

ABBREVIATIONS

®	AT	M.O.	MASONRY OPENING
A.B.	ANCHOR BOLT	M.R.	MOISTURE RESISTANT
ACOUST. or AC	ACOUSTICAL	MTL	METAL
A.C.T.	ACOUSTICAL CEILING TILE	NEC'Y	NECESSARY
ACM	ACOUSTICAL MYLAR	N.I.C.	NOT IN CONTRACT
ADJ.	ADJUSTABLE	N.T.S.	NOT TO SCALE
A.F.F.	ABOVE FINISHED FLOOR	O	OIL
A.F.G.	ABOVE FINISHED GRADE	O.C. or O/C	ON CENTER
AGG.	AGGREGATE	O.D.	OUTSIDE DIAMETER
ALUM. or AL	ALUMINUM	O/O	OUT TO OUT
ANCH.	ANCHOR	OPG.	OPENING
APPROX.	APPROXIMATELY	O.H.	OVERHEAD
ASB.	ASBESTOS	OPP.	OPPOSITE
ATTEN.	ATTENUATION	P, PT. or PNT.	PAINT(ED)
BD.	BOARD	PARTN.	PARTITION
B.J.B.	BAR JOIST BEARING	P.BD.	PARTICLE BOARD
BLDG.	BUILDING	P.C.T.	PORCELAIN TILE
BLK.	BLOCK	PL.	PLATE
BM.	BEAM	PLAM	PLASTIC LAMINATE
BRG. PL.	BEARING PLATE	PLAS.	PLASTIC
BRK.	BRICK	PLWD. or PWD.	PLYWOOD
BRZ.	BRONZE	PNL	PANELING
BOT.	BOTTOM	POLY.	POLYETHENE
CAB.	CABINET	PORC.	PORCELAIN
C.B.	CATCH BASIN	P.T.	PRESSURE TREATED
CEM.	CEMENT	PVMT.	PAVEMENT
CER.	CERAMIC	Q.T.	QUARRY TILE
C.G.	CORNER GUARD	R	RISERS
C.J.	CONTROL JOINT	RAD. or R	RADIUS
CK.	CAULK	R.B.	RUBBER BASE
CL. or ☒	CENTERLINE	R.C.P.	REINFORCED CONCRETE PIPE
CLG.	CEILING	R.D.	ROOF DRAIN
C.M.U.	CONCRETE MASONRY UNIT	RE.	REFERENCE
C.O.	CLEAN OUT	REC.	RECESSED
COL.	COLUMN	REF.	REFRIGERATOR
CONC.	CONCRETE	REINF.	REINFORCED
CONC. BLK.	CONCRETE BLOCK	REQ'D	REQUIRED
CONST.	CONSTRUCTION	RES.	RESISTANT
CONT.	CONTINUOUS	RESIL.	RESILIENT
CORR.	CORRIDOR	RET.	RETAINING
CPT.	CARPET	RM.	ROOM
C.R.	COLD ROLLED	R.O.	ROUGH OPENING
C.T.	CERAMIC TILE	SB.	SPLASH BACK
DBL.	DOUBLE	SC.	SOLID CORE
DET. or DTL.	DETAIL	SCHED.	SCHEDULE
D.F.	DRINKING FOUNTAIN	SCW.	SOLID CORE WOOD
DIA. or ∅	DIAMETER	SECT.	SECTION
DIAG.	DIAGONAL	SHT.	SHEET
DIM.	DIMENSION	SIM.	SIMILAR
DISP.	DISPENSER	SILR.	SEALER
DTL.	DETAIL	SPEC.	SPECIFICATIONS
DN.	DOWN	SQ.	SQUARE
D.O.	DO OVER	S.S.	STAINLESS STEEL
D.S.	DOWN SPOUT	ST.	STAIN
DWG.	DRAWING	STD.	STANDARD
E	EPOXY	STL.	STEEL
E.D.F.	ELECTRIC DRINKING FOUNTAIN	STN.	STONE
E.I.F.S.	EXTERIOR INSULATION & FINISH SYSTEM	STRUCT.	STRUCTURE
E.J.	EXPANSION JOINT	STUC.	STUCCO
E.W.C.	ELECTRIC WATER COOLER	S.V.	SHEET VINYL
EA.	EACH	SYM.	SYMMETRICAL
EL or ELEV.	ELEVATION	SYN.	SYNTHETIC
ELECT.	ELECTRIC(AL)	T.	TREAD
ENAM.	ENAMEL	T. & B.	TOP AND BOTTOM
E.O.S.	EDGE OF SLAB	T. & G.	TONQUE AND GROOVE
E.P.T.	EPOXY PAINT	TB	TACKBOARD
EQ.	EQUAL	TC	TEACHER CABINET
EQUIP.	EQUIPMENT	TEL.	TELEPHONE
E.W.	EACH WAY	TF	TOP OF FOOTING
EXIST.	EXISTING	THK	THICK(NESS)
EXP.	EXPOSED	THR	THRESHOLD
EXP. JT. or E.J.	EXPANSION JOINT	THRU.	THROUGH
EXT.	EXTERIOR	T.O.C.	TOP OF CONCRETE
EXT. GDE.	EXTERIOR GRADE	T.TILE	TERRAZZO TILE
F.B.O.	FURNISHED BY OTHERS	TXP.	TEXTURED PAINT
F/C or F.C.U.	FAN COIL UNIT	TYP.	TYPICAL
F.D.	FLOOR DRAIN	TZ.	TERRAZZO
F.E.C.	FIRE EXTINGUISHER CABINET	U.L.	UNDERWRITERS LABORATORIES
F.H.	FLAT HEAD	UNF.	UNFINISHED
FND.	FOUNDATION	U.O.N.	UNLESS OTHERWISE NOTED
FIN.	FINISH	UR.	URINAL
FLR.	FLR.	V.C.G.B.	VINYL COVERED GYP. BOARD
FLUOR.	FLUORESCENT	V.C.P.	VITRIFIED CLAY PIPE
F.O.S.	FACE OF STUD	V.C.T.	VINYL COMPOSITION TILE
FRM.	FRAME	VERT.	VERTICAL
FT.	FOOT	VIN.	VINYL
FTG.	FOOTING	VWC.	VINYL WALL COVERING
G.I.	GALVANIZED IRON	W	WAX
GA.	GAUGE	W/	WITH
GALV.	GALVANIZED	WATER-RES.	WATER-RESISTANT
G.B.	GYPSPUM BOARD	WC	WATER CLOSET
GEN.	GENERAL	WD.	WOOD
GL.	GLASS	W.F.	WIDE FLANG
GLS. BLK.	GLASS BLOCK	WN.	WINDOW
GRT.	GROUT	W.P.	WATERPROOF
GYP.	GYPSPUM	W.R.G.B.	WATER-RESISTANT GYPBOARD
GYP. BD.	GYPSPUM BOARD	WSC.T.	WAINSCOT
HBD.	HARDBOARD	W.W.F.	WELDED WIRE FABRIC/MESH
H.C.	HANDICAPPED	W.W.M.	WELDED WIRE MESH
H.C.W.	HOLLOW CORE WOOD		
HDW.	HARDWARE		
H.M.	HOLLOW METAL		
HR.	HANDRAIL		
HR.	HOUR		
HD.	HEAD		
HDWD. or HWD.	HARDWOOD		
HORIZ.	HORIZONTAL		
HT.	HEIGHT		
INCL.	INCLUDING		
I.D.	INSIDE DIAMETER		
IN.	INCH		
INSUL.	INSULATION		
INT.	INTERIOR		
INV.	INVERT		
J.B.	JUNCTION BOX		
J.T.	JOINT		
KIT.	KITCHEN		
LAB.	LABORATORY		
LAM.	LAMINATE		
LAV.	LAVATORY		
LT. WT.	LIGHT WEIGHT		
MACH.	MACHINE		
MANUF.	MANUFACTURER		
MATL.	MATERIAL		
MAX.	MAXIMUM		
M.B.	MARKER BOARD		
MECH.	MECHANICAL		
M.E.S.	METAL EDGE STRIP		
MET.	METAL		
M.H.	MAN HOLE		
MIL.	MIL		
MIN.	MINIMUM		
MISC.	MISCELLANEOUS		
MLD.	MOLDING		

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A000

= BLDG SECTION

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= DETAIL CUTS

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= INTERIOR ELEV. LABEL

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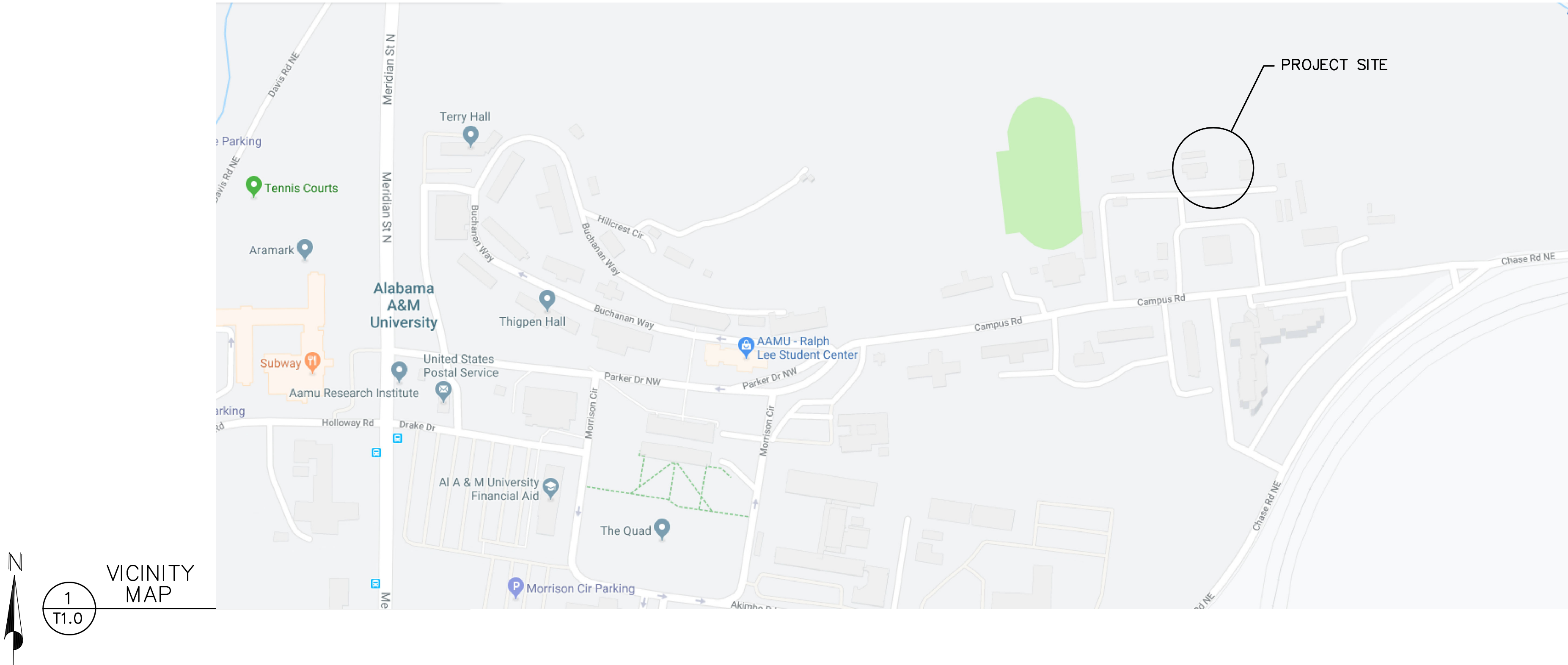
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NOTE 1: NOT ALL SYMBOLS MAY BE USED IN THESE DRAWINGS.

NOTE 2: ALSO SEE ENGINEERING DRAWINGS FOR OTHER SYMBOLS THAT MAY BE USED IN THESE DRAWINGS.

A&M ELECTRIC BUS/VEHICLE SERVICE BAY

ALABAMA A&M UNIVERSITY,
CAMPUS DRIVE, BESIDE EUGENE
KENDRICK MAINTENANCE FACILITY
NORMAL, AL



DRAWING INDEX

GENERAL

T1.0 TITLE SHEET

CIVIL

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C101 CONCRETE PAVEMENT JOINT LAYOUT PLAN

C102 GRADING & DRAINAGE PLAN

C103 SITE UTILITY PLAN

C104 EROSION & SEDIMENT CONTROL PLAN

C200 PROJECT CONSTRUCTION DETAILS

ARCHITECTURAL

A1.0 FLOOR PLAN, ROOF PLAN, LIFE SAFETY NOTES

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STRUCTURAL

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S2.0 GENERAL NOTES

S2.1 GENERAL DETAILS

S2.2 SPECIAL INSPECTIONS

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ELECTRICAL

E1 SPECIFICATIONS & LEGEND

E2 POWER PLAN

E3 LIGHTING PLAN

E4 ELECTRICAL SCHEDULES & RISER DIAGRAM

PROJECT TEAM

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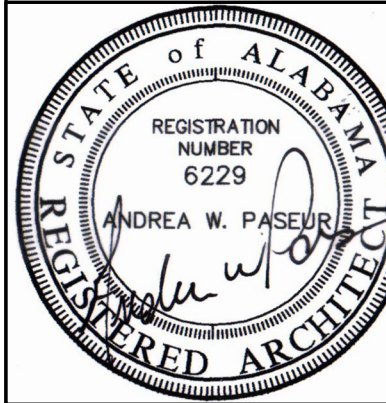
PROJECT NOTES

- PROJECT SCOPE: CONSTRUCTION OF A NEW BUS MAINTENANCE FACILITY AND DRIVEWAY.
- THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THESE DOCUMENTS WITH EACH OTHER AND WITH INFORMATION PROVIDED BY THE OWNER PRIOR TO COMMENCING THE WORK AND SHALL AT ONCE REPORT ANY ERRORS OR INCONSISTENCIES TO ARCHITECT.
- THE CONTRACTOR SHALL REQUEST FROM THE ARCHITECT ADDITIONAL INFORMATION THAT THE CONTRACTOR DEEMS NECESSARY IN ORDER TO EXECUTE AND COMPLETE THE WORK. IT IS THE OWNER'S OPTION TO REQUEST ADDITIONAL SERVICES IN PROVIDING SUCH ADDITIONAL INFORMATION, OR TO PROVIDE THE INFORMATION TO THE CONTRACTOR BY OTHER MEANS.
- IN NO CASE SHALL DIMENSIONS BE SCALED FROM DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS IN THE FIELD BEFORE PROCEEDING WITH SUBSEQUENT WORK. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES FOR CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK.
- PRE-INSTALLATION INSPECTION AND APPROVAL: IT IS ESSENTIAL THAT A PRODUCT'S OR ASSEMBLY'S INSTALLER APPROVE SUBSTRATES AND OTHER SUPPORT CONDITIONS PRIOR TO PROCEEDING WITH THE INSTALLATION OF THE PRODUCT OR ASSEMBLY. IT SHALL BE UNDERSTOOD BY ALL PARTIES THAT INSTALLATION OF THE PRODUCT OR ASSEMBLY INDICATES APPROVAL OF THE SUBSTRATE AND SUPPORT CONDITIONS BY THE INSTALLER OF THE PRODUCT OR ASSEMBLY.



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A&M ELECTRIC BUS/VEHICLE SERVICE BAY

ALABAMA A&M UNIVERSITY,
C/O DEPARTMENT OF TRANSPORTATION
315 PATTON HALL, NORMAL, AL 35762

PROJECT: 21022

DRAWN: AWP

DATE: 2/21/2022

REVISIONS

SHEET TITLE

TITLE SHEET

SHEET NO.

T1.0

I. SITEWORK

1. SCOPE & GENERAL NOTES

- A. FURNISH ALL LABOR, MATERIALS, TOOLS, AND EQUIPMENT REQUIRED FOR CLEARING, GRUBBING, EROSION CONTROL AND GRADING, PAVING, STRUCTURES, DRAINAGE, SOIL TREATMENT, ETC. IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS.
- B. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALABAMA A&M UNIVERSITY REQUIREMENTS, SPECIFICATIONS, AND REGULATIONS.
- C. CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF THE PROPOSED IMPROVEMENTS AND CONSTRUCTION AS SHOWN THROUGHOUT THE PLANS.
- D. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS DURING CONSTRUCTION FOR PROTECTION OF ADJACENT PROPERTIES, ROADWAYS, AND WATERWAYS.
- E. ALL MATERIAL, EQUIPMENT, DEBRIS, ETC. DESIGNATED TO BE REMOVED FROM THE SITE SHALL BE REMOVED AND DISPOSED OF ACCORDING TO CURRENT LAWS AND REGULATIONS.
- F. CONTRACTOR SHALL MAINTAIN A SAFE, CLEAN WORK SITE, SHALL PROPERLY STORE MATERIALS AND EQUIPMENT AND REMOVE TRASH FROM THE WORK SITE DAILY.
- G. FUEL TANKS SHALL NOT BE STORED ON ROAD R.O.W./SHOULDER OVERNIGHT. VEHICLES TRANSPORTING FUEL, CHEMICALS, FERTILIZERS, ETC. ONTO THE R.O.W. SHALL NOT BE LEFT UNATTENDED.
- H. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM EXISTING DRAWINGS AND SURVEY. THE ENGINEER MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.
- I. THE CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS, ELEVATIONS, AND SITE TOPOGRAPHY PRIOR TO CONSTRUCTION. IF CONFLICTS ARE FOUND THAT SHOULD ALTER THE PERFORMANCE OF THE WORK THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE CONSTRUCTION SUPERVISOR OR THE ENGINEER.
- J. THE ENGINEER DOES NOT ACCEPT OR ASSUME ANY RESPONSIBILITY REGARDING THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION SELECTED BY THE CONTRACTOR. IT IS THE INTENT OF THESE DRAWINGS TO SHOW THE COMPLETED PRODUCT OF WORK. FURTHER, THE ENGINEER IS NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS AND/OR PROGRAMS RELATING TO THE PERFORMANCE OF THE WORK UNDER THIS CONTRACT.

2. CLEARING & GRUBBING

- A. GRASS, STUMPS AND ROOTS ARE TO BE STRIPPED FROM PROPOSED EXCAVATION, EMBANKMENT, PAVED AND BUILDING AREAS. CONTRACTOR SHALL REMOVE ALL STUMPS IN THEIR ENTIRETY AND SHALL REMOVE ROOTS GREATER THAN 3" IN DIAMETER TO A MINIMUM OF 18" BELOW ALL REQUIRED STRUCTURE AND PAVEMENT AREAS.
- B. ALL TRASH, WEEDS, BRUSH AND ROOTS SHALL BE REMOVED FROM THE SITE.
- C. ALL TOPSOIL SHALL BE STOCKPILED DURING GRADING OPERATIONS AND PLACED IN LANDSCAPE AREAS AS SHOWN ON THE PLANS.

3. GRADING OPERATIONS

- A. PRIOR TO BEGINNING ANY EARTHWORK ON SITE, THE CONTRACTOR SHALL HAVE IN PLACE ALL REQUIRED EROSION CONTROL MEASURES NECESSARY TO PREVENT SILTATION FROM LEAVING THE SITE. THE WAYS, MEANS, AND METHODS FOR CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. THE OWNER AND ENGINEER WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S LACK OR NON-MAINTENANCE OF EROSION CONTROL PRACTICES.
- B. ALL SITE GRADING, EXCAVATION, FILL, COMPACTION AND EARTHWORK OPERATIONS SHALL BE PERFORMED UNDER THE SUPERVISION OF A QUALIFIED GEOTECHNICAL ENGINEER. UNIVERSITY WILL PROVIDE AND PAY COSTS FOR ON-SITE GEOTECHNICAL ENGINEERING SERVICES TO INCLUDE PROOF ROLL INSPECTION, SOIL TESTING AND COMPACTION TESTING.
- C. ALL TOPSOIL, VEGETATION, DEBRIS, POORLY COMPACTED OLD FILL AND NATIVE SOILS CONTAINING ORGANIC MATERIAL SHALL BE REMOVED FROM THE CONSTRUCTION SITE, OR, IF ACCEPTABLE, BE USED AS TOPSOIL ON GRADED AREAS. TOPSOIL SHALL BE STOCKPILED AND, WHEN EMBANKMENT IS COMPLETE, PLACED OVER THE GRADED AREA.
- D. ALL STRUCTURAL FILL MATERIAL AT THE SITE SHALL BE FREE OF ORGANICS AND DEBRIS. FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM 98 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY STANDARD PROCTOR ASTM D-698. LIFT THICKNESS FOR GENERAL FILLS SHALL BE LIMITED TO 8" LOOSE MEASURE. BACKFILLING IN LIMITED ACCESS AREAS SUCH AS UTILITY TRENCHES SHALL HAVE A LIFT THICKNESS LIMITED TO 6" LOOSE MEASURE.
- E. ALL PROOFROLLING OPERATIONS SHALL BE OBSERVED BY A COMPETENT GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER CAN PROVIDE DIRECTION AS TO THE DEPTH AND EXTENT OF REQUIRED UNDERCUTTING. THE GEOTECHNICAL ENGINEER CAN ALSO PROVIDE ALTERNATIVES TO UNDERCUTTING WHERE APPROPRIATE.
- F. AFTER STRUCTURES AND PAVEMENTS ARE COMPLETED AND ALL PIPING TRENCHES BACKFILLED, THE AREAS TO BE LANDSCAPED SHALL BE FINE GRADED AND PREPARED FOR TOPSOIL. TOPSOIL SHALL BE FREE OF ROOTS, STUMPS AND DEBRIS AND PLACED TO 4" DEPTH IN ALL LANDSCAPE AREAS.
- G. LANDSCAPE AREAS SHALL INCLUDE ALL AREAS, EXCLUDING THE BUILDING, ROADWAY AND PARKING/GRAVEL AREAS, THAT WERE DISTURBED (GRADED, ETC.) DURING CONSTRUCTION. ALL LANDSCAPE AREAS SHALL RECEIVE A SUFFICIENT AMOUNT OF FERTILIZER INCORPORATED INTO THE SOIL AND SEED OR SOD TO INSURE A 100% VEGETATIVE COVER.
- H. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES USED BY THE CONTRACTOR SHALL BE REMOVED UPON COMPLETION OF THE PROJECT AND THE SITE SHALL BE CLEANED UP AND RESTORED TO THE SATISFACTION OF THE OWNER.

II. UTILITIES

1. SCOPE & GENERAL NOTES

- A. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, FITTINGS, MISCELLANEOUS APPURTENANCES AND TESTING SERVICES NECESSARY FOR THE INSTALLATION OF ALL SITE UTILITIES WORK REQUIRED TO ACCOMPLISH THE CONTRACT.
- B. ALL RULES AND REGULATIONS COVERING THE RESPECTIVE UTILITIES SHALL BE OBSERVED IN EXECUTING UTILITY INSTALLATION WORK. ACTIVE UTILITIES SHALL BE PROTECTED AS REQUIRED TO PERFORM CONTRACT. INACTIVE UTILITIES AND ABANDONED UTILITIES ENCOUNTERED IN EXCAVATING AND GRADING OPERATIONS SHALL BE REMOVED, PLUGGED, OR CAPPED AS REQUIRED.
- C. THE CONTRACTOR SHALL PHYSICALLY LOCATE AND VERIFY ALL UTILITY LOCATIONS PRIOR TO STARTING ANY DIGGING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIR ON ANY AND ALL DAMAGES TO EXISTING UTILITY LINES CAUSED BY THE CONTRACTOR'S CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO THE PROJECT.
- D. ANY DAMAGES TO EXISTING UTILITIES SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR OR AFFECTED UTILITY, AT THE CONTRACTOR'S EXPENSE.
- E. ALL EMBANKMENT AREAS SHALL BE FILLED AND COMPACTED PRIOR TO EXCAVATION OF UTILITY TRENCHES.
- F. CONTRACTOR SHALL PROVIDE ALL NECESSARY SAFETY PRECAUTIONS FOR THE VARIOUS TYPES OF CONSTRUCTION REQUIRED BY THIS PROJECT INCLUDING PRECAUTIONS ASSOCIATED WITH WORKING IN TRENCHES AND AROUND ACTIVE UTILITIES. THE PROJECT ENGINEER WILL NOT STAY ON THE JOB SITE TO SUPERVISE ANY WORK, SAFETY FEATURES, OR PRECAUTIONS.

2. STORM SEWER

- A. ALL STORM SEWER UTILITY MATERIALS AND INSTALLATION, INCLUDING STORM DRAINS, CULVERTS, DRAINAGE PIPE, MANHOLES, CLEANOUTS, ETC., SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE CITY OF HUNTSVILLE ENGINEERING DEPARTMENT STANDARDS FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS AND THE CITY OF HUNTSVILLE REGULATIONS AND TECHNICAL GUIDELINES FOR STORMWATER MANAGEMENT.
- B. REINFORCED CONCRETE PIPE FOR STORM SEWER APPLICATIONS SHALL BE CLASS III, MINIMUM AND SHALL CONFORM TO ALL REQUIREMENTS OF ASTM C-76 OR C-655 FOR CIRCULAR PIPE AND ASTM C506 FOR ARCH PIPE.
- C. PLASTIC PIPE FOR STORM SEWER APPLICATIONS SHALL MEET OR EXCEED ASTM F2648 STANDARDS FOR DUAL WALL PLASTIC PIPE. PIPE SHALL BE ADS N-12 ST 18 PIPE, OR APPROVED EQUIVALENT. PLASTIC PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM D2321 AND ADS RECOMMENDED GUIDELINES.
- D. REQUIRED STORM DRAINAGE PIPES SHALL BE BEDDED IN MINIMUM 4" OF CRUSHED AGGREGATE.
- E. REQUIRED CONCRETE CATCH BASINS/INLET BOXES SHALL BE CAST IN PLACE.
- F. PLASTIC INLET BOXES MAY BE ALLOWED IN NON-TRAFFIC AREAS. PLASTIC CATCH BASIN/INLETS SHALL BE NYLOPLAST NDS 18" SQUARE HDPE CATCH BASIN, OR APPROVED EQUIVALENT.

III. CONCRETE

1. SCOPE & GENERAL NOTES

- A. FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR THE CONSTRUCTION OF ALL CONCRETE AND STEEL WORK REQUIRED TO ACCOMPLISH THE CONTRACT.
- B. SEE DRAWINGS FOR LOCATION, SIZE, AND SHAPE OF CONCRETE WORK INCLUDING RETAINING WALLS, FOOTINGS, SLABS, SIDEWALKS, ETC.

2. CONCRETE MIX

- A. PORTLAND CEMENT SHALL COMPLY WITH ASTM •C-150.
- B. CONCRETE AGGREGATES SHALL COMPLY WITH ASTM •C-33.
- C. WATER SHALL BE POTABLE.
- D. REINFORCING BARS SHALL COMPLY WITH ASTM •A-615-83(S1), GRADE 60.
- E. WELDED WIRE MESH REINFORCEMENT SHALL BE AS SHOWN ON THE PLANS AND SHALL COMPLY WITH ASTM •A-185-79.
- F. READY MIXED CONCRETE SHALL COMPLY WITH ASTM •C-94 AND AS FOLLOWS:
- o. ALL CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH NOT LESS THAN 4,000 PSIAS DETERMINED BY ASTM •C-31 AND C-39.
- b. CONCRETE SHALL CONTAIN AIR-ENTRAINING ADMIXTURE TO PROVIDE 3%-6% AIR CONTENT AND COMPLY WITH ASTM •C-260.
- c. CONCRETE SHALL BE DELIVERED AT SITE WITH SLUMP BETWEEN 3" AND 4".
- d. CONCRETE SHALL NOT HAVE MORE THAN ONE GALLON OF WATER PER C.Y. ADDED ON SITE. CONTRACTOR WILL KEEP DELIVERY TICKETS AND PROVIDE OWNER WITH COPIES AS NECESSARY.
- e. TEMPERATURE OF CONCRETE AT TIME OF PLACEMENT SHALL NOT BE BELOW 50° F, NOR EXCEED 90° F.

3. TESTING

- A. UNIVERSITY TO PROVIDE AND PAY COSTS FOR TEST REPORTS FOR CONCRETE USED IN RETAINING WALLS, FOOTINGS, SLABS, AND SIDEWALKS AND ALL SPECIAL INSPECTIONS.
- B. SAMPLES SHALL BE MADE AS PER ASTM •C-172 "METHOD OF SAMPLING FRESH CONCRETE."

4. PLACEMENT

- A. CONCRETE SHALL BE THOROUGHLY CONSOLIDATED DURING PLACEMENT, AND SHALL BE WORKED AROUND REINFORCEMENT WITH MECHANICAL VIBRATORS.
- B. EXTERIOR CONCRETE PAVING AND SIDEWALKS SHALL RECEIVE A NON-SLIP BROOM FINISH.

