City of Crossville, TN

700 Interchange Drive; Crossville, TN 38555

PROJECT TEAM

OWNER CITY OF CROSSVILLE 392 N Main St. Crossville, TN 38555 p. 931-456-2014, 931-456-6172 contact TIM BEGLEY and DON COLE e. tim.begley@crossvilletn.gov, don.cole@crossvilletn.gov

CONTRACTOR TO BE DETERMINED ADDRESS CITY, ST ZIP p. XXX XXX XXXX contact PROJECT MANAGER e. email

ARCHITECT TB ARCHITECTURE, PLLC 211 SCOTLAND PLACE NASHVILLE, TN 37205 p. 615 513 3135 contact TOMMY BROWN e. tommy@tbarchitecturepllc.com

CIVIL CT CONSULTANTS 2964 SIDCO DRIVE NASHVILLE, TN 37204 p. 615-349-4025 contact JAMES GOLIAS e. JGolias@ctconsultants.com

STRUCTURAL SLAB CT CONSULTANTS 1001 Lakeside Ave E, Suite 1005 Cleveland, OH 44114 p. 216-430-8506 contact BRAD FRONEK e. Brad.Fronek@ctconsultants.com

P.E.M.B. TO BE DETERMINED ADDRESS CITY, ST ZIP p. XXX XXX XXXX contact NAME e. email

MECHANICAL & PLUMBING Olert Engineering, Inc. 605C Berry Road Nashville, TN 37204 p. 615-944-1296 contact Jess Gardner e.jess@olertengineering.com

ELECTRICAL iDesign Services, Inc 703 Berry Rd Nashville, TN 37204 phone 615-298-5557 contact Wendell Barnett e. wbarnett@idesignservices.com

NOT APPLICABLE

FIRE PROTECTION

DRAWING INDEX

GENERAL

-

COVER SHEET AND DRAWING INDEX

CIVIL	
C0.1	NOTES AND DETAILS
C1.1	EXISTING CONDITIONS PLAN
C2.1	FUTURE SITE PLAN
C2.2	SITE LAYOUT & UTILITY PLAN
C3.1	FUTURE GRADING LAYOUT PLAN
C3.2	GRADING LAYOUT PLAN
C3.3	OVERALL GRADING LAYOUT PLAN

ARCHITECTURAL

AG0.1	GENERAL NOTES & REFERENCE
AG0.2	ACCESSIBILITY DETAILS
A0.0	LIFE SAFETY & CODES INFO
A1.0	OVERALL FLOOR PLAN & DOOR SO
A1.1	FLOOR PLAN
A1.3	ROOF PLAN
A2.1	ELEVATIONS
A2.2	ELEVATIONS
A2.3	SECTIONS
A2.4	SECTIONS
A3.1	WALL SECTIONS & DETAILS
A6.1	REFLECTED CEILING PLAN

STRUCTURAL SLAB

S0.1	GENERAL NOTES
S0.2	GENERAL NOTES AND SPECS
S0.3	GENERAL NOTES AND SPECS
S1.1	FOUNDATION PLAN
S2.1	FOUNDATION TYPICAL DETAILS
S2.2	TYPICAL SECTIONS

P.E.M.B. NOT INCLUDED

MECHANICAL & PLUMBING

MP-1 MP-2

MECHANICAL / PLUMBING PLAN MECHANICAL / PLUMBING SCHEDULES & DETAILS

ELECTRICAL

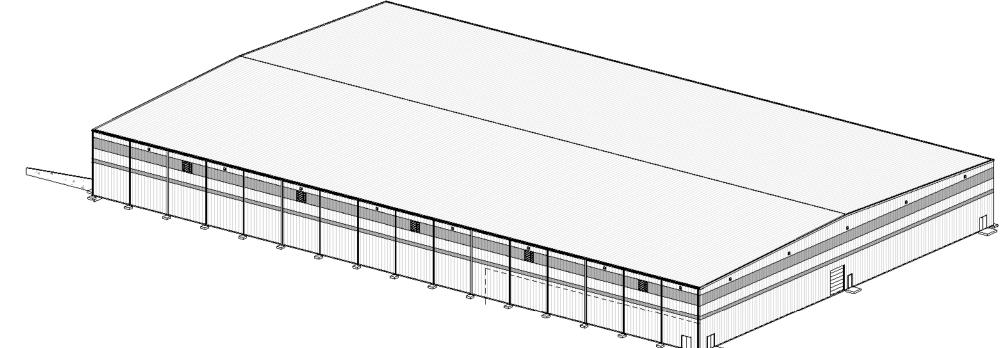
E1.0	LIGHTING PLAN
E2.0	POWER & SYSTEMS PLAN
E3.0	LEGENDS, RISER & SCHEDULES

FIRE PROTECTION NOT APPLICABLE

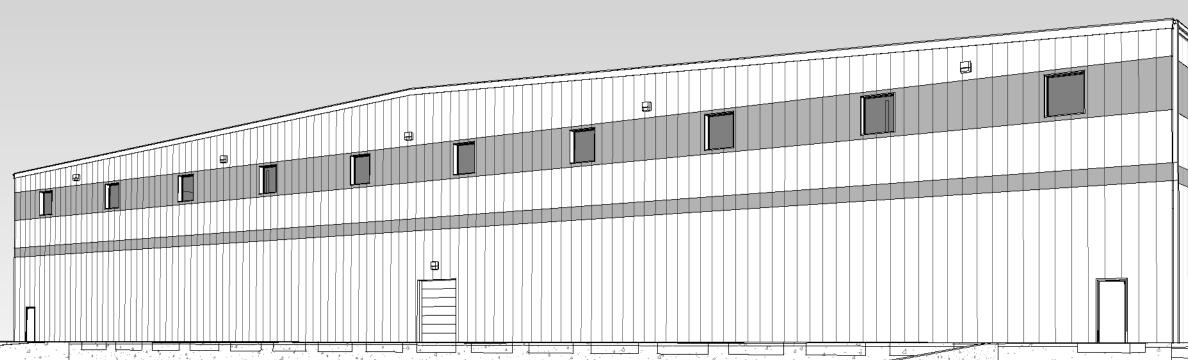
SCHEDULE

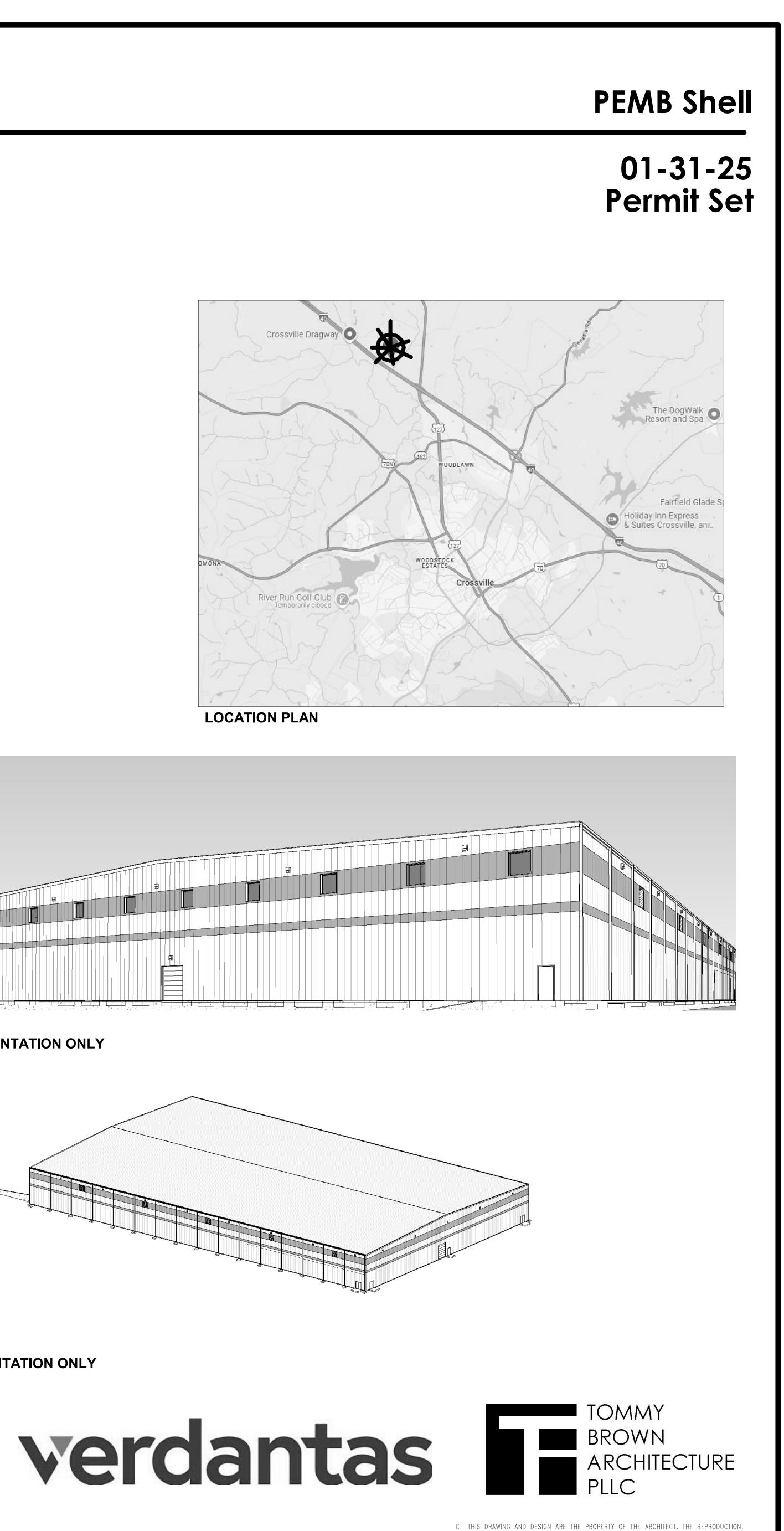
GRAPHIC REPRESENTATION ONLY





GRAPHIC REPRESENTATION ONLY





	ALL CONSTRUCTION SHALL CONFORM TO THESE PLANS AND SPECIFICATIONS, THE LATEST EDITION OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (TDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. THERE SHALL BE NO DEVIATION FROM THE APPROVED PLANS WITHOUT PRIOR	1. THIS PLAN SHOWS THE APPROXIMATE LOCATION OF UUTILITIES (GAS, WATER, STORM SEWER, SANITARY SE ELECTRIC, ETC.). THE PREPARER DOES NOT GUARAN ACCURACY OR CORRECTNESS. THE INFORMATION PR FIELD VERIFIED PRIOR TO CONSTRUCTION. THE CONT
	WRITTEN APPROVAL FROM THE OWNER OR THEIR REPRESENTATIVE. ANY DEVIATION FROM THESE PLANS WITHOUT PRIOR WRITTEN APPROVAL SHALL BE AT THE CONTRACTOR'S RISK AND EXPENSE.	RESPONSIBLE FOR MAINTAINING THE UTILITY AS WEL LATERALS AT ALL TIMES DURING CONSTRUCTION. THE SHALL PRACTICE CARE DURING THE GRADING AND THE EXCAVATION AND SHALL BE RESPONSIBLE FOR REPLA
	THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A TESTING AGENCY FOR ALL REQUIRED TESTING.	SERVICES THAT ARE DAMAGED DURING CONSTRUCTI EXPENSE.
	THE CONTRACTOR SHALL REVIEW THE 2 SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING REPORTS PREPARED BY GEOServices, LLC AND DATED APRIL 11, 2022 AND MARCH 6, 2017, AND ANY SUBSEQUENT REVISIONS. A COPY OF THE REPORTS WILL BE MADE AVAILABLE TO THE CONTRACTOR THROUGH THE OWNER. THE CONTRACTOR SHALL ADHERE TO ALL ASPECTS	 PRIOR TO ANY EXCAVATION OVER AN EXISTING UTILIT SERVICE, CONTRACTOR SHALL HAND EXCAVATE TO E UTILITY AND DETERMINE LOCATION AND DEPTH. NOT IMMEDIATELY OF ANY CONFLICTS.
	AND RECOMMENDATIONS OF THE REPORTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT STAKING INCLUDING HORIZONTAL AND VERTICAL CONTROL. ANY DISCREPANCIES DISCOVERED IN THE PLAN INFORMATION, OR BETWEEN THE	3. TOPS OF EXISTING AND PROPOSED CASTING ELEVAT TO FINAL ADJUSTMENTS AS APPROVED BY THE ENGIN REQUIREMENTS OF UTILITY OWNER. THIS WORK WILL THE CONTRACT.
	PLAN AND ELECTRONIC DATA SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE DESIGN ENGINEER SO THE APPROPRIATE ADJUSTMENTS MAY BE MADE. ALL WORK SHALL BE LIMITED TO THE PROPERTIES AND EASEMENTS	4. FORTY-EIGHT (48) HOURS BEFORE EXCAVATION IS TO CONTRACTOR SHALL NOTIFY THE FOLLOWING AGENO TENNESSEE UTILITY PROTECTION SERVICE AND ALL O THAT MAY HAVE UNDERGROUND UTILITIES INVOLVING AND ARE NON-MEMBERS OF TENNESSEE UNDERGROU
	IDENTIFIED ON THE PLANS. ANY WORK WITHIN THE PUBLIC RIGHT OF WAY IS SUBJECT TO INSPECTIONS AND ENCROACHMENT PERMITS FROM THE JURISDICTION HAVING AUTHORITY OVER THE RIGHT-OF-WAY. REQUIREMENTS OF SUCH PERMITS ARE INCORPORATED INTO THESE DOCUMENTS BY REFERENCE.	5. THE SITE MAY CONTAIN EXISTING PRIVATELY OWNED HAVE BEEN SHOWN AS ACCURATELY AS POSSIBLE BA UTILITY INFORMATION, BUT THE PREPARER OF THESE DOES NOT ATTEST TO THEIR ACCURACY OR CORRECT BE THE CONTRACTOR'S RESPONSIBILITY TO CONTRACT
	ANY DEFECTS IN CONSTRUCTION, INCLUDING MATERIALS OR WORKMANSHIP, SHALL BE REPLACED OR CORRECTED BY THE CONTRACTOR BY REMOVAL AND REPLACEMENT OR OTHER APPROVED METHODS PRIOR TO ACCEPTANCE BY THE OWNER WITH NO ADDITIONAL COMPENSATION.	UTILITY MARKING AGENCY TO IDENTIFY AND LOCATE UTILITIES WITHIN THE WORK SITE. THIS MAY INVOLVE AND UNCOVERING OF UTILITIES TO VERIFY LOCATION ENGINEER IMMEDIATELY OF ANY CONFLICTS. CONTR RECORDS OF ALL PRIVATE UTILITIES ENCOUNTERED
	CONTRACTOR SHALL SUBMIT A PLAN OF OPERATIONS FOR REVIEW AND APPROVAL BY THE ARCHITECT THAT WILL INDICATE EQUIPMENT STAGING AREAS, STOCKPILE LOCATION AND SANITATION FACILITIES. RIGHT-OF-WAY AND PROPERTY LINES SHOWN ARE THE RESULT OF A FIELD	 6. RECORD DRAWINGS OF NEW UTILITY SERVICES SHAL THE CONTRACTOR AND SUBMITTED TO THE OWNER U OF THE PROJECT.
0.	BOUNDARY SURVEY FROM THE CITY OF CROSSVILLE. ALL OSHA, STATE AND LOCAL SAFETY REGULATIONS SHALL BE FOLLOWED	GRADING AND EROSION CONTROL
	DURING CONSTRUCTION.	
	PERMITS HAVE BEEN ISSUED AS REQUIRE APPROPRIATE BARRICADES, WARNING LIGHTS, SIGNS, FENCING ETC. SHALL BE ERECTED AROUND THE CONSTRUCTION AREA DURING NON-WORKING HOURS TO ALERT PERSONS OF THE POTENTIAL DANGER ASSOCIATED WITH THE AREA UNDER CONSTRUCTION AS WELL AS TO PREVENT ACCESS BY UNAUTHORIZED PERSONNEL. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY	1. ALL DISTURBED AREAS WITH EXPOSED SOIL ARE TO BE F AND MULCHED) BY THE CONTRACTOR AND SHALL PROCE PROGRESSION. THE CONTRACTOR SHALL ALSO BE RESP REMOVING ANY EXCESS MATERIALS AT THE SITE AND MA SEEDED AND MULCHED AREAS UNTIL PROJECT COMPLET INSPECTION PER TDEC. ALL DISTURBED AREAS WITH EXF BE RESTORED WITHIN 14 DAYS AFTER CONSTRUCTION.
	OF THE GENERAL PUBLIC AS WELL AS ALL CONSTRUCTION PERSONNEL. ANY EXISTING ROADWAY, LAWN, CURB, SIDEWALK OR OTHER APPURTENANCE DISTURBED DURING CONSTRUCTION NOT DESIGNATED FOR REMOVAL OR REPLACEMENT SHALL BE RESTORED BY THE CONTRACTOR WITHOUT	 ALL APPLICABLE RECOMMENDATIONS IN TENNESSEE'S E AND SEDIMENT CONTROL SHALL BE FOLLOWED BY THE O INCLUDING SEEDING OF DISTURBED GROUND. 2. ADDITIONAL BMP'S AND EROSION AND SEDIMENT CONTR
	ADDITIONAL COMPENSATION TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO DISTURBANCE. ANY TEMPORARY UTILITY REQUIRED BY THE CONTRACTOR (ELECTRIC, WATER ETC.) SHALL BE AT THE SOLE EXPENSE OF THE CONTRACTOR.	 ADDITION TO BUILT OF AND ENCODED AND CEDIMENT CONTROL REQUIRED AS DEEMED NECESSARY. ALL COST FOR ABOV INCLUDED IN LUMP SUM BID FOR EROSION CONTROL AND CONTROL. ALL EXCAVATION IS CONSIDERED UNCLASSIFIED AND TH
	THE CONTRACTOR SHALL PRESERVE ALL BENCHMARKS, PROPERTY LINE REFERENCES, REFERENCE POINTS, STAKES AND ANY OTHER SURVEY REFERENCE. IN CASE OF DISTURBANCE THE CONTRACTOR SHALL REPLACE THEM AT THE CONTRACTOR'S EXPENSE, BE RESPONSIBLE FOR ANY ERRORS THAT MAY BE CAUSED BY THEIR LOSS OR DISTURBANCE.	3. ALL EXCAVATION IS CONSIDERED UNCLASSIFIED AND TH SHALL BE RESPONSIBLE FOR MEANS, METHODS AND MAT CONSTRUCTION. THE DESIGN ENGINEER SHALL NOT BE THE SUITABILITY OF MATERIAL UNDERLYING THE PROJEC CONTRACTOR SHALL PERFORM ANY INVESTIGATIONS OF NECESSARY TO ADEQUATELY DETERMINE OR ESTIMATE
	ALL PROPOSED CONCRETE PAVEMENT ABUTTING EXISTING PAVEMENT SHALL BE DOWELED INTO EXISTING CONCRETE PAVEMENT USING A $\frac{1}{2}$ " DEFORMED DOWEL WITH 9" MINIMUM EMBEDMENT.	SATISFACTION ANY EXISTING SITE CONDITION WHICH CO OR THE PERFORMANCE OF THE PROPOSED IMPROVEMEN INCLUDE, BUT NOT BE LIMITED TO, UNSUITABLE OR UNST SOIL/SUBSURFACE CONDITIONS, ROCK, WATER (PERCHE OBSTRUCTIONS ETC.
	THE CONTRACTOR SHALL COMPLY AT ALL TIMES WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, PROVISIONS, AND POLICIES GOVERNING SAFETY AND HEALTH, INCLUDING THE FEDERAL CONSTRUCTION SAFETY ACT (PUBLIC LAW 91-54), FEDERAL REGISTER, CHAPTER XVII, PART 1926 OF TITLE 29 REGULATIONS,	4. ALL TREES AND OTHER VEGETATION WITHIN THE PROJECT INTERFERE WITH CONSTRUCTION SHALL BE REMOVED, IN REMOVAL.
	OCCUPATIONAL SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, AND SUBSEQUENT PUBLICATIONS UPDATING THESE REGULATIONS.	5. THE CONTRACTOR SHALL REMOVE ALL SURPLUS DEMOL MATERIALS, INCLUDING TREES, STUMPS, TRASH AND DEE PROJECT LIMITS AND DISPOSE OF OFF-SITE. IN NO INSTA BE BURIED ON-SITE.
•	THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING THE AREAS AND CONDITIONS UNDER WHICH THE PROJECT IS TO BE CONSTRUCTED PRIOR TO THE SUBMISSION OF THE BID. SUBMISSION OF A BID SHALL BE CONSTRUED TO MEAN THE CONTRACTOR HAS REVIEWED THE SITE AND IS FAMILIAR WITH THE CONDITIONS AND CONSTRAINTS OF THE SITE.	 THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL M UNSUITABLE FOR EMBANKMENT BY THE OWNER'S REPRE DISPOSED OF OFF-SITE. THE CONTRACTOR SHALL PROVIDE FINAL GRADING TO W
9.	CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION.	SHOWN ON THE PLANS.8. TOPSOIL SHALL BE STRIPPED AND SOCKPILED FROM ALL
	ELECTRIC NOTES	GRADED, TO WHATEVER DEPTH ENCOUNTERED, AND IN A PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL. S STOCKPILED NEAR THE EDGE OF EXCAVATIONS OR WITH TREES TO REMAIN.
	 ALL WORK RELATING TO ELECTRIC LINES SHALL BE COMPLETED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE VOLUNTEER ELECTRIC COOPERATIVE. ALL CONDUITS TO HAVE PULL STRINGS. 	9. EXCESS SOIL GENERATED FROM TRENCH EXCAVATIONS INCORPORATED IN THE UNIT PRICE BID FOR EXCAVATION EMBANKMENT CONSTRUCTION. ANY EXCESS SOIL UNAB ON-SITE OR DEEMED UNSUITABLE FOR EMBANKMENT BY
	3. ALL CONDUITS EXPOSED TO SUN TO BE SCH 80 PVC 36" LONG SWEEPS.	BE DISPOSED OF OFF-SITE. 10. THE CONTRACTOR SHALL FOLLOW THE RECOMMENDATION SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGIN
	 ALL DITCHES, BOXES AND PEDESTALS MUST BE INSPECTED BEFORE ANY BACK FILL CAN TAKE PLACE. 	EXCAVATION AND EMBANKMENT TO CONSTRUCT THE IMPACHIEVE THE FINISHED GRADES SHOWN ON THE PLANS.11. NO SLAG, RIVER GRAVEL, RECYCLED PORTLAND CEMENTRY
		RECLAIMED ASPHALT CONCRETE PAVEMENT OR RECLAIM AGGREGATE BASE SHALL BE USED AS FILL. 12. EXPOSED PAVEMENT SUBGRADE AREAS SHALL BE MAIN
		 12. EXPOSED PAVEMENT SUBGRADE AREAS SHALL BE MAIN TO PREVENT PONDING OF WATER AFTER RAINS. 13. SLOPE ALL AREAS AWAY FROM THE BUILDING AT A MINIM
	STORM AND SANITARY NOTES	14. THE ENGINEER MAKES NO REPRESENTATION AS TO A BA SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR P SITE GRADES AS INDICATED ON THE GRADING PLAN, INC
	1. CONTRACTOR SHALL BE REQUIRED TO MAINTAIN STORM SEWER FLOW THROUGHOUT THE PROJECT, FOR THE DURATION OF CONSTRUCTION. ALL COST FOR THE ABOVE SHALL BE INCIDENTAL TO THE CONTRACT.	OR EXPORT OF MATERIAL IF REQUIRED TO ACHIEVE THE ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIB REMOVAL AND DISPOSAL OF ALL SURPLUS EARTHWORK, FROM THE SITE. ALL COST FOR THE ABOVE SHALL BE IN CONTRACTORS BID PRICE FOR EXCAVATION AND/OR EMI
	2. IF REQUIRED, CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND SCHEDULING STORM SEWER INSPECTIONS AS SET OUT IN THE PRECONSTRUCTION MEETING.	15. THE CONTRACTOR SHALL PROTECT STRUCTURES, UTILIT PAVEMENTS AND OTHER FACILITIES TO REMAIN FROM DA EARTHWORK OPERATIONS.
	3. ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.	16. MAINTENANCE OF ALL TEMPORARY AND PERMANENT ER CONTROL FACILITIES IS THE RESPONSIBILITY OF THE CO
	4. CONTRACTOR TO PROVIDE SHOP DRAWINGS ON ALL STORM SEWER MANHOLES, INLETS AND DETENTION SYSTEMS.	17. CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATIC REPLACEMENT OF BMP'S
	5. CONTRACTOR SHALL ASSURE THAT THERE IS POSITIVE DRAINAGE TO	

TES

OCATION OF UNDERGROUND , SANITARY SEWER, TELEPHONE, NOT GUARANTEE THEIR ORMATION PROVIDED SHALL BE ON. THE CONTRACTOR SHALL BE **FILITY AS WELL AS THE SERVICE** RUCTION. THE CONTRACTOR RADING AND TRENCH BLE FOR REPLACING ANY CONSTRUCTION AT THEIR

XISTING UTILITY LINE OR KCAVATE TO EXPOSE THE D DEPTH. NOTIFY ENGINEER

STING ELEVATIONS ARE SUBJECT BY THE ENGINEER AND IS WORK WILL BE INCIDENTAL TO

AVATION IS TO COMMENCE, THE DWING AGENCIES: THE /ICE AND ALL OTHER UTILITIES IES INVOLVING THIS PROJECT UNDERGROUND PROTECTION.

ATELY OWNED UTILITIES. THESE S POSSIBLE BASED ON EXISTING RER OF THESE DOCUMENTS Y OR CORRECTNESS. IT SHALL TO CONTRACT WITH A PRIVATE AND LOCATE ALL PRIVATE MAY INVOLVE THE EXCAVATION RIFY LOCATION. NOTIFY LICTS. CONTRACT SHALL MAKE ICOUNTERED DURING THE

ERVICES SHALL BE PREPARED BY THE OWNER UPON COMPLETION

CONTROL NOTES

ARE TO BE RESTORED (SEEDED SHALL PROCEED WITH JOB LSO BE RESPONSIBLE FOR SITE AND MAINTAINING ALL ECT COMPLETION AND FINAL EAS WITH EXPOSED SOILS SHALL STRUCTION.

ENNESSEE'S EROSION PREVENTION WED BY THE CONTRACTOR,

IMENT CONTROL MEASURES MAY BE OST FOR ABOVE SHALL BE CONTROL AND WATER POLLUTION

SIFIED AND THE CONTRACTOR HODS AND MATERIALS OF HALL NOT BE RESPONSIBLE FOR G THE PROJECT SITE. THE TIGATIONS OR TESTING OR ESTIMATE TO THEIR ION WHICH COULD AFFECT HIS BID IMPROVEMENTS. THIS COULD ABLE OR UNSTABLE TER (PERCHED OR FREE), N THE PROJECT LIMITS THAT REMOVED, INCLUDED STUMP

RPLUS DEMOLISHED AND WASTE RASH AND DEBRIS, FROM THE IN NO INSTANCE SHALL MATERIAL

HE SITE ALL MATERIAL DEEMED VNER'S REPRESENTATIVE AND BE

GRADING TO WITHIN 1" OF GRADES

ED FROM ALL AREAS TO BE ERED, AND IN A MANNER TO NG SUBSOIL. SOILD SHALL NOT BE IONS OR WITHIN DRIP LINES OF

EXCAVATIONS SHALL BE R EXCAVATION INCLUDING SS SOIL UNABLE TO BE PLACED BANKMENT BY THE ENGINEER SHALL

COMMENDATIONS IN THE HNICAL ENGINEERING REPORT FOR TRUCT THE IMPROVEMENTS AND

LAND CEMENT CONCRETE, IT OR RECLAIMED BITUMINOUS

HALL BE MAINTAINED IN CONDITIONS AINS.

NG AT A MINIMUM OF 1%

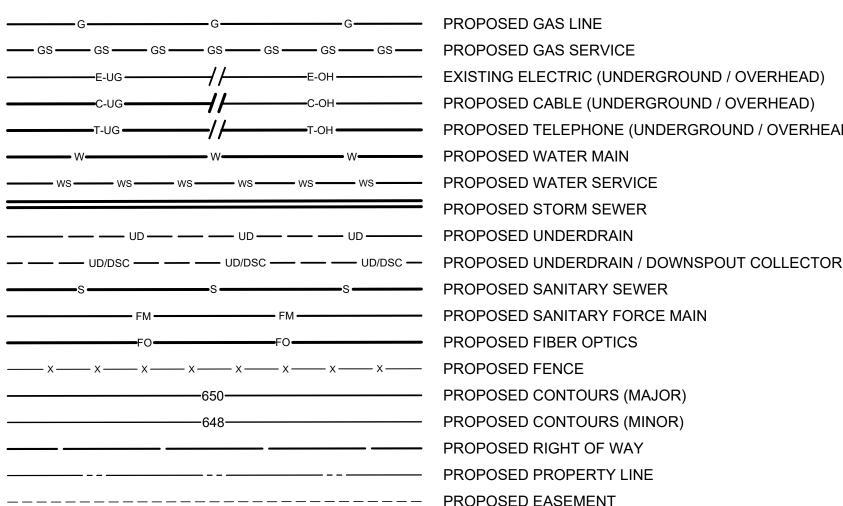
ON AS TO A BALANCED EARTHWORK NSIBLE FOR PROVIDING THE FINAL ING PLAN, INCLUDING THE IMPORT ACHIEVE THE PROPOSED GRADES. E RESPONSIBLE FOR THE PROPER EARTHWORK, DEBRIS OR WASTE SHALL BE INCLUDED IN THE N AND/OR EMBANKMENT.

CTURES, UTILITIES, SIDEWALKS, MAIN FROM DAMAGE CAUSED BY

RMANENT EROSION AND SEDIMENT TY OF THE CONTRACTOR(S)

OCUMENTATION OF REPAIR AND/OR

_____ GS _____ GS _____ GS _____ GS _____ GS _____ ____ С-ОН_____С-ОН_____С-ОН_____ —_T-UG_______T-OH______ ______ W _____ — — ws — EXISTING WATER SERVICE _____



PROPOSED TREE LINE / CLEARING LIMITS PROPOSED DISTURBED LIMITS

MB

0

GF

7	EXISTING FLAGPOLE	
}]	EXISTING MAILBOX	
-	EXISTING SIGN	
	EXISTING CABLE PEDESTAL	
	EXISTING ELECTRIC PEDESTAL	
	EXISTING PULL BOX	
-	EXISTING GROUND LIGHT	
_	EXISTING LIGHT POLE	
)	EXISTING ELECTRIC METER	
	EXISTING ELECTRIC MANHOLE	
)	EXISTING GAS METER	
θV	EXISTING GAS VALVE	
)	EXISTING GAS BOX	
	EXISTING UTILITY POLE	
	EXISTING GUY WIRE / ANCHOR	
	EXISTING SANITARY MANHOLE	
SCO	EXISTING SANITARY CLEANOUT	
	EXISTING STORM MANHOLE	
า ป	EXISTING SINGLE CURB INLET	
	EXISTING DOUBLE CURB INLET	
	EXISTING CATCH BASIN	
000	EXISTING STORM CLEANOUT	
	EXISTING TELEPHONE MANHOLE	
	EXISTING TELEPHONE PEDESTAL	
	EXISTING FIRE HYDRANT	
	EXISTING WATER METER	
~~ .\\ //.	EXISTING WATER VALVE	
	EXISTING BUSHES / TREES	Ž
BM#		

EXISTING SURVEY BENCHMARK TEST BORING LOCATION

ELECTRIC VOLUNTEER ENERGY COOPERATIVE 235 O'BRIEN DRIVE CROSSVILLE, TN 38555 MARK EVANS MEVANS@VEC.ORG

OFFICE: 931-484-3527 WATER & SEWER CITY OF CROSSVILLE 392 N MAIN ST CROSSVILLE, TN 38555 KEVIN G. OAKES KEVIN.OAKES@CROSSVILLETN.GOV (931) 787-1692

STORM CITY OF CROSSVILLE 392 N MAIN ST CROSSVILLE, TN 38555 BILLY MARTIN BMARTIN@CROSSVILLETN.GOV (931) 484-7631

UTILITY CONTACTS

GAS MIDDLE TN NATURAL GAS 348 OLD JAMESTOWN HIGHWAY CROSSVILLE, TN 38557 MAX STENNETT KMCCAFFERTY@MTPLEASANT-TN.GOV OFFICE: (615) 597-0515 CELL: (931) 293-9111

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TELECOMMUNICATIONS FRONTIER/CITIZENS COMMUNICATIONS CO 2104 WEST EMORY RD POWELL, TN 37849 JIM HEATHERLY

CABLE SPIRIT BROADBAND P.O. BOX 249 COLLEGE GROVE, TN 37046 VINCE, KING VINCE@SPIRITSPIRITBB.COM (615) 368-2115 EXT.29

EXISTING TELEPHONE (UNDERGROUND / OVERHEAD) EXISTING WATER MAIN EXISTING ROOF DRAIN EXISTING SANITARY SEWER EXISTING SANITARY FORCE MAIN EXISTING FIBER OPTICS EXISTING FENCE EXISTING CONTOURS (MAJOR) EXISTING CONTOURS (MINOR) EXISTING RIGHT OF WAY EXISTING PROPERTY LINE EXISTING EASEMENT EXISTING GUARDRAIL EXISTING TREE LINE E-OH ECOH EXISTING ELECTRIC (UNDERGROUND / OVERHEAD) PROPOSED TELEPHONE (UNDERGROUND / OVERHEAD **PROPOSED WATER MAIN** PROPOSED STORM SEWER •S — PROPOSED SANITARY SEWER PROPOSED FIBER OPTICS PROPOSED FENCE PROPOSED CONTOURS (MAJOR) PROPOSED CONTOURS (MINOR) PROPOSED RIGHT OF WAY PROPOSED PROPERTY LINE

ROPOSED D	ISTURBED LIMITS
F	PROPOSED FLAGPOLE
Г 1В	PROPOSED MAILBOX
0-	PROPOSED SIGN
CP	PROPOSED CABLE PEDESTAL
:P	PROPOSED ELECTRIC PEDESTAL
РВ	PROPOSED PULL BOX
⊙(÷	PROPOSED GROUND LIGHT
	PROPOSED LIGHT POLE
EM	PROPOSED ELECTRIC METER
Ē	PRPOSED ELECTRIC MANHOLE
<u>GM</u>	PROPOSED GAS METER
⊗ ^{GV}	PROPOSED GAS VALVE
ЭF)	PROPOSED GAS BOX
þ	PROPOSED UTILITY POLE
(PROPOSED GUY WIRE / ANCHOR
3)	PROPOSED SANITARY MANHOLE
sco	PROPOSED SANITARY CLEANOUT
	PROPOSED STORM MANHOLE
	PROPOSED SINGLE CURB INLET
	PROPOSED DOUBLE CURB INLET
	PROPOSED CATCH BASIN
DCO	PROPOSED STORM CLEANOUT
D	PROPOSED TELEPHONE MANHOLE
ГР	PROPOSED TELEPHONE PEDESTAL
す	PROPOSED FIRE HYDRANT
	PROPOSED WATER METER
	PROPOSED WATER VALVE
	REMOVE EXISTING BUSH / TREE

PROPOSED SLOPE DIRECTION

CABLE CHARTER COMMUNICATIONS 35 WEST BROAD STREER COOKEVILLE, TN 38501 JOE HUNTER JOE.HUNTER@CHARTER.COM OFFICE: (931) 272-2889 CELL: (931) 260-5156

