SPECTRUM
ENGINEERS

Review Comments

Project:	**Brighton Recovery Campus-Building D**	**From:**	Jason Worthen
Project No:	20160686	**Date:**	April 12,2017

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Technology Design
Acoustical Engineering
Lighting Design
Theatre Design
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BUILDING D RESPONSES

E1. Dishwasher shall be GFCI protected per NEC210.8 (D).

Response: Added a note requiring GFCI circuit breaker in the panel for the circuit feeding the dishwasher.

E2. Sheet E601: Please note and verify location of the concrete encased grounding electrode.

Response: Modified grounding electrode circuiting on one-line diagram (EP601) instructing the contractor to connect the new services ground bus to the building existing grounding electrode system.

E3. Please note on electrical roof top plan WP GFCI for RTU units per NEC 210.63.

Response: Provided 120 volt circuit to all rooftop units for GFI WP receptacle that will be provided with unit.

E4. Please provide complete and detailed available fault current calculations (in accordance with NEC 110.9 and 110.10) and show the following on the plans:

I. Specify the KVA rating and impedance of the utility transformer. If this information cannot be obtained from the power company, please base the calculations off of the worst case scenario per the infinite bus method using the largest KVA rated transformer required for the service and figure such transformer with an impedance of 2% or less.

Response: Added impedance of the utility transformer to one-line diagram. KVA rating is already shown.

II. Show lengths and types of all conductors in the calculations and specify the resistance of such.

Response: Conductor types are shown on the one-line diagram. Refer to attached table for lengths and resistances.

III. Specify the amount of available fault current that could be provided to each panel and each piece of electrical equipment based on the calculations.

Response: This information is shown in the fault current table on EP601.

IV. Show the fault current rating of each switchgear and each panelboard.

Response: Added the AIC rating for each panel to the panel schedules.

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V. Specify on the plans the short circuit ratings of all overcurrent protection devices, or add a note on the plans that all overcurrent protective devices will have the same fault current rating as the rating of the panel or switchgear they are located within.

Response: Added general note to EP601 calling for all overcurrent protective devices to have the same AIC rating as the panel or gear they are located within.

VI. Please indicate on the plans that the calculated available fault current that could be provided to each equipment will be field marked as required by NEC110.24(A).

Response: Added a general note to EP601 requiring that all electrical equipment be field marked with the calculated available fault current.

N2. Sheet EL601: Recessed lighting shall be IC rated and airtight if penetrating the air or thermal barriers per IECC C402.5.8.

Response: Modified all can lights to be IC rated.

N6. Per IECC C405.2.2, for lighting which is not provided with an occupancy sensor control please provide time-switch controls to automatically shut off lighting.

Response: Lighting is provided with occupancy or vacancy sensors.

N7. Per IECC C405.2.3, it appears that reception area is a daylight zone which will require daylight responsive controls. Please clarify.

Response: The reception area is a daylight zone and is controlled with lighting load a, which is provided with daylight responsive controls.

N8. Please show the toplight daylight zones created by the skylights per IECC C405.2.3.3.

A. Per IECC C405.2.3 provide daylight responsive controls for all daylight zones with more than 150 watts of general lighting.

Response: Added the daylight zones to the drawings and added daylight responsive controls in the daylight zones.

N12. Please provide a lighting power analysis for the interior lighting in accordance with IECC C405.4.

Response: See attached ComCheck report.

N10. Please clarify how the exterior lighting for this project will be controlled. Verify that lighting controls will meet the requirements of IECC C405.2.5.

Response: Per sheet EP603 exterior lighting will be controlled via a lighting control panel based on input from exterior photo cells.

N11. Please provide a lighting power analysis for the exterior lighting in accordance with IECC C405.5.1.

Response: See attached ComCheck report.

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BUILDING D DRAWINGS

EP11D (see attached sheet)

1. Added keynote requiring the dishwasher be protected by a GFCI circuit breaker.
2. Added one 120V circuit for receptacles provided with roof top units and modified key note #1.
3. Added a duplex receptacle in the new corridor by the yoga studio.
4. Added power connection for EUH-2 in Corridor by the Yoga Studio.
5. Deleted one duplex receptacle in workout room. Relocated two duplex receptacles to accommodate Family Toilet
6. Added one above counter GFCI receptacle for Family Toilet.
7. Added a dedicated duplex receptacle for drinking fountains.
8. Changed exhaust fans in Men D107 and Women D108 from EF-1 fans to EF-2 fans.
9. Added power for exhaust fans in both employee locker rooms.
10. Added power for exhaust fan and unit heater in Family Toilet D113C.

EP401

1. Removed sheet from the set.

EP601 (see attached sheet)

1. Added impedance for the transformer that was used for fault current calculations.
2. Added general note calling for all overcurrent protective devices to have the same AIC rating as the panel or gear they are located within.
3. Added a general note requiring that all electrical equipment be field marked with the calculated available fault current.
4. Changed one-line diagram to shown the grounding electrodes as existing.
5. Changed all branch circuit panels from main lugs only to main circuit breaker panels.
6. Added panel LE2.
7. Added EF-2 to the equipment schedule.
8. Added grounding electrodes and grounding electrode conductors for the panels in buildings B, C, D, E and F.

EP602 (see attached sheet)

1. Added panel AIC ratings to panel schedules.
2. Changed branch panels to have main circuit breakers.
3. Updated panel schedules.

EP603 (see attached sheet)

1. Added panel AIC ratings to panel schedules.
2. Changed branch panels to have main circuit breakers.
3. Updated panel schedules.
4. Added panel schedule for panel LE2.

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EL11D (see attached sheet)

1. Shifted lighting to match architectural plans.
2. Added three DX-1 fixtures and an occupancy sensor to the corridor by the yoga studio.
3. Added a dimmer at each end of the corridor by the yoga studio.
4. Added one DX-1 fixture in the Check-in/Exit.
5. Added dashed line showing daylight zones.
6. Added an occupancy sensor/photocell in the Reception/Office.
7. Changed to occupancy sensor/photocell in the Gallery to be just a occupancy sensor.
8. Revised lighting zones in the dining, common area, gallery, reception and check-in.
9. Shifted one W-3 fixture in Workout Room to accommodate the family toilet.
10. Added one WS-2 fixture and one DX-1 fixture with a wall mounted occupancy sensor in Family Toilet.

EL601 (see attached sheet)

1. Changed the acceptable fixture types for DX-1, DX-2 and DX-4 fixtures.

EY11D (see attached sheet)

1. Added a camera in the new corridor by the yoga studio.
2. Added a card reader to the new entrance by the yoga studio.

FA11D (see attached sheet)

1. Added a pull station in the new corridor by the yoga studio.
2. Added a strobe in Family Toilet.

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COMcheck Software Version 4.0.5.2

Interior Lighting Compliance Certificate

Project Information

Energy Code:	2015 IECC
Project Title:	Brighton Recovery Campus Bulding E
Project Type:	Alteration

Construction Site:
4931 South 900 East

Owner/Agent:

Designer/Contractor:

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Common Space Types:Electrical/Mechanical	109	0.95	104
2-Common Space Types:Storage	105	0.63	66
3-Common Space Types:Classroom/Lecture/Training	490	1.24	608
4-Common Space Types:Restrooms	275	0.98	270
5-Common Space Types:Computer Room	120	1.71	205
6-Common Space Types:Office - Enclosed	120	1.11	133
7-Gymnasium/Fitness Center:Exercise Area	973	0.72	701
8-Common Space Types:Dining Area - Cafeteria/Fast Food	983	0.65	639
9-Common Space Types:Lounge/Breakroom	1240	0.73	905
10-Common Space Types:Corridor/Transition <8 ft wide	104	0.66	69
11-Common Space Types:Locker Room	140	0.75	105
		Total Allowed Watts =	3804

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Common Space Types:Electrical/Mechanical (109 sq.ft.)				
W-3 copy 1: W-3: LINEAR SURFACE MOUNT: Other:	1	2	48	96
TX-4: TX-4: SURFACE MOUNT: Other:	1	3	22	66
Common Space Types:Storage (105 sq.ft.)				
W-3: W-3: LINEAR SURFACE MOUNT: Other:	1	1	48	48
Common Space Types:Classroom/Lecture/Training (490 sq.ft.)				
W-2: W-2: LINEAR SURFACE MOUNT: Other:	1	8	57	456
Common Space Types:Restrooms (275 sq.ft.)				
DX-2: DX-2: 7" LED DOWNLIGHT: LED Other Fixture Unit 50W:	1	4	54	216
WS-2: WS-2: 36" VANITY LIGHT: LED Other Fixture Unit 36W:	1	2	19	38
Common Space Types:Computer Room (120 sq.ft.)				
W-2 copy 1: W-2: LINEAR SURFACE MOUNT: Other:	1	2	57	114
Common Space Types:Office - Enclosed (120 sq.ft.)				
W-2 copy 2: W-2: LINEAR SURFACE MOUNT: Other:	1	2	57	114
Gymnasium/Fitness Center:Exercise Area (973 sq.ft.)				

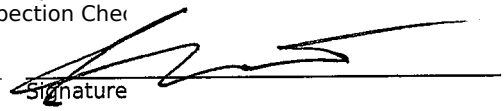
A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
W-3 copy 1: W-3: LINEAR SURFACE MOUNT: Other:	1	12	48	576
Common Space Types:Dining Area - Cafeteria/Fast Food (983 sq.ft.)				
TX-1: TX-1: SURFACE MOUNT: Other:	1	4	100	400
TX-2: TX-2: SURFACE MOUNT: Other:	1	1	37	37
TX-5: TX-5: SURFACE MOUNT: Other:	1	3	24	72
W-3 copy 2: W-3: LINEAR SURFACE MOUNT: Other:	1	3	48	144
Common Space Types:Lounge/Breakroom (1240 sq.ft.)				
TX-5 copy 1: TX-5: SURFACE MOUNT: Other:	1	6	24	144
DX-1: DX-1: 7" LED DOWNLIGHT: LED Other Fixture Unit 36W:	1	23	27	621
W-2 copy 3: W-2: LINEAR SURFACE MOUNT: Other:	1	2	57	114
Common Space Types:Corridor/Transition <8 ft wide (104 sq.ft.)				
DX-1 copy 1: DX-1: 7" LED DOWNLIGHT: LED Other Fixture Unit 36W:	1	3	27	81
Common Space Types:Locker Room (140 sq.ft.)				
W-2: W-2: LINEAR SURFACE MOUNT: Other:	1	2	57	114
			Total Proposed Watts =	3451

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2015 IECC requirements in COM*check* Version 4.0.5.2 and to comply with any applicable mandatory requirements listed in the Inspection Che

Jason Worthen - Professional Engineering Intern
Name - Title



Signature

03/10/2017
Date

COMcheck Software Version 4.0.5.2

Exterior Lighting Compliance Certificate

Project Information

Energy Code:	2015 IECC
Project Title:	Brighton Recovery Campus Bulding E
Project Type:	Alteration
Exterior Lighting Zone	2 (Residential mixed use area)

Construction Site:
4931 South 900 East

Owner/Agent:

Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Parking area	41175 ft2	0.06	Yes	2470
Plaza area	9000 ft2	0.14	Yes	1260
Entry canopy	5511 ft2	0.25	Yes	1378
			Total Tradable Watts (a) =	5108
			Total Allowed Watts =	5108
			Total Allowed Supplemental Watts (b) =	600

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 600 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

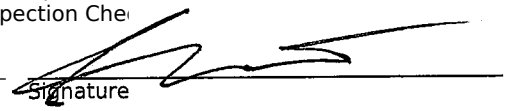
A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Parking area (41175 ft2): Tradable Wattage				
OC-32 copy 1: OC-32: LED WALL PACK: LED Other Fixture Unit 50W:	1	10	24	240
ZX-2: ZX-2: Other:	1	4	72	288
ZX-4: ZX-4: Other:	1	8	72	576
Plaza area (9000 ft2): Tradable Wattage				
OC-32: OC-32: LED WALL PACK: LED Other Fixture Unit 50W:	1	7	24	168
Entry canopy (5511 ft2): Tradable Wattage				
HG-1: HG-1: CANOPY LIGHT: Other:	1	85	50	4250
			Total Tradable Proposed Watts =	5522

Exterior Lighting PASSES: Design 3% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2015 IECC requirements in COM*check* Version 4.0.5.2 and to comply with any applicable mandatory requirements listed in the Inspection Che

Jason Worthen - Professional Engineering Intern
Name - Title



Signature

03/10/2017
Date

COM*check* Software Version 4.0.5.2

Inspection Checklist

Energy Code: 2015 IECC

Requirements: 0.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C103.2 [PR8][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406 [PR9][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.1 [EL15][1]	Lighting controls installed to uniformly reduce the lighting load by at least 50%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1 [EL18][1]	Occupancy sensors installed in required spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1, C405.2.2.3 [EL23][2]	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.2.1 [EL22][2]	Automatic controls to shut off all building lighting installed in all buildings.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.3 [EL16][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.3, C405.2.3.1, C405.2.3.2 [EL20][1]	Primary sidelighted areas are equipped with required lighting controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.3, C405.2.3.1, C405.2.3.3 [EL21][1]	Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.4 [EL4][1]	Separate lighting control devices for specific uses installed per approved lighting plans.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.4 [EL8][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.5 [EL25][null]	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.3 [EL6][1]	Exit signs do not exceed 5 watts per face.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][3]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.4.1 [FI18][1]	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Interior Lighting fixture schedule for values.*
C405.5.1 [FI19][1]	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Exterior Lighting fixture schedule for values.*
C408.2.5.1 [FI16][3]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Component Name	Length (ft)	Rpos (Ohms/1000 ft)	Xpos (Ohms/1000 ft)	Rzero (Ohms/1000 ft)	Rzero (Ohms/1000 ft)
MDP - LA	5	0.064	0.0497	0.2017	0.1224
MDP - LB	82	0.064	0.0497	0.2017	0.1224
MDP - LC	120	0.0805	0.0519	0.2537	0.1278
MDP - LD	138	0.0552	0.0495	0.1739	0.1219
MDP - LE	155	0.0552	0.0495	0.1739	0.1219
MDP - LF	100	0.064	0.0497	0.2017	0.1224
METER/CT - MDP	5	0.0356	0.049	0.1122	0.1206
XFMR - METER/CT	75	0.0356	0.049	0.1122	0.1206

SYMBOL LEGEND

SYMBOL	DESCRIPTION
A5 / E-501	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
A5 / E-201	ELEVATION OR SECTION INDICATOR, EXTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
ROOM NAME 100	ROOM IDENTIFIER WITH ROOM NAME AND NUMBER.
1	KEYNOTE INDICATOR.
1	REVISION INDICATOR.
CU-1	EQUIPMENT INDICATOR.
	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING.
	BREAK, ROUND.
WIRING METHODS	
	WIRING.
A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
1 A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. NUMBER IN BOX REFERS TO THE CONDUCTOR AND CONDUIT SCHEDULE. FOR BRANCH WIRING USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
— X —	WIRING AND/OR RACEWAY: THIN LINE. WHERE "X" = : CATV = CABLE TELEVISION CCTV = CLOSED CIRCUIT TELEVISION FA = FIRE ALARM FO = FIBER OPTICS I = INTERCOM NC = NURSE CALL P = POWER RC = RIGID CONDUIT S = SOUND T = TELEPHONE TV = TELEVISION OTHERS AS NOTED IN OTHER SCHEDULES. RACEWAYS AND WIRING SHALL BE SIZED AS SHOWN AND/OR SPECIFIED.
	CONDUIT STUB. DIMENSION RECORD DRAWINGS AND MARK.
1	CONDUCTOR & CONDUIT ("CC") SCHEDULE INDICATOR. REFER TO ONE-LINE DIAGRAM.
	JUNCTION BOX.
C C	CABLE TRAY ABOVE ACCESSIBLE CEILING.
	LADDER RACK.
WIRING DEVICES	
	RECEPTACLE, SINGLE: NEMA 5-20R.
	RECEPTACLE, DUPLEX: NEMA 5-20R.
A	RECEPTACLE, DUPLEX, ABOVE COUNTER: NEMA 5-20R.
C	RECEPTACLE, DUPLEX, CEILING: NEMA 5-20R.
D	RECEPTACLE, DUPLEX, DEDICATED CIRCUIT: NEMA 5-20R.
DF	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, DRINKING FOUNTAIN: CONCEAL WATER COOLER RECEPTACLE BEHIND WATER COOLER. SEE MECHANICAL/PLUMBING SHOP DRAWINGS FOR INSTALLATION REQUIREMENTS.
S	RECEPTACLE, DUPLEX, SWITCHED: NEMA 5-20R.
WP	RECEPTACLE, DUPLEX, WEATHERPROOF: NEMA 5-20R.
	RECEPTACLE, DUPLEX ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
WP	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WEATHERPROOF: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
	RECEPTACLE, SPECIAL PURPOSE. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
	RECEPTACLE, SPECIAL PURPOSE ON EMERGENCY POWER. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
D	RECEPTACLE, DRYER: NEMA 14-30R.
R	RECEPTACLE, RANGE: NEMA 10-50R.
	MULTI-OUTLET ASSEMBLY: NEMA 5-20R.
	SWITCH, DIMMER.
X $	SWITCH, SINGLE POLE ("x" INDICATES FIXTURES CONTROLLED).
X $3	SWITCH, THREE-WAY ("x" INDICATES FIXTURES CONTROLLED).

SYMBOL LEGEND

SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
	CIRCUIT BREAKER, MOLDED CASE (ONE-LINE DIAGRAM).
	TRANSFORMER (ONE-LINE DIAGRAM).
"1H"	PANELBOARD (ONE-LINE DIAGRAM).
225/3 "1H"	PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
	TRANSITION CABINET (ONE-LINE DIAGRAM).
	CT CABINET PER UTILITY'S REQUIREMENTS (ONE-LINE DIAGRAM).
	SERVICE ENTRANCE SURGE PROTECTION (ONE-LINE DIAGRAM).
	METER.
	DISCONNECT SWITCH, FUSED.
	DISCONNECT SWITCH, UNFUSED.
	STARTER, COMBINATION WITH DISCONNECT SWITCH.
	STARTER OR MOTOR CONTROLLER.
	PANELBOARD CABINET, FLUSH MOUNTED.
	PANELBOARD CABINET, SURFACE MOUNTED, 1 SECTION.
	PANELBOARD CABINET, SURFACE MOUNTED, 2 SECTION.
DP#__	DISTRIBUTION PANEL OR SWITCHBOARD.
LP	LIGHTING RELAY, CONTACTOR PANEL, OR DIMMING ENCLOSURE.
75	TRANSFORMER: NUMBER INDICATES kVA.
	MECHANICAL EQUIPMENT CONNECTION.
LIGHTING (REFER TO FIXTURE SCHEDULE FOR SYMBOLS)	
(W-3)	FIXTURE IDENTIFICATION: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
(W-3)	FIXTURE IDENTIFICATION, EMERGENCY WITH BATTERY PACK, CONNECTED TO GENERATOR AS INDICATED: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
	EGRESS DIRECTION ARROW.
NL	NIGHT LIGHT. DO NOT SWITCH.
LIGHTING CONTROL	
	OCCUPANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
	OCCUPANCY SENSOR, DUAL TECHNOLOGY, WALL.
	OCCUPANCY SENSOR, DUAL TECHNOLOGY, DIRECTIONAL.
	VACANCY SENSOR, DUAL TECHNOLOGY.
STRUCTURED CABLING	
X	TELEPHONE, WALL MOUNTED ("X" INDICATES QUANTITY OF CABLES).
P	TELEPHONE, WALL MOUNTED: PAY PHONE.
W	TELEPHONE, WALL MOUNTED: WALL PHONE.
	TWO-WAY EMERGENCY COMMUNICATION DEVICE PER IBC, WALL MOUNTED IN RECESSED BOX.
X	OUTLET, DATA COMMUNICATION ("X" INDICATES QUANTITY OF CABLES).
	OUTLET, BUILDING STANDARD COMBINATION TELEPHONE/ DATA COMMUNICATION.
	TELEPHONE TERMINAL BOARD, FIRE TREATED PLYWOOD PAINTED.
	LAN RACK, FLOOR STANDING.
—D—	DATA CABLE, CATEGORY 5 (ONE-LINE DIAGRAM).
—V—	VOICE CABLE, CATEGORY 3 (ONE-LINE DIAGRAM).
	DATA CONNECTION: WIRELESS ACCESS POINT (WAP). REQUIRES (2) DATA DROPS PER DEVICE
WAP	DATA CONNECTION: WIRELESS ACCESS POINT (WAP). REQUIRES (2) DATA DROPS PER DEVICE

SYMBOL LEGEND

SYMBOL	DESCRIPTION
FIRE ALARM	
FSA	FIRE SYSTEM ANNUNCIATOR.
FCP	FIRE ALARM CONTROL PANEL, SEMI-RECESSED.
FPS	FIRE ALARM NOTIFICATION POWER SUPPLY.
CM	CONTROL MODULE.
MM	MONITOR MODULE.
P	FIRE ALARM MANUAL PULL STATION.
	MAGNETIC DOOR HOLDER.
	DETECTOR, SMOKE.
R	DETECTOR, SMOKE, RESIDENTIAL. CONNECTED TO FIRE ALARM INITIATING LOOP. EMITS LOW-FREQUENCY ALARM.
	DETECTOR, SMOKE, DUCT WITH HOUSING AND SAMPLING TUBE.
	DETECTOR, HEAT.
	STROBE.
WP	ALARM, HORN/SPEAKER, WEATHERPROOF.
	ALARM, HORN/STROBE. ONE ASSEMBLY.
	DETECTOR, FLOW SWITCH: FLOW SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
	DETECTOR, TAMPER SWITCH WITH VALVE: TAMPER SWITCHES SHALL BE PROVIDED AND INSTALLED WITH FIRE SPRINKLER SYSTEM AND SHALL BE CONNECTED TO LOCATIONS SHOWN ON THE FIRE SPRINKLER SHOP DRAWINGS.
SD	SMOKE DAMPER.
FSD	FIRE AND SMOKE DAMPER.
CO	DETECTOR, CARBON MONOXIDE.
TECHNOLOGY SYSTEMS	
S #	SPEAKER, CEILING MOUNTED.
	EQUIPMENT CABINET.
	MEDIA CONNECTION PLATE.
	AUDIO/VISUAL OUTLET.
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER, AC LINE CONDITIONER.
NURSE CALL	
	JUNCTION BOX.
	CORRIDOR LIGHT.
B	BATHROOM PULL CORD STATION.
D	DUTY STATION.
E	EMERGENCY ASSISTANCE CALL STATION.
E CB	EMERGENCY ASSISTANCE CODE BLUE CALL STATION.
P	PATIENT STATION.
S	STAFF STATION.
NCM	TOUCH SCREEN NURSE CALL MASTER STATION.
ZLC	ZONE LIGHT CONTROLLER.
CU	NURSE CALL AREA CONTROL UNIT & POWER SUPPLIES.
CCTV	
P	CCTV CABLE, POWER.
V	CCTV CABLE, VIDEO SIGNAL.
CCTV	CCTV HEADEND EQUIPMENT.
M	CCTV MONITOR.
	CCTV CAMERA/ENCLOSURE WITH LENS, TYPICAL. SEE SCHEDULE.
PTZ	CCTV CAMERA WITH PAN, TILT AND ZOOM.
360°	PANNING CAMERA TRANSVERSE ANGLE.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
SECURITY	
X	SECURITY CABLE. SEE EQUIPMENT SCHEDULE FOR CABLE TYPE.
ACC	ACCESS CONTROL HEADEND EQUIPMENT.
CTR	SECURITY CONTROL PANEL.
SEC	INTRUSION DETECTION HEADEND EQUIPMENT.
#1	CARD ACCESS DOOR TYPE #1 OR AS NOTED. SEE SCHEDULE.
CR	CARD READER.
TV DISTRIBUTION	
T	TV DISTRIBUTION CABLE, INDIVIDUAL DROPS.
TR	TV DISTRIBUTION CABLE, TRUNK.
CMB	COMBINER.
DC	DIRECTIONAL COUPLER.
DA	DISTRIBUTION AMPLIFIER (ONE-LINE DIAGRAM).
SPL	SPLITTER (ONE-LINE DIAGRAM).
	TV OUTLET.
	SATELLITE ANTENNA.
	TV ANTENNA (ONE-LINE DIAGRAM).
	TERMINATOR, 75 OHM (TV DISTRIBUTION).

