INDEX OF SHEETS

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

I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\01-COVER.DWG MAR 25, 2010 11:52AM HAUSM00682

ITEM NO.: 1A
IDOT LETTING: JUNE 11, 2010

LE041
TOTAL SHEETS = 42

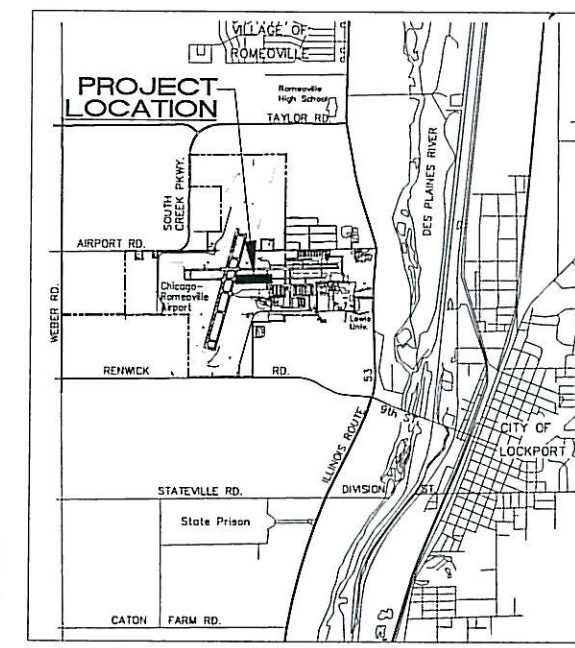
CONSTRUCTION PLANS

REHABILITATE PORTION OF TAXIWAY B

JOLIET REGIONAL PORT DISTRICT
CHICAGO-ROMEOVILLE AIRPORT (LOT)
ROMEOVILLE, WILL COUNTY, ILLINOIS

AIP PROJECT NO. 3-17-0140-B44
IDA PROJECT NO. LOT-3969

VICINITY MAP



-N-

4000 0 4000 8000
SCALE IN FEET

LICENSED PROFESSIONAL ENGINEER
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS

COVERING ELECTRICAL DESIGN
SHEETS 27 THROUGH 39

LICENSED PROFESSIONAL ENGINEER
LINDSAY DENET HAUSMAN
062-059464
STATE OF ILLINOIS

EXP. 11/30/2011

SHEET NO. 1 OF 42

Seal — Date of Plans
[illegible]
3/25/2010
EXPIRES 11/30/2011
Kevin N. Lightfoot, P.E. — APRIL 16, 2010

Seal — Date of Plans
[illegible]
Lindsay D. Hausman, P.E. — APRIL 16, 2010

HANSON
HANSON PROFESSIONAL SERVICES INC.
815 Commerce Drive, Suite 200
Oak Brook, Illinois 60523
Telephone: 630.990.3800
Fax: 630.990.3801
Illinois Professional Design Firm No. 184-001084

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

SUMMARY OF QUANTITIES

Item No.	Description	Unit	As Bid	Adjusted
AR107812	L-807 W C-12' Internally Lit	Each	1.0	
AR107900	Remove Wind Cone	Each	1.0	
AR108158	1/C #8 5KV UG Cable in UD	Linear Foot	2,960.0	
AR108658	3/C #8 600 V UG Cable in UD	Linear Foot	2,310.0	
AR108960	Remove Cable	Linear Foot	935.0	
AR109620	Lighting Control System	Lump Sum	1.0	
AR110014	4" Directional Bore	Linear Foot	30.0	
AR110551	Extend Duct	Linear Foot	62.0	
AR110610	Electrical Handhole	Each	2.0	
AR125410	MITL-Stake Mounted	Each	12.0	
AR125415	MITL-Base Mounted	Each	4.0	
AR125444	Taxi Guidance Sign, 4 Character	Each	2.0	
AR125445	Taxi Guidance Sign, 5 Character	Each	2.0	
AR125610	REILS	Pair	1.0	
AR125901	Remove Stake Mounted Light	Each	12.0	
AR125902	Remove Base Mounted Light	Each	4.0	
AR125904	Remove Taxi Guidance Sign	Each	4.0	
AR125907	Remove REILS	Pair	1.0	
AR150510	Engineer's Field Office	Lump Sum	1.0	
AR150540	Haul Route	Lump Sum	1.0	
AR152410	Unclassified Excavation	Cubic Yard	4,176.0	
AR156510	Silt Fence	Linear Foot	600.0	
AR156513	Separation Fabric	Square Yard	10,040.0	
AR156520	Inlet Protection	Each	6.0	
AR208515	Porous Granular Embankment	Cubic Yard	890.0	
AR209612	Crushed Agg. Base Course - 12"	Square Yard	103.0	
AR401613	Bit. Surf. Cse. - Method I, Superpave	Ton	45.0	
AR401650	Bituminous Pavement Milling	Square Yard	1,720.0	
AR401660	Saw and Seal Bit. Joints	Linear Foot	209.0	
AR401665	Bituminous Pavement Sawing	Linear Foot	85.0	
AR401900	Remove Bituminous Pavement	Square Yard	6,128.0	
AR403613	Bit. Base Cse. - Method I, Superpave	Ton	13.0	
AR501510	10" PCC Pavement	Square Yard	9,732.0	
AR501530	PCC Test Batch	Each	1.0	
AR501665	PCC Pavement Sawing	Linear Foot	65.0	
AR501900	Remove PCC Pavement	Square Yard	1,105.0	
AR602510	Bituminous Prime Coat	Gallon	31.0	
AR603510	Bituminous Tack Coat	Gallon	67.0	
AR620525	Pavement Marking-Black Border	Square Foot	3,395.0	
AR620530	Pavement Marking-Epoxy	Square Foot	3,395.0	
AR705506	6" Perforated Underdrain	Linear Foot	2,885.0	
AR705630	Underdrain Inspection Hole	Each	2.0	
AR705640	Underdrain Cleanout	Each	4.0	
AR705900	Remove Underdrain	Linear Foot	2,370.0	
AR705904	Remove Underdrain Cleanout	Each	9.0	
AR800927	Granular Drainage Subbase - 6"	Square Yard	10,040.0	
AR901510	Seeding	Acre	2.1	
AR905510	Topsoiling (From On Site)	Cubic Yard	1,125.0	
AR908510	Mulching	Acre	2.1	

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

APR 23, 2010 8:01 AM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\02-QUANTITIES.DWG

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mchas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 02-QUANTITIES.DWG
Scale N/A
Date DATE

LAYOUT	LDH	12/7/09
DRAWN	LDH	12/7/09
REVIEWED	RMH	04/15/10

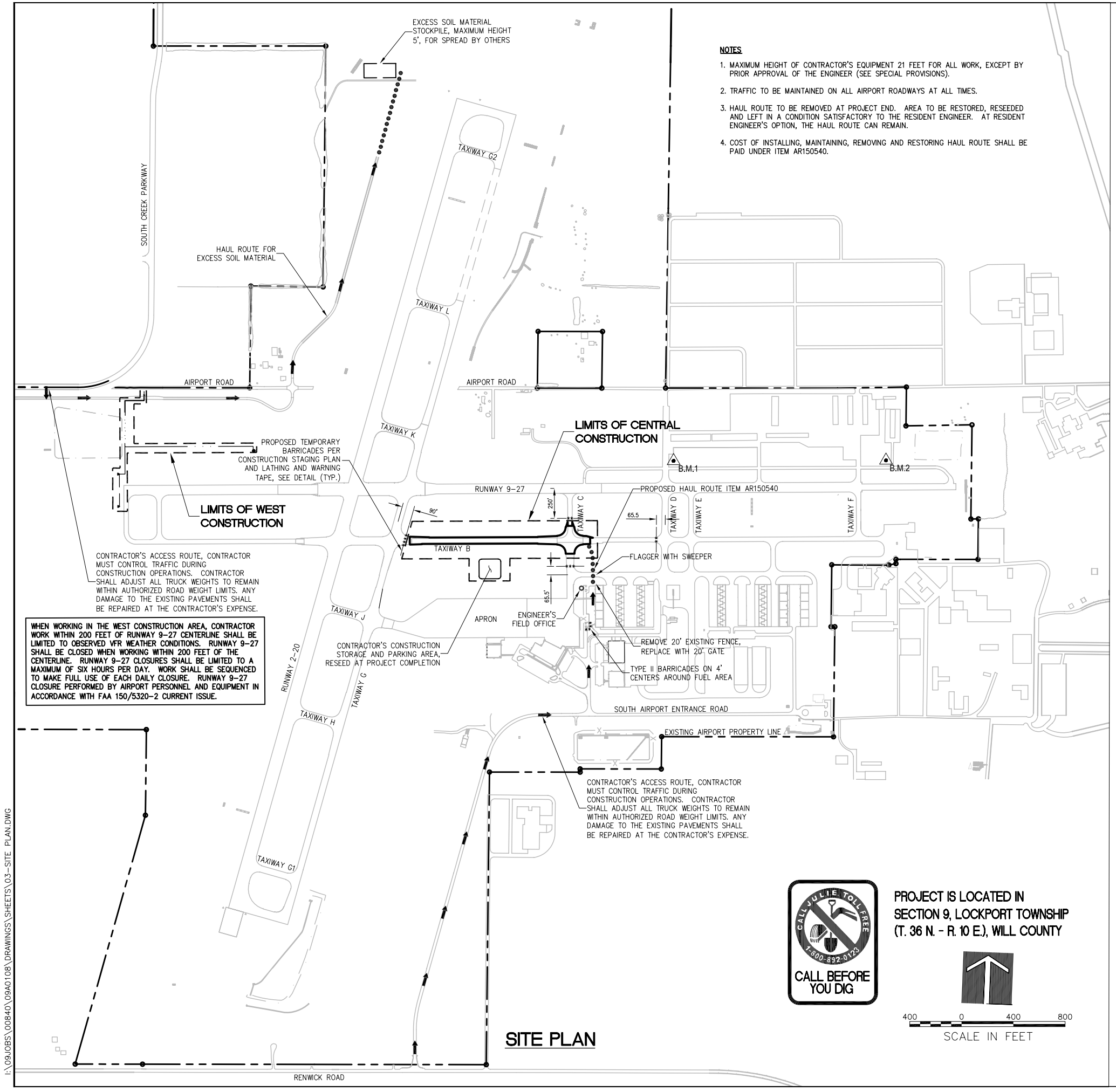
HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

SUMMARY OF QUANTITIES

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3989 AIP No. 3-17-0140-B44

2



SITE PLAN

NOTES

1. MAXIMUM HEIGHT OF CONTRACTOR'S EQUIPMENT 21 FEET FOR ALL WORK, EXCEPT BY PRIOR APPROVAL OF THE ENGINEER (SEE SPECIAL PROVISIONS).
2. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
3. HAUL ROUTE TO BE REMOVED AT PROJECT END. AREA TO BE RESTORED, RESEEDED AND LEFT IN A CONDITION SATISFACTORY TO THE RESIDENT ENGINEER. AT RESIDENT ENGINEER'S OPTION, THE HAUL ROUTE CAN REMAIN.
4. COST OF INSTALLING, MAINTAINING, REMOVING AND RESTORING HAUL ROUTE SHALL BE PAID UNDER ITEM AR150540.

GENERAL NOTES

PROJECT DESCRIPTION

THIS PROJECT IS TO REHABILITATE A PORTION OF TAXIWAY B AT CHICAGO-ROMEOVILLE AIRPORT INCLUDING, AMONG OTHER INCIDENTAL WORK, THE FOLLOWING ITEMS:

- PLACEMENT OF TEMPORARY SOIL EROSION CONTROL MEASURES
- REMOVAL OF EXISTING PAVEMENTS
- EXTENSION OF EXISTING UNDERDRAIN PIPE SYSTEM
- CONSTRUCTION OF TAXIWAY B, PCC COMPOSITION
- PLACEMENT OF PAVEMENT MARKING
- INSTALLATION OF AIRFIELD EDGE AND GUIDANCE SIGN LIGHTING
- TOPSOILING, SEEDING AND MULCHING AROUND NEW PAVEMENTS

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.

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 A TEMPORARY HAUL ROUTE WITHIN THE CONSTRUCTION LIMIT LINES AS SHOWN. HEAVY VEHICLES SHALL NOT CROSS EXISTING PAVEMENT SURFACES EXCEPT AT THE LOCATION SHOWN AND 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 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 J.U.L.I.E. (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 AT ONCE.

EXISTING BENCHMARKS

PROJECT BENCHMARKS ARE AS FOLLOWS:

B.M.1	N 1,800,236.82	E 1,051,080.54	ELEV. 666.67
B.M.2	N 1,800,302.96	E 1,052,719.90	ELEV. 664.18

THIS DATA IS NOT ILLINOIS STATE PLANE COORDINATES.

DATE	REVISION

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mchas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 03-SITE PLAN.DWG
Scale 1"=400'
Date DATE

LAYOUT	LDH	12/10/09
DRAWN	LDH	12/10/09
REVIEWED	RMH	04/15/10

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

SITE PLAN AND GENERAL NOTES

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

3
3 of 42 sheets

APR 14, 2010 2:59 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\03-SITE PLAN.DWG

LE041

CONSTRUCTION AND SAFETY NOTES

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 RUNWAYS, 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 WORK AREA FROM ACTIVE AIRPORT OPERATIONS AREAS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE, PLACE AND MAINTAIN LATHING AND WARNING TAPE SHOWN ON SHEET 3, AND IN 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.

TEMPORARY BARRICADES ON AIRFIELD

THE PROJECT WILL REQUIRE THE PLACEMENT OF BARRICADES TO DELINEATE PORTIONS OF THE CONSTRUCTION AREA AND TO EFFECT TEMPORARY CLOSURES OF ACTIVE TAXIWAYS. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH, PLACE AND MAINTAIN BARRICADES AS SHOWN ON SHEET 3, AND 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 AN ACTIVE RUNWAY SAFETY AREA (RSA) OR AN ACTIVE TAXIWAY SAFETY AREA (TSA) OVER NIGHT. THE RSA IS DEFINED AS 250 FEET FROM THE RUNWAY CENTERLINE AND 1,000 FEET FROM THE END OF THE RUNWAY. THE TSA IS MEASURED AT 39.5 FEET FROM THE TAXIWAY CENTERLINE. THE CONTRACTOR WILL HAVE STEEL PLATES ON-SITE TO ALLOW FOR THE RAPID COVERING OF TRENCHES IN AN ACTIVE RSA OR TSA IN THE EVENT OF UNEXPECTED WORK STOPPAGES FOR WEATHER OR AIRPORT EMERGENCIES.

RUNWAY CLOSURE

CLOSURE OF RUNWAY 2-20 WILL NOT BE PERMITTED AT ANY TIME DURING THE PROJECT. RUNWAY 9-27 SHALL BE CLOSED WHEN WORKING IN THE WEST CONSTRUCTION LIMITS AND WITHIN 200 FEET OF THE CENTERLINE. RUNWAY 9-27 CLOSURES SHALL BE LIMITED TO A MAXIMUM OF SIX HOURS PER DAY AND OBSERVED VFR WEATHER CONDITIONS. WORK WHEN THE RUNWAY IS CLOSED SHALL BE SEQUENCED TO MAKE FULL USE OF EACH DAILY CLOSURE. RUNWAY 9-27 CLOSURE SHALL BE PERFORMED BY AIRPORT PERSONNEL AND EQUIPMENT IN ACCORDANCE WITH FAA AC 150/5320-2CURRENT ISSUE.

HAUL ROUTE

THE CONTRACTOR SHALL CONSTRUCT A HAUL ROUTE AS SHOWN IN THE SITE PLAN AND DETAIL C THIS SHEET. THE COST OF CONSTRUCTING, MAINTAINING, AND REMOVING THE HAUL ROUTE AT PROJECT END SHALL BE PAID UNDER ITEM AR150540. AT THE RESIDENT ENGINEER'S OPTION, THE HAUL ROUTE CAN REMAIN AT PROJECT END.

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. 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 SITE PLAN FOR THE CURRENT WORK. CONTRACTOR'S PERSONNEL AND EQUIPMENT MUST REMAIN AT LEAST 200 FEET FROM THE CENTERLINE OF ACTIVE RUNWAYS, 1,000 FEET FROM THE END OF ACTIVE RUNWAYS, 65.5 FEET FROM THE CENTERLINE OF ACTIVE TAXIWAYS, 44.5 FEET FROM T-HANGAR TAXILANES 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 SITE PLAN, SHEET 3. 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 21 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 TAXIWAYS. 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.

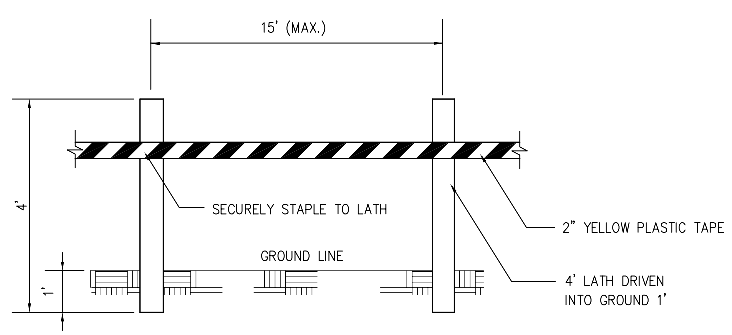
CONTRACTOR'S USE OF SITE

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.

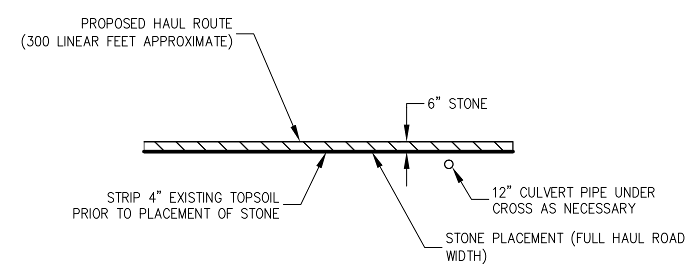
UTILITY OUTAGES AND SHUTDOWNS

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.

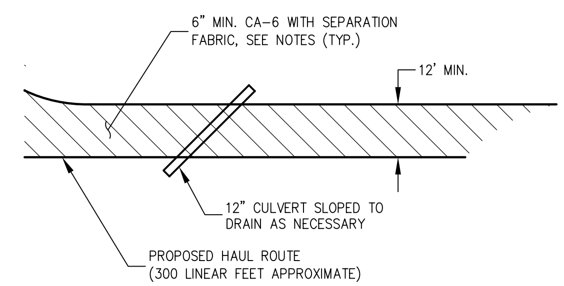


MATERIALS ARE TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION. COST OF MATERIALS, INSTALLATION, RELOCATION AND MAINTENANCE OF LATHING AND WARNING TAPE IS TO BE INCIDENTAL TO THE CONTRACT.

DETAIL A
LATHING AND WARNING TAPE



CROSS SECTION

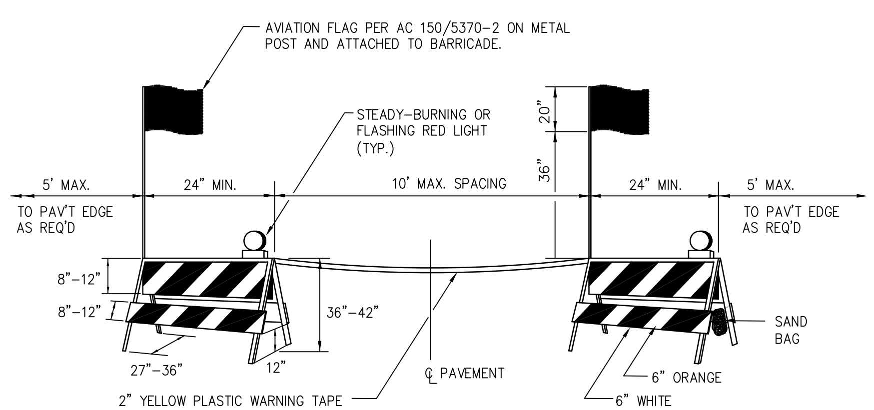


PLAN

NOTES:

1. STRIP 4" OF EXISTING TOPSOIL PRIOR TO PLACEMENT OF STONE.
2. STONE SHALL BE 2-INCH SIZE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT, OR RECYCLED ASPHALT.
3. HAUL ROUTE THICKNESS SHALL NOT BE LESS THAN SIX INCHES.
4. HAUL ROUTE WIDTH SHALL BE 12 FEET MINIMUM.
5. SURFACE WATER FLOWING OR DIVERTED SHALL BE CARRIED IN CULVERT (CMP, STELL OR HDPE).
6. PLACE SEPARATION FABRIC PRIOR TO STONE PLACEMENT FOR FULL WIDTH OF HAUL ROUTE. FABRIC TO BE MIRAFI 160N OR APPROVED EQUAL, COST INCIDENTAL TO ITEM AR150540.
7. THE HAUL ROUTE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL AGGREGATE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
8. PERIODIC INSPECTION SHALL BE PERFORMED AND REQUIRED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.
9. HAUL ROUTE TO BE REMOVED AT PROJECT END. AREA TO BE RESTORED AND RESEEDED AND LEFT IN A CONDITION SATISFACTORY TO THE RESIDENT ENGINEER.
10. COST OF INSTALLING, MAINTAINING, REMOVING AND RESTORING HAUL ROUTE SHALL BE PAID UNDER ITEM AR150540.

DETAIL C
HAUL ROUTE



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

DETAILS SHOWN ARE NOT TO SCALE

APR 15, 2010 10:18 AM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\04-SAFETY NOTES.DWG

DATE	REVISION

Chicago-Romeoville Airport

JOLIET REGIONAL PORT DISTRICT

1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 04-SAFETY NOTES.DWG
Scale N/A
Date DATE

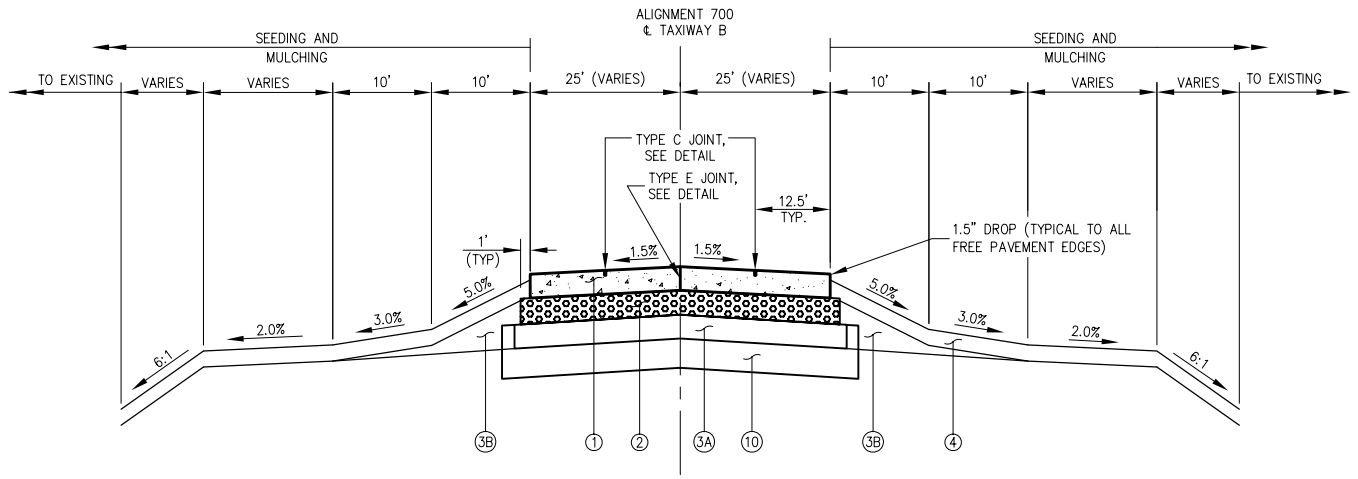
LAYOUT	LDH	12/10/09
DRAWN	LDH	12/10/09
REVIEWED	RMH	04/15/10

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

CONSTRUCTION AND SAFETY NOTES AND DETAILS

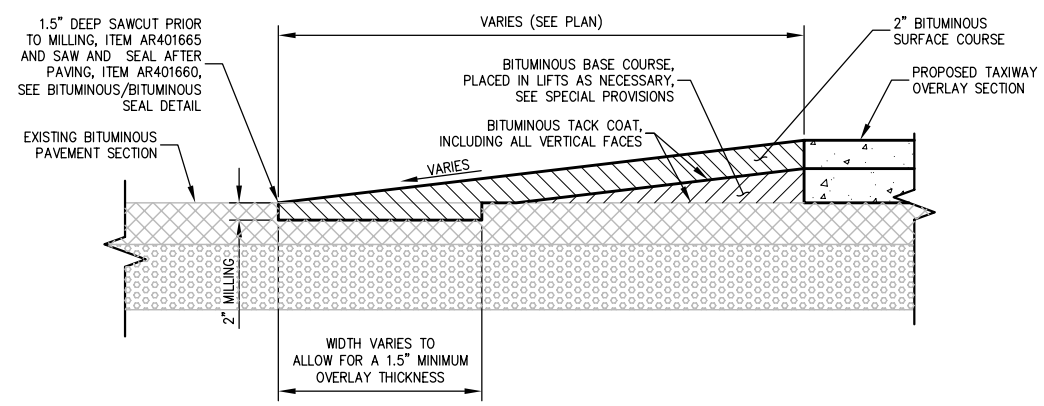
REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

LE041



TYPICAL SECTION - TAXIWAY B

(SECTION SHOWN LOOKING EAST)



BITUMINOUS TAPER DETAIL

① PROPOSED 10 INCH PCC PAVEMENT, ITEM AR501510

② PROPOSED 6 INCH GRANULAR DRAINAGE SUBBASE, ITEM AR800927

③ PROPOSED PREPARED SUBGRADE:
- A. SUBGARDE PREARATION WITHIN 5 FEET OF PROPOSED PAVEMENT EDGE IN AREAS OF UNDERCUT ONLY.
- B. FILL OUTSIDE THESE AREAS MAY BE NON-STRUCTURAL FILL. CUT AREAS - REMOVE TOPSOIL AND CLAY TO FINISHED SUBGRADE ELEV. FILL AREAS - REMOVE TOPSOIL AND PLACE FILL TO FINISHED SUBGARDE ELEVATION.

④ PROPOSED 4 INCH TOPSOIL IN SEEDING AND MULCHING AREAS, ITEM AR905510

⑤ PROPOSED 2 INCH BITUMINOUS SURFACE COURSE, ITEM AR401613

⑥ PROPOSED BITUMINOUS TACK COAT, ITEM AR603510

⑦ PROPOSED 2 INCH BITUMINOUS BASE COURSE, ITEM AR403613

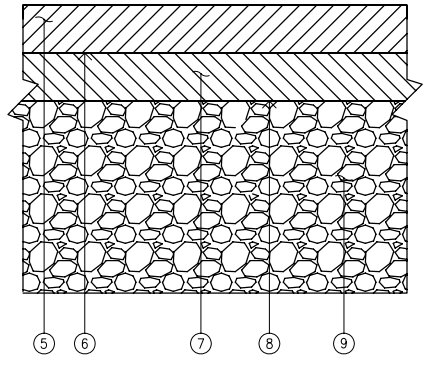
⑧ PROPOSED BITUMINOUS PRIME COAT, ITEM AR602510

⑨ PROPOSED 12 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209612

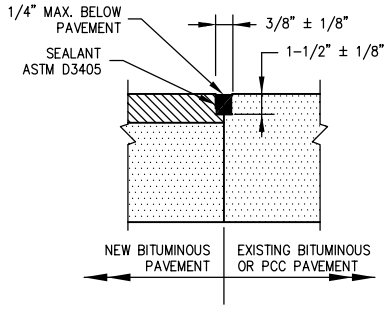
⑩ PROPOSED 2 FOOT UNDERCUT STATION 751+00 TO STATION 753+00 30' LEFT AND 30' RIGHT. POROUS GRANULAR EMBANKMENT, ITEM AR208515

NOTES:

1. FOR ADDITIONAL INFORMATION AND VARIATIONS ON TYPICAL JOINTING, SEE JOINTING PLAN AND DETAILS.
2. FOR ADDITIONAL LANDSCAPING INFORMATION, SEE LANDSCAPING PLAN.



TYPICAL SECTION - BITUMINOUS TRANSITIONS



NOTE:
ALL BITUMINOUS/BITUMINOUS AND BITUMINOUS/PCC JOINT SEALING TO BE PAID UNDER SAW AND SEAL BITUMINOUS JOINTS, ITEM AR401660.

BITUMINOUS/BITUMINOUS OR BITUMINOUS/PCC SEAL

APR 14, 2010 2:59 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\05-TYP XSEC.DWG

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 05-TYP XSEC.DWG
Scale N/A
Date DATE

LAYOUT	LDH	12/10/09
DRAWN	LDH	12/10/09
REVIEWED	RMH	04/15/10

HANSON

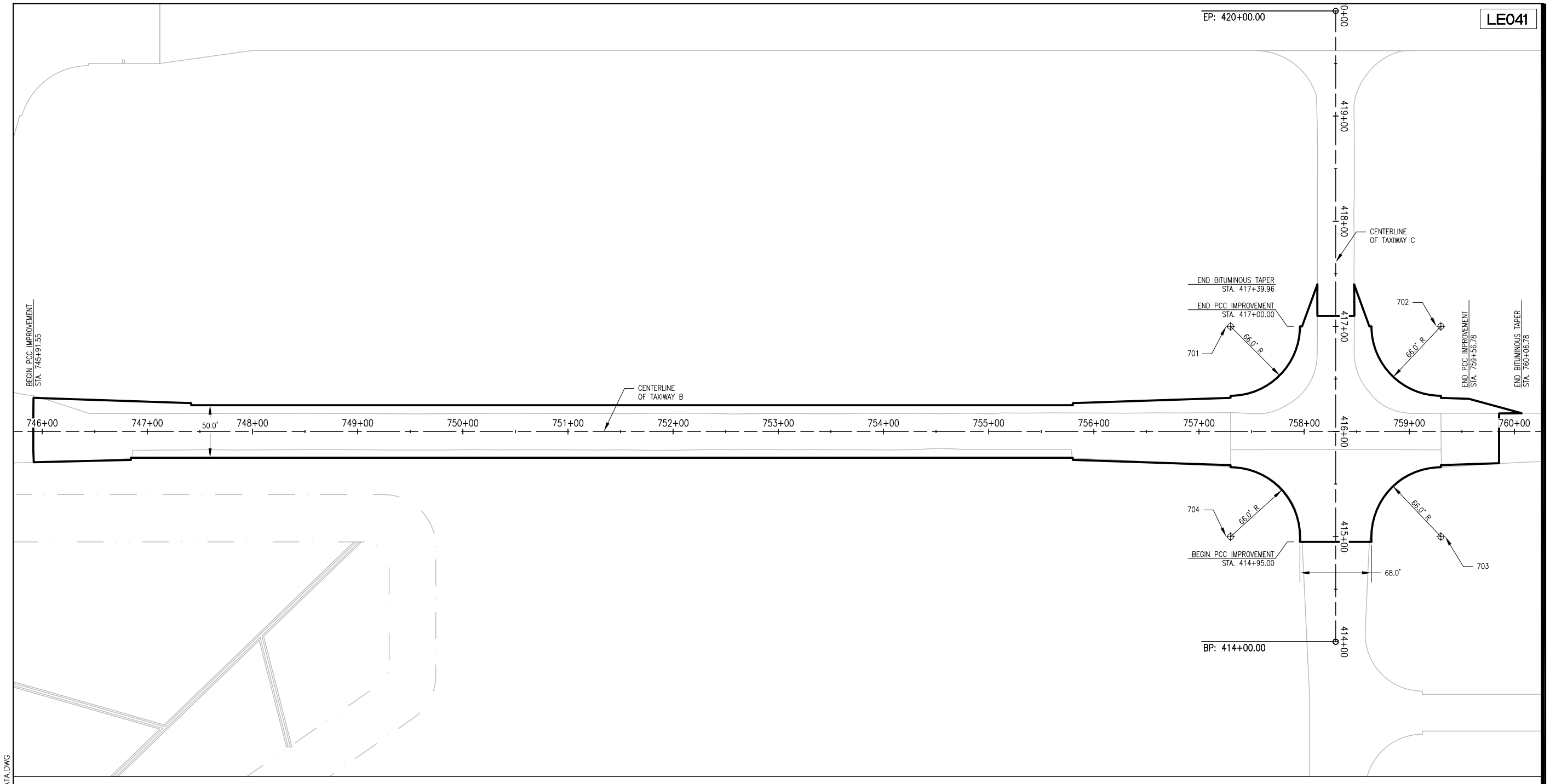
Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

TYPICAL SECTION

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

5

LE041



ALIGNMENT DATA

DESCRIPTION	STATION	PROJECT COORDINATES	
		NORTHING	EASTING
BEGINNING OF ALIGNMENT 700	742+00	1,799,525.91	1,048,675.86
END OF ALIGNMENT 700	771+00	1,799,648.57	1,051,573.27
BEGINNING OF ALIGNMENT 400	414+00	1,799,395.03	1,050,312.87
END OF ALIGNMENT 400	420+00	1,799,994.50	1,050,287.49

CURVE DATA

CURVE #	CENTER	P.C.	P.T.
701	757+30 100.0' LT (66.0' RADIUS)	757+30 34.0' LT EL. = 666.29	757+96 100.0' LT EL. = 666.04
702	759+30 100.0' LT (66.0' RADIUS)	759+30 34.0' LT EL. = 666.39	758+64 100.0' LT EL. = 666.04
703	759+30 100.0' RT (66.0' RADIUS)	759+30 34.0' RT EL. = 666.39	758+64 100.0' RT EL. = 666.64
704	757+30 100.0' RT (66.0' RADIUS)	757+30 34.0' RT EL. = 666.29	757+96 100.0' RT EL. = 666.43

50 0 50 100

SCALE IN FEET

NOTE:

ALIGNMENTS ARE BASED ON PROJECT COORDINATES.

