

ELECTRICAL SYMBOL LEGEND											
HT AFF	SYMBOL	DESCRIPTION	HT AFF	SYMBOL	DESCRIPTION	HT AFF	SYMBOL	DESCRIPTION	HT AFF	SYMBOL	DESCRIPTION
AS NOTED		WALL MOUNTED FLOODLIGHT (TYPE DENOTED)	18"		MULTIOUTLET ASSEMBLY (TYPE DENOTED)	90***		FIRE ALARM HORN	90***		FIRE ALARM HORN W/STROBE (CANDELAS)
		RECESSED LIGHT (TYPE DENOTED)	18"		MULTIOUTLET ASSEMBLY (TYPE DENOTED)	90***		FIRE ALARM BELL	90***		FIRE ALARM BELL W/STROBE (CANDELAS)
PER SCHED		POLE MOUNTED LIGHT (TYPE DENOTED)	84"		CLOCK (TYPE DENOTED)	90***		FIRE ALARM STROBE (CANDELAS)	90***		FIRE ALARM STROBE W/STROBE (CANDELAS)
		SURFACE LIGHT (TYPE DENOTED)			POWER POLE (OPEN OFFICE STYLE)	90***		FIRE ALARM SPEAKER	90***		FIRE ALARM SPEAKER W/STROBE (CANDELAS)
		SUSPENDED OR PENDANT LIGHT (TYPE DENOTED)	AS NOTED		JUNCTION BOX			FIRE ALARM REMOTE ANNUNCIATOR			SMOKE DETECTOR (TYPE DENOTED)
		RECESSED LIGHT (TYPE DENOTED)			PULL BOX			HEAT DETECTOR (TYPE & TEMP DENOTED)			DUCT SMOKE DETECTOR (TYPE DENOTED)
		STRIP LIGHT (TYPE DENOTED)	72***		CIRCUIT BREAKER PANEL			REMOTE TEST/STATUS STATION			GAS DETECTOR (TYPE DENOTED)
AS NOTED		TRACK AND TRACK LIGHT (TYPES DENOTED)	72***		MANUAL MTR. STR. (W/OVERLOADS)	18"		F.A. PULLSTATION	44****		F.A. ADDRESSABLE MONITOR MODULE
96"		EMERGENCY BATTERY LIGHT (TYPE DENOTED)	72***		MAG. MOTOR STARTER OR CONTACTOR	44****		F.A. CONTROL MODULE			F.A. DOOR HOLDER
12**		EXIT SIGN (TYPE DENOTED)	72***		COMB. MOTOR STARTER (NON-FUSED)	18"		F.A. DOOR CLOSER			SPRINKLER FLOW SWITCH
44"		SINGLE POLE SW.	72***		COMB. MOTOR STARTER (FUSED)	18"		SPRINKLER VALVE TAMPER SWITCH			SPRINKLER PRESSURE SWITCH
44"		2 POLE SINGLE THROW SW.	72***		SAFETY DISC. SW. (NON-FUSED)	18"		ELECTRIC STRIKE			MAGNETIC LOCK
44"		3-WAY SW.	72***		SAFETY DISC. SW. (FUSED)	18"		DOOR SECURE INDICATOR LIGHT			DOOR CONTACTS
44"		4-WAY SW.	72***		VARIABLE FREQUENCY DRIVE	18"		CARD READER	44****		REQUEST TO EXIT DEVICE
44"		KEYED SW.	72***		RELAY	18"		DOOR ACCESS CONTROL PANEL			KEYPAD
44"		SW. W/PILOT	72***		ENCLOSED CIRCUIT BREAKER	84"		MOTION DETECTOR (TYPE DENOTED)	44****		INTRUSION DETECTION CONTROL PANEL
44"		DIMMER SWITCH	72***		OCCUPANCY SENSOR - TYPE DENOTED	84"		DURESS BUTTON			HANDICAP DOOR OPERATOR PUSHBUTTON
44"		OCCUPANCY SENSOR SWITCH	72***		LIGHT LEVEL SENSOR - TYPE DENOTED	44"		POWER ASSIST AUTOMATIC DOOR OPENER			DOOR PROP ALARM
44"		MOTOR HORSEPOWER RATED SWITCH	72***		PHOTOCELL			REMOTE ACCESS LOCK DOWN			REMOTE ACCESS DOOR RELEASE
44"		LOW VOLTAGE SWITCH	44"		TIME CONTROL SWITCH (TIME SWITCH)	AS NOTED		AREA OF RESCUE AREA STATION			

ELECTRICAL ABBREVIATIONS LIST									
1P	1 POLE (2P, 3P, 4P, ETC.)	DCP	DOMESTIC WATER CIRCULATING PUMP	HT	HEIGHT	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION	SWBD	SWITCHBOARD
A	AMPERE	DEPT	DEPARTMENT	HTG	HEATING			SYM	SYMMETRICAL
AC	ABOVE COUNTER OR AIR CONDITIONER	DET	DETAIL	HV	HIGH VOLTAGE	NFDS	NON-FUSED SAFETY DISCONNECT SWITCH	TEL	TELEPHONE
ACLG	ABOVE CEILING	DISC	DISCONNECT	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	NIC	NOT IN CONTRACT	TERM	TERMINAL
AD	AUTOMATIC DOOR OPENER	DIST	DISTRIBUTION	HWP	HOTWATER WATER PUMP	NL	NIGHT LIGHT	TL	TWIST LOCK
AF	AMP FRAME	DN	DOWN			N.O.	NORMALLY OPEN	TR	TAMPER RESISTANT
AFF	ABOVE FINISHED FLOOR	DPR	DATA PROCESSOR	IC	INTERURPING CAPACITY	NPF	NORMAL POWER FACTOR	T-STAT	THERMOSTAT
AFG	ABOVE FINISHED GRADE	DS	SAFETY DISCONNECT SWITCH	IG	ISOLATED GROUND	NTS	NOT TO SCALE	TTC	TELEPHONE TERMINAL
AFI	ARC FAULT CIRCUIT INTERRUPTER	DT	DOUBLE THROW	IMC	INTERMEDIATE METAL CONDUIT				CABINET
AHU	AIR HANDLING UNIT	DWG	DRAWING	INCAND	INCANDESCENT	OL	OVERHEAD OVERLOADS	TVTC	TELEVISION TERMINAL
AL	ALUMINUM	EC	ELECTRICAL CONTRACTOR	IW	INTERLOCK WITH			TVT	CABINET
ALT	ALTERNATE	EC	ELECTRIC, ELECTRICAL			PA	PUBLIC ADDRESS	TYC	TYPICAL
AMP	AMPERE	ELEV	ELEVATOR	J-BOX	JUNCTION BOX	PB	PULL BOX OR PUSHBUTTON		
AMPL	AMPLIFIER	EM	EMERGENCY			PE	PNEUMATIC PRESSURE	UC	UNDER COUNTER
ANUN	ANNUNCIATOR	EMS	ENERGY MANAGEMENT SYSTEM	KV	KILOVOLT	PED	PEDESTAL	UG	UNDERGROUND ELECTRICAL
APPROX	APPROXIMATELY	ENT	ELECTRICAL METALLIC TUBING	KVA	KILOVOLT-AMPERE	PF	POWER FACTOR	UE	UNDERGROUND
ASTAT	APPROXIMATELY	EP	ELECTRIC PNEUMATIC	PHASE	PHASE	PH	PHASE	UH	UNIT HEATER
ARCH	ARCHITECT, ARCHITECTURAL	EQUIP	EQUIPMENT	KW	KILOWATT	PV	POST INDICATING VALVE	UL	UNDERGROUND TELEPHONE
AS	AMP SWITCH	ENC	ELECTRIC WATER COOLER	KWH	KILOWATT HOUR	PNL	PANEL	UTL	UTILITY
AT	AMP TRIP	EXIST	EXISTING	LOC	LOCATE OR LOCATION	PP	POWER POLE	UV	UNIT VENTILATOR OR ULTRAVIOLET
ATS	AUTOMATIC TRANSFER SWITCH	EXH	EXHAUST	LT	LIGHT	PR	PRIMARY		
AUTO	AUTOMATIC	EXP	EXPLOSION PROOF	LTG	LIGHTING	PROJ	PROJECTION	V	VOLT
AUX	AUXILIARY	FA	FIRE ALARM	LTNG	LIGHTNING	PRV	POWER ROOF VENTILATOR	VA	VOLT-AMPERES
AV	AUDIO VISUAL	FABP	FIRE ALARM BOOSTER POWER SUPPLY PANEL	LV	LOW VOLTAGE	PTR	POTENTIAL TRANSFORMER	VFD	VARIABLE FREQUENCY DRIVE
AWG	AMERICAN WIRE GAUGE					PVC	POLYVINYL CHLORIDE (CONDUIT)	VRT	VERTICAL
							POWER	VOL	VOLUME
BATT	BATTERY	FACP	FIRE ALARM CONTROL PANEL	MAX	MAXIMUM	QUN	QUANTITY	W	WATT
BD	BOARD	FCU	FAN COIL UNIT	MAG.S	MAGNETIC STARTER			WH	WITH
BLDG	BUILDING	FXT	FIXTURE	MC	MOMENTARY CONTACT	PWR	POWER	WG	WIRE GUARD
BMS	BUILDING MANAGEMENT SYSTEM	FLR	FLOOR	MC	MECHANICAL CONTRACTOR	QUAN	QUANTITY	W	WATT
		FLUOR	FLUORESCENT	MCB	MAIN CIRCUIT BREAKER			WH	WITH
C	CONDUIT	FUSE	FUSE	MCC	MOTOR CONTROL CENTER	RCP	RECEPTACLE	W	WIRE GUARD
CAB	CABINET	FUSD	FUSED SAFETY DISCONNECT SWITCH	MDC	MAIN DISTRIBUTION CENTER	REQD	REQUIRED	WH	WATER HEATER
CAT	CATALOG	SWD	SWITCH	MDP	MAIN DISTRIBUTION PANEL	RM	ROOM	WO	WITHOUT
CATV	CABLE TELEVISION			MFR	MANUFACTURER	RSC	RIGID STEEL CONDUIT	WP	WEATHERPROOF
CB	CIRCUIT BREAKER	GA	GAUGE	MFS	MAIN FUSED DISCONNECT SWITCH	RTU	ROOF TOP UNIT		
CC	CLOSED CIRCUIT TELEVISION	GAL	GALLON					XFR	TRANSFORMER
CCTV	CLOSED CIRCUIT TELEVISION	GALV	GALVANIZED	MH	MANHOLE	SC	SURFACE CONDUIT	XFRM	TRANSFER
CKT	CIRCUIT	GC	GENERAL CONTRACTOR	MIC	MICROPHONE	SEC	SECONDARY		
CLG	CEILING	GEN	GENERATOR	MIN	MINIMUM	SHT	SHEET		
COMB	COMBINATION	GGI	GROUND FAULT CIRCUIT INTERRUPTER	MISC	MISCELLANEOUS	SIM	SIMILAR		
CMRP	COMPRESSOR	GND	GROUND	MLO	MAIN LUGS ONLY	SIN	SIN SPEC		
CONN	CONNECTION	GFP	GROUND FAULT PROTECTOR	MMS	MANUAL MOTOR STARTER	SPEC	SPECIFICATION	△	
CONST	CONSTRUCTION	GRD	GROUND	MOA	MULTI-TOOLT ASSEMBLY	SPR	SPRINKLER		
CONT	CONTINUATION OR CONTINUOUS	GRS	GALVANIZED RIGID STEEL (CONDUIT)	MSP	MOTOR STARTER PANELBOARD	SP	SPARE	@	ANGLE
CONTR	CONTRACTOR	GYP BD	GYPSON BOARD	MSBD	MAIN SWITCHBOARD	SR	SURFACE RACEWAY		
CONV	CONVEYOR			MT	MOUNT	SS	STAINLESS STEEL	Δ	DELTA
CP	CIRCULATING PUMP	HOA	HYPDRO-AUTOMATIC SWITCH	MTC	EMULY CONDUIT	SW	SWITCH	L'	FEET
CR	CATHODE-RAY TUBE			MTS	MANUAL TRANSFER SWITCH	S	START/STOP PUSHBUTTONS	INCHES	
CT	CENTER	HORIZ	HORIZONTAL	MTR	MOTOR, MOTORIZED	STA	STATION	#	NUMBER
CTR	CENTER					STD	STANDARD	Ø	DIAMETER
CU	COPPER	HPF	HIGH POWER FACTOR	N.C.	NORMALLY CLOSED	SURF	SURFACE MOUNTED	C	CENTER LINE
				NEC	NATIONAL ELECTRICAL CODE	SW	SWITCH	P	PLATE



SEAL:

CITY OF CARIBOU, MAINE
CARIBOU POLICE
DEPARTMENT

ELECTRICAL DRAWINGS	
E0.1	LEGENDS AND NOTES
E0.2	LEGENDS AND NOTES
ES1.1	ELECTRICAL SITE PLAN
E1.1	FIRST FLOOR PLAN - LIGHTING
E1.2	FIRST FLOOR PLAN - POWER
E1.3	FIRST FLOOR PLAN - SYSTEMS
E5.1	ELECTRICAL RISER - POWER
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PROJECT NUMBER: 21-000

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ORIGINAL ISSUE
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LEGENDS & NOTES