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

TECHNOLOGY SYSTEMS: THE TERM "TECHNOLOGY SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

GENERAL ELECTRICAL NOTES

1. CLARIFICATION METHODS: AT THE TIME OF BIDDING, BIDDERS SHALL FAMILIARIZE THEMSELVES WITH THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS, MISUNDERSTANDINGS, CONFLICTS, DELETIONS, DISCONTINUED PRODUCTS, CATALOG NUMBER DISCREPANCIES, DISCREPANCIES BETWEEN THE EQUIPMENT SUPPLIED AND THE INTENT OR FUNCTION OF THE EQUIPMENT, ETC, SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING FOR CLARIFICATION PRIOR TO ISSUANCE OF THE FINAL ADDENDUM AND BIDDING OF THE PROJECT. WHERE DISCREPANCIES OR MULTIPLE INTERPRETATIONS OCCUR, THE MOST STRINGENT (WHICH IS GENERALLY RECOGNIZED AS THE MOST COSTLY) THAT MEETS THE INTENT OF THE DOCUMENTS SHALL BE ENFORCED.
2. OWNER FURNISHED ITEMS: THE OWNER WILL FURNISH MATERIAL AND EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS TO BE INCORPORATED INTO THE WORK. THESE ITEMS ARE ASSIGNED TO THE INSTALLER AND COSTS FOR RECEIVING, HANDLING, STORAGE, IF REQUIRED, AND INSTALLATION ARE INCLUDED IN THE CONTRACT SUM.
   A. THE INSTALLER'S RESPONSIBILITIES ARE THE SAME AS IF THE INSTALLER FURNISHED THE MATERIALS OR EQUIPMENT.
   B. THE OWNER WILL ARRANGE AND PAY FOR DELIVERY OF OWNER FURNISHED ITEMS FREIGHT ON BOARD JOB SITE AND THE INSTALLER WILL INSPECT DELIVERIES FOR DAMAGE. IF OWNER FURNISHED ITEMS ARE DAMAGED, DEFECTIVE OR MISSING, DOCUMENT DAMAGED ITEMS WITH THE TRANSPORT COMPANY AND THE OWNER WILL ARRANGE FOR REPLACEMENT. THE OWNER WILL ALSO ARRANGE FOR MANUFACTURER'S FIELD SERVICES, AND THE DELIVERY OF MANUFACTURER'S WARRANTIES AND BONDS TO THE INSTALLER.
   C. THE INSTALLER IS RESPONSIBLE FOR DESIGNATING THE DELIVERY DATES OF OWNER FURNISHED ITEMS AND FOR RECEIVING, UNLOADING AND HANDLING OWNER FURNISHED ITEMS AT THE SITE. THE INSTALLER IS RESPONSIBLE FOR PROTECTING OWNER FURNISHED ITEMS FROM DAMAGE, INCLUDING DAMAGE FROM EXPOSURE TO THE ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.
3. EXPOSED STRUCTURE AREAS (EXCLUDING MECHANICAL, ELECTRICAL, AND COMMUNICATION SPACES): INSTALL RACEWAYS BETWEEN DECK AND STRUCTURE WHEREVER POSSIBLE IN EXPOSED STRUCTURE CEILING AREAS. ROUTE RACEWAYS IN CONCEALED AREAS WHEREVER POSSIBLE. REFER ALL CONDITIONS WHERE RACEWAYS MUST BE INSTALLED WHICH CANNOT COMPLY WITH THESE REQUIREMENTS TO THE ARCHITECT.
4. SUBMITTALS: PROVIDE ORIGINAL ELECTRONIC PDF FORMAT, BOUND, BOOKMARKED (EACH SECTION AND PRODUCT), AND HIGHLIGHTED. JOB NAME AND SUBCONTRACTOR SHALL BE ON THE FRONT COVER. PREPARE INDEX OF EQUIPMENT SUBMITTED IN EACH TAB.
5. REFLECTED CEILING PLANS: COORDINATE THE LOCATION OF LIGHT FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. REFER ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.
6. ALL WORK SHALL BE DONE ACCORDING TO THE CURRENT NATIONAL ELECTRIC CODE (NEC), IBC, NFPA, AND IFC. COMPLIANCE AND FINAL APPROVAL IS SUBJECT TO THE ON SITE FIELD INSPECTION OF THE AHJ.

ELECTRICAL SHEET INDEX

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Salt Lake County, Utah

date

January 04, 2017

revisions

PERMIT SET–December 28, 2016
1 ADDENDUM #1–January 04, 2017
2 ADDENDUM #2–January 06, 2017
3 ADDENDUM #3–January 11, 2017
4 ADDENDUM #4–January 17, 2017
5 ADDENDUM #5–January 19, 2017
7 ADDENDUM #7–April 12, 2017

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drawn by:
checked by:

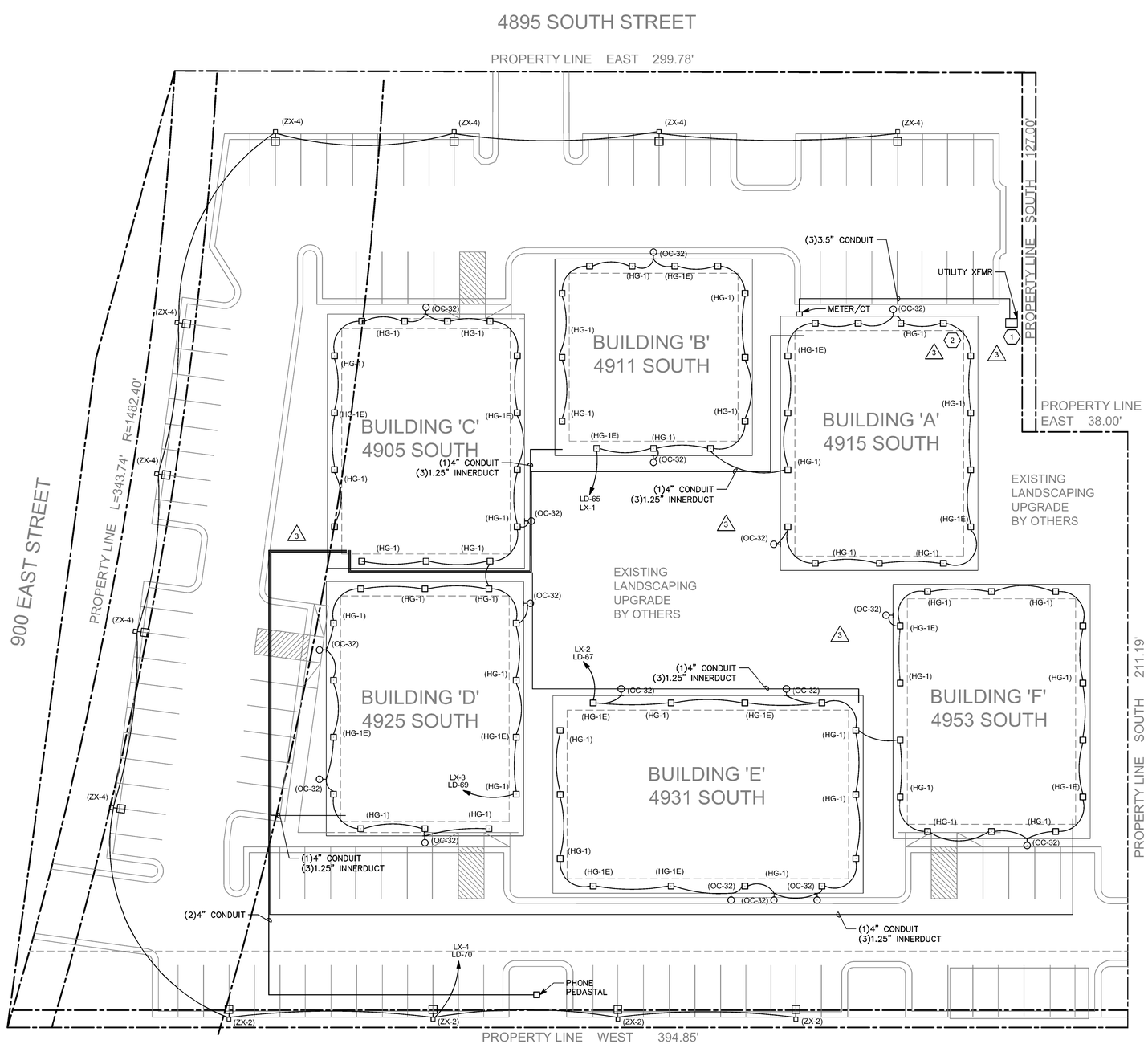
title

SYMBOL SCHEDULE, SHEET INDEX

sheet

EE001

BUILDING 'D' 4925 South 900 East PARCEL #2208185011000



1 ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES

1. EXISTING ROCKY MOUNTAIN TRANSFORMER. COORDINATE WITH ROCKY MOUNTAIN POWER TO DETERMINE IF THE EXISTING TRANSFORMER NEEDS TO BE REPLACED.
2. THE EXISTING ELECTRICAL ROOM IS LOCATED IN NORTHEAST CORNER OF BUILDING A. ALL OF THE ELECTRICAL EQUIPMENT IN THIS ROOM IS TO BE DEMOLISHED, INCLUDING THE ELECTRICAL PANEL AND METER CENTER. REMOVE ALL ASSOCIATED WIRING BACK TO THE UTILITY TRANSFORMER.

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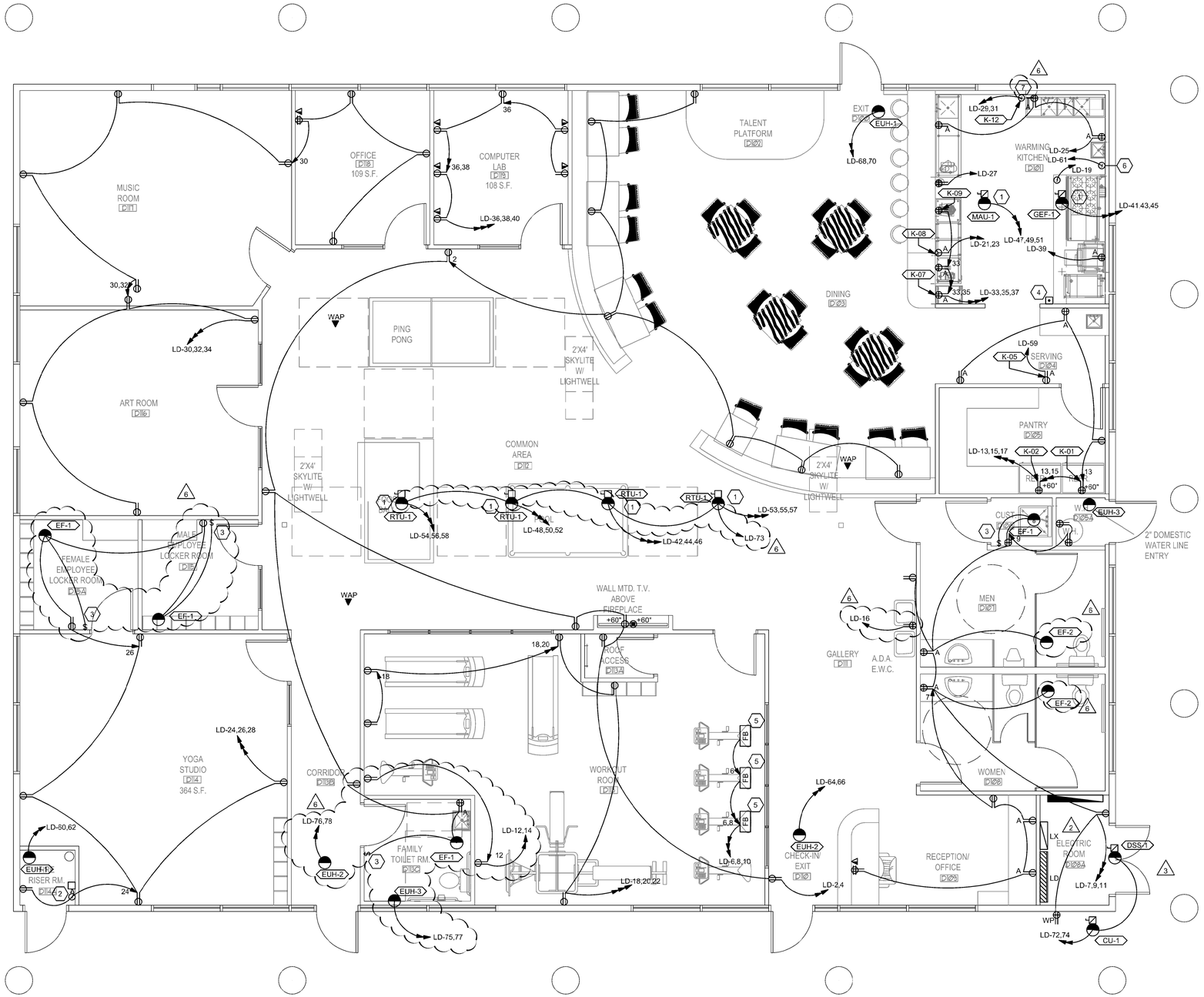
ELECTRICAL SITE PLAN

sheet

ES1.01

BUILDING 'D' 4925 South 900 East PARCEL #22081850110000



1 POWER PLAN - BUILDING 'D'

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

GENERAL SHEET NOTES

1.

SHEET KEYNOTES

1. RTU LOCATED ON ROOF. PROVIDE 208/3 DEDICATD CIRCUIT FOR EACH RTU AND A 120/1 CIRCUIT FOR ALL CONVENIENCE OUTLETS INTEGRAL WITH RTU.
2. PROVIDE DEDICATED 120V CIRCUIT AND A 30/3P DISCONNECT FOR FIRE ENTRY FLOW SWITCH AND AIR COMPRESSOR.
3. PROVIDE A 20A/1P SWITCH TO CONTROL EXHAUST FAN.
4. EMERGENCY FIRE SHUTOFF SWITCH. SWITCH TO CLOSE GAS LINE SOLENOID VALVE.
5. PROVIDE LEGRAND EVOLUTION SERIES FLUSH MOUNT FLOOR BOX WITH TWO DUPLEX RECEPTACLES.
6. PROVIDE 120V POWER TO ANSUL FIRE SYSTEM PANEL. PROVIDE 120V POWER TO GAS LINE SOLENOID SHUTOFF VALVE.
7. PROVIDE A GFCI TYPE CIRCUIT BREAKER IN PANEL LD FOR DISHWASHER.

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POWER PLAN - BUILDING 'D'

sheet

EP1 1D

BUILDING 'D' 4925 South 900 East PARCEL #22018501100000

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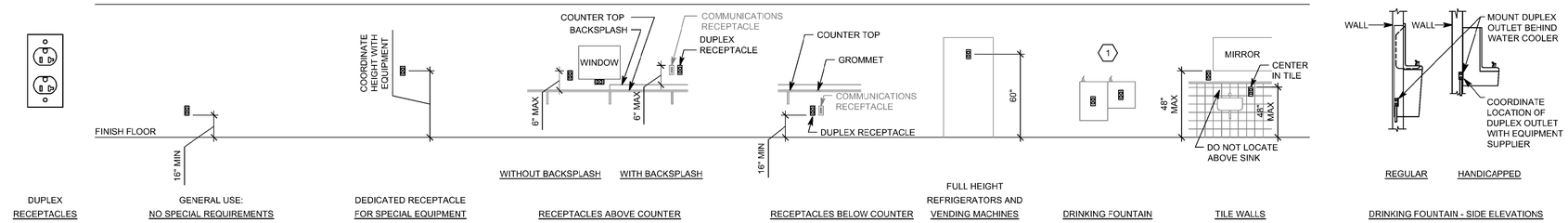
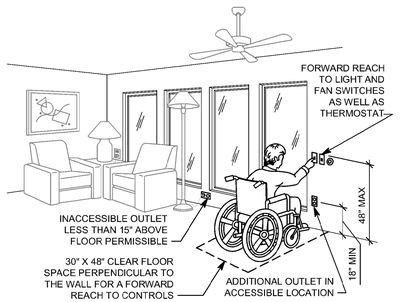


REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF OUTLETS.

7 RECEPTACLE MOUNTING DETAILS

NTS



5 ADA DETAIL

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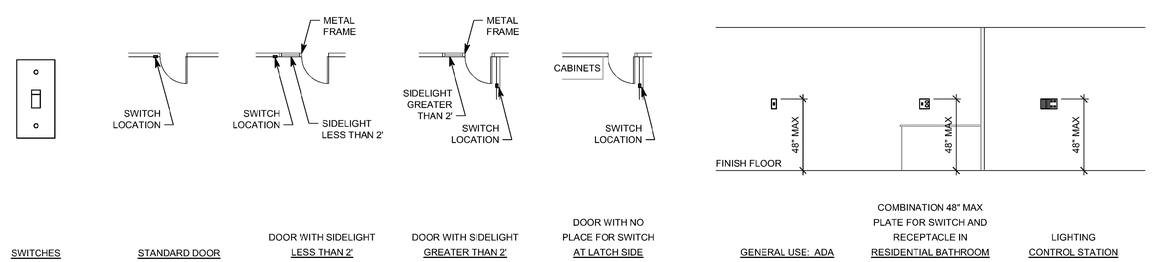

6 SWITCH MOUNTING DETAILS

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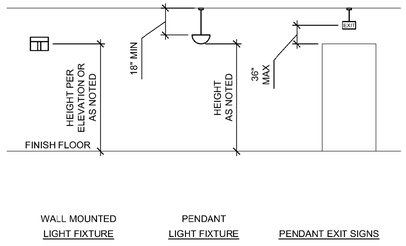

2 LIGHTING MOUNTING DETAILS

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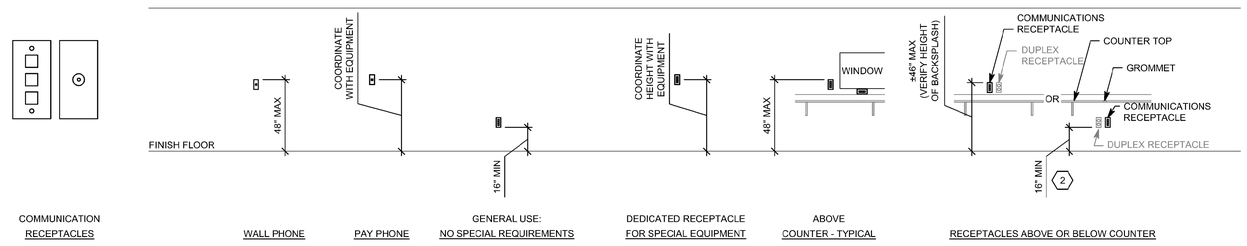

3 COMMUNICATION MOUNTING DETAILS

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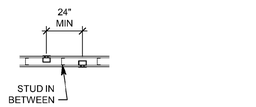
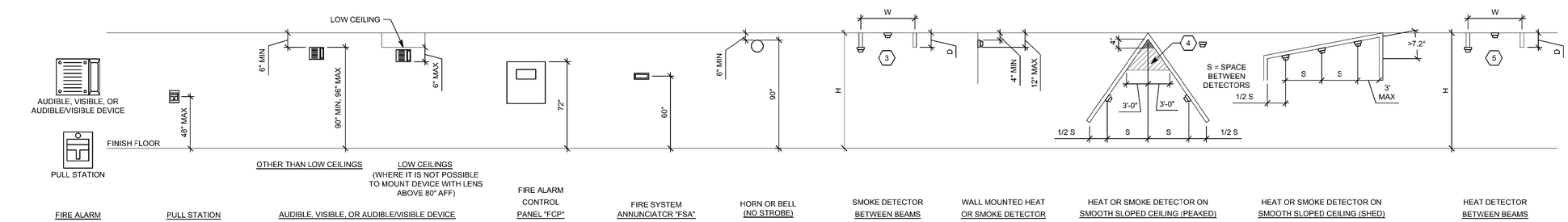


BOXES ON OPPOSITE SIDES OF WALL

4 BOX MOUNTING DETAILS

NTS



FIRE ALARM | PULL STATION | AUDIBLE, VISIBLE, OR AUDIBLE/VISIBLE DEVICE

1 FIRE ALARM MOUNTING DETAILS

NTS

GENERAL SHEET NOTES

1. DETERMINE MOUNTING HEIGHTS OF ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE FOLLOWING ORDER OF PRIORITY:

   1 - ELEVATIONS (ARCHITECTURAL, ELECTRICAL, MECHANICAL, ETC).
   2 - EQUIPMENT SHOP DRAWINGS.
   3 - FIELD INSTRUCTIONS.
2. LOCATE RECEPTACLES SERVING THE SAME TYPE OF USE AT A UNIFORM HEIGHT UNLESS DIRECTED OTHERWISE.
3. MECHANICAL, ELECTRICAL, AND COMMUNICATION ROOMS: COORDINATE LOCATION OF LIGHTING AND POWER RECEPTACLES WITH EQUIPMENT, PIPING, AND DUCTWORK. DO NOT INSTALL RECEPTACLES BEHIND EQUIPMENT OR WHERE OTHERWISE INACCESSIBLE. POSITION LIGHTING REGARDLESS OF WHERE SHOWN ON DRAWING TO PROVIDE PROPER ILLUMINATION.
4. MOUNT RECEPTACLE BOXES FOR SWITCHES AND RECEPTACLES WITH LONG AXIS OF THE DEVICE VERTICAL UNLESS OTHERWISE INDICATED.
5. SET BOXES WITH PLASTER RINGS FLUSH WITH FINISHED SURFACE.
6. LOCATE BOX COVERS OR DEVICE PLATES SO THEY WILL NOT SPAN DIFFERENT TYPES OF BUILDING FINISHES EITHER VERTICALLY OR HORIZONTALLY.
7. VERIFY ALL DOOR CONDITIONS ON ARCHITECTURAL DRAWINGS PRIOR TO INSTALLING SWITCHES.
8. LOCATE WIRING DEVICES WHICH ARE ADJACENT AND ARE COMPATIBLE VOLTAGES IN ONE PLATE.