CABLE VOLFIRST P.O. BOX 670 MCMINNVILLE, TN 38557 RICHARD BOYD RBOYD@BLOMAND.NET (931) 668-6692

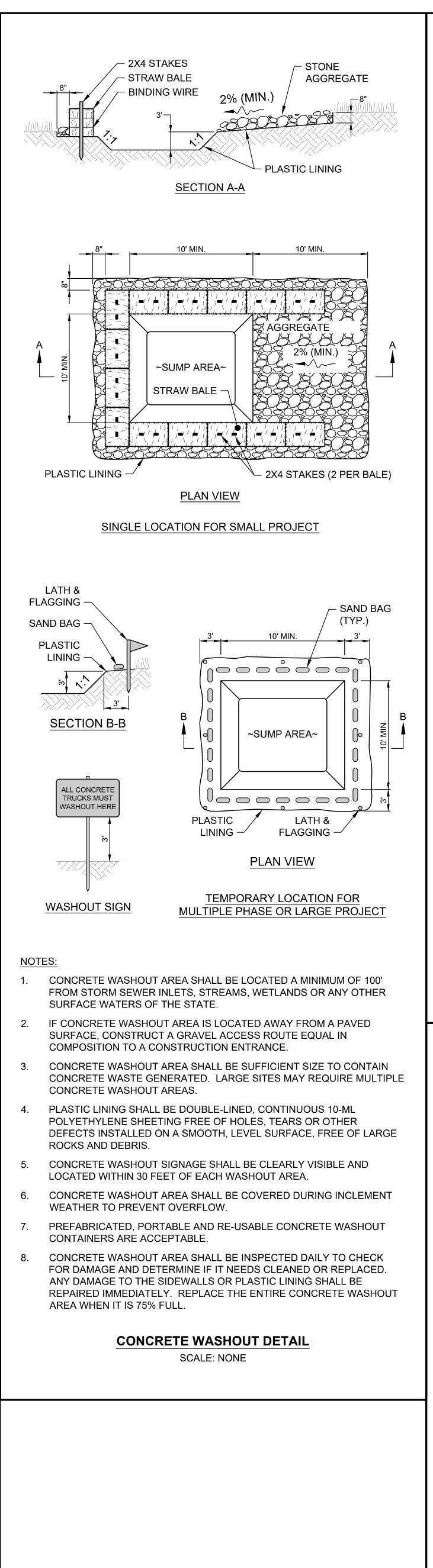
SYMBOL LEGEND

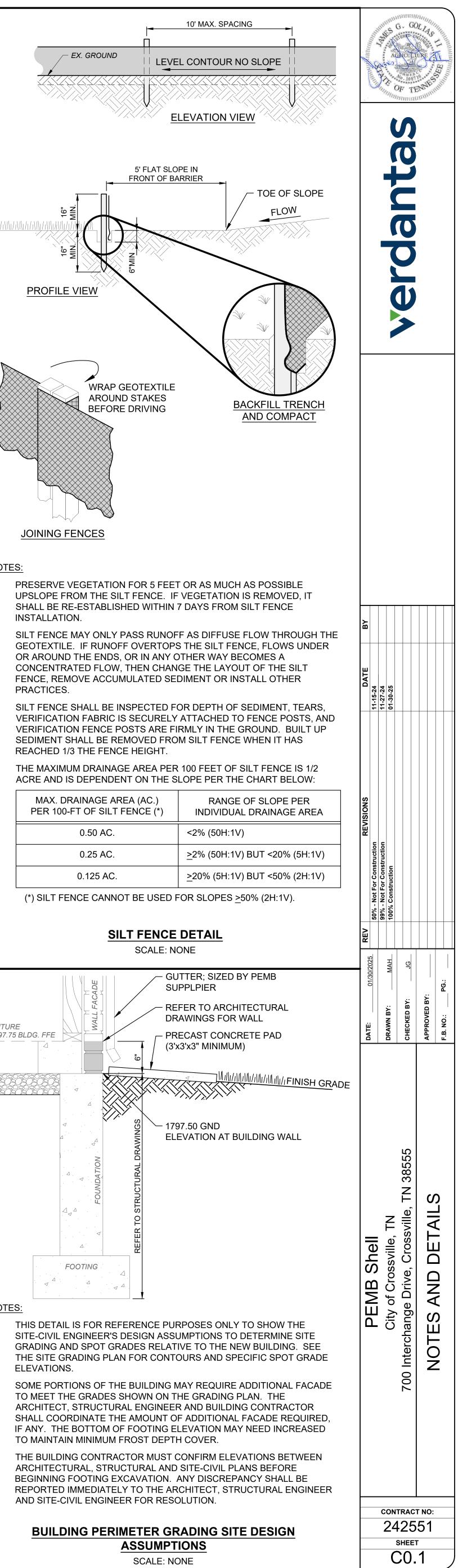
EXISTING GAS LINE

EXISTING GAS SERVICE

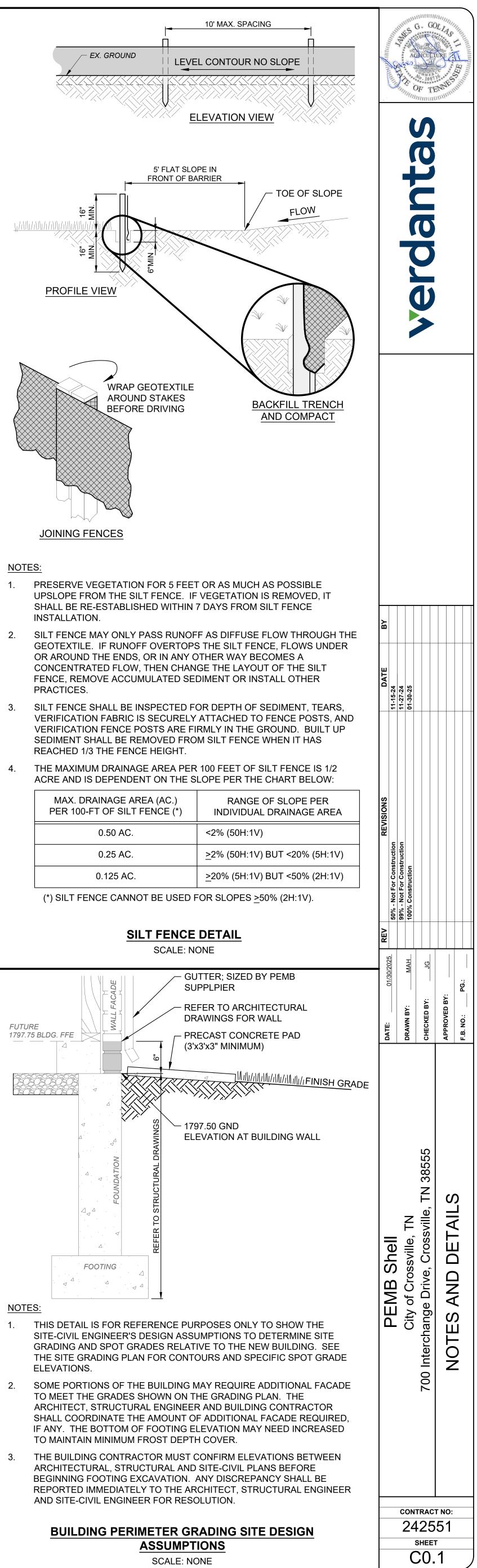
EXISTING ELECTRIC (UNDERGROUND / OVERHEAD)

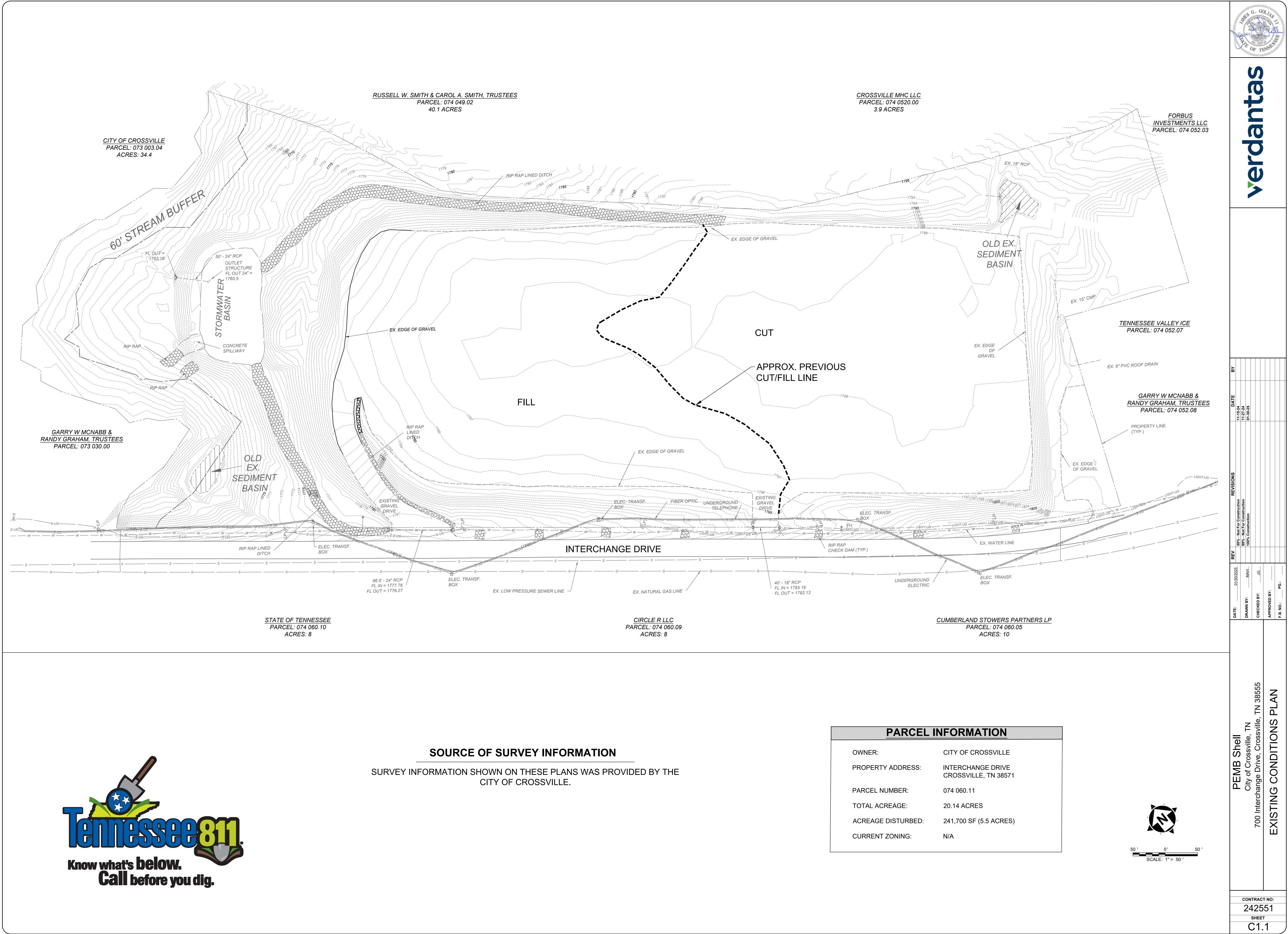
EXISTING CABLE (UNDERGROUND / OVERHEAD)





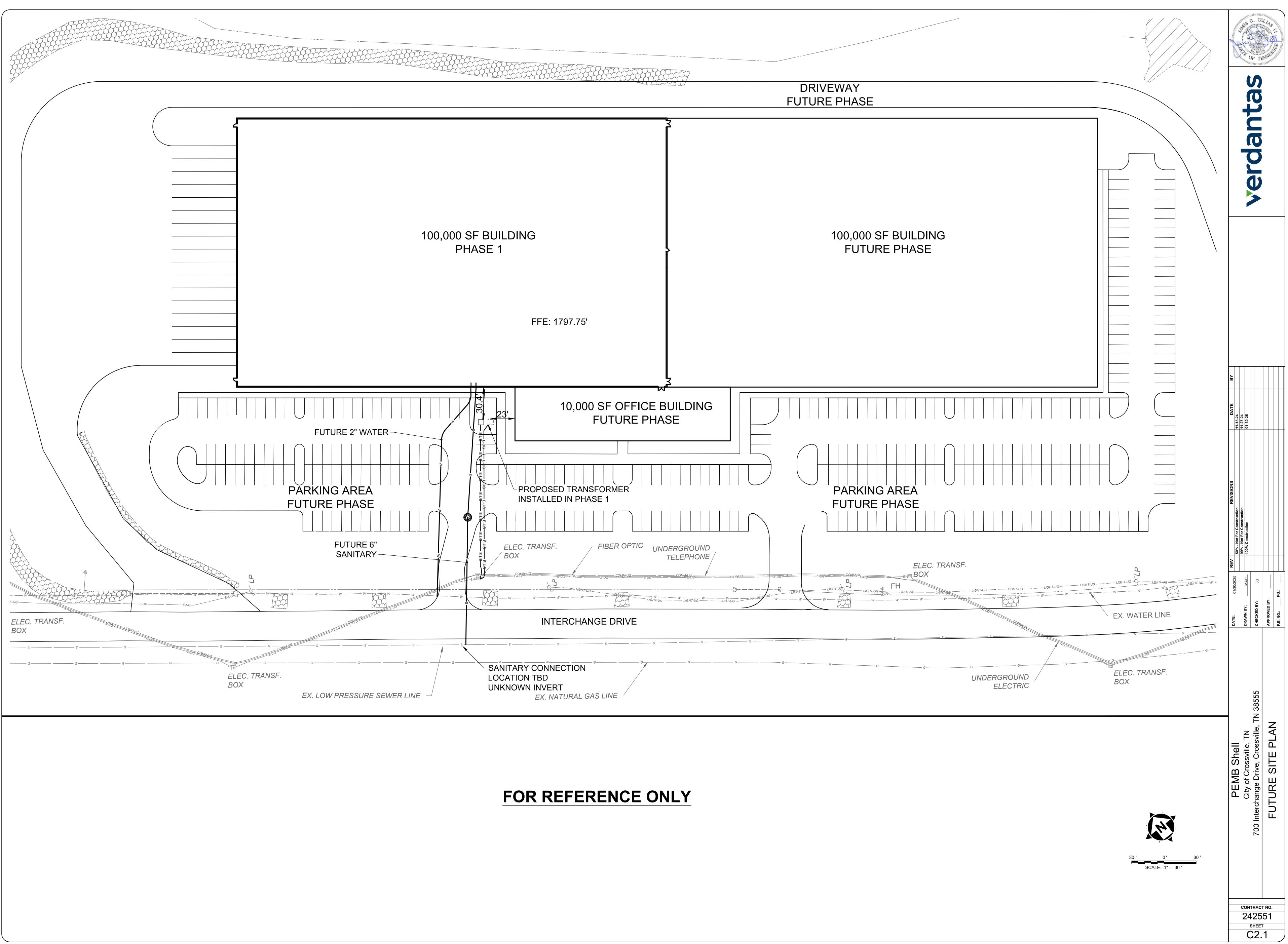
MAX. DRAINAGE AREA (AC.) PER 100-FT OF SILT FENCE (*)	RANGE (INDIVIDUAL
0.50 AC.	<2% (50H:1V)
0.25 AC.	≥2% (50H:1V)
0.125 AC.	<u>></u> 20% (5H:1V)

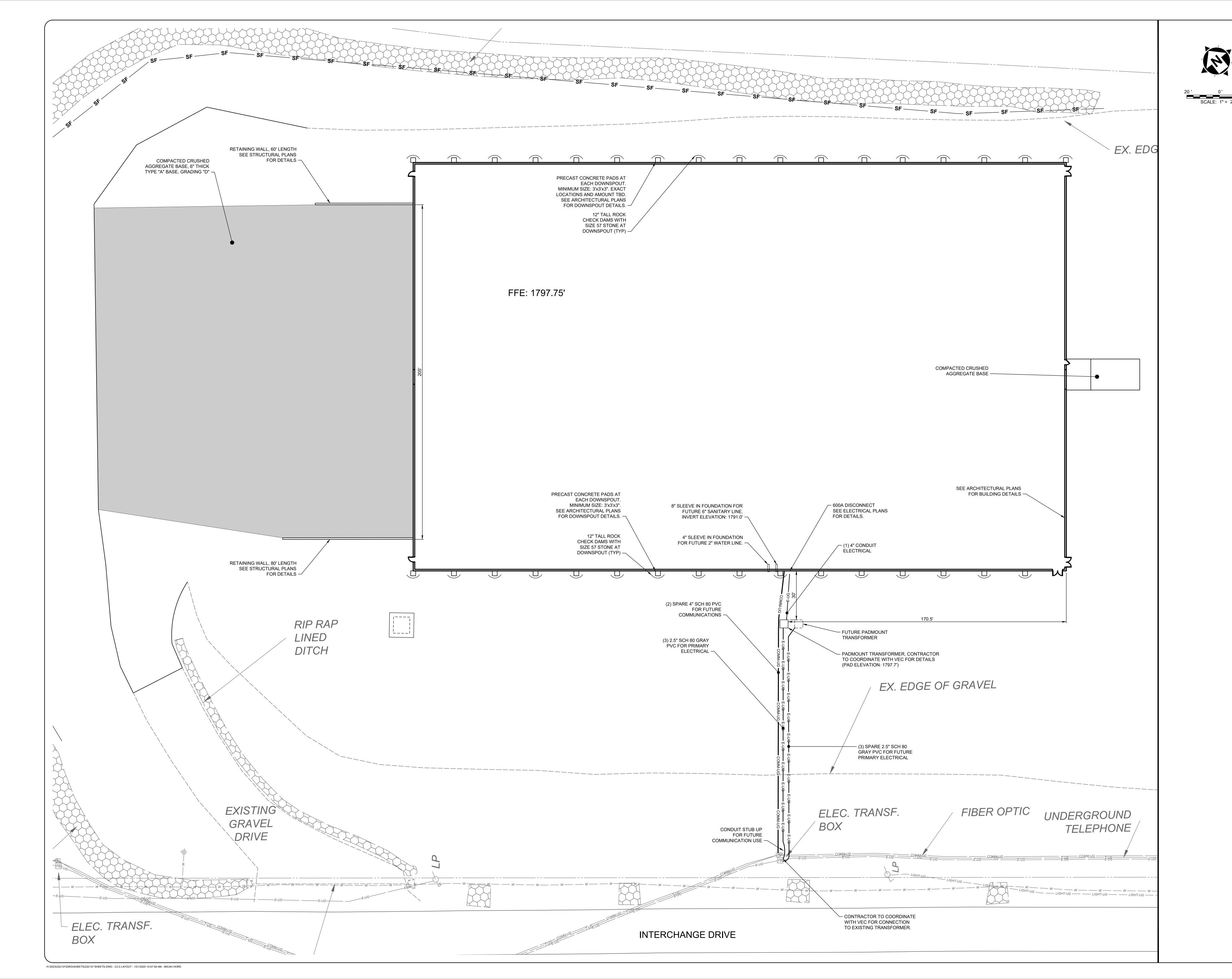




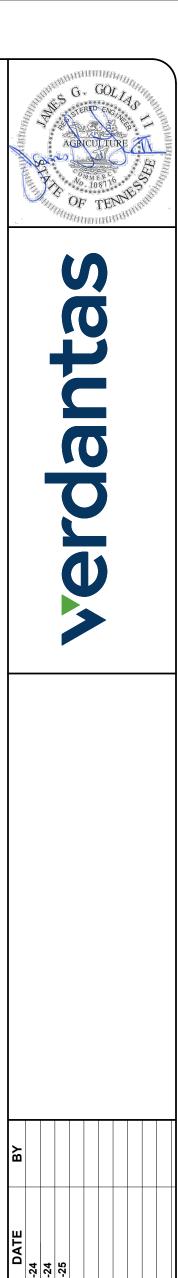
H:\2023\232137\DWG\SHEETS\232137 SHEETS.DWG - C1.0 EXISTING - 1/21/2025 10:57:59 AM - MICAH HORD

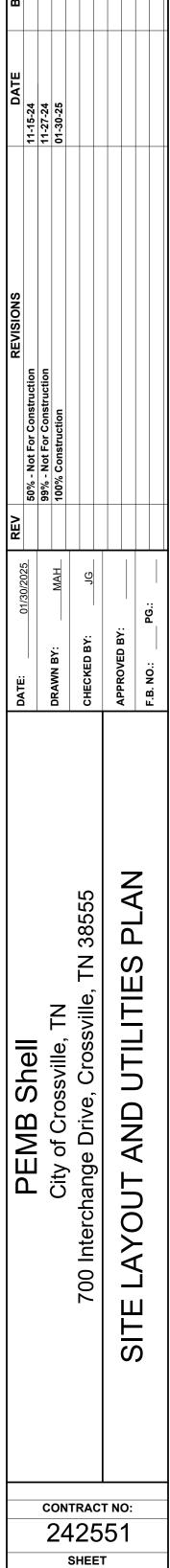
PARCEL	INFORMATION	
OWNER:	CITY OF CROSSVILLE	
PROPERTY ADDRESS:	INTERCHANGE DRIVE CROSSVILLE, TN 38571	
PARCEL NUMBER:	074 060.11	
TOTAL ACREAGE:	20.14 ACRES	
ACREAGE DISTURBED:	241,700 SF (5.5 ACRES)	
CURRENT ZONING:	N/A	



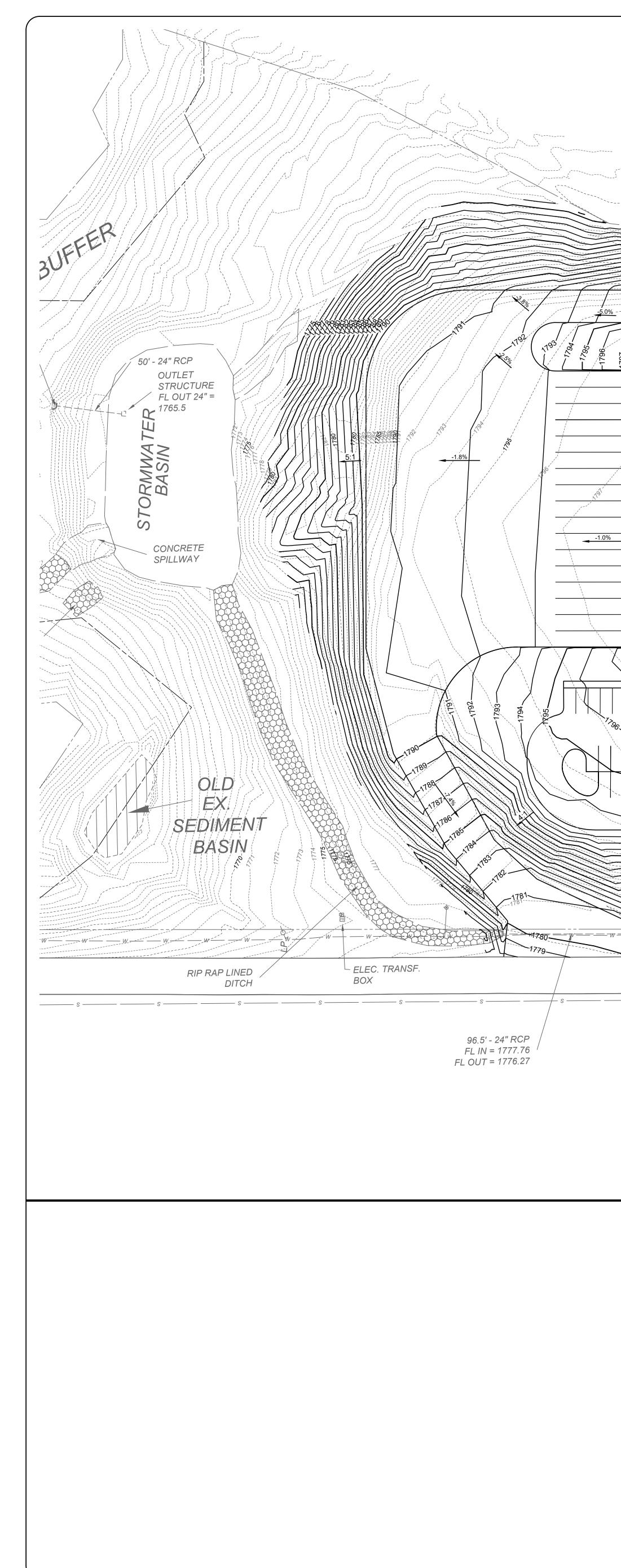








C2.2

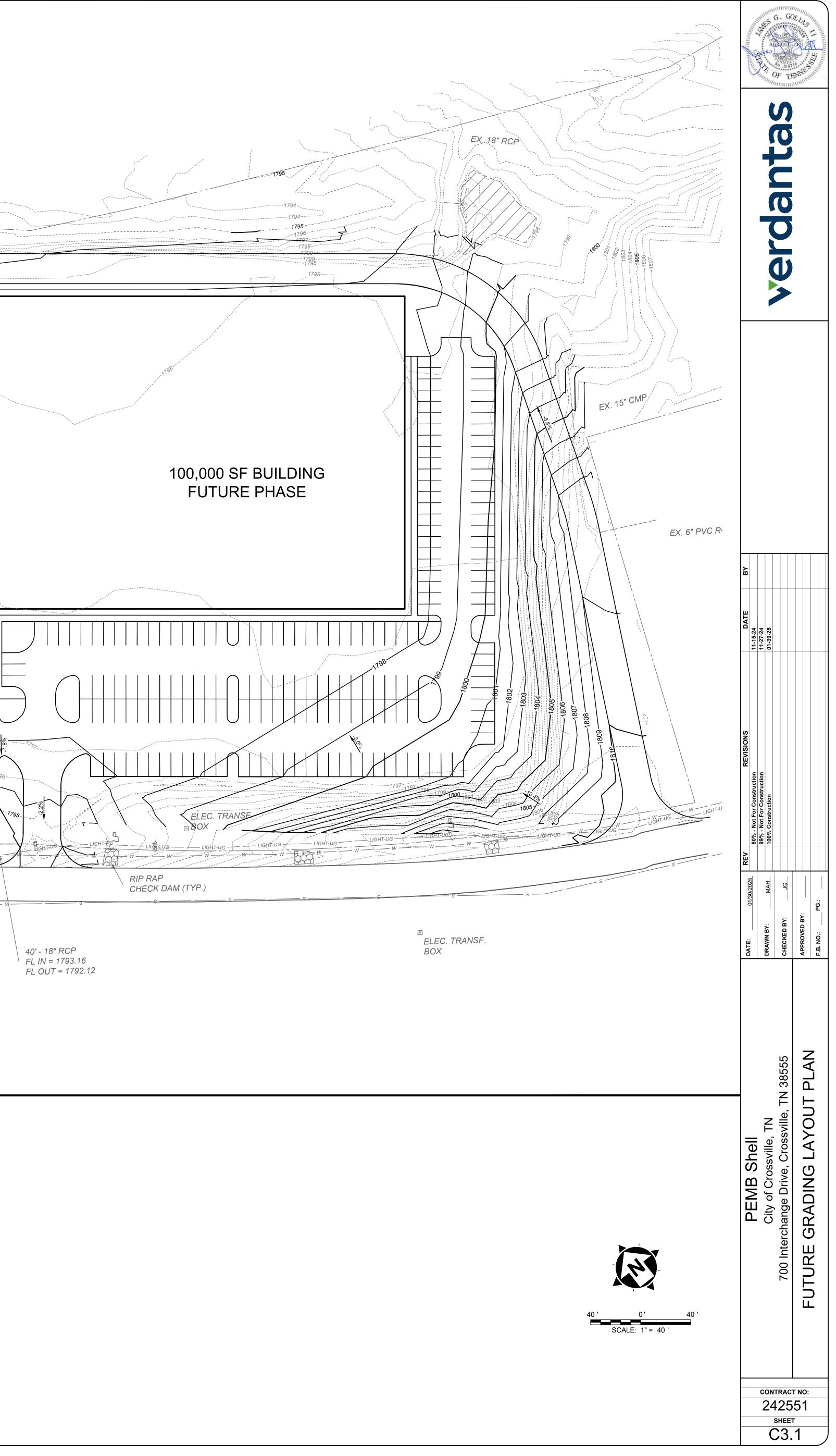


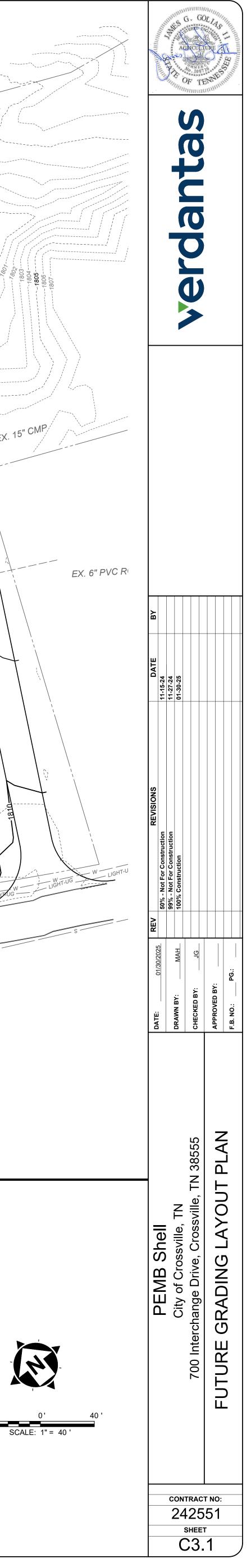
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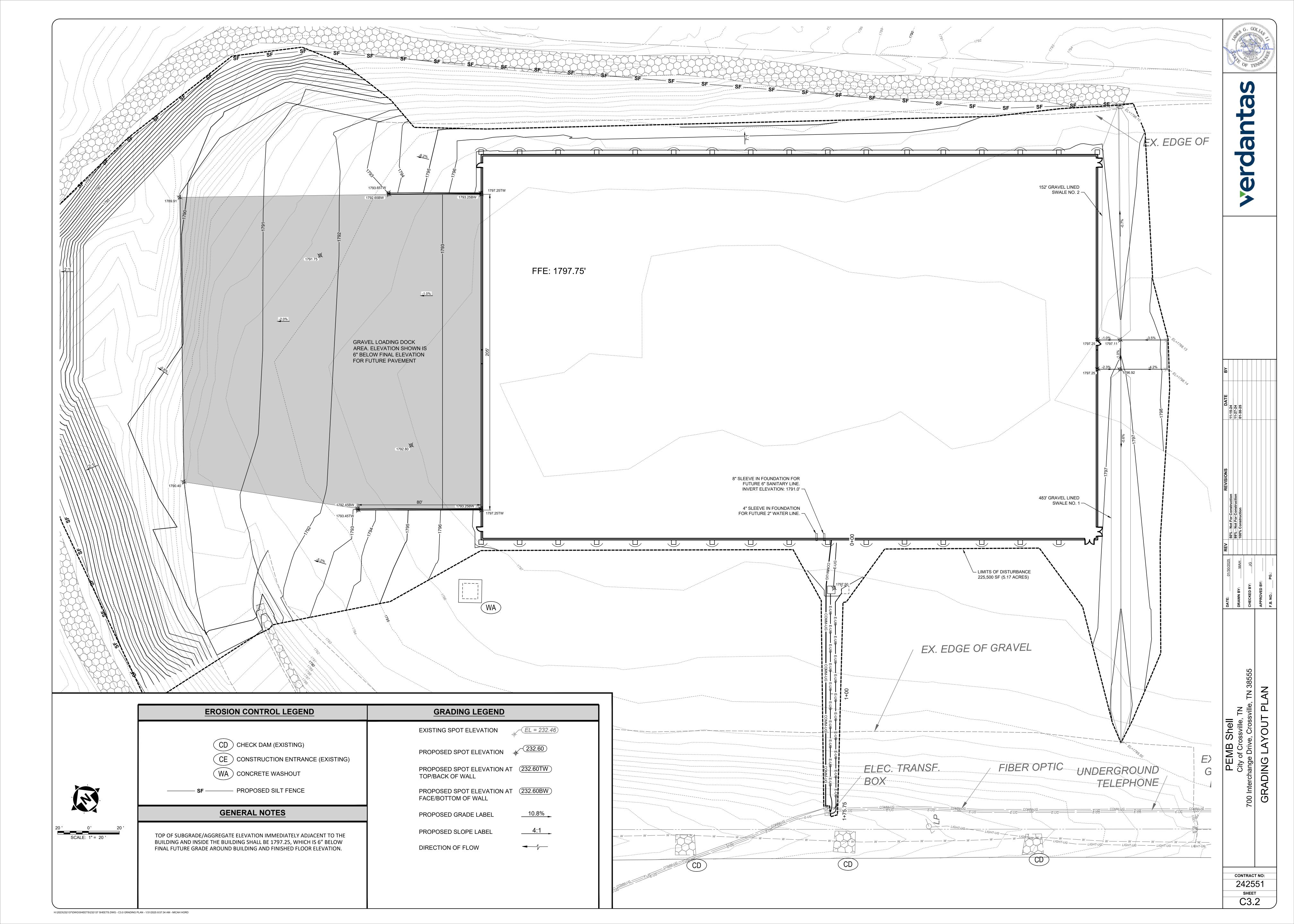
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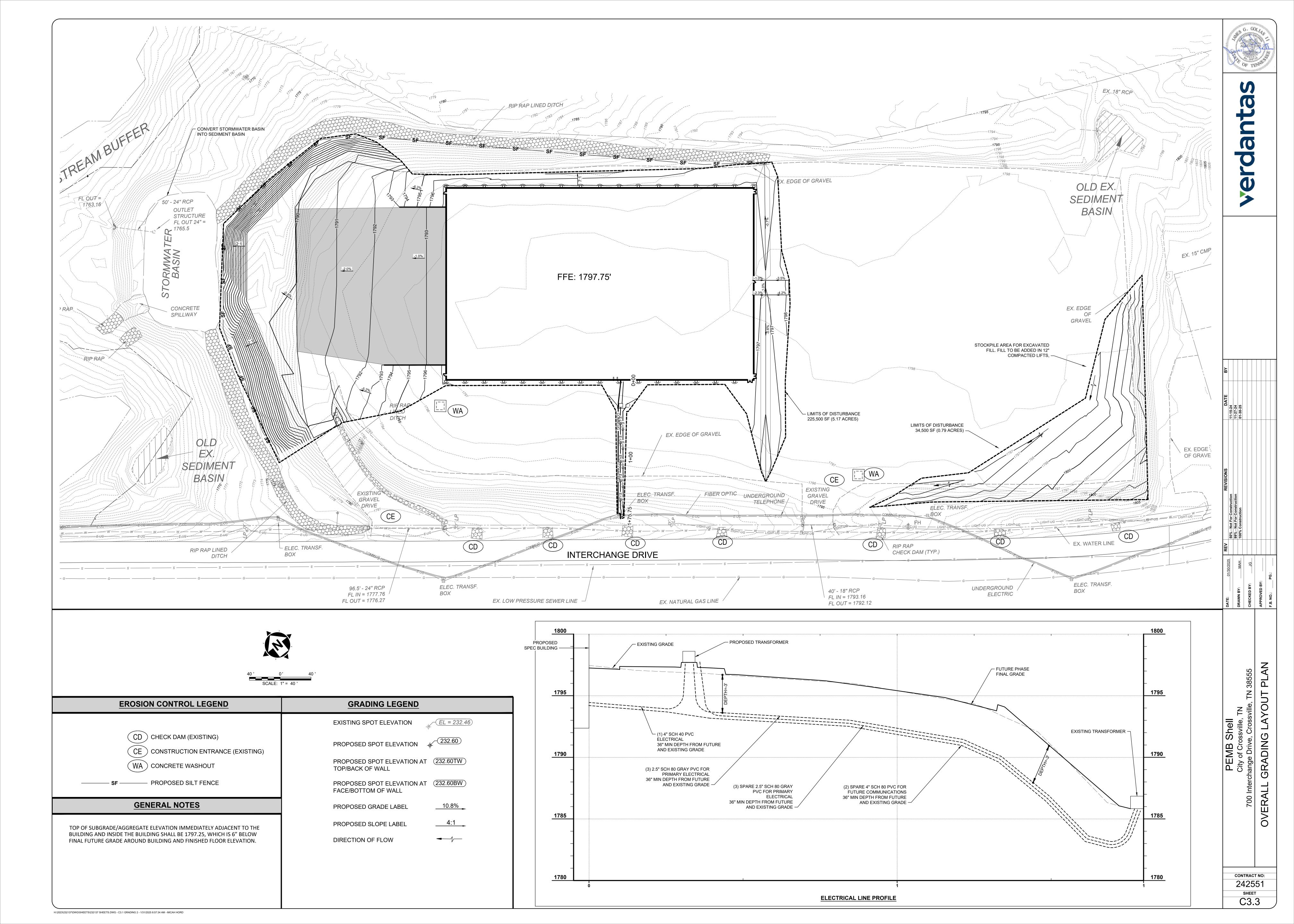
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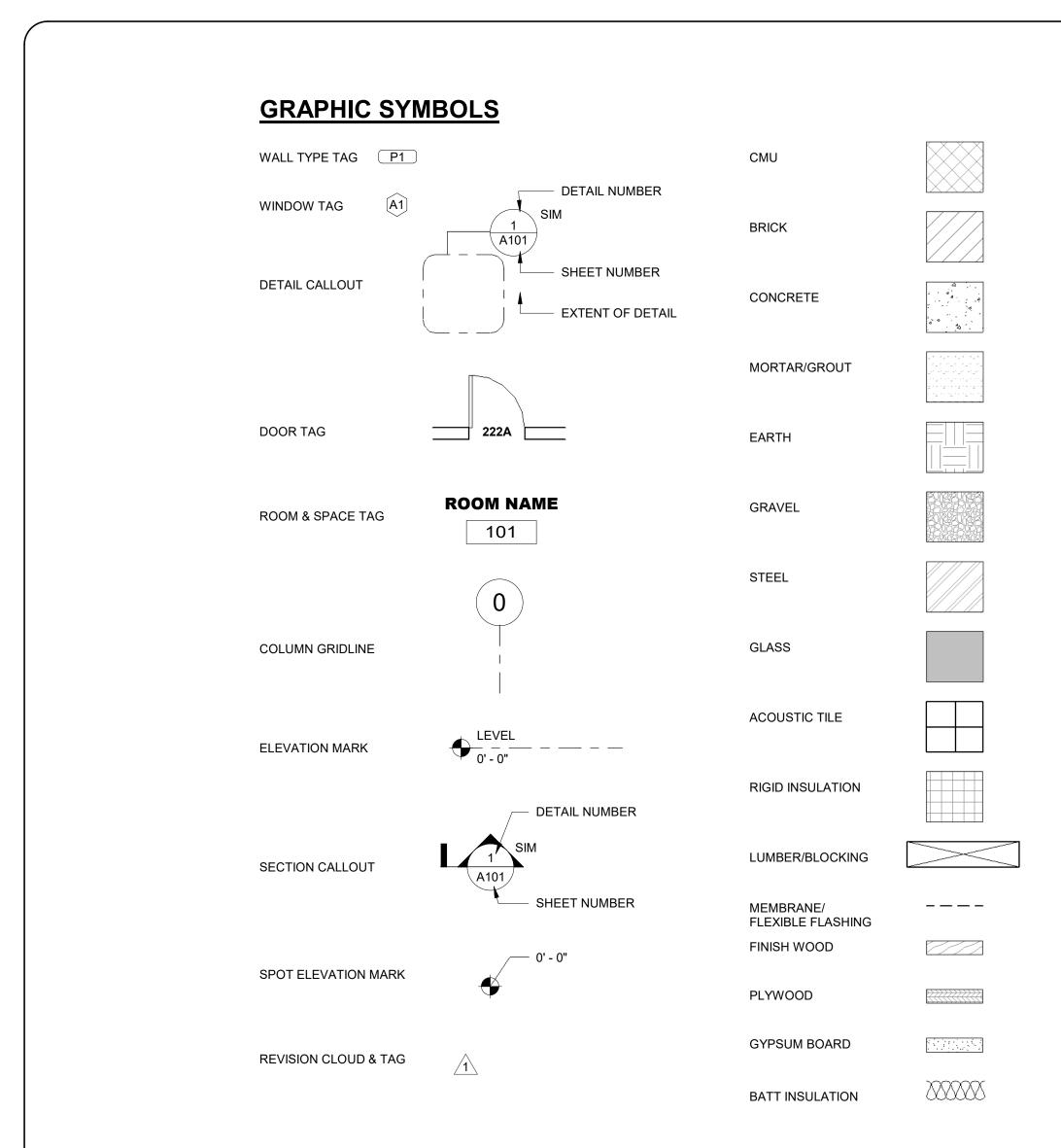
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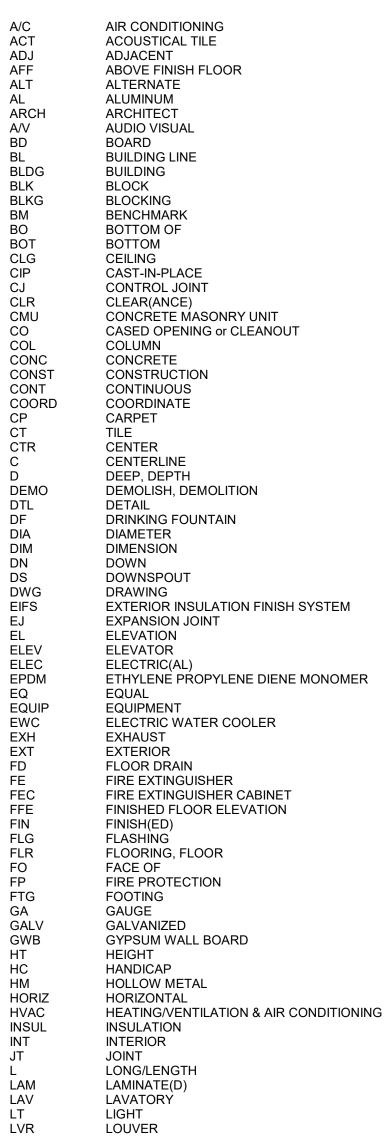


