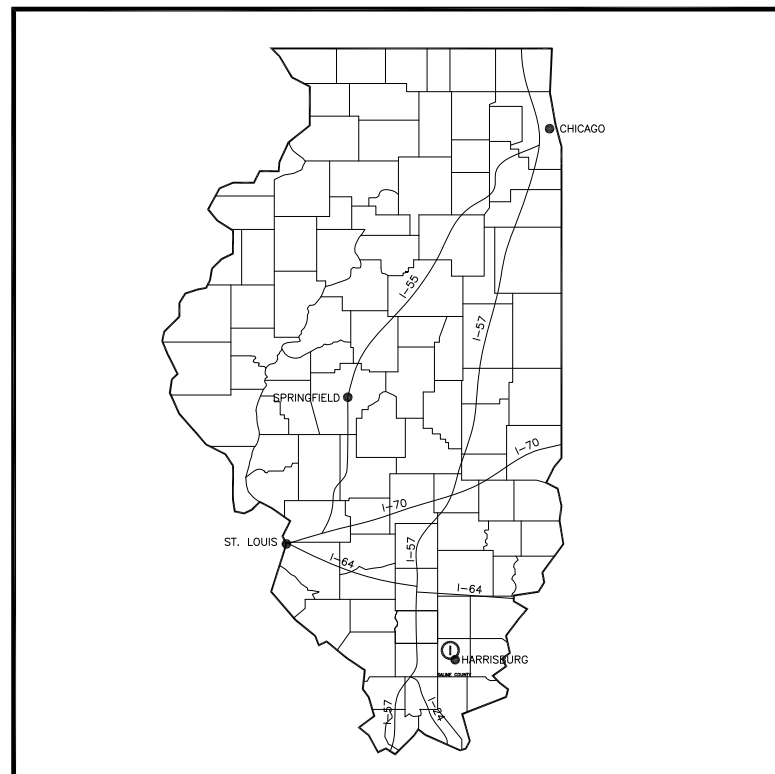


CONSTRUCTION PLANS

FOR

HARRISBURG-RALEIGH AIRPORT

CONSTRUCT A NEW ELECTRICAL VAULT

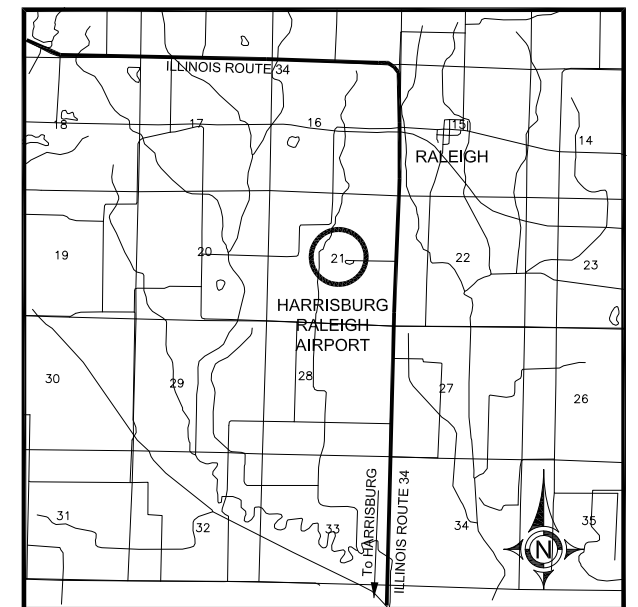
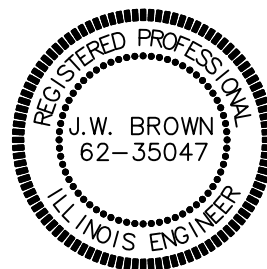


LOCATION MAP

ILLINOIS PROJECT NUMBER: HSB-4524
 SBG PROJECT NUMBER: 3-17-SBGP-XX

HARRISBURG, ILLINOIS
 SALINE COUNTY

DATE: APRIL 15, 2016



VICINITY MAP

PLANS PREPARED BY:



BROWN AND ROBERTS, INC.
 1 WESTRIDGE ROAD
 HARRISBURG, IL. 62946
 (618) 252-8111

BROWN AND ROBERTS, INC.
 CONSULTING ENGINEER
 PRESIDENT

SUBMITTED BY: *Jim W. Brown*
 JIM W. BROWN, PRESIDENT

DATE SUBMITTED: *4/5/16*

LICENSE NUMBER: 062-035047
 LICENSE EXPIRATION DATE: NOVEMBER 30, 2017

DON FULLER
 ELECTRICAL ENGINEER

SUBMITTED BY: *Donald L. Fuller*
 DON FULLER

DATE SUBMITTED: *4/5/16*

LICENSE NUMBER: 062-041196
 LICENSE EXPIRATION DATE: NOVEMBER 30, 2017

HARRISBURG RALEIGH AIRPORT AUTHORITY
 CHAIRMAN

APPROVED BY: *Brad Hershaw* DATE: *3/22/16*
 BRAD HERSHAW

SECRETARY

ATTESTED BY: *Ken Wallace* DATE: *4/5/16*
 KEN WALLACE

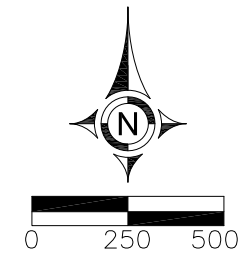
GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, AND TRANSPORTATION NECESSARY TO CONSTRUCT ALL ELEMENTS OF THE PROJECT AS DESCRIBED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS.
2. THE RULES, REGULATIONS, AND SPECIFICATIONS ENUMERATED HEREIN SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS. THEY SHALL NOT PROHIBIT THE CONTRACTOR FROM FURNISHING AND INSTALLING HIGHER GRADES OF MATERIAL THAN ARE SPECIFIED HEREIN.
3. THE CONSTRUCTION ENTRANCE AS SHOWN ON THE SAFETY PLAN ARE ONLY TO BE USED FOR THIS PROJECT. ACCESS TO THE PROJECT FOR ALL HAULING OF MATERIALS AND EQUIPMENT SHALL BE RESTRICTED TO THE DESIGNATED CONSTRUCTION ENTRANCE AND HAUL ROUTE. ACCESS TO THE WORK AREAS FROM THE STAGING AREA SHALL BE COORDINATED WITH THE RESIDENT ENGINEER AND AIRPORT MANAGEMENT.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT, PRESERVE, AND REPAIR THE EXISTING AIRFIELD AND ROADWAY PAVEMENTS AT ALL TIMES. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING ELECTRICAL, DRAINAGE, AND PAVEMENT STRUCTURES AT NO ADDITIONAL COST TO THE CONTRACT.
5. NO EQUIPMENT SHALL BE PERMITTED TO CROSS OR USE ANY EXISTING PAVEMENT OUTSIDE THE CONSTRUCTION LIMITS, GENERAL PROJECT AREA OR ACCESS ROUTE.
6. CONTRACTOR IS REQUIRED TO PROVIDE THEIR OWN RESTROOM FACILITIES.
7. UNLESS OTHERWISE NOTED, ALL DISTURBED AREAS OUTSIDE OF THE PROPOSED CONSTRUCTION LIMITS SHALL BE GRADED, SEEDED AND/OR HYDROMULCH SEEDED AT NO ADDITIONAL COST TO THE CONTRACT.
8. ALL WASTE MATERIAL SHALL BE HAULED FROM THE AIRPORT AND PROPERLY DISPOSED OF UNLESS OTHERWISE SPECIFIED HEREIN.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS FOR HAULING ON PUBLIC ROADS, AS APPLICABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY DAMAGES TO ANY PAVEMENTS (PUBLIC OR PRIVATE) CAUSED BY HIS/HER CONSTRUCTION EQUIPMENT OR PERSONNEL.
10. THE OWNER SHALL HAVE THE RIGHT OF FIRST REFUSAL FOR ALL SALVAGEABLE MATERIAL REMOVED ON THE PROJECT.
11. THE CONTRACTOR SHALL PROVIDE ONE SET OF REDLINED AS-BUILT DRAWINGS TO THE RESIDENT ENGINEER AT THE COMPLETION OF THE PROJECT.
12. CONTRACTOR SHALL NOTE THAT ALL AREAS WITHIN THE AIRPORT PROPERTY LINE AND OUTSIDE THE CONSTRUCTION LIMITS MAY BE USED FOR AGRICULTURAL PURPOSES. THE CONSTRUCTION LIMITS SHALL BE RESTRICTED TO AREAS THAT ARE ABSOLUTELY NECESSARY TO DISTURB TO COMPLETE THE REQUIRED WORK ITEMS. LIMITS SHALL BE COORDINATED WITH THE RESIDENT ENGINEER PRIOR TO BEGINNING ANY WORK. ALL AREAS WHICH HAVE BEEN FARMED AND/OR DESIGNATED TO BE FARMED AFTER THE PROJECT COMPLETION, AND HAVE BEEN DISTURBED BY CONSTRUCTION ACTIVITY, SHALL BE CHISEL PLOWED (36" MAX) OR OTHERWISE SCARIFIED TO RETURN THE AREA TO A REASONABLE TILLABLE CONDITION (IF SO PERMITTED BY THE AIRPORT MANAGER.)
13. CONTRACTOR SHALL RESTORE TO ORIGINAL CONDITION ALL GRASS, STONE, OR PAVEMENT DISTURBED BY CONTRACTOR'S CONSTRUCTION OPERATIONS, STAGING, AND CONSTRUCTION ACCESS ROUTES. DISTURBED AREAS TO BE REPAIRED, GRADED, AND MULCHED SEEDED UNLESS OTHERWISE NOTED. STAGING AREA AND SITE ACCESS RESTORATION WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
14. THE PROJECT PAY ITEMS ARE INTENDED TO BE INCLUSIVE OF ALL WORK TO BE PERFORMED AS SHOWN IN THESE PLANS. ALL INCIDENTAL WORK REQUIRED TO COMPLETE THE PROJECT TO THE SATISFACTION OF THE RESIDENT ENGINEER IS TO BE INCLUDED IN THE COSTS OF PERFORMING THESE ITEMS.
15. APPROXIMATE LOCATIONS OF UNDERGROUND UTILITIES ARE SHOWN THROUGHOUT THESE PLANS. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND PROTECT THESE UTILITIES DURING CONSTRUCTION. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COORDINATE WITH THE PROPER PERSONS FOR THE PURPOSE OF LOCATING AND PROTECTING EXISTING UNDERGROUND UTILITIES.
16. THE CONTRACTOR MUST AT ALL TIMES MAINTAIN PROPER DRAINAGE FOR ALL AREAS AFFECTED BY HIS WORK, TO INCLUDE PIPE CULVERT(S) FOR HAUL/ACCESS ROUTE IF NECESSARY.
17. ANY FENCING OR FENCE POST REMOVAL ON ACCESS ROUTE NECESSARY FOR EQUIPMENT TO ACCESS THE PROJECT AREA SHALL BE REMOVED AND REPLACED AT THE EXPENSE OF THE CONTRACTOR.

SUMMARY OF QUANTITIES			
ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY
AR108258	2/C #8 5 KV UG CABLE IN UD	L.F.	480
AR108654	3/C #4 600 V UG CABLE IN UD	L.F.	560
AR108656	3/C #6 600 V UG CABLE IN UD	L.F.	140
AR108658	3/C #8 600 V UG CABLE IN UD	L.F.	150
AR109110	ERECT PREFABRICATED VAULT	L.S.	1
AR109200	INSTALL ELECTRICAL EQUIPMENT	L.S.	1
AR110610	ELECTRICAL HANDHOLE	EACH	4

INDEX OF SHEETS	
SHEET NUMBER	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES, INDEX OF SHEETS & GENERAL NOTES
3	RUNWAY SAFETY PLAN
4	SITE PLAN
5	AIRPORT CONTROL DIAGRAM
6	SINGLE LINE DRAWING
7	GROUNDING PLAN
8	ELECTRICAL EQUIPMENT PLAN
9	VAULT ELEVATIONS
10	LIGHTING AND RECEPTACLE PLAN
11	L-821 CONTROL PANEL
12	VAULT FOUNDATION DETAILS
13	ELECTRICAL SERVICE DETAILS / SUGGESTED SEQUENCE OF WORK
14	ELECTRICAL AND AIRFIELD LIGHTING NOTES
15	POWER AND CONTROL NOTES

HARRISBURG-RALEIGH AIRPORT	
IL PROJECT NO. HSB-4524	
SBG NO. 3-17-SBGP-XX	
SUMMARY OF QUANTITIES, INDEX OF SHEETS & GENERAL NOTES	
SHEET 2 OF 15	HA028



SCOPE OF WORK

THE PROJECT SCOPE CONSISTS OF THE CONSTRUCTION OF A NEW ELECTRICAL VAULT AND OTHER NECESSARY AND RELATED WORK.

