

FACILITIES SHOP

SPANISH FORK CITY

433 SOUTH MAIN STREET

SPANISH FORK, 84660



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GENERAL NOTES

- ALL EXIT ACCESS DOORS AND EXITS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. USE OF MANUAL FLUSH BOLTS, EDGE BOLTS, TOP OR BOTTOM BOLTS, ETC. IS PROHIBITED.
- GLAZING IN DOORS OR IN FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST EXPOSED EDGE IS WITHIN A 24 INCH ARC OF THE DOOR AND WHERE THE BOTTOM EXPOSED EDGE IS LESS THAN 60 INCHES ABOVE THE WALKING SURFACE MUST BE TEMPERED.
- TANK TYPE WATER CLOSETS SHALL HAVE A MAXIMUM WATER USE OF 1.6 GALLONS PER FLUSH. SHOWERS SHALL HAVE A MAXIMUM FLOW OF 2.5 GALLONS PER MINUTE.
- BURNING OF CONSTRUCTION WASTE MATERIALS IS PROHIBITED AT ALL TIMES.
- PROVIDE ONE RECESSED 2-A FIRE EXTINGUISHER FOR EVERY 3,000 SQ. FT. OF FLOOR AREA WITH A MAXIMUM TRAVEL DISTANCE OF 75 FEET TO AN EXTINGUISHER.
- STORAGE OF EQUIPMENT, SOILS, CONSTRUCTION MATERIALS ON PUBLIC RIGHT-OF-WAY (STREETS/SIDEWALKS) OR EASEMENT IS EXPRESSLY PROHIBITED.
- GENERAL CONTRACTOR TO PROCURE ALL REQUIRED PERMITS FROM AUTHORITY HAVING JURISDICTION, INCLUDING BUT NOT LIMITED TO BUILDING, ENGINEERING, RIGHT OF WAY, AND OTHER PERMITS REQUIRED FOR SUB-CONTRACTOR WORK.
- GENERAL CONTRACTOR TO PROVIDE REQUIRED FIRE EXTINGUISHERS TO BE PRESENT DURING CONSTRUCTION.
- DIMENSIONS ARE SHOWN TO FACE OF STUD, UNLESS NOTED OTHERWISE.
- ALL APPLICABLE ELEMENTS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES WILL BE ADHERED TO.
- SEE ELECTRICAL DRAWINGS FOR RELATED SITE UTILITIES.
- COMPLY WITH SPANISH FORK CITY STANDARDS, SPECIFICATIONS, AND DRAWINGS.
- COMPLY WITH REQUIREMENTS OF PROJECT GEO-TECHNICAL REPORT.
- FINISH GRADE AND FINISH SIDEWALKS TO SLOPE AWAY FROM BUILDING WITH POSITIVE DRAINAGE.

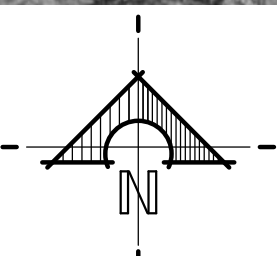
PROJECT DATA

SITE ADDRESS: 433 SOUTH MAIN STREET
SPANISH FORK, UT 84660
PARCEL NUMBER: Z1019-0023
ZONING: P-F
GENERAL PLAN: AGRICULTURAL
EXISTING USE: VACANT
PROPOSED USE: OFFICE/MAINTENANCE BUILDING
LAND AREA: 2.48 ACRES

PROJECT LOCATION



VICINITY MAP



BID/PERMIT SET - 05.19.2023

FACILITIES SHOP

SPANISH FORK CITY

SPANISH FORK, UTAH 84660

433 SOUTH MAIN STREET

G1.1
COVER SHEET

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Date: 05.22.2023
Revision:

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ELECTRICAL GENERAL NOTES:

1. WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER, PER INDUSTRY STANDARD, AND TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER.
2. WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES, STANDARDS AND ORDINANCES.
3. ELECTRICAL CONTRACTOR TO REFER TO THE CIVIL ENGINEER'S DRAWING AND COORDINATE ELECTRICAL INSTALLATION WITH ALL UTILITIES.
4. ELECTRICAL CONTRACTOR TO VERIFY ALL THE UTILITY COMPANY SERVICE (POWER, TELEPHONE, ETC.) TERMINATION POINTS PRIOR TO ROUGH-IN. PROVIDE CONDUIT AS REQUIRED TO ACCOMMODATE ALL UTILITY COMPANY SERVICES. REPORT ANY CONFLICTING CONDITIONS TO THE ARCHITECT.
5. EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE PER NEC 408.4(A).
6. ALL MATERIALS USED IN THIS INSTALLATION SHALL BE U.L. APPROVED AND NEW.
7. DO NOT PENETRATE STRUCTURAL ELEMENTS OF FLOORS, WALLS, CEILINGS, ROOF, ETC.
8. DETAILS ARE SHOWN ON DIFFERENT SHEETS. THE CONTRACTOR SHALL REFER TO THOSE DETAILS WHETHER OR NOT CALLED IN REFERENCE NOTES.
9. ELECTRICAL CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO DUCTS, PIPING, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER, OR PASS THROUGH ELECTRICAL ROOMS OR SPACES, OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN OTHER AREAS.
10. NO WIRING SHALL RUN IN DUCT WORK.
11. USE EPOXY ANCHORS TO SUPPORT THE ELECTRICAL EQUIPMENT. EXPANSION ANCHOR BOLTS ARE NOT ACCEPTED.
12. THE ELECTRICAL CONTRACTOR SHALL REVIEW AND COORDINATE WITH ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL, PLUMBING, AND OTHER DRAWINGS PRIOR TO BID.
13. ELECTRICAL CONTRACTOR SHALL REVIEW ALL ARCHITECT'S ELEVATIONS, SECTIONS, AND FLOOR PLANS PRIOR TO ROUGH-IN OF ELECTRICAL JUNCTION BOXES.
14. ALL JUNCTION BOXES SHALL HAVE MINIMUM DEPTH OF 2-1/8" UNLESS OTHERWISE SPECIFIED. SECURE ALL JUNCTION BOXES AS SHOWN IN THE DETAILS. FURNISH AND INSTALL PROPER PLASTER RINGS.
15. REFER TO ARCHITECTURAL CABINET CASEWORK ELEVATION DRAWINGS FOR CLARIFICATION ON MOUNTING AND PLACEMENT OF ALL RACEWAY, RECEPTACLES, AND SWITCHES.
16. MANY DEVICE MOUNTING LOCATIONS ARE DEPENDENT ON MILLWORK LOCATIONS. COORDINATE ALL APPLICABLE LOCATIONS WITH MILLWORK INSTALLER PRIOR TO BEGINNING WORK.
17. LIGHT SWITCHES INSTALLED ADJACENT TO EACH OTHER, SHALL BE GANGED TOGETHER WITH ONE PIECE COVER PLATE.
18. ALL WALL MOUNTED MOTION SENSORS SHALL BE A DUAL TECHNOLOGY MOTION SENSOR WITH INTEGRAL OVERRIDE SWITCH. MOTION SENSOR TO MOUNT IN A STANDARD SWITCH BOX. MOTION SENSOR TO HAVE A FIFTEEN MINUTE TIME DELAY SET AT TEN MINUTES TO SENSOR SET TO MANUAL ON. USE HUBBELL, SENSOR SWITCH, LEVITON, OR APPROVED EQUAL.
19. CONSULT ARCHITECTS REFLECTED CEILING PLANS FOR EXACT LOCATION OF LIGHTING FIXTURES, SMOKE DETECTORS, ETC.
20. ELECTRICAL CONTRACTOR SHALL MEET WITH THE CEILING AND MECHANICAL CONTRACTORS TO COORDINATE LOCATIONS, CLEARANCES, CEILING TYPES, AND ROUGH-IN REQUIREMENTS OF ALL LIGHTING FIXTURES PRIOR TO DUCT, PIPING, AND CEILING INSTALLATIONS.
21. ALL CEILING MOUNTED MOTION SENSORS SHALL BE A DUAL TECHNOLOGY MOTION SENSOR WITH POWER PACK AS REQUIRED TO CONTROL LIGHTING. MOTION SENSOR TO HAVE A FIFTEEN MINUTE DELAY SET AT TEN MINUTES TO SENSOR SET TO MANUAL ON. CONTRACTOR TO SUBMIT FLOOR PLAN TO MOTION SENSOR SUPPLIER FOR FACTORY TO LOCATED MOTION SENSOR FOR OPTIMAL PERFORMANCE TO AVOID NUISANCE SHUT OFF OF LIGHTING. MANUFACTURERS LAYOUT PLAN TO BE PART OF SUBMITTALS. PROVIDE SUFFICIENT BOX DEPTH AND CORRECT PLASTER RING TO ACCOMMODATE ACTUAL RING UNIT AND OR PIPING. MOTION SENSOR TO BE INSTALLED, PROVIDE PROPER SEPARATION OF 120 VOLT AND CLASS 2 WIRING AS NECESSARY IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE. USE HUBBELL, SENSOR SWITCH, LEVITON OR APPROVED EQUAL.
22. THE ELECTRICAL CONTRACTOR SHALL TERMINATE THE ELECTRICAL CONNECTIONS TO ALL THE EQUIPMENT BY PROVIDING THE NECESSARY MALE/FEMALE CONNECTOR, RECEPTACLE, PLUG, ETC.
23. FINAL CONNECTIONS TO EQUIPMENT SHALL BE MADE AS PER MANUFACTURERS WRITTEN INSTRUCTIONS AND APPROVED WIRING DIAGRAMS AND DETAILS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE ALL MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED UNDER OTHER DIVISIONS WITH APPROVED SHOP DRAWINGS PRIOR TO BEGINNING ROUGH-IN.
24. VERIFY EXACT LOCATION(S) OF ALL EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
25. AT THE END OF THE JOB, PROVIDE BLANK COVER PLATES TO MATCH THE OTHER COVER PLATES FOR ALL JUNCTION BOXES WHERE DEVICES HAVE NOT YET BEEN INSTALLED.

ELECTRICAL SYMBOLS			
SYMBOL	EXPLANATION	SYMBOL	EXPLANATION
	BRANCH CIRCUIT CONCEALED IN CEILING OR WALL		FIXTURE TYPE SYMBOL
	BRANCH CIRCUIT CONCEALED IN GROUND OR FLOOR		LINEAR FIXTURE (TYPICAL)
	BRANCH CIRCUIT HOMERUNS TO PANEL		EMERGENCY LIGHTING UNIT
	ROOM NUMBER		SURFACE OR PENDANT MOUNTED FIXTURE
	MECHANICAL EQUIPMENT SYMBOL		RECESSED FIXTURE
	KEYED NOTE REFERENCE		WALL MOUNTED FIXTURE
	FEEDER TAG (SEE FEEDER SCHEDULE)		WALL PACK
	LIGHTING AND POWER PANELBOARD		STRIP FIXTURE
	DISCONNECT SWITCH		TRACK LIGHTING
	DISCONNECT SWITCH WITH MOTOR STARTER		EMERGENCY LIGHTING UNIT
	MOTOR STARTER		WALL MOUNTED EXIT LIGHT (SINGLE FACE)
	VARIABLE FREQUENCY DRIVE		WALL MOUNTED EXIT LIGHT (DOUBLE FACE)
	CONDUIT STUB		CEILING MOUNTED EXIT LIGHT
	JUNCTION BOX		CEILING MOUNTED EXIT LIGHT (DOUBLE FACE)
	ELECTRIC VEHICLE CHARGING STATION		EXIT LIGHT WITH PROTECTIVE COVER
	WP — WEATHERPROOF COVER & LISTED WEATHER RESISTANT DEVICE GFCI — PROTECTED BY FAULT CIRCUIT INTERRUPTER REF — MOUNTING HEIGHT ABOVE FLOOR OR GRADE GIVEN IN INCHES. REF — REFRIGERATOR DW — DISHWASHER DISP — DISPOSAL WASH — WASHING MACHINE EWC — ELECTRIC WATER COOLER USB — HUBBELL USB15ACSW OR EQUAL DUPLEX PLUS USB CHARGER TR — TAMPER RESISTANT		SINGLE POLE SWITCH (SUBSCRIPT AS INDICATED BELOW)
	DUPLEX RECEPTACLE OUTLET		DOUBLE GANG SWITCH
	QUAD RECEPTACLE OUTLET		LOW VOLTAGE MULTI BUTTON CONTROL SWITCH (LETTER INDICATES CONTROL OF CORRESPONDING FIXTURES)
	SPLIT WIRED DUPLEX RECEPTACLE OUTLET		CONTROLLING SWITCH (LETTER INDICATES CONTROL OF CORRESPONDING FIXTURES)
	220V RECEPTACLE OUTLET		OCCUPANCY SENSOR (CEILING MOUNTED)
	ISOLATED GROUND RECEPTACLE		DUAL TECHNOLOGY OCCUPANCY SENSOR (CEILING MOUNTED)
	RECEPTACLE FLOOR DEVICE		PASSIVE INFRARED OCCUPANCY SENSOR (CEILING MOUNTED)
	CEILING MOUNTED DEVICE		ROOM CONTROLLER
	SPECIAL RECEPTACLE		DAYLIGHT SENSOR
	MOTOR OUTLET		PHOTOCELL
	EXHAUST FAN		VOLUME CONTROL
	THERMOSTAT OUTLET		WALL SPEAKER
	REMOTE SENSOR OUTLET		CEILING SPEAKER
	TELEPHONE OUTLET		SURVEILLANCE CAMERA
	COMPUTER DATA OUTLET (#) INDICATES JACK QUANTITIES		SURVEILLANCE DIGITAL VIDEO RECORDER
	NETWORK AND VOICE OUTLET		NURSE CALL ANNUNCIATOR PANEL
	WIRELESS ACCESS POINT CEILING MOUNTED		NURSE CALL EMERGENCY CALL DEVICE
	TELEVISION OUTLET		NURSE CALL EMERGENCY CALL LIGHT
NOTE: ALL SYMBOLS MAY NOT BE USED.			SMOKE DETECTOR (SUBSCRIPT AS INDICATED BELOW)
			SMOKE ALARM BATTERY-BACKED
			SMOKE/CARBON MONOXIDE ALARM COMBO BATTERY-BACKED
			DUCT SMOKE DETECTOR
			SMOKE DETECTOR WITH ADDRESSABLE RELAY
			SMOKE DETECTOR WITH SOUNDER BASE
			HEAT DETECTOR
			GAS DETECTOR
			CARBON MONOXIDE DETECTOR
			CARBON MONOXIDE/NITROGEN DIOXIDE SENSOR (GARAGE)
			ADA TWO-WAY COMMUNICATIONS SYSTEM
			ACCESS CONTROL KEY PAD
			ACCESS CONTROL CARD READER
			ACCESS CONTROL DOOR STRIKE
			ACCESS CONTROL MAG LOCK
			ACCESS CONTROL DOOR SENSOR
			ACCESS CONTROL REQUEST TO EXIT
			PUSHBUTTON
			BELL

