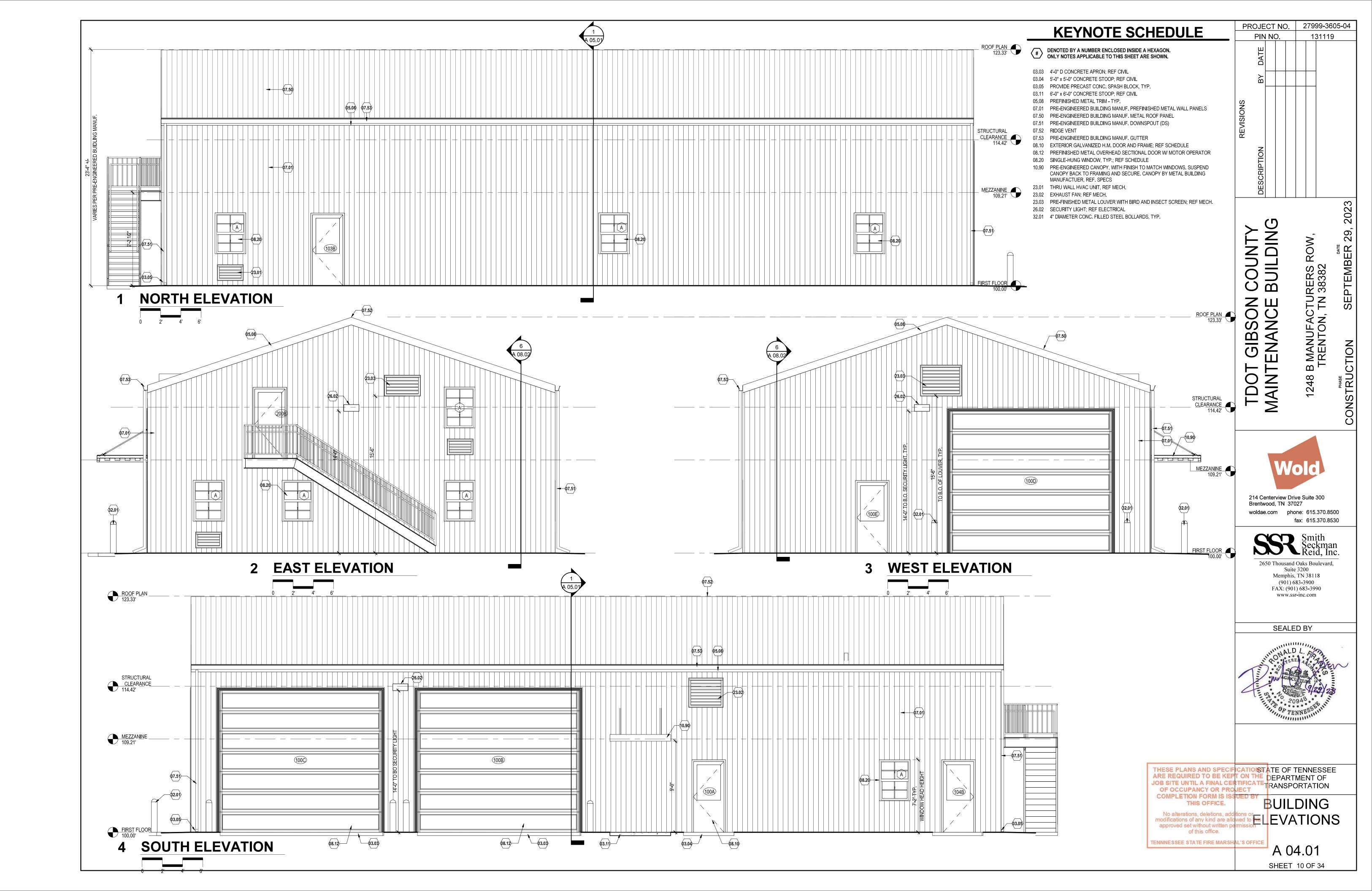
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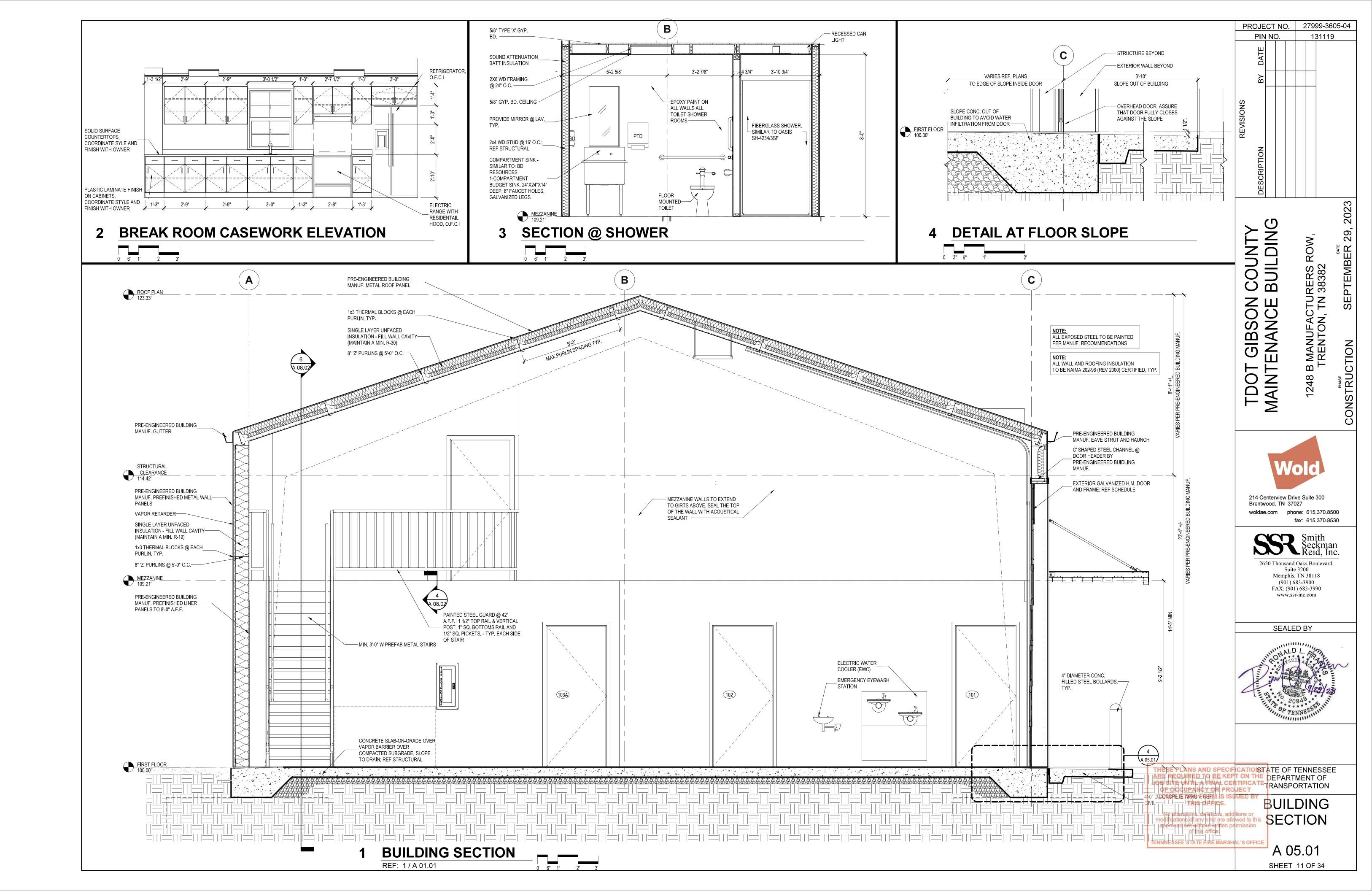


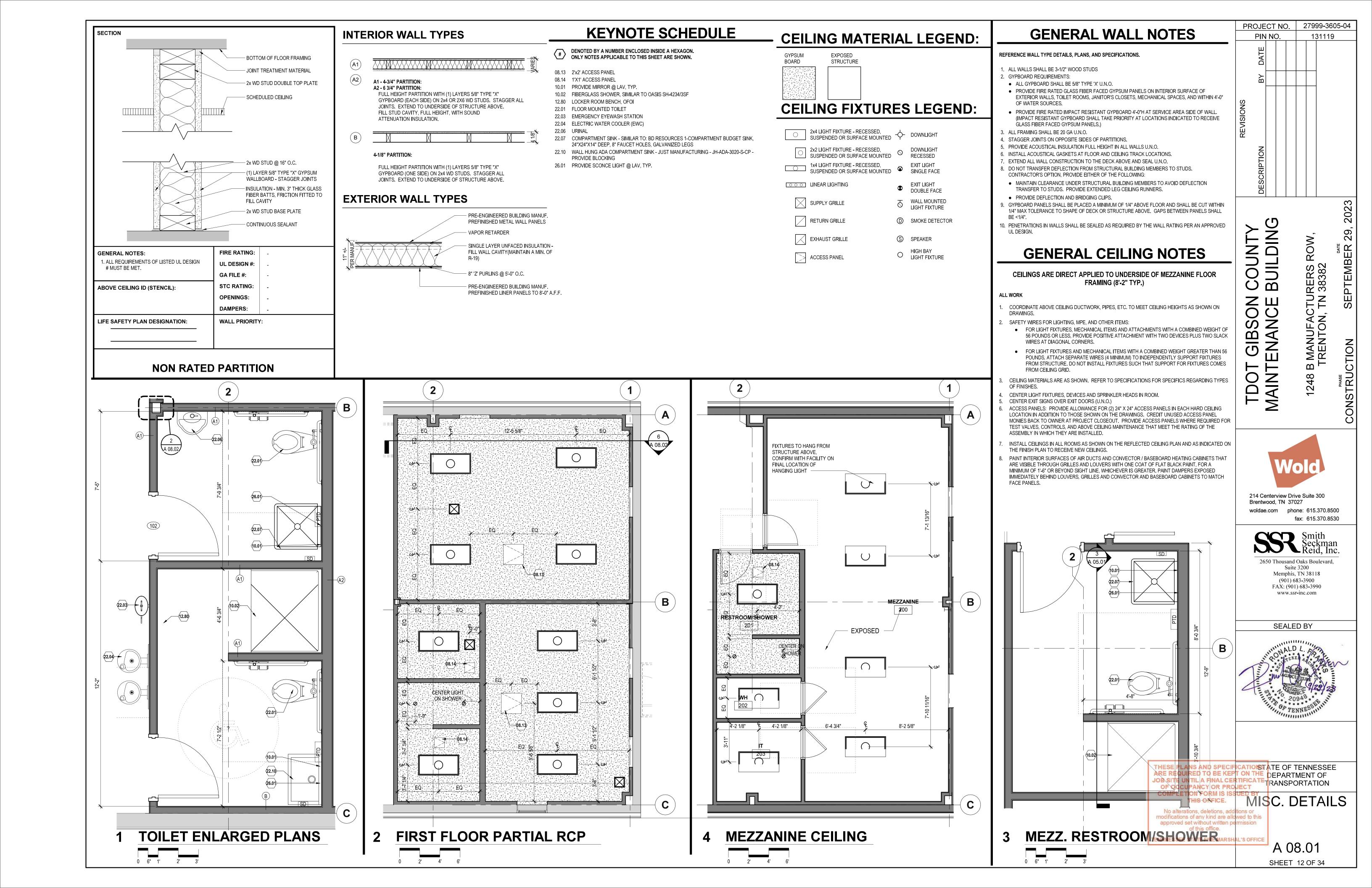


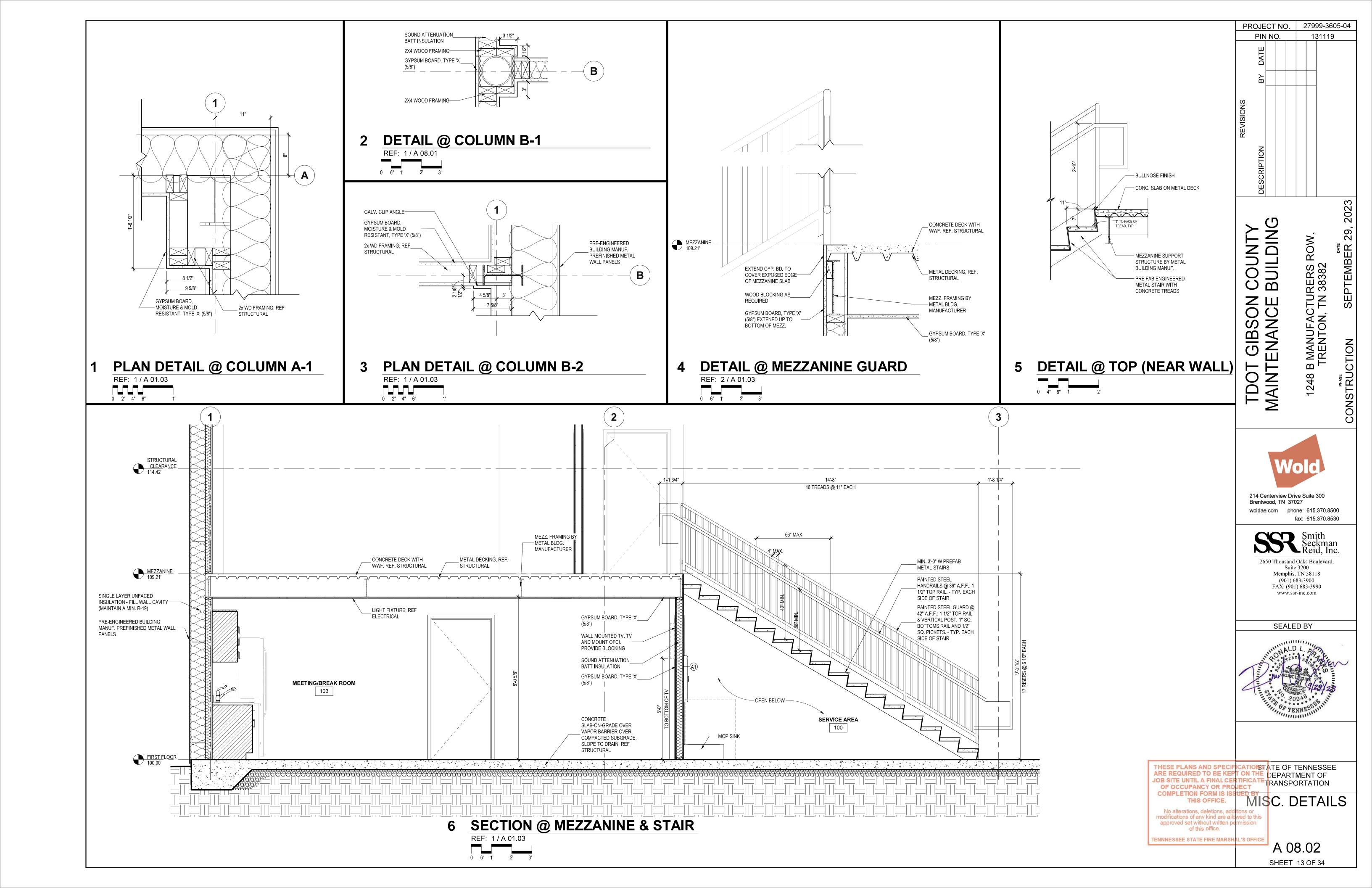












STRUCTURAL DESIGN CRITERIA

(MPE/CEILING ALLOWANCE)

2012 INTERNATIONAL BUILDING CODE (IBC) **LOADING CRITERIA:**

A. APPLIES TO: OFFICE, GARAGE, AND MEZZANINE.

DEAD LOADS:

LIVE LOADS: A. REDUCIBLE PER IBC: **ROOFS AND CANOPIES:** 20 PSF

FIRST FLOOR GARAGE: 32 KIP (PER AXLE)

MEZZANINE COLLATERAL LOAD:

FIRST FLOOR COMMON AREAS: 100 PSF FIRST FLOOR OFFICE MEETING ROOMS: 50 PSF 60 PSF MEZZANINES:

A. PER ASCE: 7-10

BASIC WIND SPEED (VULT): 115 MPH 89 MPH BASIC WIND SPEED (VASD): RISK CATEGORY: WIND EXPOSURE CATEGORY

MAIN WIND FORCE RESISTING SYSTEM (MWFRS): PER PEMB MANUFACTURER COMPONENTS AND CLADDING PRESSURES: REFER TO PEMB MANUFACTUREF

SNOW LOADS:

10 PSF GROUND SNOW LOAD (Pg): FLAT ROOF SNOW LOAD: 7 PSF EXPOSURE FACTOR (Ce): 0.9 IMPORTANCE FACTOR (Is): 1.0 THERMAL FACTOR (Ct): SEISMIC DESIGN CRITERIA: IMPORTANCE FACTOR (Is):

> RISK CATEGORY SITE CLASSIFICATION: SEISMIC DESIGN CATEGORY: MAPPED SPECTRAL RESPONSE ACCELERATION: 0.731 0.266

MAPPED SPECTRAL DESIGN ACCELERATION: 0.592 SD1 0.331

BASIC SEISMIC FORCE RESISTING SYSTEM: PER PEMB MANUFACTURER RESPONSE MODIFICATION COEFFICIENT (R): PER PEMB MANUFACTURER DEFLECTION AMPLIFICATION FACTOR (Cd): PER PEMB MANUFACTURER OVER STRENGTH (W): PER PEMB MANUFACTURER SEISMIC RESPONSE COEFFICIENT (Cs): PER PEMB MANUFACTURER DESIGN BASE SHEAR (V): PER PEMB MANUFACTURER

ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE

(DESIGN MAXIMUM)

MATERIAL STRENGTHS:

CONCRETE:

A. DESIGN PER CURRENT EDITION OF: ACI 318

SLAB-ON-GRADE: F'c = 4,000 PSI FOOTINGS/FOUNDATION WALLS: LIGHT WEIGHT CONCRETE FOR MEZZANINES:

> ALL OTHER CONCRETE: F'c = 3,000 PSI REINFORCING STEEL: ASTM A615, GRADE 60 WELDED WIRE FABRIC: ASTM A1064

B. TDOT STANDARD SPECIFICATIONS FOR CONCRETE MIX DESIGN CAN ALSO BE USED AS LONG AS THE COMPRESSIVE STRENGTH SPECIFIED ABOVE IS MAINTAINED.

FOUNDATIONS:

A. FOUNDATION TYPES: SHALLOW FOUNDATIONS CONSISTING OF SPREAD FOOTINGS.

SOIL BEARING CAPACITIES:

SPREAD FOOTINGS: 1,500 PSF

STRUCTURAL SPECIFICATIONS

SITE PREPARATION:

A. FOOTING AND SLAB SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF A LOCAL GEOTECHNICAL ENGINEER AND SHALL BE IN COMPLIANCE WITH APPLICABLE REQUIREMENTS OF GOVERNING AUTHORITIES HAVING JURISDICTION. SPECIAL ATTENTION SHALL BE GIVEN TO RECOMMENDED UNDERCUTTING OF MATERIAL CONTAINING ORGANIC MATERIAL.

GEOTECHNICAL:

A. A GEOTECHNICAL TESTING AND INSPECTION FIRM SHALL BE EMPLOYED TO PERFORM A SOIL SURVEY FOR SATISFACTORY SOIL MATERIALS, SAMPLING AND TESTING FOR QUALITY CONTROL. ALL EARTHWORK OPERATIONS SHALL BE PERFORMED TO THE SATISFACTION OF THE GEOTECHNICAL TESTING FIRM.

CONCRETE:

- A. CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", (ACI
- B. CONCRETE SHALL BE PROPORTIONED, BATCHED, MIXED, PLACED, CONSOLIDATED, AND CURED IN ACCORDANCE WITH ACI 301,304,308,309 AND 318.
- C. ALL CONCRETE MIXES SHALL BE PROPORTIONED BY THE FIELD EXPERIENCE METHOD OR THE LABORATORY TRIAL METHOD IN ACCORDANCE W/ ACI 318, MAX WATER TO CEMENT RATIO SHALL BE 0.55.
- D. PROVIDE COMPRESSIVE STRENGTH TESTS CONFORMING TO ASTM C31 AND ASTM C39. ONE SET OF FOUR CYLINDERS FOR EACH 150 CUBIC YARDS OR FRACTION THEREOF, OF EACH STRENGTH OF CONCRETE PLACED IN ANY ONE DAY. TEST ONE SPECIMEN AT SEVEN DAYS, TEST TWO SPECIMENS AT 28 DAYS AND HOLD ONE IN RESERVE. PERFORM ONE SLUMP TEST FOR EACH SET OF COMPRESSIVE STRENGTH TEST SPECIMENS. SUBMIT RESULTS DIRECTLY TO ENGINEER.
- E. TDOT STANDARD SPECIFICATIONS FOR CONCRETE MIX DESIGN CAN ALSO BE USED AS LONG AS THE COMPRESSIVE STRENGTH AND MINIMUMS SPECIFIED ABOVE ARE MAINTAINED.

CONCRETE

- A. PROVIDE 3/4" CHAMFER AT ALL EXPOSED CORNERS OF BEAMS, WALLS, SLABS, ETC.
- ACI 304 AND ACI 309 B. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED IN ACCORDANCE WITH
- C. ALL EXTERIOR CONC, PERMANENTLY EXPOSED TO WEATHER SHALL CONTAIN AN AIR ENTRAINING ADMIXTURE.
- D. LIGHT WEIGHT CONCRETE SHALL HAVE A MAXIMUM WEIGHT OF 110 PCF
- E. CONTRACTOR SHALL USE CAUTION TO PREVENT POP-OUTS WHILE FINISHING LIGHT WEIGHT CONCRETE WITH AIR ENTRAINMENT >
- F. CONTRACTOR SHALL REFER TO AND COORDINATE WITH OTHER DISCIPLINES DRAWINGS AND OR VENDOR DRAWINGS FOR EMBEDDED ITEMS AND OR RECESSES NOT SHOWN IN THE STRUCTURAL DRAWINGS.

A. UNLESS NOTED OTHERWISE (U.N.O.) ON THE DWGS. THE MIN. COVER FOR REINFORCING SHALL BE AS FOLLOWS.

SLABS, WALLS, AND JOISTS:

FOOTINGS: 3.00 INCHES 1.50 INCHES COLUMNS/BEAMS: 2.00 INCHES SLABS ON GRADE: 1.00 INCHES (FROM TOP) **ELEVATED SLABS**

B. ALL REINFORCING SHALL BE HELD SECURELY IN POSITION WITH STANDARD ACCESSORIES IN CONFORMANCE WITH THE FOLLOWING DURING THE PLACING OF CONCRETE:

CRSI MANUAL OF STANDARD PRACTICE

ACI 315 C. ALL REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH THE FOLLOWING

ACI DETAILING MANUAL, SP-66

THE CRSI MANUAL OF CONCRETE PRACTICE ACI 318

D. PROVIDE BAR SUPPORTS AND SPACERS IN ACCORDANCE WITH THE FOLLOWING:

CRSI MANUAL OF STANDARD PRACTICE

- E. ALL BAR SUPPORTS IN AREA WHERE CONCRETE WILL BE EXPOSED SHALL HAVE PLASTIC TIPPED FEET. THE CONTRACTOR IS CAUTIONED THAT CARE MUST BE EXERCISED TO PREVENT EXPOSURE OF THE TIE WIRE OR OTHER MATERIAL WHICH MAY CAUSE STAINING OF EXPOSED CONCRETE. PROPER COVER AS INDICATED ABOVE SHALL BE MAINTAINED ON ALL REINFORCEMENT.
- F. ALL HOOKS IN REINFORCING BARS SHALL BE ACI STANDARD HOOKS, U.N.O.
- G. DOWELS FROM FOUND. OR SLABS TO WALLS SHALL MATCH WALL REINFORCING, UNLESS NOTED OTHERWISE. DOWELS SHALL BE PLACED BEFORE CONC. IS POURED. DOWELS SHALL NOT BE PUSHED INTO THE CONCRETE.
- H. WHERE GRADE BEAMS OR STRIP FOOTINGS INTERSECT COLUMNS FOUNDATIONS, EXTEND GRADE BEAM OR STRIP FOOTING REINFORCEMENT CONTINUOUSLY THROUGH THE COLUMN FOUNDATION.
- I. WELDED WIRE FABRIC SHALL BE LAPPED A MINIMUM OF WIRE SPACING PLUS 6" AND TIED
- J. WELDED WIRE FABRIC SHALL BE FABRICATED IN FLAT SHEETS. ROLLS ARE NOT ALLOWED.
- K. UNLESS NOTED OTHERWISE, TENSION SPLICES IN REINFORCING, WHERE PERMITTED, SHALL BE:

REINFORCING BARS:

ACI 315

#6 AND SMALLER				#7 AND	LARGER			
OTHER	BARS	TOP I	BARS	OTHER	RBARS	TOP I	BARS	
CLASS A	CLASS B	Class A	Class B	Class A	Class B	Class A	Class B	
44 db	57 db	57 db	74 db	55 db	72 db	72 db	93 db	
38 db	50 db	50 db	65 db	48 db	62 db	62 db	81 db	
34 db	45 db	45 db	58 db	43 db	56 db	56 db	72 db	
	CLASS A 44 db 38 db	OTHER BARS CLASS A CLASS B 44 db 57 db 38 db 50 db	CLASS A CLASS B Class A 44 db 57 db 57 db 38 db 50 db 50 db	OTHER BARS CLASS A CLASS B Class A Class B 44 db 57 db 57 db 74 db 38 db 50 db 50 db 65 db	OTHER BARS TOP BARS OTHER CLASS A CLASS B Class A Class B Class A 44 db 57 db 57 db 74 db 55 db 38 db 50 db 50 db 65 db 48 db	OTHER BARS TOP BARS OTHER BARS CLASS A CLASS B Class A Class B Class A Class B 44 db 57 db 57 db 74 db 55 db 72 db 38 db 50 db 50 db 65 db 48 db 62 db	OTHER BARS TOP BARS OTHER BARS TOP I CLASS A CLASS B Class A Class B Class B Class B Class B Class B Class B Class A 44 db 57 db 57 db 74 db 55 db 72 db 72 db 38 db 50 db 50 db 65 db 48 db 62 db 62 db	OTHER BARS TOP BARS CLASS A CLASS B Class A Class B OTHER BARS Class B Class B Class B Class B Class B OTHER BARS Class B Class B Class B Class B Class B Class B OTHER BARS Class B OTHER BARS Class B Class B

- 1. ALL LAPS SHALL BE CLASS B UNLESS NOTED OTHERWISE (U.N.O.).
- 2. BEAMS AND COLUMNS: INCREASE LAPS SHOWN BY 50% IF CLEAR SPACING OF BARS IS LESS THAN 2 db, OR IF CLEAR COVER OF BARS IS LESS THAN 1 db.
- 3. WALLS, SLABS, AND FOOTINGS: INCREASE LAPS SHOWN BY 50% IF CLEAR SPACING OF BARS IS LESS THAN 2 db, OR IF CLEAR COVER OF BARS IS LESS THAN 2 db.
- 4. INCREASE LAPS BY 25% FOR GRADE 75 REINFORCEMENT.
- 5. INCREASE LAPS BY 33% FOR LIGHTWEIGHT CONCRETE.

CONTROL JOINTS:

- A. SAWN CONTROL JOINTS IN SLAB ON GRADE SHALL BE CUT IN ACCORDANCE WITH: ACI 302.1R
- B. JOINTS SHALL BE CUT WITHIN 12 HOURS OF SLAB PLACEMENT.

MINIMUM LOCAL VALUE

C. CONTROL JOINTS ARE DIAGRAMMATICALLY SHOWN ON THE PLANS. THE CONTRACTOR MAY ADJUST THE SPACING OF THE JOINTS AND SUBMIT A REVISED SLAB CONTROL JOINT PLAN TO THE ENGINEER FOR APPROVAL. THE LENGTH TO WIDTH RATIO BETWEEN JOINTS SHALL NOT EXCEED 1.5 AND THE AREA BOUNDED BY THE JOINTS SHALL NOT EXCEED 200SF FOR 4" SLABS AND 400SF FOR 6" SLABS.

CONCRETE SLABS:

- A. ALL CONCRETE SLABS-ON-GRADE SHALL BE CURED USING A LIQUID MEMBRANE FORMING CURING COMPOUND WHERE PRACTICAL. REFER TO THE SPECIFICATIONS FOR FURTHER INFORMATION.
- B. SLAB-ON-GRADE VAPOR BARRIERS SHALL BE A MINIMUM OF 15 MILS THICK. OVERLAP SEAMS 6" AND TAPE.
- C. PROVIDE TWO (2) #4 x 3'-0" LONG DIAGONAL BARS, SPACED 6" O.C AT 2" BELOW FINISHED FLOOR AT ALL RE-ENTRANT CORNERS IN SLABS. EXTEND REINFORCEMENT PAST RE-ENTRANT CORNERS A MINIMUM OF 12".
- D. PLUMBING, MECHANICAL, AND ELECTRICAL CONTRACTORS SHALL SUBMIT SIZES AND LOCATIONS OF ALL PENETRATIONS THROUGH ELEVATED STRUCTURAL SLABS FOR THE STRUCTURAL ENGINEERS APPROVAL PRIOR TO PLACEMENT OF THE SLAB. NO OPENINGS OR PENETRATIONS SHALL BE ADJACENT TO A COLUMN OR WITHIN A DISTANCE EQUAL TO THE THICKNESS OF THE SLAB FROM THE FACE OF THE COLUMN UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
- E. ALL PIPE PENETRATIONS THROUGH ELEVATED CONCRETE SLABS SHALL BE SLEEVED PER:
- F. ANY CONDUIT AND/OR PIPE RUNNING IN A SLAB OR WALL SHALL BE SPACED NOT LESS THAN 3 DIAMETERS AND SHALL NOT BE LARGER THAN 1/3 THE SLAB THICKNESS.
- G. PROVIDE 1/2" PRE-MOLDED EXPANSION JOINT MATERIAL WITH FLEXIBLE JOINT SEALANT WHERE SLAB ON GRADE IS POURED
- AROUND COLUMNS AND AGAINST GRADE BEAMS OR WALLS, UNLESS OTHERWISE SHOWN OR NOTED. H. FOR FLATNESS AND LEVELNESS, CONCRETE SLABS SHALL CONFORM TO: ACI 117-90
- ACCORDING TO: ASTM E 1155 COMPOSITE FLATNESS (Ff) **COMPOSITE LEVELNESS (FI) SPECIFIED OVERALL VALUE:**

SHALLOW FOUNDATIONS

- A. FINISHED FLOOR ELEVATION SHALL BE TAKEN AS 0'-0". REFER TO CIVIL DRAWINGS FOR ACTUAL ELEVATION.
- B. SEE PLUMBING, ELECTRICAL, AND CIVIL DWGS. FOR REQUIRED UTILITIES UNDER FLOOR SLABS AND FOUNDATIONS
- C. BACKFILL FOR FOUNDATIONS, BASEMENT OR RETAINING WALLS SHALL BE SAND OR #57 UNIFORMLY GRADED.
- D. FOOTINGS SHALL NOT BE POURED AGAINST SUB-GRADE CONTAINING ICE, STANDING WATER, OR LOOSE MATERIAL
- E. FOOTINGS SHALL BE CENTERED ON COLUMN LINES, AND CENTERLINES OF WALLS (U.N.O.).

- A. SLAB-ON-GRADE SHALL BEAR PROPERLY AGAINST 15 MIL VAPOR BARRIER OVER 6" COMPACTED GRANULAR DRAINAGE LAYER. DRAINAGE LAYER SHALL BE UNIFORMLY GRADED GRANULAR MATERIAL EQUIVALENT TO #57 STONE.
- B. TDOT STANDARD SPECIFICATIONS FOR SUBGRADE AND COMPACTION REQUIREMENTS CAN ALSO BE USED AS LONG AS A SOIL BEARING CAPACITY OF 1500 PSF IS MAINTAINED.