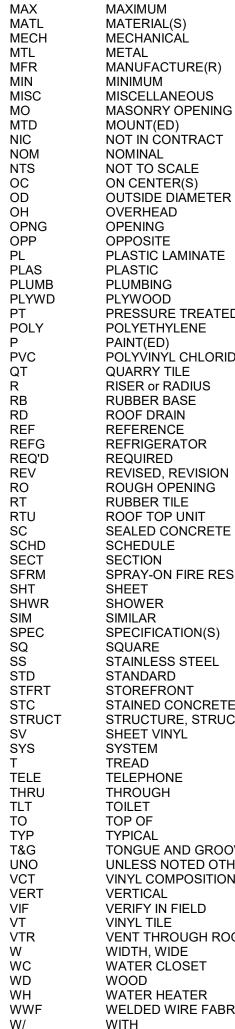






ABBREVIATIONS





MAS

MASONRY

OUTSIDE DIAMETER PLASTIC LAMINATE PRESSURE TREATED POLYETHYLENE POLYVINÝL CHLORIDE RISER or RADIUS REFRIGERATOR REVISED, REVISION ROUGH OPENING ROOF TOP UNIT SEALED CONCRETE SPRAY-ON FIRE RESITIVE MATERAL SPECIFICATION(S) STAINLESS STEEL STAINED CONCRETE STRUCTURE, STRUCTURAL TONGUE AND GROOVE UNLESS NOTED OTHERWISE VINYL COMPOSITION TILE VERIFY IN FIELD VENT THROUGH ROOF WATER CLOSET WATER HEATER WELDED WIRE FABRIC

WALL TYPES

(P1)		3 5/8" MTL. STUDS @ 16" O.C. + ONE (1) LAYER 5/8" GYP. BD. EACH SIDE
(P2)		6" MTL. STUDS @ 16" O.C. + ONE (1) LAYER 5/8" GYP. BD. EACH SIDE
F1		7/8" HAT CHANNEL @ 16" O.C. + ONE (1) LAYER 5/8" GYP. BD.
<u>F2</u>		1 1/2" HAT CHANNEL @ 16" O.C. + ONE (1) LAYER 5/8" GYP. BD.
F 3		2 1/2" METAL STUDS @ 16" O.C. + ONE (1) LAYER 5/8" GYP. BD.
F 4		3 5/8" METAL STUDS @ 16" O.C. + ONE (1) LAYER 5/8" GYP. BD.
F 5		6" METAL STUDS @ 16" O.C. + ONE (1) LAYER 5/8" GYP. BD.
<u>M1</u>	<u></u>	6" CMU, SEE STRUCT FOR REINFORCING
<u>M2</u>		8" CMU, SEE STRUCT FOR REINFORCING
M3		12" CMU, SEE STRUCT FOR REINFORCING
<u>M4</u>		3 5/8" BRICK VENEER + 1 1/2" AIR SPACE + LIQUID APPLIED VAPOR BARRIER + 8" CMU
<u>M5</u>		3 5/8" BRICK VENEER + 1 1/2" AIR SPACE + AIR BARRIER + 1/2" SHEATHING + 6" MTL. STUDS @ 16" O.C. + ONE LAYER 5/8" GYP. BD.
<u>C1</u>		5 1/2" CONCRETE TILT-UP WALL, SEE STRUCT FOR REINFORCING
<u>C2</u>	<u> </u>	7 1/4" CONCRETE TILT-UP WALL, SEE STRUCT FOR REINFORCING
<u>C3</u>	- <u> </u>	9 1/4" CONCRETE TILT-UP WALL, SEE STRUCT FOR REINFORCING
<u>B1</u>		8 1/2" GIRT + 2" METAL PANEL
<u>B2</u>		10" GIRT + 2" METAL PANEL
<u>B3</u>		11 1/2" GIRT + 2" METAL PANEL

LEGEND

WITHOUT

W/O

1 HOUR FIRE RATED 2 HOUR FIRE RATED 4 HOUR FIRE RATED

WALL TYPE INDICATOR -

WALL TYPE MODIFIER, IF REQUIRED

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ଶି 2' - 0"

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MODIFIER KEY

2' - 0" PX.i -ADD BATT INSULATION \rightarrow FULL HEIGHT OF PARTITION OR EXTEND 2'-0" EITHER SIDE OF PARTIAL HEIGHT PARTITIONS PX.#r -FIRE RATING DESIGNATION. GYP. BOARD SHALL BE

TYPE-X

WALL NOTES

1) ALL INTERIOR PARTITION WALLS AND FURRING SHALL EXTEND TO BOTTOM OF STRUCTURE ABOVE, UNLESS SPECIFICALLY NOTED OTHERWISE. 2) SEE STRUCTURAL FOR ADDITIONAL INFORMATION ON WALL TYPES.

GENERAL NOTES

IMPROVEMENTS SHOWN ON THESE

UTILITY LINES OR EASEMENTS.

THE CONTRACTOR SHALL CONFORM TO ALL APPLICABLE RULES, REGULATIONS AND CODES, OBTAIN ALL NECESSARY PERMITS, PAY ALL FEES AND GIVE ALL NOTICES REQUIRED FOR EXECUTION OF THE WORK PRIOR TO BEGINNING THE WORK.

THE LOCATION AND SIZE OF EXISTING UTILITIES SHOWN ON THESE CONSTRUCTION PLANS IS APPROXIMATE ONLY. OTHER UTILITIES MAY EXIST AND MAY NOT BE SHOWN, OR MAY VARY FROM LOCATIONS SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION AND SIZE OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO VERIFY LOCATION AND SIZE OF ANY AND ALL UNDERGROUND OR OVERHEAD UTILITIES. NO GUARANTEES ARE EXPRESSED OR IMPLIED WITH RESPECT TO UTILITY LOCATIONS AND SIZES SHOWN HEREIN.

3. IN THE EVENT OF ANY DISCREPANCIES AND/OR ERRORS FOUND IN THE CONSTRUCTION PLANS, OR IF PROBLEMS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY DESIGNER BEFORE PROCEEDING WITH THE WORK. IF DESIGNER IS NOT NOTIFIED, THE CONTRACTOR SHALL ASSUME AND TAKE RESPONSIBILITY FOR THE COST OF ANY REVISION AND ANY OTHER DAMAGES OR COSTS STEMMING THEREFROM.

PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VERIFY THAT ACTUAL SITE CONDITIONS (INCLUDING, BUT NOT LIMITED TO, ELEVATIONS, GRADES AND DIMENSIONS) ARE CONSISTENT WITH THE EXISTING CONDITIONS DEPICTED ON THESE CONSTRUCTION PLANS. IN THE EVENT OF ANY DISCREPANCIES AND/OR ERRORS ARE FOUND IN THE CONSTRUCTION PLANS, OR IF PROBLEMS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL TO NOTIFY THE DESIGNER AND OWNER BEFORE PROCEEDING WITH THE WORK. COMMENCEMENT OF CONSTRUCTION BY THE CONTRACTOR SHALL INDICATE THAT THE CONTRACTOR ACCEPTS THE ACTUAL SITE CONDITIONS AS MATCHING EXISTING CONDITIONS DEPICTED ON THE CONSTRUCTION PLANS.

PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VERIFY ANY AND ALL DIMENSIONS, WIDTHS, HEIGHTS, SQUARE FOOTAGES, AND ANY OTHER CALCULATIONS DEPICTED ON THESE CONSTRUCTION PLANS. NO GUARANTEES ARE EXPRESSED OR IMPLIED WITH RESPECT TO SQUARE FOOTAGES REPRESENTED ON THESE CONSTRUCTION PLANS.

6. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED DURING THE PREPARATION OF THESE CONSTRUCTION PLANS AND NO REPRESENTATION IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND CONTAINERS, FACILITIES, WELLS, SINK HOLES, GRAVE SITES, DEBRIS OR ANY OTHER SUBSURFACE CONDITION THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS PROJECT.

THE DESIGNER OR ARCHITECT DOES NOT GUARANTEE THE SUITABILITY OF THE SUBSURFACE CONDITIONS FOR THE WORK INDICATED. DETERMINATION OF THE SUITABILITY OF SUBSURFACE CONDITIONS FOR THE WORK INDICATED IS SOLELY THE RESPONSIBILITY OF THE OWNER AND/OR CONTRACTOR.

8. THE DESIGNER OR ARCHITECT DOES NOT GUARANTEE THE WORK OF ANY CONTRACTOR OR SUBCONTRACTOR. SHALL HAVE NO AUTHORITY TO STOP WORK, SHALL HAVE NO AUTHORITY TO DIRECT WORK, SHALL NOT BE RESPONSIBLE FOR JOB SITE SAFETY, OR HAVE ANY CONTROL OVER JOB SITE SAFETY. 9. THE CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION AND REMOVAL NECESSARY TO ACCOMPLISH THE PROPOSED

CONSTRUCTION PLANS. 10. THE CONTRACTOR SHALL VERIFY THAT THERE ARE NO CONFLICTS WITH EXISTING OR PROPOSED UNDERGROUND OR OVERHEAD

11. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE TENNESSEE UNDERGROUND UTILITY DAMAGE PREVENTION ACT (ONE-CALL) AND FOR ESTABLISHING THE EXACT VERTICAL AND HORIZONTAL LOCATION OF EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE UTILITY COMPANY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. THE CONTRACTOR SHALL PERFORM ALL WORK IN A MANNER THAT WILL NOT CAUSE DAMAGE TO EXISTING UTILITIES THAT ARE TO REMAIN. TO THE EXTENT ANY EXISTING UTILITIES ARE DAMAGED, CONTRACTOR SHALL REPAIR ALL DAMAGE ACCORDING TO LOCAL STANDARDS AT THE CONTRACTOR'S EXPENSE. DESIGNER IS NOT RESPONSIBLE FOR ANY DAMAGES AS A RESULT OF CONTRACTOR'S FAILURE TO COORDINATE UTILITY WORK.

12. NECESSARY AND SUFFICIENT BARRICADES, LIGHTS, SIGNS, AND OTHER TRAFFIC CONTROL MEASURES AS MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL ENSURE COMPLIANCE WITH ALL APPLICABLE RULES, REGULATIONS, AND CODES WITH RESPECT TO STORM WATER DISCHARGES, OR SEDIMENT OR EROSION CONTROL THROUGHOUT CONSTRUCTION. THE GRADING CONTRACTOR SHALL USE WHATEVER MEASURES ARE REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL EROSION, CONSERVATION AND SILTATION ORDINANCES.

14. THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES. THE DESIGNER IS NOT RESPONSIBLE FOR ANY EROSION OR SEDIMENT PROBLEMS ENCOUNTERED **DURING CONSTRUCTION.**

15. ARCHITECT IS NOT RESPONSIBLE OR LIABLE FOR STRUCTURAL ENGINEERING, MECHANICAL ENGINEERING, ELECTRICAL ENGINEERING, PLUMBING ENGINEERING, CIVIL ENGINEERING, LANDSCAPE ARCHITECTURE, FIRE PROTECTION DESIGN AND ANY DAMAGE RESULTING FROM EXTREME WEATHER.

16. ARCHITECT IS NOT RESPONSIBLE OR LIABLE FOR THE SELECTION OR PERFORMANCE AND ANY MATERIALS, FIXTURES, ETC. IN THIS PROJECT.

17. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INSTALL MATERIALS PER MANUFACTURERS INSTRUCTIONS. 18. PEMB SUPPLIER IS RESPONSIBLE FOR ANY WATER PROOFING DETAILING, MOISTURE CONTROL DESIGN, AIR INFILTRATION DESIGN OR ANY OTHER SIMILAR ISSUES AS RELATED TO THE PERFORMANCE OF THE BUILDING.

19. PEMB SUPPLIER IS RESPONSIBLE AND LIABLE FOR ANY ROOF DRAINAGE DESIGNS OR PERFORMANCE OR ANY FLASHING DETAILING AT THE EXTERIOR OF THE BUILDING.

20. PEMB SUPPLIER IS RESPONSIBLE FOR PERFORMANCE OF ROOF AND ROOF DETAILING. 21. ALL MATERIALS INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND INDUSTRY STANDARD CONSTRUCTION METHODS SHALL BE

USED ON PROJECT UNLESS OTHERWISE SPECIFIED 22. ALL SIDING FINAL SELECTIONS AND OTHER EXTERIOR BUILDING MATERIAL SELECTIONS ARE THE RESPONSIBILITY OF THE OWNER, PEMB SUPPLIER, AND GENERAL CONTRACTOR.

23. G.C. AND PEMB SUPPLIER ARE RESPONSIBLE TO REVIEW THE DRAWINGS TO IDENTITE ANY COORDIATION ITEMS WITH THE PEMB STRUCTURE AND STRUCTURAL FOUNDATION DETAILS AND DRAWINGS.

24. THE G.C. SHALL CHECK, VERIFY, AND MAINTAIN ALL DIMENSIONS, GRADES, LEVELS AND OTHER CONDITIONS BEFORE PROCEEDING WITH FABRICATION. THE G.C. SHALL REPORT ANY ISSUES TO THE PROPER PERSON BEFORE PROCEEDING WITH THE WORK.

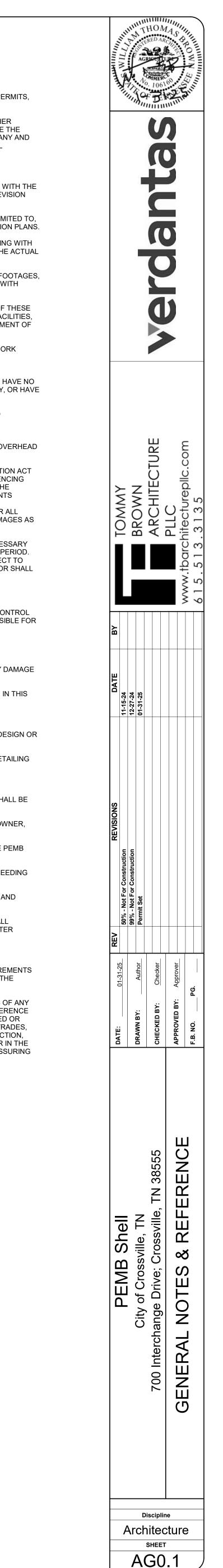
25. CHANGES: ANY CHANGES TO THE DESIGN IS THE RESPONSIBILITY OF THE G.C. AND OWNER TO CONTACT THE ARCHITECT AND OTHER ENGINEERS. 26. THE G.C. SHALL EXAMINE ALL DRAWINGS FOR REQUIRED OPENINGS. THE G.C. SHALL VERIFY THE SIZE AND LOCATION OF ALL

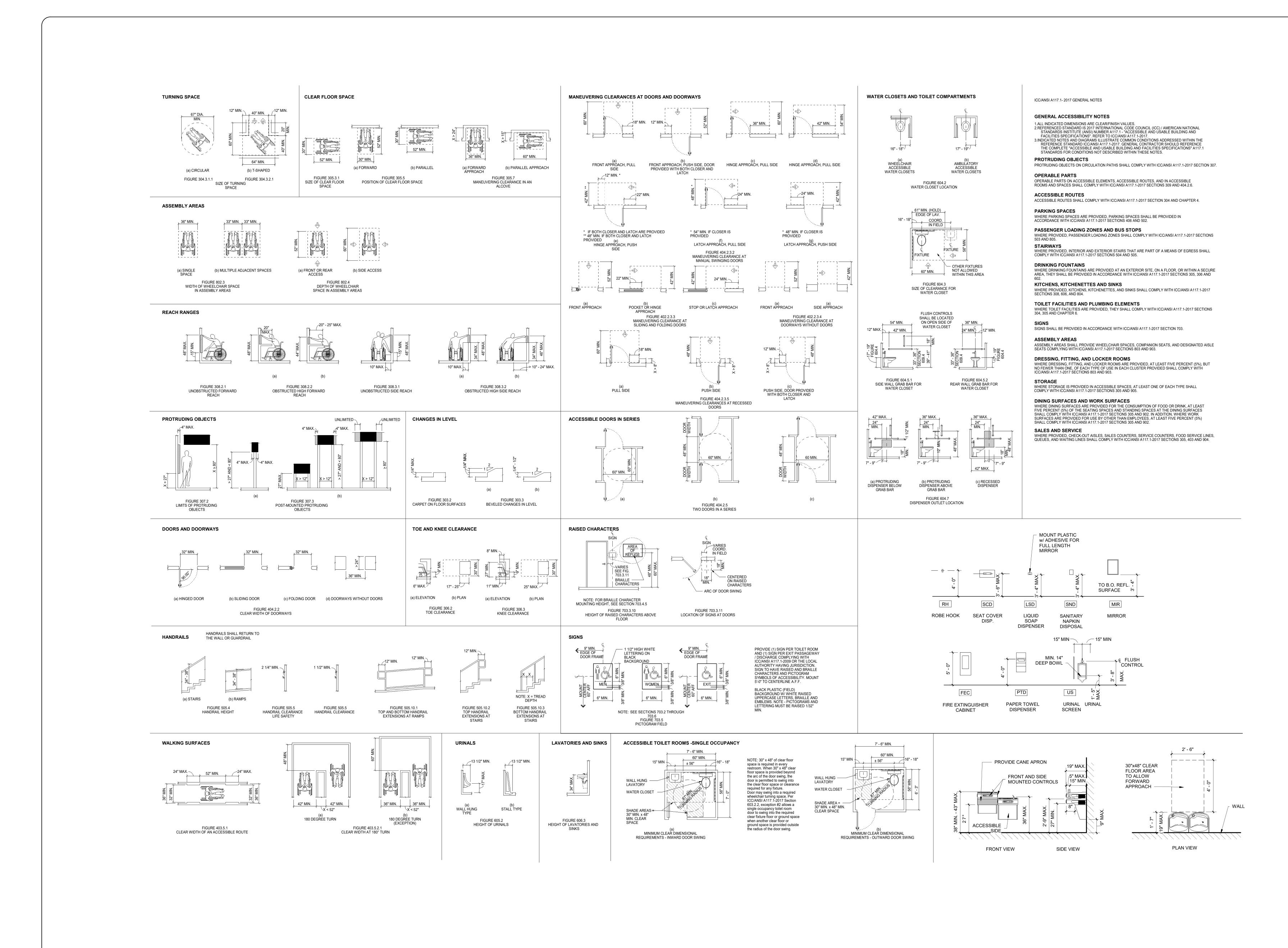
OPENINGS WITH ALL-SUBCONTRACTORS PRIOR TO PERFORMING THE WORK AND IS RESPONSIBLE FOR ALL FLASHING AND WATER PROOFING OF ALL OPENINGS. 27.

28. ALL PARTS OF THE WORK, INCLUDING MATERIALS, METHODS, ASSEMBLIES, ETC. MUST COMPLY WITH THE MINIMUM REQUIREMENTS OF THE GOVERNING REGULATIONS OF ALL FEDERAL, STATE, DISTRICT, AND LOCAL AUTHORITIES HAVING JURISDICTION OVER THE PROJECT AS WELL AS THOSE GREATER REQUIREMENTS INDICATED BY THE CONTRACT DOCUMENTS.

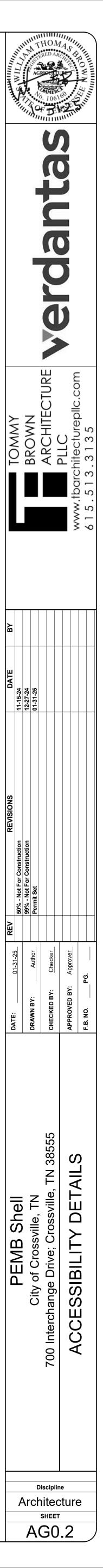
29. THE ARCHITECTURAL DRAWINGS ARE A PART OF A LARGER SET OF DRAWINGS. THE WORK DESCRIBED BY THE DRAWINGS OF ANY ONE DISCIPLINE MAY BE AFFECTED BY THE WORK DESCRIBED ON DRAWINGS OF ANOTHER DISCIPLINE AND MAY REQUIRE REFERENCE TO THE DRAWINGS OF ANOTHER DISCIPLINE. PARTIAL SETS OF DRAWINGS ARE INCOMPLETE AND SHOULD NOT BE DISTRIBUTED OR UTILIZED BY THE G.C. IT IS THE G.C.'S RESPONSIBILITY TO REVIEW AND COORDINATE THE WORK OF ALL SUB-CONTRACTORS, TRADES, AND SUPPLIERS WITH THE REQUIREMENTS OF THE DRAWINGS AND CONTRACT DOCUMENTS BEFORE COMMENCING CONSTRUCTION, AND TO ASSURE THAT ALL PARTIES ARE AWARE OF ALL REQUIREMENTS, REGARDLESS OF WHERE THE REQUIREMENTS OCCUR IN THE DRAWINGS AND CONTRACT DOCUMENTS, WHICH MIGHT EFFECT THE WORK OF THAT PARTY. THE G.C. IS RESPONSIBLE FOR ASSURING

THAT ALL SUBCONTRACTORS, TRADES, ETC. ARE AWARE OF THEIR PORTION OF THE WORK ON THE PROJECT.





1/2025 4-39-01 DM

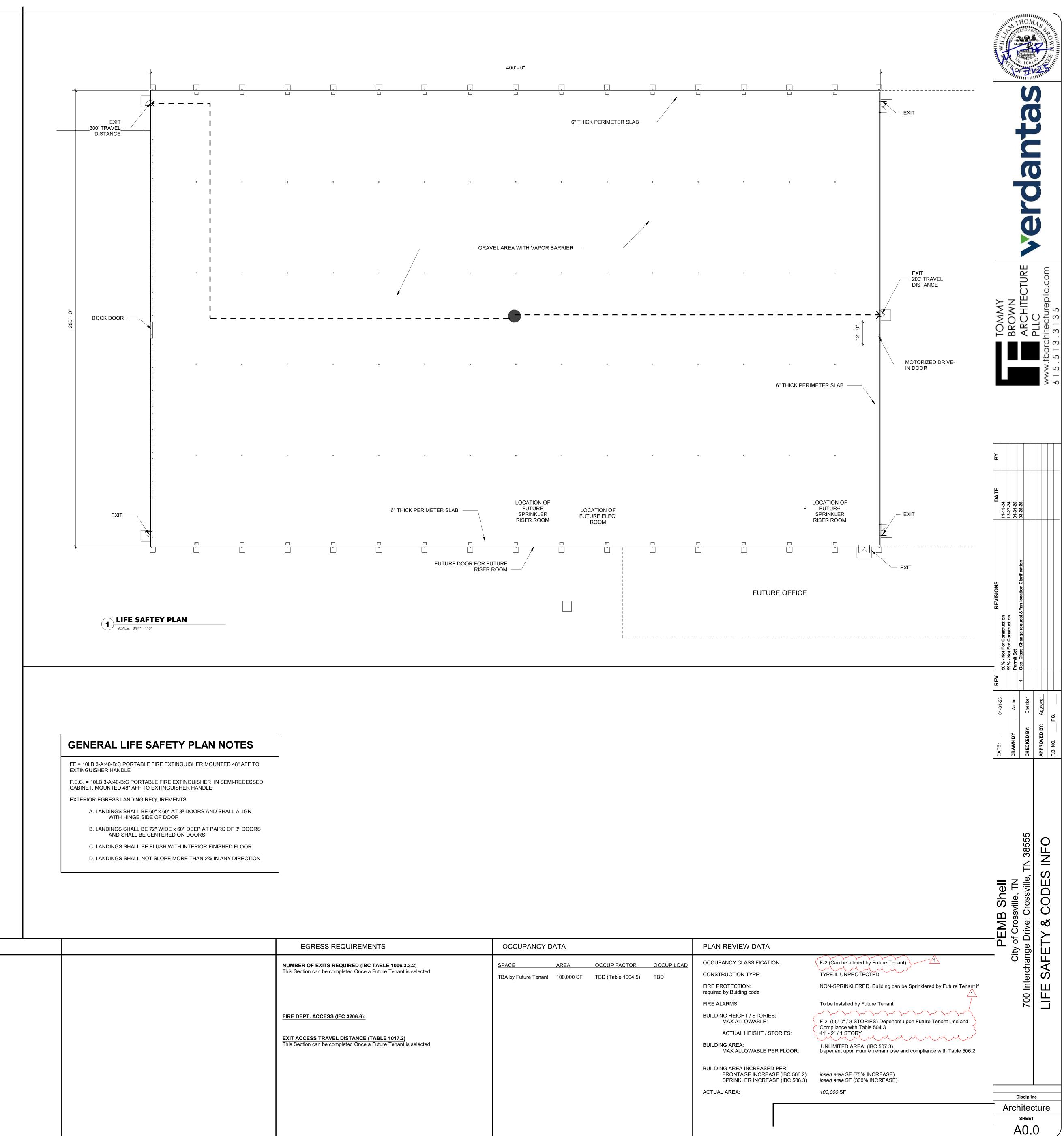


	Project Information Energy Code: 2018 IECC						
		e Business Par ennessee	k Phase 1				
	Project Type:New ConstrVertical Glazing / Wall Area:1%	ruction					
	Construction Site: Owner/Ag 700 Interchange Drive	gent:		Desig	ner/Contracto	or:	
	Crossville, TN 38555 Additional Efficiency Package(s) Credits: 1.0 Required 1.0 Proposed						
	Enhanced Interior Lighting Controls, 1.0 credit		Floor A	Area			
<u>/1</u>	1-Manufacturing Facility Nonresidential		100	000			
	Envelope Assemblies Assembly		Gross Area		Cont.	Proposed	Budget U
	Roof 1: Metal Building, Screw Down, Liner System without	Thermal	or Perimeter 100000	R-Value 30.0	R-Value	U-Factor 0.035	Factor (a)
	Blocks, [Bldg. Use 1 - Manufacturing Facility] : Comment: Floor 1: Slab-On-Grade:Unheated, [Bldg. Use 1 - Manufact Facility] (d)		1300			0.730	0.540
	<u>NORTH</u> Exterior Wall 3: Other Metal Building Wall, [Bldg. Use 1 - Ma Facility] (b)	anufacturing	14030			0.051	0.052
	<u>EAST</u> Exterior Wall 6: Other Exterior Wall, Heat capacity 1.0, [Bld Manufacturing Facility] (b)	lg. Use 1 -	9670			0.051	0.064
	Door 5: Glass (> 50% glazing):Metal Frame, Non-Entrance Specs.: Product ID TBD, SHGC 0.36, VT 0.90, [Bldg. Use 1 Manufacturing Facility] (c)	1 -	84			0.250	0.450
	Door 6: Insulated Metal, Swinging, [Bldg. Use 1 - Manufactu Door 7: Insulated Metal, Non-Swinging, [Bldg. Use 1 - Manu Facility]		21 168			0.250 0.135	0.610 0.179
	<u>SOUTH</u> Exterior Wall 2: Other Metal Building Wall, [Bldg. Use 1 - Ma Facility] (b)	lanufacturing	14030			0.051	0.052
	Door 10: Glass (> 50% glazing):Metal Frame, Non-Entrance Specs.: Product ID TBD, SHGC 0.36, VT 0.90, [Bldg. Use 1 Manufacturing Facility] (c)		42			0.250	0.450
	<u>WEST</u> Exterior Wall 5: Other Metal Building Wall, [Bldg. Use 1 - Ma Facility] (b)	anufacturing	9670			0.051	0.052
	Project Title: Interchange Business Park Phase 1					Report d	ate: 03/25/
	Data filename: C:\Users\tommy\OneDrive\Desktop\T 2018 03-25-25.cck	TBA\Crossville	Spec Building	ComCheck\	Interchang	e IECC Pag	ge 1 of
	Assembly		Gross Are or	a Cavity R-Value	Cont. R-Value	Proposed U-Factor	
	Window 5: Metal Frame with Thermal Break:Fixed, Perf.		Perimeter 250			0.250	0.38
	Product ID TBD, SHGC 0.36, VT 0.90, [Bldg. Use 1 - Mai Facility] (c) Door 4: Insulated Metal, Swinging, [Bldg. Use 1 - Manufa	acturing Facility]				0.135	0.61
	Door 10: Insulated Metal, Non-Swinging, [Bldg. Use 1 - N	Manufacturing	90		 ents.	0.135	0.17
	Facility]	alculations ONL	Y, and are not co				
		tion for propose d in accordance	d U-factors. with NFRC and		porting docu	mentation.	
	Facility] (a) Budget U-factors are used for software baseline ca (b) 'Other' components require supporting documental (c) Fenestration product performance must be certified (d) Slab-On-Grade proposed and budget U-factors show Project Notes	tion for propose d in accordance own in table are	d U-factors. with NFRC and		porting docu	mentation.	
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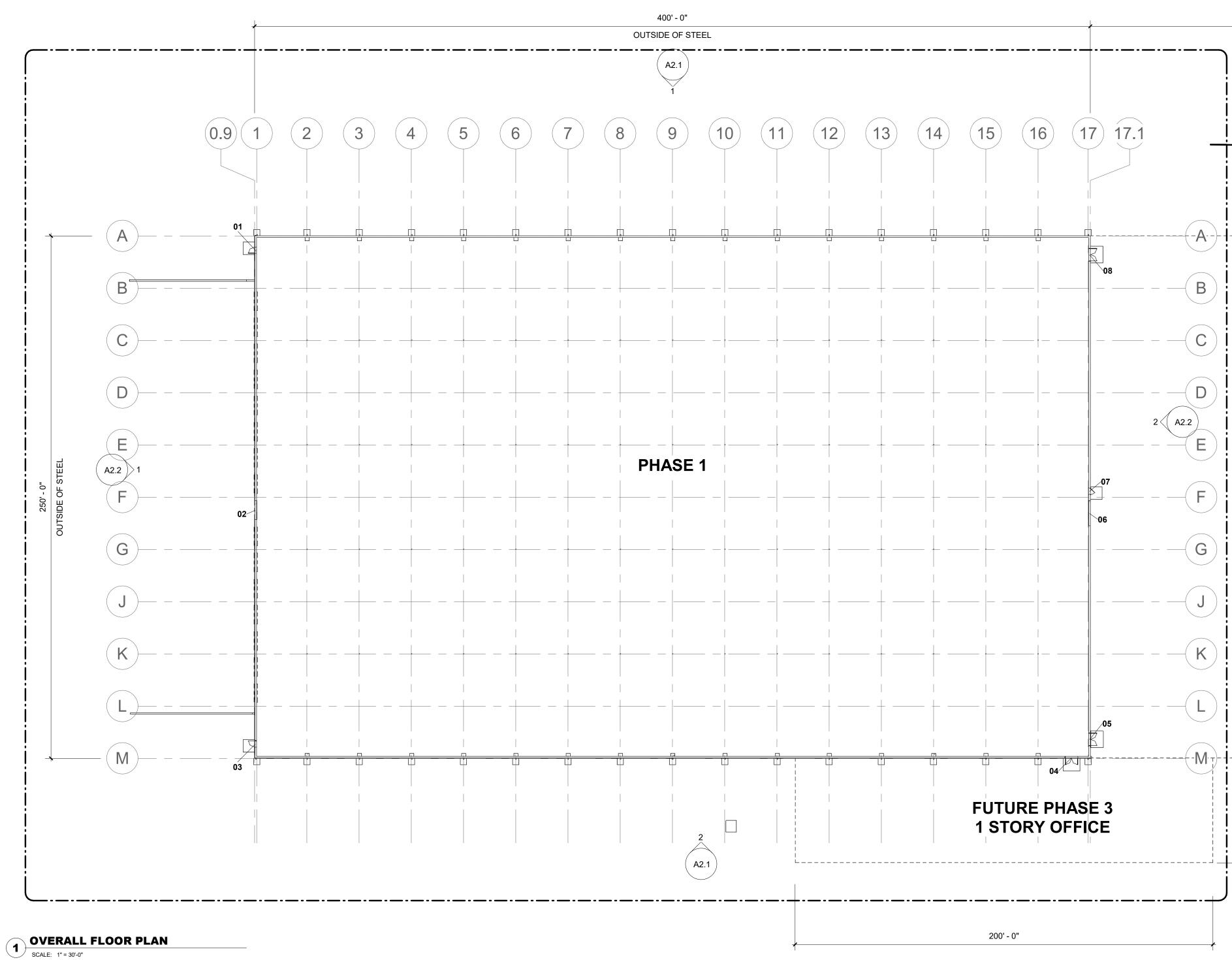
2018 INTERNATIONAL ENERGY CONSERVATION CODE W/ LOCAL AMENDMENTS

2017 ICC/ANSI A-117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

2018 LIFE SAFETY CODE (NFPA 101) W/ LOCAL AMENDMENTS



	OCCUPANCY D	ΑΤΑ			PLAN REVIEW DATA	
sted	<u>SPACE</u> TBA by Future Tenant	AREA 100,000 SF	OCCUP FACTOR TBD (Table 1004.5)	OCCUP LOAD TBD	OCCUPANCY CLASSIFICATION: CONSTRUCTION TYPE: FIRE PROTECTION: required by Buiding code	F-2 (Can be altered by Future Tenant) TYPE II, UNPROTECTED NON-SPRINKLERED, Building can be
sted					FIRE ALARMS: BUILDING HEIGHT / STORIES: MAX ALLOWABLE: ACTUAL HEIGHT / STORIES: BUILDING AREA: MAX ALLOWABLE PER FLOOR:	To be Installed by Future Tenant F-2 (55'-0" / 3 STORIES) Depenant up Compliance with Table 504.3 41' - 2" / 1 STORY UNLIMITED AREA (IBC 507.3) Depenant upon Future Tenant Use and
					BUILDING AREA INCREASED PER: FRONTAGE INCREASE (IBC 506.2) SPRINKLER INCREASE (IBC 506.3) ACTUAL AREA:	insert area SF (75% INCREASE) insert area SF (300% INCREASE) 100,000 SF

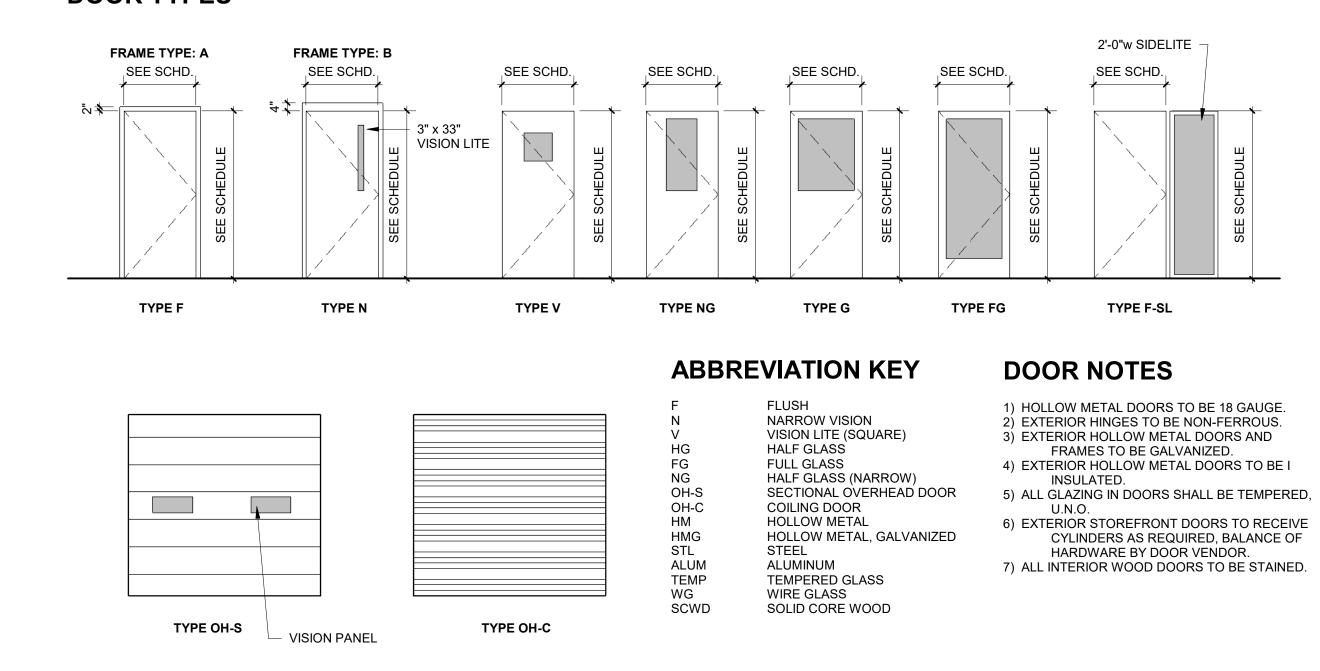


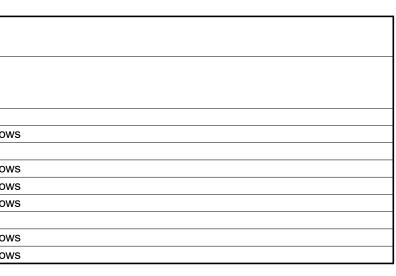


								DOO	R SCHED	ULE	
			DOC	R		FRA	FRAME				
MARK			SIZE					_ DOOR FIRE	DOOR	DOOR	
	TYPE	WIDTH	HEIGHT	THICKNESS	MATERIAL	MATERIAL	TYPE	RATING	HARDWARE	SIGNAGE	COMMENTS
01	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	HM	TBD		TBD		Insulated HM; No Window
02	OH-C	9' - 0"	10' - 0"	0' - 1 1/2"	TBD	TBD	TBD		TBD		Manual; Insulated
03	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	HM	TBD		TBD		Insulated HM; No Window
04	F	6' - 0"	7' - 0"	0' - 1 3/4"	HM	HM	TBD		TBD		Insulated HM; No Window
05	F	6' - 0"	7' - 0"	0' - 1 3/4"	HM	HM	TBD		TBD		Insulated HM; No Window
06	OH-C	12' - 0"	14' - 0"	0' - 1 1/2"	TBD	TBD	TBD		TBD		Motorized; Insulated
07	F	3' - 0"	7' - 0"	0' - 1 3/4"	HM	HM	TBD		TBD		Insulated HM; No Windov
08	F	6' - 0"	7' - 0"	0' - 1 3/4"	НМ	HM	TBD		TBD		Insulated HM; No Windov

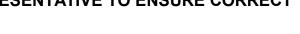
NOTE: THE G.C. IS RESPONSIBLE TO COORDINATE A MEETING WITH OWNERS AND DOOR & DOOR HARDWARE REPRESENTATIVE TO ENSURE CORRECT SELECTIONS AND FUNCTIONALITY OF EACH DOOR.