IV. GROUND PREPARATION, FERTILIZATION AND GRASSING

1. SCOPE & GENERAL NOTES

- A. THE TOTAL DISTURBED AREA SHALL BE MACHINED TO A SMOOTH SURFACE MATCHING THE ADJACENT OR ADJOINING GROUND SURFACES AND THE GROUND PROFILE ON THE PLANS. THE GROUND PREPARATION BEFORE SEEDING/SODDING SHALL CONSIST OF CULTIVATION TO A LOOSE DEPTH OF APPROXIMATELY 3-4" MINIMUM AND THE APPLICATION OF LIME TO THE SOIL AT THE RATE OF 2 TONS PER ACRE. THE PLOWING, HARROWING, CULTIVATING AND ALL OTHER OPERATIONS SHALL BE PERFORMED WITH PROPER EQUIPMENT AND IN SUCH A MANNER AS TO BREAK UP ALL CLODS, LUMPS, OR EARTH BALLS, AND REMOVE ALL BOULDERS, STUMPS, LARGE ROOTS, OR OTHER PARTICLES WHICH WOULD INTERFERE WITH THE WORK AND WHICH WILL RESULT IN A SMOOTH UNIFORM, LOOSE, WELL BROKEN, AND FINE GRAINED SOIL; THUS PROVIDING A SUITABLE BED FOR SEED GRASS. THE GROUND SHALL BE PLOWED TO THE REQUIRED DEPTH THEN CULTIVATED WITH A ROTARY TILLER AND/OR DISC HARROW, IN BOTH DIRECTIONS, IF FEASIBLE, UNTIL APPROVED. IN SMALL OR INACCESSIBLE AREAS THE USE OF HAND TOOLS WILL BE PERMITTED. THE CONTRACTOR SHALL ADD SUFFICIENT WATER TO WET THE SOIL IN ORDER TO PREPARE THE GROUND TO BE SEEDED/SODDED. 920 POUNDS OF 13-13-13 COMMERCIAL GRADE FERTILIZER PER ACRES OF GROUND SHALL BE SPREAD UNIFORMLY INTO THE AREAS TO BE PLANTED. THE FERTILIZER SHALL BE WELL PULVERIZED AND FREE OF LUMPS WHEN APPLIED. IN NO CASE SHALL FULL STRENGTH FERTILIZER BE PERMITTED IN DIRECT CONTACT WITH THE SEEDS. WHEN FERTILIZERS ARE APPLIED HYDRAULICALLY, THEY MUST BE DILUTED SUFFICIENTLY AS DIRECTED SO THAT NO DAMAGE IS DONE TO EITHER SEED OR ESTABLISHED GRASSES AND LEGUMES.
- B. TEMPORARY SEEDING SHALL BE CONDUCTED AS NECESSARY TO PREVENT EROSION AND, AT A MINIMUM, ON ALL STOCKPILES AND GRADED AREAS NOT TO BE DISTURBED FOR A PERIOD OF NO LESS THAN FOURTEEN DAYS. PERMANENT SEEDING SHALL BE APPLIED IN ALL AREAS AFTER FINAL GRADING HAS BEEN COMPLETED.
- C. SEEDING MIXTURES SHALL BE AS FOLLOWS:
- o. SEPTEMBER THROUGH MARCH WINTER
KENTUCKY BLUE GRASS 6 LBS/ACRE
PENSACOLA BAHIA 20 LBS/ACRE
b. RESEEDING WHITE CLOVER 30 LBS/ACRE
KENTUCKY 31 FESCUE 20 LBS/ACRE
- o. APRIL THROUGH JUNE SPRING
PENSACOLA BAHIA 20 LBS/ACRE
d. KENTUCKY 31 FESCUE 20 LBS/ACRE
COMMON LESPEDEZA (VAR. TENN.) 10 LBS/ACRE
BERMUDA GRASS 12 LBS/ACRE
- o. JUNE THROUGH AUGUST SUMMER
BERMUDA GRASS 6 LBS/ACRE
PENSACOLA BAHIA 20 LBS/ACRE
e. RESEEDING WHITE CLOVER 30 LBS/ACRE
KENTUCKY 31 FESCUE 20 LBS/ACRE
- D. SOWING OF SEED SHALL, IN GENERAL, FOLLOW PROMPTLY AFTER INCORPORATION OF FERTILIZER IN A UNIFORM MANNER AT THE RATES SPECIFIED FOR EACH SEED SPECIE. SOWING SHALL BE DONE BY APPROVED MECHANICAL SEEDERS. NO SOWING SHALL BE DONE DURING WINDY WEATHER, WHEN THE PREPARED SURFACE IS CRUSTED, OR WHEN THE GROUND IS FROZEN, WET, OR OTHERWISE IN A NON-TILLABLE CONDITION, UNLESS OTHERWISE DIRECTED. AFTER SEED HAS BEEN SOWN THE SEED BED SHALL BE COMPACTED IMMEDIATELY BY MEANS OF A CULTIPACKER, LIGHT ROLLER, OR APPROVED DRAG. THE AMOUNT OF WATER AND WHEN IT SHALL BE APPLIED SHALL BE THE CONTRACTOR'S RESPONSIBILITY UNTIL ACCEPTANCE OF THE PROJECT.
- E. THE CONTRACTOR SHALL INSTALL A DOUBLE-NET EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 2:1. EROSION CONTROL BLANKET SHALL BE TENSAR, NORTH AMERICAN GREEN, ERONET S150 EROSION CONTROL BLANKET, OR APPROVED EQUIVALENT.
- F. THE ACCEPTANCE OF DESIGNATED SEED AREA WILL BE BASED ON VERIFICATION OF A SATISFACTORY STAND OF GRASS IN THE SEASON FOR EACH SPECIE REQUIRED BY THE MIX DESIGNATED FOR USE. IF A SATISFACTORY STAND OF GRASS IS NOT ESTABLISHED THEN THE AREA SHALL BE RE-SEEDED AND/OR SODDED WITHOUT ADDITIONAL COST TO THE OWNER.
- G. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING A SATISFACTORY STAND OF GRASS AND LEGUMES IN ACCORDANCE WITH THE SPECIFICATION.
- H. THE CONTRACTOR MAY, AT HIS OPTION, EMPLOY ADDITIONAL MEASURES (OTHER THAN THOSE SPECIFIED) TO PREVENT LOSS OF, OR DAMAGE TO, THE WORK RESULTING FROM THE EFFECTS OF WIND AND/OR WATER. NO ADDITIONAL COMPENSATION WILL BE MADE FOR THE EMPLOYMENT OF SUCH ADDITIONAL MEASURES.
- I. THE EROSION CONTROL WORK SHALL COVER ALL DISTURBED AREAS WITHIN THE PROJECT BOUNDARY. EROSION CONTROL WORK SHALL INCLUDE ALL DISTURBED AREAS AS NECESSARY TO COMPLETE THE GRASSING OF THE PROJECT.

PLANS LEGEND

EXISTING BLDG.	
EXISTING ASPHALT PAVEMENT	
EXISTING GRAVEL ROAD	
EXISTING SIDEWALK	
EXISTING ELEVATION CONTOUR, MINOR	
EXISTING ELEVATION CUNTOR, MAJOR	
EXISTING PROPERTY/R-O-W LINE	
EXISTING CHAIN LINK FENCE	
EXISTING WATER MAIN	
EXISTING SAN. SEWER MAIN	
EXISTING SAN. SEWER MANHOLE	
EXISTING NATURAL GAS MAIN	
EXISTING OVERHEAD ELECTRIC LINE	
EXISTING UNDERGROUND ELECTRIC LINE	
EXISTING UTILITY POLE	
EXISTING BURIED FIBER OPTIC	
NEW CONSTRUCTION	
REQD CONC CURB	
REQD ELEVATION CONTOUR MAJOR	
REQD ELEVATION CONTOUR MINOR	
REQD STORM DRAIN	
REQD EXTERIOR LIGHT FIXTURE	
SILT FENCE	
REQUIRED	REQD
CONCRETE	CONC
PAVEMENT	PVMNT

ISSUED
FOR
CONSTRUCTION



REV #	DATE	DESCRIPTION					

GENERAL NOTES, & LEGEND

ALABAMA A&M UNIVERSITY
ELECTRIC BUS/VEHICLE SERVICE BAY
NORMAL, ALABAMA

DRAWN:	JAR
CHECKED:	JAR
DATE:	FEB 9, 2022
PROJECT NUMBER:	21816
SHEET NUMBER:	C001

PROJECT NOTES

- A. THE CONTRACTOR SHALL COORDIANTE WORK AND TIE-IN TO EXISTING CONSTRUCTION OF THE ADJACENT BUS PARKING AREA. CONTRACTOR SHALL TIE TO EXISTING PAVEMENT ELEVATIONS FOR ALL NEWLY PLACED CONCRETE.
- B. AN EXPANSION JOINT SHALL BE REQUIRED AT ALL AREAS WHEN NEW PAVEMENT ABUTS EXISTING ASPHALT AND/OR CONCRETE PAVEMENT.

ISSUED
FOR
CONSTRUCTION

CIVIL
R-G-S
ENGINEERS

RGS CIVIL DESIGN LLC
2822 TRELIS POST COURT
OWENS CROSS ROADS, AL 35763
(256) 503-9277

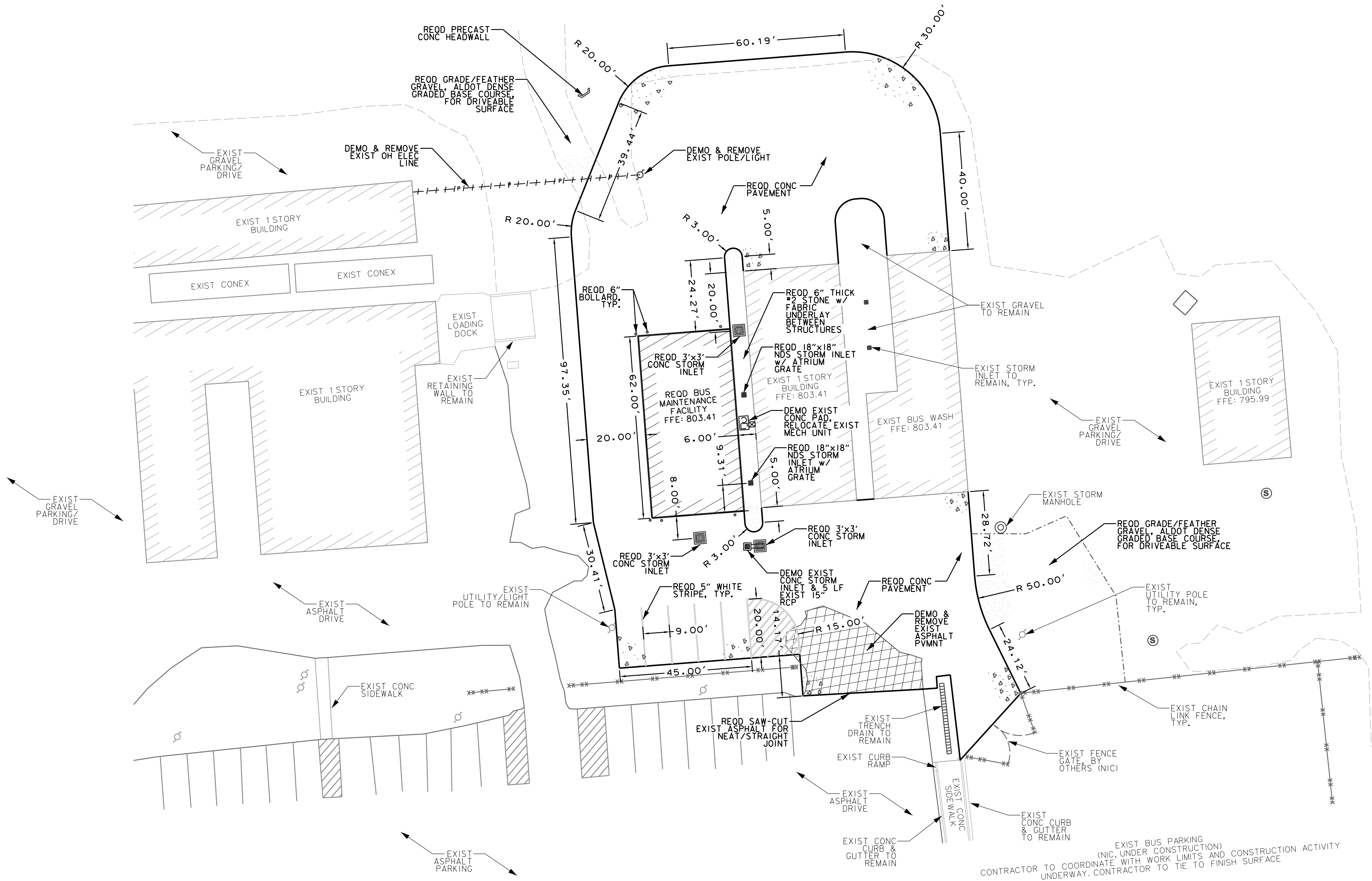


REV #	DATE	DESCRIPTION

SITE LAYOUT PLAN

ALABAMA A&M UNIVERSITY
ELECTRIC BUS/VEHICLE SERVICE BAY
NORMAL, ALABAMA

DRAWN: JAR
CHECKED: JAR
DATE: FEB 9, 2022
PROJECT NUMBER: 21816
SHEET NUMBER: C100



SITE LAYOUT PLAN

SCALE: 1" = 20'

GRAPHIC SCALE: 1" = 20'

CONTRACTOR TO COORDINATE WITH WORK LIMITS AND CONSTRUCTION ACTIVITY UNDERWAY. CONTRACTOR TO TIE TO FINISH SURFACE



GRADING & SOIL CONDITION NOTES:

A. THE PRESENCE OF PREVIOUS FILL MATERIAL OF VARYING QUALITY IS KNOWN TO BE ON SITE. THE CONTRACTOR SHALL PLAN AND EXPECT TO UNDERCUT EXISTING MATERIAL IN ACCORDANCE WITH ALL GEOTECHNICAL ENGINEER'S GUIDANCE.

B. THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER AND SHALL PROVIDE 48 HOURS NOTICE PRIOR TO BEGINNING GRADING OPERATIONS.

C. FOR BIDDING PURPOSES, THE CONTRACTOR SHALL ASSUME A MINIMUM REQUIREMENT TO UNDERCUT EXISTING BUILDING AND PAVEMENT AREAS SUFFICIENT DEPTH TO PROVIDE 24" OF APPROVED, COMPACTED STRUCTURAL FILL MATERIAL BENEATH FOUNDATION/PAVEMENT SURFACE.



GRADING & DRAINAGE PLAN

SCALE: 1" = 20'

GRAPHIC SCALE: 1" = 20'

ISSUED FOR CONSTRUCTION

CIVIL

R-G-S

ENGINEERS

RGS CIVIL DESIGN LLC

2822 TRELIS POST COURT

OWENS CROSS ROADS, AL 35763

(256) 503-9277

ALABAMA

Professional Engineer

No. 34040

02/09/22

JACOB A. ROTH

REV #	DATE	DESCRIPTION

GRADING & DRAINAGE PLAN

ALABAMA A&M UNIVERSITY

ELECTRIC BUS/VEHICLE SERVICE BAY

NORMAL, ALABAMA

DRAWN: JAR

CHECKED: JAR

DATE: FEB 9, 2022

PROJECT NUMBER: 21816

SHEET NUMBER: C102

ISSUED
FOR
CONSTRUCTION

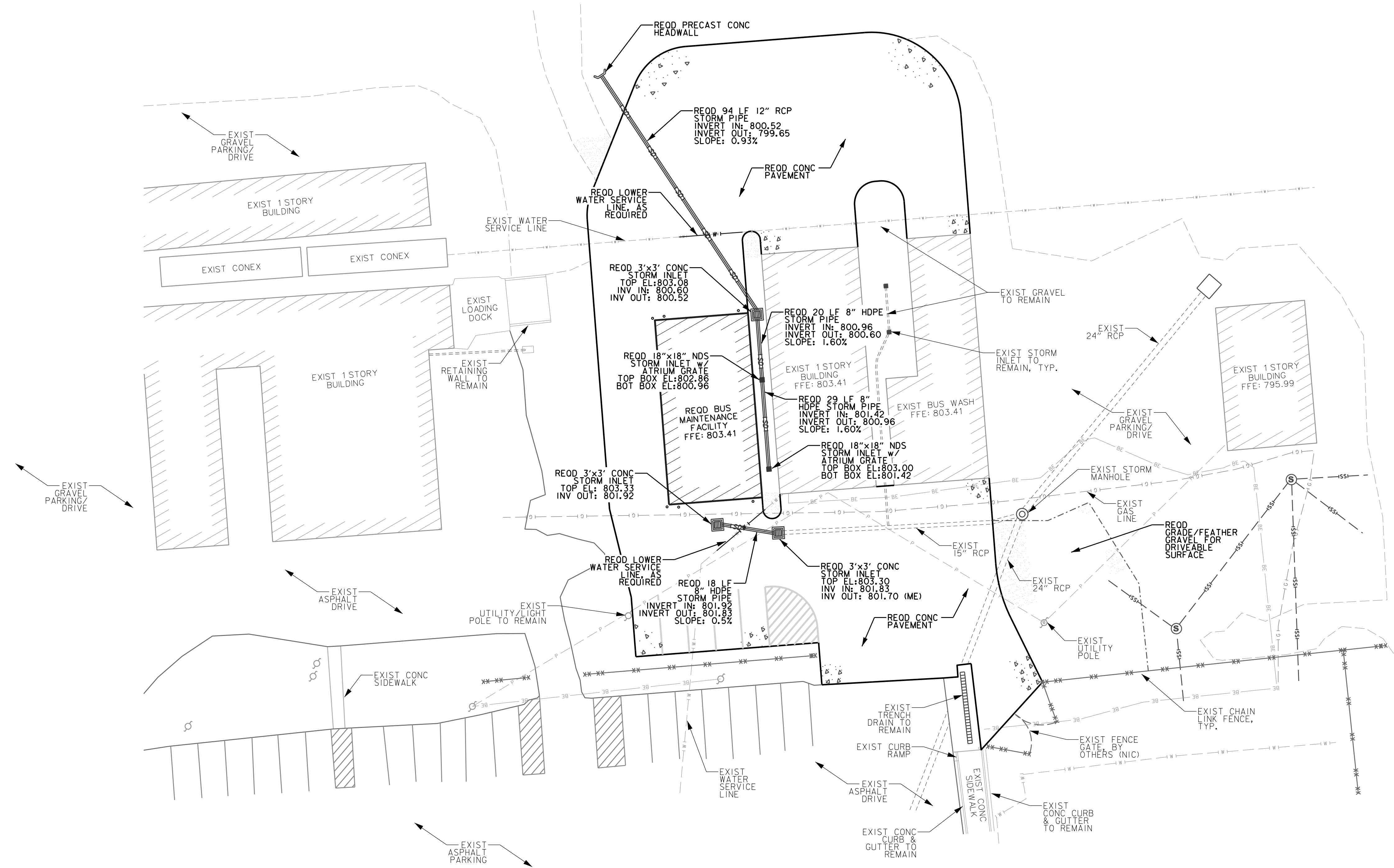
CIVIL
R-G-S
ENGINEERS
RGS CIVIL DESIGN LLC
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OWENS CROSS ROADS, AL 35763
(256) 503-9277



REV #	DATE	DESCRIPTION

SITE UTILITY PLAN
ALABAMA A&M UNIVERSITY
ELECTRIC BUS/VEHICLE SERVICE BAY
NORMAL, ALABAMA

DRAWN: **JAR**
CHECKED: **JAR**
DATE: **FEB 9, 2022**
PROJECT NUMBER: **21816**
SHEET NUMBER: **C103**



SITE UTILITY PLAN
SCALE: 1" = 20'
GRAPHIC SCALE: 1" = 20'

EROSION & SEDIMENT CONTROL NOTES
A. THE TOTAL DISTURBED AREA FOR THIS PROJECT IS 0.67 ACRES. AN ADEM NPDES CONSTRUCTION STORMWATER PERMIT IS NOT REQUIRED FOR THIS PROJECT. CONTRACTOR SHALL COMPLY WITH THE ALABAMA HANDBOOK FOR SEDIMENT CONTROL, EROSION CONTROL AND STORMWATER MANAGEMENT ON CONSTRUCTION SITES AND URBAN AREAS.

ISSUED
FOR
CONSTRUCTION

CIVIL
R-G-S
ENGINEERS

RGS CIVIL DESIGN LLC
2822 TRELIS POST COURT
OWENS CROSS ROADS, AL 35763
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REV #	DATE	DESCRIPTION

EROSION & SEDIMENT
CONTROL PLAN

ALABAMA A&M UNIVERSITY
ELECTRIC BUS/VEHICLE SERVICE BAY
NORMAL, ALABAMA

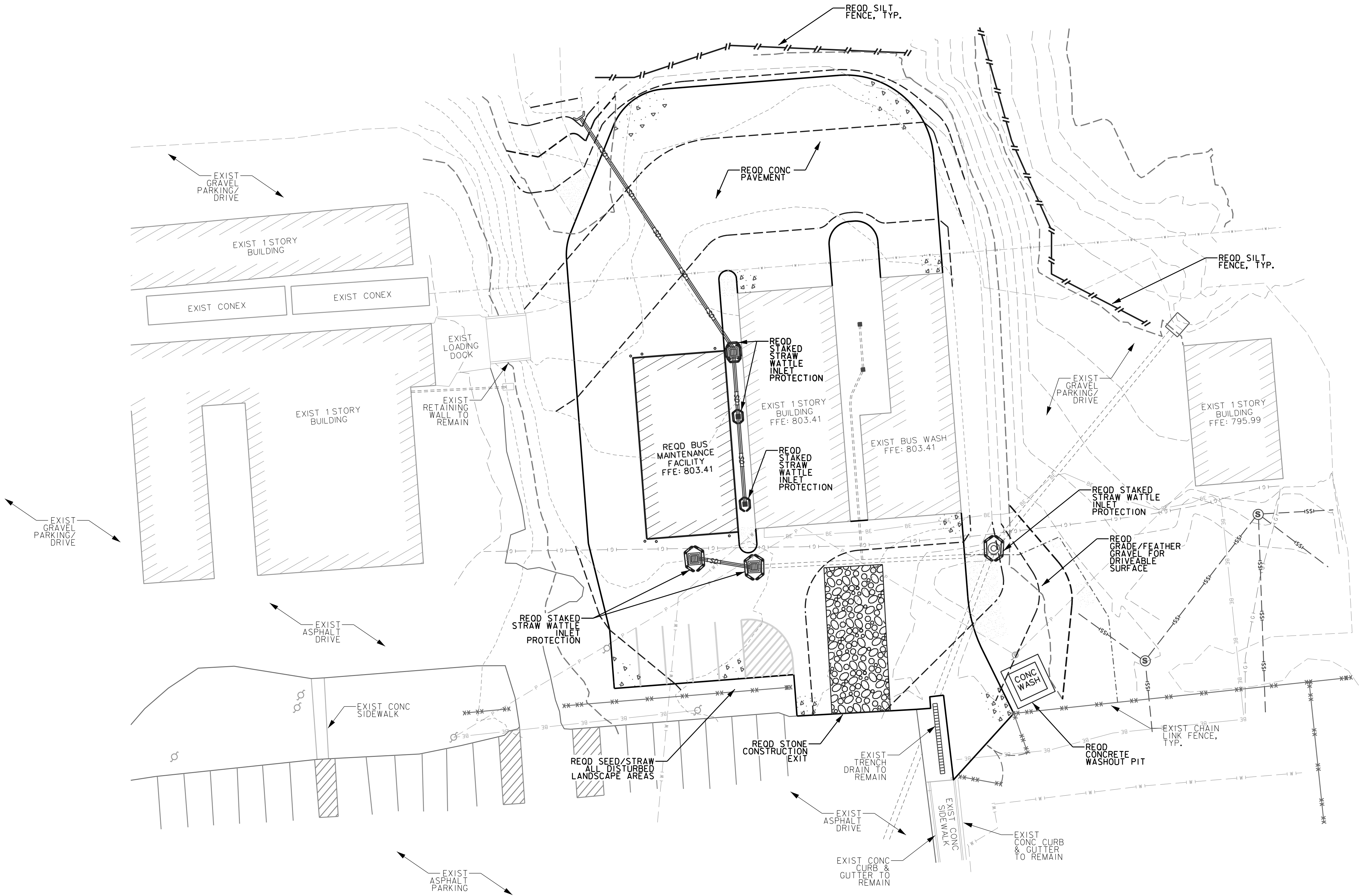
DRAWN: JAR

CHECKED: JAR

DATE: FEB 9, 2022

PROJECT NUMBER: 21816

SHEET NUMBER: C104



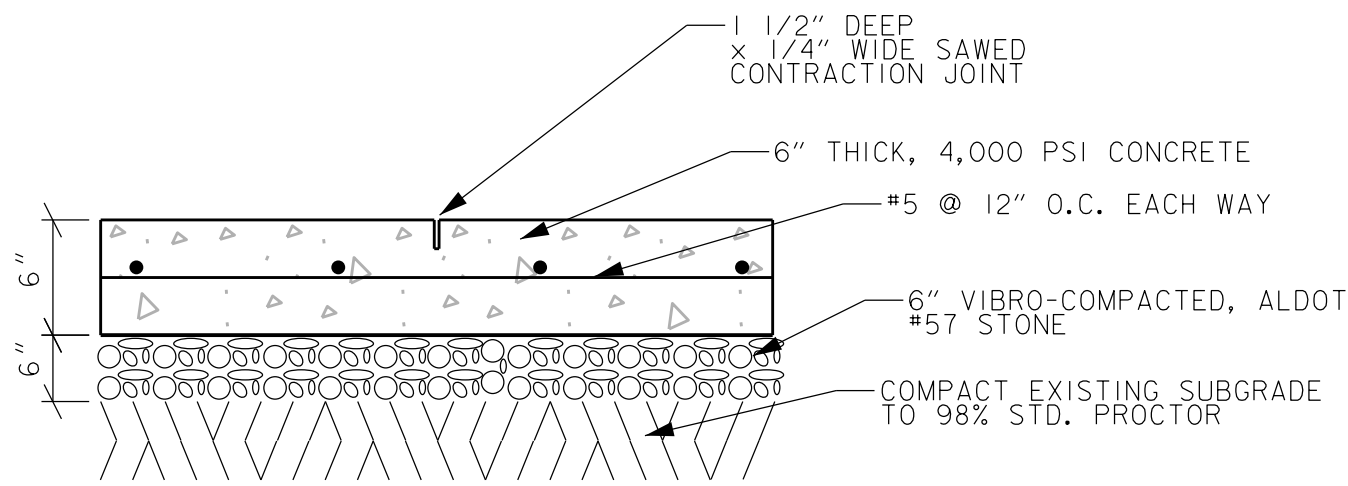
EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 20'

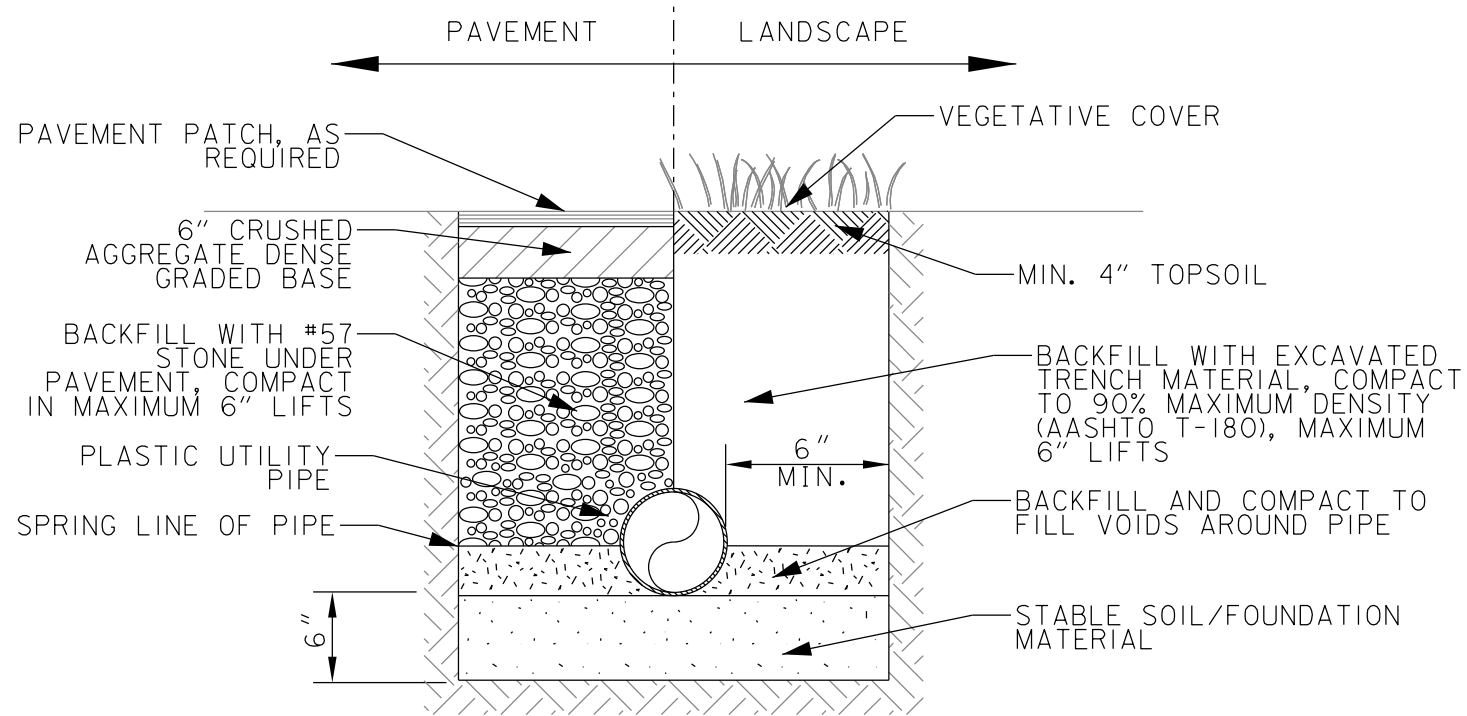


GRAPHIC SCALE: 1" = 20'

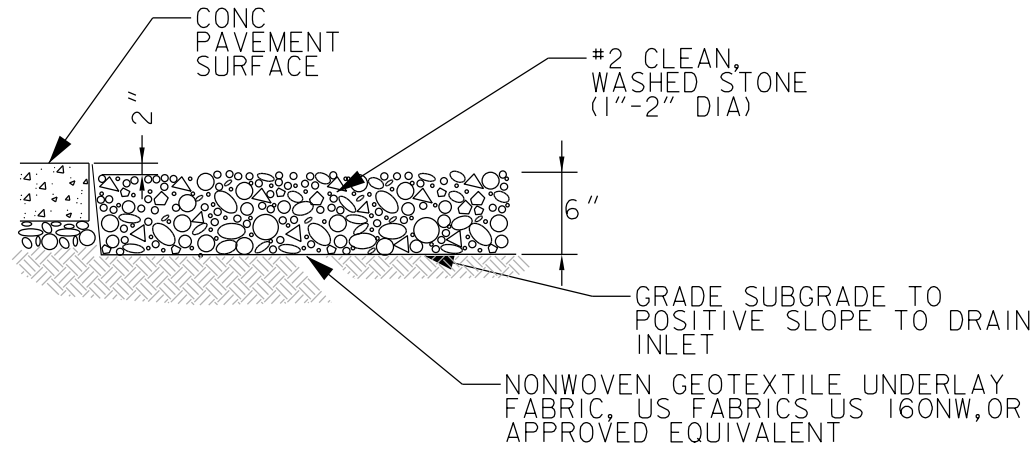




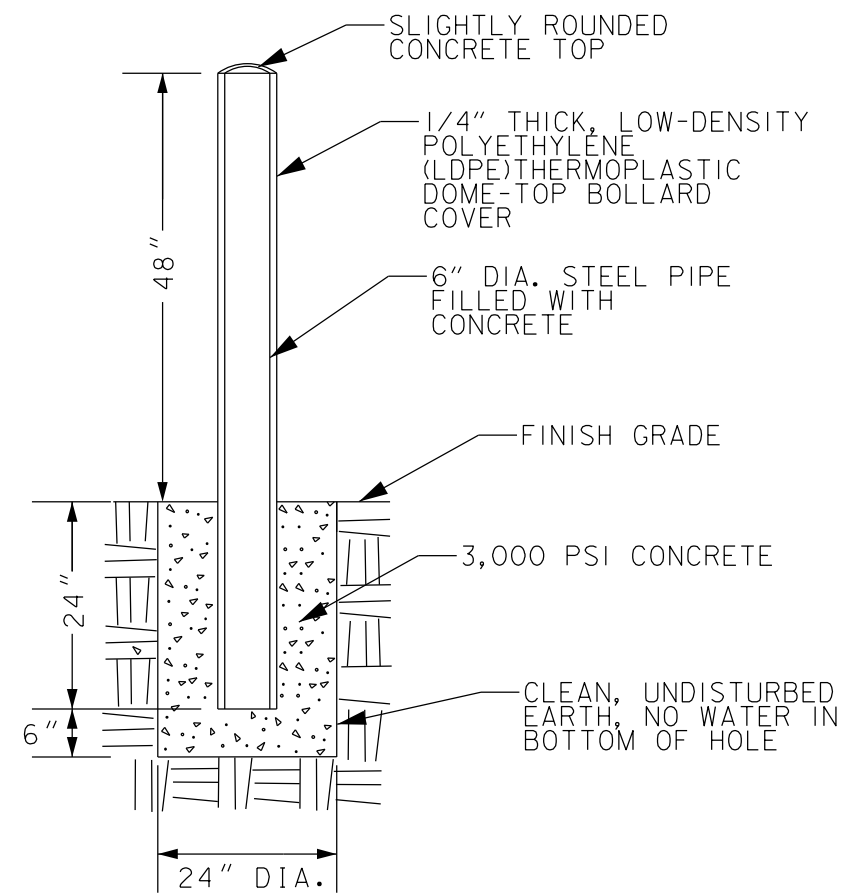
CONCRETE PAVEMENT SECTION
N.T.S.