PROPOSED SAFETY PLAN

GENERAL- THE HARRISBURG-RALEIGH AIRPORT AUTHORITY CURRENTLY HAS A PAVED RUNWAY 6-24 WHICH IS 5013 FT. x 75 FT. AND A PAVED RUNWAY 14-32 WHICH IS 2820 FT. x 75 FT.

IT IS ANTICIPATED THAT NO CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT WILL IMPACT ANY AIRCRAFT OPERATIONS ON THE AIRPORT RUNWAYS.

CONTRACTOR'S RESPONSIBILITIES

IDENTIFICATION- THE CONTRACTOR'S VEHICLES AND EQUIPMENT SHALL BE PROPERLY MARKED WITH 3-FOOT SQUARE INTERNATIONAL ORANGE AND WHITE CHECKERED FLAGS ANYTIME THEY ARE ON AIRPORT PROPERTY.

THE CONTRACTOR AND HIS EMPLOYEES SHALL BE RESTRICTED TO THE WORK AREA.

EQUIPMENT PARKING AND STORAGE- THE CONTRACTOR'S EQUIPMENT PARKING, STORAGE, AND EMPLOYEE PARKING WILL BE AT THE LOCATION SHOWN ON THIS SHEET. ONLY CONTRACTOR VEHICLES AND EQUIPMENT REQUIRED FOR CONSTRUCTION WILL BE ALLOWED OUTSIDE THIS AREA.

BARRICADES AND TRAFFIC CONES - IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AND TRAFFIC CONES AS REQUIRED AND AS DIRECTED BY THE RESIDENT ENGINEER. BARRICADES WILL BE LIGHTED WITH RED FLASHING LIGHTS. BARRICADES, THEIR MAINTENANCE, PLACEMENT, AND REMOVAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING PAVEMENTS CAUSED BY HIS PERSONNEL OR EQUIPMENT.

NONCOMPLIANCE WITH CONTRACTOR'S APPROVED SAFETY PLAN MAY RESULT IN FINES AS ALLOWED BY LAW.

HAUL ROUTE AND EQUIPMENT PARKING

THE CONTRACTOR WILL USE THE DESIGNATED HAUL ROUTE AND EQUIPMENT PARKING AREA SHOWN ON THIS SAFETY PLAN. THE PROPOSED EQUIPMENT PARKING AREA WILL BE APPROXIMATELY 150-FT BY 150-FT. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROPOSED HAUL ROUTE AND PARKING AREA THROUGHOUT THE COURSE OF THE PROJECT. AT THE CONCLUSION OF THE PROJECT, ALL AREAS DISTURBED WILL BE RESTORED AS NEEDED TO ITS ORIGINAL STATE. RESTORATION OF THE HAUL ROUTE AND EQUIPMENT PARKING AREA WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

UTILITY NOTE

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES AND ORGANIZATIONS THAT HAVE LINES OR CONDUITS IN THE PROPOSED WORK AREA. ALL LINES AND CONDUITS SHALL BE LOCATED AND IDENTIFIED FOR DEPTH BEFORE ANY EXCAVATION BEGINS. THE CONTRACTOR SHALL CALL JULIE (1-800-892-0123) TO ACCOMPLISH THESE REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL NON-JULIE UTILITIES LOCATED WITHIN THE PROPOSED CONSTRUCTION LIMITS. THESE UTILITIES ARE TO BE LOCATED PRIOR TO THE START OF CONSTRUCTION.

J.U.L.I.E. INFORMATION

COUNTY.....SALINE
 CITY.....HARRISBURG (5 MI NORTH)
 TOWNSHIP.....RALEIGH
 SECTION NO.....21
 NEAREST MAJOR ROAD INTERSECTION...ILLINOIS RT. 34 & AIRPORT DRIVE
 AIRPORT ADDRESS...HARRISBURG-RALEIGH AIRPORT
 PO BOX 33
 HARRISBURG, IL 62946

HEIGHT OF CONSTRUCTION EQUIPMENT

THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT IS 60 FEET. THE TALLEST EQUIPMENT IS EXPECTED TO BE A CRANE WITH THE BOOM EXTENDED IN THE UP POSITION.

NOTE:

THE COST OF CONSTRUCTING, PLACING, MAINTAINING, AND REMOVING CROSSES WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. THE CROSSES WILL BE YELLOW IN COLOR AND SHALL BE MADE OF A SUITABLE MATERIAL AS APPROVED BY THE RESIDENT ENGINEER. THE CROSSES WILL BE PLACED AT THE ENDS OF THE RUNWAY AND SECURED IN A MANNER APPROVED BY THE RESIDENT ENGINEER. THE PROPOSED CROSSES WILL BE PLACED WHEN THE RUNWAY IS CLOSED AND REMOVED WHEN THE RUNWAY IS RE-OPENED. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PLACEMENT AND REMOVAL OF THE CROSSES AT NO ADDITIONAL COST TO THE CONTRACT.

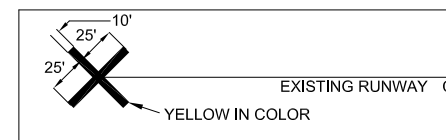
AIRPORT SECURITY

AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. THE PROPOSED HAUL ROUTE SHOWN ON THIS SAFETY PLAN IS THE ONLY ACCESS CONTRACTOR EQUIPMENT AND PERSONNEL WILL BE ALLOWED TO USE. THE CONTRACTOR SHALL PROVIDE BARRICADES AT THIS ACCESS AND ENSURE THE BARRICADES ARE IN PLACE AT THE END OF EACH WORKING DAY.

CLOSURE OF RUNWAY 6/24:

WHEN CONSTRUCTION OPERATIONS MAKE IT NECESSARY FOR THE CONTRACTOR TO BE WORKING CLOSER THAN 200 FEET OF THE CENTERLINE OF RUNWAY 6/24, THE RUNWAY SHALL BE CLOSED PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES WITHIN 200 FEET OF THE CENTERLINE OF RUNWAY 6/24. THE CONSTRUCTION ACTIVITIES SHALL BE STAGED TO MINIMIZE THE CLOSURE TIME OF RUNWAY 6/24.

RUNWAY SHALL REMAIN CLOSED IF THERE ARE ANY OPEN TRENCHES OR PITS EXCEEDING 3" DEPTH WITHIN 200' OF THE CENTERLINE OF RUNWAY 6/24 CAUSED BY EXCAVATING OR CONSTRUCTION ACTIVITIES. THE RUNWAY SHALL NOT BE REOPENED UNTIL THE TRENCHES OR PITS HAVE BEEN RESTORED TO ORIGINAL GRADES.



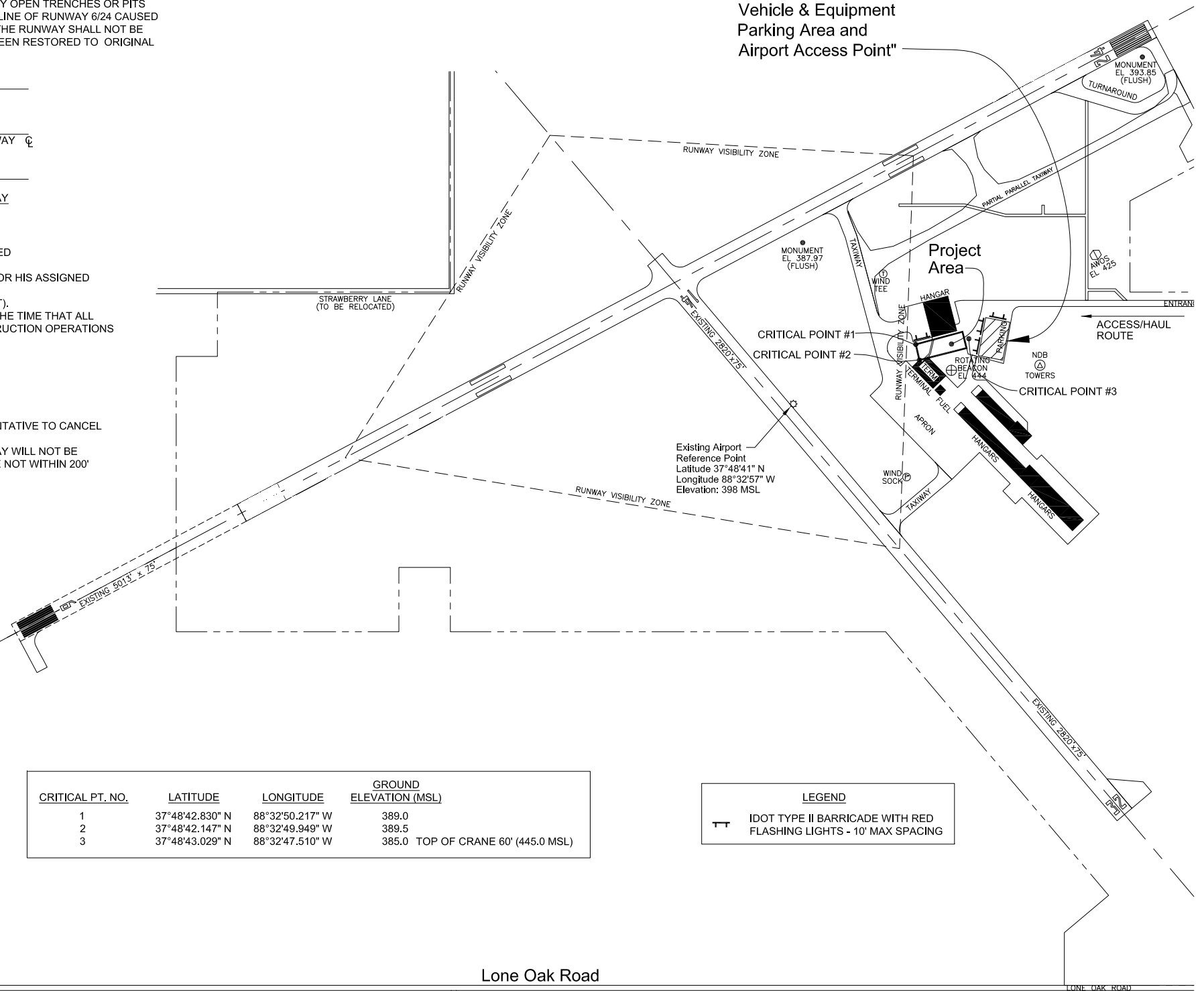
DETAIL OF CROSS FOR CLOSED RUNWAY
 "NOT TO SCALE"

RUNWAY CLOSURE PROCEDURES:

- * CONTACT THE AIRPORT MANAGER OR HIS ASSIGNED REPRESENTATIVE.
- * ISSUANCE OF NOTAM BY THE AIRPORT MANAGER OR HIS ASSIGNED REPRESENTATIVE.
- * PLACEMENT OF CROSSES (SEE DETAIL THIS SHEET).
- * PLACEMENT OF LIGHTED BARRICADES. ONLY AT THE TIME THAT ALL OF THE ABOVE ARE COMPLETED MAY ANY CONSTRUCTION OPERATIONS WITHIN 200' OF THE RUNWAY CENTERLINE BEGIN.
- * RUNWAY LIGHTS SHALL BE DISABLED

RUNWAY RE-OPENING PROCEDURES:

- * REMOVE CROSSES.
- * REMOVE LIGHTED BARRICADES.
- * NOTIFY THE AIRPORT MANAGER OR HIS REPRESENTATIVE TO CANCEL THE NOTAM.
- * CANCELLATION OF THE NOTAM. A CLOSED RUNWAY WILL NOT BE RE-OPENED UNTIL ALL EQUIPMENT AND WORK ARE NOT WITHIN 200' OF THE RUNWAY CENTERLINE.
- * RUNWAY LIGHTS SHALL BE REACTIVATED.



