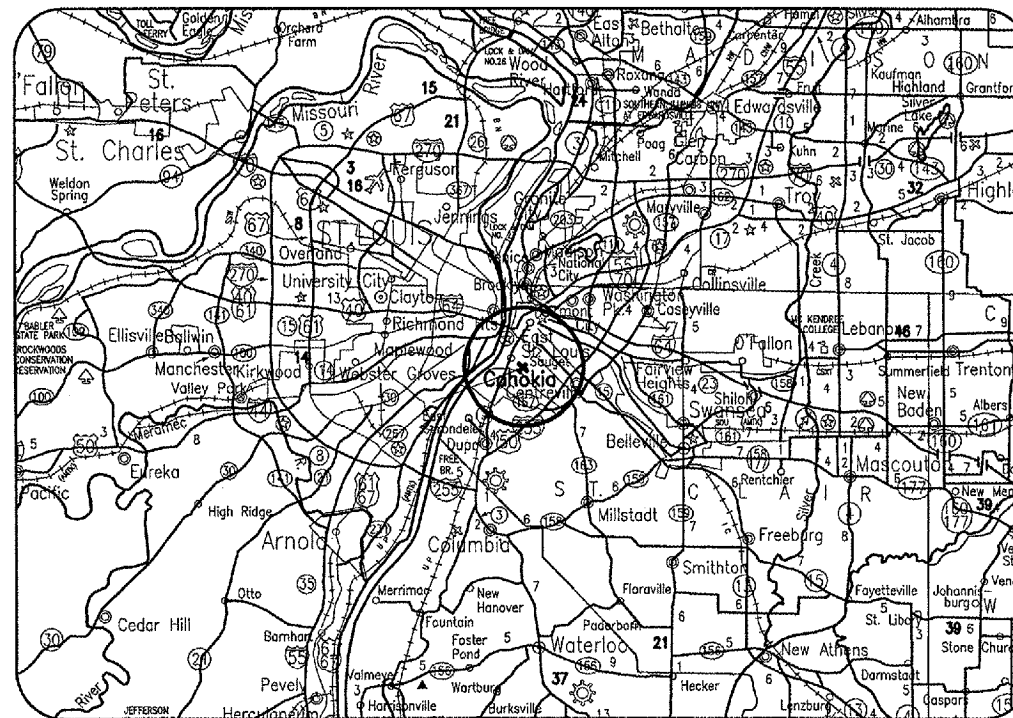


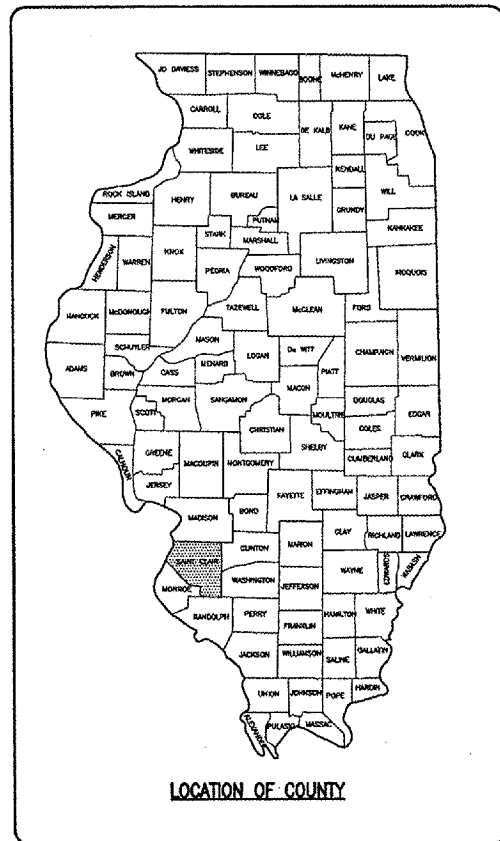
CONSTRUCTION PLANS FOR ST. LOUIS DOWNTOWN AIRPORT CAHOKIA, ST. CLAIR COUNTY, ILLINOIS TAXI GUIDANCE SIGN IMPROVEMENTS

SCOPE OF WORK

THE PROPOSED IMPROVEMENTS CONSIST OF THE REMOVAL, REPLACEMENT, INSTALLATION AND MODIFICATION OF THE EXISTING TAXI GUIDANCE SIGN SYSTEM.



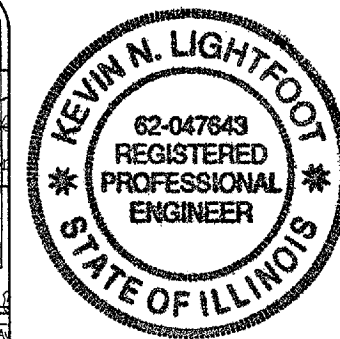
LOCATION



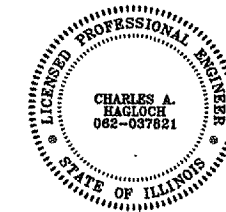
LOCATION OF COUNTY

ILL. PROJ. CPS-3480
A.I.P. PROJ. 3-17-0039-B16

LATITUDE: 38° 34' 14"
LONGITUDE: 90° 09' 22"
ELEVATION: 413.0' M.S.L.
DATE: 06/30/05



FOR ELECTRICAL
DESIGN



Hanson Professional Services Inc.
ELECTRICAL ENGINEER

Submitted by: *Kevin N. Lightfoot* SNG'R
Date Submitted: 6-30-2005
Lic. Exp. Date: NOVEMBER 30, 2005



Hanson Professional Services Inc.

Submitted by: *Charles A. Hagloch* SNG'R
Date Submitted: 6-30-2005
Lic. Exp. Date: NOVEMBER 30, 2005

BI-STATE DEVELOPMENT AGENCY

Approved: *Robert M. Sauer* DIRECTOR OF THE AIRPORT
Date: 6/27/05

REVISION	DATE	BY

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Bi-State Development Agency
A.I.P. PROJ.: 3-17-0039-B16
I.L. PROJ.: CPS-3480

FILE NO.	SCALE	DATE	LAYOUT	C.A.H.
845-0552ND-0800	NOT TO SCALE	06/13/05	DRAWN	B.A.K.
R-001.CVR.DWG		06/13/05	REVIEWED	C.A.H.

HAUSON
Hanson Professional Services Inc.
4227 Earth City Expressway, Suite 130
St. Louis, MO 63045-1308
Offices Nationwide

TAXI GUIDANCE SIGN IMPROVEMENTS
COVER SHEET

JUN 30, 2005 1:30 PM BAK
L:\AIRPORTS\ST. LOUIS DOWNTOWN\845055\GN\AIRPORT\SHETS\01.CVR.DWG - Layout

SD046

DATE	REVISION	BY

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AR108158	1/C #8 5 KV UG CABLE IN UD	LF.	5,000	
AR109200	INSTALL ELECTRICAL EQUIPMENT	L.S.	1	
AR110014	4" DIRECTIONAL BORE	LF.	106	
AR125441	TAXI GUIDANCE SIGN, 1 CHARACTER	EA.	1	
AR125442	TAXI GUIDANCE SIGN, 2 CHARACTER	EA.	3	
AR125443	TAXI GUIDANCE SIGN, 3 CHARACTER	EA.	15	
AR125444	TAXI GUIDANCE SIGN, 4 CHARACTER	EA.	4	
AR125445	TAXI GUIDANCE SIGN, 5 CHARACTER	EA.	1	
AR125446	TAXI GUIDANCE SIGN, 6 CHARACTER	EA.	7	
AR125447	TAXI GUIDANCE SIGN, 7 CHARACTER	EA.	6	
AR125449	TAXI GUIDANCE SIGN, 9 CHARACTER	EA.	3	
AR125901	REMOVE STAKE MOUNTED LIGHT	EA.	12	
AR150510	ENGINEER'S FIELD OFFICE	L.S.	1	
AR800401	ADD 1 MODULE WITH SIGN BASE EXTENSION	EA.	12	
AR800402	ADD 2 MODULE WITH SIGN BASE EXTENSION	EA.	8	
AR800403	ADD 3 MODULE WITH SIGN BASE EXTENSION	EA.	1	
AR800405	MODIFY EXISTING SIGN PANEL, L-858-L	EA.	21	
AR800406	MODIFY EXISTING SIGN PANEL, L-858-R	EA.	14	
AR800407	MODIFY EXISTING SIGN PANEL, L-858-Y	EA.	39	
AR800408	RELOCATE EXISTING 1 MODULE	EA.	15	
AR800409	RELOCATE EXISTING 2 MODULE	EA.	1	

INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES AND INDEX TO SHEETS
3	PROPOSED SAFETY PLAN
4	EXISTING TAXI GUIDANCE SIGN PLAN
5	EXISTING TAXI GUIDANCE SIGN PLAN
6	EXISTING TAXI GUIDANCE SIGN PLAN
7	EXISTING TAXI GUIDANCE SIGN PLAN
8	PROPOSED TAXI GUIDANCE SIGN PLAN
9	PROPOSED TAXI GUIDANCE SIGN PLAN
10	PROPOSED TAXI GUIDANCE SIGN PLAN
11	PROPOSED TAXI GUIDANCE SIGN PLAN
12	GUIDANCE SIGN DATA
13	GUIDANCE SIGN DATA
14	GUIDANCE SIGN DATA
15	PROPOSED GUIDANCE SIGN DETAILS
16	TAXIWAY "B" PROPOSED HOMERUN CABLES
17	ELECTRICAL DETAILS
18	ELECTRICAL DETAILS
19	ELECTRICAL NOTES
20	ELECTRICAL NOTES
21	ELECTRICAL LEGEND AND ABBREVEATIONS
22	EXISTING VAULT FLOOR PLAN
23	PROPOSED VAULT FLOOR PLAN
24	EXISTING ELECTRICAL ONE LINE DIAGRAM FOR AIRPORT VAULT
25	PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR AIRPORT VAULT
26	AIRFIELD LIGHTING WIRING SCHEMATIC
27	HIGH VOLTAGE WIRING SCHEMATIC
28	VAULT GROUND RISER AND GROUNDING DETAILS

SAINT LOUIS
DOWNTOWN
AIRPORT



A Division of Missouri State Development Agency
A.I.P. PROJ. 3-17-0039-B16

IL PROJ: PPS-3480

PROJECT NO. 845-055GND_0800	DATE 06/13/05
REVISION R-002FLP.DWG	DATE 06/13/05
SCALE NOT TO SCALE	DATE 06/13/05
LAYOUT C.A.H.	06/13/05
DRAWN B.L.K.	06/13/05
REVIEWED C.A.H.	06/30/05

HANSON
 Hanson Professional Services Inc.
 4227 Earth City Expressway, Suite 130
 St. Louis, MO 63146-1308
 Offices Nationwide

TAXI GUIDANCE SIGN
IMPROVEMENTS
SUMMARY OF QUANTITIES
AND
INDEX TO SHEETS

PROPOSED SAFETY PLAN

GENERAL - THE ST. LOUIS DOWNTOWN AIRPORT IS COMPRISED OF THREE RUNWAYS. THE PROPOSED CONSTRUCTION WILL NECESSITATE CLOSING ALL RUNWAYS AT SOME TIME. ANY TIME THE CONTRACTOR IS WORKING WITHIN 200' OF A RUNWAY CENTERLINE OR WITHIN 85' OF A TAXIWAY CENTERLINE THAT RUNWAY OR TAXIWAY WILL BE CLOSED. THE RUNWAY WILL BE CLOSED ONLY DURING THE CONSTRUCTION DAY. AT THE END OF EACH CONSTRUCTION DAY THE CONTRACTOR WILL SMOOTH GRADE ALL DISTURBED AREAS WITHIN THE SAFETY AREA TO THE SATISFACTION OF THE RESIDENT ENGINEER AND RE-OPEN THE RUNWAY. ALL WORK INCLUDED IN OPENING AND CLOSING THE RUNWAY WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

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 (121.80 MHZ.) WITH THE AIRPORT UNICOM. THIS WILL KEEP THE CONTRACTOR IN CONSTANT CONTACT WITH THE ST. LOUIS DOWNTOWN 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.

AN AIRPORT RADIO WILL BE FURNISHED TO THE CONTRACTOR BY THE AIRPORT.

CONTRACTOR RESPONSIBILITIES

THE CONTRACTOR'S EQUIPMENT PARKING AND STORAGE AREA WILL BE AS SHOWN ON THIS SHEET. THE CONTRACTOR'S EMPLOYEES WILL PARK THEIR VEHICLES IN THIS AREA. ONLY CONTRACTOR VEHICLES WILL BE ALLOWED OUTSIDE THIS AREA.

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

THE CONTRACTOR SHALL KEEP ONE RUNWAY OPEN AT ALL TIMES AND MAINTAIN CONTINUOUS TAXIWAY ACCESS TO ALL HANGARS AND ADMINISTRATIVE AREAS.

ALL WORK PERFORMED SHALL BE DONE IN A ORDERLY AND EFFECTIVE MANNER TO MINIMIZE RUNWAY CLOSURE.

NO TRENCHES OR HOLES WILL REMAIN OPEN OVERNIGHT.

NO RUNWAY SHALL BE CLOSED OVERNIGHT.

HAUL ROUTE AND VEHICLE PARKING

THE CONTRACTOR WILL USE THE DESIGNATED HAUL ROUTE AND PARKING AREA AS SHOWN ON THIS SHEET. THE PROPOSED PARKING AREA WILL BE 200' X 200'. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PROPOSED HAUL ROUTE AND PARKING AREA 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 GRADE, FERTILIZE, SEED AND MULCH AS NEEDED TO RESTORE TO ORIGINAL STATE. RESTORATION OF THE HAUL ROUTE AND PARKING AREA WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

BARRICADES AND TRAFFIC CONES

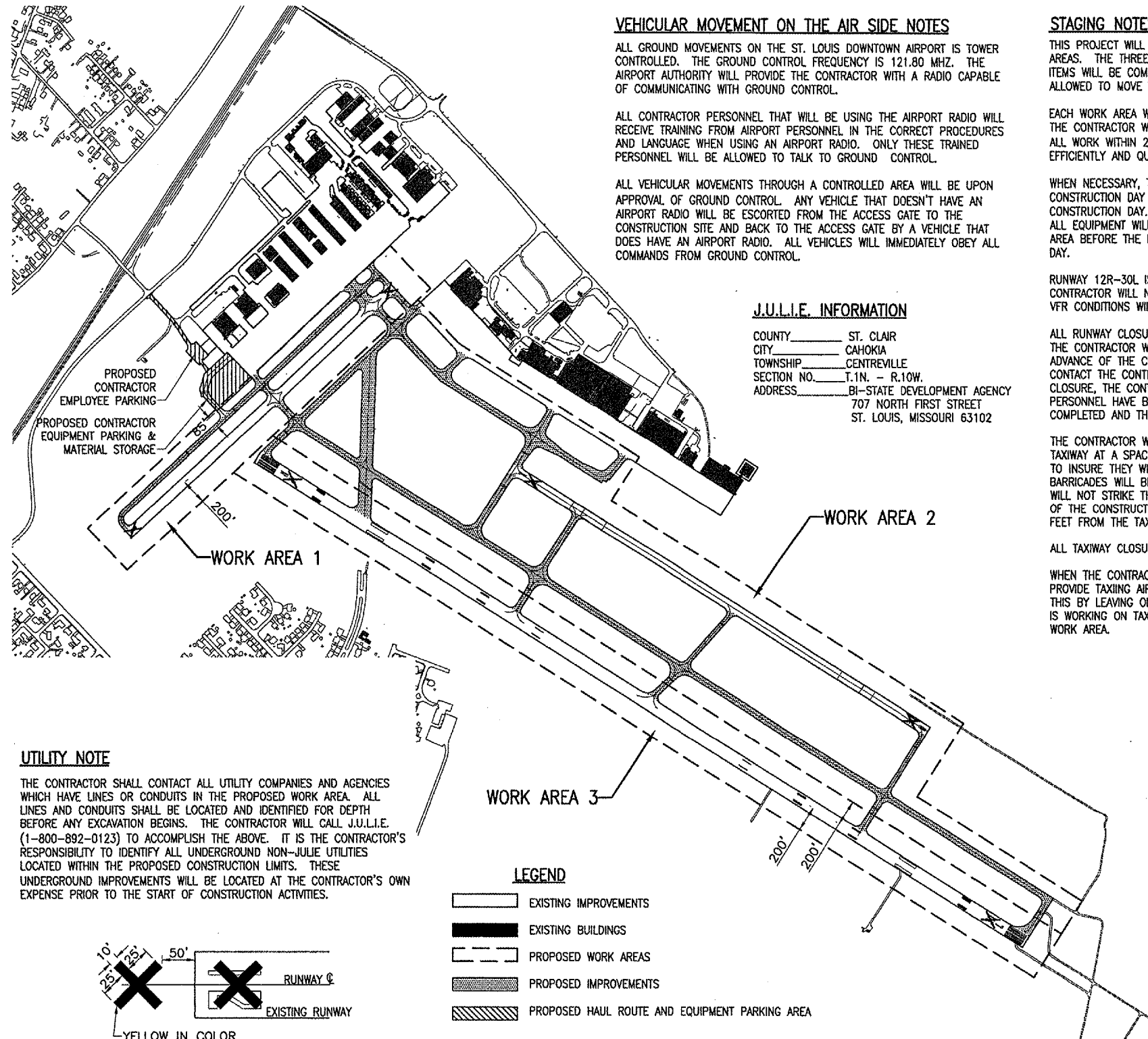
IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AND TRAFFIC CONES AS DIRECTED BY THE AIRPORT DIRECTOR. THE BARRICADES WILL BE EQUIPPED WITH RED STEADY-BURN OR FLASHING LIGHTS. THE BARRICADES, THEIR MAINTENANCE, PLACEMENT AND REMOVAL WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

HEIGHT OF CONSTRUCTION EQUIPMENT

THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT WILL BE 25 FEET. THE TALLEST EQUIPMENT IS EXPECTED TO BE A CONCRETE TRUCK.

EROSION CONTROL

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



VEHICULAR MOVEMENT ON THE AIR SIDE NOTES

ALL GROUND MOVEMENTS ON THE ST. LOUIS DOWNTOWN AIRPORT IS TOWER CONTROLLED. THE GROUND CONTROL FREQUENCY IS 121.80 MHZ. THE AIRPORT AUTHORITY WILL PROVIDE THE CONTRACTOR WITH A RADIO CAPABLE OF COMMUNICATING WITH GROUND CONTROL.

ALL CONTRACTOR PERSONNEL THAT WILL BE USING THE AIRPORT RADIO WILL RECEIVE TRAINING FROM AIRPORT PERSONNEL IN THE CORRECT PROCEDURES AND LANGUAGE WHEN USING AN AIRPORT RADIO. ONLY THESE TRAINED PERSONNEL WILL BE ALLOWED TO TALK TO GROUND CONTROL.

ALL VEHICULAR MOVEMENTS THROUGH A CONTROLLED AREA WILL BE UPON APPROVAL OF GROUND CONTROL. ANY VEHICLE THAT DOESN'T HAVE AN AIRPORT RADIO WILL BE ESCORTED FROM THE ACCESS GATE TO THE CONSTRUCTION SITE AND BACK TO THE ACCESS GATE BY A VEHICLE THAT DOES HAVE AN AIRPORT RADIO. ALL VEHICLES WILL IMMEDIATELY OBEY ALL COMMANDS FROM GROUND CONTROL.

J.U.L.I.E. INFORMATION

COUNTY ST. CLAIR
CITY CAHOKIA
TOWNSHIP CENTREVILLE
SECTION NO. T.1N. - R.10W.
ADDRESS BI-STATE DEVELOPMENT AGENCY
707 NORTH FIRST STREET
ST. LOUIS, MISSOURI 63102

UTILITY NOTE

THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND AGENCIES WHICH HAVE LINES OR CONDUITS IN THE PROPOSED WORK AREA. ALL LINES AND CONDUITS SHALL BE LOCATED AND IDENTIFIED FOR DEPTH BEFORE ANY EXCAVATION BEGINS. THE CONTRACTOR WILL CALL J.U.L.I.E. (1-800-892-0123) TO ACCOMPLISH THE ABOVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY ALL UNDERGROUND NON-JULIE UTILITIES LOCATED WITHIN THE PROPOSED CONSTRUCTION LIMITS. THESE UNDERGROUND IMPROVEMENTS WILL BE LOCATED AT THE CONTRACTOR'S OWN EXPENSE PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.

LEGEND

- EXISTING IMPROVEMENTS
EXISTING BUILDINGS
PROPOSED WORK AREAS
PROPOSED IMPROVEMENTS
PROPOSED HAUL ROUTE AND EQUIPMENT PARKING AREA

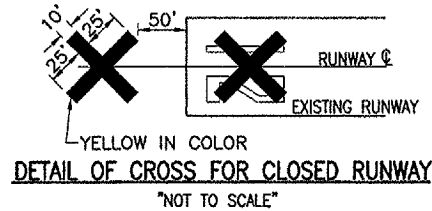


Table with 4 columns: LOCATION, LATITUDE, LONGITUDE, ELEVATION. Lists sign locations and coordinates.

NOTE:

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

STAGING NOTES

THIS PROJECT WILL BE COMPLETED IN THREE SEPARATE STAGES OR WORK AREAS. THE THREE WORK AREAS ARE SHOWN ON THIS SHEET. ALL WORK ITEMS WILL BE COMPLETED IN A WORK AREA BEFORE THE CONTRACTOR WILL BE ALLOWED TO MOVE TO THE NEXT WORK AREA.

EACH WORK AREA WILL HAVE AN IMPACT ON ONE OF THE THREE RUNWAYS. THE CONTRACTOR WILL MINIMIZE THE IMPACT ON THAT RUNWAY BY SCHEDULING ALL WORK WITHIN 200' OF THE RUNWAY CENTERLINE TO BE COMPLETED AS EFFICIENTLY AND QUICKLY AS POSSIBLE.

WHEN NECESSARY, THE RUNWAY WILL BE CLOSED AT THE START OF THE CONSTRUCTION DAY AND WILL REMAIN CLOSED UNTIL THE END OF THAT CONSTRUCTION DAY. THE CONTRACTOR WILL HAVE ALL HOLES FILLED IN AND ALL EQUIPMENT WILL BE RETURNED TO THE PROPOSED EQUIPMENT PARKING AREA BEFORE THE RUNWAY IS RE-OPENED AT THE END OF THE CONSTRUCTION DAY.

RUNWAY 12R-30L IS AN ILS RUNWAY AND DURING IFR CONDITIONS THE CONTRACTOR WILL NOT BE ALLOWED TO CLOSE THIS RUNWAY. ONLY DURING VFR CONDITIONS WILL THE CONTRACTOR BE ALLOWED TO CLOSE THIS RUNWAY.

ALL RUNWAY CLOSURES WILL BE COORDINATED WITH THE AIRPORT PERSONNEL. THE CONTRACTOR WILL COORDINATE ALL CLOSURES AT LEAST 24 HOURS IN ADVANCE OF THE CLOSURE. THIS WILL ALLOW THE AIRPORT PERSONNEL TO CONTACT THE CONTROL TOWER AND ISSUE REQUIRED NOTAMS. THE DAY OF THE CLOSURE, THE CONTRACTOR WILL NOT CLOSE THE RUNWAY UNTIL THE AIRPORT PERSONNEL HAVE BEEN CONTACTED AND THEY VERIFY EVERYTHING HAS BEEN COMPLETED AND THE RUNWAY CAN BE CLOSED.

THE CONTRACTOR WILL CLOSE A TAXIWAY BY PLACING BARRICADES ACROSS THE TAXIWAY AT A SPACING OF 15 FEET. THE BARRICADES WILL BE WEIGHTED DOWN TO INSURE THEY WILL NOT BE BLOWN OVER BY AIRCRAFT. IF NECESSARY, THE BARRICADES WILL BE PLACED ON THE GROUND TO INSURE AN AIRCRAFT WING WILL NOT STRIKE THE BARRICADE. ALL TAXIWAYS WILL BE OPENED AT THE END OF THE CONSTRUCTION DAY. ALL BARRICADES WILL BE PLACED AT LEAST 85 FEET FROM THE TAXIWAY CENTERLINE.

ALL TAXIWAY CLOSURES WILL BE COORDINATED WITH THE AIRPORT PERSONNEL.

WHEN THE CONTRACTOR IS WORKING IN WORK AREA 2 HE WILL BE REQUIRED TO PROVIDE TAXIING AIRCRAFT ACCESS TO RUNWAY 12R-30L. HE WILL ACCOMPLISH THIS BY LEAVING ONE OR TWO OF THE CROSS-OVER TAXIWAYS OPEN WHILE HE IS WORKING ON TAXIWAY B AND THE REMAINING CROSS-OVER TAXIWAYS IN THIS WORK AREA.

AIRPORT SECURITY NOTES

AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR WILL ACCESS THE PROPOSED JOB SITE THROUGH AN EXISTING ELECTRIC SLIDE GATE. THE AIRPORT AUTHORITY WILL ISSUE CONTROLLER CARDS TO THE CONTRACTOR FOR HIS EXCLUSIVE USE. THESE CARDS WILL BE RETURNED TO THE AIRPORT AUTHORITY UPON COMPLETION OF THIS PROJECT. AT NO TIME WILL THE ELECTRIC SLIDE GATE BE IN A LOCKED BACK POSITION.

AIRPORT SECURITY NOTE

AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR WILL CLOSE AND LOCK THE EXISTING GATE IN THE HAUL ROUTE AT THE END OF EACH WORKING DAY.

SCOPE OF WORK

THE PROPOSED IMPROVEMENTS CONSIST OF THE REMOVAL, REPLACEMENT, INSTALLATION AND MODIFICATION OF THE EXISTING TAXI GUIDANCE SIGN SYSTEM.

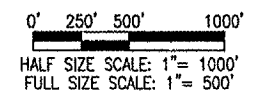


Table with columns: REVISION, DATE, BY.

SAINT LOUIS DOWNTOWN AIRPORT logo and title block information.