APR 14, 2010 3:00 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\06-ALIGNMENT & CURVE DATA.DWG

REVISION

DATE

Chicago-Romeoville Airport

JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 06-ALIGNMENT & CURVE DATA
Scale 1"=50'
Date DATE

LAYOUT	LDH	12/30/09
DRAWN	LDH	12/30/09
REVIEWED	RMH	04/15/10

HANSON

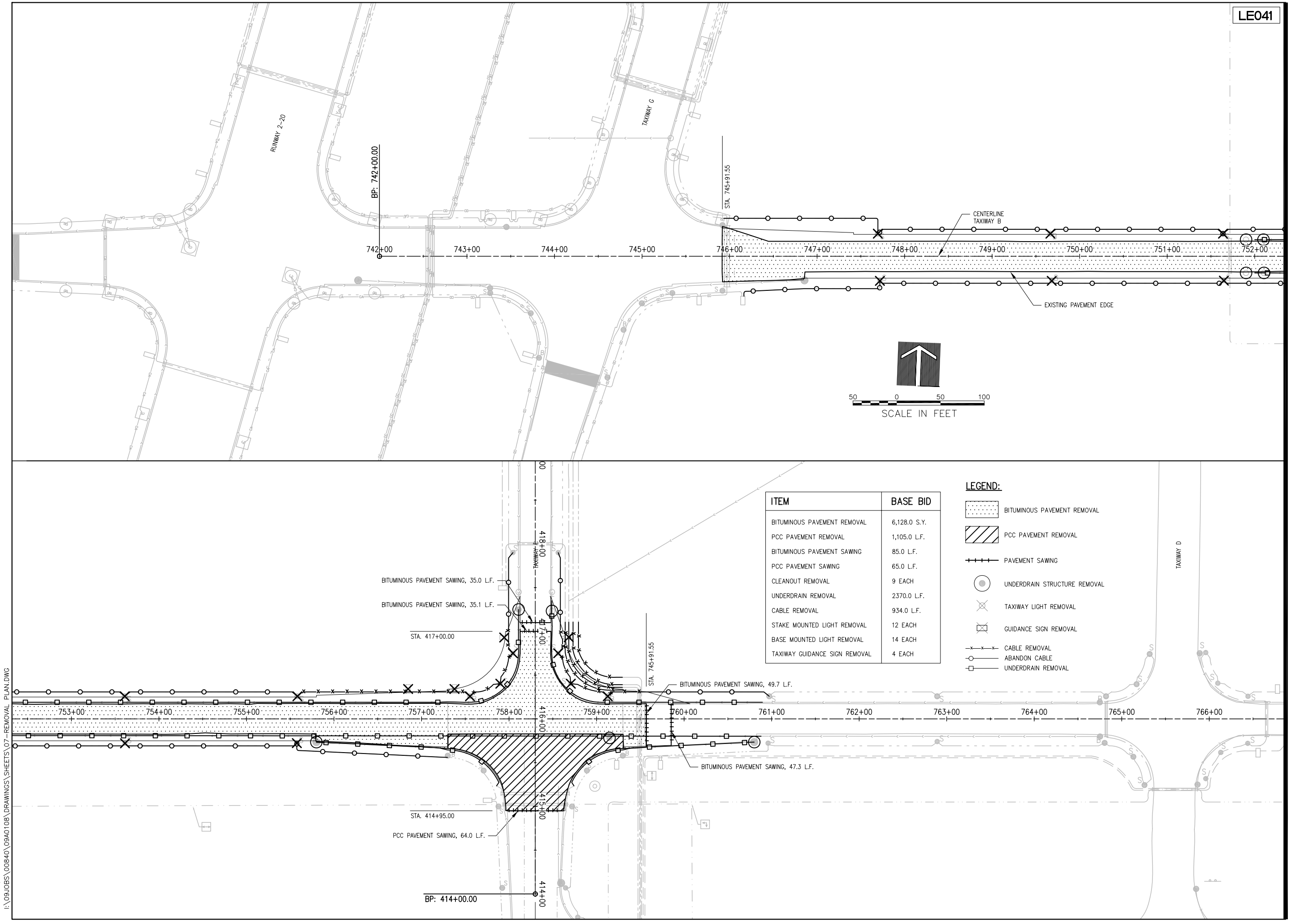
Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

ALIGNMENT AND CURVE DATA

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

6

LE041



ITEM	BASE BID
BITUMINOUS PAVEMENT REMOVAL	6,128.0 S.Y.
PCC PAVEMENT REMOVAL	1,105.0 L.F.
BITUMINOUS PAVEMENT SAWING	85.0 L.F.
PCC PAVEMENT SAWING	65.0 L.F.
CLEANOUT REMOVAL	9 EACH
UNDERDRAIN REMOVAL	2370.0 L.F.
CABLE REMOVAL	934.0 L.F.
STAKE MOUNTED LIGHT REMOVAL	12 EACH
BASE MOUNTED LIGHT REMOVAL	14 EACH
TAXIWAY GUIDANCE SIGN REMOVAL	4 EACH

LEGEND:

- BITUMINOUS PAVEMENT REMOVAL
- PCC PAVEMENT REMOVAL
- PAVEMENT SAWING
- UNDERDRAIN STRUCTURE REMOVAL
- TAXIWAY LIGHT REMOVAL
- GUIDANCE SIGN REMOVAL
- CABLE REMOVAL
- ABANDON CABLE
- UNDERDRAIN REMOVAL

APR 14, 2010 3:00 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\07-REMOVAL PLAN.DWG

REVISION	DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 07-REMOVAL PLAN.DWG
Scale 1"=50'
Date DATE

LAYOUT	LDH	12/29/09
DRAWN	LDH	12/29/09
REVIEWED	RMH	04/15/10

HANSON

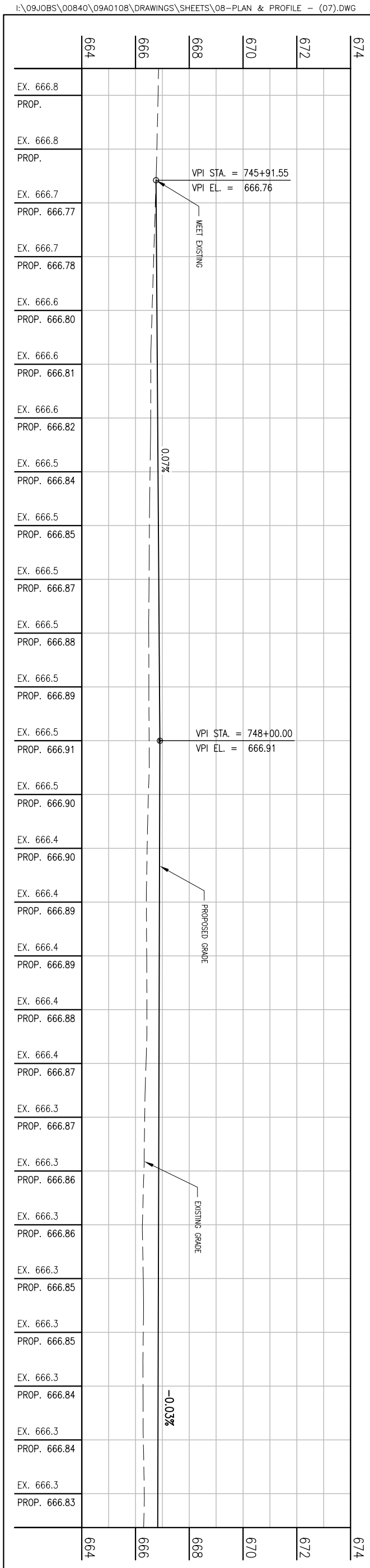
Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

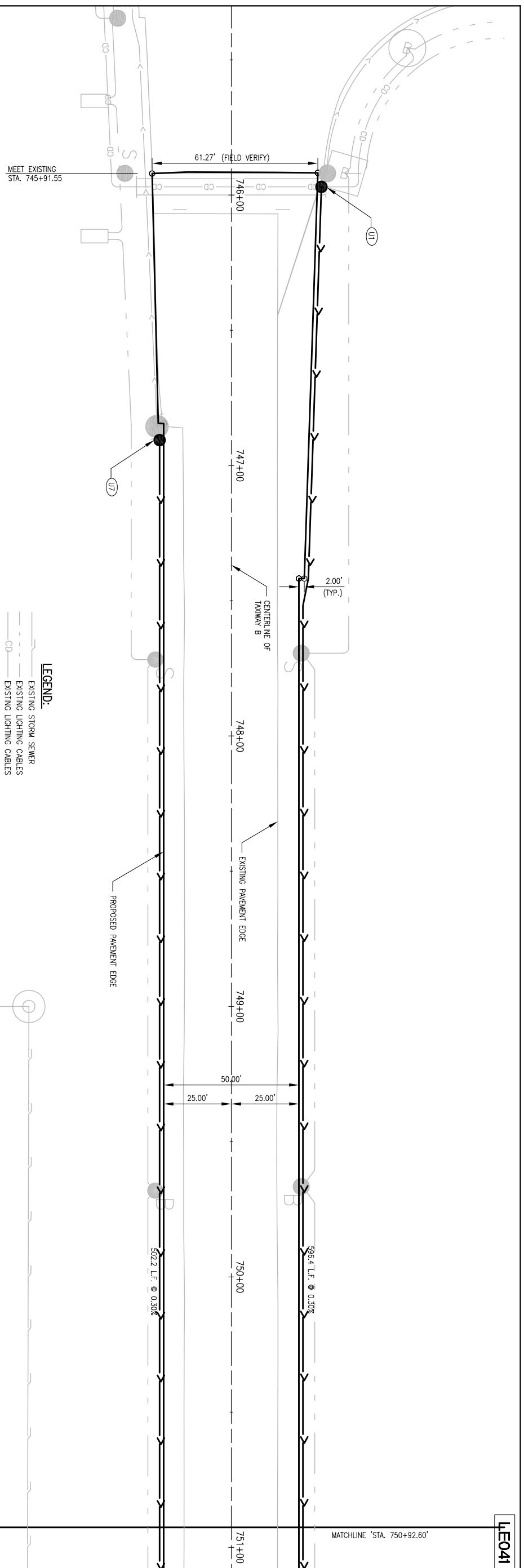
REMOVAL PLAN TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

7

APR 15, 2010 10:22 AM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\08-PLAN & PROFILE - (07).DWG



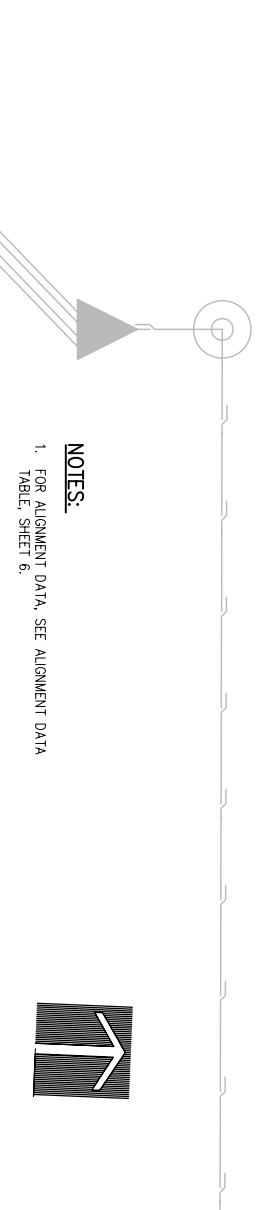


LEGEND:

- EXISTING STORM SEWER
- EXISTING LIGHTING CABLES
- EXISTING LIGHTING CABLES
- EXISTING LIGHTING CABLES
- EXISTING LIGHTING CABLES
- EXISTING LIGHTING CABLES
- EXISTING GAS LINE
- PROPOSED UNDERDRAIN
- EXISTING EDGE LIGHT
- EXISTING STORM SEWER MANHOLE
- EXISTING FLARED END SECTION
- EXISTING UNDERDRAIN INSPECTION HOLE
- EXISTING UNDERDRAIN CLEAN OUT
- PROPOSED INSPECTION HOLE
- PROPOSED CLEAN OUT

NOTES:

1. FOR ALIGNMENT DATA, SEE ALIGNMENT DATA TABLE, SHEET 6.
2. DRAINAGE AND UTILITIES NOT SHOWN IN PROFILE.
3. SOME EXISTING AND PROPOSED UTILITIES HAVE BEEN OMITTED FOR CLARITY.
4. FOR PAVEMENT AND UTILITY REMOVAL INFORMATION, SEE SHEET 7.
5. SEE ELECTRICAL PLANS FOR RELATED WORK.



PLAN AND PROFILE TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

Hanson No. 09A0108
Filename 08-PLAN & PROFILE - (07).DWG
Scale 1"=20'
Date DATE

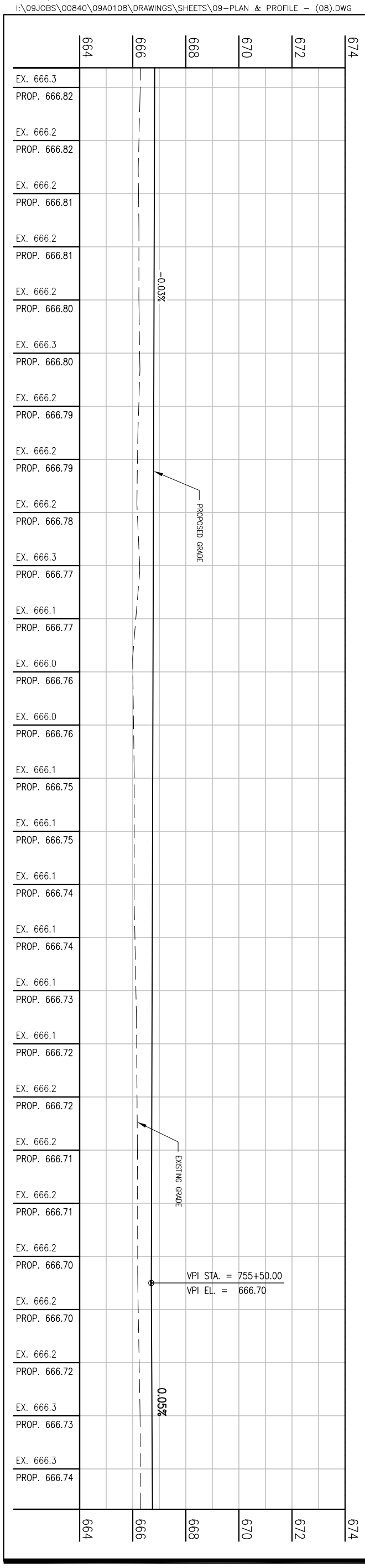
LAYOUT	LDH	12/29/09
DRAWN	LDH	12/29/09
REVIEWED	RMH	04/15/10

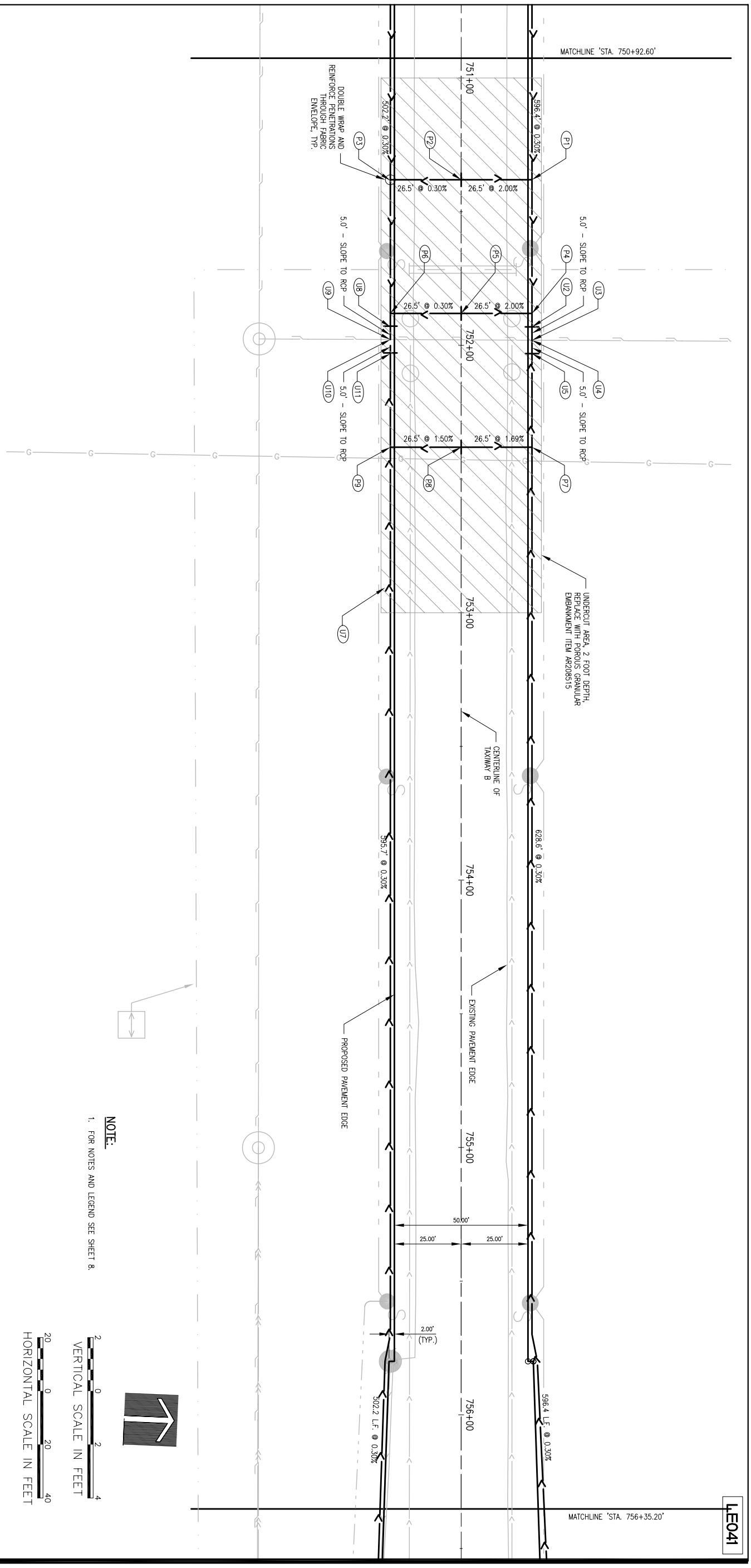
Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

8

APR 14, 2010 3:01 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\09-PLAN & PROFILE - (08).DWG





NOTE:
1. FOR NOTES AND LEGEND SEE SHEET 8.

HORIZONTAL SCALE IN FEET
20 0 20 40

VERTICAL SCALE IN FEET
2 0 2 4

LE041

9 of 42 sheets

9

PLAN AND PROFILE TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

Hanson No. 09A0108
Filename 09-PLAN & PROFILE - (08).DWG
Scale 1"=20'
Date DATE

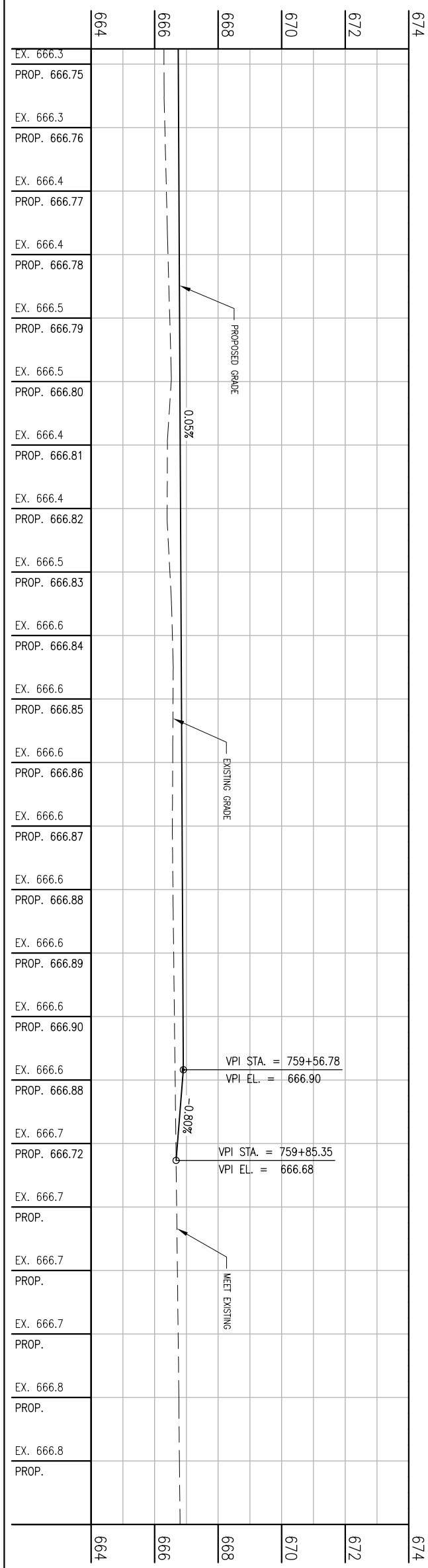
LAYOUT	LDH	12/30/09
DRAWN	LDH	12/30/09
REVIEWED	RMH	04/15/10

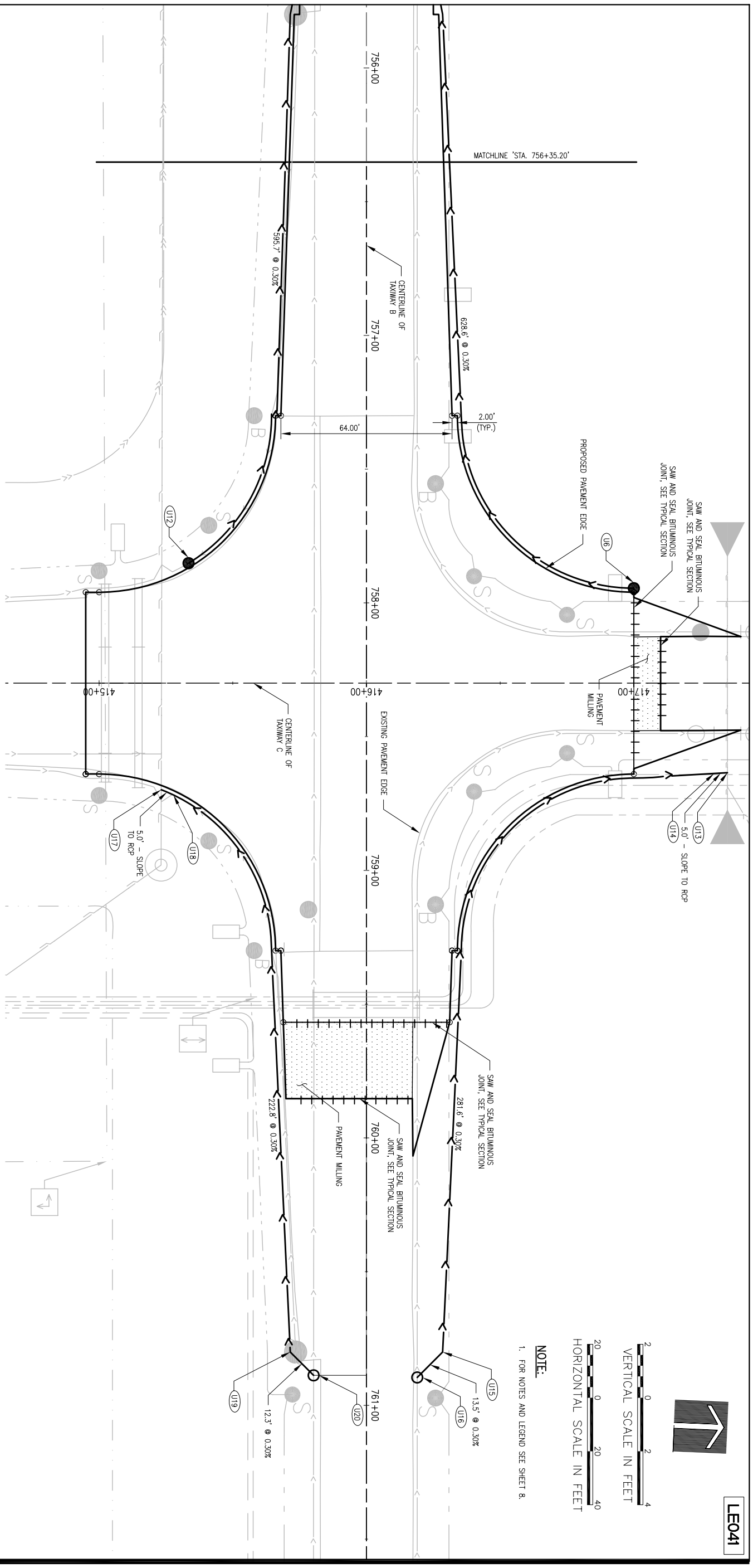
Chicago-Romeoville Airport

JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

APR 14, 2010 3:01 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\10-PLAN & PROFILE - (09).DWG





10 of 42 sheets

10

PLAN AND PROFILE
TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

Hanson No. 09A0108
Filename 10-PLAN & PROFILE - (09).DWG
Scale 1"=20'
Date DATE

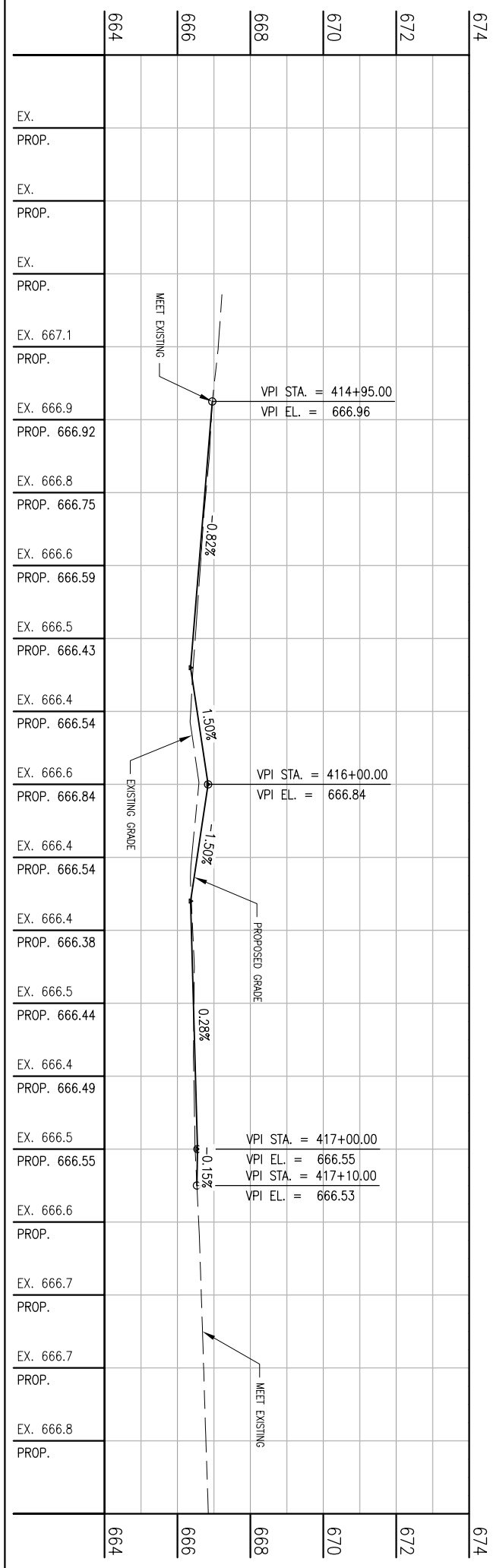
LAYOUT	LDH	12/30/09
DRAWN	LDH	12/30/09
REVIEWED	RMH	04/15/10

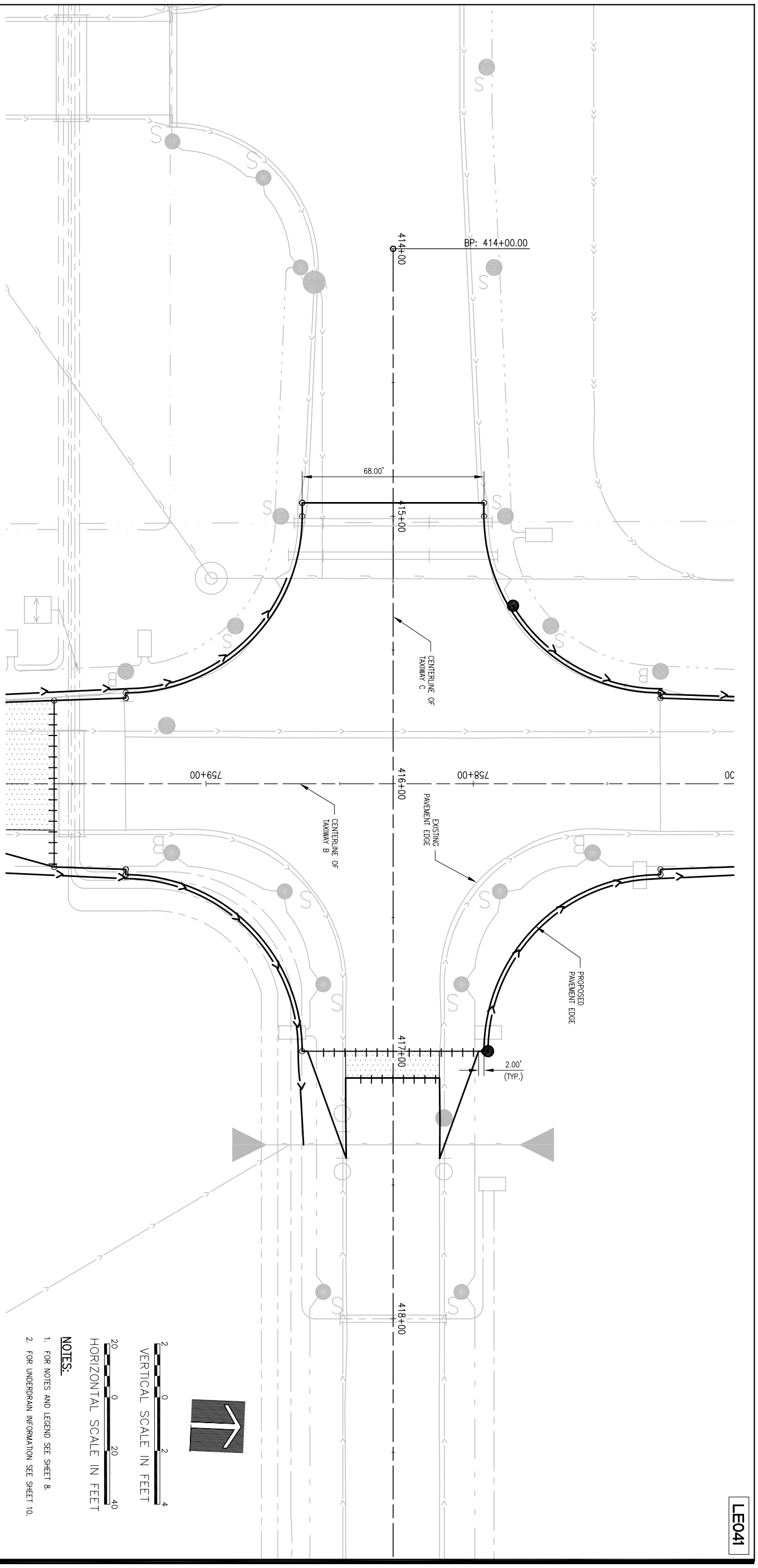
Chicago-Romeoville Airport

JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

APR 14, 2010 3:02 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\11-PLAN & PROFILE - (10).DWG





NOTES:

1. FOR NOTES AND LEGEND SEE SHEET 8.
2. FOR UNDERDRAIN INFORMATION SEE SHEET 10.

HORIZONTAL SCALE IN FEET
20 0 20 40

VERTICAL SCALE IN FEET
2 0 2 4

LE041

11 of 42 sheets

11

PLAN AND PROFILE
TAXIWAY C

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

Hanson No. 09A0108
Filename 11-PLAN & PROFILE - (10).DWG
Scale 1"=20'
Date DATE

LAYOUT	LDH	12/30/09
DRAWN	LDH	12/30/09
REVIEWED	RMH	04/15/10

Chicago-Romeoville Airport

JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

UNDERDRAIN SCHEDULE - ALONG PAVEMENT EDGE

Structure	Station	Offset	Type	Rim El.	Invert El.	Pay Length	Slope %
U1	745+96.95	33.33 LT	Clean Out	666.09	664.09		
U2	751+93.09	26.50 LT	Slope Break	--	662.30	596.4	0.30
U3	751+98.09	26.50 LT	RCP Connection	--	659.48	5.0	56.40
U4	751+98.09	26.50 LT	RCP Connection	--	659.48		
U5	752+03.09	26.50 LT	Slope Break	--	661.95	5.0	49.40
U6	757+94.50	100.00 LT	Clean Out	665.84	663.84	628.6	0.30
U7	746+90.60	26.50 RT	Clean Out	666.25	664.25		
U8	751+92.84	26.50 RT	Slope Break	--	662.75	502.2	0.30
U9	751+97.84	26.50 RT	RCP Connection	--	659.78	5.0	59.40
U10	751+97.84	26.50 RT	RCP Connection	--	659.78		
U11	752+02.84	26.50 RT	Slope Break	--	662.00	5.0	44.40
U12	757+85.15	66.55 RT	Clean Out	665.80	663.80	595.7	0.30
U13	758+63.50	135.00 LT	RCP Connection	--	663.73		
U14	758+63.79	130.00 LT	Slope Break	--	663.53	5.0	4.00
U15	760+80.07	28.50 LT	Elbow Fitting	--	664.37	281.6	0.30
U16	760+89.58	19.00 LT	Inspection Hole	666.41	664.41	13.5	0.30
U17	758+69.83	76.76 RT	RCP Connecton	--	661.56		
U18	758+72.01	72.16 RT	Slope Break	--	663.74	5.0	43.60
U19	760+80.07	28.50 RT	Elbow Fitting	--	664.36	222.8	0.30
U20	760+88.80	19.75 RT	Inspection Hole	666.40	664.40	12.3	0.30

UNDERDRAIN SCHEDULE - UNDER PAVEMENT

Structure	Station	Offset	Type	Rim El.	Invert El.	Pay Length	Slope %
P1	751+38.09	26.50 LT	Tee Connection	--	662.47		
P2	751+38.09	0.00	Slope Break	--	663.00	26.5	2.00
P3	751+38.09	26.50 T	Tee Connection	--	662.92	26.5	0.30
P4	751+88.09	26.50 LT	Tee Connection	--	662.32		
P5	751+88.09	0.00	Slope Break	--	662.85	26.5	2.00
P6	751+88.09	26.50 RT	Tee Connection	--	662.77	26.5	0.30
P7	752+38.09	26.50 LT	Tee Connection	--	662.06		
P8	752+38.09	0.00	Slope Break	--	662.51	26.5	1.69
P9	752+38.09	26.50 RT	Tee Connection	--	662.11	26.5	1.50

APR 14, 2010 3:02 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\12-UNDERDRAIN SCHEDULE.DWG

REVISION
DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 12-UNDERDRAIN SCHEDULE.DWG
Scale N/A
Date DATE

LAYOUT	LDH	12/11/09
DRAWN	LDH	12/11/09
REVIEWED	RMH	04/15/10

HANSON

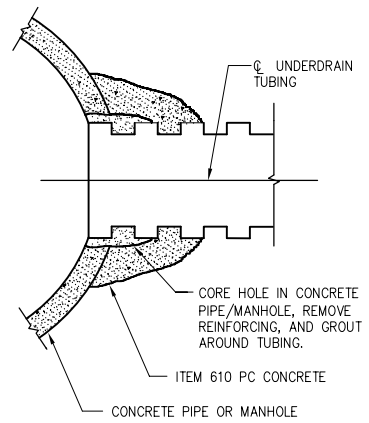
Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

UNDERDRAIN SCHEDULE

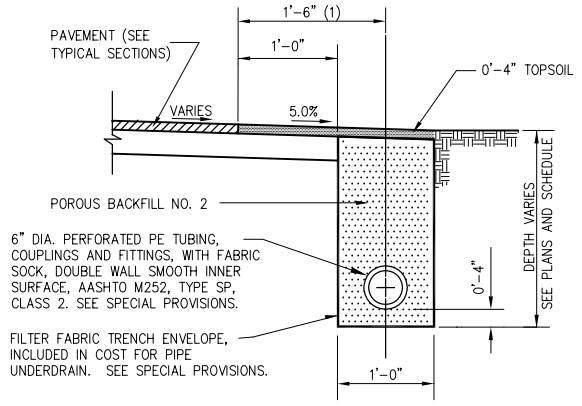
REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

12

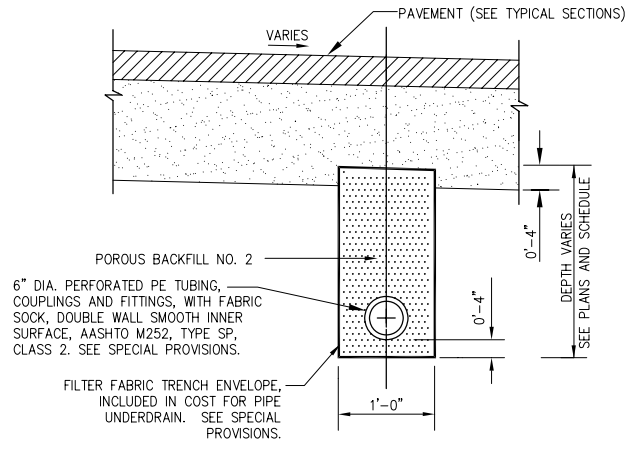
LE041



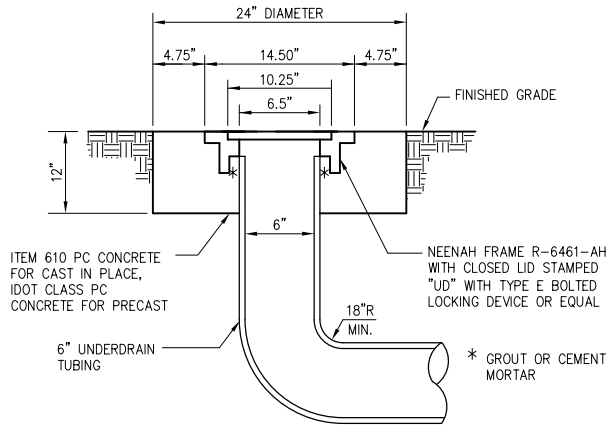
STORM SEWER CONCRETE COLLAR AND GROUT CONNECTION



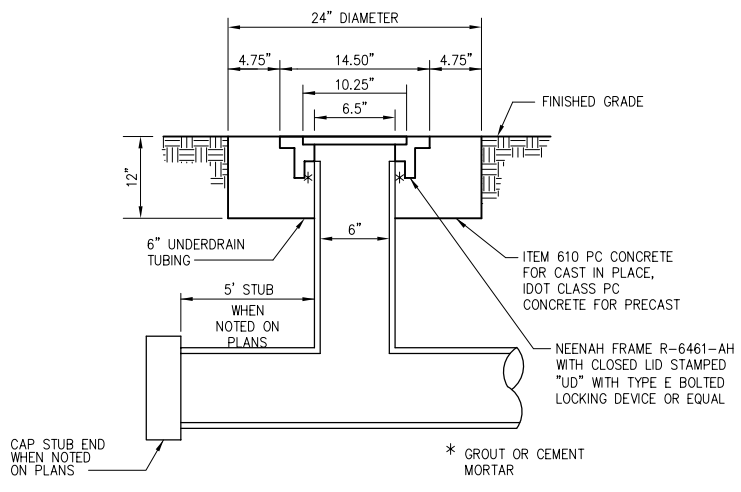
UNDERDRAIN ALONG PAVEMENT EDGE



UNDERDRAIN UNDER PAVEMENT



UNDERDRAIN CLEANOUT



UNDERDRAIN INSPECTION HOLE

DETAILS SHOWN ARE NOT TO SCALE

APR 14, 2010 3:02 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\13-UNDERDRAIN DETAILS.DWG

DATE	REVISION

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 13-UNDERDRAIN DETAILS.DWG
Scale N/A
Date DATE

LAYOUT	LDH	12/10/09
DRAWN	LDH	12/10/09
REVIEWED	RMH	04/15/10

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

UNDERDRAIN DETAILS

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

13
13 of 42 sheets

LE041

EARTHWORK SUMMARY IN CUBIC YARDS		
CUT	4,175	
TOTAL REQUIRED		4,175
FILL	56	
10% Shrink	6	
Material Used as On-site Topsoil	1,125	
Subtotal		1,187
MATERIAL TO BE HAULED TO ON-STE LOCATION		2,988

TAXIWAY G

TAXIWAY B

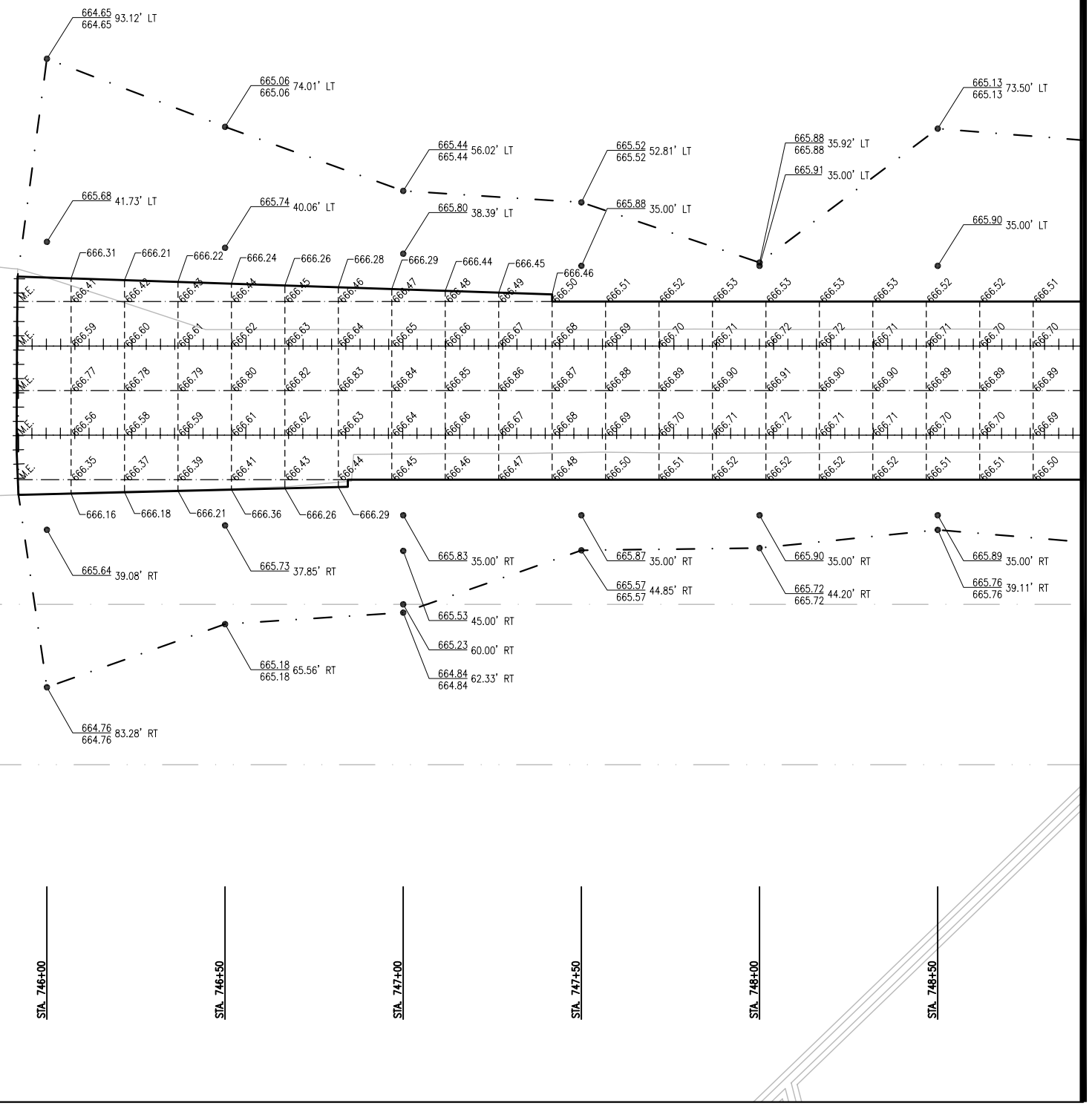
20 0 20 40
SCALE IN FEET

GRADING, TOPSOILING, SEEDING AND MULCHING LIMITS

M.E. MEET EXISTING

NOTES:

1. FOR ADDITIONAL GRADING INFORMATION, SEE PLAN AND PROFILE SHEETS AND CROSS SECTIONS.
2. CONTRACTOR IS REQUIRED TO FIELD VERIFY EXISTING UTILITY LOCATIONS.
3. CONTRACTOR WILL BE PROVIDED WITH CONTROL POINTS AND BASELINES IN ACCORDANCE WITH SPECIAL PROVISIONS.
4. STAKING POINTS AT JOINTS UNLESS NOTED OTHERWISE.
5. FOR SEEDING INFORMATION, SEE LANDSCAPING PLAN.



APR 15, 2010 10:24 AM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\14-STAKING PLAN.DWG

REVISION	DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 14-STAKING PLAN.DWG
Scale 1"=20'
Date DATE

LAYOUT	LDH	01/04/10
DRAWN	LDH	01/04/10
REVIEWED	RMH	04/15/10

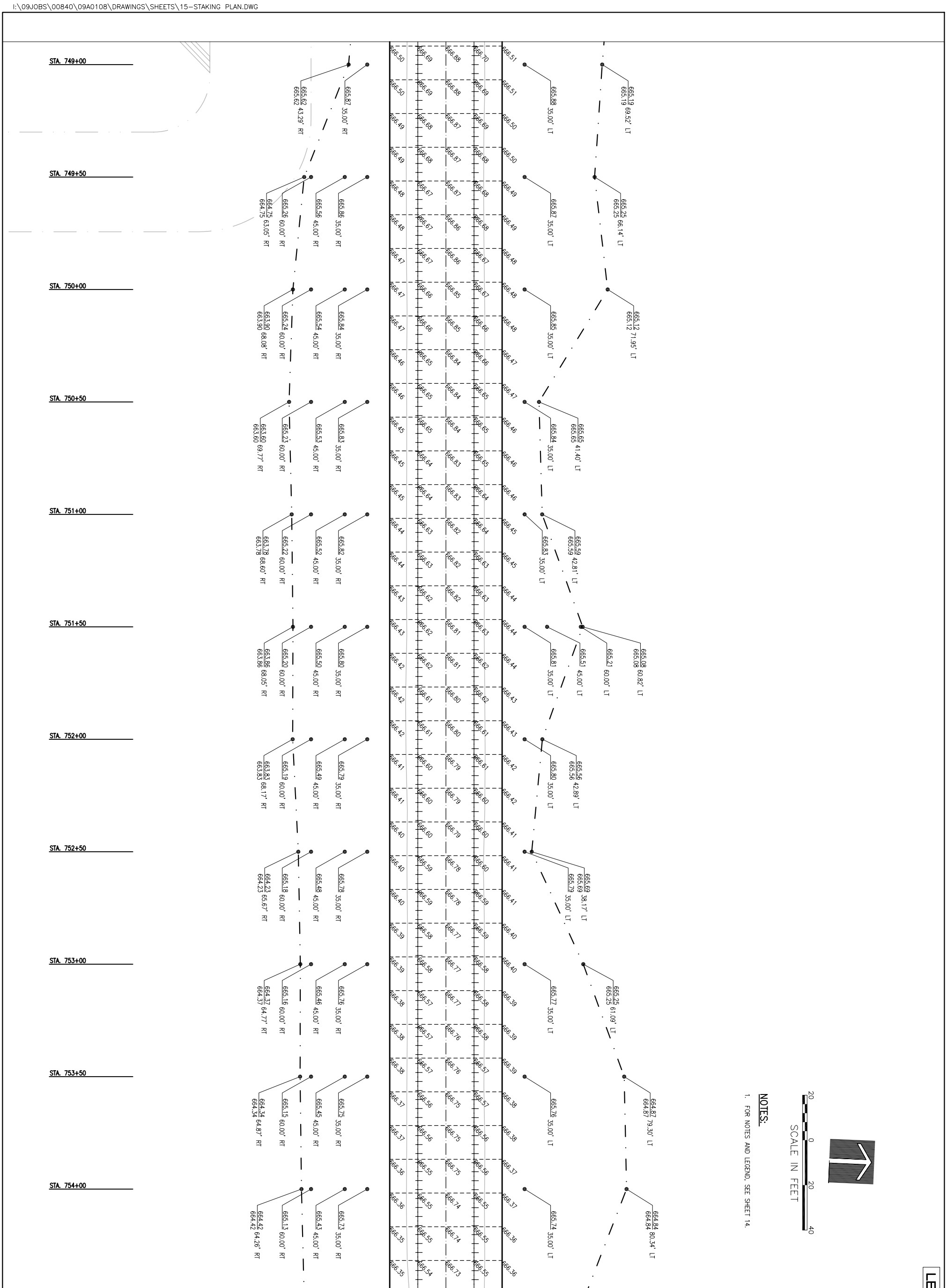
HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

STAKING PLAN & PAVEMENT ELEVATIONS - TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

14
14 of 42 sheets



NOTES:

1. FOR NOTES AND LEGEND, SEE SHEET 14.

LE041

15

15 of 42 sheets

STAKING PLAN & PAVEMENT ELEVATIONS - TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

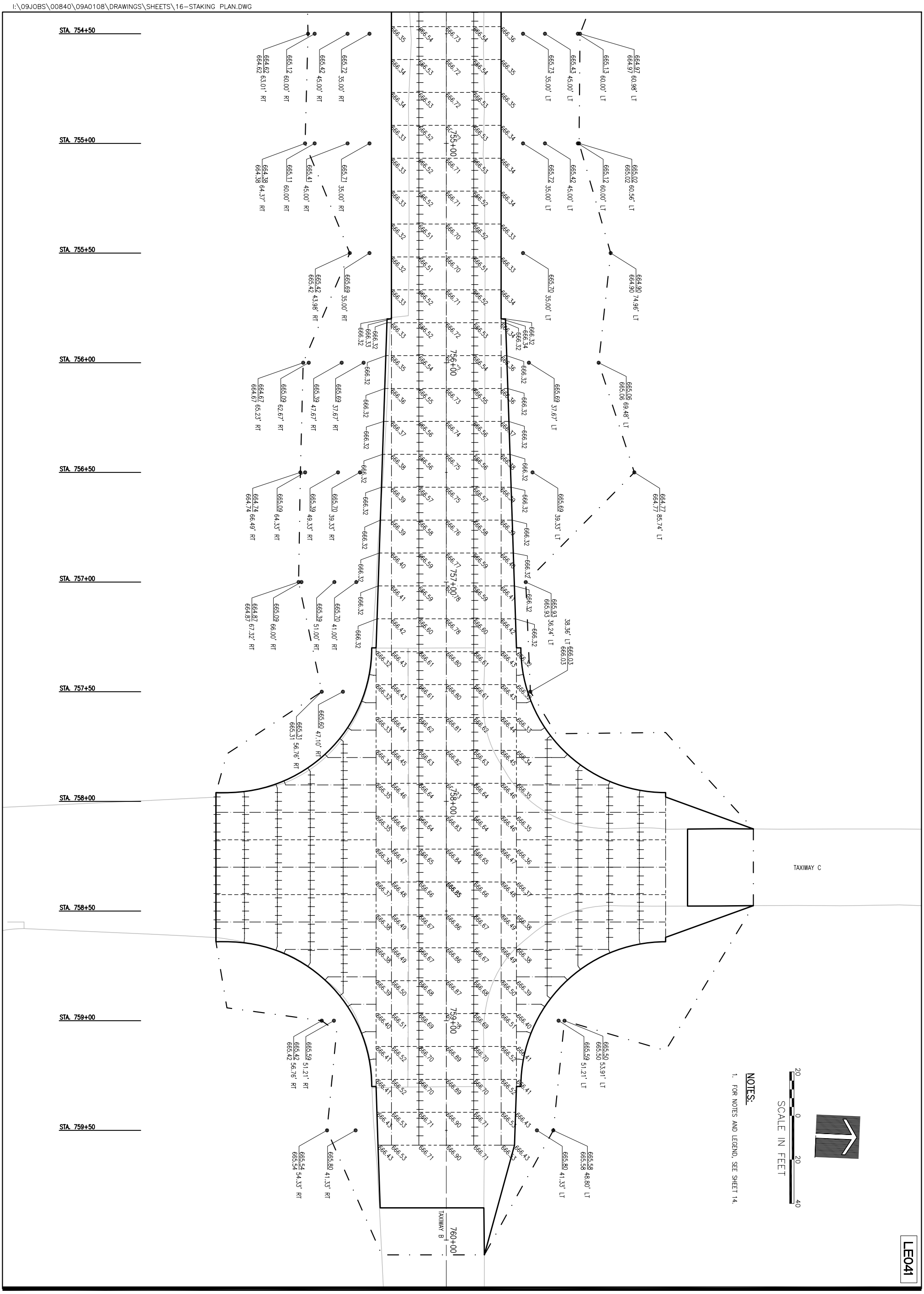
Hanson No. 09A0108
Filename 15-STAKING PLAN.DWG
Scale 1"=20'
Date DATE

LAYOUT	LDH	01/04/10
DRAWN	LDH	01/04/10
REVIEWED	RMH	04/15/10

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

APR 14, 2010 3:03 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\16-STAKING PLAN.DWG



STAKING PLAN & PAVEMENT ELEVATIONS - TAXIWAY B

16 of 42 sheets

16

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

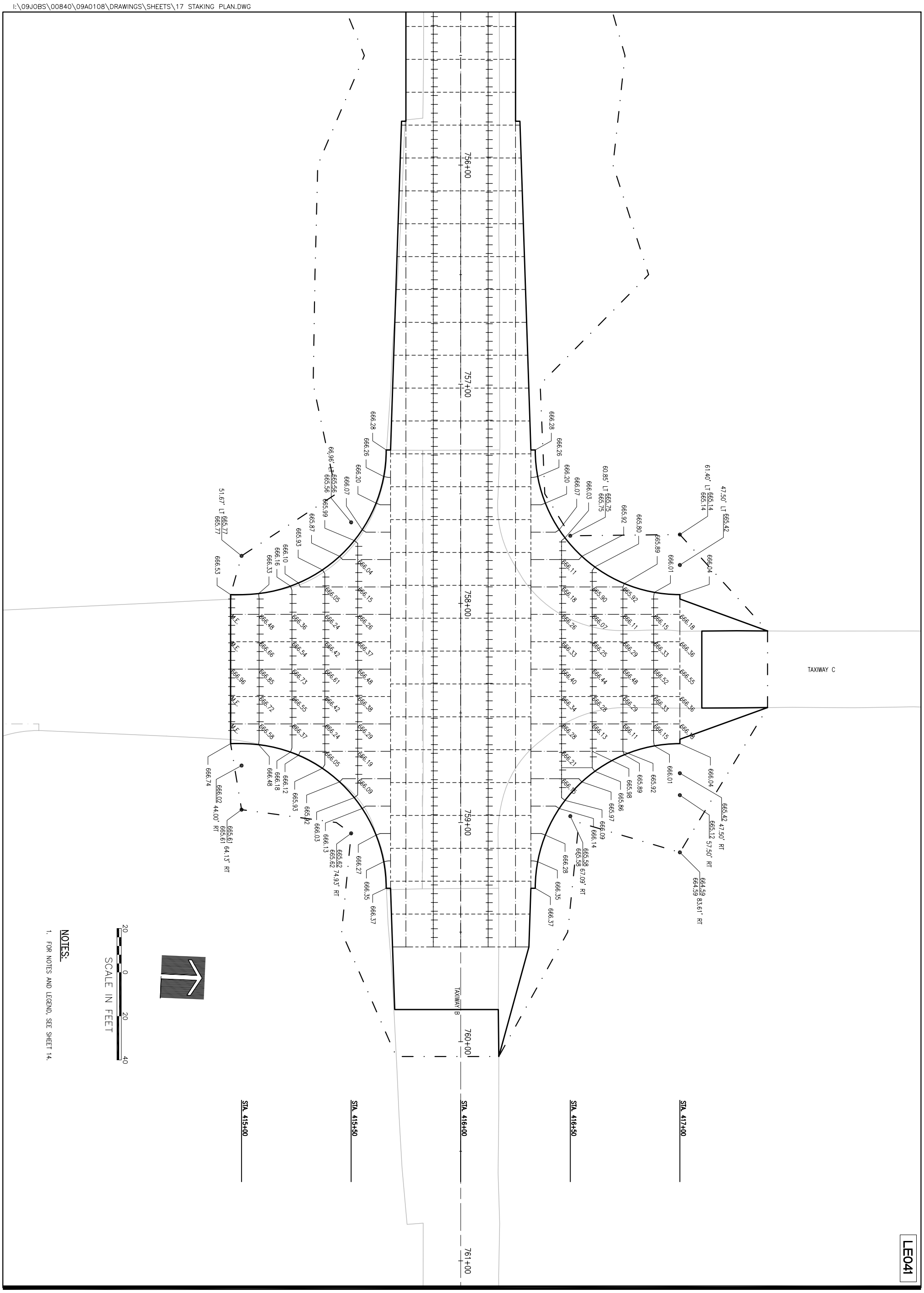
Hanson No. 09A0108
Filename 16-STAKING PLAN.DWG
Scale 1"=20'
Date DATE

LAYOUT	LDH	01/04/10
DRAWN	LDH	01/04/10
REVIEWED	RMH	04/15/10

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

APR 14, 2010 3:03 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\17 STAKING PLAN.DWG



NOTES:

1. FOR NOTES AND LEGEND, SEE SHEET 14.

SCALE IN FEET
20 0 20 40

LE041

17 of 42 sheets

17

STAKING PLAN & PAVEMENT ELEVATIONS - TAXIWAY C

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

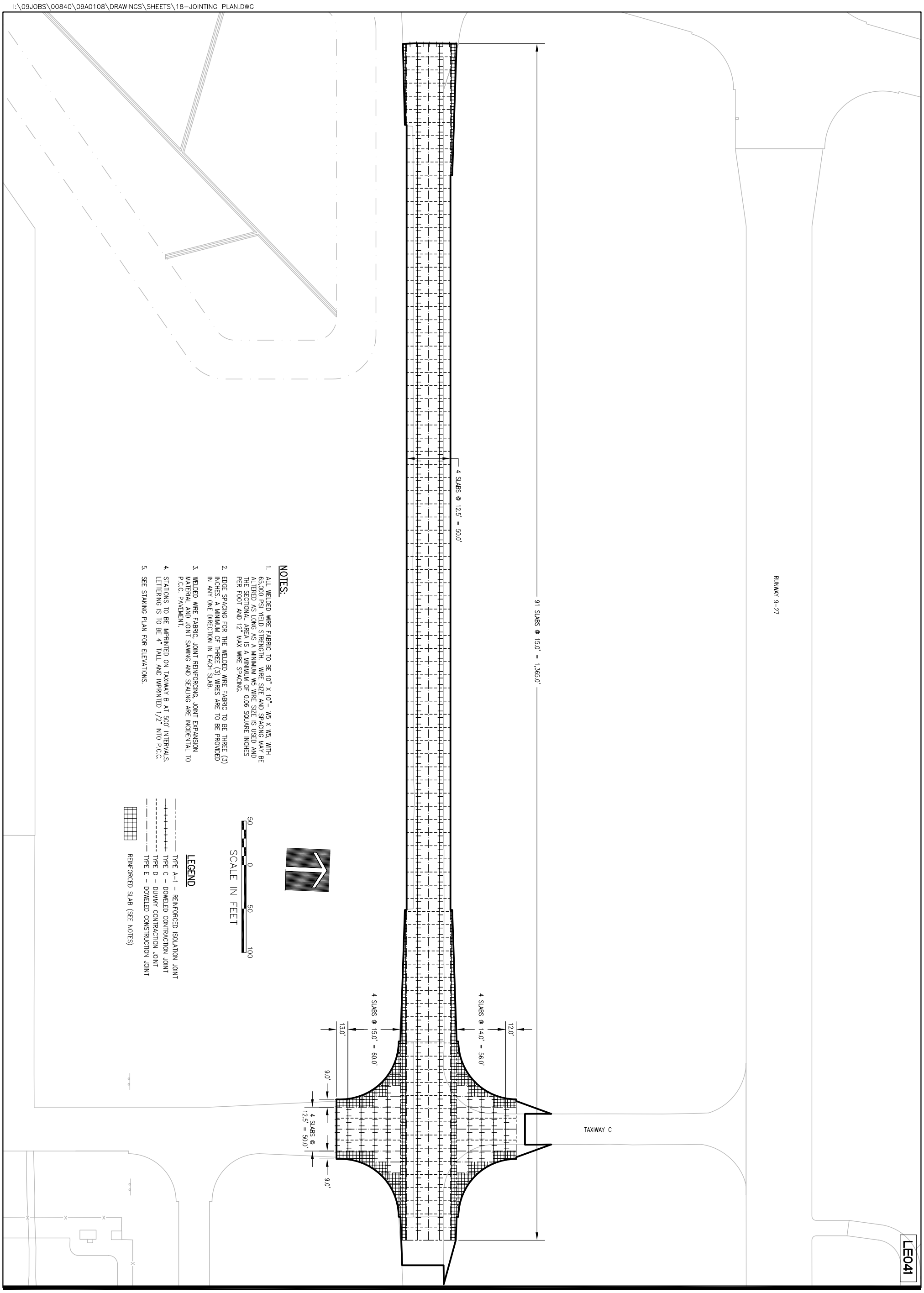
Hanson No. 09A0108
Filename 17 STAKING PLAN.DWG
Scale 1"=20'
Date DATE

LAYOUT	LDH	01/07/10
DRAWN	LDH	01/07/10
REVIEWED	RMH	04/15/10

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mlchas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

APR 14, 2010 3:03 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\18-JOINTING PLAN.DWG



NOTES:

1. ALL WELDED WIRE FABRIC TO BE 10" X 10"- W5 X W5, WITH 65,000 PSI YIELD STRENGTH. WIRE SIZE AND SPACING MAY BE ALTERED AS LONG AS A MINIMUM W5 WIRE SIZE IS USED AND THE SECTIONAL AREA IS A MINIMUM OF 0.06 SQUARE INCHES PER FOOT AND 12" MAX WIRE SPACING.
2. EDGE SPACING FOR THE WELDED WIRE FABRIC TO BE THREE (3) INCHES. A MINIMUM OF THREE (3) WIRES ARE TO BE PROVIDED IN ANY ONE DIRECTION IN EACH SLAB.
3. WELDED WIRE FABRIC, JOINT REINFORCING, JOINT EXPANSION MATERIAL AND JOINT SAWING AND SEALING ARE INCIDENTAL TO P.C.C. PAVEMENT.
4. STATIONS TO BE IMPRINTED ON TAXIWAY B AT 500' INTERVALS. LETTERING IS TO BE 4" TALL AND IMPRINTED 1/2" INTO P.C.C.
5. SEE STAKING PLAN FOR ELEVATIONS.

