

# CONSTRUCTION PLANS FOR JOLIET REGIONAL AIRPORT JOLIET, WILL COUNTY, ILLINOIS

## CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

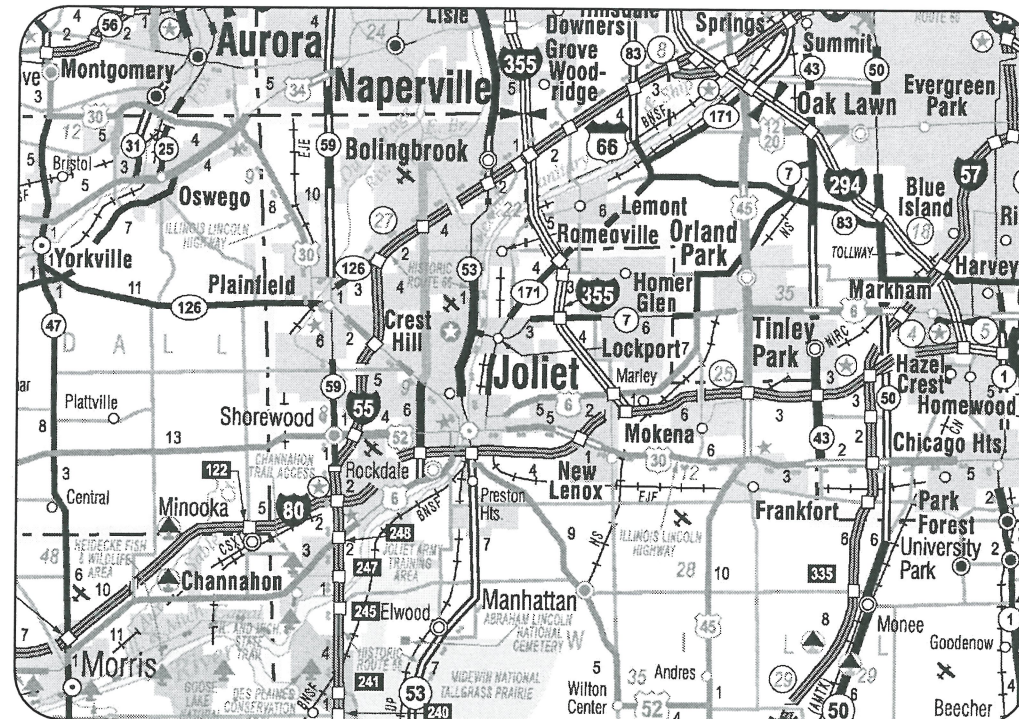
### SCOPE OF WORK

**BASE BID:** THE PROJECT SHALL CONSIST OF CONSTRUCTION OF A STANDALONE ELECTRICAL VAULT, REPLACING THE RUNWAY LIGHTING, INSTALLING TAXIWAY LIGHTS, AND THE ASSOCIATED CABLING AND DUCT WORK. PROVIDING MANDATORY HOLD SIGNS AT THE RUNWAY/RUNWAY AND RUNWAY/TAXIWAY INTERSECTIONS WILL BE INCLUDED WITH THIS PROJECT. ALSO INCLUDED WITH THIS PROJECT WILL BE THE REMOVAL OF THE EXISTING LIGHTED L-807 PRIMARY WIND CONE AND INSTALLATION OF A NEW LIGHTED L-807 PRIMARY WIND CONE AT A NEW LOCATION.

**ADDITIVE ALTERNATE NO. 1:** ADDITIVE ALTERNATE NO. 1 SHALL CONSIST OF THE ADDITION OF OBSTRUCTION LIGHTING AND LIGHTNING PROTECTION TO THE EXISTING AIRPORT ROTATING BEACON TOWER.



LOCATION OF COUNTY



### LOCATION

ILL. PROJ.: JOT-4166  
A.I.P. PROJ.: 3-17-0056-B8  
LATITUDE: 41° 31' 03"  
LONGITUDE: 88° 10' 30"  
ELEVATION: 581.0' M.S.L.  
DATE: FEB. 13, 2012



REVISED MARCH 9, 2012



Hanson Professional Services Inc.  
ELECTRICAL ENGINEER

Submitted by: *Kevin N. Lightfoot* ENG'R  
Date Submitted: 3/12/2012  
Lic. Exp. Date: NOVEMBER 30, 2013

JOLIET PARK DISTRICT

Approved: *[Signature]* CHAIRMAN

Date: 3-12-12

REVISION	DATE

JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS  
A.I.P. PROJ.: 3-17-0056-B8  
IL PROJ.: JOT-4166

Hanson Project No. 09A0177D-0001	File Name G-001-CVR.dwg	Scale NONE	Date 02/13/12
LAYOUT	KNL	MLH	01/18/12
DRAWN	MLH	KNL/CAH	01/30/12
REVIEWED	KNL/CAH		02/13/12

**HANSON**  
© Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 South Sixth Street  
Springfield, Illinois 62703-2886

COVER SHEET  
CONSTRUCT A STAND ALONE  
ELECTRICAL VAULT, REPLACE RUNWAY  
LIGHTS AND INSTALL TAXIWAY LIGHTS

MAR 12, 2012 10:38 AM K:\KINCAD0394  
pwl\spw-svr\306\hanson.don\hanson\Projects\Documents\09A0177D\09A0177D\CAD\Airport\Sheet\A-001-CVR

**SUMMARY OF QUANTITIES - BASE BID**

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AR107812	L-807 WC-12' INTERNALLY LIT	EA.	1	
AR107900	REMOVE WIND CONE	EA.	1	
AR108108	1/C #8 5 KV UG CABLE	L.F.	1,040	
AR108158	1/C #8 5 KV UG CABLE IN UD	L.F.	17,700	
AR109110	ERECT PREFABRICATED VAULT	L.S.	1	
AR109200	INSTALL ELECTRICAL EQUIPMENT	L.S.	1	
AR109901	REMOVE ELECTRICAL VAULT	L.S.	1	
AR110012	2" DIRECTIONAL BORE	L.F.	920	
AR110013	3" DIRECTIONAL BORE	L.F.	420	
AR110202	2" PVC DUCT, DIRECT BURY	L.F.	113	
AR110610	ELECTRICAL HANDHOLE	EA.	8	
AR125410	MITL - STAKE MOUNTED	EA.	54	
AR125415	MITL - BASE MOUNTED	EA.	10	
AR125442	TAXI GUIDANCE SIGN, 2 CHARACTER	EA.	3	
AR125444	TAXI GUIDANCE SIGN, 4 CHARACTER	EA.	2	
AR125445	TAXI GUIDANCE SIGN, 5 CHARACTER	EA.	3	
AR125505	MIRL, STAKE MOUNTED	EA.	19	
AR125510	MIRL, BASE MOUNTED	EA.	9	
AR125540	MI THRESHOLD LIGHT STAKE MTD	EA.	14	
AR125545	MI THRESHOLD LIGHT BASED MOUNTED	EA.	8	
AR125901	REMOVE STAKE MOUNTED LIGHT	EA.	52	
AR125902	REMOVE BASE MOUNTED LIGHT	EA.	14	
AR150510	ENGINEER'S FIELD OFFICE	L.S.	1	
AR150520	MOBILIZATION	L.S.	1	
AR150540	HAUL ROUTE	L.S.	1	
AR800503	ENHANCED THRESHOLD LIGHT STAKE MT	EA.	6	
AR800569	TAXI SIGN, 5 CHARACTER, UNLIGHTED	EA.	2	

**SUMMARY OF QUANTITIES - ADDITIVE ALTERNATE NO. 1**

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AS110013	3" DIRECTIONAL BORE	L.F.	100	
AS800590	4/C #6 600V UG CABLE IN UD	L.F.	1,100	
AS800591	UPGRADE AIRPORT ROTATING BEACON	L.S.	1	

**GENERAL NOTES:**

**QUANTITIES**  
PAYMENT WILL BE MADE UNDER THE ITEM NUMBERS, DESCRIPTIONS AND UNITS NOTED IN THE ABOVE TABLE IN ACCORDANCE WITH THE BASIS OF PAYMENT FOR EACH RESPECTIVE WORK ITEM COMPLETED AND ACCEPTED BY THE ENGINEER.

**CERTIFIED PAYROLLS**  
THE RESIDENT ENGINEER CANNOT FORWARD CONSTRUCTION REPORTS TO THE ILLINOIS DIVISION OF AERONAUTICS FOR PROCESSING UNTIL ALL CERTIFIED PAYROLLS FOR THE PERIOD HAVE BEEN RECEIVED.

**MATERIAL CERTIFICATIONS**  
COMPLETED WORK CANNOT BE PLACED ON A CONSTRUCTION REPORT UNTIL ALL MATERIAL CERTIFICATIONS FOR THAT PAY ITEM HAVE BEEN RECEIVED, REVIEWED AND ACCEPTED BY THE RESIDENT ENGINEER.

**RUNWAY CLOSURE SCHEDULING**  
THE CONTRACTOR SHALL NOTIFY THE AIRPORT MANAGER SEVEN DAYS IN ADVANCE OF THE COMMENCEMENT OF WORK, WHICH WOULD NECESSITATE THE CLOSING OF THE RUNWAY OR CLOSING OF THE AIRPORT.

**UTILITY NOTE**

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED 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 CONTRACTOR 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 JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

**J.U.L.I.E. INFORMATION**

COUNTY \_\_\_\_\_ WILL  
CITY \_\_\_\_\_ JOLIET  
TOWNSHIP \_\_\_\_\_ TROY  
SECTION NO. \_\_\_\_\_ 14 & 15  
ADDRESS \_\_\_\_\_ JOLIET REGIONAL AIRPORT  
3000 WEST JEFFERSON STREET  
JOLIET, ILLINOIS 60435



**Know what's below.  
Call before you dig.**

**INDEX TO SHEETS**

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES AND INDEX TO SHEETS
3	PROPOSED SAFETY PLAN
4	EXISTING ELECTRICAL PLAN -- HOMERUNS AND VAULT
5	EXISTING ELECTRICAL PLAN -- STA. 20+00 TO STA. 29+00
6	EXISTING ELECTRICAL PLAN -- STA. 29+00 TO STA. 39+75
7	EXISTING ELECTRICAL PLAN -- STA. 39+75 TO STA. 51+00
8	PROPOSED ELECTRICAL PLAN -- HOMERUNS AND VAULT
9	PROPOSED ELECTRICAL PLAN -- STA. 20+00 TO STA. 29+00
10	PROPOSED ELECTRICAL PLAN -- STA. 29+00 TO STA. 39+75
11	PROPOSED ELECTRICAL PLAN -- STA. 39+75 TO STA. 51+00
12	THRESHOLD DETAILS AND AIRFIELD LIGHTING NOTES
13	AIRFIELD LIGHTING SCHEDULES AND LIGHT LOCATION TABLE
14	ELECTRICAL DETAILS SHEET 1
15	ELECTRICAL DETAILS SHEET 2
16	ELECTRICAL DETAILS SHEET 3
17	ELECTRICAL DETAILS SHEET 4
18	UNLIGHTED SIGN DETAILS
19	L-807 WIND CONE ELEVATION DETAIL
20	LIGHTNING PROTECTION DETAILS FOR BEACON
21	ELECTRICAL NOTES SHEET 1
22	ELECTRICAL NOTES SHEET 2
23	ELECTRICAL LEGEND AND ABBREVIATIONS
24	EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD
25	PROPOSED AIRPORT VAULT EQUIPMENT PLAN
26	PROPOSED AIRPORT VAULT LIGHTING AND RECEPTACLE PLAN
27	PROPOSED AIRPORT VAULT ELEVATIONS (SHEET 1)
28	PROPOSED AIRPORT VAULT ELEVATIONS (SHEET 2)
29	PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD (1)
30	PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD (2)
31	AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC
32	LIGHTING CONTACTOR SCHEMATIC
33	LIGHTING CONTACTOR PANEL DETAIL
34	HIGH VOLTAGE WIRING SCHEMATIC
35	LEGEND PLATE SCHEDULES
36	VAULT GROUND BUS RISER
37	GROUNDING DETAILS
38	GROUNDING NOTES

MAR 12, 2012 10:58 AM K:\KINCA00394.pw:\sps-sv306.hanson.dom\hanson - Projects\Documents\09jobs\0940177\0940177D\CAD\Airport\Sheet\G-002-FLP

REVISION DATE 03/09/12 UPDATE PER IDA REVIEW	<b>JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS</b>	A.I.P. PROJ.: 3-17-0066-B8  IL PROJ.: JOT-4166
Hanson Project No. 0940177D-0001 File Name G-002-FLP.dwg Scale NONE Date 02/13/12		
LAYOUT DRAWN REVIEWED	MLH MLH KNL/CAH	02/03/12 02/03/12 02/13/12
Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 S. State Street Springfield, Illinois 62703-2886		
SUMMARY OF QUANTITIES AND INDEX TO SHEETS	CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS	
<span style="font-size: 2em; font-weight: bold;">2</span> 2 of 38 sheets		

**PROPOSED SAFETY PLAN**

GENERAL - THE JOLIET REGIONAL AIRPORT IS COMPRISED OF TWO RUNWAYS. THE PROPOSED CONSTRUCTION WILL NECESSITATE CLOSURES OF RUNWAYS AND TAXIWAYS AT TIMES DURING THE PROJECT.

RUNWAY 13-31 WILL BE CLOSED ANY TIME THE CONTRACTOR IS WORKING WITHIN 75' OF THE RUNWAY CENTERLINE. RUNWAY 4-22 (TURF RUNWAY) WILL BE CLOSED ANYTIME THE CONTRACTOR IS WORKING WITHIN 200' OF THE RUNWAY CENTERLINE. ANY TAXIWAY WILL BE CLOSED WHEN THE CONTRACTOR IS WORKING WITHIN 45' OF THE RESPECTIVE TAXIWAY CENTERLINE (TAXIWAY OBJECT FREE AREA). THE CONTRACTOR SHALL COORDINATE ALL CLOSURES WITH THE AIRPORT MANAGER.

THE CONTRACTOR WILL BE ALLOWED TO CLOSE RUNWAY 13-31 FOR THE CONSTRUCTION WEEK. AT THE END OF THE CONSTRUCTION WEEK HE MUST OPEN IT BACK UP FOR "DAYTIME OPERATIONS ONLY". THE CONTRACTOR WILL BE ALLOWED TO CLOSE BOTH RUNWAYS WHEN HE IS WORKING WITHIN THE INTERSECTION OF BOTH RUNWAYS. THE CONTRACTOR WILL EXPEDITE THIS WORK IN ORDER TO REDUCE THE AMOUNT OF TIME THE AIRPORT IS CLOSED. ALL WORK INCLUDING IN OPENING AND CLOSING THE RUNWAY WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

OPEN TRENCHES OR EXCAVATIONS ARE NOT PERMITTED WITHIN THE RUNWAY OR TAXIWAY SAFETY AREAS WHILE THE RESPECTIVE RUNWAY OR TAXIWAY IS OPEN. SMOOTH GRADE ALL AREAS WITHIN THE SAFETY AREA TO THE SATISFACTION OF THE RESIDENT ENGINEER PRIOR TO RE-OPENING THE RUNWAY OR TAXIWAY. IF THE RUNWAY OR TAXIWAY MUST BE OPENED BEFORE EXCAVATIONS ARE BACKFILLED, COVER THE EXCAVATIONS APPROPRIATELY. COVERINGS FOR OPEN TRENCHES OR EXCAVATIONS MUST BE OF SUFFICIENT STRENGTH TO SUPPORT THE HEAVIEST AIRCRAFT OPERATING ON THE RUNWAY.

THE CONTRACTOR AND HIS EMPLOYEES WILL BE RESTRICTED TO THE WORK AREAS AND ALL OTHER AREAS OF THE AIRPORT ARE "OFF LIMITS" TO THEM.

THE CONTRACTOR SHALL STAGE WORK TO MINIMIZE RUNWAY AND TAXIWAY CLOSURE TIME AND MAINTAIN ACCESS TO ALL HANGARS AND ADMINISTRATIVE AREAS.

ALL CONSTRUCTION/OPERATIONS ARE TO BE PERFORMED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR (AC) 150/5370-2F "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" AND AC 150/5300-13 "AIRPORT DESIGN".

IDENTIFICATION - WHEN THE CONTRACTORS VEHICLES AND EQUIPMENT ARE ON THE AIRPORT THEY SHALL BE PROPERLY MARKED WITH THREE (3') FOOT SQUARE CHECKERED FLAGS (INTERNATIONAL ORANGE AND WHITE). THE CONTRACTOR WILL ALSO PROVIDE WORKERS WITH SOME TYPE OF TAG OR GARMENT TO IDENTIFY THE PERSON AS BEING PART OF THE CONSTRUCTION CREW.

RADIO CONTROL - THE CONTRACTOR WILL BE REQUIRED TO BE IN TWO-WAY RADIO CONTACT (122.70 MHz.) WITH THE AIRPORT UNICOM. THIS WILL KEEP THE CONTRACTOR IN CONSTANT CONTACT WITH THE JOLIET REGIONAL AIRPORT AND ENABLE THE AIRPORT TO IMMEDIATELY CONTACT THE CONTRACTOR IN CASE OF AN AERONAUTIC EMERGENCY THAT WOULD REQUIRE ACTION BY THE CONTRACTOR AND/OR HIS PERSONNEL.

**HAUL ROUTE, VEHICLE PARKING, EQUIPMENT PARKING AND MATERIAL STORAGE**

THE CONTRACTOR WILL USE THE DESIGNATED CONSTRUCTION ACCESS AND HAUL ROUTE SHOWN ON THIS SHEET. ACCESS THROUGH THE EXISTING GATE WILL BE COORDINATED WITH THE AIRPORT MANAGER. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING A SECURE CONDITION WHEN USING THE GATE.

CONTRACTOR SITE PARKING, EQUIPMENT PARKING AND MATERIAL STORAGE WILL BE IN THE WEST HALF OF THE EXISTING PARKING LOT. IN ADDITION, THE CONTRACTOR MAY USE THE AREA DESIGNATED WITHIN THE AIRPORT FENCE FOR ADDITIONAL MATERIAL STORAGE, IN ORDER TO PROVIDE AN ADDED LEVEL OF SECURITY FOR STORAGE OF MATERIALS. ALL CONSTRUCTION MATERIALS WILL BE STORED IN DESIGNATED AREAS AND OUTSIDE OF RUNWAY AND TAXIWAY OBJECT FREE AREAS.

THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE CONSTRUCTION ACCESS, HAUL ROUTE, VEHICLE PARKING, EQUIPMENT PARKING AND MATERIAL STORAGE AREAS THROUGHOUT THE COURSE OF THE PROJECT. ANY AREAS DAMAGED OUTSIDE OF THESE AREAS WILL BE REPAIRED BY THE CONTRACTOR AND AT THE CONTRACTOR'S OWN EXPENSE. AT THE CONCLUSION OF THE PROJECT THE CONTRACTOR WILL RESTORE THESE AREAS TO THEIR PRE-CONSTRUCTION CONDITION, INCLUDING GRADING, FERTILIZING, SEEDING AND MULCHING FOR NON-PAVED AREAS. RESTORATION OF THESE AREAS WILL BE INCLUDED IN THE COST OF ITEM AR150540, HAUL ROUTE, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**BARRICADES AND TRAFFIC CONES**

IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AND TRAFFIC CONES AS SHOWN AND AS DIRECTED BY THE AIRPORT MANAGER. THE BARRICADES WILL BE EQUIPPED WITH RED FLASHING OR RED STEADY-BURN LIGHTS AND 20" SQUARE ORANGE FLAGS. THE BARRICADES, THEIR MAINTENANCE, PLACEMENT AND REMOVAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. INCLUDE BARRICADES FOR TAXIWAYS TO COORDINATE WITH THE RESPECTIVE RUNWAY CLOSURE. WHEN TAXIWAYS ARE CLOSED PLACE BARRICADES AT EACH END OF TAXIWAY AS NEEDED. WHEN BOTH RUNWAYS ARE CLOSED BARRICADES SHALL BE PLACED ON ALL TAXIWAYS LEADING TO THE RUNWAYS.

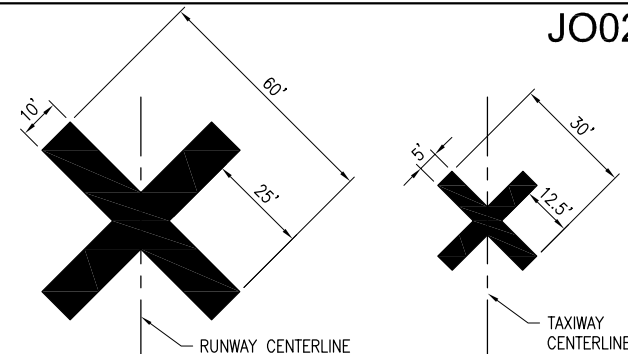
**HEIGHT OF CONSTRUCTION EQUIPMENT**

THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT WILL BE 70 FEET, WHICH IS EXPECTED TO BE A CRANE TO SET THE VAULT OR A BUCKET TRUCK TO WORK ON THE BEACON TOWER. THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT AT ALL OTHER LOCATIONS WILL BE 25 FEET, WHICH IS EXPECTED TO BE A CONCRETE TRUCK OR A LINE TRUCK. THE CRANE OR BUCKET TRUCK SHALL BE USED DURING THE DAYLIGHT HOURS AND VFR CONDITIONS ONLY AND SHALL BE LOWERED WHEN NOT IN USE, DURING THE HOURS BETWEEN SUNSET AND SUNRISE, AND/OR DURING IFR WEATHER CONDITIONS. WHEN IN USE, THE CRANE OR BUCKET TRUCK SHALL BE MARKED WITH THE 3' SQUARE CHECKERED FLAG.

**AIRPORT SECURITY NOTE**

AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR WILL BE SURE THE EXISTING GATE IN THE HAUL ROUTE IS CLOSED AT THE END OF EACH WORKING DAY.

CRITICAL POINT DATA					
POINT #	LATITUDE	LONGITUDE	GROUND ELEVATION	PROPOSED EQUIPMENT HEIGHT	PROPOSED EQUIPMENT ELEVATION
①	N 041° 31' 11.70"	W 088° 10' 45.03"	581'	25'	606'
②	N 041° 31' 08.33"	W 088° 10' 37.90"	580'	25'	605'
③	N 041° 30' 55.26"	W 088° 10' 15.62"	579'	25'	604'
④	N 041° 31' 02.61"	W 088° 10' 40.66"	576'	25'	601'
⑤	N 041° 31' 09.90"	W 088° 10' 29.59"	581'	25'	606'
⑥	N 041° 31' 14.33"	W 088° 10' 29.60"	581'	70'	651'
⑦	N 041° 31' 17.13"	W 088° 10' 40.06"	583'	70'	653'



1. TEMPORARY "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS SHALL BE "AVIATION YELLOW"
2. TEMPORARY "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS SHALL BE CONSTRUCTED OF PLYWOOD, DOUBLE-LAYERED SNOW FENCE OR APPROVED FABRIC AND SHALL BE SECURED TO PAVEMENT BY SANDBAGS OR OTHER APPROVED METHOD.
3. TEMPORARY "CLOSED RUNWAY" MARKINGS SHALL BE PLACED OVER THE RUNWAY DESIGNATION NUMBERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. TEMPORARY "CLOSED TAXIWAY" MARKINGS SHALL BE PLACED WHEN THE RUNWAY IS OPEN AND THE TAXIWAY IS CLOSED. THE "CLOSED TAXIWAY" MARKINGS SHALL BE PLACED AS SHOWN ON THIS SHEET AT A DISTANCE OF 65' FROM RUNWAY 13-31 CENTERLINE OR 125' FROM RUNWAY 4-22 CENTERLINE.
5. THE PROPOSED CROSSES WILL BE PLACED EACH DAY THE RUNWAY OR TAXIWAY IS CLOSED AND REMOVED WHEN THE RUNWAY OR TAXIWAY IS RE-OPENED. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PLACEMENT AND REMOVAL OF THE CROSSES. "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS SHALL NOT BE A PAY ITEM AND SHALL BE INCIDENTAL TO OTHER CONTRACT BID ITEMS.

**TEMPORARY CLOSURE CROSS DETAIL**

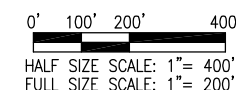
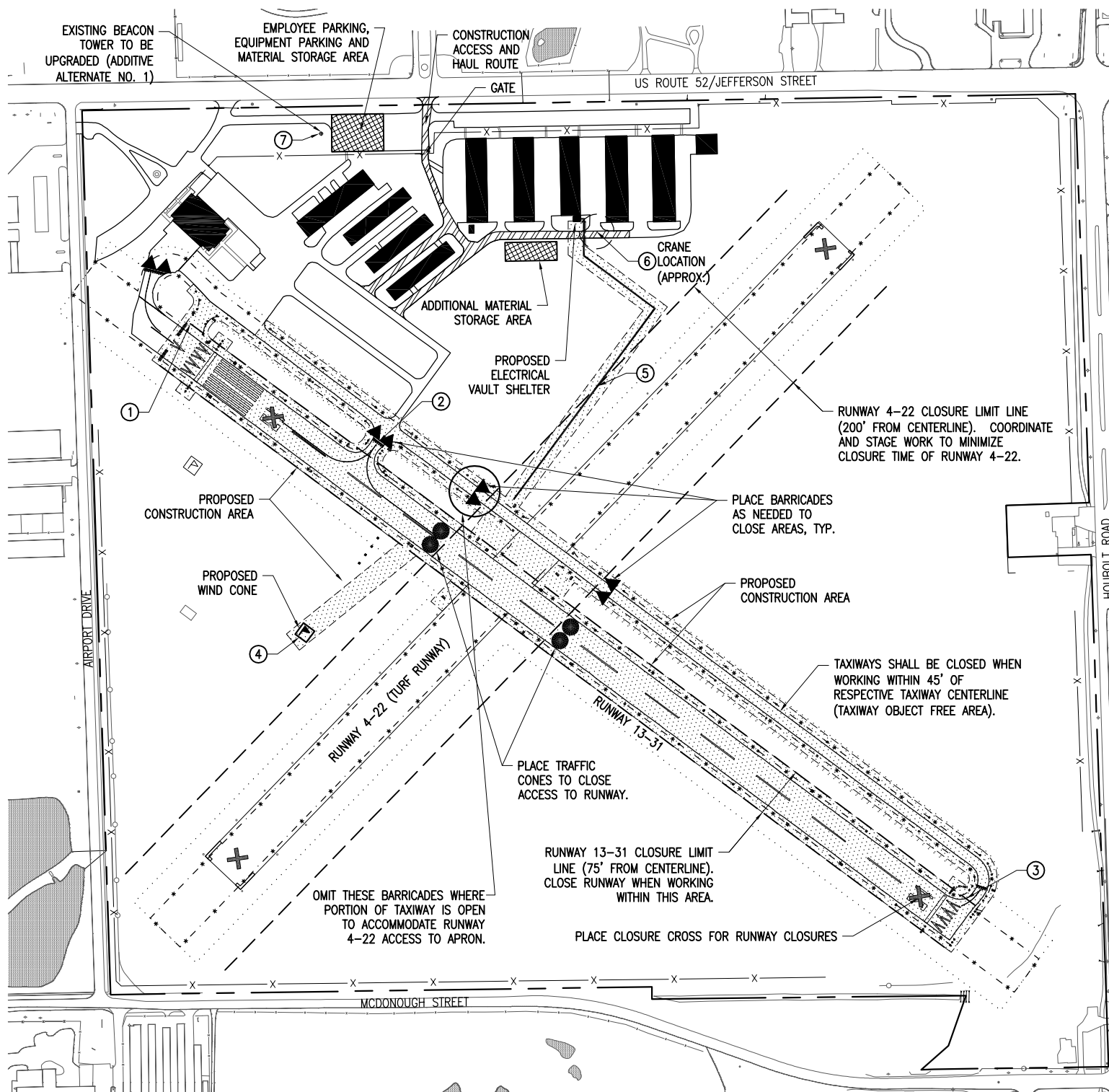
NOT TO SCALE

**EROSION CONTROL**

THIS PROJECT WILL DISTURB LESS THAN 1 ACRE OF LAND, THEREFORE NO N.P.D.E.S. PERMIT WILL BE REQUIRED.

**LEGEND**

- EXISTING IMPROVEMENTS
- EXISTING BUILDINGS
- PROPOSED WORK AREAS
- PROPOSED HAUL ROUTE
- PROPOSED CONTRACTOR STAGING AREA
- PROPOSED BARRICADES
- PROPOSED TRAFFIC CONES
- EXISTING FENCE
- RUNWAY/TAXIWAY SAFETY AREA
- RUNWAY/TAXIWAY OBJECT FREE AREA
- AIRPORT PROPERTY LINE
- CRITICAL POINT



REVISION	DATE	UPDATE PER	DATE
	03/09/12		

JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS

IL PROJ.: JOT-4166  
A.I.P. PROJ.: 3-17-0066-B8

Hanson Project No.	G-09A0177D-0001	LAYOUT	02/03/12
File Name	G-003-SFY.dwg	DRAWN	MLH
Scale	AS SHOWN	REVIEWED	KNL/CAH
Date	02/13/12		



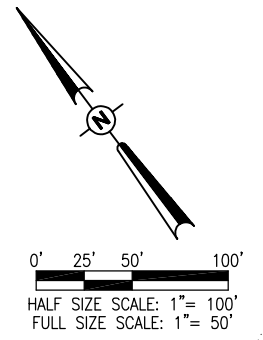
© Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 So. Skyway  
Springfield, Illinois 62703-2886

PROPOSED SAFETY PLAN  
CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

MAR 12 2012 11:27 AM K:\NCA00394  
pw:\sg\svr06\hanson\dom\hanson - Projects\Documents\09\jobs\09A0177D\09A0177D CAD\Work\Sheet\G-003-SFY

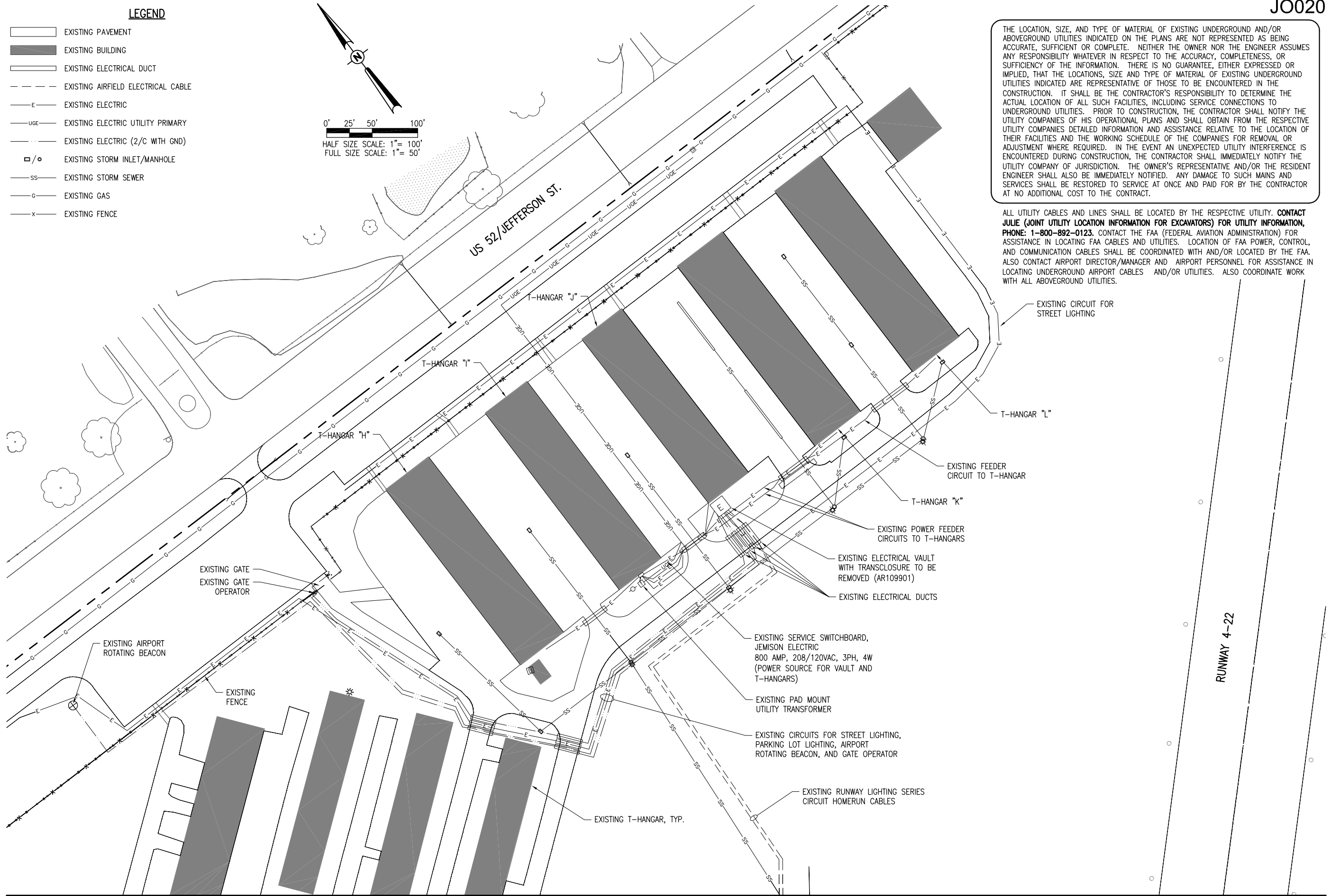
LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING AIRFIELD ELECTRICAL CABLE
- EXISTING ELECTRIC
- EXISTING ELECTRIC UTILITY PRIMARY
- EXISTING ELECTRIC (2/C WITH GND)
- EXISTING STORM INLET/MANHOLE
- EXISTING STORM SEWER
- EXISTING GAS
- EXISTING FENCE



THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED 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 CONTRACTOR 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 JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



REVISION	DATE

**JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS**

IL. PROJ.: JOT-4166  
A.I.P. PROJ.: 3-17-0066-B8

Hanson Project No. 09A0177D-0001	File Name C-141-ELE.dwg	Scale AS SHOWN	Date 02/13/12
LAYOUT	MLH	01/16/12	
DRAWN	MLH	01/16/12	
REVIEWED	KNL/CAH	02/13/12	

**HANSON**

© Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 S. State St.  
Springfield, Illinois 62703-2886

EXISTING ELECTRICAL PLAN - HOMERUNS AND VAULT

CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

MAR 12, 2012 11:32 AM K:\NCAD00394  
p:\s\sp-sv306.hanson.com\hanson\_projects\Documents\09A0177D\09A0177D CAD\Airport\Sheet\C-141-ELE

MATCHLINE - SEE NEXT SHEET

MATCHLINE - SEE SHEET 6

MATCHLINE - SEE PREVIOUS SHEET

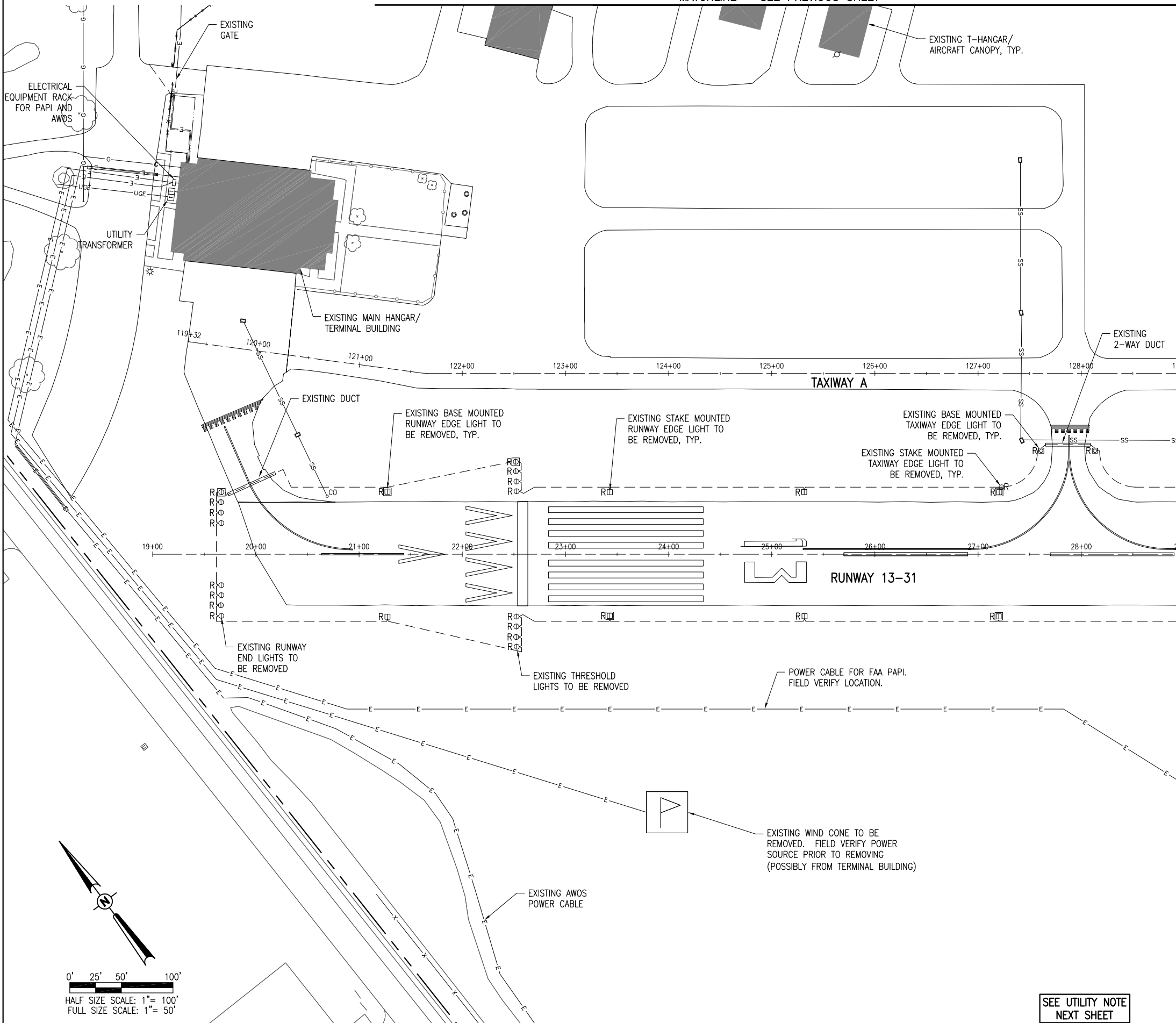
AIRFIELD LIGHTING REMOVAL NOTES

JO020

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAIDS, OR OTHER DEVICE.
3. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
4. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
5. POWER FOR THE RESPECTIVE WIND CONE SHALL BE DISCONNECTED AT THE RESPECTIVE POWER SOURCE PRIOR TO REMOVING THE RESPECTIVE WIND CONE. POWER FOR THE EXISTING PRIMARY WIND CONE IS UNDERSTOOD TO BE POWERED FROM THE MAIN HANGAR/TERMINAL BUILDING. CONTRACTOR SHALL FIELD VERIFY TO CONFIRM THE RESPECTIVE POWER SOURCE FOR EACH WIND CONE.
6. THE CONTRACTOR SHALL COORDINATE THE REMOVAL OF THE EXISTING WIND CONE WITH THE INSTALLATION OF THE NEW LIGHTED WIND CONE TO MINIMIZE THE TIME WHEN THE AIRPORT IS WITHOUT A WIND CONE. THE CONTRACTOR SHALL COORDINATE WITH AND NOTIFY THE AIRPORT MANAGER AND THE RESIDENT ENGINEER. HE SHALL PROVIDE A SCHEDULE FOR THE WIND CONE REMOVAL AND THE NEW WIND CONE INSTALLATION. THE CONTRACTOR WILL TURN THE WIND CONE AND SUPPORT POLE OVER TO THE AIRPORT MANAGER. THE CONCRETE BASE/FOUNDATION WILL BE DISPOSED OF OFF THE AIRPORT SITE, IN A LEGAL MANNER, AT THE EXPENSE OF THE CONTRACTOR.
7. THE EXISTING AIRFIELD (RUNWAY & TAXIWAY) LIGHTS AND THEIR ISOLATED TRANSFORMERS DESIGNATED FOR REMOVAL SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT. REMOVAL OF THE EXISTING AIRFIELD LIGHTS WILL BE PAID FOR UNDER ITEM AR125901 REMOVE STAKE MOUNTED LIGHT, PER EACH AND AR125902 REMOVE BASE MOUNTED LIGHT, PER EACH.
8. THE EXISTING AIRFIELD LIGHTING CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH THE INSTALLATION OF A PROPOSED LIGHT OR CABLE, PAVEMENT, OR OTHER WORK, THEN IT SHALL BE REMOVED AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES.
9. ALL ABOVEGROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2F, OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 218, PARAGRAPH C.
10. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE LIGHT AND/OR BASE REMOVAL WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
11. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

