

C:\Users\bkoon\Documents\Revit\18103 - USC - Aiken Maint Bldg 2nd Modification - v18_BKoon.rvt 1/14/2020 11:56:31 AM

ABBREVIATIONS

ACT	ACOUSTICAL TILE	FLOUR	FLUORESCENT FIXTURE	PT	PAINT
ALUM	ALUMINUM	FTG	FOOTING	RD	ROOF DRAIN
BD	BOARD	GALV	GALVANIZED	REINF	REINFORCE (D) (ING)
BLKG	BLOCKING	GB	GRAB BAR	REQ'D	REQUIRED
CB	CHALK BOARD	GC	GENERAL CONTRACTOR	SCHED	SCHEDULE
CJ	CONTROL JOINT	GL	GLASS	SEC	SECTION
CT	CERAMIC TILE	GWB	GYP SUM WALL BOARD	SHT	SHEET
CMU	CONCRETE MASONRY UNIT	HM	HOLLOW METAL	SIM	SIMILAR
CONC	CONCRETE	HORIZ	HORIZONTAL	SS	STAINLESS STEEL
CONST	CONSTRUCTION	ID	INSIDE DIAMETER	STL	STEEL
CONT	CONTINUOUS	INSUL	INSULATION	SWC	SOLID WOOD CORE
COOR	COORDINATE	INT	INTERIOR	TB	TACK BOARD
CPT	CARPET	LAV	LAVATORY	TEMP	TEMPERED
CR	CLASSROOM	MAS	MASONRY	TOIL	TOILET
DBL	DOUBLE	MB	MARKER BOARD	TRT'D	TREATED
DS	DEEP SHELVES	MECH	MECHANICAL	TYP	TYPICAL
DTL	DETAIL	MFG/MFR	MANUFACTURER	UL	UNDERWRITER'S LABORATORY
DIM	DIMENSION	MIR	MIRROR	U.N.O.	UNLESS NOTED OTHERWISE
ELEV	ELEVATION	MO	MASONRY OPENING	VCT	VINYL COMPOSITION TILE
EA	EACH	MTL	METAL	VER	VERIFY
EJ	EXPANSION JOINT	NSG	NOSING	VERT	VERTICAL
ELEC	ELECTRICAL	NIC	NOT IN CONTRACT	VW	VIEW WINDOW
EQ	EQUAL	OC	ON CENTER	W/	WITH
EXIST	EXISTING	OD	OUTSIDE DIAMETER	W/O	WITH OUT
EXP	EXPANSION	OPNG	OPENING	WD	WOOD
EXT	EXTERIOR	PLAS LAM	PLASTIC LAMINATE		
FD	FLOOR DRAIN	PL	PLATE		
FE	FIRE EXTINGUISHER	PLUMB	PLUMBING		
FF	FINISH FLOOR	PR	PAIR		
FLR	FLOOR				

INDEX OF DRAWINGS

T101	COVER SHEET	E001	ELECTRICAL SYMBOLS AND NOTES
T102	DRAWING INDEX, ABBREV., CONTACTS	E002	ELECTRICAL SITE PLAN
T103	BUILDING CODE ANALYSIS	E003	LIGHTING FIXTURE SCHEDULE AND DETAILS
T104	LIFE SAFETY PLANS	E101	LIGHTING PLAN
		E201	POWER PLAN
		E301	HVAC POWER PLAN
C101	STAKING AND WATER PLAN	E401	COMMUNICATIONS PLAN
C102	PHASE 1 SEDIMENT AND EROSION CONTROL PLAN	E501	FIRE ALARM PLAN
C102.1	GRADING, DRAINAGE & UTILITY PLAN	E502	FIRE ALARM RISER AND DETAILS
C103	SITE WORK DETAILS	E601	POWER RISER
C104	SITE WORK DETAILS	E602	ELECTRICAL DETAILS
C105	SITE WORK DETAILS	E603	ELECTRICAL DETAILS
		E604	ELECTRICAL PANEL SCHEDULES
		E605	ELECTRICAL POWER SCHEDULES
A101	ARCHITECTURAL SITE PLAN		
A301	FLOOR PLAN		
A302	STORAGE BUILDING		
A401	EXTERIOR ELEVATIONS & BUILDING SECTION		
A501	FINISH & DOOR SCHEDULE, DOOR, FRAME & WINDOW TYPES		
A502	DOOR DETAILS & ENLARGED RAILING DETAILS		
A601	ENLARGED TOILET PLANS & CASEWORK ELEVATIONS		
A602	CASEWORK SECTION		
A701	WALL SECTIONS		
A801	ROOF PLAN		
A901	CEILING PLAN		
S101	FOUNDATION PLAN		
S102	FOUNDATION SECTIONS		
S103	MASONRY WALL REINFORCING		
P101	WASTE AND VENT PIPING PLANS		
P201	SUPPLY PIPING PLANS		
P301	DETAILS, NOTES, SHEDULES AND LEGEND		
FP101	FIRE PROTECTION PLAN		
M101	HVAC PLAN		
M201	DETAILS, NOTES, SCHEDULES AND LEGEND		

PROJECT CONTACTS

JOB SITE	- - -
CONTRACTOR'S OFFICE	- - -
OWNER	- - -
ARCHITECT	803-791-1020
STRUCTURAL ENGINEER	803-779-8830
PLUMBING ENGINEER	803-791-9300
MECHANICAL ENGINEER	803-791-9300
ELECTRICAL ENGINEER	803-765-1007
CIVIL ENGINEER	803-649-1316

LOCATION MAP



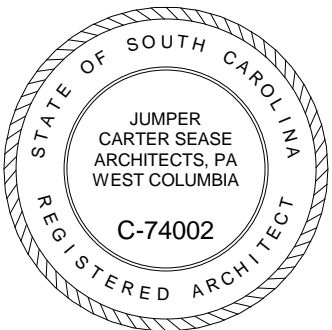
Jumper

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ARCHITECTS

412 Meeting Street
West Columbia
South Carolina



OUTDOOR STORAGE BUILDING
UNIVERSITY OF SOUTH CAROLINA AIKEN
AIKEN, SOUTH CAROLINA

FP00000362

No	Description	Date

DRAWN BY:

CHECKED BY:

COMM NO:

DATE:

SHEET TITLE:

DRAWING
INDEX,
ABBREV.,
CONTACTS

SHEET NO:

T102

TROLLEY LINE ROAD * 66' R/W *

NO CROSS-DRAIN PIPES FOUND

GENERAL NOTES - SITEWORK

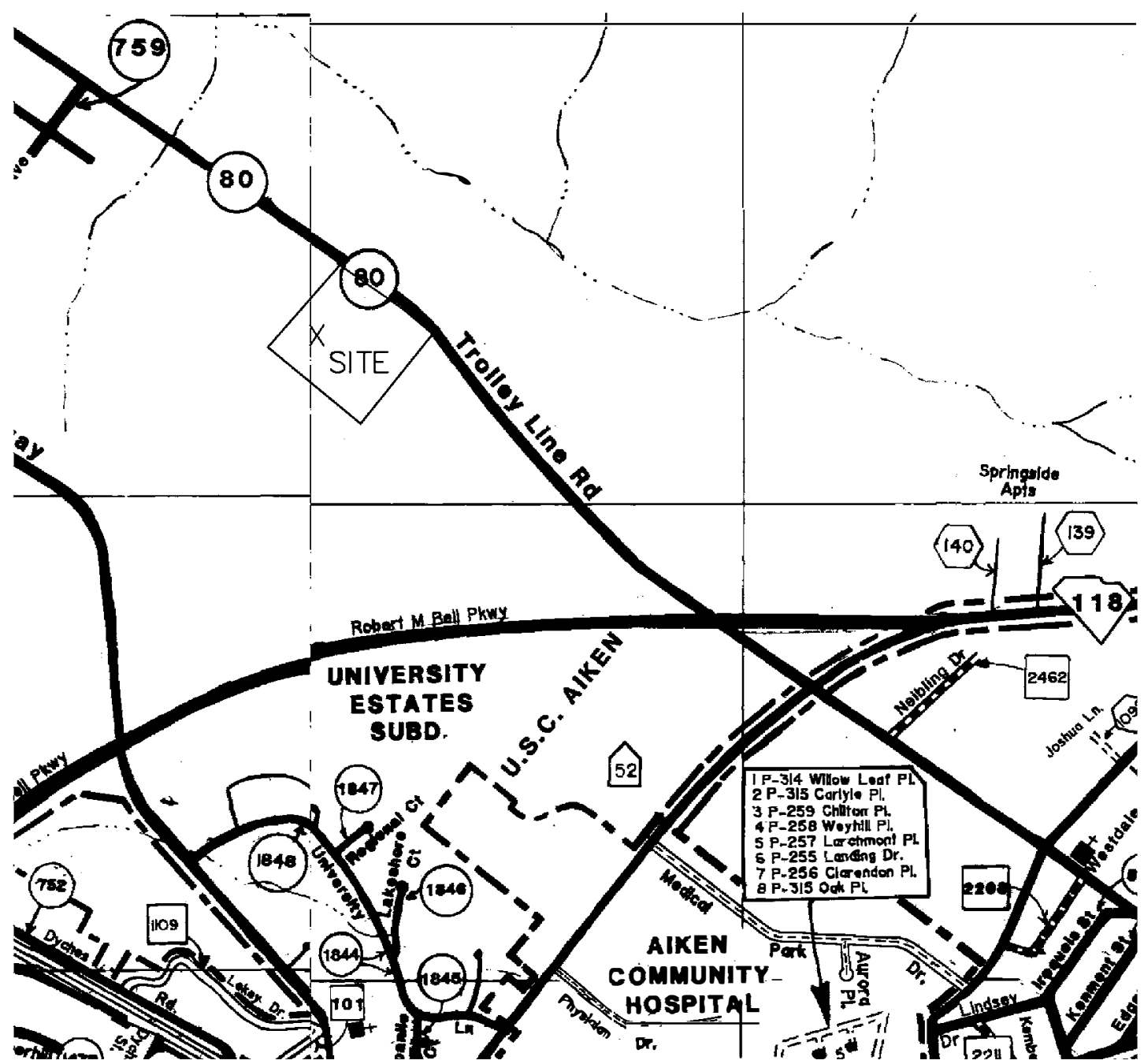
- Topographic and utility survey by Hass & Hilderbrand, Inc. or agents dated March 5, 2019.
- The contractor shall verify the location and invert elevation of all underground utilities, and verify property corners and topo before any construction is begun. Call utility companies before any excavation to locate all buried cables and underground utilities.
- The contractor shall notify the engineers for a review should discrepancies be discovered at the site or on the drawings.
- Earthwork shall be to the lines and grades shown. Proof-rilling and compaction tests shall be performed in the field to test all areas. The contractor shall retain the services of a testing company to test all areas.
- The grading contractor shall grade all the construction area with heavy-pneumatic equipment. All soft spots shall be undercut and re-compacted with suitable structural fill material.
- Topsoil to be stripped to a depth as required and stockpiled as directed by the owner's representative.
- The grading contractor shall conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 feet. (Final graded surface under building slabs shall be within a tolerance of 3/8" when measured with a 10' straight edge).
- All roads and parking lots shall have a minimum 3'-0" wide grassed shoulder.
- All utility trenches shall be thoroughly compacted to prevent settlement and arrange for future placement and structures.
- All areas not covered by buildings and pavement shall receive topsoil and be graded in accordance with the specifications.
- Dimensions shown are to the face of the curb and the face of the wall unless noted otherwise.
- Contractor shall be responsible for all utility relocation required.
- All reference to specifications for highway construction of materials are made from South Carolina State Highway's Department standard specification, current edition.
- The contractor shall remove all trees and vegetation that interfere with new construction. Contractor to remove all debris from site and protect all trees that are to remain.
- All fill material shall be from a source approved by the testing company and shall be free of roots, rocks, organic and boulders larger than 1 cubic foot. Fill shall be placed in lifts and compacted per the specifications.
- All existing slopes steeper than 4:1 that will receive fill shall be placed and scarified as new fill and shall be compacted.
- All reinforced concrete (RC) shall be Class III unless noted on the drawings and shall conform to S.C.DOT specifications.
- All sanitary sewer work shall be constructed to lines and grades shown on the drawings. The contractor shall provide a standard clean-out at all bends and changes in grade in sewer lines.
- All sewer lines in relation to water lines must conform to "San States Standards" Section 18.3.1 minimum 12" horizontal and 12" vertical separation shall be maintained of sewer mains crossing water mains.
- All construction shall conform to the specifications of Aiken County and all applicable Federal and local regulations, including NFPA and AIAWA.
- This construction will comply with all applicable Federal, State and Local regulations regarding handicap access including ADA standards.
- According to the state historic preservation office there are no historically significant structures on this site.
- There are no endangered species on this site per the South Carolina rare, threatened & endangered species inventory map, species map of the upstate quadrangle data last updated January 17th, 2020.
- There are no current violations on this site.
- Sever and water provided by the Valley Public Service Authority.
- Based on observation of the site there are no apparent archaeological resources on the site.
- The site is not in an airport district.
- According to the national flood insurance program map 4500300329E w/ an effective date of June 19, 2012 the property is located in a Flood Zone "X".
- Power provided by SCE&G.

PHYSICAL ADDRESS: N/A
(PROPERTY LOCATED ON TROLLEY LINE ROAD ±±±±±)
DUE WEST OF THE E. 1st OF ROBERT M. BELL PARKWAY

PREPARED FOR:
UNIVERSITY OF SOUTH CAROLINA AIKEN
C/O: BRIAN ENTER, PE
SENIOR UNIVERSITY FACILITIES EXECUTIVE
471 UNIVERSITY PARKWAY
AIKEN, SC 29801

CIVIL PLANS PREPARED BY:
HASS & HILDERBRAND, Inc.
POST OFFICE BOX 3274
133 GREENVILLE STREET, SW
AIKEN, SC 29802 (803) 649-1310

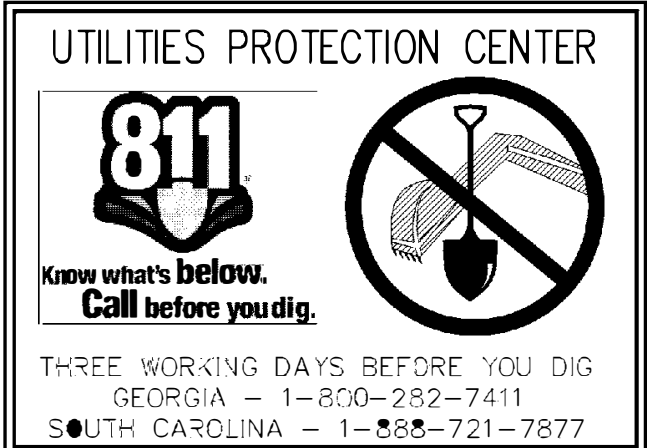
OLD BORROW PIT AREA
FORMERLY USED FOR
SHOOTING RANGE



PLANT SCHEDULE			
BOTANICAL NAME	COMMON NAME	KEY	QUANTITY
Liquidambar styraciflua	Chinese Sweetgum	1-1/2" CAL (6" HIGH F. MULTI-STEM)	2

COUNTY BUFFER YARD REQUIREMENTS			
BUFFER YARD REQUIRED NO. 1 (10' WIDE) ALONG TROLLEY LINE ROAD			
REQUIRED PLANT LIMITS/50 FT	REQUIRED PLANT LIMITS/50 FT	REQUIRED PLANT LIMITS/50 FT	REQUIRED PLANT LIMITS/50 FT
1. 2-2" P.L.M. WITH 10' W.C.H.	2. 2-2" P.L.M. WITH 10' W.C.H.	3. 2-2" P.L.M. WITH 10' W.C.H.	4. 2-2" P.L.M. WITH 10' W.C.H.
5. 2-2" P.L.M. WITH 10' W.C.H.	6. 2-2" P.L.M. WITH 10' W.C.H.	7. 2-2" P.L.M. WITH 10' W.C.H.	8. 2-2" P.L.M. WITH 10' W.C.H.

NOTES:
1. ALL BUFFER AREAS LISTED DEVIATE TO PLANTS SHALL BE SEEDING WITH
2. CONSTRUCTION SHALL BE RESPONSIBLE FOR THE PERMANENT CARE MAINTENANCE
3. ALL BUFFER AREAS SHALL BE MAINTAINED AS PLANT BUFFER AREAS
EXISTING VEGETATION BETWEEN TROLLEY LINE ROAD AND PROJECT AREA SHALL BE USED AS LANDSCAPE BUFFER.

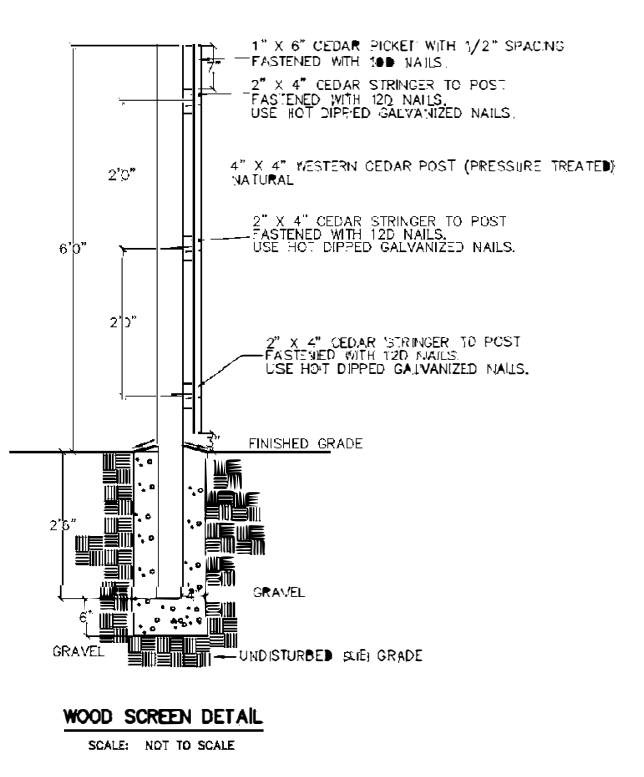
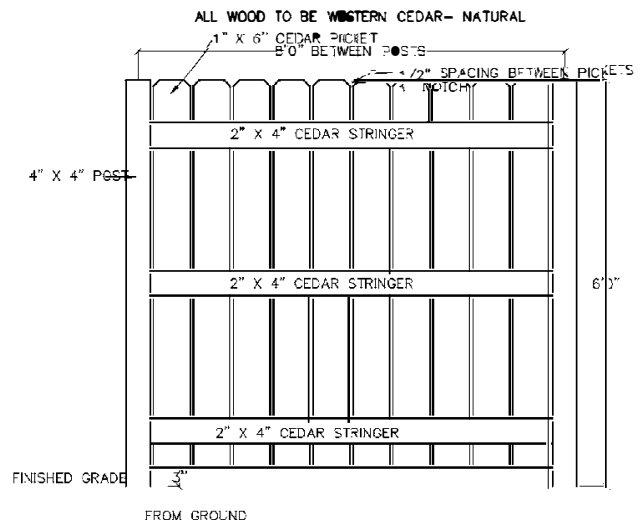
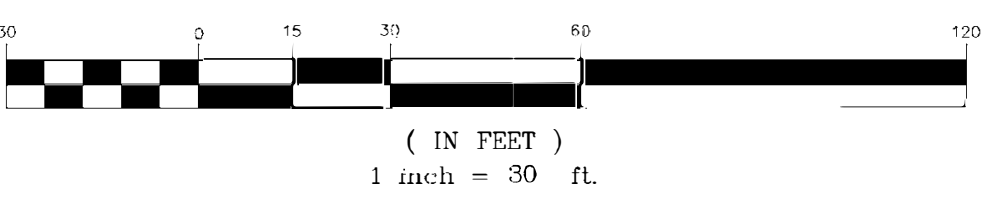


UTILITY WARNING:
The underground utilities shown have been located from field survey information and existing drawings. The Surveyor makes no guarantee that the underground utilities shown comprise all utilities in the area, and the Engineer or Designer. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although he does certify that they are located as accurately as possible from information available. The surveyor has not physically located the underground utilities.

REVISIONS PER OWNER JANUARY 16, 2020

- STORAGE BUILDING, ROOF DRAIN AND ASSOCIATED GRADING.
- TWO 8" THICK CONCRETE PADS.
- PARKING SOUTH OF BUILDING AND ASSOCIATED GRADING.
- PARKING NORTH OF THE BUILDING AND ASSOCIATED GRADING.
- ENLARGED LOADING DOCK AREA AND ASSOCIATED GRADING.
- CONCRETE WALK FROM NEW PARKING SOUTH OF BUILDING TO ASPHALT AREA WEST OF BUILDING.
- AREA THAT WAS GRAVEL IS NOW ASPHALT PAVING.
- DUMPSTER PAD RELOCATED TO NEAR LOADING DOCK.
- 1" WATER LINE ADDED TO HOSE BIBB.

GRAPHIC SCALE



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412 Meeting Street
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South Carolina

USC Aiken - Outdoor Storage Building
650 Trolley Line Road, Graniteville, SC 29829
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SOUTH CAROLINA

FP00000362

Description	Date
Outdoor Storage Building	April 6, 2020
No	

DRAWN BY: SLB

CHECKED BY: HTH

COMM NO:

DATE: April 6, 2020

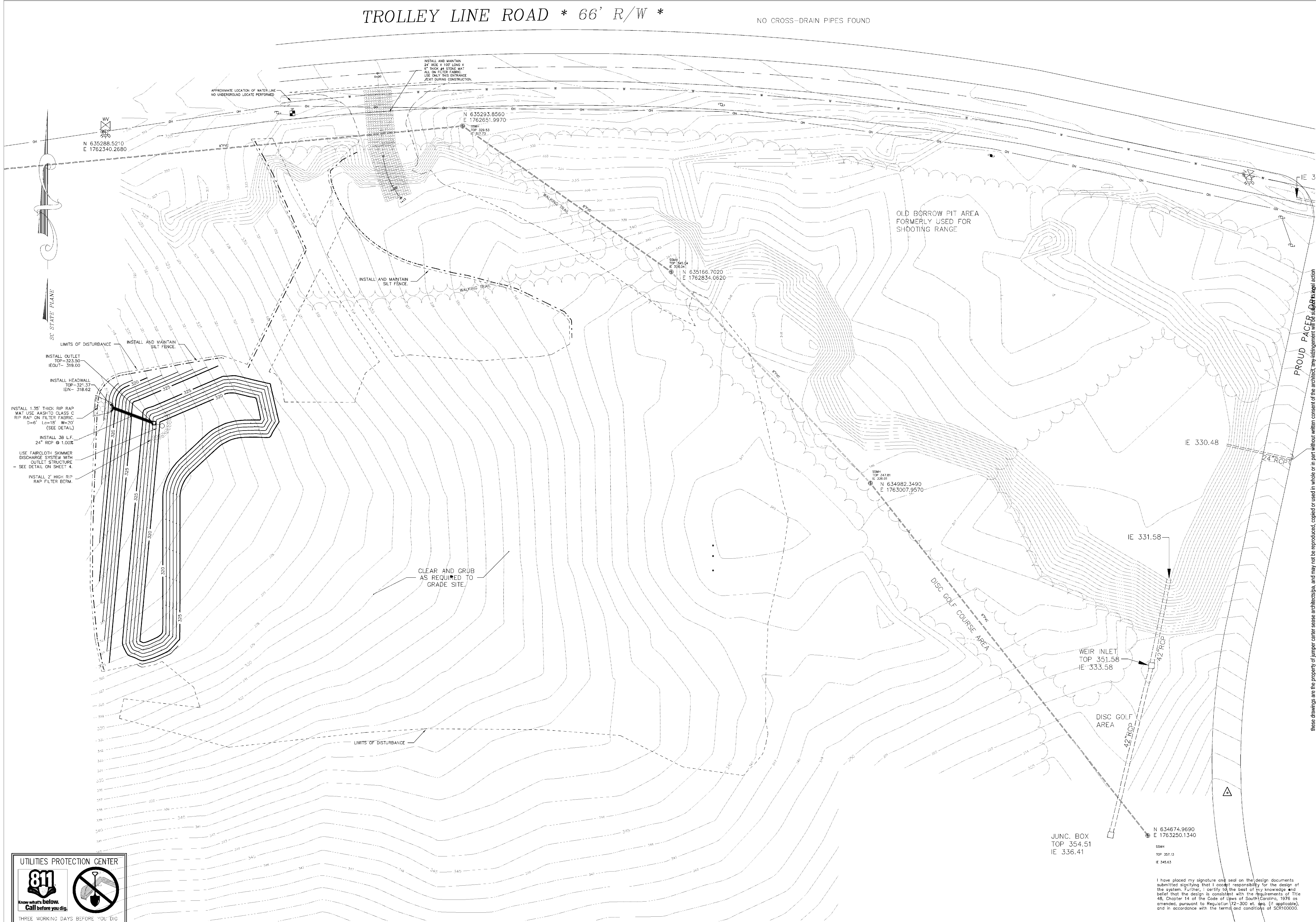
SHEET TITLE:

STAKEOUT
AND WATER
PLAN

SHEET NO:

C101

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UTILITIES PROTECTION CENTER

811

Know what's below.
Call before you dig.

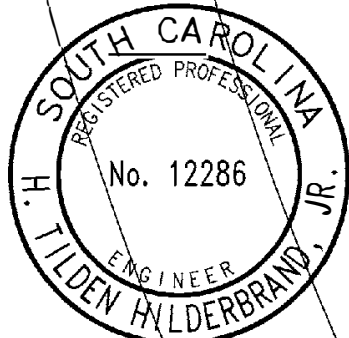
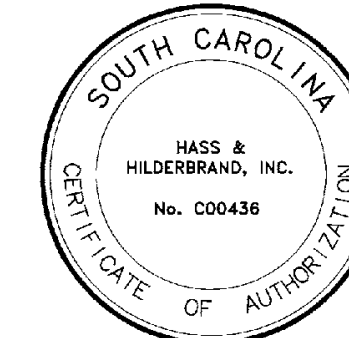
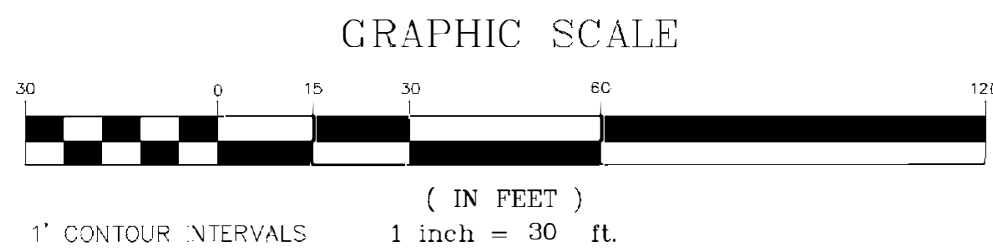
THREE WORKING DAYS BEFORE YOU DIG
GEORGIA - 1-800-282-7411
SOUTH CAROLINA - 1-888-721-7877

UTILITY WARNING

The underground utilities shown have been located from field survey information and existing drawings. The Surveyor makes no guarantee that the underground utilities shown comprise all such utilities in the area, either in service or abandoned. The surveyor 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. The surveyor has not physically located the underground utilities.

BENCHMARK
TOP of #5 REBAR PROJ. P.N.
ELEVATION = 442.55
N.A.V.D. 1988

BENCHMARK
BASED ON:
S.C.G.S. MONUMENT - AKGPS 31
P.O. ID = 02480
ELEVATION = 374.41
N.A.V.D. 1988



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AIKEN, SOUTH CAROLINA

FP00000362

No	Description	Date
1	Outdoor Storage Building	April 6, 2020

DRAWN BY: SLB

CHECKED BY: HTH

COMM NO:

DATE: April 6, 2020

SHEET TITLE:

PHASE 1
SEDIMENT &
EROSION
CONTROL PLAN

SHEET NO:

C102

HH No. 05567

NO CROSS-DRAIN PIPES FOUND

412 Meeting Street
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South Carolina

412 Meeting Street
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South Carolina

USC Aiken – Outdoor Storage Building
650 Trolley Line Road, Graniteville, SC 29829
UNIVERSITY OF SOUTH CAROLINA
AIKEN, SOUTH CAROLINA

FP00000362

No	Description	Date
1	Outdoor Storage Building	April 6, 2020

DRAWN BY: S

CHECKED BY: H

COMM NO:

DATE: _____

SHEET TITLE:

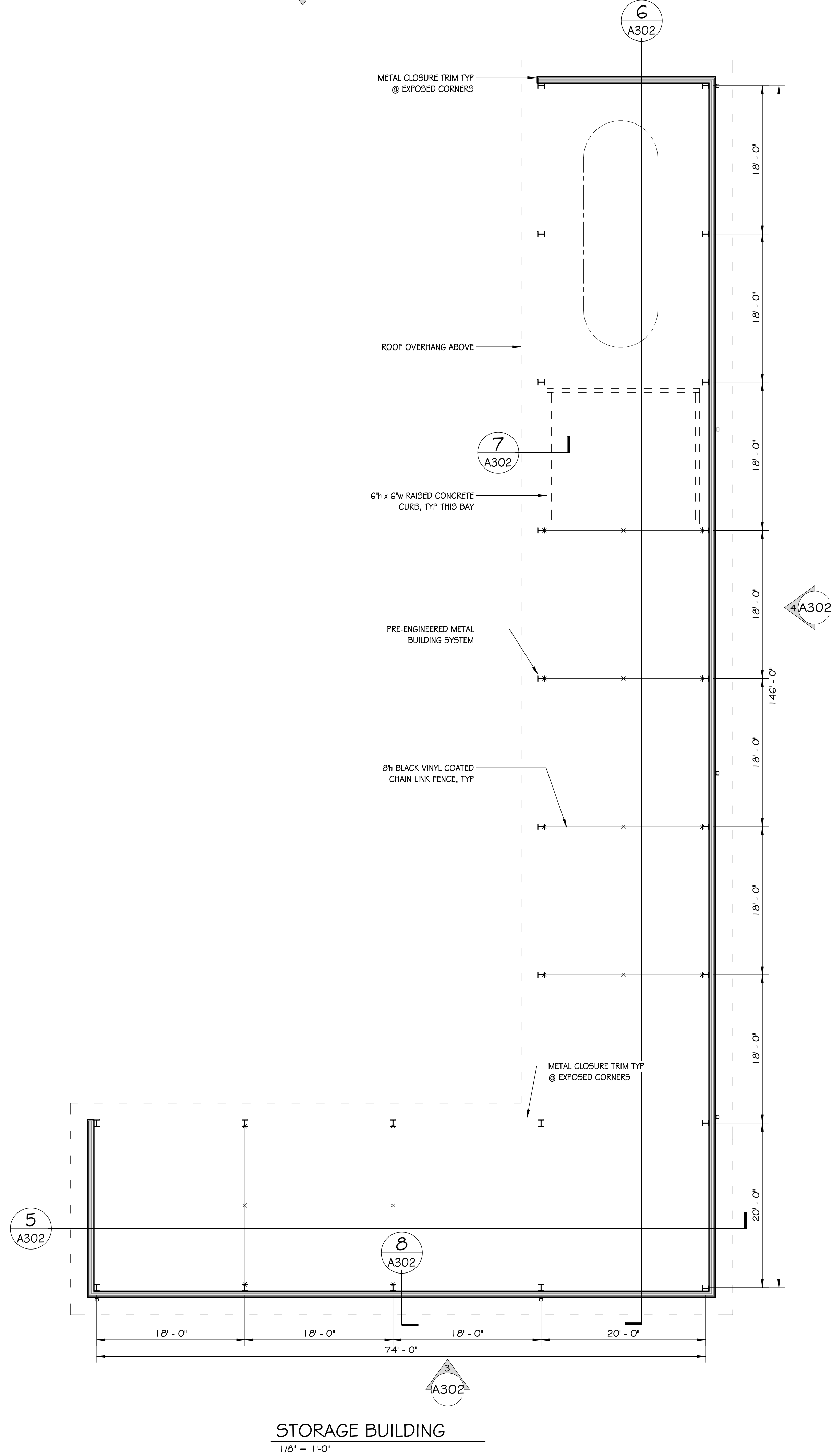
GRADING, DRAINAGE & UTILITY PLAN

SHEET NO:

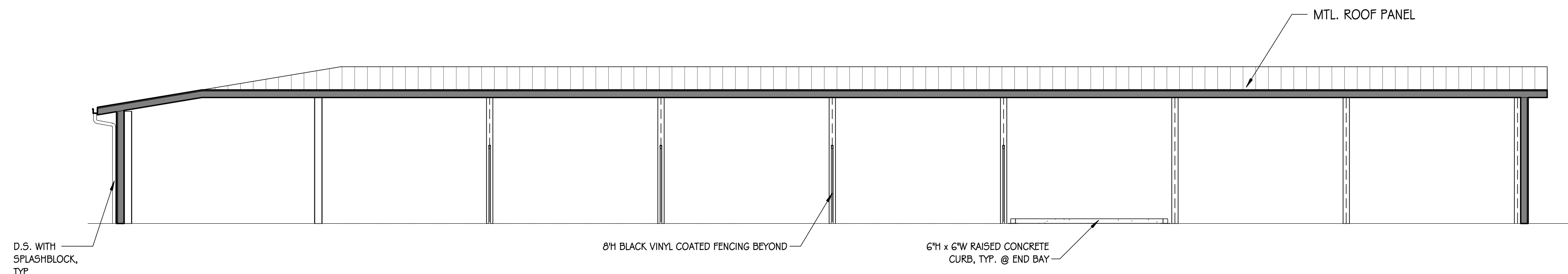
C102.1

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A302

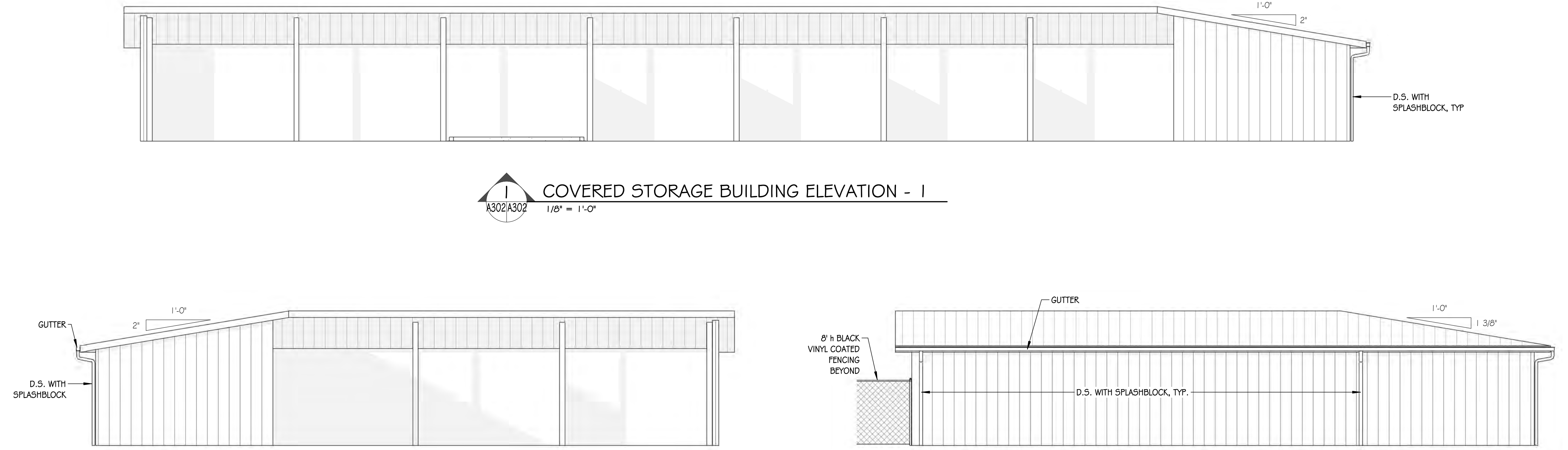


STORAGE BUILDING
1/8" = 1'-0"



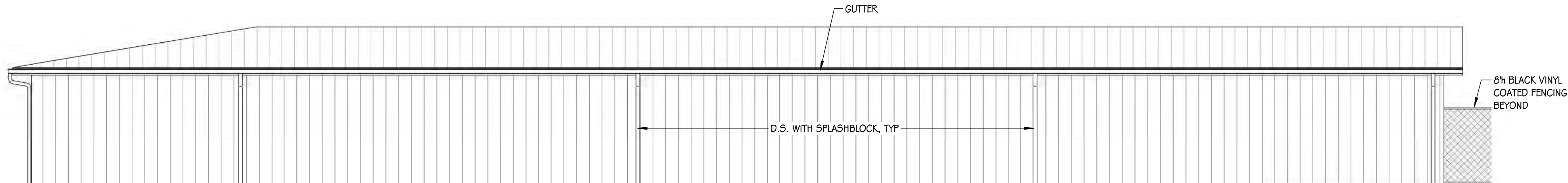
6 COVERED STORAGE BUILDING SECTION - 2
1/8" = 1'-0"

A302

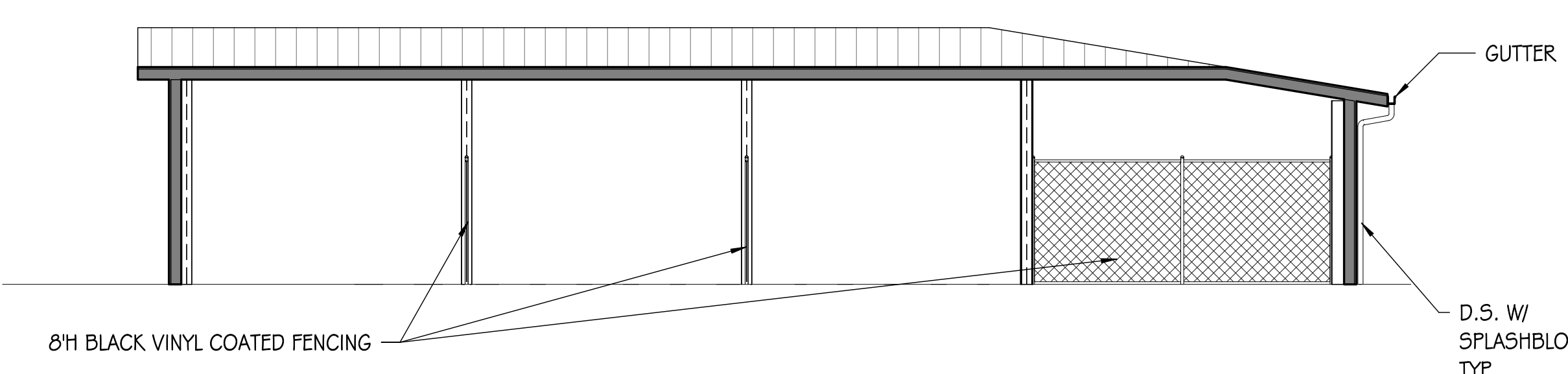


2 COVERED STORAGE BUILDING ELEVATION - 2
1/8" = 1'-0"

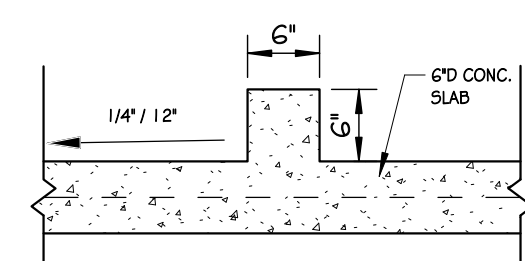
3 COVERED STORAGE BUILDING ELEVATION - 3
1/8" = 1'-0"