ABBREVIATIONS INDEX							
#	NUMBER	DC	DIRECT CURRENT	KW	KILOWATT	PT	POTENTIAL TRANSFORMER
φ	PHASE	DISP	DISPOSAL	LRA	LOCKED ROTOR AMPS	PV	PHOTOVOLTAIC
1φ	SINGLE PHASE	DRY	DRYER	LTG	LIGHTING	PVC	POLYVINYL CHLORIDE
2P	TWO-POLE	DW	DISHWASHER	MATV	MASTER ANTENNA TELEVISION	(R)	RELOCATE
3φ	THREE PHASE	DWG	DRAWING	MAX	MAXIMUM	REC	RECEPTACLE
4P	FOUR-POLE	EC	EMPTY CONDUIT	MB	MAIN BUS	REF	REFRIGERATOR
AC	ALTERNATING CURRENT	EM	EMERGENCY	MCB	MAIN CIRCUIT BREAKER	REQ	REQUIRED
AFB	ABOVE FINISHED FLOOR	EMG	EMERGENCY GENERATOR	MCC	MOTOR CONTROL CENTER	RLA	RATED LOAD AMPS
AFG	ABOVE FINISHED GRADE	EMT	ELECTRICAL METALLIC TUBING	MCM	1000 CIRCULAR MILLS	RMS	ROOT MEAN SQUARE
AFP	ARC FAULT PROTECTOR	EPO	EMERGENCY POWER OFF	MH	MANHOLE	SE	SERVICE ENTRANCE
AHJ	AUTHORITY HAVING JURISDICTION	EW	ELECTRIC WATER COOLER	MC	MICROPHONE	SPD	SURGE PROTECTION DEVICE
AI	AMP INTERRUPTING CURRENT (SYMMETRICAL)	EWH	ELECTRIC WATER HEATER	MIN	MINIMUM	SPEC	SPECIFICATION
AL	ALUMINUM	EX	EXISTING	MLO	MAIN LUGS ONLY	SPK	SPEAKER
AM	AMPS METER	(F)	FUTURE	MNF	MANUFACTURER	SS	SELECTOR SWITCH
AMP	AMPERE	FA	FIRE ALARM	MTG	MOUNTING	SW	SWITCH
ANN	ANNUNCIATOR	FACP	FIRE ALARM CONTROL PANEL	MTR	MOTOR	SWBD	SWITCHBOARD
ATS	AUTOMATIC TRANSFER SWITCH	FC	FOOT CANDLE	MW	MICROWAVE	SWGR	SWITCHGEAR
AUX	AUXILIARY	FLA	FULL LOAD AMPS	(N)	NEW	TIB	TELEPHONE TERMINAL BOARD
AWG	AMERICAN WIRE GAUGE	FT	FOOT	N/A	NOT APPLICABLE	TBC	TELEPHONE TERMINAL CABINET
BC	BARE COPPER	FRZ	FREEZER	NC	NORMALLY CLOSED	TV	TELEVISION
BFG	BELOW FINISH GRADE	FS	FUSED SWITCH	NEC	NATIONAL ELECTRICAL CODE	TY	TYPE
C	CONDUIT	GFAF	DUAL FUNCTION GFCI/AFCI CIRCUIT BREAKER	NEMA	NATIONAL MANUFACTURING ASSOCIATION	UG	UNDERGROUND
CAB	CABINET	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	NFC	NATIONAL FIRE CODE	UNO	UNLESS NOTED OTHERWISE
CATB	COMMUNITY ANTENNA TELEVISION	GFP	GROUND-FAULT EQUIPMENT PROTECTION	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	UPS	UNINTERRUPTIBLE POWER SUPPLY
CATV	CABLE TELEVISION	GFP	GROUND-FAULT PROTECTOR	NFS	NON FUSED SWITCH	V	VOLT (KV-KILOVOLT)
CFI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED	GRC	GALVANIZED RIGID CONDUIT	NIC	NOT IN CONTRACT	VA/R	VOLT-AMPS/REACTIVE
CXCT	CIRCUIT	GRD	GROUND	NL	NIGHT LIGHT	VM	VOLT METER
CLG	CEILING	HP	HORSE POWER	NO	NORMALLY OPEN	W	WATTS
CNTR	CONTRACTOR	HZ	HERTZ	NTS	NOT TO SCALE	W/	WITH
CO	CONVENIENCE OUTLET	IG	ISOLATED GROUND	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED	WASH	WASHER
CR	COMPUTER TERMINAL	IMC	INTERMEDIATE METALLIC CONDUIT	OFOI	OWNER FURNISHED OWNER INSTALLED	WH	WATHOUR
CT	CURRENT TRANSFORMER	IN	INCH	OS&Y	OUTSIDE SCREW AND YOKE	W/O	WITHOUT
CW	COPPER	J-BOX	JUNCTION BOX	PB	PUSH BUTTON	WP	WEATHER PROOF
C/W	CONDUIT WITH	KV	KILOVOLT	PF	POWER FACTOR	XPMR	TRANSFORMER
(J)	DEMOLISH/DELETE	KVA	KILOVOLT AMPERES	PHR	PHASE FAILURE RELAY	XPMR-SW	TRANSFORMER SWITCH
DB	DECIBEL	KVAR	KILOVAR	PNL	PANEL	XP	EXPOSITION PROOF

NOTE: THIS IS A TYPICAL ABBREVIATION LIST. NOT ALL ABBREVIATIONS MAY BE USED ON THIS PROJECT.

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ELECTRICAL TEAM LEAD:	DAVID SWEARINGEN
ELECTRICAL DESIGNER:	RILEY CRUMP

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
E0.1	ELECTRICAL COVER SHEET
E0.2	ELECTRICAL SITE PLAN
E1.1	BUILDING #1 FLOOR PLAN
E1.2	BUILDING #1 MEZZ. PLAN
E4.1	ENLARGED FLOOR PLANS
E5.1	ELECTRICAL DETAILS
E5.2	ELECTRICAL DETAILS
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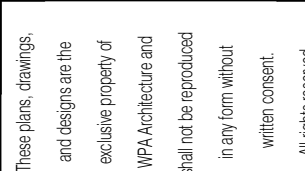
COMMISSIONING NOTES:

C408.3 LIGHTING SYSTEM FUNCTIONAL TESTING. CONTROLS FOR AUTOMATIC LIGHTING SYSTEMS SHALL COMPLY WITH SECTION C408.3.

C408.3.1 FUNCTIONAL TESTING.

TESTING SHALL ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE TESTING PERSONNEL OR DOCUMENTS SHALL STATE THE PARTY WHO WILL CONDUCT THE REQUIRED FUNCTIONAL TESTING, WHERE REQUIRED BY THE CODE OFFICIAL, AN APPROVED PARTY INDEPENDENT FROM THE DESIGN OR CONSTRUCTION OF THE PROJECT SHALL BE RESPONSIBLE FOR THE FUNCTIONAL TESTING AND THE PROVEN RECORD SHALL BE TO THE CODE OFFICIAL CERTIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET THE PROVISIONS OF SECTION C405. WHERE OCCUPANT SENSORS, TIME SWITCHES, PROGRAMMABLE SCHEDULE CONTROLS, PHOTOSENSORS OR DAYLIGHTING CONTROLS ARE INSTALLED, THE FOLLOWING PROCEDURES SHALL BE PERFORMED:

1. CONFIRM THAT THE PLACEMENT, SENSITIVITY AND TIME-OUT ADJUSTMENTS FOR OCCUPANT SENSORS YIELD ACCEPTABLE PERFORMANCE.



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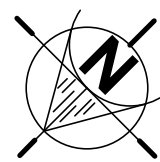
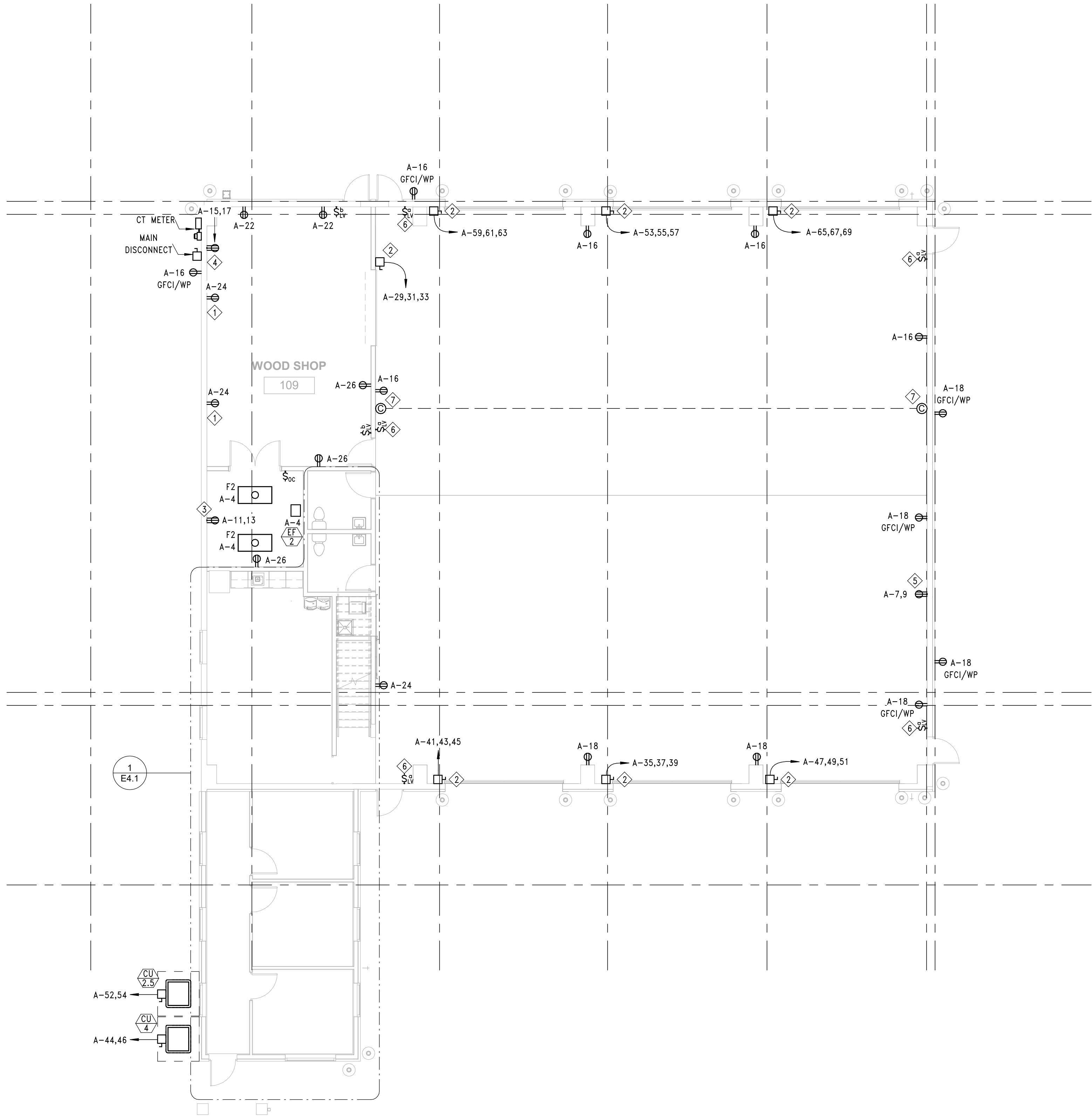


SPANISH FORK CITY

SPANISH FORK, UTAH 84660

ELECTRICAL
COVER SHEET

THESE DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE AND THE INFORMATION CONTAINED HEREIN IS INCOMPLETE UNLESS IN CONJUNCTION WITH ROYAL ENGINEERING'S INTERPRETATIONS, DECISIONS, OBSERVATIONS AND ADMINISTRATIONS. USE OR REPRODUCTION OF THESE DOCUMENTS IN WHOLE OR IN PART WITHOUT ROYAL ENGINEERING'S CONSENT IS IN VIOLATION OF COMMON LAW, COPYRIGHTS, STATUTORY AND OTHER RESERVED RIGHTS. REFER TO ACT 17 U.S.C. PAR. 511 (1991), WHICH PREEMPTS STATE AND LOCAL PUBLIC RECORD ACTS. REFER TO ACT 17 U.S.C. PAR. 301 (1991).



MAIN FLOOR ELECTRICAL PLAN - BUILDING #1

1/8" = 1'-0"

ELECTRICAL KEYED NOTES:

- 1 WOODSHOP RECEPTACLES FOR BENCH. VERIFY EXACT LOCATION AND HEIGHT WITH CABINET INSTALLER PRIOR TO ROUGH-IN.
- 2 DISCONNECT FOR OVERHEAD DOOR. COORDINATE ELECTRICAL REQUIREMENTS WITH DOOR INSTALLER PRIOR TO ROUGH-IN.
- 3 RECEPTACLE FOR AIR COMPRESSOR. VERIFY EXACT LOCATION AND HEIGHT WITH OWNER REPRESENTATIVE PRIOR TO ROUGH-IN.
- 4 RECEPTACLE FOR WELDER. VERIFY EXACT LOCATION AND HEIGHT WITH CREPRESENTATIVE PRIOR TO ROUGH-IN.
- 5 RECEPTACLE FOR PRESSURE WASHER. VERIFY EXACT LOCATION AND HEIGHT WITH REPRESENTATIVE PRIOR TO ROUGH-IN.
- 6 REFER TO PAGE E1.2 FOR LIGHTING LAYOUT AND SWITCHING CONNECTION.
- 7 2" CONDUIT FROM THE PANEL ROOM TO THE SOUTH WALL AS SHOWN IN PLANS FOR FUTURE NEEDS.

