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IDA LETTING DATE: JANUARY 19, 2007

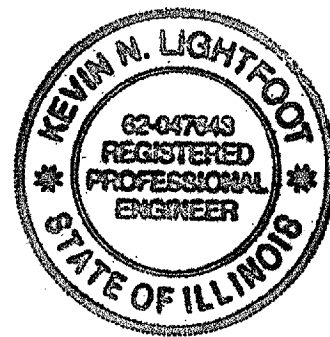
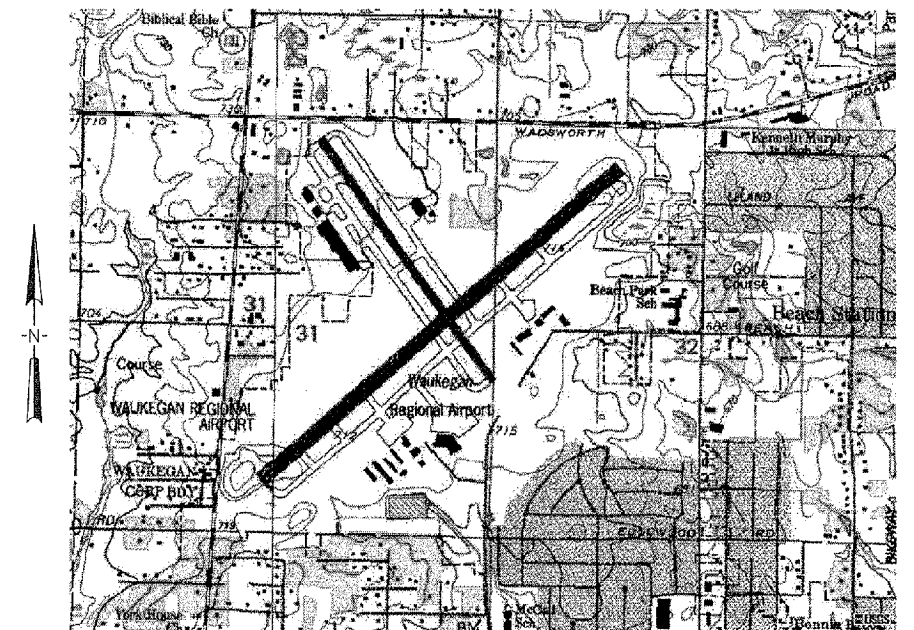
CONSTRUCTION PLANS

AIRFIELD SIGNAGE IMPROVEMENTS

**WAUKEGAN PORT DISTRICT
WAUKEGAN REGIONAL AIRPORT (UGN)
WAUKEGAN, LAKE COUNTY, ILLINOIS**

**AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650**

VICINITY MAP



EXPIRES
11/30/2007

SHEET NO. 1 OF 41


NOTICE TO CONTRACTORS AND BIDDERS

THESE CONSTRUCTION PLANS RELY UPON THE SPECIAL PROVISIONS AND THE SPECIFICATIONS TO PROVIDE FOR A COMPLETE DESCRIPTION OF THE WORK AND CONSTRUCTION REQUIREMENTS. THE PLANS SHALL ONLY BE USED IN COMBINATION WITH ALL CONTRACT DOCUMENTS.

No.	Issue/Description	Sheets Changed	Date	By

Seal Date of Plans
Kevin N. Lightfoot
November 10, 2006
Kevin N. Lightfoot, P.E.

HANSON
HANSON PROFESSIONAL SERVICES INC.
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**WAUKEGAN REGIONAL AIRPORT
WAUKEGAN PORT DISTRICT**
3580 North McAree Road
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AIRFIELD SIGNAGE IMPROVEMENTS
 AIP PROJECT NO. 3-17-0105-B35
 IDA PROJECT NO. UGN-3650

SUMMARY OF QUANTITIES

Number	Description	Item	Unit	Quantity	
				Bid	Paid
AR108108	1/C #8 5KV UG Cable		Linear Feet	4,200.00	
AR108158	1/C #8 5KV UG Cable in UD		Linear Feet	25,900.00	
AR109200	Install Electrical Equipment		Lump Sum	1.00	
AR110014	4" Directional Bore		Linear Feet	295.00	
AR110610	Electrical Handhole		Each	3.00	
AR125442	Taxiway Guidance Sign, 2 Characters		Each	9.00	
AR125443	Taxiway Guidance Sign, 3 Characters		Each	22.00	
AR125444	Taxiway Guidance Sign, 4 Characters		Each	5.00	
AR125445	Taxiway Guidance Sign, 5 Characters		Each	6.00	
AR125446	Taxiway Guidance Sign, 6 Characters		Each	8.00	
AR125447	Taxiway Guidance Sign, 7 Characters		Each	7.00	
AR125451	Taxiway Guidance Sign, 11 Characters		Each	1.00	
AR125904	Remove Taxi Guidance Sign		Each	66.00	
AR150510	Engineer's Field Office		Lump Sum	1.00	
AR620520	Pavement Marking - Waterborne		Square Feet	4,630.00	
AR620525	Pavement Marking - Black Border		Square Feet	7,290.00	
AR620900	Pavement Marking Removal		Square Feet	8,520.00	
AR800906	15 KW Regulator, 1 Step		Each	1.00	
AR800932	Runway Closure Marker - Set		Each	2.00	
AR800938	Reflective Guidance Sign, 2 Characters		Each	1.00	
AR800939	Reflective Guidance Sign, 3 Characters		Each	6.00	
AR800940	Reflective Guidance Sign, 4 Characters		Each	13.00	
AR800941	Reflective Guidance Sign, 5 Characters		Each	11.00	
AR800942	Reflective Guidance Sign, 11 Characters		Each	1.00	

No.	Drawing Issue Description	Date	By

Date
 NOVEMBER 10, 2006
 Sheet Title

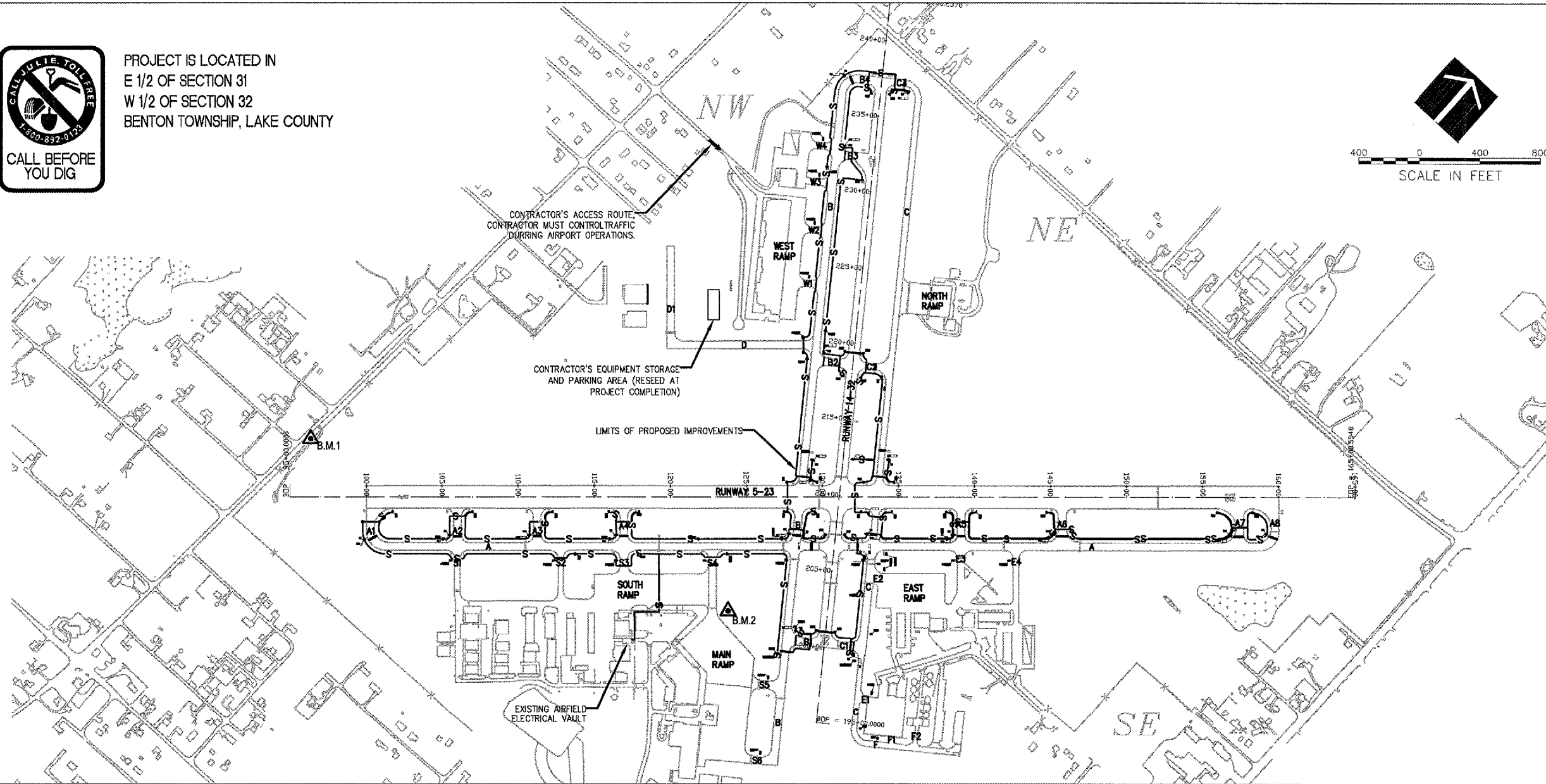
SUMMARY OF QUANTITIES

831-06A8004
 Project Number
 LDH 05/18/06
 Layout By Date
 LDH 05/18/06
 Designed By Date
 RMH 11/10/06
 Reviewed By Date
 LDH
 Drawn By Sheet No.

I:\06\005\00831\06A8004\DRAWINGS\02-QUANTITIES.DWG NOV 13, 2006 2:46PM LDH



PROJECT IS LOCATED IN
E 1/2 OF SECTION 31
W 1/2 OF SECTION 32
BENTON TOWNSHIP, LAKE COUNTY



WA057



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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

GENERAL NOTES

PROJECT DESCRIPTION

THIS PROJECT IS TO PROVIDE GUIDANCE SIGNS AT WAUKEGAN REGIONAL AIRPORT, INCLUDING, AMONG OTHER INCIDENTAL WORK, THE FOLLOWING ITEMS:

- REMOVAL OF EXISTING GUIDANCE SIGNS
- INSTALLATION OF ELECTRICAL CABLING ASSOCIATED WITH PROPOSED GUIDANCE SIGNS
- INSTALLATION OF EDGE GUIDANCE SIGNS
- INSTALLATION OF NEW AND MODIFICATION OF EXISTING ELECTRICAL VAULT EQUIPMENT
- TOPSOILING, SEEDING AND MULCHING, PAID UNDER OTHER WORK ITEMS

PROTECTION OF EXISTING AIRPORT FACILITIES

THE CONTRACTOR IS TO BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UNDERGROUND AND OVERHEAD UTILITIES AND LIGHTING EQUIPMENT; DRIVEWAY AND ROAD PAVEMENT AND SHOULDERS; RUNWAY, TAXIWAY AND APRON PAVEMENTS AND SHOULDERS; RUNWAY, TAXIWAY AND AIRPORT LIGHTING EQUIPMENT; AND SEEDED AND TURFED AREAS THAT ARE UTILIZED IN OR AFFECTED BY THE CONTRACTOR'S ACTIVITIES. ITEMS DAMAGED BY THE CONTRACTOR ARE TO BE REPAIRED AT CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF AIRPORT MANAGER AND THE OWNER'S REPRESENTATIVE.

IN ADDITION WHEN CONDITIONS DICTATE OR AS DETERMINED BY THE AIRPORT MANAGER OR THE OWNER'S REPRESENTATIVE, THE CONTRACTOR SHALL BE REQUIRED TO USE A PICK-UP TYPE SWEEPER IN ALL ACTIVE CONSTRUCTION AIRFIELD PAVEMENT AREAS. THE CONTRACTOR WILL BE REQUIRED TO HAVE A SWEEPER AVAILABLE FOR USE AT ALL TIMES. THE COST OF SWEEPING SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE FAA (SMO) THROUGH THE RESIDENT ENGINEER TO LOCATE ALL FAA CABLES ON THE PROJECT SITE. ALL FAA CABLES SHALL BE PROTECTED AT ALL TIMES.

CONTRACTOR'S ACCESS AND TEMPORARY FACILITIES

CONTRACTOR'S ACCESS TO THE PROJECT WHEN ON AIRPORT PROPERTY IS SHOWN ON THIS SHEET. CONTRACTOR'S ACCESS TO THE AIRPORT ITSELF IS TO BE PROVIDED BY PUBLIC RIGHTS-OF-WAY. THE CONTRACTOR IS TO SECURE ALL NECESSARY PERMITS FOR THE USE OF ANY PUBLIC RIGHTS-OF-WAY AND IS TO MAINTAIN TRAFFIC ON THESE PUBLIC ROADS AT ALL TIMES, WITH THE COSTS OF PERMITTING, CLEANING AND REPAIRING OF PAVEMENT DAMAGED BY CONTRACTOR'S ACTIVITIES INCIDENTAL TO THE CONTRACT. USE OF AND REPAIRS TO ANY PUBLIC FACILITIES ARE TO BE COMPLETED TO THE SATISFACTION OF THE FACILITY'S OWNER.

THE CONTRACTOR IS TO PROVIDE TEMPORARY CONSTRUCTION ROADS WITHIN THE CONSTRUCTION LIMIT LINES AS MAY BE REQUIRED BY HIS ACTIVITIES. HEAVY VEHICLES SHALL NOT CROSS EXISTING PAVEMENT SURFACES EXCEPT AS APPROVED BY THE AIRPORT MANAGER AND THE OWNER'S REPRESENTATIVE. ANY DAMAGE TO PAVEMENTS THAT MAY OCCUR BY THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE AIRPORT MANAGER AND THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR IS TO PROVIDE AN EQUIPMENT, STORAGE AND PARKING AREA AT THE LOCATIONS SHOWN ON THIS SHEET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE ACCESS ROADS AND THE STORAGE AREA DURING CONSTRUCTION AND TO RESTORE THE AREAS AT PROJECT COMPLETION TO CONDITIONS SUITABLE TO THE AIRPORT MANAGER AND THE OWNER'S REPRESENTATIVE. AT THE AIRPORT MANAGER'S DISCRETION, THE TEMPORARY FACILITIES MAY REMAIN, BUT THEY MUST BE LEFT IN CONDITIONS SUITABLE TO THE AIRPORT MANAGER. THE COST OF PROVIDING, MAINTAINING AND RESTORING THE TEMPORARY FACILITIES IS INCIDENTAL TO THE CONTRACT.

RESPONSIBILITY FOR EXISTING UTILITIES

THE LOCATION, SIZE AND/OR TYPE OF MATERIAL OF EXISTING UNDERGROUND OR OVERHEAD UTILITIES AS MAY BE INDICATED ON THESE CONSTRUCTION PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE PROJECT ENGINEER HAVE INDEPENDENTLY VERIFIED THIS INFORMATION AND NEITHER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE ACCURACY, SUFFICIENCY OR COMPLETENESS OF THE INFORMATION AND GIVE NO EXPRESSED OR IMPLIED GUARANTEE THAT ANY CONDITIONS INDICATED ARE REPRESENTATIVE OF ACTUAL CONDITIONS TO BE ENCOUNTERED.

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 ALL UTILITY COMPANIES AND AGENCIES OF HIS CONSTRUCTION PLANS AND SHALL OBTAIN FROM EACH PARTY DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF ALL UTILITIES AND THE WORKING SCHEDULE OF ANY REMOVALS OR ADJUSTMENTS REQUIRED OF THE UTILITY. THE CONTRACTOR SHALL CONTACT JULLIE (PHONE 800-892-0123) TO ASSIST IN THE ABOVE.

THE CONTRACTOR SHALL PROTECT ANY FACILITIES TO THE SATISFACTION OF THE UTILITY OR OWNING-AGENCY WITH THE COST OF ANY REQUIRED PROTECTION TO BE INCIDENTAL TO THE CONTRACT. IN THE EVENT A UTILITY LINE OR SERVICE IS UNEXPECTEDLY ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE AND THE UTILITY COMPANY OR AGENCY OF JURISDICTION. ANY SUCH UTILITIES DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO SERVICE IMMEDIATELY.

AIRPORT SECURITY

THE CONTRACTOR IS TO COORDINATE GATE SECURITY, THROUGH THE RESIDENT ENGINEER, WITH THE AIRPORT MANAGEMENT. AIRPORT SECURITY SHALL BE MAINTAINED AT ALL TIMES.

EXISTING BENCHMARK

BENCHMARK IS AS FOLLOWS:

- ▲ B.M.1 ELEVATION 721.34
STEEL ROD SET IN 6" LOGO CAP
LOCATION: 36.5 FEET EAST OF RT. 131 (GREEN BAY RD.), 230 FEET SOUTH OF SUDDARD ST., 101 FEET NORTH OF CENTER ST.
COORDINATES: N 110107324.042 E 202094502.438
- ▲ B.M.2 ELEVATION 708.29
COORDINATES: N 1101018.012 E 2095499.384

ALIGNMENT DATA TABLE

RUNWAY	DESCRIPTION	STATION	STATE PLANE COORDINATES	
			NORTHING	EASTING
5-23	BEGINNING OF ALIGNMENT 100	95+00	2094131.2602	1107476.7809
	END OF ALIGNMENT 100	165+00.5948	2098802.3721	1112691.0922
14-32	BEGINNING OF ALIGNMENT 200	195+00	2095339.2989	1111040.8061
	END OF ALIGNMENT 200	242+50.2370	2099178.8099	1108243.8602

No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

SITE PLAN AND GENERAL NOTES

831-06A8004
Project Number
LDH 05/18/06
Layout By Date
LDH 05/18/06
Designed By Date
RMH 11/10/06
Reviewed By Date
LDH
Drawn By Sheet No.

CONSTRUCTION AND SAFETY NOTES

WA057



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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

SEQUENCE OF CONSTRUCTION

TO MINIMIZE DISRUPTIONS TO AIRPORT OPERATIONS, CONSTRUCTION OPERATIONS MUST BE CONTROLLED THROUGHOUT THE PROJECT'S DURATION AND WORK MUST BE COMPLETED EXPEDITIOUSLY. THE CONTRACTOR IS TO PREPARE AND FOLLOW A STAGING PLAN THAT COORDINATES HIS WORK WITH THE WORK OF HIS SUBCONTRACTORS AND THE WORK OF OTHER CONTRACTORS ON-FIELD. THIS STAGING PLAN MUST BE SATISFACTORY TO THE PROJECT ENGINEER AND THE AIRPORT DIRECTOR. THE CONTRACTOR SHALL EXPEDITE WORK AT THOSE STAGES WHEN ACTIVE TAXIWAYS, APRONS, ROADWAYS OR PARKING LOTS MUST BE CLOSED TO MINIMIZE THE LENGTH OF TIME THAT AIRPORT OPERATIONS ARE RESTRICTED.

LATHING AND WARNING TAPE

THE PROJECT WILL REQUIRE THE PLACEMENT OF LATHING AND WARNING TAPE TO DELINEATE THE CONSTRUCTION AREA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE, PLACE AND MAINTAIN LATHING AND WARNING TAPE SHOWN ON DETAIL A, THIS SHEET, AND AS DIRECTED BY THE RESIDENT ENGINEER AND THE AIRPORT DIRECTOR. THE CONTRACTOR WILL FURNISH, PLACE, MAINTAIN AND RELOCATE THE LATHING AND WARNING TAPE AS REQUIRED. THE COST OF THESE ITEMS, AND THEIR MAINTENANCE, IS TO BE INCIDENTAL TO THE CONTRACT.

RUNWAY CLOSURE

THE PROJECT WILL REQUIRE THE PLACEMENT OF RUNWAY CLOSURE MARKINGS, SEE STAGING PLAN. TO MINIMIZE DISRUPTION TO AIRCRAFT OPERATIONS ASSOCIATED WITH THE RUNWAY CLOSURE, CONSTRUCTION WORK MUST BE COMPLETED EXPEDITIOUSLY. RUNWAY CLOSINGS SHALL ONLY BE PERMITTED BY PRIOR AUTHORIZATION OF THE RESIDENT ENGINEER AND THE AIRPORT OWNER.

IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE, INSTALL AND MAINTAIN RUNWAY CLOSURE MARKERS AT THE LOCATIONS SHOWN IN THE STAGING PLAN, SEE DETAIL C, THIS SHEET, AND AS DIRECTED BY THE RESIDENT ENGINEER AND AIRPORT OWNER. THE COST OF FURNISHING, PLACING AND RELOCATING THESE ITEMS, AND THEIR MAINTENANCE, IS TO BE INCLUDED IN ITEM AR800932.

THE AIRPORT OWNER WILL DE-ENERGIZE AIRFIELD LIGHTING, NAVAID AND ROTATING BEACON POWER AND CONTROL CIRCUITS WHEN THE RUNWAY IS CLOSED.

TEMPORARY BARRICADES ON AIRFIELD

THE PROJECT WILL REQUIRE THE PLACEMENT OF BARRICADES TO DELINEATE PORTIONS OF THE CONSTRUCTION AREA AND FOR TEMPORARY CLOSURES OF ACTIVE TAXIWAYS AND APRONS. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH, PLACE AND MAINTAIN BARRICADES AS SHOWN IN DETAIL B, THIS SHEET, AND AS DIRECTED BY THE RESIDENT ENGINEER AND AIRPORT DIRECTOR. THE COST OF THESE ITEMS, AND THEIR MAINTENANCE, IS TO BE INCIDENTAL TO THE CONTRACT. ANY WORK THAT REQUIRES PORTIONS OF AN ACTIVE TAXIWAY OR APRON TO BE CLOSED MUST BE COMPLETED EXPEDITIOUSLY TO MINIMIZE DISRUPTION TO AIRCRAFT OPERATIONS.

OPEN TRENCHES, EXCAVATIONS AND STOCKPILED MATERIAL AT THE CONSTRUCTION SITE SHALL BE DELINEATED WITH THE USE OF BARRICADES DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS. NO OPEN TRENCHES SHALL BE ALLOWED WITHIN THE RUNWAY SAFETY AREA (RSA) OR THE TAXIWAY SAFETY AREA (TSA) OVER NIGHT. THE RSA IS DEFINED AS 250 FEET FROM THE RUNWAY CENTERLINE AND 1000 FEET FROM THE END OF THE RUNWAY. THE TSA IS MEASURED AT 65.5 FEET FROM THE TAXIWAY CENTERLINE. THE CONTRACTOR WILL HAVE STEEL PLATES ON-SITE TO ALLOW FOR THE RAPID COVERING OF TRENCHES IN THE EVENT OF UNEXPECTED WORK STOPPAGES FOR WEATHER OR AIRPORT EMERGENCIES.

VEHICULAR TRAFFIC CONTROL

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE AND PLACE ROAD WARNING SIGNS AND BARRICADES ON THE EXISTING ROADWAYS PRIOR TO THE START OF CONSTRUCTION IN THE VICINITY. THE CONTRACTOR SHALL PROVIDE, INSTALL AND RELOCATE THE ITEMS AS REQUIRED. THE COST OF THIS WORK IS TO BE INCIDENTAL TO THE CONTRACT.

CONTRACTOR SHALL PROVIDE, INSTALL AND REMOVE ALL TRAFFIC CONTROL ITEMS WHEN CONSTRUCTION ACTIVITIES ARE WITHIN 15 FEET OF AN ACTIVE ROADWAY EDGE OR AS REQUIRED BY THE SITE PLAN. COST OF THIS WORK IS TO BE INCIDENTAL TO THE CONTRACT.

AIRFIELD OPERATIONAL SAFETY DURING CONSTRUCTION

ALL CONSTRUCTION TRAFFIC AND PERSONNEL SHALL REMAIN WITHIN THE CONSTRUCTION LIMIT LINE SHOWN ON THE STAGING PLAN FOR THE STAGE CURRENTLY UNDER CONSTRUCTION. CONTRACTOR'S PERSONNEL AND EQUIPMENT MUST REMAIN AT LEAST 200 FEET FROM THE CENTERLINE OF ACTIVE RUNWAYS, 1000 FEET FROM THE END OF ACTIVE RUNWAYS, 65.5 FEET FROM THE CENTERLINE OF ACTIVE TAXIWAYS, AND 10 FEET FROM THE EDGE OF ACTIVE APRONS.

WHEN IT IS NECESSARY FOR CONSTRUCTION VEHICLES TO OPERATE ON OR WITHIN THESE LIMITS, THE RUNWAY, TAXIWAYS OR APRON MUST BE CLOSED. THE CONTRACTOR WILL PROVIDE POSITIVE CONTROL OF CONSTRUCTION VEHICLES USING RADIO-EQUIPPED FLAGGERS. ALL CONTRACTOR'S EQUIPMENT USED IN ACTIVE AIRPORT OPERATIONS AREAS SHALL BE EQUIPPED WITH A FAA-STANDARD FLAG, AS REFERENCED IN FAA AC 150/5370-2, CURRENT ISSUE. AIRCRAFT SHALL HAVE THE RIGHT-OF-WAY. CONSTRUCTION VEHICLES SHALL NOT CROSS AN ACTIVE RUNWAY. THE COST OF ALL TRAFFIC CONTROL, BOTH WITHIN AND OUTSIDE OF AIRPORT OPERATIONS AREAS, IS TO BE INCIDENTAL TO THE CONTRACT.

WHEN NOT IN USE AND DURING NONWORKING HOURS, CONTRACTOR'S EQUIPMENT SHALL BE PARKED WITHIN THE CONTRACTOR'S EQUIPMENT STORAGE AND PARKING AREAS. THE EQUIPMENT STORAGE AND PARKING AREAS ARE TO BE LOCATED AS SHOWN ON THE STAGING PLAN. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THE CONSTRUCTION ENTRANCE IN GOOD CONDITION. THE COST OF MAINTAINING THE CONSTRUCTION ENTRANCE IS TO BE INCIDENTAL TO THE CONTRACT.

AT NO TIME SHALL THE CONTRACTOR OPERATE OR PARK EQUIPMENT SO AS TO OBSTRUCT AN ACTIVE RUNWAY APPROACH SURFACE.

BEFORE REOPENING TEMPORARILY CLOSED RUNWAYS, TAXIWAYS OR ROADWAYS, THE CONTRACTOR SHALL INSPECT AND CLEAN, AS NECESSARY, THE PAVEMENT TO ASSURE THAT NO MATERIALS OR OBJECTS THAT MAY DAMAGE AIRCRAFT OR VEHICLES REMAIN. ANY REQUIRED CLEANING SHALL BE TO THE SATISFACTION OF THE RESIDENT ENGINEER AND AIRPORT OWNER AND IS INCIDENTAL TO THE CONTRACT.

ALL CONTRACTOR EQUIPMENT IS LIMITED TO A HEIGHT OF 15 FEET.

NOTIFICATIONS BY CONTRACTOR

THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND AIRPORT OWNER 7 DAYS IN ADVANCE OF THE CONTRACTOR'S CLOSING OF ACTIVE RUNWAYS, TAXIWAYS AND APRONS. THE DATE, TIME AND SCHEDULED DURATION OF THE CLOSING MUST BE APPROVED BY THE RESIDENT ENGINEER AND THE AIRPORT OWNER. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND AIRPORT OWNER 72 HOURS IN ADVANCE OF THE CONTRACTOR'S CLOSING OF OTHER ACTIVE ROADWAYS, AIRFIELD OR ROADWAY LIGHTING CIRCUITS, OR OTHER AIRPORT FACILITIES.

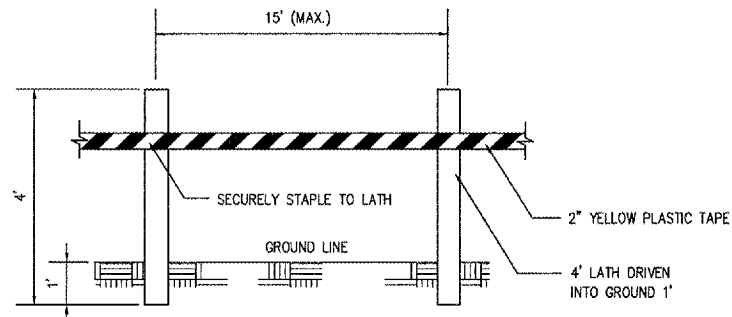
CONTRACTOR'S USE OF SITE

THE CONTRACTOR SHALL NOT OPERATE WITHIN, ENCROACH UPON OR OBSTRUCT AIRPORT OPERATIONAL AREAS, INCLUDING ACTIVE RUNWAY, TAXIWAYS AND APRON SAFETY AREAS, OBJECT AND OBSTACLE FREE ZONES, RUNWAY PROTECTION ZONES AND AIRPORT IMAGINARY SURFACES AS DEFINED IN FEDERAL AVIATION REGULATIONS (FAR) PART 77, "OBJECTS AFFECTING NAVIGABLE AIRSPACE".

THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF THE WORK AREA PRIOR TO BEGINNING WORK AT A NEW LOCATION.

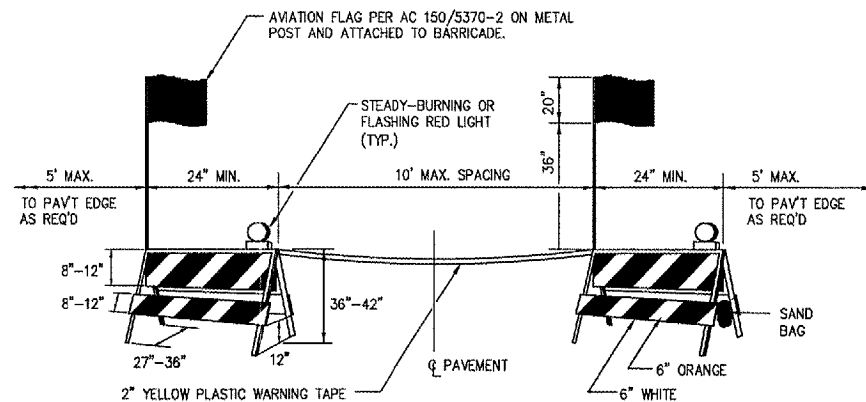
UTILITY OUTAGES AND SHUTDOWNS

THE CONTRACTOR SHALL PROVIDE 72 HOURS PRIOR NOTICE OF ANY OUTAGES OR SHUTDOWNS TO THE OWNER AND THE AGENCY OWNING THE AFFECTED UTILITY. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY CONNECTIONS OR OTHER MEASURES AS MAY BE REQUIRED TO MAINTAIN SERVICE AS MAY BE REQUIRED BY THE OWNING AGENCY AT NO COST TO THE OWNER.



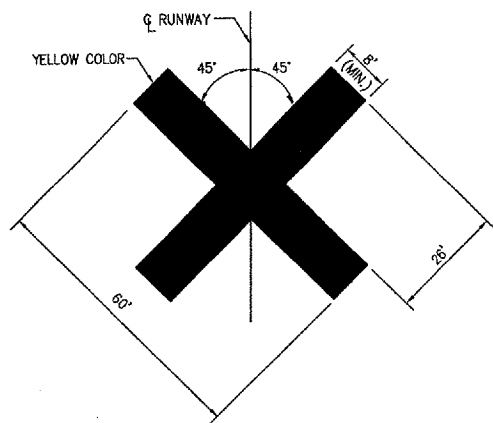
MATERIALS ARE TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION. COST OF MATERIALS, INSTALLATION, RELOCATION AND MAINTENANCE OF LATHING AND WARNING TAPE IS TO BE INCIDENTAL TO THE CONTRACT.

DETAIL A
LATHING AND WARNING TAPE
NTS



BARRICADES ARE TO BE OF IDOT TYPE I. A STEADY-BURNING OR FLASHING RED LIGHT FACING PASSING TRAFFIC IS TO BE MOUNTED ABOVE THE TOP OF EACH BARRICADE FRAME. THE BARRICADE IS TO BE STABILIZED FROM WIND BY SANDBAGS PLACED ON THE FRAME OR OTHER METHODS APPROVED BY THE RESIDENT ENGINEER. NO PART OF THE REFLECTORIZED PORTION OF THE BARRICADE IS TO BE OBSTRUCTED IN ANY MANNER. COST OF FURNISHING, INSTALLING, RELOCATING, MAINTAINING and REMOVING BARRICADES IS TO BE INCIDENTAL TO THE CONTRACT.

