ELECTRICAL SYMBOL LEGEND											
HT AFF SYMBOL AS NOTED → F PER SCHED → M POLE MOUNTED LIGHT (TYPE DENOTED) SURFACE LIGHT (TYPE DENOTED) SUSPENDED OR PENDANT LIGHT (TYPE DENOTED) SUSPENDED OR PENDANT LIGHT (TYPE DENOTED) STRIP LIGHT (TYPE DENOTED) STRIP LIGHT (TYPE DENOTED) STRIP LIGHT (TYPE DENOTED) TRACK AND TRACK LIGHT (TYPES DENOTED)	HT AFF SYMBOL 18" 18" 84" NOTED) AS NOTED 10 72"** 72"**	DESCRIPTION MULTIOUTLET ASSEMBLY (TYPE DENOTED) MULTIOUTLET ASSEMBLY (TYPE DENOTED) CLOCK (TYPE DENOTED) POWER POLE (OPEN OFFICE STYLE) JUNCTION BOX PULL BOX CIRCUIT BREAKER PANEL POWER OR DISTRIBUTION PANEL	HT AFF SYMBOL	DESCRIPTION CONDUIT CONCEALED IN WALL OR OVERHEAD CONDUIT CONCEALED BELOW FLOOR CONDUIT EXPOSED CONDUIT TRANSITION UP CONDUIT TRANSITION DOWN CONDUIT STUBBED OUT OVERHEAD ELECTRIC	HT AFF 90"** 90"** 90"** 90"** 90"** HEN 110cd 90"** 90"** HED 110cd 90"** HED 110cd 90"** HE 110cd 90"** HE 110cd 90"** HE 3110cd PAANNUN HOp ②p	DESCRIPTION FIRE ALARM HORN FIRE ALARM HORN W/STROBE (CANDELAS) FIRE ALARM BELL FIRE ALARM BELL W/STROBE (CANDELAS) FIRE ALARM STROBE (CANDELAS) FIRE ALARM SPEAKER W/STROBE (CANDELAS) FIRE ALARM REMOTE ANNUNCIATOR SMOKE DETECTOR (TYPE DENOTED)					
P6" 12"*	72"** 72"** 72"** 72"** 72"** 72"** 72"** 72"** 72"** 72"** 72"** 1	SPECIAL CABINET (TYPE DENOTED) TRANSFORMER (TYPE DENOTED) MOTOR (SEE SCHEDULE) DAMPER MOTOR MANUAL MTR. STR. (W/OVERLOADS) MAG. MOTOR STARTER OR CONTACTOR COMB. MOTOR STARTER (NON-FUSED) COMB. MOTOR STARTER (FUSED) SAFETY DISC. SW. (NON-FUSED) VARIABLE FREQUENCY DRIVE RELAY ENCLOSED CIRCUIT BREAKER OCCUPANCY SENSOR - TYPE DENOTED LIGHT LEVEL SENSOR - TYPE DENOTED PHOTOCELL TIME CONTROL SWITCH (TIME SWITCH) FURNITURE FEED OCCUPANCY SENSOR - TYPE DENOTED	18" 44"*** 18" 18" 18" 18" 18" 18" 18"	BRANCH CIRCUIT HOME RUN UNDERFLOOR RACEWAY SYSTEM CABLE TRAY (TYPE DENOTED) CONDUIT SLEEVE (SIZE DENOTED) TELEPHONE OUTLET (TYPE DENOTED) WALL TELEPHONE OUTLET (TYPE DENOTED) INFORMATION OUTLET (TYPE DENOTED) WIRELESS ACCESS POINT TELEVISION OUTLET MULTIPLE SERVICE OUTLET (TYPE DENOTED) OUTLET IN FLOOR (MICROPHONE SHOWN) MULTIPLE SERVICE FLR OUTLET (TYPE DENOTED) SPEAKER (WALL OR CEILING MT.) HORN TYPE SPEAKER VOLUME CONTROL MICROPHONE OUTLET COURTROOM VIDEO CAMERA/RECORDING KEYED NOTE (SEE SCHEDULE) DIGITAL VIDEO RECORDER CCTV MONITOR PTZ CONTROLLER CCTV CAMERA CCTV CAMERA CCTV CAMERA CCTV CAMERA CCTV CAMERA WITH PAN/TILT DRIVE DOOR LOCK DOOR LOCK CONTROL PANEL INFRARED HEARING ASSISTANCE EMITTER RECORDING STATION PA CABINET MICROPHONE SALLYPORT OH DOOR REMOTE OPENER TEMPERATURE ALARM WATER ALARM BROADCAST TRUCK CONNECTION PLATE BROADCAST TRUCK CONNECTION PLATE	### ### ### ### ### #### #### ##### ####	HEAT DETECTOR (TYPE & TEMP DENOTED) DUCT SMOKE DETECTOR (TYPE DENOTED) REMOTE TEST/STATUS STATION GAS DETECTOR (TYPE DENOTED) F.A. PULLSTATION F.A. ADDRESSABLE MONITOR MODULE F.A. CONTROL MODULE F.A. DOOR HOLDER F.A. DOOR CLOSER SPRINKLER FLOW SWITCH SPRINKLER VALVE TAMPER SWITCH SPRINKLER PRESSURE SWITCH ELECTRIC STRIKE MAGNETIC LOCK DOOR SECURE INDICATOR LIGHT DOOR CONTACTS CARD READER REQUEST TO EXIT DEVICE DOOR ACCESS CONTROL PANEL KEYPAD MOTION DETECTOR (TYPE DENOTED) INTRUSION DETECTION CONTROL PANEL DURESS BUTTON HANDICAP DOOR OPERATOR PUSHBUTTON POWER ASSIST AUTOMATIC DOOR OPENER DOOR PROP ALARM REMOTE ACCESS LOCK DOWN REMOTE ACCESS DOOR RELEASE AREA OF RESCUE AREA STATION AUDIO_VIDEO INTERCOM DOOR STATION AUDIO_VIDEO INTERCOM MASTER STATION AUDIO_VIDEO INTERCOM MASTER STATION POWER SUPPLY					

ALL DISTANCES ARE TO CENTER OF DEVICE OR EQUIPMENT UNLESS OTHERWISE NOTED. DEVICES INDICATED AT 48" MAY NOT BE INSTALLED WITH ANY OPERABLE PART HIGHER THAN 48". DEVICES MAY BE INSTALLED IN CONCRETE MASONRY UNITS WITH THE TOP OF THE DEVICE AT 44". * DISTANCE ABOVE TOP OF DOOR FRAME ** DISTANCE TO TOP OF EQUIPMENT OR DEVICE *** DISTANCE TO HIGHEST OPERABLE PART OF EQUIPMENT **** DISTANCE BELOW CEILING ***** DISTANCE TO BOTTOM OF DEVICE

ELECTRICAL SYMBOL LEGEND1

SCALE: 12" = 1'-0"

PANELBOARD IDENTIFICATION

CODE
HP4 HP3 LP4 LP3 LP2 LP1
CODE
N E C EG
FLOOR OF STRUCTURE PANEL NO.

SPECIFIC CODE NOTES

FIRE PROTECTION REQUIREMENTS

- A. PENETRATIONS IN WALLS REQUIRING PROTECTED OPENINGS MUST BE FIRESTOPPED WITH AN APPROVED MATERIAL.
- 1. CONDUITS MAY PENETRATE WALLS OR PARTITIONS, PROVIDED THEY ARE FIRE-STOPPED.
- 2. OPENINGS FOR STEEL ELECTRICAL BOXES NOT EXCEEDING 16 SQUARE INCHES ARE PERMITTED PROVIDED OPENINGS DO NOT AGGREGATE MORE THAN 100
- SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL OR PARTITION. 3. OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY A HORIZONTAL DISTANCE OF 24 INCHES.
- B. LIGHT FIXTURES AND OTHER APPARATUS SUPPORTED BY THE ACOUSTICAL CEILING GRID MUST MEET THE REQUIREMENTS OF NEC SECTION 410.16, MEANS OF SUPPORT.
- C. RECESSED LIGHTING FIXTURES INSTALLED IN FIRE RATED CEILING ASSEMBLIES SHALL BE FIRE RATED FIXTURES BEARING THE UL FIRE RATED LABEL. FIXTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE UL FIRE RESISTANCE DIRECTORY, AND SHALL INCLUDE A FIRE RATED ENCLOSURE INSTALLED OVER THE FIXTURE THAT MEETS THE REQUIREMENTS OF THE UL FIRE RESISTANCE DIRECTORY.

THE LIGHTING FIXTURE TYPE IS INDICATED BY AN UPPER CASE LETTER. THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER. THE SWITCH DESIGNATION IS INDICATED BY A LOWER CASE LETTER. EXAMPLE 1: LIGHTING FIXTURE TYPE "A" IS CONNECTED TO CIRCUIT 12 AND CONTROLLED BY SWITCH "b". EXAMPLE 2: THE FIXTURE TYPE SHOWN AS A NUMERATOR INDICATES ALL LIGHTING FIXTURES IN THE ROOM OR SPACE ARE THE SAME TYPE. THE CIRCUIT NUMBER AND SWITCH DESIGNATION SHOWN AS A DENOMINATOR INDICATES ALL LIGHTING FIXTURES IN THE ROOM OR SPACE ARE CONNECTED TO THE SAME CIRCUIT, CONTROLLED BY THE SAME LPN-102 SWITCHES, CENTER/OUTBOARD MULTILEVEL SWITCHING. EXIT LIGHTS. STEM INDICATES WALL MOUNTING. NO STEM INDICATES CEILING MOUNTING. SHADED AREA INDICATES ILLUMINATED FACE(S). ARROW INDICATES DIRECTIONAL ARROW ON ILLUMINATED FACE(S). THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER. EXAMPLE: THE WALL MOUNTED EXIT LIGHT TYPE "E" WITH SINGLE FACE AND DIRECTIONAL ARROW IS CONNECTED TO CIRCUIT 14.

DEVICES. THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER. THE SWITCH DESIGNATION IS INDICATED BY A LOWER CASE LETTER. EXAMPLE: SPLIT DUPLEX RECEPTACLE IS CONNECTED TO CIRCUIT 16 AND ONE RECEPTACLE OUTLET IS

THE CONTROL DEVICE DESIGNATION IS INDICATED BY A LOWER CASE LETTER. EXAMPLE: SINGLE POLE SWITCH "d" TO CONTROL LIGHTING FIXTURES INDICATED BY "d". WALL BOX DIMMER WITH SIZE AS INDICATED AT DEVICE. EXAMPLE: 600 WATT WALL BOX DIMMER TO CONTROL LIGHTING FIXTURES INDICATED BY "e". SEE SPECIFICATIONS FOR WATTAGE IF NOT INDICATED. SPECIAL CONNECTIONS. THE EQUIPMENT IS INDICATED BY A NUMBER IN A CIRCLE. SEE

THE MOTOR AND EQUIPMENT SCHEDULE FOR THE LOAD DESCRIPTION AND TYPE OF

CIRCUIT DESIGNATION IS INDICATED BY A NUMBER(S) ADJACENT TO THE SYMBOL.

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CONNECTION. THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER(S) ADJACENT TO THE SYMBOL. EXAMPLE: EQUIPMENT NO. 1; 3 PHASE CONNECTION TO CIRCUITS 1, 3, 5. MOTOR CONNECTIONS. THE MOTOR IS INDICATED BY A NUMBER WITHIN OR CHARACTERS ADJACENT TO THE MOTOR SYMBOL. SEE THE MOTOR AND EQUIPMENT SCHEDULE FOR THE MOTOR DESCRIPTION AND ELECTRICAL REQUIREMENTS. THE

EXAMPLE: MOTOR SF-1; 3 PHASE CONNECTION TO CIRCUITS 2, 4, 6.

ELECTRICAL SYMBOL NOTES 7,9 ELECTRIC HEATER CONNECTIONS. THE FIGURE THE HEATER SCHEDULE FOR FOLLOWING THE UPPER CASE LETTER "H". SEE THE HEATER SCHEDULE FOR A SECONDATION IS INDICATED BY A ELECTRIC HEATER CONNECTIONS. THE HEATER TYPE IS INDICATED BY A NUMBER ELECTRICAL REQUIREMENTS. THE CIRCUIT DESIGNATION IS INDICATED BY A NUMBER(S) ADJACENT TO THE HEATER. EXAMPLE: ELECTRIC BASEBOARD HEATER

TYPE "H1" CONNECTED TO CIRCUITS 7, 9. TRANSFORMERS. THE TRANSFORMER TYPE IS INDICATED BY A NUMBER FOLLOWING THE UPPER CASE LETTER "T". SEE THE TRANSFORMER SCHEDULE OR THE SINGLE LINE DIAGRAM FOR THE TRANSFORMER DESCRIPTION AND REQUIREMENTS.

EXAMPLE: TRANSFORMER TYPE "T1". PANELBOARDS. PANELBOARD DOORS MAY BE SHOWN TO INDICATE OPENING SIDE OF RECESSED PANELBOARDS. SEE PANELBOARD IDENTIFICATION FOR

DESIGNATION CODES. SPECIAL NOTE. SEE THE SPECIAL NOTES ON THAT SHEET FOR THE NOTE NUMBER

INDICATED IN THE HEXAGON.

CONDUIT SHOWN WITHOUT SLASH MARKS SHALL CONTAIN 2 # 12 CONDUCTORS IN 3/4" CONDUIT UNLESS SPECIFIC EQUIPMENT REQUIRES A DIFFERENT SIZE. CONDUIT SHOWN WITH SLASH MARKS SHALL CONTAIN 1 # 12 CONDUCTOR PER SLASH MARK IN 3/4" CONDUIT UNLESS A CONDUCTOR AND CONDUIT SIZE IS SHOWN ADJACENT TO THE SLASH MARKS. SLASH MARK INDICATORS ARE: SHORT STRAIGHT=PHASE CONDUCTOR, LONG STRAIGHT=NEUTRAL CONDUCTOR, SHORT BENT ENDED=SWITCH LEGS, LONG STRAIGHT WITH A DOT=GROUND CONDUCTOR, CHEVRON=CATEGORY 6, HALF CHEVRON=CATEGORY 3, TWIST=SHIELDED TWISTED

PAIR, CONCENTRIC CIRCLE AND DOT=COAX CABLE.

HOME RUN TO BRANCH CIRCUIT PANELBOARD. THE PANELBOARD DESIGNATION IS SHOWN ADJACENT TO THE HOME RUN ARROW AS A NUMERATOR AND THE CIRCUIT DESIGNATION IS SHOWN AS THE DENOMINATOR. CIRCUIT BREAKER SIZES (AMPS/NUMBER OF POLES) ARE SHOWN IN THE PANELBOARD SCHEDULE WITH THE CORRESPONDING PANELBOARD AND CIRCUIT DESIGNATION. EXAMPLE: HOME RUN TO PANELBOARD LPN-102; CIRCUITS 1, 3, 5.

SYMBOL NOTATIONS: UPPER CASE LETTERS ADJACENT TO SYMBOLS INDICATE A UNIT TYPE. SEE APPROPRIATE SCHEDULE OR SPECIFICATIONS.

ELECTRICAL ABBREVIATIONS LIST

1P	1 POLE (2P, 3P, 4P, ETC.)	DCP	DOMESTIC WATER	HT	HEIGHT	NEMA	NATIONAL ELECTRICAL	SWBD	SWITCHBOARD
			CIRCULATING PUMP	HTG	HEATING		MANUFACTURER'S	SYM	SYMMETRICAL
Α	AMPERE	DEPT	DEPARTMENT	HTR	HEATER		ASSOCIATION	SYS	SYSTEM
AC	ABOVE COUNTER OR AIR	DET	DETAIL	HV	HIGH VOLTAGE	NFDS	NON-FUSED SAFETY	TEL	TELEPHONE
	CONDITIONER	DIA	DIAMETER	HVAC	HEATING, VENTILATING AND		DISCONNECT SWITCH	TEL/DATA	TELEPHONE/DATA
ACLG	ABOVE CEILING	DISC	DISCONNECT		AIR CONDITIONING	NIC	NOT IN CONTRACT	TERM	TERMINAL
NDO	AUTOMATIC DOOR OPENER	DIST	DISTRIBUTION	HWP	HYDRONIC WATER PUMP	NL	NIGHT LIGHT	TL	TWIST LOCK
١F	AMP FRAME	DN	DOWN			N.O.	NORMALLY OPEN	TR	TAMPER RESISTANT
\FF	ABOVE FINISHED FLOOR	DPR	DAMPER	IC	INTERRUPTING CAPACITY	NPF	NORMAL POWER FACTOR	T-STAT	THERMOSTAT
ι \FG	ABOVE FINISHED GRADE	DS	SAFETY DISCONNECT SWITCH	IG	ISOLATED GROUND	NTS	NOT TO SCALE	TTC	TELEPHONE TERMINAL
 √FI	ARC FAULT CIRCUIT	DT	DOUBLE THROW	IMC	INTERMEDIATE METAL CONDUIT				CABINET
	INTERRUPTER	DWG	DRAWING	INCAND	INCANDESCENT	ОН	OVERHEAD	TV	TELEVISION
\HU	AIR HANDLING UNIT	DIIIO	Bivwiivo	IR	INFRARED	OL	OVERLOADS	TVTC	TELEVISION TERMINAL
\L	ALUMINUM	EC	ELECTRICAL CONTRACTOR	I/W	INTERLOCK WITH	OL	OVERLOADO	1710	CABINET
ALT	ALTERNATE	ELEC	ELECTRICAL CONTRACTOR ELECTRIC, ELECTRICAL	1/ V V	INTERLOCK WITH	PA	PUBLIC ADDRESS	TYP	TYPICAL
MP	AMPERE	ELEV	ELEVATOR	J-BOX	JUNCTION BOX	PB	PULL BOX OR PUSHBUTTON	HIF	TIFICAL
MPL				J-BOX	JUNCTION BOX	PE PE		UC	LINDED COUNTED
	AMPLIFIER	EM	EMERGENCY	10.7	KII OVOLT		PNEUMATIC ELECTRIC		UNDER COUNTER
NUN	ANNUNCIATOR	EMS	ENERGY MANAGEMENT SYSTEM		KILOVOLT	PED	PEDESTAL	UE	UNDERGROUND ELECTRICAL
PROX	APPROXIMATELY	EMT	ELECTRICAL METALLIC TUBING	KVA	KILOVOLT-AMPERE	PF	POWER FACTOR	UG	UNDERGROUND
Q-STAT	AQUASTAT	EP	ELECTRIC PNEUMATIC	KVAR	KILOVOLT-AMPERE REACTIVE	PH	PHASE	UH	UNIT HEATER
RCH	ARCHITECT, ARCHITECTURAL	EQUIP	EQUIPMENT	KW	KILOWATT	PIV	POST INDICATING VALVE	UT	UNDERGROUND TELEPHONE
S	AMP SWITCH	EWC	ELECTRIC WATER COOLER	KWH	KILOWATT HOUR	PNL	PANEL	UTIL	UTILITY
Τ	AMP TRIP	EXIST	EXISTING			PP	POWER POLE	UV	UNIT VENTILATOR OR
ΓS	AUTOMATIC TRANSFER SWITCH	EXH	EXHAUST	LOC	LOCATE OR LOCATION	PR	PAIR		ULTRAVIOLET
UTO	AUTOMATIC	EXP	EXPLOSION PROOF	LT	LIGHT	PRI	PRIMARY		
UX	AUXILIARY			LTG	LIGHTING	PROJ	PROJECTION	V	VOLT
V	AUDIO VISUAL	FA	FIRE ALARM	LTNG	LIGHTNING	PRV	POWER ROOF VENTILATOR	VA	VOLT-AMPERES
WG	AMERICAN WIRE GAUGE	FABP	FIRE ALARM BOOSTER POWER	LV	LOW VOLTAGE	PT	POTENTIAL TRANSFORMER	VDT	VIDEO DISPLAY TERMINAL
			SUPPLY PANEL			PVC	POLYVINYL CHLORIDE	VERT	VERTICAL
ATT	BATTERY	FACP	FIRE ALARM CONTROL PANEL	MAX	MAXIMUM		(CONDUIT)	VFD	VARIABLE FREQUENCY DRIVE
)	BOARD	FCU	FAN COIL UNIT	MAG.S	MAGNETIC STARTER	PWR	POWER	VOL	VOLUME
.DG	BUILDING	FIXT	FIXTURE	M/C	MOMENTARY CONTACT				
1S	BUILDING MANAGEMENT	FLR	FLOOR	MC	MECHANICAL CONTRACTOR	QUAN	QUANTITY	W	WATT
	SYSTEM	FLUOR	FLUORESCENT	MCB	MAIN CIRCUIT BREAKER			W/	WITH
		FU	FUSE	MCC	MOTOR CONTROL CENTER	RCPT	RECEPTACLE	WG	WIRE GUARD
	CONDUIT	FUDS	FUSED SAFETY DISCONNECT	MDC	MAIN DISTRIBUTION CENTER	REQD	REQUIRED	WH	WATER HEATER
ΛB	CABINET		SWITCH	MDP	MAIN DISTRIBUTION PANEL	RM	ROOM	W/O	WITHOUT
T	CATALOG			MFR	MANUFACTURER	RSC	RIGID STEEL CONDUIT	WP	WEATHERPROOF
TV	CABLE TELEVISION	GA	GAUGE	MFS	MAIN FUSED DISCONNECT	RTU	ROOF TOP UNIT	***	WEXTHER TOO
3	CIRCUIT BREAKER	GAL	GALLON	WII O	SWITCH	IXIO	ROOF FOI DIVIT	XFMR	TRANSFORMER
CTV	CLOSED CIRCUIT TELEVISION	GALV	GALVANIZED	MH	MANHOLE	SC	SURFACE CONDUIT	XFR	TRANSFER
KT	CIRCUIT	GC	GENERAL CONTRACTOR	MIC	MICROPHONE	SEC	SECONDARY	ALIX	TRANSI ER
LG	CEILING	GEN	GENERATOR	MIN	MINIMUM	SHT	SHEET		
OMB		GFI	GROUND FAULT CIRCUIT	MISC		SIM			
	COMBINATION	GFI			MISCELLANEOUS		SIMILAR	_	
MPR	COMPRESSOR	OFD	INTERRUPTER	MLO	MANUAL MOTOR STARTER	S/N	SOLID NEUTRAL	_	
ONN	CONNECTION	GFP	GROUND FAULT PROTECTOR	MMS	MANUAL MOTOR STARTER	SPEC	SPECIFICATION	\triangle	
ONST	CONSTRUCTION	GND	GROUND	MOA	MULTIOUTLET ASSEMBLY	SPKR	SPEAKER	_	
TNC	CONTINUATION OR	GRS	GALVANIZED RIGID STEEL	MSP	MOTOR STARTER PANELBOARD	SP	SPARE	_	ANGLE
	CONTINUOUS		(CONDUIT)	MSBD	MAIN SWITCHBOARD	SR	SURFACE RACEWAY	@	AT
ONTR	CONTRACTOR	GYP BD	GYPSUM BOARD	MT	MOUNT	SS	STAINLESS STEEL		DELTA
ONV	CONVECTOR			MT.C	EMPTY CONDUIT	SSW	SELECTOR SWITCH	L'	FEET
P	CIRCULATING PUMP	HOA	HANDS-OFF-AUTOMATIC	MTS	MANUAL TRANSFER SWITCH	S/S	STOP/START PUSHBUTTONS	L"	INCHES
RT	CATHODE-RAY TUBE		SWITCH	MTR	MOTOR, MOTORIZED	STA	STATION	#	NUMBER
Γ	CURRENT TRANSFORMER	HORIZ	HORIZONTAL			STD	STANDARD	Ø	PHASE
TR	CENTER	HP	HORSEPOWER	N.C.	NORMALLY CLOSED	SURF	SURFACE MOUNTED	С	CENTER LINE
U	COPPER	HPF	HIGH POWER FACTOR	NEC	NATIONAL ELECTRICAL CODE	SW	SWITCH	P	PLATE