CRITICAL PT. NO.	LATITUDE	LONGITUDE	GROUND ELEVATION (MSL)
1	37°48'42.830" N	88°32'50.217" W	389.0
2	37°48'42.147" N	88°32'49.949" W	389.5
3	37°48'43.029" N	88°32'47.510" W	385.0 TOP OF CRANE 60' (445.0 MSL)

LEGEND	
	IDOT TYPE II BARRICADE WITH RED FLASHING LIGHTS - 10' MAX SPACING



EXISTING CORPORATE HANGAR

EXISTING PARKING LOT

PR PCC SIDEWALK

TO REMAIN

EXISTING SIDEWALK

CORPORATE RAMP

PR (3) 2/C #8 5kV UG CABLE IN UD

EX FENCE TO REMAIN

PR PREFABRICATED ELECTRICAL VAULT

PROPOSED GROUND TRANSFORMER TO BE PLACED BY OTHERS

PR (3) 3/C #4 600V UG CABLE IN UD
 PR (2) 3/C #6 600V UG CABLE IN UD
 PR (1) 3/C #8 600V UG CABLE IN UD

PR (1) 4/C #10 UG IN 1-1/2" SCH 80 PVC

LEGEND

- 1 HIGH VOLTAGE HANDHOLE
- 2 LOW VOLTAGE HANDHOLE

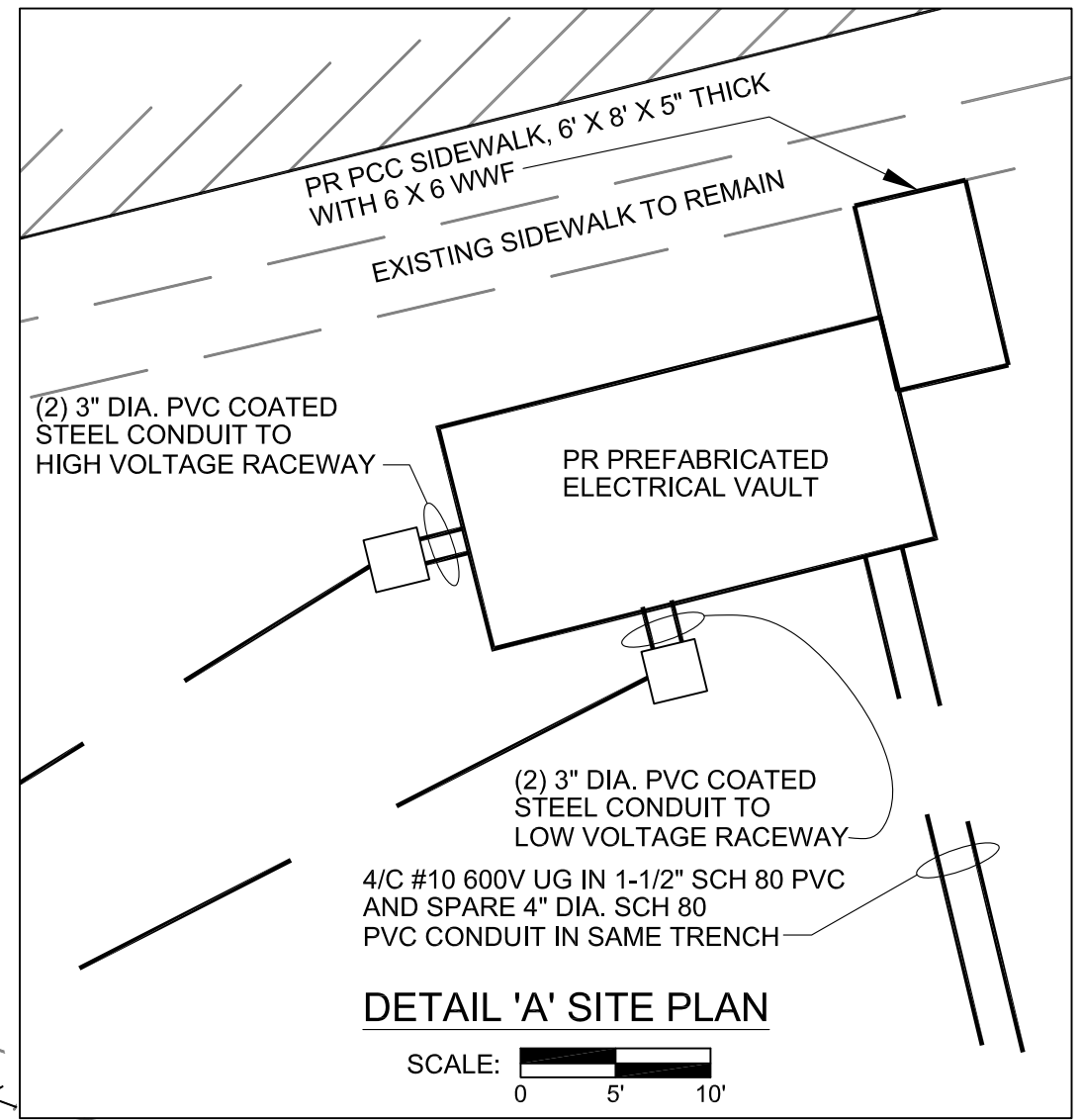
EXISTING MAIN HANGAR/
 ADMINISTRATION BUILDING

EXISTING ROTATING BEACON

EX FENCE TO REMAIN

4" SCH 80 PVC CONDUIT FOR FUTURE USE

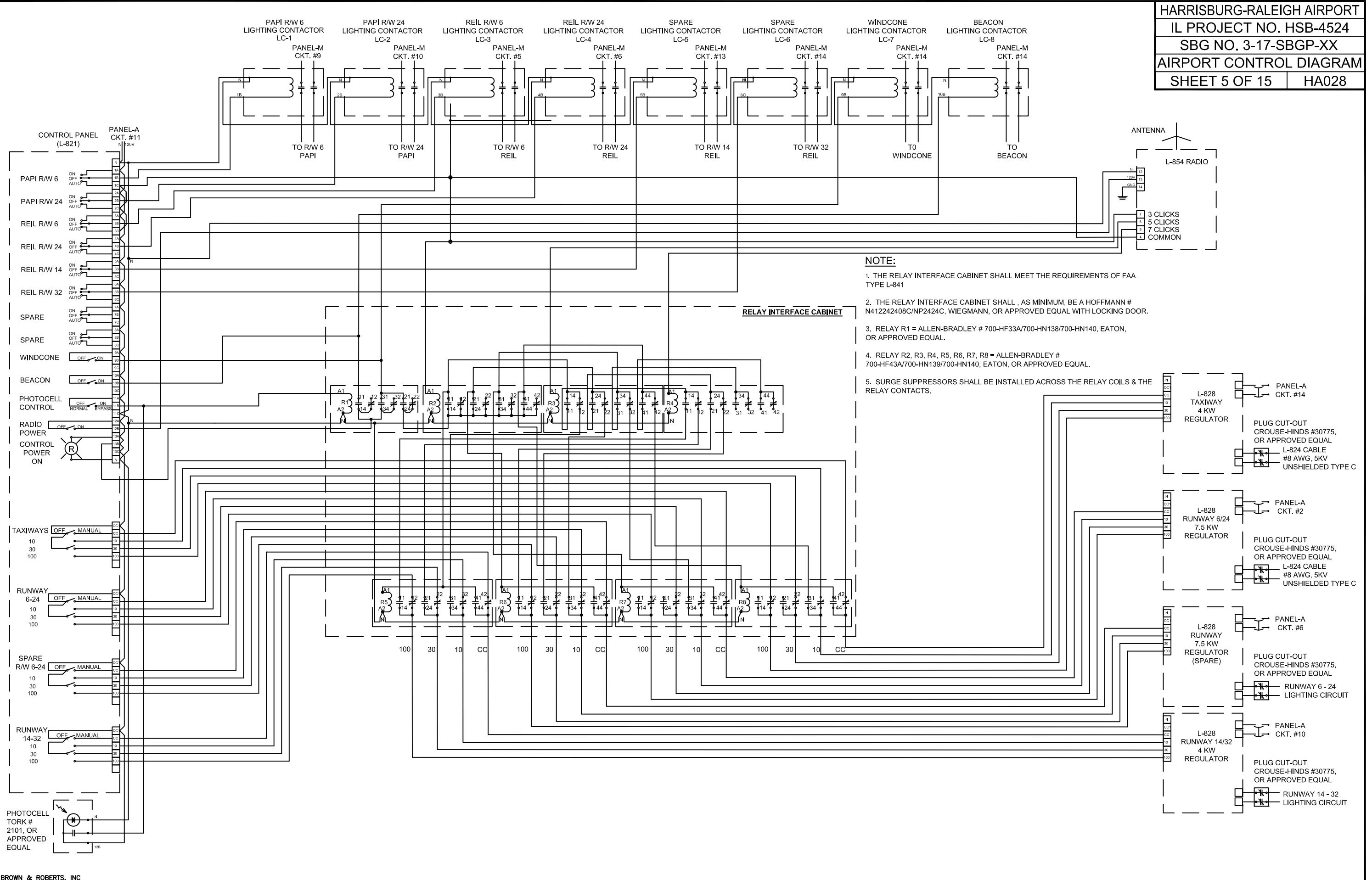
MAIN APRON ACCESS



DETAIL 'A' SITE PLAN

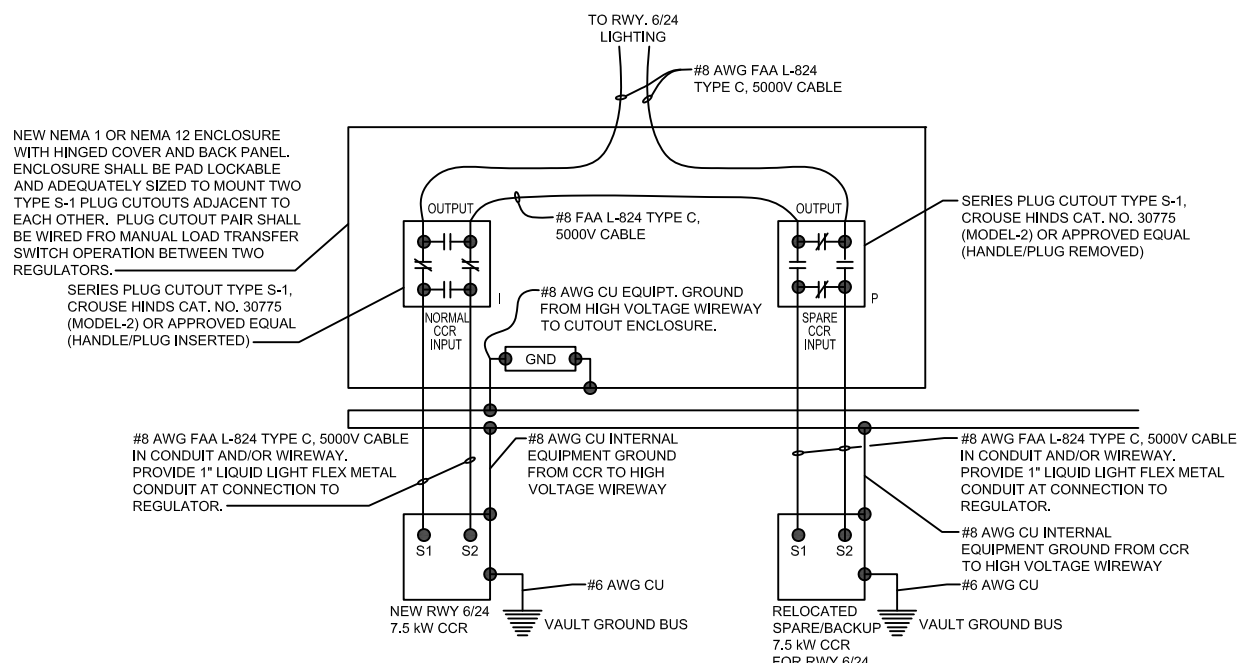
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05 Apr 2016 - 8:09am x:\2015\15179\oc\Construction Plans\15179 Site Plan.dwg: Layout, Tab 'Layout1'