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DEPARTMENT

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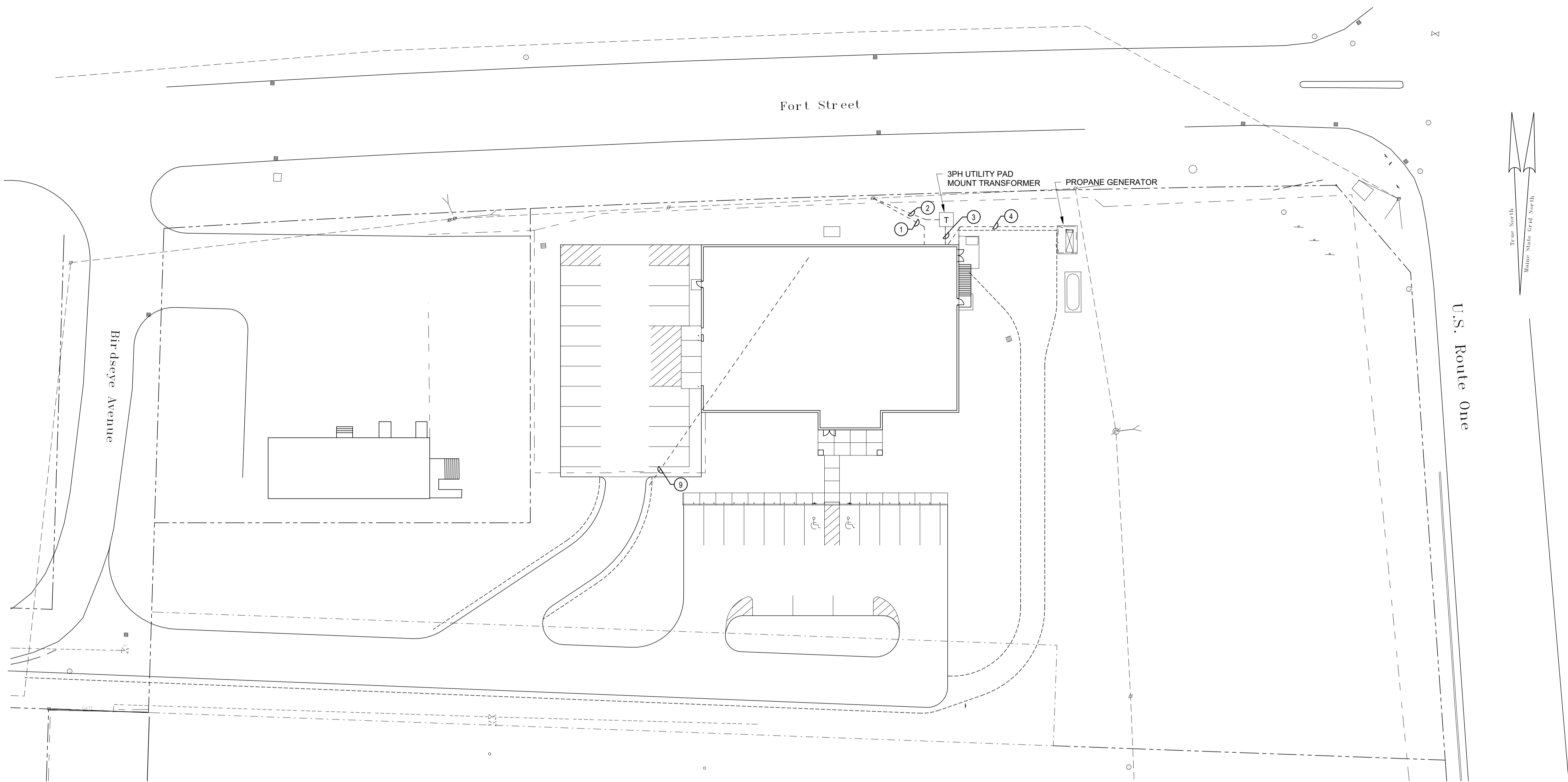
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ELECTRICAL SITE PLAN

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ELECTRICAL SITE PLAN

SCALE: 1" = 30'-0"

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 MINIMUM #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" W/ PULL WIRE FOR TELECOM. CONFIRM CONDUIT ROUTING AND REQUIREMENTS WITH TELECOM UTILITY.
2. PROVIDE (2) 5" W/ PULL WIRE FOR ELECTRICAL PRIMARY SERVICE. COORDINATE ROUTING IN FIELD WITH OTHER UTILITIES AND CIVIL PLANS.
3. PROVIDE (2) 4" W/ CONDUCTORS AND (1) 4" SPARE FOR ELECTRICAL SECONDARY SERVICE. COORDINATE ROUTING IN FIELD WITH OTHER UTILITIES AND CIVIL PLANS.
4. PROVIDE (2) 4" W/ CONDUCTORS FOR GENERATOR STANDBY FEEDER AND (4) 1" W/ W/ CONDUCTORS FOR CONTROLS. COORDINATE ROUTING IN FIELD WITH OTHER UTILITIES AND CIVIL PLANS.
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'.

PRELIMINARY - NOT FOR CONSTRUCTION

GENERAL ELECTRICAL NOTES

1. DO NOT SCALE THESE DRAWINGS. SEE ARCHITECTURAL DOCUMENTS FOR EXACT LOCATIONS AND MOUNTINGS FOR FIXTURES, DEVICES, ETC. EXCEPT AS SPECIFICALLY NOTED.

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 JURISDICTION.

25. COORDINATE WITH THE GENERAL CONTRACTOR AND ALL OTHER SUB-CONTRACTORS IN ORDER TO DETERMINE THE OVERALL PROJECT PHASING AND WORK SEQUENCING.

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:

1" TV OUTLETS

3/4" VOLUME CONTROLS

3/4" SECURITY CCTV

3/4" SECURITY DOOR ACCESS CONTROL

1" TELEPHONE OUTLETS

1" INFORMATION OUTLETS

3/4" FIRE ALARM DEVICES

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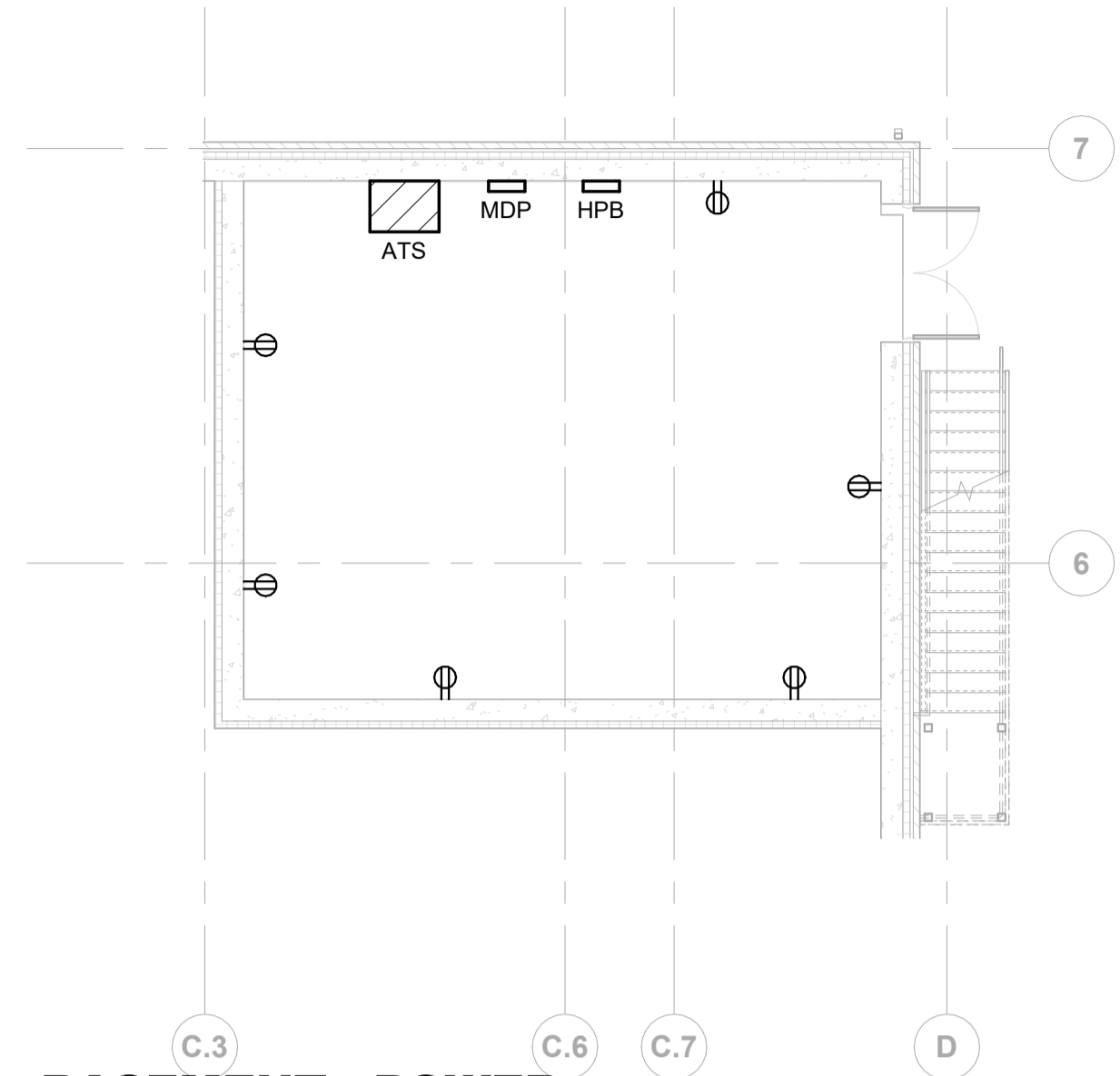
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LEGENDS & NOTES

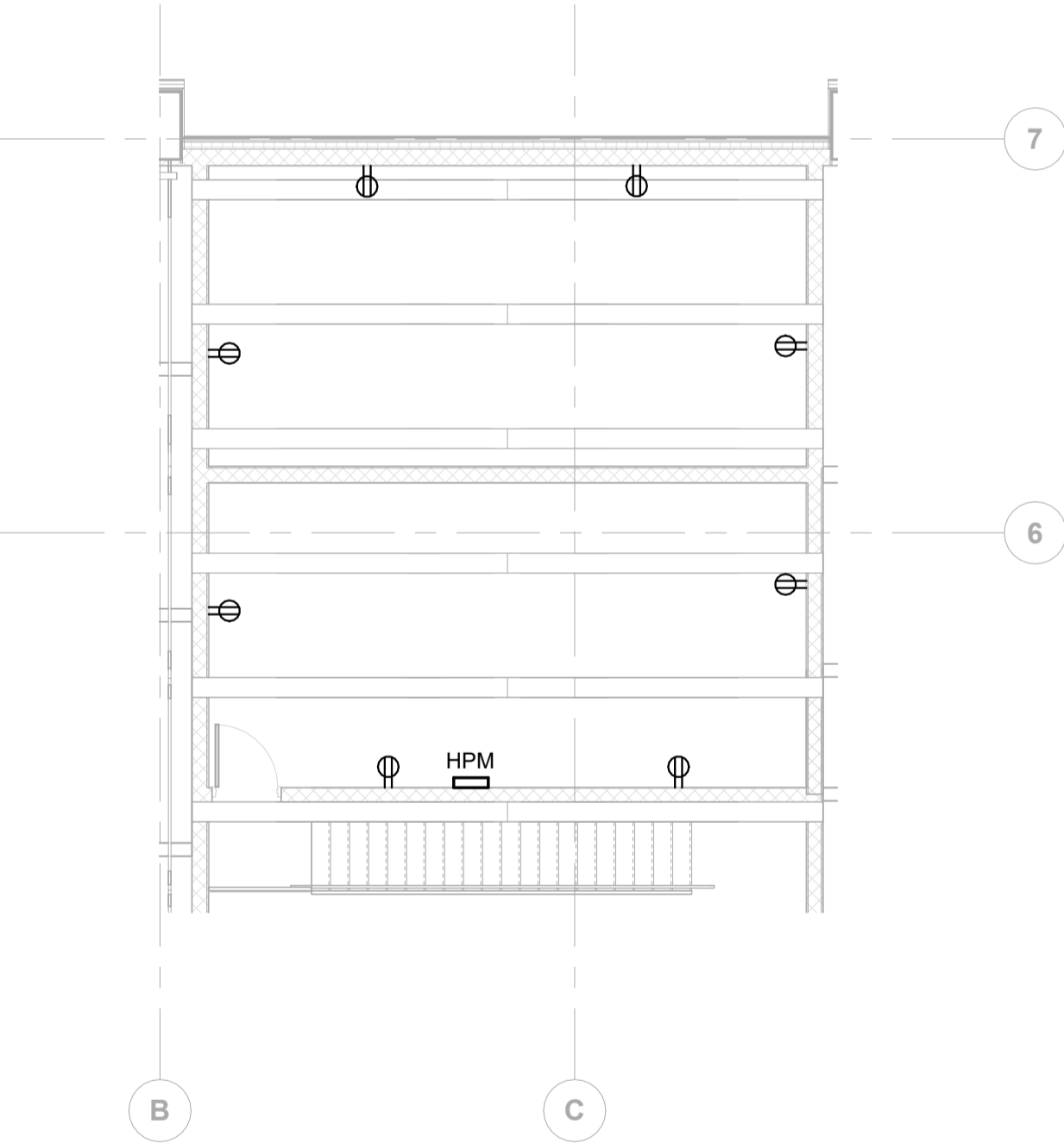
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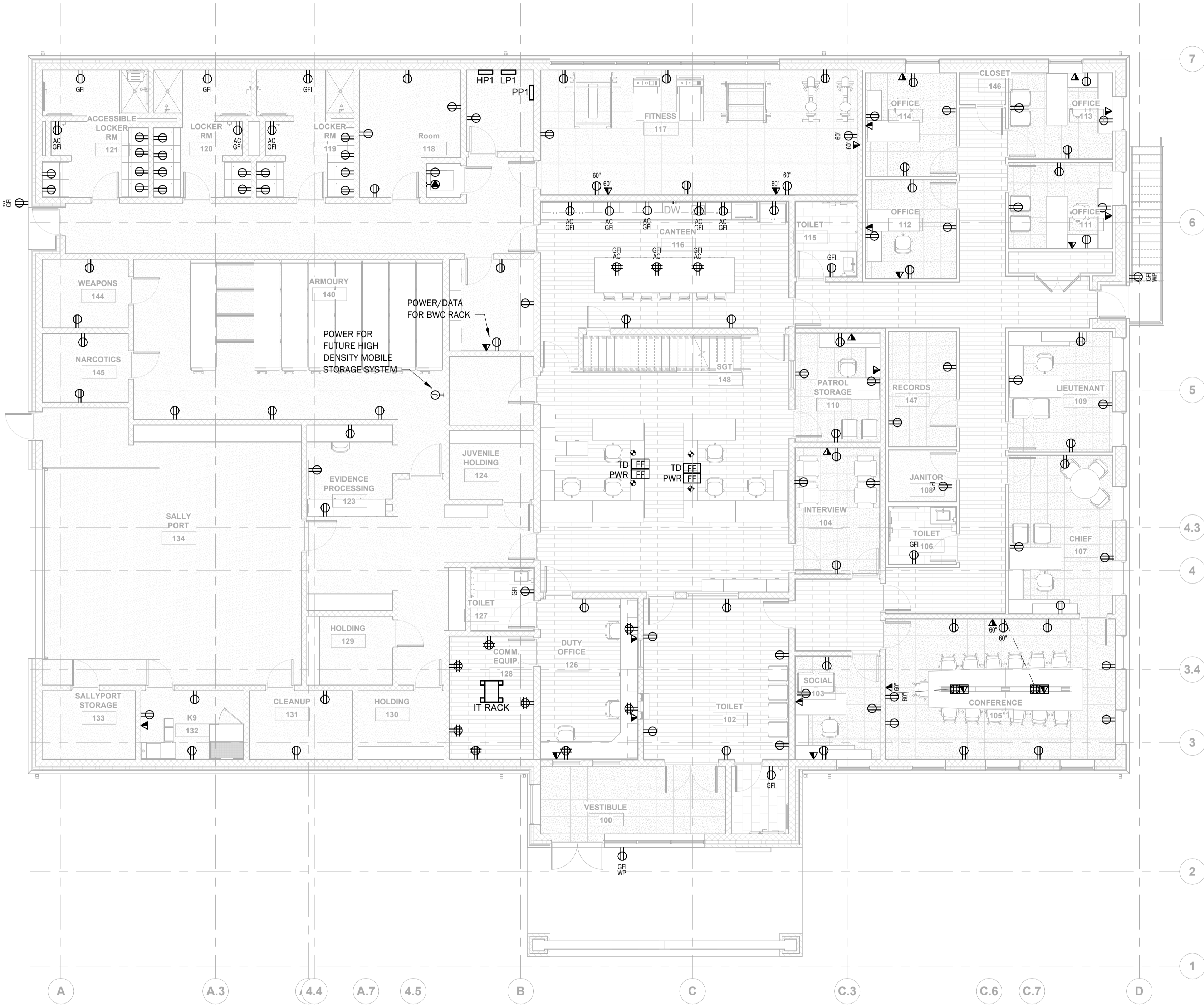
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BASEMENT - POWER
SCALE: 1/8" = 1'-0"