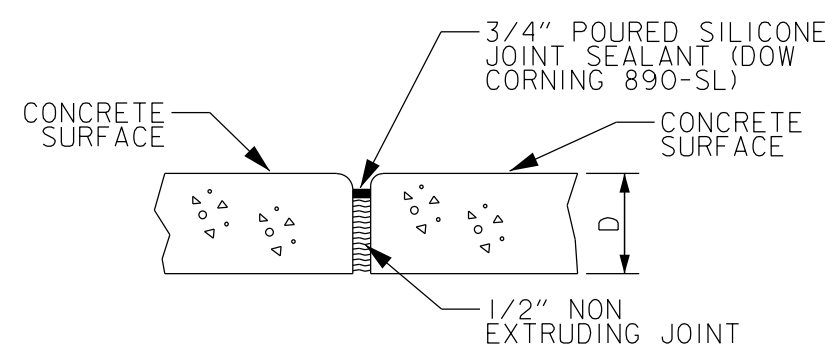
PLASTIC UTILITY PIPE TRENCH DETAIL
N.T.S.



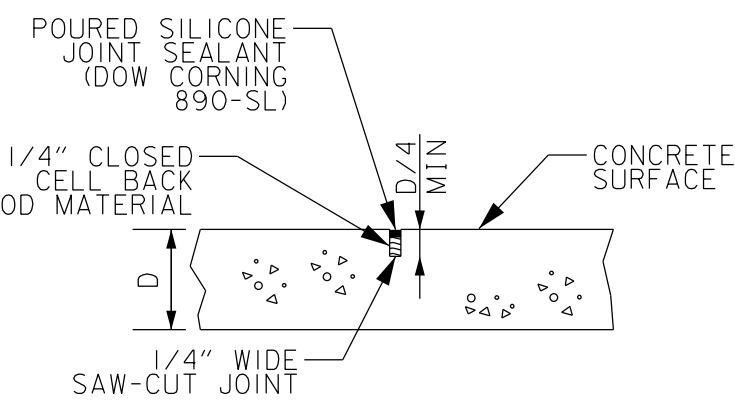
NON-TRAFFIC STONE INSTALLATION DETAIL
N.T.S.



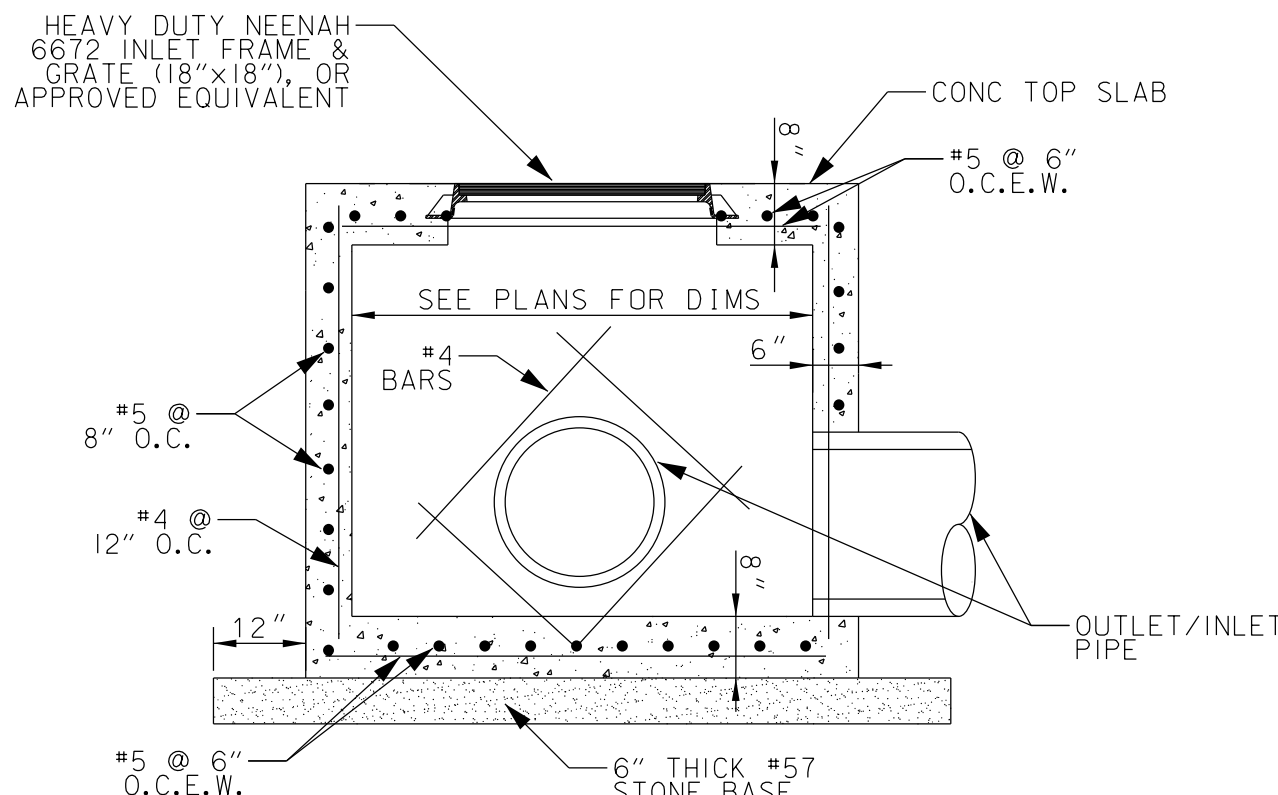
PROTECTIVE BOLLARD DETAIL
N.T.S.



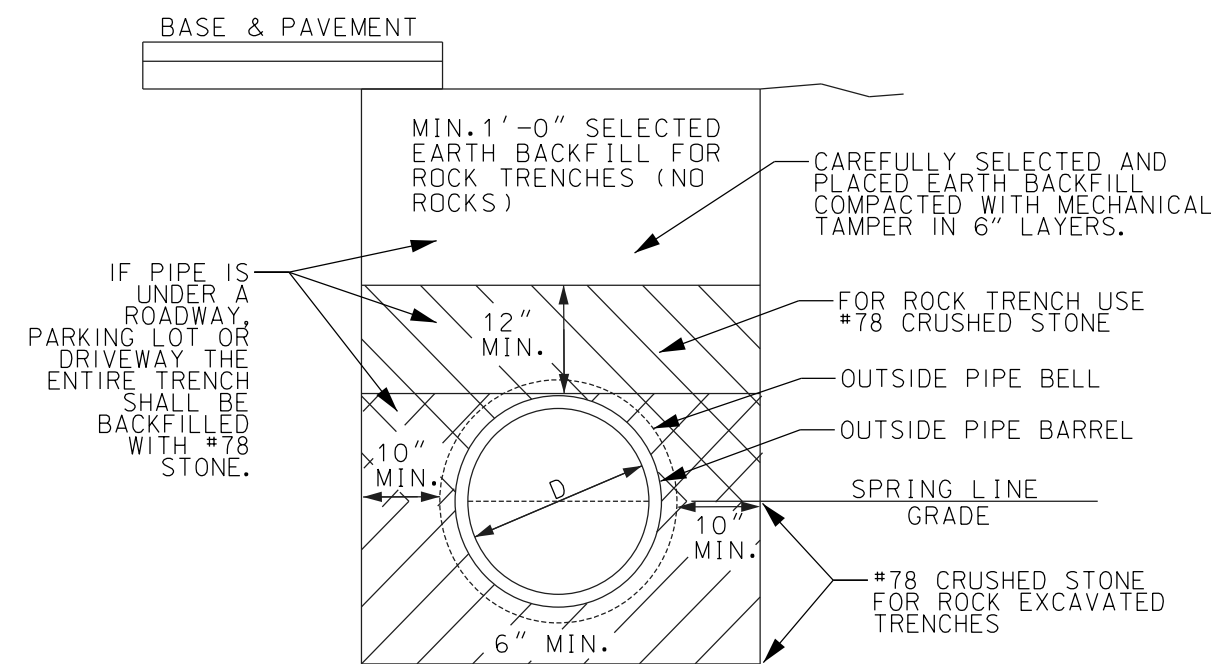
EXPANSION JOINT DETAIL
N.T.S.



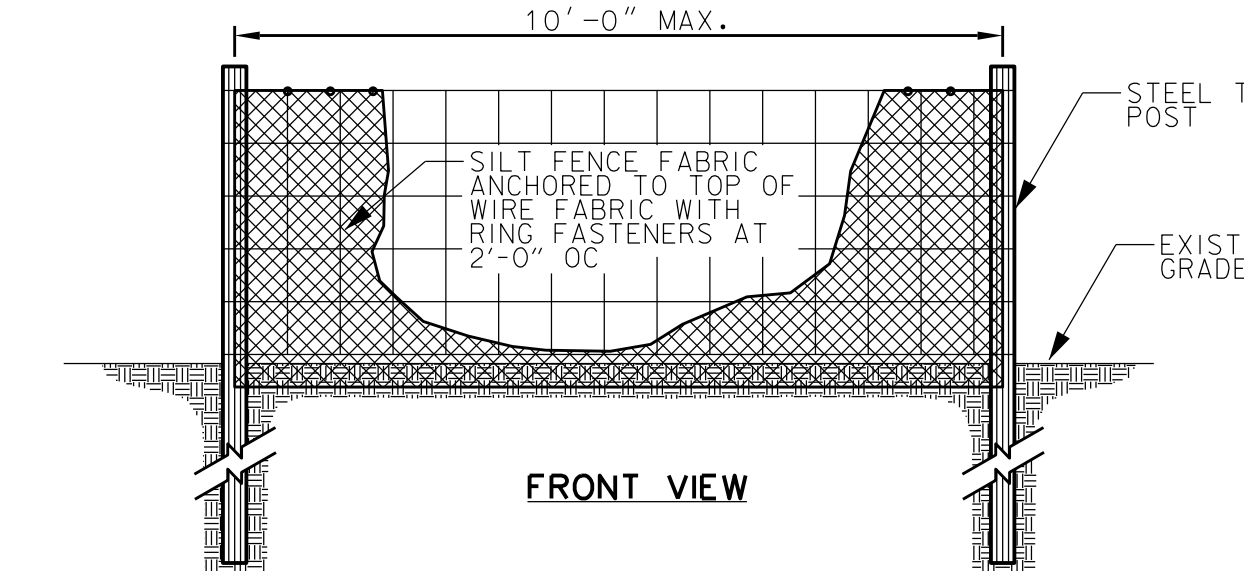
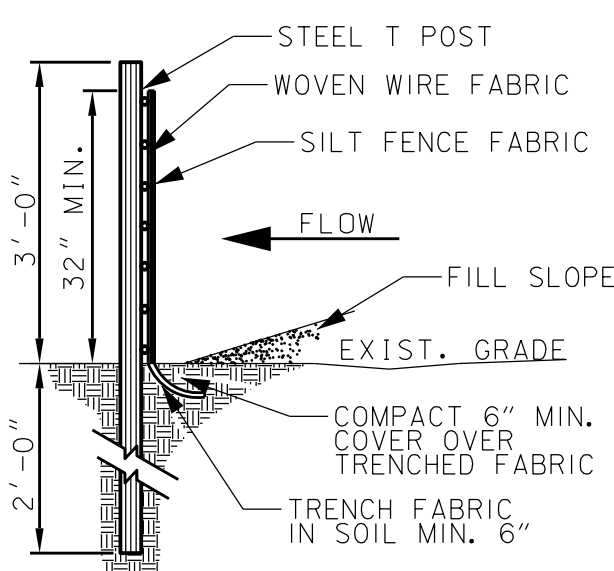
CONTRACTION JOINT DETAIL
N.T.S.



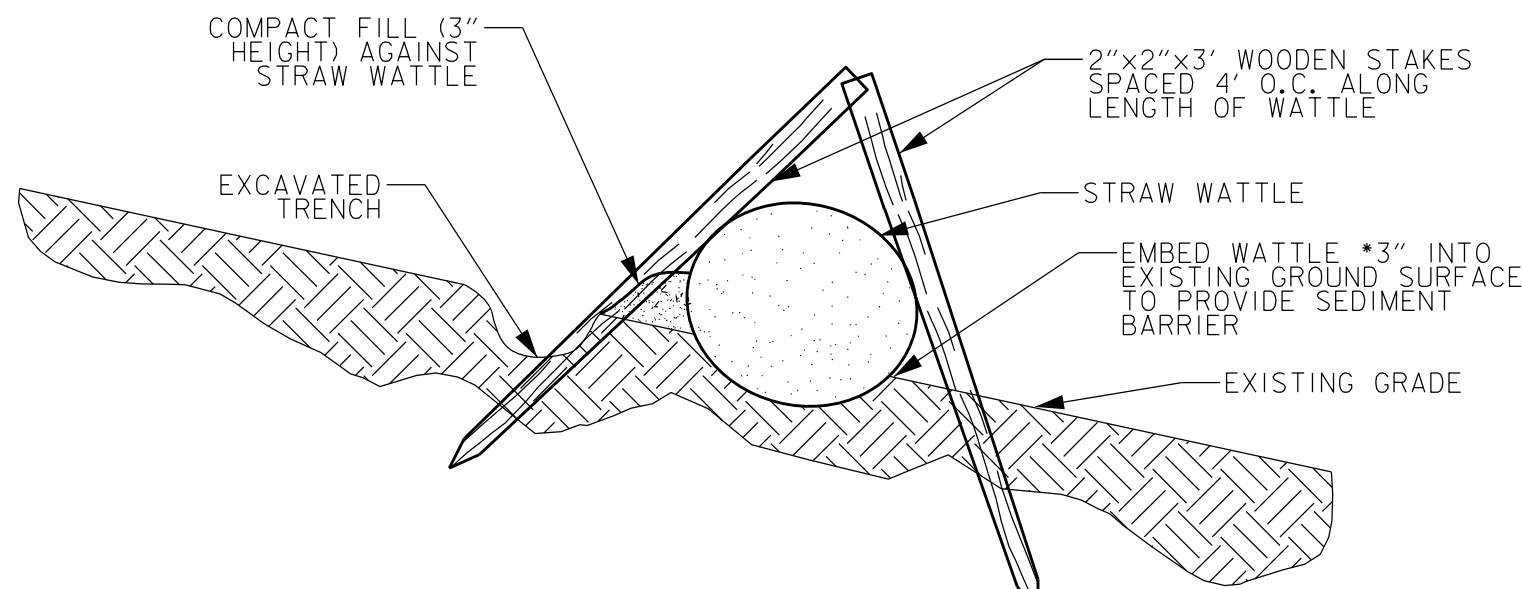
CONCRETE STORMWATER JUNCTION BOX DETAIL
N.T.S.



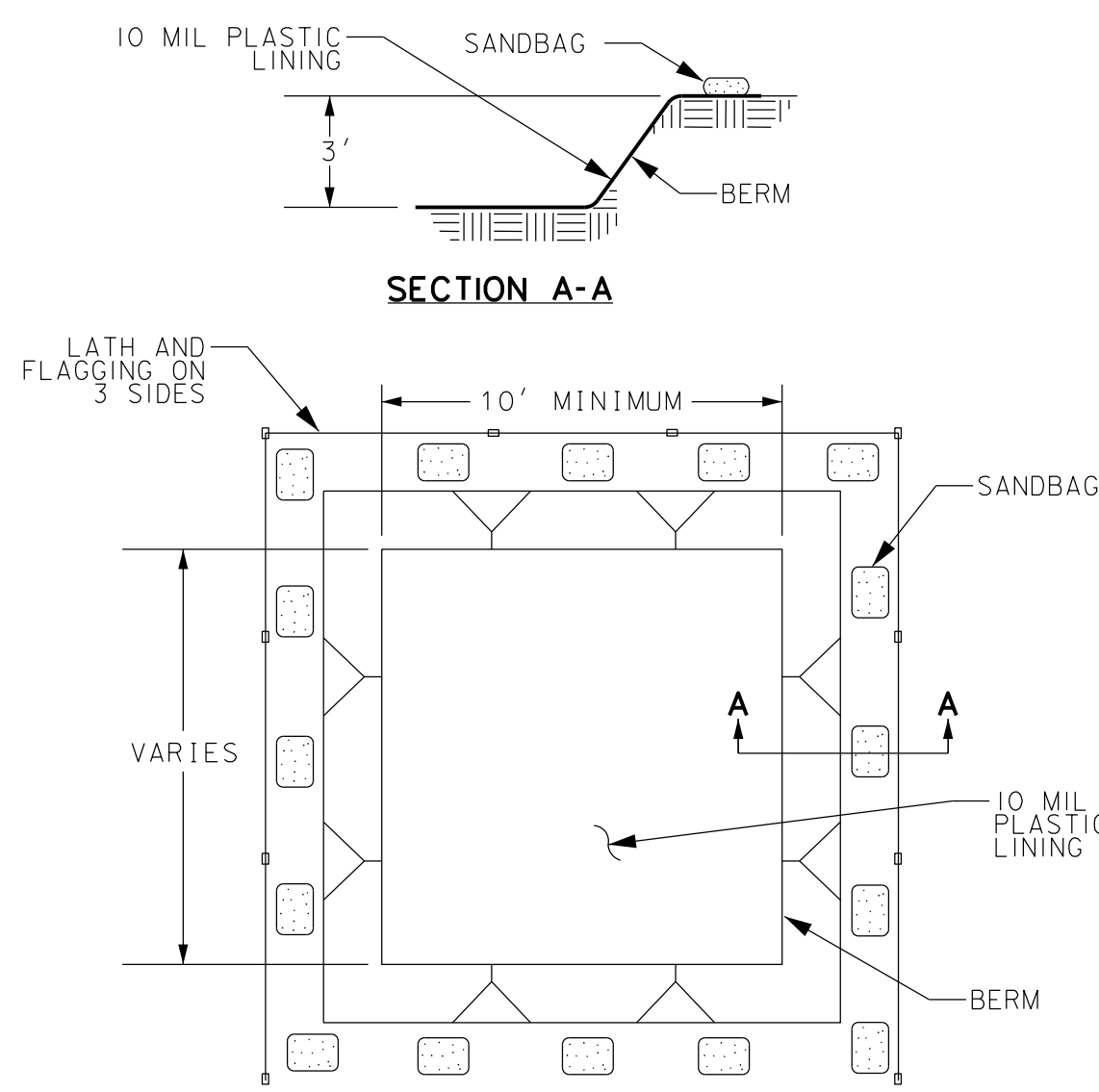
REINFORCED CONCRETE STORM PIPE TRENCH DETAIL
N.T.S.



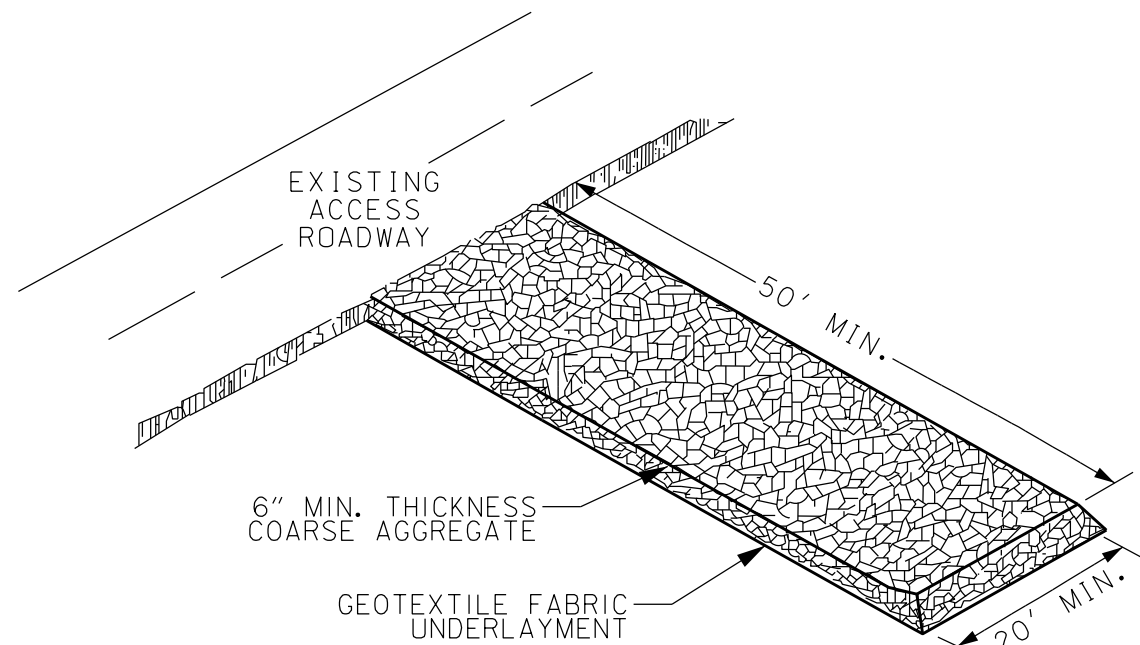
SILT FENCE DETAIL
N.T.S.



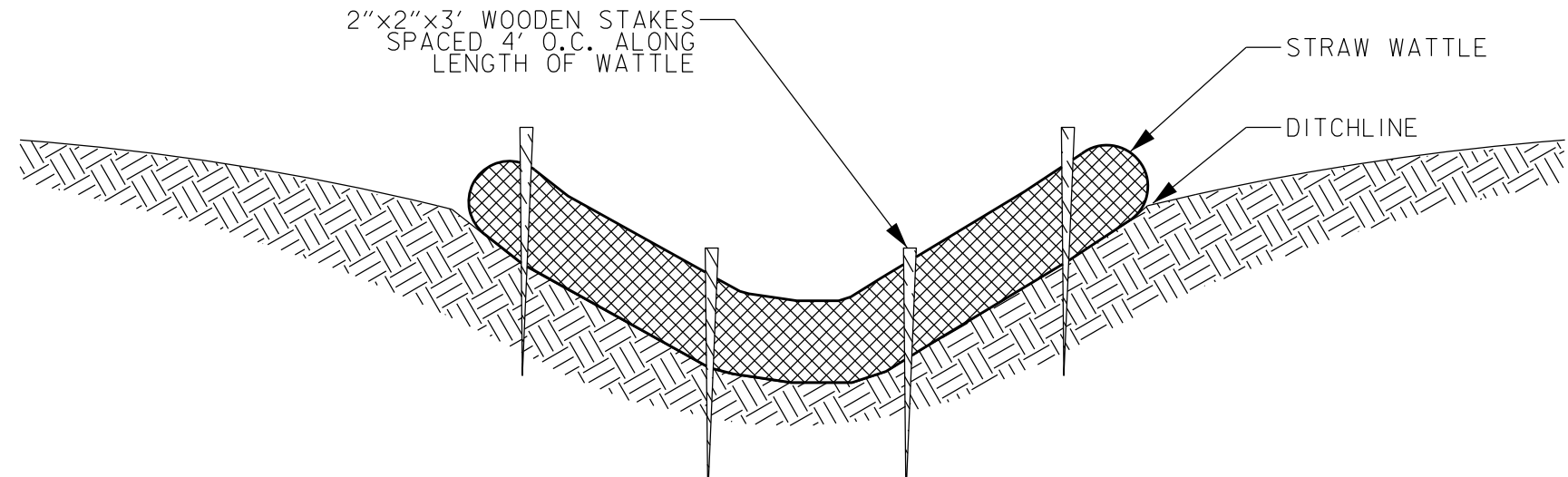
STRAW WATTLE INSTALLATION DETAIL
N.T.S.



CONCRETE WASHOUT PIT
N.T.S.



CRUSHED STONE CONSTRUCTION EXIT
N.T.S.



STRAW WATTLE CHECK DAM
N.T.S.

ISSUED
FOR
CONSTRUCTION

CIVIL
R-G-S
ENGINEERS
RGS CIVIL DESIGN LLC
2822 TRELIS POST COURT
OWENS CROSS ROADS, AL 35763
(256) 503-9277

ALABAMA
Professional Engineer
No. 34040
02/09/22
JACOB A. ROTH

REV #	DATE	DESCRIPTION

PROJECT CONSTRUCTION
DETAILS
ALABAMA A&M UNIVERSITY
ELECTRIC BUS/VEHICLE SERVICE BAY
NORMAL, ALABAMA

DRAWN: **JAR**
CHECKED: **JAR**
DATE: **FEB 9, 2022**
PROJECT NUMBER: **21816**
SHEET NUMBER: **C200**

BUILDING CODE/LIFE SAFETY NOTES

APPLICABLE CODES: ALABAMA STATE BUILDING CODE
2015 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL PLUMBING CODE
2015 INTERNATIONAL MECHANICAL CODE
2011 NATIONAL ELECTRICAL CODE
2015 INTERNATIONAL FIRE CODE
2013 NFPA 101 LIFE SAFETY CODE (FIRE MARSHALL)
2015 INTERNATIONAL ENERGY CONSERVATION CODE
2010 AMERICANS WITH DISABILITY ACT ACCESSIBILITY GUIDELINES

BUILDING OCCUPANCY TYPE: U-UTILITY/MISC., UNCONDITIONED; MAINTENANCE/REPAIR SHED (OPEN ON MINIMUM 2 SIDES) FOR ELECTRICALLY POWERED BUSES.

- NOT USED FOR ANY GAS, OIL OR SIMILAR MOTOR FUEL-POWERED VEHICLES.
- NOT USED FOR STORAGE OR CHARGING OF BATTERIES.

BUILDING AREA: 1820 SQFT

NO. OF OCCUPANTS:

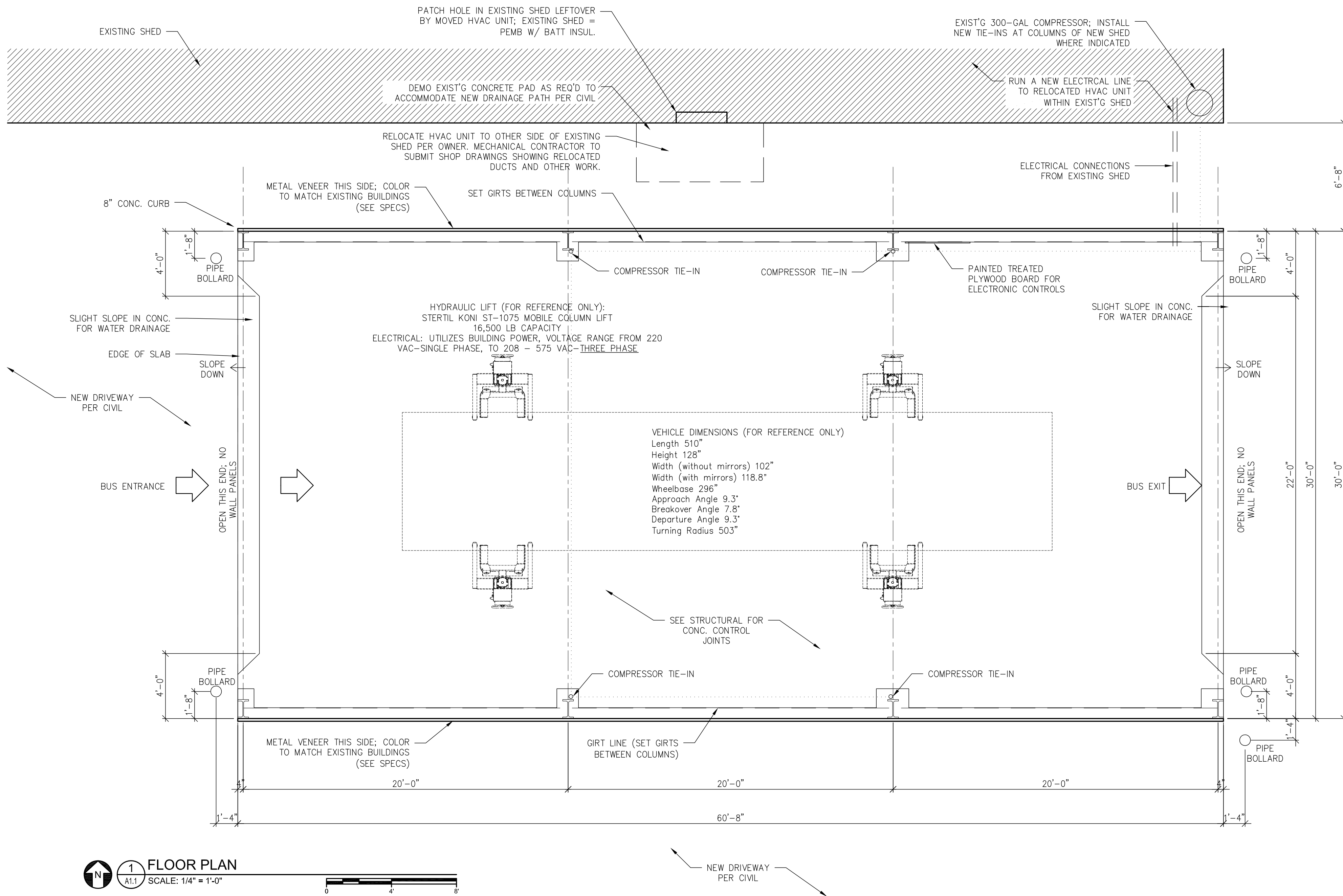
BUILDING CONSTRUCTION TYPE: III-B NON-SPRINKLERED

CONSTRUCTION MATERIALS: ENGINEERED STEEL FRAME ON CONCRETE SLAB ON GRADE, STEEL PANEL VENEER OVER GIRTS; AND STANDING SEAM METAL ROOF.