ELECTRICAL DRAWINGS

E0.1 LEGENDS & NOTES E0.2 LEGENDS & NOTES

ES1.1 ELECTRICAL SITE PLAN

E1.1 FIRST FLOOR PLAN - LIGHTING

FIRST FLOOR PLAN - POWER FIRST FLOOR PLAN - SYSTEMS

ELECTRICAL RISER - POWER

ELECTRICAL RISER - TELECOM

ELECTRICAL RISER - FIRE ALARM

E5.4 ELECTRICAL DETAILS

ELECTRICAL DETAILS

ELECTRICAL DETAILS ELECTRICAL DETAILS

SUBMISSION **PROGRESS**

ORIGINAL ISSUE ₽₳₫€:24

SHEET REVISION SCHEDULE:

LEGENDS & NOTES

PRELIMINARY - NOT FOR CONSTRUCTION

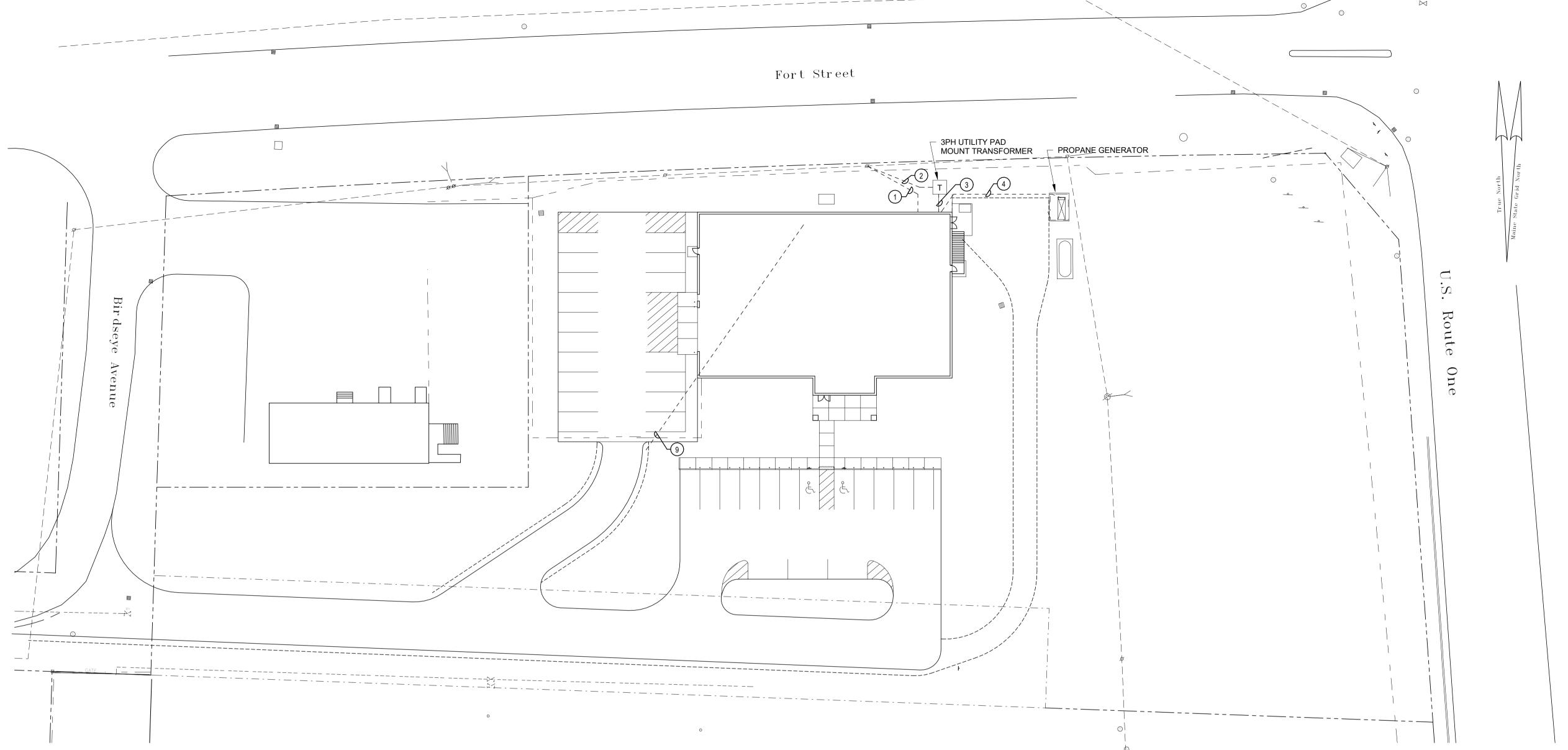
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CONSULTANT: MEP/FP Engineers

603.444.6578 Project #530419

PROJECT NUMBER: 21-000

No. DATE



ELECTRICAL SITE PLAN

SCALE: 1" = 30'-0

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GENERAL SHEET NOTES

1. REFER TO CIVIL DRAWINGS FOR ROUTING OF ALL UNDERGROUND CONDUIT AND COORDINATION WITH SITE UTILITIES.

2. ALL UNDERGROUND SHALL BE SCHEDULE 80 PVC, MINIMUM SIZE 1"C UNLESS OTHERWISE NOTED.

3. ALL SITE LIGHTING BRANCH CIRCUIT WIRING SHALL BE MINIIMUM #10 AWG.. ROUTE ALL EXTERIOR LIGHTING BRANCH CIRCUITS VIA LIGHTING CONTROL RELAY PANEL LOCATED IN MAIN ELECTRICAL ROOM.

4. PROVIDE HAND HOLE/PULL BOXES AS REQUIRED, PROPERLY SIZED PER NEC FOR SITE LIGHTING AND POWER.

5. ALL LIGHTING AND POWER CONDUCTORS SHALL BE INSTALLED 36" BELOW FINISHED GRADE.

6. ALL CONDUIT SWEEPS TURNED UP IN EQUIPMENT SLABS SHALL BE INSTALLED AS RIGID STEEL GALVANIZED CONDUIT. GROUND STEEL CONDUITS IN ACCORDANCE WITH APPLICABLE CODES.

7. PROVIDE HAND HOLE BOXES AND EXTENSIONS TO ALLOW FOR CONDUIT BURIAL DEPTHS AND CONDUIT/BOX FILL CODE REQUIREMENTS.

8. ALL EMPTY CONDUITS SHALL CONTAIN A NYLON PULL ROPE.

KEYED SHEET NOTES

1. PROVIDE (2)4"C W/ PULL WIRE FOR TELECOM. CONFIRM CONDUIT ROUTING AND REQUIREMENTS WITH TELECOM UTILITY.

2. PROVIDE (2)5"C W/ PULL WIRE FOR ELECTRICAL PRIMARY SERVICE. COORDINATE ROUTING IN FIELD WITH OTHER UTILITIES AND CIVIL PLANS.

3. PROVIDE (2)4"C W/ CONDUCTORS AND (1)4"C SPARE FOR ELECTRICAL SECONDARY SERVICE. COORDINATE ROUTING IN FIELD WITH OTHER UTILITIES AND CIVIL PLANS.

4. PROVIDE (2)4"C W/ CONDUCTORS FOR GENERATOR STANDBY FEEDER AND (4)1"C W/ W/ CONDUCTORS FOR CONTROLS. COORDINATE ROUTING IN FIELD WITH OTHER UTILITIES AND CIVIL

5. 2#10,1#10G-1"C, UNLESS OTHERWISE NOTED.

6. ELECTRIC VEHICLE CHARGING STATION - PROVIDE 1"C WITH CONDUCTORS [2 SETS OF(2#8,1#10G)] AND 1"C WITH NYLON PULL ROPE FOR DATA FOR EACH EV SPACE. CONDUITS SHALL ORIGINATE FROM THE SERVICE ELECTRIC PANEL AND BE ROUTED FROM A FLUSH IN-GRADE PULLBOX INTO THE CONCRETE BASE FOR THE EV CHARGING STATION. PROVIDE SEPARATE PULLBOX FOR POWER AND DATA. CONDUITS SHALL BE STUBBED 6" ABOVE THE THE CONCRETE BASE AND BE CAPPED AND LABELED. COORDINATE LOCATIONS WITH SITE CONTRACTOR AND THE OWNER.

7. PROVIDE 6" CONCRETE FILLED GALVANIZED STEEL PROTECTIVE BOLLARD.

8. PROVIDE (2)1"C WITH PULL ROPE FOR CAMERA POE SWITCH POWER AND DATA. CONDUITS SHALL RUN FROM MAIN ELEC RM AND MDF RM. PROVIDE 20A CIRCUIT (2#10,1#10G-1"C) FOR WAP/POE SWITCH POWER.FIELD COORDINATE REQUIREMENTS AND LOCATION OF CAMERA/POE SWITCH PRIOR TO ROUGH-IN.

9. PROVIDE (3) 1" CONDUITS FOR GATE POWER/CONTROL WIRING, CARD ACCESS WIRING, EXIT REQUEST WIRING AND AUDIO VIDEO INTERCOM WIRING. COORDINATE EXACT REQUIREMENTS WITH THE SYSTEM SUPPLIERS PRIOR TO ROUGHING IN. GATE POWER CONDUIT SHALL BE RUN FROM HANDHOLE TO PANELBOARD FEEDING THE GATE OPENER. AUDIO VIDEO INTERCOM CONDUIT SHALL BE RUN TO DUTY OFFICE. HANDHOLE FOR SLIDE GATE MOTOR POWER. PROVIDE COVER LOGO DESCRIPTION AS 'ELECTRIC'.

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SEAL

CITY OF CARIBOU, MAINE CARIBOU POLICE

PROJECT NUMBER: 21-000

SUBMISSION PROGRESS

ORIGINAL ISSUE PAT€24

SHEET REVISION SCHEDULE: No. DATE

ELECTRICAL SITE PLAN

SHEET NUMBER:

GENERAL ELECTRICAL NOTES

- 1. DO NOT SCALE THESE DRAWINGS. SEE ARCHITECTURAL DOCUMENTS FOR EXACT LOCATIONS AND MOUNTINGS FOR FIXTURES, DEVICES, ETC. EXCEPT AS SPECIFICALLY
- 2. REFER TO DIVISION 21, 22 & 23 FOR ADDITIONAL FIRE PROTECTION/PLUMBING/HVAC EQUIPMENT AND REQUIREMENTS.
- 3. PROVIDE BRANCH CIRCUITING AND FINAL CONNECTION FOR ALL FIXTURES, OUTLETS AND EQUIPMENT.
- 4. INSTALLATION SHALL COMPLY WITH 2023 EDITION OF NEC, INCLUDING ALL STATE AND LOCAL AMENDMENTS.
- 5. MINIMUM CIRCUIT SIZE IS 1P-20A, 2 #12, 1 #12 GROUND MINIMUM CONDUIT SIZE IS 3/4". UNLESS OTHERWISE NOTED, WIRING METHOD FOR ALL SYSTEMS SHALL BE IN CONDUIT OR METAL RACEWAY UNLESS OTHERWISE NOTED. MC CABLE MAY BE ALLOWED WITH PRE-APPROVAL OBTAINED FROM THE DIVISION. WHERE MC CABLE IS APPROVED FOR USE, ALL HOMERUNS SHALL BE IN CONDUIT.
- 6. ALL NEW WIRING SHALL BE TYPE THHN/THWN RATED 75-90°C, 600V. WET-DRY LOCATIONS. MINIMUM BRANCH CIRCUIT WIRING SHALL BE NO. 12 AWG SOLID COPPER. BRANCH CIRCUITS LONGER THAN 75-FT FOR 120V OR 175-FT FOR 277V SHALL BE AT LEAST NO. 10 AWG FROM PANEL TO LAST OUTLET.
- 7. PROVIDE SEPARATE GREEN GROUND WIRE (SIZE PER NEC) FOR ALL CIRCUITS INCLUDING LIGHTING.
- 8. HOMERUN CONDUITS SHALL CONTAIN SIX (6) UNGROUNDED PHASE CONDUCTORS MAXIMUM. VOLTAGE DROP AS PER N.E.C.
- 9. PROVIDE SEPARATE NEUTRAL (EACH PHASE A NEUTRAL) FOR ALL 120 VOLT LIGHTING AND RECEPTACLE CIRCUITS.
- 10. WHERE INDIVIDUAL BRANCH CIRCUITS AS SHOWN ON PLANS ARE COMBINED AS MULTI-WIRE BRANCH CIRCUITS, THE MULTIWIRE BRANCH CIRCUITS SHALL BE INSTALLED ACCORDING TO REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND STATE AMENDMENTS.
- 11. PROVIDE ROUGH-IN, FINAL CONNECTION, BRANCH CIRCUITS, PANELBOARDS, ETC. FOR ALL DEVICES AND EQUIPMENT SHOWN ON THESE DOCUMENTS.
- 12. CONTRACTOR SHALL VERIFY ROUGH-IN REQUIREMENTS FOR ALL EQUIPMENT (MECHANICAL, PLUMBING, FIRE PROTECTION, OWNER PROVIDED, OTHER VENDOR PROVIDED, ETC.) PRIOR TO BEGINNING ROUGH-IN. ANY DISCREPANCIES WITH THESE PLANS SHALL BE BROUGHT TO THE ARCHITECT/ENGINEER'S ATTENTION IMMEDIATELY.
- 13. THE MECHANICAL AND ELECTRICAL DRAWINGS INCLUDED IN THIS SET WERE ORIGINALLY PREPARED TO THE SCALE SHOWN ON THE TITLE BLOCK OF EACH SPECIFIC DRAWING. HOWEVER, BECAUSE OF THE INACCURACIES INHERENT TO THE ELECTRONIC PLOTTING AND/OR REPROGRAPHIC PROCESSES USED TO OBTAIN FINAL PRINTS, SPECIFIC DIMENSIONS SHOULD NOT BE OBTAINED BY SCALING OF THESE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ACTUAL DIMENSIONS.
- 14. PERMANENT TYPE MARKING PENS SHALL BE USED TO NEATLY LABEL ALL JUNCTION BOX AND PULL BOX COVERS. WHERE BOXES ARE INSTALLED FOR THE INSTALLATION OF POWER WIRING, THE COVER SHALL INDICATE THE PANEL DESIGNATION AND CIRCUIT BREAKER NUMBER(S) ASSOCIATED WITH EACH BOX. WHERE BOXES ARE INSTALLED FOR THE THE INSTALLATION OF TELECOMMUNICATION WIRING. THE COVERS SHALL BE LABELED 'TELECOMMUNICATIONS' AND INDICATE THE POINT OF THE SYSTEM DISTRIBUTION LOCATION ASSOCIATED WITH EACH BOX.
- 15. THE COVERS ON ALL PULL BOXES, JUNCTION BOXES AND ASSOCIATED COVERS FOR THE INSTALLATION OF THE FIRE ALARM SYSTEM SHALL BE PAINTED RED AND SHALL BE NEATLY LABELED IN ACCORDANCE WITH THE LOCAL FIRE DEPARTMENT'S REQUIREMENTS.
- 16. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND PROVIDE AS REQUIRED FOR ALL THE FIRE DAMPERS AND MOTORIZED DAMPERS, AS SHOWN ON THE DOCUMENTS UNDER DIVISION 23 AND 26.
- 17. PROVIDE ENGRAVED NAMEPLATES FOR ALL NEW PANELBOARDS, DISCONNECT SWITCHES, MANUAL MOTOR STARTERS, SERVICE SWITCHES, ETC. NAMEPLATES SHALL BE SCREWED-ON OR RIVETED TO THE EQUIPMENT. ADHESIVE TYPES WILL NOT BE ACCEPTABLE. NAMEPLATES SHALL BE LAMINATED BLACK WITH WHITE ENGRAVED TEXT. TEXT HEIGHT SHALL BE 1/4".
- 18. ALL PANELBOARDS SHALL BE FURNISHED WITH TYPEWRITTEN CIRCUIT DIRECTORIES AT CLOSE OF PROJECT. ALL SPARE CIRCUIT BREAKERS SHALL BE IDENTIFIED ON THE CIRCUIT DIRECTORIES AS 'SPARES' AND SHALL BE LOCKED IN THE OFF POSITION. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROPERLY PHASE BALANCING LOADS ON EACH PANELBOARD.
- 19. COLOR OF DEVICES AND PLATES SHALL BE AS DIRECTED BY THE ARCHITECT.
- 20. DISCONNECT SWITCHES SHALL BE HEAVY DUTY (HD), SIDE OPERATED WITH INTERLOCKING COVER.
- 21. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY ALL CHARGES FOR PERMITS AND INSPECTIONS.
- 22. UNDER NO CIRCUMSTANCES SHALL ANY BACK BOXES OR CONDUIT BE INSTALLED SURFACE MOUNTED ON NEW CONSTRUCTION IN FINISHED AREAS, INCLUDING FINISHED AREAS WITH BLOCK WALLS. ANY BACK BOXES OR CONDUIT INSTALLED SURFACE MOUNTED ON FINISHED WALLS SHALL BE REINSTALLED BY THE ELECTRICAL CONTRACTOR TO THE SATISFACTION OF THE ARCHITECT AND WITH NO ADDITIONAL COSTS TO THE ELECTRICAL CONTRACTOR.
- 23. ALL DEVICE COVER PLATES SHALL BE LABELED IN ACCORDANCE WITH THE OWNER'S REQUIREMENTS.
- 24. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE FOR THE MAGNETIC HOLD DOOR OPENER, ELECTRONIC LOCK AND THE AUTOMATIC DOOR OPENER AS SHOWN ON OR SPECIFIED UNDER THE ARCHITECTURAL SECTIONS AS FOLLOWS: A) POWER AS REQUIRED; COORDINATE WITH SUPPLIER.
- B) FIRE ALARM INTERFACE INCLUDING WIRING AND FINAL CONNECTIONS FOR AN OPERATIONAL COMPLETE SYSTEM AS REQUIRED BY THE AUTHORITY HAVING
- 25. COORDINATE WITH THE GENERAL CONTRACTOR AND ALL OTHER SUB-CONTRACTORS IN ORDER TO DETERMINE THE OVERALL PROJECT PHASING AND WORK
- 26. ALL 15- AND 20-AMP, 125- AND 250-VOLT NON-LOCKING TYPE RECEPTACLES SHALL BE TAMPER-RESISTANT IN ACCORDANCE WITH NEC 406.12.
- 27. TEMPORARY LIGHT AND POWER SHALL BE PROVIDED ON SITE BY THE ELECTRICAL CONTRACTOR. COST OF ELECTRICITY SHALL BE THE RESPONSIBILITY OF THE CONSTRUCTION MANAGER.
- 28. WIRING METHOD FOR ALL SYSTEMS SHALL BE IN CONDUIT OR METAL RACEWAY UNLESS OTHERWISE NOTED. MC CABLE MAY BE ALLOWED WITH PRE-APPROVAL OBTAINED FROM THE DIVISION. WHERE MC CABLE IS APPROVED FOR USE, ALL HOMERUNS SHALL BE IN CONDUIT.

