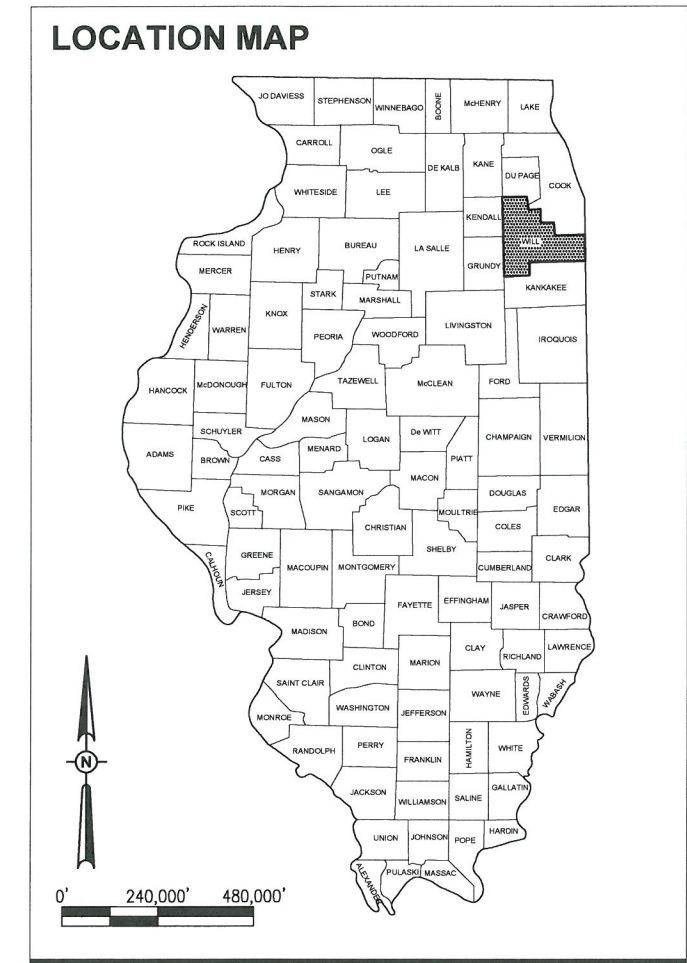
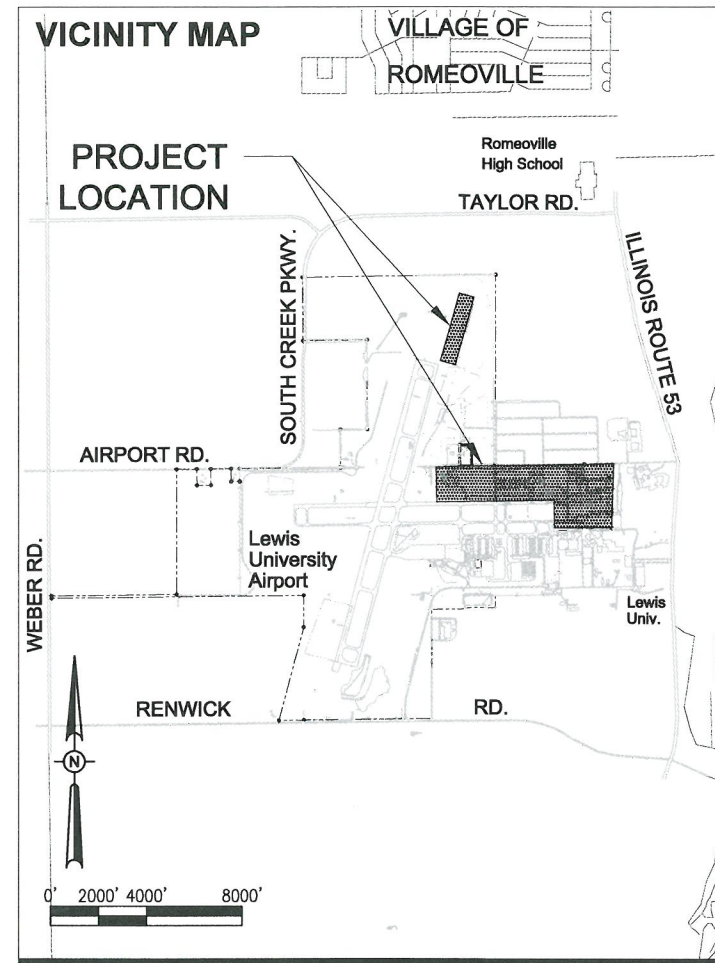


CONSTRUCTION PLANS

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA)
MODIFICATIONS

JOLIET REGIONAL PORT DISTRICT
LEWIS UNIVERSITY AIRPORT (LOT)
ROMEOVILLE, WILL COUNTY, ILLINOIS

IDA PROJECT NO. LOT-4520
SBGP PROJECT NO. 3-17-SBGP-XX



No.	Issue/Description	Sheets Changed	Date	By

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.

Seal: Date of Plans: **EXP 11/30/17**
 Date: **JUNE 17, 2016**
 Lindsay D. Hausman, P.E., Project Engineer

Seal: **COVERING ELECTRICAL DESIGN**
 Date: **6/15/2016**
EXPIRES: 11/30/2017

 Kevin N. Lightfoot, P.E., Project Engineer

HANSON
 HANSON PROFESSIONAL SERVICES INC.
 815 Commerce Drive, Suite 200 Oak Brook, Illinois 60523
 Telephone: 630.990.3800
 Fax: 630.990.3801

 Ronald M. Hudson, AICP Project Manager
 Date: **JUNE 17, 2016**

Lewis University Airport
 JOLIET REGIONAL PORT DISTRICT
 1 Executive Terminal
 George Michas Drive
 Romeoville, Illinois 60446
 Telephone: 815.838.9497
 Fax: 815.838.9524

 Chris Lawson, Director of Aviation
 Date: **JUNE 17, 2016**

SUMMARY OF QUANTITIES

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2	SHEET INDEX AND SUMMARY OF QUANTITIES
3	SITE AND SAFETY PLAN
4	SITE AND SAFETY PLAN NOTES
5	CONSTRUCTION SAFETY NOTES AND DETAILS
6	PHASING PLAN - PHASE 1
7	PHASING PLAN - PHASE 2
8	PHASING PLAN - PHASE 3
9	PHASING PLAN - PHASE 4
10	ALIGNMENT DATA TABLE AND PAVEMENT LAYOUT
11	TYPICAL SECTIONS AND PAVEMENT DETAILS
12-13	STORM WATER POLLUTION PREVENTION PLAN
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15-16	RUNWAY 9-27 MARKING REMOVAL PLAN
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28	STORM SEWER SCHEDULE
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35	PLAN AND PROFILE - TAXIWAY F
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38-40	PAVEMENT CROSS SECTIONS - TAXIWAY F
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74	BORING LOGS B-1 THRU B-6
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ITEM NO.	DESCRIPTION	UNIT	AS-BID QUANTITY	RECORD PAID
AR107812	L-807 W C - 12' INTERNALLY LIT	EACH	1.0	
AR107900	REMOVE WIND CONE	EACH	1.0	
AR108051	POWER CABLE IN UNIT DUCT	LINEAR FOOT	2,197.0	
AR108108	1/C #8 5 KV UG CABLE	LINEAR FOOT	126.0	
AR108158	1/C #8 5 KV UG CABLE IN UD	LINEAR FOOT	3,138.0	
AR108960	REMOVE CABLE	LINEAR FOOT	2,175.0	
AR110202	2" PVC DUCT, DIRECT BURY	LINEAR FOOT	110.0	
AR110504	4-WAY CONCRETE ENCASED DUCT	LINEAR FOOT	94.0	
AR110550	SPLIT DUCT	LINEAR FOOT	74.0	
AR110551	EXTEND DUCT	LINEAR FOOT	72.0	
AR125410	MITL - STAKE MOUNTED	EACH	18.0	
AR125415	MITL - BASE MOUNTED	EACH	2.0	
AR125441	TAXI GUIDANCE SIGN, 1 CHARACTER	EACH	1.0	
AR125442	TAXI GUIDANCE SIGN, 2 CHARACTER	EACH	5.0	
AR125443	TAXI GUIDANCE SIGN, 3 CHARACTER	EACH	2.0	
AR125545	MI THRESHOLD LIGHT BASE MTD	EACH	8.0	
AR125565	SPLICE CAN	EACH	1.0	
AR125901	REMOVE STAKE MOUNTED LIGHT	EACH	13.0	
AR125902	REMOVE BASE MOUNTED LIGHT	EACH	20.0	
AR125904	REMOVE TAXI GUIDANCE SIGN	EACH	7.0	
AR125947	ADJUST REILS	PAIR	1.0	
AR150510	ENGINEER'S FIELD OFFICE	LUMP SUM	1.0	
AR150560	TEMPORARY THRESHOLD	LUMP SUM	1.0	
AR152410	UNCLASSIFIED EXCAVATION	CUBIC YARD	96,181.0	
AR156510	SILT FENCE	LINEAR FOOT	2,962.0	
AR156513	SEPARATION FABRIC	SQUARE YARD	7,319.0	
AR156520	INLET PROTECTION	EACH	34.0	
AR209610	CRUSHED AGG. BASE COURSE - 10"	SQUARE YARD	3,437.0	
AR209612	CRUSHED AGG. BASE COURSE - 12"	SQUARE YARD	3,883.0	
AR401613	BIT. SURF. CSE.-METHOD I, SUPERPAVE	TON	1,003.0	
AR401650	BITUMINOUS PAVEMENT MILLING	SQUARE YARD	1,331.0	
AR401660	SAW & SEAL BIT. JOINTS	LINEAR FOOT	1,007.0	
AR401665	BITUMINOUS PAVEMENT SAWING	LINEAR FOOT	1,348.0	
AR401900	REMOVE BITUMINOUS PAVEMENT	SQUARE YARD	43,705.0	
AR401910	REMOVE AND REPLACE BIT. PAVEMENT	SQUARE YARD	72.0	
AR403613	BIT. BASE CSE.-METHOD I, SUPERPAVE	TON	2,188.0	
AR602510	BITUMINOUS PRIME COAT	GALLONS	2,097.0	
AR603510	BITUMINOUS TACK COAT	GALLONS	2,297.0	
AR620520	PAVEMENT MARKING-WATERBORNE	SQUARE FOOT	17,578.0	
AR620525	PAVEMENT MARKING-BLACK BORDER	SQUARE FOOT	35,295.0	
AR701512	12" RCP, CLASS IV	LINEAR FOOT	372.0	
AR701518	18" RCP, CLASS IV	LINEAR FOOT	809.0	
AR701524	24" RCP, CLASS IV	LINEAR FOOT	1,067.0	

ITEM NO.	DESCRIPTION	UNIT	AS-BID QUANTITY	RECORD PAID
AR701536	36" RCP, CLASS IV	LINEAR FOOT	171.0	
AR701548	48" RCP, CLASS IV	LINEAR FOOT	168.0	
AR701900	REMOVE PIPE	LINEAR FOOT	370.0	
AR705506	6" PERFORATED UNDERDRAIN	LINEAR FOOT	3,043.0	
AR705630	UNDERDRAIN INSPECTION HOLE	EACH	6.0	
AR705640	UNDERDRAIN CLEANOUT	EACH	6.0	
AR705900	REMOVE UNDERDRAIN	LINEAR FOOT	1,958.0	
AR705903	REMOVE UNDERDRAIN INSP. HOLE	EACH	1.0	
AR705904	REMOVE UNDERDRAIN CLEANOUT	EACH	3.0	
AR751412	INLET - TYPE B	EACH	3.0	
AR751540	MANHOLE 4'	EACH	3.0	
AR751550	MANHOLE 5'	EACH	4.0	
AR751560	MANHOLE 6'	EACH	4.0	
AR751903	REMOVE MANHOLE	EACH	1.0	
AR751927	REPLACE FRAME AND GRATE	EACH	9.0	
AR751943	ADJUST MANHOLE	EACH	9.0	
AR752412	PRECAST REINFORCED CONC. FES 12"	EACH	1.0	
AR752418	PRECAST REINFORCED CONC. FES 18"	EACH	2.0	
AR752424	PRECAST REINFORCED CONC. FES 24"	EACH	1.0	
AR752448	PRECAST REINFORCED CONC. FES 48"	EACH	1.0	
AR752512	GRATING FOR CONC. FES 12"	EACH	1.0	
AR752518	GRATING FOR CONC. FES 18"	EACH	2.0	
AR752524	GRATING FOR CONC. FES 24"	EACH	1.0	
AR752548	GRATING FOR CONC. FES 48"	EACH	1.0	
AR752900	REMOVE END SECTION	EACH	5.0	
AR754610	PAVED DITCH	LINEAR FOOT	206.0	
AR754910	REMOVE PAVED DITCH	LINEAR FOOT	365.0	
AR800907	INFILTRATION TRENCH	LINEAR FOOT	811.0	
AR800926	CA-6 AGGREGATE BACKFILL	CUBIC YARD	3,163.0	
AR800927	GRANULAR DRAINAGE SUBBASE - 6"	SQUARE YARD	7,319.0	
AR800953	REMOVE TAXI GUIDANCE SIGN BASE	EACH	2.0	
AR800955	PCC FOUNDATION REMOVAL	SQUARE YARD	40.0	
AR800956	PCC SLAB REMOVAL	SQUARE YARD	1,605.0	
AR800957	ADJUST CAPPED WELL	LUMP SUM	1.0	
AR800987	REMOVE FUEL FARM	LUMP SUM	1.0	
AR800988	CONTAMINATED SOIL REMOVAL	CUBIC YARD	75.0	
AR803003	CONCRETE CABLE BOTTOM	SQUARE YARD	816.0	
AR803008	TEMPORARY SEED AND MULCH	ACRE	31.5	
AR803010	CONSERVATION COVER	ACRE	1.3	
AR901510	SEEDING	ACRE	42.4	
AR905510	TOPSOILING (FROM ON SITE)	CUBIC YARD	25,383.0	
AR908510	MULCHING	ACRE	47.2	

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.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

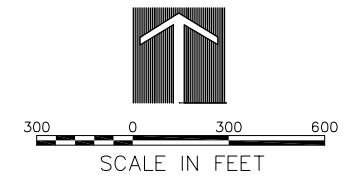
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 02-SQ.DWG
DESIGN BY: LDH 7/25/14
DRAWN BY: LDH 7/25/14
REVIEWED BY: SJM 6/6/16

SHEET TITLE

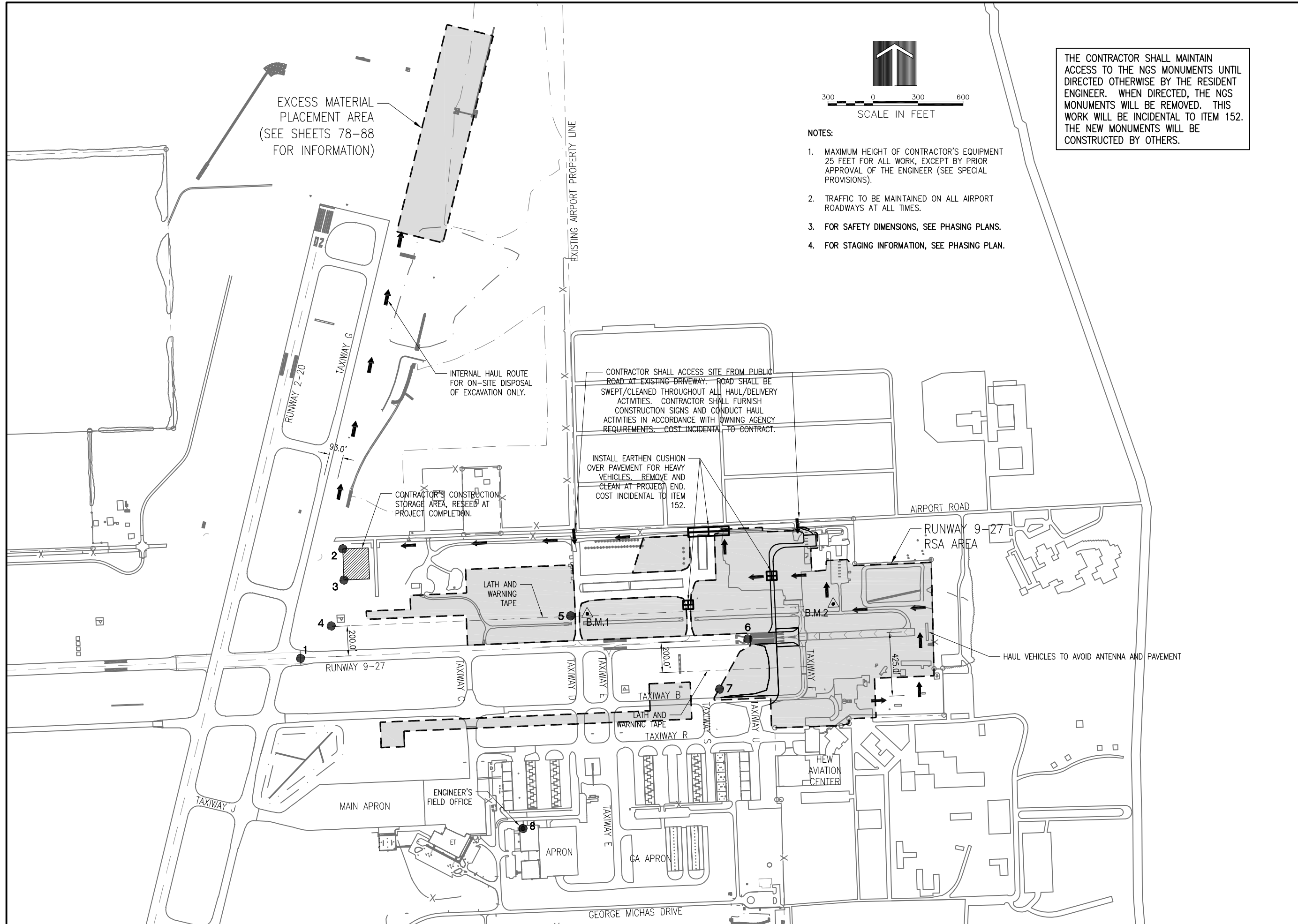
SHEET INDEX AND SUMMARY OF QUANTITIES

THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE NGS MONUMENTS UNTIL DIRECTED OTHERWISE BY THE RESIDENT ENGINEER. WHEN DIRECTED, THE NGS MONUMENTS WILL BE REMOVED. THIS WORK WILL BE INCIDENTAL TO ITEM 152. THE NEW MONUMENTS WILL BE CONSTRUCTED BY OTHERS.



NOTES:

1. MAXIMUM HEIGHT OF CONTRACTOR'S EQUIPMENT 25 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. FOR SAFETY DIMENSIONS, SEE PHASING PLANS.
4. FOR STAGING INFORMATION, SEE PHASING PLAN.



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 03-SITE & SAFETY.DWG
DESIGN BY: LDH 6/2/16
DRAWN BY: LDH 6/2/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

SITE AND SAFETY PLAN

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GENERAL NOTES

PROJECT DESCRIPTION

THIS PROJECT IS TO FURNISH SITE GRADING, DRAINAGE AND PAVEMENT MODIFICATIONS FOR THE RUNWAY SAFETY AREA (RSA) AT LEWIS UNIVERSITY AIRPORT INCLUDING, AMONG OTHER INCIDENTAL WORK, THE FOLLOWING ITEMS:

- PLACEMENT OF TEMPORARY SOIL EROSION CONTROL MEASURES.
- REMOVAL OF PAVEMENTS INCLUDING, BUT NOT LIMITED TO, TAXIWAYS A AND F, AND ABANDONED APRON PAVEMENTS.
- REMOVAL OF UNDERGROUND FUEL TANKS AND APPURTENANCES.
- PROVISION OF REQUIRED UNCLASSIFIED EXCAVATION. PLACEMENT OF EXCESS CUT MATERIAL AT STOCKPILE AREA.
- ADJUSTMENT OF EXISTING DRAINAGE STRUCTURES, AND INSTALLATION OF NEW DRAINAGE STRUCTURES.
- MODIFICATION OF DETENTION BASIN AT EAST END OF RUNWAY 9-27; INSTALLATION OF CONCRETE CABLE BOTTOM AND PAVED DITCH.
- INSTALLATION OF INFILTRATION TRENCH.
- INSTALLATION OF NEW DRAINAGE LAYER, AGGREGATES AND BITUMINOUS (HMA) PAVEMENTS.
- INSTALLATION OF UNDERDRAINS.
- PLACEMENT OF PAVEMENT MARKINGS.
- TOPSOILING, SEEDING AND MULCHING IN ALL DISTURBED AREAS, INCLUDING ALONG NEW PAVEMENT EDGES.

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 TEMPORARY CONSTRUCTION ROADS WITHIN THE CONSTRUCTION LIMIT LINES AS MAY BE REQUIRED BY HIS ACTIVITIES. HEAVY VEHICLES SHALL NOT CROSS EXISTING PAVEMENT SURFACES EXCEPT AS APPROVED BY THE AIRPORT MANAGER AND THE OWNER'S REPRESENTATIVE. ANY DAMAGE TO PAVEMENTS THAT MAY OCCUR BY THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE AIRPORT MANAGER AND THE OWNER'S REPRESENTATIVE. FOR HAUL ROUTES MADE BY CONTRACTOR THROUGH GRASSED AREAS, CONTRACTOR SHALL GRADE, LEVEL, TOPSOIL, SEE AND MULCH AT THE END OF THE PROJECT, COST INCIDENTAL TO THE CONTRACT.

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

RESPONSIBILITY FOR EXISTING UTILITIES

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

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND AGENCIES OF HIS CONSTRUCTION PLANS AND SHALL OBTAIN FROM EACH PARTY DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF ALL UTILITIES AND THE WORKING SCHEDULE OF ANY REMOVALS OR ADJUSTMENTS REQUIRED OF THE UTILITY. THE CONTRACTOR SHALL CONTACT 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 1,800,232.9153
E 1,051,079.7581
ELEV. 666.199

▲ B.M.2 N 1,800,299.1028
E 1,052,719.1446
ELEV. 663.770



PROJECT IS LOCATED IN NORTHWEST 1/4 OF SECTION 15, LOCKPORT TOWNSHIP, WILL COUNTY

NOTES

1. COORDINATES ARE IN NAD 83 FOR HORIZONTAL AND NAVD 88 FOR VERTICAL.
2. STATIONS, OFFSETS AND ELEVATIONS SHOWN ARE IN FEET.
3. THE APPROACH END OF RUNWAY 9 IS STATION 23+85. THE APPROACH END OF RUNWAY 2 IS STATION 100+00.
4. THE AIRPORT REFERENCE CODE FOR RUNWAY 9-27 IS B-II WITH NONPRECISION APPROACHES WITH VISIBILITY 1 MILE OR GREATER ON BOTH RUNWAY 9 AND RUNWAY 27.
5. THE AIRPORT REFERENCE CODE FOR RUNWAY 2-20 IS D-III WITH NONPRECISION APPROACHES WITH VISIBILITY AS LOW AS 3/4 MILE ON RUNWAY 2 AND AS LOW AS 1 MILE ON RUNWAY 20.

RUNWAY END COORDINATES

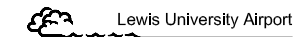
DESCRIPTION	LATITUDE	LONGITUDE	RUNWAY STATION	RUNWAY ELEVATION
RUNWAY 9 END	41°36'28.93" N	88°06'16.00" W	23+85.38	672.7
RUNWAY 27 END	41°36'31.15" N	88°05'01.08" W	80+81.15	664.1
TEMPORARY RUNWAY 27 END	41°36'30.54" N	88°05'21.94" W	64+95.01	668.2
RUNWAY 2 END	41°35'57.23" N	88°06'03.23" W	100+00.40	678.7
RUNWAY 20 END	41°36'59.61" N	88°05'42.92" W	165+00.00	665.9



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Illinois Licensed
Professional Service Corporation
#184-001084



JOLIET REGIONAL PORT DISTRICT

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phone: 815.838.9497
fax: 815.838.9524

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 04-GENEALNOTES.DWG
DESIGN BY: LDH 6/2/16
DRAWN BY: LDH 6/2/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

SITE & SAFETY PLAN NOTES

OBJECT INFORMATION													
ITEM NO.	DESCRIPTION	PHASE	MOBILITY	GROUND ELEVATION	OBJECT ELEVATION	LATITUDE	LONGITUDE	RUNWAY 9-27 STATION	RUNWAY 9-27 OFFSET	RUNWAY 9-27 EXIST EL.	RUNWAY 2-20 STATION	RUNWAY 2-20 OFFSET	RUNWAY 2-20 EXIST EL.
1	CONSTRUCTION EQUIPMENT	1 & 4	MOVING	666.7	691.7	41° 36' 29.8101" N	88° 05' 45.3988" W	---	---	---	135+24.61	533.40	667.9
2	CONTRACTOR'S CONSTRUCTION STORAGE	ALL	STATIONARY	661.4	686.4	41° 36' 37.0127" N	88° 05' 41.6740" W	50+23.37	714.10	666.9	142+99.97	635.20	666.0
3	CONSTRUCTION EQUIPMENT	ALL	STATIONARY	660.6	685.6	41° 36' 34.9638" N	88° 05' 41.5714" W	50+22.89	506.63	666.9	141+00.37	692.00	667.3
4	CONSTRUCTION EQUIPMENT	2 & 3	MOVING	663.0	688.0	41° 36' 31.9394" N	88° 05' 42.6991" W	49+25.25	204.00	666.9	137+82.66	681.50	667.8
5	CONSTRUCTION EQUIPMENT	2	MOVING	665.8	690.8	41° 36' 32.5608" N	88° 05' 21.6960" W	65+21.98	203.80	668.3	142+22.59	2,216.40	666.4
6	CONSTRUCTION EQUIPMENT	2	MOVING	666.6	691.6	41° 36' 31.0059" N	88° 05' 06.1481" W	76+95.94	0.00	667.1	143+50.23	3,401.10	665.8
7	CONSTRUCTION EQUIPMENT	2	MOVING	663.8	688.8	41° 36' 27.7099" N	88° 05' 08.6469" W	74+93.11	325.90	667.9	139+81.07	3,295.90	667.3
8	ENGINEER'S FIELD OFFICE	ALL	STATIONARY	665.2	680.2	41° 36' 18.5610" N	88° 05' 25.9287" W	61+44.74	1,199.40	668.3	127+69.76	2,240.50	668.2

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SAFETY IS REQUIRED

CONSTRUCTION AND SAFETY NOTES

CONSTRUCTION OF THE PROJECT SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH THE GUIDELINES SPECIFIED IN FAA ADVISORY CIRCULAR 150/5320-2 (CURRENT ISSUE) AND THE AIRPORT RULES AND REGULATIONS (AS PUBLISHED ON LEWIS UNIVERSITY AIRPORT'S WEBSITE AT [HTTP://WWW.FLYLOT.COM](http://www.flylot.com) UNDER JRPD ORDINANCES AND MINUTES (EXCEPT FEES FOR VEHICLE DRIVING PERMITS SHALL NOT BE PAID)). ANY CONTRACTOR ACTIVITIES REQUIRED FOR PROJECT SAFETY SHALL BE PROVIDED BY THE CONTRACTOR AND INCIDENTAL TO THE CONTRACT.

SEQUENCE OF CONSTRUCTION

TO MINIMIZE DISRUPTIONS AT AIRPORT OPERATIONS, CONSTRUCTION OPERATIONS MUST BE CONTROLLED THROUGHOUT THE PROJECT'S DURATION, AND WORK MUST BE COMPLETED EXPEDITIOUSLY. A CONSTRUCTION PHASING PLAN DETAILING THE SEQUENCING OF THE CONTRACTOR'S WORK THROUGHOUT THE PROJECT IS INCLUDED IN THE PLANS. THE CONTRACTOR SHALL PROVIDE HIS WRITTEN ACCEPTANCE OF THE PROJECT CONSTRUCTION PHASING PLAN AT THE PRE-CONSTRUCTION CONFERENCE. ANY AND ALL CHANGES TO THE CONSTRUCTION PHASING PLAN THAT MAY BE REQUESTED BY THE CONTRACTOR MUST BE APPROVED BY THE PROJECT ENGINEER AND THE AIRPORT OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SUFFICIENT ADVANCE NOTICE OF ANY PROPOSED PHASING CHANGE TO PERMIT CONSIDERATION AND APPROVAL BY THE PROJECT ENGINEER AND THE AIRPORT OWNER. THE CONTRACTOR SHALL NOT BE ENTITLED TO ANY EXTRA COMPENSATION, NOR EXTENSION TO THE CONTRACT TIME, BECAUSE OF A PHASING CHANGE REQUEST NOR FOR ANY TIME NECESSARY IN RECEIVING THE REQUIRED APPROVALS. THE CONTRACTOR SHALL EXPEDITE WORK AT THOSE STAGES WHERE ACTIVE TAXIWAYS, HANGAR ACCESS, APRONS, ROADWAYS OR PARKING LOTS MUST BE CLOSED, TO MINIMIZE THE LENGTH OF TIME THAT AIRPORT OPERATIONS ARE RESTRICTED.

AT THE PRE-CONSTRUCTION CONFERENCE, THE CONTRACTOR SHALL PROVIDE A CONTRACTOR COORDINATION PLAN THAT COORDINATES HIS WORK WITH THE WORK OF HIS SUBCONTRACTORS AND THE WORK OF OTHER CONTRACTORS OF OTHER ON-GOING AIRPORT PROJECTS.

RUNWAY CLOSURE

THE PROJECT WILL REQUIRE THE TEMPORARY (LESS THAN 3 DAY) CLOSURE OF RUNWAY 9-27; SEE PHASING PLANS ON SHEETS 6-9 AND DETAIL D, THIS SHEET. TO MINIMIZE DISRUPTION TO AIRCRAFT OPERATIONS ASSOCIATED WITH THE RUNWAY CLOSURE, CONSTRUCTION WORK MUST BE COMPLETED EXPEDITIOUSLY. RUNWAY CLOSINGS SHALL ONLY BE PERMITTED BY PRIOR AUTHORIZATION OF THE RESIDENT ENGINEER AND THE AIRPORT OWNER.

THE CONTRACTOR WILL INSTALL, OPERATE, MAINTAIN AND REMOVE LIGHTED RUNWAY CLOSURE MARKERS FURNISHED BY THE OWNER AS SPECIFIED ON THIS SHEET AND IN THE SPECIAL PROVISIONS. IF CLOSURES WILL BE DAY TIME ONLY, OR IF NECESSARY FOR EMERGENCIES OR EXTENDED MAINTENANCE OF THE LIGHTED MARKER EQUIPMENT BY THE CONTRACTOR, THE CONTRACTOR WILL TEMPORARILY USE PRE-MANUFACTURED, VINYL MARKERS TO BE FURNISHED TO THE CONTRACTOR BY THE OWNER. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL, RELOCATE AND MAINTAIN RUNWAY CLOSURE MARKERS AT THE LOCATIONS SHOWN IN THE PLAN, AND AS DIRECTED BY THE RESIDENT ENGINEER AND AIRPORT OWNER. THE COST OF PLACING AND RELOCATING THESE ITEMS, AND THEIR OPERATION AND MAINTENANCE, IS TO BE INCIDENTAL TO THE CONTRACT.

THE AIRPORT OWNER WILL DE-ENERGIZE AIRPORT/RUNWAY NAVAIDS, AND AIRFIELD LIGHTING POWER AND CONTROL CIRCUITS WHEN THE RUNWAY IS CLOSED.

TEMPORARY BARRICADES

THE CONTRACTOR SHALL FURNISH BARRICADES FOR ANY AIRFIELD OR ROADWAY PAVEMENT TO BE CLOSED BY HIS WORK. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH, PLACE AND MAINTAIN BARRICADES AS SHOWN IN DETAIL B, THIS SHEET, AND AS DIRECTED BY THE RESIDENT ENGINEER AND AIRPORT DIRECTOR. THE COST OF THESE ITEMS, AND THEIR MAINTENANCE, IS TO BE INCIDENTAL TO THE CONTRACT. ANY WORK THAT REQUIRES PORTIONS OF AN ACTIVE RUNWAY, TAXIWAY OR APRON TO BE CLOSED MUST BE COMPLETED EXPEDITIOUSLY TO MINIMIZE DISRUPTION TO AIRCRAFT OPERATIONS.

VEHICULAR TRAFFIC CONTROL

THE CONTRACTOR SHALL ERECT AND MAINTAIN, AT NO COST TO THE CONTRACT, DIRECTIONAL AND INFORMATIONAL SIGNS FOR THE CONTRACTOR'S ACCESS ROUTES AT THE EXISTING CONSTRUCTION ENTRANCES AND FOR THE CONTRACTOR'S ROUTE WITHIN THE AIRPORT OPERATIONS AREA, AS NOTED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER. WHERE CONTRACTOR EQUIPMENT IS OPERATING WITHIN ACTIVE AIRCRAFT OPERATIONS AREAS, RADIO-EQUIPPED FLAGGERS SHALL BE FURNISHED BY THE CONTRACTOR. CONTINUOUS PAVEMENT SWEEPING SHALL BE FURNISHED TO REMOVE DEBRIS FROM ACTIVE AIRCRAFT MOVEMENT PATHS. THE COST OF TRAFFIC CONTROL/FLAGGERS AND PAVEMENT SWEEPING SHALL BE INCIDENTAL TO THE CONTRACT.

AIRFIELD OPERATIONAL SAFETY DURING CONSTRUCTION

THE CONTRACTOR SHALL NOT HAVE ACCESS TO ANY PART OF THE ACTIVE AIRFIELD (RUNWAYS, TAXIWAYS OR APRONS) FOR ANY EQUIPMENT OR PERSONNEL WITHOUT THE APPROVAL OF THE RESIDENT ENGINEER AND THE AIRPORT OWNER. ACTIVITIES WITHIN THE AIRPORT OPERATIONS AREA (AOA) ARE SUBJECT TO FEDERAL ACCESS CONTROL. BECAUSE OF THE HIGH REQUIREMENTS FOR AIRPORT SECURITY AND SAFETY, THE FOLLOWING REQUIREMENTS MUST BE ADHERED TO:

- ALL EMPLOYEES OF THE CONTRACTOR SHALL PARK THEIR PERSONAL VEHICLES IN THE DESIGNATED EQUIPMENT PARKING AND STORAGE AREA. EACH PERSON OR VEHICLE ENTERING THE CONTRACTOR AREA SHALL DO SO IN ACCORDANCE WITH THE POLICIES AND PROCEDURES OF THE AIRPORT OWNER. THE CONTRACTOR WILL TRANSPORT THE WORKERS FROM THE PARKING AREAS TO THE WORK AREA. ONLY CONTRACTOR VEHICLES WILL BE ALLOWED OUTSIDE OF THE PROPOSED EQUIPMENT STORAGE AND PARKING AREAS.
- SHOULD ANY CONTRACTOR PERSONNEL BE IDENTIFIED AS NONCOMPLIANT WITH ANY VEHICLE DRIVING SAFETY REQUIREMENTS IN THIS PROJECT SAFETY PLAN OR IN THE AIRPORT VEHICLE OPERATIONS REGULATIONS, SUCH DRIVERS SHALL BE PENALIZED BY REVOISSION OF THEIR ON-AIRPORT DRIVING PRIVILEGES, AND THEIR ACCESS TO THE CONSTRUCTION LIMIT AREA WHEN OPERATING VEHICLES SHALL BE REVOKED.
- THE CONTRACTOR WILL BE REQUIRED TO BE IN CONTACT WITH AIRPORT OPERATIONS. THIS WILL KEEP THE CONTRACTOR IN CONTACT WITH AIRPORT PERSONNEL AND ENABLE THE AIRPORT PERSONNEL TO IMMEDIATELY CONTACT THE CONTRACTOR IN CASE OF AN AERONAUTICAL EMERGENCY THAT WOULD REQUIRE ACTION BY THE CONTRACTOR AND/OR HIS PERSONNEL.

THE CONTRACTOR SHALL REMAIN WITHIN THE CONSTRUCTION LIMITS LINE SHOWN IN THE PLANS. WHEN OUTSIDE THESE LIMITS, ALL CONTRACTOR ACTIVITIES SHALL REMAIN MORE THAN 200 FEET FROM THE CENTERLINE AND 300 FEET FROM THE END OF ACTIVE RUNWAY 9-27, AND 250 FEET FROM THE CENTERLINE AND 1,000 FEET FROM THE END OF ACTIVE RUNWAY 2-20. FOR WORK NEAR TAXIWAYS AND APRONS, THE CONTRACTOR'S PERSONNEL AND EQUIPMENT MUST REMAIN AT LEAST 44.5 FEET FROM CENTERLINE OF ACTIVE CATEGORY I TAXIWAYS, 65.5 FEET FROM ACTIVE CATEGORY II TAXIWAYS AND 93 FEET FROM ACTIVE CATEGORY III TAXIWAYS, AND TEN (10) FEET FROM ACTIVE APRONS. WHEN CONSTRUCTION OPERATIONS MUST BE CONDUCTED WITHIN THESE SEPARATIONS, THE PAVEMENT MUST BE CLOSED TO AIRCRAFT ACTIVITY BY THE CONTRACTOR BY PROVIDING TEMPORARY BARRICADES AS SHOWN IN THE PLANS, AND IN THE CASE RUNWAY PAVEMENTS, CLOSED RUNWAY MARKERS.

NO CLOSURE OF ANY RUNWAY WILL BE PERMITTED FOR THIS PROJECT, EXCEPT AS SHOWN IN THE PHASING PLANS.

THE CONTRACTOR SHALL KEEP ALL OF HIS EQUIPMENT AND PERSONNEL AT LEAST 15 FEET FROM THE EDGE OF ANY ACTIVE ROADWAY OR AUTO PARKING PAVEMENT. WHEN HIS ACTIVITIES REQUIRE WORKING WITHIN 15 FEET OF THE ROAD/PAVEMENT EDGE, THE CONTRACTOR SHALL PROVIDE FOR TRAFFIC CONTROL IN ACCORDANCE WITH IDOT SPECIFICATIONS (HIGHWAY STANDARDS).

OPEN TRENCHES, EXCAVATIONS AND STOCKPILED MATERIAL AT THE CONSTRUCTION SITE SHALL BE DELINEATED WITH THE USE OF BARRICADES DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS. NO OPEN TRENCHES SHALL BE ALLOWED WITHIN THE RUNWAY SAFETY AREA (RSA) OR THE TAXIWAY SAFETY AREA (TSA) WHEN THE RUNWAY OR TAXIWAY IS OPEN TO AIR TRAFFIC (INCLUDING OVERNIGHT). THE RSA IS DEFINED AS 75 FEET FROM THE CENTERLINE AND 300 FEET FROM THE END OF RUNWAY 9-27 (OR THE TEMPORARY THRESHOLD POINT, WHEN THE RUNWAY HAS BEEN SHORTENED), AND 250 FEET FROM THE CENTERLINE AND 1,000 FEET FROM THE END OF RUNWAY 2-20. THE TSA IS MEASURED AT 24.5 FEET FROM THE CATEGORY I TAXIWAY CENTERLINE, AND 39.5 FEET FROM THE CATEGORY II TAXIWAY CENTERLINE, AND 59 FEET FROM THE CATEGORY III TAXIWAY CENTERLINE. NO VERTICAL DROP OF GREATER THAN 3-INCHES IN HEIGHT FROM PAVEMENT EDGE TO EARTH GRADE OR EARTH GRADE TO EARTH GRADE WITHIN THE RSA OR TSA WILL BE PERMITTED WHEN THE RUNWAY OR TAXIWAY IS OPEN TO AIR TRAFFIC. THE CONTRACTOR WILL HAVE STEEL PLATES ON-SITE TO ALLOW FOR THE RAPID COVERING OF TRENCHES OR EARTH DROPS IN THE EVENT OF UNEXPECTED WORK STOPPAGES FOR WEATHER OR AIRPORT EMERGENCIES.

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 PHASING PLAN. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THE CONSTRUCTION ENTRANCES IN GOOD CONDITION. THE COST OF MAINTAINING THE CONSTRUCTION ENTRANCE AND CONTRACTOR AREAS IS TO BE INCIDENTAL TO THE CONTRACT. THE CONTRACTOR SHALL PROTECT ALL EXISTING PAVEMENT EDGES FROM DAMAGE FROM CONSTRUCTION EQUIPMENT AND HAUL VEHICLES.

AT NO TIME SHALL THE CONTRACTOR CONDUCT ANY ACTIVITIES OR OPERATE OR PARK EQUIPMENT SO AS TO OBSTRUCT ACTIVE PART 77 AIRPORT IMAGINARY SURFACES OR THE RUNWAY PROTECTION ZONES (RPZ) AS DELINEATED IN THE PLANS. CONTRACTOR'S EQUIPMENT SHALL EXTEND NO HIGHER THAN 25 FEET. CRANES SHALL NOT BE USED DURING INSTRUMENT WEATHER CONDITIONS OR AT NIGHT. CRANES SHALL BE LOWERED WHEN NOT IN USE.

BEFORE REOPENING TEMPORARILY CLOSED PAVEMENTS, 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 WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE APPROVED PROJECT SAFETY PLAN, ISSUED BY THE ILLINOIS DIVISION OF AERONAUTICS.

FAILURE TO USE THESE PRESCRIBED PROCEDURES OR ADHERE TO THE SAFETY REQUIREMENTS WILL RESULT IN THE SUSPENSION OF WORK.

NOTIFICATIONS BY CONTRACTOR

THE CONTRACTOR MUST NOTIFY THE RESIDENT ENGINEER AND THE AIRPORT OWNER 3 DAYS IN ADVANCE OF ANY REQUIRED PARTIAL OR COMPLETE CLOSING OF ANY RUNWAY, TAXIWAY OR APRON. 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 3 DAYS 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

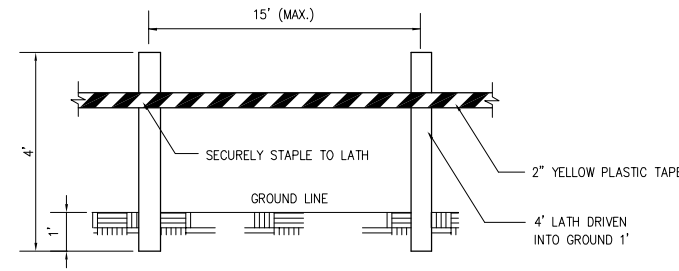
CONTRACTOR'S ACCESS TO THE PROJECT WHEN ON AIRPORT PROPERTY IS SHOWN IN THE PLANS. CONTRACTOR'S ACCESS TO THE AIRPORT ITSELF IS TO BE PROVIDED BY PUBLIC RIGHTS-OF-WAY. THE CONTRACTOR IS TO SECURE ALL NECESSARY PERMITS FOR THE USE OF ANY PUBLIC RIGHTS-OF-WAY AND IS TO MAINTAIN TRAFFIC ON THESE PUBLIC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

THE CONTRACTOR IS TO PROVIDE TEMPORARY CONSTRUCTION ROADS WITHIN THE CONSTRUCTION LIMIT LINES AS MAY BE REQUIRED BY HIS ACTIVITIES. HEAVY VEHICLES SHALL NOT CROSS EXISTING PAVEMENT SURFACES EXCEPT AS APPROVED BY THE AIRPORT OWNER AND THE RESIDENT ENGINEER. 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 OWNER AND THE RESIDENT ENGINEER. FOR HAUL ROUTES MADE BY CONTRACTOR THROUGH GRASSED AREAS, CONTRACTOR SHALL GRADE, LEVEL, TOPSOIL, SEED AND MULCH AT THE END OF THE PROJECT, COST INCIDENTAL TO THE CONTRACT.

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

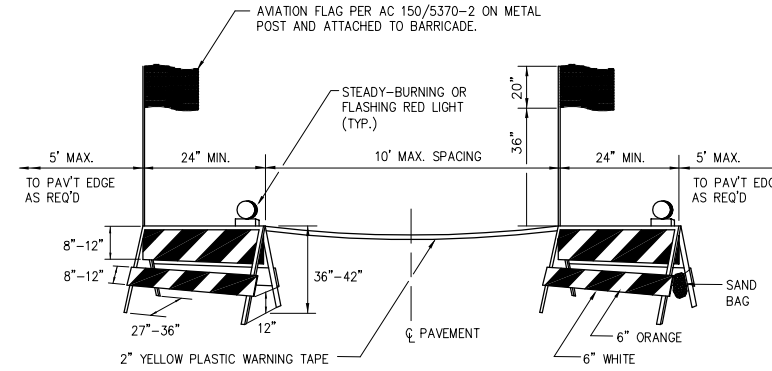
UTILITY OUTAGES AND SHUTDOWNS

THE CONTRACTOR SHALL PROVIDE 3 DAYS 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.



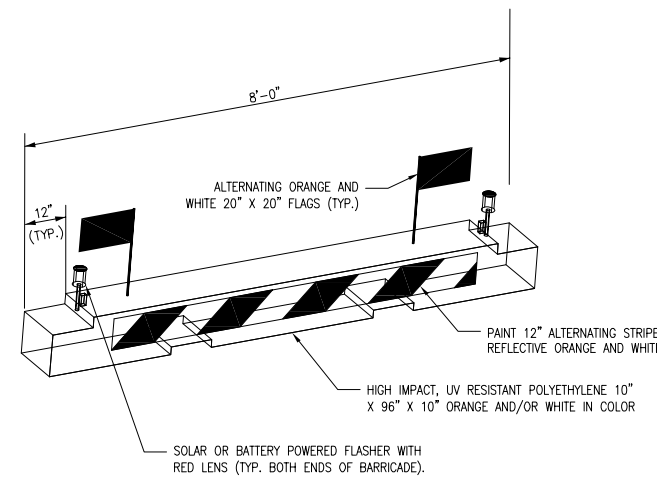
MATERIALS ARE TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION. COST OF MATERIALS, INSTALLATION, RELOCATION AND MAINTENANCE OF LATHING AND WARNING TAPE IS TO BE INCIDENTAL TO THE CONTRACT.

**DETAIL A
LATHING AND WARNING TAPE**



BARRICADES ARE TO BE OF IDOT TYPE II. 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
STANDARD PAVEMENT BARRICADES**



NOTES:

1. INTENDED USE FOR THE FOLLOWING:
 - MARKING/LIGHTING OF TEMPORARY HAZARDS WITHIN THE AOA.
 - LONGTERM CLOSURE OF AIRCRAFT ROUTES.
2. INSTALL AT 12" CENTER TO CENTER SPACING ALONG FULL WIDTH OF PAVEMENT.
3. USE IN AREAS SUBJECT TO JET BLAST.
4. BARRICADE SHALL BE EQUIPPED WITH ALTERNATING ORANGE AND WHITE 20" X 20" FLAGS.
5. BARRICADES SHALL BE WATER-FILLED AND MODULAR TO ASSEMBLE/DISASSEMBLE AND NEST FOR COMPACT STORAGE.
6. CONTRACTOR MAY SUBMIT ALTERNATIVE BARRICADE FOR APPROVAL BY ENGINEER. ALTERNATIVE MUST MEET MINIMUM REQUIREMENTS OF FAA AC 150/5370-2F (LATEST EDITION).
7. FURNISHING, INSTALLING, MAINTAINING AND REMOVING BARRICADES SHALL BE INCIDENTAL TO THE CONTRACT.
8. CONTRACTOR SHALL MAINTAIN THE BARRICADES. ANY DAMAGED BARRICADES SHALL BE REPLACED AND NEW BARRICADES PROVIDED.

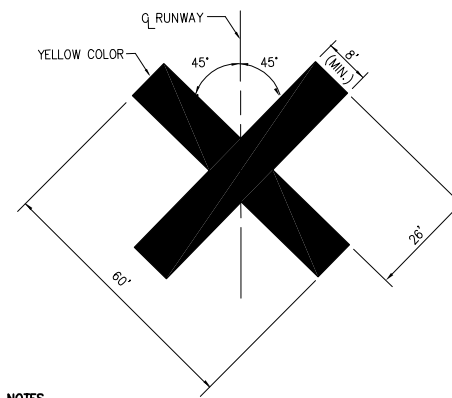
**DETAIL C
LOW PROFILE AIRCRAFT BARRICADE DETAIL**



NOTES

1. LIGHTED MARKER SHALL BE FURNISHED BY THE OWNER.
2. THE LIGHTED MARKERS SHALL BE PLACED OVER THE RUNWAY NUMERALS AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.
3. LIGHTED MARKERS SHALL BE SECURED FROM WIND EFFECTS BY THE CONTRACTOR AS RECOMMENDED BY THE MANUFACTURER.
4. THE LIGHTED MARKERS SHALL BE IN PLACE AND OPERATING WHENEVER THE RUNWAY IS CLOSED AND REMOVED WHEN THE RUNWAY IS RE-OPENED.
5. SHOULD IT BE NECESSARY FOR THE CONTRACTOR TO TEMPORARILY REMOVE THE LIGHTED MARKERS FROM SERVICE, SUCH INTERRUPTION SHALL BE DURING DAYLIGHT CONDITIONS ONLY. THE LIGHTED MARKER SHALL BE REPLACED WITH OWNER-SUPPLIED VINYL MARKERS, WHICH SHALL BE PLACED, SECURED AND REMOVED BY THE CONTRACTOR AS SHOWN IN THE DETAIL, THIS SHEET. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT.

LIGHTED RUNWAY CLOSURE MARKER



NOTES

1. VINYL MARKERS SHALL BE FURNISHED BY THE OWNER. THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS FOR INSTALLING, RELOCATING AND MAINTAINING THE MARKERS, WHOSE COST SHALL BE INCIDENTAL TO THE CONTRACT.
2. CONTRACTOR SHALL LOCATE THE MARKERS ON TOP OF THE RUNWAY NUMERALS DURING CLOSURE OF THE RUNWAY.
3. MARKERS TO BE SECURED BY CONTRACTOR AS RECOMMENDED BY THE MANUFACTURER.

**VINYL RUNWAY CLOSURE MARKER
(DAYLIGHT USE ONLY)**

**DETAIL D
RUNWAY CLOSURE MARKERS**

DETAILS SHOWN ARE NOT TO SCALE



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Illinois Licensed
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1 Executive Terminal
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phone: 815.838.9497
fax: 815.838.9524

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016

PROJECT NO: 16A0012

CAD FILE: 05-SAFETYNOTES.DWG

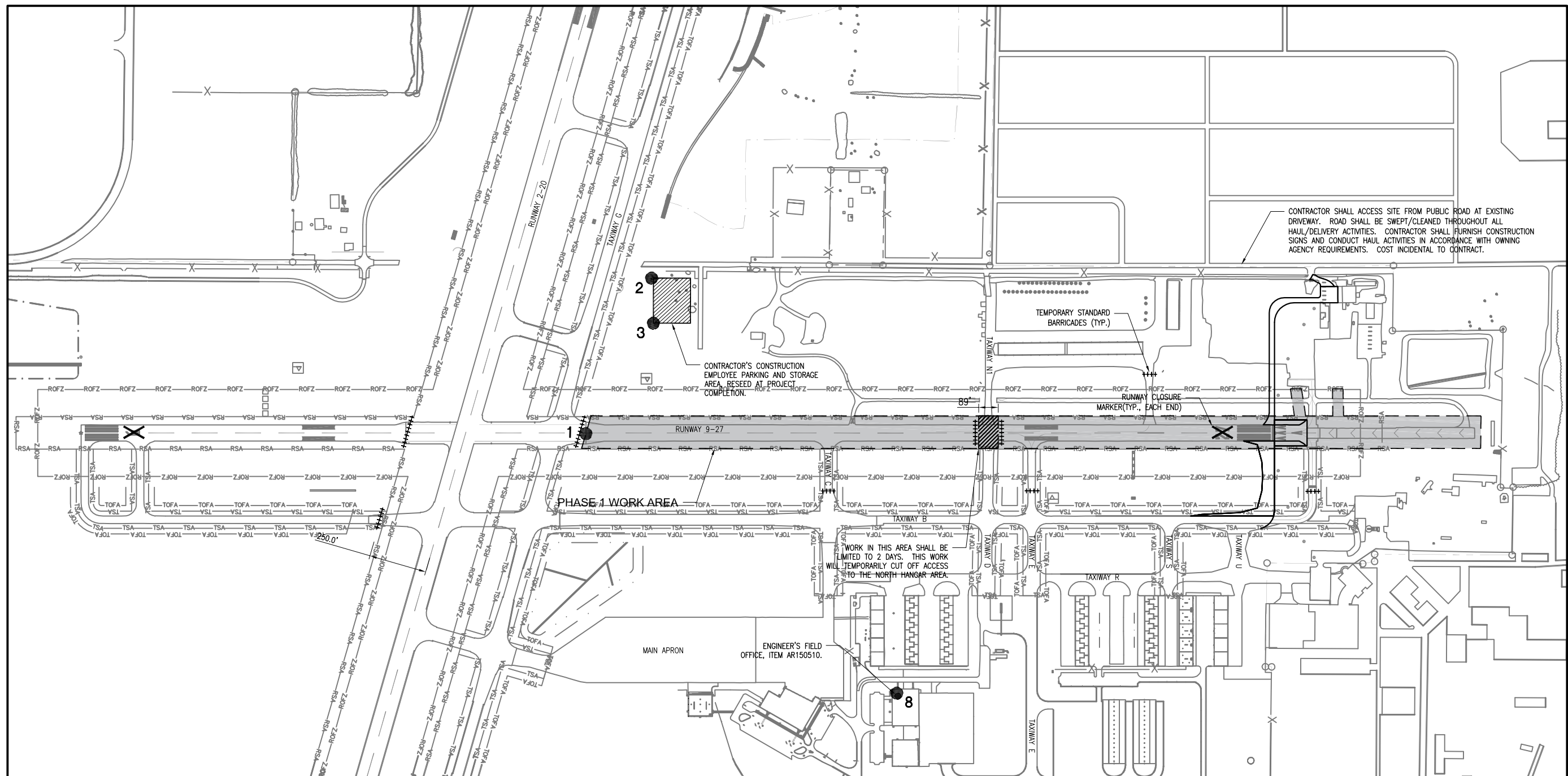
DESIGN BY: LDH 6/2/16

DRAWN BY: LDH 6/2/16

REVIEWED BY: SJM 6/6/16

SHEET TITLE

CONSTRUCTION SAFETY NOTES AND DETAILS



CONTRACTOR SHALL ACCESS SITE FROM PUBLIC ROAD AT EXISTING DRIVEWAY. ROAD SHALL BE SWEEP/CLEANED THROUGHOUT ALL HAUL/DELIVERY ACTIVITIES. CONTRACTOR SHALL FURNISH CONSTRUCTION SIGNS AND CONDUCT HAUL ACTIVITIES IN ACCORDANCE WITH OWNING AGENCY REQUIREMENTS. COST INCIDENTAL TO CONTRACT.