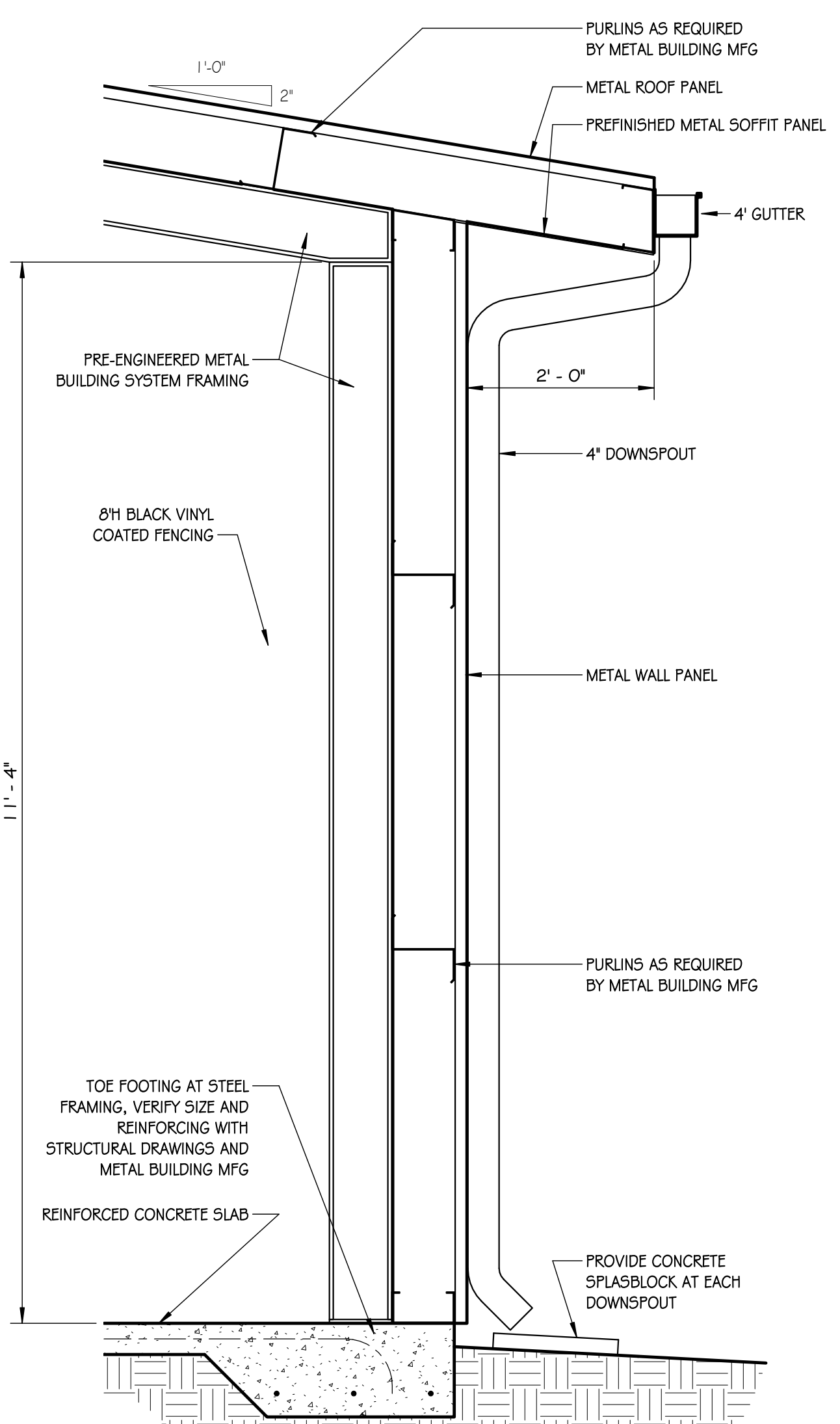
4 COVERED STORAGE BUILDING ELEVATION - 4
1/8" = 1'-0"



5 COVERED STORAGE BUILDING SECTION - 1
1/8" = 1'-0"



7 CURB SECTION
3/4" = 1'-0"

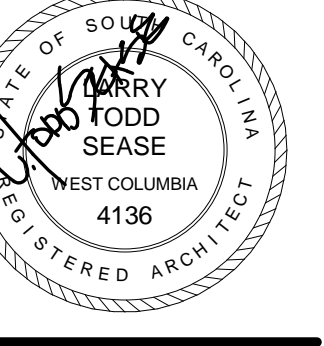
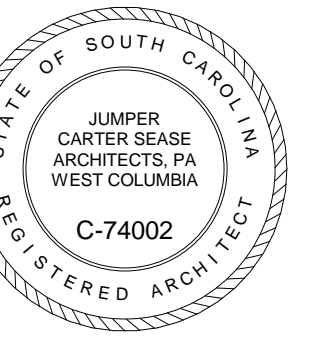


8 WALL SECTION - 6
3/4" = 1'-0"

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OUTDOOR STORAGE BUILDING
UNIVERSITY OF SOUTH CAROLINA AIKEN
AIKEN, SOUTH CAROLINA

No	Description	Date
1	Negotiated Changes	01/17/2020

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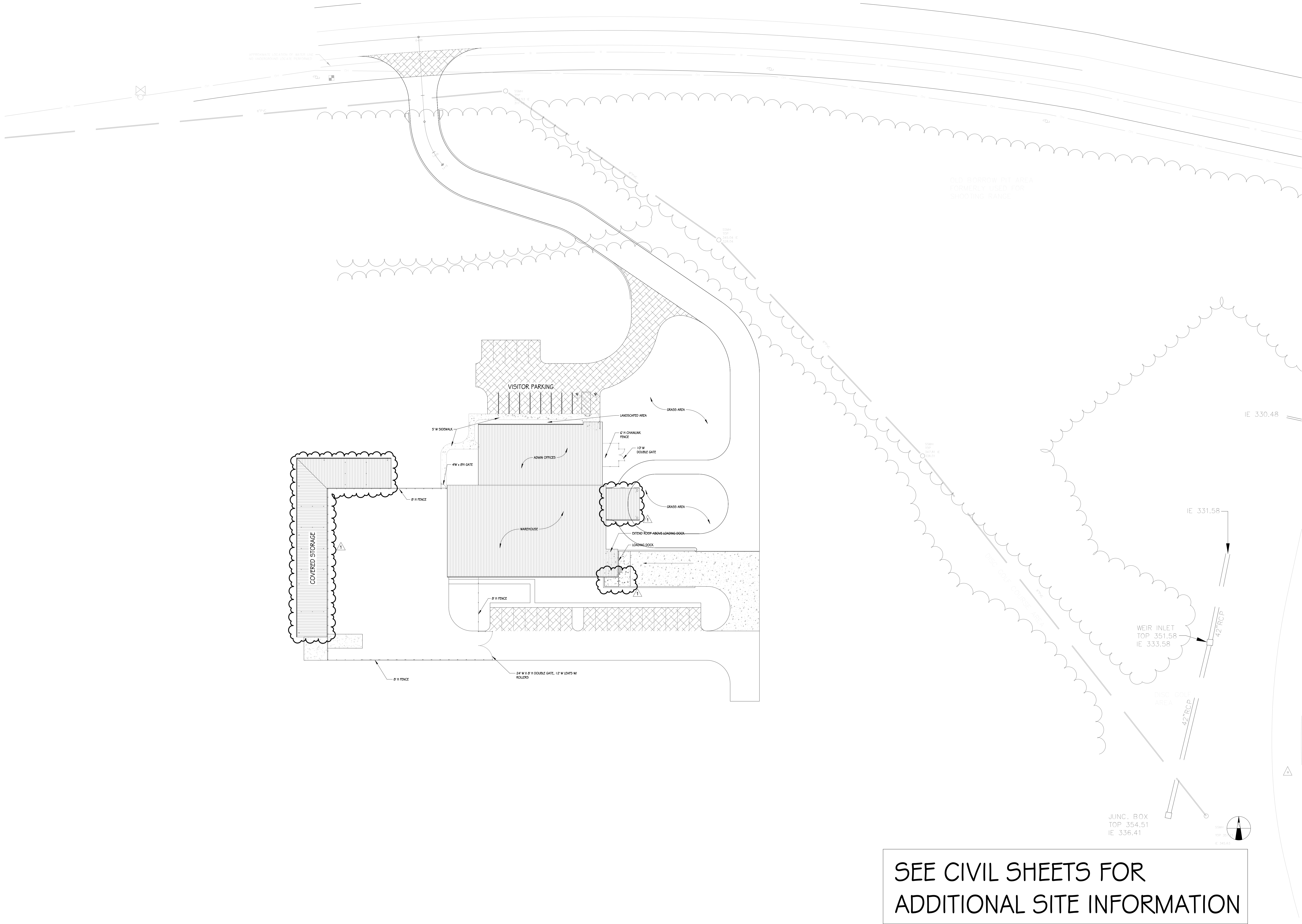
COMM NO: 18103

DATE: OCT. 31, 2019

SHEET TITLE: STORAGE BUILDING

SHEET NO:

A302



ARCHITECTURAL SITE PLAN
1" = 30'-0"

SEE CIVIL SHEETS FOR
ADDITIONAL SITE INFORMATION

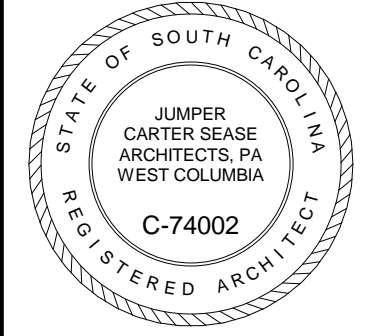
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OUTDOOR STORAGE BUILDING
UNIVERSITY OF SOUTH CAROLINA AIKEN
AIKEN, SOUTH CAROLINA

FP00000362

No	Description	Date
1	Negotiated Changes	01/17/2020

DRAWN BY: JH

CHECKED BY: TS

COMM NO: 18103

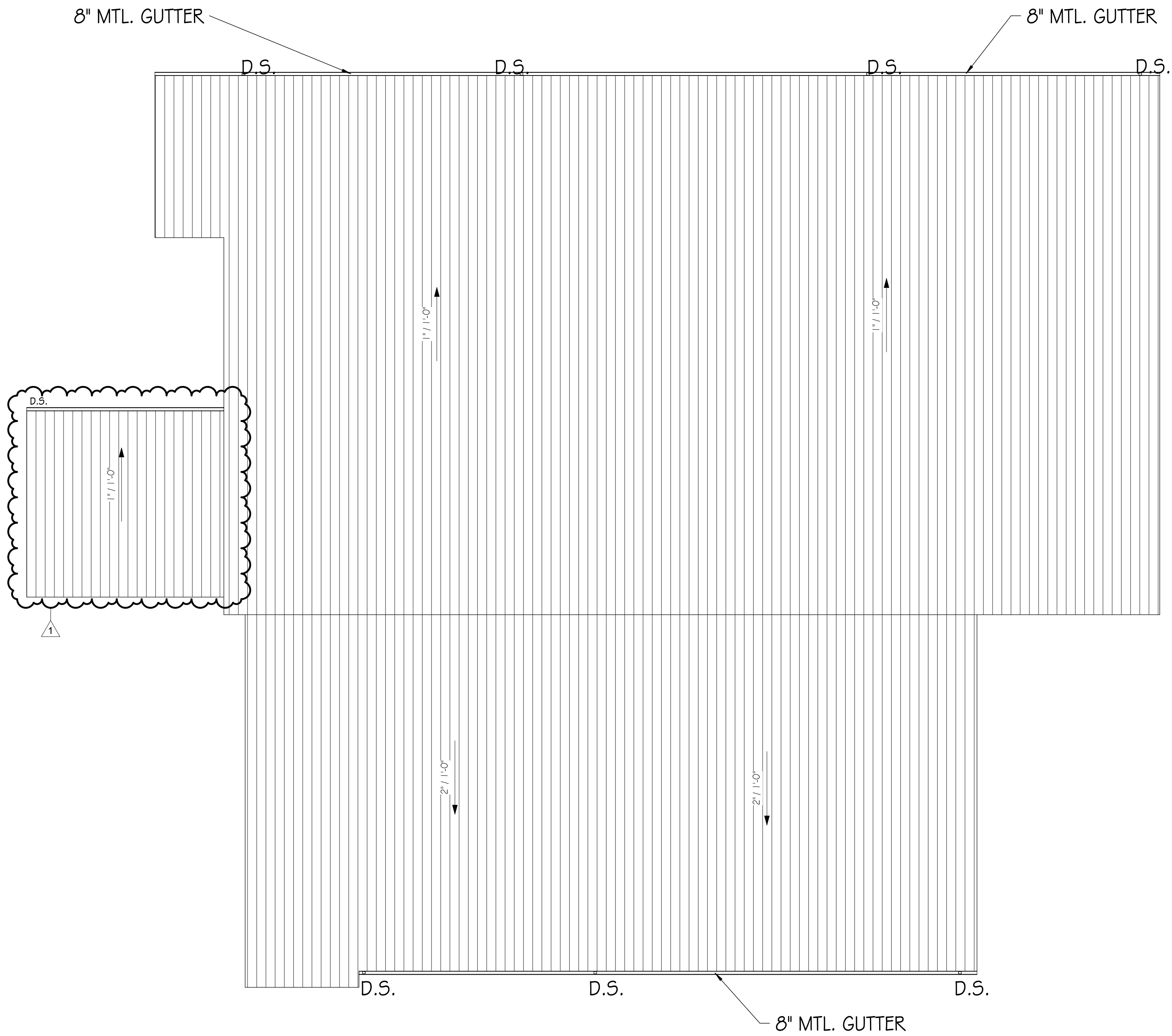
DATE: OCT. 31, 2019

SHEET TITLE:
ARCHITECTURAL
SITE PLAN

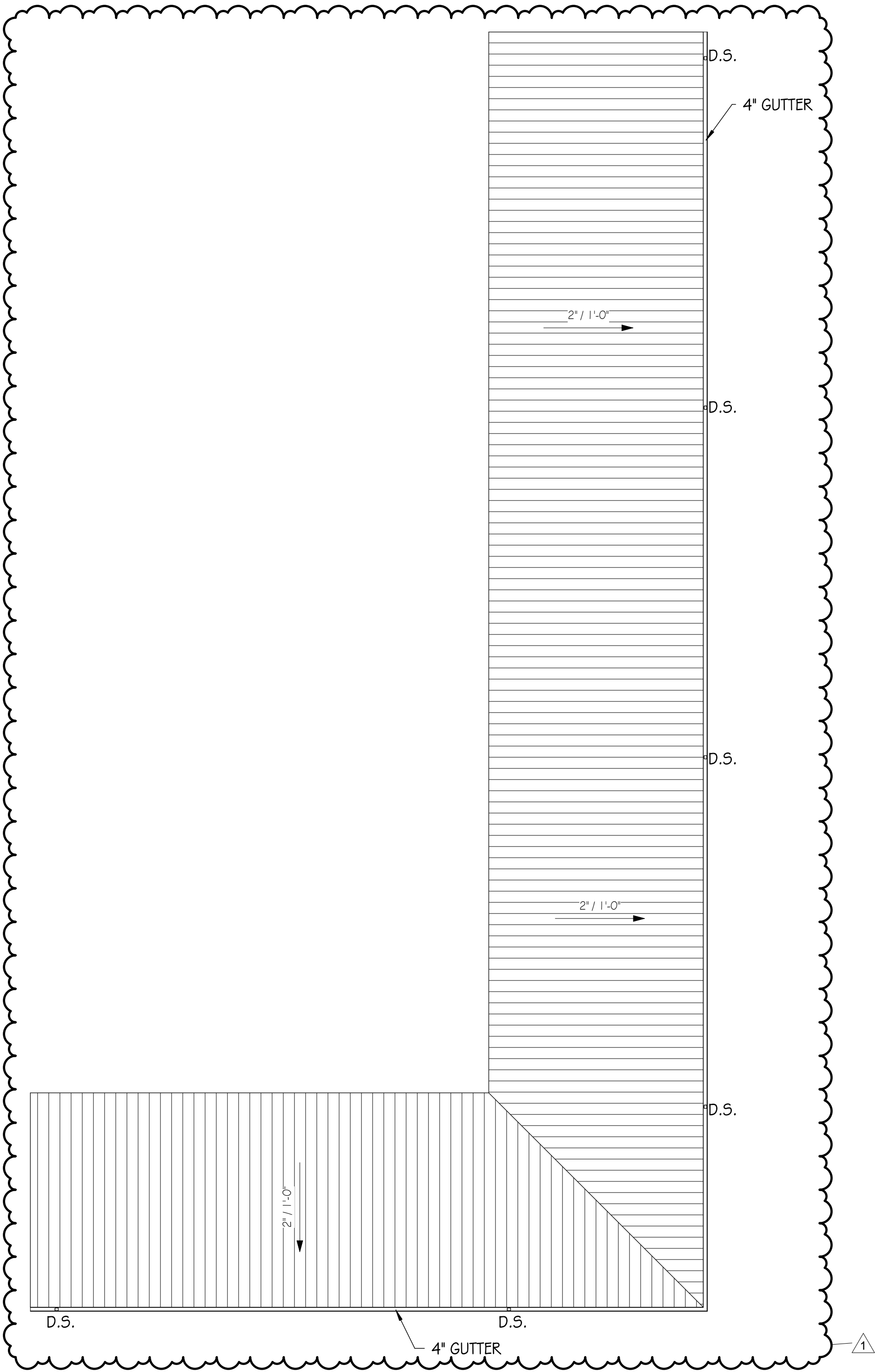
SHEET NO:

A101

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ROOF PLAN
3/32" = 1'-0"



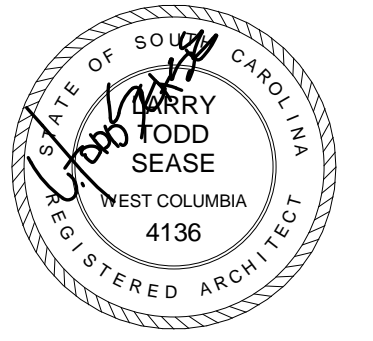
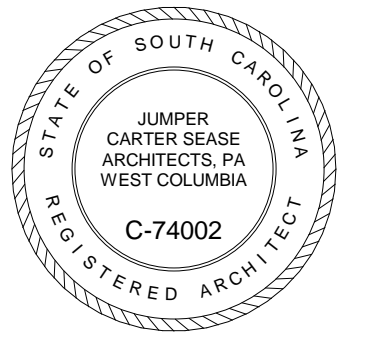
ROOF LEGEND	
→	INDICATES DIRECTION OF SLOPE AT 1/4" PER FOOT.
□ OR □	MECHANICAL UNIT - SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION.
□	EXHAUST FAN - SEE MECHANICAL DRAWINGS.
D.S.	6"x6" PRE-FINISHED METAL DOWNSPOUT FROM GUTTER CONNECTED TO STORM DRAINAGE WITH BOOT - SEE PLUMBING.
⊙	VENTILATING FAN, SEE MECHANICAL DRAWINGS.

GENERAL NOTES	
1.	TIE DOWNSPOUT TO STORM DRAINAGE SYSTEM, TYP.
2.	AT ALL MECHANICAL UNITS INSTALL CRICKET OF TAPER INSULATION ON THE UP-HILL SIDE TO DISPERSE WATER AROUND THE UNIT.
3.	ROOF TOP EQUIPMENT EXPOSED TO VIEW SHALL BE PAINTED TO MATCH METAL PARAPET COLOR. INCLUDES STAND PIPES.

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OUTDOOR STORAGE BUILDING
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FP00000362

No	Description	Date
1	Negotiated Changes	01/17/2020

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COMM NO:	18103
DATE:	OCT. 31, 2019
SHEET TITLE:	ROOF PLAN

SHEET NO:
A801

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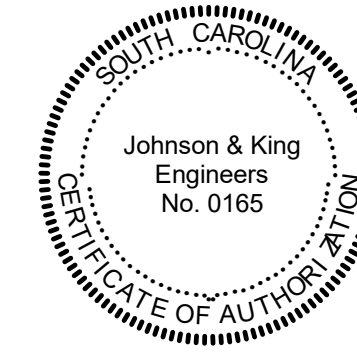
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OUTDOOR STORAGE BUILDING
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AIKEN, SOUTH CAROLINA

FP00000362

No	Description	Date
1	Negotiated Changes	01/17/2020

DRAWN BY: LWK
CHECKED BY: LWK/JLM
COMM NO: 18103
DATE: OCT 15, 2019
SHEET TITLE: FOUNDATION PLAN

SHEET NO:

S101

GENERAL NOTES

- IN CASE OF DISCREPANCY BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS, CONSULT WITH THE ARCHITECT. FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE THE ARCHITECTURAL DRAWINGS. VERIFY ALL MECHANICAL OPENINGS AND SUPPORTS WITH THE MECHANICAL EQUIPMENT. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS RELATED TO EXISTING CONSTRUCTION.
- DESIGN CRITERIA:
 - BUILDING CODE: 2015 INTERNATIONAL BUILDING CODE
 - OCCUPANCY CATEGORY: II
 - SEISMIC DESIGN DATA:
 - IMPORTANCE FACTOR: 1.0
 - $S_s = 0.334$
 - $S_1 = 0.122$
 - $S_D = 0.341$
 - $S_1 = 0.188$
 - SITE CLASS D ASSUMED, SEISMIC DESIGN CATEGORY C
 - DESIGN BASE SHEAR: BY METAL BUILDING SUPPLIER
 - SEISMIC RESPONSE COEFFICIENT: $C_s =$ BY METAL BUILDING SUPPLIER
 - BASIC SEISMIC FORCE RESISTING SYSTEM: BY METAL BUILDING SUPPLIER
 - ANALYSIS PROCEDURE: BY METAL BUILDING SUPPLIER
 - WIND VELOCITY 115 MPH, EXPOSURE C, INTERNAL PRESSURE COEFFICIENT ± 0.18
 - ROOF LIVE LOAD: 20 PSF
 - FLOOR LIVE LOAD: 10 PSF
 - FLOOR LIVE LOADS:
 - LOBBIES: 100 PSF
 - CORRIDORS: 80 PSF
 - OFFICES: 50 PSF
 - CLASSROOMS: 40 PSF
 - FLOORS (EXCEPT AREAS WHERE LIVE LOADS EXCEED 80 PSF) ARE DESIGNED FOR A LIVE LOAD PARTITION ALLOWANCE OF 15 PSF.
- FOUNDATION DESIGN BASED ON AN ASSUMED SOIL BEARING PRESSURE OF 2500 PSF
 - FOOTING TO BE VERIFIED FOR BEARING PRESSURE = 2500 PSF BEFORE POURING FOOTINGS
 - STEP FOOTINGS AS REQUIRED TO LET UTILITIES PASS OVER FOOTINGS
- CONCRETE: 28-DAY COMPRESSIVE STRENGTHS SHALL BE AS FOLLOWS:
 - ALL CONCRETE: 3000 PSI, NORMAL WEIGHT
- CONCRETE REINFORCING STEEL:
 - ASTM A615, GRADE 60, EXCEPT WHERE REINFORCING IS SHOWN TO BE WELDED, USE ASTM A706 WELDABLE REINFORCING. DO NOT WELD OR TACK WELD ANY REINFORCING NOT SHOWN ON THE DRAWINGS TO BE WELDED.
 - DETAIL IN ACCORDANCE WITH ACI DETAILING MANUAL, LATEST EDITION.
 - LAP ALL BARS WITH CLASS B SPLICES UNLESS NOTED OTHERWISE.
 - PROVIDE CORNER BARS OF SAME SIZE AND SPACING AS HORIZONTAL REINFORCING AT ALL WALLS AND FOOTING INTERSECTIONS. LAP WITH CLASS B SPLICES.
- STRUCTURAL STEEL:
 - MATERIALS:
 - PIPE: ASTM A53, GRADE B
 - TUBE: ASTM A500, GRADE C
 - WIDE FLANGES AND TEES: ASTM A992, GRADE 50
 - OTHER: ASTM A36
 - FABRICATION SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS.
 - BOLTED CONNECTIONS: ASTM A325, 3/4" DIAMETER, SNUG-TIGHTENED, BEARING TYPE CONNECTIONS WITH THREADS IN THE SHEAR PLANE UNLESS NOTED OTHERWISE.
 - WELDED CONNECTIONS: E70XX ELECTRODES. ELECTRODES USED FOR WELDING A992 STEEL SHALL BE LOW HYDROGEN ELECTRODES.
- METAL BUILDING SYSTEM, GIRTS, AND PURLINS:
 - THE METAL BUILDING SYSTEM SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN SOUTH CAROLINA FOR THE FOLLOWING LOADS AND FOR THE MECHANICAL LOADS AND OTHER LOADS SHOWN ON THE DRAWINGS:
 - ROOF LIVE LOAD - 20 PSF (REDUCIBLE FOR FRAMES)
 - COLLATERAL LOAD - 3 PSF + SPRINKLER LOAD
 - WIND AND SEISMIC LOADS - PER DESIGN CRITERIA IN GENERAL NOTE 2.
 - METAL BUILDING SYSTEM MANUFACTURER SHALL SUBMIT COMPLETE SHOP DRAWINGS AND STRUCTURAL CALCULATIONS SEALED BY THE DESIGN ENGINEER.
 - THE METAL BUILDING SHALL BE DESIGNED FOR A LATERAL WIND DEFLECTION OF H/80 (H = EAVE HEIGHT). RIGID FRAMES SHALL BE DESIGNED WITH PINNED COLUMN BASES. DRIFT SHALL BE BASED ON 10 YEAR WIND LOAD.
 - PURLINS SHALL BE DESIGNED FOR A DEFLECTION OF L/240 UNDER COMBINED DEAD AND LIVE LOAD.

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1 FOUNDATION PLAN

1/8" = 1'-0"

PLAN NOTES:

- MAIN FINISH FLOOR IS DATUM (0.00). FOOTING ELEVATION SHOWN ARE BELOW THIS LEVEL. WHERE NOT SHOWN OR NOTED, STEP FOOTING TO MAINTAIN 8" BELOW FINISH GRADE. INTERIOR FOOTINGS ELEVATION ARE SHOWN BELOW MAIN FINISH FLOOR ELEVATION (0.00).
- TYPICAL FLOOR ON GRADE CONSTRUCTION = 4" CONCRETE SLAB REINFORCED WITH WWF 6X6 - W1.4 X W1.4 WIRE MESH UNLESS NOTED OTHERWISE.
- "C/J" DENOTES SLAB CONTROL JOINT. SEE DETAIL 1S401.
- SEE DRAWING S103 FOR MASONRY WALL REINFORCING DETAILS.
- SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN OR NOTED.
- SEE DRAWING S103 FOR ALL APPROVED ANCHORS FOR POST-INSTALLED ANCHORS IN CONCRETE AND MASONRY.

MARK	SIZE	THICKNESS	REINFORCING EACH WAY
F58	5'-0" X 5'-0"	24"	6 #5
F70	7'-0" X 7'-0"	24"	6 #5
TF1	7'-0" X 8'-0"	24"	7 #5 CONT. #4 @ 12" OC HOOK BARS
TF2	7'-0" X 7'-0"	24"	7 #5 CONT. #4 @ 12" OC HOOK BARS
TF3	6'-0" X 5'-0"	24"	6 #5 CONT. #4 @ 12" OC HOOK BARS
TF4	4'-0" X 5'-0"	24"	4 #5 CONT. #4 @ 12" OC HOOK BARS
TF5	6'-0" X 6'-0"	24"	5 #5 CONT. #4 @ 12" OC HOOK BARS
TF6	4'-0" X 4'-0"	24"	4 #5 CONT. #4 @ 12" OC HOOK BARS
TS14	1'-4" CONT.	12"	2 #4 CONT.
WF26	2'-6" CONT.	12"	3 #5 CONT. #4 @ 32" OC TRANSVERSE
WF28	2'-8" CONT.	12"	3 #5 CONT. #4 @ 32" OC TRANSVERSE
WF30	3'-0" CONT.	12"	3 #5 CONT. #4 @ 32" OC TRANSVERSE

NOTE:
DO NOT POUR ANY FOOTINGS UNTIL METAL BUILDING COLUMN REACTIONS HAVE BEEN CHECKED AGAINST FOOTING SIZES

SEE METAL BLDG. SHOP DIVGS. FOR PROJECTION

HEAVY HEX NUT

TACK WELD

4" THICK

1/2" FOR LENGTH

ANCHOR ROD SCHEDULE	
DIAMETER	LENGTH
1/2" DIA.	15"
3/8" DIA.	15"
3/4" DIA.	24"
1" DIA.	24"
1 1/4" DIA.	24"

3 ANCHOR RODS DETAILS

S101 1 1/2" = 1'-0"

NOTES:

- SEE THE APPROVED METAL BUILDING SYSTEM DRAWINGS FOR THE QUANTITY, DIAMETER AND PROJECTION OF ANCHOR RODS. GENERAL CONTRACTOR SHALL PROVIDE ANCHOR RODS. SOME OF THE DIAMETERS SHOWN IN THE SCHEDULE MAY NOT BE REQUIRED FOR THIS BUILDING.
- ANCHOR ROD MATERIAL SHALL BE ASTM F1554, GRADE 36.
- IF DIAMETERS OTHER THAN THOSE SHOWN IN THE SCHEDULE ARE REQUIRED, CONSULT WITH THE ARCHITECT FOR THE REQUIRED ANCHOR ROD LENGTHS.

2" X 2" X 16 GAGE ANGLE, 4" LONG W/ (3) #12 SCREWS

HORIZONTAL SAMMY SCREW WITH THREADED ROD ATTACHMENT

NOTE 2 (TYP.)

PIPING OR DUCT PARALLEL TO PURLINS MAX. LOAD 100 LBS.

2" X 2" X 16 GAGE ANGLE, 4" LONG W/ (3) #12 SCREWS

HORIZONTAL SAMMY SCREW WITH THREADED ROD ATTACHMENT

ZEE PURLIN

PIPING OR DUCT PERPENDICULAR TO PURLINS MAX. LOAD 100 LBS.

UNISTRUT 1346 3-HOLE FITTING

ZEE PURLIN

NUT AND BEVELED WASHER

P1000 UNISTRUT

NOTE 2 (TYP.)

PIPING OR DUCT PARALLEL TO PURLINS LOAD 101 TO 250 LBS.

UNISTRUT 1346 3-HOLE FITTING

ZEE PURLIN

NUT AND BEVELED WASHER

P1000 UNISTRUT

NOTE 2 (TYP.)

PIPING OR DUCT PERPENDICULAR TO PURLINS LOAD 101 TO 250 LBS.

4 PURLIN HANGER ROD DETAILS

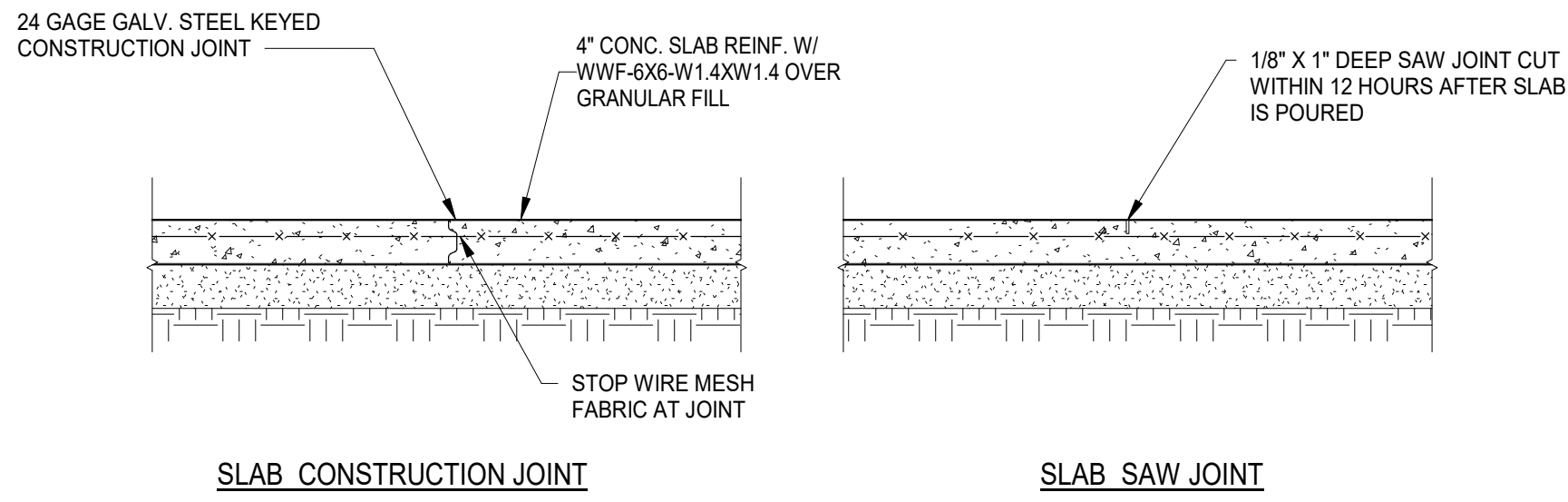
3/4" = 1'-0"

NOTES:

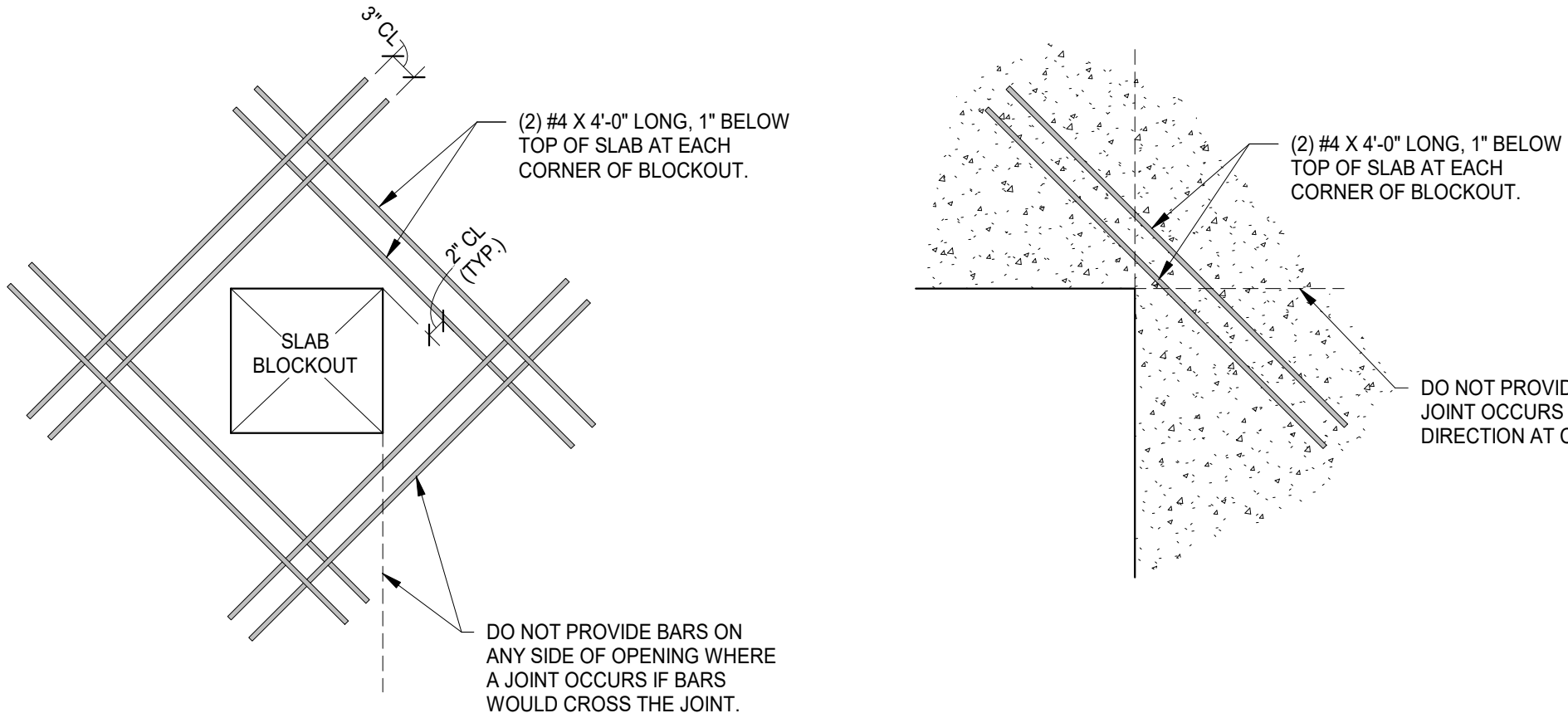
- REFER TO THE MECHANICAL AND PLUMBING DRAWINGS FOR SIZE AND LOCATIONS OF PIPES, DUCTS AND FOR HANGER DETAILS.
- DO NOT DRILL OR CLAMP THE BOTTOM FLANGE OF ANY PURLIN.
- MULTIPLE LOADS USING THE DETAILS SHOWN ABOVE SHALL NOT BE LOCATED CLOSER TOGETHER THAN 8" APART ALONG THE LENGTH OF THE PURLIN.
- INDIVIDUAL LOADS ON ZEE PURLINS SHALL NOT EXCEED 250 POUNDS.