GENERAL LOW VOLTAGE NOTES

- A. ALL CONDUCTORS OPERATING AT 50 VOLTS OR GREATER SHALL BE IN RACEWAY. ALL RACEWAY WITHIN THE STRUCTURE ABOVE THE FLOOR SLAB SHALL BE METAL. RACEWAY BELOW THE FLOOR SLAB AND UNDERGROUND RACEWAY OUTSIDE THE STRUCTURE SHALL BE PVC.
- B. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN METAL RACEWAY WHERE INSTALLED WITHIN WALLS OR INACCESSIBLE SPACES. LOW VOLTAGE CABLES MAY BE RUN IN CABLE TRAY WHERE NOTED. LOW VOLTAGE CABLES MAY BE RUN IN CABLE SUPPORT HOOKS ABOVE ACCESSIBLE CEILINGS WHERE NOTED.
- C. INSTALL CONDUIT WITH NO MORE THAN (2) 90° BENDS BETWEEN PULL BOXES. AND NO MORE THAN 100'-0" BETWEEN PULL BOXES. PULL BOXES SHALL BE INSTALLED FOR STRAIGHT THRU PULLS ONLY.
- D. ALL COMMUNICATIONS CABLES SHALL BE INSTALLED IN CABLE TRAY AS MUCH AS POSSIBLE ABOVE ACCESSIBLE CEILINGS, OR IN CONDUIT WHERE NOT ACCESSIBLE. PROVIDE BUSHINGS AT THE ENDS OF ALL CONDUIT WHERE STUBBED ABOVE ACCESSIBLE CEILINGS OR WHERE DROPPED INTO CABLE TRAY.
- E. COORDINATE LOCATIONS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND DETAILS. ARCHITECTURAL ELEVATIONS AND DETAILS TAKE PRECEDENCE OVER LOCATIONS SHOWN ON ELECTRICAL DRAWINGS.
- F. TV OUTLETS, VOLUME CONTROLS, TELE/DATA OUTLETS, SECURITY DEVICES, AND FIRE ALARM DEVICES SHALL CONSIST OF A BACK BOX WITH CONDUIT STUBBED ABOVE THE ACCESSIBLE CEILING, SEE STUB UP DETAIL. VERIFY SIZE OF BACK BOX REQUIRED WITH DEVICE TO BE INSTALLED. LOCATE BACK BOXES 6" FROM ADJACENT POWER RECEPTACLE INTENDED FOR COMPUTER USE.
- G. FURNISH AND INSTALL CONDUIT FROM BACK BOXES FOR THE FOLLOWING DEVICES INTO THE ACCESSIBLE CEILING SPACE IN THE CORRIDOR, UNLESS NOTED OTHERWISE:
 - TV OUTLETS
- **VOLUME CONTROLS** 3/4"C 3/4"C SECURITY CCTV
- SECURITY DOOR ACCESS CONTROL
- 3/4"C TELEPHONE OUTLETS 1"C 1"C INFORMATION OUTLETS 3/4"C FIRE ALARM DEVICES



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LEGENDS & NOTES

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MEZZANINE - LIGHTING

SCALE: 1/8" = 1'-0"

FIRST FLOOR PLAN - LIGHTING

SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

1. COORDINATE ALL LIGHTING FIXTURE LOCATIONS
WITH ARCHITECTURAL REFLECTED CEILINGS PLANS
AND ELEVATIONS. CONFIRM SWITCHING SCHEME AND
SWITCH LOCATIONS WITH ARCHITECT/OWNER PRIOR TO
INSTALL

2. PROVIDE UNSWITCHED WIRING TO EXIT SIGNS. COORDINATE EXIT SIGN LOCATIONS WITH ARCHITECTURAL EMERGENCY EGRESS PLANS.

3. ALL LIGHT FIXTURE LOCATIONS SHALL BE COORDINATED WITH HVAC DUCTWORK AND OTHER EQUIPMENT IN FIELD TO AVOID INTERFERENCE PRIOR TO INSTALL.

4. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR WIRING ALL ELECTRICAL ITEMS SHOWN ON THIS DRAWING

5. MC TYPE CONDUCTOR WITH INTEGRAL GROUND WIRE MAY BE UTILIZED FOR POWER AND LIGHTING CIRCUITS. MC CABLE SHALL BE UTILIZED ONLY WHERE COMPLETELY CONCEALED.

6. ALL MOUNTING HEIGHTS FOR LIGHTING FIXTURES ARE TO THE BOTTOM OF THE FIXTURES UNLESS INDICATED OTHERWISE.

7. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES AND REFLECTED CEILING PLAN FOR INTERIOR LIGHTS.

8. PROVIDE PROPER NUMBER OF CONDUCTORS TO ACHIEVE CIRCUITING AND SWITCHING SHOWN.

9. USE #10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS LONGER THAN 75 FEET, #8 AWG FOR 20 AMP, 120 VOLT BRANCH CIRCUITS LONGER THAN 150 FEET AND #10 AWG FOR 20 AMPERE, 277 VOLT CIRCUITS LONGER THAN 150 FEET, UNLESS SPECIFICALLY NOTED OTHERWISE. THIS INCREASED WIRE SIZE SHALL BE REQUIRED FOR THE ENTIRE LENGTH OF THE CIRCUIT.

10. PROVIDE UL 924 LIGHTING RELAY CONTROL DEVICE FOR ALL EMERGENCY FIXTURES CONTROLLED BY A SEPARATE LOCAL SWITCH/SENSOR AND NOT BY THE LIGHTING CONTROL SYSTEM WHETHER OR NOT SHOWN ON PLAN.

11. PLACE YELLOW ADHESIVE DOT ON EVERY EMERGENCY LUMINAIRE OR ON THE CEILING GRID ADJACENT TO THE EMERGENCY LUMINAIRE.

12. LOCAL DIGITAL RELAY POWER PACKS SHALL BE CIRCUITED TO THE SAME CIRCUIT AS THE LIGHTS BEING CONTROLLED BY THAT RELAY/POWER PACK.

13. COORDINATE EXIT SIGN LOCATIONS WITH ARCHITECT AND EMERGENCY EGRESS PLANS.

KEYED SHEET NOTES

1. SWITCH BANK FOR ALL Z# ZONES AND EXTERIOR. PROVIDE (1) QSWS2-5BRL.

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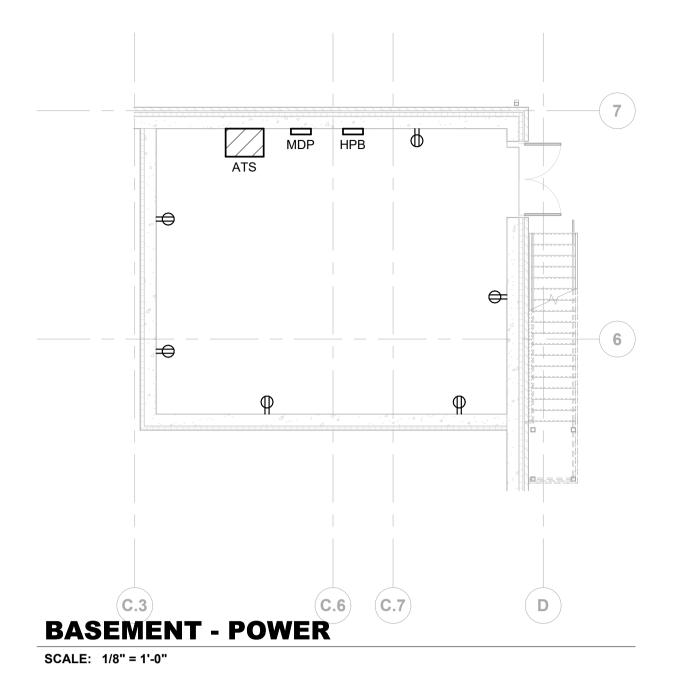
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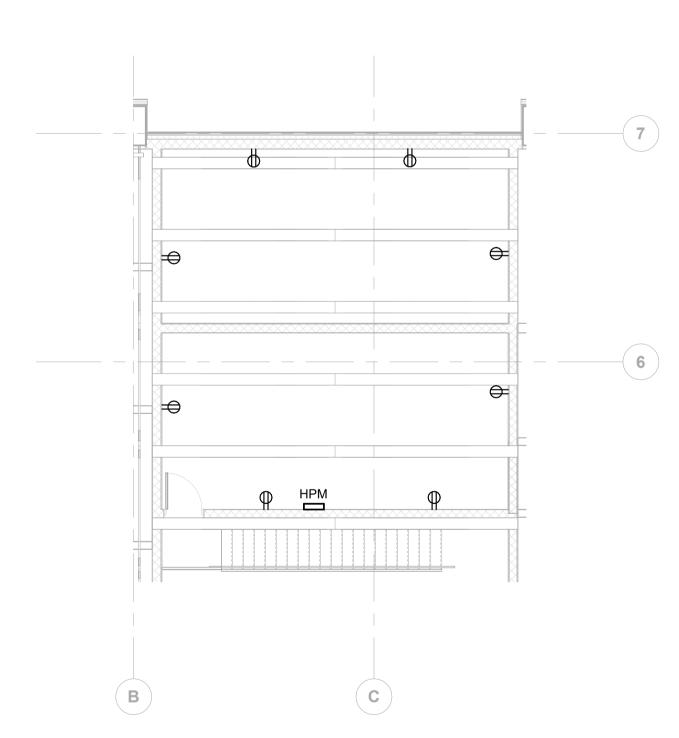
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FIRST FLOOR PLAN - LIGHTING

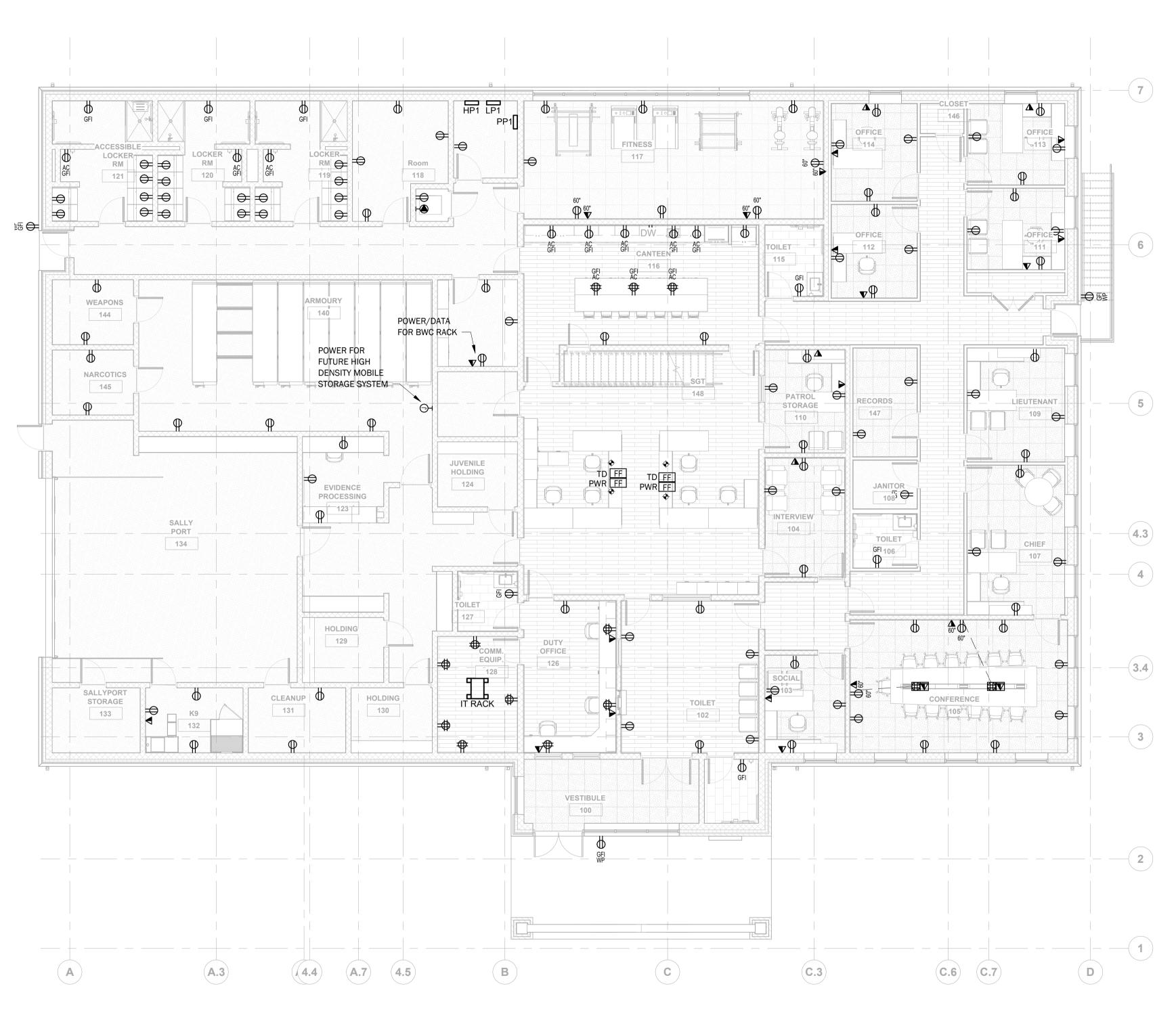
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MEZZANINE - POWER

SCALE: 1/8" = 1'-0"



FIRST FLOOR PLAN - POWER

SCALE: 1/8" = 1'-0"

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GENERAL SHEET NOTES

1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR WIRING ALL ELECTRICAL ITEMS SHOWN ON THIS DRAWING.

2. ALL RECESSED LIGHTING FIXTURES IN LAY-IN CEILINGS SHALL BE INSTALLED WITH 6' LONG FLEXIBLE METAL CONDUIT.

3. ALL MOUNTING HEIGHTS FOR LIGHTING FIXTURES ARE TO THE BOTTOM OF THE FIXTURES UNLESS INDICATED OTHERWISE.

4. SEE ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHTS OF EXTERIOR LIGHTING FIXTURES.

5. CIRCUIT WIRING IS NOT SHOWN EXCEPT FOR SWITCHING INTENT OF FIXTURES AND CONTROL OF

6. PROVIDE PROPER NUMBER OF CONDUCTORS TO ACHIEVE CIRCUITING AND SWITCHING SHOWN.

7. CIRCUIT NUMBERS AT DEVICES CORRESPOND TO PANELBOARD BREAKERS (SEE PANELBOARD SCHEDULE). BRANCH CIRCUITS SHALL BE SIZED ACCORDING TO THE CIRCUIT BREAKER RATING, UNLESS INDICATED OTHERWISE ON THE ELECTRICAL EQUIPMENT SCHEDULE.

8. USE #10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS LONGER THAN 75 FEET, UNLESS SPECIFICALLY INDICATED OTHERWISE. THIS SHALL BE REQUIRED FOR THE ENTIRE LENGTH OF THE CIRCUIT.

KEYED SHEET NOTES

1. METAL DETECTOR - PROVIDE (2)1"C IN CONCRETE SLAB FOR POWER AND DATA/SECURITY WIRING FROM NEAREST WALL. COORDINATE ACTUAL REQUIREMENTS, CONDUIT ROUTING, AND TERMINATION LOCATIONS WITH MANUFACTURER PRIOR TO ROUGH-IN.

2. RECESSED 6" FIRE-RATED FLOOR BOX (HUBBELL SYSTEMONE) WITH FINISHED COVER. PROVIDE (2) DUPLEX RECEPTACLES, (1V3D) DATA JACKS, (1) HDMI AND (1) USB OUTLET, REQUIRED MODULES AND MOUNTNIG PROVISIONS.

3. PROVIDE 3-GANG FLUSH IN WALL BACK BOX EQUAL TO HUBBELL #NSAV62M WITH #NSAV6C METAL COVER. PROVIDE 20A, 120V WHITE DUPLEX RECEPTACLE WITH PLATE AND TWO CAT6 VOICE/DATA '2D' OUTLETS IN ENCLOSURE. COORDINATE EXACT LOCATIONS AND HEIGHTS WITH ARCHITECTURAL ELEVATIONS.

4. PROVIDE POKE-THRU FOR ELECTRIFIED FURNITURE FEEDS (POWER & DATA). COORDINATE WITH CUBICLE VENDOR FOR POWER CIRCUITING (TYP. - MAX 3-WORKSTATIONS PER CIRCUIT) AND DATA CONNECTIONS. PROVIDE HANDLE-TIE FOR CIRCUIT BREAKERS SERVING MULTI-WIRE BRANCH CIRCUITS UTILIZING SHARED NEUTRALS. RECEPTACLES ARE FURNISHED WITH ELECTRIFIED CUBICLES AND PREWIRED. THE STANDARD WIRING HARNESS CONFIGURATION IS A 3-CIRCUIT, 8-WIRE (3 CIRCUIT CONDUCTORS, 3 NEUTRAL CONDUCTORS AND 2 EQUIPMENT GROUNDING CONDUCTORS. CONNECT EACH CIRCUIT TO A DIFFERENT PHASE AND BALANCE LOADS BETWEEN PHASES. FIELD VERIFY FINAL LOCATION AND MULTI-CIRCUIT WIRING REQUIREMENTS WITH ARCHITECT AND ELECTRIFIED FURNITURE INSTALLER.

5. PROVIDE 6" POKE-THRU EQUAL TO HUBBELL #DIR6PTWZBRZ, WITH (1) 20A DUPLEX RECEPTACLE, (2) DATA PORTS, AND (1) MICROPHONE JACK. BRONZE PLATED TRIM COVER PLATE.

6. PROVIDE TAMPER-RESISTANT TELEDATA OUTLET EQUAL TO HUBBELL TPF1W. INCLUDE SPARE KEYS FOR ONSITE AND IT PERSONNEL.

7. PROVIDE JUNCTION BOX ABOVE ACCESSIBLE CEILING FOR 120VAC TO SUPPORT PTZ CAMERA POWER (MIDSPAN). COORDINATE ACTUAL LOCATION AND PROVIDE 1" WEATHERPROOF, WALL SLEEVE FOR POWER AND SIGNAL WIRING.

8. AUTO DOOR SLIDER - PROVIDE POWER 120VAC CONNECTION. COORDINATE ACTUAL REQUIREMENTS, CONDUIT ROUTING, AND TERMINATION LOCATIONS WITH MANUFACTURER PRIOR TO ROUGH-IN.

9. FUTURE LCD DISPLAY. PROVIDE JUNCTION BOXES ABOVE NEAREST ACCESSIBLE CEILING FOR POWER 20A, 120V AND TWO CAT6 VOICE/DATA '2D' DROPS. COORDINATE EXACT LOCATIONS WITH ARCHITECT/OWNER PRIOR TO ROUGH-IN.

10. AUTOMATIC POWER ASSIST DOOR OPENERS AND PUSHBUTTONS BY OTHERS. E.C. SHALL PROVIDE WIRING AND TERMINATIONS AS REQUIRED. E.C. SHALL COORDINATE WITH DOOR HARDWARE CONTRACTOR AND ARCHITECT FOR LOCATIONS AND REQUIREMENTS PRIOR TO ROUGH-IN.