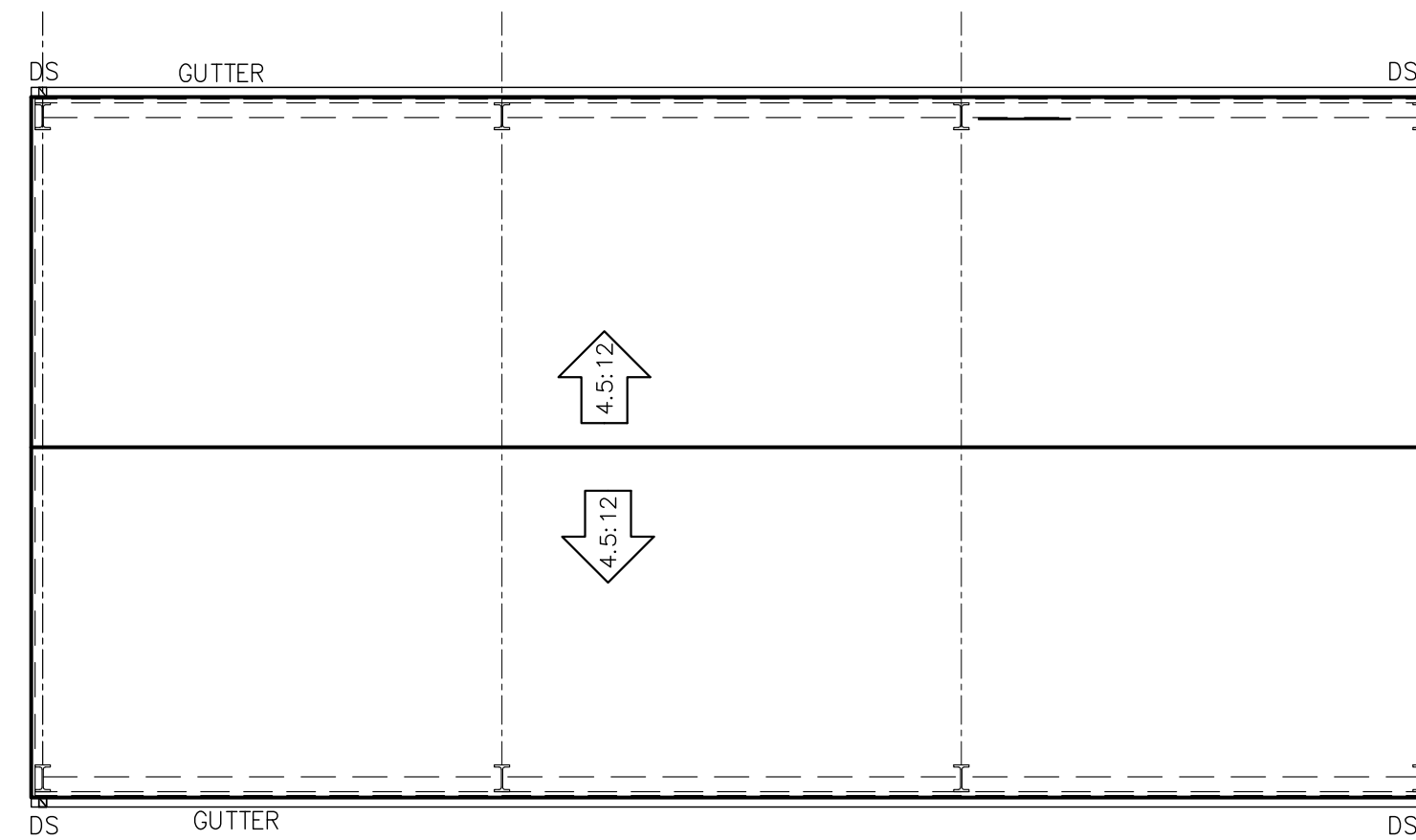
RESTROOMS: EXISTING RESTROOMS AND DRINKING FOUNTAIN ARE LOCATED ON SAME PROPERTY, WITHIN 170 FT FROM THIS BUILDING. EXISTING RESTROOMS AND FOUNTAIN MAY BE USED, PROVIDED THAT RESTROOM AND DRINKING FOUNTAIN ARE ALWAYS AVAILABLE WHILE BUILDING IS IN USE

ADDITIONAL CODE NOTES

- FIRE EXTINGUISHER: 15 LDS, 4A40BC RATING PER INTERNATIONAL FIRE CODE SECTION 906.
- PROVIDE NEW FIRE EXTINGUISHERS APPROXIMATELY WHERE SHOWN ON PLANS. ADD'L EXTINGUISHERS MAY BE REQUIRED BY THE FIRE MARSHALL.
- A STAMPED SET OF CONSTRUCTION DRAWINGS SHALL BE ON THE CONSTRUCTION SITE AT ALL TIMES.
- PRIOR TO THE BEGINNING OF CONSTRUCTION, THE GENERAL CONTRACTOR SHALL CONTACT INSPECTOR TO SCHEDULE A PRECONSTRUCTION MEETING TO ENSURE ALL REQUIRED PLANS HAVE BEEN SUBMITTED AND APPROVED BEFORE CONSTRUCTION BEGINS. IFC 2003 105.4
- EMERGENCY ILLUMINATION SHALL BE PROVIDED FOR NOT LESS THAN 1½ HOURS IN THE EVENT OF FAILURE OF NORMAL LIGHTING. EMERGENCY LIGHTING FACILITIES SHALL BE ARRANGED TO PROVIDE INITIAL ILLUMINATION THAT IS NOT LESS THAN AN AVERAGE OF 1FT CANDLE ALONG THE PATH OF EGRESS. NFPA 101 7.9.2.1. FIELD INSPECTOR WILL VERIFY ONSITE.
- ANY RATED WALLS TO BE LABELED WITH APPROPRIATE FIRE RATING.
- MAX. ½" RISE ALLOWED FROM EXTERIOR LANDING TO FINISH FLOOR ELEVATION.
- THE FOLLOWING OPENINGS SHALL BE SEALED:
 - AROUND DOOR FRAMES
 - JUNCTIONS BETWEEN WALLS AND FOUNDATIONS, WALLS AND BUILDING CORNERS, WALLS AND ROOF PANELS
 - PENETRATIONS OF UTILITY SERVICES THROUGH ROOFS, WALLS, AND FLOORS (INCLUDING BUT NOT LIMITED TO M/E/P, SECURITY AND COMMUNICATIONS)
 - OTHER OPENINGS IN THE BUILDING ENVELOPE
- STORAGE AREAS SHALL NOT BE USED FOR STORAGE OF HIGH-PRESSURE BOILERS, REFRIGERATING MACHINERY (OTHER THAN DOMESTIC REFRIGERATOR TYPE), LARGE TRANSFORMERS OR OTHER SERVICE EQUIPMENT SUBJECT TO EXPLOSION.
- SMOKING AREAS ARE NOT ALLOWED IN AREAS WHERE FLAMMABLE OR COMBUSTIBLE MATERIALS ARE STORED OR HANDLED, OR WHERE DETERMINED BY AUTHORITIES HAVING JURISDICTION. IN AREAS WHERE SMOKING IS NOT ALLOWED, INSTALL A CONSPICUOUS "NO SMOKING" SIGN OUT OF IMMEDIATE REACH OF OCCUPANTS.



1 FLOOR PLAN
A1.1 SCALE: 1/4" = 1'-0"



1 ROOF PLAN
A1.1 SCALE: 1/8" = 1'-0"

ROOF NOTES

- ROOF MATERIAL: STANDING SEAM METAL ROOF OVER PEMB ROOF PURLINS. ROOF PROVIDED AS PART OF THE ENGINEERED METAL BUILDING SYSTEM. SEE METAL BUILDING SPECIFICATIONS FOR MATERIAL DESCRIPTIONS.
- ARROWS SHOWN ON ROOF PLAN INDICATE DIRECTION OF DOWNWARD WATER FLOW.
- GUTTER & DOWNSPOUT MINIMUM SIZES: (PER TABLE 1-4 OF SMACNA ASMM)

RAINFALL INTENSITY (IN/HR): 10.1

ROOF RAINFALL DESIGN AREA (FT²): 935.00
* AREA OF LARGEST ROOF SERVING A SINGLE GUTTER SYSTEM

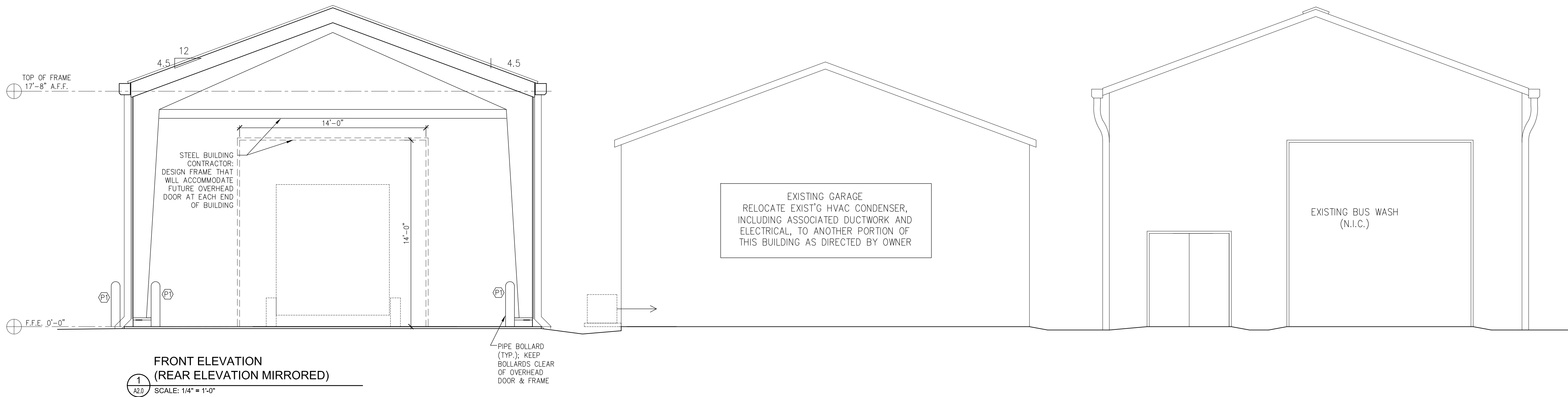
GUTTER IN LINEAL FT: 62

GUTTER LENGTH SERVING SINGLE DS (FT.): 31

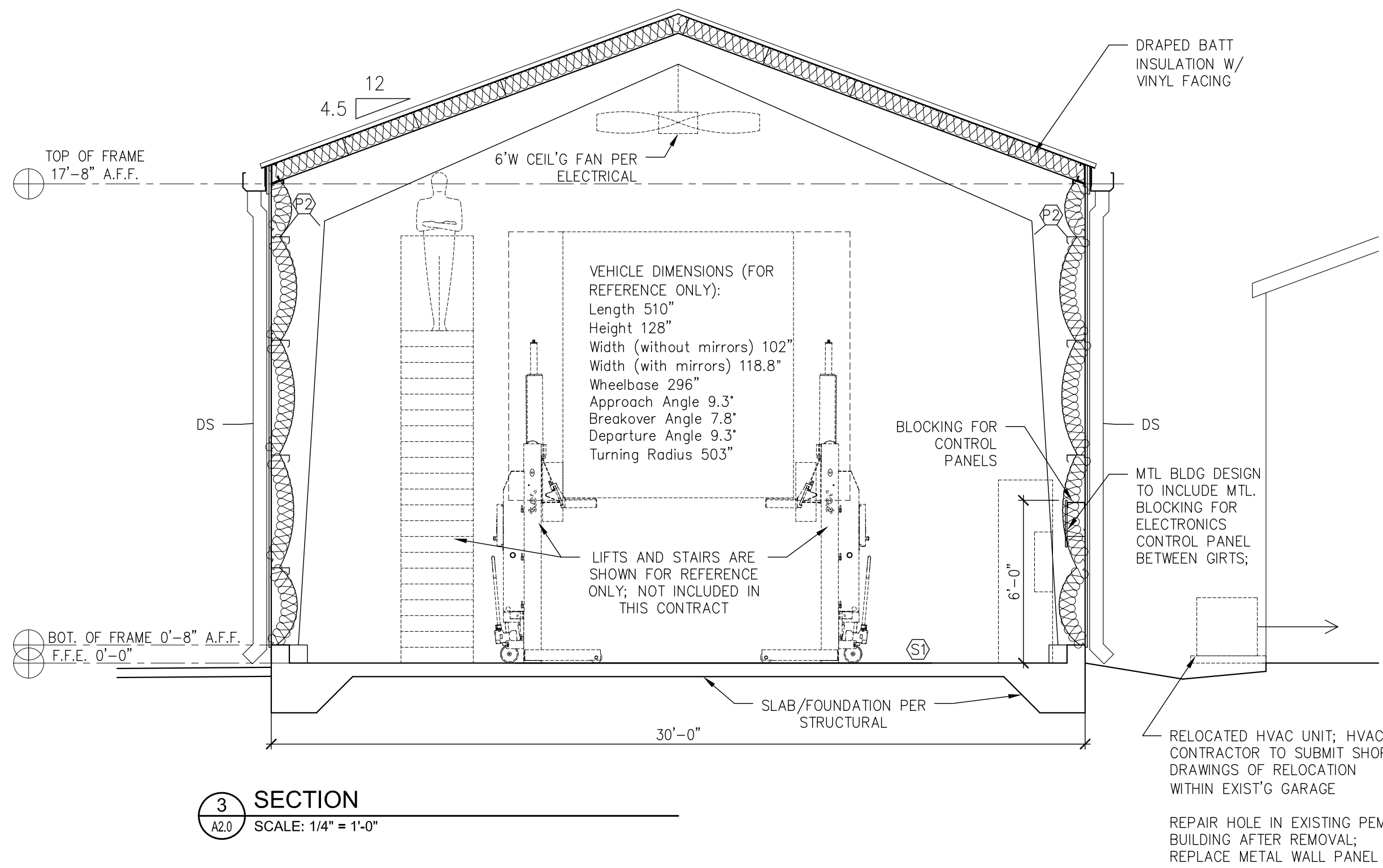
M (DEPTH TO WIDTH RATIO): 1.00

MIN. GUTTER WIDTH (IN.): 4

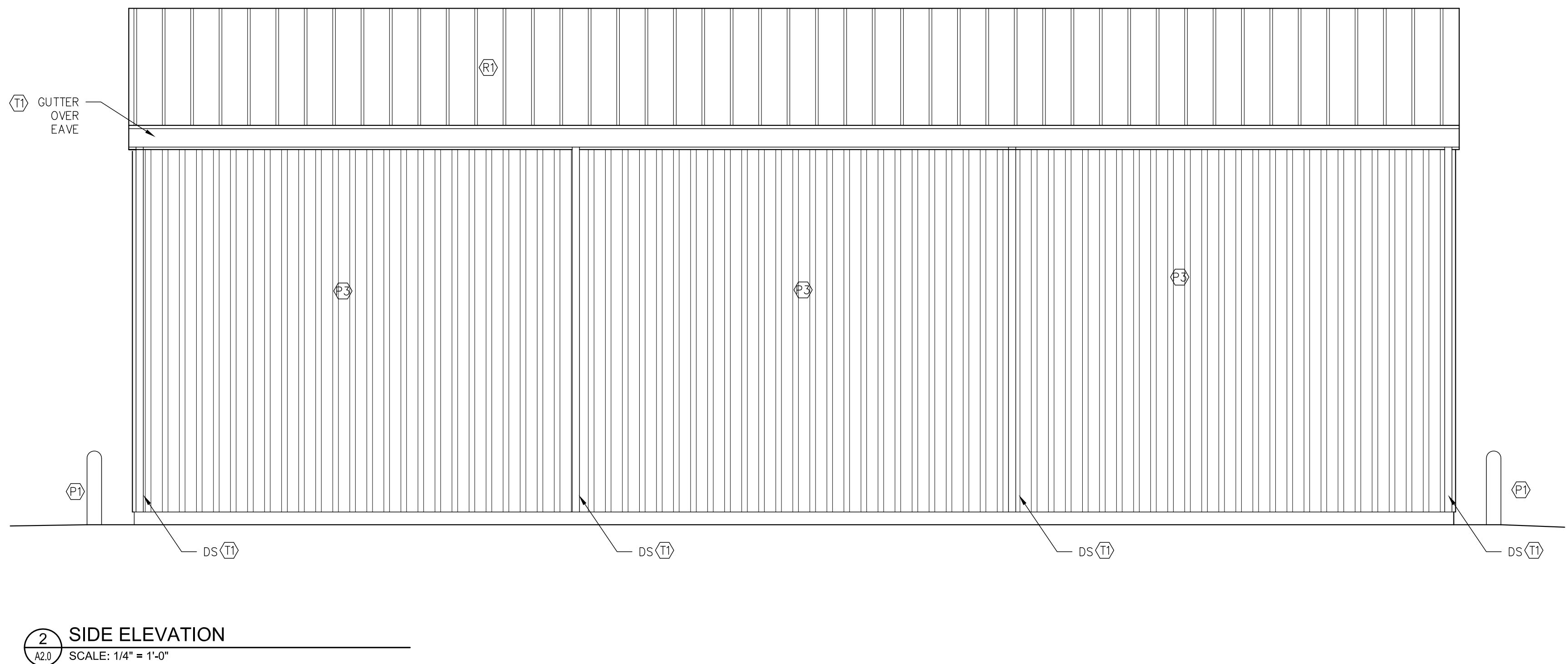
MIN. GUTTER DEPTH (IN.): 4



1 FRONT ELEVATION
(REAR ELEVATION MIRRORED)
SCALE: 1/4" = 1'-0"



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



2 SIDE ELEVATION
SCALE: 1/4" = 1'-0"

FINISH MATERIAL LEGEND

ABBREV.	MATERIAL	EQUIVALENT MANUF.	COLOR
S	SEALANT FOR CONCRETE	??	(CLEAR)
P	PAINT - BOLLARD	SHERWIN WILLIAMS	SAFETY YELLOW
P2	PAINT - STRUCTURAL FRAME	(MTL. BLDG. MANUF.)	POLAR WHITE
P3	PAINT - EXTERIOR METAL PANELS	(MTL. BLDG. MANUF.)	COLONIAL RED - PENDING APPROVAL THAT IT MATCHES EXISTING BUILDINGS
R	MTL. ROOF	(MTL. BLDG. MANUF.)	GALVALUME
T	TRIM, GUTTERS, DOWNSPOUTS	(MTL. BLDG. MANUF.)	POLAR WHITE

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REGISTERED ARCHITECT
STATE OF ALABAMA
REGISTRATION NUMBER 6229
ANDREA W. PASEUR

A&M ELECTRIC
BUS/VEHICLE SERVICE BAY

ALABAMA A&M UNIVERSITY
C/O DEPARTMENT OF TRANSPORTATION
315 PATTON HALL, NORMAL, AL 35762

PROJECT: 21022

DRAWN: AWP

DATE: 2/21/2022

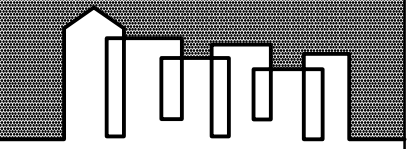
REVISIONS

SHEET TITLE

ELEVATIONS,
SECTION,
SCHEDULES

SHEET NO.

A2.0



PASEUR
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A&M ELECTRIC BUS/VEHICLE
SERVICE BAY

ALABAMA A&M UNIVERSITY,
C/O DEPARTMENT OF TRANSPORTATION
315 PATTON HALL, NORMAL, AL 35762

PROJECT: 21022

DRAWN: AWP

DATE: 2/21/2022

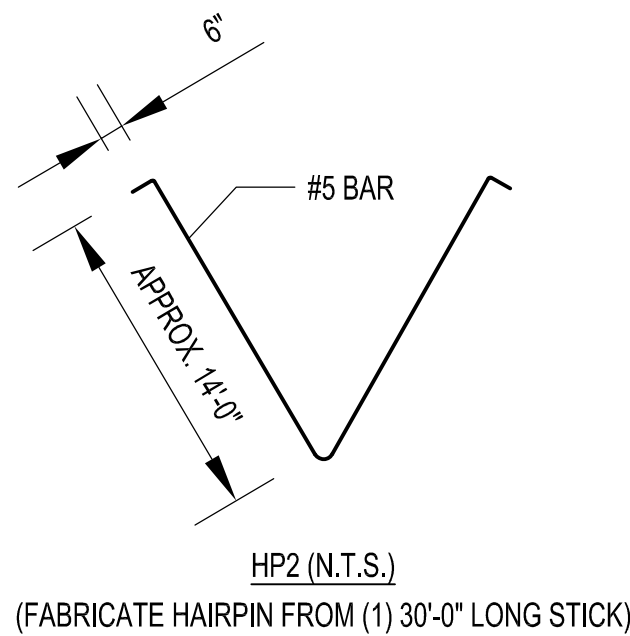
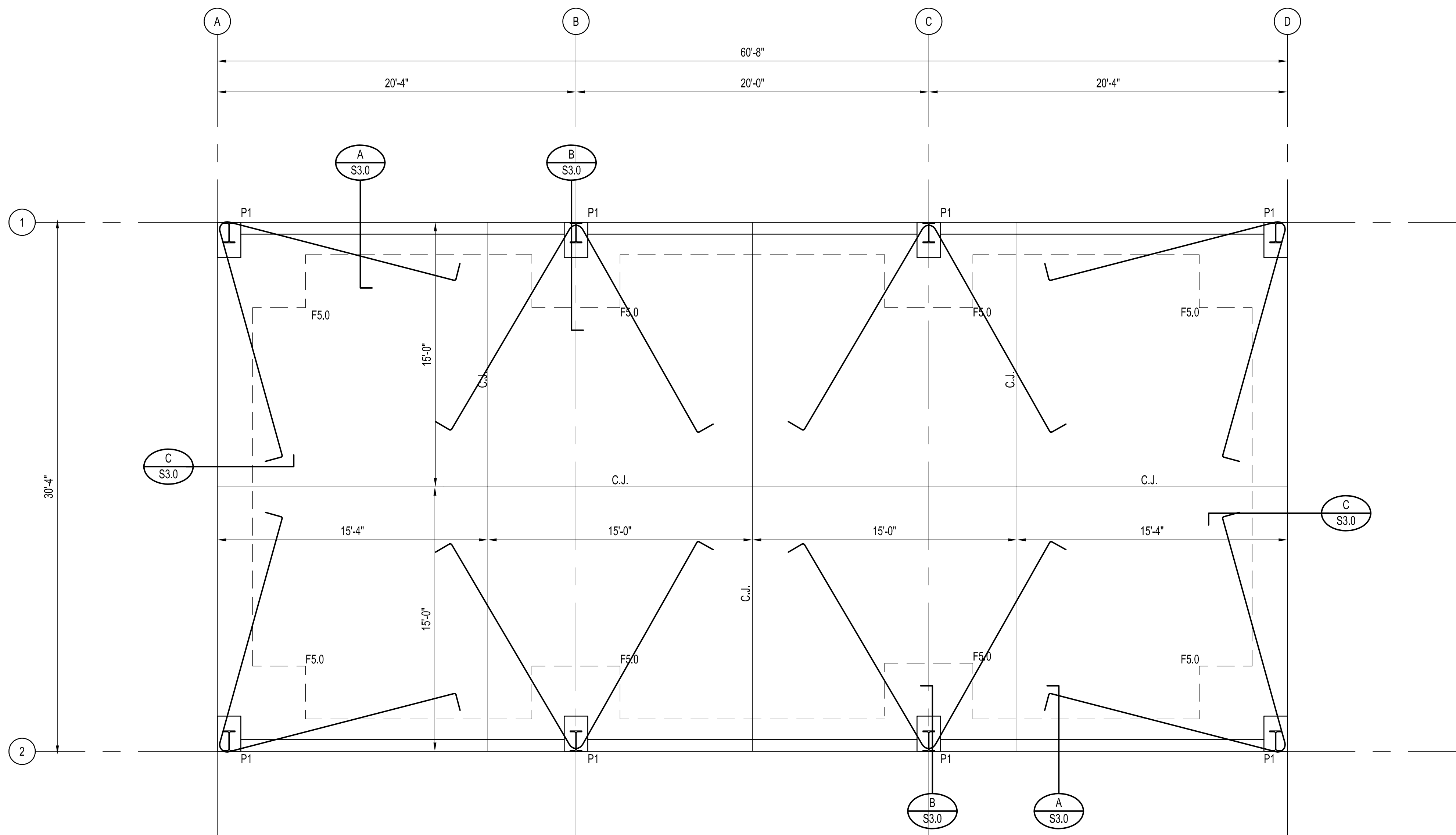
REVISIONS

SHEET TITLE

FOUNDATION
PLAN

SHEET NO.

S1.0



FOUNDATION PLAN

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

PLAN NOTES:

1. BOTTOM OF GRADE BEAM (-2'-0") OR A MINIMUM OF 12" BELOW ADJACENT FINISHED GRADE, WHICHEVER IS LOWER, UNLESS NOTED OTHERWISE ON PLAN.
2. VERIFY ALL FOOTING STEP LOCATIONS WITH FINISHED GRADE ELEVATIONS AND ADJUST AS REQUIRED.
3. SLAB TO BE 8" THICK CONCRETE. SLAB CONSTRUCTION TO BE CAST-IN-PLACE CONCRETE ON 15 MIL VAPOR BARRIER AND 6" (MIN.) POROUS FILL COMPACTED PER SITE AND FOUNDATION GENERAL NOTES. REINFORCE CONCRETE SLAB WITH #4 BARS AT 14" O.C., EACH WAY, SUPPORTED ON CHAIRS. REINFORCING TO BE AT 2 3/4" CLEAR FROM TOP OF SLAB.
4. ALL GRAVEL FILL MUST BE PLACED IN 8" (MAX.) LIFTS AND COMPACTED PER SITE AND FOUNDATION GENERAL NOTES TO ENSURE PROPER SUPPORT OF SLABS-ON GRADE. SPECIAL CARE MUST BE GIVEN TO COMPACTING BACKFILL IN TRENCHES (REFER TO SITE AND FOUNDATION GENERAL NOTES).
5. C.J. DENOTES CONTROL JOINT, REFER TO TYPICAL DETAIL.
6. ADD (2) #4 x 5'-0" LONG RE-ENTRANT BARS AT ALL INTERIOR CORNERS OF SLAB AND AT ALL DISCONTINUOUS CONTROL JOINTS.
7. VERIFY ALL DIMENSIONS WITH METAL BUILDING MANUFACTURER'S SHOP DRAWINGS PRIOR TO COMMENCING CONSTRUCTION.
8. SLOPE FLOOR TOWARDS TRENCH DRAINS AS REQUIRED IN ARCHITECTURAL DRAWINGS.
9. PEMB SHOULD BE DESIGNED FOR THE OPTION TO ENCLOSE THE BUILDING IN THE FUTURE, WITH OVERHEAD DOORS ON EACH END.
10. DESIGN PEMB FRAMES TO BE TAPERED COLUMNS.

MARK:	FOOTING SIZE: W x L x D	REINFORCING:
F5.0	5'-0"x5'-0"x24"	(6) #6 EACH WAY, BOTTOM

GENERAL NOTES:

- CONSTRUCTION METHODS, PROCEDURES, AND SEQUENCES ARE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL TAKE ALL THE NECESSARY MEANS TO MAINTAIN AND PROTECT THE STRUCTURAL INTEGRITY OF ALL CONSTRUCTION NEW AND EXISTING, AT ALL STAGES.
- CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY AND ERECTION REQUIREMENTS OF ALL GOVERNING PUBLIC AGENCIES DURING FABRICATION AND CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS FOR DETAILING INCLUDING, BUT NOT LIMITED TO NOTCHES, STEPS, FORM TIES, REVEALS, AND CONSTRUCTION JOINTS IN EXPOSED CONCRETE AND MASONRY.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS AND ALL DIMENSIONS FROM NEW CONSTRUCTION TO EXISTING CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO ANY PERTINENT WORK. ALL EXISTING CONDITIONS AND DIMENSIONS SHALL BE NOTED BY THE CONTRACTOR ON THE SHOP DRAWINGS PRIOR TO SUBMITTING THOSE SHOP DRAWINGS FOR REVIEW.
- THE CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL, CIVIL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS AND VERIFY THE LOCATIONS AND SIZES OF CHASES, INSERTS, OPENINGS, SLEEVES, FINISHES, DEPRESSIONS, SLOPES, AND OTHER PROJECT REQUIREMENTS. USE DETAILS PROVIDED BY THE MANUFACTURER FOR INSTALLATION AND EQUIPMENT ANCHORAGE.
- ALL CONSTRUCTION JOINTS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE INCORPORATED INTO THE STRUCTURE. ADDITIONAL CONSTRUCTION JOINTS TO FACILITATE CONSTRUCTION SHALL BE LOCATED AND DETAILED ON THE SHOP DRAWINGS FOR REVIEW.
- ALL DETAILS SHOWN ARE TYPICAL. SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS, UNLESS SHOWN OTHERWISE.
- THE CONTRACTOR SHALL SUBMIT THE SHOP DRAWINGS, DETAILING ALL OPENINGS, INCLUDING ADDED REINFORCEMENT, AS SHOWN ON TYPICAL DETAILS, FOR REVIEW.
- ALL STRUCTURAL MEMBERS, AS SHOWN, HAVE BEEN DESIGNED TO CARRY IN PLACE DESIGN LOADS ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPORT OF ANY ADDITIONAL LOADS AND FORCES IMPOSED DURING CONSTRUCTION, TRUCKING, ERECTING AND HANDLING.
- CONTRACTOR SHALL BRACE ALL BASEMENT TYPE WALLS RETAINING EARTH UNTIL RESTRAINING SLABS HAVE BEEN PLACED AND REACHED REQUIRED DESIGN STRENGTH.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING SPECIFIC CONNECTION AND SUPPORT REQUIREMENTS FOR EXTERIOR VENEER WITH THE ARCHITECT, STRUCTURAL ENGINEER, AND AFFECTED SUBCONTRACTOR. ADDITIONAL FRAMING AND SUPPORT MAY NEED TO BE ADDED TO MEET THE SPECIFIC REQUIREMENTS OF THE VENEER SYSTEM.