DETAIL B
PAVEMENT BARRICADES
NTS



NOTES

- THE MARKERS ARE TO BE OF A PERMANENT TYPE, CONSTRUCTED OF VINYL OR OTHER LIGHTWEIGHT DURABLE MATERIAL AS MANUFACTURED BY NEUBERT AERO CORP ITEM 31900XB OR EQUAL. ONE SET OF TWO MARKERS WITH MATCHING STORAGE BAG SHALL BE FURNISHED.

NEUBERT AERO CORP
14141 46TH STREET N, SUITE 1206
CLEARWATER, FLORIDA 33762
PHONE: 727.538.8744
FAX: 727.538.8765

- THE MARKERS ARE TO BECOME THE PROPERTY OF THE AIRPORT UPON COMPLETION OF THE PROJECT.
- CONTRACTOR SHALL LOCATE THE MARKERS ON TOP OF THE RUNWAY NUMERALS DURING CLOSURE OF THE RUNWAY.
- MARKERS TO BE SECURED BY CONTRACTOR AS RECOMMENDED BY MANUFACTURER.
- COST OF FURNISHING, INSTALLING, RELOCATING AND MAINTAINING MARKERS SHALL BE PAID UNDER ITEM AR800932 (SEE SPECIAL PROVISIONS).

DETAIL C
TEMPORARY RUNWAY CLOSED MARKER
NTS

No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

CONSTRUCTION AND SAFETY NOTES AND DETAILS

Project Number	
LDH	05/18/06
Designed By	
LDH	05/18/06
Reviewed By	
RMH	11/10/06
Drawn By	
LDH	

4

4 | 10/2005 | 10/20/06 | 10/20/06 | DRAWINGS | SHEETS | 04 - SAFETY NOTES | NOV 13, 2006 2:46PM LDH

WA057



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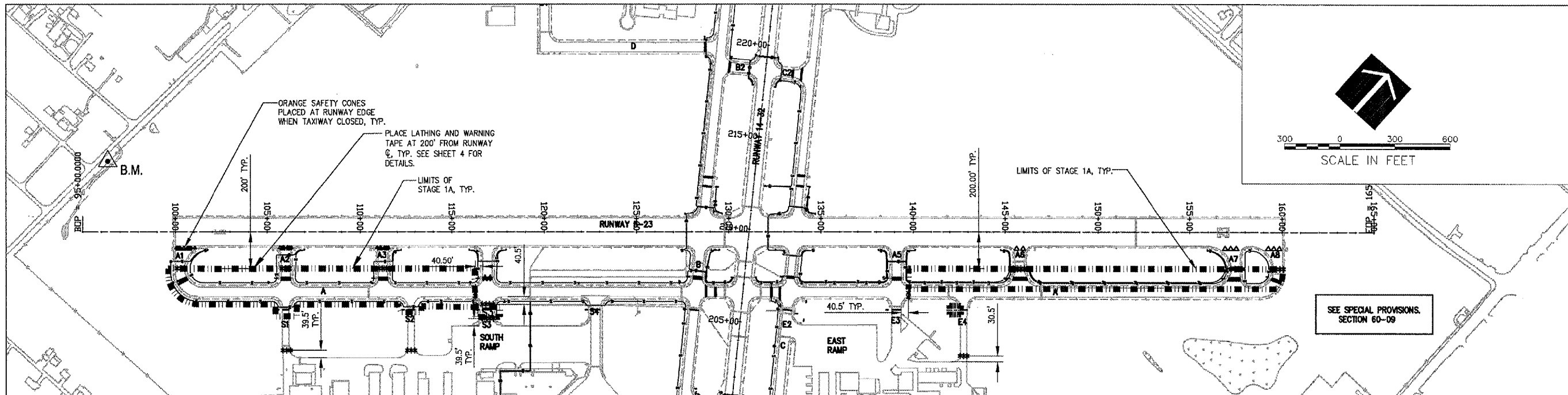


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AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



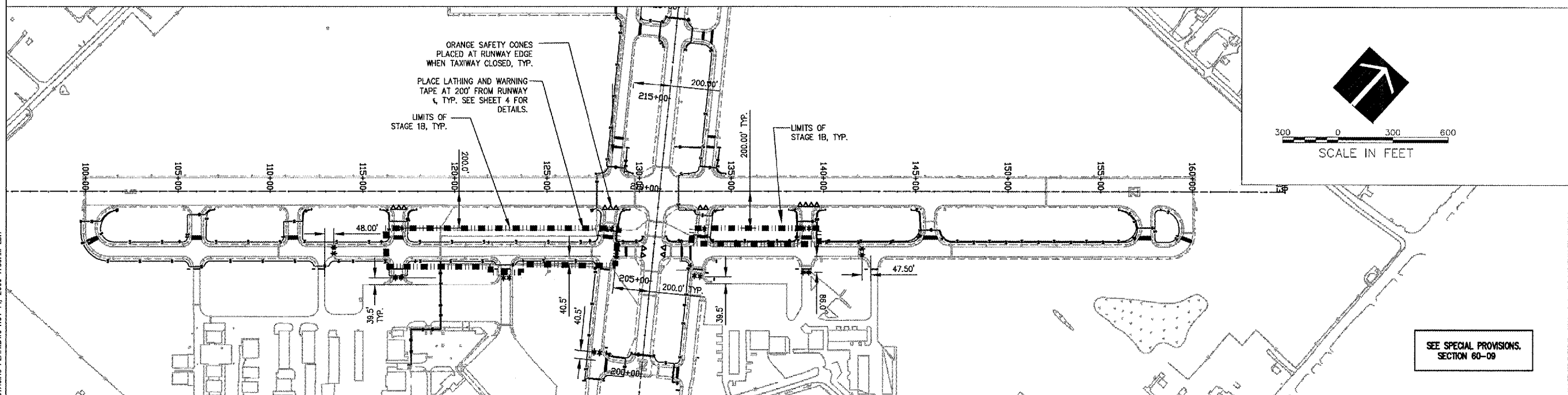
STAGE 1A NOTES

NOTES:

- THE CONTRACTOR HAS 9 DAYS TO SUBSTANTIALLY COMPLETE STAGE 1A.
- THE CONTRACTOR SHALL USE LATHING AND WARNING TAPE TO DELINEATE THE WORK AREA AT 200' FROM RUNWAY CENTERLINE. CONES SHALL BE PLACED AT THE INTERSECTION OF THE RUNWAY AND ANY CLOSED TAXIWAY. SEE CONSTRUCTION DETAILS SHEET FOR LATHING AND WARNING TAPE DETAIL. AT THE END OF THE WORK DAY, THE CONTRACTOR IS REQUIRED TO OPEN ALL TAXIWAYS UP TO AIR TRAFFIC AND REMOVE ALL EQUIPMENT FROM THE WORK AREA. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING THE TAXIWAY SAFETY AREA TO CONDITIONS ACCEPTABLE TO THE CONSTRUCTION MANAGER AT THE END OF EACH DAY. THE CONTRACTOR MAY USE STEEL PLATES AS NECESSARY TO COVER OPEN AREAS WITHIN THE TAXIWAY SAFETY AREA. ALL OTHER OPEN AREAS MUST BE DELINEATED WITH WARNING TAPE AND LATHING.
- ALL CONTRACTOR'S ACTIVITIES SHALL BE LIMITED TO THE AREA WITHIN THE STAGE 1A LIMITS AS SHOWN.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 15 FEET UNLESS PRIOR APPROVAL IS GIVEN BY THE ENGINEER.
- SEE CONSTRUCTION AND SAFETY NOTES, SHEET 4.

STAGE 1A INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:

- PROVIDE ENGINEER'S FIELD OFFICE AND CONTRACTOR'S EQUIPMENT, STORAGE AND PARKING AREA.
- PROVIDE TEMPORARY BARRICADES, LATHING AND WARNING TAPE, AND ORANGE CONES AS INDICATED ON THE PLAN SET.
- INSTALL DUCT, CABLE IN UNIT DUCT, HANDHOLES, SIGN BASES, AND SIGNS AS INDICATED ON THE PLANS WITHIN PHASE 1A LIMITS.
- TOPSOIL AND SEED WITHIN STAGE 1A LIMITS.
- REMOVE LATHING AND WARNING TAPE, BARRICADES AND TEMPORARY EROSION CONTROL MEASURES AS NECESSARY WITHIN STAGE 1 LIMITS.



STAGE 1B NOTES

NOTES:

- THE CONTRACTOR HAS 9 DAYS TO SUBSTANTIALLY COMPLETE STAGE 1B.
- THE CONTRACTOR SHALL USE LATHING AND WARNING TAPE TO DELINEATE THE WORK AREA AT 200' FROM RUNWAY CENTERLINE. CONES SHALL BE PLACED AT THE INTERSECTION OF THE RUNWAY AND ANY CLOSED TAXIWAY. SEE CONSTRUCTION DETAILS SHEET FOR LATHING AND WARNING TAPE DETAIL. AT THE END OF THE WORK DAY, THE CONTRACTOR IS REQUIRED TO OPEN ALL TAXIWAYS UP TO AIR TRAFFIC AND REMOVE ALL EQUIPMENT FROM THE WORK AREA. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING THE TAXIWAY SAFETY AREA TO CONDITIONS ACCEPTABLE TO THE CONSTRUCTION MANAGER AT THE END OF EACH DAY. THE CONTRACTOR MAY USE STEEL PLATES AS NECESSARY TO COVER OPEN AREAS WITHIN THE TAXIWAY SAFETY AREA. ALL OTHER OPEN AREAS MUST BE DELINEATED WITH WARNING TAPE AND LATHING.
- ALL CONTRACTOR'S ACTIVITIES SHALL BE LIMITED TO THE AREA WITHIN THE STAGE 1B LIMITS AS SHOWN.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 15 FEET UNLESS PRIOR APPROVAL IS GIVEN BY THE ENGINEER.
- SEE CONSTRUCTION AND SAFETY NOTES, SHEET 4.

STAGE 1A INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:

- PROVIDE ENGINEER'S FIELD OFFICE AND CONTRACTOR'S EQUIPMENT, STORAGE AND PARKING AREA.
- PROVIDE TEMPORARY BARRICADES, LATHING AND WARNING TAPE, AND ORANGE CONES AS INDICATED ON THE PLAN SET.
- INSTALL DUCT, CABLE IN UNIT DUCT, HANDHOLES, SIGN BASES, AND SIGNS AS INDICATED ON THE PLANS WITHIN PHASE 1B LIMITS.
- TOPSOIL AND SEED WITHIN STAGE 1B LIMITS.
- REMOVE LATHING AND WARNING TAPE, BARRICADES AND TEMPORARY EROSION CONTROL MEASURES AS NECESSARY WITHIN STAGE 1B LIMITS.

No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006

Sheet Title
CONSTRUCTION STAGING PLAN STAGE 1A AND 1B

831-06A8004	
Project Number	
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Layout By	Date
LDH	05/18/06
Designed By	Date
RMH	11/10/06
Reviewed By	Date
LDH	
Drawn By	Sheet No.

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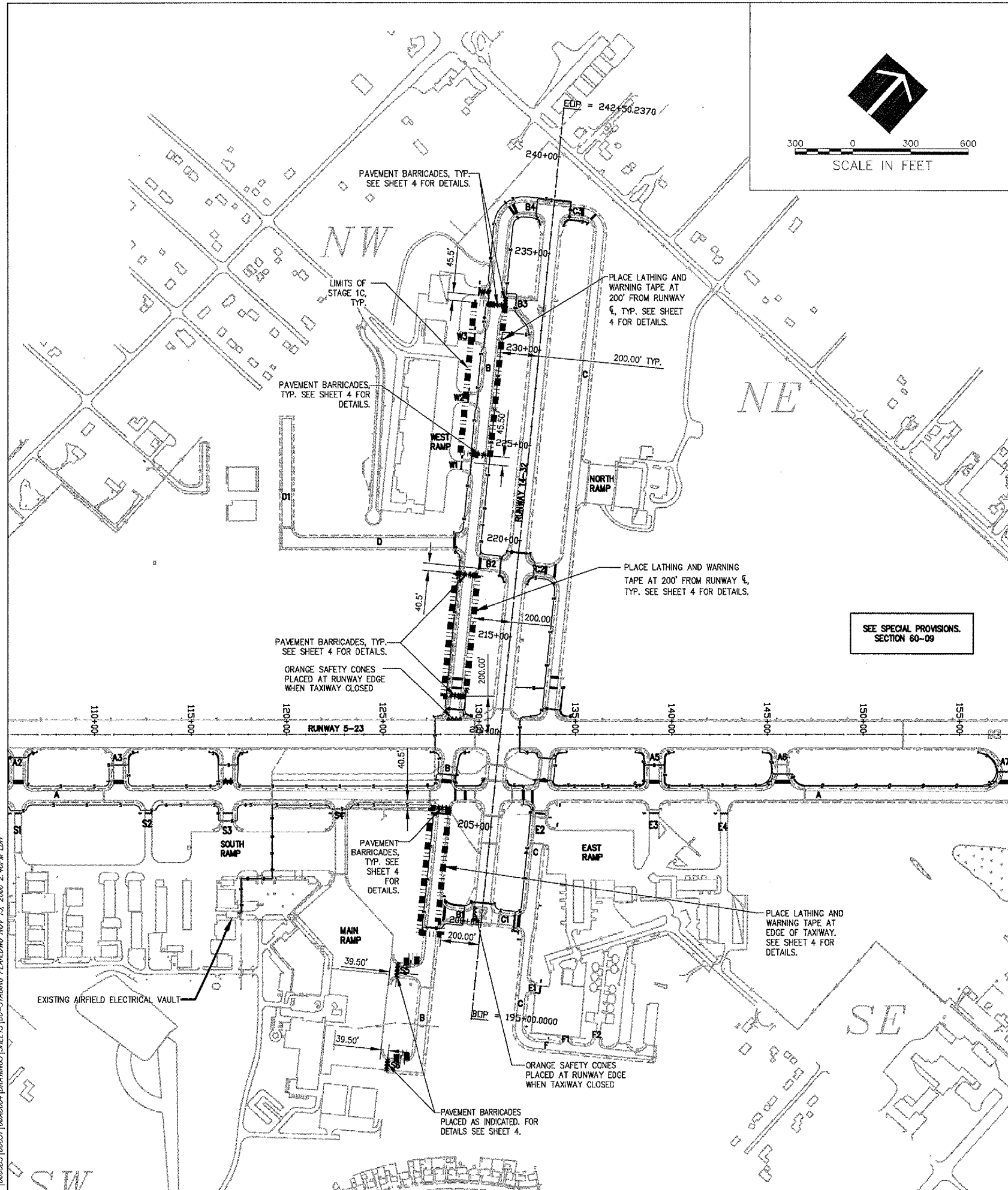


WAUKEGAN REGIONAL AIRPORT
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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



STAGE 1C NOTES

NOTES:

- THE CONTRACTOR HAS 4 DAYS TO SUBSTANTIALLY COMPLETE STAGE 1C.
- STAGE 1A / 1B AND 1C CAN NOT BE DONE CONCURRENTLY. THE CONTRACTOR SHALL WORK ADJACENT TO ONLY ONE RUNWAY AT A TIME.
- THE CONTRACTOR SHALL USE LATHING AND WARNING TAPE TO DELINEATE THE WORK AREA AT 200' FROM RUNWAY CENTERLINE. CONES SHALL BE PLACED AT THE INTERSECTION OF THE RUNWAY AND ANY CLOSED TAXIWAY. SEE CONSTRUCTION DETAILS SHEET FOR LATHING AND WARNING TAPE DETAIL. AT THE END OF THE WORK DAY, THE CONTRACTOR IS REQUIRED TO OPEN ALL TAXIWAYS UP TO AIR TRAFFIC AND REMOVE ALL EQUIPMENT FROM THE WORK AREA. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING THE TAXIWAY SAFETY AREA TO CONDITIONS ACCEPTABLE TO THE CONSTRUCTION MANAGER AT THE END OF EACH DAY. THE CONTRACTOR MAY USE STEEL PLATES AS NECESSARY TO COVER OPEN AREAS WITHIN THE TAXIWAY SAFETY AREA. ALL OTHER OPEN AREAS MUST BE DELINEATED WITH WARNING TAPE AND LATHING.
- PAVEMENT BARRICADES SHALL BE PLACED AT 65.5' FROM THE TAXIWAY CENTERLINE
- ALL CONTRACTOR'S ACTIVITIES SHALL BE LIMITED TO THE AREA WITHIN THE STAGE 1C LIMITS AS SHOWN.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 15 FEET UNLESS PRIOR APPROVAL IS GIVEN BY THE ENGINEER.
- SEE CONSTRUCTION AND SAFETY NOTES, SHEET 4.
- CONSTRUCTION ON STAGES 1A, 1B, AND 1C WILL VARY BASED ON DAILY AIRPORT OPERATIONS.

STAGE 1C INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:

- PROVIDE TEMPORARY BARRICADES, LATHING AND WARNING TAPE, AND ORANGE CONES AS INDICATED ON THE PLAN SET.
- INSTALL CABLE IN UNIT DUCT, HANDHOLES, SIGN BASES, AND SIGNS AS INDICATED ON THE PLANS WITHIN PHASE 1C LIMITS.
- TOPSOIL AND SEED WITHIN STAGE 1C LIMITS.
- REMOVE LATHING AND WARNING TAPE, BARRICADES AND TEMPORARY EROSION CONTROL MEASURES AS NECESSARY WITHIN STAGE 1C LIMITS.

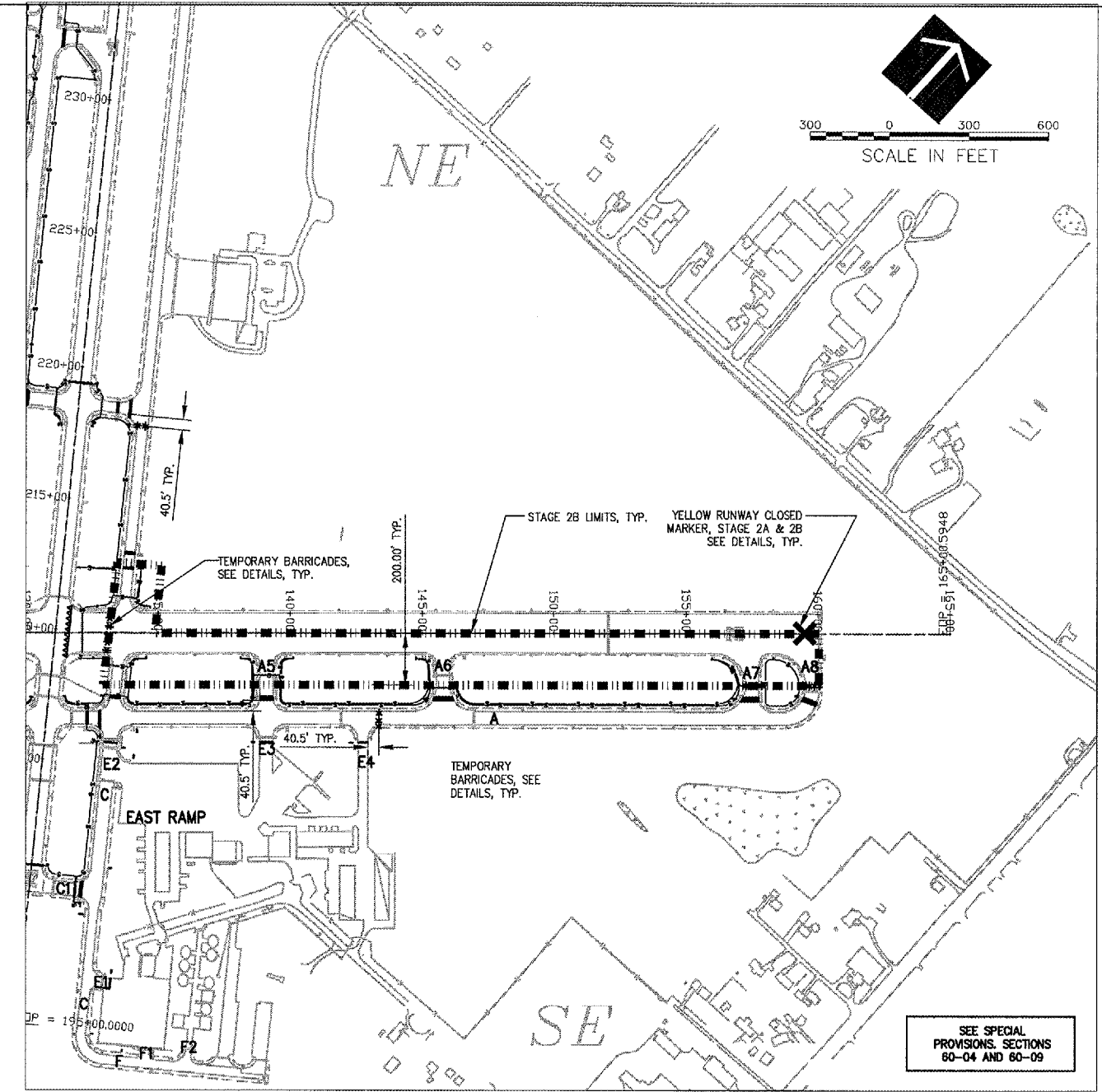
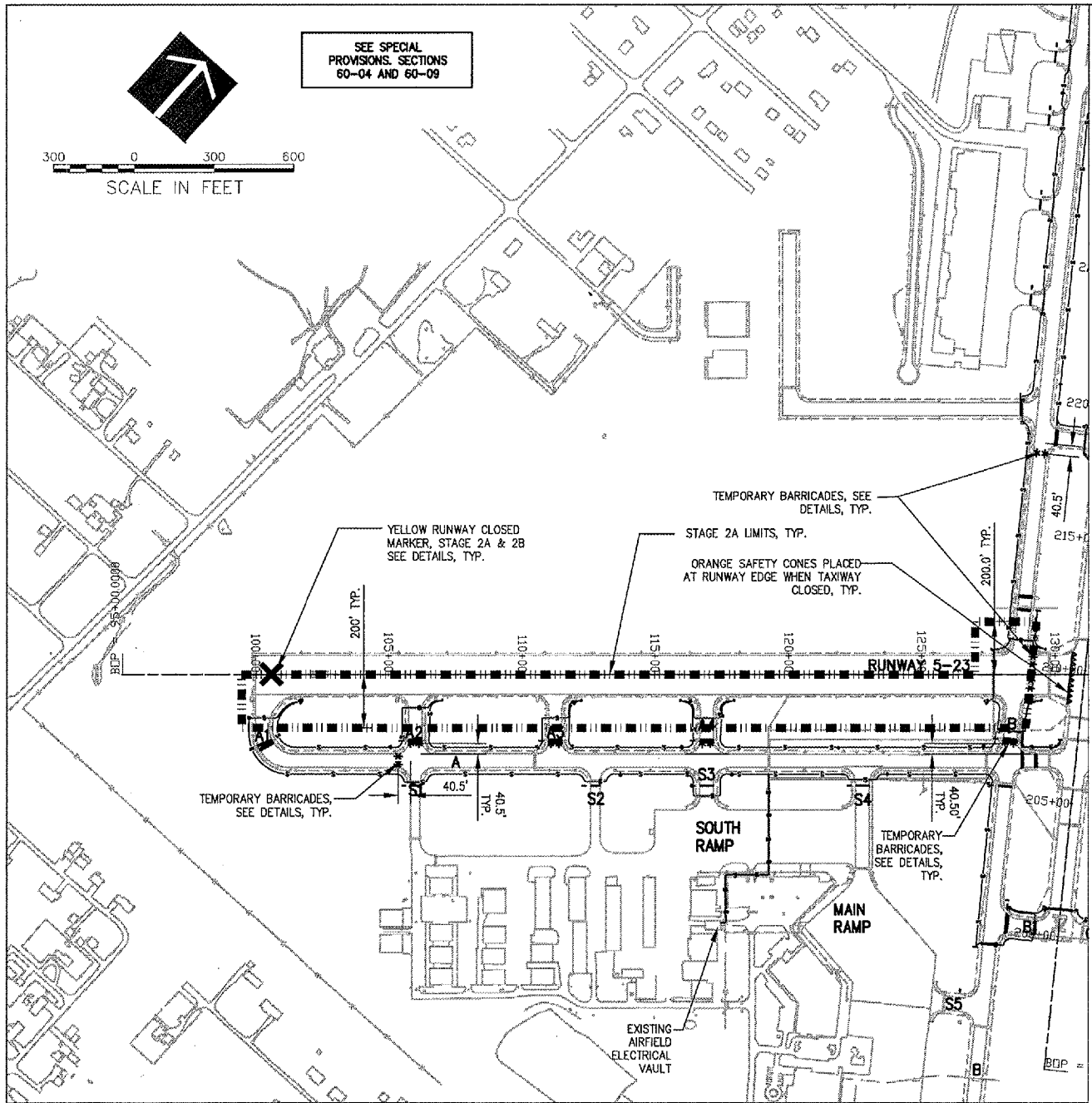
No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

CONSTRUCTION STAGING PLAN STAGE 1C

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RMH 11/10/06
Reviewed By Date
LDH
Drawn By

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STAGE 2A NOTES

- NOTES:**
- RUNWAY 05-23 WILL BE CLOSED DURING STAGE 2A. THE CONTRACTOR IS TO COORDINATE THE RUNWAY CLOSURE WITH AIRPORT OPERATIONS THROUGH THE RESIDENT ENGINEER. THE CONTRACTOR IS TO PLACE RUNWAY CLOSED MARKERS AT EACH END OF THE RUNWAY WHEN CLOSURE BEGINS, AND REMOVE THE MARKERS EVERY EVENING WHEN THE RUNWAY IS REOPENED TO AIR TRAFFIC. THE CONTRACTOR MUST ENSURE THE RUNWAY AND SAFETY AREA MEET FAA CRITERIA PRIOR TO REOPENING THE RUNWAY.
 - THE CONTRACTOR MUST COMPLETE ALL WORK WITHIN STAGE 2A BEFORE BEGINNING STAGE 2B.
 - ALL CONTRACTOR'S ACTIVITIES SHALL BE LIMITED TO AREA WITHIN THE STAGE 2A LIMITS AS SHOWN. THE CONTRACTOR MUST MAINTAIN AN AIR TRAFFIC ROUTE TO RUNWAY 14-32 AT ALL TIMES.
 - ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 15 FEET UNLESS PRIOR APPROVAL IS GIVEN BY THE ENGINEER.
 - SEE CONSTRUCTION AND SAFETY NOTES, SHEET 4.
 - THE CONTRACTOR HAS 11 DAYS TO COMPLETE ALL WORK IN STAGE 2A AND 2B. DAYS MAY NOT BE CONSECUTIVE.
- THE FOLLOWING ITEMS ARE TO BE COMPLETED IN STAGE 2A:**
- PROVIDE TEMPORARY BARRICADES AS SHOWN.
 - PROVIDE LATHING AND WARNING TAPE AS SHOWN.
 - INSTALL CABLE IN UNIT DUCT, HANDHOLES, SIGN BASES, AND SIGNS AS INDICATED ON THE PLANS WITHIN STAGE 2A LIMITS.
 - REGRADE SHOULDERS AND SWALES WHERE NECESSARY WITHIN STAGE 2A LIMITS.
 - TOPSOIL AND SEED WITHIN CONSTRUCTION LIMITS.
 - REMOVE LATHING AND WARNING TAPE, BARRICADES AND TEMPORARY EROSION CONTROL MEASURES AS NECESSARY.

STAGE 2B NOTES

- NOTES:**
- RUNWAY 05-23 WILL BE CLOSED DURING STAGE 2B. THE CONTRACTOR IS TO COORDINATE THE RUNWAY CLOSURE WITH AIRPORT OPERATIONS THROUGH THE RESIDENT ENGINEER. THE CONTRACTOR IS TO PLACE RUNWAY CLOSED MARKERS AT EACH END OF THE RUNWAY WHEN CLOSURE BEGINS, AND REMOVE THE MARKERS EVERY EVENING WHEN THE RUNWAY IS REOPENED TO AIR TRAFFIC. THE CONTRACTOR MUST ENSURE THE RUNWAY AND SAFETY AREA MEET FAA CRITERIA PRIOR TO REOPENING THE RUNWAY.
 - ALL CONTRACTOR'S ACTIVITIES SHALL BE LIMITED TO AREA WITHIN THE STAGE 2B LIMITS AS SHOWN. THE CONTRACTOR MUST MAINTAIN AN AIR TRAFFIC ROUTE TO RUNWAY 14-32 AT ALL TIMES.
 - ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 15 FEET UNLESS PRIOR APPROVAL IS GIVEN BY THE ENGINEER.
 - SEE CONSTRUCTION AND SAFETY NOTES, SHEET 4.
- THE FOLLOWING ITEMS ARE TO BE COMPLETED IN STAGE 2B:**
- PROVIDE TEMPORARY BARRICADES AS SHOWN.
 - PROVIDE LATHING AND WARNING TAPE AS SHOWN.
 - INSTALL CABLE IN UNIT DUCT, HANDHOLES, SIGN BASES, AND SIGNS AS INDICATED ON THE PLANS WITHIN STAGE 2B LIMITS.
 - REGRADE SHOULDERS AND SWALES WHERE NECESSARY WITHIN STAGE 2B LIMITS.
 - TOPSOIL AND SEED WITHIN CONSTRUCTION LIMITS.
 - REMOVE LATHING AND WARNING TAPE, BARRICADES AND TEMPORARY EROSION CONTROL MEASURES AS NECESSARY.