11. RECEPTACLE TO BE MOUNTED HORIZONTALLY.

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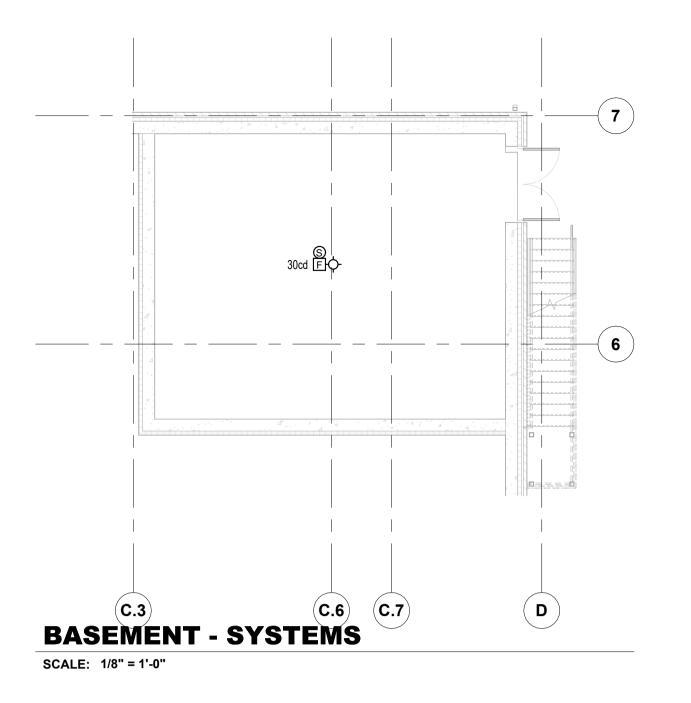
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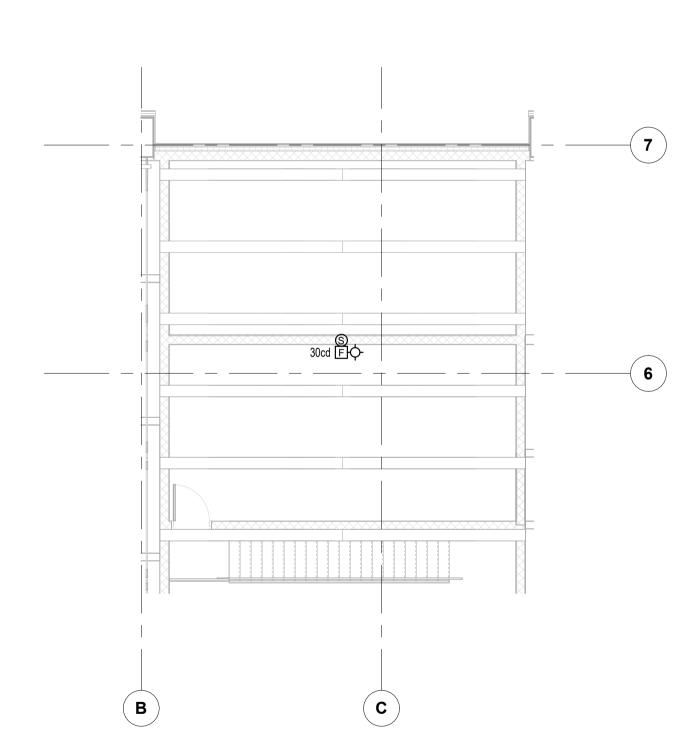
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FIRST FLOOR PLAN - POWER

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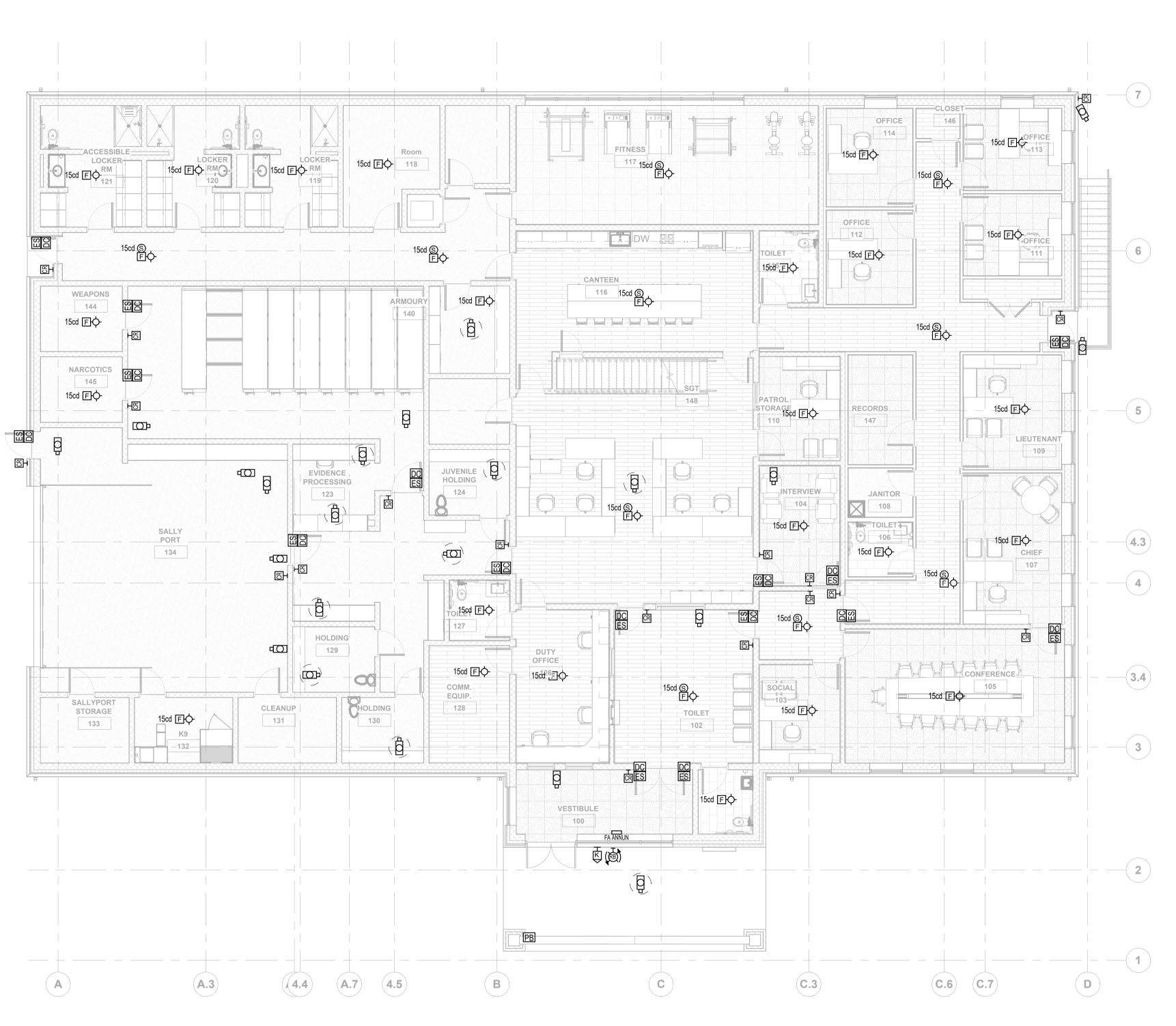
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MEZZANINE - SYSTEMS

SCALE: 1/8" = 1'-0"



FIRST FLOOR PLAN - SYSTEMS

SCALE: 1/8" = 1'-0"

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GENERAL SHEET NOTES

1. ALL TELECOMMUNICATION/SECURITY CABLES SHALL BE INSTALLED IN CABLE TRAY AS MUCH AS POSSIBLE OR UNLESS OTHERWISE NOTED OR SHOWN ON THE DRAWINGS. CONDUIT SHALL BE UTILIZED IN AREAS WITHOUT ACCESSIBLE CEILINGS ABOVE ACCESSIBLE CEILINGS WITHOUT CABLE TRAY. PROVIDE BUSHINGS AT THE ENDS OF ALL CONDUITS WHERE DROPPED INTO LADDER OR CABLE TRAYS. FIELD COORDINATE INSTALLATION OF CABLE TRAY WITH OTHER CONTRACTOR'S TO AVOID DUCTWORK AND PIPING. DO NOT MOUNT CABLE TRAY DIRECTLY BELOW DUCTWORK.

2. COORDINATE EXACT REQUIREMENTS AND DEVICE LOCATIONS FOR ALL COURTROOM AUDIO AND RECORDING SYSTEM EQUIPMENT, SPEAKER/PA SYSTEM, AND SECURITY SYSTEM WITH ARCHITECT, VENDORS AND OWNER.

KEYED SHEET NOTES

1. PROVIDE 6"H X 18"W WIDE PLATED STEEL WIRE BASKET CABLE TRAY SYSTEM FOR TELECOMMUNICATIONS AND SECURITY CABLING ABOVE ACCESSIBLE CEILINGS.

2. PROVIDE CONDUIT ABOVE ACCESSIBLE CEILINGS WITHOUT CABLE TRAY TO EXTEND AND MANAGE CABLES AROUND INACCESSIBLE/HARD CEILINGS. PROVIDE CONDUIT SLEEVES ABOVE HARD CEILINGS FOR INSTALLING CABLES BETWEEN TRAYS.

3. PROVIDE (3)4"C METAL BUSHED SLEEVES ABOVE DOOR HEIGHT TO ACCESS EACH MDF/IDF LADDER TRAY. EXTEND FROM LADDER TRAY TO CABLE TRAY IN CORRIDOR. PROVIDE FIRE SEALS FOR CABLING AND AROUND CONDUIT PENETRATIONS.

4. PROVIDE INTERCONNECT WIRING WITH SALLY PORT OH DOOR REMOTE OPENER 'SPRO'.

5. PROVIDE 120VAC FOR LOCAL DOOR PROP ALARM POWER SUPPLY ABOVE DOOR. PROVIDE LOW VOLTAGE WIRING AS REQUIRED FROM POWER SUPPLY TO DOOR PROP ALARM DEVICE.

6. COORDINATE SECURITY CAMERA LOCATIONS WITH OWNER'S SECURITY VENDOR PRIOR TO ROUGH-IN.

7. COORDINATE PA SPEAKER LOCATIONS WITH ARCHITECT AND OWNER'S VENDOR PRIOR TO ROUGH-IN.

9. PROVIDE 1.5"C WITH PULLSTRING BACK TO RESPECTIVE FLOOR AV ROOM. VERIFY FINAL CONDUIT TERMINATION LOCATIONS WITH AV VENDOR PRIOR TO ROUGH-IN.

10. PROVIDE 1.5"C TO ABOVE CEILING FOR CEILING SPEAKERS WITH PULLSTRING BACK TO RESPECTIVE FLOOR AV ROOM. VERIFY FINAL CONDUIT TERMINATION LOCATIONS WITH AV VENDOR PRIOR TO ROUGH-IN.

11. PROVIDE 1.5"C TO ABOVE CEILING FOR VIDEO RECORDING CAMERAS WITH PULLSTRING BACK TO RESPECTIVE FLOOR AV ROOM. VERIFY FINAL CONDUIT TERMINATION LOCATIONS WITH AV VENDOR PRIOR TO ROUGH-IN.



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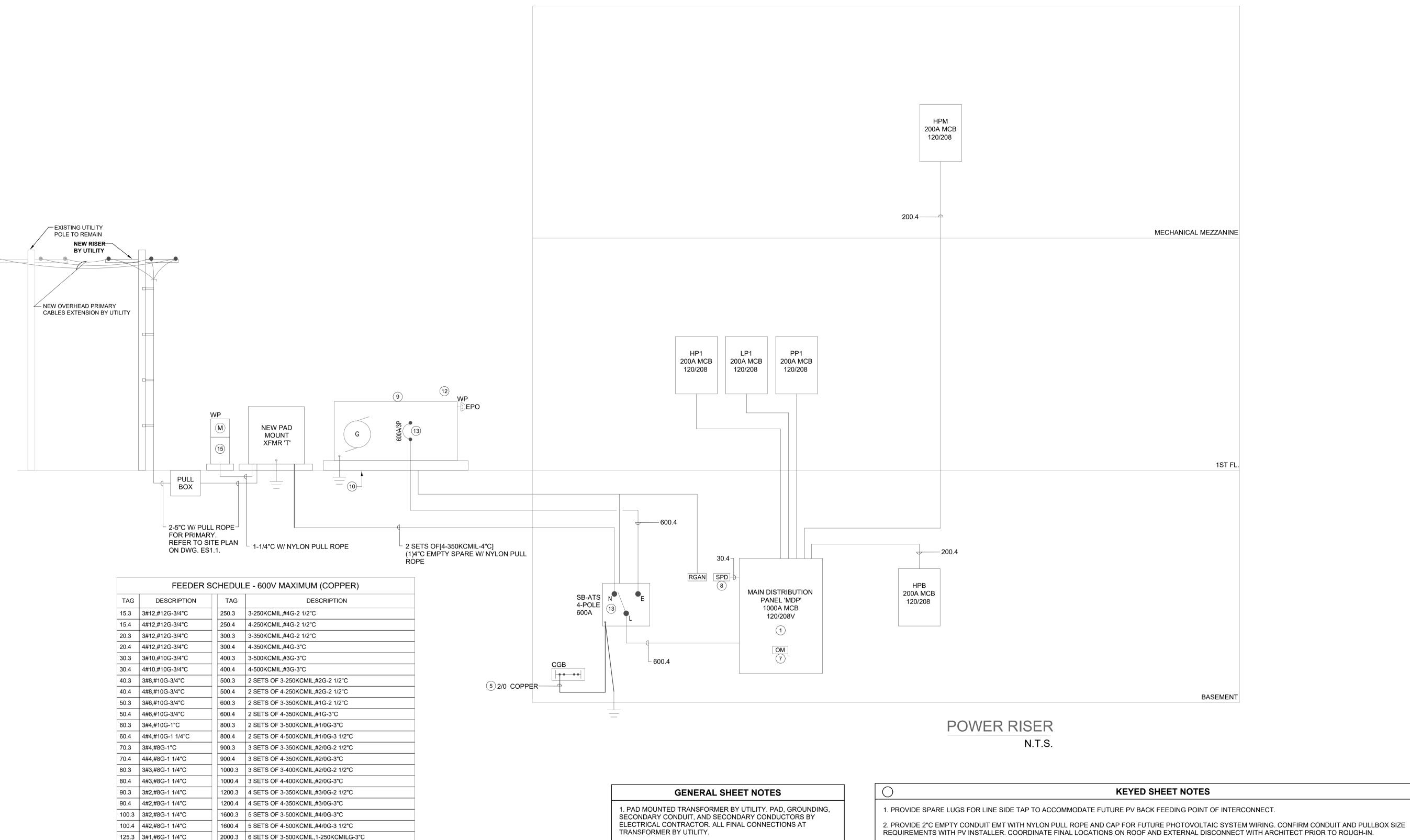
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FIRST FLOOR PLAN - SYSTEMS

SHEET NUMBER:



2. PROVIDE POWER SYSTEM STUDY INCLUDING SHORT-CIRCUIT, PROTECTIVE DEVICE COORDINATION AND ARC FLASH WITH ARC FLASH HAZARD WARNING LABELS.

3. COORDINATE WITH UTILITY AND OWNER FOR SCOPE OF WORK REQUIREMENTS FOR NEW SERVICE AND SHUTDOWNS. E.C. SHALL CARRY ALL ASSOCIATED COSTS FOR UTILITY BACK CHARGES.

4. THE WHOLE BUILDING ELECTRICAL SYSTEM WILL BE BACKED UP ON THE GENERATOR.

5. WIRING METHOD FOR ALL SYSTEMS SHALL BE IN CONDUIT OR METAL RACEWAY UNLESS OTHERWISE NOTED. MC CABLE MAY BE ALLOWED WITH PRE-APPROVAL OBTAINED FROM THE DIVISION. WHERE MC CABLE IS APPROVED FOR USE, ALL HOMERUNS SHALL BE IN CONDUIT.

1. PROVIDE SPARE LUGS FOR LINE SIDE TAP TO ACCOMMODATE FUTURE PV BACK FEEDING POINT OF INTERCONNECT.

REQUIREMENTS WITH PV INSTALLER. COORDINATE FINAL LOCATIONS ON ROOF AND EXTERNAL DISCONNECT WITH ARCHITECT PRIOR TO ROUGH-IN.

3. PROVIDE POWER SYSTEM STUDY INCLUDING SHORT-CIRCUIT, PROTECTIVE DEVICE COORDINATION AND ARC FLASH WITH ARC FLASH HAZARD WARNING LABELS.

4. RUN #2/0 COPPER TO GROUNDING ELECTRODE SYSTEM AS SPECIFIED IN NEC SECTIONS 250.50, 250.52 & 250.53.

5. PROVIDE CUSTOMER POWER METER TO RECORD CONSUMPTION, DEMAND, AND POWER FACTOR. METER SHALL HAVE LAN OR BACNET CONNECTION TO TRANSMIT

DATA TO THE BUILDING AUTOMATION SYSTEM 'BAS' FOR REMOTE MONITORING. FINAL CONNECTION TO BAS BY ATC.

6. PROVIDE SURGE PROTECTION DEVICE 'SPD' WITH CIRCUIT BREAKER AS REQUIRED.

7. 200KW/255KVA, 120/208V, 3¢, 4W LIQUID PROPANE GENERATOR IN WEATHERPROOF SOUND ATTENUATED ENCLOSURE (LEVEL 2). PROVIDE SERVICE ENTRANCE RATED OUTPUT CIRCUIT BREAKERS AND 8-POSITION LOAD CENTER WITH GENSET. PROVIDE WITH INTERIOR CABINET UNIT HEATER (5000W) PER NFPA 110-5.3.5 TO MAINTAIN 40° F AS REQUIRED. INCLUDE MOTORIZED DAMPERS AND ENCLOSURE LED LIGHT KIT.

8. PROVIDE ALL REQUIRED REINFORCEMENT AND FORMWORK FOR CONCRETE PAD. REINFORCING BARS: ASTM A 615/A 615M, GRADE 60 AND BAR SUPPORTS INCLUDING BOLSTERS, CHAIRS, SPACES AND OTHER DEVICES FOR SPACING, SUPPORTING, AND FASTENING REINFORCING BARS. CONFIRM WITH MANUFACTURER'S RECOMMENDATIONS SIZING AND STRENGTH OF PAD FOR WEIGHT OF GENERATOR.

9. PROVIDE (2#12-1"C) FOR ENGINE START, (2#10,#10G-1"C) FOR ENGINE COOLANT HEATERS/VENT DAMPERS, (2#10,#10G-1"C) FOR BATTERY CHARGER, AND (UL LISTED 4 TWISTED PAÌR-1"C) FÓR NETWORK WIRING TO REMOTE ANNUNCIATOR. SHORE POWER AND CONTROL/SIGNAL WIRING SHALL BE COORDINATED WITH SELECTED MANUFACTURER, PROVIDED AND INSTALLED BY E.C..

10. SERVICE ENTRANCE RATED 800A, 120/208V, 3PH, 4W, 4-POLE, OPEN TRANSITION AUTOMATIC TRANSFER SWITCH. INCLUDE NORMAL SIDE SERVICE ENTRANCE RATED 600A LSIG MAIN IN-LINE CIRCUIT BREAKER. PROVIDE SURGE PROTECTION DEVICE. PROVIDE SPARE LUGS FOR LINE SIDE TAP TO ACCOMMODATE FUTURE PV BACK FEEDING POINT OF INTERCONNECT.

11. TRANSFORMER RATED PEDESTAL METER. METER SOCKET FURNISHED BY UTILITY AND INSTALLED BY ELECTRICAL CONTRACTOR.

PRELIMINARY - NOT FOR CONSTRUCTION



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ELECTRICAL RISER - POWER

125.4 4#1,#6G-1 1/4"C

150.3 3#1/0,#6G-1 1/2"C

150.4 4#1/0,#6G-1 1/2"C

175.3 3#2/0,#6G-2"C

175.4 4#2/0,#6G-2"C

200.3 3#3/0,#6G-2"C

200.4 4#3/0,#6G-2"C

225.3 3#4/0,#4G-2"C

225.4 4#4/0,#4G-2 1/2"C

2000.4 6 SETS OF 4-500KCMIL,1-250KCMILG-3 1/2"C

2500.4 7 SETS OF 4-500KCMIL,1-350KCMILG-3 1/2"C

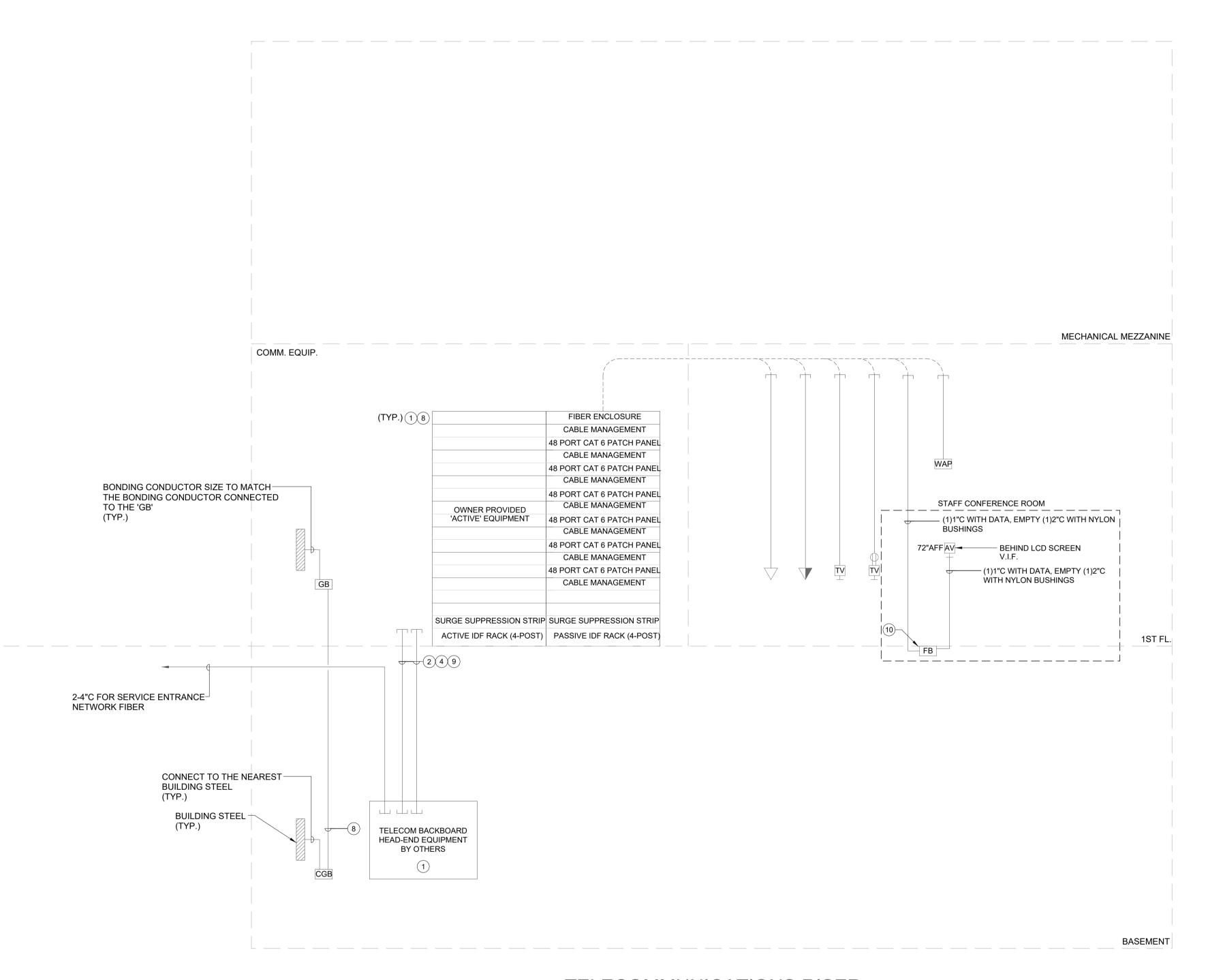
3000.4 8 SETS OF 4-500KCMIL,1-400KCMILG-3 1/2"C

4000.4 11 SETS OF 4-500KCMIL,1-500KCMILG-3 1/2"C

4000.3 11 SETS OF 3-500KCMIL,1-500KCMILG-3"C

2500.3 7 SETS OF 3-500KCMIL,1-350KCMILG-3"C

3000.3 8 SETS OF 3-500KCMIL,1-400KCMILG-3"C



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TELECOMMUNICATIONS RISER

N.T.S.