- A. A SITE SPECIFIC SOILS EXPLORATION REPORT WAS NOT PERFORMED FOR THIS PROJECT THAN ALL FOUNDATIONS ARE DESIGNED BASED ON AN ALLOWABLE BEARING CAPACITY OF 1500 PSF. THE ALLOWABLE BEARING PRESSURES ARE BASED ON BEARING AGAINST FIRM, NON-EXPANSIVE, UNDISTURBED SOIL. WHERE UNACCEPTABLE MATERIAL OCCURS, EXCAVATE AND REPLACE WITH ENGINEERED FILL AS DIRECTED BY A LOCAL GEOTECHNICAL ENGINEER
- B. FOUNDATIONS SHALL BEAR ON UNDISTURBED EARTH OR COMPACT FILL. REFER TO SPECIFICATIONS FOR COMPACTION
- C. TDOT STANDARD SPECIFICATIONS FOR SUBGRADE AND COMPACTION REQUIREMENTS CAN ALSO BE USED AS LONG AS A SOIL BEARING CAPACITY OF 1500 PSF IS MAINTAINED.

A. ALL FOUNDATIONS SHALL BE INSPECTED BY A LOCAL GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT TO CONFIRM THE BEARING PRESSURES LISTED ABOVE. IF FOUNDATION EXCAVATIONS OCCUR IN A DISTURBED, UNSUITABLE, OR UNSTABLE SOIL, THE ENGINEER SHALL BE NOTIFIED.

METAL DECKING

- A. ALL METAL DECKING SHALL BE INSTALLED WITH A MINIMUM OF TWO SPANS.
- B. EACH DECKING PANEL SHALL BE CONNECTED TO SUPPORTING MEMBERS.
- C. ADJACENT PANELS SHALL BE INTERCONNECTED WITH SIDE LAP FASTENERS AT EACH SPAN

D. REFER TO PEMB MANUFACTURER FOR CONNECTION DETAILS.

DESIGN CRITERIA: A. DESIGN PER CURRENT EDITION OF

B. DECKING MATERIAL G60

GALV. ,UNLESS NOTED OTHERWISE (U.N.O.) METAL FLOOR DECKING MANUFACTURER: VULCRAFT (OR APPROVED EQUAL)

PROFILE: WIDE RIB TYPE 1.0C GAGE

PRE-ENGINEERED METAL BUILDINGS

A. PRE-ENGINEERED METAL BUILDINGS SHALL BE DESIGNED IN ACCORDANCE WITH THE FOLLOWING:

THE BUILDING CODE REFERENCED IN THE SECTION TITLED "STRUCTURAL DESIGN CRITERIA".

MBMA MANUAL, LATEST EDITION

- B. FOUNDATIONS HAVE BEEN DESIGNED FOR "PINNED" PEMB COLUMN BASES. NO MOMENTS ARE TO BE TRANSMITTED TO THE
- C. FOUNDATIONS HAVE BEEN DESIGNED WITH PRELIMINARY LOADS PROVIDED BY THE PRE-ENGINEERED METAL BUILDING MANUFACTURER. THE CONTRACTOR SHALL NOT EXCAVATE OR SUBMIT FOUNDATION REINFORCING SUBMITTALS UNTIL PEMB FOUNDATION LOADS HAVE BEEN SUBMITTED TO AND FOUNDATION SIZES VERIFIED BY THE STRUCTURAL ENGINEER.
- D. THE METAL BUILDING MANUFACTURER SHALL INCLUDE MASS OF EXTERIOR VENEER INTO ACCOUNT FOR SEISMIC LOADING.
- E. THE METAL BUILDING MANUFACTURER SHALL ACCOUNT FOR WIND LOADS TRANSMITTED TO THE PEMB STRUCTURE FROM THE
- F. ALL ANCHOR BOLTS MUST BE LOCATED BY MEANS OF A TEMPLATE. DO NOT HAND SET ANCHOR BOLTS.

SUPPLEMENTARY NOTES

- A. PROVIDE ALL TEMPORARY BRACING, GUYING OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION. THE STRUCTURE SHOULD NOT BE CONSIDERED STABLE UNTIL ALL STRUCTURAL ELEMENTS HAVE BEEN CONSTRUCTED.
- B. THE STRUCTURAL ENGINEER SHALL NOT HAVE CONTROL OR BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES OR SEQUENCES. FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, OR ANY OTHER PERSONS PERFORMING THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- C. VERIFY ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS.

SHALL BE RETURNED WITHOUT REVIEW.

ACI 318

- D. SEE THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR EMBEDS, OPENINGS, SLEEVES, ETC. NOT
- SHOWN ON THE STRUCTURAL DRAWINGS. E. ALL STRUCTURAL OPENINGS AROUND OR AFFECTED BY MECHANICAL, ELECTRICAL, AND PLUMBING EQUIPMENT SHALL BE VERIFIED WITH EQUIPMENT PURCHASED BEFORE PROCEEDING WITH STRUCTURAL WORK AFFECTED.
- F. STRUCTURAL ENGINEER OF RECORD FOR THIS PROJECT IS NOT RESPONSIBLE FOR THE DESIGN OF STEEL STAIRS, HANDRAILS, COLD FORMED METAL FRAMING, OR OTHER SYSTEMS NOT INDICATED ON THE STRUCTURAL DOCUMENTS. REFER TO SPECIFICATIONS FOR THESE ITEMS FOR DEFERRED DESIGN SUBMITTAL REQUIREMENTS.
- G. ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF AN ENGINEER
- REGISTERED IN THE STATE OF THE PROJECT. H. GENERAL CONTRACTOR MUST REVIEW AND APPROVE SHOP DRAWINGS PRIOR TO SUBMITTAL TO ARCHITECT/ENGINEER SUBMITTALS WHICH DO NOT CONTAIN THE CONTRACTORS SHOP DRAWING OR STAMP OR HAVE BEEN MERELY "RUBBE
- I. DO NOT REPRODUCE STRUCTURAL ENGINEERS' DRAWINGS. ERECTION AND SHOP DRAWINGS WILL NOT BE REVIEWED IF AN PORTION CONTAINS REPRODUCTIONS OF STRUCTURAL ENGINEERS' DRAWINGS. OF OCCUPANCY OR PROJECT
- J. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PLETION FORM IS ISSUED CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION. THIS OFFICE.

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PROJECT NO. PIN NO.

27999-3605-04

131119

FA

SEPTEMBER





Memphis, TN 38118

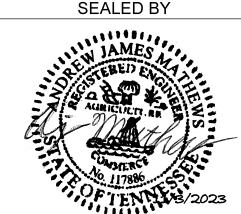
(901) 683-3900

FAX: (901) 683-3990

www.ssr-inc.com

SSR Project #: --

woldae.com phone: 615.370.8500



PLANS AND SPECIFICATIONSTATE OF TENNESSEE QUIRED TO BE KEPT ON THE DEPARTMENT OF RANSPORTATION

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approved set without written pe of this office.

SHEET 14 OF 34

STATEMENT OF SPECIAL INSPECTIONS

THIS STATEMENT OF SPECIAL INSPECTIONS IS SUBMITTED AS REQUIRED FOR BUILDING PERMIT ISSUANCE IN ACCORDANCE WITH THE SPECIAL INSPECTION AND STRUCTURAL TESTING REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE. THIS STATEMENT OF SPECIAL INSPECTIONS IS ONLY FOR THE STRUCTURAL PORTION OF THE WORK. REFER TO OTHER DISCIPLINES FOR OTHER SPECIAL INSPECTION REQUIREMENTS FOR THIS PROJECT.

THE OWNER OR REGISTERED DESIGN PROFESSIONAL IN CHARGE (ARCHITECT) ACTING AS THE OWNERS AGENT SHALL EMPLOY ONE OR MORE AGENCIES APPROVED BY THE BUILDING OFFICIAL TO PERFORM INSPECTION DURING CONSTRUCTION. THESE INSPECTIONS ARE IN ADDITION TO SECTION 110 OF THE IBC. CONTRACTOR IS RESPONSIBLE TO ENSURE THE INSPECTOR IS PRESENT WHERE WORK REQUIRES PERIODIC OR CONTINUOUS INSPECTION.

RESPONSIBILITIES OF THE SPECIAL INSPECTOR

THE INSPECTOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. DISCOVERED DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF SUCH DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING ALL THE REQUIRED SPECIAL INSPECTIONS AND TESTING, AND CORRECTION OF ANY DISCREPANCIES NOTED PREVIOUSLY SHALL BE SUBMITTED TO THE BUILDING OFFICIAL PRIOR TO ISSUANCE OF A CERTIFICATE OF USE AND OCCUPANCY.

FABRICATIONS

SPECIAL INSPECTIONS OF THE FABRICATION PROCESS SHALL NOT BE REQUIRED WHERE FABRICATION OF STRUCTURAL LOAD BEARING MEMBERS AND ASSEMBLIES IS BEING PERFORMED ON THE PREMISES OF A FABRICATOR IS REGISTERED AND APPROVED TO PERFORM THE WORK WITHOUT SPECIAL INSPECTIONS. AT THE COMPLETION OF THE FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL.

THE SPECIAL INSPECTIONS ARE IN ADDITION TO THE MATERIAL TESTING AND INSPECTIONS LISTED IN THE CONTRACT SPECIFICATIONS. CONTRACTOR IS TO COORDINATED SPECIAL INSPECTIONS, MATERIAL SPECIFIC TESTING AND INSPECTIONS WITH THE OWNER FURNISHED SPECIAL INSPECTOR MATERIAL TESTING LABS.

THE SPECIAL INSPECTIONS INDICATED HEREIN DO NOT RELIEVE THE CONTRACTOR FROM THEIR RESPONSIBILITIES. CONTRACTOR SHALL PAY FOR ANY ADDITIONAL TESTING OR INSPECTION REQUIRED FROM WORK OR MATERIALS NOT IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.

THE STATEMENT OF SPECIAL INSPECTIONS INCLUDES REQUIRED VERIFICATION AND INSPECTION OF **THE FOLLOWING SECTIONS**;

1. CONCRETE CONSTRUCTION

2. SOILS

COMPONENTS PART OF THE MAIN WIND FORCE RESISTING SYSTEM AND SUBJECTED TO SPECIAL **INSPECTIONS FOR WIND RESISTANCE:**

COMPONENTS PART OF THE MAIN SEISMIC FORCE RESISTING SYSTEM AND SUBJECTED TO SPECIAL **INSPECTIONS FOR SEISMIC RESISTANCE:**

AISC 360-10: SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS

TABLE N5.6-1	

INSPECTION TASKS PRIOR TO BOLTING	i	
1. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIAL	Х	-
2. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	-	х
3. PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)	-	X
4. PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	-	Х
5. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	-	Х
6. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHOD USED	Х	х
7. PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS	_	Х

AND OTHER FASTENER COMPONENTS		,
TABLE N5.6-2 INSPECTION TASKS DURING BOLTING		
1. FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	-	Х
2. JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	-	Х
3. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	-	Х
4. FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RSCS SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM	-	Х

TABLE N5.6-3 INSPECTION TASKS AFTER BOLTING	
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED	

THE MOST RIGID POINT TOWARD THE FREE EDGES

CONNECTIONS

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT.		х	ACI 318: 3.5, 7.1-7.7	1910.4
2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1705.2.2, ITEM 2B.			AWS D1.4 ACI 318:3.5.2	
3. INSPECTION OF ANCHORS CAST IN CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED.		х	ACI 318:8.1.3, 21.2.8	1908.5, 1909.1
4. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS		Х	ACI 318: 3.8.6, 8.1.3, 21.2.8	1909.1
5. VERIFYING USE OF REQUIRED DESIGN MIX		Х	ACI 318: CH. 4,5.2-5.4	1904.2, 1910.2, 1910.3
6. AT THE TIME OF FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	х		ASTM C172 ASTM C31 ACI 318: 5.6, 5.8	1910.10
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	х		ACI 318: 5.9, 5.10	1910.6, 1910.7, 1910.8
8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.		Х	ACI 318: 5.11-5.13	1910.9
9. INSPECTION OF PRESTRESSED CONCRETE:				
A. APPLICATION OF PRESTRESSING FORCES.	Х			
B. GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC FORCE-RESISTING SYSTEM.	Х		ACI 318: 18.20 ACI 318: 18.18.4	
10. ERECTION OF PRECAST CONCRETE MEMBERS.		х	ACI 318: CH. 16	
11. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.		х	ACI 318: 6.2	
12. INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.		х	ACI 318: 6.1.1	

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.		х
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		Х
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.		Х
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	х	
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		Х

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE
. STRUCTURAL STEEL	•			
SEE AISC 341 AND INSPECTION LIST ATTACHED	х	х	AISC 341	1705.11.1

FURTHER SPECIAL INSPECTIONS RELATED TO EACH DISCIPLINE.

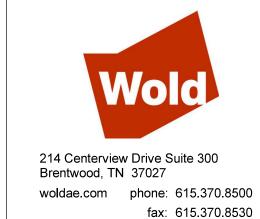
PROJECT NO. 27999-3605-04 PIN NO. 131119

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SEPTEMBER

MANUFAC FRENTON,

COUNTY BUILDING





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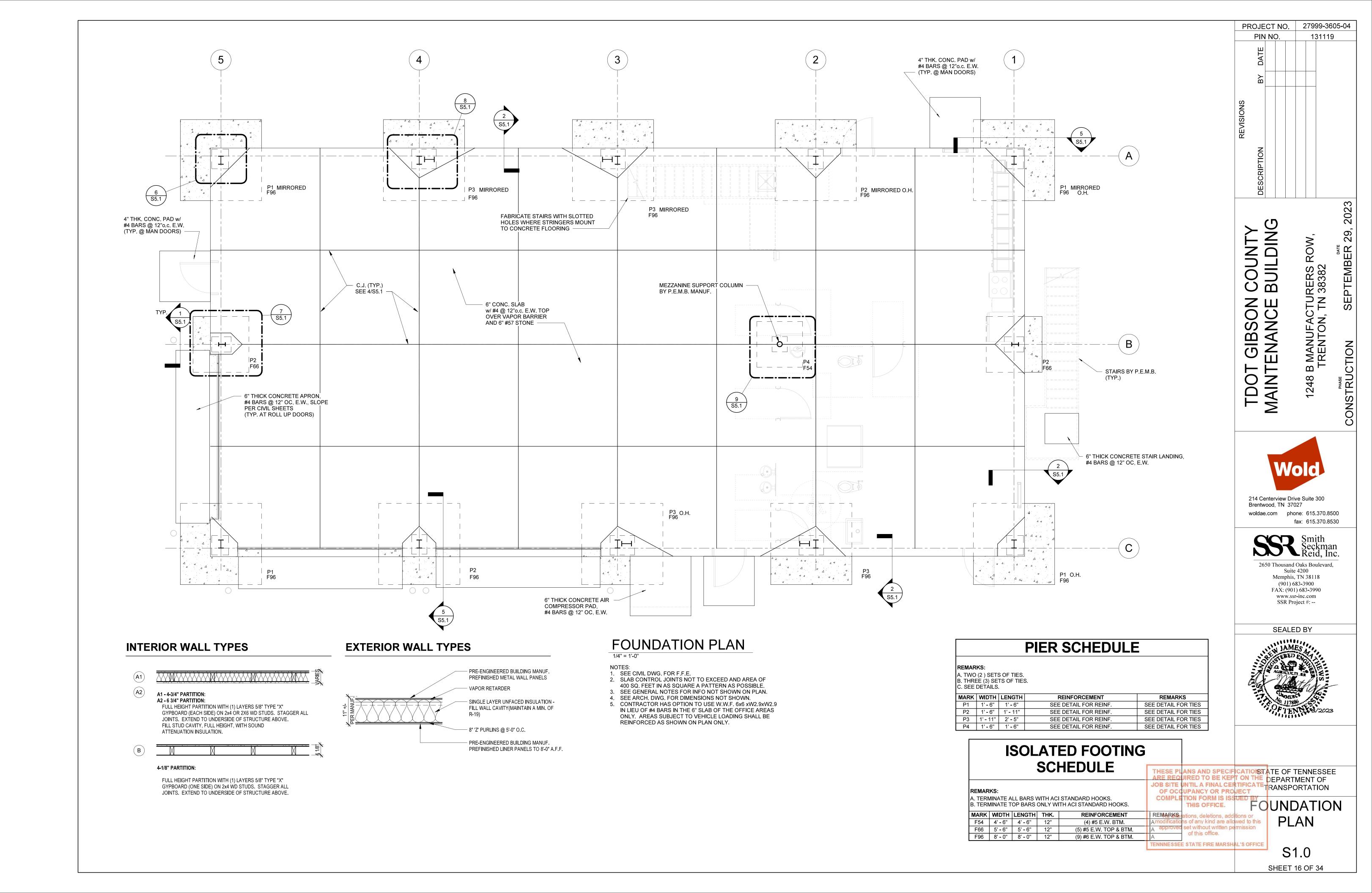
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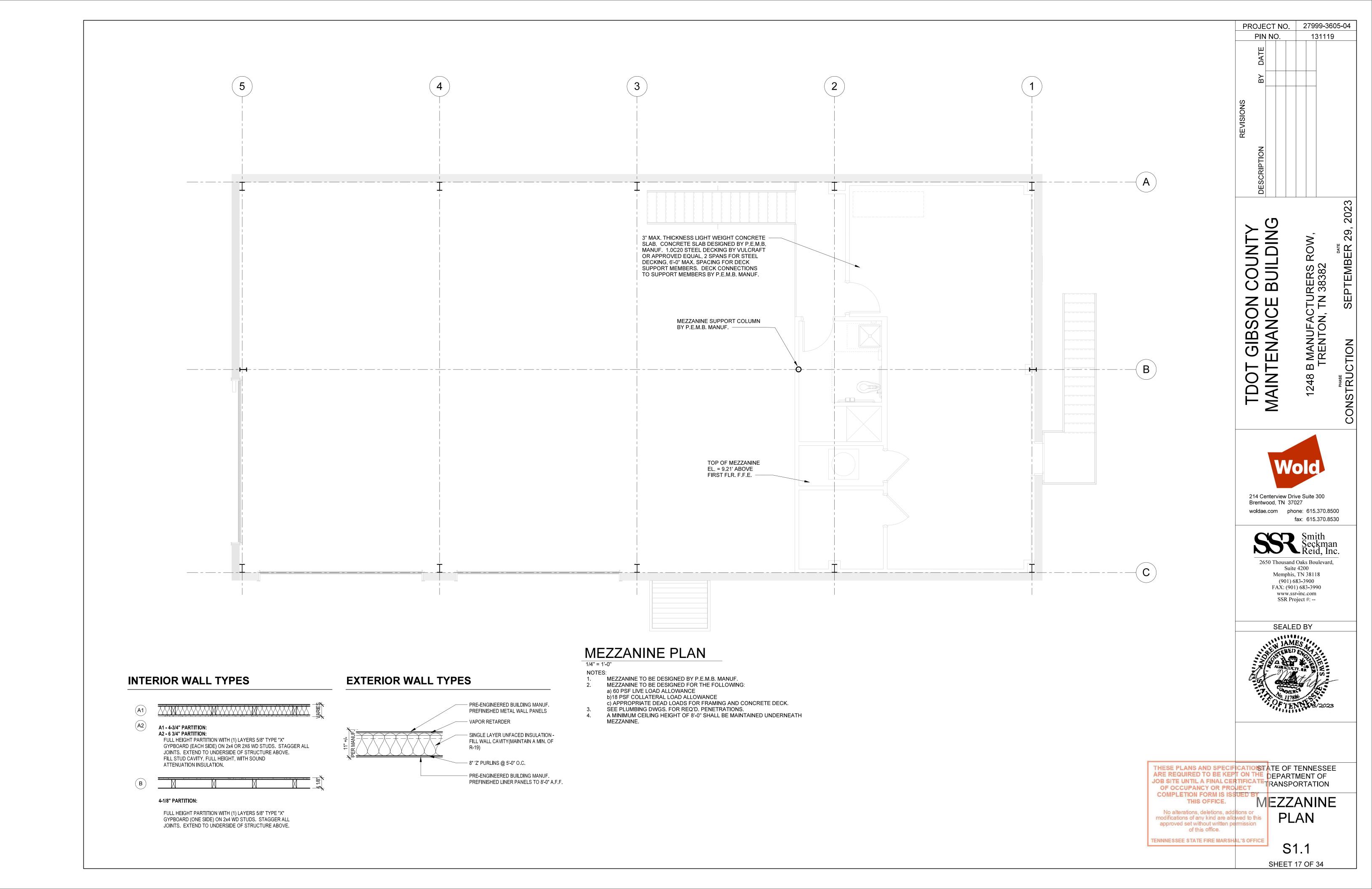
THESE PLANS AND SPECIFICATIONS ATE OF TENNESSEE
ARE REQUIRED TO BE KEPT ON THE DEPARTMENT OF JOB SITE UNTIL A FINAL CERTIFICATE TRANSPORTATION OF OCCUPANCY OR PROJECT COMPLETION FORM IS ISSUED BY THIS OFFICE.

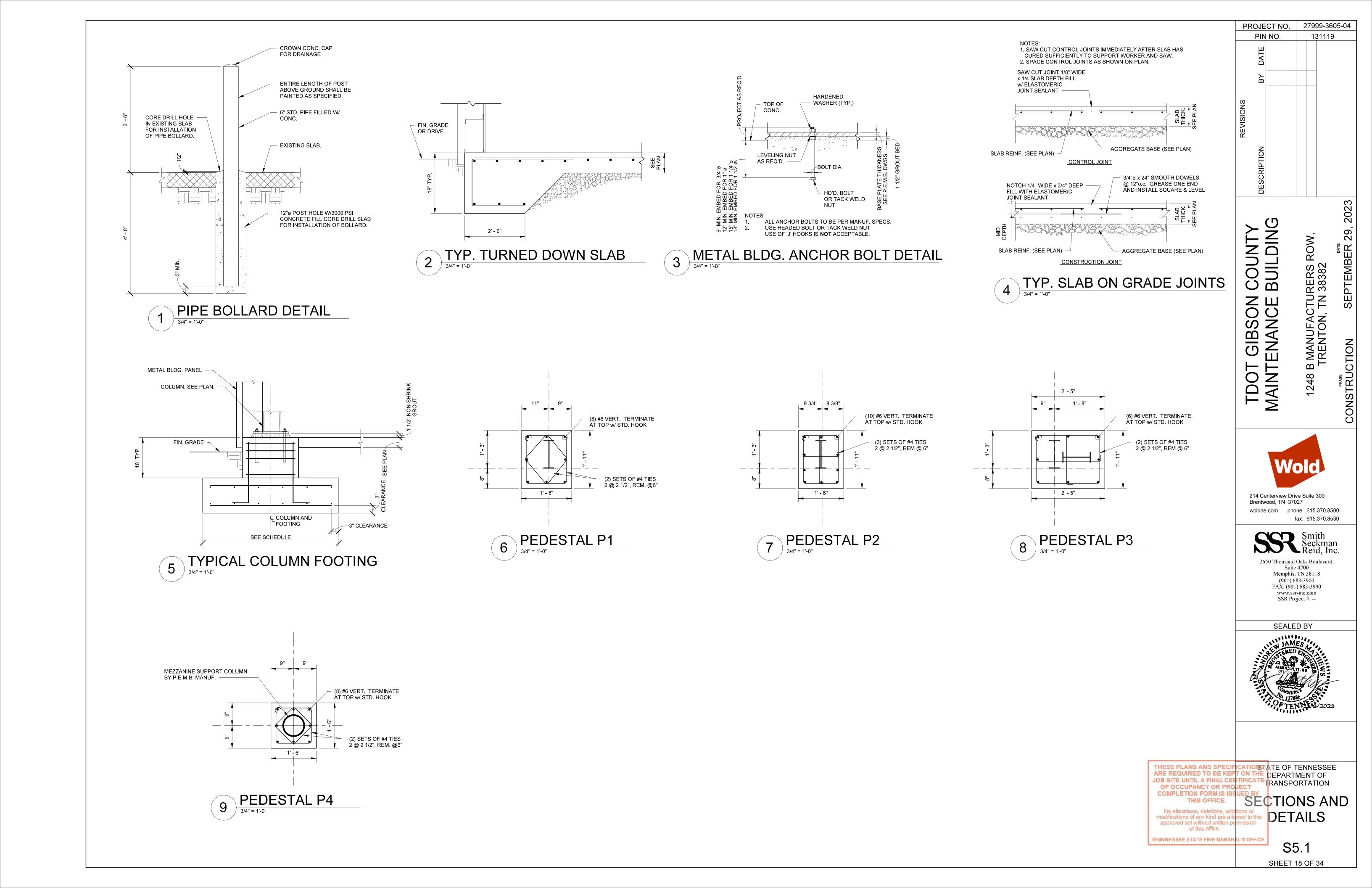
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SPECIAL TENNNESSEE STATE FIRE MARSHAL'S OFFICE

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PART 1 GENERAL

- 1.1 REQUIREMENTS:
 - A. APPLICABLE PROVISION OF GENERAL CONDITIONS OF DIVISION 1, GENERAL REQUIREMENTS, GOVERN ALL WORK SPECIFIED IN THIS SECTION.
- B. REFER TO ARCHITECTURAL DRAWINGS FOR APPLICABLE PROVISIONS OF THE GENERAL CONDITIONS FOR GENERAL REQUIREMENTS THAT GOVERN ALL WORK SPECIFIED IN THIS SECTION.
- C. REFER TO MECHANICAL DRAWINGS FOR GENERAL REQUIREMENTS APPLYING, BUT NOT LIMITED TO THE FOLLOWING:
- 1. ALTERNATES
- INSPECTION OF SITE. 3. VERIFICATION OF UTILITIES AND SERVICES.
- REQUIREMENTS OF REGULATORY AGENCIES.
- DRAWINGS
- SAFETY DEVICES. SHOP DRAWINGS.
- 8. GUARANTEE. 1.2 SCOPE OF WORK INCLUDED:
 - A. MECHANICAL WORK SHALL INCLUDE ALL CONSTRUCTION IN CONNECTION WITH HEATING, VENTILATING AND AIR CONDITIONING AS DESCRIBED HEREAFTER.
 - B. WORK SPECIFIED UNDER THIS SECTION INCLUDES FURNISHING OF AND PAYING FOR ALL MATERIALS, LABOR, EQUIPMENT LICENSES, TAXES, AND OTHER ITEMS REQUIRED FOR EXECUTION AND COMPLETION OF ALL WORK INDICATED.
 - C. EVERYTHING NECESSARY FOR A COMPLETE AND SATISFACTORY INSTALLATION INCLUDING ALL NECESSARY PARTS, DEVICES, ACCESSORIES, ETC., REQUIRED BY CODES OR THAT MAY BE REQUIRED TO SATISFACTORILY COMPLETE THE INSTALLATION OF THE ABOVE ITEMS SHALL BE
- 1.3 RELATED WORK UNDER OTHER DIVISIONS OF THE CONTRACT:
 - A. CONCRETE PADS AND FOUNDATIONS REF. STRUCTURAL B. POWER AND CONTROL WIRING - REF. ELECTRICAL
- 1.4 REFERENCE STANDARDS:
 - A. ALL WORK MUST BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FOLLOWING PERTINENT STANDARDS AND LEGAL CODES AND ORDINANCES:
 - 1. INTERNATIONAL BUILDING CODE AND PUBLICATIONS REFERRED TO THEREIN
 - 2. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
 - 3. STATE, COUNTY, AND LOCAL MECHANICAL, GAS, AND PLUMBING CODES
 - 4. NATIONAL ELECTRICAL CODE (NEC), NFPA 70, 2017 EDITION
 - 5. AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA) 6. AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS, INC. (ASHRAE)
 - 7. AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
 - 8. AMERICAN SOCIETY FOR TESTING AND MATERIAL (ASTM) 9. ASSOCIATED AIR BALANCE COUNCIL (AABC)
 - 10. NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)
 - 11. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
 - 12. CAST IRON PIPE INSTITUTE (CIPI) 13. NATIONAL SANITATION FOUNDATION TESTING LABORATORY (NSF)
 - 14. PLUMBING DRAINAGE INSTITUTE (PDI)
 - 15. FACTORY MUTUAL GLOBAL (FM)
 - 16. STANDARDS AND PERIODICALS LISTINGS, UNDERWRITERS LABORATORIES
 - 17. FOR WORK NOT SPECIFICALLY LISTED ABOVE, USE THE STANDARDS AND CODES OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
- 1.5 INSPECTION OF THE SITE:
 - A. BIDDERS SHALL VISIT THE SITE OF THE WORK BEFORE SUBMITTING BIDS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF ALL WORK TO BE DONE INCLUDING REQUIREMENTS OF LOCAL AUTHORITIES TO MEET WITH THEIR PROCEDURES OR CODES.
- 1.6 VERIFICATION OF UTILITIES AND SERVICES:
- A. IMMEDIATELY UPON COMMENCING CONSTRUCTION, AND PRIOR TO CONSTRUCTION OF ANY PART OF THE FACILITY INVOLVED IN ANY WAY WITH UTILITIES, INVESTIGATE THOROUGHLY THE SIZE, CAPACITY ARRANGEMENT AND LOCATION OF UTILITIES. REPORT ANY DISCREPANCIES OR APPARENT PROBLEM INVOLVING THE PROJECT THAT PERTAIN TO UTILITIES. THIS APPLIES TO PRIVATE AS WELL AS PUBLIC UTILITIES.
- 1.7 REQUIREMENTS OF REGULATORY AGENCIES:
- A. ALL WORK SHALL BE EXECUTED AND INSPECTED IN ACCORDANCE WITH ALL LOCAL OR STATE CODES, LAWS, ORDINANCES, RULES AND REGULATIONS APPLICABLE TO THE PARTICULAR CLASS OF WORK AND SHALL INCLUDE ALL APPLICABLE SERVICE CHARGES, FEES, PERMITS, ROYALTIES, TAXES, AND OTHER SIMILAR COSTS IN CONNECTION THEREWITH. IF THE DRAWINGS OR SPECIFICATIONS ARE AT VARIANCE WITH ABOVE MENTIONED LAWS, RULES AND REGULATIONS, NOTIFY THE ENGINEER IN WRITING SO ANY NECESSARY CHANGES CAN BE PROVIDED PRIOR TO CONTRACT.
- B. IF THE CONTRACTOR PERFORMS ANY WORK KNOWING IT TO BE CONTRARY TO SUCH LAWS. RULES OR REGULATIONS, AND WITHOUT NOTICE AS REQUIRED ABOVE, HE SHALL BEAR COSTS ARISING THEREFROM. THE DRAWINGS AND SPECIFICATIONS TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT THAN CODES, ORDINANCES, OR STATUTES IN EFFECT.
- C. APPLICABLE CODES, ORDINANCE, STANDARDS AND STATUTES TAKE PRECEDENCE WHERE THEY ARE MORE STRINGENT OR CONFLICT WITH THE DRAWINGS AND SPECIFICATIONS.
- 1.8 INSTRUCTION OF OWNER:
- A. WHEN THE SYSTEM IS IN COMPLETE OPERATION, AND PRIOR TO DATE OF FINAL COMPLETION, PROVIDE AN APPROVED QUALIFIED ENGINEER. TECHNICIAN, OR MECHANIC, FOR A PERIOD OF FOUR (4) MAN-HOURS TO INSTRUCT THE OWNER, OR HIS AUTHORIZED PERSONNEL, IN OPERATION AND MAINTENANCE OF ALL SYSTEMS INSTALLED UNDER THIS SECTION OF WORK, OR RELATED WORK UNDER OTHER SECTIONS.
- B. REVIEW OPERATING AND MAINTENANCE MANUAL. IDENTIFY ALL CONTROLS AND ALL LUBRICATION POINTS, DEMONSTRATE START, STOP, AND ADJUSTMENTS OF ALL SYSTEMS AND EQUIPMENT.
- 1.9 DRAWINGS:
- A. IT IS INTENDED THAT ALL PARTS AND COMPONENTS BE LOCATED SYMMETRICALLY WITH ARCHITECTURAL ELEMENTS, AND SHALL BE INSTALLED AT EXACT HEIGHT AND LOCATIONS AS SHOWN ON THE ARCHITECTURAL DRAWINGS.
- B. BE ACQUAINTED WITH ANY AND ALL PECULIARITIES AND LIMITATIONS OF THE SPACES AVAILABLE FOR THE INSTALLATION OF ALL WORK AND MATERIALS FURNISHED AND INSTALLED UNDER THIS SECTION OF THE SPECIFICATIONS. EXERCISE DUE AND PARTICULAR CAUTION TO DETERMINE THAT ALL PARTS OF THE WORK ARE MADE QUICKLY AND EASILY ACCESSIBLE.
- C. ALTHOUGH THE LOCATIONS OF THE EQUIPMENT AND PIPING MAY BE SHOWN ON THE DRAWINGS IN CERTAIN POSITIONS, SHOULD THE CONTRACTOR DISCOVER CONFLICTS OR INTERFERENCES DURING PROGRESS OF THE WORK HE SHALL REPORT ANY DISCREPANCIES OR INTERFERENCES THAT ARE DISCOVERED. FAILURE TO REPORT SUCH DISCREPANCIES AND INTERFERENCES SHALL RESULT IN THE CORRECTING OF THESE ERRORS OR OMISSIONS BY THIS SECTION AT HIS OWN EXPENSE. ALL WORK INSTALLED UNDER THIS SECTION WHICH DEVIATES FROM THE DRAWINGS AND SPECIFICATION WITHOUT PRIOR APPROVAL, SHALL BE ALTERED BY THIS SECTION AT HIS OWN EXPENSE, TO COMPLY WITH THE DRAWINGS AND SPECIFICATIONS AS DIRECTED.
- D. THE DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT REFLECT ALL OFFSETS OR CHANGES OF DIRECTION OR ELEVATION TO COORDINATE WITH THE ACTUAL CONSTRUCTION OF THE PROJECT. CONTRACTOR SHALL COORDINATE WITH THE ACTUAL CONDITIONS PRESENTED DURING CONSTRUCTION TO ENSURE THE INTENT OF THE DESIGN IS MET.
- 1.10 SAFETY DEVICES:
 - A. CONTRACTOR SHALL FURNISH AND INSTALL SAFETY GUARDS FOR ALL DANGEROUS MOVING PARTS SUCH AS BELTS AND PULLEYS, FLEXIBLE SHAFT CONNECTIONS AND THE LIKE, AND SHALL PROVIDE ALL REQUIRED SAFETY CONTROLS TO PREVENT DANGEROUS OR DAMAGING OPERATION OF EQUIPMENT.