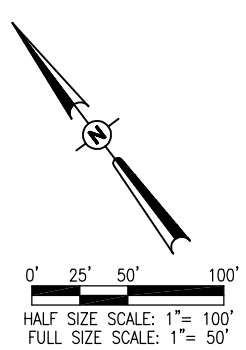
LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING AIRFIELD LIGHTING ELECTRICAL CABLE
- EXISTING ELECTRIC
- EXISTING STAKE MOUNTED TAXIWAY LIGHT (TO BE REMOVED)
- EXISTING BASE MOUNTED TAXIWAY LIGHT (TO BE REMOVED)
- EXISTING STAKE MOUNTED RUNWAY LIGHT (TO BE REMOVED)
- EXISTING BASE MOUNTED RUNWAY LIGHT (TO BE REMOVED)
- EXISTING STAKE MOUNTED THRESHOLD LIGHT (TO BE REMOVED)
- EXISTING BASE MOUNTED THRESHOLD LIGHT (TO BE REMOVED)
- EXISTING WIND CONE
- EXISTING STORM INLET/MANHOLE
- EXISTING STORM SEWER



MATCHLINE - SEE NEXT SHEET

SEE UTILITY NOTE NEXT SHEET



MAR 12, 2012 11:36 AM K:\NCAD00394... Documents\09jobs\0940177\0940177D\CAD\Airport\Sheet\C-141-ELE

REVISION	DATE	UPDATE PER	IDA REVIEW
	03/09/12		

**JOLIET REGIONAL AIRPORT**  
**JOLIET PARK DISTRICT**  
**JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-B8  
 I.L. PROJ.: JOT-4166

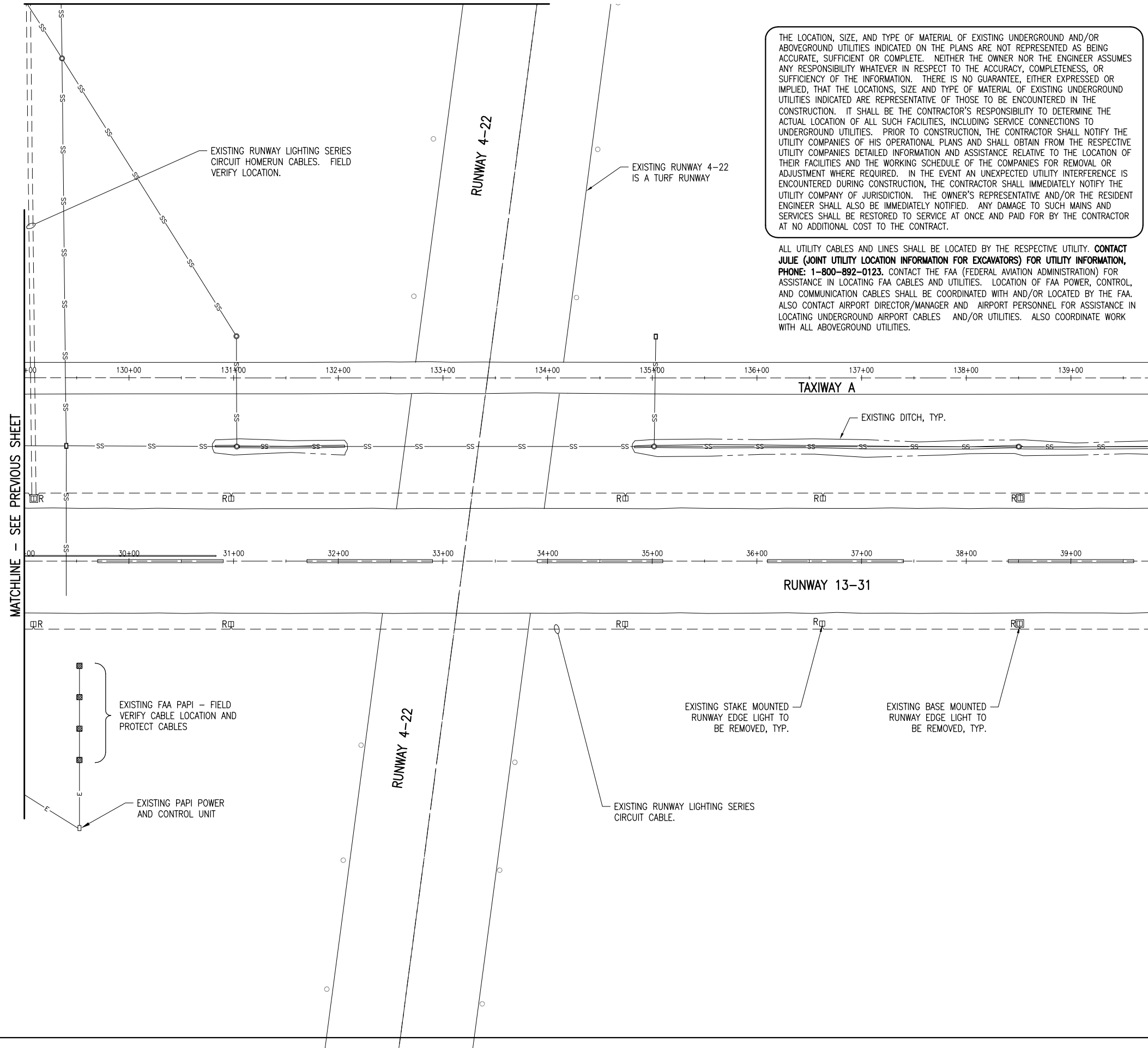
Hanson Project No.	0940177D-0001
Filename	C-141-ELE.dwg
Scale	AS SHOWN
Date	02/13/12
LAYOUT	MLH 01/16/12
DRAWN	MLH 01/16/12
REVIEWED	KNL/CAH 02/13/12

**HANSON**  
 Hanson Professional Services Inc.  
 1525 S. St. Louis  
 Springfield, Illinois 62703-2886

EXISTING ELECTRICAL PLAN - STA. 20+00 TO STA. 29+00

CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

MATCHLINE - SEE SHEET 4

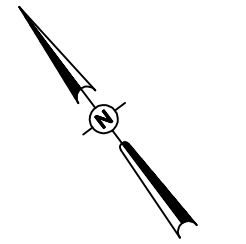


THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED 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 CONTRACTOR 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 JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

MATCHLINE - SEE PREVIOUS SHEET

MATCHLINE - SEE NEXT SHEET



0' 25' 50' 100'  
 HALF SIZE SCALE: 1" = 100'  
 FULL SIZE SCALE: 1" = 50'

**LEGEND**

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING AIRFIELD LIGHTING ELECTRICAL CABLE
- EXISTING ELECTRIC
- EXISTING STAKE MOUNTED RUNWAY LIGHT (TO BE REMOVED)
- EXISTING BASE MOUNTED RUNWAY LIGHT (TO BE REMOVED)
- EXISTING STORM INLET/MANHOLE
- EXISTING STORM SEWER

MAR 12, 2012 11:39 AM K:\KAC00394...  
 pw:\sri-sv306.hanson.com\hanson\_projects\Documents\09jobs\09A0177\09A0177D\CAD\Airport\Sheet\C-141-ELE

REVISION	DATE

**JOLIET REGIONAL AIRPORT  
 JOLIET PARK DISTRICT  
 JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-B8

IL PROJ.: JOT-4166

Hanson Project No.	09A0177D-0001
Filename	C-141-ELE.dwg
Scale	AS SHOWN
Date	02/13/12
LAYOUT	MLH 01/16/12
DRAWN	MLH 01/16/12
REVIEWED	KNL/CAH 02/13/12



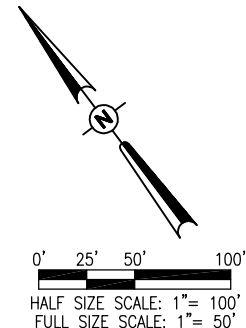
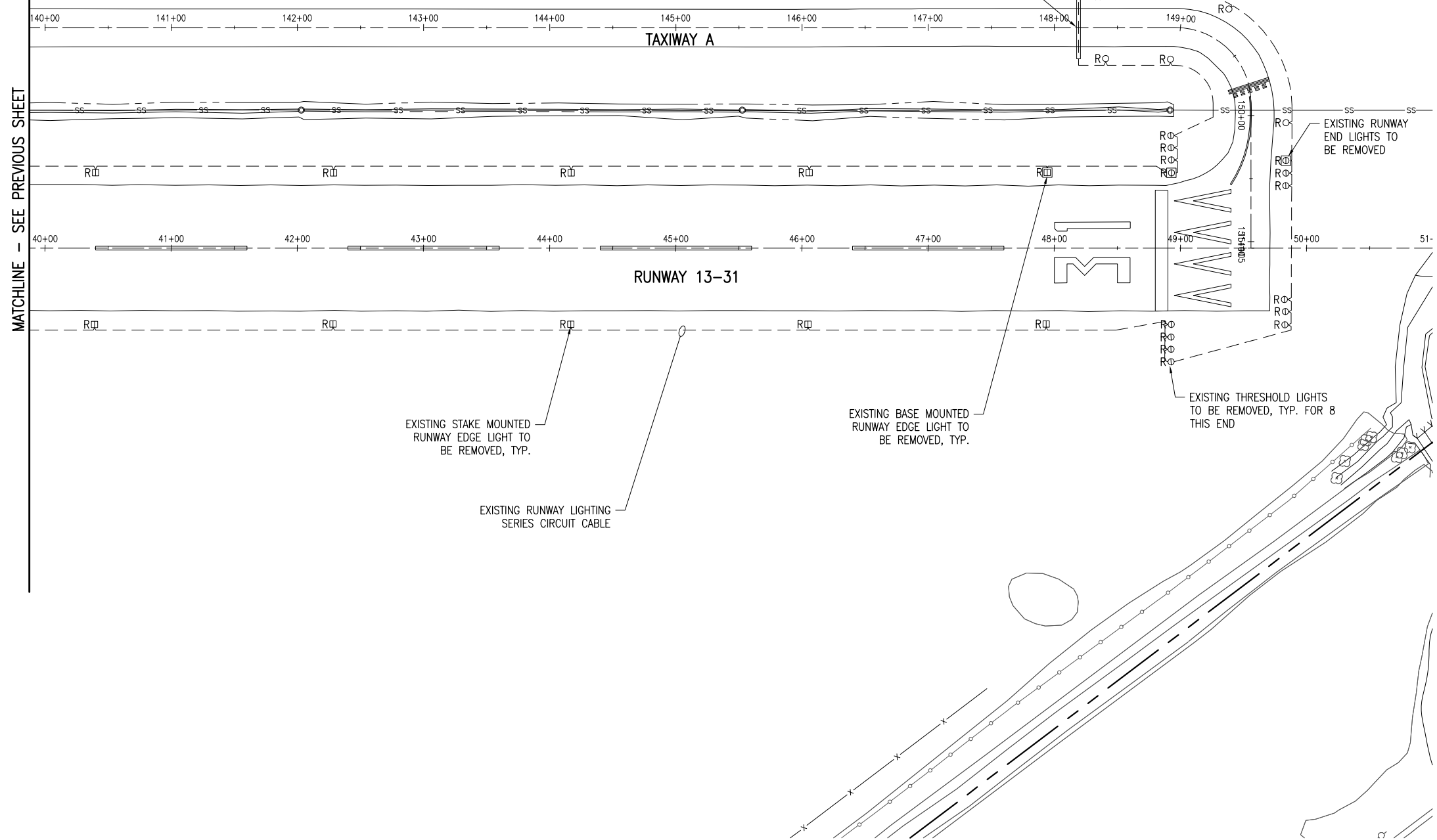
© Copyright Hanson Professional Services Inc. 2012  
**Hanson Professional Services Inc.**  
 1525 S. State Street  
 Springfield, Illinois 62703-2886

EXISTING ELECTRICAL PLAN -  
 STA. 29+00 TO STA. 39+75

CONSTRUCT A STAND ALONE  
 ELECTRICAL VAULT, REPLACE RUNWAY  
 LIGHTS AND INSTALL TAXIWAY LIGHTS

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED 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 CONTRACTOR 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 JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



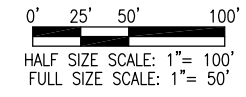
- LEGEND**
- EXISTING PAVEMENT
  - EXISTING BUILDING
  - EXISTING ELECTRICAL DUCT
  - EXISTING AIRFIELD LIGHTING ELECTRICAL CABLE
  - O R EXISTING STAKE MOUNTED TAXIWAY LIGHT (TO BE REMOVED)
  - R EXISTING STAKE MOUNTED RUNWAY LIGHT (TO BE REMOVED)
  - R EXISTING BASE MOUNTED RUNWAY LIGHT (TO BE REMOVED)
  - ⊙ R EXISTING STAKE MOUNTED THRESHOLD LIGHT (TO BE REMOVED)
  - ⊞ R EXISTING BASE MOUNTED THRESHOLD LIGHT (TO BE REMOVED)
  - / ○ EXISTING STORM INLET/MANHOLE
  - SS EXISTING STORM SEWER

MATCHLINE - SEE PREVIOUS SHEET

REVISION		<b>JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS</b>	A.I.P. PROJ.: 3-17-0056-B8 IL PROJ.: JOT-4166
DATE			
Hanson Project No. 09A0177D-0001 Filename C-141-ELE.dwg Scale AS SHOWN Date 02/13/12		LAYOUT MLH 01/16/12 DRAWN MLH 01/16/12 REVIEWED KNL/CAH 02/13/12	
		© Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 S. Skyway Springfield, Illinois 62703-2886	
EXISTING ELECTRICAL PLAN - STA. 39+75 TO STA. 51+00		CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS	
7		7 of 38 sheets	

**LEGEND**

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRIC
- EXISTING ELECTRIC UTILITY PRIMARY
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UG CABLE IN UNIT DUCT
- PROPOSED 4-1/C #6 AWG, XLP-USE 600 VOLT UG CABLE IN UNIT DUCT
- EXISTING ELECTRICAL STRUCTURE (HANDHOLE, SPLICE CAN)
- PROPOSED ELECTRICAL STRUCTURE (MANHOLE, HANDHOLE, SPLICE CAN)
- EXISTING ELECTRICAL MARKER (DUCT MARKER, CABLE MARKER)
- EXISTING STORM INLET/MANHOLE
- EXISTING STORM SEWER
- EXISTING GAS
- EXISTING FENCE

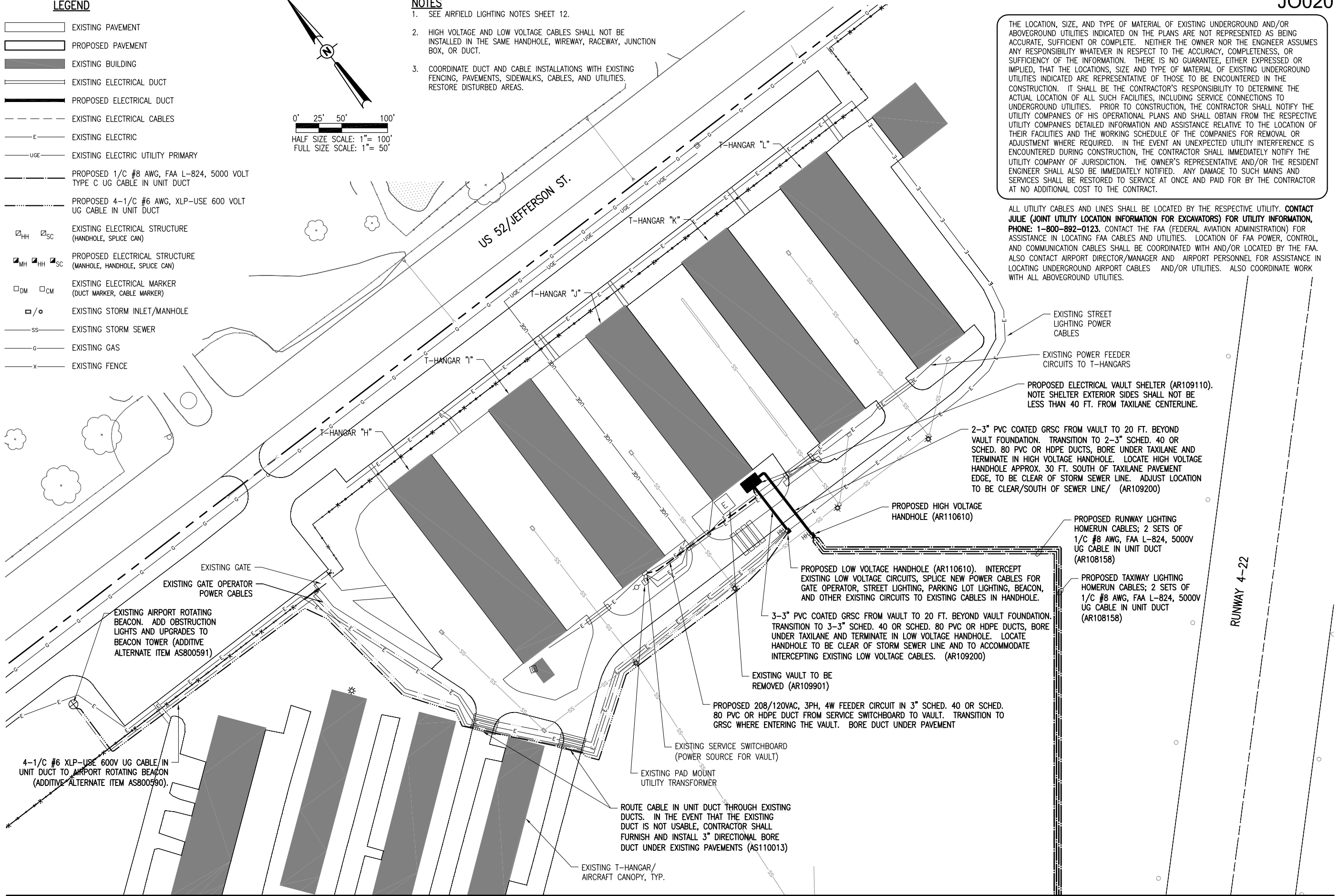


**NOTES**

1. SEE AIRFIELD LIGHTING NOTES SHEET 12.
2. HIGH VOLTAGE AND LOW VOLTAGE CABLES SHALL NOT BE INSTALLED IN THE SAME HANDHOLE, WIREWAY, RACEWAY, JUNCTION BOX, OR DUCT.
3. COORDINATE DUCT AND CABLE INSTALLATIONS WITH EXISTING FENCING, PAVEMENTS, SIDEWALKS, CABLES, AND UTILITIES. RESTORE DISTURBED AREAS.

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED 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 CONTRACTOR 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 JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



MATCHLINE - SEE NEXT SHEET

MATCHLINE - SEE SHEET 10

REVISION	DATE	JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS		A.I.P. PROJ.: 3-17-0066-B8	
HANSON © Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 S. Skyway Springfield, Illinois 62703-2886					
Project No. 09A0177D-0001 Filename C-142-ELE.dwg Scale AS SHOWN Date 02/13/12	LAYOUT MLH 01/16/12 DRAWN MLH 01/16/12 REVIEWED KNL/CAH 02/13/12	PROPOSED ELECTRICAL PLAN - HOMERUNS AND VAULT CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS			IL PROJ.: JOT-4166
<span style="font-size: 2em;">8</span> 8 of 38 sheets					

MAR 12, 2012 11:44 AM K:\NCA00394  
 p:\sps-sv306\hanson\Documents\09\jobs\09A0177D\09A0177D(CAD)\Airport\Sheet\C-142-ELE



MATCHLINE - SEE PREVIOUS SHEET

NOTES

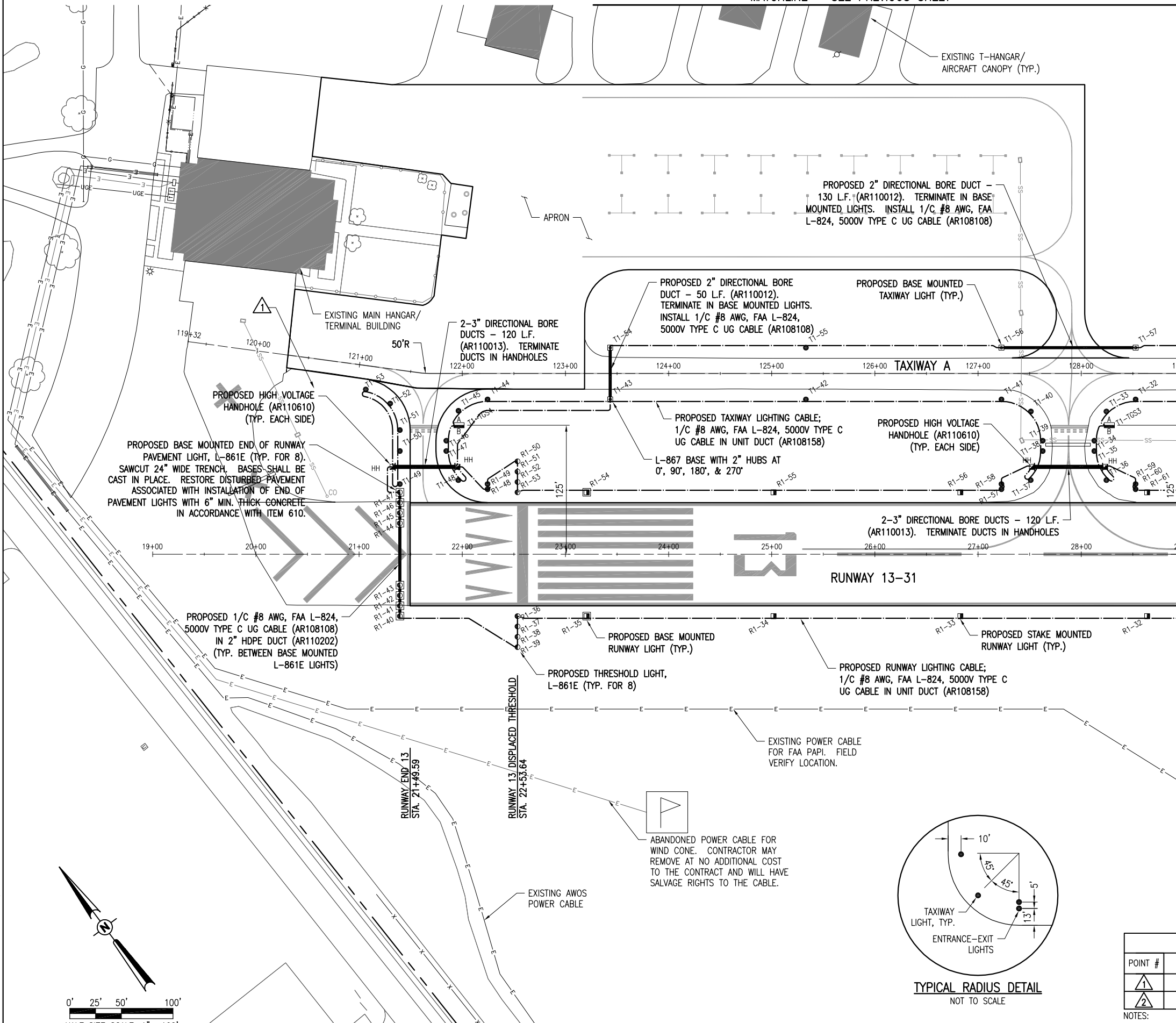
JO020

1. SEE AIRFIELD LIGHTING NOTES SHEET 12.

LEGEND

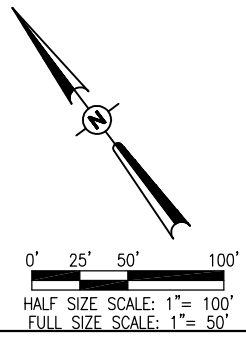
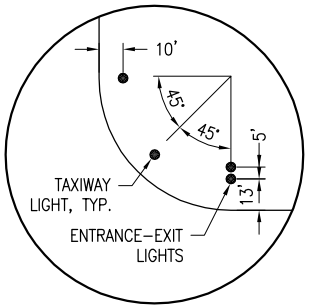
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRIC
- EXISTING ELECTRIC UTILITY PRIMARY
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UG CABLE IN UNIT DUCT
- PROPOSED 4-1/C #6 AWG, XLP-USE 600 VOLT UG CABLE IN UNIT DUCT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED STAKE MOUNTED THRESHOLD LIGHT
- PROPOSED BASE MOUNTED THRESHOLD LIGHT
- PROPOSED TAXI GUIDANCE SIGN
- EXISTING ELECTRICAL STRUCTURE (HANDHOLE, SPLICE CAN)
- PROPOSED ELECTRICAL STRUCTURE (MANHOLE, HANDHOLE, SPLICE CAN)
- EXISTING ELECTRICAL MARKER (DUCT MARKER, CABLE MARKER)
- PROPOSED WIND CONE
- EXISTING STORM INLET/MANHOLE
- EXISTING STORM SEWER
- EXISTING GAS
- EXISTING FENCE
- COORDINATE LOCATION
- BENCHMARK LOCATION

MATCHLINE - SEE NEXT SHEET



ALIGNMENT COORDINATE DATA TABLE					
POINT #	STATION	OFFSET	LINE	NORTHING	EASTING
①	19+00.00	0.00'	RWY 13-31	1767779.0586	1026220.1919
②	29+00.00	0.00'	13-31	1767183.8007	1027023.7266
③	119+32.33	0.00'	TXY A	1767924.0303	1026370.3820
④	121+61.22	0.00'	TXY A	1767764.5320	1026534.5380
⑤	121+67.89	0.00'	TXY A	1767760.2157	1026539.6180
⑥	129+00.00	0.00'	TXY A	1767324.4222	1027127.8927
⑦	39+75.00	0.00'	13-31	1766543.8984	1027887.5264
⑧	139+75.00	0.00'	TXY A	1766684.5199	1027991.6925
⑨	148+95.93	0.00'	TXY A	1766136.3261	1028731.6957
⑩	149+90.18	0.00'	TXY A	1766052.3985	1028744.1923
⑪	151+05.18	0.00'	TXY A	1765959.9920	1028675.7377
	49+55.93	0.00'	13-31		

BENCHMARK DATA				
POINT #	DESCRIPTION	ELEVATION	NORTHING	EASTING
①	NGS MONUMENT 'JOLIPOINT'	579.87	1767814.875	1026441.630
②	NGS MONUMENT 'JOLIPOINT AZ MK'	---	1766728.003	1027868.334



MAR 12, 2012 11:46 AM K:\NCAD00394... MAR 12, 2012 11:46 AM K:\NCAD00394...

REVISION

DATE

JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS

A.I.P. PROJ.: 3-17-0066-B8

IL PROJ.: JOT-4166

Hanson Project No. 09A0177D-0001  
File Name C-142-ELE.dwg  
Scale AS SHOWN  
Date 02/13/12

LAYOUT	MLH	01/16/12
DRAWN	MLH	01/16/12
REVIEWED	KNL/CAH	02/13/12

**HANSON**  
Professional Services Inc.  
1525 S. State Street  
Springfield, Illinois 62703-2886

PROPOSED ELECTRICAL PLAN - STA. 20+00 TO STA. 29+00

CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

9  
9 of 38 sheets

NOTES

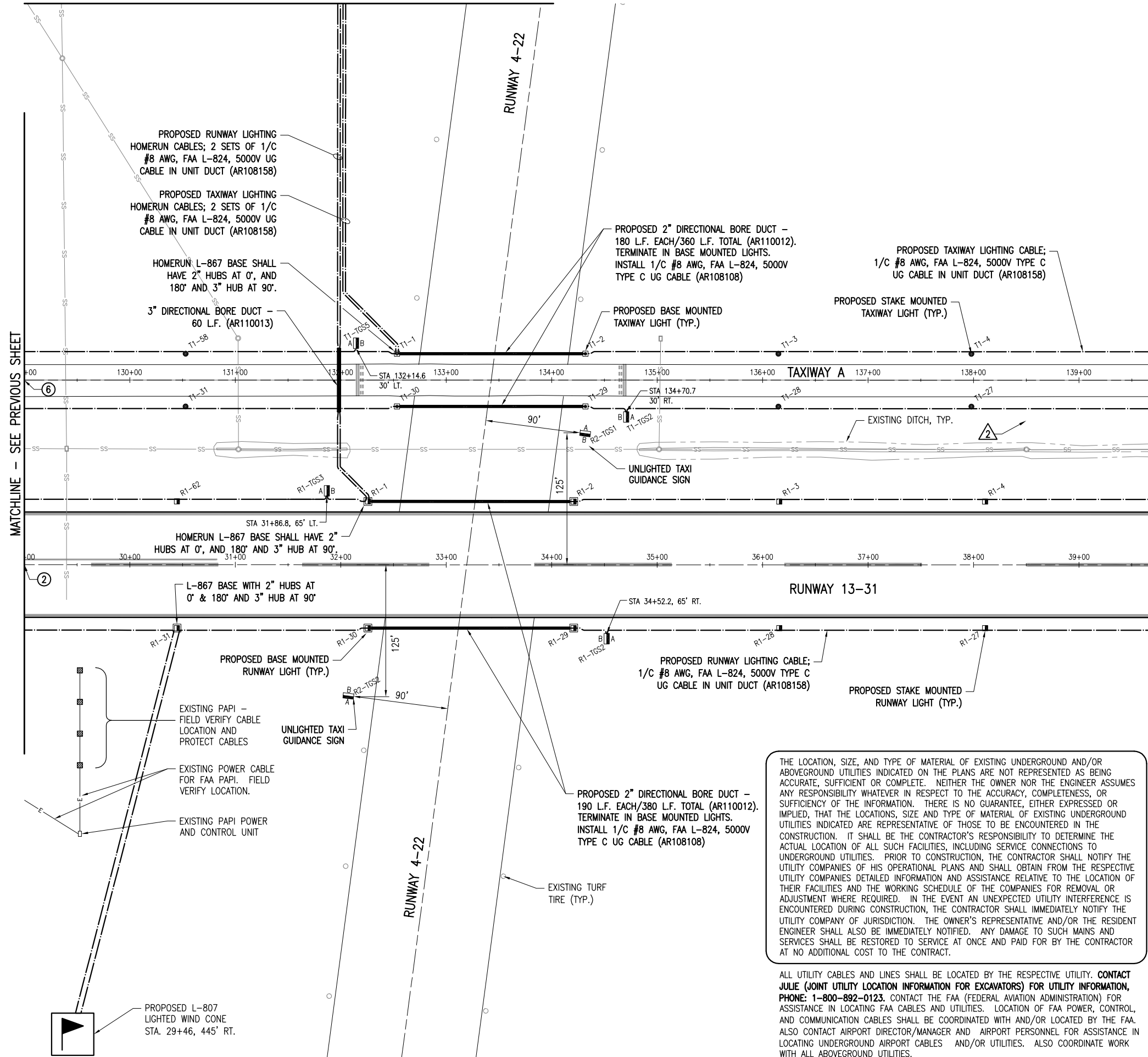
1. SEE AIRFIELD LIGHTING NOTES SHEET 12.

LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRIC
- EXISTING ELECTRIC UTILITY PRIMARY
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UG CABLE IN UNIT DUCT
- PROPOSED 4-1/C #6 AWG, XLP-USE 600 VOLT UG CABLE IN UNIT DUCT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED STAKE MOUNTED THRESHOLD LIGHT
- PROPOSED BASE MOUNTED THRESHOLD LIGHT
- PROPOSED TAXI GUIDANCE SIGN
- EXISTING ELECTRICAL STRUCTURE (HANDHOLE, SPLICE CAN)
- PROPOSED ELECTRICAL STRUCTURE (MANHOLE, HANDHOLE, SPLICE CAN)
- EXISTING ELECTRICAL MARKER (DUCT MARKER, CABLE MARKER)
- PROPOSED WIND CONE
- EXISTING STORM INLET/MANHOLE
- EXISTING STORM SEWER
- EXISTING GAS
- EXISTING FENCE
- COORDINATE LOCATION (SEE SHEET 9)
- BENCHMARK LOCATION (SEE SHEET 9)

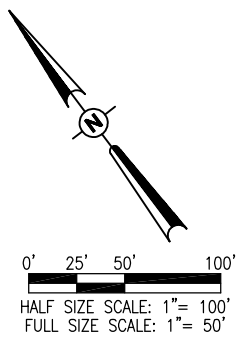
MATCHLINE - SEE PREVIOUS SHEET

MATCHLINE - SEE NEXT SHEET



THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED 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 CONTRACTOR 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 JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



MAR 12, 2012 11:47 AM K:\KAC00394  
 pw:\sps-svc06\hanson\Documents\09\Jobs\0940177\0940177D\CAD\Work\Sheet\C-142-ELE

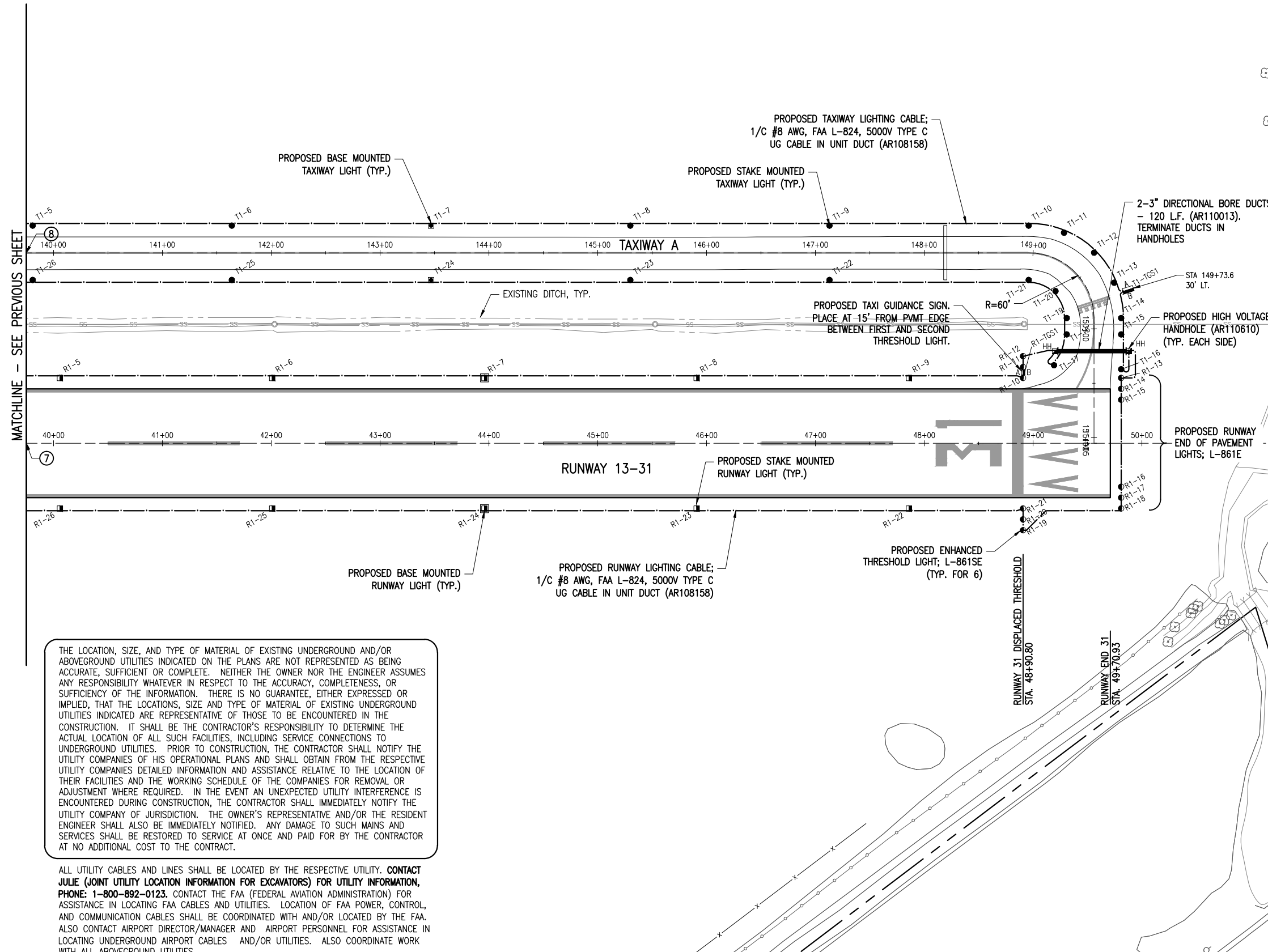
REVISION					
DATE					
<b>JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS</b>					
A.I.P. PROJ.: 3-17-0066-B8 I.L. PROJ.: JOT-4166					
Hanson Project No.	0940177D-0001	LAYOUT	MLH	01/16/12	
Filename	C-142-ELE.dwg	DRAWN	MLH	01/16/12	
Scale	AS SHOWN	REVIEWED	KNL/CAH	02/13/12	
Date	02/13/12				
<b>HANSON</b>					
<small>© Copyright Hanson Professional Services Inc. 2012        Hanson Professional Services Inc.        1525 S. State Street        Springfield, Illinois 62703-2886</small>					
PROPOSED ELECTRICAL PLAN - STA. 29+00 TO STA. 39+75					
CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS					
<b>10</b>					
10 of 38 sheets					

**NOTES**

1. SEE AIRFIELD LIGHTING NOTES SHEET 12.

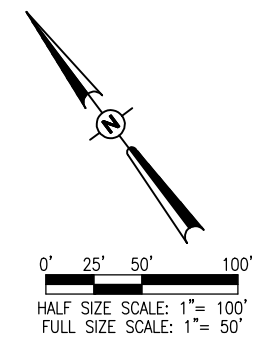
**LEGEND**

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLES
- EXISTING ELECTRIC
- EXISTING ELECTRIC UTILITY PRIMARY
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UG CABLE IN UNIT DUCT
- PROPOSED 4-1/C #6 AWG, XLP-USE 600 VOLT UG CABLE IN UNIT DUCT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED STAKE MOUNTED THRESHOLD LIGHT
- PROPOSED BASE MOUNTED THRESHOLD LIGHT
- PROPOSED TAXI GUIDANCE SIGN
- EXISTING ELECTRICAL STRUCTURE (HANDHOLE, SPLICE CAN)
- PROPOSED ELECTRICAL STRUCTURE (MANHOLE, HANDHOLE, SPLICE CAN)
- EXISTING ELECTRICAL MARKER (DUCT MARKER, CABLE MARKER)
- PROPOSED WIND CONE
- EXISTING STORM INLET/MANHOLE
- EXISTING STORM SEWER
- EXISTING GAS
- EXISTING FENCE
- COORDINATE LOCATION (SEE SHEET 9)



THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED 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 CONTRACTOR 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 JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



REVISION	DATE

**JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-BB  
I.L. PROJ.: JOT-4166

Hanson Project No. 09A0177D-0001	File Name C-142-ELE.dwg	Scale AS SHOWN	Date 02/13/12
LAYOUT	MLH	01/16/12	02/13/12
DRAWN	MLH	01/16/12	02/13/12
REVIEWED	KNL/CAH	02/13/12	02/13/12