Table with columns: LAYOUT, DRAWN, REVIEWED, C.A.H., B.A.K., C.A.H., 06/14/05, 06/14/05, 06/30/05.

HANSON logo and contact information for Hanson Professional Services Inc.

TAXI GUIDANCE SIGN IMPROVEMENTS PROPOSED SAFETY PLAN












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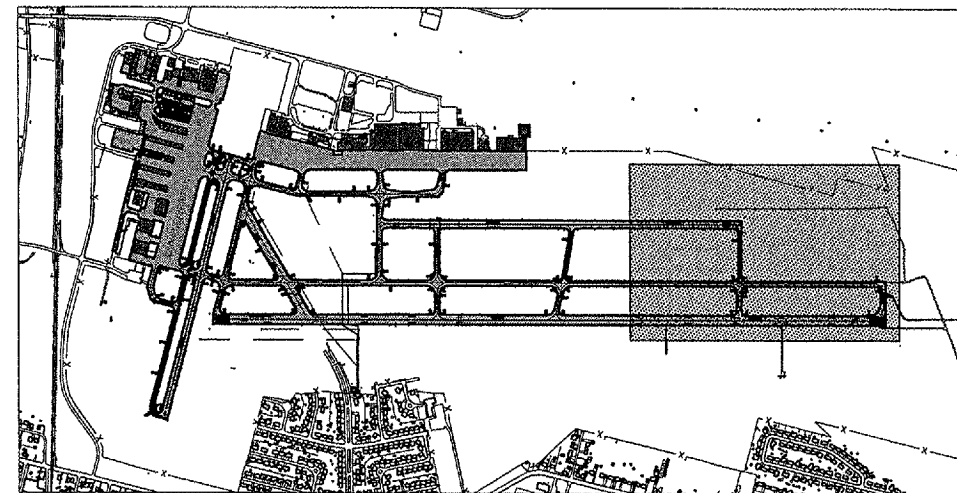
HOMEMADE SIGN NOTE

THERE ARE NINETEEN HOMEMADE SIGNS DESIGNATED FOR REMOVAL. THE AIRPORT PERSONNEL WILL REMOVE AND DISPOSE OF THE SIGNS.

THE CONTRACTOR WILL BE RESPONSIBLE FOR MARKING THE LOCATIONS OF THE EXISTING HOMEMADE SIGNS THAT WILL BE REPLACED BY A NEW GUIDANCE SIGN.

LEGEND

-  EXISTING AIRFIELD BUILDINGS
-  EXISTING AIRFIELD PAVEMENT
-  EXISTING OFFSITE BUILDINGS
-  EXISTING OFFSITE PAVEMENT
-  EXISTING BASE MOUNTED RUNWAY LIGHT
-  EXISTING STAKE MOUNTED RUNWAY LIGHT
-  EXISTING STAKE MOUNTED RUNWAY THRESHOLD LIGHT
-  EXISTING BASE MOUNTED TAXIWAY LIGHT
-  EXISTING STAKE MOUNTED TAXIWAY LIGHT
-  EXISTING TAXI GUIDANCE SIGN
-  EXISTING TAXI GUIDANCE SIGN NUMBER



EXISTING SIGNS TO BE REMOVED AND RELOCATED

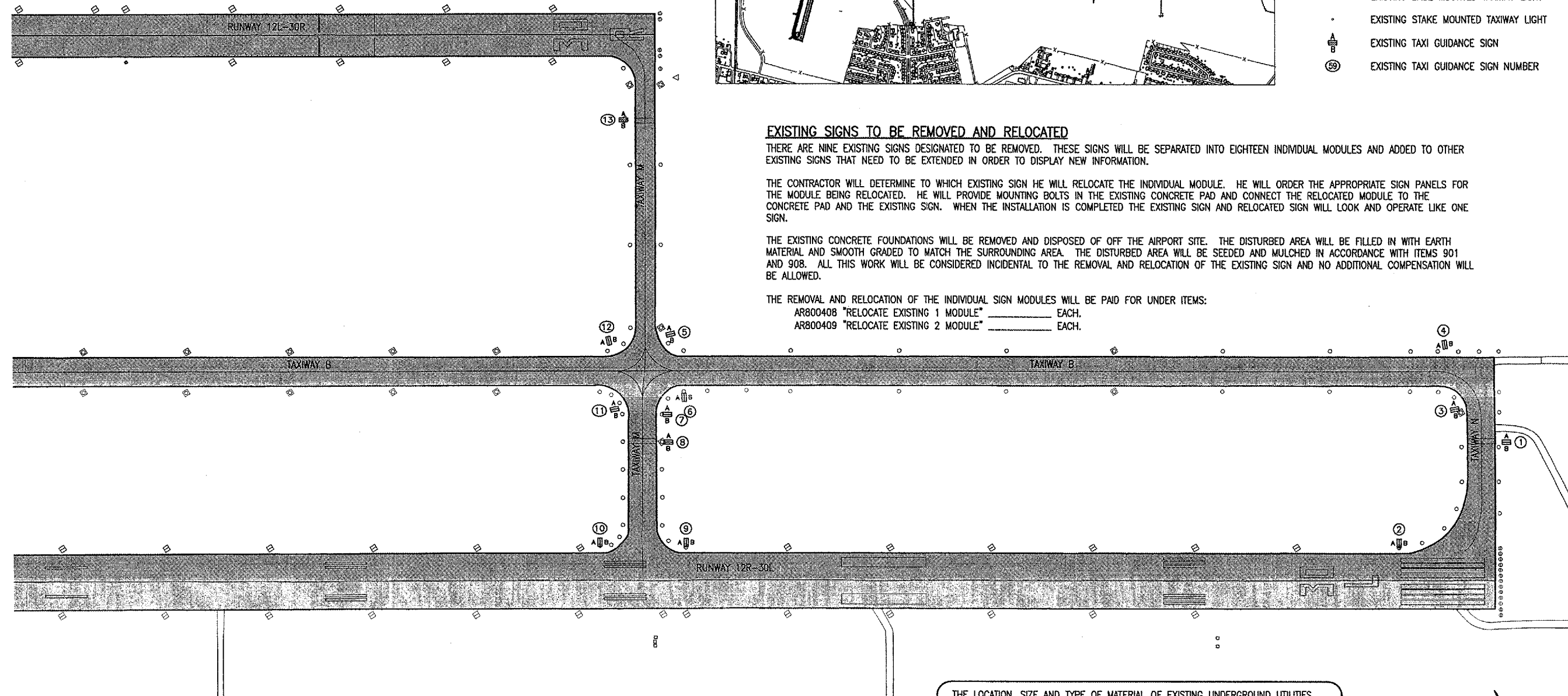
THERE ARE NINE EXISTING SIGNS DESIGNATED TO BE REMOVED. THESE SIGNS WILL BE SEPARATED INTO EIGHTEEN INDIVIDUAL MODULES AND ADDED TO OTHER EXISTING SIGNS THAT NEED TO BE EXTENDED IN ORDER TO DISPLAY NEW INFORMATION.

THE CONTRACTOR WILL DETERMINE TO WHICH EXISTING SIGN HE WILL RELOCATE THE INDIVIDUAL MODULE. HE WILL ORDER THE APPROPRIATE SIGN PANELS FOR THE MODULE BEING RELOCATED. HE WILL PROVIDE MOUNTING BOLTS IN THE EXISTING CONCRETE PAD AND CONNECT THE RELOCATED MODULE TO THE CONCRETE PAD AND THE EXISTING SIGN. WHEN THE INSTALLATION IS COMPLETED THE EXISTING SIGN AND RELOCATED SIGN WILL LOOK AND OPERATE LIKE ONE SIGN.

THE EXISTING CONCRETE FOUNDATIONS WILL BE REMOVED AND DISPOSED OF OFF THE AIRPORT SITE. THE DISTURBED AREA WILL BE FILLED IN WITH EARTH MATERIAL AND SMOOTH GRADED TO MATCH THE SURROUNDING AREA. THE DISTURBED AREA WILL BE SEEDED AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908. ALL THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE REMOVAL AND RELOCATION OF THE EXISTING SIGN AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

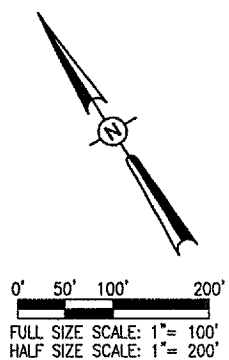
THE REMOVAL AND RELOCATION OF THE INDIVIDUAL SIGN MODULES WILL BE PAID FOR UNDER ITEMS:

- AR800408 "RELOCATE EXISTING 1 MODULE" _____ EACH.
- AR800409 "RELOCATE EXISTING 2 MODULE" _____ EACH.



THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. 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 ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123.



DATE	REVISION	BY

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 A.I.P. PROJ. 3-17-0039-816
 I.L. PROJ. CPS-3460

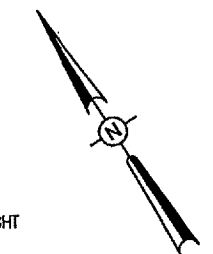
ILE Project No. 845-055GND_0800 Filename R-14.1E.L.DWG Scale 1" = 100' Date 06/23/05	LAYOUT C.A.H. 06/23/05 DRAWN C.C.C. 06/23/05 REVIEWED C.A.H. 06/30/05
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HANSON
 Hanson Professional Services Inc.
 4227 Earth City Expressway, Suite 130
 St. Louis, MO 63045-1308
 Offices Nationwide

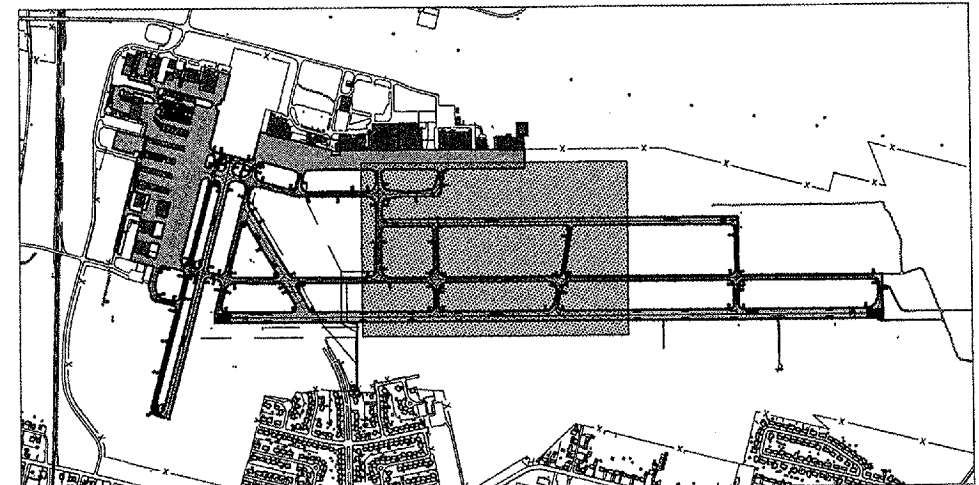
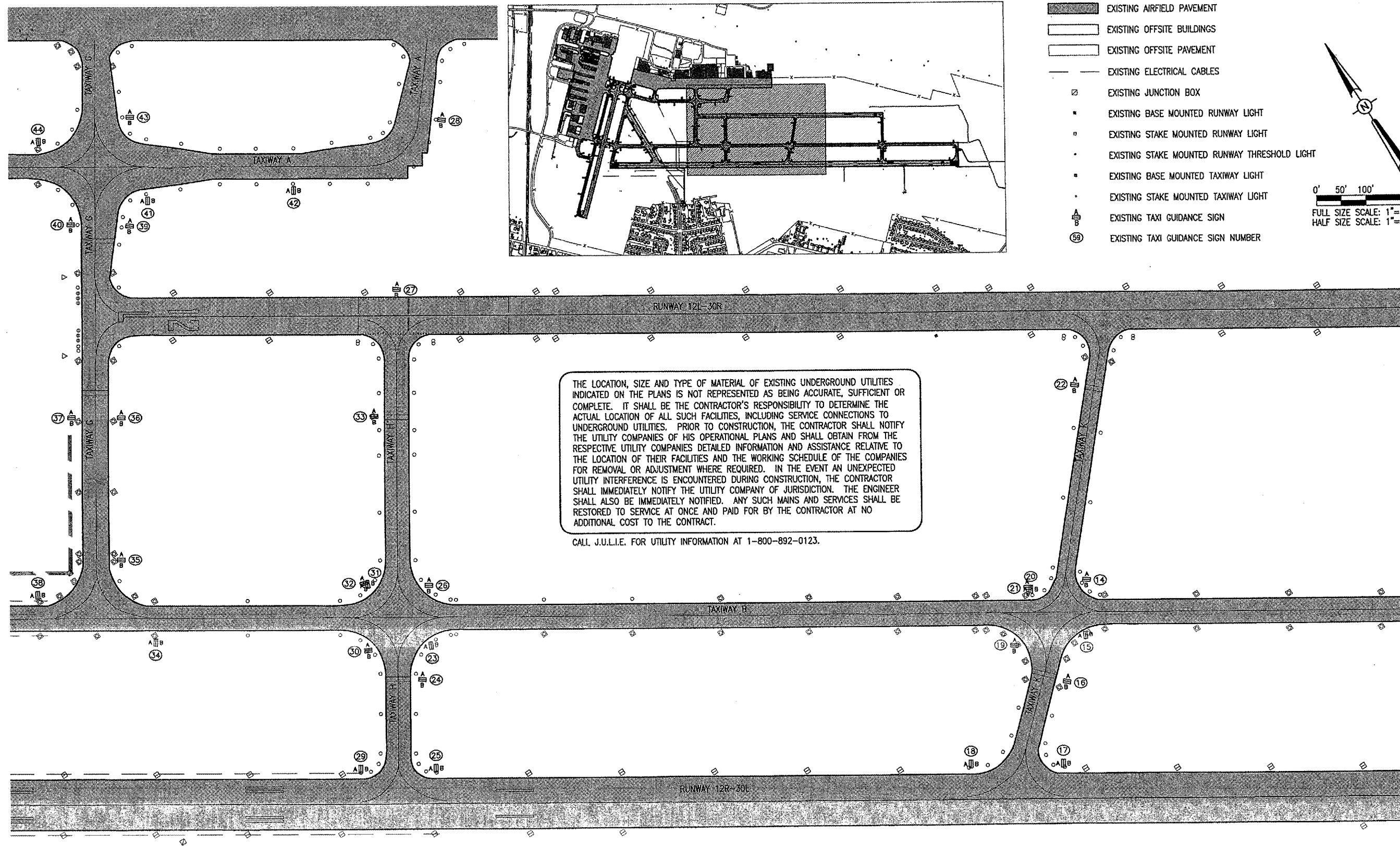
TAXI GUIDANCE SIGN IMPROVEMENTS
 EXISTING TAXI GUIDANCE SIGN PLAN

LEGEND

- EXISTING AIRFIELD BUILDINGS
- EXISTING AIRFIELD PAVEMENT
- EXISTING OFFSITE BUILDINGS
- EXISTING OFFSITE PAVEMENT
- EXISTING ELECTRICAL CABLES
- EXISTING JUNCTION BOX
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY THRESHOLD LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING TAXI GUIDANCE SIGN
- EXISTING TAXI GUIDANCE SIGN NUMBER



0' 50' 100' 200'
 FULL SIZE SCALE: 1" = 100'
 HALF SIZE SCALE: 1" = 200'



THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. 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 ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123.

DATE	REVISION	BY




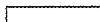

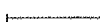







SAINT LOUIS DOWNTOWN AIRPORT
 A Division of B-Store Development Agency
 A.I.P. PROJ.: 3-17-0039-B16

FILE PROJECT NO.	845-05SGND-0800
REVISION	R-14.1ELE.DWG
SCALE	1" = 100'
DATE	06/23/05
LAYOUT	C.A.H. 06/23/05
DRAWN	C.C.C. 06/23/05
REVIEWED	C.A.H. 06/30/05

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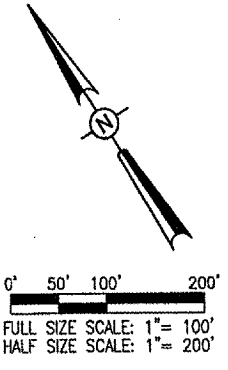
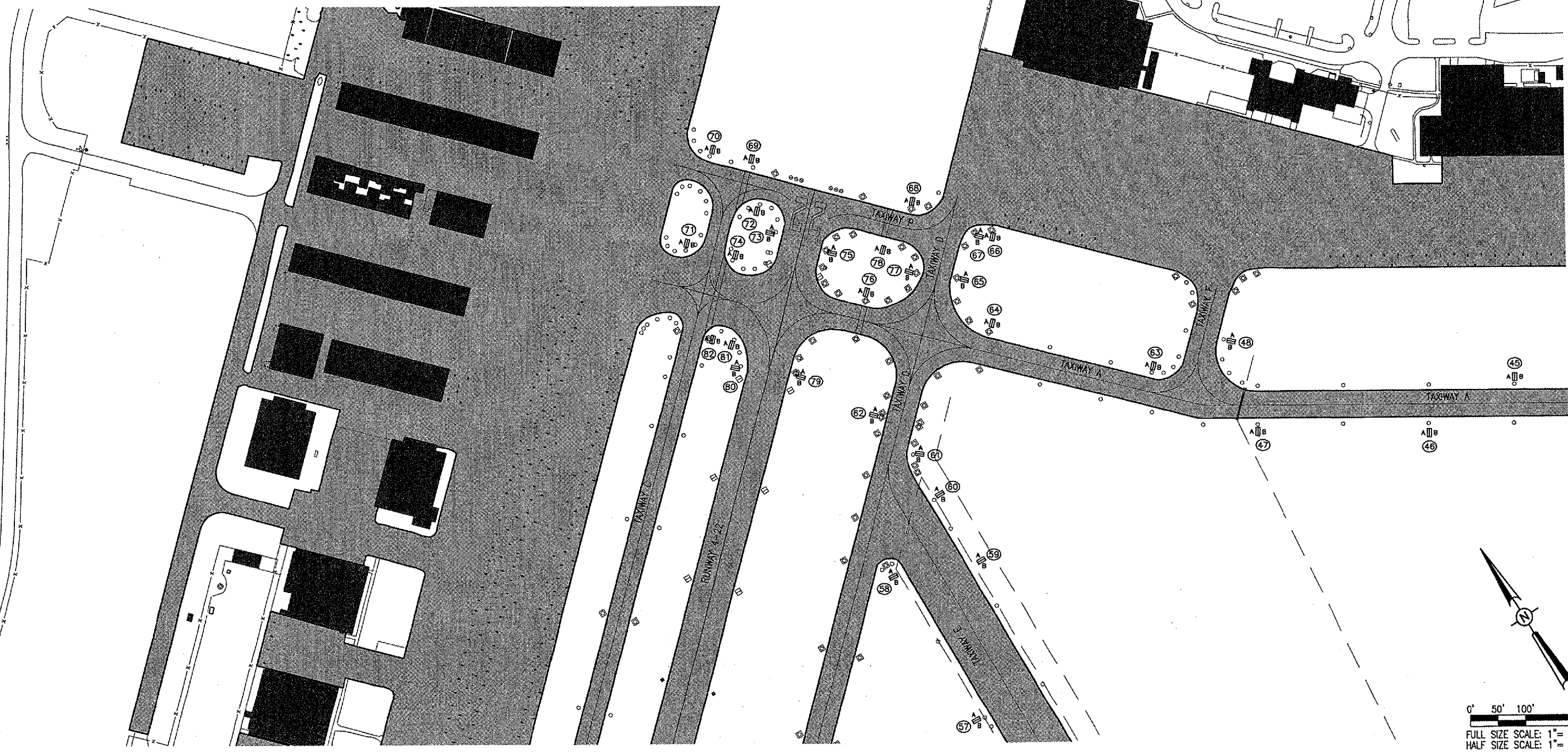
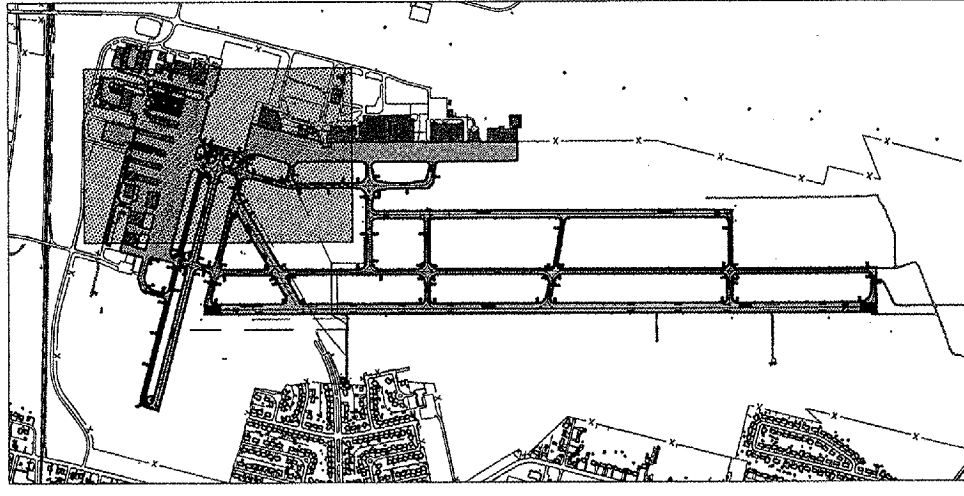
TAXI GUIDANCE SIGN IMPROVEMENTS
 EXISTING TAXI GUIDANCE SIGN PLAN

LEGEND

-  EXISTING AIRFIELD BUILDINGS
-  EXISTING AIRFIELD PAVEMENT
-  EXISTING OFFSITE BUILDINGS
-  EXISTING OFFSITE PAVEMENT
-  EXISTING ELECTRICAL CABLES
-  EXISTING ELECTRICAL DUCT
-  EXISTING BASE MOUNTED RUNWAY LIGHT
-  EXISTING STAKE MOUNTED RUNWAY LIGHT
-  EXISTING STAKE MOUNTED RUNWAY THRESHOLD LIGHT
-  EXISTING BASE MOUNTED TAXIWAY LIGHT
-  EXISTING STAKE MOUNTED TAXIWAY LIGHT
-  EXISTING TAXI GUIDANCE SIGN
-  EXISTING TAXI GUIDANCE SIGN NUMBER

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CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123.