- 1.11 SHOP DRAWINGS (SUBMITTALS):
 - A. EQUIPMENT SUBMITTALS:
 - 1. ELECTRONIC COPIES OF SHOP DRAWINGS AND/OR MANUFACTURER'S DESCRIPTIVE DATA IN A PDF FORMAT OF A NATURE TO COMPLETELY IDENTIFY THE EQUALITY OF THE MATERIAL OR EQUIPMENT INTENDED FOR INSTALLATION SHALL BE SUBMITTED FOR APPROVAL BEFORE BEGINNING ANY CONSTRUCTION AND WITHIN THIRTY DAYS AFTER SIGNING CONTRACT. FAILURE TO SUBMIT DATA FOR APPROVAL WITHIN THIRTY DAYS TIME LIMIT WILL BE CONSTRUED AS MEANING EQUIPMENT CALLED FOR BY NAME WILL BE FURNISHED. DATA SHALL BE ORGANIZED IN SAME ORDER AS LISTED BELOW, SHALL BE SUBMITTED ALL IN ONE BROCHURE, INDEXED BY FLYSHEET ON FRONT PAGE, AND BE BOUND IN SETS, ALL SETS IDENTICAL. NO EXCEPTION WILL BE MADE TO THIS PROCEDURE AND TIME SCHEDULE.
 - 2. EACH ITEM SUBMITTED FOR REVIEW SHALL BE MARKED AND HAVE SUBMITTAL DATA PRECEDED BY A TYPEWRITTEN DESCRIPTION (BY CONTRACTOR OR ITEM SUPPLIER) OF THE ITEM. DESCRIPTION TO INCLUDE MAKE AND MODEL NUMBERS AND SHALL DESCRIBE THE ITEM. LIST ALL OPTIONS AND ACCESSORIES WHICH ARE INCLUDED. LIST ANY OPTIONS OR ACCESSORIES SHOWN ON SHOP DRAWINGS WHICH ARE NOT INCLUDED.
 - 3. SUBMIT THE FOLLOWING FOR APPROVAL, REFERRING TO THE VARIOUS SECTIONS OF THIS SPECIFICATION FOR SPECIFIC ITEMS (AS APPLICABLE):
 - a. HEATING EQUIPMENT.
 - b. VENTILATING OR EXHAUST EQUIPMENT.
 - c. DUCT INSULATION. d. DUCT HANGERS.
 - e. AIR DISTRIBUTION EQUIPMENT.

1.12 GUARANTEE:

g VALVES

- A. ALL WORK PERFORMED UNDER THIS DIVISION SHALL BE GUARANTEED TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FROM DATE OF SUBSTANTIAL COMPLETION OF SUCH WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
- B. LATENT DEFECTS ARISING DURING THIS PERIOD SHALL, UPON NOTIFICATION BY THE OWNER, BE PROMPTLY CORRECTED AT NO ADDITIONAL COST TO THE OWNER.

1.13 COORDINATION:

A. COORDINATE ALL WORK WITH THAT OF THE OTHER TRADES ON THE JOB AND ALSO WITH THAT OF THE OWNER, IN ORDER THAT THERE WILL BE NO DELAY IN THE PROPER INSTALLATION AND COMPLETION OF THE WORK. ANY COST FOR EXTRA WORK OR MATERIALS RESULTING FROM LACK OF COORDINATION OF WORK PERFORMED UNDER THIS SECTION SHALL BE BORNE BY THIS SECTION.

1.14 WORKMANSHIP, MATERIALS AND EQUIPMENT:

A. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT AND MECHANICAL APPEARANCE WHEN COMPLETED. ALL MATERIALS SHALL BE OF TYPE, QUALITY, AND OF MINIMUM RATING PRESCRIBED HEREIN OR AS INDICATED ON THE PLANS.

1.15 MANUFACTURER'S RECOMMENDATIONS:

- A. ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER OF SUCH MATERIAL AND EQUIPMENT.
- B. IN THE EVENT OF DISCREPANCY BETWEEN MANUFACTURER'S RECOMMENDATIONS AND ANY REQUIREMENTS OF DRAWINGS OR SPECIFICATIONS, CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER IN ORDER THAT THE MATTER CAN BE CLEARED UP PRIOR TO ANY INSTALLATION OF MATERIALS OR EQUIPMENT.

1.16 PROTECTION OF WORK:

A. PROTECT WORK AT ALL TIMES FROM DANGER BY FREEZING, BREAKAGE, DIRT, FOREIGN MATERIALS ETC., AND REPLACE ALL WORK SO DAMAGED. USE EVERY PRECAUTION TO PROTECT THE WORK OF OTHERS, AND BE RESPONSIBLE FOR ALL DAMAGE TO OTHER WORK CAUSED BY WORK OF, OR THROUGH THE NEGLECT OF WORKMEN UNDER THIS SECTION OF THE SPECIFICATIONS.

1.17 EQUIPMENT/PIPING SUPPORTS:

- A. FURNISH AND ERECT ALL NECESSARY STEEL MEMBERS, FRAMES, CONNECTIONS, ETC., TO SUPPORT EQUIPMENT AND PIPING INSTALLED UNDER THIS SECTION, REGARDLESS OF WHETHER THE DRAWINGS INDICATE SUPPORT DETAILS OR NOT. COORDINATE WITH GENERAL CONTRACTOR TO DETERMINE WHICH SUPPORTS ARE BEING FURNISHED BY OTHER SECTIONS.
- B. PROVIDE CONCRETE PADS, CURBS, ETC. FOR SUPPORT OF EQUIPMENT AND PIPING INSTALLED UNDER THIS SECTION, WHETHER SHOWN ON DRAWINGS OR NOT, EXCEPT WHERE SUPPORTS ARE REQUIRED TO BE FURNISHED AND INSTALLED BY OTHER SECTIONS OF THESE SPECIFICATIONS. COORDINATE RESPONSIBILITY WITH GENERAL CONTRACTOR.
- C. PROVIDE VIBRATION ABSORBING, MOUNTING DEVICES (INCLUDING SEISMIC RESTRAINT) DESIGNED TO PREVENT TRANSMISSION OF VIBRATION AND NOISE TO THE BUILDING STRUCTURE.
- 1.18 PAINTING AND IDENTIFICATION:
 - A. THE FOLLOWING PROTECTIVE PAINTING AND IDENTIFICATION OF EQUIPMENT AND PIPING SHALL BE PROVIDED UNDER THIS DIVISION OF THE WORK, OTHER FINISH PAINTING SHALL BE PROVIDED UNDER THE "PAINTING" DIVISION OF THE SPECIFICATIONS.
 - 1. FABRICATED EQUIPMENT AND ASSEMBLED UNITS SHALL BE FURNISHED WITH FACTORY APPLIED. PROTECTIVE. PRIME COAT PAINT OF FINISHED BAKED ENAMEL AS SPECIFIED HEREINBEFORE. EQUIPMENT SURFACES DAMAGED DURING THE COURSE OF CONSTRUCTION SHALL BE REFINISHED BY THE CONTRACTOR.

1.19 TESTING:

- A. UPON COMPLETION OF WORK, ALL EQUIPMENT SHALL BE CLEANED AND ADJUSTED FOR PROPER OPERATION AND ANY DEFECTS DISCOVERED SHALL BE CORRECTED BEFORE FINAL INSPECTION PRIOR TO ACCEPTANCE.
- B. ALL AIR LEAKS SHALL BE REPAIRED. DUCTWORK SHALL BE TESTED FOR LEAKS BEFORE APPLYING EXTERNAL INSULATION AND BEFORE CONCEALING IN INACCESSIBLE LOCATIONS.
- C. THE ABOVE TESTS SHALL BE MADE IN THE PRESENCE OF THE OWNER OR HIS AUTHORIZED REPRESENTATIVE. THE TEST RESULTS SHALL BE INCLUDED IN THE O&M MANUALS AS PART OF 1.20 ADJUSTMENTS:
 - A. UPON COMPLETION OF THE INSTALLATION OF ALL WORK AND EQUIPMENT, THE CONTRACTOR SHALL START ALL EQUIPMENT AND MAKE ALL NECESSARY ADJUSTMENTS TO PLACE ENTIRE HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS IN A SATISFACTORY CONDITION FOR CONTINUOUS SAFE OPERATION.
 - B. ALL FILTERS SHALL BE REPLACED WITH THE SPECIFIED TYPE AFTER THE PERIOD OF ADJUSTMENT.
 - C. AIR CIRCULATION SYSTEMS SHALL BE ALCOHOL CLEANED, FREE OF ALL DIRT AND DEBRIS AND ADJUSTED TO PROVIDE UNIFORM HEATING AND/OR COOLING OF ALL SPACES SERVED BY EACH SYSTEM. TEST ADJUSTMENTS SHALL BE CONTINUED UNTIL UNIFORM TEMPERATURE WITHIN CONDITIONED AREAS HAS BEEN ATTAINED WITHIN TWO (2) DEGREES FAHRENHEIT FOR ONE (1) DEGREE ABOVE AND BELOW THERMOSTATIC SETTING.
 - D. TEMPERATURE AND SAFETY CONTROLS SHALL BE ADJUSTED AS NECESSARY TO INSURE CONTINUOUS, TROUBLE FREE, SAFE, AND AUTOMATIC OPERATION OF SYSTEMS.

1.21 CONTRACTOR'S TEST AND BALANCE:

- A. TEST AND BALANCE SHALL BE PERFORMED BY FOLLOWING THE PROCEDURES RECOMMENDED BY
- B. AIR FLOWS SHALL BE BALANCED TO PLUS OR MINUS 5 PERCENT OF SPECIFIED QUANTITIES. LIST ALL FANS, COILS, SUPPLY, RETURN, AND EXHAUST OUTLETS. PROVIDE INLET AND OUTLET TEMPERATURES FOR ALL COILS. PROVIDE LOCATION, SPECIFIED AIR QUANTITY, FACE AREA, FACE VELOCITY AND MEASURED AIR QUANTITY FOR ALL COILS AND SUPPLY, RETURN, AND EXHAUST
- C. LIST OUTDOOR DRY BULB AND WET BULB TEMPERATURES, AND DRY BULB TEMPERATURE OF ALL CONDITIONED SPACES.
- D. VERIFICATION OF PERFORMANCE OF EQUIPMENT AND AUTOMATIC TEMPERATURE CONTROLS.
- E. PREPARE AND TURN OVER TO THE OWNER OR ARCHITECT, ELECTRONIC COPIES OF ALL TEST AND BALANCE DATA.

1.22 CLEAN-UP:

A. KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY EMPLOYEES OR WORK UNDER THIS SECTION OF THE SPECIFICATIONS. AT THE COMPLETION OF THE WORK, REMOVE ALL SURPLUS MATERIALS, TOOLS, ETC., AND LEAVE THE PREMISES

1.23 INSTRUCTION OF OWNER:

- A. PROVIDE THE SERVICES OF APPROVED QUALIFIED ENGINEER, TECHNICIAN OR MECHANIC FOR A PERIOD OF 4 HOURS TO INSTRUCT THE OWNER OR HIS AUTHORIZED REPRESENTATIVE, IN ALL PHASES OF OPERATION AND MAINTENANCE OF EACH OF THE MECHANICAL SYSTEMS.
- 1.24 OPERATING AND MAINTENANCE INSTRUCTIONS:
- A. FURNISH AND TURN OVER TO A/E THREE (3) HARD COPIES AND ONE ELECTRONIC COPY OF OPERATION AND MAINTENANCE INSTRUCTIONS, TO INCLUDE:
 - 1. COMPLETE SET OF APPROVED SUBMITTAL DATA ON INSTALLED EQUIPMENT, TO INCLUDE FINAL TEST AND BALANCE REPORT, AS BUILT TEMPERATURE CONTROL DIAGRAMS AND WIRING DIAGRAMS.
- 2. OPERATING INSTRUCTIONS ON ALL EQUIPMENT HAVING MOVING PARTS, TO INCLUDE RECOMMENDED MAINTENANCE AND INSPECTION SCHEDULE.
- 3. PARTS LISTS ON ALL EQUIPMENT, ALONG WITH NAME, ADDRESS, AND TELEPHONE NUMBER OF SOURCE OF PURCHASE OR LOCAL REPRESENTATIVE.
- 4. COPIES OF ALL WARRANTIES OR GUARANTEES.
- 5. COPIES OF INSTALLATION INSTRUCTIONS WHEN FURNISHED WITH EQUIPMENT.
- B. INSTRUCTIONS SHALL BE IN HARD COVER BINDER WITH INDEX. INSERT IN ORDER AS LISTED HEREIN. PROVIDE ELECTRONIC COPY.

PART 2 PRODUCTS

- 2.1 MATERIALS AND EQUIPMENT:
- A. MATERIALS AND/OR EQUIPMENT SPECIFIED HEREIN TO BE OF A CERTAIN MANUFACTURER OR BRAND ARE USED AS A STANDARD AND MATERIALS AND/OR EQUIPMENT OF OTHER MANUFACTURER MAY BE SUBMITTED FOR SUBSTITUTION PROVIDED THAT THEY MEET OR EXCEED QUALITY AND ALL CAPACITIES SPECIFIED AND SPACE REQUIREMENTS SHOWN ON THE DRAWINGS.

2.2 EXHAUST FAN:

- A. FAN SHALL BE ACME MASTER-ETTE, GREENHECK, COOK, PENN, OR APPROVED EQUAL. FAN SHALL HAVE ACOUSTICAL HOUSING, DIRECT CONNECTED CENTRIFUGAL FAN, ANODIZED ALUMINUM FINISH, AND SHALL BE BOTH AMCA AND UL APPROVED. CAPACITIES SHALL BE AS INDICATED ON PLANS.
- B. ACCESSORIES SHALL INCLUDE BACKDRAFT DAMPER
- 2.3 LOW PRESSURE DUCTWORK:
 - A. DUCTWORK SUBJECT TO PRESSURES UP TO 2.0" WATER COLUMN SHALL BE DESIGNATED LOW PRESSURE DUCTWORK AND SHALL BE CONSTRUCTED OF GALVANIZED STEEL ASTM A525-75 GRADE G90, HOT DIP GALVANIZED TO 0.90 OZ. OF ZINC PER SQUARE FOOT OF METAL.
 - B. ALL CONSTRUCTION AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH S M A C N A RECOMMENDATIONS
 - C. ALL DUCT SIZES SHOWN ON DRAWINGS ARE NET INSIDE CLEAR DIMENSIONS MEASURED INSIDE BARE DUCT.
 - D. METAL GAUGE, LONGITUDINAL AND TRANSVERSE JOINTS, SHALL BE FOR 2.0" PLUS OR MINUS STATIC PRESSURE, UNLESS OTHERWISE INDICATED ON DRAWINGS.
 - E. RADIUS ELBOWS SHALL HAVE MINIMUM CENTERLINE RADIUS OF 1.5 X DUCT WIDTH. LARGER ELBOWS SHALL BE VANED PER S.M.A.C.N.A. DETAILS. SQUARE ELBOWS SHALL HAVE FACTORY TURNING VANES, PER S.M.A.C.N.A. DETAILS, BARBER COLEMAN "AIRTURNS", OR EQUIVALENT TITUS.
 - F. TRANSITIONS SHALL BE AS GRADUAL AS POSSIBLE, BUT NOT TO EXCEED 30° PER
 - G. BRANCH DUCT TAKEOFFS FOR RECTANGULAR DUCTS SHALL BE ONE OF THE FOLLOWING:
 - 1. 90° TAKEOFF (STRAIGHT TAP) WITH ADJUSTABLE DEFLECTOR IN TRUNK DUCT, OR FIXED DEFLECTOR WITH MANUAL DAMPER.
 - 2. 45° ELBOW TAP-IN.
 - 3. 90° TAKEOFF WITH 45° ENTRY.
 - H. BRANCH DUCT TAKEOFFS FOR ROUND DUCT SHALL BE MADE WITH ONE OF THE FOLLOWING:
 - 45° TAKEOFF.
 - 2. 90° CONICAL TAP-IN.
 - RECTANGULAR TO ROUND TRANSITION BOOT, 45° ENTRY.
 - I. ALL BRANCH TAKEOFFS SHALL HAVE MANUAL DAMPER WITH QUADRANT.

J. FINAL CONNECTIONS FROM DUCTS TO CEILING DIFFUSERS MAY BE MADE WITH

FLEXIBLE INSULATED DUCT NOT TO EXCEED 3'-6" IN LENGTH. 2.4 >OMITTED<

- 2.5 DIFFUSERS, GRILLES AND REGISTERS:
 - A. CEILING SUPPLY AND RETURN DIFFUSERS SHALL BE SIZED FOR A MAXIMUM STATIC PRESSURE DROP OF 0.05 INCHES W.G., AND MAXIMUM NOISE LEVEL OF NC=30. SELECTION FOR THROW TO NEAREST WALL SHALL PROVIDE A DOWNWARD AIR MOVEMENT AT WALL OF 50 FPM.
 - B. ALL CEILING DIFFUSERS SHALL HAVE VOLUME CONTROL DAMPER OPERABLE FROM THE FACE OF THE DIFFUSER. DIFFUSERS AND GRILLES SHALL BE AS INDICATED ON

 - C. UNLESS OTHERWISE NOTED ON DRAWINGS AIR DISTRIBUTION CONSTRUCTION AND FINISHES SHALL BE AS FOLLOWS:
 - 1. CEILING DIFFUSERS STEEL CONSTRUCTION BAKED WHITE ENAMEL FINISH.
 - 2. GRILLES AND REGISTERS
 - CEILING- STEEL OR ALUMINUM CONSTRUCTION BAKED WHITE ENAMEL FINISH.
- D. CEILING DIFFUSERS, SUPPLY AND RETURN, SHALL HAVE REMOVABLE FACE PLATE AND FRAMES SELECTED FOR THE CEILING CONSTRUCTION IN WHICH INSTALLED (T-BAR, SPLINE, ETC.). 2.6 DAMPERS:
- A. MANUAL VOLUME DAMPERS SHALL BE INSTALLED IN EACH BRANCH DUCT, AND WHERE INDICATED.
 - B. DAMPER CONSTRUCTION SHALL BE PER FIGURE 2-14 AND 2-L5 OF SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", FIRST EDITION. MARK END OF SHAFT PARALLEL TO BLADE AND PROVIDE LOCKING QUADRANT.
- C. PROVIDE STAND-OFF ASSEMBLY FOR ALL DAMPERS INSTALLED ON INSULATED DUCT.

2.8 HANGERS AND SUPPORTS:

- A. PIPING SHALL BE HUNG FROM STRUCTURE BY ADJUSTABLE HANGERS, PER ANSI/MSS STANDARD SP-58, SP-69 AND SP-89, SPACED AS NOTED WITH ADDITIONAL SUPPORT FOR VALVES AND SPECIALTIES, OR AT JOINTS SO ADJUSTMENTS FOR PITCH CAN BE MADE AFTER INSTALLATION. REFERENCES ARE TO GRINNELL FIGURE NUMBERS. COMPARABLE PRODUCTS OF F & S, ELCEN, MICHIGAN, OR B-LINE ARE ACCEPTABLE.
- FERROUS PIPE (HORIZONTAL).

2. COPPER TUBING (HORIZONTAL)

- a. 2 INCH AND SMALLER GRINNELL FIG. 104 ADJUSTABLE SPLIT RINGS.
- b. OVER 2 INCH GRINNELL FIG. 260 STEEL CLEVIS.
- c. WHERE PIPES ARE GROUPED, USE OF "UNISTRUT" RACKS AND BRACKETS WILL BE PERMISSIBLE.
- a. 1/2 INCH TO 6 INCH SIZE GRINNELL FIG. 260 WITH FIG 81 INSULATION PROTECTORS, LENGTH AND GAUGE AS RECOMMENDED BY MANUFACTURER.
- 3. VERTICAL PIPING (ALONG WALLS) a. STEEL: 1 INCH AND SMALLER - ANCHOR MIDWAY BETWEEN FLOOR AND CEILING
- b. COPPER TUBING: 1 INCH AND SMALLER ANCHOR MIDWAY BETWEEN FLOOR AND CEILING WITH GRINNELL FIG. CT-138R SPLIT RING EXTENSION HANGER.
- B. ROD SUSPENSION-SUSPEND HANGER RODS FROM SUPPORTS AS LISTED HEREIN. FIGURE NUMBERS USED REFER TO GRINNELL CATALOGS, COMPARABLE PRODUCTS OF F & S, ELCEN, MICHIGAN OR B-LINE ARE ACCEPTABLE. WIRE FASTENINGS SHALL NOT BE
- 1. STEEL BEAMS: FIG. 217, 218, 225 OR 227 BEAM CLAMPS

WITH GRINNELL FIG. 103 STEEL OFFSET PIPE CLAMPS.

- 2. STEEL JOISTS: FIG. 64 CLAMP FASTEN TO TOP CHORD OF BAR JOIST WITH THREADED ROD AND HANGER WHEN PIPES PASS THROUGH BAR JOISTS. WHEN PARALLEL TO JOISTS PROVIDE AN ANGLE WELDED TO ADJACENT JOISTS FOR FASTENING OR HANGER ROD.
- 3. PIPE ALONG WALLS: FIG. 194 OR 195 WELDED STEEL BRACKETS, DEPENDENT ON

2.9 INSULATION:

pipe insulation.

- A. PIPE AND EQUIPMENT INSULATION 1. Materials for Pipe and Equipment: Provide factory premolded insulation for pipe, pipe fittings, and valves. Fitting insulation shall be the same thickness and material as adjoining
- 2. Flexible Tubular Elastomeric: A. Provide fire-retardant closed-cell slip-on flexible type; minimum "R" value of 2.57 B. Acceptable manufacturers: Aeroflex "Aerocel", Armacell "AP/Armaflex", or K-Flex
- C. Use on the following services: b. Refrigerant lines: 1-1/2" thick (2 layers of 3/4" thick).
- B. INSTALLATION OF PIPE AND EQUIPMENT COVERING A. Finish for all piping exposed-to-the-weather shall be Childers, or equal, .016 inch thick aluminum jacket on piping and Ell jacs, or equal, pre-formed aluminum covering on fittings. B. Apply flexible tubular elastomeric insulation to pipe and fittings with all joints tightly fitted
- C. SMOKE AND FLAME RATING:

and sealed with adhesive.

"Insul-Tube".

1. ALL INSULATION SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATING AS TESTED BY PROCEDURES ASTM E-84, NFPA 255, AND WL 723 NOT EXCEEDING FLAME SPREAD 25 AND SMOKE DEVELOPED 50.

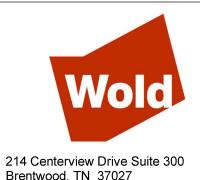
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SHEET 19 OF 34

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TENNNESSEE STATE FIRE MARSHAL'S OFFICE

ARE REQUIRED TO BE KEPT ON THE DEPARTMENT OF JOB SITE UNTIL A FINAL CERTIFICATE TRANSPORTATION OF OCCUPANCY OR PROJECT COMPLETION FORM IS ISSUED

PART 3 EXECUTION

- 3.1 GENERAL REQUIREMENTS:
 - A. REFER TO PART 1 GENERAL FOR:
 - 1. COORDINATION
 - 2. WORKMANSHIP, MATERIALS AND EQUIPMENT
 - 3. MANUFACTURER'S RECOMMENDATIONS 4. PROTECTION OF WORK
 - 5. UTILITY CONNECTIONS
 - 6. PATCHING
 - 7. PAINTING IDENTIFICATION 8. ADJUSTMENTS
 - 9. CONTRACTORS TEST AND BALANCE
 - 10. CLEAN-UP

3.2 LOW VELOCITY DUCTWORK:

- A. FOLLOW RECOMMENDATION OF ASHRAE "HANDBOOK", SMACNA "LOW PRESSURE DUCT CONSTRUCTION METHODS", AND THE DRAWINGS.
- B. UNLESS INDICATED OTHERWISE ON DRAWINGS ALL LOW PRESSURE DUCTWORK FOR 2" W.C.
- C. SEAL ALL JOINTS BY DIPPING IN HARD CAST TAPE DT-5400 IN HARD CAST ACTIVATOR RTA 50 AND THEN WRAPPING AROUND AND OVER THE JOINTS.
- D. TRANSVERSE JOINT SYSTEMS MANUFACTURED BY DUCTMATE OR EQUAL ARE ACCEPTABLE.
- E. IN GENERAL, VERTICAL RISERS AND OTHER DUCT RUNS WHERE THE METHOD OF SUPPORT SPECIFIED ABOVE IS NOT APPLICABLE SHALL BE SUPPORTED BY SUBSTANTIAL ANGLE BRACKETS DESIGNED TO MEET FIELD CONDITIONS AND INSTALLED TO ALLOW FOR DUCT EXPANSION.
- F. WHERE DUCTS PASS THROUGH WALLS, FLOORS OR PARTITIONS, THE EDGES SHALL BE PACKED WITH MINERAL FIBER OR OTHER NON-COMBUSTIBLE MATERIAL. AFTER HOLE IS FILLED, PROVIDE SHEET METAL COLLAR AROUND THE DUCT TO COVER THE ROUGH OPENING.
- G. VOLUME DAMPERS SHALL BE INSTALLED WHERE BRANCHES TAKE-OFF FROM MAIN TRUNK DUCTWORK, WHERE DUCTS DIVIDE, OR WHERE SHOWN ON THE PLANS.
- H. PROVIDE FLEXIBLE CONNECTIONS AT ALL CONNECTIONS BETWEEN DUCTS AND FANS OR CASINGS.
- I. DAMPERS: PROVIDE ACCESSIBLE VOLUME DAMPERS IN BRANCH DUCTS, CONNECTIONS TO GRILLES, AND OTHER PLACES WHERE NECESSARY TO BALANCE THE AIRFLOW, WHETHER SHOWN
- J. FIRE STOPPING SHALL BE PROVIDED AT ALL DUCT PENETRATIONS OF FIRE RATED WALLS, PARTITIONS, FLOORS, ROOFS, OR OTHER RATED BUILDING ASSEMBLIES. PROVIDE GROUT TO FILL OPENINGS IN HOLLOW MASONRY AROUND WALL OPENINGS. PROVIDE SHEET METAL SLEEVE AT OTHER HOLLOW WALL OR PARTITIONS. PACK OPENING BETWEEN DUCT AND SLEEVE OR OPENING ON ALL SIDES WITH FIREPROOF MINERAL WOOL AND CAULK EACH SIDE WITH NON-COMBUSTIBLE CALKING COMPOUND.

3.3 REGISTERS AND DIFFUSERS:

A. CEILING DIFFUSERS SHALL BE INSTALLED IN MANNER RECOMMENDED FOR THE TYPE CEILING IN WHICH INSTALLED. ALL SHALL BE CENTERED GEOMETRICALLY IN CEILING ELEMENTS WITH SIDES PARALLEL TO WALLS AND PARTITIONS. PROVIDE SUPPORTS ABOVE CEILING WHERE REQUIRED TO SUPPORT OUTLET WEIGHT AND TO PULL SURFACE FLANGES FLUSH TO CEILING. INSULATE TOPS OF DIFFUSERS AND REGISTERS ABOVE CEILING IN NON PLENUM RETURN CEILING SPACES.

3.4 >OMITTED<

3.6 SLEEVES:

- A. PIPES PASSING THROUGH WALLS, PARTITIONS, FLOORS OR ROOFS SHALL BE PROTECTED BY STEEL SLEEVES THROUGH FULL THICKNESS OF CONSTRUCTION. ALLOW 1/2 INCH CLEARANCE AROUND PIPE OR COVERING AND TERMINATE FLUSH WITH FINISH SURFACE EXCEPT IN ROOMS CONTAINING FLOOR DRAINS OR IN WATERPROOFED FLOORS. SLEEVES IN FLOORS WITH DRAINS SHALL TERMINATE 1-1/2 INCHES ABOVE THE FLOOR. SLEEVES IN WATERPROOFED SLABS SHALL EXTEND SUFFICIENTLY SO WATERPROOFING CAN BE FLASHED AROUND THE SLEEVE.
- B. SLEEVES IN NON-BEARING PARTITIONS, OR NON-LOAD BEARING WALLS MAY BE 22 GAUGE SHEET STEEL OR HOLE-OUTS. IN BEARING WALLS, WATERPROOFED FLOORS, OR ROOFS, THEY SHALL BE SCHEDULE 40 STEEL PIPE WITH FINISHED ENDS.
- C. CAULK SLEEVES IN FLOOR WITH FIREPROOF MINERAL WOOL AND SEAL ENDS WITH FIREPROOF CALKING COMPOUND TO SEAL SPACE BETWEEN PIPE OR COVERING, AND THE SLEEVE. SLEEVES IN ROOF SHALL BE FLASHED AND MADE WATERTIGHT. PACK SLEEVES PASSING THROUGH FIRE WALLS OR FIRE RATED FLOORS WITH FIREPROOF MINERAL WOOL AND SEAL ENDS WITH NON-HARDENING FIREPROOF CALKING COMPOUND.
- D SLEEVES SHALL BE INSTALLED AND SECURELY FASTENED IN THEIR PROPER POSITION BY EACH SPECIALTY CONTRACTOR FOR HIS OWN WORK. WHO SHALL BE RESPONSIBLE FOR FINAL LOCATION.