JOHNSON & KING
ENGINEERS
architects/civilengineers

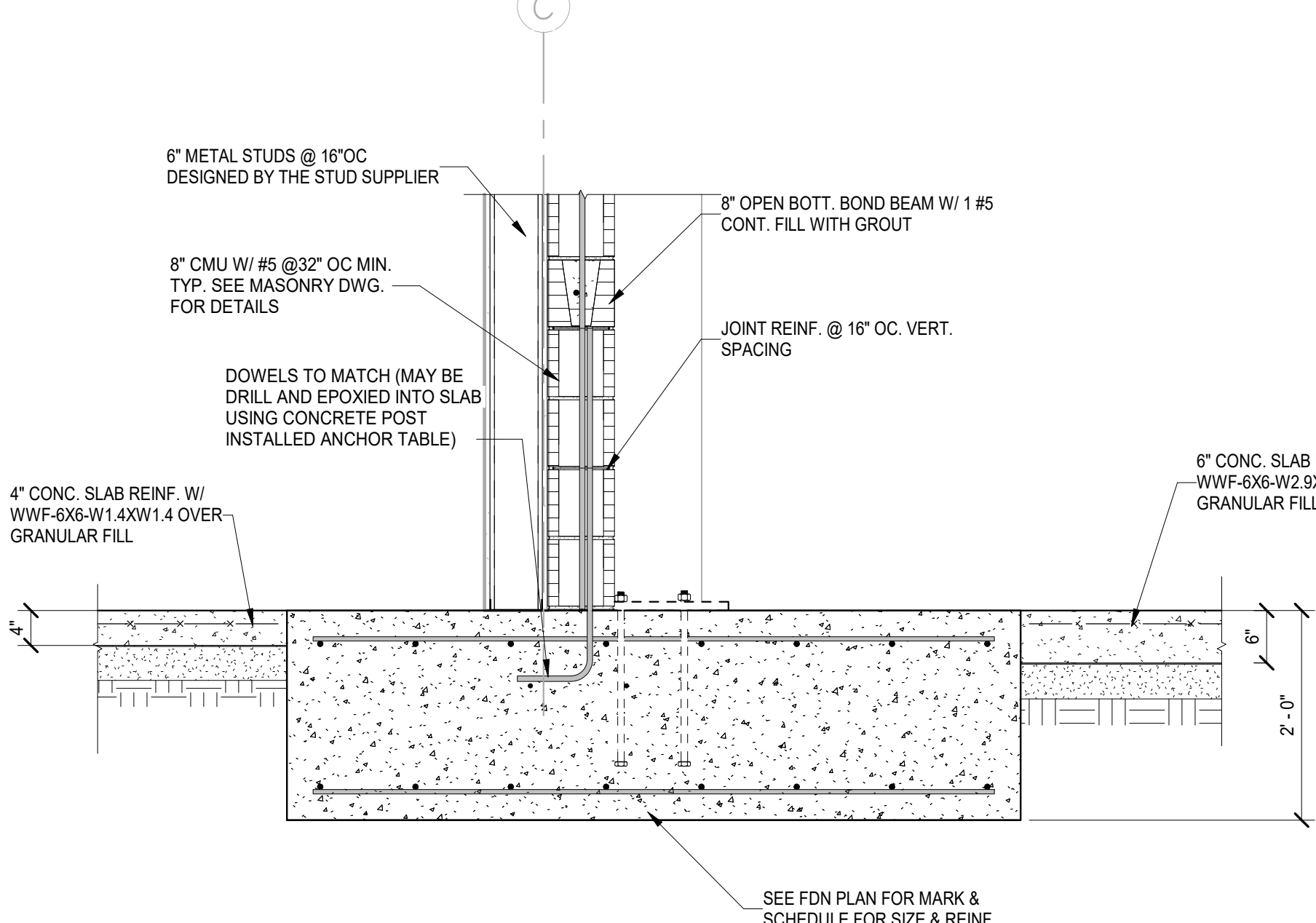
1223 Elmwood Avenue | 803.779.8830
Columbia, SC 29201 | 803.779.8813



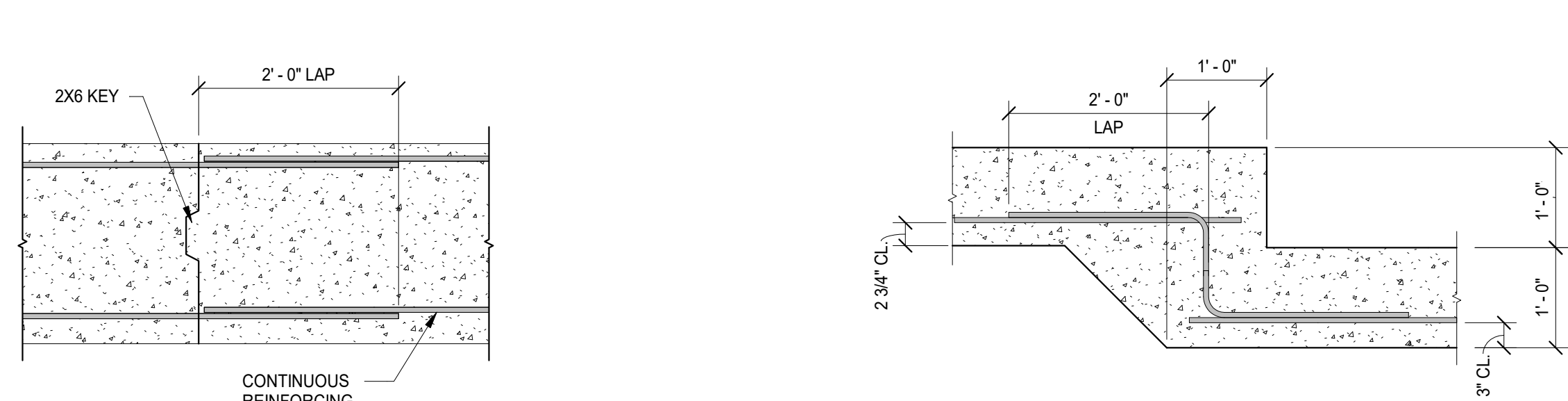
1 SLAB CONSTRUCTION JOINTS
S102 3/4\"/>



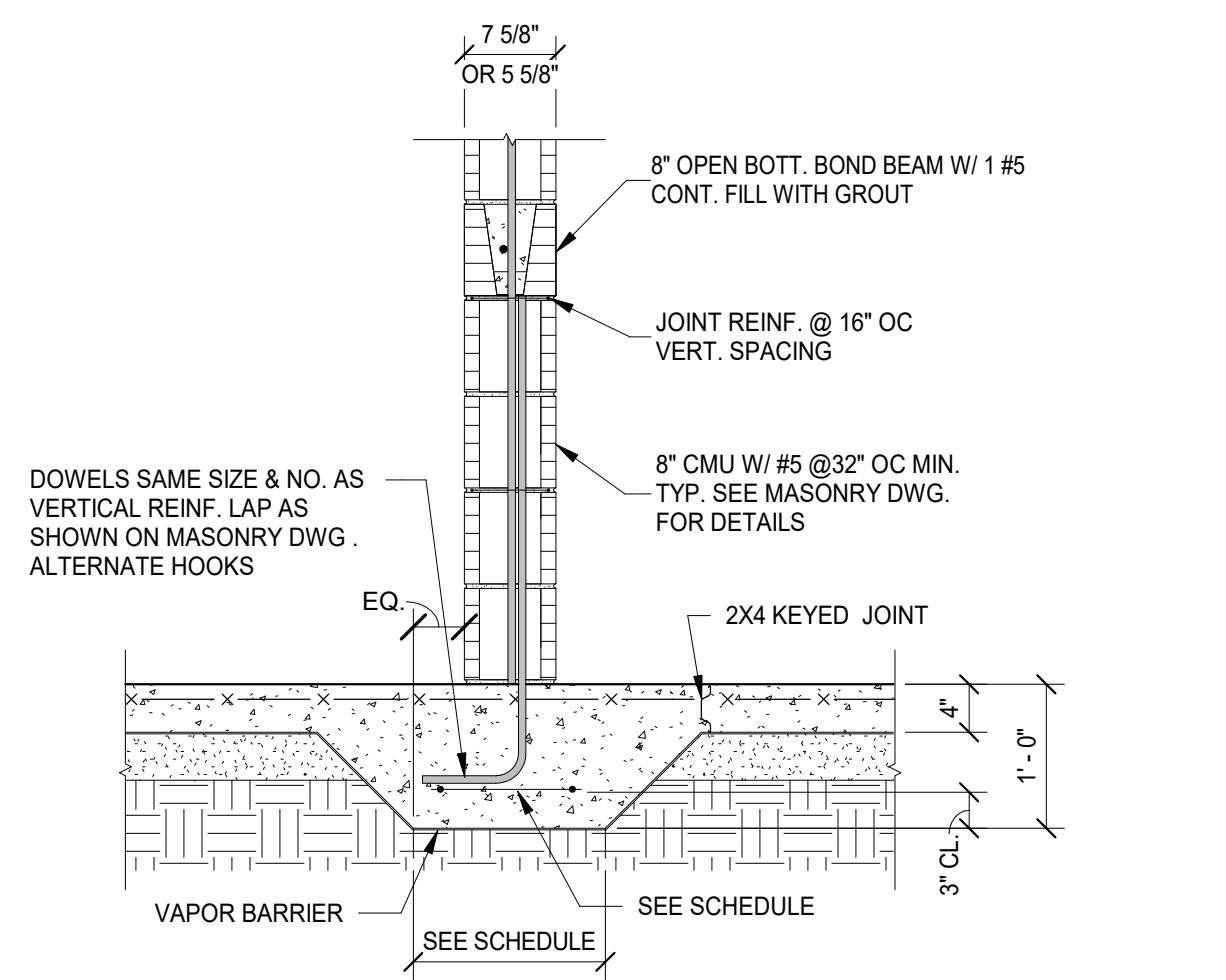
2 THICKEN SLAB CONSTRUCTION JOINT
S102 3/4\"/>



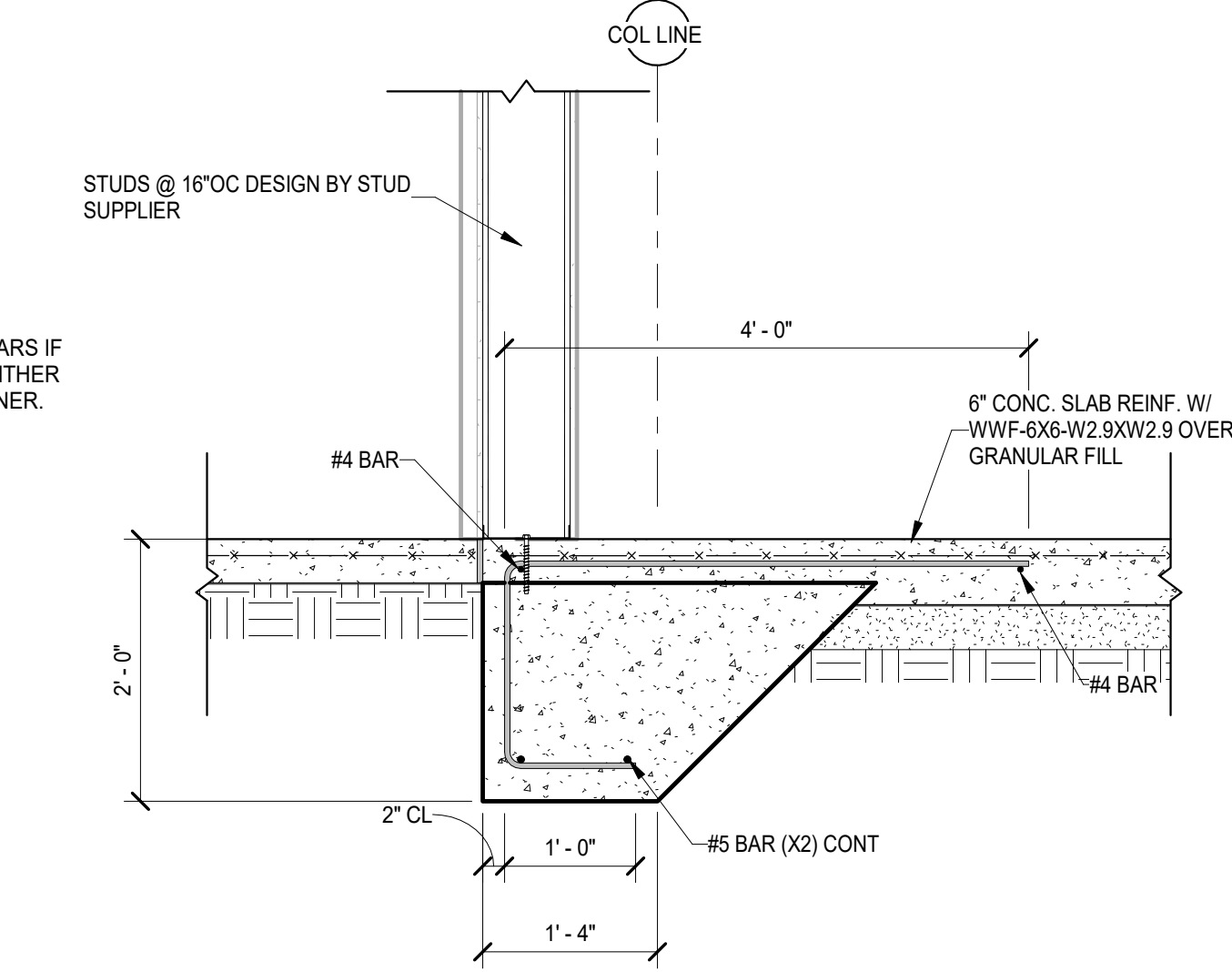
3 STEP FOOTING DETAIL
S102 3/4\"/>



4 THICKEN SLAB DETAIL
S102 3/4\"/>

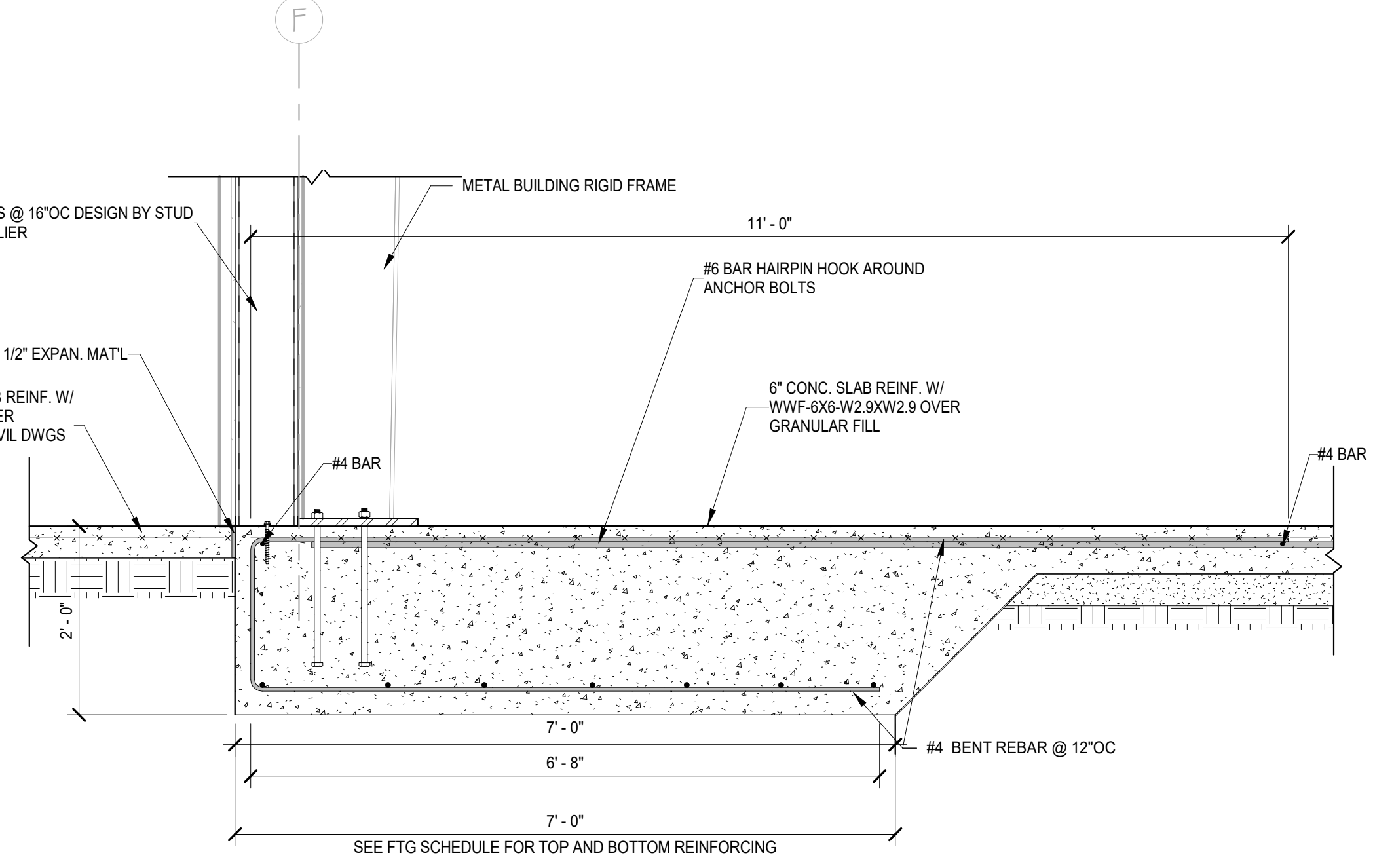


5 THICKEN SLAB W/ CONSTRUCTION JOINT
S102 3/4\"/>

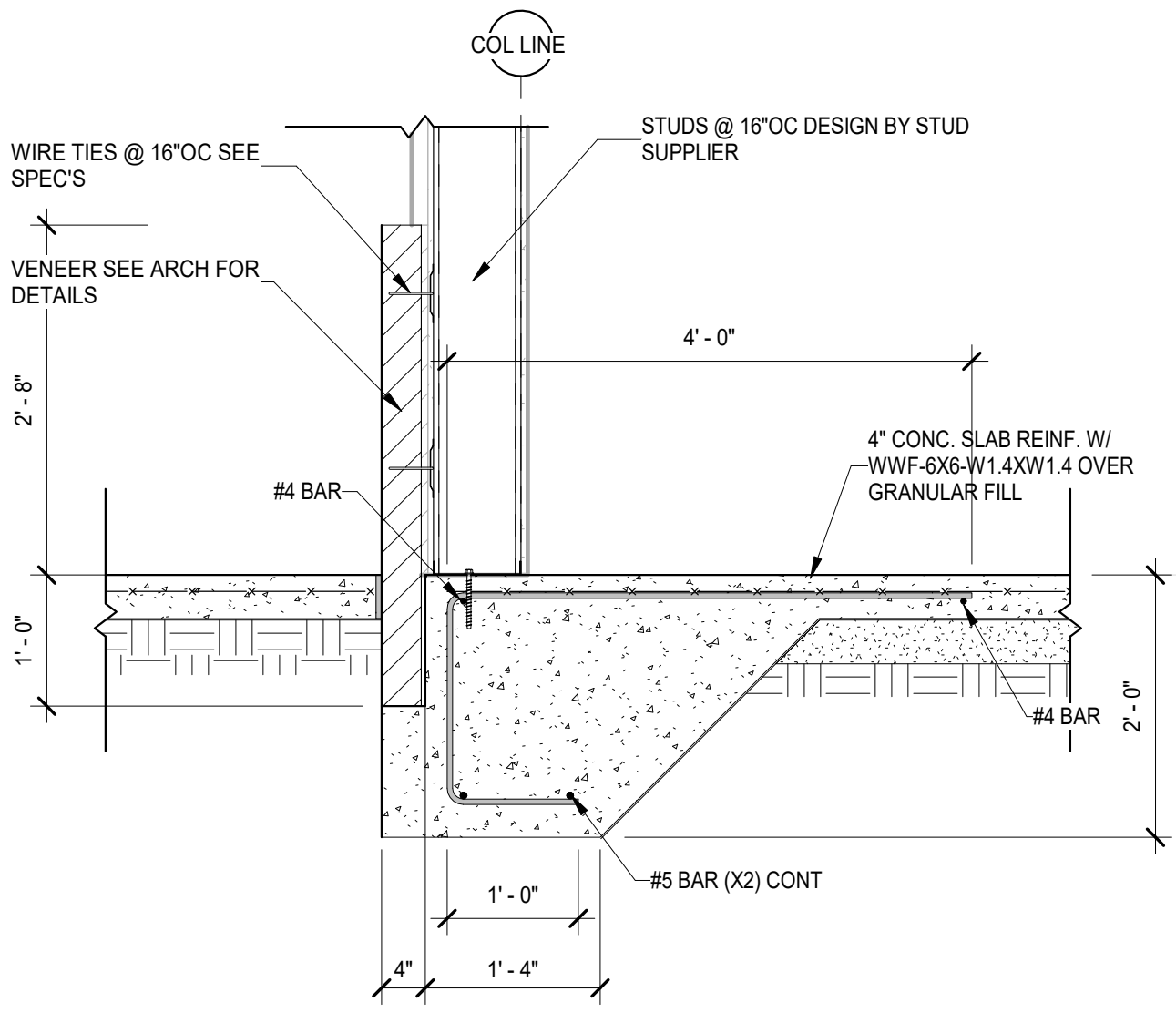


6 SLAB BLOCKOUT/RE-ENTRANT CORNER DETAILS
S102 3/4\"/>

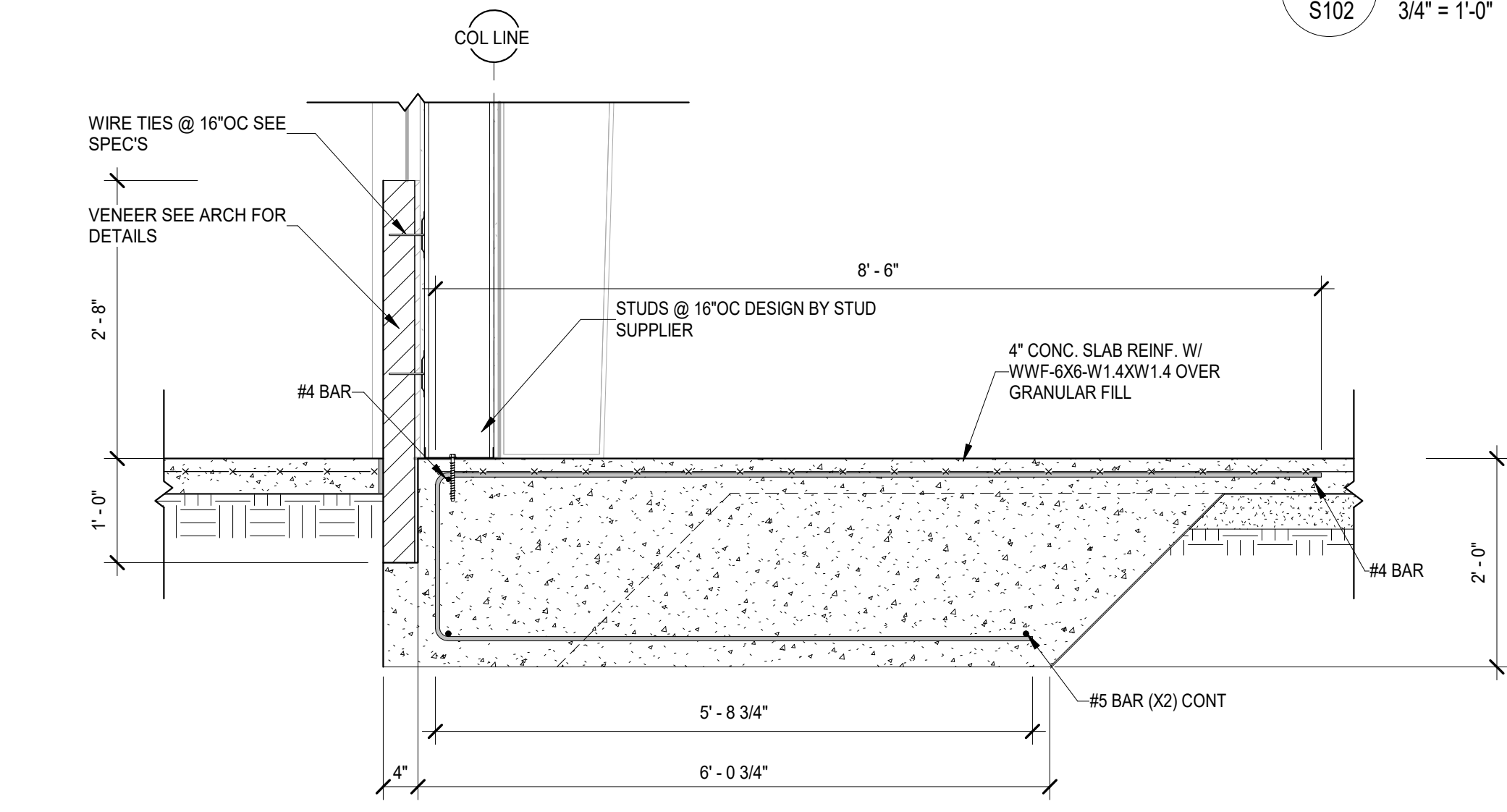
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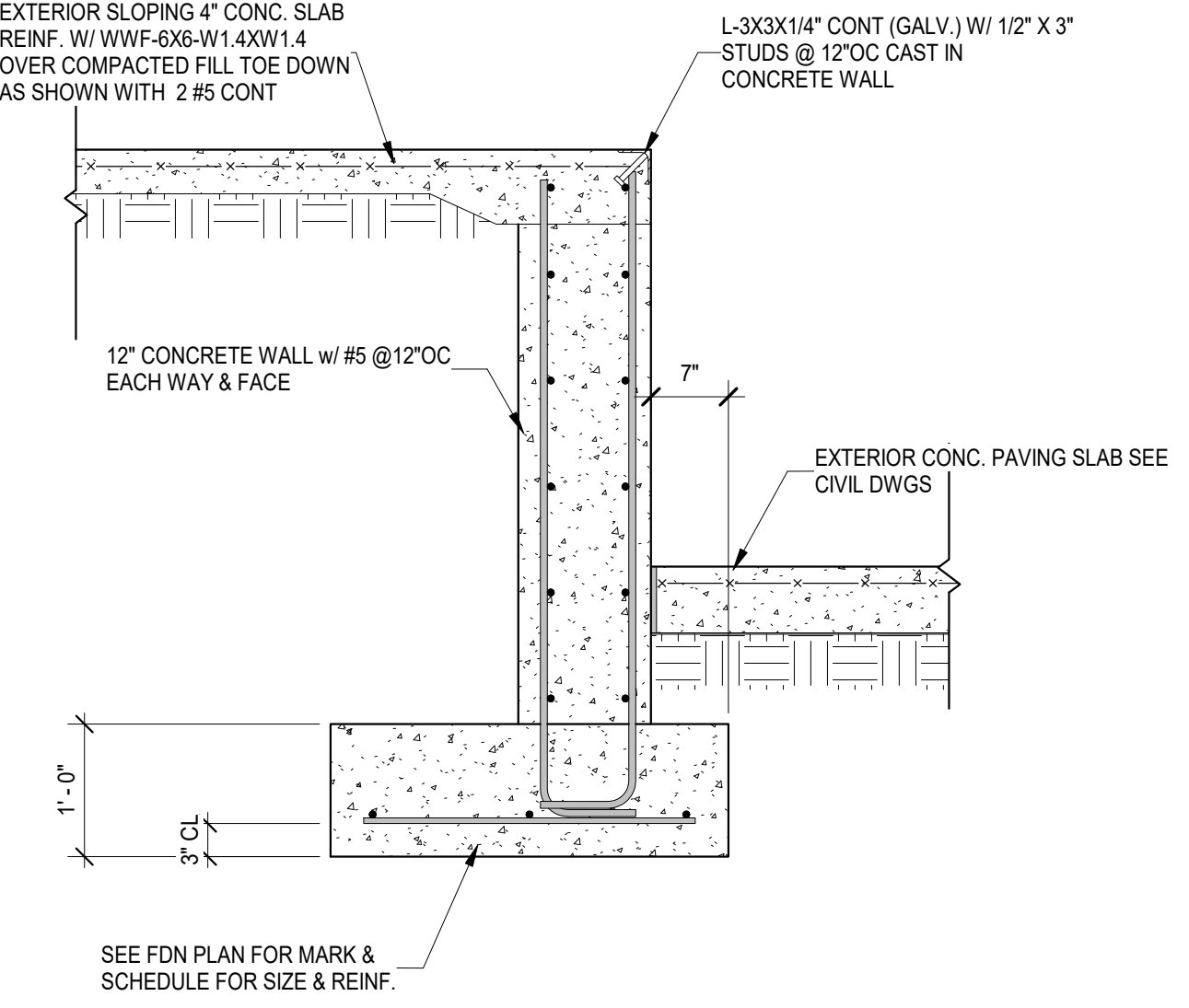
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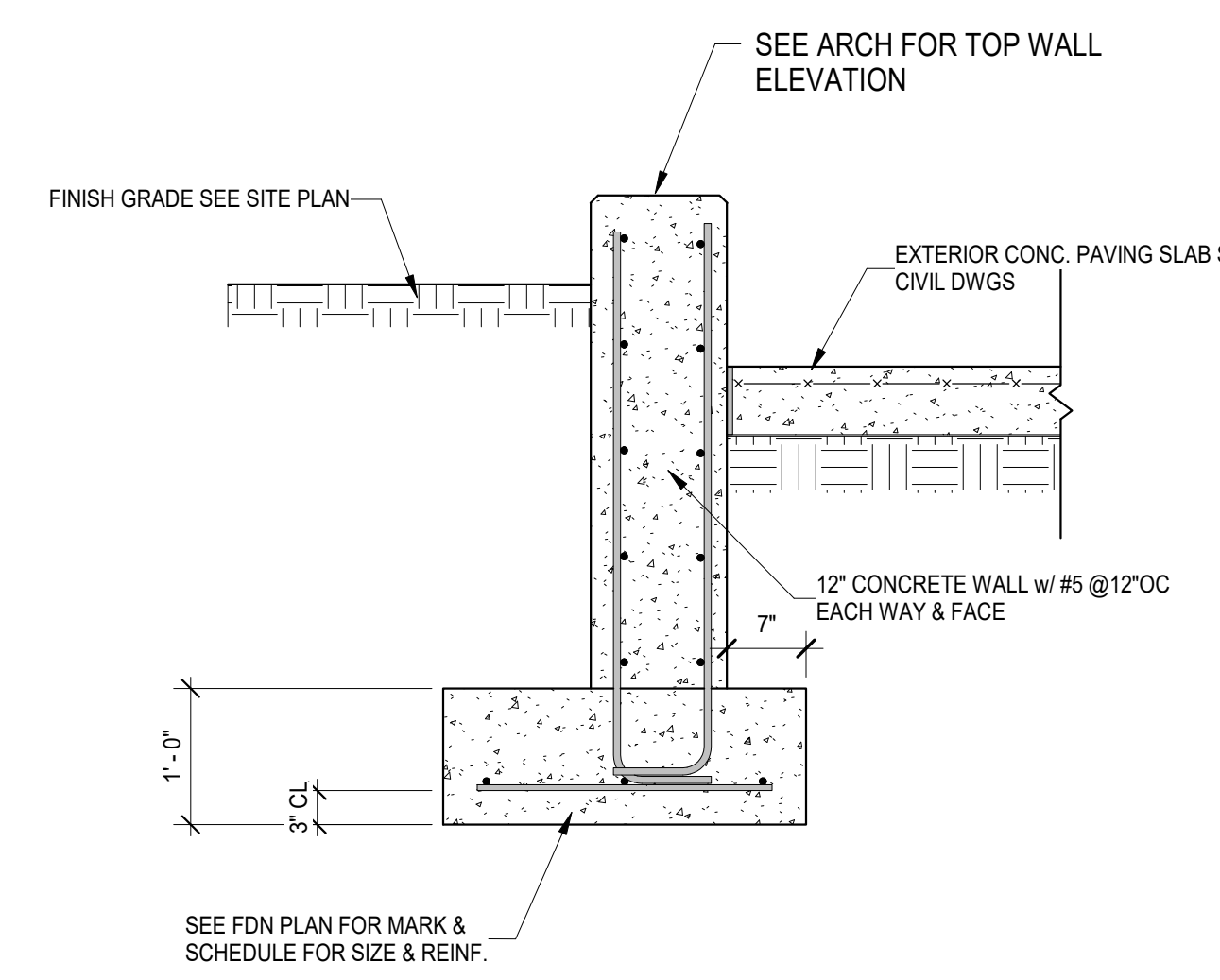
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11 SECTION
S102 3/4\"/>



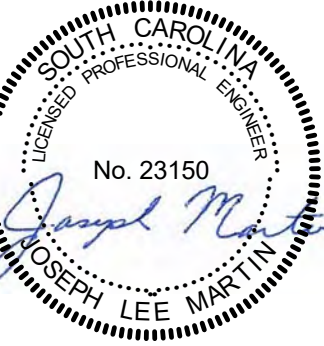
12 SECTION
S102 3/4\"/>



13 SECTION
S102 3/4\"/>

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OUTDOOR STORAGE BUILDING
UNIVERSITY OF SOUTH CAROLINA
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FP00000362

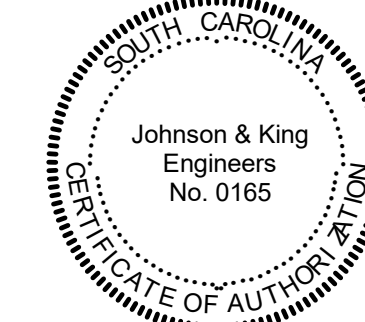
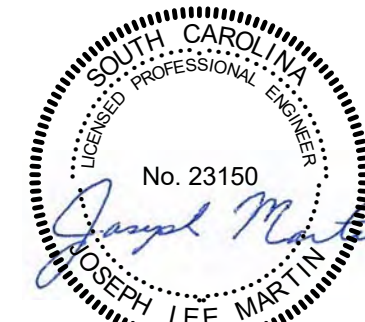
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DRAWN BY: LWK
CHECKED BY: LWK/JLM
COMM NO: 18103
DATE: OCT 15, 2019
SHEET TITLE: FOUNDATION SECTIONS

SHEET NO:

S102





FP00000362

No	Description	Date
1	Negotiated Changes	01/17/2020

DRAWN BY: **LWK**

CHECKED BY: **LWK/JLM**

COMM NO: **18103**

DATE: **OCT 15, 2019**

SHEET TITLE: **MASONRY WALL REINFORCING STORAGE BUILDING**

SHEET NO:

LINTEL SCHEDULE

MARK	DESCRIPTION	SHAPE (8" CMU SHOWN 12" CMU SIMILAR)	END BRG EACH END	REMARKS
L1	8" OR 12" CMU BOND BEAM W/ 2 #5 BOTTOM FILL WITH GROUT		2'-0"	OPENINGS IN 8" OR 12" CMU WALLS 4'-0" WIDE AND UNDER
L2	8" OR 12" CMU BOND BEAM + 8" OR 12" OPEN BOTTOM BOND BEAM W/ 2 #6 TOP & BOTTOM + #3 "Z" BARS AT 16" o.c. FILL WITH GROUT		2'-0"	OPENINGS IN 8" OR 12" CMU WALLS 4'-1" TO 8'-4" WIDE

VERTICAL REINFORCING AT CORNERS AND ENDS OF WALLS

NO SCALE

VERTICAL REINFORCING AT CONTROL JOINTS

NO SCALE

VERTICAL REINFORCING AT JAMBS OF OPENINGS

NO SCALE

BOND BEAM REINFORCING AT JAMBS OF OPENINGS

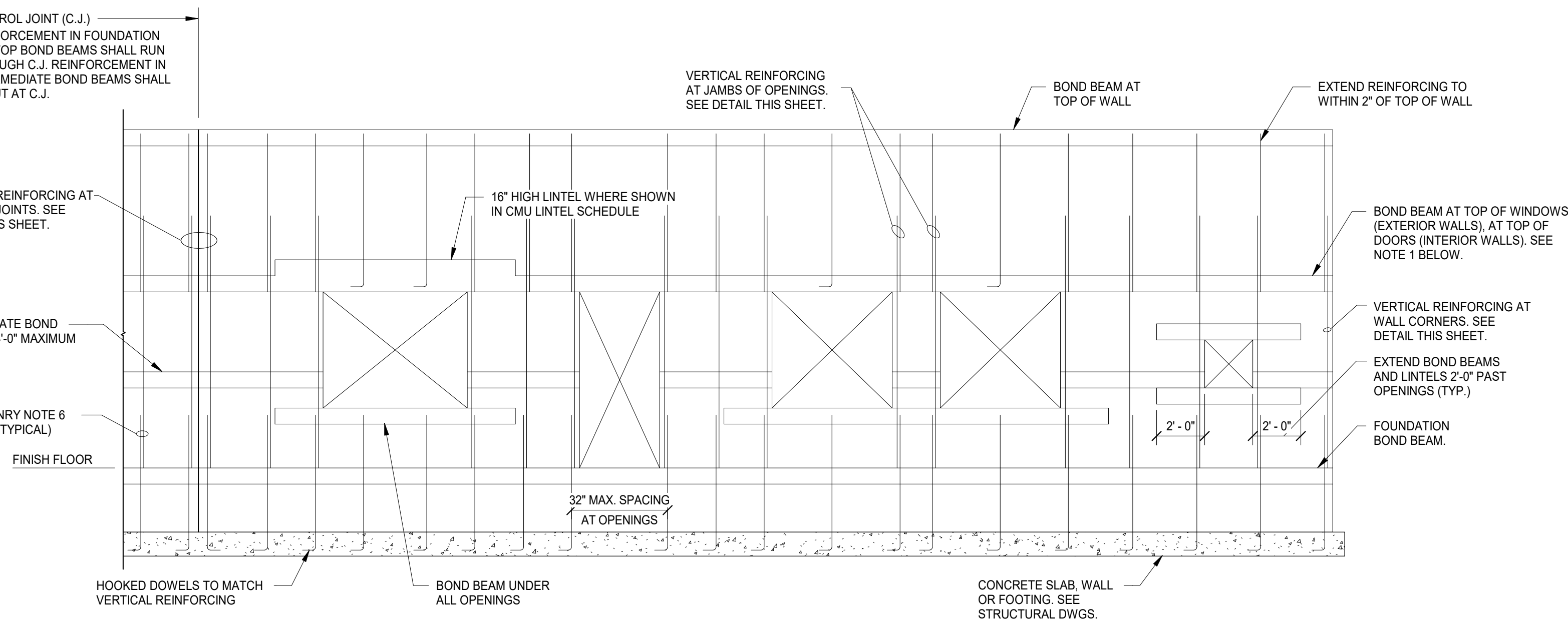
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BOND BEAM AND VERTICAL REINFORCING AT WALL INTERSECTIONS

NO SCALE

TYPICAL WALL BRACING DETAIL

S103 3/4" = 1'-0"



TYPICAL CMU WALL ELEVATION

NO SCALE

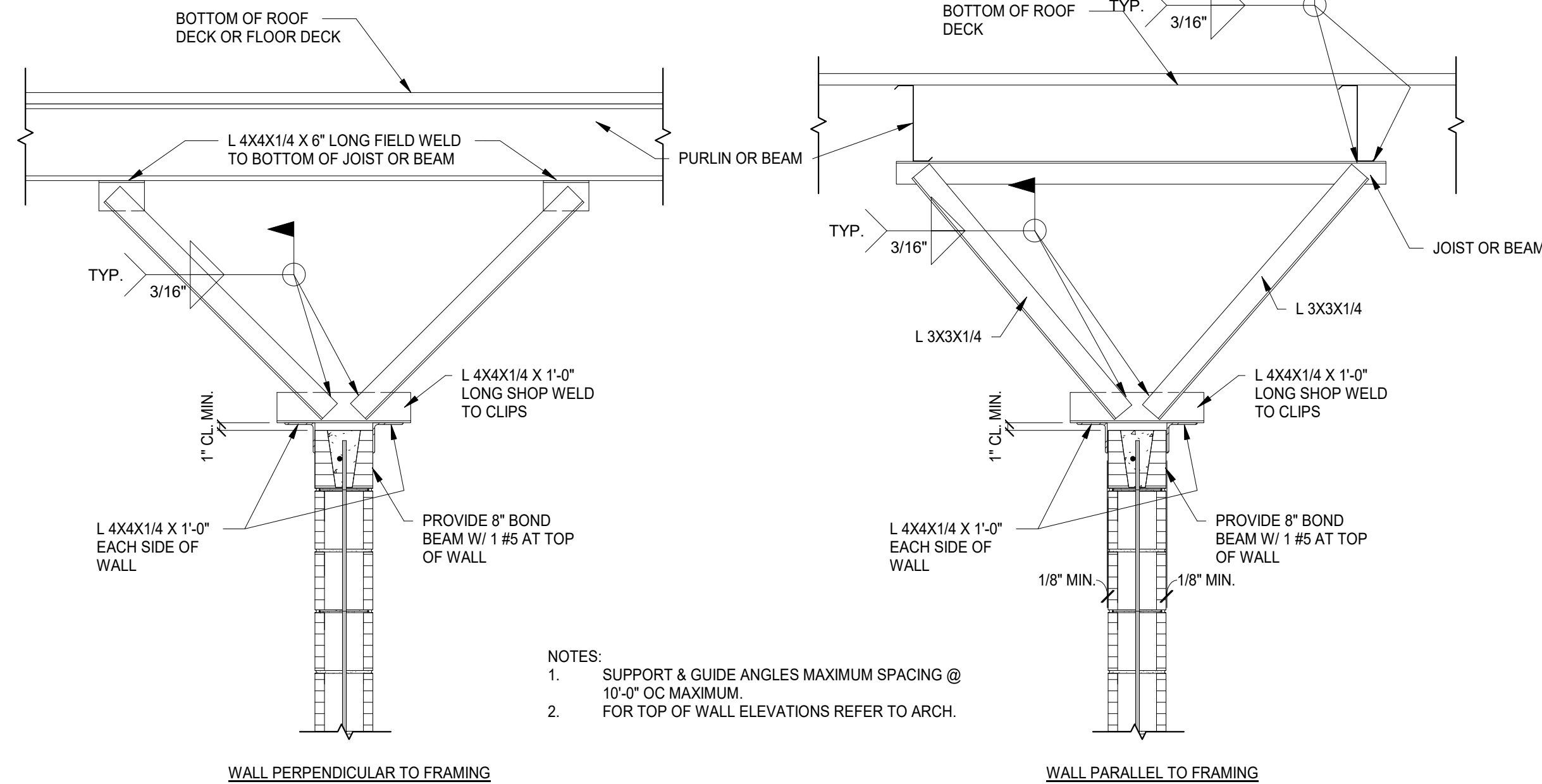
1. WALL SHOWN ABOVE IS A GENERIC INDICATION OF THE TYPICAL REINFORCING REQUIRED IN BOTH THE FIRST AND SECOND STORIES.

MASONRY NOTES:

- MASONRY CONSTRUCTION SHALL CONFORM TO ACI 530.1, SPECIFICATIONS FOR MASONRY STRUCTURES.
- MASONRY IS DESIGNED FOR $f_m = 1500$ PSI.
- CONCRETE MASONRY UNITS (CMU) SHALL BE LIGHTWEIGHT UNITS IN ACCORDANCE WITH ASTM C90, GRADE N.
- FILL ALL BOND BEAMS, LINTELS, CELLS CONTAINING REINFORCEMENT AND CELLS BELOW GRADE WITH 2500 PSI COARSE GROUT IN ACCORDANCE WITH ASTM C476, 8" TO 10" SLUMP. PLACE GROUT IN LIFTS NOT EXCEEDING 5 FEET.
- MORTAR FOR REINFORCED MASONRY SHALL BE TYPE S IN ACCORDANCE WITH ASTM C270.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. LAP ALL #4 BARS 2'-1" AND #5 BARS 2'-7".
- VERTICAL REINFORCING SHALL BE SECURED AGAINST DISPLACEMENT PRIOR TO GROUTING AT INTERVALS NOT EXCEEDING 6 FEET USING GALVANIZED STEEL WIRE CENTERING CLIPS.
- HORIZONTAL JOINT REINFORCEMENT:
(A) JOINT REINFORCEMENT IN CMU WALLS SHALL BE LADDER TYPE AT 16" OC VERTICAL SPACING WITH 9 GAGE SIDE RODS AND 9 GAGE CROSS RODS. TRI-ROD TYPE SHALL BE USED AT CAVITY WALLS. UNLESS OTHERWISE SHOWN ON THE ARCHITECTURAL DRAWINGS, LAP SIDE RODS 12" AT SPLICES. SIDE RODS SHALL HAVE 5/8" MINIMUM MORTAR COVER AT EXPOSED SIDES OF EXTERIOR WALLS AND 1/2" MINIMUM MORTAR COVER AT INTERIOR WALLS.
(B) JOINT REINFORCEMENT IN EXTERIOR WALLS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A153, CLASS 55 (1.50 OZ/SF). JOINT REINFORCEMENT FOR INTERIOR WALLS SHALL BE MILL GALVANIZED IN ACCORDANCE WITH ASTM A641, CLASS 1 (0.1 OZ/SF).
(C) PROVIDE FACTORY FABRICATED TEES AND CORNERS AT CMU WALL INTERSECTIONS.
- CONTROL JOINT SPACING SHALL NOT EXCEED 40 FEET IN STRAIGHT RUNS OF WALL. IF JOINT LOCATIONS ARE NOT SHOWN ON THE ARCHITECTURAL DRAWINGS, CONSULT WITH THE ARCHITECT FOR APPROVAL OF JOINT LOCATIONS.
- SEE THE DRAWINGS OF ALL OTHER DISCIPLINES FOR OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
- ALL OF THE MASONRY SIZES AND CONDITIONS SHOWN ON THIS DRAWINGS MAY NOT BE PRESENT ON THIS JOB.
- CONDITIONS SHOWN ON THIS DRAWING REPRESENT MINIMUM REQUIRED REINFORCING. SEE THE OTHER STRUCTURAL DRAWINGS FOR SPECIAL CASES.