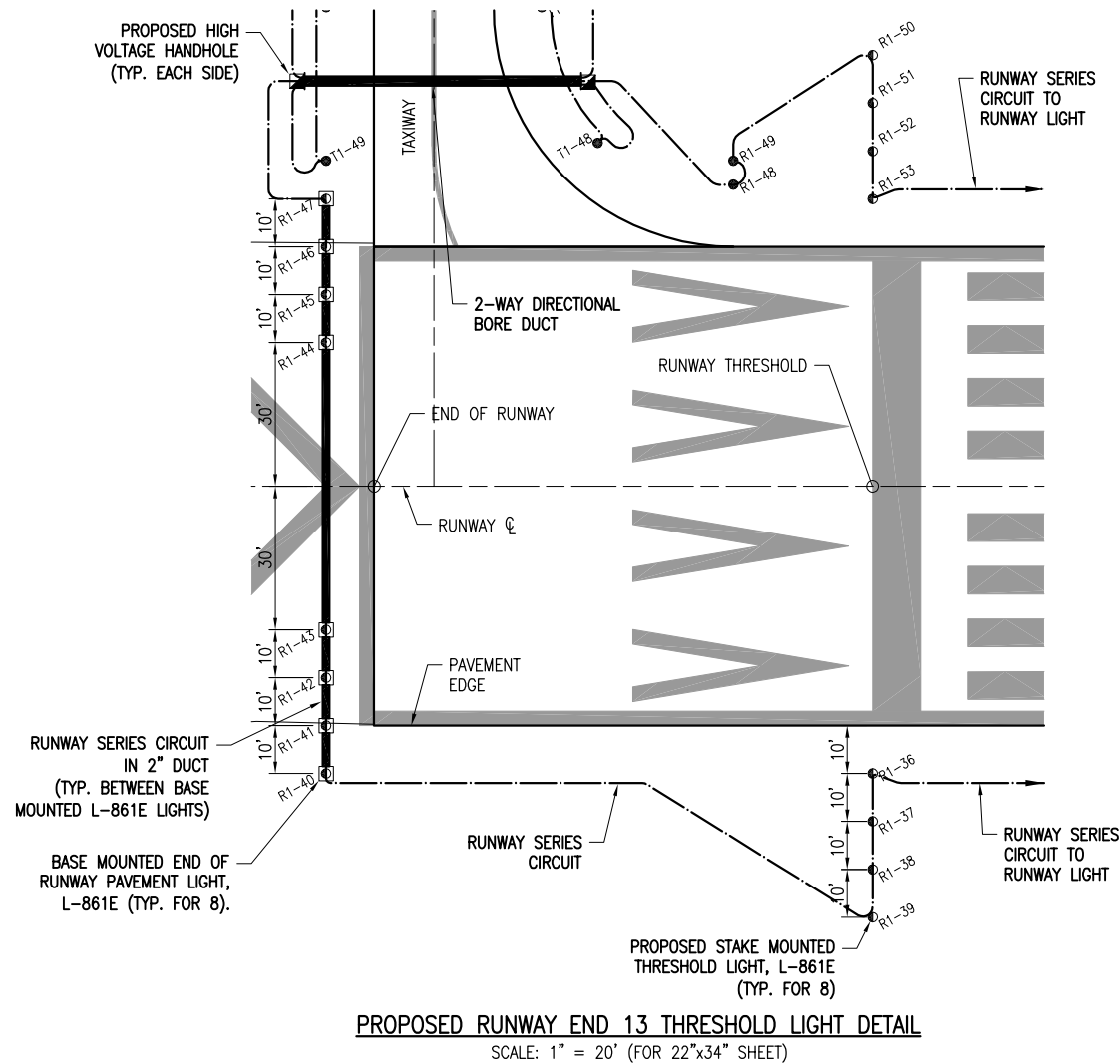
© Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 South Sixth Street  
Springfield, Illinois 62703-2886

PROPOSED ELECTRICAL PLAN - STA. 39+75 TO STA. 51+00

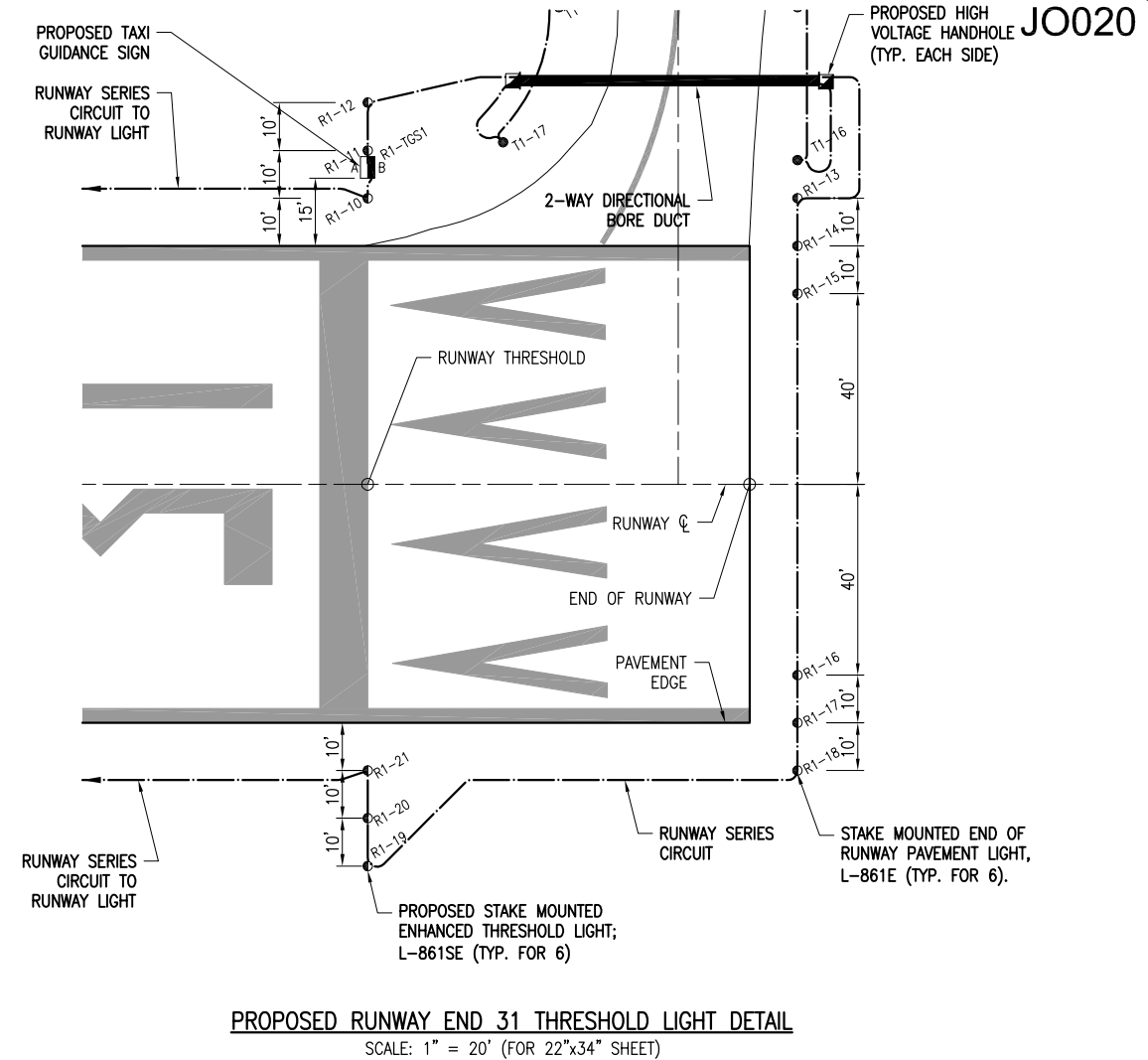
CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

MAR 12, 2012 11:59 AM K:\CADC0394 pw:\spsr\306\hanson.dom\hanson\_projects\documents\09\jobs\09A0177D\CAD\Work\Sheet\C-142-ELE

MAR 12, 2012 1:14 PM K:\CADD\394 - Projects\09101770\09101770\09101770\09101770.dwg (Airport) Sheet C-542-DETL



**PROPOSED RUNWAY END 13 THRESHOLD LIGHT DETAIL**  
SCALE: 1" = 20' (FOR 22"x34" SHEET)



**PROPOSED RUNWAY END 31 THRESHOLD LIGHT DETAIL**  
SCALE: 1" = 20' (FOR 22"x34" SHEET)

**AIRFIELD LIGHTING NOTES**

- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAID, OR OTHER DEVICE.
- PROPOSED RUNWAY, THRESHOLD, AND TAXIWAY LIGHTS SHALL BE PLACED 10' (FT.) FROM THE PAVEMENT EDGE UNLESS SHOWN OTHERWISE ON THESE CONSTRUCTION DRAWINGS. PROPOSED TAXI GUIDANCE SIGNS SHALL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 15' FROM THE PAVEMENT EDGE, UNLESS SHOWN OTHERWISE.
- PROPOSED RUNWAY LIGHTS, THRESHOLD LIGHTS, TAXIWAY LIGHTS, GUIDANCE SIGNS, OTHER AIRFIELD LIGHTING, SPLICE CANS, HANDHOLES, MANHOLES, ELECTRICAL DUCTS, AND CABLE SHALL BE INSTALLED AT THE LOCATIONS SHOWN AND IN COMPLIANCE WITH THE SPECIFICATIONS, SPECIAL PROVISIONS, RESPECTIVE DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
- PROPOSED CABLE FOR RUNWAY AND TAXIWAY LIGHTING SHALL BE INSTALLED APPROXIMATELY 12' FROM THE PAVEMENT EDGE. CABLES SHALL BE PLACED A MINIMUM OF 18" BELOW FINISHED GRADE.
- THE PROPOSED RUNWAY AND TAXIWAY LIGHTING CABLE SHALL BE 1/C, #8 AWG, FAA L-824, 5000 VOLT, TYPE C UNDERGROUND CABLE IN UNIT DUCT, OR DUCT AS DETAILED HEREIN.
- IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE CROSSES AN EXISTING CABLE, THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH NECESSARY FOR THE PROPOSED CABLE. AT OTHER LOCATIONS, THE PROPOSED CABLE MAY BE TRENCHED OR PLOWED INTO PLACE. HAND DIGGING, TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- PROPOSED RUNWAY LIGHTS SHALL BE FITTED WITH LENSES IN ACCORDANCE WITH THE "LIGHT LENS SCHEDULE". ALL PROPOSED TAXIWAY LIGHTS WILL BE FITTED WITH 360° BLUE LENSES.
- ALL PROPOSED RUNWAY, THRESHOLD, AND TAXIWAY LIGHTS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE LIGHT NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS.
- SEE "TAXI GUIDANCE SIGN SCHEDULE" FOR INFO ON SIGN LEGENDS.
- THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA AC 150/5370-2F, PART 218, PARAGRAPH C. ALL LABOR, MATERIALS, AND TIME NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT.
- EXISTING AIRFIELD LIGHTING CABLES IN AREAS OF NEW WORK SHALL BE DISCONNECTED & REMOVED WHERE IN CONFLICT WITH NEW CONSTRUCTION. IN OTHER AREAS CABLES MAY BE ABANDONED IN PLACE.
- THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE NEW WORK, WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY. THIS WORK WILL BE CONSIDERED AS AN INCIDENTAL ITEM AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

REVISION	DATE	UPDATE PER	IDA REVIEW
	03/09/12		

**JOLIET REGIONAL AIRPORT**  
**JOLIET PARK DISTRICT**  
**JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-B8  
ILL. PROJ.: JOT-4166

Hanson Project No.	09A01770-0001	LAYOUT	MLH	01/16/12
Filename	C-542-DETL.dwg	DRAWN	MLH	01/16/12
Scale	AS SHOWN	REVIEWED	KNL/CAH	02/13/12
Date	02/13/12			



© Copyright Hanson Professional Services Inc. 2012  
**Hanson Professional Services Inc.**  
1525 S. State St.  
Springfield, Illinois 62703-2886

THRESHOLD DETAILS AND AIRFIELD LIGHTING NOTES

CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

LIGHT LOCATIONS

LIGHT NUMBERS	STATION	OFFSET	LINE	NORTHING	EASTING	LIGHT NUMBERS	STATION	OFFSET	LINE	NORTHING	EASTING
R1-1	32+25.84	60' LT.	RWY 13-31	1767038.05	1027321.27	T1-1	132+53.36	25' LT.	TXY A	1767134.17	1027426.71
R1-2	34+20.85	60' LT.	RWY 13-31	1766921.97	1027477.96	T1-2	134+31.93	25' LT.	TXY A	1767027.87	1027570.20
R1-3	36+15.85	60' LT.	RWY 13-31	1766805.89	1027634.66	T1-3	136+14.93	25' LT.	TXY A	1766918.94	1027717.25
R1-4	38+10.86	60' LT.	RWY 13-31	1766689.81	1027791.35	T1-4	137+97.93	25' LT.	TXY A	1766810.01	1027864.30
R1-5	40+05.87	60' LT.	RWY 13-31	1766573.74	1027948.05	T1-5	139+80.93	25' LT.	TXY A	1766701.07	1028011.35
R1-6	42+00.88	60' LT.	RWY 13-31	1766457.66	1028104.74	T1-6	141+63.93	25' LT.	TXY A	1766592.14	1028158.39
R1-7	43+95.88	60' LT.	RWY 13-31	1766341.58	1028261.44	T1-7	143+46.93	25' LT.	TXY A	1766483.21	1028305.44
R1-8	45+90.89	60' LT.	RWY 13-31	1766225.50	1028418.13	T1-8	145+29.93	25' LT.	TXY A	1766374.28	1028452.48
R1-9	47+85.90	60' LT.	RWY 13-31	1766109.42	1028574.83	T1-9	147+12.93	25' LT.	TXY A	1766265.35	1028599.53
R1-10	48+90.80	60' LT.	RWY 13-31	1766046.97	1028659.12	T1-10	148+95.93	25' LT.	TXY A	1766156.41	1028746.58
R1-11	48+90.80	70' LT.	RWY 13-31	1766055.01	1028665.07	T1-11	149+19.49	25' LT.	TXY A	1766131.85	1028768.86
R1-12	48+90.80	80' LT.	RWY 13-31	1766063.04	1028671.02	T1-12	149+43.05	25' LT.	TXY A	1766100.63	1028780.05
R1-13	49+80.93	60' LT.	RWY 13-31	1765993.32	1028731.54	T1-13	149+66.62	25' LT.	TXY A	1766067.51	1028778.44
R1-14	49+80.93	50' LT.	RWY 13-31	1765985.29	1028725.59	T1-14	149+90.18	25' LT.	TXY A	1766037.52	1028764.28
R1-15	49+80.93	40' LT.	RWY 13-31	1765977.25	1028719.64	T1-15	150+05.18	25' LT.	TXY A	1766025.45	1028755.35
R1-16	49+80.93	40' RT.	RWY 13-31	1765912.97	1028672.02	T1-16	150+37.18	25' LT.	TXY A	1765999.75	1028736.30
R1-17	49+80.93	50' RT.	RWY 13-31	1765904.93	1028666.06	T1-17	150+33.46	36.72' RT.	TXY A	1766039.47	1028688.92
R1-18	49+80.93	60' RT.	RWY 13-31	1765896.90	1028660.11	T1-18	150+05.18	25' RT.	TXY A	1766055.23	1028715.18
R1-19	48+90.80	80' RT.	RWY 13-31	1765934.48	1028575.78	T1-19	149+90.18	25' RT.	TXY A	1766067.28	1028724.10
R1-20	48+90.80	70' RT.	RWY 13-31	1765942.51	1028581.74	T1-20	149+43.05	25' RT.	TXY A	1766093.27	1028730.60
R1-21	48+90.80	60' RT.	RWY 13-31	1765950.55	1028587.69	T1-21	148+95.93	25' RT.	TXY A	1766116.24	1028716.81
R1-22	47+85.90	60' RT.	RWY 13-31	1766012.99	1028503.40	T1-22	147+12.93	25' RT.	TXY A	1766225.17	1028569.77
R1-23	45+90.89	60' RT.	RWY 13-31	1766129.07	1028346.70	T1-23	145+29.93	25' RT.	TXY A	1766334.10	1028422.72
R1-24	43+95.88	60' RT.	RWY 13-31	1766245.15	1028190.01	T1-24	143+46.93	25' RT.	TXY A	1766443.03	1028275.68
R1-25	42+00.88	60' RT.	RWY 13-31	1766361.23	1028033.31	T1-25	141+63.93	25' RT.	TXY A	1766551.97	1028128.63
R1-26	40+05.87	60' RT.	RWY 13-31	1766477.31	1027876.62	T1-26	139+80.93	25' RT.	TXY A	1766660.90	1027981.58
R1-27	38+10.86	60' RT.	RWY 13-31	1766593.39	1027719.92	T1-27	137+97.93	25' RT.	TXY A	1766769.83	1027834.54
R1-28	36+15.85	60' RT.	RWY 13-31	1766709.47	1027563.23	T1-28	136+14.93	25' RT.	TXY A	1766878.76	1027687.49
R1-29	34+20.85	60' RT.	RWY 13-31	1766825.55	1027406.53	T1-29	134+31.94	25' RT.	TXY A	1766987.69	1027540.44
R1-30	32+25.84	60' RT.	RWY 13-31	1766941.63	1027249.84	T1-30	132+53.36	25' RT.	TXY A	1767093.99	1027396.95
R1-31	30+44.80	60' RT.	RWY 13-31	1767049.40	1027104.36	T1-31	130+52.97	25' RT.	TXY A	1767213.27	1027235.93
R1-32	28+63.76	60' RT.	RWY 13-31	1767157.16	1026958.89	T1-32	128+52.58	25' RT.	TXY A	1767332.56	1027074.91
R1-33	26+82.72	60' RT.	RWY 13-31	1767264.93	1026813.42	T1-33	128+24.30	36.72' RT.	TXY A	1767339.98	1027045.21
R1-34	25+01.68	60' RT.	RWY 13-31	1767372.69	1026667.95	T1-34	128+12.58	65' RT.	TXY A	1767324.22	1027018.96
R1-35	23+20.64	60' RT.	RWY 13-31	1767480.46	1026522.47	T1-35	128+12.58	75' RT.	TXY A	1767316.19	1027013.01
R1-36	22+53.64	60' RT.	RWY 13-31	1767520.34	1026468.64	T1-36	128+24.30	103.28' RT.	TXY A	1767286.49	1027005.59
R1-37	22+53.64	70' RT.	RWY 13-31	1767512.30	1026462.69	T1-37	127+50.87	103.28' RT.	TXY A	1767330.20	1026946.58
R1-38	22+53.64	80' RT.	RWY 13-31	1767504.27	1026456.74	T1-38	127+62.58	75' RT.	TXY A	1767345.95	1026972.83
R1-39	22+53.64	90' RT.	RWY 13-31	1767496.23	1026450.78	T1-39	127+62.58	65' RT.	TXY A	1767353.99	1026978.79
R1-40	21+39.60	60' RT.	RWY 13-31	1767588.22	1026377.00	T1-40	127+51.13	36.72' RT.	TXY A	1767383.53	1026986.42
R1-41	21+39.60	50' RT.	RWY 13-31	1767596.26	1026382.96	T1-41	127+22.58	25' RT.	TXY A	1767409.94	1026970.45
R1-42	21+39.60	40' RT.	RWY 13-31	1767604.30	1026388.91	T1-42	125+33.01	25' RT.	TXY A	1767522.78	1026818.13
R1-43	21+39.60	30' RT.	RWY 13-31	1767612.33	1026394.86	T1-43	123+43.44	25' RT.	TXY A	1767635.63	1026665.80
R1-44	21+39.60	30' LT.	RWY 13-31	1767660.54	1026430.58	T1-44	122+24.60	25' RT.	TXY A	1767706.37	1026570.31
R1-45	21+39.60	40' LT.	RWY 13-31	1767668.58	1026436.53	T1-45	121+96.37	36' RT.	TXY A	1767714.33	1026541.07
R1-46	21+39.60	40' LT.	RWY 13-31	1767676.61	1026442.48	T1-46	121+84.60	65' RT.	TXY A	1767698.04	1026514.36
R1-47	21+39.60	60' LT.	RWY 13-31	1767684.65	1026448.43	T1-47	121+84.60	75' RT.	TXY A	1767690.00	1026508.40
R1-48	22+24.60	63' LT.	RWY 13-31	1767636.46	1026518.52	T1-48	121+96.31	103.28' RT.	TXY A	1767660.30	1026500.98
R1-49	22+24.60	68' LT.	RWY 13-31	1767640.48	1026521.50	T1-49	121+54.06	109.37' RT.	TXY A	1767691.08	1026453.20
R1-50	22+53.64	90' LT.	RWY 13-31	1767640.87	1026557.93	T1-50	121+49.81	77.65' RT.	TXY A	1767716.79	1026472.24
R1-51	22+53.64	80' LT.	RWY 13-31	1767632.83	1026551.97	T1-51	121+47.12	57.63' RT.	TXY A	1767733.03	1026484.27
R1-52	22+53.64	70' LT.	RWY 13-31	1767624.80	1026546.02	T1-52	121+34.41	33.38' RT.	TXY A	1767759.27	1026492.06
R1-53	22+53.64	60' LT.	RWY 13-31	1767616.76	1026540.07	T1-53	121+09.09	22.98' RT.	TXY A	1767784.38	1026481.14
R1-54	23+20.64	60' LT.	RWY 13-31	1767576.88	1026593.91	T1-54	123+43.44	25' LT.	TXY A	1767675.80	1026695.56
R1-55	25+01.68	60' LT.	RWY 13-31	1767469.12	1026739.38	T1-55	125+33.01	25' LT.	TXY A	1767562.96	1026847.89
R1-56	26+82.72	60' LT.	RWY 13-31	1767361.35	1026884.85	T1-56	127+22.58	25' LT.	TXY A	1767450.12	1027000.22
R1-57	27+22.58	63' LT.	RWY 13-31	1767340.03	1026918.67	T1-57	128+52.58	25' LT.	TXY A	1767372.73	1027104.68
R1-58	27+22.58	68' LT.	RWY 13-31	1767344.05	1026921.64	T1-58	130+52.97	25' LT.	TXY A	1767253.45	1027265.70
R1-59	28+52.58	68' LT.	RWY 13-31	1767266.67	1027026.10						
R1-60	28+52.58	63' LT.	RWY 13-31	1767262.65	1027023.13						
R1-61	28+63.76	60' LT.	RWY 13-31	1767253.59	1027030.32						
R1-62	30+44.80	60' LT.	RWY 13-31	1767145.82	1027175.79						

TAXI GUIDANCE SIGN SCHEDULE

SIGN NUMBERS	LOCATION	SIDE A	SIDE B
R1-TGS1	RUNWAY 13 INTERSECTION WITH TAXIWAY A	←A	BLANK
R1-TGS2	RUNWAY 31 INTERSECTION WITH RUNWAY 4-22	A 4-22	BLANK
R1-TGS3	RUNWAY 13 INTERSECTION WITH RUNWAY 22-4	22-4	BLANK
T1-TGS1	TAXIWAY A AT RUNWAY END 31 (HOLD LINE)	31	BLANK
T1-TGS2	TAXIWAY A INTERSECTION WITH RUNWAY 4-22 (AT HOLD LINE)	A 4-22	BLANK
T1-TGS3	TAXIWAY CONN. AT RUNWAY 31-13 (HOLD LINE)	31-13	RAMP ↑
T1-TGS4	TAXIWAY CONN. AT RUNWAY END 31 (HOLD LINE)	13	BLANK
T1-TGS5	TAXIWAY A INTERSECTION WITH RUNWAY 22-4 (AT HOLD LINE)	A 22-4	BLANK
R2-TGS1**	RUNWAY 22 INTERSECTION WITH RUNWAY 31-13	31-13	BLANK
R2-TGS2**	RUNWAY 4 INTERSECTION WITH RUNWAY 13-13	13-31	BLANK

\*\* UNLIGHTED SIGN

TAXI GUIDANCE SIGN LEGEND

- A** TYPE L-858L LOCATION SIGN - YELLOW LEGEND AND BORDER ON A BLACK BACKGROUND
- 13-31** TYPE L-858R MANDATORY INSTRUCTION SIGN - BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON A RED BACKGROUND
- RAMP ↑** TYPE L-858Y DIRECTION, DESTINATION, AND BOUNDARY SIGN - BLACK LEGEND ON A YELLOW BACKGROUND
- BLANK** BLANK - BLACK BACKGROUND

TAXI GUIDANCE SIGN NOTES

- THE PROPOSED LIGHTED TAXI GUIDANCE SIGNS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345 44J (OR LATEST ISSUE IN FORCE) AND BE FAA-APPROVED FOR TYPE L-858Y DIRECTION, DESTINATION, AND BOUNDARY SIGNS (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858R MANDATORY INSTRUCTION SIGN (BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON RED BACKGROUND); AND/OR TYPE L-858L LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND). THE SIGNS SHALL BE SIZE 1, 18-IN. SIGN FACE WITH A 12-IN. LEGEND; STYLE 2, POWERED FROM A 4.8 TO 6.6 AMP SERIES LIGHTING CIRCUIT; CLASS 2, FOR OPERATION FROM -40 DEGREES F TO 131 DEGREES F; MODE 2, TO WITHSTAND WIND LOADS OF 200 M.P.H., BASE-MOUNTED, DOUBLE-SIDED, AS SPECIFIED ON THE PLANS.
- THE PROPOSED UNLIGHTED TAXI GUIDANCE SIGNS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345-44J (OR LATEST ISSUE IN FORCE) AND BE FAA-APPROVED FOR TYPE L-858 TAXIWAY AND RUNWAY SIGNS. THE SIGNS SHALL BE SIZE 1, 18-IN. SIGN FACE WITH A 12-IN. LEGEND; STYLE 4, UNLIGHTED SIGNS; MODE 2, TO WITHSTAND WIND LOADS OF 200 M.P.H., BASE-MOUNTED.

LIGHT LENS SCHEDULE

LIGHT NUMBERS	LENS	ORIENTATION	FIXTURE TYPE
R1-1 TO R1-2	CLEAR WHITE	---	L-861
R1-3 TO R1-9	CLEAR WHITE/AMBER	AMBER SIDE FACING NORTHWEST	L-861
R1-10 TO R1-12	GREEN UNI-DIRECTIONAL	GREEN SIDE FACING SOUTHEAST	L-861SE
R1-13 TO R1-18	RED/RED	---	L-861E
R1-19 TO R1-21	GREEN UNI-DIRECTIONAL	GREEN SIDE FACING SOUTHEAST	L-861SE
R1-22 TO R1-28	CLEAR WHITE/AMBER	AMBER SIDE FACING NORTHWEST	L-861
R1-29 TO R1-35	CLEAR WHITE	---	L-861
R1-36 TO R1-39	GREEN UNI-DIRECTIONAL	GREEN SIDE FACING NORTHWEST	L-861E
R1-40 TO R1-47	RED/RED	---	L-861E
R1-48 TO R1-49	BLUE	---	L-861T
R1-50 TO R1-53	GREEN UNI-DIRECTIONAL	GREEN SIDE FACING NORTHWEST	L-861E
R1-54 TO R1-56	CLEAR WHITE	---	L-861
R1-57 TO R1-60	BLUE	---	L-861T
R1-61 TO R1-62	CLEAR WHITE	---	L-861
T1-1 TO T1-73	BLUE	---	L-861T

REVISION

DATE

JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS

A.I.P. PROJ.: 3-17-0066-B8

IL PROJ.: JOT-4166

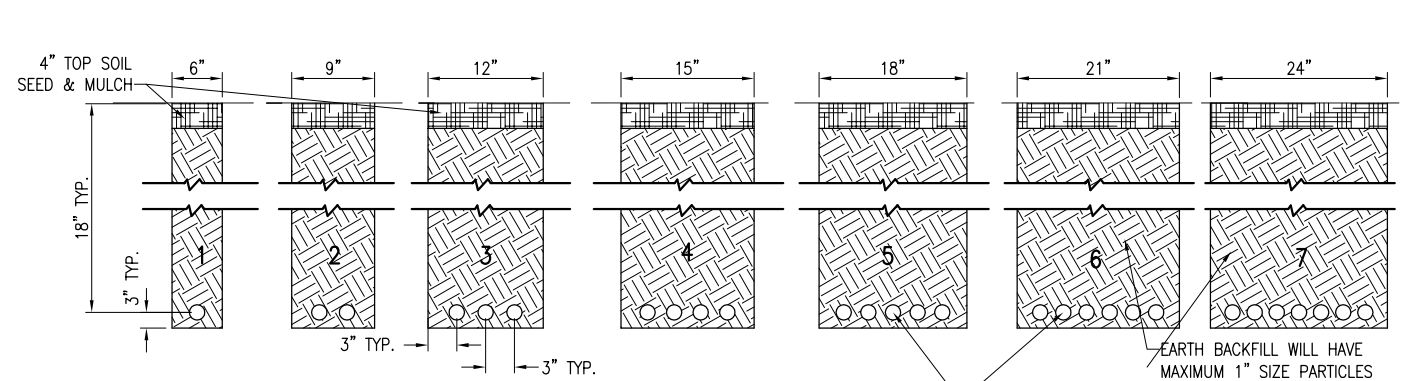
Hanson Project No. 09A0177D-0001	01/16/12
Filename C-542-DETL.dwg	MLH
Scale AS SHOWN	01/16/12
Date 02/13/12	REVIEWED
	KNL/CAH
	02/13/12

**HANSON**

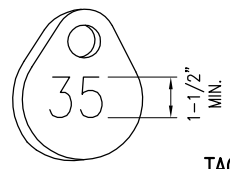
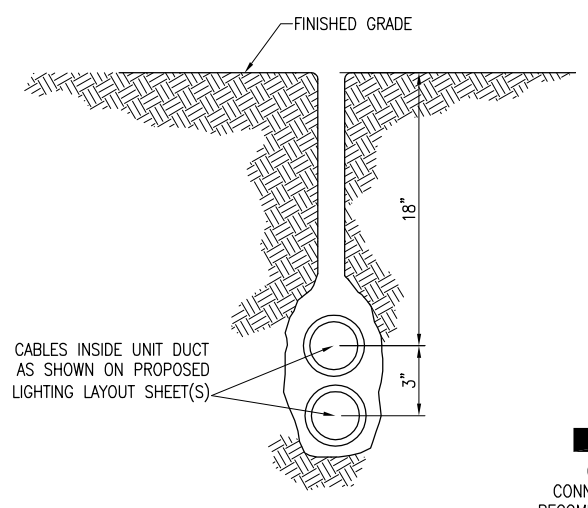
Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 So. State St.  
Springfield, Illinois 62703-2886

AIRFIELD LIGHTING SCHEDULES  
AND LIGHT LOCATION TABLE

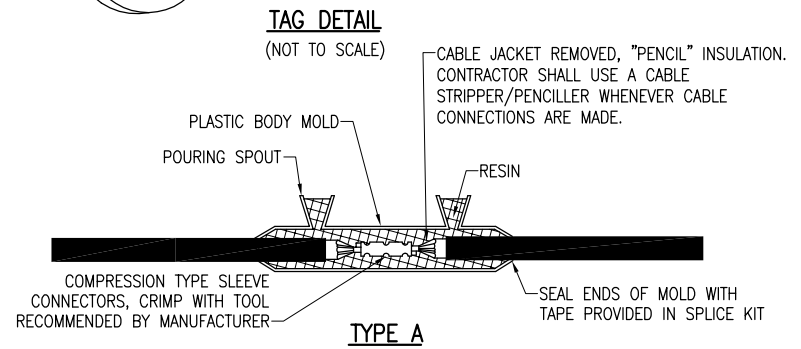
CONSTRUCT A STAND ALONE  
ELECTRICAL VAULT, REPLACE RUNWAY  
LIGHTS AND INSTALL TAXIWAY LIGHTS



**NOTES:**  
 DETAIL NUMBERS INDICATE NO. OF CABLES.  
 TRENCHES WITH MORE THAN SEVEN CABLES SHALL BE INCREASED 3" IN WIDTH FOR EACH ADDITIONAL CABLE; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.  
 DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
 ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.

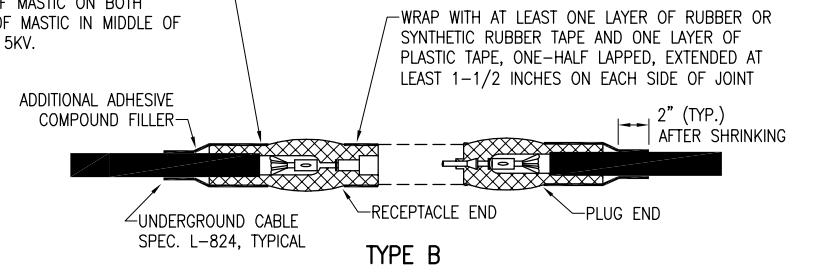


**NOTE:**  
 AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.



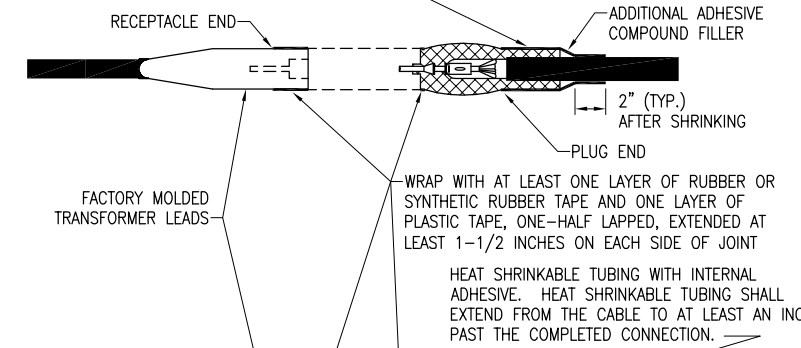
CONTINUOUS HEAT SHRINK TUBING PLACED OVER THE ENTIRE L-823 CONNECTOR(S) BOTH MALE AND FEMALE AT ALL 5KV JUNCTIONS. THE HEAT SHRINK TUBING SHALL BE APPROXIMATELY 18" IN LENGTH WITH 6 INCHES OF MASTIC ON BOTH ENDS AND VOID OF MASTIC IN MIDDLE OF TUBE RATED FOR 5KV.

FOR SPLICES IN LOW VOLTAGE CABLE (600V) HOMERUNS FOR EXTENSIONS TO EXISTING LOW VOLTAGE CABLES ONLY. TYPE A SPLICES SHALL BE MADE IN SPLICE CANS, HANDHOLES, MANHOLES, OR JUNCTIONS BOXES



FOR SPLICES AT JUNCTION OF HOMERUN WITH LOOP CIRCUIT AND FOR SPLICES IN HOMERUNS TO EXISTING CABLES

HEAT SHRINKABLE TUBING WITH INTERNAL ADHESIVE. HEAT SHRINKABLE TUBING SHALL EXTEND FROM THE CABLE TO AT LEAST AN INCH PAST THE COMPLETED CONNECTION.

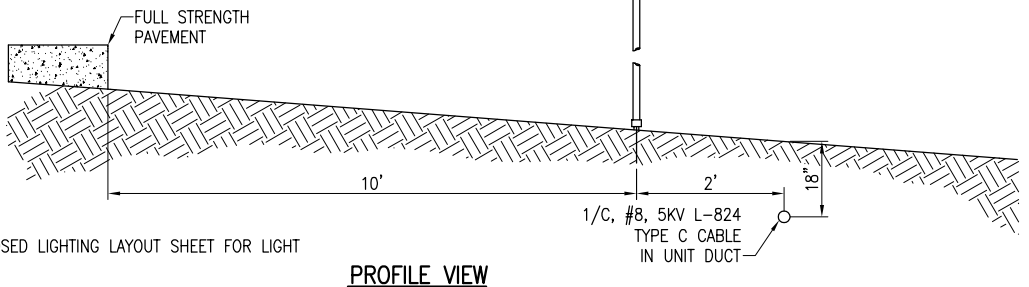
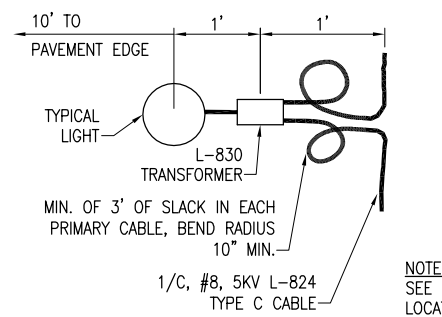


FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS

INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF CABLE.

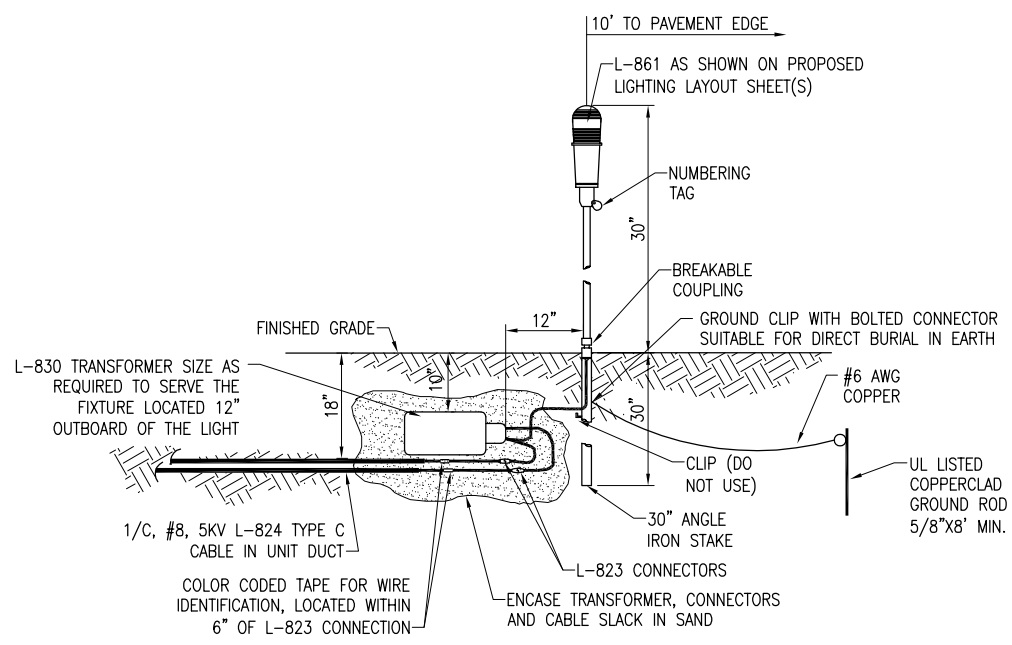
**CABLE SPLICES**  
 (NOT TO SCALE)

**CABLE TRENCHES**  
 (NOT TO SCALE)

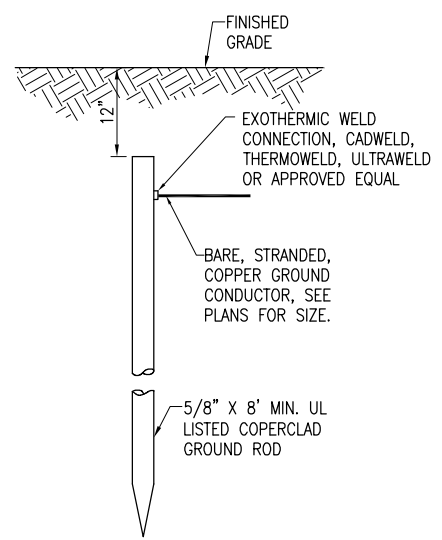


**PROFILE VIEW**

**LIGHT AND CABLE INSTALLATION DETAIL**  
 (NOT TO SCALE)



**MEDIUM INTENSITY LIGHT - STAKE MOUNTED**  
 (NOT TO SCALE)



**NOTES:**  
 TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.  
 THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.  
 COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.

**GROUND ROD**  
 (NOT TO SCALE)

PER FAA AC 150/5340-30F DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 5/8-INCH DIAMETER BY 8-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD.