GENERAL SHEET NOTES

1. PROVIDE ALL WIRING, TERMINATIONS (UNLESS OTHERWISE NOTED) AND TEST ALL CABLES IN ACCORDANCE WITH EIA AND TIA STANDARDS. PROVIDE REPORT. TERMINATION PROTOCOL SHALL BE

VERIFIED WITH OWNER FOR VOICE OVER INTERNET

VERIFIED WITH OWNER FOR VOICE OVER INTERNET PROTOCOL (VOIP) PRIOR TO INSTALL.

2. ALL CABLES SHALL BE CLEARLY LABELED AT BOTH ENDS WITH DESCRIPTION OF DEVICE. COORDINATE LABELING CONVENTIONS OF JACKS AND CABLES WITH OWNER'S I.T. PERSONNEL. A 10' SERVICE LOOP SHOULD BE PROVIDED AT NETWORK CLOSET END AND A 1' SERVICE LOOP PROVIDED AT THE DEVICE END.

3. PROVIDE CABLE TRAY ABOVE ACCESSIBLE CEILINGS OR IN CONDUIT WHERE NOT ACCESSIBLE. ALL CABLING SHALL BE CONCEALED. ALL EMPTY CONDUITS SHALL HAVE NYLON PULL STRING.

4. ALL DEVICE LOCATIONS SHALL HAVE A FOUR INCH SQUARE BACK BOX AT EACH LOCATION OF A TELEPHONE/DATA/CATV OUTLET. PROVIDE 1-GANG REDUCER PLATES AS REQUIRED. RUN A ONE INCH CONDUIT AND PULL STRING FROM EACH BACK BOX TO WITHIN 6" OF CABLE TRAY ABOVE ACCESSIBLE CEILING. PROVIDE CABLE AS INDICATED FROM DEVICE TO HEAD-END (RESPECTIVE FLOOR DATA CLOSET).

5. PROVIDE INSULATED BUSHINGS ON THE ENDS OF ALL CONDUITS WITH BELL-CAP TYPE BUSHING AT TRAY END.

6. ALL CABLE SHALL BE LAID AT LEAST 18-INCHES AWAY FROM ELECTRICAL SERVICES INCLUDING POWER, LIGHTING, AC SECURITY SYSTEMS, AND OTHER SERVICES CREATING HARMONICS.

KEYED SHEET NOTES

1. PROVIDE CAT6 48-PORT UNIVERSAL RJ45/110 PATCH PANELS AS REQUIRED FOR QUANTITY OF DATA DROPS WITH 20% SPARE CAPACITY. PROVIDE ALL INFRASTRUCTURE INCLUDING NETWORK SUPPORT RACKS, CABLE/LADDER TRAY, GROUNDING/BONDING, POWER RECEPTACLES AND PLYWOOD BACKBOARD AS REQUIRED. UPS UNITS ARE PROVIDED BY OTHERS. PROVIDE 3/4"C FIRE RATED AC PLYWOOD PAINTED BLACK ALL AROUND DATA ROOMS. CONTRACTOR SHALL COORDINATE WITH OWNER'S I.T. PERSONNEL FOR EXACT REQUIREMENTS PRIOR TO PURCHASING AND CONSTRUCTION.

2. (4) EMPTY 4"C (EMT) W/ NYLON PULLSTRING. PROVIDE INSULATED BUSHINGS AT CONDUIT ENDS. PROVIDE FIRE STOPPING SEALANT AROUND CONDUIT PENETRATIONS AS REQUIRED. CONDUIT SLEEVES SHALL BE UTILIZED FOR LOW VOLTAGE CABLES ONLY. MAINTAIN MIN. 12" SEPARATION BETWEEN LOW VOLTAGE AND LINE VOLTAGE CABLES.

3. ALL HORIZONTAL CABLING FOR DATA, FROM THE FACEPLATE JACK TO PATCH PANEL, SHALL BE FURNISHED AND INSTALLED AS RISER RATED, NON-PLENUM, SOLID CATEGORY 6 CMR CABLE, EQUAL TO HUBBELL PREMISE WIRING #C6RRB. DATA (COLORED BLUE) AND VOICE (COLORED YELLOW). ALL CONCEALED WIRING ABOVE ACCESSIBLE SHALL BE RUN IN CABLE TRAY AND WALL MOUNTED CABLE CATS, ALL OTHER CABLING SHALL BE INSTALLED IN 3/4"C EMT MINIMUM. 'COLORED ORANGE' FOR WIRELESS ACCESS POINTS FROM OUTLET TO PATCH PANEL. '2D' DENOTES TWO DATA RJ45 JACKS AND TWO CATEGORY 6 UTP CABLES. WIRELESS ACCESS POINTS SHALL HAVE TWO DATA DROPS PER DEVICE LOCATION. PROVIDE BISUIT JACK FOR ACCESS POINTS.

4. ALL FIBER STRANDS SHALL BE TERMINATED WITH STANDARD CERTIFIED CONNECTORS, EQUAL TO HUBBELL PREMISE WIRING SPLICE CASSETTES #OCSPLCD12M4 FOR MULTIMODE.

5. ALL HORIZONTAL CABLING SHALL BE COLLECTIVELY GROUPED TO IDENTIFY AREAS OF SERVICE. FIRE RATED WALL PENETRATIONS SHALL BE MINIMIZED, BY COLLECTIVELY INSTALLING CABLES AS DEEMED APPROPRIATE, THRU METAL WALL AND FLOOR SLEEVES. PROVIDE FIRE-STOPPING AT ALL PENETRATIONS MADE FOR CABLE INSTALLATION.

6. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL HOMERUNS FROM DEVICE TO RESPECTIVE FLOOR IDF CLOSET.
CONTRACTOR SHALL TERMINATE ALL HOMERUNS AT DEVICE END AND AT PATCH PANELS WITHIN IDF CLOSET. PROVIDE SERVICE LOOPS AT BOTH PATCH PANEL AND DEVICE END. PROVIDE 10-FT OF EXTRA LENGTH, LOOPED IN THE IDF CLOSET TO ALLOW FOR FUTURE ADJUSTMENT OF PATCH PANELS. CERTIFY AND TEST ALL CABLES IN ACCORDANCE WITH TIA/EIA STANDARDS. PROVIDE REPORT TO OWNER. WIRE PUNCH/TERMINATION PROTOCOL SHALL BE VERIFIED WITH OWNER FOR VOICE OVER INTERNET PROTOCOL (VOIP) PRIOR TO INSTALL. COORDINATE WITH OWNER'S I.T. PERSONNEL FOR LABELING CONVENTIONS OF JACKS AND CABLE.

7. PROVIDE BONDING CONDUCTOR SIZED IN ACCORDANCE WITH TIA-607-B, SECTION 6.3.2 & TABLE 1 -TYPICAL. PROVIDE MINIMUM #3 CU IN 1"C PVC SCH. 40.

8. TYPICAL IT NETWORK RACKS AND ASSOCIATED WIRING SHALL CONSIST OF THE FOLLOWING:
A. MDF - ONE EMPTY ACTIVE BAY, FOUR POST RACK, EQUAL TO A HUBBELL #SF841936.

B. ONE PASSIVE BAY, TWO POST RACK WITH VERTICAL MANAGEMENT INCLUDING FLOOR ANCHOR & MOUNTING KITS, EQUAL TO A HUBBELL #HPW84RR19, (2)#VME614C1.
C. IDF - ONE FIBER TERMINATION PANEL EQUAL TO A HUBBELL #FCR1U3SP. MDF - TWO FIBER TERMINATION PANELS EQUAL TO A HUBBELL #FCR1U3SP.

D. 6 STRAND MM FIBER MODULE, LC STYLE, HUBBELL #OCSPLCD12M4.

E. 6 STRAND SM FIBER MODULE, LC STYLE, HUBBELL #.
F. ONE 1-3/4" CABLE MANAGER JUST BELOW THE FIBER
ENCLOSURE, HUBBELL #HM24C.
G. 48 PORT CAT6 PATCH PANELS WITH REAR CABLE
MANAGEMENT, HUBBELL #HPJ648, QUANTITY AS INDICATED IN

H. ONE 1-3/4" CABLE MANAGER JUST BELOW THE FIBER ENCLOSURE, HUBBELL #HM24C.
I. EACH RACK SHALL BE EQUIPPED WITH A POWER STRIP AND SURGE SUPPRESSOR, HUBBELL #PH20A10S.

9. PROVIDE (2)6-STRAND OM4 ARMORED MULTI-MODE 50/125 MICRON FIBER OPTIC CABLE AND (6) CAT6 RISER CABLES (HFCD15006P4) FOR INTERCONNECTION BETWEEN MDF AND EACH IDF CLOSET. TERMINATE ALL FO CABLE STRANDS ON SPLICE CASSETTES WITH UNKEYED DUPLEX LC TYPE CONNECTORS.

10. CONTRACTOR SHALL COORDINATE EXACT REQUIREMENTS AND CONFIGURATION OF FLOOR BOX WITH OWNER PRIOR TO ROUGH-IN AND PURCHASING OF DEVICE. PROVIDE (2) DUPLEX RECEPTACLES, (1V3D) DATA PORTS, (1) HDMI AND (1) USB PORT.

TUDIO

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Bedford, NH MEP/FP Engineers 603.444.6578 Project #530419

SEAL:

CITY OF CARIBOU, MAINE CARIBOU POLICE DEPARTMENT

PROJECT NUMBER: 21-000

SUBMISSION PROGRESS

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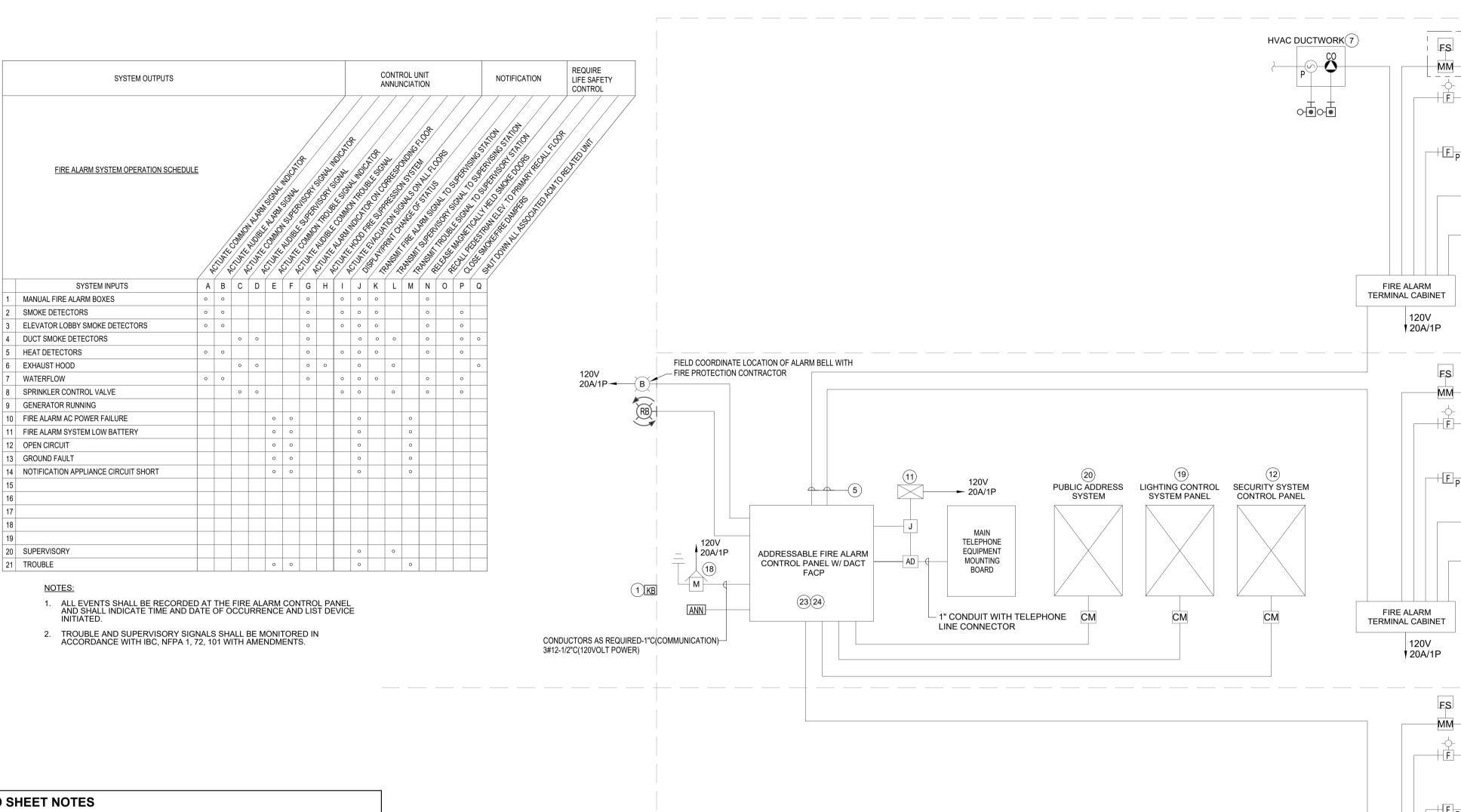
SHEET REVISION SCHEDULE:

ELECTRICAL RISER - TELECOM

SHEET NUMBER:

E5.2

DETAILS.



KEYED SHEET NOTES

1. PROVIDE KEY BOX AT MAIN ENTRANCE. ELECTRICAL CONTRACTOR SHALL PURCHASE DIRECTLY THROUGH KNOX BOX, BUT KEY BOX MUST MEET THE FIRE DEPARTMENT REQUIREMENTS. VERIFY LOCATION WITH FIRE DEPARTMENT.

2. ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUIT BREAKER HANDLE-LOCK ON POWER CIRCUITS. HANDLE LOCK SHALL ALLOW THE CIRCUIT BREAKER TO TRIP, BUT PREVENT SWITCHING OF THE CIRCUIT BREAKER TO THE "OFF" POSITION.

3. PROVIDE SMOKE DETECTOR IN VICINITY OF FIRE ALARM CONTROL PANEL, REMOTE ANNUNCIATOR, POWER BOOSTERS, AND ALL FIRE ALARM TERMINAL BOXES. SMOKE DETECTORS IN ELEVATOR LOBBY SHALL BE PROGRAMMED AND/OR PROVIDED WITH ELEVATOR RECALL

4. MINIMUM SIZE CONDUIT SHALL BE 3/4" UNLESS NOTED OTHERWISE.

5. ALL SYSTEM WIRING SHALL BE INSTALLED IN CONDUIT OR (FIRE ALARM RATED FPLR FLEXIBLE METALLIC CABLE TYPE MC CABLE WHERE CONCEALED) AND IN ACCORDANCE WITH EQUIPMENT SUPPLIER'S APPROVED SHOP DRAWINGS AND WIRING DIAGRAMS.

6. RISER DIAGRAM DOES NOT SHOW ENTIRE SYSTEM. REFER TO FLOOR PLANS FOR EXACT QUANTITIES AND LOCATIONS OF ALL SYSTEM

7. TO AUXILIARY CONTACTS IN RESPECTIVE AIR-HANDLING UNIT STARTER FOR UNIT SHUTDOWN ON ALARM. DUCT SMOKE DETECTOR SHALL BE PROVIDED AND WIRED BY ELECTRICAL CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR. DUCT SMOKE DETECTORS SHALL BE INSTALLED AS IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODE:

· SMOKE DETECTORS SHALL BE INSTALLED IN RETURN AIR SYSTEMS WITH A DESIGN CAPACITY GREATER THAN 2,000 CFM, IN THE RETURN AIR DUCT OR PLENUM UPSTREAM OF ANY FILTERS, EXHAUST AIR CONNECTIONS, OUTDOOR AIR CONNECTIONS, OR DECONTAMINATION EQUIPMENT AND APPLIANCES.

· WHERE RETURN AIR RISERS SERVE TWO OR MORE STORIES AND SERVE ANY PORTION OF A RETURN AIR SYSTEM HAVING A DESIGN CAPACITY GREATER THAN 15,000 CFM, SMOKE DETECTORS SHALL BE INSTALLED AT EACH STORY. SUCH SMOKE DETECTORS SHALL BE LOCATED UPSTREAM OF THE CONNECTION BETWEEN THE RETURN AIR RISER AND ANY AIR DUCTS OR PLENUMS. · SMOKE DETECTORS SHALL BE INSTALLED IN THE SUPPLY AIR SYSTEM FOR ALL MAKE-UP AIR UNITS WITH A DESIGN CAPACITY GREATER THAN 2,000 CFM.

8. PROVIDE SURFACE 24 VOLT DC CARBON MONOXIDE ALARM DETECTOR.

9. PROVIDE 120VOLT POWER AND CONTROL MODULE FOR CONTROL OF SMOKE DAMPER AT TOP OF ELEVATOR SHAFT. DAMPER SHALL BE PROGRAMMED TO OPEN UPON ACTIVATION OF SMOKE DETECTOR AT ELEVATOR MACHINE ROOM, OR AS DIRECTED PROVIDE CONTROL WIRING FROM DAMPER MOTOR TO FIRE ALARM TERMINAL CABINET.

10. PROVIDE REMOTE ALARM INDICATOR OVER DOOR OF EACH LOCKED ROOM THAT CONTAINS A SMOKE OR HEAT DETECTOR WHETHER OR NOT SHOWN ON THE FLOOR PLANS: SUCH AS, ELEVATOR MACHINE ROOMS, ELECTRIC ROOMS, MECHANICAL ROOMS, IT ROOMS, ETC.

11. ELECTRICAL CONTRACTOR SHALL PROVIDE 120VOLT POWER AND CONTROL WIRING TO ALL SMOKE/FIRE DAMPERS. REFER TO ELECTRICAL DRAWINGS FOR POWER WIRING REQUIREMENTS. "1" NEXT TO SMOKE/FIRE DAMPER INDICATES SMOKE ZONE. PROVIDE A MONITOR MODULE, CONTROL MODULE AND RELAY MODULE FOR EACH GROUP OF SMOKE/FIRE DAMPERS. REFER TO ELECTRICAL DRAWINGS FOR QUANTITY OF SMOKE DAMPERS, AND SMOKE ZONES.

12. PROVIDE A 20AMP, 120VOLT, 1 PHASE SURGE PROTECTOR EQUAL TO MCG SURGE PROTECTION MODEL NO. 415. SURGE PROTECTOR SHALL BE INSTALLED BETWEEN THE CIRCUIT BREAKER IN THE PANEL AND THE FIRE ALARM PANEL, AND IN ACCORDANCE WITH MANUFACTURER'S WIRING RECOMMENDATIONS.

13. SECURITY/DOOR ENTRY SYSTEM SHALL BE CONNECTED TO FIRE ALARM SYSTEM VIA A CONTROL MODULE/RELAY. SELECTIVE SECURED DOORS SHALL RELEASE UPON ACTIVATION OF ALARM. COORDINATE WITH SECURITY AND DOOR HARDWARE CONTRACTORS.

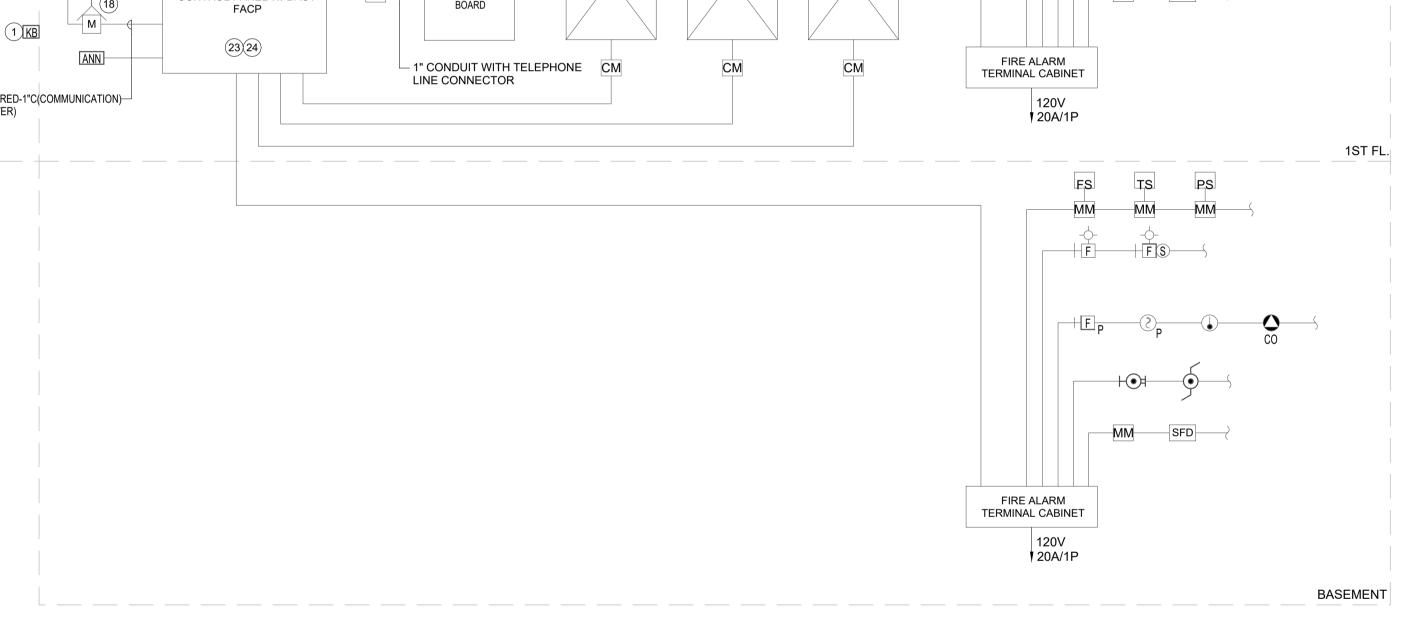
14. CELLULAR/IP COMMUNICATOR -THE FACP SHALL TRANSMIT AN ALARM SIGNAL TO THE LOCAL FIRE DEPARTMENT VIA A CELLULAR/IP COMMUNICATOR THAT MEETS THE REQUIREMENTS OF THE DERRY FIRE DEPARTMENT. TWO TRANSMISSION METHODS SHALL BE EMPLOYED. COMMON METHODS ARE AS FOLLOWS:

· DACT CELLULAR COMMUNICATOR · DACT VIA LOCAL INTERNET PROTOCOL AS BACK-UP.