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



FIRST FLOOR PLAN - POWER
SCALE: 1/8" = 1'-0"

- 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 DEVICES.
 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" 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 MOUNTING 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 #DIR6PTW2BRZ, 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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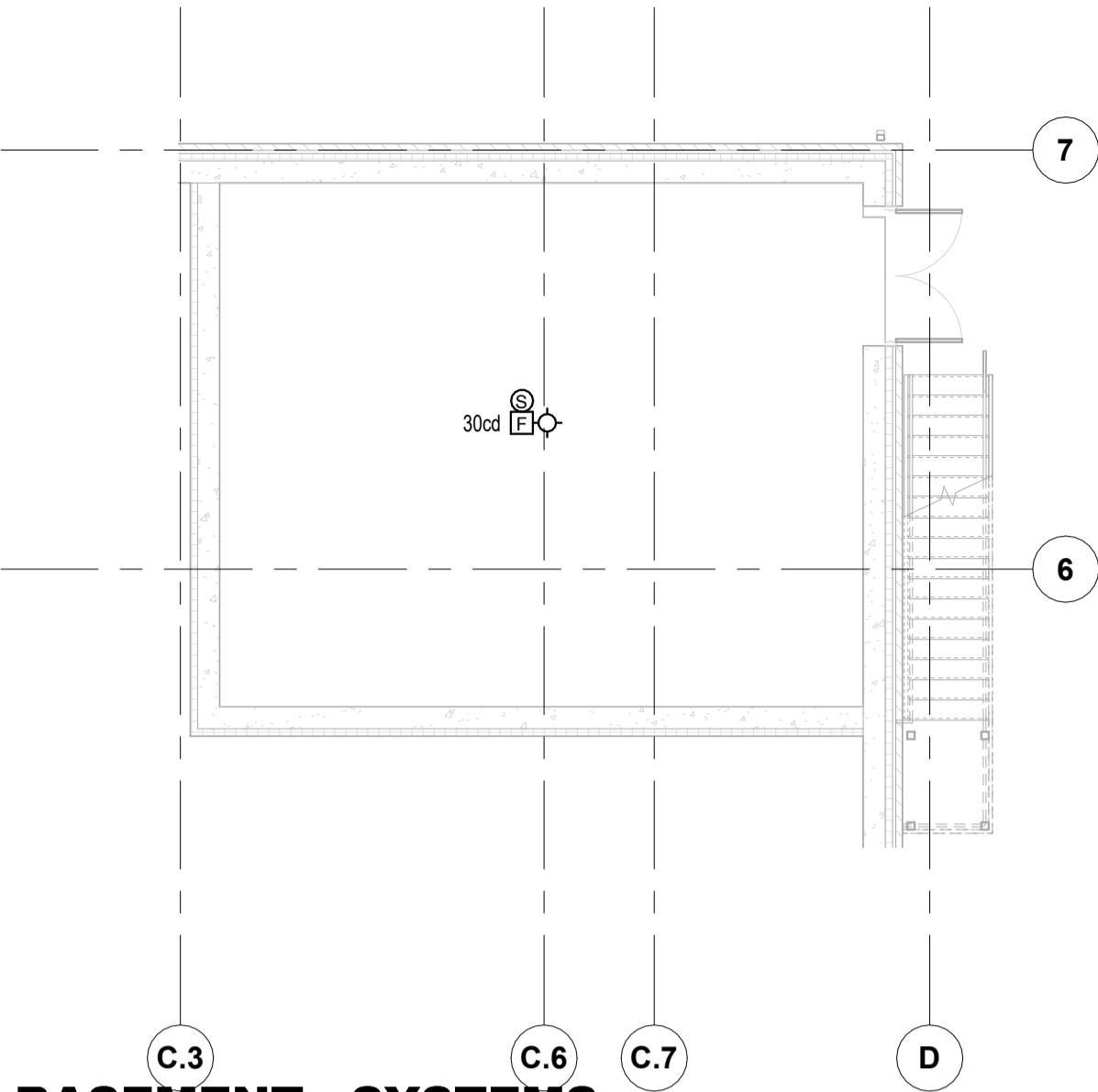
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FIRST FLOOR PLAN - POWER

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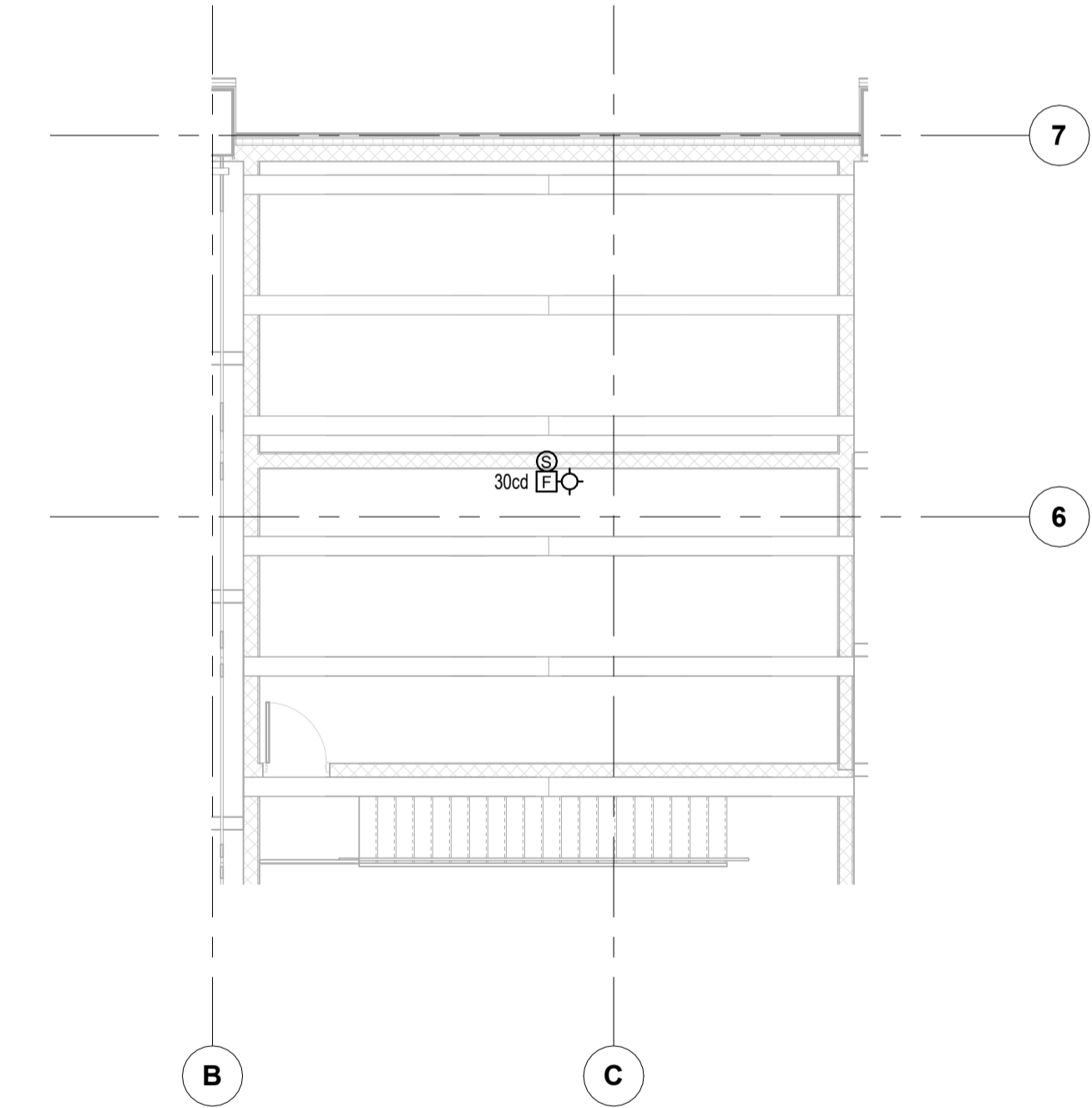
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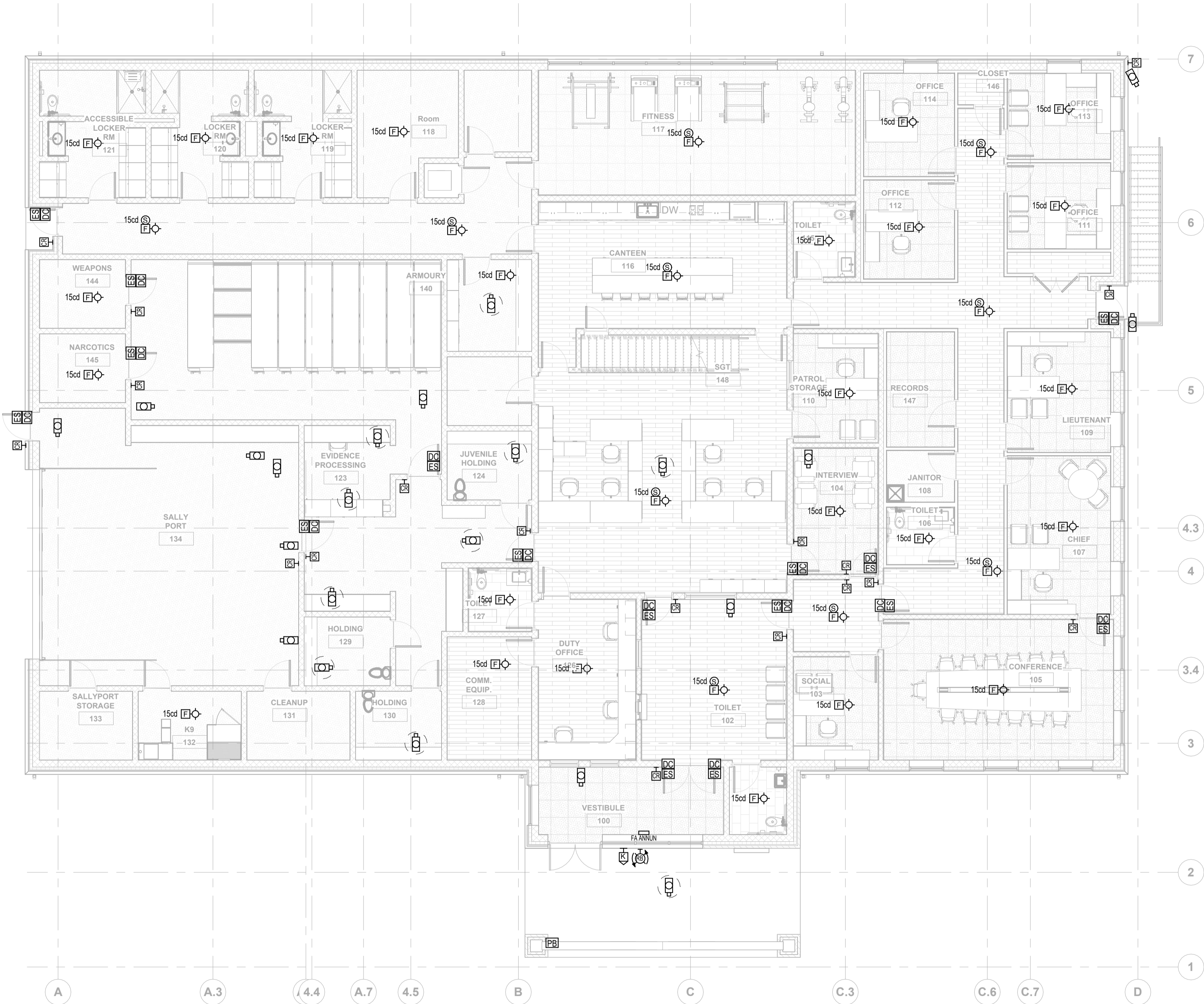
BASEMENT - SYSTEMS