LEGEND

- TYPE A-1 - REINFORCED ISOLATION JOINT
- TYPE C - DOWELED CONTRACTION JOINT
- TYPE D - DUMMY CONTRACTION JOINT
- TYPE E - DOWELED CONSTRUCTION JOINT
- REINFORCED SLAB (SEE NOTES)

LE041

18 of 42 sheets

18

JOINTING AND REINFORCING PLAN - TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

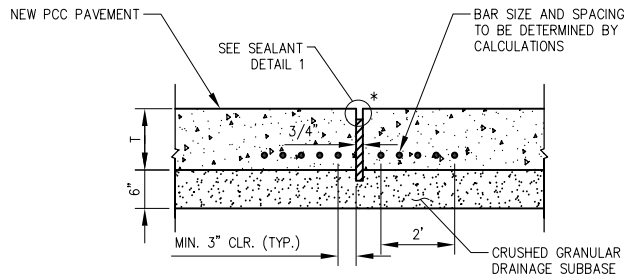
Hanson No. 09A0108
Filename 18-JOINTING PLAN.DWG
Scale 1"=50'
Date DATE

LAYOUT	LDH	12/11/09
DRAWN	LDH	12/11/09
REVIEWED	RMH	04/15/10

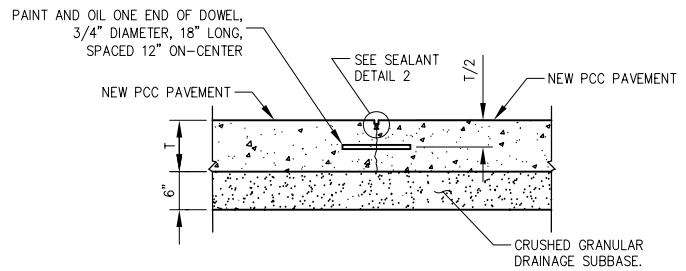
Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

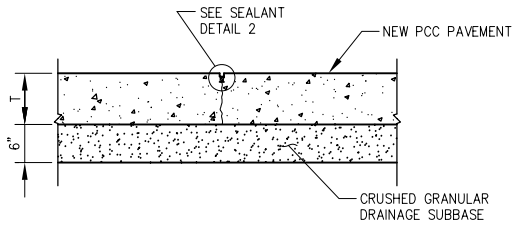
LE041



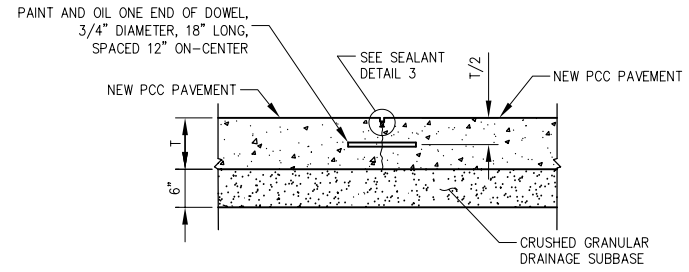
TYPE A-1 - REINFORCED ISOLATION JOINT



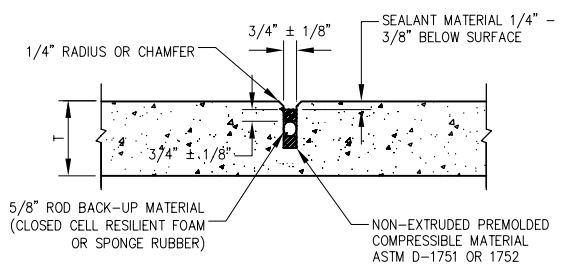
TYPE C - DOWELED CONTRACTION JOINT



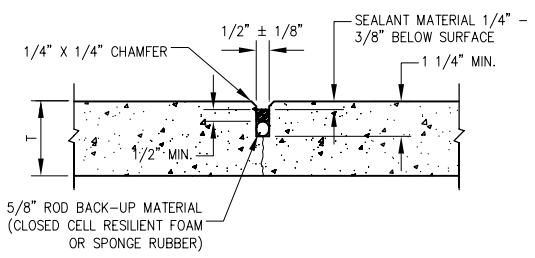
TYPE D - DUMMY CONTRACTION JOINT



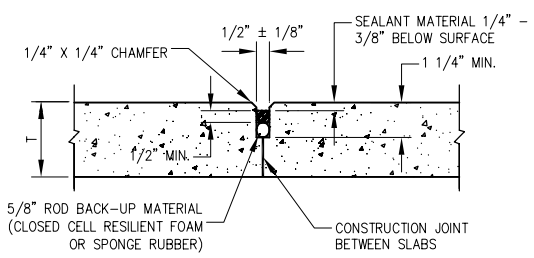
TYPE E - DOWELED CONSTRUCTION JOINT



DETAIL 1 - SEALANT



DETAIL 2 - SEALANT



DETAIL 3 - SEALANT

NOTE: T = 10 INCHES

DETAILS SHOWN ARE NOT TO SCALE

APR 14, 2010 3:03 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\19-JOINTING DETAILS.DWG

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 19-JOINTING DETAILS.DWG
Scale N/A
Date DATE

LAYOUT	LDH	12/15/09
DRAWN	LDH	12/15/09
REVIEWED	RMH	04/15/10

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

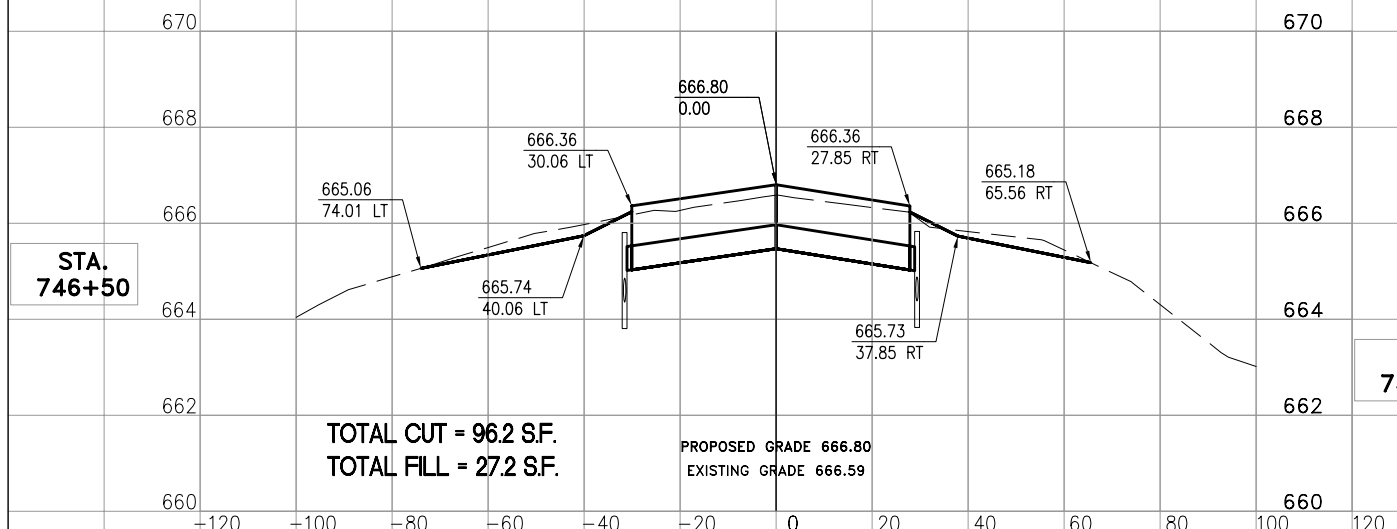
PCC PAVEMENT AND JOINTING DETAILS

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

19
19 of 42 sheets

LE041

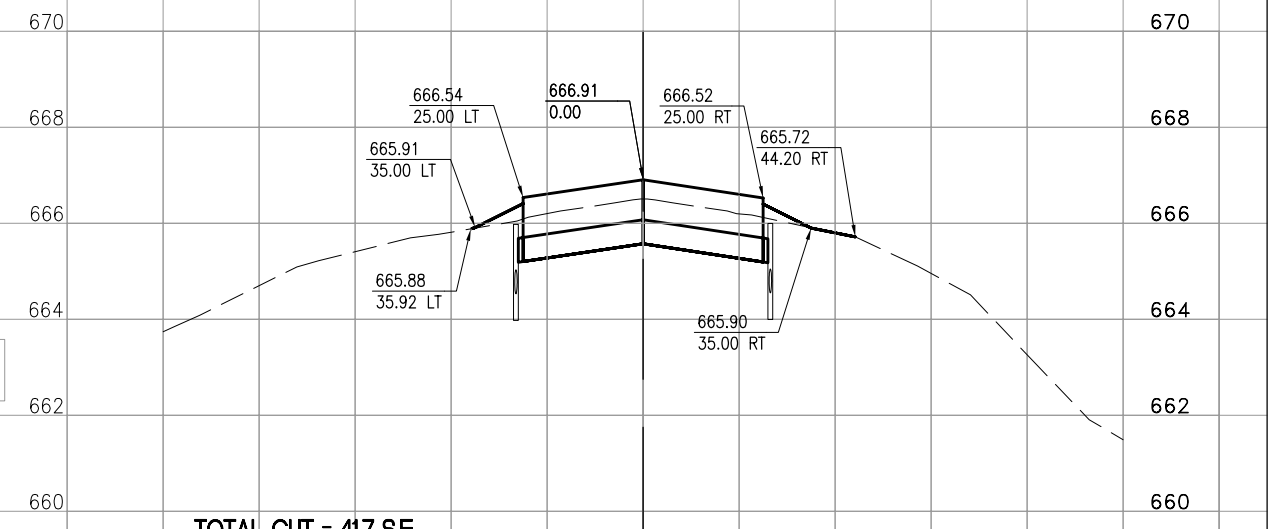
STA. 746+50



TOTAL CUT = 96.2 S.F.
TOTAL FILL = 27.2 S.F.

PROPOSED GRADE 666.80
EXISTING GRADE 666.59

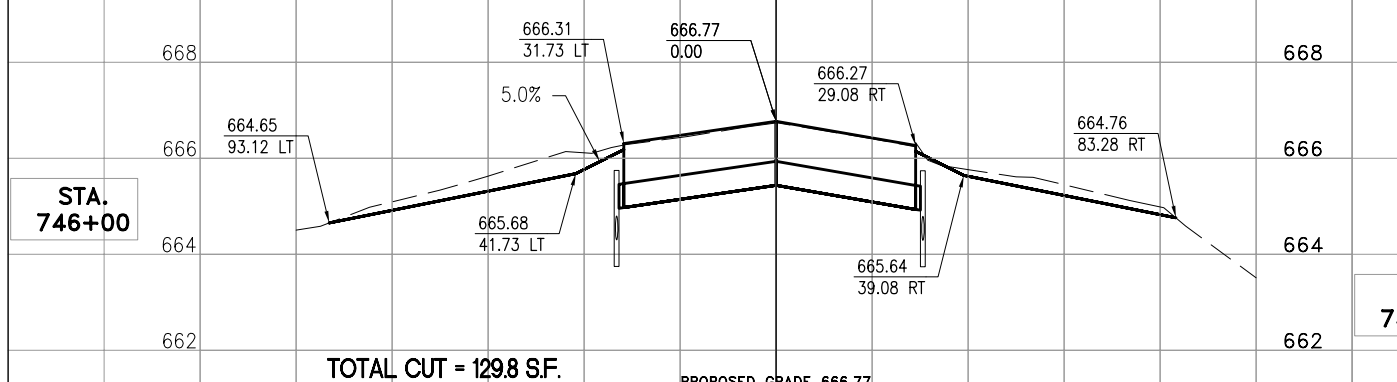
STA. 748+00



TOTAL CUT = 41.7 S.F.
TOTAL FILL = 3.4 S.F.

PROPOSED GRADE 666.91
EXISTING GRADE 666.51

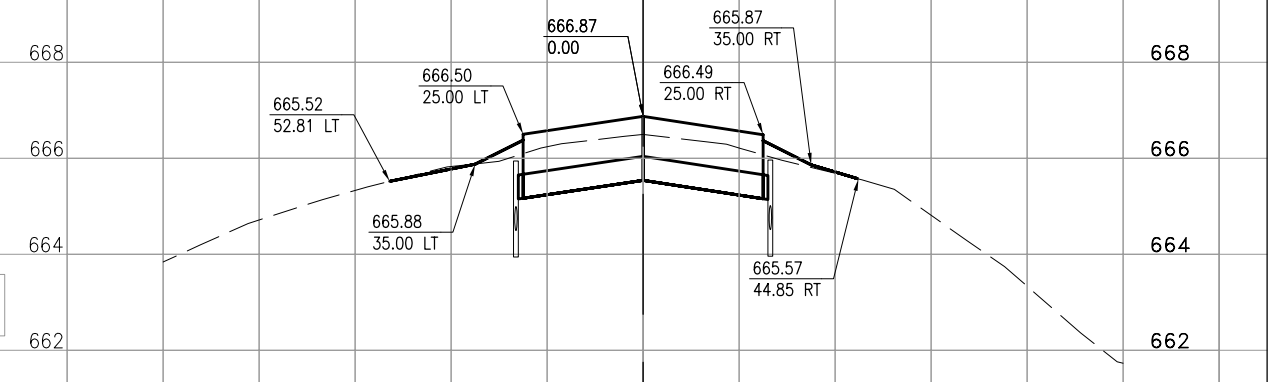
STA. 746+00



TOTAL CUT = 129.8 S.F.
TOTAL FILL = 38.5 S.F.

PROPOSED GRADE 666.77
EXISTING GRADE 666.74

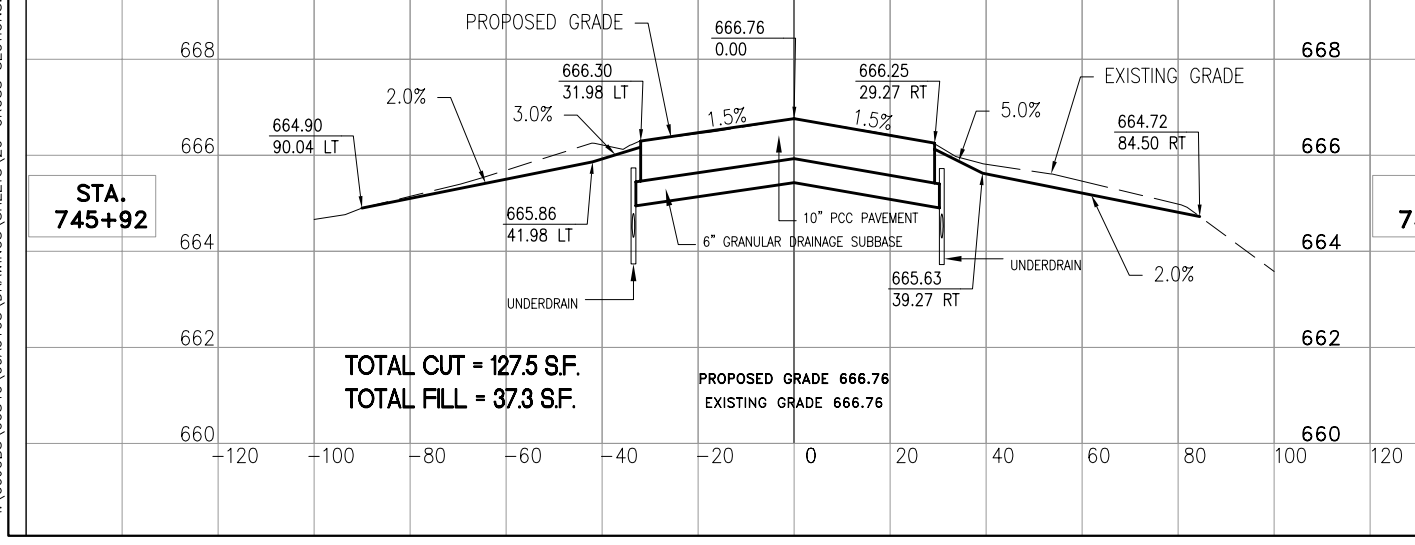
STA. 747+50



TOTAL CUT = 44.8 S.F.
TOTAL FILL = 4.0 S.F.

PROPOSED GRADE 666.87
EXISTING GRADE 666.50

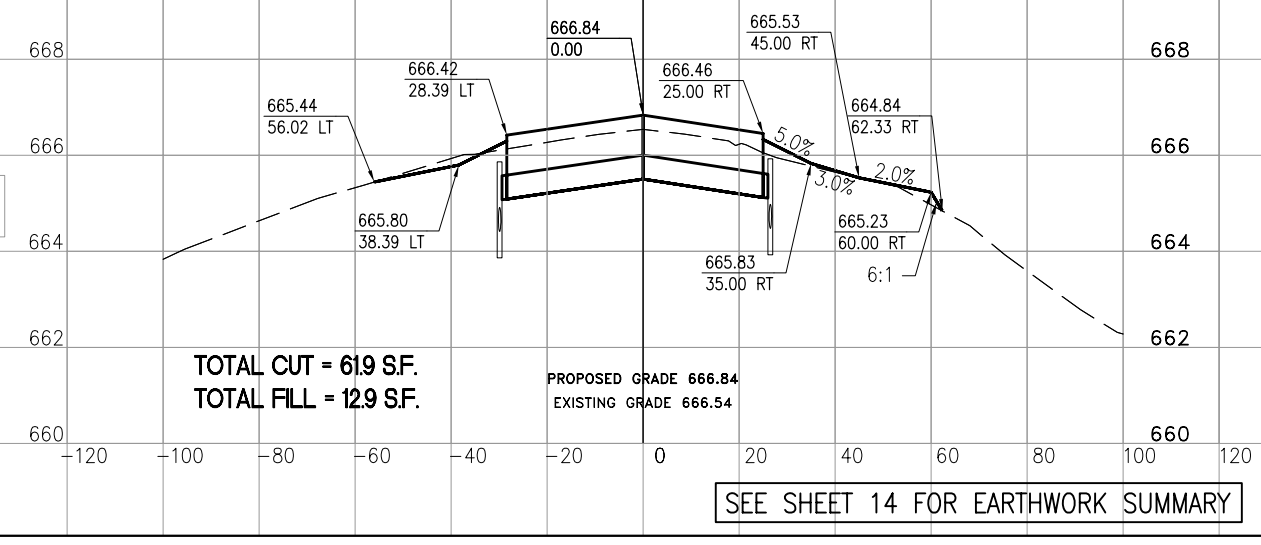
STA. 745+92



TOTAL CUT = 127.5 S.F.
TOTAL FILL = 37.3 S.F.

PROPOSED GRADE 666.76
EXISTING GRADE 666.76

STA. 747+00



TOTAL CUT = 61.9 S.F.
TOTAL FILL = 12.9 S.F.

PROPOSED GRADE 666.84
EXISTING GRADE 666.54

SEE SHEET 14 FOR EARTHWORK SUMMARY

APR 14, 2010 3:04 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\20-CROSS SECTIONS.DWG

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mchas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108 | 20-CROSS_SECTIONS.DWG
Filename
Scale 1"=20'
Date DATE

LAYOUT	LDH	3/8/10
DRAWN	LDH	3/9/10
REVIEWED	RMH	04/15/10

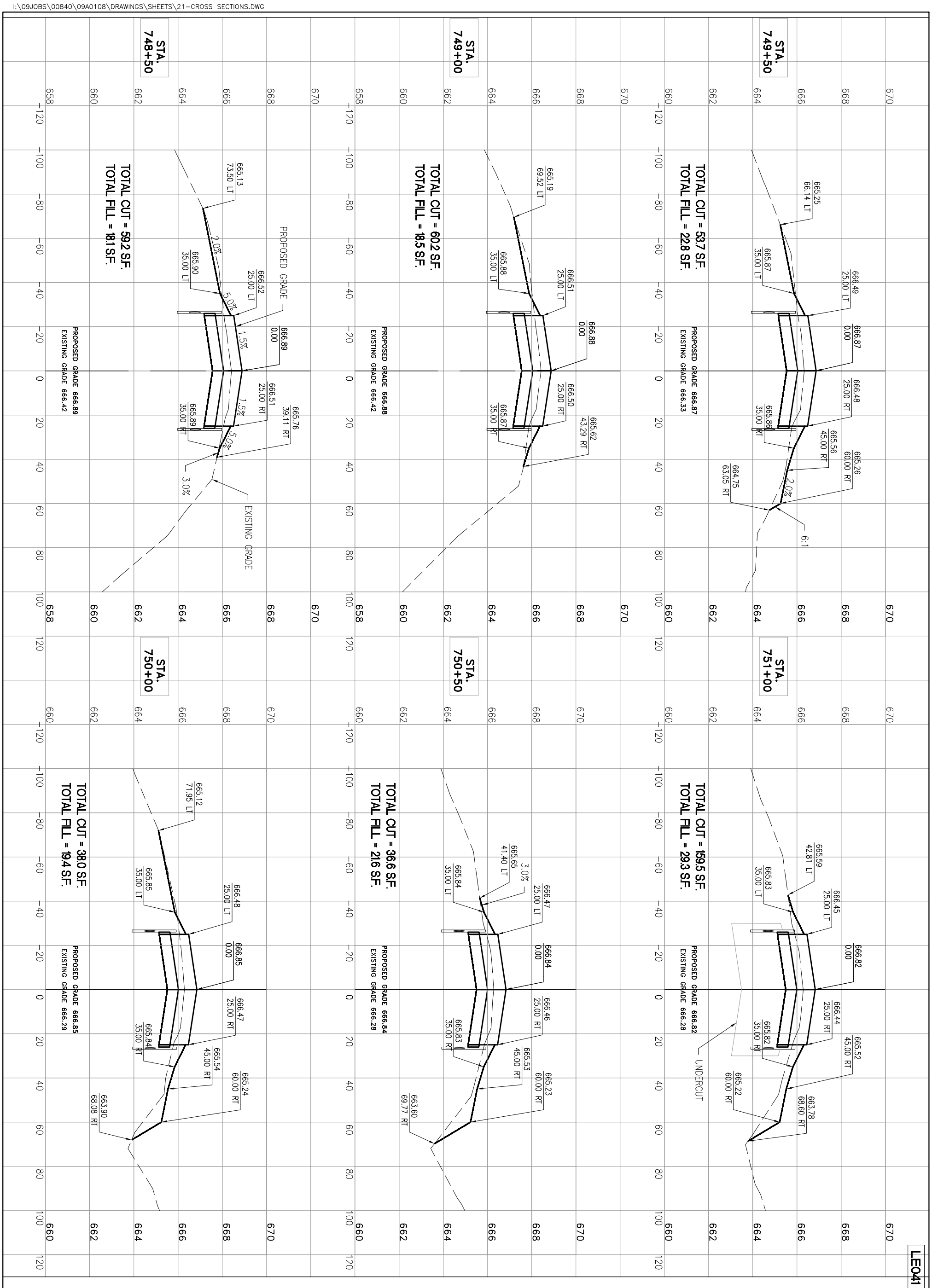
HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

CROSS SECTIONS
TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

20
20 of 42 sheets



CROSS SECTIONS
TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

21
21 of 42 sheets

HANSON
Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

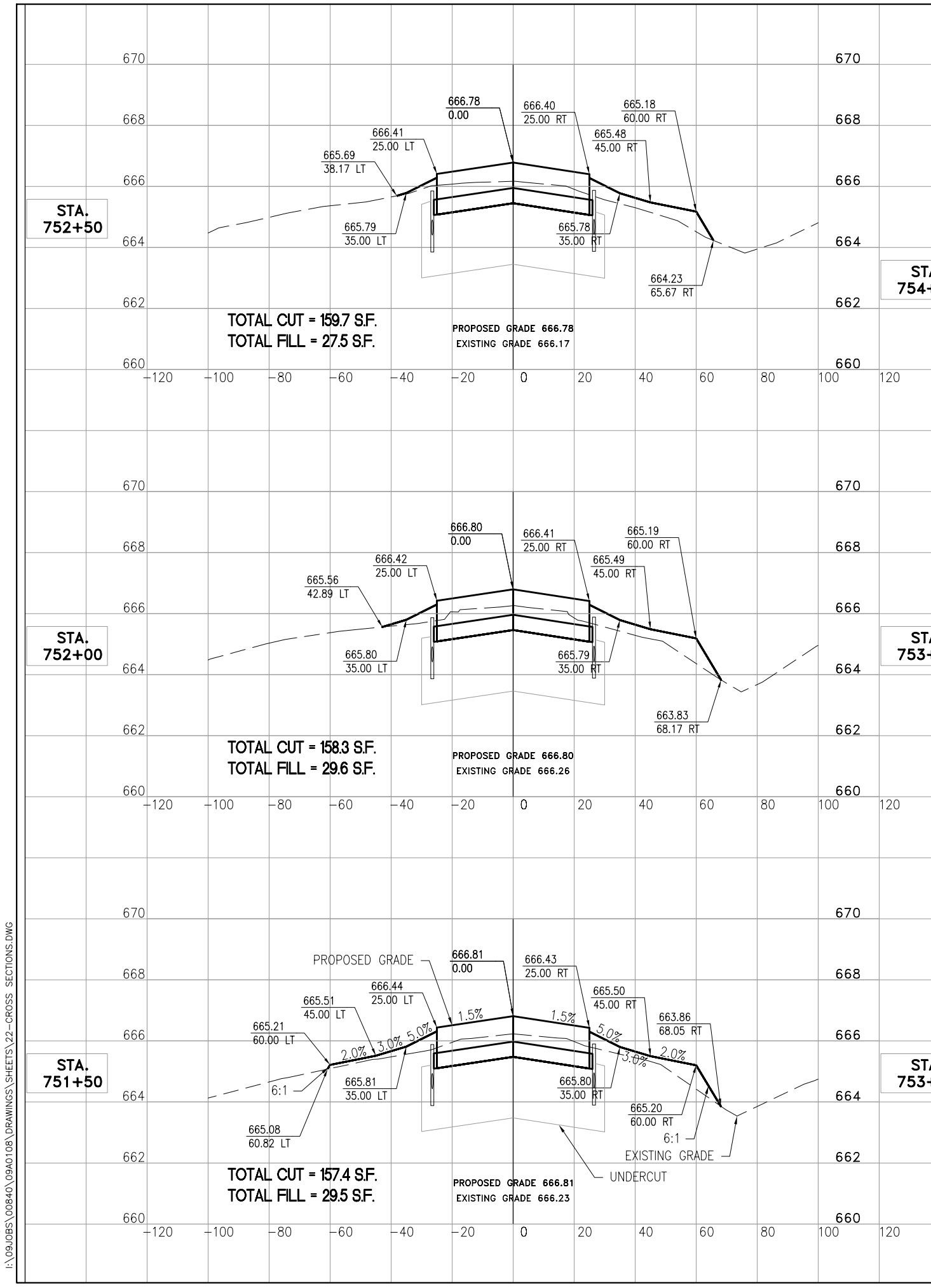
Hanson No. 09A0108
Filename 21-CROSS SECTIONS.DWG
Scale 1"=20'
Date DATE

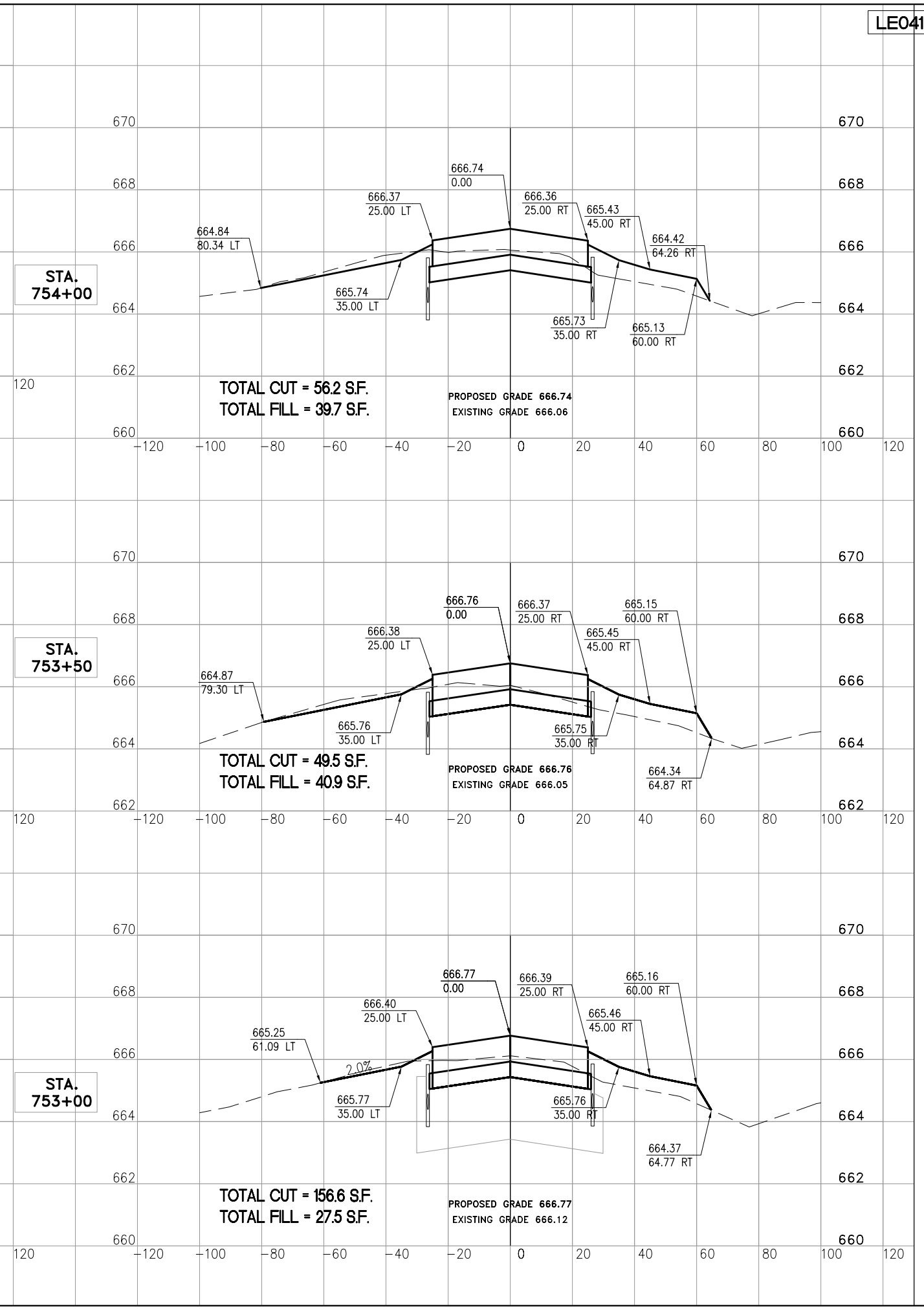
LAYOUT	LDH	3/8/10
DRAWN	LDH	3/9/10
REVIEWED	RMH	04/15/10

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mlchas Drlve
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

LE041





APR 14, 2010 3:04 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\22-CROSS SECTIONS.DWG

REVISION	DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mchas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 22-CROSS SECTIONS.DWG
Scale 1"=20'
Date DATE

LAYOUT	LDH	3/8/10
DRAWN	LDH	3/9/10
REVIEWED	RMH	04/15/10

HANSON

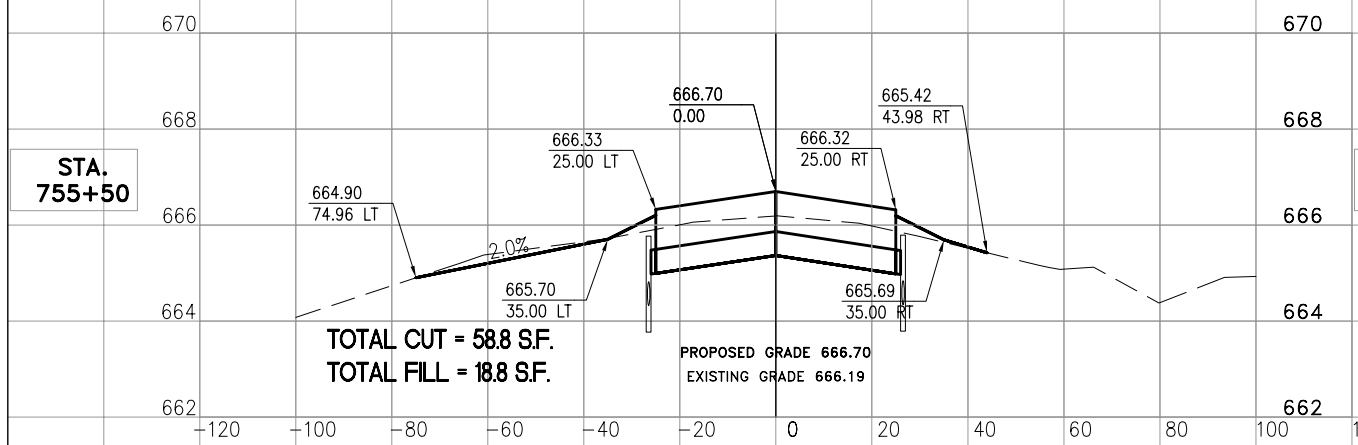
Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

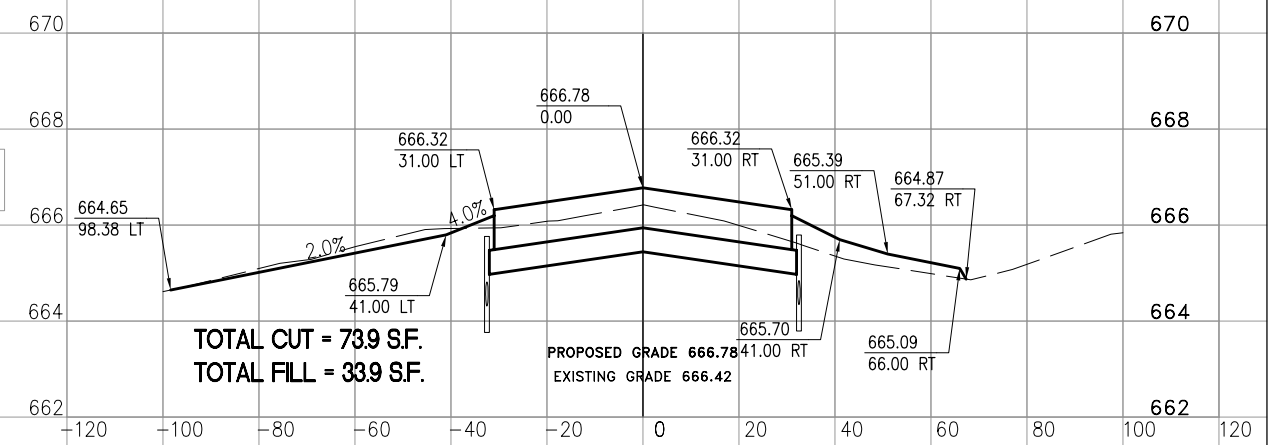
CROSS SECTIONS TAXIWAY B

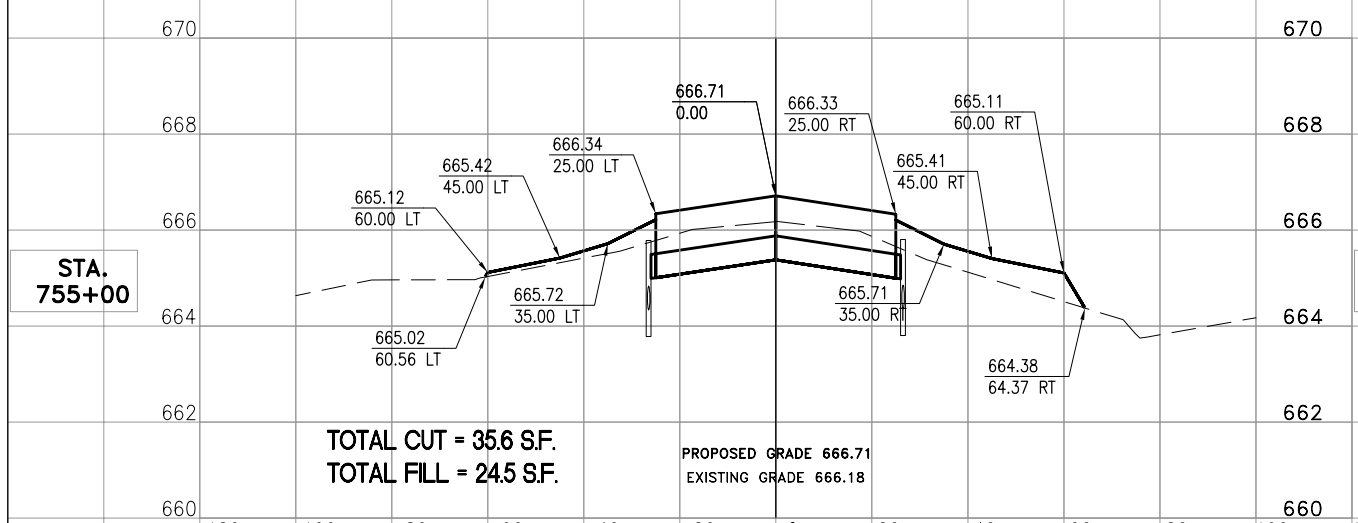
REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