**NOTES:**  
 SEE PROPOSED LIGHTING LAYOUT SHEET FOR LIGHT LOCATIONS.

SEE "ELECTRICAL DETAILS SHEET 2" FOR BASE MOUNT LIGHT DETAILS

REVISION	
DATE	
<b>JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS</b>	
A.I.P. PROJ.: 3-17-0066-B8	
IL PROJ.: JOT-4166	

Hanson Project No.	09A01770-0001
Filename	E-501-DETL.dwg
Scale	NOT TO SCALE
Date	02/13/12
LAYOUT	KNL 01/16/12
DRAWN	MLH 01/27/12
REVIEWED	KNL/CAH 02/13/12

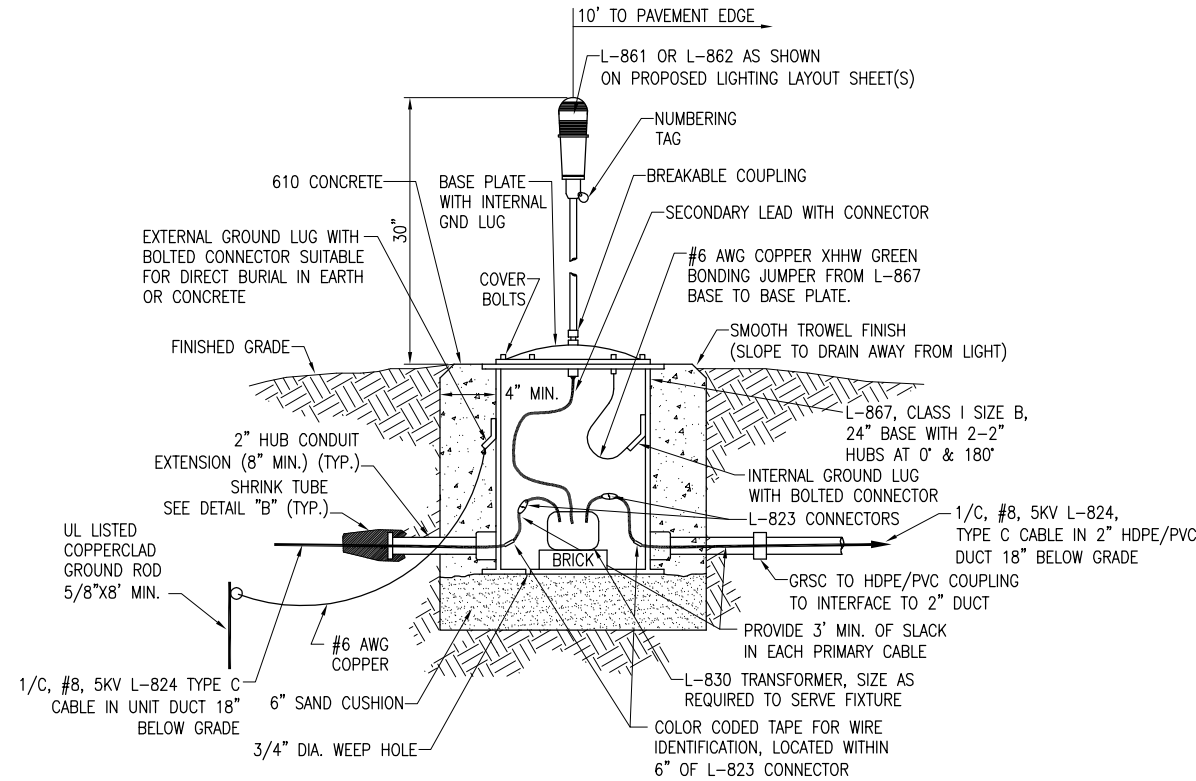
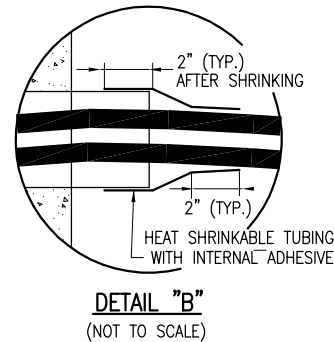
**HANSON**

© Copyright Hanson Professional Services Inc. 2012  
 Hanson Professional Services Inc.  
 1525 S. Skyway  
 Springfield, Illinois 62703-2886

ELECTRICAL DETAILS  
 SHEET 1

CONSTRUCT A STAND ALONE  
 ELECTRICAL VAULT, REPLACE RUNWAY  
 LIGHTS AND INSTALL TAXIWAY LIGHTS

MAR 12, 2012 1:41 PM KINC00394  
 pw:\sps-sv306\hanson\Documents\09\Jobs\09A01770\CAD\Airport\Sheet\E-501-DETL



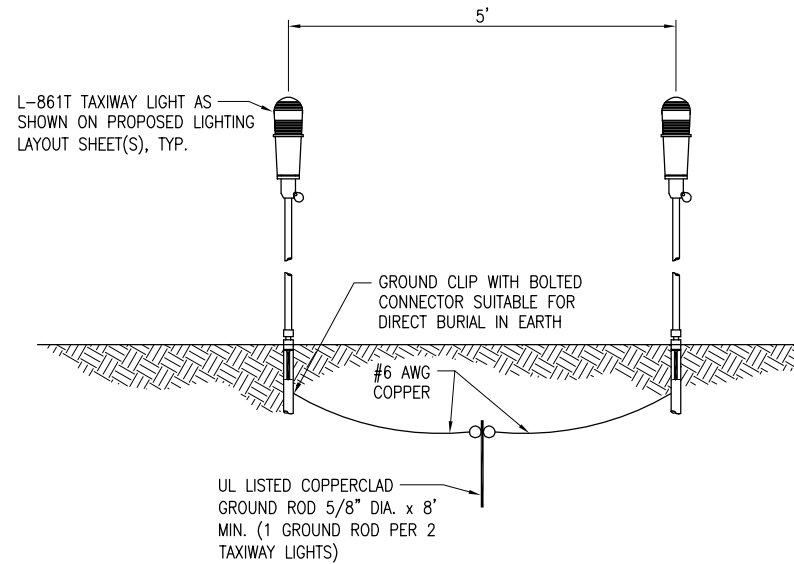
**MEDIUM/HIGH INTENSITY LIGHT - BASE MOUNTED**

(NOT TO SCALE)

NOTE: SEE PROPOSED ELECTRICAL PLANS FOR LOCATIONS OF BASE MOUNTED LIGHTS WITH 2" DUCT INTERFACE AND LOCATIONS WITH CABLE IN UNIT DUCT INTERFACE.

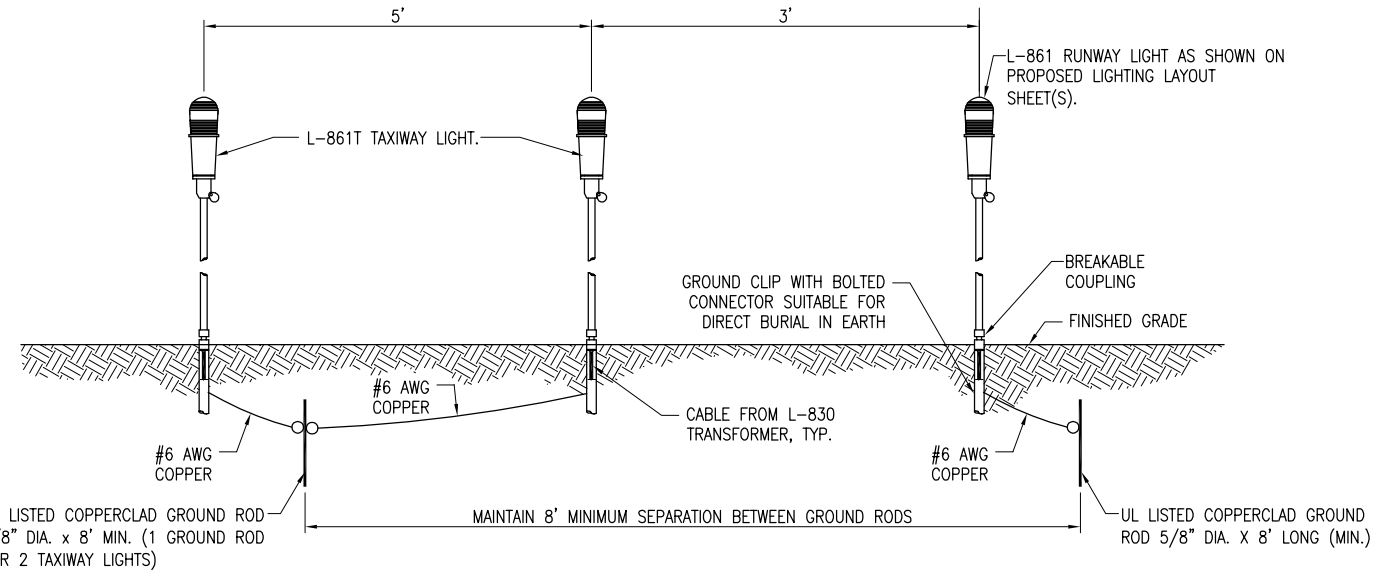
**NOTES**

- GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. PER FAA AC 150/5340-30F DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6; A GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. THE PURPOSE OF THE LIGHT BASE GROUND IS TO PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A LIGHT BASE GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AND CONNECTED TO THE METAL FRAME OF EACH TAXI GUIDANCE SIGN AS DETAILED ON THE PLANS AND IN ACCORDANCE WITH THE RESPECTIVE TAXI GUIDANCE SIGN MANUFACTURER RECOMMENDATIONS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 5/8-INCH DIAMETER BY 8-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. CONNECTIONS TO GROUND LUGS ON THE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE SHALL BE WITH A UL LISTED GROUNDING CONNECTOR. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELDED BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE: 800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE: 918-663-1440), ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE: 800-842-7437), OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
- FOR BASE MOUNTED LIGHT FIXTURES THE LIGHT FIXTURE MUST BE BONDED TO THE LIGHT BASE INTERNAL GROUND LUG VIA A #6 AWG STRANDED COPPER WIRE RATED FOR 600 VOLTS WITH GREEN XHHW OR USE INSULATION. THE GROUND WIRE LENGTH MUST BE SUFFICIENT TO ALLOW THE REMOVAL OF THE LIGHT FIXTURE FROM THE LIGHT BASE FOR ROUTINE MAINTENANCE. SEE THE LIGHT FIXTURE MANUFACTURER'S INSTRUCTIONS FOR PROPER METHODS OF ATTACHING A BONDING WIRE.
- FOR TAXIWAY LIGHTS THAT ARE SPACED WITH LESS THAN 10 FEET OF SEPARATION BETWEEN THEM PROVIDE ONE 5/8-INCH DIAMETER BY 8-FOOT LONG GROUND ROD PER TWO ADJACENT TAXIWAY LIGHTS.
- STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100% DOMESTIC STEEL.



**GROUNDING DETAIL FOR ADJACENT TAXIWAY LIGHTS**

(NOT TO SCALE)



**GROUNDING DETAIL FOR ADJACENT RUNWAY AND TAXIWAY LIGHTS**

(NOT TO SCALE)

REVISION	DATE

JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS

A.I.P. PROJ.: 3-17-0066-B8  
ILL. PROJ.: JOT-4166

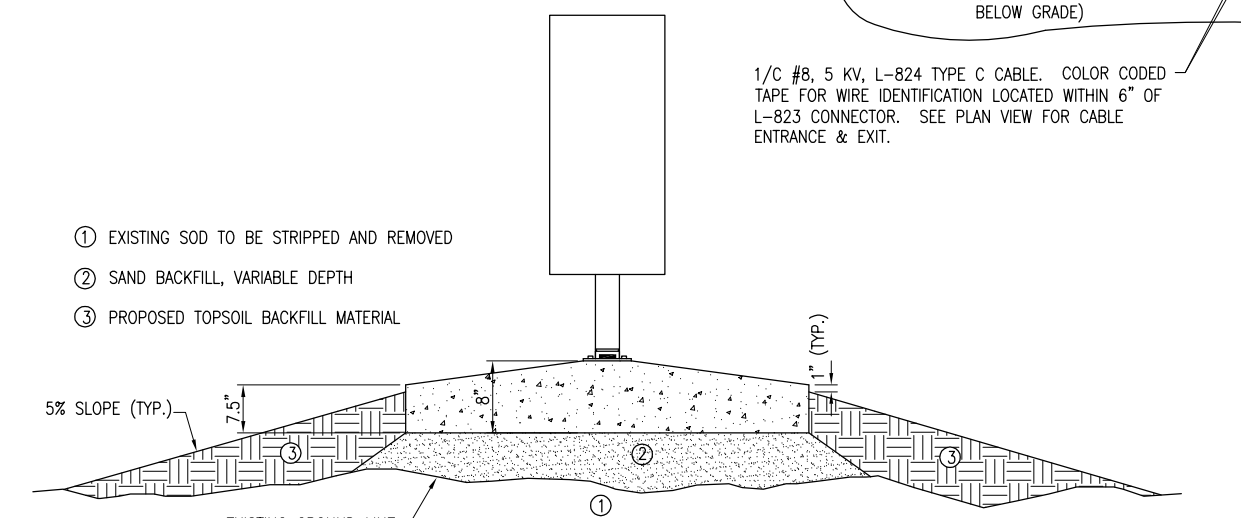
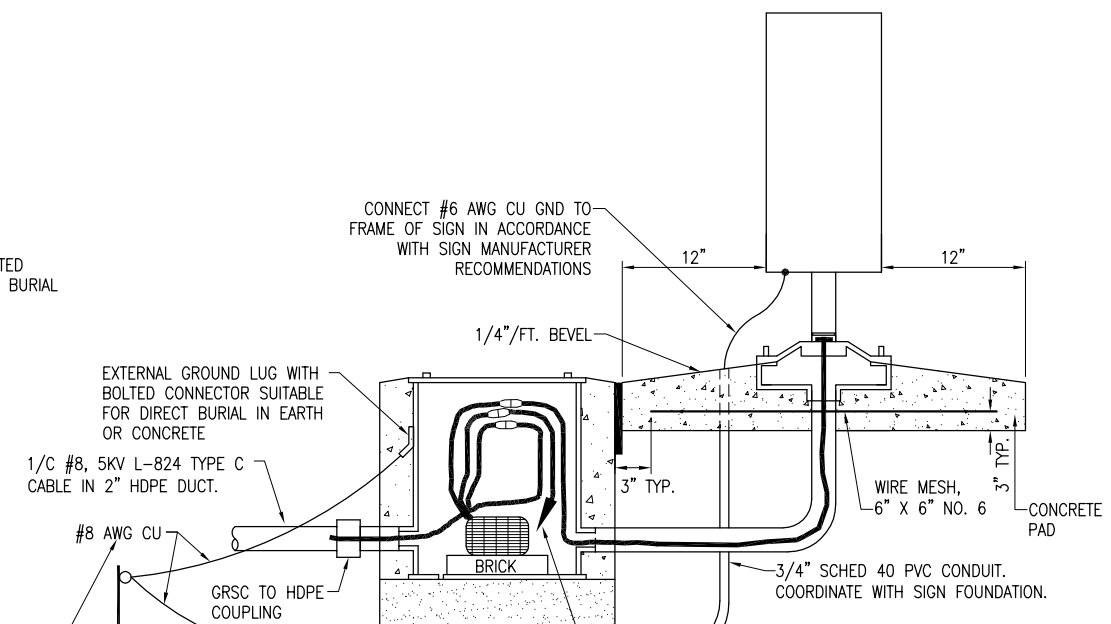
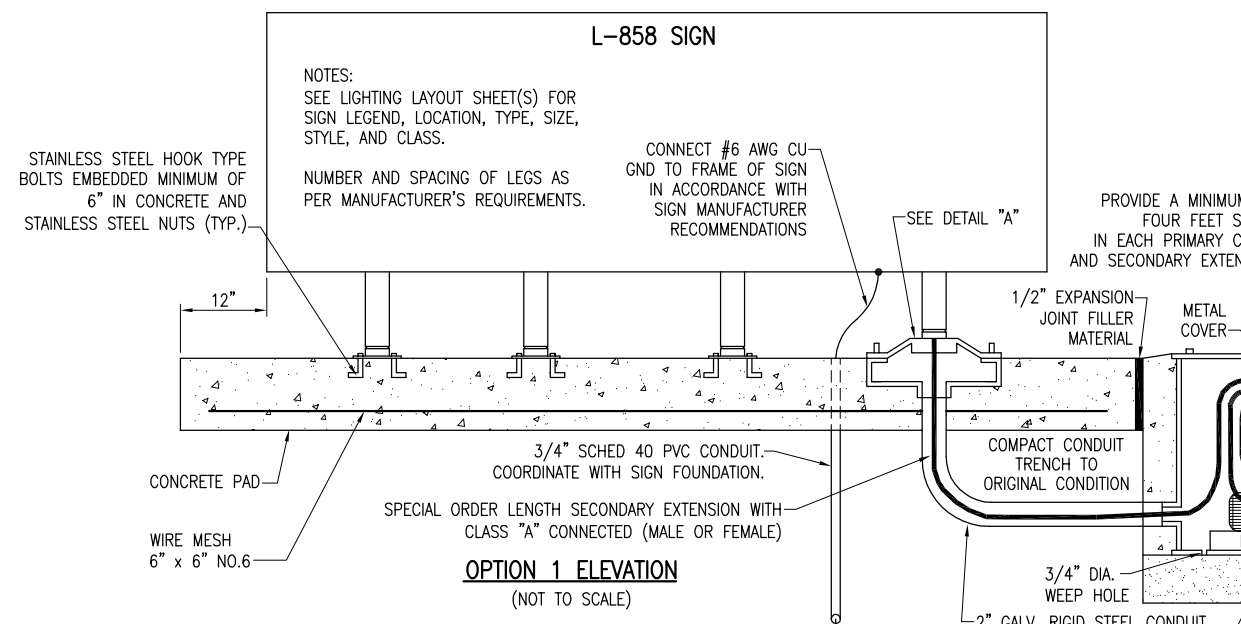
Hanson Project No. 09A0177D-0001	File Name E-502-DETL.dwg	Scale NOT TO SCALE	Date 02/13/12
LAYOUT	KNL	01/16/12	
DRAWN	MLH	01/27/12	
REVIEWED	KNL/CAH	02/13/12	



© Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 S. Skyway  
Springfield, Illinois 62703-2886

ELECTRICAL DETAILS  
SHEET 2  
CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

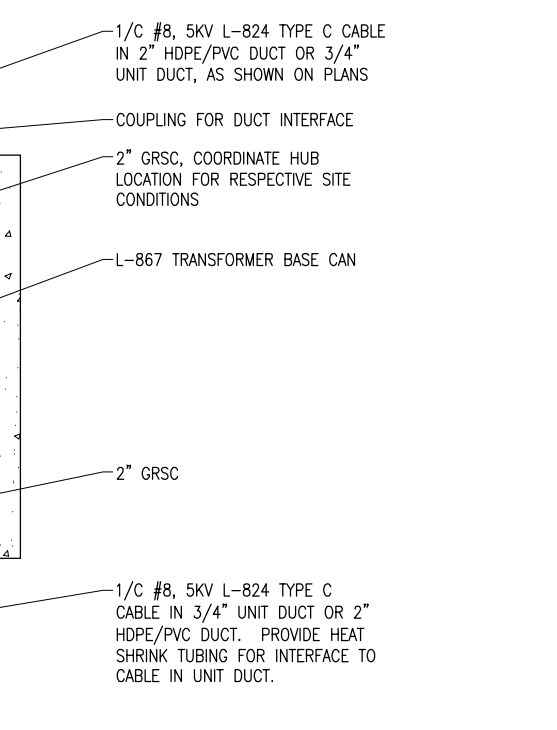
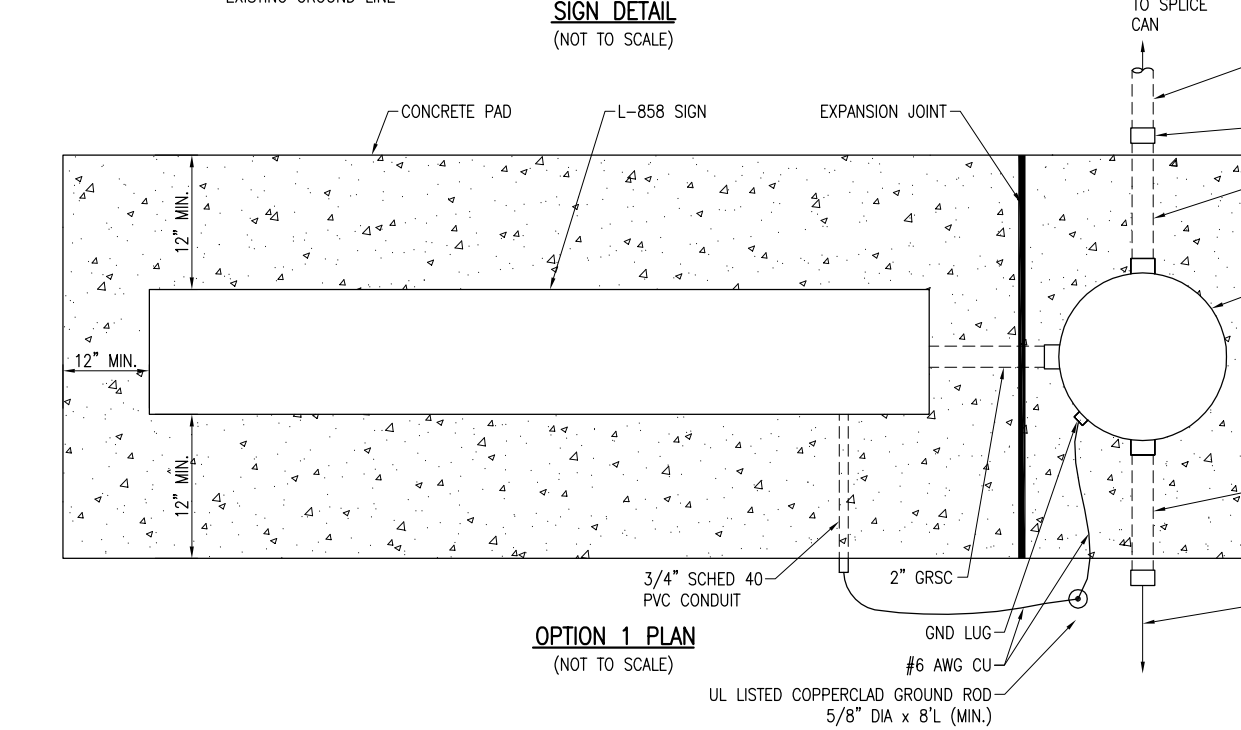
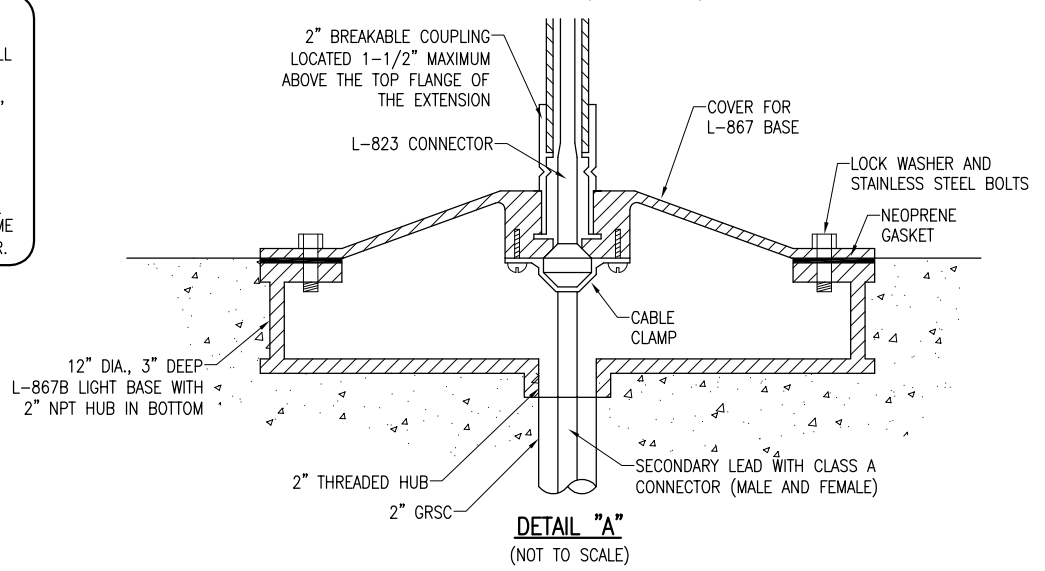
MAR 12, 2012 1:46 PM KINC00394  
pw:\sps-sv306\hanson\Documents\09\jobs\09A0177\09A0177D\CAD\Work\Sheet\E-502-DETL



PER FAA AC 150/5340-30F DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN, TAXI SIGN FRAME, OR MOUNTING STAKE AND A 3/8-INCH DIAMETER BY 8-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. ALSO BOND THE SIGN FRAME TO THE GROUND ROD WITH A #6 AWG BARE COPPER CONDUCTOR.

**GENERAL NOTES**

- SEE LIGHTING LAYOUT SHEET FOR SIGN LEGEND, LOCATION, TYPE, SIZE, STYLE, AND CLASS.
- SEE ELECTRICAL NOTES SHEETS.



NOTE: FOR THE PURPOSE OF ENHANCING SAFETY, EACH BASE MUST HAVE INSTALLED, BY THE MANUFACTURER, AN INTERNAL AND EXTERNAL GROUND STRAP THAT IS AVAILABLE FOR THE PURPOSE OF ATTACHING A GROUND LUG THAT IS CONNECTED TO AN EARTH GROUND OR A SAFETY GROUND CONDUCTOR INSTALLED WITH THE RESPECTIVE CIRCUIT. FOR AIRPORT PROJECTS RECEIVING FEDERAL FUNDS THIS REQUIREMENT IS MANDATORY PER FAA AC 150/5345-42F.

REVISION	DATE

JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS

A.I.P. PROJ.: 3-17-0066-B8  
ILL. PROJ.: JOT-4166

Hanson Project No. 09A0177D-0001	File Name E-503-DETL.dwg	Scale NOT TO SCALE	Date 02/13/12
LAYOUT	KNL	01/16/12	
DRAWN	MLH	01/27/12	
REVIEWED	KNL/CAH	02/13/12	



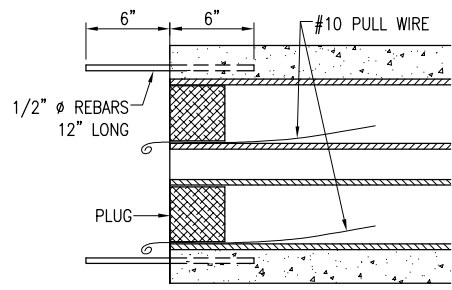
ELECTRICAL DETAILS  
SHEET 3

CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

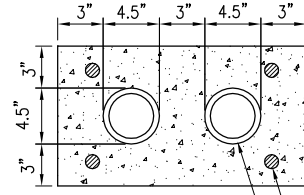
16  
16 of 38 sheets

MAR 12, 2012 2:18 PM KINC00394  
pw:\sps-sv306\hanson\Documents\09\Jobs\09A0177D\CAD\Airport\Sheet\E-503-DETL

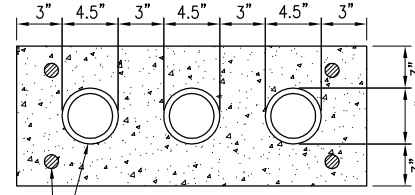




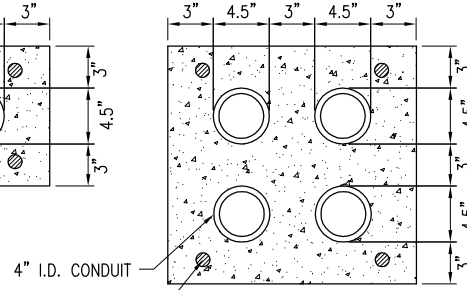
**TYPICAL SECTION**  
"NOT TO SCALE"



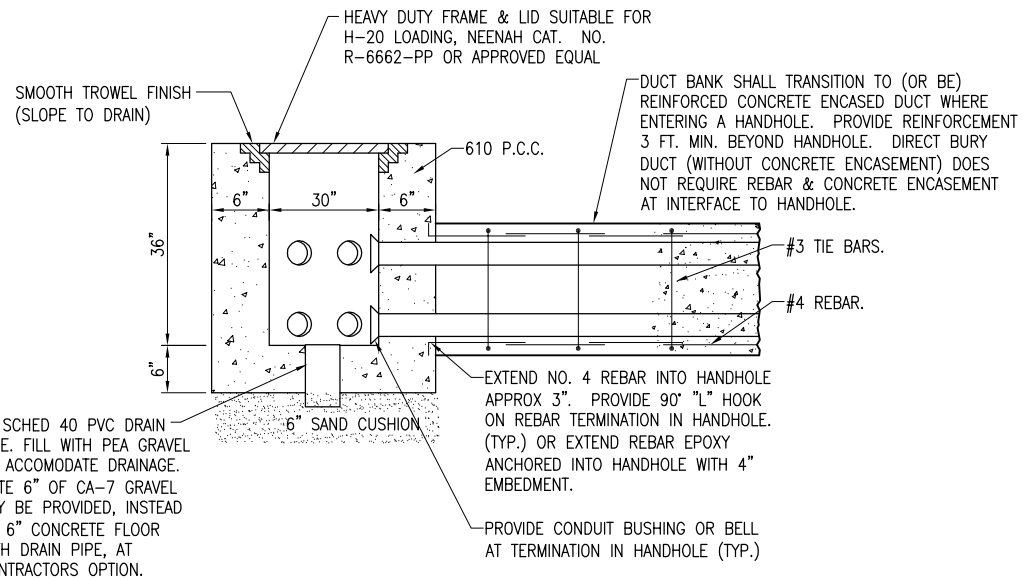
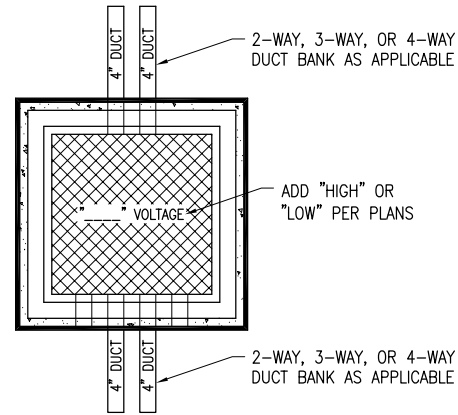
**2-DUCT BANK**  
"NOT TO SCALE"



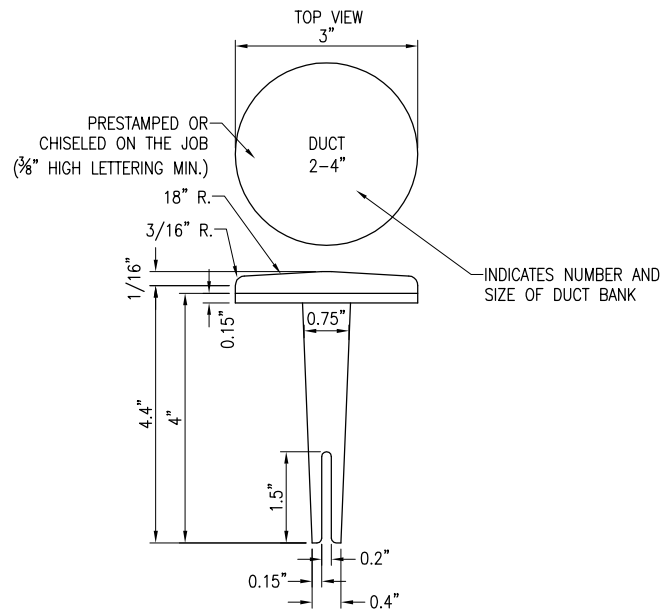
**3-DUCT BANK**  
"NOT TO SCALE"



**4-DUCT BANK**  
"NOT TO SCALE"

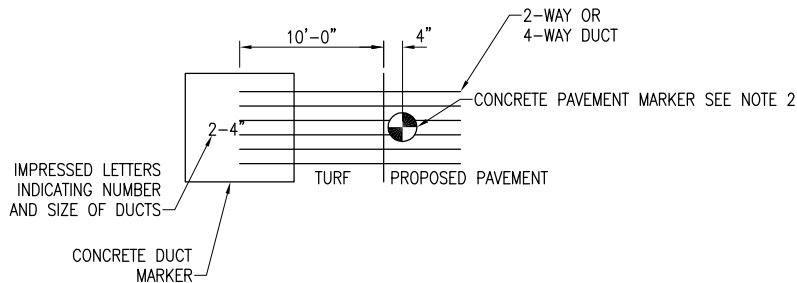


**ELECTRICAL HANDHOLE**  
"NOT TO SCALE"



**BITUMINOUS PAVEMENT DUCT MARKERS**  
"NOT TO SCALE"

- NOTES:**
- TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE.
  - BRASS DUCT MARKERS ARE AVAILABLE FROM G&S FOUNDRY & MANUFACTURING CO., INC., 210 KASKASKIA DRIVE, RED BUD, IL 62278, PHONE: (618)-282-4114



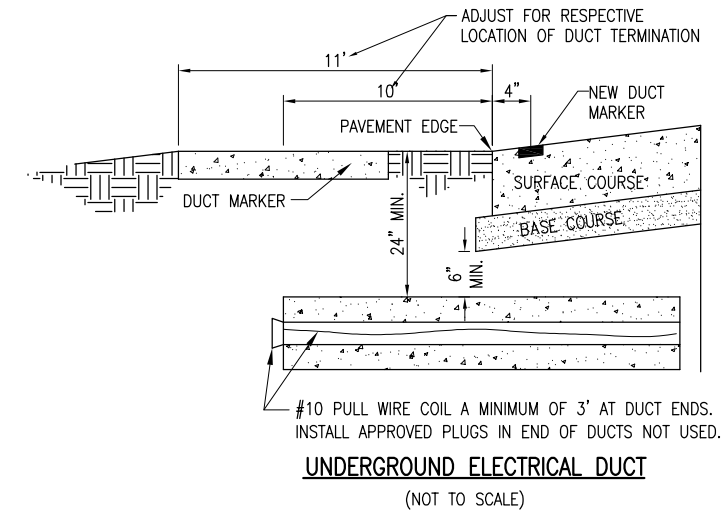
**DUCT MARKER DETAIL**  
"NOT TO SCALE"

**DUCT BANK NOTES:**

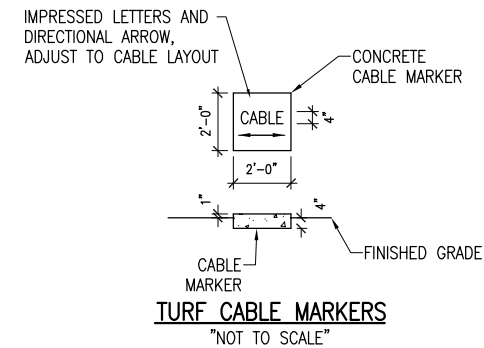
- DIMENSIONS FOR CONCRETE COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
- INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., OR APPROVED EQUAL TO MAINTAIN PROPER SEPARATION OF CONDUITS.
- REBAR IS REQUIRED TO ACCOMMODATE FUTURE DUCT EXTENSIONS & INTERFACE AT DUCT BANK TERMINATIONS. CONCRETE ENCASED DUCT BANKS TERMINATING IN HANDHOLES REQUIRE REBAR AT TERMINATIONS.
- CONDUITS FOR CONCRETE ENCASED DUCT SHALL BE SCHEDULE 40 PVC CONFORMING TO ITEM 110.
- MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 18" BELOW FINISHED GRADE.
- HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
- HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
- DUCT INTERFACE TO HANDHOLES OR MANHOLES WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT PAY ITEM.

**CABLE & DUCT MARKER NOTES:**

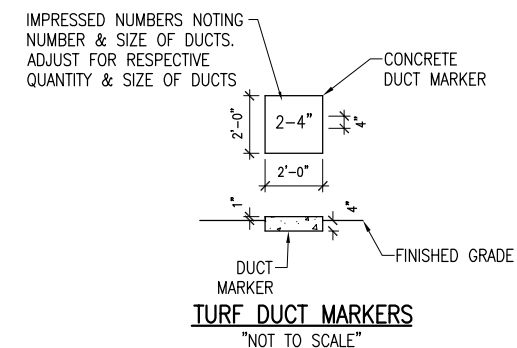
- THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
- BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE FORMED AS DESCRIBED IN NOTE 4.
- CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
- CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 3/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.



**UNDERGROUND ELECTRICAL DUCT**  
"NOT TO SCALE"



**TURF CABLE MARKERS**  
"NOT TO SCALE"



**TURF DUCT MARKERS**  
"NOT TO SCALE"

**NOTES:**

- LIDS FOR LOW VOLTAGE HANDHOLES SHALL BE LABELED "LOW VOLTAGE". LIDS FOR HIGH VOLTAGE HANDHOLES SHALL BE LABELED "HIGH VOLTAGE". COORDINATE LETTERING WITH MFR.
- HANDHOLES MAY BE CAST IN PLACE OR PRECAST. PRECAST MANUFACTURERS MUST BE ON THE IDOT (ILLINOIS DEPT. OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
- ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND / OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE HANDHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

REVISION	
DATE	
<b>JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS</b>	
A.I.P. PROJ.: 3-17-0066-B8 ILL. PROJ.: JOT-4166	

Hanson Project No.	09A0177D-0001
Filename	E-504-DETL.dwg
Scale	NOT TO SCALE
Date	02/13/12
LAYOUT	KNL 01/16/12
DRAWN	MLH 01/27/12
REVIEWED	KNL/CAH 02/13/12

**HANSON**

Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 S. State St.  
Springfield, Illinois 62703-2886

ELECTRICAL DETAILS  
SHEET 4

CONSTRUCT A STAND ALONE  
ELECTRICAL VAULT, REPLACE RUNWAY  
LIGHTS AND INSTALL TAXIWAY LIGHTS

MAR 12, 2012 1:57 PM KINC0394  
pw:\sps-sv306\hanson\Documents\09\jobs\09A0177D\CA0\Work\Sheet\E-504-DETL

**UNLIGHTED TAXI GUIDANCE SIGN NOTES**

1. THE PROPOSED UNLIGHTED TAXI GUIDANCE SIGNS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345-44J (OR LATEST ISSUE IN FORCE) AND BE FAA-APPROVED FOR TYPE L-858 TAXIWAY AND RUNWAY SIGNS. THE SIGNS SHALL BE SIZE 1, 18-IN. SIGN FACE WITH A 12-IN. LEGEND; STYLE 4, UNLIGHTED SIGNS; MODE 2, TO WITHSTAND WIND LOADS OF 200 M.P.H., BASE-MOUNTED.
2. THE SIGNS SHALL READ AS DESCRIBED ON THE TAXI GUIDANCE SIGN SCHEDULE. THE PROPOSED TAXI GUIDANCE SIGNS WILL BE TYPE L-858-Y DIRECTION, DESTINATION, AND BOUNDARY SIGNS (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858-R MANDATORY INSTRUCTION SIGN (BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON RED BACKGROUND); AND TYPE L-858-L LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND).
3. THE CONCRETE USED IN THE CONSTRUCTION OF THESE ITEMS SHALL BE IN ACCORDANCE WITH ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.