DATE	REVISION	BY

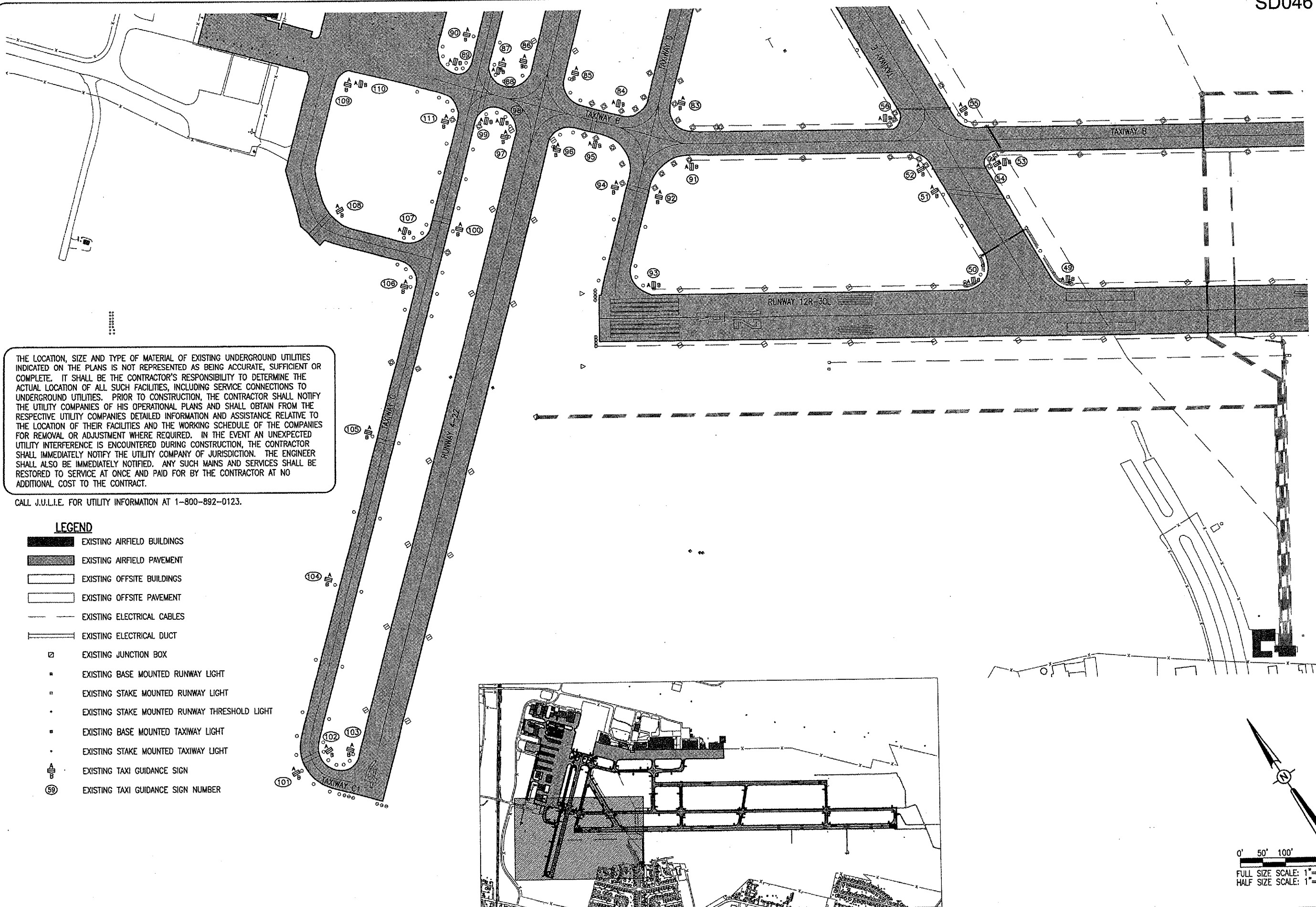
SAINT LOUIS DOWNTOWN AIRPORT
 A Division of St. Louis Development Agency
 A.L.P. PROJ.: 3-17-0039-B16



HEB Project No. 845-05SGND 0800	DATE 06/23/05
Drawn R-141ELE.DWG	C.A.H. 06/23/05
Scale 1" = 100'	C.C.C. 06/23/05
Date 06/23/05	C.A.H. 06/30/05
LAYOUT	
DRAWN	
REVIEWED	

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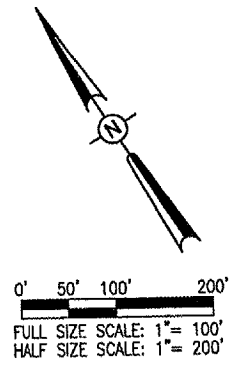
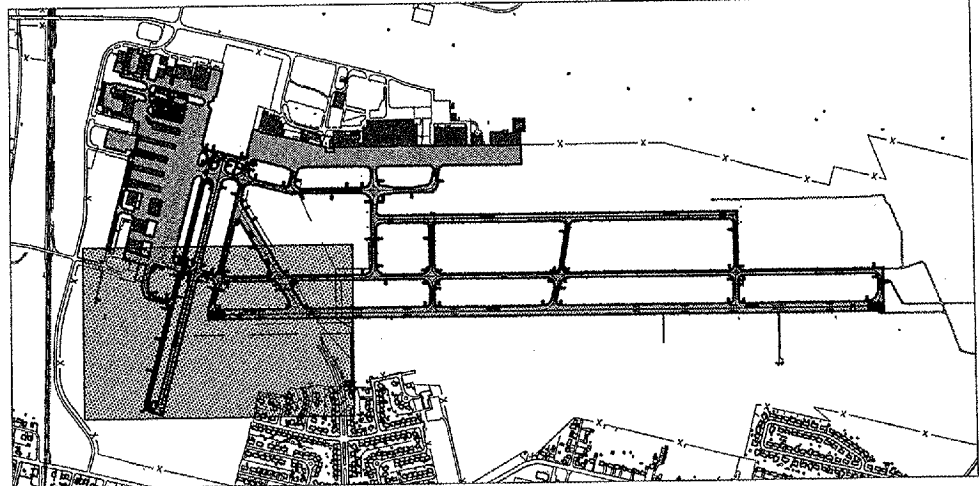


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- EXISTING TAXI GUIDANCE SIGN NUMBER



DATE	REVISION	BY

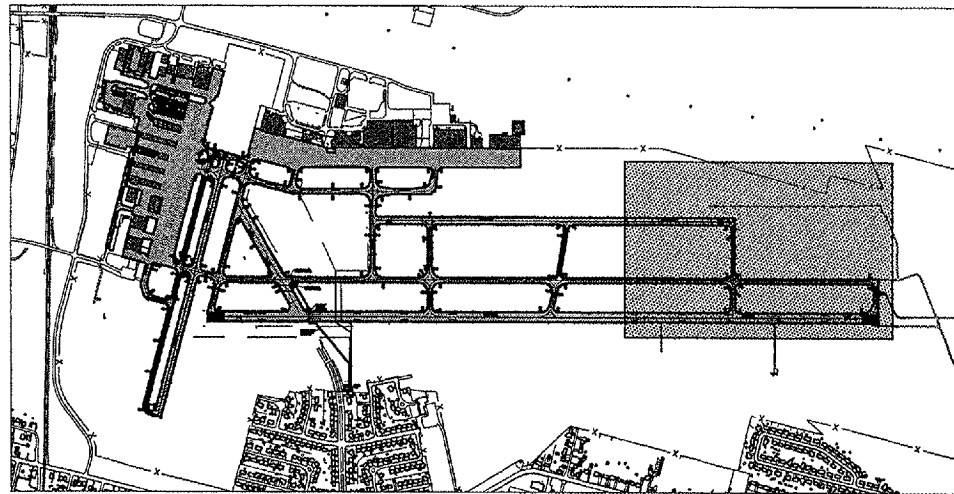
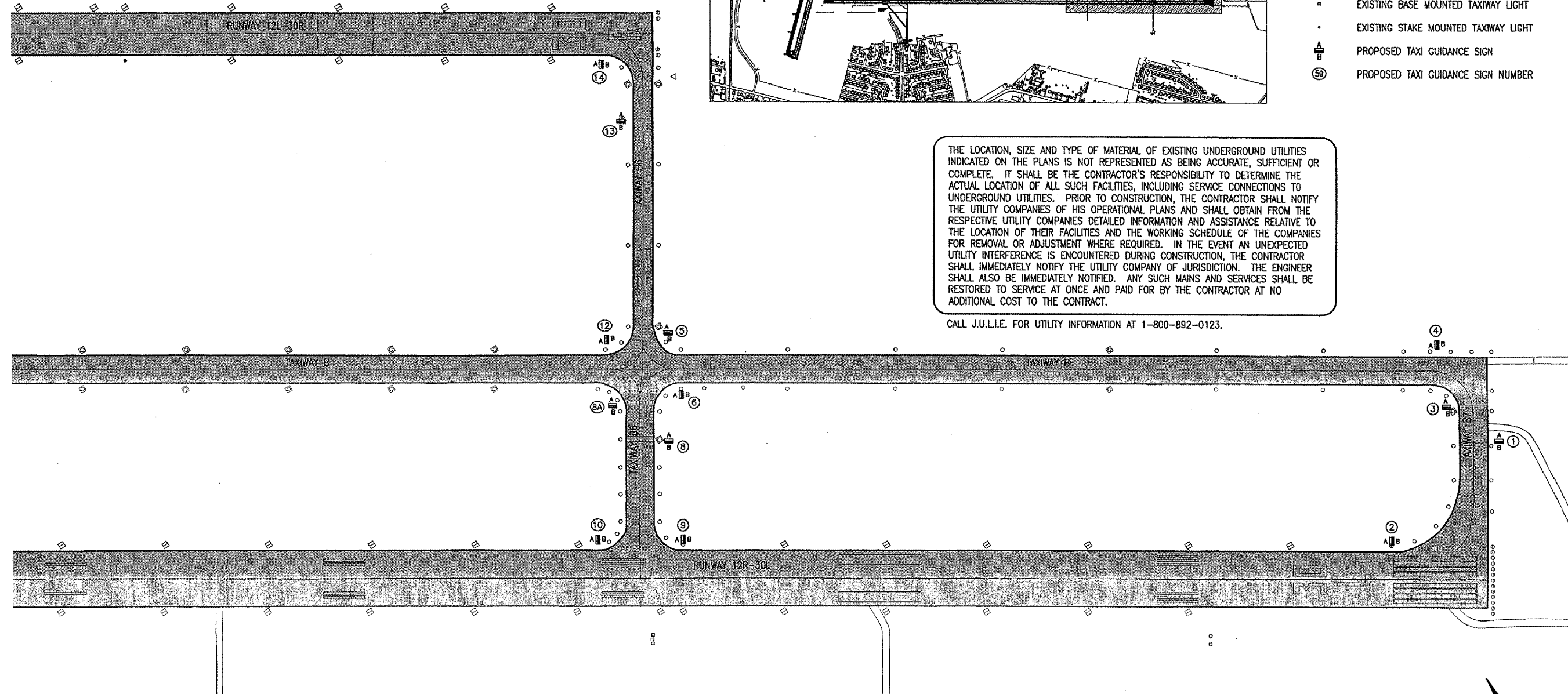
SAINT LOUIS DOWNTOWN AIRPORT
A Division of St. Louis Development Agency
A.I.P. PROJ.: 3-17-0039-R16

IL PROJ.: CPS-3480

HEB Proj. No. 845-055GND 0800	Element: R-141ELE.DWG	Scale: 1" = 100'	Date: 06/23/05
LAYOUT	C.A.H.	06/23/05	
DRAWN	C.C.C.	06/23/05	
REVIEWED	C.A.H.	06/30/05	

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TAXI GUIDANCE SIGN IMPROVEMENTS
EXISTING TAXI GUIDANCE SIGN PLAN



- LEGEND**
- EXISTING AIRFIELD BUILDINGS
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 - EXISTING OFFSITE PAVEMENT
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SD046

DATE	REVISION	BY

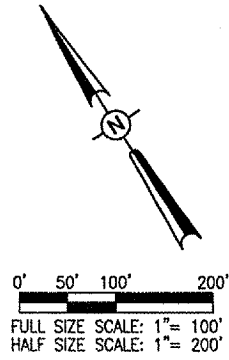
SAINT LOUIS DOWNTOWN AIRPORT
 A Division of St. Louis Development Agency

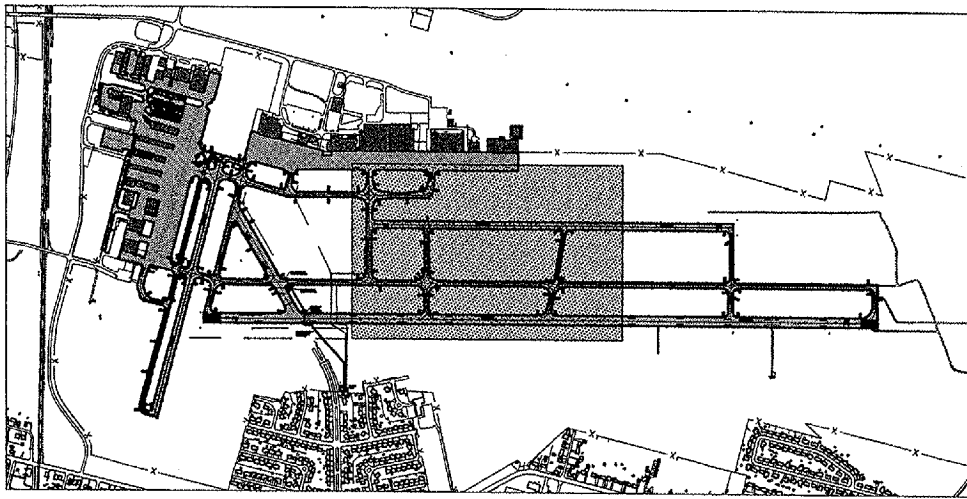
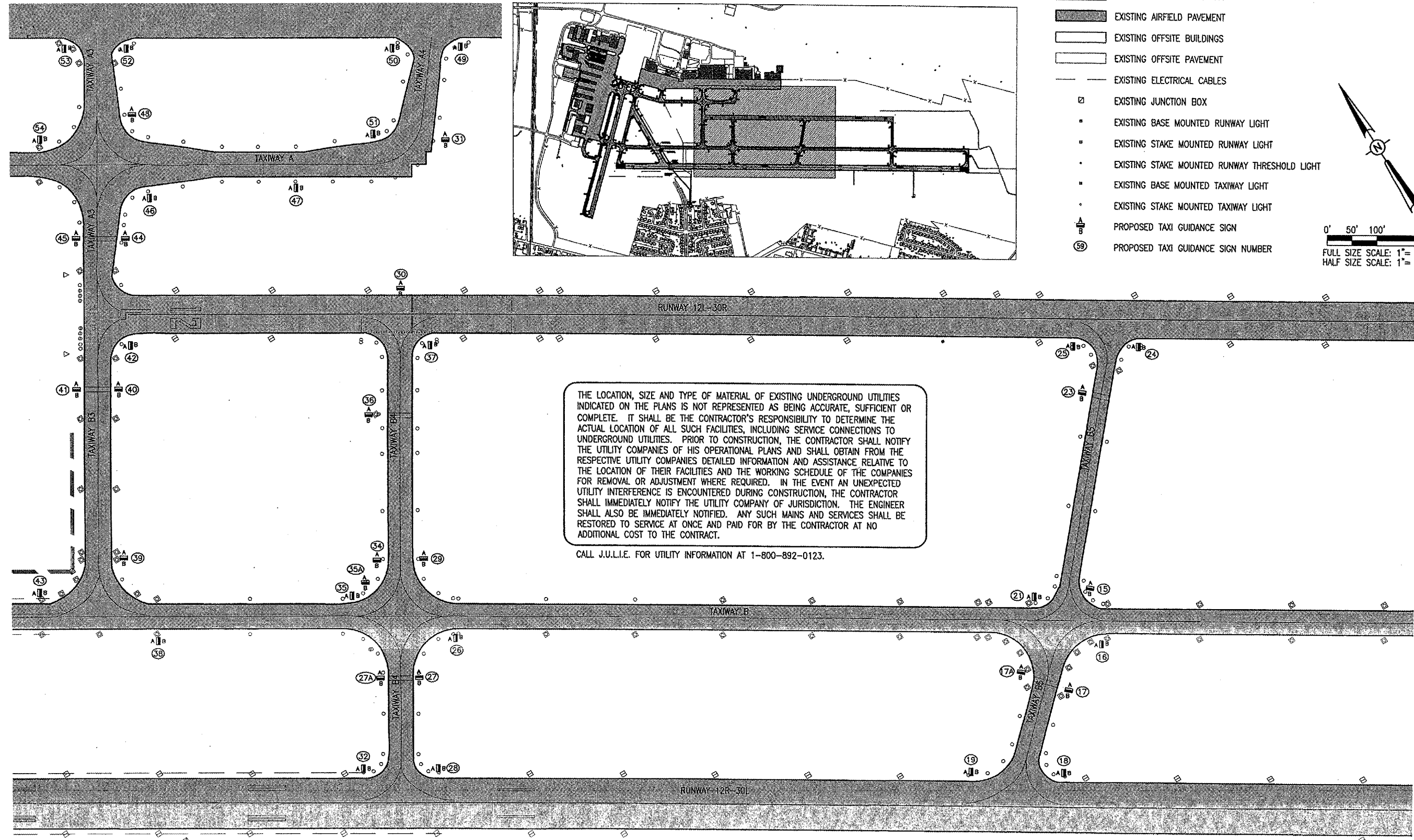
 I.L. PROJ.: CPS-3480 A.I.P. PROJ.: 3-17-0039-B16

HEB Project No.	845-055GND 0800
Revision	R-142ELE.DWG
Scale	1" = 100'
Date	06/23/05
LAYOUT	C.A.H. 06/23/05
DRAWN	C.C.C. 06/23/05
REVIEWED	C.A.H. 06/30/05

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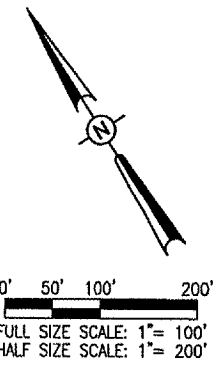
TAXI GUIDANCE SIGN IMPROVEMENTS
 PROPOSED TAXI GUIDANCE SIGN PLAN





LEGEND

- EXISTING AIRFIELD BUILDINGS
- EXISTING AIRFIELD PAVEMENT
- EXISTING OFFSITE BUILDINGS
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SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 A.L.P. PROJ.: 3-17-0039-816

ILL. PROJ.: OPS-3480

FILE NO. 845-055GND_0800	
PROJECT R-142ELE.DWG	
SCALE 1" = 100'	
DATE 06/23/05	
LAYOUT C.A.H. 06/23/05	
DRAWN C.C.C. 06/23/05	
REVIEWED C.A.H. 06/30/05	

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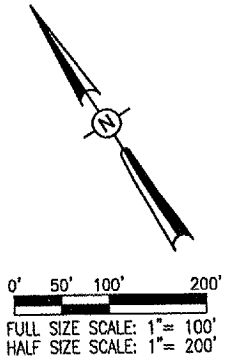
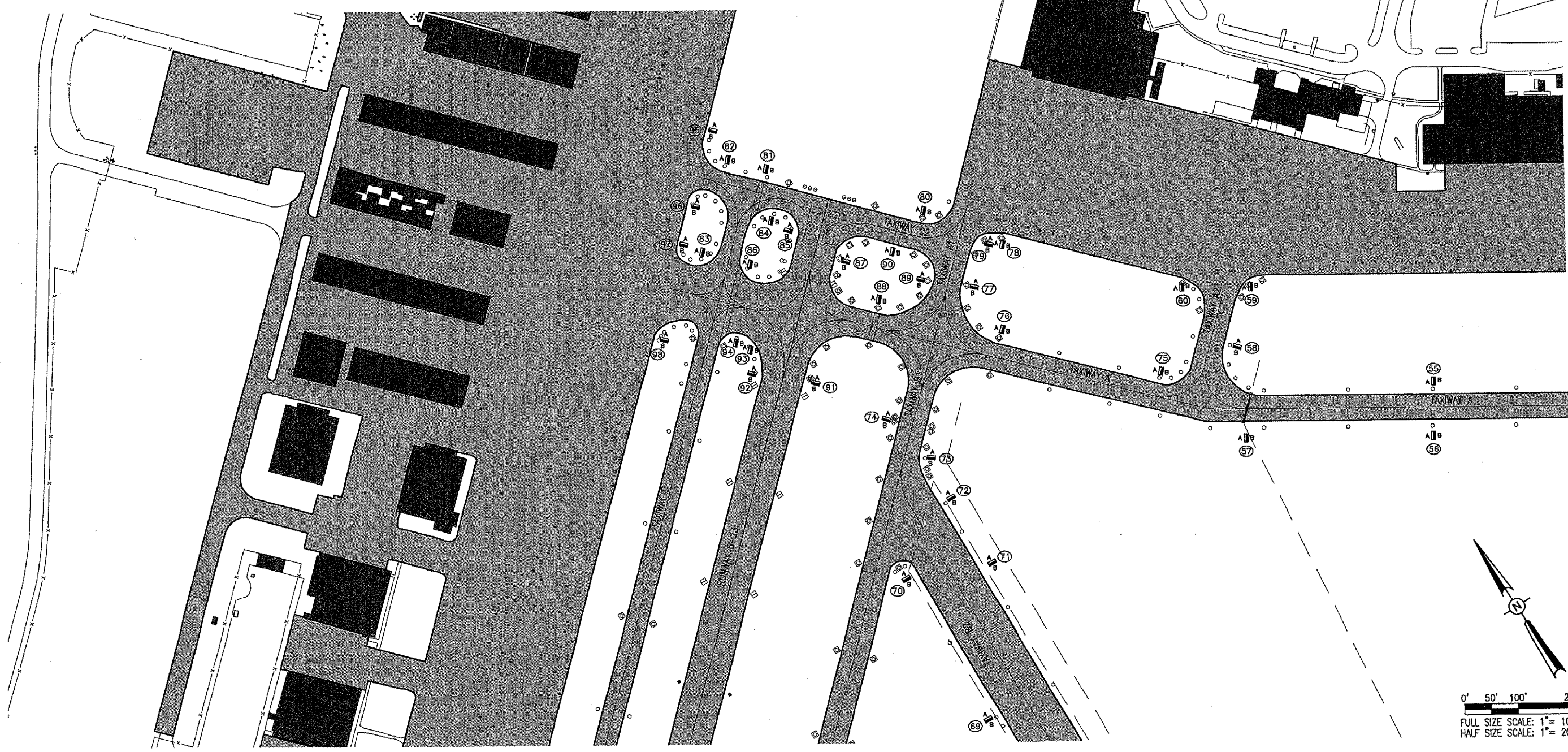
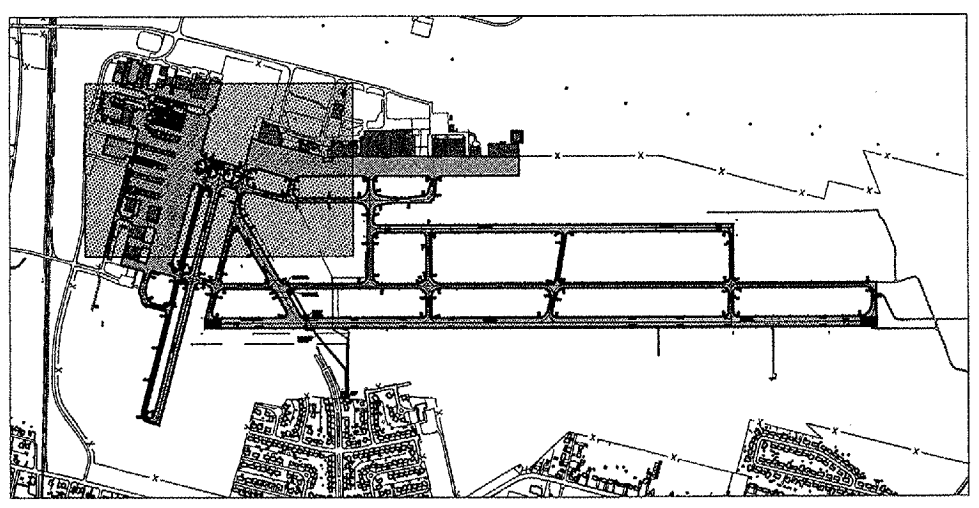
TAXI GUIDANCE SIGN IMPROVEMENTS
 PROPOSED TAXI GUIDANCE SIGN PLAN

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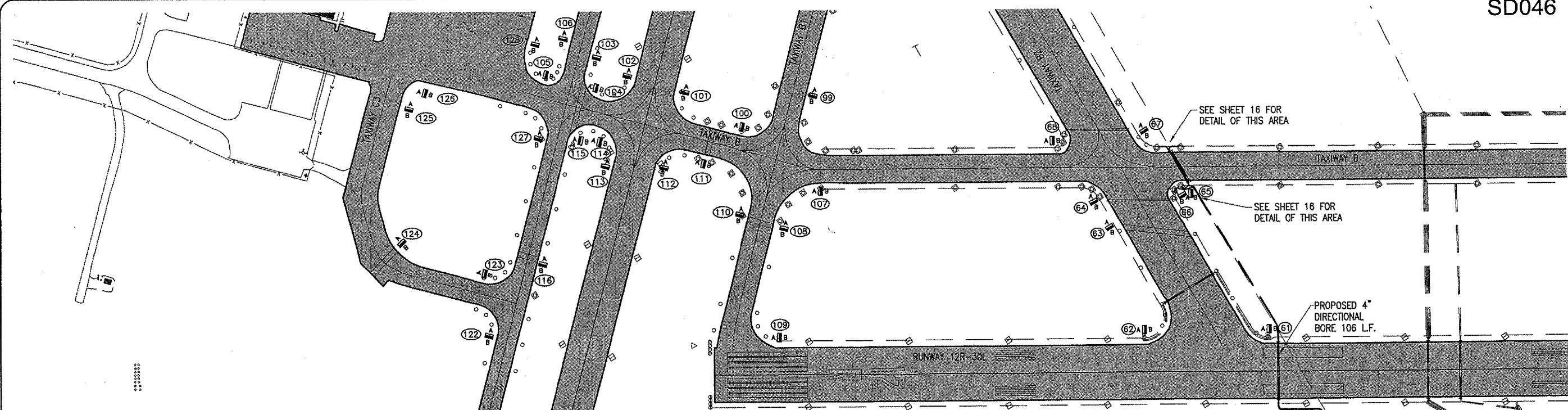
DATE	REVISION	BY

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Missouri State Development Agency
 A.L.P. PROJ.: 3-17-0039-B16
 I.L. PROJ.: CPS-3480

HEB Project No.	845-05SGND_0800
Drawn	R-142ELE.DWG
Scale	1" = 100'
Date	06/23/05
LAYOUT	C.A.H. 06/23/05
DRAWN	C.C.C. 06/23/05
REVIEWED	C.A.H. 06/30/05

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TAXI GUIDANCE SIGN IMPROVEMENTS
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 - EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - ▲ PROPOSED TAXI GUIDANCE SIGN
 - Ⓢ PROPOSED TAXI GUIDANCE SIGN NUMBER
 - ▬ PROPOSED 4" DIRECTIONAL BORE CONDUIT
 - PROPOSED 1/C #8 5KV U.G. CABLE IN UNIT DUCT

PROPOSED CABLE NOTES

ALL PROPOSED CABLE WILL BE LOCATED 12' FROM THE PAVEMENT EDGE UNLESS OTHERWISE STATED BY THE RESIDENT ENGINEER.

ALL PROPOSED CABLE WILL BE PLACED 18" BELOW THE EXISTING GRADE IN GRASS AREAS AND 30" BELOW THE EXISTING GRADE IN FARMED AREAS.

THE PROPOSED ELECTRICAL CABLE WILL BE NO. 8, 5000 V., 1/C, TYPE C UNDERGROUND CABLE IN UNIT DUCT.

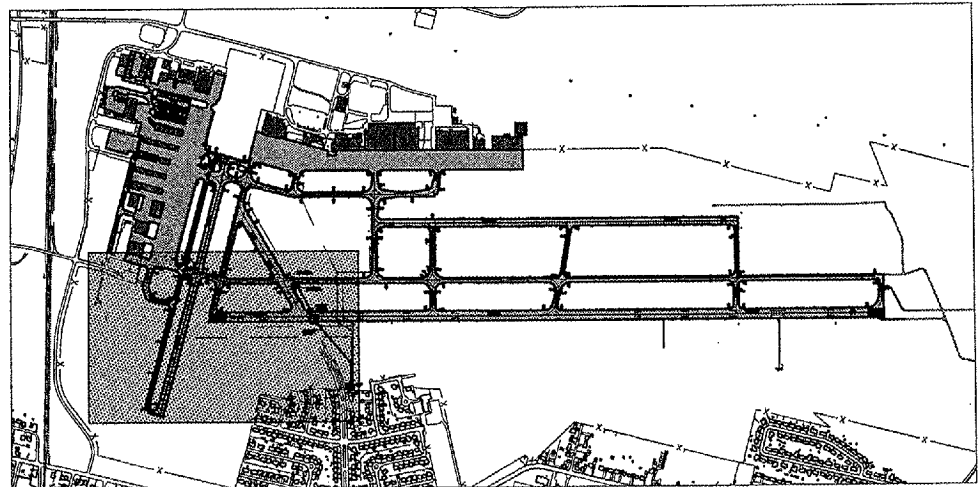
IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE CROSSES AN EXISTING CABLE, THE PROPOSED CABLE WILL BE HAND DUG INTO PLACE. AT ALL OTHER LOCATIONS, THE PROPOSED CABLE IN UNIT DUCT MAY BE EITHER TRENCHED OR PLOWED INTO PLACE. THE TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

ALL CABLE SHOWN BY A (---) DASHED LINE ARE EXISTING CIRCUITS THAT ARE NOT PART OF THIS CONTRACT. THE LOCATION OF THESE CABLES ARE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND IDENTIFY THESE EXISTING CIRCUITS PRIOR TO THE INSTALLATION OF THE PROPOSED CABLE. ANY DAMAGE TO THE EXISTING CIRCUITS SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE RESIDENT ENGINEER AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE PROPOSED HOMERUN CABLE SHALL RUN FROM THE EXISTING VAULT TO EXISTING TAXIWAY "B".