CMU WALL REINFORCING SCHEDULE			
CMU TYPE	VERTICAL REINFORCING	BOND BEAM REINFORCING	MAXIMUM BOND BEAM SPACING
8" EXTERIOR	#5 @ 32" OC	(1) #5	4'-0"
8" INTERIOR	#5 @ 32" OC	(1) #5	4'-0"
12" EXTERIOR	(2) #5 @ 32" OC	(2) #5	4'-0"
12" INTERIOR	(2) #5 @ 32" OC	(2) #5	4'-0"

NOTE: PROVIDE BOND BEAMS AS SHOWN IN TYPICAL CMU WALL ELEVATION.



- NOTES:
- SUPPORT & GUIDE ANGLES MAXIMUM SPACING @ 10'-0" OC MAXIMUM.
 - FOR TOP OF WALL ELEVATIONS REFER TO ARCH.

CONCRETE POST INSTALLED ANCHOR TABLE

TYPE	MANUFACTURER	PRODUCT	DIAMETER/SIZE
SCREW ANCHOR	HILTI	KWIK HUS-EZ (KH-EZ)	1/4" TO 3/4"
	POWERS	WEDGE-BOLT+ w/ WEDGE BIT	3/8" TO 3/4"
	SIMPSON	TITEN HD	3/8" TO 3/4"
ROD ANCHOR	HILTI	KWIK HUS-EZ-1	3/8" TO 1/2"
	POWERS	VERTIGO + w/ WEDGE BIT	1/4" TO 1/2"
		SNAKE +	3/8" TO 1/2"
	SIMPSON	TITEN HD ROD HANGER	3/8", 1/2"
EXPANSION ANCHOR	HILTI	KWIK BOLT TZ	3/8", 1/2"
	POWERS	POWER-STUD + SD1	3/8" TO 1"
	SIMPSON	STRONG-BOLT 2	3/8" TO 5/8"
ADHESIVE ANCHOR	HILTI	HIT-HY 200 SAFE SET	ALL THREAD ROD 3/8" TO 1 1/4"
			REBAR #3 TO #8
		HIT-RE 500-SD	ALL THREAD ROD 3/8" TO 1 1/4"
			REBAR #3 TO #10
	POWERS	PE1000+	ALL THREAD ROD 1/2" TO 7/8"
			REBAR #3 TO #7
	SIMPSON	SET-XP	ALL THREAD ROD 3/8" TO 1 1/4"
		AT-XP	ALL THREAD ROD 3/8" TO 1 1/4"

NOTES:

- THIS SELECTION TABLE SHALL BE USED WHEN ANCHOR RODS OR REBARS WITH ANCHOR ADHESIVE, EXPANSION ANCHORS OR SCREW ANCHORS ARE CALLED OUT ON THE DRAWINGS. THE ADHESIVES SHOWN SHALL ALSO BE USED WHERE THE TERM "EPOXY" IS USED ON THE STRUCTURAL DRAWINGS.
- ADHESIVE ANCHORS HOLES SHALL BE CLEANED PER THE MANUFACTURER RECOMMENDATIONS INCLUDING USING A BRUSH AND 100 PSI MINIMUM OR THE MANUFACTURERS REQUIRED COMPRESSED AIR.
- ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. (MP11)
- SCREW AND EXPANSION ANCHORS SHALL MEET THE EMBEDMENT DEPTHS AS SPECIFIED IN THE DRAWINGS BUT NOT LESS THAN THE MINIMUM OF 7 TIMES THE ANCHOR DIAMETER.
- ADHESIVE ANCHORS SHALL MEET THE EMBEDMENT DEPTHS AS SPECIFIED IN THE DRAWINGS. IF NO EMBEDMENT IS SPECIFIED, EMBED 12 TIMES THE ANCHOR DIAMETER.
- CONTACT THE ENGINEER OF RECORD FOR APPROVAL OF ANY OTHER ANCHOR TYPE OR DIAMETER PRIOR TO INSTALLATION.

MASONRY POST INSTALLED ANCHOR TABLE

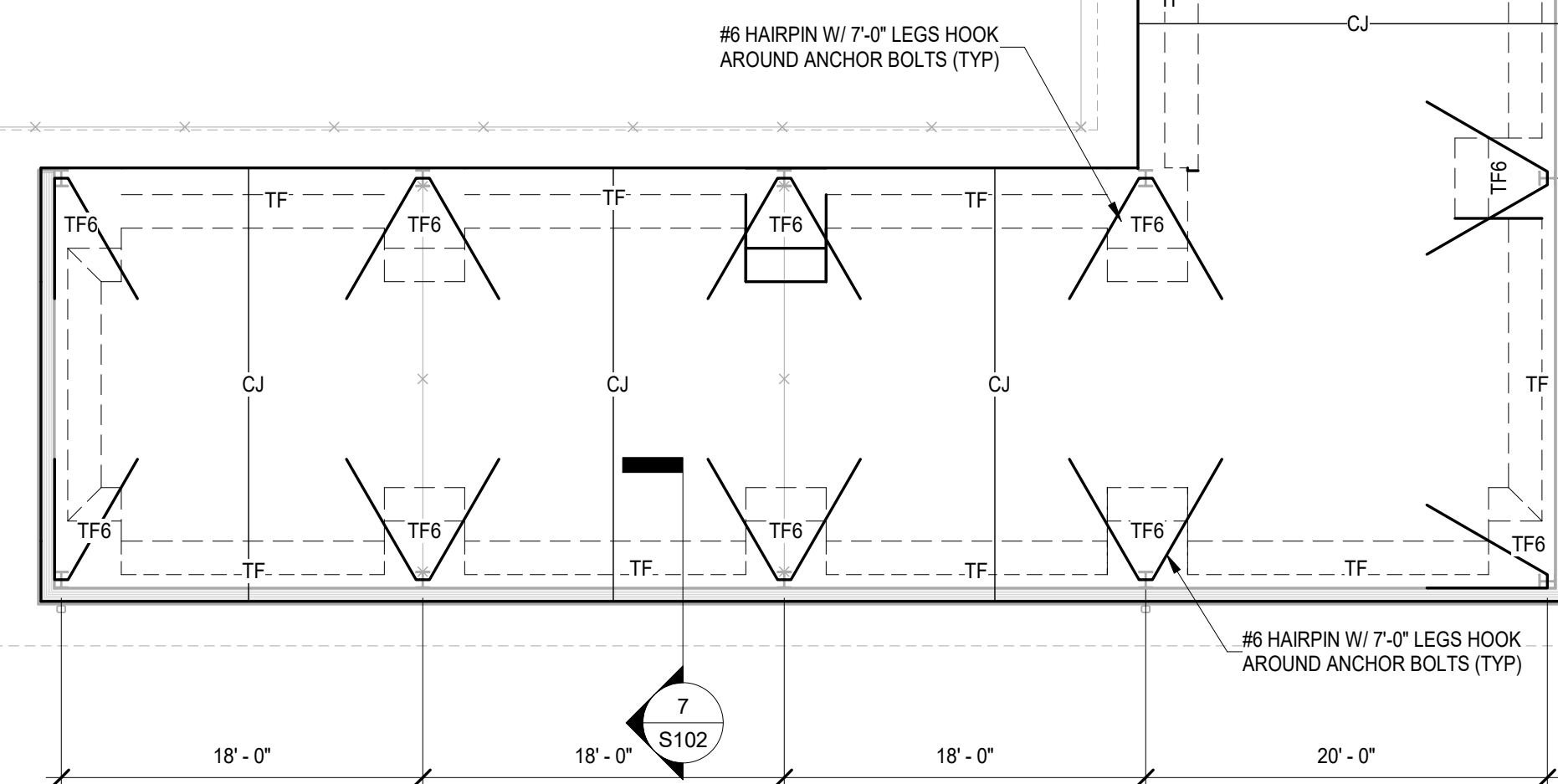
TYPE	MANUFACTURER	PRODUCT	BASE MATERIAL	DIAMETER/SIZE
SCREW ANCHOR	HILTI	KWIK HUS-EZ	GROUTED CONCRETE BLOCK	1/4" TO 3/4"
	POWERS	WEDGE-BOLT+ w/ WEDGE BIT	GROUTED CONCRETE BLOCK	1/4" TO 3/4"
	SIMPSON	TITEN HD	GROUTED CONCRETE BLOCK	3/8" TO 3/4"
EXPANSION ANCHOR	HILTI	KWIK BOLT 3	GROUTED CONCRETE BLOCK	1/4" TO 3/4"
	POWERS	POWER-STUD + SD1	GROUTED CONCRETE BLOCK	3/8" TO 5/8"
	SIMPSON	WEDGE ALL	GROUTED CONCRETE BLOCK	3/8" TO 3/4"
ADHESIVE ANCHOR	HILTI	HIT-HY 70	GROUTED CONCRETE BLOCK	ALL THREAD ROD 1/4" TO 3/4"
		HIT-HY 70	HOLLOW CONCRETE BLOCK (REQUIRES SCREEN TUBES)	ALL THREAD ROD 3/4"
				REBAR #4 TO #6
	POWERS	T308+	FULLY GROUTED	ALL THREAD ROD 3/4"
			HOLLOW CONCRETE BLOCK (REQUIRES SCREEN TUBES)	ALL THREAD ROD 3/4"
				REBAR #5, #6
	SIMPSON	SET	FULLY GROUTED	ALL THREAD ROD 1/2" TO 3/4"
			HOLLOW CONCRETE BLOCK (REQUIRES SCREEN TUBES)	ALL THREAD ROD 5/8" AND 3/4"
		ET-HP	FULLY GROUTED	ALL THREAD ROD 3/8" TO 3/4"
			HOLLOW CONCRETE BLOCK (REQUIRES SCREEN TUBES)	ALL THREAD ROD 1/2" TO 3/4"

NOTES:

- THIS SELECTION TABLE SHALL BE USED WHEN ANCHOR RODS OR REBARS WITH ANCHOR ADHESIVE, EXPANSION ANCHORS OR SCREW ANCHORS ARE CALLED OUT ON THE DRAWINGS. THE ADHESIVES SHOWN SHALL ALSO BE USED WHERE THE TERM "EPOXY" IS USED ON THE STRUCTURAL DRAWINGS.
- ADHESIVE ANCHORS HOLES SHALL BE CLEANED PER THE MANUFACTURER RECOMMENDATIONS INCLUDING USING A BRUSH AND 100 PSI MINIMUM OR THE MANUFACTURERS REQUIRED COMPRESSED AIR.
- ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. (MP11)
- SCREW AND EXPANSION ANCHORS SHALL MEET THE EMBEDMENT DEPTHS AS SPECIFIED IN THE DRAWINGS BUT NOT LESS THAN THE MINIMUM OF 7 TIMES THE ANCHOR DIAMETER.
- ADHESIVE ANCHORS SHALL MEET THE EMBEDMENT DEPTHS AS SPECIFIED IN THE DRAWINGS. IF NO EMBEDMENT IS SPECIFIED, EMBED 12 TIMES THE ANCHOR DIAMETER.
- CONTACT THE ENGINEER OF RECORD FOR APPROVAL OF ANY OTHER ANCHOR TYPE OR DIAMETER PRIOR TO INSTALLATION.

FOUNDATION PLAN-STORAGE BUILDING

S103 1/8" = 1'-0"



ELECTRICAL SYMBOLS	
	DUPLEX RECEPTACLE, 20A, 120V, NEMA 5/20R, 16" AFF TO BOTTOM OF OUTLET BOX. - "TR" DENOTES TAMPER-RESISTANT RECEPTACLE, SEE 260500. - "CR" DENOTES CORROSION-RESISTANT RECEPTACLE, SEE 260500. - "WP" DENOTES WEATHER-RESISTANT RECEPTACLE [2014 NEC, SECTION 406.9(A)] WITH EXTRA-DUTY RATED IN-USE WEATHERPROOF COVER PLATE, SEE 260500.
	SAME, EXCEPT MOUNTED 3" TO BOTTOM OF OUTLET FROM COUNTER BACKSPLASH, OR 48" AFF TO TOP OF OUTLET, OR AS DETAILD ON DRAWINGS. SEE ELEVATION THIS SHEET.
	SAME, EXCEPT CEILING MOUNTED RECEPTACLE.
	SAME, EXCEPT SINGLE RECEPTACLE, MOUNT BEHIND EQUIPMENT AS DIRECTED ON JOB.
	QUADRAPLEX RECEPTACLE, (2) HUBBELL 5362 RECEPTACLES WITH 2-GANG COVERPLATE, 16" AFF. FOR STANDARD, 3" TO BOTTOM OF OUTLET FROM COUNTER BACKSPLASH FOR "AC".
	GFCI RECEPTACLE, MOUNTING HEIGHTS AS ABOVE, "WP" DENOTES WEATHER-RESISTANT RECEPTACLE [2014 NEC, SECTION 406.9(A)] WITH WEATHERPROOF COVER PLATE, SEE SPECIFICATIONS.
	REMOTE FACELESS GFCI TEST SWITCH, 48" AFF TO TOP OF BOX OR 3" TO BOTTOM OF BOX FROM COUNTER BACKSPLASH. GROUP TEST SWITCH WITH GFCI RECEPTACLE WIRED TO A SEPARATE CIRCUIT. HUBBELL GFBF20-X-L OR EQUIVALENT, SEE DETAIL FOR MOUNTING AND CIRCUITING.
	DEDICATED ISOLATED GROUND DUPLEX OR QUADRAPLEX RECEPTACLE FOR COMPUTERS, 20A, 120V, NEMA 5/20R WITH FACTORY ENGRAVED STAINLESS STEEL COVERPLATE LABELED "COMPUTER", MOUNTING HEIGHTS AND CONFIGURATIONS AS ABOVE.
	WALL OR FLOOR MOUNTED SPECIAL POWER OUTLET, SEE PLANS FOR DESCRIPTION.
	WALL OR CEILING MOUNTED JUNCTION BOX.
	HANDS-FREE HIGH VELOCITY ADA COMPLIANT HAND DRYER, SEE SPECIFICATIONS. SECURELY MOUNT TO WALL PER MANUFACTURER'S INSTRUCTIONS 44" AFF TO BOTTON OF HAND DRYER (VERIFY MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN).
	PUSHBUTTON STATION, SEE PLANS FOR DESCRIPTION.
	WIREMOLD DIVIDED POWER POLE, NP800 SERIES WITH CONNECTORS, FLEXIBLE CONDUIT, ADAPTER PLATES, ETC. AS REQUIRED TO CONNECT TO PREWIRED DESKS.
	30" OUTDOOR POWER PEDESTAL WITH ALUMINUM OR STAINLESS STEEL CONSTRUCTION (SILVER) AND (2) 20A WR GFCI RECEPTACLES MOUNTED BEHIND WP COVER. WIREMOLD XCSP20RR-SY OR EQUIVALENT OF ACE MANUFACTURING APR MARINE SERIES, IPLC IP3 SERIES, PEDCO POWER SOLUTIONS RECEPTACLE, OR OTHER ACCEPTABLE EQUIVALENT PEDESTAL. SEE DETAIL ON E005.
	NON-FUSED SAFETY SWITCH, 3 POLE. SEE EQUIPMENT POWER NOTES ON DRAWINGS.
	SAME, EXCEPT FUSED SAFETY SWITCH.
	EQUIPMENT ELECTRICAL CONNECTION. SEE EQUIPMENT POWER NOTES ON DRAWINGS.
	MOTOR CONTROLLER, STARTER, OR VFD FURNISHED WITH EQUIPMENT, INSTALLED AND POWER WIRED BY ELECTRICAL CONTRACTOR.
	MOTOR, NUMERAL DENOTES HORSEPOWER. "F" FOR FRACTIONAL HORSEPOWER.
	MOTORIZED ZONE DAMPER FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR, POWER WIRED BY ELECTRICAL CONTRACTOR. PROVIDE 120V CIRCUIT AS NOTED ON THE DRAWINGS.
	CONDENSATE PUMP TIED TO AHD UNITS, PROVIDE 120V CIRCUIT AND DISCONNECT AS NOTED ON THE DRAWINGS.
	WALL MOUNTED THERMOSTAT, 48" AFF. FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED AND POWER WIRED BY ELECTRICAL CONTRACTOR.
	FAN SWITCH, FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED AND POWER WIRED BY ELECTRICAL CONTRACTOR.
	TWO-PIECE DIVIDED SURFACE METAL RACEWAY SYSTEM, SEE SPECIFICATIONS AND DETAILS ON DRAWINGS. VERIFY MOUNTING HEIGHT WITH ARCHITECT ON JOB PRIOR TO ROUGH-IN.
	TELEPHONE BOARD.
	PANELBOARD.
	BRANCH CIRCUIT WIRING RUN CONCEALED IN WALLS OR CEILING, 1#12G, 2#12 UNLESS NOTED OTHERWISE. ARROW DENOTES HOME RUN AND NUMERAL DENOTES CIRCUIT NUMBER. WHERE MORE THAN TWO CONDUCTORS ARE REQUIRED, SLASH MARKS INDICATE NUMBER OF #12 CONDUCTORS: - // - SHORT SLASH DENOTES HOT OR SWITCH LEG, - - - LONG SLASH DENOTES NEUTRAL, - - - L - DENOTES GROUNDING WIRE.
	MULTIWIRED BRANCH CIRCUITS USING A SHARED OR COMMON NEUTRAL ARE NOT PERMITTED ON THIS PROJECT. THE CONTRACTOR SHALL PULL A SEPARATE NEUTRAL FOR ALL 120V AND 277V CIRCUITS. CONDUIT HOMERUNS TO PANELBOARDS SHALL BE 3/4" MINIMUM, OTHERWISE RACEWAYS SHALL BE 1/2" MINIMUM, EXCEPT THAT FLEXIBLE CONDUIT SHALL BE 3/8" MINIMUM.
	SAME, EXCEPT RUN UNDERGROUND OR UNDERFLOOR.
	SAME, EXCEPT RUN EXPOSED.
	COMMUNICATIONS CONDUIT (OR CONDUIT & WIRING WHERE SPECIFIED), SIZE AS NOTED. CONDUIT TO BE EMT RUN OVERHEAD CONCEALED IN WALLS OR CEILING UNLESS NOTED OTHERWISE.
	FLOOR OUTLET, SEE PLANS AND SPECIFICATIONS FOR DESCRIPTION. "P" DENOTES POWER, "C" DENOTES COMMUNICATIONS, "P,C" DENOTES 2-GANG BOX, "P,C,C" DENOTES 3-GANG BOX, "P,P,C" DENOTES 3-GANG BOX, "P,P,C,C" DENOTES 4-GANG BOX, ETC. EACH COMMUNICATIONS GANG MUST BE CAPABLE OF ACCEPTING A MINIMUM OF (4) CATEGORY 6 JACKS. PROVIDE BOX WITH CONDUIT TAPPING TO MATCH CONDUIT FEEDING BOX, SEE SPECIFICATIONS. "WOOD" DENOTES FLOOR OUTLET FOR INSTALLATION IN WOOD FLOOR, SEE PLANS & SPECIFICATIONS FOR DESCRIPTION.
	CABLE TRAY RUN ABOVE ACCESSIBLE LAY-IN CEILINGS, SEE SPECIFICATIONS AND DETAILS ON DWGS.
	RATED TRIPLE CABLE PATHWAY SYSTEM, SEE DETAIL ON DRAWINGS. STI EZ-PATH TRIPLE PATHWAY SYSTEM, OR EQUIVALENT. "NR" DENOTES A NON-RATED SLEEVE ASSEMBLY FOR NON-RATED WALLS.
	TV OUTLET, 2 GANG BOX, 4 11/16" SQUARE, 2 1/8" DEEP, WITH 1 GANG PLASTER RING, 84" AFF TO BOTTOM OF OUTLET BOX UNLESS NOTED. PROVIDE DUPLEX RECEPTACLE 84" AFF WITHIN 8" OF TV OUTLET. HOMERUN 3/4" EMPTY CONDUIT WITH PULL WIRE TO CABLE TRAY OR MDF/IDF ROOM.
	COMMUNICATIONS OUTLET, 2 GANG BOX, 4 11/16" SQUARE, 2 1/8" DEEP, WITH 1 GANG PLASTER RING, 16" AFF TO BOTTOM OF OUTLET BOX UNLESS NOTED. HOMERUN 1" EMPTY CONDUIT TO CABLE TRAY OR MDF/IDF ROOM.
	SAME, EXCEPT MOUNTED 4" ABOVE COUNTER BACKSPLASH OR AS INDICATED ON THE DRAWINGS.
	CEILING MOUNTED WIRELESS ACCESS POINT, 2 GANG BOX, 4" SQUARE, 2 1/8" DEEP, WITH BLANK COVER, LOCATED ABOVE LAY-IN CEILING IN ACCESSIBLE LOCATION. HOMERUN 3/4" CONDUIT TO CABLE TRAY OR MDF/IDF ROOM.
	SECURITY CAMERA BACK BOX. COORDINATE LOCATION AND ELEVATION WITH OWNER'S SECURITY CONSULTANT PRIOR TO ROUGH-IN. HOMERUN 3/4" EMPTY CONDUIT WITH PULL WIRE TO CABLE TRAY OR MDF/IDF ROOM.
	CARD READER
SEE E401 FOR ADDITIONAL COMMUNICATIONS SYMBOLS.	

LIGHTING SYMBOLS	
	WALL OR CEILING MOUNTED FIXTURE, PROVIDE AS SCHEDULED.
	RECESSED FIXTURE, WIRE THRU GREENFIELD FROM OUTLET BOX ABOVE CEILING, PROVIDE AS SCHEDULED. "NL" DENOTES FIXTURE WIRED TO A SEPARATE 24/7 NIGHT LIGHT CIRCUIT.
	SUSPENDED DIRECT/INDIRECT FIXTURE, PROVIDE AS SCHEDULED.
	RECESSED FIXTURE, PROVIDE AS SCHEDULED.
	SURFACE MOUNTED FIXTURE, PROVIDE AS SCHEDULED.
	WALL MOUNTED FIXTURE, PROVIDE AS SCHEDULED.
	HALF-SHADED FIXTURE DENOTES EMERGENCY LIGHTING FIXTURE. PROVIDE EMERGENCY BALLASTS OR GENERATOR TRANSFER DEVICES WHERE SCHEDULED.
	WALL OR CEILING MOUNTED LED EXIT LIGHT, SHADED AREA DENOTES FACE.
	WALL OR CEILING MOUNTED LED EXIT LIGHT, SHADED AREA DENOTES FACE.
	POLE MOUNTED FIXTURE.
	SINGLE POLE SWITCH, 20A, 120/277V, 48" AFF TO TOP OF OUTLET BOX. SUBSCRIPT DENOTES OUTLETS CONTROLLED. WP DENOTES SWITCH WITH LOCKABLE SHALLOW IN-USE STYLE WEATHERPROOF COVER PLATE, SEE 260500.
	SAME, EXCEPT THREE WAY.
	SAME, EXCEPT FOUR WAY.
	SAME, EXCEPT SINGLE POLE KEYED SWITCH, 20A, 120/277V, 48" AFF.
	120/277V, 0-10V LED WALL BOX DIMMER WITH INTEGRAL ON/OFF BUTTON, 48" AFF TO TOP OF OUTLET BOX. RATING=120W (120V) & 160W (277V). ON/OFF TO BE ACCOMPLISHED WITHOUT THE USE OF SEPARATE POWER PACKS, UNLESS NOTED OTHERWISE. GREENGATE WBS0-010SLD OR EQUIVALENT OF WATSTOPPER, ACUTY, CRESTRON, LUTRON. SEE DETAIL ON E605.
	SLIDE-TO-OFF WALL BOX DIMMER, 48" AFF TO TOP OF OUTLET BOX. "DE" DENOTES ELECTRONIC LOW VOLTAGE DIMMER, "DM" DENOTES MAGNETIC VOLTAGE DIMMER, "600", "1000", "1500", OR "2000" DENOTES 600W, 1000W, 1500W, OR 2000W INCANDESCENT DIMMER. LUTRON NOVA T SERIES, OR EQUIVALENT. ALL DIMMERS TO BE SLIDE-TO-OFF UNLESS NOTED OTHERWISE.
	WALL MOUNTED IR SENSOR WITH BUILT-IN SWITCH, 48" AFF. SEE OCCUPANCY SENSOR DETAILS. WATSTOPPER PW-100 (A) OR PW-200 (AB), OR EQUIVALENT OF ACUTY, EATON, CRESTRON, OR LUTRON.
	WALL MOUNTED PRMET COUNTDOWN TIME SWITCH, 48" AFF. SEE OCCUPANCY SENSOR DETAILS. WATSTOPPER RT-50 OR EQUIVALENT OF ACUTY, EATON, CRESTRON, OR LUTRON.
	WALL OR CEILING MOUNTED DUAL TECHNOLOGY SENSOR WITH INTEGRAL PHOTOSENSOR. FURNISH, INSTALL, AND WIRE POWER PACK(S) PER THE MANUFACTURER'S INSTRUCTIONS. POWER PACKS NOT SHOWN ON DRAWINGS, BUT ARE REQUIRED, SEE OCCUPANCY SENSOR DETAILS AND NOTES FOR ADDITIONAL INFORMATION. WATSTOPPER DT-200 (2000SF) WITH BZ-150 POWER PACK(S). "WG" DENOTES WIRE GUARD; "WP" DENOTES WATSTOPPER CB-100 (2000SF) WATER-TIGHT INFRARED SENSOR; OR EQUIVALENT OF ACUTY, EATON, CRESTRON, OR LUTRON.
	CEILING MOUNTED 360° DUAL TECHNOLOGY OCCUPANCY SENSOR. FURNISH, INSTALL, AND WIRE POWER PACK(S) PER THE MANUFACTURER'S INSTRUCTIONS. POWER PACKS NOT SHOWN ON DRAWINGS, BUT ARE REQUIRED, SEE OCCUPANCY SENSOR DETAILS AND NOTES FOR ADDITIONAL INFORMATION. WATSTOPPER DT-300 (1000SF) WITH BZ-150 POWER PACK(S), OR EQUIVALENT OF ACUTY, EATON, CRESTRON, OR LUTRON.
	CEILING MOUNTED 360° INFRARED TECHNOLOGY OCCUPANCY SENSOR. FURNISH, INSTALL, AND WIRE POWER PACK(S) PER THE MANUFACTURER'S INSTRUCTIONS. POWER PACKS NOT SHOWN ON DRAWINGS, BUT ARE REQUIRED, SEE OCCUPANCY SENSOR DETAILS AND NOTES FOR ADDITIONAL INFORMATION. WATSTOPPER CI-300-1 (IR, 500SF) AND CI-300 (IR2, 1200SF) WITH BZ-150 POWER PACK(S), OR EQUIVALENT OF ACUTY, EATON, CRESTRON, OR LUTRON.
	CEILING MOUNTED 360° ULTRASONIC SENSOR, FURNISH, INSTALL, AND WIRE POWER PACK(S) PER THE MANUFACTURER'S INSTRUCTIONS. POWER PACKS NOT SHOWN ON DRAWINGS, BUT ARE REQUIRED, SEE OCCUPANCY SENSOR DETAILS AND NOTES FOR ADDITIONAL INFORMATION. ARROWS DENOTE SENSOR FOR CORRIDORS WITH 90° LINEAR COVERAGE PATTERN. WATSTOPPER UT-300-3 (2000SF OR 90LF) WITH BZ-150 POWER PACK(S), OR EQUIVALENT OF ACUTY, EATON, CRESTRON, OR LUTRON.
	SAME AS ABOVE, EXCEPT DENOTES SENSOR TO BE PROVIDED WITH AUXILIARY RELAY FOR CONTROL OF SEPARATE LOAD SUCH AS A TOILET EXHAUST FAN, SEE OCCUPANCY SENSOR DETAILS AND NOTES FOR ADDITIONAL INFORMATION. WATSTOPPER S120/277/347E-P RELAY, OR EQUIVALENT OF ACUTY, EATON, CRESTRON, OR LUTRON.
	ADJUSTABLE SLIDE LIGHTING PHOTOSENSOR AS MANUFACTURED BY TORK OR INTERMATIC.
	TIME CLOCK: 7-DAY, 2-CHANNEL, 120V ELECTRONIC PROGRAMMABLE TIME CONTROL WITH TWO SPDT CONTACTS, NEMA 3R CASE, 24-HOUR CLOCK FORMAT, LEAP YEAR CORRECTION, AND DAYLIGHT SAVING TIME ADJUSTMENT. INTERMATIC ET1725CR OR EQUIVALENT OF TORK.

SCOPE OF WORK	
THE WORK OF THIS SECTION SHALL PROVIDE COMPLETE ELECTRICAL SYSTEMS WHICH SHALL INCLUDE THE PROVIDING OF ALL CONDUCTORS, RACEWAYS, FITTINGS, CIRCUIT PROTECTIVE DEVICES, LIGHT FIXTURES, BOXES, SUPPORTS, AND ALL ASSOCIATED APPURTENANCES AND MISCELLANEOUS EQUIPMENT NECESSARY, ALL OF WHICH SHALL BE COMPLETELY CONNECTED, TESTED, ADJUSTED AND LEFT IN PROPER OPERATING CONDITION. THE ELECTRICAL SYSTEM TO BE PROVIDED SHALL INCLUDE SERVICE AND DISTRIBUTION FACILITIES POWER FOR MOTOR OPERATED EQUIPMENT, LIGHTING SYSTEMS, AND ALL OUTLETS AS COVERED HEREINAFTER.	
GENERAL NOTES:	
<ol style="list-style-type: none"> ALL ELECTRICAL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE 2014 NATIONAL ELECTRICAL CODE (NEC), THE 2015 INTERNATIONAL BUILDING CODE (IBC), AND ANY LOCAL CODES, LAWS AND ORDINANCES WHICH MAY APPLY. WHERE DIFFERENCES EXIST BETWEEN THE CODES, THE STRICTER CODE SHALL APPLY. ALL CONDUITS SHALL CONTAIN A GROUNDING CONDUCTOR REGARDLESS OF USE. THE CONTRACTOR FOR THE WORK UNDER THIS SECTION SHALL PROCURE AND PAY FOR ALL PERMITS, FEES, AND LICENSES REQUIRED FOR THE EXECUTION OF THIS WORK. SATISFACTORY EVIDENCE OF COMPLIANCE WITH THE REQUIREMENT AND ALL CERTIFICATES OF INSPECTION SHALL BE DELIVERED TO THE OWNER PROMPTLY UPON REQUEST. TYPE MC CABLE MAY NOT BE USED ON THIS PROJECT, EXCEPT AS NOTED BELOW: <ul style="list-style-type: none"> MANUFACTURER SUPPLIED METAL CLAD CABLE (TYPE MC OR TYPE MC-PCS) SHALL BE PERMITTED FOR LIGHT FIXTURE WHIPS (#18 AWG MINIMUM) PROVIDED THEY INCLUDE A GROUND WIRE AND DO NOT EXCEED 6' IN LENGTH. TYPE TYPE MC-PCS CABLE MAY BE USED FOR INTERIOR, CONCEALED 0-10V LIGHTING BRANCH CIRCUITS LOCATED ABOVE ACCESSIBLE LAY-IN CEILINGS, EXCEPT THAT CIRCUITING BETWEEN SPACES AND HOMERUNS TO PANELBOARDS SHALL BE IN EMT, CIRCUITING FOR LIGHTS IN CORRIDORS SHALL BE IN EMT, AND TYPE MC-PCS CABLE MAY NOT PENETRATE RATED WALLS OR FLOORS. REFER TO SPECIFICATIONS AND TO LIGHTING PLANS FOR ADDITIONAL INFORMATION. 	
WAREHOUSE AREA:	
- MC CABLEING MAY NOT BE USED. PROVIDE SYSTEM CABLEING AND WIRING IN METALLIC CONDUITS AS SPECIFIED.	
<ol style="list-style-type: none"> ALL LOW VOLTAGE WIRING FOR OCCUPANCY SENSOR APPLICATIONS SHALL BE RUN IN METALLIC CONDUIT. UNLESS OTHERWISE NOTED FOR 120-VOLT, 20-AMP CKTS: #10 AWG SHALL BE USED FOR HOMERUNS LONGER THAN 75 FEET #12 AWG SHALL BE USED FOR HOMERUNS 75 FEET OR SHORTER MULTIWIRED BRANCH CIRCUITS USING A SHARED OR COMMON NEUTRAL ARE NOT PERMITTED ON THIS PROJECT. THE CONTRACTOR SHALL PULL A SEPARATE NEUTRAL FOR ALL 120V AND 277V CIRCUITS. MOUNT RECEPTACLES 16" AFF UNLESS OTHERWISE NOTED. ALL LIGHT SWITCHES AND RECEPTACLES SHALL BE BY THE SAME MANUFACTURER. COVER PLATES SHALL BE JUMBO STAINLESS STEEL. DEVICE COLOR TO BE SELECTED BY THE ARCHITECT UNLESS STATED WITH THE DEVICE SYMBOL. ELECTRICAL METALLIC TUBING AND RIGID GALVANIZED STEEL CONDUIT SHALL BE THE ONLY TYPES OF CONDUIT INSTALLED WITHIN THE BUILDING. PVC IS PERMITTED UNDERGROUND. BRANCH CIRCUITS SHALL BE RUN CONCEALED WHERE PRACTICAL. BRANCH CIRCUITS RUN EXPOSED TO WEATHER ON EXTERIOR WALLS OR ON ROOFS SHALL BE RUN IN GRC OR IMC WITH SCREWED FITTINGS. BRANCH CIRCUITS RUN CONCEALED IN WALLS OR CEILINGS SHALL BE RUN IN EMT, GRC, OR IMC. BRANCH CIRCUITS RUN EXPOSED IN DRY, FINISHED SPACES SHALL BE RUN IN WIREMOLD SURFACE METAL RACEWAY. BRANCH CIRCUITS RUN EXPOSED IN DAMP LOCATIONS, UNFINISHED SPACES (ATTICS), AND UNOCCUPIED SPACES (STORAGE ROOM, EQUIPMENT ROOMS, JANITOR'S CLOSET, ETC.) MAY BE RUN IN EMT IN LIEU OF WIREMOLD. CONDUIT HOMERUNS TO PANELBOARDS AND CONDUITS SHOWN WITH MULTIPLE CIRCUITS SHALL BE 3/4" MINIMUM, OTHERWISE RACEWAYS SHALL BE 1/2" MINIMUM, EXCEPT THAT FLEXIBLE CONDUIT SHALL BE 3/8" MINIMUM. INTERIOR CONDUIT HOMERUNS TO PANELBOARDS SHALL BE RUN OVERHEAD IN EMT, GRC, OR IMC UNLESS NOTED OTHERWISE ON THE DRAWINGS. FIRE ALARM SYSTEM CONDUITS AND COMMUNICATIONS SYSTEM CONDUITS TO BE EMT RUN OVERHEAD CONCEALED IN WALLS OR CEILING UNLESS NOTED OTHERWISE. ALL FIRE RATED WALLS, FLOORS, ETC WHICH HAVE A CONDUIT OR OTHER ELECTRICAL PENETRATION SHALL BE SEALED TO EQUAL THE RATING OF THE WALL, FLOOR, ETC. THAT IS PENETRATED. CONTRACTOR SHALL USE A U.L. RATED AND LISTED ASSEMBLY FOR THE SEALING MATERIAL AND METHOD. COORDINATE MANUFACTURER WITH THE GENERAL CONTRACTOR SO THAT ALL TRADES ON THE PROJECT USE THE SAME MANUFACTURER. THROUGH PENETRATIONS OF CONDUITS AND CABLES OF FIRE RESISTANCE RATED WALLS MUST COMPLY WITH SECTION 714.3.1 OF THE IBC. THROUGH PENETRATIONS OF FIRE RESISTANCE CEILING ASSEMBLIES MUST COMPLY WITH SECTION 714.4.1.1 OF THE IBC. ALL OUTLET BOXES 4"x4" OR SMALLER LOCATED ON OPPOSITE SIDES OF A RATED WALL SHALL HAVE A MINIMUM OF 24" HORIZONTAL SPACING OR SHALL BE PROTECTED WITH LISTED PUTTY PADS. ALL OUTLET BOXES LARGER THAN 4"x4" (COMMUNICATIONS OUTLETS, ETC.) LOCATED IN RATED WALLS SHALL BE PROTECTED WITH LISTED PUTTY PADS. METALLIC WATER PIPING SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM (SEE NEC 250-104). REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS, LOCATIONS, CABINETS, ETC. CONCEAL ALL CONDUIT AND FITTINGS EXCEPT WHERE THE ARCHITECT GRANTS SPECIFIC PERMISSION. ALL WORK AND MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF ACCEPTANCE. PROVIDE ONE COMPLETE SET OF ELECTRICAL DRAWINGS MARKED UP FOR RECORD DRAWINGS. SHOW ALL LOCATIONS OF EQUIPMENT AND MATERIALS. INSTALL ALL MATERIALS PER MANUFACTURER'S INSTRUCTIONS. IDENTIFY MAJOR EQUIPMENT INSTALLED WITH LAMICOR LABELS (SEE SPECS). PROVIDE FLASH HAZARD SIGN AT ALL ELECTRICAL PANELS. PROVIDE A TYPED DIRECTORY IN ALL PANEL BOARDS CLEARLY DESCRIBING THE LOCATION OF AND TYPE OF LOAD BEING SERVED FOR ALL CIRCUITS. VISIT SITE TO DETERMINE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ALL RACEWAYS, FIXTURES, WIRING, DEVICES, AND EQUIPMENT RENDERED USELESS BY THIS WORK SHALL BE REMOVED AND DELIVERED TO THE OWNER'S STORAGE FACILITY AS DIRECTED. ANY MATERIAL NOT WANTED BY THE OWNER SHALL BE DISPOSED OF BY THE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL DO ALL CUTTING AND PATCHING AS REQUIRED TO INSTALL HIS WORK. FINISH PATCHING AND PAINTING WILL BE DONE BY THE GENERAL CONTRACTOR. PRIOR TO DIGGING ANY TRENCHES, NOTIFY ALL UTILITIES AND OBTAIN LOCATIONS OF UNDERGROUND UTILITIES. ANY DAMAGES DONE TO UNDERGROUND UTILITIES OR PIPING BY THIS CONTRACTOR WILL BE REPAIRED BY THE OWNER OF THE LINE IN A SATISFACTORY MANNER. THIS CONTRACTOR WILL BEAR ALL COSTS FOR REPAIRS. THE MAIN ELECTRICAL FEEDER AND THE SERVICE ENTRANCE COMMUNICATIONS CONDUIT SHALL BE ENCASED IN MINIMUM 2" CONCRETE ON ALL SIDES WHERE RUN UNDERGROUND, EXCEPT WHERE RUN UNDER THE CONCRETE FLOOR SLAB. CONDUITS TO BE RUN UNDER WALKWAYS AND PAVINGS SHALL BE INSTALLED BY JACKING OR BORING, UNLESS NOTED. DO NOT CUT WALKWAYS OR PAVEMENTS, UNLESS ACCEPTABLE TO THE ENGINEER. ALLOWED CUTS IN PAVEMENT OR CONCRETE SHALL BE MADE USING A PAVEMENT SAW, AND SHALL BE PATCHED TO MATCH THE EXISTING SURFACE. WHERE DISAGREEMENTS EXISTS ON THE DESIGN DOCUMENTS, THE ITEM OR ARRANGEMENTS OF BETTER QUALITY, GREATER QUANTITY, OR HIGHER COST SHALL BE INCLUDED IN THE BASE BID. ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS, AND FIELD CONDITIONS SHALL BE RESOLVED WITH THE ENGINEER PRIOR TO COMMENCING WORK. ALL AGREEMENTS SHALL BE VERIFIED IN WRITING. ALL WORK UNDER THIS SECTION SHALL BE COORDINATED WITH OTHER TRADES TO INSURE PROPER LOCATION OF OUTLETS AND EQUIPMENT CONNECTIONS, AND TO MINIMIZE CONFLICTS WITH STRUCTURAL MEMBERS, DUCT WORK, PIPING, ETC. CONFLICTS BETWEEN EQUIPMENT AND/OR MATERIAL LOCATIONS SHALL BE CORRECTED AS DIRECTED BY THE ARCHITECT-ENGINEER AT NO ADDITIONAL COST TO THE OWNER. 	