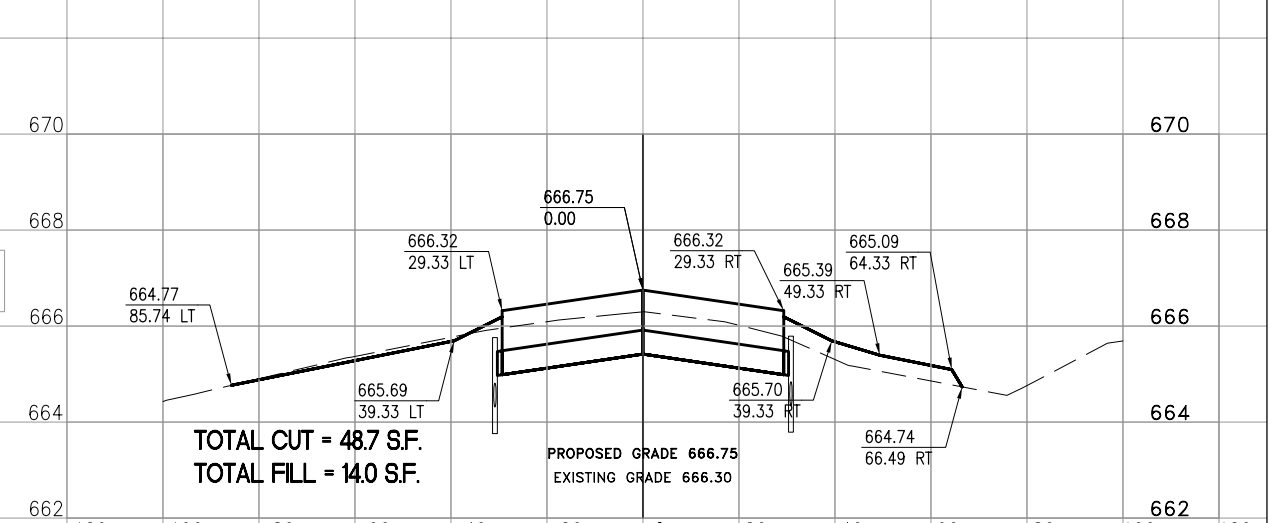
22

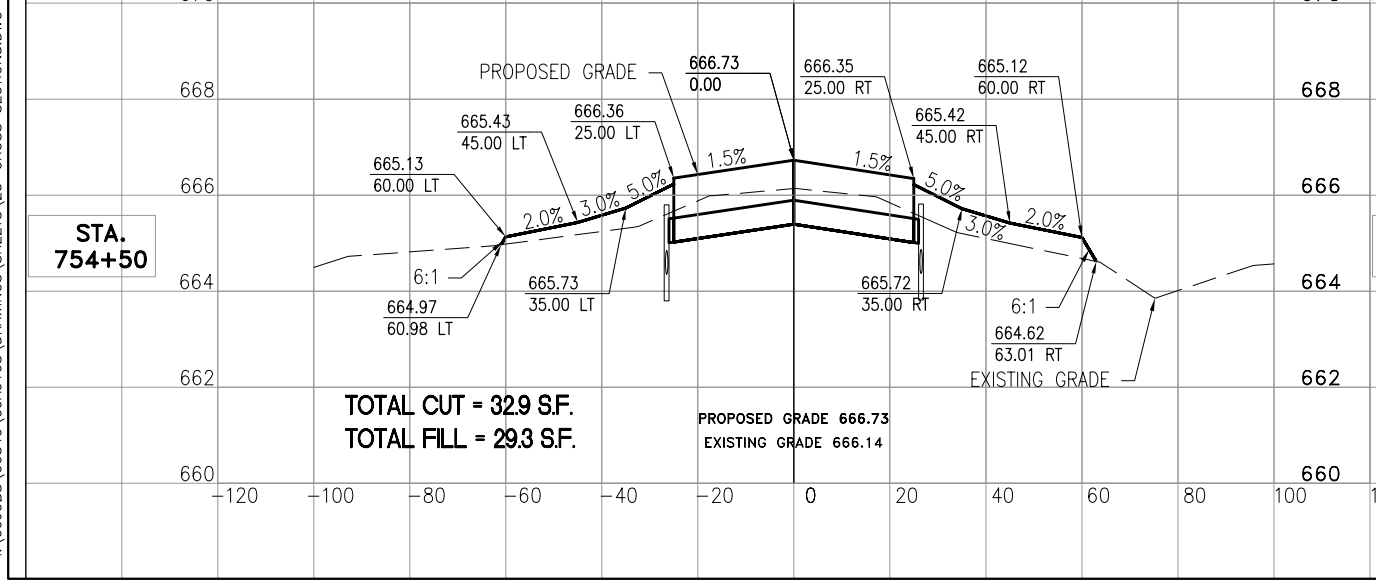
LE041

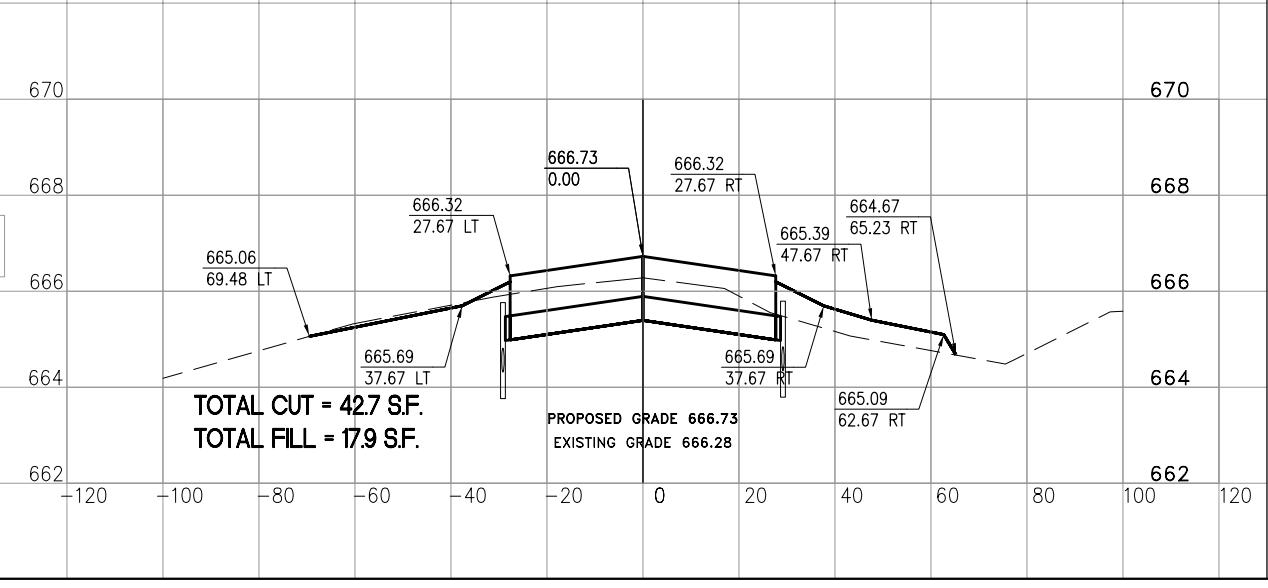












APR 14, 2010 3:04 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\23-CROSS SECTIONS.DWG

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mchas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 23-CROSS SECTIONS.DWG
Scale 1"=20'
Date DATE

LAYOUT	LDH	3/8/10
DRAWN	LDH	3/9/10
REVIEWED	RMH	04/15/10

HANSON

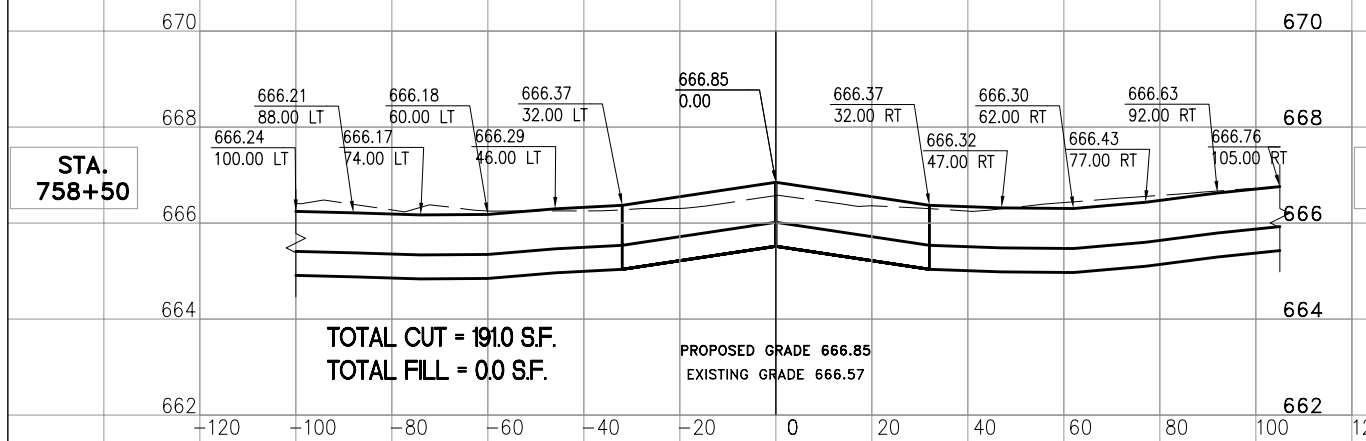
Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

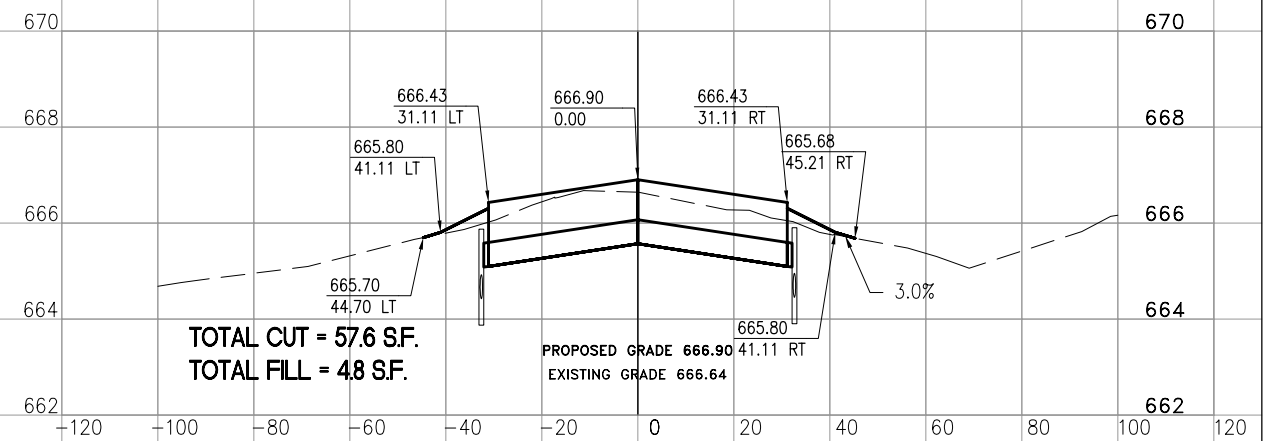
CROSS SECTIONS
TAXIWAY B

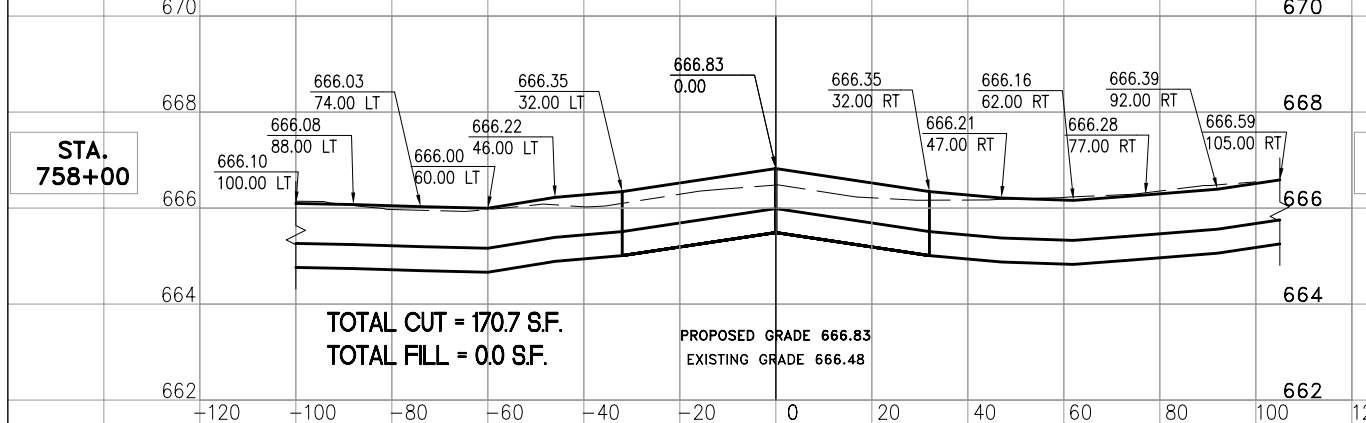
REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

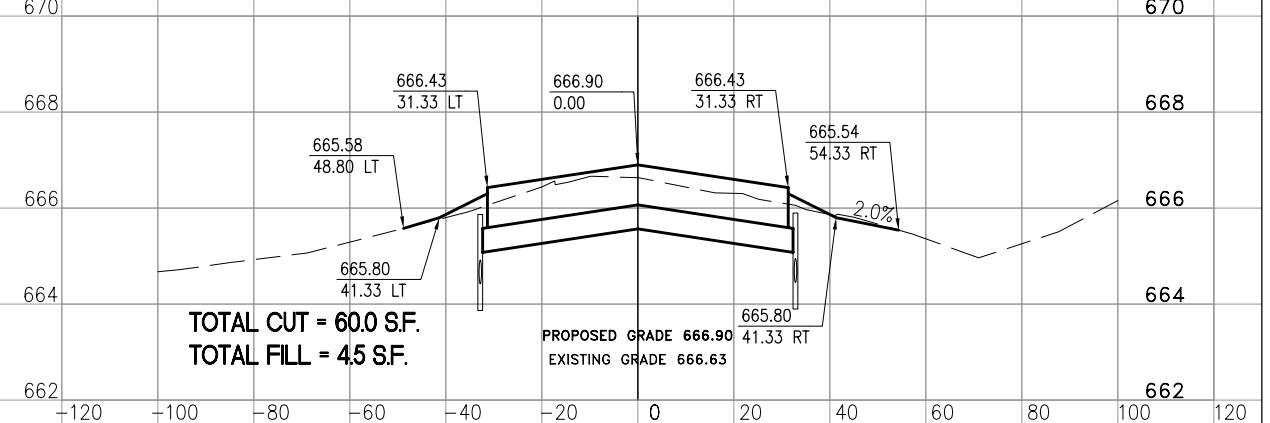
23
23 of 42 sheets

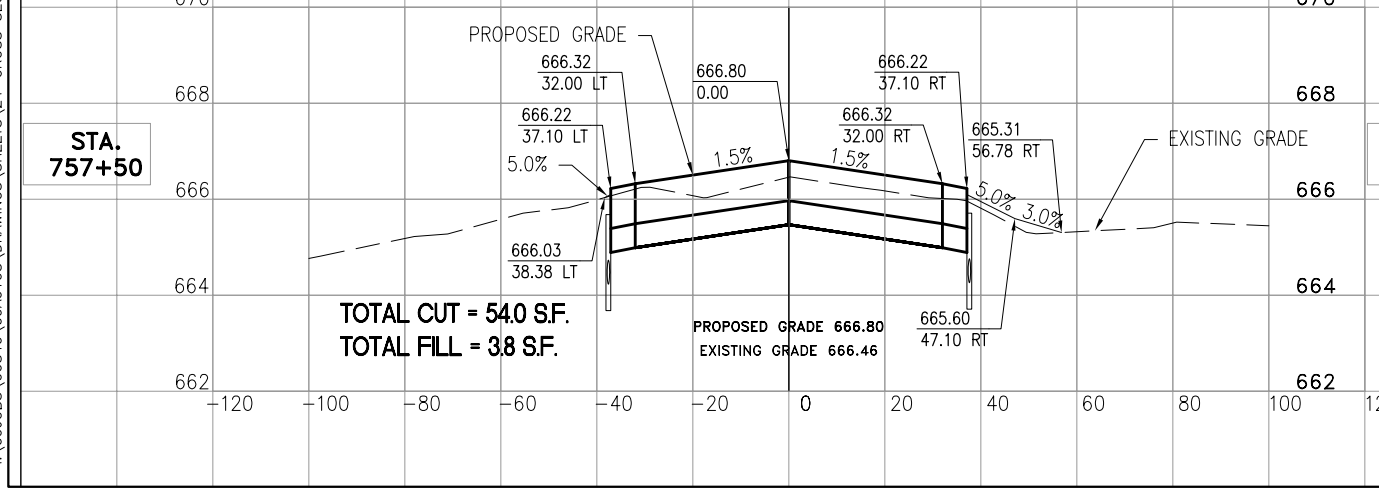
LE041

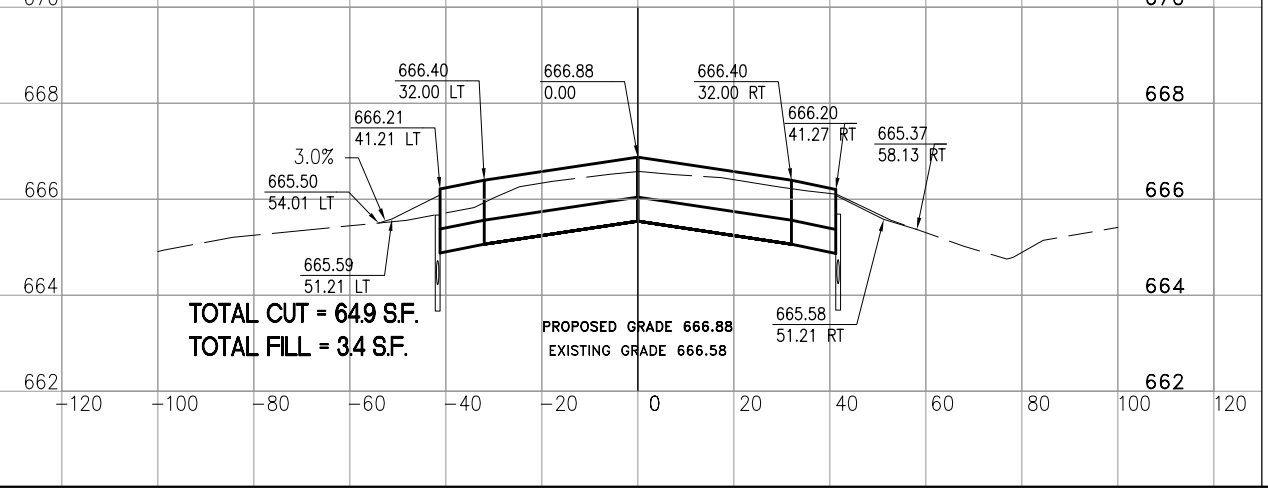












APR 14, 2010 3:05 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\24-CROSS SECTIONS.DWG

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mchas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 24-CROSS SECTIONS.DWG
Scale 1"=20'
Date DATE

LAYOUT	LDH	3/8/10
DRAWN	LDH	3/9/10
REVIEWED	RMH	04/15/10

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

CROSS SECTIONS
TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

24
24 of 42 sheets

APR 14, 2010 3:05 PM HAUSM0682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\25-LIGHTING PLAN.DWG

LIGHTING PLAN TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

25 of 42 sheets

25

LAYOUT	LDH	12/18/09
DRAWN	LDH	12/18/09
REVIEWED	RMH	04/15/10

Hanson No. 09A0108
Filename 25-LIGHTING PLAN.DWG
Scale 1"=50'
Date DATE

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mickas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

AIRFIELD LIGHTING NOTES

1. THE LIGHTING PLANS AND LIGHTING DETAILS MUST NOT BE USED WITHOUT REFERRING TO THE SPECIAL PROVISIONS.
2. CONTRACTOR SHALL REFER TO PLAN AND PROFILE FOR ADDITIONAL UTILITY AND DUCT LOCATIONS.
3. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF EXISTING CABLES TO REMAIN PRIOR TO PLOWING OR EXCAVATING NEW TRENCHES. ANY ACTIVE CABLES WHICH ARE CUT OR DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY REPAIRED. THE COST OF ANY NECESSARY REPAIRS FROM CONTRACTOR'S DAMAGE IS INCIDENTAL TO THE CONTRACT. SPLICES IN CABLES BETWEEN FIXTURES SHALL NOT BE PERMITTED.
4. DISCONNECTION OF ANY CABLES OR FIXTURES IN EXISTING CIRCUITS SHALL NOT BE PERMITTED UNTIL ALL NEW CABLING AND FIXTURES AND ELECTRICAL ITEMS ASSOCIATED WITH THE CIRCUIT HAVE BEEN INSTALLED. THE PERIOD OF DISCONNECTION FOR REWIRING IS TO BE LIMITED TO THE MINIMUM TIME REQUIRED TO REDUCE DISRUPTIONS TO AIRPORT OPERATIONS AND IS TO BE COORDINATED WITH THE RESIDENT ENGINEER AND AIRPORT DIRECTOR.
5. SEE REQUIREMENTS FOR LIGHTING MAINTENANCE THIS SHEET.
6. FOR INDIVIDUAL FIXTURE INFORMATION INCLUDING LOCATIONS SEE LIGHTING SCHEDULE.
7. PRIOR TO INSTALLING THE NEW LIGHT FIXTURES, THE CONTRACTOR WILL APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, COUPLINGS, AND ALL POINTS WHERE METAL IS IN CONTACT WITH METAL. THE COST OF THIS ITEM IS INCIDENTAL TO THE LIGHT FIXTURE.
8. CABLES SHALL BE RUN IN SEPARATE UNDERGROUND DUCTS UNLESS NOTED IN THE PLANS.
9. PROPOSED CABLE TRENCHING THAT IS LOCATED OUTSIDE THE PROPOSED SEEDING LIMITS IS TO BE RESEEDED AND RESTORED TO ITS ORIGINAL CONDITION, WITH THIS COST INCIDENTAL TO THE CABLE TRENCHING.
10. SOME EXISTING UTILITIES NOT SHOWN FOR CLARITY.
11. ANY EXISTING UNDERDRAIN CUT WHILE INSTALLING ELECTRICAL ITEMS ARE TO BE REPAIRED AND RECONNECTED, COST INCIDENTAL TO CONTRACT.

SCALE IN FEET

50 0 50 100

PROPOSED LEGEND

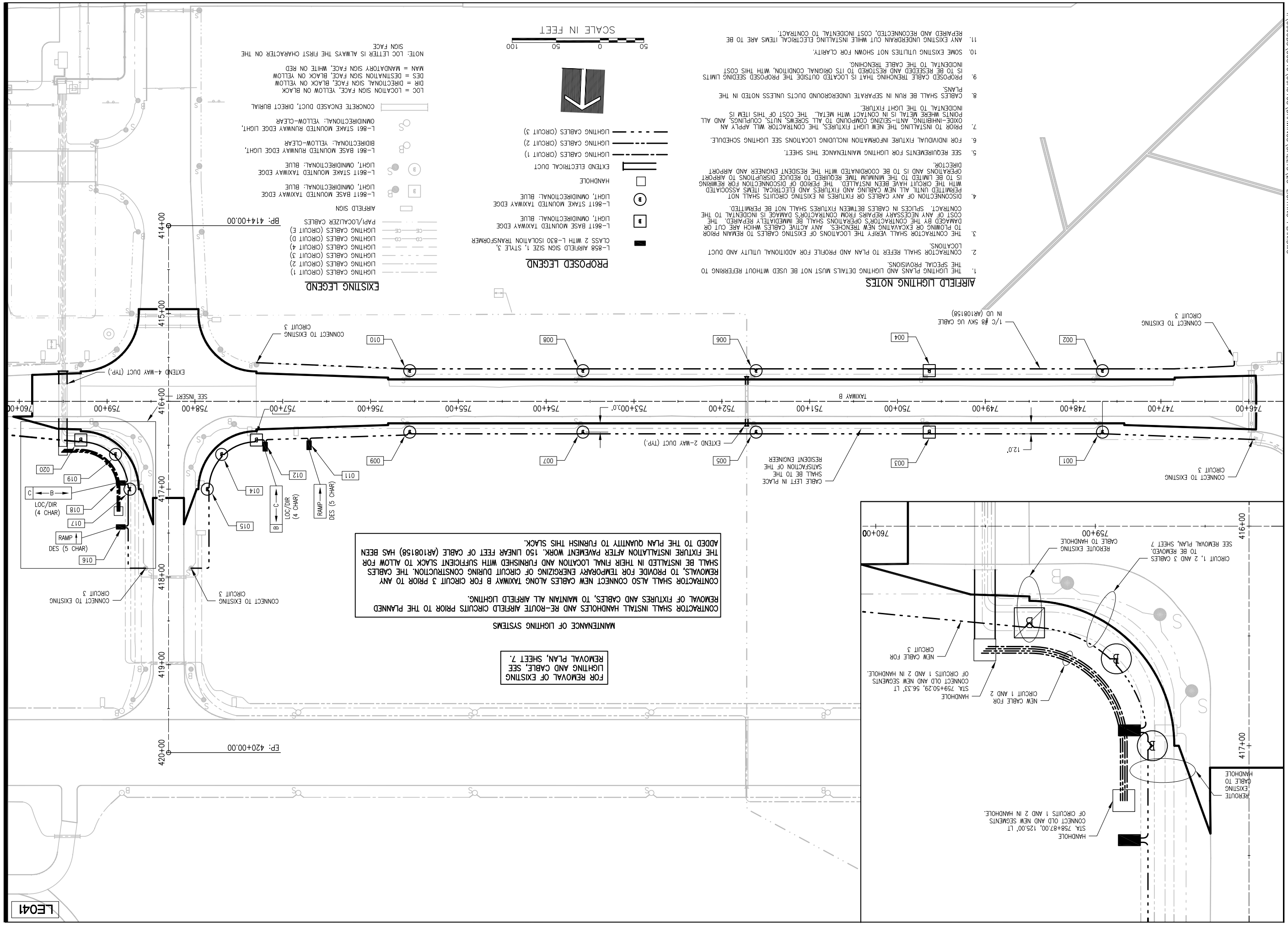
- L-858 AIRFIELD SIGN SIZE 1, STYLE 3, CLASS 2 WITH L-830 ISOLATION TRANSFORMER
- L-861T BASE MOUNTED TAXIWAY EDGE LIGHT, OMNIDIRECTIONAL: BLUE
- L-861T STAKE MOUNTED TAXIWAY EDGE LIGHT, OMNIDIRECTIONAL: BLUE
- HANDHOLE
- EXTEND ELECTRICAL DUCT
- LIGHTING CABLES (CIRCUIT 1)
- LIGHTING CABLES (CIRCUIT 2)
- LIGHTING CABLES (CIRCUIT 3)

EXISTING LEGEND

- LIGHTING CABLES (CIRCUIT 1)
- LIGHTING CABLES (CIRCUIT 2)
- LIGHTING CABLES (CIRCUIT 3)
- LIGHTING CABLES (CIRCUIT 4)
- LIGHTING CABLES (CIRCUIT D)
- LIGHTING CABLES (CIRCUIT E)
- PAPI/LOCALIZER CABLES
- AIRFIELD SIGN
- L-861T BASE MOUNTED TAXIWAY EDGE LIGHT, OMNIDIRECTIONAL: BLUE
- L-861T STAKE MOUNTED TAXIWAY EDGE LIGHT, OMNIDIRECTIONAL: BLUE
- L-861 BASE MOUNTED RUNWAY EDGE LIGHT, BIDIRECTIONAL: YELLOW-CLEAR
- L-861 STAKE MOUNTED RUNWAY EDGE LIGHT, OMNIDIRECTIONAL: YELLOW-CLEAR
- CONCRETE ENCASED DUCT, DIRECT BURIAL

LOC = LOCATION SIGN FACE, YELLOW ON BLACK
DIR = DIRECTIONAL SIGN FACE, BLACK ON YELLOW
DES = DESTINATION SIGN FACE, BLACK ON YELLOW
MAN = MANDATORY SIGN FACE, WHITE ON RED

NOTE: LOC LETTER IS ALWAYS THE FIRST CHARACTER ON THE SIGN FACE



FOR REMOVAL OF EXISTING LIGHTING AND CABLE, SEE REMOVAL PLAN, SHEET 7.

MAINTENANCE OF LIGHTING SYSTEMS

CONTRACTOR SHALL INSTALL HANDHOLES AND RE-ROUTE AIRFIELD CIRCUITS PRIOR TO THE PLANNED REMOVAL OF FIXTURES AND CABLES, TO MAINTAIN ALL AIRFIELD LIGHTING.

CONTRACTOR SHALL ALSO CONNECT NEW CABLES ALONG TAXIWAY B FOR CIRCUIT 3 PRIOR TO ANY REMOVALS, TO PROVIDE FOR TEMPORARY ENERGIZING OF CIRCUIT DURING CONSTRUCTION. THE CABLES SHALL BE INSTALLED IN THEIR FINAL LOCATION AND FURNISHED WITH SUFFICIENT SLACK TO ALLOW FOR THE FIXTURE INSTALLATION AFTER PAVEMENT WORK. 150 LINEAR FEET OF CABLE (AR108158) HAS BEEN ADDED TO THE PLAN QUANTITY TO FURNISH THIS SLACK.