· DUAL PHONE LINES AS BACK-UP.

15. LIGHTING CONTROL SYSTEM SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM SO THAT WHEN IN ALARM STATUS, THE FIRE ALARM SYSTEM OVERRIDES DIMMING SYSTEM AND LIGHTS ARE BROUGHT UP TO 100% OUTPUT.

16. PA/SOUND/ASSISTED LISTENING/MEDIA SYSTEM SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM SO THAT WHEN IN ALARM STATUS, THE FIRE ALARM SYSTEM OVERRIDES MUSIC SYSTEM AND MUTES THE SOUND SYSTEM.



FIRE ALARM RISER N.T.S.

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CONSULTANT:

- FIELD COORDINATE QUANTITIES AND LOCATIONS OF ALARM SWITCHES WITH FIRE PROTECTION

CONTRACTOR (TYP.)

- SMOKE DAMPERS PROVIDED

ELEVATOR RECALL LOCATED IN

ELEVATOR MACHINE ROOM

BY HVAC CONTRACTOR (TYP.)

MECHANICAL MEZZANINE



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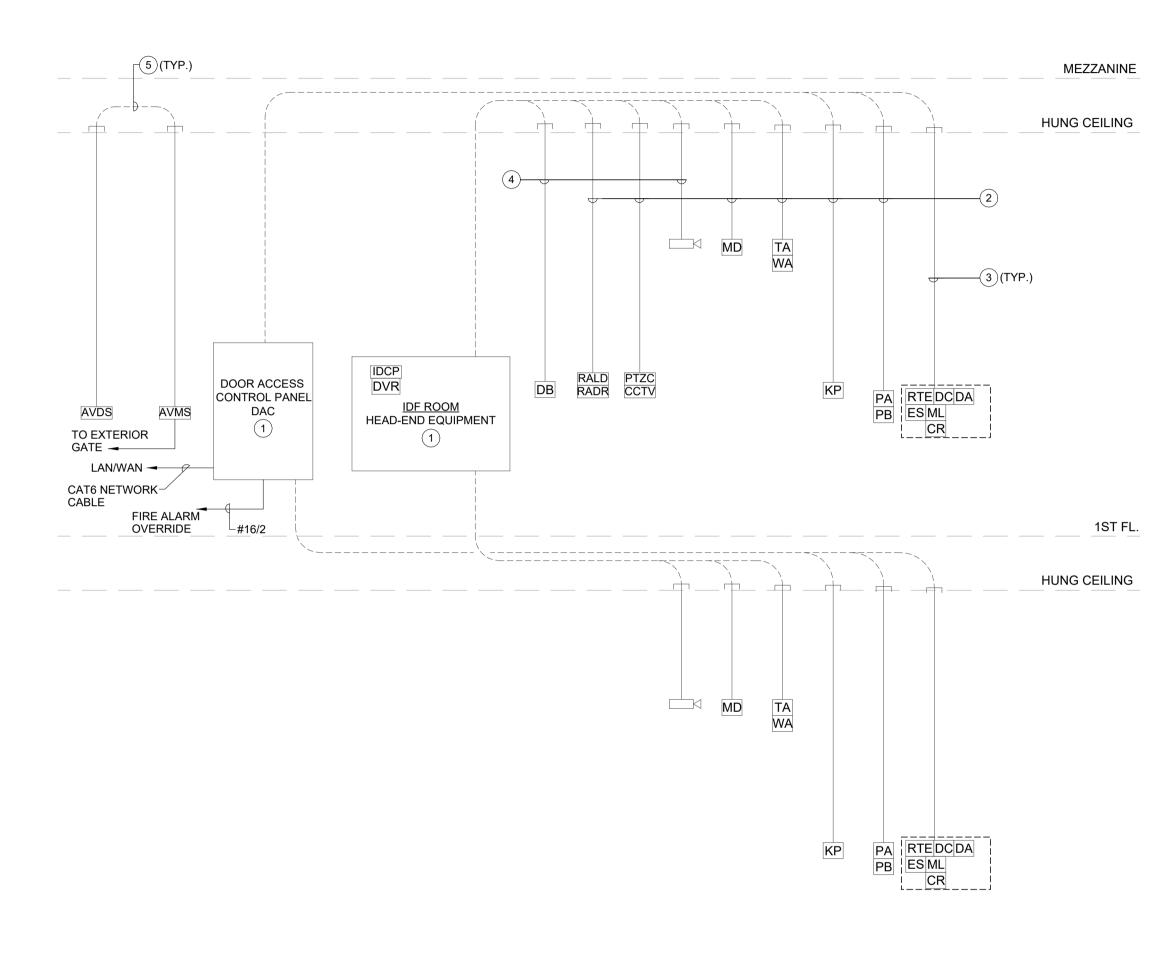
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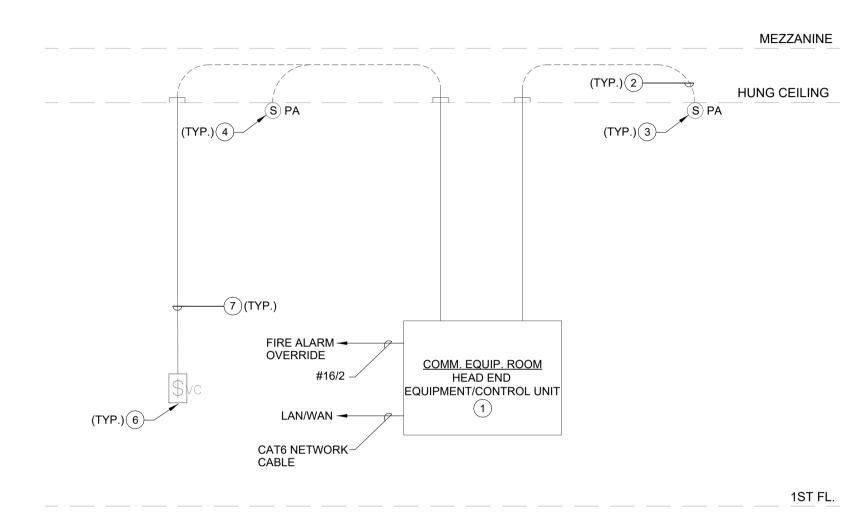
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ORIGINAL ISSUE ₽₳₫€:24

SHEET REVISION SCHEDULE: No. DATE

ELECTRICAL RISER - FIRE ALARM





HUNG CEILING

BASEMENT

SECURITY SYSTEM RISER

N.T.S.

BASEMENT

KEYED SHEET NOTES

1. PROVIDE CAT6 48PORT UNIVERSAL RJ45/110 PATCH PANEL AND ASSOCIATED MOUNTING BRACKETS FOR SECURITY NETWORK RACK. PROVIDE ALL INFRASTRUCTURE INCLUDING NETWORK RACK, CABLE TRAY/J-HOOKS, GROUNDING/BONDING, POWER RECEPTACLES AND PLYWOOD BACKBOARD AS REQUIRED. E.C. SHALL COORDINATE WITH OWNER'S SECURITY CONTRACTOR FOR EXACT REQUIREMENTS AND LOCATION OF HEAD-END EQUIPMENT PRIOR TO PURCHASING AND CONSTRUCTION.

2. PROVIDE SECURITY CABLES AS REQUIRED. CCTV (COLORED WHITE) AND ACCESS CONTROL (COLORED TBD). E.C. SHALL COORDINATE WITH OWNER'S SECURITY CONTRACTOR FOR EXACT REQUIREMENTS, WIRING SPECIFICATIONS AND LOCATION OF HEAD-END EQUIPMENT PRIOR TO PURCHASING AND CONSTRUCTION.

3. 18/4 NON-SHIELDED PLENUM CABLE CMP AND COMPOSITE CABLE CMP. VERIFY CABLE REQUIREMENTS AND LOCATIONS WITH OWNER'S SECURITY VENDOR.

4. CATEGORY 6 PLENUM CABLE CMP DROP AT EACH CAMERA, DURRESS BUTTON, AND TEMPERATURE/WATER DETECTION ALARM LOCATION. LEAVE 30' OF SERVICE LOOP AT CAMERA LOCATION.

5. WIRING AS REQUIRED BY THE MANUFACTURER. INTERCOM MASTER STATION EQUAL TO AIPHONE #JP-DVF, INTERCOM SUB-MASTER STATION EQUAL TO AIPHONE #JP-4HD, AND INTERCOM DOOR STATION EQUAL TO AIPHONE #JP-DVF. PROVIDE ALL MATERIALS AND EQUIPMENT NEEDED FOR A COMPLETE AND OPERATIONAL VIDEO INTERCOM SYSTEM, WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO VIDEO MASTER STATION, VIDEO SUB-STATION, POWER SUPPLIES, DOOR RELEASE ADAPTORS, LONG DISTANCE ADAPTORS, BACK BOXES, CONDUIT, AND WIRING. ALL LOW VOLTAGE WIRING SHALL BE SIZED BY AND THE MANUFACTURER.

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PUBLIC ADDRESS SYSTEM RISER

N.T.S.

KEYED SHEET NOTES

1. PROVIDE ALL REQUIRED SYSTEM COMPONENTS AND HEAD-END EQUIPMENT FOR FULLY FUNCTIONAL PUBLIC ADDRESS SYSTEM. RISER DOES NOT SHOW ALL NECESSARY COMPONENTS AND WIRING. CONTRACTOR SHALL COORDINATE WITH OWNER'S VENDOR (TELEPHONE AND NETWORK TECHNOLOGIES - TNT) FOR ALL 120VAC POWER, LOW VOLTAGE WIRING, AND INTEGRAL COMPONENTS FOR A COMPLETE OPERATING SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

2. 18/2 PLENUM RATED SPEAKER WIRE. VERIFY WIRING REQUIREMENTS WITH OWNER'S VENDOR.

 $3.\ \mathsf{RECESS}\ \mathsf{MOUNT}\ \mathsf{8"}\ \mathsf{CEILING}\ \mathsf{PAGING}\ \mathsf{SPEAKERS}.\ \mathsf{INCLUDE}\ \mathsf{BACKBOX}\ \mathsf{AND}\ \mathsf{CEILING}\ \mathsf{TILE}\ \mathsf{MOUNTING}\ \mathsf{SUPPORT}\ \mathsf{AS}\ \mathsf{REQUIRED}.$

4. RECESS MOUNT 4" CEILING PAGING SPEAKERS. INCLUDE BACKBOX AND CEILING TILE MOUNTING SUPPORT AS REQUIRED.

5. ALL CABLES SHALL BE CLEARLY LABELED WITH DESCRIPTION OF DEVICE LOCATION. PROVIDE SERVICE LOOPS AT THE HEAD-END AND DEVICE LOCATIONS. TERMINATE AND TEST ALL CABLES AT DEVICE AND HEAD-END IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS. PROVIDE ALL REQUIRED SOFTWARE, PROGRAMMING, TRAINING, AND COMMISSIONING FOR 'PA' SPEAKER SYSTEM.

6. PROVIDE ATTENUATORS/VOLUME CONTROL STATIONS AND WIRING. LOCATE AND LABEL VOLUME CONTROL STATIONS IN RESPECTIVE FLOOR IDF CLOSET.

7. 18/2 PLENUM RATED SPEAKER WIRE. VERIFY WIRING REQUIREMENTS WITH OWNER'S VENDOR.

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603.444.6578 Project #530419

CITY OF CARIBOU, MAINE CARIBOU POLICE

PROJECT NUMBER: 21-000

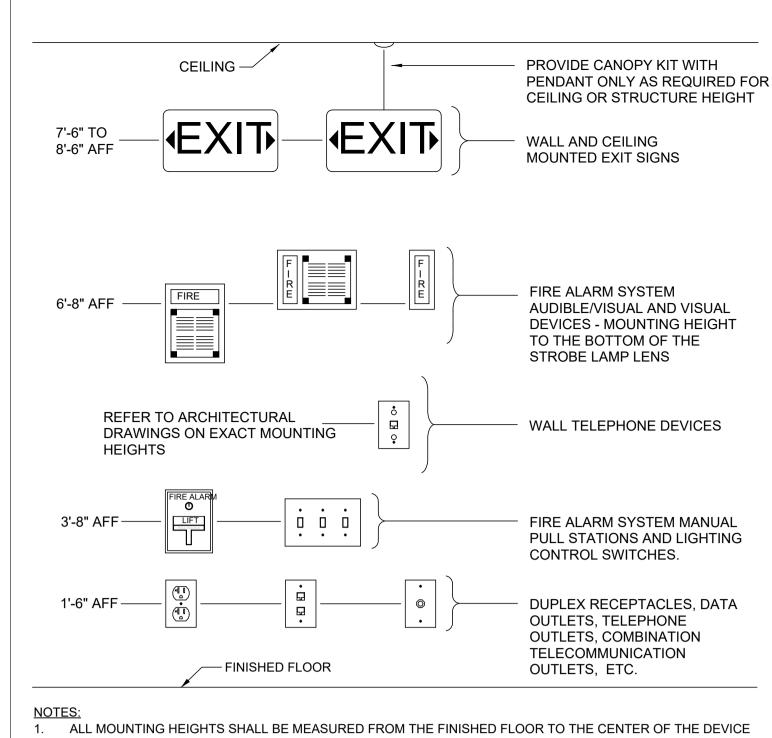
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ORIGINAL ISSUE ₽₳₮€24

SHEET REVISION SCHEDULE: No. DATE

ELECTRICAL DETAILS

HEET IUMBER:

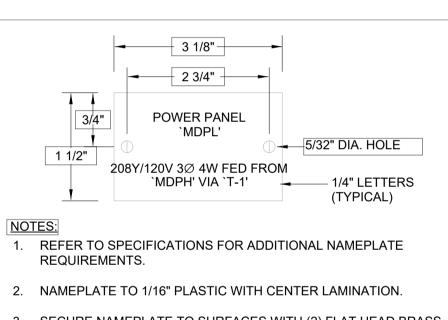


- ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM THE FINISHED FLOOR TO THE CENTER OF THE DEVICE UNLESS OTHERWISE INDICATED.
- DEVICES SHALL BE INSTALLED ON A COMMON HORIZONTAL CENTERLINE WHEN GROUPED TOGETHER.
 ALL DEVICES SHALL BE INSTALLED AT MOUNTING HEIGHTS AS INDICATED ON THIS DETAIL UNLESS
- OTHERWISE NOTED ON THE PLANS.

 4. ALL DEVICES SHOWN ON THIS DETAIL, MAY NOT BE PRESENT ON THIS PROJECT. THIS IS A TYPICAL DEVICE MOUNTING HEIGHT DETAIL, EACH PROJECT MAY HAVE MORE OR LESS VARIETY OF DEVICES AND SYSTEMS.

TYPICAL DEVICE MOUNTING HEIGHT DETAIL

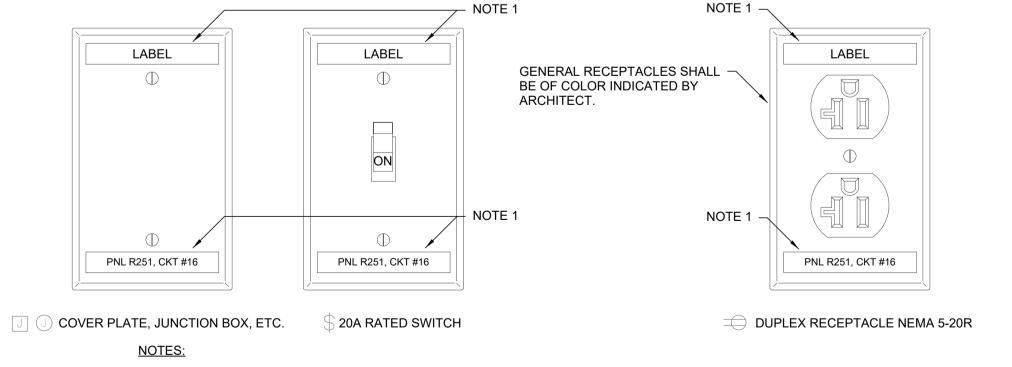
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- 3. SECURE NAMEPLATE TO SURFACES WITH (2) FLAT HEAD BRASS SCREWS.
- 4. 208Y/120 VOLT PANELBOARDS SHALL HAVE BLUE FACE PLATE WITH WHITE ENGRAVED LETTERS.
- 5. 480Y/277 VOLT PANELBOARDS SHALL HAVE ORANGE FACE PLATE WITH BLACK ENGRAVED LETTERS.
- 6. LIFE SAFETY PANELBOARDS SHALL HAVE RED FACE PLATE WITH WHITE ENGRAVED LETTERS.

TYPICAL NAMEPLATE DETAIL

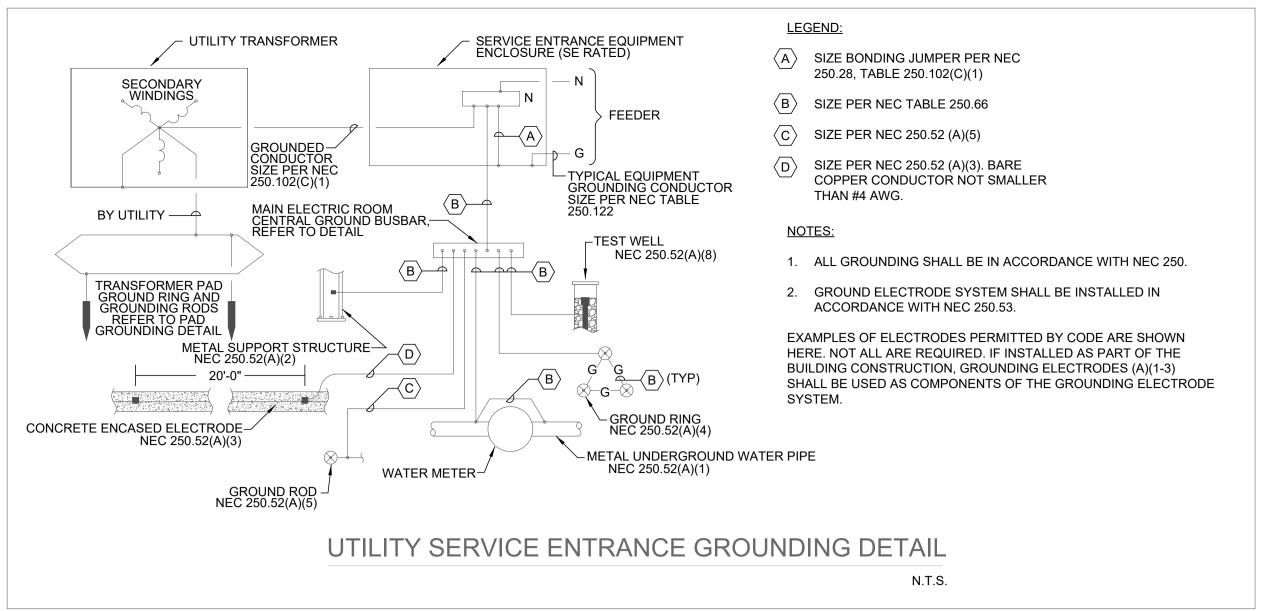
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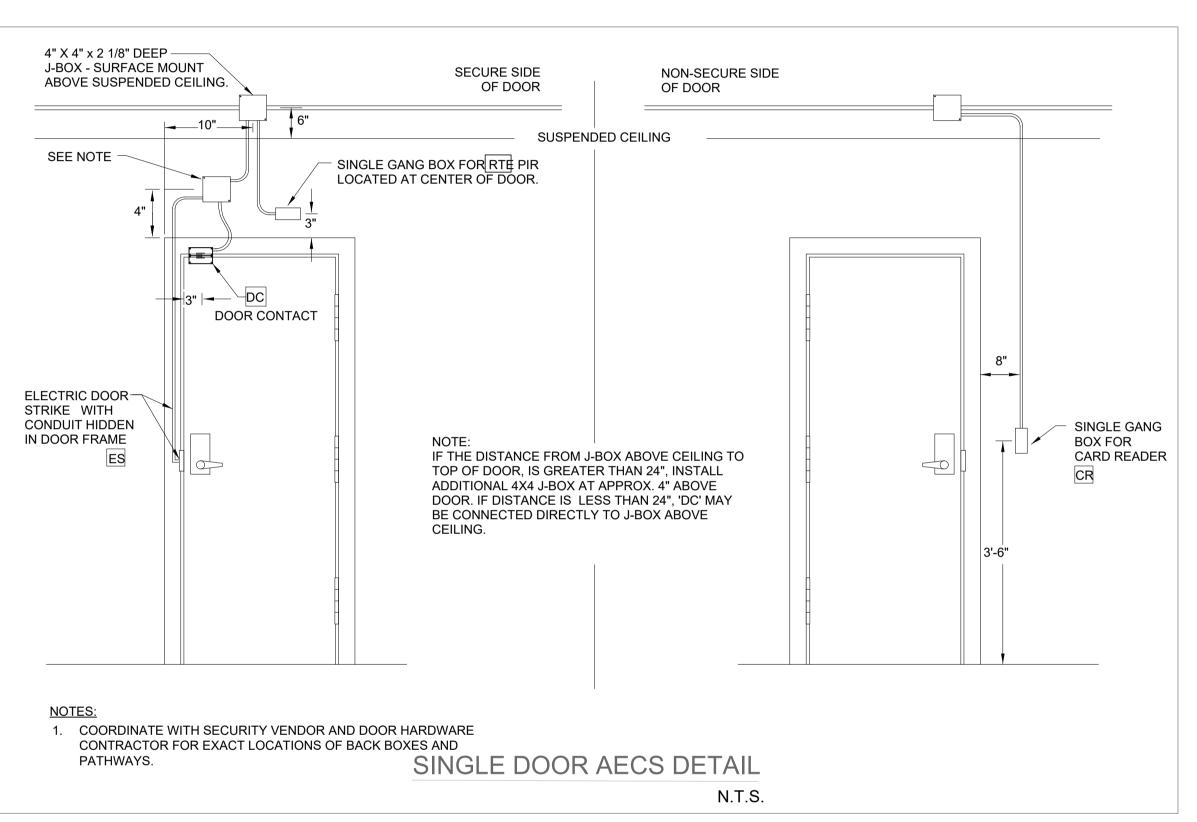