SHEET KEYNOTES

1. LOCATE RECEPTACLES BEHIND DRINKING FOUNTAINS.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF OUTLETS.
3. LOCATE AT BOTTOM OF BEAMS IF D < .1H AND W < .4H OR AT CEILING FOR LEVEL CEILINGS. FOR PAN-TYPE CEILINGS, CORRIDORS, SMALL ROOMS, SLOPED/BEAMED CEILINGS, AND OTHER CONDITIONS, REFER TO NFPA 72.
4. LOCATE DETECTOR ANYWHERE IN SHADED AREA BUT NOT IN TOP 4" OF PEAK.
5. LOCATE AT BOTTOM OF BEAMS IF D/H < .1 OR W/H < .4; OTHERWISE, LOCATE IN BEAM POCKET. FOR D > 4 REDUCE SPACING .33 PERPENDICULAR TO BEAMS.

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data
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drawn by:
checked by:

title
DETAILS

sheet
EP501

BUILDING 'D' 4925 South 900 East PARCEL #2208185011000

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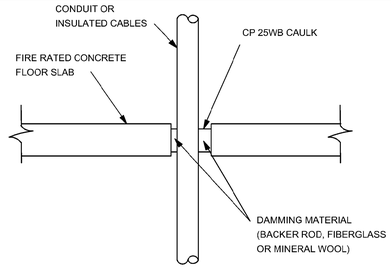
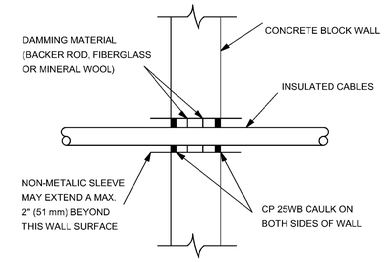


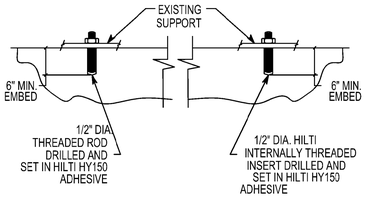
7 TYPICAL FIRESTOP FOR CABLES/CONDUIT THROUGH CONCRETE FLOORING

NTS



8 TYPICAL FIRESTOP FOR CABLES/CONDUIT THROUGH CONCRETE WALLS

NTS

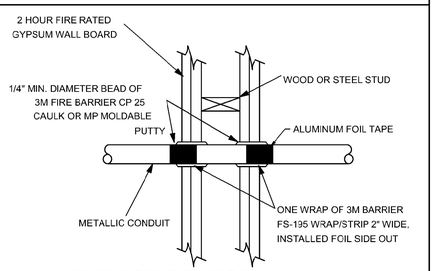


OPTION 1 OPTION 2

NOTE:
1. BLOW ALL HOLES CLEAN W/OIL FREE COMPRESSED AIR.
2. FOLLOW ALL MANUFACTURES RECOMMENDATIONS.

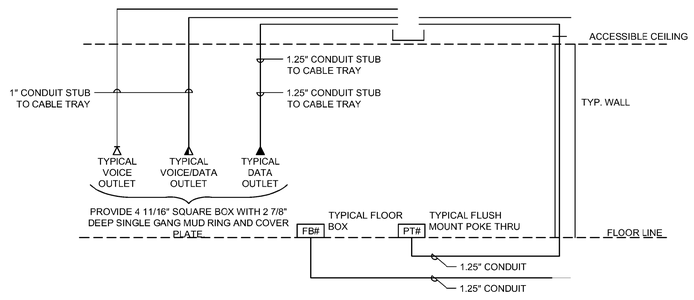
4 LIGHT WEIGHT CONCRETE ANCHORAGE

NTS



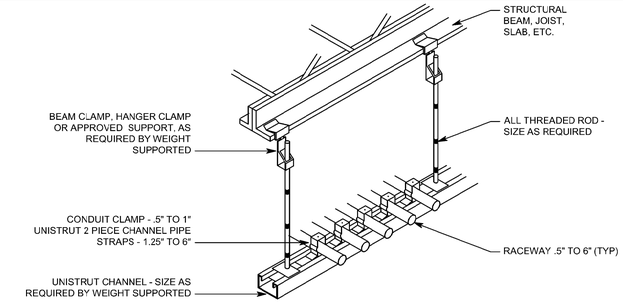
1 FIRESTOP FOR METAL CONDUIT THRU GYPSUM WALL BOARD

NTS



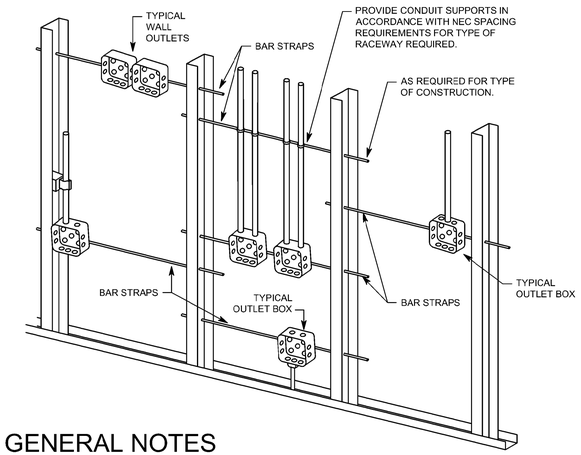
5 VOICE/DATA RISER

NTS



6 TYPICAL CONDUIT RACK DETAIL

NTS



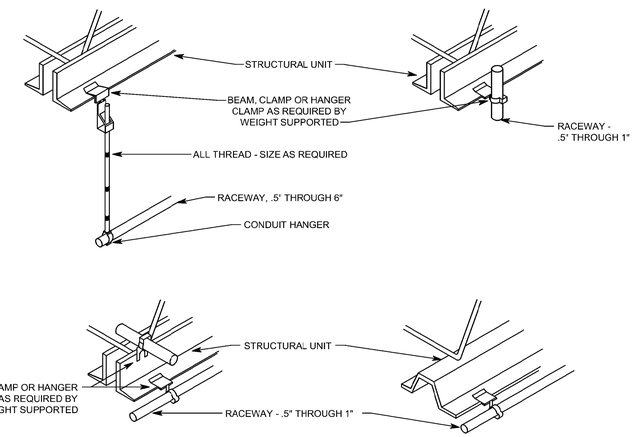
GENERAL NOTES

1. TYPICAL FOR WOOD AND METAL STUD ROUGH-IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. IN ACCORDANCE WITH UBC 709-7 EXCEPTION 1, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE IN A RATED FIRE SEPARATION WALL MUST BE SEPARATED BY A MINIMUM OF 24" HORIZONTAL DISTANCE.
5. IN NON-RATED WALLS, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY 16" FOR SOUND ATTENUATION.

2 TYPICAL ROUGH-IN REQUIREMENTS DETAIL

NTS

NOTE: TIE WIRE SHALL NOT BE USED AS A COMPONENT OF ANY RACEWAY HANGER SYSTEM.



3 TYPICAL RACEWAY SUPPORT METHODS DETAIL

NTS

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project no:
drawn by:
checked by:

title
DETAILS

sheet
EP502

BUILDING 'D' 4925 South 900 East PARCEL #2208185011000

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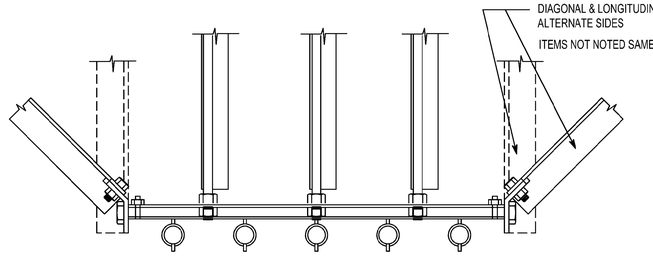
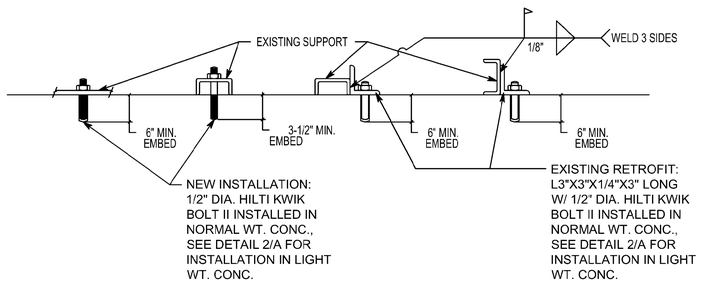
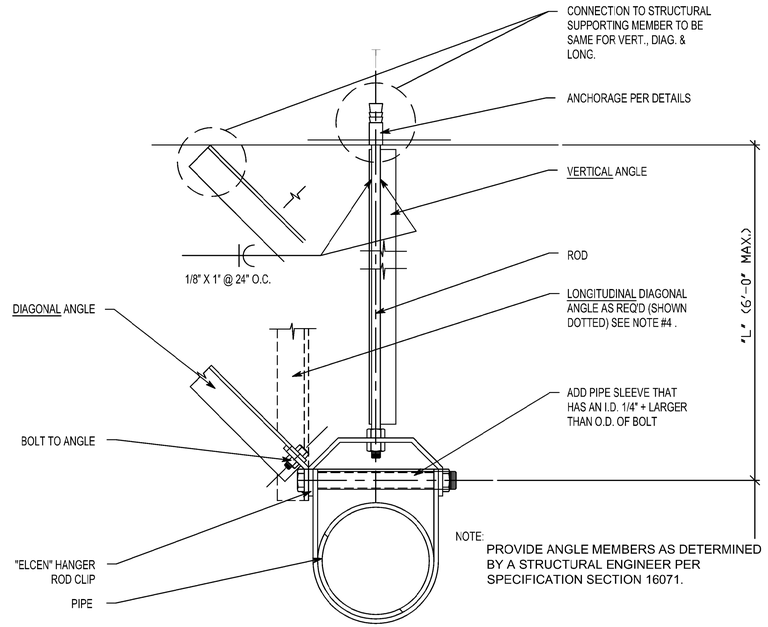


NOTE: PROVIDE ANGLE MEMBERS AS DETERMINED BY A STRUCTURAL ENGINEER PER SPECIFICATION SECTION 16071.

5 TYPICAL CONDUIT RACK BRACING
NTS



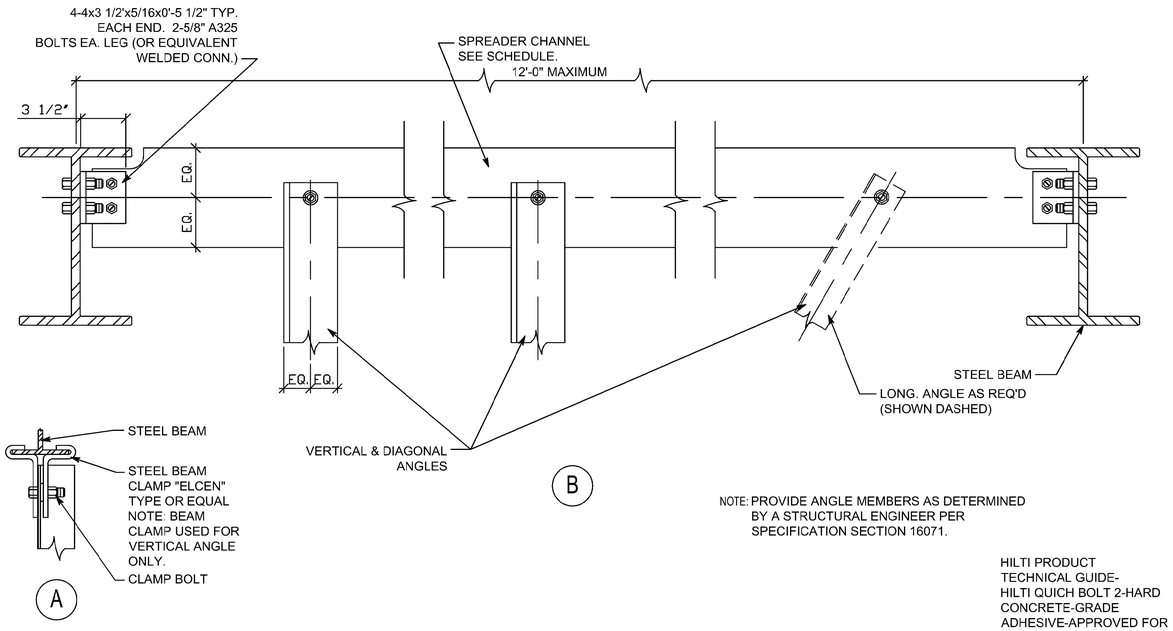
3 NORMAL WEIGHT CONCRETE ANCHORAGE



4 TYPICAL SINGLE CONDUIT BRACING
NTS

SEISMIC BRACING GENERAL NOTES

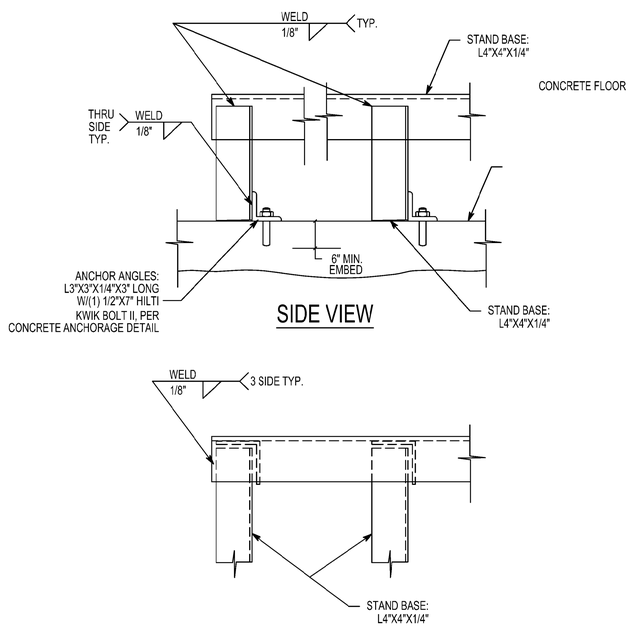
1. BRACE ALL CONDUIT WITH 2 1/2" I.D. AND LARGER, AND ALL BUSWAY, CABLE TRAY AND CONDUIT RACKS.
2. DETAILS SHOWN PROVIDE A LATERAL BRACING SYSTEM. A TYPICAL VERTICAL SUPPORT SYSTEM MUST ALSO BE USED. HOWEVER, WHERE BRACE OCCURS THE VERTICAL ANGLE SHOWN MAY REPLACE A TYPICAL VERTICAL SUPPORT.
3. TRANSVERSE BRACING AT 30'-0" O.C. MAX.
4. LONGITUDINAL BRACINGS AT 60'-0" O.C. MAX.
5. TRANSVERSE BRACING FOR ONE CONDUIT OR BUSWAY SECTION MAY ALSO ACT AS LONGITUDINAL BRACING FOR THE CONDUIT OR BUSWAY SECTION CONNECTED PERPENDICULAR TO IT, IF THE BRACING IS INSTALLED WITHIN 24" OF THE ELBOW OR TEE AND SIMILAR SIZE.
6. DO NOT USE BRANCH LINES TO BRACE MAIN LINES.
7. PROVIDE FLEXIBILITY IN JOINTS WHERE PIPES PASS THROUGH BUILDING SEISMIC OR EXPANSION JOINTS, OR WHERE RIGIDLY SUPPORTED PIPES CONNECT TO EQUIPMENT WITH VIBRATION ISOLATORS.
8. AT VERTICAL CONDUIT AND BUSWAY RISERS, WHEREVER POSSIBLE, SUPPORT OF WEIGHT OF THE RISER AT A POINT OR POINTS ABOVE THE CENTER OF GRAVITY OF THE RISER. PROVIDE LATERAL GUIDES AT THE TOP AND BOTTOM OF THE RISER, AND AT INTERMEDIATE POINTS NOT TO EXCEED 30'-0" ON CENTER.
9. PROVIDE LARGE ENOUGH CONDUIT SLEEVES THROUGH WALLS OR FLOORS TO ALLOW FOR ANTICIPATED DIFFERENTIAL MOVEMENTS.
10. DO NOT FASTEN ONE RIGID CONDUIT OR BUSWAY SYSTEM TO TWO DISSIMILAR PARTS OF A BUILDING THAT MAY RESPOND IN A DIFFERENT MODE DURING AN EARTHQUAKE: FOR EXAMPLE, A WALL AND A ROOF.
11. REFER TO SPECIFICATIONS AND MANUFACTURER'S LITERATURE FOR ADDITIONAL REQUIREMENTS.



NOTE: PROVIDE ANGLE MEMBERS AS DETERMINED BY A STRUCTURAL ENGINEER PER SPECIFICATION SECTION 16071.

HILTI PRODUCT TECHNICAL GUIDE- HILTI QUICH BOLT 2-HARD CONCRETE-GRADE ADHESIVE-APPROVED FOR SOFT CONCRETE-GLUE

1 TYPICAL SINGLE CONDUIT BRACING
NTS



2 BASE STAND
NTS

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DETAILS

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EP503

BUILDING 'D' 4925 South 900 East PARCEL #22018501100000

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FAULT CURRENT TABLE

BUS	FAULT CURRENT
METER/CT	25,009 SCA
MDP	24,762 SCA
LA	23,147 SCA
LB	10,931 SCA
LC	7,729 SCA
LD	8,216 SCA
LE	7,572 SCA
LF	9,682 SCA

PROVIDE FULLY RATED CIRCUIT BREAKERS IN PANELBOARDS FOR THE FAULT CURRENT SHOWN. SERIES RATINGS WITH NEXT LEVEL UPSTREAM OVERCURRENT PROTECTIVE DEVICES ARE PERMITTED SUBJECT TO FACTORY UL DOCUMENTATION OF SERIES RATING SUBMITTED TO ENGINEER. IF DEVICE OR EQUIPMENT FAULT CURRENT RATING IS NOT SHOWN, ASSUME 100,000 AIC.

EQUIPMENT SCHEDULE

MARK	ITEM DESCRIPTION	LOAD DATA HP	kW	MCA	FLA	VOLT	PH	Hz	WIRE AND CONDUIT SIZE	COND. AND CONDUIT SCHED.	OVERCURRENT PROTECTION FURN BY	DEVICE	LOCATION	DISCONNECT FURN BY	DEVICE	LOCATION	STARTER DATA FURN BY	DEVICE	LOCATION	SIZE	SPEED	CTRL VOLT	SELECTOR SWITCH	PUSH BUTTON	PILOT LAMP	NORMALLY OPEN CONTACTS	NORMALLY CLOSED CONTACTS	PHASE FAILURE RELAY	SCHEMATIC REFERENCE	REMOTE CTRL	NOTES	MARK
EUH-1	ELECTRIC UNIT HEATER WATER ENTRIES		3.3	20	15.85	208	1	60	2 #12, #12 GR 0.75" CND	1	E	20A/2P CB	PANEL	E	THERMAL SWITCH	ADJ TO EQUIP	E															EUH-1
EUH-2	ELECTRIC UNIT HEATER EXIT DOORS		2.0	12	9.6	208	1	60	2 #12, #12 GR 0.75" CND	1	E	20A/2P CB	PANEL	E	THERMAL SWITCH	ADJ TO EQUIP	E															EUH-2,3
EUH-3	ELECTRIC UNIT HEATER CUSTODIAN		1.5	9	7.2	208	1	60	2 #12, #12 GR 0.75" CND	1	E	20A/2P CB	PANEL	E	THERMAL SWITCH	ADJ TO EQUIP	E															EUH-3
EF-1	EXHAUST FAN PRIVATE UNIT BATHROOMS		.06			120	1	60	2 #12, #12 GR 0.75" CND	1	E	20A/1P CB	PANEL	E	THERMAL SWITCH	ADJ TO EQUIP	E															AC-1
EF-2	EXHAUST FAN PRIVATE UNIT BATHROOMS		.01			120	1	60	2 #12, #12 GR 0.75" CND	1	E	20A/1P CB	PANEL	E	THERMAL SWITCH	ADJ TO EQUIP	E															AC-1
GEF-1	EXHAUST FAN	2		9.5	7.5	208	3	60	3 #12, #12 GR 0.75" CND	2	E	20A/3P CB	PANEL	E	30A/3P FRN 10	ADJ TO EQUIP	E	FVNR	ADJ TO EQUIP	0			HOA		R,G	2	2					GEF-1
RTU-1	ROOF TOP UNIT BUILDING ROOFS			19.1		208	3	60	4 #10, #10 GR 0.75" CND	6	E	30A/3P CB	PANEL	E	30A/3P NON-FUSED	ADJ TO EQUIP	E														1	RTU-1
RTU-2	ROOF TOP UNIT BUILDING ROOFS			28.9		208	3	60	4 #8, #10 GR 1" CND	9	E	40A/3P CB	PANEL	E	50A/3P NON-FUSED	ADJ TO EQUIP	E														1	RTU-2
MAU-1	MAKE UP AIR UNIT	1.5		10.2	8.6	208	3	60	3 #12, #12 GR 0.75" CND	2	E	20A/3P CB	PANEL	E	30A/3P FRN 9	ADJ TO EQUIP	E	FVNR	ADJ TO EQUIP	00			HOA		R,G	2	2					MAU-1
DSS-1	SPLIT SYSTEM INDOOR UNIT				0.25	208	1	60	2 #12, #12 GR 0.75" CND	1	E	20A/3P CB	PANEL	E	30A/3P FRN-2	ADJ TO EQUIP																DSS-1
CU-1	SPLIT SYSTEM OUTDOOR UNIT			16	12.8	208	1	60	2 #12, #12 GR 0.75" CND	1	E	20A/3P CB	PANEL	E	30A/3P FRN-20	ADJ TO EQUIP																CU-1
DSS-2	SPLIT SYSTEM INDOOR UNIT				0.4	208	1	60	2 #12, #12 GR 0.75" CND	1	E	20A/3P CB	PANEL	E	30A/3P FRN-2	ADJ TO EQUIP																DSS-2
CU-2	SPLIT SYSTEM OUTDOOR UNIT			20	16	208	1	60	2 #10, #10 GR 0.75" CND	4	E	30A/3P CB	PANEL	E	30A/3P FRN-25	ADJ TO EQUIP																CU-2

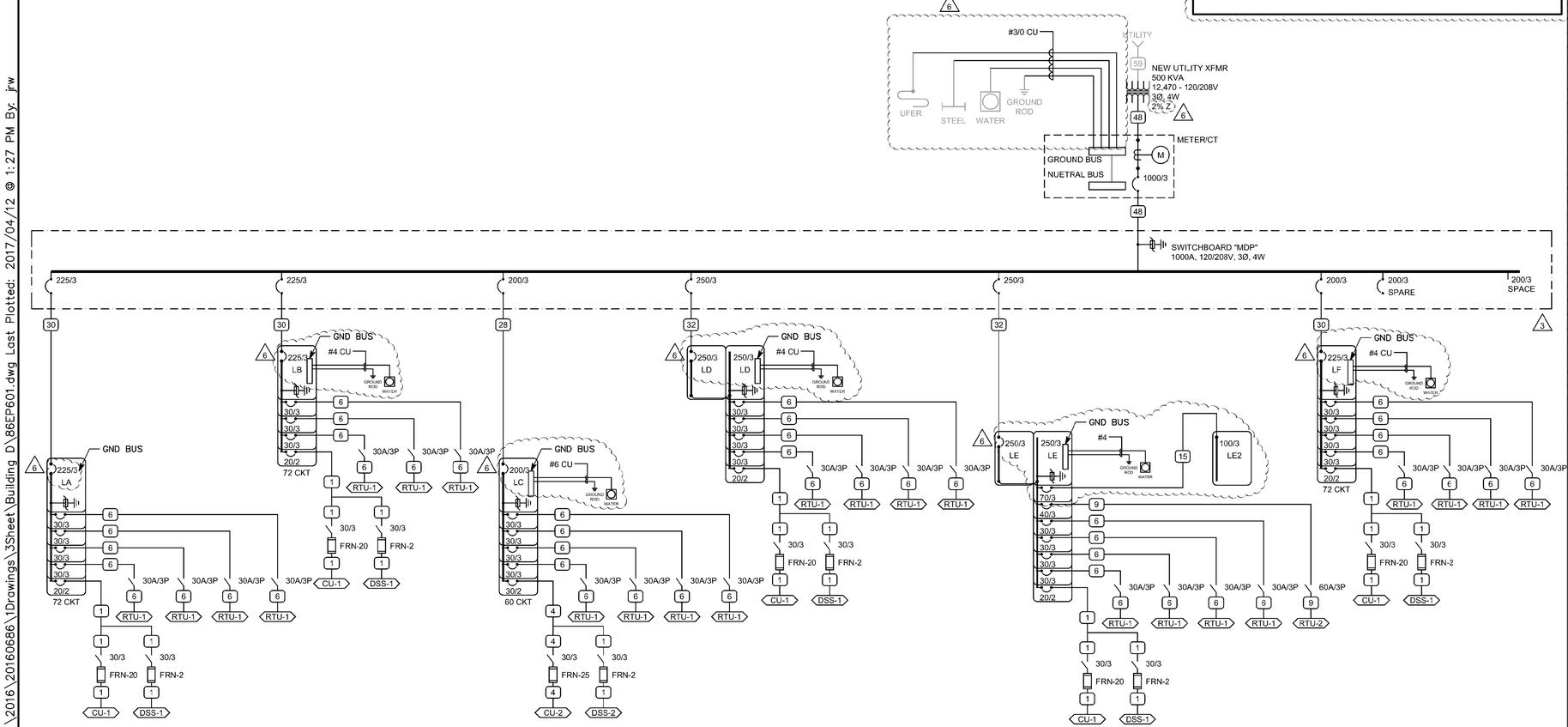
1 120V convenience outlet integral to unit.