REVISION	DATE

**JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-B8  
ILL. PROJ.: JOT-4166

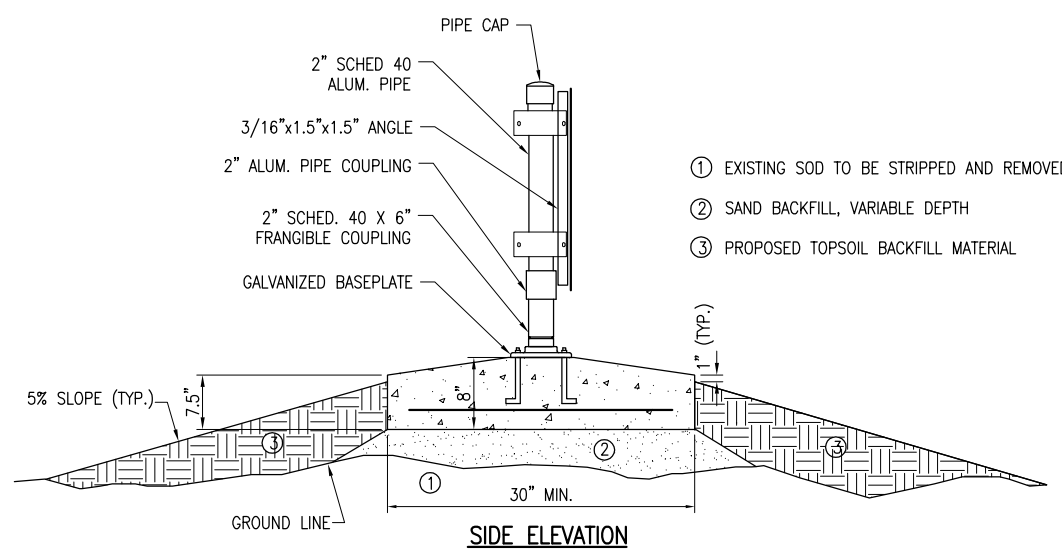
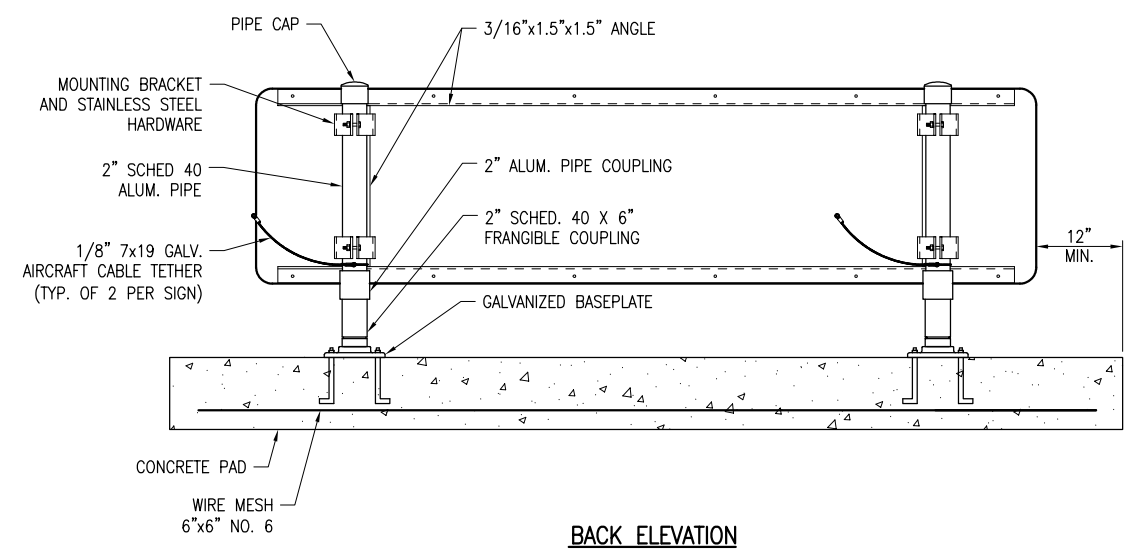
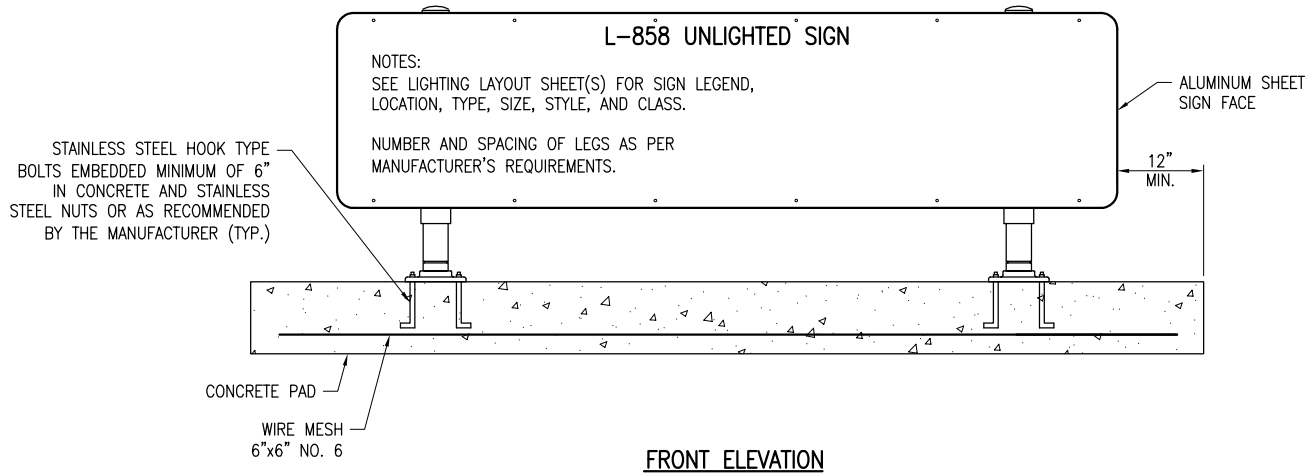
Hanson Project No. 09A0177D-0001	LAYOUT	KNL	01/16/12
Filename E-503-DETL.dwg	DRAWN	MLH	01/27/12
Scale NOT TO SCALE	REVIEWED	KNL/CAH	02/13/12
Date 02/13/12			

**HANSON**

© Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 S. Skyway  
Springfield, Illinois 62703-2886

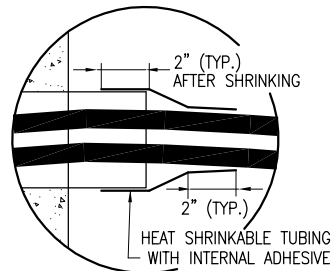
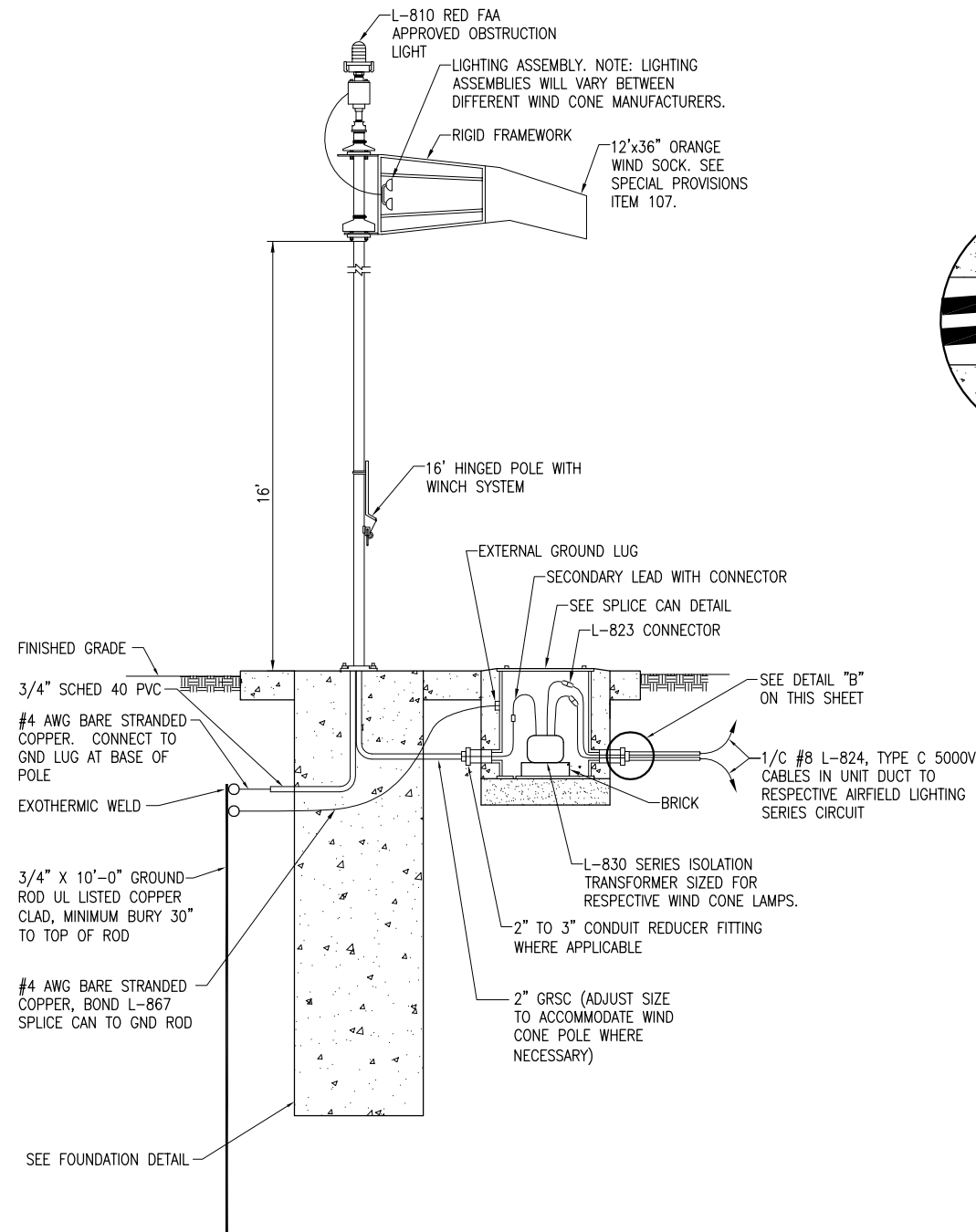
UNLIGHTED SIGN  
DETAILS

CONSTRUCT A STAND ALONE  
ELECTRICAL VAULT, REPLACE RUNWAY  
LIGHTS AND INSTALL TAXIWAY LIGHTS

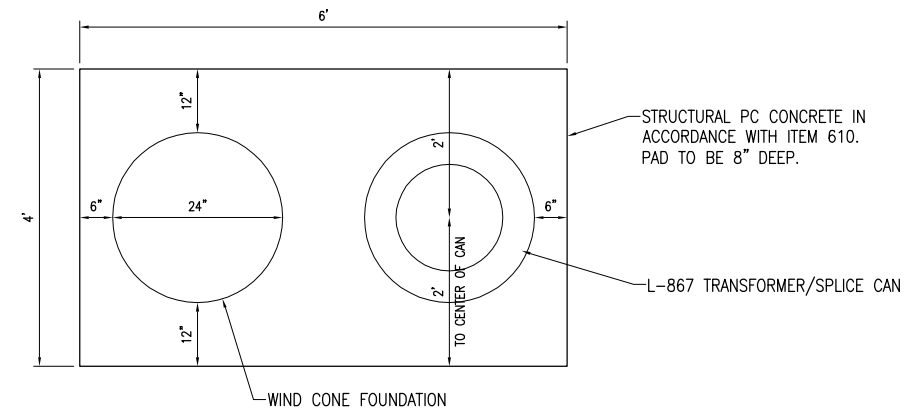


**UNLIGHTED SIGN DETAILS**  
(NOT TO SCALE)

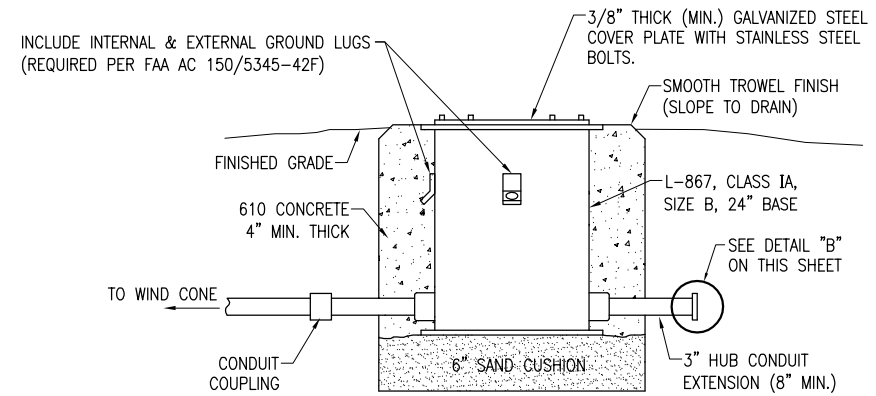
MAR 12, 2012 1:54 PM KINC00394  
pw:\sps-sv306.hanson.com\hanson\_projects\Documents\09A0177D\09A0177D (CAD) Vpport\Sheet\E-503-DETL



DETAIL "B"  
(NOT TO SCALE)

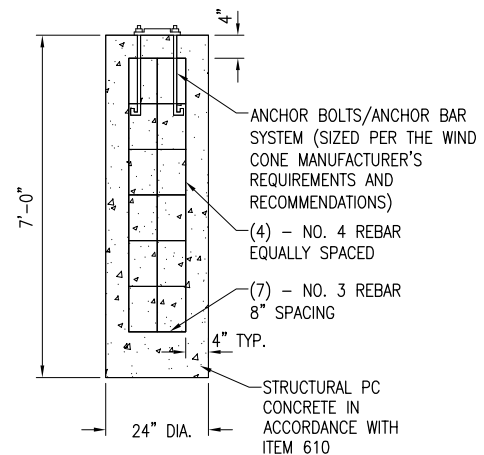


CONCRETE PAD PLAN VIEW  
(NOT TO SCALE)



TRANSFORMER/SPLICE CAN DETAIL  
(NOT TO SCALE)

- NOTES:
1. INCLUDE INTERNAL AND EXTERNAL GROUND LUGS.
  2. L-867 CAN FOR WIND CONE SHALL HAVE 2" HUB AT 0°, AND 3" HUB AT 180°. L-867 CAN WITH 2" HUB AT 0°, 2" HUB AT 90°, 2" HUB AT 180° IS ALSO ACCEPTABLE.



FOUNDATION DETAIL  
"NOT TO SCALE"

**NOTES**

1. WIND CONE SHALL INCLUDE CONSTANT-BRIGHTNESS SERIES CIRCUIT POWER ADAPTER.
2. THE RUNWAY LIGHTING SERIES CIRCUIT IS POWERED BY AN L-828 CLASS 1 - 6.6 AMP OUTPUT CURRENT, STYLE 1-3 BRIGHTNESS STEPS CONSTANT CURRENT REGULATOR. COORDINATE WITH THE RESPECTIVE WIND CONE MANUFACTURER TO PROVIDE A COMPATIBLE AND PROPERLY SIZED SERIES ISOLATION TRANSFORMER.
3. THE EXISTING CONSTANT CURRENT REGULATOR POWERING THE SERIES CIRCUIT FOR THE WIND CONE HAS BEEN SIZED FOR THE RESPECTIVE RUNWAY LIGHTING LOADS AND A WIND CONE THAT HAS A LOAD OF LESS THAN 200VA AND DOES NOT REQUIRE A SERIES ISOLATION TRANSFORMER LARGER THAN A 300 WATT RATING. IN THE EVENT THAT A WIND CONE IS PROPOSED THAT EXCEEDS THIS RATING, THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT THE RESPECTIVE CONSTANT CURRENT REGULATOR IS PROPERLY SIZED FOR THE TOTAL SERIES CIRCUIT LOAD. WHERE A WIND CONE IS PROPOSED THAT REQUIRES LOADS THAT EXCEED THE RATING OF THE RESPECTIVE CONSTANT CURRENT REGULATOR, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADJUSTMENTS INCLUDING PROVIDING A LARGER CONSTANT CURRENT REGULATOR AND ALL ASSOCIATED CIRCUIT BREAKERS, CONDUITS, WIRING AND VAULT WORK AS APPLICABLE TO ACCOMMODATE THE RESPECTIVE SERIES CIRCUIT LOAD WITH THE WIND CONE.
4. L-807 OR L-807(L) WIND CONE WILL BE PAID FOR UNDER ITEM AR107812 L-807 WC-12' INTERNALLY LIT PER EACH. SPLICE CANS FOR WIND CONE SERIES CIRCUIT TRANSFORMER WILL BE INCIDENTAL TO THE RESPECTIVE WIND CONE PAY ITEM.
5. REBAR SHALL BE MANUFACTURED FROM 100% DOMESTIC STEEL. INCLUDE CERTIFICATION OF 100% DOMESTIC STEEL WITH SHOP DRAWING SUBMITTAL.

**INTERNALLY LIGHTED L-807 WIND CONE**  
"NOT TO SCALE"

REVISION	DATE	UPDATE PER
1	03/09/12	PER FAA PGL 12-2 & EB67D

**JOLIET REGIONAL AIRPORT**  
**JOLIET PARK DISTRICT**  
**JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-B8  
I.L. PROJ.: JOT-4166

Hanson Project No.	09A0177D-0001
Filename	E-505-DET.dwg
Scale	NONE
Date	02/13/12
LAYOUT	KNL 01/13/12
DRAWN	MLH 01/24/12
REVIEWED	KNL/CAH 02/13/12

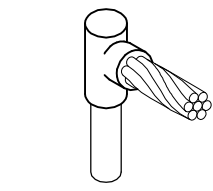
**HANSON**

Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 S. State St.  
Springfield, Illinois 62703-2886

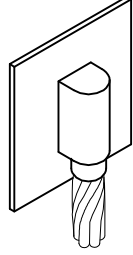
L-807 WIND CONE  
ELEVATION DETAIL

CONSTRUCT A STAND ALONE  
ELECTRICAL VAULT, REPLACE RUNWAY  
LIGHTS AND INSTALL TAXIWAY LIGHTS

MAR 12, 2012 2:03 PM KINC00394  
pw:\sps-svc\06.hanson.com\Hanson Projects\Documents\09A0177D\09A0177D\CA0\Work\Sheet\E-505-DET



CABLE TO GROUND ROD

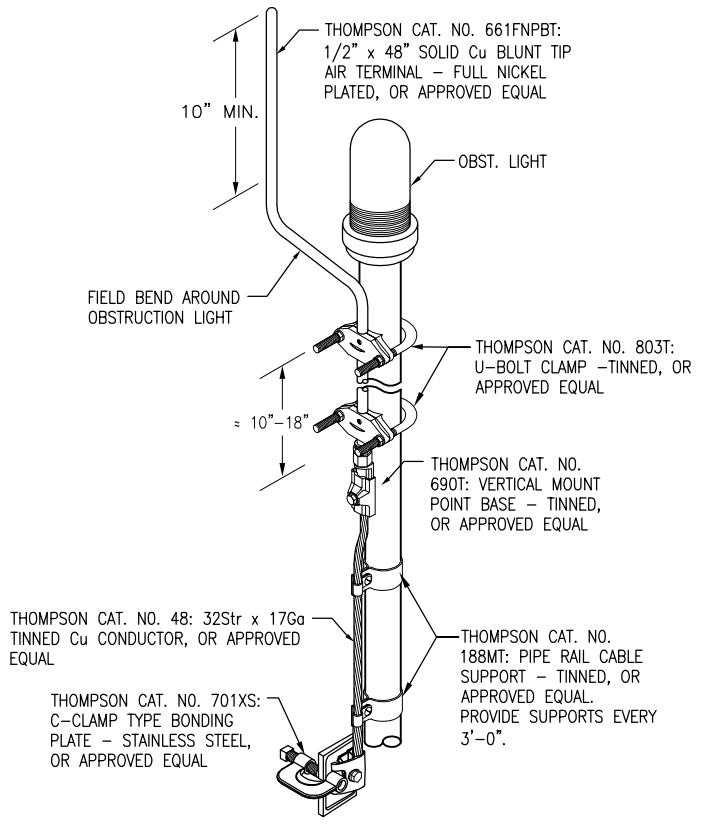


CABLE TO SURFACE

**DETAIL NOTES**

- EXOTHERMIC WELDS SHALL BE CADWELDED AS MANUFACTURED BY ERICO PRODUCTS, SOLON, OHIO, ULTRAWELDED AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, GRAYSLAKE, IL, THERMOWELDED AS MANUFACTURED BY CONTINENTAL INDUSTRIES, TULSA, OKLAHOMA, OR APPROVED EQUAL. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
- FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.
- VERIFY EXOTHERMIC MOLDS ARE SUITABLE FOR USE WITH THE RESPECTIVE TYPE (SOLID OR STRANDED) & SIZE CONDUCTOR.

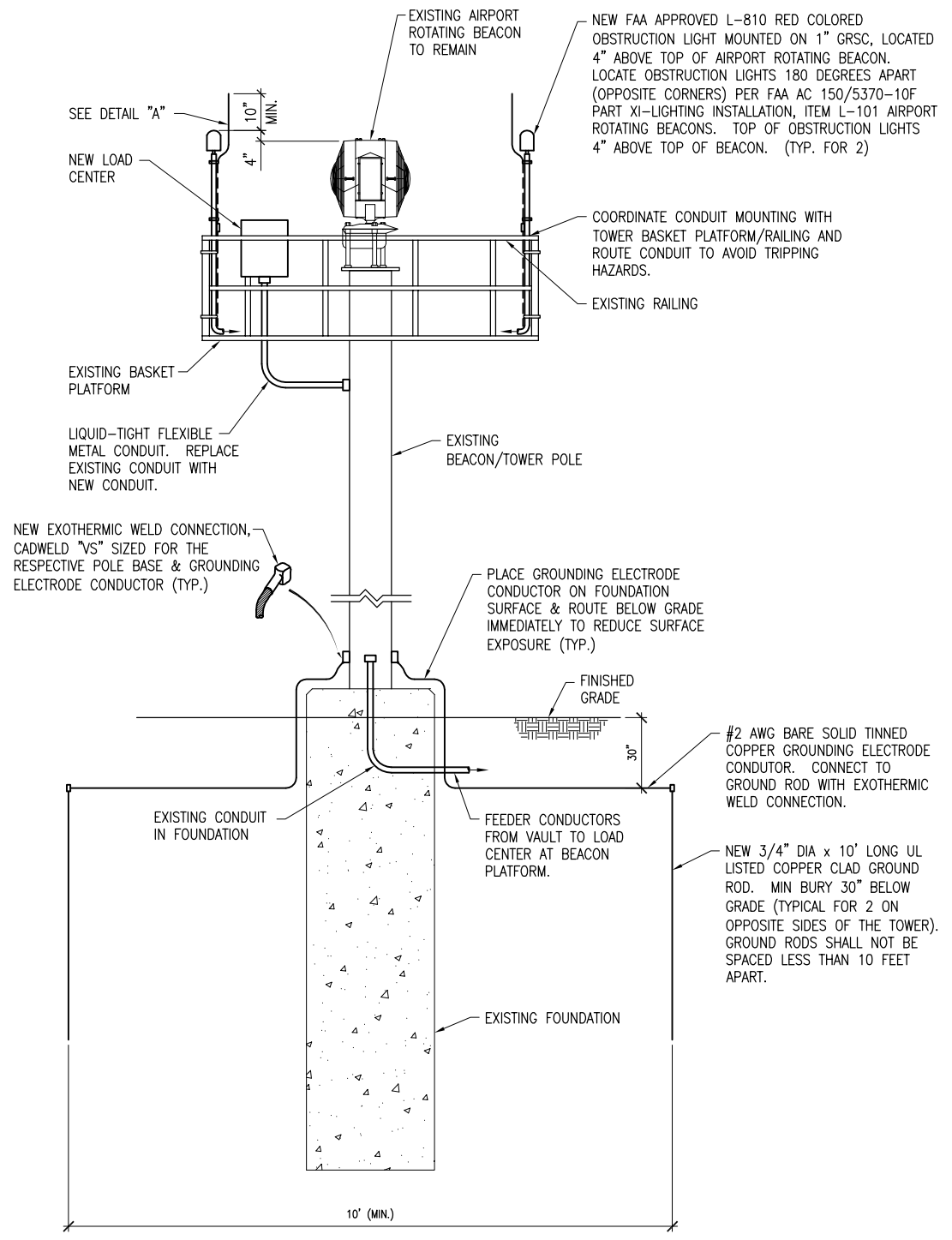
**EXOTHERMIC WELD DETAILS**



DETAIL A

**NOTES**

- REFERENCES TO THOMPSON ARE THOMPSON LIGHTNING PROTECTION INC., 901 SIBLEY MEMORIAL HWY, ST. PAUL, MN 55188, PHONE: 651-455-7661, 800-777-1230, FAX: 651-455-2545.
- VERIFY LIGHTNING PROTECTION COMPONENTS AND CATALOG NUMBERS WITH THE RESPECTIVE LIGHTNING PROTECTION EQUIPMENT MANUFACTURER.
- CLEAN ALL CONNECTIONS TO EXPOSE BARE METAL.



LIGHTNING PROTECTION DETAIL FOR AIRPORT ROTATING BEACON

AIRPORT ROTATING BEACON LOAD CENTER SCHEDULE			
CKT #	DUTY	SIZE	CKT #
1	BLANK		2
3	BLANK		4
5	AIRPORT ROTATING BEACON	20A 1P	6
7	OBSTRUCTION LIGHTS	15A 1P	8
9	BLANK		10
11	BLANK		12

100 AMP (MINIMUM), 120/240 VAC, 1 PHASE, 3 WIRE, 12 CIRCUIT LOAD CENTER WITH MAIN LUGS IN A NEMA 3R RAIN PROOF ENCLOSURE, SQUARE D CAT. NO. QO112L125GRB WITH EQUIPMENT GROUND BAR KIT OR APPROVED EQUAL. CONFIRM LOAD CENTER IS MADE IN USA TO COMPLY WITH AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENT.

**NOTES**

- INCLUDE EQUIPT GROUND BAR KIT.
- ALL BREAKERS SHALL HAVE 10,000 AIC RATING AT 120/240 VAC.
- PHASE "A" SHALL BE SWITCHED THROUGH A LIGHTING CONTACTOR AT THE VAULT. PHASE "B" SHALL BE UNSWITCHED.
- INCLUDE ENGRAVED PHENOLIC LEGEND PLATE LABELED "ARB PANEL, 120/240 VAC, 1PH, 3W, FED FROM VAULT".
- SURGE PROTECTORS SHALL BE SUITABLE FOR 120VAC, 1PH, 2W PLUS GROUND, 30KA (MINIMUM) SURGE CURRENT RATING, JOSLYN MODEL 1260-21 OR LIGHTING PROTECTION CORP. MODEL LPC 11765-132, OR APPROVED EQUAL. FURNISH & INSTALL TWO SURGE PROTECTORS (ONE FOR EACH PHASE).
- LOAD CENTER SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENT. PROVIDE CERTIFICATION OF MANUFACTURE IN THE UNITED STATES WITH SHOP DRAWING SUBMITTAL.

**ADDITIVE ALTERNATE NO. 1**

WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM AS800591 - UPGRADE AIRPORT ROTATING BEACON - PER L.S.

REVISION	DATE

**JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS**

Hanson Project No. 09A0177D-0001	01/13/12
Filename E-506-DET.dwg	KNL
Scale NOT TO SCALE	MLH
Date 02/13/12	02/13/12
LAYOUT	REVIEWED
DRAWN	KNL/CAH



© Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 S. State St.  
Springfield, Illinois 62703-2886

LIGHTNING PROTECTION  
DETAILS FOR BEACON

CONSTRUCT A STAND ALONE  
ELECTRICAL VAULT, REPLACE RUNWAY  
LIGHTS AND INSTALL TAXIWAY LIGHTS

MAR 12 2012 2:07 PM KINC00394  
pw:\sps-svr306\hanson\Documents\09A0177D\09A0177D CAD\Airport\Sheet\E-506-DET

A.I.P. PROJ.: 3-17-0066-B8  
IL PROJ.: JOT-4166

GENERAL 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. CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
4. 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.
5. 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.
6. 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 COST WITH THE EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.
7. 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.
8. 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.
9. 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 CONTAIN 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 REQUIREMENTS.
F. CHART FOR TROUBLE-SHOOTING.
G. COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), 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.

POWER AND CONTROL NOTES

- 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. COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK AND RED SHALL BE USED FOR PHASE CONDUCTORS ON 120/240VAC SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, ORANGE (FOR HIGH LEG) AND BLUE SHALL BE USED FOR PHASE CONDUCTORS ON 240/120VAC THREE-PHASE, FOUR WIRE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, SHALL BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH. NEUTRAL CONDUCTORS LARGER THAN NO. 6 AWG SHALL BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR SIZES (AWG OR KCMIL).
3. ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE SHALL BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING SHALL BE EXTENDED TO THE POINT OF UTILIZATION.
4. IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
5. LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS.
6. NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND JUNCTION/PULL BOXES.
7. THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:
A. IN STRAIGHT PULLS THE LENGTH OF THE BOX SHALL NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END SHALL BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.
B. IN ANGLE PULLS OR 'U' PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX SHALL NOT BE LESS THAN SIX (6) TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE SHALL BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL AS THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR SHALL NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.
8. A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS, CAST, CONDUIT TYPE OUTLETS SHALL NOT BE TREATED AS PULL/JUNCTION BOXES.
9. EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.
10. SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
11. CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE, MINIMUM FRAME.
12. DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
13. 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.
14. 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.

- 15. 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.
16. 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 UL LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
17. UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
18. ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
19. USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS.
20. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
21. WRAP ALL PRIMARY AND SECONDARY POWER TRANSFORMER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE (3M SCOTCH 23 ALL-VOLTAGE SPLICING TAPE, 3M SCOTCH 130C LINERLESS RUBBER SPLICING TAPE, OR APPROVED EQUAL) AND COVER WITH VINYL ELECTRICAL TAPE (3M SCOTCH 88 VINYL ELECTRICAL TAPE OR APPROVED EQUAL) FOR FULL VALUE OF CABLE INSULATION VOLTAGE.
22. UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINIMUM.
23. THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR 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 4, 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. A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.
H. THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.
I. ALL WIRING SHALL BE NEATLY TRAINED AND LACED.
J. MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
24. FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, CUTOFF, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".

REVISION DATE JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS PROJECT: JOT-4166 I.L. PROJ.: 3-17-0066-B8 HANSON PROJECT NO. 09A0177D-0001 E-001-NOTE.dwg SCALE NONE DATE 02/13/12 LAYOUT KNL 01/12/12 DRAWN MLH 01/23/12 REVIEWED KNL/CAH 02/13/12 ELECTRICAL NOTES SHEET 1 CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS 21 21 of 38 sheets

MAR 12 2012 2:12 PM KINC00394 pw:\sps-sv306\hanson\dom\hanson\_projects\Documents\09\jobs\09A0177\09A0177D\CAD\Work\Sheet\E-001-NOTE

**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. NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
3. THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REIL, ETC.) 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.
4. 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.
5. 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.
6. L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
7. THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURE AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.
8. ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
9. DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF TEN (10") INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION TWELVE (12") INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.
10. A SLACK OF THREE (3") FEET, MINIMUM, SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS, THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER.
11. DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO RIGHT IS CODED BLUE. THIS APPLIES TO STAKE MOUNTED LIGHTS AND BASE MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.
12. L-867 BASES SHALL BE SIZE B, 24" DEEP, CLASS I, UNLESS OTHERWISE NOTED.
13. BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL BE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.
14. THE ELEVATION OF THE BREAKABLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE MOUNTED COUPLINGS.
15. WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
16. TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
17. PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
18. THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE: ONE (1) INCH. IN CASE OF STAKE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.
19. THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.

20. ENTRANCES INTO L-867 BASES SHALL HAVE CONDUIT COUPLINGS OR REDUCERS TO INTERFACE UNIT DUCT/CONDUIT TO L-867 BASE HUBS, OR SHALL BE SEALED WITH HEAT SHRINK AS SHOWN IN DETAIL "B" ON ELECTRICAL DETAILS SHEET 1.
21. GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
22. EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
23. CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS SHALL BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.
24. ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLES.
25. THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
26. APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.
27. LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.
28. WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "T" SPLICES SHALL BE OF THE CAST TYPE.
29. CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKINGS, ETC. SHALL BE 3500 PSI, AIR-ENTRAINED.
30. ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE-ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.
31. 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 WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED 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 CONTRACTOR 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 DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.
32. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

**GROUNDING NOTES FOR AIRFIELD LIGHTING**

1. GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. PER FAA AC 150/5340-30F DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6; A GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. THE PURPOSE OF THE LIGHT BASE GROUND IS TO PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A LIGHT BASE GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AND CONNECTED TO THE METAL FRAME OF EACH TAXI GUIDANCE SIGN AS DETAILED ON THE PLANS AND IN ACCORDANCE WITH THE RESPECTIVE TAXI GUIDANCE SIGN MANUFACTURER RECOMMENDATIONS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 5/8-INCH DIAMETER BY 8-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. CONNECTIONS TO GROUND LUGS ON THE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE SHALL BE WITH A UL LISTED GROUNDING CONNECTOR. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE: 800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE: 918-663-1440), ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE: 800-842-7437), OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
2. FOR BASE MOUNTED LIGHT FIXTURES THE LIGHT FIXTURE MUST BE BONDED TO THE LIGHT BASE INTERNAL GROUND LUG VIA A #6 AWG STRANDED COPPER WIRE RATED FOR 600 VOLTS WITH GREEN XHHW OR USE INSULATION. THE GROUND WIRE LENGTH MUST BE SUFFICIENT TO ALLOW THE REMOVAL OF THE LIGHT FIXTURE FROM THE LIGHT BASE FOR ROUTINE MAINTENANCE. SEE THE LIGHT FIXTURE MANUFACTURER'S INSTRUCTIONS FOR PROPER METHODS OF ATTACHING A BONDING WIRE.
3. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL PER 2011 NATIONAL ELECTRICAL CODE ARTICLE 250-12.
4. PER FAA 150/5340-30F THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.

MAR 12, 2012 2:16 PM KINC00394 p:\s\sp-rv\06.hanson.com\Documents\09\jobs\0940177\0940177D\CAD\Wiporth\Sheet\E-002-NOTE

REVISION	DATE

**JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-B8  
I.L. PROJ.: JOT-4166

Hanson Project No. 0940177D-0001	Filename E-002-NOTE.dwg	Scale NONE	Date 02/13/12
LAYOUT	KNL	01/12/12	
DRAWN	MLH	01/23/12	
REVIEWED	KNL/CAH	02/13/12	



© Copyright Hanson Professional Services Inc. 2012  
**Hanson Professional Services Inc.**  
 1525 South State Street  
 Springfield, Illinois 62703-2886

ELECTRICAL NOTES SHEET 2

**CONSTRUCT A STAND ALONE  
ELECTRICAL VAULT, REPLACE RUNWAY  
LIGHTS AND INSTALL TAXIWAY LIGHTS**

ELECTRICAL LEGEND - ONE-LINE DIAGRAM	
	CABLE TERMINATOR/LUG
	TRANSFORMER
	DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	CIRCUIT BREAKER
	THERMAL MAGNETIC CIRCUIT BREAKER
	FUSE
	TRANSIENT VOLTAGE SURGE SUPPRESSOR OR SURGE PROTECTOR DEVICE
	GROUND - GROUND ROD, GROUNDING ELECTRODE, OR AT EARTH POTENTIAL
	INDICATING LIGHT
	MOTOR
	LOAD, MOTOR, # = HORSEPOWER
	ELECTRIC UTILITY METER BASE
	JUNCTION BOX WITH SPLICE
	EQUIPMENT, XXX = DEVICE DESCRIPTION
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	PANELBOARD WITH MAIN LUGS
	PANELBOARD WITH MAIN BREAKER
	FUSE PANEL WITH MAIN FUSE PULLOUT
	DUPLEX RECEPTACLE 120V SINGLE PHASE GROUNDING TYPE
	CONTROL STATION
	TRANSFER SWITCH
	ENGINE GENERATOR SET

ELECTRICAL LEGEND - SCHEMATIC	
	NORMALLY OPEN (N.O.) CONTACT
	NORMALLY CLOSED (N.C.) CONTACT
	STARTER COIL, * = STARTER NUMBER
	OVERLOAD RELAY CONTACT
	CONTROL RELAY, * = CONTROL RELAY NUMBER
	RELAY, * = RELAY NUMBER
	TOGGLE SWITCH / 2 POSITION SWITCH
	2-POSITION SELECTOR SWITCH
	3-POSITION SELECTOR SWITCH (H-O-A SHOWN)
	2 POLE DISCONNECT SWITCH
	3 POLE DISCONNECT SWITCH
	PHOTOCELL
	TERMINAL BLOCK, * = TERMINAL NUMBER
	DEVICE TERMINAL, * = DEVICE TERMINAL NUMBER
	INTERNAL PANEL WIRING
	FIELD WIRING
	FUSE
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	GROUND, GROUND ROD, GROUND BUS
	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
	S1 CUTOUT HANDLE REMOVED
	S1 CUTOUT HANDLE INSERTED
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH
	L-830 SERIES ISOLATION TRANSFORMER

ELECTRICAL ABBREVIATIONS	
A.F.F.	ABOVE FINISHED FLOOR
A, AMP	AMPERES
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CR	CONTROL RELAY
CU	COPPER
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
ES	EMERGENCY STOP
ETL	INTERTEK - ELECTRICAL TESTING LABS
ETM	ELAPSE TIME METER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRSC	GALVANIZED RIGID STEEL CONDUIT
HID	HIGH INTENSITY DISCHARGE
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
J	JUNCTION BOX
KVA	KILOVOLT AMPERE(S)
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LTFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT (UL LISTED)
LTG	LIGHTING
LP	LIGHTING PANEL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCUAR MIL
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRIC
OL	OVERLOAD

ELECTRICAL ABBREVIATIONS (CONTINUED)	
PB	PULL BOX
PC	PHOTO CELL
PDB	POWER DISTRIBUTION BLOCK
PNL	PANEL
RCPT	RECEPTACLE
R	RELAY
S	STARTER
SPD	SURGE PROTECTION DEVICE
SPST	SINGLE POLE SINGLE THROW
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UG	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITER'S LABORATORIES
V	VOLTS
W/	WITH
W/O	WITHOUT
WP	WEATHER PROOF
XFER	TRANSFER
XFMR	TRANSFORMER

AIRPORT EQUIPMENT/FACILITY ABBREVIATIONS	
ASOS	AUTOMATED SURFACE OBSERVING SYSTEM
ATCT	AIR TRAFFIC CONTROL TOWER
AWOS	AUTOMATED WEATHER OBSERVING SYSTEM
CCR	CONSTANT CURRENT REGULATOR
DME	DISTANCE MEASURING EQUIPMENT
FAR	FEDERAL AVIATION REGULATION
GS	GLIDE SLOPE FACILITY
HIRL	HIGH INTENSITY RUNWAY LIGHT
ILS	INSTRUMENT LANDING SYSTEM
IM	INNER MARKER
LIR	LOW IMPACT-RESISTANT
LOC	LOCALIZER FACILITY
MALS	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM
MALSR	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RUNWAY ALIGNMENT INDICATING LIGHTS
MIRL	MEDIUM INTENSITY RUNWAY LIGHT
MITL	MEDIUM INTENSITY TAXIWAY LIGHT
NDB	NON-DIRECTIONAL BEACON
PAPI	PRECISION APPROACH PATH INDICATOR
PLASI	PULSE LIGHT APPROACH SLOPE INDICATOR
RAIL	RUNWAY ALIGNMENT INDICATING LIGHTS
REIL	RUNWAY END IDENTIFIER LIGHT
RVR	RUNWAY VISUAL RANGE
VADI	VISUAL APPROACH DESCENT INDICATOR
VASI	VISUAL APPROACH SLOPE INDICATOR
VOR	VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE FACILITY
WC	WIND CONE

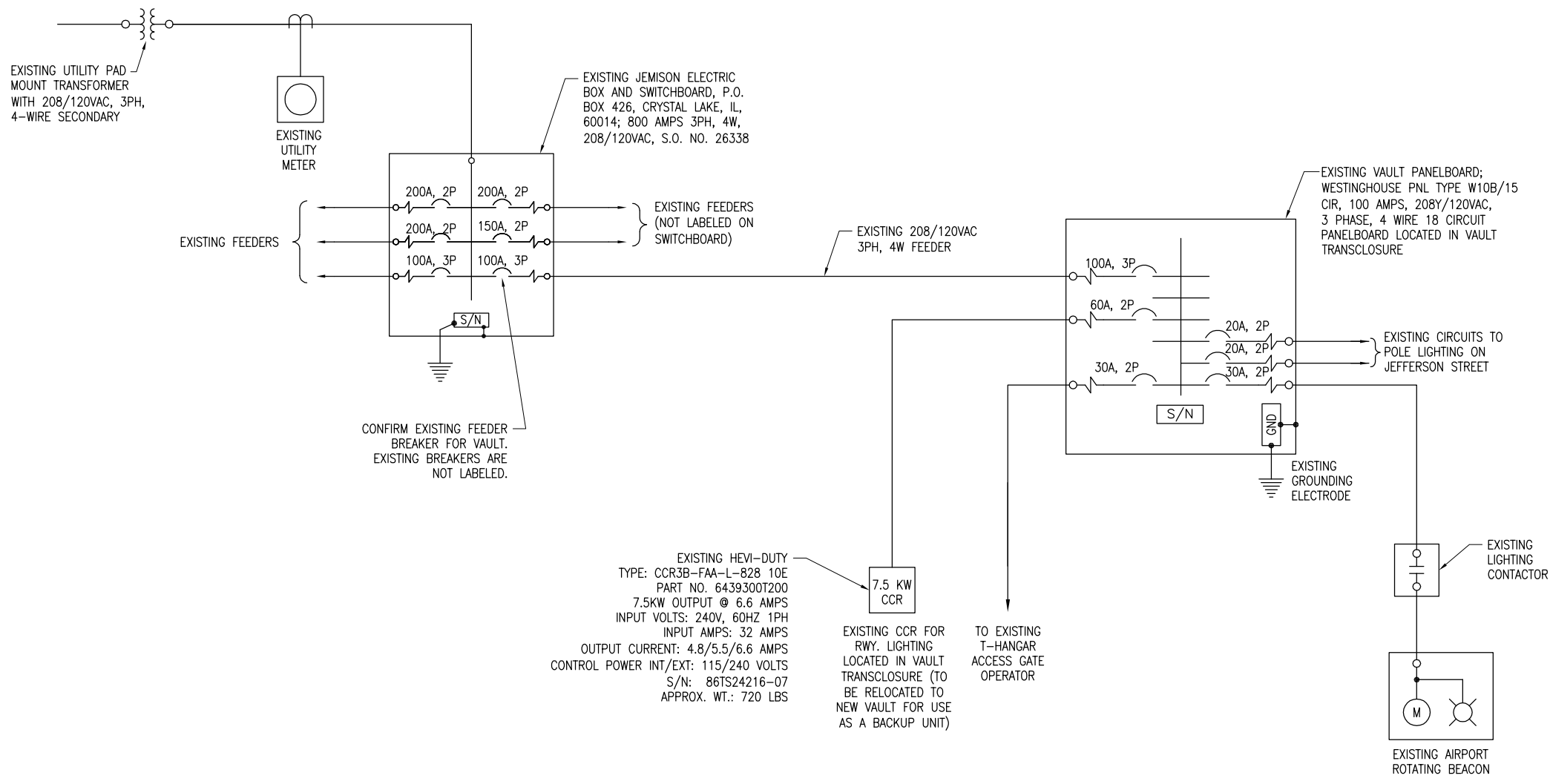
NOTES:

- 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.
- ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:  
  

120/240 VAC, 1 PHASE, 3 WIRE	
PHASE A	BLACK
PHASE B	RED
NEUTRAL	WHITE
GROUND	GREEN
- SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
- LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.
- ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES UL LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
- HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, OR HANDHOLE.