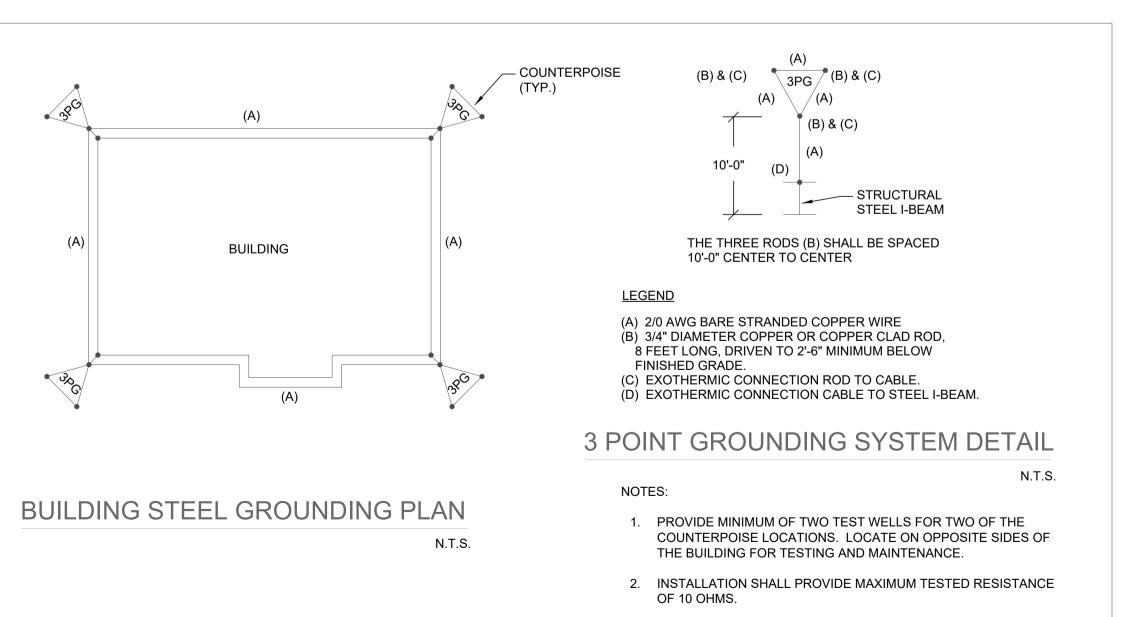
1. AT A MINIMUM, ELECTRICAL CONTRACTOR SHALL PROVIDE TYPED LABELS WITH PTOUCH MACHINE TO INDICATE PANEL NAME AND CIRCUIT NUMBER. PROVIDE TYPED LABEL FOR AUTOMATICALLY CONTROLLED RECEPTACLES. COORDINATE EXACT NAMING WITH FACILITY'S PERSONNEL. IF FACILITY STANDARD IS ENGRAVED COVERPLATES, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ENGRAVED COVERPLATES TO MATCH FACILITY REQUIREMENTS.

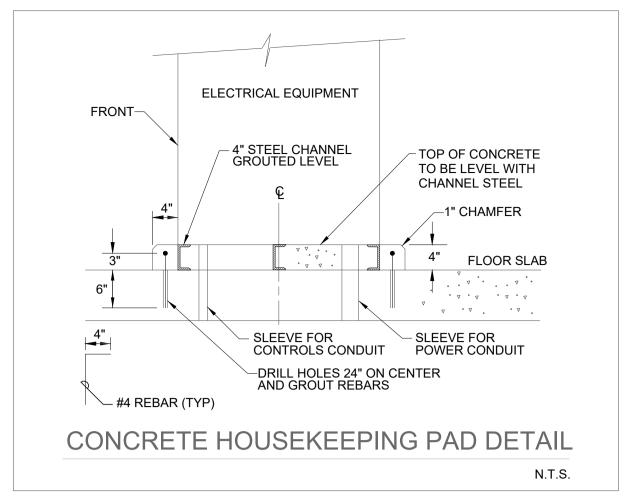
TYPICAL DEVICE COVERPLATE LABELING DETAIL

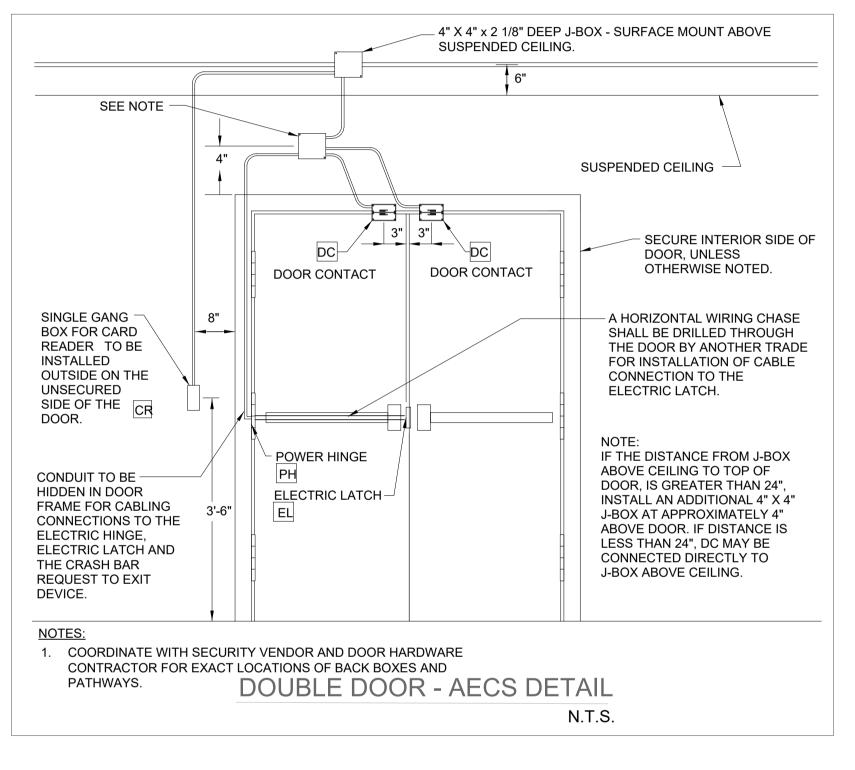
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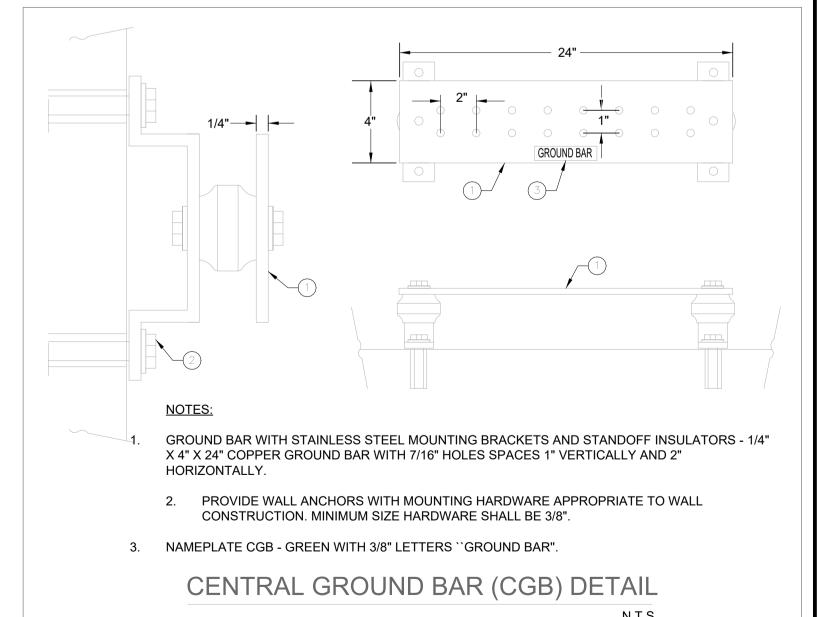
















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SEAL:

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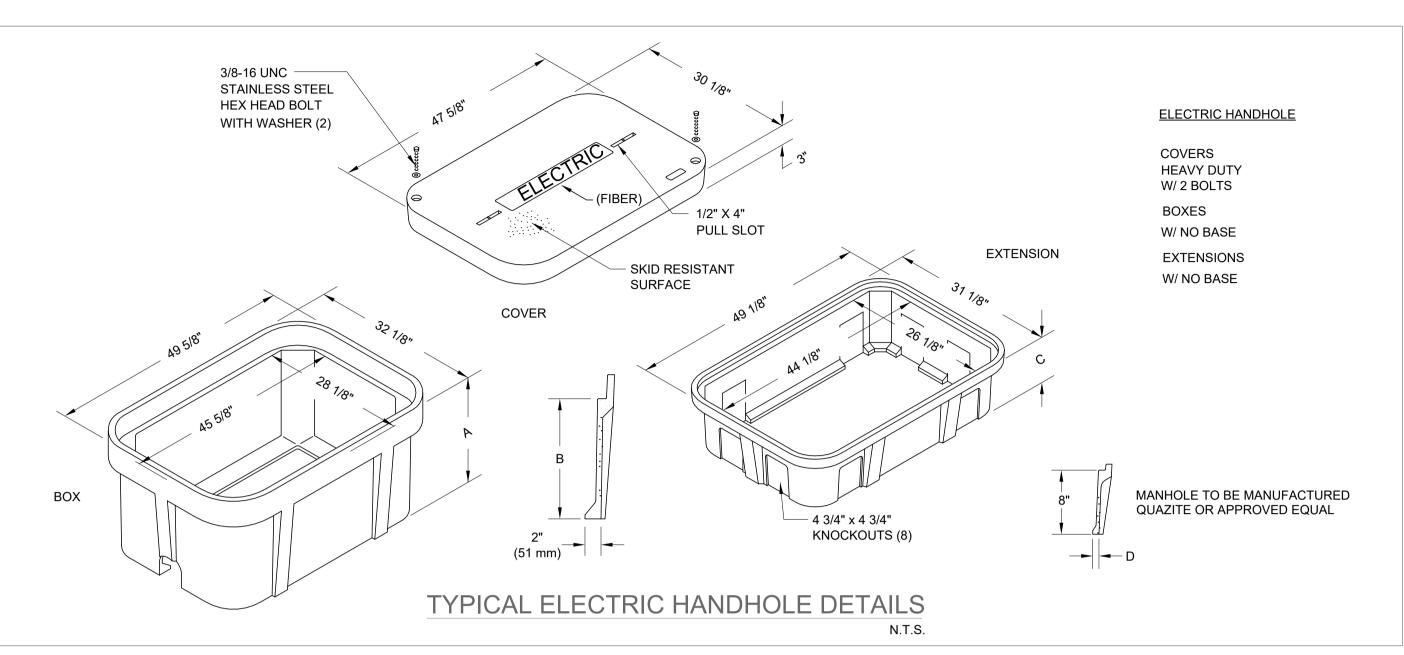
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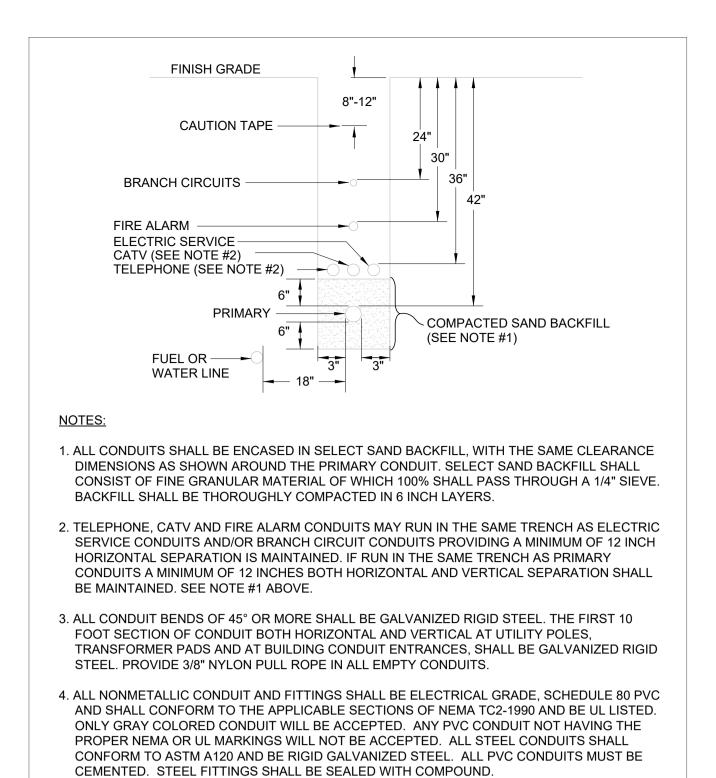
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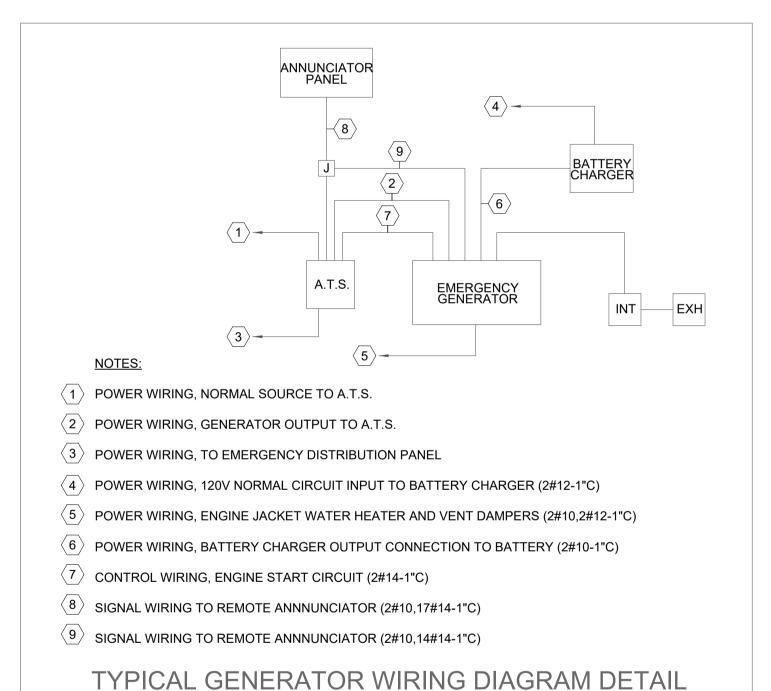
TYPICAL CONDUIT TRENCH DETAIL

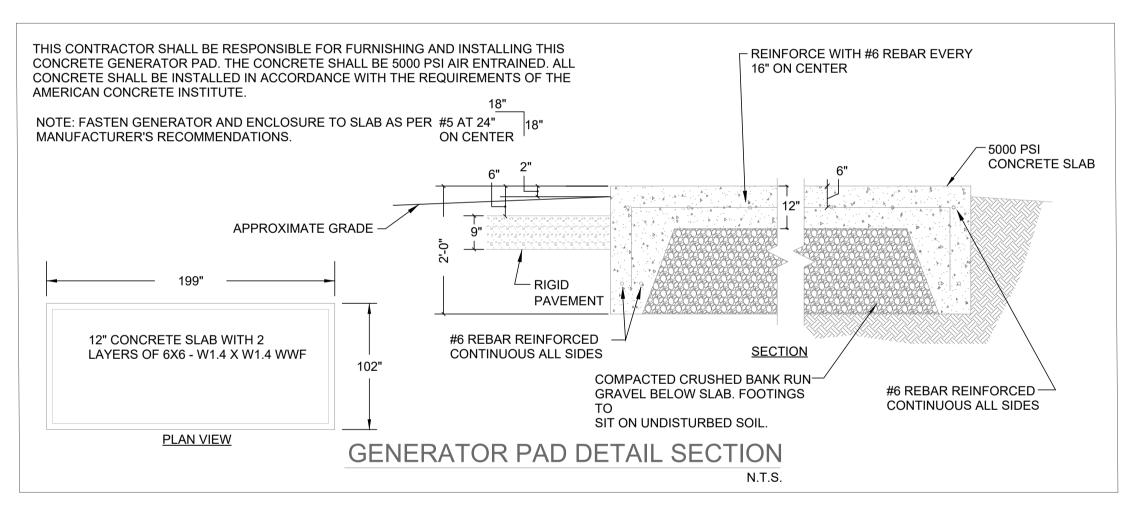
5. ALL CONDUIT SYSTEMS, SHOWN ON THIS DETAIL, MAY NOT BE PRESENT ON THIS PROJECT.

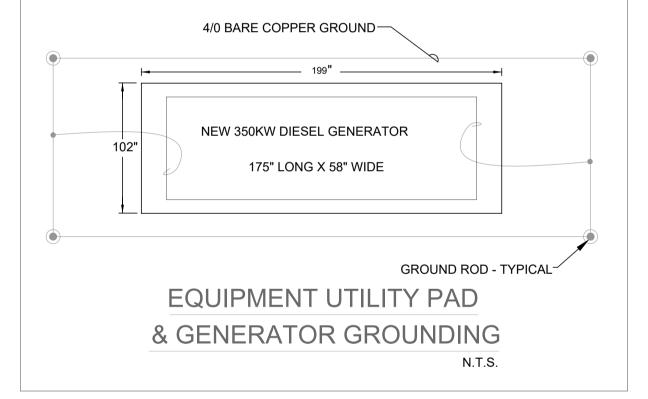
LESS CONDUIT SYSTEMS.

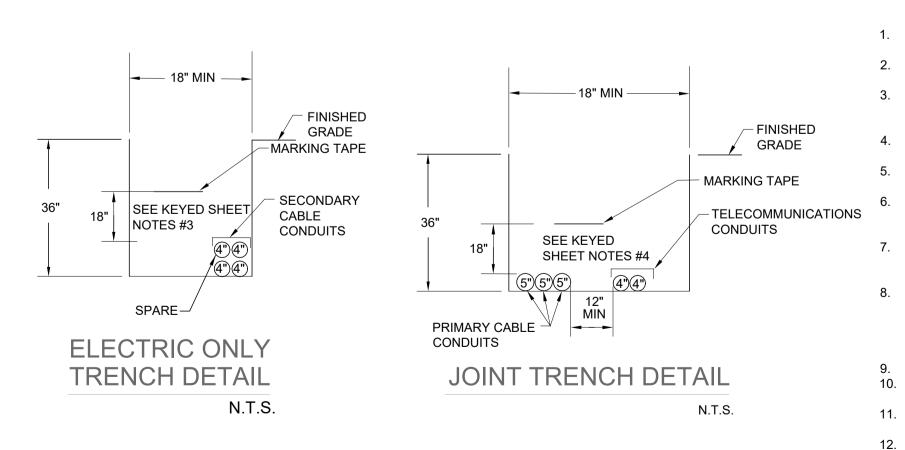
THIS IS A TYPICAL CONDUIT TRENCH DETAIL, EACH INDIVIDUAL PROJECT MAY HAVE MORE OR

N.T.S.









COMMUNICATION CONDUITS SHALL HAVE A MINIMUM OF 12" OF SEPARATION FROM THE ELECTRIC CONDUITS.
GAS LINES SHALL HAVE A MINIMUM OF 36" SEPARATION FROM ELECTRIC AND

COMMUNICATION CONDUITS.
WATER AND SEWER LINES SHALL HAVE A MINIMUM OF 48" OF HORIZONTAL
SEPARATION FOR PARALLEL RUNS AND MINIMUM OF 12" VERTICAL SEPARATION FOR
CROSSING RUNS.
THE CONDUIT TRENCH SHALL BE BETWEEN 42" (MINIMUM) AND 48" (MAXIMUM) IN

DEPTH AND 18" (MINIMUM) IN WIDTH.
CONDUIT TRENCH SHALL NOT PASS THROUGH SOILS SUCH AS MUD, SHIFTING SOILS, ETC.

THE TRENCH BOTTOM SHALL BE SMOOTH, FLAT AND WITHOUT SURFACE IRREGULARITIES. THE BOTTOM OF THE TRENCH SHALL BE FREE OF DEBRIS, SUCH AS ROCKS, WOOD, GLASS, ETC.

IF EXCAVATION IS IN LEDGE OR ROCK, A 4" (MINIMUM) LAYER OF CLEAN BACKFILL (ROCKS NOT LARGER THAN 1 1/2") IS TO BE PLACED OVER THE TRENCH BOTTOM

PRIOR TO THE INSTALLATION OF CONDUITS.
THE FIRST 12" OF BACK FILL MATERIAL SHALL NOT CONTAIN ROCK LARGER THAN 1
1/2" IN THEIR GREATEST DIMENSIONS AND SHALL CONTAIN ENOUGH FINES TO FILL
ALL VOIDS. THE REMAINDER OF THE BACKFILL SHALL NOT CONTAIN ROCKS LARGER
THAN 3" IN DIAMETER. ALL BACK FILL MATERIAL SHALL BE FREE OF DECOMPOSABLE
(ORGANIC) MATERIAL.