ELECTRICAL SUBMITTALS			
ELECTRICAL SHOP DRAWINGS SHALL BE SUBMITTED IN ONE COMPLETE PACKAGE CONTAINING ALL ITEMS REQUIRED BY THE ELECTRICAL DRAWINGS AND THE DIVISION 26-28 SPECIFICATIONS. PARTIAL SHOP DRAWING SUBMITTALS MAY BE REJECTED BY THE ARCHITECT-ENGINEER. REFER TO SECTION 260510 OF THE ELECTRICAL SPECIFICATIONS FOR REQUIRED SUBMITTAL FORMAT AND FOR ADDITIONAL REQUIREMENTS.			
ABBREVIATIONS			
A	AMPERES	LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR	MFR	MANUFACTURER
AFG	ABOVE FINISHED GRADE	MLO	MAIN LUGS ONLY
AWG	AMERICAN WIRE GAUGE	NEC	NATIONAL ELECTRICAL CODE
AHJ	AUTHORITY HAVING JURISDICTION	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
CU	COPPER	NIC	NOT IN CONTRACT
EC	EMPTY CONDUIT	PH.#	PHASE
EQT	EQUIPMENT	RCPT	RECEPTACLE
EXST	EXISTING	RE:	REFER TO
FWE	FURNISHED WITH EQUIPMENT	TYP	TYPICAL
GFI	GROUND FAULT INTERRUPTER	UNO	UNLESS NOTED OTHERWISE
IAW	IN ACCORDANCE WITH	V	VOLTS
KVA	KILOVOLTAMPERES	W	WIRE OR WAITS
KW	KILOWATTS	WP	WEATHERPROOF

SPARE PARTS:	
<p>A. ADDITIONAL FIRE ALARM DEVICES: THE ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM INSTALLER SHALL FURNISH AND INSTALL ADDITIONAL FIRE ALARM DEVICES AT THE DISCRETION OF THE ARCHITECT/ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION IN THE FOLLOWING QUANTITIES:</p> <ul style="list-style-type: none"> (4) HORN/STROBE LIGHTS (4) STROBE LIGHTS (4) MANUAL PULL STATIONS, MONITORING MODULES, OR CONTROL MODULES (2) CEILING MOUNTED SMOKE OR HEAT DETECTORS <p>INCLUDE COMPLETE COSTS TO FURNISH AND INSTALL THE ABOVE ADDITIONAL DEVICES IN BASE BID, INCLUDING ALL CONDUIT, OUTLET BOXES, 120V POWER, WIRING, AND SYSTEM PROGRAMMING. ANY DEVICES NOT USED SHALL BE TURNED OVER TO THE OWNER AS SPARE DEVICES AT THE END OF THE PROJECT.</p> <p>B. ADDITIONAL LIGHTING CONTROL ROOM OCCUPANCY SENSORS: THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ADDITIONAL ROOM OCCUPANCY SENSORS AT THE DISCRETION OF THE ARCHITECT/ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION IN THE FOLLOWING QUANTITIES:</p> <ul style="list-style-type: none"> (4) WALL OR CEILING MOUNTED DUAL TECHNOLOGY, ULTRASONIC, OR INFRARED OCCUPANCY SENSORS WITH POWER SUPPLIES <p>INCLUDE COMPLETE COSTS TO FURNISH AND INSTALL THE ABOVE ADDITIONAL DEVICES IN BASE BID, INCLUDING ALL CONDUIT, OUTLET BOXES, WIRING, AND SYSTEM PROGRAMMING. ANY DEVICES NOT USED SHALL BE TURNED OVER TO THE OWNER AS SPARE DEVICES AT THE END OF THE PROJECT.</p> <p>C. ADDITIONAL EXIT LIGHTS: THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ADDITIONAL EXIT LIGHTS AT THE DISCRETION OF THE ARCHITECT/ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION IN THE FOLLOWING QUANTITIES:</p> <ul style="list-style-type: none"> (4) WALL OR CEILING MOUNTED TYPE EXIT LIGHTS AS SPECIFIED. SEE LIGHTING FIXTURE SCHEDULE. <p>INCLUDE COMPLETE COSTS TO FURNISH AND INSTALL THE ABOVE ADDITIONAL EXIT LIGHTS IN BASE BID, INCLUDING ALL CONDUIT, OUTLET BOXES, 120V POWER, AND WIRING. ANY DEVICES NOT USED SHALL BE TURNED OVER TO THE OWNER AS SPARE DEVICES AT THE END OF THE PROJECT.</p>	

ELECTRICAL SHEET LIST	
E001	ELECTRICAL SYMBOLS & NOTES
E002	ELECTRICAL SITE PLAN
E003	STORAGE BUILDING ELECTRICAL PLAN
E004	LIGHTING FIXTURE SCHEDULE AND DETAILS
E101	LIGHTING PLAN
E201	POWER PLAN
E301	HVAC PLAN
E401	COMMUNICATION PLAN
E501	FIRE ALARM PLAN
E502	FIRE ALARM RISER AND DETAILS
E601	POWER RISER
E602	ELECTRICAL DETAILS
E603	ELECTRICAL DETAILS
E604	ELECTRICAL PANEL SCHEDULES
E605	ELECTRICAL POWER SCHEDULES

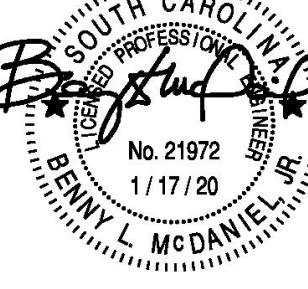
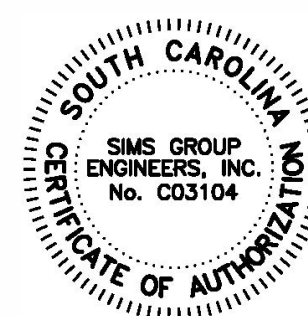
Jumper

Carter

Sease

ARCHITECTS

412 Meeting Street
West Columbia
South Carolina



OUTDOOR STORAGE BUILDING
UNIVERSITY OF SOUTH CAROLINA AIKEN
AIKEN, SOUTH CAROLINA

FF00000362

Description		Date
NEGOTIATED CHANGES		01-17-2020
No		

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SHEET TITLE:	ELECTRICAL SYMBOLS AND NOTES

SHEET NO:

E001

BID SET

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The diagram illustrates the typical mounting heights for various wall-mounted electrical devices. It shows a cross-section of a wall with a finished ceiling and floor. Key features include:

- EXIT Sign:** Mounted 8" below the finished ceiling.
- Fire Alarm Strobe or Speaker/Strobe:** Mounted 80" to the bottom of the device and 96" to the top of the device.
- Light Switch/Dimmer:** Mounted 48" above the floor.
- High Mount Power Receptacle:** Mounted 48" above the floor.
- Plugmold:** Mounted 48" above the floor.
- Wall Mounted Intercom/Telephone Outlet for Handset:** Mounted 48" above the floor.
- Fire Alarm Pull Station:** Mounted 48" above the floor.
- Security System Keypad:** Mounted 48" above the floor.
- AV/TV Outlet & Receptacle:** Mounted 48" above the floor.
- Data/Telephone Outlet:** Mounted 16" above the floor.
- Power Receptacle:** Mounted 16" above the floor.
- 3" to Bottom of Outlet Box:** Indicated for various outlets, including those with counter backplash or as detailed on drawings.
- Coordinate w/ Arch. Plans:** Indicated for various outlets, including those with counter backplash or as detailed on drawings.

1 TYPICAL MOUNTING HEIGHTS FOR WALL MOUNTED DEVICES
NOT TO SCALE

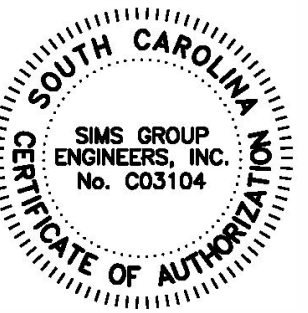
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OUTDOOR STORAGE BUILDING
UNIVERSITY OF SOUTH CAROLINA AIKEN
AIKEN, SOUTH CAROLINA

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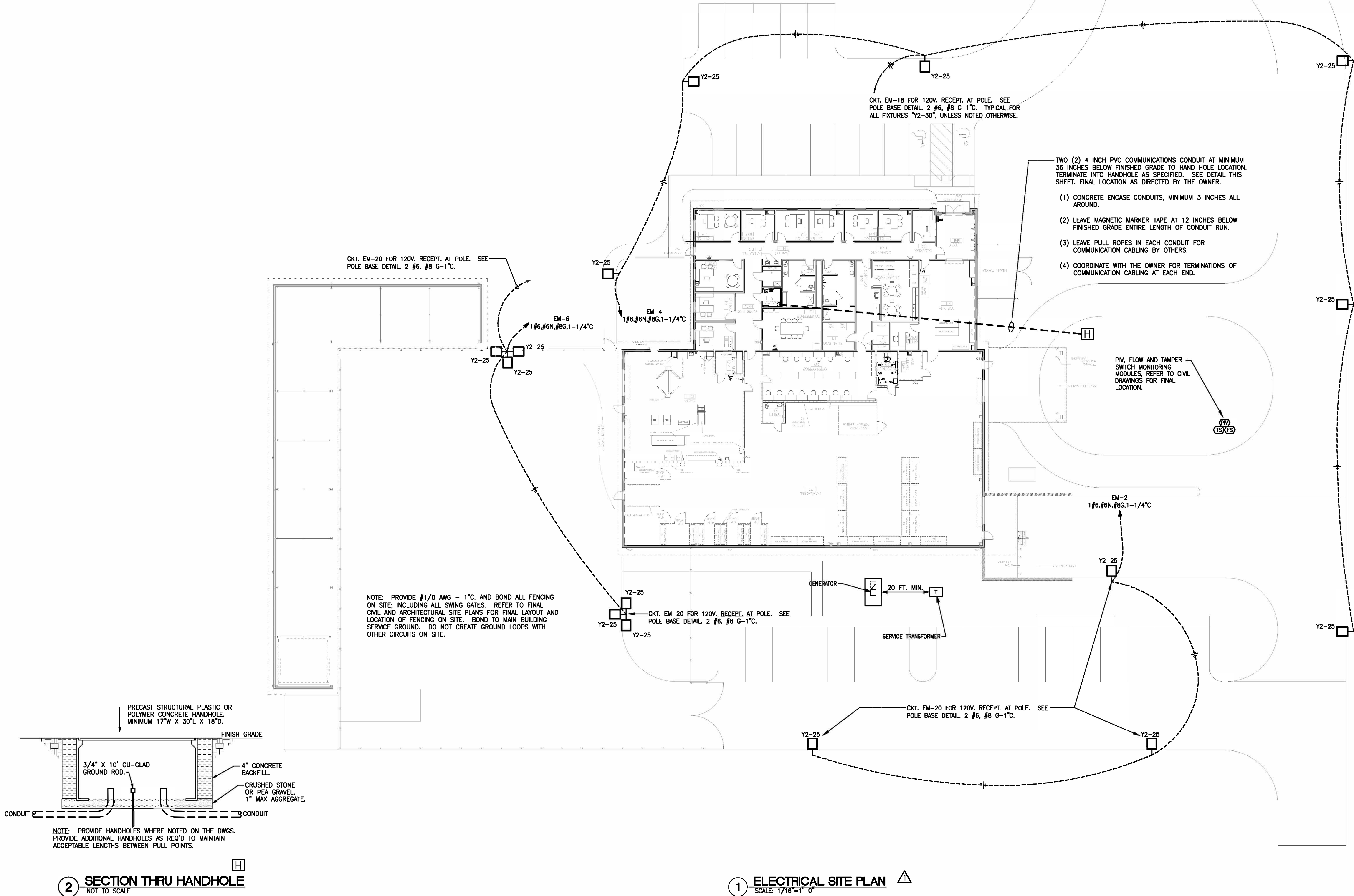
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No	Description	Date
1	NEGOTIATED CHANGES	01-17-2020

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COMM NO: 18103
DATE: OCT. 31, 2019
SHEET TITLE: ELECTRICAL SITE PLAN

SHEET NO:

E002



2 SECTION THRU HANDHOLE
NOT TO SCALE

1 ELECTRICAL SITE PLAN
SCALE: 1/16"=1'-0"

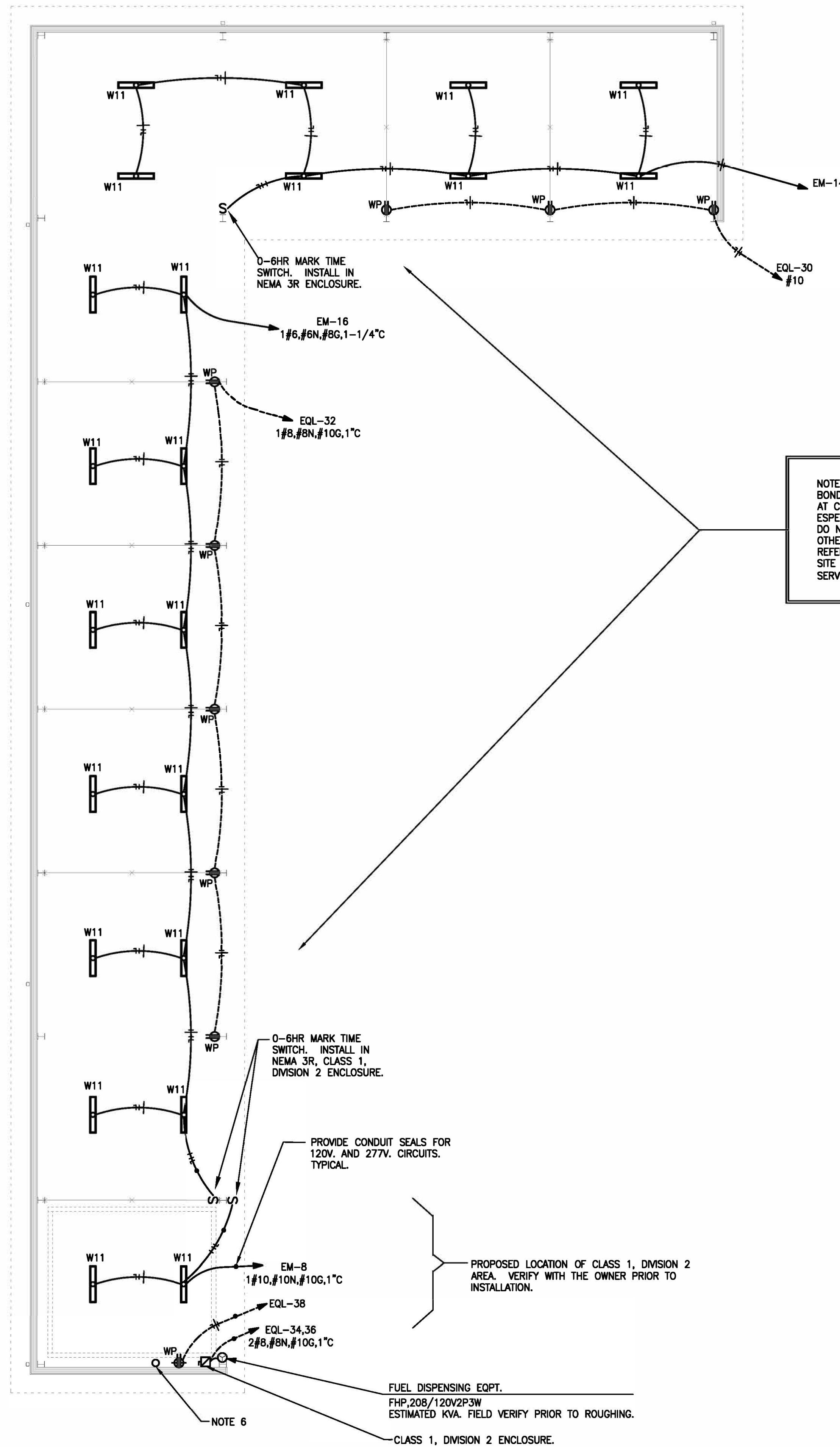
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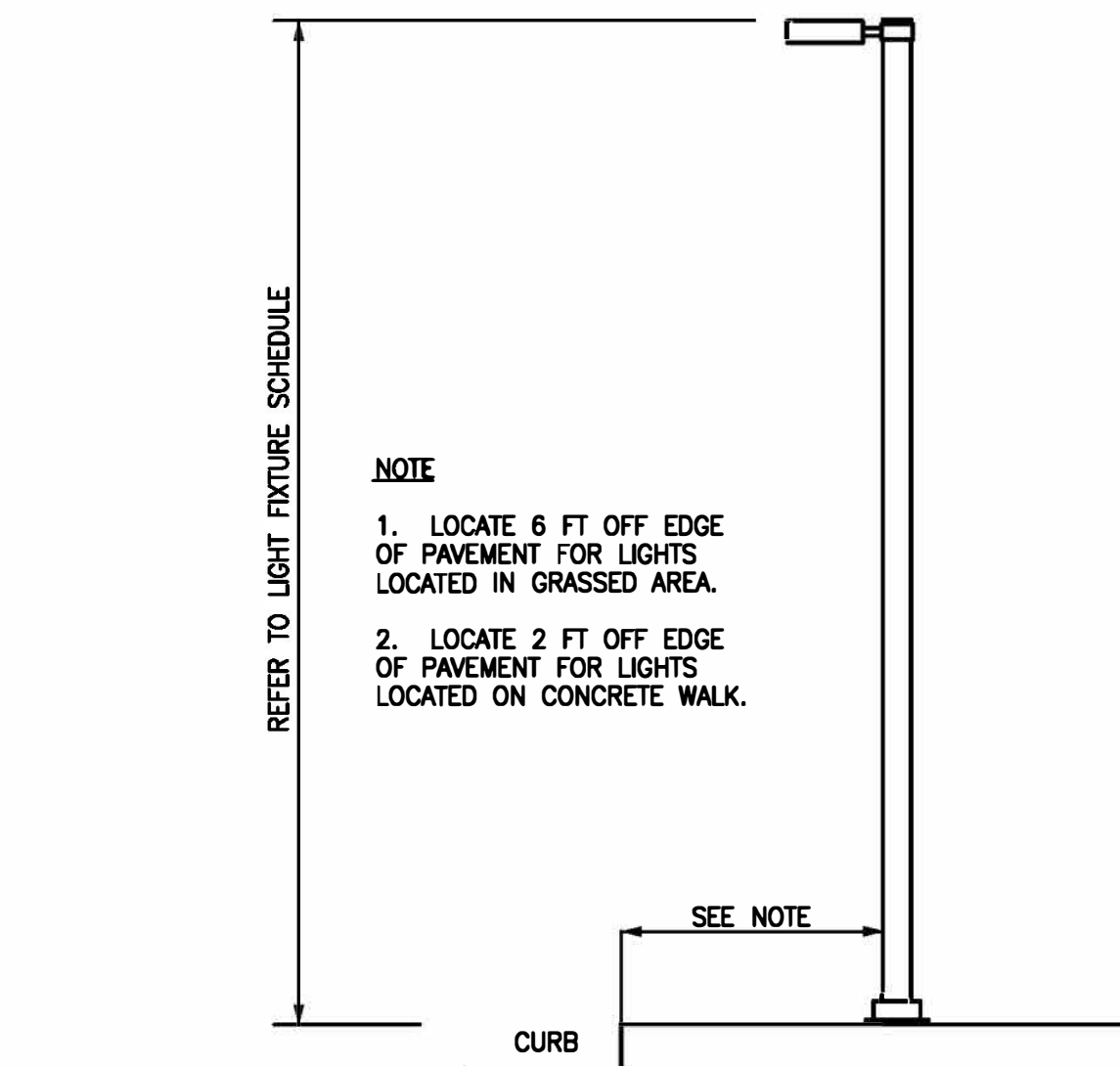
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800 Columbianna Drive, Suite 208
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Date	01-17-2020
Description	NEGOTIATED CHANGES
No	Δ

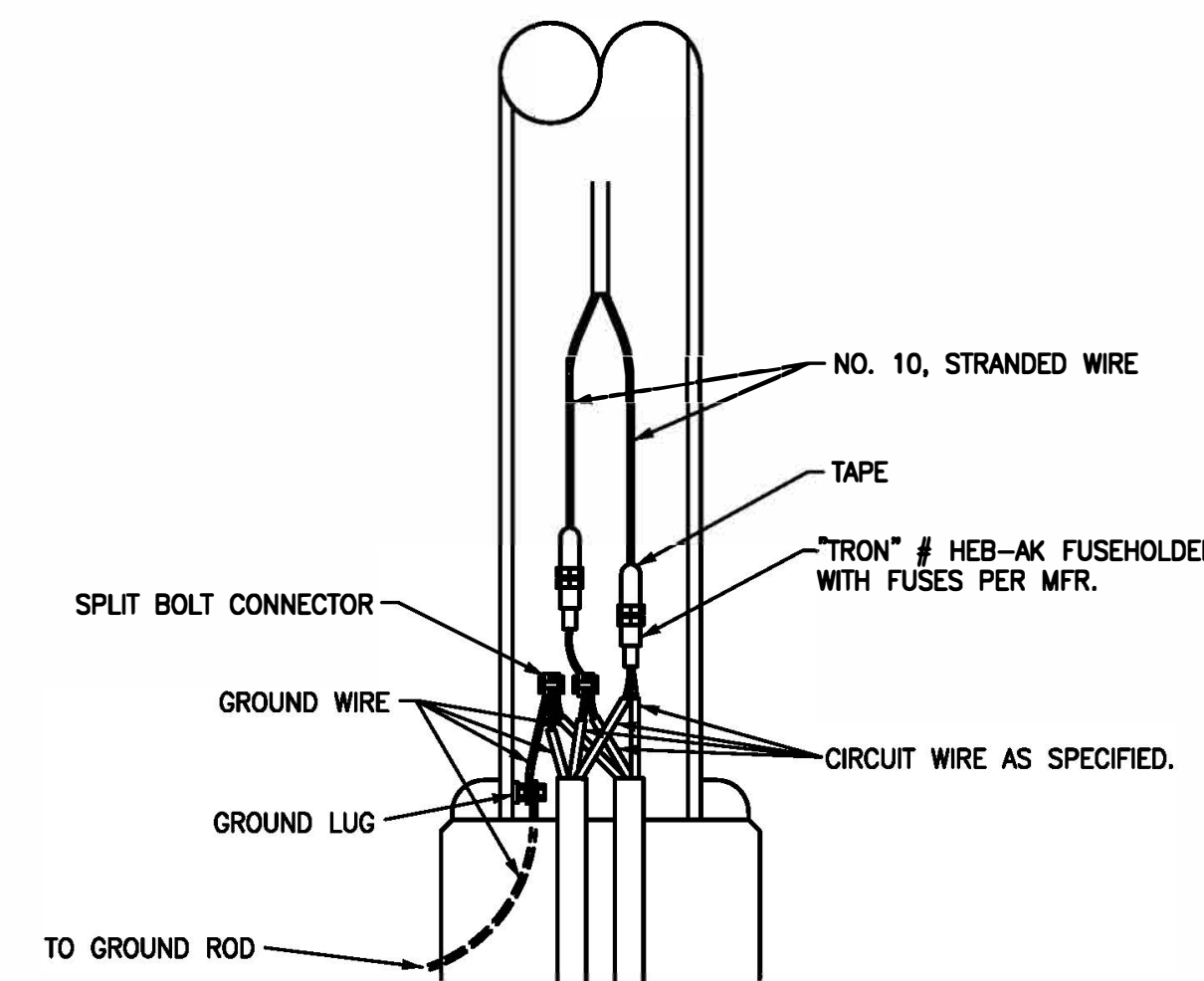
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COMM NO: 18103
DATE: OCT. 31, 2019
SHEET TITLE: STORAGE BLDG ELECTRICAL PLAN



1 STORAGE BUILDING ELECTRICAL PLAN Δ
SCALE: 1/8"=1'-0"



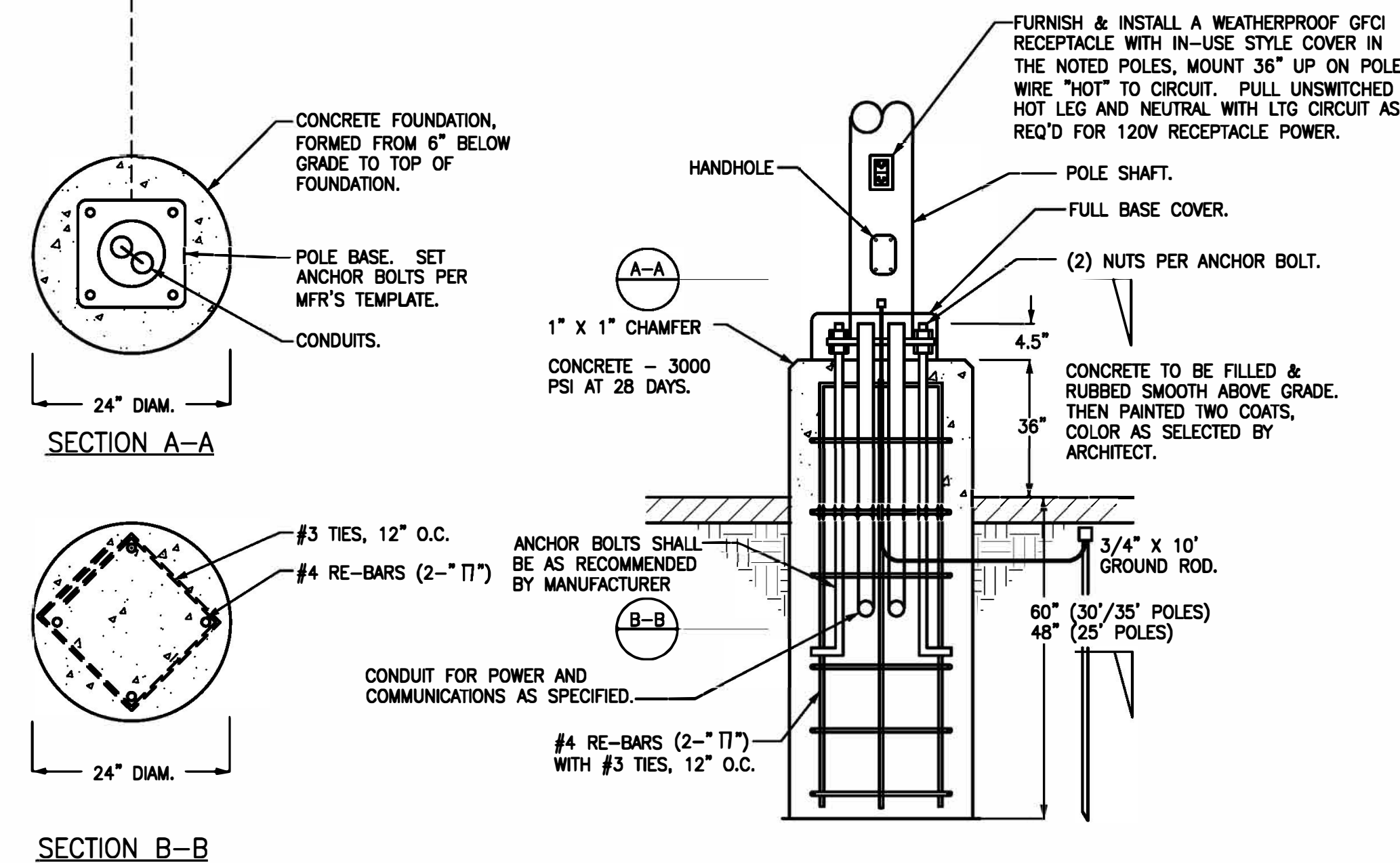
4 LIGHT STANDARD ELEVATIONS
SCALE: NOT TO SCALE



3 TYPICAL CONDUCTOR CONNECTION DETAIL
SCALE: NOT TO SCALE

CONDUITS BELOW GRADE FOR POWER AND COMMUNICATIONS. LEAVE PULL ROPES IN ALL EMPTY CONDUITS. PROVIDE THE FOLLOWING AS A MINIMUM:

- 1-1/4". FROM POLE BASE FOR FUTURE CAMERA. ROUTE TO MAIN DATA ROOM. MAX. THREE (3) POLES PER HOMERUN TO DATA ROOM. LEAVE PULL ROPE.
- 1". WITH 120V. CIRCUIT FOR RECEPTACLE AT POLE. SEE ELECTRICAL SITE LIGHTING PLAN.



2 LIGHT POLE FOUNDATION DETAIL
SCALE: NOT TO SCALE

LIGHTING FIXTURE SCHEDULE

TYPE	SYMBOL	LAMP	DESCRIPTION	MODEL	WATTS	VOLTS	NOTE 1
A47		(1) LED	2x4 SPEC GRADE RECESSED LED FIXTURE WITH 0-10V DIMMING CAPABILITY AND THE FOLLOWING MINIMUM CRITERIA: 4700 LUMEN OUTPUT, 115LPW, 80CRI, 4000K.	FIDELUX FFP24-35W-40-UNV-0 OR EQUIVALENT OF LITHONIA EPNAL SERIES, METALUX 24FP SERIES, OR COLUMBIA CFP SERIES	38	277V 1P 2W	WIRE FOR 0-10V DIMMING WHERE NOTED.
A50		(1) LED	2x4 SPEC GRADE RECESSED LED FIXTURE WITH 0-10V DIMMING CAPABILITY AND THE FOLLOWING MINIMUM CRITERIA: 5000 LUMEN OUTPUT, 125LPW, 80CRI, 4000K.	WILLIAMS LT-24-L52/840-AF-EQCUPS-DIM-UNV OR EQUIVALENT OF LITHONIA 2BLT4 SERIES OR METALUX CRUZE SERIES	38	277V 1P 2W	
B27		(1) LED	2x2 SPEC GRADE RECESSED LED FIXTURE WITH 0-10V DIMMING CAPABILITY AND THE FOLLOWING MINIMUM CRITERIA: 2700 LUMEN OUTPUT, 125LPW, 80CRI, 4000K.	WILLIAMS LT-22-L27/840-AF-EQCUPS-DIM-UNV OR EQUIVALENT OF LITHONIA 2BLT2 SERIES OR METALUX CRUZE SERIES	21	277V 1P 2W	
C		(1)	HI-BAY LED WAREHOUSE LIGHTING	CREE HYB-B-UV-35L-M-40K-8-UL-SV OR EQUAL	276	277V 1P 2W	
DWET		(1) LED	VANDAL RESISTANT LENSED DOWNLIGHT WET LOCATION LISTED FOR COVERED CEILINGS.	KENALL HDROL-19L-40K8-DV-DCC-CC(SILVER)-CSS-TTG, OR EQUIVALENT OF GOTHAM EVO-VR SERIES OR FALSAFE FFLDGA SERIES.	19	277V 1P 2W	SILVER OR ALUMINUM TRIM FINISH.
EM1		(2) LED	WALL MOUNTED EMERGENCY BATTERY LIGHT WITH WITH WHITE THERMOPLASTIC HOUSING, NICAD BATTERY BACKUP, 1W LED HEADS, SELF DIAGNOSTICS.	EMERGILITE EL-2LED, LITHONIA ELMG-LED-S0, SURELITES APEL OR ACCEPTABLE EQUIVALENT OF CHLORIDE, LIGHTALARMS, OR DUALLITE	2	277V 1P 2W	PROVIDE WITH SELF-TESTING DIAGNOSTICS.
F55		(1) LED	4-FOOT SPEC GRADE SURFACE LED FIXTURE WITH THE FOLLOWING MINIMUM CRITERIA: 5500 LUMEN OUTPUT, 125LPW, 80CRI, 4000K.	WILLIAMS 75R-4-L50/840-DRV-UNV OR EQUIVALENT OF LITHONIA ZL10 SERIES OR METALUX SNLED SERIES	44	277V 1P 2W	
W10		(1) LED	FULL CUTOFF WALL MOUNTED LED FIXTURE WITH ALUMINUM HOUSING, INTEGRAL SURGE PROTECTION, IP65 RATING, AND THE FOLLOWING MINIMUM CRITERIA: 1700 LUMEN OUTPUT, 80LPW, 80CRI, 4000K. PROVIDE FIXTURE WITH EMERGENCY BATTERY BACKUP. COLD WEATHER RATED. 90 MIN. RATING. CONTROL VIA TIME CLOCK.	WILLIAMS VVMH-L17/840-XX-XYZ-SDGL-SP10-DIM-UNV OR EQUIVALENT OF LITHONIA WST-LED, EATON, OR HUBBELL. HOUSING TO MATCH FIXTURE WIDE FORWARD THROW LIGHTING DISTRIBUTION.	16	277V 1P 2W	XYZ=STANDARD COLOR AS SELECTED BY ARCHITECT (BLACK, BRONZE, GRAY, SILVER, WHITE). REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING, FIELD VERIFY WITH ARCHITECT PRIOR TO ROUGH-IN.
W10E		(1) LED	FULL CUTOFF WALL MOUNTED LED FIXTURE WITH ALUMINUM HOUSING, INTEGRAL SURGE PROTECTION, IP65 RATING, AND THE FOLLOWING MINIMUM CRITERIA: 1000 LUMEN OUTPUT, 100LPW, 80CRI, 4000K. PROVIDE FIXTURE WITH EMERGENCY BATTERY BACKUP. COLD WEATHER RATED. 90 MIN. RATING. CONTRACTOR MAY PROVIDE REMOTE BATTERY BACKUP AT HIS OPTION. LOCATE ABOVE LAY-IN TILE CEILINGS. DESIGN INTENT IS FOR THE HOUSING OF FIXTURES W10 AND W10E TO MATCH. CONTROL VIA TIME CLOCK.	WILLIAMS VVMH-L10/840-XX-XYZ-SDGL-SP10-DIM-UNV OR EQUIVALENT OF LITHONIA WST-LED, EATON, OR HUBBELL. FORWARD THROW LIGHTING DISTRIBUTION.	13	277V 1P 2W	XYZ=STANDARD COLOR AS SELECTED BY ARCHITECT (BLACK, BRONZE, GRAY, SILVER, WHITE). REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING, FIELD VERIFY WITH ARCHITECT PRIOR TO ROUGH-IN.
W11		(1) LED	4-FOOT OUTDOOR, CLASS 1, DIVISION 2 RATED, SURFACE LED FIXTURE. COLD WEATHER RATED LED DRIVER.	HUBBELL HEM-40-HL-RFP-E-SSL-277V. OR APPROVED EQUAL	52	277V 1P 2W	SURFACE-CEILING
X1C		(1) LED	CEILING MOUNT SINGLE FACE LED EXIT SIGN WITH EVEN ILLUMINATION RED DIFFUSER, WHITE THERMOPLASTIC HOUSING. PROVIDE BATTERY BACKUP.	EMERGILITE, ELXN400-RN SERIES LITHONIA LXPM-S-W-3-R-120/277 SERIES SURELITES LPXC SERIES	2	MULTIPLE	SURFACE-CEILING. PROVIDE WITH SELF-TESTING DIAGNOSTICS.
X1W		(1) LED	FLAT WALL MOUNTED SINGLE FACE LED EXIT SIGN WITH EVEN ILLUMINATION RED DIFFUSER, WHITE THERMOPLASTIC HOUSING. PROVIDE BATTERY BACKUP.	MATCH X1C. ADJUST CATALOG NUMBERS FOR FLAT WALL MOUNTED EXIT	2	MULTIPLE	PROVIDE WITH SELF-TESTING DIAGNOSTICS.
Y2-25		(1) LED	25' ROUND TAPERED ALUMINUM POLE WITH (1) SPEC GRADE LED LUMINAIRE WITH DIE-CAST ALUMINUM HOUSING, UNIFORM DISTRIBUTION, CLASS 1 DRIVER WITH 10KV SURGE PROTECTION, AND THE FOLLOWING MINIMUM CRITERIA: 21,000 LUMEN OUTPUT, 120LPW, 70CRI, 4000K, 95% LUMEN MAINTENANCE AT 50,000 HOURS (25° C), 5 YEAR WARRANTY, IP65 RATING.	US ARCHITECTURAL RAZAR RZR-PLED-II-80LED-700ma-NW-277-XX-MS-F211 ON 30-FOOT RTA POLE WITH 4-BOLT BASE, OR EQUIVALENT OF LITHONIA D-SERIES, CREE OSO SERIES, MCGRAW-EDISON GLEON SERIES, OR KIM ALTITUDE SERIES	174	277V 1P 2W	MOUNT ON ROUND CONCRETE BASE, SEE DETAIL ON DRAWINGS. FIXTURE TO INCLUDE ARM, HUB, AND ALL OTHER NECESSARY SUPPORTING HARDWARE. EPA OF POLE 100 MPH AND 1.3 GUST FACTOR. EPA RATING OF POLE SHALL EXCEED SUM OF FIXTURE AND HARDWARE ATTACHED TO POLE.

OCCUPANCY SENSOR NOTES:

MANUFACTURER: PRODUCTS SUPPLIED SHALL BE FROM A SINGLE MANUFACTURING THAT HAS BEEN CONTINUOUSLY INVOLVED IN THE MANUFACTURING OF OCCUPANCY SENSORS FOR A MINIMUM OF FIVE (5) YEARS. MIXING OF MANUFACTURERS SHALL NOT BE ALLOWED. FURNISH AND INSTALL SENSORS AS MANUFACTURED BY WATTSTOPPER, OR SENSOR SWITCH (ACUTTY).

WARRANTY: ALL COMPONENTS SHALL BE U.L. LISTED, OFFER A MINIMUM 5-YEAR WARRANTY AND MEET ALL STATE AND LOCAL APPLICABLE CODE REQUIREMENTS. CONTRACTOR SHALL WARRANT ALL EQUIPMENT FURNISHED IN ACCORDANCE TO THIS SPECIFICATION TO BE UNDAMAGED, FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP, AND IN CONFORMANCE WITH THE SPECIFICATIONS. THE SUPPLIER'S OBLIGATION SHALL INCLUDE REPAIR OR REPLACEMENT, AND TESTING WITHOUT CHARGE TO THE OWNER, ALL OR ANY PARTS OF EQUIPMENT WHICH ARE FOUND TO BE DAMAGED, DEFECTIVE OR NON-CONFORMING AND RETURNED TO THE SUPPLIER. THE WARRANTY SHALL COMMENCE UPON THE OWNER'S ACCEPTANCE OF THE PROJECT. WARRANTY ON LABOR SHALL BE FOR A MINIMUM PERIOD OF 1-YEAR.

SUBMITTALS AND DOCUMENTATION: MANUFACTURER SHALL SUBSTANTIATE CONFORMANCE TO THIS SPECIFICATION BY SUPPLYING THE NECESSARY DOCUMENTS, PERFORMANCE DATA AND WIRING DIAGRAMS. SUBMIT A LIGHTING PLAN CLEARLY MARKED BY MANUFACTURER SHOWING PROPER PRODUCT, LOCATION, WIRING, AND ORIENTATION OF EACH SENSOR. SUBMIT STANDARD CATALOG LITERATURE WHICH INCLUDES PERFORMANCE SPECIFICATIONS INDICATING COMPLIANCE TO THE SPECIFICATION.

THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC AND ONLY ESTABLISH THE MINIMUM NUMBER AND TYPE OF SENSOR REQUIRED IN EACH SPACE. THE CONTRACTOR SHALL FURNISH ADDITIONAL SENSORS AS NECESSARY TO PROVIDE THE REQUIRED COVERAGE. THE CONTRACTOR MAY NOT REDUCE THE NUMBER OF SENSORS IN A SPACE OR CHANGE THE SENSOR TYPE IN A SPACE WITHOUT WRITTEN PERMISSION FROM THE ENGINEER AND THE OWNER. IN ORDER TO PROVIDE COVERAGE FOR THE CONTROLLED AREA AND ACCOMMODATE ALL OWNER OCCUPANCY REQUIREMENTS, ALL ROOMS/SPACES SHALL HAVE BETWEEN NINETY (90) AND ONE HUNDRED (100) PERCENT COVERAGE.

LAYOUT OF OCCUPANCY SENSORS ON THE CONTRACT DOCUMENTS REPRESENTS THE BASIS OF DESIGN. THE OCCUPANCY SENSOR SUPPLIER SHALL FURNISH SHOP DRAWINGS AND PRINTED MATERIAL INDICATING LAYOUT OF SENSORS, RACEWAY, AND WIRING REQUIRED TO CONTROL THE LIGHTING INDICATED. NO CHANGE ORDER WILL BE ALLOWED FOR ADDITIONAL SENSORS, RACEWAY, WIRING, POWER SUPPLIES, SATELLITE RELAYS, ETC., REQUIRED ON SHOP DRAWINGS BY THE OCCUPANCY SENSOR SUPPLIER. WHERE POWER SUPPLIES ARE REQUIRED FOR OPERATION OF THE OCCUPANCY SENSORS, BUT ARE NOT SHOWN ON THE LIGHTING PLANS, THE POWER SUPPLIES MUST BE INCLUDED AS PART OF THE BASE BID FOR THIS PROJECT. SEE OCCUPANCY SENSOR DETAILS THIS SHEET.