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Date: 03.30.2023

Revision:

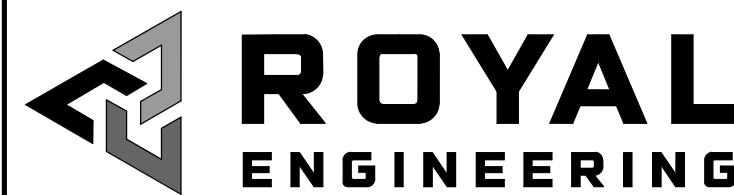


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SPANISH FORK CITY
BUILDINGS & GROUNDS SHOP
300 WEST 500 SOUTH

BID/PERMIT SET - 05.19.2023



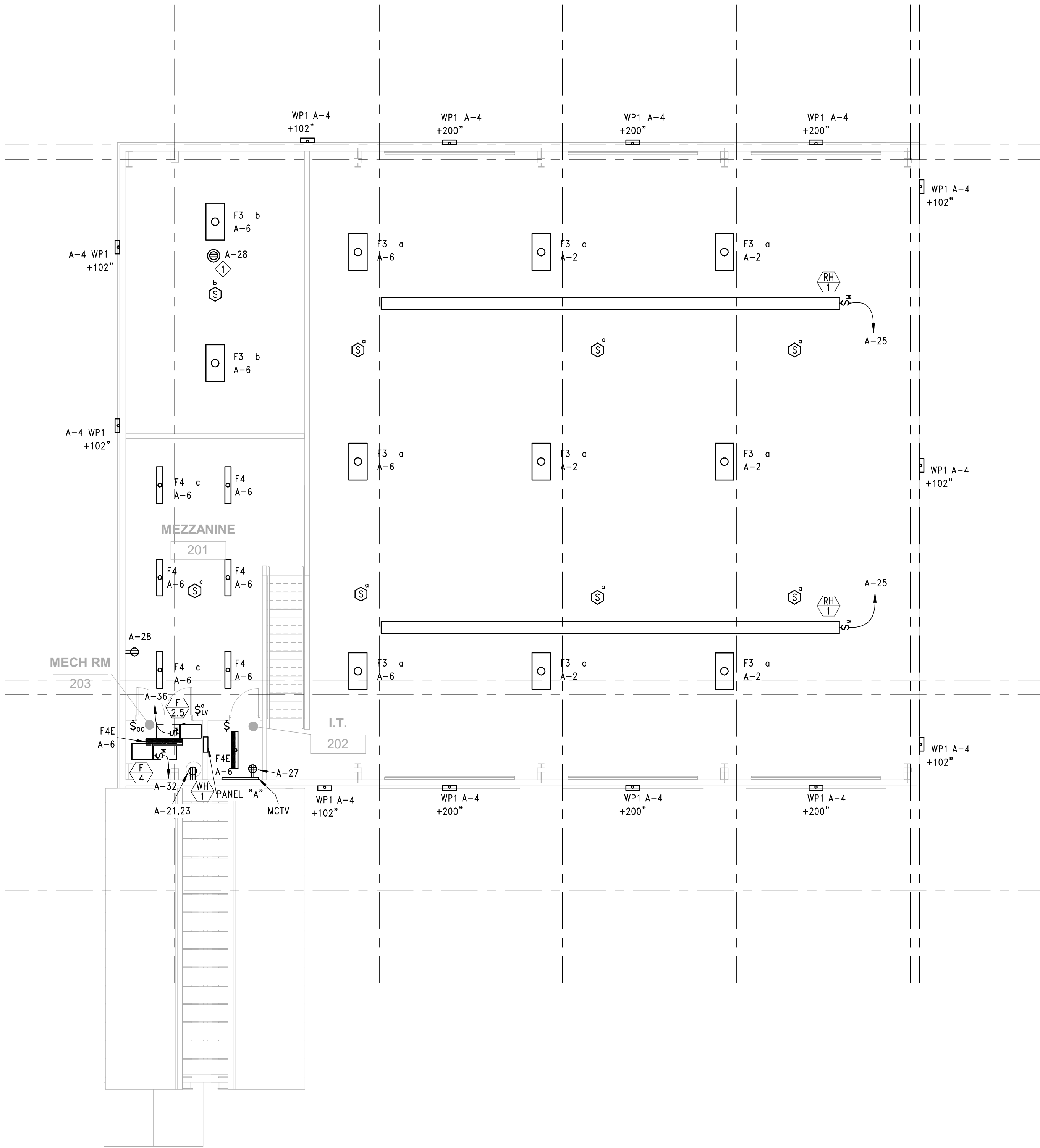
ELECTRICAL MECHANICAL
1837 S. EAST BAY BLVD. PROVO, UTAH 84606
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E1.1

BUILDING #1 FLOOR PLAN



MEZZANINE ELECTRICAL PLAN - BUILDING #1

1/8" = 1'-0"

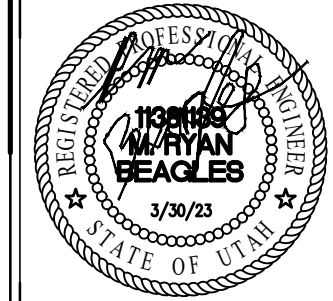
ELECTRICAL KEYED NOTES:

- 1 RECEPTACLE FOR DROPCORD. ELECTRICAL CONTRACTOR TO PROVIDE DROPCORD FOR THE CEILING DUPLEX.

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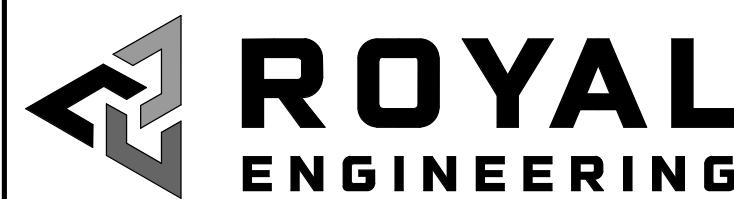


Alan R. Poulsen
Bruce T. Fallon



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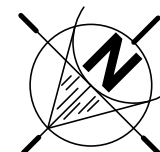
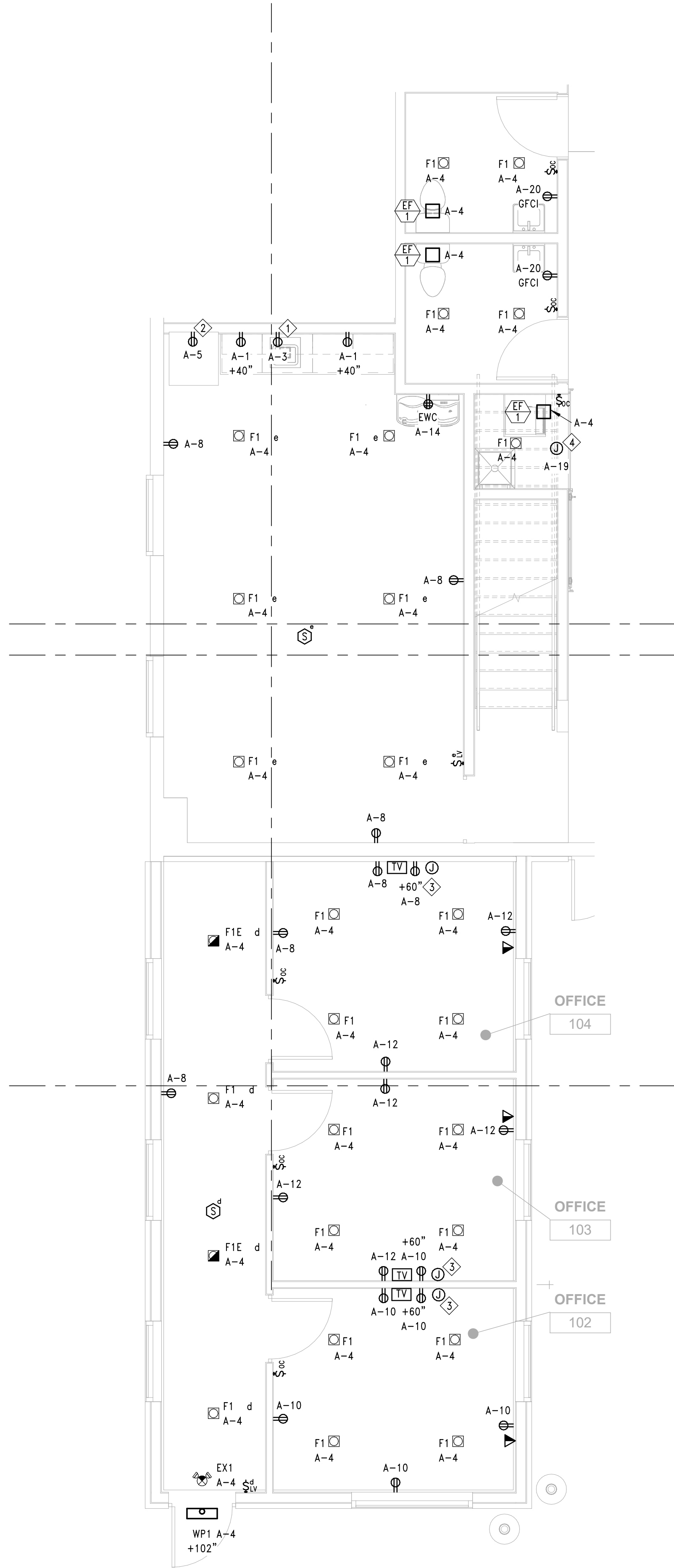
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E1.2

BUILDING #1 MEZZ. PLAN



ENLARGED FRONT ENTRANCE
1/4" = 1'-0"

ELECTRICAL KEYED NOTES:

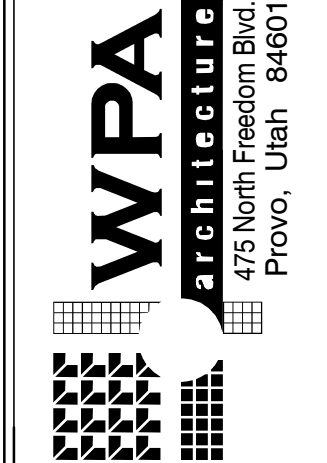
- 1 RECEPTACLE FOR DISHWASHER/DISPOSAL. VERIFY EXACT LOCATION WITH CABINET INSTALLER PRIOR TO ROUGH-IN. PROVIDE WITH AIR SWITCH FOR DISPOSAL LOCATED IN SINK.
- 2 RECEPTACLE FOR REFRIGERATOR. LOCATE SUCH THAT THE APPLIANCE WILL SIT TIGHT AGAINST THE WALL.
- 3 PROVIDE INTERFERENCE BOX FOR TV MONITOR. VERIFY EXACT LOCATION AND HEIGHT WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
- 4 PROVIDE CONDUIT FOR FUTURE ICE MACHINE. VERIFY TYPE OF LOAD WITH ARCHITECT. VERIFY EXACT LOCATION AND HEIGHT WITH CABINET INSTALLER PRIOR TO ROUGH-IN.

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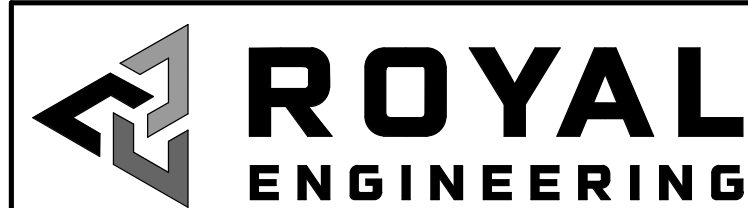
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SPANISH FORK CITY
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300 WEST 500 SOUTH