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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

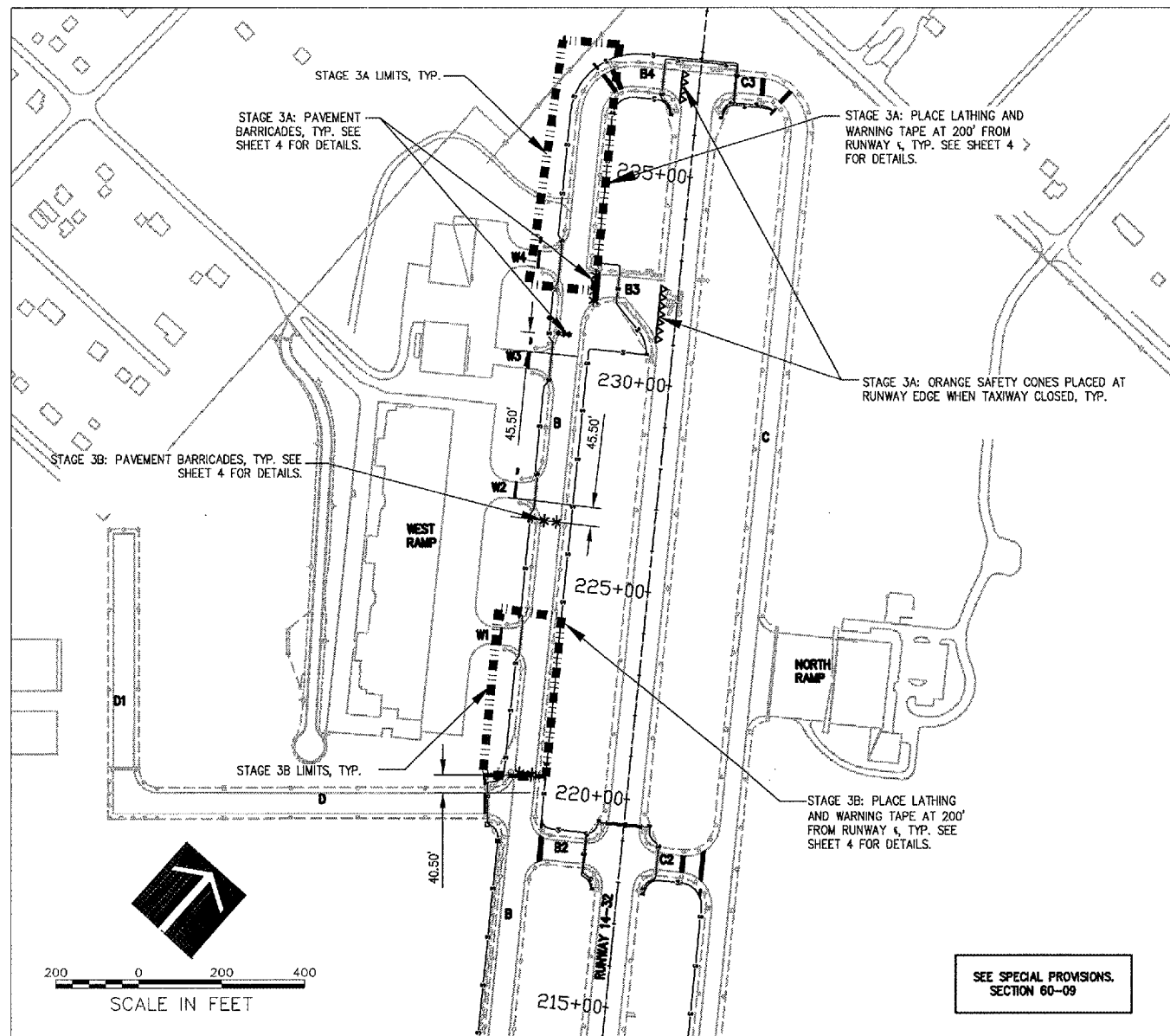
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Sheet Title

CONSTRUCTION STAGING PLAN STAGE 2A AND 2B

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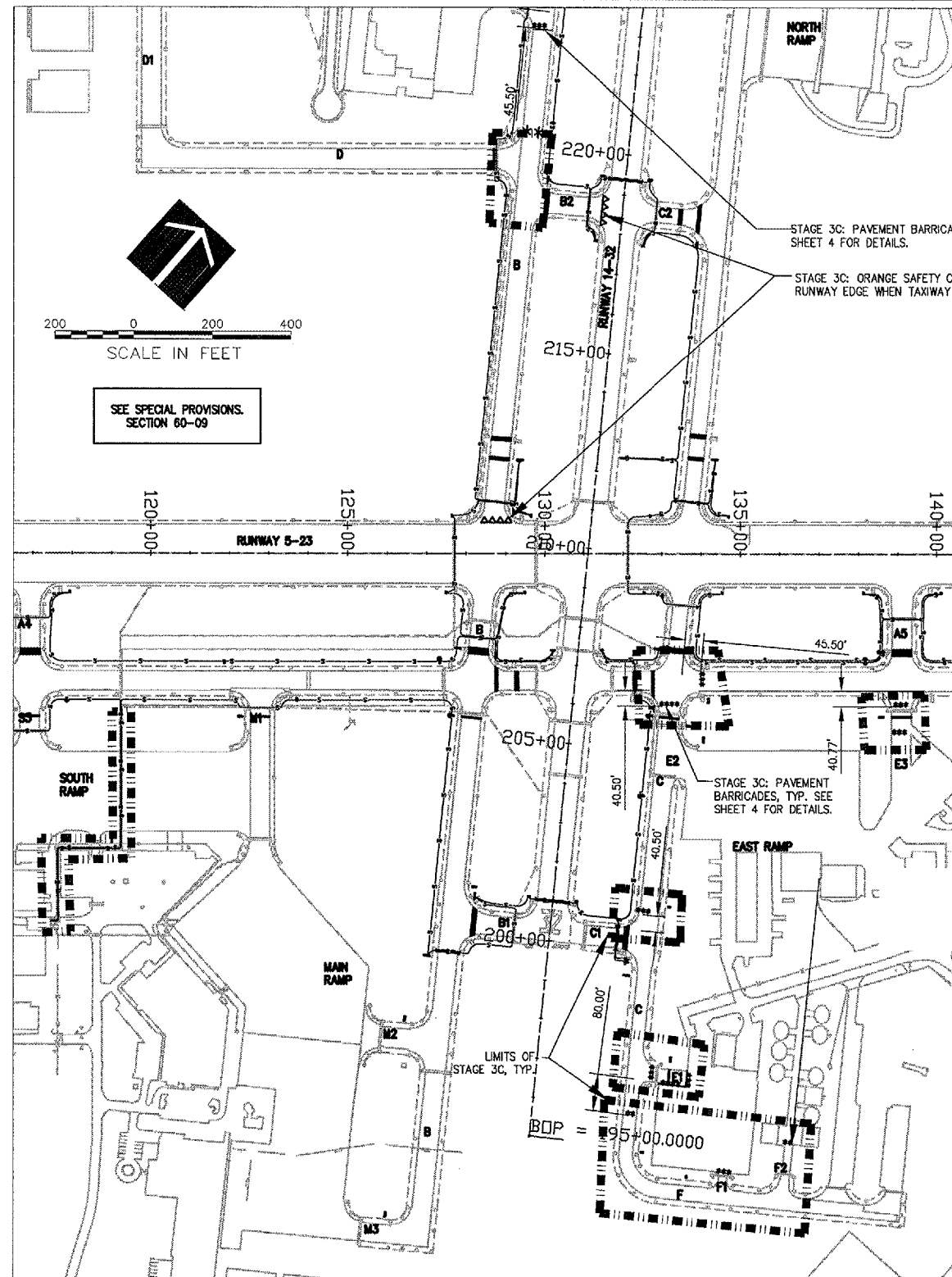
STAGE 3A AND 3B NOTES

NOTES:

- THE CONTRACTOR MUST COMPLETE ALL WORK WITHIN STAGE 3A BEFORE BEGINNING STAGE 3B.
- THE CONTRACTOR IS TO MAINTAIN RUNWAY ACCESS FOR ALL AIRPORT CLIENTS AT ALL TIMES. THE CONTRACTOR IS TO REOPEN ALL TAXIWAYS TO AIR TRAFFIC AT THE END OF EACH DAY. THE CONTRACTOR MUST ENSURE THE WORK AREA MEETS FAA CRITERIA PRIOR TO OPENING ANY TAXIWAY.
- ALL CONTRACTOR'S ACTIVITIES SHALL BE LIMITED TO AREA WITHIN THE STAGE LIMITS AS SHOWN. THE CONTRACTOR MUST MAINTAIN AIR TRAFFIC ROUTE TO RUNWAY 14-32 AT ALL TIMES.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 15 FEET UNLESS PRIOR APPROVAL IS GIVEN BY THE ENGINEER.
- SEE CONSTRUCTION AND SAFETY NOTES, SHEET 4.
- THE CONTRACTOR HAS 2 DAYS TO SUBSTANTIALLY COMPLETE WORK IN STAGE 3A AND 3B

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN STAGE 3A AND 3B:

- PROVIDE TEMPORARY BARRICADES AS SHOWN.
- PROVIDE LATHING AND WARNING TAPE AS SHOWN.
- INSTALL CABLE IN UNIT DUCT, HANDHOLES, SIGN BASES, AND SIGNS AS INDICATED ON THE PLANS WITHIN STAGE LIMITS.
- REGRADE SHOULDERS AND SWALES WHERE NECESSARY WITHIN STAGE LIMITS.
- TOPSOIL AND SEED WITHIN CONSTRUCTION LIMITS.
- REMOVE LATHING AND WARNING TAPE, BARRICADES AND TEMPORARY EROSION CONTROL MEASURES AS NECESSARY.



STAGE 3C NOTES

NOTES:

- THE CONTRACTOR SHALL WORK IN ONE AREA AT A TIME, AS DELINEATED BY STAGE 3C LIMITS. THE CONTRACTOR MUST SUBSTANTIALLY COMPLETE WORK IN ONE AREA PRIOR TO BEGINNING WORK IN A NEW SECTION OF 3C.
- WORK AT THE INTERSECTION OF TAXIWAY D AND TAXIWAY B MUST BE COORDINATED WITH AIRPORT OPERATIONS AND THE TENANT THROUGH THE RESIDENT ENGINEER PRIOR TO CLOSING THE TAXIWAY AND BEGINNING ANY WORK. WORK IN THIS INTERSECTION MUST BE COMPLETED DURING ONE 8 HOUR CLOSURE.
- THE CONTRACTOR IS TO REOPEN ALL TAXIWAYS TO AIR TRAFFIC AT THE END OF EACH DAY. THE CONTRACTOR MUST ENSURE THE WORK AREA MEETS FAA CRITERIA PRIOR TO OPENING ANY TAXIWAY.
- ALL CONTRACTOR'S ACTIVITIES SHALL BE LIMITED TO AREA WITHIN THE STAGE 3C LIMITS AS SHOWN. THE CONTRACTOR MUST MAINTAIN AIR TRAFFIC ROUTE TO RUNWAY 14-32 AT ALL TIMES.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 15 FEET UNLESS PRIOR APPROVAL IS GIVEN BY THE ENGINEER.
- SEE CONSTRUCTION AND SAFETY NOTES, SHEET 4.
- THE CONTRACTOR HAS 2 DAYS TO SUBSTANTIALLY COMPLETE WORK IN STAGE 3C.
- PLACE PAVEMENT BARRICADES AS INDICATED OR AS DIRECTED BY THE RESIDENT ENGINEER TO ENSURE WORK AREA IS SECURE AND SAFE.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN STAGE 3C:

- PROVIDE TEMPORARY BARRICADES AS SHOWN.
- PROVIDE LATHING AND WARNING TAPE AS SHOWN.
- INSTALL CABLE IN UNIT DUCT, HANDHOLES, SIGN BASES, AND SIGNS AS INDICATED ON THE PLANS WITHIN STAGE LIMITS.
- REGRADE SHOULDERS AND SWALES WHERE NECESSARY WITHIN STAGE LIMITS.
- TOPSOIL AND SEED WITHIN CONSTRUCTION LIMITS.
- REMOVE LATHING AND WARNING TAPE, BARRICADES AND TEMPORARY EROSION CONTROL MEASURES AS NECESSARY.

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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

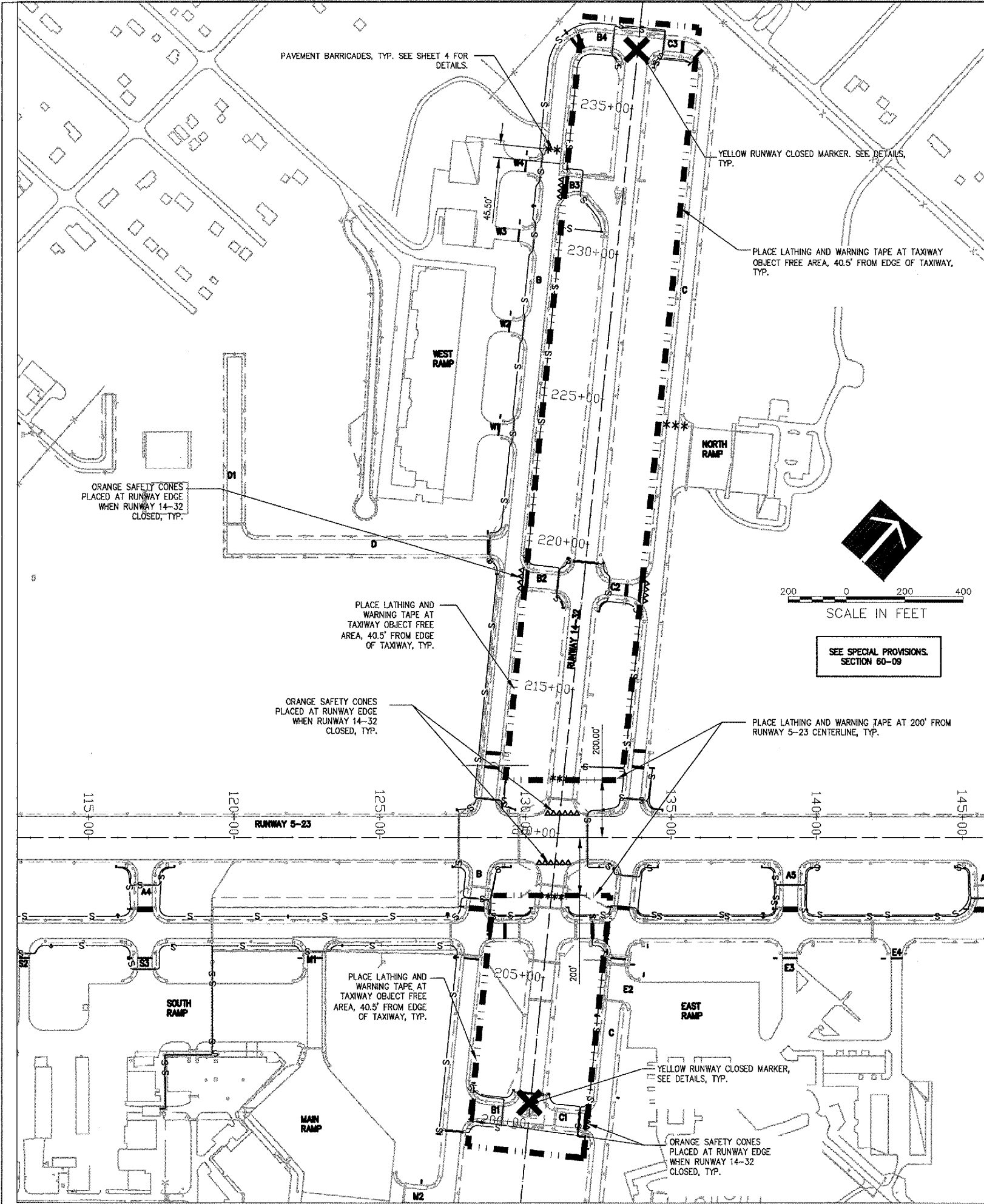
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Date
NOVEMBER 10, 2006
Sheet Title

CONSTRUCTION STAGING PLAN STAGE 3A,3B AND 3C

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LDH
Drawn By

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STAGE 4 NOTES

NOTES:

- RUNWAY 14-32 WILL BE CLOSED DURING STAGE 4. THE CONTRACTOR IS TO COORDINATE THE RUNWAY CLOSURE WITH AIRPORT OPERATIONS THROUGH THE RESIDENT ENGINEER. THE CONTRACTOR IS TO PLACE RUNWAY CLOSED MARKERS AT EACH END OF THE RUNWAY WHEN CLOSURE BEGINS, AND REMOVE THE MARKERS EVERY EVENING WHEN THE RUNWAY IS REOPENED TO AIR TRAFFIC. THE CONTRACTOR MUST ENSURE THE RUNWAY AND SAFETY AREA MEET FAA CRITERIA PRIOR TO REOPENING THE RUNWAY.
- ALL CONTRACTOR'S ACTIVITIES SHALL BE LIMITED TO AREA WITHIN THE STAGE 4 LIMITS AS SHOWN. THE CONTRACTOR MUST MAINTAIN AIR TRAFFIC ROUTE TO RUNWAY 05-23 AT ALL TIMES.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 15 FEET UNLESS PRIOR APPROVAL IS GIVEN BY THE ENGINEER.
- SEE CONSTRUCTION AND SAFETY NOTES, SHEET 4.
- THE CONTRACTOR HAS 10 DAYS TO SUBSTANTIALLY COMPLETE WORK IN STAGE 4. DAYS MAY NOT BE CONSECUTIVE.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN STAGE 2A:

- PROVIDE TEMPORARY BARRICADES AS SHOWN.
- PROVIDE LATHING AND WARNING TAPE AS SHOWN.
- INSTALL CABLE IN UNIT DUCT, HANDHOLES, SIGN BASES, AND SIGNS AS INDICATED ON THE PLANS WITHIN STAGE LIMITS.
- REGRADE SHOULDERS AND SWALES WHERE NECESSARY WITHIN STAGE LIMITS.
- TOPSOIL AND SEED WITHIN CONSTRUCTION LIMITS.
- REMOVE LATHING AND WARNING TAPE, BARRICADES AND TEMPORARY EROSION CONTROL MEASURES AS NECESSARY.

SEE SPECIAL PROVISIONS.
SECTION 60-09

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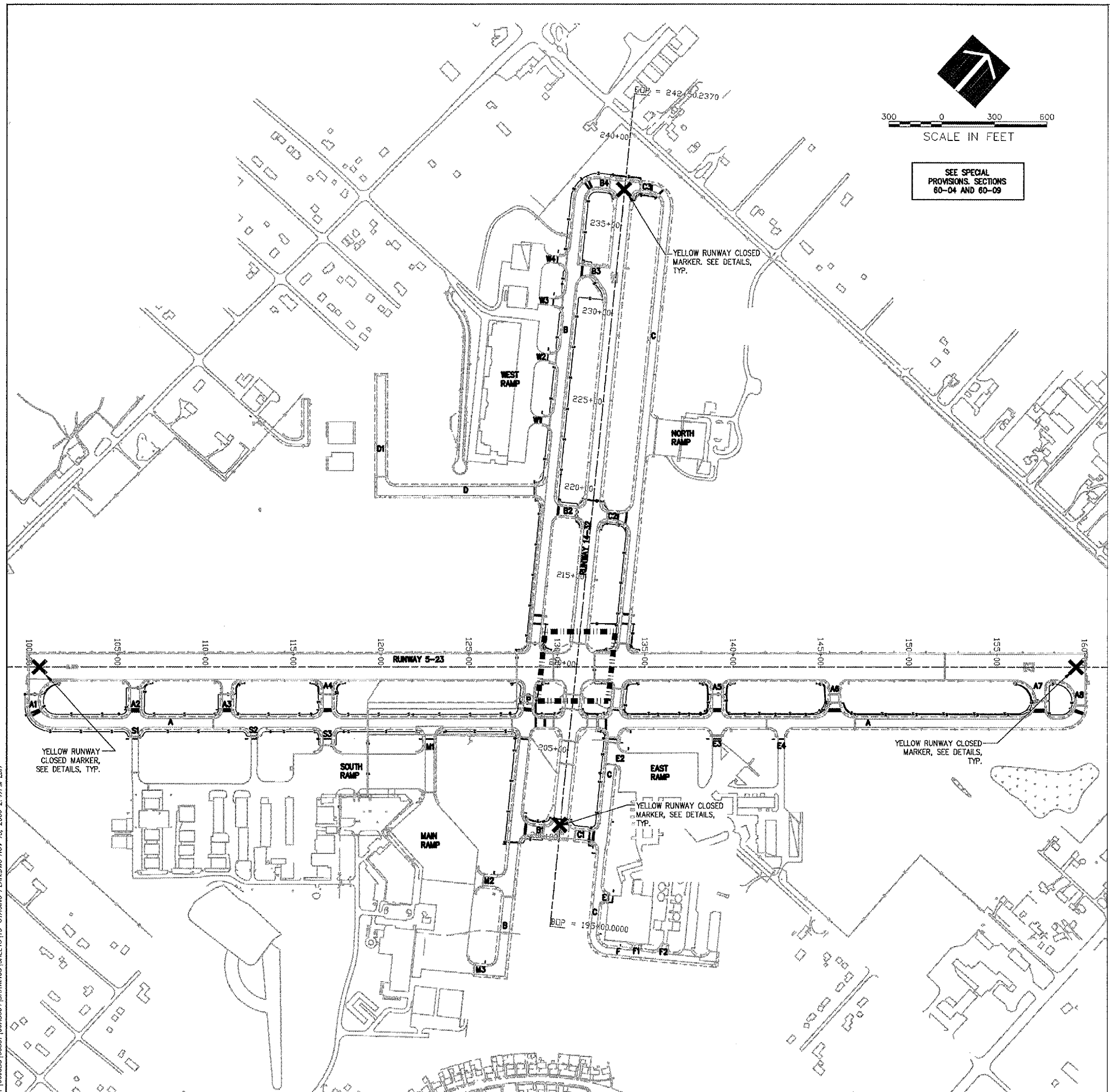
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NOVEMBER 10, 2006

Sheet Title
CONSTRUCTION STAGING PLAN STAGE 4

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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

STAGE 5 NOTES

- NOTES:**
- DURING STAGE 5, THE AIRPORT WILL BE CLOSED TO ALL AIR TRAFFIC FOR A PERIOD OF 8 HOURS DURING TWO SUNDAY CLOSURES THAT WILL START AT 7AM. THE CONTRACTOR IS TO COORDINATE THE RUNWAY CLOSURE WITH AIRPORT OPERATIONS THROUGH THE RESIDENT ENGINEER. THE CONTRACTOR IS TO PLACE RUNWAY CLOSED MARKERS AT THE ENDS OF RUNWAY 5-23 AND RUNWAY 14-32 AND REMOVE THE MARKERS AFTER EACH CLOSURE WHEN THE RUNWAY IS REOPENED TO AIR TRAFFIC. THE CONTRACTOR MUST ENSURE THE RUNWAY AND SAFETY AREA MEET FAA CRITERIA PRIOR TO REOPENING THE RUNWAY.
 - ALL CONTRACTOR'S ACTIVITIES SHALL BE LIMITED TO AREA WITHIN THE STAGE 5 LIMITS AS SHOWN.
 - SEE CONSTRUCTION AND SAFETY NOTES, SHEET 4.
 - THE CONTRACTOR HAS (2) TWO 8 HOUR SUNDAY CLOSURES TO COMPLETE WORK IN STAGE 5
- THE FOLLOWING ITEMS ARE TO BE COMPLETED IN STAGE 5:**
- INSTALL CABLE IN UNIT DUCT, HANDHOLES, SIGN BASES, AND SIGNS AS INDICATED ON THE PLANS WITHIN STAGE 5 LIMITS.
 - REGRADE SHOULDERS AND SWALES WHERE NECESSARY WITHIN STAGE 5 LIMITS.
 - TOPSOIL AND SEED WITHIN CONSTRUCTION LIMITS.
 - REMOVE LATHING AND WARNING TAPE, BARRICADES AND TEMPORARY EROSION CONTROL MEASURES AS NECESSARY.

No.	Drawing Issue	Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

CONSTRUCTION STAGING PLAN STAGE 5

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Project Number
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Layout By Date
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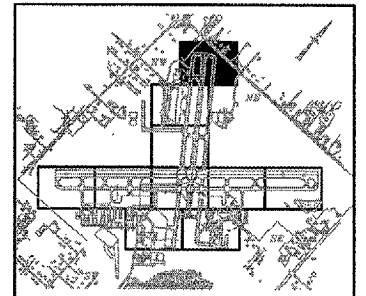


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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



No.	Drawing Issue Description	Date	By

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Sheet Title

SIGNAGE AND MARKING PLAN

831-06A8004
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 LDH 04/19/06
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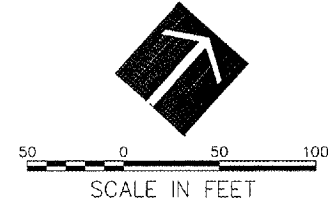
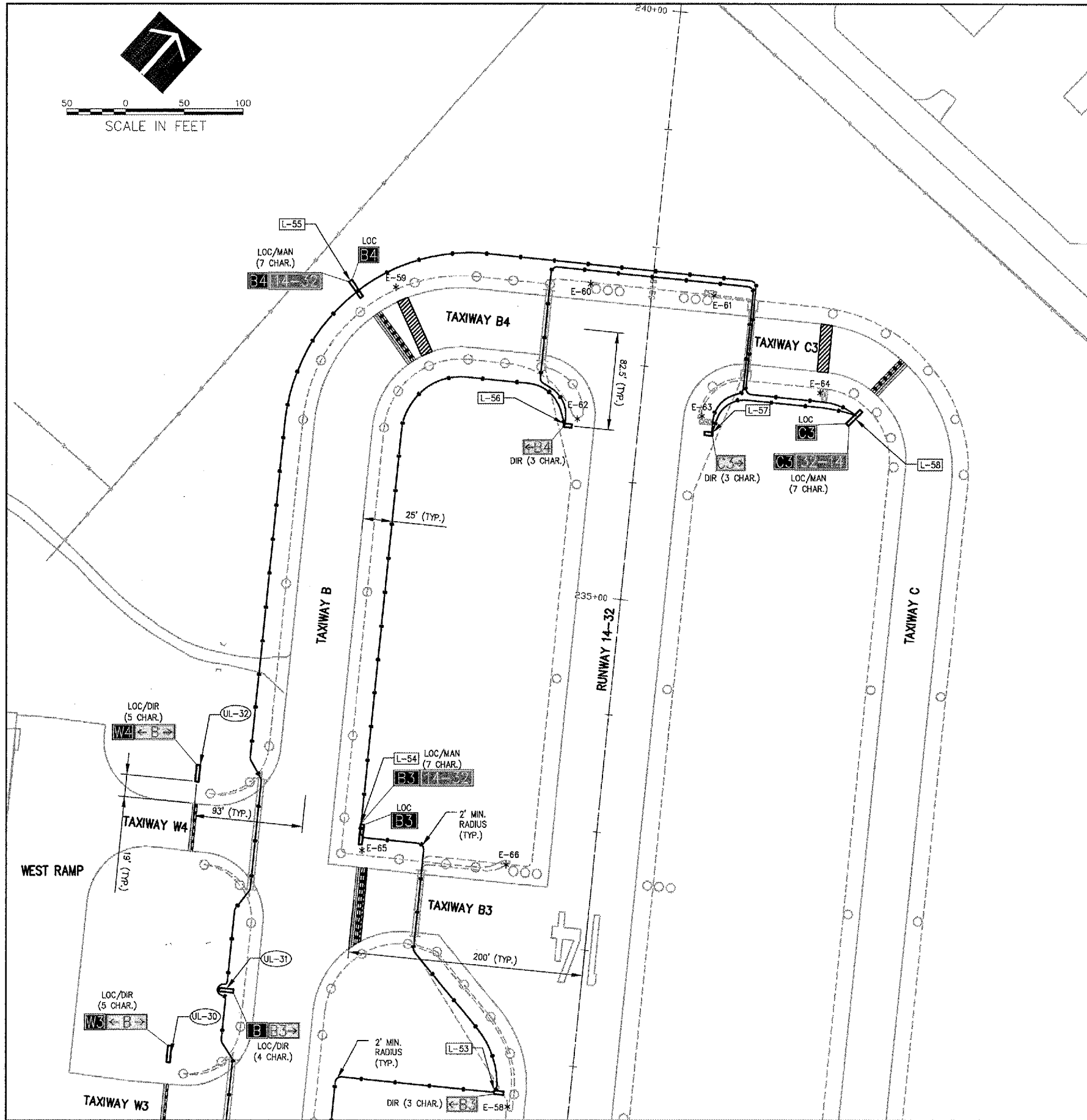
LEGEND

- [---] PROPOSED MARKING
- [] EXISTING HANDHOLE
- [<-A->] DIRECTION SIGN (DIR)
- [] NEW HANDHOLE
- [B-20] MANDATORY SIGN (MAN)
- [---] NEW 4" DUCT DIRECTIONAL BORE
- [A] LOCATION SIGN (LOC)
- [---] EXISTING CONCRETE ENCASED DUCT
- [L-X] LIGHTED SIGN: L-858, SIZE 1, STYLE 5, CLASS 2, MODE 2
- [---] NEW LIGHTING CABLE
- [UL-X] REFLECTIVE SIGN: L-858, SIZE 1, STYLE 4, MODE 2
- [---] EXISTING LIGHTING CABLE
- [*] EXISTING SIGN TO BE REMOVED
- [] EXISTING LIGHT TO REMAIN
- [---] NEW SIGN FOUNDATION
- [---] REMOVAL OF EXISTING MARKING

NOTES

1. FOR ADDITIONAL GUIDANCE SIGN INFORMATION SEE SIGNAGE SCHEDULE AND DETAILS, SHEETS 21 TO 24.
2. CONTRACTOR SHALL VERIFY SIGN LOCATION, STATION AND OFFSET WITH TYPICAL DIMENSIONS SHOWN IN THE PLANS PRIOR TO INSTALLING SIGN.
3. LOC = LOCATION SIGN FACE, YELLOW ON BLACK
 DIR = DIRECTIONAL SIGN FACE, BLACK ON YELLOW
 MAN = MANDATORY SIGN FACE, WHITE ON RED

 LOC LETTER IS ALWAYS THE FIRST CHARACTER ON THE SIGN FACE
4. SIGNS SHALL MEET REQUIREMENTS OF FAA ADVISORY CIRCULAR 150/5345-44G, SPECIFICATION FOR TAXIWAY AND RUNWAY SIGNS



MATCH LINE SEE SHEET 12

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Telephone: 630.990.3800
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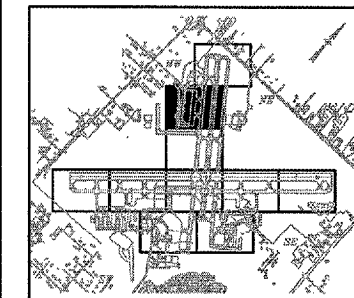


WAUKEGAN REGIONAL AIRPORT
WAUKEGAN PORT DISTRICT

3580 North McAree Road
Waukegan, Illinois 60087
Telephone: 847.244.0066
Fax: 847.244.3813

AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



No.	Drawing Issue	Description	Date	By

Date
NOVEMBER 10, 2006

Sheet Title

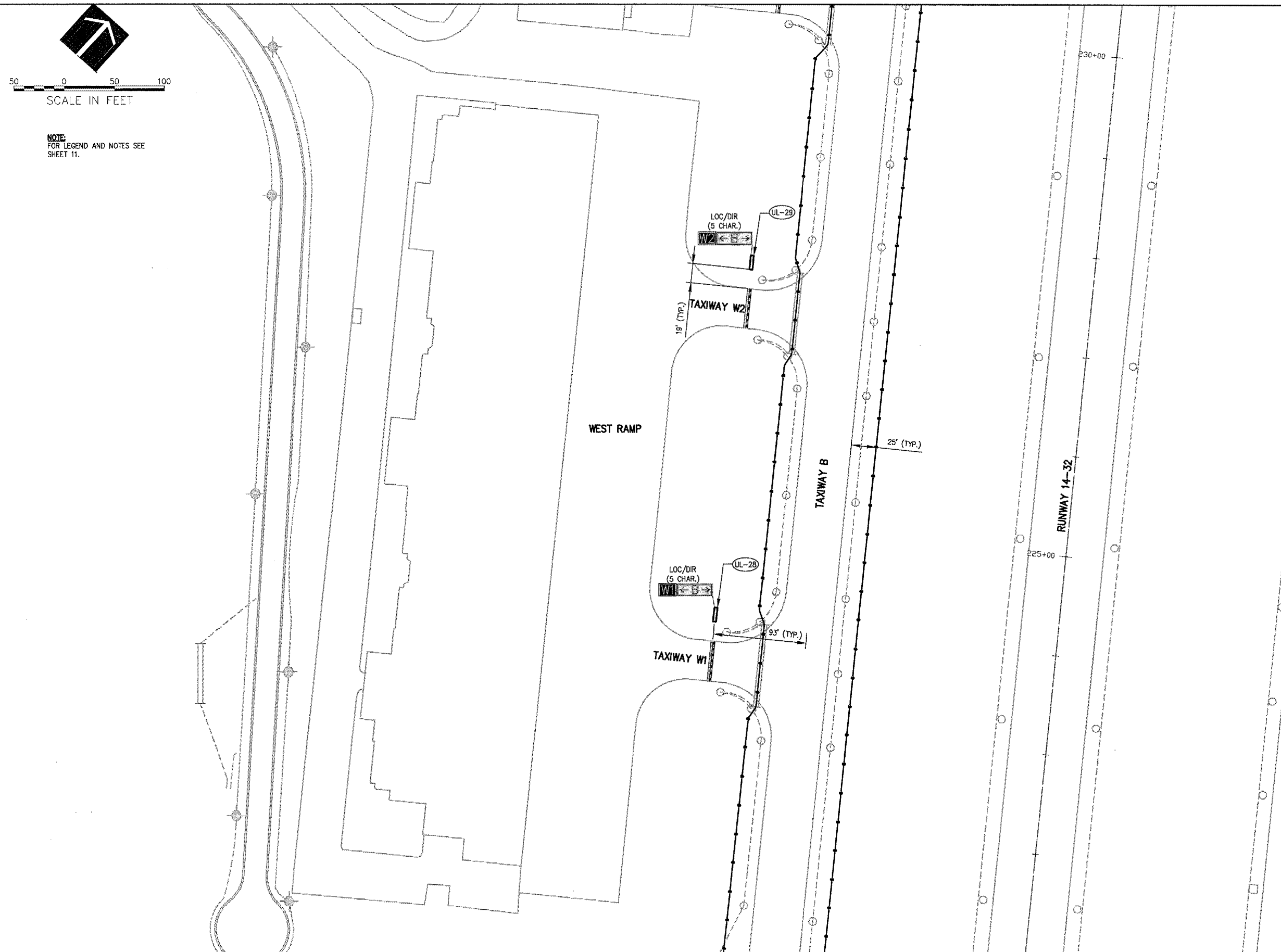
SIGNAGE PLAN

831-06A8004
 Project Number
 LDH 04/19/06
 Layout By Date
 LDH 04/19/06
 Designed By Date
 RMH 11/10/06
 Reviewed By Date
 LDH
 Drawn By _____
 Sheet No. _____

12

MATCH LINE SEE SHEET 11

MATCH LINE SEE SHEET 13



SCALE IN FEET

NOTE:
FOR LEGEND AND NOTES SEE SHEET 11.