CONTRACTOR'S CONSTRUCTION EMPLOYEE PARKING AND STORAGE AREA, RESEED AT PROJECT COMPLETION.

TEMPORARY STANDARD BARRICADES (TYP.)

RUNWAY CLOSURE MARKER (TYP., EACH END)

PHASE 1 WORK AREA

WORK IN THIS AREA SHALL BE LIMITED TO 2 DAYS. THIS WORK WILL TEMPORARILY CUT OFF ACCESS TO THE NORTH HANGAR AREA.

ENGINEER'S FIELD OFFICE, ITEM AR150510.

PHASE 1

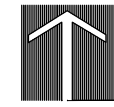
NOTES

- ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 25 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER (SEE SPECIAL PROVISIONS).
- CONTRACTOR'S EQUIPMENT MAY NOT DISRUPT FLIGHT OPERATIONS ON RUNWAY 2-20 AT ANY TIME DURING PHASE 1.
- RUNWAY 9-27 WILL BE CLOSED DURING PHASE 1.**
- TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
- SEE CONSTRUCTION SITE PLAN ON SHEET 3 AND 4 AND SAFETY NOTES ON SHEET 5.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 1:

- ESTABLISH RELOCATED RUNWAY END, INCLUDING BLACKOUT OF EXISTING MARKING, TEMPORARY WATERBORNE AND FABRIC MARKING, LIGHT MODIFICATIONS AND INSTALLATIONS.
- PAVEMENT REMOVAL WITHIN PHASE 1 LIMITS.
- INSTALL STORM SEWER WITHIN PHASE 1 LIMITS.

PHASE 1
RUNWAY 9-27 CLOSED DURING THIS PHASE. ALL RUNWAYS 9 AND 27 INSTRUMENTS PROCEDURES SUSPENDED.



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
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DESIGN BY: LDH 3/24/16
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REVIEWED BY: SJM 6/6/16

SHEET TITLE

PHASING PLAN - PHASE 1

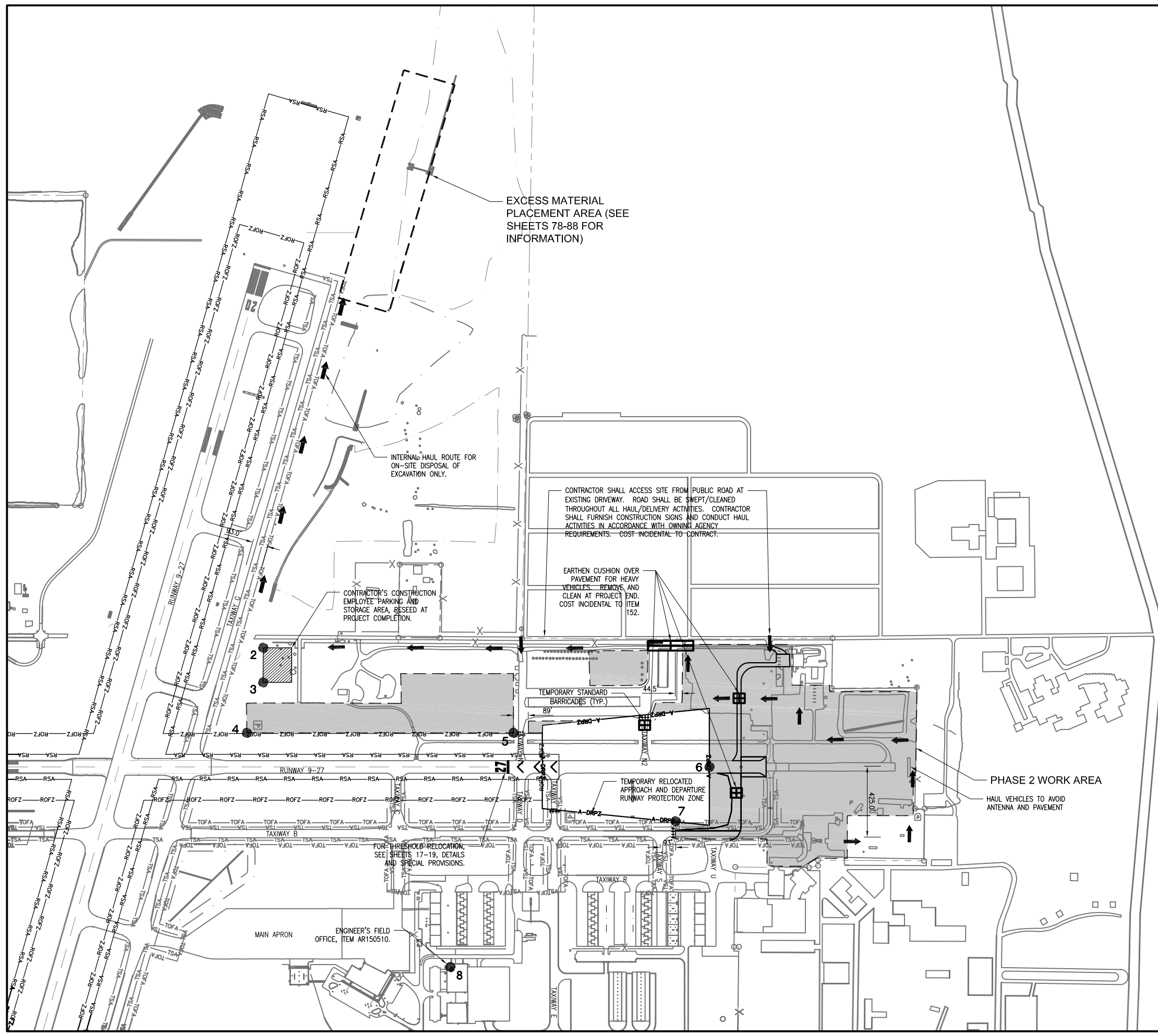
PHASE 2

NOTES

1. ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
2. ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 25 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER (SEE SPECIAL PROVISIONS).
3. CONTRACTOR'S EQUIPMENT MAY NOT DISRUPT FLIGHT OPERATIONS ON RUNWAY 2-20 OR SHORTENED 9-27 AT ANY TIME DURING PHASE 2.
4. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
5. SEE CONSTRUCTION SITE PLAN ON SHEET 3 AND 4 AND SAFETY NOTES ON SHEET 5.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 2:

1. PAVEMENT REMOVAL WITHIN PHASE 2 LIMITS.
2. INSTALL STORM SEWER WITHIN PHASE 2 LIMITS.
3. INSTALL PAVED DITCH WITHIN PHASE 2 LIMITS.
4. INSTALL CONCRETE CABLE BOTTOM WITHIN PHASE 2 LIMITS.
5. REMOVE FUEL TANKS AND APPURTENANCES.
6. REMOVE FOUNDATIONS.
7. ADJUST TELEPHONE PEDESTAL (BY OTHERS).
8. CAP EXISTING WELL.
9. GRADE AND LANDSCAPE WITHIN PHASE 2 LIMITS.



EXCESS MATERIAL
PLACEMENT AREA (SEE
SHEETS 78-88 FOR
INFORMATION)

INTERNAL HAUL ROUTE FOR
ON-SITE DISPOSAL OF
EXCAVATION ONLY.

CONTRACTOR SHALL ACCESS SITE FROM PUBLIC ROAD AT
EXISTING DRIVEWAY. ROAD SHALL BE SWEEP/CLEANED
THROUGHOUT ALL HAUL/DELIVERY ACTIVITIES. CONTRACTOR
SHALL FURNISH CONSTRUCTION SIGNS AND CONDUCT HAUL
ACTIVITIES IN ACCORDANCE WITH OWNING AGENCY
REQUIREMENTS. COST INCIDENTAL TO CONTRACT.

CONTRACTOR'S CONSTRUCTION
EMPLOYEE PARKING AND
STORAGE AREA, RESEED AT
PROJECT COMPLETION.

EARTHEN CUSHION OVER
PAVEMENT FOR HEAVY
VEHICLES. REMOVE AND
CLEAN AT PROJECT END.
COST INCIDENTAL TO ITEM
152.

TEMPORARY STANDARD
BARRICADES (TYP.)

TEMPORARY RELOCATED
APPROACH AND DEPARTURE
RUNWAY PROTECTION ZONE

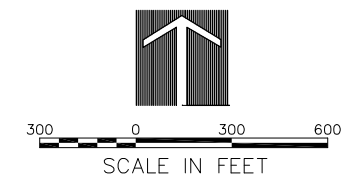
PHASE 2 WORK AREA

HAUL VEHICLES TO AVOID
ANTENNA AND PAVEMENT

FOR THRESHOLD RELOCATION,
SEE SHEETS 17-19, DETAILS
AND SPECIAL PROVISIONS.

MAIN APRON
ENGINEER'S FIELD
OFFICE, ITEM AR150510.

PHASE 2
RUNWAY 9-27 OPEN AT REDUCED
LENGTH (4,110 FEET AVAILABLE),
LIMITED TO B-II AIRCRAFT ONLY.
ACCESS TO 27 END VIA TAXIWAY
N1 AND C. ALL RUNWAYS 9 AND
27 INSTRUMENT PROCEDURES
SUSPENDED.



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RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
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DESIGN BY: LDH 3/24/16				
DRAWN BY: LDH 3/24/16				
REVIEWED BY: SJM 6/6/16				

SHEET TITLE

PHASING PLAN - PHASE 2

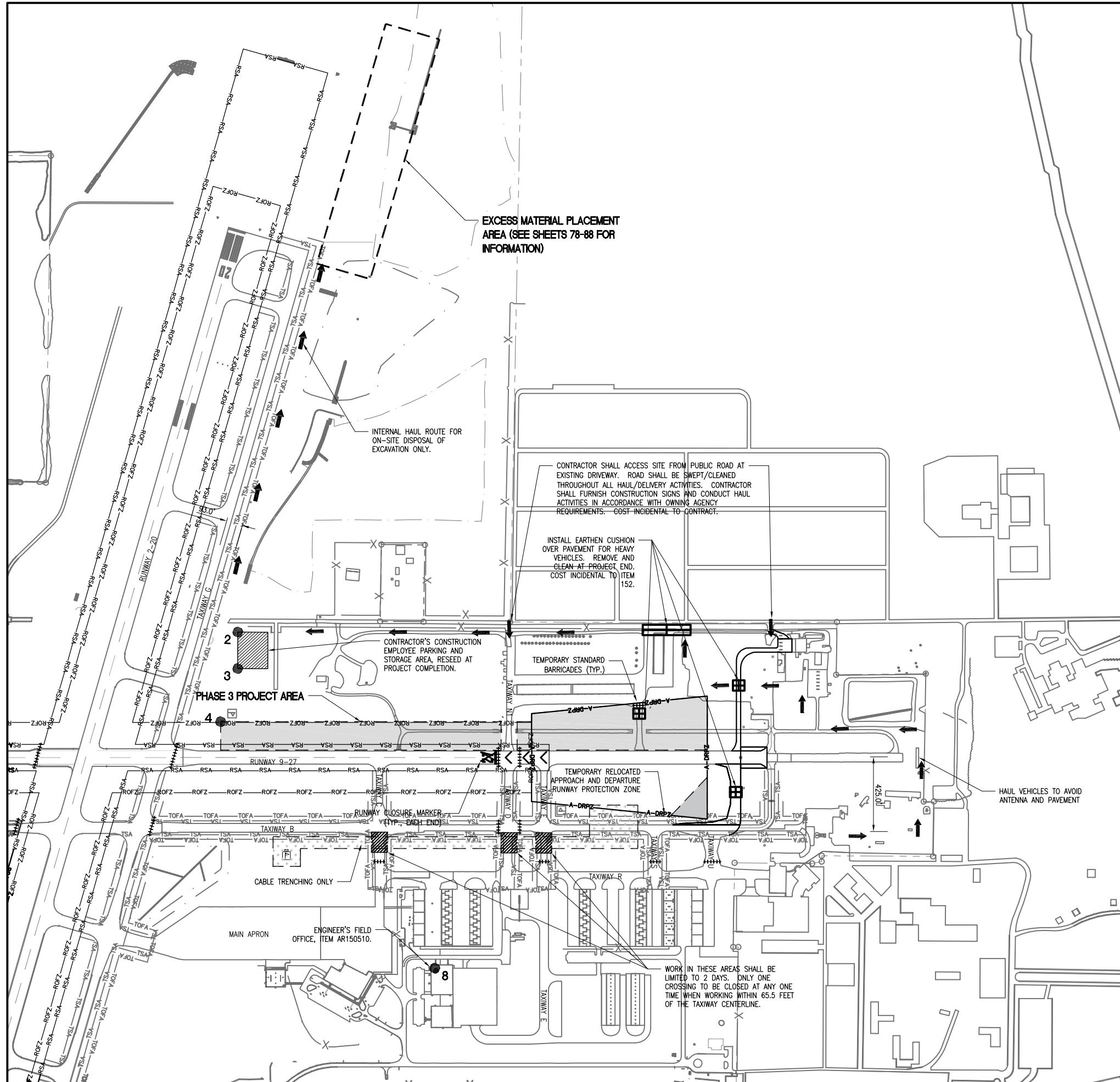
PHASE 3

NOTES

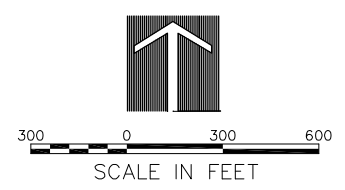
1. ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
2. ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 25 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER (SEE SPECIAL PROVISIONS).
3. CONTRACTOR'S EQUIPMENT MAY NOT DISRUPT FLIGHT OPERATIONS ON RUNWAY 2-20 AT ANY TIME DURING PHASE 3.
4. **RUNWAY 9-27 WILL BE CLOSED DURING PHASE 3.**
5. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
6. SEE CONSTRUCTION SITE PLAN ON SHEET 3 AND 4 AND SAFETY NOTES ON SHEET 5.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 3:

1. PAVEMENT REMOVAL WITHIN PHASE 3 LIMITS.
2. INSTALL STORM SEWER WITHIN PHASE 3 LIMITS.
3. INSTALL WIND CONE AND ASSOCIATED CABLING.
4. GRADE AND LANDSCAPE WITHIN PHASE 3 LIMITS.



PHASE 3
RUNWAY 9-27 CLOSED DURING THIS PHASE. ALL RUNWAYS 9 AND 27 INSTRUMENT PROCEDURES SUSPENDED.



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

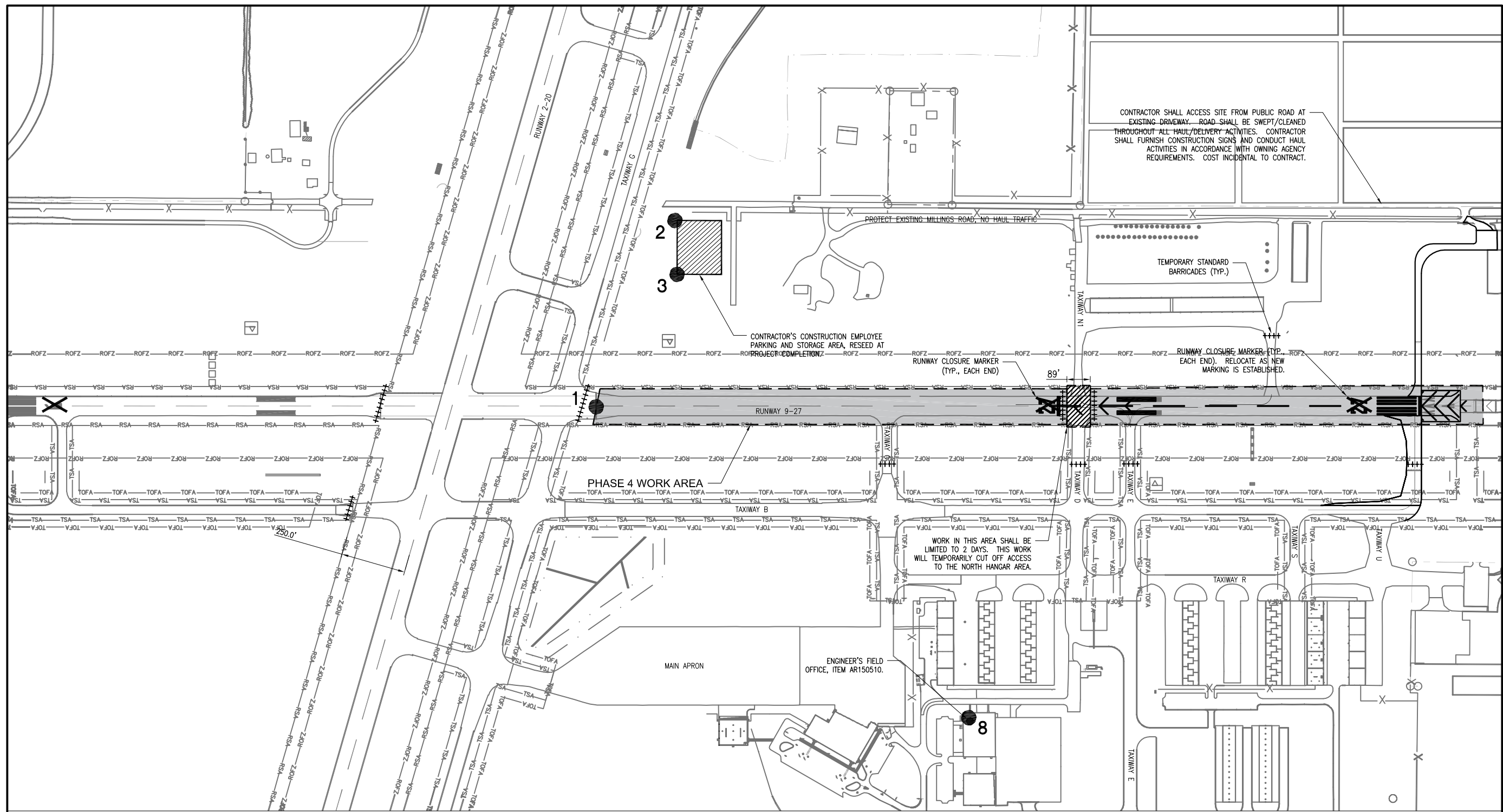
IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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		DES	DWN	REV

SHEET TITLE

PHASING PLAN - PHASE 3



CONTRACTOR SHALL ACCESS SITE FROM PUBLIC ROAD AT EXISTING DRIVEWAY. ROAD SHALL BE SWEEP/CLEANED THROUGHOUT ALL HAUL/DELIVERY ACTIVITIES. CONTRACTOR SHALL FURNISH CONSTRUCTION SIGNS AND CONDUCT HAUL ACTIVITIES IN ACCORDANCE WITH OWNING AGENCY REQUIREMENTS. COST INCIDENTAL TO CONTRACT.

CONTRACTOR'S CONSTRUCTION EMPLOYEE PARKING AND STORAGE AREA, RESEED AT PROJECT COMPLETION.

RUNWAY CLOSURE MARKER (TYP., EACH END)

TEMPORARY STANDARD BARRICADES (TYP.)

RUNWAY CLOSURE MARKER (TYP., EACH END). RELOCATE AS NEW MARKING IS ESTABLISHED.

PHASE 4 WORK AREA

WORK IN THIS AREA SHALL BE LIMITED TO 2 DAYS. THIS WORK WILL TEMPORARILY CUT OFF ACCESS TO THE NORTH HANGAR AREA.

MAIN APRON

ENGINEER'S FIELD OFFICE, ITEM AR150510.

PHASE 4

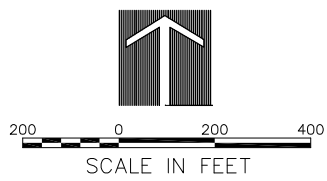
NOTES

- ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 25 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER (SEE SPECIAL PROVISIONS).
- CONTRACTOR'S EQUIPMENT MAY NOT DISRUPT FLIGHT OPERATIONS ON RUNWAY 2-20 AT ANY TIME DURING PHASE 4.
- RUNWAY 9-27 WILL BE CLOSED DURING PHASE 4.**
- TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
- SEE CONSTRUCTION SITE PLAN ON SHEET 3 AND 4 AND SAFETY NOTES ON SHEET 5.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 4:

- INSTALL MARKING AND ELECTRICAL REQUIRED TO REESTABLISH THE PERMANENT RUNWAY END.
- REMOVE ALL TEMPORARY BARRICADES AND CLOSURES.

PHASE 4
RUNWAY 9-27 CLOSED DURING THIS PHASE. ALL RUNWAYS 9 AND 27 INSTRUMENT PROCEDURES SUSPENDED.



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

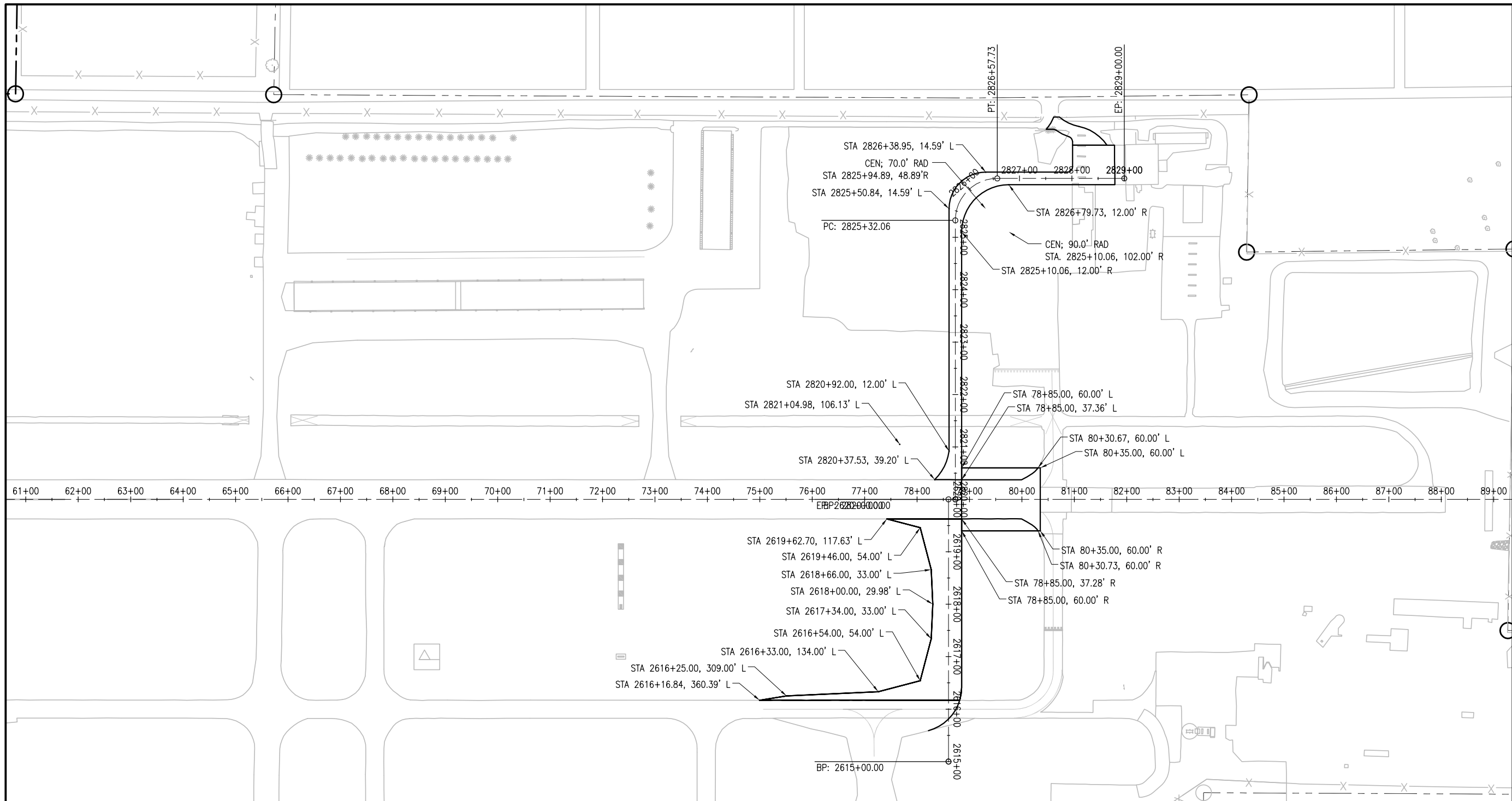
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		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 09-PHASING PLAN.DWG
DESIGN BY: LDH 3/24/16
DRAWN BY: LDH 3/24/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

PHASING PLAN - PHASE 4



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

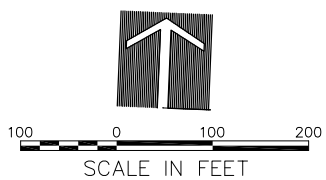
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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CAD FILE: 10-ALIGN.DWG
DESIGN BY: LDH 5/3/16
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REVIEWED BY: SJM 6/6/16

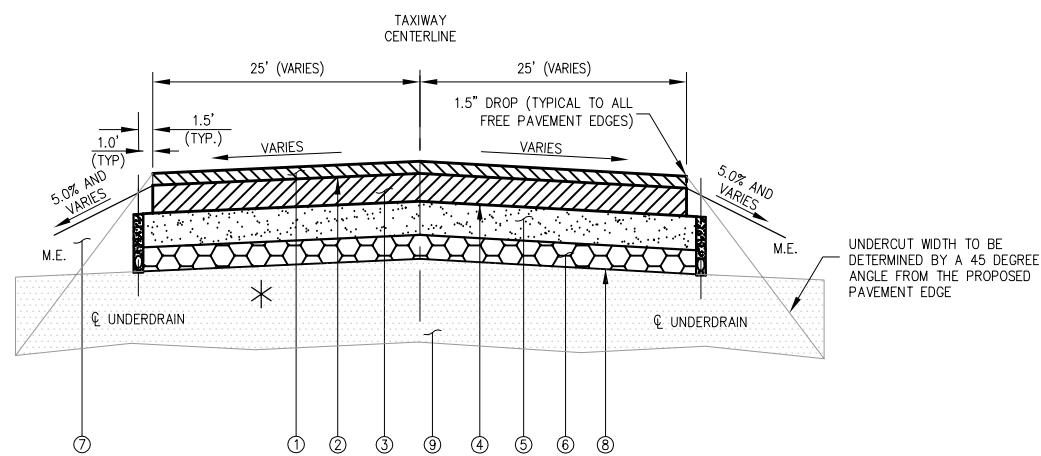
SHEET TITLE

ALIGNMENT DATA TABLE AND PAVEMENT LAYOUT

Alignment	Description	Station	Project Coordinates	
			Northing	Easting
Existing Runway 9-27	Beginning of Alignment	50+00	1799955.5099	1049457.4587
	End of Alignment	89+00	1800120.4741	1053353.9683
Exiting Runway 2-20	Beginning of Alignment	162+00	1802665.9589	1049279.1452
	End of Alignment	180+00	1804415.6684	1049701.6576
Proposed Taxiway F	Beginning of Alignment	2615+00	1799576.9312	1052336.0483
	End of Alignment	2620+00	1800076.4837	1052314.8991
Proposed Service Road	Beginning of Alignment	2820+00	1800077.0336	1052327.8874
	PC	2825+32.06	1800608.6189	1052305.3820
	Center (80' Radius)	2825+32.06	1800612.0028	1052385.3104
	PT	2826+57.73	1800691.9312	1052381.9266
	End of Alignment	2829+00	1800702.1791	1052623.9845



FOR EXCESS MATERIAL PLACEMENT AREA, SEE SHEETS 78-88.



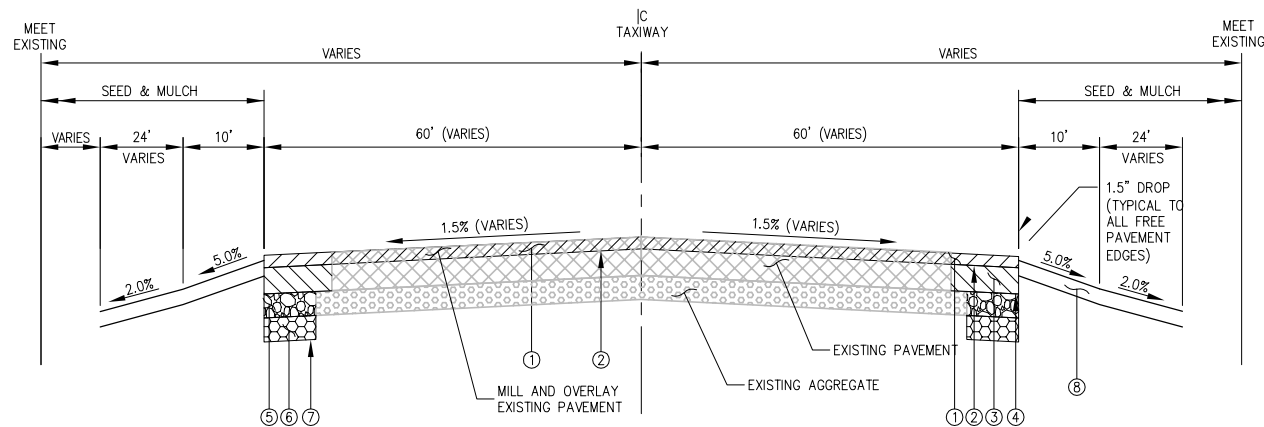
TYPICAL SECTION - TAXIWAY F

(SECTION SHOWN LOOKING NORTH)

- ① PROPOSED 2.0 INCH BITUMINOUS SURFACE COURSE, ITEM AR401613
- ② PROPOSED BITUMINOUS TACK COAT, ITEM AR603510
- ③ PROPOSED 4.5 INCH BITUMINOUS BASE COURSE, ITEM AR403613
- ④ PROPOSED BITUMINOUS PRIME COAT, ITEM AR602510
- ⑤ PROPOSED 12 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209612
- ⑥ PROPOSED 6 INCH GRANULAR DRAINAGE SUBBASE, ITEM AR800927
- ⑦ PROPOSED 4 INCH TOPSOIL, ITEM AR905510
- ⑧ PROPOSED SEPARATION FABRIC, ITEM AR156513
- ⑨ PROPOSED UNDERCUT (ITEM AR152410) AND BACKFILL (ITEM AR800926).

* BITUMINOUS TACK COAT SHALL BE APPLIED BETWEEN EACH LIFT OF BITUMINOUS BASE COURSE AND BETWEEN THE BITUMINOUS BASE COURSE TOP LIFT AND THE BITUMINOUS SURFACE COURSE - NO EXCEPTIONS.

BITUMINOUS PRIME AND BITUMINOUS TACK COAT SHALL BE REQUIRED AS SPECIFIED. SEE SPECIAL PROVISIONS AND STANDARD PROVISIONS.



NOTE:
FOR ADDITIONAL LANDSCAPING INFORMATION, SEE LANDSCAPING PLAN.

BLAST PAD WIDENING AND OVERLAY TYPICAL SECTION

- ① PROPOSED 2.0 INCH BITUMINOUS SURFACE COURSE, ITEM AR401613.
- ② PROPOSED BITUMINOUS TACK COAT, ITEM AR603510.
- ③ PROPOSED 4.5 INCH BITUMINOUS BASE COURSE, ITEM AR403613.
- ④ PROPOSED BITUMINOUS PRIME COAT, ITEM AR602510.
- ⑤ PROPOSED 12 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209612.
- ⑥ PROPOSED 6 INCH GRANULAR DRAINAGE SUBBASE, ITEM AR800927.
- ⑦ PROPOSED SEPARATION FABRIC, ITEM AR156513.
- ⑧ PROPOSED TOPSOIL, ITEM AR905510. SEEDING AND MULCHING AREAS, ITEMS AR901510 AND AR908510.

REHABILITATE TAXIWAY N1, N2, & R1 AND PORTIONS OF TAXIWAY R

IDA No: LOT-4425
SBG No: 3-17-SBGP-XX

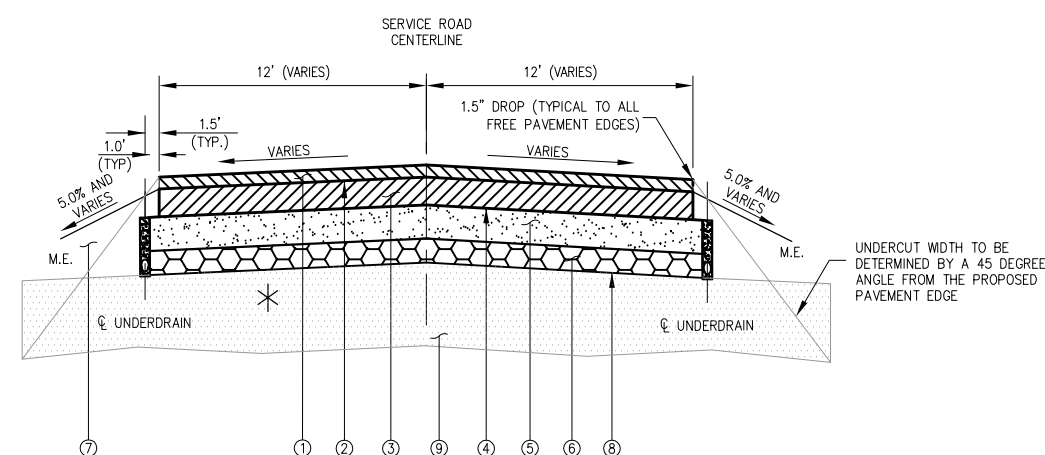
LE049

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 14A0072
CAD FILE: 11-TYPSECTION.DWG
DESIGN BY: LDH 3/30/16
DRAWN BY: LDH 3/30/16
REVIEWED BY: RMH 11/13/15

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SHEET TITLE

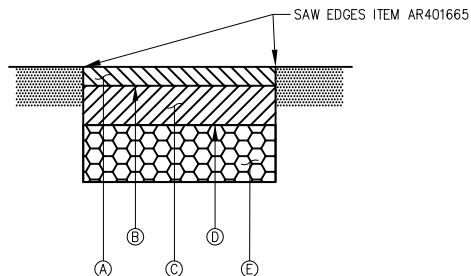
TYPICAL SECTION AND PAVEMENT DETAILS



TYPICAL SECTION - SERVICE ROAD

(SECTION SHOWN LOOKING NORTH)

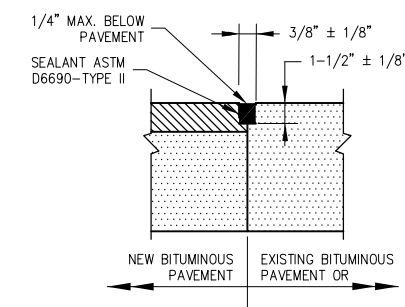
- ① PROPOSED 2.0 INCH BITUMINOUS SURFACE COURSE, ITEM AR401613
- ② PROPOSED BITUMINOUS TACK COAT, ITEM AR603510
- ③ PROPOSED 6.0 INCH BITUMINOUS BASE COURSE, ITEM AR403613
- ④ PROPOSED BITUMINOUS PRIME COAT, ITEM AR602510
- ⑤ PROPOSED 10 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209610
- ⑥ PROPOSED 6 INCH GRANULAR DRAINAGE SUBBASE, ITEM AR800927
- ⑦ PROPOSED 4 INCH TOPSOIL, ITEM AR905510
- ⑧ PROPOSED SEPARATION FABRIC, ITEM AR156513
- ⑨ PROPOSED UNDERCUT (ITEM AR152410) AND BACKFILL (ITEM AR800926).



NOTE:
ALL WORK TO BE PAID UNDER AR800958, EXCEPT SAWING PAID UNDER AR401665.

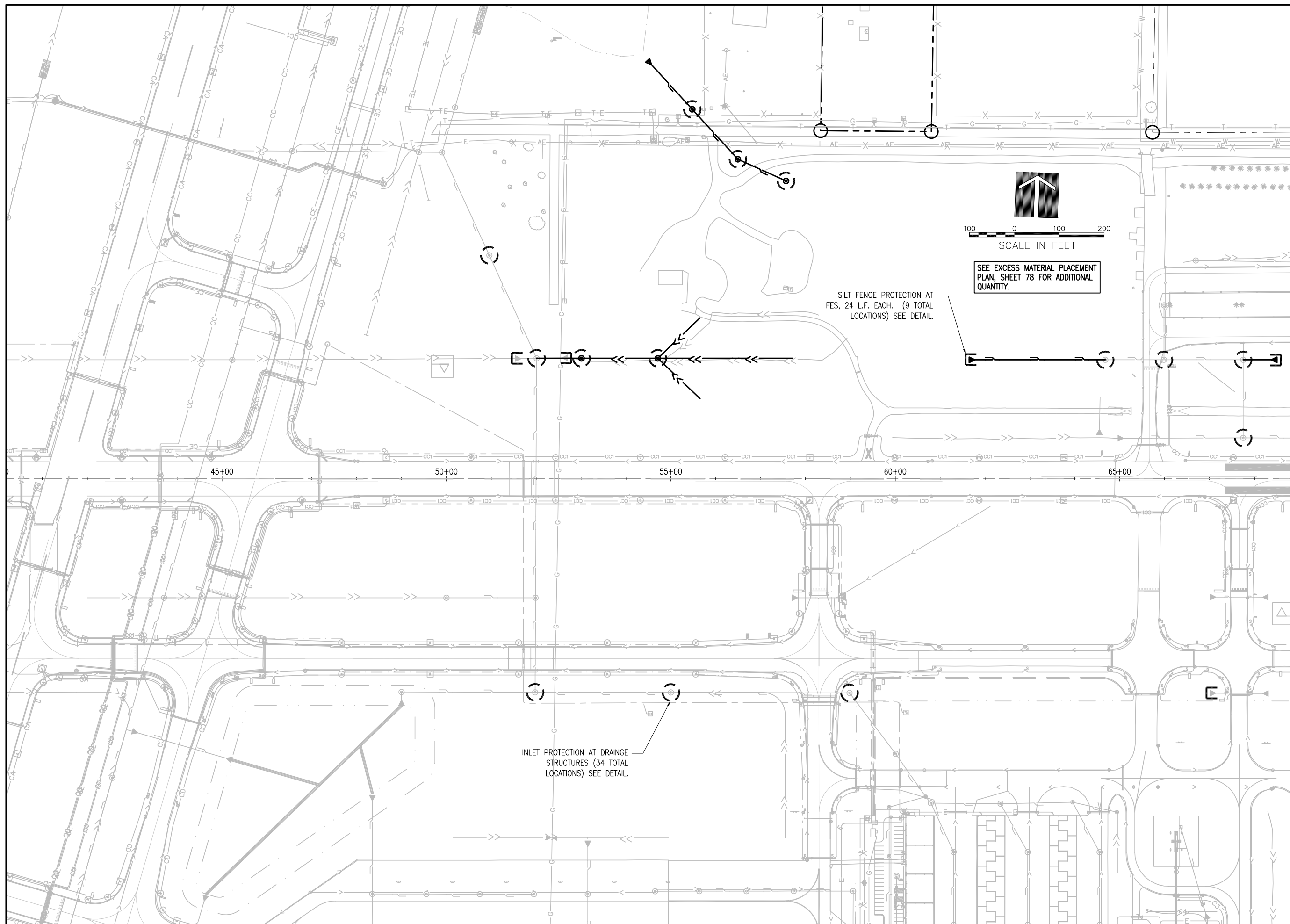
REMOVE AND REPLACE BITUMINOUS PAVEMENT

- A) PROPOSED 2 INCH BITUMINOUS SURFACE COURSE ITEM AR401613
- B) PROPOSED BITUMINOUS TACK COAT, ITEM AR603510 (BETWEEN ALL LIFTS, .15 GALLONS/SQUARE YARD)
- C) PROPOSED 2 INCH BITUMINOUS BASE COURSE ITEM AR403613
- D) PROPOSED BITUMINOUS PRIME COAT, ITEM AR602510 (.30 GALLONS/SQUARE YARD)
- E) PROPOSED 6 INCH CRUSHED AGGREGATE BASE COURSE ITEM AR209606



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

BITUMINOUS/BITUMINOUS SEAL



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
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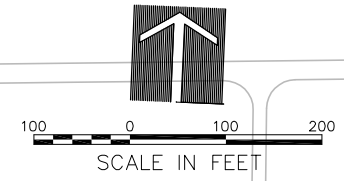
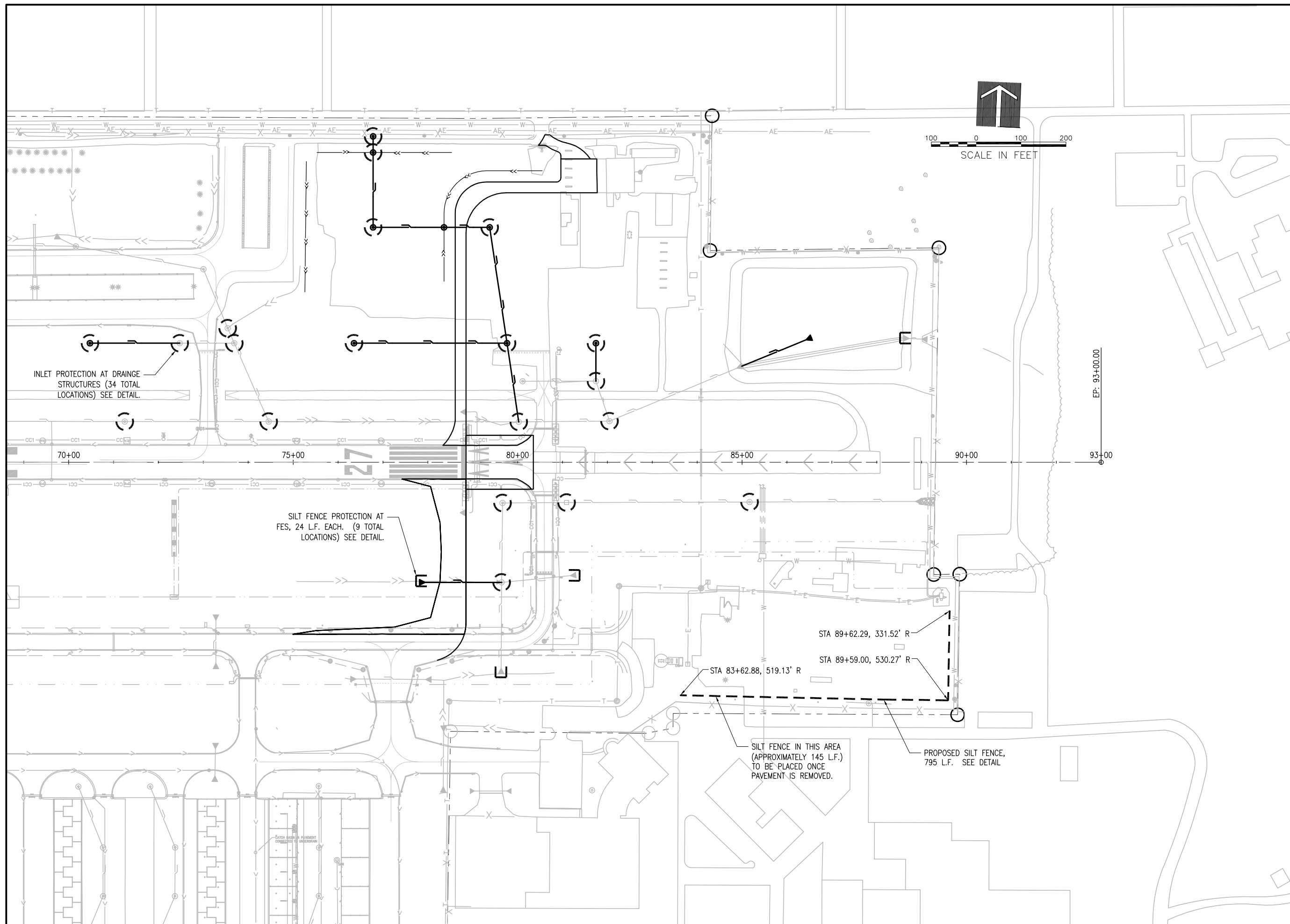
DESIGN BY: LDH 5/3/16

DRAWN BY: LDH 5/3/16

REVIEWED BY: SJM 6/6/16

SHEET TITLE

STORM WATER POLLUTION PREVENTION PLAN



EP: 93+00.00

**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016

PROJECT NO: 16A0012

CAD FILE: 13-SWPPP.DWG

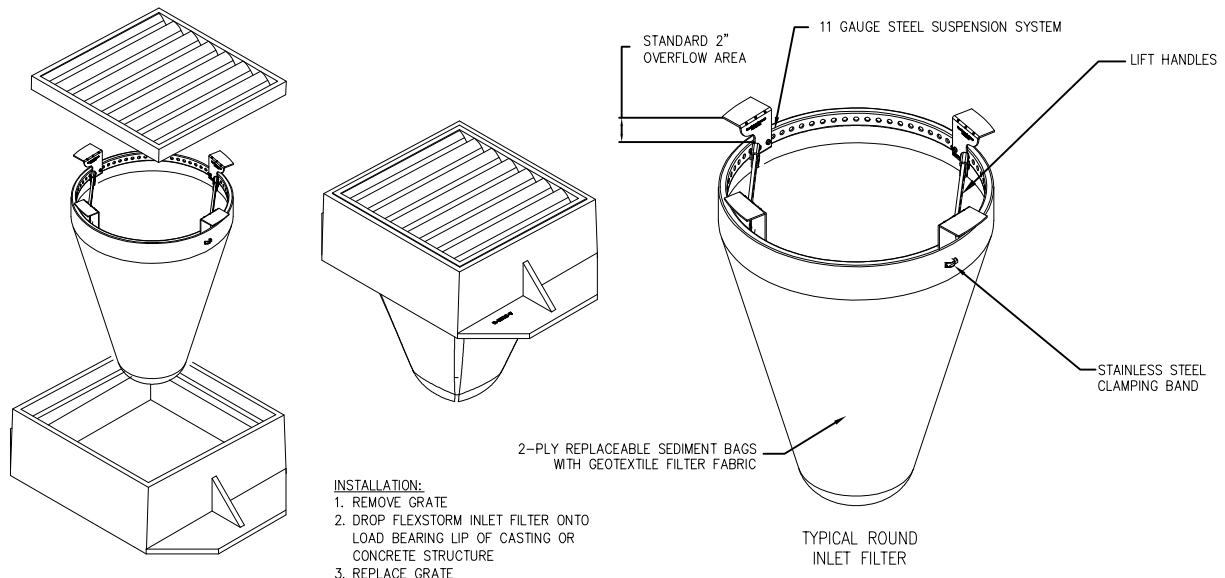
DESIGN BY: LDH 5/3/16

DRAWN BY: LDH 5/3/16

REVIEWED BY: SJM 6/6/16

SHEET TITLE

**STORM WATER
POLLUTION
PREVENTION PLAN**

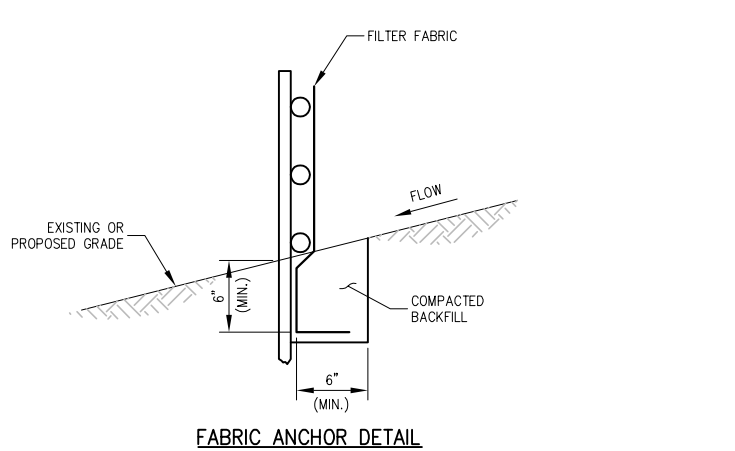


- INSTALLATION:**
1. REMOVE GRATE
 2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
 3. REPLACE GRATE

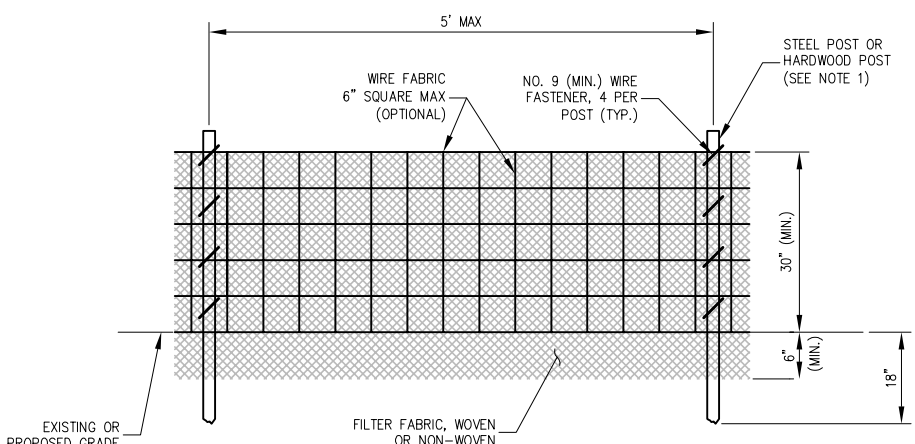
NOTES:

1. FILTER FABRIC INLET PROTECTION SHALL CONSIST OF INLET BASKET AND FABRIC INSERT, IPP FLEXSTORM BY EROTEX OR APPROVED EQUAL.
2. DEVICE SHALL BE EQUIPPED WITH AN OVERFLOW FEATURE SO DRAINAGE TO INLET IS NOT COMPLETELY BLOCKED IF DEVICE IS FULL OF SILT.
3. INLET BASKET IS AVAILABLE TO FIT ROUND, RECTANGULAR, BEEHIVE OR CURB INLET CASTINGS.
4. FILTER FABRIC SHALL HAVE AN APPARENT OPENING SIZE (AOS) OF AT LEAST 70 SIEVE FOR NONWOVEN.
5. FILTER FABRIC SHALL HAVE A GRAB TENSILE STRENGTH OF A LEAST 100 LBS FOR NON WOVEN.
6. POLYESTER OUTER REINFORCEMENT BAG SHALL HAVE FABRIC WITH A WEIGHT OF 4.55 OZ/SQYD +/- 15 PERCENT.
7. FRAME CONSTRUCTION SHALL HAVE A TENSILE STRENGTH OF AT LEAST 58,000 PSI AND A YIELD STRENGTH OF AT LEAST 36,000 PSI.
8. MAINTENANCE SHALL BE PERFORMED AS NEEDED. REMOVE SILT FROM FABRIC INSERT WHEN 50% OF CAPACITY IS REACHED. REMOVE SILT FROM INTERIOR AND EXTERIOR OF INLET DAM WHEN 50% OF DAM HEIGHT IS REACHED.
9. PAYMENT FOR INLET PROTECTION MAINTENANCE SHALL BE INCIDENTAL TO INLET PROTECTION.