3.7 ESCUTCHEONS:

A. PROVIDE CHROME PLATED METAL ESCUTCHEONS WITH FASTENING DEVICES ON ALL PIPES PASSING THROUGH FINISHED WALL SURFACES AND FINISHED CEILING SURFACES. PROVIDE WITH SET SCREWS. SPACES WHICH ARE PAINTED, PANELED OR HAVING OTHER DECORATIVE WALL FINISH SHALL BE CONSIDERED "FINISHED ROOMS".

3.8 UNIONS:

A. UNIONS BETWEEN PIPING OF DIFFERENT MATERIALS SHALL BE PROVIDED WITH DIELECTRIC UNIONS OR FLANGES.

3.9VALVES:

- A. SHUTOFF VALVES SHALL ALSO BE INSTALLED IN BRANCH LINES TO RISERS DROPPING IN WALLS, PARTITIONS, OR CHASES. VALVES SHALL HAVE PAD LOCK FEATURE
- B. ALL VALVES DESIGNED FOR SOLDERING SHALL BE PROTECTED FROM HEAT AS RECOMMENDED BY MANUFACTURER TO PROTECT SEALS.

3.10 PIPE IDENTIFICATION:

A. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION AND SECURING LABELS AND FLOW ARROWS TO PIPING.

3.11 HANGERS AND SUPPORTS

- A. FURNISH ALL MATERIALS REQUIRED FOR THE PROPER SUPPORT OF EQUIPMENT AND PIPING INSTALLED HEREIN. EACH HANGER SHALL BE SUITABLE TO MEET THE STRUCTURAL, TEMPERATURE, PIPE MATERIAL AND EXPANSION CONDITIONS ENCOUNTERED. SELECTION AND APPLICATION SHALL BE IN ACCORDANCE WITH ANSI/MSS SP-69.
- B. CLAMPS, INSERTS, BOLTS, CHANNEL AND ANGLE IRON, RACKS, ROLLERS, ETC., SHALL BE FURNISHED FOR PIPING AND EQUIPMENT SUPPORTS AS REQUIRED. ALL HANGER AND SUPPORT COMPONENTS SHALL BE ADEQUATE FOR THE LOADS INVOLVED.
- C. VERTICAL PIPING SHALL BE SUPPORTED WITH RISER CLAMPS OR OTHER SATISFACTORY MEANS AS DICTATED BY THE PARTICULAR SITUATION AND AS RECOMMENDED BY THE HANGER MANUFACTURER. SPECIAL SITUATIONS SHALL BE TAKEN CARE OF AS DICTATED BY GOOD PRACTICE. BASE OF EACH STACK SHALL BE SUPPORTED WITH CONCRETE BASE SUPPORT.
- D. EQUIPMENT SHALL BE SUPPORTED ADEQUATELY WITH ALL BRACING, FOUNDATIONS, ANGLES, CHANNELS, HANGERS, ETC.
- E. SPECIALLY DESIGNED HANGERS SHALL BE FABRICATED AND INSTALLED PER ANSI/MSS SP-89.

3.12 EXPANSION AND CONTRACTION:

A. ALL PIPING SHALL BE INSTALLED SO AS TO BE FREE FROM STRESS, STRAINS AND DISTORTIONS BY EXPANSION OR CONTRACTION. EXPANSION AND CONTRACTION SHALL BE TAKEN UP BY OFFSETS IN PIPING WITH REQUIRED ANCHORS, EXPANSION LOOPS AND JOINTS, ETC., ALL TO MEET WITH GOOD ACCEPTED PRACTICES, WHETHER SPECIFICALLY INDICATED OR NOT. INSTALL ANCHORS OF SUITABLE DESIGN AND ADEQUATE STRENGTH FOR GUIDANCE OF PIPING SUBJECTED TO EXPANSION AND CONTRACTION DUE TO TEMPERATURE CHANGES. ANCHORS SHALL BE SECURELY ATTACHED TO THE BUILDING FRAME.

3.13 HANGER LOCATIONS:

A. HANGER LOCATIONS FOR GENERAL SERVICE STEEL AND COPPER PIPING SHALL NOT EXCEED A DISTANCE OF 2 FEET 6 INCH FROM A POINT OF CHANGE IN PIPING DIRECTION AND SHALL BE SPACED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

1. INSULATED PIPE WITH VAPOR JACKET:

SIZE STEEL F	<u>PIPE</u> <u>COPPER F</u>	기PE
1" AND SMALLER 10 1-1/4" TO 2-1/2" 10 3" AND LARGER 10	8	

2. UNINSULATED PIPE

	STEEL	PIPE	COPPE	R PIPE
PIPE	WATER	VAPOR	WATER	VAPOR
SIZE	<u>SERVICE</u>	<u>SERVICE</u>	<u>SERVICE</u>	<u>SERVICE</u>
1/2" AND SMALLER	7	8	5	6
3/4"	7	9	5	7
1"	7	9	6	8
1-1/4"	7	9	7	9
1-1/2"	9	12	8	10
2"	10	13	8	11
2-1/2"	11	14	9	13
3"	12	15	10	14
4"	14	17	12	16
6" AND LARGER	17	21	14	20

ADDITIONAL SUPPORTS SHALL BE PROVIDED AT ALL CHANGES OF DIRECTION AND FOR CONCENTRATED LOADS SUCH AS VALVES.

B. HANGERS SHALL BE SUSPENDED FROM MILD STEEL RODS SIZED IN ACCORDANCE WITH THE **FOLLOWING TABLE:**

PIPE SIZE (INCHES)	ROD DIAMETER (INCHE
2 OR SMALLER 2-1/2 TO 3	3/8 1/2
4 TO 5	5/8
6 AND LARGER	3/4

3.14 AS-BUILT DRAWINGS:

A. MAKE ALL NECESSARY MEASUREMENTS OF THE ACTUAL INSTALLED LOCATIONS OF THE INSTALLED SYSTEMS AND COMPONENTS AS THE WORK PROGRESSES AND KEEP ACCURATE RECORDS OF THESE FIELD MEASUREMENTS, SHOW LOCATIONS BY DIMENSION FROM PERMANENT, READILY IDENTIFIABLE REFERENCE POINTS SUCH AS BUILDING WALLS, COLUMNS, ETC., UPON COMPLETION OF THE PROJECT, DELIVER TO THE OWNER MARKED TRACINGS SHOWING THE ACTUAL INSTALLED LOCATIONS, DEPTHS AND SIZES OF ALL INSTALLED COMPONENTS.

MECHANICAL GENERAL NOTES

- A. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE PROJECT SCOPE, UTILITY CONNECTIONS, AND ALL BUILDING SERVICES.
- B. STANDARD DETAILS ILLUSTRATED ON THE DRAWINGS SHALL BE APPLIED IN ALL CASES WHERE THE FEATURE OCCURS IN THE SYSTEM DESIGN.
- C. MAJOR EQUIPMENT SHOWN ON THE PLANS AND ELEVATIONS ILLUSTRATE THE GENERAL ARRANGEMENT AND SPACE ALLOCATIONS. THE CONTRACTOR SHALL VERIFY THE SPACE REQUIREMENTS FOR EACH SYSTEM COMPONENT USING MANUFACTURER CERTIFIED SHOP DRAWINGS AND MAKE THE NECESSARY ADJUSTMENTS IN EQUIPMENT PLACEMENT AND CONNECTION IN ORDER TO ACCOMMODATE THE EXACT EQUIPMENT TO BE INSTALLED.
- D. SUPPORTS, ANCHOR BOLTS, AND HANGERS FOR ALL EQUIPMENT SPECIFIED IN DIVISION 23 SHALL CONFORM TO THE SPECIFICATIONS. MISCELLANEOUS STEEL BRACING SUPPORTS AND REINFORCING STEEL NEEDED TO SUPPORT EQUIPMENT SPECIFIED IN DIVISION 23 SHALL BE PART OF THE SCOPE OF WORK OF DIVISION 23.
- E. DUCTWORK AND PIPING 4" AND LARGER ROUTED PARALLEL TO A RATED WALL SHALL BE INSTALLED WITH A MINIMUM 6" CLEARANCE TO ALLOW FOR INSPECTION OF WALL PENETRATIONS.
- F. DUCTWORK STORED ON-SITE AWAITING INSTALLATION SHALL REMAIN PROPERLY SEALED AND PROTECTED. OPEN ENDS OF DUCTWORK SHALL BE CAPPED AND SEALED AFTER INSTALLATION.
- G. DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING EXACT ROUTING OF ALL SERVICES WITH EXISTING CONDITIONS AND WITH ALL OTHER TRADES. REFER TO SPECIFICATIONS FOR COORDINATION DRAWING
- H. OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 10 FEET AWAY FROM PLUMBING VENTS, EXHAUST VENTS, AND OTHER SOURCES OF NOXIOUS FUMES AND/OR ODORS. INTAKES SHALL BE A MINIMUM OF 36" ABOVE FINISHED ROOF AND 72" ABOVE FINISHED GRADE.
- EQUIPMENT CALLED FOR BY NAME AND MODEL NUMBER FORMS THE STANDARD FOR SELECTION. EQUIPMENT MEETING OR EXCEEDING THAT SPECIFIED MAY BE SUBMITTED FOR APPROVAL.

MECHANICAL LEGEND DUCTWORK SYMBOL / ABBREVIATION SYMBOL / ABBREVIATION DESCRIPTION DESCRIPTION 12"X12" FACE 24"X24" FACE RECTANGULAR RETURN / EXHAUST SUPPLY DIFFUSER AND AIR QUANTITY. BLANK OUTS INDICATE THROW IN THIS DIRECTION. (X DENOTES TYPE. SEE NOTE 1 OF AIR \boxtimes RECTANGULAR RETURN / EXHAUST DISTRIBUTION DEVICE SCHEDULE) DUCT - DOWN RETURN GRILLE AND AIR QUANTITY RX (X DENOTES TYPE) EXHAUST GRILLE AND AIR QUANTITY MANUAL VOLUME DAMPER EX (X DENOTES TYPE) CFM AIRFLOW TRANSFER RATE AT DOOR TRANSITION ΑD ACCESS DOOR **RADIUS ELBOW** AFF ABOVE FINISHED FLOOR BOD **BOTTOM OF DUCT** BOP **BOTTOM OF PIPE** SQUARE THROAT ELBOW WITH TURNING CS COLD DECK SUPPLY **DIRECT DIGITAL CONTROL** DDC BRANCH DUCT CONNECTION MVD MANUAL VOLUME DAMPER RECTANGULAR OR ROUND BRANCH. RECTANGULAR TRUNK. MVD REQUIRED OA **OUTSIDE AIR** TO AIR DEVICES RA **RETURN AIR** RISE/DROP IN ELEVATION SA SUPPLY AIR R/D R/D SCREENED OPENING SO **BRANCH DUCT CONNECTION CONICAL** TEE AND TAP ROUND TRUNK. SIDEWALL REGISTER BRANCH DUCT CONNECTION SIDEWALL GRILLE SWG BEVELED TEE. ROUND TRUNK. **UNLESS NOTED OTHERWISE** MVD REQUIRED TO AIR DEVICES. UNO WALL MOUNTED CONTROL DEVICES THERMOSTAT OR TEMP SENSOR

System No. W-L-5096 F Ratings - 1 and 2 Hr (See Item 1 and 3) T Ratings - 0,1/2 and 1 Hr (See Items 1, 3 and 4)

1. Wall Assembly The 1 or 2 hr fire rated wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features: A. Studs Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.

thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the Fire Resistance Directory. Max dia. of openings is 14-1/2 in. for wood stud walls. Max dia. of opening is 18 in. for steel studs walls. The hourly F and T Ratings of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

B. **Gypsum Board*** Nom 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type,

- 2. Steel Sleeve (Optional) Max 18 in. dia. Schedule 40 (or heavier) steel pipe sleeve inserted in nom 18 in. dia. circular opening core drilled through wall. Length of steel sleeve to be equal to thickness of wall.
- 3. Through Penetrant One metallic pipe or tubing installed concentrically or eccentrically within the firestop system. Pipe or tube to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tube may be used:
- A. Steel Pipe Nom 12 in. dia. (or smaller) Schedule 40 (or heavier) steel pipe. When steel pipe is used, T Rating is 1/2 hr.
- B. Copper Tube Nom 6 in. dia. (or smaller) Type L (or heavier) copper tube. When copper tube is used, T Rating is 1/2 hr and 1 hr when installed in 1 and 2 hr rated walls,
- C. Copper Pipe Nom 6 in. dia. (or smaller) Regular (or heavier) copper pipe. When copper pipe is used, T Rating is 1/2 and 1 hr when installed in 1 and 2 hr rated walls

4. Pipe Covering* Max. 2 in. thick hollow cylindrical heavy density (min 3.5 pcf) glass fiber units, jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied SSL tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. When pipe covering thickness is less than 2 in., T Rating is 0 hr.

See Pipe and Equipment Covering-Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used. The annular space of the firestop system is dependent on the type and size of the through penetrant as shown in the table below:

Through Penetrant		Annular Space	
Туре	Max. dia. In.	Min In.	Max In.
A	12	0	1/2
B or C	6	0	1-7/8

5. Fill, Void or Cavity Material*-Sealant Min 5/8 in. or thickness of fill material applied within annulus, flush with both surfaces of wall assembly for At point contact an additional 1/2 in. bead of sealant shall be applied to the insulated pipe/ wall interface.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- FS-ONE Sealant THESE PLANS AND SPECIFICATIONSTATE OF TENNESSEE *Bearing the UL Classification Mark

ARE REQUIRED TO BE KEPT ON THE DEPARTMENT OF JOB SITE UNTIL A FINAL CERTIFICATE TRANSPORTATION OF OCCUPANCY OR PROJECT COMPLETION FORM IS ISSUE THIS OFFICE.

No alterations, deletions, approved set without writte of this office 6

TENNNESSEE STATE FIRE MARSHAL'S OFFICE

MECHANICAL

M0.2**SHEET 20 OF 34**

INSULATED METAL PIPE THROUGH SLEEVE IN 1-HR OR 2-HR WALL

SECTION A-A

PROJECT NO. 27999-3605-04 PIN NO. 131119

Y N \Box 00 FA SZ Z Z Z Z $\geq \alpha$ MAINT

 \Box

SEPTEMBER

(NOT ALL SYMBOLS MAY BE USED

214 Centerview Drive Suite 300

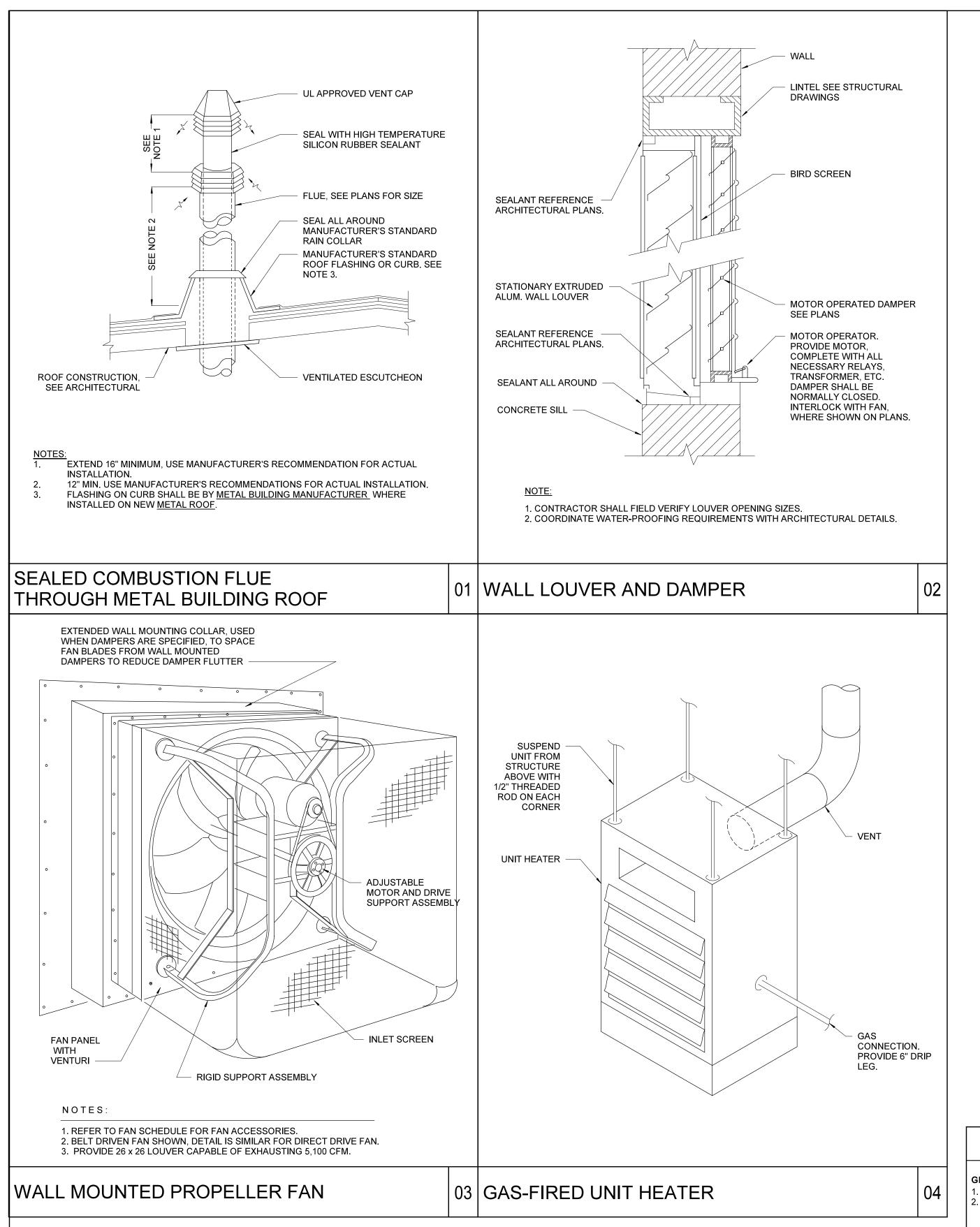
woldae.com phone: 615.370.8500 fax: 615.370.8530

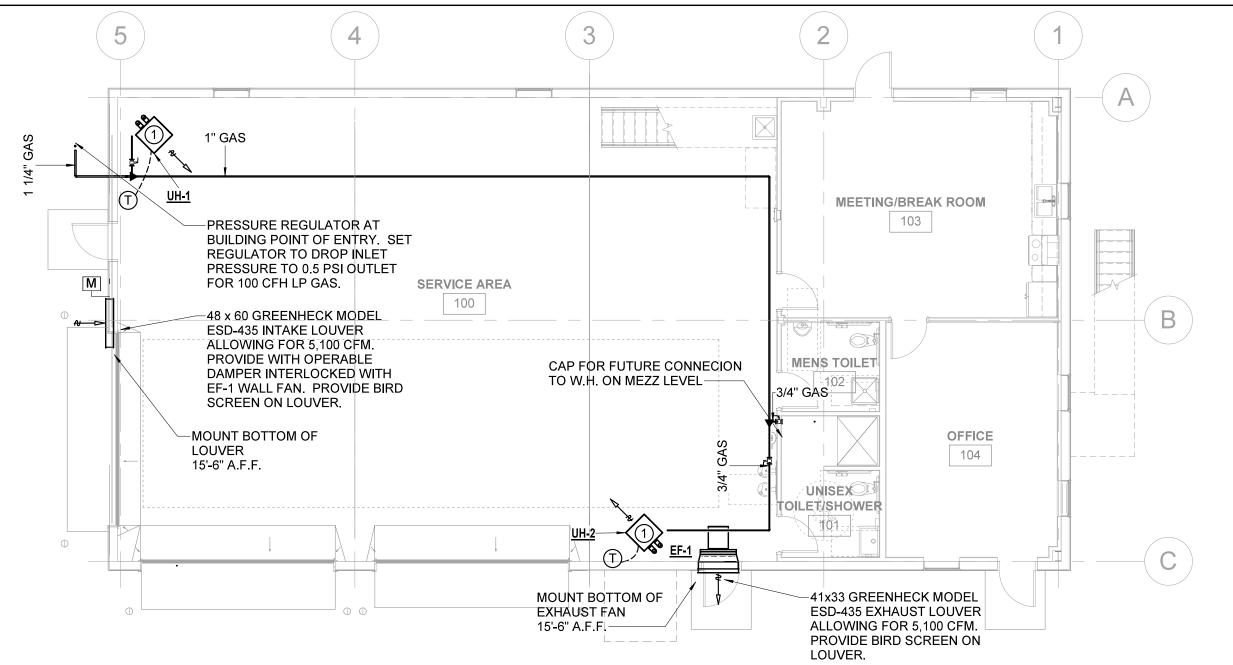
Brentwood, TN 37027

2650 Thousand Oaks Boulevard, **Suite 4200** Memphis, TN 38118 (901) 683-3900 FAX: (901) 683-3990 www.ssr-inc.com SSR Project #: 22640620

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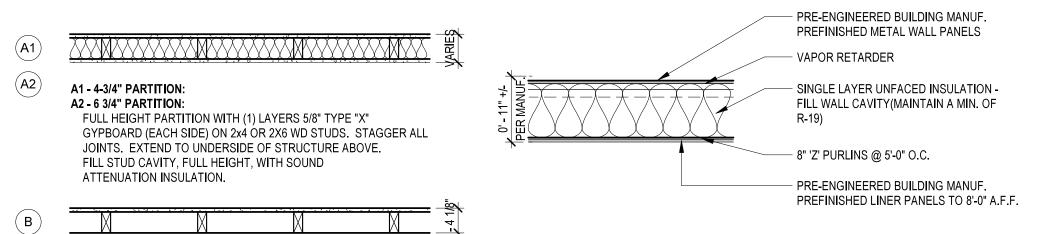


SHEET KEYED NOTES

1 PROVIDE WALL MOUTED TSTAT AND CONCENTRIC VENT TERMINATION KIT. SIZE PER MANUFACTURERS RECOMMENDATION.

INTERIOR WALL TYPES

EXTERIOR WALL TYPES



4-1/8" PARTITION:

FULL HEIGHT PARTITION WITH (1) LAYERS 5/8" TYPE "X" GYPBOARD (ONE SIDE) ON 2x4 WD STUDS. STAGGER ALL JOINTS. EXTEND TO UNDERSIDE OF STRUCTURE ABOVE.

,		,, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	

GENERAL NOTES:	
SEE SPECIFICATIONS. PIPE CONNECTIONS SIZE SEE ELECTRICAL DRAWIN	S PER PLANS. NGS FOR STARTER AND LOCATION.

UNIT TYPES: VERTICAL HORIZONTAL MOTOR TYPES:

PSC - PERMANENT SPLIT-CAPACITOR. ECM - ELECTRONICALLY COMMUTATED MOTOR.

				MIN.	1		LP GAS INPUT	MO.	TOR	E	ELECTRICAI	
DESIGNATION	TYPE	MANUFACTURER	MODEL NUMBER	CAPACITY (BTUH)	CFM	KW	(BTUH)	HP	TYPE	VOLT/PH	FLA	MOCP
UH-1	LP GAS	REZNOR	UDX-75	0.0	961	0	75,000	0.06		115/1	3.3	15
UH-2	LP GAS	REZNOR	UDX-75	0.0	961	0	75,000	0.06		115/1	3.3	15

FAN SCHEDULE

GENERAL NOTES:

1. MOTOR H.P. SHALL COMPLY WITH ASHRAE 90.1. 2. BHP SHALL BE NO GREATER THAN 90% OF THE MOTOR H.P.

						ESP			МОТО	R		MAX.	ROOF / V
DESIGNATION	SERVICE	MANUFACTURER	MODEL NUMBER	TYPE	CFM	(IN. WG)	ВНР	MIN. HP	RPM	VOLTAGE	PHASE	1	OPENI
EF-1	CORE	GREENHECK	AER-E30C-310-VG	PROP	5,100	0.5		2	1,725	240	1	27	39.75x3

N COUNTY DESCRIPTION TO 38382 SEPTEMBER 29, 2023

PROJECT NO.

PIN NO.

27999-3605-04

131119

TDOT GIBSON COUNTY
MAINTENANCE BUILDIN
1248 B MANUFACTURERS ROW,
TRENTON, TN 38382

214 Centerview Drive Suite 300
Brentwood, TN 37027
woldae.com phone: 615.370.8500

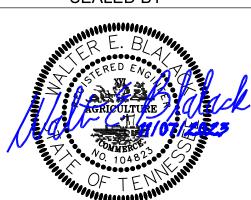
fax: 615.370.8530

Smith
Seckman
Reid, Inc.

2650 Thousand Oaks Boulevard,
Suite 4200
Memphis, TN 38118

Memphis, TN 38118 (901) 683-3900 FAX: (901) 683-3990 www.ssr-inc.com SSR Project #: 22640620

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/ WALLTHOPERATING AND SPECIFICATIONS ATE OF TENNESSEE
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MECHANICAL

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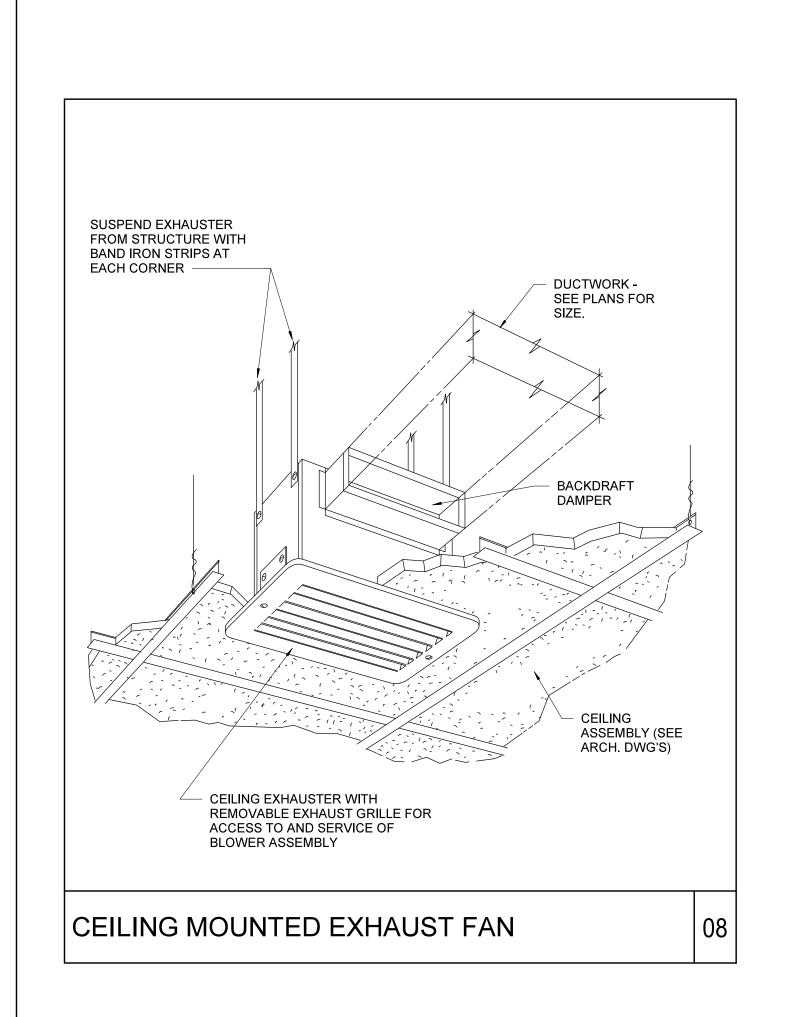
TENNNESSEE STATE FIRE MARSHAL'S OFFICE

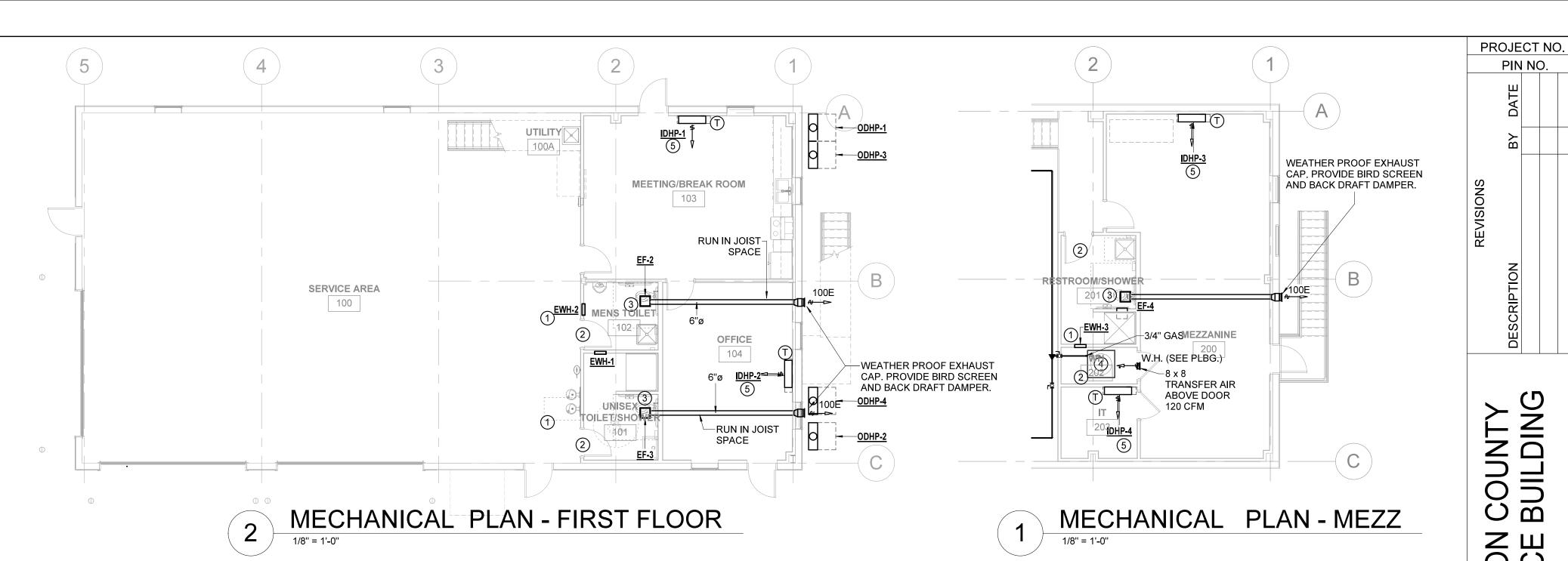
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No alterations, deletions, a

modifications of any kind are a

M1.0 SHEET 21 OF 34





SHEET KEYED NOTES

- 1) PROVIDE WALL HEATER EQUAL TO QMARK AWH3150F OR APPROVED EQUAL. UNIT SHALL BE 120/1/60 AND PROVIDE 1.5 KWHEAT. PROVIDE RECESSED WALL MOUNT KIT AND SURFACE MOUNTED CONTROLS.
- (2) PROVIDE 3/4" UNDERCUT ON DOORS.
- (3) INTERLOCK WITH LIGHT SWITCH
- (4) VENT W.H. UP THRU ROOF AND SIZE AS PER MANUFACTURER'S RECOMMENDATIONS.
- (5) REFER TO PLUMBING DRAWINGS FOR CONDENSATE TO DRY WELL.

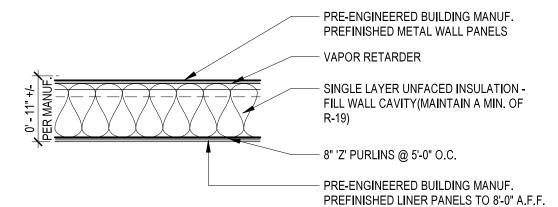
INTERIOR WALL TYPES

A1 - 4-3/4" PARTITION: A2 - 6 3/4" PARTITION: FULL HEIGHT PARTITION WITH (1) LAYERS 5/8" TYPE "X" GYPBOARD (EACH SIDE) ON 2x4 OR 2X6 WD STUDS. STAGGER ALL

JOINTS. EXTEND TO UNDERSIDE OF STRUCTURE ABOVE. FILL STUD CAVITY, FULL HEIGHT, WITH SOUND ATTENUATION INSULATION.