Z:\06-005\06057\06A8004\DRAWINGS\SHEETS\2-SIGN PLAN\DWG NOV 11, 2006 2:47PM LDH



HANSON PROFESSIONAL SERVICES INC.

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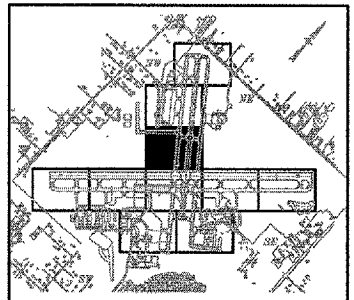


WAUKEGAN REGIONAL AIRPORT
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Waukegan, Illinois 60087
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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



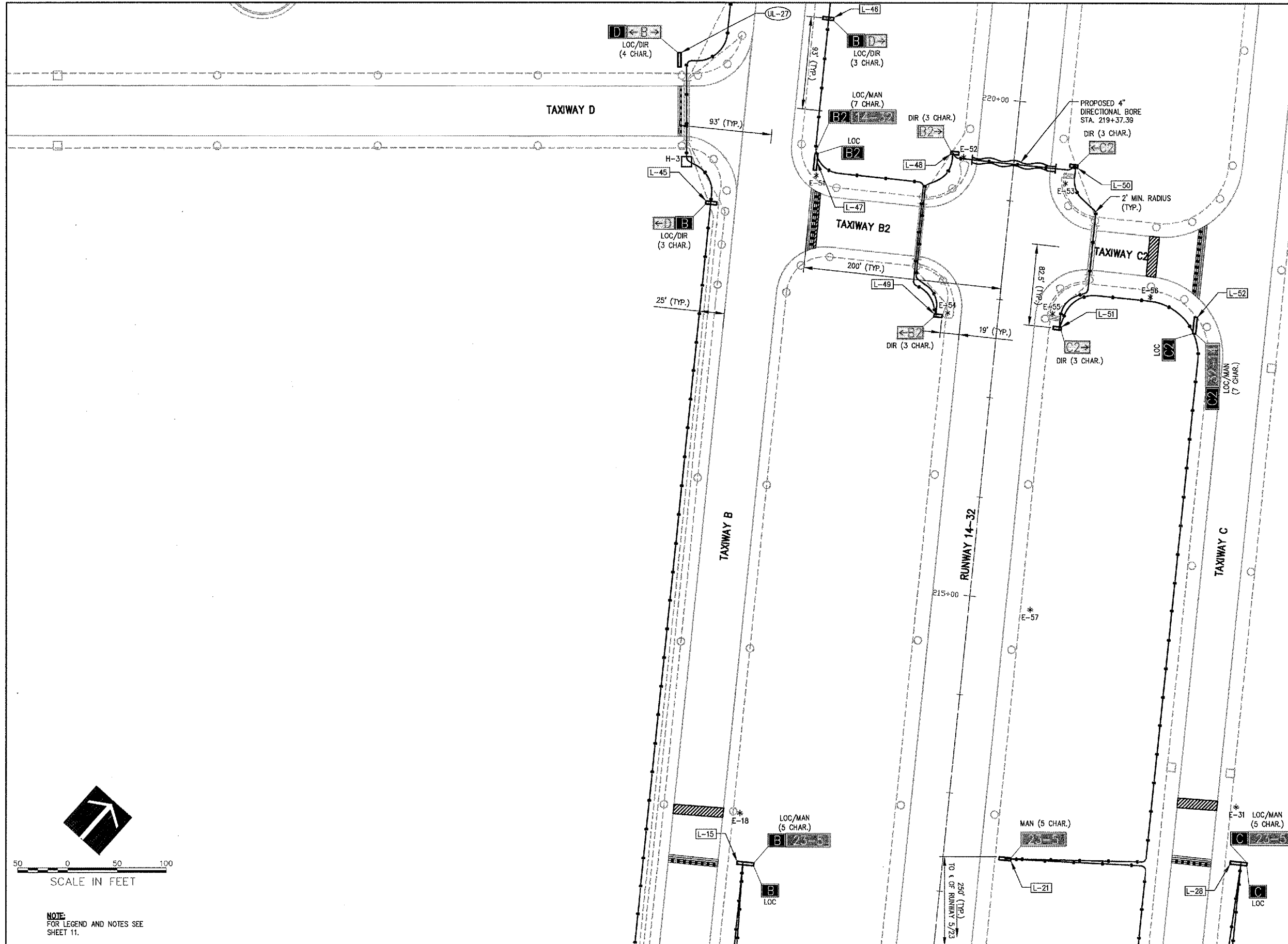
No.	Drawing Issue	Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

SIGNAGE AND MARKING PLAN

831-06A8004
Project Number
LDH 04/19/06
Layout By Date
LDH 04/19/06
Designed By Date
RMH 11/10/06
Revised By Date
LDH
Drawn By

MATCH LINE SEE SHEET 12



MATCH LINE SEE SHEET 16



SCALE IN FEET
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NOTE:
FOR LEGEND AND NOTES SEE SHEET 11.

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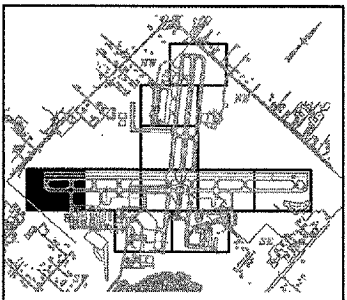


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 Waukegan, Illinois 60087
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AIRFIELD SIGNAGE IMPROVEMENTS
 AIP PROJECT NO. 3-17-0105-B35
 IDA PROJECT NO. UGN-3650



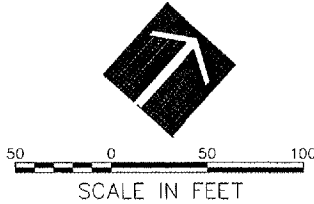
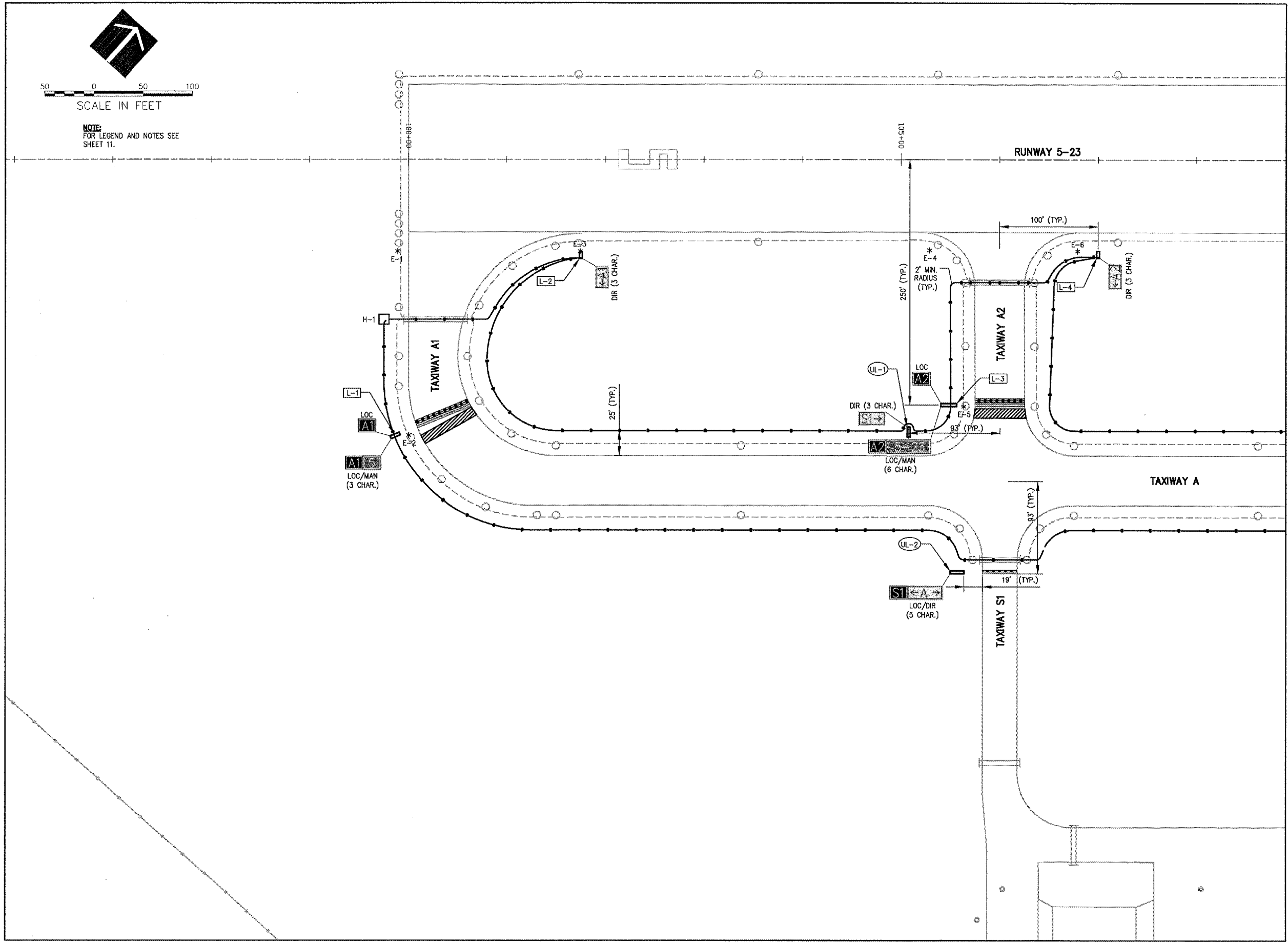
No.	Drawing Issue Description	Date	By

Date
 NOVEMBER 10, 2006
 Sheet Title

SIGNAGE AND MARKING PLAN

831-06A8004
 Project Number
 LDH 04/19/06
 Layout By Date
 LDH 04/19/06
 Designed By Date
 RMH 11/10/06
 Reviewed By Date
 LDH
 Drawn By Sheet No.

MATCH LINE SEE SHEET 15



NOTE:
 FOR LEGEND AND NOTES SEE
 SHEET 11.

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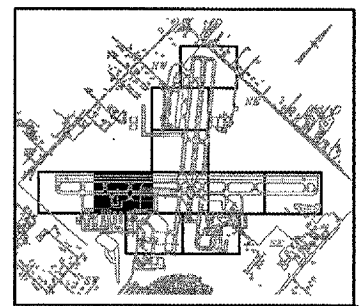


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AIRFIELD SIGNAGE IMPROVEMENTS
AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

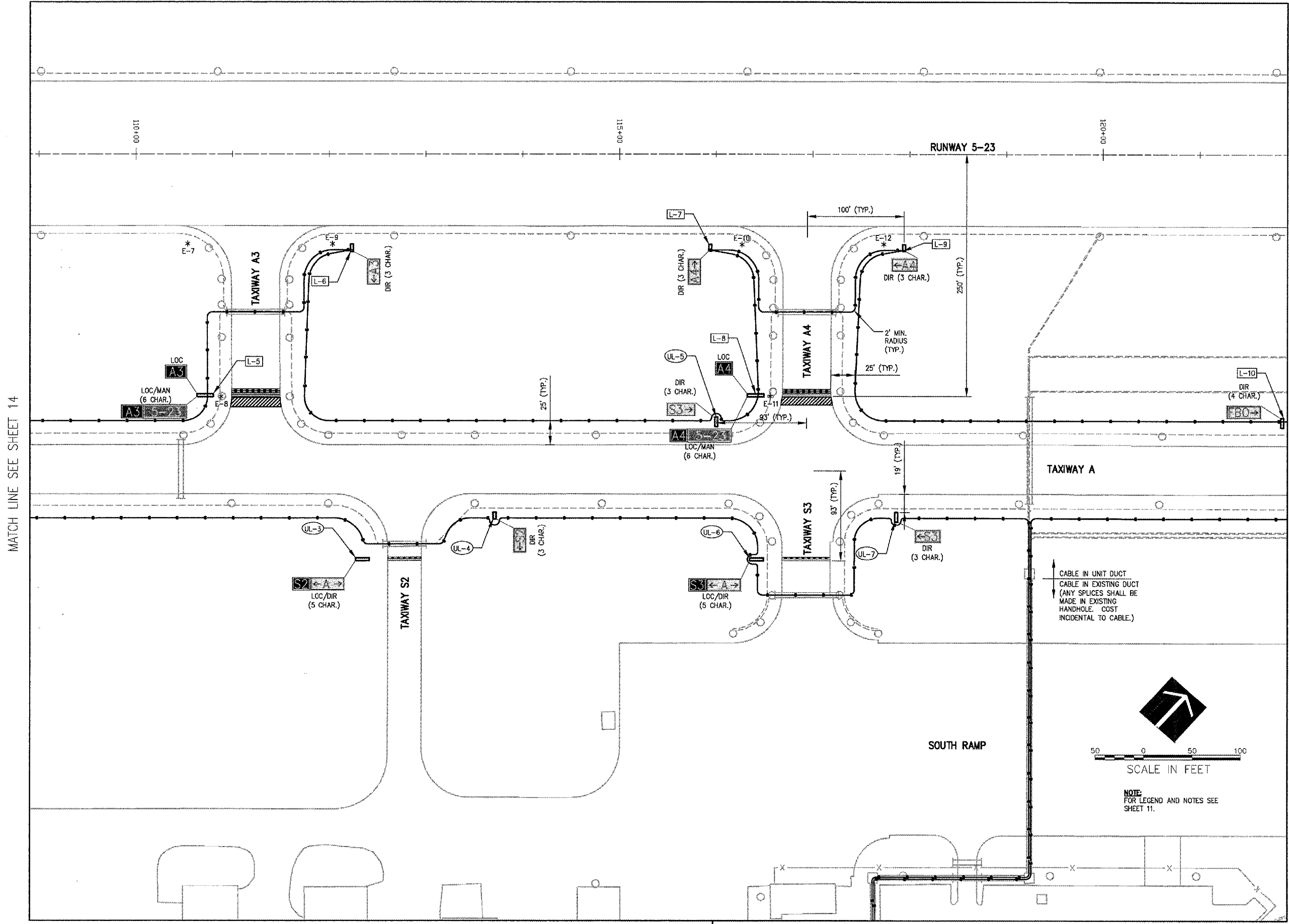


No.	Drawing Issue Description	Date	By

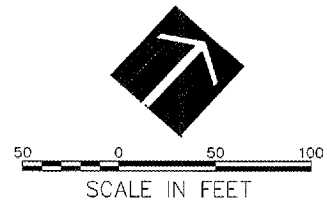
Date
NOVEMBER 10, 2006
Sheet Title

SIGNAGE AND MARKING PLAN

831-06A8004
Project Number
LDH 04/19/06
Laid Out By Date
LDH 04/19/06
Designed By Date
RMH 11/10/06
Reviewed By Date
LDH
Drawn By



CABLE IN UNIT DUCT
CABLE IN EXISTING DUCT
(ANY SPLICES SHALL BE
MADE IN EXISTING
HANDHOLE. COST
INCIDENTAL TO CABLE.)



NOTE:
FOR LEGEND AND NOTES SEE
SHEET 11.

MATCH LINE SEE SHEET 14

MATCH LINE SEE SHEET 16

MATCH LINE SEE SHEET 19



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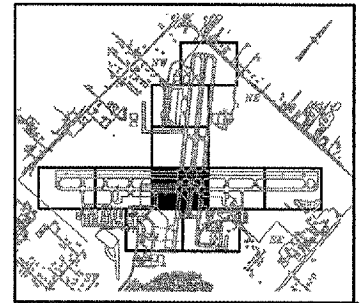


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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

SIGNAGE AND MARKING PLAN

831-06A8004

Project Number

LDH 04/19/06
Layout By Date

LDH 04/19/06
Designed By Date

RMH 11/10/06
Reviewed By Date

LDH
Drawn By

Sheet No.

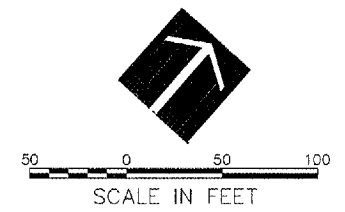
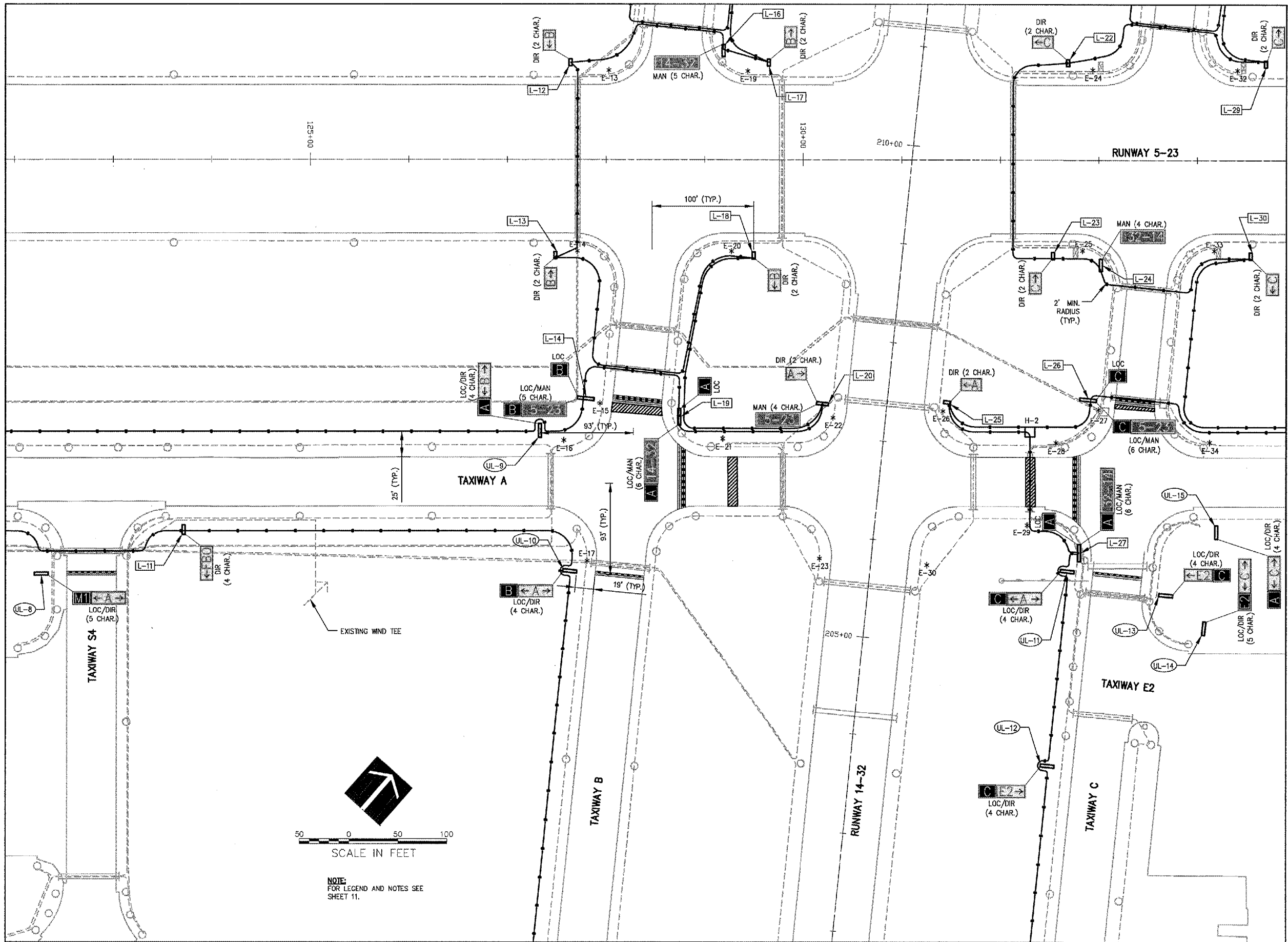
MATCH LINE SEE SHEET 13

MATCH LINE SEE SHEET 15

MATCH LINE SEE SHEET 17

MATCH LINE SEE SHEET 19

MATCH LINE SEE SHEET 20



NOTE:
FOR LEGEND AND NOTES SEE SHEET 11.

HANSON PROFESSIONAL SERVICES INC.
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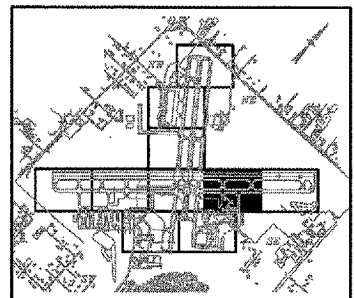


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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
 IDA PROJECT NO. UGN-3650

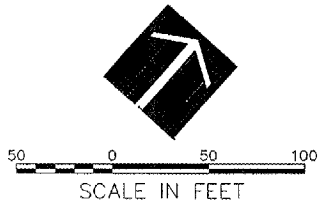
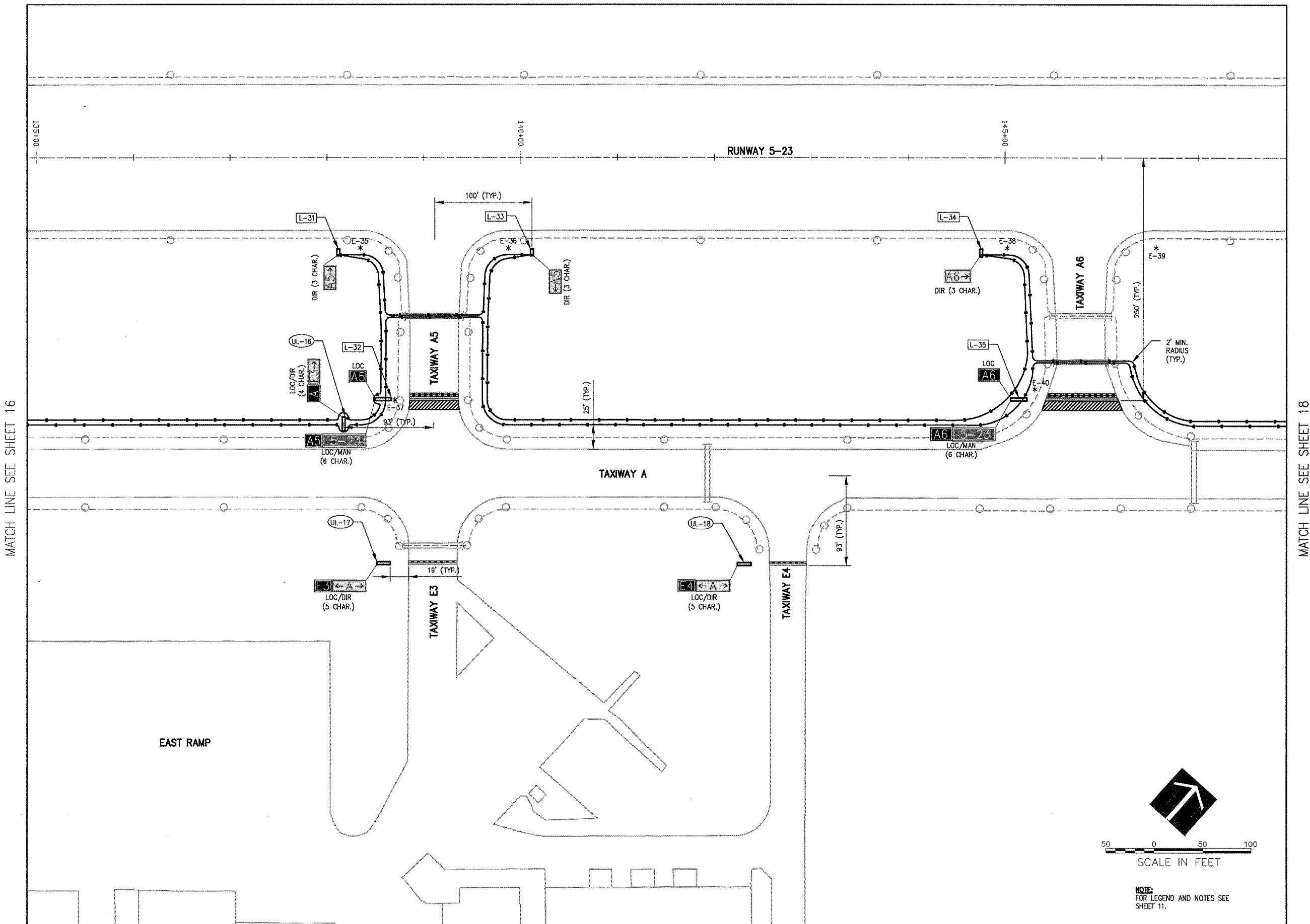


No.	Drawing Issue	Description	Date	By

Date
 NOVEMBER 10, 2006
 Sheet Title

SIGNAGE AND MARKING PLAN

831-06A8004
 Project Number
 LDH 04/19/06
 Layout By Date
 LDH 04/19/06
 Designed By Date
 RMH 11/10/06
 Reviewed By Date
 LDH
 Drawn By Sheet No.



NOTE:
 FOR LEGEND AND NOTES SEE SHEET 11.

MATCH LINE SEE SHEET 16

MATCH LINE SEE SHEET 18

P:\06\0605\100631\06A8004\06A8004\06A8004\SHEETS\17-SIGN PLANDING NOV 13, 2006 2:48PM LDH



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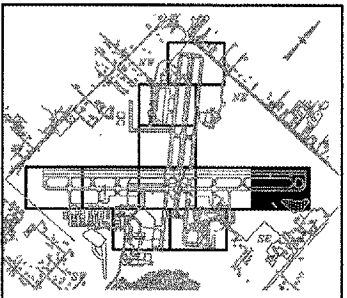


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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



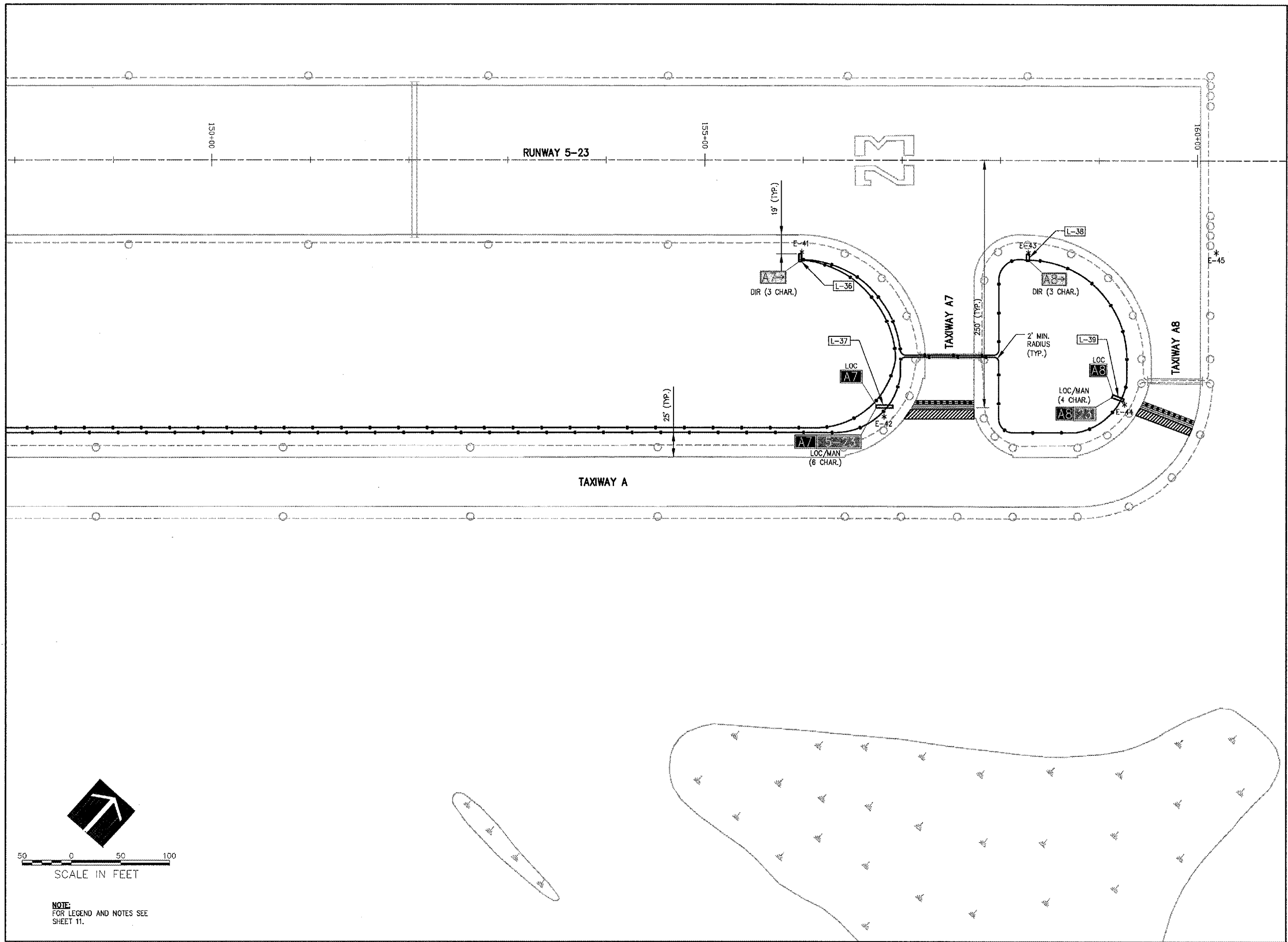
No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

SIGNAGE AND MARKING PLAN

831-06A8004	
Project Number	
LDH	04/19/06
Laid Out By	Date
LDH	04/19/06
Designed By	Date
RMH	11/10/06
Reviewed By	Date
LDH	
Drawn By	
	Sheet No.

MATCH LINE SEE SHEET 17



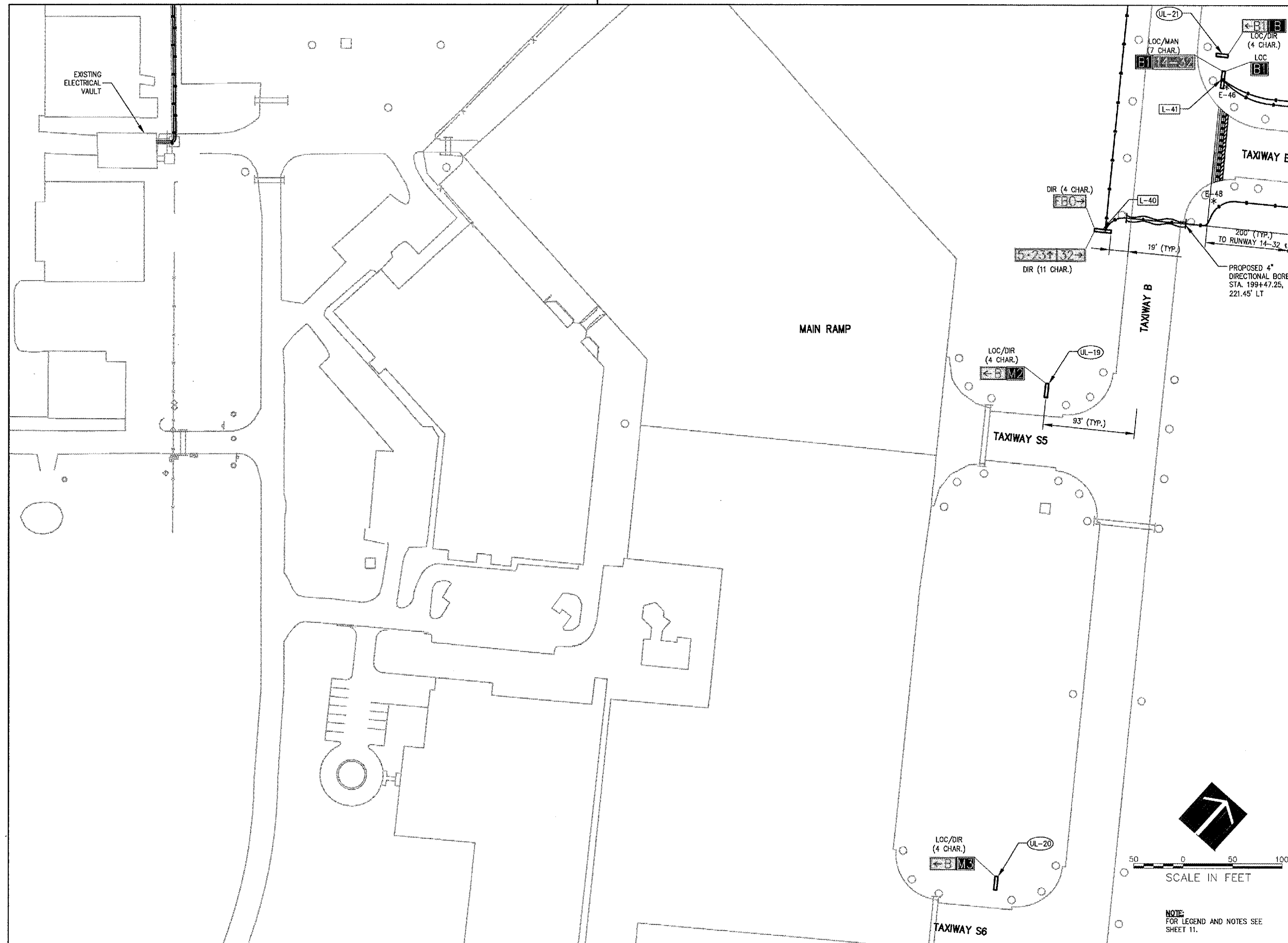
SCALE IN FEET

NOTE:
FOR LEGEND AND NOTES SEE SHEET 11.