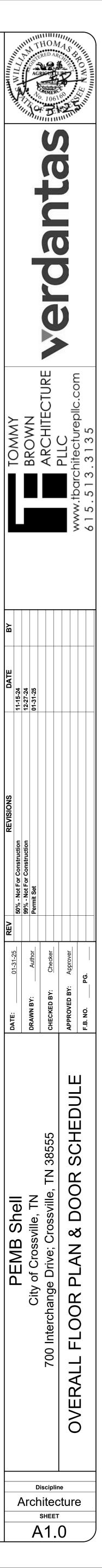
7) ALL INTERIOR WOOD DOORS TO BE STAINED.

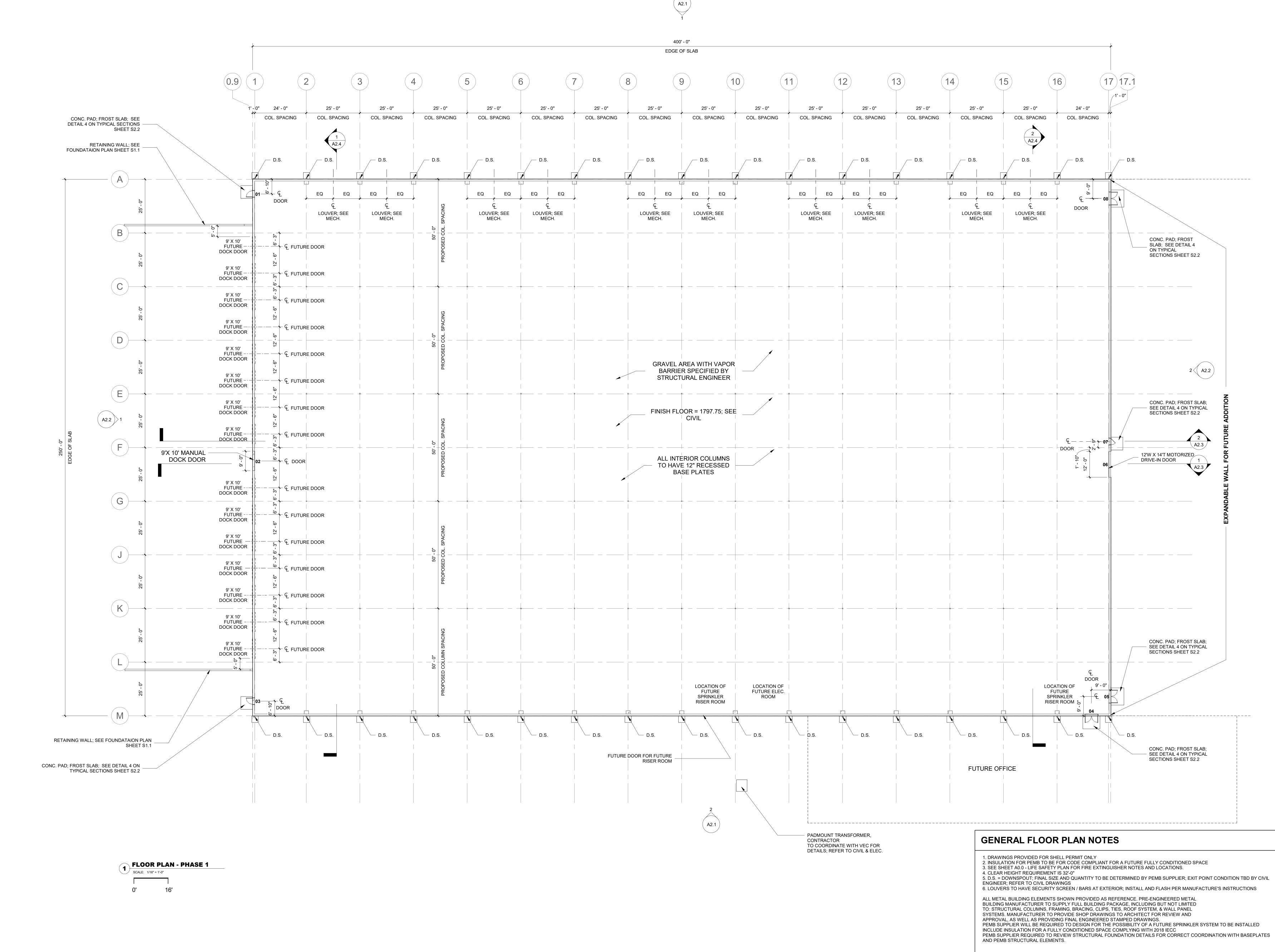
FUTURE PHASE 2

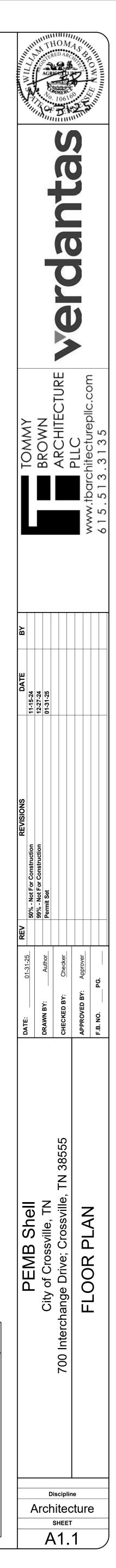
GENERAL FLOOR PLAN NOTES

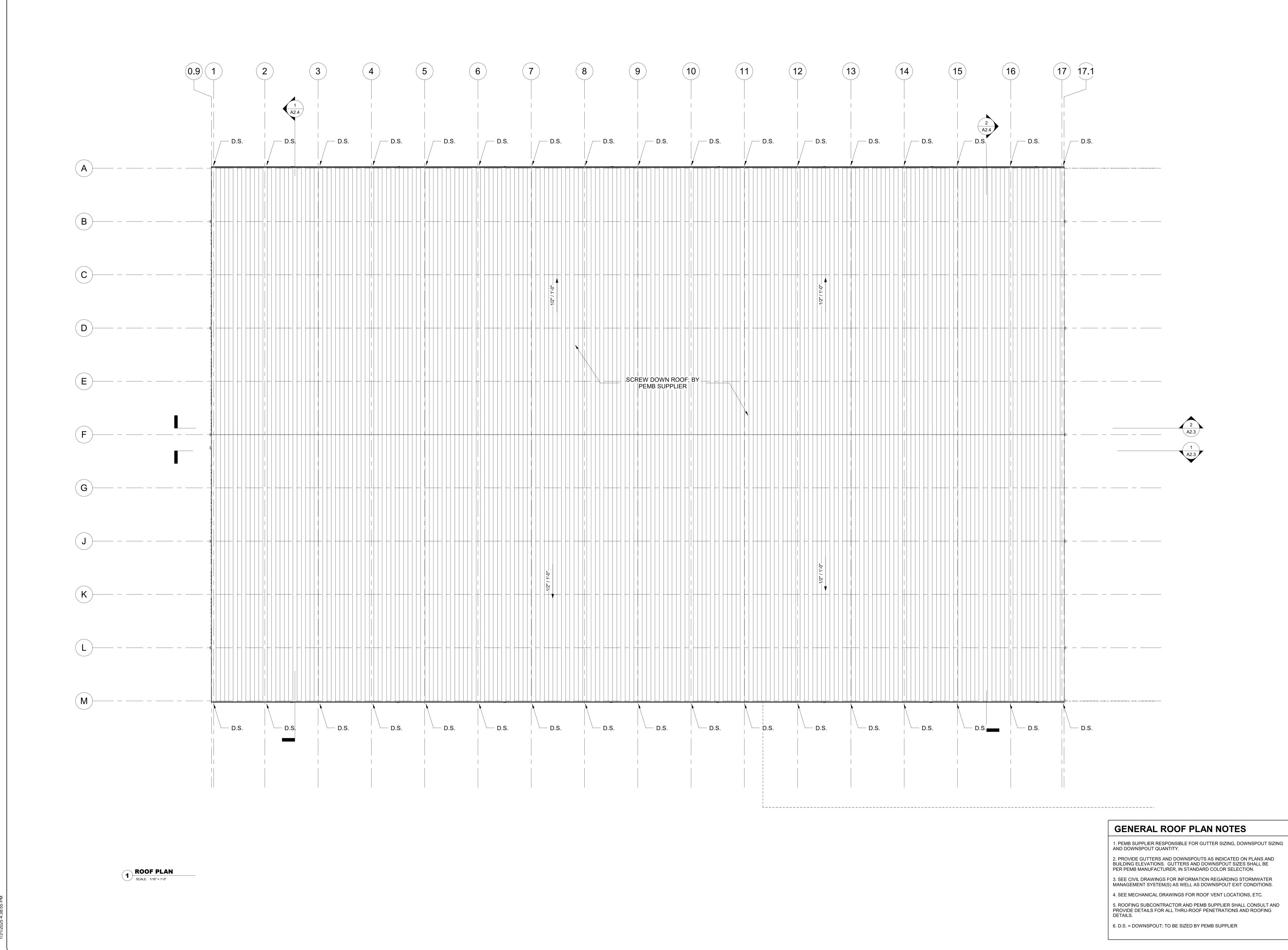
- 1. DRAWINGS PROVIDED FOR SHELL PERMIT ONLY 2. INSULATION FOR PEMB TO BE FOR CODE COMPLIANT FOR A FUTURE FULLY CONDITIONED SPACE 3. SEE SHEET A0.0 - LIFE SAFETY PLAN FOR FIRE EXTINGUISHER NOTES AND LOCATIONS.
- 4. CLEAR HEIGHT REQUIREMENT IS 32'-0"
 5. D.S. = DOWNSPOUT; FINAL SIZE AND QUANTITY TO BE DETERMINED BY PEMB SUPPLIER; EXIT POINT CONDITION TBD BY CIVIL ENGINEER; REFER TO CIVIL DRAWINGS 6. LOUVERS TO HAVE SECURITY SCREEN / BARS AT EXTERIOR; INSTALL AND FLASH PER MANUFACTURE'S INSTRUCTIONS
- ALL METAL BUILDING ELEMENTS SHOWN PROVIDED AS REFERENCE. PRE-ENGINEERED METAL BUILDING MANUFACTURER TO SUPPLY FULL BUILDING PACKAGE, INCLUDING BUT NOT LIMITED TO: STRUCTURAL COLUMNS, FRAMING, BRACING, CLIPS, TIES, ROOF SYSTEM, & WALL PANEL SYSTEMS. MANUFACTURER TO PROVIDE SHOP DRAWINGS TO ARCHITECT FOR REVIEW AND APPROVAL, AS WELL AS PROVIDING FINAL ENGINEERED STAMPED DRAWINGS. PEMB SUPPLIER WILL BE REQUIRED TO DESIGN FOR THE POSSIBILITY OF A FUTURE SPRINKLER SYSTEM TO BE INSTALLED
- INCLUDE INSULATION FOR A FULLY CONDITIONED SPACE COMPLYING WITH 2018 IECC PEMB SUPPLIER REQUIRED TO REVIEW STRUCTURAL FOUNDATION DETAILS FOR CORRECT COORDINATION WITH BASEPLATES AND PEMB STRUCTURAL ELEMENTS.

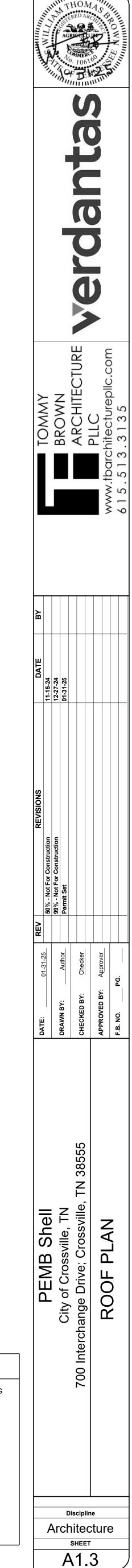
A1.1

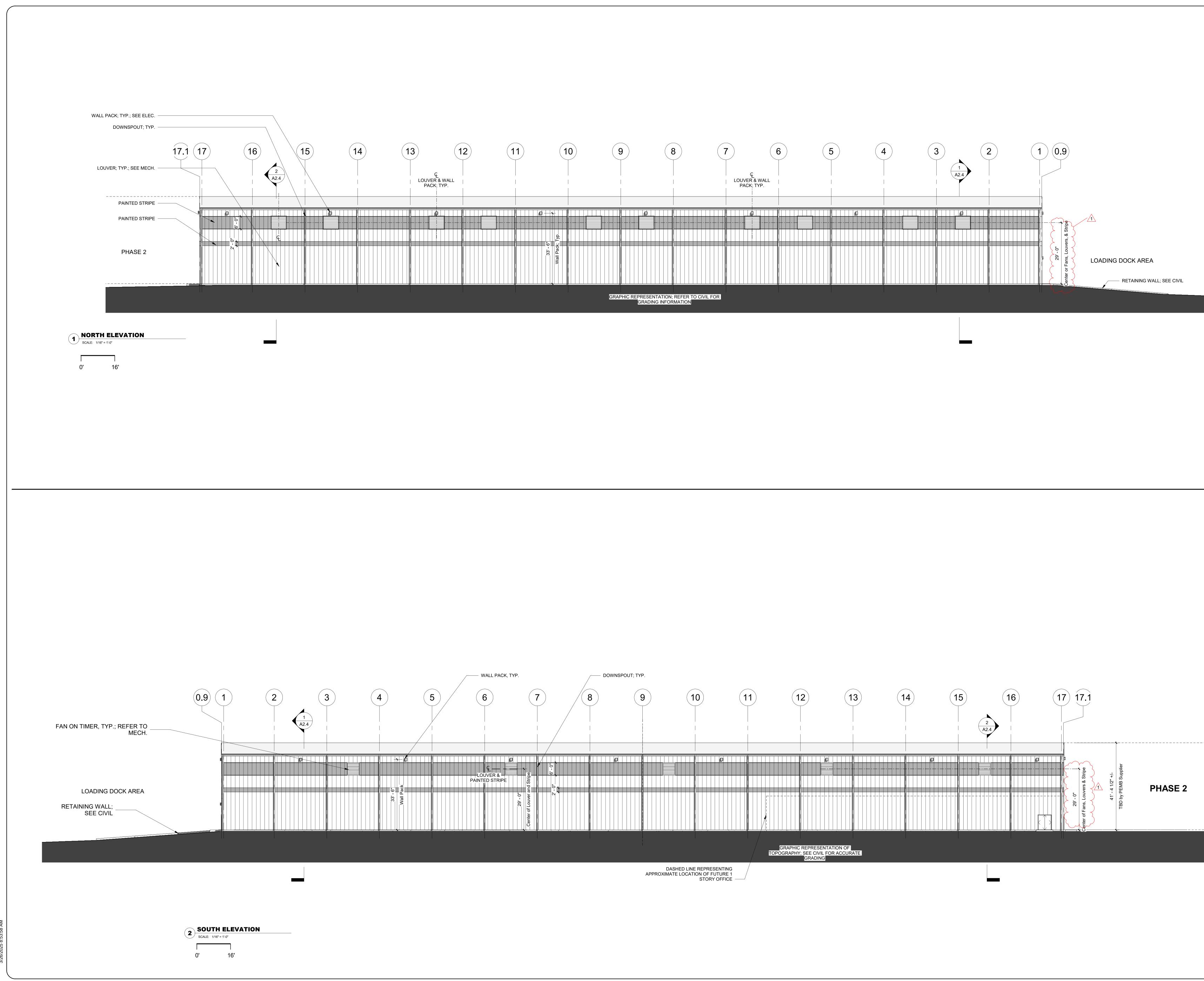




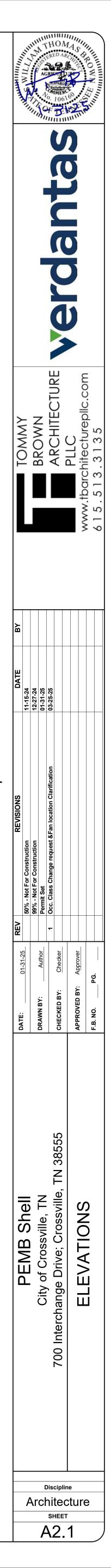


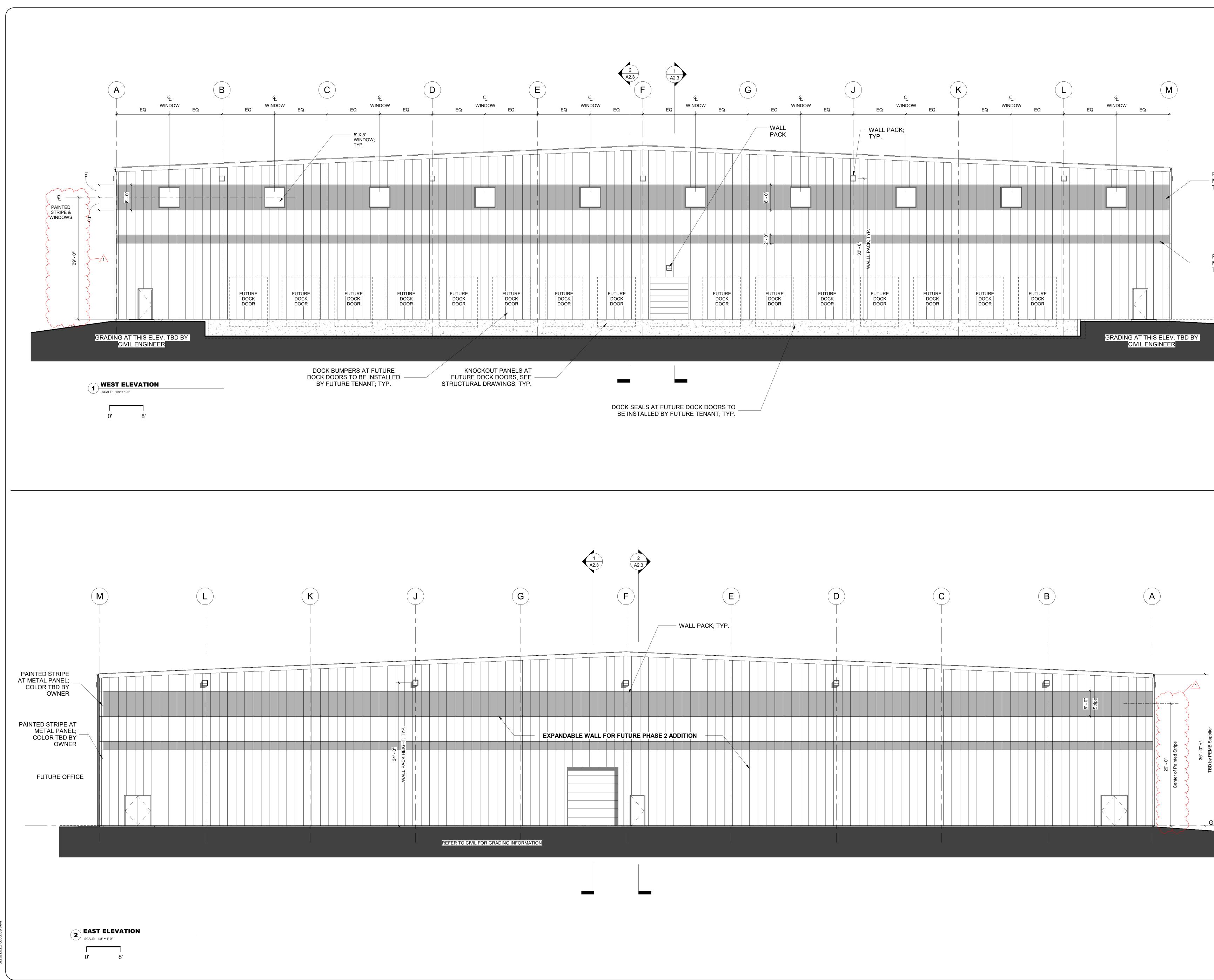




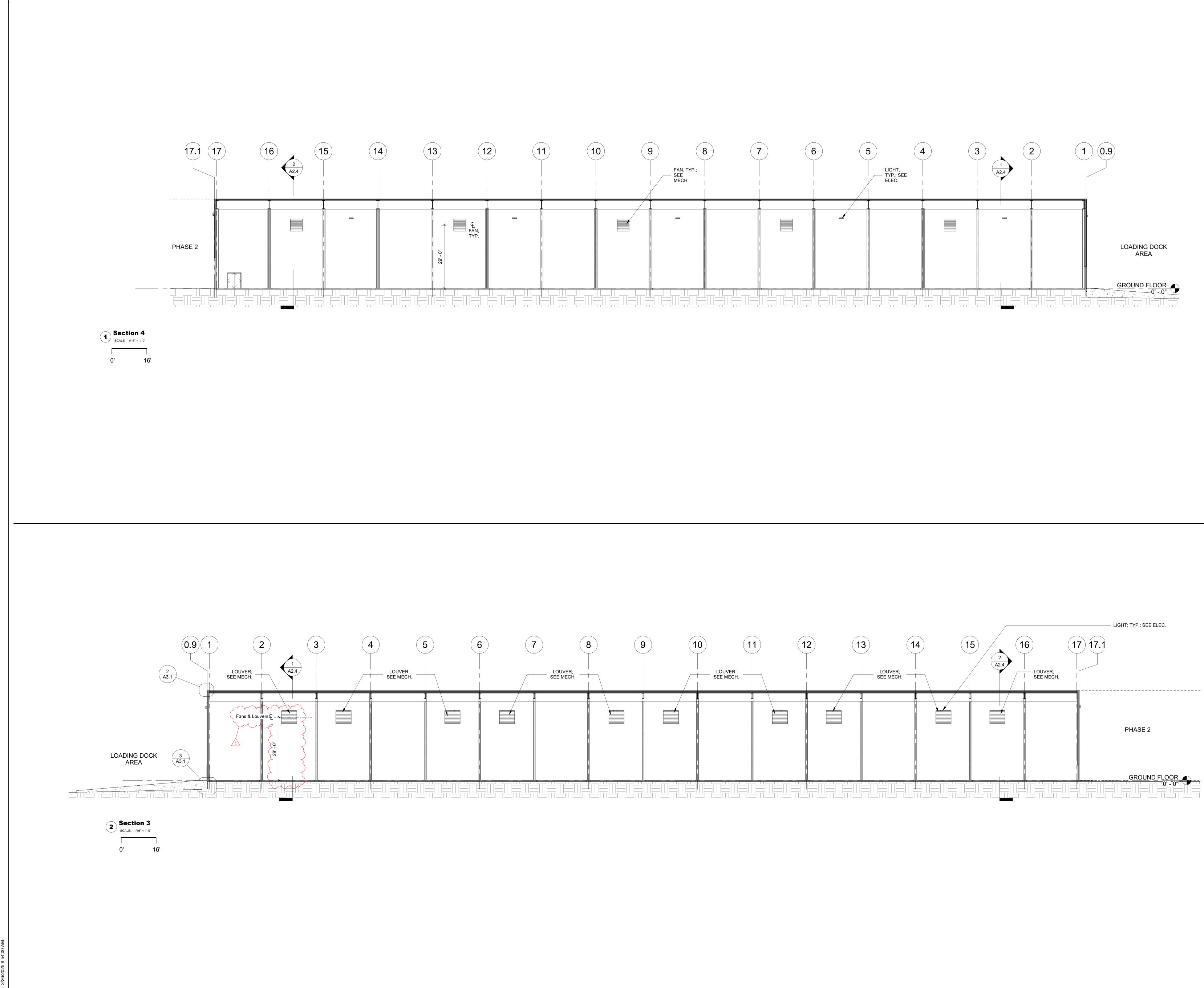


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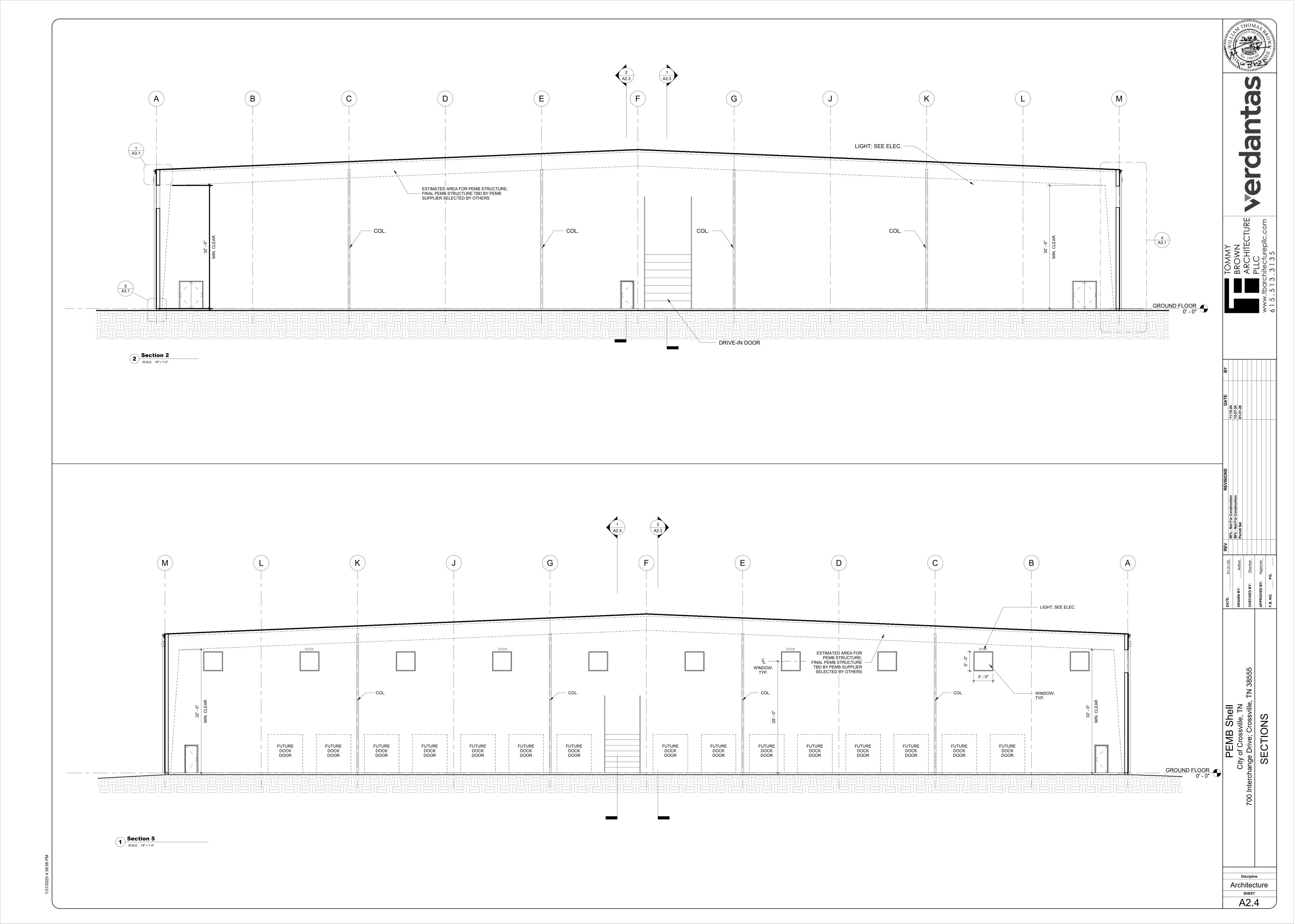


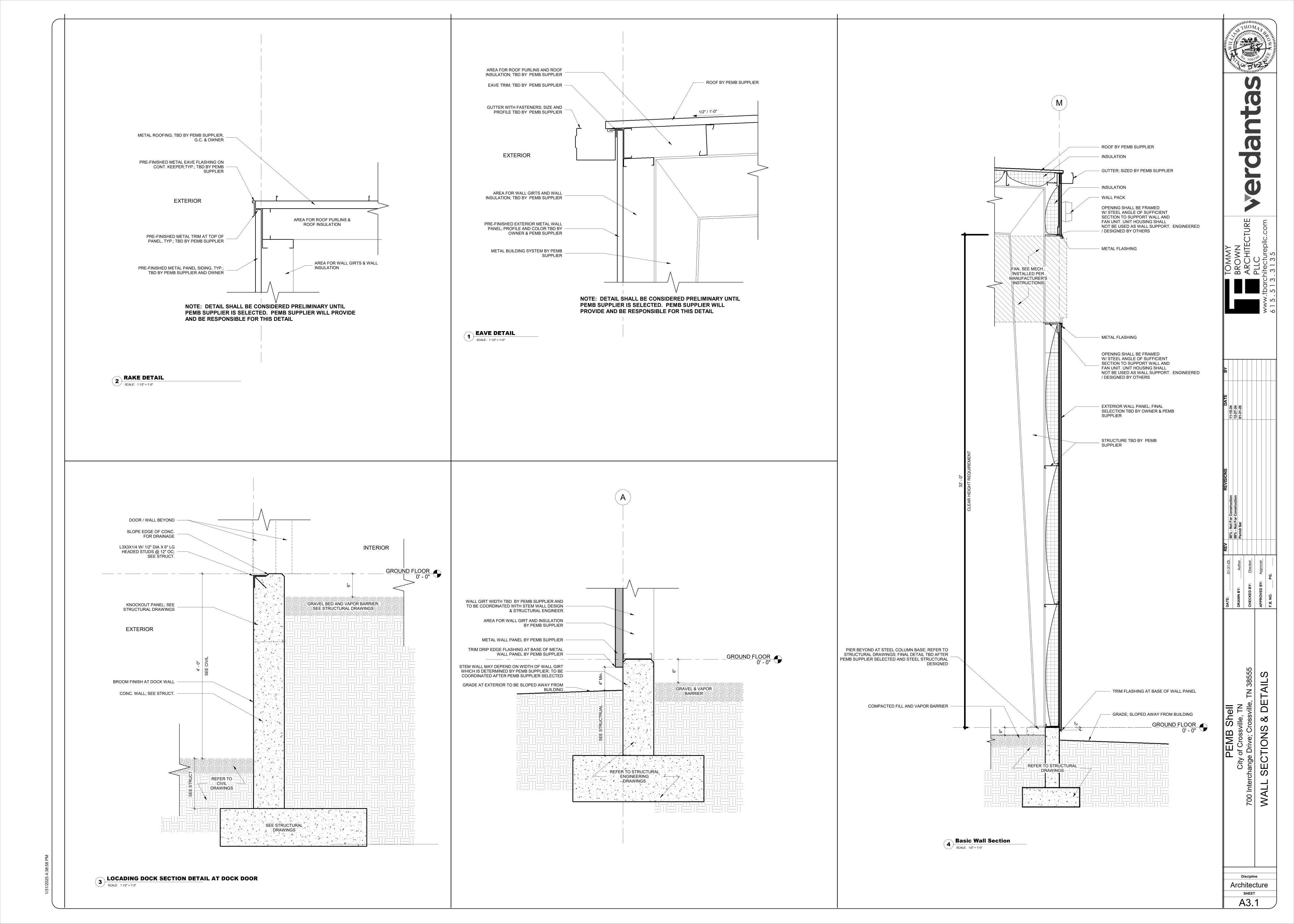


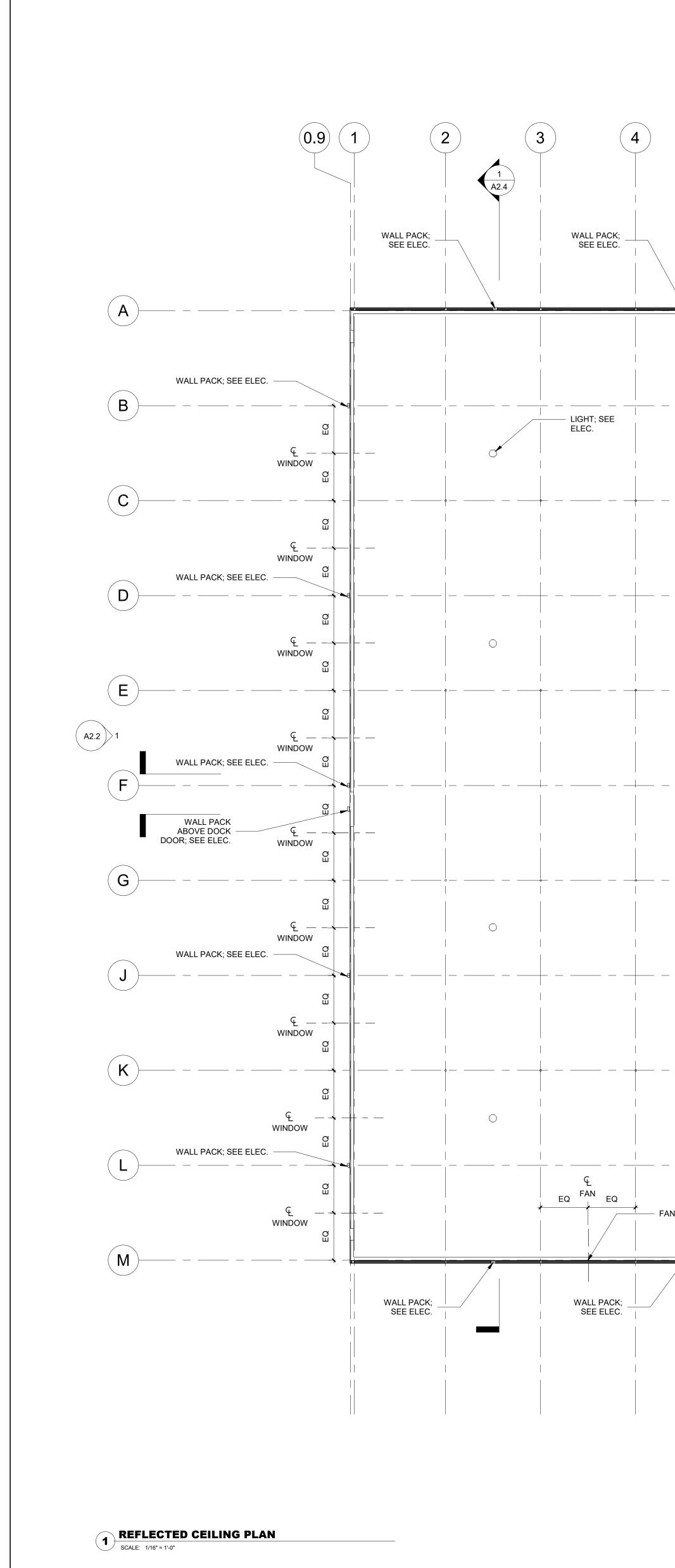
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PAINTED STRIPE AT METAL PANEL; COLOR TBD BY OWNER	ARCHITECTURE MWW.tbarchitectureplic.com
	DATE BY 11-15-24 11-15-24 12-27-24 01-31-25 01-31-25 03-25-25 tion 03-25-25
	DATE: 01-31-25 REV S0% - Not For Construction DRAWN BY: 01-31-25 50% - Not For Construction DRAWN BY: Author 99% - Not For Construction DRAWN BY: Author 99% - Not For Construction DRAWN BY: Author 99% - Not For Construction DRAWN BY: Author 1 Deconstruction CHECKED BY: Checker 1 Occ. Class Change request & Fan location Clarification APPROVED BY: Approver Approver E.B. NO. PG.
GROUND FLOOR 0' - 0"	PEMB Shell DATE: City of Crossville, TN DRAWN BY: 700 Interchange Drive; Crossville, TN 38555 CHECKED BY: ELEVATIONS APPROVED BY
	Discipline Architecture SHEET A2.2