MAR 12, 2012 2:22 PM KINC00394  
 pw:\sps-sv306\hanson\dom\hanson\_projects\Documents\09\jobs\0940177\0940177D\CAD\Airport\Sheet\E-003-LEGN

REVISION	
DATE	
<b>JOLIET REGIONAL AIRPORT</b> <b>JOLIET PARK DISTRICT</b> <b>JOLIET, ILLINOIS</b>	
A.I.P. PROJ.: 3-17-0066-B8 ILL. PROJ.: JOT-4166	
Hanson Project No. 0940177D-0001 File Name E-003-LEGN.dwg Scale NONE Date 02/13/12	LAYOUT KNL 01/12/12 DRAWN MLH 01/23/12 REVIEWED KNL/CAH 02/13/12
Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 Skyway Springfield, Illinois 62703-2886	
ELECTRICAL LEGEND AND ABBREVIATIONS CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS	
<b>23</b> 23 of 38 sheets	



EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD

- NOTES:**
- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE EXISTING CONDITIONS.
  - ALL POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING AIRFIELD LIGHTING OR OTHER SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER AND/OR AIRPORT REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
  - SEE "ELECTRICAL LEGEND AND ABBREVIATIONS" SHEET FOR GENERAL NOTES AND REQUIREMENTS.
  - ALL EXISTING AIRFIELD LIGHTING SYSTEMS, STREET LIGHTING, AND/OR OTHER AIRPORT FACILITIES (THAT ARE NOT SCHEDULED FOR REMOVAL OR REPLACEMENT) SHALL BE OPERABLE DURING NIGHTFALL WHEN THE RUNWAY IS OPEN FOR OPERATION UNLESS OTHERWISE APPROVED BY THE AIRPORT MANAGER AND/OR OTHERWISE DETAILED HEREIN. CONTRACTOR SHALL PROVIDE ALL TEMPORARY WORK AS NECESSARY TO MAINTAIN OPERATION OF THE AIRFIELD LIGHTING SYSTEMS AT NIGHTFALL. CONTRACTOR SHALL COORDINATE TRANSFER OF EXISTING AIRFIELD CIRCUITS TO MINIMIZE DOWNTIME.
  - EQUIPMENT DESIGNATED FOR REMOVAL SHALL BE TURNED OVER TO THE AIRPORT. IN THE EVENT THE AIRPORT DOES NOT WANT THE RESPECTIVE EQUIPMENT, THE CONTRACTOR SHALL DISPOSE OF IT OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT.
  - WHEN THE RUNWAY IS CLOSED THE RESPECTIVE RUNWAY LIGHTING AND AIRPORT NAVAIDS (PAPI, WIND CONE, AND AIRPORT ROTATING BEACON) SHALL BE SHUT OFF.
  - REMOVAL OF EXISTING VAULT AND EQUIPMENT WILL BE PAID FOR UNDER ITEM AR109901, REMOVE ELECTRICAL VAULT, PER LUMP SUM.

REVISION	DATE

**JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-B8  
ILL. PROJ.: JOT-4166

Hanson Project No. 09A0177D-0001	File Name E-601-LINE.dwg	Scale NONE	Date 02/13/12
LAYOUT	KNL	01/13/12	
DRAWN	MLH	01/24/12	
REVIEWED	KNL/CAH	02/13/12	

**HANSON**

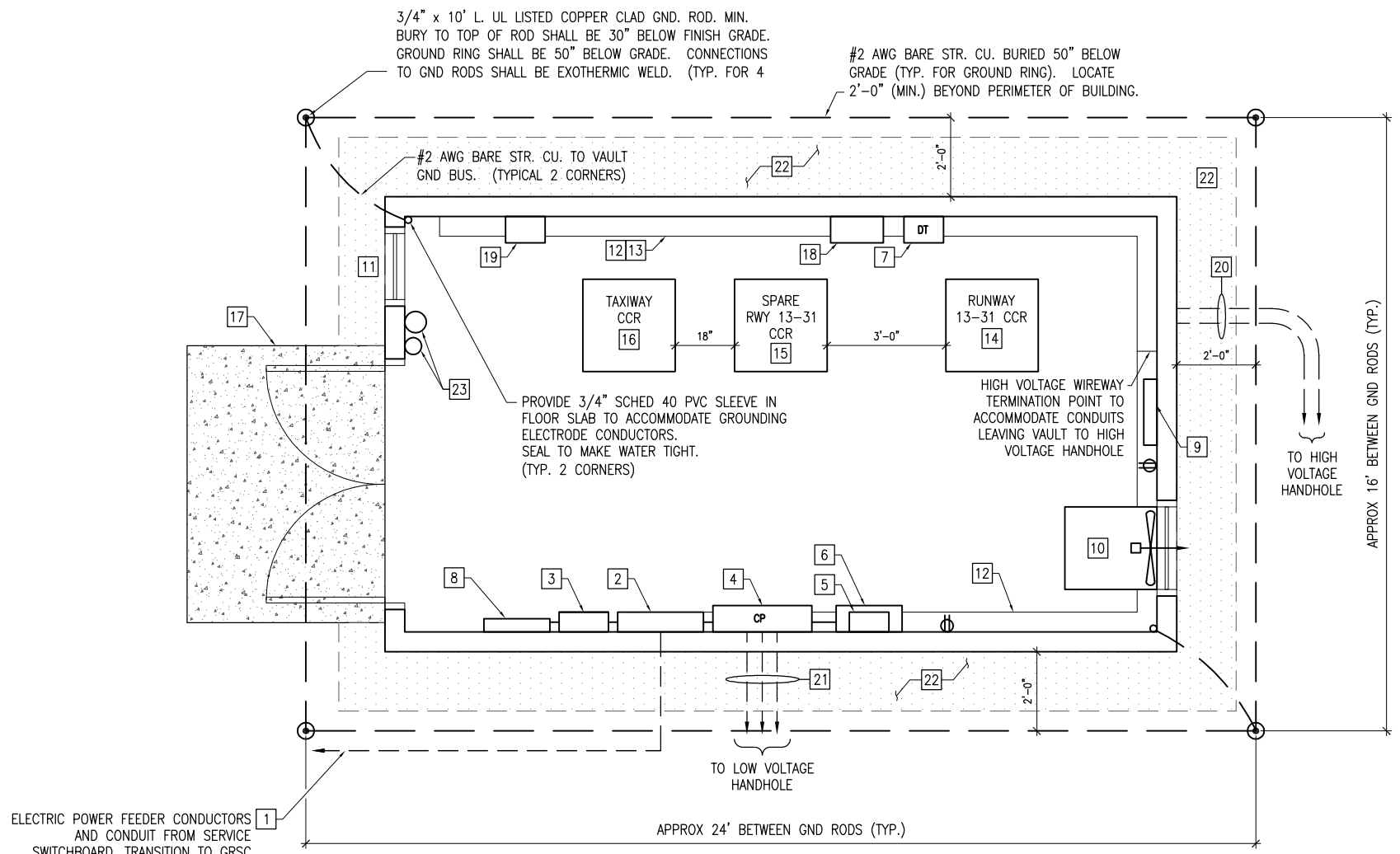
© Copyright Hanson Professional Services Inc. 2012  
**Hanson Professional Services Inc.**  
 1525 S. State Street  
 Springfield, Illinois 62703-2886

EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD

CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

MAR 12, 2012 2:25 PM KINC00394  
 pw:\sps-sv306.hanson.com\hanson\_projects\Documents\09jobs\09A0177D\09A0177D\CAD\Report\Sheet\E-601-LINE





**VAULT ELECTRICAL EQUIPMENT PLAN**  
 SCALE 1/2"=1'-0" [FULL-SIZE (22x34)]  
 1 0 2 4 FEET

ELECTRICAL LEGEND - PLANS	
—	CONDUIT (EXPOSED)
---	CONDUIT OR UNIT DUCT (CONCEALED OR BURIED)
⊗	POLE OR CONDUIT MOUNTED LIGHT FIXTURE
⊙ ⊙ ⊙	WALL OR CEILING MTD. JUNCTION BOX. CONFIGURATION VARIES WITH USE
⊏	SINGLE THROW DISCONNECT SWITCH
⊏	SINGLE THROW, FUSIBLE DISCONNECT SWITCH
⊏	ENCLOSED CIRCUIT BREAKER
⊏	DOUBLE THROW SAFETY SWITCH, MANUAL TRANSFER SWITCH
⊏	CONTROL PANEL
T	TRANSFORMER
⊏	ELECTRIC UTILITY METER
⊏	ENCLOSURE
⊏	CIRCUIT BREAKER PANEL—SEE SCHEDULES
⊙	GROUND ROD
—	#12 AWG TWN COPPER UNLESS NOTED OTHERWISE. LONG SLASHES INDICATE NEUTRAL. SHORT SLASHES INDICATE HOT OR SWITCHED LEG. SLASHES WITH DOT OR A "G" INDICATE SEPARATE GROUND WIRE.
PNL A	HOMERUN TO PANEL PNL A INDICATES PANEL 1,3,5 INDICATES CIRCUIT NUMBERS
⊙	PHOTO-ELECTRIC CELL

**GENERAL NOTES**

- SEE "PROPOSED ELECTRICAL ONE-LINE FOR VAULT AND AIRFIELD" FOR LOW VOLTAGE INPUT POWER WIRING REQUIREMENTS TO CCR'S (CONSTANT CURRENT REGULATORS). SEE "HIGH VOLTAGE WIRING SCHEMATIC" FOR CCR OUTPUT WIRING REQUIREMENTS. SEE "AIRFIELD LIGHTING WIRING SCHEMATIC" FOR CCR CONTROL WIRING REQUIREMENTS. PROVIDE 5 FEET MINIMUM CLEAR WORKING SPACE IN FRONT OF EACH CCR AND EACH SERIES PLUG CUTOUT.
- CONSTANT CURRENT REGULATORS AND THEIR RESPECTIVE SERIES PLUG CUTOUTS SHALL BE CLEARLY LABELED TO IDENTIFY THE RESPECTIVE REGULATOR DESIGNATION, RUNWAY OR TAXIWAY SERVED, POWER SOURCE OR CIRCUIT, AND VOLTAGE SYSTEM.
- SEE ELEVATION VIEWS FOR ADDITIONAL INFORMATION ON PROPOSED EQUIPMENT LAYOUTS.
- COORDINATE CONDUIT & SLEEVE ENTRANCES THROUGH FLOOR SLAB AND WALLS.
- VAULT FOUNDATION PIERS SHALL BE SIZED IN ACCORDANCE WITH THE RESPECTIVE VAULT SHELTER MANUFACTURER AND EXTEND 5 FEET MINIMUM BELOW FINISHED GRADE.

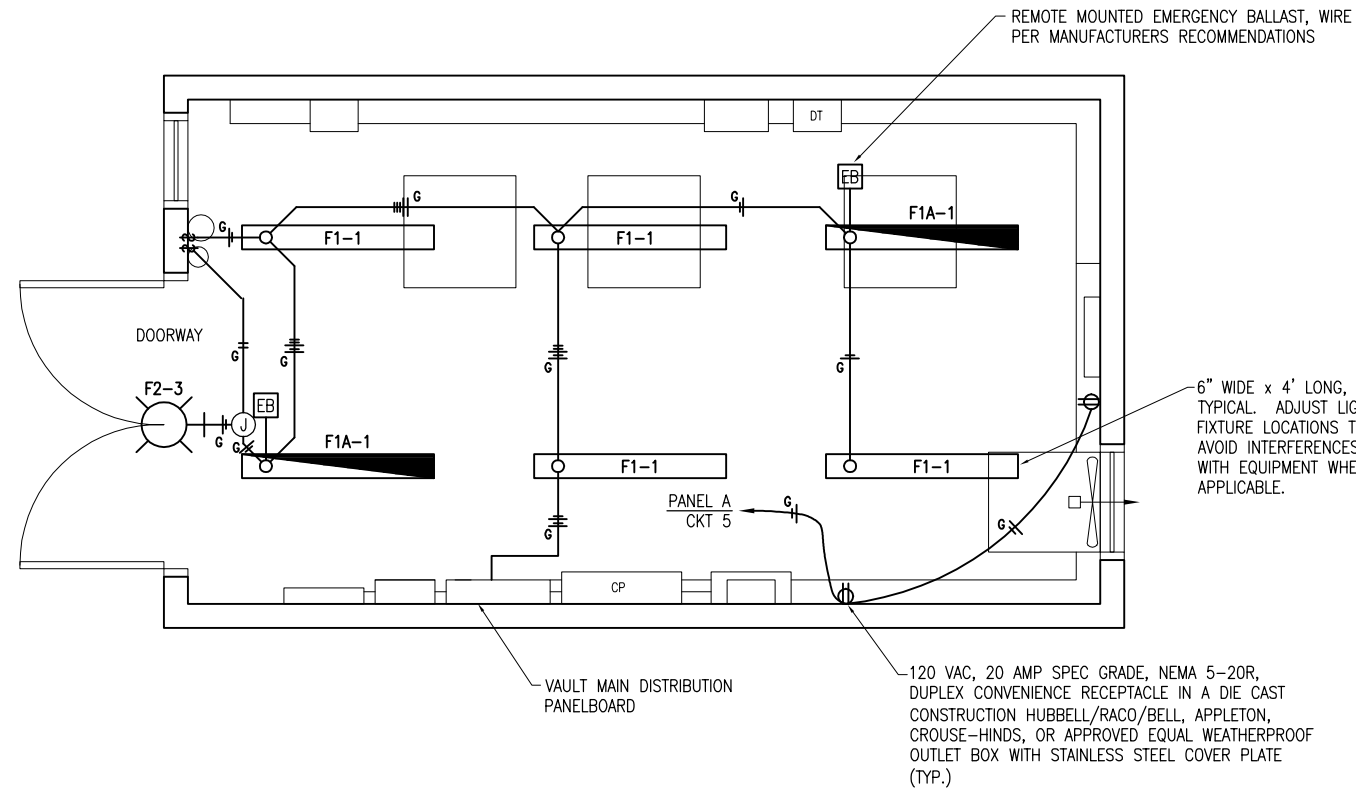
**KEYED NOTES**

- ELECTRIC POWER FEEDER CONDUCTORS AND CONDUIT FROM SERVICE SWITCHBOARD, TRANSITION TO GRSC WHERE EMERGING FROM GRADE. SEE "PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD".
- VAULT MAIN DISTRIBUTION PANELBOARD
- AC SURGE PROTECTIVE DEVICE, SEE "PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD."
- LIGHTING CONTACTOR PANEL. SEE AIRFIELD LIGHTING WIRING SCHEMATIC AND LIGHTING CONTACTOR PANEL DETAIL.
- L-854 RADIO CONTROL UNIT. EXTEND GRSC & RADIO ANTENNA CABLE AND MOUNT ANTENNA ABOVE THE ADJACENT HANGAR BUILDING ROOF AS REQUIRED FOR PROPER OPERATION. BOND GRSC AT BLDG EXTERIOR TO GND RING WITH #2 AWG BARE CU. PROVIDE 1" SCHED 40 PVC TO PROTECT GND WIRE. GRSC WITH ANTENNA CABLE SHALL TRANSITION TO SCHED 40 PVC AT ENTRY TO VAULT.
- RADIO RELAY INTERFACE PANEL WITH PHOTOCELL BYPASS SWITCH FOR AIRFIELD LIGHTING SYSTEM. SEE AIRFIELD LIGHTING WIRING SCHEMATIC FOR WIRING REQUIREMENTS. MOUNT PHOTOCELL ABOVE ROOF. FIELD VERIFY LOCATION FOR PROPER CONTROL AND OPERATION. BOND GRSC AT BLDG EXTERIOR TO GND RING WITH #2 AWG BARE CU. PROVIDE 1" SCHED 40 PVC TO PROTECT GND WIRE. GRSC WITH PHOTOCELL CABLE SHALL TRANSITION TO SCHED 40 PVC AT ENTRY TO VAULT.
- 60AMP, 240VAC, 2P DOUBLE THROW NOT FUSIBLE SAFETY SWITCH FOR RUNWAY CCR'S.
- ELECTRIC WALL HEATER EH-1, 3000 WATT, 208 VAC, 1 PHASE, SUITABLE FOR SURFACE MOUNTING WITH INTEGRAL THERMOSTAT, Q-MARK MODEL CWH3404, OR EQUAL. HEATER SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENT.
- ELECTRIC WALL HEATER EH-2 3000 WATT, 208 VAC, 1 PHASE, SUITABLE FOR SURFACE MOUNTING WITH INTEGRAL THERMOSTAT, Q-MARK MODEL CWH3404 OR APPROVED EQUAL. HEATER SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENT. BOTTOM OF HEATER SHALL BE 3" (MIN.) ABOVE THE UPPER ELECTRICAL WIREWAY. COORDINATE WITH CCR INSTALLATION & FAN INSTALLATION. LOCATE HEATER ON WALL SUCH THAT IT IS NOT DIRECTLY BEHIND CCR.

- EXHAUST FAN EF-1, 2000 CFM (MINIMUM) AT .25" STATIC PRESSURE WITH 1/3 HP (MINIMUM), 120 VAC MOTOR, COOK MODEL 20S10D, OR APPROVED EQUAL. INCLUDE WALL HOUSING WITH GUARD, GRAVITY BACK DRAFT DAMPER, ALUMINUM WEATHER-HOOD PAINTED TO MATCH BUILDING EXTERIOR, STAINLESS STEEL INSECT SCREEN, AND FRACTIONAL HP ELECTRICAL DISCONNECT. INSTALL FAN AS HIGH AS REASONABLE. PROVIDE 120 VAC THERMOSTAT, AT 48" AFF. SEE EXHAUST FAN CONTROL SCHEMATIC FOR WIRING REQUIREMENTS. FAN SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENT.
- INTAKE LOUVER L-1, 24" WIDE BY 48" HIGH INTAKE LOUVER WITH STAINLESS INSECT SCREEN. 120 VAC MOTORIZED DAMPER DWITH LIMIT SWITCH, KYNAR FINISH MATCHING BUILDING EXTERIOR, RUSKIN MODEL ELF375DX, OR APPROVED EQUAL. SEE EXHAUST FAN CONTROL SCHEMATIC FOR WIRING REQUIREMENTS. LOUVER / DAMPER SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENT.
- 6" BY 6" LOW VOLTAGE WIREWAY. LABEL "LOW VOLTAGE" EVERY 4 FEET. INSTALL ABOVE HIGH VOLTAGE WIREWAY.
- 6" BY 6" HIGH VOLTAGE WIREWAY. LABEL "HIGH VOLTAGE" EVERY 4 FEET. INSTALL BELOW LOW VOLTAGE WIREWAY.
- NEW RUNWAY 13-31 CONSTANT CURRENT REGULATOR. SEE GENERAL NOTE 1.
- BACKUP/SPARE CONSTANT CURRENT REGULATOR FOR RUNWAY 13-31 RELOCATED FROM EXISTING VAULT. SEE GENERAL NOTE 1.
- NEW TAXIWAY CONSTANT CURRENT REGULATOR. SEE GENERAL NOTE 1.
- ENTRANCE PAD/STEP CONSTRUCTED OF 6" CONCRETE SLAB W/6X6-W5XW5 WELDED WIRE FABRIC ON A COMPACTED SUBGRADE. MINIMUM DIMENSIONS OF PAD WILL BE 7'Wx5'Dx6"H, SLOPED AT A MIN. OF 0.5"/FT AWAY FROM THE VAULT ENTRANCE. PCC USED TO CONSTRUCT THE PAD WILL CONFORM TO ITEM 610. ALL MATERIALS, LABOR AND EQUIPMENT USED TO CONSTRUCT THE PAD INCLUDING ANY GRADING REQUIRED WILL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE PROPOSED ELECTRICAL VAULT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. COORDINATE WITH ENTRY TO VAULT. VAULT FLOOR ELEVATION TO BE APPROXIMATELY 6 INCHES ABOVE PAD/STEP.
- TRANSFER PAIR SERIES PLUG CUTOUTS (TYPE S-1) FOR RUNWAY LIGHTING WITH ENCLOSURE. SEE GENERAL NOTES 1 & 2.
- SERIES PLUG CUTOUT (TYPE S-1) FOR TAXIWAY LIGHTING WITH ENCLOSURE. SEE GENERAL NOTES 1 & 2.
- 2-3" PVC COATED GRSC WITH PVC COATED GRSC ELBOWS FROM HIGH VOLTAGE WIREWAY TO HIGH VOLTAGE HANDHOLE. TRANSITION TO SCHED 40 PVC OR HDPE DUCT 20 FT BEYOND VAULT.
- 3-3" PVC COATED GRSC WITH PVC COATED GRSC ELBOWS AT VAULT FROM LOW VOLTAGE WIREWAY TO LOW VOLTAGE HANDHOLE. TRANSITION TO SCHED 40 PVC OR HDPE DUCT 20 FT BEYOND VAULT. COORDINATE LOCATION WITH BUILDING FOUNDATION/PIERS.
- VEGETATION BARRIER CONSISTING OF A MIN. 3" PEA GRAVEL SURFACE OVER FILTER OR LANDSCAPING FABRIC. PROPOSED SURFACE TREATMENT WILL COVER ENTIRE AREA BENEATH VAULT STRUCTURE AS WELL AS 18" AROUND THE PERIMETER OF THE BUILDING EDGE. THE STONE AND FABRIC AS WELL AS ANY EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS TASK WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE PROPOSED ELECTRICAL VAULT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- FURNISH AND INSTALL A UL RATED, 10 POUND CARBON DIOXIDE FIRE EXTINGUISHER SUITABLE FOR USE ON CLASS C FIRES AND A 10 POUND CLASS 4A:80B:C DRY CHEMICAL ABC FIRE EXTINGUISHER SUITABLE FOR USE ON CLASS A,B,C FIRES, IN THE VAULT SHELTER. PER NFPA 10 "PORTABLE FIRE EXTINGUISHERS" CLASS C ARE FOR FIRES THAT INVOLVE ENERGIZED ELECTRICAL EQUIPMENT. FIRE EXTINGUISHERS SHALL BE MADE IN THE UNITED STATES OF AMERICA TO COMPLY WITH BUY AMERICAN REQUIREMENT. FIRE EXTINGUISHER TYPE CO2 SHALL BE AMEREX MODEL 330, ANSUL SENTRY 10 MODEL CD10A-1 OR APPROVED EQUAL. FIRE EXTINGUISHER DRY CHEMICAL TYPE ABC SHALL BE AMEREX MODEL B456, OR APPROVED EQUAL. PROVIDE WALL MOUNTING BRACKET FOR EACH FIRE EXTINGUISHER. CONFIRM MODEL NUMBERS WITH THE RESPECTIVE FIRE EXTINGUISHER MANUFACTURER.

REVISION	DATE				
<b>JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS</b>					
A.I.P. PROJ.: 3-17-0066-B8 ILL. PROJ.: JOT-4166					
Hanson Project No.	09A0177D-0001	LAYOUT	KNL	01/17/12	
Filename	E-101-VLT.dwg	DRAWN	MLH	01/26/12	
Scale	AS SHOWN	REVIEWED	KNL/CAH	02/13/12	
Date	02/13/12				
<b>HANSON</b>					
© Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 S. State St. Springfield, Illinois 62703-2886					
<b>PROPOSED AIRPORT VAULT EQUIPMENT PLAN</b>					
<b>CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS</b>					
<b>25</b>					
25 of 38 sheets					

MAR 12, 2012 2:27 PM KINCAC0394  
 p:\s\sp\06\hanson\Documents\09A0177D\09A0177D(CAD)\Vport\Sheet\E-101-VLT



- NOTES**
- 15 AMP & 20 AMP BRANCH CIRCUITS FOR LIGHTING & RECEPTACLES SHALL USE #12 AWG THWN (MIN.). EMT MAY BE USED FOR LIGHTING AND RECEPTACLE BRANCH CIRCUITS.
  - LIGHT FIXTURES SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. PROVIDE CERTIFICATION OF MANUFACTURE IN THE UNITED STATES WITH SHOP DRAWINGS SUBMITTAL.
  - ADJUST RECEPTACLE LOCATIONS WHERE NECESSARY TO ACCOMODATE EQUIPMENT LAYOUT.
  - TEST EMERGENCY LIGHTING AND CONFIRM PROPER OPERATION.
  - "USPOM" SUFFIX ON LITHONIA LIGHT FIXTURE CATALOG NUMBERS INDICATES UNITED STATES POINT OF MANUFACTURE.



**VAULT LIGHTING AND RECEPTACLE PLAN**

SCALE 1/2"=1'-0" [FULL-SIZE (22x34)]  
 1 0 2 4 FEET

LIGHTING FIXTURE SCHEDULE						
FIXT. TYPE	DESCRIPTION	MANUFACTURER & CATALOG NO.	LAMPS/WATTS	VOLTS	MOUNTING	REMARKS
F1	4 FT. WET LOCATION LISTED ENCLOSED AND GASKETED INDUSTRIAL FLUORESCENT LIGHT FIXTURE, IMPACT RESISTANT, UV RESISTANT REINFORCED POLYESTER FIBERGLASS HOUSING, HIGH IMPACT ACRYLIC DIFFUSER, RAPID START COLD WEATHER 0 DEG. F. ELECTRONIC BALLAST WITH LESS THAN OR EQUAL TO 10% THD.	LITHONIA: DMW-2-32-AR-120-CW-GEB10RS-WLF -USPOM	2-32W T8 4100K 59 TOTAL INPUT WATTS	120	SURFACE TO HARD CEILING	PROVIDE WET LOCATION FITTINGS INSTALLED IN TOP OF FIXTURE.
F1A	SAME AS F1 EXCEPT PROVIDE AN EMERGENCY BALLAST CAPABLE OF OPERATING 2 LAMPS FOR 90 MINUTES AT 1100-1400 TOTAL LUMENS, BODINE #B50ST. NOTE BALLAST MIGHT REQUIRE TO BE REMOTE MOUNTED NEAR FIXTURE AS INDICATED ON THE PLANS.	LITHONIA: DMW-2-32-AR-120-CW-GEB10RS-WLF -USPOM	2-32W T8 4100K 59 TOTAL INPUT WATTS	120	SURFACE TO HARD CEILING	PROVIDE WET LOCATION FITTINGS INSTALLED IN TOP OF FIXTURE.
F2	COMPACT FLUORESCENT WALL-PAK, ONE PIECE INJECTION MOLDED UV STABILIZED POLYCARBONATE HOUSING, HIGH PERFORMANCE SPECULAR ANODIZED SEGMENTED REFLECTOR, ONE PIECE HIGH TEMPERATURE SILICONE GASKET, MEDIUM BRONZE FINISH, HIGH POWERFACTOR ELECTRONIC BALLAST WITH LESS THAN OR EQUAL TO 10% THD, UL LISTED FOR WET LOCATIONS, FUSED.	LITHONIA: TWA-42TRT-120-SF-CR-DMB-LPI -USPOM	1-42W TRT 4100K 47 TOTAL INPUT WATTS	120	SURFACE TO WALL ABOVE EXTERIOR DOOR APPROXIMATELY 4 INCHES ABOVE TOP OF DOOR FRAME.	CONNECT TO WALL SWITCH LOCATED ON THE INSIDE OF THE BUILDING.

REVISION	DATE

**JOLIET REGIONAL AIRPORT  
 JOLIET PARK DISTRICT  
 JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-B8  
 ILL. PROJ.: JOT-4166

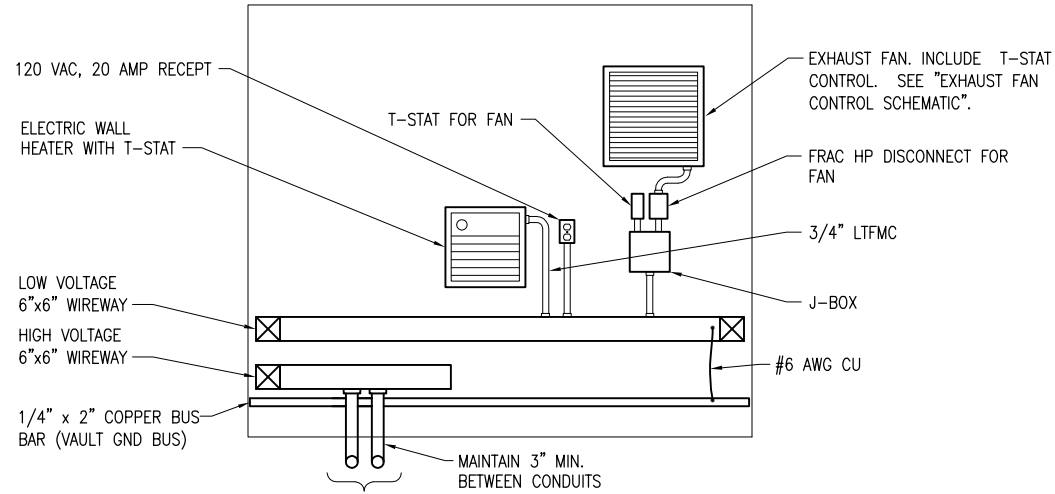
Hanson Project No. 09A0177D-0001	File Name E-102-LTG.dwg	Scale AS SHOWN	Date 02/13/12
LAYOUT	KNL	01/17/12	
DRAWN	MLH	01/26/12	
REVIEWED	KNL/CAH	02/13/12	



**PROPOSED AIRPORT  
 VAULT LIGHTING AND  
 RECEPTACLE PLAN**

**CONSTRUCT A STAND ALONE  
 ELECTRICAL VAULT, REPLACE RUNWAY  
 LIGHTS AND INSTALL TAXIWAY LIGHTS**

Mar 12, 2012 2:29 PM KINC00394  
 pw:\sps-sv306.hanson.com\hanson\_projects\Documents\09\jobs\09A0177D\09A0177D\CA0\Wipport\Sheet\E-102-LTG



2-3" PVC COATED GRSC ELBOWS AND 2-3" PVC COATED GRSC CONDUITS TO HIGH VOLTAGE HANDHOLE. TRANSITION TO SCHED 40 OR SCHED 80 PVC OR HDPE DUCT AT 20 FT BEYOND VAULT FOUNDATION. COORDINATE LOCATIONS WITH VAULT PIER FOUNDATIONS.

**VAULT EAST WALL ELEVATION**

SCALE 1/2"=1'-0"  
1 0 2 4 FEET

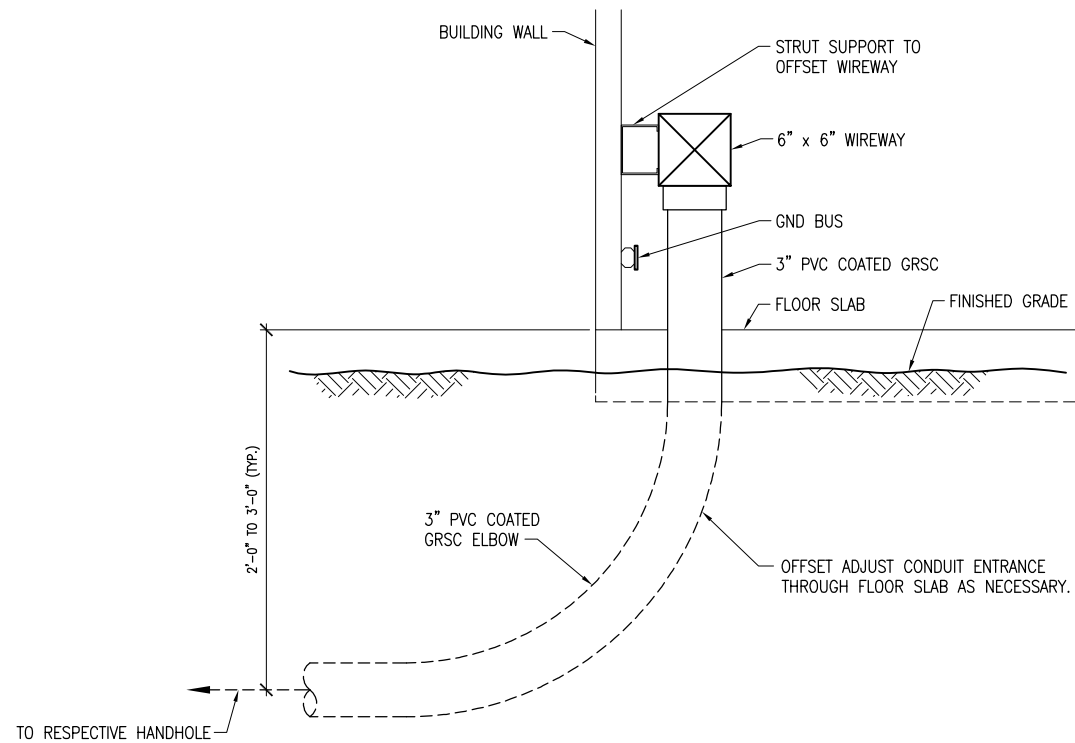
**VAULT MAIN DISTRIBUTION PANEL "A" SCHEDULE**

CKT #	DUTY	SIZE	SIZE	DUTY	CKT #
1	VAULT INTERIOR LIGHTS	15A, 1P	60A 3P	AC SURGE PROTECTOR	2
3	VAULT EXTERIOR LIGHTS	15A, 1P		4	
5	VAULT RECEPTACLES	20A, 1P		6	
7	L-854 RADIO AND CONTROL POWER	15A, 1P		8	
9	VAULT EXHAUST FAN	20A, 1P	20A 2P	SPARE RUNWAY CCR CKT	10
11	SPARE	20A, 1P		ELECTRIC HEATER #1	12
13	T-HANGAR ACCESS GATE	30A	20A 2P	ELECTRIC HEATER #2	14
15	SPARE	2P		16	
17	JEFFERSON STREET POLE LIGHTS CKT 1	20A	---	BLANK	18
19	SPARE	2P	---	BLANK	20
21	JEFFERSON STREET POLE LIGHTS CKT 2	20A	---	BLANK	22
23	SPARE	2P	---	BLANK	24
25	AIRPORT ROTATING BEACON	30A	---	BLANK	26
27	SPARE	2P	---	BLANK	28
29	SPARE	30A, 1P	60A 2P	TAXIWAY A CCR	30
31	SPARE	25A, 1P		32	
33	SPARE	20A, 1P	60A 2P	RUNWAY 13-31 CCR'S	34
35	SPARE	15A, 1P		36	
37	BLANK	---	---	BLANK	38
39	BLANK	---	---	BLANK	40
41	BLANK	---	---	BLANK	42

225 AMP, 208/120 VAC, 3 PHASE, 4 WIRE, 42 CIRCUIT PANELBOARD WITH 150 AMP, 3 POLE MAIN BREAKER, RATED 22,000 AIC AT 240 VAC IN A NEMA 1 ENCLOSURE, UL LISTED SUITABLE FOR SERVICE ENTRANCE. INCLUDE TWO SEPARATE COPPER GROUND BAR KITS. ALL FEEDER AND BRANCH BREAKERS SHALL BE BOLT-ON TYPE WITH 22,000 AIC RATING (MINIMUM) AT 120/240 VAC. PANELBOARD SHALL BE SQUARE D NQ TYPE OR APPROVED EQUAL.

**NOTES**

- PANELBOARD BUSES SHALL BE COPPER. NEUTRAL SHALL BE COPPER. EQUIPMENT GROUND BAR SHALL BE COPPER.
- ALL BRANCH CIRCUIT & FEEDER BREAKERS SHALL BE BOLT-ON TYPE WITH 22,000 AIC AT 120/240 VAC.
- INCLUDE ENGRAVED, PHENOLIC OR PLASTIC LEGEND PLATE LABELED "VAULT MAIN DIST. PANEL, 208/120 VAC, 3PH, 4W". INCLUDE ADDITIONAL LEGEND PLATE FOR THE VAULT MAIN BREAKER LABELED "VAULT MAIN DISCONNECT".
- PANELBOARD SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. PROVIDE CERTIFICATION OF MANUFACTURE IN THE UNITED STATES WITH SHOP DRAWING SUBMITTAL.
- CIRCUIT BREAKERS AND WIRING SHALL BE SIZED FOR THE ACTUAL EQUIPMENT FURNISHED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S RECOMMENDATION AND N.E.C. CONTRACTOR SHALL ADJUST CIRCUIT BREAKER SIZES & WIRING WHERE APPLICABLE TO CONFORM WITH THE MANUFACTURER'S RECOMMENDATIONS AND N.E.C.
- FOR A BOTTOM FEED PANELBOARD, MOVE AC SURGE PROTECTOR BREAKER DOWN TO POSITIONS 38, 40 AND 42.