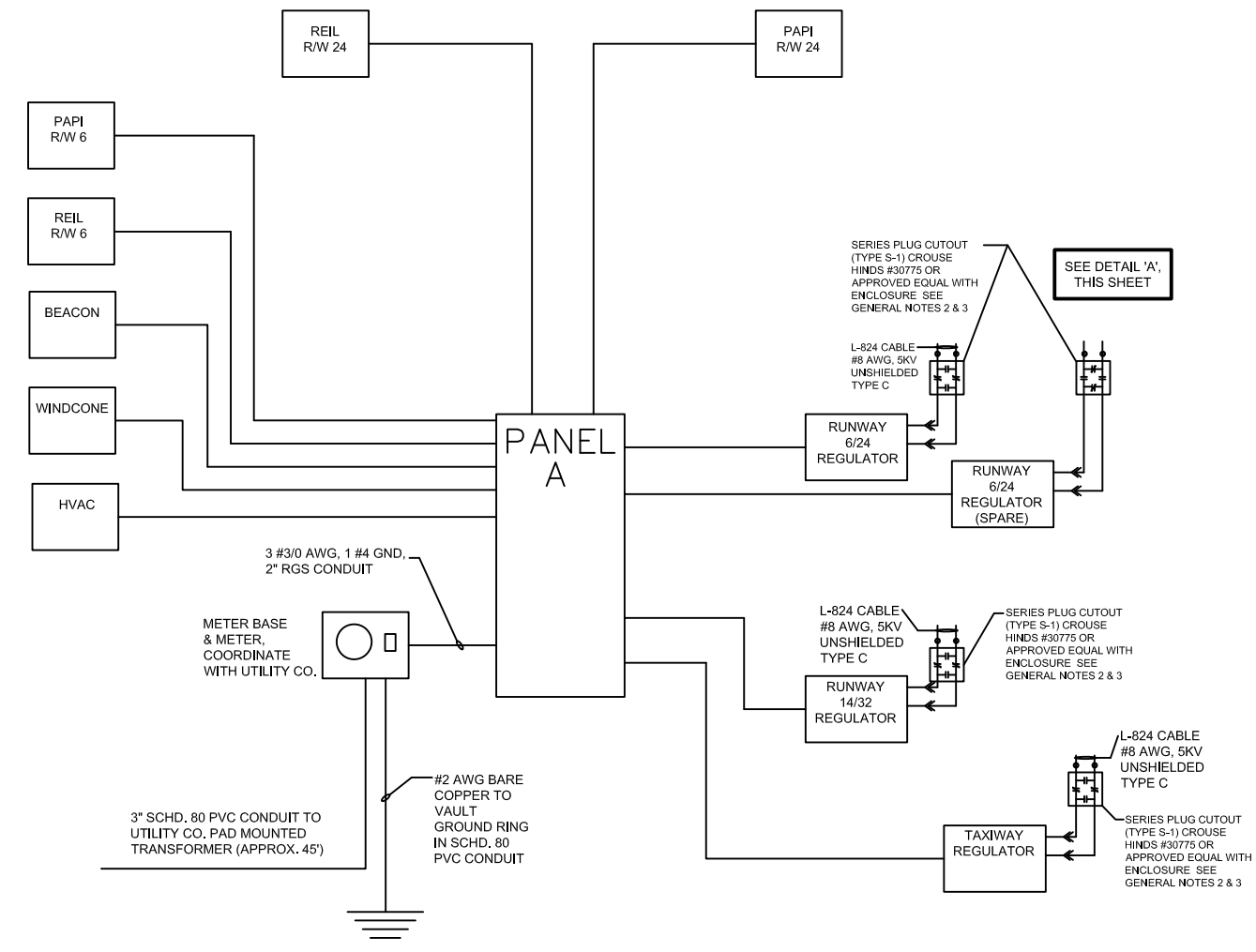


- NOTE:**
1. THE RELAY INTERFACE CABINET SHALL MEET THE REQUIREMENTS OF FAA TYPE L-841
 2. THE RELAY INTERFACE CABINET SHALL, AS MINIMUM, BE A HOFFMANN # N412242408C/NP2424C, WIEGMANN, OR APPROVED EQUAL WITH LOCKING DOOR.
 3. RELAY R1 = ALLEN-BRADLEY # 700-HF33A/700-HN138/700-HN140, EATON, OR APPROVED EQUAL.
 4. RELAY R2, R3, R4, R5, R6, R7, R8 = ALLEN-BRADLEY # 700-HF43A/700-HN139/700-HN140, EATON, OR APPROVED EQUAL.
 5. SURGE SUPPRESSORS SHALL BE INSTALLED ACROSS THE RELAY COILS & THE RELAY CONTACTS.

05 Apr 2016 - 7:49am x:\2015\15179\oc\Construction Plans\15179 Airport Control Diagram.dwg: Layout Tab 'Harrisburg Airport Control Schematic'
 BROWN & ROBERTS, INC



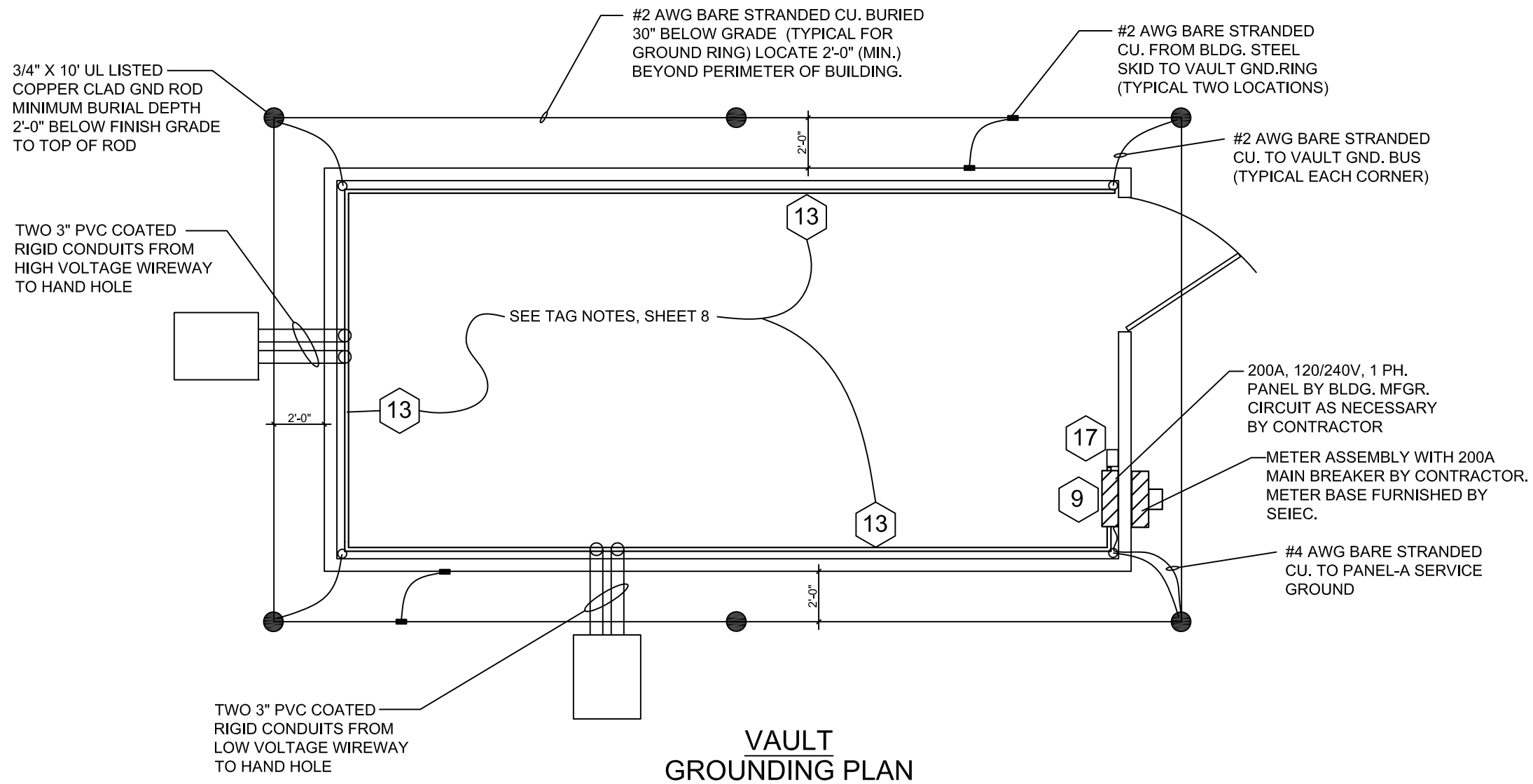
DETAIL 'A'



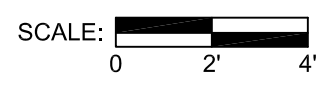
ELEMENTARY SINGLE LINE DIAGRAM
 NO SCALE

PANEL-A, 120/240V, 1Ø, 3W, 200A MAIN BREAKER (NEMA 1, SURFACE MT'D)												
CKT. NO.	WIRE	CKT. BKR.	DESCRIPTION	TOTAL VA	A	B	TOTAL VA	DESCRIPTION	CKT. BKR.	WIRE	CKT. NO.	
1	10'S	2P30	HVAC UNIT	2880	X		3800	RUNWAY 6/24 REGULATOR	2P50	6'S	2	
3	---	---	-----	2880		X	3800	-----	---	---	4	
5	12'S	1P20	VAULT LIGHTING	480	X		3800	RUNWAY 6/24 REGULATOR SPARE	2P50	6'S	6	
7	12'S	1P20	VAULT RECEPTACLES	720		X	3800	-----	---	---	8	
9	12'S	1P20	VAULT RECEPTACLES	900	X		5000	RUNWAY 14/32 REGULATOR	2P60	6'S	10	
11	12'S	1P20	RUNWAY/TAXIWAY CONTROLS	500		X	5000	-----	---	---	12	
13	10'S	1P30	BEACON	1200	X		3800	TAXIWAY REGULATOR	2P40	6'S	14	
15	10'S	1P30	WINDCONE	600	X	X	3800	-----	---	---	16	
17	12'S	2P20	REIL R/W 6	300	X		300	REIL R/W 24	2P20	12'S	18	
19	---	---	-----	300		X	300	-----	---	---	20	
21	12'S	2P20	PAPI R/W 6	900	X		900	PAPI R/W 24	2P20	12'S	22	
23	---	---	-----	900		X	900	-----	---	---	24	
25		1P20	SPARE		X			SPARE	1P20		26	
27		1P20	SPACE			X		SPARE	1P20		28	
29			SPACE		X			SPACE			30	
31			SPACE			X		SPACE			32	
33			SPACE		X			SPACE			34	
35			SPACE			X		SPACE			36	
37			SPACE		X			SPACE			38	
39			SPACE			X		SPACE			40	
41											42	

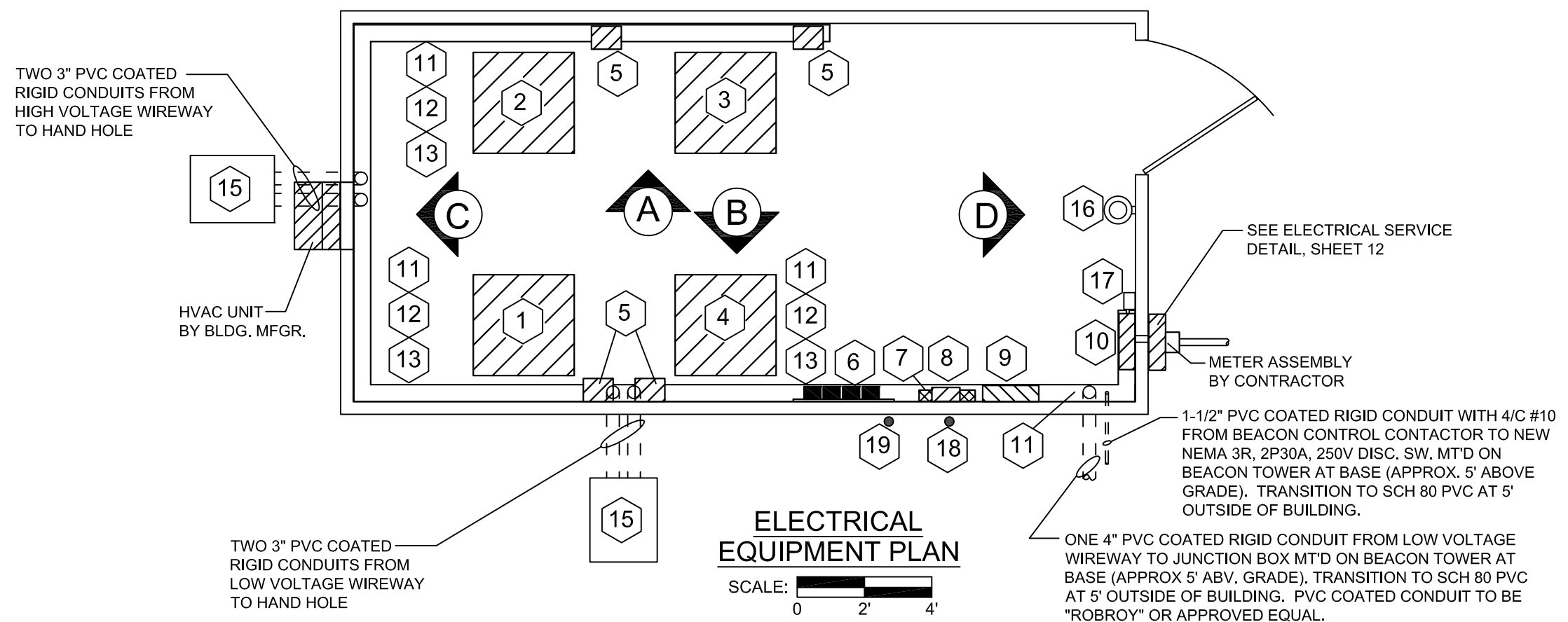
TOTALS	
PHASE 'A' =	24260
PHASE 'B' =	23500
TOTAL LOAD =	47760