DESIGN CRITERIA:

- BUILDING CODES AND STANDARDS:

A. GENERAL BUILDING CODE: 2015 INTERNATIONAL BUILDING CODE

B. CONCRETE: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318

C. STRUCTURAL STEEL: SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, AISC

DESIGN LOADS

A. DEAD LOADS: ANY CHANGE IN CONSTRUCTION MATERIALS FROM THOSE SHOWN ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS SHALL BE REPORTED BY THE GENERAL CONTRACTOR TO THE STRUCTURAL ENGINEER FOR VERIFICATION OF LOAD-CARRYING CAPACITY OF THE STRUCTURE.

B. LIVE LOADS (PSF):

ROOFS

20

C. SNOW LOADS:

SEE METAL BUILDING SHOP DRAWINGS

D. WIND LOADS:

SEE METAL BUILDING SHOP DRAWINGS

E. SEISMIC LOADS:

SEE METAL BUILDING SHOP DRAWINGS

SHOP DRAWINGS:

- ELECTRONIC SHOP DRAWINGS ARE PREFERRED, SUBMITTED THROUGH THE ARCHITECT. IF PAPER SHOP DRAWINGS ARE CHOSEN, SUBMIT 4 COPIES. ONE COPY WILL BE KEPT BY THE STRUCTURAL ENGINEER, ONE COPY WILL BE KEPT BY THE ARCHITECT, AND TWO COPIES WILL BE RETURNED TO THE GENERAL CONTRACTOR. ALL FURTHER COPIES REQUIRED BY THE CONTRACTOR ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- ALLOW TWO WEEKS FOR THE REVIEW OF EACH SUBMITTAL.
- THE CONTRACTOR ACKNOWLEDGES ITS RESPONSIBILITY TO SUBMIT COMPLETE SHOP DRAWINGS AND OTHER REQUIRED SUBMITTALS. INCOMPLETE SUBMITTALS WILL BE RETURNED TO THE CONTRACTOR UNREVIEWED. NO TIME EXTENSIONS OR COST INCREASES WILL BE ALLOWED FOR DELAYS CAUSED BY RETURN OF INCOMPLETE SUBMITTALS.
- THE CONTRACTOR SHALL REVIEW AND STAMP ALL SUBMITTALS PRIOR TO SUBMITTING THEM TO THE STRUCTURAL ENGINEER FOR REVIEW. QUESTIONS TO THE CONTRACTOR AND REQUESTS FOR FIELD VERIFICATION SHALL BE ANSWERED/PROVIDED PRIOR TO SUBMITTING THEM TO THE STRUCTURAL ENGINEER FOR REVIEW. SUBMITTALS THAT HAVE NOT BEEN REVIEWED BY THE GENERAL CONTRACTOR WILL BE RETURNED UNREVIEWED. NO TIME EXTENSIONS OR COST INCREASES WILL BE ALLOWED FOR DELAYS CAUSED BY RETURN OF UNREVIEWED SUBMITTALS.
- ALL SHOP DRAWINGS ARE TO BE NEWLY PREPARED. REPRODUCTIONS OF CONTRACT STRUCTURAL DRAWINGS FOR USE AS ERECTION DRAWINGS WILL NOT BE PERMITTED. SHOULD SHOP DRAWING SUBMITTALS CONTAIN ANY REPRODUCTIONS OF CONTRACT STRUCTURAL DRAWINGS, THEY WILL BE REJECTED AND RETURNED WITHOUT ENGINEER REVIEW.

SITE AND FOUNDATION:

- ASSUMED SOIL BEARING PRESSURE: 2000 PSF
- ALL FOUNDATION BEARING SURFACES SHALL BE REVIEWED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE TO ENSURE THEIR COMPLIANCE WITH THE PRESSURES NOTED ABOVE. ALL BOTTOM ELEVATIONS ARE ESTIMATED AND MAY BE ADJUSTED IN THE FIELD BY THE GEOTECHNICAL ENGINEER. ALL BOTTOM ELEVATIONS THAT ARE LOWER THAN THOSE GIVEN IN THE STRUCTURAL DRAWINGS MUST BE FILLED WITH LEAN CONCRETE UP TO THE BOTTOM OF FOOTING ELEVATION.
- COMPACTED FILL WITHIN THE BUILDING AREA AND EXTENDING 10 FEET OUTSIDE THE EXTERIOR BUILDING LINE SHALL MEET THE FOLLOWING REQUIREMENTS:

PLASTICITY INDEX LESS THAN 30

MAXIMUM SIZE STONE OF 4 INCHES

SOIL FREE OF ORGANIC MATERIAL

PLACE IN 8 INCH LOOSE LIFTS

COMPACT TO 98 PERCENT OF STANDARD PROCTOR MAXIMUM DRY DENSITY

FIELD DENSITY TEST FOR EACH 2500 SQUARE FEET PER FOOT OF FILL
- STRUCTURAL FILL UNDER FLOOR SLABS: COMPACT TO 98 PERCENT OF SOIL'S STANDARD PROCTOR MAXIMUM DRY DENSITY.
- GRAVEL FILL IN TRENCHES: PLACE IN 8 INCH MAXIMUM LIFTS AND COMPACT EACH LIFT WITH VIBRATORY OR TAMPING COMPACTION EQUIPMENT.
- GRAVEL FILL UNDER CONCRETE SLAB-ON-GRADE MUST BE COMPACTED USING VIBRATORY PLATE COMPACTION EQUIPMENT OR VIBRATORY ROLLERS. SPECIAL CARE MUST BE TAKEN TO ENSURE PROPER COMPACTION OF GRAVEL AT EDGES OF SLAB AND ADJACENT TO FOUNDATION STEM WALLS WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF FOUNDATION STEM WALLS.
- BACKFILL FOR FOUNDATION AND RETAINING WALLS SHALL BE A FREE DRAINING GRANULAR MATERIAL, SUCH AS #57 STONE. BACKFILL SHALL BE PLACED IN 12 INCH LIFTS AND SHALL BE COMPACTED SUFFICIENTLY TO PREVENT SUBSIDENCE OF SURFACE ADJACENT TO THE WALL. THE GRANULAR MATERIAL SHALL BE PLACED IN A 45 DEGREE WEDGE EXTENDING FROM THE OUTSIDE EDGE OF THE FOOTING.

CONCRETE

- CONCRETE SCHEDULE:

ITEM

28 DAY COMPRESSIVE STRENGTH

FOOTINGS

SLAB-ON-GRADE

ELEVATED SLABS

WALLS, COLUMNS

MASONRY FILL

3000 PSI, NORMAL WEIGHT, AIR-ENTRAINED

4000 PSI, NORMAL WEIGHT

3500 PSI, NORMAL WEIGHT

4000 PSI, NORMAL WEIGHT

3000 PSI, NORMAL WEIGHT, PEA-GRAVEL AGGREGATE, 8"-10" SLUMP

CONCRETE COVER AROUND REINFORCING (U.N.O.)

UNFORMED SURFACES IN CONTACT WITH EARTH

UNFORMED SURFACES OVER VAPOR BARRIER

FORMED SURFACES EXPOSED TO EARTH OR WEATHER:

#5 AND SMALLER

#6 AND LARGER

FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER

3 IN.

2 IN.

1 1/2 IN.

2 IN.

1 IN.

CONCRETE CONSTRUCTION AND OPERATIONS SHALL COMPLY WITH A.C.I. STANDARDS.

CONCRETE BEAMS, JOISTS, FOOTINGS, AND SLABS SHALL HAVE NO HORIZONTAL JOINTS. WHERE THIS IS NOT FEASIBLE, ANY STOP IN CONCRETE WORK MUST BE MADE AT CENTER OF SPAN WITH VERTICAL BULKHEAD AND SHEAR KEY, UNLESS SHOWN OTHERWISE.

NO CONDUIT OR PIPE SHALL BE CAST IN CONCRETE WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. IF CONDUIT OR PIPE IS ALLOWED IN THE SLAB, THEY SHALL MEET THE FOLLOWING REQUIREMENTS:

A. CONDUIT AND PIPE SHALL HAVE A MINIMUM OF 3" CLEAR BETWEEN PIECES OF CONDUIT OR PIPE AND A MINIMUM SPACING OF 3 TIMES THE CONDUIT OR PIPE DIAMETER.

B. OUTER LIMITS OF CONDUIT, CROSSING CONDUIT AND COUPLERS SHALL NOT EXCEED 1/3 THE SLAB THICKNESS AND SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF THE SLAB.

C. THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT AND ELECTRICAL ENGINEER AS REQUIRED TO ENSURE THAT PANEL LAYOUTS AND ELECTRICAL ROOMS ARE LARGE ENOUGH TO ACCOMMODATE CONDUIT CLEARANCE AND SPACING REQUIREMENTS WHERE CONDUITS TURN UP/DOWN AND OUT OF THE SLAB.

MECHANICAL ANCHORS INTO CONCRETE SHALL BE POWERS WEDGE BOLTS, SIMPSON TITEN HD, OR EQUIVALENT.

EPOXY ANCHORS INTO CONCRETE SHALL BE POWERS, SIMPSON, OR HILTI INSTALLED WITH EPOXY ADHESIVES PER THE MANUFACTURER'S GUIDELINES FOR CLEANING, USE, AND INSTALLATION.
- REINFORCING
- ALL REINFORCING SHALL CONFORM TO THE LATEST REVISION OF ASTM SPECIFICATION A615, GRADE 60.
 - ALL REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH A.C.I. STANDARD 315, LATEST REVISION.
 - NO REINFORCING SHALL BE WELDED IN ANY MANNER, UNLESS SPECIFICALLY SHOWN OR NOTED ON THE DRAWINGS.
 - ALL WELDED WIRE FABRIC (W.W.F.) SHALL CONFORM TO ASTM A-185. WELDED WIRE FABRIC SHALL BE LAPPED A MINIMUM OF 1'-0" AND SHALL BE FURNISHED IN SHEETS ONLY (NO ROLLS). ALL WELDED WIRE FABRIC SHALL BE SUPPORTED AT THE CORRECT DEPTH.
 - REINFORCING STEEL SHOWN IN SECTIONS IS A SCHEMATIC INDICATION THAT REINFORCING EXISTS. REFER TO SCHEDULES, SECTION NOTES, AND GENERAL NOTES FOR ACTUAL REINFORCING REQUIRED.
 - REINFORCING BAR PLACING ACCESSORIES SHALL BE PLACED IN ACCORDANCE WITH C.R.S.I. SPECIFICATIONS, AND A.C.I. MANUAL OF STANDARD PRACTICE. WHERE CONCRETE IS EXPOSED IN FINISHED BUILDING, PROVIDE ACCESSORIES WITH RUSTPROOF LEGS.
 - ALL SPLICES SHALL BE CLASS "B" TENSION LAP SPLICES, UNLESS NOTED OTHERWISE.
 - PROVIDE OUTSIDE CORNER BARS IN CONCRETE FOOTINGS TO MATCH THE SIZE AND SPACING OF THE HORIZONTAL REINFORCING. LEG LENGTH SHALL BE EQUIVALENT TO A CLASS "A" SPLICE, UNLESS NOTED OTHERWISE.
 - AT OPENINGS LARGER THAN 12" IN CONCRETE WALLS AND FLOOR SLABS, PROVIDE 2 #4 BARS AT ALL 4 SIDES OF THE OPENING. EXTEND BARS 2'-0" BEYOND THE CORNERS OF THE OPENING.
- STRUCTURAL STEEL
- STRUCTURAL STEEL: ASTM A992, GRADE 50 FOR W-SHAPES, ASTM A36 ELSEWHERE.
 - STEEL TUBING: ASTM A500, GRADE B.
 - STEEL PIPE: ASTM A53, TYPE E OR S, GRADE B.
 - WELDED CONNECTIONS: E70XX ELECTRODES, MINIMUM SIZE FILLET WELD 3/16".
 - BOLTED CONNECTIONS: BEARING TYPE A325N, IN ACCORDANCE WITH AISC "SPECIFICAITON FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS". BOLTS THROUGH 4" WIDE BEAM FLANGES SHALL BE 5/8" DIAMETER. ALL OTHER BOLTS SHALL BE 3/4" DIAMETER (MINIMUM).
 - ANCHOR BOLTS: ASTM A449, HEADED TYPE, UNLESS NOTED OTHERWISE.
 - HEADED STUDS: ASTM A108, GRADE 1015 OR 1020, COLD-FINISHED CARBON STEEL WITH DIMENSIONS COMPLYING WITH AISC.
 - FABRICATE AND ERECT ALL STRUCTURAL STEEL IN ACCORDANCE WITH AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
 - BOLTS SHOWN IN SECTIONS AND DETAILS ARE A SCHEMATIC INDICATION THAT BOLTS MAY BE USED. ACTUAL NUMBER, UNLESS SPECIFIED, TO BE IN ACCORDANCE WITH AISC.
 - ALL STRUCTURAL STEEL CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE DESIGNED TO RESIST FORCES INDICATED, BY THE CONTRACTOR, UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF ALABAMA.
 - THE STEEL FRAME IS NOT "SELF-SUPPORTING". ADEQUATE TEMPORARY SUPPORT MUST BE PROVIDED BY THE CONTRACTOR UNTIL REQUIRED CONNECTIONS OR ELEMENTS ARE IN PLACE.
 - PROVIDE 3" MINIMUM CONCRETE COVER FOR ALL STEEL BELOW GRADE. ALL EXPOSED EXTERIOR STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED (ASTM A123) UNLESS SHOWN IN THE ARCHITECTURAL DRAWINGS OR SPECIFICATIONS AS PAINTED OR STAINLESS STEEL.
 - DO NOT PRIME OR PAINT TOP FLANGE SURFACES OF BEAMS WHICH ARE TO RECEIVE FIELD-WELDED CONNECTIONS OR HEADED STUDS.
 - COORDINATE PRIMING OR PAINTING OF STRUCTURAL STEEL WITH FIREPROOFING REQUIREMENTS.
- ENGINEERED METAL BUILDING
- DESIGN, FABRICATE AND ERECT ENGINEERED METAL BUILDING IN ACCORDANCE WITH NAMBM STANDARDS AND THE INTERNATIONAL BUILDING CODE. METAL BUILDING SHOP DRAWINGS SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF ALABAMA.
 - ANCHOR BOLT SIZE, LENGTH, AND LOCATION ARE TO BE DESIGNATED BY THE METAL BUILDING SUPPLIER. ANCHOR BOLTS ARE TO BE PURCHASED AND INSTALLED BY THE GENERAL CONTRACTOR.
 - BEFORE FOOTING INSTALLATION, THE ANCHOR BOLT EMBEDMENT LENGTHS MUST BE VERIFIED. THE FOOTING DEPTH SHALL BE THE SCHEDULED DEPTH OR THE ANCHOR BOLT EMBEDMENT DEPTH PLUS 3 INCHES, WHICHEVER IS GREATER.
 - HORIZONTAL FORCE TRANSFER FROM METAL BUILDING COLUMN BASE TO CONCRETE BY METAL BUILDING SUPPLIER.
 - METAL BUILDING SUPPLIER TO VERIFY COLUMN LAYOUT. ANY CHANGES MUST BE SUBMITTED FOR REVIEW OF FOUNDATION DESIGN BEFORE CONSTRUCTION BEGINS.
 - THE FOUNDATIONS AND DETAILS SHOWN ON THE STRUCTURAL DRAWINGS ARE BASED ON PRELIMINARY COLUMN REACTIONS AND ARE SHOWN FOR BIDDING PURPOSES ONLY.
 - WHEN THE METAL BUILDING SUPPLIER HAS BEEN SELECTED AND THE FINAL METAL BUILDING DESIGN COMPLETED, THE METAL BUILDING SUPPLIER SHALL FURNISH FINAL DESIGN LOADS, BUILDING REACTIONS, AND NECESSARY DETAILS TO THE FOUNDATION ENGINEER FOR REVIEW. THE FOUNDATION DRAWINGS WILL BE MODIFIED AS REQUIRED PRIOR TO ANY CONCRETE PLACEMENT.
 - BEFORE FOOTING INSTALLATION, METAL BUILDING SUPPLIER SHALL SUBMIT DESIGN LOADS AND COLUMN REACTIONS.
- P.R. Matthewson & Associates Engineers, Inc.

PRM

STRUCTURAL ENGINEERING

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Huntsville, AL 35801
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- PASEUR

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paseurassociates.com

ALABAMA

L.P.R. Matthewson

No. 23391

PROFESSIONAL

12-21-22

ENGINEER

PR. MATTHEWSON

A&M ELECTRIC BUS/VEHICLE

SERVICE BAY

ALABAMA A&M UNIVERSITY,
C/O DEPARTMENT OF TRANSPORTATION
315 PATTON HALL, NORMAL, AL 35762

PROJECT: 21022

DRAWN: AWP

DATE: 3/7/2022

REVISIONS
CONCRETE STRENGTH 3--7--22

SHEET TITLE

GENERAL

NOTES

SHEET NO.

S2.0

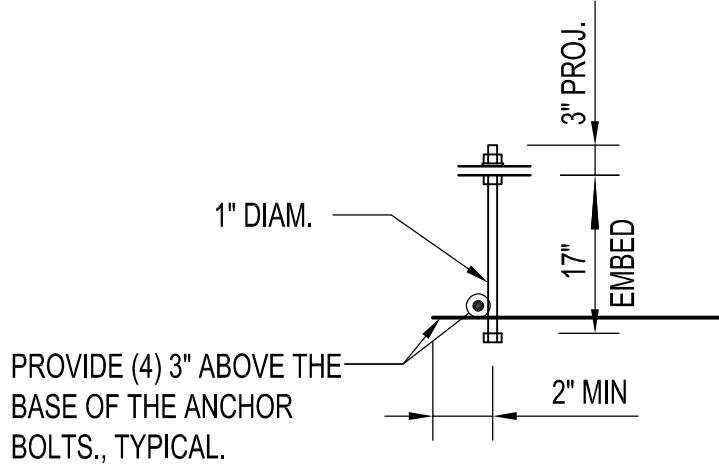
TENSION LAP SPLICE LENGTHS								
BAR SIZE	f _c = 3000 PSI				f _c = 4000 PSI			
	TOP BARS		OTHER BARS		TOP BARS		OTHER BARS	
	A	B	A	B	A	B	A	B
#3	22"	28"	17"	22"	19"	24"	15"	19"
#4	29"	37"	22"	29"	25"	32"	19"	25"
#5	36"	47"	28"	36"	31"	40"	24"	31"
#6	43"	56"	33"	43"	37"	48"	29"	37"
#7	63"	81"	48"	63"	54"	70"	42"	54"
#8	72"	93"	55"	72"	62"	80"	48"	62"
#9	81"	105"	62"	81"	70"	91"	54"	70"
#10	91"	118"	70"	91"	79"	102"	61"	79"
#11	101"	131"	78"	101"	87"	113"	67"	87"

- 1) TOP BARS ARE HORIZONTAL REINFORCEMENT WITH MORE THAN 12" OF CONCRETE CAST BELOW THE REINFORCEMENT.
- 2) MASONRY REINFORCING LAP SPLICE LENGTHS SHALL BE 48x BAR DIAMETER.

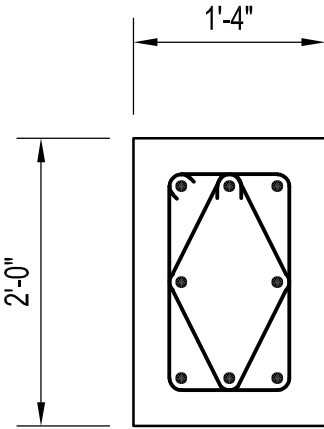
REQUIRED SUBMITTALS:		
SPEC. SECTION	SPEC. SECTION TITLE	REQUIRED SUBMITTAL
03200	CONCRETE REINFORCEMENT	SHOP DRAWINGS MATERIAL CERTIFICATES WELDERS CERTIFICATES
03300	CONCRETE	PRODUCT DATA DESIGN MIXES MANUFACTURER'S INSTALLATION INSTRUCTIONS PROJECT RECORD DOCUMENTS
	PRE ENGINEERED METAL BUILDING	SHOP DRAWINGS

ANCHOR BOLT LENGTH SCHEDULE			
ANCHOR BOLT DIAM. (IN)	EMBEDMENT DEPTH (IN)	PROJECTION LENGTH (IN)	TOTAL LENGTH (IN)
1/2	6	1.5	7.5
5/8	10	2	12
3/4	14	3	17
1	17	3	20

ALL ANCHOR BOLTS TO BE ASTM F1554 GR 36 UNLESS SPECIFIED OTHERWISE ON THE METAL BUILDING ANCHOR BOLT SHOP DRAWINGS. ALL 3/4" AND 1" ANCHOR BOLTS TO HAVE OVERSIZE WASHERS TACK WELDED TO THE BOLT HEAD THAT IS CAST INTO THE CONCRETE.



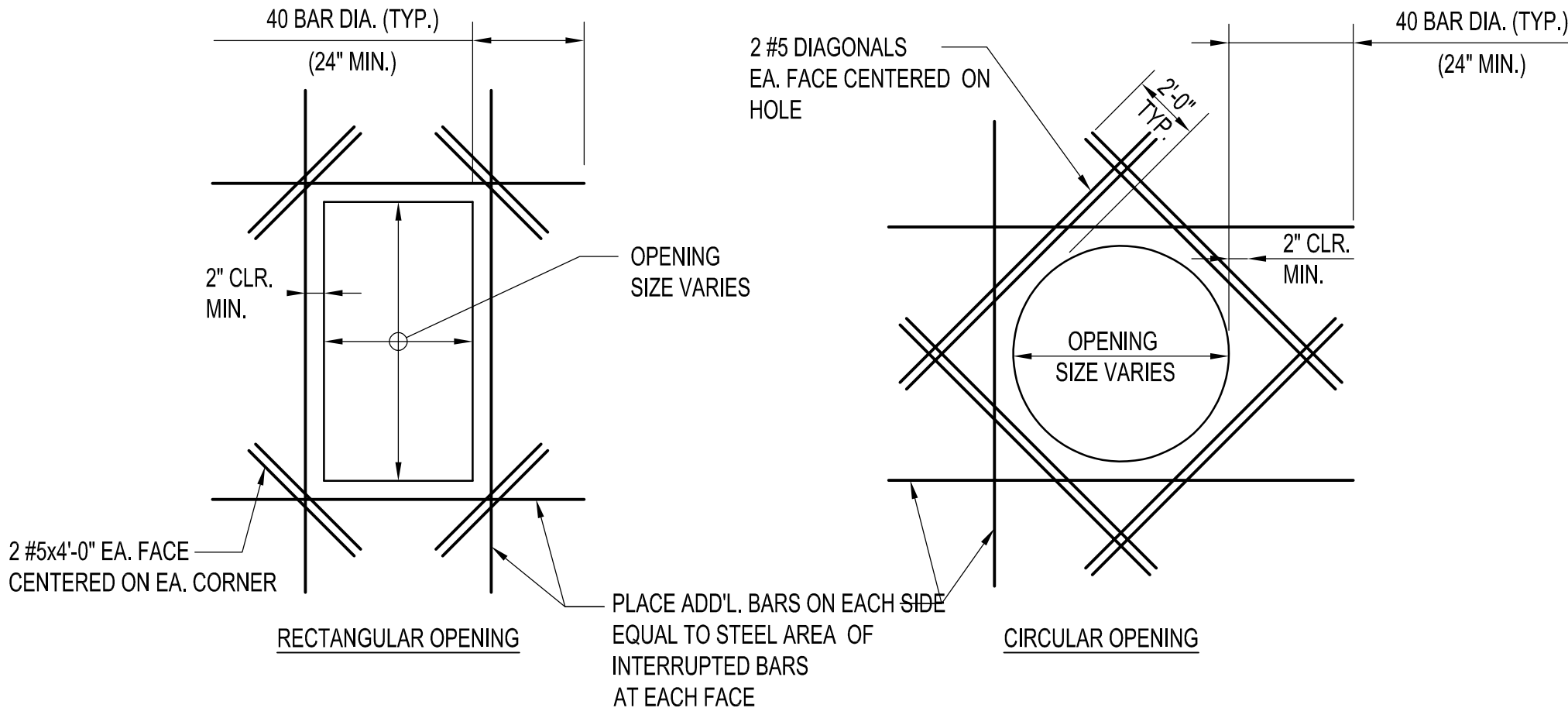
AB1



REINFORCE WITH (8) #7 VERTICAL, #4 CLOSED TIES AND #4 DIAMOND CLOSED TIES AT 12" O.C. PROVIDE (3) SETS AT TOP.

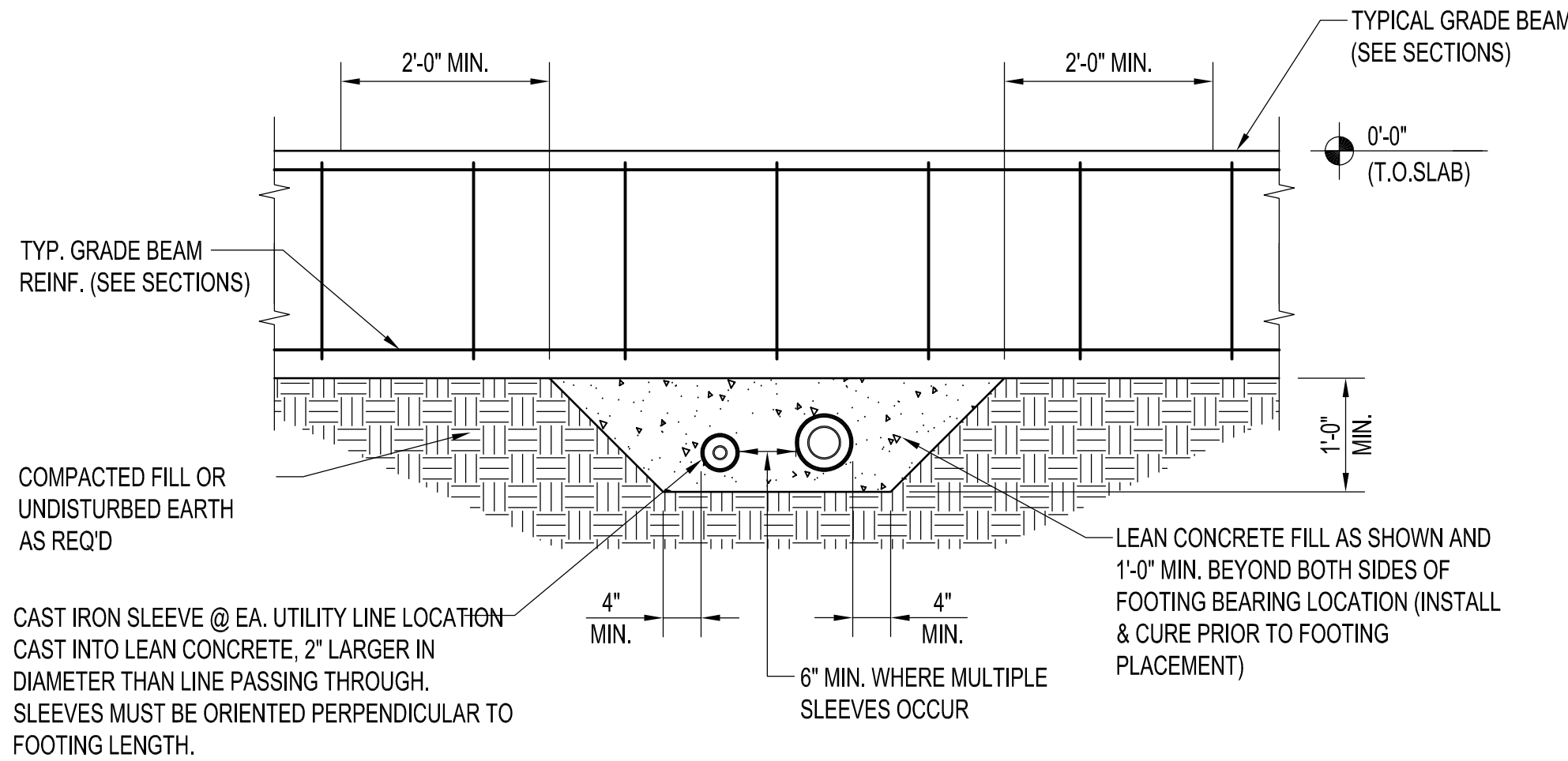
P1 PEDESTAL

N.T.S.