FOR CABLE ROUTING ON TAXIWAY "B" SEE SHET 16.

THE PROPOSED HOMERUN CABLES SHALL BE PAID FOR UNDER ITEM:
AR108158 1/C #8 5KV U.G. CABLE IN U.D. 2,989 L.F.

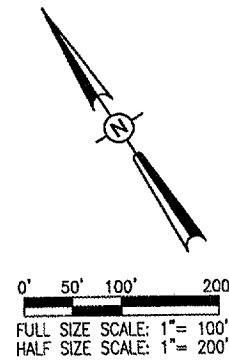


DUCT NOTE:

THE CONTRACTOR WILL INSTALL THE PROPOSED DUCT AT THE LOCATIONS SHOWN ON THIS SHEET AND IN ACCORDANCE WITH THE DETAILS AND THE SPECIFICATIONS.

THE CONTRACTOR WILL REPAIR THE DISTURBED AREAS TO THEIR ORIGINAL STATE AND SEEDED IN ACCORDANCE WITH THE SPECIFICATIONS.

THE PROPOSED DUCTS WILL BE PAID FOR UNDER ITEM:
AR110014 4" DIRECTIONAL BORE 106 L.F



DATE	REVISION	BY

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Missouri State Development Agency
A.I.P. PROJ.: 3-17-0039-B16



Project No.	845-05SGND-0800
Drawn	R-142ELE.DWG
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Date	06/23/05
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DRAWN	C.C.C. 06/23/05
REVIEWED	C.A.H. 06/30/05

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TAXI GUIDANCE SIGN IMPROVEMENTS
PROPOSED TAXI GUIDANCE SIGN PLAN

JUN 30, 2005 11:45 AM BAK \\AIRPORTS\ST. LOUIS DOWNTOWN\845\SGND\AIRPORTSHEET\SR-142ELE.DWG - 15

DATE	REVISION

SAINT LOUIS DOWNTOWN AIRPORT
A Division of St. Louis Development Agency



IL PROJ. CFS-3480

FILED: 845-055GND 0800	DATE: 06/21/05
TITLE: TABLE.DWG	C.A.H.
SCALE: NOT TO SCALE	B.A.K.
DATE: 06/21/05	C.A.H.
LAYOUT	06/21/05
DRAWN	06/21/05
REVIEWED	06/30/05

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TAXI GUIDANCE SIGN IMPROVEMENTS

GUIDANCE SIGN DATA

GUIDANCE SIGN DATA

EXISTING SIGN NUMBERS	PROPOSED SIGN NUMBERS	LOCATION	SIDE A		SIDE B		EXISTING CHARACTERS	PROPOSED CHARACTERS	CONCRETE BASE EXTENSION	PROPOSED CABLE LENGTH L.F.	COMMENTS
			EXISTING	PROPOSED	EXISTING	PROPOSED					
1	1	TAXIWAY B7	30L	B7 30L	BLANK	BLANK	3	5	YES		ADD ONE MODULE
2	2	RUNWAY 12R-30L	← N	← B7	BLANK	BLANK	2	3	YES		ADD ONE MODULE, CHANGE SIGN PANELS
3	3	TAXIWAY B7	BLANK	BLANK	N ← B	← B B7	-	4		56	REMOVE HOME MADE SIGN, REPLACE WITH FOUR CHARACTER SIGN
4	4	TAXIWAY B	B N →	B B7 →	BLANK	BLANK	-	4		62	REMOVE HOME MADE SIGN, REPLACE WITH FOUR CHARACTER SIGN
5	5	TAXIWAY B6	M ← B →	← B B6 B →	BLANK	BLANK	-	6		57	REMOVE HOME MADE SIGN, REPLACE WITH SIX CHARACTER SIGN
6	6	TAXIWAY B	↑ 30L	BLANK	B M	← B6 B B6 →	4	7	YES		ADD THREE MODULES, CHANGE SIGN PANELS
7	7	TAXIWAY B	B	-	BLANK	-	1	-			REMOVE AND RELOCATE EXISTING SIGN
8	8	TAXIWAY B6	30L-12R	B6 30L-12R	BLANK	BLANK	7	9	YES		ADD ONE MODULE
	8A	TAXIWAY B6	-	BLANK	-	← B B6 B →	-	6		47	NEW SIGN
9	9	RUNWAY 12R-30L	BLANK	BLANK	M	B6 →	1	3	YES		ADD ONE MODULE, CHANGE SIGN PANELS
10	10	RUNWAY 12R-30L	M	← B6	→	BLANK	1	3	YES		ADD ONE MODULE, CHANGE SIGN PANELS
11	11	TAXIWAY B6	M ← B →	-	BLANK	-	-	-			REMOVE HOME MADE SIGN
12	12	TAXIWAY B	B ← M →	← B6 B B6 →	BLANK	BLANK	-	7		26	REMOVE HOME MADE SIGN, REPLACE WITH SEVEN CHARACTER SIGN
13	13	TAXIWAY B6	BLANK	BLANK	M 30R	B6 30R	-	5		176	REMOVE HOME MADE SIGN, REPLACE WITH FIVE CHARACTER SIGN
	14	RUNWAY 12L-30R	-	B6 →	-	BLANK	-	3		68	NEW SIGN
14	15	TAXIWAY B5	K ← B →	← B B5 B →	BLANK	← RAMP	-	6		26	REMOVE HOME MADE SIGN, REPLACE WITH SIX CHARACTER SIGN
15	16	TAXIWAY B	BLANK	BLANK	B ← K →	← B5 B B5 →	-	7		61	REMOVE HOME MADE SIGN, REPLACE WITH SEVEN CHARACTER SIGN
16	17	TAXIWAY B5	30L-12R	B5 30L-12R	BLANK	BLANK	7	9	YES		ADD ONE MODULE
	17A	TAXIWAY B5	-	BLANK	-	← B B5 B →	-	6		62	NEW SIGN
17	18	RUNWAY 12R-30L	K	BLANK	→	B5 →	1	3	YES		ADD ONE MODULE, CHANGE SIGN PANELS
18	19	RUNWAY 12R-30L	←	← B5	K	BLANK	1	3	YES		ADD ONE MODULE, CHANGE SIGN PANELS
19	20	TAXIWAY B5	K ← B →	-	BLANK	-	-	-			REMOVE HOME MADE SIGN
20	21	TAXIWAY B	B ← K →	← B5 B B5 →	BLANK	BLANK	-	7		26	REMOVE HOME MADE SIGN, REPLACE WITH SEVEN CHARACTER SIGN
21	22	TAXIWAY B5	← RAMPS	-	BLANK	-	-	-			REMOVE HOME MADE SIGN
22	23	TAXIWAY B5	BLANK	BLANK	K 12L-30R	B5 12L-30R	-	9		167	REMOVE HOME MADE SIGN, REPLACE WITH NINE CHARACTER SIGN
	24	RUNWAY 12L-30R	-	BLANK	-	← B5	-	3			REMOVE TWO TAXIWAY LIGHTS, INSTALL NEW SIGN AT SAME LOCATION
	25	RUNWAY 12L-30R	-	B5 →	-	BLANK	-	3			REMOVE TWO TAXIWAY LIGHTS, INSTALL NEW SIGN AT SAME LOCATION
23	26	TAXIWAY B	BLANK	BLANK	B ← H →	← B4 B B4 →	-	7		26	REMOVE HOME MADE SIGN, REPLACE WITH SEVEN CHARACTER SIGN
24	27	TAXIWAY B4	30L-12R	B4 30L-12R	BLANK	BLANK	7	9	YES		ADD ONE MODULE
	27A	TAXIWAY B4	-	BLANK	-	← B B4 B →	-	6		107	NEW SIGN
25	28	RUNWAY 12R-30L	H	BLANK	→	B4 →	1	3	YES		ADD ONE MODULE, CHANGE SIGN PANELS
26	29	TAXIWAY B4	H ← B →	← B B4 B →	e	e	-	6		68	REMOVE HOME MADE SIGN, REPLACE WITH SIX CHARACTER SIGN
27	30	RUNWAY 12L-30R	BLANK	BLANK	///	///	-	4		220	REMOVE HOME MADE SIGN, ADD LIGHTED TAXIWAY ENDING MARKER
28	31	TAXIWAY A4	A →	A4 A →	BLANK	BLANK	2	4			ADD ONE MODULE, USE EXISTING BASE
29	32	RUNWAY 12R-30L	←	← B4	H	BLANK	1	3	YES		ADD ONE MODULE, CHANGE SIGN PANELS
30	33	TAXIWAY B4	H ← B →	-	BLANK	-	-	-			REMOVE HOME MADE SIGN
31	34	TAXIWAY B4	B ← H →	BLANK	e	e	-	1		68	REMOVE HOME MADE SIGN, REPLACE WITH ONE CHARACTER SIGN
32	35	TAXIWAY B	← RAMPS	← B4 B B4 →	BLANK	BLANK	-	7		26	REMOVE HOME MADE SIGN, REPLACE WITH SEVEN CHARACTER SIGN
	35A	TAXIWAY B	-	BLANK	-	← RAMPS	-	6		68	NEW SIGN
33	36	TAXIWAY B4	BLANK	BLANK	H 12L-30R	B4 12L-30R	-	9		100	REMOVE HOME MADE SIGN, REPLACE WITH NINE CHARACTER SIGN
	37	RUNWAY 12L-30R	-	BLANK	-	← B4	-	3			REMOVE TWO TAXIWAY LIGHTS, INSTALL NEW SIGN AT SAME LOCATION
34	38	TAXIWAY B	BLANK	BLANK	B G →	B B3 →	3	4			ADD ONE MODULE, CHANGE SIGN PANELS
35	39	TAXIWAY B3	G ← B →	← B B3 B →	BLANK	BLANK	4	6			CHANGE SIGN PANELS
36	40	TAXIWAY B3	BLANK	BLANK	12L-30R G	12L-30R B3	8	9			CHANGE G TO B3
37	41	TAXIWAY B3	-	BLANK	-	B3 12L-30R	-	9		156	NEW SIGN
	42	RUNWAY 12L-30R	-	BLANK	-	← B3 A3 →	-	7		26	NEW SIGN
38	43	TAXIWAY B	← G B	← B3 B	BLANK	BLANK	3	4			USE EXISTING BASE, ADD ONE MODULE, CHANGE SIGN PANELS
39	44	TAXIWAY A3	G 30R-12L	A3 30R-12L	BLANK	BLANK	8	8			CHANGE G TO A3
40	45	TAXIWAY A3	30R-12L G	30R-12L A3	G ← A →	← A A3 A →	8	9			ADD ONE MODULE, CHANGE SIGN PANELS
41	46	TAXIWAY A	BLANK	BLANK	A ← G →	← A3 A A3 →	4	7	YES		ADD TWO MODULES, CHANGE SIGN PANELS

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DATE	REVISION

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Missouri State Development Agency



ALP PROJ: 3-17-0039-B16
IL PROJ: OPS-3480

HEP/ISS: 845-055GND 0800
TABLE: DWG
Scale: NOT TO SCALE
Date: 06/21/05

LAYOUT	C.A.H.	06/21/05
DRAWN	B.A.K.	06/21/05
REVIEWED	C.A.H.	06/30/05

HANSON

Hanson Professional Services Inc.
4227 Earth City Expressway, Suite 130
St. Louis, MO 63045-1308
Offices Nationwide

TAXI GUIDANCE SIGN IMPROVEMENTS

GUIDANCE SIGN DATA


GUIDANCE SIGN DATA

EXISTING SIGN NUMBERS	PROPOSED SIGN NUMBERS	LOCATION	SIDE A		SIDE B		EXISTING CHARACTERS	PROPOSED CHARACTERS	CONCRETE BASE EXTENSION	PROPOSED CABLE LENGTH L.F.	COMMENTS
			EXISTING	PROPOSED	EXISTING	PROPOSED					
42	47	TAXIWAY A	← 12L	← 12L	BLANK	BLANK	4	4			LEAVE IN PLACE, NO CHANGE
43	48	TAXIWAY A3	G ← A →	← A A3 A →	BLANK	BLANK	4	6			CHANGE SIGN PANELS
	49	TAXIWAY A4	-	BLANK	-	← A4	-	3		26	NEW SIGN
	50	TAXIWAY A4	-	A4 →	-	BLANK	-	3		26	NEW SIGN
	51	TAXIWAY A	-	← A4 A	-	BLANK	-	4		26	NEW SIGN
	52	TAXIWAY A3	-	BLANK	-	← A3	-	3		26	NEW SIGN
	53	TAXIWAY A3	-	A3 →	-	BLANK	-	3		26	NEW SIGN
44	54	TAXIWAY A	A ← G →	← A3 A A3 →	BLANK	BLANK	4	7	YES		ADD TWO MODULES, CHANGE SIGN PANELS
45	55	TAXIWAY A	12L →	12L →	BLANK	BLANK	4	4			LEAVE IN PLACE, NO CHANGE
46	56	TAXIWAY A	BLANK	BLANK	A 12L-APCH	A 12L-APCH	9	9			LEAVE IN PLACE, NO CHANGE
47	57	TAXIWAY A	BLANK	BLANK	A F →	A A2 →	3	4			ADD ONE MODULE, CHANGE SIGN PANELS
48	58	TAXIWAY A2	← A F A →	← A A2 A →	BLANK	BLANK	5	6			CHANGE F TO A2
	59	TAXIWAY A2	-	BLANK	-	← A2	-	3		26	NEW SIGN
	60	TAXIWAY A2	-	A2 →	-	BLANK	-	3		26	NEW SIGN
49	61	RUNWAY 12R-30L	E	BLANK	←	B2 ↗	1	3			REMOVE AND RELOCATE EXISTING SIGN, REMOVE TWO TAXIWAY LIGHTS, INSTALL NEW SIGN AT SAME LOCATION
50	62	RUNWAY 12R-30L	→	↙ B2	E	BLANK	1	3			REMOVE AND RELOCATE EXISTING SIGN, REMOVE TWO TAXIWAY LIGHTS, INSTALL NEW SIGN AT SAME LOCATION
51	63	TAXIWAY B2	30L-12R E	30L-12R B2	BLANK	BLANK	8	9			CHANGE E TO B2
52	64	TAXIWAY B2	BLANK	BLANK	↖ B E B ↘	↖ B B2 B ↘	5	6			CHANGE E TO B2
53	65	TAXIWAY B	BLANK	BLANK	↙ E B E ↗	↙ B2 B B2 ↗	5	7	YES		ADD TWO MODULES, CHANGE SIGN PANELS
54	66	TAXIWAY B2	E 30L-12R	B2 30L-12R	BLANK	BLANK	8	9			CHANGE E TO B2
55	67	TAXIWAY B2	↖ B E B ↘	↖ B B2 B ↘	BLANK	BLANK	5	6			CHANGE E TO B2
56	68	TAXIWAY B	↙ E B E ↗	↙ B2 B B2 ↗	BLANK	BLANK	5	7	YES		ADD TWO MODULES, CHANGE SIGN PANELS
57	69	TAXIWAY B2	BLANK	BLANK	E 12L-APCH	B2 12L-APCH	9	10			CHANGE E TO B2
58	70	TAXIWAY B2	BLANK	BLANK	↙ D E	↙ B1 B2	3	5			ADD ONE MODULE, CHANGE SIGN PANELS
59	71	TAXIWAY B2	E 12L-APCH	B2 12L-APCH	BLANK	BLANK	9	10			CHANGE E TO B2
60	72	TAXIWAY B2	BLANK	BLANK	E D ↗	B2 B1 ↗	3	5			ADD ONE MODULE, CHANGE SIGN PANELS
61	73	TAXIWAY B1	↖ E D	↖ B2 B1	BLANK	BLANK	3	5			ADD ONE MODULE, CHANGE SIGN PANELS
62	74	TAXIWAY B1	BLANK	BLANK	D ← A →	← A B1 ↑ A1 A →	4	10	YES		ADD TWO MODULES, CHANGE SIGN PANELS
63	75	TAXIWAY A	← F A	← A2 A	BLANK	BLANK	3	4			ADD ONE MODULE, CHANGE SIGN PANELS
64	76	TAXIWAY A	A 12L-APCH	A 12L-APCH	BLANK	BLANK	9	9			LEAVE IN PLACE, NO CHANGE
65	77	TAXIWAY A1	D ← A →	← A A1 B1 ↑ A →	BLANK	BLANK	4	10	YES		ADD TWO MODULES, CHANGE SIGN PANELS
66	78	APRON	← D	← A1	BLANK	BLANK	2	3			ADD ONE MODULE, CHANGE SIGN PANELS
67	79	TAXIWAY A1	D P →	A1 C2 →	BLANK	BLANK	3	5			ADD ONE MODULE, CHANGE SIGN PANELS
68	80	TAXIWAY C2	P D →	C2 A1 →	BLANK	BLANK	3	5			ADD ONE MODULE, CHANGE SIGN PANELS
69	81	TAXIWAY C2	P 22-4	C2 23	BLANK	BLANK	5	4			CHANGE SIGN PANELS
70	82	TAXIWAY C2	P C →	C2 C →	BLANK	BLANK	3	4			CHANGE P TO C2
71	83	TAXIWAY A	A ← C →	← C A C →	BLANK	BLANK	4	5			CHANGE SIGN PANELS
72	84	TAXIWAY C2	BLANK	BLANK	← C P	← C C2	3	4			CHANGE P TO C2
73	85	RUNWAY 5-23	BLANK	BLANK	← P	← C2	2	3			ADD ONE MODULE, CHANGE SIGN PANELS
74	86	TAXIWAY A	A 22-4	A 23-5	BLANK	BLANK	5	5			CHANGE SIGN PANELS
75	87	RUNWAY 5-23	BLANK	BLANK	P →	C2 →	2	3			ADD ONE MODULE, CHANGE SIGN PANELS
76	88	TAXIWAY A	A ← D →	← A1 A B1 →	BLANK	BLANK	4	7	YES		ADD TWO MODULES, CHANGE SIGN PANELS
77	89	TAXIWAY A1	BLANK	BLANK	← P D	← C2 A1	3	5			ADD ONE MODULE, CHANGE SIGN PANELS
78	90	TAXIWAY C2	BLANK	BLANK	P 4-22	C2 23	5	4			CHANGE SIGN PANELS
79	91	RUNWAY 5-23	BLANK	BLANK	A →	A →	2	2			LEAVE IN PLACE, NO CHANGE
80	92	RUNWAY 5-23	BLANK	BLANK	← A	← A	2	2			LEAVE IN PLACE, NO CHANGE
81	93	TAXIWAY A	BLANK	BLANK	A ← C →	← C A C →	4	5			CHANGE SIGN PANELS
82	94	TAXIWAY A	22-4 A	A 23-5	BLANK	A ← C →	5	5			CHANGE SIGN PANELS

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SAINT LOUIS DOWNTOWN AIRPORT SHEET TABLE DWG - 2

BY	
REVISION	
DATE	

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Missouri State Development Agency
 I.L. PROJ.: 3-17-0039-816



181 Project No.	845-055SND_0800
Revision	TABLE DWG
Date	06/21/05
Scale	NOT TO SCALE
LAYOUT	C.A.H. 06/21/05
DRAWN	B.A.K. 06/21/05
REVIEWED	C.A.H. 06/30/05

HANSON
 Hanson Professional Services, Inc.
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 St. Louis, MO 63045-3108
 Offices Nationwide

TAXI GUIDANCE SIGN IMPROVEMENTS
 GUIDANCE SIGN DATA

GUIDANCE SIGN DATA

EXISTING SIGN NUMBERS	PROPOSED SIGN NUMBERS	LOCATION	SIDE A		SIDE B		EXISTING CHARACTERS	PROPOSED CHARACTERS	CONCRETE BASE EXTENSION	PROPOSED CABLE LENGTH L.F.	COMMENTS
			EXISTING	PROPOSED	EXISTING	PROPOSED					
	95	TAXIWAY C2	-	← C2	-	BLANK	-	3		26	NEW SIGN
	96	TAXIWAY C2	-	BLANK	-	C2 →	-	3		26	NEW SIGN
	97	TAXIWAY A	-	← A	-	BLANK	-	2		26	NEW SIGN
	98	TAXIWAY A	-	BLANK	-	A →	-	2		26	NEW SIGN
83	99	TAXIWAY B1	↙ B D B →	↙ B B1 B →	BLANK	BLANK	5	6			CHANGE D TO B1
84	100	TAXIWAY B	B ← D →	← B1 B B1 →	BLANK	BLANK	4	7	YES		ADD TWO MODULES, CHANGE SIGN PANELS
85	101	RUNWAY 5-23	← B	← B	BLANK	BLANK	2	2			LEAVE IN PLACE, NO CHANGE
86	102	RUNWAY 5-23	B →	B →	BLANK	BLANK	2	2			LEAVE IN PLACE, NO CHANGE
87	103	TAXIWAY C	C 12R-APCH	C 12R-APCH	BLANK	BLANK	9	9			LEAVE IN PLACE, NO CHANGE
88	104	TAXIWAY B	B 22-7	B 23-5	BLANK	BLANK	5	5			CHANGE SIGN PANELS
89	105	TAXIWAY B	B ← C →	← C B C →	BLANK	BLANK	4	5			CHANGE SIGN PANELS
90	106	TAXIWAY C	C ← B →	← B C B →	BLANK	BLANK	4	5			CHANGE SIGN PANELS
91	107	TAXIWAY B	BLANK	BLANK	↖ D B D ↘	↖ B1 B B1 ↘	5	7	YES		ADD TWO MODULES, CHANGE SIGN PANELS
92	108	TAXIWAY B1	D 12R	B1 12R	BLANK	BLANK	4	5			CHANGE D TO B1
93	109	RUNWAY 12R-30L	BLANK	BLANK	D	B1 →	1	3	YES		REMOVE AND RELOCATE EXISTING SIGN, REMOVE TWO TAXIWAY LIGHTS, INSTALL NEW SIGN AT SAME LOCATION
94	110	TAXIWAY B1	BLANK	BLANK	← B D B →	← B B1 B →	5	6			CHANGE D TO B1
95	111	TAXIWAY B	BLANK	BLANK	B 4-22	B 5-23	5	5			CHANGE SIGN PANELS
96	112	RUNWAY 5-23	BLANK	BLANK	B →	B →	2	3			LEAVE IN PLACE, NO CHANGE
97	113	RUNWAY 5-23	BLANK	BLANK	← B	← B	2	3			LEAVE IN PLACE, NO CHANGE
98	114	TAXIWAY B	BLANK	BLANK	B ← C →	← C B C →	4	5			CHANGE SIGN PANELS
99	115	TAXIWAY B	22-4 B	B 23-5	BLANK	BLANK	5	5			CHANGE SIGN PANELS
100	116	TAXIWAY C	ILS	ILS	ILS	ILS	3	3			LEAVE IN PLACE, NO CHANGE
101	117	TAXIWAY C4	4 C	C4 5	BLANK	BLANK	2	3			CHANGE SIGN PANELS
102	118	TAXIWAY C4	C 4	C4 5	BLANK	BLANK	2	3			CHANGE SIGN PANELS
103	119	RUNWAY 5-23	C →	C4 →	BLANK	BLANK	2	3			ADD ONE MODULE, CHANGE SIGN PANELS
104	120	TAXIWAY C	BLANK	BLANK	C 12R-APCH	C 12R-APCH	9	9			LEAVE IN PLACE, NO CHANGE
105	121	TAXIWAY C	ILS	ILS	ILS	ILS	3	3			LEAVE IN PLACE, NO CHANGE
106	122	TAXIWAY C	← U C	-	BLANK	-	3	-			REMOVE AND RELOCATE SIGN
107	123	TAXIWAY C3	U ← C →	-	BLANK	-	4	-			REMOVE AND RELOCATE SIGN
108	124	TAXIWAY C3	ILS	-	BLANK	-	3	-			REMOVE AND RELOCATE SIGN
109	125	TAXIWAY C3	U 12R-APCH	-	BLANK	-	9	-			REMOVE AND RELOCATE SIGN
110	126	TAXIWAY B	← U B	-	BLANK	-	3	-			REMOVE AND RELOCATE SIGN
111	127	TAXIWAY C	BLANK	BLANK	C ← B →	← B C B →	4	5			CHANGE SIGN PANELS
	128	TAXIWAY B	-	← B	-	BLANK	-	2		26	NEW SIGN

TAXI GUIDANCE SIGN NOTES

ALL NEW MODULES AND RELOCATED MODULES WILL BE BID WITH NEW SIGN PANELS.

IF THE CONTRACTOR IS ADDING MODULES (NEW OR RELOCATED) TO AN EXISTING SIGN AND THE EXISTING LOCATION SIGN PANEL DESCRIPTION IS BEING CHANGED ON THAT SIGN, THEN THE NEW LOCATION SIGN PANEL WILL BE CONSIDERED AS BEING ON ONE OF THE MODULES BEING ADDED TO THAT SIGN.

A MODULE IS THE BODY OF THE TAXI GUIDANCE SIGN IN WHICH THE SIGN PANEL IS PLACED. ONE MODULE MEASURES APPROXIMATELY 2'-6" IN LENGTH.

A SIGN PANEL MEASURES APPROXIMATELY 2'-6" IN LENGTH AND INSERTS INTO ONE SIDE OF A SINGLE MODULE. A SINGLE MODULE REQUIRES TWO SIGN PANELS.