**VAULT
GROUNDING PLAN**



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ELECTRICAL EQUIPMENT PLAN

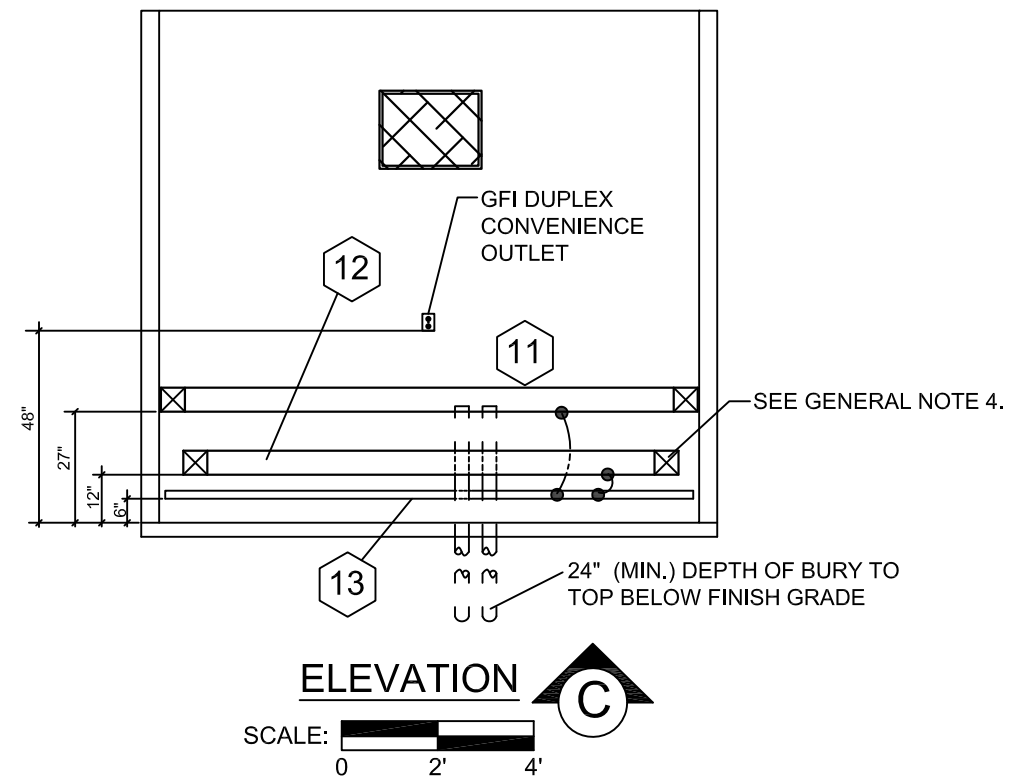
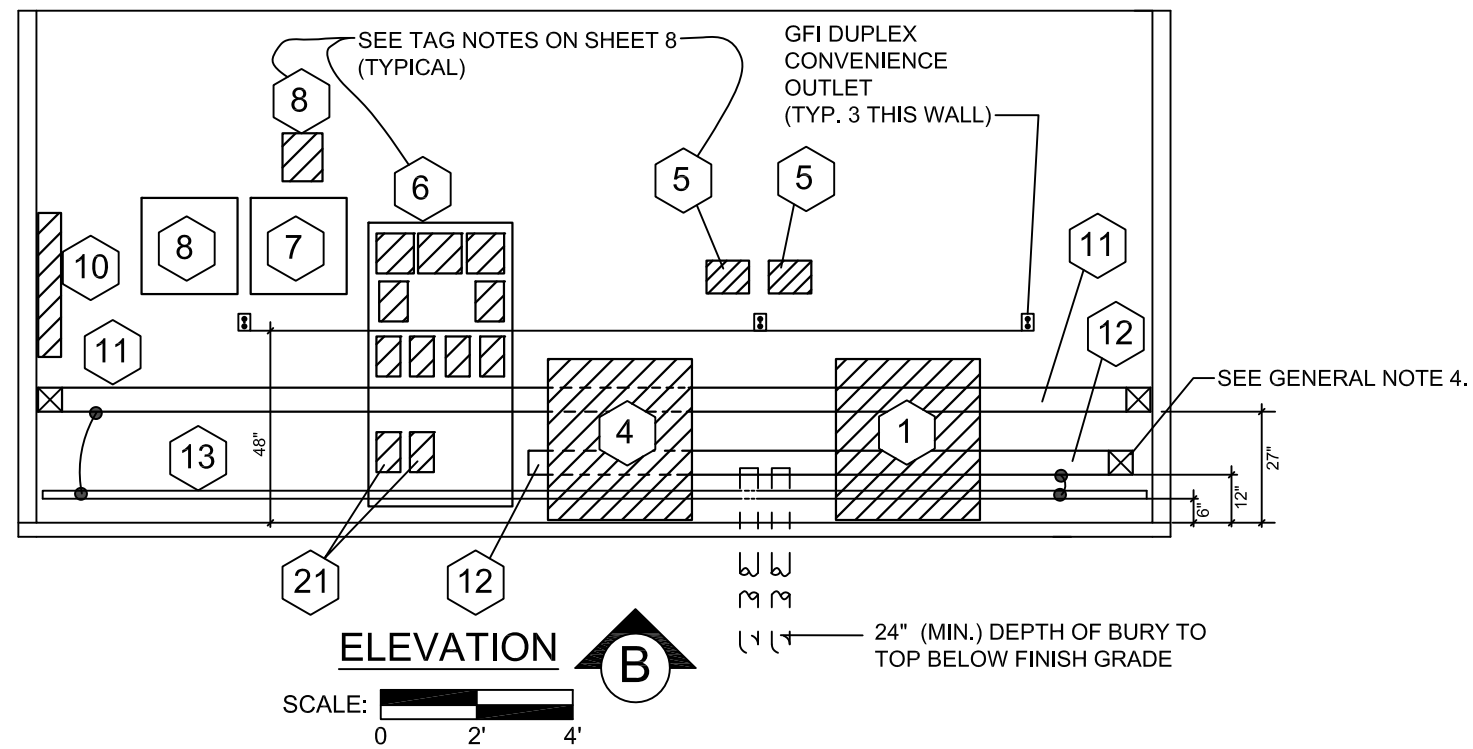
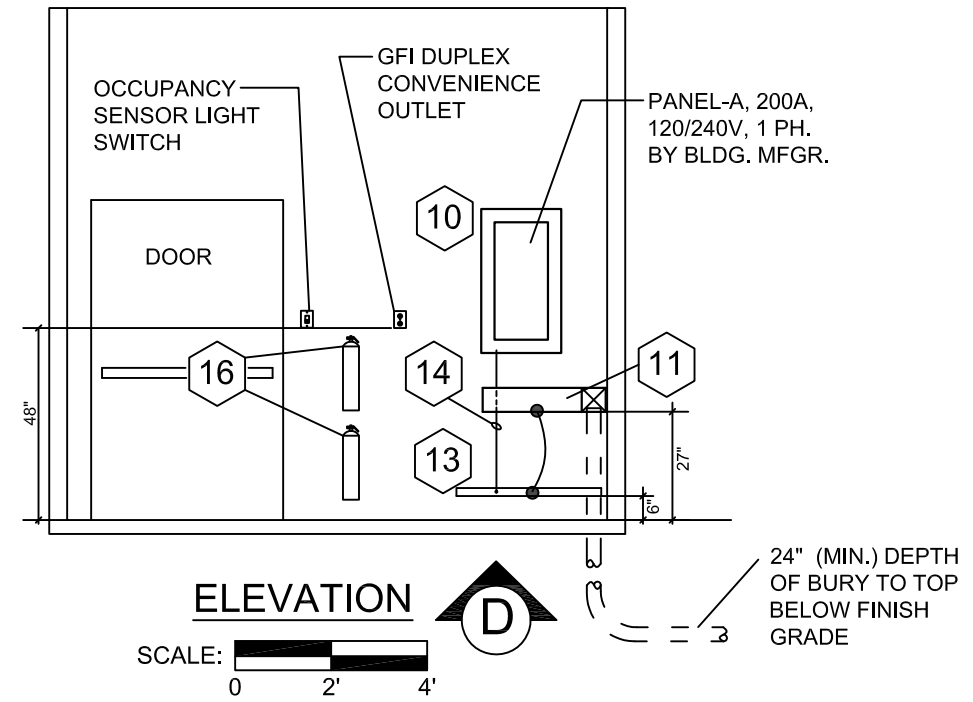
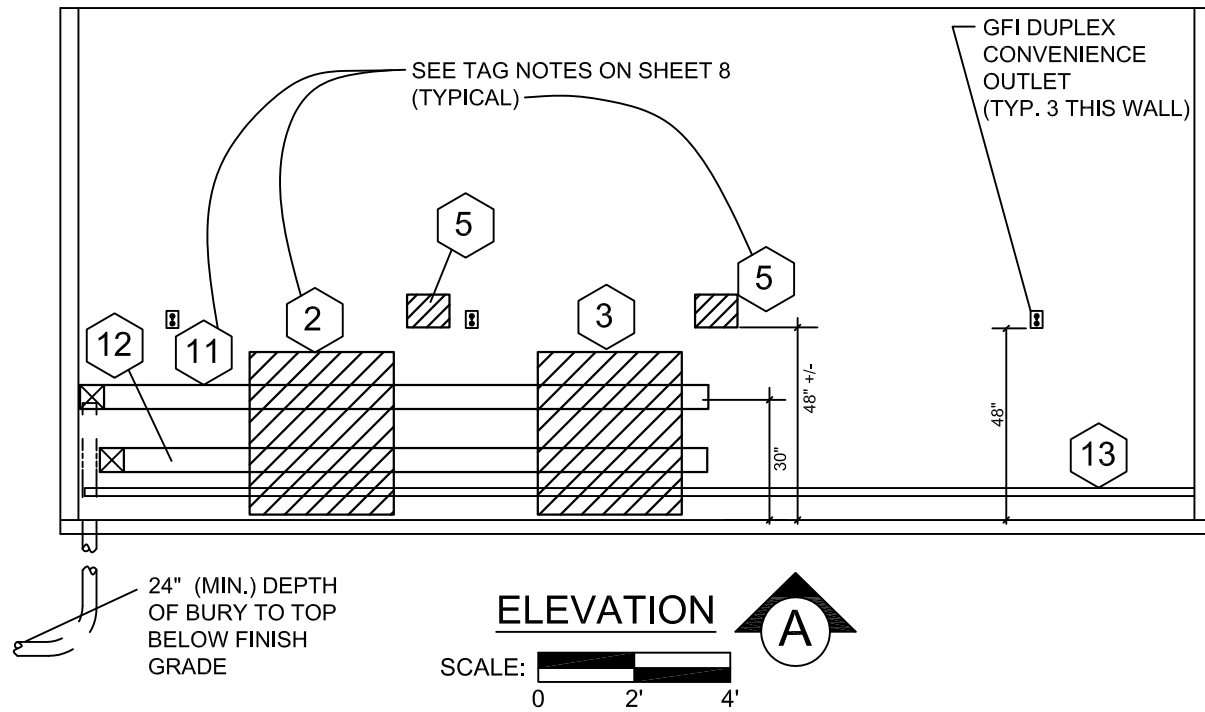
SCALE: 0 2' 4'