4-1/8" PARTITION:

EXTERIOR WALL TYPES



FULL HEIGHT PARTITION WITH (1) LAYERS 5/8" TYPE "X" GYPBOARD (ONE SIDE) ON 2x4 WD STUDS. STAGGER ALL JOINTS. EXTEND TO UNDERSIDE OF STRUCTURE ABOVE.

FAN SCHEDULE

GENERAL NOTES:

1. MOTOR H.P. SHALL COMPLY WITH ASHRAE 90.1. 2. BHP SHALL BE NO GREATER THAN 90% OF THE MOTOR H.P.

						ESP		MOTOR			MAX.	ROOF / WALL	OPERATING				
DESIGNATION	SERVICE	MANUFACTURER	MODEL NUMBER	L NUMBER TYPE		TYPE CFM		(IN. WG)	ВНР	MIN. HP	RPM	VOLTAGE	PHASE	SONES	OPENING	WEIGHT (LBS)	
EF-2	RESTROOM	GREENHECK	SP-110-VG	CEILING	100	0.125		8W	940	115/60	1	1.4		12			
EF-3	RESTROOM	GREENHECK	SP-110-VG	CEILING	100	0.125		8W	940	115/60	1	1.4		12			
EF-4	RESTROOM	GREENHECK	SP-110-VG	CEILING	100	0.125		8W	940	115/60	1	1.4		12			

SPLIT SYSTEM HEAT PUMP SCHEDULE

GENERAL NOTES:

1. SEE SPECIFICATIONS.

2. PIPE CONNECTIONS SIZES PER PLANS.

3. CONTROL SEQUENCE PER DRAWINGS.

4. 1" PLEATED FILTER.

5. SEE ELECTRICAL DRAWINGS FOR STARTER, DISCONNECT AND LOCATION.

6. REFRIGERANT LINE SIZES PER MANUFACTURER'S REQUIREMENTS.

7. COOLING CAPACITY AND SEER BASED ON 95°F.

8. HEATING CAPACITY AND HSPF BASED ON 17°F.

9 LINITS SHALL BE SELECTED TO OPERATE AT AN ALTITUDE OF XXXX ET

UNIT TYPES: VERTICAL HORIZONTAL

MOTOR TYPES: PSC - PERMANENT SPLIT-CAPACITOR. ECM - ELECTRONICALLY COMMUTATED MOTOR. COUNTY
BUILDING

PIN NO.

27999-3605-04

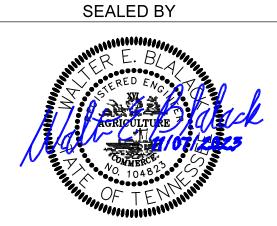
131119

SEPTEMBER 2 MANUFAC FRENTON,



2650 Thousand Oaks Boulevard, Suite 4200 Memphis, TN 38118 (901) 683-3900 FAX: (901) 683-3990

www.ssr-inc.com SSR Project #: 22640620



CIFICATIONSTATE OF TENNESSEE CERTIFICATE TRANSPORTATION MECHANICAL

to the RST FLR./ MEZZ.BUILD-OUT M1.1

SHEET 22 OF 34

		MOE	DEL NO.																						COND	ENSING UNIT	JOB	SITE UN	TIL A FINAL
										FAN I	MOTOR		COOLING	3				HEA	ΓING				-				CC	MPLETIC	ANCY OR I
DESIGNATION	MANUFACTURER	INDOOR UNIT	CONDENSING UNIT	UNIT HSPF	UNIT EER	СҒМ	OA CFM	ESP (IN. WG)	TSP (IN. WG)	w	VOLT/PH	EAT DB/WB (° F)	LAT DB/WB (° F)	TOTAL CAPACITY (BTUH)	MAX. CAPACITY 17°F (BTUH)	EAT DB (° F)	LAT DB (° F)	AUX KW	KW / STEP	MCA	MOCP	VOLT/PH	DESIGN AMBIENT	FAN FLA	COMPRESSOR RLA	VOLT/PH	MIOCP mod	No aMSAtions oproved se	ons, REERIGE, of any kind are t without writte of this office.
IDHP-1/ODHP-1	MITSUBISHI	MSZ-HM12NA	MUZ-HM12NA	10	9.9	400	0	0	0	30	208/1	-	-	12200	9000	-	-	-	-	12	15	208/230/1	95	0.5	6.6	208/1	15ENN	NESSEE S	TATER410A/A
IDHP-2/ODHP-2	MITSUBISHI	MSZ-HM09NA	MUZ-HM09NA	10	12	400	0	0	0	30	208/1	-	-	10000	7200	-	-	-	-	9	15	208/230/1	95	0.5	6.2	208/1	15	9	R410A
IDHP-3/ODHP-3	MITSUBISHI	MSZ-HM12NA	MUZ-HM12NA	10	9.9	400	0	0	0	30	208/1	-	-	12200	9000	-	-	-	-	12	15	208/230/1	95	0.5	6.6	208/1	15	12	R410A
IDHP-4/ODHP-4	MITSUBISHI	MSZ-HM09NA	MUZ-HM09NA	10	12	400	0	0	0	30	208/1	-	-	10000	7200	-	-	-	-	9	15	208/230/1	95	0.5	6.2	208/1	15	9	R410A

ALL PLUMBING LEGEND **NOT ALL SYMBOLS MAY BE USED** SYMBOL ABB. **DESCRIPTION** —сw— CW CW DOMESTIC COLD WATER ____<u>cw</u>____ ---CW---CW DOM. COLD WATER (BELOW) ——HW—— HW HW DOMESTIC HOT WATER ---HW DOMESTIC HOT WATER (BELOW) ---HW---HW —HWR— HWR HWR DOMESTIC HOT WATER RECIRC. --HWR---HWR DOMESTIC HOT WATER RECIRC. (BELOW)

——D—— D	D	DRAIN
D D	D	DRAIN (BELOW)
—TP	TP	TRAP PRIMER
— w— • w	W	WASTE
w <u>E</u> <u>v</u>	W	WASTE (BELOW)
v £	V	SANITARY VENT
		PIPE TURN DOWN
——— ID		PIPE TURN UP
δ		BALL VALVE
⋈ ∄		GATE VALVE
N ₫		CHECK VALVE
		BALANCING VALVE
ń [BUTTERFLY VALVE
Å 🛔	PRV	PRESSURE REGULATING VALVE
		SOLENOID VALVE
△ △		STRAINER
		REDUCER
÷		PIPE GUIDE
×)X(ANCHOR
Φ		PRESSURE GAUGE
P -		PRESSURE SWITCH WITH DEMAND CHECK FITTING
Ψ		THERMOMETER
<u> </u>		CAP/PLUG
	со	CLEANOUT (ABOVE CEILING)
-		UNION
ŽĮ —	PR	PRESSURE RELIEF VALVE
T		SHOCK ARRESTOR
<u> </u>		HOSE BIBB / WALL HYDRANT
o ^{FCO}	FCO	FLOOR CLEAN OUT
	wco	WALL CLEAN OUT
	FD	FLOOR DRAIN
	VTR	VENT THRU ROOF
	I.E.	INVERT ELEVATION
	1 ,	ABOVE EINIOUED ELOOD

SITE UTILITY NOTES -NEW CONSTRUCTION

AFF ABOVE FINISHED FLOOR

- A. CONTRACTOR SHALL FIELD VERIFY UTILITY CONNECTIONS TO EXISTING CITY UTILITIES FOR EXACT LOCATIONS, PIPE SIZES, MATERIAL AND DEPTHS. CONFIRM EXACT CONNECTIONS WITH LOCAL AUTHORITIES AND PAY PRESCRIBED FEES. MATERIALS AND INSTALLATION SHALL MEET STATE AND LOCAL CODES AND
- B. CONTRACTOR SHALL COORDINATE ALL TOP CASTING ELEVATIONS ON NEW SANITARY SEWER MANHOLES WITH FINISHED GRADES.

SHOCK ARRESTOR SCHEDULE

GENERAL NOTES:

1. ALL ARRESTORS SHALL BE SIZED AND LOCATED PER PDI STANDARDS.

P.D.I. SYMBOL	FIXTURE UNITS	SIZE	MANUFACTURER	MODEL NUMBER
Á	1-11	1/2" NPT	PPP	SC-500
B	12-32	3/4" NPT	PPP	SC-750
♦	33-60	1" NPT	PPP	SC-1000
D	61-113	1 1/4" NPT	PPP	SC-1250
⟨E ⟩	114-154	1 1/2" NPT	PPP	SC-1500
⟨ F ⟩	155-330	2" NPT	PPP	SC-2000

PLUMBING GENERAL NOTES

- A. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE PROJECT SCOPE, UTILITY CONNECTIONS AND ALL BUILDING SERVICES. EXISTING SITE UTILITIES SHALL BE FIELD LOCATED FOR EXACT LOCATION AND ELEVATION BEFORE BEGINNING CONSTRUCTION OR DEMOLITION.
- B. DRAWINGS SHOW KNOWN EXISTING SERVICES, PIPING, FIXTURES, EQUIPMENT, AND CONNECTIONS IN REASONABLE PROXIMITY. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS AND SIZES. ANY DISCREPANCIES AND / OR DEVIATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ARCHITECTS ATTENTION.
- . COORDINATE WATER, WASTE, VENT, RAIN WATER AND OTHER PIPING WITH ALL TRADES TO AVOID SPACING AND ROUTING PROBLEMS.
- D. FIXTURES, EQUIPMENT, CONNECTIONS AND PIPING SHALL BE FURNISHED AND INSTALLED TO MEET OR EXCEED STATE AND LOCAL CODES AND REQUIREMENTS.
- E. STANDARD DETAILS ILLUSTRATED ON THE DRAWINGS SHALL BE APPLIED IN ALL CASES WHERE THE FEATURE OCCURS IN THE SYSTEM DESIGN.
- . FURNISH AND INSTALL SHOCK ARRESTORS IN COLD WATER LINES AT CONNECTIONS TO FLUSH VALVES AND QUICK CLOSING VALVES AND AT EACH HOT AND COLD WATER CONNECTION TO FIXTURES.
- G. PLUMBING VENTS AND STACKS THROUGH ROOF SHALL BE INSTALLED A MINIMUM OF 25 FEET CLEAR OF HVAC OUTSIDE AIR INTAKES AND ANY OPERABLE WINDOW OR BUILDING OPENING.
- H. VENT AND WASTE STACKS LESS THAN THREE INCHES IN DIAMETER SHALL NOT ROUTE THROUGH THE ROOF. PROVIDE INCREASERS ON PIPING BELOW ROOF.
- PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE SLEEVED, SEALED AND FIRESAFED TO MAINTAIN THE INTEGRITY OF THE WALL AND FLOOR UL FIRE RESISTANCE RATING.
- DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED. CONTRACTOR IS RESPONSIBLE FOR
- COORDINATING EXACT ROUTING OF ALL SERVICES WITH EXISTING CONDITIONS AND WITH ALL OTHER TRADES. K. PROVIDE INSULATION KIT FOR SUPPLIES, TRAP AND DRAIN PIPING FOR ALL HANDICAP ACCESSIBLE LAVATORIES
- AND SINKS. INSULATION OF PIPING IS NOT REQUIRED WHERE PROTECTIVE SKIRT IS PROVIDED BELOW FIXTURE. . PROVIDE HOUSEKEEPING PADS UNDER ALL EQUIPMENT. COORDINATE PAD SIZE AND FLOOR DRAIN LOCATIONS WITH FINAL EQUIPMENT PAD LOCATIONS. LOCATE DRAINS NEAR EQUIPMENT DRAINS AND DISCHARGE TO AVOID
- ROUTING OF PIPING ACROSS WALK PATHS. M. SUPPORTS, ANCHOR BOLTS AND HANGERS FOR ALL EQUIPMENT SPECIFIED SHALL CONFORM TO THE SPECIFICATIONS. MISCELLANEOUS STEEL BRACING SUPPORTS AND REINFORCING STEEL NEEDED TO SUPPORT
- EQUIPMENT AND PIPING SYSTEMS SPECIFIED SHALL BE FURNISHED AND INSTALLED AS PART OF THE WORK.
- N. MAINTAIN ACCESSIBILITY OF ALL EQUIPMENT AND VALVES. PROVIDE ACCESS PANELS AS REQUIRED. COORDINATE PLACEMENT WITH THE ARCHITECT PRIOR TO INSTALLATION.
- O. INSTALL EXTERIOR WALL HYDRANTS AT 18" ABOVE FINISHED GRADE.
- P. CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT PRIOR TO CUTTING ANY OPENING IN THE STRUCTURE. COORDINATE SLEEVING OF BEAMS AND CORING OF STRUCTURE WITH STRUCTURAL DRAWINGS AND DETAILS PRIOR TO INSTALLATION.
- Q. CONTRACTOR SHALL PROVIDE TRAP PRIMERS ON ALL FLOOR DRAINS NOT RECEIVING CONSTANT DISCHARGE FROM FIXTURES AND/OR EQUIPMENT AND AS REQUIRED BY STATE AND LOCAL CODES.
- R. ALL SANITARY AND STORM WATER PIPING BELOW GRADE IN AREAS SUBJECT TO TRAFFIC WITH LESS THAN TWO FEET OF EARTH COVER SHALL BE DUCTILE IRON.
- S. PROVIDE PIPING EXPANSION JOINTS AT EACH PIPE CROSSING AN INTERIOR BUILDING EXPANSION JOINT
- . ORIENT FLUSH VALVE HANDLES ASSOCIATED WITH BARRIER-FREE WATER CLOSETS ON THE WIDE SIDE OF THE STALL TO COMPLY WITH ADA REQUIREMENTS.
- J. PROVIDE LEAD FREE MIXING VALVES UNDER PUBLIC LAVATORIES, KITCHEN HAND WASHING SINKS OR ANY OTHER FIXTURE REQUIRING TEMPERED WATER TO MEET ASSE 1070/ASME A112.1070 OR LOCAL ADOPTED CODE.
- A DOUBLE WYE OR DOUBLE COMBINATION WYE AND 1/8 BEND FITTING IS NOT ACCEPTABLE IN A HORIZONTAL POSITION FOR A DRAINAGE SYSTEM.
- W. EQUIPMENT AND FIXTURES CALL FOR BY NAME AND MODEL NUMBER FORM THE STANDARD FOR SELECTION. EQUIPMENT AND FIXTURE MEETING OR EXCEEDING THAT SPECIFIED SHALL BE SUBMITTED FOR APPROVAL.

	DRAINS SCHEDULE				
TYPE	DESCRIPTION	CW	HW	DR	VENT
ICO WCO	INTERIOR CLEAN-OUT - ZURN Z-1400-T WITH FLANGE & C.C. (SIZE TO MATCH LINE SERVED)	-	-	1	-
FD-1	FLOOR DRAIN (3" DIA. OUTLET) - JR SMITH MODEL 2005-B WITH ADJUSTABLE ROUND STRAINER HEAD, FLASHING COLLAR AND P-TRAP. PROVIDE TRAP PRIMER.	-	-	3"	2"
FD-2	SHOWER DRAIN (2" DIA. OUTLET) - JR SMITH MODEL 220-10 SERIES WITH ADJUSTABLE ROUND STRAINER HEAD, FLASHING COLLAR AND P-TRAP.	-	-	2"	2"
TP	TRAP PRIMERS - PRECISION PLUMBING PRODUCTS INC. PR-500 TRAP PRIMER VALVE - INSTALL IN NEARBY COLD WATER LINE - PROVIDE ONE VALVE PER TRAP OR VALVES WITH DISTRIBUTION UNITS AS REQUIRED TO SERVE ALL FLOOR DRAINS AND OTHER NOTED LOCATIONS	1/2"	-	-	-

	HOSE BIBB SCHEDULE											
TYPE	DESCRIPTION	HW	DR	VENT								
NFHB-1 P-19A	NONFREEZE HOSE BIBB 1. ZURN MODEL Z-1321 WITH ANTI-SIPHON, BACKFLOW PREVENTER, AUTOMATIC DRAINING, KEY OPERATED REFER ARCHITECT DRAWINGS FOR WALL THICKNESS. 2. MOUNTING HEIGHT: 18" ABOVE FINISHED FLOOR/GRADE	3/4"	-	-	-							

SHEET INDEX - PLUMBING										
NUMBER	NUMBER SHEET NAME									
P0.1	NOTES, LEGENDS & SCHEDULES									
P1.0	PLUMBING CORE & SHELL									
P1.1	PLUMBING FIRST FLR./ MEZZ.BUILD-OUT									
P2.0	PLUMBING DETAILS									

PLUMBING FIXTURE CONNECTION SCHEDULE

NOTES:

1. BRANCH CONNECTION SIZES ARE INDICATED. REFER TO FLOOR PLANS FOR MAIN PIPING SIZES

FIXTURE TAG	FIXTURE DESCRIPTION	COLD WATER	HOT WATER	DRAIN	VENT	NOTE
FD-1	SEE DRAIN SCHEDULE					1.
FD-2 P-1	SEE DRAIN SCHEDULE WATER CLOSET (FLOOR MOUNTED - FLUSH VALVE - 1.6 GPF) A. FIXTURE:AMERICAN STANDARD #2858.016, WHITE ELONGATED BOWL B. VALVE: ZURN Z6000AV-WS1 1.6 GALLON PER FLUSH C. SEAT: AMERICAN STANDARD #5901.100 WHITE OPEN FRONT D. TRIM: WAX RING, TWO BOLT CAPS INCLUDED	 1"		4"	2"	1.
P-1A	WATER CLOSET (FLOOR MOUNTED - FLUSH VALVE - BARRIER FREE - 1.6 GPF) A. FIXTURE:AMERICAN STANDARD #2854.016, WHITE ELONGATED BOWL B. VALVE: ZURN Z6000AV-WS1, 1.6 GALLON PER FLUSH C. SEAT: AMERICAN STANDARDS #5901.100 WHITE OPEN FRONT D. TRIM: WAX RING, TWO BOLT CAPS INCLUDED	1"		4"	2"	
P-2A	URINAL (ADA WALL HUNG - FLUSH VALVE - BARRIER FREE - 0.5 GPF) A. FIXTURE: AMERICAN STANDARD #6555.001, TOP SPUD, WHITE, ELONGATED RIM B. VALVE: ZURN Z6003AV-EWS, 0.5 GALLON PER FLUSH C. CARRIER: ZURN Z1221 D. MOUNTING: 17 INCHES MAX. FROM FINISHED FLOOR TO FLOOD RIM	3/4"		2"	2"	
P-4	SHOWER (42"X42") A. FIXTURE: PRAXIS #M4242 SH TILE WITH CENTRAL DRAIN. PROVIDE SUPPORTS AS REQUIRED. UNIT SHALL BE EQUIPPED WITH INTEGRALLY MOLDED SOAP DISH AND 4" THRESHOLD. B. TRIM: SHOWER VALVE AND HEAD SHALL BE DELTA #T17230 CHROME PLATED LEVER TYPE SHOWER VALVE AND LOW FLOW 3-POSITION SHOWER HEAD	1/2"	1/2"	2"	2"	
P-4A	ADA SHOWER (48"X37") A. FIXTURE: FREEDOM SHOWERS #APF4836BF4P WITH CENTRAL DRAIN. ACCESSORIES: GRAB BARS, FOLDING SEAT COLLAPSIBLE WATER RETAINER, DRAIN, WEIGHTED SHOWER CURTAIN AND ROD, SLIDE BAR. 7/8 BARRIER FREE THRESSHOLD. PROVIDE SUPPORTS AS REQUIRED. B. TRIM: SHOWER VALVE AND HEAD SHALL BE DELTA #T13H153-25 POLISHED CHROME PLATED PRESSURE BALANCE VALVE, PRESSURE BALANCE LEVER HANDLE ADA COMPLIANT, HAND SHOWER BACKFLOW PROTECTION PRIOVIDE BY TWO CERTIFIED CHECK VALVES IN SERIES, HAND SHOWER ADA COMPLIANT. INTEGRAL CHECK VALVES, #5 HANDSHOWER WITH 24" STAINLESS STEEL SLIDE BAR. #5 SHOWER 1.5 GPM. C. COORDINATE REQUIREMENT FOR SLAB DEPRESSION AS REQUIRED WITH STRUCTURAL DRAWINGS.	1/2"	1/2"	2"	2"	
P-5	1-COMPARTMENT BUDGET SINK - FREE STANDING A. FIXTURE: BK-RESOURCES #BK8BS-1-24-14 FREE STANDING 1-COMPARTMENT STAINLESS STEEL SINK, 24"X24"X14" NO DRAINBOARDS W/ GALV. LEGS, ADJUSTABLE HIGH IMPACT CORROSION RESISTANT FEET. B. FAUCET: BK-RESOURCES #BKF-G 8" CENTERSET SPLASH MOUNT FAUCET WITH SWING SPOUT, #BKF-C414-VR VANDAL RESISTANT AERATOR .5 GPM, #BKF-WBH WRIST BLADE HANDLES AND #BK-DMMK-90 FAUCET MOUNTING KIT. BRAIDED SUPPLIES AND GRID DRAIN. C. TRIM: ZURN 8700-PC SERIES 1-1/4 INCH SEMI-CAST BRASS P-TRAP. ZURN Z8804-XL-PC WHEEL HANDLE STOPS.	1/2"	1/2"	2"	2"	2.
P-5A	HAND SINK (STAINLESS STEEL WALL HUNG - ADA) A. FIXTURE: BK-RESOURCES #BKHS-ADA-D-P-G 14"X16"X5" WITH 8" SPLASHMOUNT 2-HOLE B. FAUCET: BK-RESOURCES #BKF-4DM-3G-G 4" OC 3-1/2" GOOSENECK SPOUT FAUCET, 8" RISER, 1" TURN DOWN ON RISER, #BKF-C1414-VR VANDAL RESISTANT AERATOR .5 GPM AND WRIST BLADE HANDLES #BKF-WBH, WALL BRACKET, MARINE EDGE 18/304 STAINLESS STEEL BRAIDED SUPPLIES AND GRID DRAIN. #BKF-C414-VR VANDAL RESISTANT AERATOR 0.5 GPM C. TRIM: ZURN 8700-PC SERIES 1-1/4 INCH SEMI-CAST BRASS P-TRAP. ZURN Z8804-XL-PC WHEEL HANDLE STOPS. D. CARRIER: PROVIDE WALL PLATE AND SUPPORTS	1/2"	1/2"	2"	2"	2.
P-6A	SINK (ADA DOUBLE COMPARTMENT) A. FIXTURE: JUST DL-ADA-1925-A-GR, 19"X25"X6.5" B. FAUCET: JUST #902, DECK MOUNTED FAUCET 8" SWING SPOUT 2.2 GPM FLOW WITH HOSE SPRAY C. TRIM: TWO ZURN Z8743-1-PC GRID DRAIN WITH 1-1/2 INCH TAILPIECE. ZURN Z8804-XL-PC WHEEL HANDLE STOPS. ONE ZURN Z8702-PC SERIES 1-1/2 INCH BY 1-1/2 INCH SEMI-CAST BRASS P-TRAP. ONE ZURN Z8751 CONTINUOUS WASTE.	1/2"	1/2"	2"	2"	
P-9	MOP SINK A. FIXTURE: MUSTEE # 63M 24X24X10 FLOOR MOUNTED BASIN B. FAUCET: MUSTEE #63.600A HEAVY DUTY CHROME PLATED BRASS, 8" CENTER FAUCET WITH VACUUM BREAKER STOPS, MUSTEE #65.700 HOSE & HOSE HOLDER, MUSTEE # 65.600 MOP HANGER, BUMPER AND WALL GUARDS. 3" DRAIN. C. MOUNTING: MOUNT FAUCET 36 INCHES ABOVE FINISHED FLOOR.	3/4"	3/4"	3"	2"	
P-12B	ELECTRIC WATER COOLER HIGH-LOW WITH BOTTLE FILLER A. FIXTURE: ELKAY LZSTL8WSVRK - EZH20 WITH COOLING SYSTEM 8GPH STAINLESS STEEL 50 DEG. F WATER 115V/1 - 1/5 HP COMP. 1.5 GPM FILL RATE. ADJUST STREAM HEIGHT TO 4" ABOVE SPOUT B. TRIM: ONE ZURN Z8802-XL-LR-8860-12-PC SUPPLY WITH WHEEL HANDLE STOP. ONE ZURN Z8700-PC SERIES, 1-1/4 INCH SEMI-CAST BRASS P-TRAP C. MOUNTING: 36 INCHES FROM LOW BUBBLER TO FINISHED FLOOR. D. CARRIER: (2) ZURN Z1225	1/2"	-	2"	2"	
P-19	SEE HOSE BIBB SCHEDULE	3/4"				
P-19A	SEE HOSE BIBB SCHEDULE	3/4"				
P-24D	EMERGENCY EYEWASH - WALL MOUNTED A. FIXTURE: BRADLEY #S19-220B GALV. STEEL PROTECTED WITH BRADTECT SAFETY YELLOW COATING WITH WALL BRACKET. B. TRIM: BRADLEY S19-2000 NAVIGATOR EMERGENCY THERMOSTATIC MIXING VALVE WITH COLD WATER BY-PASS IN A STAINLESS STEEL CABINET ASSEMBLY. PROVIDE UNIT WITH ADJUSTABLE HIGH TEMPERATURE LIMIT STOP. PROVIDE TEMPERATURE GAUGE FOR OUTLET SIDE OF MIXING VALVE AS PART OF ASSEMBLY. CONTRACTOR SHALL COORDINATE	3/4"	3/4"	2"	2"	

DOMESTIC WATER HEATER SCHEDULE

- . SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND ACCESSORIES.
- . PROVIDE 4" THICK REINFORCED CONCRETE PAD BELOW ALL FLOOR MOUNTED EQUIPMENT. 3. PROVIDE DISCONNECT WITHIN SIGHT OF THE WATER HEATER AS REQUIRED PER IPC-2015
- ELECTRICAL DRAWINGS FOR EXACT REQUIREMENT PRIOR TO CONSTRUCTION.
- SECTION 504.3. PROVIDE BRANCH CIRCUIT PROTECTION AS REQUIRED. COORDINATE WITH

- A. HEATER WITH BRONZE CIRCULATING PUMP(S) AND STARTER(S).
- B. CONDENSATE NEUTRALIZATION KIT. C. CONCENTRIC VENT KIT WITH APPLICABLE WALL OR ROOF CAP.

A. BRONZE CONSTRUCTION FOR DOMESTIC WATER SERVICE.

ESIGNATION	SERVICE	MANUFACTURER	MODEL NUMBER	RECOVERY GPH (90° RISE)	FUEL	INPUT BTU	STORAGE TANK	REMARKS
				GFH (90 KISE)		ыо	GAL.	
GWH-1	DOMESTIC	A.O. SMITH	BTXL-100	129	PROPANE	100000	75	

PUMP SCHEDULE

GENERAL NOTES:

MOUNTING LOCATION OF RECESSED MIXING VALVE BOX WALL WITH ARCHITECT.

. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND

B. STARTER BY DIVISION 26. 2. MOUNT HOT WATER RECIRCULATING PUMP AT 5'-0" ABOVE FINISHED C. PUMP REMOVAL KIT.

FLOOR WITH WALL BRACKETS.

DESIGNATION	MANUFACTURER	MANUEACTURER MODEL T		GPM	M TOTAL HEAD		ELECTRICAL			REMARKS
DESIGNATION	WANDFACTURER	NUMBER	TYPE	GPIVI	FT	HP	VOLTAGE	PHASE		KEWAKKS
RP_1	GRUNDEOS	LIDQ15_//2F	INLLINE	46 MAX	n_32	1/25	115 \/	1	ARC	

PIPING MATERIALS SCHEDULE THESE PLANS AND									
PLUMBING SYSTEM	PLUMBING MATERIAL DESCRIPTION	JOB SITE UNTIL A FINAL CE	PER						
SANITARY DRAIN PIPING	STANDARD WEIGHT CAST IRON PIPE, BELL & SPIGOT JOINTS (BELOW SLAB)	COMPLETION FORM IS IS	S						
SANITARY DRAIN PIPING	STANDARD WEIGHT CAST IRON PIPE, WITH NO HUB JOINTS (ABOVE SLAB)	No alterations, deletions, ad modifications of any kind are a	di						
VENT PIPING	STANDARD WEIGHT CAST IRON PIPE, WITH NO HUB JOINTS (ABOVE SLAB)	approved set without written portion of this office.	e						
DOMESTIC WATER PIPING (ABOVE SLAB)	TYPE "L". COPPER TUBING, WITH WROUGHT COPPER FITTINGS (ASTM B88).	TENNNESSEE STATE FIRE MARS	HA						
DOMESTIC WATER PIPING (BELOW SLAB)	TYPE "K". COPPER TUBING, WITH BRAZED WROUGHT COPPER FITTINGS (ASTM B88).								
			_	-					

PROJECT NO. 27999-3605-04 PIN NO. 131119 29,

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MAN REN

SEPTEMBER



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CATIONSTATE OF TENNESSEE ON THE DEPARTMENT OF TIFICATE TRANSPORTATION

SHEET 23 OF 34

GENERAL PLUMBING SPECIFICATIONS

- 1. FURNISH, INSTALL PROVIDE AND MAKE OPERATIVE ALL EQUIPMENT, MATERIALS, SUPERVISION, LABOR AND ANY AND ALL ITEMS NECESSARY FOR THE PROPER INSTALLATION OF A CORRECTLY FUNCTIONING PLUMBING SYSTEM AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.
- 2. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. EQUALS MAY BE SUBSTITUTED ONLY IF PRIOR APPROVAL IS OBTAINED FROM OWNER.
- 3. ORDINANCES, PERMITS AND CODES. THE WORKMANSHIP AND MATERIALS COVERED BY THESE SPECIFICATIONS SHALL CONFORM TO ALL REGULATIONS OF ALL THE AUTHORITIES
- 4. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, CONNECTION AND INSPECTION FEES AS REQUIRED FOR THE COMPLETE INSTALLATION OF THE PLUMBING
- 5. THE LOCATION OF PIPING AND EQUIPMENT, AS SHOWN ON THE DRAWINGS, IS DIAGRAMMATIC AND SCHEMATIC AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIS OWN WORKING LAYOUT TO ELIMINATE ALL STRUCTURAL AND ARCHITECTURAL CONFLICTS IN THE BUILDING.
- 6. VERIFY ALL MEASUREMENTS AT THE SITE AND COORDINATE ALL WORK SO THAT IT DOES NOT INTERFERE WITH THE WORK OF OTHER TRADES.
- 7. INSULATION: ALL INSULATION, INCLUDING JACKET, OR FACING AND ADHESIVE USED TO ADHERE TO FACING OR JACKET TO THE INSULATION SHALL HAVE A COMPOSITE FIRE AND SMOKE HAZARD RATING TESTED BY THE PROCEDURE RECOMMENDED BY ASTM E-84. NFPA 225 OR UL 723, NOT EXCEEDING FLAME SPREAD 25, SMOKED DEVELOPED 50. ALL INSULATION ACCESSORIES SHALL ALSO HAVE THE RATING LISTED ABOVE.
- 8. DOMESTIC WATER PIPES SHALL BE INSULATED WITH ONE (1) INCH THICK PREFORMED HIGH DENSITY FIBERGLASS WITH FACTOR APPLIED VAPOR BARRIER AND SELF SEALING LAP, SUCH AS MANVILLE MICRO-LOK.
- 9. DOMESTIC WATER PIPES LARGER THAN 1 1/4" SHALL BE TYPE "L" COPPER ABOVE GROUND / SLAB AND TYPE "K" COPPER BELOW GRADE / SLAB. INSTALL DIELECTRIC UNIONS AT CONNECTIONS TO DISSIMILAR METALS. DOMESTIC HOT AND COLD WATER PIPING FOR PIPE SIZES 1 1/4" AND SMALLER MAY BE CROSS-LINKED POLYETHYLENE (PEX) MANUFACTURED IN ACCORDANCE WITH ASTM F876 AND F877. FITTING ASSEMBLY SHALL BE MANUFACTURED FROM MATERIAL LISTED IN ASTM F1960. FITTINGS SHALL BE INSTALLED INSIDE EXPANDED PIPE WITH FITTING ID MATCHING TUBING ID. SUPPLY STOPS SHALL BE COMPATIBLE WITHT THE PEX TUBING AND SUPPLIED BY THE SAME TUBING MANUFACTURER.
- 10.ANY WATER PIPING ROUTED IN AN EXTERIOR WALL SHALL BE INSIDE THE FACE OF THE BUILDING INSULATION OR OTHERWISE EXPOSED TO FREEZING TEMPERATURES SHALL BE PROVIDED WITH CHROMOLOX SRF (OR EQUAL) SELF-REGULATING FREEZE PROTECTION CABLE - 8 WATTS PER LINEAL FOOT OF PIPING.
- 11.NATURAL GAS PIPE SHALL BE SCHEDULE 40 BLACK STEEL WITH THREADED FITTINGS. IINSTALL PRESSURE REDUCING VALVES WHERE REQUIRED. SYSTEM INSTALLATION TO BE IN ACCORDANCE WITH NFPA 34 AND LOCAL CODES.
- 12.IT IS THE INTENT OF THESE DRAWINGS TO COVER ALL WORK FOR A COMPLETE FIRST CLASS PLUMBING INSTALLATION - ANY EQUIPMENT, TRIM HARDWARE AND/OR DEVICES SHALL BE UTILIZED IN THIS CLASS OF WORK THOUGH NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, BUT WHICH MAY BE NECESSARY FOR THE SATISFACTORY COMPLETION OF THE WORK (AS DETERMINED BY THE ARCHITECT) SHALL BE FURNISHED AND INSTALLED BY THE PLUMBING CONTRACTOR AS PART OF HIS TOTAL WORK.
- 13.ALL PIPING PASSING THRU A RATED OR NON-RATED WALL TO BE SLEEVED AND CAULKED (WITH FIREPROOF MATERIAL IF REQUIRED) IN ACCORDANCE WITH NFPA. STATE AND LOCAL CODES AS REQUIRED - REFER TO ARCHITECT FOR VARIOUS WALL RATINGS.