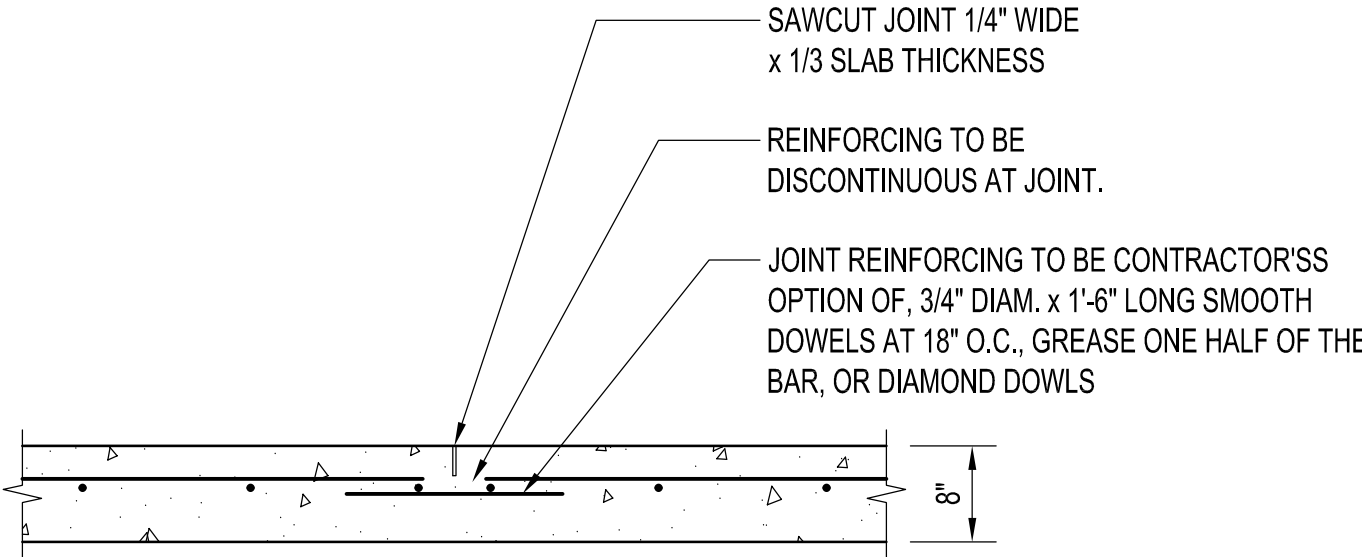
TYPICAL DETAIL OF ADD'L. REINF. AROUND OPENINGS IN CONCRETE WALLS AND SLABS

NOTE: COORD. W/ MECH. & EQUIPMENT DWGS. FOR ALL OPENING SIZES & LOCATIONS



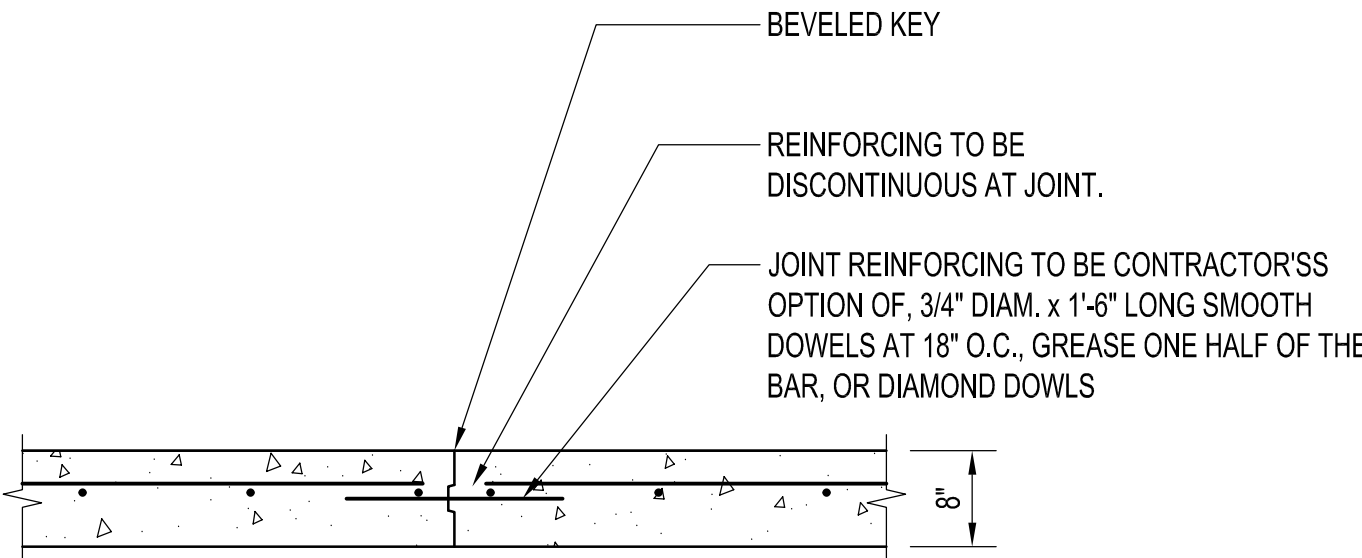
TYPICAL DETAIL FOR UTILITIES PASSING BELOW GRADE BEAMS

- CONTRACTOR'S OPTION TO STEP FOOTINGS BELOW UTILITIES IN LIEU OF THIS DETAIL.
- COORD. UTILITY LOCATIONS W/ CIVIL, MECHANICAL, PLUMBING, & ELECTRICAL DWGS.
- UTILITIES SHALL NOT PASS BELOW COLUMN FOOTINGS.



SAWED CONTROL JOINT

SAW JOINTS WITHIN 8 HOURS AFTER CONCRETE IS PLACED.



KEYED CONTROL JOINT

TYPICAL SLAB CONTROL JOINT DETAILS

USE EITHER KETED OR SAWED AT CONTRACTOR'S OPTION
SEE PLAN FOR SPACING HAND-TOOL AREAS INACCESSIBLE WITH SAW

STATEMENT OF SPECIAL INSPECTIONS

Project:
Project Address:
Permit Applicant:
Applicant Address:
Owner:
Owner Address:

Registered Design Professionals (RDP):

Architect*
Geotechnical Engineer:
Structural Engineer:
Mechanical Engineer:
Electrical Engineer:

This statement of special inspections is submitted as a condition for permit issuance in accordance with Chapter 17 of the International Building Code. It includes a Schedule of Special Inspections applicable to the above referenced project as well as the identity of the individuals, agencies, or firms intended to be retained for conducting these inspections.

The Special Inspector(s) shall keep records of all inspections and shall furnish interim inspection reports to the building official and to the registered design professional in responsible charge at a frequency agreed upon by the permit applicant and building official prior to the start of work. Discrepancies shall be brought to the immediate attentions 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 completion of that phase of work. A Final Report of Special Inspections documenting required inspections and correction of any discrepancies noted in the inspections shall be submitted by each agent at the completion of that phase of work.

Maximum frequency of interim report submittals shall be less than weekly.

The Special Inspection program does not relieve the contractor of the responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.

Owner's Acknowledgement:

Signature Date

RDP in Responsible Charge

Building Official's Acceptance:

Signature Date

Permit No.

Frequency of interim report submittals to building official:

☒ Monthly ☐ Bi-Monthly ☐ Upon Completion ☐ Per Attached Schedule

FINAL REPORT OF SPECIAL INSPECTIONS

Project:
Project Address:
Testing / Inspection Agent:
Testing / Inspection Agent Address:
Scope of Testing / Inspections:

To the best of my information, knowledge, and belief, the special inspections or testing required for this project, and designated for this Agent in the Schedule of Special Inspections submitted for permit, have been completed in accordance with the contract documents.

Interim reports submitted prior to this final report and numbered [redacted] to [redacted] form a basis for, and are to be considered an integral part of this final report. The following discrepancies that were outstanding since the last interim report dated [redacted] have been corrected:

(Attache 8 1/2" X 11" continuation sheet(s) if required to complete the description of corrections)

Prepared By:

Type or print name

Signature Date

Special Inspector's Seal

(Licensed Professional Engineer)

REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

TABLE 1704.4

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD (a)	IBC REFERENCE
1. Inspection of reinforcing steel, including prestressing tendons, and placement.	-	X	ACI 318: 3.5, 7.1-7.7	1913.4
2. Inspection of reinforcing steel welding in accordance with Table 1704.3, Item 5b.	-	-	AWS D1.4 CI 318: 3.5.2	-
3. Inspect bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased.	X	-	-	1911.5
4. Verifying use of required design mix.	-	X	ACI 318: Ch. 4, 5.2-5.4	1904.2.2, 1913.2, 1913.3
5. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	X	-	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1913.1
6. Inspection of concrete and shotcrete placement for proper application techniques.	X	-	ACI 318: 5.9, 5.10	1913.6, 1913.7, 1913.8
7. Inspection for maintenance of specified curing temperature and techniques.	-	X	ACI 318: 5.11-5.13	1913.9
8. Inspection of prestressed concrete: a. Application of prestressing forces.	X	-	ACI 318: 18.20	-
b. Grouting of bonded prestressing tendons in the seismic-force-resisting system.	X	-	ACI 318: 18.18.4	-
9. Erection of precast concrete members.	-	X	ACI 318: Ch. 16	-
10. Verification of in-situ concrete strength, prior to stressing of tendons in posttensioned concrete and prior to removal of shores and forms from beams and structural slabs.	-	X	ACI 318: 6.2	-
11. Inspect formwork for shape, location and dimensions of the concrete member being formed.	-	X	ACI 318: 6.1.1	-

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

TABLE 1704.3

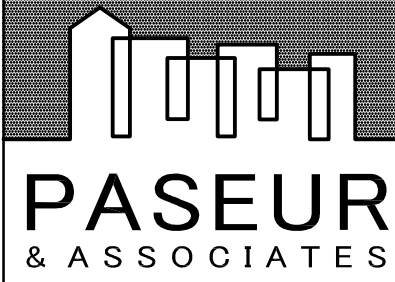
VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD (a)	IBC REFERENCE
1. Material verification of high-strength bolts, nuts and washers:				
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	-	X	Applicable ASTM material specifications; AISC 360, Section A3.3	-
b. Manufacturer's certificate of compliance required.	-	X	-	-
2. Inspection of high-strength bolting:				
a. Bearing-type connections.	-	X	AISC 360, Section M2.5	1704.3.3
b. Slip-critical connections.	X	X		
3. Material verification of structural steel:				
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	-	-	ASTM A 6 or ASTM A 568	1708.4
b. Manufacturers' certified mill test reports.	-	-	ASTM A 6 or ASTM A 568	
4. Material verification of weld filler materials:				
a. Identification markings to conform to AWS specification in the approved construction documents.	-	-	AISC 360, Section A3.5	-
b. Manufacturer's certificate of compliance required.	-	-	-	-
5. Inspection of welding:				
a. Structural steel:	-	-		
1) Complete and partial penetration groove welds.	X	-	AWS D1.1	1704.3.1
2) Multipass fillet welds.	X	-		
3) Single-pass fillet welds> 5/16"	X	-		
4) Single-pass fillet welds< 5/16"	-	X		
5) Floor and roof deck welds.	-	X	AWS D1.3	-
b. Reinforcing steel:	-	-		
1) Verification of weldability of reinforcing steel other than ASTM A 706.	-	X	AWS D1.4 ACI 318: 3.5.2	-
2) Reinforcing steel-resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special reinforced concrete shear walls and shear reinforcement.	X	-		
3) Shear reinforcement.	X	-		
4) Other reinforcing steel.	-	X		
6. Inspection of steel frame joint details for compliance with approved construction documents:				
a. Details such as bracing and stiffening.	-	X	-	1704.3.2
b. Member locations.	-	-		
c. Application of joint details at each connection.	-	-		

REQUIRED VERIFICATION AND INSPECTION OF SOILS

TABLE 1704.7

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. Verify materials below footings are adequate to achieve the design bearing capacity.	-	X
2. Verify excavations are extended to proper depth and have reached proper material.	-	X
3. Perform classification and testing of controlled fill materials.	-	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of controlled fill.	X	-
5. Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly.	-	X

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A&M ELECTRIC BUS/VEHICLE

SERVICE BAY

ALABAMA A&M UNIVERSITY,
C/O DEPARTMENT OF TRANSPORTATION
315 PATTON HALL, NORMAL, AL 35762

PROJECT: 21022

DRAWN: AWP

DATE: 2/21/2022

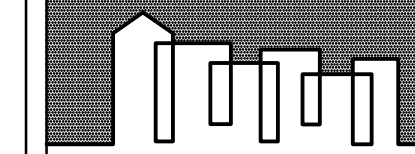
REVISIONS

SHEET TITLE

SPECIAL
INSPECTIONS

SHEET NO.

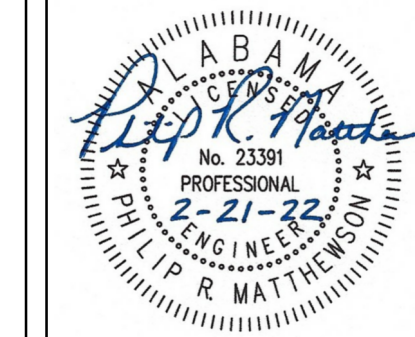
S2.2



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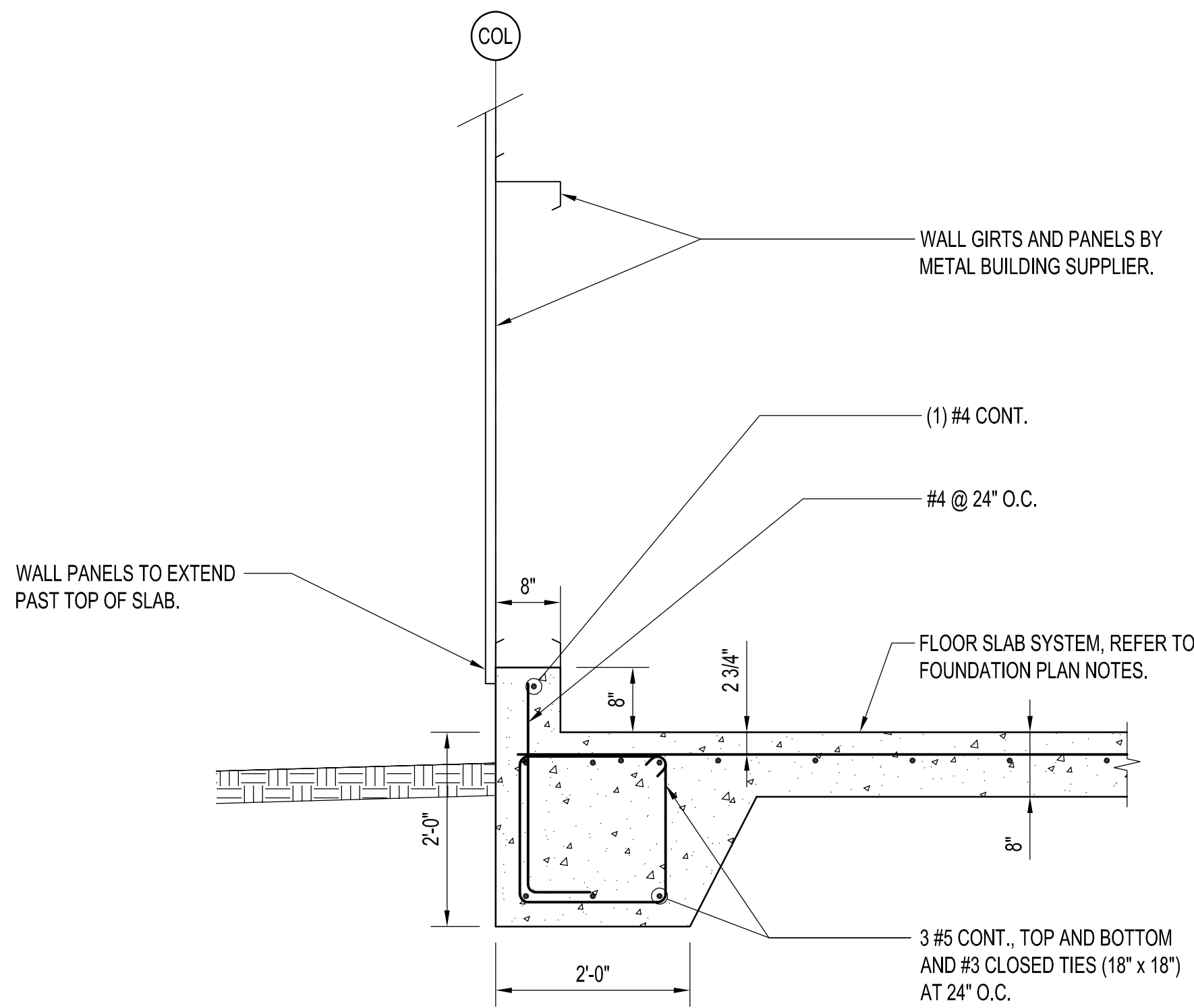
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FOUNDATION

SECTIONS

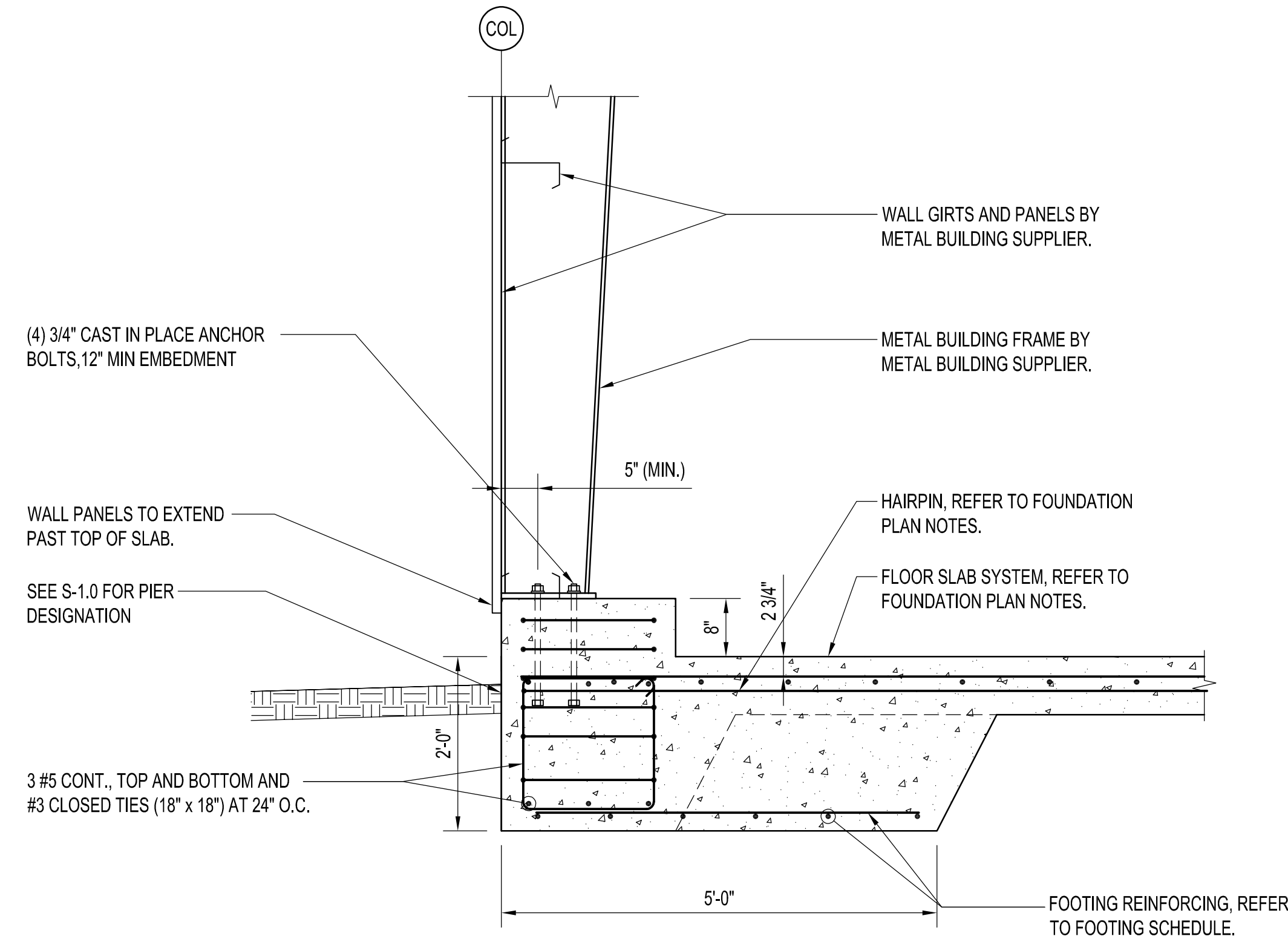
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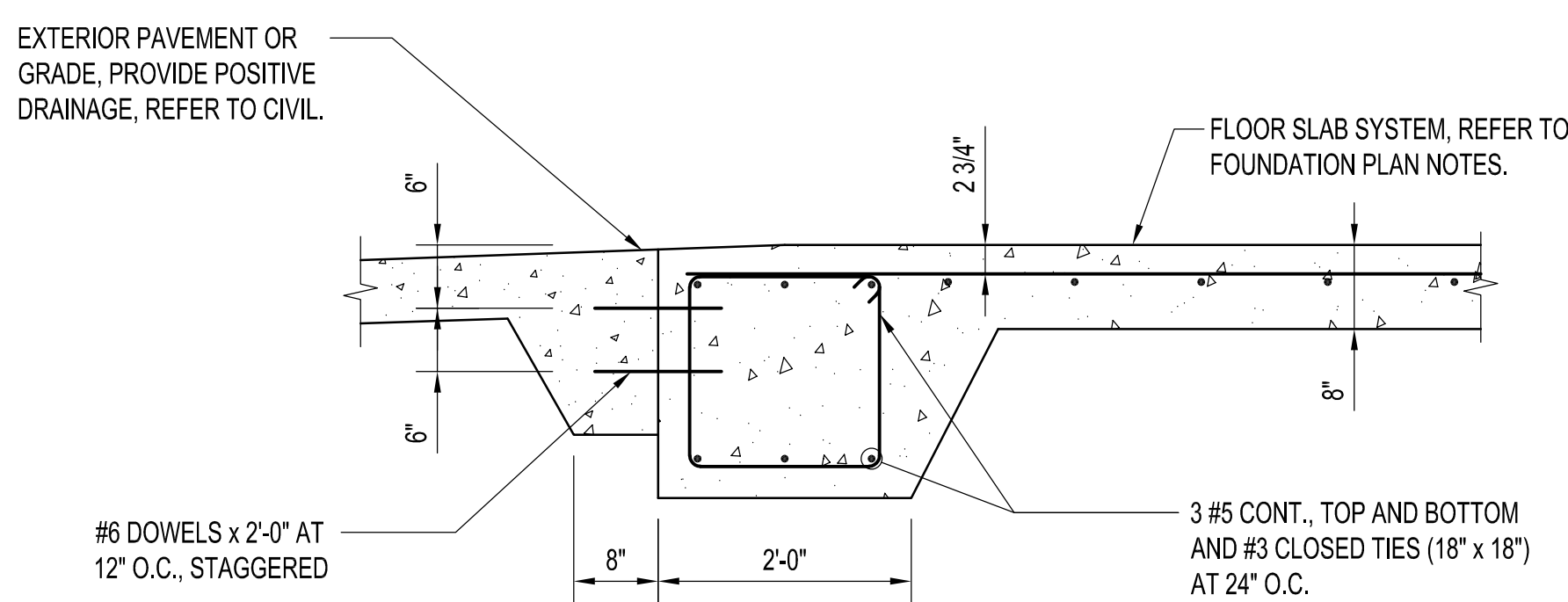
SECTION
SCALE 3/4" = 1'-0"

A
S3.0



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

B
S3.0



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

C
S3.0

PART 1 - GENERAL
1.1 GENERAL

THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO REPRESENT THE SCOPE OF WORK FOR THE ELECTRICAL TASK TO BE PERFORMED. ELEMENTS AND COMPONENTS NOT INCLUDED ON THE DRAWINGS, BUT ARE NECESSARY AND DEEMED ESSENTIAL FOR THE PROPER OPERATION AND FUNCTION OF THE ELECTRICAL SYSTEMS, (CONREQUIRED FOR COMPLIANCE WITH APPLICABLE CODES), SHALL BE PROVIDED AND INSTALLED AT NO ADDITIONAL COST TO THE OWNER, ARCHITECT, AND/OR ENGINEERS. THE CONTRACTOR SHALL PROVIDE AND INSTALL HIS EQUIPMENT AND INSTALL AND CONNECT EQUIPMENT AND FIXTURES FURNISHED BY OTHERS.

1.2 SCOPE OF WORK

FURNISH AND INSTALL ALL MATERIALS AND EQUIPMENT AND PROVIDE ALL LABOR REQUIRED AND NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND ALL OTHER WORK NOT SPECIFICALLY STATED, BUT REASONABLY INFERRED FOR A COMPLETE AND USEABLE SYSTEM. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT REQUIREMENTS AND SUBMIT TO THE ARCHITECT FOR APPROVAL PRIOR TO PURCHASE, FABRICATION, AND/OR INSTALLATION. THE SCOPE OF WORK SHALL INCLUDE TESTING TO REASONABLY SHOW THAT THE SYSTEM COMPONENTS MEET THE SPECIFIED REQUIREMENTS. THIS PROJECT INCLUDES ELECTRICAL SERVICE, GENERAL POWER, AND LIGHTING.

1.3 INSPECTION OF SITE

THE CONTRACTOR SHALL INSPECT THE SITE OF THE NEW CONSTRUCTION AND PREMISES OF THE EXISTING BUILDING AND SHALL COMPARE CONDITIONS THEREIN WITH WORK SHOWN ON THE DRAWINGS. HE SHALL BECOME THOROUGHLY FAMILIAR WITH CONDITIONS WHICH WILL AFFECT HIS WORK, AS NO ALLOWANCE IS TO BE MADE FOR LACK OF KNOWLEDGE CONCERNING SUCH CONDITIONS AFTER THE CONTRACT IS SIGNED. HE SHALL REPORT IMMEDIATELY TO THE OWNER ANY DISCREPANCIES WHICH HIS INSPECTION MAY REVEAL DURING THE BIDDING PERIOD IN ORDER THAT MISUNDERSTANDINGS AT A LATER DATE MAY BE PREVENTED. THE CONTRACTOR SHALL SUGGEST, BASED ON HIS EXPERTISE, SOLUTION FOR THE DOCUMENTATION FOR THE ARCHITECT TO REVIEW PRIOR TO SUBMISSION OF HIS PROPOSAL. ACCEPTANCE BY THE CONTRACTOR OF THE DESIGN DOCUMENTATION AS EVIDENCED BY THE ACCEPTANCE OF THE CONTRACTOR'S PROPOSAL, BY THE OWNER SHALL INDICATE THAT THE WORK CAN BE ACCOMPLISHED IN ACCORDANCE WITH THE DOCUMENTATION. EXCEPT FOR UNFORESEEN ITEMS, THE CONSTRUCTION COST AND DOCUMENTATION RESULTING FROM CHANGES INCURRED AS A RESULT ON UNINTENTIONAL OMISSIONS BY THE ARCHITECTURAL DESIGN/CONSTRUCTION DOCUMENTATION AFTER AWARD SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THIS DOES NOT ALLEVIATE THE CONTRACTOR FROM PROVIDING SUCCESSFULLY INSPECTED, FULLY FUNCTIONAL SYSTEMS.

1.4 CODES, PERMITS, AND INSPECTIONS

WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST PUBLISHED NATIONAL ELECTRIC CODE, NATIONAL ELECTRIC SAFETY CODE, STATE OF ALABAMA BUILDING CODES, AND OTHER NATIONAL, LOCAL, AND STATE LAWS, ORDINANCES RULES, AND REGULATIONS RELATING TO THE WORK. WHERE THE DRAWINGS OR SPECIFICATIONS EXCEED THESE REQUIREMENTS, THE SPECIFICATIONS SHALL GOVERN. IN NO CASE SHALL WORK BE INSTALLED CONTRARY TO OR BELOW THE MINIMUM LEGAL STANDARDS. THE CONTRACT SHALL INCLUDE PAYMENT OF PERMIT AND INSPECTION FEES REQUIRED FOR INSTALLATION OF THE ELECTRICAL WORK. ALSO INCLUDE THAT PORTION OF THE BUILDING PERMIT FOR WORK PERTAINING TO THIS BRANCH, WHERE APPLICABLE. WORK SHALL BE INSPECTED AND APPROVED BY THE INSPECTION AGENCY HAVING JURISDICTION AND A CERTIFICATE OF APPROVAL SHALL BE DELIVERED TO THE OWNER.

1.5 GUARANTEE

THIS CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS INSTALLED UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. MATERIALS OR WORKMANSHIP PROVING TO BE DEFECTIVE DURING THIS PERIOD SHALL BE REPLACED BY THIS CONTRACTOR WITHOUT COST TO THE OWNER.

1.6 EQUIPMENT SELECTION AND APPROVAL

THE SELECTION OF MATERIALS AND EQUIPMENT TO BE FURNISHED UNDER THIS CONTRACT SHALL BE IN STRICT ACCORDANCE WITH THESE SPECIFICATIONS. WHERE TRADE NAMES, BRANDS, OR MANUFACTURER OF EQUIPMENT OR MATERIALS ARE LISTED IN THE SPECIFICATIONS, THE WORDS "OR APPROVED EQUAL" SHALL BE UNDERSTOOD TO APPEAR THEREAFTER. APPROVAL OF EQUALITY IS REQUIRED BY THE OWNER.

1.7 SHOP DRAWINGS

THE CONTRACTOR SHALL SUBMIT 3 SETS OF SHOP DRAWINGS, WHICH SHALL INCLUDE EQUIPMENT FURNISHED AS APPLICABLE TO HIS DISCIPLINE. THE SHOP DRAWINGS SHALL INCLUDE BUT NOT BE LIMITED TO SERVICE ENTRANCE EQUIPMENT, POWER PANELS OR LOAD CENTERS, LIGHT FIXTURES, AND OUTLET DEVICES.

1.8 LOCATION COORDINATION

COORDINATE WORK WITH OTHER TRADES TO AVOID CONFLICT AND TO PROVIDE CORRECT ROUGH-IN AND CONNECTION FOR EQUIPMENT FURNISHED UNDER OTHER TRADES THAT REQUIRE ELECTRICAL CONNECTIONS. VERIFY EQUIPMENT DIMENSIONS AND REQUIREMENTS WITH PROVISIONS SPECIFIED UNDER THIS SECTION.

1.9 PROTECTION OF EQUIPMENT

THIS CONTRACTOR SHALL BE ENTIRELY RESPONSIBLE FOR THE PROTECTION OF HIS MATERIALS AND EQUIPMENT DURING ALL STAGES OF CONSTRUCTION, BOTH BEFORE AND AFTER INSTALLATION, UNTIL THE WORK IS ACCEPTED BY THE OWNER.

1.10 SITE CLEANUP

AFTER ALL OTHER WORK HAS BEEN ACCOMPLISHED, CLEAN ALL EXPOSED CONDUIT, FIXTURES, EQUIPMENT, AND SUPPORT. TOUCH UP PAINT ON ANY EQUIPMENT SCRAPPED, SCRATCHED OR DAMAGED DURING CONSTRUCTION. LEAVE ALL AREAS INVOLVING ELECTRICAL WORK IN A CONDITION SATISFACTORY TO THE OWNER. REMOVE ALL CRATES, CARDBOARD, PACKING MATERIAL, WASTE MATERIAL, AND OTHER DEBRIS LEFT OVER FROM CONSTRUCTION. ALL DEBRIS SHOULD BE REMOVED FROM THE SITE ON A DAILY BASIS.