EQUIPMENT SCHEDULE KEY

E	DIVISION 26
Q	FURNISHED WITH THE EQUIPMENT
*	COORDINATE WITH THE DIVISION 23 TEMPERATURE CONTROL INSTALLER
5	AUTOMATIC CONTROL WIRING BY DIVISION 23

GENERAL SHEET NOTES

1. ALL OVERCURRENT PROTECTIVE DEVICES SHALL HAVE THE SAME AIC RATING AS THE PANEL OR GEAR THEY ARE LOCATED WITHIN.
2. ALL ELECTRICAL EQUIPMENT SHALL BE FIELD MARKED WITH THE CALCULATED AVAILABLE FAULT CURRENT PER NEC 110.24(A).



1 ONE LINE DIAGRAM

SCALE: NTS

COPPER CONDUCTOR AND CONDUIT SCHEDULE

** SCHEDULE NUMBER
* SUBSCRIPT (NOTE 5)
(E.G.) 5 IG

SYM	AMP	CONDUIT SIZE	CONDUCTOR(NOTE 1) QTY	SIZE	G	IG/HH	SBJ	NOTES
1	20	.75	2	12	12	12	8	2
2	20	.75	3	12	12	12	8	2,3
3	20	.75	4	12	12	12	8	2,3
4	30	.75	2	10	10	10	8	2
5	30	.75	3	10	10	10	8	2
6	30	.75	4	10	10	10	8	2
7	40	1	2	8	10	8	6	2
8	40	1	3	8	10	8	6	2
9	40	1	4	8	10	8	6	2
10	55	1	2	6	10	8	4	2
11	55	1	3	6	10	8	4	2
12	55	1.25	4	6	10	8	4	2
13	70	1	2	4	8	4	2	2
14	70	1.25	3	4	8	4	2	2
15	70	1.25	4	4	8	4	2	2
16	85	1.25	2	3	8	3	2	2
17	85	1.25	3	3	8	3	2	2
18	85	1.25	4	3	8	3	2	2
19	95	1.25	3	2	8	2	2	2
20	95	1.50	4	2	8	2	2	2
21	130	1.50	3	1	6	2	2	2
22	130	1.50	4	1	6	2	2	2
23	150	2	3	1/0	6	2	1/0	2
24	150	2	4	1/0	6	2	1/0	2
25	175	2	3	2/0	6	2	2/0	2
26	175	2	4	2/0	6	2	2/0	2
27	200	2	3	3/0	6	2	2/0	2
28	200	2.50	4	3/0	6	2	2/0	2
29	230	2.50	3	4/0	4	2	2/0	2
30	230	2.50	4	4/0	4	2	2/0	2
31	255	2.50	3	250	4	1	2/0	2
32	255	2.50	4	250	4	1	2/0	2
33	310	3	3	350	3	1/0	3/0	2
34	310	3	4	350	3	1/0	3/0	2
35	380	3.50	3	500	3	3/0	3/0	2
36	380	4	4	500	3	3/0	3/0	2
37	400	2 EA 2	3	3/0	3	3/0	3/0	2
38	400	2 EA 2.50	4	3/0	3	3/0	3/0	2
39	510	2 EA 2.50	3	250	1	4/0	3/0	2
40	510	2 EA 3	4	250	1	4/0	3/0	2
41	620	2 EA 3	3	350	1/0	4/0	3/0	2,4
42	620	2 EA 3	4	350	1/0	4/0	3/0	2,4
43	760	2 EA 3.50	3	500	1/0	4/0	3/0	2,4
44	760	2 EA 4	4	500	1/0	4/0	3/0	2,4
45	855	3 EA 3	3	300	2/0	4/0	3/0	2,4
46	855	3 EA 3	4	300	2/0	4/0	3/0	2,4
47	1000	3 EA 3.50	3	400	2/0	4/0	3/0	4
48	1000	3 EA 3.50	4	400	2/0	4/0	3/0	4
49	1140	3 EA 4	3	500	3/0	4/0	3/0	4
50	1140	3 EA 4	4	500	3/0	4/0	3/0	4
51	1240	4 EA 3	3	350	3/0	4/0	3/0	4
52	1240	4 EA 3	4	350	3/0	4/0	3/0	4
53	1675	5 EA 4	4	400	4/0	4/0	4/0	4
54	2010	6 EA 4	4	400	250	250	250	4
55	2660	7 EA 4	4	500	350	350	350	4
56	3040	8 EA 4	4	500	500	500	500	4
57	4180	11 EA 4	4	500	500	500	500	4
58		5 EA 4						6
59		5						6
60		10 EA 4						6

CONDUCTOR AND CONDUIT SCHEDULE NOTES

1. CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
2. PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
3. PROVIDE #10 NEUTRALS FOR MULTIWIRE BRANCH CIRCUITS SERVING COMPUTERS.
4. GROUND CONDUCTOR SHALL BE OMITTED BETWEEN THE UTILITY TRANSFORMER AND THE FIRST OVERCURRENT PROTECTIVE DEVICE.
5. SYMBOL SUBSCRIPTS:

   "2N": INCLUDE TWO NEUTRAL CONDUCTORS, SIZED AS SCHEDULED FOR PHASED AND NEUTRAL CONDUCTORS.

   "FG": FULL SIZE GROUND, SIZE EQUIPMENT GROUNDING CONDUCTOR TO BE THE SAME SIZE AS THE PHASE CONDUCTORS.

   "HH": NEUTRAL CURRENTS EXIST DUE TO HIGH HARMONIC "NONLINEAR" LOADS. CURRENT CARRYING CONDUCTORS DERATED ACCORDINGLY. PROVIDE THE IG/HH SIZE FOR THE EQUIPMENT GROUNDING CONDUCTOR.

   "IG": INCLUDE IG (INSULATED/ISOLATED GROUND CONDUCTOR) SCHEDULED ALONG WITH GROUND OF EQUIPMENT GROUND CONDUCTOR.

   "SBJ": SUBSTITUTE "SBJ" CONDUCTOR FOR "G" CONDUCTOR SHOWN, WHICH IS SIZED FOR THE SYSTEM BONDING JUMPER OF THE SEPARATELY DERIVED SYSTEM.
6. RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.

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data

project no:
drawn by:
checked by:

title

ONE LINE DIAGRAM

sheet

EP6.01

BUILDING 'D' 4925 South 900 East PARCEL #22081850110000

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6 DISTRIBUTION PANELBOARD "MDP"

VOLTS/PHASE/WIRE:	MAIN SIZE & TYPE:	LOCATION:	AIC RATING:	NOTES:
120/208 V, 3 PH 4 WIRE	1000 AMP MAIN LUGS	BUILDING A	30,000 AIC	

ACCESSORIES: IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR

CKT	OCP		LOAD (kVA)				LCL	PHASE LOAD			LCL		LOAD (kVA)			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR	PANEL / EQUIPMENT	kVA	A	B	C	kVA	PANEL / EQUIPMENT	LTG	CO	PWR	AMP	POLE	NO
1	200	3	1.6	7.7	17.3	LA	27.0	59.6			33.7	LD	2.9	10.9	19.2	200	3	2
-	-	-	1.5	7.9	18.5	-	28.2		54.4		27.3	-	2.9	10.1	13.6	-	-	-
-	-	-	0.0	4.8	20.8	-	25.6			58.7	33.9	-	3.0	9.6	20.5	-	-	-
3	200	3	1.3	5.9	16.9	LB	24.4	57.8			34.1	LE	1.7	9.8	22.2	200	3	4
-	-	-	1.6	6.2	14.6	-	22.8		60.3		38.3	-	1.5	10.2	26.2	-	-	-
-	-	-	0.0	6.2	20.6	-	26.8			61.0	34.5	-	1.0	7.9	25.3	-	-	-
5	200	3	1.5	9.2	10.9	LC	22.0	48.3			27.2	LF	1.8	6.2	18.7	200	3	6
-	-	-	1.2	6.6	13.4	-	21.5		48.4		27.6	-	1.6	6.5	19.1	-	-	-
-	-	-	1.4	6.8	11.7	-	20.3			46.3	26.4	-	0.0	7.5	18.9	-	-	-
7	200	3				SPARE	0.0	0.0			0.0	SPACE				-	3	8
-	-	-				-	0.0		0.0		0.0	-				-	-	-
-	-	-				-	0.0			0.0	0.0	-				-	-	-
TOTALS:						CONNECTED kVA PER PHASE	166	163	166							CONNECTED TOTAL kVA	495	
						CONNECTED AMPS PER PHASE	1381	1360	1383							CONNECTED AVERAGE AMPS PER PHASE	1375	

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING 27kVA @125% =	33 kVA	ALL OTHER LOADS @100% =	328 kVA	DIVERSIFIED TOTAL kVA =	436
RECEPTACLES 10kVA @100% =	10 kVA	25% OF LARGEST MOTOR =	0 kVA	AVERAGE AMPS PER PHASE =	1212
REMAINDER 130kVA @ 50% =	65 kVA				

5 PANEL "LA" 3

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	AIC RATING:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	225 AMP MAIN CB		42,000 AIC	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR

CKT	OCP		LOAD (kVA)			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	LOAD (kVA)			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1	1.3			LIGHTING	1.6	2.3			1.0	WASHER LAUNDY A127		1.0		20	1	2
3	20	1	1.5			LIGHTING	1.9		1.9		0.4	CO LAUNDRY A127		0.4		20	1	4
5	30	2			1.3	DRYER LAUNDRY A101	1.3			2.6	1.3	DRYER LAUNDRY A127			1.3	30	2	6
7	-	-			1.3	-	1.3	2.6			1.3	-			1.3	-	-	8
9	20	1		1.0		WASHER LAUNDY A101	1.0		2.6		1.6	ROOMS A126, A125		1.4	0.2	20	1	10
11	20	1		1.4	0.2	ROOMS A103, A104	1.6			1.9	0.3	CUSTODIAN		0.2	0.1	20	1	12
13	20	1		0.8		CO ROOMS A101, A102	0.8	2.0			1.2	RM A122		1.1	0.1	20	1	14
15	20	1		0.6	0.6	WH/PUMP/FIRE COMP.	1.2		2.4		1.2	RM A119		1.1	0.1	20	1	16
17	20	1		1.1	0.1	RM A107	1.2			1.8	0.6	CO STORAGE/DINING A130		0.6		20	1	18
19	20	1		1.1	0.1	RM A110	1.2	2.1			0.9	CO FAMILY ROOM A131		0.9		20	1	20
21	20	1		1.1	0.1	RM A111	1.2		2.4		1.2	RM A118		1.1	0.1	20	1	22
23	20	1		0.9		CO RF ACCS, DINING A113	0.9			3.3	2.4	RANGE KITCHEN A132			2.4	50	2	24
25	20	1		0.6		CO FAMILY ROOM/STOR.	0.6	3.0			2.4	-			2.4	-	-	26
27	50	2			2.4	RANGE KITCHEN A115	2.4		3.4		1.0	REFRIGERATOR A132		1.0		20	1	28
29	-	-			2.4	-	2.4			2.6	0.2	CO KITCHEN A132		0.2		20	1	30
31	20	1		1.0		REFRIGERATOR A115	1.0	2.0			1.0	DISWASHER A132			1.0	20	1	32
33	20	1		0.2		CO KITCHEN A115	0.2		1.2		1.0	GARBAGE DISP. A132			1.0	20	1	34
35	20	1			1.0	DISHWASHER A115	1.0			2.9	1.9	RTU-1			1.9	30	3	36
37	20	1			1.0	GARBAGE DISP. A115	1.0	2.9			1.9	-			1.9	-	-	38
39	30	3			1.9	RTU-1	1.9		3.8		1.9	-			1.9	-	-	40
41	-	-			1.9	-	1.9			3.8	1.9	RTU-1			1.9	30	3	42
43	-	-			1.9	-	1.9	3.8			1.9	-			1.9	-	-	44
45	30	3			1.9	RTU-1	1.9		3.8		1.9	-			1.9	-	-	46
47	-	-			1.9	-	1.9			2.7	0.8	EUH-3			0.8	20	2	48
49	-	-			1.9	-	1.9	2.7			0.8	-			0.8	-	-	50
51	20	1			1.0	EUH-2	1.0		2.0		1.0	EUH-2			1.0	20	2	52
53	20	1			1.0	-	1.0			2.0	1.0	-			1.0	-	-	54
55	20	1			1.7	EUH-1	1.7	2.0			0.4	EGRESS LIGHTING	0.3			20	1	56
57	20	1			1.7	-	1.7		3.4		1.7	CU-1/DSS-1			1.7	20	2	58
59	20	1		0.4		KITCHEN ISLAND CO	0.4			2.1	1.7	-			1.7	-	-	60
61	20	1		0.8		RTU CO's	0.8	1.2			0.4	KITCHEN ISLAND CO		0.4		20	1	62
63	20	1			1.0	SMOKE DETECTORS	1.0		1.0		0.0	SPARE				20	1	64
65	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	66
67	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	68
69	20	1				SPARE	0.0		0.0		0.0	SPARE				20	1	70
71	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	72
TOTALS:						CONNECTED kVA PER PHASE	27	28	26							CONNECTED TOTAL kVA	80	
						CONNECTED AMPS PER PHASE	221	232	213							CONNECTED AVERAGE AMPS PER PHASE	222	

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING 3kVA @125% =	4 kVA	ALL OTHER LOADS @100% =	57 kVA	DIVERSIFIED TOTAL kVA =	77
RECEPTACLES 10kVA @100% =	10 kVA	25% OF LARGEST MOTOR =	2 kVA	AVERAGE AMPS PER PHASE =	215
REMAINDER 10kVA @ 50% =	5 kVA				

6 PANEL "LB" 3

VOLTS/PH-ASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	AIC RATING:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	225 AMP MAIN CB		22,000 AIC	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR, SUBFEED LUGS

CKT	OCP		LOAD (kVA)			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	LOAD (kVA)			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1	1.3			LIGHTING	1.6	2.6			1.3	DRYER LAUNDRY B125			1.3	30	2	2
3	20	1	1.3			LIGHTING	1.6		2.6		1.3	-			1.3	-	-	4
5	30	2			1.3	DRYER LAUNDRY B101	1.3			1.7	0.4	CO LAUNDRY B125		0.4		20	1	6
7	-	-			1.3	-	1.3	2.3			1.0	WASHER B125		1.0		20	1	8
9	20	1		1.4	0.2	ROOMS B104, B105	1.6		3.2		1.6	ROOMS B12, B123		1.4	0.2	20	1	10
11	20	1		1.0		WASHER LAUNDRY B101	1.0			2.3	1.3	WH/PUMP/FIRE COMP		1.3		20	1	12
13	20	1		0.8		CO ROOMS B101, B102	0.8	2.0			1.2	ROOM B119		1.1	0.1	20	1	14
15	20	1		0.2	0.1	CO & EF-1 CUST B106	0.3		1.5		1.2	ROOM B117		1.1	0.1	20	1	16
17	20	1		1.1	0.1	ROOM B108	1.2			2.2	1.0	REFRIGERATOR B129		1.0		20	1	18
19	20	1		1.1	0.1	ROOM B111	1.2	1.7			0.5	CO DINING B127		0.5		20	1	20
21	20	1		0.5		CO FAMILY RM B114	0.5		1.3		0.8	CO FAMILY/STOR. B128,B121		0.8		20	1	22
23	20	1		0.8		CO DINING RM B113	0.8			3.2	2.4	RANGE B129			2.4	50	2	24
25	20	1		1.0		REFRIGERATOR B115	1.0	3.4			2.4	-			2.4	-	-	26
27	50	2			2.4	RANGE B115	2.4		3.4		1.0	GARBAGE DISP.			1.0	20	1	28
29	-	-			2.4	-	2.4			3.4	1.0	DISHWASHER B129			1.0	20	1	30
31	20	1		0.2		CO KITCHEN B115	0.2	0.4			0.2	CO KITCHEN B129		0.2		20	1	32
33	20	1			1.0	DISHWASHER B115	1.0		2.9		1.9	RTU-1			1.9	30	3	34
35	20	1			1.0	GARBAGE DISP. B115	1.0			2.9	1.9	-			1.9	-	-	36
37	30	3			1.9	RTU-1	1.9	3.8			1.9	-			1.9	-	-	38
39	-	-			1.9	-	1.9		2.9		1.0	EUH-2			1.0	20	2	40
41	-	-			1.9	-	1.9			2.9	1.0	-			1.0	-	-	42
43	30	3			1.9	RTU-1	1.9	2.7			0.8	EUH-3			0.8	20	2	44
45	-	-			1.9	-	1.9		2.7		0.8	-			0.8	-	-	46
47	-	-			1.9	-	1.9			3.6	1.7	EUH-1			1.7	20	2	48
49	20	2			0.8	EUH-3	0.8	2.5			1.7	-			1.7	-	-	50
51	-	-			0.8	-	0.8		1.1		0.4	EGRESS LIGHTING	0.3			20	1	52
53	20	2			1.0	EUH-2	1.0			2.7	1.7	CU-1/DSS-1			1.7	20	2	54
55	-	-			1.0	-	1.0	2.7			1.7	-			1.7	-	-	56
57	20	1		0.4		KITCHEN ISLAND CO	0.4		0.8		0.4	KITCHEN ISLAND CO		0.4		20	1	58
59	20	1		0.6		RTU CO'S	0.6			1.6	1.0	SMOKE DETECTORS			1.0	20	1	60
61	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	62
63	20	1				SPARE	0.0		0.0		0.0	SPARE				20	1	64
65	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	66
67	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	68
69	20	1				SPARE	0.0		0.0		0.0	SPARE				20	1	70
71	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	72
TOTALS:						CONNECTED kVA PER PHASE	24	22	26							CONNECTED TOTAL kVA	73	
						CONNECTED AMPS PER PHASE	201	187	221							CONNECTED AVERAGE AMPS PER PHASE	203	

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING 3kVA @125% =	4 kVA	ALL OTHER LOADS @100% =	52 kVA	DIVERSIFIED TOTAL kVA =	71
RECEPTACLES 10kVA @100% =	10 kVA	25% OF LARGEST MOTOR =	2 kVA	AVERAGE AMPS PER PHASE =	198
REMAINDER 8kVA @ 50% =	4 kVA				

6 PANEL "LC" 3 2

VOLTS/PH-ASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	AIC RATING:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	200 AMP MAIN CB		10,000 AIC	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR, SUBFEED LUGS