INLET PROTECTION



FABRIC ANCHOR DETAIL

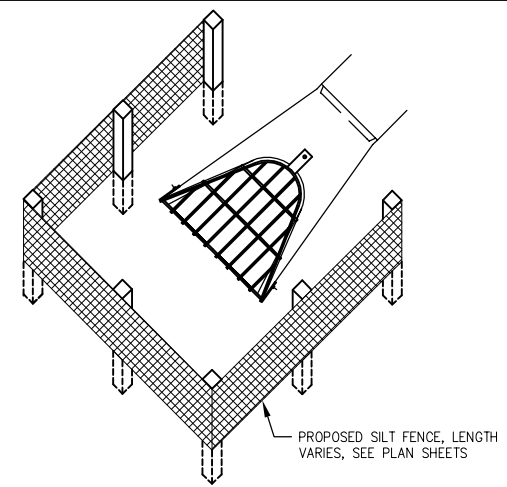


ELEVATION

NOTES:

1. FENCE POST SHALL BE EITHER STEEL "1" LINE POST OR HARDWOOD POST WITH A MINIMUM SECTIONAL AREA OF 2.0 SQUARE INCHES. A CARPENTER'S (NOMINAL) 2"x2" POST WILL MEET SPECIFICATIONS.
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. FILTER FABRIC SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS WITH APPARENT OPENING SIZE (AOS) OF AT LEAST 40 FOR NONWOVEN AND WOVEN (OR MAXIMUM OF 0.60mm).
7. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. SOIL STABILIZATION MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS AND THE USE OF TEMPORARY OR PERMANENT MEASURES.
8. ALL STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
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. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN BULGES DEVELOP IN THE SILT FENCE.
11. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION. DISCHARGES SHALL BE ROUTED THROUGH AN EFFECTIVE SEDIMENT CONTROL MEASURE (E.G. SEDIMENT TRAP, SEDIMENT BASIN, OR OTHER APPROPRIATE MEASURE).
12. FENCE POSTS SHALL BE REMOVED WHEN DIRECTED AT PROJECT END.
13. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER OR GOVERNING AGENCY.

SILT FENCE



SILT FENCE PLACEMENT AT FLARED END SECTIONS (FES)

SEDIMENTATION AND EROSION CONTROL NOTES:

- A. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. SOIL STABILIZATION MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS AND THE USE OF TEMPORARY OR PERMANENT MEASURES.
- B. SOIL EROSION AND SEDIMENT CONTROL FEATURES SHALL BE CONSTRUCTED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.
- C. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN 14 CALENDAR DAYS OF THE END OF ACTIVE HYDROLOGIC DISTURBANCE, OR REDISTURBANCE.
- D. AREAS OR EMBANKMENTS HAVING SLOPES GREATER THAN OR EQUAL TO 8H:1V SHALL BE STABILIZED WITH SOD, MAT OR BLANKET IN COMBINATION WITH SEEDING.
- E. EROSION CONTROL BLANKET SHALL BE REQUIRED ON ALL INTERIOR DETENTION BASIN SIDE SLOPES BETWEEN NORMAL WATER LEVEL AND HIGH WATER LEVEL.
- F. ALL STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED, BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
- G. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.
- H. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE PROPERTY OWNER SHALL BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE AND REPAIR.
- I. A STABILIZED MAT OF AGGREGATE UNDERLAIN WITH FILTER CLOTH (OR OTHER APPROPRIATE MEASURE) SHALL BE LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA. ANY SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
- J. SOIL STOCKPILES SHALL NOT BE LOCATED IN A FLOOD PRONE AREA OR A DESIGNATED BUFFER. NO STOCKPILES SHALL BE LOCATED WITHIN AN ACTIVE RUNWAY SAFETY AREA, RUNWAY OBJECT FREE AREA, RUNWAY OBSTACLE FREE ZONE, OR ACTIVE TAXIWAY OBJECT FREE AREA.
- K. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION. DISCHARGES SHALL BE ROUTED THROUGH AN EFFECTIVE SEDIMENT CONTROL MEASURE (E.G. SEDIMENT TRAP, SEDIMENT BASIN, OR OTHER APPROPRIATE MEASURE).
- L. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER OR GOVERNING AGENCY.

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 WHEREVER 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.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

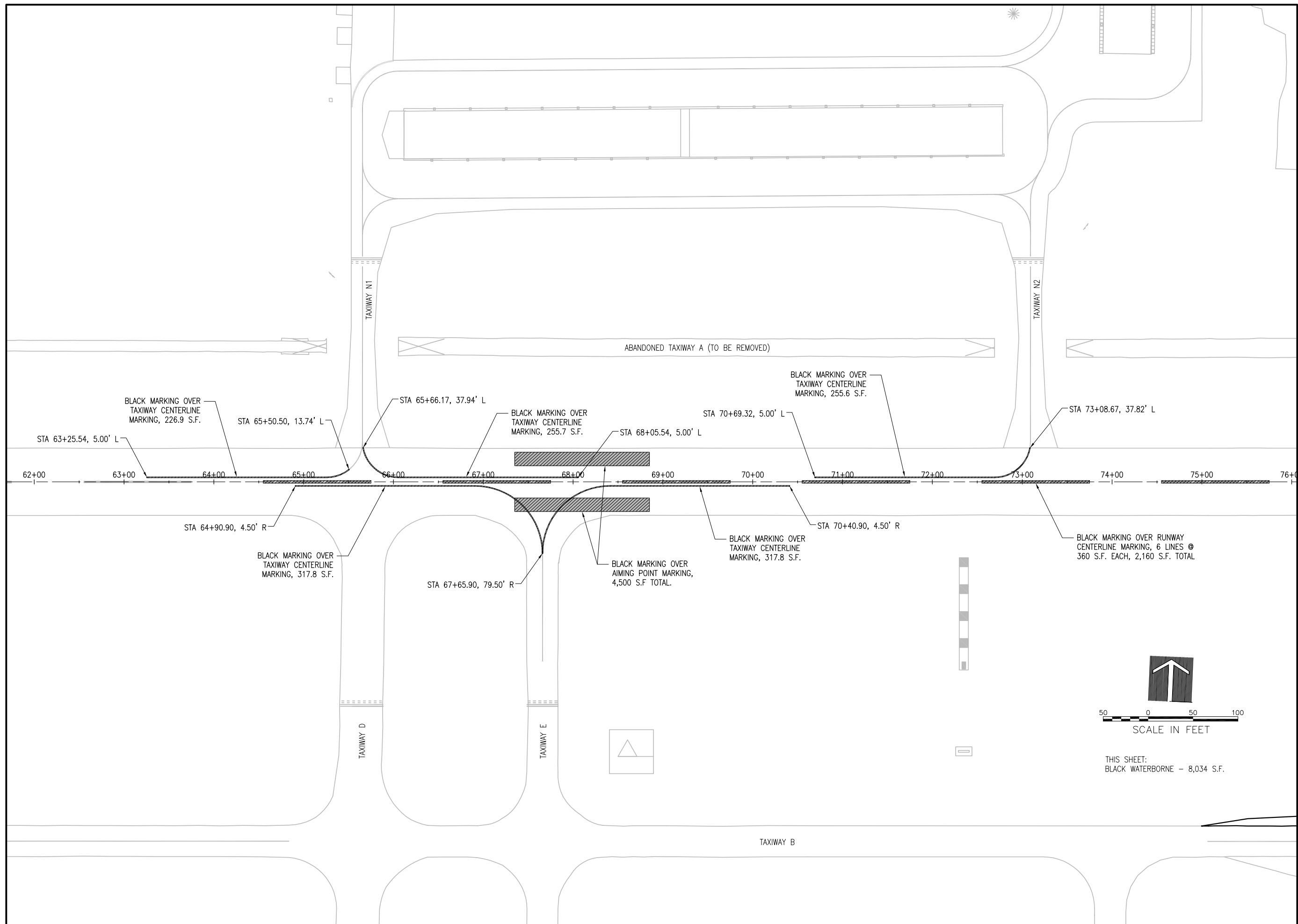
LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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REVIEWED BY: SJM 6/6/16

SHEET TITLE

SWPPP DETAILS



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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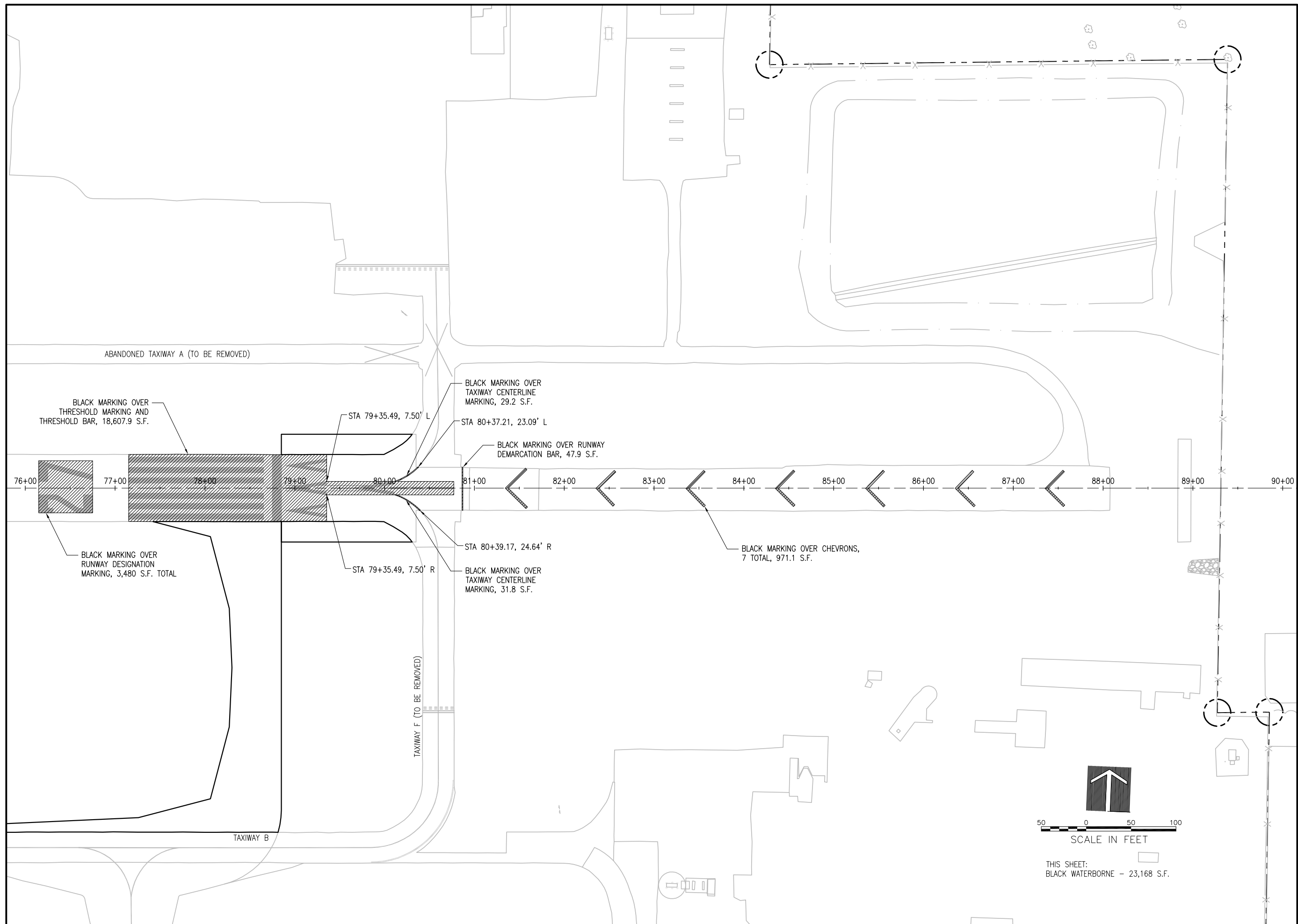
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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DRAWN BY: LDH 3/23/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

RUNWAY 9-27 MARKING REMOVAL PLAN

JUN 15, 2016 4:29 PM HALUSH00682
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RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

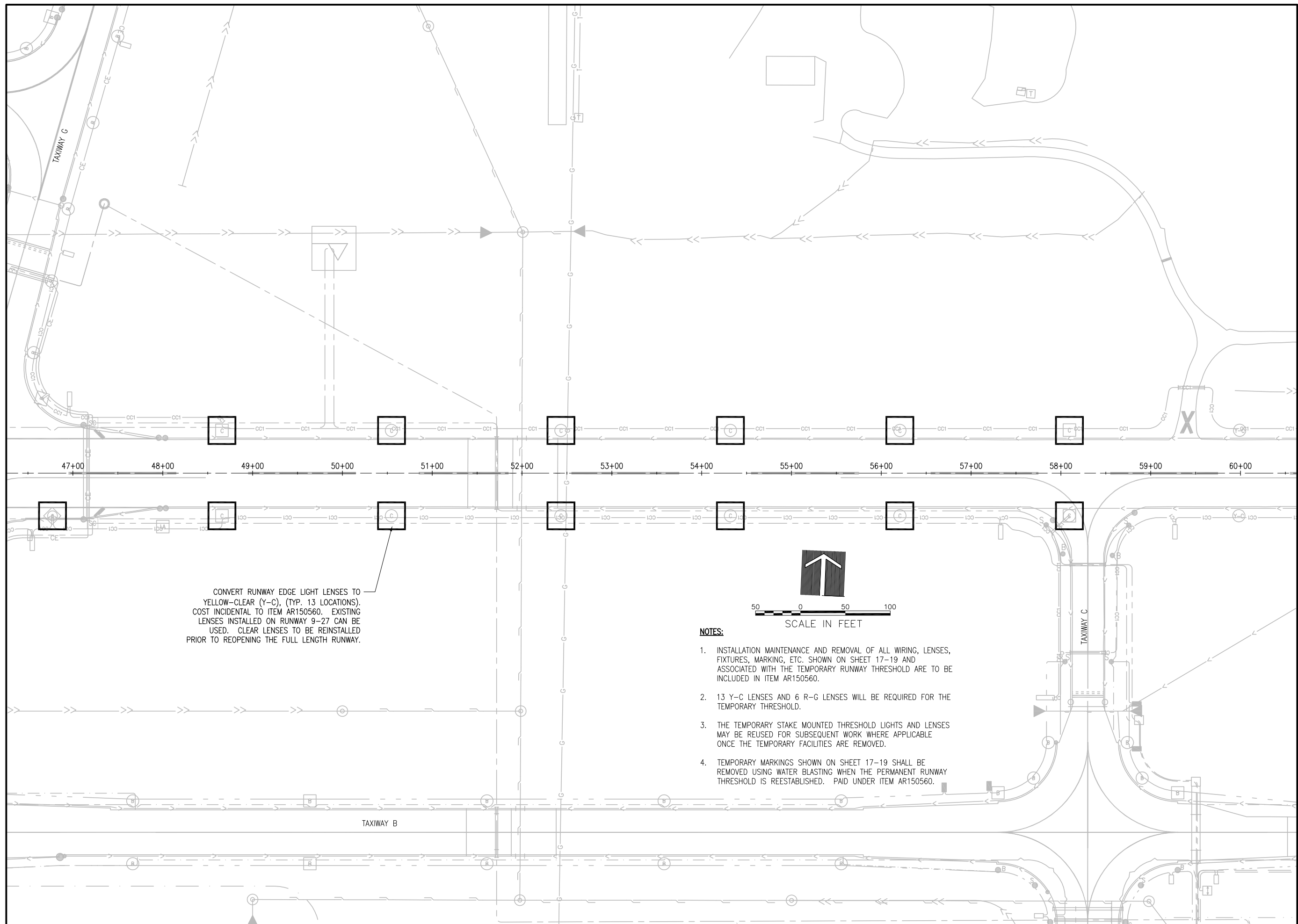
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		DES	DWN	REV

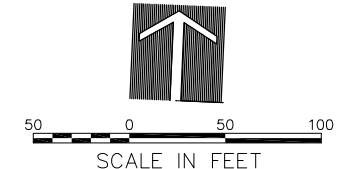
ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 16-MARKINGREM.DWG
DESIGN BY: LDH 3/23/16
DRAWN BY: LDH 3/23/16
REVIEWED BY: SJM 6/6/16

RUNWAY 9-27 MARKING REMOVAL PLAN

JUN 15, 2016 4:30 PM HALUSM00682
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CONVERT RUNWAY EDGE LIGHT LENSES TO YELLOW-CLEAR (Y-C), (TYP. 13 LOCATIONS). COST INCIDENTAL TO ITEM AR150560. EXISTING LENSES INSTALLED ON RUNWAY 9-27 CAN BE USED. CLEAR LENSES TO BE REINSTALLED PRIOR TO REOPENING THE FULL LENGTH RUNWAY.



NOTES:

1. INSTALLATION MAINTENANCE AND REMOVAL OF ALL WIRING, LENSES, FIXTURES, MARKING, ETC. SHOWN ON SHEET 17-19 AND ASSOCIATED WITH THE TEMPORARY RUNWAY THRESHOLD ARE TO BE INCLUDED IN ITEM AR150560.
2. 13 Y-C LENSES AND 6 R-G LENSES WILL BE REQUIRED FOR THE TEMPORARY THRESHOLD.
3. THE TEMPORARY STAKE MOUNTED THRESHOLD LIGHTS AND LENSES MAY BE REUSED FOR SUBSEQUENT WORK WHERE APPLICABLE ONCE THE TEMPORARY FACILITIES ARE REMOVED.
4. TEMPORARY MARKINGS SHOWN ON SHEET 17-19 SHALL BE REMOVED USING WATER BLASTING WHEN THE PERMANENT RUNWAY THRESHOLD IS REESTABLISHED. PAID UNDER ITEM AR150560.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

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ISSUE: JUNE 17, 2016

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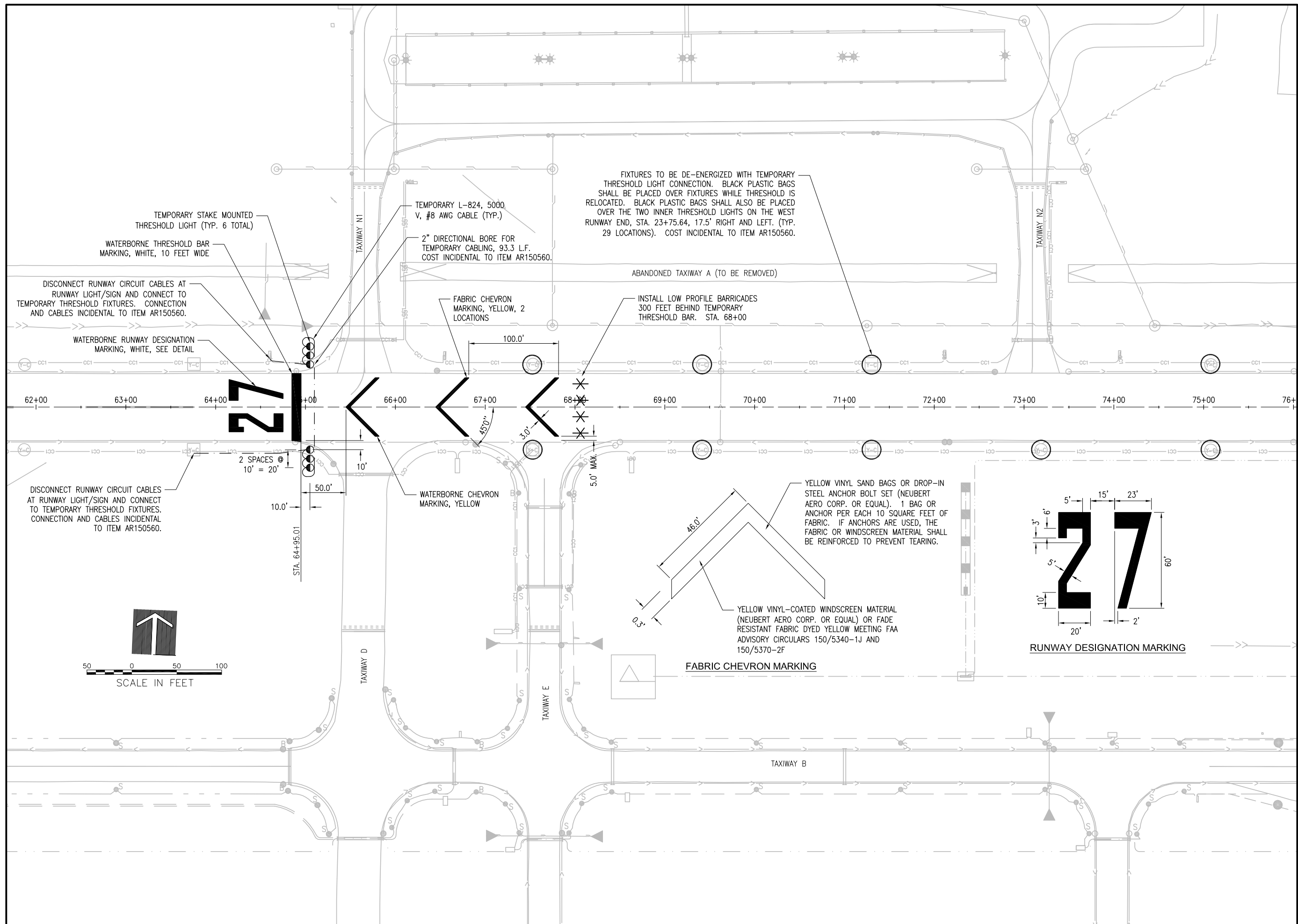
CAD FILE: 17-RELOCATEDEND.DWG

DESIGN BY: LDH 3/23/16

DRAWN BY: LDH 3/23/16

REVIEWED BY: SJM 6/6/16

TEMPORARY THRESHOLD



FIXTURES TO BE DE-ENERGIZED WITH TEMPORARY THRESHOLD LIGHT CONNECTION. BLACK PLASTIC BAGS SHALL BE PLACED OVER FIXTURES WHILE THRESHOLD IS RELOCATED. BLACK PLASTIC BAGS SHALL ALSO BE PLACED OVER THE TWO INNER THRESHOLD LIGHTS ON THE WEST RUNWAY END, STA. 23+75.64, 17.5' RIGHT AND LEFT. (TYP. 29 LOCATIONS). COST INCIDENTAL TO ITEM AR150560.

TEMPORARY STAKE MOUNTED THRESHOLD LIGHT (TYP. 6 TOTAL)
WATERBORNE THRESHOLD BAR MARKING, WHITE, 10 FEET WIDE

TEMPORARY L-824, 5000 V, #8 AWG CABLE (TYP.)
2" DIRECTIONAL BORE FOR TEMPORARY CABLING, 93.3 L.F. COST INCIDENTAL TO ITEM AR150560.

ABANDONED TAXIWAY A (TO BE REMOVED)

FABRIC CHEVRON MARKING, YELLOW, 2 LOCATIONS

INSTALL LOW PROFILE BARRICADES 300 FEET BEHIND TEMPORARY THRESHOLD BAR. STA. 68+00

DISCONNECT RUNWAY CIRCUIT CABLES AT RUNWAY LIGHT/SIGN AND CONNECT TO TEMPORARY THRESHOLD FIXTURES. CONNECTION AND CABLES INCIDENTAL TO ITEM AR150560.

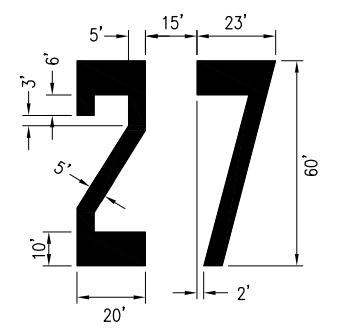
WATERBORNE RUNWAY DESIGNATION MARKING, WHITE, SEE DETAIL

DISCONNECT RUNWAY CIRCUIT CABLES AT RUNWAY LIGHT/SIGN AND CONNECT TO TEMPORARY THRESHOLD FIXTURES. CONNECTION AND CABLES INCIDENTAL TO ITEM AR150560.

YELLOW VINYL SAND BAGS OR DROP-IN STEEL ANCHOR BOLT SET (NEUBERT AERO CORP. OR EQUAL). 1 BAG OR ANCHOR PER EACH 10 SQUARE FEET OF FABRIC. IF ANCHORS ARE USED, THE FABRIC OR WINDSCREEN MATERIAL SHALL BE REINFORCED TO PREVENT TEARING.

YELLOW VINYL-COATED WINDSCREEN MATERIAL (NEUBERT AERO CORP. OR EQUAL) OR FADE RESISTANT FABRIC DYED YELLOW MEETING FAA ADVISORY CIRCULARS 150/5340-1J AND 150/5370-2F

FABRIC CHEVRON MARKING



RUNWAY DESIGNATION MARKING

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

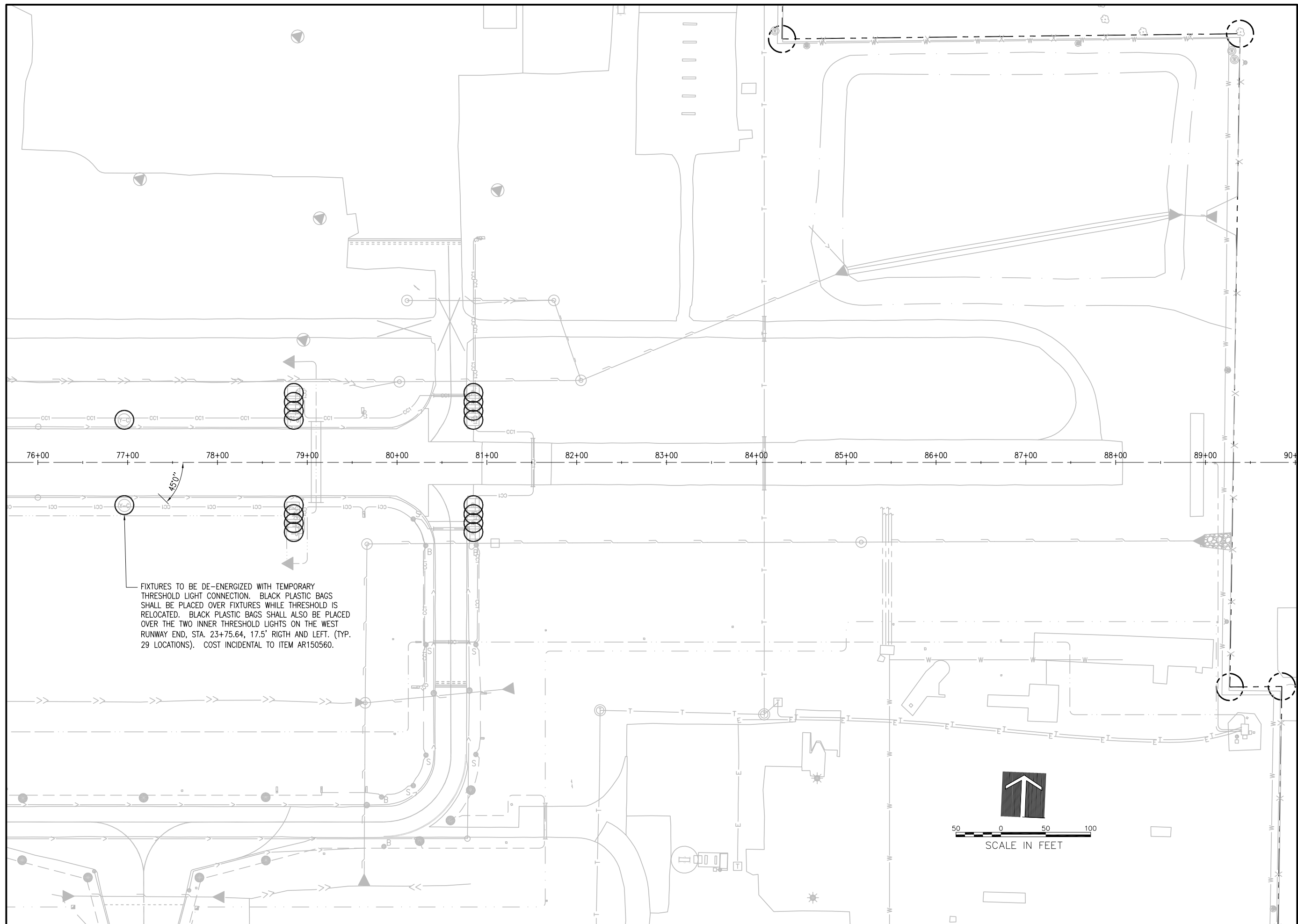
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DESIGN BY: LDH 3/23/16
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REVIEWED BY: SJM 6/6/16

SHEET TITLE

TEMPORARY THRESHOLD



FIXTURES TO BE DE-ENERGIZED WITH TEMPORARY THRESHOLD LIGHT CONNECTION. BLACK PLASTIC BAGS SHALL BE PLACED OVER FIXTURES WHILE THRESHOLD IS RELOCATED. BLACK PLASTIC BAGS SHALL ALSO BE PLACED OVER THE TWO INNER THRESHOLD LIGHTS ON THE WEST RUNWAY END, STA. 23+75.64, 17.5' RIGTH AND LEFT. (TYP. 29 LOCATIONS). COST INCIDENTAL TO ITEM AR150560.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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









NO.	DATE	DESCRIPTION		
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PROJECT NO: 16A0012
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DRAWN BY: LDH 3/24/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

TEMPORARY THRESHOLD

LEGEND:

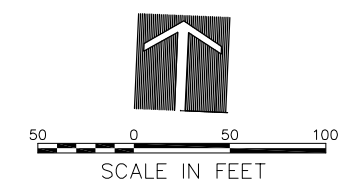
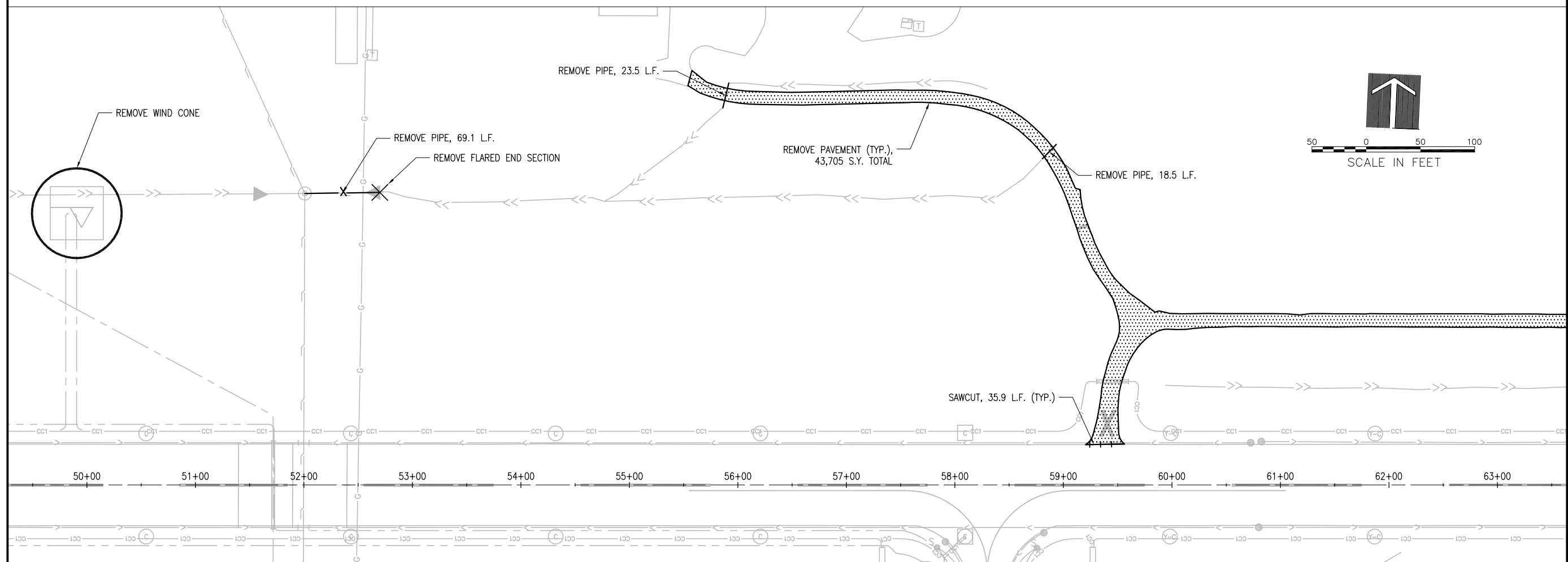
-  PROPOSED BITUMINOUS PAVEMENT REMOVAL
-  PROPOSED PCC SLAB REMOVAL
-  PROPOSED MILLING
-  PROPOSED BITUMINOUS PAVEMENT SAWING
-  PROPOSED PIPE/UNDERDRAIN REMOVAL
-  PROPOSED FES/MANHOLE OR CLEANOUT/INSPECTION HOLE REMOVAL
-  PROPOSED SIGN REMOVAL
-  PROPOSED STAKE MOUNTED LIGHT REMOVAL
-  PROPOSED BASE MOUNTED LIGHT REMOVAL
-  PROPOSED CABLE REMOVAL

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT 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. CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVE GROUND UTILITIES.

AIRFIELD LIGHTING REMOVAL NOTES

1. 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).
2. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. POWER FOR THE EXISTING LOW INTENSITY RUNWAY LIGHTING IS UNDERSTOOD TO BE POWERED FROM THE AIRPORT OFFICE BUILDING. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAIDS, OR OTHER DEVICE.
3. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
4. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
5. THE EXISTING AIRFIELD LIGHTS AND SIGNS DESIGNATED FOR REMOVAL SHALL BE DISCONNECTED, REMOVED AND TURNED OVER TO THE AIRPORT MANAGER. THE CONCRETE LIGHT BASES AND FOUNDATIONS SHALL BE REMOVED AND DISPOSED OF, OFF THE AIRPORT SITE IN A LEGAL MANNER.
6. THE EXISTING AIRFIELD LIGHTING CABLES, THAT ARE NOT IDENTIFIED FOR REMOVAL, BUT ARE ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH THE INSTALLATION OF A PROPOSED LIGHT OR CABLE, PAVEMENT, OR OTHER WORK, THEN IT SHALL BE REMOVED AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES.
7. WHEN A RUNWAY IS CLOSED THE RUNWAY LIGHTING SYSTEM SHALL BE SHUT OFF, AND THE ASSOCIATED NAVAIDS FOR THAT RUNWAY SHALL ALSO BE SHUT OFF.
8. ALL ABOVE GROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2F, "OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION", PART 218, PARAGRAPH C.
9. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE LIGHT, SIGN, AND/OR BASE REMOVAL WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
10. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
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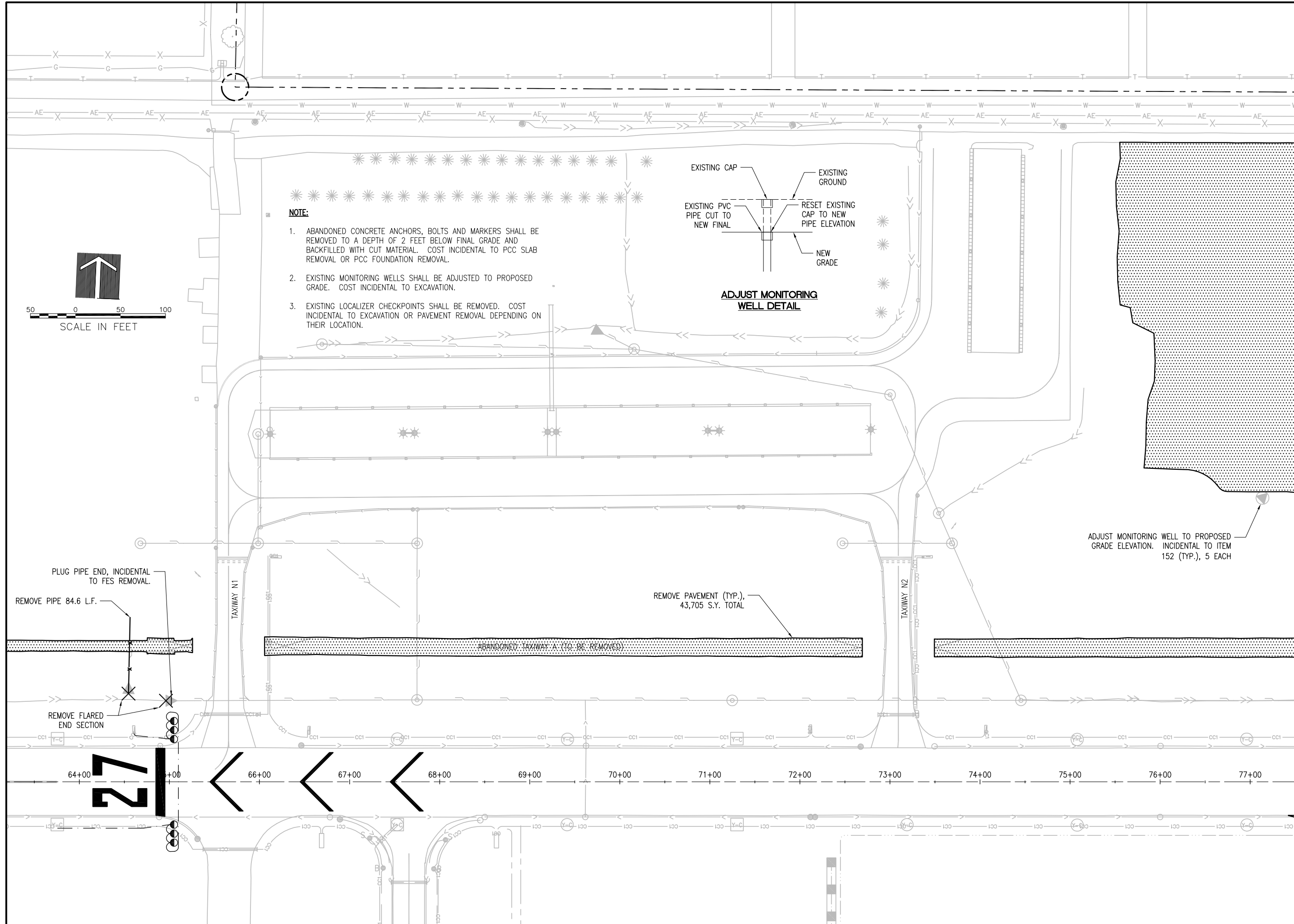
NO.	DATE	DESCRIPTION		
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ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
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DRAWN BY: LDH 3/30/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

REMOVAL PLAN

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- NOTE:**
1. ABANDONED CONCRETE ANCHORS, BOLTS AND MARKERS SHALL BE REMOVED TO A DEPTH OF 2 FEET BELOW FINAL GRADE AND BACKFILLED WITH CUT MATERIAL. COST INCIDENTAL TO PCC SLAB REMOVAL OR PCC FOUNDATION REMOVAL.
 2. EXISTING MONITORING WELLS SHALL BE ADJUSTED TO PROPOSED GRADE. COST INCIDENTAL TO EXCAVATION.
 3. EXISTING LOCALIZER CHECKPOINTS SHALL BE REMOVED. COST INCIDENTAL TO EXCAVATION OR PAVEMENT REMOVAL DEPENDING ON THEIR LOCATION.

ADJUST MONITORING WELL DETAIL

ADJUST MONITORING WELL TO PROPOSED GRADE ELEVATION. INCIDENTAL TO ITEM 152 (TYP.), 5 EACH

REMOVE PAVEMENT (TYP.), 43,705 S.Y. TOTAL

REMOVE PIPE 84.6 L.F.
PLUG PIPE END, INCIDENTAL TO FES REMOVAL.

REMOVE FLARED END SECTION

64+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
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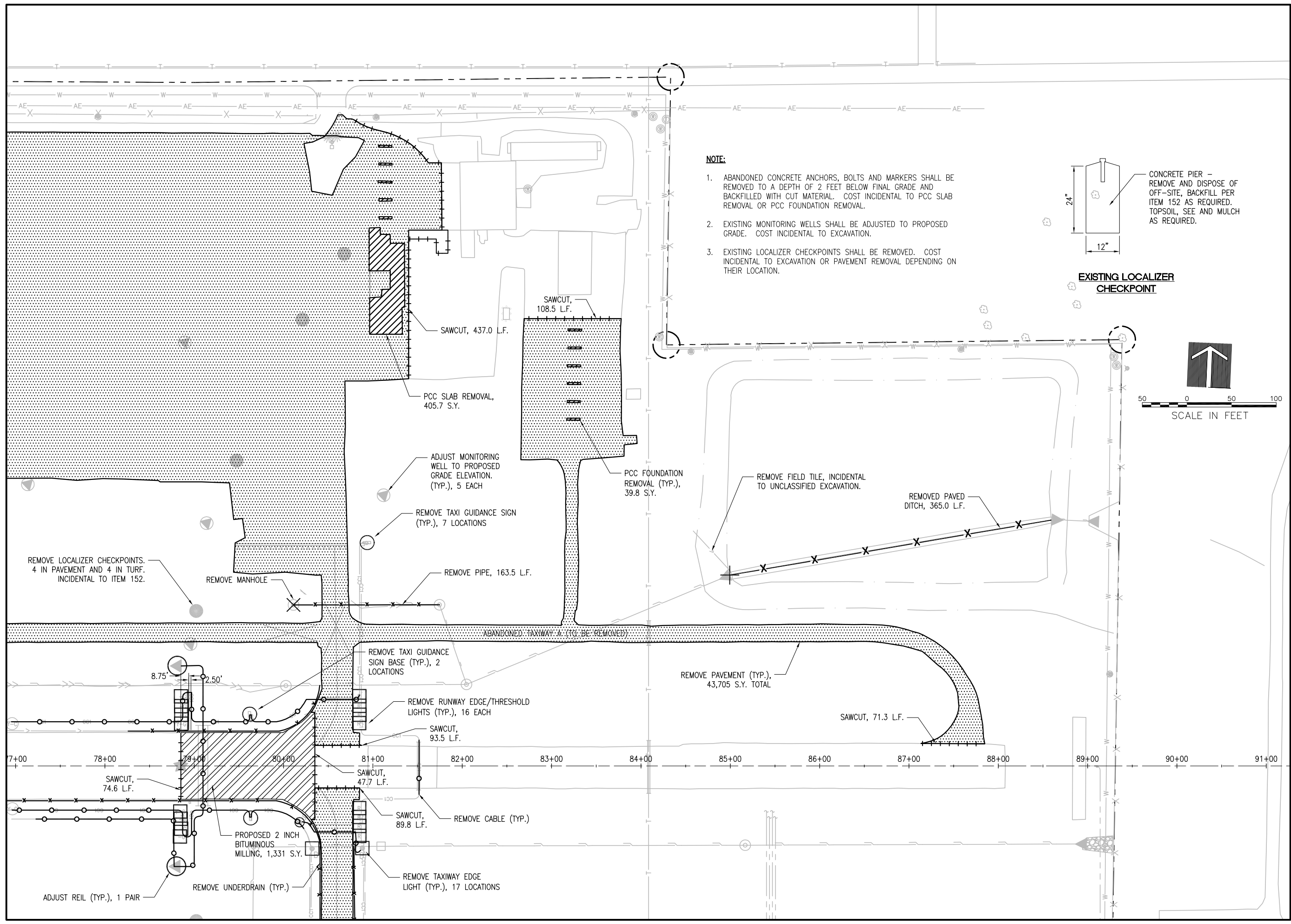
PROJECT NO: 16A0012
CAD FILE: 21-REMOVALPLAN.DWG

DESIGN BY: LDH 3/30/16
DRAWN BY: LDH 3/30/16

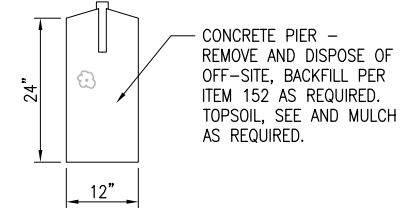
REVIEWED BY: SJM 6/6/16

SHEET TITLE

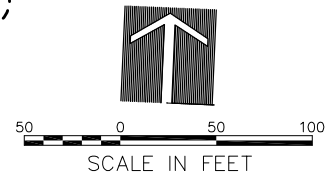
REMOVAL PLAN



- NOTE:**
1. ABANDONED CONCRETE ANCHORS, BOLTS AND MARKERS SHALL BE REMOVED TO A DEPTH OF 2 FEET BELOW FINAL GRADE AND BACKFILLED WITH CUT MATERIAL. COST INCIDENTAL TO PCC SLAB REMOVAL OR PCC FOUNDATION REMOVAL.
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EXISTING LOCALIZER CHECKPOINT



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
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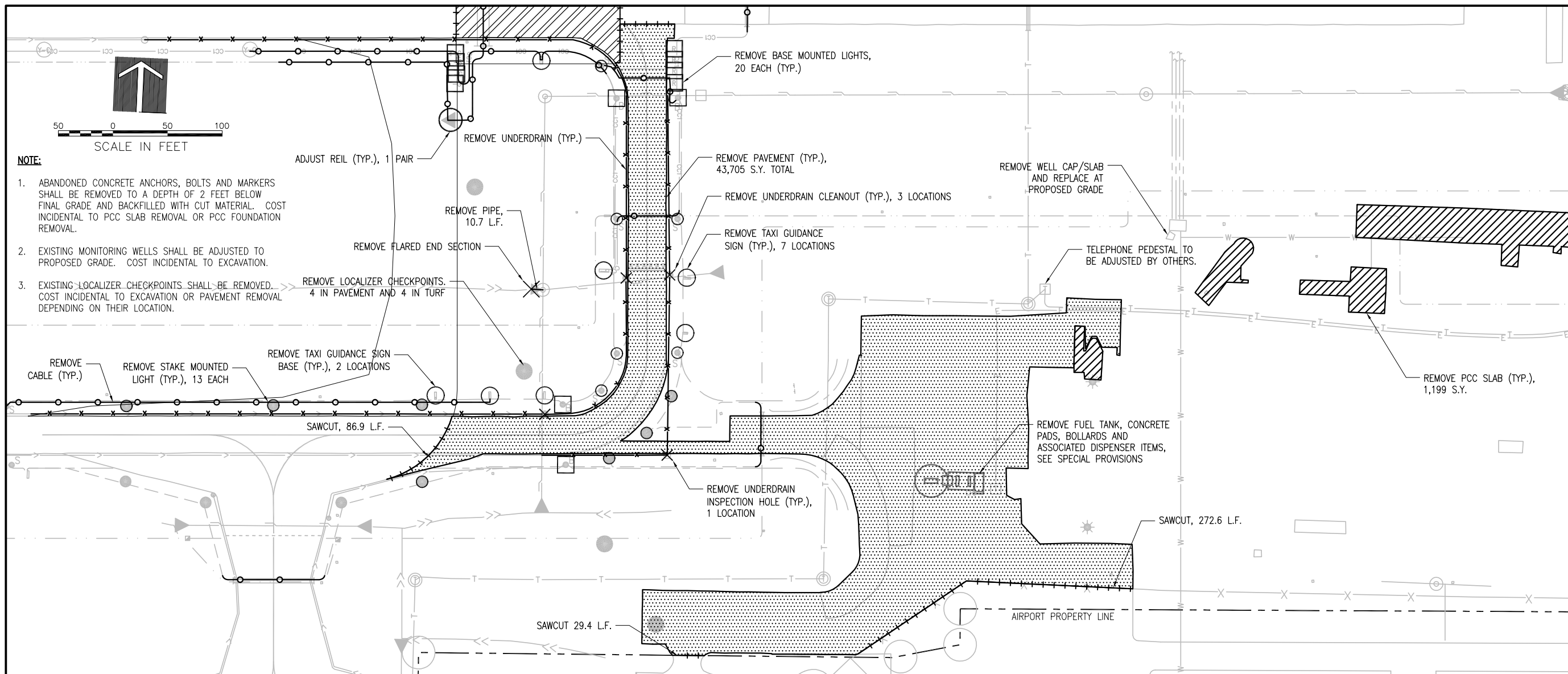
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SHEET TITLE

REMOVAL PLAN

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NOTE:

1. ABANDONED CONCRETE ANCHORS, BOLTS AND MARKERS SHALL BE REMOVED TO A DEPTH OF 2 FEET BELOW FINAL GRADE AND BACKFILLED WITH CUT MATERIAL. COST INCIDENTAL TO PCC SLAB REMOVAL OR PCC FOUNDATION REMOVAL.
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3. EXISTING LOCALIZER CHECKPOINTS SHALL BE REMOVED. COST INCIDENTAL TO EXCAVATION OR PAVEMENT REMOVAL DEPENDING ON THEIR LOCATION.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

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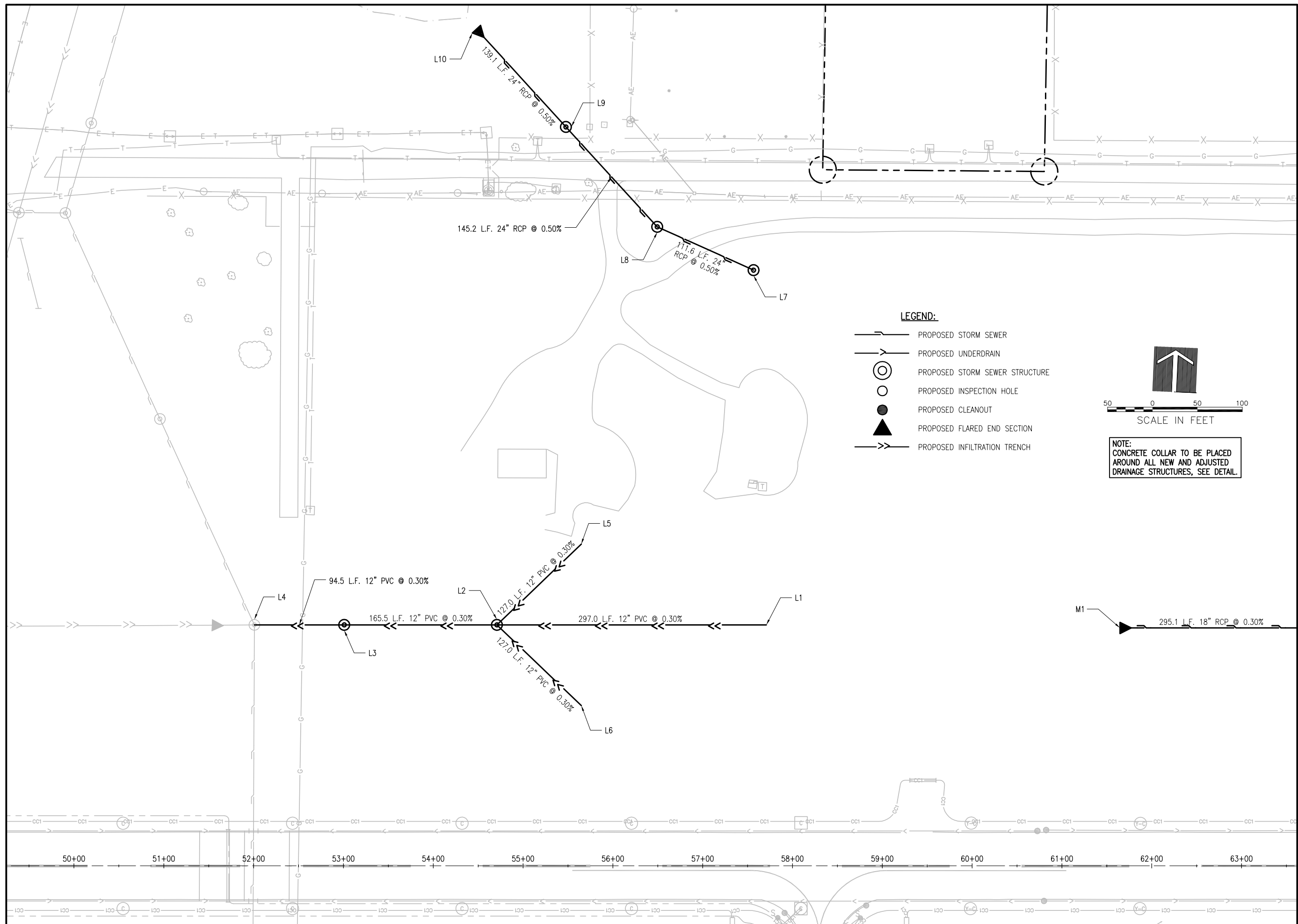
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SHEET TITLE

REMOVAL PLAN

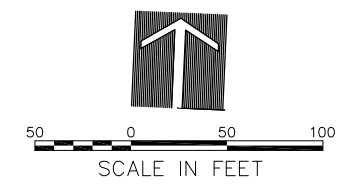


EXISTING FUEL TANK AND ASSOCIATED APPURTENANCES



LEGEND:

- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED STORM SEWER STRUCTURE
- PROPOSED INSPECTION HOLE
- PROPOSED CLEANOUT
- PROPOSED FLARED END SECTION
- PROPOSED INFILTRATION TRENCH



NOTE:
CONCRETE COLLAR TO BE PLACED
AROUND ALL NEW AND ADJUSTED
DRAINAGE STRUCTURES, SEE DETAIL.