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



MEZZANINE - SYSTEMS

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



FIRST FLOOR PLAN - SYSTEMS

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

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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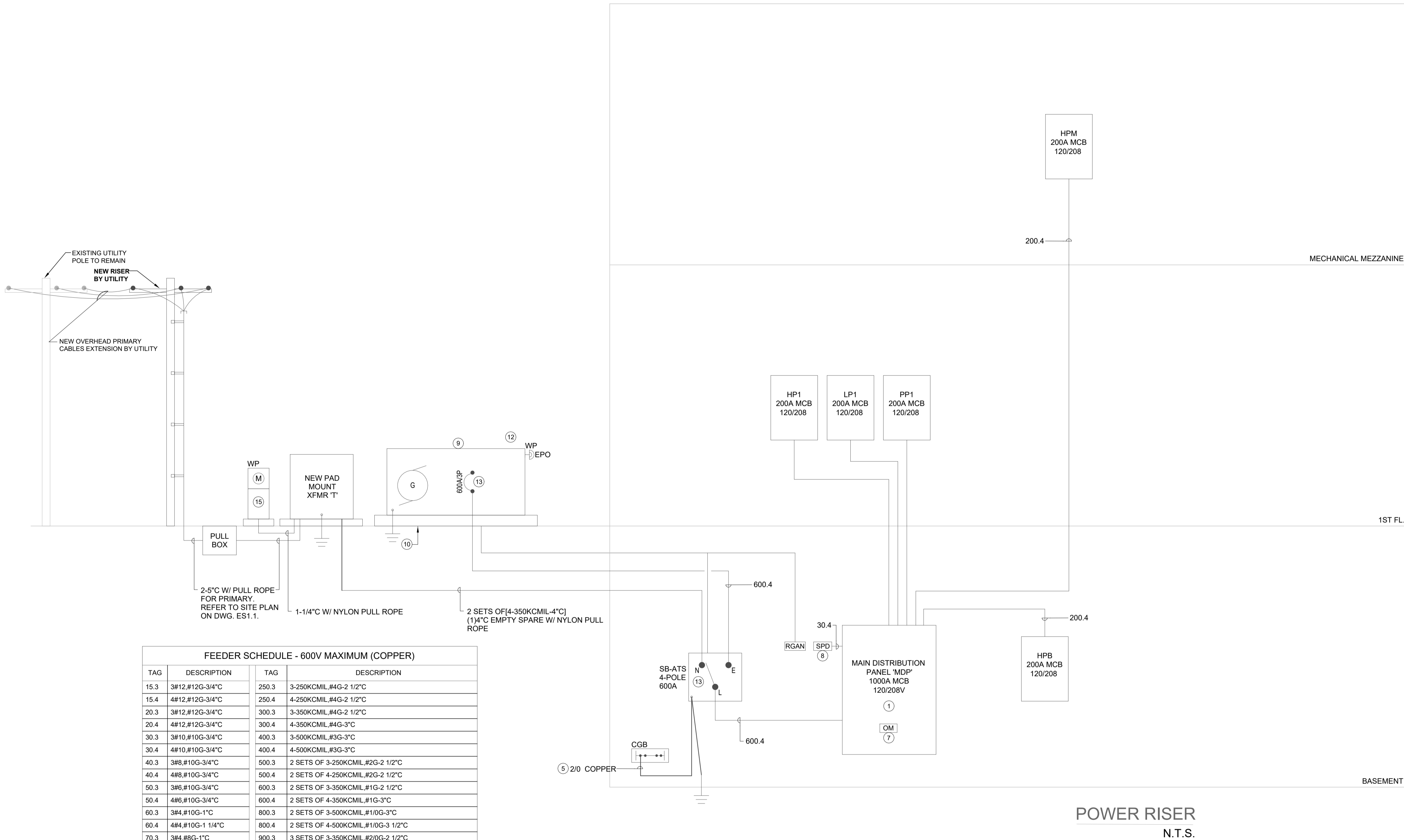
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ELECTRICAL RISER - POWER

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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 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" 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" (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 #6CRRB. 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" EMT MINIMUM. COLORED ORANGE FOR WIRELESS ACCESS POINTS FROM OUTLET TO PATCH PANEL. '2D' DENOTES TWO DATCH/45 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.

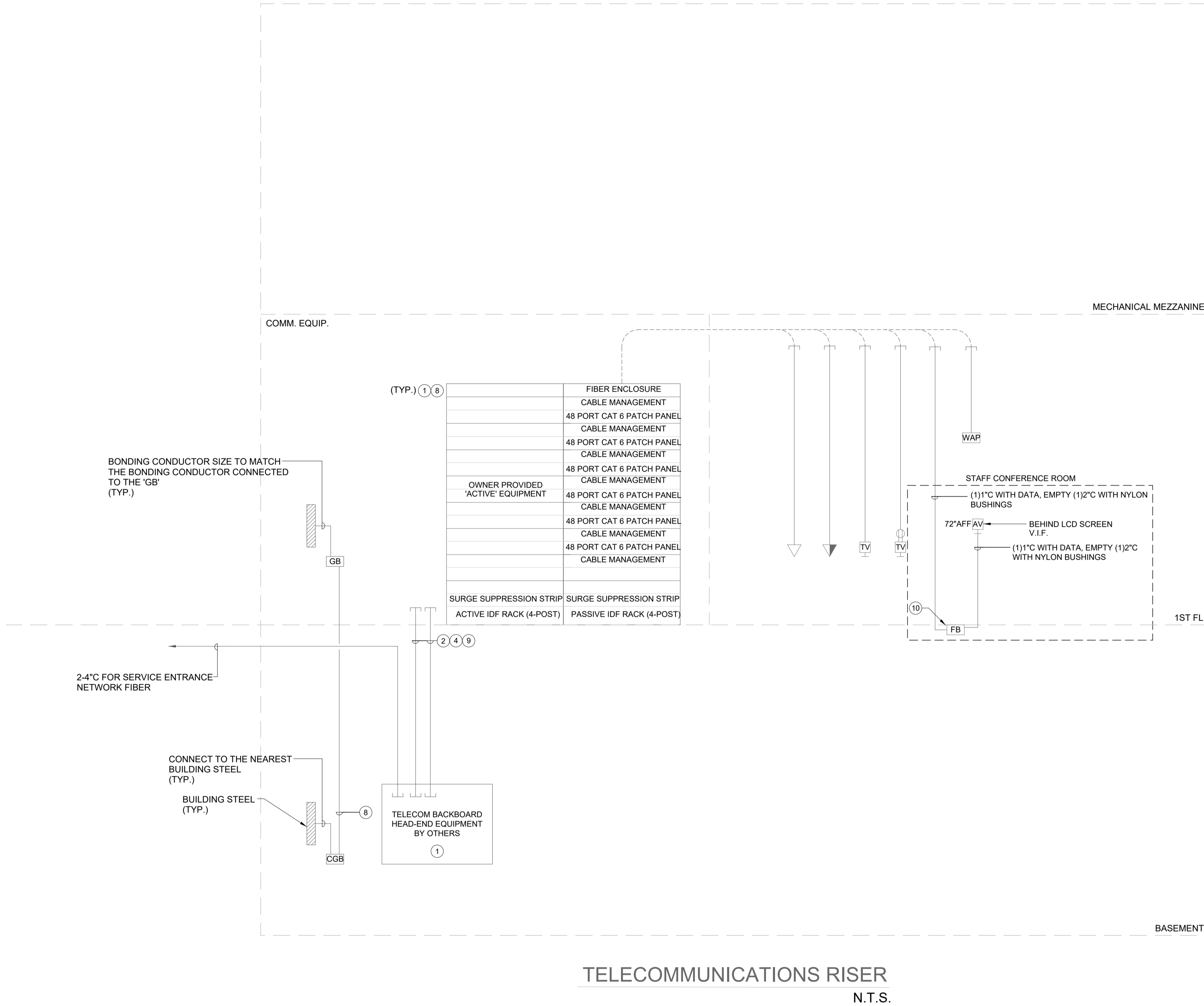
6. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL HOMERUNS FROM DEVICE TO RESPECTIVE FLOOR IDF CLOSET. CONTRACTOR SHALL TERMINATE ALL HOMERUNS AT DEVICE END AND AT PATCH PANELS WITHIN IDF CLOSET. PROVIDE SERVICE LOOPS AT BOTH PATCH PANEL AND DEVICE END. PROVIDE 10-FT OF EXTRA LENGTH, LOOPED IN THE IDF CLOSET 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" 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)#ME614C1.
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 DETAILS.
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.



TELECOMMUNICATIONS RISER
N.T.S.

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ELECTRICAL RISER - FIRE ALARM

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SYSTEM OUTPUTS										CONTROL UNIT ANNUNCIATION										NOTIFICATION	REQUIRE LIFE SAFETY CONTROL							
FIRE ALARM SYSTEM OPERATION SCHEDULE										ACTIVATE COMMON ALARM SIGNAL INDICATOR										RECALL DOWN ALL ASSOCIATED AHA TO RELATED UNIT								
										ACTIVATE ADDRESSABLE ALARM SIGNAL																		
										ACTIVATE COMMON NOISE SIGNAL																		
										ACTIVATE ADDRESSABLE SUPERVISORY SIGNAL INDICATOR																		
										ACTIVATE COMMON NOISE SIGNAL INDICATOR																		
										ACTIVATE ADDRESSABLE FIRE SIGNAL																		
										DISARM INDICATOR ON CORRESPONDING FLOOR																		
										TRANSMIT FIRE SUPPRESSION SYSTEM																		
										DISARM INDICATOR ON SIGNAL ONLY FLOORS																		
										TRANSMIT FIRE ALARM SIGNAL TO SUPERVISION STATION																		
RELEASE MAGNETICALLY LATCHED SMOKE DETECTORS																												
CLOSE SMOKE-FIRE DAMPERS																												
SHUT DOWN ALL ASSOCIATED AHA TO RELATED UNIT																												
SYSTEM INPUTS										A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q		
1	MANUAL FIRE ALARM BOXES										o	o						o		o	o	o		o	o			
2	SMOKE DETECTORS										o	o						o		o	o	o		o	o			
3	ELEVATOR LOBBY SMOKE DETECTORS										o	o						o		o	o	o		o	o			
4	DUCT SMOKE DETECTORS												o	o				o		o	o	o		o	o	o		
5	HEAT DETECTORS										o	o						o		o	o	o		o	o			
6	EXHAUST HOOD												o	o				o		o	o				o			
7	WATERFLOW										o	o						o		o	o	o		o	o			
8	SPRINKLER CONTROL VALVE												o	o					o		o	o						
9	GENERATOR RUNNING																											
10	FIRE ALARM AC POWER FAILURE																	o			o							
11	FIRE ALARM SYSTEM LOW BATTERY																	o			o							
12	OPEN CIRCUIT																	o			o							
13	GROUND FAULT																	o			o							
14	NOTIFICATION APPLIANCE CIRCUIT SHORT																	o			o							
15																												
16																												
17																												
18																												
19																												
20	SUPERVISORY																		o		o							
21	TROUBLE																	o	o		o							

120V
20A/1P

NOTES:

- ALL EVENTS SHALL BE RECORDED AT THE FIRE ALARM CONTROL PANEL AND SHALL INDICATE TIME AND DATE OF OCCURRENCE AND LIST DEVICE INITIATED.
- TRouble AND SUPERVISORY SIGNALS SHALL BE MONITORED IN ACCORDANCE WITH IBC, NFPA 1, 72, 101 WITH AMENDMENTS.

CONDUCTORS AS REQUIRED-1"(COMMUNICATION)-
3#12-1/2"(120VOLT POWER)

FIRE ALARM RISER
N.T.S.

KEYED SHEET NOTES

- 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.
- 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.
- 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 CAPABILITY.
- MINIMUM SIZE CONDUIT SHALL BE 3/4" UNLESS NOTED OTHERWISE.
- 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.
- RISER DIAGRAM DOES NOT SHOW ENTIRE SYSTEM. REFER TO FLOOR PLANS FOR EXACT QUANTITIES AND LOCATIONS OF ALL SYSTEM DEVICES.
- 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.
- PROVIDE SURFACE 24 VOLT DC CARBON MONOXIDE ALARM DETECTOR.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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ORIGINAL ISSUE
PA16-24

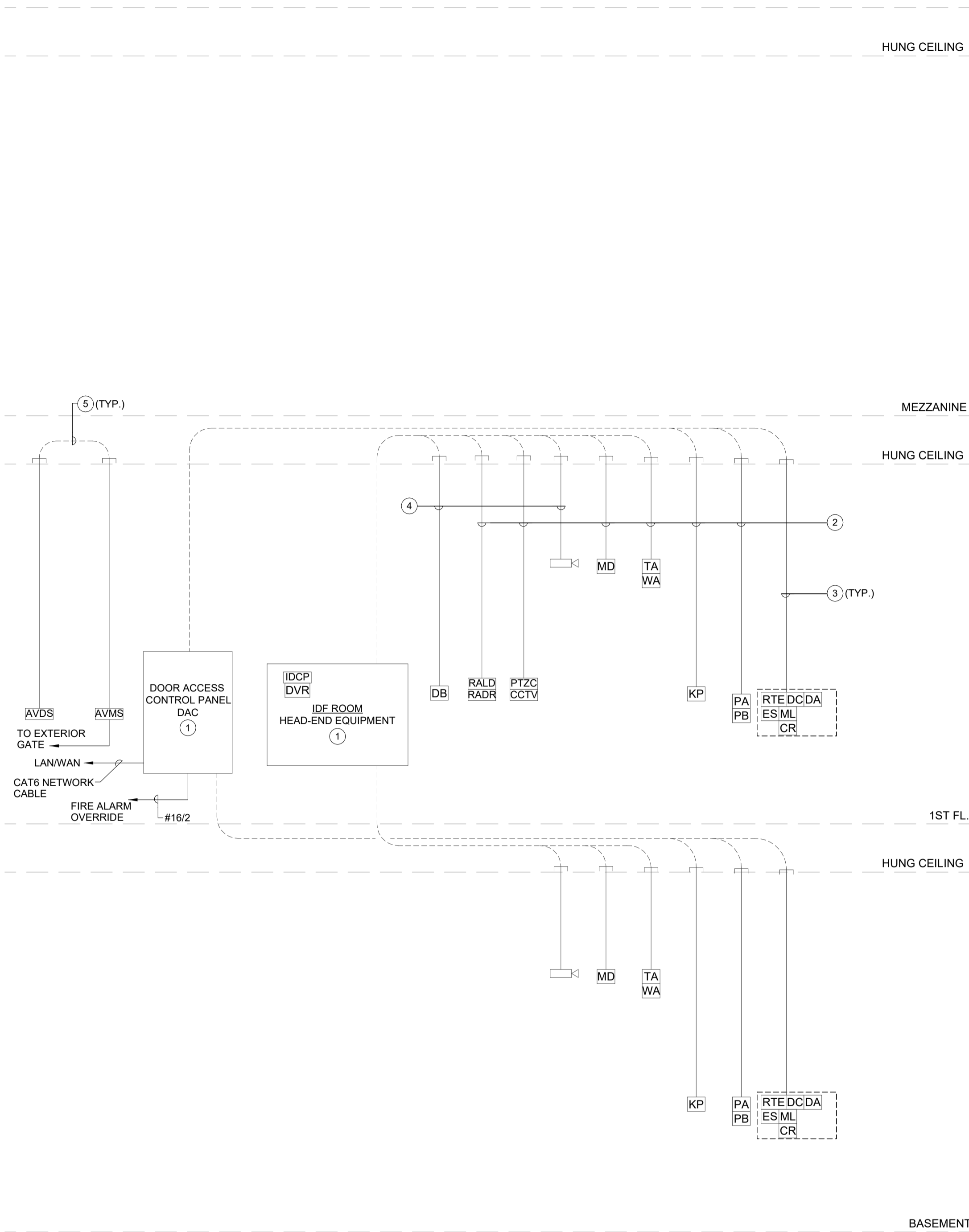
SHEET REVISION SCHEDULE:
No. DATE

ELECTRICAL DETAILS

SHEET
NUMBER:

E5.4

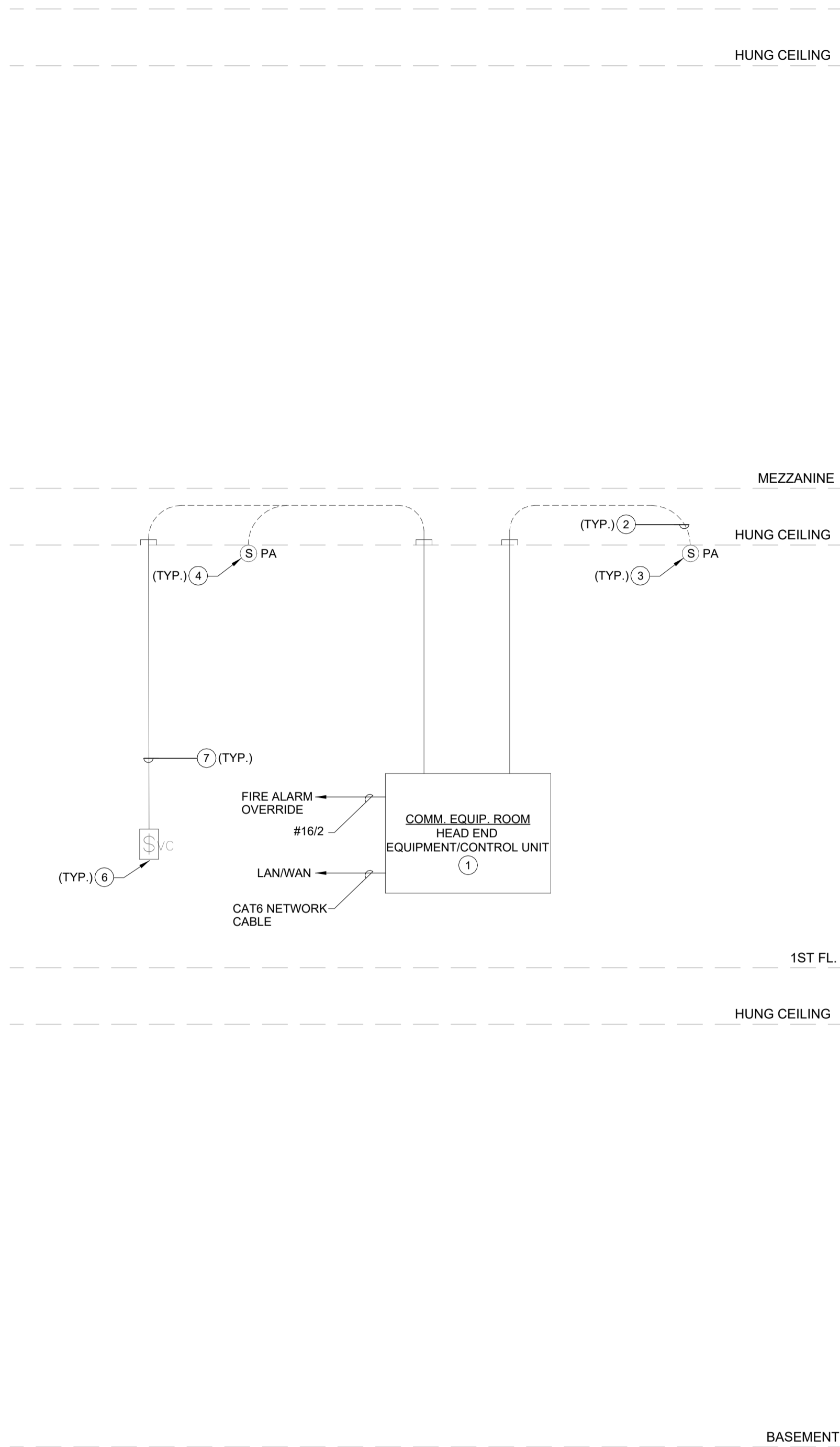
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SECURITY SYSTEM RISER

N.T.S.