INSTALLATION: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND AIM SENSORS IN THE CORRECT LOCATION REQUIRED FOR COMPLETE AND PROPER VOLUMETRIC COVERAGE WITHIN THE RANGE OF COVERAGE(S) OF CONTROLLED AREAS PER THE MANUFACTURER'S RECOMMENDATIONS. PROPER JUDGMENT MUST BE EXERCISED IN EXECUTING THE INSTALLATION SO AS TO ENSURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURAL COMPONENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ALL PROPER ADJUSTMENTS TO ASSURE OWNER'S SATISFACTION WITH THE OCCUPANCY SYSTEM. PROVIDE ALL POWER PACKS AND MOUNTING HARDWARE NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.

RACEWAYS: ALL LOW VOLTAGE WIRING FOR OCCUPANCY SENSORS SHALL BE RUN IN METAL CONDUIT. SEE DETAIL FOR MOUNTING OF OCCUPANCY SENSOR POWER SUPPLIES.

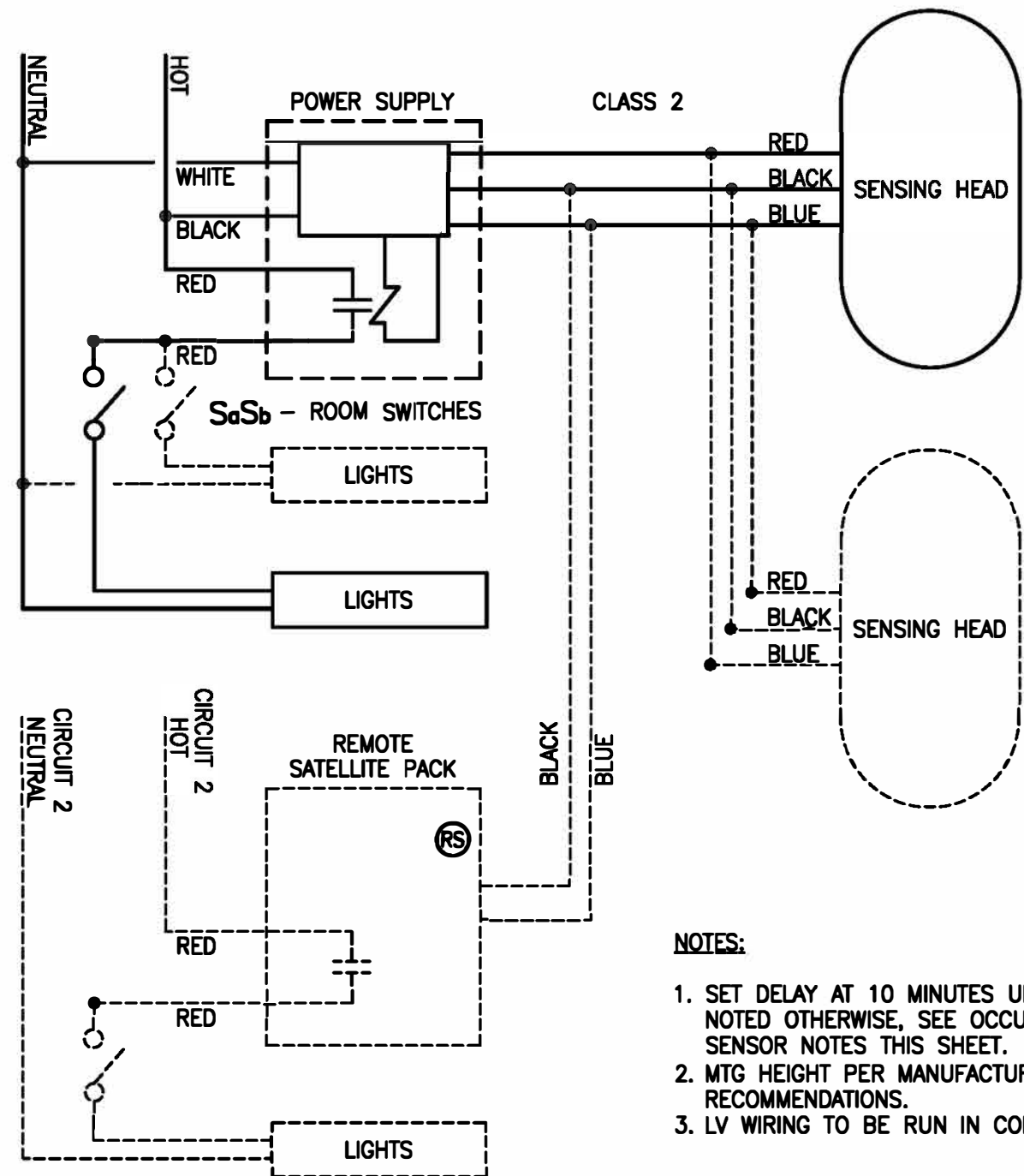
OCCUPANCY SENSOR TIME DELAY SETTINGS: RECOMMENDED DELAY FOR OCCUPANCY SENSORS IS 20 MINUTES. FIELD VERIFY DELAY SETTINGS FOR OCCUPANCY SENSORS WITH THE OWNER PRIOR TO FINAL SETUP (BETWEEN 30 SECONDS AND 30 MINUTES).

DUAL TECHNOLOGY SENSORS: SET TRIGGER FOR DUAL TECHNOLOGY SENSORS SO BOTH TECHNOLOGIES ARE REQUIRED TO TRIGGER ON, EITHER TECHNOLOGY IS REQUIRED TO HOLD ON, AND EITHER TECHNOLOGY IS REQUIRED TO RETRIGGER ON (5 SECOND DURATION).

VERIFICATION AND TRAINING: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL PROPER ADJUSTMENTS AND TRAIN OWNER'S PERSONNEL TO ENSURE OWNERS SATISFACTION WITH THE OCCUPANCY SYSTEM. THIS SERVICE SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER OR THE ARCHITECT/ENGINEER. SEE SPECIFICATIONS THIS SHEET FOR ADDITIONAL INFORMATION.

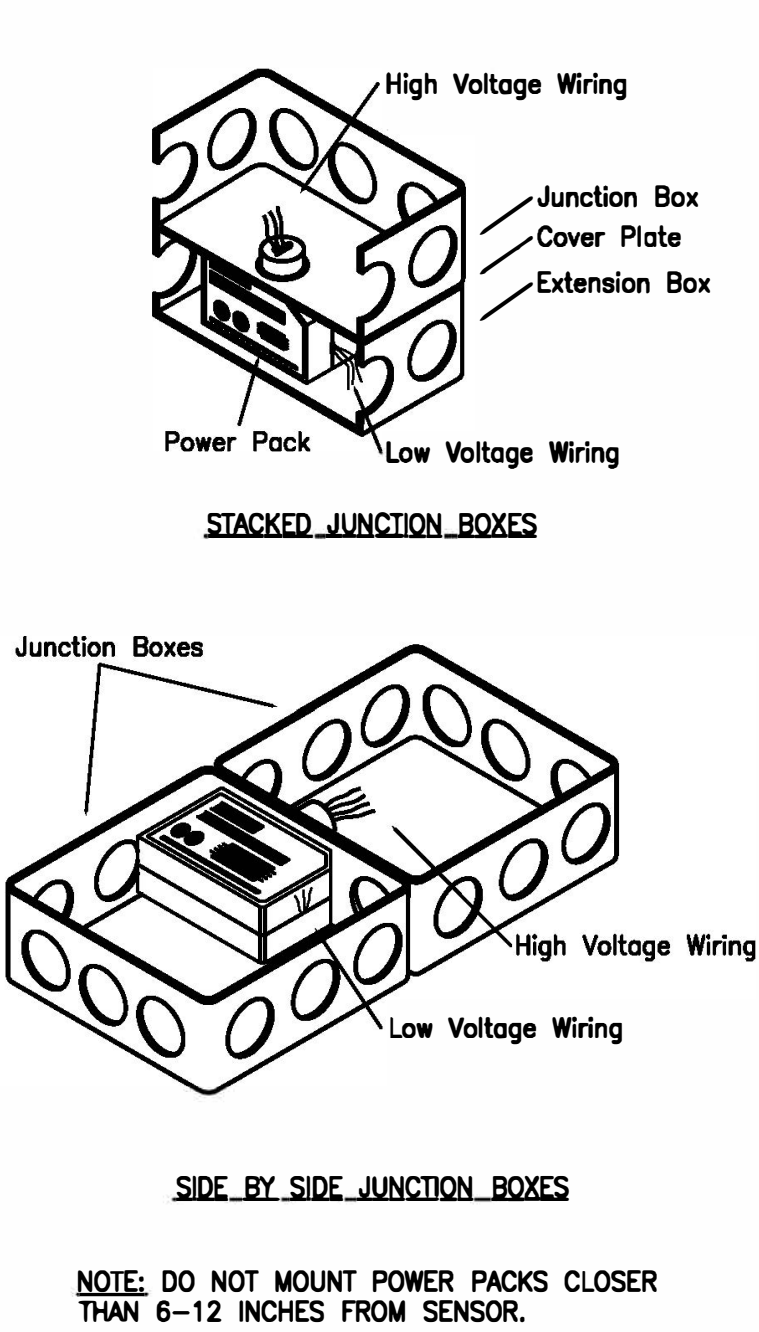
FINAL REVIEW: A FINAL REVIEW OF THE ELECTRICAL INSTALLATION BY THE ENGINEER CANNOT BE PROVIDED UNTIL THE OCCUPANCY SENSOR INSTALLATION AND THE SENSOR SETTINGS HAVE BEEN PROPERLY VERIFIED BY THE CONTRACTOR.

1 LOW VOLTAGE CEILING AND WALL MOUNTED OCCUPANCY SENSOR DETAIL



- NOTES:
1. SET DELAY AT 10 MINUTES UNLESS NOTED OTHERWISE, SEE OCCUPANCY SENSOR NOTES THIS SHEET.
 2. MTO HEIGHT PER MANUFACTURER'S RECOMMENDATIONS.
 3. LV WIRING TO BE RUN IN CONDUIT.

2 OCCUPANCY SENSOR POWER PACK INSTALLATION DETAIL



NOTE: DO NOT MOUNT POWER PACKS CLOSER THAN 6-12 INCHES FROM SENSOR.

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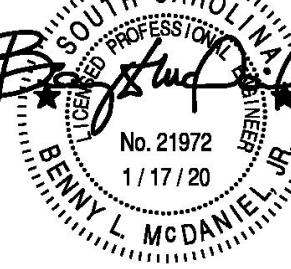
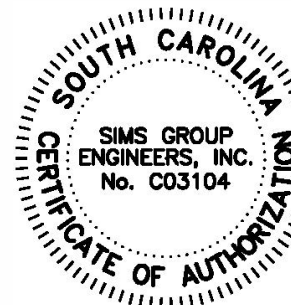
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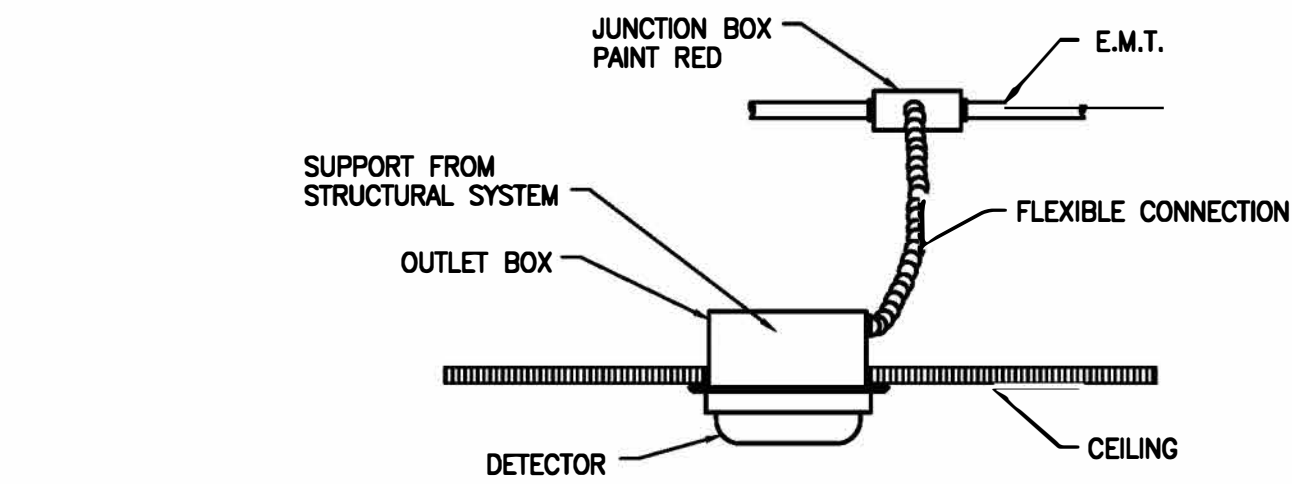
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Date	01-17-2020
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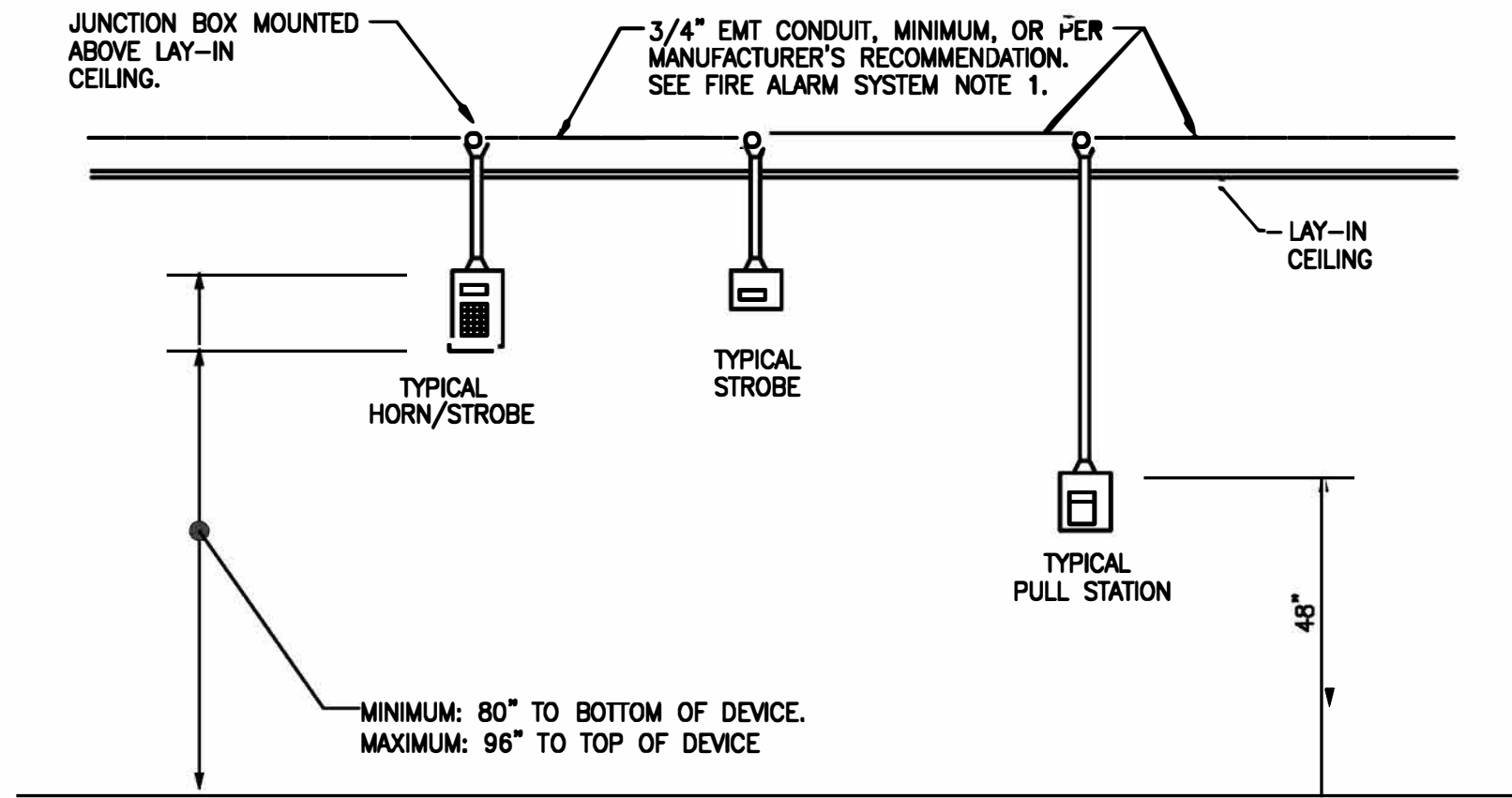
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COMM NO: 18103
DATE: OCT. 31, 2019
SHEET TITLE: LIGHTING FIXTURE SCHEDULE AND DETAILS

SHEET NO:

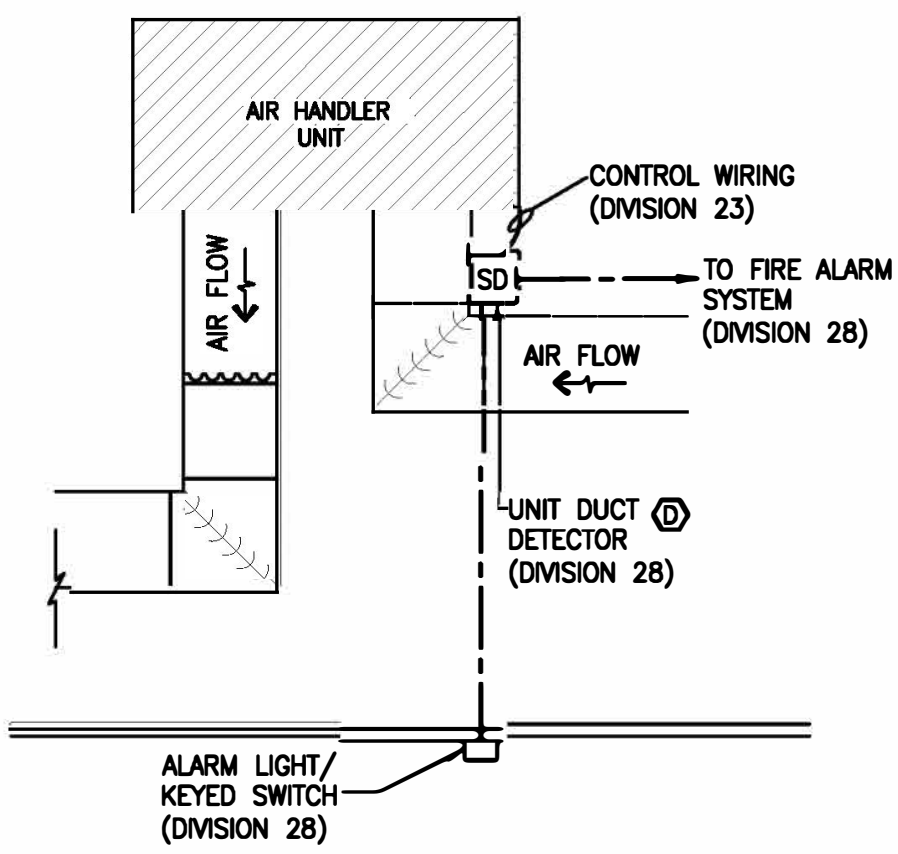
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3 MULTI SENSOR DETECTOR INSTALLATION DETAIL
NOT TO SCALE

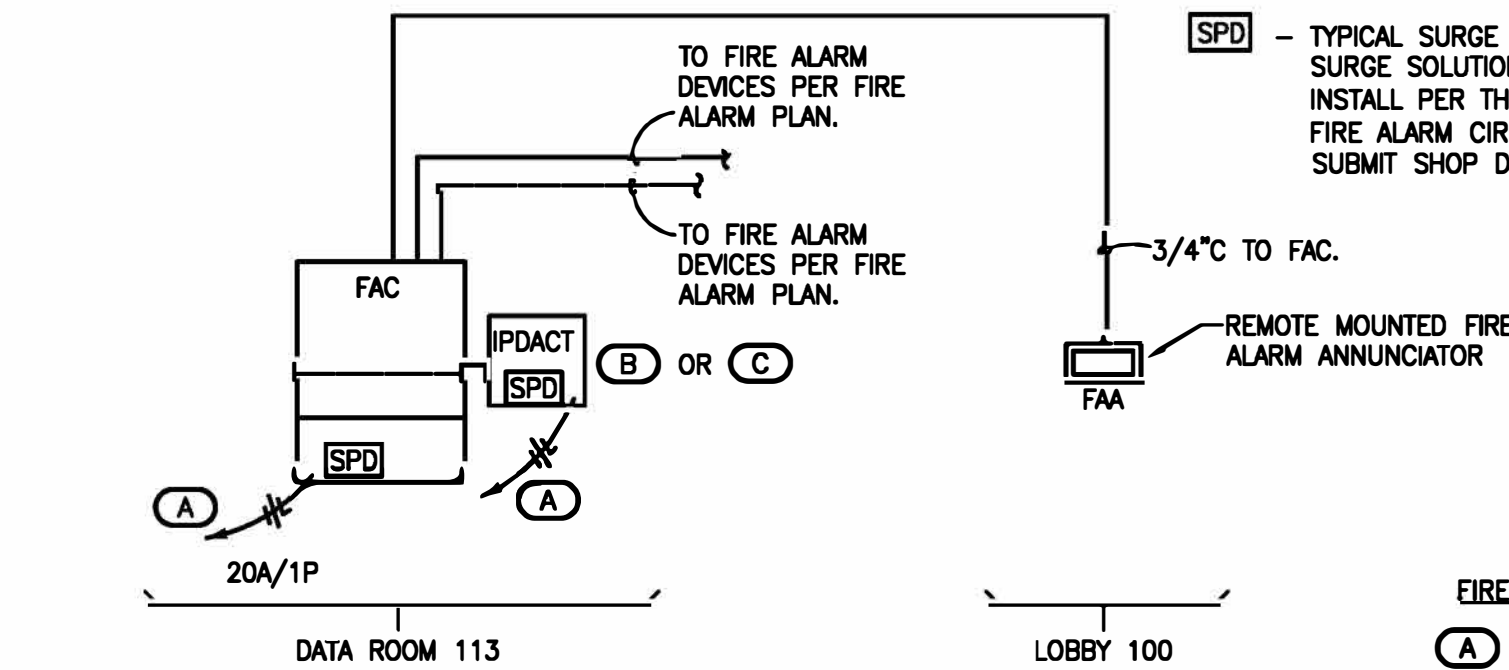


4 TYPICAL ELEVATIONS-LAY-IN CEILING
NOT TO SCALE



- NOTES:
1. PROVIDE UNIT DUCT MOUNTED SMOKE DETECTORS FOR EACH AIR HANDLER UNIT ABOVE 2000CFM AND MAKE-UP AIR UNITS AS SHOWN. PROVIDE (2) UNIT DUCT MOUNTED SMOKE DETECTORS FOR EACH AIR HANDLER UNIT ABOVE 15000CFM. PROVIDE ALL WIRING, CONDUIT, CONTROL MODULES, RELAYS, SOFTWARE AND PROGRAMMING REQUIRED TO CONNECT TO FIRE ALARM SYSTEM, INTEGRATE INTO MECHANICAL SYSTEM AND SHUT DOWN UNIT PER NFPA-72.
 2. PROVIDE DUCT SMOKE DETECTORS FOR FIRE/SMOKE DAMPERS LOCATED WITHIN DUCTS. FOR FIRE/SMOKE DAMPERS THROUGH WALLS AND NOT LOCATED WITHIN DUCTS, PROVIDE SMOKE DETECTORS RATED FOR AIR FLOW. INSTALL DUCT SMOKE DETECTORS PER THE MANUFACTURER'S INSTRUCTIONS, PROVIDE SAMPLING TUBE LENGTHS AS REQUIRED FOR DUCT TYPES AND WIDTHS PROVIDED.
 3. FOR ALL DUCT SMOKE DETECTORS AND SMOKE DETECTORS LOCATED IN CONCEALED LOCATIONS, PROVIDE REMOTE ALARM INDICATOR WITH KEYED TEST SWITCH.

2 HVAC AUTOMATIC FAN SHUTDOWN
NOT TO SCALE



FIRE ALARM RISER GENERAL NOTES:

1. ALL RISER CONDUIT SHALL BE MINIMUM 1" OR LARGER AS REQUIRED.
2. ALL DEVICE CIRCUIT CONDUIT RUNS SHALL BE 3/4" MINIMUM OR LARGER AS REQUIRED.
3. POWER EXTENDER PANELS "FPE": PROVIDE QUANTITY OF FPE PANELS AS REQUIRED FOR ACTUAL LOADS. LOCATE AS REQUIRED FOR COVERAGE OF THE BUILDING, PROVIDE NUMBER OF CIRCUITS AS REQUIRED BY LOADS TO 120V PANELS INDICATED AND SHOW LOCATIONS ON FIRE ALARM SHOP DRAWINGS.
4. FIRE SPRINKLER WIRING OF FLOW AND TAMPER SWITCHES ARE A PART OF THIS CONTRACT. COORDINATE WITH OTHER TRADES AND CONNECT COMPLETE AS DIRECTED BY SPRINKLER CONTRACTOR. SWITCHES SHALL BE PROVIDED BY OTHERS AND WIRED UNDER DIVISION 26/26.
5. FIRESTOP ALL THROUGH-WALL AND ALL THROUGH-FLOOR PENETRATIONS PER ASTM AND UL 1479, LATEST EDITION AT PROJECT BIDDING. PROVIDE ASSEMBLIES AS REQUIRED AS LISTED IN UL FIRE RESISTANCE DIRECTORY, LATEST EDITION.

1 FIRE ALARM RISER DIAGRAM
NOT TO SCALE

SPRINKLER SYSTEM MONITORING NOTE:
FLOW, TAMPER, AND FIV MONITORING LOCATIONS SHOWN ARE PER FIRE PROTECTION DRAWINGS. FURNISH & INSTALL MONITORING MODULES AS NEEDED TO MONITOR SPRINKLER FLOW, TAMPER, & FIV SWITCHES. VERIFY NUMBER REQ'D AND LOCATIONS WITH SPRINKLER CONTRACTOR AND SPRINKLER SYSTEM SHOP DRAWINGS PRIOR TO STARTING WORK AND INSTALL ACCORDINGLY. PROVIDE A MONITORING MODULE FOR EACH VALVE. NO CHANGES WILL BE ISSUED FOR ADDITIONAL WORK NOT INDICATED ON THE DRAWINGS BUT REQ'D TO PROPERLY MONITOR THE SPRINKLER SYSTEM.

FIRE ALARM RISER KEYNOTES:

- (A) CONNECT TO A DEDICATED 20A CIRCUIT BREAKER IN EMERGENCY GENERATOR PANEL "EOL". CONDUCTORS PER N.E.C. AND DRAWINGS. PROVIDE LOCK-OUT HASP FOR BREAKER AND PAINT CIRCUIT BREAKER HANDLE RED.
- (B) PROVIDE DACT AT CONTROL PANEL. VERIFY NORMAL OPERATION OF TWO RJ-31X TELEPHONE JACKS AT FAC FOR REMOTE REPORTING CONNECTED TO TWO TELEPHONE LINES (ONE PRIMARY, ONE BACKUP) COORDINATE WITH OWNER'S IT DIRECTOR FOR TELEPHONE LINE WORK.
- (C) PROVIDE AN IPDACT WITH GSM(CELL) BACKUP. PRIOR TO INSTALLATION, COORDINATE WITH ARCHITECT/OWNER TO OBTAIN APPROVAL FROM THE LOCAL FIRE MARSHAL FOR THE IPDACT USE. PROVIDE IPDACT, HONEYWELL IPGSM-4G OR EQUIVALENT IPDACT. COORDINATE WITH THE OWNER'S IT DIRECTOR FOR IP NETWORK AND CELL PHONE CONNECTIONS. WIRE PER MANUFACTURER'S INSTRUCTIONS FOR IP PRIMARY/CELLULAR BACKUP OPERATION. RUN 3/4" EMPTY CONDUIT BETWEEN FAC & IPDACT AND FROM IPDACT TO ABOVE LAY-IN CEILING.
- (D) FIRE ALARM CONDUITS, SIGNAL CABLE AND WIRING SHALL BE RUN CONCEALED WHERE POSSIBLE. COORDINATE WITH ARCHITECTURAL DRAWINGS PRIOR TO RUNNING CONDUIT.

FIRE ALARM SYSTEM NOTES

1. ALL FIRE ALARM SYSTEM WIRING SHALL BE RUN ABOVE GRADE IN WALLS AND ABOVE CEILING IN METAL RACEWAYS. RACEWAYS SHALL BE RUN CONCEALED. FIRE ALARM WIRING MAY NOT BE RUN UNDERGROUND OR IN SLAB UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.
2. VERIFY WIRING REQUIREMENTS WITH EQUIPMENT MFR PRIOR TO ROUGH-IN AND INSTALL ACCORDINGLY. NOTIFICATION APPLIANCE CIRCUITS SHALL BE RUN AS REQ'D TO PROVIDE A 3-PULSE TEMPORAL AUDIBLE SIGNAL WITHOUT COMPROMISING THE OPERATION OF THE STROBES.
3. PROVIDE SYNCHRONIZATION OF ALL STROBE LIGHTS.
4. FIRE ALARM SYSTEM TO BE CLASS B SUPERVISED SYSTEM (STYLE B INITIATING DEVICE CIRCUITS, STYLE 4 SIGNALING LINE CIRCUITS, CLASS B NOTIFICATION APPLIANCE CIRCUITS). FURNISH & INSTALL END-OF-LINE RESISTORS WHERE REQUIRED.
5. EQUIPMENT SUPPLIER SHALL SUBMIT SHOP DRAWINGS INDICATING EXACT ROUTING OF RACEWAYS AND NUMBER AND SIZE OF CONDUCTORS IN RACEWAYS FOR THE FIRE ALARM SYSTEM. THE ELECTRICAL CONTRACTOR SHALL USE THE REVIEWED DRAWING FOR ROUGH-IN OF FIRE ALARM SYSTEM RACEWAYS AND OUTLET BOXES.
6. MULTI SENSOR DETECTORS SHALL BE LOCATED AS NEAR THE CENTER OF THE ROOM AS PRACTICAL. DO NOT LOCATE ANY DETECTOR WITHIN 3-FT. OF AN HVAC SUPPLY OR RETURN GRILLE. PROVIDE AUXILIARY CONTACT ON SMOKE DETECTORS LOCATED IN CORRIDORS AT SMOKE DOORS. WIRE MAGNETIC DOOR HOLDERS THRU AUXILIARY CONTACT TO RELEASE DOOR WHEN THOSE DETECTORS ARE ACTUATED.
7. DUCT SMOKE DETECTORS SHALL BE FURNISHED BY THE FIRE ALARM SYSTEM SUPPLIER AND INSTALLED BY A QUALIFIED HVAC TECHNICIAN UNDER DIVISION 28. FIRE ALARM SYSTEM WIRING WILL BE FURNISHED & INSTALLED BY THE FIRE ALARM SYSTEM SUPPLIER UNDER DIVISION 28. HVAC CONTROL WIRING WILL BE FURNISHED & INSTALLED BY THE MECHANICAL CONTRACTOR UNDER DIVISION 23 AND SHALL BE SIZED PER THE N.E.C. PROVIDE AUXILIARY CONTACT WITH EACH DUCT DETECTOR FOR USE BY HVAC CONTROLS CONTRACTOR.

DUCT SMOKE DETECTORS TO BE LOCATED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. COORDINATE THE LOCATION OF EACH DUCT SMOKE DETECTOR IN THE FIELD WITH THE MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN TO INSURE COMPLIANCE WITH THE MANUFACTURER'S REQUIREMENTS.

PROVIDE DOCUMENTATION OF DUCT DETECTOR TESTING PER NFPA 72 TABLE 14.4.2.2-14(G)(6). AIR DUCT SMOKE DETECTORS SHALL BE TESTED/INSPECTED TO ENSURE THAT THE DEVICE WILL SAMPLE THE AIRSTREAM. THE TEST SHALL BE MADE IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS.
8. LOCATE MANUAL PULL STATIONS WITHIN 5'-0" OF THE EXIT DOOR PER NFPA AND IBC REQUIREMENTS. PROVIDE ANY SPECIAL ADAPTER PLATES OR COVER PLATES REQ'D TO MOUNT PULL STATIONS IN DOOR MULLIONS WHERE APPLICABLE AND PAINT EXPOSED SURFACES TO MATCH MULLION.
9. EACH HORN/STROBE OR STROBE LOCATED AT THE END OF A CORRIDOR MUST BE WITHIN 15'-0" OF THE END WALL PER NFPA 72. HORN/STROBES MUST BE LOCATED TO COMPLY WITH TABLE 7.5.4.3.1(a) & TABLE 7.5.4.3.1(b) OF NFPA 72. DO NOT ADJUST LOCATIONS OF HORN/STROBES WITHOUT CONSULTING WITH THE ENGINEER AND OBTAINING WRITTEN PERMISSION.
10. FIELD VERIFY LOCATION OF FIRE ALARM PANEL "FAC" AND/OR REMOTE FIRE ALARM ANNUNCIATOR "FMA" WITH OWNER AND AUTHORITY HAVING JURISDICTION PRIOR TO ROUGH-IN.
11. IN ADDITION TO MULTI SENSOR DETECTORS SHOWN, CONTRACTOR WILL BE REQUIRED TO FURNISH & INSTALL MULTI SENSOR DETECTORS IN ALL ROOMS WITH FIRE ALARM POWER SUPPLIES AND POWER BOOSTERS. IN ADDITION TO 120V CIRCUITS SHOWN, CONTRACTOR SHALL BE REQUIRED TO FURNISH & INSTALL ANY 120V CIRCUITS NECESSARY TO PROVIDE A COMPLETE AND OPERABLE FIRE ALARM SYSTEM.
12. ADDITIONAL FIRE ALARM DEVICES: THE ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM INSTALLER SHALL FURNISH AND INSTALL ADDITIONAL FIRE ALARM DEVICES AT THE DISCRETION OF THE ARCHITECT/ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION. REFER TO SHEET E001 FOR QUANTITIES.

INCLUDE COMPLETE COSTS TO FURNISH AND INSTALL THE ABOVE ADDITIONAL DEVICES IN BASE BID, INCLUDING ALL CONDUIT, OUTLET BOXES, 120V POWER, WIRING, AND SYSTEM PROGRAMMING. ANY DEVICES NOT USED SHALL BE TURNED OVER TO THE OWNER AS SPARE DEVICES AT THE END OF THE PROJECT.
15. USE OWNER'S ACTUAL PLACARDED ROOM NAMES FOR FINAL PROGRAMMING OF THE FIRE ALARM SYSTEM. INDICATE ANY DISCREPANCIES WITH DRAWING ROOM NAMES OR NUMBERS ON AS-BUILT MARK-UPS.
16. THE CONTRACTOR SHALL PROVIDE THE REQUIRED NUMBER OF POWER EXTENDER PANELS TO SUPPORT NOTIFICATION DEVICES. EXTENDER PANELS MAY BE STACKED A MAXIMUM OF TWO PANELS VERTICALLY.
17. BACK BOXES FOR ALL CEILING FIRE ALARM DEVICES SHALL BE FLUSH MOUNTED WHERE CONDUIT IS ROUTED ABOVE FINISHED CEILING.
18. EXTERIOR DEVICES SHALL BE EQUIPPED WITH WEATHERPROOF OPTIONS AS RECOMMENDED BY MANUFACTURER.

STANDARD FIRE ALARM SYMBOLS

	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR
	FIRE ALARM POWER EXTENDER PANEL
	FIRE/SMOKE DAMPER LOCATION
	FIRE ALARM MANUAL PULL STATION. 48" AFF.
	FIRE ALARM WALL MOUNTED HORN WITH STROBE LIGHT, CANDELA RATING AS NOTED. MOUNT BETWEEN 80" AND 96" AFF. PER NFPA 72 AND ADA REQUIREMENTS.
	CEILING MOUNTED FIRE ALARM HORN WITH STROBE LIGHT, CANDELA RATING AS NOTED.
	FIRE ALARM WALL MOUNTED STROBE LIGHT, CANDELA RATING AS NOTED. MOUNT BETWEEN 80" AND 96" AFF. PER NFPA 72 AND ADA REQUIREMENTS.
	CEILING MOUNTED FIRE ALARM STROBE LIGHT, CANDELA RATING AS NOTED.
	MULTI SENSOR (PHOTOELECTRIC, THERMAL) DETECTOR. CEILING MOUNTED, UNLESS NOTED.
	HEAT DETECTOR. CEILING MOUNTED, UNLESS NOTED OTHERWISE.
	DUCT MOUNTED SMOKE DETECTOR, FURNISHED & INSTALLED UNDER DIVISION 28. SEE ELECTRICAL SPECIFICATIONS AND DETAIL ON DRAWINGS FOR WIRING.
	DUCT MOUNTED CARBON MONOXIDE DETECTOR. AIR PRODUCTS AND CONTROLS MODEL SL-701 SERIES OR EQUAL. PROVIDE WITH REMOTE MSR-50/CO INDICATOR AND LOCATE IN MAIN OFFICE. FINAL LOCATION BY THE OWNER.
	WALL MOUNTED CARBON MONOXIDE DETECTOR. OBTAIN FINAL MFR. CUT SHEETS AND WALL MOUNT AT HEIGHT AS DIRECTED BY MFR. DEVICE SHALL BE SUITABLE FOR WAREHOUSE, VENTILATED, AND UNCONDITIONED TYPE SPACES. PRIOR TO BIDDING, VERIFY TEMPERATURE RANGE OF DEVICE MEETS OR EXCEEDS THAT OF SPACE INSTALLED. CO DEVICE SENSITIVITY SHALL BE ADJUSTABLE AND PROGRAMMABLE. PROVIDE 3/4" C. WITH FIRE ALARM CABLING AND CONNECT TO FIRE ALARM SYSTEM.
	DUCT SMOKE DETECTOR REMOTE ALARM INDICATOR WITH INTEGRATED KEYED TEST SWITCH.
	WALL MOUNTED MAGNETIC DOOR HOLDER, 120V. 76" AFF, UNLESS NOTED - FIELD VERIFY WITH ARCHITECT.
	FIRE ALARM MONITORING MODULE.
	FIRE ALARM CONTROL MODULE.
	SPRINKLER SYSTEM TAMPER SWITCH MONITORING MODULE
	SPRINKLER SYSTEM FLOW SWITCH MONITORING MODULE
	WEATHERPROOF DEVICE. PROVIDE BACKBOX AND COVER U.L. LISTED AS WEATHERPROOF.

FIRE ALARM SYMBOL SCHEDULE NOTES:
1. WALL MOUNTED NOTIFICATION DEVICES SHALL BE LOCATED AT UNIFORM HEIGHT ABOVE FINISHED FLOOR WHERE CEILING HEIGHTS ALLOW.