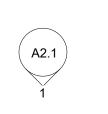


TOMMY BROWN BROWN ARCHITECTURE ARCHITECTURE ARCHITECTURE PLLC WILL www.tbarchitecturepllc.com 615.513.3135										
ВҮ										
DATE	11-15-24	12-27-24	01-31-25	03-25-25						
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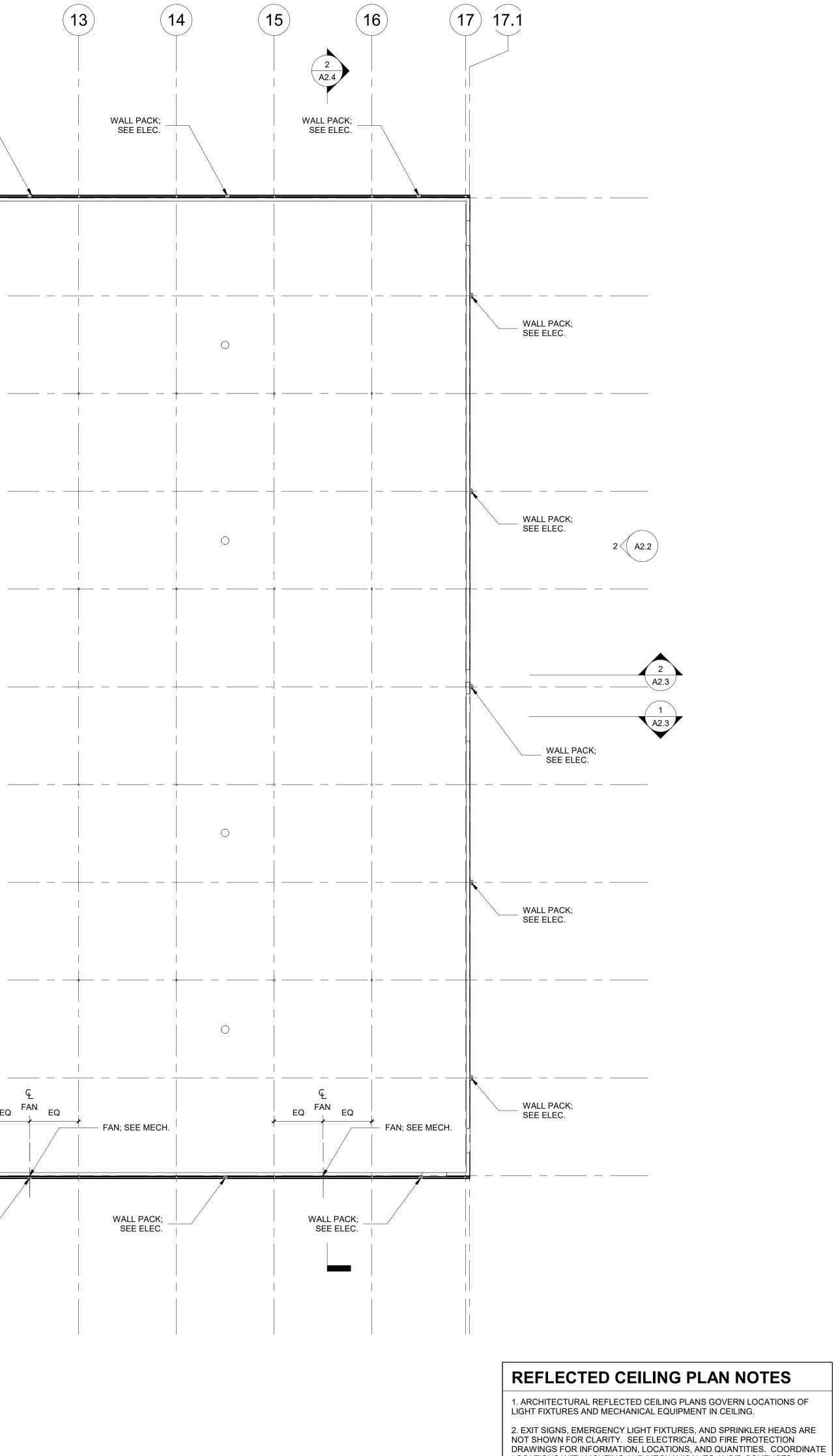






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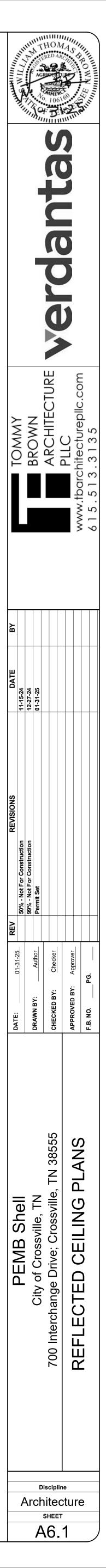
(A2.1)



LOCATIONS WITH LIGHTING AND MECHANICAL TO AVOID CONFLICTS. SPRINKLER HEADS SHALL BE CENTERED IN CEILING TILE WHERE APPLICABLE.

3. SEE ELECTRICAL DRAWINGS FOR LIGHT FIXTURE SCHEDULE, FIXTURE CALLOUTS, CIRCUITING, ETC. ELECTRICAL DRAWINGS SHALL BE USED TO DETERMINE FIXTURE QUANTITIES, TYPES, ETC.

4. SEE MECHANICAL DRAWINGS FOR HEATER SCHEDULE, CALLOUTS, MOUNTING HEIGHTS, ETC.



GOVERNING CODES AND STANDARDS:		CAST-IN-PLACE CONCRETE AND REINFORCEMENT:
IBC - INTERNATIONAL BUILDING CODE, 2018 EDITION ASCE 7 - MINIMUM DESIGN LOADS FOR BUILDINGS AND	OTHER STRUCTURES, 2010 EDITION	1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 318.
ACI 318 - BUILDING CODE REQUIREMENTS FOR STRUCT ACI 301 - SPECIFICATIONS FOR STRUCTURAL CONCRET ACI 305R - HOT WEATHER CONCRETING, 2010 EDITION		 CONCRETE SHALL HAVE THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS: CAST-IN-PLACE CONCRETE: 4,000 PSI FILL CONCRETE: 1,500 PSI
ACI 306R - COLD WEATHER CONCRETING, 2010 EDITION ACI SP-66 - ACI DETAILING MANUAL, 2004		3. USE 6% ±1.5%, ENTRAINED AIR PER ASTM C260 FOR ALL CONCRETE EXPOSED TO WEATHER.
ACI 350.1 - TIGHTNESS TESTING OF ENVIRONMENTAL END SPECIFICATION, 2022 EDITION ACI 530 - BUILDING CODE REQUIREMENTS FOR MASONF		 ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60. ALL REINFORCING TO BE WELDED SHALL CONFORM TO ASTM A706.
ACI 530.1 - SPECIFICATIONS FOR MASONRY STRUCTURES AISC 360 - STEEL CONSTRUCTION MANUAL, 14TH EDITION	S, 2013 EDITION	5. ALL WELDED WIRE REINFORCING SHALL CONFORM TO ASTM A1064 PROVIDED IN FLAT SHEETS OR
AISC 341 - SEISMIC PROVISIONS FOR STRUCTURAL STEE AWS D1.1 - STRUCTURAL WELDING CODE - STEEL, 2010 EI AWS D1.3 - STRUCTURAL WELDING CODE - SHEET STEEL,	DITION	ROLLS. 6. ADMIXTURES SHALL CONTAIN NO MORE THAN 0.05% CHLORIDE IONS BY WEIGHT OF CEMENT WHEN
AWS D1.4 - STRUCTURAL WELDING CODE - REINFORCING AWS D1.8 - STRUCTURAL WELDING CODE - SEISMIC SUPP	STEEL, 2011 EDITION	TESTED IN ACCORDANCE WITH AASHTO T260.
DESIGN LOADS:		 CONTRACTOR SHALL KEEP A COPY OF "FIELD REFERENCE MANUAL: STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE ACI 301 WITH SELECTED ACI REFERENCES", (ACI PUBLICATION SP-15) AT THE PROJECT FIELD OFFICE.
a. FIRST FLOOR (SLAB ON GRADE)	DRM (PSF) CONCENTRATED (LBS) 125 2,000	8. ALL REINFORCING DETAILS SHALL CONFORM TO THE ACI DETAILING MANUAL, SP-66, UNLESS
b. ROOF 2. SNOW LOADS:	20 300	DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS. 9. SUBMIT FOR APPROVAL CONCRETE MIX DESIGN AND CERTIFICATION OF CONCRETE MATERIALS
 a. GROUND SNOW LOAD, b. FLAT ROOF SNOW LOAD, 	P _g 10 PSF P _f 8.4 PSF	9. SUBMIT FOR APPROVAL CONCRETE MIX DESIGN AND CERTIFICATION OF CONCRETE MATERIALS CONFORMING TO THE FOLLOWING EXPOSURE CATEGORIES:
c. SNOW EXPOSURE FACTOR, d. SNOW LOAD IMPORTANCE FACTOR,	C _e 1.0 I _s 1.0	FOOTINGS, INTERIOR SLAB-ON-GRADE <u>PIERS, WALLS, EXTERIOR SLABS</u> <u>CATEGORY</u> <u>NON-AIR ENTRAINED CLASS</u> : <u>AIR ENTRAINED CLASS</u> :
e. THERMAL FACTOR, f. DESIGN ROOF SNOW LOAD	Ct 1.2 P 10 PSF	FREEZE AND THAWINGF0F3SULFATES1S1IN CONTACT WITH WATERW1W1
 WIND LOADS a. ULTIMATE DESIGN WIND SPEED (3-SECOND GUST), MPH 		CORROSION PROTECTION C2 C2
 b. NOMINAL DESIGN WIND SPEED (3-SECOND GUST), MPH c. RISK CATEGORY d. WIND EXPOSURE 	89 II C	10. THE CONTRACTOR SHALL EMPLOY A TESTING LABORATORY APPROVED BY THE ENGINEER/ARCHITECT TO PERFORM THE TESTING SPECIFIED PER PARAGRAPH 1.6.4 OF ACI 301. THE TESTING LABORATORY SHALL MEET THE REQUIREMENTS OF ASTM E329. TESTING SHALL BE MADE BY
e. DESIGN WIND PRESSURE FOR COMPONENTS AND CLADDING SHALL BE COMPUTED PER GOVERNING		AN ACI CONCRETE FIELD-TESTING TECHNICIAN GRADE 1 OR APPROVED EQUIVALENT. A TECHNICIAN GRADE 1 SHALL BE PRESENT DURING ALL CONCRETE PLACEMENT.
BUILDING CODE USING EXPOSURE f. INTERNAL PRESSURE COEFFICIENT (ENCLOSED)	X (SEE DIAGRAM ON SHEET S0.2) ±0.18	11. SUBMIT SHOP DRAWINGS FOR REVIEW. THESE DRAWINGS SHALL SHOW ALL CONCRETE MEMBER DIMENSIONS AND DOWELS FOR MASONRY WALLS.
 4. EARTHQUAKE DESIGN DATA: a. OCCUPANCY RISK CATEGORY 	II	12. PROVIDE DOWELS FROM FOUNDATIONS TO MATCH PIER AND WALL VERTICAL REINFORCING. WHERE
b. SEISMIC IMPORTANCE FACTOR,c. MAPPED SPECTRAL RESPONSE ACCELERATIONS	I_e 1.0 S _s = 0.25 S ₁ = 0.11	SHOWN, PROVIDE DOWELS OUT OF WALLS TO MATCH SLAB REINFORCING. 13. PROVIDE CLASS "B" TENSION LAP SPLICE OR FULL MECHANICAL SPLICE (ACI 318, SECT. 12.14.3) FOR
d. SITE CLASS e. DESIGN SPECTRAL RESPONSE ACCELERATIONS	$S_1 = 0.11$ D $S_{ds} = 0.202$	ALL VERTICAL STEEL IN WALLS, COLUMNS, AND SLABS. SEE LAP SCHEDULE ON SHEET S2.1 FOR LAP LENGTHS, UNO.
f. SEISMIC DESIGN CATEGORY	S _{d1} = 0.126 B STRUCTURAL STEEL SYSTEMS NOT	14. PROVIDE ADEQUATE BOLSTERS, HI-CHAIRS, SUPPORT BARS, ETC., TO MAINTAIN SPECIFIED CLEARANCES FOR THE ENTIRE LENGTH OF ALL REINFORCING BARS. SUPPORTS THAT BEAR DIRECTLY
g. BASIC SEISMIC REINFORCING SYSTEM	STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DESIGNED FOR SEISMIC RESISTANCE	ON EXPOSED SURFACES SHALL BE STAINLESS STEEL.
h. DESIGN BASE SHEAR i. SEISMIC RESPONSE COEFFICIENT i. DESPONSE MODIFICATION COEFFICIENT	$V = C_s \times W$ $C_s = 0.067$	 ALL SLABS SHALL BE POURED MONOLITHICALLY, EXCEPT FOR THE REQUIRED CONSTRUCTION JOINTS.
j. RESPONSE MODIFICATION COEFFICIENT k. ANALYSIS PROCEDURE USED	R = 3 EQUIVALENT LATERAL FORCE	16. PROVIDE 3/4 INCH CHAMFER ON ALL EXPOSED CORNERS OF SLABS UNLESS OTHERWISE INDICATED ON THE ARCHITECTURAL DRAWINGS. MINIMUM CLEARANCES FOR REINFORCING STEEL SHALL BE
5. FROST DEPTH	12"	MAINTAINED.
GENERAL: 1. THESE NOTES ARE GENERAL REQUIREMENTS. SEE SPECIF	ICATIONS FOR ADDITIONAL	17. CURE ALL CONCRETE FOR A MINIMUM 7-DAYS. APPLY CURING COMPOUND AT THE MAXIMUM COVERAGE RATE OF 300 SQUARE FEET PER GALLON. USE PRODUCT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. SEE SPECIFICATIONS.
REQUIREMENTS.		18. ALL CONSTRUCTION JOINTS SHALL BE KEYED. PROVIDE KEYWAYS AT MEMBER CENTERLINE WITH A
 UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRAC THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS PROJECT. 		DEPTH OF 1-1/2 INCH AND HEIGHT EQUAL TO ONE-THIRD OF THE MEMBER'S DEPTH/THICKNESS. 19. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS NOT INDICATED ON
3. IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICAT		THE DRAWINGS FOR REVIEW BY THE ENGINEER/ARCHITECT.
ARE NOT IN AGREEMENT WITH THESE NOTES, THE CONTRA ARCHITECT/ENGINEER FOR CLARIFICATION.	ACTOR SHALL CONTACT THE	20. ALL ALUMINUM IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE COATED WITH GRAY EPOXY PRIMER, APPROVED BY THE ENGINEER.
 TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON THE F OTHERWISE. 	PLANS, BUT APPLY UNLESS NOTED	21. FORMWORK, FOR ALL CONCRETE THAT WILL BE EXPOSED IN THE COMPLETED STRUCTURE, SHALL BE CONSTRUCTED FROM A METAL OR SUITABLE SURFACE PLYWOOD THAT WILL PRODUCE AN
5. SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONT APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUB		ACCEPTABLY SMOOTH SURFACE. SEE SPECIFICATIONS. 22. CONCRETE PROTECTION (CLEAR COVER) FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS
6. SHOP DRAWINGS PREPARED BY THE CONTRACTORS, SUPP		UNLESS NOTED OTHERWISE: a. FOOTINGS:
ENGINEER/ARCHITECT ONLY FOR CONFORMANCE WITH DE THE SHOP DRAWINGS SHALL BE STARTED WITHOUT SUCH		 3 INCHES, BOTTOM AND UNFORMED EDGES 2 INCHES, FORMED EDGES 2 INCHES, EXPOSED TO EARTH, WATER OR WEATHER
7. THE GENERAL CONTRACTOR SHALL COORDINATE ALL REV INDICATED ON THE SHOP DRAWINGS BY THE ARCHITECT/E		 2 INCHES, EXPOSED TO EARTH, WATER OR WEATHER 2 INCHES, BOTTOM, ON CONCRETE MUDMAT b. PIERS:
8. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUC		 1 1/2 INCH TO TIES 2 INCH FOR VERTICAL REINFORCEMENT
9. THE STRUCTURAL CONTRACT DOCUMENTS DO NOT INDICA		PRE-ENGINEERED METAL BUILDING DESIGNS:
CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK A FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES,	AND HE SHALL BE SOLELY RESPONSIBLE SEQUENCES AND PROCEDURES.	1. PRE-ENGINEERED METAL BUILDING MANUFACTURER SHALL BE AN IAS ACCREDITED MANUFACTURER
OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHAL PROTECTIVE MEASURES OR THE CONSTRUCTION PROCED		AND MEETING THE REQUIREMENTS OF IAS ACCREDITATION CRITERIA AC472. 2. PRE-ENGINEERED BUILDING MANUFACTURER SHALL BE RESPONSIBLE FOR THE ENTIRE DESIGN OF
10. ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER D DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPEC	CTION SERVICES WHICH ARE FURNISHED	THE STEEL SUPERSTRUCTURE INCLUDING, BUT NOT LIMITED TO, PRIMARY AND SECONDARY STRUCTURAL MEMBERS, METAL ROOF AND WALL PANELS, LATERAL BRACING SYSTEM, AND
BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY T PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACH CONSTRUCTION DOCUMENTS. THEY DO NOT GUARANTEE	IEVING CONFORMANCE WITH THE	APPLICABLE ACCESSORIES.
SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRU	ICTION.	3. THE ENTIRE METAL BUILDING SYSTEM, INCLUDING APPLICABLE ACCESSORIES, AND METAL ROOF AND WALL PANELS, SHALL BE DESIGNED TO SUPPORT SELF-WEIGHT PLUS SUPERIMPOSED LOADS, THERMALLY INDUCED MOVEMENT, AND EXPOSURE TO WEATHER WITHOUT FAILURE OR INFILTRATION
11. ALL STRUCTURES ARE DESIGNED TO BE STABLE AND SELF CONSTRUCTION. IT IS THE CONTRACTOR'S SOLE RESPONS PROCEDURE AND SEQUENCE TO ENSURE THE STABILITY A	SIBILITY TO DETERMINE THE ERECTION	OF WATER INTO THE STRUCTURE. THE LOADING SHALL BE APPLIED TO THE STRUCTURE PRODUCING THE MOST SEVERE CONDITION IN ACCORDANCE WITH THE GOVERNING BUILDING CODE. WIND
COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO,	OR INCOMPLETE CONNECTIONS DURING THE ADDITION OF WHATEVER TEMPORARY	PRESSURES FOR ENCLOSED, AND PARTIALLY ENCLOSED BUILDING AREAS PER THE GOVERNING BUILDING CODE SHALL BE CONSIDERED. SUPERIMPOSED LOADS INCLUDE, BUT ARE NOT LIMITED TO, DEAD, LIVE, WIND, OR SEISMIC LOADING.
BRACING, GUYS OR TIE-DOWNS THAT MAY BE NECESSARY THE DRAWINGS AND, IF PROVIDED, SHALL BE REMOVED, AS PROPERTY OF THE CONTRACTOR.		4. CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS FOR REVIEW PRIOR TO MANUFACTURING. CALCULATIONS AND SHOP DRAWINGS SHALL BE SEALED BY REGISTERED
12. ALL MATERIALS AND EQUIPMENT FURNISHED WILL BE NEW		PROFESSIONAL ENGINEER IN THE STATE OF THE PROJECT. SHOP DRAWINGS SHALL BE SEALED BY REGISTERED INFORMATION INCLUDING, BUT NOT LIMITED TO, DIMENSIONS, MEMBER SIZES AND PROPERTIES,
FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE C SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTH CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE A	HORIZED PRIOR TO INSTALLATION. THE	FRAMING PLANS, SECTIONS AND ALL PERTINENT DETAILS.
MATERIALS AND EQUIPMENT BEING SUBSTITUTED.		 SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER/ARCHITECT.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION W	,	6. STEEL PURLIN TYPE, SIZE AND SPACING SHALL BE THE OPTION OF THE PRE-ENGINEERED METAL BUILDING MANUFACTURER WITH APPROVAL FROM THE ARCHITECT.
14. COORDINATE WITH THE ARCHITECTURAL DRAWINGS AND S STEEL ITEMS, LINTELS, METAL PAN STAIRS, SIZE AND LOCA	TION OF FLOOR SLOPES, DEPRESSED	 PRE-ENGINEERED BUILDING MANUFACTURER SHALL DESIGN AND SUPPLY ALL REQUIRED SUB- FRAMING FOR OPENINGS, INCLUDING FRAMING TO SUPPORT THE WEIGHT OF MECHANICAL
AREAS, FINISH FILLS, CHAMFERS, GROOVES, RAILING SLEE 15. COORDINATE WITH CIVIL, MECHANICAL AND ELECTRICAL D		EQUIPMENT.
DRAINS, ROOF DRAINS, INSERTS, HANGERS, TRENCHES, PI RUNS IN WALLS AND SLABS, SIZE AND LOCATION OF MACH	TS, WALL AND SLAB OPENINGS, CONDUIT	 PRE-ENGINEERED MANUFACTURER SHALL DESIGN STRUCTURE TO MEET OR EXCEED VERTICAL AND HORIZONTAL CLEAR DIMENSIONS AS INDICATED ON ARCHITECTURAL/STRUCTURAL PLANS.
ANCHOR BOLTS, RAILING, ETC. 16. COORDINATE WITH SITE, ARCHITECTURAL, ELECTRICAL, MI		9. PEMB SHOP DRAWINGS AND CALCULATIONS ARE TO BE SUBMITTED TO THE EOR FOR REVIEW AND ARE TO BE STAMPED AND SIGNED BY AN ENGINEER REGISSTERED IN THE STATE OF THE PROJECT.
RETAINING WALLS, PADS, PAVEMENT AND OTHER SITE STR	RUCTURES.	SHOP DRAWINGS AND CALCULATIONS TO INCLUDE BASE REACTIONS & ANCHOR BOLT LOCATIONS & SIZES. SHOP DRAWINGS TO INCLUDE ALL DESIGN LOADS INCLUDING LIVE LOADS, DEAD LOADS, WIND AND SEISMIC LOADS, AND ALL COLLATERALL LOADS SUPPORTED BY THE PEMB.
17. EARTHWORK, FOUNDATION DRAINS, WATERPROOFING, PE OTHER REQUIRED NON-STRUCTURAL ITEMS ARE NOT SHO COORDINATE WITH CIVIL/SITE AND ARCHITECTURAL DRAW	WN ON THE STRUCTURAL DRAWINGS.	10. THE BASIS OF DESIGN FOR THE FOUNDATIONS SHOWN ON THE CONSTRUCTION DOCUMENTS ARE
FOUNDATIONS:		BASED ON THE REACTIONS PROVIDED ON THE DRAWINGS FROM BUTLER MFG DATED 09/29/2023. FINAL FOUNDATION SIZES, DEPTHS AND REINFORCING TO BE REVIEWED AND REVISED AS REQUIRED ONCE THE FINAL PEMB REACTIONS ARE SUBMITTED TO THE EOR FOR REVIEW. BUILDING DESIGN
 FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS IN 12-17138, PREPARED BY GEOSERVICES, DATED MARCH 6, 2 		INCLUDING THE ANCHORAGE IS THE RESPONSIBILITY OF THE SEOR FOR THE PEMB.
GEOTECHNICAL REPORT PRIOR TO CONSTRUCTION.		11. PEMB MFG/ DESIGNER TO INCLUDE A MINIMUM COLATERAL LOAD OF 12 PSF IN ADDITION TO THE SELF WEIGHT OF THE PEMB BUILDING, THE LIVE LOADS AND OR SNOW LOADS.
 FOUNDATIONS ARE DESIGNED TO BEAR ON UNDISTURBED COMPACTED ENGINEERED FILL WITH A GROSS ALLOWABLE GEOTECHNICAL REPORT) 		
3. TOPSOIL, FILL, AND/OR OTHER DELETERIOUS MATERIALS E		
PREPARATION MUST BE REMOVED AND REPLACED WITH SI 98% PER ASTM D1557 AND MEETING THE SPECIFIED DESIGN REPORT FOR MORE INFORMATION).		
4. CONTRACTOR SHALL EMPLOY A SOILS TESTING LABORATO		
PERFORM TESTING SERVICES AS REQUIRED BY THE SPECI SURFACES OF SLABS AND FOUNDATIONS.	TO INSPECTALL BEARING	
5. NOTIFY ENGINEER OF RECORD IF FOUNDATION CONDITION EXPLORATION INFORMATION MADE AVAILABLE TO THE COM		
6. REMOVE ALL EXISTING PAVEMENT, STRUCTURES AND FOU FILLS AND ORGANIC SOILS ENCOUNTERED WITHIN AND BEI		
ON GRADE AND FOUNDATIONS. THESE MATERIALS SHALL ADJACENT TO THE BUILDING.		
 CHANGES IN ELEVATION OF WALL FOOTING SHALL BE MAD AT LEAST 4'-0" APART, UNLESS DETAILED OTHERWISE. SEE 		
8. THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL PROV	IDE TEMPORARY SHORING, BRACING,	
UNDERPINNING, AND OTHER MEASURES NECESSARY TO IN ERECTION AND CONSTRUCTION AND TO PREVENT MOVEMI EXISTING STRUCTURES, PAVEMENT, UTILITIES, ETC.		
9. AFTER EXCAVATING FOR SLABS ON GRADE, THE EXPOSED		
COMPACTED PER GEOTECHNICAL REPORT PRIOR TO PLAC 10. CENTER FOOTINGS UNDER COLUMNS AND WALLS UNLESS		
11. THE DIFFERENCE IN ELEVATION OF THE BACKFILL ON THE	INSIDE AND OUTSIDE OF WALLS SHALL NOT	
EXCEED TWO FEET UNTIL THE FIRST FLOOR STRUCTURE S UNLESS THE WALL IS BRACED TO PREVENT MOVEMENT.	UPPORTING THE WALLS IS IN PLACE,	
12. UNLESS NOTED OTHERWISE ON THE CIVIL/SITE DRAWINGS 10-FEET OF THE PERIMETER OF THE FOUNDATION SYSTEM		
AWAY. 13. DO NOT PLACE FILL OR CONCRETE ON FROZEN GROUND.		

14. CONTINUOUSLY BEAR ON ROCK OR ADD 1' OF ENGINEER FILL PER GEO REPORT.

RF

- 1. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR: a. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK DESIGNATED TO ASSURE IT IS
- CONSTRUCTED IN CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS. b. THE SPECIAL INSPECTOR SHALL SUBMIT INSPECTION REPORTS AND TESTS TO THE BUILDING OFFICIAL AND REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. c. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE
- BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK. d. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND TESTS, AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS OR TESTS, SHALL BE SUBMITTED WITHIN
- THE AGREED UPON TIME TO THE BUILDING OFFICIAL PRIOR TO THE START ISSUANCE OF A CERTIFICATE OF OCCUPANCY. e. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A STATEMENT OF RESPONSIBILITY ACKNOWLEDGING THE AWARENESS OF THE SPECIAL INSPECTION
- REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS. 2. CONCRETE:
- a. INSPECT REINFORCEMENT, AND VERIFY PLACEMENT. (PERIODIC) b. INSPECT ANCHORS CAST IN CONCRETE (PERIODIC) c. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:
- ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. (CONTINOUS) MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE. (PERIODIC) d. VERIFY USE OF REQUIRED MIX DESIGN. (PERIODIC)
- e. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE. (CONTINUOUS) INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES. (CONTINUOUS) VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES. (PERIODIĆ)
- INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED. (PERIODIC). i. NO INSPECTION IS REQUIRED FOR SLABS-ON-GRADE.
- SOILS: a. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY. (PERIODIC) b. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER
- MATERIAL. (PERIODIC) PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS. (PERIODIC) d. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND
- COMPACTION OF COMPACTED FILL. (CONTINUOUS) e. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PROPERLY PREPARED. (PERIODIC)

		- /
STRUCTUR	AL DRAWING ABBREVIATIONS	
	ADDITIONAL ADJACENT ARCH EXPOSED STRUCTURAL STEEL ALTERNATE AND APPROXIMATELY ARCHITECT or ARCHITECTURAL AT or SPACING BOTTOM OF BUILDING LINE BUILDING	MANUF MAS MATL MAX MECH MEZZ MFR MIN MISC MK MO MTL
BLKG BM BRDG BRG BTWN BOT	BLOCKING BEAM BRIDGING BEARING BETWEEN BOTTOM	NO or # NOM NS NTS
CANT CL CLR CTR COL CONC	CANTILEVER CENTERLINE CLEAR CENTER COLUMN CONCRETE	OC OD OF O/OOUT OPNG OPP
CONN CONST CONT CJ CMU CONT CUFT CY	CONNECTION CONSTRUCTION CONTINUOUS CONTROL/CONSTRUCTION JOINT CONCRETE MASONRY UNIT CONTINUOUS CUBIC FEET CUBIC YARDS	PAF PAR PC PERP PL PLF PLYWD PREFAB
DBL DEG or [°] DEMO DET DF DIAG	DOUBLE DEGREE DEMOLITION DETAIL DOUGLAS FIR LARCH DIAGONAL	PSF PSI PT PTR QL
DIA or ø DIM DO DN DP DWG DWL	DIAMETER DIMENSION DITTO DOWN DEEP DRAWING DOWEL	QTY RAD REF REINF REQD
EA EF EJ ELEC EMBED EQ EQUIP ES EW EX EXIST EXP EXT	EACH EACH FACE EXPANSION JOINT ELEVATION ELECTRICAL EMBEDDED, EMBEDMENT EQUAL EQUIPMENT EACH SIDE EACH WAY EXISTING EXISTING EXPANSION EXTERIOR	SCHED SECT SF SHT SIM SOG SPA SPEC(S) SPF SQ SS STD STIFF STL STR STRUCT
FAB FDN FIN FLG FLR FS FT FTG	FABRICATE FOUNDATION FINISH FLANGE FLOOR FARSIDE FOOT, FEET FOOTING	SYM SYM SYP T T/ T&B T&G
GA GAL GALV GC GEN GLB GR GYP BD	GAGE GALLON GALVANIZED GENERAL CONTRACTOR GENERAL GLUE LAMINATED BEAM GRADE GYPSUM BOARD	TEMP THD THK THRU TOL TRANS TYP UN or UN
HC HORIZ HS HT IVY ID IF IN INFO INT INV	HOLLOW CORE HORIZONTAL HIGH STRENGTH HEIGHT HEAVY INSIDE DIAMETER INSIDE FACE INCH INFORMATION INTERIOR INVERT	VERT VIF w/o WD WP WT WWF
JST JT	JOIST JOINT	
K KSF KSI	KIPS KIPS PER SQUARE FOOT KIPS PER SQUARE INCH	
L LBS LF	ANGLE POUNDS LINEAL FEET	

L	ANGLE
LBS	POUNDS
LF	LINEAL FEET
LG	LONG
LL	LIVE LOAD
LLHLONG	LEG HORIZONTAL
LLVLONG	LEG VERTICAL
LOC	LOCATION
LONG	LONGITUDINAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LT WT	LIGHT WEIGHT

;	MISCELLANEOUS MARK MASONRY OPENING METAL
r #	NUMBER NOMINAL NEARSIDE NOT TO SCALE
DUT G	ON CENTER OUTSIDE DIAMETER OUTSIDE FACE TO OUT OPENING OPPOSITE
	POWDER ACTUATED FASTENERS PARALLEL PRECAST PERPENDICULAR PLATE POUNDS PER LINEAL FOOT PLY WOOD PREFABRICATED POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POST TENSIONED PRESSURE TREATED

MANUFACTURER

MASONRY

MATERIAL

MAXIMUM MECHANICAL

MEZZANINE MANUFACTURER MINIMUM

SEISMIC LOAD QUANTITY

RADIUS REFERENCE REINFORCEMENT, REINFORCING, REINFORCED REQUIRED

SCHEDULE SECTION SQUARE FOOT SHEET SIMILAR SLAB-ON-GRADE SPACING SPECIFICATION(S) SPRUCE PINE FIR SQUARE STAINLESS STEEL STANDARD STIFFENER

STEEL STRUCTURAL STRUCTURAL SUPPORT SYMMETRICAL SOUTHERN YELLOW PINE

TOP

TOP OF TOP AND BOTTOM TONGUE AND GROOVE TEMPERATURE STEEL THREAD THICK THROUGH TOLERANCE

TRANSVERSE TYPICAL

NO UNLESS NOTED (OTHERWISE)