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MATCH LINE SEE SHEET 15

MATCH LINE SEE SHEET 16



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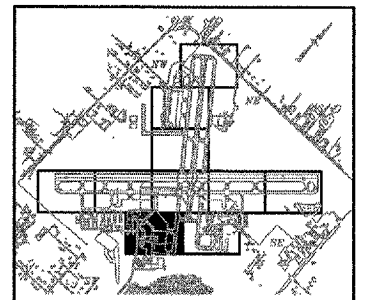


WAUKEGAN REGIONAL AIRPORT
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Waukegan, Illinois 60087
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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



MATCH LINE SEE SHEET 20

No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

SIGNAGE AND MARKING PLAN

831-06A8004

Project Number	
LDH	04/19/06
Layout By	Date
LDH	04/19/06
Designed By	Date
RMH	11/10/06
Reviewed By	Date
LDH	
Drawn By	
	Sheet No.

4: [06.005] (0303) [06A8004] (DRAWMSS) SHEETS [19-SIGN PLANKING NOV 13, 2006 2:49PM LDH]



HANSON PROFESSIONAL SERVICES INC.

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Oak Brook, Illinois 60523
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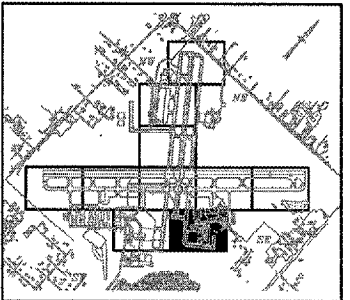


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Waukegan, Illinois 60087
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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3850



No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

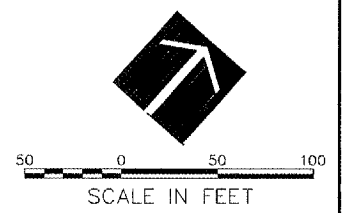
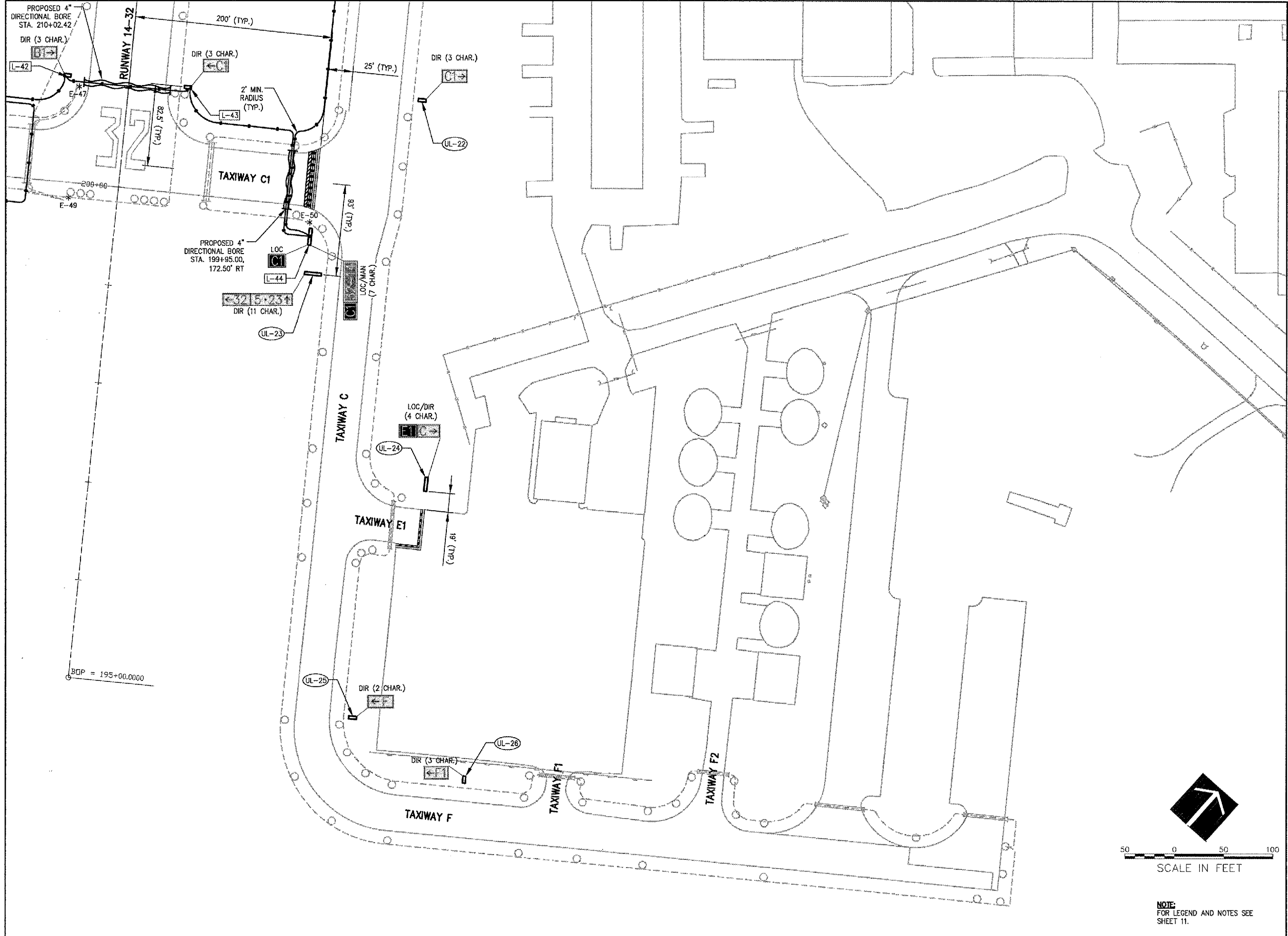
SIGNAGE AND MARKING PLAN

831-06A8004
 Project Number
 LDH 04/19/06
 Layout By Date
 LDH 04/19/06
 Designed By Date
 RMH 11/10/06
 Reviewed By Date
 LDH
 Drawn By Sheet No.

MATCH LINE SEE SHEET 16

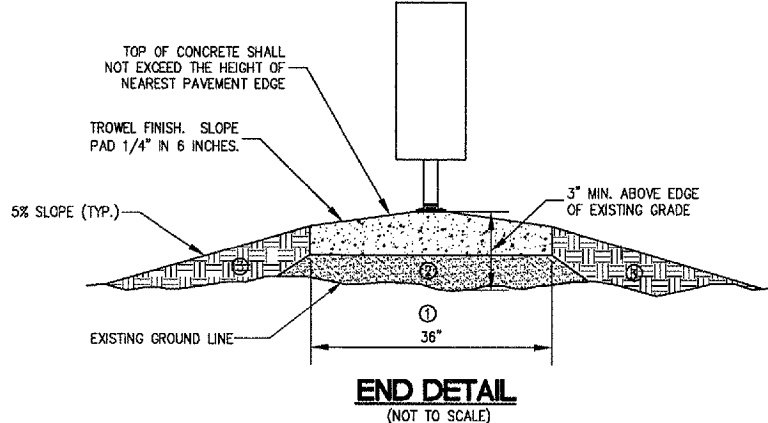
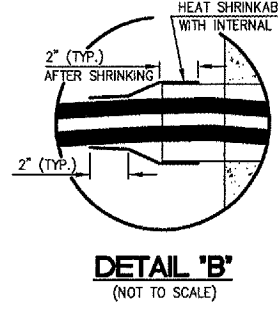
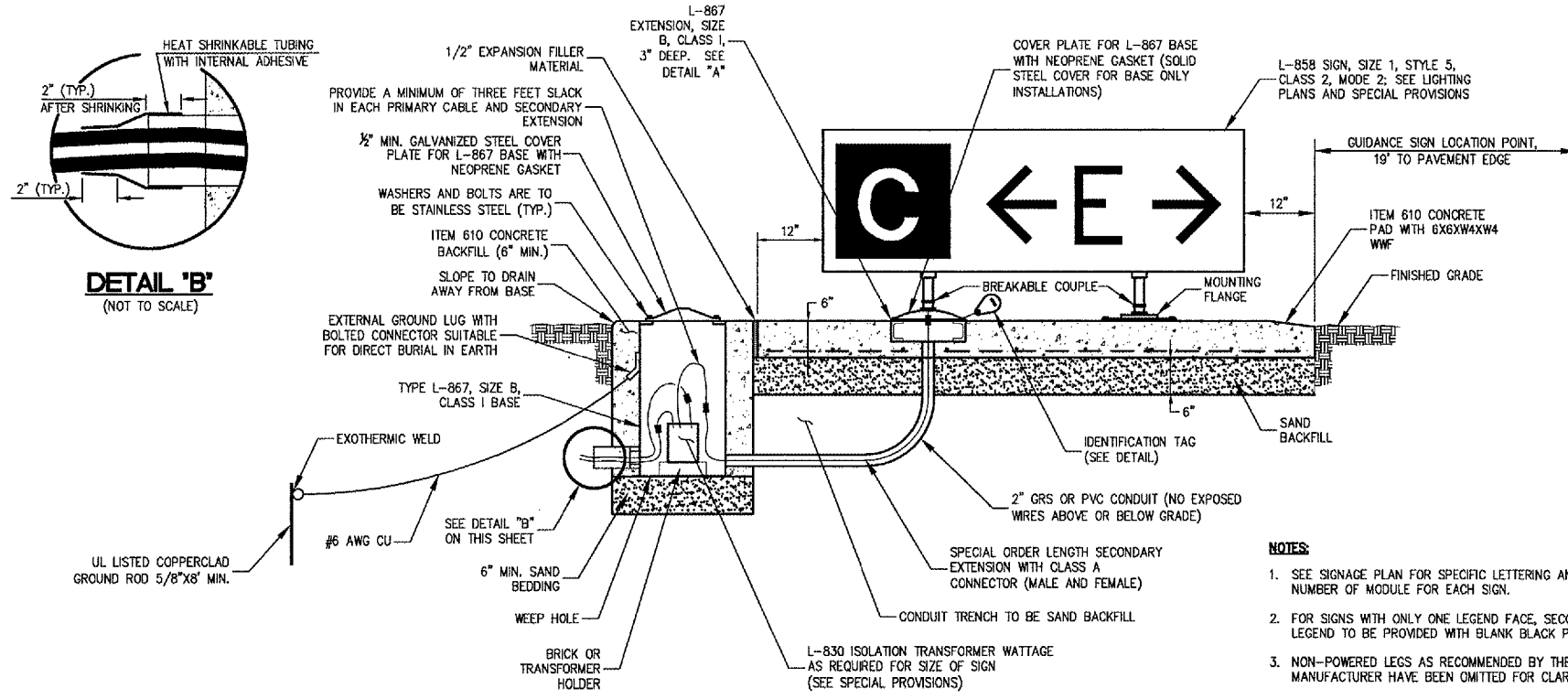
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MATCH LINE SEE SHEET 19



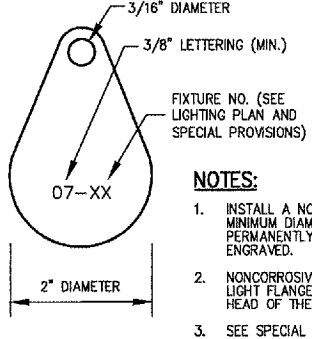
NOTE:
FOR LEGEND AND NOTES SEE SHEET 11.

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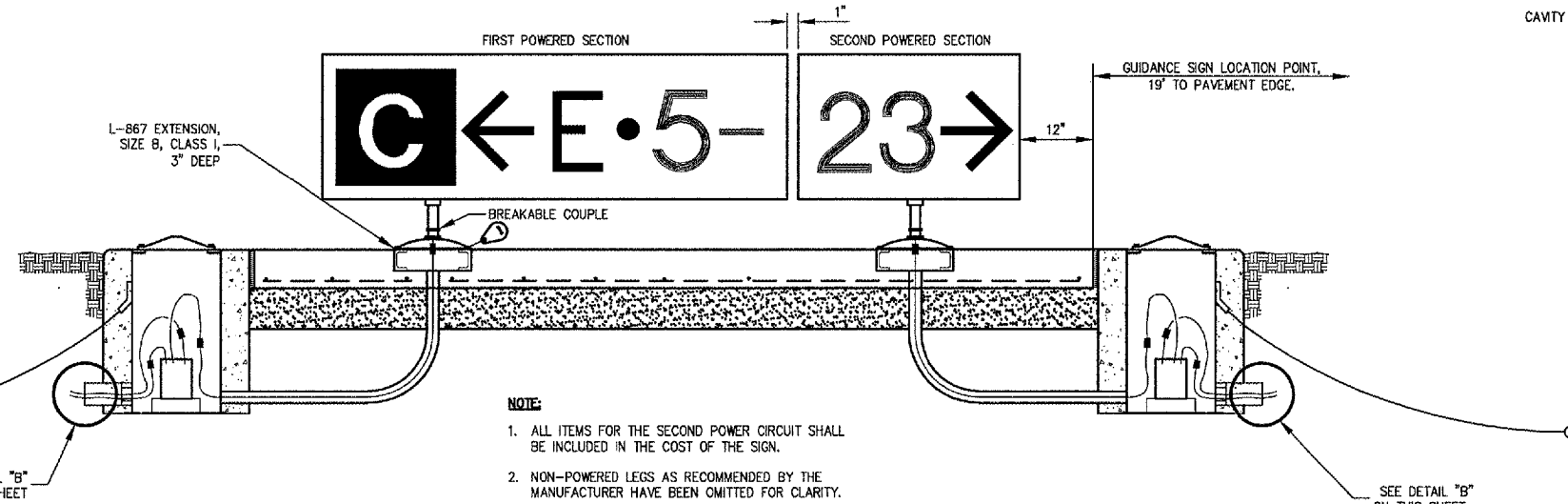
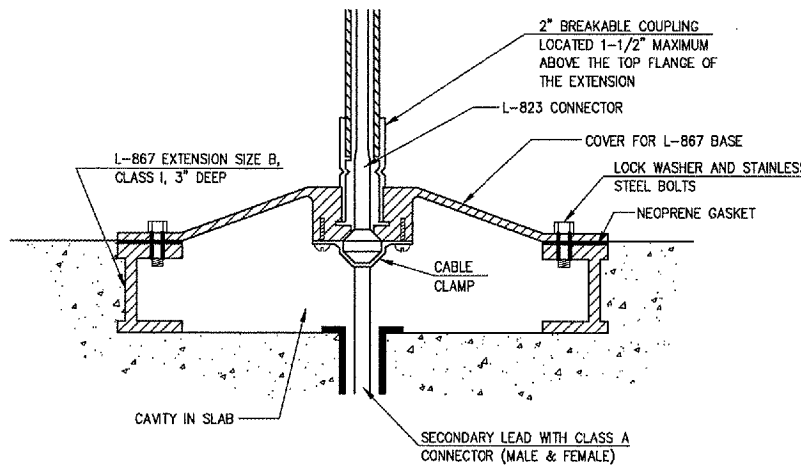
- NOTES:
- EXISTING SOD TO BE STRIPPED AND REMOVED
 - SAND BACKFILL, VARIABLE DEPTH
 - PROPOSED TOPSOIL BACKFILL MATERIAL

- NOTES:
- SEE SIGNAGE PLAN FOR SPECIFIC LETTERING AND NUMBER OF MODULE FOR EACH SIGN.
 - FOR SIGNS WITH ONLY ONE LEGEND FACE, SECOND LEGEND TO BE PROVIDED WITH BLANK BLACK PANEL.
 - NON-POWERED LEGS AS RECOMMENDED BY THE MANUFACTURER HAVE BEEN OMITTED FOR CLARITY.
 - ALL CONNECTION AT GROUND RODS SHALL BE EXOTHERMIC WELDS.



- NOTES:
- INSTALL A NONCORROSIVE DISC OF 2\"/>

LIGHTED AIRPORT GUIDANCE SIGN



- NOTE:
- ALL ITEMS FOR THE SECOND POWER CIRCUIT SHALL BE INCLUDED IN THE COST OF THE SIGN.
 - NON-POWERED LEGS AS RECOMMENDED BY THE MANUFACTURER HAVE BEEN OMITTED FOR CLARITY.

LIGHTED AIRPORT GUIDANCE SIGN WHEN TWO POWER CIRCUITS ARE REQUIRED

DETAILS SHOWN ARE NOT TO SCALE

No.	Drawing Issue	Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

SIGNAGE AND ELECTRICAL DETAILS

831-06A8004
Project Number
LDH 05/18/06
Layout By Date
LDH 05/18/06
Designed By Date
RMH 11/10/06
Reviewed By Date
LDH
Drawn By



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WAUKEGAN PORT DISTRICT

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Waukegan, Illinois 60087
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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

No.	Drawing Issue Description	Date	By

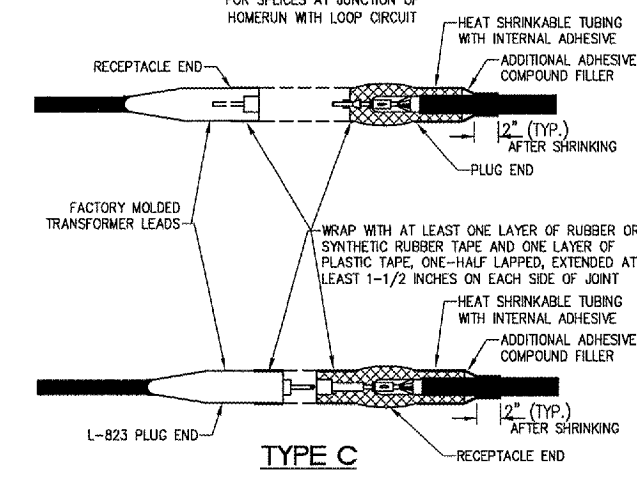
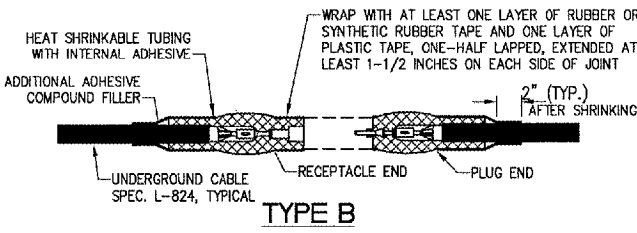
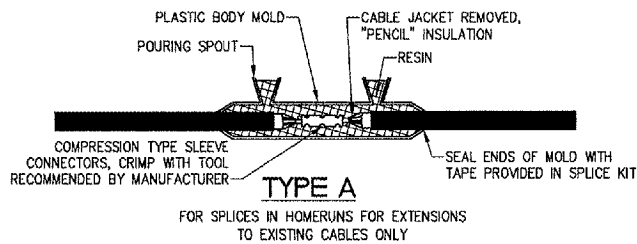
Date

NOVEMBER 10, 2006

Sheet Title

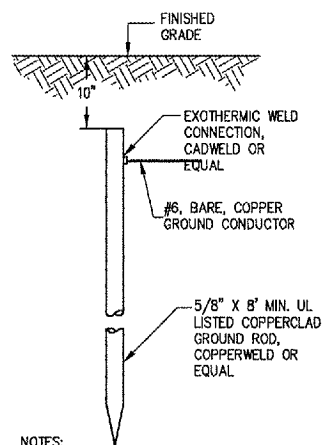
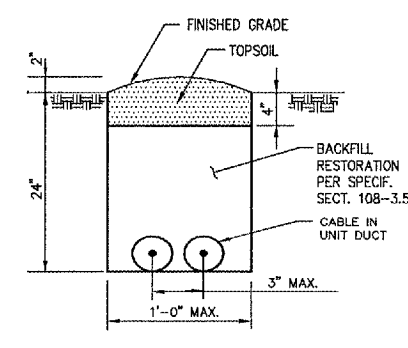
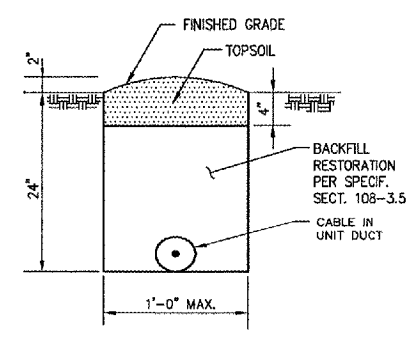
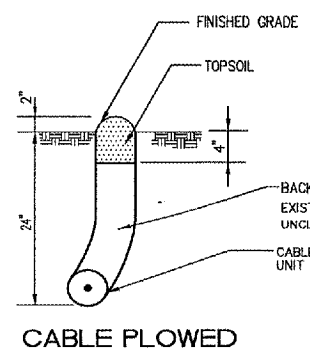
SIGNAGE AND
ELECTRICAL DETAILS

831-06A8004
Project Number
LDH 05/18/06
Layout By Date
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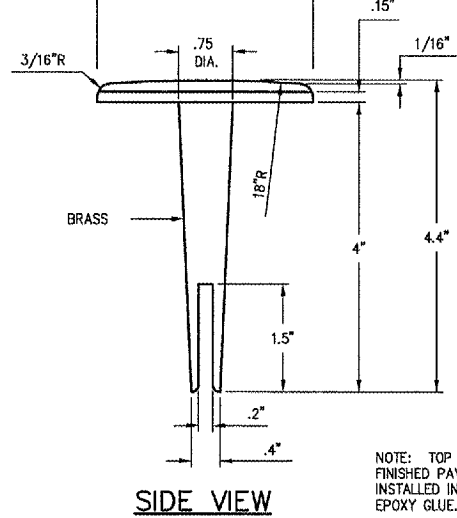
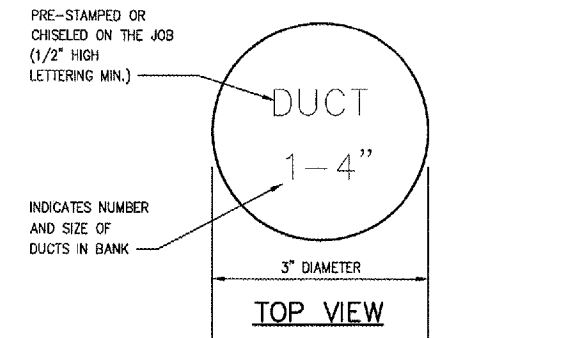
NOTES:
SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR SPLICE TYPE.
INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF CABLE.

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 GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
 - COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
 - GROUND RODS SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.

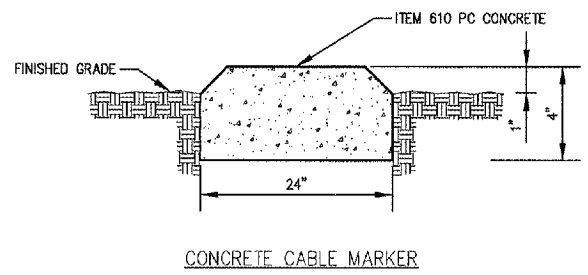
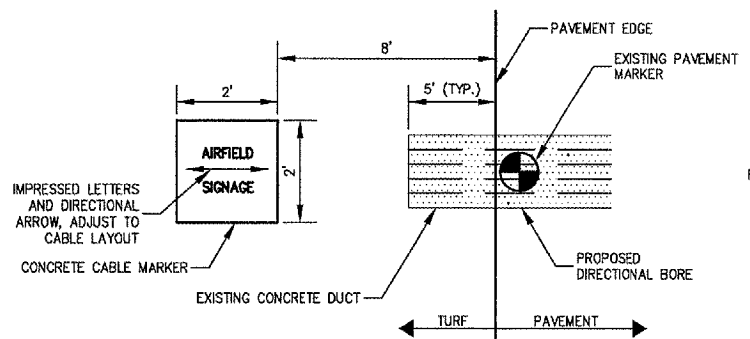
GROUND ROD
(NOT TO SCALE)



BITUMINOUS PAVEMENT MARKER

NOTE: TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE.

TURF AND PAVEMENT DUCT AND CABLE MARKERS



NOTES

- ALL CABLE SHALL BE PROVIDED WITH TURF CABLE MARKERS.
- THE COSTS OF ALL CABLE AND DUCT MARKERS SHALL BE INCIDENTAL TO THE CABLE AND DUCT.
- CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND EVERY 200' ALONG CABLE RUNS.
- LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.
- DUCT LOCATIONS SHALL BE FURNISHED WITH CONCRETE DUCT AND IN PAVEMENT BRASS MARKERS.

TURF CABLE AND DUCT MARKERS

DETAILS SHOWN ARE NOT TO SCALE

A: 10610051 000831 00AR004 00RAN005 SHEET 13 - DETAILS.DWG NOV 13, 2006 2:49PM LDH



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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

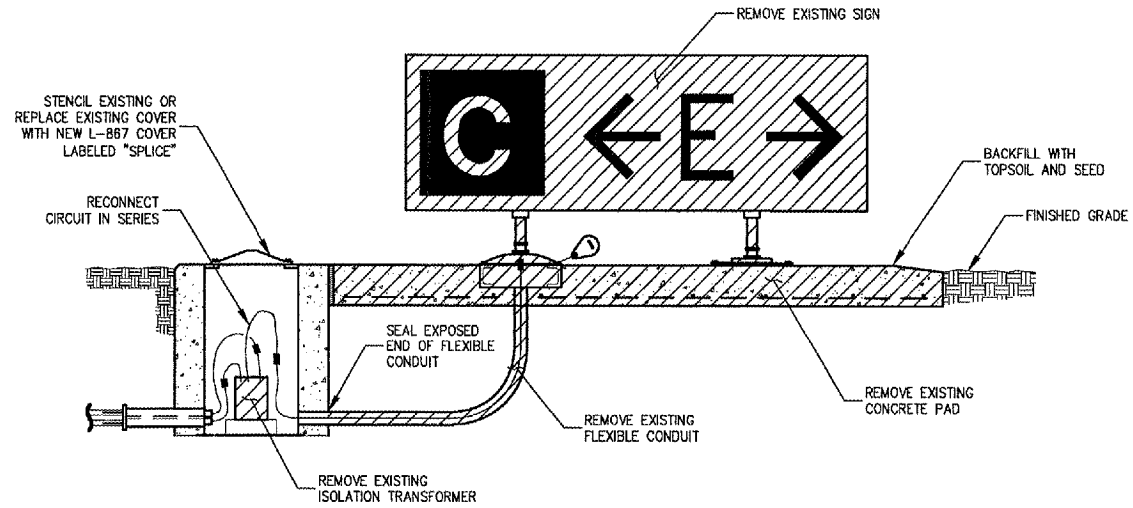
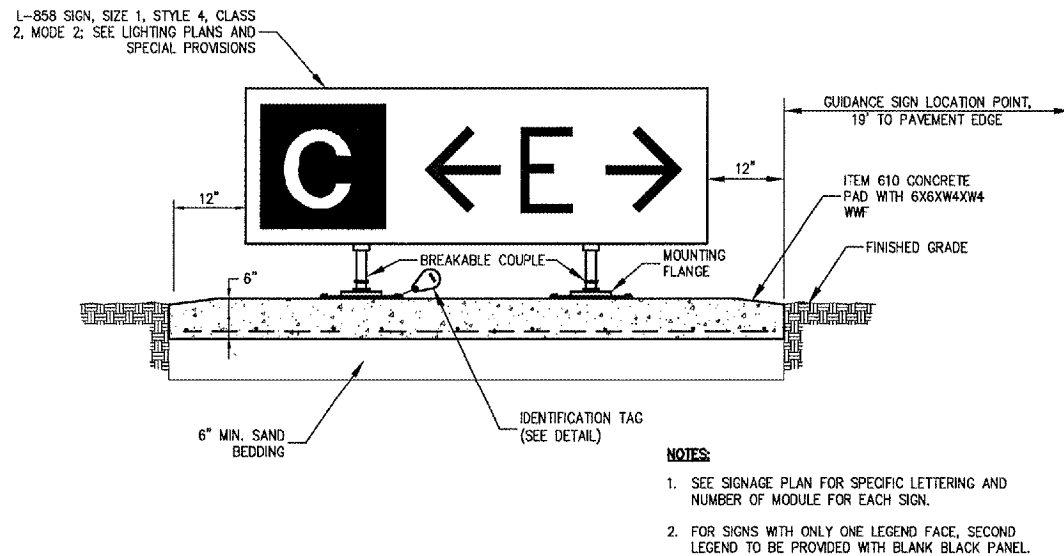
No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006

Sheet Title

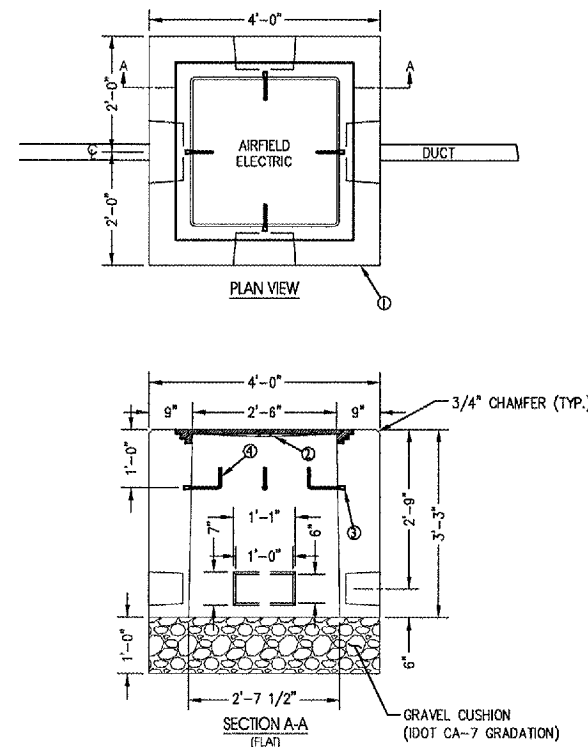
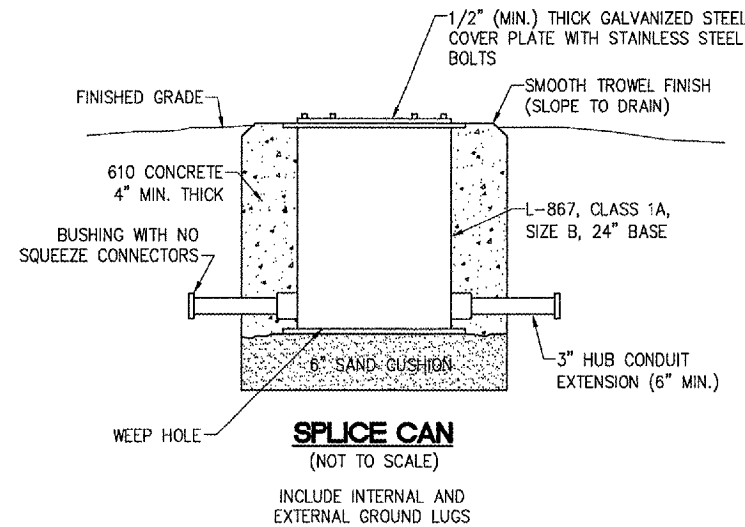
SIGNAGE AND ELECTRICAL DETAILS

Project Number	831-06A8004
LDH	09/11/06
Layout By	Date
LDH	09/11/06
Designed By	Date
RMH	11/10/06
Reviewed By	Date
LDH	---
Drawn By	Sheet No.