**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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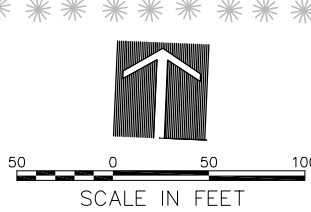
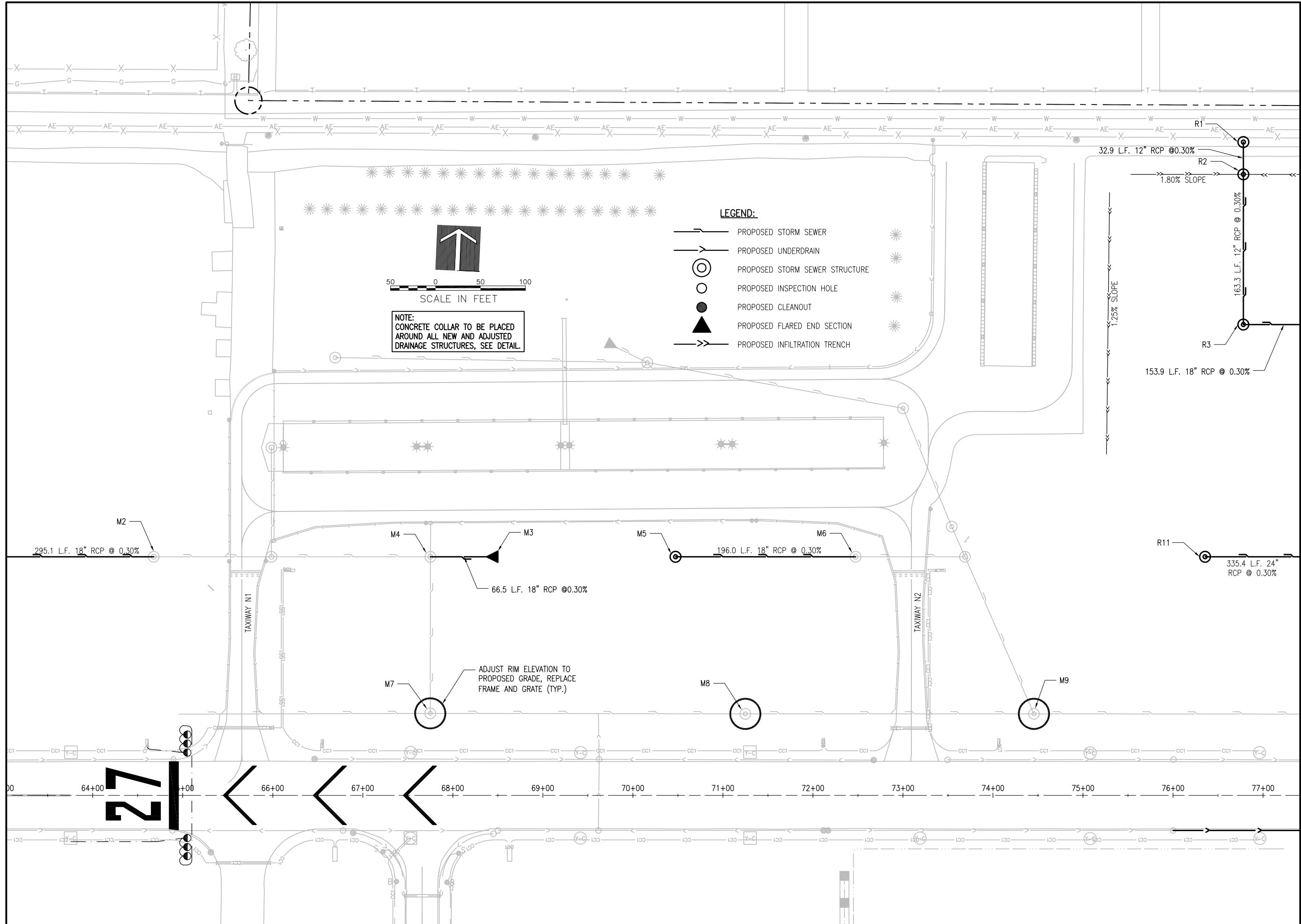
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CAD FILE: 24-DRAINAGEPLAN.DWG
DESIGN BY: LDH 5/11/16
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REVIEWED BY: SJM 6/6/16

SHEET TITLE

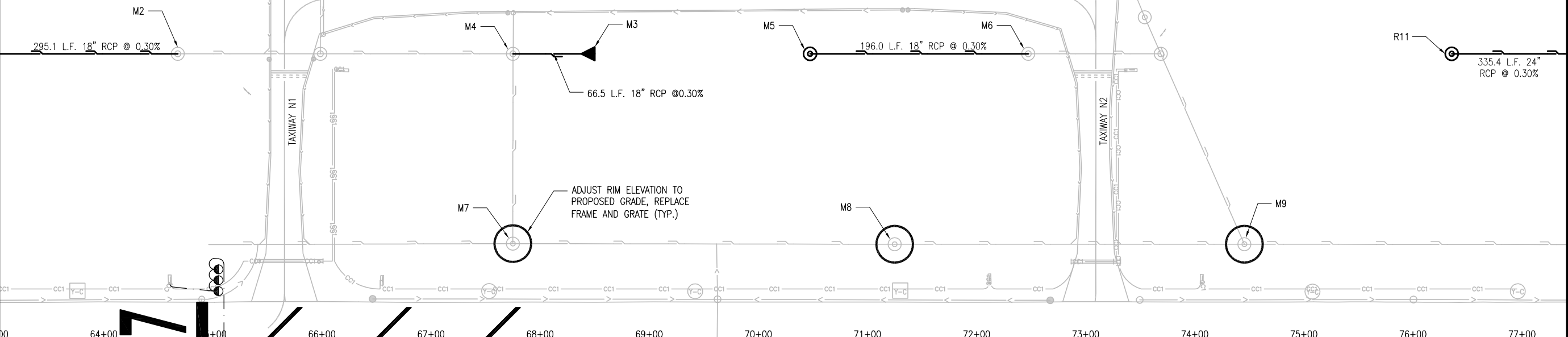
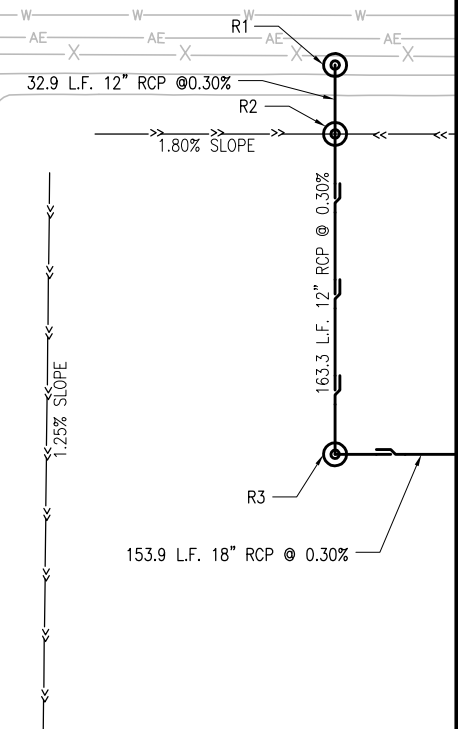
DRAINAGE PLAN

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NOTE:
CONCRETE COLLAR TO BE PLACED
AROUND ALL NEW AND ADJUSTED
DRAINAGE STRUCTURES, SEE DETAIL.

- LEGEND:**
- PROPOSED STORM SEWER
 - PROPOSED UNDERDRAIN
 - PROPOSED STORM SEWER STRUCTURE
 - PROPOSED INSPECTION HOLE
 - PROPOSED CLEANOUT
 - ▲ PROPOSED FLARED END SECTION
 - > PROPOSED INFILTRATION TRENCH



ADJUST RIM ELEVATION TO
PROPOSED GRADE, REPLACE
FRAME AND GRATE (TYP.)

**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

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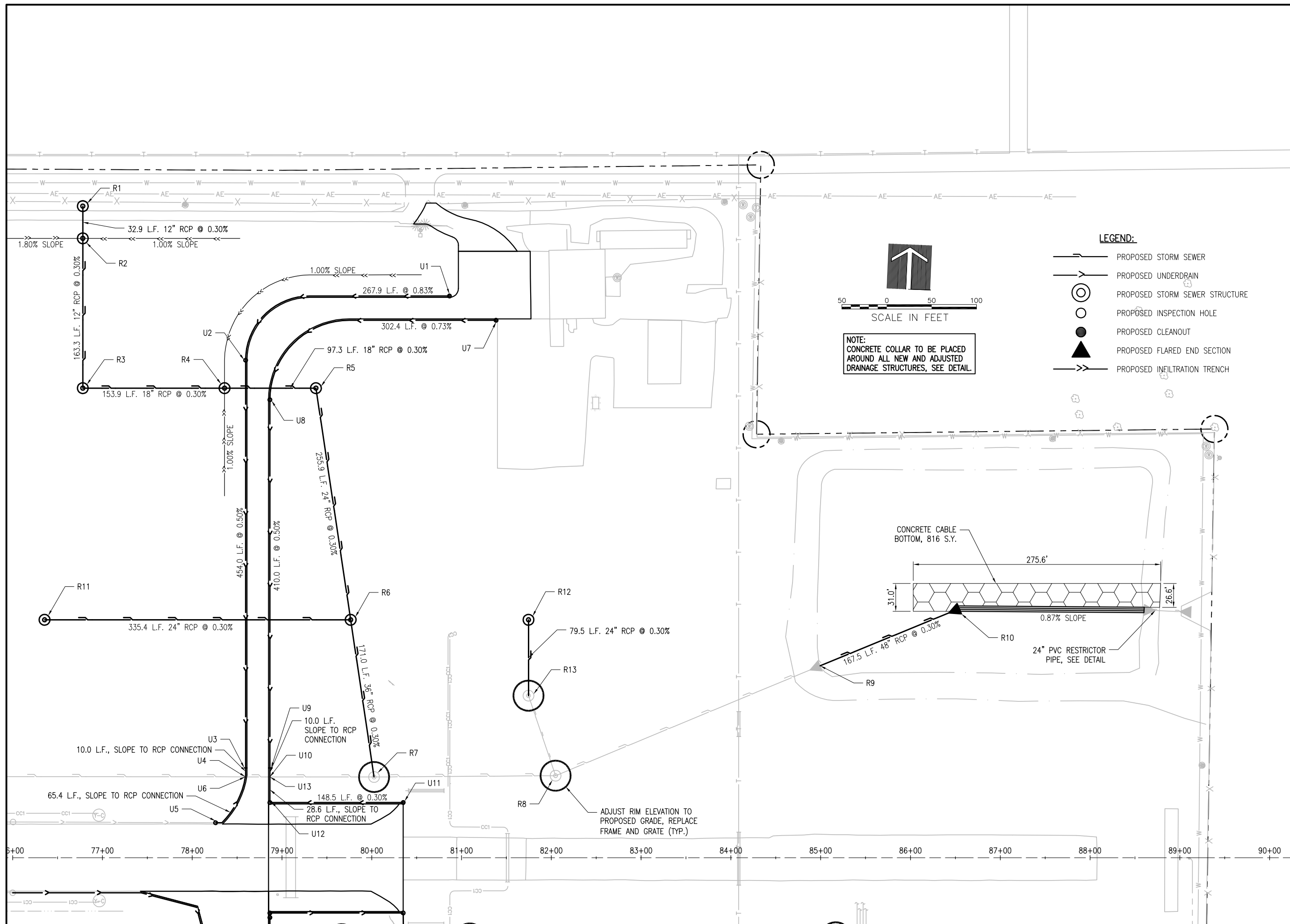
NO.	DATE	DESCRIPTION		
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DRAINAGE PLAN

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LEGEND:

- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- ⊗ PROPOSED STORM SEWER STRUCTURE
- PROPOSED INSPECTION HOLE
- PROPOSED CLEANOUT
- ▲ PROPOSED FLARED END SECTION
- ⇨⇨ PROPOSED INFILTRATION TRENCH

50 0 50 100
SCALE IN FEET

NOTE:
CONCRETE COLLAR TO BE PLACED
AROUND ALL NEW AND ADJUSTED
DRAINAGE STRUCTURES, SEE DETAIL.

**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

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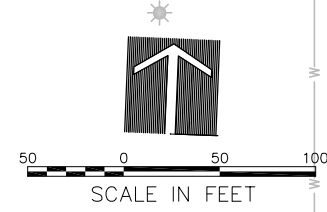
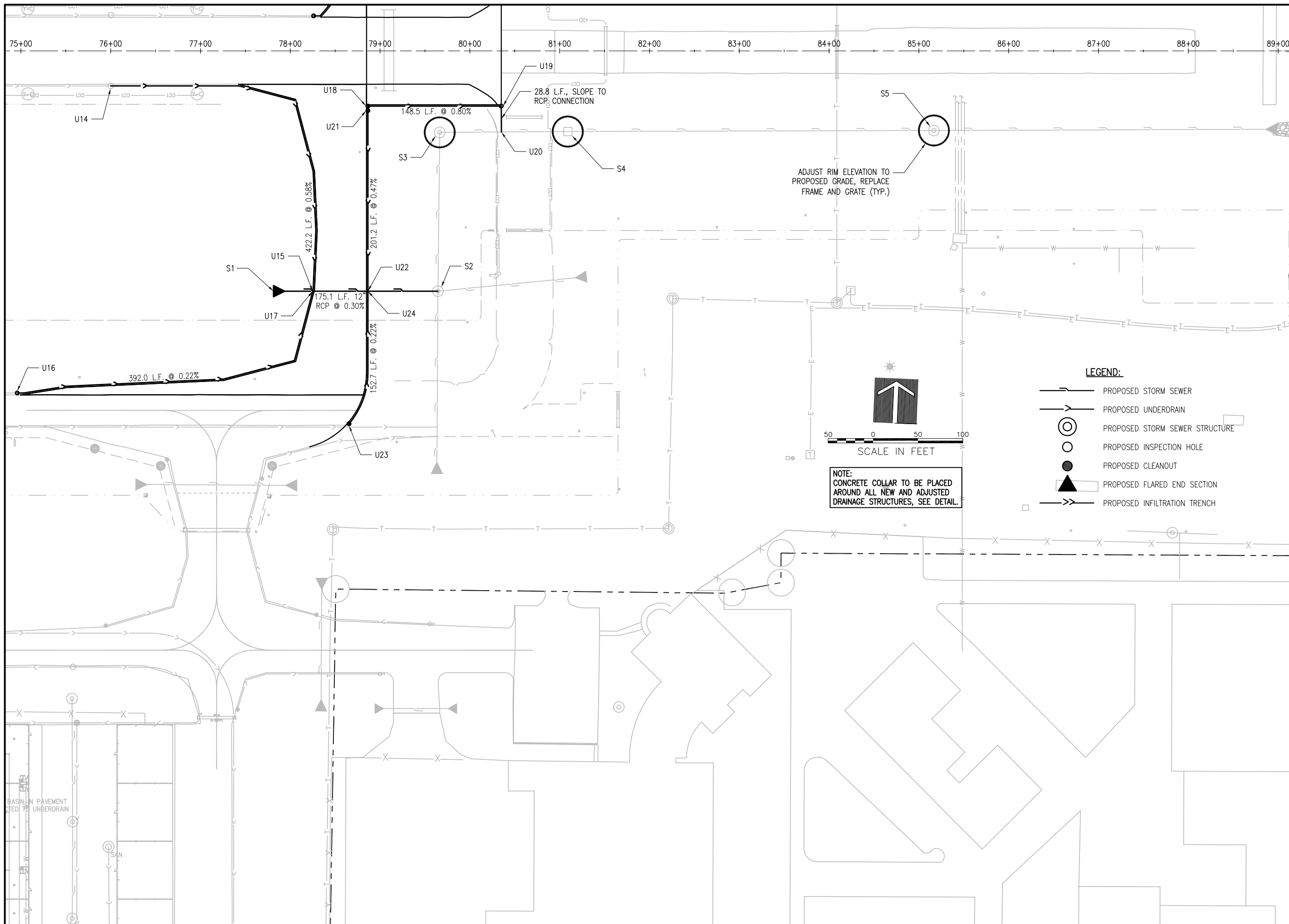
DRAWN BY: LDH 5/11/16

REVIEWED BY: SJM 6/6/16

SHEET TITLE

DRAINAGE PLAN

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NOTE:
CONCRETE COLLAR TO BE PLACED
AROUND ALL NEW AND ADJUSTED
DRAINAGE STRUCTURES, SEE DETAIL.

LEGEND:

- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED STORM SEWER STRUCTURE
- PROPOSED INSPECTION HOLE
- PROPOSED CLEANOUT
- PROPOSED FLARED END SECTION
- PROPOSED INFILTRATION TRENCH

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**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016

PROJECT NO: 16A0012
CAD FILE: 27-DRAINAGEPLAN.DWG

DESIGN BY: LDH 5/11/16
DRAWN BY: LDH 5/11/16

REVIEWED BY: SJM 6/6/16

SHEET TITLE

DRAINAGE PLAN

STORM SEWER SCHEDULE

Structure	Station	Offset	Type	Rim EL	Invert EL	Pipe Pay Length	Size	Type	Slope %	
L7	57+56.63	663.4	LT	6' Manhole	667.20	NW 661.20	111.6	24.0	RCP	0.50
L8	56+49.38	711.7	LT	6' Manhole	667.20	SE 660.61 NW 660.61	145.2	24.0	RCP	0.50
L9	55+47.71	822.9	LT	5' Manhole	667.00	SE 659.86 NW 659.86	139.1	24.0	RCP	0.50
L10	54+48.16	931.8	LT	FES	--	659.12				

Structure	Station	Offset	Type	Rim EL	Invert EL	Pipe Pay Length	Size	Type	Slope %	
M1	61+64.70	265.0	LT	FES	--	663.07				
M2	64+67.76	265.0	LT	Existing 4' Manhole	665.96	W 662.16	295.1	18"	RCP	0.30
M3	67+75.00	265.0	LT	FES	--	662.87				
M4	68+50.00	265.0	LT	Existing 5' Manhole	664.61	E 661.24	66.5	18.0	RCP	0.30
M5	70+47.36	265.0	LT	4' Manhole	663.38	E 658.90	196.0	18.0	RCP	0.30
M6	72+47.36	265.0	LT	Existing 4' Manhole	666.04	W 658.36				

Structure	Station	Offset	Type	Rim EL	Invert EL	Pipe Pay Length	Size	Type	Slope %	
R1	76+78.12	725.7	LT	Type B Inlet	671.57		32.9	12"	RCP	0.30
R2	76+78.12	689.8	LT	Type B Inlet	669.40	N 658.06 S 657.96	163.3	12"	RCP	0.30
R3	76+78.12	523.0	LT	4' Manhole	666.00	N 657.43 E 657.33	153.9	18"	RCP	0.30
R4	78+36.00	523.0	LT	4' Manhole	664.27	W 656.86 E 656.86	97.3	18"	RCP	0.30
R5	79+37.79	523.0	LT	5' Manhole	664.50	W 656.55 S 656.45	255.9	24"	RCP	0.30
R6	79+76.47	265.0	LT	6' Manhole	663.00	N 655.67 W 655.67 S 655.57	171.0	36"	RCP	0.30
R7	80+02.56	89.9	LT	Existing 6' Manhole	663.83*	N 655.04				
R11	76+35.54	265.0	LT	5' Manhole	661.80	E 656.69	335.4	24"	RCP	0.30
R6	79+76.47	265.0	LT	6' Manhole	663.00	W 655.67 N 655.67 S 655.57				
R12	81+74.55	265.0	LT	5' Manhole	659.00	S 654.02	79.5	24"	RCP	0.30
R13	81+74.55	180.5	LT	Existing 5' Manhole	660.65*	N 653.77				
R9	84+99.46	213.8	LT	Existing 48" Pipe End	--	653.05	167.5	48"	RCP	0.30
R10	86+54.35	277.4	LT	FES	--	652.55				

* THE RIM ELEVATION SHOWN IS THE PROPOSED ADJUSTED RIM ELEVATION, NOT THE EXISTING RIM ELEVATION

Structure	Station	Offset	Type	Rim EL	Invert EL	Pipe Pay Length	Size	Type	Slope %	
S1	77+81.41	267.7	RT	FES	--	661.61				
S2	79+64.48	267.7	RT	Existing 4' Manhole	664.56	W 661.06	175.1	12"	RCP	0.30

INFILTRATION TRENCH SCHEDULE

Structure	Station	Offset	Type	Rim EL	Invert EL	Pipe Pay Length	Size	Type	Slope %	
L1	57+70.89	268.4	LT	Pipe End	--	656.81				
L2	54+70.89	268.4	LT	6' Manhole	661.78	E 655.92 S 655.91 N 655.91 W 655.81	297.0	12.0	PVC	0.30
L3	53+00.89	268.4	LT	Type B Inlet	660.57	E 655.30 W 655.30	165.5	12.0	PVC	0.30
L4	52+00.89	268.4	LT	Existing 8' Manhole	661.06	E 655.00	94.5	12.0	PVC	0.30
L5	55+64.81	358.3	LT	Pipe End	--	656.30				
L2	54+70.89	268.4	LT	6' Manhole	661.78	N 655.91 S 655.91 E 655.92 W 655.81	127.0	12.0	PVC	0.30
L6	55+64.81	178.5	LT	Pipe End	--	656.30				
L2	54+70.89	268.4	LT	6' Manhole	661.78	S 655.91 N 655.91 E 655.92 W 655.81	127.0	12.0	PVC	0.30

STRUCTURE SCHEDULE

Structure Number	Structure Type	Diameter "D" (In.)	Frame Height (In.)	Grate Diameter (In.)	Frame Type (Neenah)	Cover/Grate (Neenah)
L2	Manhole	72	8-5/8	36	R-2251	Type G
L3	Inlet Type B	36	7	25-3/4	R-2390	Type C
L7	Manhole	72	8-5/8	36	R-2251	Type G
L8	Manhole	72	8-5/8	36	R-2251	Type G
L9	Manhole	60	8-5/8	36	R-2251	Type G
M5	Manhole	48	8-5/8	36	R-2251	Type G
R1	Inlet Type B	36	7	25-3/4	R-2390	Type C
R2	Inlet Type B	36	7	25-3/4	R-2390	Type C
R3	Manhole	48	8-5/8	36	R-2251	Type G
R4	Manhole	48	8-5/8	36	R-2251	Type G
R5	Manhole	60	8-5/8	36	R-2251	Type G
R6	Manhole	72	8-5/8	36	R-2251	Type G
R11	Manhole	60	8-5/8	36	R-2251	Type G
R12	Manhole	60	8-5/8	36	R-2251	Type G

ADJUSTMENT SCHEDULE

Existing Structure	New Grate Type	Station	Offset	Existing Rim Elevation	Proposed Rim Elevation
M7	Neenah R-3492	67+74.93	91.07	LT 664.94	666.06
M8	Neenah R-3492	71+24.92	90.48	LT 664.84	666.23
M9	Neenah R-3492	74+45.49	90.55	LT 664.84	665.96
R7	Neenah R-3492	80+02.56	89.93	LT 662.53	663.83
R8	Neenah R-3492	82+04.72	91.40	LT 661.90	662.35
R13	Neenah R-3492	81+74.55	180.53	LT 662.32	660.65
S3	Neenah R-3492	79+66.46	90.80	RT 664.06	664.65
S4	Neenah R-3492	81+09.14	89.85	RT 663.11	663.77
S5	Neenah R-3492	85+16.73	88.67	RT 662.05	662.00

NO.	DATE	DESCRIPTION		
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DESIGN BY: LDH 5/13/16

DRAWN BY: LDH 5/13/16

REVIEWED BY: SJM 6/6/16

SHEET TITLE

STORM SEWER
SCHEDULE

UNDERDRAIN SCHEDULES

Structure	Station	Offset		Type	Rim El.	Invert El.	Pay Length	Slope %
U1	2827+91.26	13.50	LT	Cleanout	667.95	665.45	267.9	0.83
U2	2825+50.55	16.05	LT	Inspection Hole	666.68	663.23	454.0	0.50
U3	2821+00.06	13.50	LT	Slope Change	--	660.96	10.0	36.10
U4	2820+90.09	13.80	LT	RCP Connection	--	657.35		
U5	2820+39.00	47.00	LT	Inspection Hole (Connect Existing)	665.80	662.84	65.4	8.39
U6	2820+90.09	13.80	LT	RCP Connection	--	657.35		
U7	2828+43.11	13.50	RT	Cleanout	668.57	666.07	302.4	0.73
U8	2825+10.06	13.50	RT	Inspection Hole	666.55	663.86	410.0	0.50
U9	2821+00.06	13.50	RT	Slope Change	--	661.81	10.0	45.70
U10	2820+90.06	13.50	RT	RCP Connection	--	657.24		
U11	2820+61.50	162.00	RT	Cleanout	664.11	661.61	148.5	0.30
U12	2820+61.50	13.50	RT	Inspection Hole	665.37	661.16	28.6	13.73
U13	2820+90.06	13.50	RT	RCP Connection	--	657.24		

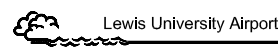
Structure	Station	Offset		Type	Rim El.	Invert El.	Pay Length	Slope %
U14	2619+61.00	260.00	LT	Connect to Existing Inspection Hole	--	664.41	422.2	0.58
U15	2617+32.35	34.99	LT	RCP Connection	--	661.98		
U16	2616+18.93	364.00	LT	Inspection Hole (Connect Existing)	664.94	662.85	392.0	0.22
U17	2617+32.35	34.99	LT	RCP Connection	--	661.98		
U18	2619+38.50	26.50	RT	Cleanout	665.25	662.75	148.5	0.80
U19	2619+38.50	175.00	RT	Inspection Hole	664.14	661.57	28.8	0.80
U20	2619+09.66	175.19	RT	RCP Connection	--	661.34		
U21	2619+33.50	26.50	RT	Cleanout	665.24	662.74	201.2	0.47
U22	2617+32.35	26.50	RT	RCP Connection	--	661.79		
U23	2615+84.69	5.46	RT	Cleanout	664.12	662.12	152.7	0.22
U24	2617+32.35	26.50	RT	RCP Connection	--	661.79		

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RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
 SBGP No: 3-17-SBGP-XX

LE050

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 DRAWN BY: LDH 5/13/16
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SHEET TITLE

UNDERDRAIN SCHEDULE

**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

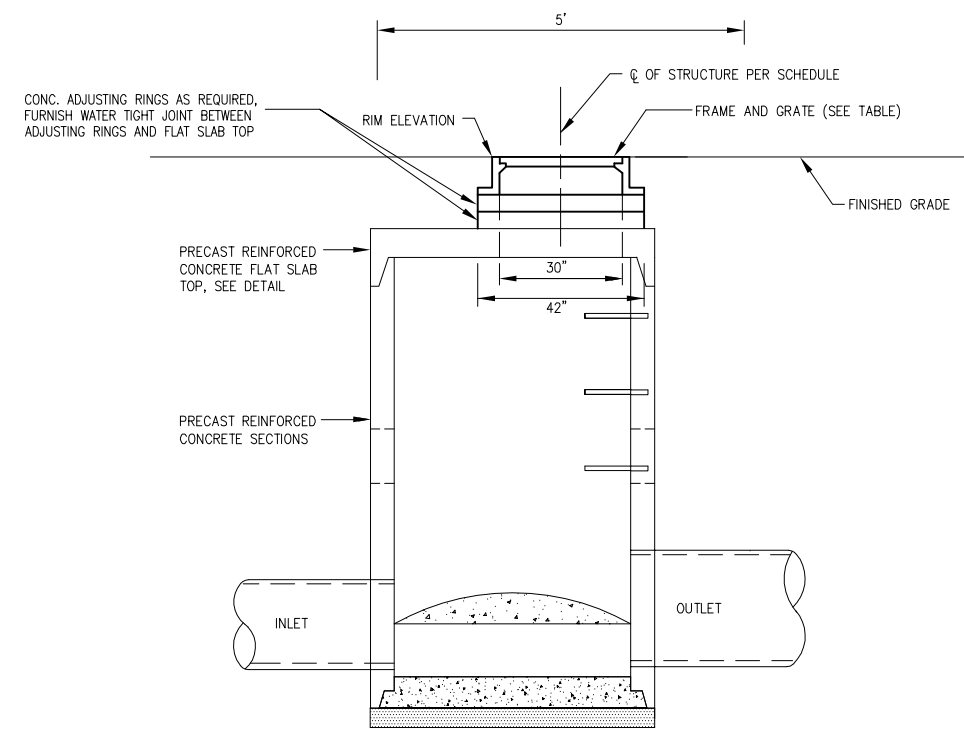
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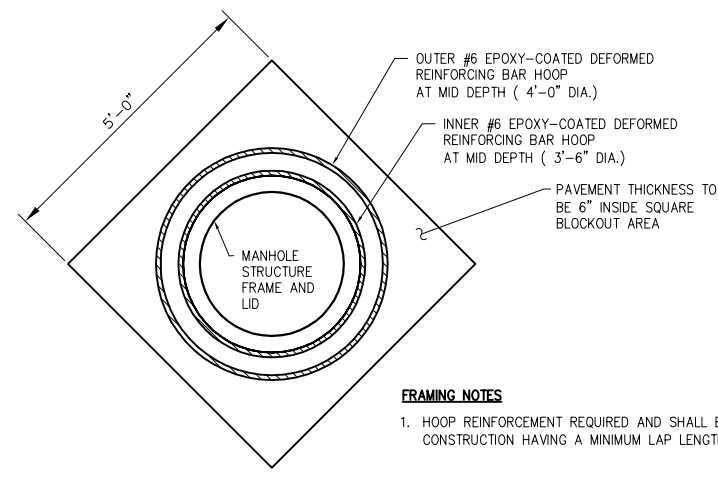
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SHEET TITLE

**DRAINAGE
DETAILS**



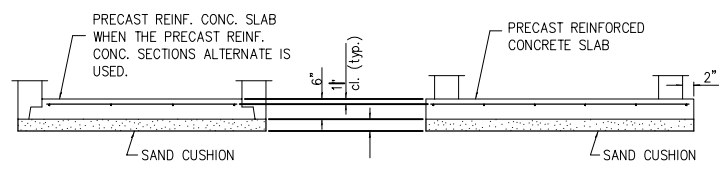
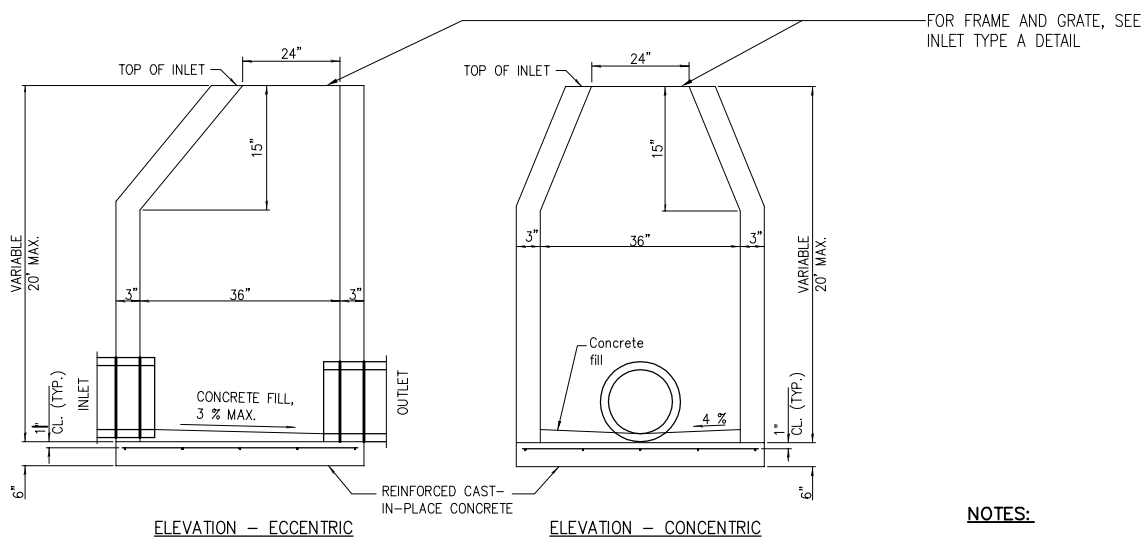
EXISTING MANHOLE ADJUSTMENT



- FRAMING NOTES**
- HOOP REINFORCEMENT REQUIRED AND SHALL BE ONE PIECE CONSTRUCTION HAVING A MINIMUM LAP LENGTH OF 2'-0".

CONCRETE COLLAR AND REINFORCING AT MANHOLES

TO BE CONSTRUCTED AT ALL NEW AND ADJUSTED DRAINAGE STRUCTURES
(COST INCIDENTAL TO ITEM 751)



**ALTERNATE BOTTOM SLAB
INLET TYPE B
(IDOT STANDARD 602306)**

NOTES:

- BOTTOM SLABS SHALL BE REINFORCED WITH A MINIMUM OF 0.20 SQ. IN./FT. IN BOTH DIRECTION WITH A MAXIMUM SPACING OF 12".
- BOTTOM SLABS MAY BE CONNECTED TO THE RISER AS DETERMINED BY THE FABRICATOR; HOWEVER, ONLY A SINGLE ROW OF REINFORCEMENT AROUND THE PERIMETER MAY BE UTILIZED.
- SEE STANDARD 602601 FOR OPTIONAL PRECAST REINFORCED CONCRETE FLAT SLAB TOP

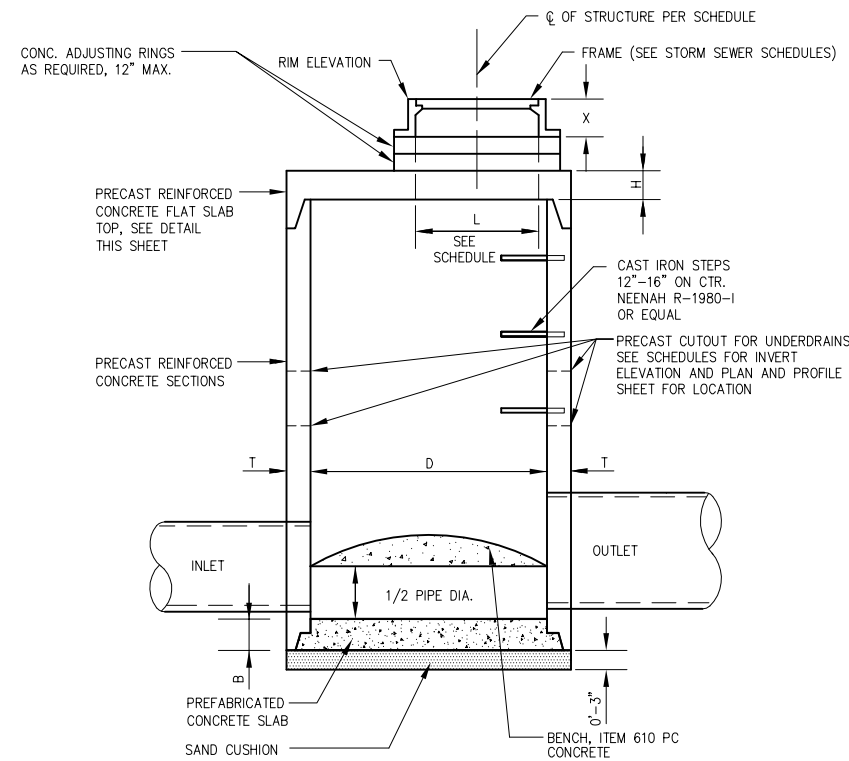
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SHEET TITLE

DRAINAGE
DETAILS



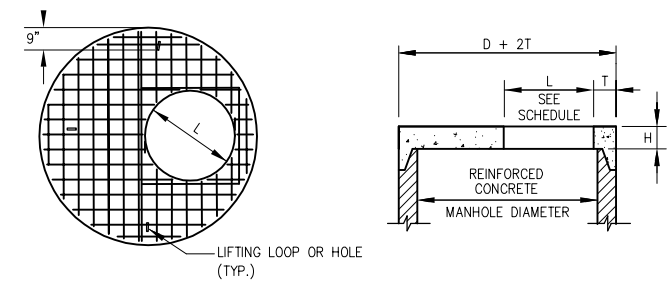
MANHOLE DATA

NOTES

- FOR "L" DIMENSION AND FRAME AND LID INFORMATION SEE STORM SEWER SCHEDULES.
- CENTER OF FRAME TO BE USED FOR LOCATING STRUCTURE. FOR STRUCTURE LOCATIONS AND ADDITIONAL INFORMATION SEE SCHEDULE.
- ALL STRUCTURES TO BE PRECAST REINFORCED CONCRETE SECTIONS; BENCHES MAY BE CAST IN PLACE.
- BLOCKOUTS FOR UNDERDRAIN CONNECTIONS AND FUTURE PIPES SHALL BE PRECAST INTO THE STRUCTURE.

INSIDE DIA. "D" (IN.)	WALL THICKNESS "T" (IN.)	TOP THICKNESS "H" (IN.)	BOTTOM THICKNESS "B" (IN.)
48	5	6	6
60	5	8	8
72	7	8	8
108	9	9	8

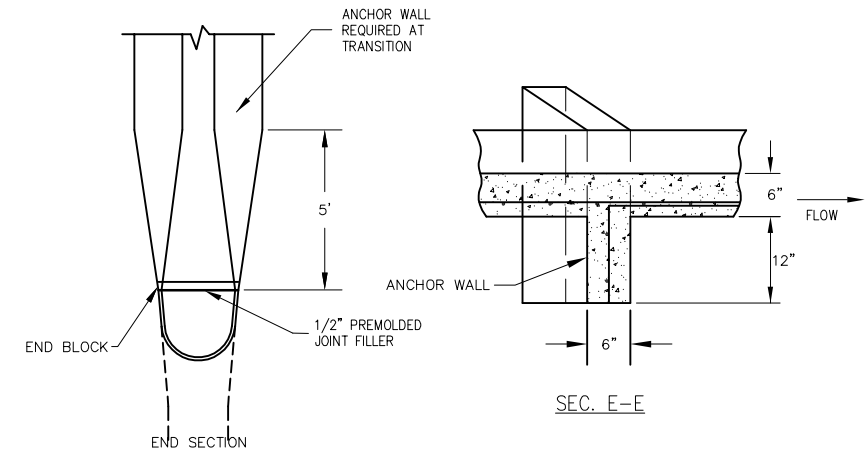
MANHOLE WITH FLAT SLAB TOP
(IDOT STANDARD 602401-MODIFIED)



NOTES

- ADDITIONAL TOP AND BOTTOM BARS PLACED ADJACENT TO ACCESS HOLE.
- MINIMUM 1" COVER ON STEEL BARS.
- THREE LIFTING LOOPS OR HOLES.
- MINIMUM STEEL REINFORCEMENT IN EACH DIRECTION TO BE WWF 1.06 SQ. IN./FT. IN ACCORDANCE WITH AASHTO M199 AND IDOT STANDARDS.
- FOR "L" DIMENSION SEE STORM SEWER SCHEDULES.

PRECAST REINFORCED CONCRETE FLAT SLAB TOP
(IDOT STANDARD 602601)

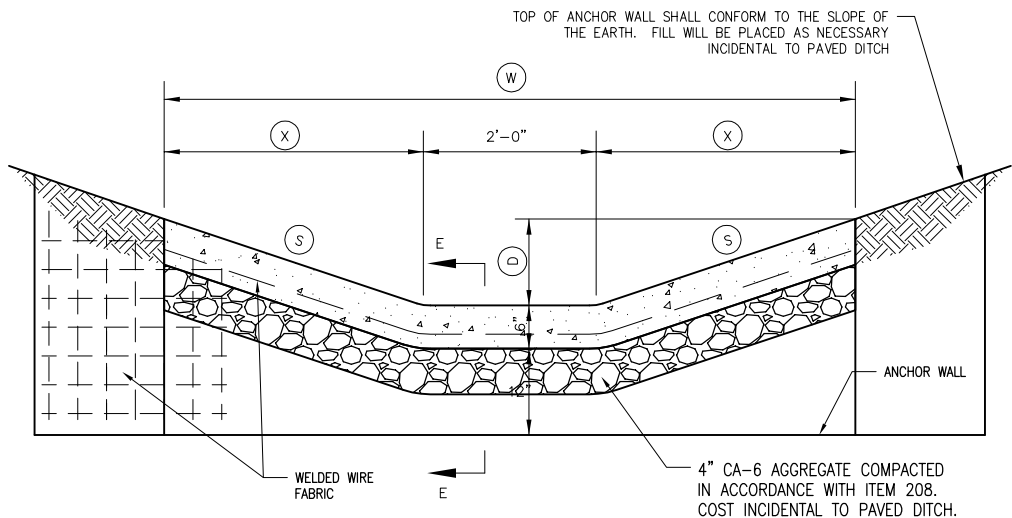


PAVED DITCH
TRANSITION TO END SECTION

ANCHOR WALL

NOTES

- ITEM 610 PC CONCRETE SHALL BE USED THROUGHOUT.
- WELDED WIRE FABRIC SHALL BE 6"x6" MESH, #4 GAGE, 58 LBS. PER 100 SQ. FT., CONFORMING TO THE REQUIREMENTS OF AASHTO M-55.
- 1/2 INCH PREMOULDED JOINT FILLER SHALL BE PLACED AT THE JUNCTION OF PAVED DITCH WITH ANY OTHER STRUCTURE.
- ANCHOR WALLS SHALL BE SPACED AT NOT MORE THAN 50 FOOT INTERVALS.
- ANCHOR WALLS SHALL BE CONSTRUCTED MONOLITHICALLY WITH THE PAVED DITCH.
- AT THE OPTION OF THE CONTRACTOR, #3 REINFORCING BARS PLACED AT 12 INCH CENTERS LONGITUDINALLY IN PAVED DITCH AND VERTICALLY IN ANCHOR AND CUT-OFF WALLS MAY BE USED IN LIEU OF THE WELDED WIRE FABRIC.
- THE COST OF FURNISHING AND PLACING THE JOINT FILLER AND WELDED WIRE FABRIC OR THE #3 REINFORCING BARS WILL BE CONSIDERED INCIDENTAL TO THE COST OF THE PAVED DITCH.
- TOOLED OR SAWED CONTROL JOINTS ARE TO BE PLACED AT A SPACING NOT TO EXCEED 15' APART. NO SECTION IS TO BE SHORTER THAN 4'.
- EXPANSION JOINTS WITH 1/2" PREMOULDED JOINT FILLER TO BE PLACED AT A SPACING NO GREATER THAN 30'.
- CONSTRUCTION/CONTRACTION JOINTS AND EXPANSION JOINTS SHALL BE SEALED WITH JOINT SEALER SUITABLE FOR THIS APPLICATION. (SEE SPECIAL PROVISIONS)
- C.I.P. = CAST-IN-PLACE
- ALL JOINTS AND JOINT SEALING IS INCIDENTAL TO PAVED DITCH.

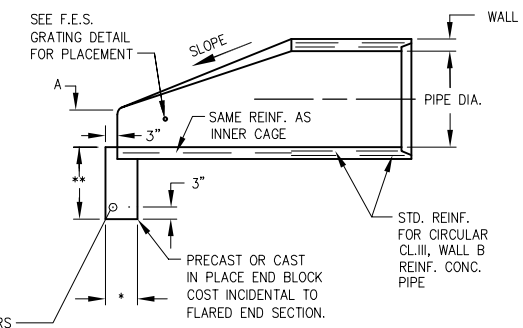
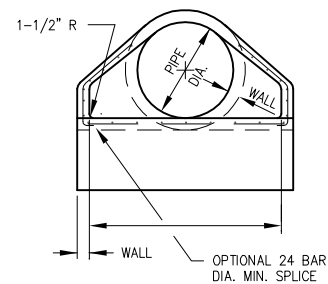
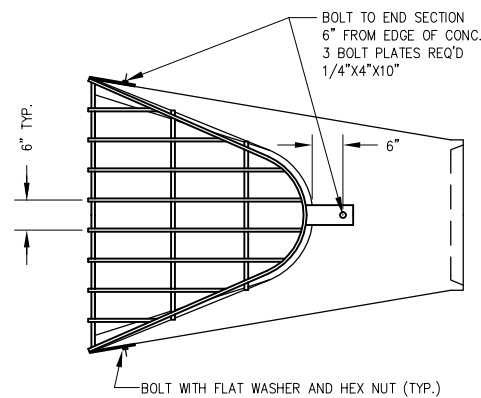


CROSS SECTION

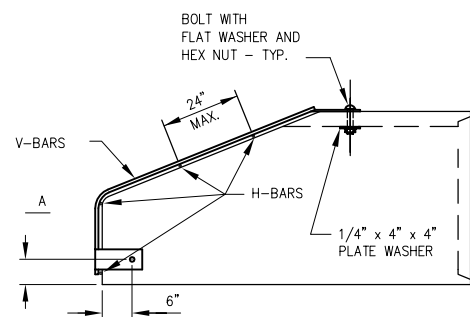
TYPE	D	W	X	S
B-15	6"	6'-0"	2'-0"	1:4

PAVED DITCH AND ANCHOR WALL
(IDOT STANDARD 606401-01)

DIA. INCHES	V-BAR SIZE	H-BAR SIZE	No. OF H-BARS REQ'D.	BOLT DIA.	"A" DIM.
	INCHES			INCHES	
12	1/2 ϕ	5/8 ϕ	3	1/2	4
15	1/2 ϕ	5/8 ϕ	3	1/2	4 1/2
18	1/2 ϕ	5/8 ϕ	4	1/2	4 1/2
21	1/2 ϕ	5/8 ϕ	4	1/2	5
24	5/8 ϕ	3/4 ϕ	4	1/2	5
27	5/8 ϕ	3/4 ϕ	4	1/2	5 1/2
30	5/8 ϕ	3/4 ϕ	4	1/2	5 1/2
36	3/4 ϕ	1 ϕ	4	3/4	8
42	3/4 ϕ	1 ϕ	4	3/4	8
48	3/4 ϕ	1 ϕ	5	3/4	8
54	3/4 ϕ	1-1/2 PIPE	5	3/4	8
24 X 38 ELLIPTICAL	3/4 ϕ	1 ϕ	5	3/4	8



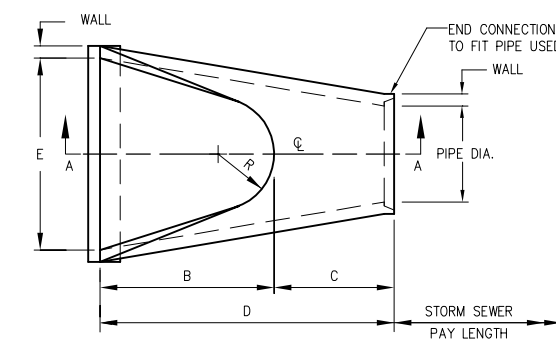
- * 8" - 36" DIA. PIPE OR LESS
10" - GREATER THAN 36" DIA. PIPE
- ** 18" - 36" DIA. PIPE OR LESS
24" - GREATER THAN 36" DIA. PIPE
2 - NO. 4 BARS



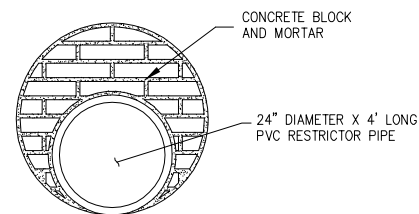
- NOTES**
1. BARS AND PLATES ARE HOT ROLLED STEEL.
 2. BARS, PLATES, PIPE AND BOLTS ARE GALVANIZED.

GRATING FOR FLARED END SECTION

- NOTES**
1. GRATING SHALL BE PAID FOR UNDER ITEM AR752518.
 2. THE END BLOCK SHALL BE PLACED PRIOR TO THE INSTALLATION OF THE FLARED END SECTION. THE END BLOCK SHALL BE BACKFILLED IN ACCORDANCE WITH ARTICLE 502.10 OF IDOT SPECIFICATIONS, WITH COST INCIDENTAL TO FLARED END SECTION.
 3. PRECAST CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-170 CLASS III, WALL B REINFORCED CONCRETE PIPE.
 4. MODIFICATION IS DUE TO THE RELOCATION OF THE CONNECTION POINT BETWEEN THE GRATE AND THE FLARED END SECTION.



TOP VIEW



NOTE:
ALL MATERIALS AND WORK SHALL BE INCIDENTAL TO STORM SEWER.

RESTRICTOR PIPE

PIPE DIA.	WALL	A	B	C	D	E	R	SLOPE
12"	2"	4"	2'-0"	4'-0 7/8"	6'-0 7/8"	2'-0"	9"	3:1
15"	2 1/4"	6"	2'-3"	3'-10"	6'-1"	2'-6"	11"	3:1
18"	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	12"	3:1
21"	2 3/4"	9"	2'-11"	3'-2"	6'-1"	3'-6"	13"	3:1
24"	3"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	14"	3:1
27"	3 1/4"	10 1/2"	4'-0"	2'-1 1/2"	6'-1 1/2"	4'-6"	14 1/2"	3:1
30"	3 1/2"	1'-0"	4'-6 1/2"	1'-7 3/4"	6'-1 3/4"	5'-0"	15"	3:1
33"	3 3/4"	1'-1 1/2"	4'-10 1/2"	3'-3 1/4"	8'-1 3/4"	5'-6"	17 1/2"	3:1
36"	4"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	20"	3:1
42"	4 1/2"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	22"	3:1
48"	5"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	22"	3:1
54"	5 1/2"	2'-3"	5'-5"	2'-11"	8'-4"	7'-6"	24"	2.4:1

PRECAST CONCRETE FLARED END SECTION
(IDOT STANDARD 542301-MODIFIED)

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

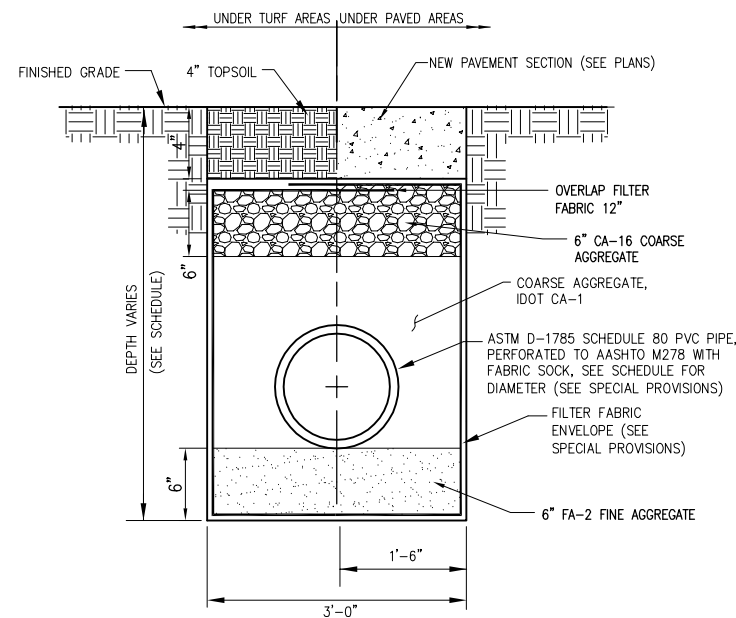
LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 32-DRAINAGEDET.DWG
DESIGN BY: LDH 3/18/16
DRAWN BY: LDH 3/18/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

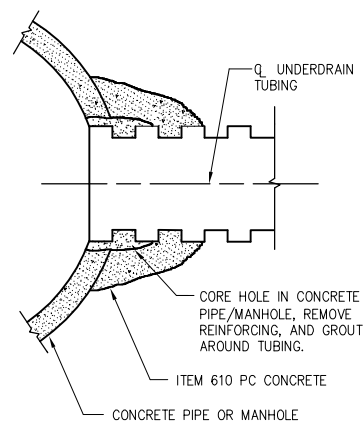
DRAINAGE DETAILS



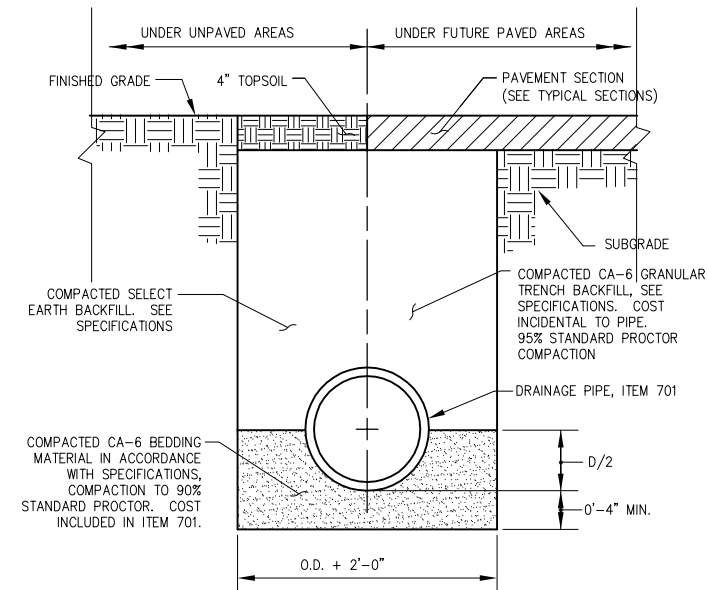
NOTES

1. UNSUITABLE MATERIAL ENCOUNTERED DURING PLACEMENT OF BEDDING SHALL BE REMOVED AND REPLACED.
2. DO NOT COMPACT SOIL PLACED ABOVE THE AGGREGATE.
3. SEPARATE PAYMENT FOR COARSE AND FINE AGGREGATES, FILTER FABRIC ENVELOPE, PVC PIPE, AND FABRIC SOCK WILL NOT BE MADE BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER LINEAR FOOT OF INFILTRATION TRENCH.
4. SEE SPECIAL PROVISIONS.