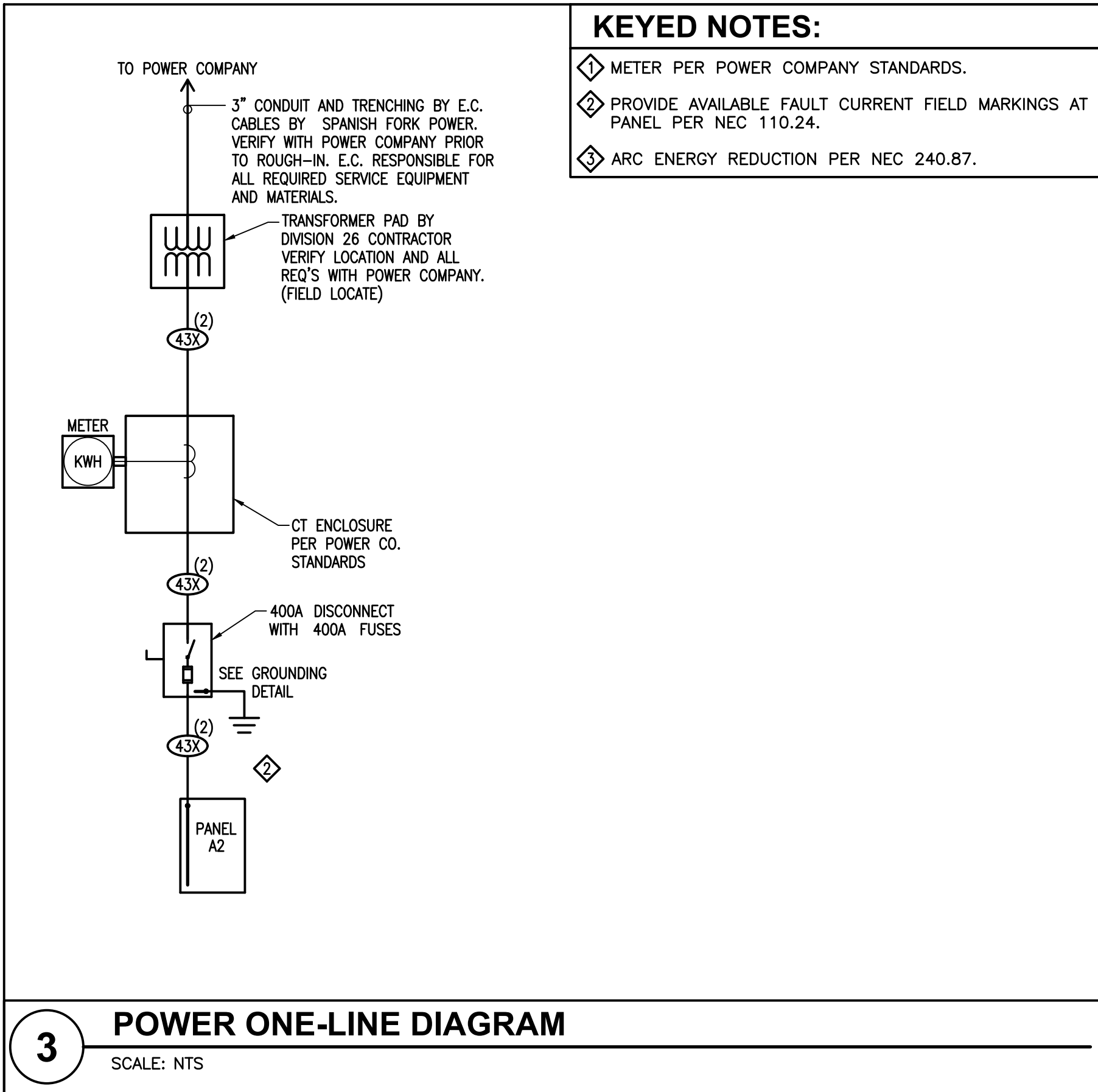
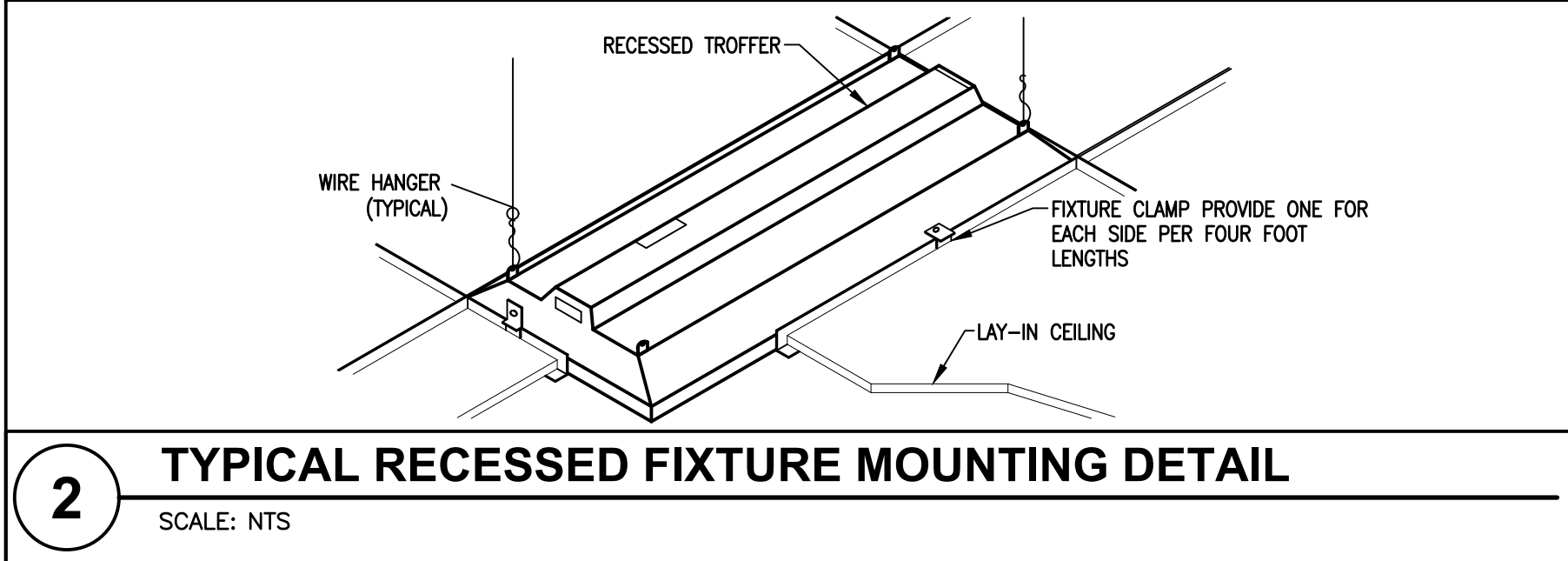
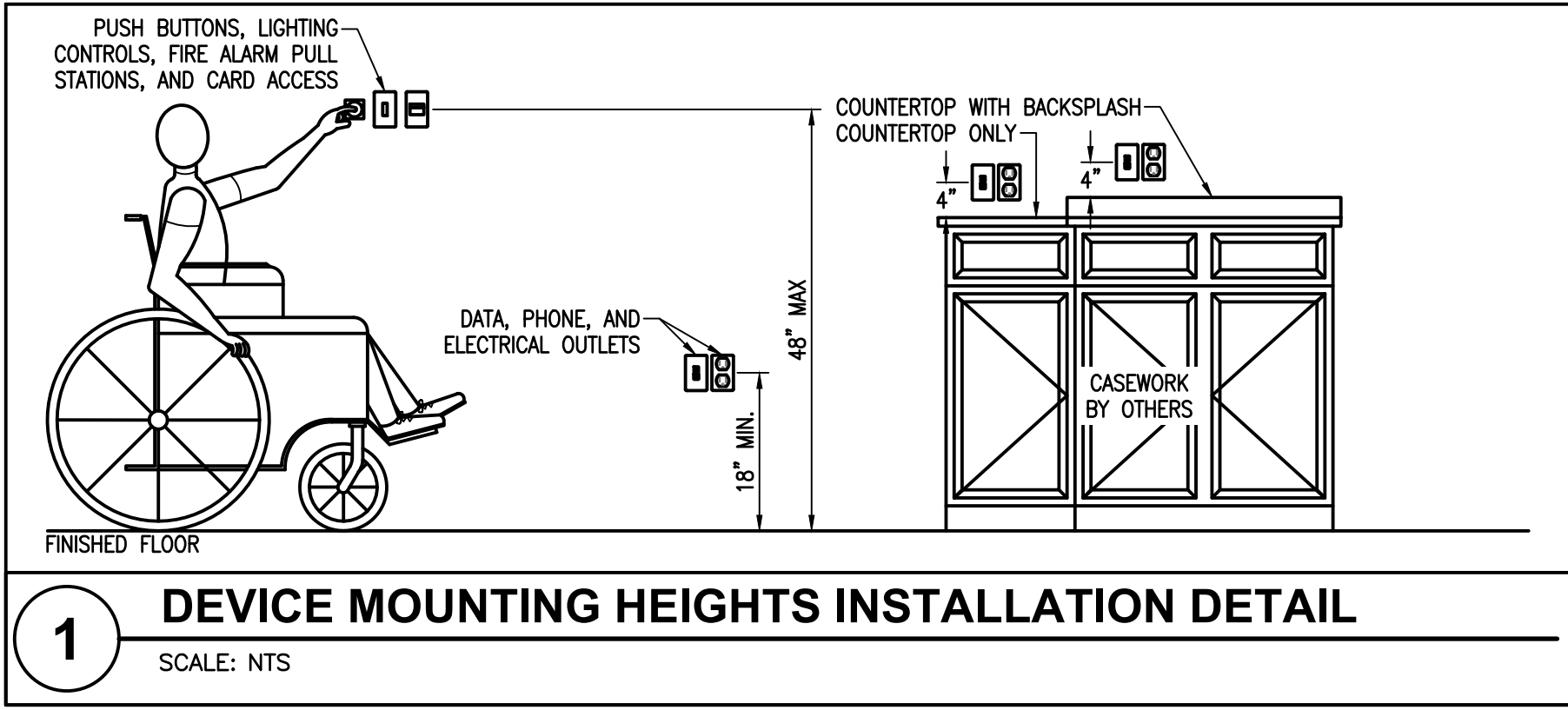
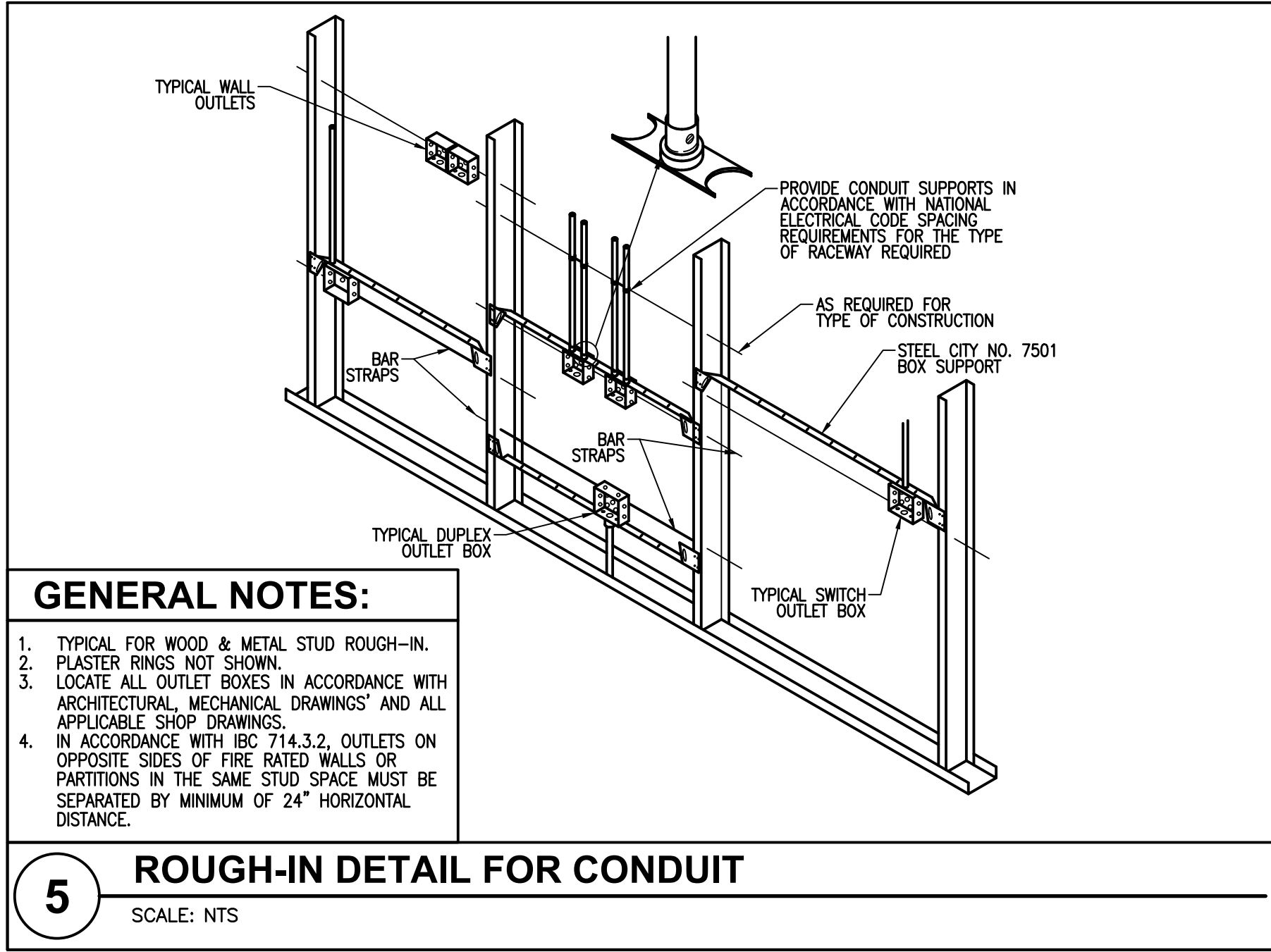
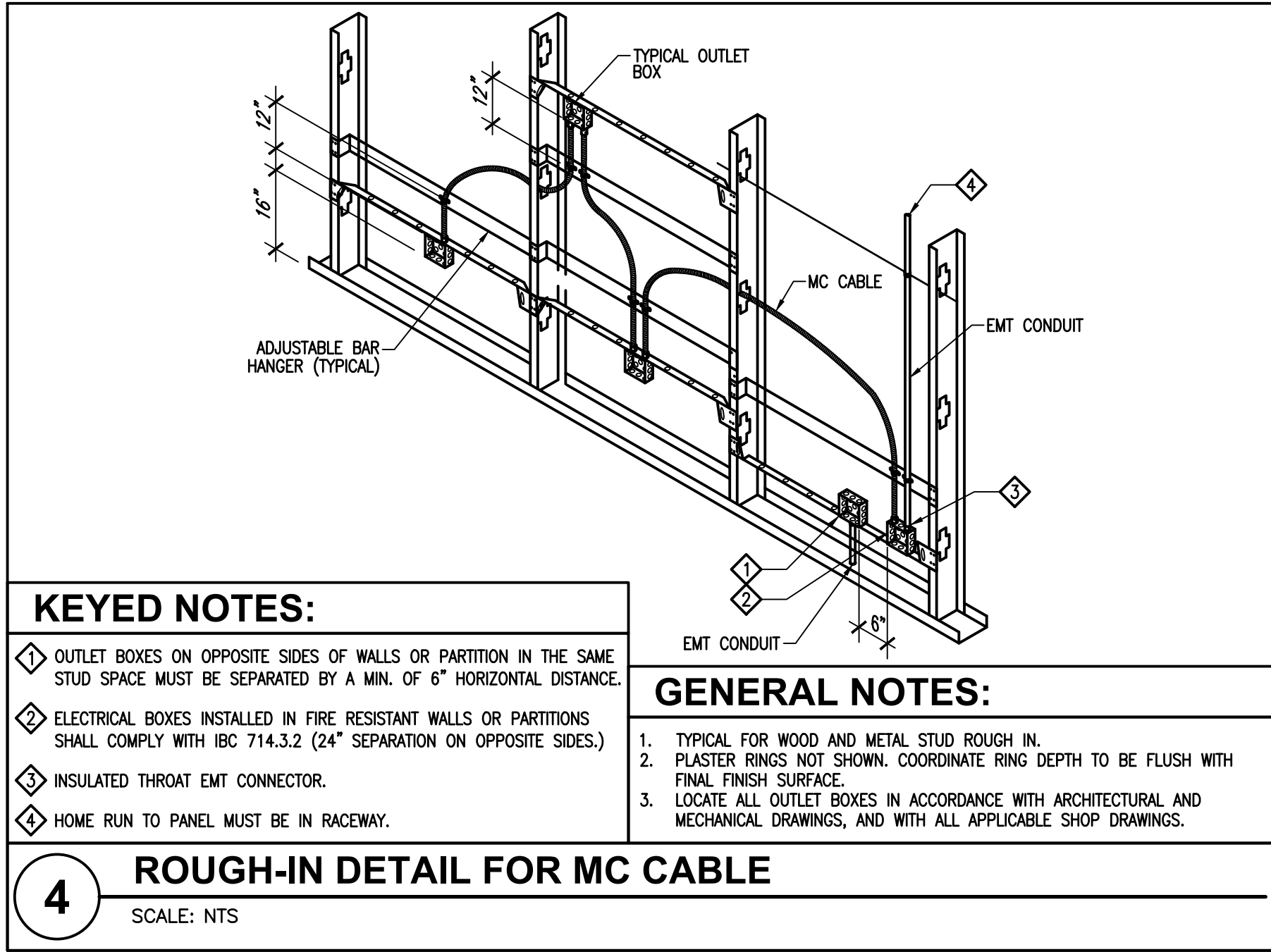


ROYAL ENGINEERING
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MECHANICAL


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E4.1
ENLARGED FLOOR PLANS



COPPER FEEDER SCHEDULE																		
TYPE	CONDUIT SIZE		CONDUCTORS		75°C AMP RATING	TYPE	CONDUIT SIZE		CONDUCTORS		75°C AMP RATING	TYPE	CONDUIT SIZE		CONDUCTORS		75°C AMP RATING	
	PVC	EMT	QUAN.	SIZE			PVC	EMT	QUAN.	SIZE			PVC	EMT	QUAN.	SIZE		
(212)	3/4"	3/4"	2	#12	25	(21)	1-1/4"	1-1/4"	2	#1	130	(235)	2"	2"	2	350 KCMIL	310	
(312)	3/4"	3/4"	3	#12		(31)	1-1/4"	1-1/4"	3	#1		(335)	2-1/2"	2-1/2"	3	350 KCMIL		
(412)	3/4"	3/4"	4	#12		(41)	1-1/2"	1-1/2"	4	#1		(435)	3"	2-1/2"	4	350 KCMIL		
(20)	3/4"	3/4"	2	#10	35	(21X)	1-1/4"	1-1/4"	2	1/0	150	(240)	2"	2"	2	400 KCMIL	335	
(30)	3/4"	3/4"	3	#10		(31X)	1-1/2"	1-1/2"	3	1/0		(340)	2-1/2"	2-1/2"	3	400 KCMIL		
(40)	3/4"	3/4"	4	#10		(41X)	1-1/2"	1-1/2"	4	1/0		(440)	3"	3"	4	400 KCMIL		
(28)	3/4"	3/4"	2	#8	50	(22X)	1-1/4"	1-1/4"	2	2/0	175	(250)	2-1/2"	2-1/2"	2	500 KCMIL	380	
(38)	3/4"	3/4"	3	#8		(32X)	1-1/2"	1-1/2"	3	2/0		(350)	3"	2-1/2"	3	500 KCMIL		
(48)	3/4"	3/4"	4	#8		(42X)	2"	2"	4	2/0		(450)	4"	3-1/2"	4	500 KCMIL		
(26)	3/4"	3/4"	2	#6	65	(23X)	1-1/2"	1-1/4"	2	3/0	200	(260)	2-1/2"	2-1/2"	2	600 KCMIL	420	
(36)	3/4"	3/4"	3	#6		(33X)	2"	2"	3	3/0		(360)	3-1/2"	3-1/2"	3	600 KCMIL		
(46)	1"	1"	4	#6		(43X)	2"	2"	4	3/0		(460)	4"	4"	4	600 KCMIL		
(24)	3/4"	3/4"	2	#4	85	(24X)	1-1/2"	1-1/2"	2	4/0	230	EQUIPMENT GROUNDING CONDUCTORS SCHEDULE						
(34)	1"	1"	3	#4		(34X)	2"	2"	3	4/0								
(44)	1-1/4"	1-1/4"	4	#4		(44X)	2-1/2"	2-1/2"	4	4/0		OVERCURRENT DEVICE						
(23)	1"	1"	2	#3	100	(225)	2"	2"	2	250 KCMIL	255	15	14					
(33)	1"	1"	3	#3		(325)	2"	2"	3	250 KCMIL		20	12					
(43)	1-1/4"	1-1/4"	4	#3		(425)	3"	2-1/2"	4	250 KCMIL		30	10					
(22)	1"	1"	2	#2	115	(230)	2"	2"	2	300 KCMIL	285	40	10					
(32)	1-1/4"	1-1/4"	3	#2		(330)	2-1/2"	2-1/2"	3	300 KCMIL		60	10					
(42)	1-1/4"	1-1/4"	4	#2		(430)	3"	2-1/2"	4	300 KCMIL		100	6					
NOTE:																		
1. SEE EQUIPMENT GROUND CONDUCTOR SCHEDULES OR SERVICE GROUNDING DETAIL FOR GROUND CONDUCTORS RATING.																		
2. ALL INSULATION SHALL BE THHN (ABOVE GRADE) OR THWN (BELOW GRADE) UNLESS NOTED OTHERWISE.																		
3. PVC CONDUIT SIZE IS BASED ON SCHEDULE 40 PVC. PVC & THWN ARE APPROVED FOR UNDERGROUND FEEDERS ONLY.																		