REFLECTIVE AIRPORT GUIDANCE SIGN

AIRPORT GUIDANCE SIGN REMOVAL DETAIL



PARTS LIST (PER EACH)		
ITEM	DESCRIPTION	QUANTITY
1	PRECAST CONCRETE JUNCTION BOX	1
2	CAST IRON FRAME & COVER EAST JORDAN IRON WORKS B213 OR EQUAL WITH CONCEALED HINGE COVER. LETTERING "AIRFIELD ELECTRIC".	1
3	3/8" PLASTIC THREADED INSERT	4
4	3/8" # GALVANIZED CABLE HOOK	4

SPECIFICATIONS

CONCRETE: 5,000 P.S.I. @ 28 DAYS, 5%-8% ENTRAINED AIR, 4" MAX. SLUMP. IDOT CLASS P.C.

DESIGN CRITERIA: PRECAST VERSION OF ILLINOIS STATE TOLL HIGHWAY AUTHORITY STANDARD NO. RL 91-04 LIGHT AND HEAVY DUTY JUNCTION BOXES.

WEIGHT: 4,990# FLAT TOP

NOTES

- HANDHOLE SHALL BE PRECAST AS DETAILED.
- PRECAST HANDHOLE TO BE UTILITY CONCRETE PRODUCTS, LLC. 30" X 30" JUNCTION BOX OR APPROVED EQUAL.
- LIDS FOR HANDHOLES SHALL BE LABELED "AIRFIELD ELECTRIC".
- GRAVEL CUSHION SHALL BE INCIDENTAL TO THE HANDHOLE.

DETAILS SHOWN ARE NOT TO SCALE



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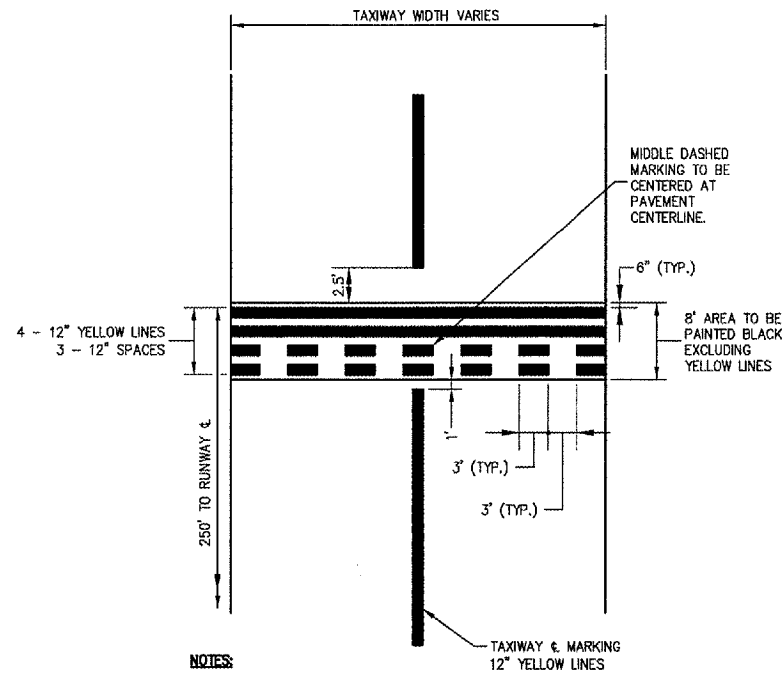


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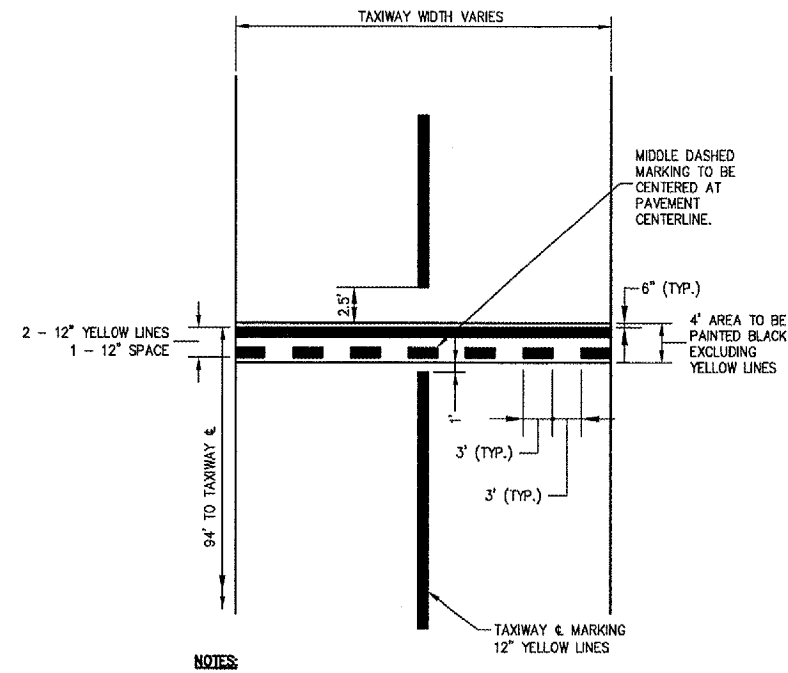
AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
 IDA PROJECT NO. UGN-3650



- NOTES:**
1. HOLDING POSITION MARKINGS TO BE YELLOW, WATERBORNE WITH REFLECTIVE BEADS AND PAID UNDER ITEM AR620520.
 2. HOLDING POSITION MARKINGS TO HAVE BLACK BORDER AND PAID UNDER ITEM AR620525.

HOLDING POSITION MARKING



- NOTES:**
1. NON-MOVEMENT AREA BOUNDARY MARKINGS TO BE YELLOW, WATERBORNE WITH REFLECTIVE BEADS AND PAID UNDER ITEM AR620520.
 2. NON-MOVEMENT AREA BOUNDARY MARKINGS TO HAVE BLACK BORDER AND PAID UNDER ITEM AR620525.

NON-MOVEMENT AREA BOUNDARY MARKING

No.	Drawing Issue Description	Date	By

Date
 NOVEMBER 10, 2006
 Sheet Title

MARKING DETAILS

831-06A8004
 Project Number
 LDH 10/17/06
 Layout By Date
 LDH 10/17/06
 Designed By Date
 RMH 11/10/06
 Reviewed By Date
 LDH
 Drawn By Sheet No.

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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006

Sheet Title

ELECTRICAL NOTES

831-06A8004	Project Number	26
LDH	Date 05/18/06	
LDH	Date 05/18/06	
RMH	Date 11/10/06	
LDH	Date	
LDH	Date	
LDH	Date	

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 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.

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FIELD LIGHTING NOTES

1. 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.
2. NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
3. THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REIL, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKABLE COUPLING(S) AT THE GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.
4. THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT.
5. THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE.
6. L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
7. THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURE AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.
8. ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
9. DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF TEN (10") INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION TWELVE (12") INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.
10. A SLACK OF THREE (3') FEET, MINIMUM, SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS, THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER.
11. DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO RIGHT IS CODED BLUE. THIS APPLIES TO STAKE MOUNTED LIGHTS AND BASE MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.
12. L-867 BASES SHALL BE SIZE B, 24" DEEP, CLASS I, UNLESS OTHERWISE NOTED.
13. BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL BE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.
14. THE ELEVATION OF THE BREAKABLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE MOUNTED COUPLINGS.

15. WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
16. TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
17. PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
18. THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. IN CASE OF STAKE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.
19. THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.
20. ENTRANCES INTO L-867 BASES SHALL BE SEALED WITH HEAT SHRINK.
21. GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
22. EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
23. CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS SHALL BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.
24. ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLES.
25. THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
26. APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.
27. LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.
28. WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "T" SPLICES SHALL BE OF THE CAST TYPE.
29. CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKINGS, ETC. SHALL BE 3000 PSI, AIR-ENTRAINED.
30. ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE-ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.

GROUNDING NOTES

1. 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.
2. TOP OF GROUND RODS SHALL BE TEN (10) INCHES BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
3. THE RESISTANCE TO GROUND OF THE VAULT GROUNDING SYSTEM WITH THE COMMERCIAL POWER LINE NEUTRAL DISCONNECTED SHALL NOT EXCEED 10 OHMS.

PROPOSED TAXIWAY GUIDANCE SIGN NOTES

THE PROPOSED TAXI GUIDANCE SIGNS WILL CONFORM TO ADVISORY CIRCULAR 150/5345-44G. THE LIGHTED SIGNS SHALL BE SIZE 1, 18-IN. SIGN FACE WITH A 12-IN. LEGEND; STYLE 5, POWERED FROM A 5.5 AMP SERIES LIGHTING CIRCUIT; CLASS 2, FOR OPERATION DOWN TO -55°C; MODE 2, TO WITHSTAND WIND LOADS OF 200 MPH; BASE MOUNTED, DOUBLE SIDED, AS SPECIFIED ON THE PLANS. THE REFLECTIVE SIGNS SHALL BE SIZE 1, 18-IN. SIGN FACE WITH A 12-IN. LEGEND; STYLE 4, REFLECTIVE SIGN; MODE 2, TO WITHSTAND WIND LOADS OF 200 MPH; 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, DESTINATION AND BOUNDARY SIGNS (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858-R MANDATORY INSTRUCTION SIGN (BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON RED BACKGROUND); AND TYPE L-858-L LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND).

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 BE PAID FOR BY THE MAXIMUM NUMBER OF CHARACTERS REPRESENTED ON ONE SIGN FACE.

ALL SIGNS WILL READ AS DETAILED ON THE SIGNAGE AND MARKING PLANS.

WA057



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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

ELECTRICAL NOTES

831-06A8004
Project Number
LDH 05/18/06
Layout By Date
LDH 05/18/06
Designed By Date
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LDH |----
Drawn By Sheet No.

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

ELECTRICAL LEGEND - SCHEMATIC	
	NORMALLY OPEN (N.O.) CONTACT
	NORMALLY CLOSED (N.C.) CONTACT
	STARTER COIL, * = STARTER NUMBER
	OVERLOAD RELAY CONTACT
	CONTROL RELAY, * = CONTROL RELAY NUMBER
	RELAY, * = RELAY NUMBER
	TOGGLE SWITCH / 2 POSITION SWITCH (OPEN-CLOSED)
	2-POSITION SELECTOR SWITCH
	TOGGLE SWITCH 2-POSITION
	TOGGLE SWITCH 3-POSITION CENTER OFF
	ROTARY SWITCH/ 4-POSITION
	ROTARY SWITCH/ 6-POSITION
	3-POSITION SELECTOR SWITCH (H-O-A SHOWN)
	2 POLE DISCONNECT SWITCH
	3 POLE DISCONNECT SWITCH
	PHOTOCELL
	TERMINAL BLOCK, * = TERMINAL NUMBER
	DEVICE TERMINAL, * = DEVICE TERMINAL NUMBER
	INTERNAL PANEL WIRING
	FIELD WIRING
	FUSE
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	GROUND, GROUND ROD, GROUND BUS
	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
	S1 CUTOUT HANDLE REMOVED
	S1 CUTOUT HANDLE INSERTED
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH
	L-830 SERIES ISOLATION TRANSFORMER

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

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

AIRPORT EQUIPMENT ABBREVIATIONS	
ATCT	AIR TRAFFIC CONTROL TOWER
CCR	CONSTANT CURRENT REGULATOR
HIRL	HIGH INTENSITY RUNWAY LIGHT
MIRL	MEDIUM INTENSITY RUNWAY LIGHT
MITL	MEDIUM INTENSITY TAXIWAY LIGHT
NOB	NON-DIRECTIONAL BEACON
PAPI	PRECISION APPROACH PATH INDICATOR
PLASI	PULSE LIGHT APPROACH SLOPE INDICATOR
REIL	RUNWAY END IDENTIFIER LIGHT
VADI	VISUAL APPROACH DESCENT INDICATOR
VASI	VISUAL APPROACH SLOPE INDICATOR
WC	WIND CONE

NOTES:

- 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.
- CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT DIRECTOR.
- 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:

240/120 VAC, 3 PHASE, 4 WIRE
 PHASE A BLACK
 PHASE B ORANGE
 PHASE C BLUE
 NEUTRAL WHITE
 GROUND GREEN

WA057



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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
 IDA PROJECT NO. UGN-3650

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ELECTRICAL LEGEND AND ABBREVIATIONS

831-06A8004
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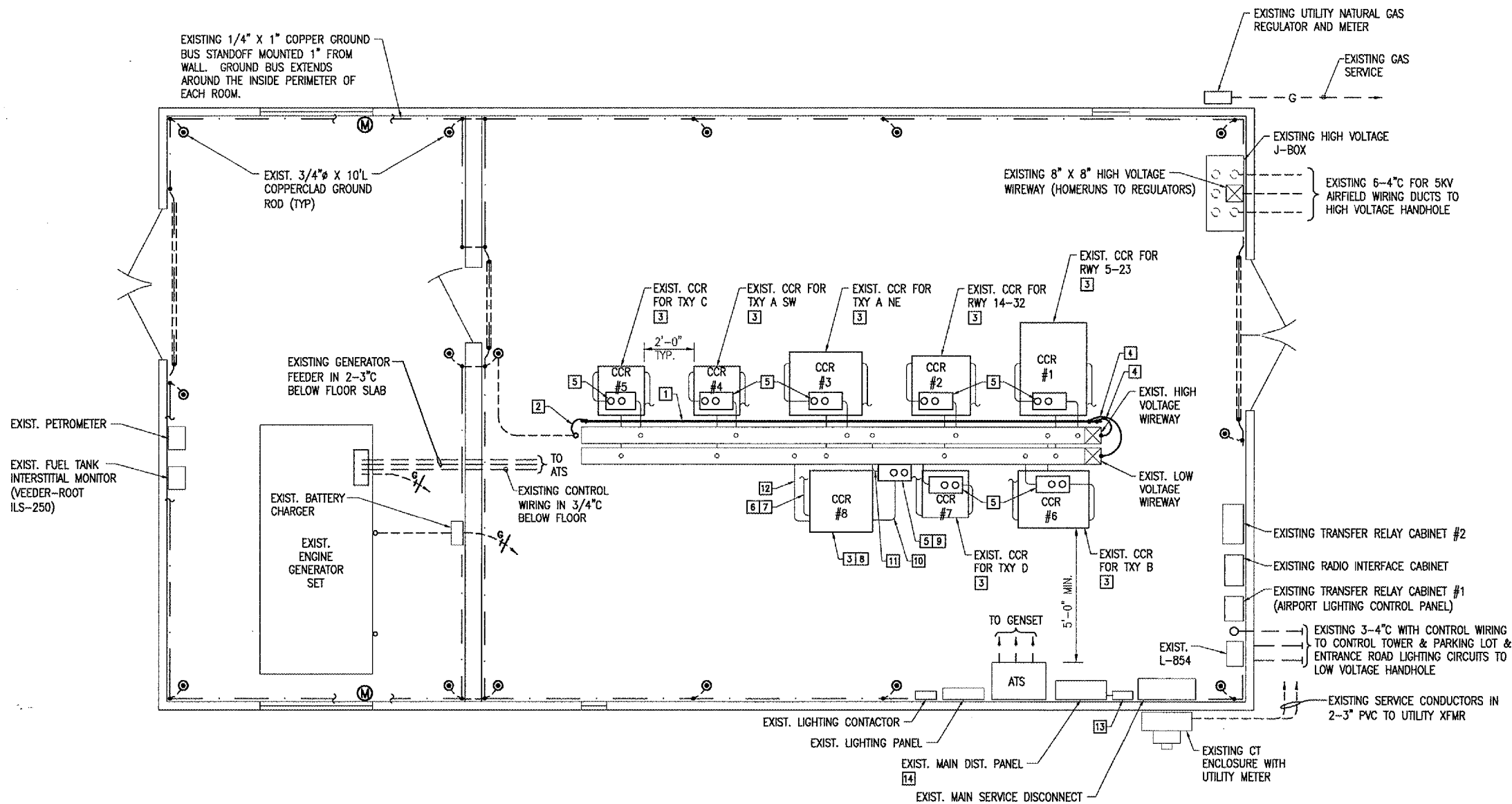


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AIP PROJECT NO. 3-17-0105-B35
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ELECTRICAL VAULT FLOOR PLAN
SCALE 3/8" = 1'-0"
0 2 4 FEET

NOTES

1. ALL VAULT WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT MANAGER.
2. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA70 (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 UL LISTING, ETL LISTING, OR OTHER THIRD PARTY LISTING AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
3. SEE "CCR GROUND BUS RISER AND GROUNDING DETAILS" SHEET FOR ADDITIONAL INFO ON THE NEW GROUND BAR FOR CCR'S.
4. SEE HIGH VOLTAGE WIRING SCHEMATICS FOR REQUIREMENTS ON CUTOUT WIRING.
5. SEE "PROPOSED ELECTRICAL ONE LINE" FOR REQUIREMENTS ON BRANCH CIRCUIT WIRING, CONDUIT, EQUIPMENT, ETC.
6. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY.
7. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE UL LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED.

KEYED NOTES

- 1 NEW GROUND BAR FOR CCR'S; 1/4" THICK BY 2" WIDE BY 20'-1" LONG COPPER BUS BAR WITH STANDOFF INSULATORS AND MOUNTING HARDWARE. NEW GROUND BAR SHALL REPLACE EXISTING 1/4" THICK BY 1" WIDE GROUND BAR AT CCR'S. MOUNT TO EXISTING STRUT SUPPORT STRUCTURE. SEE NOTE 3.
- 2 CONNECT EXISTING #1/0 GROUNDING ELECTRODE CONDUCTOR TO NEW GROUND BAR.
- 3 BOND EACH CCR FRAME TO NEW GROUND BAR WITH #6 AWG (MIN.) STRANDED COPPER CONDUCTOR. SEE NOTE 3.
- 4 BOND HIGH VOLTAGE & LOW VOLTAGE WIREWAYS TO NEW GROUND BAR WITH #6 AWG (MIN.) STRANDED COPPER CONDUCTOR. SEE NOTES 3 & 4.
- 5 BOND EACH CUTOUT ENCLOSURE TO NEW GROUND BAR WITH #6 AWG (MIN.) STRANDED COPPER CONDUCTOR. SEE NOTES 3 & 4.
- 6 FURNISH & INSTALL NEW PLUG-IN UNIT CIRCUIT BREAKER FOR NEW CCR #8, 240 VAC BRANCH CIRCUIT. SEE NOTE 5.
- 7 NEW 240 VAC BRANCH CIRCUIT CONDUCTORS & CONDUIT TO TAXI GUIDANCE SIGN CCR. SEE NOTE 5.
- 8 NEW TAXI GUIDANCE SIGNS CCR.
- 9 SERIES PLUG CUTOUT CABINET WITH L-861 LIGHT FIXTURES. SEE DETAIL ON "HIGH VOLTAGE SCHEMATIC FOR TAXIWAY SIGNS" SHEET. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS.
- 10 2 #8 FAA L-828 TYPE C, 5000V CABLES WITH #8 EQUIPT GND IN 1" LTFMC FROM CCR TO CUTOUT ENCLOSURE.
- 11 2 #8 FAA L-828 TYPE C, 5000V CABLES IN 1" LTFMC FROM CUTOUT ENCLOSURE TO HIGH VOLTAGE WIREWAY & ON TO TAXI GUIDANCE SIGN SERIES CIRCUIT.
- 12 CONTROL WIRING IN 3/4" LTFMC FROM CCR TO LOW VOLTAGE WIREWAY. INTERFACE TO EXISTING CONTROL SYSTEM WITH UPGRADES AS DETAILED HEREIN.
- 13 NEW AC SURGE PROTECTOR/TVSS DEVICE. INSTALL ON LEFT HAND SIDE OF POWER DISTRIBUTION PANELBOARD ABOVE SERVICE DISCONNECT. PROVIDE 2" GRSC NIPPLE WITH 3 #6 THWN, 1 #6 NEUTRAL, 1 #6 GND, 1 #8 EQUIPT GND. REMOVE EXISTING TVSS UPON COMPLETING INSTALLATION OF NEW TVSS.
- 14 FURNISH & INSTALL NEW BREAKER FOR CCR BUSWAY & NEW BREAKER FOR AC SURGE PROTECTOR/TVSS DEVICE. SEE NOTE 5.

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ELECTRICAL VAULT FLOOR PLAN

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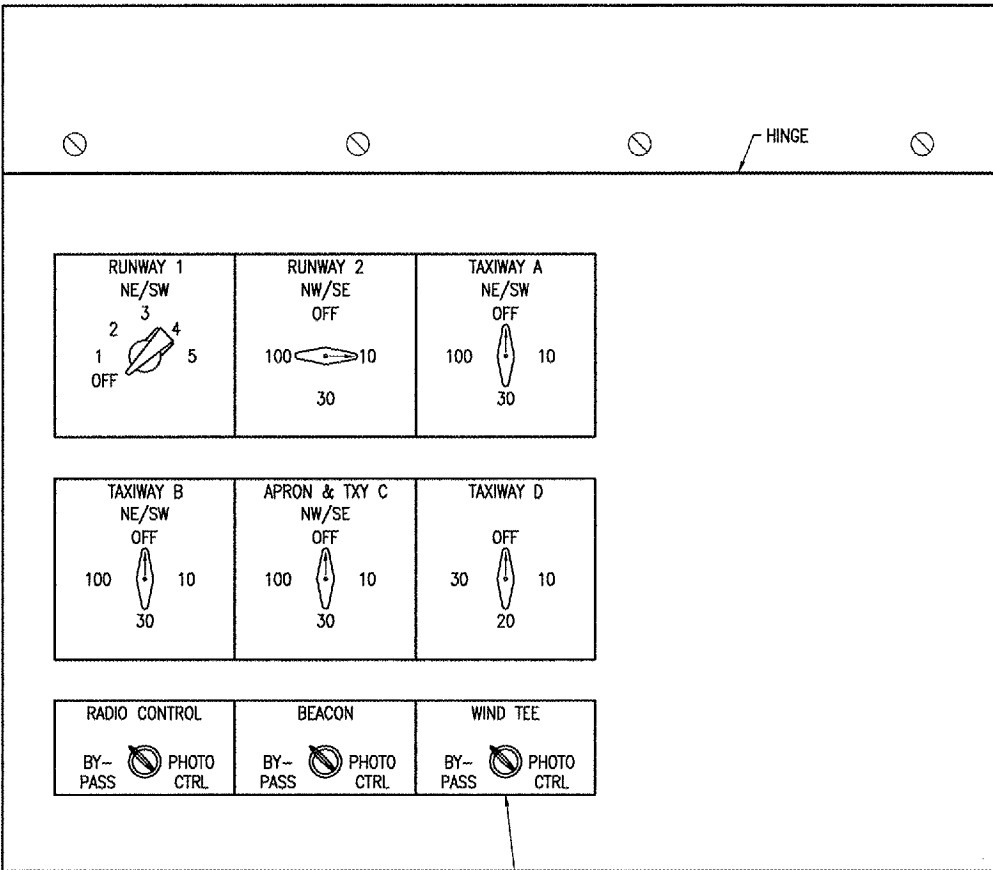


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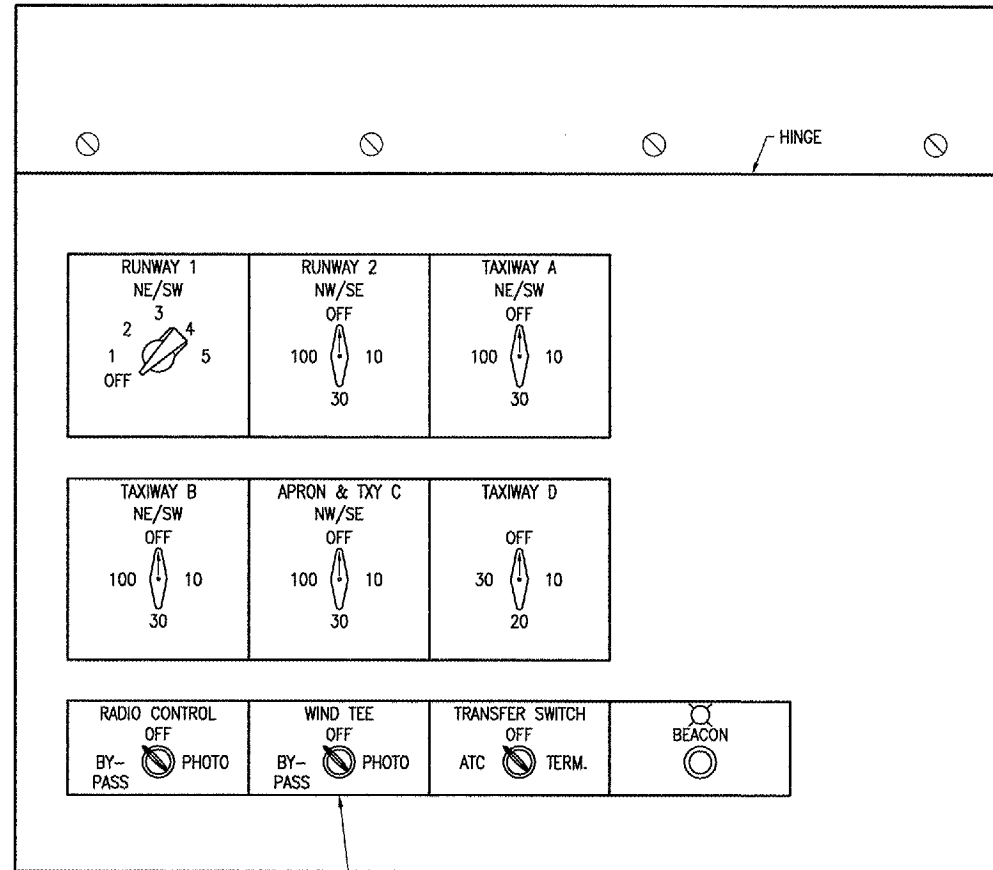
AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



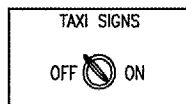
WIND TEE NO LONGER EXISTS. REPLACE WIND TEE CONTROL SWITCH WITH TAXI GUIDANCE SIGN CONTROL SWITCH: "ON-OFF" 2-POSITION SWITCH, AS DETAILED. INCLUDE UPDATED LEGEND PLATE LABELED "TAXI SIGNS" WITH "OFF" & "ON" POSITIONS IDENTIFIED.

EXISTING L-821 CONTROL PANEL AT ADMINISTRATION/TERMINAL BUILDING



WIND TEE NO LONGER EXISTS. REPLACE WIND TEE CONTROL SWITCH WITH TAXI GUIDANCE SIGN CONTROL SWITCH: "ON-OFF" 2-POSITION SWITCH, AS DETAILED. INCLUDE UPDATED LEGEND PLATE LABELED "TAXI SIGNS" WITH "OFF" & "ON" POSITIONS IDENTIFIED.

EXISTING L-821 CONTROL PANEL AT A.T.C.T.



TAXI GUIDANCE SIGN CONTROL SWITCH

ADD TO L-821 CONTROL PANEL AT ADMIN/TERMINAL BUILDING AND AT A.T.C.T.

NOTES

1. THE L-821 CONTROL PANEL AT THE ADMINISTRATION BUILDING IS EXISTING, & WAS MANUFACTURED BY UNIVERSE INC., 1833 WEST HOVEY AVE, NORMAL, ILLINOIS 61761, PHONE 309-454-5665, FAX: 309-452-2521. COORDINATE REPLACEMENT TOGGLE SWITCH SELECTION WITH UNIVERSE.
2. THE L-821 CONTROL PANEL AT THE A.T.C.T. (AIR TRAFFIC CONTROL TOWER) IS EXISTING, & WAS MANUFACTURED BY UNIVERSE INC., 1833 WEST HOVEY AVE, NORMAL, ILLINOIS 61761, PHONE 309-454-5665, FAX: 309-452-2521. COORDINATE REPLACEMENT TOGGLE SWITCH SELECTION WITH UNIVERSE.
3. TAXI GUIDANCE SIGN CIRCUIT SHALL BE 1-STEP (OFF-ON) IN MANUAL MODE OF OPERATION AT L-821 CONTROL PANELS. CONTROL BY L-854 RADIO RECEIVER SHALL BE AS FOLLOWS:
3 CLICKS: ON
5 CLICKS: REMAIN ON
7 CLICKS: REMAIN ON

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DETAILS FOR EXISTING L-821 CONTROL PANELS

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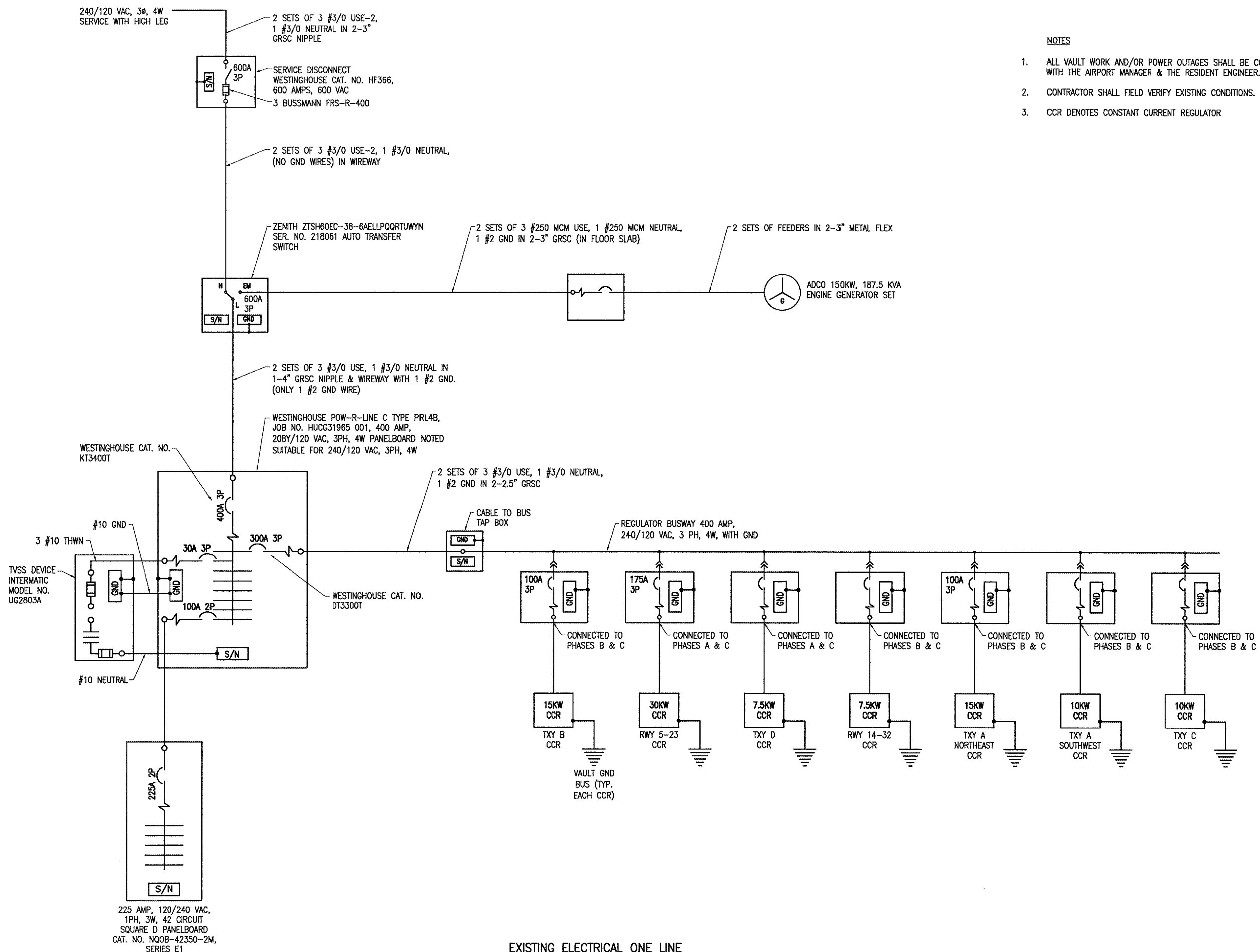
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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

NOTES

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



EXISTING ELECTRICAL ONE LINE

No.	Drawing Issue Description	Date	By

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Sheet Title

EXISTING ELECTRICAL ONE LINE

831-06A8004	Project Number
KNL	09/01/06
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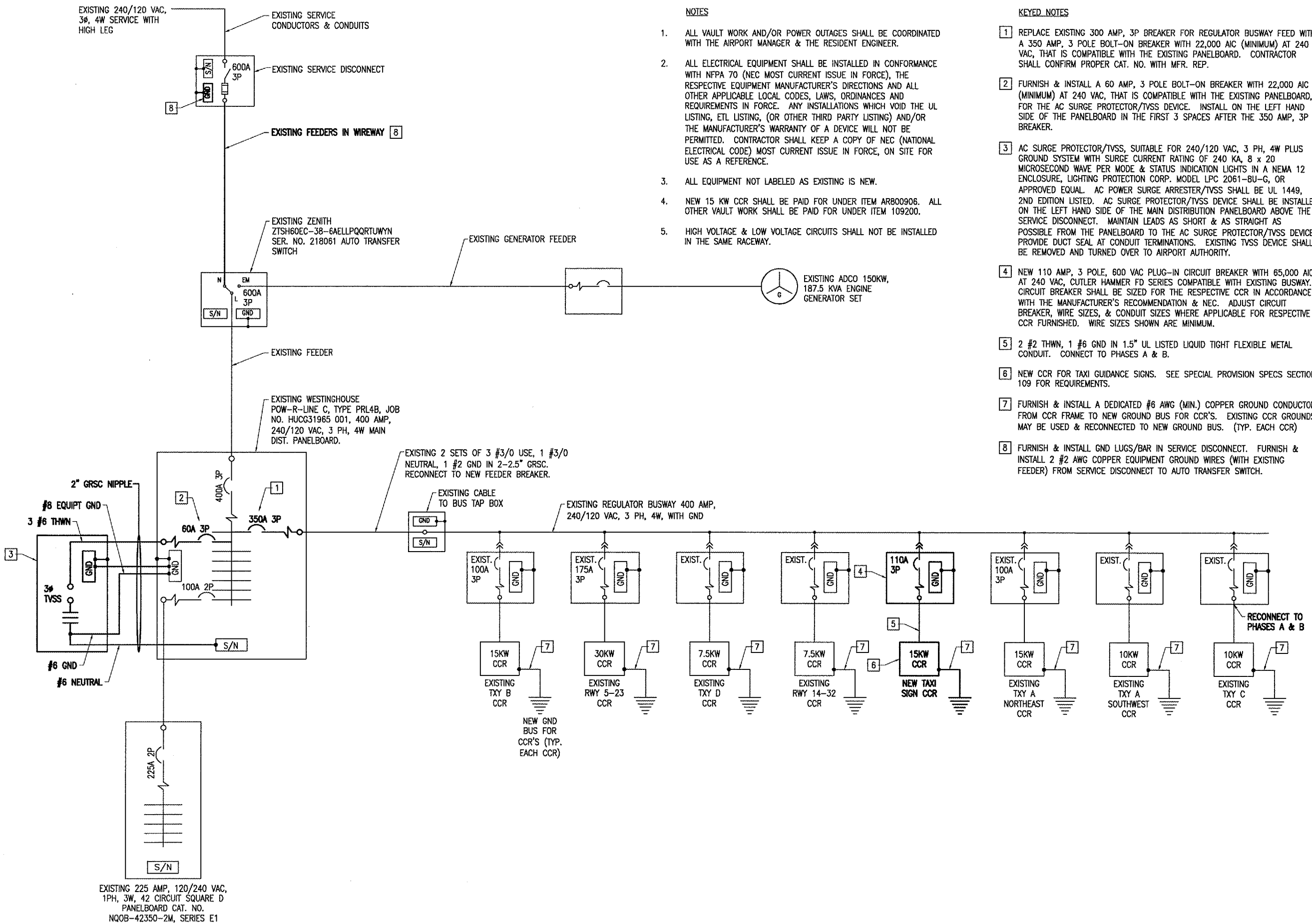


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AIP PROJECT NO. 3-17-0105-B35
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NOTES

1. ALL VAULT WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT MANAGER & 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 UL LISTING, ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL 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. NEW 15 KW CCR SHALL BE PAID FOR UNDER ITEM AR800906. ALL OTHER VAULT WORK SHALL BE PAID FOR UNDER ITEM 109200.
5. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY.