CKT	OCP		LOAD (kVA)			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	LOAD (kVA)			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1	1.5			LIGHTING	1.9	2.3			0.8	CO FIRE RM/FIRE COMP		0.2	0.6	20	1	2
3	20	1	1.2			LIGHTING	1.5		2.0		0.8	GROUP ROOM C127		0.8		20	1	4
5	20	1	1.0			LIGHTING	1.3			1.8	0.8	GROUP ROOM C126		0.8		20	1	6
7	20	1		0.8		CO RECPTION C122	0.8	2.0			1.2	GROUP ROOM C130,128		1.2		20	1	8
9	20	1		1.6		CO OFFICES C117, C116	1.6		2.4		0.8	GROUP ROOM C131		0.8		20	1	10
11	20	1		1.4		CO OFFICES C115, C114	1.4			2.4	1.0	WH/PUMP/CO CUST C133		0.2	0.8	20	1	12
13	20	1		0.8		CO CUBICLES	0.8	1.6			0.8	CO CUBICLES		0.8		20	1	14
15	20	1		0.8		CO OFFICE C106	0.8		1.8		1.0	COPIER COPY C121		1.0		20	1	16
17	20	1		1.4		CO OFFICES C107, C108	1.4			2.8	1.4	CO C129, C125, C132		1.2	0.2	20	1	18
19	20	1		1.0		REFRIGERATOR C113	1.0	2.4			1.4	CO CORR C118, 109, 102		1.4		20	1	20
21	20	1		0.2		CO BREAK ROOM C113	0.2		2.1		1.9	RTU-1			1.9	30	3	22
23	20	1		0.2		CO BREAK ROOM C113	0.2			2.1	1.9	-			1.9	-	-	24
25	20	1		1.0		CO MEDS C112	1.0	2.9			1.9	-			1.9	-	-	26
27	20	1		0.4		CO MEDS C112	0.4		2.3		1.9	RTU-1			1.9	30	3	28
29	20	1		0.8		CO BREAK ROOM C113	0.8			2.7	1.9	-			1.9	-	-	30
31	20	1		0.4		CO LAB C111	0.4	2.3			1.9	-			1.9	-	-	32
33	20	1		0.2		CO LAB C111	0.2		1.2		1.0	EUH-2			1.0	20	2	34
35	20	1		1.0		REFRIGERATOR C111	1.0			2.0	1.0	-			1.0	-	-	36
37	30	3			1.9	RTU-1	1.9	3.6			1.7	EUH-1			1.7	20	2	38
39	-	-			1.9	-	1.9		3.6		1.7	-			1.7	-	-	40
41	-	-			1.9	-	1.9			2.3	0.5	EGRESS LIGHTING	0.4			20	1	42
43	30	3			1.9	RTU-1	1.9	2.5			0.6	CO ELEC C115A		0.6		20	1	44
45	-	-			1.9	-	1.9		4.0		2.1	CU-2/DSS-2			2.1	30	2	46
47	-	-			1.9	-	1.9			4.0	2.1	-			2.1	-	-	48
49	20	2			1.0	EUH-2	1.0	1.6			0.6	RTU CO'S		0.6		20	1	50
51	-	-			1.0	-	1.0		2.4		1.4	CO CUBICLES		1.4		20	1	52
53	20	1				DRINKING FOUNTAIN	0.0			1.4	1.4	CO CUBICLES		1.4		20	1	54
55	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	56
57	20	1				SPARE	0.0		0.0		0.0	SPARE				20	1	58
59	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	60
TOTALS:						CONNECTED kVA PER PHASE	21	22	21							CONNECTED TOTAL kVA	64	
						CONNECTED AMPS PER PHASE	177	182	179	ARC						CONNECTED AVERAGE AMPS PER PHASE	179	

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING 4kVA @125% =	5 kVA	ALL OTHER LOADS @100% =	36 kVA	DIVERSIFIED TOTAL kVA =	58
RECEPTACLES 10kVA @100% =	10 kVA	25% OF LARGEST MOTOR =	0 kVA	AVERAGE AMPS PER PHASE =	162
REMAINDER 14kVA @ 50% =	7 kVA				

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project:

Tenant Finish for New Brighton Recovery Campus

4905, 4911, 4915, 4925, 4931, & 4953 South 900 East

Salt Lake County, Utah

date

January 04, 2017

revisions

PERMIT SET–December 28, 2016
1 ADDENDUM #1–January 04, 2017
2 ADDENDUM #2–January 06, 2017
3 ADDENDUM #3–January 11, 2017
4 ADDENDUM #4–January 17, 2017
5 ADDENDUM #5–January 19, 2017
6 ADDENDUM #7–April 12, 2017

data

project no:
drawn by:
checked by:

title

PANEL SCHEDULES

sheet

EP602

BUILDING 'D' 4925 South 900 East PARCEL #2208185011000

File Name: P:\2016\20160686\1Drawings\3Sheet\Building D\86EP602.dwg Last Plotted: 2017/04/12 @ 1:04 PM By: jrw

PANEL "LD"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	AIC RATING:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	250 AMP MAIN CB		10,000 AIC	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR, SUBFEED LUGS

CKT	OCP		LOAD (kVA)			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	LOAD (kVA)			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1	1.4			LIGHTING	1.8	2.8			1.4	CO DINING D103		1.4		20	1	2
3	20	1	1.2			LIGHTING	1.5		2.4		1.2	CO COMMON AREA D112		1.2		20	1	4
5	20	1	0.6			LIGHTING	0.8			1.6	1.0	FB WORKOUT RM D113		1.0		20	1	6
7	20	1		0.9		CO RECEPTION D109	0.9	1.9			1.0	FB WORKOUT RM D113		1.0		20	1	8
9	20	1		0.7		WH/PUMP	0.7		1.7		1.0	FB WORKOUT RM D113		1.0		20	1	10
11	20	1		0.9	0.3	CO D108A, D108, D107, D106	1.2			2.2	1.0	CO WORKOUT RM D113		1.0		20	1	12
13	20	1		0.6		CO PNTRY/SERV. D104,105	0.6	1.6			1.0	CO WORKOUT RM D113		1.0		20	1	14
15	20	1		1.0		REFRIGERATOR D105	1.0		2.0		1.0	DRINKING FOUNTAIN		1.0		20	1	16
17	20	1		1.3		FREEZER D105	1.3			2.3	1.0	CO WORKOUT RM D113		1.0		20	1	18
19	20	1			1.5	KITCHEN HOOD	1.5	2.5			1.0	CO WORKOUT RM D113		1.0		20	1	20
21	30	2			1.7	SOFT SERVE MACHINE	1.7		2.3		0.6	CO WORKOUT RM D113		0.6		20	1	22
23	-	-			1.7	-	1.7			2.5	0.8	FIRE CO/FIRE COMP D114A		0.2	0.6	20	1	24
25	20	1		0.6		CO KITCHEN D101	0.6	1.4			0.8	CO OFFICE/STOR D115		0.8		20	1	26
27	20	1		1.0		CO KITCHEN D101	1.0		1.8		0.8	CO YOGA STUDIO D114		0.8		20	1	28
29	50	2			4.0	DISHWASHER	4.0			5.0	1.0	CO OFFICE D118		1.0		20	1	30
31	-	-			4.0	-	4.0	4.8			0.8	CO MUSIC ROOM D117		0.8		20	1	32
33	20	1		0.6		SANDWICH/SALAD FRIDGE.	0.6		1.4		0.8	CO ART ROOM D116		0.8		20	1	34
35	20	1		1.0		CO KITCHEN D101	1.0			1.4	0.4	CO COMPUTER LAB D119		0.4		20	1	36
37	20	1		1.8		ESPRESSO MACHINE	1.8	2.2			0.4	CO COMPUTER LAB D119		0.4		20	1	38
39	20	1		1.0		CO KITCHEN D101	1.0		1.4		0.4	CO COMPUTER LAB D119		0.4		20	1	40
41	20	3			0.5	GEF-1	0.5			2.4	1.9	RTU-1			1.9	30	3	42
43	-	-			0.5	-	0.5	2.4			1.9	-			1.9	-	-	44
45	-	-			0.5	-	0.5		2.4		1.9	-			1.9	-	-	46
47	20	3			0.4	MAU-1	0.4			2.3	1.9	RTU-1			1.9	30	3	48
49	-	-			0.4	-	0.4	2.3			1.9	-			1.9	-	-	50
51	-	-			0.4	-	0.4		2.3		1.9	-			1.9	-	-	52
53	30	3			1.9	RTU-1	1.9			2.9	1.0	EUH-2			1.0	20	2	54
55	-	-			1.9	-	1.9	2.9			1.0	-			1.0	-	-	56
57	-	-			1.9	-	1.9		3.8		1.9	RTU-1			1.9	30	3	58
59	20	1		1.8		ICE MAKER	1.8			3.7	1.9	-			1.9	-	-	60
61	20	1			1.5	ANSUL FIRE PANEL	1.5	3.4			1.9	-			1.9	-	-	62
63	20	1	0.2			EGRESS LIGHTING	0.3		1.9		1.7	EUH-1			1.7	20	2	64
65	20	1	1.5			BLDG A & B CANOPY LTG	1.9			3.2	1.7	-			1.7	-	-	66
67	20	1	1.5			BLDG E & F CANOPY LTG	1.9	2.5			1.0	EUH-2			1.0	20	2	68
69	20	1	1.5			BLDG C & D CANOPY LTG	1.9		2.5		1.0	-			1.0	-	-	70
71	20	1	0.9			PARKING LOT LTG	1.1			2.6	1.7	CU-1/DSS-1			1.7	20	2	72
73	20	1		0.6		RTU CO'S	0.6	2.3			1.7	-			1.7	-	-	74
75	20	2			0.8	EUH-3	0.8		1.8		1.0	EUH-2			1.0	20	1	76
77	-	-			0.8	-	0.8			1.8	1.0	-			1.0	20	1	78
79	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	80
81	20	1				SPARE	0.0		0.0		0.0	SPARE				20	1	82
83	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	84
TOTALS:						CONNECTED kVA PER PHASE	33	28	34		95	CONNECTED TOTAL kVA				106		
						CONNECTED AMPS PER PHASE	275	231	282		263	CONNECTED AVERAGE AMPS PER PHASE				294		

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING 9kVA @125% =	11 kVA	ALL OTHER LOADS @100% =	55 kVA	DIVERSIFIED TOTAL kVA =	86
RECEPTACLES 10kVA @100% =	10 kVA	25% OF LARGEST MOTOR =	0 kVA	AVERAGE AMPS PER PHASE =	240
REMAINDER 21kVA @ 50% =	10 kVA				

PANEL "LE"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	AIC RATING:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	250 AMP MAIN CB		10,000 AIC	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR, SUBFEED LUGS

CKT	OCP		LOAD (kVA)			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	LOAD (kVA)			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1	1.2			LIGHTING	1.5	2.2			1.0	WASHER LAUNDRY E127		1.0		20	1	2
3	20	1	1.5			LIGHTING	1.9		2.8		1.3	DRYER LAUNDRY E127			1.3	30	2	4
5	20	1	1.0			LIGHTING	1.3			2.3	1.3	-			1.3	-	-	6
7	30	2			1.3	DRYER LAUNDRY E101	1.3	2.0			0.7	CO E134, E127		0.6	0.1	20	1	8
9	-	-			1.3	-	1.3		2.9		1.6	ROOMS E125,E126		1.4	0.2	20	1	10
11	20	1		1.4	0.2	ROOMS E103, E104	1.6			2.8	1.2	ROOM E119		1.1	0.1	20	1	12
13	20	1		1.0		WASHER LAUNDRY E101	1.0	2.2			1.2	ROOM E122		1.1	0.1	20	1	14
15	20	1		0.6		CO ROOMS E101,E102	0.6		0.9		0.3	CO/EF-1 CUSTODIAN E124		0.2	0.1	20	1	16
17	20	1		0.2	0.8	WH/PUMP/CO STORAGE	1.0			2.2	1.2	ROOM E118		1.1	0.1	20	1	18
19	20	1		1.1	0.1	ROOM E107	1.2	2.1			0.9	CO FAMILY ROOM E131		0.9		20	1	20
21	20	1		1.1	0.1	ROOM E110	1.2		1.8		0.6	CO DINING ROOM E130		0.6		20	1	22
23	20	1		1.1	0.1	ROOM E111	1.2			2.2	1.0	REFRIGERATOR E132		1.0		20	1	24
25	20	1		1.0		CO DINING E113	1.0	1.2			0.2	CO KITCHEN E132		0.2		20	1	26
27	20	1		0.6		CO FAMILY E114	0.6		3.0		2.4	RANGE E132			2.4	50	2	28
29	20	1		1.0		REFRIGERATOR E115	1.0			3.4	2.4	-			2.4	-	-	30
31	50	2			2.4	RANGE E115	2.4	3.4			1.0	DISHWASHER E132			1.0	20	1	32
33	-	-			2.4	-	2.4		3.4		1.0	GARBAGE DISP E132			1.0	20	1	34
35	20	1			1.0	GARBAGE DISPOSAL	1.0			2.9	1.9	RTU-1			1.9	30	3	36
37	20	1			1.0	DISWASHER E115	1.0	2.9			1.9	-			1.9	-	-	38
39	20	1		0.2		CO KITCHEN E115	0.2		2.1		1.9	-			1.9	-	-	40
41	30	3			1.9	RTU-1	1.9			3.8	1.9	RTU-1			1.9	30	3	42
43	-	-			1.9	-	1.9	3.8			1.9	-			1.9	-	-	44
45	-	-			1.9	-	1.9		3.8		1.9	-			1.9	-	-	46
47	30	3			1.9	RTU-1	1.9			3.8	1.9	RTU-2			1.9	40	3	48
49	-	-			1.9	-	1.9	3.8			1.9	-			1.9	-	-	50
51	-	-			1.9	-	1.9		3.8		1.9	-			1.9	-	-	52
53	20	2			0.8	EUH-3	0.8			1.8	1.0	EUH-2			1.0	20	2	54
55	-	-			0.8	-	0.8	1.8			1.0	-			1.0	-	-	56
57	20	2			1.0	EUH-2	1.0		1.8		0.8	EUH-3			0.8	20	2	58
59	-	-			1.0	-	1.0			1.8	0.8	-			0.8	-	-	60
61	20	1	0.5			EGRESS LIGHTS	0.6	0.9			0.4	KITCHEN ISLAND CO		0.4		20	1	62
63	20	2			1.7	CU-1/DSS-1	1.7		2.7		1.0	SMOKE DETECTORS			1.0	20	1	64
65	-	-			1.7	-	1.7			1.7	0.0	SPARE				20	1	66
67	20	1		1.0		RTU CO'S	1.0	1.0			0.0	SPARE				20	1	68
69	20	1		0.4		KITCHEN ISLAND CO	0.4		0.4		0.0	SPARE				20	1	70
71	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	72
73	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	74
75	20	1				SPARE	1.7		0.0		0.0	SPARE				20	1	76
77	20	1				SPARE	1.7			0.0	0.0	SPARE				20	1	78
79	20	1				SPARE	0.0	6.4			6.4	LE2		1.5	4.9	70	3	80
81	20	1				SPARE	0.0		8.5		8.5	-		5.1	3.4	-	-	82
83	20	1				SPARE	0.0			5.5	5.5	-		1	4.5	-	-	84
TOTALS:						CONNECTED kVA PER PHASE	34	38	34		106	CONNECTED TOTAL kVA				106		
						CONNECTED AMPS PER PHASE	281	316	285		294	CONNECTED AVERAGE AMPS PER PHASE				294		

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING 4kVA @125% =	5 kVA	ALL OTHER LOADS @100% =	74 kVA	DIVERSIFIED TOTAL kVA =	98
RECEPTACLES 10kVA @100% =	10 kVA	25% OF LARGEST MOTOR =	0 kVA	AVERAGE AMPS PER PHASE =	272
REMAINDER 18kVA @ 50% =	9 kVA				

PANEL "LE2"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	AIC RATING:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	100 AMP MAIN LUGS		10,000 AIC	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR, SUBFEED LUGS

CKT	OCP		LOAD (kVA)			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	LOAD (kVA)			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	2			0.8	EUH-3	0.8	1.0			0.2	CO SERVING E140		0.2		20	1	2
3	-	-			0.8	-	0.8		1.0		0.2	CO SERVING E140		0.2		20	1	4
5	20	2			1.0	EUH-2	1.0			2.0	1.0	REFRIGERATOR E140		1.0		20	1	6
7	-	-			1.0	-	1.0	2.1			1.1	GATHERING/LEARN E136		1.1		20	1	8
9	20	2			0.8	EUH-3	0.8		1.6		0.8	CO A/V E139		0.8		20	1	10
11	-	-			0.8	-	0.8			0.8	0.0	SPARE				20	1	12
13	20	2			0.8	EUH-3	0.8	0.8			0.0	SPARE				20	1	14
15	-	-			0.8	-	0.8		0.8		0.0	SPARE				20	1	16
17	20	2			1.7	EUH-1	1.7			1.7	0.0	SPARE				20	1	18
19	-	-			1.7	-	1.7	1.7			0.0	SPARE				20	1	20
21	20	2			1.0	EUH-2	1.0		1.0		0.0	SPARE				20	1	22
23	-	-			1.0	-	1.0			1.0	0.0	SPARE				20	1	24
25	20	1		0.2	0.6	CO FIRE E135/FIRE COMP.	0.8	0.8			0.0	SPARE				20	1	26
27	20	1		1.0		DRINKING FOUNTAIN	1.0		1.0		0.0	SPARE				20	1	28
29	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	30
31	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	32
33	20	1				SPARE	0.0		0.0		0.0	SPARE				20	1	34
35	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	36
TOTALS:						CONNECTED kVA PER PHASE	6	5	6		17	CONNECTED TOTAL kVA				17		
						CONNECTED AMPS PER PHASE	53	45	46		48	CONNECTED AVERAGE AMPS PER PHASE				48		

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING 0kVA @125% =	0 kVA	ALL OTHER LOADS @100% =	13 kVA	DIVERSIFIED TOTAL kVA =	17
RECEPTACLES 5kVA @100% =	5 kVA	25% OF LARGEST MOTOR =	0 kVA	AVERAGE AMPS PER PHASE =	48
REMAINDER 0kVA @ 50% =	0 kVA				

PANEL "LF"

VOLTS/PHASE/WIRE:	PANEL SIZE & TYPE:	MAIN SIZE & TYPE:	LOCATION:	AIC RATING:	NOTES:
120/208 V, 3 PH 4 WIRE	22" W x 6" D, BOLT-ON	225 AMP MAIN CB		10,000 AIC	

ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR, INSULATED GROUND BAR

CKT	OCP		LOAD (kVA)			DESCRIPTION	LCL	PHASE LOAD			LCL	DESCRIPTION	LOAD (kVA)			OCP		CKT
NO	AMP	POLE	LTG	CO	PWR		kVA	A	B	C	kVA		LTG	CO	PWR	AMP	POLE	NO
1	20	1	1.5			LIGHTING	1.9	2.8			1.3	DRYER LAUNDRY F127			1.3	30	2	2
3	20	1	1.6			LIGHTING	2.0		2.9		1.3	-			1.3	-	-	4
5	30	2			1.3	DRYER LAUNDRY F101	1.3			2.9	1.6	ROOMS F125,F126		1.4	0.2	20	1	6
7	-	-			1.3	-	1.3	2.3			1.0	WASHER LAUNDRY F127		1.0		20	1	8
9	20	1		1.4	0.2	ROOMS F103,F104	1.6		2.0		0.4	CO LAUNDRY F127		0.4		20	1	10
11	20	1		1.0		WASHER LAUNDRY F101	1.0			2.2	1.2	ROOM F119		1.1	0.1	20	1	12
13	20	1		0.6		CO ROOMS F101,F102	0.6	1.8			1.2	ROOM F122		1.1	0.1	20	1	14
15	20	1		1.1	0.1	ROOM F110	1.2		1.5		0.3	CO/EF-1 CUST. F124		0.2	0.1	20	1	16
17	20	1		1.1	0.1	ROOM F107	1.2			2.1	0.9	CO DINING F130		0.9		20	1	18
19	20	1		0.6	0.6	WH/PUMP/FIRE COMP.	1.2	1.8			0.6	CO FAMILY F131		0.6		20	1	20
21	20	1		1.1	0.1	ROOM F111	1.2		2.4		1.2	ROOM F118		1.1	0.1	20	1	22
23	20	1		0.6		CO DINING F113	0.6			1.6	1.0	REFRIGERATOR F132		1.0		20	1	24
25	20	1		0.9		CO FAMILY F114	0.9	3.3			2.4	RANGE F132			2.4	50	2	26
27	20	1		1.0		REFRIGERATOR F115	1.0		3.4		2.4	-			2.4	-	-	28
29	50	2			2.4	RANGE F115	2.4			3.4	1.0	GARBAGE DISP. F132			1.0	20	1	30
31	-	-			2.4	-	2.4	3.4			1.0	DISHWASHER F132			1.0	20	1	32
33	20	1			1.0	GARBAGE DISP. F115	1.0		1.2		0.2	KITCHEN CO F132		0.2		20	1	34
35	20	1			1.0	DISHWASHER F115	1.0			2.9	1.9	RTU-1			1.9	30	3	36
37	20	1		0.2		CO KITCHEN F115	0.2	2.1			1.9	-			1.9	-	-	38
39	30	3			1.9	RTU-1	1.9		3.8		1.9	-			1.9	-	-	40
41	-	-			1.9	-	1.9			3.8	1.9	RTU-1			1.9	30	3	42
43	-	-			1.9	-	1.9	3.8			1.9	-			1.9	-	-	44
45	30	3			1.9	RTU-1	1.9		3.8		1.9	-			1.9	-	-	46
47	-	-			1.9	-	1.9			2.9	1.0	EUH-2			1.0	20	2	48
49	-	-			1.9	-	1.9	2.9			1.0	-			1.0	-	-	50
51	20	2			1.7	EUH-1	1.7		2.5		0.8	EUH-3			0.8	20	2	52
53	-	-			1.7	-	1.7			2.5	0.8	-			0.8	-	-	54
55	20	2			1.0	EUH-2	1.0	1.3			0.4	EGRESS LIGHTS	0.3			20	1	56
57	-	-			1.0	-	1.0		2.7		1.7	CU-1/DSS-1			1.7	20	2	58
59	20	1		0.4		KITCHEN ISLAND CO	0.4			2.1	1.7	-			1.7	-	-	60
61	20	1		0.8		RTU CO'S	0.8	1.2			0.4	KITCHEN ISLAND CO		0.4		20	1	62
63	20	1				SPARE	0.0		1.0		1.0	SMOKE DETECTORS			1.0	20	1	64
65	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	66
67	20	1				SPARE	0.0	0.0			0.0	SPARE				20	1	68
69	20	1				SPARE	0.0		0.0		0.0	SPARE				20	1	70
71	20	1				SPARE	0.0			0.0	0.0	SPARE				20	1	72
TOTALS:						CONNECTED kVA PER PHASE	27	27	26		80	CONNECTED TOTAL kVA				80		
						CONNECTED AMPS PER PHASE	223	226	220		223	CONNECTED AVERAGE AMPS PER PHASE				223		

NEC DIVERSIFIED LOAD CALCULATIONS

LIGHTING 3kVA @125% =	4 kVA	ALL OTHER LOADS @100% =	57 kVA	DIVERSIFIED TOTAL kVA =	76
RECEPTACLES 10kVA @100% =	10 kVA	25% OF LARGEST MOTOR =	0 kVA	AVERAGE AMPS PER PHASE =	211
REMAINDER 10kVA @ 50% =	5 kVA				

LIGHTING CONTROL PANEL SCHEDULE

LX

RELAY	CIRCUIT	VOLTS	LOAD DESCRIPTION	AUTOMATIC CONTROL ON	AUTOMATIC CONTROL OFF	OVERRIDE CONTROL SCHEDULE	OVERRIDE CONTROL ON	OVERRIDE CONTROL OFF	OTHER CONTROLS	REMARKS
1	LD	120	BLDG A & B CANOPY LTG	EPC	EPC				EPC	
2	LD	120	BLDG E & F CANOPY LTG	EPC	EPC				EPC	
3	LD	120	BLDG C & D CANOPY LTG	EPC	EPC				EPC	
4	LD	120	PARKING LOT LIGHTING	EPC	EPC				EPC	
5		120	SPARE							
6		120	SPARE							