INFILTRATION TRENCH



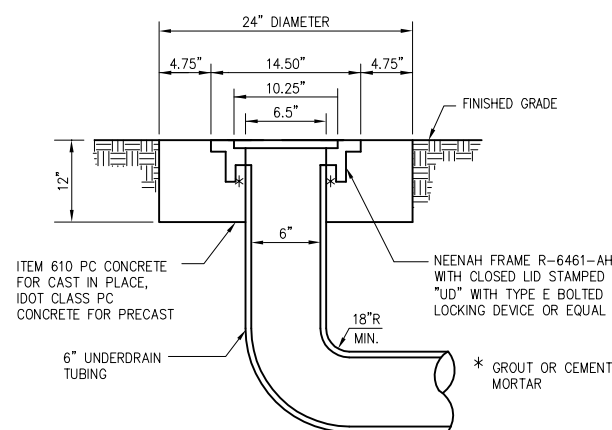
STORM SEWER CONCRETE COLLAR AND GROUT CONNECTION



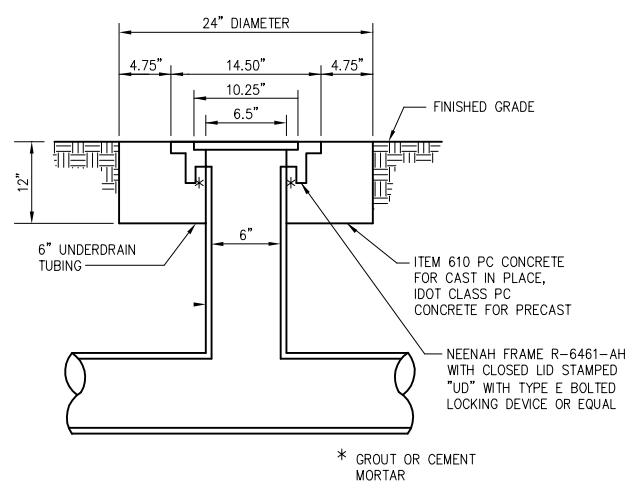
NOTES

1. UNSUITABLE MATERIAL ENCOUNTERED DURING PLACEMENT OF BEDDING SHALL BE REMOVED AND REPLACED.
2. WITHIN 3 FEET OF FUTURE PAVED AREA, GRANULAR BACKFILL IS TO BE USED INSTEAD OF EARTH BACKFILL.
3. AT CONTRACTOR'S OPTION IDOT CONTROLLED LOW STRENGTH MATERIAL WITH A HIGH EARLY STRENGTH, "FLASH FILL", MAY BE USED INSTEAD OF GRANULAR TRENCH BACKFILL UNDER PAVEMENTS.
4. CA-7 BEDDING MAY BE PERMITTED IN CERTAIN CONDITIONS AS SPECIFIED IN STANDARD SPECIFICATIONS.

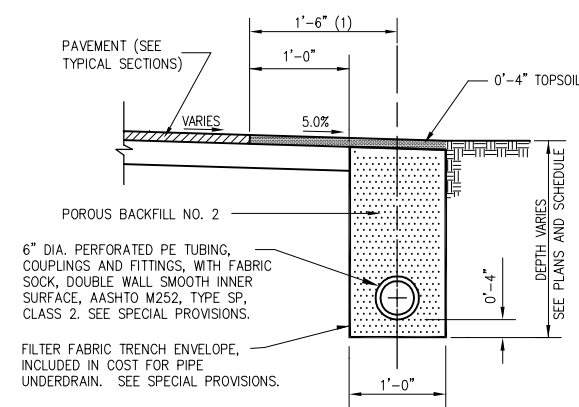
PIPE TRENCH



UNDERDRAIN CLEANOUT



UNDERDRAIN INSPECTION HOLE



UNDERDRAIN ALONG PAVEMENT EDGE

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

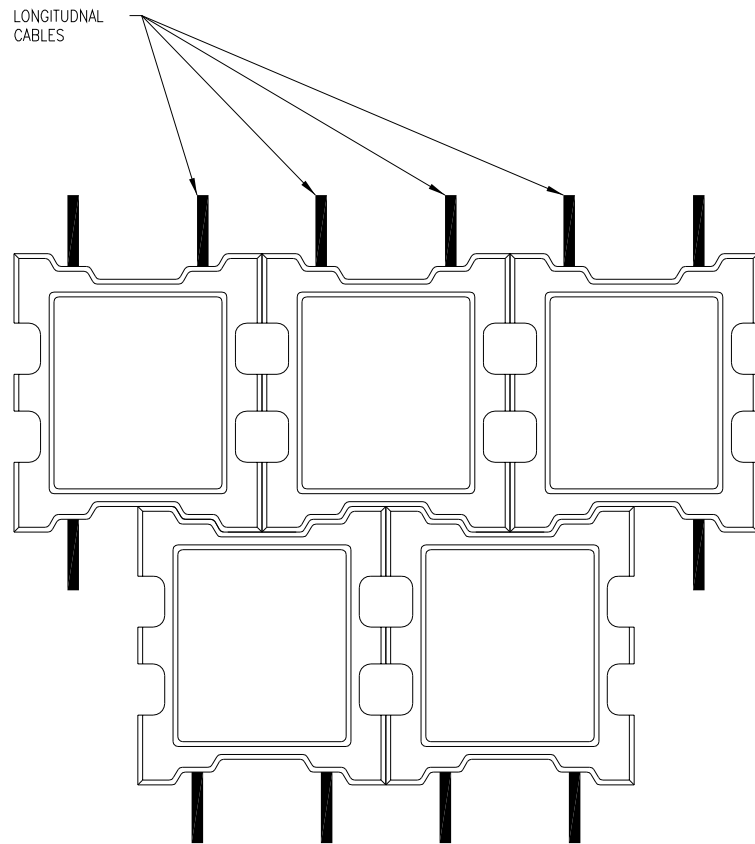
LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

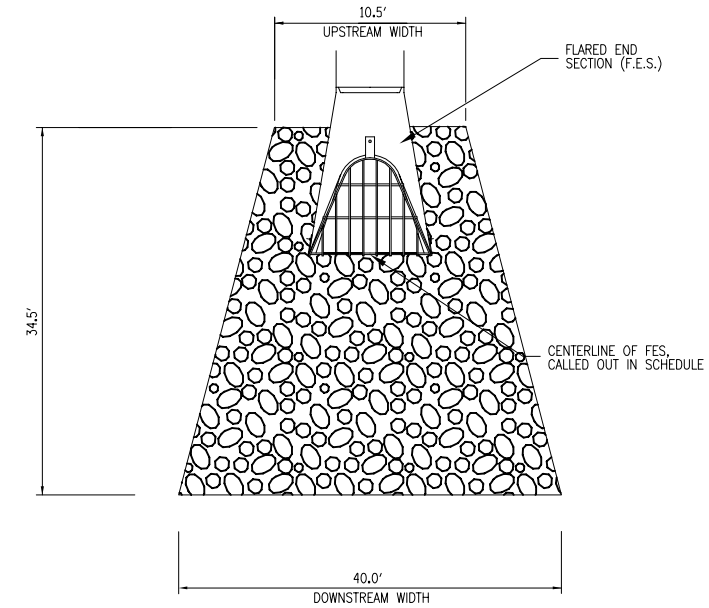
ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 33-DRAINAGEDET.DWG
DESIGN BY: LDH 3/18/16
DRAWN BY: LDH 3/18/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

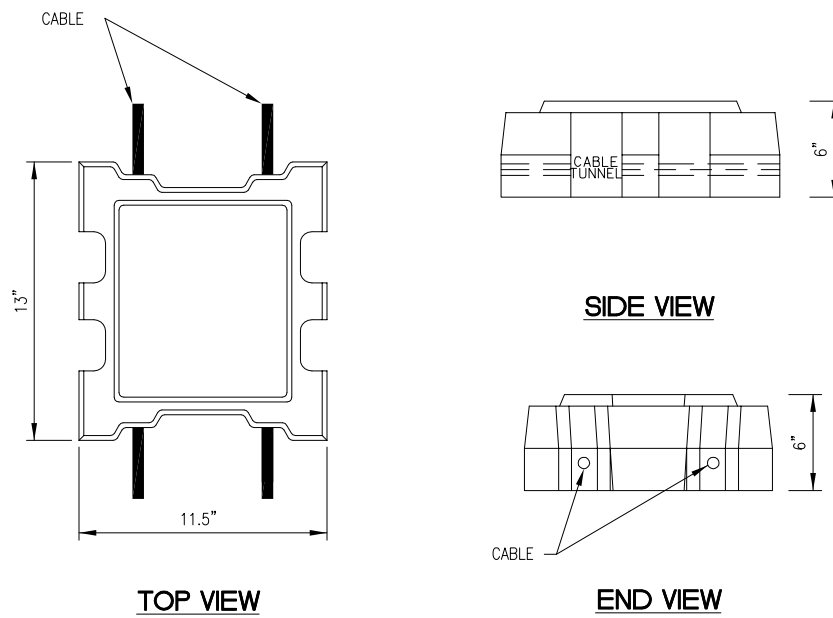
DRAINAGE AND UNDERDRAIN DETAILS



PLAN



RIPRAP DETAIL

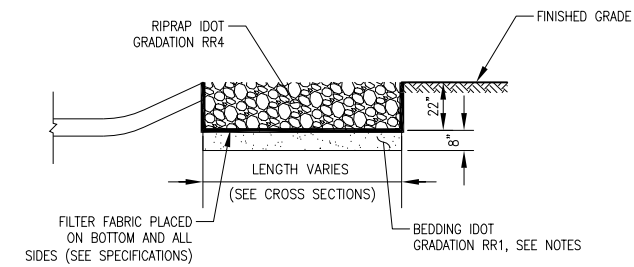


CONCRETE CABLE BOTTOM

(ARMORFLEX CLOSED STANDARD CLASS 55S DIMENSIONS,
OR APPROVED EQUIVALENT)

NOTES

1. FOUNDATION PREPARATION SHALL BE AS RECOMMENDED BY MANUFACTURER.
2. FILTER FABRIC MEETING THE REQUIREMENTS OF ITEM AR156513 IS TO BE PLACED ON TOP OF COMPACTED SUBGRADE BEFORE ARMORFLEX BLOCK IS PLACED.
3. CONCRETE CELLS INCLUDE CONNECTING CABLES AND FITTINGS.
4. EXPOSED EDGES SHALL BE EDGED WITH CONCRETE (ITEM 610) OR CONCRETE GROUT (IDOT-APPROVED). EDGES SHALL BE BACKFILLED AND COMPACTED FLUSH WITH THE UNITS AND FINAL GRADE.
5. OPEN AREAS BETWEEN CELLS SHALL BE BACKFILLED WITH SAND (IDOT FA-1 OR FA-2) OR OTHER MATERIAL APPROVED BY MANUFACTURER.
6. ALL MATERIALS AND WORK, INCLUDING FABRIC, CONCRETE CELLS, CONCRETE EDGING, AND SAND BACKFILL FOR THIS ITEM IS TO BE PAID UNDER AR803003.



RIPRAP SECTION

NOTES

1. COST OF FILTER FABRIC IS INCIDENTAL TO RIPRAP.
2. CENTERLINE OF FLARED END SECTION WILL BE CALLED OUT IN SCHEDULE. THE WIDTH OF THE RIPRAP WILL BE CENTERED ON THIS LOCATION. THE PLACEMENT OF THE RIPRAP CAN BE DETERMINED FROM THIS LOCATION.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016

PROJECT NO: 16A0012

CAD FILE: 34-EC DETAILS.DWG

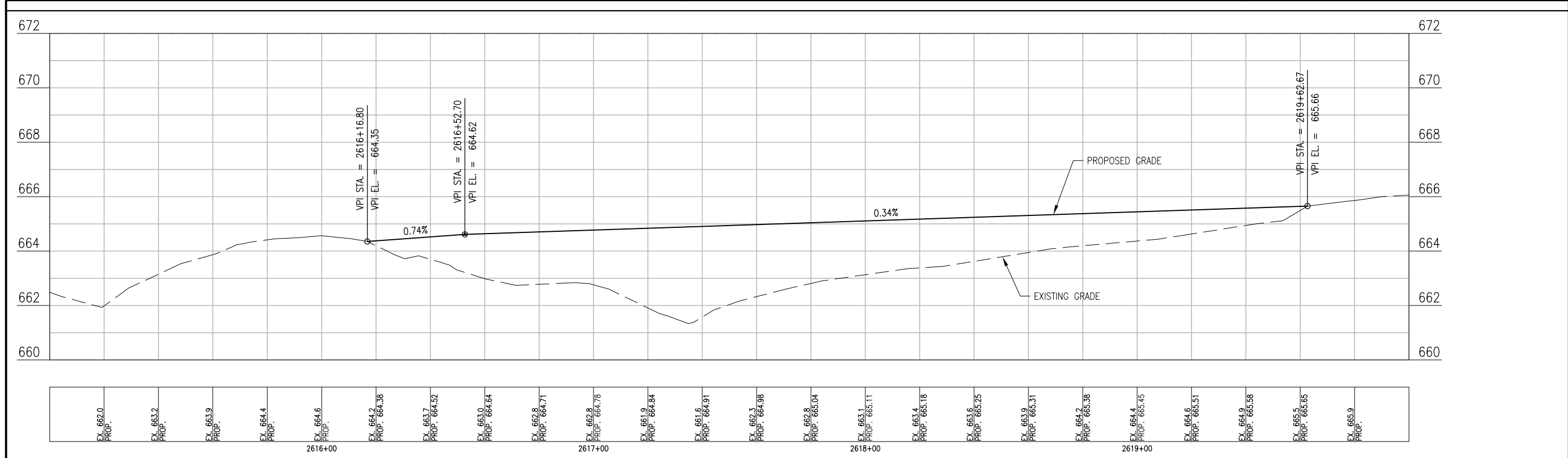
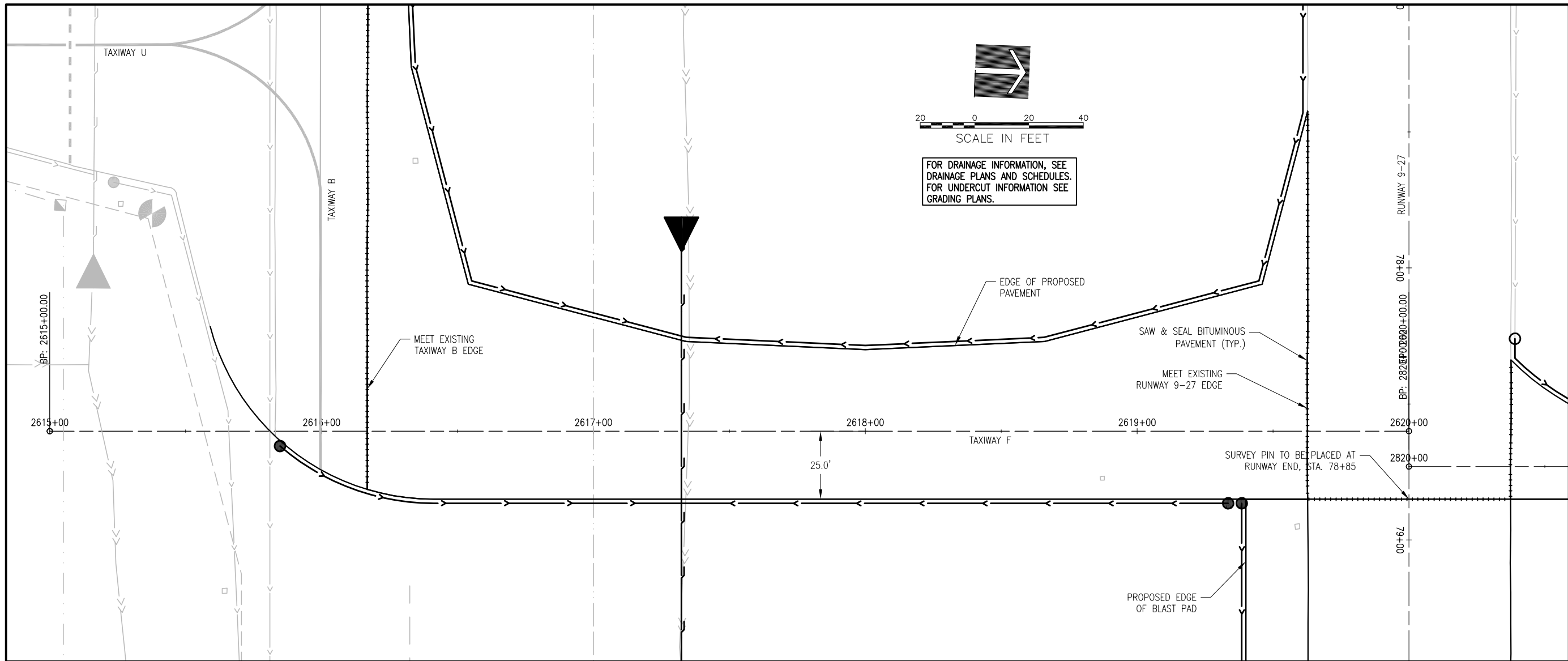
DESIGN BY: LDH 5/13/16

DRAWN BY: LDH 5/13/16

REVIEWED BY: SJM 6/6/16

SHEET TITLE

EROSION CONTROL DETAILS



**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

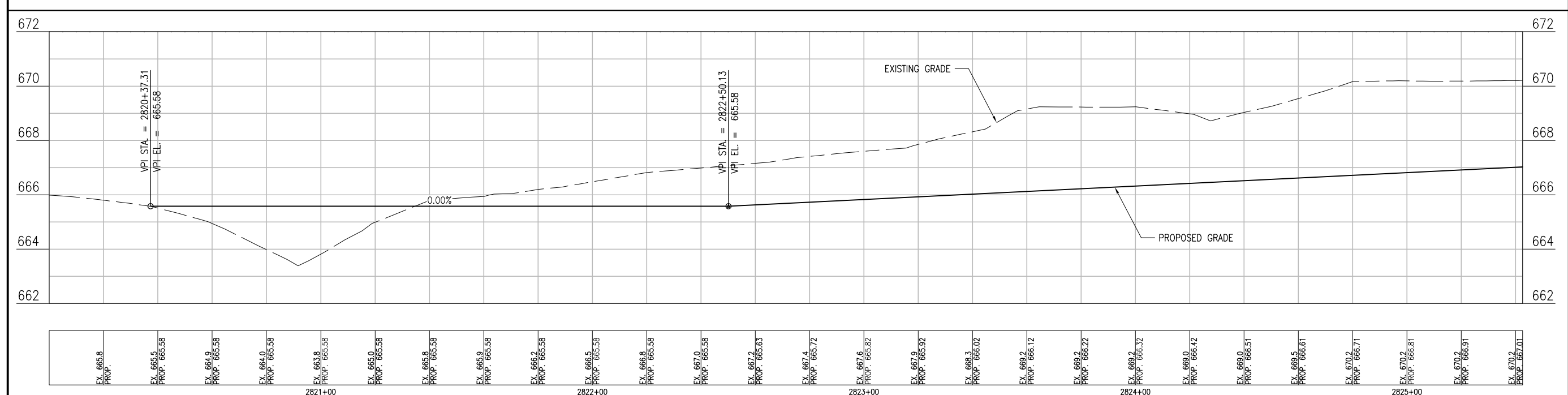
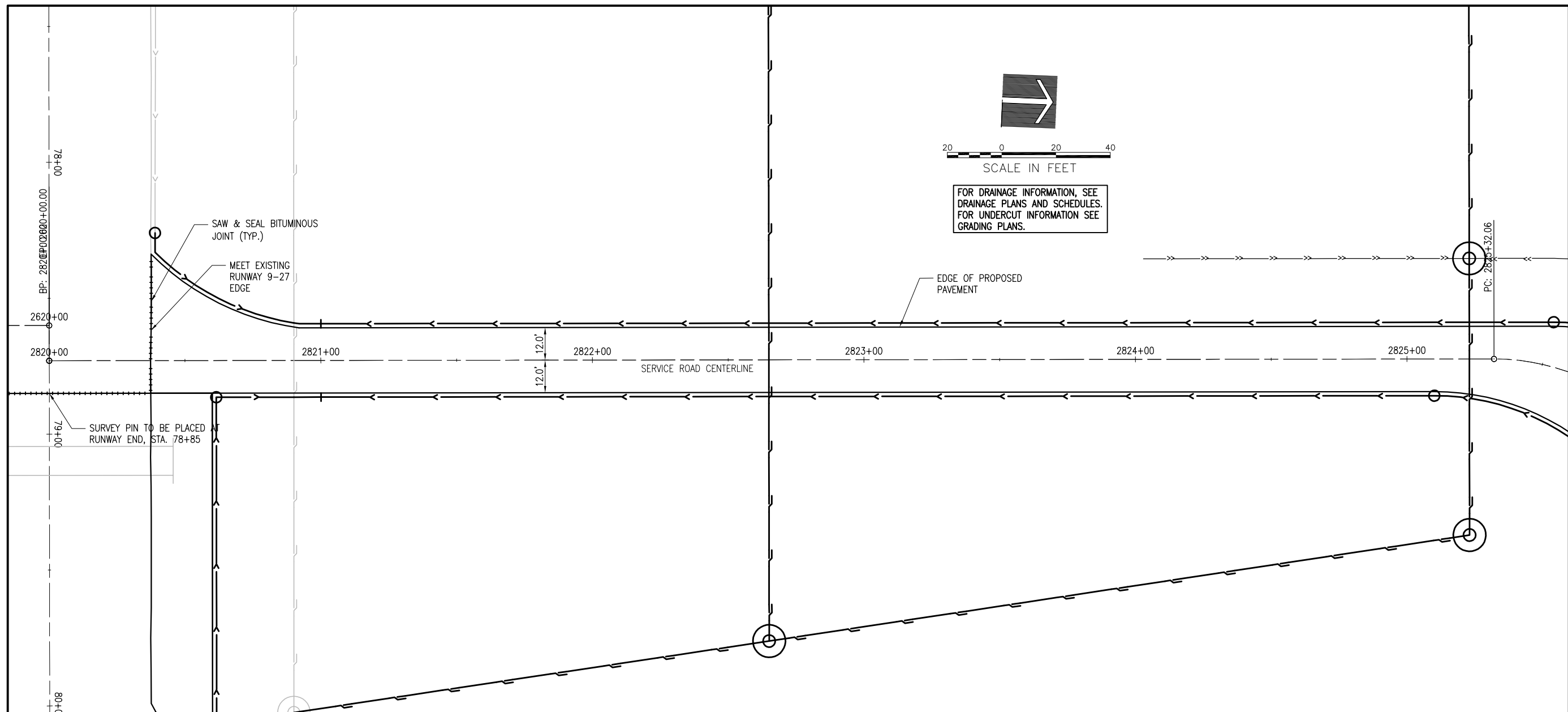
LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 35-P&P-TXYF-(1).DWG
DESIGN BY: LDH 5/3/16
DRAWN BY: LDH 5/3/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

**PLAN & PROFILE
TAXIWAY F**



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

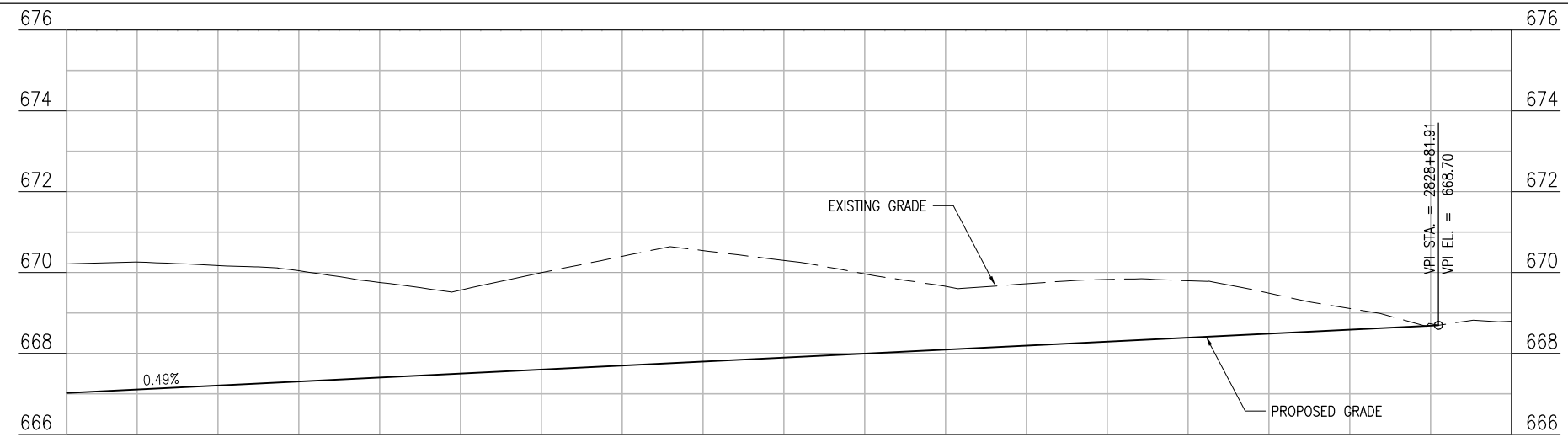
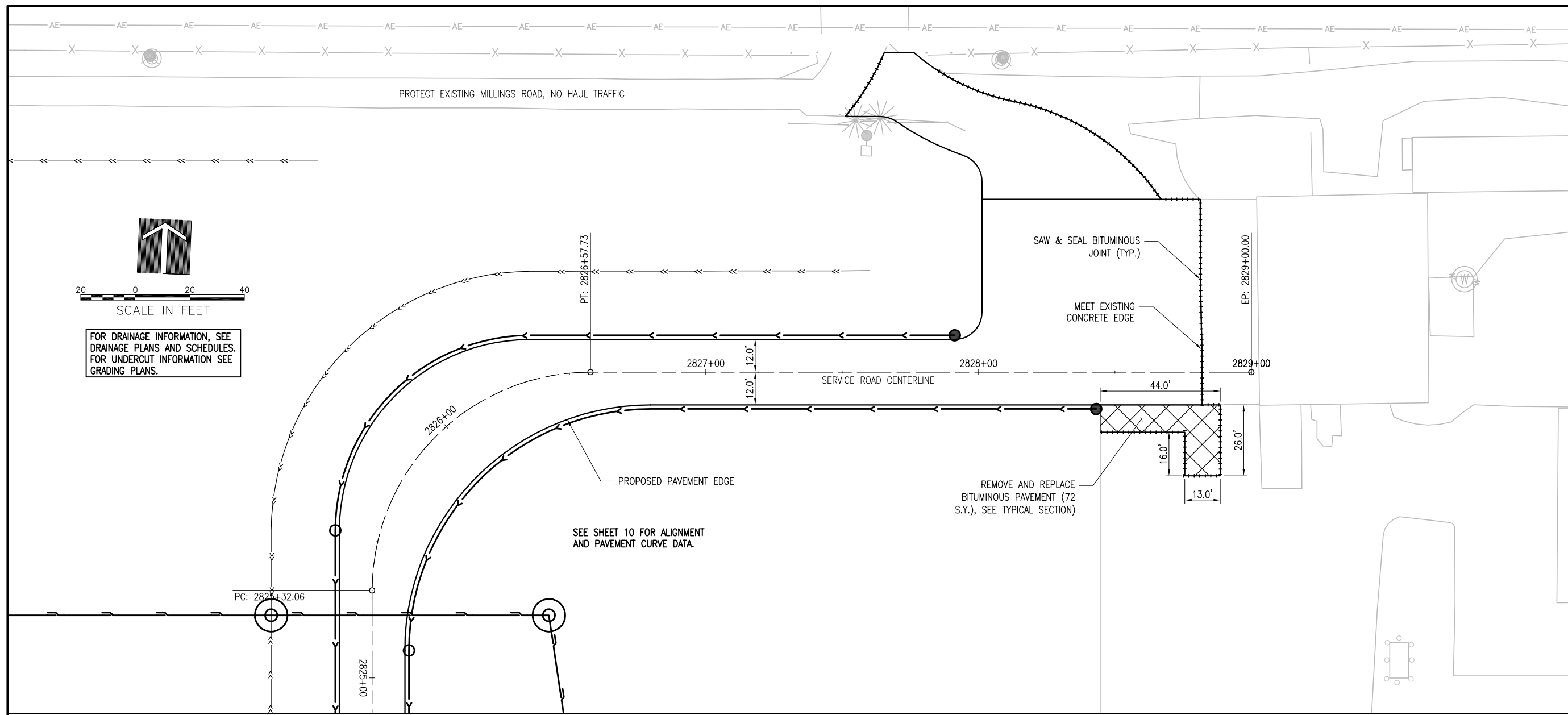
LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 36-P&P-SR - (1).DWG
DESIGN BY: LDH 5/12/16
DRAWN BY: LDH 5/12/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

PLAN & PROFILE SERVICE ROAD



EX. 670.3 PROP. 667.11	EX. 670.2 PROP. 667.21	EX. 670.0 PROP. 667.31	EX. 669.8 PROP. 667.40	EX. 669.6 PROP. 667.50	EX. 670.0 PROP. 667.60	EX. 670.4 PROP. 667.70	EX. 670.5 PROP. 667.80	EX. 670.3 PROP. 667.90	EX. 670.0 PROP. 668.00	EX. 669.7 PROP. 668.10	EX. 669.7 PROP. 668.19	EX. 669.8 PROP. 668.29	EX. 669.8 PROP. 668.39	EX. 669.5 PROP. 668.49	EX. 669.1 PROP. 668.59	EX. 668.7 PROP. 668.69	EX. 668.8 PROP.
2826+00			2827+00					2828+00					2829+00				

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

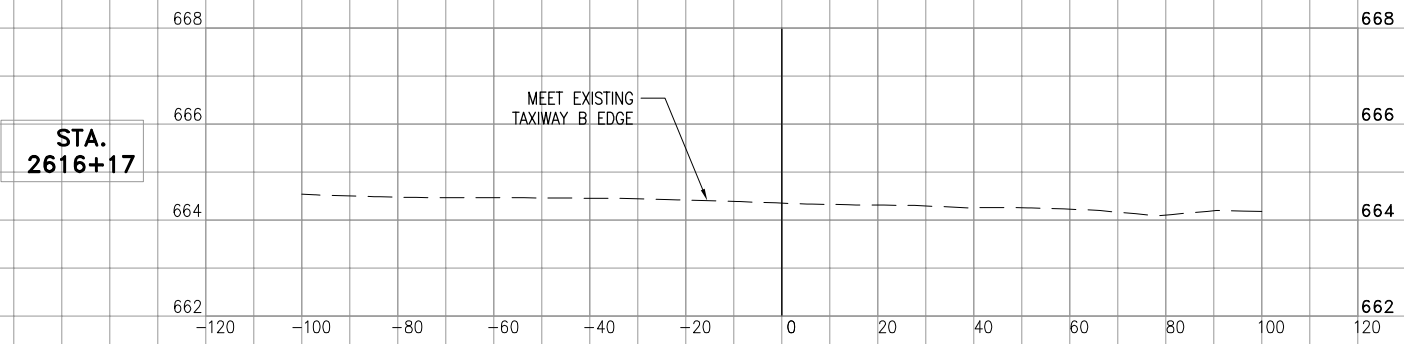
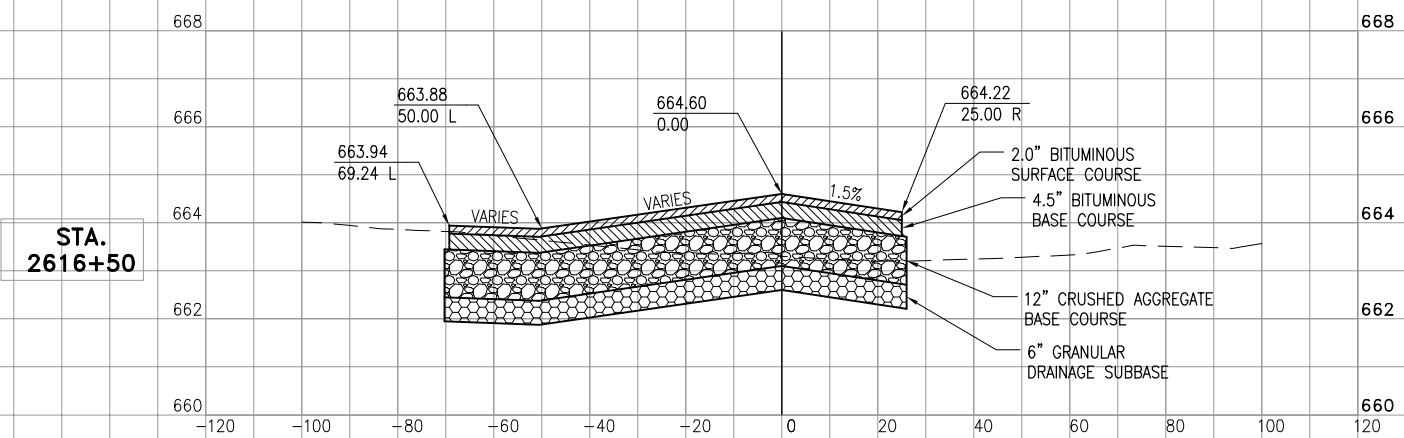
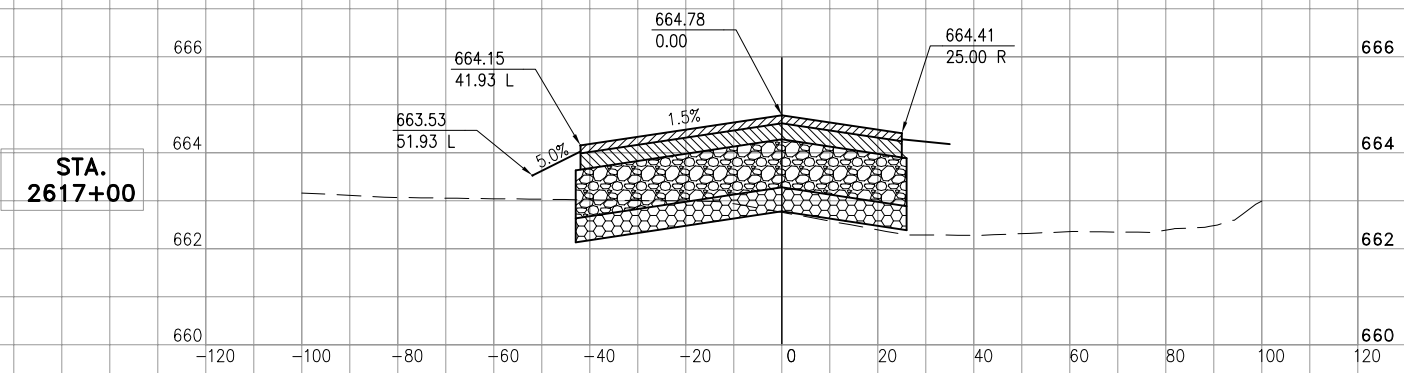
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 37-P&P-SR - (2).DWG
DESIGN BY: LDH 5/12/16
DRAWN BY: LDH 5/12/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

PLAN & PROFILE SERVICE ROAD

FOR ADDITIONAL GRADING,
SEE GRADING PLANS



**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

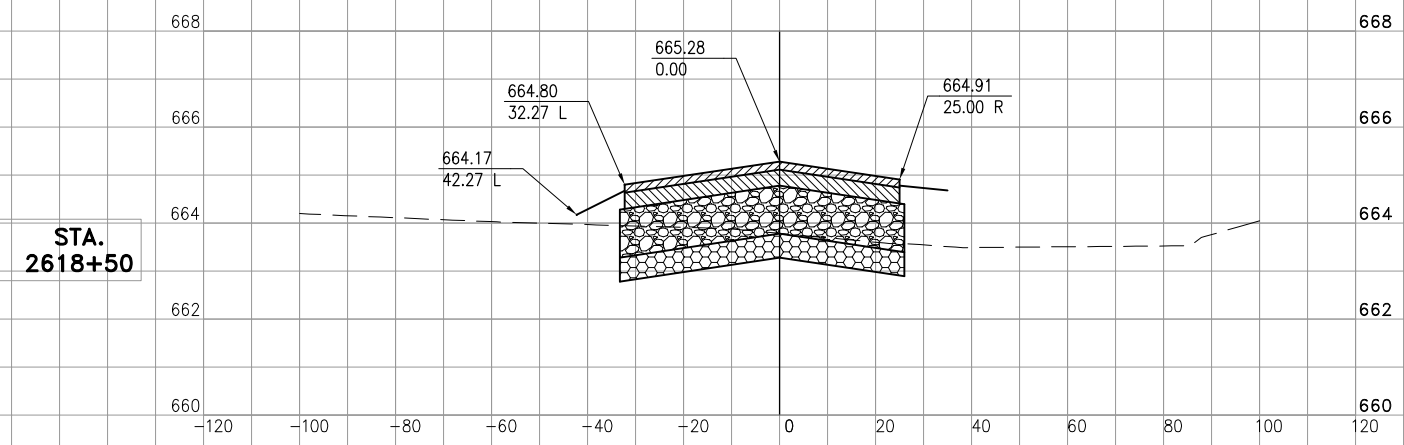
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 38-SECTIONS.DWG
DESIGN BY: LDH 5/12/16
DRAWN BY: LDH 5/12/16
REVIEWED BY: SJM 6/6/16

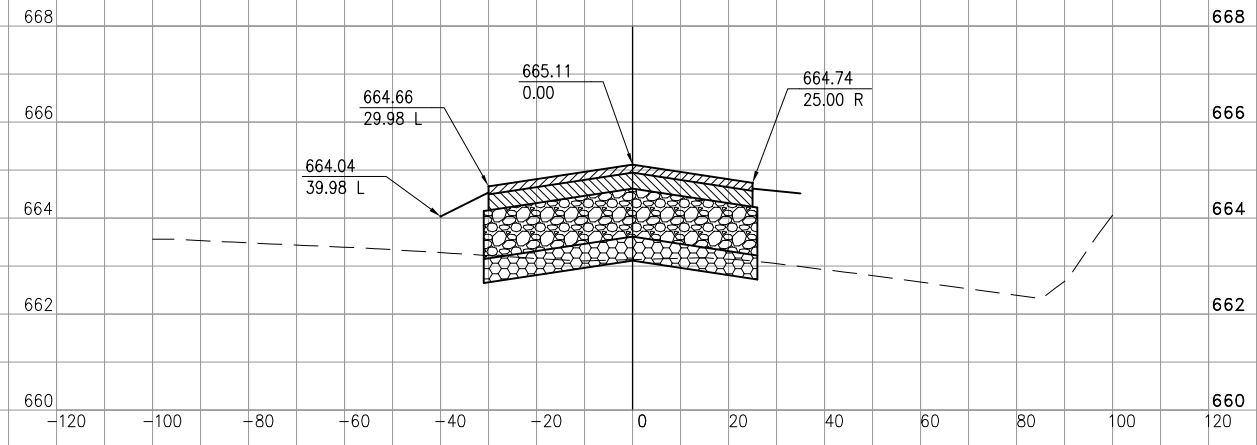
SHEET TITLE

**PAVEMENT
CROSS SECTIONS
TAXIWAY F**

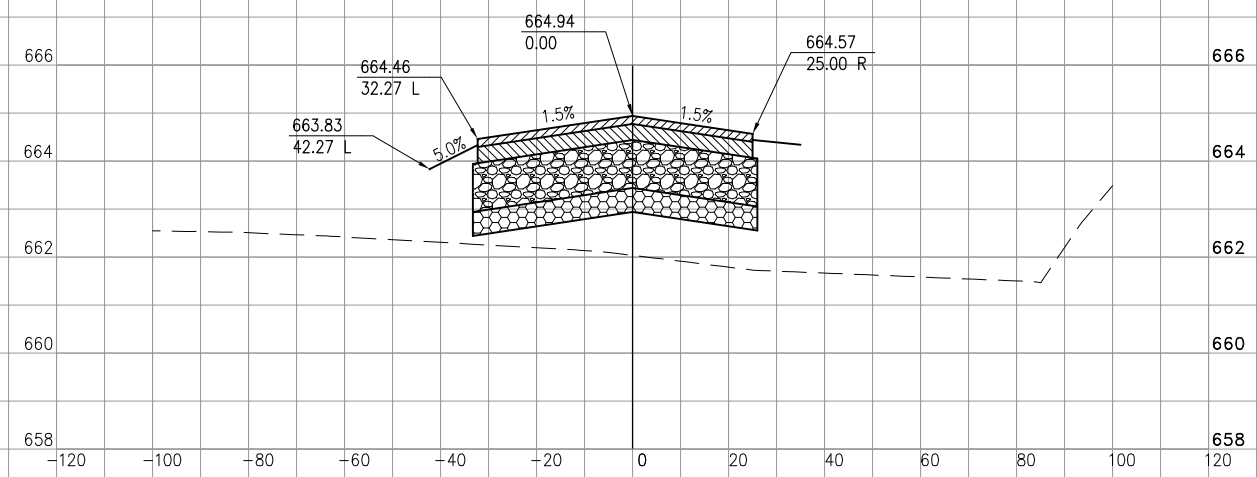
FOR ADDITIONAL GRADING,
SEE GRADING PLANS



STA.
2618+00



STA.
2617+50



RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

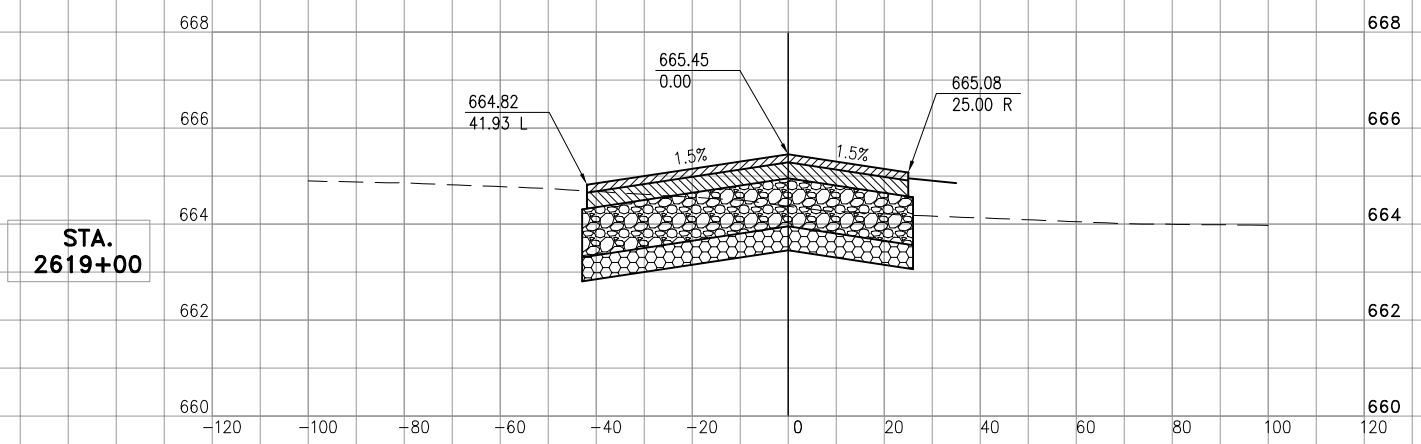
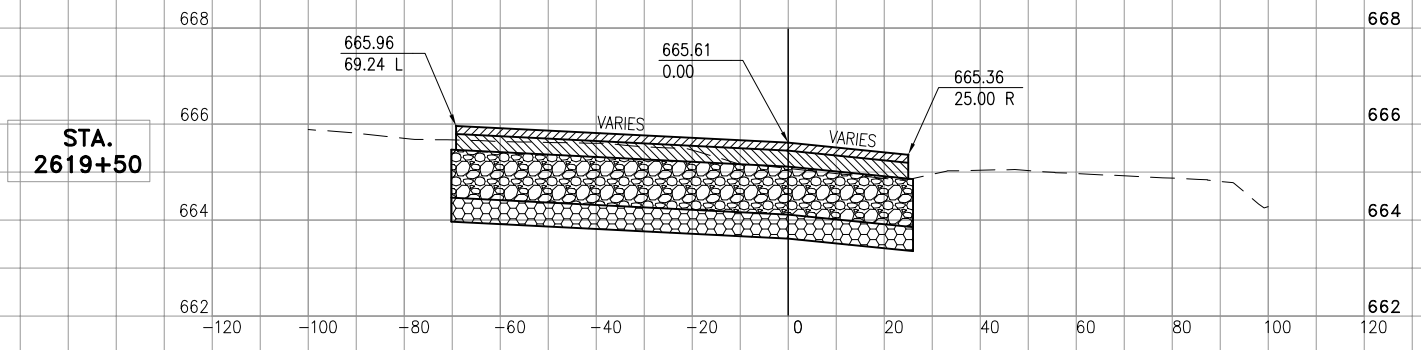
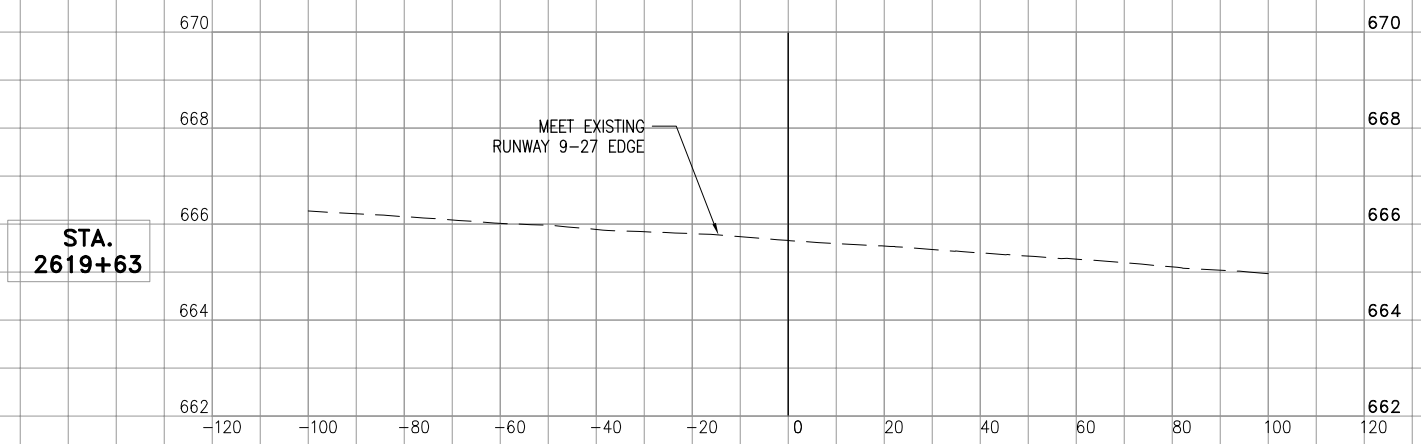
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 39-SECTIONS.DWG
DESIGN BY: LDH 5/12/16
DRAWN BY: LDH 5/12/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

PAVEMENT
CROSS SECTIONS
TAXIWAY F

FOR ADDITIONAL GRADING,
SEE GRADING PLANS



**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

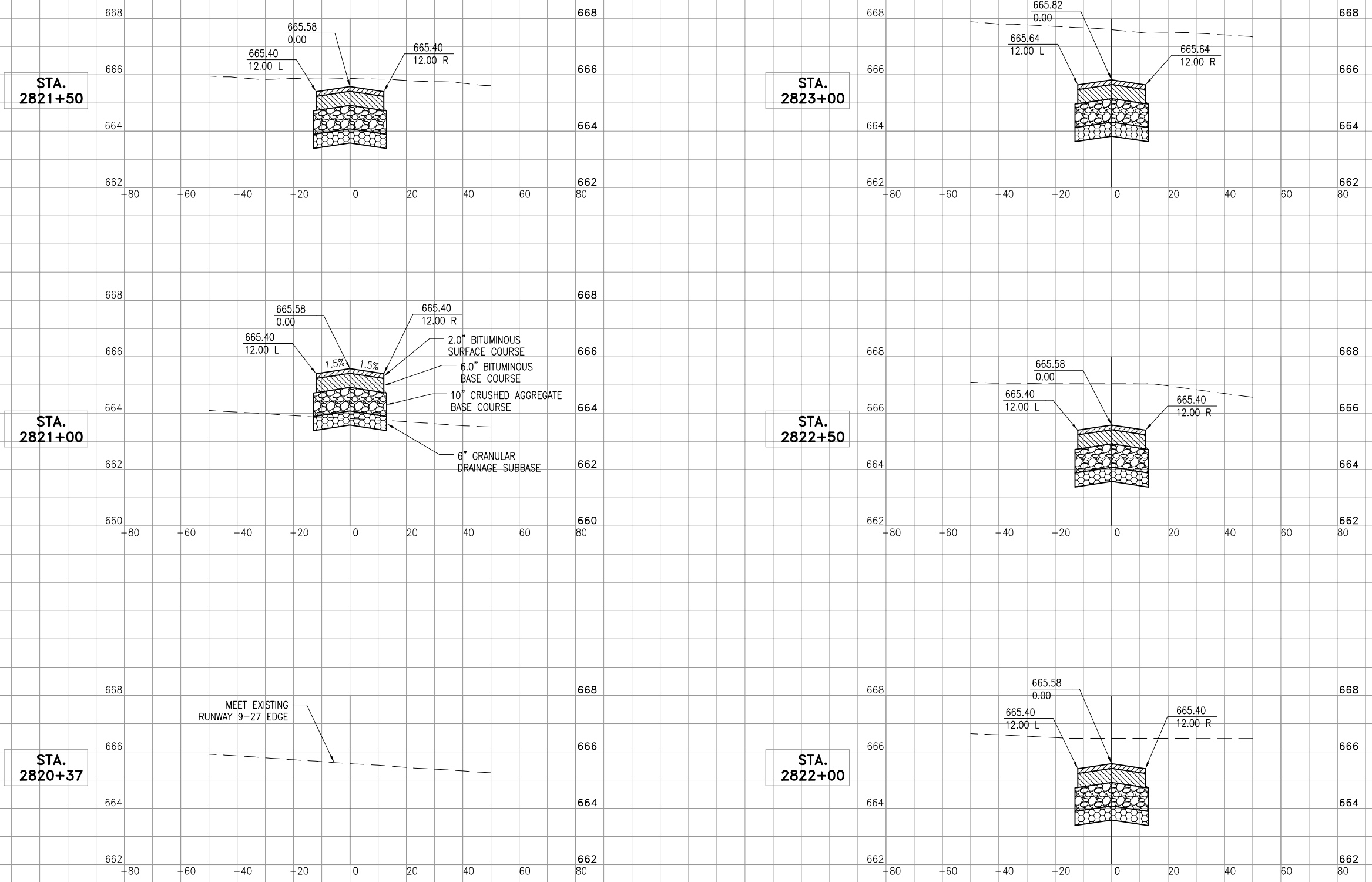
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 40-SECTIONS.DWG
DESIGN BY: LDH 5/12/16
DRAWN BY: LDH 5/12/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

**PAVEMENT
CROSS SECTIONS
TAIWAY F**

FOR ADDITIONAL GRADING,
SEE GRADING PLANS



**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

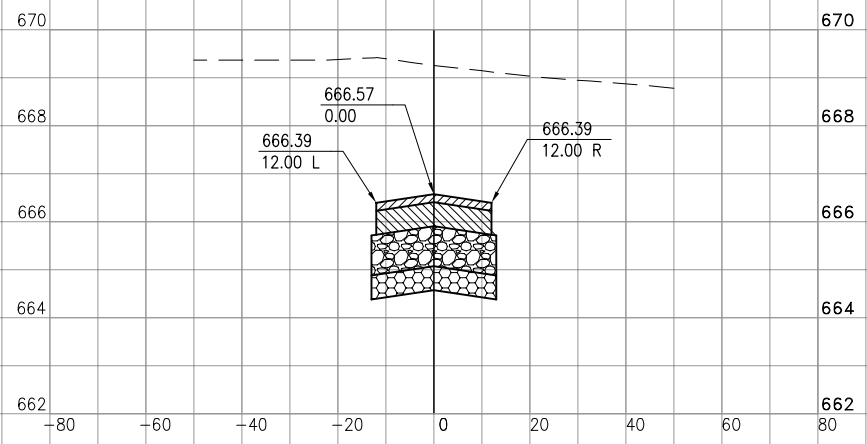
ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 41-SECTIONS.DWG
DESIGN BY: LDH 5/12/16
DRAWN BY: LDH 5/12/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

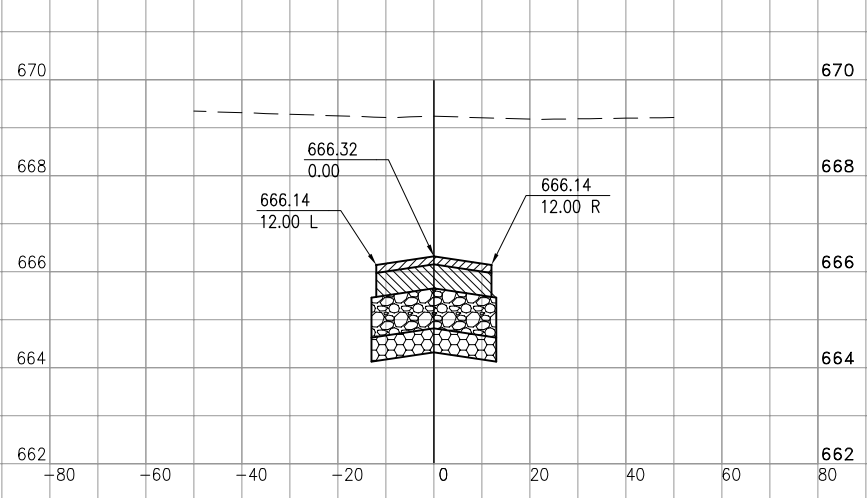
**PAVEMENT
CROSS SECTIONS
SERVICE ROAD**