VERTICAL VERIFY IN FIELD

WITH WITHOUT WOOD WORKPOINT WEIGHT

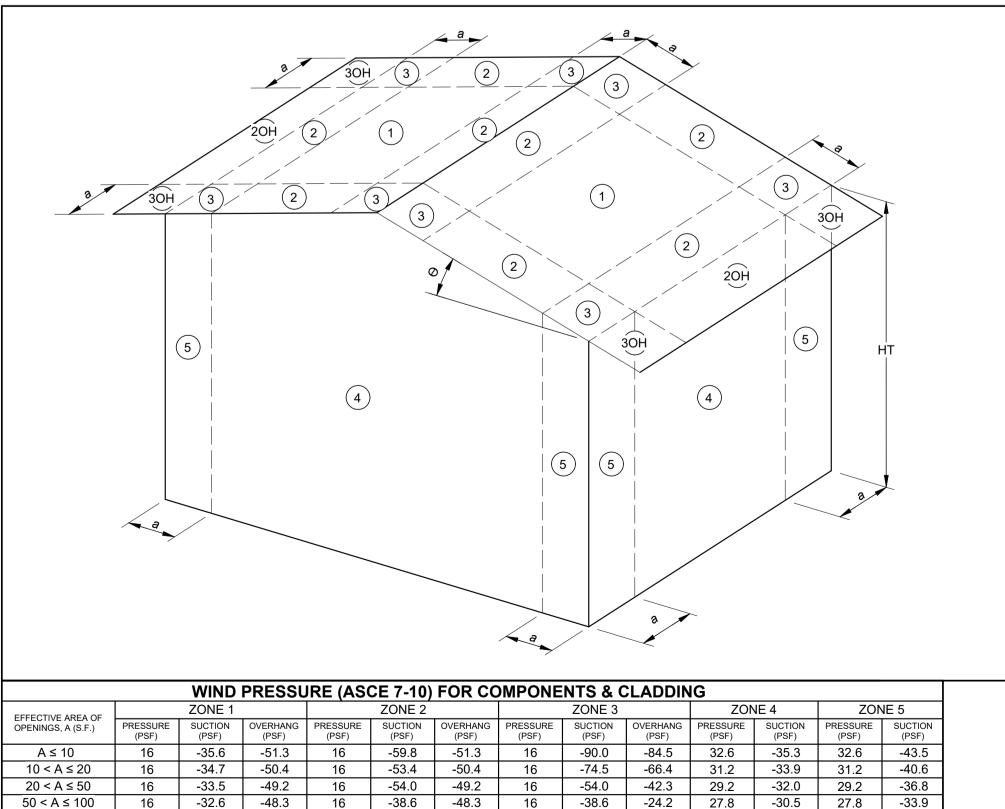
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TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS OF CONCRETE CONSTRUCTION							
EQUIRED	TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD ^a	IBC REFERENCE		
Х	1. INSPECT REINFORCEMENT AND VERIFY PLACEMENT.	-	х	ACI 318 CH. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4		
Х	2. REINFORCING BAR WELDING:						
Х	a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706;	-	Х				
Х	b. INSPECT SINGLE-PASS FILLET WELDS, MAZIMUM 5/16"; AND		Х	AWS D1.4 ACI 318: 26.6.4	-		
Х	c. INSPECT ALL OTHER WELDS	Х					
Х	3. INSPECT ANCHORS CAST INTO CONCRETE.	-	X	ACI 318: 17.8.2	-		
Х	4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. ^b						
х	a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	Х	-	ACI 318: 17.8.2.4	_		
Х	b. MECHANICAL ANCHORS AND ASHESIVE ANCHORS NOT DEFINED IN 4.a.	-	х	ACI 318: 17.8.2	-		
Х	5. VERIFY USE OF REQUIRED DESIGN MIX.	-	х	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3		
Х	6. PRIOR TO CONCRETE PLACEMENT, 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: 26.4, 26.12	1908.10		
Х	7. INSPECT CONCRETE FOR PROPER APPLICATION TECHNIQUES.	х	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8		
Х	8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	х	ACI 318: 26.5.3-26.5.5	1908.9		
	9. INSPECT PRESTRESSED CONCRETE FOR:						
	a. APPLICATION OF PRESTRESSING FORCES; AND	Х	-	ACI 318: 2610	-		
	b. GROUTING OF BONDED PRESTRESSING TENDONS.	Х	-				
	10. INSPECT ERECTION OF PRESCAST CONCRETE MEMBERS.	-	Х	ACI 318: CH. 26.8	-		
	11. VERIFY 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: 26.11.2	-		
Х	12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	x	ACI 318: CH. 26.11.2(b)	-		

TABLE 1705.6 REQUIRED SPECIAL INSPECTIONS AND TESTS O	F SOILS
	00120

		_0
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS RE ADEQUATE TO ACHIEVE THE DESIGN BEARNIG APACITY.	-	х
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER EPTH AND HAVE REACHED PROPER MATERIAL.	-	х
PERFORM CLASSIFICATION AND TESTING OF OMPACTED FILL MATERIAL.	-	х
VERIFY USE OF PROPER MATERIALS, DENSITIES AND FT THICKNESSES DURING PLACEMENT AND OMPACTION OF COMPACTED FILL.	х	-
PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT UBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED ROPERLY.	-	Х
TABLE 1705.8 REQUIRED SPECIAL INSPECTIONS AN FOUNDATION ELEMENT		I-PLACE
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
INSPECT DRILLING OPERATIONS AND MAINTAIN OMPLETE AND ACCURATED RECORDS FOR EACH	х	-

1. INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATED RECORDS FOR EACH ELEMENT.	x	-
2. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE) AND ADEQUATE END-BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES.	х	-
3. FOR CONCRETE ELEMENTS, PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTONS IN ACCORDANCE WITH SECTION 1705.3.	-	-

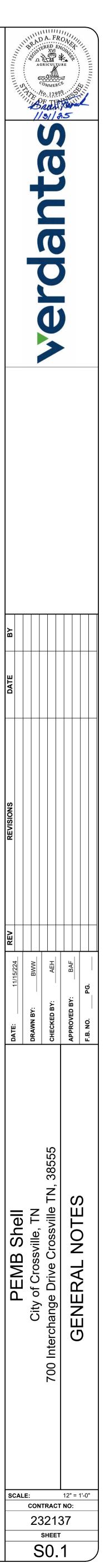


		WIND	PRESSL	JRE (AS	CE 7-10)	FOR CC	MPONE	NTS & C	LADDIN	IG		
EFFECTIVE AREA OF		ZONE 1			ZONE 2			ZONE 3	ZONE 4			
OPENINGS, A (S.F.)	PRESSURE (PSF)	SUCTION (PSF)	OVERHANG (PSF)	PRESSURE (PSF)	SUCTION (PSF)	OVERHANG (PSF)	PRESSURE (PSF)	SUCTION (PSF)	OVERHANG (PSF)	PRESSURE (PSF)	SUCTION (PSF)	PRES (P
A ≤ 10	16	-35.6	-51.3	16	-59.8	-51.3	16	-90.0	-84.5	32.6	-35.3	32
10 < A ≤ 20	16	-34.7	-50.4	16	-53.4	-50.4	16	-74.5	-66.4	31.2	-33.9	3′
20 < A ≤ 50	16	-33.5	-49.2	16	-54.0	-49.2	16	-54.0	-42.3	29.2	-32.0	29
50 < A ≤ 100	16	-32.6	-48.3	16	-38.6	-48.3	16	-38.6	-24.2	27.8	-30.5	27

1. VALUES LISTED IN THE ABOVE TABLE ARE BASED UPON AN ENCLOSED BUILDING USING THE SPECIFIED WIND LOADING AS INDICATED IN THE 'DESIGN LOADS' SECTION OF THE GENERAL NOTES. 2. PRESSURE (POSITIVE) AND SUCTION (NEGATIVE) VALUES SIGNIFY LOADING ACTING TOWARDS AND AWAY FROM THE BUILDING SURFACES,

RESPECTIVELY (FULL HEIGHT, UNLESS NOTED.) 3. VALUES LISTED IN THE ABOVE TABLE ARE ULTIMATE WIND PRESSURES. TO OBTAIN ALLOWABLE STRESS DESIGN WIND VALUES, MULTIPLY THE VALUES SHOWN IN THE ABOVE TABLE BY 0.6.

4. EDGE STRIP "a" = #'-#", UNLESS NOTED OTHERWISE. 5. #OH DENOTES OVERHANG WIND LOAD IN CORRESPONDING ZONE. 6. O DENOTES ROOF SLOPE, SEE ROOF PLAN.



SECTION 133419 - METAL BUILDING SYSTEMS	Diaphragm Action of Metal Panels: Design metal building to resist wind forces through diaphragm action of metal panels.
PART 1 - GENERAL	 Anchor Rods: Headed anchor rods as indicated on the Drawings for attachment of metal building to foundation. Use hot-dipped galvanized anchor rods, no less than ³/₄" diameter, minimum 4 per column, ASTM F1554 Grade
1.1 RELATED DOCUMENTS	55, with 24" embedment into concrete, unless noted otherwise. J. Materials:
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.	1. W-Shapes: ASTM A 992/A 992M; ASTM A 572/A 572M, Grade 50 or 55; or ASTM A 529/A 529M, Grade 50 or 55.
1.2 SUMMARY	 Channels, Angles, M-Shapes, and S-Shapes: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50 or 55; or ASTM A 529/A 529M, Grade 50 or 55.
A. Section Includes:	3. Plate and Bar: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50 or 55; or ASTM A 529/A 529M, Grade 50 or 55.
 Structural-steel framing. Metal roof panels. 	 Structural-Steel Sheet: Hot-rolled, ASTM A 1011/A 1011M, Structural Steel (SS), Grades 30 through 55, or High-Strength Low-Alloy Steel (HSLAS) or High-Strength Low-Alloy Steel with Improved Formability (USLAS E) Conduct 45 through 70 million ASTM A 1020M. Strength Steel (SS).
 Metal wall panels. Thermal insulation. 	(HSLAS-F), Grades 45 through 70; or cold-rolled, ASTM A 1008/A 1008M, Structural Steel (SS), Grades 25 through 80, or HSLAS, Grades 45 through 70.
5. Accessories.	 High-Strength Bolts, Nuts, and Washers: ASTM F 3125/F 3125M, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F 436/F 436M, Type 1, herdered earlier steel washers.
1.3 DEFINITIONS	hardened carbon-steel washers. a. Finish: Hot-dip zinc coating, ASTM F 2329, Class C G. Toncion Control, High Strongth Bolt Nut Washer Assembling: ASTM F 2125/F 2125M, Crode F1852
A. Terminology Standard: See MBMA's "Metal Building Systems Manual" for definitions of terms for metal building system construction not otherwise defined in this Section or in standards referenced by this Section.	 Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F 3125/F 3125M, Grade F1852, Type 1, heavy-hex or round head assemblies consisting of steel structural bolts with splined ends; ASTM A 563, Grade DH, heavy hex earbean steel pute; and ASTM F 426/F 436M. Type 1 herdened
1.4 COORDINATION	ASTM A 563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F 436/F 436M, Type 1 hardened carbon-steel washers
A. Coordinate sizes and locations of concrete foundations and casting of anchor-rod inserts into foundation walls and	 Headed Anchor Rods: ASTM F 1554, Grade 55 a. Configuration: Straight. b. Nutry: ASTM A 563 begavy box carbon steel
footings. Anchor rod installation, concrete, reinforcement, and formwork requirements are specified in Section 033000 "Cast-in-Place Concrete."	 b. Nuts: ASTM A 563 heavy-hex carbon steel. c. Plate Washers: ASTM A 36/A 36M carbon steel. d. Washers: ASTM F 436 hardened carbon steel.
B. Coordinate metal panel assemblies with rain drainage work, flashing, trim, and construction of supports and other adjoining work to provide a leakproof, secure, and noncorrosive installation.	e. Finish: Hot-dip zinc coating, ASTM F 2329, Class C
1.6 ACTION SUBMITTALS	2.9 THERMAL INSULATION
A. Product Data: For each type of metal building system component.	A. Unfaced Metal Building Insulation: ASTM C 991, Type I, or NAIMA 202, glass-fiber-blanket insulation; 0.5-lb/cu. ft. density; 2-inch wide, continuous, vapor-tight edge tabs; with a flame-spread index of 25 or less.
 Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following: 	 B. Retainer Strips: For securing insulation between supports, 0.025-inch nominal-thickness, formed, metallic-coated steel or PVC retainer clips colored to match insulation facing.
a. Metal roof panels.b. Metal wall panels.	 C. Vapor-Retarder Liner/Facing: ASTM C 1136, with permeance not greater than 0.02 perm when tested according to ASTM E 96/E 96M, Desiccant Method.
c. Thermal insulation and vapor-retarder facings.	 Composition: Aluminum foil facing, elastomeric barrier coating, fiberglass scrim reinforcement, and kraft- paper backing.
B. Shop Drawings: Indicate components by others. Include full building plan, elevations, sections, details and the following:	 D. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.
 Anchor-Rod Plans: Submit anchor-rod plans and templates before foundation work begins. Include location, diameter, and minimum required projection of anchor rods required to attach metal building to foundation. 	2.10 ACCESSORIES
Indicate column reactions at each location.Structural-Framing Drawings: Show complete fabrication of primary and secondary framing; include	A. General: Provide accessories as standard with metal building system manufacturer and as specified. Fabricate
provisions for openings. Indicate welds and bolted connections, distinguishing between shop and field applications. Include transverse cross-sections.	and finish accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes. Comply with indicated profiles and with dimensional and structural requirements.
 Metal Roof and Wall Panel Layout Drawings: Show layouts of panels including methods of support. Include details of edge conditions, joints, panel profiles, corners, anchorages, clip spacing, trim, flashings, closures, and field executed works and field executed works are and field executed works. 	 Form exposed sheet metal accessories that are without excessive oil-canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
and special details. Distinguish between factory- and field-assembled work; show locations of exposed fasteners. a. Show roof-mounted items including equipment supports, pipe supports and penetrations, lighting fixtures,	B. Roof Panel Accessories: Provide components required for a complete metal roof panel assembly including copings, fasciae, corner units, ridge closures, clips, sealants, gaskets, fillers, closure strips, and similar items.
 and items mounted items including equipment supports, pipe supports and penetrations, lighting includes, and items mounted on roof curbs. b. Show wall-mounted items including personnel doors, windows, louvers, and lighting fixtures. 	Match material and finish of metal roof panels unless otherwise indicated. 1. Closures: Provide closures at eaves and ridges, fabricated of same material as metal roof panels.
1.7 INFORMATIONAL SUBMITTALS	 Clips: Manufacturer's standard, formed from steel sheet, designed to withstand negative-load requirements.
A. Letter of Design Certification: Signed and sealed by a qualified professional engineer. Include the following:	 Cleats: Manufacturer's standard, mechanically seamed cleats formed from steel sheet. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material
 Name and location of Project. Order number. 	 recommended by manufacturer. 5. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell
 Name of manufacturer. Name of Contractor. 	laminated polyethylene; minimum 1-inch- thick, flexible closure strips; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight
 Building dimension including width, length, height, and roof slope. Indicate compliance with AISC standards for hot-rolled steel and AISI standards for cold-rolled steel, including 	construction. 6. Thermal Spacer Blocks: Where metal panels attach directly to purlins, provide thermal spacer blocks of thiskness required to provide no loss than 1 inch (25 mm) standoff: [abricated from extruded polyetyrone
edition dates of each standard. B. Governing building code and year of edition.	thickness required to provide no less than 1-inch (25-mm) standoff; fabricated from extruded polystyrene C. Wall Panel Accessories: Provide components required for a complete metal wall panel assembly including
C. Design Loads: Include dead load, roof live load, collateral loads, roof snow load, deflection, wind loads/speeds and exposure, seismic design category or effective peak velocity-related acceleration/peak acceleration, and	copings, fasciae, mullions, sills, corner units, clips, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal wall panels unless otherwise indicated. 1. Closures: Provide closures at eaves and rakes, fabricated of same material as metal wall panels.
auxiliary loads (cranes). D. Load Combinations: Indicate that loads were applied acting simultaneously with concentrated loads, according to	 Closures: Provide closures at eaves and rakes, fabricated of same material as metal wall panels. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
governing building code. E. Building-Use Category: Indicate category of building use and its effect on load importance factors.	 Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- thick, flexible closure strips; cut or premolded to match metal
1.8 CLOSEOUT SUBMITTALS	wall panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
A. Maintenance Data: For metal panel finishes to include in maintenance manuals.	 Thermal Break Foam Tape: Where metal panels attach directly to girts, provide 3" wide foam tape. D. Flashing and Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, minimum 0.018-inch
1.9 QUALITY ASSURANCE	nominal (26 gauge) uncoated steel thickness, prepainted with coil coating; finished to match adjacent metal panels.
A. Manufacturer Qualifications: A qualified manufacturer.	. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae,
 Engineering Responsibility: Preparation of comprehensive engineering analysis and Shop Drawings by a professional engineer who is legally qualified to practice in jurisdiction where Project is located. 	and fillers.2. Opening Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, minimum 0.018-inch
PART 2 - PRODUCTS	nominal (26 gauge) uncoated steel thickness, prepainted with coil coating. Trim head and jamb of door openings, and head, jamb, and sill of other openings.
2.3 PERFORMANCE REQUIREMENTS	E. Gutters: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, minimum 0.018-inch nominal (26 gauge) uncoated steel thickness, prepainted with coil coating; finished to match roof fascia and rake trim. Match
A. Delegated Design: Engage a qualified professional engineer to design metal building system.	profile of gable trim, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch- long sections, sized according to SMACNA's "Architectural Sheet Metal Manual."
B. Structural Performance: Metal building systems shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to procedures in MBMA's "Metal Building Systems Manual."	 Gutter Supports: Fabricated from same material and finish as gutters. Strainers: Bronze, copper, or aluminum wire ball type at outlets.
 Design Loads: As indicated on Structural Drawings. Deflection and Drift Limits: No greater than the following: 	F. Downspouts: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, minimum 0.018-inch nominal (26 gauge) uncoated steel thickness, prepainted with coil coating; finished to match metal wall panels. Fabricate in minimum 10 feat language stings, explained with formed allows and effects.
 a. Purlins and Rafters: Vertical deflection of 1/240 of the span. b. Girts at metal wall panels: Horizontal deflection of 1/180 of the span, or 1", whichever is less. 	minimum 10-foot- long sections, complete with formed elbows and offsets. 1. Mounting Straps: Fabricated from same material and finish as gutters. C. Pine Elashing: Promoted EPDM pine collar with floxible aluminum ring bonded to base
 c. Metal Roof Panels: Vertical deflection of 1/240 of the span. d. Metal Wall Panels: Horizontal deflection of 1/180 of the span. 	 G. Pipe Flashing: Premolded, EPDM pipe collar with flexible aluminum ring bonded to base. H. Materials: Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other
 Design secondary-framing system to accommodate deflection of primary framing and construction tolerances, and to maintain clearances at openings. 	suitable fasteners designed to withstand design loads. Provide fasteners with heads matching color of materials being fastened by means of plastic caps or factory-applied coating.
f. Lateral Drift: Maximum of 1/100 of the building height. C. Seismic Performance: Metal building system shall withstand the effects of earthquake motions determined	 Fasteners for Metal Roof Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws, with a stainless-steel cap or zinc-aluminum-alloy head and EPDM sealing washer.
according to ASCE/SEI 7. D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing	 b. Fasteners for Metal Wall Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws, with EPDM sealing washers bearing on weather side of metal panels.
buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and	 c. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws with hex washer head. d. Blind Fasteners: High-strength aluminum or stainless-steel rivets.
nighttime-sky heat loss. 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.	 Corrosion-Resistant Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other
E. Structural Performance for Metal Roof and Wall Panels: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592:	deleterious impurities. 3. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, nonmetallic
 Wind Loads: As indicated on Drawings. F. Air Infiltration for Metal Roof Panels: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E 1680 at the following test-pressure difference: 	aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.
 Test-Pressure Difference: 1.57 lbf/sq. ft. G. Air Infiltration for Metal Wall Panels: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM 	 Metal Panel Sealants: a. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene-compound sealant tape
E 283 at the following test-pressure difference: 1. Test-Pressure Difference: 1.57 lbf/sq. ft.	with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape of manufacturer's standard size.
 H. Water Penetration for Metal Roof Panels: No water penetration when tested according to ASTM E 1646 at the following test-pressure difference: 	 Joint Sealant: ASTM C 920; one part elastomeric polyurethane or polysulfide; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as
 Test-Pressure Difference: 2.86 lbf/sq. ft. Water Penetration for Metal Wall Panels: No water penetration when tested according to ASTM E 331 at the 	recommended by metal building system manufacturer. 2.11 FABRICATION
following test-pressure difference: 1. Test-Pressure Difference: 2.86 lbf/sq. ft.	A. General: Design components and field connections required for erection to permit easy assembly.
J. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.	 Mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.
1. Uplift Rating: UL 90.	 Fabricate structural framing to produce clean, smooth cuts and bends. Punch holes of proper size, shape, and location. Members shall be free of cracks, tears, and ruptures.
2.4 STRUCTURAL-STEEL FRAMING	 B. Tolerances: Comply with MBMA's "Metal Building Systems Manual" for fabrication and erection tolerances. C. Primary Framing: Shop fabricate framing components to indicated size and section, with baseplates, bearing
 A. Structural Steel: Comply with AISC 360, "Specification for Structural Steel Buildings." B. Bolted Connections: Comply with RCSC's "Specification for Structural Joints Using High-Strength Bolts." 	plates, stiffeners, and other items required for erection welded into place. Cut, form, punch, drill, and weld framing for bolted field assembly.
C. Cold-Formed Steel: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" for design requirements and allowable stresses.	 Make shop connections by welding or by using high-strength bolts. Join flanges to webs of built-up members by a continuous, submerged arc-welding process.
D. Primary Framing: Manufacturer's standard primary-framing system, designed to withstand required loads and specified requirements. Primary framing includes transverse and lean-to frames; rafters, rake, and canopy beams;	 Brace compression flange of primary framing with steel angles or cold-formed structural tubing between frame web and purlin web or girt web, so flange compressive strength is within allowable limits for any
sidewall, intermediate, end-wall, and corner columns; and wind bracing. 1. General: Provide frames with attachment plates, bearing plates, and splice members. Factory drill for field-bolted assembly. Provide frame span and spacing indicated	combination of loadings. 4. Weld clips to frames for attaching secondary framing if applicable, or punch for bolts.
field-bolted assembly. Provide frame span and spacing indicated. a. Slight variations in span and spacing may be acceptable if necessary to comply with manufacturer's standard, as approved by Architect.	5. Shop Priming: Prepare surfaces for shop priming according to SSPC-SP 2. Shop prime primary framing with specified primer after fabrication.
 standard, as approved by Architect. Rigid Clear-Span Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Interior columns are not permitted. 	D. Secondary Framing: Shop fabricate framing components to indicated size and section by roll forming or break forming, with baseplates, bearing plates, stiffeners, and other plates required for erection welded into place. Cut, form purch drill, and weld secondary framing for belted field connections to primary framing.
 Frame Configuration: Single gable. Exterior Column: Tapered. 	form, punch, drill, and weld secondary framing for bolted field connections to primary framing. 1. Make shop connections by welding or by using non-high-strength bolts. 2. Shop Priming: Prepare uncoated surfaces for shop priming according to SSPC-SP 2. Shop prime
 Extend Column rapered. 5. Rafter: Tapered. E. End-Wall Framing: Manufacturer's standard primary end-wall framing fabricated for field-bolted assembly to 	 Shop Priming: Prepare uncoated surfaces for shop priming according to SSPC-SP 2. Shop prime uncoated secondary framing with specified primer after fabrication. Metal Panels: Fabricate and finish metal panels at the factory to greatest extent possible, by manufacturer's
comply with the following: 1. End-Wall and Corner Columns: I-shaped sections fabricated from structural-steel shapes; shop-welded,	standard procedures and processes, as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.
built-up steel plates; or C-shaped, cold-formed, structural-steel sheet.2. End-Wall Rafters: C-shaped, cold-formed, structural-steel sheet; or I-shaped sections fabricated from	 Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of metal panel.
shop-welded, built-up steel plates or structural-steel shapes. F. Secondary Framing: Manufacturer's standard secondary framing, including purlins, girts, eave struts, flange	PART 3 - EXECUTION
bracing, base members, gable angles, clips, headers, jambs, and other miscellaneous structural members. Unless otherwise indicated, fabricate framing from either cold-formed, structural-steel sheet or roll-formed, metallic sected steel sheet prepainted with apil section, to complexitly the following:	3.1 EXAMINATION
 metallic-coated steel sheet, prepainted with coil coating, to comply with the following: 1. Purlins: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel 	A. Examine substrates, areas, and conditions, with erector present, for compliance with requirements for installation
shapes; minimum 2-1/2-inch- wide flanges. a. Depth: As needed to comply with system performance requirements.	tolerances and other conditions affecting performance of the Work. B. Before erection proceeds, survey elevations and locations of concrete- and masonry-bearing surfaces and
 Girts: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes. Form ends of Z-sections with stiffening lips angled 40 to 50 degrees from flange, with minimum 2-1/2-inch- wide flanges. 	locations of anchor rods, bearing plates, and other embedments to receive structural framing, with erector present, for compliance with requirements and metal building system manufacturer's tolerances.
 2-1/2-inch- wide flanges. a. Depth: 8". 3. Eave Struts: Unequal-flange, C-shaped sections; fabricated from built-up steel plates, steel sheet, or 	C. Proceed with erection only after unsatisfactory conditions have been corrected.
 Eave Struts: Unequal-flange, C-snaped sections; fabricated from built-up steel plates, steel sneet, or structural-steel shapes; to provide adequate backup for metal panels. Flange Bracing: Minimum 2-by-2-by-1/8-inch structural-steel angles or 1-inch- diameter, cold-formed 	3.2 PREPARATION
structural tubing to stiffen primary-frame flanges. 5. Sag Bracing: Minimum 1-by-1-by-1/8-inch structural-steel angles.	 A. Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition. B. Provide temperary shores, give, brases, and other supports during creation to keep structural framing secure.
 Base or Sill Angles: Manufacturer's standard base angle, minimum 3-by-2-inch , fabricated from zinc- coated (galvanized) steel sheet. 	B. Provide temporary shores, guys, braces, and other supports during erection to keep structural framing secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural framing, connections, and bracing are in place unless.
 Purlin and Girt Clips: Manufacturer's standard clips fabricated from steel sheet. Provide galvanized clips where clips are connected to galvanized framing members. 	Remove temporary supports when permanent structural framing, connections, and bracing are in place unless otherwise indicated.
 Framing for Openings: Channel shapes; fabricated from cold-formed, structural-steel sheet or structural- steel shapes. Frame head and jamb of door openings and head, jamb, and sill of other openings. 	3.3 ERECTION OF STRUCTURAL FRAMING
 Miscellaneous Structural Members: Manufacturer's standard sections fabricated from cold-formed, structural-steel sheet; built-up steel plates; or zinc-coated (galvanized) steel sheet; designed to withstand 	A. Erect metal building system according to manufacturer's written instructions and drawings.
required loads.	 B. Do not field cut, drill, or alter structural members without written approval from metal building system manufacturer's professional engineer. C. Set structural framing accurately in locations and to elevations indicated, according to AISC specifications
 H. Bracing: Provide adjustable wind bracing using any method as follows: 1. Rods: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50; or ASTM A 529/A 529M, Grade 50; minimum 	 C. Set structural framing accurately in locations and to elevations indicated, according to AISC specifications referenced in this Section. Maintain structural stability of frame during erection. D. Base and Bearing Plates: Clean concrete bearing surfaces, and ensure surfaces are flush and level prior to
 1/2-inch- diameter steel; threaded full length or threaded a minimum of 6 inches at each end. Cable: ASTM A 475, minimum 1/4-inch- diameter, extra-high-strength grade, Class B, zinc-coated, 	 D. Base and Bearing Plates: Clean concrete bearing surfaces, and ensure surfaces are flush and level prior to setting plates. Clean bottom surface of plates. 1. Set plates for structural members on wedges, shims, or setting nuts as required.
seven-strand steel; with threaded end anchors.3. Angles: Fabricated from structural-steel shapes to match primary framing, of size required to withstand	 Set plates for structural members on wedges, shifts, or setting huts as required. Tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
 design loads. 4. Rigid Portal Frames: Fabricated from shop-welded, built-up steel plates or structural-steel shapes to match primary framing: of size required to withstand design loads. 	 Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation
 match primary framing; of size required to withstand design loads. 5. Fixed-Base Columns: Fabricated from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand design loads. Fixed base columns are only where 	instructions for shrinkage-resistant grouts.
match primary framing; of size required to withstand design loads. Fixed-base columns are only where specifically indicated on the Drawings.	

- E. Align and adjust structural framing before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with framing. Perform necessary adjustments to compensate for discrepancies in elevations and alignment. 1. Level and plumb individual members of structure.
- 2. Make allowances for difference between temperature at time of erection and mean temperature when structure will be completed and in service F. Primary Framing and End Walls: Erect framing level, plumb, rigid, secure, and true to line. Level baseplates to a true even plane with full bearing to supporting structures. 1. Make field connections using high-strength bolts installed according to RCSC's "Specification for
- Structural Joints Using High-Strength Bolts" for bolt type and joint type specified. a. Joint Type: Snug tightened or pretensioned as required by manufacturer. G. Secondary Framing: Erect framing level, plumb, rigid, secure, and true to line. Field bolt secondary framing to clips attached to primary framing.
- 1. Provide rake or gable purlins with tight-fitting closure channels and fasciae. 2. Locate and space wall girts and perimeter studs to suit openings such as doors and windows. 3. Provide supplemental framing at entire perimeter of openings, including doors, windows, louvers, ventilators, and other penetrations of roof and walls.
- H. Bracing: Install bracing in roof and sidewalls where indicated on erection drawings. Tighten rod and cable bracing to avoid sag.
- 2. Locate interior end-bay bracing only where indicated. I. Framing for Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to
- structural framing. J. Erection Tolerances: Maintain erection tolerances of structural framing within AISC 303.
- 3.4 METAL PANEL INSTALLATION, GENERAL
- A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements. B. Examination: Examine primary and secondary framing to verify that structural-panel support members and
- anchorages have been installed within alignment tolerances required by manufacturer. 1. Examine roughing-in for components and systems penetrating metal panels, to verify actual locations of penetrations relative to seams before metal panel installation C. General: Anchor metal panels and other components of the Work securely in place, with provisions for thermal
- and structural movement. 1. Field cut metal panels as required for doors, windows, and other openings. Cut openings as small as possible, neatly to size required, and without damage to adjacent metal panel finishes. a. Field cutting of metal panels by torch is not permitted unless approved in writing by manufacturer. Install metal panels perpendicular to structural supports unless otherwise indicated.
- 3. Flash and seal metal panels with weather closures at perimeter of openings and similar elements. Fasten with self-tapping screws. 4. Locate and space fastenings in uniform vertical and horizontal alignment.
- Locate metal panel splices over structural supports with end laps in alignment. 6. Lap metal flashing over metal panels to allow moisture to run over and off the material. D. Lap-Seam Metal Panels: Install screw fasteners using power tools with controlled torque adjusted to compress EPDM washers tightly without damage to washers, screw threads, or metal panels. Install screws in predrilled
- 1. Arrange and nest side-lap joints so prevailing winds blow over, not into, lapped joints. Lap ribbed or fluted sheets one full rib corrugation. Apply metal panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line E. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic
- action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal roof panel manufacturer. F. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal panel assemblies. Provide types of gaskets, fillers, and sealants indicated; or, if not
- indicated, provide types recommended by metal panel manufacturer. 1. Seal metal panel end laps with double beads of tape or sealant the full width of panel. Seal side joints where recommended by metal panel manufacturer. 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- 3.5 METAL ROOF PANEL INSTALLATION
- A. General: Provide metal roof panels of full length from eave to ridge unless otherwise indicated or restricted by shipping limitations. Install ridge caps as metal roof panel work proceeds.
- 2. Flash and seal metal roof panels with weather closures at eaves and rakes. Fasten with self-tapping B. Standing-Seam Metal Roof Panels: Fasten metal roof panels to supports with concealed clips at each standingseam joint, at location and spacing and with fasteners recommended by manufacturer.
- . Install clips to supports with self-drilling or self-tapping fasteners. Install pressure plates at locations indicated in manufacturer's written installation instructions. 3. Seamed Joint: Crimp standing seams with manufacturer-approved motorized seamer tool so that clip,
- metal roof panel, and factory-applied sealant are completely engaged. 4. Rigidly fasten eave end of metal roof panels and allow ridge end free movement for thermal expansion and contraction. Predrill panels for fasteners.
- 5. Provide metal closures at peaks, rake edges, rake walls, and each side of ridge caps. Metal Fascia Panels: Align bottom of metal panels and fasten with blind rivets, bolts, or self-drilling or self-tappin screws. Flash and seal metal panels with weather closures where fasciae meet soffits, along lower panel edges,
- and at perimeter of all openings D. Metal Roof Panel Installation Tolerances: Shim and align metal roof panels within installed tolerance of 1/4 inch in 20 feet on slope and location lines and within 1/8-inch offset of adjoining faces and of alignment of matching profiles
- 3.6 METAL WALL PANEL INSTALLATION
- A. General: Install metal wall panels in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to girts, extending full height of building, unless otherwise indicated. Anchor metal wall panels and other components of the Work securely in place, with provisions for thermal and structural movement. 1. Unless otherwise indicated, begin metal panel installation at corners with center of rib lined up with line of
 - 2. Shim or otherwise plumb substrates receiving metal wall panels. When two rows of metal panels are required, lap panels 4 inches minimum.
 - 4. When building height requires two rows of metal panels at gable ends, align lap of gable panels over metal wall panels at eave height. 5. Rigidly fasten base end of metal wall panels and allow eave end free movement for thermal expansion
 - and contraction. Predrill panels. 6. Flash and seal metal wall panels with weather closures at eaves and rakes, and at perimeter of all
- openings. Fasten with self-tapping screws. 7. Install screw fasteners in predrilled holes.
- 8. Install flashing and trim as metal wall panel work proceeds. 9. Apply elastomeric sealant continuously between metal base channel (sill angle) and concrete, and
- elsewhere as indicated on Drawings; if not indicated, as necessary for waterproofing. 10. Align bottom of metal wall panels and fasten with blind rivets, bolts, or self-drilling or self-tapping screws.
- 11. Provide weatherproof escutcheons for pipe and conduit penetrating exterior walls. B. Metal Wall Panels: Install metal wall panels on exterior side of girts. Attach metal wall panels to supports with fasteners as recommended by manufacturer.
- C. Installation Tolerances: Shim and align metal wall panels within installed tolerance of 1/4 inch in 20 feet. noncumulative; level, plumb, and on location lines; and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- 3.8 THERMAL INSULATION INSTALLATION
- A. General: Install insulation concurrently with metal panel installation, in thickness indicated to cover entire surface. according to manufacturer's written instructions. a. Set vapor-retarder-faced units with vapor retarder toward warm side of construction unless otherwise indicated. Do not obstruct ventilation spaces except for firestopping. b. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to the surrounding
- construction to ensure airtight installation. c. Install blankets straight and true in one-piece lengths that fill entire cavity. Install vapor retarder over insulation, with both sets of facing tabs sealed, to provide a complete vapor retarder.
- 3.9 DOOR AND FRAME INSTALLATION
- A. General: Install doors and frames plumb, rigid, properly aligned, and securely fastened in place according to manufacturers' written instructions. Coordinate installation with wall flashings and other components. Seal perimeter of each door frame with elastomeric sealant used for metal wall panels. B. Door Hardware: Comply with installation requirements in Section 087111 "Door Hardware."
- 3.10 WINDOW INSTALLATION
- A. General: Install windows plumb, rigid, properly aligned, without warp or rack of frames or sash, and securely fasten in place according to manufacturer's written instructions. Coordinate installation with wall flashings and other components. Seal perimeter of each window frame with elastomeric sealant used for metal wall panels. 1. Separate dissimilar materials from sources of corrosion or electrolytic action at points of contact with other materials by complying with requirements specified in AAMA/WDMA/CSA 101/I.S.2/A440.
- B. Set sill members in bed of sealant or with gaskets, for weathertight construction. C. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.

3.11 ACCESSORY INSTALLATION

- A. General: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components. 1. Install components required for a complete metal roof panel assembly, including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. 2. Install components for a complete metal wall panel assembly, including trim, copings, corners, seam
- covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. 3. Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by manufacturer.
- B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level. Install work with laps, joints, and seams that will be permanently watertight and weather resistant. 1. Install exposed flashing and trim that is without excessive oil-canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal
 - flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch
- deep, filled with mastic sealant (concealed within joints). C. Gutters: Join sections with riveted-and-soldered or lapped-and-sealed joints. Attach gutters to eave with gutter hangers spaced as required for gutter size, but not more than 36 inches o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

3.12 FIELD QUALITY CONTROL

- A. Special Inspections: Engage a qualified special inspector to perform field quality control special inspections and to submit reports.
- B. Product will be considered defective if it does not pass tests and inspections. C. Prepare test and inspection reports.
- 3.13 ADJUSTING

A. Doors: After completing installation, test and adjust doors to operate easily, free of warp, twist, or distortion. END OF SECTION 133419

SECTION 033000 - CAST-IN-PLACE CONCRETE

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

- B. Design Mixtures: For each concrete mixture. C. Construction/Control Joint Layout: Indicate proposed construction joints required to construct the structure.
- Indicate location of control joints proposed as a part of the structure construction. 1. Location of construction joints is subject to approval of the Engineer.
- 2. Location of control joints is subject to the approval of the Engineer.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and testing agency. B. Material certificates.

Material test reports.

D. Floor surface flatness and levelness measurements.

- 1.5 QUALITY ASSURANCE A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment. 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production
- B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified
- according to ASTM C 1077 and ASTM E 329 for testing indicated. C. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specifications for Structural Concrete," ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- D. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.7 FIELD CONDITIONS

- A. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures. 1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required
 - bv ACI 301. 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
- 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs. B. Hot-Weather Placement: Comply with ACI 301 and as follows:
 - 1. Maintain concrete temperature below 95 deg F (35 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

- 2.1 CONCRETE, GENERAL
- A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents: ACI 301 2. ACI 117

2.4 CONCRETE MATERIALS

A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single

- manufacturer. B. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - Portland Cement: ASTM C 150, Type I/II gray or white. Supplement with the following: a. Fly Ash: ASTM C 618, Class F
- b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120. C. Normal-Weight Aggregates: ASTM C 33, graded.
 - Maximum Coarse-Aggregate Size: 3/4-inch nominal.
- . Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement. D. Water: ASTM C 94/C 94M and potable. The mixing water shall comply with ASTM C1602.

E. Aggregate – General: Aggregate source shall be identified. Verification that the source is not recycled concrete shall be provided.