**CONDUIT ENTRANCE DETAIL**

SCALE 1 1/2"=1'-0"  
0.5 0 1 2 FEET

REVISION  
DATE

JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS

A.I.P. PROJ.: 3-17-0066-B8

IL PROJ.: JOT-4166

Hanson Project No. 09A01770-0001  
E-201-ELEV.dwg

AS SHOWN  
Scale  
Date 02/13/12

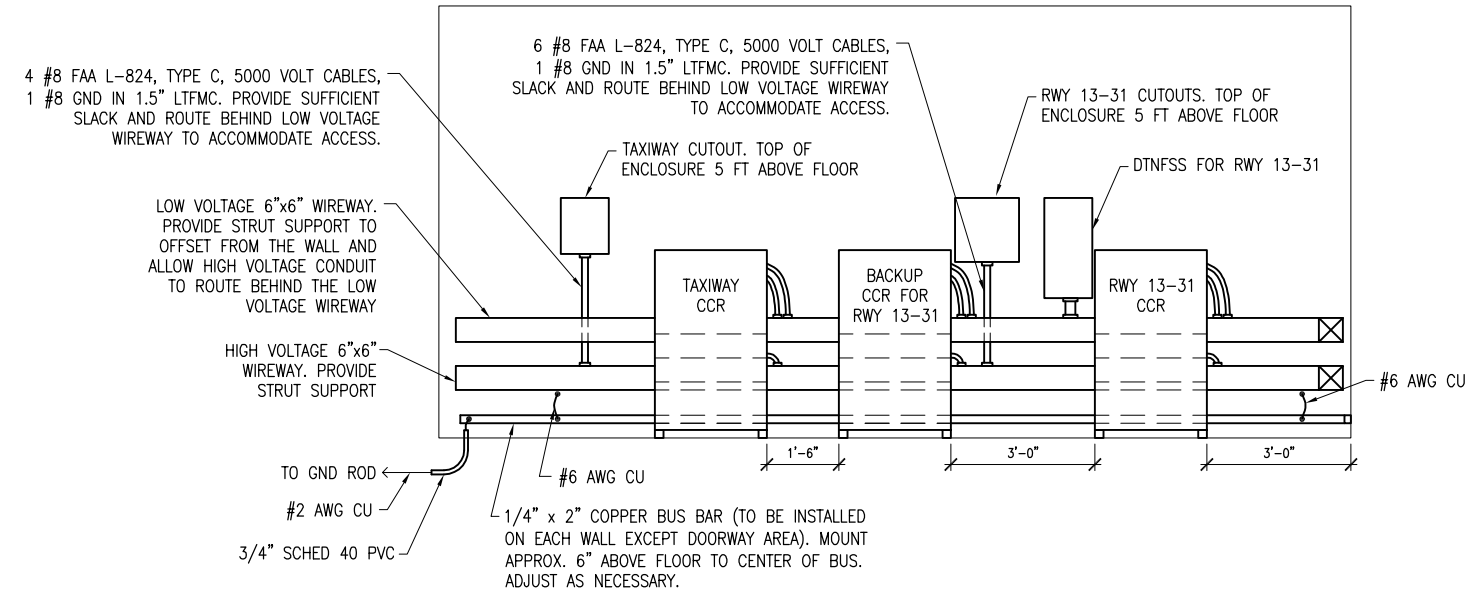
LAYOUT	KNL	01/13/12
DRAWN	MLH	01/28/12
REVIEWED	KNL/CAH	02/13/12



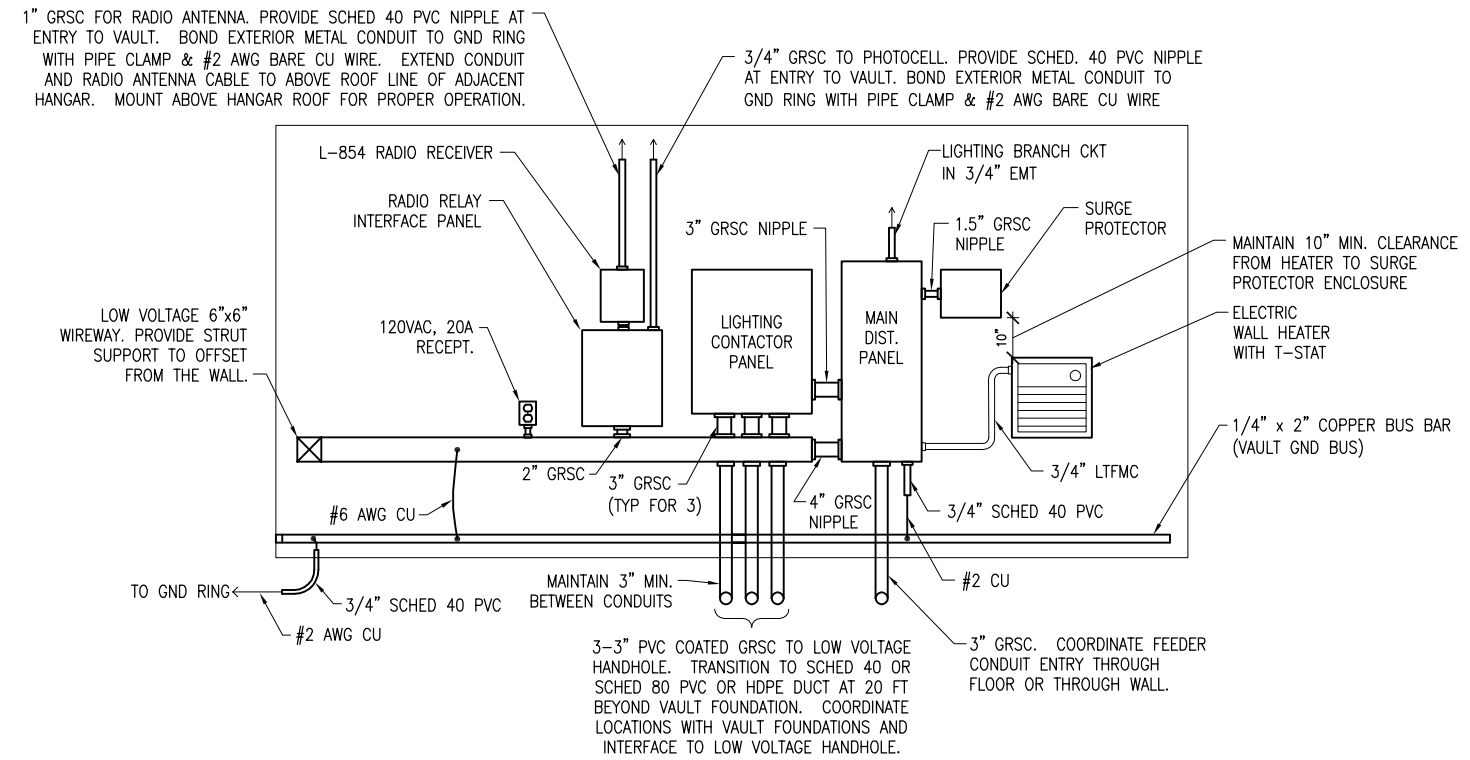
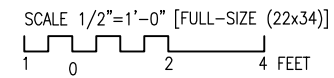
© Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 S. State St.  
Springfield, Illinois 62703-2886

PROPOSED AIRPORT VAULT  
ELEVATIONS (SHEET 1)

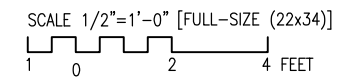
CONSTRUCT A STAND ALONE  
ELECTRICAL VAULT. REPLACE RUNWAY  
LIGHTS AND INSTALL TAXIWAY LIGHTS



VAULT NORTH WALL ELEVATION



VAULT SOUTH WALL ELEVATION



REVISION	DATE

JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS

A.I.P. PROJ.: 3-17-0066-B8

IL. PROJ.: JOT-4166

Hanson Project No.	09A01770-0001
Filename	E-201-ELEV.dwg
Scale	AS SHOWN
Date	02/13/12
LAYOUT	KNL 01/13/12
DRAWN	MLH 01/28/12
REVIEWED	KNL/CAH 02/13/12

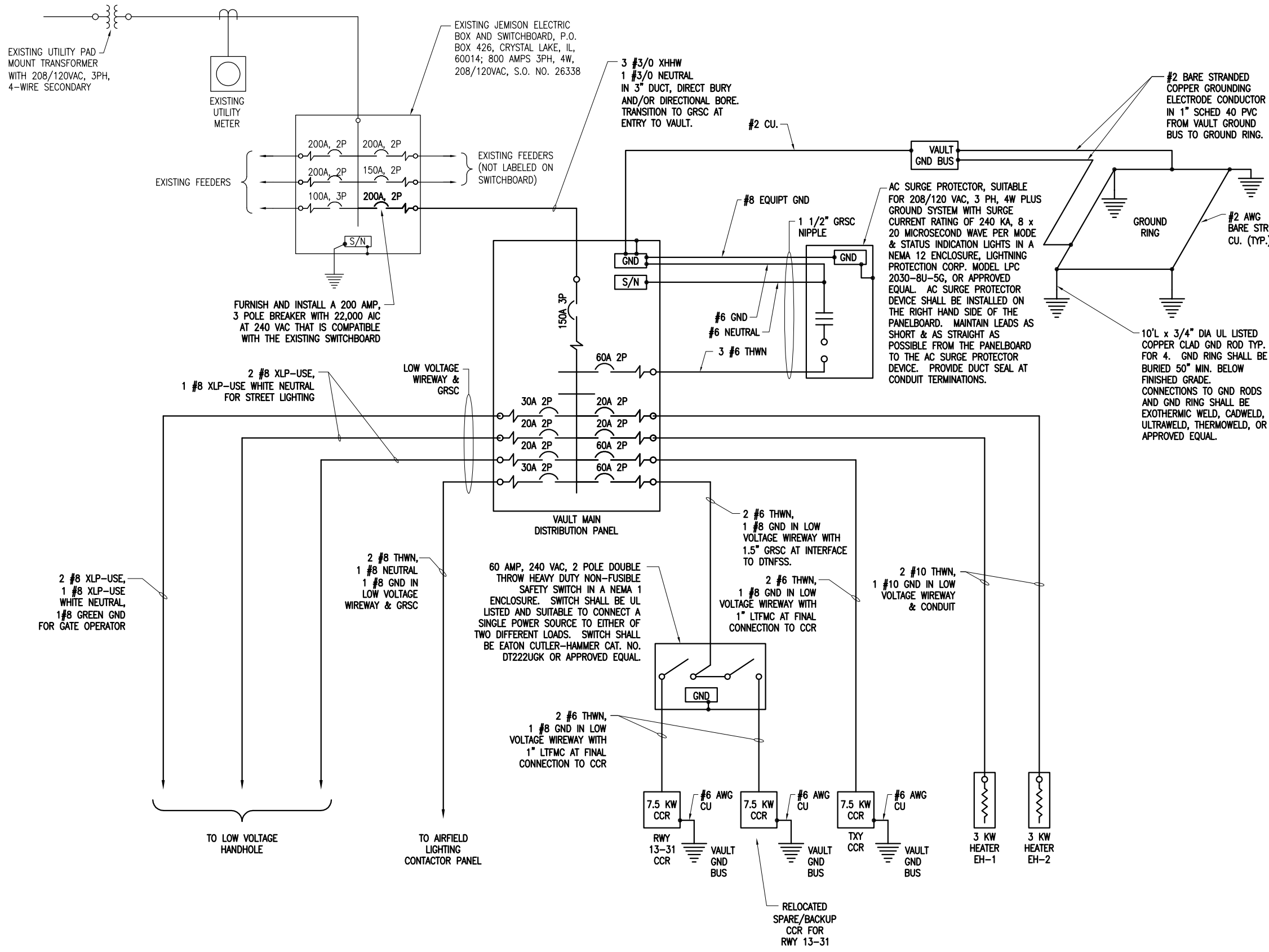
**HANSON**

© Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 S. Skyway  
Springfield, Illinois 62703-2886

PROPOSED AIRPORT VAULT  
ELEVATIONS (SHEET 2)

CONSTRUCT A STAND ALONE  
ELECTRICAL VAULT. REPLACE RUNWAY  
LIGHTS AND INSTALL TAXIWAY LIGHTS

MAR 12, 2012 2:33 PM KINC00394  
pw:\sps-sv306\hanson\dom\hanson\_projects\Documents\09\jobs\09A01770\09A01770(CAD)\rport\Sheet\E-201-ELEV



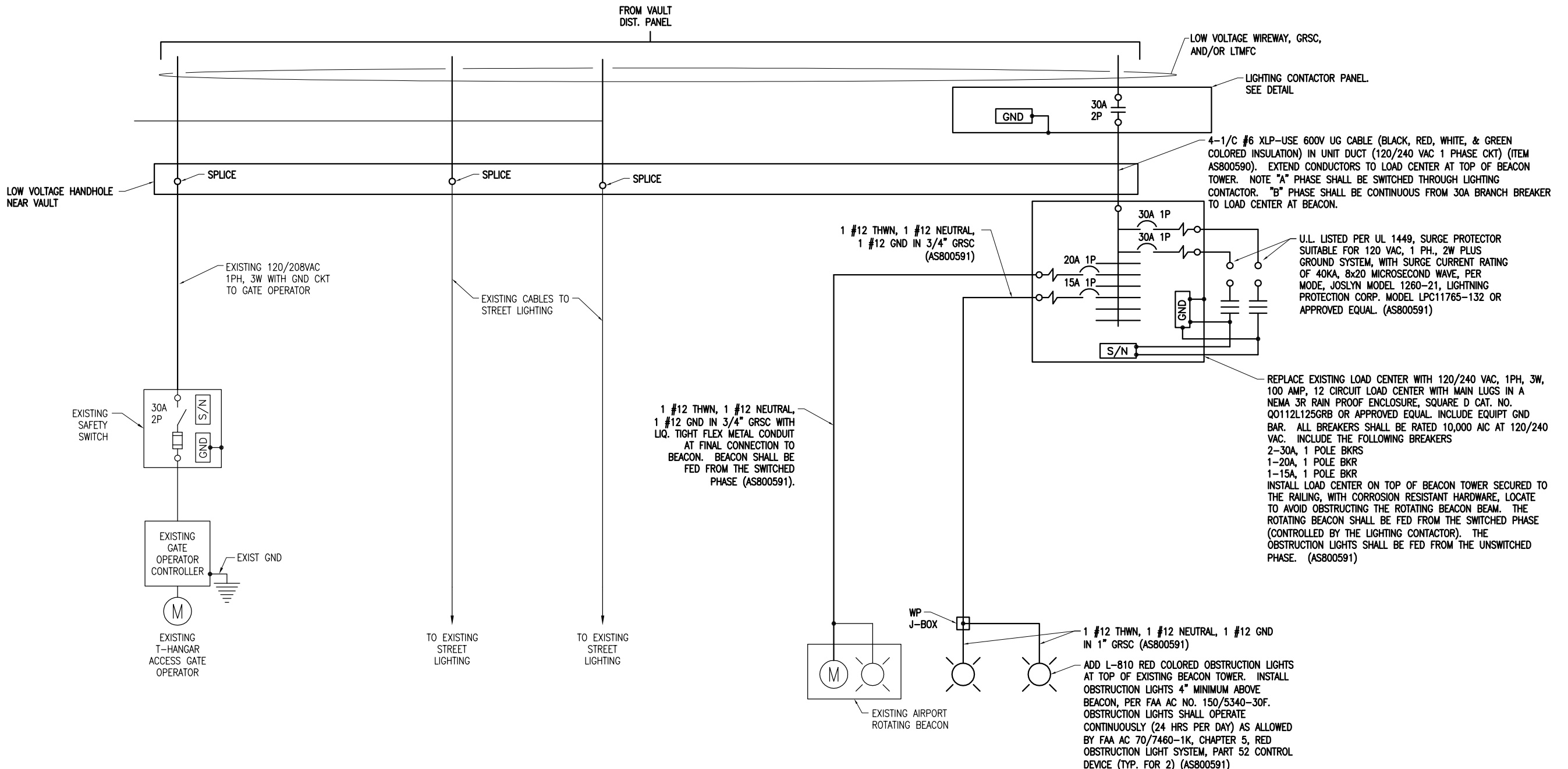
**NOTES**

- ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- 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.
- ALL CONDUCTORS/WIRING SHALL BE COPPER.
- CONTRACTOR SHALL CONFIRM POWER REQUIREMENTS WITH THE ACTUAL NAMEPLATE ON EACH CONSTANT CURRENT REGULATOR (OR OTHER RESPECTIVE EQUIPMENT) AND ADJUST CIRCUIT BREAKER, WIRE SIZES & CONDUIT SIZES TO CONFORM WITH NEC & MANUFACTURER'S RECOMMENDATIONS WHERE APPLICABLE. WIRE SIZES SHOWN ON THE PLANS ARE MINIMUM.
- HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, HANDHOLE, JUNCTION BOX, OR RACEWAY.
- LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.

PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD

<p>REVISION</p> <p>DATE</p>	<p style="text-align: center;"><b>JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS</b></p>									
<p>A.I.P. PROJ.: 3-17-0066-B8</p> <p>IL PROJ.: JOT-4166</p>										
<p>Hanson Project No. 09A0177D-0001                  Filename E-602-LINE.dwg                  Scale NONE                  Date 02/13/12</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>LAYOUT</td> <td>KNL</td> <td>01/13/12</td> </tr> <tr> <td>DRAWN</td> <td>MLH</td> <td>01/24/12</td> </tr> <tr> <td>REVIEWED</td> <td>KNL/CAH</td> <td>02/13/12</td> </tr> </table>	LAYOUT	KNL	01/13/12	DRAWN	MLH	01/24/12	REVIEWED	KNL/CAH	02/13/12
LAYOUT	KNL	01/13/12								
DRAWN	MLH	01/24/12								
REVIEWED	KNL/CAH	02/13/12								
<p style="font-size: x-small;">© Copyright Hanson Professional Services Inc. 2012                  Hanson Professional Services Inc.                  1525 S. State St.                  Springfield, Illinois 62703-2886</p>										
<p>PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD (1)</p>	<p>CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS</p>									
<p style="font-size: 2em; font-weight: bold;">29</p> <p style="font-size: x-small;">29 of 38 sheets</p>										

MAR 12, 2012 2:39 PM KINC00394 pw:\sps-sv306\hanson\Documents\09A0177D\09A0177D\CA0\Work\Sheet\E-602-LINE



PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD (CONTINUED)

- NOTES**
1. PROVIDE NEMA 4 HUBS FOR ALL CONDUIT ENTRIES INTO NEMA 4 RATED ENCLOSURES. PROVIDE NEMA 4 HUBS FOR ALL CONDUIT ENTRIES INTO THE NEMA 3R LOAD CENTER ENCLOSURE FOR THE BEACON.
  2. INSTALL OBSTRUCTION LIGHTING ON AIRPORT ROTATING BEACON TOWER IN CONFORMANCE WITH FAA AC NO. 150/5340-30F AND FAA AC NO. 150/5370-10F, ITEM L-101, INSTALLATION OF AIRPORT ROTATING BEACONS.
  3. IN THE EVENT THAT ADDITIVE ALTERNATE NO. 1 WORK FOR THE AIRPORT ROTATING BEACON IS NOT AWARDED, CONTRACTOR SHALL LOCATE AND INTERCEPT THE EXISTING BEACON CABLES, EXTEND NEW FEEDER CABLES FROM THE VAULT TO THE LOW VOLTAGE HANDHOLE AND SPLICE THE NEW CABLES TO THE EXISTING CABLES.

REVISION
DATE

**JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-B8  
ILL. PROJ.: JOT-4166

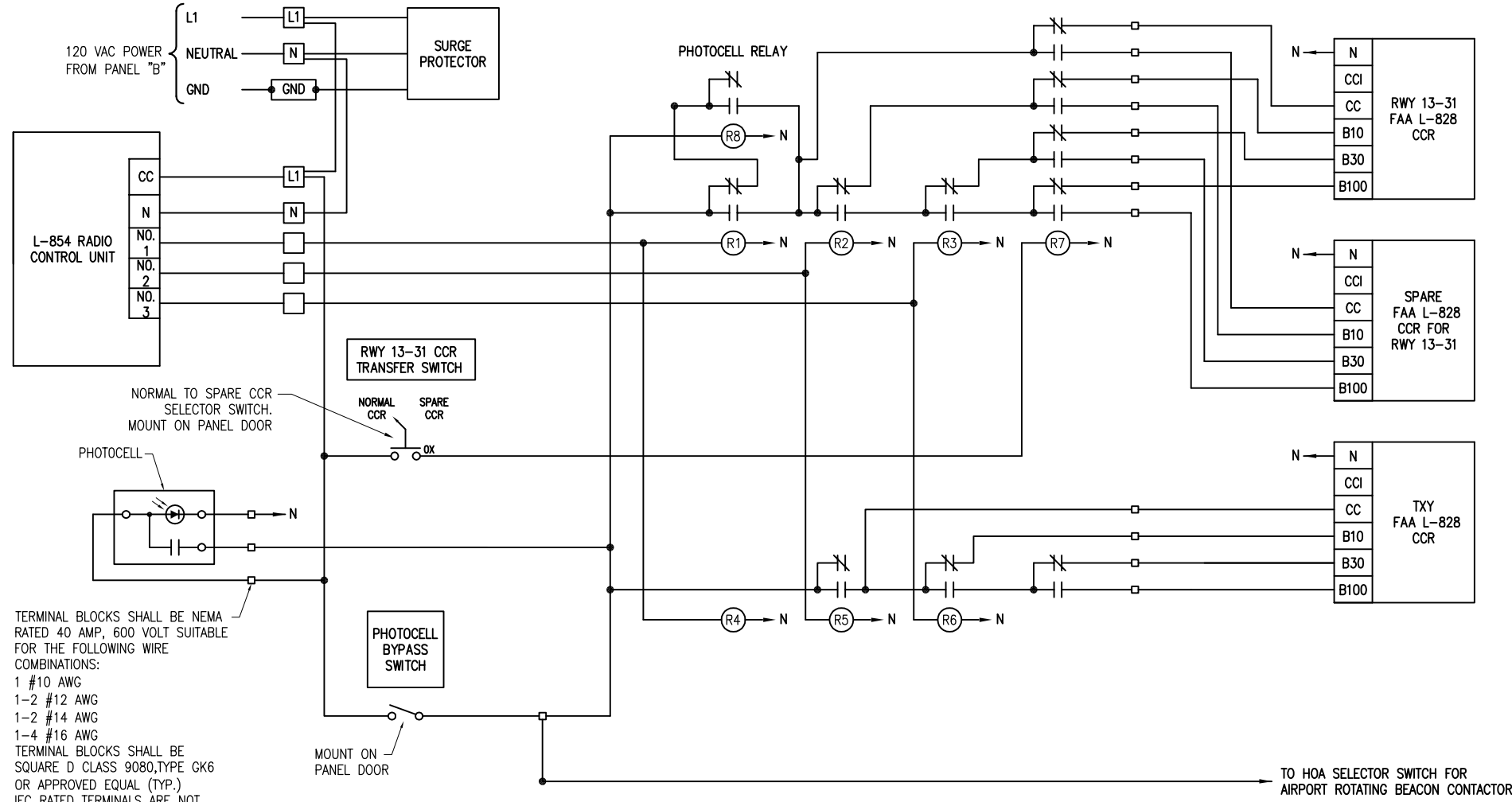
Hanson Project No. 09A0177D-0001	FILENAME	E-602-LINE.dwg
Scale	NONE	
Date	02/13/12	
LAYOUT	KNL	01/13/12
DRAWN	MLH	01/24/12
REVIEWED	KNL/CAH	02/13/12

© Copyright Hanson Professional Services Inc. 2012  
**Hanson Professional Services Inc.**  
 1525 S. State St.  
 Springfield, Illinois 62703-2886

PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD (2)

CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

MAR 12, 2012 2:40 PM KINC00394  
 pw:\sps-sv306\hanson\dom\hanson\_projects\Documents\09\jobs\09A0177D\CAD\Wpport\Sheet\E-602-LINE



TERMINAL BLOCKS SHALL BE NEMA RATED 40 AMP, 600 VOLT SUITABLE FOR THE FOLLOWING WIRE COMBINATIONS:  
 1 #10 AWG  
 1-2 #12 AWG  
 1-2 #14 AWG  
 1-4 #16 AWG  
 TERMINAL BLOCKS SHALL BE SQUARE D CLASS 9080, TYPE GK6 OR APPROVED EQUAL (TYP.)  
 IEC RATED TERMINALS ARE NOT ACCEPTABLE.

- NOTES:**
- RELAY INTERFACE CONTROL PANEL SHALL BE MANUFACTURED BY AN FAA APPROVED L-821 PANEL BUILDER OR A UL 508 INDUSTRIAL CONTROL PANEL BUILDER, AND SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENT AND THE "BUY AMERICAN ACT". RELAY INTERFACE CONTROL PANEL SHALL BE A SEPARATE PANEL. DO NOT COMBINE WITH LIGHTING CONTACTOR PANEL.
  - PANEL SHALL BE IN A NEMA 12 ENCLOSURE WITH HINGED COVER. DRILL HOLE IN BOTTOM OF ENCLOSURE TO ALLOW CONDENSATION TO ESCAPE.
  - EXTERNAL CONTROL CABLE SHALL BE NO. 12 AWG COPPER, 600 VOLT CABLE. ALL PANEL INTERIOR CONTROL CABLE SHALL BE MINIMUM 16 AWG, COPPER, 600 VOLT CABLE.
  - IN THE AUTOMATIC MODE OF OPERATION THE RUNWAY 13-31 CONSTANT CURRENT REGULATORS (PRIMARY UNIT & SPARE UNIT) SHALL BE CONTROLLED BY THE PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER:  
 PHOTOCELL - 10% BRIGHTNESS & ACTIVATE RADIO CONTROL  
 5 CLICKS - 30% BRIGHTNESS  
 7 CLICKS - 100% BRIGHTNESS
  - IN THE AUTOMATIC MODE OF OPERATION THE TAXIWAY CIRCUIT WILL BE CONTROLLED BY THE PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER:  
 PHOTOCELL -ACTIVATE RADIO CONTROL  
 3 CLICKS -10% BRIGHTNESS  
 5 CLICKS -30% BRIGHTNESS  
 7 CLICKS -100% BRIGHTNESS
  - IN THE AUTOMATIC MODE OF OPERATION THE AIRPORT ROTATING BEACON SHALL BE ACTIVATED BY THE PHOTOCELL OR PHOTOCELL BYPASS SWITCH.
  - EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH BRANCH CIRCUIT & EACH CONTROL CIRCUIT.
  - INCLUDE PHOTOCELL BYPASS SWITCH.
  - SURGE PROTECTOR SHALL BE UL LISTED PER UL 1449, SUITABLE FOR 120 VAC, 1PH, 2 WIRE PLUS GROUND SYSTEM WITH SURGE CURRENT RATING OF 40 KA (MIN.), 8x20 MICROSECOND WAVE, AND STATUS INDICATION LIGHTS IN A WEATHERPROOF HOUSING, JOSLYN MODEL 1260-21, OR APPROVED EQUAL. MAINTAIN LEADS AS SHORT & AS STRAIGHT AS POSSIBLE. INCLUDE MOUNTING BRACKET.
  - INCLUDE EQUIPMENT GROUND BAR, ILSCO D167-12 OR EQUAL.
  - CONTROL RELAYS SHALL HAVE 10 AMP CONTACT RATINGS AT 240 VAC WITH 120 VAC COILS. PROVIDE 3 SPARE RELAYS FOR EACH TYPE USED IN THE RELAY INTERFACE PANEL.
  - COLOR CODING FOR THE CONTROL WIRING TO EACH CONSTANT CURRENT REGULATOR SHALL BE CONSISTENT FOR ALL REGULATORS. COLOR CODING SHALL BE AS FOLLOWS:  
 CC -RED  
 10% -ORANGE  
 30% -YELLOW  
 100% -BLUE  
 NEUTRAL -WHITE  
 EQUIPT. GND -GREEN  
 ALSO TAG THE CONTROL WIRES WITH THE RESPECTIVE DESIGNATION (CC, 10%, 30%, 100%)
  - "N" DESIGNATES NEUTRAL CONNECTION OR NEUTRAL CONDUCTOR.

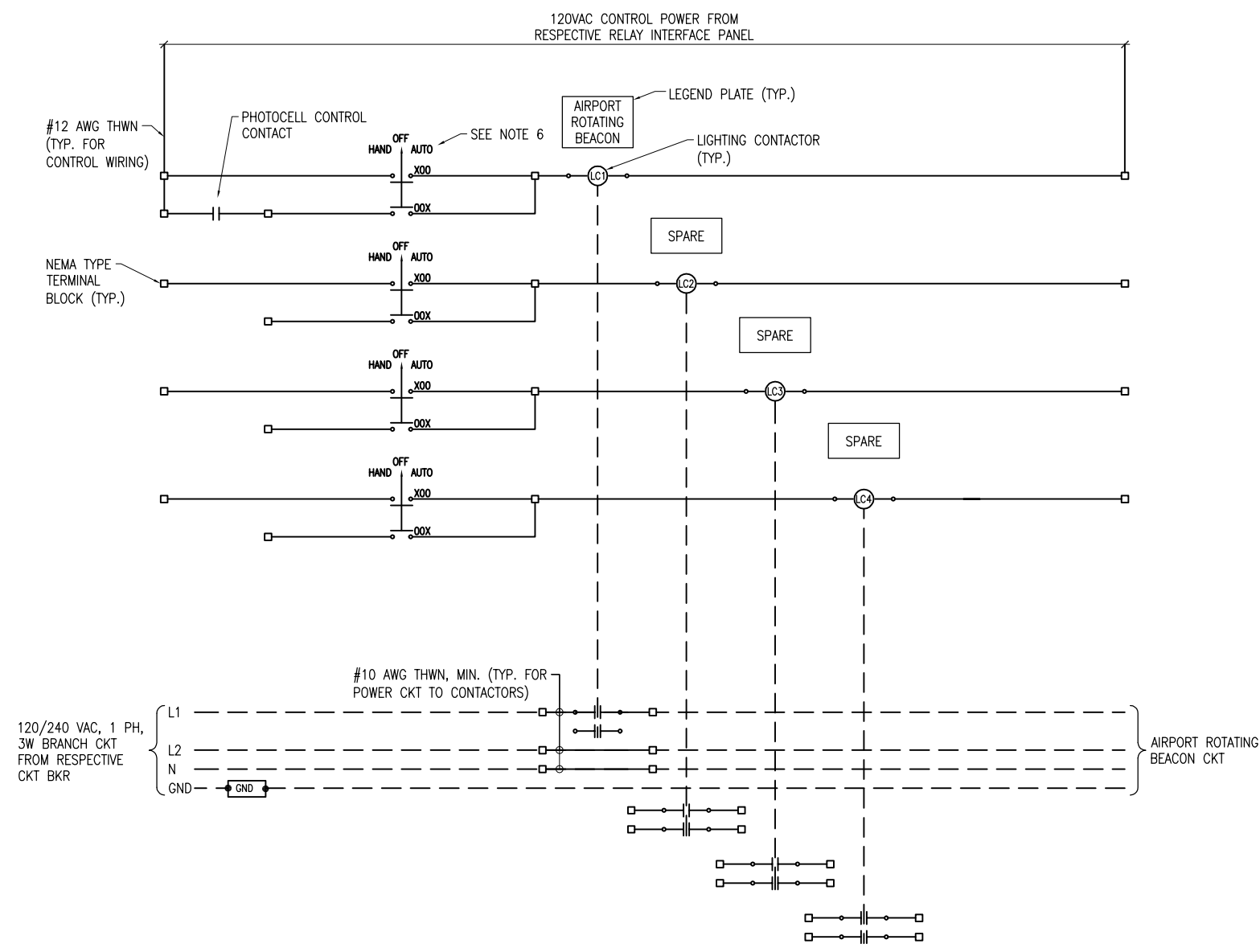
AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC

MAR 12, 2012 2:44 PM KINC00394  
 pw:\sps-sv306\hanson\dom\hanson Projects\Documents\09\jobs\0940177\0940177(CAD)\rport\Sheet\E-603-SCM

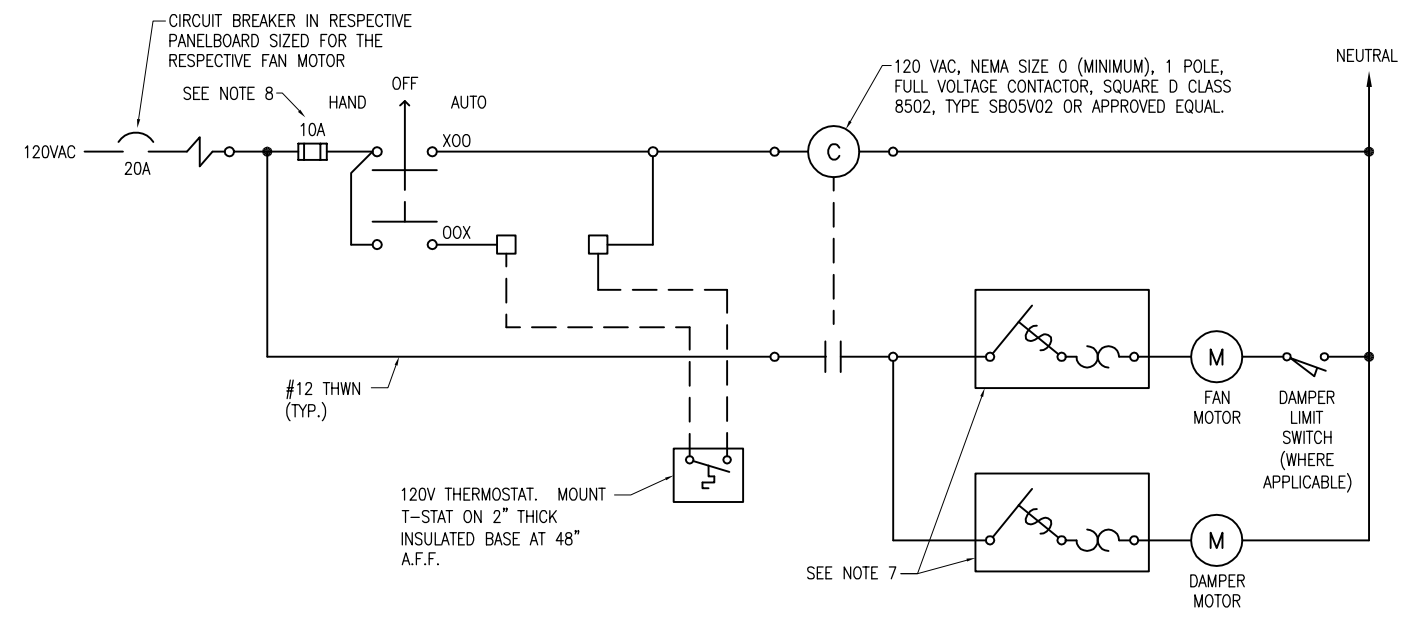
REVISION	DATE				
<b>JOLIET REGIONAL AIRPORT                  JOLIET PARK DISTRICT                  JOLIET, ILLINOIS</b>					
A.I.P. PROJ.: 3-17-0066-B8 I.L. PROJ.: JOT-4166					
Hanson Project No. 0940177D-0001	File Name E-603-SCM.dwg	Scale NONE	Date 02/13/12	LAYOUT KNL	01/13/12
				DRAWN MLH	01/28/12
				REVIEWED KNL/CAH	02/13/12
© Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 S. State St. Springfield, Illinois 62703-2886					
AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC			CONSTRUCT A STAND ALONE ELECTRICAL VAULT. REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS		
<b>31</b> 31 of 38 sheets					

NOTES

- 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL. 25 AMP AND 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL.
- INPUT CONTROL CIRCUITS SHALL BE #12 AWG COPPER THWN.
- FOR 120 VAC BRANCH CIRCUITS THE NEUTRAL CONDUCTOR SHALL NOT BE SWITCHED THROUGH THE RELAY CONTACTS. USE TERMINAL BLOCKS TO TRANSITION FROM VAULT BRANCH CIRCUIT WIRING TO FIELD WIRING.
- THE AIRPORT ROTATING BEACON CIRCUIT SHALL HAVE PHASE "A" SWITCHED THROUGH THE LIGHTING CONTACTOR. PHASE "B" SHALL BE UNSWITCHED FROM THE POWER SOURCE TO THE LOAD CENTER AT THE AIRPORT ROTATING BEACON.
- PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
- PROVIDE 3-POSITION MAINTAINED CONTACT "HAND-OFF-AUTO" SELECTOR SWITCH FOR EACH LIGHTING CONTACTOR & MOUNT ON LIGHTING CONTACTOR PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: "WIND CONE" OR "AIRPORT ROTATING BEACON").
- PROVIDE FRACTIONAL HORSEPOWER MOTOR MANUAL STARTER, SQUARE D MANUAL STARTER WITH HANDLE/GUARD/LOCK OFF, IN NEMA 4 ENCLOSURE CLASS 2510, TYPE FG5 OR APPROVED EQUAL FOR FAN MOTOR & DAMPER MOTOR. INCLUDE MELTING ALLOY TYPE THERMAL OVERLOADS SIZED AS REQUIRED TO PROTECT THE RESPECTIVE MOTOR. 120 VAC MOTORS SHALL HAVE SINGLE POLE STARTERS.
- FUSING FOR CONTROL WIRING SHALL BE 10 AMP, 600 VAC, BUSSMANN CATALOG FNQ-R-10, OR APPROVED EQUAL, WITH FUSE BLOCKS, WITH BOX LUG TERMINALS, SIZED AS REQUIRED FOR THE RESPECTIVE APPLICATION. INCLUDE HARDWARE FOR MOUNTING. PROVIDE ONE BOX (5 MINIMUM QUANTITY) OF EACH TYPE AND SIZE OF FUSE, UPON COMPLETION OF THE JOB FOR USE AS SPARES.



CONTROL PANEL FOR AIRFIELD NAVAIDS SCHEMATIC



EXHAUST FAN CONTROL SCHEMATIC

REVISION	DATE

JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS

A.I.P. PROJ.: 3-17-0066-B8

IL PROJ.: JOT-4166

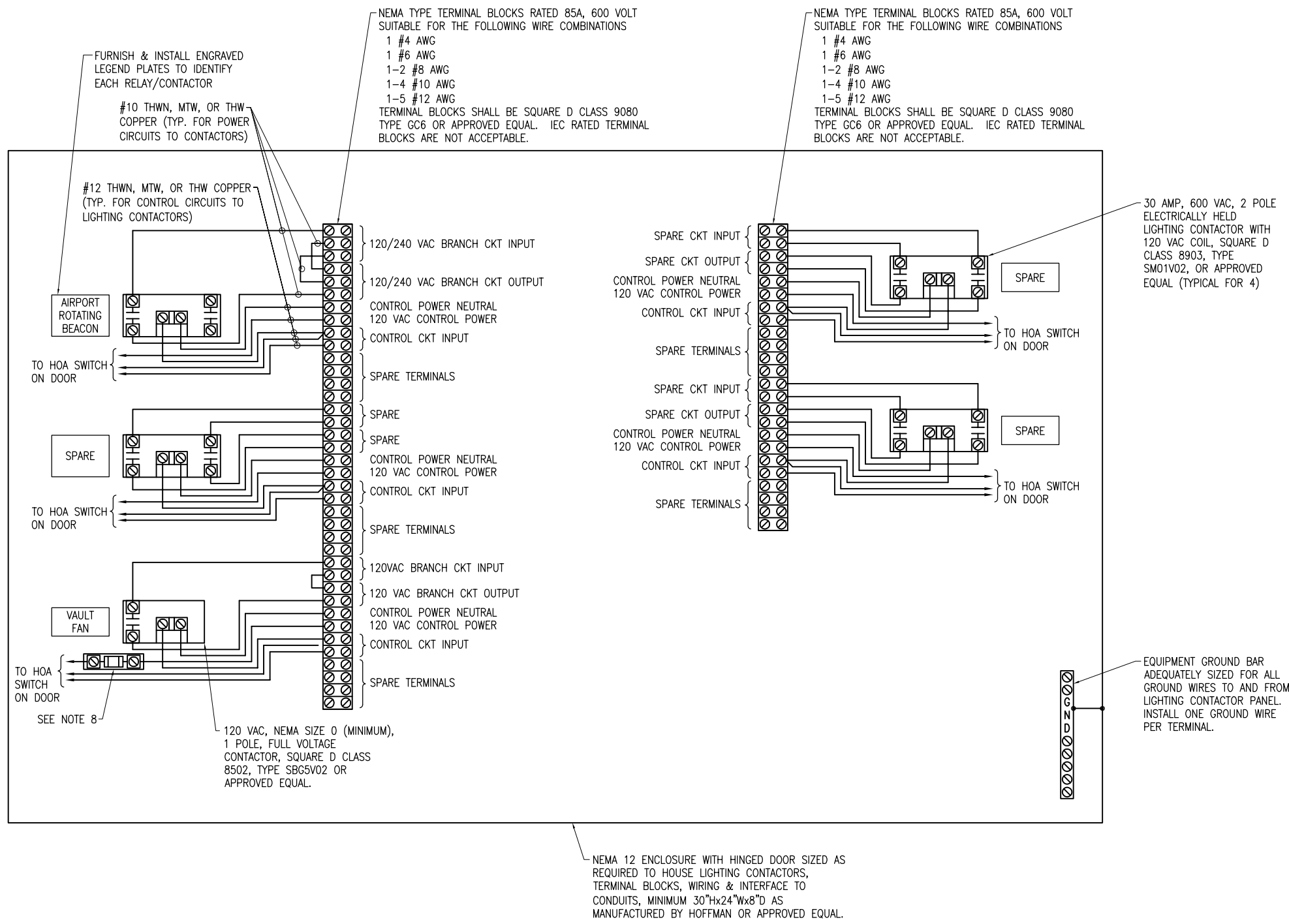
Hanson Project No.	09A01770-0001
Filename	E-604-SCM.dwg
Scale	NONE
Date	02/13/12
LAYOUT	KNL 01/13/12
DRAWN	MLH 01/28/12
REVIEWED	KNL/CAH 02/13/12



© Copyright Hanson Professional Services Inc. 2012  
Hanson Professional Services Inc.  
1525 S. State St.  
Springfield, Illinois 62703-2886

LIGHTING CONTACTOR SCHEMATIC  
CONSTRUCT A STAND ALONE ELECTRICAL VAULT. REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS





**NOTES**

- 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR PANEL. 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR PANEL.
- INPUT CONTROL CIRCUITS SHALL BE #12 AWG COPPER THWN.
- FOR 120 VAC BRANCH CIRCUITS THE NEUTRAL CONDUCTOR SHALL NOT BE SWITCHED THROUGH THE RELAY CONTACTS. USE TERMINAL BLOCKS TO TRANSITION FROM VAULT BRANCH CIRCUIT WIRING TO FIELD WIRING.
- THE AIRPORT ROTATING BEACON CIRCUIT SHALL HAVE PHASE "A" SWITCHED THROUGH THE LIGHTING CONTACTOR. PHASE "B" SHALL BE UNSWITCHED FROM THE POWER SOURCE TO THE LOAD CENTER AT THE AIRPORT ROTATING BEACON.
- PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
- PROVIDE 3-POSITION MAINTAINED CONTACT "HAND-OFF-AUTO" SELECTOR SWITCH FOR EACH LIGHTING CONTACTOR & MOUNT ON LIGHTING CONTACTOR PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: "WIND CONE" OR "AIRPORT ROTATING BEACON").
- SEE "LIGHTING CONTACTOR SCHEMATIC" AND "EXHAUST FAN CONTROL SCHEMATIC" FOR ADDITIONAL INFORMATION ON WIRING.
- FUSING FOR FAN CIRCUIT CONTROL WIRING SHALL BE 10 AMP, 600 VAC, BUSSMANN CATALOG FNQ-R-10, OR APPROVED EQUAL, WITH FUSE BLOCKS, WITH BOX LUG TERMINALS, SIZED AS REQUIRED FOR THE RESPECTIVE APPLICATION. INCLUDE HARDWARE FOR MOUNTING. PROVIDE ONE BOX (5 MINIMUM QUANTITY) OF EACH TYPE AND SIZE OF FUSE, UPON COMPLETION OF THE JOB FOR USE AS SPARES.
- INCLUDE LEGEND PLATE ON CONTROL PANEL ENCLOSURE OUTER DOOR LABELED "NOTICE: CONTACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME".
- 120/240 VAC PHASE "A" CONDUCTORS SHALL HAVE BLACK COLORED INSULATION. 120/240 VAC PHASE "B" CONDUCTORS SHALL HAVE RED COLORED INSULATION. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION. INSULATED EQUIPMENT GROUND WIRES SHALL HAVE GREEN COLORED INSULATION.
- CONTROL PANEL FOR AIRFIELD NAVAIDS & VAULT FAN SHALL BE MANUFACTURED BY A UL 508 INDUSTRIAL CONTROL PANEL BUILDER OR AN FAA APPROVED L-821 PANEL BUILDER, AND SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS. GUS BERTHOLD ELECTRIC (1900 WEST CARROLL AVENUE, CHICAGO, IL 60612, PHONE: 312-243-5767) IS AN APPROVED UL 508 INDUSTRIAL CONTROL PANEL BUILDER.