BH = BUSINESS HOURS PER SCHEDULE (EXAMPLE SCHEDULE 1: ON AT 6:00 AM / OFF AT 8:00 PM) - UP TO 6 SCHEDULES PER PANEL AVAILABLE AS SELECTED BY OWNER
SCHEDULE BH-1: LIGHTS ON 7:00 AM / LIGHTS OFF 9:00 PM/MONDAY - FRIDAY EXCLUDING HOLIDAYS
SCHEDULE BH-2: LIGHTS ON 7:00 AM / LIGHTS OFF 10:00 PM / MONDAY - FRIDAY EXCLUDING HOLIDAYS
SCHEDULE BH-3: LIGHTS ON 7:00 AM/LIGHTS OFF 11:PM / 7 DAYS/WEEK
SCHEDULE BH-4: ON CONTROL BY EPC / OFF 11:00 PM
SCHEDULE BH-5: LIGHT ON 7:00 AM CONTROLLED BY IPC OFF 7:00 PM
SCHEDULE BH-6: NOT USED
EPC = EXTERIOR PHOTO CELL
IPC(XXX) = INTERIOR PHOTO CELL. PROVIDE DIMMING CONTROL
LC - OVERRIDE CONTROL WALL SWITCH CONTROL; PUSH ON TURNS CIRCUIT ON FOR AUTO OFF AFTER 30 MINUTES

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PETER E. JOHANSEN
STATE OF UTAH

project:

Tenant Finish for New Brighton Recovery Campus
4905, 4911, 4915, 4925, 4931, & 4953 South 900 East
Salt Lake County, Utah

date

January 04, 2017

revisions

PERMIT SET–December 28, 2016
1 ADDENDUM #1–January 04, 2017
2 ADDENDUM #2–January 06, 2017
3 ADDENDUM #3–January 11, 2017
4 ADDENDUM #4–January 17, 2017
5 ADDENDUM #5–January 19, 2017
6 ADDENDUM #7–April 12, 2017

data

project no:
drawn by:
checked by:

title

PANEL SCHEDULES

sheet

EP603

BUILDING 'D' 4925 South 900 East PARCEL #2 #22081850110000

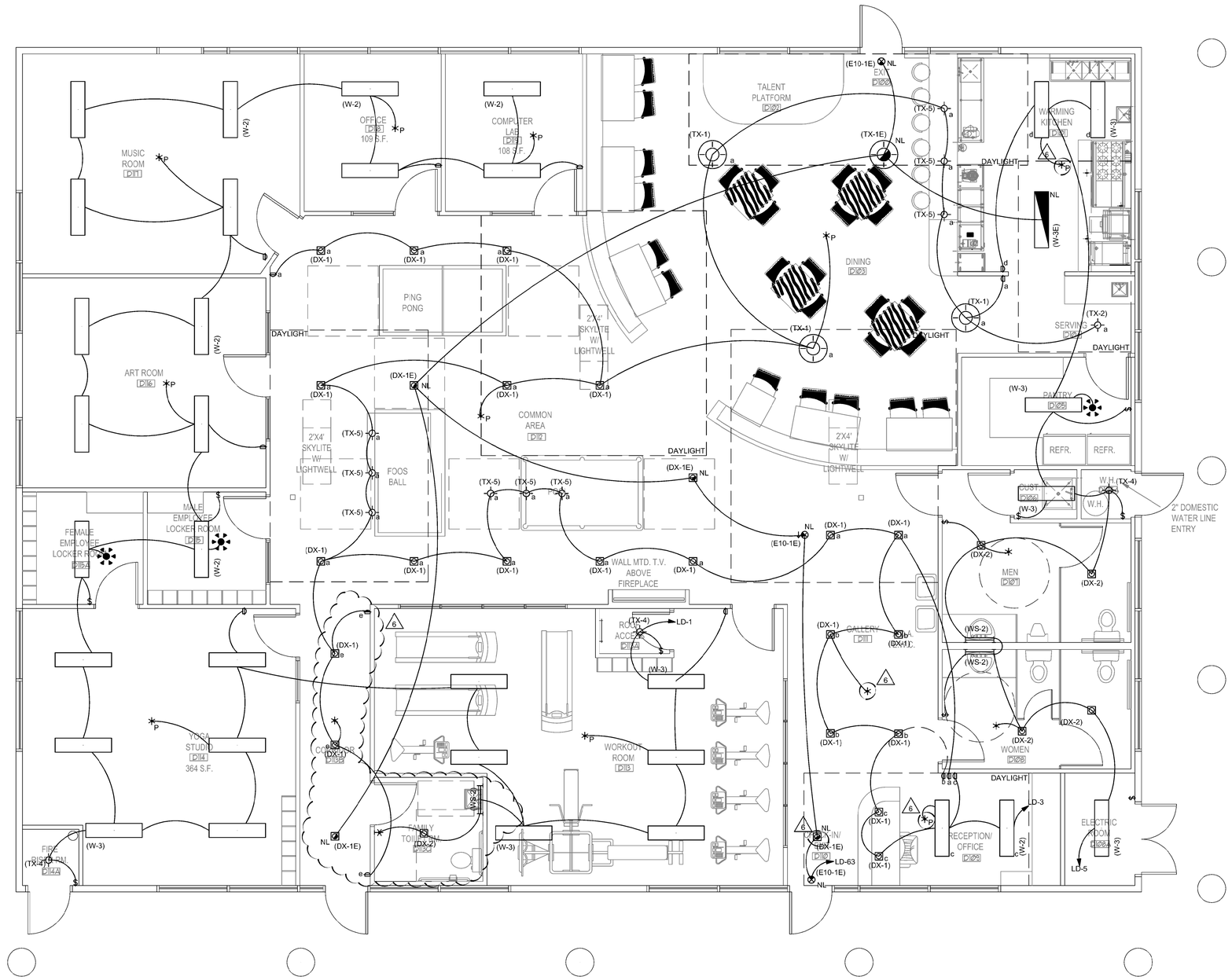
File Name: P:\2016\20160686\1Drawings\3Sheet\Building D\86EP603.dwg Last Plotted: 2017/04/12 @ 1:03 PM By: jrw

GENERAL SHEET NOTES

1. OCCUPANCY SENSORS SHALL NOT TURN LIGHTS ON TO MORE THAT 50%. LIGHTS MUST BE MANUALLY ADJUSTED TO 100%. PHOTOCELLS TO BE SET AT 30 FC. PROVIDE ROOM/DIMMING CONTROLLERS AS NECESSARY TO FACILITATE LIGHTING OPERATION AS DESCRIBED.

⬡ SHEET KEYNOTES

1.



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

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data

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drawn by:
checked by:

title

LIGHTING PLAN - BUILDING 'D'

sheet

EL1 1D

BUILDING 'D' 4925 South 900 East PARCEL #22081850110000

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LIGHTING FIXTURE SCHEDULE

NOTE TO BIDDERS: COMPLY WITH THE SPECIFICATIONS.
REFER TO SPECIFICATIONS FOR IMPORTANT TECHNICAL REQUIREMENTS FOR LIGHTING FIXTURES, BALLASTS, AND LAMPS. THE CATALOG NUMBERS LISTED BELOW HAVE BEEN CAREFULLY PREPARED TO ASSIST BIDDERS IN SELECTING PRODUCTS TO ACHIEVE THE DESIGN CONCEPT, HOWEVER, PRIOR TO BIDDING, EACH MANUFACTURER SHALL COMPARE THE CATALOG NUMBERS SHOWN WITH THE DESCRIPTION AND REQUIREMENTS ON THE DRAWINGS, AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES. SPECIFICALLY INCLUDED IN THIS EVALUATION SHALL BE THE VERIFYING OF PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS. NO ALLOWANCE OR REDRESS WILL BE ALLOWED FOR DISCREPANCIES THAT WERE NOT REPORTED TO THE ARCHITECT/ENGINEER IN TIME FOR CORRECTION OR CLARIFICATION BEFORE THE BID. THE REPORTING OF ANY AMBIGUITY IS THE RESPONSIBILITY OF THE BIDDER. PROVIDE UNIT PRICES AND FIXTURE BRAND SELECTED FOR ADD/DELETE CHANGES FOR EACH FIXTURE TYPES SHOWN WITHIN 48 BUSINESS HOURS OF THE BID DATE. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY DISQUALIFY THE PRODUCTS AND EMPOWER THE ENGINEER TO DETERMINE FAIR VALUE FOR FIXTURE AND INSTALLATION CHANGES, WITHOUT FURTHER INPUT FROM THE CONTRACTCR OR INSTALLER. SUBMITTAL PACKAGE SHALL INCLUDE LAMP MANUFACTURER AND CATALOG NUMBER ON EACH FIXTURE SHEET. ON ALL PENDANT MOUNTED FIXTURES, PROVIDE A SECOND SET OF PENDANTS, OF A DIFFERENT LENGTH, AS DIRECTED BY THE ARCHITECT/ENGINEER, PROVIDED AND INSTALLED AT NO ADDITIONAL CHARGE. ALL FIXTURES SHALL BE APPROVED BY UL OR ANOTHER ACCEPTABLE TESTING LAB FOR THE PURPOSE INTENDED AND WITH THE LAMP AND BALLAST PROPOSED. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED, CONTRACTCR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES. UNIVERSAL VOLTAGE (120/277) BALLASTS REQUIRED UNLESS NOTED OTHERWISE. DIMENSION SEQUENCE = (LENGTH X WIDTH X DEPTH) IN INCHES.

SYMBOL	MARK	FIXTURE CHARACTERISTICS BODY / AIR / MOUNTING / DOOR LENS/LOUVER/REFLECTOR/OTHER	LAMP	WATTS	VOLTS	MANUFACTURER	CATALOG NUMBER	NOTES
	DX	LED DOWNLIGHT. THERMALLY PROTECTED HOUSING: TO ACCOMMODATE MULTIPLE TRIMS AND REFLECTOR ASSEMBLIES FOR LAMPS AS LISTED BELOW; ELECTRONIC BALLASTS; LOW IRIDESCENT REFLECTOR FINISH (EVEN IF NOT SHOWN IN CATALOG #); SELF-FLANGING TRIM UNLESS NOTED.						
6	DX-1	RECESSED DOWNLIGHT; VERTICAL, FULL ON AT 0 VOLTS CONTROL INPUT 6" 3500 K DIMMALE 0-10V	1500 LU 3500k	27W	120/277V	PEACHTREE	6BLRD-IC-18-35K-80-SH-TRW-120 OR EQUIVALENT	
	DX-2	RECESSED DOWNLIGHT; VERTICAL, FULL ON AT 0 VOLTS CONTROL INPUT 6" 3500K, 90 CRI 2000 LUMENS DIMMABLE 0-10V DAMP LOCATION	2000 LI 3500k	54W	120/277V	PEACHTREE	6BLRD-IC-20-35K-80-SH-RCA-120 OR EQUIVALENT	
	DX-4	RECESSED DOWNLIGHT; LED 6" SHOWER LIGHT 4000k	1250 L 3500k	27W	120/277V	PEACHTREE EATON	6BLRD-IC-13-35K-80-SH-RCA-WL-120 SLD612-80-35-WH WITH H7ICAT HOUSING OR EQUIVALENT	
	E	E SUFFIX INDICATES THAT FIXTURE IS PROVIDED WITH AN EMERGENCY BATTERY PACK TO PROVIDE POWER LED LAMPS, TO PROVIDE 90 MINUTES OF EMERGENCY POWER TO FIXTURE. MINIMUM LIGHT OUTPUT FOR TYPICAL 4' LAMP SHALL BE 1100 LUMENS OR HIGHER;UNIVERSAL TRANSFORMER FOR 120 OR 277 VOLTS; LOW VOLTAGE PROTECTION, COMBINATION TEST SWITCH AND AC "ON" INDICATOR; 10 YEAR PRO-RATA WARRANTY; INSTALL TEST SWITCH IN A MANNER THAT REQUIRES NO DISASSEMBLY FOR TESTING.						
	E	EMERGENCY BATTERY PACK. self testing ballasts		3W	120/277V	DUAL-LITE BODINE LITHONIA EMERGI LITE EVENLINT	UFO 6WI RED/TEST PS1400QD SD FPDL/U BAL1400	
	E10	EXIT SIGN: METAL HOUSING; CEILING MOUNT, SEE DRAWINGS; ARROWS PER PLANS; LED LAMPS; EDGE LIGHTED CLEAR LENS; GREEN LETTERS ON CLEAR BACKGROUND. MUST MEET NFPA ILLUMINATION STANDARDS. UNITS SHOWN ARE CEILING MOUNT MODELS. CONTRACTOR TO PROVIDE MATCHING LOW LEVEL WALL MOUNTED UNITS WHERE REQUIRED.						
	E10-1E	SINGLE FACE: WITH EMERGENCY BATTERY PACK	LED 3000K	2W	120/277V	DUAL-LITE MCPHILBEN EELP LITHONIA EVENLITE ISOLITE CHLORIDE LIGHTOLIER	LECSGWA 45VL-1-GC-XX EDG 1 GC W EM LRP W 1 GC XX 120/277 SOV-AC-G-1M WH XX UC EDGL-S-S-G-BK (BLACK HOUSING) STDLX-X-1-GC-X LEAC1GCX	
	E10-2E	DUAL FACE: WITH EMERGENCY BATTERY PACK	LED 3000K	2W	120/277V	DUAL-LITE MCPHILBEN EELP LITHONIA EVENLITE ISOLITE CHLORIDE LIGHTOLIER	LECDGWA 45VL-2-GM-XX EDG 2 GC W EM LRP W 2 GMR XX 120/277 SOV AC G 2M WH XX UC EDGL-D-S-G-BK (BLACK HOUSING) STDLX-X-2-GC-X LEAC2GC7	
	HG	EXTERIOR CANOPY FIXTURES						
	HG-1	RECESSED SQUARE LED CANOPY LIGHT, BRONZE FINISH, WIDE DISTRIBUTION	LED 3000K	50W 3800 LU	120/277V	MCGRAW EDISON	LRC-B16-1-LED-E1-WST	
	OC	WALL MOUNTED TRAPEZOIDAL WALL PACK, WET LOCATION						
	OC-32	LED WALL PACK, TYPE IV OPTICS BRONZE FINISH	LED 3500K	24W 1600 LU	120/277V	LITHONIA	WST-LED-1-10A700-35K-SR4-MVOLT	
	TX	SPECIAL FIXTURES AS INDICATED. MEET ALL REQUIREMENTS OF SPECIFICATIONS AND FIXTURE SCHEDULE. VISUAL AND FINISH APPROVAL REQUIRED.						
	TX-1	Surface Mounted Drum 36" Diameter	LED 3500K	100W	120/277V	SHAPER SPI	122-36-L7-UNV-SN AIC11866-L100.4WDML-PT04-120-277V-3500K-FB01	
	TX-2	Surface Mounted Drum 24" Diameter	LED 3500K	37W	120/277V	SHAPER SPI	122-24-L5-UNV-SN AIC11865-L46.6WDML-PT04-120-277V-3500K-FB01	
	TX-3	Surface Mounted Bedroom Light	LED 3500K	24W	120/277V	BETACALCO	FIERO-60 1200-3500K-PC-SN	
	TX-4	Surface Mounted Closet Light	LED 3000K	22W	120/277v	METALUX	FM-15-W-R-30-R	
	TX-5	PENDANT	LED 3500K	21W	120/277V	SPI	SIP11783-2F21-120-F-AC1	
	W	LOW PROFILE WRAPAROUND: SURFACE MOUNTED SUITABLE FOR MOUNTING ON LOW DENSITY CEILINGS WRAPAROUND ACRYLIC PRISMATIC DIFFUSER; WHITE ENAMEL ENDPLATES; MINIMUM CU OF 70 @ 80/50/20 AND RCR=1;						
	W-2	NARROW BODY WRAPAROUND; APPROX; 3" X 12" X 48" X 48". 5500 LUMENS	LED 3500K	57W	277/120V	EATON	DSI-WD-3-L35-1-D-UNV-SU-JB-4-STD-FC-W	
	W-3	NARROW BODY WRAPAROUND; APPROX; 3" X 10" X 48" X 48", 4800 LUMENS	LED 3500K	48W	277/120V	LITHONIA COLUMBIA METALUX DAYBRITE	LBL4 LP840 LWC4 40 ML EU WNLED LD1 41 " UNV L835 CD1 U OWL450L835UNV	
	WS	WALL MOUNTED LED LOCATED ABOVE WALL ELEMENT (MIRROR/WHITEBOARD, ETC.): AS INDICATED ON DRAWINGS;						
	WS-2	36" LED VANITY LIGHT SATIN CHROM FINISH 2.25" WIDE	LED 3500K	19W	120/277V	EDGE LIGHT EUREKA LBL	TW12 S11 1RE 36" 30k CH 3541 35 LED 17.40 120/277 SC WH LW496 OP XX LED 277	
	ZX	OUTDOOR AREA LIGHT. SINGLE HEAD PER POLE AS SHOWN ON DRAWINGS. WET LABEL. LED LIGHT ENGINE, OPTICS AND DRIVERS ACCESSIBLE FROM BELOW; RATED 100 MPH WITH 1.3 GUST FACTOR						
	ZX-2	LED POLE MOUNTED AREA LIGHT, TYPE II OPTICS, BRONZE FINISH HOUSE SIDE SHIELD 9' SSS POLE, FINISH TO MATCH FIXTURE	LED 3500K	72W 3500 LU	120/277V	LITHONIA	DSX0-LED-20C-*000-35K-T2M-MVOLT-HS	
	ZX-4	LED POLE MOUNTED AREA LIGHT, TYPE IV OPTICS, BRONZE FINISH HOUSE SIDE SHIELD 9' SSS POLE, FINISH TO MATCH FIXTURE	LED 3500K	72W 3500 LU	120/277V	LITHONIA	DSX0-LED-20C-*000-35K-T4M-MVOLT-HS	

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LIGHTING FIXTURE SCHEDULE

sheet

EL601

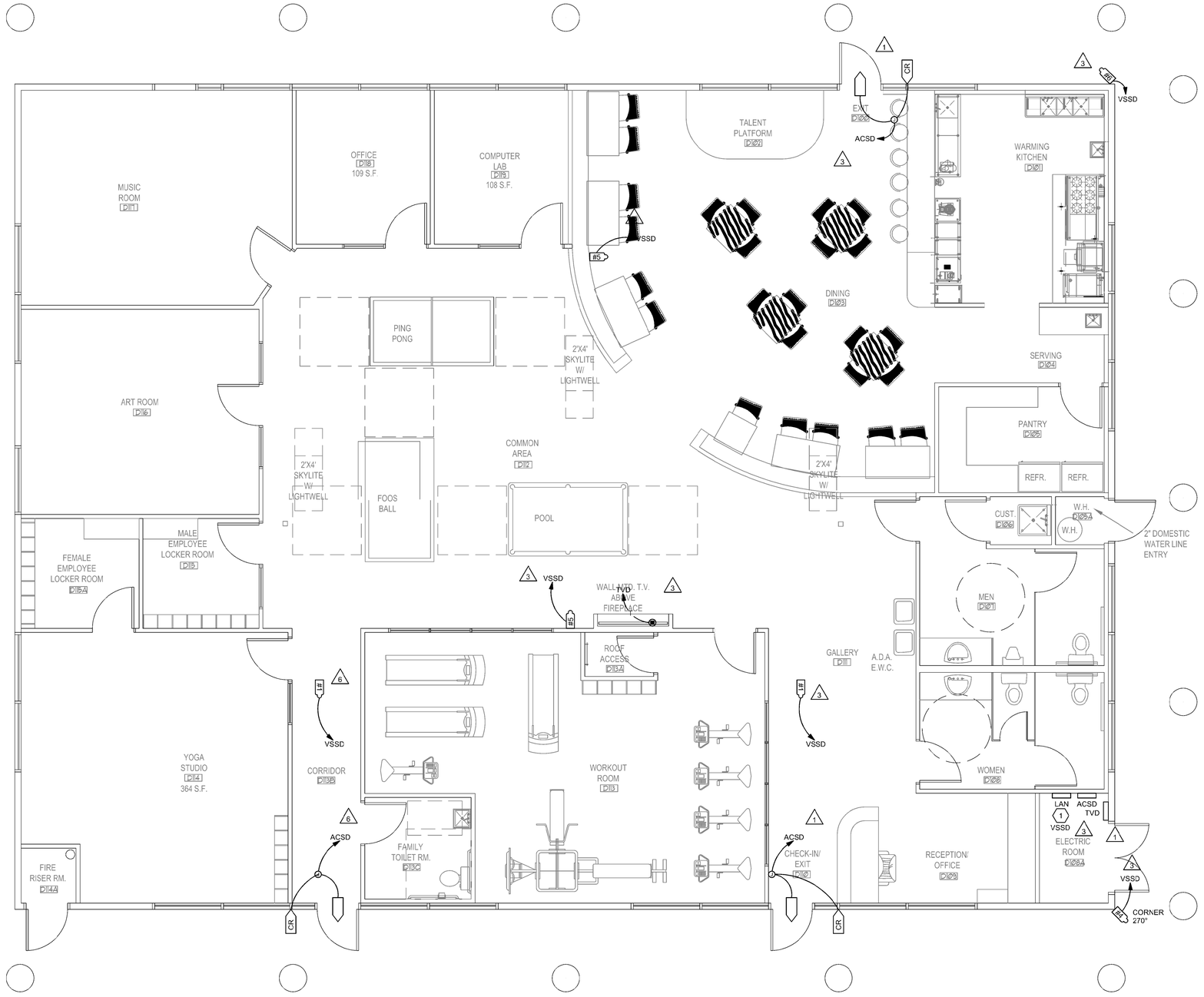
BUILDING 'D' 4925 South 900 East PARCEL #22018501100000

GENERAL SHEET NOTES

1.