HOMEMADE SIGN REMOVAL NOTE

THE EXISTING HOMEMADE SIGNS WILL BE REMOVED BY THE AIRPORT PERSONNEL.

MODIFY EXISTING SIGN PANEL NOTES

ALL NEW SIGNS, ADD MODULES, AND RELOCATE MODULES WILL BE ACCOMPLISHED WITH NEW SIGN PANELS AS INCIDENTAL TO THAT ITEM OF WORK.

WHILE REPLACING THE EXISTING SIGN PANELS IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO USE AS MANY OF THE EXISTING SIGN PANELS AS POSSIBLE.

IF A SIGN PANEL CAN'T BE USED IN THE SIGN IT IS TAKEN FROM BUT CAN BE USED IN ANOTHER SIGN, THEN THE CONTRACTOR WILL INSTALL IT IN THAT SIGN.

THE CONTRACTOR WILL NOT BE PAID FOR MOVING AN EXISTING SIGN PANEL TO A DIFFERENT SIGN MODULE.

CONCRETE SIGN BASE EXTENSION NOTES

THE EXISTING TAXI GUIDANCE SIGNS DESIGNATED FOR BASE EXTENSIONS WILL HAVE THEIR CONCRETE BASES EXTENDED A SUFFICIENT DISTANCE TO PROVIDE A MINIMUM OF 2" OF CONCRETE BASE BEYOND THE EXTENDED SIGN.

THE CONCRETE SHALL MEET THE REQUIREMENTS OF ITEM 610 "STRUCTURAL PORTLAND CEMENT CONCRETE".

THE CONTRACTOR WILL DRILL THREE NO. 3 RE-BAR (8" LONG) INTO THE FACE OF THE EXISTING CONCRETE PAD. ONE HALF OF THE RE-BAR WILL BE GROUTED INTO THE EXISTING CONCRETE PAD. THE RE-BAR WILL TIE THE EXISTING AND PROPOSED CONCRETE PADS TOGETHER.

6" X 6" NO. 6 WIRE MESH WILL ALSO BE PLACED IN THE EXTENDED CONCRETE BASE.

THE EXTENSION OF THE CONCRETE BASE WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO ADDITION OF A MODULE TO THE EXISTING SIGN AND WILL BE PAID FOR UNDER ITEMS:

- AR800401 "ADD 1 MODULE WITH SIGN BASE EXTENSION" _ _ _ _ EACH.
- AR800402 "ADD 2 MODULE WITH SIGN BASE EXTENSION" _ _ _ _ EACH.

TAXIWAY LIGHT REMOVAL NOTES

THE INSTALLATION OF PROPOSED TAXI GUIDANCE SIGNS 25, 25, 37, 61, 62 AND 109 WILL REQUIRE THE CONTRACTOR TO REMOVE TWO EXISTING TAXIWAY LIGHTS AT EACH LOCATION.

THE LIGHTS, STAKES, AND ISOLATION TRANSFORMERS WILL BE REMOVED AND TURNED OVER TO THE AIRPORT MAINTENANCE PERSONNEL. IF THEY DON'T WANT THE MOUNTING STAKES, THE CONTRACTOR WILL DISPOSE OF THEM OFF THE AIRPORT SITE AT HIS OWN EXPENSE.

THE CONTRACTOR WILL MARK THE LOCATION OF THESE LIGHT REMOVALS SINCE THIS WILL BE THE LOCATIONS WHERE HE WILL INSTALL THE PROPOSED TAXI GUIDANCE SIGNS.

THE CONTRACTOR WILL USE THE EXISTING LIGHTING CABLES AT THESE LOCATIONS TO CONNECT THE PROPOSED TAXI GUIDANCE SIGNS INTO THE EXISTING TAXIWAY LIGHTING CIRCUITS.

THE REMOVAL AND DISPOSAL OF THE EXISTING TAXIWAY LIGHTS WILL BE PAID FOR UNDER: AR125901 "REMOVE STAKE MOUNTED LIGHT" _ _ _ _ 12 EACH.

PROPOSED TAXIWAY GUIDANCE SIGN NOTES

THE PROPOSED TAXI GUIDANCE SIGNS WILL CONFORM TO ADVISORY CIRCULAR 150/5345-44F. THE SIGNS WILL 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 DOWN TO -55°C; MEDIUM INTENSITY, BASE MOUNTED, DOUBLE SIDED, AS SPECIFIED ON THE PLANS.

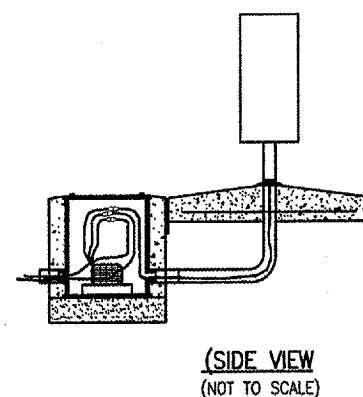
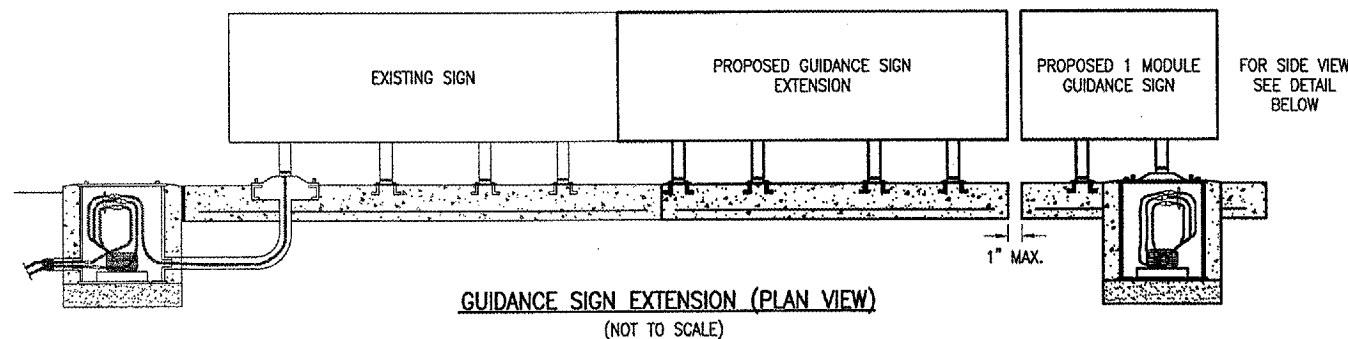
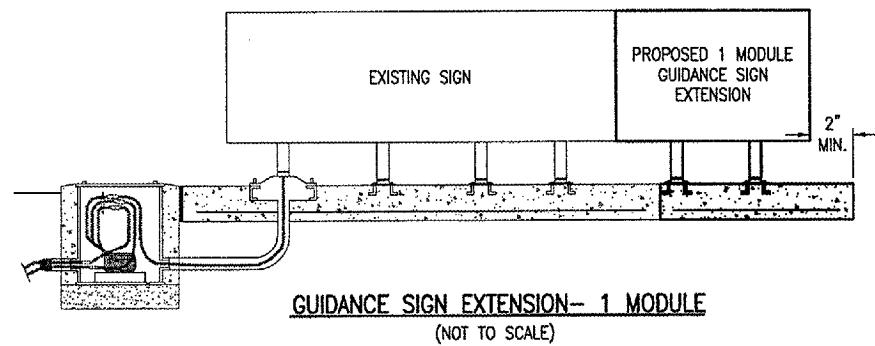
THE SIGNS SHALL READ AS DESCRIBED ON THE CONSTRUCTION PLANS. THE PROPOSED TAXI GUIDANCE SIGNS WILL BE TYPE L-858-Y DIRECTION SIGN (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858-R MANDATORY SIGN (WHITE LEGEND ON RED BACKGROUND); TYPE L-858-L LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND).

THE PROPOSED TAXI GUIDANCE SIGNS WILL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS SHOWN ON THESE CONSTRUCTION PLANS. THE TAXI GUIDANCE SIGNS WILL BE LOCATED WITH THE NEAR FACE OF THE SIGN SET 20 FEET FROM THE EDGE OF THE EXISTING PAVEMENT.

THE PROPOSED TAXI GUIDANCE SIGNS WILL ALL BE LUMACURVE SIGNS. LUMACURVE IS A BRAND OF STANDARD SIGNS, INC. INFORMATION CONCERNING LUMACURVE SIGNS CAN BE OBTAINED BY CALLING CINDY KUNTZ AT 216-341-5611 EXTENSION 207.

THE PROPOSED TAXI GUIDANCE SIGNS WILL BE PAID FOR BY THE MAXIMUM NUMBER OF CHARACTERS REPRESENTED ON ONE SIGN FACE.

ALL SIGN WILL READ AS DETAILED ON SHEETS 12, 13 AND 14.



FOR SIDE VIEW
SEE DETAIL
BELOW

DATE	REVISION	BY

**SAINT LOUIS
DOWNTOWN
AIRPORT**
A Division of Bi-State Development Agency



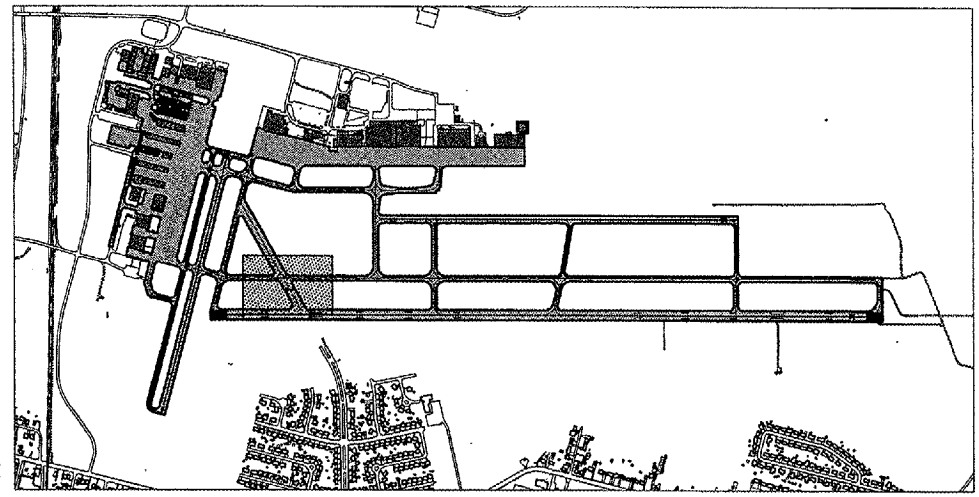
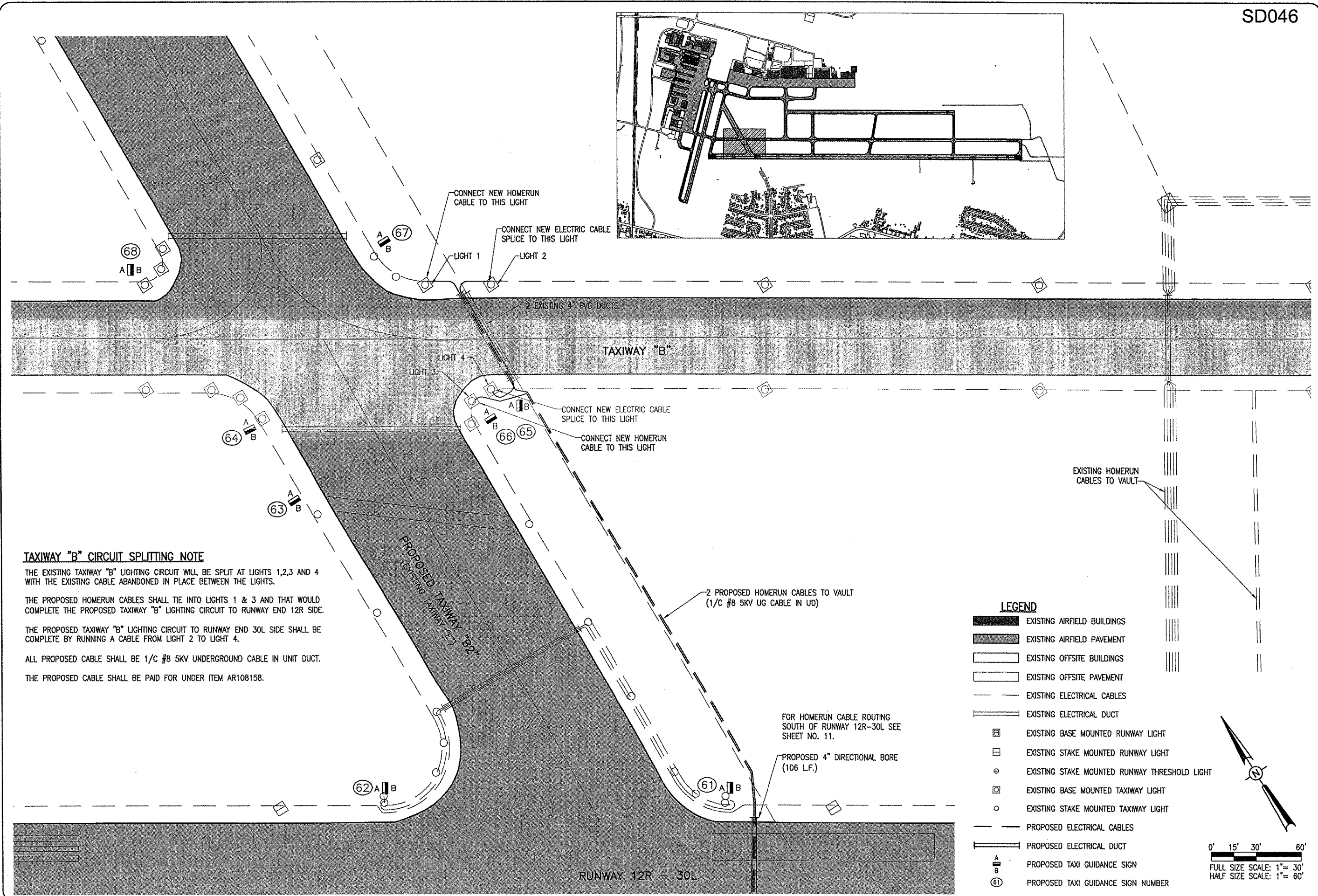
A.I.P. PROJ. 3-17-0039-R16
ILL. PROJ. CPS-3480

HEB Project No. 845-05SGND 0800	Scale	DATE	C.A.H.	DATE
Filename R-541ELE.DWG	NOT TO SCALE	06/17/05	C.A.H.	06/17/05
Scale	NOT TO SCALE	06/17/05	B.A.K.	06/17/05
Date	06/17/05	06/17/05	C.A.H.	06/30/05
LAYOUT				
DRAWN				
REVIEWED				



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TAXI GUIDANCE SIGN IMPROVEMENTS	PROPOSED GUIDANCE SIGN DETAILS
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TAXIWAY "B" CIRCUIT SPLITTING NOTE

THE EXISTING TAXIWAY "B" LIGHTING CIRCUIT WILL BE SPLIT AT LIGHTS 1,2,3 AND 4 WITH THE EXISTING CABLE ABANDONED IN PLACE BETWEEN THE LIGHTS.

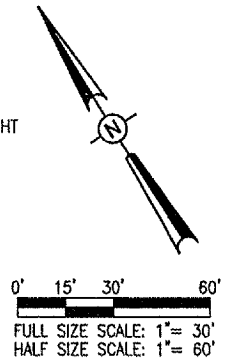
THE PROPOSED HOMERUN CABLES SHALL TIE INTO LIGHTS 1 & 3 AND THAT WOULD COMPLETE THE PROPOSED TAXIWAY "B" LIGHTING CIRCUIT TO RUNWAY END 12R SIDE.

THE PROPOSED TAXIWAY "B" LIGHTING CIRCUIT TO RUNWAY END 30L SIDE SHALL BE COMPLETE BY RUNNING A CABLE FROM LIGHT 2 TO LIGHT 4.

ALL PROPOSED CABLE SHALL BE 1/C #8 5KV UNDERGROUND CABLE IN UNIT DUCT.

THE PROPOSED CABLE SHALL BE PAID FOR UNDER ITEM AR108158.

- LEGEND**
- EXISTING AIRFIELD BUILDINGS
 - EXISTING AIRFIELD PAVEMENT
 - EXISTING OFFSITE BUILDINGS
 - EXISTING OFFSITE PAVEMENT
 - EXISTING ELECTRICAL CABLES
 - EXISTING ELECTRICAL DUCT
 - EXISTING BASE MOUNTED RUNWAY LIGHT
 - EXISTING STAKE MOUNTED RUNWAY LIGHT
 - EXISTING STAKE MOUNTED RUNWAY THRESHOLD LIGHT
 - EXISTING BASE MOUNTED TAXIWAY LIGHT
 - EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - PROPOSED ELECTRICAL CABLES
 - PROPOSED ELECTRICAL DUCT
 - PROPOSED TAXI GUIDANCE SIGN
 - PROPOSED TAXI GUIDANCE SIGN NUMBER



DATE	REVISION	BY

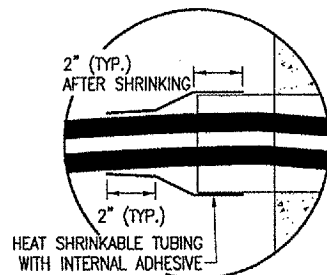
SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 A.L.P. PROJ.: 3-17-0038-B16
 I.L. PROJ.: CPS-3480

REVISION NO.	DATE	BY	REVIEWED
0800	06/23/05	C.C.C.	C.A.H.
0801	06/23/05	C.C.C.	C.A.H.
0802	06/23/05	C.C.C.	C.A.H.

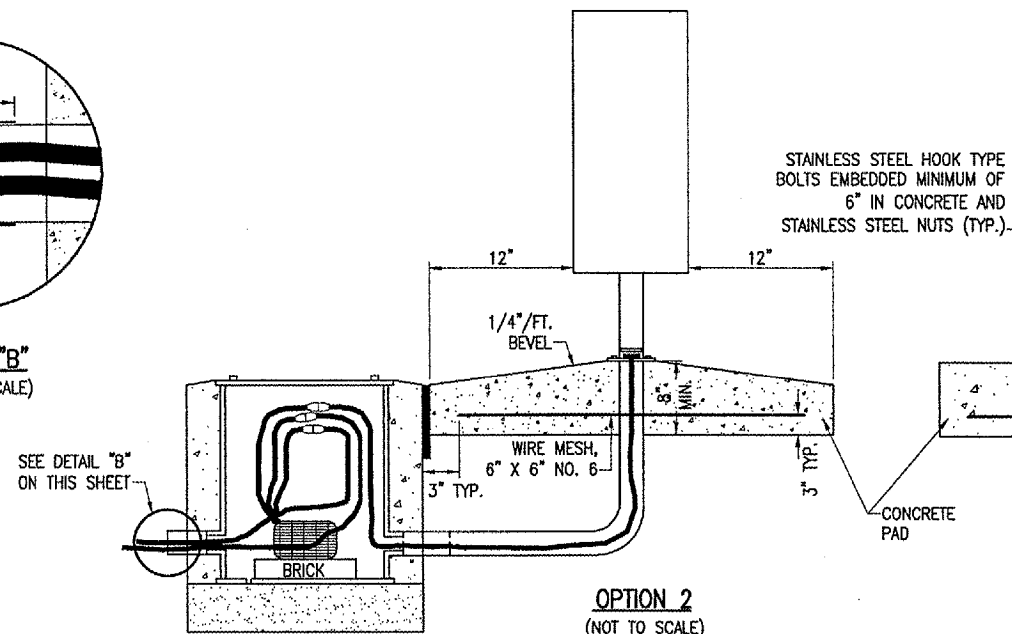
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TAXI GUIDANCE SIGN IMPROVEMENTS
 TAXIWAY "B" PROPOSED HOMERUN CABLES

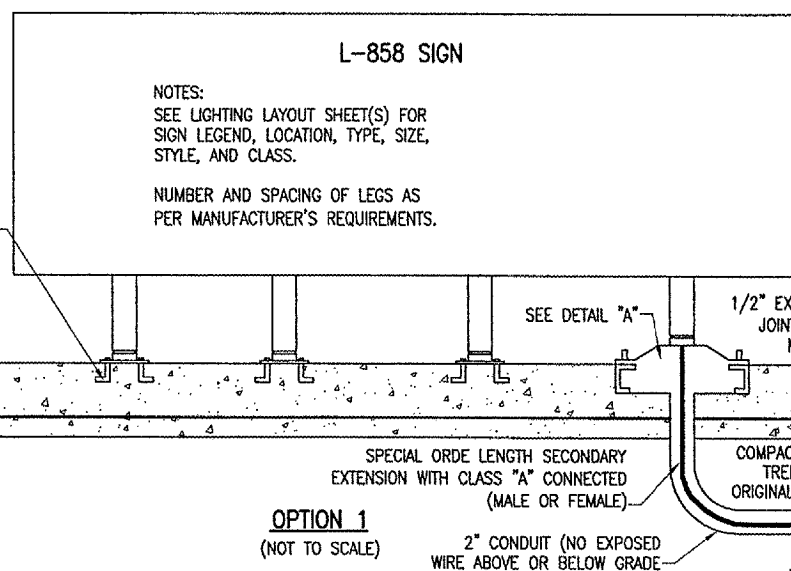
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DETAIL "B"
(NOT TO SCALE)

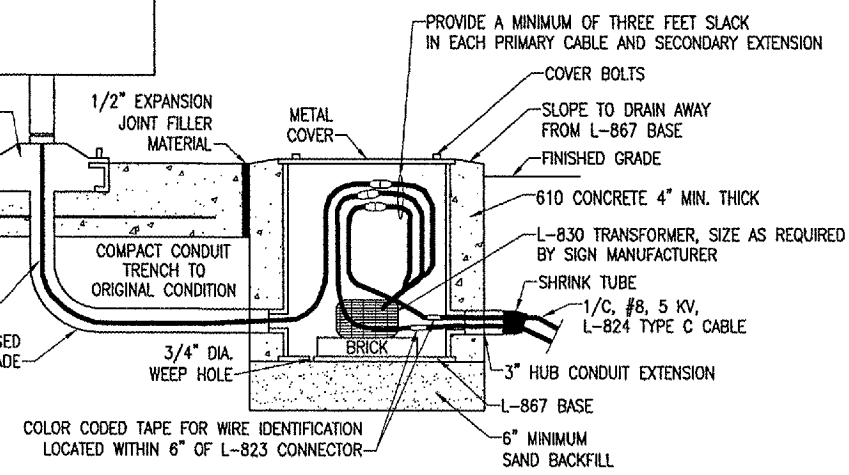


OPTION 2
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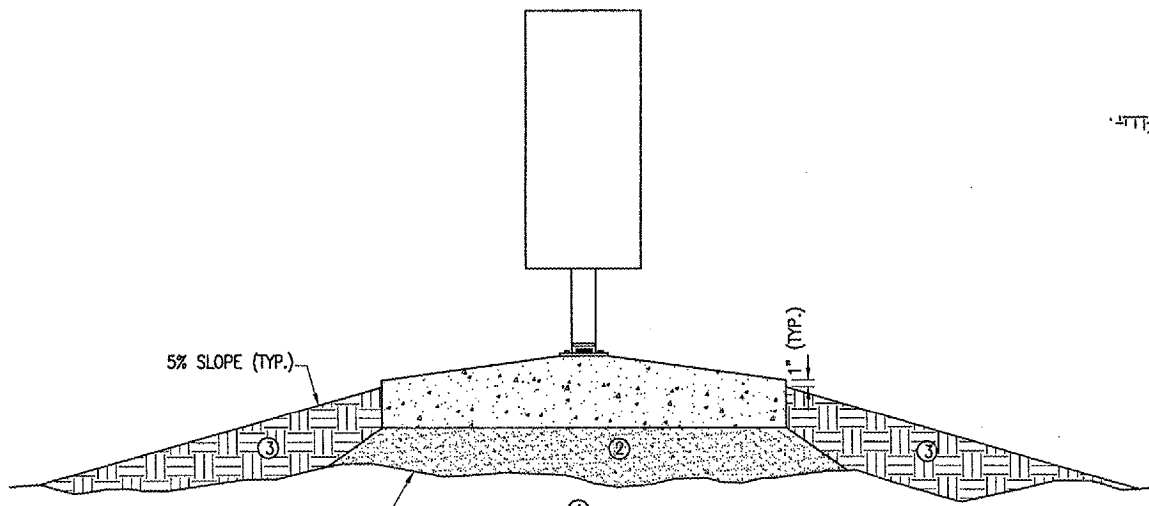


OPTION 1
(NOT TO SCALE)

THE LOCATION OF UNDERGROUND UTILITIES AS INDICATED ON THE PLANS HAS BEEN OBTAINED FROM EXISTING RECORDS. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER, IN RESPECT TO THE ACCURACY OR SUFFICIENCY OF THE INFORMATION AND THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE CONDITIONS ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION.