ROYAL

ENGINEERING

ELECTRICAL

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FACILITIES SHOP

SPANISH FORK CITY

433 SOUTH MAIN STREET

UTAH 84660



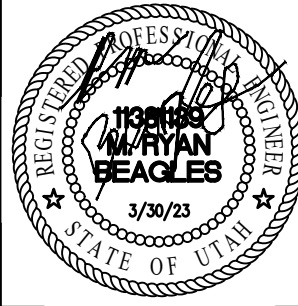
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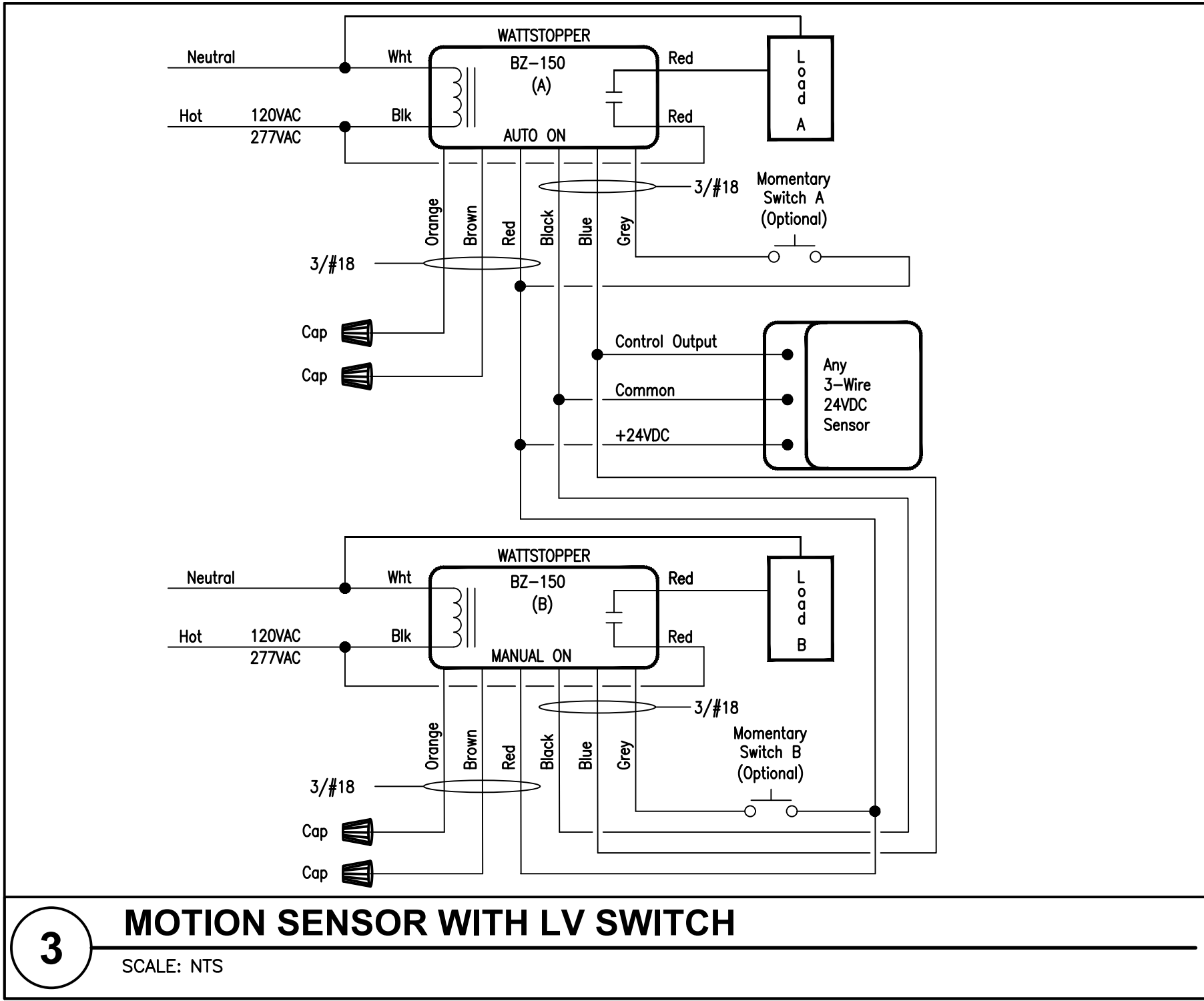
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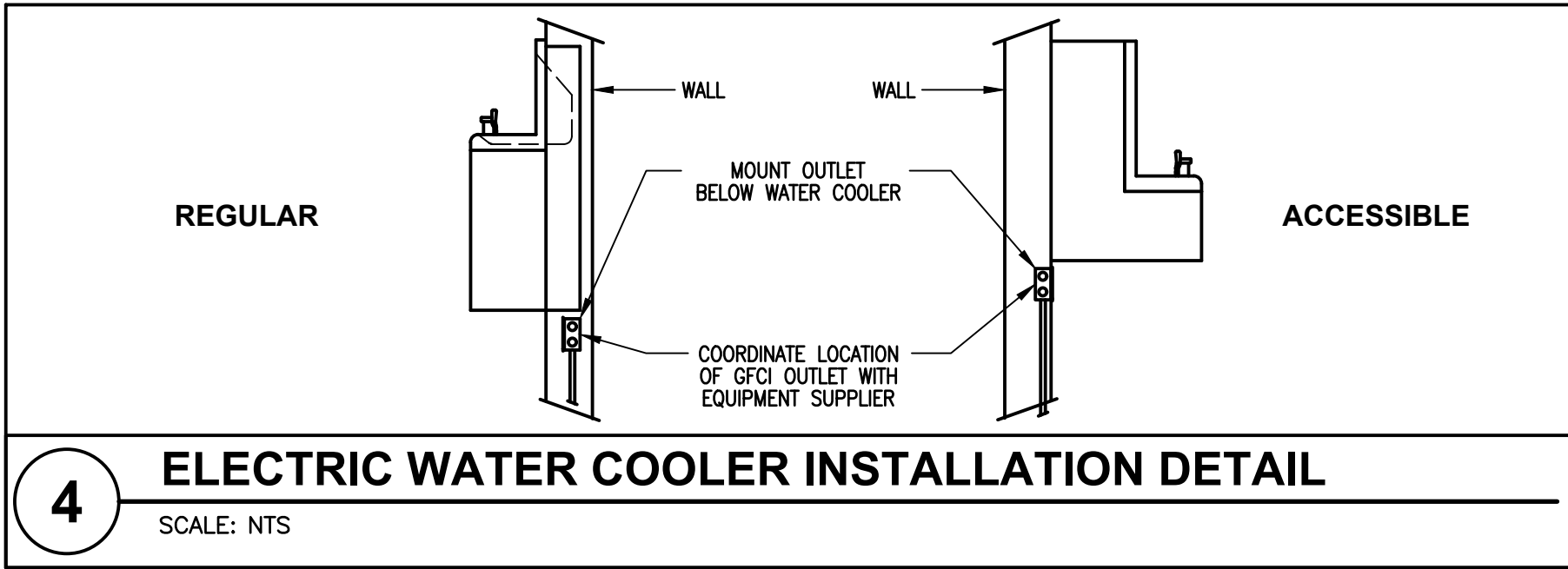
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E5.1

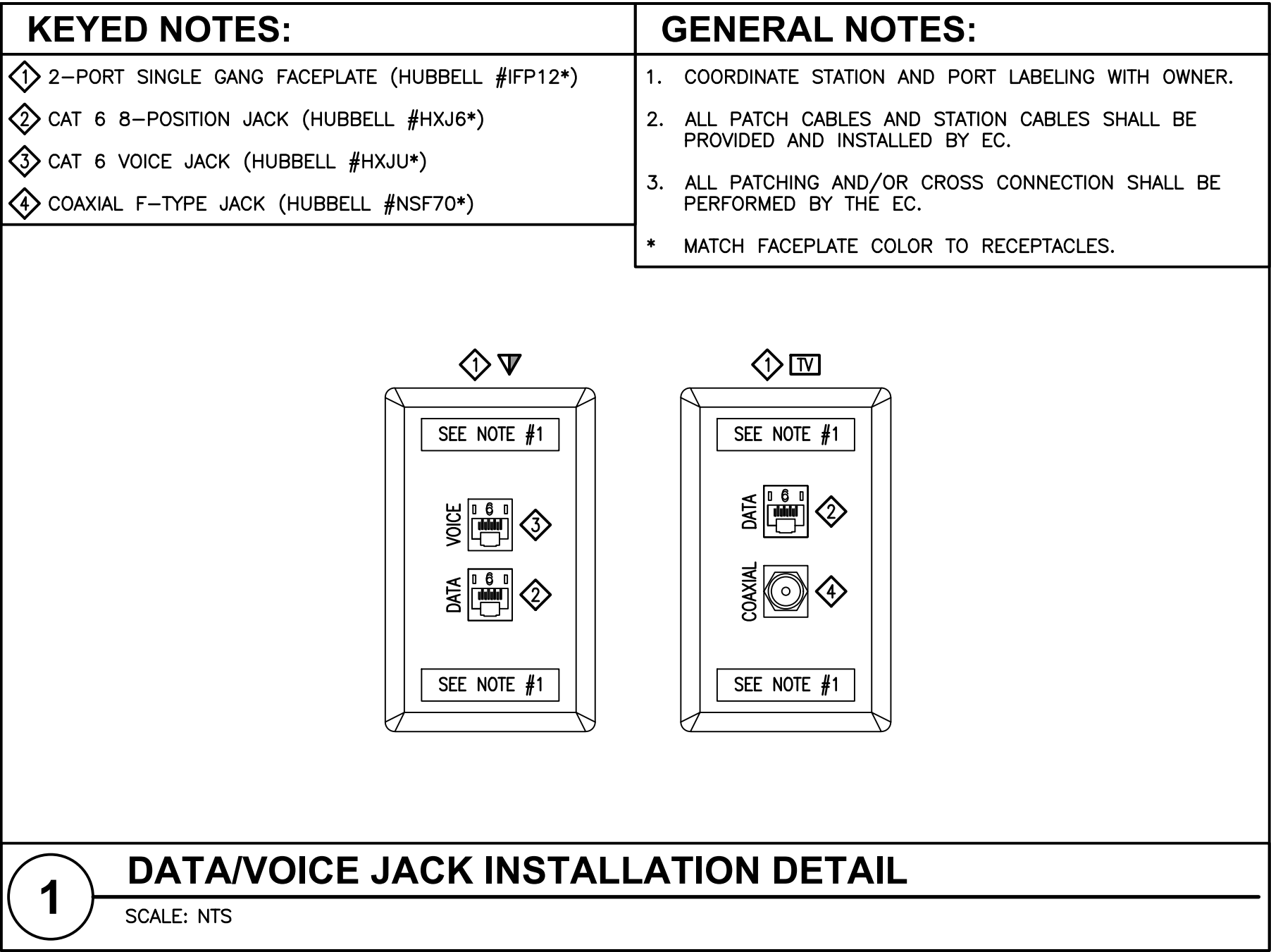
ELECTRICAL
DETAILS



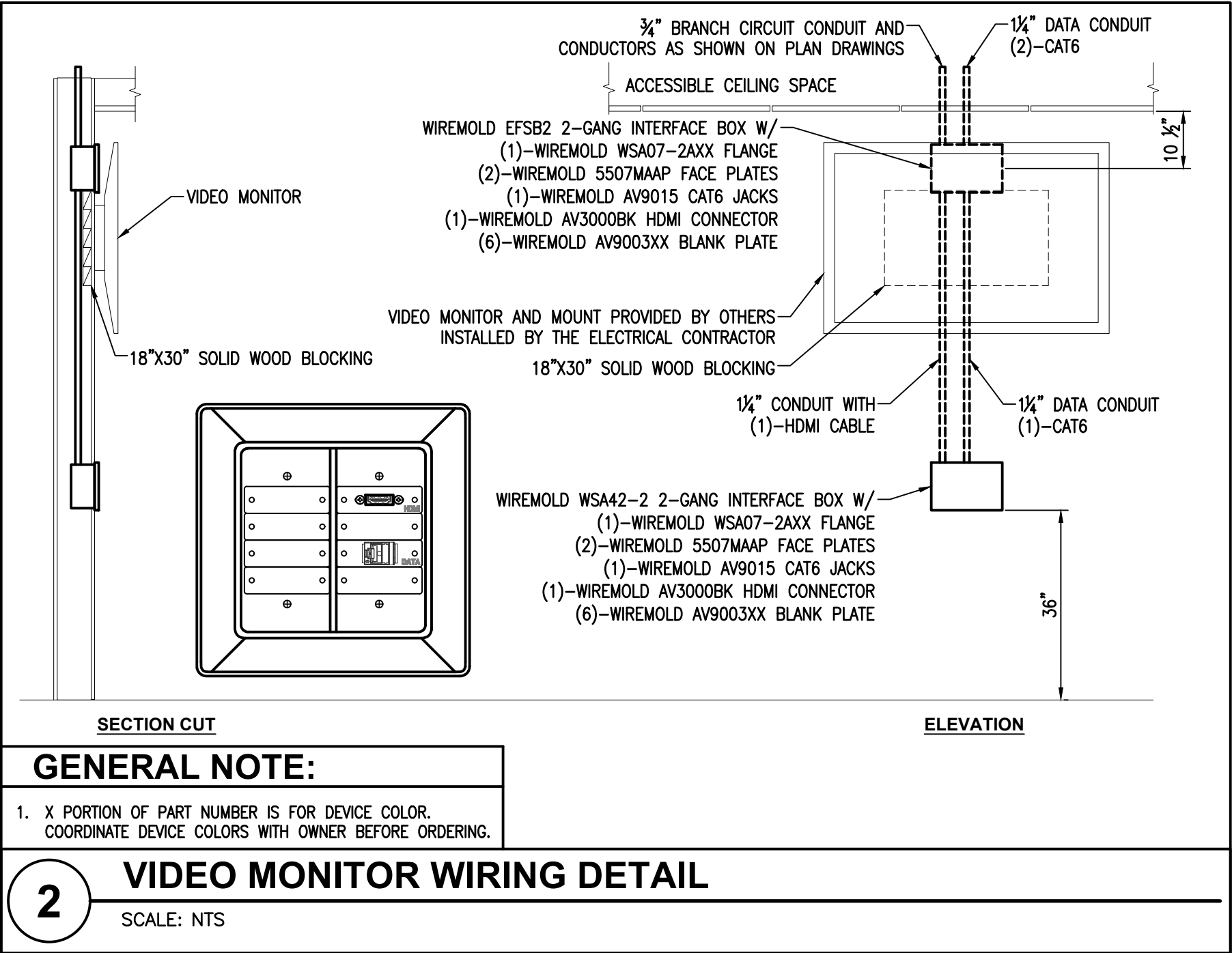
3 MOTION SENSOR WITH LV SWITCH
SCALE: NTS



4 ELECTRIC WATER COOLER INSTALLATION DETAIL
SCALE: NTS



1 DATA/VOICE JACK INSTALLATION DETAIL
SCALE: NTS



GENERAL NOTE:

- X PORTION OF PART NUMBER IS FOR DEVICE COLOR. COORDINATE DEVICE COLORS WITH OWNER BEFORE ORDERING.