**CONTROL PANEL FOR AIRFIELD NAVAIDS AND VAULT FAN**

REVISION	DATE

**JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-B8  
IL PROJ.: JOT-4166

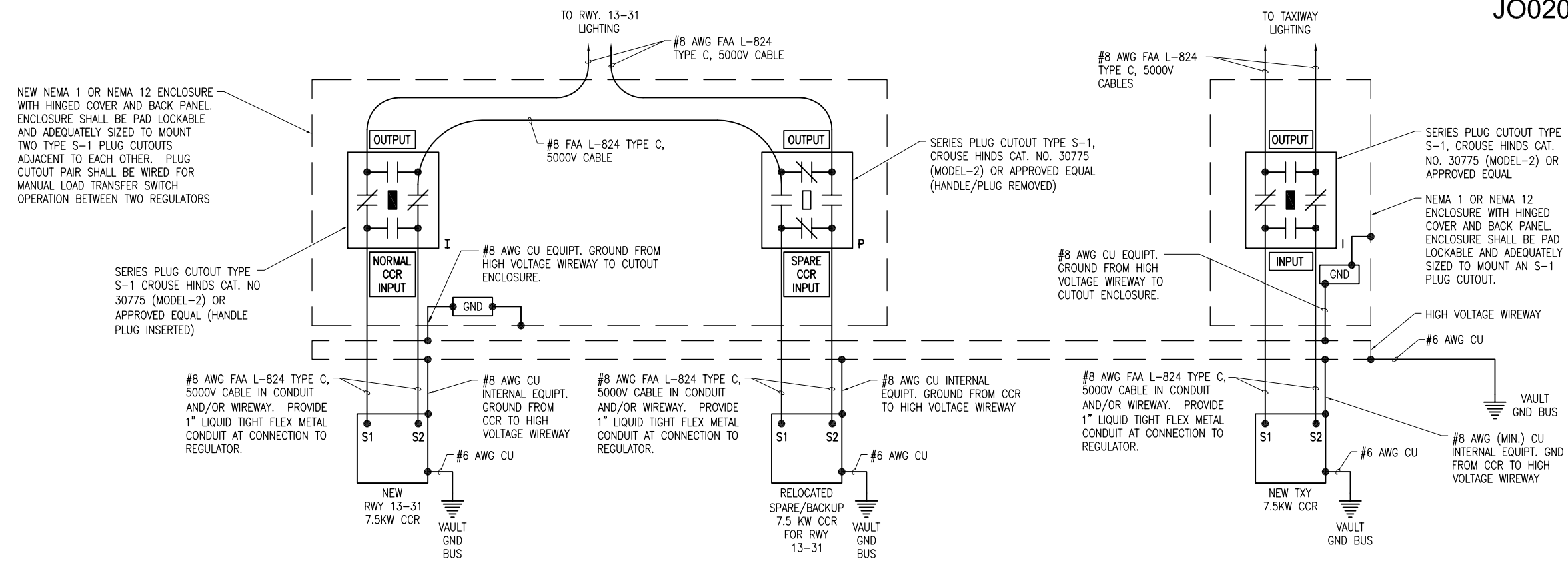
Hanson Project No. 09A0177D-0001	File Name E-605-DETL.dwg	Scale NONE	Date 02/13/12
LAYOUT	KNL	01/13/12	
DRAWN	MLH	01/28/12	
REVIEWED	KNL/CAH	02/13/12	

© Copyright Hanson Professional Services Inc. 2012  
**Hanson Professional Services Inc.**  
 1525 So. State St.  
 Springfield, Illinois 62703-2886

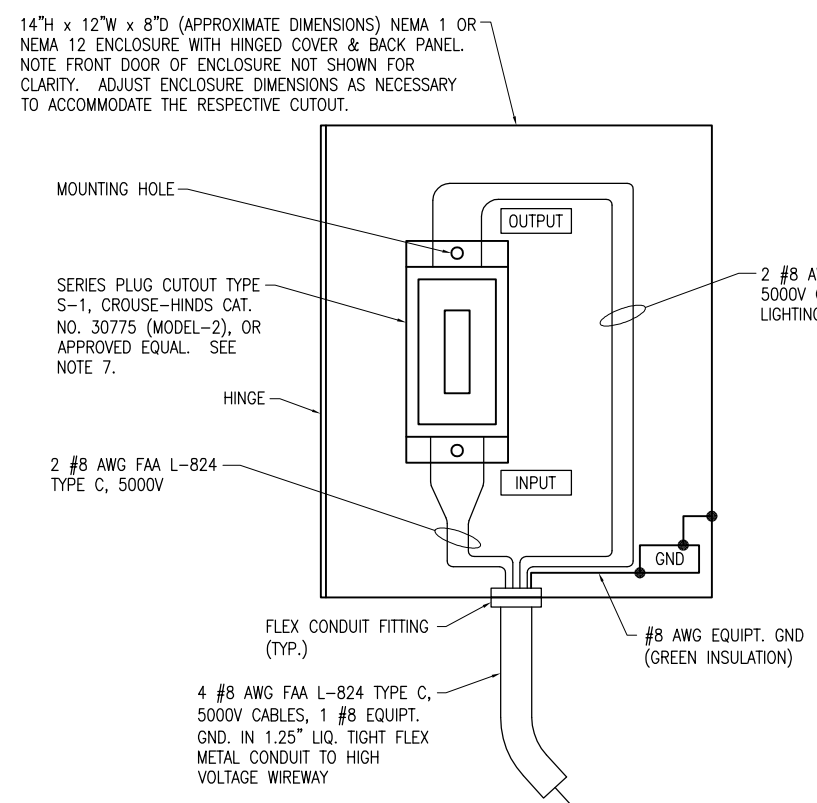
**LIGHTING CONTACTOR  
PANEL DETAIL**

**CONSTRUCT A STAND ALONE  
ELECTRICAL VAULT. REPLACE RUNWAY  
LIGHTS AND INSTALL TAXIWAY LIGHTS**

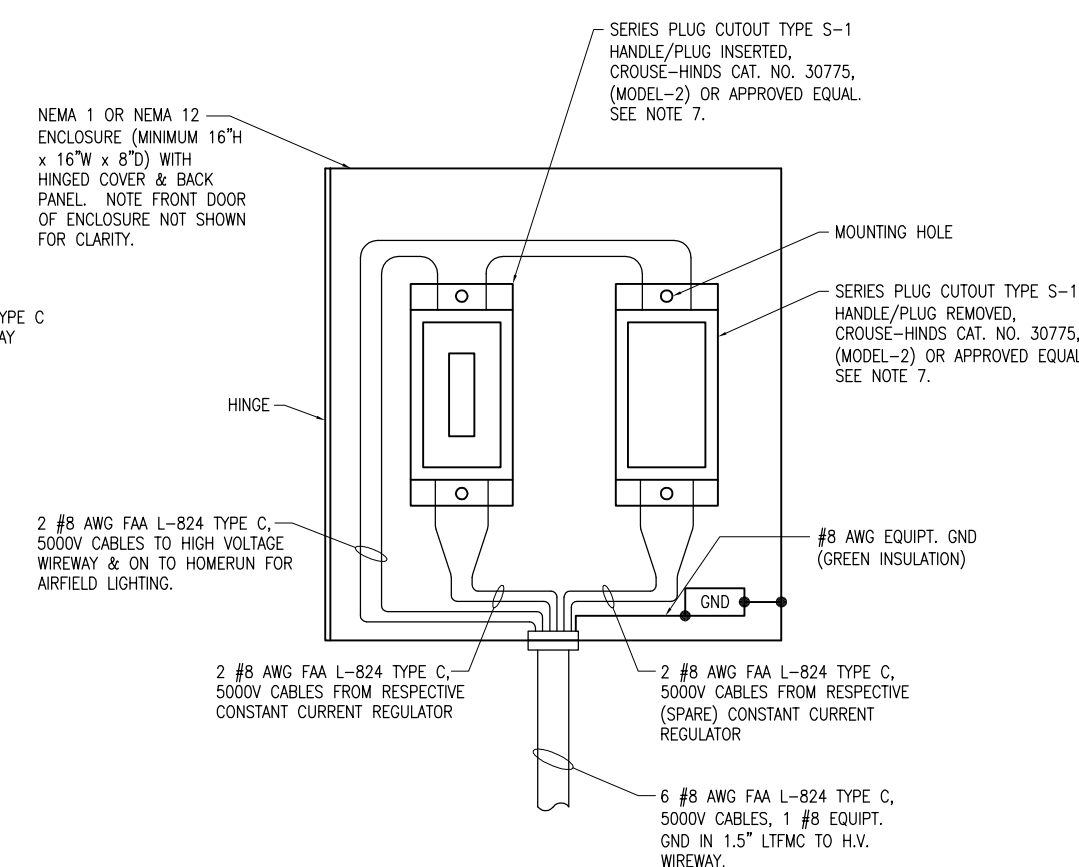
MAR 12 2012 2:49 PM KINCAC0394  
 pw:\sps-sv306\hanson\Documents\09\jobs\09A0177D\09A0177D\CA0\Airport\Sheet\E-605-DETL



**HIGH VOLTAGE WIRING SCHEMATIC**



**SERIES PLUG CUTOUT MOUNTING DETAIL FOR TAXIWAY CIRCUIT**  
NOT TO SCALE



**SERIES PLUG CUTOUT MOUNTING DETAIL FOR RUNWAY CIRCUIT**  
NOT TO SCALE

- NOTES**
1. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR (EXISTING & NEW) NOTING THE RUNWAY AND/OR TAXIWAY SERVED.
  2. EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE RUNWAY OR TAXIWAY CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF".
  3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR THE CUTOUTS TO IDENTIFY THE RESPECTIVE REGULATOR OUTPUT CONNECTION AND THE RESPECTIVE CIRCUIT LOAD CONNECTION.
  4. BOND REGULATOR FRAME TO VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER.
  5. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS.
  6. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
  7. SERIES PLUG CUTOUTS SHALL BE TYPE S-1, RATED 5000 VOLTS, 20-AMP, AND SHALL COMPLY WITH FAA AC 150/5340-4C. SERIES PLUG CUTOUTS SHALL BE RATED SUITABLE FOR NORMAL OPERATION WITH HANDLE REMOVED OR HANDLE INSERTED. CUTOUTS SHALL DISCONNECT THE INPUT FROM THE FROM THE OUTPUT, SHORT THE INPUT TERMINALS, AND SHORT THE OUTPUT TERMINALS WHEN THE HANDLE/PLUG IS REMOVED. CUTOUTS SHALL BE SUITABLE FOR MANUAL TRANSFER OPERATION (ONE SERIES CIRCUIT LOOP WITH THE CAPABILITY OF BEING POWERED FROM EITHER OF TWO CONSTANT CURRENT REGULATOR POWER SOURCES). SERIES PLUG CUTOUTS SHALL BE CROUSE-HINDS CAT. NO. 30775, OR APPROVED EQUAL. THE RESPECTIVE MANUFACTURER SHALL CERTIFY IN WRITING THAT THEIR CUTOUT IS SUITABLE AND RATED FOR THE RESPECTIVE APPLICATION.
  8. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.
- LEGEND**
- "I" DENOTES PLUG CUTOUT WITH PLUG INSERTED
  - "P" DENOTES PLUG CUTOUT WITH PLUG PULLED
  - "CCR" DENOTES CONSTANT CURRENT REGULATOR

REVISION	
DATE	
<b>JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS</b>	
A.I.P. PROJ.: 3-17-0066-B8	
ILL. PROJ.: JOT-4166	
Hanson Project No. 09A0177D-0001	LAYOUT KNL 01/13/12
Filename E-606-SCM.dwg	DRAWN MLH 01/30/12
Scale NONE	REVIEWED KNL/CAH 02/13/12
Date 02/13/12	
<b>HANSON</b>	
<small>© Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 S. State St. Springfield, Illinois 62703-2886</small>	
<b>HIGH VOLTAGE WIRING SCHEMATIC</b>	
<b>CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS</b>	
<b>34</b>	
34 of 38 sheets	

MAR 12, 2012 2:51 PM KINC00394 pw:\sps-svc\06.hanson.com\Documents\09A0177D\09A0177D (CAD) (Work) Sheet E-606-SCM

LEGEND PLATE SCHEDULE	
DEVICE	LABEL
VAULT MAIN DISTRIBUTION PANELBOARD	MAIN DIST PANEL 208/120 VAC, 3 PH, 4W
MAIN BREAKER IN VAULT PANEL	MAIN DISCONNECT
TAXIWAY "A" CCR	TAXIWAY "A"
RUNWAY 13-31 CCR	RUNWAY 13-31
BACKUP/SPARE CCR FOR RUNWAY 13-31	SPARE FOR RUNWAY 13-31
CUTOUT ENCLOSURE FOR TAXIWAY	TAXIWAY "A"
TAXIWAY CUTOUT INPUT SIDE CONNECTION	INPUT
TAXIWAY CUTOUT OUTPUT SIDE CONNECTION	OUTPUT
CUTOUT ENCLOSURE FOR RUNWAY 13-31	RUNWAY 13-31 CUTOUTS
NORMAL CUTOUT INPUT SIDE CONNECTION FOR RUNWAY 13-31	NORMAL CCR INPUT
SPARE CUTOUT INPUT SIDE CONNECTION FOR RUNWAY 13-31	SPARE CCR INPUT
EACH CUTOUT (RUNWAY 13-31) OUTPUT SIDE CONNECTION (2 LEGEND PLATES)	OUTPUT
EACH CUTOUT ENCLOSURE (2 LEGEND PLATES)	CAUTION OPERATE CUTOUTS WITH CCR'S SHUT OFF
RADIO RELAY INTERFACE PANEL	RADIO RELAY INTERFACE PANEL
MANUAL TRANSFER SWITCH FOR RUNWAY 13-31 NORMAL CCR AND SPARE/BACKUP CCR	TRANSFER SWITCH FOR RUNWAY 13-31 CONSTANT CURRENT REGULATORS
MANUAL TRANSFER SWITCH FOR RUNWAY 13-31 NORMAL CCR AND SPARE/BACKUP CCR - NORMAL SWITCH POSITION	NORMAL CCR
MANUAL TRANSFER SWITCH FOR RUNWAY 13-31 NORMAL CCR AND SPARE/BACKUP CCR - BACKUP SWITCH POSITION	SPARE/BACKUP CCR
CONTROL PANEL FOR AIRFIELD NAVAIDS AND VAULT FAN	CONTACTOR PANEL FOR AIRFIELD NAVAIDS, & VAULT FAN
CONTACTOR PANEL FOR AIRFIELD NAVAIDS AND VAULT FAN	NOTICE CONTACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME
LOW VOLTAGE WIREWAY (PROVIDE 9 LEGEND PLATES 1/2" HIGH BLACK LETTERS WHITE BACKGROUND)	LOW VOLTAGE
HIGH VOLTAGE WIREWAY (PROVIDE 6 LEGEND PLATES 1/2" HIGH BLACK LETTERS WHITE BACKGROUND)	HIGH VOLTAGE
VAULT GROUND BUS (PROVIDE 4 LEGEND PLATES 1/2" HIGH WHITE LETTERS GREEN BACKGROUND; INSTALL ABOVE OR BELOW GROUND BUS)	VAULT GROUND BUS
GROUNDING ELECTRODE CONDUCTORS TERMINATED ON VAULT GROUND BUS. (PROVIDE 3 LEGEND PLATES & SECURE TO CONDUCTORS WITH NYLON STRING OR CABLE TIES)	DO NOT DISCONNECT

- DIRECTIONS TO TRANSFER RUNWAY 13-31 LIGHTING FROM NORMAL CCR TO SPARE/BACKUP CCR.
- SHUT OFF INPUT POWER (CIRCUIT BREAKER) TO BOTH RWY 13-31 CCR'S & TURN CCR SELECTOR SWITCHES TO OFF.
  - OPERATE MANUAL TRANSFER SWITCH FOR RWY 13-31 AND MOVE HANDLE FROM "NORMAL" POSITION TO "SPARE/BACKUP" POSITION.
  - PULL CUTOUT HANDLE FROM NORMAL CCR UNIT & INSERT INTO SPARE CCR CUTOUT.
  - GO TO RADIO RELAY INTERFACE PANEL & TURN "RWY 13-31 CCR TRANSFER" SELECTOR SWITCH FROM "NORMAL" TO "SPARE" POSITION.
  - TURN ON INPUT POWER (CIRCUIT BREAKER) TO SPARE RWY 13-31 CCR.
  - TURN SELECTOR SWITCH ON SPARE CCR TO "REMOTE" POSITION.

PROVIDE PLACARD OR LEGEND PLATE FOR RUNWAY CONSTANT CURRENT REGULATOR PAIR AS NOTED ABOVE: LETTERING TO BE MIN. 1/4" HIGH, BLACK ON WHITE BACKGROUND. LOCATE PLACARD ABOVE OR ADJACENT TO CUTOUT ENCLOSURE FOR RESPECTIVE RUNWAY.

**RUNWAY 13-31 CCR TRANSFER  
PROCEDURE PLACARD DETAIL**

NOTES:

- 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.
- FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH SAFETY SWITCH, PANELBOARD, LOAD CENTER, CUTOUT, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION". LABELS SHALL BE HAZARD COMMUNICATION SYSTEMS, LLC (190 OLD MILFORD RD., BOX 1174, MILFORD, PA 18337, PHONE: 1-877-748-0244) PART NO. H6010-9VWHBJ OR APPROVED EQUAL.



"DANGER - HIGH VOLTAGE KEEP OUT" SIGN

PROVIDE WARNING SIGN ON VAULT EXTERIOR DOORS LABELED "DANGER - HIGH VOLTAGE - KEEP OUT" PER THE REQUIREMENTS OF NEC 110.34 (C). PROVIDE MINIMUM OF 2 SIGNS (ONE ON EACH DOOR TO THE VAULT).

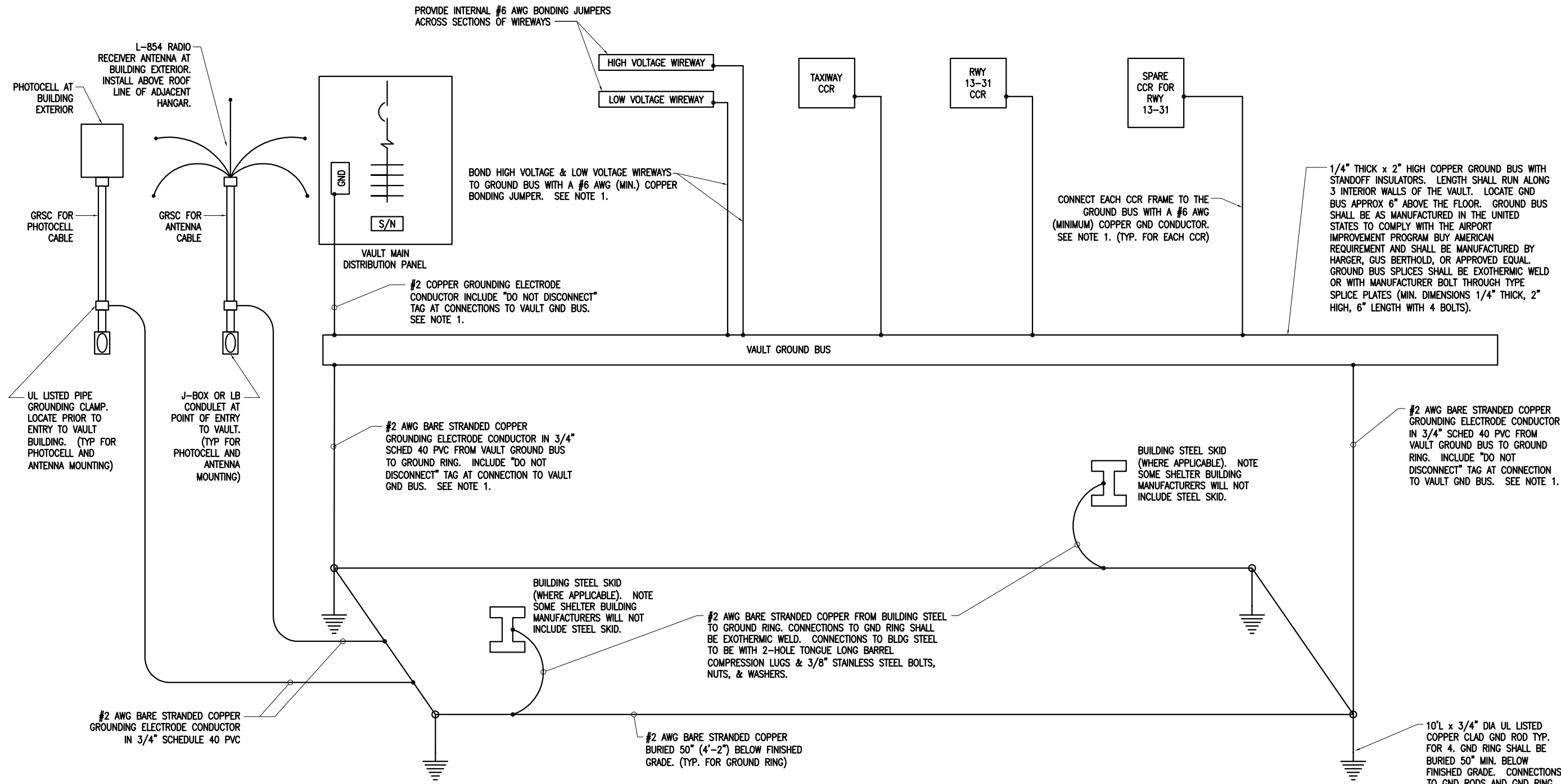


"DANGER - HIGH VOLTAGE" SIGN

FURNISH AND INSTALL "DANGER - HIGH VOLTAGE" LABELS/SIGNS FOR EACH CUTOUT ENCLOSURE, EACH CONSTANT CURRENT REGULATOR, AND THE HIGH VOLTAGE WIREWAY, TO COMPLY WITH FAA AC 150/5340-26B "MAINTENANCE OF AIRPORT VISUAL AID FACILITIES".

MAR 12, 2012 2:54 PM K:\CADD\394 pw:\sri-sv306.hanson.com\Projects\Documents\09\jobs\0940177\0940177D\CAD\Airport\Sheet\E-607-SCHD

REVISION							
	DATE						
<b>JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS</b>							
A.I.P. PROJ.: 3-17-0066-B8 IL PROJ.: JOT-4166							
Hanson Project No.	0940177D-0001	Filename	E-607-SCHD.dwg	LAYOUT	KNL	01/13/12	
Scale	NONE	Date	02/13/12	DRAWN	MLH	01/30/12	
				REVIEWED	KNL/CAH	02/13/12	
© Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 South State Street Springfield, Illinois 62703-2886							
LEGEND PLATE SCHEDULES				CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS			
<span style="font-size: 2em; font-weight: bold;">35</span>							
35 of 38 sheets							



**Vault Ground Bus Riser**

- NOTES**
1. CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2-HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
  2. ALL CONNECTIONS TO THE GROUND RING AND GROUND RODS SHALL BE EXOTHERMIC WELD.
  3. ALL INSULATED GROUND WIRES SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND KCMIL.
  4. ALL WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM AR109200 "INSTALL ELECTRICAL EQUIPMENT" PER LUMP SUM.
  5. TEST GROUND RING AND RECORD RESULTS. WHERE GROUND RESISTANCE TEST RESULTS EXCEED 10 OHMS CONTACT PROJECT ENGINEER FOR FURTHER DIRECTION.

REVISION	DATE

**JOLIET REGIONAL AIRPORT  
JOLIET PARK DISTRICT  
JOLIET, ILLINOIS**

A.I.P. PROJ.: 3-17-0066-B8  
I.L. PROJ.: JOT-4166

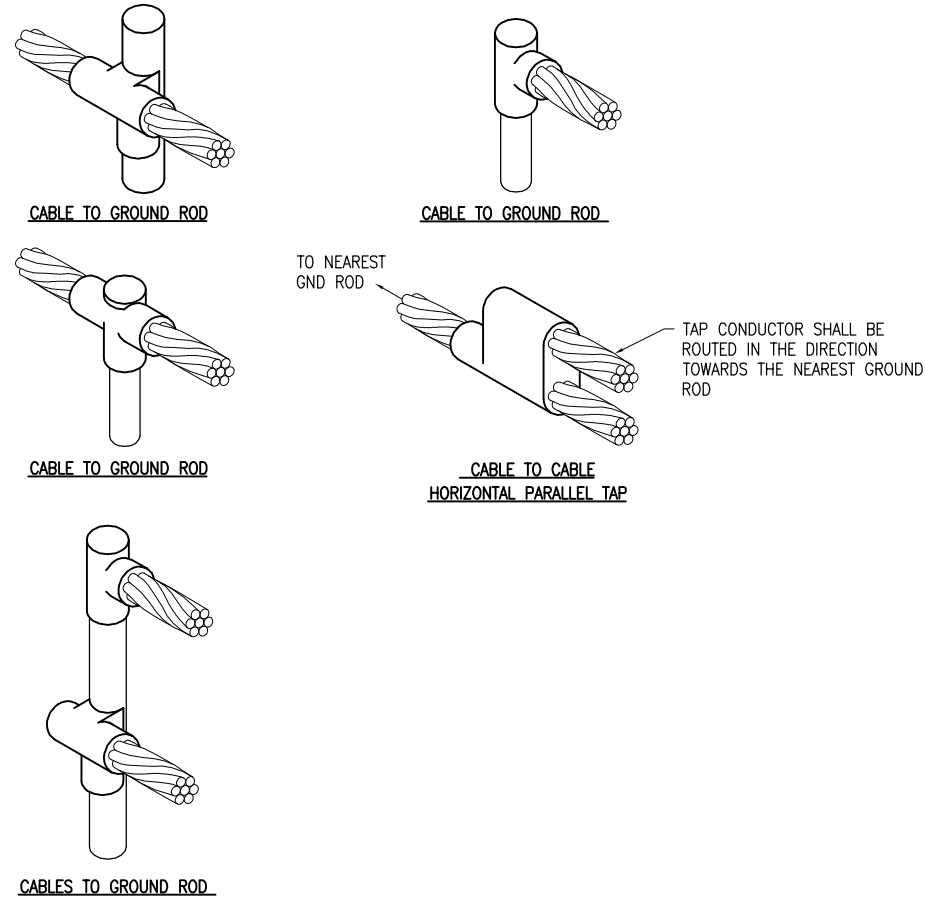
Hanson Project No.	09A0177D-0001
Filename	E-608-DIAG.dwg
Scale	NONE
Date	02/13/12
LAYOUT	KNL 01/13/12
DRAWN	MLH 01/30/12
REVIEWED	KNL/CAH 02/13/12

© Copyright Hanson Professional Services Inc. 2012  
**Hanson Professional Services Inc.**  
 1525 S. State St.  
 Springfield, Illinois 62703-2886

**Vault Ground Bus Riser**

CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS

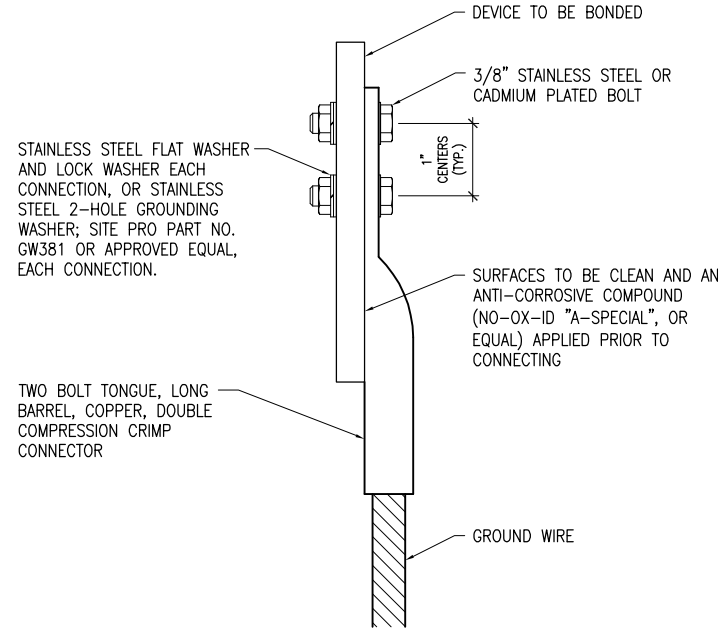
MAR 12, 2012 3:00 PM KINCAC0394  
 pw:\sps-sv306.hanson.com\hanson\Projects\Documents\09\jobs\09A0177D\09A0177D\CA0\Wipport\Sheet\E-608-DIAG



**DETAIL NOTES**

- ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELD AS MANUFACTURED BY ERICO PRODUCTS, SOLON, OHIO, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, GRAYSLAKE, IL, OR THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES, TULSA, OKLAHOMA. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
- FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.
- INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 40 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.

**EXOTHERMIC WELD DETAILS**

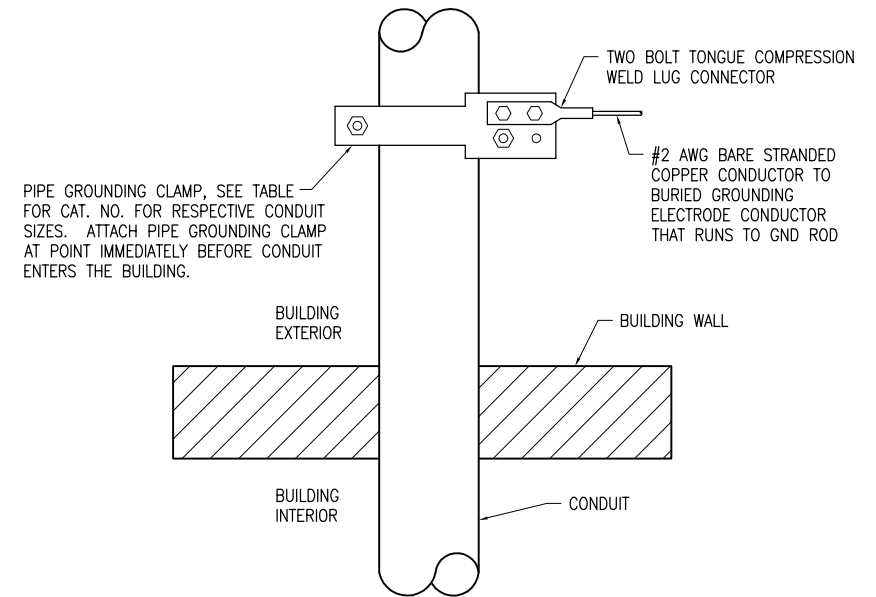


2 HOLE LONG BARREL COMPRESSION LUG TABLE			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	BBLU-4D-2TC38
#2 AWG STRANDED	YA2C-2TC38	256-30695-1160	BBLU-2D-2TC38
#2 AWG SOLID	YA3C-2TC38	256-30695-1160	BBLU-3D-2TC38
#1/0 AWG STRANDED	YA25-2TC38	256-30695-1162	BBLU-1/0D-2TC38
#2/0 AWG STRANDED	YA26-2TC38	256-30695-1116	BBLU-2/0D-2TC38
#3/0 AWG STRANDED	YA27-2TC38	54816BE	BBLU-3/0D-2TC38
#4/0 AWG STRANDED	YA28-2TC38	256-30695-1117	BBLU-4/0D-2TC38

**NOTES**

- ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
- GROUND WIRE CONNECTIONS TO EQUIPMENT SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE DEVICE OR WITH THE RESPECTIVE EQUIPT MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE.
- GROUNDING ELECTRODE CONDUCTORS, BONDING JUMPERS, & INDIVIDUAL GROUND WIRES SHALL NOT BE INSTALLED IN METAL CONDUIT. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC APTH FROM ENCIRCLING THE CONDUIT.
- ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", BURNDY PENETROX E, OR EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.

**GROUNDING LUG CONNECTION DETAIL**



PIPE GROUNDING CLAMP TABLE	
BURNDY CAT. NO.	CONDUIT SIZE
GAR3902TC	1/2" - 1"
GAR3903TC	1 1/4" - 2"
GAR3904TC	2 1/2" - 3 1/2"
GAR3905TC	4" - 5"
GAR3906TC	6"
GAR3907TC	8"

**NOTES**

- EXTERIOR CONDUIT GROUNDING IS REQUIRED FOR THE PHOTOCELL CONDUIT, RADIO ANTENNA CONDUIT, & OTHER CONDUITS EXTENDING TO THE ROOF LEVEL.
- CONNECTIONS TO BURIED GROUNDING ELECTRODE CONDUCTOR SHALL BE EXOTHERMIC WELD.

**EXTERIOR CONDUIT GROUNDING DETAIL**

MAR 12, 2012 3:01 PM KINC00394  
 pw:\sps-sv306.hanson.com\hanson\_projects\Documents\09jobs\0940177\0940177\0940177.dwg\Sheet\Sheet E-507-GND

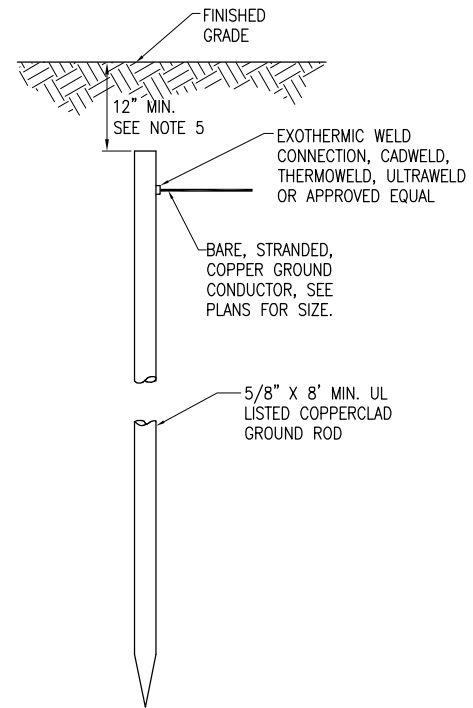
REVISION	DATE	
<b>JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS</b>		
Hanson Project No. 0940177D-0001		FILENAME E-507-GND.dwg
Scale NONE		DATE 02/13/12
LAYOUT	KNL	01/13/12
DRAWN	MLH	01/24/12
REVIEWED	KNL/CAH	02/13/12
<b>HANSON</b>		
© Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 S. State St. Springfield, Illinois 62703-2886		
GROUNDING DETAILS		
CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS		
<b>37</b>		
37 of 38 sheets		

A.I.P. PROJ.: 3-17-0066-B8  
 I.L. PROJ.: JOT-4166

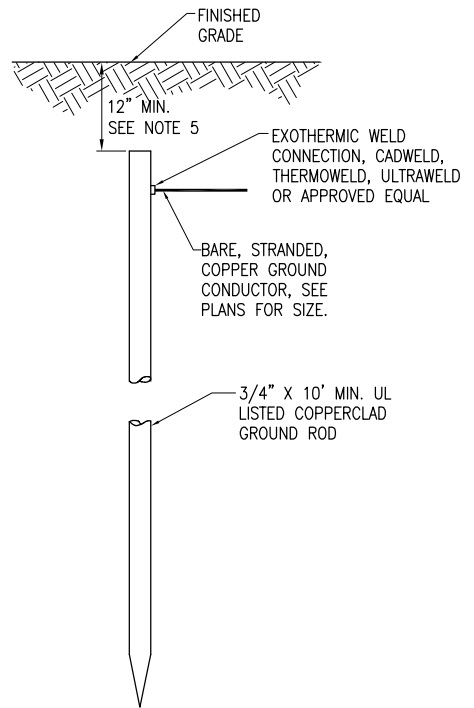
**GROUNDING NOTES**

- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE AND FAA-STD-019e (LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT). THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:
- FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS FOR AIRFIELD LIGHTING (RUNWAY LIGHTING, TAXIWAY LIGHTING, TAXI GUIDANCE SIGNS, & DISTANCE REMAINING SIGNS) SHALL BE MINIMUM 5/8-IN. DIAMETER BY 8-FT LONG, UL-LISTED COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS FOR OTHER APPLICATIONS SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS, AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE 1-800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE 918-663-1440) OR ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE 1-800-842-7437) OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS OR AT BURIED GROUNDING ELECTRODE CONDUCTORS.
- CONTRACTOR SHALL TEST EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 10 OHMS, CONTACT THE RESIDENT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND FIELD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER, UPON REQUEST, FOR REVIEW AND RECORD PURPOSES.
- ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
- ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND BEFORE JOINING, SANCHEM INC. "NO-OX-ID "A-SPECIAL" COMPOUND, BURNDY PENETROX E, OR EQUAL.
- METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2011 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
- METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT
- ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
- ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
- PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC., ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE ENCLOSURES.
- EACH NEW FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 2011 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.

- ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2011 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHBOARD, ETC) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2011 NEC 250-102.
- IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.
- PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
- EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
- ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR APPROVED EQUAL.
- BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
- BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
- INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, DO NOT COMPLETELY ENCIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS. GIRDLING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GIRDLING GROUND CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUND CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS GIRDLED DURING A LIGHTNING STRIKE RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 500,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. GIRDLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.
- IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2011 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
- WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE RESIDENT ENGINEER OR PROJECT ENGINEER FOR FURTHER DIRECTIONS.
- GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. STEEL USED TO MANUFACTURER GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.



**8 FT. GROUND ROD**



**10 FT. GROUND ROD**

**NOTES**

- TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
- THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
- COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED. GROUND RODS FOR VAULT WILL BE CONSIDERED INCIDENTAL TO ITEM AR109200.
- GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.
- TOP OF GROUND RODS SHALL BE 12" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN. TOP OF GROUND RODS FOR VAULT SHALL BE 30" MIN. BELOW GRADE. GROUND RING CONDUCTORS SHALL BE 50" MINIMUM BELOW GRADE TO BE BELOW FROST LINE.
- GROUND RODS FOR RUNWAY LIGHTING, TAXIWAY LIGHTING, AND TAXI GUIDANCE SIGNS SHALL BE A MINIMUM 5/8-INCH DIAMETER BY 8-FT LONG UL LISTED COPPER CLAD.
- GROUND RODS FOR VAULT, WIND CONES, BEACON TOWER, AND OTHER NAVAIDS SHALL BE A MINIMUM 3/4-INCH DIAMETER BY 10-FT LONG UL LISTED COPPER CLAD.

**GROUND RODS**

(NOT TO SCALE)

MAR 12, 2012 3:03 PM KINC00394 pw:\sps-svr306\hanson\Documents\09jobs\0940177\0940177D\CAD\Wipport\Sheet\E-004-NOT

REVISION		<b>JOLIET REGIONAL AIRPORT JOLIET PARK DISTRICT JOLIET, ILLINOIS</b>	A.I.P. PROJ.: 3-17-0066-B8  IL PROJ.: JOT-4166
DATE			
Hanson Project No. 0940177D-0001 Filename E-004-NOTE.dwg Scale NONE Date 02/13/12		LAYOUT KNL 01/12/12 DRAWN MLH 01/23/12 REVIEWED KNL/CAH 02/13/12	
		© Copyright Hanson Professional Services Inc. 2012 Hanson Professional Services Inc. 1525 South Skyway Springfield, Illinois 62703-2886	
GROUNDING NOTES		CONSTRUCT A STAND ALONE ELECTRICAL VAULT, REPLACE RUNWAY LIGHTS AND INSTALL TAXIWAY LIGHTS	
38		38 of 38 sheets	