L-E041

LE041

LIGHTING AND SIGNAGE SCHEDULE

NO.	TAG ID	DESCRIPTION	TYPE	DIRECTION	COLOR	MOUNTING	STATION	OFFSET		NO.
001	10-3-001	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	747+66.57	35.00	LT	001
002	10-3-002	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	747+66.57	35.00	RT	002
003	10-3-003	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	749+63.77	35.00	LT	003
004	10-3-004	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	749+63.77	35.00	RT	004
005	10-3-005	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	751+60.97	35.00	LT	005
006	10-3-006	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	751+60.97	35.00	RT	006
007	10-3-007	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	753+58.17	35.00	LT	007
008	10-3-008	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	753+58.17	35.00	RT	008
009	10-3-009	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	755+55.37	35.00	LT	009
010	10-3-010	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	755+55.37	35.00	RT	010
011	10-3-011	Sign	L-858Y	Double Face	---	---	756+70.03	45.00	LT	011
012	10-3-012	Sign	L-858Y	Double Face	---	---	757+20.03	46.68	LT	012
013	10-3-013	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	757+30.00	44.00	LT	013
014	10-3-014	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	757+69.60	60.40	LT	014
015	10-3-015	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	757+86.00	100.00	LT	015
016	10-3-016	Sign	L-858Y	Double Face	---	---	758+79.48	143.00	LT	016
017	10-3-017	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	758+74.00	100.00	LT	017
018	10-3-018	Sign	L-858Y	Double Face	---	---	758+79.48	93.00	LT	018
019	10-3-019	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	758+90.40	60.40	LT	019
020	10-3-020	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	759.30.00	44.00	LT	020

APR 14, 2010 3:05 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\26-LIGHTING SCHEDULE.DWG

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 26-LIGHTING SCHEDULE.DWG
Scale N/A
Date DATE

LAYOUT	LDH	12/15/09
DRAWN	LDH	12/15/09
REVIEWED	RMH	04/15/10

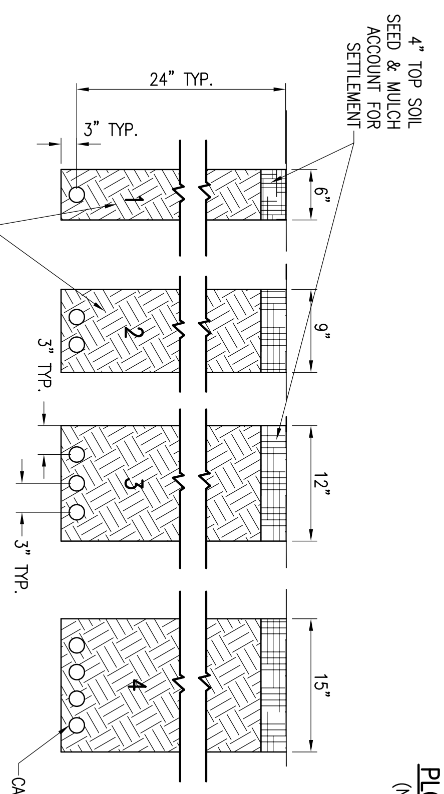
HANSON

Hanson Professional Services Inc.
615 Commerce Drive Suite 200
Oak Brook, Illinois 60523

LIGHTING AND SIGNAGE SCHEDULE

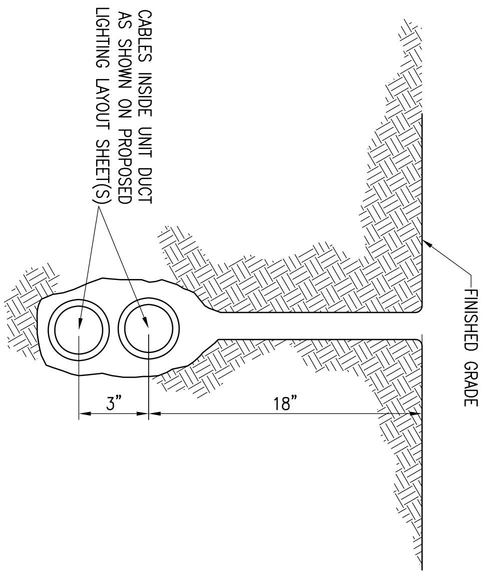
REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

26
26 of 42 sheets

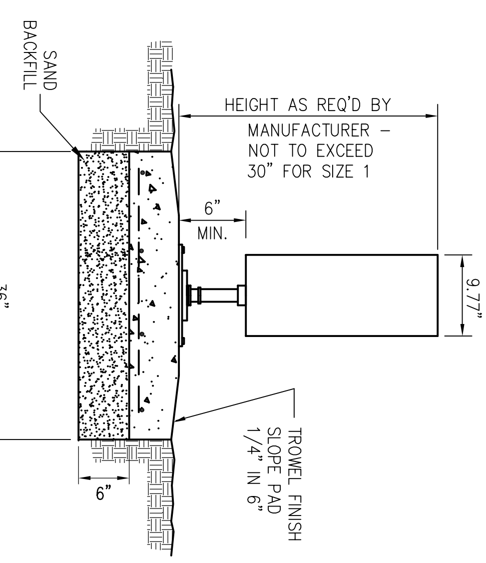


NOTES:
DETAIL NUMBERS INDICATE NO. OF CABLES.
DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS.
ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.
INCREASE TRENCH 3" FOR EACH ADDITIONAL CABLE

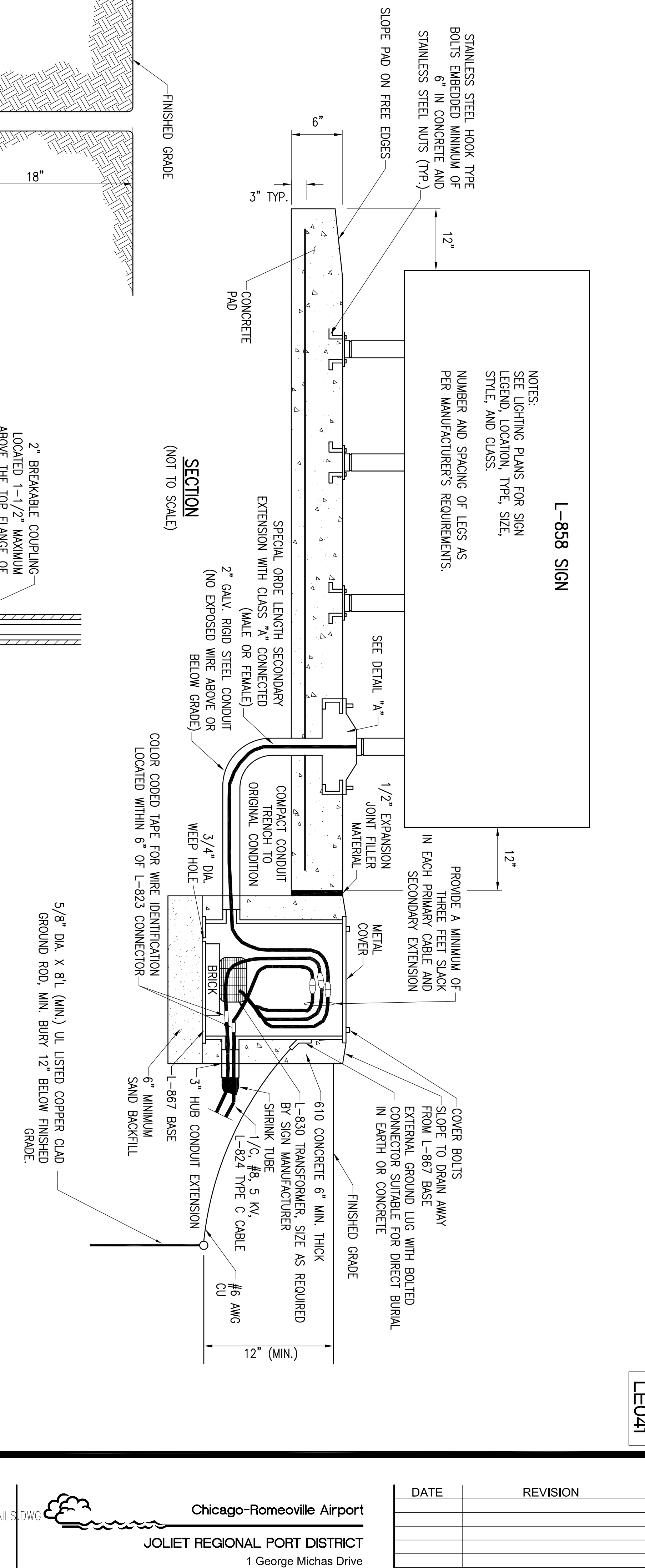
CABLE TRENCHED
(NOT TO SCALE)



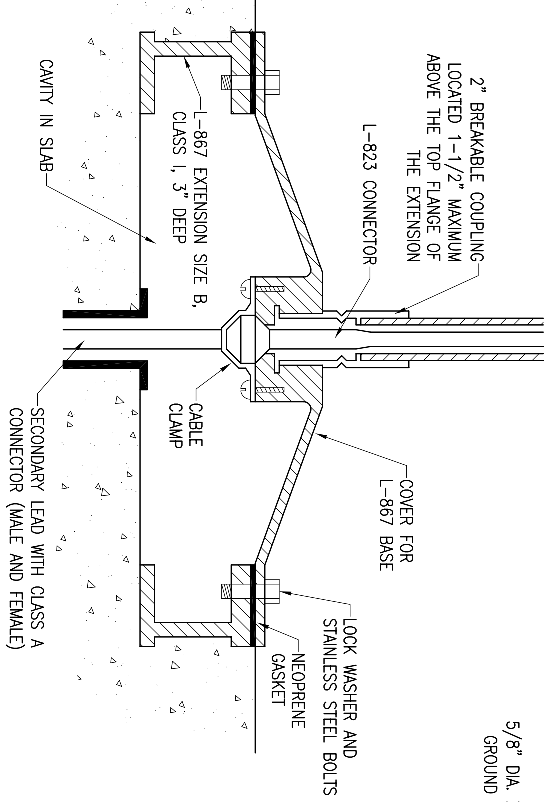
PLOWED CABLE
(NOT TO SCALE)



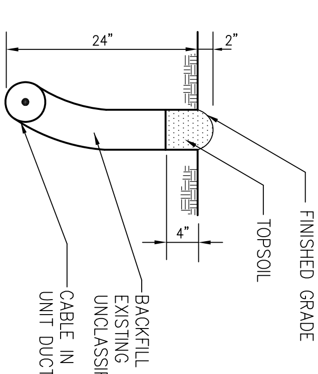
SIDE VIEW
(NOT TO SCALE)



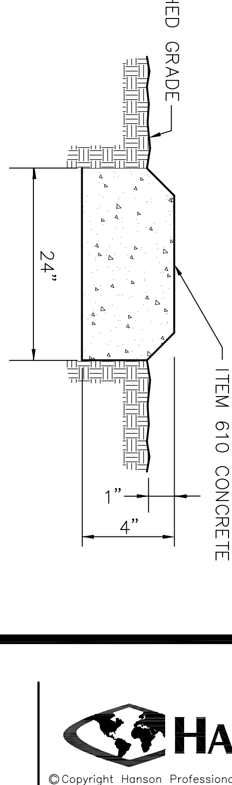
SECTION
(NOT TO SCALE)



DETAIL "A"
(NOT TO SCALE)



CABLE PLOWED



NOTES:
1. CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND EVERY 200' ALONG CABLE RUNS.
2. LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.

TURF CABLE MARKERS

LE041

ELECTRICAL DETAILS

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

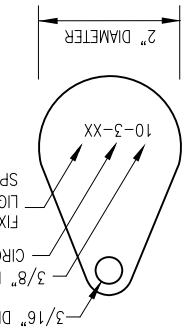
Hanson No. 09A0108
Filename 27-ELECTRICAL DETAILS.DWG
Scale N/A
Date DATE

LAYOUT	LDH	12/21/09
DRAWN	LDH	12/21/09
REVIEWED	RMH	04/15/10

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

IDENTIFICATION TAG DETAIL

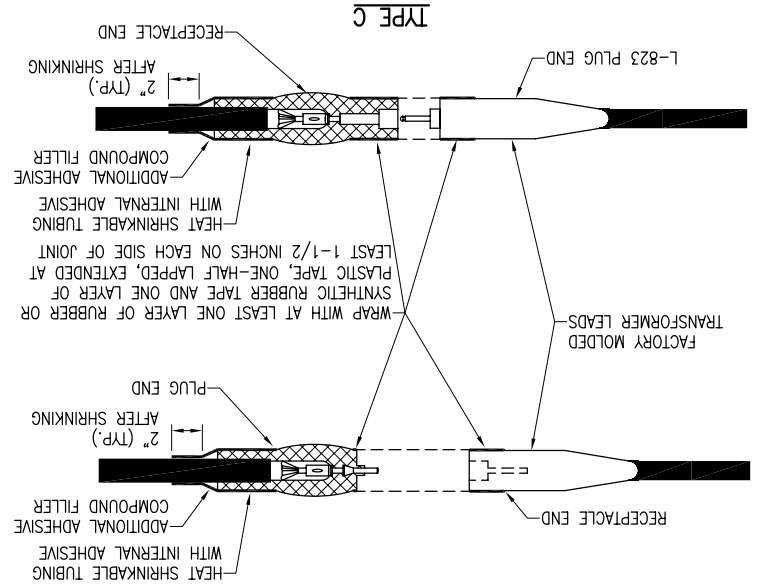


NOTES:
1. INSTALL A NONCORROSIVE DISC OF 2" MINIMUM DIAMETER WITH NUMBER PERMANENTLY STAMPED, CUT OUT OR ENGRAVED.
2. NONCORROSIVE DISC MAY BE ATTACHED TO LIGHT FLANGE WITH SCREW OR UNDER THE HEAD OF THE BASE PLATE BOLT.
3. SEE SPECIAL PROVISIONS FOR LETTERING.

CABLE SPLICES
(NOT TO SCALE)

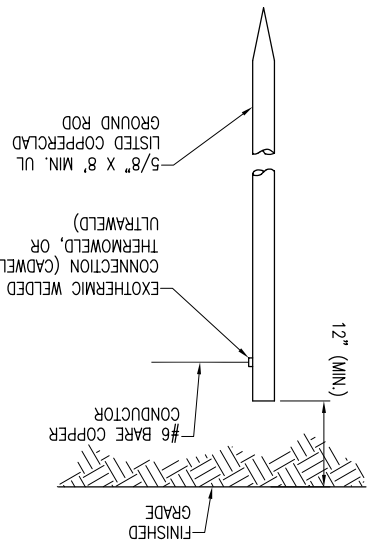
NOTES:
1. SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR SPLICE TYPE.
2. INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF CABLE.
3. SPLICES SHALL BE MADE IN SPLICE CANS, BASE CANS, HANDHOLES, MANHOLES, OR JUNCTION BOXES.

TYPE C
FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS



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

GROUND ROD
(NOT TO SCALE)



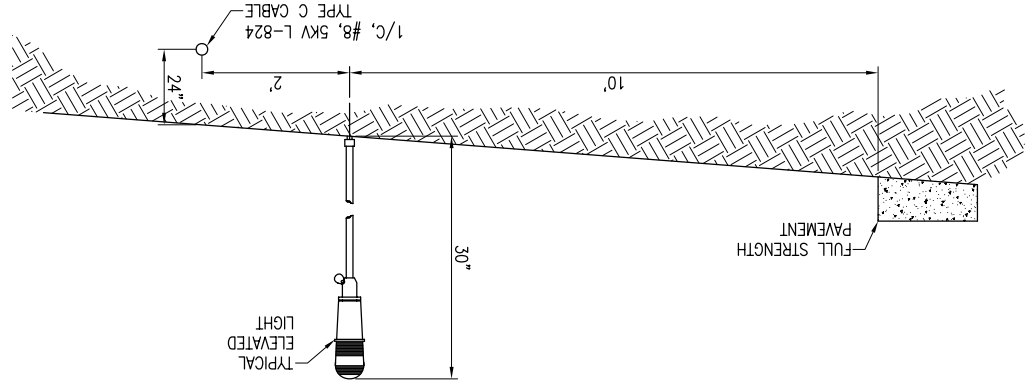
NOTES:
TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.

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

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

LIGHT AND CABLE INSTALLATION DETAIL
(NOT TO SCALE)

NOTES:
SEE PROPOSED LIGHTING LAYOUT SHEET FOR LIGHT LOCATIONS.



MEDIUM INTENSITY LIGHT - STAKE MOUNTED
(NOT TO SCALE)

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

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

HANSON

ELECTRICAL DETAILS

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969
AIP No. 3-17-0140-B44

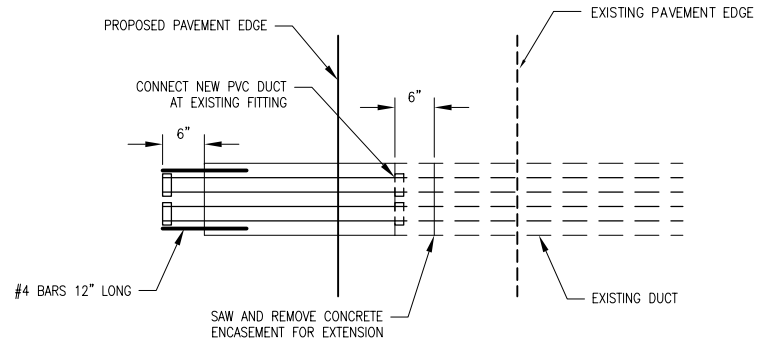
Hanson No.	09A0108	
Filename	28-ELECTRICAL DETAILS.DWG	
Scale	N/A	
Date	DATE	
LAYOUT	LDH	12/21/09
DRAWN	LDH	12/21/09
REVIEWED	RMH	04/15/10

DATE	REVISION

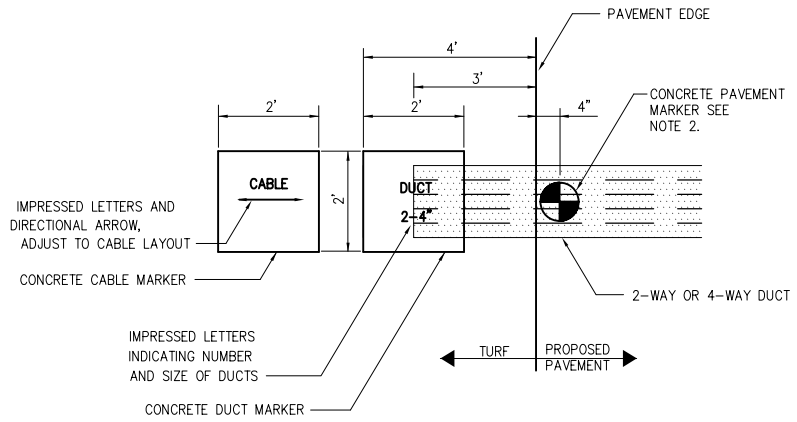
Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

LE041

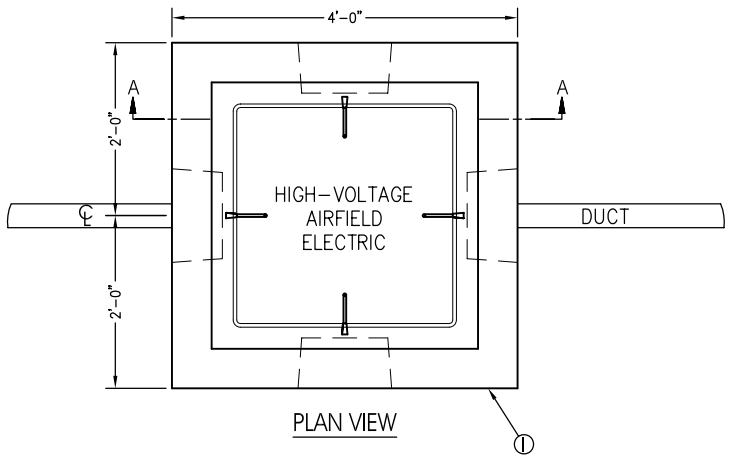
28
28 of 42 sheets



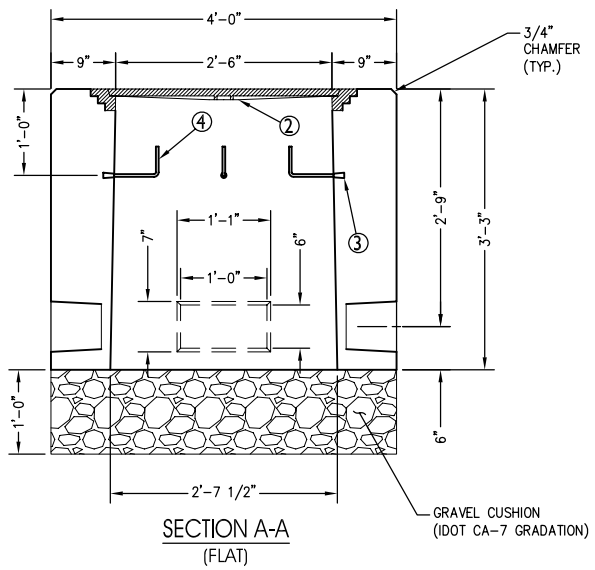
DUCT EXTENSION



LOCATION PLAN



PLAN VIEW



SECTION A-A
(FLAT)

PARTS LIST (PER EACH)		
ITEM	DESCRIPTION	QUANTITY
1	PRECAST CONCRETE JUNCTION BOX	1
2	CAST IRON FRAME & COVER EAST JORDAN IRON WORKS 8213 OR EQUAL WITH CONCEALED HINGE COVER. LETTERING "HIGH-VOLTAGE AIRFIELD ELECTRIC".	1
3	3/8" PLASTIC THREADED INSERT	4
4	3/8" ø GALVANIZED CABLE HOOK	4
5	4T LIFTING ANCHORS	4

SPECIFICATIONS

CONCRETE: 5,000 P.S.I. @ 28 DAYS, 5%-8% ENTRAINED AIR, PC/SI IDOT CLASS

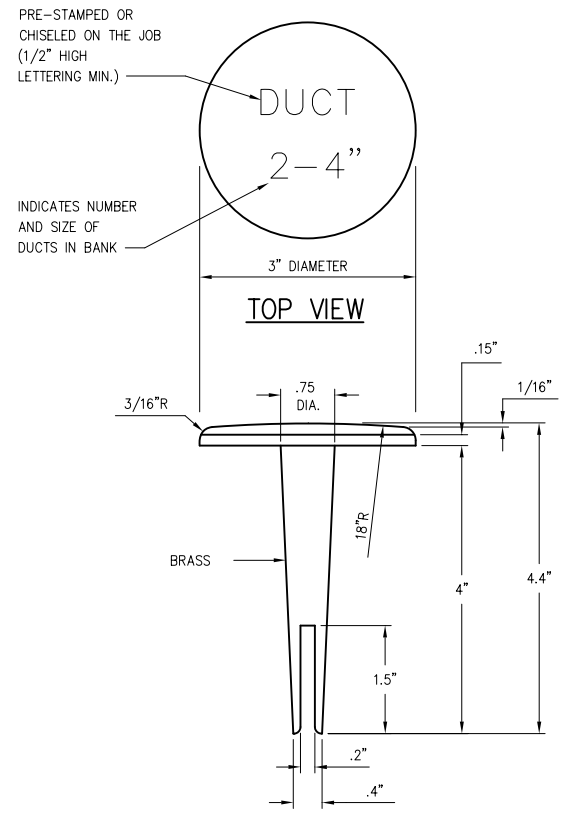
DESIGN CRITERIA: PRECAST VERSION OF ILLINOIS STATE TOLL HIGHWAY AUTHORITY STANDARD NO. RL 03-07 LIGHT AND HEAVY DUTY JUNCTION BOXES.

WEIGHT: 4,990# FLAT TOP

NOTES

1. **HANDHOLE SHALL BE PRECAST AS DETAILED.**
2. PRECAST HANDHOLE TO BE UTILITY CONCRETE PRODUCTS, LLC. 30" X 30" JUNCTION BOX OR APPROVED EQUAL.
3. HANDHOLE FRAME AND LID SHALL BE HEAVY DUTY SUITABLE FOR H-20 LOADING. LIDS FOR HANDHOLES USED WITH AIRFIELD LIGHTING OR ELECTRICAL CABLES SHALL BE LABELED "HIGH-VOLTAGE AIRFIELD ELECTRIC".
4. GRAVEL CUSHION SHALL BE INCIDENTAL TO THE HANDHOLE.
5. HANDHOLES WILL BE PAID FOR UNDER ITEM AR110610 ELECTRICAL HANDHOLE PER EACH.

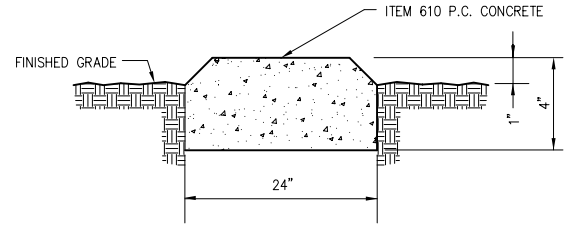
ELECTRICAL HANDHOLE



SIDE VIEW

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

BITUMINOUS PAVEMENT MARKER



CONCRETE MARKER

NOTES:

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

TURF AND PAVEMENT DUCT AND CABLE MARKERS

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 29-ELECTRICAL DETAILS.DWG
Scale N/A
Date DATE

LAYOUT	LDH	3/8/10
DRAWN	LDH	3/8/10
REVIEWED	RMH	04/15/10

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

ELECTRICAL DETAILS

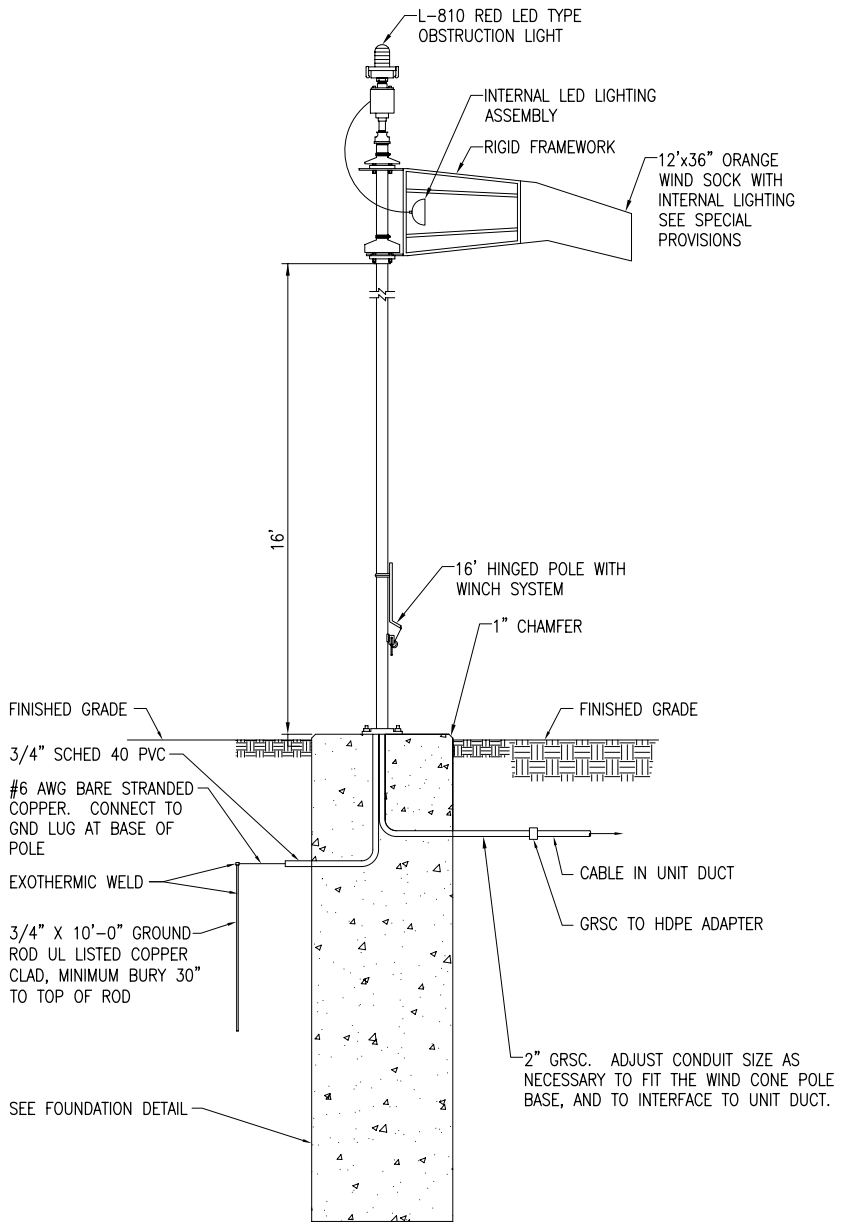
REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

29

APR 14, 2010 3:06 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\30-REIL & PAPI.DWG

30 of 42 sheets	REIL AND WIND CONE CABLING PLAN	HANSON © Copyright Hanson Professional Services Inc. 2010	Hanson No. 09A0108 / Filename 30-REIL & PAPI.DWG / Scale 1"=50' / Date DATE	Chicago-Romeoville Airport	DATE	REVISION
30	**REHABILITATE PORTIONS OF TAXIWAY B** IDA No. LOT-3969 AIP No. 3-17-0140-B44	**Hanson Professional Services Inc.** 815 Commerce Drive Suite 200 Oak Brook, Illinois 60523	LAYOUT LDH 2/1/10; DRAWN LDH 2/1/10; REVIEWED RMH 04/15/10	JOLIET REGIONAL PORT DISTRICT 1 George Michas Drive Romeoville, Illinois 60446 Telephone: 815.838.9497 Fax: 815.838.9524		

LE041



NOTES

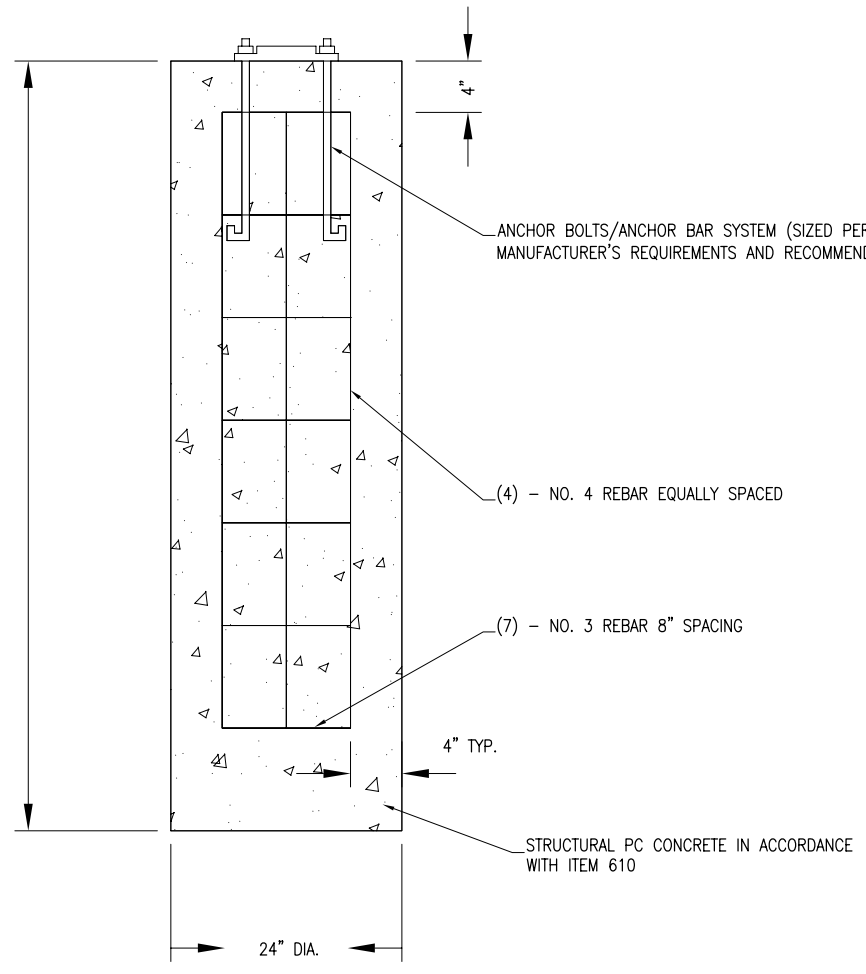
WIND CONE SHALL BE FAA APPROVED L-807, STYLE 1B INTERNAL LED (LIGHT EMITTING DIODE) LIGHTED, SIZE 2 WITH ORANGE WIND SOCK, 120 VAC, & WITH L-810 RED LED TYPE OBSTRUCTION LIGHT, SEE SPECIAL PROVISIONS.

1. THE NEW L-807 LIGHTED WIND CONE SHALL BE LOCATED 5 FEET NORTH OF THE EXISTING RUNWAY WIND CONE TO BE REMOVED.

2. L-807 WIND CONE 12' INTERNALLY LIT WILL BE PAID FOR UNDER ITEM AR107812.

INTERNALLY LIGHTED L-807 WIND CONE

"NOT TO SCALE"



FOUNDATION DETAIL

"NOT TO SCALE"

WIND CONE REMOVAL NOTES

1. EXISTING WIND CONE LOCATED NEAR RUNWAY 9 PAPI SYSTEM SHALL BE REMOVED. THE EXISTING WIND CONE IS POWERED FROM THE RUNWAY 9 PAPI'S WHICH ARE OWNED AND MAINTAINED BY THE FAA. DISCONNECTING POWER TO THE EXISTING RUNWAY 9 WIND CONE SHALL BE COORDINATED WITH THE AIRPORT MANAGER AND THE RESPECTIVE FAA MAINTENANCE PERSONNEL. DISCONNECT EXISTING POWER CABLES FOR WIND CONE AT THE POWER SOURCE AND WIND CONE & REMOVE WHERE EXPOSED OR TO ACCOMMODATE WORK. THE CONTRACTOR SHALL COORDINATE THE REMOVAL OF EXISTING WIND CONE WITH THE INSTALLATION OF THE NEW L-807 LIGHTED WIND CONE TO MINIMIZE THE TIME WHEN THE AIRPORT IS WITHOUT A MAIN WIND CONE. THE CONTRACTOR SHALL ALSO COORDINATE WITH AND NOTIFY THE AIRPORT MANAGER AND THE RESIDENT ENGINEER AND PROVIDE A SCHEDULE FOR WIND CONE REMOVAL AND THE INSTALLATION OF THE NEW L-807 LIGHTED WIND CONE. THE CONTRACTOR SHALL TURN EACH WIND CONE AND SUPPORT POLE OVER TO THE AIRPORT MANAGER AND/OR AIRPORT MAINTENANCE STAFF. THE CONCRETE BASE/FOUNDATION WILL BE DISPOSED OF OFF THE AIRPORT SITE, IN A LEGAL MANNER, AT THE EXPENSE OF THE CONTRACTOR.