2 VIDEO MONITOR WIRING DETAIL
SCALE: NTS

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SPANISH FORK CITY

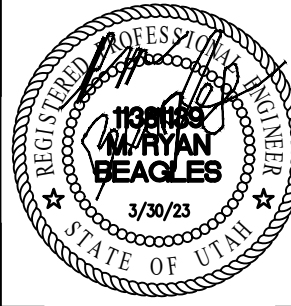
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E5.3

ELECTRICAL
DETAILS

LOAD CALCULATIONS			
GROSS BUILDING AREA:	7,567	SQ. FT	
BUILDING VOLTAGE:	208	VOLTS	
PHASE	3	PHASE	
OCCUPANCY TYPE:	BUSINESS		
GENERAL LOADS:			
LIGHTING W/ 125% DEMAND:	4,543	VA	
RECEPTACLE LOAD:	14,076	VA	
FIRST 10,000 VA @ 100%	10,000	VA	
REMAINDER @50%	2,038	VA	
ADJUSTED RECEPTACLE TOTAL LOAD:	12,038	VA	
TOTAL:	16,581	VA	
HVAC LOADS:			
COOLING/HEATING	8,923	VA	
RESISTANCE HEATING W/ 125% DEMAND:	4,425	VA	
WATER HEATING:	180	VA	
TOTAL:	13,528	VA	
EQUIPMENT LOADS:			
AIR COMPRESSORS:	4,800	VA	
MOTORS	25,200	VA	
TOTAL:	35,760	VA	
NET COMPUTED LOAD:	65,869	VA	
NET COMPUTED AMPS:	183	AMPS	

EQUIPMENT SCHEDULE												
SYMBOL	DESCRIPTION	SERVICE		DISCONNECT		STARTER	LOAD			MOC/P BRKR	REMARKS	
		VOLTS	PHASE	SIZE	FUSE		HP/TON	VA	AMPS			
	FURNACE FAN	120 V	1Ø	MANUAL STARTER	-	INTEGRAL	-	1,176	9.8A	15A		
	FURNACE FAN	120 V	1Ø	MANUAL STARTER	-	INTEGRAL	-	1,956	16.3A	20A		
	AIR COOLED CONDENSING UNIT	208 V	1Ø	30A NEMA 3R	-	INTEGRAL	2½ TON	3,494	16.8A	30A		
	AIR COOLED CONDENSING UNIT	208 V	1Ø	60A NEMA 3R	-	INTEGRAL	4 TON	5,429	26.1A	40A		
	EXHAUST FAN	120 V	1Ø	INTEGRAL PLUG	-	-	-	15	0.1A	20A	EF CONTROLLED WITH LIGHTING	
	EXHAUST FAN	120 V	1Ø	INTEGRAL PLUG	-	-	-	32	0.3A	20A	EF CONTROLLED WITH LIGHTING	
	EXHAUST FAN	120 V	1Ø	MANUAL STARTER	-	-	FRAC	240	2.0A	20A	EF CONTINUOUS OPERATION TO BE WIRED TO SYSTEM CONTROL PANEL	
	EXHAUST FAN	120 V	1Ø	MANUAL STARTER	-	-	¼ HP	696	5.8A	20A	3	
	UNIT HEATER	120 V	1Ø	MANUAL STARTER	-	-	-	228	1.9A	20A		
	WATER HEATER	208 V	1Ø	PLUG/ CORD	-	-	-	180	0.9A	30A		
	RECIRCULATION PUMP	120 V	1Ø	PLUG/ CORD	-	-	FRAC	240	2.0A	20A		
	RADIANT TUBE HEATER	120 V	1Ø	MANUAL STARTER	-	-	-	204	1.7A	20A		
NOTES: 1. VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS (i.e. VOLTAGE, PHASE, FLA, ETC.) WITH MECHANICAL DRAWINGS/SUBMITTALS BEFORE FOR ACTUAL EQUIPMENT INSTALLED. 2. ALL FUSES SHALL BE DUAL ELEMENT TIME DELAY. FINAL BREAKER/FUSE & DISCONNECT SIZE SHALL BE DETERMINED BY MANUFACTURER'S RECOMMENDATION FOR ACTUAL EQUIPMENT INSTALLED. 3. MAXIMUM VALUES INDICATED. 4. DISCONNECTING MEANS NOT REQUIRED FOR EQUIPMENT WITHIN SIGHT (AS DEFINED IN NEC) OF BRANCH PANEL SERVING EQUIPMENT. SEE NEC 422.31 (B). 5. DISCONNECTING MEANS NOT REQUIRED FOR APPLIANCES NOT OVER 300 VA. SEE NEC 422.31 (A).												

FAULT CURRENT CALCULATION TABLE																	
MAIN UTILITY COMPANY TRANSFORMER		TRANSFORMER KVA		AFC AT UTILITY		%Z											
3Ø 120/208V -400A PAD MOUNTED		150		22,000 A		1.07%											
CONFIGURATION						FEEDER			SYSTEM					FAULT CURRENT AT EQUIPMENT	FULL OR SERIES RATED	MINIMUM SYMMETRICAL EQUIPMENT AIC RATING	
FROM		TO		LENGTH	SOURCE FAULT CURRENT	FEEDER SIZE	FEEDERS PER PHASE	WIRE CONSTANT	LINE TO LINE VOLTS	XFMR SECONDARY VOLTS	PHASE	KVA	%Z				MOTOR LOAD
TRANSFORMER	UTILITY	SWITCHBOARD	METER	26'-0"	22,000 AIC	500 AL	1	21,390	208 V		3Ø		-		17,993 AIC	FULL	22,000 AIC
SWITCHBOARD	METER	PANELBOARD	A	80'-0"	17,993 AIC	30 CU	2	13,923	208 V		3Ø		-		12,579 AIC	FULL	22,000 AIC
NOTE: DISTANCES INDICATED ARE FOR FAULT-CURRENT ANALYSIS ONLY. CONTRACTOR SHALL USE FIELD MEASUREMENTS ESTABLISH CONDUCTOR LENGTHS FOR ORDERING PURPOSES.																	

LIGHT FIXTURE SCHEDULE												
FIXTURE NUMBER	FIXTURE MANUFACTURER	FIXTURE CATALOG #	LAMPS		FIXTURE			DESCRIPTION	REMARKS			
			TYPE	QTY.	VOLTS	WATTS	MOUNTING					
F1	HALO COMMERCIAL LITHONIA LIGHTOLIER ATLANTIC PRESCOLITE MAXILUME	PD620ED010IPDM6A83561VC LDN6 3520 L06AR LSS MVOLT E21 P6RD20NZ10UVB W/P6RD835VB W/P6RDCC LED6-DLM20-35K-U-6LED10-SS LF6SL-6LFSL20L35K HH6-LED-2000L-DIM10-MVOLT-MD-35K-90HH6-6501-CL-WH	LED 3500 KELVIN 2000 LUMENS 80 CRI	-	120	24.8	RECESSED	LED DOWNLIGHT WITH ALZAK TRIM				
F1E	HALO COMMERCIAL LITHONIA LIGHTOLIER ATLANTIC PRESCOLITE MAXILUME	PD620ED010IEMIPDM6A83561VCEM LDN6 3520 L06AR LSS MVOLT E21 EL P6RD20NZ10UVBEM W/P6RD835VB W/P6RDCC LED6-DLM20-35K-U-LEM-6LED10-SS LF6SLEM-6LFSL20L35KEM HH6-LED-2000L-DIM10-MVOLT-MD-35K-90-EMG-LEDHH6-6501-CL-WH	LED 3500 KELVIN 2000 LUMENS 80 CRI	-	120	24.8	RECESSED	LED DOWNLIGHT WITH ALZAK TRIM AND EMERGENCY BATTERY PACK				
F2	METALUX LITHONIA DAY-BRITE LSI COLUMBIA ORACLE	24FR-LD4-40-UNV-L835-CD1-U ZBLT4-40L-ADP-E21-LP835 2FGG4SL835-2-D-UNV-DIM-EMLD PEC24-LED-SS-RAD-WW-UE LTRE24-3SLWG-RFA-EDU 24-ODVH-LED-3000L-DIM10-MVOLT-39K-80	LED 3500 KELVIN 4000 LUMENS 80 CRI	-	120	45	LAY-IN GRID	2X4 LED LAY-IN VOLUMETRIC				
F3	NUVO METALUX	65-785R1 LED UFO HIGHBAY 200W/4000K UHB-24-UNV-L840-CD-U	LED 4000 KELVIN 28000 LUMENS 80 CRI	-	120	200	PENDANT OR SURFACE	LED HIGH BAY				
F4	METALUX LITHONIA DAY-BRITE LSI COLUMBIA ORACLE	4SNLED-LD4-30SL-LW-UNV-L835-CD1-U ZL1N-L48-3000LM-FST-MVOLT-35K-80CRI-WH FSS440L835-UNV-DIM SDL4-LED-SS-WW-UE LCL4-3SLW-EDU 4-OC1-LED-3000L-DIM10-MVOLT-35K-80	LED 3500 KELVIN 3000 LUMENS 80 CRI	-	120	29	SURFACE/CHAIN	48" LED STRIP				
F4E	METALUX LITHONIA DAY-BRITE LSI COLUMBIA ORACLE	4SNLED-LD4-30SL-LW-UNV-EL14W-L835-CD1-U ZL1N-L48-3000LM-FST-MVOLT-35K-80CRI-E7W-WH FSS440L835-UNV-DIM-EMLD SDL4-LED-SS-WW-UE-EM LCL4-3SLW-EDU-ELL14 4-OC1-LED-3000L-DIM10-MVOLT-35K-80-O-EMG-LED	LED 3500 KELVIN 3000 LUMENS 80 CRI	-	120	29	SURFACE/CHAIN	48" LED STRIP WITH EMERGENCY BATTERY PACK				
WP1	LUMARK	AXCS3A-PC1-CBP	LED 4000 KELVIN 3500 LUMENS 80 CRI	-	120	27	SURFACE WALL	LED SCONCE WITH INTEGRAL PHOTOCELL FOR NORMAL AND EMERGENCY OPERATION	AS SPECIFIED OR APPROVED EQUAL			
EX1	SURELITES LITHONIA LIGHTOLIER LSI MAXILUME	LPX-70-DGWHDH LHQM-S-1-G-EL-N LC18NH71GW LPRX-G-U-WH-LD11 ELX-703-G-W	INCLUDED	2	120	5.4	SURFACE WALL	2-HEAD EM WALL PACK (SURFACE) WITH EXIT LIGHT				

PANEL SCHEDULE "A"																															
VOLTAGE: 208 Y/120 VOLTS				BUS RATING (AMPS): 400										REMARKS:																	
MOUNTING: FLUSH				PHASE: 3				MAIN LUGS ONLY																							
ENCLOSURE: NEMA 1				WIRE: 4				MINIMUM EQUIPMENT RATING:										SEE FAULT CURRENT TABLE													
CIRCUIT BREAKER				FEEDER				CKT. LOAD		LOAD/PHASE (VA)			CKT. LOAD		FEEDER			CIRCUIT NAME				CIRCUIT BREAKER									
No.	AMPS	POLE	MOD.	CIRCUIT NAME	C	WIRE	GRD	DEMAND FACTOR	WATTS	ØA	ØB	ØC	WATTS	DEMAND FACTOR	GRD	WIRE	C	CIRCUIT NAME	MOD.	POLE	AMPS	No.									
1	20	1	GFCI	CO-KITCHEN	½"	#12	#12	1.00	1,500	2,700			1,200	1.25	#12	#12	½"	MEZZ LIGHTING	-	1	20	2									
3	20	1	GFCI	DISHWASHER / DISPOSAL	½"	#12	#12	1.00	1,200		2,402		1,202	1.25	#12	#12	½"	FLOOR 1 LIGHTING	-	1	20	4									
5	20	1	GFCI	REFRIGERATOR	½"	#12	#12	1.00	1,200			2,432	1,232	1.25	#12	#12	½"	MEZZ LIGHTING	-	1	20	6									
7	30	2	GFCI	PRESSURE WASHER	½"	#10	#10	1.00	120	1,380			1,260	1.00	#12	#12	½"	OFFICE 104 BREAKROOM REC	-	1	20	8									
9	30	-	-	-	-	#10	-	1.00	120		1,200		1,080	1.00	#12	#12	½"	OFFICE 102 & 103 REC	-	1	20	10									
11	30	2	-	AIR COMPRESSOR	½"	#10	#10	1.00	2,400			3,480	1,080	1.00	#12	#12	½"	OFFICE RECP	GFCI	1	20	12									
13	30	-	-	-	-	#10	-	1.00	2,400	3,150			750	1.00	#12	#12	½"	WATER FOUNTAIN	GFCI	1	20	14									
15	50	2	-	WELDER	½"	#8	#10	1.00	2,880		3,960		1,080	1.00	#12	#12	½"	GARAGE REC	GFCI	1	20	16									
17	50	-	-	-	-	#8	-	1.00	2,880			3,960	1,080	1.00	#12	#12	½"	GARAGE REC	GFCI	1	20	18									
19	20	1	GFCI	ICE MACHINE	½"	#12	#12	1.00	1,086	1,446			360	1.00	#12	#12	½"	BATHROOM	-	1	20	20									
21	30	2	GFCI	WH-1	½"	#10	#10	1.00	90		450		360	1.00	#12	#12	½"	WOOD SHOP REC	-	1	20	22									
23	-	-	-	-	-	#10	-	1.00	90			630	540	1.00	#12	#12	½"	WOOD SHOP BENCH REC	-	1	20	24									
25	20	1	-	RH-1 x2	½"	#12	#12	1.25	408	948			540	1.00	#12	#12	½"	WOOD SHOP REC	-	1	20	26									
27	20	1	-	TERMINAL BOARD RECP	½"	#12	#12	1.00	360		720		360	1.00	#12	#12	½"	CEILING REC	-	1	20	28									
29	30	3	-	OVERHEAD DOOR	½"	#10	#10	1.00	1,200			1,200	1,000					SPACE	-												
31	-	-	-	-	-	#10	-	1.00	1,200	3,156			1,956	1.25	#12	#12	½"	F-4	-	1	20	32									
33	-	-	-	-	-	#10	-	1.00	1,200		1,200		1,000					SPACE	-												
35	30	3	-	OVERHEAD DOOR	½"	#10	#10	1.00	1,200			2,376	1,176	1.25	#12	#12	½"	F-2.5	-	1	20	36									
37	-	-	-	-	-	#10	-	1.00	1,200	1,200			1,000					SPACE	-												
39	-	-	-	-	-	#10	-	1.00	1,200		1,200		1,000					SPACE	-												
41	30	3	-	OVERHEAD DOOR	½"	#10	#10	1.00	1,200			1,200	1,000					SPACE	-												
43	-	-	-	-	-	#10	-	1.00	1,200	3,914			2,714	1.00	#10	#8	½"	CU-4	-	2	40	44									
45	-	-	-	-	-	#10	-	1.00	1,200		3,914		2,714	1.00	-	#8	-		-	-	-	46									
47	30	3	-	OVERHEAD DOOR	½"	#10	#10	1.00	1,200			1,200	1,000					SPACE	-												
49	-	-	-	-	-	#10	-	1.00	1,200	1,200			1,000									50									
51	-	-	-	-	-	#10	-	1.00	1,200		2,947		1,747	1.00	#10	#10	½"	CU-2.5	-	2	30	52									
53	30	3	-	OVERHEAD DOOR	½"	#10	#10	1.00	1,200			2,947	1,747	1.00	-	#10	-		-	-	-	54									
55	-	-	-	-	-	#10	-	1.00	1,200	1,200			1,000					SPACE	-			56									
57	-	-	-	-	-	#10	-	1.00	1,200		1,200		1,000					SPACE	-			58									
59	30	3	-	OVERHEAD DOOR	½"	#10	#10	1.00	1,200			1,200	1,000					SPACE	-			60									
61	-	-	-	-	-	#10	-	1.00	1,200	1,200			1,000					SPACE	-			62									
63	-	-	-	-	-	#10	-	1.00	1,200		1,200		1,000					SPACE	-			64									
65	30	3	-	OVERHEAD DOOR	½"	#10	#10	1.00	1,200			1,200	1,000					SPACE	-			66									
67	-	-	-	-	-	#10	-	1.00	1,200	1,200			1,000					SPACE	-			68									
69	-	-	-	-	-	#10	-	1.00	1,200		1,200		1,000					SPACE	-			70									
71	-	-	-	SPACE				1.00				0		1.00				SPACE	-			72									
73	-	-	-	SPACE				1.00		0				1.00				SPACE	-			74									
75	-	-	-	SPACE				1.00			0			1.00				SPACE	-			76									
77	-	-	-	SPACE				1.00				0		1.00				SPACE	-			78									
79	-	-	-	SPACE				1.00		0				1.00				SPACE	-			80									
81	-	-	-	SPACE				1.00			0			1.00				SPACE	-			82									
83	-	-	-	SPACE				1.00				0		1.00				SPACE	-			84									