1.11 BUILDING SERVICE

THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS WITH AND MEET ALL REQUIREMENTS OF PUBLIC SERVICE TO OBTAIN A 200 AMP 480/277 VOLT, THREE PHASE, FOUR WIRE ELECTRIC SERVICE FOR THE ENTIRE PORTION OF THE BUILDING. THE OWNER SHALL PROVIDE TO THE ELECTRICAL CONTRACTOR A SINGLE POINT OF CONTACT TO ENSURE COORDINATION OF ALL ELECTRICAL SERVICE REQUIREMENTS.

1.12 TEMPORARY SERVICE FOR CONSTRUCTION

THIS CONTRACTOR SHALL MAKE APPLICATION TO THE USER FOR TEMPORARY ELECTRIC SERVICE. THIS SERVICE SHALL BE USED UNTIL THE NEW SERVICE IS ENERGIZED. THE CONTRACTOR SHALL FURNISH, INSTALL, AND PAY FOR ALL NECESSARY WIRE, METERING, POLES, SWITCHES, RECEPTACLES, LIGHTS, AND ACCESSORIES TO PROVIDE A TEMPORARY ELECTRIC SERVICE. THE CONTRACTOR ON THE PROJECT REQUIRING EXTENSION CORDS SHALL PROVIDE THEIR OWN CORDS AND PLUGS UP TO CAPACITY OF 20 AMPERES. THIS CONTRACTOR SHALL MAINTAIN THE TEMPORARY LIGHT AND POWER SYSTEM FOR THE DURATION OF THE WORK AND SHALL REMOVE IT FROM THE SITE WHEN DIRECTED. TEMPORARY WIRING AND EQUIPMENT SHALL REMAIN THE PROPERTY OF THIS CONTRACTOR. THE COMPLETE TEMPORARY SERVICE SHALL COMPLY WITH OSHA REQUIREMENTS.

PART 2 - PRODUCTS

2.1 MATERIAL APPROVAL

ALL MATERIALS MUST BE NEW AND BEAR U.L. LABEL. MATERIALS THAT ARE NOT COVERED BY UL TESTING STANDARDS SHALL BE TESTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY OF A GOVERNMENTAL AGENCY APPROVED BY THE AUTHORITY HAVING JURISDICTION.

2.2 WIRES AND CABLES

FOR 600V SYSTEMS AND BELOW SHALL BE STRANDED COPPER. THE MINIMUM WIRE SIZE SHALL BE #12 AWG. WIRE AMPACITY SHALL BE EQUAL TO OR GREATER THAN THE OVERCURRENT PROTECTIVE DEVICE SERVING THAT CIRCUIT. WIRE SIZE SHALL BE INCREASED TO COMPENSATE FOR VOLTAGE DROP BASED ON PHYSICAL ROUTING OF CABLE. INSULATION SHALL BE THWN FOR WET LOCATIONS AND THHN FOR DRY LOCATIONS. TYPE MC AND NM CABLES ARE NOT PERMITTED FOR USE ON THIS PROJECT. ALL WIRE MUST BE INSTALLED IN CONDUIT.

2.3 JUNCTION AND PULL BOXES

BOXES SHALL BE CODE GAUGE, CONSTRUCTED OF GALVANIZED STEEL WITH SCREWED COVERS. JUNCTION BOXES AND PULL BOXES SHALL BE SO LOCATED AS TO BE ACCESSIBLE. WHERE A NATURAL MEANS OF ACCESS IS NOT AVAILABLE, HINGED METAL ACCESS COVERS MATCHING THE CEILING FINISH SHALL BE PROVIDED BY THIS CONTRACTOR. ACCESS COVERS SHALL BE FLUSH TYPE WITH HINGED DOOR AND RIGID FRAME, WITH SCREWDRIVER LOCK. A REMOVABLE PAN OR LAY-IN CEILING SHALL BE CONSIDERED AS ADEQUATE MEANS OF ACCESS TO BOXES. ACCESS PANEL SHALL BE MILCOR "M" OR "D" OR "DIV" OR APPROVED EQUAL.

2.4 OUTLET BOXES

CONDUIT BOXES SHALL BE CAST ALUMINUM, GALVANIZED OR CADMIUM PLATED STEEL AS MANUFACTURED BY STEEL CITY, APPLETON, CROUSE HINDS, RUSSELL & STOLL, OR RACO. FIXTURE OUTLET BOXES SHALL BE A STANDARD 4" X 2" DEEP, OCTAGONAL OR SQUARE WITH 3/8" FIXTURE STUDS. DEVICE OUTLET BOXES SHALL BE NOMINAL 2" X 4" WHERE TWO WIRES TERMINATE. WHERE WIRING IS CONTINUOUS AND MORE THAN TWO ENTER, BOXES SHALL BE 4" SQUARE. PROVIDE SINGLE GANG PLASTER RING EXTENSIONS FOR 4" SQUARE BOXES WHERE INSTALLED IN PLASTERED WALLS. DEVICE OUTLET BOXES LOCATED IN MASONRY WALLS SHALL BE 4" SQUARE AND HAVE SQUARE CORNERS WITH NO EXTERNAL EARS.

OUTLET AND DEVICE BOXES SHALL BE RIGIDLY ATTACHED TO THE CEILING OR WALL CONSTRUCTION BY MEANS OF STEEL STRAPS SECURED TO STUDS OR CHANNELS BY MEANS OF SCREWS, BOLTS, OR WIRE. BOXES SHALL BE ALIGNED TRUE TO BUILDING LINES. MOUNTING HEIGHTS AND DIMENSIONS SHALL BE CONSIDERED TO BE AT THE CENTER LINE OF THE BOX. OUTLET AND DEVICE BOXES SHALL NOT BE MOUNTED BACK TO BACK IN COMMON WALLS. WATER TIGHT JUNCTION BOXES, BONDING JUMPERS, ETC., SHALL BE PROVIDED WHEREVER THE CONSTRUCTION DICTATES SUCH DEVICES. FLOOR BOXES SHALL BE CAST METAL OR FORMED STEEL.

2.5 WIRING DEVICES

ALL WIRING DEVICES OF ANY ONE GENERAL TYPE SHALL BE OF THE SAME MANUFACTURER AND SHALL MATCH THROUGHOUT. WIRING DEVICES SHALL BE AS MANUFACTURED BY HUBBELL, GE, LEVITON, P & S, OR BRYANT. COVER PLATES SHALL BE AS MANUFACTURED BY ARROW HART, SIERRA, LEVITON, OR MULLBERRY. THE COLOR SHALL BE IVORY UNLESS SPECIFIED OTHER WISE BY ARCHITECT.

WHERE INDICATED, PROVIDE SPECIFICATION GRADE, DUPLEX RECEPTACLES, GROUND-FAULT CIRCUIT INTERRUPTERS; GROUND TYPE, UL-RATED CLASS A GROUP 1, 20 AMPERES RATING, 120 VOLTS. THE COLOR SHALL BE IVORY UNLESS SPECIFIED OTHERWISE BY ARCHITECT. SWITCHES SHALL BE FLUSH WALL TYPE. TWO, THREE AND FOUR-WAY 120-VOLT SWITCHES SHALL BE SPECIFICATION GRADE, TOGGLE HANDLE, WITH TOTALLY ENCLOSED CASE, RATED 20 AMPERE, TUNGSTEN, 60 HERTZ AND CONTAIN SWITCHING ARRANGEMENT INDICATED ON DRAWINGS. ALL LIGHT SWITCHES SHALL HAVE A COVER TO PREVENT INCIDENTAL CONTACT. THE COLOR SHALL BE IVORY UNLESS SPECIFIED OTHER WISE BY ARCHITECT.

2.6 WIRE CONNECTORS

CONNECTIONS SHALL BE MADE USING PRESSURE TYPE TERMINALS. WHERE CONNECTIONS OF STRANDED WIRE ARE TO BE MADE TO DEVICES OR EQUIPMENT UNDER SCREW HEADS ONLY, INSTALL INSULATED GRIMP WIRE SPADE CLIPS ON THE WIRE ENDS BEFORE THE CONNECTIONS ARE MADE. CONNECTORS SHALL CONTAIN ONLY ONE WIRE UNLESS THEY ARE APPROVED FOR MULTIPLE CONDUCTORS.

2.7 PANELBOARD

PANELBOARDS SHALL BE AS MANUFACTURED BY SQUARE D, GE, SIEMENS, OR CUTLER HAMMER. PROVIDE PANELBOARDS AS INDICATED ON SCHEDULES WITH THE FOLLOWING FEATURES: HARD-DRAWN COPPER BUS, MECHANICAL-TYPE MAIN AND NEUTRAL LUGS, NEUTRAL BUS RATED 100 PERCENT OF PHASE BUS, GROUND BUS BONDED TO ENCLOSURE, BOLT-ON MOLDED-CASE THERMAL-MAGNETIC BREAKERS. PANELBOARDS SHALL BE FULLY RATED FOR THE SHORT CIRCUIT INTERRUPTING CAPACITY INDICATED IN SCHEDULES. PROVIDE A PHENOLIC NAMEPLATE ON THE VISIBLE FACE INDICATING THE PANEL NAME IN 3/8" LETTERS. PROVIDE A TYPE WRITTEN PANEL DIRECTORY THAT IS FULLY VISIBLE WHEN THE PANEL NAME IS OPEN. THE PANEL DIRECTLY SHALL INDICATE THE LOADS SERVED BY ALL CIRCUIT BREAKERS INSTALLED IN THE PANELBOARD. THE SOURCE OF POWER TO THE PANELBOARD, THE SIZE OF THE PANEL BOARD, SIZE OF THE MAIN BREAKER IF INSTALLED, VOLTAGE, PHASE, AND NUMBER OF WIRES SERVING THE PANELBOARD.

2.8 WARNING SIGNS

PROVIDE WARNING SIGNS FOR FLASH PROTECTION IN ACCORDANCE WITH NFPA 70E AND NEMA Z535.4 FOR PANELBOARDS, CIRCUIT BREAKER ENCLOSURES, LOAD CENTERS, AND ANY OTHER ELECTRICAL EQUIPMENT THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED. PROVIDE FIELD INSTALLED SIGNS TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS WHEN WARNING SIGNS ARE NOT PROVIDED BY THE MANUFACTURER. PROVIDE MARKING THAT IS CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.

2.9 RACEWAYS

ALL DISTRIBUTION AND SERVICE WIRING SHALL BE RUN IN CONDUIT, IN MASONRY WALLS, ON EXPOSED SURFACES, IN POURED CONCRETE, AND WHERE UNDERGROUND. CONDUIT MAY BE RIGID GALVANIZED OR PLATED STEEL, INTERMEDIATE GRADE STEEL (IMC), RIGID ALUMINUM, GALVANIZED, OR PLATED THINWALL ELECTRIC METALIC TUBING OR TYPE EPC-40 RIGID POLYVINYL CHLORIDE (PVC), SUBJECT TO THE FOLLOWING CONDITIONS. CONDUIT SHALL CONFORM TO ANSI AND NEMA REQUIREMENTS AND EACH LENGTH SHALL BE UL LABELED. DO NOT USE ALUMINUM IN POURED CONCRETE OR UNDERGROUND. EMT IS NOT APPROVED FOR INSTALLATION UNDERGROUND OR EXPOSED TO WEATHER. EXPOSED CONDUITS IN EQUIPMENT ROOMS, STORAGE ROOMS, JANITOR ROOMS, AND SIMILAR SPACES MAY BE EMT, IMC, OR RIGID.

FLEXIBLE METAL CONDUIT EQUAL TO GREENFIELD MAY BE USED FOR CONNECTIONS TO LIGHTING FIXTURES, WITH LENGTH LIMITED TO 6 FT., HORIZONTAL RUNS THROUGH STUD WALLS, IN NARROW MOVABLE PARTITIONS WHERE OTHER RACEWAYS ARE NOT PRACTICABLE WHEN SO APPROVED BY THE OWNER OR ENGINEER, AND CONNECTIONS TO MOTORS OR CONTROLS ON DYNAMIC EQUIPMENT. NOTE THAT FLEXIBLE MOTOR CONNECTIONS IN WET, DAMP, DUSTY, OR OUTSIDE LOCATIONS SHALL BE WATER AND DUST TIGHT TYPE FITTINGS APPROVED FOR WET LOCATIONS. CONDUIT SHALL BE 3/4" DIAMETER OR LARGER EXCEPT 1/2" SIZE MAY BE USED WHERE FLEXIBLE CONDUIT IS ALLOWED, FOR SWITCH LEGS, AND WHEN CONDUIT CARRIES CONTROL WIRING ONLY

2.10 LIGHT FIXTURES

PROVIDE LIGHT FIXTURES AS SHOWN IN LIGHTING FIXTURE SCHEDULE. PROVIDE LAMPS IN EACH FIXTURE. ONLY THE NUMBER OF LAMPS REQUIRED TO PROVIDE TEMPORARY LIGHTING SHALL BE INSTALLED AT THE TIME FIXTURES ARE INSTALLED AND TESTED. REMAINING LAMPS SHALL BE INSTALLED NOT MORE THAN TEN (10) DAYS PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE OWNER. LAMPS SHALL BE OPERATING AT THE TIME OF FINAL ACCEPTANCE AND DEFECTIVE LAMPS SHALL BE REPLACED BY THIS CONTRACTOR. LAMPS SHALL BE MANUFACTURED BY G.E., WESTINGHOUSE, OR SYLVANIA.

PART 3 EXECUTION
3.1 GENERAL

SYSTEM LAYOUTS INDICATED ON THE DRAWINGS ARE DIAGRAMMATIC, BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER TRADES WILL ALLOW. COORDINATE LOCATIONS OF ELECTRICAL EQUIPMENT, DEVICES, OUTLETS, FIXTURES, ETC., WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REFLECTED CEILING PLANS PRIOR TO ROUGH-IN WORK. ALL HOME RUNS ARE INDICATED AS STARTING FROM THE DEVICE NEAREST THE PANEL AND CONTINUING IN THE GENERAL DIRECTION OF THE PANEL. OBTAIN PRIOR APPROVAL FROM ARCHITECT AND CONFORM TO ALL STRUCTURAL REQUIREMENTS WHEN CUTTING OR BORING OF THE STRUCTURE OR STRUCTURAL MEMBERS IS REQUIRED. CONDUITS LEAVING OR ENTERING THE BUILDING SHALL BE SEALED PER THE NATIONAL ELECTRICAL CODE TO PREVENT THE ENTRANCE OF MOISTER. VERIFY ALL FIRE AND SMOKE RATING BARRIERS WITH ARCHITECTURAL PLANS.

3.2 ELECTRICAL GROUNDING

THE ENTIRE ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS AND ASSOCIATED FITTINGS AND TERMINATIONS SHALL BE MADE MECHANICALLY TIGHT TO PROVIDE A CONTINUOUS ELECTRICAL PATH TO GROUND AND SHALL BE SAFELY GROUNDED AT ALL EQUIPMENT BY BONDING ALL METALLIC CONDUIT TO THE EQUIPMENT ENCLOSURES WITH LOCKNUTS CUTTING THROUGH PAIN ON ENCLOSURES. BOND ALL CONDUITS ENTERING SERVICE ENTRANCE SWITCHBOARD WITH A GROUND WIRE. CONNECT THE GROUNDING TYPE BUSHINGS TO THE EQUIPMENT GROUND BAR. GROUND CONDUCTORS SHALL IDENTIFIED BY GREEN AT ALL ACCESSIBLE LOCATIONS AND SHALL BE CONNECTED WITH APPROVED CONNECTORS AND TERMINATORS TO BOXES, DEVICES, EQUIPMENT, ETC., AND TO GROUND BARS IN PANELS. THE BUILDING NEUTRAL SHALL BE IDENTIFIED WITH WHITE CONDUCTORS.

3.3 RACEWAY AND CABLE INSTALLATION

CONDUIT SHALL BE RUN CONCEALED UNLESS OTHERWISE INDICATED OR SPECIAL PERMISSION GRANTED FROM THE OWNER. WHERE CONDUIT IS EXPOSED, IT SHALL BE RUN PARALLEL OR PERPENDICULAR TO THE BUILDING LINES. BENDS AND OFFSETS SHALL BE AVOIDED WHERE POSSIBLE. WHEN REQUIRED, RADI FOR CONDUITS SHALL NOT BE LESS THAN STIPULATED BY CODE. TERMINATIONS OF ALL CONDUITS SHALL BE SECURED BY LOCKNUTS AND APPROVED BUSHINGS TIGHTENED UP TO SECURE ELECTRICAL AS WELL AS MECHANICAL INTEGRITY OF THE CONDUIT NETWORK. FASTEN CONDUIT SECURELY TO THE BUILDING STRUCTURE THROUGHOUT BY MEANS OF HEAVY DUTY STRAP HANGERS AND CLAMPS ATTACHED TO THE BASIC BUILDING STRUCTURE. SMALLER BRANCH CIRCUIT CONDUIT MAY BE SECURED BY MEANS OF GALVANIZED METAL CLAMPS AND SCREWS ATTACHED TO CONCRETE OR JOISTS. WIRE SHALL NOT BE USED FOR SUSPENDING CONDUIT. VERTICAL CONDUIT RUN SHALL BE SUPPORTED WITH CLAMPS AT EACH FLOOR LEVEL TO PREVENT BOTH LATERAL AND VERTICAL SHIFTING.

OPEN ENDS OF CONDUIT STUDS SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SPECIAL CARE SHALL BE TAKEN TO PREVENT DAMAGE TO THE CONDUIT DURING CONCRETE POURING. EMPTY CONDUIT INSTALLATION FOR USE BY OTHERS SUCH AS TELEPHONE OR FUTURE SYSTEMS, ETC., SHALL BE COMPLETE WITH PULL WIRE. A MANDREL SHALL BE PULLED THROUGH EACH FEEDER CONDUIT TO ASSURE AGAINST FOREIGN OBJECTS REMAINING INSIDE.

FLOOR SLEEVES SHALL PROJECT ONE INCH ABOVE THE FINISHED FLOOR. SLEEVES AND OPENINGS THROUGH FLOORS AND WALLS IN WHICH CONDUITS PASS SHALL BE PACKED AND SEALED WITH FIRE STOPPING MATERIAL TO PREVENT SPREAD OF FIRE AND SMOKE.

3.4 CONDUIT AND CABLE PENETRATIONS

FURNISH RIGID CONDUIT SLEEVES FOR CABLES PASSING THROUGH MASONRY, CONCRETE, OR OTHER SIMILAR CONSTRUCTION. FURNISH SLEEVE TO MASONRY WALLS. FURNISH, INSTALL, AND GROUT SLEEVE IN EXISTING MASONRY AND NEW CONCRETE WALLS. SLEEVE NOT REQUIRED FOR DRYWALL WALLS OR CORE DRILLED HOLE IN CONCRETE WALL.

FOR NON-FIRE RATED INTERIOR WALL AND FLOOR PENETRATIONS; FILL VOID BETWEEN CONDUIT AND SLEEVE, CONCRETE, OR DRYWALL WITH EXPANDING POLYURETHANE FOAM. CAULK BETWEEN CONDUIT AND SLEEVE OR WALL WITH NON-HARDENING POLYURETHANE FOAM. CAULK BETWEEN CONDUIT AND WALL. PROVIDE AN OPENING AROUND PIPE WITH A UL APPROVED FIRE-STOP SYSTEM HAVING AN F-RATING NOT LESS THAN THE HOURLY RATING OF THE ASSEMBLY BEING PENETRATED. FOR SMOKE WALL PENETRATIONS; CONDUITS OR CABLE PENETRATING PENETRATION SHALL NOT DESTROY THE BARRIERS INTEGRITY.

3.5 MISCELLANEOUS EQUIPMENT CONNECTIONS

VARIOUS ITEMS OF EQUIPMENT WILL BE FURNISHED AND SET IN PLACE BY OTHER TRADES. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR TO COMPLETE THE FIELD WIRING OF THIS EQUIPMENT SO THAT IT SHALL BE CONNECTED COMPLETE AND READY FOR OPERATION. WHERE DISCONNECT SWITCHES ARE INDICATED OR WHERE OTHERWISE REQUIRED, THEY SHALL BE MOUNTED IN AN ACCESSIBLE LOCATION AS DEFINED BY THE NATIONAL ELECTRICAL CODE. IT WILL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO VERIFY THAT THE RECEPTACLE SPECIFIED ON THE DRAWINGS WILL MATCH THE CONFIGURATION OF THE PLUG BEING FURNISHED ON THE APPLIANCE PRIOR TO INSTALLATION.

3.6 MOTOR WIRING

MOTORS FOR PUMPS, FANS, AIR CONDITIONING UNITS, ETC. WILL BE FURNISHED AND PLACED BY VARIOUS TRADES. MOTOR STARTERS SHALL BE FURNISHED BY THIS CONTRACTOR IF NOT PROVIDED BY OTHER TRADES AND IS REQUIRED FOR THE EQUIPMENT TO BE FULLY OPERATIONAL. STARTERS, WHERE FURNISHED BY OTHER TRADES, WILL BE TURNED OVER TO THIS CONTRACTOR WHO SHALL INSTALL THEM WHERE INDICATED, INCLUDING ALL WIRING FROM THE STARTERS TO THE MOTORS, ALL COMPLETE AND READY FOR OPERATION. WHERE DISCONNECT SWITCHES ARE INDICATED, OR REQUIRED BY THE CODE IN ADDITION TO THE STARTERS, THEY SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. FLEXIBLE CONDUIT SHALL BE USED AT ALL MOTOR CONNECTIONS. WHERE EXPOSED TO WEATHER, MOISTURE OR TO CONCENTRATE DUST OR FUMES, FLEXIBLE CONDUIT AND CONNECTORS SHALL BE WATER TIGHT.

3.7 EQUIPMENT SUPPORTS

PROVIDE STRUCTURAL STEEL FRAMEWORK AND HANGING RODS WITH BRACES AND ACCESSORIES WHERE SHOWN OR WHERE REQUIRED TO HOLD EQUIPMENT IN FINAL POSITION. PROVIDE STEEL STRAPS AND FRAMES TO SUPPORT WALL MOUNTED EQUIPMENT WHERE THE NORMAL WALL STRENGTH MAY BE INADEQUATE. ELECTRICAL DEVICES, MOTORS STARTERS, DISCONNECT SWITCHES, ETC. SHALL BE SUPPORTED INDEPENDENT OF AND ISOLATED FROM EQUIPMENT VIBRATION.

3.8 EXCAVATION AND BACKFILL

THE CONTRACTOR SHALL PROVIDE EXCAVATION AS FOLLOWS FOR THE UNDERGROUND SERVICES FOR THIS PROJECT. TRENCHES SHALL BE OPENED IN STRAIGHT LINES AND BOTTOM OUT AT LEAST 4" BELOW CONDUITS OR DUCTS AND LEVELED WITH COMPACTED GRANULAR MATERIAL. UNLESS OTHERWISE INDICATED, THE MINIMUM DEPTH SHALL BE AS DEFINED BY THE NATIONAL ELECTRICAL CODE AND SHALL BE MAINTAINED BETWEEN TOP OF LARGEST CONDUIT OR DUCT AND FINISH GRADES. THE CONTRACTOR SHALL REMOVE ROCKS, DEBRIS, ETC., IN THE LINE OF THE EXCAVATION OF THE SAME ITEMS FROM PROJECT SITE. THE CONTRACTOR SHALL CUT ANY INTERFERING TREES, REMOVE ALL STUMPS, ROCKS, ETC., IN THE LINE OF THE EXCAVATION. APPROVAL OF THE OWNER SHALL BE OBTAINED BEFORE ANY TREE IS REMOVED. ANY SHRUBBERY IN LINE OF EXCAVATION SHALL BE REMOVED WITH A BALL OF DIRT AND REPLACED AT COMPLETION OF EXCAVATION. WHERE EXCAVATION CROSSES EXISTING LAWNS, CONTRACTOR SHALL REMOVE SOD, PROPERLY STORE AND REPLACE SOD AT COMPLETION OF EXCAVATION. CARE SHALL BE EXERCISED DURING THE WORK TO SEE THAT NO UNNECESSARY DAMAGE OCCURS IN THE OPERATION OF THE WORK. THE CONTRACTOR SHALL BE REQUIRED TO RECONDITION LAWNS AT HIS OWN EXPENSE. WHERE EXISTING SIDEWALKS, DRIVES, AND ROADWAYS MUST BE CUT, THEY SHALL BE SAW-CUT IN STRAIGHT LINES AT EXISTING EXPANSION JOINT OR CONTROL JOINT AND SHALL PRESENT A NEAT APPEARANCE WHEN RELAID AND SHALL MATCH EXISTING WORK. THE CONTRACTOR SHALL LOCATE EXISTING ELECTRIC FEEDERS, GAS LINES, WATER LINES, SANITARY LINES, AND ANY OTHER EXISTING UNDERGROUND SERVICE LINES BEFORE THE EXCAVATION IS STARTED. ALL RESPECTIVE SERVICE LINES SHALL BE STAKED AND THE TRENCH SHALL BE OPENED BY HAND AT THE LOCATIONS OF THE ABOVE SERVICES.

BACKFILLING INCLUDED IN THE ELECTRICAL CONTRACT SHALL INCLUDE TRENCHES WHICH ARE EXCAVATED UNDER THIS CONTRACT. BACKFILLING SHALL BE CAREFULLY PERFORMED AND THE SURFACE RESTORED TO ITS ORIGINAL LEVEL AS NEARLY AS POSSIBLE. THE TRENCHES SHALL BE BACKFILLED WITH THE EXCAVATED MATERIAL, FREE FROM LARGE CLOUDS OR STONES, EXCEPT BACKFILL OVER SERVICES IN PAVED, OR OTHER HARD GRADED MATERIAL TO PREVENT UNDOE SETTLEMENT. ALSO, THE INTERIOR TRENCHES SHALL BE BACKFILLED WITH GRADED GRAVEL. ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED. ALL TRENCHES SHALL BE MECHANICALLY COMPACTED IN LAYERS NOT OVER 6" DEEP. WATER SETTLING WILL BE PERMITTED ONLY AS AN AID TO MECHANICAL COMPACT. WHEREVER THE TRENCHES HAVE NOT BEEN PROPERLY FILLED OR SETTLEMENT OCCURS, THEY SHALL BE REFILLED, COMPACTED, SMOOTHED OFF, AND FINALLY MADE TO CONFORM TO THE ORIGINAL SURFACE OF THE GROUND. PAVING, SIDEWALKS, CURBS, SODDED, AND OTHER FINISHED SURFACES WHICH ARE BROKEN AND REMOVED BY THIS CONTRACTOR IN ORDER TO INSTALL THE UTILITIES, SHALL BE REPLACED BY THIS CONTRACTOR AT HIS EXPENSE, EQUAL TO ITS ORIGINAL CONDITION. THIS REQUIREMENT IS NOT APPLICABLE IN AREAS WHERE THE GENERAL CONTRACTOR OR THE SITE CONTRACTOR ARE OBLIGATED TO FURNISH NEW SURFACES. BACKFILL AND SURFACE REPAIR OF ROADWAY SHALL BE IN ACCORDANCE WITH GOVERNING AGENCY RULES AND REGULATIONS AND ANY FEES FOR CROSSING THE ROADWAY SHALL BE INCLUDED IN THIS CONTRACT SO THAT NO ADDITIONAL COST WILL ACCRUE TO THE OWNER. BACKFILL UNDER BUILDING WALLS OR FOOTERS SHALL BE CONCRETE OF SAME STRENGTH AS WALLS OR FOOTERS.









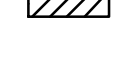


3.9 RECORD DRAWINGS

THIS CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF ANY DEVIATIONS OF CONSEQUENCE FROM THE CONTRACT DRAWINGS AND SPECIFICATIONS. HE SHALL NEATLY AND CORRECTLY ENTER, IN COLORED PENCIL, ANY DEVIATIONS ON DRAWINGS AFFECTED AND SHALL KEEP THESE DRAWINGS AVAILABLE FOR INSPECTION. AT COMPLETION OF THE JOB, AND BEFORE FINAL APPROVAL, THE CORRECTED SET OF DRAWINGS SHALL BE DELIVERED TO THE OWNER.




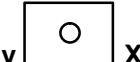




3.9 TESTS AND MAINTENANCE INSTRUCTIONS

FINAL INSPECTION AND OPERATIONAL TESTS OF ALL EQUIPMENT AND SYSTEMS SHALL BE MADE IN THE PRESENCE OF THE OWNER OR HIS AUTHORIZED REPRESENTATIVE. TESTS SHALL BE MADE UNDER CONDITIONS SIMULATING AS NEARLY AS PRACTICABLE THOSE WHICH ARE OBTAINED IN OPERATION, AND SHALL SHOW CONCLUSIVELY THAT THE REQUIREMENTS OF THE SPECIFICATIONS HAVE BEEN FULFILLED. THIS CONTRACTOR SHALL MEGGER TEST FEEDERS OR BRANCH CIRCUITS AS REQUIRED OR DESIRED BY THE OWNER. DATA TAKEN DURING SUCH TESTS SHALL BE SUBMITTED TO THE OWNER, TYPEWRITTEN, AND IN FOLDER FORM. INSTRUMENTS REQUIRED FOR TESTS SHALL BE FURNISHED BY THIS CONTRACTOR. SPECIAL SYSTEMS SHALL BE CHECKED OUT AND DETERMINED TO BE COMPLETE AND FUNCTIONING IN A MANNER AS REQUIRED BY THE SPECIFICATIONS AND DRAWINGS.