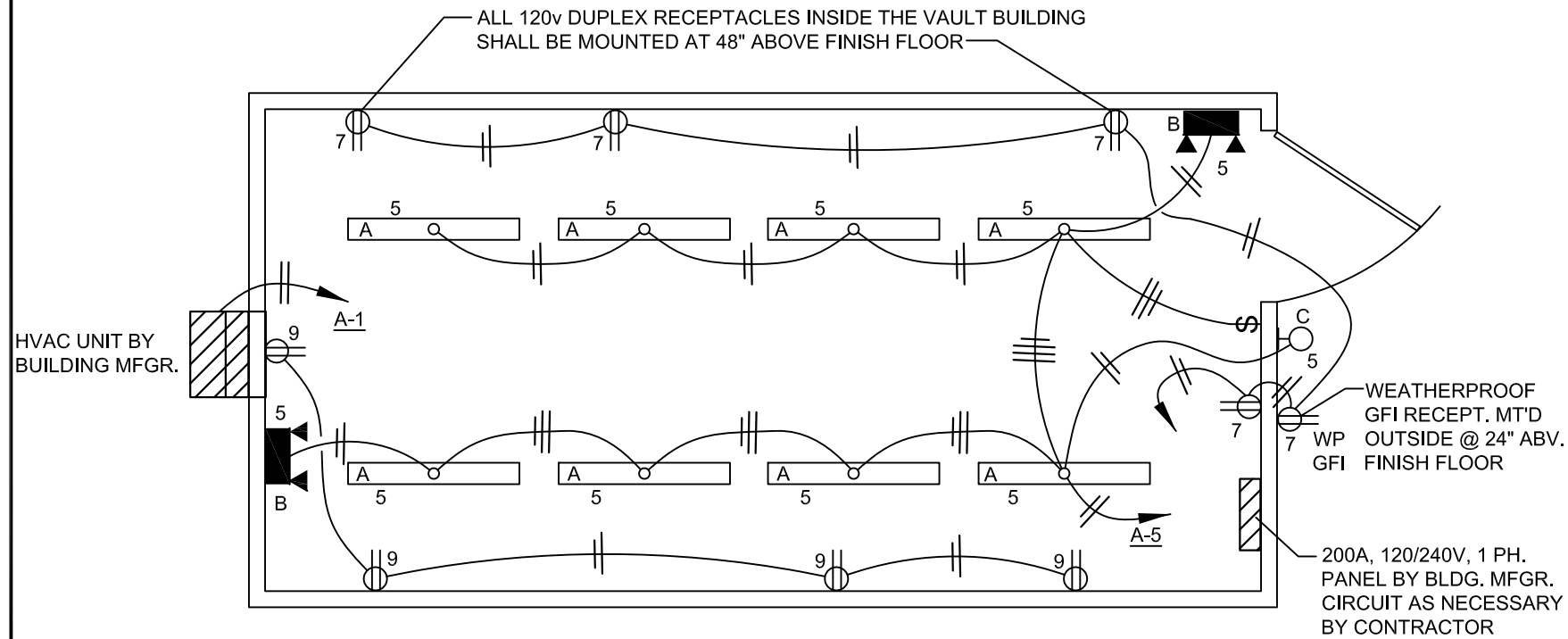
TAG NOTES:

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|--|---|---|--|
| <p>1 NEW 7.5 KW L-828 CONSTANT CURRENT REGULATOR RUNWAY 6/24. SEE GENERAL NOTE 2.</p> <p>2 EXIST. R/W 14/32 10 KW L-828 CONSTANT CURRENT REGULATOR RELOCATED. SEE GENERAL NOTE 2.</p> <p>3 EXIST. T/W 4 KW L-828 CONSTANT CURRENT REGULATOR RELOCATED. SEE GENERAL NOTE 2.</p> <p>4 EXIST. 7.5 KW L-828 CONSTANT CURRENT REGULATOR RELOCATED TO BECOME SPARE FOR RUNWAY 6/24. SEE GENERAL NOTE 2.</p> <p>5 SERIES PLUG CUTOUT (TYPE 1) INSTALL IN LOCKABLE NEMA 1 ENCLOSURE. SEE GENERAL NOTES 2 & 3</p> | <p>6 EXIST. TRANSFORMERS, CONTACTORS, DISC. SW'S MT'D ON PLYWOOD BACKBOARD TO BE RELOCATED</p> <p>7 NEW L-841 RELAY INTERFACE PANEL WITH PHOTOCELL BYPASS SWITCH. MOUNT PHOTOCELL ABOVE VAULT ROOF LEVEL. FIELD VERIFY LOCATION AND DIRECTION FOR PROPER CONTROL AND OPERATION.</p> <p>8 NEW L-821 CONTROL PANEL</p> <p>9 NEW L-854 RADIO CONTROL UNIT SEE GENERAL NOTE 1.</p> <p>10 ELECTRICAL SERVICE PANELBOARD 200A, 120/240V, SEE GENERAL NOTE 1.</p> <p>11 6" X 6" LOW VOLTAGE WIREWAY. LABEL "LOW VOLTAGE" EVERY 4 FEET. INSTALL ABOVE HIGH VOLTAGE WIREWAY.</p> <p>12 6" X 6" HIGH VOLTAGE WIREWAY. LABEL "HIGH VOLTAGE" EVERY 4 FEET. INSTALL BELOW LOW VOLTAGE WIREWAY.</p> | <p>13 1/4" X 2" COPPER ELECTRICAL BUS FOR INSIDE BUILDING GROUND</p> <p>14 #2 AWG BARE SOLID CU. CONDUCTOR (SERVICE PANEL GROUND)</p> <p>15 HAND HOLE 24"L X 30"W X 30" D QUAZITE, OR APPROVED EQUAL</p> <p>16 FURNISH & INSTALL A UL LISTED, 10 POUND CARBON DIOXIDE FIRE EXTINGUISHER SUITABLE FOR USE ON CLASS C FIRES & A 10 POUND CLASS 4A:80B:C DRY CHEMICAL ABC FIRE EXTINGUISHER SUITABLE FOR USE ON CLASS A,B,C FIRES. CO2 TYPE EXTINGUISHER SHALL BE AMEREX MODEL 330, ANSUL SENTRY 10 MODEL CO10A-1, OR APPROVED EQUAL. TYPE ABC EXTINGUISHER SHALL BE AMERE MODEL B456, OR APPROVED EQUAL.. WALL MOUNTING BRACKETS SHALL ALSO BE FURNISHED & INSTALLED.</p> <p>17 SURGE ARRESTER, SQUARE D # TVS1HWA10X, OR APPROVED EQUAL</p> <p>18 NEW EXTERNAL REMOTE RADIO RECEIVER ANTENNA</p> <p>19 NEW LIGHTING CONTROL PHOTOCELL MT'D EXTERNAL TO BUILDING, PRECISION # T-20-AL, OR APPROVED EQUAL.</p> | <p>20 20A, 125V DUPLEX CONVENIENCE OUTLET BY BUILDING MFGR.</p> <p>21 EXISTING REIL LIGHTING CONTACTORS TO BE RELOCATED TO BACKBOARD</p> |
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GENERAL NOTES:

1. RADIO CONTROL UNIT (FAA L-854). ROUTE COAXIAL CABLE FROM RADIO TO EXTERNAL REMOTE ANTENNA. MOUNT ANTENNA ON 1-1/4" X 20' (MIN.) GALV. STL. POLE USING SUPPORT BRACKETS SECURED TO SIDE OF BUILDING.
2. EACH CONSTANT CURRENT REGULATOR AND ITS RESPECTIVE SERIES PLUG CUTOFF SHALL BE CLEARLY LABELED IDENTIFYING THE RUNWAY OR TAXIWAY SERVED, AND POWER SOURCE CIRCUIT.
3. SEE SINGLE LINE DIAGRAM AND WIRING SCHEMATIC FOR WIRING REQUIREMENTS.
4. OFFSET HIGH VOLTAGE WIREWAY MOUNTING TO ALLOW CONDUITS TO LOW VOLTAGE WIREWAY TO PASS BEHIND.





LIGHTING & RECEPTACLE PLAN



ELECTRICAL LEGEND	
	FLUORESCENT LIGHTING FIXTURE SEE SCHEDULE
	WALL MOUNTED LIGHTING FIXTURE SEE SCHEDULE
	STANDBY EMERGENCY LIGHTING FIXTURE SEE SCHEDULE
	VAULT LIGHT SWITCH, MOUNT AT 48" ABOVE FINISH FLOOR
	120VAC, 20 AMP DUPLEX CONVENIENCE OUTLET GROUND FAULT INTERRUPTING - MOUNT @ 48" ABOVE FINISH FLOOR OR NOTED
	120VAC, 20 AMP DUPLEX CONVENIENCE OUTLET GROUND FAULT INTERRUPTING, WEATHERPROOF, MOUNT @ 24" ABOVE FINISH FLOOR OR NOTED
	CONDUIT ABOVE GROUND OR IN WALLS
	CONDUIT/CABLE BELOW GROUND
	HOME RUN INDICATOR
	PHASE (HOT)
	NEUTRAL

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURE	CATALOG NUMBER	LAMPS	MOUNTING
A	LITHONIA	UN232MVOLTGEB10IS/1B	2-32 WATT T8 3500 DEG K	SURFACE MT'D AT CEILING
B	LITHONIA	ELM2LED	2-1.5 WATT/3.6V WHITE LED	WALL MT'D AT 7'-0" +/- ABV. FIN. FLR.
C	LITHONIA	TWSLED150K120PE	1-1017 LUMEN LIGHT PACKAGE	WALL MT'D AT 6'-6" TO BTM. ABV. FIN. FLR.

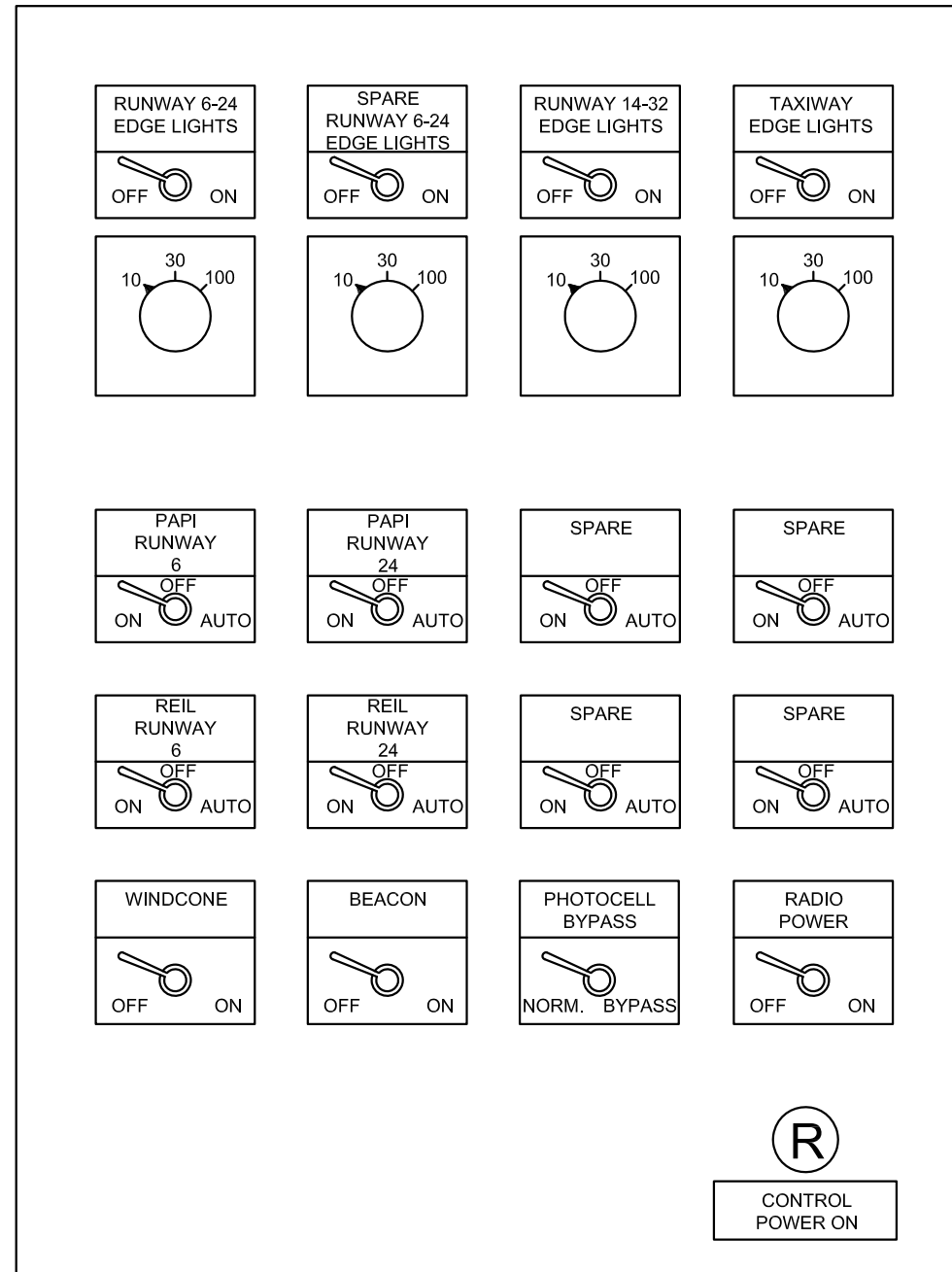
NOTE:

- LIGHTING FIXTURES FURNISHED & INSTALLED BY BUILDING MANUFACTURER
- OCCUPANCY SENSOR LIGHTING CONTROL FURNISHED & INSTALLED BY BUILDING MANUFACTURER
- 20A, 125V DUPLEX CONVENIENCE OUTLETS FURNISHED & INSTALLED BY BUILDING MANUFACTURER