SHEET KEYNOTES

1. ALL VIDEO SURVEILLANCE CAMERA CABLING SHALL BE PULLED BACK AND TERMINATED ON A CAT 6 COMPLIANT PATCH PANEL.



1 AUXILIARY PLAN - BUILDING 'D'

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

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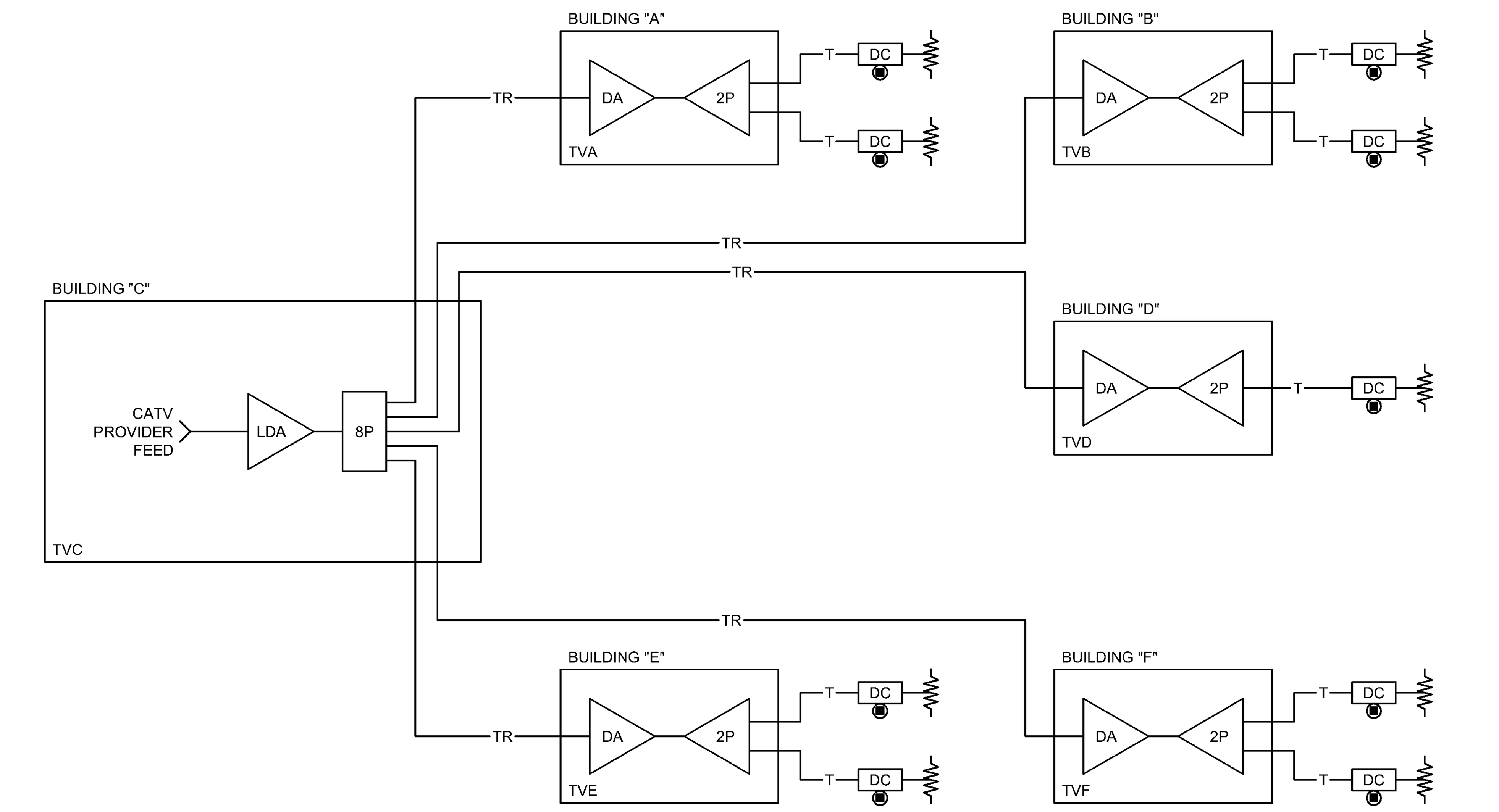
AUXILIARY PLAN - BUILDING 'D'

sheet

EY1 1D

BUILDING 'D' 4925 South 900 East PARCEL #22018501100000



3 TV DISTRIBUTION SYSTEM DIAGRAM

NO SCALE

TV DISTRIBUTION EQUIPMENT LIST

SYMBOL	DESCRIPTION	QTY	ACCEPTABLE TYPES
#P	MULTI-PORT SPLITTER	OFP	2-PORT BLONDER TONGUE SXRS-2 4-PORT BLONDER TONGUE SXRS-4
LDA	BROADBAND AMPLIFIER (LAUNCH)	OFP	BLONDER TONGUE RMDA 750-30
DA	BROADBAND AMPLIFIER	OFP	BLONDER TONGUE ZCM-201
DC	DIRECTIONAL COUPLER/WALL TAP PLATE	OFP	BLONDER TONGUE VERSATAP SERIES MODEL V-3889 SERIES
	RF TERMINATOR	A/R	75 OHM TERMINATOR
T	COAXIAL CABLE, HORIZONTAL DROP	A/R	RG-6 (SEE SPECIFICATIONS)
TR	COAXIAL CABLE, TRUNK	A/R	RG-11 (SEE SPECIFICATIONS)

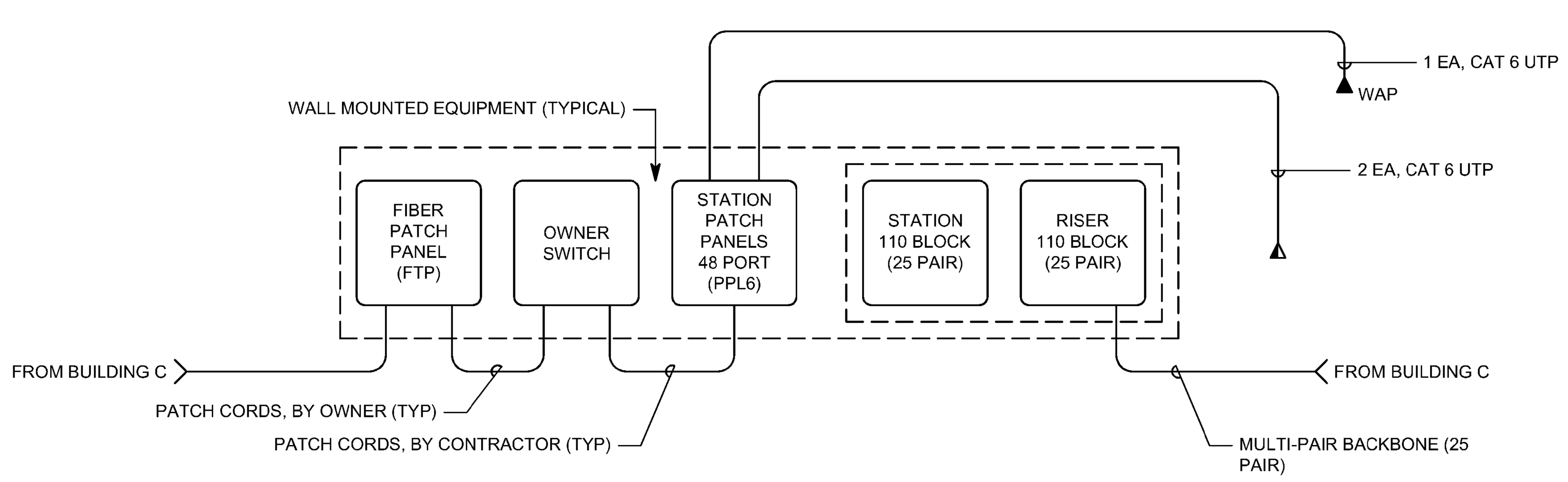
SECURITY EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	MOUNTING *	ROUGH-IN	QTY	ACCEPTABLE TYPES
CR	CARD READER	40"	4SQ W/ 1G RING	OFP	SEE SECTION 281300
#1	CARD ACCESS DOOR TYPE, TYPICAL. REFER TO CARD ACCESS DOOR TYPE SCHEDULE.	SEE SCHEDULE	SEE SCHEDULE	OFP	REFER TO CARD ACCESS DOOR TYPE SCHEDULE & SECTION 281300
1	VSS CAMERA/ENCLOSURE TYPE, TYPICAL. REFER TO VSS CAMERA/ENCLOSURE TYPE SCHEDULE.	SEE SCHEDULE	SEE SCHEDULE	OFP	SEE VSS CAMERA/ENCLOSURE TYPE SCHEDULE
ACS	CARD ACCESS CONTROLLERS & PWR SUPPLIES	72"	4"x4" GUTTER & STUBS A/R	A/R	SEE SECTION 281300
VSS	VIDEO SURVEILLANCE SYSTEM	RACK MOUNTED			COORDINATE WITH OWNER

* COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL ELEVATIONS BEFORE INSTALLATION.

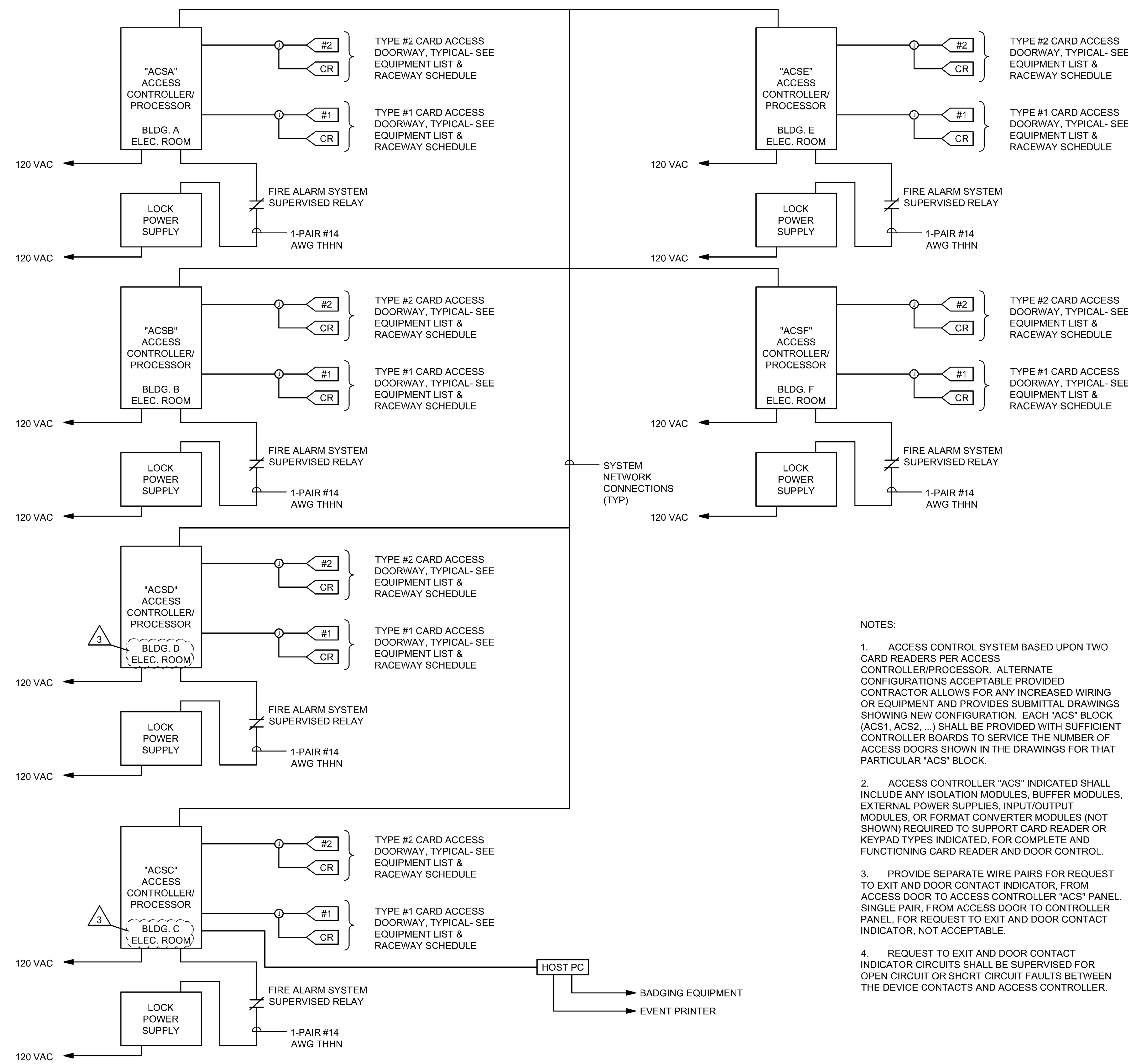
STRUCTURED CABLING SYSTEM NOTES

1. REFER TO EP SERIES SHEETS FOR VOICE/DATA OUTLET QUANTITIES AND LOCATIONS.
2. PROVIDE PLENUM RATED CABLE IN ALL AIR PLENUMS. IF A PLENUM RATED CABLE IS NOT SPECIFIED, PROVIDE THE PLENUM RATED EQUIVALENT TO THE SPECIFIED CABLE.
3. ALL CABLE, REGARDLESS OF LENGTH, INSTALLED UNDER THIS CONTRACT ARE TO BE LABELED.
4. UNLESS OTHERWISE NOTED, INSTALL ALL CABLE INSIDE RACEWAY SYSTEMS. WHERE RACEWAY SYSTEMS HAVE NOT BEEN PROVIDED OR SPECIFIED, INSTALL CABLE THROUGH THE SPECIFIED "CADDIE" CLIPS INSTALLED ABOVE ACCESSIBLE CEILINGS AT THE MINIMUM INTERVALS IDENTIFIED IN THE SPECIFICATIONS. SUPPORT "CADDIE" CLIPS DIRECTLY FROM THE BUILDING STRUCTURE, NOT FROM OTHER BUILDING SYSTEM SUPPORT WIRES OR CABLE.
5. GROUND ALL EQUIPMENT AS DETAILED. COORDINATE GROUNDING WITH ELECTRICAL CONTRACTOR.
6. ALL CABLE, FIBER, AND UTP TO TERMINATED ON BOTH ENDS.
7. ALL VOICE/DATA SYSTEMS CABLE IS TO BE INSTALLED INSIDE MINIMUM 1" CONDUIT. STUB CONDUIT FROM JUNCTION BOX LOCATION TO CABLE MANAGEMENT SYSTEM SPECIFIED FOR ACCESSIBLE CEILING.
8. INSTALL ALL ELECTRONIC SYSTEMS EQUIPMENT IN COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS, SEISMIC CODES, AND INDUSTRY WIDE ACCEPTED PRACTICES. SUPPORT EQUIPMENT WEIGHT FROM BUILDING STRUCTURE. DURING THE SUBMITTAL PROCESS, PROVIDE SHOP DRAWINGS WHICH DETAIL PROPOSED MOUNTING FOR ALL SUCH EQUIPMENT.



2 HORIZONTAL WALL MOUNT DIAGRAM (TYP. FOR BUILDINGS A, B, D, E, & F)

NO SCALE



NOTES:

1. ACCESS CONTROL SYSTEM BASED UPON TWO CARD READERS PER ACCESS CONTROLLER/PROCESSOR. ALTERNATE CONFIGURATIONS ACCEPTABLE PROVIDED CONTRACTOR ALLOWS FOR ANY INCREASED WIRING OR EQUIPMENT AND PROVIDES SUBMITTAL DRAWINGS SHOWING NEW CONFIGURATION. EACH "ACS" BLOCK (ACS1, ACS2, ...) SHALL BE PROVIDED WITH SUFFICIENT CONTROLLER BOARDS TO SERVICE THE NUMBER OF ACCESS DOORS SHOWN IN THE DRAWINGS FOR THAT PARTICULAR "ACS" BLOCK.
2. ACCESS CONTROLLER "ACS" INDICATED SHALL INCLUDE ANY ISOLATION MODULES, BUFFER MODULES, EXTERNAL POWER SUPPLIES, INPUT/OUTPUT MODULES, OR FORMAT CONVERTER MODULES (NOT SHOWN) REQUIRED TO SUPPORT CARD READER OR KEYPAD TYPES INDICATED, FOR COMPLETE AND FUNCTIONING CARD READER AND DOOR CONTROL.
3. PROVIDE SEPARATE WIRE PAIRS FOR REQUEST TO EXIT AND DOOR CONTACT INDICATOR, FROM ACCESS DOOR TO ACCESS CONTROLLER "ACS" PANEL. SINGLE PAIR, FROM ACCESS DOOR TO CONTROLLER PANEL, FOR REQUEST TO EXIT AND DOOR CONTACT INDICATOR, NOT ACCEPTABLE.
4. REQUEST TO EXIT AND DOOR CONTACT INDICATOR CIRCUITS SHALL BE SUPERVISED FOR OPEN CIRCUIT OR SHORT CIRCUIT FAULTS BETWEEN THE DEVICE CONTACTS AND ACCESS CONTROLLER.

1 ACCESS CARD SYSTEM (ACS) RISER DIAGRAM

1/8" = 1'-0"

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AUXILIARY RISER DIAGRAMS

sheet

EY601

BUILDING 'D' 4925 South 900 East PARCEL #22081850110000

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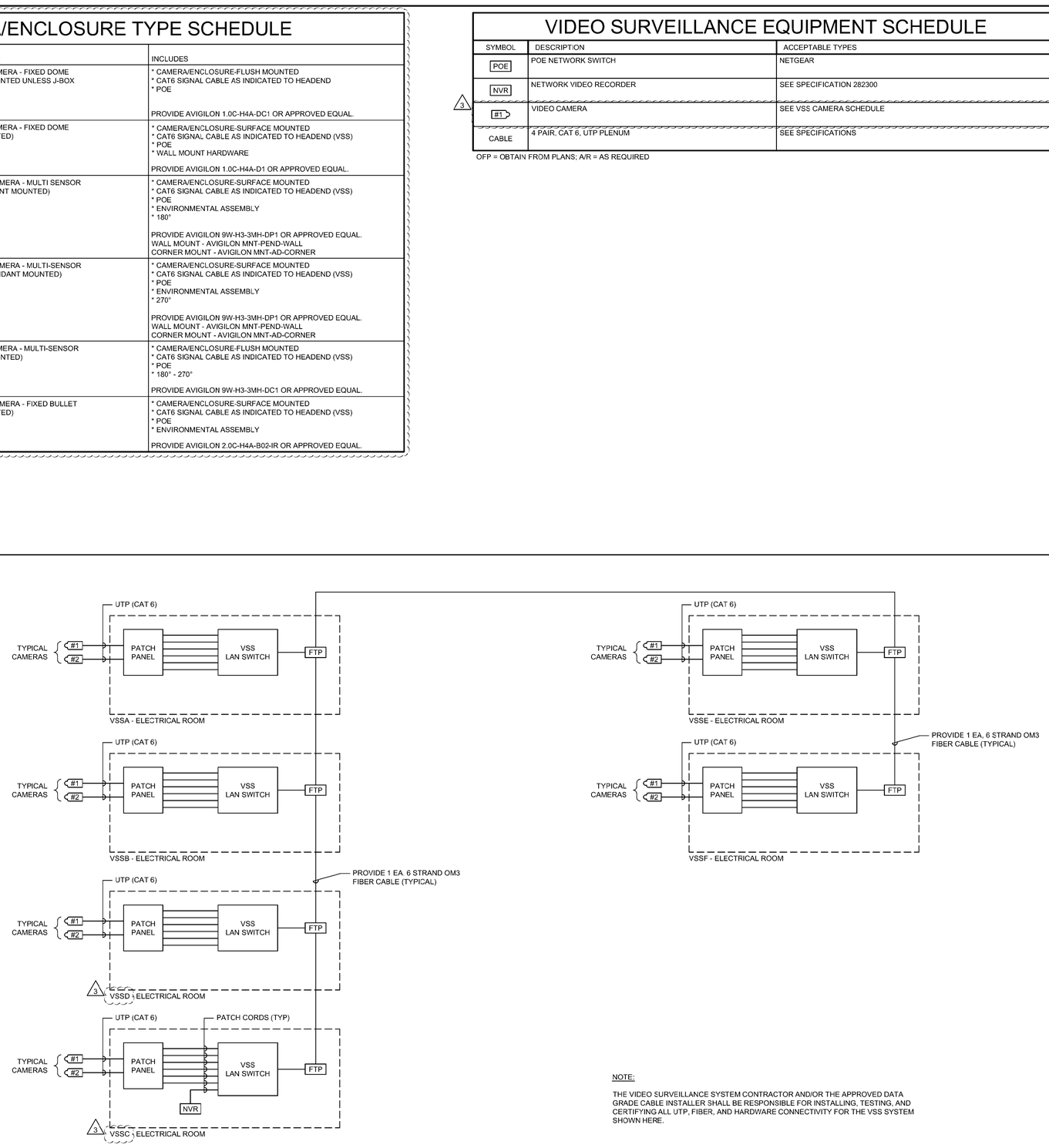
VSS CAMERA/ENCLOSURE TYPE SCHEDULE

CAMERA TYPE NUMBER	SYMBOL	DESCRIPTION	INCLUDES
TYPE 1	#1 VSS	INTERIOR CAMERA - FIXED DOME (CEILING MOUNTED UNLESS J-BOX SHOWN)	* CAMERA/ENCLOSURE-FLUSH MOUNTED * CAT6 SIGNAL CABLE AS INDICATED TO HEADEND * POE PROVIDE AVIGILON 1.0C-H4A-DC1 OR APPROVED EQUAL.
TYPE 2	#2 VSS	INTERIOR CAMERA - FIXED DOME (WALL MOUNTED)	* CAMERA/ENCLOSURE-SURFACE MOUNTED * CAT6 SIGNAL CABLE AS INDICATED TO HEADEND (VSS) * POE * WALL MOUNT HARDWARE PROVIDE AVIGILON 1.0C-H4A-D1 OR APPROVED EQUAL.
TYPE 3	#3 VSS	EXTERIOR CAMERA - MULTI SENSOR (WALL PENDANT MOUNTED)	* CAMERA/ENCLOSURE-SURFACE MOUNTED * CAT6 SIGNAL CABLE AS INDICATED TO HEADEND (VSS) * POE * ENVIRONMENTAL ASSEMBLY * 180° PROVIDE AVIGILON 9W-H3-3MH-DP1 OR APPROVED EQUAL. WALL MOUNT - AVIGILON MNT-PEND-WALL CORNER MOUNT - AVIGILON MNT-AD-CORNER
TYPE 4	#4 VSS	EXTERIOR CAMERA - MULTI-SENSOR (CORNER PENDANT MOUNTED)	* CAMERA/ENCLOSURE-SURFACE MOUNTED * CAT6 SIGNAL CABLE AS INDICATED TO HEADEND (VSS) * POE * ENVIRONMENTAL ASSEMBLY * 270° PROVIDE AVIGILON 9W-H3-3MH-DP1 OR APPROVED EQUAL. WALL MOUNT - AVIGILON MNT-PEND-WALL CORNER MOUNT - AVIGILON MNT-AD-CORNER
TYPE 5	#5 VSS	INTERIOR CAMERA - MULTI-SENSOR (CEILING MOUNTED)	* CAMERA/ENCLOSURE-FLUSH MOUNTED * CAT6 SIGNAL CABLE AS INDICATED TO HEADEND (VSS) * POE * 180° - 270° PROVIDE AVIGILON 9W-H3-3MH-DC1 OR APPROVED EQUAL.
TYPE 6	#6 VSS	EXTERIOR CAMERA - FIXED BULLET (WALL MOUNTED)	* CAMERA/ENCLOSURE-SURFACE MOUNTED * CAT6 SIGNAL CABLE AS INDICATED TO HEADEND (VSS) * POE * ENVIRONMENTAL ASSEMBLY PROVIDE AVIGILON 2.0C-H4A-B02-IR OR APPROVED EQUAL.

VIDEO SURVEILLANCE EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	ACCEPTABLE TYPES
POE	POE NETWORK SWITCH	NETGEAR
NVR	NETWORK VIDEO RECORDER	SEE SPECIFICATION 282300
#1	VIDEO CAMERA	SEE VSS CAMERA SCHEDULE
CABLE	4 PAIR, CAT 6, UTP PLENUM	SEE SPECIFICATIONS

OFP = OBTAIN FROM PLANS; A/R = AS REQUIRED



NOTE:

THE VIDEO SURVEILLANCE SYSTEM CONTRACTOR AND/OR THE APPROVED DATA GRADE CABLE INSTALLER SHALL BE RESPONSIBLE FOR INSTALLING, TESTING, AND CERTIFYING ALL UTP, FIBER, AND HARDWARE CONNECTIVITY FOR THE VSS SYSTEM SHOWN HERE.