FOR ADDITIONAL GRADING,
SEE GRADING PLANS

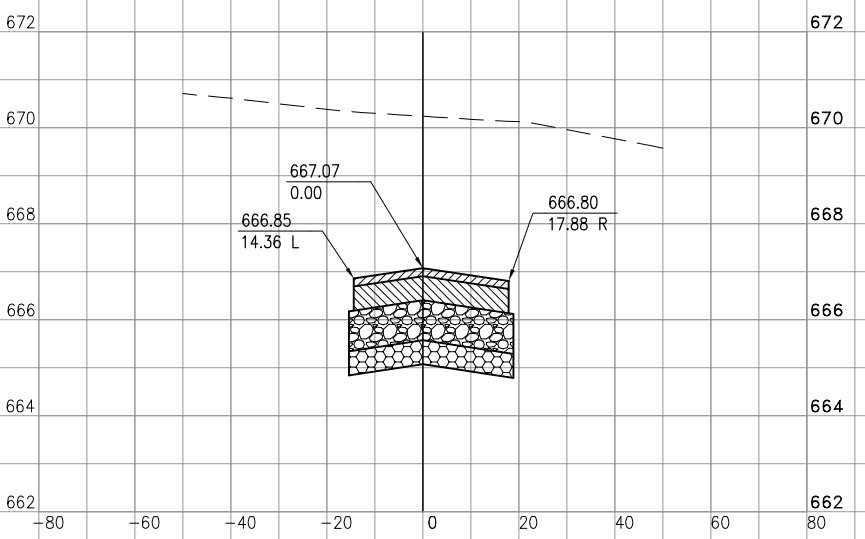
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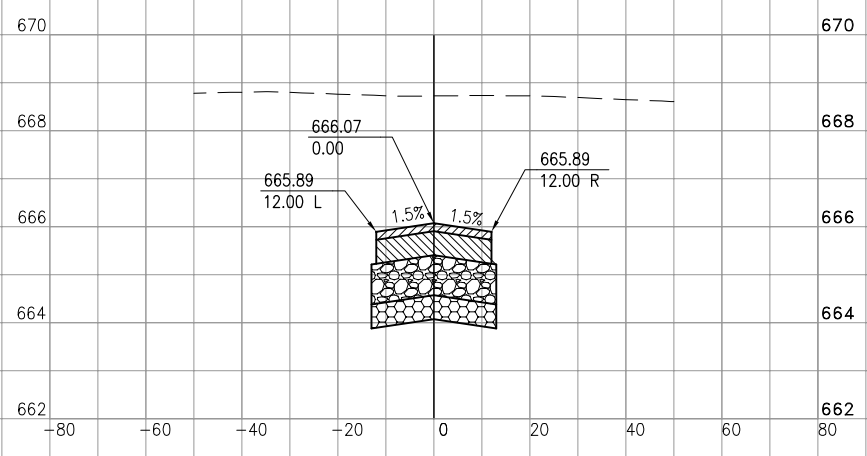
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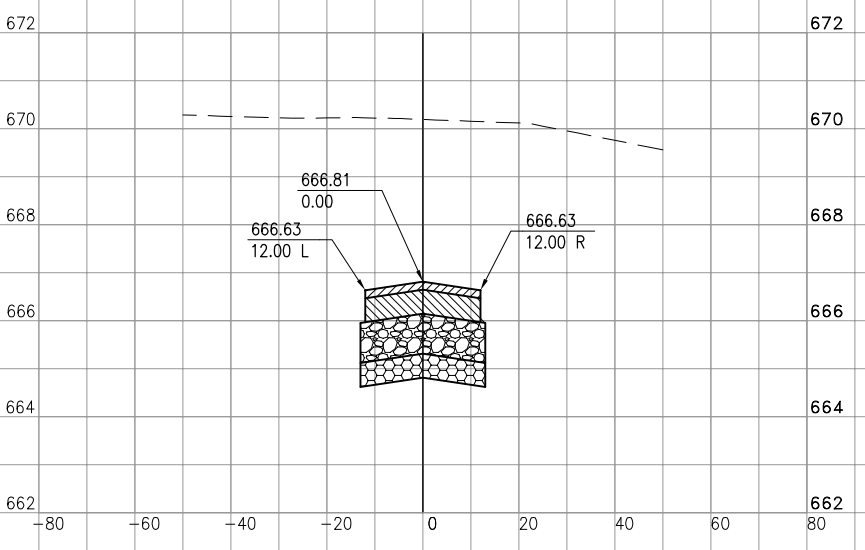
STA.
2825+50



STA.
2823+50



STA.
2825+00



RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

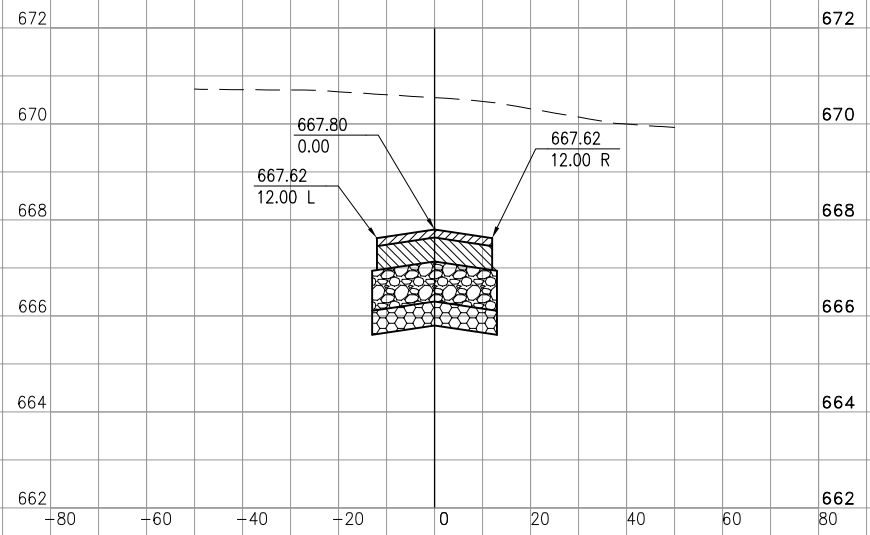
ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 42-SECTIONS.DWG
DESIGN BY: LDH 5/12/16
DRAWN BY: LDH 5/12/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

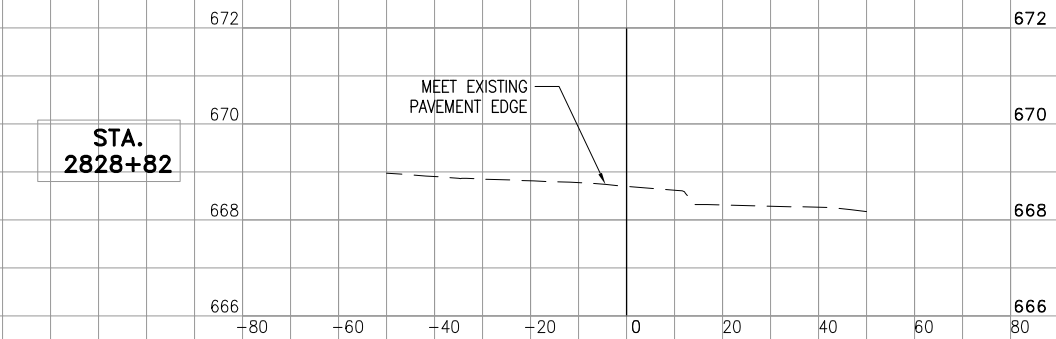
PAVEMENT
CROSS SECTIONS
SERVICE ROAD

FOR ADDITIONAL GRADING,
SEE GRADING PLANS

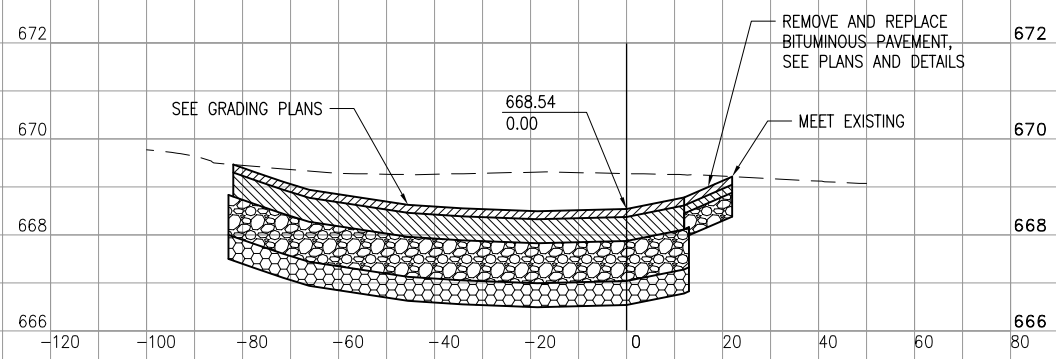
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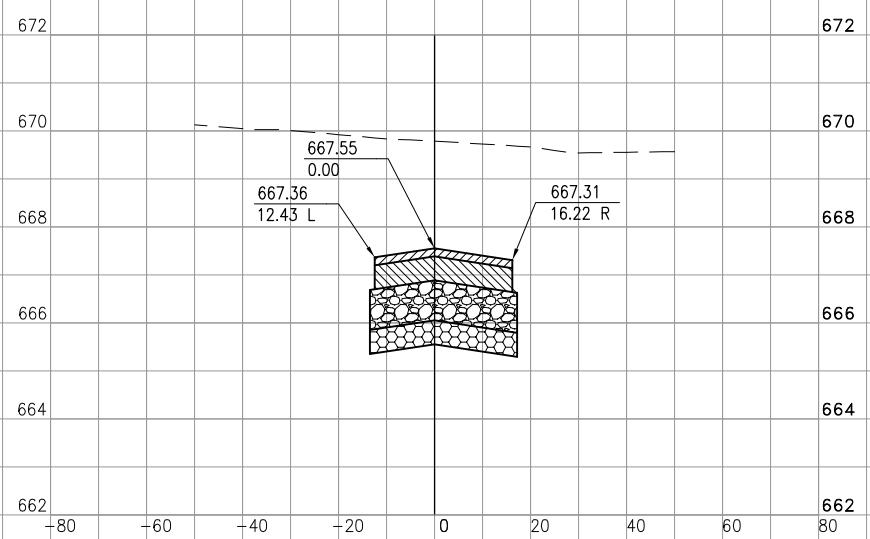
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2828+82



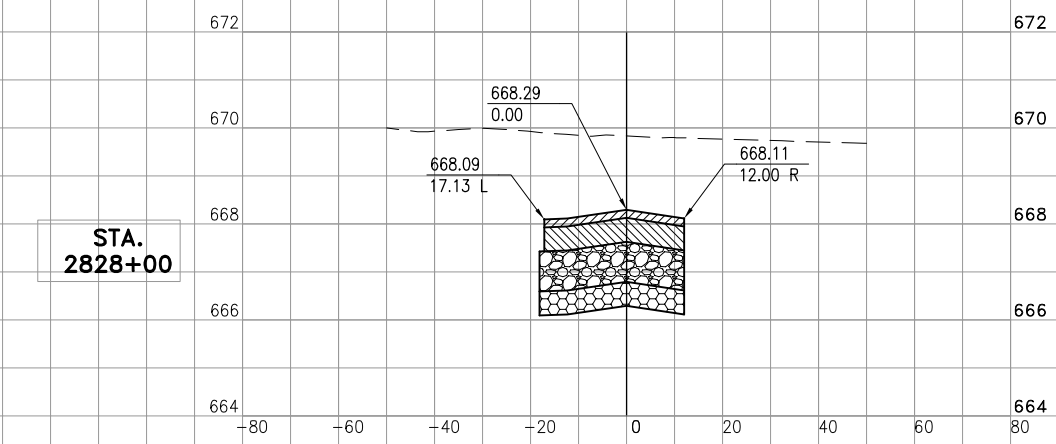
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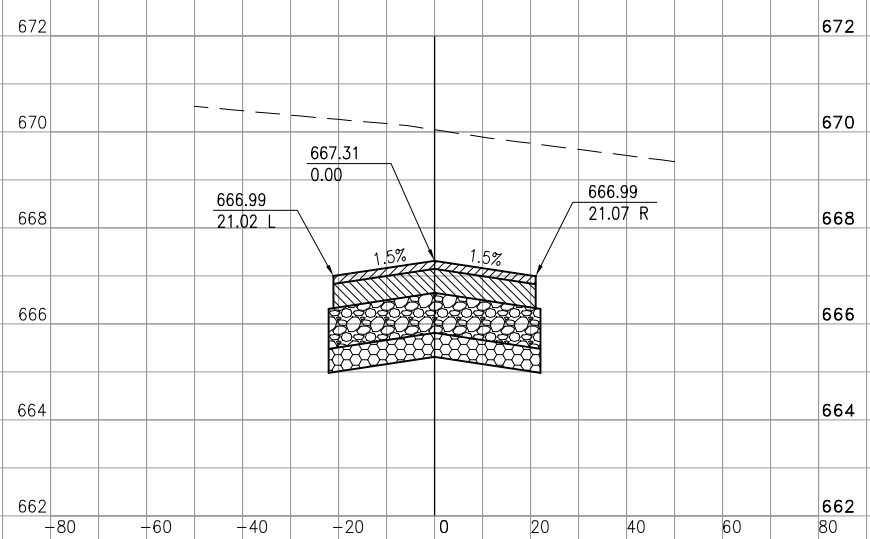
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2826+50



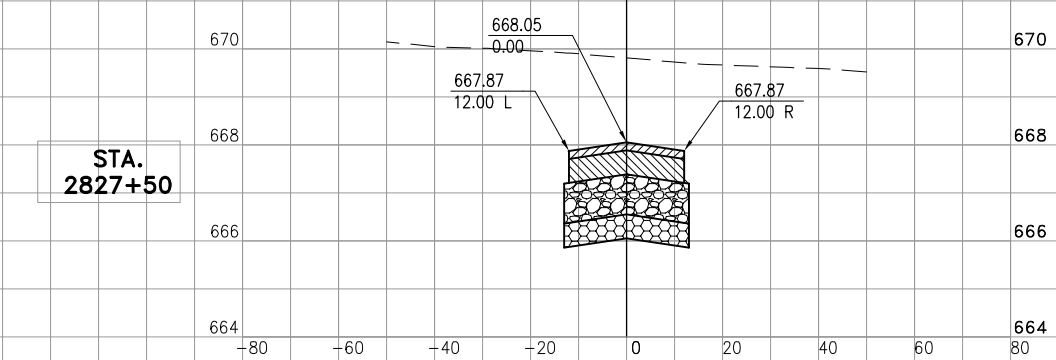
STA.
2828+00



STA.
2826+00



STA.
2827+50



RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

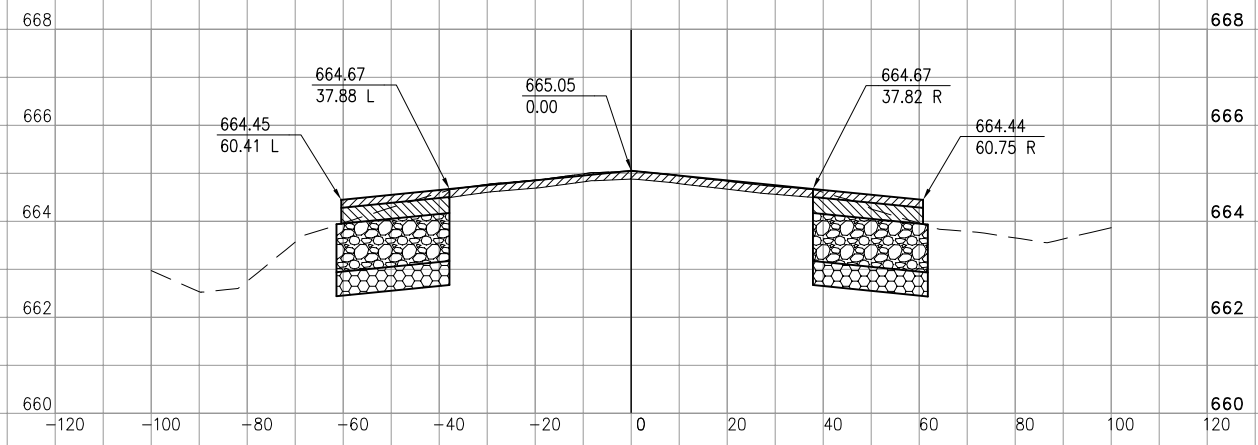
ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 43-SECTIONS.DWG
DESIGN BY: LDH 5/12/16
DRAWN BY: LDH 5/12/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

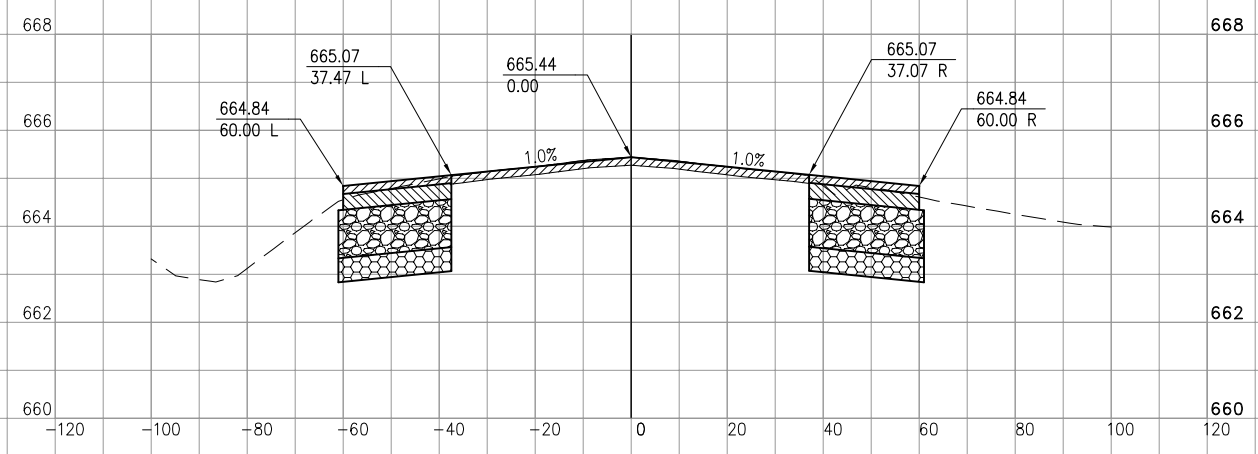
PAVEMENT
CROSS SECTIONS
SERVICE ROAD

FOR ADDITIONAL GRADING,
SEE GRADING PLANS

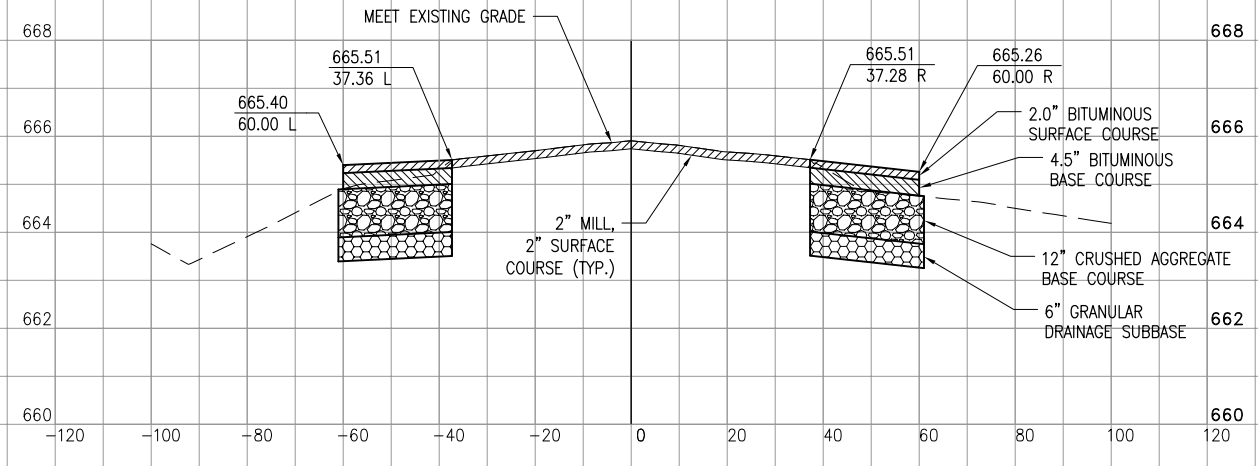
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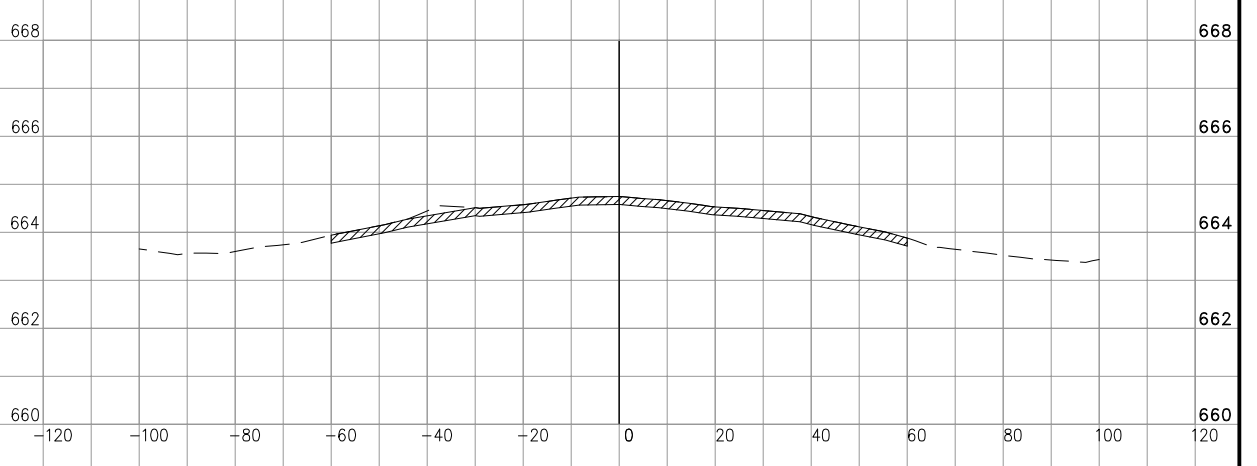
STA.
79+50



STA.
78+85



STA.
80+35



**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 44-SECTIONS.DWG
DESIGN BY: LDH 5/12/16
DRAWN BY: LDH 5/12/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

**PAVEMENT
CROSS SECTIONS
BLAST PAD**

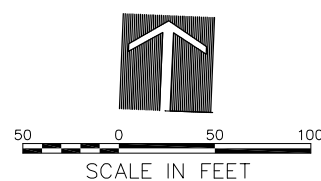
EARTHWORK SUMMARY IN CUBIC YARDS

	CUT	FILL
EXCESS MATERIAL PLACEMENT AREA		
TOPSOIL STRIPPING	4,219	
EXCESS MATERIAL PLACEMENT		60,938
TOPSOIL PLACEMENT		4,219
RUNWAY 9-27 RSA AREA		
CUT INCLUDING TOPSOIL STRIPPING	91,962	
SOIL MATERIAL FILL		9,860
CA-6 BACKFILL		3,163
TOPSOIL PLACEMENT		21,164
TOTAL		
UNCLASSIFIED EXCAVATION =	96,181	
TOPSOILING =		25,383

NOTES:

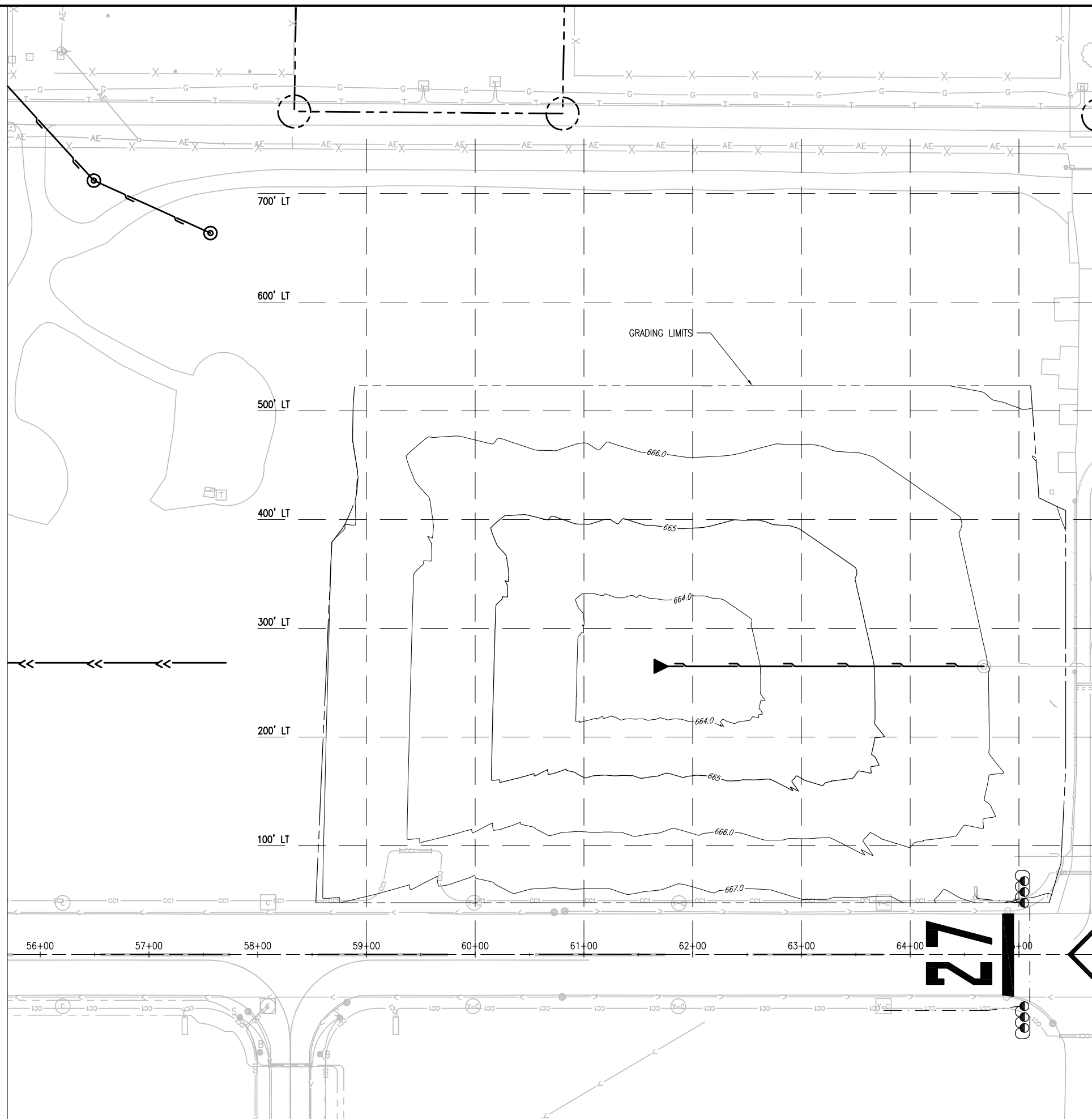
THE CONTRACTOR SHALL LIMIT THE ACREAGE OF DISTURBED GROUND TO ONLY THAT NECESSARY FOR THE CONDUCT OF AN EFFICIENT CONSTRUCTION PROCESS WITHOUT OVER-EXPOSING NON-VEGETATED AREAS. ANY DISTURBED AREA OF CONSTRUCTION THAT WILL NOT BE REWORKED FOR A PERIOD LONGER THAN 14 DAYS MUST BE SEEDED OR MULCHED, WITH EITHER PERMANENT SEEDING, OR TEMPORARY SEEDING AND MULCHING, ITEM AR803008, AFTER APPROVAL BY THE RESIDENT ENGINEER OF THIS PROPOSED ACTION. THE CONTRACTOR SHALL MAKE BEST EFFORT TO REDUCE THE NEED FOR TEMPORARY COVERING BY SCHEDULING HIS EARTHWORK ACTIVITIES IN A PROPER SEQUENCE AND APPLY PERMANENT COVERING AT THE EARLIEST POSSIBLE DATE, WITHIN 14 DAYS, AFTER REACHING FINAL GRADE. OUTSIDE THE REGULAR PLANTING SEASON, TEMPORARY SEED AND MULCH SHALL BE PLACED AS STATED HERE. HOWEVER, NO PAYMENT FOR TEMPORARY SEEDING AND MULCHING WILL BE MADE IF THE TIME OF APPLICATION IS WITHIN THE REGULAR PLANTING SEASON(S) STATED IN THE SPECIAL PROVISIONS. DURING THE REGULAR PLANTING SEASON(S), ONLY PERMANENT COVERING SHALL BE PAID.

THE QUANTITIES SHOWN INCLUDE THE ESTIMATED TEMPORARY SEEDING AND MULCHING, ITEM AR803008, THAT MAY BE PLACED OUTSIDE THE REGULAR PLANTING SEASON. TEMPORARY SEEDING AND MULCHING PLACED DURING THE REGULAR PLANTING SEASON IS INCIDENTAL TO THE CONTRACT.



LEGEND:

- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED STORM SEWER STRUCTURE
- PROPOSED INSPECTION HOLE
- PROPOSED CLEANOUT
- PROPOSED FLARED END SECTION
- PROPOSED INFILTRATION TRENCH



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

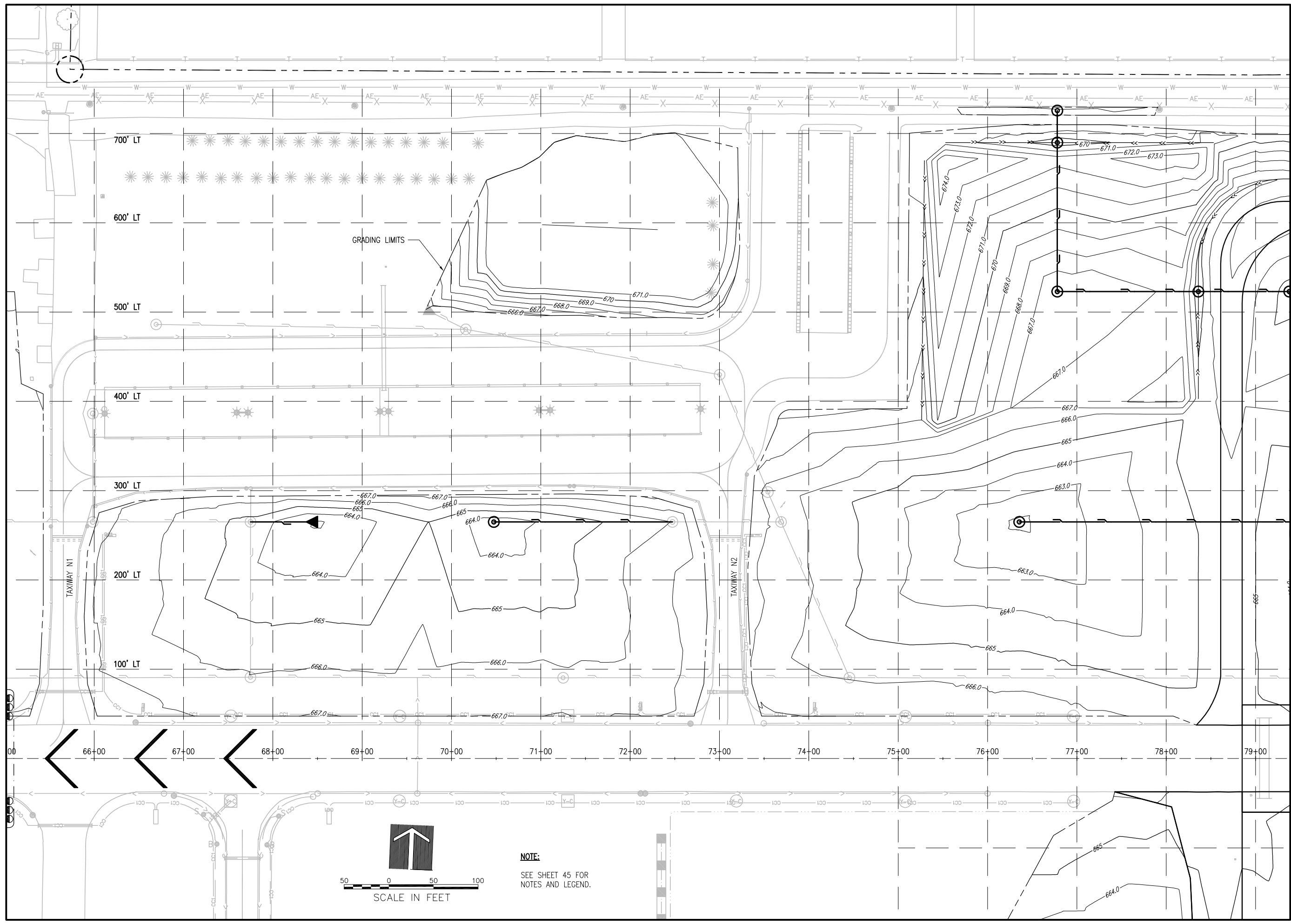
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PROJECT NO: 16A0012
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REVIEWED BY: SJM 6/6/16

SHEET TITLE

GRADING PLAN



**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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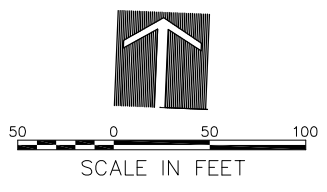
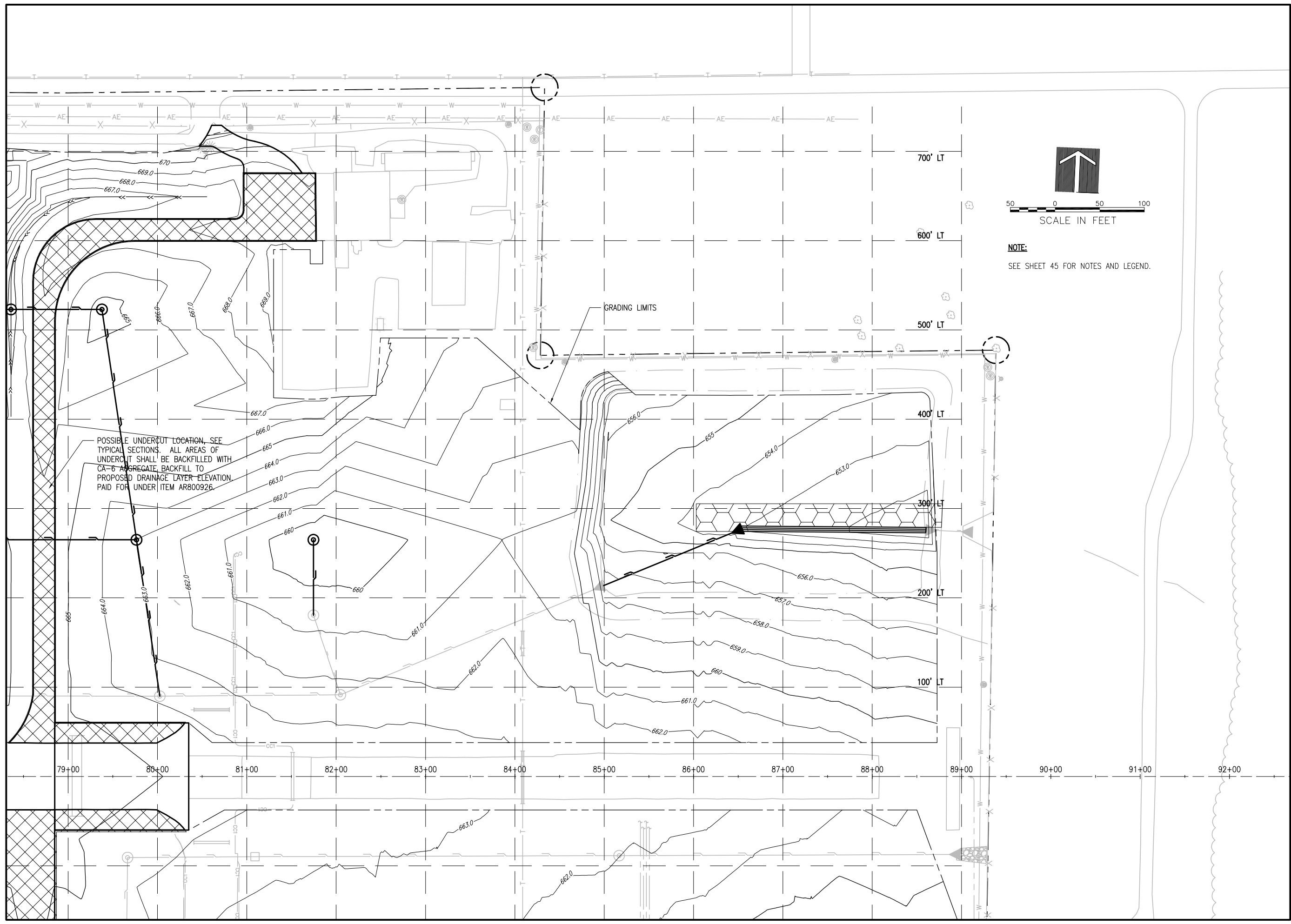
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SHEET TITLE

GRADING PLAN

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NOTE:
SEE SHEET 45 FOR NOTES AND LEGEND.

POSSIBLE UNDERCUT LOCATION, SEE TYPICAL SECTIONS. ALL AREAS OF UNDERCUT SHALL BE BACKFILLED WITH CA-6 AGGREGATE, BACKFILL TO PROPOSED DRAINAGE LAYER ELEVATION, PAID FOR UNDER ITEM AR800926.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

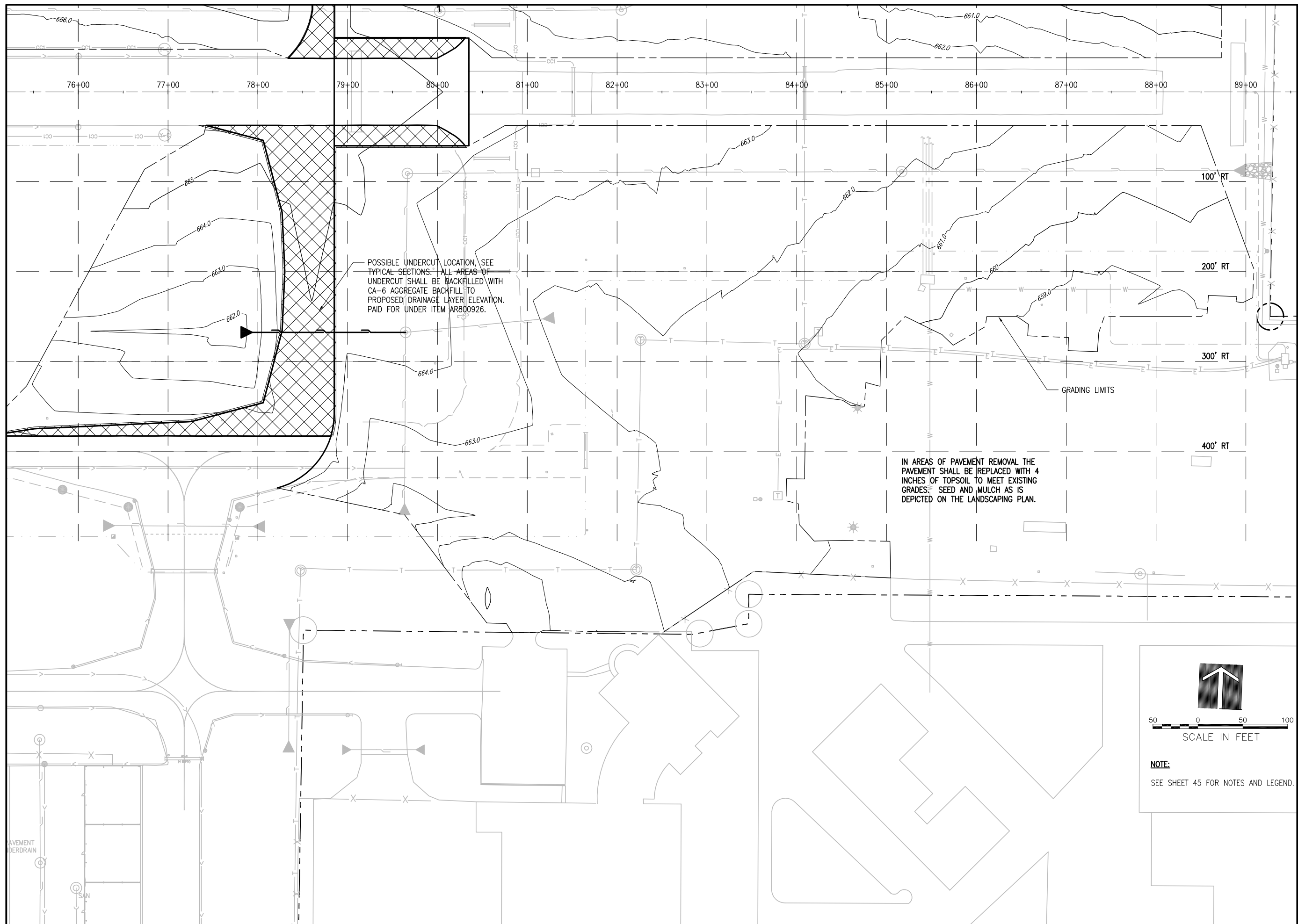
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RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
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SHEET TITLE

GRADING PLAN

SCALE IN FEET

NOTE:
SEE SHEET 45 FOR NOTES AND LEGEND.

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AIRFIELD LIGHTING NOTES

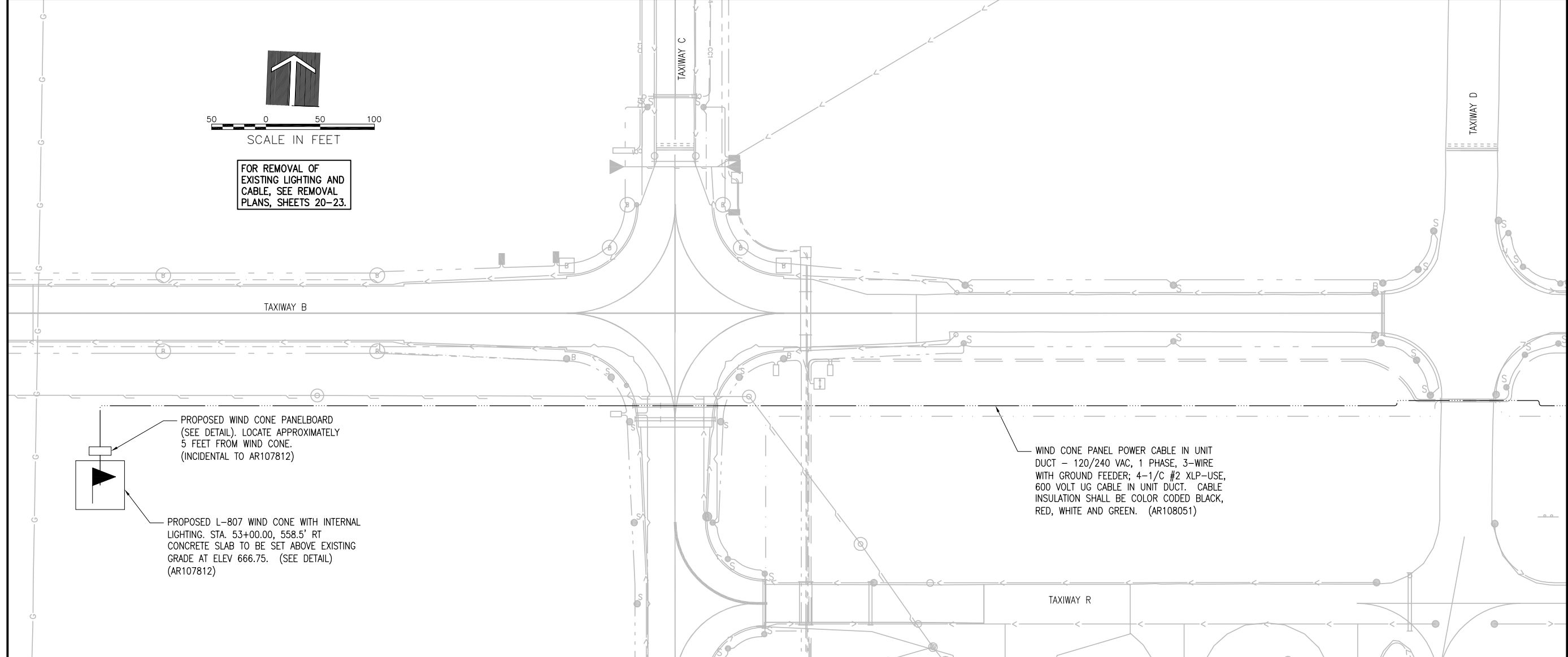
1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAID, OR OTHER DEVICE.
3. PROPOSED TAXIWAY LIGHTS AND CABLE SHALL BE INSTALLED AT THE LOCATIONS SHOWN AND IN COMPLIANCE WITH THE SPECIFICATIONS, SPECIAL PROVISIONS, RESPECTIVE DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
4. PROPOSED CABLE FOR TAXIWAY LIGHTING SHALL BE INSTALLED APPROXIMATELY 12' FROM THE RESPECTIVE PAVEMENT EDGE. CABLES SHALL BE PLACED A MINIMUM OF 24" BELOW FINISHED GRADE.
5. IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE CROSSES AN EXISTING CABLE, THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH NECESSARY FOR THE PROPOSED CABLE. AT OTHER LOCATIONS, THE PROPOSED CABLE MAY BE TRENCHED OR PLOWED INTO PLACE. HAND DIGGING, TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
6. ALL PROPOSED TAXIWAY LIGHTS SHALL BE FITTED WITH 360° BLUE LENSES. OTHER LIGHTS SHALL HAVE LENSES AS DETAILED ON THE LIGHT FIXTURE SCHEDULE.
7. ALL PROPOSED LIGHTS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE LIGHT NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS.
8. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA AC 150/5370-2F, PARAGRAPH C. ALL LABOR, MATERIALS, AND TIME NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
9. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT.
10. EXISTING AIRFIELD LIGHTING CABLES IN AREAS OF NEW WORK SHALL BE DISCONNECTED & REMOVED WHERE IN CONFLICT WITH NEW CONSTRUCTION. IN OTHER AREAS CABLES MAY BE ABANDONED IN PLACE, UNLESS DETAILED OTHERWISE TO REMOVE. COST INCIDENTAL TO CONTRACT.
11. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE NEW WORK, WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND TOPSOILED, SEEDED AND MULCHED IN ACCORDANCE WITH ITEMS 901, 905 AND 908.
12. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE AIRPORT OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE AIRPORT MANAGER OR DESIGNATED 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. CONTACT AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVE GROUND UTILITIES.