POWER PLAN LEGEND

	BRANCH CIRCUIT CONCEALED IN CEILING OR WALL. HOME RUN TO PANELBOARD AND 20A, SINGLE POLE BREAKER UNO. CIRCUIT NUMBER SHOWN ADJACENT TO HOME RUN.
	BRANCH CIRCUIT CONCEALED BELOW FLOOR OR UNDERGROUND.
	(3) #12 AND (1) #12(G) IN 3/4" CONDUIT, OR PER NATIONAL ELECTRIC CODE. FOR MORE THAN (3) CONDUCTORS, HAS MARKS INDICATE THE NUMBER OF CONDUCTORS REQUIRED. LARGE HASH INDICATES NEUTRAL CONDUCTOR.
	120V, 20A, 3-WIRE DUPLEX RECEPTACLE--MOUNT 36" AFF. UNO. WP INDICATES WEATHER PROOF ENCLOSURE, GFI INDICATES GROUND FAULT INTERRUPTER, CR INDICATES CORROSION RESISTANT RECEPTACLE.
	SPECIAL OUTLET, DISCONNECT SWITCH OR WIRING DEVICE REQUIRED BY EQUIPMENT MANUFACTURER. COORDINATE REQUIREMENTS WITH EQUIPMENT SPECIFIED BY OWNER/ARCHITECT
	ELECTRIC METER. PROVIDE IN ACCORDANCE WITH UTILITY COMPANY SPECIFICATIONS.
	JUNCTION BOX. SIZE PER NATIONAL ELECTRICAL CODE OR AS INDICATED ON DRAWINGS. COORDINATE FIELD WIRING REQUIREMENTS FROM JUNCTION BOX TO EQUIPMENT INSTALLED BY OWNER.
	NON-FUSED DISCONNECT. SEE EQUIPMENT SCHEDULE FOR AMPS / # OF POLES / NEMA ENCLOSURE TYPE. MOUNT 48" AFF. UNO.
	POWER PANEL. A INDICATES THE PANEL IDENTIFICATION. SEE PANEL SCHEDULES FOR MORE INFORMATION.
	TELEPHONE/DATA OUTLET BOX. PROVIDE OUTLET BOX RECESSED IN WALL WITH BLANK FACE PLATE FLUSH WITH WALL. INSTALL 3/4" CONDUIT FROM OUTLET BOX TO 18" ABOVE CEILING. PROVIDE CONDUIT WITH PLASTIC INSULATED BUSHING. MOUNT 18" AFF. UNO.
	TELEVISION CABLE OUTLET BOX. PROVIDE OUTLET BOX RECESSED IN WALL WITH BLANK FACE PLATE FLUSH WITH WALL. INSTALL 3/4" CONDUIT FROM OUTLET BOX TO 18" ABOVE CEILING. PROVIDE CONDUIT WITH INSULATED BUSING. MOUNT 18" AFF. UNO.

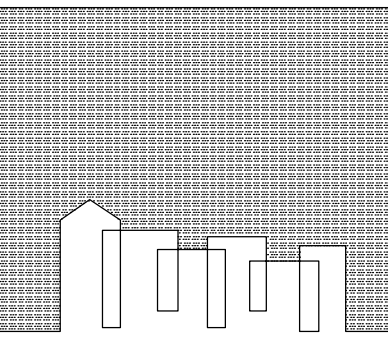
LIGHTING PLAN LEGEND

	277V, 20A, SINGLE-POLE SWITCH--MOUNT 44" AFF. UNO.
	277V, 20A, 3-WAY SWITCH--MOUNT 48" AFF. UNO.
	120V FAN CONTROL SWITCH. PROVIDE SWITCH WITH ON, OFF, AND SPEED CONTROL. SWITCH SHALL BE COMPATIBLE WITH THE FAN PURCHASED.
	4" SURFACE MOUNTED LIGHT FIXTURE. X DENOTES FIXTURE MARK INDICATED IN FIXTURE SCHEDULE. Y IF PRESENT DENOTES SWITCH ZONE.
	CEILING MOUNTED EXIT SIGN, DARKENED AREA INDICATES LIGHTED FACE WITH DIRECTIONAL ARROWS AS SHOWN. X DENOTES FIXTURE MARK INDICATED IN FIXTURE SCHEDULE.
	EMERGENCY LIGHT UNIT WITH SELF CONTAINED SEALED BATTERY. X DENOTES FIXTURE MARK INDICATED IN FIXTURE SCHEDULE.
	CEILING FAN KIT. UNDER INDOOR/OUTDOOR INDUSTRIAL FAN. EACH FAN SHALL BE SUPPLIED BY A DEDICATED WALL SWITCH THAT WILL TURN FAN ON AND OFF AND VARY FAN SPEED. COORDINATE SWITCH LOCATIONS WITH OWNER PRIOR TO ROUGH-IN.
	LIGHTING CONTRACTOR. SEE LIGHTING CONTROL DIAGRAMS FOR MORE INFORMATION.



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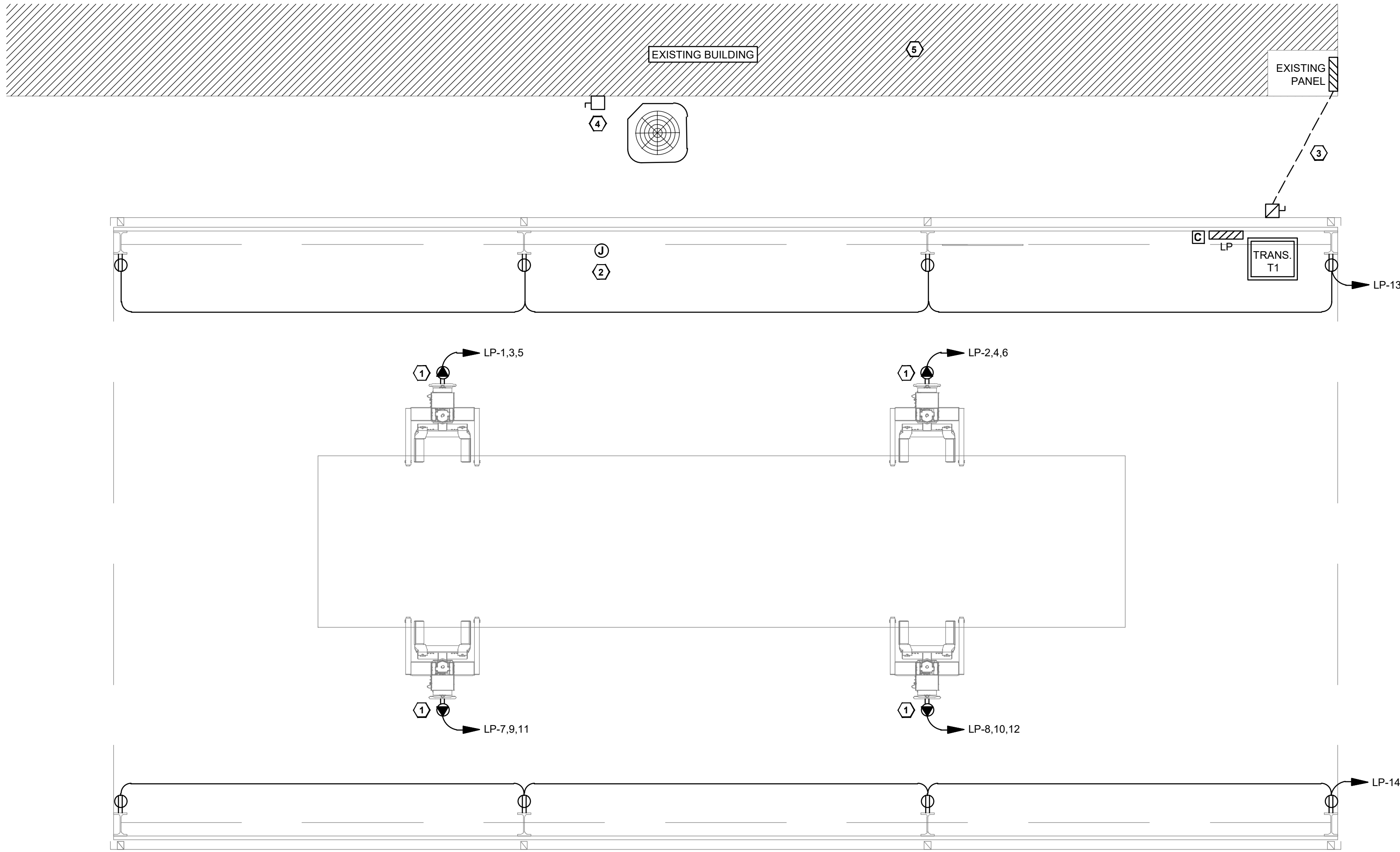
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ELECTRICAL
SPECIFICATIONS
AND LEGEND

SHEET NO.

E1



POWER PLAN KEYED NOTES

1. HYDRAULIC BUS COLUMN LIFT. PROVIDE OUTLET AT CEILING WITH DROP CORD TO LIFT. COORDINATE LOCATION OF LIFT WITH SUPPLIER AND OWNER PRIOR TO ROUGH-IN.
2. HYDRAULIC LIFT CONTROL PANEL. FIELD WIRE BUS LIFT CONTROL PANEL PER MANUFACTURER'S INSTALLATION REQUIREMENTS.
3. NEW UNDERGROUND FEEDER FROM EXISTING BUILDING. SEE RISER DIAGRAM FOR MORE INFORMATION.
4. EXISTING HVAC UNIT THAT IS TO BE RELOCATED. RELOCATE ALL ELECTRICAL WIRING TO OTHER SIDE OF EXISTING BUILDING. COORDINATE NEW LOCATION WITH OWNER AND MECHANICAL CONTRACTOR.
5. RUN A NEW ELECTRICAL BRANCH CIRCUIT TO RELOCATED HVAC UNIT WITHIN EXISTING BUILDING. COORDINATE LOCATION WITH OWNER AND MECHANICAL CONTRACTOR.

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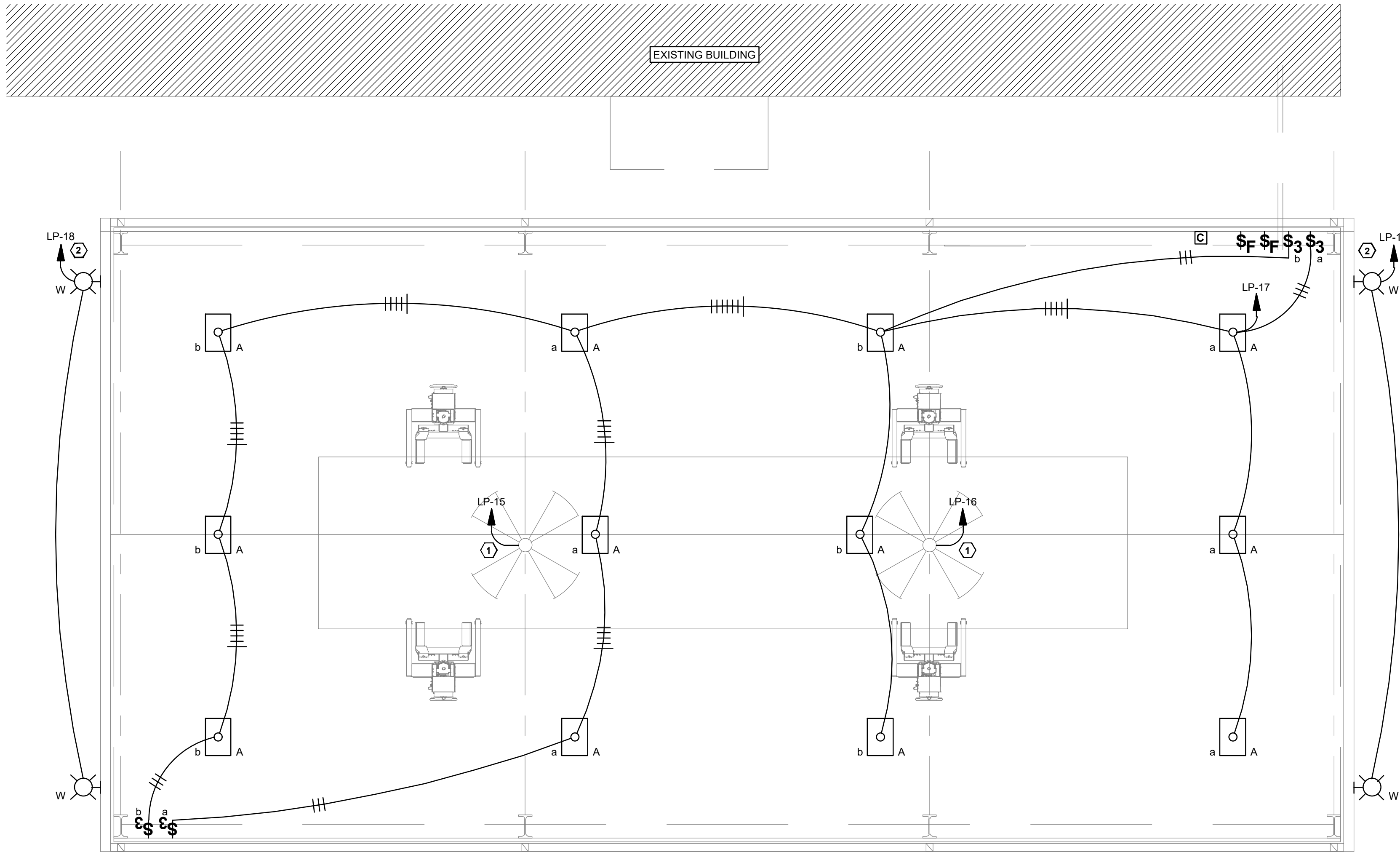
POWER PLAN

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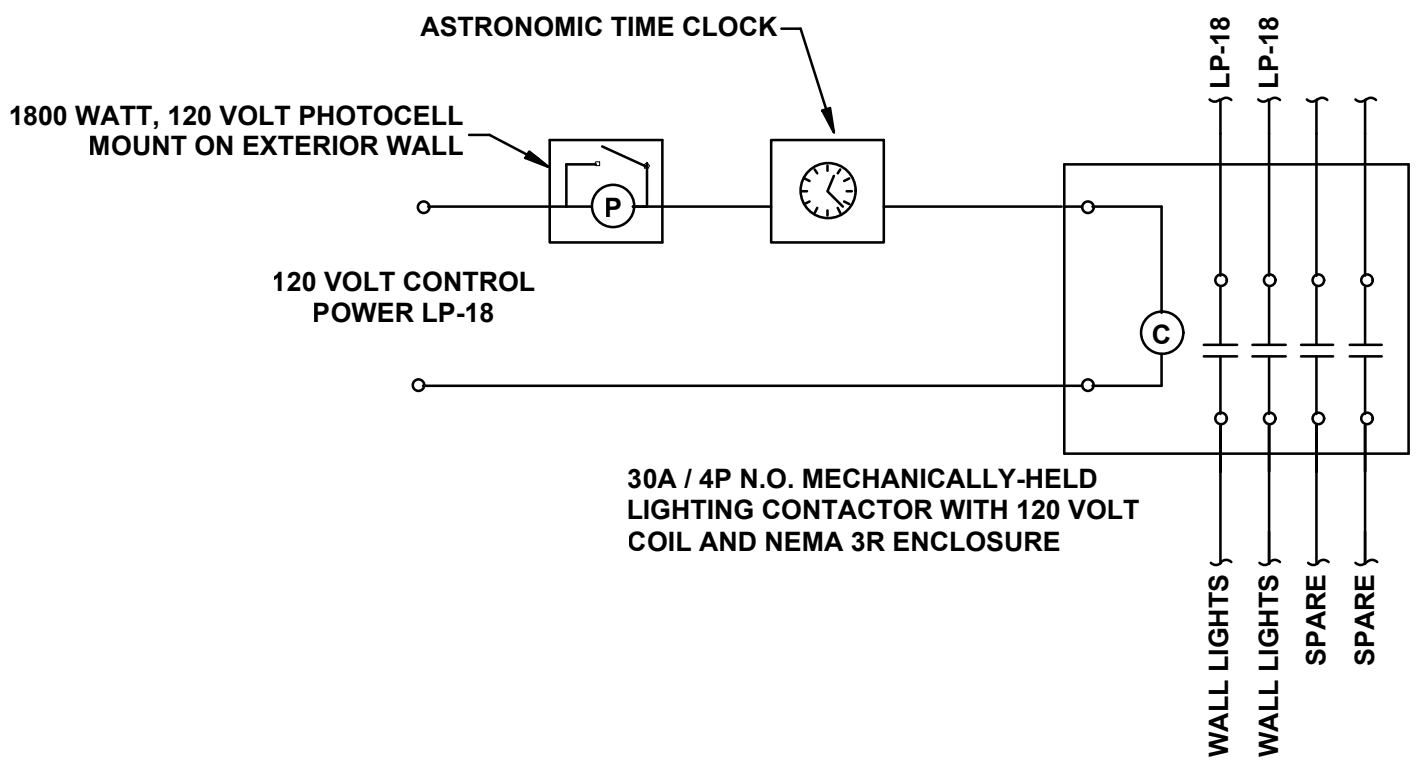
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1 LIGHTING PLAN
SCALE: 1/4" = 1' - 0"

LIGHTING PLAN KEYED NOTES

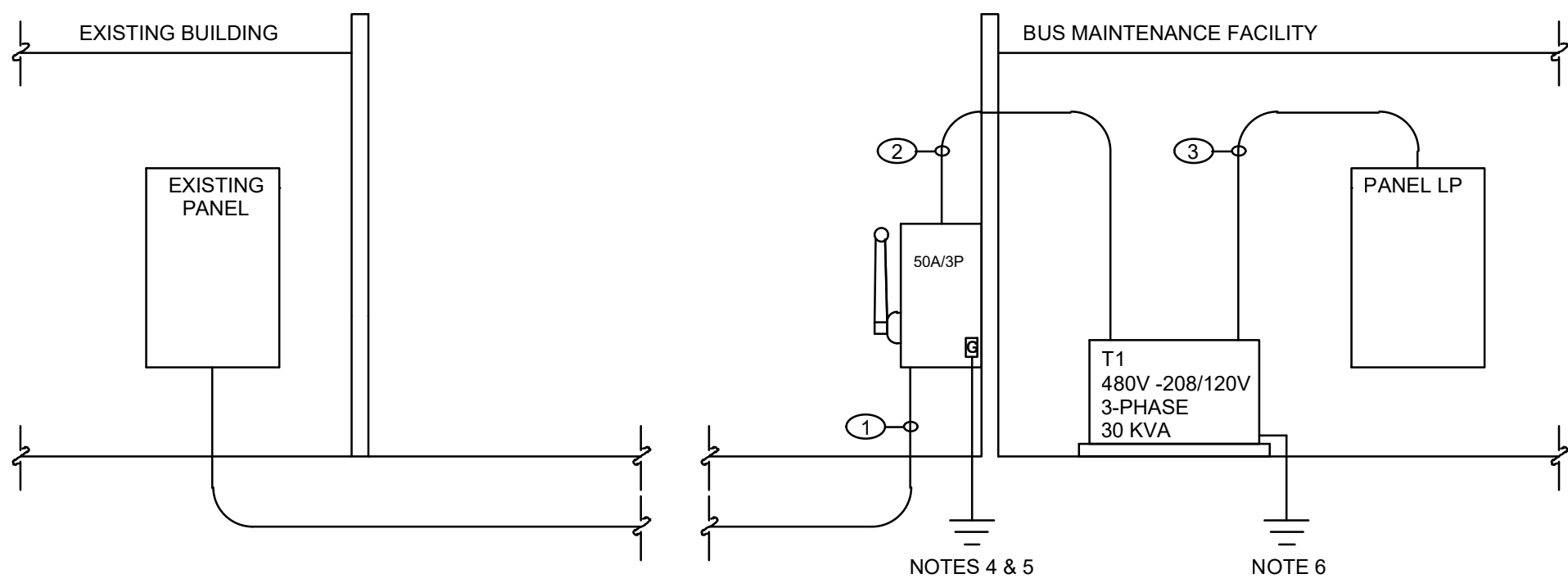
1. 14 FT CEILING FAN. BIG ASS FANS SHOP-FAN-KIT-01 OR EQUAL. FIELD WIRE FAN KIT IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. HOME RUN BRANCH CIRCUIT FOR EXTERIOR LIGHTS THROUGH LIGHTING CONTACTOR.



2 EXTERIOR LIGHTING CONTROL DIAGRAM
NOT TO SCALE

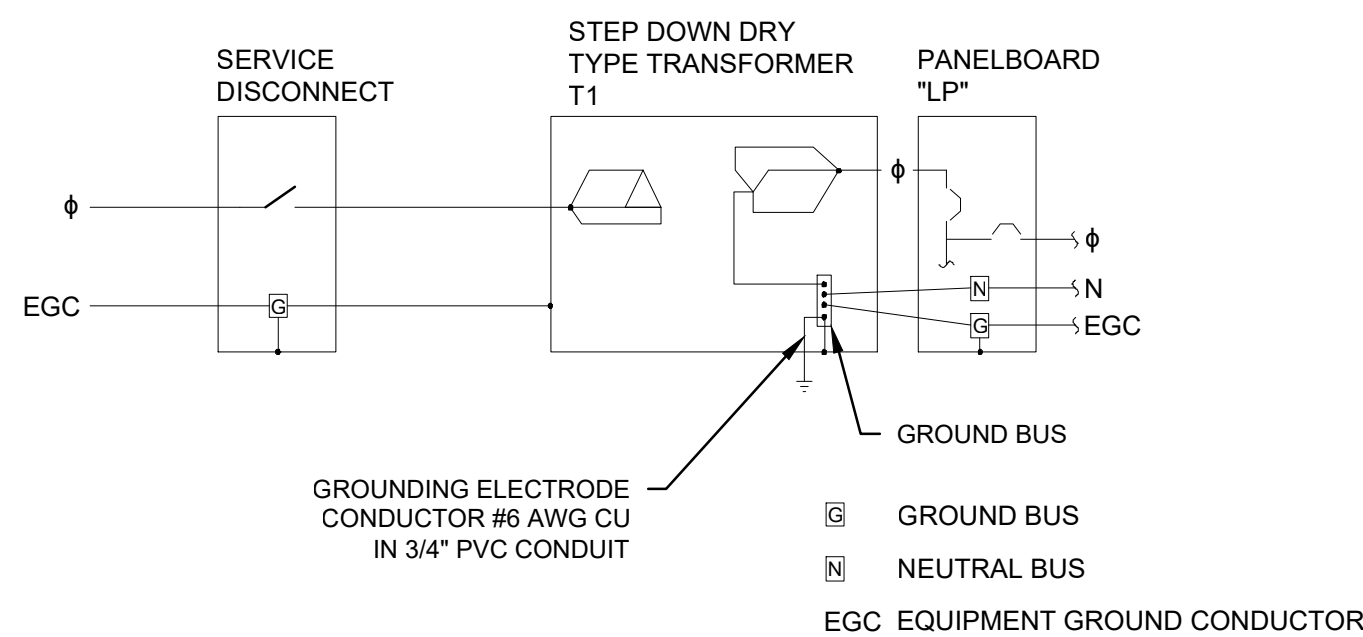


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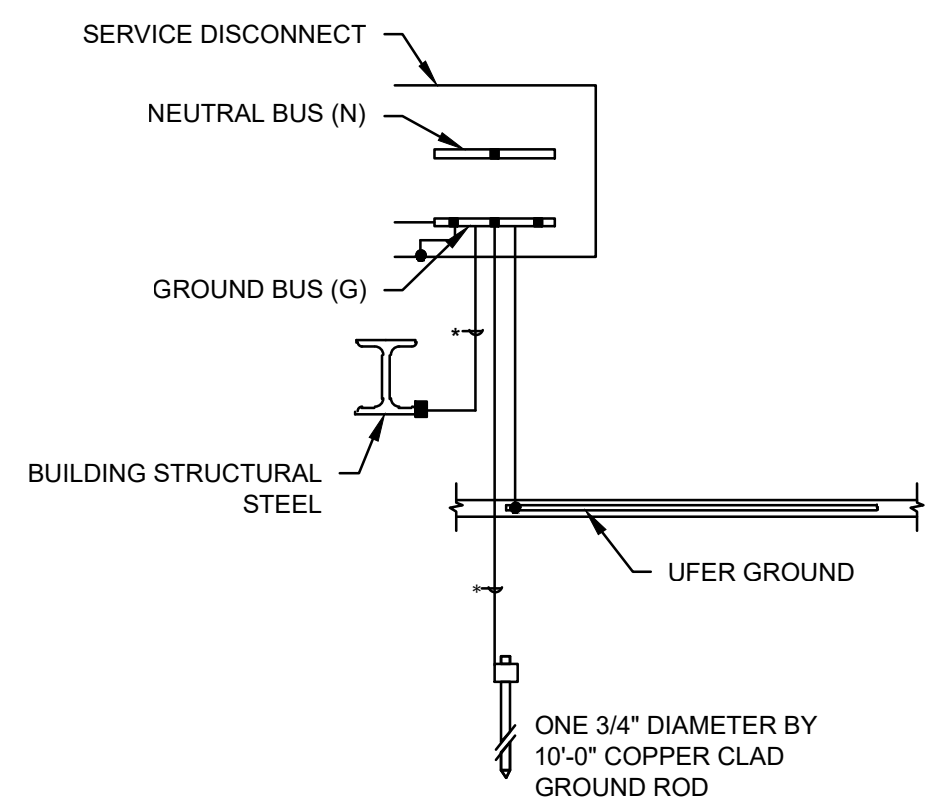
1 RISER DIAGRAM

NOT TO SCALE



2 GROUNDING DIAGRAM

SCALE: NOT TO SCALE



* - GROUND CABLE SHALL BE #6 COPPER. ROUTE IN 3/4" PVC CONDUIT INSIDE BUILDING

UFER GROUND: EXTEND THE GROUND ELECTRODE SYSTEM TO A CONTINUOUS 20' LENGTH OF REBAR IN THE BUILDING FOUNDATION. CONNECTIONS TO BE BY EXOTHERMIC WELD OR PERMANENT MECHANICAL FASTENER SUITABLE FOR THE LOCATIONS.

3 BONDING DIAGRAM

SCALE: NOT TO SCALE

POWER RISER DIAGRAM NOTES:

- SEE PANEL SCHEDULES FOR NUMBER OF BRANCH CIRCUITS, CIRCUIT BREAKERS, AND BRANCH CIRCUIT WIRE SIZES.
- SERVICE TO NEW BUILDING SHALL BE FROM FEEDER IN EXISTING PANEL. PROVIDE A NEW 50 AMP, 3-POLE CIRCUIT BREAKER IN EXISTING PANELBOARD TO SERVE NEW BUILDING.
- SEE POWER PLAN FOR PANEL LOCATIONS.
- SEE GROUNDING DIAGRAM FOR BUILDING GROUNDING REQUIREMENTS.
- SEE BONDING DIAGRAM FOR BUILDING BONDING REQUIREMENTS.
- SEE GROUNDING DIAGRAM FOR TRANSFORMER GROUNDING ELECTRODE CONDUCTOR.
- ONCE ALL EQUIPMENT IS INSTALLED, PROVIDE A LABEL INDICATING THE AVAILABLE FAULT CURRENT AT EACH SERVICE DISCONNECT IN ACCORDANCE WITH NEC 110.24.
- SEE PANEL SCHEDULE FOR OTHER BREAKERS INSTALLED IN PANEL DP.

FEEDER SCHEDULE

FEEDER NUMBER	LOAD DESCRIPTION	CIRCUIT RATING	CONDUCTOR & CONDUIT SETS	CONDUCTORS NUMBER / SIZE	CONDUCTOR MATERIAL	GROUNDING CONDUCTOR	CONDUIT SIZE
①	SERVICE DISC	50		3 / #6	COPPER	#10	3
②	T1	50		4 / #6	COPPER	#10	1
③	LP	100		4 / #1	COPPER	#6	1 1/2

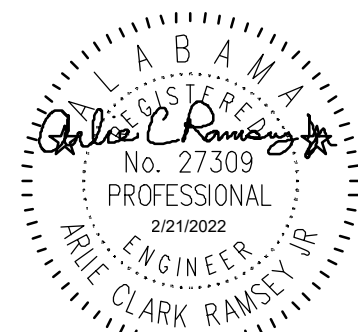
NOTES:

- ALL GROUND CONDUCTORS SIZES ARE FOR COPPER CONDUCTORS.
- FULL SIZE GROUND SHALL BE USED IN EACH CONDUIT FOR PARALLEL FEEDERS.
- NO EQUIPMENT GROUND CONDUCTOR. SEE RISER DIAGRAM FOR GROUND ELECTRODE CONDUCTOR SIZE AND ROUTING.

FIXTURE SCHEDULE

FIXTURE DESIGNATION	FIXTURE TYPE OR EQUIVALENT	LAMP			VOLTAGE	MOUNTING	REMARKS
		TYPE	NO.	DESCRIPTION			
A	LITHONIA IBE L24 1200LM ATC MD XXXX 40K 80CRI	LED	1	80 CRI / 4000K CCT / 12,000 LM	120V	PENDANT	2' X 4' LED LINEAR HIGH BAY FIXTURE
W	LITHONIA WXP1 LED P2 40K MVOLT DDBXD M4	LED	1	2,900 LM / 4000K / 24 WATTS	120V	WALL 8'-0"	LED WALL PACK. LISTED FOR WET LOCATION.

PANELBOARD LP				LOCATION: BUS MAINTENANCE AREA				MAIN: 100 A				VOLTAGE: 208/120 VOLTS			
SUPPLIED FROM: UTILITY				FEED: TOP				MAIN CKT BKR: 100 A				PHASE: 3			
MOUNTED: SURFACE				ENCLOSURE: NEMA 1				ASYM ALC MIN: 10 K				WIRE: 4			
LOAD SERVED	NO. POLES	TRIP AMPS	WIRE SIZE	VA / PHASE			CKT NO.	CKT NO.	VA / PHASE			WIRE SIZE	TRIP AMPS	NO. POLES	LOAD SERVED
				A	B	C			A	B	C				
COLUMN LFT	3	30	10	1273			1	2	1273			10	30	3	COLUMN LFT
					1273		3	4		1273					
						1273	5	6			1273				
COLUMN LFT	3	30	10	1273			7	8	1273			10	30	3	COLUMN LFT
					1273		9	10		1273					
						1273	11	12			1273				
R-BUS MAINT. AREA	1	20	12	720			13	14	720			12	20	1	R-BUS MAINT. AREA
CEILING FAN	1	20	12		750		15	16		750		12	20	1	CEILING FAN
LIGHTING	1	20	12			1022	17	18			341	12	20	1	EXTERIOR LIGHTING
SPARE	1	20					19	20				20	1		SPARE
SPARE	1	20					21	22				20	1		SPARE
SPARE	1	20					23	24				20	1		SPARE
SPARE	1	20					25	26				20	1		SPARE
SPARE	1	20					27	28				20	1		SPARE
SPARE	1	20					29	30				20	1		SPARE
							31	32							
							33	34							
							35	36							
							37	38							
							39	40							
							41	42							
				3266	3296	3568			3266	3296	2887				
ABBREVIATIONS:				TOTAL VA PHASE A: 6,632											
R-RECEPTACLE, L-LIGHTS				TOTAL VA PHASE B: 6,692											
* PROVIDE CIRCUIT BREAKER WITH THE CAPABILITY OF BEING LOCKED IN THE OPEN POSITION				TOTAL VA PHASE C: 6,455											
** PROVIDE HEATING, AIR CONDITIONING, REFRIGERATION TYPE CIRCUIT BREAKERS FOR HVAC UNITS				TOTAL CONNECTED: 19,579											



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SCHEDULES AND
RISER DIAGRAM

SHEET NO.

E4