	HOSE BIBB SCHEDULE											
TYPE	DESCRIPTION CW HW DR VENT											
HB-1 P-19	HOSE BIBB 1. ZURN MODEL Z-1341XL LEAD FREE, ANTI-SIPHON, MODERATE CLIMATE, WITH EXTERNAL VACUUM BREAKER WITH MALE HOSE CONNECTION, VANDAL RESISTANT OPERATING STEM AND SECURED WHEEL HANDLE. 2. MOUNTING HEIGHT: 18" ABOVE FINISHED FLOOR	3/4"	-	-	-							

DRAINS SCHEDULE										
TYPE	DESCRIPTION CW HW DR VEN									
GCO	GRADE/EXTERIOR CLEAN-OUT - ZURN Z-1400 WITH HEAVY DUTY COVER PLATE. INSTALL GCO IN MIN. 12"X12"X6" CONC. PAD FLUSH WITH TOP OF CLEANOUT. (SEE PLANS FOR SIZES)									
WCO WCO	INTERIOR CLEAN-OUT - ZURN Z-1400-T WITH FLANGE & C.C. (SIZE TO MATCH LINE SERVED)	-	-	-	-					
FD-1	FLOOR DRAIN (3" DIA. OUTLET) - JR SMITH MODEL 2005-B WITH ADJUSTABLE ROUND STRAINER HEAD, FLASHING COLLAR AND P-TRAP. PROVIDE TRAP PRIMER.	-	_	3"	2"					
FD-2	SHOWER DRAIN (2" DIA. OUTLET) - JR SMITH MODEL 220-10 SERIES WITH ADJUSTABLE ROUND STRAINER HEAD, FLASHING COLLAR AND P-TRAP.	-	-	2"	2"					
TP	TRAP PRIMERS - PRECISION PLUMBING PRODUCTS INC. PR-500 TRAP PRIMER VALVE - INSTALL IN NEARBY COLD WATER LINE - PROVIDE ONE VALVE PER TRAP OR VALVES WITH DISTRIBUTION UNITS AS REQUIRED TO SERVE ALL FLOOR DRAINS AND OTHER NOTED LOCATIONS	1/2"	-	-	-					

FULL HEIGHT PARTITION WITH (1) LAYERS 5/8" TYPE "X"

FILL STUD CAVITY, FULL HEIGHT, WITH SOUND

JOINTS. EXTEND TO UNDERSIDE OF STRUCTURE ABOVE.

FULL HEIGHT PARTITION WITH (1) LAYERS 5/8" TYPE "X"

GYPBOARD (ONE SIDE) ON 2x4 WD STUDS. STAGGER ALL

JOINTS. EXTEND TO UNDERSIDE OF STRUCTURE ABOVE.

GYPBOARD (EACH SIDE) ON 2x4 OR 2X6 WD STUDS. STAGGER ALL

INTERIOR WALL TYPES

A1 - 4-3/4" PARTITION:

A2 - 6 3/4" PARTITION:

4-1/8" PARTITION:

ATTENUATION INSULATION.

	DRAINS SCHEDULE		,	PLAN KEYED NOTES		
Ξ	DESCRIPTION	CW	HW	DR	VENT	SEE CIVIL ENGINEERING SITE PLAN FOR CONTINUATION.
0	GRADE/EXTERIOR CLEAN-OUT - ZURN Z-1400 WITH HEAVY DUTY COVER PLATE. INSTALL GCO IN MIN. 12"X12"X6" CONC. PAD FLUSH WITH TOP OF CLEANOUT. (SEE PLANS FOR SIZES)	-	-	-	-	COORDINATE EXACT LOCATION OF PLUMBING WITH STRUCTURAL FOOTING PRIOR TO CONSTRUCTION. Output Domestic CW Service. Estimated Max. Demand 46 GPM.
o	INTERIOR CLEAN-OUT - ZURN Z-1400-T WITH FLANGE & C.C. (SIZE TO MATCH LINE SERVED)	-	-	-	-	4 CONTRACTOR SHALL COORDINATE WITH LOCAL WATER SUPPLIER AND PROVIDE POINT OF ENTRY BACKFLOW PREVENTER AS REQUIRED. PIPE UNIT RELIEF OPENING THRU EXTERIOR WALL AND SPILL 6" ABOVE GRADE. PROVIDE BUG SCREEN OR FLAPPER.
1	FLOOR DRAIN (3" DIA. OUTLET) - JR SMITH MODEL 2005-B WITH ADJUSTABLE ROUND STRAINER HEAD, FLASHING COLLAR AND P-TRAP. PROVIDE TRAP PRIMER.	-	-	3"	2"	 (5) 4" WASTE UP. (6) 3" WASTE UP. (7) 1 1/4" CONDENSATE CONNECTION WITH DEEP SEAL TRAP. COORDINATE EXACT
2	SHOWER DRAIN (2" DIA. OUTLET) - JR SMITH MODEL 220-10 SERIES WITH ADJUSTABLE ROUND STRAINER HEAD, FLASHING COLLAR AND P-TRAP.	-	-	2"	2"	LOCATION OF DRAIN PRIOR TO CONSTRUCTION. (8) DRY WELL. SEE DETAIL 6 P2.0
	TRAP PRIMERS - PRECISION PLUMBING PRODUCTS INC. PR-500 TRAP PRIMER VALVE - INSTALL IN NEARBY COLD WATER LINE - PROVIDE ONE VALVE PER TRAP OR VALVES WITH DISTRIBUTION UNITS AS REQUIRED TO SERVE ALL FLOOR DRAINS AND OTHER NOTED LOCATIONS	1/2"	-	-	-	9 2" WASTE UP. 10 2" VENT UP. 11 3" VENT UP.

SERVICE AREA 100

EXTERIOR WALL TYPES

PRE-ENGINEERED BUILDING MANUF. PREFINISHED METAL WALL PANELS VAPOR RETARDER SINGLE LAYER UNFACED INSULATION -FILL WALL CAVITY(MAINTAIN A MIN. OF 8" 'Z' PURLINS @ 5'-0" O.C. PRE-ENGINEERED BUILDING MANUF.

MEETING/BREAK ROOM

EST. FL. 3.5" BFF.

PREFINISHED LINER PANELS TO 8'-0" A.F.F.

214 Centerview Drive Suite 300 Brentwood, TN 37027 woldae.com phone: 615.370.8500 fax: 615.370.8530

PROJECT NO.

PIN NO.

COUNTY
BUILDING

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27999-3605-04

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PLUMBING PLAN - LEVEL 1 CORE AND SHELL

THESE PLANS AND SPECIFICATIONST ATE OF TENNESSEE ARE REQUIRED TO BE KEPT ON THE DEPARTMENT OF JOB SITE UNTIL A FINAL CERTIFICATI OF OCCUPANCY OR PROJECT COMPLETION FORM IS ISSUED B THIS OFFICE.

RANSPORTATION PLUMBING

No alterations, deletions, a modifications of any kind are al approved set without written

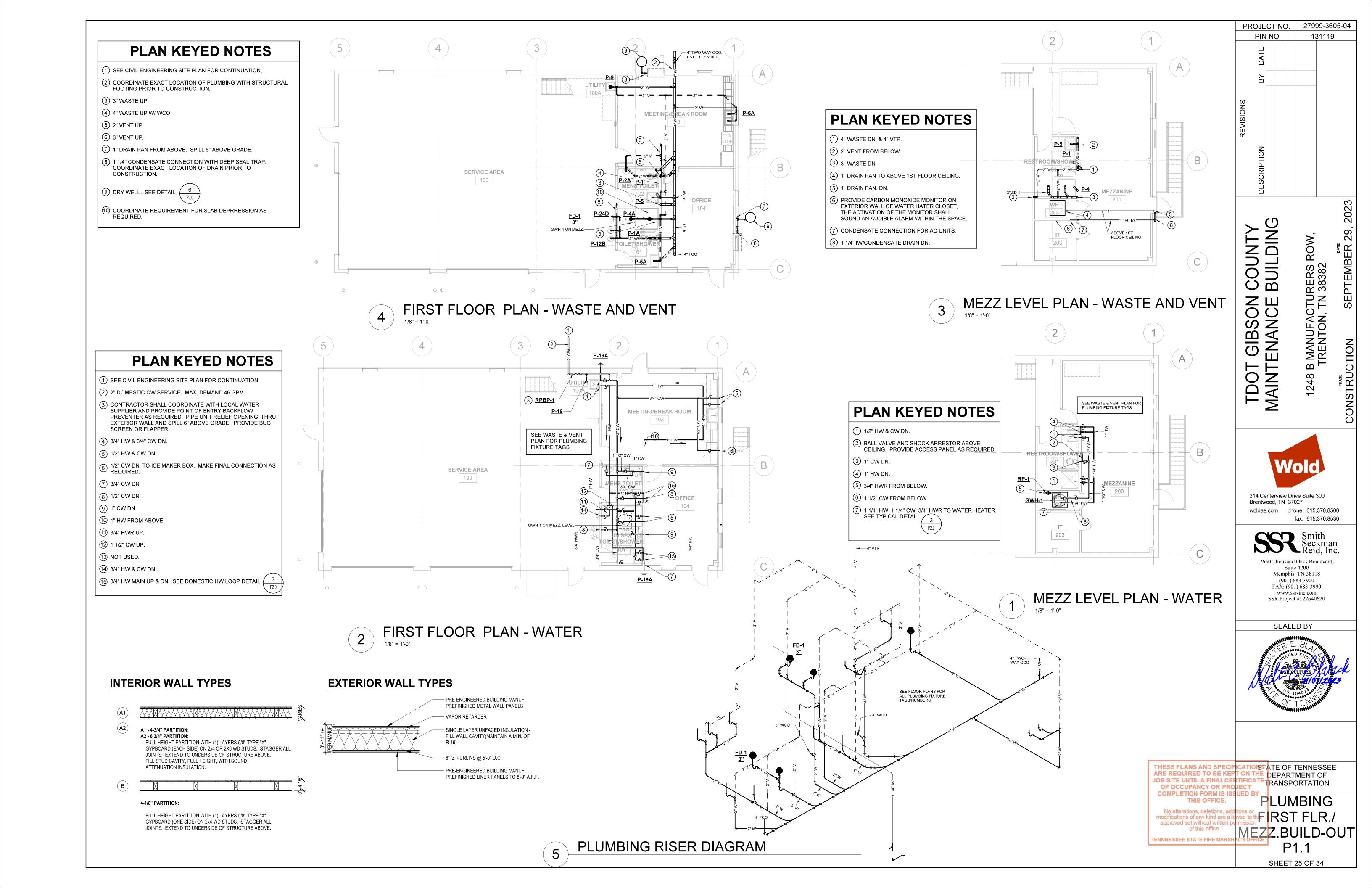
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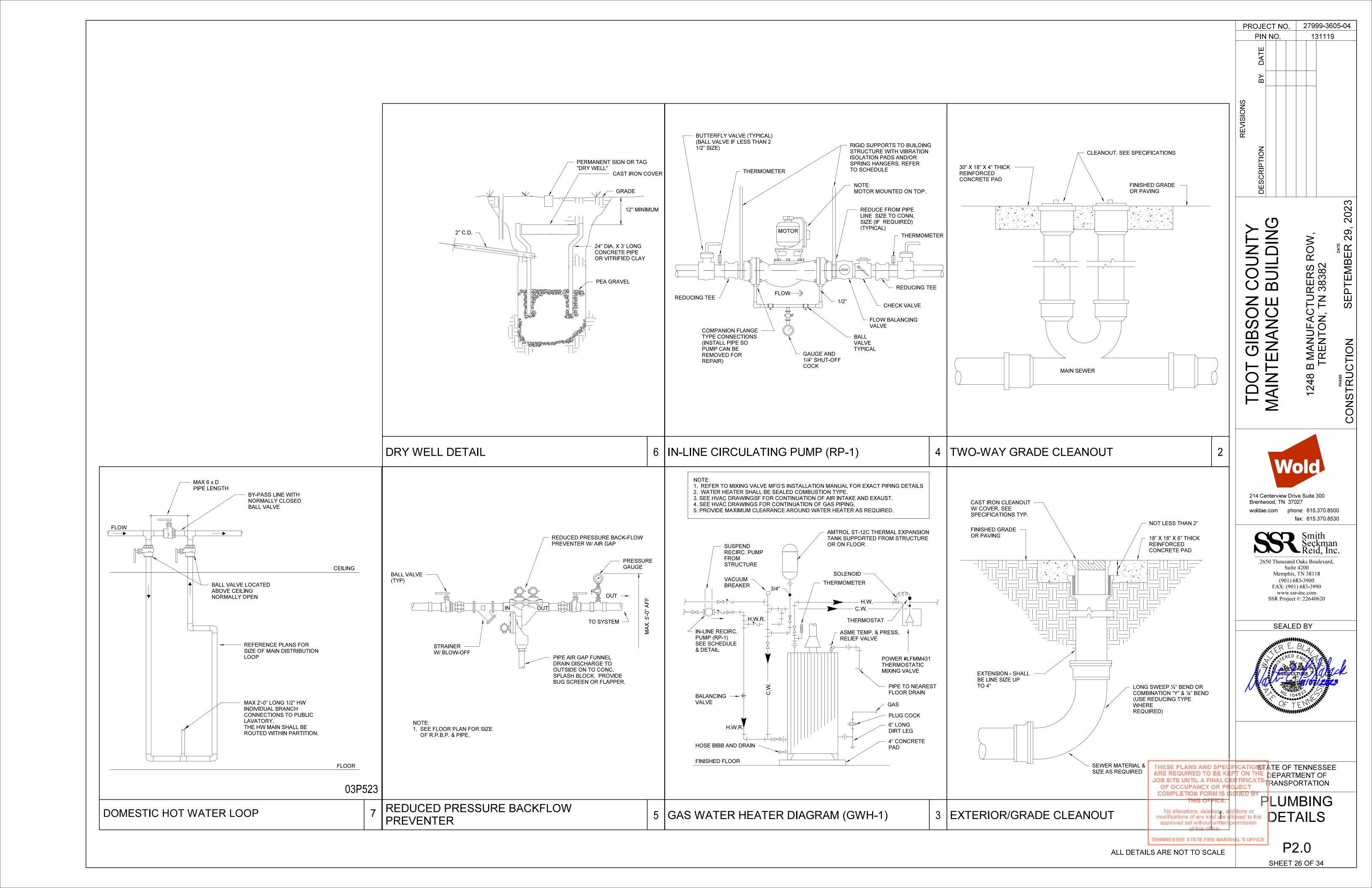
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PLUMBING RISER DIAGRAM CORE AND SHELL

TENNNESSEE STATE FIRE MARSHAL'S OFFICE

SHEET 24 OF 34





	LEGEND (NOT ALL SYMBOLS MAY BE USED)							
SYMBOL	DESCRIPTION							
	LIGHTING							
XX 1	LIGHTING FIXTURE ANNOTATIONS (LOCATION OF DESIGNATORS MAY VARY) FIXTURE TYPE: XX CIRCUIT NUMBER: 1							
x	CONTROL DESIGNATION: x							
	SURFACE, SUSPENDED, OR RECESSED LUMINAIRES (TYPE DETERMINES MOUNTING)							
0	RECESSED OR SURFACE DOWNLIGHT LUMINAIRE							
-	PENDANT MOUNTED LUMINAIRE							
<u> </u>	WALL MOUNTED LUMINAIRES							
0 0	NO SHADING INDICATES CONNECTION TO NORMAL BRANCH CIRCUIT							
	SHADING INDICATES BATTERY BACKUP							
◆ ⊗↓	ILLUMINATED EXIT SIGNS, PROVIDE DIRECTIONAL ARROWS AND MOUNTING AS INDICATED ON PLANS							
4	BATTERY POWERED EMERGENCY LIGHT							
	POLE MOUNTED SITE LIGHTING LUMINAIRES							
	RECEPTACLES							
⊕_11	DUPLEX RECEPTACLE - STANDARD MOUNTING HEIGHT 11 = CIRCUIT NUMBER (TYPICAL) XX= RECEPTACLE DESIGNATOR (TYPICAL)							
<u>~~</u>	DUPLEX RECEPTACLE - ABOVE COUNTER OR SPECIAL MOUNTING HEIGHT							
—————————————————————————————————————	DOUBLE-DUPLEX RECEPTACLE							
—	DOUBLE-DUPLEX RECEPTACLE - ABOVE COUNTER OR SPECIAL MOUNTING HEIGHT							
<u>''</u>	DUPLEX GFCI RECEPTACLE							
	DUPLEX GFCI RECEPTACLE -							
—————————————————————————————————————	ABOVE COUNTER OR SPECIAL MOUNTING HEIGHT SWITCHED DUPLEX RECEPTACLE -							
	STANDARD MOUNTING HEIGHT SPECIAL CONFIGURATION RECEPTACLE (TYPE AS NOTED)							
	FLOOR MOUNTED RECEPTACLE							
•	SWITCHES AND LIGHTING CONTROLS							
S	SINGLE POLE SWITCH							
 S ₃	THREE-WAY SWITCH							
S _D	DIMMER SWITCH							
Soc	OCCUPANCY SENSOR SWITCH, WALL MOUNT							
S _{VD}	VACANCY DIMMER							
	MOTOR RATED SWITCH WITH THERMAL OVERLOAD							
S _M	CIRCUITS AND RACEWAYS							
	BRANCH CIRCUIT OR RACEWAY CONCEALED OR EXPOSED							
	BRANCH CIRCUIT OR RACEWAY BELOW OR IN FLOOR SLAB OR BELOW GRADE							
0	CONDUIT OR RACEWAY TURNING UP							
•	CONDUIT OR RACEWAY TURNING DOWN							
$\bigcirc\!$	CAPPED CONDUIT OR RACEWAY							
<u>,</u>	CIRCUIT OR CONDUIT CONTINUATION							
	HOMERUN TO PANELBOARD - NUMBER OF ARROWHEADS INDICATES QUANTITY OF CIRCUITS. REFER TO SPECIFICATIONS FOR MINIMUM CONDUIT SIZES.							
	NOTES: 1. ALL BRANCH CIRCUITS SHALL BE #12 AWG MINIMUM. REFER TO THE SPECIFICATIONS FOR UPSIZING REQUIREMENTS DUE TO VOLTAGE DROP OR OTHER PURPOSES.							
PARTIAL CIRCUIT	2. ALL BRANCH CIRCUITS SHALL CONTAIN A SEPARATE GREEN INSULATED GROUNDING CONDUCTOR, #12 AWG MINIMUM, OR OTHERWISE AS NOTED.							
	3. ALL 120V AND 277V BRANCH CIRCUITS SHALL UTILIZE A SEPARATE DEDICATED NEUTRAL UNLESS OTHERWISE NOTED.							

	LEGEND (NOT ALL SYMBOLS MAY BE USED)
SYMBOL	DESCRIPTION
	MISCELLANEOUS
	NON-FUSIBLE SAFETY SWITCH, SIZE AS NOTED (AMP RATING/POLES)
4	FUSIBLE SAFETY SWITCH, SIZE AS NOTED (AMP RATING/POLES/FUSE SIZE)
ı⊠	COMBINATION MOTOR STARTER/SAFETY SWITCH
\blacksquare	FACTORY WIRED CONTROLLER OR EQUIPMENT
/X/	MOTOR CONNECTION
<u> </u>	JUNCTION BOX
	PANELBOARD
VFD	VARIABLE FREQUENCY DRIVE
EXXX-1)	SPECIALTY EQUIPMENT TAG
XXX-XX-XX	MECHANICAL EQUIPMENT TAG
$\nabla \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	COMMUNICATIONS OUTLET - STANDARD MOUNTING HEIGHT, SPECIAL MOUNTING HEIGHT, CEILING
▼	WALL PHONE
	ABBREVIATIONS
ABC	ABOVE COUNTER
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
CLG	CEILING
COF	COFFEE MACHINE
COP	COPIER
CR	CONTROLLED RECEPTACLE
Е	EMERGENCY POWER
EPO	EMERGENCY POWER OFF
EWC	ELECTRIC WATER COOLER
FBO	FURNISHED BY OTHERS
FLR	FLOOR MOUNTED
FSD	FIRE/SMOKE DAMPER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
ICE	ICE MACHINE/MAKER
IG	ISOLATED GROUND
MW	MICROWAVE
PC	PERSONAL COMPUTER WORKSTATION
PR	PRINTER
RF	REFRIGERATOR
ТС	TIME CLOCK
TV	TELEVISION
URF	UNDERCOUNTER REFRIGERATOR
USB	RECEPTACLE WITH USB OUTLET(S)
USBX	USB ONLY (X) = NUMBER OF USB OUTLETS
VFD	VARIABLE FREQUENCY DRIVE
VM	VENDING MACHINE
WP	WEATHERPROOF

	SHEET INDEX									
NUMBER	NUMBER SHEET NAME									
E0.1	ELECTRICAL LEGENDS									
E1.0	ELECTRICAL CORE AND SHELL									
E1.1	ELECTRICAL BUILD-OUT & MEZZANINE									
E6.1	ELECTRICAL SCHEDULES									

EQUIPMENT NO	MENCLATURE					
EQUIPMENT IDENTIFICATION TAG	S ARE COMPOSED AS FOLLOWS:					
EQUIPMENT BRANCH VOLTAGE LEVEL LOCATION						
EXAMPLE:						
MAIN SWITCHBOARD————————————————————————————————————						
EQUIPMENT TYPES:						
MSG = MAIN SWITCH GEAR SD = SERVICE DISCONNECT	LCP = LIGHTING CONTROL PANEL					
SD = SERVICE DISCONNECT DSG = DISTRIBUTION SWITCHGEAR MSB = MAIN SWITCHBOARD DSB = DISTRIBUTION SWITCHBOARD USB = UNIT SUBSTATION UPS = UNINTERRUPTIBLE POWER SUPPLY MDP = MAIN DISTRIBUTION PANELBOARD DP = DISTRIBUTION PANELBOARD IP = ISOLATED POWER PANELBOARD LP (OR P) = LIGHTING RELAY PANEL DCP = DIMMING CONTROL PANEL MCC = MOTOR CONTROL CENTER X = TRANSFORMER G = GENERATOR ATS = AUTOMATIC TRANSFER SWITCH WG = WIRING GUTTER EL-# = ELEVATOR (# REPRESENTS CAB)						
BRANCHES OF POWER:	VOLTAGE					
N = NORMAL S = LIFE SAFETY Q = I E = EMERGENCY C = CRITICAL U = U	EQUIPMENT H = 480/277V L = 208/120V					
LEVELS:	AREA / QUAD / SECTOR:					
1 = LEVEL 1	A = AREA A D = AREA D G = AREA G B = AREA B E = AREA E H = AREA H					

3. REFER TO LEGENDS FOR SYMBOLS NOT SHOWN.

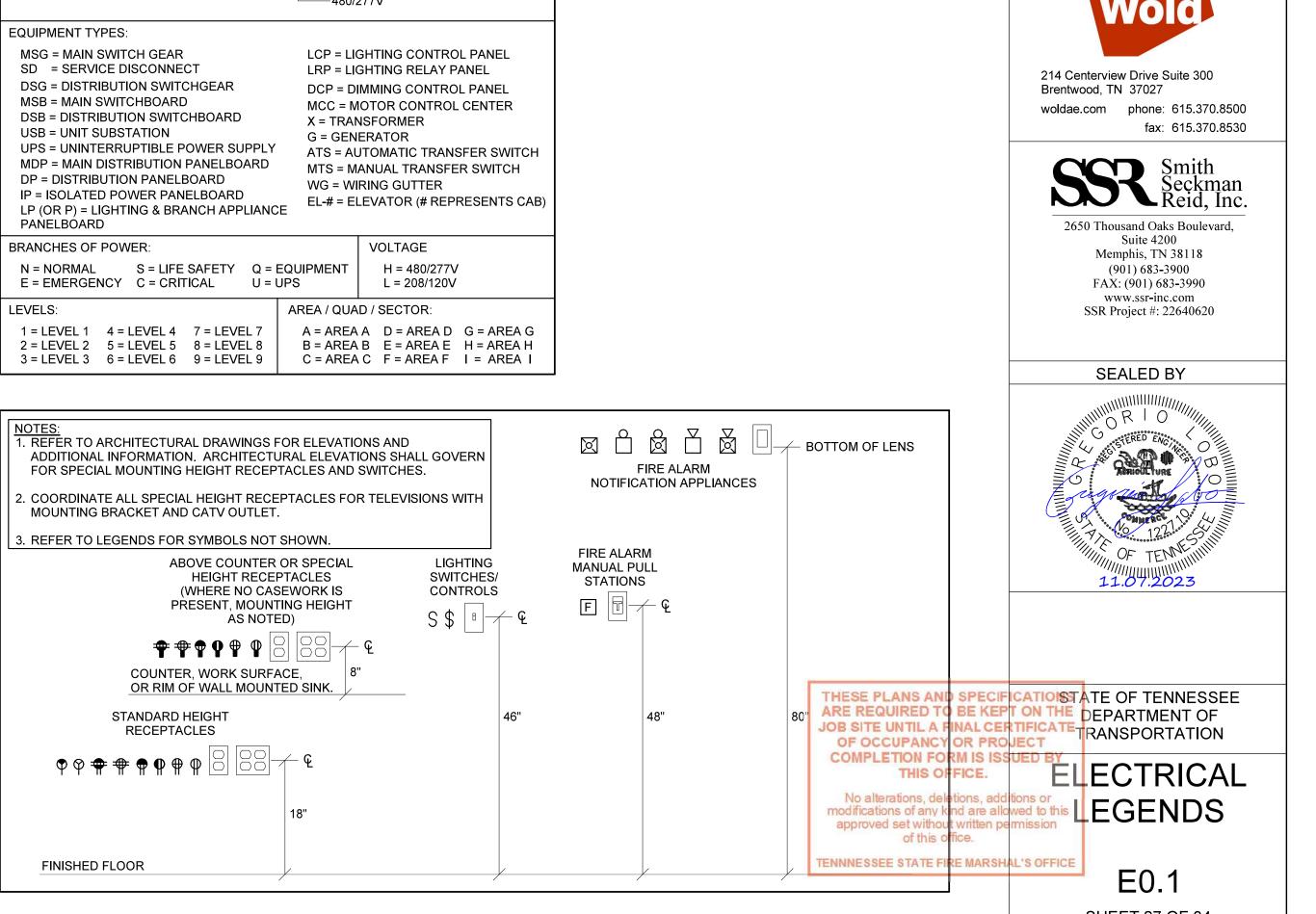
STANDARD HEIGHT RECEPTACLES

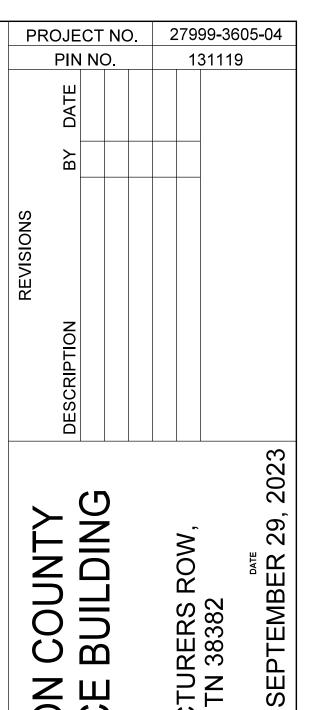
FINISHED FLOOR

ABOVE COUNTER OR SPECIAL HEIGHT RECEPTACLES (WHERE NO CASEWORK IS PRESENT, MOUNTING HEIGHT

AS NOTED)

COUNTER, WORK SURFACE, OR RIM OF WALL MOUNTED SINK.