PROPOSED LEGEND

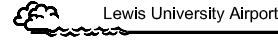
- L-861T STAKE MOUNTED TAXIWAY EDGE LIGHT, OMNIDIRECTIONAL; BLUE
- L-861T BASE MOUNTED TAXIWAY EDGE LIGHT, OMNIDIRECTIONAL; BLUE
- L-861SE BASE MOUNTED THRESHOLD LIGHT, BI-DIRECTIONAL; RED/GREEN
- L-858 TAXI GUIDANCE SIGN
- ◀ ADJUSTED REIL
- SC SPLICE CAN
- TAXIWAY SERIES CIRCUIT LIGHTING CABLES; 1/C #8 AWG, FAA L-824, 5000 VOLT, TYPE C UG CABLE IN UNIT DUCT
- cc--- RUNWAY SERIES CIRCUIT LIGHTING CABLES; 1/C #8 AWG, FAA L-824, 5000 VOLT, TYPE C UG CABLE IN UNIT DUCT
- WIND CONE POWER CABLE
- REIL POWER CABLE



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JOLIET REGIONAL PORT DISTRICT
1 Executive Terminal
George Michas Drive
Romeoville, Illinois 60446
phone: 815.838.9497
fax: 815.838.9524

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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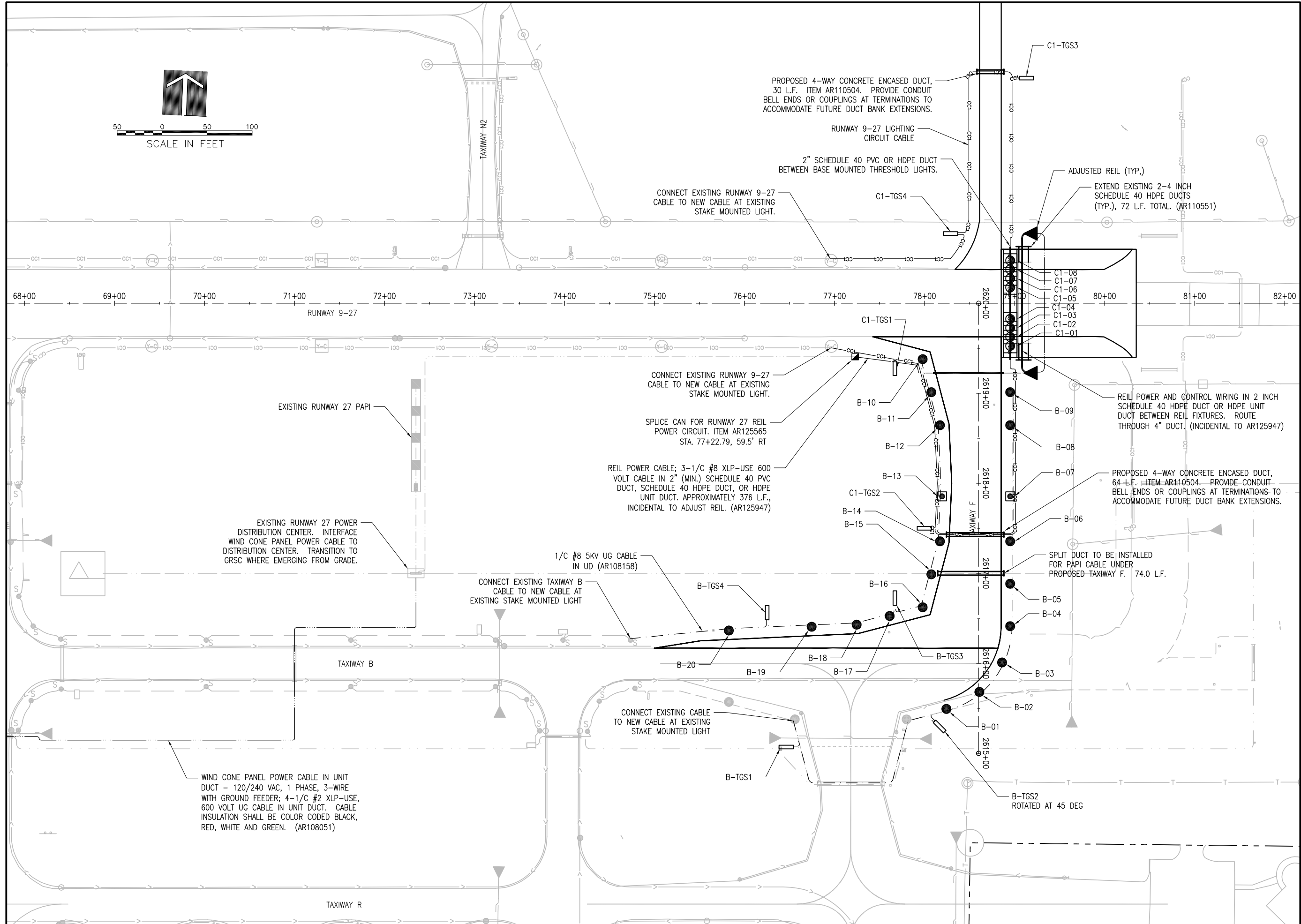
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SHEET TITLE

WIND CONE LOCATION PLAN

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RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

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SHEET TITLE

LIGHTING AND ELECTRICAL PLAN

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LIGHTING SCHEDULE

TAG ID.	DESCRIPTION	TYPE	DIRECTION	COLOR	MOUNTING	STATION	OFFSET		TAG ID.
B-01	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2615+49.34	35.88	LT	B-01
B-02	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2615+68.25	0.82	RT	B-02
B-03	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2616+00.94	26.03	RT	B-03
B-04	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2616+41.23	35.00	RT	B-04
B-05	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2616+88.37	35.00	RT	B-05
B-06	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2617+35.51	35.00	RT	B-06
B-07	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	2617+85.51	35.00	RT	B-07
B-08	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2618+64.49	35.00	RT	B-08
B-09	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2619+01.15	35.00	RT	B-09
B-10	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2619+37.81	62.19	LT	B-10
B-11	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2619+01.15	52.57	LT	B-11
B-12	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2618+64.49	42.94	LT	B-12
B-13	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	2617+85.51	40.66	LT	B-13
B-14	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2617+35.51	42.94	LT	B-14
B-15	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2616+98.85	52.57	LT	B-15
B-16	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2616+62.19	62.19	LT	B-16
B-17	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2616+52.57	98.85	LT	B-17
B-18	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2616+42.94	135.51	LT	B-18
B-19	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2616+40.66	185.51	LT	B-19
B-20	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	2616+36.45	277.51	LT	B-20
C1-01	Runway Threshold Light	L-961E	Bidirectional	Red/Green	Base	78+95.00	47.50	RT	C1-01
C1-02	Runway Threshold Light	L-861E	Bidirectional	Red/Green	Base	78+95.00	37.50	RT	C1-02
C1-03	Runway Threshold Light	L-861E	Bidirectional	Red/Green	Base	78+95.00	27.50	RT	C1-03
C1-04	Runway Threshold Light	L-861E	Bidirectional	Red/Green	Base	78+95.00	17.50	RT	C1-04
C1-05	Runway Threshold Light	L-861E	Bidirectional	Red/Green	Base	78+95.00	17.50	LT	C1-05
C1-06	Runway Threshold Light	L-861E	Bidirectional	Red/Green	Base	78+95.00	27.50	LT	C1-06
C1-07	Runway Threshold Light	L-861E	Bidirectional	Red/Green	Base	78+95.00	37.50	LT	C1-07
C1-08	Runway Threshold Light	L-861E	Bidirectional	Red/Green	Base	78+95.00	47.50	LT	C1-08
--	Adjusted REIL	L-849	Aimed	Clear	Base	79+25.00	77.50	LT	--
--	Adjusted REIL	L-849	Aimed	Clear	Base	79+25.00	77.50	RT	--

SIGN SCHEDULE

TAG ID.	DESCRIPTION	TYPE	DIRECTION	SIDE A	SIDE B	STATION	OFFSET		TAG ID.
B-TGS1	Sign	L-858LY	Double Face	← B →	U	2615+07.00	205.66	LT	B-TGS1
B-TGS2	Sign	L-858Y	Double Face	BLANK	← U	2615+35.49	49.00	LT	B-TGS2
B-TGS3	Sign	L-858Y	Double Face	BLANK	← F	2616+64.44	93.00	LT	B-TGS3
B-TGS4	Sign	L-858Y	Double Face	BLANK	U →	2616+48.41	234.95	LT	B-TGS4
C1-TGS1	Sign	L-858Y	Double Face	BLANK	F →	77+67.00	64.44	RT	C1-TGS1
C1-TGS2	Sign	L-858LY, UR	Double Face	F 27	F B →	78+07.71	250.00	RT	C1-TGS2
C1-TGS3	Sign	L-858R	Double Face	BLANK	27	79+05.00	250.00	LT	C1-TGS3
C1-TGS4	Sign	L-858R	Double Face	BLANK	⊖	78+36.68	77.50	LT	C1-TGS4

TAXI GUIDANCE SIGN SCHEDULE

- TYPE L-858R MANDATORY NO ENTRY SIGN - BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON A RED BACKGROUND
- TYPE L-858R MANDATORY INSTRUCTION SIGN - BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON A RED BACKGROUND
- TYPE L-858Y DIRECTION SIGN - BLACK LEGEND ON A YELLOW BACKGROUND
- TYPE L-858L LOCATION SIGN - YELLOW BORDER AND LEGEND ON A BLACK BACKGROUND

TAXI GUIDANCE SIGN NOTES

- THE PROPOSED TAXI GUIDANCE SIGNS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345 44J (OR LATEST ISSUE IN FORCE) AND BE FAA-APPROVED FOR TYPE L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGNS (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858R(L) MANDATORY INSTRUCTION SIGN (BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON RED BACKGROUND); AND/OR TYPE L-858L(L) LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND).
- THE SIGNS SHALL BE SIZE 1, 18-IN. SIGN FACE WITH A 12-IN. LEGEND; STYLE 2, POWERED FROM A 4.8 TO 6.6 AMP SERIES LIGHTING CIRCUIT; CLASS 2, FOR OPERATION FROM -40 DEGREES F TO 131 DEGREES F; MODE 2, TO WITHSTAND WIND LOADS OF 200 M.P.H., BASE-MOUNTED, DOUBLE-SIDED, AS SPECIFIED ON THE PLANS.
- TAXI GUIDANCE SIGNS SHALL HAVE LED (LIGHT EMITTING DIODE) TYPE ILLUMINATION. WHERE TAXI GUIDANCE SIGNS HAVE LED (LIGHT EMITTING DIODE) TYPE ILLUMINATION THEY SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF FAA ENGINEERING BRIEF NO. 67D LIGHT SOURCES OTHER THAN INCANDESCENT AND XENON FOR AIRPORT AND OBSTRUCTION LIGHTING FIXTURES.
- THE PROPOSED TAXI GUIDANCE SIGNS SHALL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 20' FROM THE PAVEMENT EDGE.
- ALL PROPOSED TAXI GUIDANCE SIGNS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE SIGN NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS.
- RUNWAY EXIT/TAXIWAY ENTRANCE SIGNS (TAXIWAY GUIDANCE SIGNS TO DEFINE THE THROAT OR ENTRANCE INTO THE INTERSECTING TAXIWAY ROUTE) SHALL BE CONNECTED TO THE RESPECTIVE RUNWAY SERIES CIRCUIT TO BE ILLUMINATED WHEN THE RUNWAY EDGE LIGHTS ARE ON TO COMPLY WITH FAA AC 150/5340-18F, CHAPTER 1, PART 15 "SIGN OPERATION."
- HOLDING POSITION SIGNS FOR RUNWAYS SHALL BE CONNECTED TO THE RESPECTIVE RUNWAY SERIES CIRCUIT TO BE ILLUMINATED WHEN THE RUNWAY EDGE LIGHTS ARE ON TO COMPLY WITH FAA AC 150/5340-18F, CHAPTER 1, PART 15 "SIGN OPERATION."

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

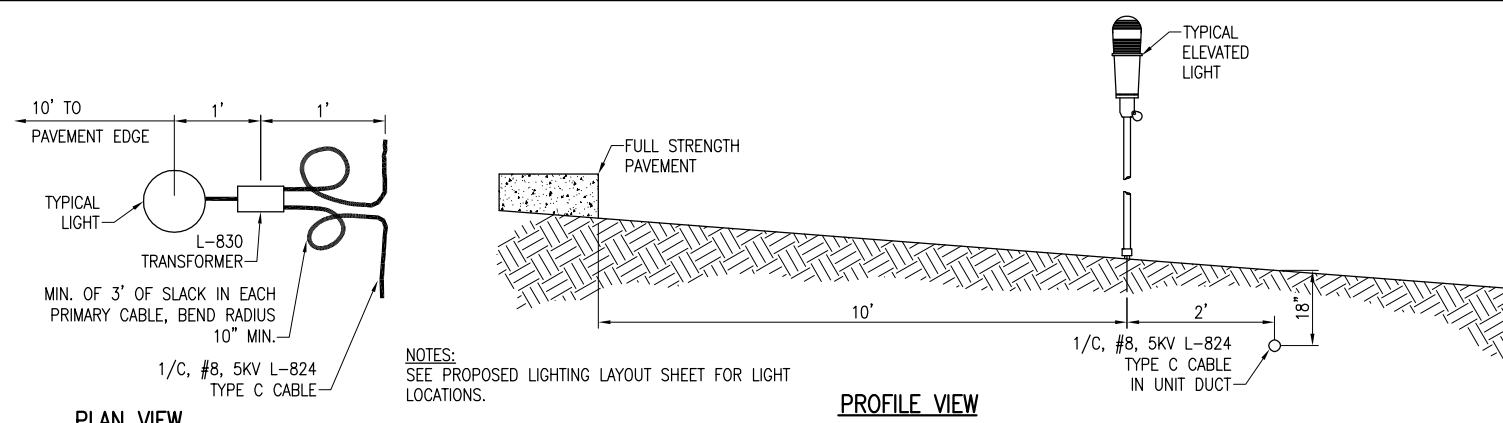
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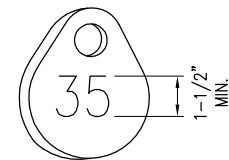
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REVIEWED BY: SJM 6/6/16

SHEET TITLE

LIGHTING AND SIGNAGE SCHEDULE

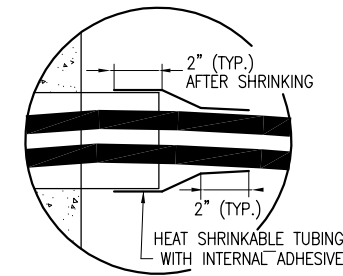


LIGHT AND CABLE INSTALLATION DETAIL
(NOT TO SCALE)

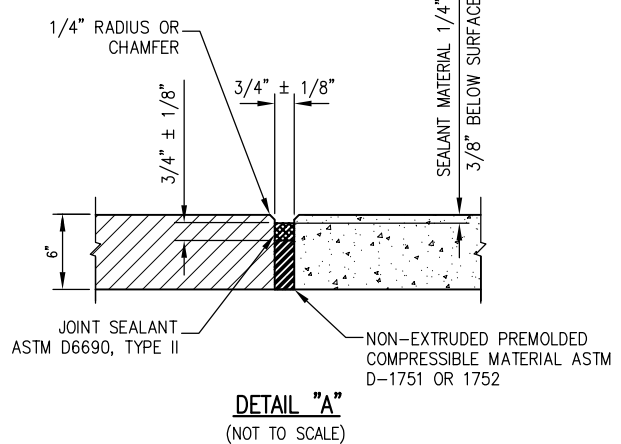


NOTE:
AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.

TAG DETAIL
(NOT TO SCALE)

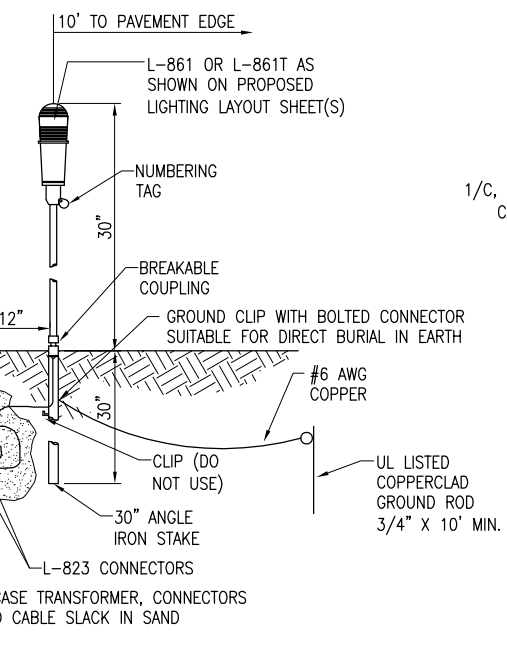


DETAIL "B"
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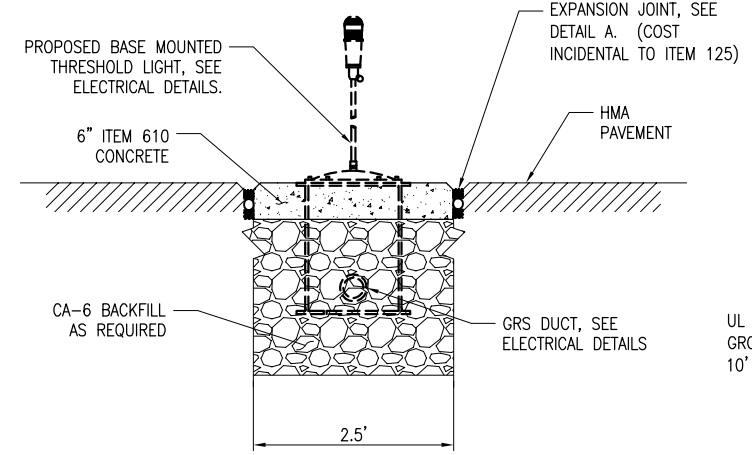


DETAIL "A"
(NOT TO SCALE)

PER FAA AC 150/5340-30H DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD.



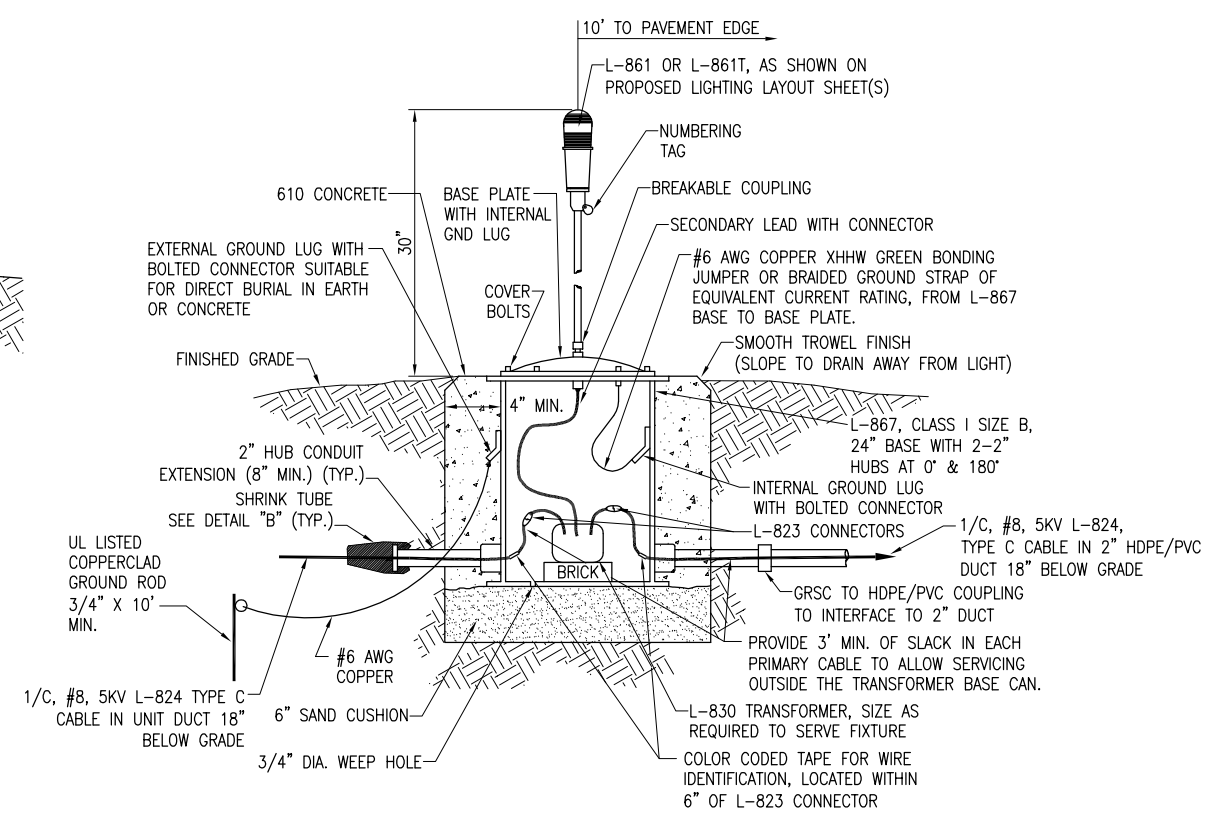
MEDIUM INTENSITY LIGHT - STAKE MOUNTED
(NOT TO SCALE)



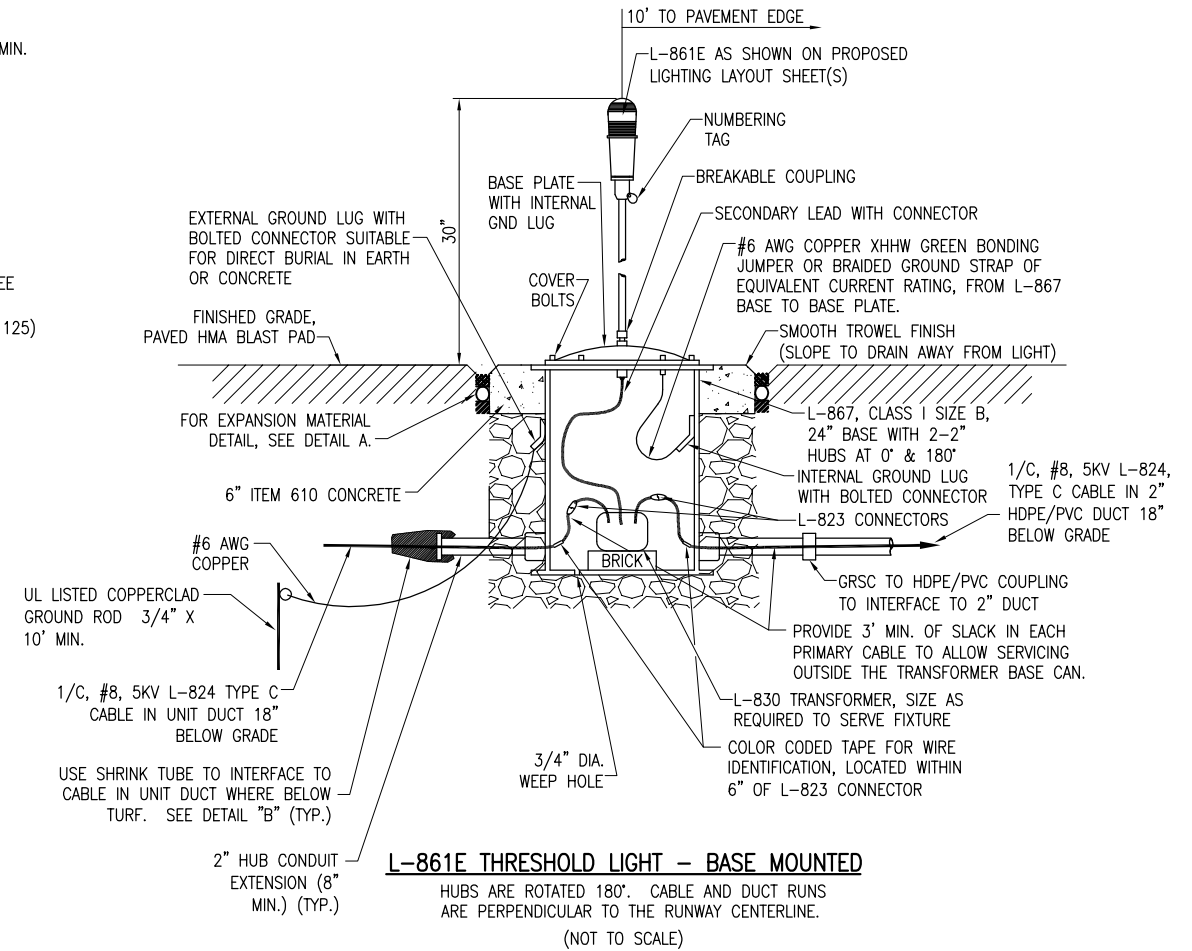
NOTES:

- ALL REMOVAL, CA-6 BACKFILL AND CONCRETE MATERIAL TO BE INCIDENTAL TO MI THRESHOLD LIGHT BASE MOUNTED, ARI25545.
- THRESHOLD TRENCH TO EXTEND FULL WIDTH OF BLAST PAD.

THRESHOLD TRENCH



MEDIUM INTENSITY LIGHT - BASE MOUNTED
(NOT TO SCALE)



L-861E THRESHOLD LIGHT - BASE MOUNTED
(NOT TO SCALE)

GENERAL NOTES

- SEE PROPOSED ELECTRICAL PLANS FOR LOCATIONS OF BASE MOUNTED LIGHTS WITH 2" DUCT INTERFACE AND LOCATIONS WITH CABLE IN UNIT DUCT INTERFACE.
- HOMERUN LIGHT BASE CANS WILL REQUIRE ADDITIONAL CONDUIT HUB OPENINGS. HOME RUN LIGHT BASE CANS SHALL HAVE 2" HUBS AT 0 DEGREES AND 180 DEGREES AND A 3" HUB AT 90 DEGREES.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

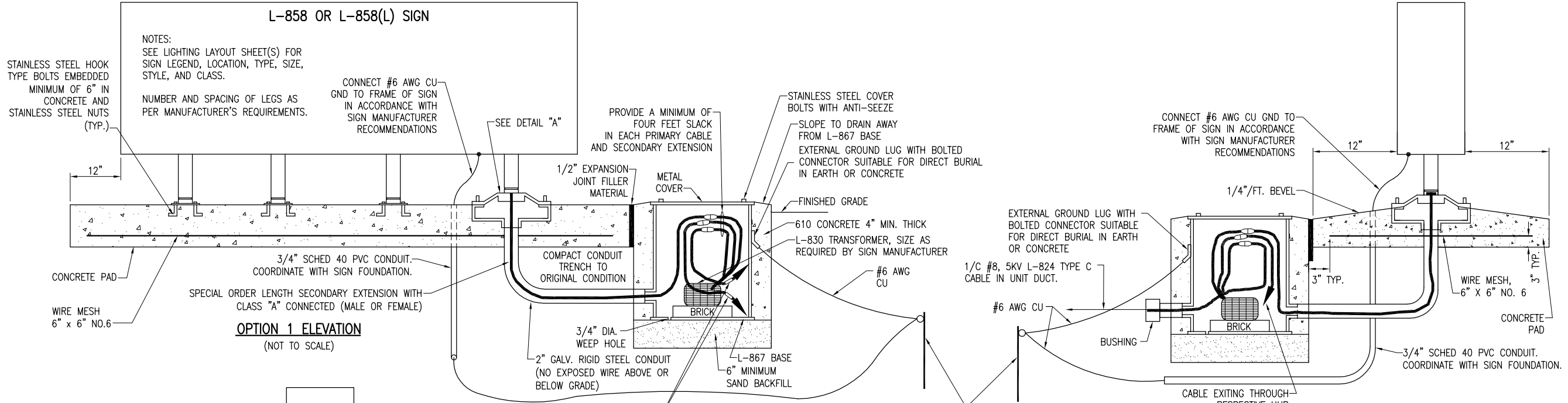
IDA No: LOT-4520
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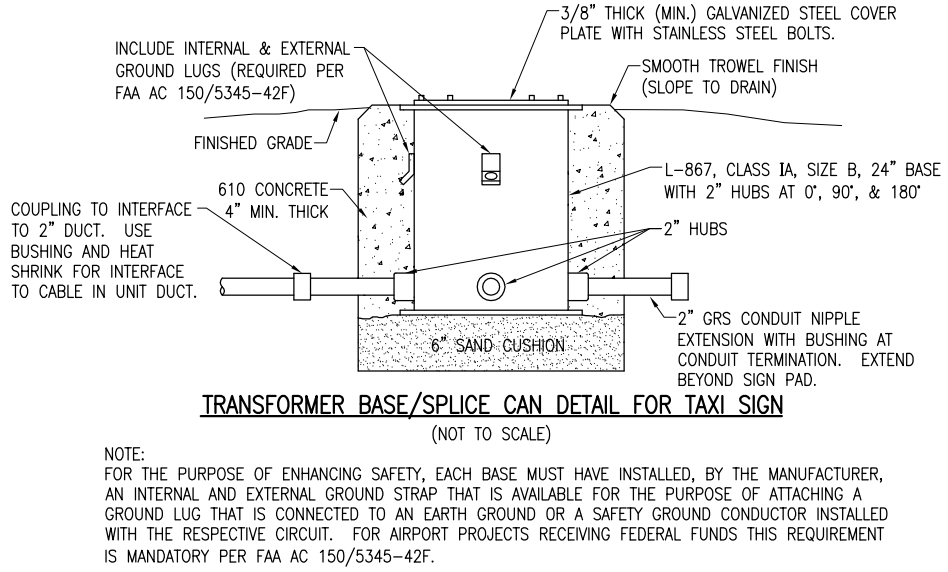
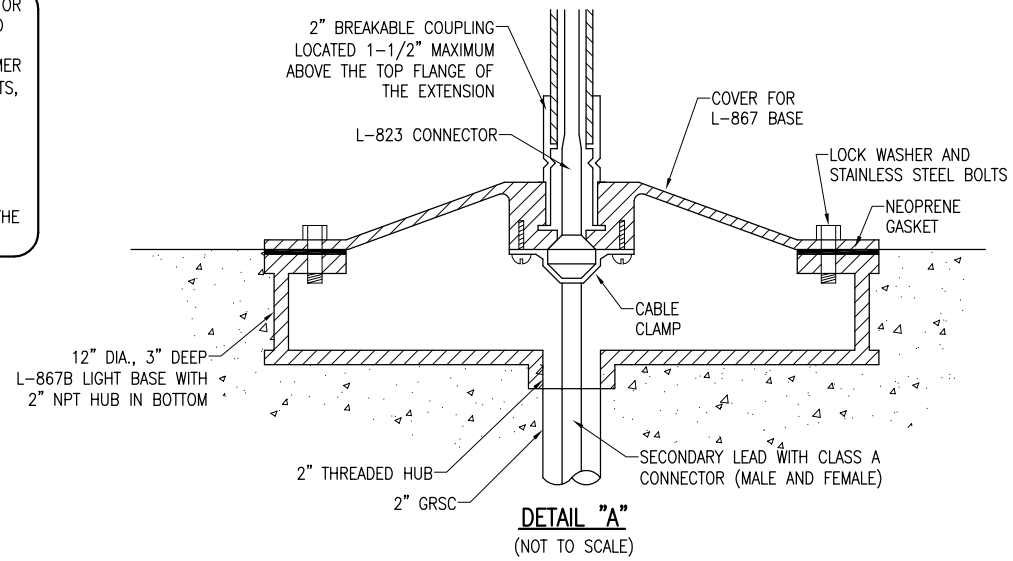
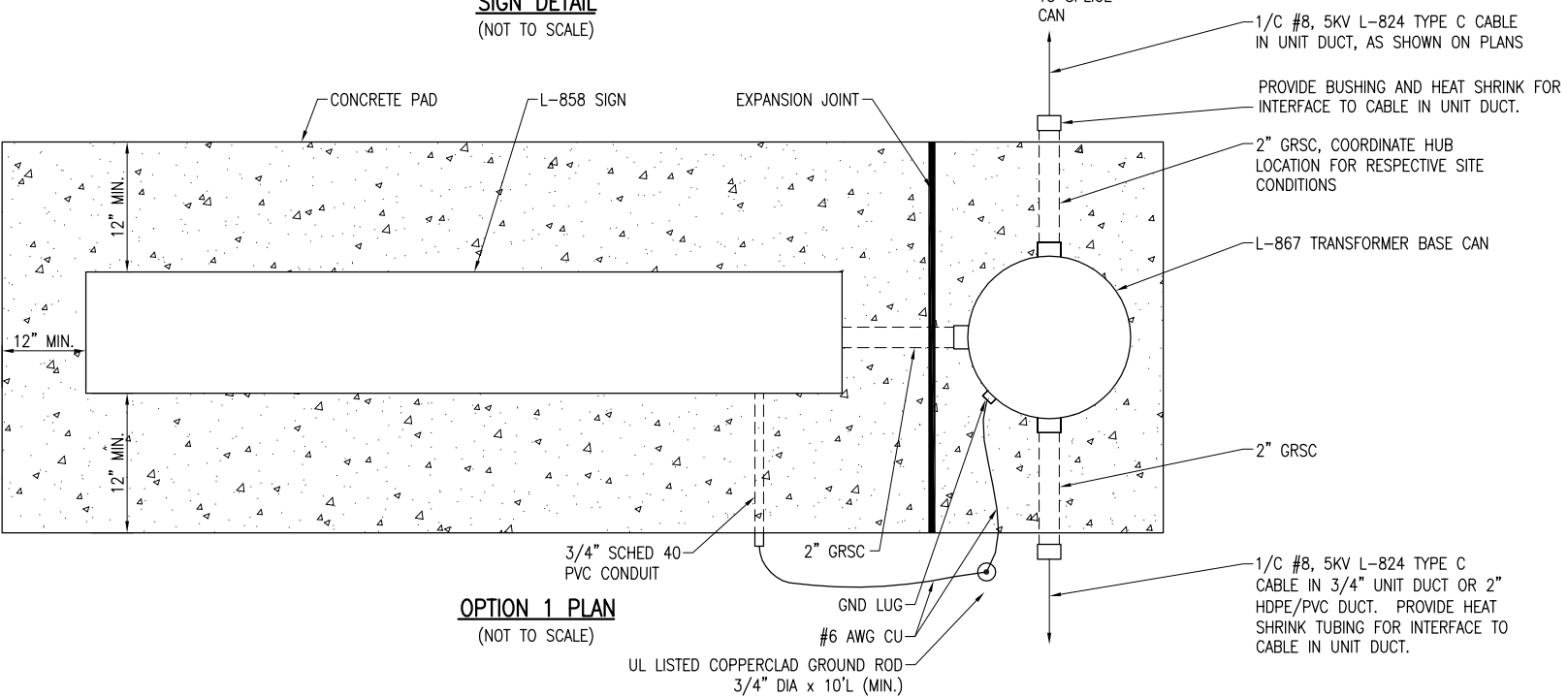
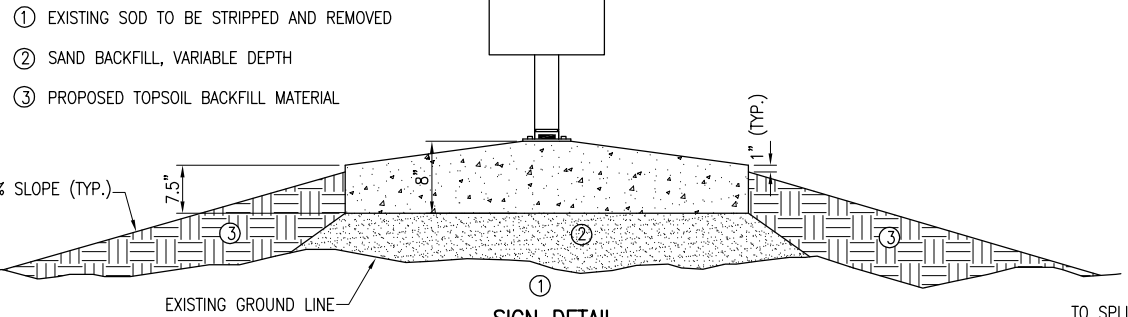
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REVIEWED BY: SJM 6/6/16

AIRFIELD LIGHTING DETAILS SHEET 1



PER FAA AC 150/5340-30G DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN, TAXI SIGN FRAME, OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. ALSO BOND THE SIGN FRAME TO THE GROUND ROD WITH A #6 AWG BARE COPPER CONDUCTOR.

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



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
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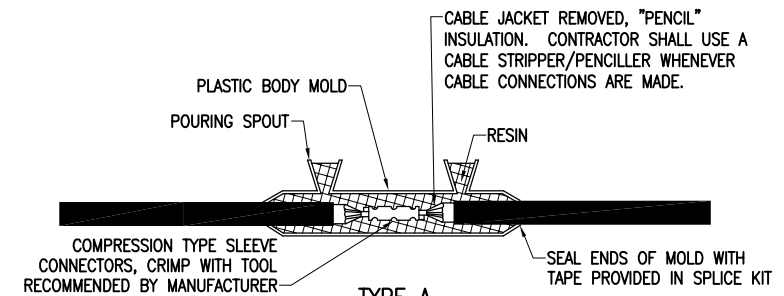
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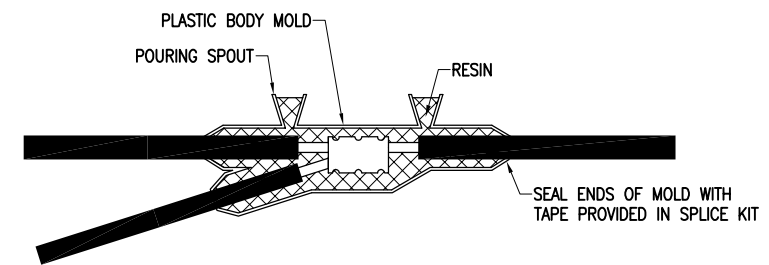
SHEET TITLE

TAXI GUIDANCE SIGN DETAILS

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



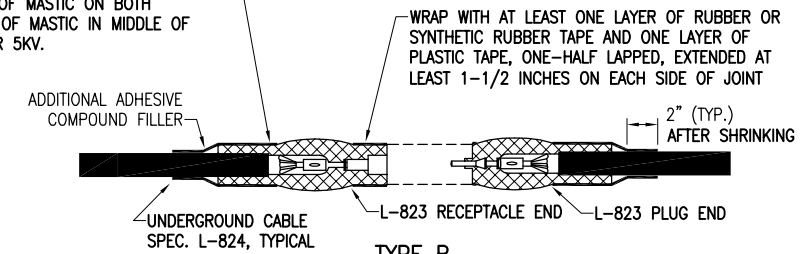
LOW VOLTAGE UNDERGROUND TAP SPLICE

FOR TAP SPLICES IN LOW VOLTAGE (600V) CABLE. SPLICES SHALL BE RATED AND LISTED SUITABLE FOR DIRECT BURIAL LOCATIONS. FOR SPLICES UP TO #2 AWG CONDUCTOR, SPLICES SHALL BE 3M SCOTCHCAST 82-B1 POWER CABLE TAP SPLICE KIT OR APPROVED EQUAL.

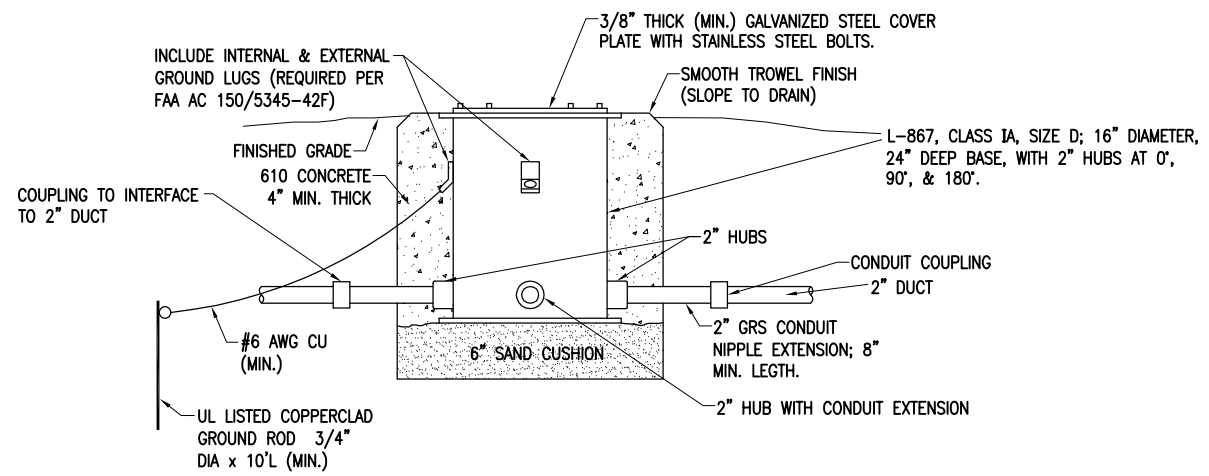
NOTES:

- SPLICE DETAILS ARE PROVIDED FOR NEW WORK AND TO ASSIST IN REPAIRS OF ACCIDENTAL OR UNEXPECTED INTERRUPTIONS AND/OR CUTS TO AIRFIELD LIGHTING CABLES.
- CONTRACTOR SHALL KEEP ON HAND A MINIMUM OF 10 SETS OF SPLICE KITS FOR L-823 CONNECTORS AND A MINIMUM OF 10 SETS OF TYPE A LOW VOLTAGE SPLICE KITS TO ACCOMMODATE REPAIRS.
- EVERY AIRFIELD LIGHTING CABLE SPLICER SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED AT AND/OR ABOVE 5,000 VOLTS AC.
- WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.
- INSIDE DIAMETER OF RESPECTIVE CABLE CONNECTOR SHALL PROPERLY MATCH OUTSIDE DIAMETER OF CABLE.
- WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE (3M SCOTCH 23 ALL-VOLTAGE SPLICING TAPE, 3M SCOTCH 130C LINERLESS RUBBER SPLICEING 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.
- PROVIDE CABLE TAGS TO IDENTIFY THE RESPECTIVE CIRCUITS ALL POINTS OF ACCESS INCLUDING L-867 BASES, L-868 BASES, HANDHOLES, MANHOLES, JUNCTION BOXES, AND WIREWAYS.

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



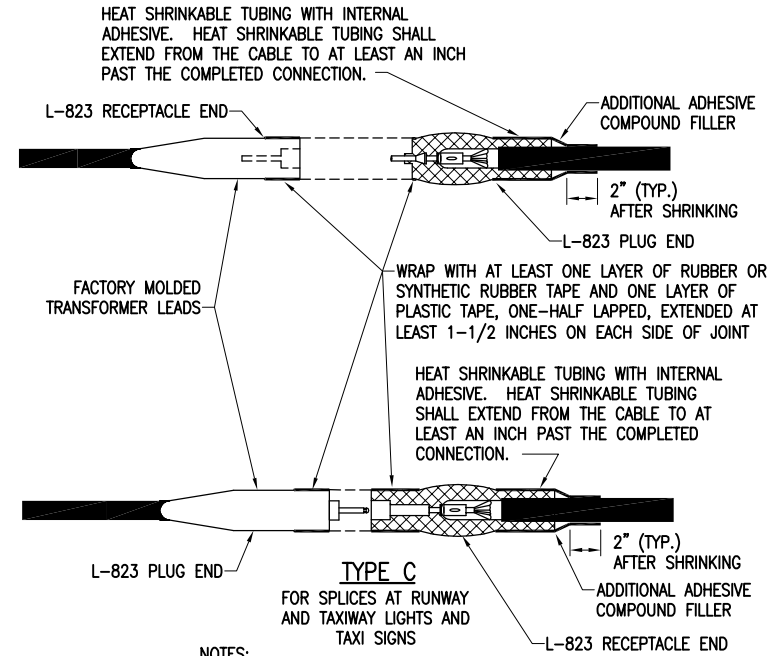
TYPE B
FOR SPLICES AT JUNCTION OF HOMERUN WITH LOOP CIRCUIT AND FOR SPLICES IN HOMERUNS TO EXISTING CABLES



SPLICE CAN DETAIL
(NOT TO SCALE)

NOTES FOR SPLICE CAN DETAIL:

- SPLICE CANS SHALL CONFORM TO THE REQUIREMENTS OF FAA AC 150/5345-42H, OR MOST CURRENT ISSUE IN FORCE, FOR TYPE L-867, CLASS 1A, SIZE D, (16 IN. NOMINAL DIAMETER), AND 24 IN. DEEP AND/OR AS DETAILED ON THE PLANS. EACH SPLICE CAN SHALL INCLUDE INTERNAL AND EXTERNAL GROUND LUGS TO ACCOMMODATE THE RESPECTIVE APPLICATIONS. SPLICE CANS AND/OR JUNCTION CANS SHALL HAVE GALVANIZED STEEL COVERS, 3/8-INCH THICK (MINIMUM), WITH STAINLESS STEEL BOLTS.
- 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 150/5345-42H.
- APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL.
- THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING CANS SHALL BE IN ACCORDANCE WITH ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.



TYPE C
FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS AND TAXI SIGNS

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

CABLE SPLICES
(NOT TO SCALE)

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
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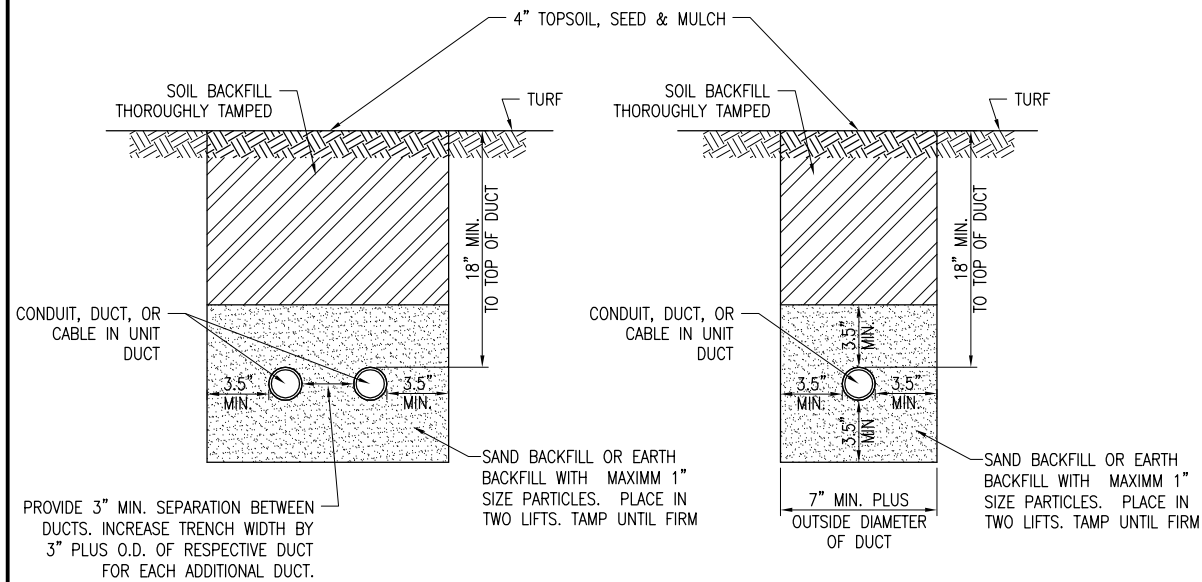
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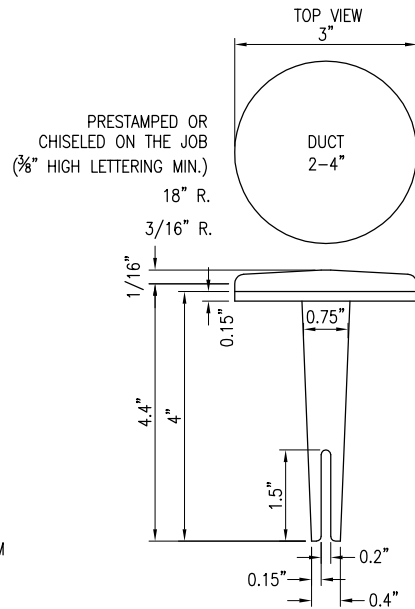
SHEET TITLE

AIRFIELD LIGHTING CABLE SPLICE DETAILS



CONDUIT IN TRENCH – NON-PAVEMENT AREAS

"NOT TO SCALE"



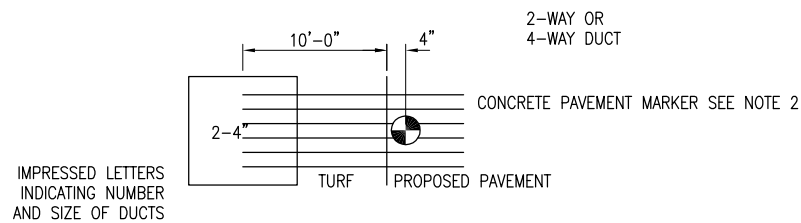
INDICATES NUMBER AND SIZE OF DUCT BANK

BITUMINOUS PAVEMENT DUCT MARKERS

"NOT TO SCALE"

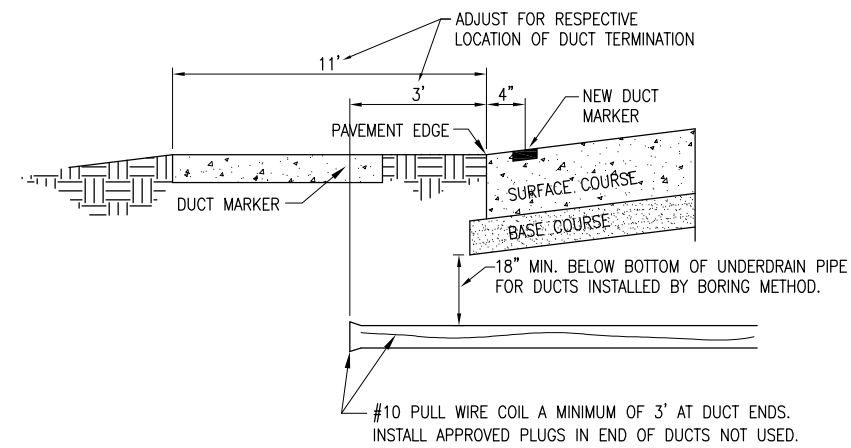
NOTES:

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



DUCT MARKER DETAIL

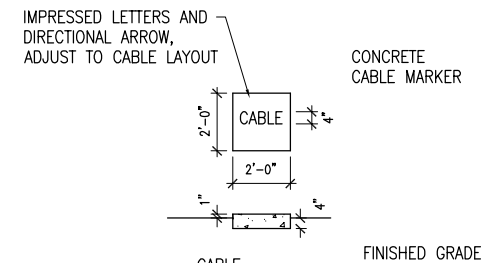
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UNDERGROUND ELECTRICAL DUCT

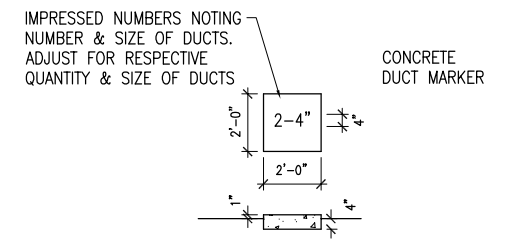
(NOT TO SCALE)

NOTE: DUCTS INSTALLED BY BORING METHOD SHALL NOT DISTURB THE RESPECTIVE PAVEMENT SURFACE.



TURF CABLE MARKERS

"NOT TO SCALE"



TURF DUCT MARKERS

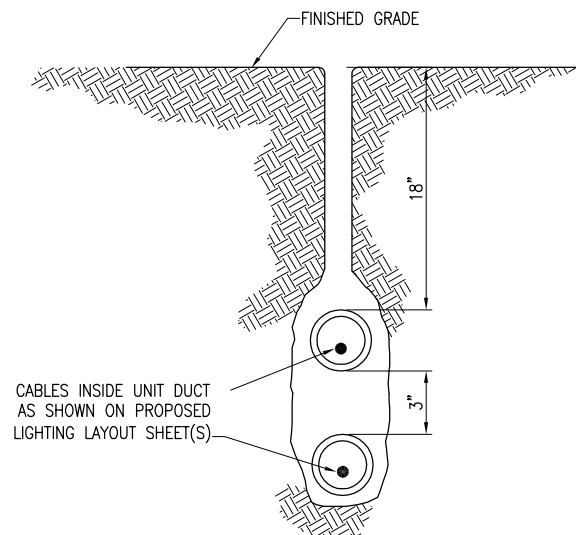
"NOT TO SCALE"

CABLE & DUCT MARKER NOTES:

- THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
- BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE FORMED AS DESCRIBED IN NOTE 4.
- CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
- CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.
- EMPLOY THE FOLLOWING METHODS WHERE ADDITIONAL SPACE TO FIT LEGEND IS REQUIRED:
 - REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
 - INCREASE THE MARKER SIZE TO 30" X 30".
 - PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE.

NOTES:

- DIMENSIONS FOR COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
- TRENCHES WITH MORE THAN TWO DUCTS OR CABLE IN UNIT DUCTS SHALL BE INCREASED 3" IN WIDTH PLUS DIAMETER OF RESPECTIVE DUCT FOR EACH ADDITIONAL CONDUIT, DUCT, OR CABLE IN UNIT DUCT; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
- DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS. MINIMUM COVER REQUIREMENTS FOR CABLES AND DUCTS AT AIRPORT RUNWAYS AND ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED IS 18 INCHES PER NEC 300.5 AND 300.50. COVER IS DEFINED AS THE SHORTEST DISTANCE IN INCHES MEASURED BETWEEN A POINT ON THE TOP SURFACE OF ANY DIRECT-BURIED CONDUCTOR, CABLE, CONDUIT, OR OTHER RACEWAY AND THE TOP SURFACE OF FINISHED GRADE, CONCRETE OR SIMILAR COVER.
- HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
- DUCT INTERFACE TO HANDHOLES, MANHOLES, SPLICE CANS, OR OTHER JUNCTION STRUCTURES WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE CABLE IN UNIT DUCT PAY ITEM OR RESPECTIVE DUCT PAY ITEM.
- ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.