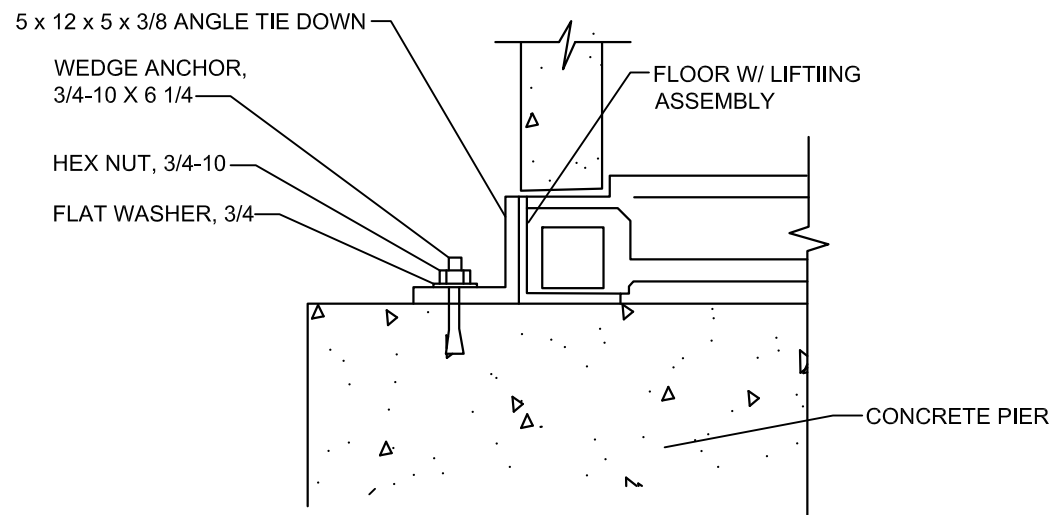
GENERAL SPECIFICATIONS & NOTES

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS, FEES, INSPECTIONS, ETC. REQUIRED FOR THE PERFORMANCE OF THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE ELECTRICAL UTILITY, AS NECESSARY, TO MEET THEIR REQUIREMENTS FOR ELECTRICAL SERVICES & METERING, INCLUDING ANY FEES AND CHARGES REQUIRED FOR THIS PROJECT.
- CONDUCTORS IN UNDERGROUND OR BELOW GRADE CONDUITS SHALL BE TYPE XHHW-2, OTHER CONDUCTORS TO BE TYPE THHN/THWN OR EQUAL.
- THE ELECTRICAL SYSTEM, SERVICE & BUILDING SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, STATE AND LOCAL CODES.
- A GROUNDING CONDUCTOR SHALL BE INCLUDED FOR EACH CIRCUIT, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- THE CONTRACTOR SHALL FLASH & SEAL ALL WALL & FLOOR PENETRATIONS.
- PANELBOARD SHALL BE SQUARE D TYPE NQ, EATON, SIEMENS OR EQUAL WITH MINIMUM 10,000 AIC RATING.
- MANUFACTURES NAMES & CATALOG NUMBERS MENTIONED ARE TO ESTABLISH TYPE & QUALITY. EQUAL PRODUCTS OF OTHER MANUFACTURES MAY BE CONSIDERED. ALL MATERIAL AND EQUIPMENT SHALL BE "MADE IN AMERICA".

CONTROL PANEL
(L-821)

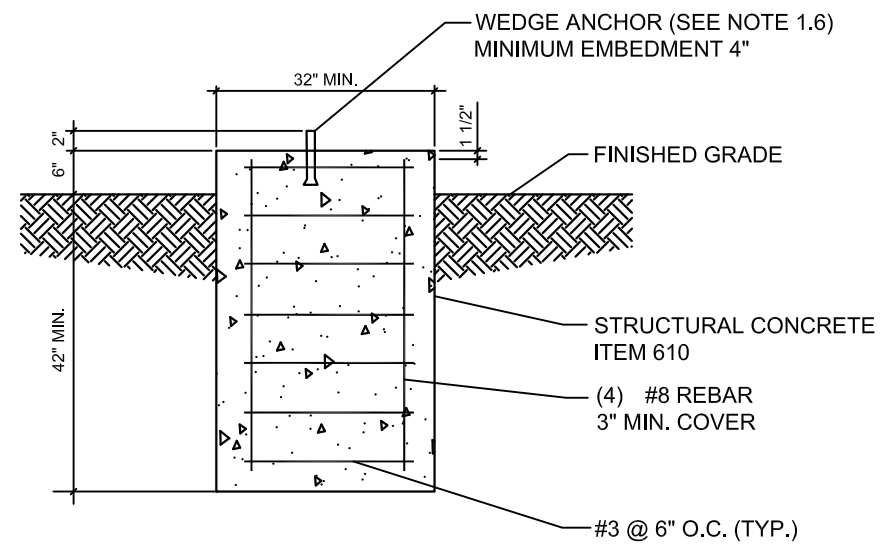


L-821 CONTROL PANEL
NOT TO SCALE



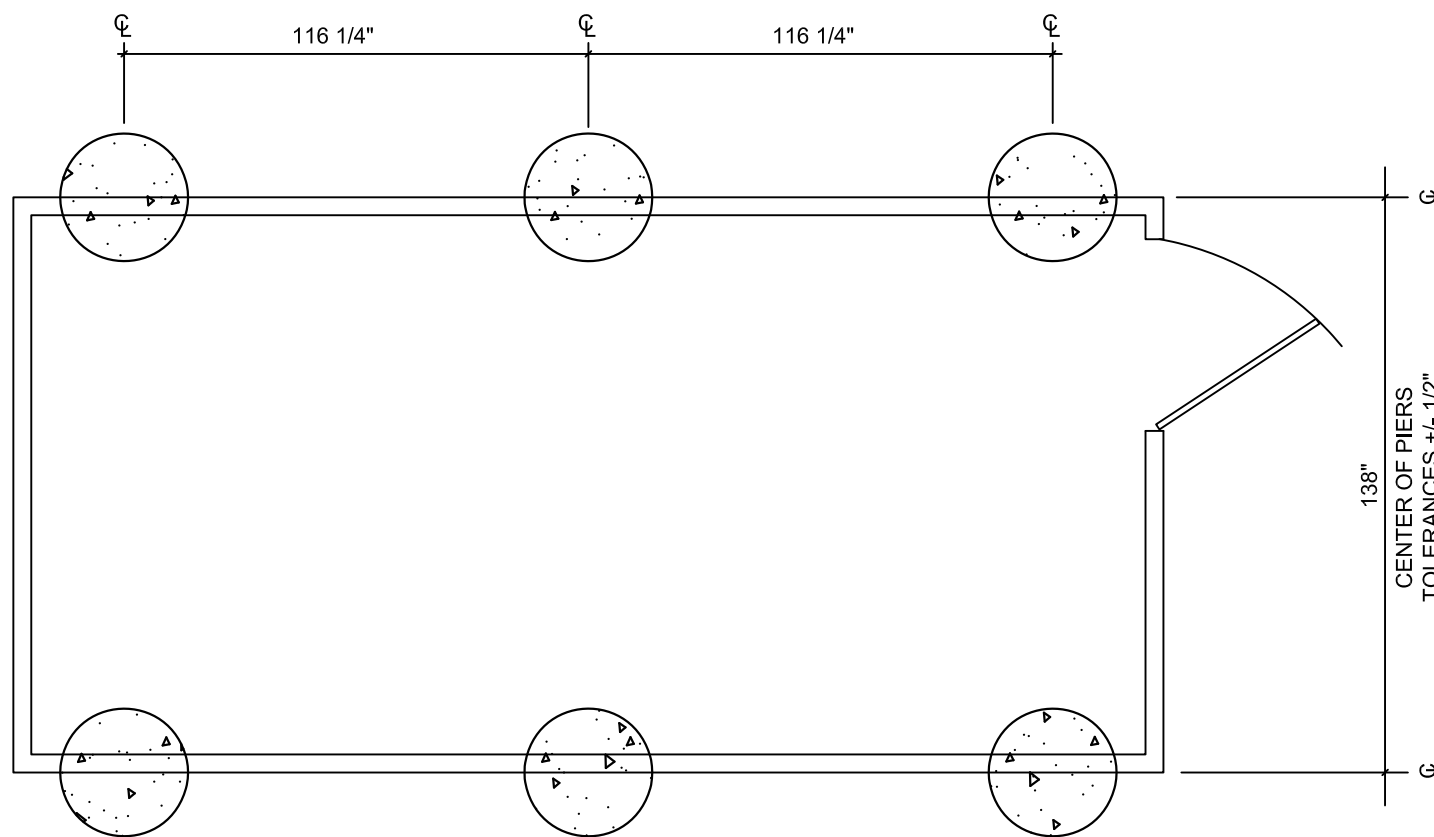
BUILDING ATTACHMENT

NO SCALE



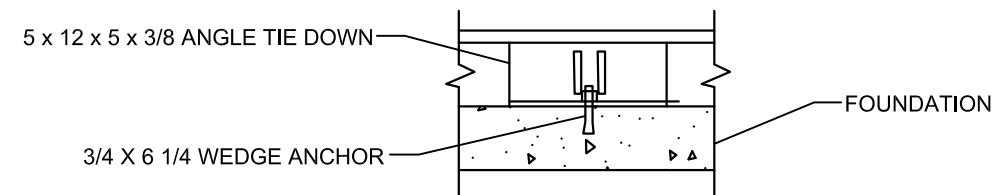
CONCRETE PIER DETAIL

NO SCALE



VAULT PIER LAYOUT

SCALE: 0 2' 4'



TIE DOWN PLATE

NO SCALE

FOUNDATION NOTES:

1. GENERAL
 - 1.1. ALL DIMENSIONS ARE SPECIFIED IN INCHES UNLESS OTHERWISE NOTED.
 - 1.2. VAULT SUPPLIER TO FURNISH FOUNDATION DIAGRAM SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF ILLINOIS.
 - 1.3. FOUNDATION IS DESIGNED FOR 2000 PSF BEARING. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXISTING SOIL BEARING CAPACITY.
 - 1.4. SLAB TYPE FOUNDATION IS NOT RECOMMENDED FOR AREAS WITH EXTREME FROST CONDITIONS OR WHERE HIGH WATER TABLES ARE PRESENT. THESE CONDITIONS COULD CAUSE DIFFERENTIAL SETTLEMENTS IN THE SOIL BENEATH THE FOUNDATION RESULTING IN STRUCTURAL CRACKS.
 - 1.5. PERIMETER FOOTING MUST BE A MINIMUM FOUNDATION DEPTH OF 42" OR PER LOCAL FROST LINE ON UNDISTURBED SOIL.
 - 1.6. LOCATE WEDGE ANCHORS AFTER SHELTER IS LOCATED ON PIERS TO CORRECTLY ALIGN WITH INSTALLED ANCHOR PLATE. DO NOT INSTALL WEDGE ANCHOR BEFORE SETTING SHELTER ON FOUNDATION.
2. MATERIAL
 - 2.1. ALL CONCRETE SHALL MEET THE REQUIREMENTS OF ITEM 610 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS.
 - 2.2. ALL REINFORCING STEEL MUST BE CERTIFIED TO MEET BUY AMERICAN ACT, CONFORM TO ITEM 501-2.6(a) AND BE 100% DOMESTIC PRODUCED.
3. TOLERANCES
 - 3.1. TOPS OF CONCRETE FOUNDATION MUST BE WITHIN 0.02" PER FOOT OF ELEVATION SPECIFIED BY THE ENGINEER.