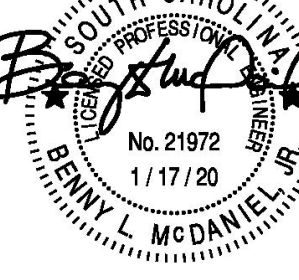
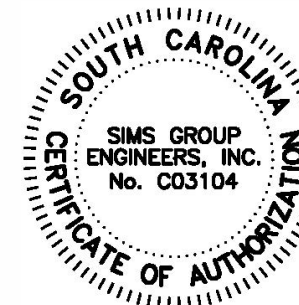
Jumper

Carter

Sease

ARCHITECTS

412 Meeting Street
West Columbia
South Carolina



OUTDOOR STORAGE BUILDING
UNIVERSITY OF SOUTH CAROLINA Aiken
Aiken, SOUTH CAROLINA

FP000362

No	Description	Date

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DATE: OCT. 31, 2019

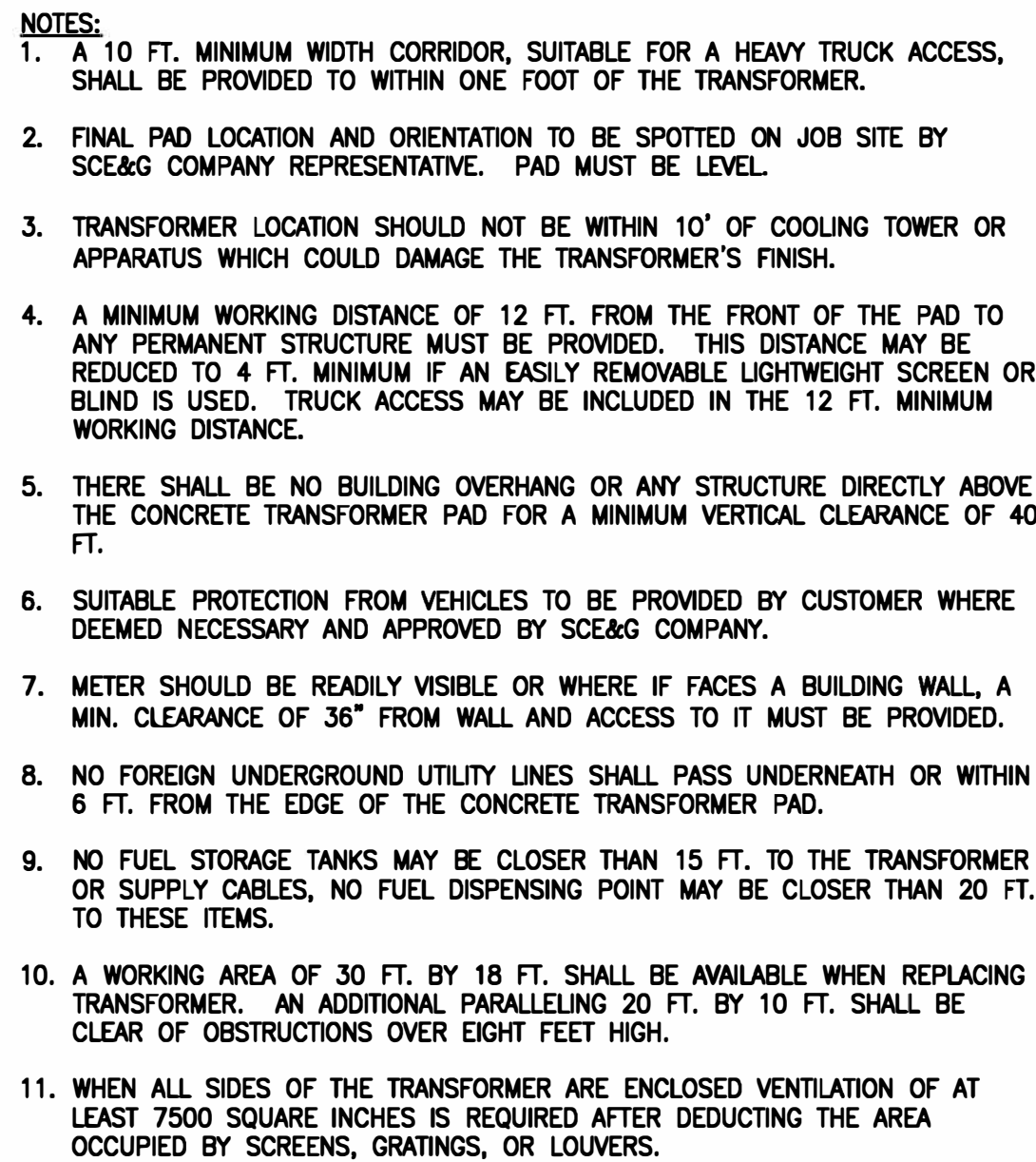
SHEET TITLE:
FIRE ALARM
RISER AND
DETAILS

SHEET NO:

E502

REGULAR STANDARD & COMPRESSED WIRE SIZE	NSI CAT. NO.	KEARNEY DIE SIZE	HOMAC CAT. NO.	KEARNEY DIE SIZE
1/0 STR.	L10N	1/2	L1/0N	1/2
2/0 STR.	L20N	9/16	L2/0N	9/16
3/0 STR.	L30N	5/8	L3/0N	9/16
4/0 STR.	L40N	5/8-1	L4/0N	5/8-1
250 KCML	L250N	11/16	L250/0N	11/16
300 KCML	L300N	781	L300/0N	781
350 KCML	L350N	840	-----	-----
400 KCML	L400N	15/16	L400/0N	840
500 KCML	L500N	1-2	L500/0N	1-2
600 KCML	L600N	1 1/8-2	L600/0N	1 1/8-2
750 KCML	L750N	1 5/16	-----	-----

TABLES ARE BASED ON
SCE&G REQUIREMENTS AND
ARE FOR BIDDING PURPOSES
ONLY. COORDINATE ACTUAL
LUG REQUIREMENTS WITH
THE APPROPRIATE POWER
COMPANY AND FURNISH &
INSTALL ACCORDINGLY.



DETAIL IS BASED ON SCE&G REQUIREMENTS AND IS FOR BIDDING PURPOSES ONLY. COORDINATE ACTUAL REQUIREMENTS WITH THE APPROPRIATE POWER COMPANY AND INSTALL ACCORDINGLY.



NOT TO SCALE



- PROVIDE ENGRAVED NAMEPLATES FOR EACH PANELBOARD, SAFETY SWITCH, ENCLOSED CIRCUIT BREAKER, TRANSFORMER, CONTACTOR, AND LIGHTING CONTROL. AS INDICATED IN THE SPECIFICATIONS. ATTACH TO EQUIPMENT COVER USING METAL SCREWS, RIVETS, OR INDUSTRIAL EPOXY CEMENT. THE MANUFACTURER'S STICKY-BACK ADHESIVE IS NOT ACCEPTABLE. USE WHITE LETTERS ON BLACK FIELD FOR NORMAL POWER ITEMS, USE WHITE LETTERS ON RED FIELD FOR EMERGENCY POWER ITEMS.
- ALL CIRCUIT BREAKERS SHALL BE FULLY RATED; SERIES RATINGS PROHIBITED.
- PROVIDE HACR-RATED CIRCUIT BREAKERS FOR ALL HVAC & REFRIGERATION EQUIPMENT.
- BRANCH MOUNTED MAIN CIRCUIT BREAKERS ARE PROHIBITED.
- EQUIPMENT CIRCUITS: VERIFY WIRE SIZE AND C/B RATING WITH EQUIPMENT NAMEPLATE DATA. NOTIFY ENGINEER OF ANY DISCREPANCY.
- BOND TRANSFORMER SECONDARY TO BUILDING STEEL WITH FULL SIZED EQUIPMENT GROUNDING CONDUCTOR PER NEC TABLE 250.68 (TYPICAL). MOUNT TRANSFORMERS 6" OFF OF WALL PER UL AND MFR REQ'TS. SEE SPEC FOR TRANSFORMER DESCRIPTION.
- REFER TO CIVIL DRAWINGS FOR UTILITY LOCATIONS. FIELD VERIFY FINAL LOCATIONS PRIOR TO POUR-IN.
- COORDINATE SERVICE, PAD, & METERING RACK WITH THE POWER COMPANY AND INSTALL ACCORDINGLY.
- PANEL NUMBERING AND CIRCUIT BREAKER/LAYOUT MUST MATCH SCHEDULES ON DESIGN DOCUMENTS. SUBMITTALS WHERE NUMBERING AND/OR BREAKER LAYOUT IS DIFFERENT WILL BE REJECTED.
- PANELBOARDS TO INCLUDE HINGED TRIM (DOOR-IN-DOOR).
- SHOP DRAWING SUBMITTALS: SUBMIT AN ELECTRICAL ROOM LAYOUT DRAWING FOR EACH ELECTRICAL ROOM REFLECTING DIMENSIONS OF ACTUAL EQUIPMENT PROVIDED. PROVIDE CLEARANCES PER TABLE 110.26(A)(1) OF THE NEC.
- BREAKER COORDINATION: MANUFACTURER SHALL PROVIDE COORDINATION BETWEEN FEEDER BREAKERS AND UPSTREAM DEVICES. THESE COORDINATION SETTINGS SHALL BE MADE IN THE FIELD BY A MANUFACTURER'S FIELD TECHNICIAN AND DOCUMENTED. THE LETTER COORDINATION SETTINGS ARE PROVIDING THE SETTING INFORMATION SHALL BE PROVIDED PRIOR TO ENERGIZATION OF THE SWITCHBOARD.

CONTRACTOR MAY PROVIDE ALUMINUM CONDUCTORS FOR SERVICE ENTRANCE AND FEEDERS ABOVE 100 AMPS. AT HIS OPTION, ALUMINUM CONDUCTORS SHALL BE COMPACT TYPE AS MFR. BY ALCAN TYPE "STABLOK" OR APPROVED EQUAL. ANY TYPE OF ALUMINUM CONDUCTORS SHALL MEET OR EXCEED THAT OF COPPER CONDUCTORS OF SAME SIZE. CONTRACTOR SHALL SUBMIT PROPOSAL FOR ALUMINUM CONDUCTORS PER THE NEC, SUBMIT SHOP DRAWINGS AND COORDINATE WITH THE ELECTRICAL ENGINEER FOR ALUMINUM WIRING AND CONDUIT SIZES. CONTRACTOR SHALL SUBMIT ALUMINUM WIRING TO ALLOW FOR VOLTAGE DROP. CONTRACTOR SHALL ADJUST Kc RATINGS OF PANELS TO SUIT ALUMINUM WIRING WHERE APPLICABLE.

WHERE HVAC UNITS ROOF TOP UNITS AND AIR HANDLERS REQUIRE COPPER CONDUCTORS ONLY, PROVIDE COPPER CONDUCTORS PER MFR. DO NOT INSTALL ALUMINUM CONDUCTORS. VERIFY EQUIPMENT WIRING CRITERIA PRIOR TO BIDDING AND INSTALLATION.

ALL BRANCH CIRCUIT CONDUCTORS DOWNSTREAM FROM PANELS SHALL BE COPPER AND INSULATED. ALL GROUNDING WIRING AND ELECTRODE SYSTEMS SHALL BE COPPER.

2 COPPER
NOT TO SCALE

(M1) 600A SERVICE ENTRANCE: 2 SETS OF 1#350KCMIL N, 3#350KCMIL,
4" CONDUIT.

(ISOLATED GROUND ON 208V. PANEL FEEDERS ONLY)

- | | | |
|----|-------------------------|--|
| P1 | 60A/80A PANEL FEEDER: | 1#8 C, 1 #8 I.G., 4#4 1 1/4" C |
| P2 | 100A/125A PANEL FEEDER: | 1#6 G, 1 #6 I.G., 4#1, 1 1/2" C |
| P3 | 150A PANEL FEEDER: | 1#6 G, 1 #6 I.G., 4#1/0, 2" C |
| P4 | 200A PANEL FEEDER: | 1#6 G, 1 #6 I.G., 4#3/0, 2 1/2" C |
| P5 | 225A PANEL FEEDER: | 1#4 G, 1 #4 I.G., 4#0, 3" C |
| P6 | 300A PANEL FEEDER: | 1#4 G, 1 #4 I.G., 4#350KCMIL, 3" C |
| P7 | 400A PANEL FEEDER: | 1#3 G, 1 #4 I.G., 4#500KCMIL, 3 1/2" C |
| P8 | 500A PANEL FEEDER: | 2 SETS OF 1#2 G, 4#250KCMIL, 2 1/2" C |
| P9 | 600A PANEL FEEDER: | 2 SETS OF 1#1 G, 4#350KCMIL, 3" C |

(G1) EMERGENCY PANEL FEEDER: 1#6 G, 4#1/0, 2" C
(G2) TO GENERATOR REMOTE ANNUNCIATOR, LOCATE IN OFFICE AREA
AS DIRECTED IN FIELD, WIRE PER MFR'S INSTRUCTIONS.
OVERHEAD FEEDERS RUN INDOORS SHALL BE RUN IN EMT.

(T1)	15KVA XFMR:	1#10 G, 3#10, 3/4" C
(T2)	30KVA XFMR:	1#10 G, 3#6, 1" C
(T3)	45KVA XFMR:	1#8 G, 3#4, 1 1/4" C
(T4)	75KVA XFMR:	1#6 G, 3#1, 1 1/2" C
(T5)	112.5KVA XFMR:	1#6 G, 3#2/0, 2" C
(T6)	150KVA XFMR:	1#4 G, 3#4/0, 2 1/2" C
(T7)	225KVA XFMR:	1#3 G, 3#500KCMIL, 3 1/2" C

(TS1) 15KVA XFMR: 1#10 G, 4#10, 3/4" C

(TS2) 30KVA XFMR: 1#8 G, 1 #8 I.G., 4#1, 1 1/2" C

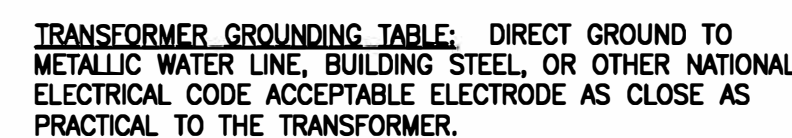
(TS3) 45KVA XFMR: 1#4 G, 1#4 I.G., 4#2/0, 2 1/2" C

(TS4) 75KVA XFMR: 1#2 G, 1 #2 I.G., 4#350KCMIL, 3" C

(TS5) 112.5KVA XFMR: 1#1/0 G, 1 #1/0 I.G., 4#500KCMIL, 3 1/2" C

(TS6) 150KVA XFMR: 2 SETS OF 1#2/0 G, 1 #2/0 I.G., 4#350KCMIL, 3 1/2" C

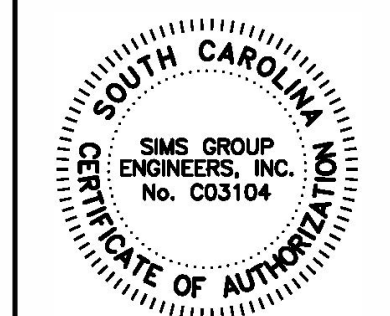
(TS7) 225KVA XFMR: 2 SETS OF 1#2/0 G, 1 #2/0 I.G., 4#500KCMIL, 4" C



15/30 KVA: #8 CU GROUND
45 KVA: #6 CU GROUND
75 KVA: #2 CU GROUND
112.5 KVA: #1/0 CU GROUND
150/225 KVA: #2/0 CU GROUND

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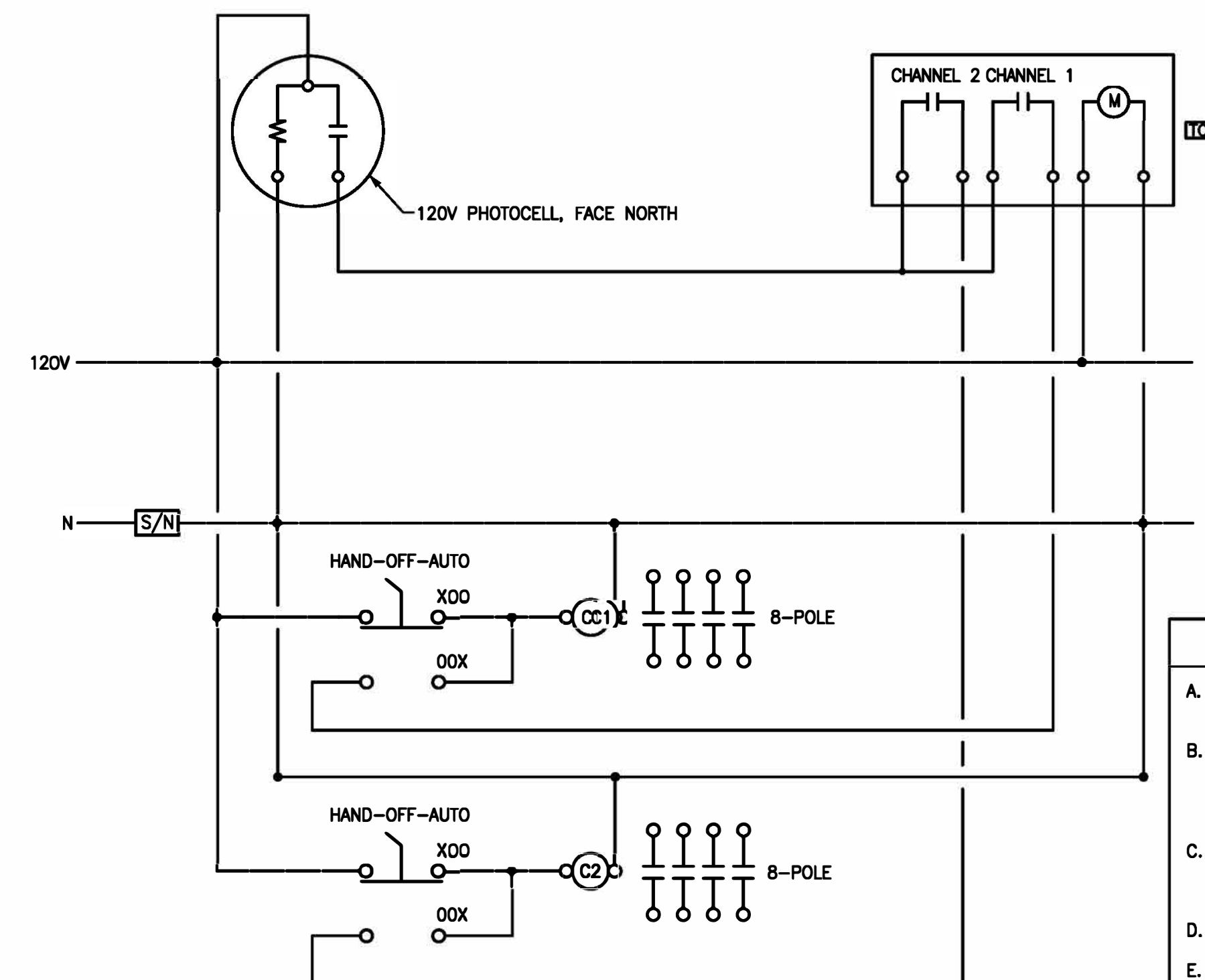
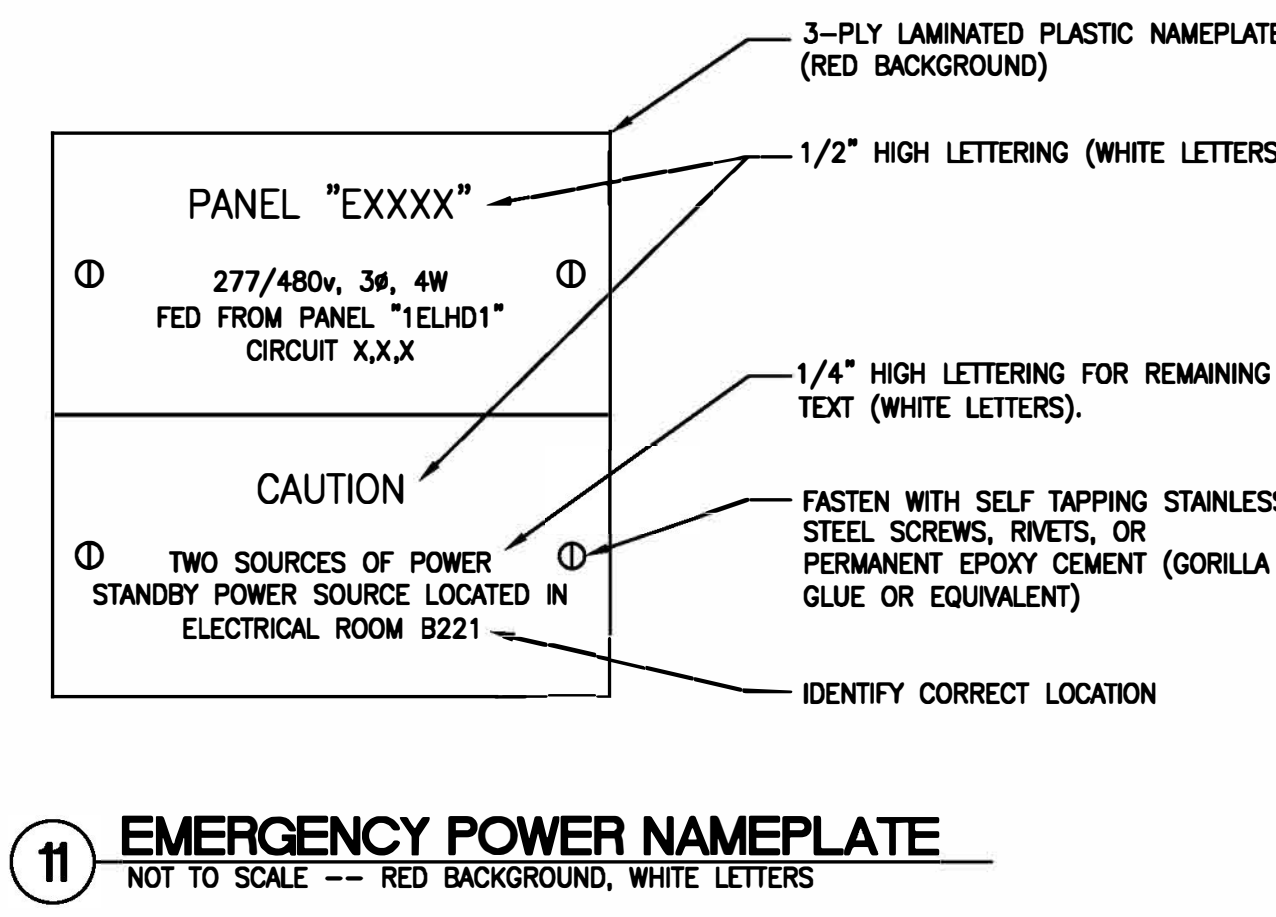
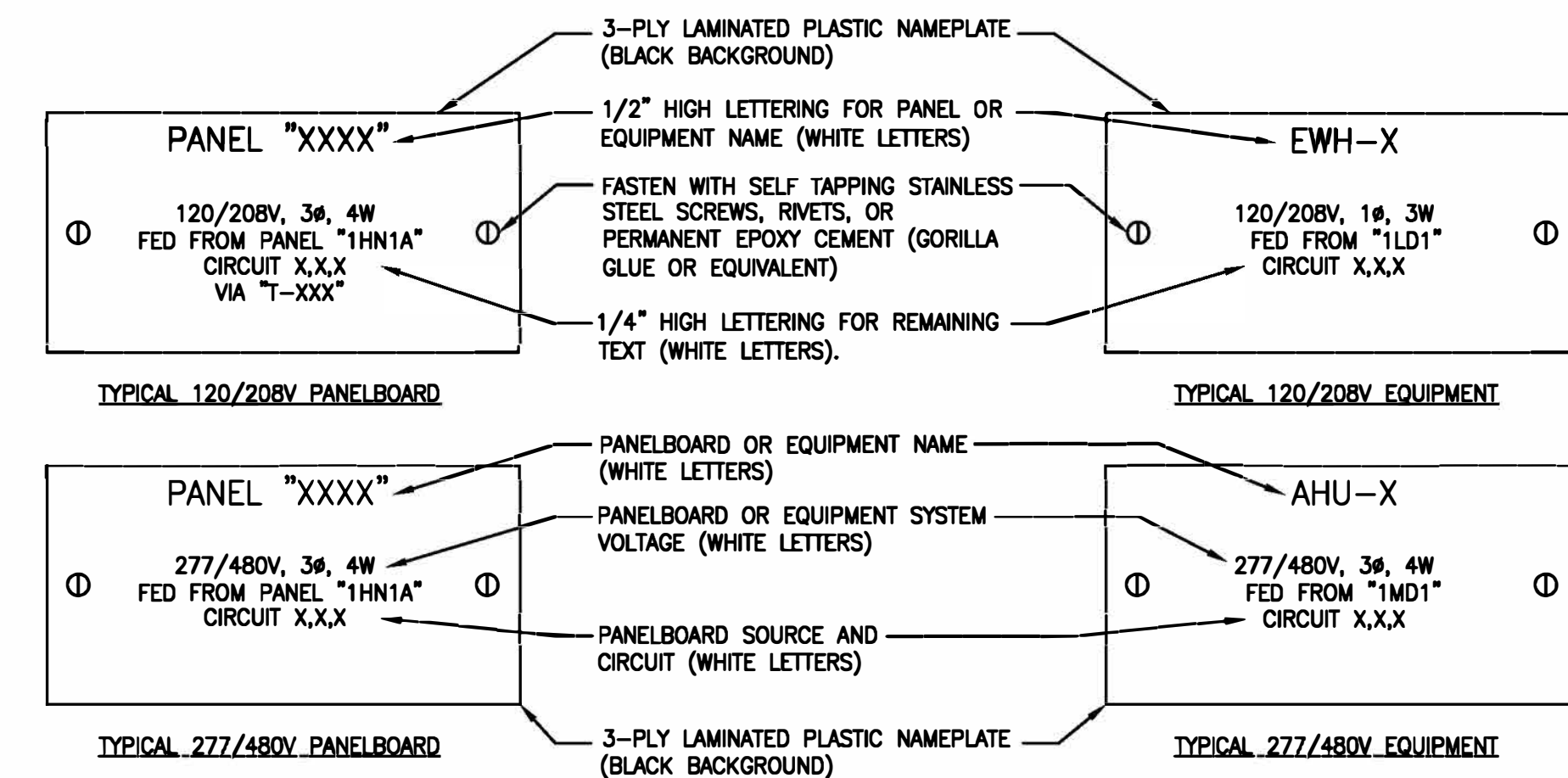
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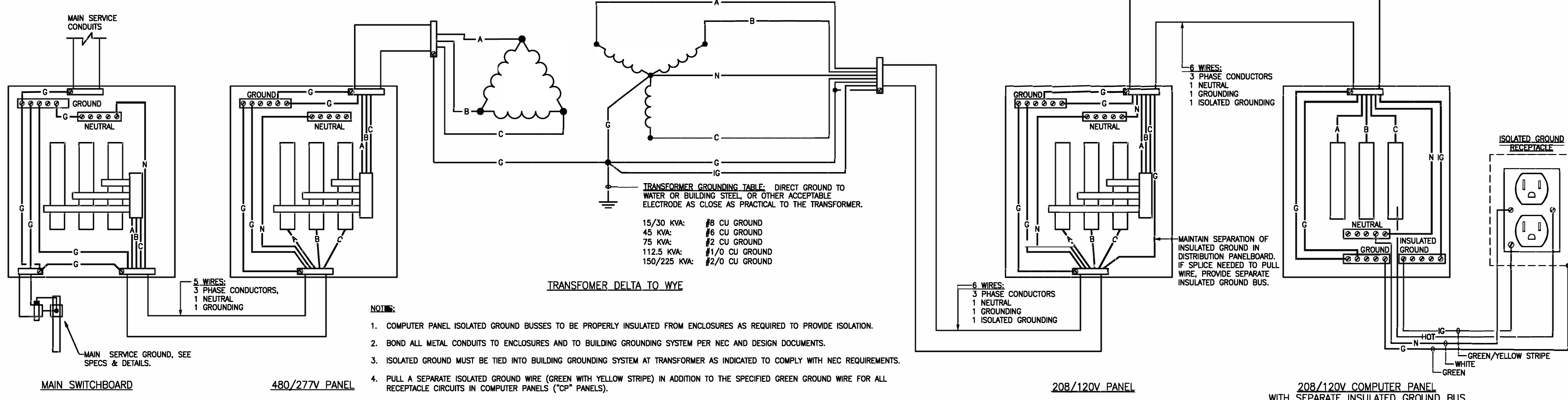
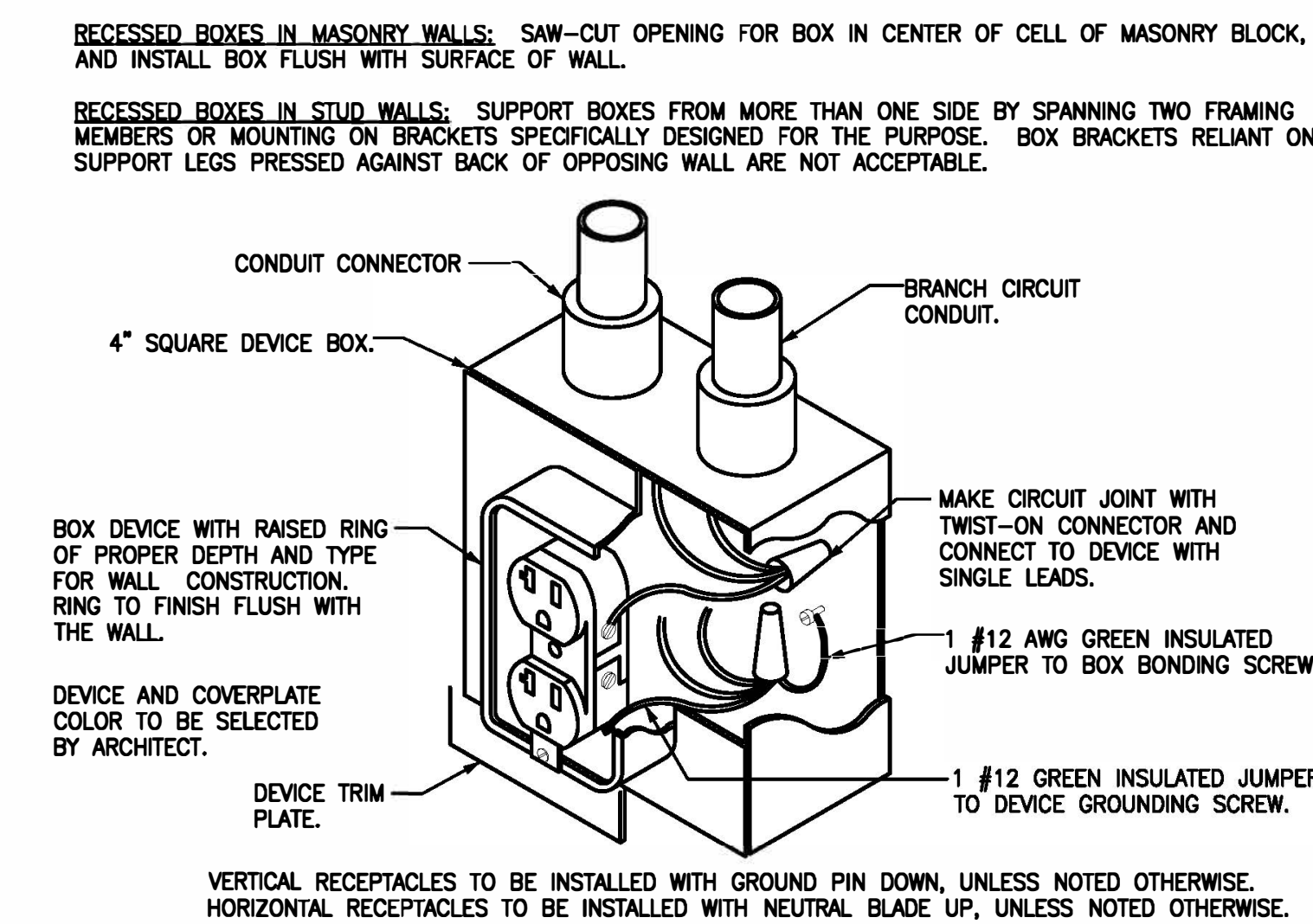
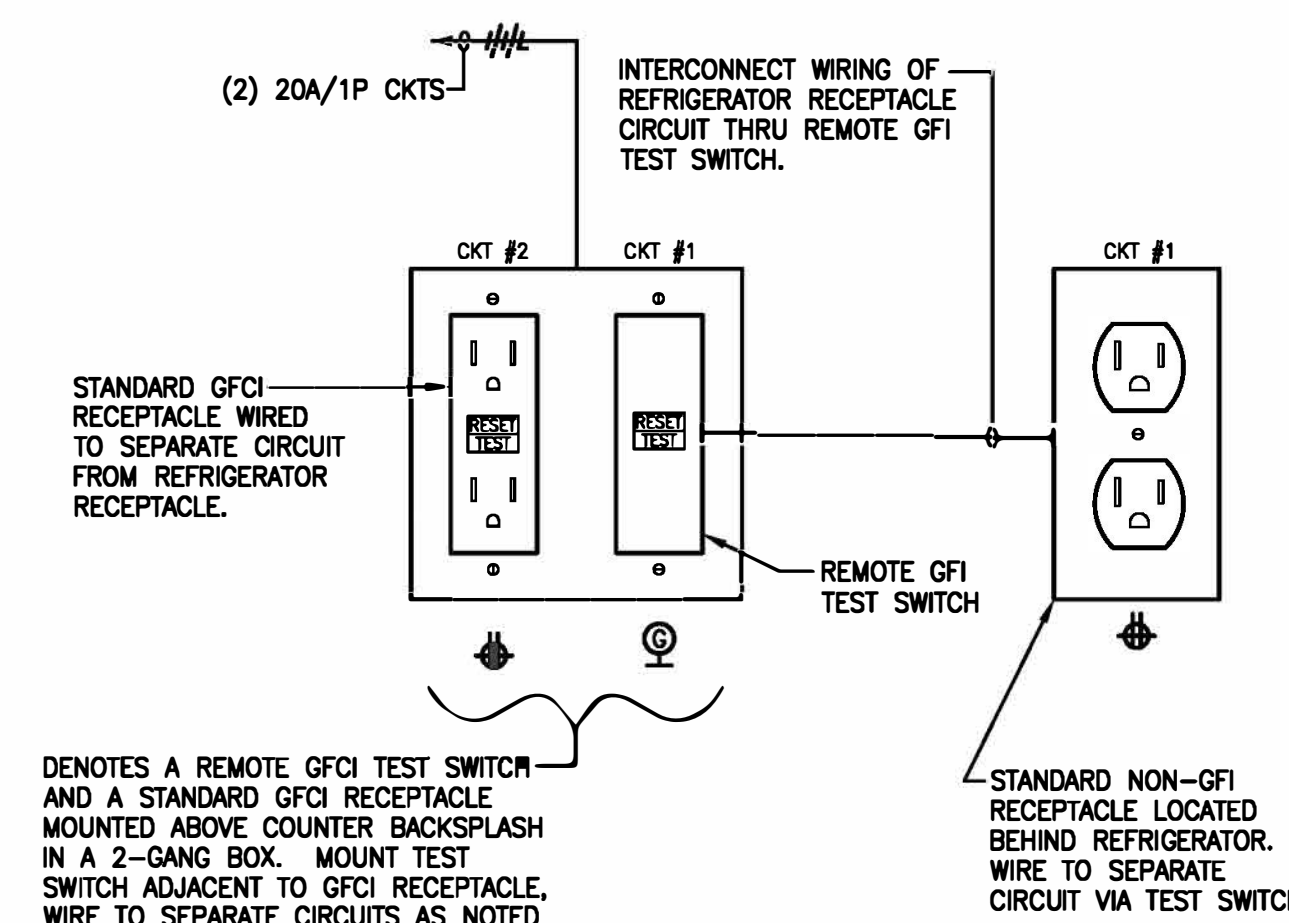
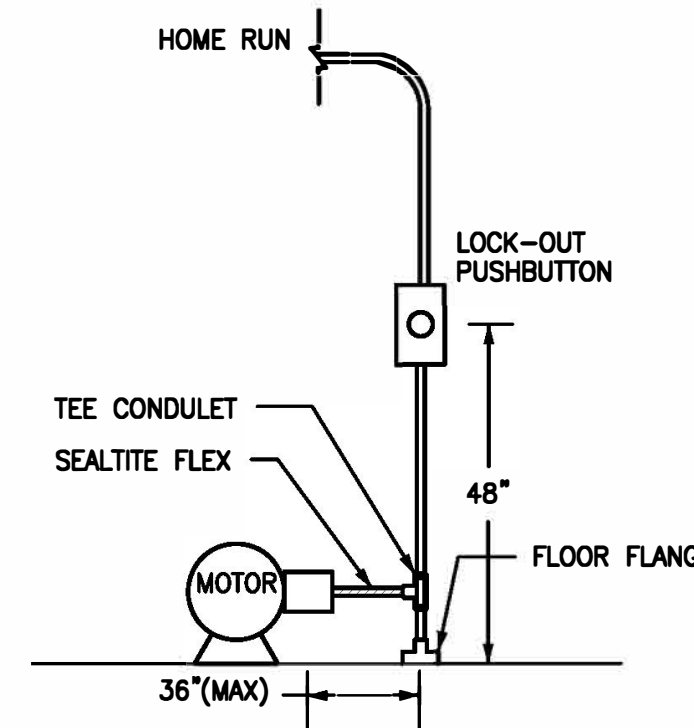
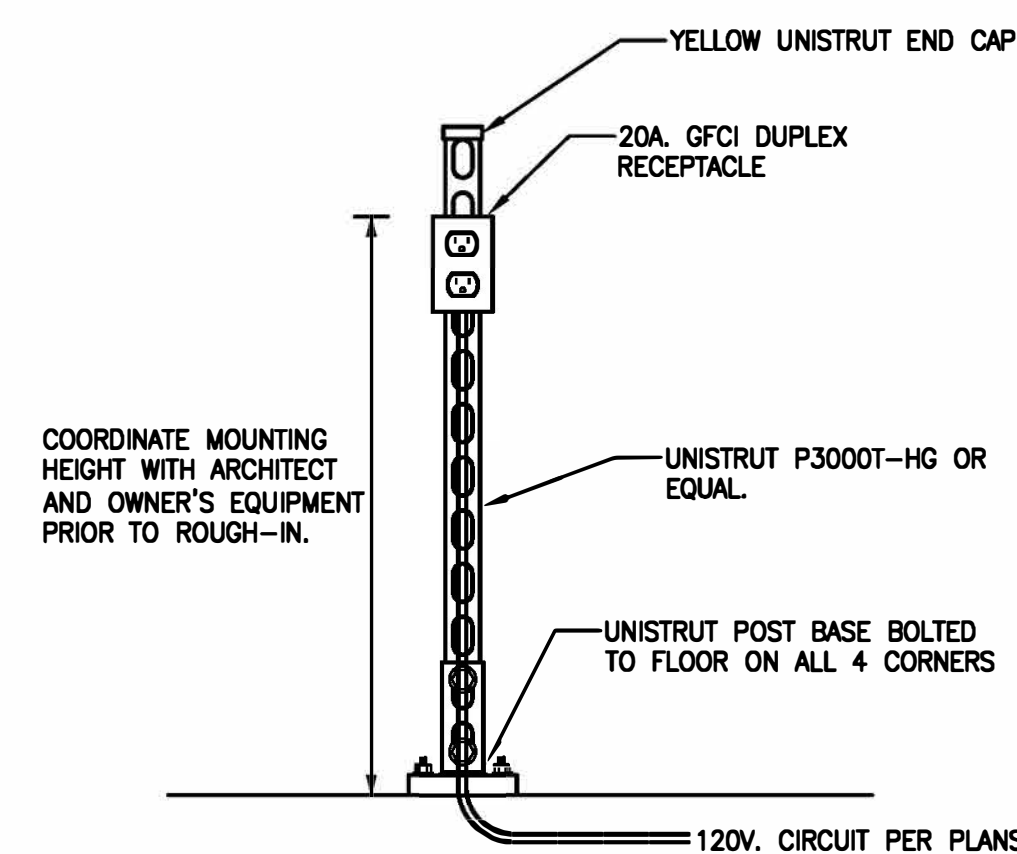
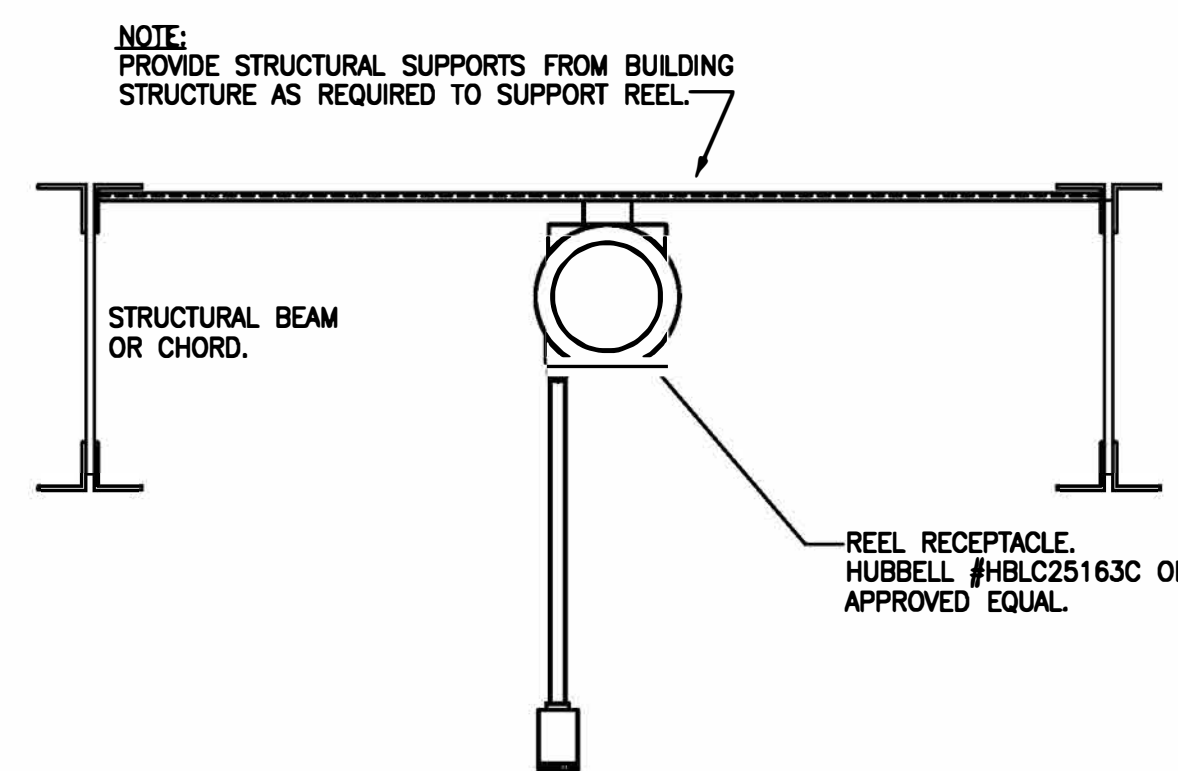
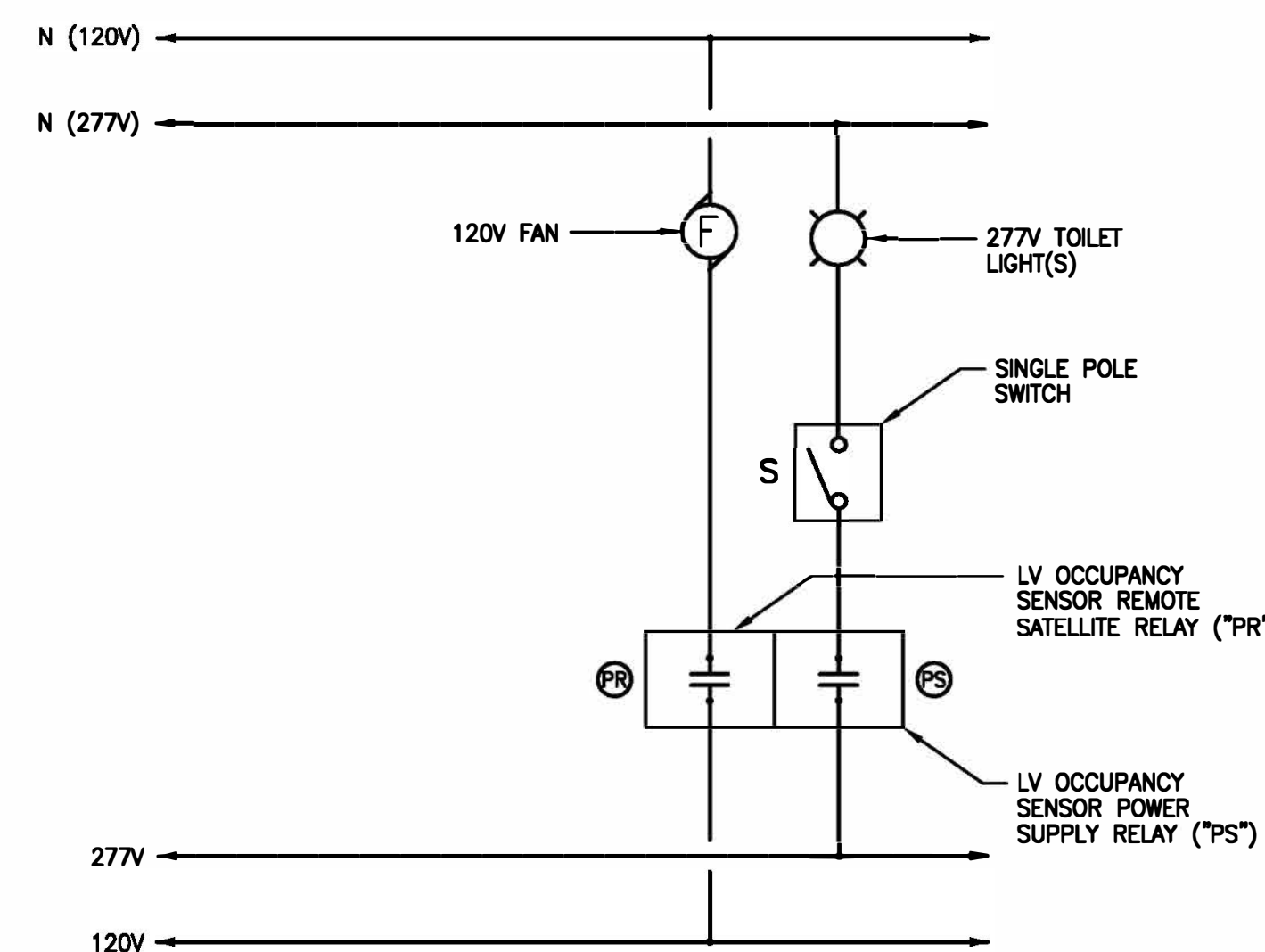
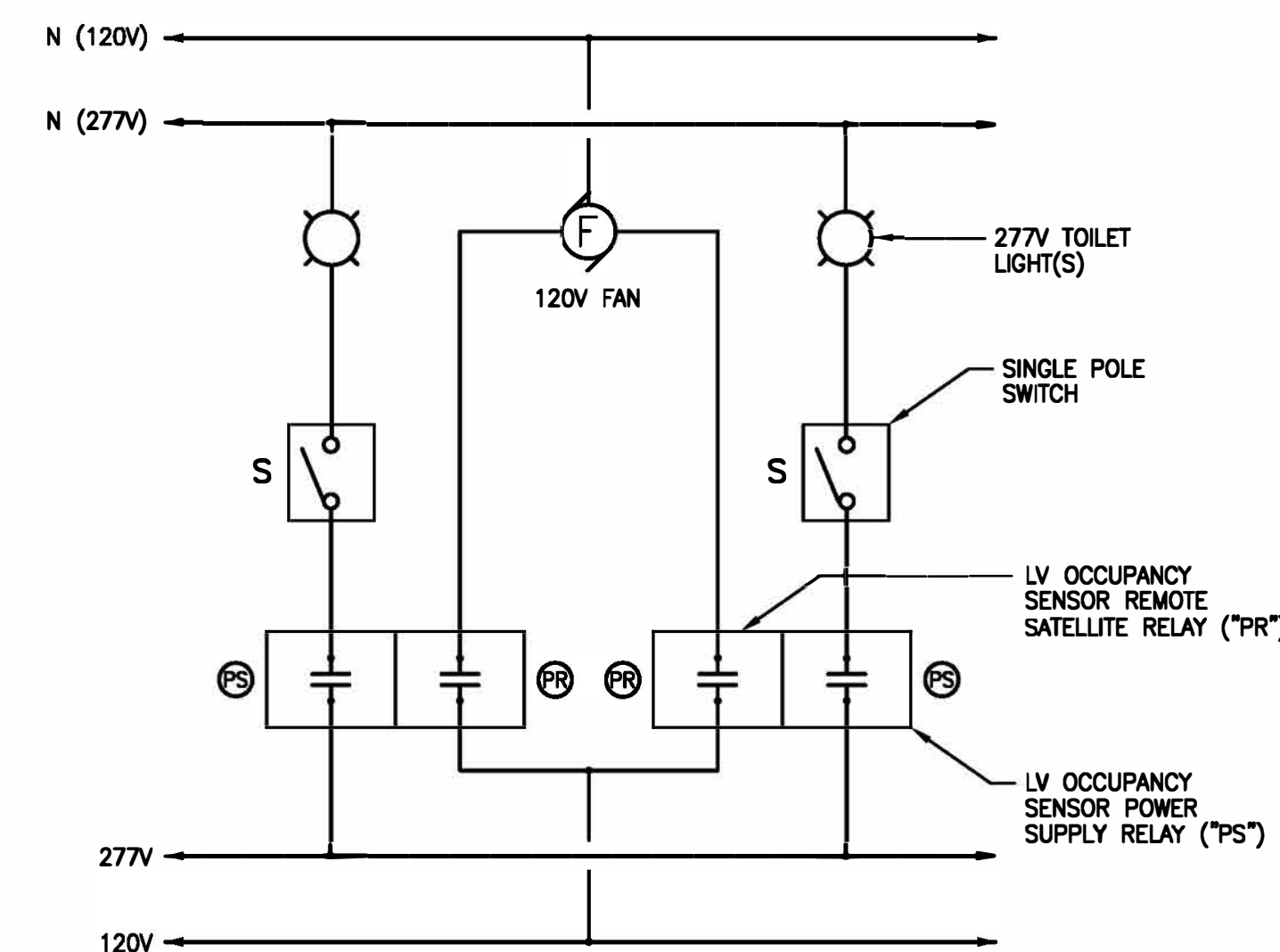
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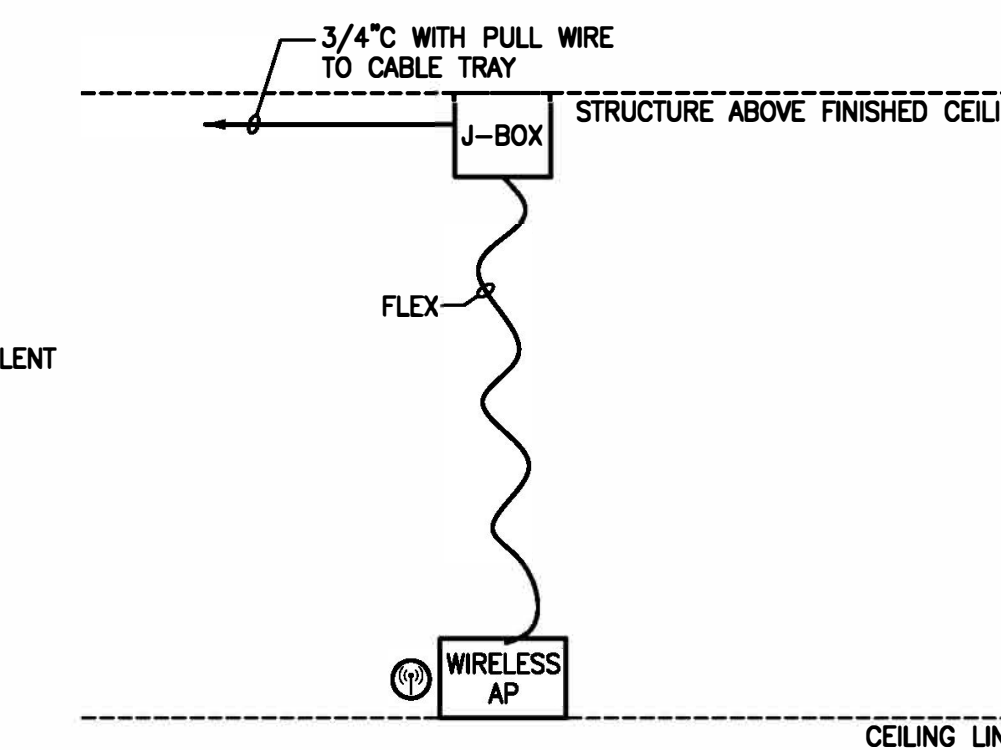
POWER RISER DIAGRAM AND DETAILS