2. THE HOLES LEFT FROM THE BASE/FOUNDATION REMOVAL SHALL BE FILLED WITH EARTH MATERIAL. THE EARTH MATERIAL WILL BE COMPACTED TO PREVENT ANY FUTURE SETTLEMENT. THE EARTH MATERIAL WILL BE OBTAINED FROM OFF THE AIRPORT SITE. THE DISTURBED AREA WILL BE RESTORED, GRADED, AND SEEDED TO THE SATISFACTION OF THE ENGINEER AND IS CONSIDERED INCIDENTAL TO THE REMOVAL OF THE WIND CONE.

3. REMOVAL OF EXISTING WIND CONE WILL BE PAID FOR UNDER ITEM AR107900 REMOVE WIND CONE – PER EACH.

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mchas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 31-E-502.DWG
Scale NONE
Date DATE

LAYOUT	KNL	02/17/10
DRAWN	MV	02/17/10
REVIEWED	RMH	04/15/10

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

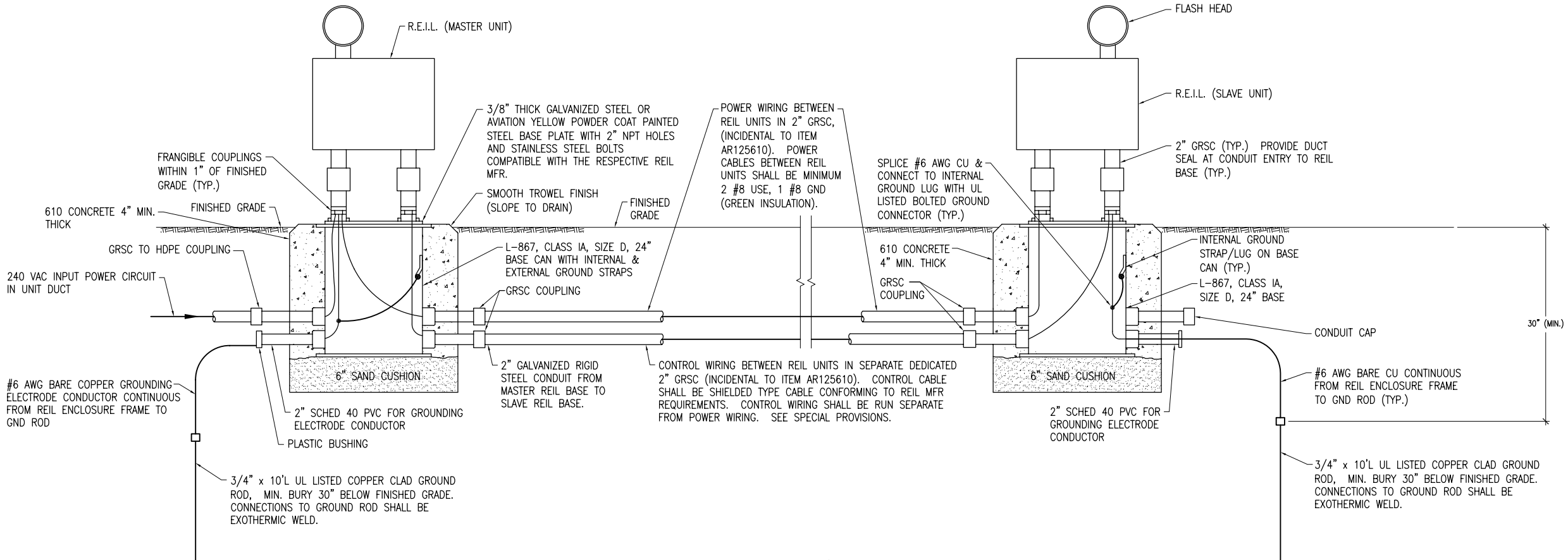
L-807 WIND CONE DETAILS

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

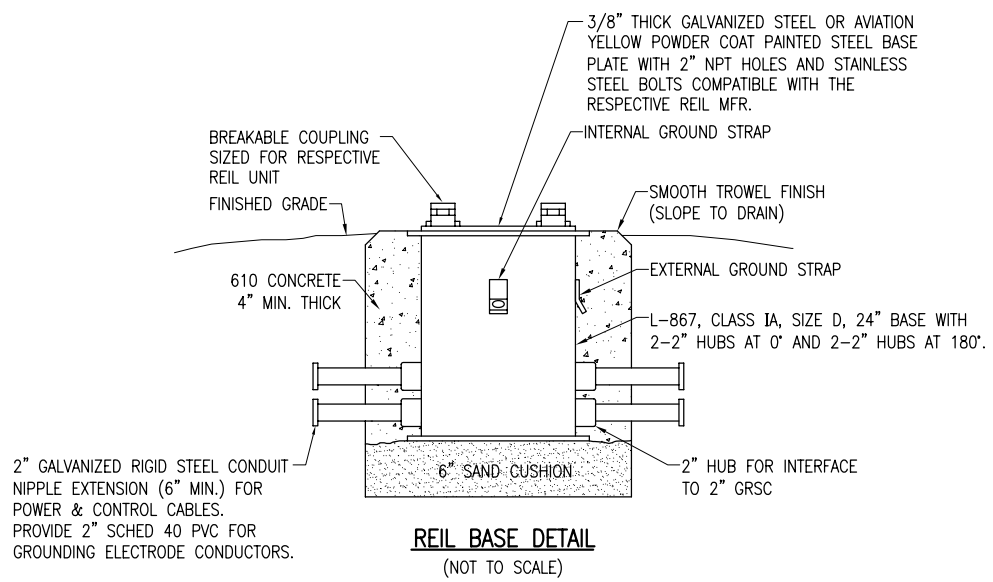
31
31 of 42 sheets

APR 14, 2010 3:06 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\31-E-502.DWG

LE041



REIL INSTALLATION DETAIL
NOT TO SCALE



REIL BASE DETAIL
(NOT TO SCALE)

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

REIL INSTALLATION NOTES

1. REILS SHALL BE FAA APPROVED TYPE L-849V, STYLE A (UNIDIRECTIONAL, HIGH INTENSITY, ONE BRIGHTNESS STEP), 240 VAC, 60 HZ INPUT POWER, FLASH TECHNOLOGY CORP. 812 SERIES OR APPROVED EQUAL. SEE SPECIAL PROVISION SPECS FOR ADDITIONAL REIL REQUIREMENTS.
2. REILS SHALL BE AIMED AT ANGLE 10 DEGREES VERTICALLY AND TOED OUT 15 DEGREES FROM THE LINE PARALLEL TO THE RUNWAY CENTERLINE.
3. REILS WILL BE PAID FOR UNDER ITEM AR125610 "REILS" PER PAIR.
4. ANY AND ALL TRENCHES AND DISTURBED AREAS WILL BE BACKFILLED AND RESTORED TO A SMOOTH GRADE AND SEEDED TO THE SATISFACTION OF THE ENGINEER. ALL TRENCH SETTLEMENT SHALL BE CORRECTED FOR A PERIOD OF ONE YEAR. RESTORATION, GRADING, SEEDING, AND MULCHING OF AREAS DISTURBED DURING THE REIL INSTALLATION AND ASSOCIATED CABLE WILL BE INCIDENTAL TO ITEM AR125610 REILS.
5. GROUNDING FOR REILS. GROUNDING FOR REILS SHALL CONFORM TO THE RESPECTIVE REIL MANUFACTURER'S INSTALLATION INSTRUCTIONS, AS DETAILED ON THE PLANS, AND AS SPECIFIED HEREIN. THE POWER CIRCUIT TO MASTER REIL UNIT, AND EACH SLAVE UNIT, SHALL INCLUDE AN EQUIPMENT GROUND WIRE OF THE SAME SIZE AND TYPE AS THE PAHSE CONDUCTORS. FURNISH AND INSTALL A 3/4-INCH DIAMETER BY 10-FOOT LONG COPPER CLAD GROUND ROD AT EACH REIL UNIT. GROUND RODS SHALL BE BURIED 30" MINIMUM BELOW GRADE. BOND EACH REIL UNIT HOUSING AND THE REIL BASE CAN TO THE RESPECTIVE GROUND ROD IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS WITH A #6 AWG BARE SOLID OR STRANDED (PER REIL MANUFACTURER REQUIREMENTS) COPPER GROUNDING ELECTRODE CONDUCTOR. ALL CONNECTIONS TO GROUND RODS SHALL BE EXOTHERMIC WELD AS MANUFACTURED BY CADWELD, THERMOWELD, OR ULTRAWELD. CONNECTIONS TO REIL UNIT FRAMES SHALL BE AS RECOMMENDED BY THE MANUFACTURER OR WITH UL LISTED GROUNDING CONNECTORS. PROVIDE MULTI TERMINAL EQUIPMENT GROUND BAR OR INDIVIDUAL GROUND LUGS TO TERMINATE EACH GROUND WIRE IN EACH REIL UNIT.

APR 14, 2010 3:06 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\32-E-501.DWG

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mchas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

LAYOUT	KNL	02/01/10
DRAWN	MV	02/01/10
REVIEWED	RMH	04/15/10

Hanson No. 09A0108
Filename 32-E-501.DWG
Scale NONE
Date DATE

HANSON

Hanson Professional Services Inc.
615 Commerce Drive Suite 200
Oak Brook, Illinois 60523

REIL INSTALLATION DETAILS

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

32
32 of 42 sheets

LE041

GENERAL NOTES

1. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 – NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.

2. CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.

3. CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).

4. THE CONTRACTOR SHALL ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM, INCLUDING FAA APPROVED EQUIPMENT, ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE NEW/EXISTING SYSTEM. ANY NONCOMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR SHALL BE REPLACED BY HIM AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER (DIFFERENT MODEL OR DIFFERENT MANUFACTURER) THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.

5. IN CASE THE CONTRACTOR ELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTORS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATION, ANY COST FOR THESE ITEMS SHALL BE INCIDENTAL TO THE EQUIPMENT COST.

6. THE CONTRACTOR INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) SHALL NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AIR NAVIGATION, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST WITH THE EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.

7. WHEN A SPECIFIC TYPE, STYLE, CLASS, ETC. OF FAA APPROVED EQUIPMENT IS SPECIFIED ONLY THAT TYPE, STYLE, CLASS, WILL BE ACCEPTABLE, EVEN THOUGH EQUIPMENT OF OTHER TYPES STYLES, CLASSES, ETC. MAY BE APPROVED.

8. ANY AND ALL INSTRUCTIONS FROM THE 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.

9. A MINIMUM OF THREE COPIES OF THE INSTRUCTION BOOK SHALL BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE BOOKS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATORS, PAPI, REIL, ETC. AS A MINIMUM SHALL CONTAIN THE FOLLOWING:
   - A. A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.
   - B. THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.
   - C. INSTALLATION INSTRUCTION.
   - D. START-UP INSTRUCTIONS.
   - E. PREVENTATIVE MAINTENANCE REQUIREMENTS.
   - F. CHART FOR TROUBLE-SHOOTING.
   - G. COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT – "BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OF THE NARRATIVE SHALL SHOW VOLTAGE/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLE-SHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL MODES OF OPERATION, SUCH AS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS SHALL BE INDICATED FOR ALL DIFFERENT MODES.
   - H. PARTS LIST WHICH WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS SUCH AS RESISTORS, DIODES, ETC. IT SHALL INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER.
   - I. SAFETY INSTRUCTIONS.

POWER AND CONTROL NOTES

1. PROVIDE LEGEND PLATES FOR ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO IDENTIFY THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT AREA TO INSTALL LEGEND PLATES, THE LEGEND PLATES SHALL BE INSTALLED ON THE WALL NEXT TO THE UNIT. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.

2. COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK AND RED SHALL BE USED FOR PHASE CONDUCTORS ON 120/240 VAC SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, RED AND BLUE SHALL BE USED FOR PHASE CONDUCTORS ON 208/120 VAC THREE-PHASE, FOUR WIRE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, SHALL BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH. NEUTRAL CONDUCTORS LARGER THAN NO. 6 AWG SHALL BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR SIZES (AWG OR KCMIL).

3. ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE SHALL BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING SHALL BE EXTENDED TO THE POINT OF UTILIZATION.

4. IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.

5. LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS.

6. NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND JUNCTION/PULL BOXES.

7. THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:
   - A. IN STRAIGHT PULLS THE LENGTH OF THE BOX SHALL NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END SHALL BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.
   - B. IN ANGLE PULLS OR 'U' PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX SHALL NOT BE LESS THAN SIX (6) TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE SHALL BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL AS THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR SHALL NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.

8. A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS, CAST, CONDUIT TYPE OUTLETS SHALL NOT BE TREATED AS PULL/JUNCTION BOXES.

9. EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.

10. SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.

11. CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE, MINIMUM FRAME.

12. DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.

13. ALL INTERIOR WALL MOUNTED EQUIPMENT ENCLOSURES SHALL BE MOUNTED ON HOT DIPPED GALVANIZED STEEL STRUT SUPPORT, OR STAINLESS STEEL STRUT SUPPORT, WITH CORROSION RESISTANT HARDWARE.

14. SUPPORT FOR EXTERIOR MOUNTED EQUIPMENT SHALL USE HOT DIPPED GALVANIZED STEEL STRUT SUPPORT OR STAINLESS STEEL STRUT SUPPORT WITH STAINLESS STEEL HARDWARE. PROVIDE ZINC RICH PAINT APPLIED TO FIELD CUTS OF GALVANIZED STEEL SUPPORT TO MINIMIZE THE POTENTIAL FOR CORROSION PER THE RESPECTIVE STRUT SUPPORT MANUFACTURER'S RECOMMENDATIONS.

15. CONDUITS FOR ELECTRIC SERVICE ENTRANCE AND FEEDERS SHALL BE AS DETAILED HEREIN ON THE PLANS. WHERE GALVANIZED RIGID STEEL CONDUIT IS SPECIFIED IT SHALL HAVE THREADED FITTINGS. SET SCREW TYPE FITTINGS WILL NOT BE ACCEPTABLE. CONDUITS FOR UNDERGROUND APPLICATIONS SHALL BE AS DETAILED HEREIN. CONDUITS FOR GROUNDING ELECTRODE CONDUCTORS OR INDIVIDUAL GROUNDING CONDUCTORS SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC.

16. PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL. LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLATION.

17. UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.

18. ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.

19. USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS.

20. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.

21. WRAP ALL PRIMARY AND SECONDARY POWER TRANSFORMER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE (3M SCOTCH 23 ALL-VOLTAGE SPLICING TAPE, 3M SCOTCH 130C LINERLESS RUBBER SPLICING TAPE, OR APPROVED EQUAL) AND COVER WITH VINYL ELECTRICAL TAPE (3M SCOTCH 88 VINYL ELECTRICAL TAPE OR APPROVED EQUAL) FOR FULL VALUE OF CABLE INSULATION VOLTAGE.

22. UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINUMUM.

23. THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:
   - A. FOR INTERIOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 12 (DUST TIGHT) ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. FOR EXTERIOR/OUTDOOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 4X STAINLESS STEEL ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. ALL CONDUIT ENTRIES INTO NEMA 4, 4X ENCLOSURES SHALL HAVE NEMA 4 HUBS LISTED SUITABLE FOR THE RESPECTIVE ENCLOSURE TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE.
   - B. THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.
   - C. ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED-EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.
   - D. WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING AND TERMINALS SHALL BE EXPOSED AND ACCESSIBLE WITHOUT REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.
   - E. ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.
   - F. EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.
   - G. A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.
   - H. THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.
   - I. ALL WIRING SHALL BE NEATLY TRAINED AND LACED.
   - J. MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.

24. FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, CUTOUT, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".

AIRFIELD LIGHTING NOTES

1. UNLESS OTHERWISE NOTED, ALL UNDERGROUND AIRFIELD LIGHTING SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED 5000 VOLT L-824 TYPE. ALL UNDERGROUND FIELD POWER LOW VOLTAGE (600 VOLT & BELOW) CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE UL LISTED 600 VOLT, TYPE XLP-USE-2 COPPER CONDUCTORS. CONDUCTOR SIZES SHALL BE AS SPECIFIED, HEREIN.
2. NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
3. THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REIL, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKAWAY 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 1, UNLESS OTHERWISE NOTED.
13. BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL BE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.
14. THE ELEVATION OF THE BREAKABLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE MOUNTED COUPLINGS.
15. WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
16. TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
17. PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
18. THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE: ONE (1) INCH. IN CASE OF STAKE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.
19. THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.
20. ENTRANCES INTO L-867 BASES SHALL HAVE CONDUIT COUPLINGS OR REDUCERS TO INTERFACE UNIT DUCT/CONDUIT TO L-867 BASE HUBS, OR SHALL BE SEALED WITH HEAT SHRINK AS SHOWN IN DETAIL "B" ON SHEET NO. 27.
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. 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.
30. THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.
31. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

GROUNDING NOTES FOR AIRFIELD LIGHTING

1. GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. PER FAA AC 150/5340-30D DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PAR 12.6; A SAFETY GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. THE PURPOSE OF THE SAFETY GROUND IS TO PROTECT PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE AS THE RESULT OF A SHORTED CABLE OR ISOLATION TRANSFORMER. A SAFETY GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A SAFETY GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. THE SAFETY GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE 5/8-INCH DIAMETER BY 8-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. CONNECTIONS TO GROUND LUGS ON THE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE: 800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE: 918-663-1440) OR ULRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE: 800-842-7437). EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
2. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL PER 2008 NATIONAL ELECTRICAL CODE ARTICLE 250-12.
3. PER FAA 150/5340-30D THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
4. GROUNDING FOR REILS. GROUNDING FOR REILS SHALL CONFORM TO THE RESPECTIVE REIL MANUFACTURER'S INSTALLATION INSTRUCTIONS, AS DETAILED ON THE PLANS, AND AS SPECIFIED HEREIN. THE POWER CIRCUIT TO MASTER REIL UNIT, AND EACH SLAVE UNIT, SHALL INCLUDE AN EQUIPMENT GROUND WIRE OF THE SAME SIZE AND TYPE AS THE PHASE CONDUCTORS. FURNISH AND INSTALL A 3/4-INCH DIAMETER BY 10-FOOT LONG COPPER CLAD GROUND ROD AT EACH REIL UNIT. BOND EACH REIL UNIT HOUSING AND THE REIL BASE CAN TO THE RESPECTIVE GROUND ROD IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS WITH A #6 AWG BARE SOLID OR STRANDED (PER REIL MANUFACTURER REQUIREMENTS) COPPER GROUNDING ELECTRODE CONDUCTOR. TOP OF GROUND RODS SHALL BE BURIED 30 INCHES BELOW GRADE. ALL CONNECTIONS TO GROUND RODS SHALL BE EXOTHERMIC WELD AS MANUFACTURED BY CADWELD, THERMOWELD, OR ULTRAWELD. CONNECTIONS TO REIL UNIT FRAMES SHALL BE AS RECOMMENDED BY THE MANUFACTURER OR WITH UL LISTED GROUNDING CONNECTORS. PROVIDE MULTI TERMINAL EQUIPMENT GROUND BAR OR INDIVIDUAL GROUND LUGS TO TERMINATE EACH GROUND WIRE IN EACH REIL UNIT. CONTRACTOR SHALL CONFIRM ADDITIONAL GROUNDING REQUIREMENTS WITH THE RESPECTIVE REIL MANUFACTURER'S INSTALLATION INSTRUCTIONS AND/OR RECOMMENDATIONS.

L-E041

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
M	MOTOR
#	LOAD, MOTOR, # = HORSEPOWER
	ELECTRIC UTILITY METER BASE
	JUNCTION BOX WITH SPLICE
XXX	EQUIPMENT, XXX = DEVICE DESCRIPTION
GND	GROUND BUS OR TERMINAL
S/N	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
N EM L	TRANSFER SWTICH
G	ENGINE GENERATOR SET

ELECTRICAL LEGEND – SCHEMATIC

	NORMALLY OPEN (N.O.) CONTACT
	NORMALLY CLOSED (N.C.) CONTACT
S*	STARTER COIL, * = STARTER NUMBER
OL	OVERLOAD RELAY CONTACT
CR*	CONTROL RELAY, * = CONTROL RELAY NUMBER
R*	RELAY, * = RELAY NUMBER
	TOGGLE SWITCH / 2 POSITION SWITCH
OFF AUTO OX	2-POSITION SELECTOR SWITCH
OFF HAND AUTO XOO OOX	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
GND	GROUND BUS OR TERMINAL
S/N	NEUTRAL BUS
	GROUND, GROUND ROD, GROUND BUS
	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
P	S1 CUTOUT HANDLE REMOVED
I	S1 CUTOUT HANDLE INSERTED
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH
	L-830 SERIES ISOLATION TRANSFORMER

ELECTRICAL ABBREVIATIONS

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

ELECTRICAL ABBREVIATIONS (CONTINUED)

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

AIRPORT EQUIPMENT/FACILITY ABBREVIATIONS

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

NOTES:

1. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 – NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.

2. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).

3. COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:

   120/240 VAC, 1 PHASE, 3 WIRE

PHASE A	BLACK
PHASE B	RED
NEUTRAL	WHITE
GROUND	GREEN

4. SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.

5. LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.

6. PROVIDE NEMA 4 WATERTIGHT HUBS FOR ALL CONDUIT ENTRIES INTO NEMA 4, 4X ENCLOSURES TO MAINTAIN NEMA 4, 4X RATING.

7. FURNISH AND INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mchas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 35-E-001.DWG
Scale NONE
Date DATE

LAYOUT	KNL	02/01/10
DRAWN	MV	02/01/10
REVIEWED	RMH	04/15/10

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

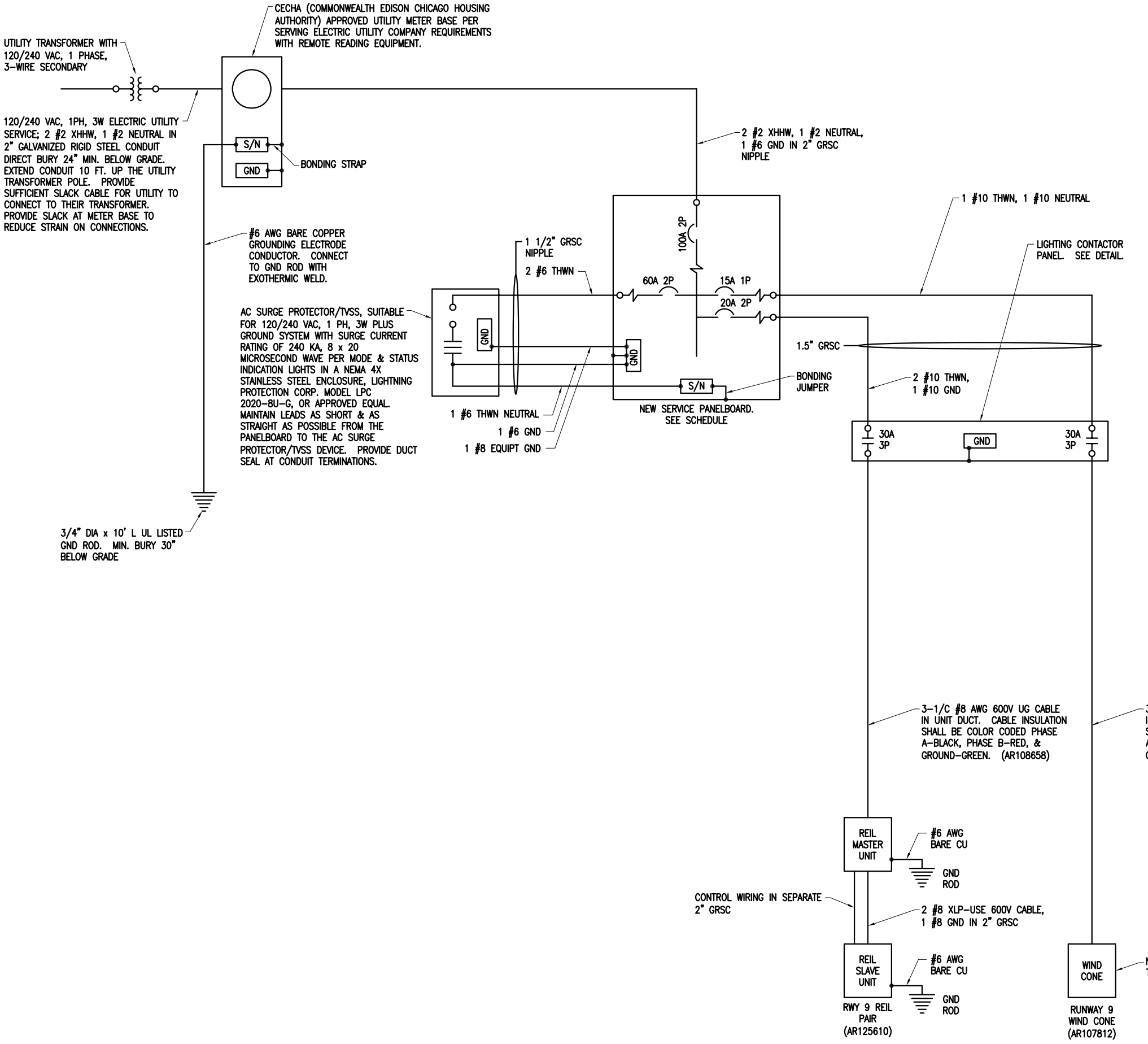
ELECTRICAL LEGEND AND ABBREVIATIONS

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

35
35 of 42 sheets

APR 14, 2010 3:07 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\35-E-001.DWG

LE041



ELECTRICAL ONE LINE DIAGRAM FOR RWY 9 REILS & WIND CONE

NOTES

1. ALL VAULT WORK AND/OR POWER OUTAGES SHALL BE COORDINATED WITH THE AIRPORT MANAGER. COORDINATE ELECTRIC SERVICE WORK WITH THE SERVING ELECTRIC UTILITY COMPANY, AND THE AIRPORT MANAGER.
2. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 – NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
3. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
4. EXISTING RWY 9 WIND CONE SHALL BE REMOVED & TURNED OVER TO THE AIRPORT. EXISTING WIND CONE IS POWERED BY SERVICE FOR RWY 9 PAPI'S WHICH ARE OWNED AND MAINTAINED BY THE FAA. COORDINATE DISCONNECTION OF POWER TO EXISTING WIND CONE WITH THE AIRPORT MANAGER & RESPECTIVE FAA MAINTENANCE PERSONNEL. DISCONNECT EXISTING RWY 9 WIND CONE FEEDER CABLES AT POWER SOURCE AND WIND CONE. REMOVE CABLES WHERE EXPOSED OR TO ACCOMMODATE WORK. REMOVAL OF WIND CONE WILL BE PAID FOR UNDER ITEM AR107900 REMOVE WIND CONE.
5. EXISTING RUNWAY 9 REILS SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT. EXISTING REILS ARE SERIES CIRCUIT TYPE POWERED BY A CONSTANT CURRENT REGULATOR IN THE VAULT FOR RUNWAY 9–27. ALL WIRING TO THE EXISTING CONSTANT CURRENT REGULATOR (INPUT POWER WIRING, CONTROL WIRING, OUTPUT WIRING) SHALL BE DISCONNECTED AND REMOVED FROM THE VAULT. REMOVAL OF REILS WILL BE PAID FOR UNDER ITEM AR125907 – REMOVE REILS.
6. COORDINATE ELECTRIC SERVICE ENTRANCE WORK WITH THE AIRPORT MANAGER AND THE SERVING ELECTRIC COMPANY; COMMONWEALTH EDISON COMPANY, 1910 SOUTH BRIGGS STREET, JOLIET, ILLINOIS 60433, ATTN. MR. MARK ANDERSON, PHONE: 815-724-5988.
7. SERVICE ENTRANCE WORK, PANELBOARD, TVSS, LIGHTING CONTACTOR PANEL AND CONTROL SYSTEM WILL BE PAID FOR UNDER AR109620 LIGHTING CONTROL PER LUMP SUM.

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Mickas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 36-E-601.DWG
Scale NONE
Date DATE

LAYOUT	KNL	02/01/10
DRAWN	MV	02/01/10
REVIEWED	RMH	04/15/10

HANSON

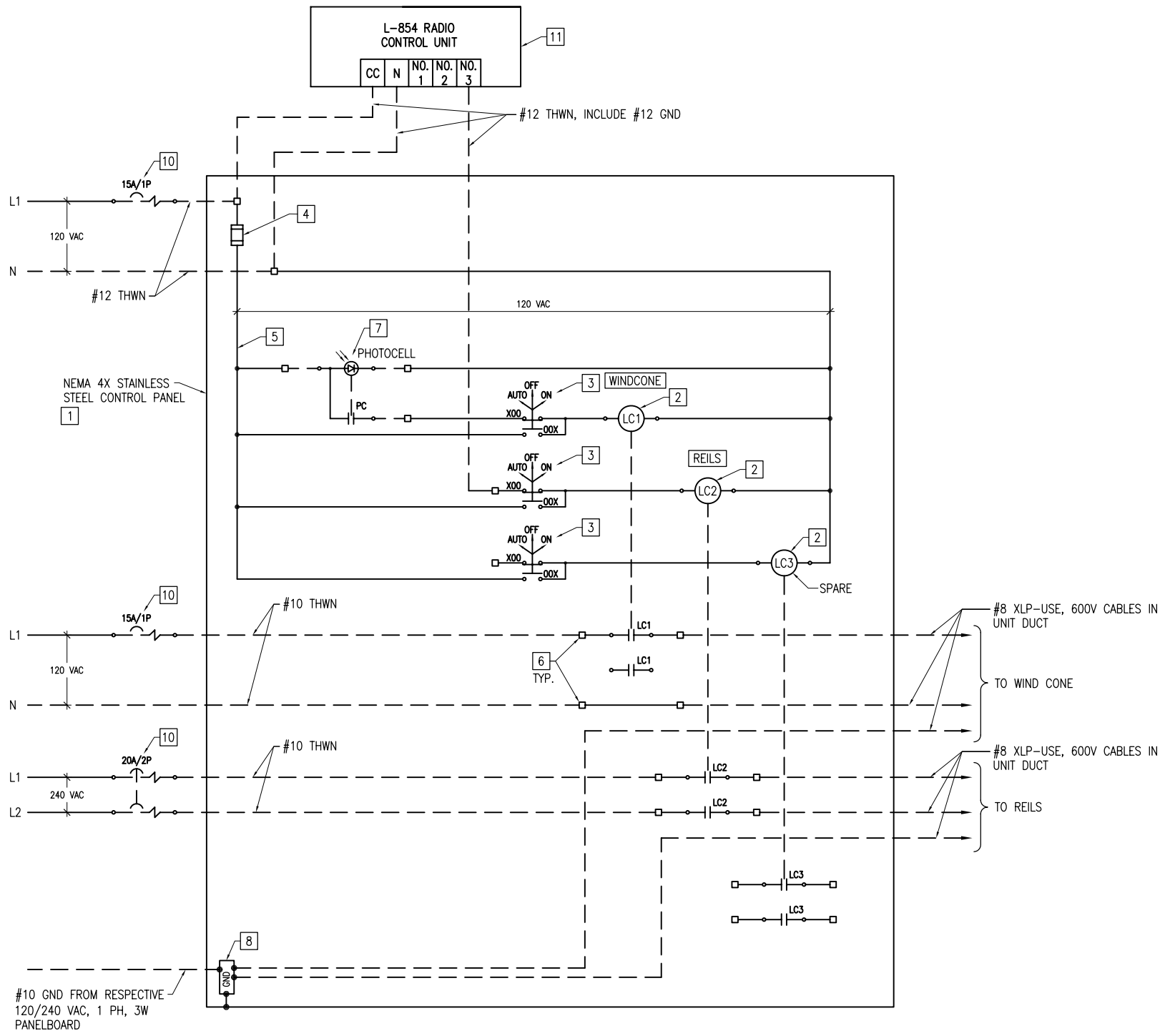
Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

ELECTRICAL ONE LINE FOR RWY 9 REILS & WIND CONE

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

36
36 of 42 sheets

APR 14, 2010 3:07 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\36-E-601.DWG



LIGHTING CONTROL PANEL FOR RUNWAY 9 WIND CONE & REILS

KEYED NOTES

1. UL LISTED NEMA 4X STAINLESS STEEL CONTROL PANEL ENCLOSURE ADEQUATELY SIZED TO HOLD THE RESPECTIVE COMPONENTS AND EQUIPMENT. PROVIDE INNER DOOR TO MOUNT SELECTOR SWITCHES. ENCLOSURE SHALL BE PAD LOCKABLE. INCLUDE LEGEND PLATES LABELED "LIGHTING CONTROL PANEL FOR RUNWAY 9 WIND CONE, AND REILS".

2. 30 AMP, 600 VAC, 2 POLE ELECTRICALLY HELD LIGHTING CONTACTOR WITH 120 VAC COIL, SQUARE D CLASS 8903, TYPE SM01V02, OR APPROVED EQUAL.

3. THREE-POSITION MAINTAINED "HAND-OFF-AUTO" SELECTOR SWITCH, HEAVY DUTY, WATERTIGHT/OIL TIGHT (NEMA 4/13), SQUARE D CLASS 9001, TYPE KS43FBH13 OR APPROVED EQUAL. INCLUDE LEGEND PLATE LABELED "AUTO-OFF-ON". MOUNT SELECTOR SWITCH ON PANEL ENCLOSURE INNER DOOR.