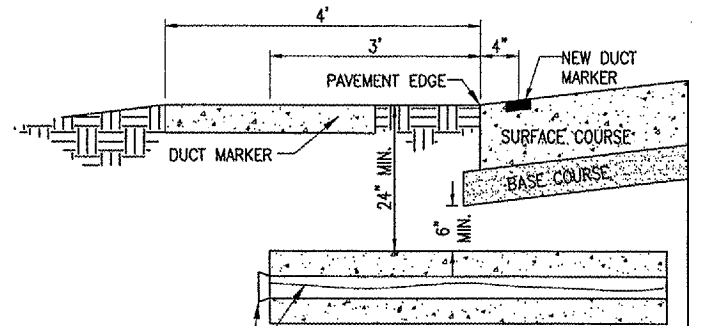


DETAIL "A"
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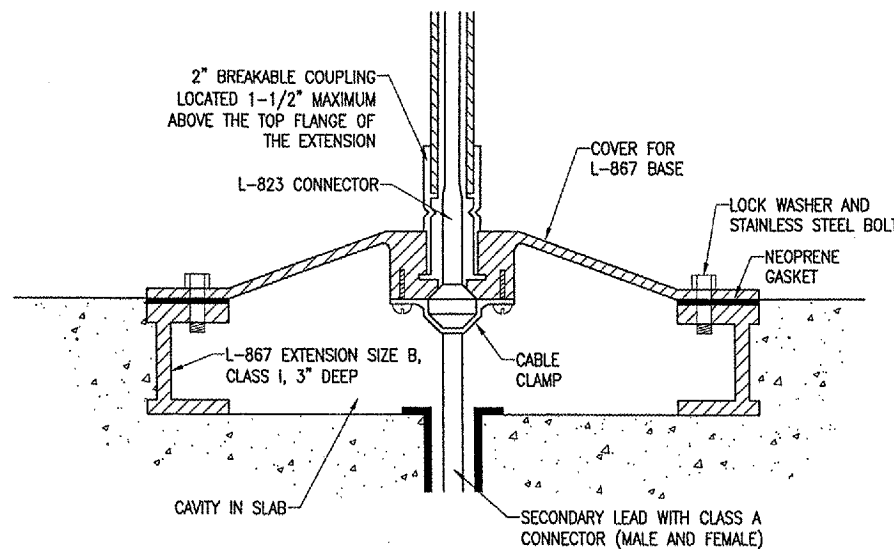


SIGN DETAIL
(NOT TO SCALE)

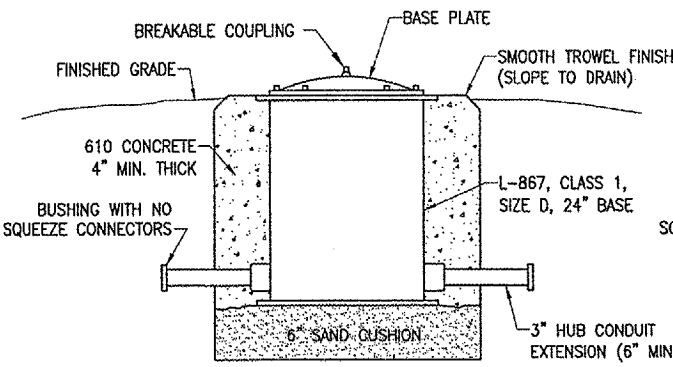
- ① EXISTING SOD TO BE STRIPPED AND REMOVED
- ② SAND BACKFILL, VARIABLE DEPTH
- ③ PROPOSED TOPSOIL BACKFILL MATERIAL



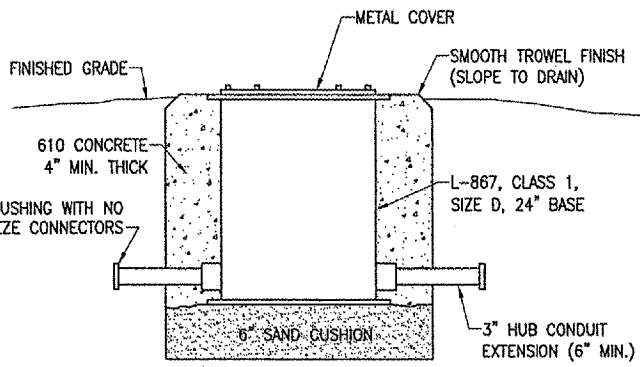
UNDERGROUND ELECTRICAL DUCT
(NOT TO SCALE)



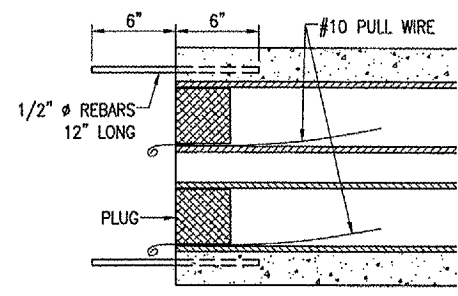
GENERAL NOTES
SEE LIGHTING LAYOUT SHEET FOR SIGN LEGEND, LOCATION, TYPE, SIZE, STYLE, AND CLASS.
SEE SHEETS 19 THROUGH 20 FOR ELECTRICAL NOTES.



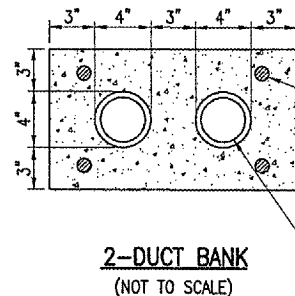
REIL BASE DETAIL
(NOT TO SCALE)



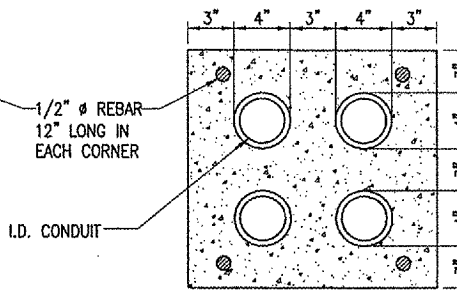
SPLICE CAN DETAIL
(NOT TO SCALE)



TYPICAL SECTION
(NOT TO SCALE)



2-DUCT BANK
(NOT TO SCALE)



4-DUCT BANK
(NOT TO SCALE)

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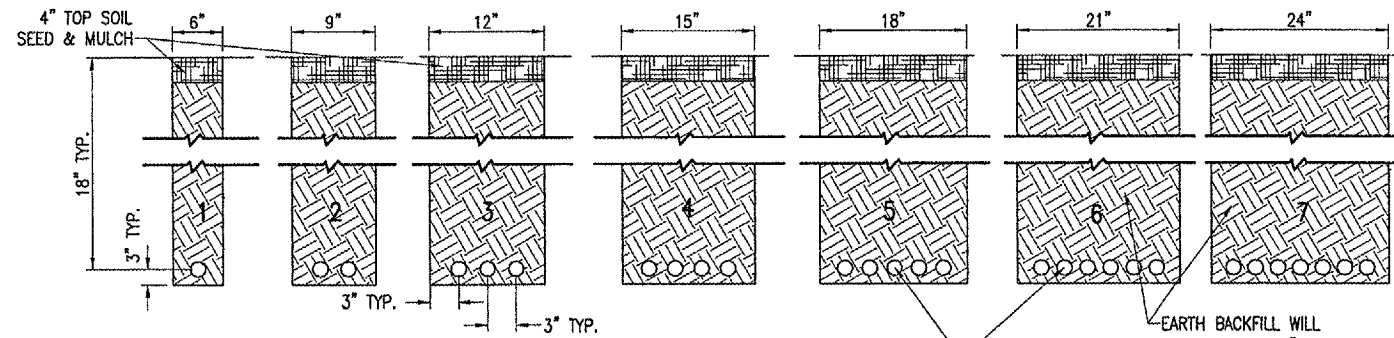
REVISION	DATE	BY

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Missouri Development Agency
A.I.P. PROJ: 3-17-0039-B16
I.L. PROJ: 055-3480

HEI Project No. 845-055GND 0800	Files R-541ELE.DWG	Scale NOT TO SCALE	Date 06/16/05
LAYOUT	C.A.H.	06/16/05	06/16/05
DRAWN	B.A.K.	06/16/05	06/16/05
REVIEWED	C.A.H.	06/30/05	06/30/05

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TAXI GUIDANCE SIGN IMPROVEMENTS
ELECTRICAL DETAILS

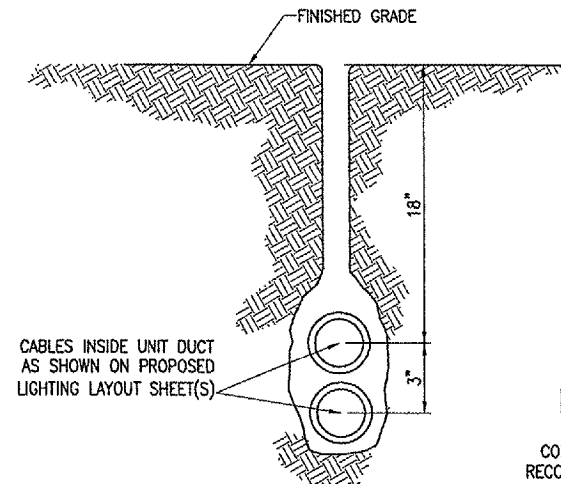


NOTES:
DETAIL NUMBERS INDICATE NO. OF CABLES.

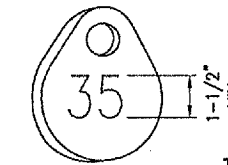
TRENCHES WITH MORE THAN SEVEN CABLES SHALL BE INCREASED 3" IN WIDTH FOR EACH ADDITIONAL CABLE; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.

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.

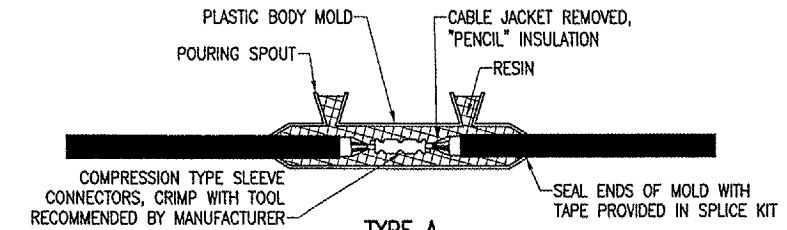


PLOWED CABLE
(NOT TO SCALE)

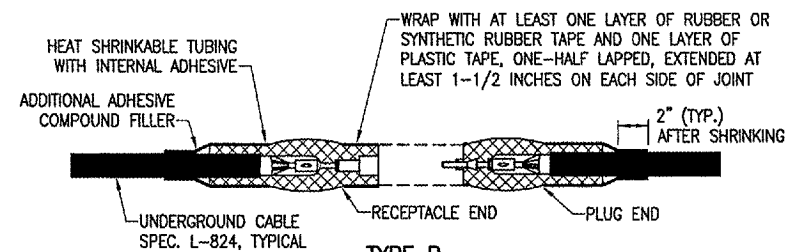


TAG DETAIL
(NOT TO SCALE)

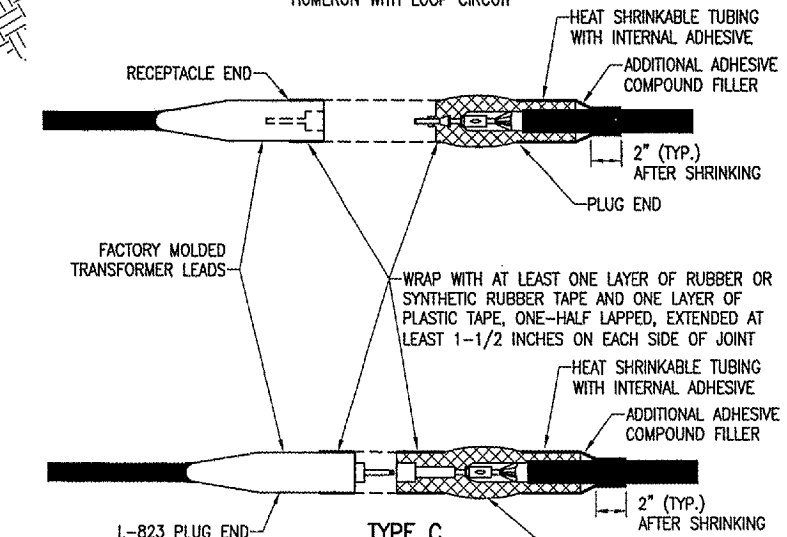
NOTE:
AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.



TYPE A
FOR SPLICES IN HOMERUNS FOR EXTENSIONS TO EXISTING CABLES ONLY



TYPE B
FOR SPLICES AT JUNCTION OF HOMERUN WITH LOOP CIRCUIT

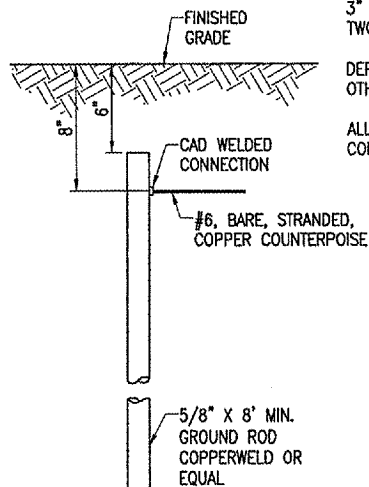


TYPE C
FOR SPLICES AT RUNWAY LIGHTS

NOTES:
SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR SPLICE TYPE.

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

CABLE SPLICES
(NOT TO SCALE)



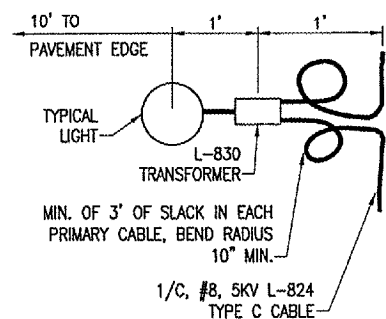
NOTES:
TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.

THE RESISTANCE TO GROUND OF THE COUNTERPOISE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.

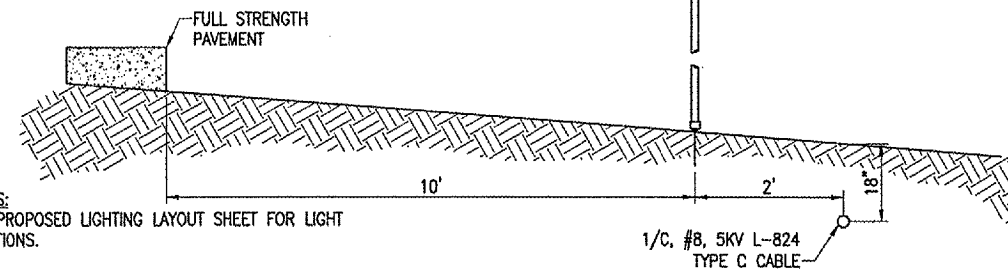
COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.

GROUND ROD
(NOT TO SCALE)

CABLE TRENCHES
(NOT TO SCALE)



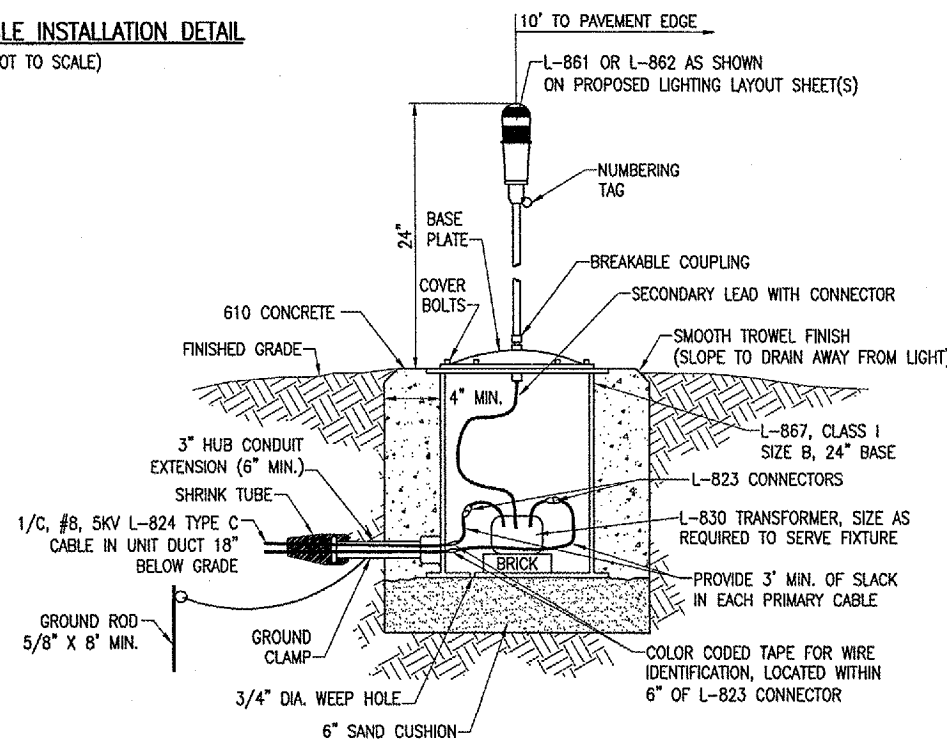
PLAN VIEW



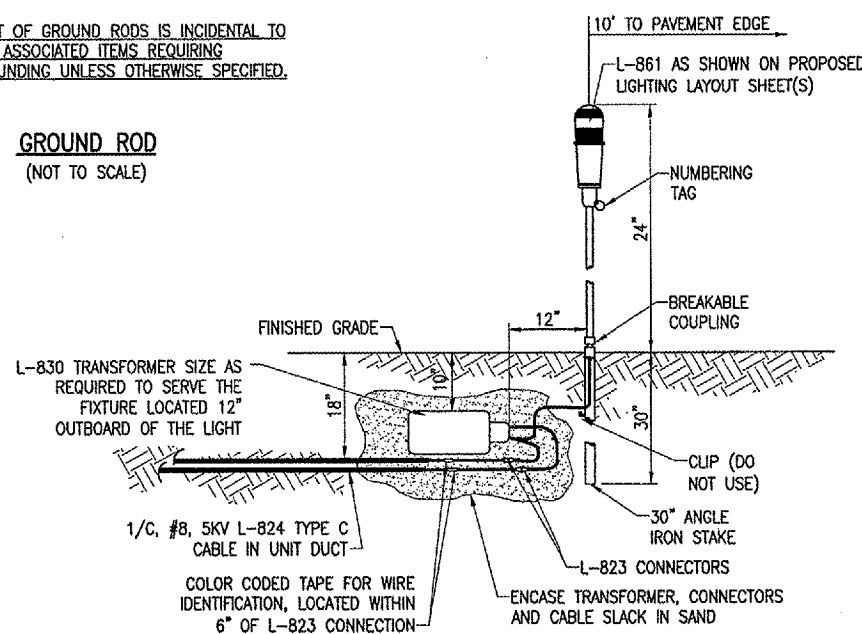
NOTES:
SEE PROPOSED LIGHTING LAYOUT SHEET FOR LIGHT LOCATIONS.

LIGHT AND CABLE INSTALLATION DETAIL
(NOT TO SCALE)

PROFILE VIEW



MEDIUM/HIGH INTENSITY LIGHT - BASE MOUNTED
(NOT TO SCALE)



MEDIUM INTENSITY LIGHT - STAKE MOUNTED
(NOT TO SCALE)

DATE	REVISION

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Missouri State Development Agency
A.I.P. PROJ: 3-17-0039-816
I. PROJ: CFS-3480

845-055GND_0800	06/16/05
R-541ELE.DWG	06/16/05
NOT TO SCALE	06/16/05
06/16/05	06/16/05
LAYOUT	C.A.H.
DRAWN	B.A.K.
REVIEWED	C.A.H.

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TAXI GUIDANCE SIGN IMPROVEMENTS
ELECTRICAL DETAILS



JUN 30, 2005 11:52 AM BAK \\AIRPORTS\ST. LOUIS DOWNTOWN\845055GND\AIRPORT\SHETS\845ELE.DWG - Layout2

GENERAL NOTES

1. THE ELECTRICAL INSTALLATION, AS A MINIMUM, SHALL MEET THE NATIONAL ELECTRICAL CODE AND LOCAL REGULATIONS.
2. 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 MANUFACTURE) THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.
3. IN CASE THE CONTRACTOR ELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTERS, 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.
4. 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.
5. 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.
6. ANY AND ALL INSTRUCTIONS FROM THE 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 FAA FIELD OFFICE (ADO/AFO). THE CONTRACTOR SHALL NOT ACCEPT ANY VERBAL INSTRUCTIONS FROM THE RESIDENT ENGINEER REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.
7. 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 INSTRUCTIONS.
 - 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 MANUFACTURE AND THE CATALOG NUMBER.
 - I. SAFETY INSTRUCTIONS.

POWER AND CONTROL NOTES

1. STENCIL ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO STENCIL THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT STENCILING AREA, THE STENCILING SHALL BE DONE ON THE WALL NEXT TO THE UNIT. THE LETTERS SHALL BE ONE INCH HIGH AND PAINTED IN WHITE OR BLACK TO PROVIDE THE HIGHEST CONTRAST WITH THE BACKGROUND.
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 SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, RED AND BLUE SHALL BE USED FOR THREE-PHASE 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.
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 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 WALL MOUNTED EQUIPMENT ENCLOSURES SHALL BE MOUNTED ON WOODEN MOUNTING BOARDS, AND/OR GALVANIZED STEEL STRUT SUPPORT.
14. WOODEN EQUIPMENT MOUNTING BOARDS SHALL BE PLYWOOD, EXTERIOR TYPE, 3/4 INCH, MINIMUM, THICKNESS, BOTH SIDES PAINTED WITH ONE COAT OF PRIMER AND TWO COATS OF GRAY OIL-BASED PAINT.
15. RIGID STEEL CONDUIT SHALL BE USED THROUGHOUT THE INSTALLATION UNLESS OTHERWISE SPECIFIED. THE MINIMUM TRADE SIZE SHALL BE 3/4 INCH.
16. ALL RIGID CONDUIT SHALL BE TERMINATED AT CONSTANT CURRENT REGULATORS WITH A SECTION (10" MINIMUM) OF FLEXIBLE CONDUIT.
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 AND COVER WITH INSULATING VARNISH FOR FULL VALUE OF CABLE INSULATION VOLTAGE.
22. UNLESS OTHERWISE NOTED, ALL INDOOR SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG.
23. THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:
 - A. ALL COMPONENTS SHALL BE MOUNTED IN DUST PROOF ENCLOSURE(S) WITH VERTICALLY HINGED COVERS.
 - 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 (SCHEMATIC 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.

DATE	REVISION	BY	DATE	REVISION	BY	DATE	REVISION									
 <p style="text-align: center;">SAINT LOUIS DOWNTOWN AIRPORT A Division of Missouri State Development Agency A.L.P. PROJ.: 3-17-0039-B16 ILL. PROJ.: GPS-3480</p>																
<p>REVISED: 845-055GND_0800 FIGURE: R-541E.DWG SCALE: NOT TO SCALE DATE: 06/16/05</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>LAYOUT</td> <td>C.A.H.</td> <td>06/16/05</td> </tr> <tr> <td>DRAWN</td> <td>B.A.K.</td> <td>06/16/05</td> </tr> <tr> <td>REVIEWED</td> <td>C.A.H.</td> <td>06/30/05</td> </tr> </table>								LAYOUT	C.A.H.	06/16/05	DRAWN	B.A.K.	06/16/05	REVIEWED	C.A.H.	06/30/05
LAYOUT	C.A.H.	06/16/05														
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 <p style="text-align: center;">HANSON Hanson Professional Services Inc. 4227 Earth City Expressway, Suite 130 St. Louis, MO. 63045-1308 Offices Nationwide</p>																
TAXI GUIDANCE SIGN IMPROVEMENTS				ELECTRICAL NOTES												
19																
19 of 28 sheets																

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I:\AIRPORTS\ST. LOUIS DOWNTOWN\845055GND\AIRPORTSHEET\SR-541E.DWG - Layout3

FIELD LIGHTING NOTES

- UNLESS OTHERWISE NOTED, ALL UNDERGROUND FIELD POWER MULTIPLE AND SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED L-824 TYPE. INSULATION VOLTAGE AND SIZE SHALL BE AS SPECIFIED.
- NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
- 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.
- 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 SHEET NO. 18.
- 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 SHEET NO. 18.
- L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
- 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.
- ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
- 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.
- 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.
- 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.
- L-867 BASES SHALL BE SIZE B, 24" DEEP, CLASS I, UNLESS OTHERWISE NOTED.
- 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.
- 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.
- 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.
- TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
- PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
- 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.
- 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.
- ENTRANCES INTO L-867 BASES SHALL BE SEALED WITH HEAT SHRINK AS SHOWN IN DETAIL "B" ON SHEET NO. 17.
- GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
- EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
- 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.
- 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.
- THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
- APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.
- LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.
- WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "T" SPLICES SHALL BE OF THE CAST TYPE.
- CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKINGS, ETC. SHALL BE 3000 PSI, AIR-ENTRAINED.
- 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.

GROUNDING NOTES

- ALL GROUND CONNECTIONS TO GROUND RODS, BUSSES, PANELS, ETC. SHALL BE MADE WITH PRESSURE TYPE SOLDERLESS LUGS AND GROUND CLAMPS SOLDERED OR BOLT AND WASHER TYPE CONNECTIONS ARE NOT ACCEPTABLE. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. CONNECTIONS TO GROUND RODS SHALL BE EXOTHERMIC WELD WHERE SPECIFIED HEREIN.
- TOP OF GROUND RODS SHALL BE TEN (10) INCHES BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
- THE RESISTANCE TO GROUND OF THE VAULT GROUNDING SYSTEM WITH THE COMMERCIAL POWER LINE NEUTRAL DISCONNECTED SHALL NOT EXCEED 10 OHMS.