1 VIDEO SURVEILLANCE SYSTEM (VSS) RISER DIAGRAM
NO SCALE

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AUXILIARY RISER DIAGRAMS

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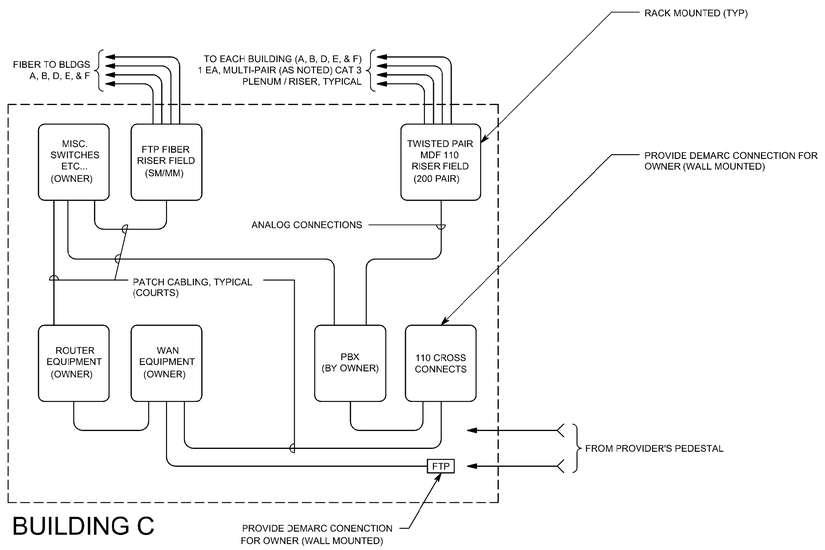


5 MAIN NETWORK ROOM SINGLE LINE DIAGRAM W/UTILITY DEMARC INFORMATION

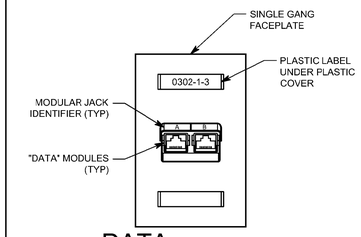
NTS

VOICE/DATA EQUIPMENT/CABLE LIST

GENERAL NOTE:
THIS REPRESENTS ITEMS OF SIGNIFICANCE USED DURING THE DESIGN OF THE CABLING INSTALLATION, WHILE THE ITEMS INDICATED BELOW SHALL NOT BE CONSTRUED AS A "BILL OF MATERIALS". FURNISH ALL MISCELLANEOUS HARDWARE AND SUPPORTS WHICH MAY NOT BE LISTED HERE FOR A COMPLETE INSTALLATION. COMPARE CATALOG NUMBERS WITH DESCRIPTION AND PRIOR TO PURCHASING ANY EQUIPMENT OR CABLE. REFER TO SECTION 16741 FOR ADDITIONAL INFORMATION. NOTIFY ENGINEER OF DISCREPANCIES PRIOR TO BID AND PROVIDE COMPLETE SUBMITTAL FOR APPROVAL.

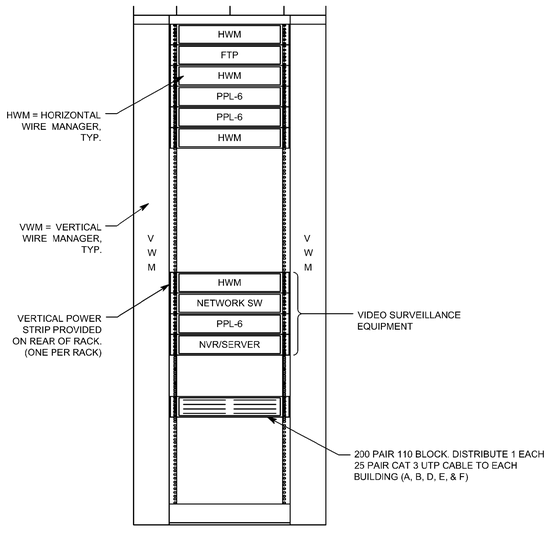
SYMBOL	ITEM DESCRIPTION	COMMENTS
	4 PAIR 24 GAUGE CAT 6 UTP, PLENUM CABLE	SEE SPECIFICATIONS
	6 STRAND FIBER PLENUM CABLE, MULTI-MODE (OM3)	SEE SPECIFICATIONS
PPL6-48	48-PORT PATCH PANEL WITH CAT 6 RJ45 JACKS; MOUNTED IN RACK.	PROVIDE FOR QUANTITY OF PORTS SHOWN ON DRAWINGS, PLUS 20%
FTP	SC TYPE CONNECTOR PANEL - PORTS AS REQUIRED	PROVIDE MODULAR TYPE WITH ADAPTOR PLATES.
	DATA RACK, FLOOR MOUNTED	OPEN RACK, STANDARD 19", PROVIDE RACKS AS SHOWN IN ROOM LAYOUT DETAILS. SEE SPECIFICATIONS.
WAP	DATA JACK, 2 CAT 6 CABLES EACH	PROVIDE WITH CAT 6 COMPLIANT RJ45 MODULAR CONNECTORS. SEE DETAIL.
PATCH CORDS	PATCH CORDS, CAT 6	PROVIDE 1 EACH FOR EVERY CABLE TERMINATED FROM HORIZONTAL CABLING OUTLETS.
	110 STYLE PUNCHDOWN BLOCKS (DUAL SIDED - 1 SIDE STATION, 1 SIDE RISER)	PROVIDE QUANTITY OF PAIRS NEEDED. A 100 PAIR CABLE WOULD NEED 100 PAIR FOR EACH SIDE OF THE BLOCK

NIC = NOT IN CONTRACT



4 DATA PLATE DETAIL (TYP)

NO SCALE

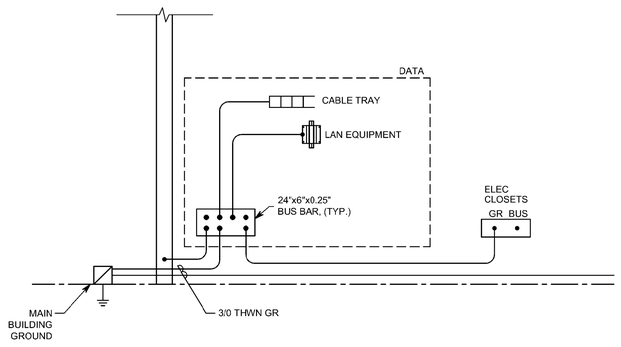


NOTES:

1. RACK LAYOUTS ARE FOR COORDINATION PURPOSES. ALL FINAL RACK LAYOUTS ARE TO BE COORDINATED WITH OWNER PERSONNEL.
2. PROVIDE ALL WIRE MANAGEMENT ACCESSORIES SHOWN.

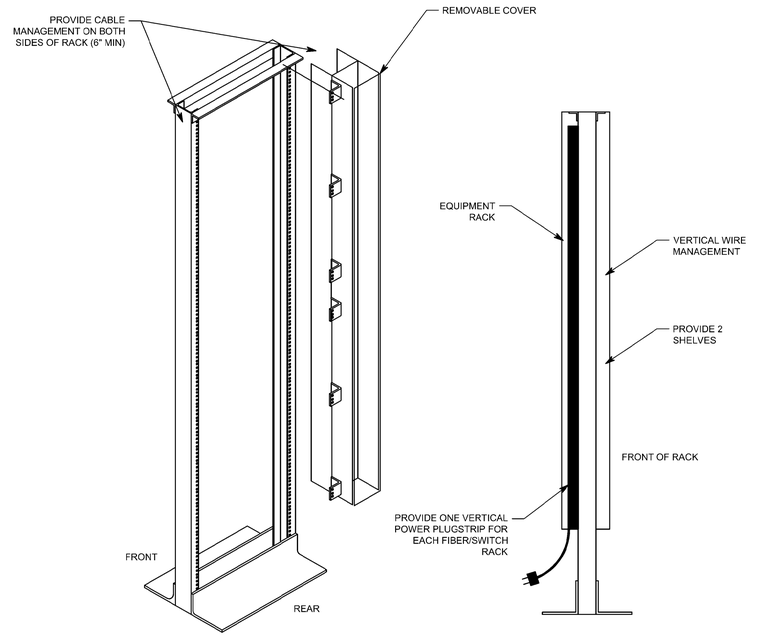
2 HORIZONTAL TERMINATION RACK ELEVATION - BUILDING C

NTS



3 VOICE-DATA GROUNDING AND CONDUIT RISER DIAGRAM

NTS



1 OPEN FRAME EQUIPMENT RACK/RACEWAY MOUNTING DETAILS

NO SCALE

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Salt Lake County, Utah

date

January 04, 2017

revisions

1 PERMIT SET–December 28, 2016
1 ADDENDUM #1–January 04, 2017
2 ADDENDUM #2–January 06, 2017
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4 ADDENDUM #4–January 17, 2017
5 ADDENDUM #5–January 19, 2017
6 ADDENDUM #7–April 12, 2017

data

project no:
drawn by:
checked by:

title

AUXILIARY RISER DIAGRAMS

sheet

6
EY6 03

BUILDING 'D' 4925 South 900 East PARCEL #22081850110000

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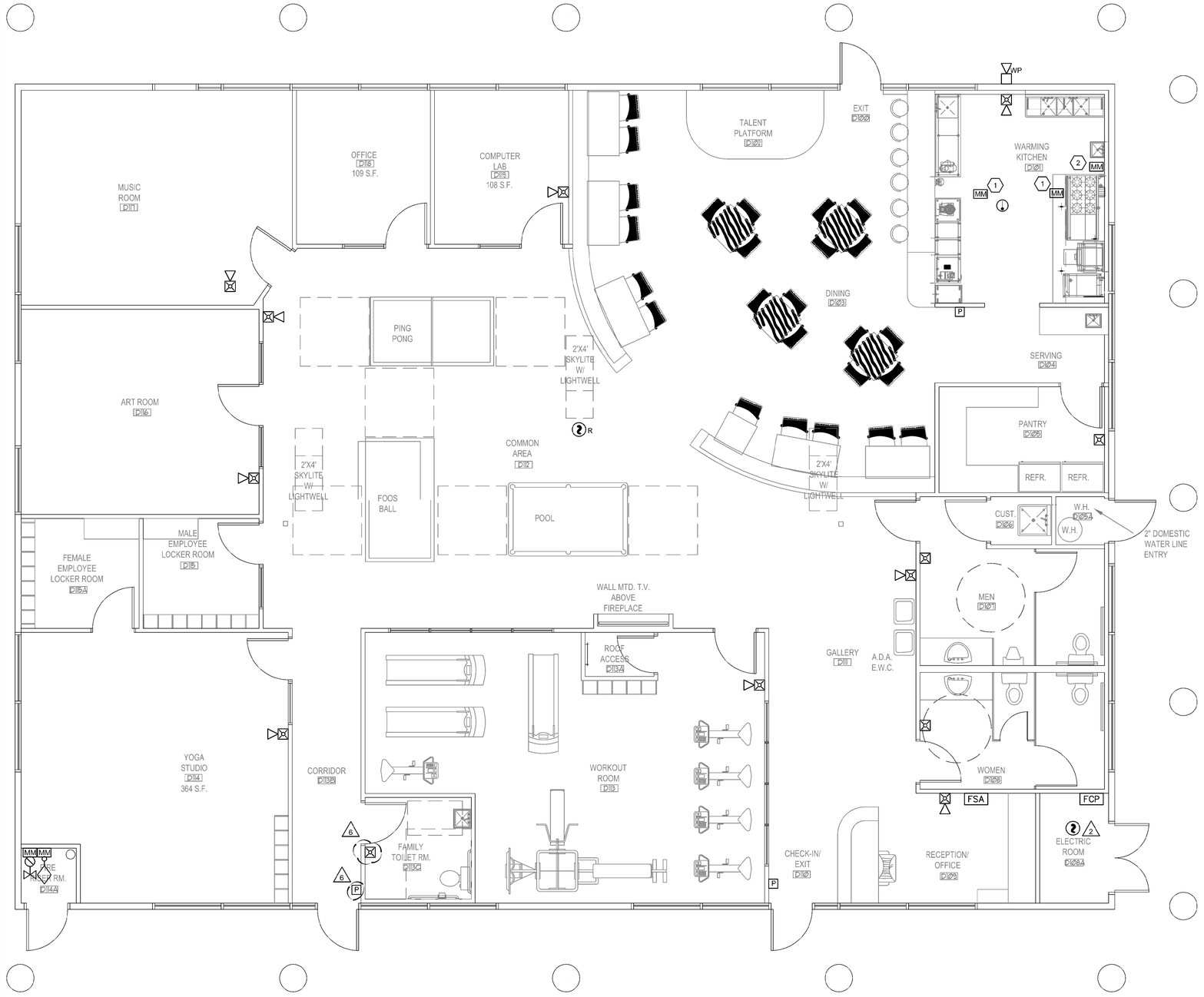

1 FIRE ALARM PLAN - BUILDING 'D'

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

GENERAL SHEET NOTES

1.

SHEET KEYNOTES

1. PROVIDE MONITORING MODULES FOR EXHAUST AND MAKE-UP AIR SYSTEMS AND CONNECT BACK TO FIRE ALARM SYSTEM.
2. PROVIDE MONITORING MODULE FOR ANSUL FIRE SYSTEM PANEL AND CONNECT TO BUILDING FIRE ALARM SYSTEM.

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FIRE ALARM PLAN - BUILDING 'D'

sheet

FA1.1D

BUILDING 'D' 4925 South 900 East PARCEL #22081850110000

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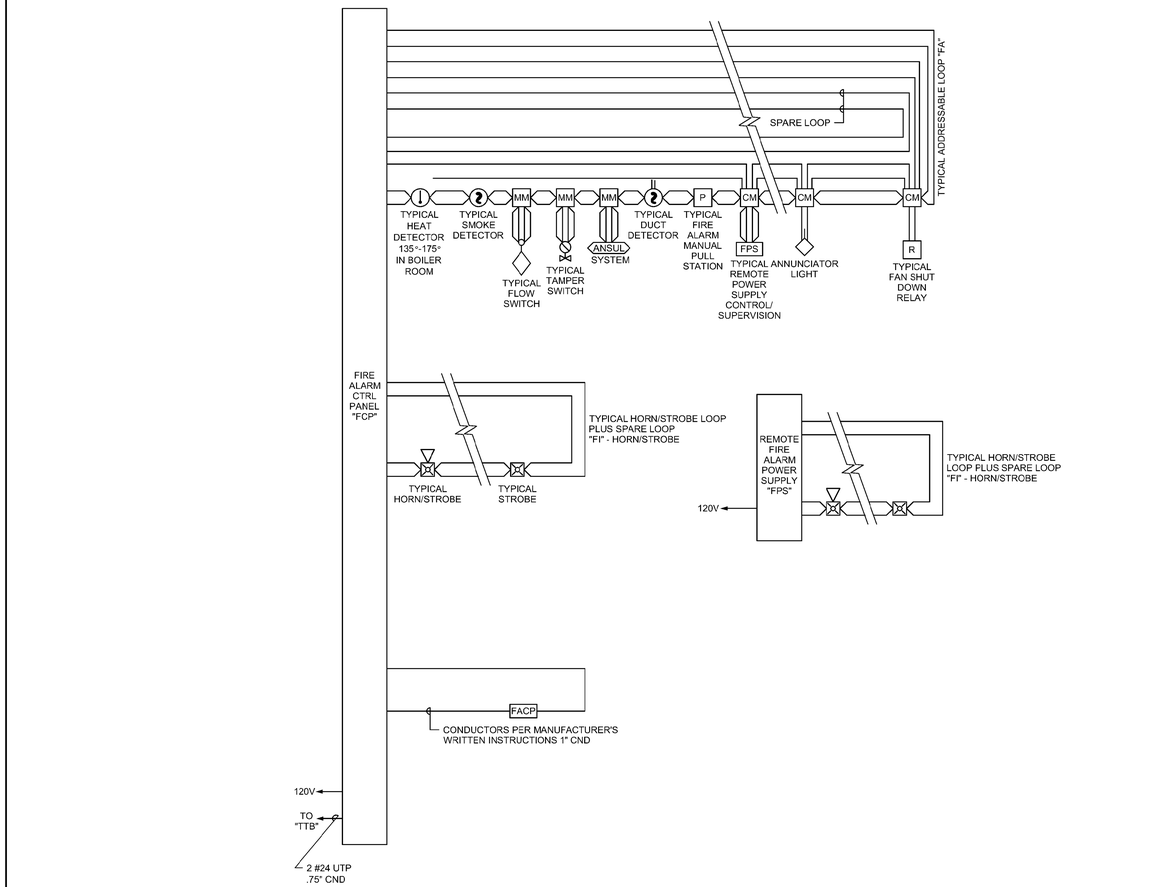
WIRING SCHEDULE

FUNCTION	< 500'	< 1000'	1000'-3000'	> 3000'
ADDRESSABLE LOOP	#18 TSP	#18 TSP	#16 TSP	#14 TSP
POWER LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
SPARE LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
STROBE HORNS	#14 THWN	#14 THWN	#12 THWN	#10 THWN
MAGNETIC DOOR HOLDER	#12 THWN	#10 THWN		
SPEAKERS	#16 TSP	#16 TSP	#14 TSP	#14 TSP

FIRE ALARM INPUT/OUTPUT MATRIX

	ZONE	OUTPUT DEVICES: GENERAL ALARM BLDG 'A'	GENERAL ALARM BLDG 'B'	GENERAL ALARM BLDG 'C'	GENERAL ALARM BLDG 'D'	GENERAL ALARM BLDG 'E'	GENERAL ALARM BLDG 'F'	TROUBLE ALARM	SUPERVISORY ALARM	FAN SHUTDOWN	FIRE DAMPER	NOTES
INITIATING DEVICES	1 RISER BLDG 'A' FLOW	●						●	●			
	2 RISER BLDG 'A' TAMPER									●		
	3 RISER BLDG 'B' FLOW		●					●	●			
	4 RISER BLDG 'B' TAMPER									●		
	5 RISER BLDG 'C' FLOW			●				●	●			
	6 RISER BLDG 'C' TAMPER									●		
	7 RISER BLDG 'D' FLOW				●			●	●			
	8 RISER BLDG 'D' TAMPER									●		
	9 RISER BLDG 'E' FLOW					●		●	●			
	10 RISER BLDG 'E' TAMPER									●		
	11 RISER BLDG 'F' FLOW						●	●	●			
	12 RISER BLDG 'F' TAMPER									●		
	13 BLDG 'A' INITIATING LOOP	●						●	●			
	14 BLDG 'B' INITIATING LOOP		●					●	●			
	15 BLDG 'C' INITIATING LOOP			●				●	●			
	16 BLDG 'D' INITIATING LOOP				●			●	●			
	17 BLDG 'E' INITIATING LOOP					●		●	●			
	18 BLDG 'F' INITIATING LOOP						●	●	●			
	19 CIRCUIT TROUBLE							●				
	20 AC POWER LOSS							●				
	21 LOW BATTERY POWER							●				
	22 SYSTEM TROUBLE							●				
	23 REMOTE POWER SUPPLY TROUBLE							●				



1 FIRE ALARM RISER
NO SCALE

GENERAL SHEET NOTES

1. PLANS ARE BASED UPON 99 MONITOR AND CONTROL DEVICES PER ADDRESSABLE LOOP. OTHER CONFIGURATIONS ARE ACCEPTABLE SUBJECT TO CONTRACTOR ALLOWING FOR INCREASED WIRING REQUIREMENTS AND SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION. MAXIMUM INITIAL DEVICES PER LOOP SHALL NOT EXCEED 75% MAXIMUM ALLOWABLE.
2. PLANS ARE BASED UPON THE WIRING SCHEDULE SHOWN. WHERE MANUFACTURER'S REQUIREMENTS EXCEED REQUIREMENTS SHOWN, INCLUDE ADDITIONAL ASSOCIATED COSTS AND SUBMITTAL DRAWINGS INDICATING NEW WIRING CONFIGURATION.
3. FLOW AND TAMPER CONFIGURATION BASED UPON FIRE SPRINKLER DESIGN CONCEPT. FIELD VERIFY ACTUAL REQUIREMENTS. INCLUDE ANY ADDITIONAL MONITOR MODULES REQUIRED BY ACTUAL DESIGN REQUIREMENTS.
4. BATTERY CAPACITY TO BE ADEQUATE TO OPERATE 15 MINUTES AFTER 24 HOURS PLUS 25% SPARE CAPACITY.
5. VFD REQUIRES TWO RELAYS, ONE FOR SMOKE CONTROL, ONE SPARE.
6. RUN SPARE LOOPS IN SAME CONDUIT. DO NOT EXCEED 40% AREA FILL OF CONDUITS.
7. PROVIDE DUCT DETECTORS FOR SUPPLY AND RETURN AIR SYSTEMS OVER 2000 CFM. INSTALL DUCT DETECTORS PER NFPA 72 REQUIREMENTS AND PROVIDE ADDITIONAL DUCT DETECTORS DEPENDING UPON FINAL DUCT ARRANGEMENT.
8. PROVIDE MANUAL PULL STATIONS IN BOILER ROOMS AND KITCHENS.
9. PROVIDE ONE YEAR OFF SITE MONITORING INCLUDING ALL INTERFACE DEVICES AND MONITORING CHARGES. COORDINATE WITH BUILDING OWNER'S OFF SITE MONITORING COMPANY.
10. LOCATE SMOKE DETECTORS MINIMUM 3' FROM AIR SUPPLY AND RETURN LOUVERS.
11. PROVIDE SYNCHRONIZED STROBES THROUGHOUT FACILITY. PROVIDE SYNCHRONIZATION MODULES PER MANUFACTURER'S REQUIREMENTS. INCLUDE ADDITIONAL WIRING, IF REQUIRED.
12. INITIATING AND INDICATING LOOPS SHALL NOT SERVE AN AREA OF GREATER THAN 22,500 SQUARE FEET. PROVIDE ADDITIONAL LOOPS FOR AREAS LARGER THAN THIS.
13. ALL OUTPUT DEVICES ARE DESIGNED ON SYSTEMS WITH 2 AMP POWER SUPPLY.
14. HORN/STROBE BASED ON 120 MILLIAMPS. DOOR HOLDERS BASED ON 70 MILLIAMPS.
15. INSTALL DUCT DETECTORS PER NFPA 72 REQUIREMENTS AND PROVIDE ADDITIONAL DUCT DETECTORS DEPENDING UPON FINAL DUCT ARRANGEMENT.

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FIRE ALARM RISER DIAGRAM

sheet
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BUILDING 'D' 4925 South 900 East PARCEL #22018501100000

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