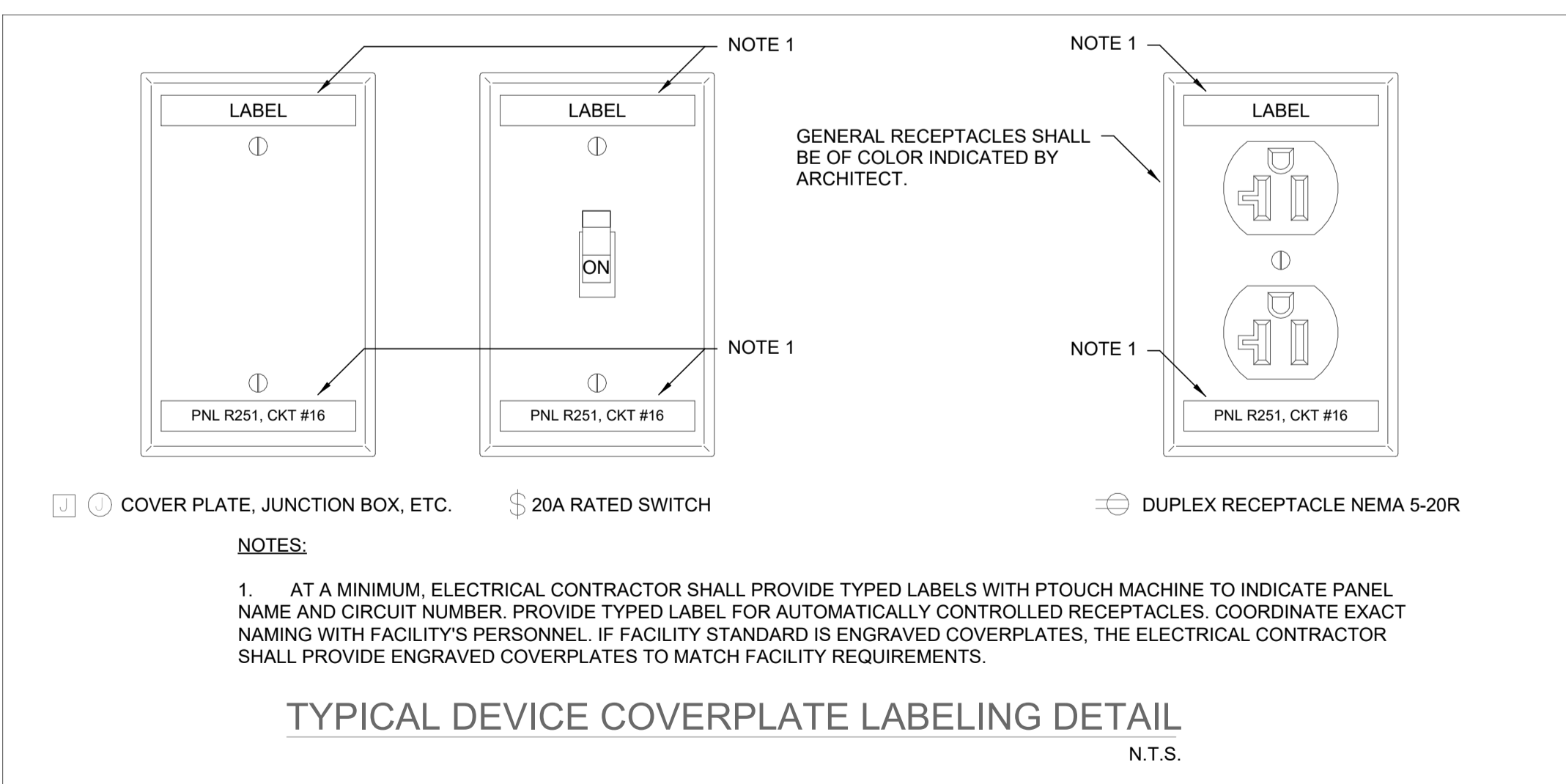
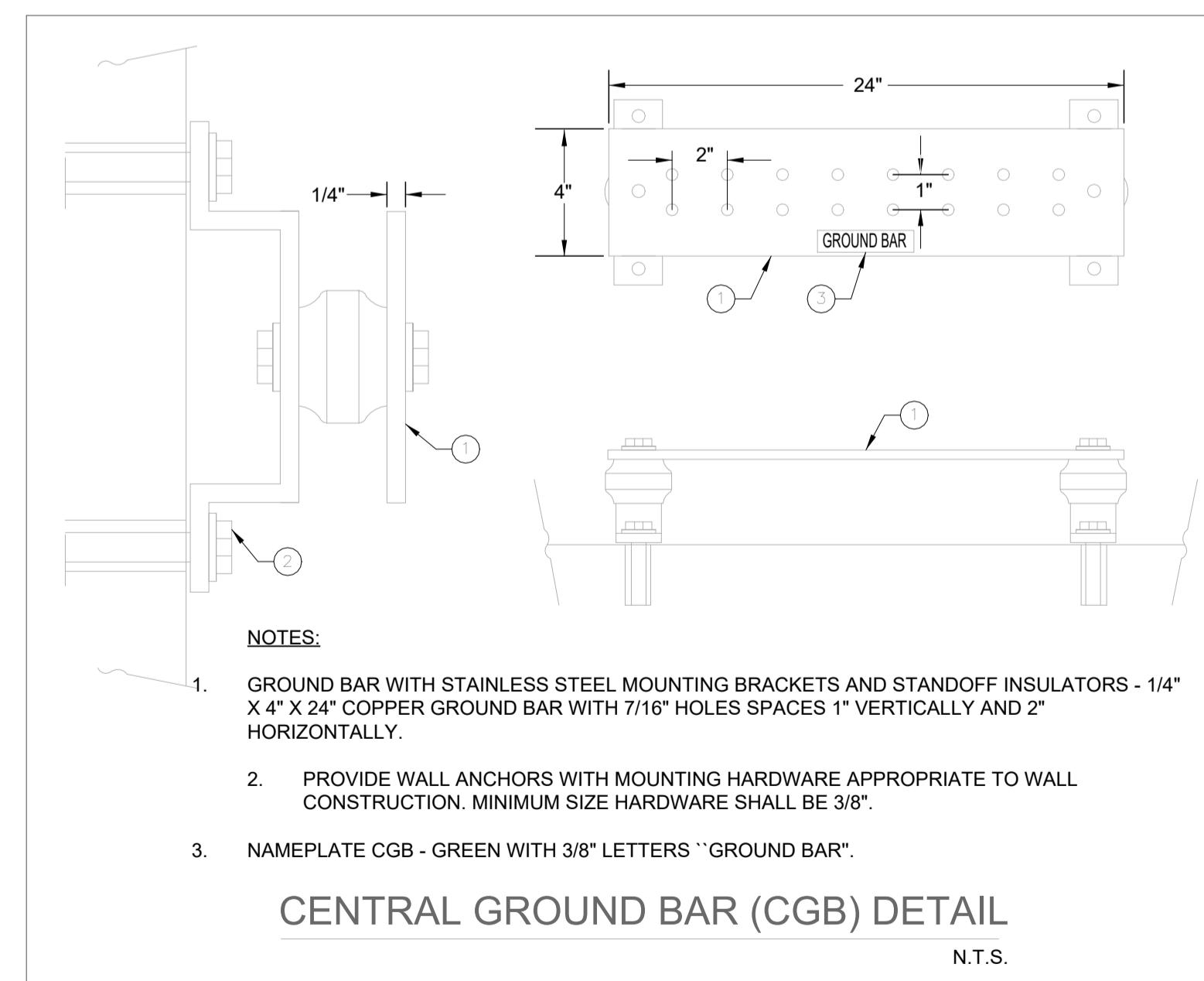
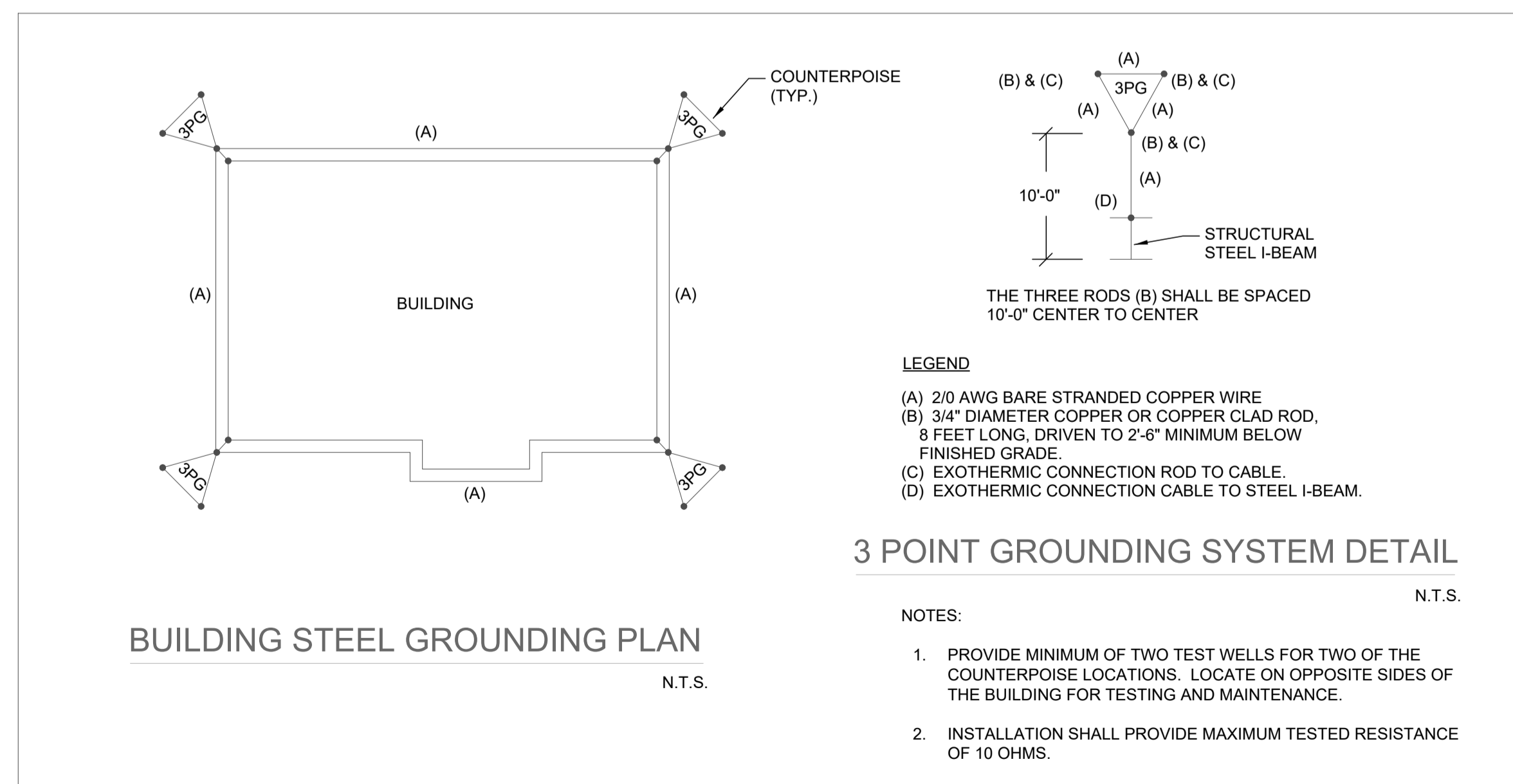
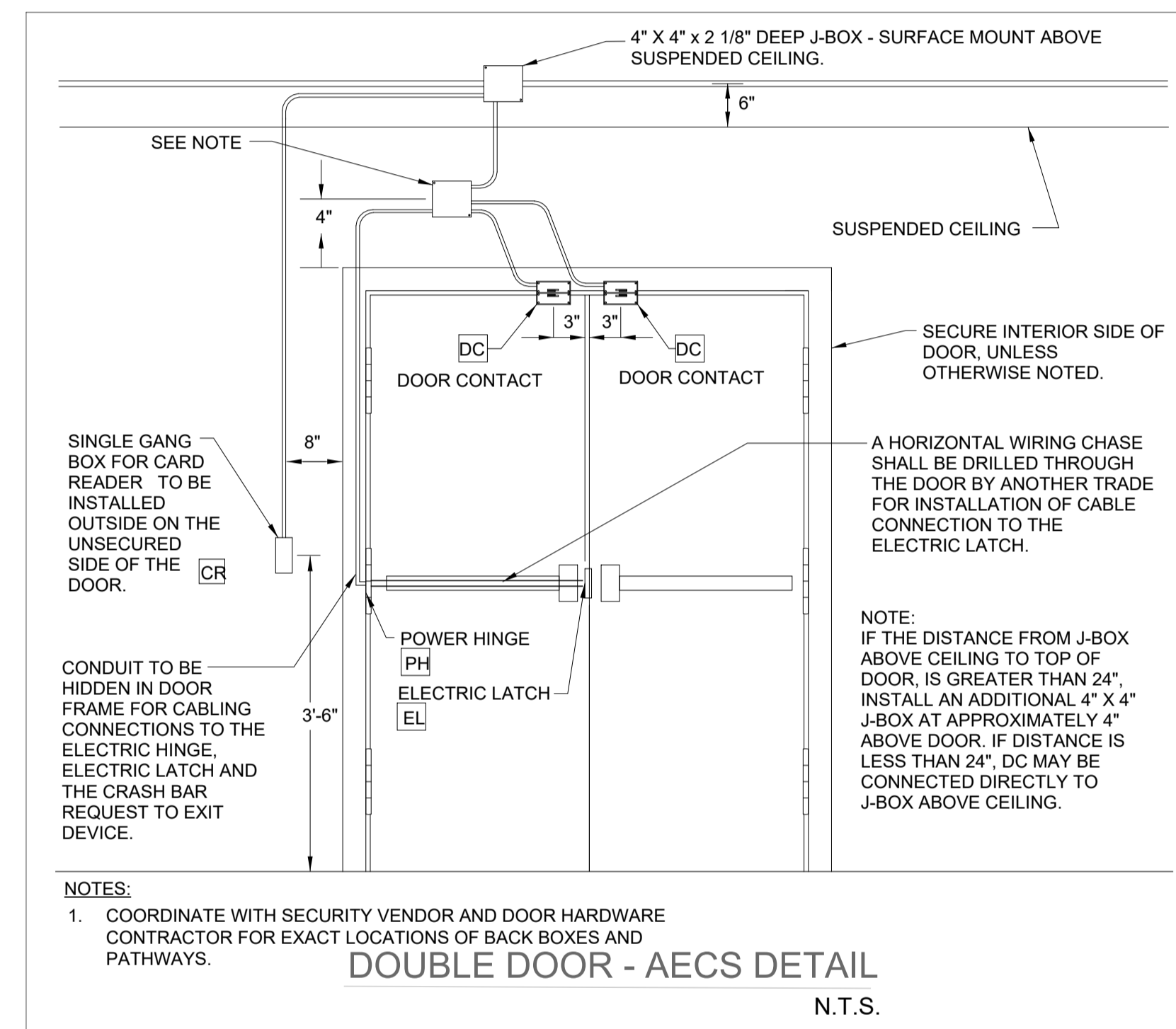
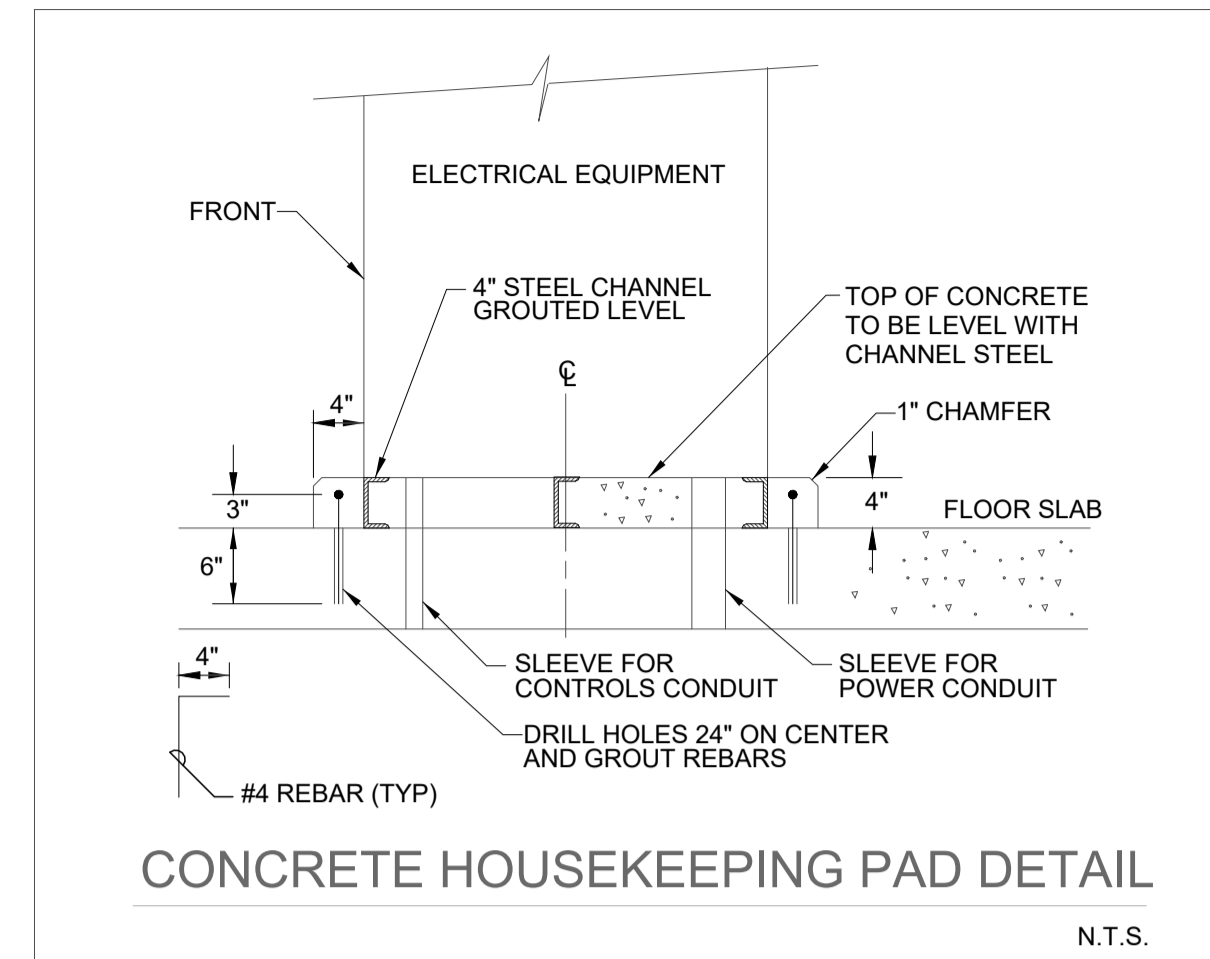
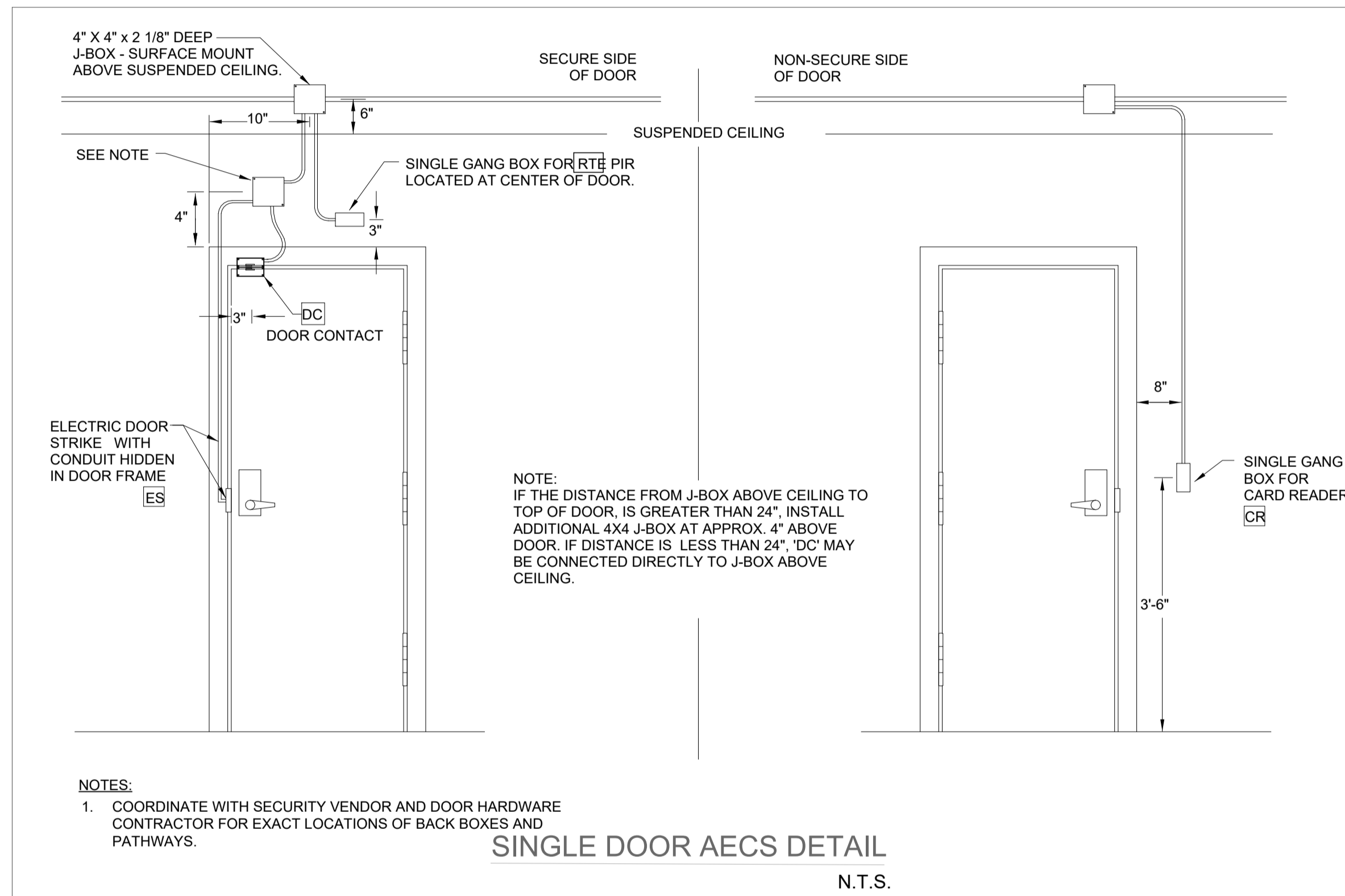
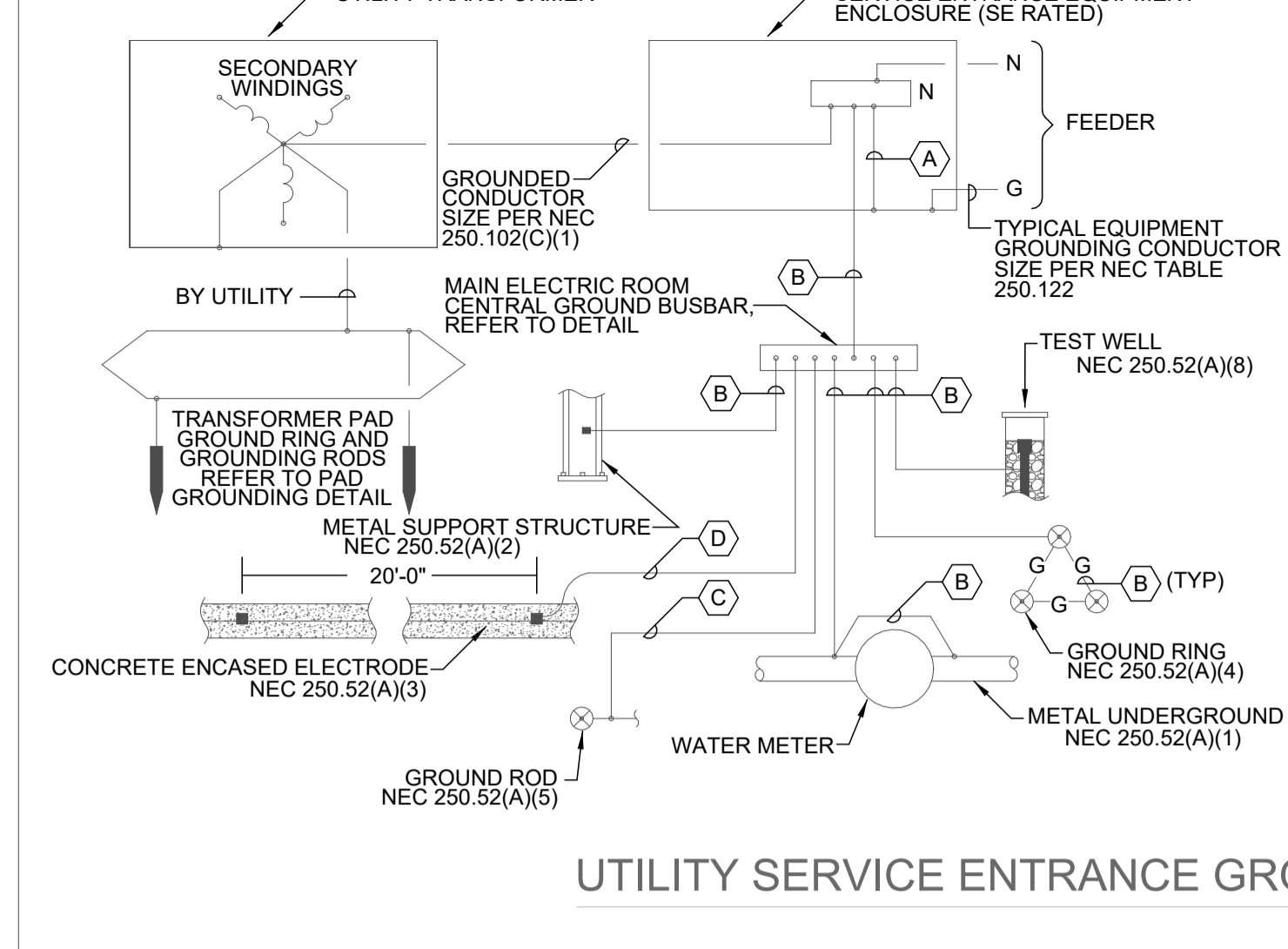
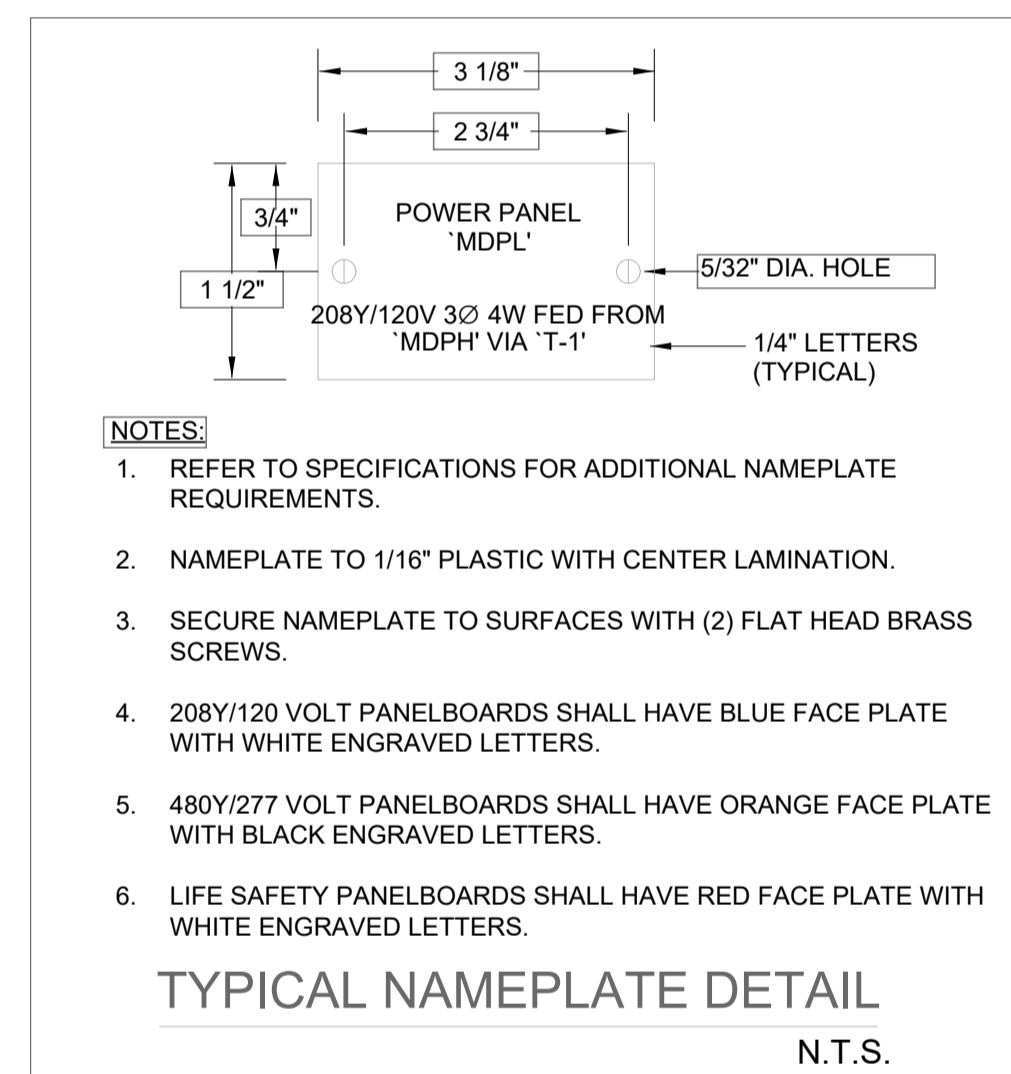
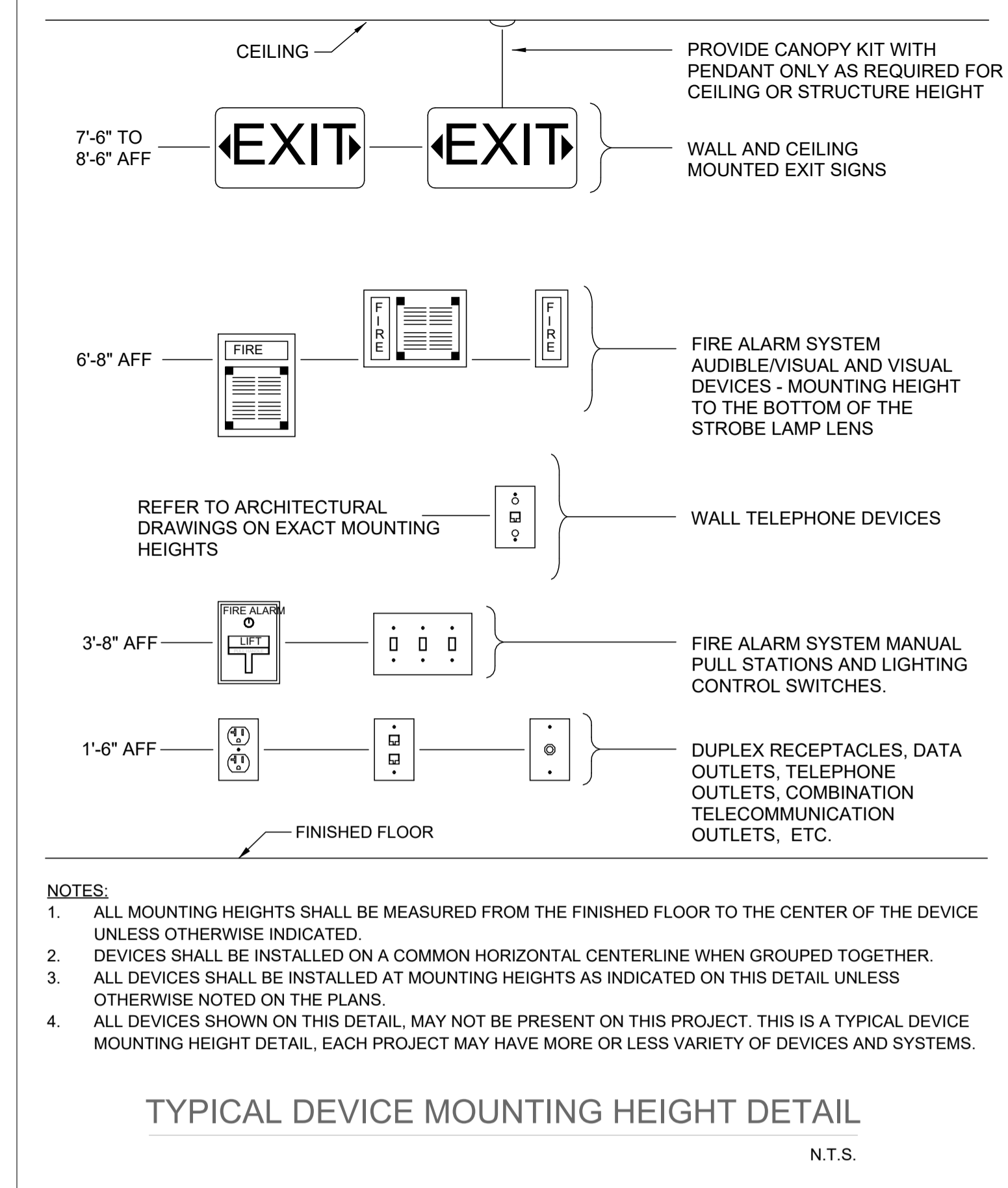
KEYED SHEET NOTES
1. PROVIDE CAT6 48PORT UNIVERSAL RJ45/110 PATCH PANEL AND ASSOCIATED MOUNTING BRACKETS FOR SECURITY NETWORK RACK. PROVIDE ALL INFRASTRUCTURE INCLUDING NETWORK RACK, CABLE TRAY/J-HOOKS, GROUNDING/BONDING, POWER RECEPTACLES AND PLYWOOD BACKBOARD AS REQUIRED. E.C. SHALL COORDINATE WITH 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.