NOTES:

1. ALL INSULATION ON CONDUCTORS TO BE THIN- UNLESS NOTED OTHERWISE. INSULATION ON ALL UNDERGROUND EXTERIOR CONDUCTORS SHALL BE THW.

2. LOAD DEMANDS CALCULATED AS PER SECTIONS 210 & 220 OF THE NATIONAL ELECTRICAL CODE.

3. PANEL COVER SHALL BE FIELD MARKED FOR FLASH PROTECTION WITH A PERMANENT LABEL AS REQUIRED BY THE NATIONAL ELECTRICAL CODE SECTION 110. LABEL SHALL READ: "DANGER- POTENTIAL ARC FLASH HAZARD"

4. PANELBOARD SHALL BE FIELD MARKED WITH THE AVAILABLE FAULT CURRENT PER NEC 408.6.

5. FIRE ALARM SYSTEMS SHALL HAVE BRANCH CIRCUITS IDENTIFIED BY RED LABELS STATING "FIRE ALARM CIRCUIT" AS REQUIRED BY THE NATIONAL ELECTRICAL CODE ARTICLE 760.41B

6. ABBREVIATIONS: CO-CONVENIENCE OUTLET, RR-RESTROOM, (N)ORTH, (S)OUTH, (E)AST, (W)EST.

ØA	ØB	ØC	TOTALS
22,694	21,594	21,825	66,113
			184
891	301	602	1,794
23,585	21,894	22,427	67,907
197	182	197	
			197
35%	32%	33%	

CONNECTED LOAD (VA)

CONNECTED LOAD (A)

DEMAND FACTOR ADJUSTMENTS (VA)

TOTAL LOAD (VA)

TOTAL LOAD (A)

MAXIMUM LOAD (A)

PHASE BALANCE

ELECTRICAL SPECIFICATIONS

GENERAL PROVISION

A. REFERENCE

1. THE GENERAL CONDITIONS AND OTHER CONTRACT DRAWINGS AS SET FORTH IN THE FOREGOING PAGES ARE HEREBY INCORPORATED INTO AND BECOME A PART OF THE SPECIFICATIONS FOR WORK UNDER THIS TITLE. INsofar AS THEY APPLY HERETO.
2. ALL SPECIFICATIONS UNDER THIS DIVISION TITLE ARE DIRECTED TO AND ARE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR, UNLESS OTHER TRADES OR PERSONS ARE SPECIFICALLY MENTIONED. "ELECTRICAL CONTRACTOR" IS INFERRED AND INTENDED.
- B. CONTRACT DRAWINGS
 1. THE DRAWINGS ACCOMPANYING THESE SPECIFICATIONS ARE COMPLEMENTARY EACH TO THE OTHER AND WHAT IS CALLED FOR BY ONE SHALL BE AS IF CALLED FOR BY BOTH.
 2. CONSULT ALL CONTRACT DRAWINGS WHICH MAY AFFECT THE LOCATION OF EQUIPMENT, CONDUIT AND WIRING AND MAKE MINOR ADJUSTMENTS IN LOCATION TO SECURE COORDINATION.
 3. WIRING LAYOUT IS SCHEMATIC AND EXACT LOCATIONS SHALL BE DETERMINED BY FIELD CONDITIONS.
 4. OTHER THAN MINOR ADJUSTMENTS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE PROCEEDING WITH THE WORK.
- C. JOB-SITE COPY OF DOCUMENTS
 1. MAINTAIN AT THE SITE, ONE COPY OF ALL DRAWINGS, SPECIFICATIONS, ADDENDA APPROVED SHOP DRAWINGS, CHANGE ORDERS AND OTHER MODIFICATIONS, IN GOOD ORDER AND MARKED TO RECORD ALL CHANGES MADE DURING CONSTRUCTION. THESE SHALL BE AVAILABLE TO THE OWNER'S REPRESENTATIVE. THE DRAWINGS MARKED TO RECORD ALL CHANGES MADE DURING CONSTRUCTION SHALL BE DELIVERED TO THE OWNER'S REPRESENTATIVE FOR THE OWNER UPON COMPLETION OF THE WORK. AN ADDITIONAL SET OF DRAWINGS WILL BE FURNISHED BY THE OWNER'S REPRESENTATIVE FOR THIS PURPOSE UPON REQUEST.
- D. MANUFACTURER'S DRAWINGS
 1. THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR REVIEW, (6) COPIES OF MANUFACTURER'S DRAWINGS AND WIRING DIAGRAMS. THE ENGINEER WILL REVIEW CONTRACTOR'S SHOP DRAWINGS AND RELATED SUBMITTALS (AS INDICATED BELOW) WITH RESPECT TO THE ABILITY OF THE DETAILED WORK, WHEN COMPLETE, TO BE A PROPERLY FUNCTIONING INTEGRAL ELEMENT OF THE OVERALL SYSTEM DESIGNED BY THE ENGINEER. BEFORE SUBMITTING A SHOP DRAWING OR ANY RELATED MATERIAL TO THE ENGINEER, CONTRACTOR SHALL: REVIEW EACH SUCH SUBMISSION FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATIONS OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF CONTRACTOR; APPROVE EACH SUCH SUBMISSION BEFORE SUBMITTING IT; AND SO STAMP EACH SUCH SUBMISSION BEFORE SUBMITTING IT. THE ENGINEER SHALL ASSUME THAT NO SHOP DRAWING OR RELATED SUBMITTAL COMPRISES A VARIATION UNLESS CONTRACTOR ADVISES ENGINEER OTHERWISE VIA A WRITTEN INSTRUMENT WHICH IS ACKNOWLEDGED BY ENGINEER IN WRITING. THE ITEMS, TYPES OF SUBMITTALS AND RELATED MATERIAL (IF ANY) CALLED FOR ARE INDICATED BELOW:

ITEMS	TYPE SUBMITTALS REQUESTED
LIGHTING AND POWER PANELS	SHOP DRAWINGS
LIGHTING FIXTURES	CATALOG CUTS

E. GUARANTEES

1. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEFECTS, REPAIRS AND REPLACEMENTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER DATE OF SUBSTANTIAL COMPLETION AS DETERMINED BY THE OWNER'S REPRESENTATIVE. PRODUCT GUARANTEES GREATER THAN ONE (1) YEAR SHALL BE PASSED ALONG TO THE OWNER FOR FULL BENEFIT OF THE MANUFACTURER'S WARRANTY.

WORK INCLUDED

A. INSTALLATION, MATERIALS, AND WORKMANSHIP

1. FURNISH AND INSTALL ALL NECESSARY ANCHORS, SUPPORTS, STRAPS, BOXES, FITTINGS AND OTHER SIMILAR APPURTENANCES NOT INDICATED ON THE DRAWINGS BUT WHICH ARE REQUIRED FOR A COMPLETE AND PROPERLY INSTALLED SYSTEM CONSISTENT WITH THE ARCHITECTURAL TREATMENT OF THE BUILDING.
2. THE ELECTRICAL CONTRACTOR, INsofar AS THE WORK IS CONCERNED, SHALL AT ALL TIMES KEEP THE PREMISES IN A NEAT AND ORDERLY CONDITION, AND AT THE COMPLETION OF THE WORK, SHALL PROPERLY CLEAN UP AND CART AWAY DEBRIS AND EXCESS MATERIALS. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF DUMPSTER & REFUSED DISPOSAL AS REQUIRED FOR ELECTRICAL WORK. ALL MATERIALS SHALL BE NEW AND UNDETERIORATED AND OF A QUALITY NOT LESS THAN THE MINIMUM SPECIFIED.
- B. COORDINATION OF PLANS AND SPECIFICATIONS
 1. CONTACT THE OWNER'S REPRESENTATIVE IMMEDIATELY IF THERE IS ANY QUESTIONS REGARDING THE MEANING OR INTENT OF EITHER PLANS OR SPECIFICATIONS, OR UPON NOTICING ANY DISCREPANCIES OR OMISSIONS IN EITHER PLANS OR SPECIFICATIONS.
- C. CUTTING AND PATCHING
 1. ALL ELECTRICAL EQUIPMENT SHALL BE KEPT DRY AND CLEAN DURING THE CONSTRUCTION PERIOD. INTERIOR OF ALL ENCLOSURES SHALL BE CLEANED OF DIRT AND DEBRIS BEFORE INSTALLING TRIM OR COVERS.
 2. ALL FINISHED SURFACES OF EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE THOROUGHLY CLEANED OF DIRT AND ALL SCRATCHED OR DAMAGED SURFACES SHALL BE TOUCHED UP WITH MATCHING MATERIALS BEFORE FINAL ACCEPTANCE OF THE WORK.
 3. WHEN ALL WORK IS COMPLETED AND ALL WORK HAS BEEN SATISFACTORILY TESTED AND ACCEPTED BY THE OWNER'S REPRESENTATIVE, ALL CONDUIT AND OTHER EXPOSED SURFACES SHALL BE THOROUGHLY CLEANED.

CODES AND FEES

A. CODES:

1. ALL WORK PERFORMED UNDER THIS SPECIFICATION SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS PREPARED AND PUBLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION AND ANY APPLICABLE STATE OR LOCAL CODES.

B. FEES:

1. OBTAIN AND PAY FOR ANY AND ALL PERMITS REQUIRED BY ALL LAWS AND REGULATIONS AND PUBLIC AUTHORITY HAVING SUCH JURISDICTION.

TESTS AND INSPECTIONS

- A. OBTAIN ALL INSPECTIONS REQUIRED BY ALL LAWS, ORDINANCES, RULES, REGULATIONS OR PUBLIC AUTHORITY HAVING JURISDICTION AND OBTAIN CERTIFICATES OF SUCH INSPECTIONS AND SUBMIT SAME TO THE OWNER'S REPRESENTATIVE. PAY ALL FEES, CHARGES AND OTHER EXPENSES IN CONNECTION THEREIN. OBTAIN OCCUPANCY PERMIT AS REQUIRED BY OWNER. FINAL PAYMENT SHALL NOT BE MADE UNTIL OCCUPANCY PERMIT IS OBTAINED.
- B. WORK SHALL BE UNACCEPTABLE WHEN FOUND TO BE DEFECTIVE OR CONTRARY TO THE PLANS SPECIFICATIONS, CODES SPECIFIED OR ACCEPTED STANDARDS OF GOOD WORKMANSHIP.
- C. THE CONTRACTOR SHALL PROMPTLY CORRECT ALL WORK FOUND UNACCEPTABLE BY THE OWNER'S REPRESENTATIVE WHETHER OBSERVED BEFORE OR AFTER SUBSTANTIAL COMPLETION AND WHETHER OR NOT FABRICATED, INSTALLED OR COMPLETED. THE CONTRACTOR SHALL BEAR ALL COSTS OF CORRECTING SUCH UNACCEPTABLE WORK, INCLUDING COMPENSATION FOR THE OWNERS REPRESENTATIVE ADDITIONAL SERVICES MADE NECESSARY THEREBY.

CONDUIT

- A. FURNISH AND INSTALL ALL CONDUITS, BOXES, FITTINGS, ETC., FOR A COMPLETE RACEWAY SYSTEM.
- B. ALL WIRING SHALL BE RUN IN EMT CONDUIT OR MC CABLE WITH GROUND CONDUCTOR UNLESS OTHERWISE NOTED.
- C. ALL CONDUIT SIZES STATED HEREIN OR MARKED ON THE DRAWINGS ARE MINIMUM SIZE AND SHALL BE NO LESS THAN 1/2" UNLESS OTHERWISE NOTED.
- D. ALL CONDUIT SHALL BE SUBSTANTIALLY SUPPORTED BY PIPE STRAPS OR SUITABLE CLAMPS OR HANGERS ATTACHED TO THE ELEMENTS OF THE BUILDING STRUCTURE TO PROVIDE RIGID INSTALLATION; IN NO CASE SHALL CONDUIT BE ATTACHED OR SUPPORTED FROM ADJOINING PIPE OR INSTALLED IN SUCH A MANNER AS TO PREVENT THE READY REMOVAL OF OTHER PIPE FOR REPAIRS.

WIRE AND CABLE

- A. ALL CONDUCTORS SHALL BE COPPER AND OF THE AWG SIZE AND TYPE SHOWN ON THE DRAWINGS. WHERE NO SIZE OR TYPE IS SHOWN. CONDUCTORS SHALL NOT BE LESS THAN #12 TYPE XHHW, THHN, OR THWN. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED COPPER AND HAVE 600 VOLT INSULATION. BE UL LABELED AND OF AMERICAN MANUFACTURER.
- B. ALL BRANCH CIRCUITS SHALL BE MC CABLE.
- C. ALL CONNECTIONS ARE TO BE MADE USING PRESSURE TYPE TERMINALS.
- D. THE FOLLOWING COLOR CODE SHALL BE USED:

	120/240 VOLT	120/208 VOLT	277/480 VOLT
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	RED	ORANGE
PHASE C	BLUE	BLUE	YELLOW
NEUTRAL	WHITE	WHITE	WHITE
GROUND	GREEN	GREEN	GREEN
- E. CONDUCTORS NO. 10 AWG OR SMALLER SHALL HAVE INSULATION COLORED AS NOTED ABOVE.
- F. CONDUCTORS NO. 8 AWG OR LARGER SHALL HAVE INSULATION COLORED AS NOTED ABOVE OR COLORED TAPE, MINIMUM SIZE 1/2", WRAPPED TWICE AROUND AT THE FOLLOWING POINTS:
 1. AT EACH TERMINAL.
 2. AT EACH CONDUIT ENTRANCE.
 3. AT INTERVALS NOT MORE THAN 12 INCHES APART IN ALL BOXES, PANEL TUBS, SWITCHBOARDS, ETC.