BY	DATE	REVISION

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Missouri State Development Agency
A.I.P. PROJ.: 3-17-0039-016

L PROJ.: CPS-3480

HEI Project No.	845-05SSND_0800	FILE	R-541ELE.DWG	06/16/05
Scale	NOT TO SCALE	DATE	06/16/05	C.A.H.
SCALE				B.A.K.
DATE	06/16/05			C.A.H.
LAYOUT				
DRAWN				
REVIEWED				

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TAXI GUIDANCE SIGN IMPROVEMENTS	ELECTRICAL NOTES
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	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, $\frac{1}{2}$ = 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

	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
	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
	S1 CUTOUT HANDLE REMOVED
	S1 CUTOUT HANDLE INSERTED
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH

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
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)
LP	LIGHTING PANEL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCUIT MIL
MDP	MAIN DISTRIBUTION PANEL
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRIC
OL	OVERLOAD
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
V	VOLTS
W/	WITH
W/O	WITHOUT
WP	WEATHER PROOF
XFER	TRANSFER
XFMR	TRANSFORMER

CCR	CONSTANT CURRENT REGULATOR
MRL	MEDIUM INTENSITY RUNWAY LIGHT
MTL	MEDIUM INTENSITY TAXIWAY LIGHT
NDB	NON-DIRECTIONAL BEACON
PAPI	PRECISION APPROACH PATH INDICATOR
PLASI	PULSE LIGHT APPROACH SLOPE INDICATOR
REL	RUNWAY END IDENTIFIER LIGHT
VASI	VISUAL APPROACH SLOPE INDICATOR
WC	WIND CONE

	CONDUIT (EXPOSED)
	CONDUIT OR UNIT DUCT (CONCEALED OR BURIED)
	DUCT
	BURIED/UNDERGROUND ELECTRIC
	UNDERGROUND ELECTRIC
	OVERHEAD ELECTRIC
	POLE MOUNTED HID FIXTURE
	DUPLEX CONVENIENCE RECEPTACLE, 120V, SINGLE PHASE, GROUNDING TYPE, 48" A.F.F. EXCEPT AS NOTED
	WALL OR CEILING MT'D. JUNCTION BOX, CONFIGURATION VARIES WITH USE
	SINGLE THROW DISCONNECT SWITCH
	SINGLE THROW, FUSIBLE DISCONNECT SWITCH
	ENCLOSED CIRCUIT BREAKER
	CONTROL PANEL
	MOTOR, ESTIMATED H.P. AS INDICATED.
	MOTOR
	TRANSFORMER
	ELECTRIC UTILITY METER
	ENCLOSURE
	CIRCUIT BREAKER PANEL - SEE SCHEDULES
	GROUND ROD
	LONG SLASHES INDICATE NEUTRAL, SHORT SLASHES INDICATE HOT OR SWITCHED LEG. G = SEPARATE GROUND WIRE.
	HOME RUN TO PANEL, PNL A INDICATES PANEL, 1,3,5 INDICATES CIRCUIT NUMBERS
	SINGLE POLE SWITCH
	FRACTIONAL HP STARTER
	CONTACTOR
	SURFACE MOUNTED OR CHAIN HUNG FLUORESCENT FIXTURE
	WALL OR CEILING MT'D. INCANDESCENT OR HID FIXTURE.

NOTES:

1. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 (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 SHALL NOT BE PERMITTED.
2. CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT DIRECTOR.
3. 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. 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

DATE	REVISION	BY

**SAINT LOUIS
DOWNTOWN
AIRPORT**

A Division of Missouri State Development Agency
ALP. PROJ. 3-17-0039-616
I.L. PROJ. CPS-3460

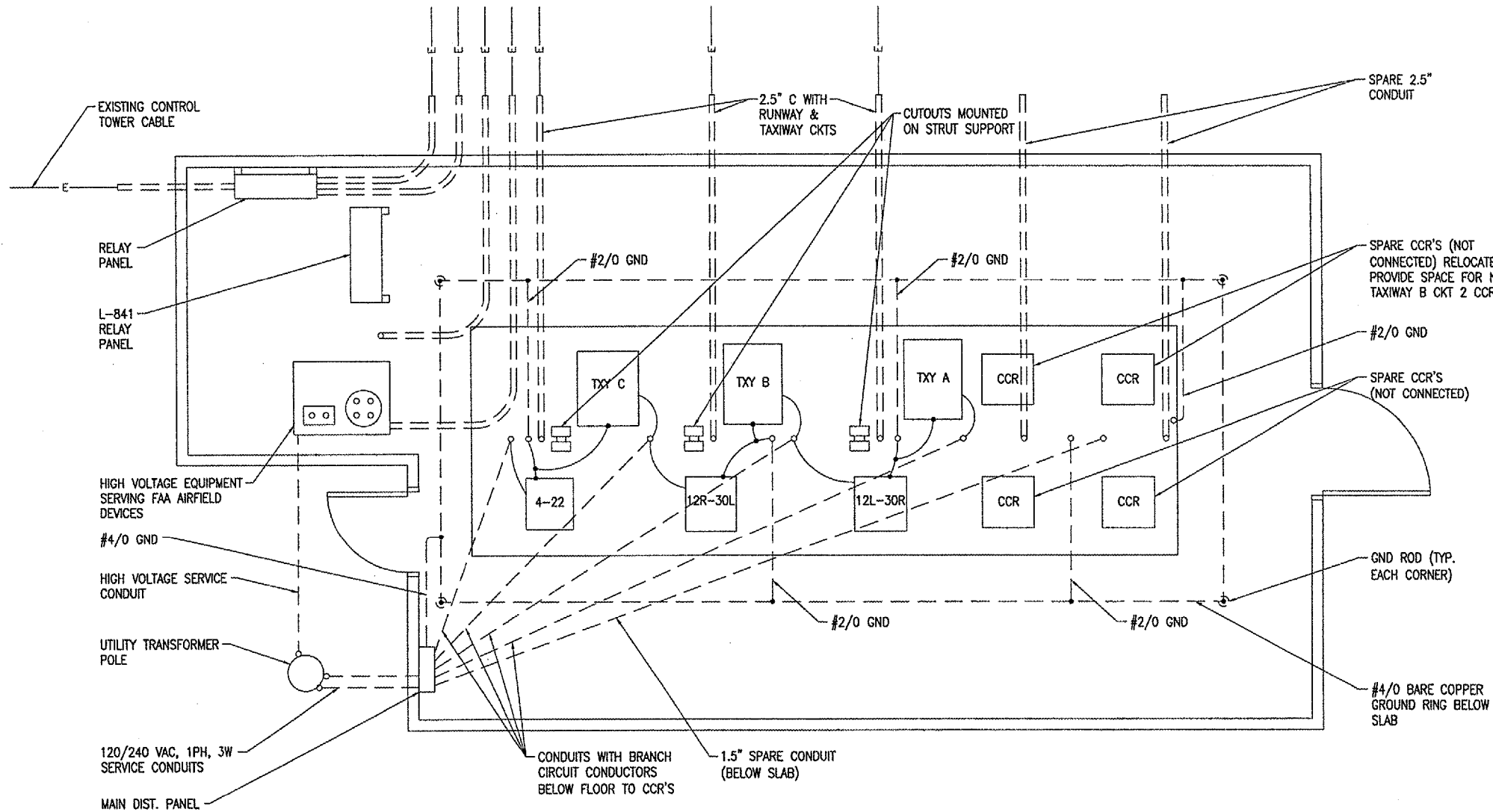
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Scale: NONE
Date: 06/16/05
LAYOUT: KNL 06/17/05
DRAWN: MW 06/23/05
REVIEWED: C.A.H. 06/30/05

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TAXI GUIDANCE SIGN IMPROVEMENTS

ELECTRICAL LEGEND AND ABBREVIATIONS



- NOTES**
- EXISTING CONDITIONS SHOWN ARE BASED ON FIELD SURVEYS AND IN PART INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK AND REPORT ANY VARIATIONS TO THE RESIDENT ENGINEER.
 - ALL VAULT WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR.

EXISTING VAULT FLOOR PLAN
 SCALE 3/8"=1'-0"
 2 0 2 4 FEET

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. 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 ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123. CONTACT AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING AIRPORT CABLES. CONTACT FAA FOR ASSISTANCE IN LOCATING FAA CABLES

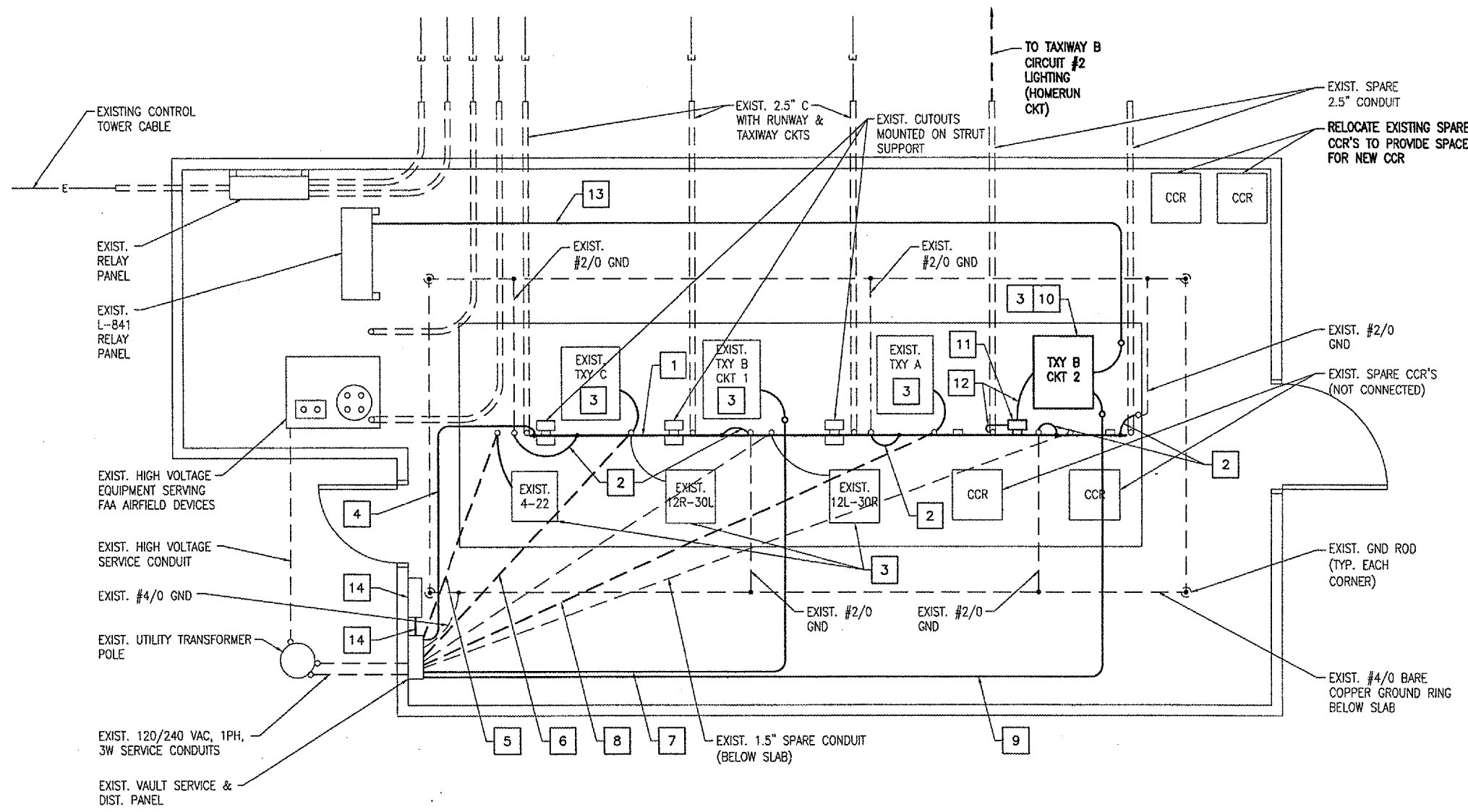
DATE	REVISION	BY

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 IL PROJ: CFS-3480

I&E Project No. 845-055.GND_0800 Name E-101.DWG Scale AS SHOWN Date 06/16/05	KNL 06/17/05 MV 06/17/05 C.A.H. 06/30/05
LAYOUT	
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TAXI GUIDANCE SIGN IMPROVEMENTS
 EXISTING VAULT FLOOR PLAN



PROPOSED VAULT FLOOR PLAN
 SCALE 3/8"=1'-0"
 2 0 2 4 FEET

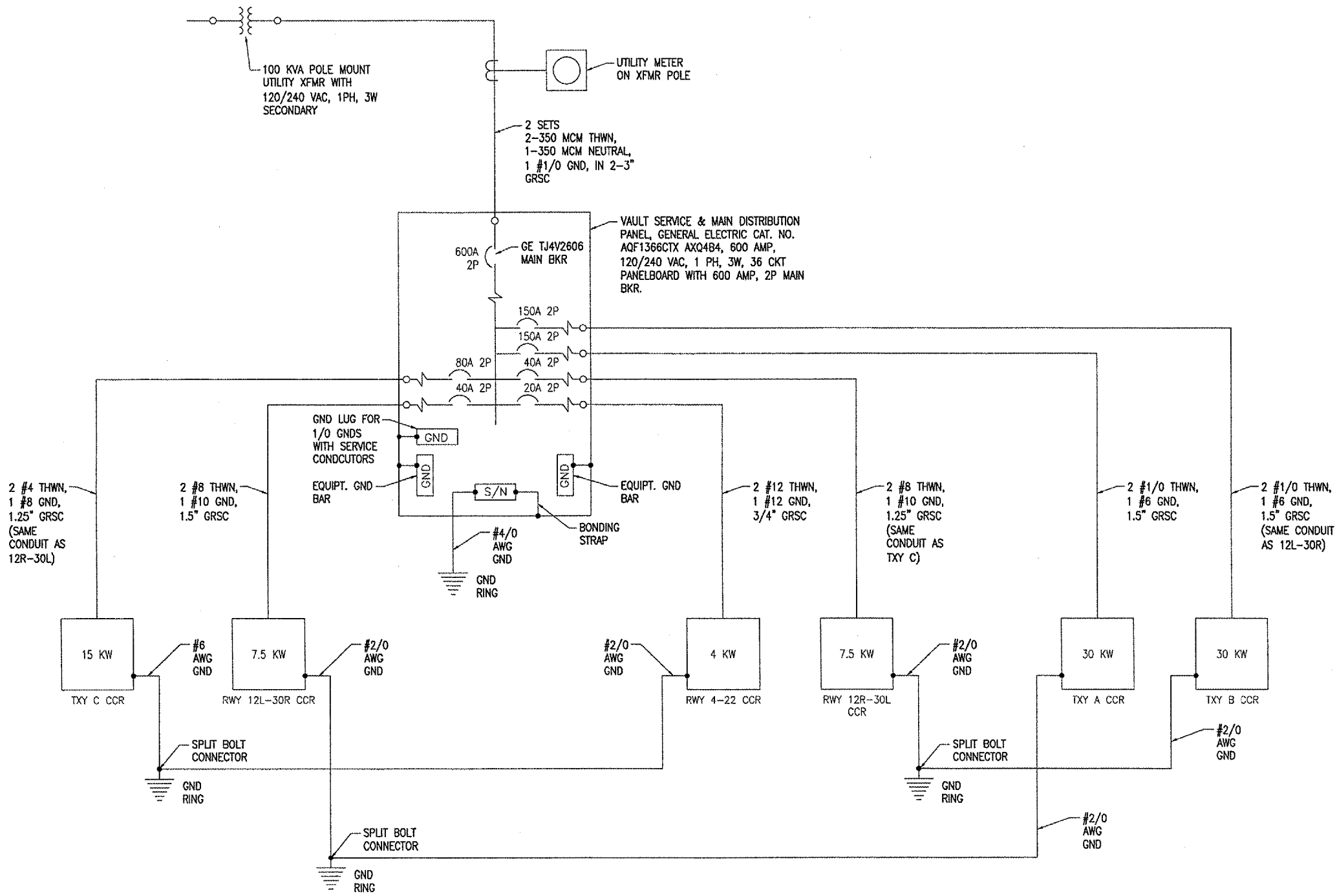
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CALL J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123. CONTACT AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING AIRPORT CABLES. CONTACT FAA FOR ASSISTANCE IN LOCATING FAA CABLES

- NOTES**
- ALL VAULT WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR.
 - SEE "VAULT GROUND RISER AND GROUNDING DETAILS" SHEET FOR ADDITIONAL INFORMATION ON THE VAULT GROUND BAR.
 - SEE "PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR AIRPORT VAULT" SHEET FOR REQUIREMENTS ON BRANCH CIRCUIT CONDUCTOR & CONDUIT SIZES AND TYPES.
 - 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 EQUIP. MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE.
 - GROUNDING ELECTRODE CONDUCTORS, BONDING JUMPERS, & INDIVIDUAL GROUND WIRES SHALL NOT BE INSTALLED IN METAL CONDUIT.
 - ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SACHEM INC. NO-OX-ID A-SPECIAL, OR EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTION TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.
 - INSULATED GROUND WIRES SHALL HAVE GREEN COLORED INSULATION.

- KEYED NOTES**
- VAULT GROUND BAR; 1/4" THICK BY 2" WIDE BY 24' LONG COPPER BUS BAR WITH STANDOFF INSULATORS & STRUT SUPPORT. MOUNT APPROX. 12" ABOVE FLOOR. SEE NOTE 2.
 - CONNECT EXISTING #2/0 GROUNDING ELECTRODE CONDUCTORS FROM GROUND RING TO VAULT GROUND BAR.
 - BOND EACH CCR FRAME TO VAULT GROUND BAR WITH #6 AWG (MIN.) STRANDED COPPER CONDUCTOR.
 - #4/0 AWG STRANDED COPPER CONDUCTOR IN 1" SCHED 40 PVC FROM SERVICE & DISTRIBUTION PANELBOARD TO VAULT GROUND BAR.
 - NEW BRANCH CIRCUIT CONDUCTORS TO RWY 4-22 CCR IN EXISTING CONDUIT. SEE NOTE 3.
 - NEW BRANCH CIRCUIT CONDUCTORS TO TAXIWAY C CCR. EXISTING BRANCH CIRCUIT CONDUCTORS TO RWY 12R-30L CCR TO REMAIN. REPULL AS NECESSARY. SEE NOTE 3.
 - NEW BRANCH CIRCUIT CONDUCTORS & CONDUIT TO TAXIWAY B CKT #1 CCR. SEE NOTE 3.
 - NEW BRANCH CIRCUIT CONDUCTORS TO TAXIWAY A CCR IN EXISTING CONDUIT. SEE NOTE 3.
 - NEW BRANCH CIRCUIT CONDUCTORS & CONDUIT TO TAXIWAY B CKT #2 CCR. EXISTING SPARE 1.5" GRSC BELOW FLOOR SLAB MAY BE USED IF IT IS IN GOOD CONDITION. SEE NOTE 3.
 - NEW TAXIWAY B CKT #2 CCR.
 - NEW SERIES PLUG CUTOUT WITH ENCLOSURE. BOND ENCL. TO VAULT GND BUS WITH #6 AWG COPPER GND.
 - 2 #8, FAA L-828 TYPE C, 5000V CABLES IN CONDUIT FROM CCR TO CUTOUT & ON TO TAXIWAY B CIRCUIT #2 SERIES LIGHTING CIRCUIT. EXISTING 2.5" CONDUIT TO BE USED TO EXIT THE VAULT.
 - CONTROL CIRCUIT WIRING IN 3/4" GRSC FROM L-841 RELAY PANEL TO TAXIWAY B CIRCUIT #2 CCR. PROVIDE 3/4" LIQ. TIGHT FLEX METAL CONDUIT AT FINAL CONNECTION TO CCR.
 - AC SURGE PROTECTOR/TVSS DEVICE. INSTALL BELOW LIGHT SWITCH & THERMOSTAT IMMEDIATELY ADJACENT TO VAULT SERVICE & DIST PANEL. PROVIDE 1.5" GRSC NIPPLE WITH 2 #6 THWN, 1 #6 NEUTRAL, 1 #6 GND, 1 #8 EQUIPT GND.

BY	
REVISION	
DATE	
<p>SAINT LOUIS DOWNTOWN AIRPORT A Division of St. Louis Development Agency I.P. PROJ.: 3-17-03B-816 L. PROJ.: CPS-3480</p>	
HANSON Hanson Professional Services Inc. 4227 Earth City Expressway, Suite 130 St. Louis, MO 63045-1308 Offices Nationwide	845-053GND_0800 E-102.DWG AS SHOWN 08/16/05 LAYOUT KNL 06/17/05 DRAWN MW 06/17/05 REVIEWED C.A.H. 06/30/05
TAXI GUIDANCE SIGN IMPROVEMENTS	PROPOSED VAULT FLOOR PLAN
<p>23</p> 23 of 28 sheets	



NOTES

1. ALL VAULT WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR & THE RESIDENT ENGINEER.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
3. CCR DENOTES CONSTANT CURRENT REGULATOR.

REVISION	DATE	BY

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Missouri State Development Agency

IL PROJ.: GPS-3480
ALP PROJ.: 3-17-0039-016

845-055GND 0800	06/17/05
E-601.DWG	06/20/05
AS SHOWN	06/30/05
06/16/05	
LAYOUT	KNL
DRAWN	MV
REVIEWED	C.A.H.

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TAXI GUIDANCE SIGN IMPROVEMENTS
EXISTING ELECTRICAL ONE LINE DIAGRAM FOR AIRPORT VAULT

EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR AIRPORT VAULT

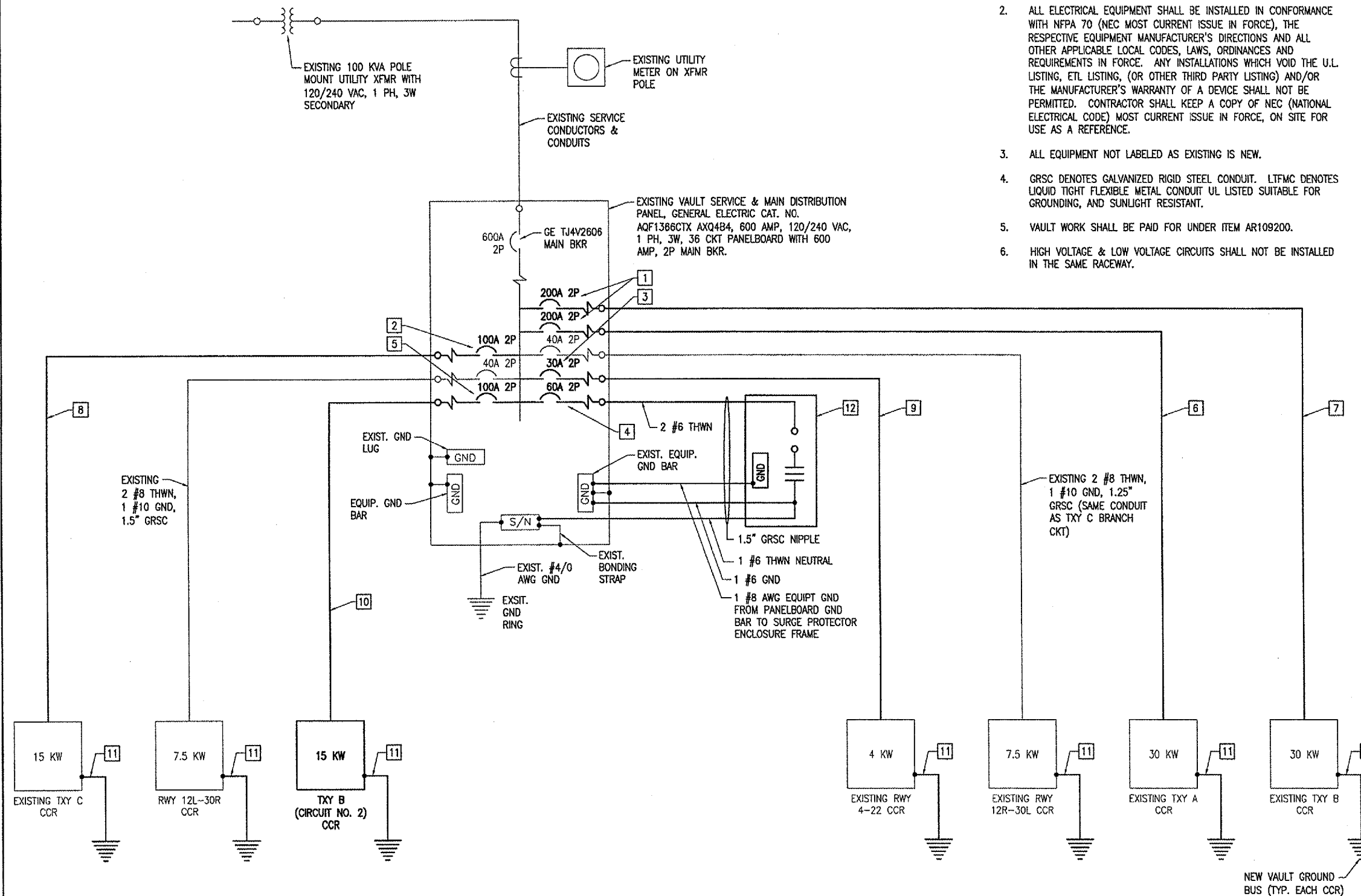
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NOTES

1. ALL VAULT WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT AUTHORITY, AND THE RESIDENT ENGINEER.
2. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 (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 SHALL NOT BE PERMITTED. CONTRACTOR SHALL KEEP A COPY OF NEC (NATIONAL ELECTRICAL CODE) MOST CURRENT ISSUE IN FORCE, ON SITE FOR USE AS A REFERENCE.
3. ALL EQUIPMENT NOT LABELED AS EXISTING IS NEW.
4. GRSC DENOTES GALVANIZED RIGID STEEL CONDUIT. LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED SUITABLE FOR GROUNDING, AND SUNLIGHT RESISTANT.
5. VAULT WORK SHALL BE PAID FOR UNDER ITEM AR109200.
6. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY.