F. Aggregate – Susceptibility: To support evaluation of the proposed aggregate for susceptibility to ASR, submit one of the following for evaluation:

- 1. Provide the 28-day test results for a mix design with the total alkali of 3 lbs (maximum from the combination of the aggregate, admixtures, and cementitious materials) per vard of concrete. Identify the aggregate pits, and the supplier of the Portland cement. The mix design shall include one of the following cementitious items: a. 20% Fly Ash Class F
 - b. 20% Slag
- c. 15% Silica Fume Provide test results for ASTM C1567 (duration of test 16 days). Test data needs to identify the aggregate pits, and the supplier of the Portland cement.
- Provide test results for CRD-C 662-10 (duration of test 28 days). Test data needs to identify the aggregate pits, and the supplier of the Portland cement.
- 4. Provide historical data from the Ready-Mix Supplier that the product complies with ASTM C1260 and/or
- ASTM C1293. Test data needs to identify the date, aggregate pits, and the supplier of the Portland 5. Ready-Mix Supplier shall provide historical tests test results for one of the following: ASTM C295, ASTM
- C586, or ASTM C1105. Test data needs to identify the date and the aggregate pits. 6. Provide historical data from the Ready-Mix Supplier that the product has been used in water treatment and/or wastewater treatment plants. Provide project name, construction date, mix design, compression test results (28-day), and identify the aggregate pits and the supplier of the Portland cement.

A. Air-Entraining Admixture: ASTM C 260.

2.5 ADMIXTURES

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

- Water-Reducing Admixture: ASTM C 494/C 494M, Type A. Retarding Admixture: ASTM C 494/C 494M, Type B. Apply to all concrete storing water.
- Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
- High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
- 7. Crystalline Waterproofing Admixture: NSF 61. Apply to all concrete storing water.

2.6 VAPOR RETARDERS

A. Sheet Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressuresensitive tape.

B. Sheet Vapor Retarder: Polyethylene sheet, ASTM D 4397, not less than 10 mils thick. C. Granular Material: Refer to Geotechnical Report.

2.7 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete. B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet. D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, non-dissipating certified by curing compound manufacturer to not interfere with bonding of floor covering F. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A. VOC Content: Curing and sealing compounds shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24). G. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
 - 1. VOC Content: Curing and sealing compounds shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.8 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber. B. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene. C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows: 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.10 CONCRETE MIXURES

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures. B. Cementitious Materials: Use fly ash and pozzolan, as needed to reduce the total amount of portland cement, which would otherwise be used, by not more than 20 percent. C. Water: The water used in the concrete mix shall comply with ASTM C 94 and be potable. The mixing water shall

comply with ASTM C1602. D. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing, high-range water-reducing, or plasticizing admixture in concrete, as required, for placement and workability Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

- 4. Use crystalline waterproofing admixture in concrete for water storing structures. E. Proportion normal-weight concrete mixture as follows:
 - 1. Concrete, unless otherwise noted. a. Minimum Compressive Strength: As noted on construction documents.
 - b. Slump Limit: 5 inches plus or minus 1 inch
 - c. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size. d. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.

2.12 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and furnish batch ticket information. 1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION 3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301 and ACI 347, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads. B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117. C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
 - Class A, 1/8 inch for smooth-formed finished surfaces. . Class C, 1/2 inch for rough-formed finished surfaces.
- D. Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 - Install keyways, reglets, recesses, and the like, for easy removal. . Do not use rust-stained steel form-facing material.
- E. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

- F. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations. G. Chamfer exterior corners and edges of permanently exposed concrete except where other construction will be
- built against or above the concrete with the face flush with the concrete. Chamfers shall be 3/4" unless otherwise H. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the
- Work. Determine sizes and locations from trades providing such items. I. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- J. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper
- K. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.
- 3.3 REMOVING AND REUSING FORMS
- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations, and curing and protection
 - operations need to be maintained 1. Leave formwork for slabs, and other structural elements that support weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
- 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores. B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material are not acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer. 3.4 VAPOR RETARDERS
- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions. 1. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.

3.6 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete. B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints
 - unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and
 - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete. 3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a
 - minimum distance of twice the beam width from a beam-girder intersection. 4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
 - 5. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible
- 6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- 7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows: 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces. 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-
- rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks. D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
- otherwise indicated. 2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, specified in Section 079200 "Joint Sealants," are indicated. E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat
- one-half of dowel length to prevent concrete bonding to one side of joint.

3.7 CONCRETE PLACEMENT

until placement of a panel or section is complete.

F. Cold-Weather Placement: Comply with ACI 306.1.

G. Hot-Weather Placement: Comply with ACI 301.

FINISHING FLOORS AND SLABS

concrete surfaces. Do not wet concrete surfaces.

does not exceed 1/8 inch.

application.

materials

3.12 JOINT FILLING

and dry.

a. Water

b. Continuous water-fog spray.

used on Project

has permanently ceased.

that cannot be repaired and patched to Engineer's approval.

3.13 CONCRETE SURFACE REPAIRS

edges with 12-inch lap over adjacent absorptive covers.

during curing period using cover material and waterproof tape.

Maintain continuity of coating and repair damage during curing period.

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

B. Add waterproofing admixture to all repair materials for water storage structures.

passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

3.11 CONCRETE PROTECTING AND CURING

until surface is left with a uniform, smooth, granular texture.

While concrete is still plastic, slightly scarify surface with a fine broom.

operations

3.8 FINISHING FORMED SURFACES

irregularities

3.9

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed. B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Structural
- Engineer of Record. C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301. 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation. 1. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.

reinforcement and other embedded items and into corners.

1. Apply to concrete surfaces not exposed to public view.

Apply scratch finish to surfaces as indicated on Architectural documents.

Apply a trowel finish to surfaces as indicated on Architectural documents.

Apply float finish to surfaces as indicated on Architectural documents.

4. Slope surfaces uniformly to drains where required.

Maintain reinforcement in position on chairs during concrete placement. 3. Screed slab surfaces with a straightedge and strike off to correct elevations.

2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301. 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints,

Consolidate concrete during placement operations, so concrete is thoroughly worked around

5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening

D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings. Finish and measure surface so gap at any point between concrete surface and an unleveled,

freestanding, 10-ft.-long straightedge resting on two high spots and placed anywhere on the surface E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces as indicated on Architectural documents. 1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated. 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing. B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float

C. Cure concrete according to ACI 308.1, by one or a combination of the following methods: 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following

c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears

a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor b. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies does not interfere with bonding of floor covering

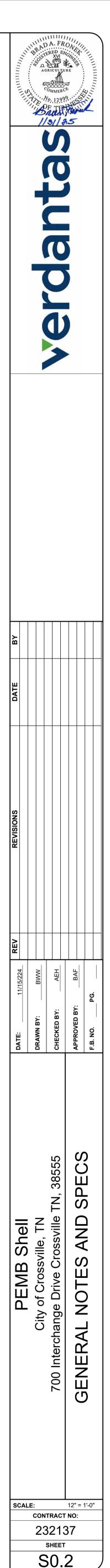
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period. a. Removal: After curing period has elapsed, remove curing compound without damaging concrete

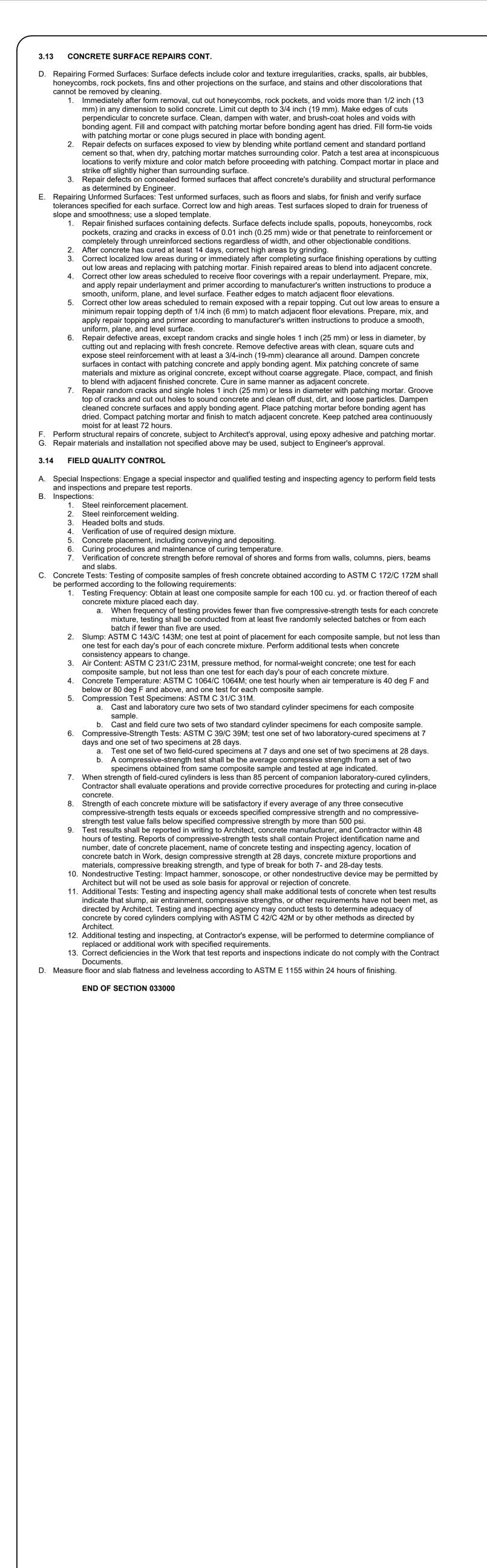
surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound does not interfere with bonding of floor covering used on Project. 4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat.

1. Defer joint filling until concrete has aged at least one month(s). Do not fill joints until construction traffic B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean

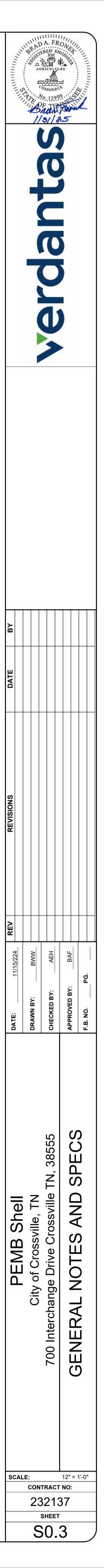
A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete

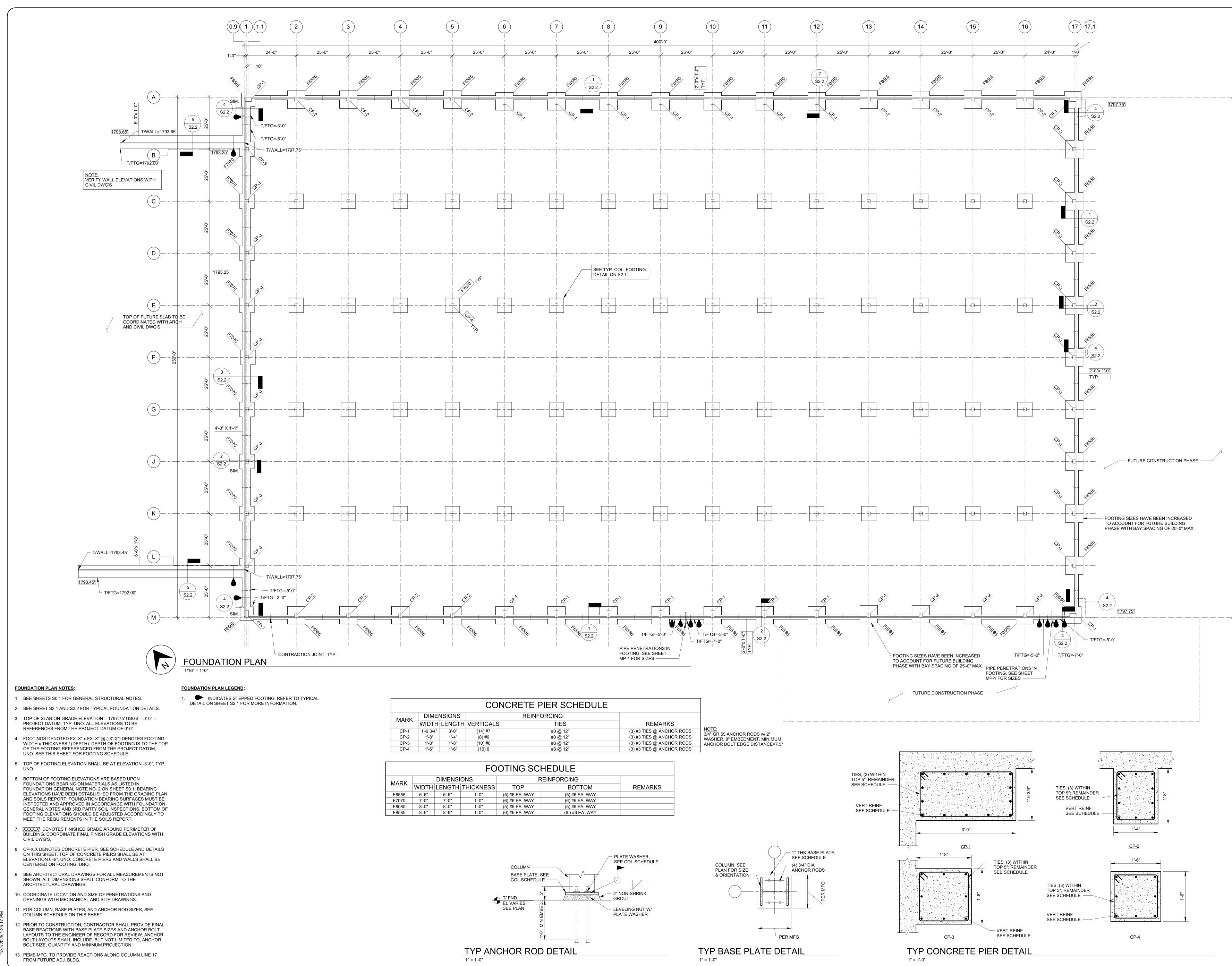
C. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate

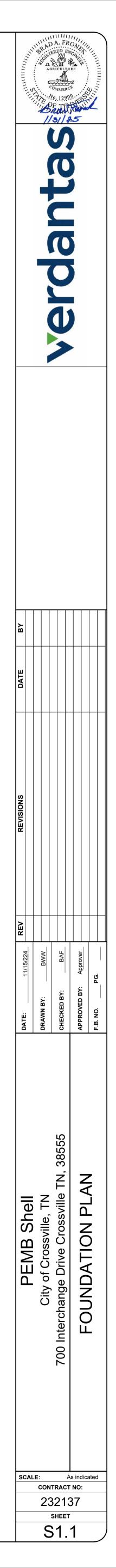


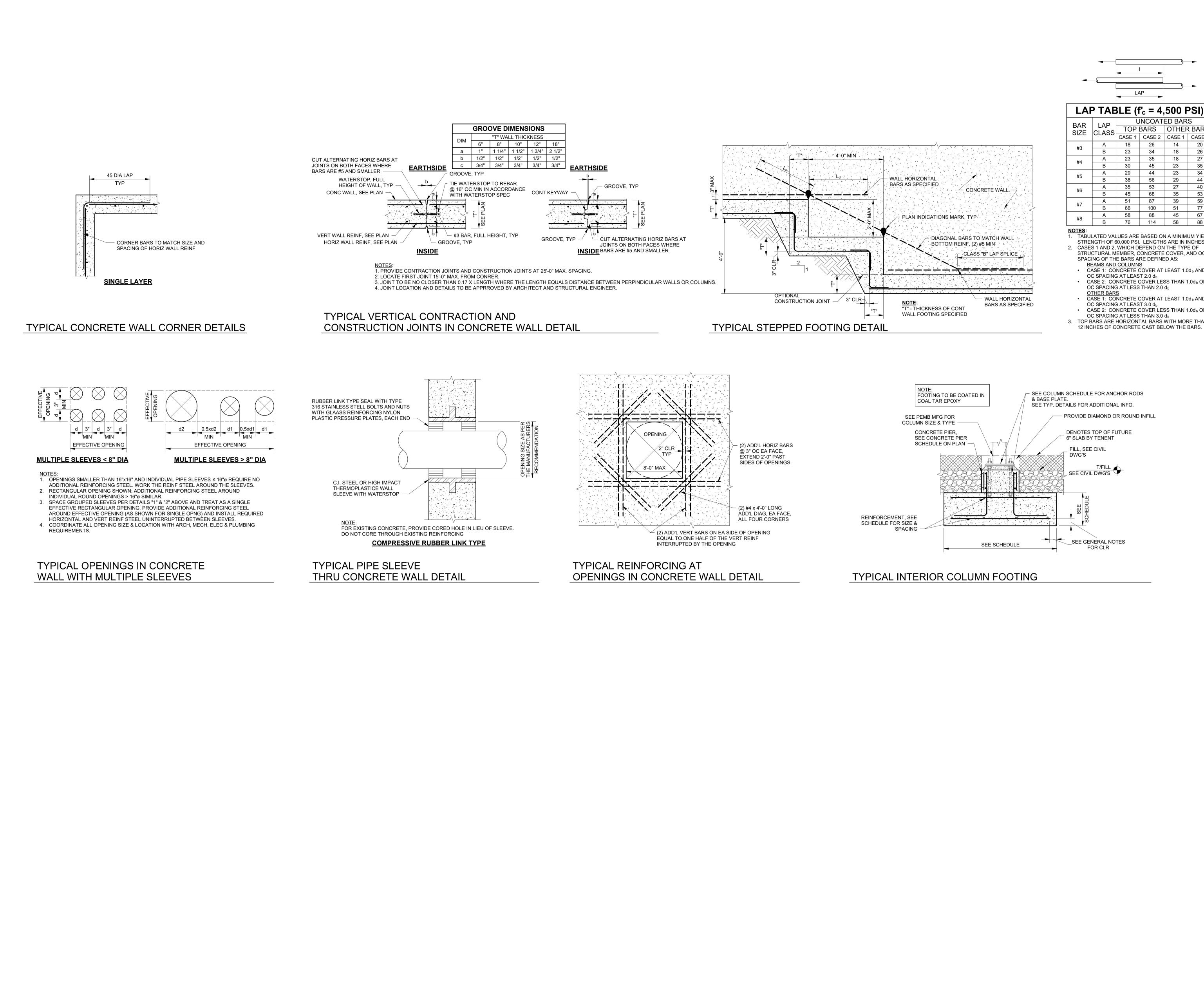


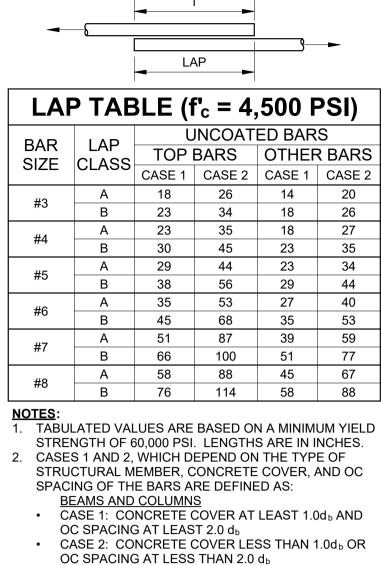
1/2025 1.25.16 DM

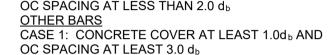












CONCRETE COVER AT LEAST 1.0db AND	
CING AT LEAST 3.0 db	
CONCRETE COVER LESS THAN 1.0db OR	
CING AT LESS THAN 3.0 d♭	
ARE HORIZONTAL BARS WITH MORE THAN	3.
OF CONCRETE CAST BELOW THE BARS	

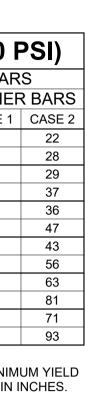
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LAF	P TAE	BLE (1	f' _c = 4,	,000 F	PSI
BAR	LAP	ι	28 15 22 4 36 19 28 5 37 19 29 2 48 25 37 1 47 24 36 0 60 31 47 7 56 29 43 3 72 37 56 4 81 42 63 0 106 54 81 2 93 48 71 0 121 62 93 ARE BASED ON A MINIMUM YIE 93 48 71 0 121 62 93 ARE DEFINED ON THE TYPE OF ER, CONCRETE COVER, AND O RS ARE DEFINED AS: JMNS TE COVER AT LEAST 1.0db AN EAST 2.0 db ETE COVER LESS THAN 1.0db C		
SIZE	CLASS	TOP	BARS	OTHEF	R BAI
SIZE	CLASS	CASE 1	CASE 2	CASE 1	CAS
# 2	A	19	28	15	22
#3	В	24	36	19	28
#4	A	25	37	19	29
#4	В	32	48	25	37
#5	A	31	47	24	36
#5	В	40	60	31	47
#6	A	37	56	29	43
#0	В	48	72		
#7	A	54			
	В	70		54	
#8	A	62			-
	B	80	121	62	93
STREI 2. CASES STRUG SPACI • C/	NGTH OF 6 S 1 AND 2, CTURAL M ING OF TH EAMS AND ASE 1: CO C SPACINO	60,000 PSI WHICH D EMBER, C E BARS A COLUMN NCRETE (G AT LEAS	. LENGTH EPEND ON CONCRETE RE DEFINE S COVER AT GT 2.0 db	S ARE IN I I THE TYP E COVER, / ED AS: LEAST 1.0	NCHE E OF AND O)d♭ AN
00 <u>0</u> • CA	C SPACINO THER BAR	G AT LESS <u>S</u> NCRETE (5 THAN 2.0 COVER AT	db	

-

OC SPACING AT LEAST 3.0 db • CASE 2: CONCRETE COVER LESS THAN 1.0db OR

OC SPACING AT LESS THAN 3.0 d♭ TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.

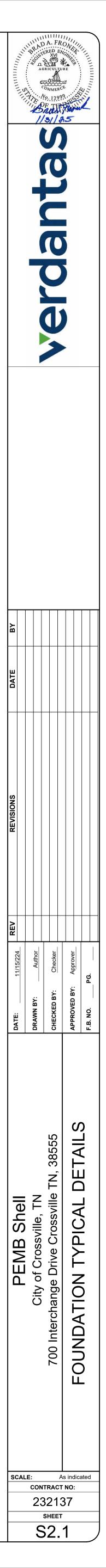


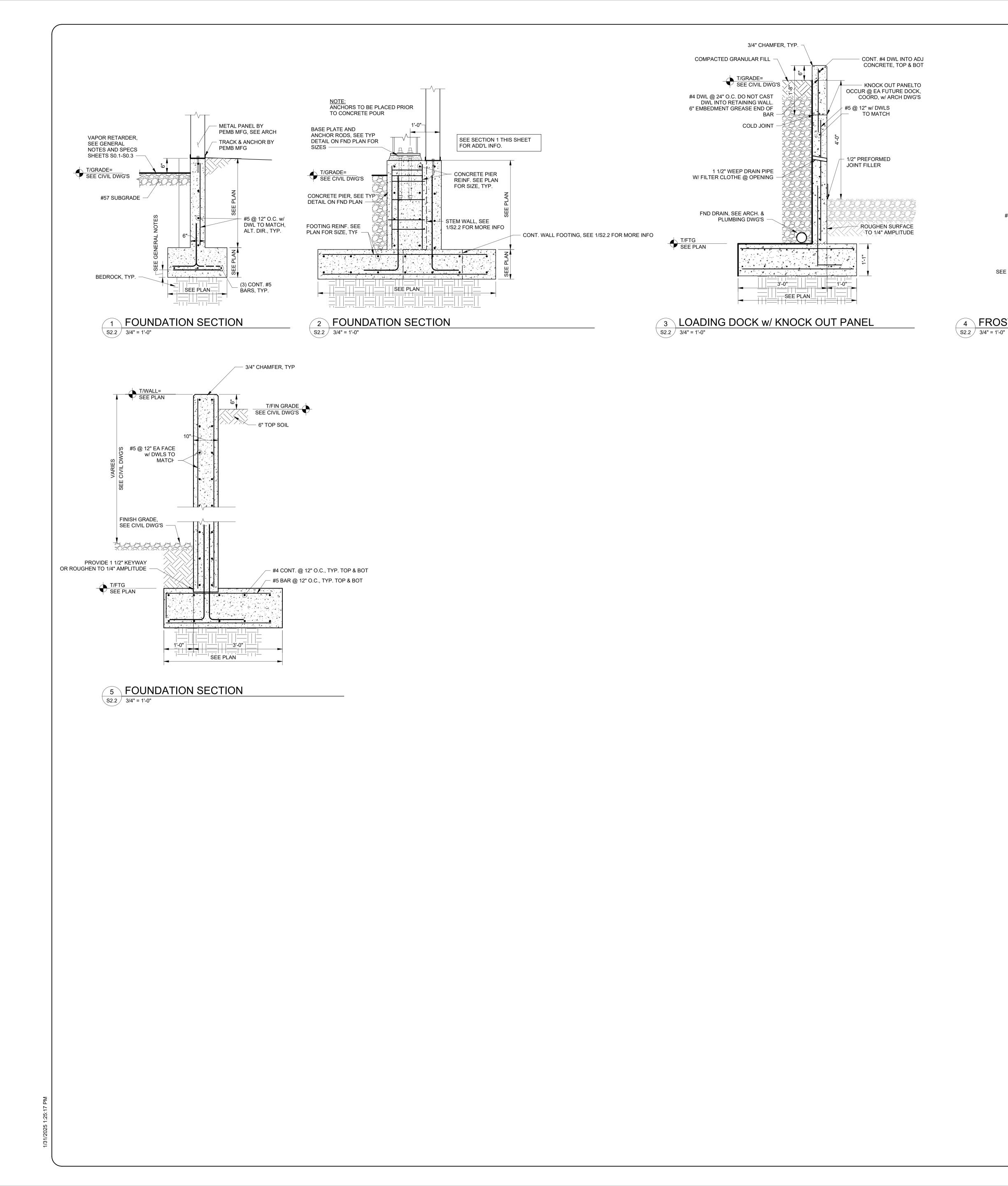
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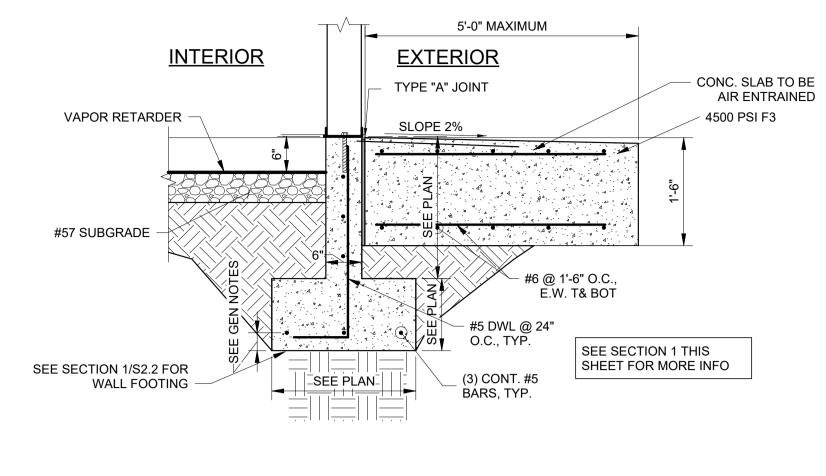
YPE OF R, AND OC

1.0d b AND N 1.0d♭ OR

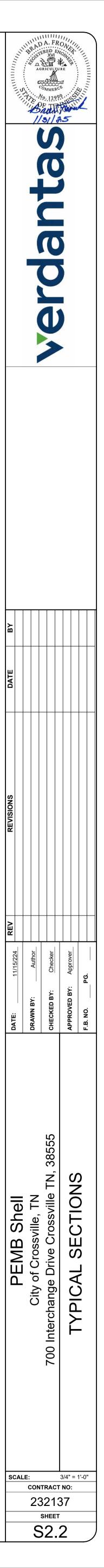
1.0d b AND

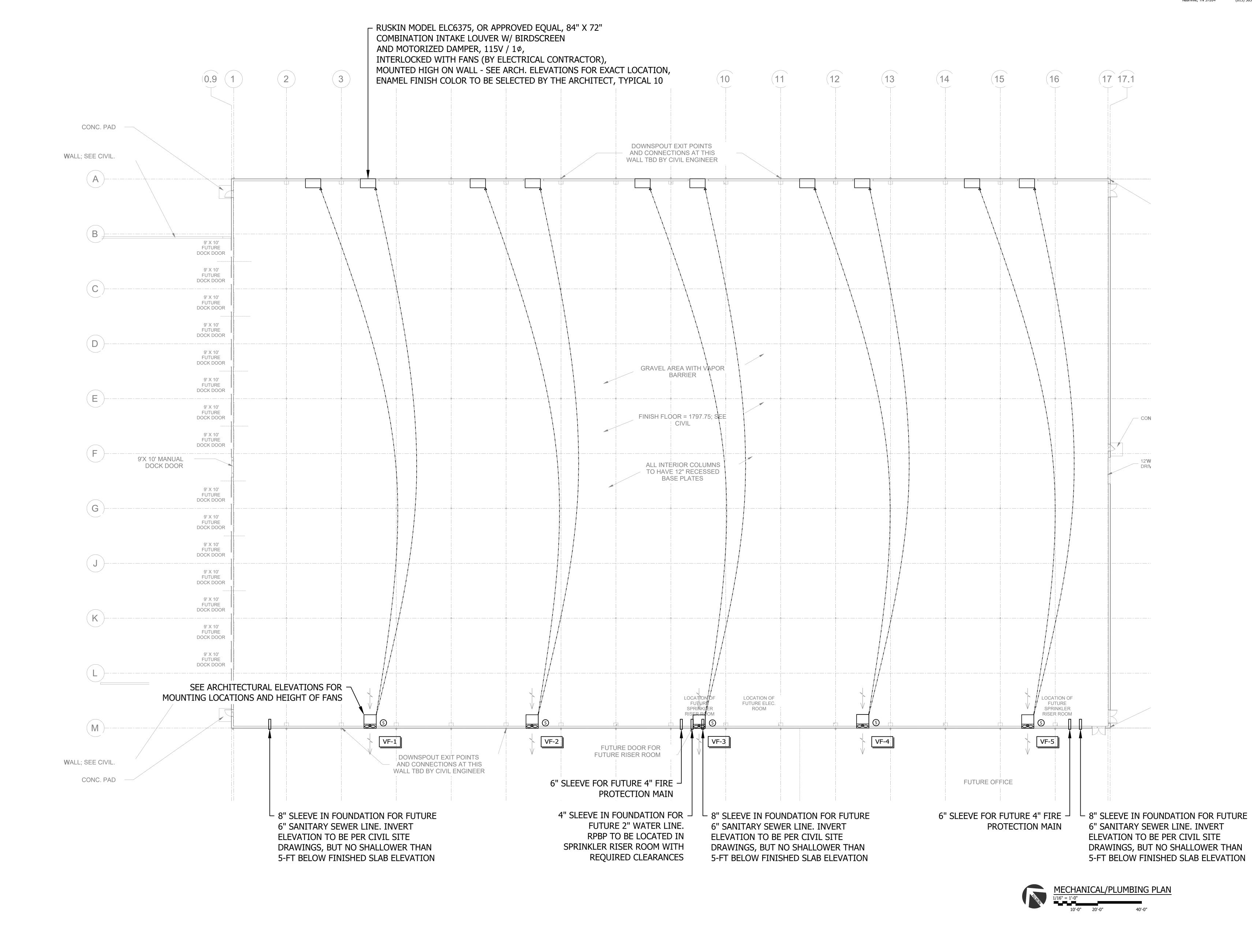


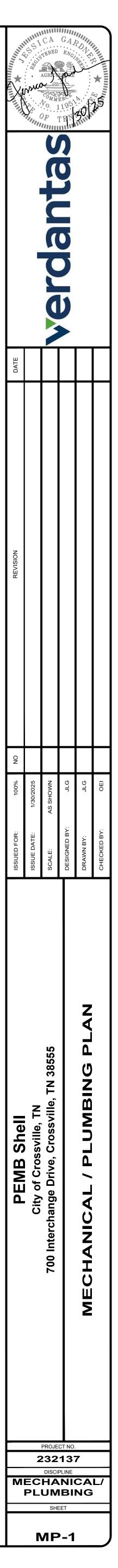


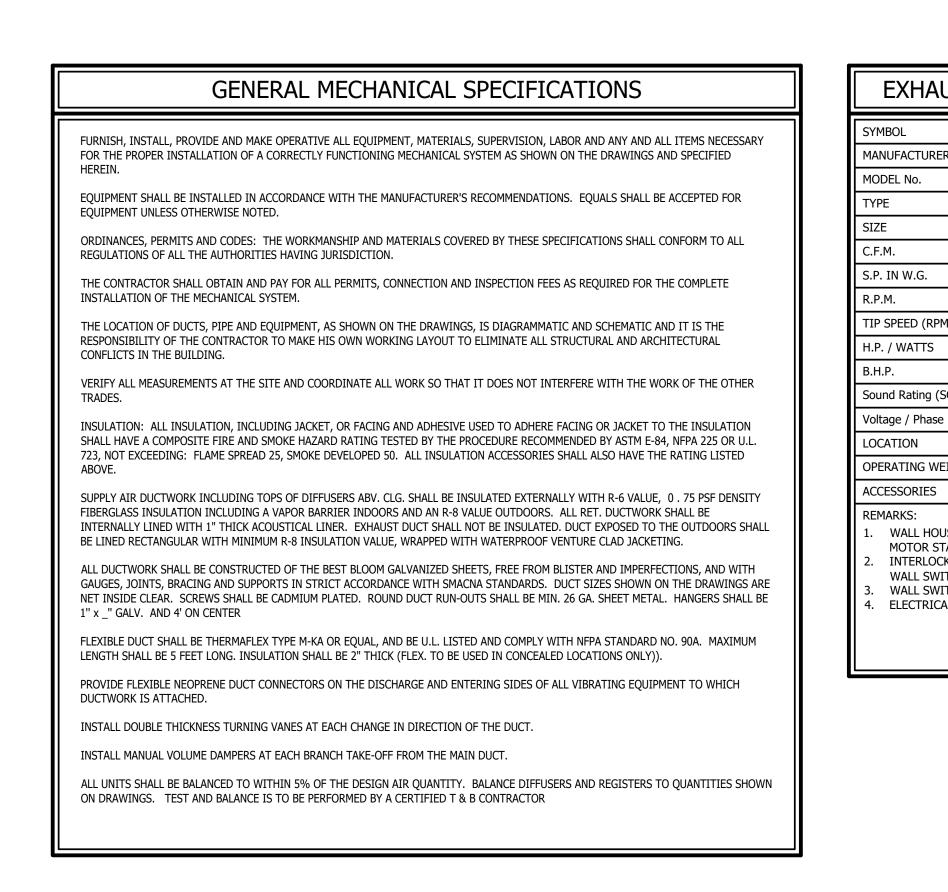


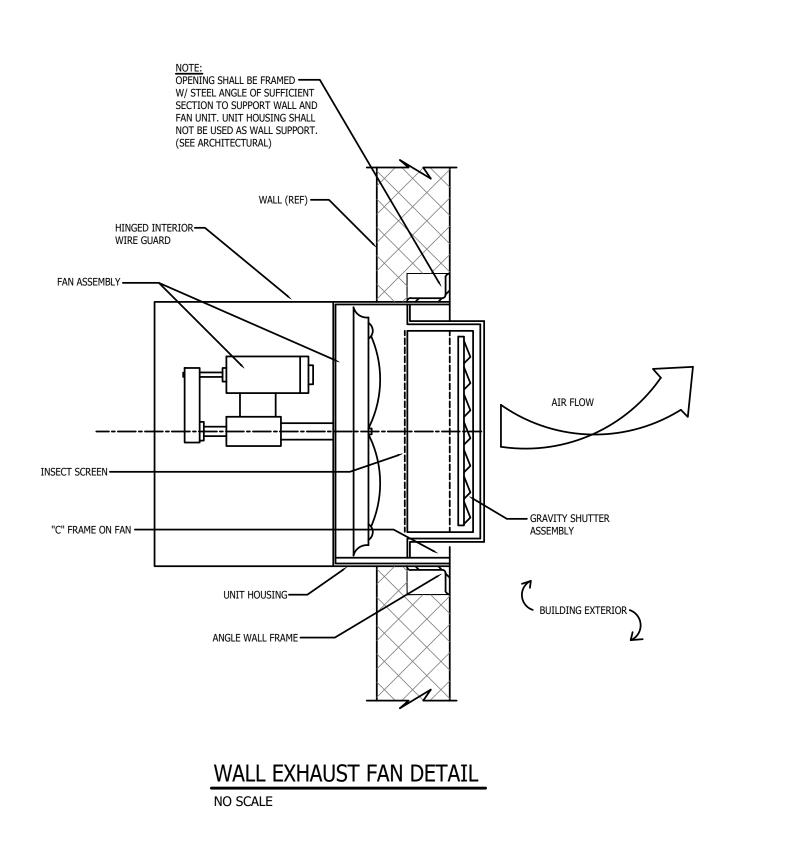
4 FROST SLAB TYP DETAIL



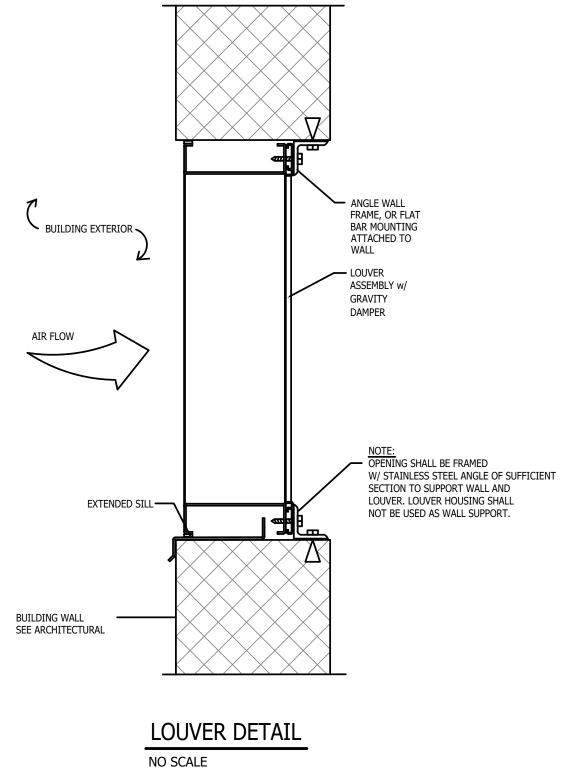




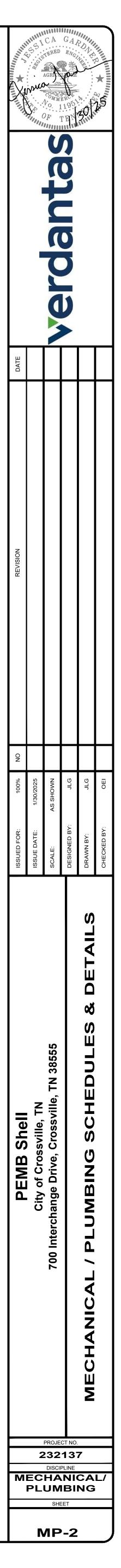


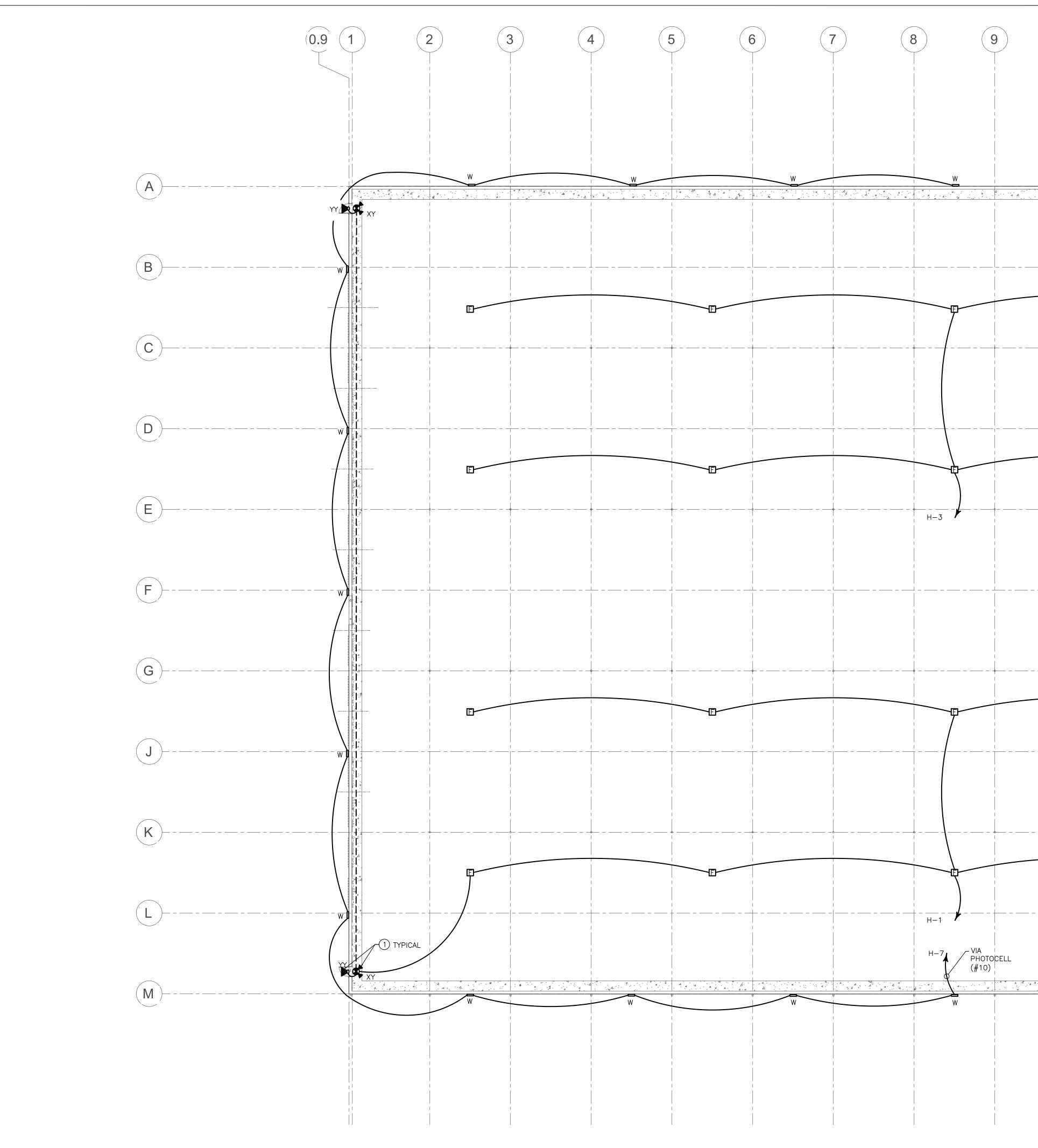


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	PROPELLER	
	66-3/16" SQ.	
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PM)		
	7.5 HP	
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Starter OCK WITH VITCH/TIN VITCH WI	GRAVITY BACKDRA OUTSIDE AIR INT MER TH TIMER AND BA ROVIDE STARTER 1	AKE LOUVER &