KEYED NOTES

- 1 REPLACE EXISTING 300 AMP, 3P BREAKER FOR REGULATOR BUSWAY FEED WITH A 350 AMP, 3 POLE BOLT-ON BREAKER WITH 22,000 AIC (MINIMUM) AT 240 VAC, THAT IS COMPATIBLE WITH THE EXISTING PANELBOARD. CONTRACTOR SHALL CONFIRM PROPER CAT. NO. WITH MFR. REP.
- 2 FURNISH & INSTALL A 60 AMP, 3 POLE BOLT-ON BREAKER WITH 22,000 AIC (MINIMUM) AT 240 VAC, THAT IS COMPATIBLE WITH THE EXISTING PANELBOARD, FOR THE AC SURGE PROTECTOR/TVSS DEVICE. INSTALL ON THE LEFT HAND SIDE OF THE PANELBOARD IN THE FIRST 3 SPACES AFTER THE 350 AMP, 3P BREAKER.
- 3 AC SURGE PROTECTOR/TVSS, SUITABLE FOR 240/120 VAC, 3 PH, 4W 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, LIGHTING PROTECTION CORP. MODEL LPC 2061-BU-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 LEFT HAND SIDE OF THE MAIN DISTRIBUTION PANELBOARD ABOVE THE SERVICE DISCONNECT. 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 TVSS DEVICE SHALL BE REMOVED AND TURNED OVER TO AIRPORT AUTHORITY.
- 4 NEW 110 AMP, 3 POLE, 600 VAC PLUG-IN CIRCUIT BREAKER WITH 65,000 AIC AT 240 VAC, CUTLER HAMMER FD SERIES COMPATIBLE WITH EXISTING BUSWAY. CIRCUIT BREAKER SHALL BE SIZED FOR THE RESPECTIVE CCR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION & NEC. ADJUST CIRCUIT BREAKER, WIRE SIZES, & CONDUIT SIZES WHERE APPLICABLE FOR RESPECTIVE CCR FURNISHED. WIRE SIZES SHOWN ARE MINIMUM.
- 5 2 #2 THWN, 1 #6 GND IN 1.5" UL LISTED LIQUID TIGHT FLEXIBLE METAL CONDUIT. CONNECT TO PHASES A & B.
- 6 NEW CCR FOR TAXI GUIDANCE SIGNS. SEE SPECIAL PROVISION SPECS SECTION 109 FOR REQUIREMENTS.
- 7 FURNISH & INSTALL A DEDICATED #6 AWG (MIN.) COPPER GROUND CONDUCTOR FROM CCR FRAME TO NEW GROUND BUS FOR CCR'S. EXISTING CCR GROUNDS MAY BE USED & RECONNECTED TO NEW GROUND BUS. (TYP. EACH CCR)
- 8 FURNISH & INSTALL GND LUGS/BAR IN SERVICE DISCONNECT. FURNISH & INSTALL 2 #2 AWG COPPER EQUIPMENT GROUND WIRES (WITH EXISTING FEEDER) FROM SERVICE DISCONNECT TO AUTO TRANSFER SWITCH.

EXISTING 225 AMP, 120/240 VAC,
1PH, 3W, 42 CIRCUIT SQUARE D
PANELBOARD CAT. NO.
NQ0B-42350-2M, SERIES E1

PROPOSED ELECTRICAL ONE LINE

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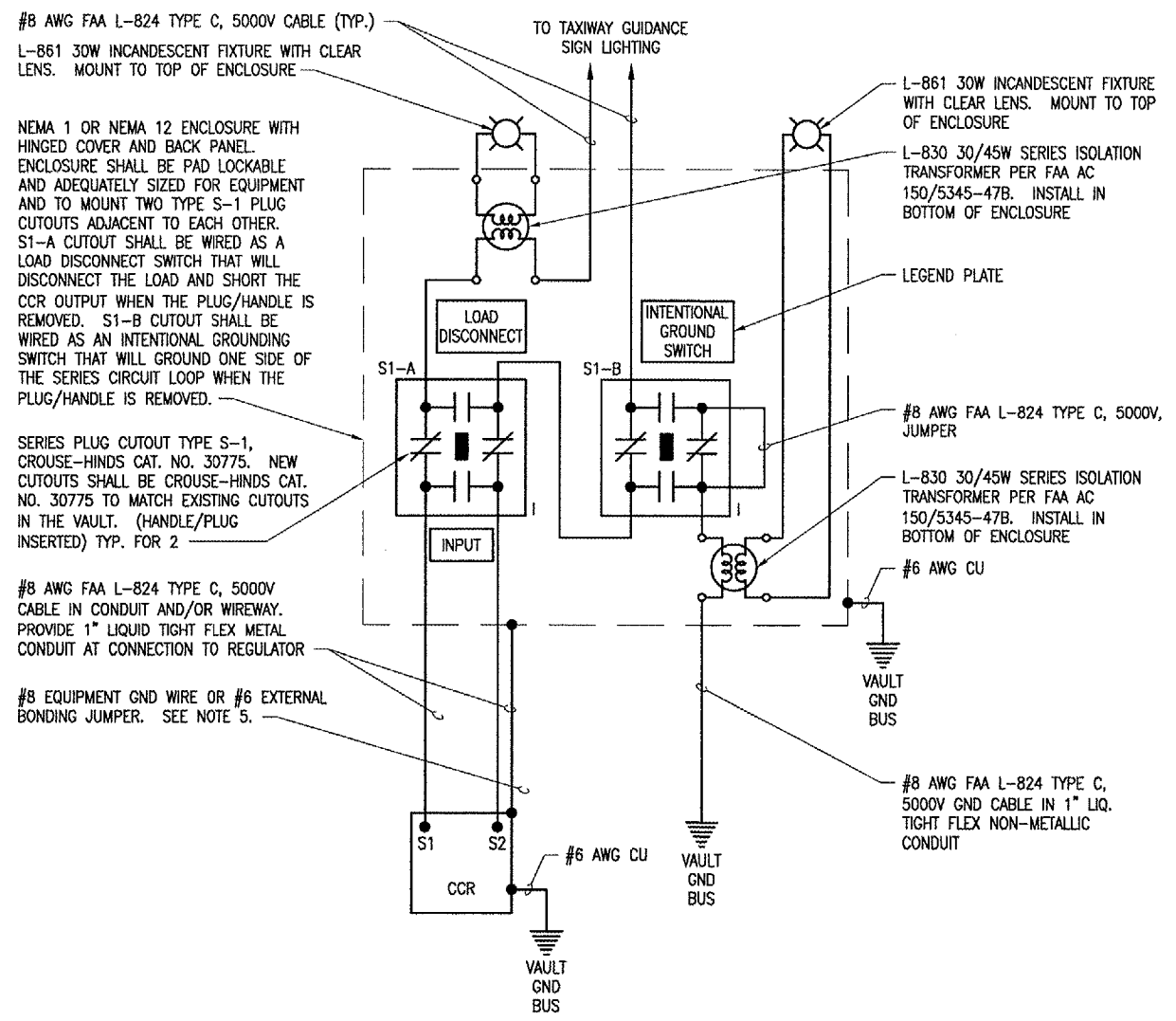


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AIRFIELD SIGNAGE IMPROVEMENTS
 AIP PROJECT NO. 3-17-0105-B35
 IDA PROJECT NO. UGN-3650



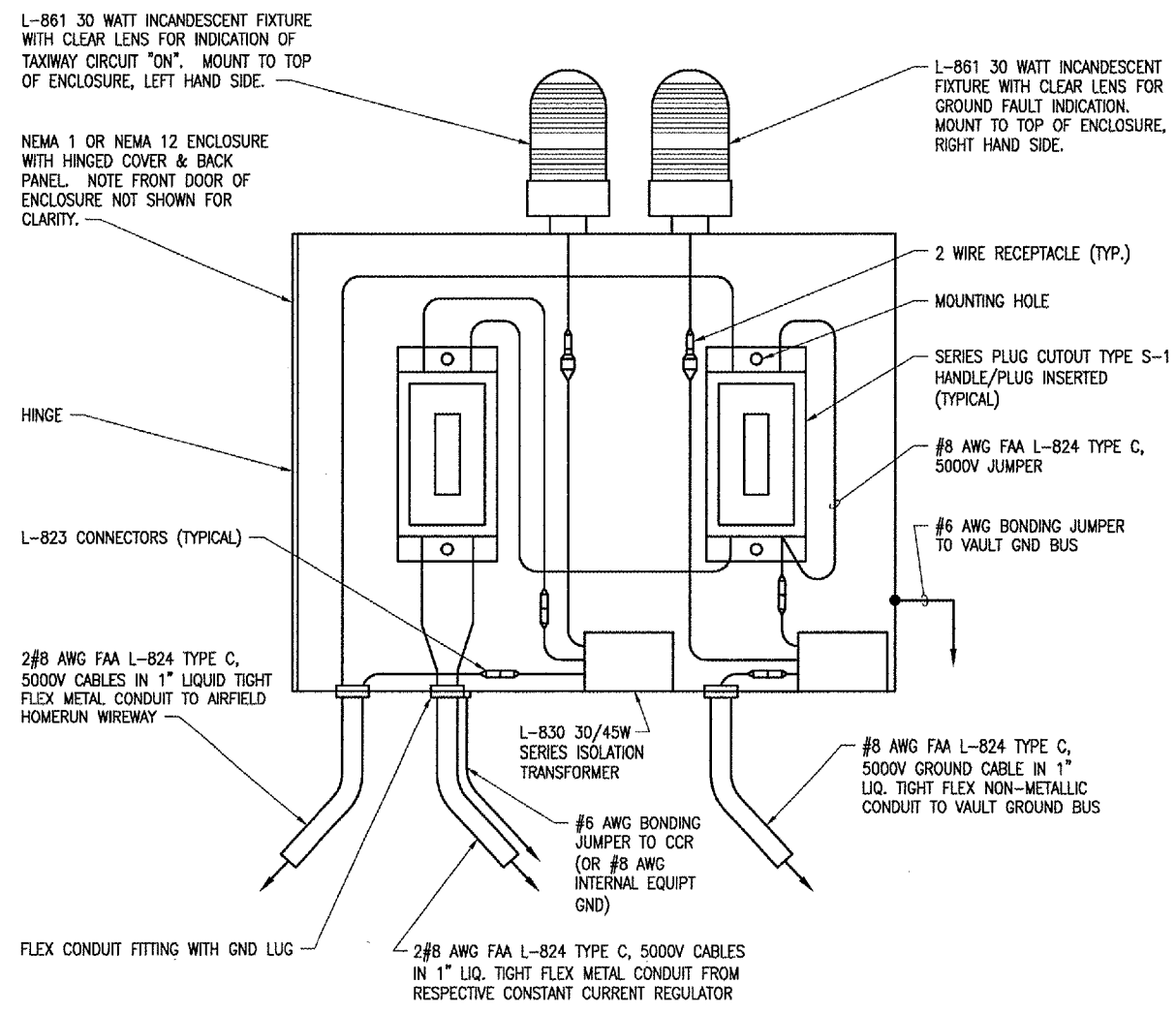
HIGH VOLTAGE WIRING SCHEMATIC FOR TAXI GUIDANCE SIGNS

NOTES

1. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR CONSTANT CURRENT REGULATOR NOTING THE REGULATOR DESIGNATION.
2. PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE S1 HANDLES WITH LOAD DE-ENERGIZED".
3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CUTOUT TO IDENTIFY THE FUNCTION OF EACH RESPECTIVE CUTOUT.
4. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS.
5. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). INTERNAL EQUIPMENT GROUNDING CONDUCTOR SHALL BE #8 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT U.L. LISTED.

LEGEND

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



SERIES PLUG CUTOUT MOUNTING DETAIL FOR TAXIWAY GUIDANCE SIGN CIRCUIT

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HIGH VOLTAGE SCHEMATIC FOR TAXIWAY SIGNS

831-06A8004

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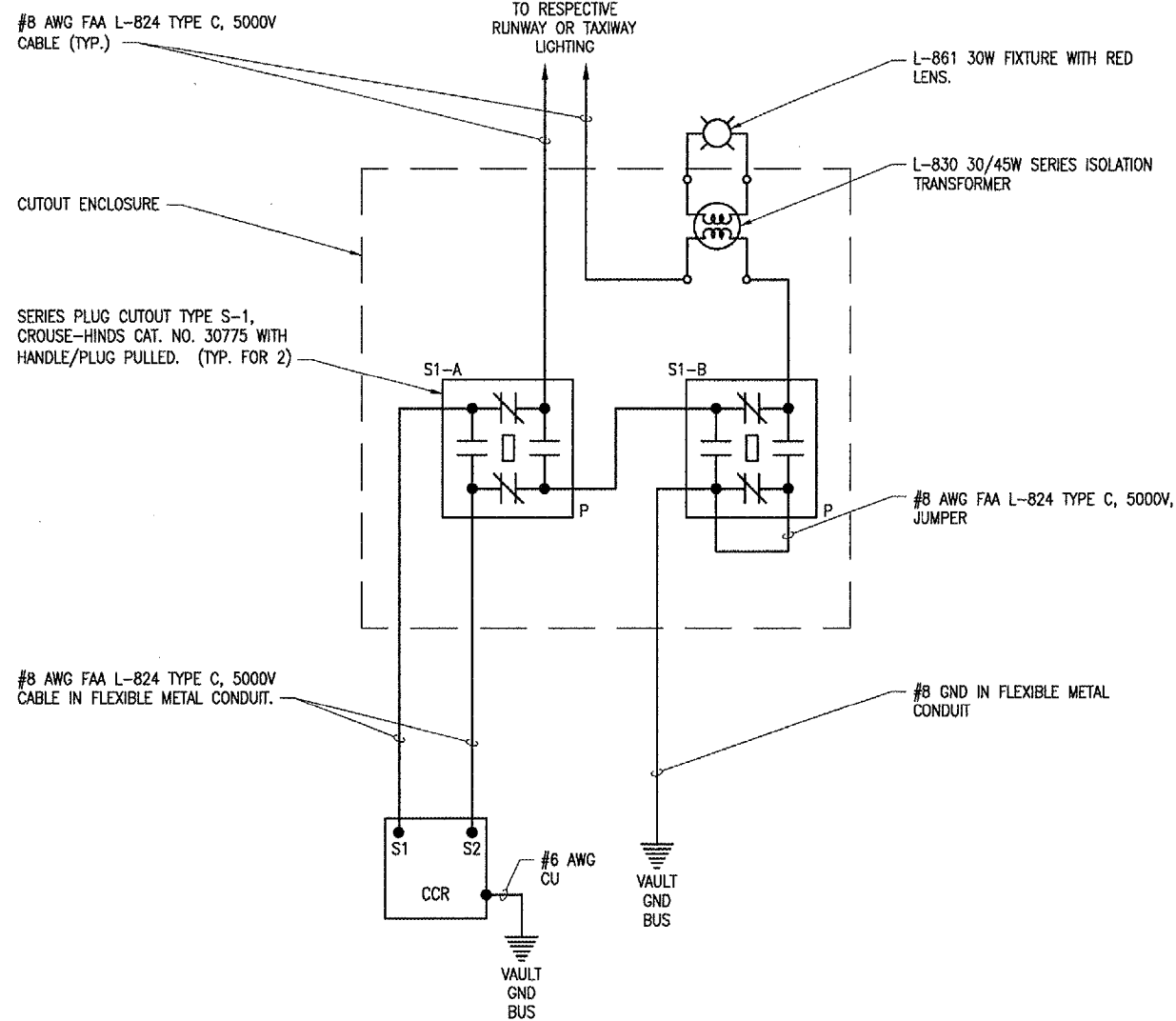
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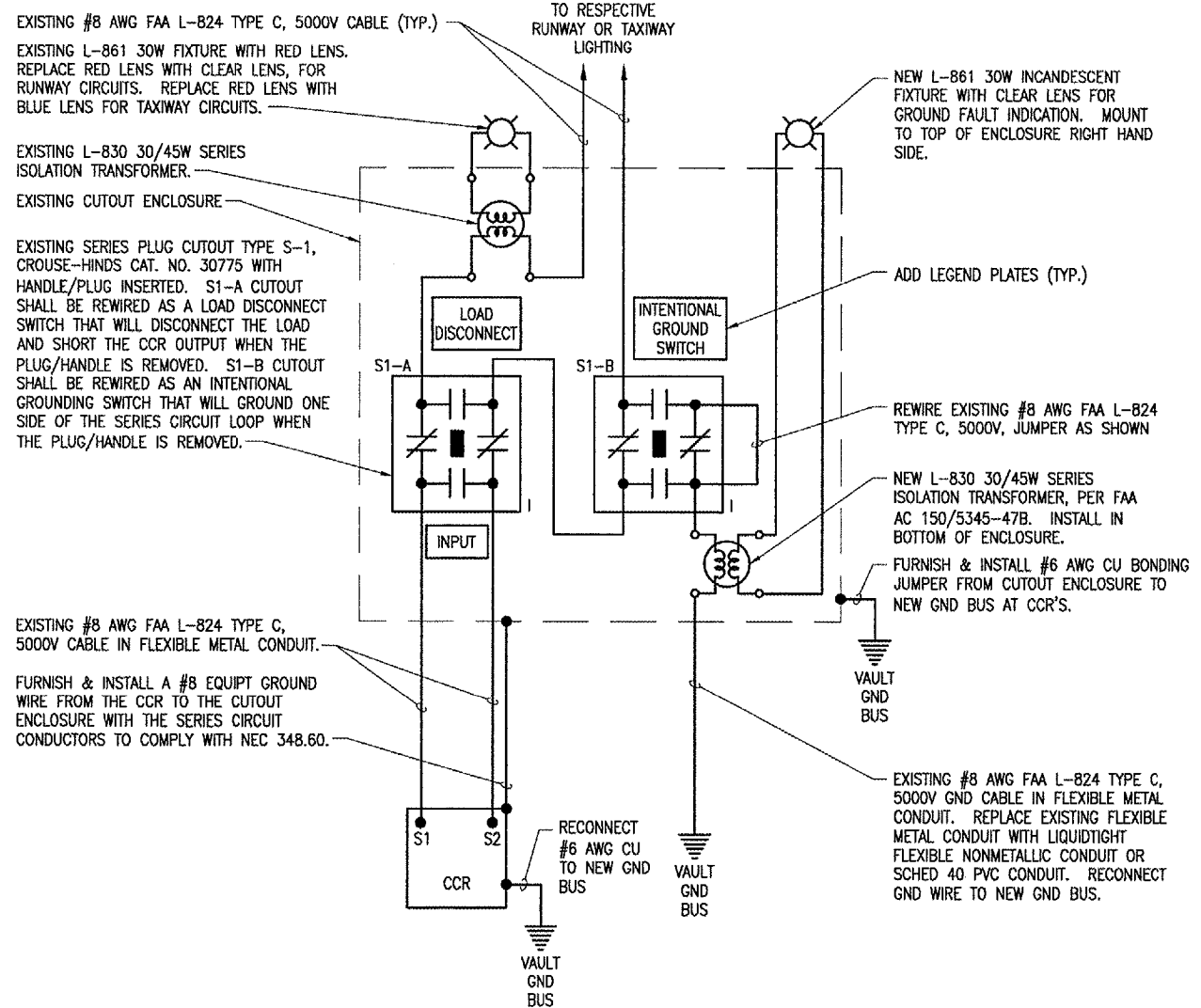
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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
 IDA PROJECT NO. UGN-3650



EXISTING HIGH VOLTAGE WIRING SCHEMATIC
 (TYP. FOR EACH CCR)



PROPOSED HIGH VOLTAGE WIRING SCHEMATIC
 (TYP. FOR EACH CCR)

NOTES

1. THE EXISTING SERIES PLUG CUTOUTS ARE WIRED SUCH THAT THE CCR OUTPUT IS CONNECTED TO THE SERIES CIRCUIT WHEN THE CUTOUT PLUG IS REMOVED. THIS IS INCORRECT AND DOES NOT ALLOW A PROPER LOCKOUT PROCEDURE. THE EXISTING CUTOUT PAIRS FOR EACH CCR SHALL BE REWIRED AS SHOWN ON THE PROPOSED HIGH VOLTAGE WIRING SCHEMATIC.
2. REFER TO COOPER CROUSE-HINDS "TROUBLESHOOTING AIRFIELD SERIES CIRCUITS" GUIDE FOR INFORMATION ON INTENTIONAL GROUNDING METHOD TO ASSIST IN LOCATING GROUND FAULTS ON AIRFIELD LIGHTING CIRCUITS.
3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR NOTING THE REGULATOR DESIGNATION, & THE RUNWAY OR TAXIWAY SERVED.
4. EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF".
5. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CUTOUT TO IDENTIFY THE FUNCTION OF EACH RESPECTIVE CUTOUT.
6. EXISTING HIGH VOLTAGE WIRING INSTALLED IN FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE THE ADDITION OF AN INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 348.60. INTERNAL EQUIPMENT GROUNDING CONDUCTOR SHALL BE #8 AWG COPPER (MINIMUM).

LEGEND

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

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HIGH VOLTAGE WIRING SCHEMATICS

831-06A8004
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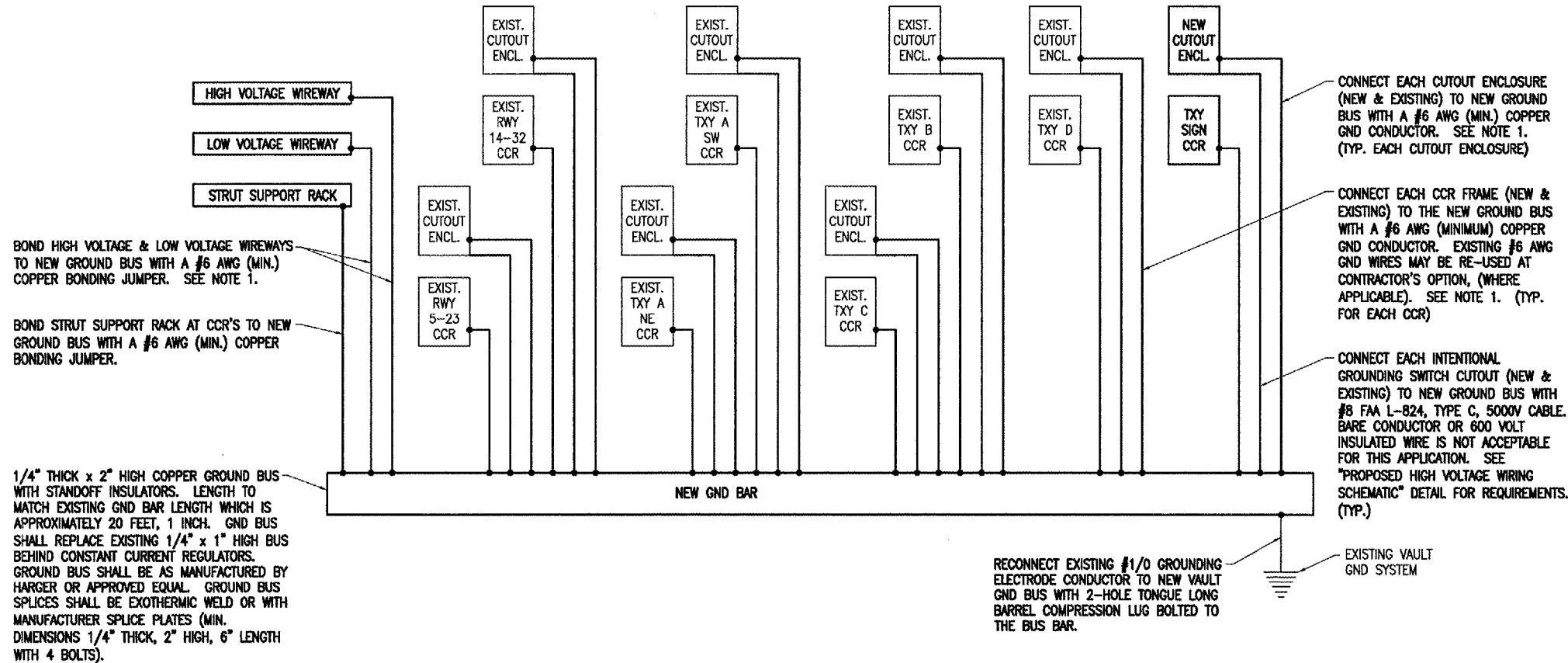


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AIRFIELD SIGNAGE IMPROVEMENTS

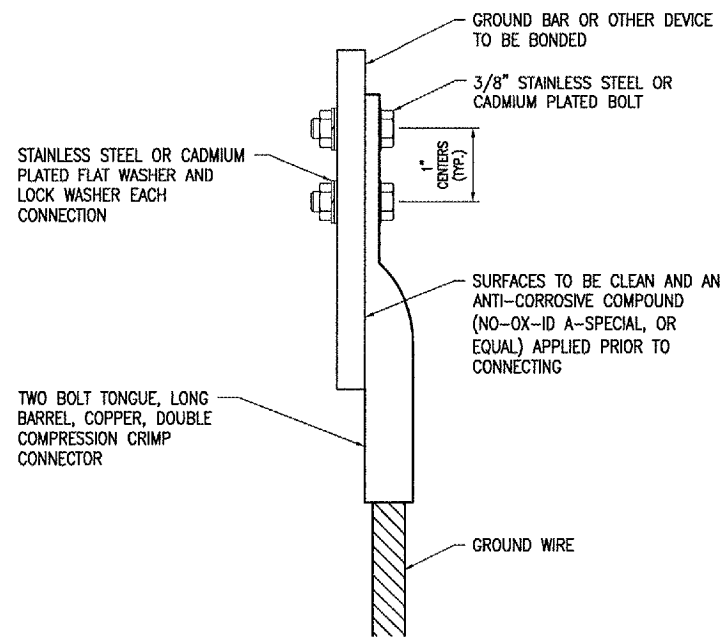
AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



NOTES

1. CONNECTIONS TO GROUND BUS BARS SHALL BE WITH 2-HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
2. GROUND WIRES FOR INTENTIONAL GROUNDING SWITCH SHALL BE FAA L-824, TYPE C, 5000V CABLE. ALL OTHER 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.