KEYED NOTES

- 1 REPLACE EXISTING 150 AMP, 2P BREAKER FOR RESPECTIVE 30 KW CCR WITH A 200 AMP, 2 POLE, BOLT-ON BREAKER WITH 22,000 AIC AT 240VAC, GENERAL ELECTRIC CAT. NO. THQB2200WL. CONTRACTOR SHALL CONFIRM PROPER CAT. NO. WITH MFR. REP.
- 2 REPLACE EXISTING 80 AMP, 2P BREAKER FOR TAXIWAY C CCR WITH A 100 AMP, 2 POLE BOLT-ON BREAKER WITH 22,000 AIC AT 240VAC, GENERAL ELECTRIC CAT. NO. THHB22100.
- 3 REPLACE EXISTING 20 AMP, 2P BREAKER FOR RUNWAY 4-22 CCR WITH A 30 AMP, 2 POLE BOLT-ON BREAKER WITH 22,000 AIC AT 240VAC, GENERAL ELECTRIC CAT. NO. THHB22030.
- 4 FURNISH & INSTALL A 60 AMP, 2 POLE BOLT-ON BREAKER WITH 22,000 AIC AT 240VAC THAT IS COMPATIBLE WITH THE EXISTING PANELBOARD, GENERAL ELECTRIC CAT. NO. THHB22060, FOR THE AC SURGE PROTECTOR/TVSS DEVICE. INSTALL ON RIGHT HAND SIDE OF PANELBOARD.
- 5 FURNISH & INSTALL A 100 AMP, 2 POLE BOLT-ON BREAKER WITH 22,000 AIC AT 240VAC THAT IS COMPATIBLE WITH THE EXISTING PANELBOARD, GENERAL ELECTRIC CAT. NO. THHB22100, FOR THE NEW CCR.
- 6 REPLACE EXISTING BRANCH CIRCUIT CONDUCTORS TO TAXIWAY A CCR WITH 2 #3/0 THWN, 1 #6 GND. EXISTING CONDUIT TO BE REUSED. PROVIDE 1.5" LTFMC AT FINAL CONNECTION TO CCR.
- 7 FURNISH & INSTALL 2 #3/0 THWN, 1 #6 GND IN 2" GRSC FROM THE VAULT SERVICE & DISTRIBUTION PANEL TO TAXIWAY B CCR. PROVIDE 2" LTFMC AT FINAL CONNECTION TO CCR. EXISTING BRANCH CKT CONDUCTORS TO TAXIWAY B CCR SHALL BE REMOVED. EXISTING CONDUIT SHALL BE DEDICATED ONLY FOR USE WITH RWY 12L-30R CCR BRANCH CIRCUIT.
- 8 REPLACE EXISTING BRANCH CIRCUIT CONDUCTORS TO TAXIWAY C CCR WITH 2 #2 THWN, 1 #6 GND. EXISTING CONDUIT TO BE REUSED. PROVIDE 1" LTFMC AT FINAL CONNECTION TO CCR.
- 9 REPLACE EXISTING BRANCH CIRCUIT CONDUCTORS TO RUNWAY 4-22 CCR WITH 2 #10 THWN, 1 #10 GND. EXISTING CONDUIT TO BE REUSED. PROVIDE 3/4" LTFMC AT FINAL CONNECTION TO CCR.
- 10 FURNISH & INSTALL 2 #2 THWN, 1 #6 GND IN 1.5" GRSC FROM VAULT SERVICE & DISTRIBUTION PANEL TO NEW TAXIWAY B (CIRCUIT NO. 2) CCR. PROVIDE 1.5" LTFMC AT FINAL CONNECTION TO CCR.
- 11 FURNISH & INSTALL A #6 AWG (MIN.) COPPER GROUND CONDUCTOR FROM CCR FRAME TO NEW VAULT GROUND BUS (TYP. EACH CCR)
- 12 AC SURGE PROTECTOR/TVSS, SUITABLE FOR 120/240 VAC, 1 PH, 3W PLUS GROUND SYSTEM WITH SURGE CURRENT RATING OF 240 KA, 8 x 20 MICROSECOND WAVE PER MODE & STATUS INDICATION LIGHTS IN A NEMA 12 ENCLOSURE, LIGHTNING PROTECTION CORP. MODEL LPC 2020-8U-G, OR APPROVED EQUAL. AC POWER SURGE ARRESTER/ TVSS SHALL BE UL 1449, 2ND EDITION LISTED. AC SURGE PROTECTOR/TVSS DEVICE SHALL BE INSTALLED ON THE RIGHT HAND SIDE OF THE VAULT PANELBOARD. MAINTAIN LEADS AS SHORT & AS STRAIGHT AS POSSIBLE FROM THE PANELBOARD TO THE AC SURGE PROTECTOR/TVSS DEVICE. PROVIDE DUCT SEAL AT CONDUIT TERMINATIONS. EXISTING BOOST TRANSFORMERS SHALL BE REMOVED AND/OR RELOCATED TO PROVIDE WALL MOUNTING SPACE FOR THE AC SURGE PROTECTOR/TVSS DEVICE.



PROPOSED ELECTRICAL ONE-LINE DIAGRAM
FOR AIRPORT VAULT

BY	
REVISION	
DATE	

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Bi-State Development Agency
A.I.P. PROJ.: 3-17-0039-R16
L. PROJ.: CPS-3480

HEI Project No. 845-055GND_0800	Drawn	AS SHOWN	Date	06/16/05
Number E-602.DWG	LAYOUT	KNL	06/17/05	
	DRAWN	MV	06/20/05	
	REVIEWED	C.A.H.	06/30/05	

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TAXI GUIDANCE SIGN IMPROVEMENTS
PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR AIRPORT VAULT

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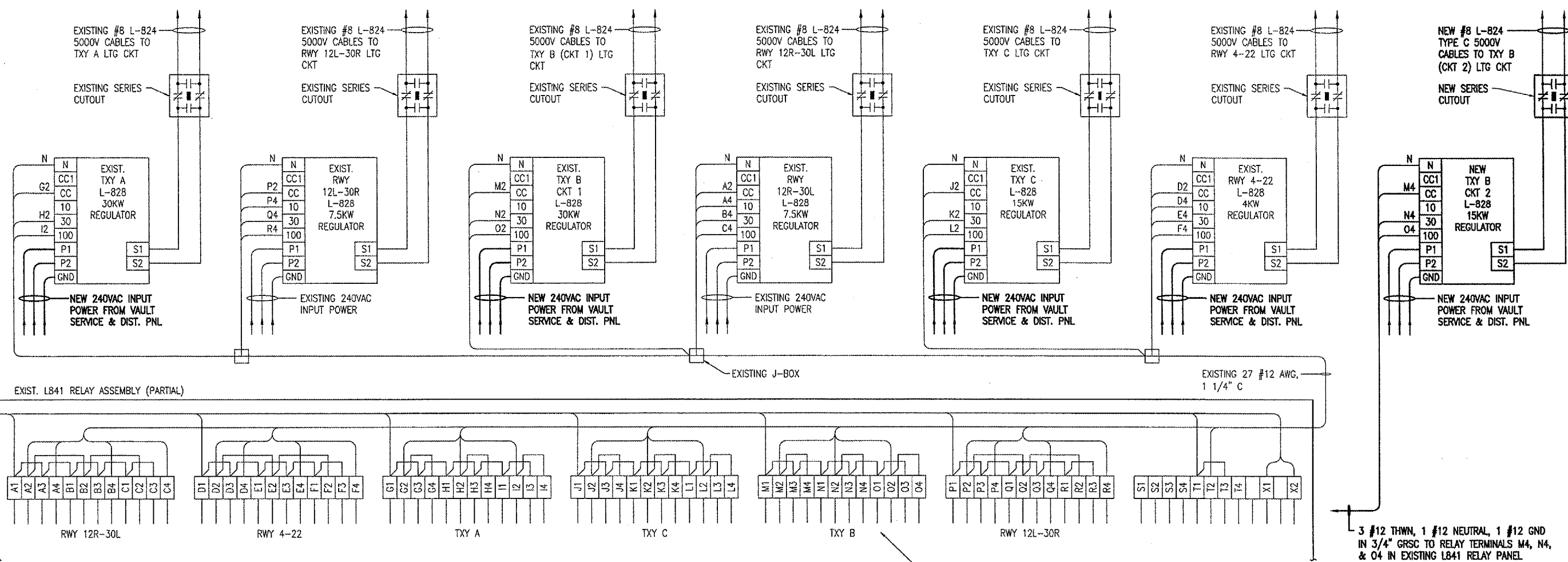
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REVISION	
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SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 ILL. PROJ.: 3-17-0039-B16
 ILL. PROJ.: CFS-3480

FILE PROJECT NO.	845-055GND_0800
FILENAME	E-603.DWG
SCALE	NONE
DATE	06/16/05
LAYOUT	KNL 06/17/05
DRAWN	MV 06/27/05
REVIEWED	C.A.H. 06/30/05

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TAXI GUIDANCE SIGN IMPROVEMENTS
 AIRFIELD LIGHTING WIRING SCHEMATIC



EXIST. L841 RELAY ASSEMBLY (PARTIAL)

EXISTING 120VAC CONTROL POWER TO VAULT SERVICE & DISTRIBUTION PANEL 12 #12 AWG, 1 #12 GND & 2 #12 AWG SPARE IN 3/4" C

EXISTING J-BOX

EXISTING 27 #12 AWG, 1 1/4" C

3 #12 THWN, 1 #12 NEUTRAL, 1 #12 GND IN 3/4" GRSC TO RELAY TERMINALS M4, N4, & O4 IN EXISTING L841 RELAY PANEL

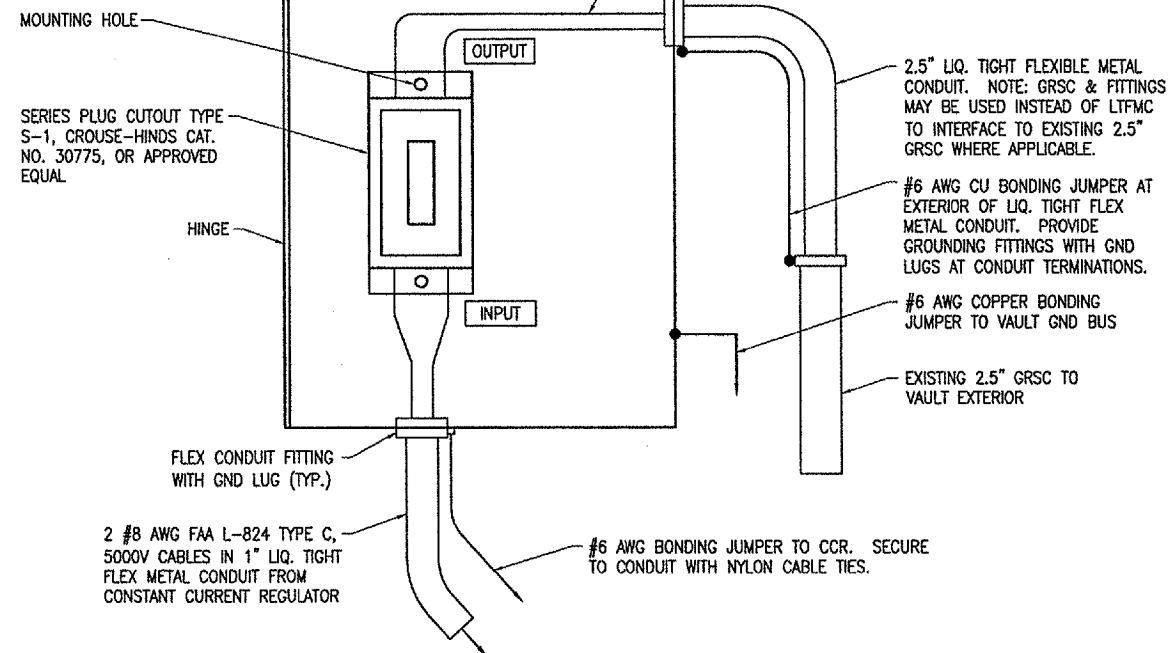
REMOVE JUMPERS BETWEEN M2 & M4, N2 & N4, AND O2 & O4 TO ACCOMMODATE CONTROL WIRING CONNECTIONS TO NEW TAXIWAY B (CKT 2) CCR

- NOTES**
1. THE EXISTING WIRING DIAGRAM IS BASED ON FIELD DATA, REVIEW OF CCR MFR INSTALLATION MANUALS, AND RECORD DRAWINGS PROVIDED BY OTHERS. THE EXISTING CONSTANT CURRENT REGULATORS ARE BELIEVED TO HAVE EXTERNAL 120 VAC CONTROL POWER FROM THE VAULT SERVICE & DIST. PANEL THROUGH THE L-841 RELAY PANEL, HOWEVER SOME RECORD DRAWINGS HAVE INDICATED CONFLICTING INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY THE EXISTING CONDITIONS & CONTROL WIRING ARRANGEMENT. THE NEW TAXIWAY B (CIRCUIT NO. 2) CCR SHALL OPERATE THE SAME AS THE EXISTING TAXIWAY B (CIRCUIT NO. 1) CCR. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY CONTROL WIRING, TERMINALS, CONNECTIONS, RELAYS, CONDUITS, JUNCTION BOXES, ETC. AS REQUIRED TO PUT THE TAXIWAY B LIGHTING SYSTEM INTO PROPER OPERATION.
 2. ALL CONTROL CABLE WILL BE NO. 12 AWG COPPER, 600 VOLT CABLE.
 3. ALL ELECTRICAL EQUIPMENT WILL BE PROPERLY LABELED AND ALL ELECTRICAL CABLES WILL BE TAGGED.
 4. ALL ELECTRICAL CABLES INSIDE THE VAULT WILL BE IN CONDUIT OR DUCT.
 5. SEE "PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR AIRPORT VAULT" FOR INFORMATION ON CCR BRANCH CIRCUIT REQUIREMENTS.
 6. EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH NEW BRANCH/FEEDER CIRCUIT & THE NEW CONTROL CIRCUIT, TO THE RESPECTIVE CONSTANT CURRENT REGULATOR.
 7. ALL WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM AR109200.

AIRFIELD LIGHTING WIRING SCHEMATIC

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14"H x 12"W x 8"D (APPROXIMATE DIMENSIONS) NEMA 1 OR NEMA 12 ENCLOSURE WITH HINGED COVER & BACK PANEL. NOTE FRONT DOOR OF ENCLOSURE NOT SHOWN FOR CLARITY. ADJUST ENCLOSURE DIMENSIONS AS NECESSARY TO ACCOMMODATE THE RESPECTIVE CUTOUT. PROVIDE STRUT SUPPORT WITH FLOOR FLANGE & ANCHORS TO MOUNT TO CONCRETE PAD. MOUNT APPROXIMATELY 4'-6" TO 5'-6" ABOVE FINISHED FLOOR.

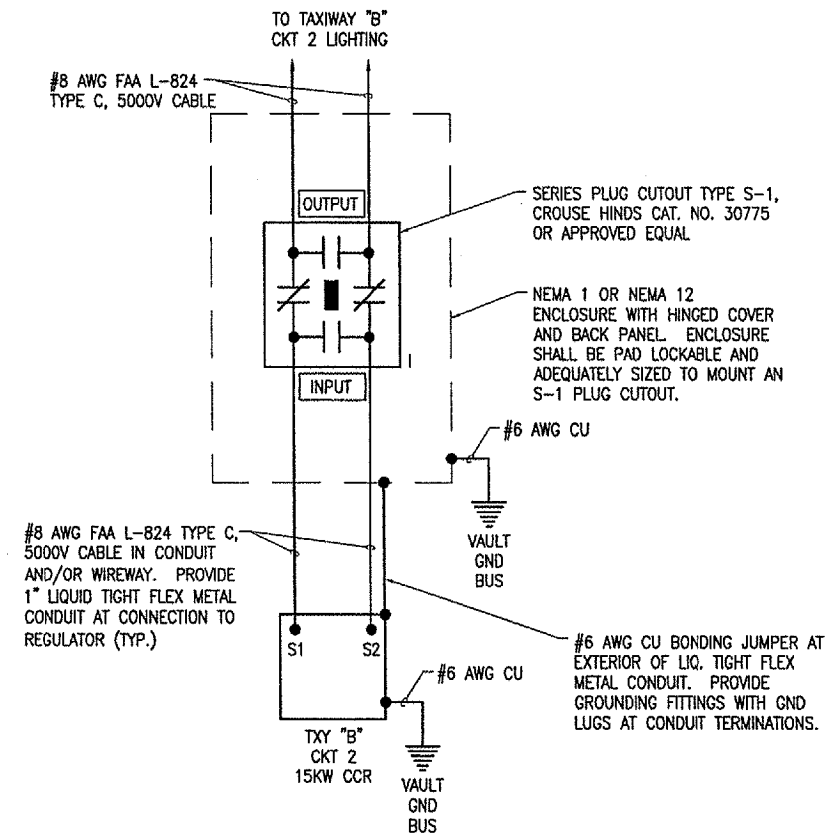


SERIES PLUG CUTOUT MOUNTING DETAIL

NOT TO SCALE

LEGEND PLATE SCHEDULE	
DEVICE	LEGEND PLATE LABEL
VAULT SERVICE & DISTRIBUTION PANEL	VAULT SERVICE & DISTRIBUTION PANEL 120/240VAC, 1PH, 3W
MAIN SERVICE BREAKER IN PANELBOARD	MAIN SERVICE BREAKER
RUNWAY 4-22 CCR	RUNWAY 4-22
RUNWAY 12L-30R CCR	RUNWAY 12L-30R
RUNWAY 12R-30L CCR	RUNWAY 12R-30L
TAXIWAY A CCR	TAXIWAY A
TAXIWAY B CIRCUIT #1 CCR	TAXIWAY B CIRCUIT #1
TAXIWAY B CIRCUIT #2 CCR	TAXIWAY B CIRCUIT #2
TAXIWAY C CCR	TAXIWAY C
CUTOUT ENCLOSURE FOR TAXIWAY B CIRCUIT #2	TAXIWAY B CIRCUIT #2
CUTOUT LINE SIDE CONNECTION	INPUT
CUTOUT LOAD SIDE CONNECTION	OUTPUT
L-841 RELAY PANEL	L-841 RELAY PANEL

NOTES
ALL LEGEND PLATES SHALL BE ENGRAVED PHENOLIC OR PLASTIC MATERIAL, BLACK LETTERS ON A WHITE BACKGROUND.



HIGH VOLTAGE WIRING SCHEMATIC

NOTES

1. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR (EXISTING & NEW) NOTING THE RUNWAY AND/OR TAXIWAY SERVED.
2. THE NEW PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE TAXIWAY CIRCUIT OR REGULATOR.
3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR THE NEW CUTOUT TO IDENTIFY THE RESPECTIVE REGULATOR OUTPUT CONNECTION AND THE RESPECTIVE CIRCUIT LOAD CONNECTION.
4. BOND PLUG CUTOUT CABINET TO THE VAULT GROUND BUS WITH A #6 AWG COPPER BONDING JUMPER.
5. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS.
6. PROVIDE WARNING SIGN ON VAULT DOOR LABELED "DANGER - HIGH VOLTAGE - KEEP OUT" PER THE REQUIREMENTS OF NEC 110.34 (c).
7. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE U.L. LISTED SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT LISTED SUITABLE FOR GROUNDING SHALL REQUIRE AN EXTERNAL OR INTERNAL #6 AWG COPPER BONDING JUMPER WITH APPROPRIATE GROUNDING FITTINGS OR LUGS. 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.

LEGEND

- "I" DENOTES PLUG CUTOUT WITH PLUG INSERTED
- "P" DENOTES PLUG CUTOUT WITH PLUG PULLED
- "CCR" DENOTES CONSTANT CURRENT REGULATOR

BY	DATE	REVISION

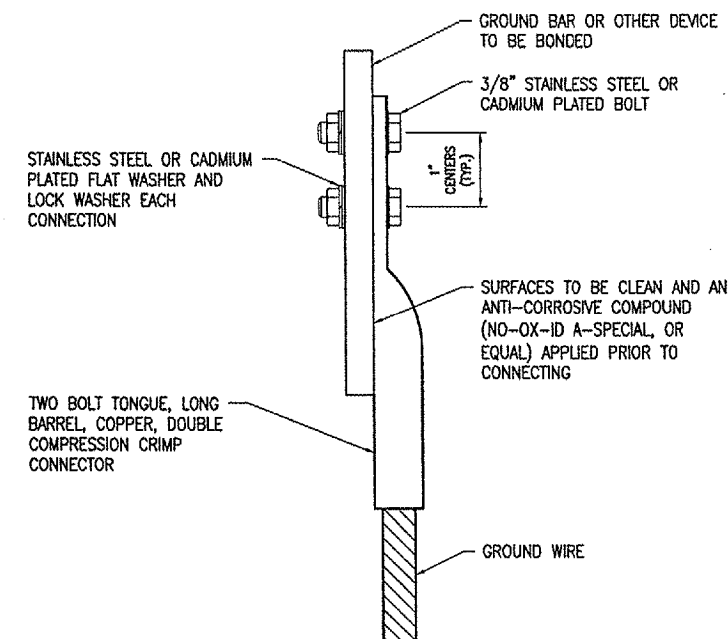
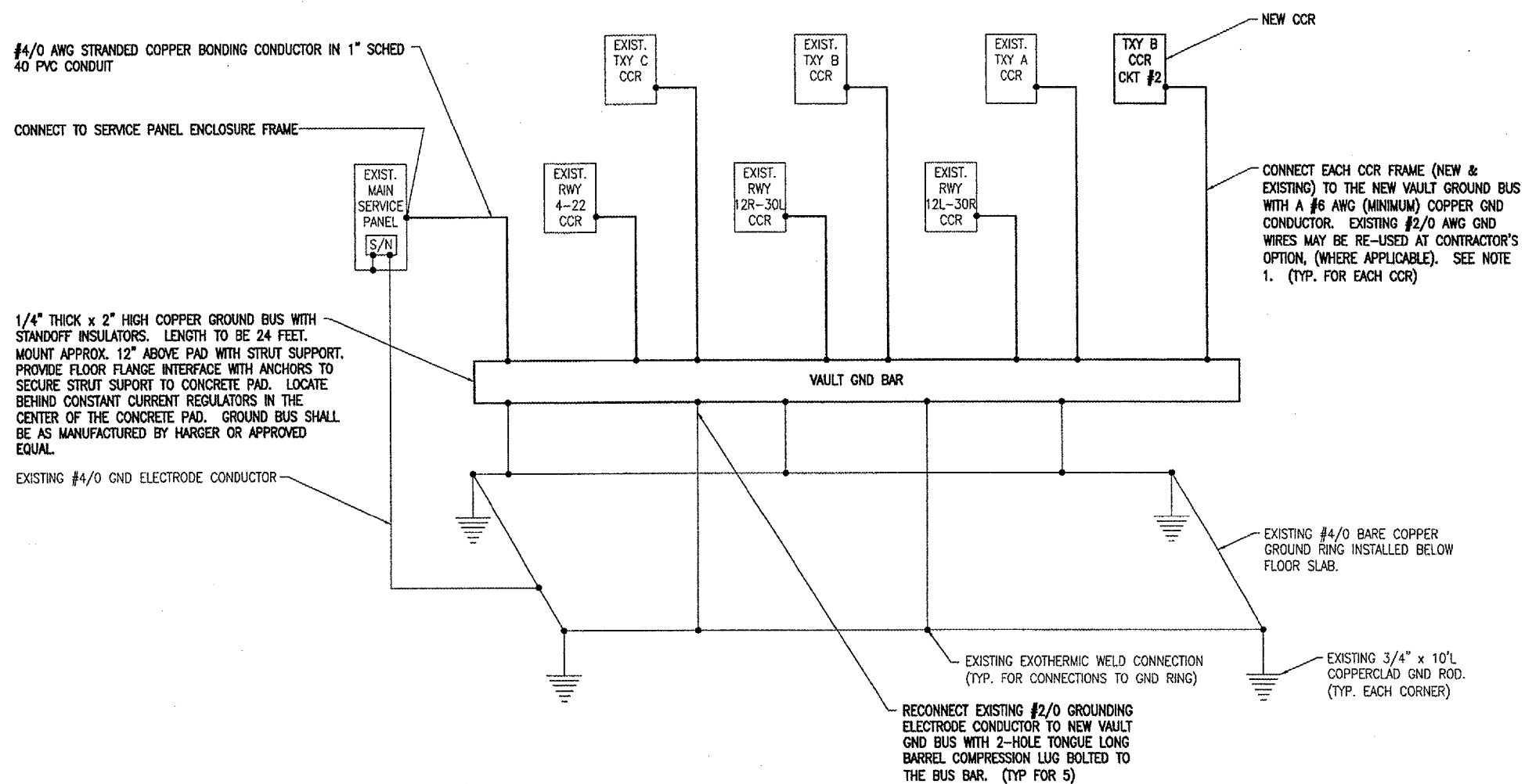
SAINT LOUIS DOWNTOWN AIRPORT
A Division of Bi-State Development Agency
ALP, PROJ. 3-17-0039-B16
CPS-3460

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Scale: NONE	06/30/05
Date: 06/16/05	C.A.H.
LAYOUT: KNIL	REVIEWED: C.A.H.
DRAWN: MV	

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TAXI GUIDANCE SIGN IMPROVEMENTS
HIGH VOLTAGE WIRING SCHEMATIC

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2 HOLE LONG BARREL COMPRESSION LUG TABLE

WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.
#6 AWG STRANDED	YA6C-2TC3B	256-30695-1158
#2 AWG STRANDED	YA2C-2TC3B	256-30695-1160
#1/0 AWG STRANDED	YA25-2TC3B	256-30695-1162
#2/0 AWG STRANDED	YA26-2TC3B	256-30695-1116
#3/0 AWG STRANDED	YA27-2TC3B	54816BE
#4/0 AWG STRANDED	YA28-2TC3B	256-30695-1117

NOTES

1. ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
2. 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.
3. GROUNDING ELECTRODE CONDUCTORS, BONDING JUMPERS, & INDIVIDUAL GROUND WIRES SHALL NOT BE INSTALLED IN METAL CONDUIT.
4. ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID A-SPECIAL, OR BURNDY PENETROX E, OR APPROVED 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

VAULT GROUND RISER

NOTES

1. CONNECTIONS TO GROUND BUS BARS SHALL BE WITH 2-HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
2. INSULATED GROUND WIRES SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND KCMIL.
3. CONSTANT CURRENT REGULATORS SHALL BE SHUT OFF PRIOR TO DISCONNECTING EXISTING FRAME GROUNDS AND SHALL REMAIN OFF UNTIL GROUNDING UPGRADES AND NEW GROUND CONNECTIONS ARE COMPLETED.
4. ALL WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM AR109200 "INSTALL ELECTRICAL EQUIPMENT" PER LUMP SUM.

DATE	REVISION	BY

SAINT LOUIS DOWNTOWN AIRPORT
A Division of Bi-State Development Agency
ALP. PROJ.: 3-17-0039-B16

845-055GND_0800
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06/16/05

LAYOUT	KNL	06/17/05
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TAXI GUIDANCE SIGN IMPROVEMENTS
VAULT GROUND RISER AND GROUNDING DETAILS