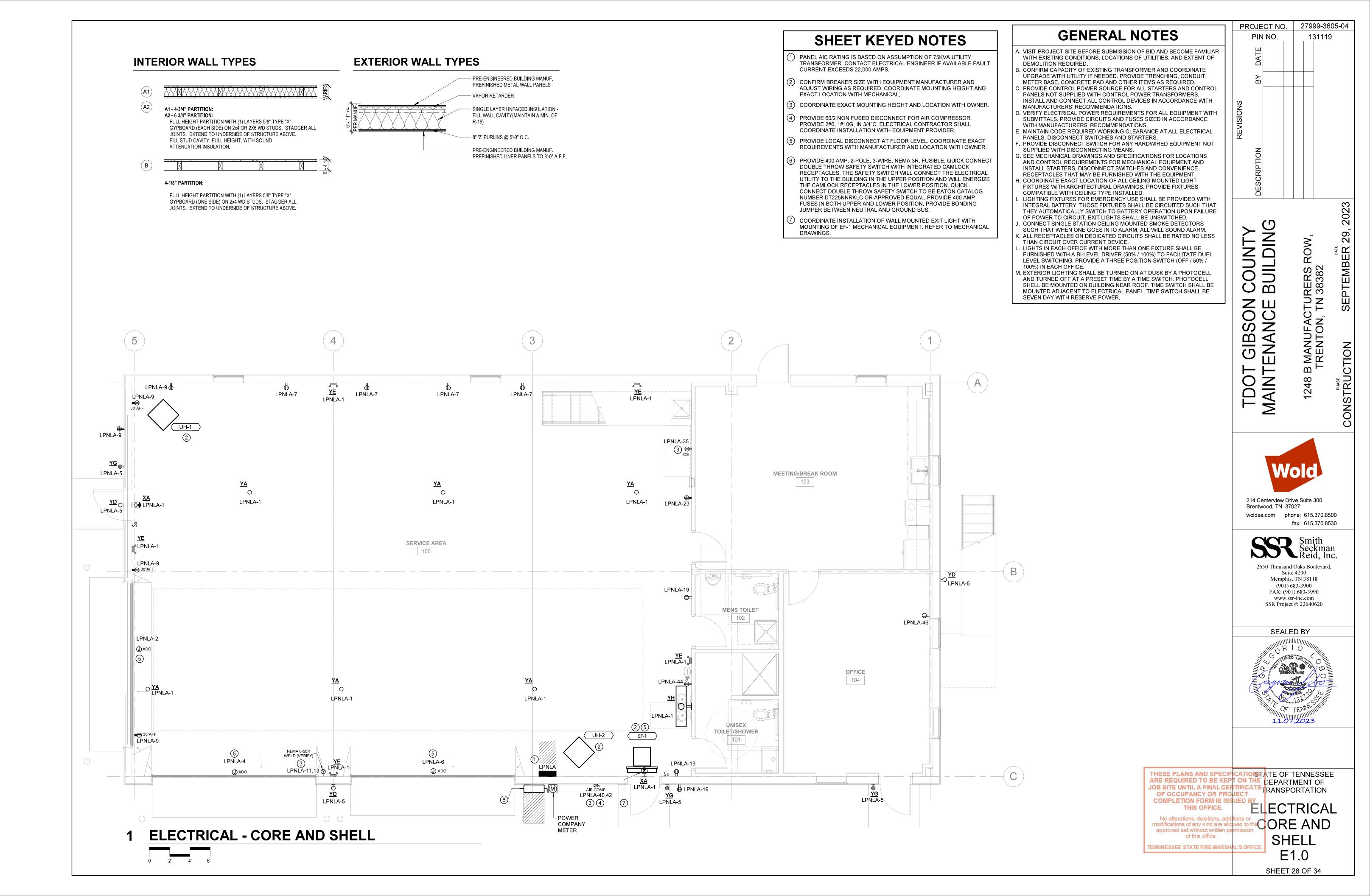


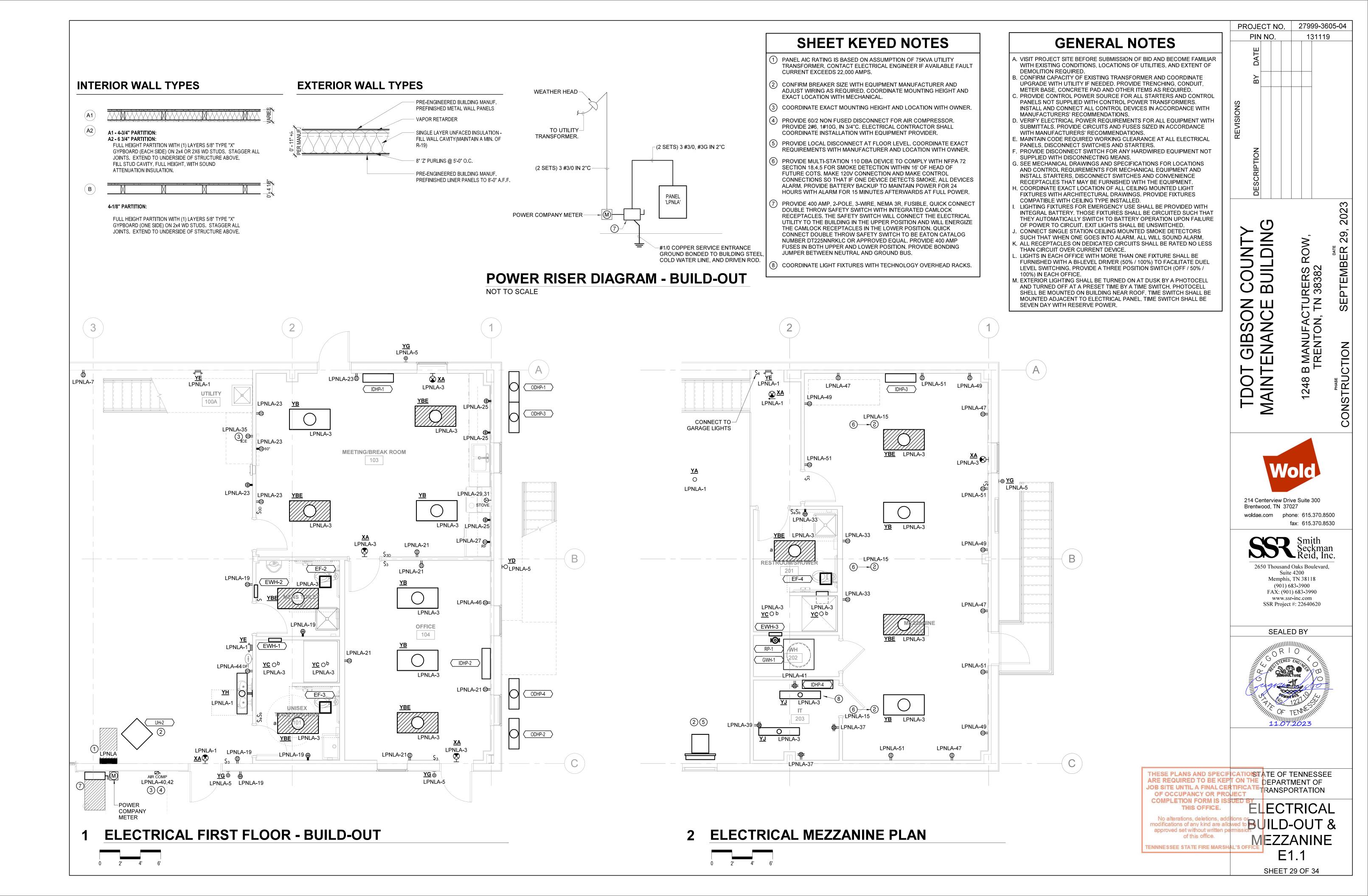


TDOT GIBSON COUNTY MAINTENANCE BUILDING 1248 B MANUFACTURERS ROW, TRENTON, TN 38382

CONSTRUCTION

SHEET 27 OF 34





	Supply From: UTIL Mounting: SUR Enclosure: NEM Notes:	`		•	hases: Wires:			Mains Type: MCB Bus Rating: 400 A MCB Rating: 400 A					
СКТ	Circuit Description	Notes	Trip	Poles	Α (VA)	В (VA)	Poles	Trip	Notes	Circuit Description	СКТ
1	Ltg		20	1	959	1000		-	1	20		Motorized Door	2
3	Ltg		20	1			829	1000	1	20		Motorized Door	4
5	Exterior Ltg		20	1	288	1000			1	20		Motorized Door	6
7	Rec		20	1			720	1440	2	15		IDHP-1/ ODHP-1	8
9	Rec		20	1	900	1440							10
11	Welding Rec	2	50	2			4800	1080	2	15		IDHP-2/ ODHP-2	12
13					4800	1080							14
15	Smoke Detection System		20	1			180	1440	2	15		IDHP-3/ ODHP-3	16
17	SPARE		20	1	0	1440							18
19	Rec		20	1			900	1020	2	20		EF-1	20
21	Rec		20	1	900	1020							22
23	Rec		20	1			900	180	1	20		EF-2, 3 & 4	24
25	Kitchen GFCI Rec		20	1	540	1500			1	20		EWH-1	26
27	Refrigerator Rec		20	1			900	1500	1	20		EWH-2	28
29	Stove Rec	2	50	2	5050	1500			1	20		EWH-3	30
31							5050	60	1	20		GWH-1	32
33	Mezzanine Rec		20	1	540	60			1	20		RP-1	34
35	Ice Machine	1	20	1			180	396	1	15		UH-1	36
37	Rec - IT Room		20	1	720	396			1	15		UH-2	38
39	Rec - IT Room		20	1			360	3000	2	60		Air Compressor	40
41	Rec - IT Room		20	1	360	3000							42
43	IDHP-4/ODHP-4		15	2			1080	1200	1	20	1	Drinking Fountain Rec	44
45					1080	180			1	20		TTB	46
47	Mezzanine Rec		20	1			720	0	1	20		SPARE	48
49	Mezzanine Rec		20	1	720	0			1	20		SPARE	50
51	Mezzanine Rec		20	1			900	0	1	20		SPARE	52
53	SPARE		20	1	0	0			1	20		SPARE	54
55	SPARE		20	1			0	0	1	20		SPARE	56
57	SPARE		20	1	0	0			1	20		SPARE	58
59	SPARE		20	1			0	0	1	20		SPARE	60
_			Tota	l Load:	3047	3 VA	2983	5 VA					
			Total	Amps:	25	4 A	24	9 A	-				

Volts: 120/240 Single

A.I.C. Rating: 22,000

	lotal Amps:	254 A 24	19 A		
Load Classification	Connected Load	Demand Factor	Demand Load	Panel	Totals
Htg	5352 VA	100.00%	5352 VA		
Kitcheq	900 VA	100.00%	900 VA	Total Conn. Load:	60308 VA
Ltg	2076 VA	125.00%	2595 VA	Total Demand:	56907 VA
Pwr	9600 VA	100.00%	9600 VA	Total Conn. Current:	251 A
Rec	20840 VA	73.99%	15420 VA	Total Demand Current:	237 A

. PROVIDE GFCI BREAKER AS REQUIRED. PROVIDE 2#8, #10G IN 1/2" C TO RECEPTACLE.

Name: LPNLA

Location: SERVICE AREA 100

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

GENERAL NOTES: ABBREVATIONS: NONE: FDS = FUSED DISCONNECT SWITCH NFDS = NON-FUSED DISCONNECT SWITCH CMSD = COMBINATION MOTOR STARTER/DISCONNECT SWITCH

TAC	TAG DESCRIPTION		VOLTAGE	рилег	SE U D	KVA	AMDS	DANIEL	CKT	DISCON	INECT	WIRE SIZE	CONDUIT	REMARKS
IAG	DESCRIPTION	LEVEL	VOLTAGE	PHASE	= M.P.	INVA	AIVIFS	PANEL	CKI.	DISC. TYPE	RATING	WIRE SIZE	SIZE	REIVIARNS
EF-1	EXHAUST FAN	FIRST FLOOR	240 V	1	2	2.0	8.5 A	LPNLA	20,22	NFDS	20A/2P	2 #12, #12G	1/2"	
EF-2	EXHAUST FAN	FIRST FLOOR	120 V	1		0.1	0.5 A	LPNLA	24			2 #12, #12G	1/2"	COORDINATE WITH MECHANICAL SUBMITTALS AND PROVIDE 20A/1P DISCONNECT FOR NEMA 5-20R RECEPTACLE AS REQUIRED.
EF-3	EXHAUST FAN	FIRST FLOOR	120 V	1		0.1	0.5 A	LPNLA	24			2 #12, #12G	1/2"	COORDINATE WITH MECHANICAL SUBMITTALS AND PROVIDE 20A/1P DISCONNECT FOR NEMA 5-20R RECEPTACLE AS REQUIRED.
EF-4	EXHAUST FAN	MEZZANINE	120 V	1	_	0.1	0.5 A	LPNLA	24			2 #12, #12G	1/2"	COORDINATE WITH MECHANICAL SUBMITTALS AND PROVIDE 20A/1P DISCONNECT FOR NEMA 5-20R RECEPTACLE AS REQUIRED.
EWH-1	ELECTRIC WALL HEATER	FIRST FLOOR	120 V	1	-	1.5	12.5 A	LPNLA	26	INT		2 #12, #12G	1/2"	
EWH-2	ELECTRIC WALL HEATER	FIRST FLOOR	120 V	1	-	1.5	12.5 A	LPNLA	28	INT		2 #12, #12G		
EWH-3	ELECTRIC WALL HEATER	MEZZANINE	120 V	1	_	1.5	12.5 A	LPNLA	30	INT		2 #12, #12G	1/2"	
GWH-1	GAS WATER HEATER	MEZZANINE	120 V	1	_	0.1	0.5 A	LPNLA	32			2 #12, #12G	1/2"	COORDINATE WITH PLUMBING SUBMITTALS AND PROVIDE 20A/1P DISCONNECT FOR NEMA 5-20R RECEPTACLE AS REQUIRED.
IDHP-1	INDOOR HEAT PUMP	FIRST FLOOR	240 V	1	_	2.9	12 A			INT		2 #12, #12G	1/2"	FED TRHOUGH ODHP-1
IDHP-2	INDOOR HEAT PUMP	FIRST FLOOR	240 V	1	-	2.2	9 A			INT		2 #12, #12G	1/2"	FED TRHOUGH ODHP-2
IDHP-3	INDOOR HEAT PUMP	MEZZANINE	240 V	1	-	2.9	12 A			INT		2 #12, #12G	1/2"	FED TRHOUGH ODHP-3
IDHP-4	INDOOR HEAT PUMP	MEZZANINE	240 V	1	-	2.2	9 A			INT		2 #12, #12G	1/2"	FED TRHOUGH ODHP-4
ODHP-1	OUTDOOR HEAT PUMP	FIRST FLOOR	240 V	1	-	2.9	12 A	LPNLA	8,10	NFDS	20A/2P	2 #12, #12G	1/2"	
ODHP-2	OUTDOOR HEAT PUMP	FIRST FLOOR	240 V	1	-	2.2	9 A	LPNLA	12,14	NFDS	20A/2P	2 #12, #12G	1/2"	
ODHP-3	OUTDOOR HEAT PUMP	FIRST FLOOR	240 V	1	_	2.9	12 A	LPNLA	16,18	NFDS	20A/2P	2 #12, #12G	1/2"	
ODHP-4	OUTDOOR HEAT PUMP	FIRST FLOOR	240 V	1	-	2.2	9 A	LPNLA	43,45	NFDS	20A/2P	2 #12, #12G	1/2"	
RP-1	RECIRC. PUMP	MEZZANINE	120 V	1	1/25	0.1	0.5 A	LPNLA	34			2 #12, #12G	1/2"	PROVIDE STARTER AND DISCONNECT AS REQUIRED
UH-1	UNIT HEATER	FIRST FLOOR	120 V	1	-	0.4	3.3 A	LPNLA	36	INT		2 #12, #12G	1/2"	PROVIDE STARTER AS REQUIRED
UH-2	UNIT HEATER	FIRST FLOOR	120 V	1	-	0.4	3.3 A	LPNLA	38	INT		2 #12, #12G	1/2"	PROVIDE STARTER AS REQUIRED

LUMINAIRE SCHEDULE

GENERAL NOTES:

. REFER TO AND COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS FOR FINAL FIXTURE LOCATIONS, HEIGHTS, CEILING TYPES, MOUNTINGS, FINISHES, ETC. . WHERE SUSPENDED FIXTURES ARE REQUIRED, REFER TO REFLECTED CEILING PLANS AND ELEVATIONS FOR MOUNTING HEIGHT TO PROVIDE PROPER LENGTH OF FIXTURE SUPPORT CABLE. UTILIZE ADJUSTABLE CABLE GRIPPERS FOR FINAL SETPOINT. ONCE FIXTURES ARE

LEVELLED, REMOVE EXCESS CABLING. PROVIDE MATCHING FEED CANOPY AT EACH SUPPORT LOCATION AS DIRECTED BY. 3. WHERE FIXTURES ARE SHOWN WITH CHAIN HANGERS, PROVIDE LONGER CHAIN. IF NEEDED, TO MOUNT AROUND OBSTRUCTIONS (I.E. DUCTWORK, PIPING, STRUCTURE, ETC.) TO AVOID SHADOWING ON SPACE/EQUIPMENT BELOW.

TYPE	DESCRIPTION	MANUFACTURER/SERIES			LA	MPS		VOLTAGE	BALLAST/DRIVER	MOUNTING	REMARKS
ITFE	DESCRIPTION	WAND ACTURENSERIES		LAMPS	MIN. LUMENS	COLOR	INPUT WATTS	VOLTAGE	BALLAS I/DRIVER	WICONTING	REWARKS
XA	LED EDGE LIT SINGLE FACE EXIT SIGN	LITHONIA EDGR		LED	N/A	N/A	3.0	UNIV	LED DRIVER	SEMI-RECESSED	
YA	LED STEM MOUNTED, INDUSTRIAL HIGHT BAY	RUGGED GRADE LIGHTING #RGL-TITAN3-150WRB		LED	21000	3500K	150.0	120V	LED DRIVER (1-10V DIMMING)	15 FEET ABOVE FINISHED FLOOR	
YB	LED SURFACE MOUNTED WRAPAROUND	COLUMBIA #LAW4-35HL-EDU		LED	5627	3500K	51.0	120V	LED DRIVER (1-10V DIMMING)		
YBE	LED SURFACE MOUNTED WRAPAROUND	COLUMBIA #LAW4-35HL-EDU		LED	5627	3500K	51.0	120V	LED DRIVER (1-10V DIMMING)		
YC	4" LED DOWNLIGHT	LITHONIA # LDN4 35/10 L04AR LSS MVOLT		LED	1045	3500K	11.0	120V	LED DRIVER	RECESSED	
YD	EXTERIOR WALL PACK	HUBBELL #WGH-133L-4K-U-M		LED	8989	SEE REMARKS	76.0	120V	LED DRIVER	SURFACE MOUNTED	4000K COLOR TEMP.
YE	LED EMERGENCY LIGHTING UNIT W/ 3.6V NICAD BATTERY	EXITRONIX #LED-90 SERIES		LED	N/A	N/A	3.0	120V		SURFACE MOUNTED	
YG	EMERGENCY EGRESS LIGHT	LITHONIA #AFF PEL UVOLT LTP SDRT FCT		LED	635	SEE REMARKS	12.0	120V		SURFACE MOUNTED	4000K COLOR TEMP.
YH	LED WALL DIRECT	CURRENT/#67L-W-D-4-4-DM-X-35K-D100-D01-1C-UNV		LED	4000	3500K	34.0	120V	LED DRIVER	WALL MOUNTED	FINISH/COLOR BY ARCH
YJ	LED WRAPAROUND	COLUMBIA #LAW4-40MW-EU		LED	3787	3500K	31.0	120/277V	LED DRIVER		

ELECTRICAL SPECIFICATIONS

- A. INCLUDES THE FURNISHING OF ALL LABOR, SUPERVISION, MATERIALS, EQUIPMENT, TOOLS, ETC., REQUIRED FOR THE ELECTRICAL SYSTEMS AS SHOWN AND DESCRIBED IN THESE DRAWINGS.
- B. THE WORK SHALL INCLUDE, BUT IS NOT NECESSARILY LIMITED TO, THE FOLLOWING:
- 1. BUILDING WIRE AND CABLE 2. WIRING DEVICES
- 3. ELECTRICAL BOXES AND FITTINGS
- 4. CIRCUIT AND MOTOR DISCONNECTS
- SUPPORTING DEVICES 6. SEISMIC RESTRAINTS
- . ELECTRICAL IDENTIFICATION 8. GROUNDING
- 9. LIGHTING 10. CONDUIT FOR AUXILIARY 11. CIRCUITS FOR HVAC EQUIPMENT

RELATED WORK

- A. THE FOLLOWING WORK RELATED TO THE ELECTRICAL WORK. B. HEATING, VENTILATING, AIR CONDITIONING AND PLUMBING EQUIPMENT, INCLUDING MOTORS, MOTOR STARTERS AND CONTROL EQUIPMENT WILL BE FURNISHED AND INSTALLED UNDER DIVISION 15.
- C. PAINTING, EXCEPT REPAIR OF FACTORY APPLIED FINISHES ON ELECTRICAL EQUIPMENT.

CODES AND PERMITS

- A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE, NFPA 70, 2012 INTERNATIONAL BUILDING CODE, 2012 INTERNATIONAL ENERGY CONSERVATION CODE AND THE LATEST EDITION OF ALL LOCAL OR STATE CODES, LAWS, AND ORDINANCES.
- TRADE NAMES AND EQUALS A. MANUFACTURER'S TRADE NAMES OR CATALOG NUMBERS USED IN THESE
- SPECIFICATIONS AND INDICATED ON THE DRAWINGS DENOTE TYPE, SIZE. QUALITY, AND DESIGN OF EQUIPMENT REQUIRED. B. WHERE EQUIPMENT IS SPECIFIED AS "EQUAL", OR "APPROVED EQUAL", IT SHALL MEAN EQUAL IN THE OPINION OF THE ENGINEER OF RECORD. THIS CONTRACTOR IS TO OFFER SUBSTITUTIONS FOR CONSIDERATION AS EQUAL

AFTER THE CONTRACT IS SIGNED; HOWEVER, BUT SHALL BE PREPARED TO

- FURNISH SPECIFIED MATERIALS WHERE SUBSTITUTIONS ARE NOT APPROVED. MATERIAL AND EQUIPMENT
- A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND OF THE QUALITY
- B. MATERIAL OR EQUIPMENT THAT HAS BEEN STORED OUTDOORS UNPROTECTED FOR LONG PERIODS OF TIME OR OTHERWISE DAMAGED IS NOT ACCEPTABLE AS NEW MATERIAL. C. APPARATUS AND MATERIALS USED IN THIS WORK WHICH ARE SUBJECT TO
- APPROVAL OF UNDERWRITERS LABORATORIES (UL) SHALL BEAR THE UL LABEL OR BE UNDERWRITERS LISTED.
- DELIVERY, STORAGE, AND HANDLING OF MATERIAL AND EQUIPMENT A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PURCHASE, DELIVERY AND STORAGE OF ALL MATERIALS AND EQUIPMENT INDICATED TO BE
- SUPPLIED UNDER THIS SECTION OF THE SPECIFICATIONS, AND IT SHALL BE HIS RESPONSIBILITY TO SCHEDULE THE DELIVERY OF MATERIALS AND EQUIPMENT AT SUCH STAGES OF THE WORK AS WILL PERMIT UNINTERRUPTED CONSTRUCTION OF ALL PHASES OF THE WORK.
- B. WHERE OWNER FURNISHED EQUIPMENT IS TO BE TURNED OVER TO THIS CONTRACTOR FOR INSTALLATION, IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO RECEIVE SUCH EQUIPMENT AND STORE IN A SAFE, DRY LOCATION.
- C. PERFORM ALL REQUIRED RIGGING, HOISTING, TRANSPORTING, ETC., OF ALL EQUIPMENT FURNISHED, AND FURNISH ANY ADDITIONAL STRUCTURAL MEMBERS, AS MAY BE REQUIRED, FOR THE PROPER SUPPORT OF ANY AND ALL EQUIPMENT FURNISHED HEREUNDER. ACCURACY OF DATA

WITH ONLY SUCH MINOR ADJUSTMENTS AS WILL BE REQUIRED TO AVOID

INTERFERENCES WITH STRUCTURE OR THE WORK OF OTHER TRADES.

A. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC, AND EXCEPT WHERE DIMENSIONS ARE SHOWN, ARE NOT INTENDED TO SHOW THE EXACT LOCATIONS OF OUTLETS, CONDUITS, SWITCHES, FIXTURES, ETC. ALL WORK SHALL BE INSTALLED AS NEARLY AS POSSIBLE IN THE LOCATIONS INDICATED,

- B. THE DRAWINGS ARE NOT INTENDED TO SHOW ALL JUNCTION OR PULL BOXES, FITTINGS AND CONNECTIONS, AND DETAILS OF WORK TO BE DONE. THIS CONTRACTOR SHALL SUPPLY ALL NECESSARY BOXES, FITTINGS AND CONNECTIONS FOR COMPLETE INSTALLATION IN A SATISFACTORY MANNER.
- C. ANY OFFSETS IN CONDUIT REQUIRED OR NECESSARY TO AVOID INTERFERENCES WITH STRUCTURE, OR THE WORK OF OTHER TRADES. ETC., SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
- A. COORDINATE WORK WITH THAT OF OTHER SUBCONTRACTORS ON THE JOB AND ALSO WITH THAT OF THE OWNER IN ORDER THAT THERE BE NO DELAY IN THE PROPER INSTALLATION AND COMPLETION OF THE WORK.
- MANUFACTURER'S RECOMMENDATIONS A. UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATION OF THE MANUFACTURER. A COPY OF THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS SHALL BE KEPT IN THE JOB SUPERINTENDENT'S OFFICE AND SHALL BE AVAILABLE TO THE
- OWNER'S REPRESENTATIVE AT ALL TIMES. A. TEST ALL ELECTRICAL WIRING FOR CONTINUITY, SHORTS, IMPROPER GROUNDS AND INSULATION RESISTANCE. MOTORS SHALL BE CHECKED FOR PROPER ROTATION AND BRANCH CIRCUIT AND OVERLOAD PROTECTION. PANELBOARDS SHALL BE CHECKED FOR BALANCED LOADING AND CORRECT PHASE ROTATION. DISCREPANCIES SHALL BE CORRECTED. THIS CONTRACTOR SHALL FURNISH TEST EQUIPMENT AND MATERIAL, AND SHALL BE RESPONSIBLE FOR REPLACEMENT OR REPAIR
- OF DAMAGE DUE TO TEST FAILURES. B. AFTER INSTALLATION IS COMPLETE, VOLTAGE MEASUREMENTS SHALL BE MADE AT EACH PANELBOARD TO VERIFY PROPER SYSTEM VOLTAGES. VOLTAGE SHALL BE MEASURED UNDER LOAD CONDITIONS WHERE
- POSSIBLE. VOLTAGE READINGS SHALL BE RECORDED. C. AFTER ALL TESTS HAVE BEEN COMPLETED. THIS CONTRACTOR SHALL CLEAN ALL LIGHT FIXTURES AND REPLACE ANY DEFECTIVE COMPONENTS ALL EQUIPMENT AND CONDUIT SHALL BE CLEANED AND LEFT IN WORKING ORDER. ALL DEBRIS CREATED BY THE EXECUTION OF THE ELECTRICAL WORK SHALL BE REMOVED BY THIS CONTRACTOR. THIS CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO KEEP PANELS, ESPECIALLY CIRCUIT BREAKER HANDLES, CLEAN DURING CONSTRUCTION.
- BUILDING WIRE, CABLE AND CONNECTORS A. BUILDING WIRE AND CONNECTORS SHALL BE UL LISTED AND LABELED. COMPLY WITH NEMA, ICEA, ANSI AND ASTM STANDARDS PERTAINING TO
- MATERIALS. CONSTRUCTION AND TESTING OF BUILDING WIRE AND CABLE. B. EXCEPT AS OTHERWISE INDICATED, PROVIDE WIRE, CABLE AND CONNECTORS OF MANUFACTURER'S STANDARD MATERIALS, AS INDICATED BY PUBLISHED PRODUCT INFORMATION, DESIGNED AND CONSTRUCTED AS RECOMMENDED BY MANUFACTURER AND AS
- REQUIRED FOR THE INSTALLATION. C. PROVIDE FACTORY FABRICATED 600 VOLT INSULATED BUILDING WIRE OF SIZES, RATINGS, MATERIALS, AND TYPES INDICATED BELOW:
 - 1. UL TYPE: THWN WET OR DRY LOCATIONS 2. UL TYPE: SA - FIXTURE WIRING ONLY
- 3. MATERIAL COPPER D. CONDUCTORS #10 AWG AND SMALLER: SOLID OR STRANDED CONDUCTORS#8 AWG AND LARGER CONCENTRIC-LAY-STRANDED
- (STANDARD FLEXIBILITY) E. CONDUCTOR IDENTIFICATION: CONDUCTORS SHALL BE IDENTIFIED BY COLOR AS FOLLOWS: 120/240
- **VOLT SYSTEMS** A PHASE BLACK B PHASE RED **NEUTRAL** WHITE
- EQUIPMENT GROUND GREEN F. COLOR FOR CONDUCTORS #10 AWG AND SMALLER, COLOR SHALL BE PERMANENT FACTORY APPLIED. CONDUCTORS #8 AWG AND LARGER SHALL BE BLACK WITH 3M OR EQUAL, COLOR CODED PHASE TAPE APPLIED AT THE TERMINATIONS. WHERE TYPE MC CABLE IS USED, CIRCUIT NUMBERS SHALL BE APPLIED AT ALL WIRE SPLICES AND TERMINATIONS.

- G. WHEN WIRES ARE INSTALLED IN CONDUIT, SUFFICIENT SLACK SHALL BE ALLOWED TO PERMIT THE CONNECTION OF FIXTURES OR WIRING DEVICES WITHOUT ADDITIONAL SPLICE
- H. ALL CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET OR FROM PANEL TO OUTLET OR DEVICE. NO SPLICES WILL BE PERMITTED IN CONDUIT RUNS.
- 1. UNLESS OTHERWISE NOTED ON THE PLANS, BRANCH CIRCUITS SHALL BE RUN HOME IN INDIVIDUAL CONDUITS. AS FOLLOWS: 2. ALL POWER AND LIGHTING BRANCH CIRCUIT WIRING SHALL BE RUN
- HOME IN SEPARATE CONDUITS. AS INDICATED. 3. FEEDERS SHALL BE RUN IN INDIVIDUAL CONDUITS FROM THE FEEDER SOURCE TO THE LOAD TERMINATIONS, AS INDICATED ON THE
- DRAWINGS. DO NOT COMBINE MULTIPLE FEEDERS IN A WIREWAY OR JUNCTION BOX. 4. USE COMPRESSION TYPE WIRE CONNECTORS FOR STRANDED CONDUCTORS, FOR MOTOR CONNECTIONS, AND ALL OTHER CONNECTIONS OR SPLICES SUBJECT TO VIBRATION. WIRE NUTS MAY
- BE USED ELSEWHERE 5. BRANCH CIRCUITS FOR MOTORS, AS INDICATED ON THE DRAWINGS, ARE APPROXIMATE SIZE ONLY. THIS CONTRACTOR SHALL TO OBTAIN THE EXACT RATING OF THE MOTOR OPERATED EQUIPMENT FROM THE MECHANICAL CONTRACTOR, AND SHALL ADJUST THE SIZE OF THE PROTECTIVE DEVICE AND WIRE TO CONFORM TO THE REQUIREMENTS OF THE EQUIPMENT. ALL SUCH CHANGES SHALL BE SUBMITTED TO
- THE ENGINEER FOR APPROVAL 6. TORQUE ALL BOLTED LUGS AND CONNECTORS TO TORQUE VALUES RECOMMENDED BY THE EQUIPMENT MANUFACTURER. WHERE TORQUE VALUES ARE NOT GIVEN, USE APPLICABLE TORQUE VALUES GIVEN BY UL STANDARDS #486A AND #486B. IF STUDS ARE COPPER OR STEEL, OR IF STEEL BOLTS ARE USED, USE A BELLEVILLE DISHED WASHER WITH A WIDE SERIES. HEAVY FLAT WASHER, TIGHTEN THE CONNECTION UNTIL THE BELLEVILLE IS FLAT. DO NOT RE-TIGHTEN
- '. MINIMUM SIZE BRANCH CIRCUIT CONDUCTOR SHALL BE #12 AWG. 8. PRIOR TO ENERGIZATION, TEST ALL LIGHTING, POWER, CONTROL, AND SPECIAL CIRCUITS AND ASSOCIATED ELECTRICAL EQUIPMENT FOR
- LOW INSULATION RESISTANCE, GROUNDS, AND SHORT CIRCUITS. 9. FURNISH AND SET UP ALL METERS, INSTRUMENTS, EQUIPMENT, AND LABOR REQUIRED TO MAKE TESTS, AS INDICATED.
- 10. REPAIR AND/OR REPLACE AT CONTRACTOR'S EXPENSE, ANY EQUIPMENT DAMAGED IN THE PROCESS OF CONDUCTING THE TESTS. 11. TEST RESULTS SHALL SHOW VALUES NO SMALLER THAN THOSE
- RECOMMENDED BY THE NEC, IPCEA, IEEE, ANSI AND NEMA. 12. PERFORM CONTINUITY TESTS ON ALL POWER AND CONTROL CIRCUITS, INCLUDING SPARE CONDUCTORS. CHECK PHASE IDENTIFICATION ON POWER CABLES.
- **BOXES AND FITTINGS** A. COMPLY WITH NEC AS APPLICABLE TO CONSTRUCTION AND
- INSTALLATION OF ELECTRICAL WIRING BOXES AND FITTINGS. B. PROVIDE ELECTRICAL BOXES AND FITTINGS WHICH HAVE BEEN UL LISTED
- C. PROVIDE CAST METAL WEATHERPROOF OUTLETS FOR LOCATIONS EXPOSED TO WEATHER OR MOISTURE.
- D. EXCEPT WHERE INDICATED OTHERWISE ON THE DRAWINGS, OUTLET BOXES SHALL BE SO LOCATED AS TO ALLOW THE ASSOCIATED DEVICE OR FIXTURE TO BE MOUNTED AT LOCATIONS AS INDICATED ON THE DRAWINGS.
- E. PROVIDE PULL BOXES AND JUNCTION BOXES, AS INDICATED ON THE PLANS, OR AS REQUIRED. BOXES SHALL BE SIZED AS INDICATED ON THE PLANS AND WHERE NOT INDICATED, THEY SHALL BE SIZED IN ACCORDANCE WITH ARTICLE 370 OF THE NATIONAL ELECTRICAL CODE.