- G. ALL BRANCH CIRCUITS SHALL BE MARKED IN THE PANEL BOARD GUTTERS. MARKERS SHALL INDICATE CORRESPONDING BRANCH--CIRCUIT NUMBERS.
- H. EACH BRANCH CIRCUIT REQUIRING A NEUTRAL SHALL BE FURNISHED WITH A SEPARATE INDIVIDUAL NEUTRAL CONDUCTOR.

BOXES AND PLATES

- A. FURNISH AND INSTALL ALL OUTLET, JUNCTION, AND PULL BOXES AS INDICATED ON THE DRAWINGS AND AS NECESSARY TO INSTALL THE REQUIRED CONDUIT AND WIRING IN A NEAT AND WORKMANLIKE MANNER.
- B. PULL BOXES AND JUNCTION BOXES SHALL BE GALVANIZED AND OF THE CORRECT SIZE AND GAUGE, SIZED IN ACCORDANCE WITH CODE REQUIREMENTS AND SHALL BE U.L. LABELED.
- C. BOXES AT EXTERIOR AREAS TO BE WATERTIGHT AND DUST-TIGHT WITH CASKETED COVERS.
- D. ALL BOXES FOR EXPOSED WORK IN FINISHED SPACES SHALL BE "FS" TYPE WITH THREADED HUBS WITH RIGID CONDUIT RISER (DEEP WIRE MOLD BOXES).
- E. ALL BOXES SHALL BE RIGIDLY SUPPORTED INDEPENDENT OF THE CONDUIT SYSTEM. BOXES CAST INTO MASONRY OR CONCRETE ARE CONSIDERED TO BE RIGIDLY SUPPORTED.

WIRING DEVICES

- F. WIRING DEVICES SHALL BE SIMILAR TO THOSE LISTED BELOW AND OF SPECIFIED AMPERAGE. OTHER SPECIAL PURPOSE DEVICES SHALL BE AS SPECIFIED ON THE DRAWINGS.
- G. DUPLEX GROUNDING TYPE RECEPTACLE - 20 AMP, 125 VOLT
 1. HUBBELL 5352
 2. ARROW HART 5352
- J. SINGLE POLE SWITCHES - 20 AMP, 120 VOLT
- K. WEATHERPROOF RECEPTACLES - 20 AMP, 125 VOLT - NEMA 5-20R
 1. HUBBELL 5352 WITH 5205 COVER INTERMATIC GUARDIAN
 2. I SERIES, NEMA 3R COVER
 3. ARROW HART 5352 WITH 4500 COVER
- E. G.F.C.I. RECEPTACLE - 20 AMP, 125 VOLT - NEMA 5-20 R
 1. HUBBELL GF 5262 WITH MATCHING NYLON COVER PLATE OR WO-26 W.P. COVER
- F. GROUND ALL RECEPTACLES IN ACCORDANCE WITH ARTICLE 250.146 OF NEC AND AS INDICATED IN THE GROUNDING SECTION OF THIS SPECIFICATION.

IDENTIFICATION

- A. EACH PIECE OF SERVICE EQUIPMENT AND INDIVIDUAL SWITCHES, ALL DISCONNECTS, STARTERS, ALL EXHAUST FAN MANUAL STARTING SWITCHES.
- B. IDENTIFICATION SHALL BE IN THE FORM OF LAMINATED PLASTIC NAMEPLATES, BLACK RACE, WITH THE LETTERS ENGRAVED INTO THE WHITE BACKGROUND, MINIMUM 1/2" HIGH. PLATES SHALL BE DRILLED ON EACH END FOR SHEET METAL SCREW ATTACHMENT. NO "DYMO" OR SIMILAR TYPE LABELS WILL BE ALLOWED.
- C. PANEL BOARD DIRECTORY: A TYPED CIRCUIT DIRECTORY SHALL BE PROVIDED INDICATING LOCAL AREA SERVED AND LOCATION FOR EACH BRANCH CIRCUIT.

GROUNDING

- A. ALL FEEDERS AND BRANCH CIRCUITS OVER 100 VOLTS SHALL INCLUDE A GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NEC TABLE 250-122, EXCEPT NOT BE SMALLER THAN #12 FOR POWER AND LIGHTING CIRCUITS AND #14 FOR CONTROL CIRCUITS. ALL GROUND CONDUCTORS SHALL BE GREEN, OR AS SPECIFIED UNDER THE WIRE AND CABLE SECTION OF THIS SPECIFICATION.
- B. ALL GROUND CLAMPS SHALL BE PENN-UNION "GPL" TYPE OR SIMILAR BY O.Z. OR BURNDY.
- C. CONDUIT FOR SOLITARY GROUND CONDUCTORS SHALL BE RIGID SCHEDULE 40 PVC NON- METALLIC ELECTRICAL CONDUIT WITH U.L. LABEL SOLITARY GROUND CONDUCTORS SHALL NOT BE PLACED THROUGH METALLIC SLEEVES OR CONDUITS AND SHALL NOT BE COMPLETELY ENIRCLED BY METALLIC HANGERS OR SUPPORTS.
- D. THE GROUND CONDUCTOR SHALL BE CONNECTED TO THE NEUTRAL IN ONLY TWO LOCATIONS -ON THE SUPPLY SIDE OF THE SERVICE DISCONNECT MEANS PER NEC--250-24 AND ON SEPARATELY DERIVED SYSTEMS PER NEC 250-30.
- E. AT EACH RECEPTACLE BOX, THE GROUND CONDUCTOR SHALL ENTER AND CONNECT, WITH NORMAL WIRING CONNECTOR, TO: 1) THE GROUND PIGTAIL TO RECEPTACLE; 2) THE GROUND PIGTAIL TO THE BOX GROUND SCREW; AND 3) THE OUTGOING GROUND CONDUCTOR TO NEXT DEVICE, IF NOT AT END OF RUN. METAL TO METAL CONTACT BETWEEN THE DEVICE YOKE AND THE OUTLET BOX IS NOT ACCEPTABLE AS A BOND FOR EITHER SURFACE. MOUNTED BOXES OR FLUSH TYPE BOXES.
- F. CONDUIT SYSTEM SHALL BE ELECTRICALLY CONTINUOUS. ALL LOCK NUTS SHALL CUT THROUGH ENAMELED OR PAINTED SURFACES ON ENCLOSURES. WHERE ENCLOSURES AND NON-CURRENT CARRYING METALS ARE ISOLATED FROM THE CONDUIT SYSTEM, USE BONDING JUMPERS WITH APPROVED CLAMPS. WHERE REDUCING WASHERS ARE USED AND WHERE CONCENTRIC OR ECCENTRIC KNOCKOUTS ARE NOT COMPLETELY REMOVED BONDING BUSHINGS SHALL BE REQUIRED.

POWER AND LIGHTING PANELS

- A. FURNISH AND INSTALL, AS SCHEDULED AND SHOWN ON THE DRAWINGS, POWER PANELS FOR OPERATION ON VOLTAGES INDICATED.
- B. ALL TERMINATIONS SHALL BE MARKED "75°C ONLY", "60/75° C" OR LISTED FOR USE OF 75° C INSULATED CONDUCTORS AT FULL 75° C AMPACITY.
- C. ALL BUS BARS SHALL BE SILVER OR TIN PLATED COPPER.
- D. CABINETS SHALL BE OF COMMERCIAL GALVANIZED SHEET STEEL, CODE GAUGE AND SIZE, SURFACE OR RECESSED MOUNTED AS CALLED FOR IN THE DRAWINGS.
- E. NEUTRAL ASSEMBLY SHALL HAVE INDIVIDUAL ANTI-TURN SOLDERLESS TERMINALS, SIMILAR TO SQUARE D TYPE PK, FOR CONNECTION OF ULTIMATE NUMBER OF NEUTRAL WIRES. SHEET METAL TERMINAL STRIPS AND CONNECTIONS WILL BE REJECTED.
- F. PANEL SHALL HAVE A COPPER GROUND BAR SIMILAR TO NEUTRAL BAR IN NUMBER, SIZE, AND TYPE OF ANTI-TURN SOLDERLESS LUGS. THIS GROUND BAR SHALL BE FACTORY BONDED TO THE PANEL TUB IN THE GUTTER SPACE OPPOSITE THE MAINS AND THE NEUTRAL ASSEMBLY AND SHALL HAVE THE SCREWDRIIVER SLOTS FACING THE FRONT OF THE PANEL.
- G. QUALITY STANDARD: SQUARE D TYPE NQ.

LIGHTING FIXTURES

- A. CONTRACTOR SHALL FURNISH AND INSTALL LIGHTING FIXTURES AS INDICATED IN FIXTURE SCHEDULE SHOWN ON DRAWINGS, AND SPECIFIED HEREIN.
- B. NEUTRAL ASSEMBLY SHALL HAVE INDIVIDUAL ANTI-TURN SOLDERLESS TERMINALS, SIMILAR TO SQUARE D TYPE PK, FOR CONNECTION OF ULTIMATE NUMBER OF NEUTRAL WIRES. SHEET METAL TERMINAL STRIPS AND CONNECTIONS WILL BE REJECTED.
- C. ALL LIGHTING FIXTURES INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE FURNISHED COMPLETE WITH AS INDICATED ON THE FIXTURE SCHEDULE.
- D. ANY LIGHTING FIXTURES SCRATCHED, BENT, CRACKED OR IN ANY WAY DAMAGED BEFORE ACCEPTANCE BY OWNER SHALL BE REPLACED AT THIS CONTRACTOR'S EXPENSE.
- E. ALL LIGHTING FIXTURES SHALL BE IN WORKING ORDER AT THE TIME OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER.
- F. ALL LIGHTING FIXTURES ARE TO BE GROUNDED ON THE INTERIOR OF THE FIXTURE HOUSING, ON CLEAN BARE METAL (FREE OF PAINT), BY USE OF PIGTAIL AND FASTENED BY A SCREW USED FOR NO OTHER PURPOSE.

TELEPHONE/DATA SYSTEMS

A. SUMMARY

1. INCLUDES BUT NOT LIMITED TO
 - a. FURNISH AND INSTALL BUILDING TELEPHONE AND COMPUTER NETWORK RACEWAY AND CABLE SYSTEM AS DESCRIBED IN CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, RACEWAY, OUTLETS, MODULAR JACKS, DEVICE PLATES, CABLES, PUNCH DOWN BLOCKS, BACKBOARDS, CABINETS, PATCH PANELS, GROUNDING AND OTHER MISCELLANEOUS ITEMS REQUIRED FOR A COMPLETE SYSTEM.
 - b. FURNISH AND INSTALL MAIN SERVICE RACEWAY AS DESCRIBED IN CONTRACT DOCUMENTS AND TO COMPLY WITH TELEPHONE COMPANY REQUIREMENTS.
- B. COMPONENTS
 1. TELEPHONE OUTLET BOX SHALL BE SINGLE DEVICE BOX.
 2. BUILDING TELEPHONE AND COMPUTER NETWORK SYSTEM CABLE
 - a. 23 GAUGE, SOLID TINNED COPPER, FOUR TWISTED PAIRS, CATEGORY 6
 - b. USE PLENUM-RATED CABLE IN CEILINGS AND AREAS USED FOR PLENUM AIR RETURN
 3. TELEPHONE TERMINATION BLOCKS
 - a. UL VERIFIED CATEGORY 6
 - b. 110 TERMINATION WITH TIN LEAD PLATED IDC
 4. NETWORK PATCH PANELS
 - a. UL VERIFIED CATEGORY 6
 - b. 110 TERMINATION WITH TIN LEAD PLATED IDC
 - c. 19" RACK MOUNT WITH BACKBOARD MOUNTING FRAME.
 - d. 48 PORTS
 5. TELEPHONE/NETWORK JACKS
 - a. WALL JACKS
 - 1) CAT6 - HUBBELL HXJ6 OR ALTERNATE MANUFACTURER WITH EQUIVALENT PERFORMANCE STANDARD.
 - b. PLATES
 - 1) HUBBELL - IFP SERIES (PORT QUANTITY AS REQUIRED, COLOR BY ARCHITECT)
 6. BACKBOARDS: INTERIOR GRADE PLYWOOD WITHOUT VOIDS, 3/4 INCH THICK; UL-LABELED FIRE RETARDANT.
 - a. SIZE: 48 INCHES WIDE 96 INCHES HIGH.
 - b. DO NOT PAINT OVER UL LABEL.

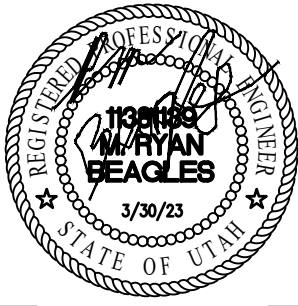
- c. PROVIDE ONE 48" MULTI-OUTLET POWER STRIP WITH INTEGRAL SURGE PROTECTION AND OUTLETS AT 6" O.C. (MINIMUM 7 OUTLETS) MOUNTED AT CENTER OF TERMINAL BOARD.

C. INSTALLATION

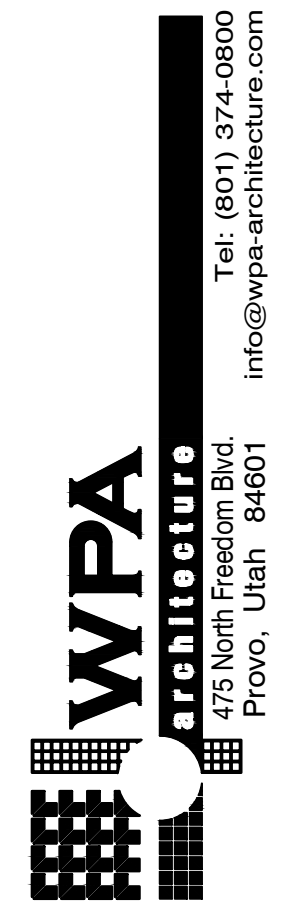
1. INSTALL CABLE FROM TERMINAL BOARD TO EACH TELEPHONE/NETWORK OUTLET.
2. TERMINATE CABLES AT EACH OUTLET WITH SPECIFIED MODULAR JACK ASSEMBLY.
3. TERMINATE CABLES ON PUNCH DOWN BLOCKS OR PATCH PANELS AT TERMINAL BOARD.
4. PROVIDE TYPED LABELS AT ALL JACKS CORRESPONDING TO TYPED NUMBERING SYSTEM AT PATCH PANEL OR TERMINAL STRIP.
- D. QUALITY ASSURANCE
 1. COMPLY WITH APPLICABLE PORTIONS OF NEC ANSI/EIA/TIA 568 AS TO TYPE PRODUCTS USED AND INSTALLATION OF COMPONENTS. PROVIDE PRODUCTS AND MATERIALS WHICH HAVE BEEN UL-LISTED AND LABELED.

Date: 03/30/2023

Revision:



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Bruce T. Fallon




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DATE PLOTTED: 03/30/2023

BID/PERMIT SET - 05.19.2023