MARKING TAPE SHALL BE INSTALLED 18" ABOVE CONDUITS.
 PVC CONDUIT MEANS - GRAY ELECTRICAL GRADE CONDUIT, SCHEDULE 40 OR 80 PVC. RIGID STEEL MEANS - (HOT-DIPPED) GALVANIZED RIGID STEEL.
 FOR PRIMARY CABLE RUNS, ALL SWEEPS AND THE FIRST TEN FOOT SECTION

THEREAFTER MUST BE RIGID STEEL.
ALL METALLIC CONDUIT EXPOSED TO THE PUBLIC MUST BE GROUNDED.
CONDUIT SWEEPS MUST HAVE A 24" OR LARGER RADIUS.

ONLY STEEL CONDUIT SHALL BE ATTACHED TO STEEL SWEEPS.
 ALL PVC CONDUIT JOINTS SHALL BE JOINED WITH PVC CEMENT. ALL STEEL TO PVC TRANSITIONS MUST UTILIZE A PVC THREADED ADAPTER.

TRENCH AND CONDUIT NOTES

ENTRANCE OF GASSES.

- 16. CONDUITS SHALL BE LAID IN AN ORGANIZED FASHION WITH THE USE OF CONDUIT SPACERS AS NEEDED.
- CHANGE IN DIRECTION BETWEEN TWO CONTIGUOUS LENGTHS OF CONDUIT SHALL BE LIMITED TO 5 DEGREES.

 OVERALL CHANGE IN DIRECTION IN THE PLANE OF ANY CONDUIT RUN SHALL NOT EXCEED 45 DEGREES EXCLUSIVE OF VERTICAL SWEEPS. A PULL BOX MUST BE INSTALLED A THE
- 45 DEGREES EXCLUSIVE OF VERTICAL SWEEPS. A PULL BOX MUST BE INSTALLED A THE APPROXIMATE MIDPOINT IF THE ARC OF THE RUN EXCEEDS THIS MAXIMUM.

17. CONDUIT SHALL BE LAID IN A STRAIGHT LINE WHENEVER POSSIBLE. THE MAXIMUM

- 19. FOR THE SECONDARY CABLE RUNS LONGER THAN 200 FEET SWEEPS AND THE FIRST 10 FOOT SECTION THEREAFTER MUST BE RIGID STEEL, EXCEPT AT THE METER LOCATION.
 20. CONDUITS INSTALLED THROUGH BUILDING WALLS SHALL BE SEALED TO PREVENT THE
- 21. CONDUIT RUNS SHALL BE INSPECTED BY UTILITY PRIOR TO BEING COVERED BY BACK FILL OR THE CONTRACTOR WILL BE REQUIRED TO RE-EXPOSE THE CONDUITS.
 22. ALL RUNS OF CONDUIT SHALL BE CLEANED BY PULLING A CLEANING PLUG OR MANDREL
- 22. ALL RUNS OF CONDUIT SHALL BE CLEANED BY PULLING A CLEANING PLUG OR MANDREL (NO SMALLER THAN 1/4" LESS THAN THE CONDUIT SIZE) THROUGH THE CONDUIT.
 23. ALL RUNS OF CONDUIT SHALL HAVE A 2,500 POUND, FLAT, WOVEN, POLYESTER PULLING
- 23. ALL RUNS OF CONDUIT SHALL HAVE A 2,500 POUND, FLAT, WOVEN, POLYESTER PULLI LINE INSTALLED.
 24. ALL CONDUITS SHALL HAVE A 36" MINIMUM COVER.
- 25. CONDUITS INSTALLED UNDER ROADWAYS, DRIVEWAYS, PARKING LOTS, OR ANY TRAVELED WAY SHALL BE SCHEDULE 80 PVC OR RIGID STEEL, OR MAY BE CONCRETE ENCASED SCHEDULE 40 PVC ONLY IF APPROVED BY UTILITY.
- 26. WATER AND SEWER THERE SHALL BE A MINIMUM OF FOUR FEET OF HORIZONTAL DISTANCE FROM ELECTRIC CONDUITS AND ONE FOOT MINIMUM VERTICAL CLEARANCE FOR ELECTRIC CONDUITS FOR CROSSING RUNS.
- 27. GAS THERE SHALL BE THREE FEET MINIMUM CLEARANCE IN ALL DIRECTIONS FROM BETWEEN ELECTRIC CONDUITS AND GAS.
- 28. THERE SHALL BE ONE FOOT MINIMUM OF SEPARATION BETWEEN ELECTRIC CONDUITS AND COMMUNICATION CONDUITS.

STUDIOS

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PROJECT NUMBER: 21-000

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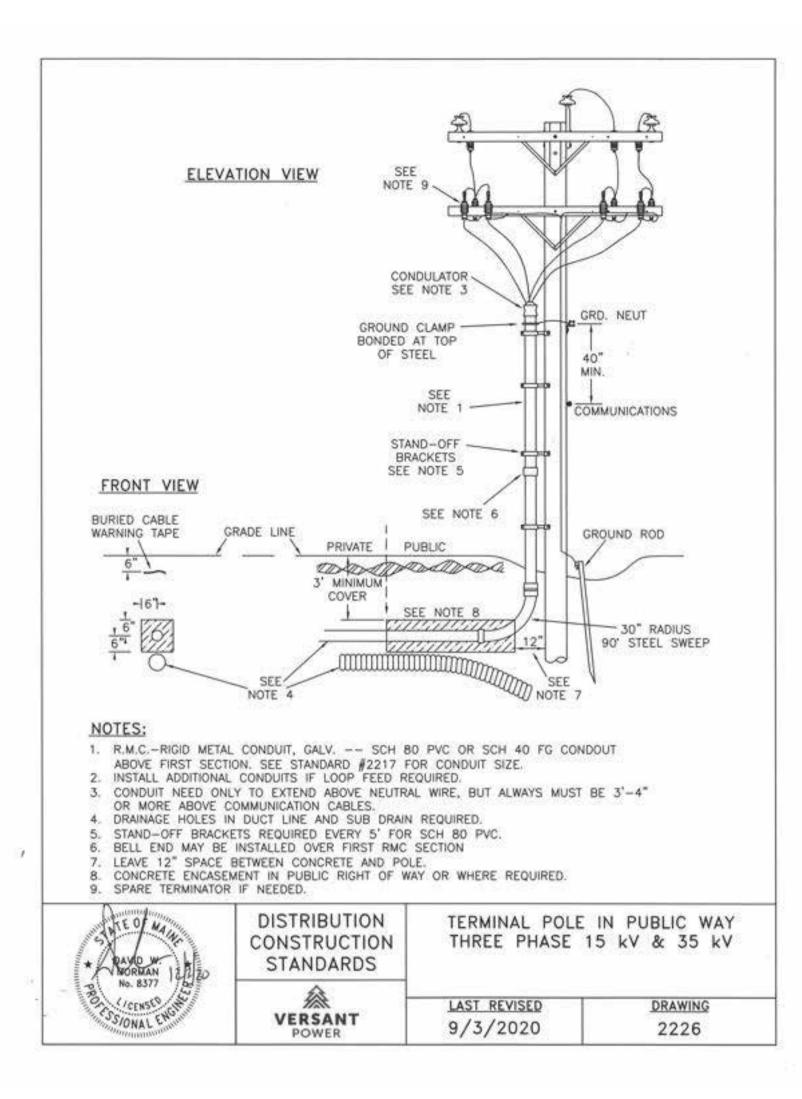
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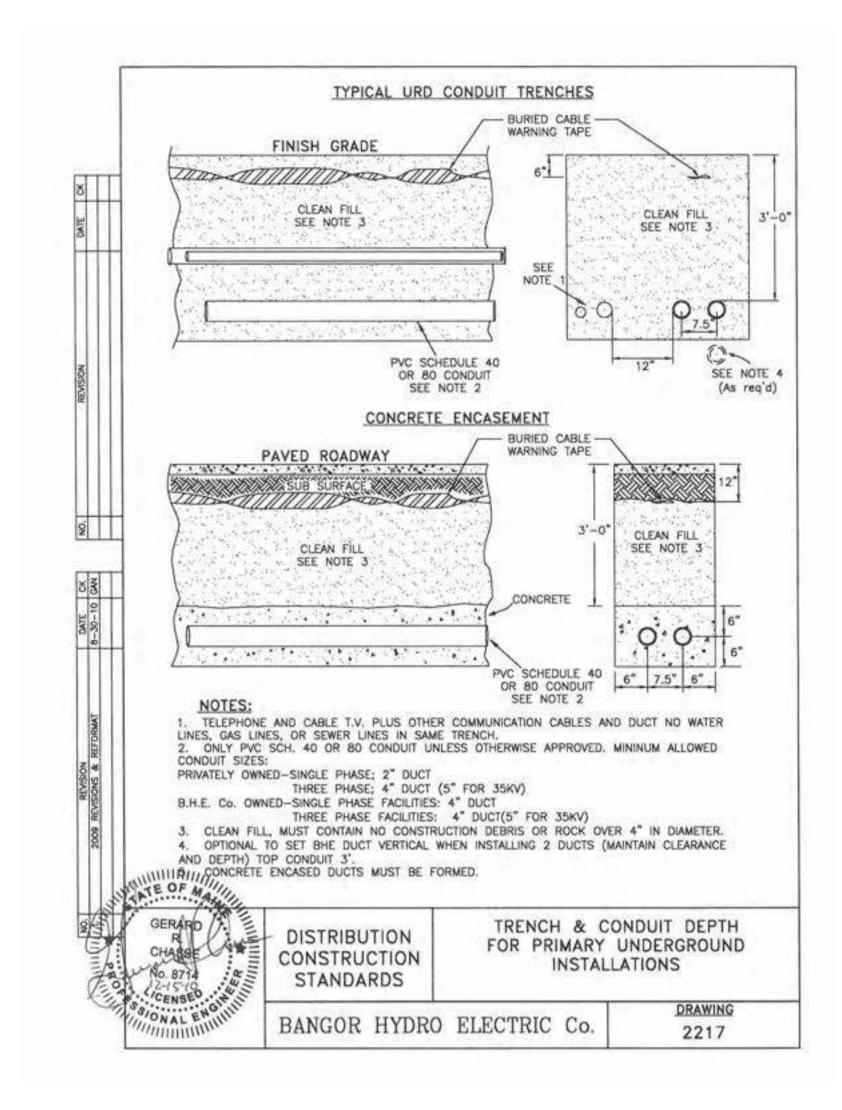
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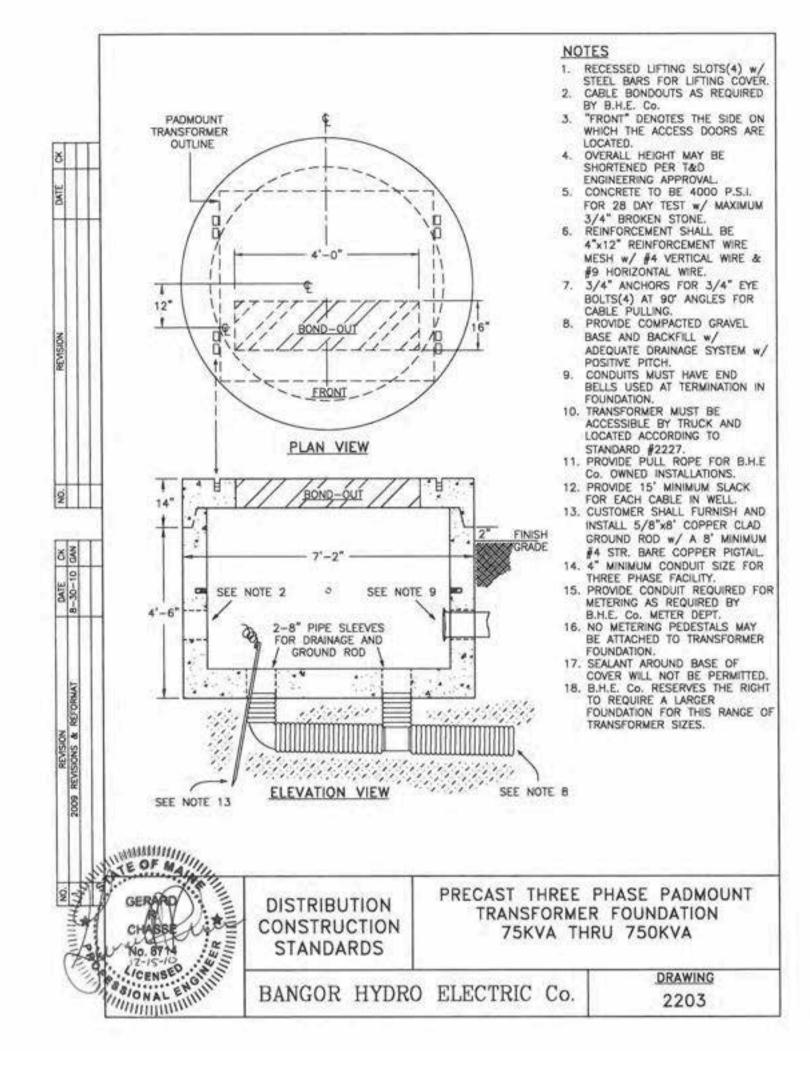
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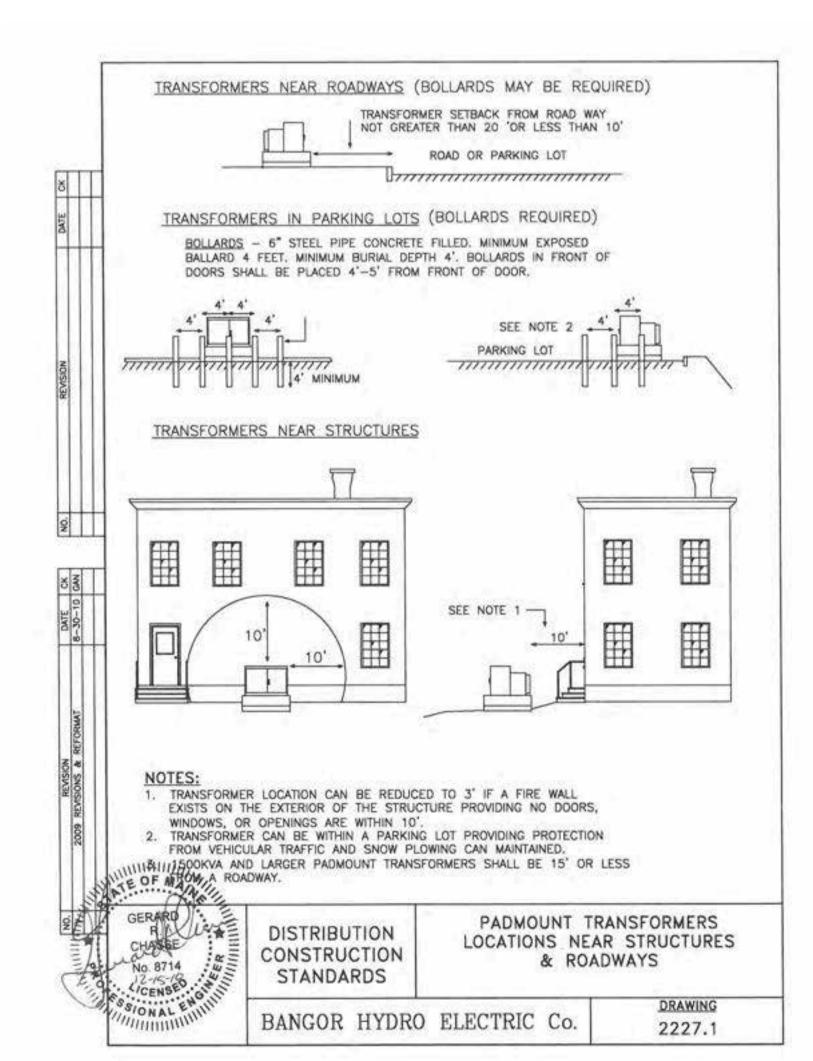
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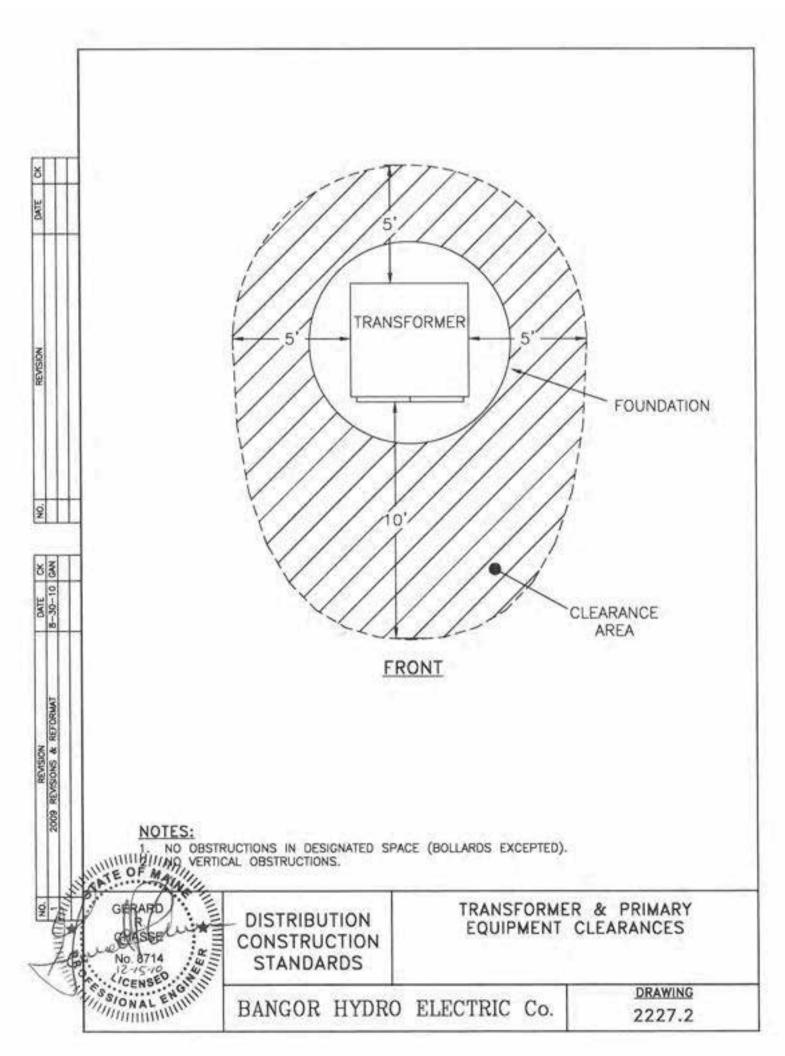


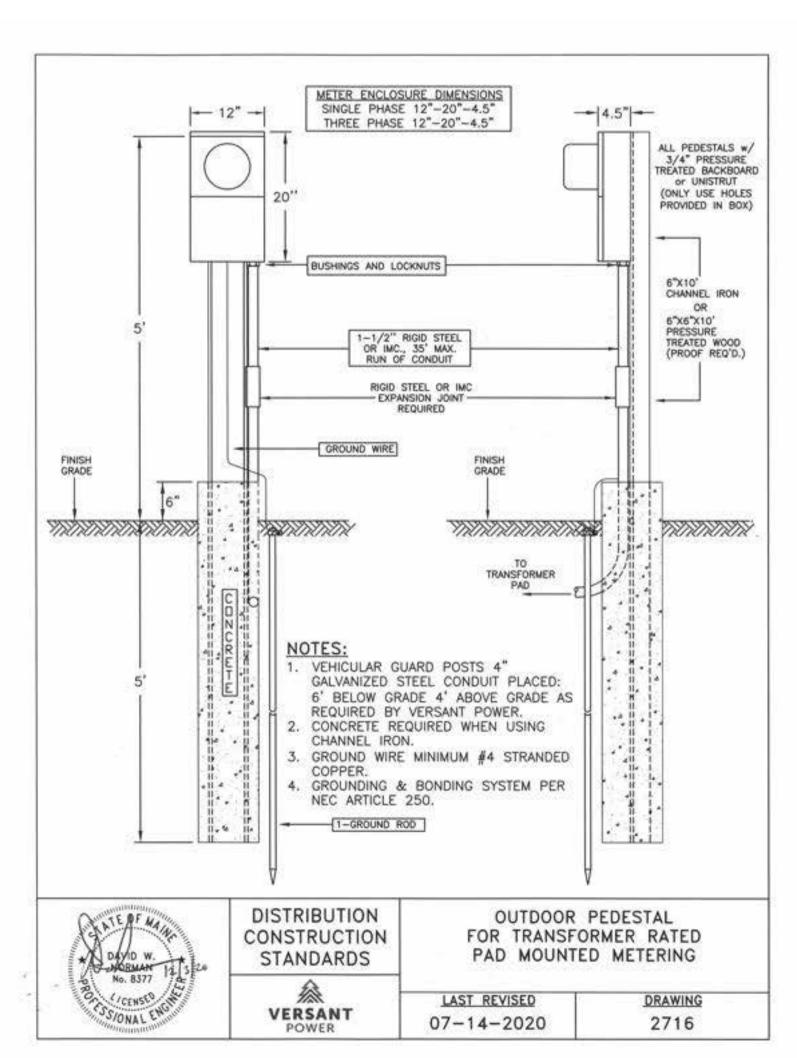


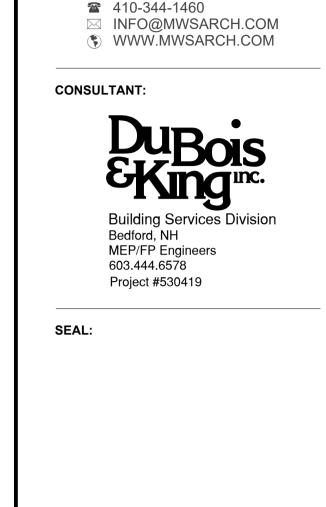




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