- EXTERIOR LIGHTING WIRING DIAGRAM NOTES**
- FURNISH & INSTALL 2-CHANNEL TIME CLOCK AS INDICATED. CHANNEL #1 CONTROLS LIT CONTACTOR "C1", CHANNEL #2 CONTROLS LIT CONTACTOR "C2".
 - RECOMMENDED LIGHTING CONTROL SETTINGS (VERIFY ACTUAL SETTINGS WITH OWNER):
CONTACTOR "C1" - ON AT DUSK, OFF AT DAWN (PHOTOCELL)
CONTACTOR "C2" - ON AT DUSK, OFF AT CLOCK SETTING (VERIFY WITH OWNER)
 - LIGHTING CONTACTORS: 3ØA WITH HAND-OFF-AUTO SELECTOR SWITCH, 120V COIL, NEMA 1 ENCLOSURE & ENGRAVED NAMEPLATE. PROVIDE NUMBER OF POLES INDICATED. VERIFY PRIOR TO ORDERING.
 - PHOTO CELL: 1800 VA, 120V ADJUSTABLE SLIDE GATE.
 - TIME CLOCK: 7-DAY, 2-CHANNEL, 120V ELECTRONIC PROGRAMMABLE TIME CONTROL WITH TWO SPOT CONTACTS, NEMA 3R CASE, 24-HOUR CLOCK FORMAT, LEAP YEAR CORRECTION, AND DAYLIGHT SAVINGS TIME ADJUSTMENT. INTERMATIC ET172SCR OR EQUAL OF 10K.

12 EXTERIOR LIGHTING WIRING DIAGRAM - DUAL CHANNEL TIME CLOCK (TC1 AND TC2)
NOT TO SCALE





10 WIRELESS ACCESS POINT (WAP) DETAIL
NOT TO SCALE

8 IDF, MDF, AND OTHER TELE/DATA ROOMS
NOT TO SCALE



2 ACCESS CONTROL SYSTEM DOOR DETAIL
NOT TO SCALE

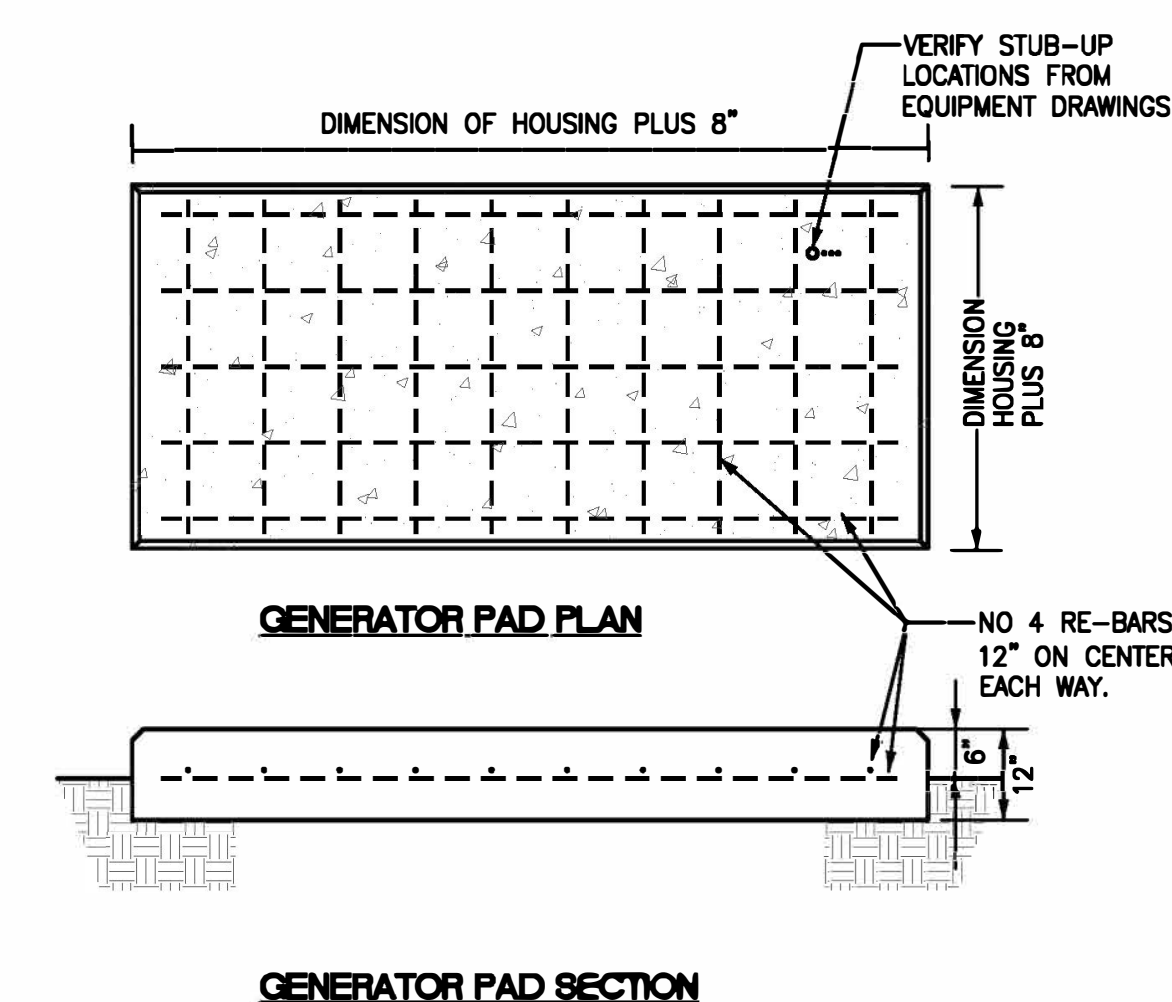


1 GENERATOR PAD DETAILS - NATURAL GAS
NOT TO SCALE



(F) LOCATION (LAY-IN CEILING)

3 INTERACTIVE TELEVISION LOCATION IT/POWER BACKBOX



GENERATOR PAD SECTION

MP

ROOM MOUNTING		SURFACE		VOLTS 480Y/277V 3P 4W		AIC 42,000			
FED FROM		SERVICE TRANSFORMER		BUS AMPS 600		MAIN BKR 600			
NOTE				NEUTRAL 100%		LUGS STANDARD			
OCT	CKT	LOAD	CIRCUIT DESCRIPTION		OCT	CKT	LOAD	CIRCUIT DESCRIPTION	
		KVA					KVA		
1	200/3	76.88	PANEL HA		a	2	30/3	0.00	SPD DEVICE
3					b	4			
5					c	6			
7	50/3	14.10	WELDER		a	8	225/3	79.16	XFMR T-LM
9					b	10			
11					c	12			
13	125/3	50.47	TRANSFER SWITCH ATS-EE		a	14	150/3	0.00	SPARE
15					b	16			
17					c	18			
19	200/3	0.00	SPARE		a	20	200/3	0.00	SPARE
21					b	22			
23					c	24			
25	20/3	0.00	SPARE		a	26	60/3	0.00	SPARE
27					b	28			
29					c	30			
31	20/1	0.00	SPARE		a	32	20/1	0.00	SPARE
33	20/1	0.00	SPARE		b	34	20/1	0.00	SPARE
35	20/1	0.00	SPARE		c	36	20/1	0.00	SPARE
37	20/1	0.00	SPARE		a	38	20/1	0.00	SPARE
39	20/1	0.00	SPARE		b	40	20/1	0.00	SPARE
41	20/1	0.00	SPARE		c	42	20/1	0.00	SPARE

CONN KVA	CALC KVA		CONN KVA	CALC KVA	
LIGHTING	14.55	18.19	(125%)	RECEPTACLES	72.36
ELECTRIC DRYER	4.98	4.98	(100%)	NONCONTINUOUS	33.00
LARGEST MOTOR	9.88	2.47	(25%)	HEATING	76.88
MOTORS	18.84	18.84	(100%)	COOLING	9.88
				TOTAL LOAD	195.54
				BALANCED 3-PHASE AMPS	235.20
				PHASE A	100%
				PHASE B	99.7%
				PHASE C	100%

NOTE: PROVIDE ELECTRONIC, ADJUSTABLE, TRIP BREAKERS FOR CIRCUITS MP-8,10,12, MP-13,15,17, MP-19,21,23, AND MP-20,22,24. BREAKER SETTINGS SHALL BE COORDINATED WITH PROTECTIVE DEVICE COORDINATION STUDY SPECIFIED ON POWER RISER DIAGRAM. SET BREAKERS FOR OPTIMUM SELECTIVITY. SET BREAKER MP-8,10,12 TO ALLOW FOR TRANSFORMER INRUSH CURRENTS.

EM

ROOM MOUNTING FED FROM NOTE		SURFACE ATS-EE	VOLTS 480Y/277V 3P 4W BUS AMPS 125 NEUTRAL 100%		AIC 35,000 MAIN BKR 125 LUGS STANDARD				
OCT #	CKT # BKR	LOAD KVA	CIRCUIT DESCRIPTION		OCT #	CKT # BKR	LOAD KVA	CIRCUIT DESCRIPTION	
1	20/1	1.34	LIGHTING		a 2	20/1	0.52	LIGHTING	
3	20/1	1.61	LIGHTING		b 4	20/1	1.04	LIGHTING	
5	20/1	0.33	LIGHTING		c 6	20/1	1.04	LIGHTING	
7	20/1	0.53	LIGHTING		a 8	20/1	0.10	EXTERIOR LIGHTING	
9	30/1	4.78	LIGHTING		b 10	20/1	0.00	EXTERIOR	
11	20/1	2.21	LIGHTING		c 12	20/1	0.00	EXTERIOR	
13	20/3	6.00	WH-1		a 14	20/1	0.42	EXTERIOR LIGHTING	
15					b 16	20/1	0.62	EXTERIOR LIGHTING	
17					c 18	20/1	1.00	RECEPTACLE	
19	20/1	0.00	SPARE		a 20	20/1	1.00	RECEPTACLE	
21	20/1	0.00	SPARE		b 22	20/1	0.00	SPARE	
23	20/1	0.00	SPARE		c 24	20/1	0.00	SPARE	
25	20/1	0.00	SPARE		a 26	20/1	0.00	SPARE	
27	20/1	0.00	SPARE		b 28	20/1	0.00	SPARE	
29	20/1	0.00	SPARE		c 30	20/1	0.00	SPARE	
31	20/1	0.00	SPARE		a 32	30/3	0.00	SPD DEVICE	
33	20/1	0.00	SPARE		b 34				
35	20/1	0.00	SPARE		c 36				
37	20/1	0.00	SPARE		a 38	70/3	27.91	XFMR T-EQL	
39	20/1	0.00	SPARE		b 40				
41	20/1	0.00	SPARE		c 42				

CONN KVA	CALC KVA		CONN KVA	CALC KVA	
LIGHTING	14.55	18.19	(125%)	MOTORS	2.59
LARGEST MOTOR	1.18	0.29	(25%)	RECEPTACLES	28.32
				NONCONTINUOUS	5.00
				TOTAL LOAD	45.24
				BALANCED 3-PHASE AMPS	54.41
				PHASE A	94.4%
				PHASE B	114%
				PHASE C	91.7%

NOTE TO EL-EM:

- CIRCUIT 13,15 WATER HEATER. ROUTE CIRCUIT VIA OFF-TIME DELAY-ON CONTACTOR WITH ADJUSTABLE RELAY. UPON BUILDING LOSS OF POWER, ADJUST TIMING THAT LOAD WILL BE CONNECTED TO THE GENERATOR.
- CIRCUITS 8,10,12 EXTERIOR LIGHTING. ROUTE CIRCUIT VIA OFF-TIME DELAY-ON CONTACTOR WITH ADJUSTABLE RELAY. UPON BUILDING LOSS OF POWER, ADJUST TIMING THAT LOAD WILL BE CONNECTED TO THE GENERATOR.

LM

ROOM MOUNTING		SURFACE		VOLTS 208Y/120V 3P 4W BUS AMPS 600 NEUTRAL 100%			AIC 22,000 MAIN BKR 600 LUGS DOUBLE ISO GND BUS		
FED FROM		T-LM							
NOTE									
OCT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		OCT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION	
1	20/1	1.48	WASHER RECEPTACLE		a	20/1	0.00	SPARE	
3	30/2	4.98	DRYER		b	4 20/1	0.00	SPARE	
5					c	6 20/1	0.00	SPARE	
7	20/1	0.72	RECEPTACLE		a	8 20/1	0.00	SPARE	
9	20/1	0.72	REC.-GFCI		b	10 20/1	0.00	SPARE	
11	20/1	1.18	MOTORIZED DOOR		c	12 20/1	0.00	SPARE	
13	20/1	0.00	SPARE		a	14 20/1	0.00	SPARE	
15	20/1	1.18	MOTORIZED DOOR		b	16 20/1	0.00	SPARE	
17	20/1	1.18	MOTORIZED DOOR		c	18 20/1	0.00	SPARE	
19	20/1	1.18	MOTORIZED DOOR		a	20 30/3	0.00	SPD DEVICE	
21	20/1	0.00	SPARE		b	22			
23	20/1	0.54	RECEPTACLE		c	24			
25	20/1	0.00	SPARE		a	26 125/3	23.08	PANEL LA	
27	20/1	0.00	SPARE		b	28			
29	20/1	0.00	SPARE		c	30			
31	20/1	0.00	SPARE		a	32 200/3	35.38	PANEL LB	
33	20/1	0.00	SPARE		b	34			
35	20/1	0.00	SPARE		c	36			
37	125/3	0.00	SPARE		a	38 125/3	7.56	PANEL LC	
39					b	40			
41					c	42			

CONN KVA	CALC KVA		CONN KVA	CALC KVA	
ELECTRIC DRYER	4.98	4.98	(100%)	MOTORS	16.14
LARGEST MOTOR	2.88	0.72	(25%)	RECEPTACLES	44.04
				NONCONTINUOUS	14.00
				TOTAL LOAD	62.86
				BALANCED 3-PHASE AMPS	174.49
				PHASE A	87.1%
				PHASE B	93%
				PHASE C	120%

HA

ROOM MOUNTING FED FROM NOTE		SURFACE MP	VOLTS 480Y/277V 3P 4W BUS AMPS 200 NEUTRAL 100%			AIC 35,000 MAIN BKR 200 LUGS STANDARD			
CKT	CKT BKR	LOAD	CIRCUIT DESCRIPTION		CKT	CKT KVA	LOAD	CIRCUIT DESCRIPTION	
1	20/3	10.00	VAV 1-1		a	2 20/1	0.00	SPARE	
3					b	4 20/1	0.00	SPARE	
5					c	6 20/1	0.00	SPARE	
7	20/3	12.00	VAV 1-3, VAV 1-4, VAV 1-5		a	8 20/1	0.00	SPARE	
9					b	10 20/1	0.00	SPARE	
11					c	12 20/1	0.00	SPARE	
13	20/3	9.00	VAV 1-2, VAV 1-6		a	14 20/1	0.00	SPARE	
15					b	16 20/1	0.00	SPARE	
17					c	18 20/1	0.00	SPARE	
19	70/3	45.88	PAC-1		a	20 20/1	0.00	SPARE	
21					b	22 20/1	0.00	SPARE	
23					c	24 20/1	0.00	SPARE	
25	20/1	0.00	SPARE		a	26 20/1	0.00	SPARE	
27	20/1	0.00	SPARE		b	28 20/1	0.00	SPARE	
29	20/1	0.00	SPARE		c	30 20/1	0.00	SPARE	
31	20/1	0.00	SPARE		a	32 20/1	0.00	SPARE	
33	20/1	0.00	SPARE		b	34 20/1	0.00	SPARE	
35	20/1	0.00	SPARE		c	36 20/1	0.00	SPARE	
37	20/1	0.00	SPARE		a	38 30/3	0.00	SPD DEVICE	
39	20/1	0.00	SPARE		b	40			
41	20/1	0.00	SPARE		c	42			

CONN KVA	CALC KVA		CONN KVA	CALC KVA	
LARGEST MOTOR	9.88	2.47	(25%)	TOTAL LOAD	79.35
HEATING	76.88	76.88	(100%)	BALANCED 3-PHASE AMPS	95.44
COOLING	9.88	0.00	(0%)	PHASE A	100%
				PHASE B	100%
				PHASE C	100%

EQL

ROOM MOUNTING		SURFACE		VOLTS 208Y/120V 3P 4W BUS AMPS 225 NEUTRAL 100%			AIC 10,000 MAIN BKR 175 LUGS DOUBLE ISO GND BUS		
FED FROM		T-EQL							
NOTE									
CKT	CKT BKR	LOAD	CIRCUIT DESCRIPTION		CKT	CKT BKR	LOAD	CIRCUIT DESCRIPTION	
1	20/1	0.36	RECEPTACLE		a	2 20/1	0.50	EWG-GFCI	
3	20/1	0.54	RECEPTACLE		b	4 20/1	0.50	EWG-GFCI	
5	20/1	0.36	RECEPTACLE		c	6 20/1	0.18	RECEPTACLE	
7	20/1	0.72	RECEPTACLE		a	8 20/1	0.18	RECEPTACLE	
9	20/1	0.36	RECEPTACLE		b	10 20/1	0.36	RECEPTACLE	
11	20/1	0.36	RECEPTACLE		c	12 20/1	0.36	RECEPTACLE	
13	20/1	0.36	RECEPTACLE		a	14 20/1	0.36	RECEPTACLE	
15	20/1	0.50	GENERATOR BATTERY CHARGER		b	16 20/1	0.36	RECEPTACLE	
17	40/2	6.00	GENERATOR BLOCK HEATER (VERIFY CKT.)		c	18 20/1	0.27	VF-1, VF-2	
19					a	20 20/1	0.90	RECEPTACLE	
21	20/1	0.50	GENERATOR RECEPTACLE		b	22 20/1	0.18	RECEPTACLE	
23	20/1	0.36	RECEPTACLE		c	24 20/1	0.53	RECIRC PUMP	
25	20/1	0.36	RECEPTACLE		a	26 20/1	1.18	DISPOSAL	
27	20/1	0.36	RECEPTACLE		b	28 20/1	0.39	EF-1, EF-2, EF-3	
29	20/1	0.36	RECEPTACLE		c	30 20/1	0.54	RECEPTACLE	
31	20/1	0.18	RECEPTACLE		a	32 20/1	0.90	RECEPTACLE	
33	20/1	0.18	RECEPTACLE		b	34 20/2	0.10	FUEL DISPENSING EOP	
35	20/1	0.36	RECEPTACLE		c	36			
37	20/1	0.72	RECEPTACLE		a	38 20/1	0.18	RECEPTACLE	
39	20/1	1.16	EMERGENCY TELEPHONE		b	40 20/1	0.13	EF-6	
41	20/1	0.36	RECEPTACLE		c	42 20/1	0.00	SPARE	
43	20/1	0.36	RECEPTACLE		a	44 20/1	0.00	SPARE	
45	30/2	5.00	COMMUNICATIONS RACK UPS		b	46 20/1	0.00	SPARE	
47					c	48 20/1	0.00	SPARE	
49	100/3	0.00	SPARE		a	50 20/1	0.00	SPARE	
51					b	52 20/1	0.00	SPARE	
53					c	54 20/1	0.00	SPARE	

CONN KVA	CALC KVA		CONN KVA	CALC KVA	
LARGEST MOTOR	1.18	0.29	(25%)	RECEPTACLES	20.32
MOTORS	2.59	2.59	(100%)	NONCONTINUOUS	5.00
				TOTAL LOAD	23.05
				BALANCED 3-PHASE AMPS	63.97
				PHASE A	111%
				PHASE B	87.3%
				PHASE C	102%

NOTE TO PANEL "EQL":

- CIRCUIT 24,26 FUEL DISPENSING EQPT. ROUTE CIRCUIT VIA OFF-TIME DELAY-ON CONTACTOR WITH ADJUSTABLE RELAY. UPON BUILDING LOSS OF POWER, ADJUST TIMING THAT LOAD WILL BE CONNECTED TO THE GENERATOR.
- CIRCUIT 28,30 COMMUNICATIONS RACK UPS. ROUTE CIRCUIT VIA OFF-TIME DELAY-ON CONTACTOR WITH ADJUSTABLE RELAY. UPON BUILDING LOSS OF POWER, ADJUST TIMING THAT LOAD WILL BE CONNECTED TO THE GENERATOR.

LA

ROOM		VOLTS 208Y/120V 3P 4W				AIC 14,000	
MOUNTING	FLUSH	BUS AMPS 125				MAIN BKR	MLO
FED FROM	LM	NEUTRAL 100%				LUGS STANDARD	ISO GND BUS
NOTE							
CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	20/1	0.36	RECEPTACLE		a 2	20/1	0.00 SPARE
3	20/1	0.54	RECEPTACLE		b 4	20/1	0.00 SPARE
5	20/1	0.72	RECEPTACLE		c 6	20/1	0.36 RECEPTACLE
7	20/1	0.36	RECEPTACLE		a 8	20/1	0.54 RECEPTACLE
9	20/1	0.36	RECEPTACLE		b 10	20/1	0.00 SPARE
11	20/1	0.36	RECEPTACLE		c 12	20/1	0.00 SPARE
13	20/1	0.54	RECEPTACLE		a 14	20/1	0.36 RECEPTACLE
15	20/1	0.36	RECEPTACLE		b 16	20/1	0.72 RECEPTACLE
17	20/1	0.72	RECEPTACLE		c 18	20/2	3.18 B&W PLOTTER RECEPTACLE
19	20/1	0.36	RECEPTACLE		a 20	20/2	3.18 COLOR PLOTTER RECEPTACLE
21	20/1	0.54	RECEPTACLE		b 22	20/2	
23	20/1	1.54	RECEPTACLE		c 24	20/2	
25	20/1	1.36	RECEPTACLE		a 26	20/1	1.36 RECEPTACLE
27	20/1	1.18	RECEPTACLE		b 28	20/1	0.18 RECEPTACLE
29	20/1	1.18	RECEPTACLE		c 30	20/1	0.18 RECEPTACLE
31	20/1	1.18	RECEPTACLE		a 32	20/1	0.00 SPARE
33	20/1	1.18	RECEPTACLE		b 34	20/1	0.00 SPARE
35	20/1	0.18	RECEPTACLE		c 36	20/1	0.00 SPARE
37	20/1	0.00	SPARE		a 38	20/1	0.00 SPARE
39	20/1	0.00	SPARE		b 40	20/1	0.00 SPARE
41	20/1	0.00	SPARE		c 42	20/1	0.00 SPARE

FAULT CURRENT SCHEDULE

DEVICE	FAULT	AIC RATING	L-N VOLTS	UTILITY			FED FROM				FEEDER						TRANSFORMER						TOTAL MOTOR FAULT	DIRECTLY CONNECTED MOTOR LOAD			
				FAULT	X	R	DEVICE	FAULT	X	R	SIZE	X / 1000'	R / 1000'	LENGTH	X	R	KVA	2%	XR RATIO	FAULT AT PRIMARY	X	R		KVA	FAULT	X	R
GENERATOR	1,000		277V	1,000	0.2716	0.05432																					
SERVICE TRANSFORMER	45,280	50,000	277V	45,123	0.00602	0.001204											750	2	5	UTILITY	0.006019	0.001204	137				
MP	34,369	42,000	277V	34,232	0.00762	0.002724	SERVICE TRANSFORMER	45,123	0.00602	0.001204	(2)#350kcmil	0.02	0.019	80'	0.0016	0.0015							137	0.1	0	558.5	139.6
ATS-EE	21,684	35,000	277V	21,672	0.004401	0.012	MP	34,232	0.00762	0.002724	#1/0	0.044	0.12	112'	0.0049	0.0134							12				
EM	21,018	35,000	277V	21,006	0.00454	0.01238	ATS-EE	21,672	0.004401	0.012	#1/0	0.044	0.12	3'-2"	0.0001	0.0004							12				
T-EQL	6,513	10,000	120V	6,484	0.01742	0.006244	EM	21,006	0.00454	0.01238	#4	0.048	0.31	11'	0.0005	0.0033	45	1.75	5	16,778	0.01647	0.003295	29				
EQL	4,809	10,000	120V	4,780	0.02079	0.01408	T-EQL	6,484	0.01742	0.006244	#2/0	0.043	0.1	78'	0.0034	0.0078							29	2.59	29	4.044	1.011
HA	33,768	35,000	277V	33,634	0.007711	0.002892	MP	34,232	0.00762	0.002724	#3/0	0.042	0.077	2'-2"	0.0001	0.0002							134	9.88	48	5.653	1.413
T-LM	16,381	22,000	120V	16,196	0.007186	0.001804	MP	34,232	0.00762	0.002724	#4/0	0.041	0.062	14'	0.0006	0.0009	150	2	5	30,955	0.005648	0.00113	185				
LM	15,974	22,000	120V	15,791	0.007344	0.001954	T-LM	16,196	0.007186	0.001804	(2)#350kcmil	0.02	0.019	7'-11"	0.0002	0.0001							183	4.7	52	2.229	0.5573
LA	9,371	14,000	120V	9,313	0.009726	0.008451	LM	15,791	0.007344	0.001954	#1/0	0.044	0.12	54'	0.0024	0.0065							58				
LB	9,486	14,000	120V	9,340	0.0104	0.00755	LM	15,791	0.007344	0.001954	#3/0	0.042	0.077	73'	0.0031	0.0056							146	11.4	127	0.9165	0.2291
LC	8,762	14,000	120V	8,712	0.01007	0.009395	LM	15,791	0.007344	0.001954	#1/0	0.044	0.12	62'	0.0027	0.0074							50				

HVAC EQUIPMENT POWER SCHEDULE

CALLOUT	SYMBOL	VOLTS	CIRCUIT	WIRE CALLOUT	DISCONNECT
CF-1	⊙	120V 1P 2W	LB-19	1#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
CF-2	⊙	120V 1P 2W	LB-28	1#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
CF-3	⊙	120V 1P 2W	LB-30	1#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
EF-1	⊙	120V 1P 2W	EQL-28	1#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
EF-2	⊙	120V 1P 2W	EQL-28	1#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
EF-3	⊙	120V 1P 2W	EQL-28	1#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
EF-4	⊙	120V 1P 2W			HARDWIRED CONNECTION
EF-4	⊙	120V 1P 2W	LB-41	1#6,#6N,#10G,3/4°C	FUSED
EF-5	⊙	120V 1P 2W	LB-6	1#6,#6N,#10G,3/4°C	FUSED
EF-6	⊙	120V 1P 2W	EQL-40	1#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
MOTORIZED DAMPER	⊙	120V 1P 2W			HARDWIRED CONNECTION
PAC-1	⊙	480V 3P 3W	HA-19,21,23	3#4,#8G,1°C	FUSED
RECIRC PUMP	⊙	120V 1P 2W	EQL-24	1#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
UH-1	⊙	120V 1P 2W	LB-13	1#10,#10N,#10G,3/4°C	FUSED
UH-2	⊙	120V 1P 2W	LB-15	1#10,#10N,#10G,3/4°C	FUSED
UH-3	⊙	120V 1P 2W	LB-17	1#12,#12N,#12G,3/4°C	FUSED
VAV 1-1	⊙	480V 3P 4W	HA-1,3,5	3#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
VAV 1-2	⊙	480V 3P 4W	HA-13,15,17	3#10,#10N,#10G,3/4°C	HARDWIRED CONNECTION
VAV 1-3	⊙	480V 3P 4W	HA-7,9,11	3#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
VAV 1-4	⊙	480V 3P 4W	HA-7,9,11	3#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
VAV 1-5	⊙	480V 3P 3W	HA-7,9,11	3#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
VAV 1-6	⊙	480V 3P 4W	HA-13,15,17	3#10,#10N,#10G,3/4°C	HARDWIRED CONNECTION
VF-1	⊙	120V 1P 2W	EQL-18	1#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
VF-2	⊙	120V 1P 2W	EQL-18	1#12,#12N,#12G,3/4°C	HARDWIRED CONNECTION
WH-1	⊙	480V 3P 3W	EM-13,15,17	3#10,#10G,3/4°C	FUSED

EQUIPMENT POWER SCHEDULE

CALLOUT	SYMBOL	VOLTS	CIRCUIT	WIRE CALLOUT	DISCONNECT
DISPOSAL	⊙	120V 1P 2W	EQL-26	1#10,#10N,#10G,3/4°C	HARDWIRED CONNECTION
MOTORIZED DOOR	⊙	120V 1P 2W	LM-11	1#10,#10N,#10G,3/4°C	NON-FUSED
MOTORIZED DOOR	⊙	120V 1P 2W	LM-15	1#10,#10N,#10G,3/4°C	NON-FUSED
MOTORIZED DOOR	⊙	120V 1P 2W	LM-17	1#10,#10N,#10G,3/4°C	NON-FUSED
MOTORIZED DOOR	⊙	120V 1P 2W	LM-19	1#10,#10N,#10G,3/4°C	NON-FUSED
UPS	⊙	208/120V 2P 3W	EQL-45,47	2#8,#8N,#10G,3/4°C	TOGGLE SWITCH
VEHICLE LIFT	⊙	208V 2P 2W	LB-10,12	2#10,#10G,3/4°C	FUSED
WELDER	⊙	208V 3P 4W	LB-21,23,25	3#6,#6N,#10G,1°C	FUSED
WELDER	⊙	480V 3P 4W	MP-7,9,11	3#6,#6N,#10G,1°C	FUSED

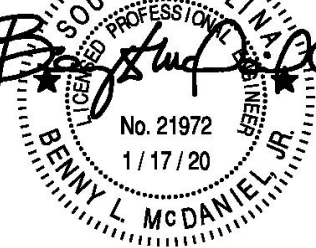
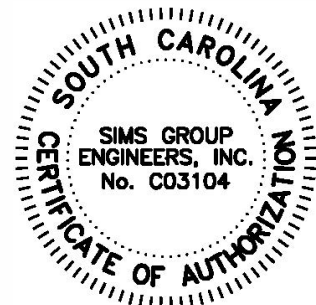
Jumper

Carter

Sease

ARCHITECTS

412 Meeting Street
West Columbia
South Carolina



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OUTDOOR STORAGE BUILDING
UNIVERSITY OF SOUTH CAROLINA AIKEN
AIKEN, SOUTH CAROLINA

FP000362

No	Description	Date
1	NEGOTIATED CHANGES	01-17-2020
2		
3		
4		
5		

DRAWN BY:	JMO
CHECKED BY:	BLM
COMM NO:	18103
DATE:	OCT. 31, 2019
SHEET TITLE:	ELECTRICAL POWER SCHEDULES

SHEET NO:

E605

BID SET

C19009

sims group

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