CCR GROUND BUS RISER



2 HOLE LONG BARREL COMPRESSION LUG TABLE

WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158
#2 AWG STRANDED	YA2C-2TC38	256-30695-1160
#1/0 AWG STRANDED	YA25-2TC38	256-30695-1162
#2/0 AWG STRANDED	YA26-2TC38	256-30695-1116
#3/0 AWG STRANDED	YA27-2TC38	54816BE
#4/0 AWG STRANDED	YA28-2TC38	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. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY RENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.
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

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CCR GROUND BUS RISER AND GROUNDING DETAILS

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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

VAULT LEGEND PLATE SCHEDULE	
DEVICE	LABEL
SERVICE DISCONNECT (BLACK LETTERING, WHITE BACKGROUND)	SERVICE DISCONNECT 240/120 VAC, 3PH, 4W
SERVICE DISCONNECT (BLACK LETTERING, WHITE BACKGROUND)	NOTE GENERATOR NEUTRAL IS ALSO BONDED TO GROUND AT THE SERVICE DISCONNECT
MAIN DIST. PANEL	MAIN DISTRIBUTION PANEL 240/120 VAC, 3PH, 4W
CIRCUIT BREAKER FOR RWY 5-23 CCR	CCR #1 RUNWAY 5-23
RUNWAY 5-23 CCR	CCR #1 RUNWAY 5-23
CUTOUT ENCLOSURE FOR RUNWAY 5-23 CCR	CCR #1 RUNWAY 5-23
CIRCUIT BREAKER FOR RWY 14-32 CCR	CCR #2 RUNWAY 14-32
RUNWAY 14-32 CCR	CCR #2 RUNWAY 14-32
CUTOUT ENCLOSURE FOR RUNWAY 14-32 CCR	CCR #2 RUNWAY 14-32
CIRCUIT BREAKER FOR TAXIWAY A NORTHEAST CCR	CCR #3 TAXIWAY A NORTHEAST
TAXIWAY A NORTHEAST CCR	CCR #3 TAXIWAY A NORTHEAST
CUTOUT ENCLOSURE FOR TAXIWAY A NORTHEAST CCR	CCR #3 TAXIWAY A NORTHEAST
CIRCUIT BREAKER FOR TAXIWAY A SOUTHWEST CCR	CCR #4 TAXIWAY A SOUTHWEST
TAXIWAY A SOUTHWEST CCR	CCR #4 TAXIWAY A SOUTHWEST
CUTOUT ENCLOSURE FOR TAXIWAY A SOUTHWEST CCR	CCR #4 TAXIWAY A SOUTHWEST
CIRCUIT BREAKER FOR TAXIWAY B CCR	CCR #6 TAXIWAY B
TAXIWAY B CCR	CCR #6 TAXIWAY B
CUTOUT ENCLOSURE FOR TAXIWAY B CCR	CCR #6 TAXIWAY B
CIRCUIT BREAKER FOR TAXIWAY C CCR	CCR #5 TAXIWAY C
TAXIWAY C CCR	CCR #5 TAXIWAY C
CUTOUT ENCLOSURE FOR TAXIWAY C CCR	CCR #5 TAXIWAY C
CIRCUIT BREAKER FOR TAXIWAY D CCR	CCR #7 TAXIWAY D
TAXIWAY D CCR	CCR #7 TAXIWAY D
CUTOUT ENCLOSURE FOR TAXIWAY D CCR	CCR #7 TAXIWAY D
CIRCUIT BREAKER FOR TAXI GUIDANCE SIGNS CCR	CCR #8 TAXIWAY GUIDANCE SIGNS
TAXI GUIDANCE SIGNS CCR	CCR #8 TAXIWAY GUIDANCE SIGNS
CUTOUT ENCLOSURE FOR TAXI GUIDANCE SIGNS CCR	CCR #8 TAXIWAY GUIDANCE SIGNS

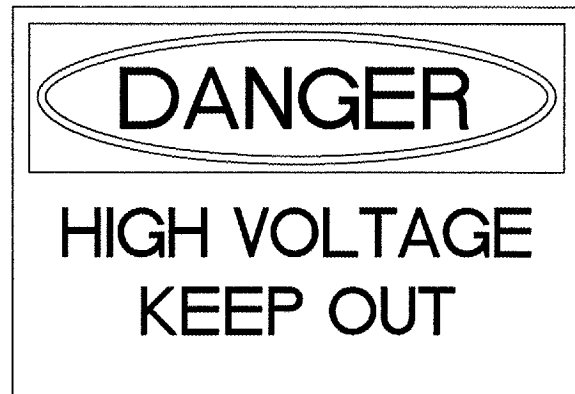
VAULT LEGEND PLATE SCHEDULE CONTINUED	
DEVICE	LABEL
EACH CCR LOAD DISCONNECT CUTOUT INPUT SIDE (TYP. FOR 8)	INPUT
EACH CCR LOAD DISCONNECT CUTOUT (TYP. FOR 8)	LOAD DISCONNECT
EACH INTENTIONAL GROUND SWITCH CUTOUT (TYP. FOR 8)	INTENTIONAL GROUND SWITCH
EACH CUTOUT ENCLOSURE (TYP. FOR 8)	CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF
EACH GROUND FAULT INDICATOR LIGHT (TYP. FOR 8)	GROUND FAULT
HIGH VOLTAGE WIREWAY (TYP. FOR 4)	HIGH VOLTAGE
LOW VOLTAGE WIREWAY (TYP. FOR 4)	LOW VOLTAGE
TRANSFER PANEL #1/ AIRPORT LIGHTING CONTROL PANEL	TRANSFER PANEL #1
TRANSFER PANEL #2	TRANSFER PANEL #2

LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH WHITE LETTERS ON A RED BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS, FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.

DIRECTIONS TO TEST FOR AIRFIELD GROUND FAULTS IN LIGHTING CIRCUITS.

- TURN OFF RESPECTIVE CCR.
- PULL INTENTIONAL GROUND SWITCH CUTOUT.
- TURN ON RESPECTIVE CCR.
- IF GROUND FAULT LIGHT IS DIM CHECK AIRFIELD CIRCUIT FOR LOCATION OF BRIGHT TO DIM LIGHTS TO ASSIST IN LOCATING AREA OF GROUND FAULT.

PROVIDE PLACARD OR LEGEND PLATE FOR GROUND FAULT TESTING PROCEDURE. LETTERING TO BE MIN. 1/4" HIGH BLACK ON WHITE BACKGROUND. LOCATE PLACARD IN REGULATOR ROOM, COORDINATED WITH AIRPORT MAINTENANCE STAFF AND RESIDENT ENGINEER.



PROVIDE WARNING SIGN ON VAULT EXTERIOR DOORS LABELED "DANGER - HIGH VOLTAGE - KEEP OUT" PER THE REQUIREMENTS OF NEC 110.34 (C).

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LEGEND PLATE SCHEDULE

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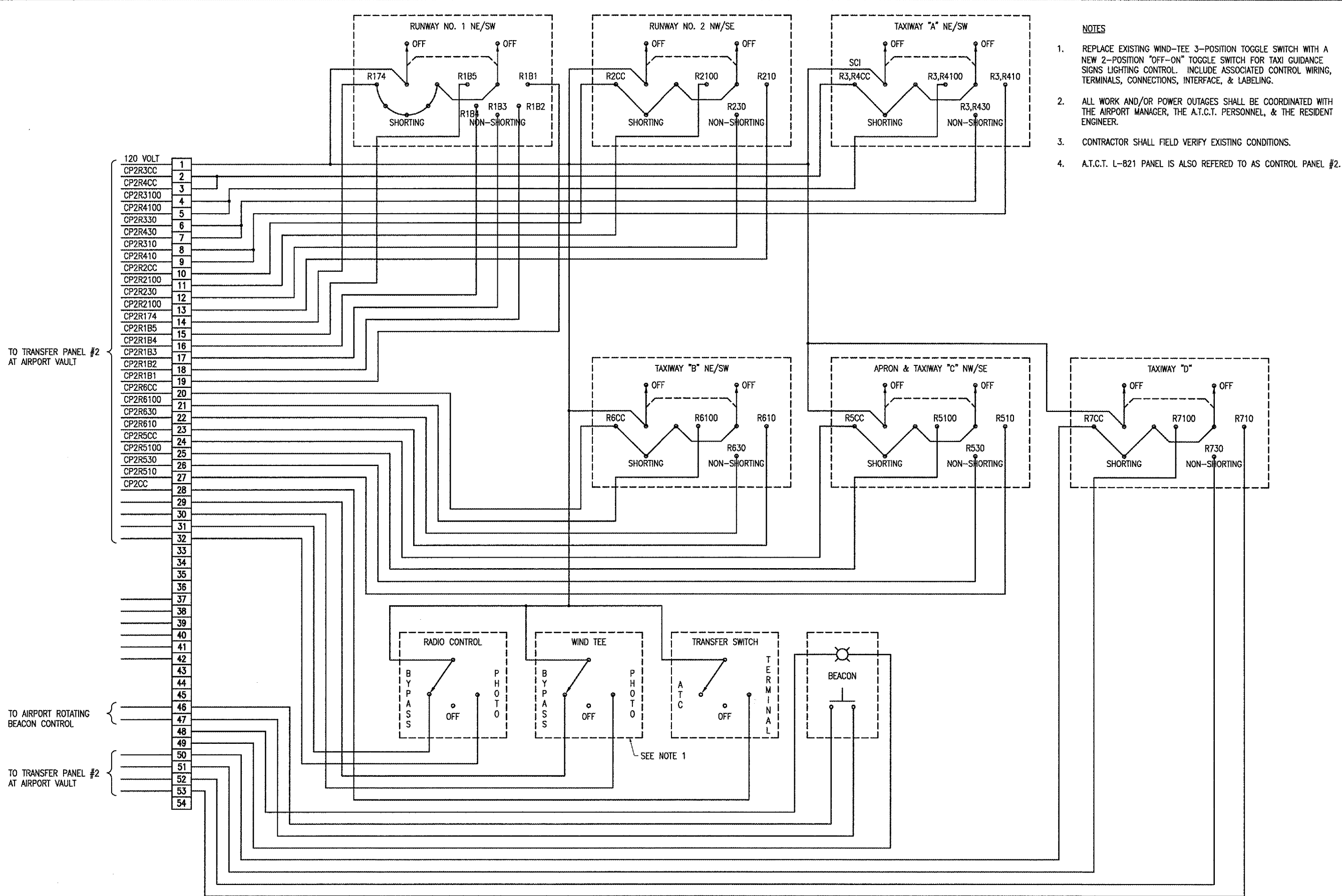


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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



- NOTES**
1. REPLACE EXISTING WIND-TEE 3-POSITION TOGGLE SWITCH WITH A NEW 2-POSITION "OFF-ON" TOGGLE SWITCH FOR TAXI GUIDANCE SIGNS LIGHTING CONTROL. INCLUDE ASSOCIATED CONTROL WIRING, TERMINALS, CONNECTIONS, INTERFACE, & LABELING.
 2. ALL WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT MANAGER, THE A.T.C.T. PERSONNEL, & THE RESIDENT ENGINEER.
 3. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
 4. A.T.C.T. L-821 PANEL IS ALSO REFERRED TO AS CONTROL PANEL #2.

TO TRANSFER PANEL #2
AT AIRPORT VAULT

TO AIRPORT ROTATING
BEACON CONTROL

TO TRANSFER PANEL #2
AT AIRPORT VAULT

No.	Drawing Issue Description	Date	By

Date
NOVEMBER 10, 2006
Sheet Title

**EXISTING A.T.C.T. L-821
CONTROL PANEL
SCHEMATIC**

831-06A8004
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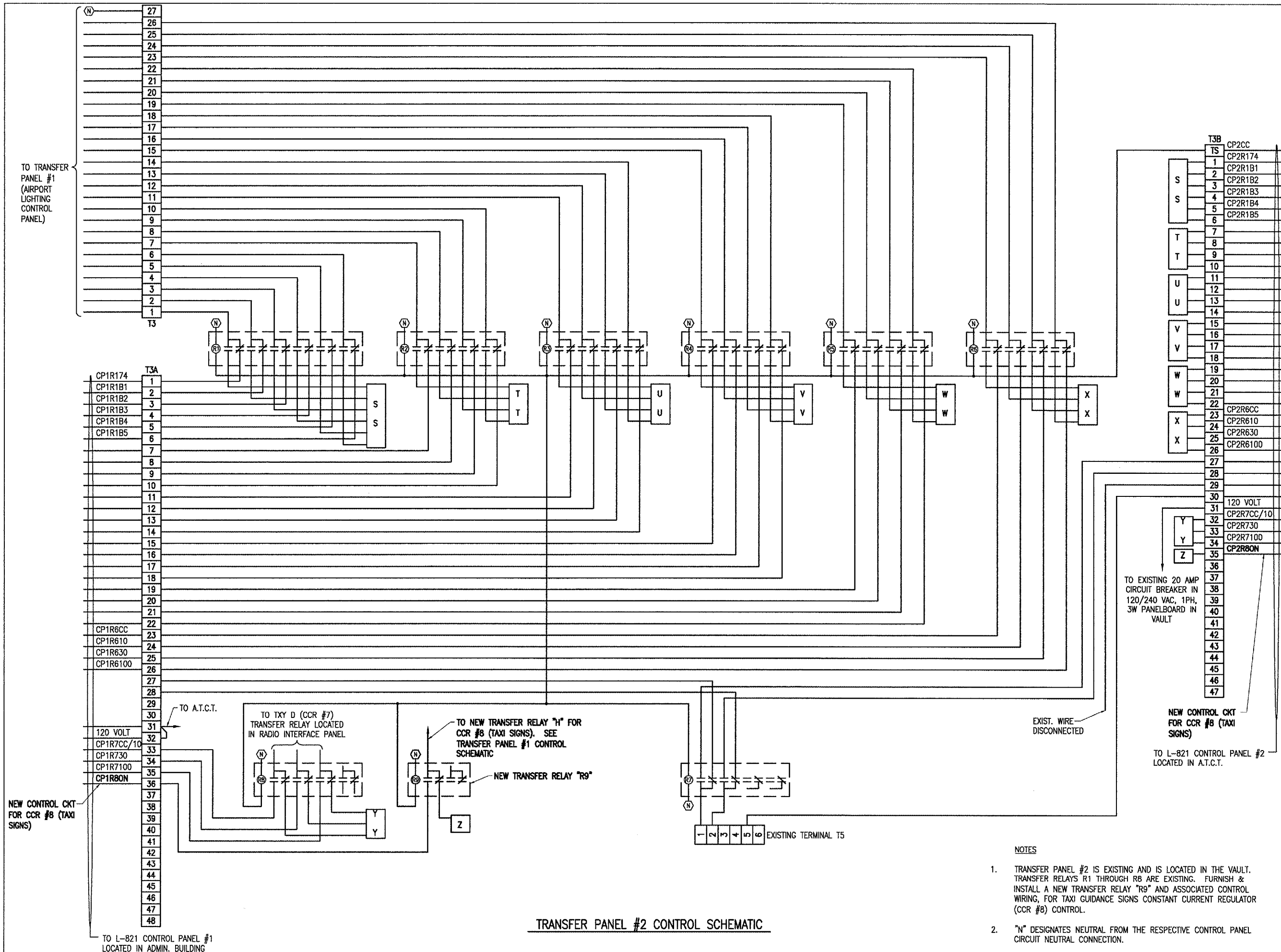


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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
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**TRANSFER PANEL #2
CONTROL SCHEMATIC**

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- NOTES
- TRANSFER PANEL #2 IS EXISTING AND IS LOCATED IN THE VAULT. TRANSFER RELAYS R1 THROUGH R8 ARE EXISTING. FURNISH & INSTALL A NEW TRANSFER RELAY "R9" AND ASSOCIATED CONTROL WIRING, FOR TAXI GUIDANCE SIGNS CONSTANT CURRENT REGULATOR (CCR #8) CONTROL.
 - "N" DESIGNATES NEUTRAL FROM THE RESPECTIVE CONTROL PANEL CIRCUIT NEUTRAL CONNECTION.

TRANSFER PANEL #2 CONTROL SCHEMATIC



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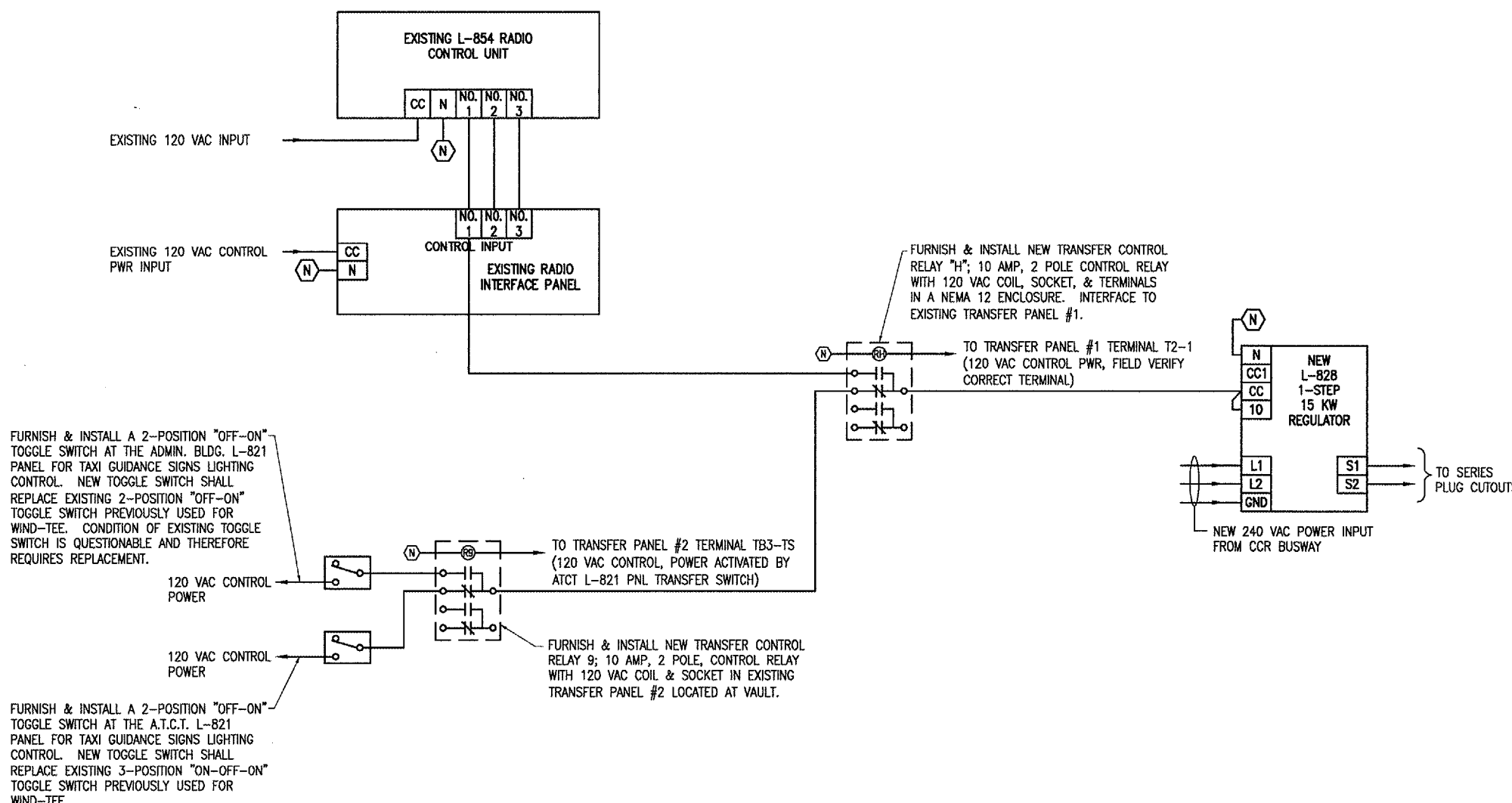


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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650



TAXI GUIDANCE SIGN LIGHTING WIRING SCHEMATIC

NOTES

1. THE TAXI GUIDANCE SIGNS LIGHTING CIRCUIT SHALL BE CONTROLLED AS FOLLOWS: THE TAXI GUIDANCE SIGNS SERIES CIRCUIT SHALL BE SINGLE STEP OPERATION (5.5 AMP CIRCUIT). THE A.T.C.T. (AIR TRAFFIC CONTROL TOWER) WILL CONTROL THE TAXI GUIDANCE SIGNS LIGHTING CIRCUIT WITH A 2-POSITION "OFF-ON" TOGGLE SWITCH ON THEIR L-821 PANEL. WHEN THE A.T.C.T. CLOSES CONTROL WILL BE TRANSFERRED TO THE ADMINISTRATION BUILDING L-821 PANEL & PILOT CONTROL THROUGH THE L-854 RADIO RECEIVER. THE ADMINISTRATION BUILDING WILL CONTROL THE TAXI GUIDANCE SIGNS LIGHTING CIRCUIT WITH A 2-POSITION "OFF-ON" TOGGLE SWITCH ON THEIR L-821 PANEL. PILOT CONTROL THROUGH THE L-854 RADIO RECEIVER SHALL BE AS FOLLOWS:
3 CLICKS - ON
5 CLICKS - REMAIN ON
7 CLICKS - REMAIN ON
2. CONTRACTOR SHALL PROVIDE MODIFICATIONS TO THE A.T.C.T. L-821 PANEL, ADMIN. BUILDING L-821 PANEL, VAULT TRANSFER PANEL #1, VAULT TRANSFER PANEL #2, & THE VAULT RADIO INTERFACE PANEL TO ACCOMPLISH CONTROL CIRCUIT ADDITIONS FOR THE TAXI GUIDANCE SIGNS.
3. THE EXISTING CONTROL WIRING DIAGRAMS INCLUDED WITH THIS PLAN SET ARE BASED ON FIELD DATA, REVIEW OF MANUFACTURER DRAWINGS AND REVIEW WITH THE AIRPORT STAFF, MODIFICATIONS HAVE BEEN MADE TO THE AIRFIELD LIGHTING CONTROL SYSTEM AND SOME MFR. DRAWINGS AND RECORD DRAWINGS HAVE CONFLICTING INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS & CONTROL WIRING ARRANGEMENT. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY CONTROL WIRING, TERMINALS, CONNECTIONS, RELAYS, TOGGLE SWITCHES, CONDUITS, JUNCTION BOXES, LABELING, ETC. TO PUT THE TAXI GUIDANCE SIGN LIGHTING SYSTEM INTO PROPER OPERATION.
4. THE EXISTING A.T.C.T. L-821 PANEL, ADMIN. BLDG L-821 PANEL, TRANSFER PANEL #1, TRANSFER PANEL #2, AND RADIO INTERFACE PANEL WERE MANUFACTURED BY UNIVERSE INC., 1833 WEST HOVEY AVE, NORMAL, ILLINOIS 61761, PHONE 309-454-5665, FAX: 309-452-2521. THE RADIO INTERFACE PANEL HAS BEEN MODIFIED AND NO LONGER REPRESENTS THE MANUFACTURER'S DRAWINGS, AND NO LONGER OPERATES AS ORIGINALLY DESIGNED. THE OTHER PANELS HAVE ALSO HAD SOME MODIFICATIONS INCLUDING THE ADDITION OF TAXIWAY D CIRCUIT, REMOVAL OF WIND-TEE, REMOVAL OF ADMIN BUILDING CONTROL OF THE AIRPORT ROTATING BEACON, AND REMOVAL OF THE PHOTOCCELL CONTROLS FOR THE AIRFIELD LIGHTING. CONTACT UNIVERSE FOR ASSISTANCE WITH CONTROL WORK MODIFICATIONS AND APPROPRIATE COMPONENTS.
5. ALL CONTROL CABLE SHALL BE NO. 12 AWG, 600 VOLT CABLE. THERE ARE APPROXIMATE 12 #12 AWG EXISTING SPARE CONTROL WIRES BETWEEN THE VAULT & THE A.T.C.T. THERE ARE ALSO SPARE CONTROL WIRES BETWEEN THE ADMIN BLDG AND THE VAULT. THESE WIRES MAY BE USED IN PLACE FOR THE CONTROL CIRCUIT ADDITIONS FOR THE TAXI GUIDANCE SIGNS.
6. ALL ELECTRICAL & CONTROL EQUIPMENT SHALL BE PROPERLY LABELED AND ALL ELECTRICAL & CONTROL CABLES SHALL BE TAGGED.
7. ALL CABLES INSIDE THE VAULT SHALL BE IN CONDUIT OR DUCT.
8. EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH NEW BRANCH/FEEDER CIRCUIT & THE NEW CONTROL CIRCUIT TO THE RESPECTIVE CONSTANT CURRENT REGULATOR.
9. ALL CONTROL WORK ASSOCIATED WITH THE TAXI GUIDANCE SIGNS LIGHTING CIRCUIT SHALL BE PAID FOR UNDER ITEM AR109200.
10. "N" DESIGNATES NEUTRAL FROM THE RESPECTIVE CONTROL PANEL CIRCUIT NEUTRAL CONNECTION.
11. ALL CONTROL WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT MANAGER & THE RESIDENT ENGINEER.

No.	Drawing Issue	Description	Date	By

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TAXI GUIDANCE SIGN LIGHTING WIRING SCHEMATIC

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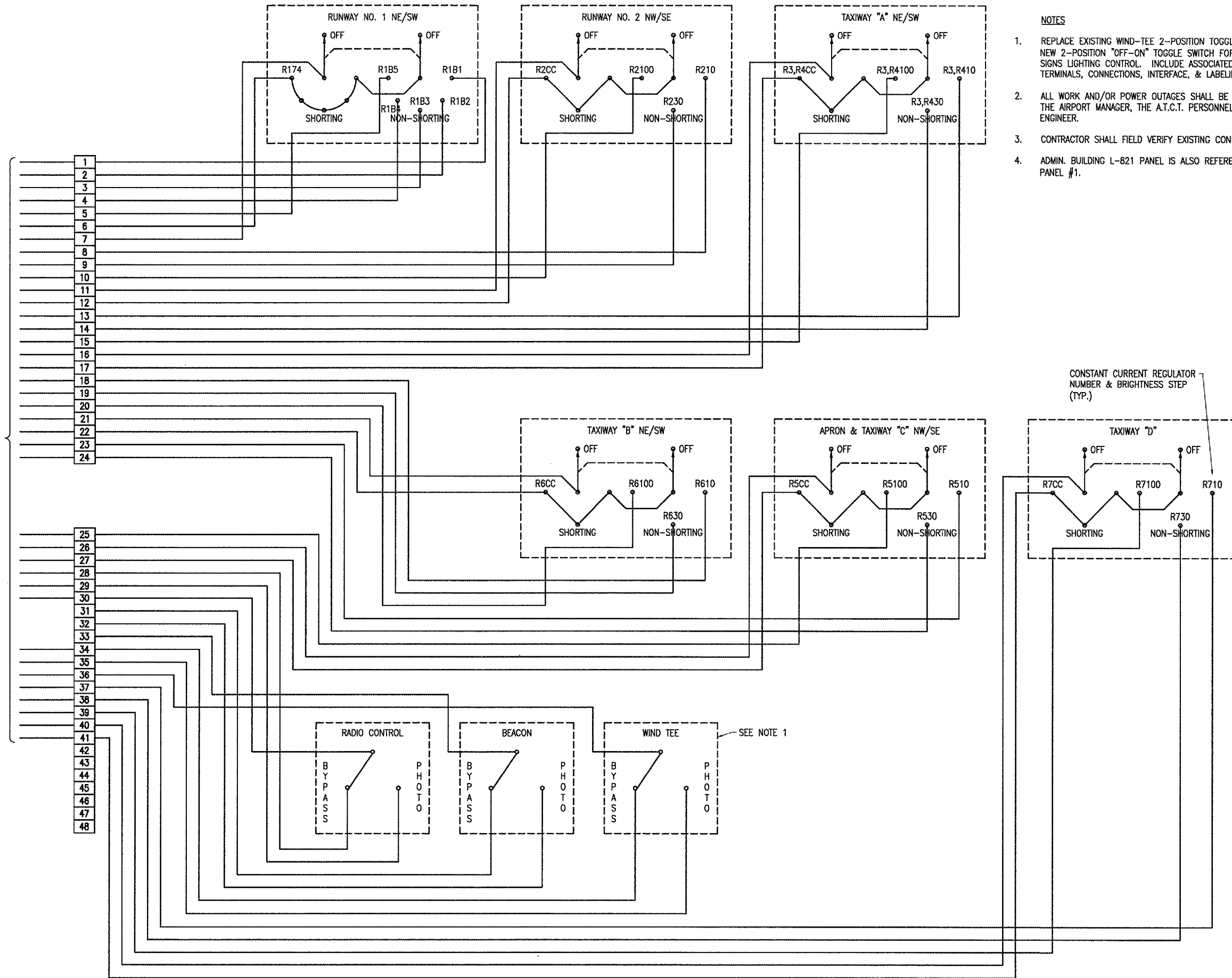
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AIRFIELD SIGNAGE IMPROVEMENTS

AIP PROJECT NO. 3-17-0105-B35
IDA PROJECT NO. UGN-3650

TO TRANSFER PANEL #2
AT AIRPORT VAULT



- NOTES**
1. REPLACE EXISTING WIND-TEE 2-POSITION TOGGLE SWITCH WITH A NEW 2-POSITION "OFF-ON" TOGGLE SWITCH FOR TAXI GUIDANCE SIGNS LIGHTING CONTROL. INCLUDE ASSOCIATED CONTROL WIRING, TERMINALS, CONNECTIONS, INTERFACE, & LABELING.
 2. ALL WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT MANAGER, THE A.T.C.T. PERSONNEL, & THE RESIDENT ENGINEER.
 3. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
 4. ADMIN. BUILDING L-821 PANEL IS ALSO REFERRED TO AS CONTROL PANEL #1.

EXISTING ADMIN. BLDG. L-821 CONTROL PANEL SCHEMATIC

No.	Drawing Issue	Description	Date	By

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EXISTING ADMIN. BLDG
L-821 CONTROL PANEL
SCHEMATIC

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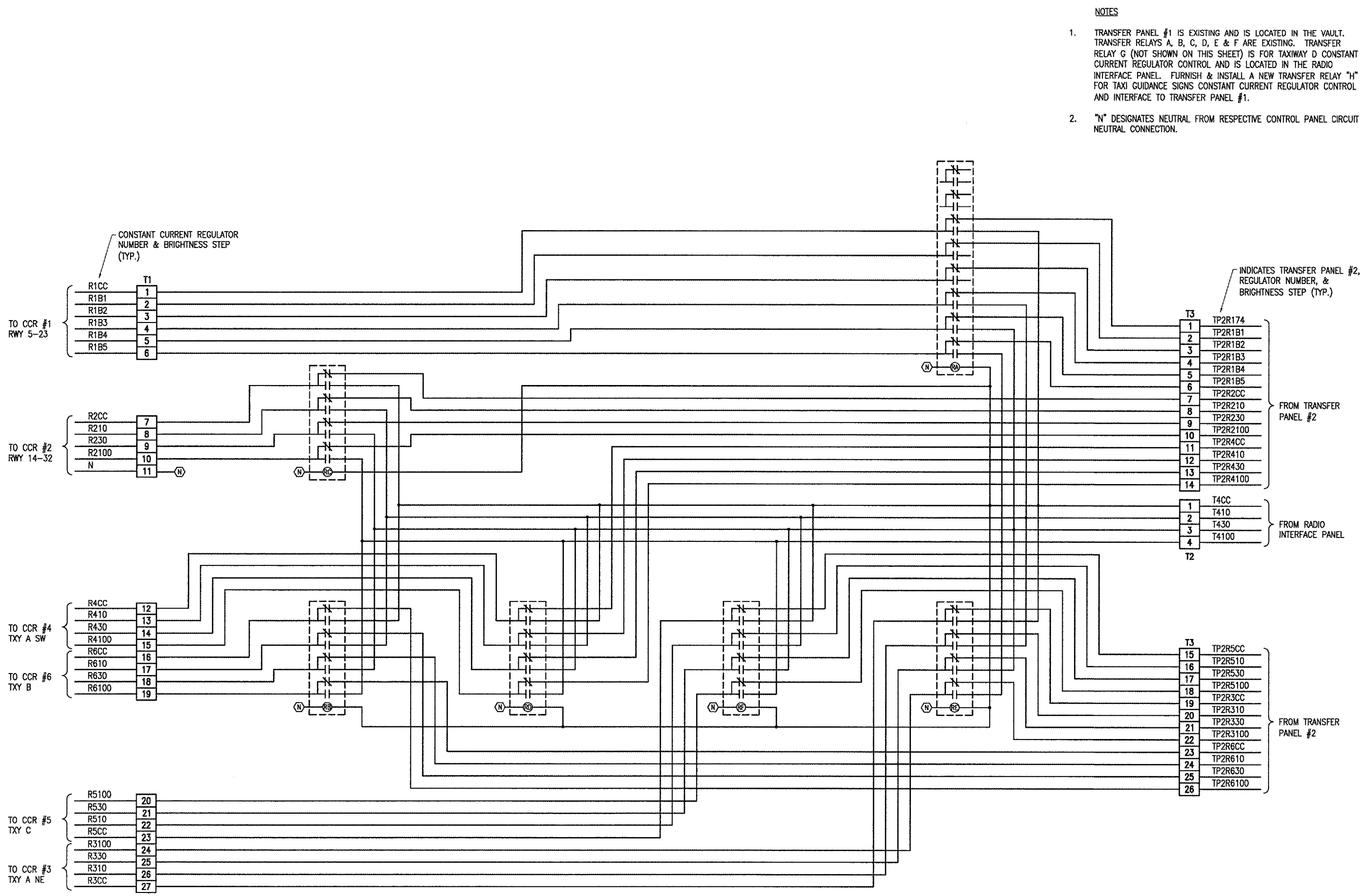
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**TRANSFER PANEL #1
CONTROL SCHEMATIC**

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TRANSFER PANEL #1 CONTROL SCHEMATIC



- NOTES
- TRANSFER PANEL #1 IS EXISTING AND IS LOCATED IN THE VAULT. TRANSFER RELAYS A, B, C, D, E & F ARE EXISTING. TRANSFER RELAY G (NOT SHOWN ON THIS SHEET) IS FOR TAXIWAY D CONSTANT CURRENT REGULATOR CONTROL AND IS LOCATED IN THE RADIO INTERFACE PANEL. FURNISH & INSTALL A NEW TRANSFER RELAY "H" FOR TAXI GUIDANCE SIGNS CONSTANT CURRENT REGULATOR CONTROL AND INTERFACE TO TRANSFER PANEL #1.
 - "N" DESIGNATES NEUTRAL FROM RESPECTIVE CONTROL PANEL CIRCUIT NEUTRAL CONNECTION.

INDICATES TRANSFER PANEL #2, REGULATOR NUMBER, & BRIGHTNESS STEP (TYP.)

CONSTANT CURRENT REGULATOR NUMBER & BRIGHTNESS STEP (TYP.)