F. PROVIDE COVERPLATES FOR ALL OUTLET BOXES EXCEPT

COMMUNICATIONS OUTLETS. G. IN ALL CASES, WHERE TWO OR MORE DEVICES ARE INSTALLED IN GANG BOXES, GANG PLATES WITH SUITABLE OPENINGS SHALL BE PROVIDED.

- WIRING DEVICES
- A. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE FOLLOWING PRODUCTS, OR AN APPROVED EQUAL:
- B. TOGGLE SWITCHES: 20 AMPERE, 120-277 VOLT, AC ONLY, QUIET TYPE, HUBBELL #1221 (SP), #1222 (DP), #1223 (3-WAY), #1224 (4-WAY), C. GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLES: NEMA 5-15R, 15 AMPERE, 125 VOLT, 2-POLE, 3-WIRE DUPLEX, HUBBELL #GF5252, OR APPROVED
- D. PROVIDE COVERPLATES FOR ALL WIRING DEVICES.
- E. MULTIPLE OUTLETS SHALL BE PROVIDED WITH MULTIPLE GANG PLATES OF ONE-PIECE CONSTRUCTION.
- F. COVERPLATES FOR OUTDOOR GFI DUPLEX RECEPTACLES SHALL BE TAYMAC # 20310, OR APPROVED EQUAL FOR USE WITH TYPE "FS" BOXES. COVERPLATES SHALL HAVE NEMA 3R RATING. G. COVERPLATES FOR ALL FLUSH MOUNTED DEVICES SHALL BE HIGH-IMPACT
- SMOOTH NYLON, WITH COLOR TO MATCH DEVICE. CIRCUIT AND MOTOR DISCONNECTS
- A. ALL DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE NEMA 1 FOR INDOOR AND NEMA 3R FOR OUTDOOR
- B. ALL DISCONNECTS SWITCHES SHALL BE UL LISTED 240 VOLT OR 600 VOLT RATING AS REQUIRED. C. FURNISH AND INSTALL DISCONNECT SWITCHES WHERE INDICATED ON THE DRAWINGS AND/OR WHERE REQUIRED BY CODE, DISCONNECT SWITCHES
- SHALL BE FUSIBLE OR NON-FUSIBLE, AS INDICATED, OR REQUIRED, TO PROVIDE THE REQUIRED DISCONNECT MEANS AND/OR BRANCH CIRCUIT PROTECTION.
- D. DISCONNECT SWITCHES SHALL BE AS MANUFACTURED BY SQUARE D COMPANY, G. E. COMPANY, SIEMENS, OR APPROVED EQUAL. SUPPORTING DEVICES
- A. PROVIDE SUPPORT FOR ALL ELECTRICAL WORK AS INDICATED ON THE DRAWINGS, AS SPECIFIED HEREIN, OR AS REQUIRED BY CODE. B. COMPLY WITH NEC AS APPLICABLE TO CONSTRUCTION AND INSTALLATION OF ELECTRICAL SUPPORTING DEVICES.
- C. COMPLY WITH APPLICABLE REQUIREMENTS OF ANSI/NEMA STD. PUB. NO. FB 1, "FITTINGS AND SUPPORTS FOR CONDUIT AND CABLE ASSEMBLIES". D. COMPLY WITH THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION
- "STANDARD OF INSTALLATION" PERTAINING TO ANCHORS, FASTENERS. HANGERS, SUPPORTS AND EQUIPMENT MOUNTING E. WHERE MANUFACTURED SUPPORTING DEVICES ARE PROVIDED, THEY SHALL COMPLY WITH MANUFACTURER'S STANDARD MATERIALS, DESIGN, AND
- CONSTRUCTION IN ACCORDANCE WITH PUBLISHED PRODUCT INFORMATION. . FURNISH AND INSTALL ALL NECESSARY HANGERS, SUPPORTS, ETC., AS REQUIRED, FOR RIGIDLY AND SECURELY MOUNTING ALL SWITCHES, CONNECTOR BOXES, LIGHTING FIXTURES, PANELBOARDS, PULL BOXES, CONDUIT, OUTLET BOXES, AND ALL OTHER ITEMS OF ELECTRICAL WORK
- INCLUDED IN THIS PROJECT. G. ALL HANGERS AND SUPPORTS SHALL BE FASTENED TO THE BUILDING STRUCTURE BY MEANS OF BOLTS, U-CHANNEL STRUT SYSTEM, ANCHORS AND RODS, OR OTHER APPROVED MEANS.
- H. TYPE MC CABLES SHALL BE SUPPORTED WITHIN 12 INCHES OF EVERY JUNCTION OR OUTLET BOX, AND AT INTERVALS NOT TO EXCEED 6'-0" IN ACCORDANCE WITH THE NEC.
- STRUCTURE, AS INDICATED ON THE DRAWINGS OR AS SPECIFIED HEREIN. ELECTRICAL IDENTIFICATION A. FURNISH AND INSTALL A CONDUCTOR IDENTIFICATION BAND ON EACH CONDUCTOR IN EACH BOX/ENCLOSURE/CABINET WHERE WIRES OF MORE

I. LIGHTING FIXTURES SHALL BE SECURELY SUPPORTED FROM THE BUILDING

- THAN ONE CIRCUIT ARE PRESENT. EXCEPT WHERE ANOTHER FORM OF IDENTIFICATION, SUCH AS COLOR CODED CONDUCTORS, IS PROVIDED. CONDUCTOR IDENTIFICATION BANDS SHALL BE T & B TYPE E-Z, OR APPROVED
- B. FURNISH AND INSTALL AN ENGRAVED PLASTIC LAMINATE IDENTIFICATION PLATE AT EACH PANELBOARD AND DISCONNECT SWITCH. SECURE WITH
- STAINLESS STEEL SCREWS. INCLUDE THE FOLLOWING INFORMATION: C. DISTRIBUTION LIGHTING AND APPLIANCE PANELBOARDS - PANEL NAME IN 1/4" LETTERS, VOLTAGE AND PHASE IN 1/8" LETTERS (E.G., "PANEL A, 120/240V, 1-
- D. EACH DISCONNECT SWITCH LOAD SERVED, VOLTAGE AND CIRCUIT NUMBER IN 1/8" LETTERS (E.G., "ACU-1, 240V, A-6")

GROUNDING

SMTO = MANUAL MOTOR STARTER WITH THERMAL OVERLOAD

- A. FURNISH AND INSTALL SYSTEM, ENCLOSURE, AND EQUIPMENT GROUNDING FOR ALL ELECTRIC WIRING FOR THE BUILDING IN FULL COMPLIANCE WITH THE REQUIREMENTS OF LOCAL CODES AND THE NEC. ALL GROUNDING CONDUCTORS SHALL BE COPPER.
- B. PROVIDE GROUNDING PRODUCTS THAT ARE UL LISTED AND LABELED AND COMPLY WITH ESTABLISHED INDUSTRY STANDARDS FOR APPLICATIONS INDICATED.
- C. A CONTINUOUS (GREEN) EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED WITH ALL FEEDERS AND BRANCH CIRCUITS. THIS GROUNDING CONDUCTOR SHALL BE INSULATED SAME AS REQUIRED FOR 600 VOLT PHASE CONDUCTORS AND SHALL BE GREEN IN COLOR, WHERE POSSIBLE. GROUNDING CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH ARTICLE 250-95 OF THE NEC AND SHALL TERMINATE BY MEANS OF COMPRESSION LUGS AT EACH GROUND BUS, PANELBOARD GROUNDING BAR, PULL BOXES, DISCONNECT
- SWITCHES, STARTERS, MOTORS, AND OTHER DEVICES. D. PROVIDE ALL GROUNDING REQUIRED FOR NEW RADIOGRAPHY SYSTEMS AS RECOMMENDED BY SYSTEMS MANUFACTURER.
- A. PROVIDE ONLY LED LIGHTING FIXTURES. EXIT SIGNS AND
- EMERGENCY LIGHTING UNITS WHICH ARE UL LISTED AND LABELED. B. CLEAN LIGHTING FIXTURES OF DIRT AND DEBRIS UPON COMPLETION OF THE INSTALLATION. PROTECT INSTALLED FIXTURES FROM DAMAGE DURING REMAINDER OF CONSTRUCTION PERIOD.
- WIRING FOR HVAC EQUIPMENT A. FURNISH AND INSTALL ALL LINE VOLTAGE POWER, INTERLOCK AND TEMPERATURE CONTROL WIRING FOR HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT. FURNISH AND INSTALL DISCONNECT
- SWITCHES AS INDICATED OR REQUIRED. B. CONNECTION TO HVAC EQUIPMENT SUBJECT TO MOVEMENT OR VIBRATION SHALL BE MADE WITH LIQUID-TIGHT FLEXIBLE CONDUIT. C. ALL WIRING INSTALLED OUTDOORS SHALL UTILIZE COMPRESSION
- TYPE EMT FITTINGS, AND WEATHERPROOF GASKETED CAST METAL PANELBOARDS - GENERAL REQUIREMENTS
- A. PROVIDE PRODUCTS LISTED, CLASSIFIED, AND LABELED BY UNDERWRITERS LABORATORIES INC. AS SUITABLE FOR THE PURPOSE INDICATED.
- B. MAINS: CONFIGURE TOP OR BOTTOM INCOMING FEED AS INDICATED OR AS REQUIRED FOR THE INSTALLATION. C. BRANCH OVERCURRENT PROTECTIVE DEVICES: REPLACEABLE
- WITHOUT DISTURBING ADJACENT DEVICES. D. BUSSING: SIZED IN ACCORDANCE WITH UL 67 TEMPERATURE RISE REQUIREMENTS.
- 1. PROVIDE SOLIDLY BONDED EQUIPMENT GROUND BUS IN EACH PANELBOARD, WITH A SUITABLE LUG FOR EACH FEEDER AND BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR. E. CONDUCTOR TERMINATIONS: SUITABLE FOR US WITH THE
- CONDUCTORS TO BE INSTALLED F. ENCLOSURES: COMPLY WITH NEMA 250, AND LIST AND LABEL AS COMPLYING WITH UL 50 AND UL50E
- 1. ENVIRONMENT TYPE PER NEMA 250: UNLESS OTHERWISE INDICATED, AS SPECIFIED FOR THE FOLLOWING INSTALLATION LOCATIONS: a. INDOOR CLEAN, DRY LOCATIONS: TYPETHESE PLANS AND \$

DIMENSIONS AS BOXES

WITH UL 1053.

- ARE REQUIRED TO B b. OUTDOOR LOCATIONS: TYPE 3R 2. BOXES: GALVANIZED STEEL UNLESS OTHERWISE INDICATED. FIN 3. FRONTS: a. FRONTS FOR SURFACE-MOUNTED ENCLOSURES: SAME FORM
- 4. LOCKABLE DOORS: ALL LOCKS KEYED ALIKE UNLESS OTHERWISE G. GROUND FAULT PROTECTION: WHERE GROUND-FAULT PROTECTION IS INDICATED, PROVIDE SYSTEM LISTED AND LABELED AS COMPLYING
 - of this office. TENNNESSEE STATE FIRE MAR

PIN NO. 131119

27999-3605-04

PROJECT NO.

VFD = VARIABLE FREQUENCY DRIVE

INT = INTEGRAL DISCONNECT

CP = CONTROL PANEL

 \Box FA

SEPTEMBER

214 Centerview Drive Suite 300 Brentwood, TN 37027 woldae.com phone: 615.370.8500



Suite 4200 Memphis, TN 38118 (901) 683-3900 FAX: (901) 683-3990 www.ssr-inc.com SSR Project #: 22640620

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ELECTRICAL

SHEET 30 OF 34

	LEGEND							
SYMBOL	DESCRIPTION	MOUNTING HEIGHT TO CENTER LINE	BACK BOX AND PLASTER RING SIZE	CONDUIT SIZE				
	STRUCTURED CABLING / PAGING							
⊲x	DATA OUTLET (SUB-SCRIPT DENOTES NUMBER OF OUTLETS IN FACEPLATE)	18" AFF OR MATCH POWER OUTLET	4" x 4" x 2 1/2" WITH SINGLE GANG MUD RING	1"				
- ∲ x	WIRELESS ACCESS POINT CONNECTION (SUB-SCRIPT REPRESENTS NUMBER OF OUTLETS IN FACEPLATE)	FINISH CEILING OR ABOVE CEILING	4" x 4" x 2 1/2" WITH SINGLE GANG MUD RING	1"				
∢ w	WALL PHONE VOICE OUTLET	+46" AFF OR PER ARCH. ELEVATIONS	4" x 4" x 2 1/2" WITH SINGLE GANG MUD RING	1"				
<u></u>	TELECOMMUNICATIONS GROUNDING BAR (ELEVATION VIEW) PROVIDED BY DIVISION 26.	WALL MOUNTED OR AS VENDOR SPECIFIED	N/A	N/A				

	PROVIDED BY DIVISION 26. WALL MOUNTED OR AS VENDOR SPECIFIED N/A	N/A
	ABBREVIATIONS	
ABC	ABOVE COUNTER	
AC	ABOVE CEILING	
AFF	ABOVE FINISHED FLOOR	
ATC	ACOUSTIC TILE CEILING	
С	CONDUIT	
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED	
DAS	DISTRIBUTED ANTENNA SYSTEM	
EF	ENTRANCE FACILITY	
ER	EQUIPMENT ROOM	
ERRCS	EMERGENCY RESPONDER RADIO COMMUNCATION SYSTEM	
JB	JUNCTION BOX	
ММ	MULTI MODE	
NTS	NOT TO SCALE	
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED	
OFOI	OWNER FURNISHED OWNER INSTALLED	
PACS	PICTURE ARCHIVE AND COMMUNICATION SYSTEM	
POE	POWER OVER ETHERNET	
RIO	ROUGH IN ONLY	
RTL	REFER TO HOST DEVICE LEGEND	
RTLS	REAL TIME LOCATION SYSTEM	
RU	RACK UNIT	
SM	SINGLE MODE	
SMH	SPECIAL MOUNTING HEIGHT	
TGB	TELECOM GROUNDING BUSBAR	
TMGB	TELECOM MAIN GROUNDING BUSBAR	
TR	TELECOM ROOM	
TYP	TYPICAL	
WAP	WIRELESS ACCESS POINT	
WP	WEATHER PROOF (EXTERIOR APPLICATION)	
+72"	NUMBER DENOTES MOUNTING HEIGHT ABOVE FINISHED FLOOR TO CENTER LINE	
(X)Y''	"X" DENOTES NUMBER OF CONDUITS, "Y" DENOTES TRADE SIZE OF CONDUIT	

	PATHWAY						
J	COMMUNICATIONS JUNCTION BOX	ABOVE CEILING (AC), OR AS NOTED	4" x 4" x 2 1/2" WITH SINGLE GANG MUD RING (FOR HARD CEILING ONLY)	1" IF HARD CEILING			
Ð	COMMUNICATIONS JUNCTION BOX - WALL MOUNTED	18" OR AS NOTED	4" x 4" x 2 1/2" WITH SINGLE GANG MUD RING	1"			
J	COMMUNICATIONS JUNCTION BOX - FLOOR MOUNTED	FLUSH IN FLOOR	POKE THRU OR CAST IN PLACE BY DIVISION 26	1"			
[—X"—⊒	X" CONDUIT SLEEVE	N/A	N/A	N/A			
X"	SLEEVE/CONDUIT	N/A	N/A	N/A			
	CABLE TRAY	AS NOTED OR SEE SPECIFICATIONS	N/A	N/A			
Ш	LADDER RACK	AS NOTED OR SEE SPECIFICATIONS	N/A	N/A			
0	CONDUIT UP	N/A	N/A	N/A			
•	CONDUIT DOWN	N/A	N/A	N/A			
	CONDUIT IN WALL OR CEILING	N/A	N/A	N/A			
	CONDUIT IN SLAB OR BELOW GRADE	N/A	N/A	N/A			
-JJJ-	J-HOOKS	N/A	N/A	N/A			

SHEET INDEX						
NUMBER	SHEET NAME					
T0.1	TECHNOLOGY GEN NOTES & LEGENDS					
T1.1	TECH. FIRST FLR./MEZZ. BUILD-OUT					
T5.0	TECHNOLOGY DETAILS					

GENERAL CONSTRUCTION NOTES

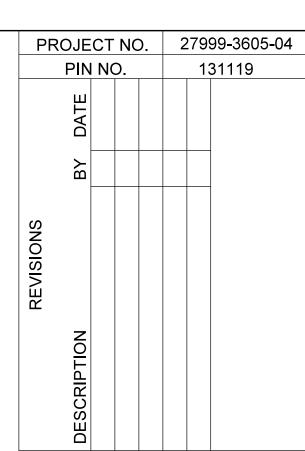
- A. COORDINATE LOCATION AND MOUNTING REQUIREMENTS OF ALL CEILING MOUNTED OR ABOVE CEILING MOUNTED DEVICES WITH REFLECTED CEILING PLAN, LIGHTING LAYOUT, AND OTHER CEILING OR ABOVE CEILING MOUNTED EQUIPMENT.
- B. ALL ABOVE CEILING WORK IN EXISTING FACILITY IS TO BE CONDUCTED IN ACCORDANCE WITH FACILITY I.C.R.A. POLICIES.
- C. DEVICES MOUNTED IN/ADJACENT TO CASEWORK PRIOR TO ROUGH-IN, COORDINATE EXACT DEVICE LOCATIONS WITH ARCHITECTURAL CASEWORK ELEVATIONS. COORDINATE WITH CASEWORK SHOP DRAWINGS FOR CABLING PATHWAY AND ROUGH-IN REQUIREMENTS.
- D. DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT DRAWN TO SCALE. CONTRACTOR IS RESPONSIBLE FOR COORDINATING EXACT ROUTING OF ALL SERVICES AND DISTANCES WITH EXISTING CONDITIONS AND WITH ALL OTHER TRADES.
- E. CONDUITS ARE TO HAVE A MAXIMUM 40% FILL RATIO.
- F. IN THE INSTALLATION OF THIS WORK, THE CONTRACTOR IS TO COMPLY WITH THE REQUIREMENTS OF LOCAL LAWS AND ORDINANCES, APPLICABLE STATE LAWS, THE NATIONAL BOARD OF FIRE UNDERWRITERS, AND THE NATIONAL ELECTRIC CODE.
- G. CAREFULLY EXAMINE THE PREMISES TO DETERMINE THE EXTENT OF WORK AND THE CONDITION UNDER WHICH IT MUST BE DONE. IF THERE ARE ANY QUESTIONS REGARDING THE PROJECT, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING CLARIFICATIONS FROM THE ENGINEER OR DESIGNATED REPRESENTATIVE BEFORE PROCEEDING WITH WORK OR RELATED WORK IN QUESTION.
- H. ANY DISCREPANCIES BETWEEN THE PLANS AND ACTUAL FIELD CONDITIONS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER OR DESIGNATED REPRESENTATIVE FOR CLARIFICATION.
- I. ALL WORK IS TO BE DONE IN A THOROUGH AND PROFESSIONAL MANNER ACCORDING TO INDUSTRY AND MANUFACTURERS' STANDARDS AND WILL BE SUBJECT TO INSPECTION AND ACCEPTANCE. WORK THAT IS DEEMED SUB-STANDARD WILL BE SUBJECT TO REPLACEMENT OR REPAIR AT NO ADDITIONAL COST TO THE OWNER OR GENERAL CONTRACTOR.
- J. THE CONTRACTOR IS REQUIRED TO PROPERLY FIRE-STOP ANY WALL OR FLOOR PENETRATIONS UTILIZED FOR THE PLACEMENT OF COMMUNICATIONS CABLING WITH APPROVED FIRE-STOPPING COMPOUND AND ACCORDING TO LOCAL AND NATIONAL CODES.
- K. ALL PENETRATED STRUCTURES ARE TO BE RETURNED TO ORIGINAL CONDITION AND FIRE RATING.
- L. WIRELESS ACCESS POINT LOCATIONS ARE DIAGRAMMATIC ONLY FOR BUDGETARY PURPOSES. FINAL LOCATION TO BE DETERMINED BY OWNER.
- M. A PULL BOX SHALL BE PLACED IN A CONDUIT RUN WHEN ANY OF THE FOLLOWING CONDITIONS EXIST:
 - 1. THE LENGTH OF THE CONDUIT RUN IS OVER 100 FEET. 2. THERE ARE MORE THAN TWO 90 DEGREE BENDS IN THE CONDUIT RUN.
 - 3. THERE IS A REVERSE BEND IN THE CONDUIT RUN.
- N. PULL BOXES AND JUNCTION BOXES SHALL BE PLACED IN EASILY ACCESSIBLE LOCATIONS. PULL BOX SIZES SHALL BE AS DEFINED BY THE NATIONAL ELECTRICAL CODE.
- O. PULL BOXES SHALL BE PLACED IN STRAIGHT SECTION OF CONDUIT AND NOT USED TO REPLACE A BEND. CONDUITS ENTERING AND EXITING PULL BOXES SHALL BE ALIGNED WITH ONE ANOTHER TO ALLOW FOR EASE OF CABLE INSTALLATION.

FACE PLATE REQUIREMENTS INITIAL CAPACITY: X CONNECTIONS MAXIMUM CAPACITY: 4 CONNECTIONS DESCRIPTION HORIZONTAL COMMUNICATION CABLE(S)** 4 PORT FACEPLATE 1 UL LISTED HORIZONTAL COMMUNICATION CABLE PULLED $| \langle \rangle | \times \langle \rangle | \times \langle \rangle |$ TO EACH DATA JACK. INSTALL BLANKS IN UNUSED JACKS. * SMH-MAXIMUM CAPACITY: 1 CONNECTION DESCRIPTION HORIZONTAL COMMUNICATION CABLE(S)** 1 PORT FACE PLATE 1 UL LISTED HORIZONTAL COMMUNICATION CABLE PULLED TO EACH DATA JACK. * SMH-* COORDINATE ALL VOICE/DATA LOCATIONS, SPECIAL MOUNTING HEIGHT (SMH) DEVICES

WITH ARCHITECTURAL WALL ELEVATIONS AND/OR MOUNTING HEIGHTS OF POWER DEVICES

** REFER TO SPECIFICATIONS FOR JACK AND CABLING REQUIREMENTS.

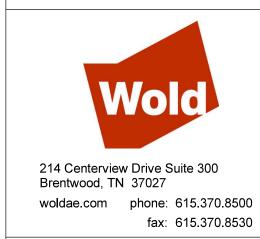
ON ELECTRICAL DRAWINGS.



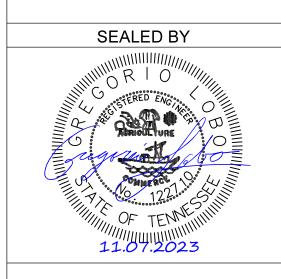
COUNTY
BUILDING

SEPTEMBER

B MANUFAC TRENTON,







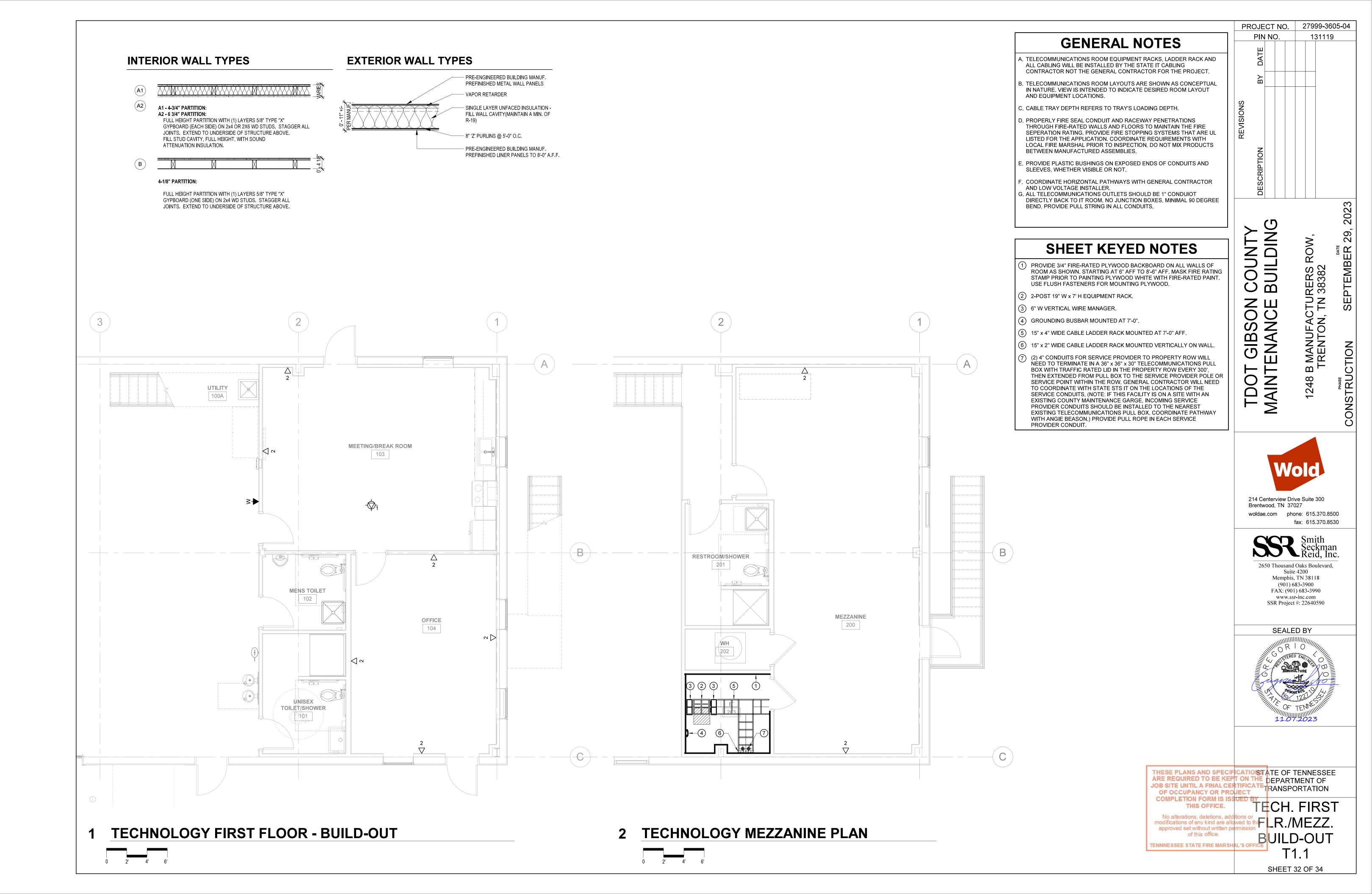
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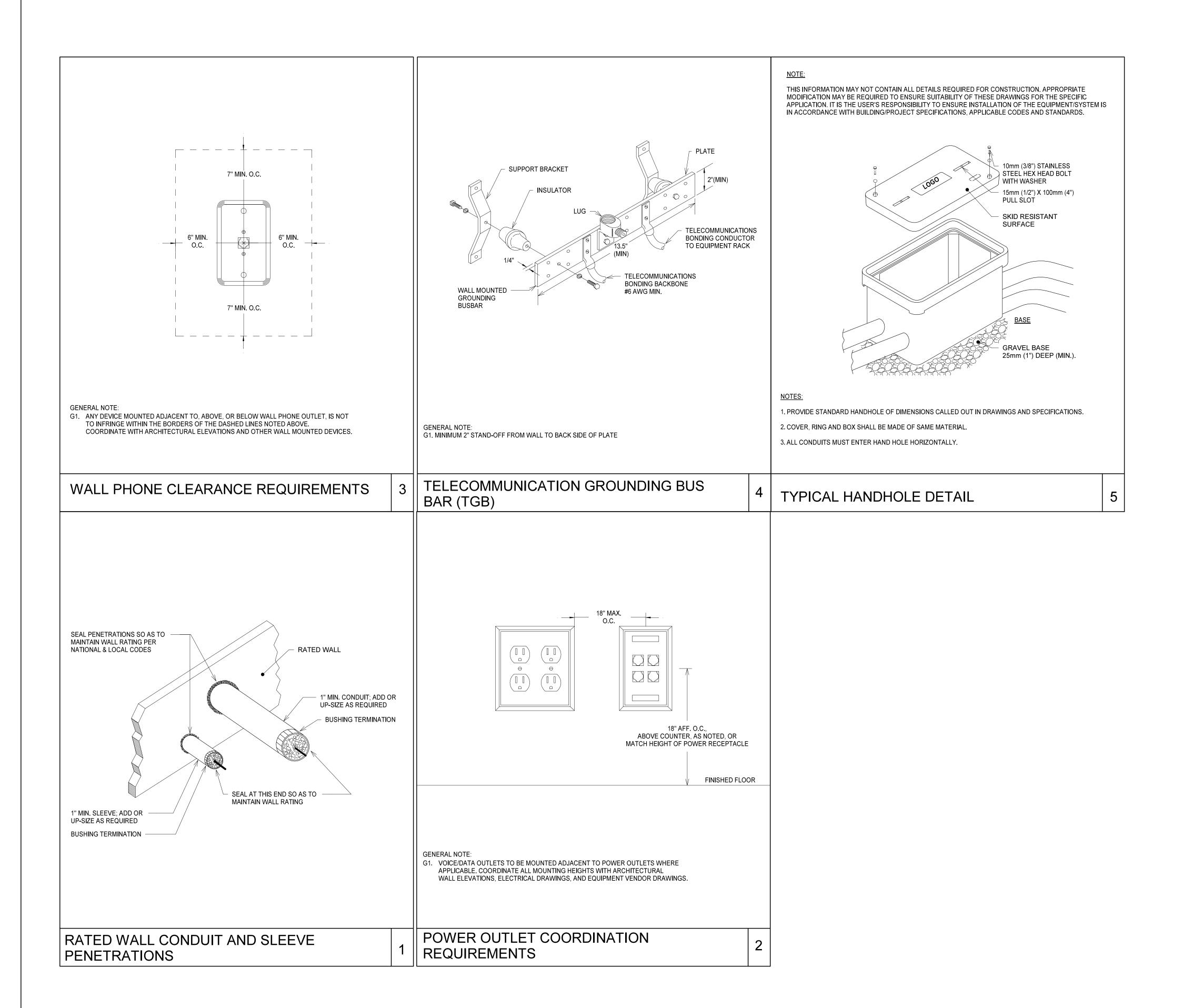
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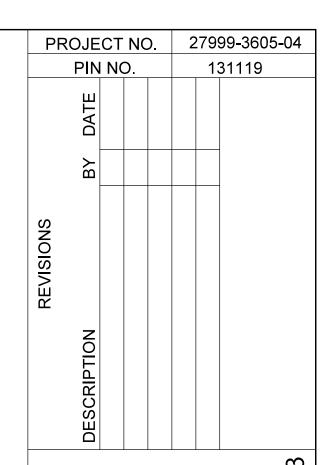
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TECHNOLOGY

SHEET 31 OF 34



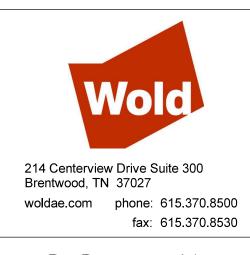




SEPTEMBER 29,

B MANUFAC TRENTON,

COUNTY BUILDING





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DETAILS

T5.0 **SHEET 33 OF 34**