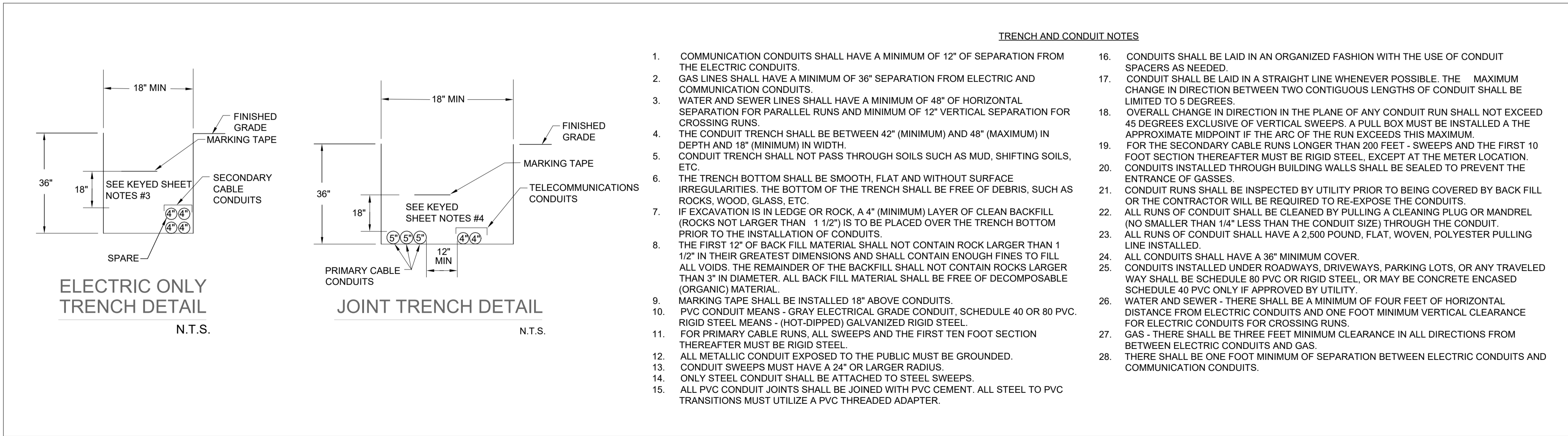
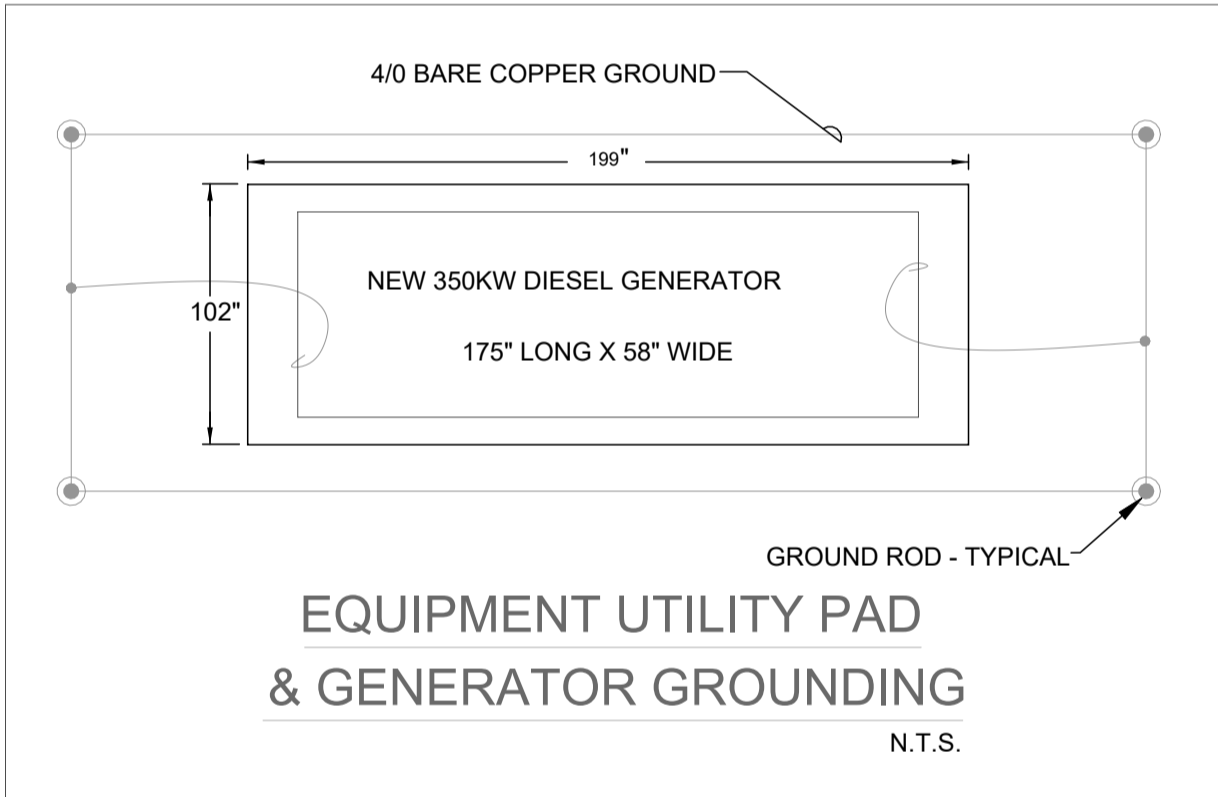
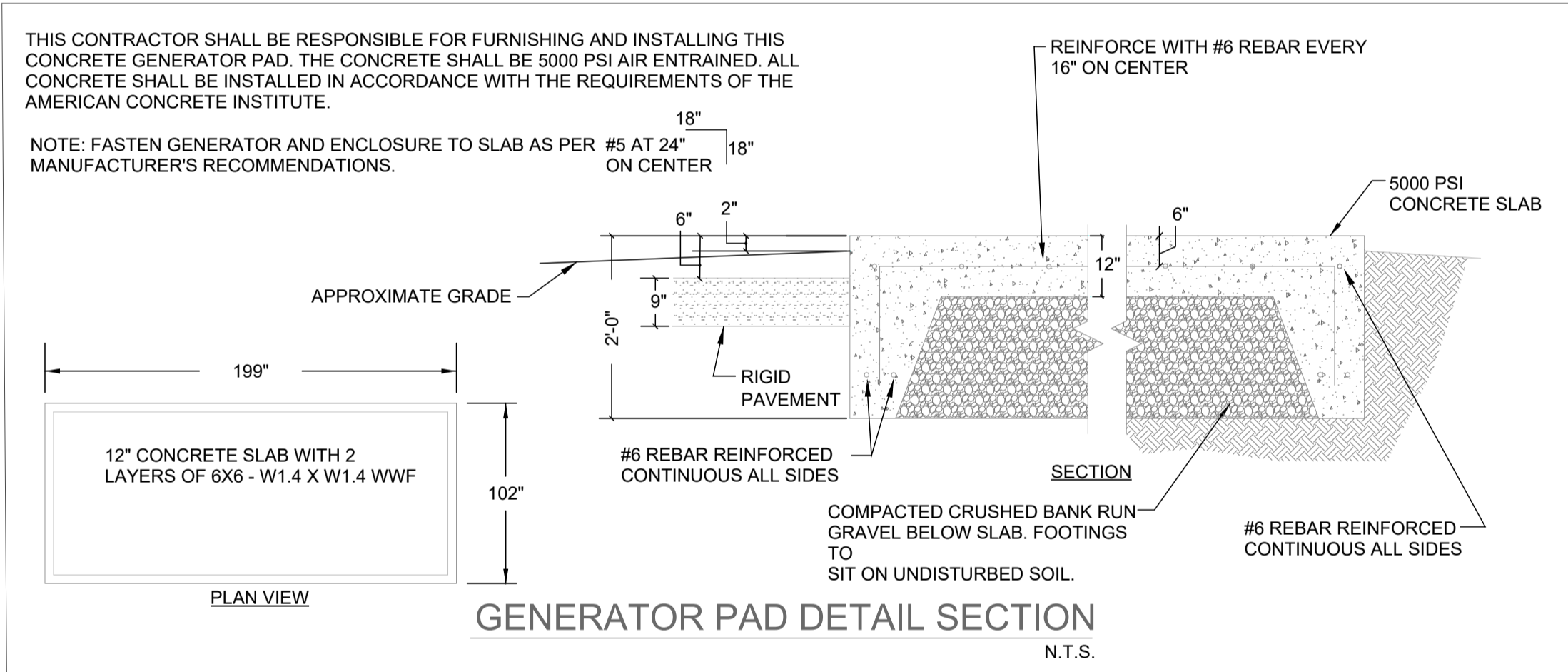
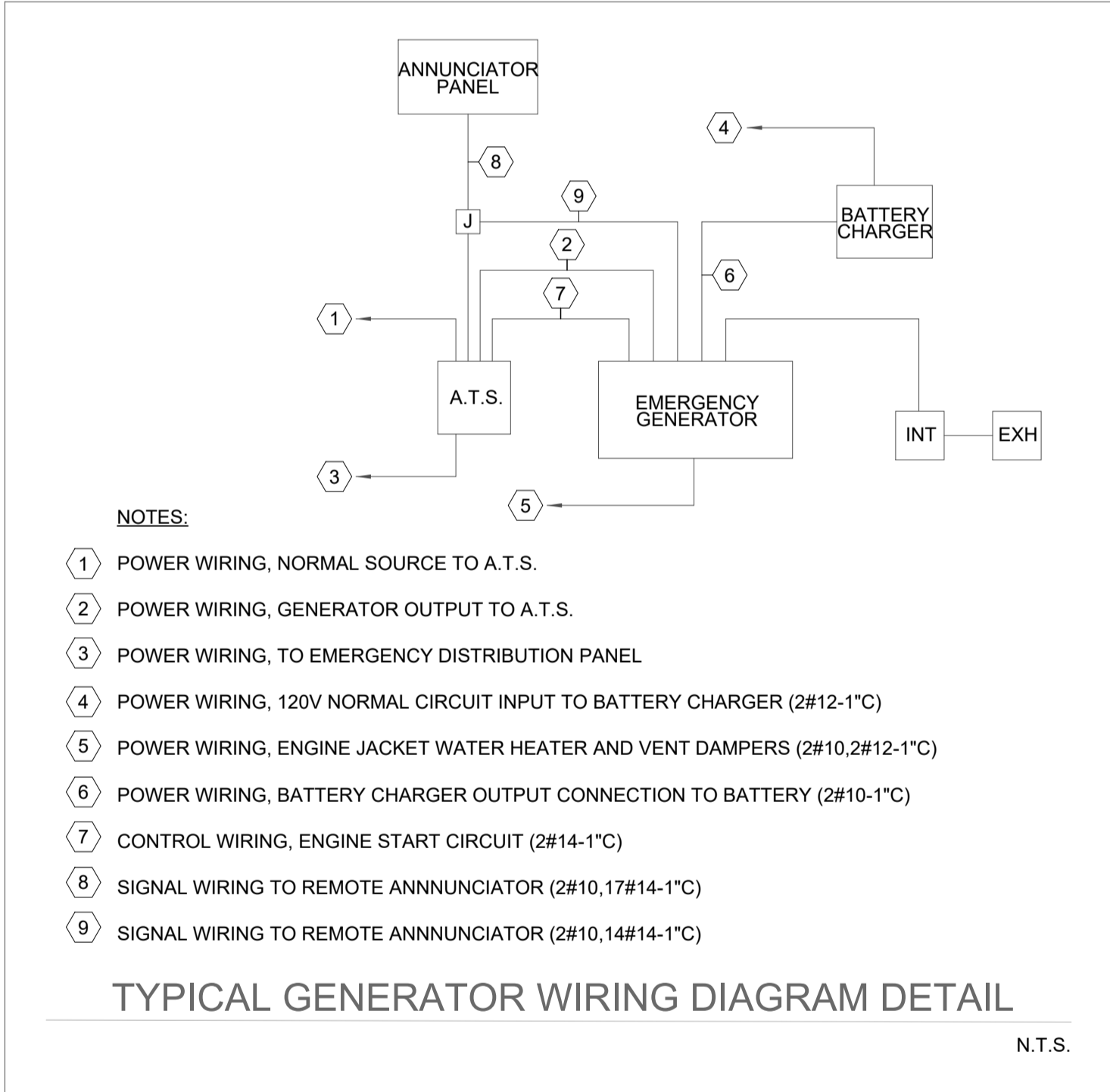
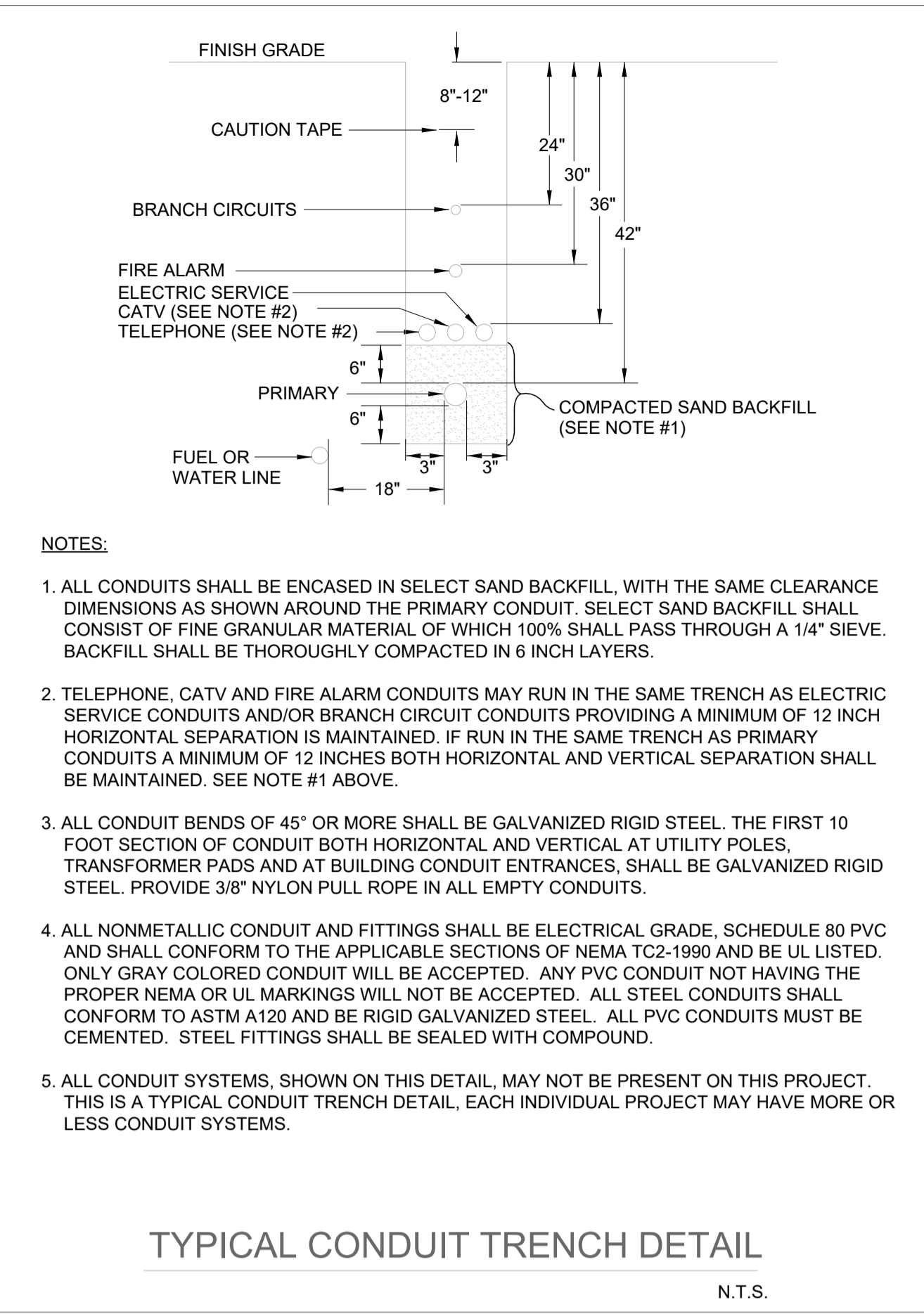
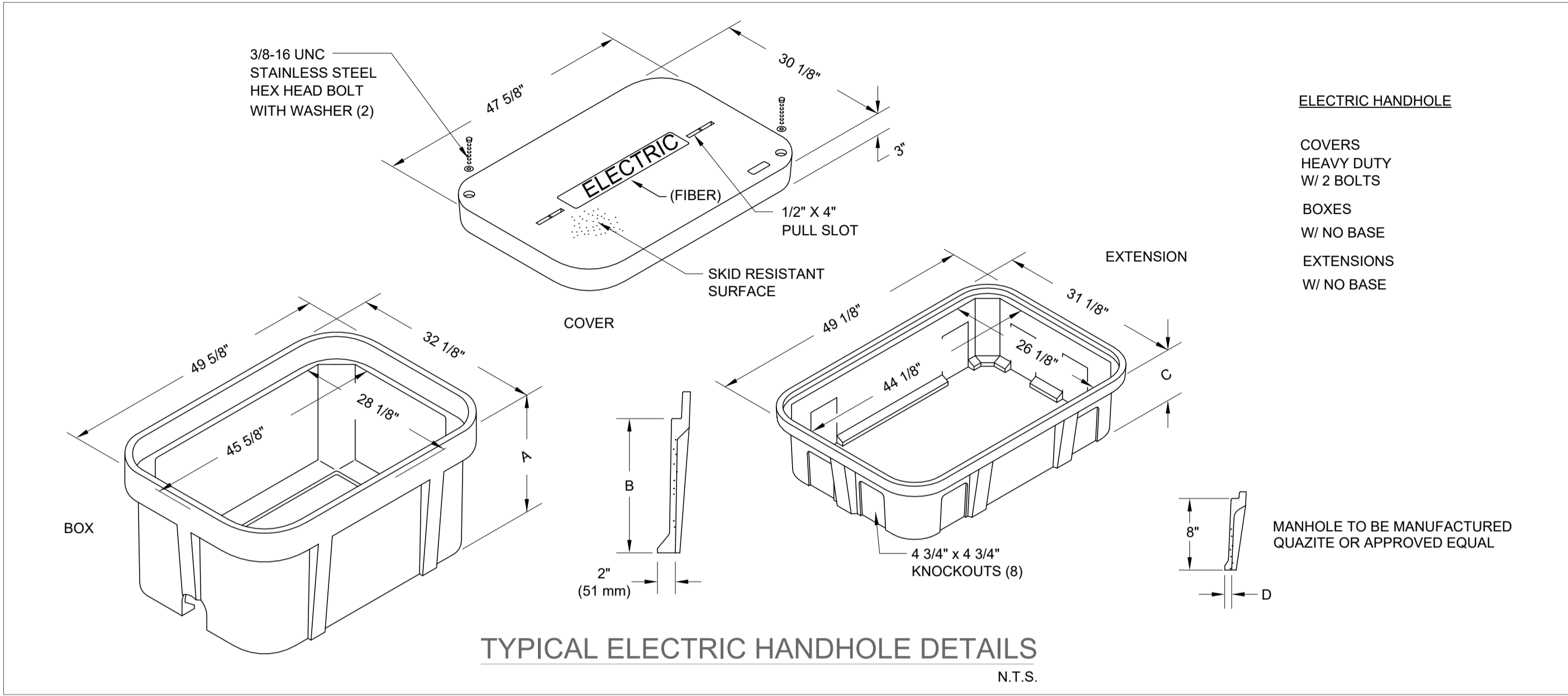


PUBLIC ADDRESS SYSTEM RISER

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. RECESS MOUNT 8" CEILING PAGING SPEAKERS. INCLUDE BACKBOX AND CEILING TILE MOUNTING SUPPORT AS 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.





PRELIMINARY - NOT FOR CONSTRUCTION