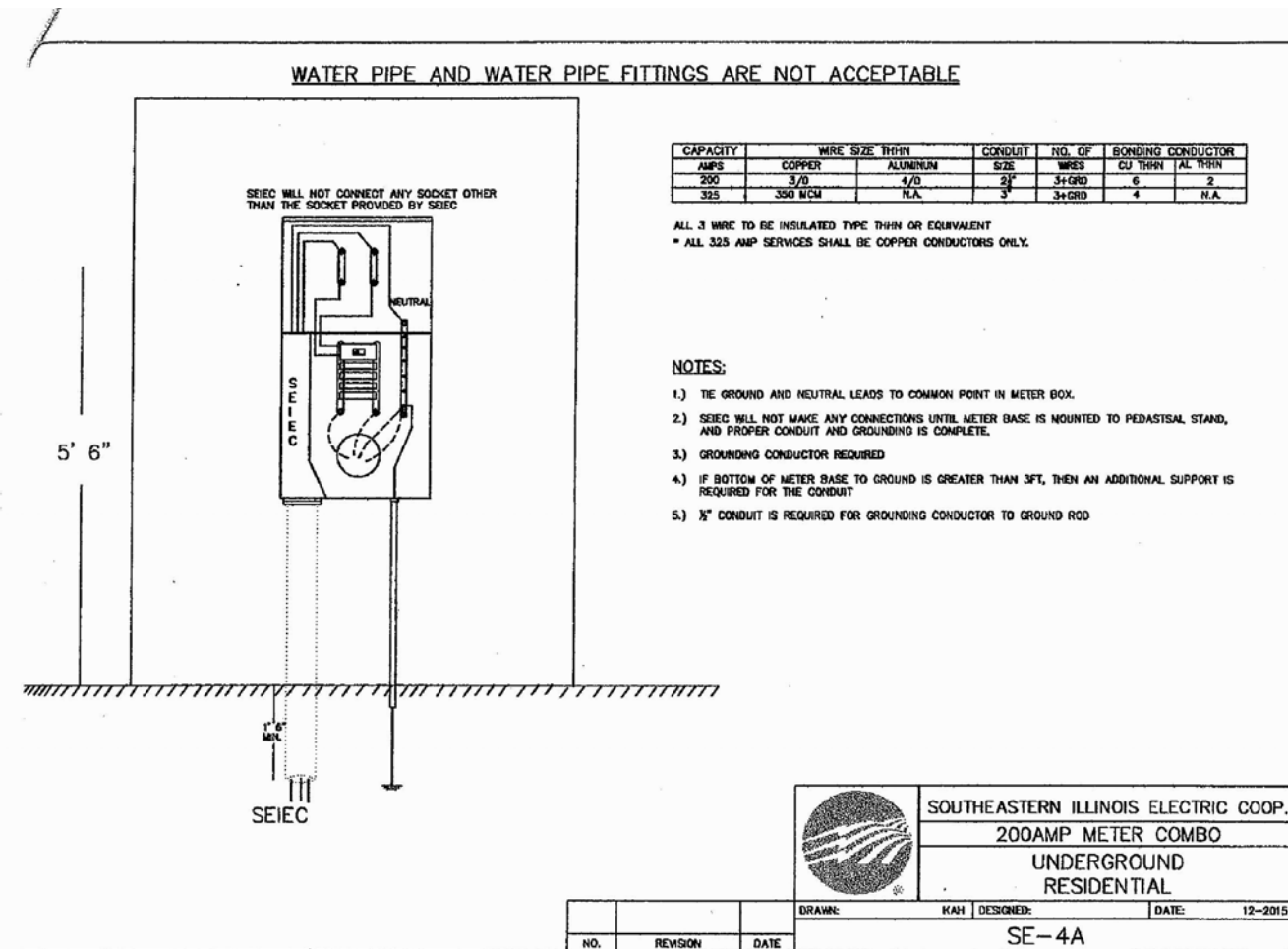
Suggested Sequence of Contract Work

Contractor should take the following information into account before submitting final bid.

The following staging of work by the contractor will minimize any disruption of the lighting and information systems

- #1 Pay SEIEC for primary power service from the existing power feed pole to the new vault location. Install Ground ring so not to interfere with conduits to handholes. Set handholes at proper locations and install "homerun" cables between handholes.
- #2 Complete (with SEIEC) power to pad mounted transformer, Install concrete piers for vault support, set handholes at proper locations and install homerun cables between handholes.
- #3 Set prefab vault on piers and secure with proper hardware, mount "all-in one meter base and have SEIEC complete power hookup to meter, energize breaker panel inside vault and complete all preliminary wiring possible, including conduits to handholes, new L-854 radio control unit, new L-821 control panel, new L-841 relay interface panel with all components and series plug cutouts along with all interconnecting wiring that is possible at this time.
- #4 Install new 7.5 KW regulator and complete wiring to handhole at existing vault.
- #5 When new regulator is ready to activate, remove 5KV cable for 6/24 runway lights from existing vault and connect to proper homerun cable in NEW HV handhole at old vault location and activate power to operate these lights.
- #6 Remove existing 7.5 regulator from existing vault and tie it into circuit (temporarily) in new vault for taxiway lights for Runway 6/24. When this regulator is operational, remove 5KV cable for taxiway lights in existing vault and connect to homerun cable in NEW HV handhole at old vault and activate power to operate these lights.
- #7 Remove existing 4KV regulator from existing vault and install in new vault to replace the 7.5KV regulator that is being used temporarily for this operation.
- #8 Use same 7.5KV regulator and install in circuit for runway lights for Runway 14/32. When this hookup is complete, remove 5KV cable from existing vault for this circuit and connect to homerun cable in NEW HV handhole at old vault and activate power to operate these lights.
- #9 Remove 10KW regulator from existing vault and replace 7.5 KW regulator that is being used temporarily. Activate power to operate the runway lights for Runway 14/32.
- #10 Tie 7.5 KW regulator that has been leapfrogged temporarily into spare circuit #6 with new 7.5KW regulator for Runway 6/24.
- #11 Remove cables for PAPI and REIL circuits for Runway 24 and connect to proper cables in NEW LV handhole at existing vault. Activate these circuits in new vault by using temporary breakers in new panel board in new vault.
- #12 Remove cable for windsock from existing vault and connect to homerun cable in NEW LV handhole and power this unit from temporary breaker in new breaker panel in NEW vault.
- #13 Remove (as a unit) breaker box, step-up transformers and contactors and reinstall in new vault, then remove cables from existing vault for PAPI and REILs for Runway 6 and connect to appropriate homerun cables in NEW LV handhole.
- #14 Transfer all temporary wiring to proper circuits, including control and interface panels.
- #15 After new conduit and cable has been located on the beacon tower, transfer power for rotating beacon to new vault.

The above sequence of work is suggested. If the contractor chooses not to follow the above sequence of work the contractor must submit a proposed sequence of work for approval by the engineer before commencing any work.



SOUTHEASTERN ILLINOIS ELECTRIC COOPERATIVE - SERVICE DETAIL

ELECTRICAL NOTES

1. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
2. CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
3. THE CONTRACTOR SHALL ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM, INCLUDING FAA APPROVED EQUIPMENT, ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE NEW/EXISTING SYSTEM. ANY NONCOMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR SHALL BE REPLACED BY HIM AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER (DIFFERENT MODEL OR DIFFERENT MANUFACTURER) THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.
4. IN CASE THE CONTRACTOR ELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTORS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATION, ANY COST FOR THESE ITEMS SHALL BE INCIDENTAL TO THE EQUIPMENT COST.
5. THE CONTRACTOR INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) SHALL NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AIR NAVIGATION, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COSTS WITH THE EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.
6. WHEN A SPECIFIC TYPE, STYLE, CLASS, ETC. OF FAA APPROVED EQUIPMENT IS SPECIFIED ONLY THAT TYPE, STYLE, CLASS WILL BE ACCEPTABLE, EVEN THOUGH EQUIPMENT OF OTHER TYPES, STYLES, CLASSES, ETC. MAY BE APPROVED.
7. ANY AND ALL INSTRUCTIONS FROM THE RESIDENT ENGINEER TO THE CONTRACTOR REGARDING CHANGES IN OR DEVIATIONS FROM THE PLANS AND SPECIFICATIONS SHALL BE IN WRITING WITH COPIES SENT TO THE AIRPORT SPONSOR AND THE ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF AERONAUTICS). THE CONTRACTOR SHALL NOT ACCEPT ANY VERBAL INSTRUCTIONS FROM THE RESIDENT ENGINEER REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.
8. A MINIMUM OF THREE COPIES OF THE INSTRUCTION BOOK SHALL BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE BOOKS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATORS, PAPI, REIL, ETC. AS A MINIMUM SHALL ACCEPT THE FOLLOWING:
 - A. A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.
 - B. THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.
 - C. INSTALLATION INSTRUCTION.
 - D. START-UP INSTRUCTIONS.
 - E. PREVENTATIVE MAINTENANCE.
 - F. CHART FOR TROUBLE-SHOOTING.
 - G. COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAMS, SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT - "BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OF THE NARRATIVE SHALL SHOW VOLTAGE/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLE-SHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL MODES OF OPERATION, SUCH AS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS SHALL BE INDICATED FOR ALL DIFFERENT MODES.
 - H. PARTS LIST WHICH WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS SUCH AS RESISTORS, DIODES, ETC. IT SHALL INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER.
 - I. SAFETY INSTRUCTIONS.

AIRFIELD LIGHTING NOTES

1. UNLESS OTHERWISE NOTED, ALL UNDERGROUND AIRFIELD LIGHTING SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED 5000 VOLT L-824 TYPE. ALL UNDERGROUND FIELD POWER LOW VOLTAGE (600 VOLT & BELOW) CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE UL LISTED 600 VOLT, TYPE XLP-USE-2 COPPER CONDUCTORS. CONDUCTOR SIZES SHALL BE AS SPECIFIED HEREIN.
2. THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND AND WHERE THEY ENTER THE EQUIPMENT ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKABLE COUPLING(S) AT THE GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.
3. THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN ON ELECTRICAL DETAILS SHEET 1.
4. THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE, AS SHOWN ON ELECTRICAL DETAILS SHEET 1.
5. L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
6. ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
7. APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.
8. ALL POWER AND CONTROL CABLES IN MANHOLES OR HANDHOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS OF THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN AN MANHOLE OR HANDHOLE - ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.
9. THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSES OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACT SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123. ALSO CONTACT AIRPORT MANAGER FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.
10. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

HARRISBURG-RALEIGH AIRPORT

IL PROJECT NO. HSB-4524

SBG NO. 3-17-SBGP-XX

ELECTRICAL AND AIRFIELD
LIGHTING NOTES

SHEET 14 OF 15

HA028

POWER AND CONTROL NOTES

HARRISBURG-RALEIGH AIRPORT	
IL PROJECT NO. HSB-4524	
SBG NO. 3-17-SBGP-XX	
POWER AND CONTROL NOTES	
SHEET 15 OF 15	HA028

1. PROVIDE LEGEND PLATES FOR ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO IDENTIFY THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT AREA TO INSTALL LEGEND PLATES, THE LEGEND PLATES SHALL BE INSTALLED ON THE WALL NEXT TO THE UNIT. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
2. IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
3. LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS.
4. EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.
5. SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
6. DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
7. ALL INTERIOR WALL MOUNTED EQUIPMENT ENCLOSURES SHALL BE MOUNTED ON HOT DIPPED GALVANIZED STEEL STRUT SUPPORT, OR STAINLESS STEEL STRUT SUPPORT, WITH CORROSION RESISTANT HARDWARE.
8. SUPPORT FOR EXTERIOR MOUNTED EQUIPMENT SHALL USE HOT DIPPED GALVANIZED STEEL STRUT SUPPORT OR STAINLESS STEEL STRUT SUPPORT WITH STAINLESS STEEL HARDWARE. PROVIDE ZINC RICH PAINT APPLIED TO FIELD CUTS OF GALVANIZED STEEL SUPPORT TO MINIMIZE THE POTENTIAL FOR CORROSION PER THE RESPECTIVE STRUT SUPPORT MANUFACTURER'S RECOMMENDATIONS.
9. CONDUITS FOR ELECTRIC SERVICE ENTRANCE AND FEEDERS SHALL BE AS DETAILED HEREIN ON THE PLANS. WHERE GALVANIZED RIGID STEEL CONDUIT IS SPECIFIED IT SHALL HAVE THREADED FITTINGS. SET SCREW TYPE FITTINGS WILL NOT BE ACCEPTABLE. CONDUITS FOR UNDERGROUND APPLICATIONS SHALL BE AS DETAILED HEREIN. CONDUITS FOR GROUNDING ELECTRODE CONDUCTORS OR INDIVIDUAL GROUNDING CONDUCTORS SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC.
10. PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT U.L. LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
11. UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
12. ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
13. USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS.
14. UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINIMUM.
15. THE FOLLOWING SHALL APPLY TO RELAY/CONDUCTOR PANELS/ENCLOSURES:
 - A. FOR INTERIOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 12 (DUST TIGHT) ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. FOR EXTERIOR/OUTDOOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 4X STAINLESS STEEL ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. ALL CONDUIT ENTRIES INTO NEMA 4X ENCLOSURES SHALL HAVE NEMA 4 HUBS LISTED SUITABLE FOR THE RESPECTIVE ENCLOSURE TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE.
 - B. THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.
 - C. ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED-EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.
 - D. WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING AND TERMINALS SHALL BE EXPOSED AND ACCESSIBLE WITHOUT REMOVAL OF ANY PANELS, COVERS, ETC. EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.
 - E. ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.
 - F. EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.
 - G. THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AND NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.
 - H. MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
 - I. ALL ENCLOSURES MUST BE CERTIFIED TO BE MADE WITH 100% DOMESTIC STEEL.
16. FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, CUTOUT, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".