4. FUSING FOR CONTROL WIRING SHALL BE 10 AMP, 600 VAC, BUSSMANN CATALOG FNQ-R-10, OR APPROVED EQUAL, WITH FUSE BLOCKS, WITH BOX LUG TERMINALS, SIZED AS REQUIRED FOR THE RESPECTIVE APPLICATION. INCLUDE HARDWARE FOR MOUNTING. PROVIDE ONE BOX (5 MINIMUM QUANTITY) OF EACH TYPE AND SIZE OF FUSE, UPON COMPLETION OF THE JOB FOR USE AS SPARES.

5. CONTROL WIRING SHALL BE SIZED AS REQUIRED PER NEC MINIMUM #12 AWG TYPE MTW, THW, OR THWN, COPPER. TERMINAL BLOCKS FOR CONTROL WIRING SHALL BE NEMA RATED, 600 VOLT, WITH AMPERAGE RATINGS IN CONFORMANCE WITH NEC TABLE 310-16 USING 75 DEGREE C WIRE FOR THE RESPECTIVE WIRE LUG RANGE, BOX LUG TYPE, SQUARE D CLASS 9080, TYPE GC6, OR APPROVED EQUAL. IEC RATED TERMINAL BLOCKS ARE NOT ACCEPTABLE.

6. TERMINAL BLOCKS FOR BRANCH CIRCUITS AND FIELD WIRING SHALL BE NEMA RATED, 600 VOLT, SQUARE D CLASS 9080, TYPE GC6, OR APPROVED EQUAL SIZED FOR THE RESPECTIVE CONDUCTORS. IEC RATED TERMINAL BLOCKS ARE NOT ACCEPTABLE.

7. PHOTOCELL RATED 2000 WATTS AT 120 VAC, WITH OFF DELAY, AND -40 DEGREE C TO 60 DEGREE C OPERATING TEMPERATURE RANGE, TORK MODEL NO. 2101, OR APPROVED EQUAL.

8. EQUIPMENT GROUNDING BAR: PROVIDE A COPPER GROUNDING BAR MOUNTED AND BONDED INSIDE THE PANEL ENCLOSURE, ADEQUATELY SIZED TO ACCOMMODATE ALL GROUND CONDUCTORS TO OR FROM THE CONTROL PANEL; ILSCO CAT. NO. D167-6, OR EQUAL.

9. LEGEND PLATES: LEGEND PLATES SHALL BE REQUIRED FOR THE CONTROL PANEL, ALL RELAYS, SELECTOR SWITCHES, AND TO IDENTIFY THE RESPECTIVE INPUT AND OUTPUT BRANCH CIRCUITS. LEGEND PLATES SHALL BE WEATHERPROOF AND ABRASION RESISTANT PHENOLIC MATERIALS. LETTERING SHALL BE BLACK ON WHITE BACKGROUND, UNLESS OTHERWISE NOTED.

10. BRANCH CIRCUIT BREAKER FROM THE RESPECTIVE PANELBOARD.

11. FAA APPROVED L-854 RADIO CONTROL UNIT IN A NEMA 4 WEATHERPROOF ENCLOSURE, SUITABLE FOR OUTDOOR USE, WITH ANTENNA.

NOTES

1. WIND CONE SHALL BE ACTIVATED BY PHOTOCELL IN AUTOMATIC MODE.
2. REILS SHALL BE ACTIVATED BY L-854 RADIO RECEIVER CONTROL IN AUTOMATIC MODE AS FOLLOWS:
   3 CLICKS - OFF
   5 CLICKS - OFF
   7 CLICKS - 100% BRIGHTNESS/ON
3. PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL GROUND BAR OR ENCLOSURE FRAME TO EACH ENCLOSURE DOOR.
4. LIGHTING CONTROL PANEL SHALL BE MANUFACTURED BY A UL 508 INDUSTRIAL CONTROL PANEL BUILDER, OR AN FAA APPROVED L-821 PANEL BUILDER, AND SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE "BUY AMERICAN ACT". GUS BERTHOLD ELECTRIC (1900 WEST CARROLL AVENUE, CHICAGO, IL 60612, PHONE: 312-243-5767) IS AN APPROVED UL 508 INDUSTRIAL CONTROL PANEL BUILDER.

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No.	09A0108	
Filename	37-E-602.DWG	
Scale	NONE	
Date	DATE	
LAYOUT	KNL	02/01/10
DRAWN	MV	02/01/10
REVIEWED	RMH	04/15/10

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

CONTROL DETAILS

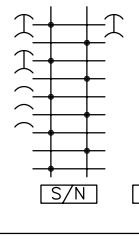
REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

37
37 of 42 sheets

APR 15, 2010 10:29 AM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\37-E-602.DWG

RWY 9 NAVAID PANEL SCHEDULE

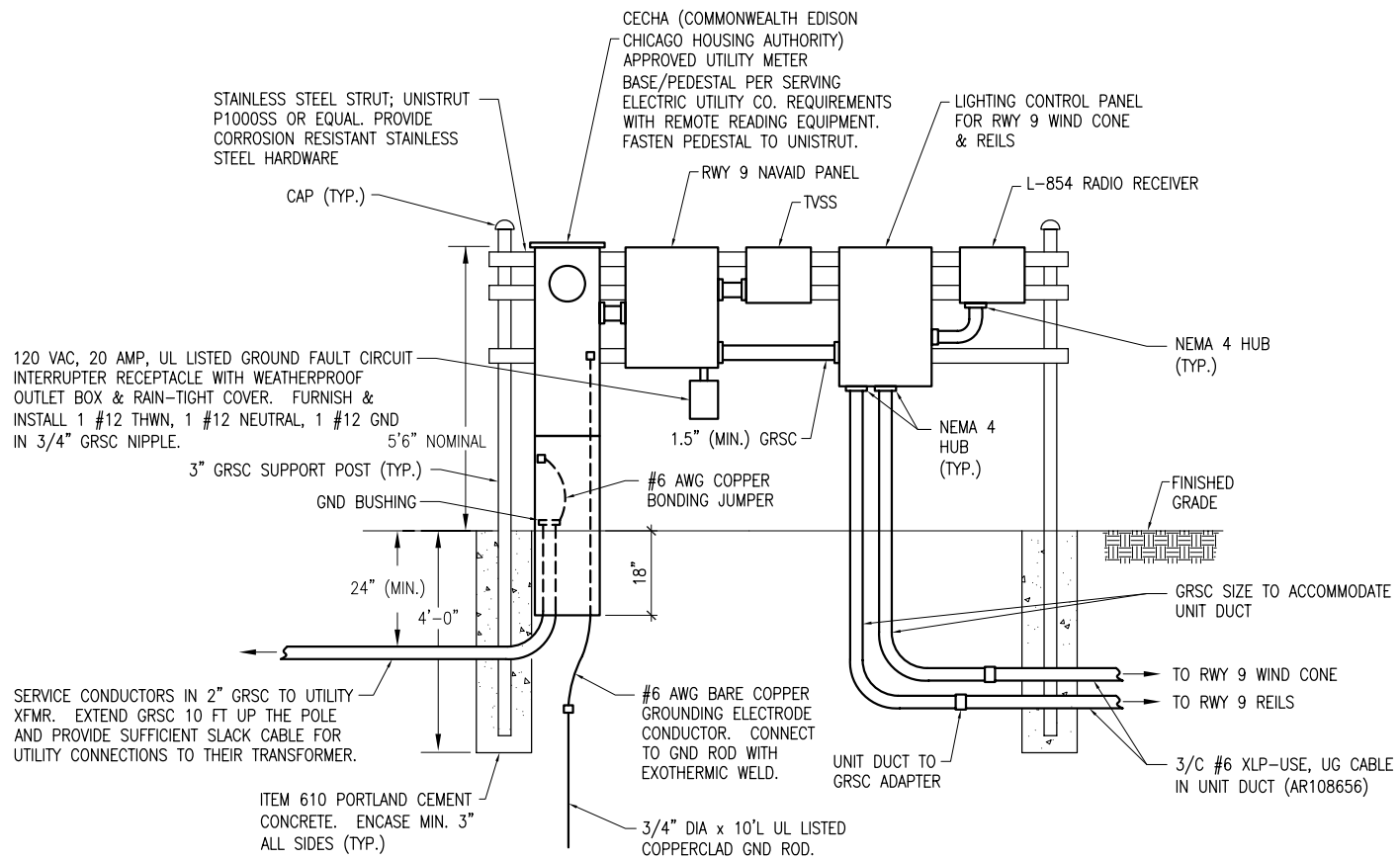
CKT #	DUTY	SIZE	SIZE	DUTY	CKT #
1	MAIN BREAKER	100A 2P	60A 2P	AC SURGE PROTECTOR	2
3	---	---	---	---	4
5	RUNWAY 9 REILS	20A 2P		BLANK	6
7	---	---			8
9	RUNWAY 9 WIND CONE	15A 1P			10
11	GFCI RECEPTACLE	20A 1P			12
13	SPARE	20A 1P			14
15	BLANK				16
17	BLANK				18



100 AMP, 120/240 VAC, 1 PHASE, 3 WIRE, 16 CIRCUIT (18 CIRCUIT INCLUDING MAIN BREAKER) PANELBOARD WITH A 100 AMP, 2 POLE BACK FED MAIN BREAKER RATED 10,000 AIC AT 120/240 VAC IN A NEMA 3R AND 12 ENCLOSURE UL LISTED SUITABLE FOR SERVICE ENTRANCE. SQUARE D CAT. NO. NQ18L1C WITH NEMA 3R AND 12 SURFACE MOUNT ENCLOSURE, OR APPROVED EQUAL. ENCLOSURE SHALL HAVE HINGED COVER. PANELBOARD SHALL ACCOMMODATE FEEDER/BRANCH BREAKERS UP TO 100 AMP FRAME SIZE. INCLUDE COPPER EQUIPT GROUND BAR. BRANCH BREAKERS SHALL BE BOLT-ON TYPE WITH 10,000 AIC AT 120/240 VAC. PANELBOARD BUSSES INCLUDING NEUTRAL SHALL BE COPPER.

NOTES

1. INCLUDE PHENOLIC ENGRAVED LEGEND PLATE LABELED "RWY 9 NAVAIDS PANEL, 120/240 VAC, 1 PH, 3W".
2. EQUIPMENT RATINGS MAY VARY DEPENDING ON MANUFACTURER AND APPLICATION. CIRCUIT BREAKERS, WIRING, CONDUIT AND ALL RELATED EQUIPMENT SHALL BE PROPERLY SIZED FOR THE RESPECTIVE EQUIPMENT RATING IN CONFORMANCE WITH NEC AND MANUFACTURER'S RECOMMENDATIONS.



SERVICE ELEVATION FOR RWY 9 REILS & WIND CONE

NOT TO SCALE

APR 15, 2010 10:30 AM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\38-E-603.DWG

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George McHas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 38-E-603.DWG
Scale NONE
Date DATE

LAYOUT	KNL	02/01/10
DRAWN	MV	02/01/10
REVIEWED	RMH	04/15/10

HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

SERVICE PANELBOARD SCHEDULE & DETAILS

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

38
38 of 42 sheets

LE041

GROUNDING NOTES

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE AND CITY OF WAUKEGAN AMENDMENT TO THE MATIONAL ELECTRICAL CODE. THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:

2. FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS SHALL BE 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING UNLESS NOTED HEREIN OTHERWISE. GROUND RODS SHALL IN NO CASE BE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND GROUNDING ELECTRODE CONDUCTORS LOCATED BELOW GRADE SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE 1-800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE 918-663-1440) OR ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE 1-800-842-7437). EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS OR AT BURIED GROUNDING ELECTRODE CONDUCTORS.

3. CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND ROD/GROUND FIELD, GROUND RING WITH AN INSTRUMEN SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE RESIDENT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND FIELD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER, UPON REQUEST, FOR REVIEW AND RECORD PURPOSES.

4. ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.

5. ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND BEFORE JOINING, SANCHEM INC. "NO-OX-ID "A-SPECIAL" COMPOUND, OR EQUAL.

6. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2008 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.

7. METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT

8. ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.

9. ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.

10. PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC., ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE ENCLOSURES.

11. EACH FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 2008 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.

12. ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2008 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHBOARD, ETC) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2008 NEC 250-102.

13. IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS <u>WILL NOT</u> BE CONSIDERED AS ADEQUATE GROUNDING.

14. PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.

15. EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.

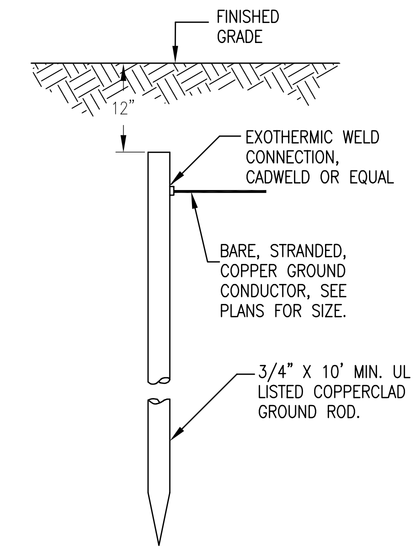
16. ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR EQUAL.

17. BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.

18. INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, <u>DO NOT</u> COMPLETELY ENCIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS. GIRDLING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GIRDLING GROUND CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUND CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS GIRDLED DURING A LIGHTNING STRIKE RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 500,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. GIRDLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.

19. IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2008 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.

20. WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE RESIDENT ENGINEER FOR FURTHER DIRECTIONS.



<u>NOTES:</u>

1. TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
2. THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
3. <u>COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.</u>
4. GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.

GROUND ROD

(NOT TO SCALE)

DATE	REVISION

Chicago-Romeoville Airport

JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 39-E-004.DWG
Scale NONE
Date DATE

LAYOUT	KNL	03/05/10
DRAWN	MV	03/05/10
REVIEWED	RMH	04/15/10

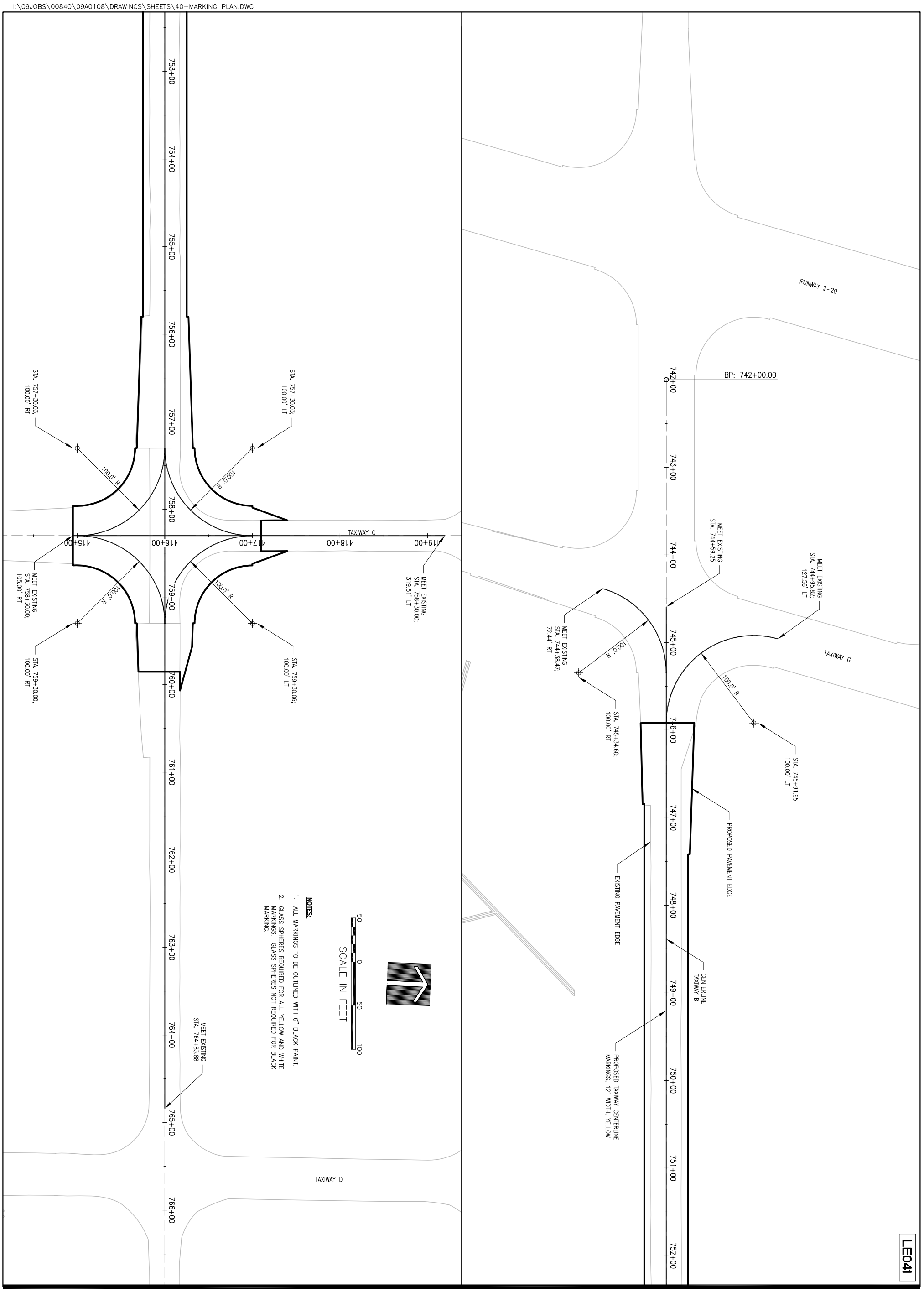
HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

GROUNDING NOTES

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

APR 14, 2010 3:08 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\40-MARKING PLAN.DWG



NOTES:

1. ALL MARKINGS TO BE OUTLINED WITH 6" BLACK PAINT.
2. GLASS SPHERES REQUIRED FOR ALL YELLOW AND WHITE MARKINGS. GLASS SPHERES NOT REQUIRED FOR BLACK MARKING.

MARKING PLAN
TAXIWAY B

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

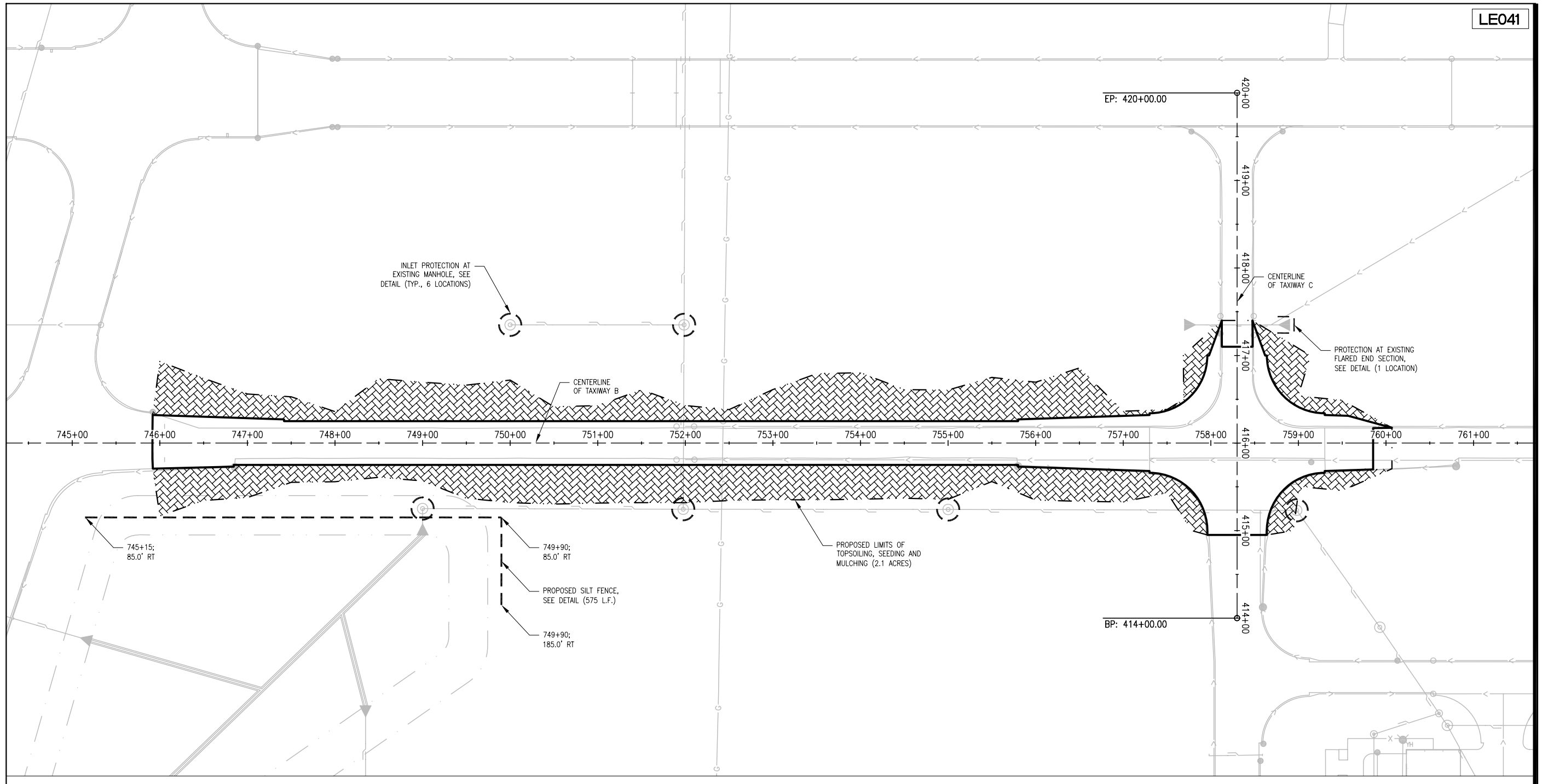
Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

Hanson No.	09A0108	
Filename	40-MARKING PLAN.DWG	
Scale	1"=50'	
Date	DATE	
LAYOUT	LDH	12/11/09
DRAWN	LDH	12/11/09
REVIEWED	RMH	04/15/10

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

DATE	REVISION

LE041



STORM WATER POLLUTION PREVENTION NOTES

GENERAL

THE CONTRACTOR SHALL IMPLEMENT ALL PROVISIONS OF THE CONTRACT DOCUMENTS TO ASSURE THAT STORM WATER POLLUTION PREVENTION ITEMS ARE CONSTRUCTED AND MAINTAINED IN A TIMELY MANNER. SEDIMENTATION MUST NOT BE TRANSPORTED OFF THE CONSTRUCTION SITE. PERMANENT DRAINAGE FEATURES AND VEGETATIVE MEASURES SHALL BE PROVIDED AS SOON AS POSSIBLE.

THE MAINTENANCE OF ALL STORM WATER POLLUTION PREVENTION MEASURES IS INCIDENTAL TO THE ASSOCIATED ITEM.

POLLUTION PREVENTION MEASURES

THE CONTRACTOR SHALL BE REQUIRED TO IMPLEMENT AND MAINTAIN STORM WATER POLLUTION PREVENTION PRACTICES AND MEASURES PRIOR TO THE STRIPPING OF EXISTING VEGETATION WHERE EVER POSSIBLE AND AS SOON AS CONSTRUCTION PERMITS IN OTHER AREAS. POLLUTION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, INCLUDING THESE CONSTRUCTION PLANS, AND WITH STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, CURRENT ISSUE. THE CONTRACTOR SHALL ADJUST HIS OPERATIONS AND IMPLEMENT POLLUTION CONTROL MEASURES SO THAT NO RUNOFF FROM STRIPPED AREAS WILL LEAVE THE CONSTRUCTION SITE OTHER THAN THROUGH SEDIMENT TRAPS OR OTHER SUITABLE CONTROL MEASURES.

POLLUTION CONTROL ITEMS SHALL BE PROVIDED AS NOTED ON THE STORM WATER POLLUTION PREVENTION PLAN AND IN THE STORM WATER POLLUTION PREVENTION DETAILS AND AS DIRECTED BY THE ENGINEER. THE LIMITS OF SUCH MEASURES SHALL BE STAKED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. SUCH LIMITS MAY BE ADJUSTED BY THE ENGINEER TO ACCOUNT FOR ACTUAL SITE CONDITIONS EXPERIENCED DURING CONSTRUCTION. ADDITIONAL COMPENSATION FOR MEASURES EXCEEDING THE PLAN QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR EACH ITEM.

THE CONTRACTOR IS TO MAINTAIN AND ADJUST, REPAIR OR REPLACE ALL POLLUTION PREVENTION MEASURES AS REQUIRED OR AS DIRECTED BY THE ENGINEER UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED. MAINTENANCE OF POLLUTION CONTROL MEASURES IS TO BE PROVIDED AT NO ADDITIONAL COST TO THE CONTRACT.

ADDITIONAL STORMWATER POLLUTION PREVENTION MEASURES ARE EXISTING ON SITE LOCATED AT DRAINAGE FACILITIES AND ALONG THE PROPERTY LINE.

LANDSCAPING NOTES:

1. SEE CROSS SECTIONS AND STAKING PLANS FOR ADDITIONAL CONSTRUCTION LIMITS INFORMATION.

LEGEND

- PROPOSED SEEDING
- LIMITS OF TOPSOILING AND SODDING
- SILT FENCE
- PROPOSED INLET PROTECTION

60 0 60 120
SCALE IN FEET

APR 14, 2010 3:08 PM HAUSM00682
I:\09JOBS\00840\09A0108\DRAWINGS\SHEETS\41-LANDSCAPING PLAN.DWG

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 41-LANDSCAPING PLAN.DWG
Scale 1"=50'
Date DATE

LAYOUT	LDH	12/30/09
DRAWN	LDH	12/30/09
REVIEWED	RMH	04/15/10

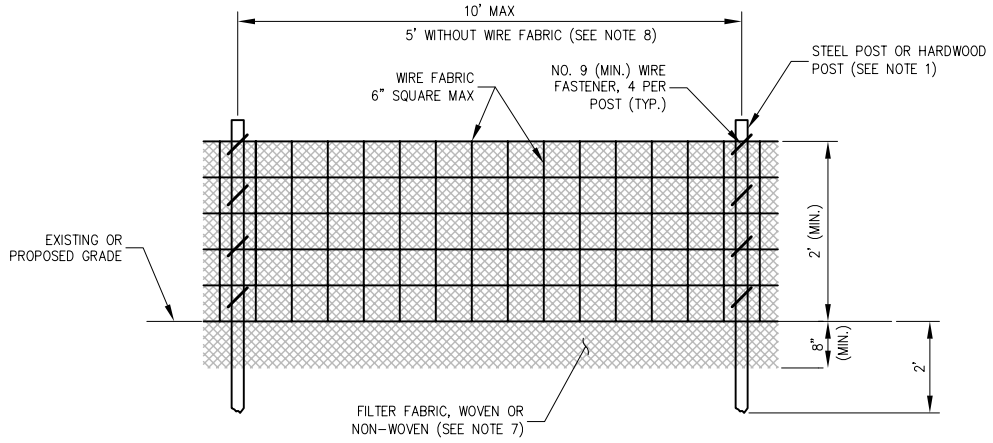
HANSON

Hanson Professional Services Inc.
815 Commerce Drive Suite 200
Oak Brook, Illinois 60523

LANDSCAPING AND SWPP PLAN

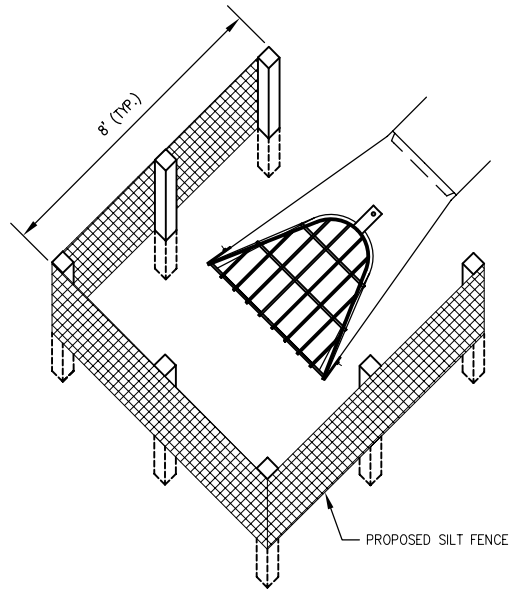
REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

41
41 of 42 sheets

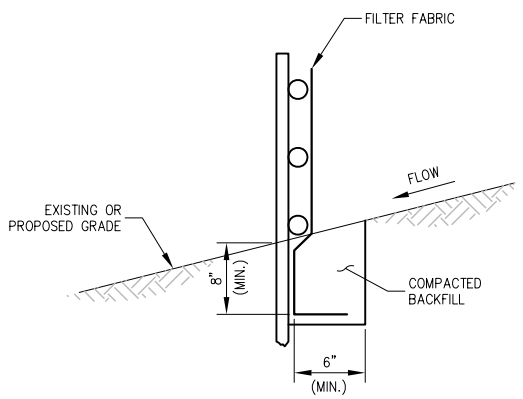


ELEVATION

NOTE: 2 X 2 STAKES DO NOT MEET SPECIFICATION.



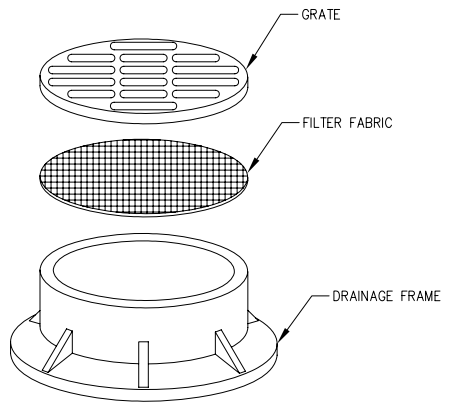
SILT FENCE PLACEMENT
AT FLARED END SECTIONS (FES)



FABRIC ANCHOR DETAIL

NOTES:

1. FENCE POST SHALL BE EITHER STEEL "T" LINE POST OR HARDWOOD POST WITH A MINIMUM SECTIONAL AREA OF 3.0 SQUARE INCHES.
2. TOP AND BOTTOM WIRE OF WIRE FABRIC SHALL BE MINIMUM GAGE NO. 9. INTERMEDIATE WIRES OF THE WIRE FABRIC SHALL BE MINIMUM GAGE NO. 11.
3. WIRE FABRIC SHALL BE SECURELY FASTENED TO FENCE POSTS WITH NO. 9 GAGE WIRE MINIMUM. FOUR (4) FASTENERS PER POST REQUIRED.
4. FILTER FABRIC SHALL BE SECURELY FASTENED TO WIRE FABRIC AND POSTS WITH TIES OR STAPLES SPACED AT 12" APART AT THE TOP, MIDDLE AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER FABRIC MEET, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED AND ATTACHED TO THE WIRE FABRIC AT A POST.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN BULGES DEVELOP IN THE SILT FENCE.
7. FILTER FABRIC SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS WITH EQUIVALENT OPENING SIZE OF AT LEAST 30 FOR NONWOVEN AND 50 FOR WOVEN.
8. WIRE FABRIC MAY BE OMITTED IF A MAXIMUM OF 5 FEET IS USED FOR POST-TO-POST SPACING.
9. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED. PERIODIC INSPECTION SHALL BE PERFORMED AND REQUIRED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.
10. FENCE POSTS SHALL BE REMOVED WHEN DIRECTED AT PROJECT END.



NOTES:

1. FILTER WRAP TO BE PLACED IN ALL MANHOLES AS SHOWN.
2. FABRIC SHALL BE IN CONFORMANCE WITH MATERIALS SPECIFIED FOR SILT FENCE.
3. FABRIC SHALL OVERLAY FRAME BY 2 INCHES (MINIMUM).
4. CONTRACTOR SHALL CLEAR DEBRIS AND SILT AS REQUIRED FROM FABRIC TO MAINTAIN DRAINAGE THROUGH THE STRUCTURE.
5. FABRIC SHALL REMAIN IN PLACE UNTIL TURFED AREAS HAVE DEVELOPED A MINIMUM OF 80% OF COVERAGE.
6. COST OF FILTER WRAP SHALL BE INCIDENTAL TO INLET PROTECTION.

INLET PROTECTION – DRAINAGE STRUCTURE FILTER WRAP

DETAILS SHOWN ARE NOT TO SCALE

REVISION | DATE

Chicago-Romeoville Airport
JOLIET REGIONAL PORT DISTRICT
1 George Michas Drive
Romeoville, Illinois 60446
Telephone: 815.838.9497
Fax: 815.838.9524

Hanson No. 09A0108
Filename 42-LANDSCAPING_DETAILS.
Scale N/A
Date DATE

LAYOUT	LDH	03/01/10
DRAWN	LDH	03/01/10
REVIEWED	RMH	04/15/10

HANSON

Hanson Professional Services Inc.
615 Commerce Drive Suite 200
Oak Brook, Illinois 60523

LANDSCAPING AND
SWPP DETAILS

REHABILITATE PORTIONS OF TAXIWAY B
IDA No. LOT-3969 AIP No. 3-17-0140-B44

42
42 of 42 sheets