Olert Engineeri Olert Job # 2024202 605C Berry Road Nashville, TN 37204



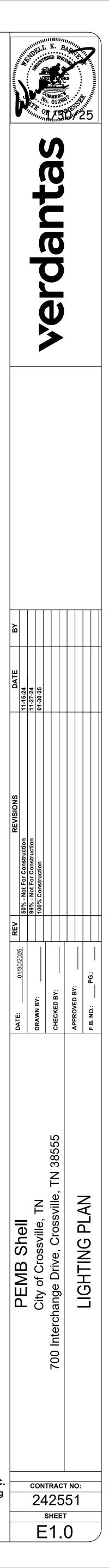


Туре	Mfg	Cat #	Lamps	Voltage	Mounting	Description
F	COLUMBIA	CLB2-40MH-W-EDU	154 W LED	277	SUSPENDED	HIGHBAY FIXTURE
W	KIM	WDM-D-48L-105-3K7-4F	104W LED	277	SURFACE	EXTERIOR LED WALL PACK
XY		LHQM LED R HO SD	INCLUDED LED		SURFACE	LED EXIT LIGHT COMBO 2-HEAD EGRESS LIGHT W/ INTERNAL BATTER
Y YY	LITHONIA LITHONIA	ELM2 LED ELA T QWP L0309 SD	INCLUDED INCLUDED LED	120 120	UNIVERSAL UNIVERSAL	2-HEAD EGRESS LIGHT W/ INTERNAL BATTERY LED EXTERIOR EMERGENCY REMOTE FIXTURE

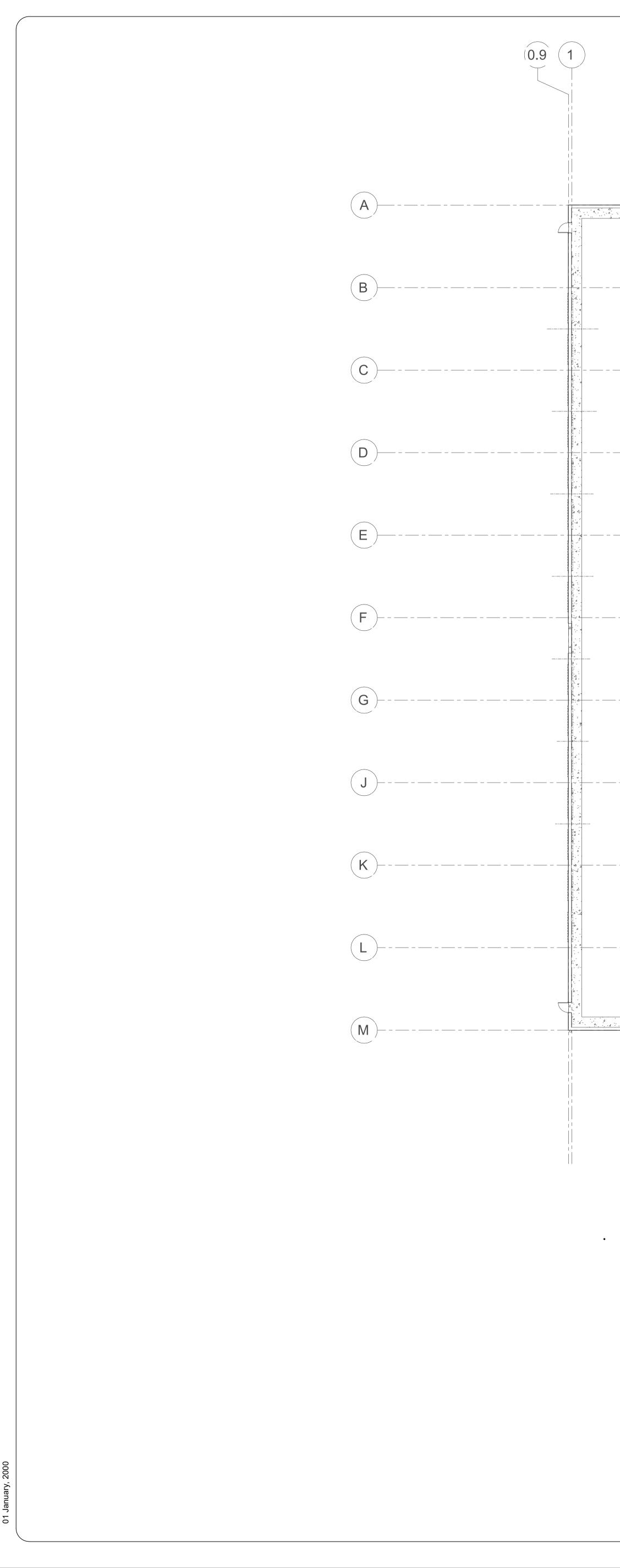


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(#10) 	

NOTES: () EXIT AND EGRESS LIGHTING SHALL BE UNSWITCHED AND SHALL AUTOMATICALLY ENERGIZE FROM INTERNAL BATTERY ON LOSS OF NORMAL POWER.

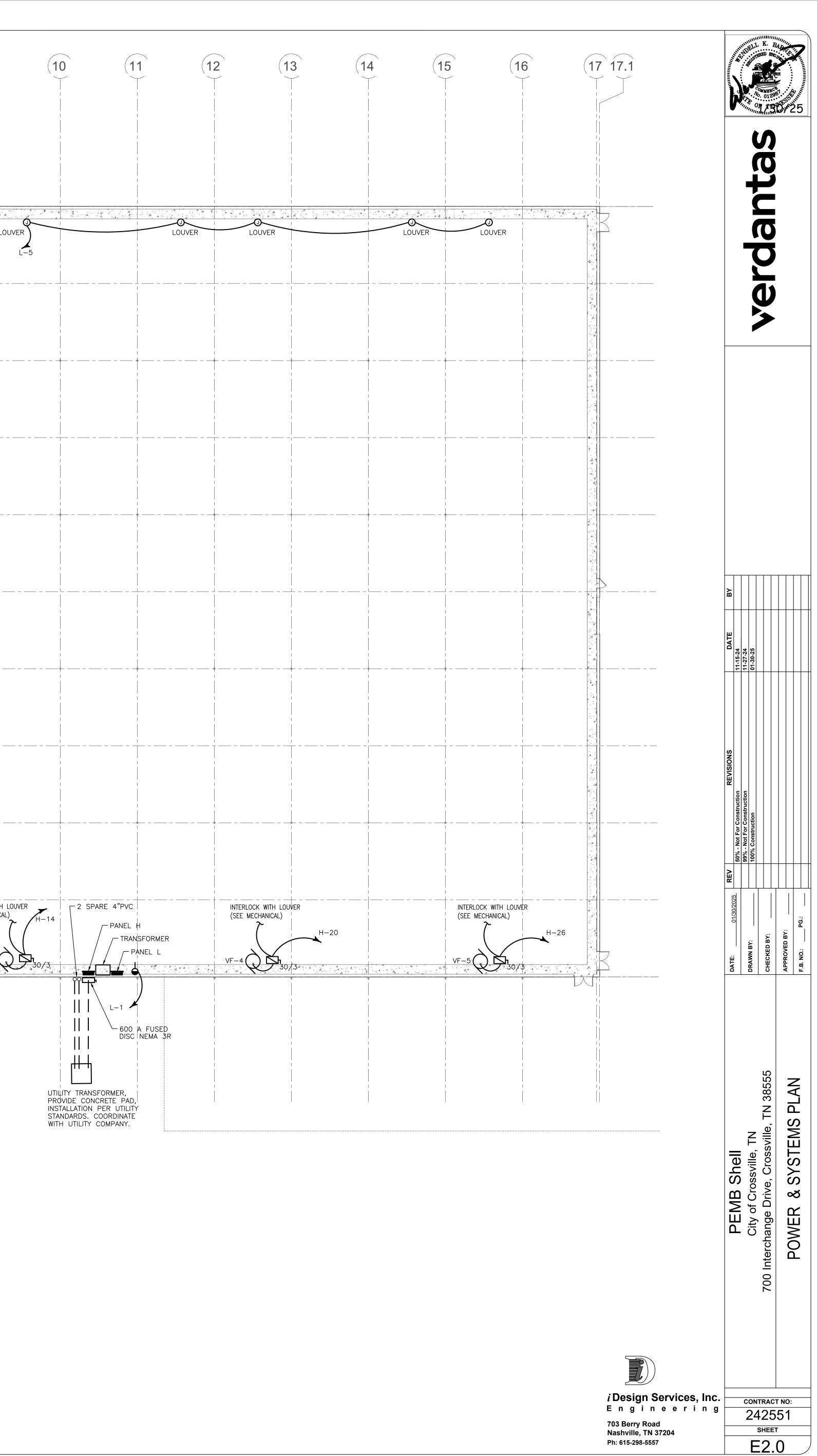


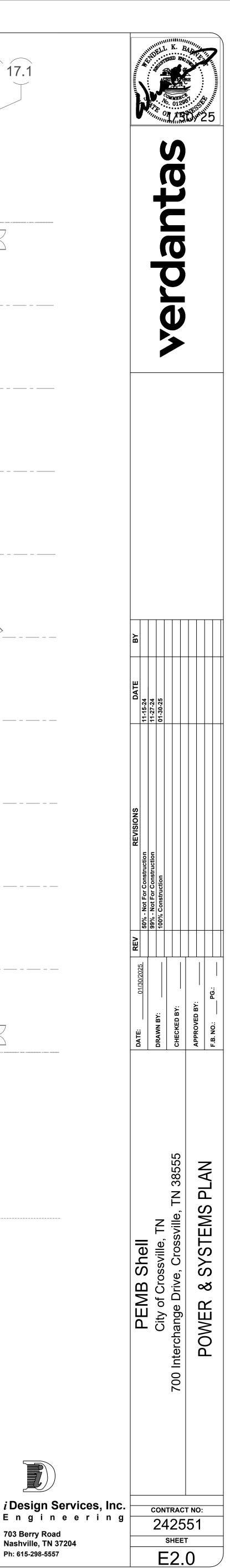
i Design Services, Inc. Engineering 703 Berry Road Nashville, TN 37204 Ph: 615-298-5557



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SPECIFICATIONS

ELECTRICAL SYSTEMS SHALL BE IN COMPLETE AND WORKING ORDER.

CODES, PERMITS, AND FEES: OBTAIN PERMITS, PAY FEES, AND SECURE

INSPECTIONS REQUIRED BY AGENCIES HAVING AUTHORITY OVER THIS WORK. PROVIDE SUBMITTALS FOR LIGHT FIXTURES AND SWITCHGEAR IN ACCORDANCE WITH PROCEDURE DESCRIBED IN DIVISION 1 SPECIFICATION. REFERENCE TO SPECIFIC PRODUCTS IS INTENDED TO ESTABLISH A LEVEL OF QUALITY, NOT TO LIMIT COMPETITION.

ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, WITH STATE AND LOCAL ELECTRICAL AND BUILDING CODES AND ORDINANCES, AND WITH SPECIAL CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS WITHIN THE COMPLETE INSTALLATION. IN THE EVENT OF CONFLICT BETWEEN DRAWINGS, SPECIFICATIONS, AND SUCH CODES, A RULING SHALL BE REQUESTED OF THE ARCHITECT.

EQUIPMENT SHALL BE UL LISTED. INSTALLATION SHALL CONFORM TO UL STANDARDS, WHERE APPLICABLE. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION. WHERE CONFLICTS OCCUR BETWEEN CONTRACT DOCUMENTS AND THESE RECOMMENDATIONS, A RULING SHALL BE REQUESTED OF THE ARCHITECT.

CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID TO ACQUAINT HIMSELF WITH EXISTING CONDITIONS. PROTECT WORK AND MATERIALS FROM DAMAGE. CAP CONDUIT DURING

INSTALLATION. AVOID DAMAGE TO MATERIALS AND EQUIPMENT IN PLACE. SATISFACTORILY REPAIR OR REMOVE AND REPLACE DAMAGED WORK WITH NEW MATERIALS.

DO NOT COVER CONCEALED WORK UNTIL TESTING IS COMPLETED AND INSTALLATION HAS BEEN APPROVED. FURNISH INSTRUMENTS, DEVICES, AND EQUIPMENT NECESSARY TO PERFORM TESTS. CLEAR DEFECTS DISCOVERED DURING TESTS. IDENTIFY ELECTRICAL EQUIPMENT WITH PERMANENTLY ATTACHED BLACK PHENOLIC PLATES WITH 1/4" WHITE ENGRAVED LETTERING ON THE FACE OF EACH, ATTACHED WITH TWO SHEET METAL SCREWS.

MAKE ELECTRICAL CONNECTIONS TO MECHANICAL EQUIPMENT AND CONTROLS. DETERMINE REQUIREMENTS FROM DRAWINGS, SPECIFICATIONS, AND SHOP DRAWINGS. MAINTAIN ONE SET OF ELECTRICAL PRINTS ON THE SITE, MARKED TO SHOW

AS-BUILT CONDITIONS AND INSTALLATIONS. PREPARE COPIES OF THESE PRINTS

AT JOB COMPLETION. PROVIDE NEMA HD SAFETY SWITCHES AND DISCONNECTS BY SQUARE D, ITE, GE, OR WESTINGHOUSE.

PROVIDE JUNCTION BOXES AS SHOWN ON DRAWINGS AND OTHERWISE WHERE REQUIRED, SIZED ACCORDING TO NUMBER OF CONDUCTORS IN BOX OR TYPE OF SERVICE TO BE PROVIDED. MINIMUM JUNCTION BOX SIZE 4 INCHES SQUARE AND 2-1/8 INCHES DEEP UNLESS OTHERWISE NOTED. PROVIDE SCREW COVERS FOR JUNCTION BOXES.

INSTALL FEEDER WIRING IN CONDUIT. COMPLY WITH NATIONAL ELECTRICAL CODE AND LOCAL AUTHORITIES HAVING JURISDICTION, INCLUDING GROUNDING AND SUPPORTING ARRANGEMENT.

1. WIRING: WIRE AND CABLE SHALL BE TYPE THHN OR THW, 600V BY ANACONDA, GENERAL ELECTRIC, TRIANGLE, ROME, OR SOUTHWIRE. WIRING SHALL BE MINIMUM #12 AWG. #12 AND #10 AWG CONDUCTORS SHALL BE SOLID WITH THWN OR THHN INSULATION. #8 AWG AND LARGER, STRANDED THW, THWN, OR THHN. ALL WIRING SHALL BE IN CONDUIT. TYPE MC CABLE MAY BE USED WHERE ALLOWED BY THE NEC AND LOCAL INSPECTOR. COLOR CODE CONDUCTORS BY VOLTAGE AND PHASE.

2. GROUNDING: PROVIDE ALL CABLES WITH GROUND CONDUCTORS. GROUND ELECTRICAL SYSTEM IN ACCORDANCE WITH ARTICLE 250, NATIONAL ELECTRICAL CODE AND LOCAL AUTHORITIES HAVING JURISDICTION. DO NOT USE FLEXIBLE METAL CONDUIT AND FITTINGS AS A GROUNDING MEANS. PULL A GREEN WIRE IN OR AROUND EACH PIECE OF FLEXIBLE CONDUIT AND SCREW TO CONDUIT SYSTEM WITH LUGS AT BOTH ENDS.

3. LIGHTING FIXTURES: ALL FIXTURES SHALL BE NEW AS SPECIFIED, OR APPROVED EQUAL. FURNISH LAMPS FOR ALL FIXTURES. 4. RACEWAYS: PROVIDE COMPLETE CONDUIT SYSTEM WITH ASSOCIATED COUPLINGS, CONNECTORS, AND FITTINGS.

USE EMT OR TYPE MC CABLE WHERE DRAWINGS CALL FOR CONDUIT TO BE CONCEALED IN WALLS, OR INSTALLED ABOVE SUSPENDED CEILINGS. USE IMC WHERE DRAWINGS CALL FOR CONDUIT TO BE INSTALLED FOR FEEDERS, INSTALLED EXPOSED BELOW 6 FEET, OR INSTALLED IN WET LOCATIONS.

USE FLEXIBLE METAL CONDUIT AT THE TERMINATION OF LIGHT FIXTURES OR OF EQUIPMENT SUBJECT TO MECHANICAL VIBRATION. FLEXIBLE METAL CONDUIT SHALL BE ELECTRICALLY CONTINUOUS FROM OUTLET OR CONDUIT END TO UTILIZATION EQUIPMENT. LENGTH SHALL NOT EXCEED 6 FEET EXPOSED OR 3 FEET CONCEALED IN WALLS. A COPPER GROUND WIRE SHALL BE INSTALLED AS A JUMPER AROUND FLEXIBLE CONDUIT. THE JUMPER MAY BE INSTALLED INSIDE OR OUTSIDE OF CONDUIT TO ASSURE CONTINUITY OF GROUND. USE PVC CONDUIT FOR OUTSIDE UNDERGROUND BRANCH CIRCUITS, FOR

ELECTRICAL SERVICE, AND FOR TELEPHONE SERVICE. USE IMC OR RGS ELLS WHEN TURNING UP ABOVE GROUND OR THROUGH CONCRETE SLAB. PVC CONDUIT SHALL BE CARLON, SCHEDULE 40.

FLEXIBLE WIRING SYSTEMS MAY BE EMPLOYED WITH APPROPRIATE FITTINGS, TERMINATIONS, BONDING, GROUNDING AND SUPPORTS AS ALLOWED BY CODE AND RECOMMENDED BY MANUFACTURER. RUN EXPOSED CONDUIT AT RIGHT ANGLES TO OR PARALLEL TO WALLS OF

SUPPORT CONDUIT VERTICALLY AND HORIZONTALLY BY STRAPS OR HANGERS. DO NOT EXCEED THESE INTERVALS: 1/2 INCH AND 3/4 INCH – 5 FEET; 1 INCH THROUGH 1-1/2 INCHES - 7 FEET; 2 INCHES AND LARGER - 9 FEET. LEAVE ONE #10 PULL WIRE IN EMPTY CONDUITS.

BUILDING.

USE EXPANSION FITTINGS, PROPERLY BONDED TO ASSURE GROUND CONTINUITY ACROSS EXPANSION JOINTS IN FLOORS AND CEILINGS. USE DOUBLE LOCK NUTS AND BUSHINGS ON PANEL FEEDERS AT PANEL ENCLOSURES. USE SHORT PIECES, APPROXIMATELY TWO FEET OF FLEXIBLE CONDUITS, TO CONNECT MOTORS AND OTHER DEVICES SUBJECT TO MOTION AND VIBRATION.

5. OUTLET BOXES: OUTLET BOXES SHALL BE NATIONAL, APPLETON, GENERAL ELECTRIC, OR RACO.

PROVIDE WIRING DEVICES, FIXTURES, AND SPECIAL OUTLETS WITH AN OUTLET BOX. USE GALVANIZED STEEL FOR CONCEALED BOXES. USE CAST IRON CONDUIT FITTINGS SIMILAR TO "CONDULETS" AND "UNILETS" WITH THREADED HUBS FOR EXPOSED BOXES.

6. WIRING DEVICES: ACCEPTABLE MANUFACTURERS SHALL BE HUBBELL, LEVITON, PASS & SEYMOUR, BRYANT, OR GENERAL ELECTRIC. PART NUMBERS LISTED ARE LEVITON.

SINGLE POLE SWITCH – 15A, 120/277VAC: LEVITON 1201-I DUPLEX RECEPTACLE - 15A, 125VAC: LEVITON 5252-I GROUND FAULT INTERRUPTING RECEPTACLE - 15A, 125VAC: LEVITON 6599LI

7. DEVICE PLATES: PROVIDE DEVICE PLATES ON SWITCHES, RECEPTACLES, TELEPHONE OUTLETS, AND MISCELLANEOUS DEVICES FROM A MANUFACTURER EQUAL TO LEVITON 83000 STAINLESS STEEL PLATES.

8. SWITCHGEAR: PROVIDE SWITCHGEAR AS DESCRIBED IN PANEL SCHEDULES ON DRAWINGS. PROVIDE WORKING CLEARANCE AND PANEL CLEARANCE IN ACCORDANCE WITH NEC AND LOCAL AMENDMENTS.

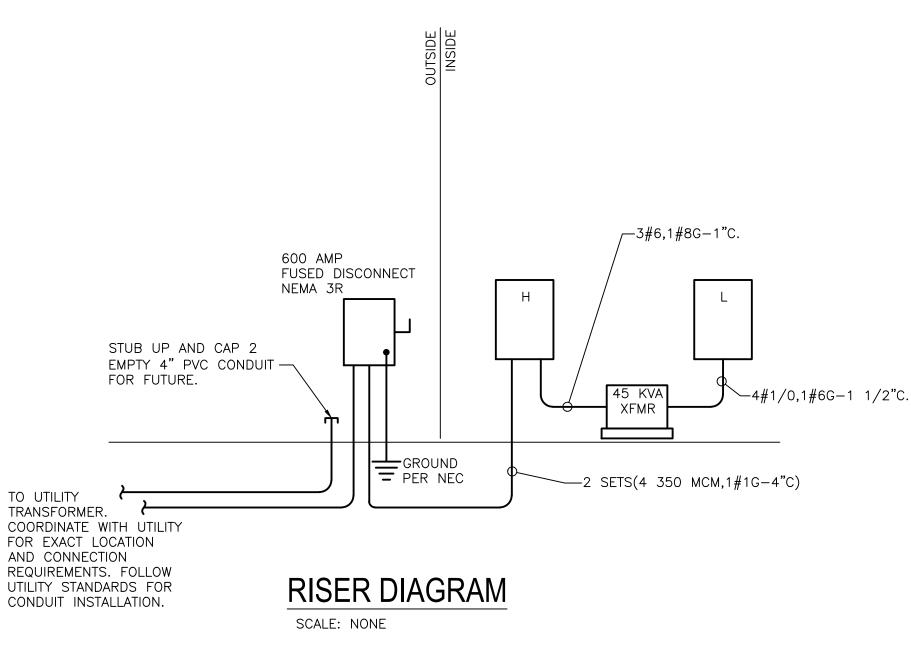
9. TELEPHONE/DATA: PROVIDE 4" SQUARE BOX FOR EACH TELEPHONE/DATA OUTLET. STUB A $\frac{3}{4}$ " CONDUIT FROM BOX TO SPACE ABOVE ACCESSIBLE CEILING. COORDINATE REQUIREMENTS FOR TELEPHONE SERVICE WITH UTILITY COMPANY.

Panel	Н					ОС Ту	ре	CKT	BRKF	2				Voltage L-L	480
Encl	NEMA 1					A.I.C.		35,0	000					Voltage L-N	277
Mtg	SURFACE					Mains		MLC						Amperage	600
Ckt No.	Description	Туре	Load	Remarks	СВ	Pole	PH	PH	Pole	СВ	Remarks	Load	Туре		Ckt No.
1	LIGHTING	2	1540	# 10	20	1	Α	Α	3	20		3000	10	VF-1	2
3	LIGHTING	2	1540	# 10	20	1	В	В		-		3000	10		4
5	LIGHTING	2	1350	# 10	20	1	С	С	-	-		3000	10	"	6
7	LIGHTING	2	1350	# 10	20	1	Α	Α	3	20		3000	10	VF-2	8
9	SPACE				-	-	В	В	-	-		3000	10	"	10
11	SPACE				-	-	С	С	-0	-		3000	10	н	12
13	SPACE				-	-	Α	Α	3	20		3000	10	VF-3	14
15	SPACE				-	-	В	В	-	-		3000	10	"	16
17	SPACE				-	-	С	С	-	-		3000	10	п	18
19	SPACE				-	-	Α	А	3	20		3000	10	VF-4	20
21	SPACE				-	_	В	В	_	-		3000	10	u.	22
23	SPACE				-	-	С	С	-	-		3000	10	п	24
25	SPACE				-	-	Α	Α	3	20		3000	10	VF-5	26
27	SPACE				-	-	В	В	-	-		3000	10	п	28
29	SPACE				-	-	С	С	-	-		3000	10		30
31	SPACE				-	-	Α	Α	-	-				SPACE	32
33	SPACE				-	-	В	В	-0	-				SPACE	34
35	SPACE				-	_	С	С	_	-				SPACE	36
37	SPACE				-	-	Α	А	3	70				PANEL LP	38
39	SPACE				-	-	В	В	_	-					40
41	SPACE				-	-	С	С	-	-				н	42
Phase A Phase B Phase C	17890 VA 16540 VA 16350 VA			Connected k	()// -	52.0		NOT	ES:	-					

Demand KVA = 44.9 Demand Amps = 54.0

Panel	L					ос ту	ре	CKT	BRKR	ł				Voltage L-L	208
Encl	NEMA 1					A.I.C.	-	10,0	00					Voltage L-N	120
Mtg	SURFACE					Mains		<i>'</i>	3 MB					Amperage	100
Ckt No.	Description	Туре	Load	Remarks	СВ	Pole	PH	PH	Pole	СВ	Remarks	Load	Туре	Description	Ckt No.
1	RECEPTACLES	3	180		20	1	A	A	-	-				SPACE	2
3	LOUVERS	4	600		20	1	В	В	-	÷				SPACE	4
5	LOUVERS	4	400		20	1	С	С		-				SPACE	6
7	SPACE				-		Α	Α	<u> </u>					SPACE	8
9	SPACE				-	-	В	В	-	-				SPACE	10
11	SPACE				-	-	С	С	-	-				SPACE	12
13	SPACE				-	-	Α	Α	-	-				SPACE	14
15	SPACE				-	- 1	В	В	-	-				SPACE	16
17	SPACE				-	-	С	С	-	-				SPACE	18
19	SPACE				-	-	Α	Α	-	-				SPACE	20
21	SPACE				-	-	В	В	-	-				SPACE	22
23	SPACE				-	-	С	С	-	-				SPACE	24
25	SPACE				<u></u> :	-	Α	Α	<u>.</u>	20				SPACE	26
27	SPACE				-	-	В	В	-	-				SPACE	28
29	SPACE				-	-	С	С	-	- 1				SPACE	30
31	SPACE				-	-	Α	Α	-	-				SPACE	32
33	SPACE				-0	-0	В	В	-	-				SPACE	34
35	SPACE				-	-	С	С	-	-				SPACE	36
37	SPACE				-	-	Α	Α	-	-				SPACE	38
39	SPACE				-	-	В	В	-	-				SPACE	40
41	SPACE				-	-	С	С	-	-				SPACE	42
Phase A Phase B Phase C	180 VA 600 VA 400 VA		(Connected k	(VA =	1.2		NOT	ES:						

Demand KVA = 0.9 Demand Amps = 2.4



	ELECTRICAL LEGEND			HINDELL CAA
SYMBOL	DESCRIPTION	MTG. HT.		CHIL SAVERE
	ERAL HOMERUN CONDUIT (QUANTITY OF ARROWS DETERMINES NUMBER OF CIRCUITS)			P
	CONDUIT CONCEALED			
	CONDUIT CONCEALED BELOW FLOOR OR GRADE CONDUIT EXPOSED			
 (1) ⟨#⟩ 	NOTE REFERENCE – REFER TO NOTE INDICATED ALL FIXTURES IN THIS SPACE SHALL BE THE SAME TYPE INDICATED			nta
	TING			
	2'x4' FIXTURE 2'x2' FIXTURE			
0	4' FIXTURE DOWN LIGHT			D
$\overline{\times}$	2'x4' FIXTURE W/ INTERNAL BATTERY 2'x2' FIXTURE W/ INTERNAL BATTERY			9
\otimes	4' FIXTURE W/ INTERNAL BATTERY			
Ю	DOWN LIGHT W/ INTERNAL BATTERY WALL MOUNTED LIGHT			
0	WALL MOUNTED SCONCE LIGHT PENDANT LIGHT			
• 	WALL WASHER UNDERCABINET LIGHT			
	DUAL HEAD EGRESS LIGHT W/ INTERNAL BATTERY EXIT LIGHT W/ INTERNAL BATTERY			
	DUAL HEAD EGRESS LIGHT / EXIT LIGHT COMBO UNIT W/ INTERNAL BATTERY EXTERIOR REMOTE EMERGENCY EGRESS FIXTURE W/ INTERNAL BATTERY			
	CHES			
S S3	SINGLE POLE SWITCH THREE WAY SWITCH	3'-10" AFF 3'-10" AFF		
S₄	FOUR WAY SWITCH	3'-10" AFF		
Sd Sd3	DIMMER SWITCH THREE WAY DIMMER SWITCH	3'-10" AFF 3'-10" AFF		
Sos Soo	OCCUPANCY SENSOR WITH SWITCH OCCUPANCY SENSOR WITH DIMMER SWITCH	3'-10" AFF 3'-10" AFF		
Cos PC	OCCUPANCY SENSOR (CEILING MOUNTED) PHOTOCELL	CEILING ROOF		
POW				
€= €-	120V DUPLEX RECEPTACLE 120V DUPLEX RECEPTACLE – SPECIAL MOUNTING HEIGHT	1'-6" AFF AS NOTED		
	120V QUADPLEX RECEPTACLE 120V QUADPLEX RECEPTACLE – SPECIAL MOUNTING HEIGHT	1'-6" AFF AS NOTED		B
━-	120V DUPLEX GFI RECEPTACLE	1'-6" AFF		
0- 0	120V DUPLEX GFI RECEPTACLE – SPECIAL MOUNTING HEIGHT 120V DUPLEX FLOOR RECEPTACLE	AS NOTED		DATE 24 25 25
€= ⊖-	250V 2-POLE SINGLE RECEPTACLE, AMPERAGE AS SPECIFIED 120V SINGLE - SPECIAL RECEPTACLE-AMPERAGE INDICATED	1'-6" AFF AS NOTED		D 11-15-24 11-27-24 01-30-25
0 ⁄⁄	JUNCTION BOX MOTOR			
	NON-FUSED DISCONNECT FUSED DISCONNECT			
 ⊈⊠	COMBINATION TYPE MOTOR STARTER MOTOR RATED TOGGLE			
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<	PHONE / DATA OUTLET AND PLATE PHONE / DATA OUTLET AND PLATE – SPECIAL MOUNTING HEIGHT	1'—6" AFF AS NOTED		REVISIONS
	FLOOR PHONE / DATA OUTLET AND PLATE	FLOOR		truction truction
5Y5 FACP	FIRE ALARM			- Not For Construction - Not For Construction 6 Construction
FAA F	FIRE ALARM ANNUNCIATOR FIRE ALARM MANUAL PULL STATION	4'-6" AFF		50% - Not 99% - Not 100% Cons
 € F⊲	FIRE ALARM VISUAL STATION – LIGHT ONLY FIRE ALARM HORN / STROBE DEVICE	7'-0" AFF 7'-0" AFF		
D H	SMOKE DETECTOR HEAT DETECTOR		i i	5022
H D _s	HEAT DETECTOR DUCT SMOKE DETECTOR – SUPPLY			01/30/2025
H D _s D _R FS	HEAT DETECTOR DUCT SMOKE DETECTOR – SUPPLY DUCT SMOKE DETECTOR – RETURN SPRINKLER FLOW SWITCH			
H D _s D _R FS Y	HEAT DETECTOR DUCT SMOKE DETECTOR – SUPPLY DUCT SMOKE DETECTOR – RETURN			
H D _s P _R FS Y SYS	HEAT DETECTOR DUCT SMOKE DETECTOR – SUPPLY DUCT SMOKE DETECTOR – RETURN SPRINKLER FLOW SWITCH SPRINKLER TAMPER SWITCH TEMS - OTHER CABLE TV OUTLET AND PLATE	1'-6" AFF/U.N.O.		
H D _s D _R FS Y SYS	HEAT DETECTOR DUCT SMOKE DETECTOR – SUPPLY DUCT SMOKE DETECTOR – RETURN SPRINKLER FLOW SWITCH SPRINKLER TAMPER SWITCH TEMS - OTHER	1'-6" AFF/U.N.O.		
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