PLOWED CABLE

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

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CONDUIT TRENCH DETAILS

**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

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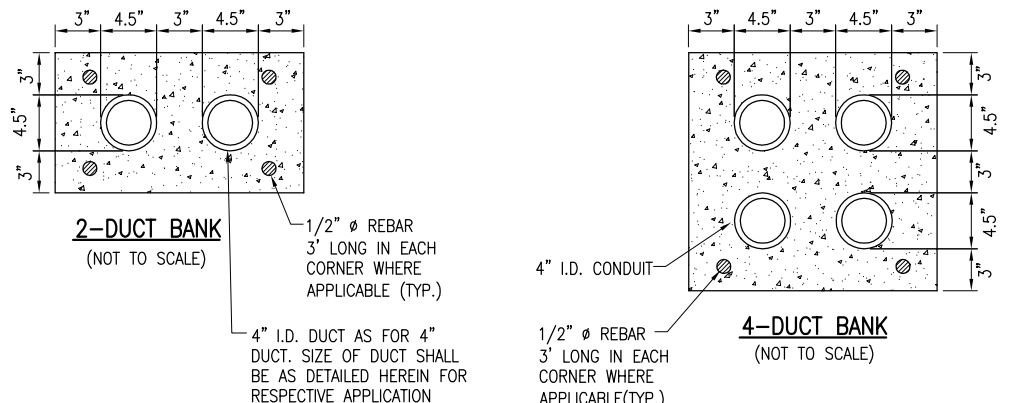
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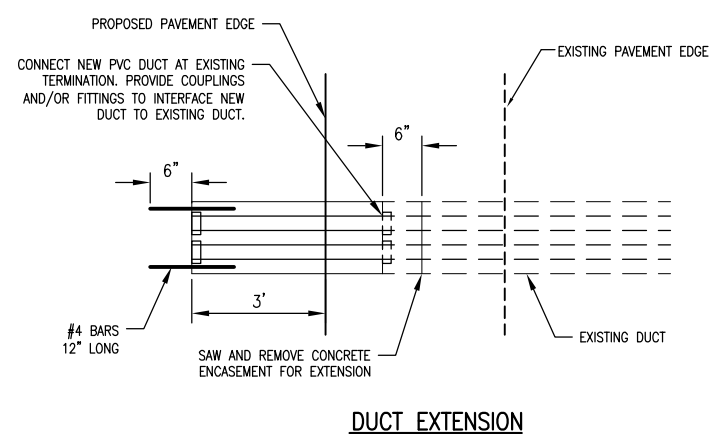
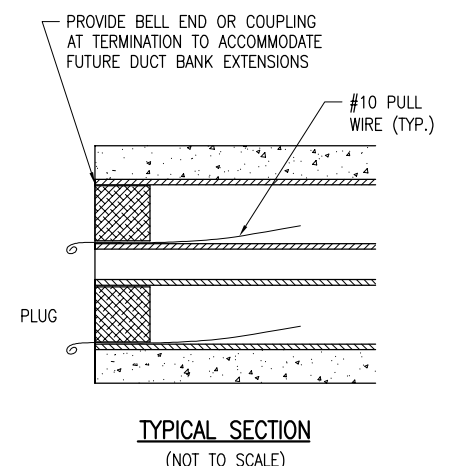
SHEET TITLE

**ELECTRICAL DUCT
BANK DETAILS
& NOTES**



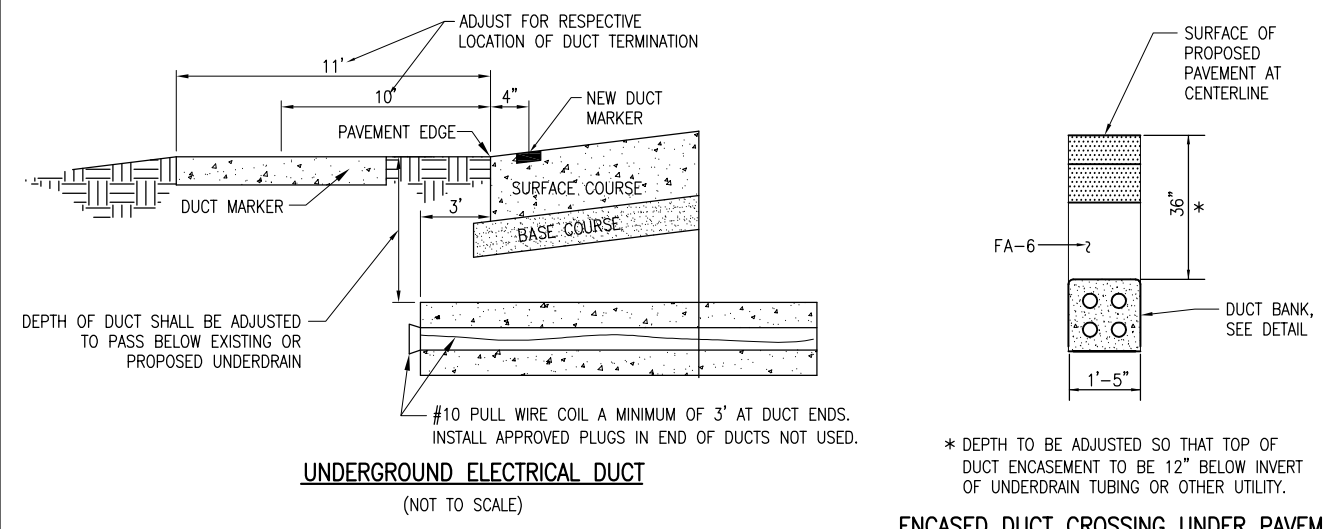
DUCT INSTALLATION NOTES

- ALL ELECTRICAL EQUIPMENT AND MATERIALS 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, INTERTEK TESTING SERVICES VERIFICATION/LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
- 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).
- THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT 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. 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.
- ADJUSTMENTS TO DUCT BANK ROUTES MIGHT BE REQUIRED TO ACCOMMODATE EXISTING SITE CONDITIONS AND UNDERGROUND LINES AND UTILITIES. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL COORDINATE DUCT ROUTE ADJUSTMENTS WITH THE RESIDENT ENGINEER/ RESIDENT PROJECT REPRESENTATIVE AND THE AIRPORT MANAGER.
- CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING CABLES, LINES, OR UTILITIES WITHIN 10 FT OF PROPOSED EXCAVATING/TRENCHING AREA. ANY CABLES, LINES, AND UTILITIES FOUND INTERFERING WITH PROPOSED EXCAVATION OR CABLE/TRENCHING SHALL BE HAND DUG AND EXPOSED. ANY DAMAGED CABLES OR OTHER UTILITIES SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE AND OWNER SHALL BE NOTIFIED IMMEDIATELY IF ANY CABLES OR OTHER UTILITIES ARE DAMAGED.
- PAYMENT FOR LOCATING AND MARKING UNDERGROUND UTILITIES AND CABLES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION.
- THE CONTRACTOR WILL DETERMINE IF THERE IS A CONFLICT BETWEEN THE INSTALLATION OF THE PROPOSED ELECTRICAL DUCTS AND ANY EXISTING UTILITIES. HE WILL MAKE ALL NECESSARY ADJUSTMENTS IN DEPTH OF INSTALLATION TO AVOID ANY AND ALL PROPOSED/EXISTING UNDERGROUND IMPROVEMENTS.
- CONDUITS FOR CONCRETE ENCASED DUCT BANK SHALL BE SCHEDULE 40 PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE—CONFORMING TO NEMA STANDARD TC-2 AND UL 651, LISTED SUITABLE FOR UNDERGROUND USE EITHER DIRECT-BURIED OR ENCASED IN CONCRETE, OR SCHEDULE 40 (MINIMUM) HDPE CONDUIT, UL LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND LISTED SUITABLE FOR UNDERGROUND USE; EITHER DIRECT BURY OR ENCASED IN CONCRETE.
- CONDUITS FOR DIRECTIONAL BORING SHALL BE SCHEDULE 40 PVC CONDUIT OR SCHEDULE 80 PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE—CONFORMING TO NEMA STANDARD TC-2 AND UL 651 AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, SCHEDULE 80 HDPE CONDUIT, UL-LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, OR WALL TYPE SDR 13.5 OR SDR 11 HDPE CONDUIT MANUFACTURED IN ACCORDANCE WITH ASTM D-3350 (SPECIFICATION OF POLYETHYLENE PLASTICS PIPE AND FITTINGS MATERIALS) AND ASTM F2160 (STANDARD SPECIFICATION FOR SOLID WALL, HIGH-DENSITY POLYETHYLENE CONDUIT BASED ON CONTROLLED OUTSIDE DIAMETER), AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION. PER NEC 300.5 (K), RACEWAYS INSTALLED USING DIRECTIONAL BORING EQUIPMENT SHALL BE APPROVED FOR THE PURPOSE.
- INSTALLATION OF CONDUIT AND DUCTS SHALL CONFORM TO ITEM 110 AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS.
- DUCTS INSTALLED IN TRENCH SHALL BE INSTALLED 18 IN. MINIMUM BELOW GRADE IN TURF AREAS NOT SUBJECT TO FARMING. DUCTS LOCATED IN AREAS SUBJECT TO FARMING SHALL BE 42 IN. MINIMUM BELOW GRADE. MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 42" IN AREAS UNDER ROADWAYS. WHERE DETAILED ON THE PLANS OR WHERE REQUIRED TO AVOID OBSTRUCTIONS, DUCTS SHALL BE BURIED DEEPER.
- WHERE CONCRETE-ENCASED DUCT INTERFACES TO AN ELECTRICAL HANDHOLE OR MANHOLE, THE CONCRETE ENCASEMENT SHALL BE INSTALLED UP TO THE RESPECTIVE HANDHOLE OR MANHOLE. PROVIDE BUSHINGS OR BELLS AT CONDUIT TERMINATIONS IN ELECTRICAL HANDHOLES OR MANHOLES.
- UNDERGROUND DUCTS INSTALLED BY DIRECTIONAL-BORING METHOD SHALL BE INSTALLED IN A MANNER THAT WILL NOT DAMAGE ANY EXISTING UNDERGROUND UTILITIES, AND SHALL NOT DISTURB OR DAMAGE THE RESPECTIVE PAVEMENT OR ROADWAY SURFACE. DUCTS SHALL BE DIRECTIONAL-BORED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. THE DUCTS WILL BE BORED AT A MINIMUM DEPTH OF 42 IN. BELOW THE RESPECTIVE PAVEMENT IT IS BEING BORED UNDER.
- A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.
- HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
- CONTROL CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES.
- HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
- COORDINATE DUCT INTERFACE TO MANHOLES AND HANDHOLES. FIELD CUT OPENINGS FOR CONDUITS AND DUCTS TO INTERFACE TO MANHOLES AND/OR HANDHOLES. CUT WALL OF RESPECTIVE HANDHOLE OR MANHOLE WITH A TOOL DESIGNED FOR MATERIAL TO BE CUT. SIZE HOLES FOR RESPECTIVE DUCTS, CONDUITS, AND TERMINATION FITTINGS AND SEAL AROUND PENETRATIONS. ALL CORING, INTERFACE, CUTTING, AND SEALING WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION AND/OR RESPECTIVE HANDHOLE/MANHOLE INSTALLATION.
- CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.
- ALL POWER AND CONTROL CABLES IN HANDHOLES, MANHOLES, AND JUNCTION BOXES SHALL BE TAGGED TO IDENTIFY THE RESPECTIVE CABLE. A MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MANHOLE; ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT. CABLE TAGS SHALL BE STAMPED BRASS TAGS OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.

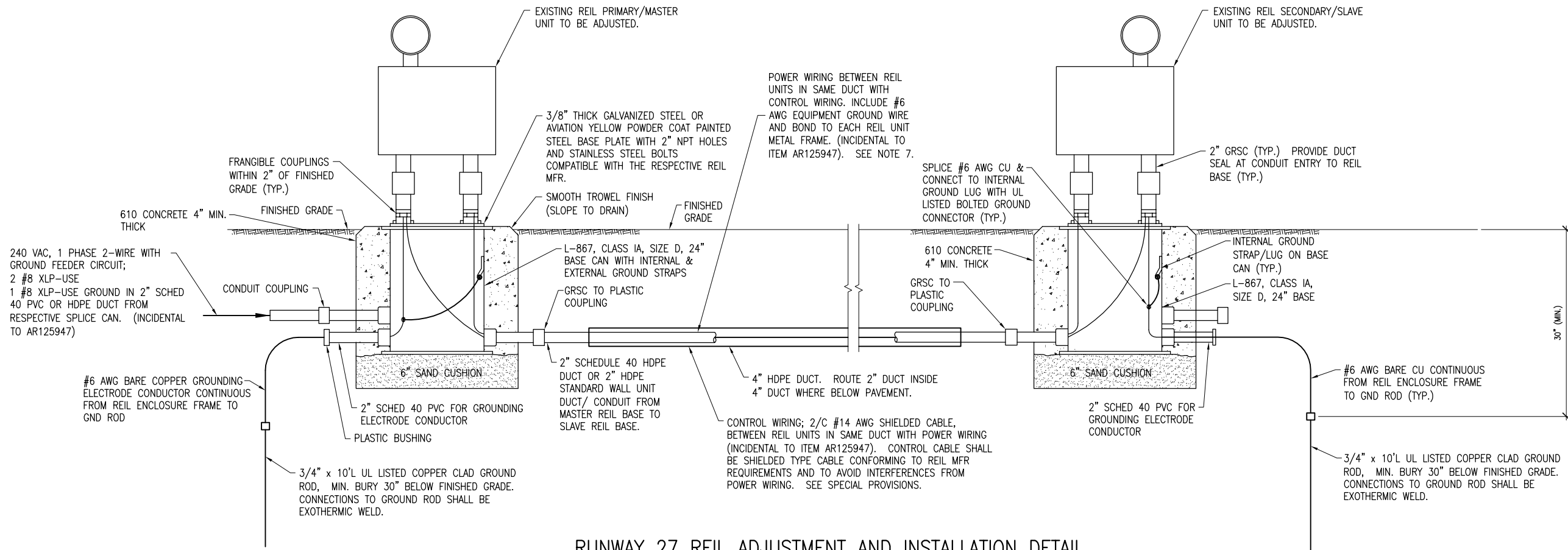


DUCT BANK NOTES:

- DIMENSIONS FOR CONCRETE COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
- INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., OR APPROVED EQUAL TO MAINTAIN PROPER SEPARATION OF CONDUITS.
- PROVIDE REBAR WHERE APPLICABLE TO ACCOMMODATE INTERFACE OF CONCRETE ENCASED DUCT BANKS TERMINATING IN HANDHOLE. PROVIDE REBAR WHERE APPLICABLE TO EXTEND AN EXISTING CONCRETE ENCASED DUCT BANK. REBAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706, GRADE 60 OR ASTM A615 GRADE 60.
- CONDUITS FOR CONCRETE ENCASED DUCT SHALL BE SCHEDULE 40 (MIN.) PVC OR HDPE CONFORMING TO ITEM 110.
- DEPTH OF DUCT SHALL BE ADJUSTED TO PASS BELOW EXISTING OR PROPOSED UNDERDRAIN.
- DUCTS SHALL EXTEND FOR 3 FEET BEYOND ANY EXISTING OR PROPOSED PAVEMENT EDGE.

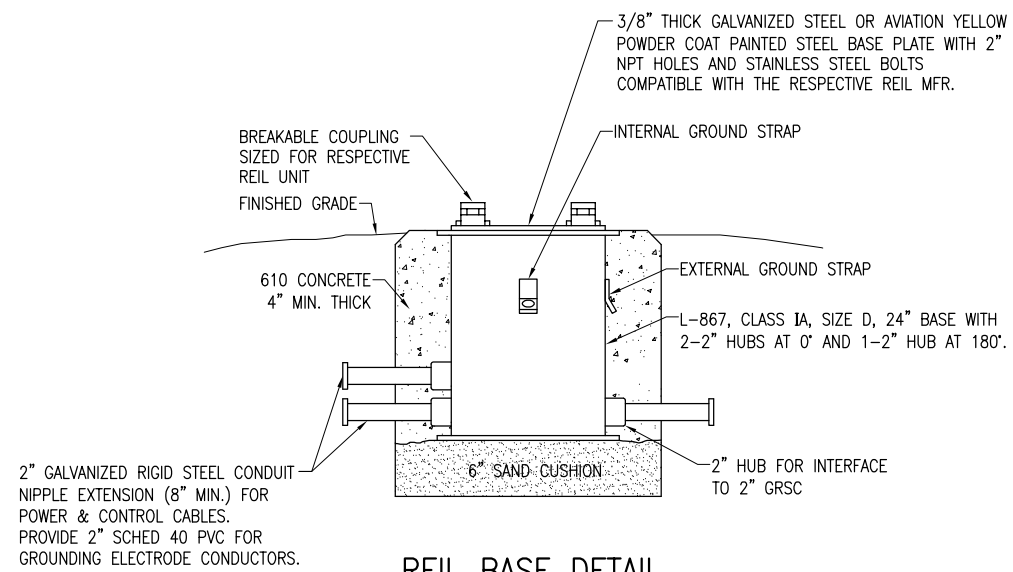


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RUNWAY 27 REIL ADJUSTMENT AND INSTALLATION DETAIL

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

- EXISTING REILS ARE FAA APPROVED TYPE L-849V, STYLE A (UNIDIRECTIONAL, HIGH INTENSITY, ONE BRIGHTNESS STEP), 240 VAC, 60 HZ INPUT POWER; FLASH TECHNOLOGY MODEL 812 SERIES. CONTRACTOR SHALL CONFIRM MODEL NUMBER IN THE FIELD.
- REILS SHALL BE AIMED AT ANGLE 10 DEGREES VERTICALLY AND TOED OUT 15 DEGREES FROM THE LINE PARALLEL TO THE RUNWAY CENTERLINE.
- ADJUSTMENT OF REILS AND ASSOCIATED EQUIPMENT, MATERIALS, COORDINATION, REMOVALS, INSTALLATIONS, LABOR, TOOLS AND INCIDENTALS WILL BE PAID FOR UNDER ITEM AR125947 "ADJUST REILS" PER PAIR.
- 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 AR125947 ADJUST REILS.
- 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. 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, ULTRAWELD OR APPROVED EQUAL. 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.
- REFER TO PROPOSED ELECTRICAL SITE PLANS FOR SITING AND ORIENTATION OF REIL'S.
- POWER WIRING BETWEEN THE REIL MASTER UNIT AND THE REIL SLAVE UNIT SHALL CONFORM TO THE RESPECTIVE REIL MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS. POWER WIRING SHALL BE TYPE XLP-USE, TYPE XHHW, TYPE THWN, OR EQUIVALENT TYPE WITH 600 VOLT RATED INSULATION. POWER WIRING BETWEEN THE MASTER AND SLAVE UNITS WILL VARY DEPENDING UPON THE MANUFACTURER, POWER WIRING BETWEEN THE MASTER REIL UNIT AND SLAVE REIL UNIT SHALL BE AS FOLLOWS FOR THE RESPECTIVE REIL MANUFACTURER AND MODEL:
FOR FLASH TECHNOLOGY TYPE L-849V MODEL 812 SERIES, 240 VAC REILS THE POWER WIRING BETWEEN THE MASTER UNIT AND THE SLAVE UNIT SHALL BE MINIMUM 2 #12 AWG 240 VAC PHASE CONDUCTORS, 1 #6 AWG (MIN.) GROUND (WITH GREEN INSULATION), FOR POWER FROM A 20 AMP (MAX), 2-POLE, 240 VAC BREAKER.
- ALL EQUIPMENT AND MATERIALS NOT IDENTIFIED AS EXISTING IS NEW.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

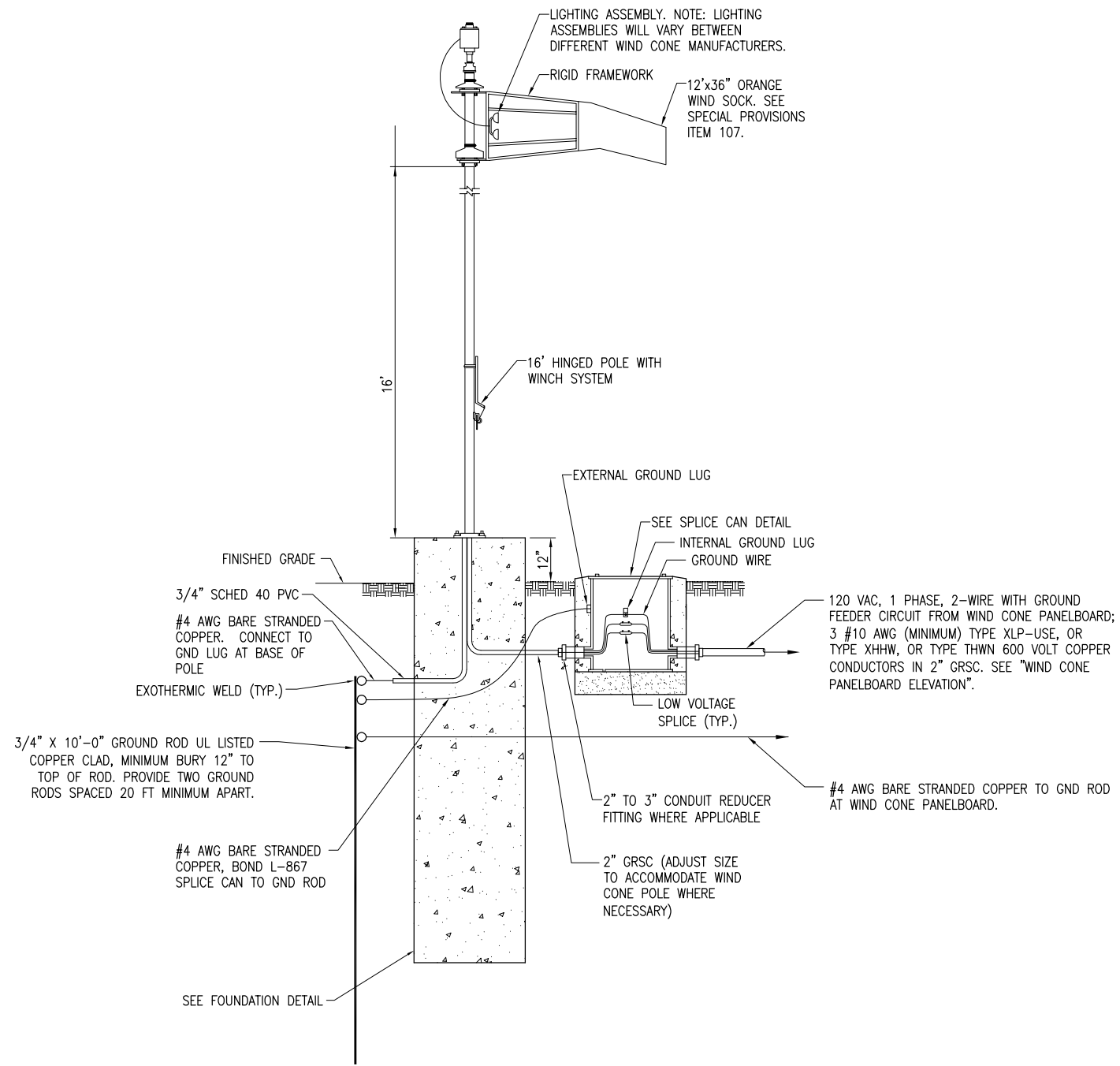
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 57-E-506-REIL.DWG
DESIGN BY: KNL 5/11/16
DRAWN BY: LDH 5/12/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

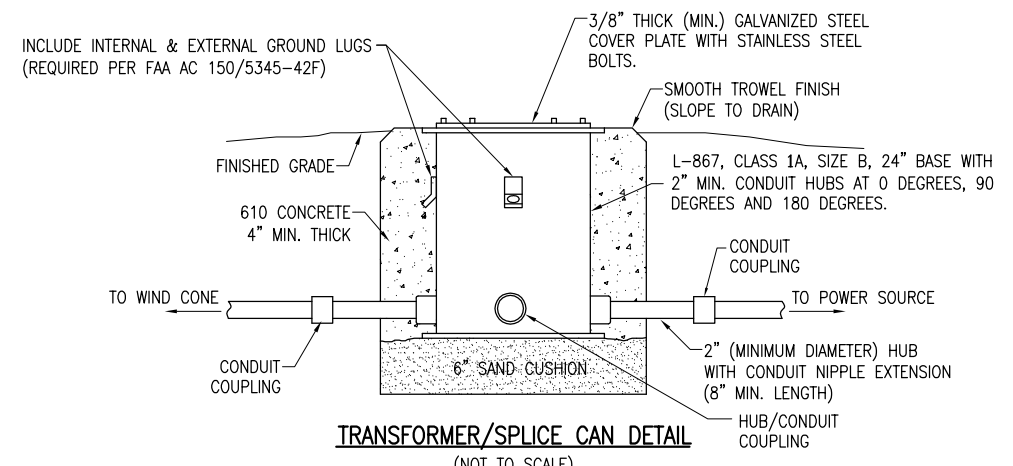
REIL ADJUSTMENT AND INSTALLATION DETAILS



NOTES

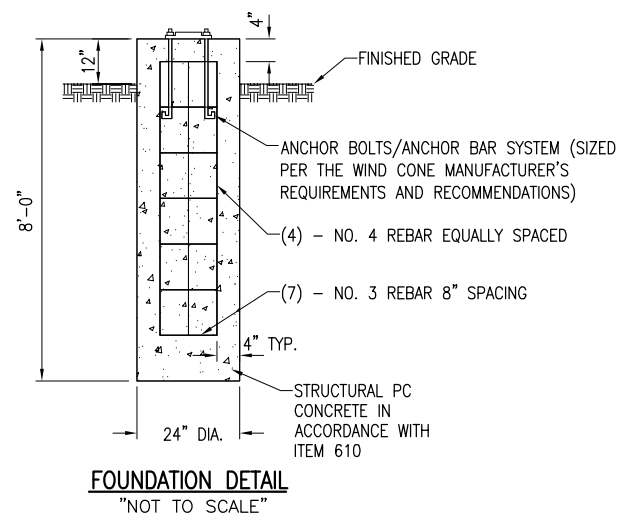
1. WIND CONE SHALL BE FAA APPROVED IN ACCORDANCE WITH FAA AC 150/5345-27E, TYPE L-807(L), STYLE I-B; INTERNALLY LIGHTED, SIZE 2; 12 FEET IN LENGTH BY 36-INCH IN THROAT DIAMETER SUITABLE FOR OPERATION ON A 120 VAC, 1 PHASE, 2-WIRE POWER SUPPLY. WIND SOCK SHALL BE ORANGE IN COLOR.
2. L-807(L) WIND CONE WILL BE PAID FOR UNDER ITEM AR107812 L-807 WC-12' INTERNALLY LIT PER EACH. SPLICE CAN FOR WIND CONE WILL BE INCIDENTAL TO THE RESPECTIVE WIND CONE PAY ITEM. WIND CONE PANELBOARD, JUNCTION BOX, PHOTOCCELL, PHOTOCCELL BYPASS SWITCH, SUPPORT STRUCTURE, AND CONDUIT AND WIRING FROM WIND CONE PANELBOARD TO WIND CONE WILL BE INCIDENTAL TO THE RESPECTIVE WIND CONE PAY ITEM.
3. GROUND RODS AND REBAR SHALL BE MANUFACTURED FROM 100% DOMESTIC STEEL TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS AND THE STEEL PRODUCTS PROCUREMENT ACT. INCLUDE CERTIFICATION OF 100% DOMESTIC STEEL WITH SHOP DRAWING SUBMITTAL.

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



NOTES:

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



FOUNDATION DETAIL
"NOT TO SCALE"

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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SHEET TITLE

WIND CONE DETAIL

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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SHEET TITLE

ELECTRICAL NOTES SHEET 1

GENERAL NOTES

- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 – NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
- 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).
- 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.
- 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.
- 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.
- 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.
- ANY AND ALL INSTRUCTIONS FROM THE RESIDENT ENGINEER/RESIDENT TECHNICIAN TO THE CONTRACTOR REGARDING CHANGES IN OR DEVIATIONS FROM THE PLANS AND SPECIFICATIONS SHALL BE IN WRITING WITH COPIES SENT TO THE AIRPORT SPONSOR AND THE ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF AERONAUTICS). THE CONTRACTOR SHALL NOT ACCEPT ANY VERBAL INSTRUCTIONS FROM THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.
- 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 DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.
 - THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.
 - INSTALLATION INSTRUCTION.
 - START-UP INSTRUCTIONS.
 - PREVENTATIVE MAINTENANCE REQUIREMENTS.
 - CHART FOR TROUBLE-SHOOTING.
 - 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.
 - 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.
 - SAFETY INSTRUCTIONS.

POWER AND CONTROL NOTES

- 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.
- COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK AND RED SHALL BE USED FOR PHASE CONDUCTORS ON 120/240VAC SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, ORANGE (FOR HIGH LEG) AND BLUE SHALL BE USED FOR PHASE CONDUCTORS ON 240/120VAC THREE-PHASE, FOUR WIRE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, SHALL BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH. NEUTRAL CONDUCTORS LARGER THAN NO. 6 AWG SHALL BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR SIZES (AWG OR KCMIL).
- 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.
- IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
- LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS.
- NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND JUNCTION/PULL BOXES.
- THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:
 - 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.
 - 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.
- 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.
- EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.
- SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
- CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE, MINIMUM FRAME.
- DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
- 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.
- 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.
- 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.
- PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT U.L. LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
- UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
- ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
- USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS.
- USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
- 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.
- UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINIMUM.
- THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:
 - 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.
 - THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.
 - ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED-EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.
 - 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.
 - ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.
 - EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.
 - A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.
 - THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.
 - ALL WIRING SHALL BE NEATLY TRAINED AND LACED.
 - MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
- 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

- 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.
- NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
- THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REIL, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKABLE COUPLING(S) AT THE GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.
- THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN ON ELECTRICAL DETAILS SHEET 1.
- THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE, AS SHOWN ON ELECTRICAL DETAILS SHEET 1.
- L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
- THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURE AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.
- ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
- DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF TEN (10") INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION TWELVE (12") INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.
- A SLACK OF THREE (3') FEET, MINIMUM, PLUS DEPTH OF BASE CAN (IF APPLICABLE), 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. THERE SHALL BE NO ADDITIONAL PAYMENT FOR CABLE SLACK AND THEREFORE THE QUANTITY OF PROPOSED CABLE SLACK HAS NOT BEEN INCLUDED IN THE RESPECTIVE CABLE PAY ITEMS.
- DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO RIGHT IS CODED BLUE. THIS APPLIES TO STAKE MOUNTED LIGHTS AND BASE MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.
- L-867 BASES SHALL BE SIZE B, 24" DEEP, CLASS I, UNLESS OTHERWISE NOTED.
- BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL BE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.
- THE ELEVATION OF THE BREAKABLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE MOUNTED COUPLINGS.
- WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
- TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
- PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
- THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE: ONE (1) INCH. IN CASE OF STAKE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.

- THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.
- ENTRANCES INTO L-867 BASES SHALL HAVE CONDUIT COUPLINGS OR REDUCERS TO INTERFACE UNIT DUCT/CONDUIT TO L-867 BASE HUBS, OR SHALL BE SEALED WITH HEAT SHRINK AS SHOWN IN DETAIL "B" ON ELECTRICAL DETAILS SHEET 1.
- GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
- EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
- CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS SHALL BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.
- ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLES.
- THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
- APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.
- LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.
- WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "T" SPLICES SHALL BE OF THE CAST TYPE.
- CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKINGS, ETC. SHALL BE 3500 PSI, AIR-ENTRAINED.
- ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE-ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.
- THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123.** ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.
- WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

GROUNDING NOTES FOR AIRFIELD LIGHTING

- 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 150/5340-30H DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6; A GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. THE PURPOSE OF THE LIGHT BASE GROUND IS TO PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A LIGHT BASE GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AND CONNECTED TO THE METAL FRAME OF EACH TAXI GUIDANCE SIGN AS DETAILED ON THE PLANS AND IN ACCORDANCE WITH THE RESPECTIVE TAXI GUIDANCE SIGN MANUFACTURER RECOMMENDATIONS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. CONNECTIONS TO GROUND LUGS ON THE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE SHALL BE WITH A UL LISTED GROUNDING CONNECTOR SUITABLE FOR DIRECT BURY IN EARTH OR CONCRETE. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE: 800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE: 918-663-1440), ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE: 800-842-7437), OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
- FOR BASE MOUNTED LIGHT FIXTURES THE LIGHT FIXTURE MUST BE BONDED TO THE LIGHT BASE INTERNAL GROUND LUG VIA A #6 AWG STRANDED COPPER WIRE RATED FOR 600 VOLTS WITH GREEN XHHW INSULATION OR A BRAIDED GROUNDING STRAP OF EQUIVALENT CURRENT RATING. THE GROUND WIRE LENGTH MUST BE SUFFICIENT TO ALLOW THE REMOVAL OF THE LIGHT FIXTURE FROM THE LIGHT BASE FOR ROUTINE MAINTENANCE. SEE THE LIGHT FIXTURE MANUFACTURER'S INSTRUCTIONS FOR PROPER METHODS OF ATTACHING A BONDING WIRE.
- 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 2014 NATIONAL ELECTRICAL CODE ARTICLE 250-12.
- PER FAA 150/5340-30H THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
- FOR TAXIWAY LIGHTS THAT ARE SPACED WITH LESS THAN 10 FEET OF SEPARATION BETWEEN THEM, PROVIDE ONE 3/4-INCH DIAMETER BY 10 FEET LONG GROUND ROD PER TWO ADJACENT TAXIWAY LIGHTS. LOCATE GROUND RODS MIDWAY BETWEEN THE TWO TAXIWAY LIGHTS.
- STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100% DOMESTIC STEEL TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS AND THE STEEL PRODUCTS PROCUREMENT ACT.
- FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, AND NAVAID THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH GROUNDING ELECTRODE SYSTEM. IF GROUND RESISTANCE EXCEEDS 25 OHMS CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

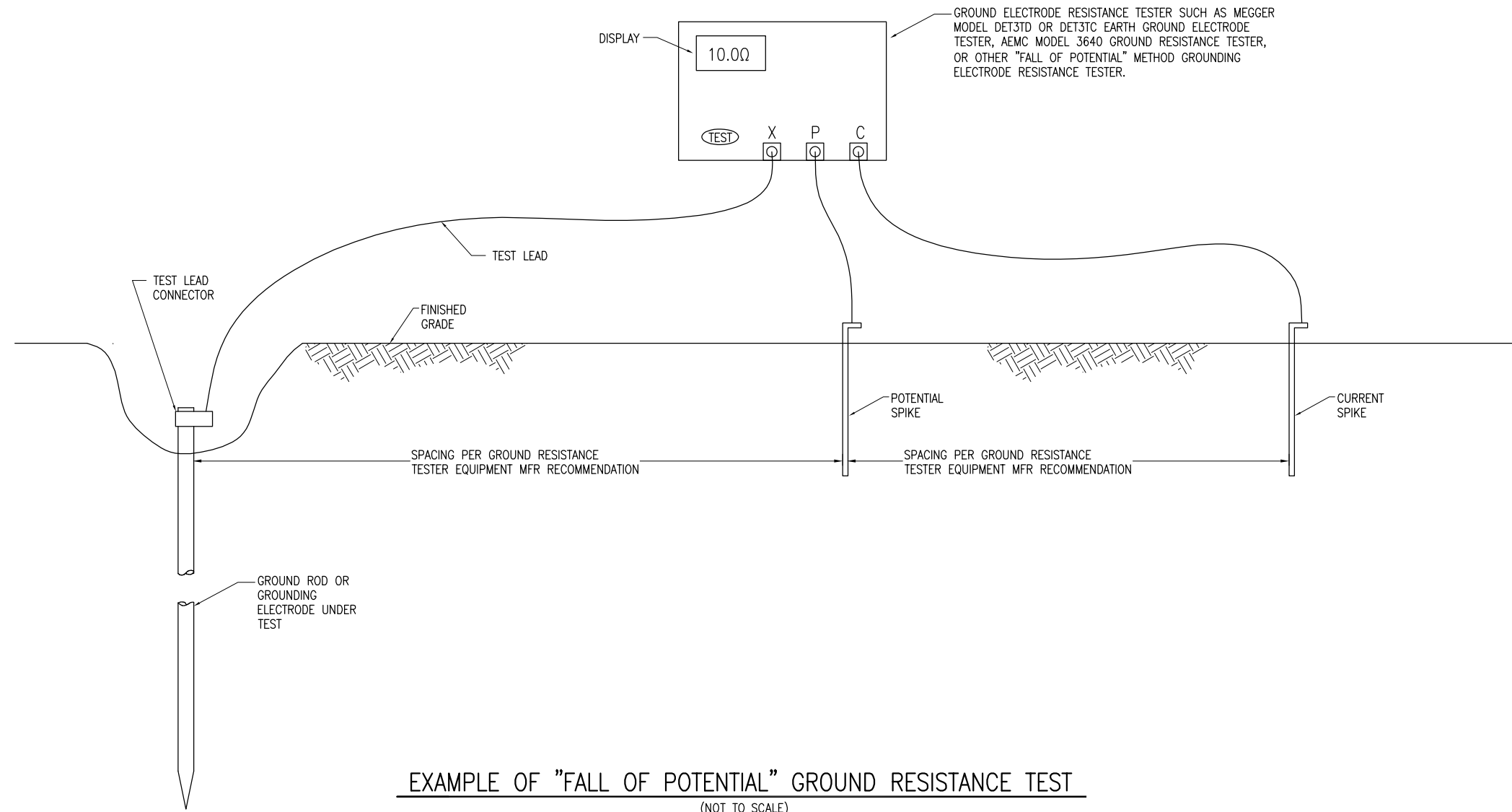
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SHEET TITLE

ELECTRICAL NOTES SHEET 2



EXAMPLE OF "FALL OF POTENTIAL" GROUND RESISTANCE TEST
(NOT TO SCALE)

NOTES

1. CONTRACTOR SHALL TEST AND RECORD THE RESISTANCE FOR EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING ELECTRODE SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN.
2. FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, AND NAVAID THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, AND NAVAIDS INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER / RESIDENT TECHNICIAN.
3. GROUND RESISTANCE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE RESPECTIVE GROUND ELECTRODE RESISTANCE TESTING EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
4. RECORD SITE CONDITIONS DURING TESTS.
5. "FALL OF POTENTIAL" TYPE GROUND ELECTRODE RESISTANCE TESTER IS RECOMMENDED FOR TESTING INDIVIDUAL STAND ALONE GROUND RODS.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

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SBGP No: 3-17-SBGP-XX

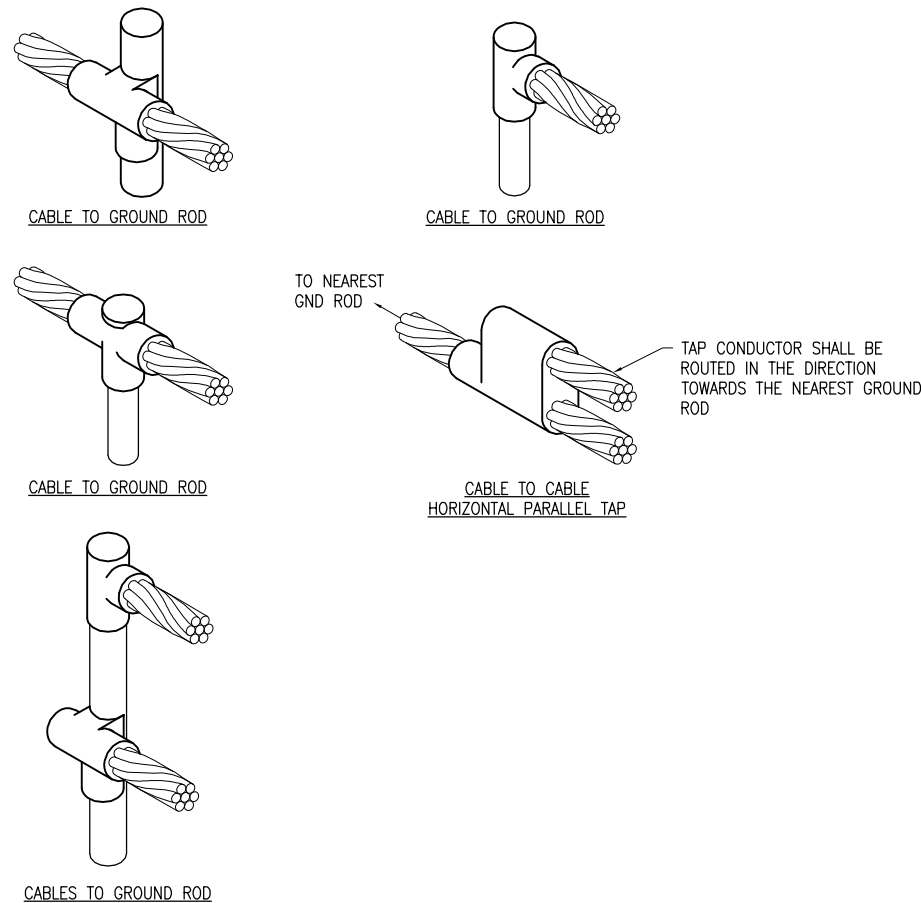
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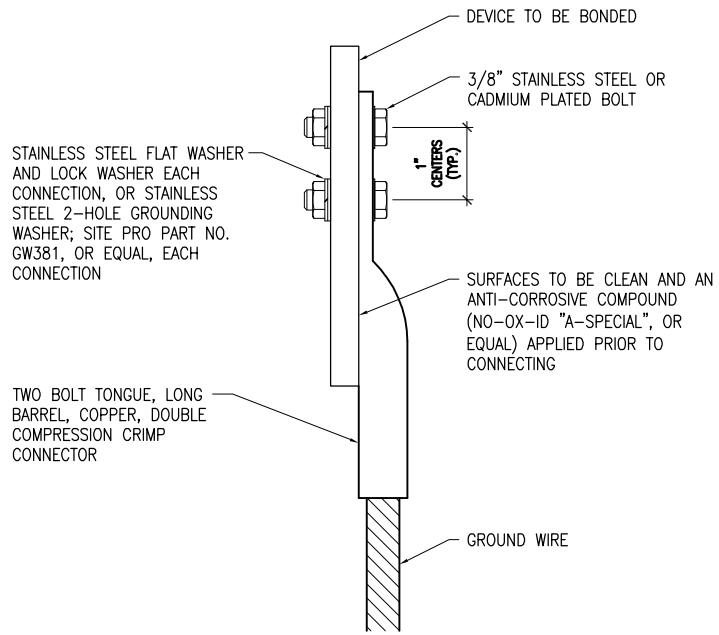
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GROUND RESISTANCE TESTING DETAILS



TO NEAREST GND ROD

TAP CONDUCTOR SHALL BE ROUTED IN THE DIRECTION TOWARDS THE NEAREST GROUND ROD

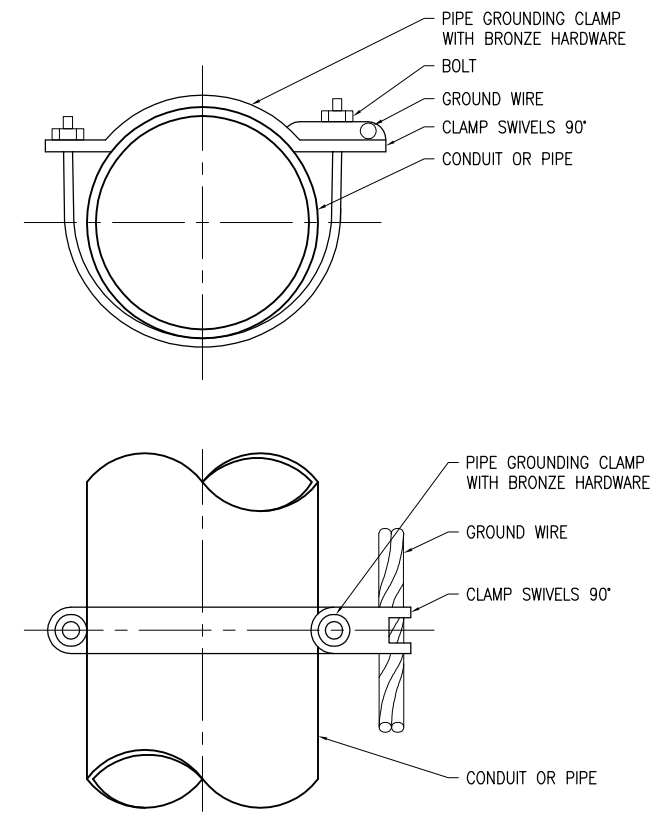


2 HOLE LONG BARREL COMPRESSION LUG TABLE			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159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

NOTES

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

GROUNDING LUG CONNECTION DETAIL



PIPE GROUNDING CLAMP TABLE	
BURNDY CAT. NO.	PIPE SIZE
GAR3902-BU	1/2" - 1"
GAR3903-BU	1 1/4" - 2"
GAR3904-BU	2 1/2" - 3 1/2"
GAR3905-BU	4" - 5"
GAR3906-BU	6"

NOTES

- PIPE GROUNDING CLAMPS SHALL HAVE BRONZE HARDWARE, BE CORROSION RESISTANT, SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE, & UL467 LISTED.

PIPE/CONDUIT GROUNDING CLAMP DETAIL

DETAIL NOTES

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

EXOTHERMIC WELD DETAILS

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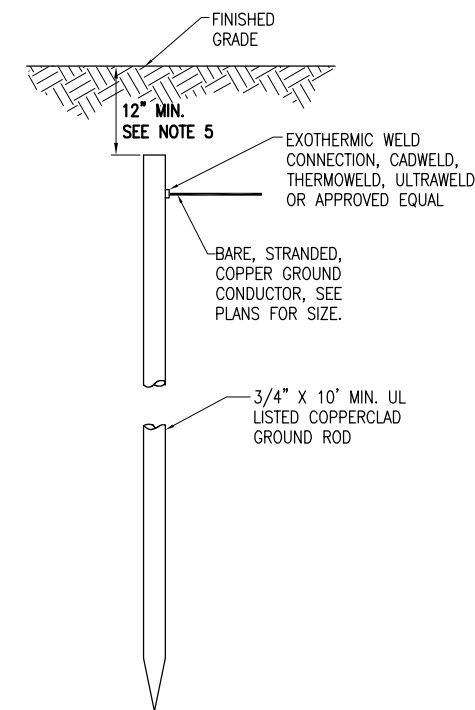
SHEET TITLE

GROUNDING DETAILS

GROUNDING NOTES

- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE AND FAA-STD-019e (LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT). THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:
- FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS FOR AIRFIELD LIGHTING (RUNWAY LIGHTING, TAXIWAY LIGHTING, TAXI GUIDANCE SIGNS, & DISTANCE REMAINING SIGNS) SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS FOR OTHER APPLICATIONS SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS, AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE 1-800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE 918-663-1440) OR ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE 1-800-842-7437) OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS OR AT BURIED GROUNDING ELECTRODE CONDUCTORS.
- CONTRACTOR SHALL TEST EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE.
- ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
- ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND BEFORE JOINING, SANCHEM INC. 'NO-OX-ID 'A-SPECIAL' COMPOUND, BURNDY PENETROX E, OR EQUAL.
- METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2014 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
- METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT
- ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
- ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
- PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC., ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE ENCLOSURES.
- EACH NEW FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 2014 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.

- ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2014 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 2014 NEC 250-102.
- IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.
- PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
- EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
- ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR APPROVED EQUAL.
- BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
- BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
- INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, DO NOT COMPLETELY ENIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS. GIRDLING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GIRDLING GROUND CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUND CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS GIRDLED DURING A LIGHTNING STRIKE RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 500,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. GIRDLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.
- IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2014 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
- WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE RESIDENT ENGINEER OR PROJECT ENGINEER FOR FURTHER DIRECTIONS.
- GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.



10 FT. GROUND ROD

NOTES

- TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
- THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
- COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
- GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.
- TOP OF GROUND RODS SHALL BE 12" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN.
- GROUND RODS FOR RUNWAY LIGHTING, TAXIWAY LIGHTING, AND TAXI GUIDANCE SIGNS SHALL BE A MINIMUM 3/4-INCH DIAMETER BY 10-FT LONG UL LISTED COPPER CLAD.
- GROUND RODS FOR VAULT SHALL BE MINIMUM 3/4-INCH DIAMETER BY 10-FOOT LONG UL LISTED COPPER CLAD.

GROUND RODS

(NOT TO SCALE)

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RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
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SHEET TITLE

GROUNDING NOTES

ELECTRICAL LEGEND - ONE-LINE DIAGRAM

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

ELECTRICAL LEGEND - SCHEMATIC

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

ELECTRICAL ABBREVIATIONS

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

ELECTRICAL ABBREVIATIONS (CONTINUED)

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

AIRPORT EQUIPMENT/FACILITY ABBREVIATIONS

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

NOTES:

- CONTRACTOR SHALL EXAMINE THE SITE AND VAULT TO DETERMINE EXISTING SITE CONDITIONS.
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:

208/120 VAC, 3 PHASE, 4 WIRE

PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUND	GREEN

120/240 VAC, 1 PHASE, 3 WIRE

PHASE A	BLACK
PHASE B	RED
NEUTRAL	WHITE
GROUND	GREEN

- SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
- LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.
- ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES U.L. LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
- HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 500 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) & LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, OR HANDHOLE.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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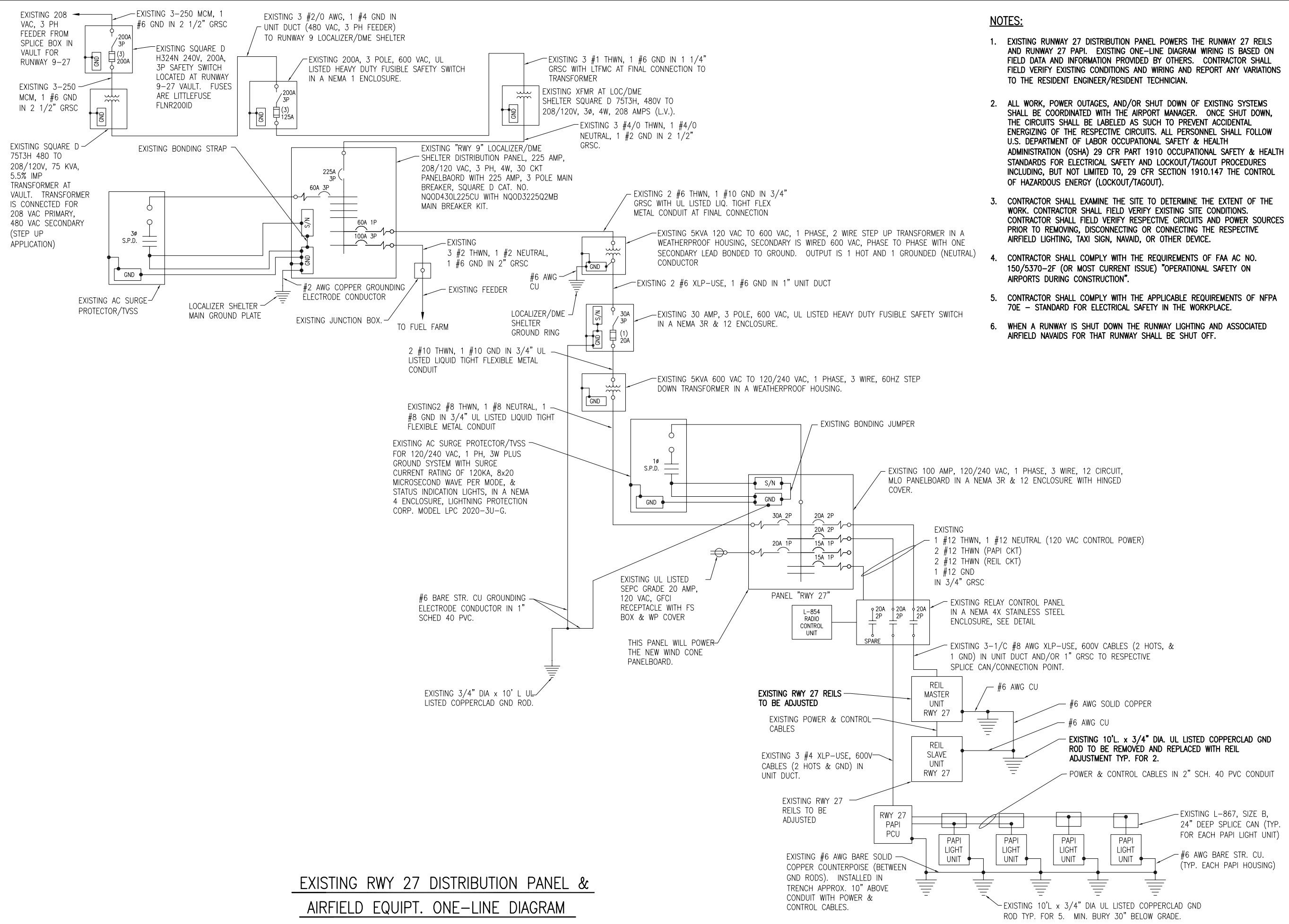
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SHEET TITLE

ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES

NOTES:

- EXISTING RUNWAY 27 DISTRIBUTION PANEL POWERS THE RUNWAY 27 REILS AND RUNWAY 27 PAPI. EXISTING ONE-LINE DIAGRAM WIRING IS BASED ON FIELD DATA AND INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND WIRING AND REPORT ANY VARIATIONS TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN.
- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING OR CONNECTING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICE.
- CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
- CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
- WHEN A RUNWAY IS SHUT DOWN THE RUNWAY LIGHTING AND ASSOCIATED AIRFIELD NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.



**EXISTING RWY 27 DISTRIBUTION PANEL &
AIRFIELD EQUIP. ONE-LINE DIAGRAM**

**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

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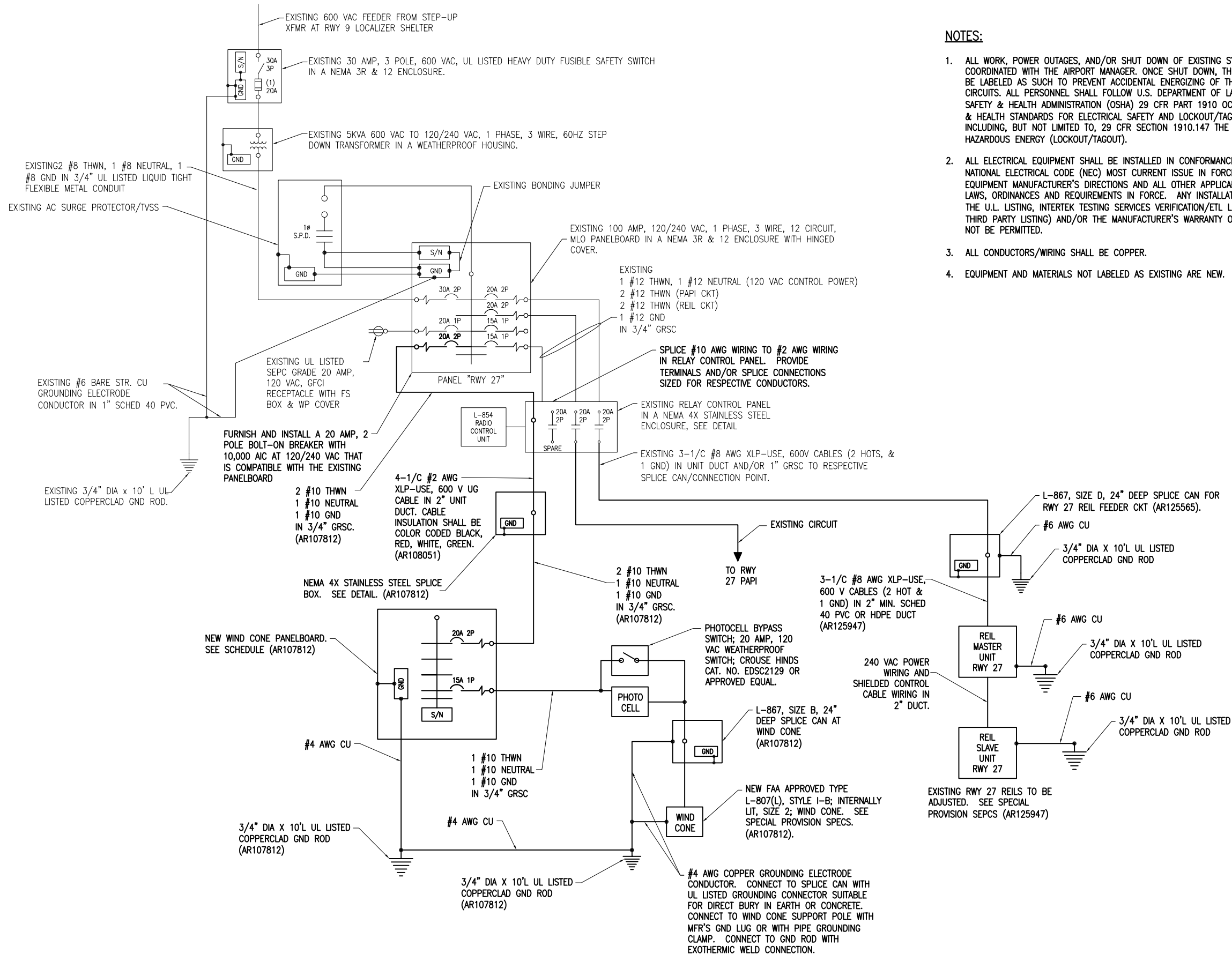
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**EXISTING RUNWAY
27 DISTRIBUTION
PANEL ONE-LINE**



- NOTES:**
1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
 2. 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, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
 3. ALL CONDUCTORS/WIRING SHALL BE COPPER.
 4. EQUIPMENT AND MATERIALS NOT LABELED AS EXISTING ARE NEW.

**PROPOSED ELECTRICAL ONE LINE FOR
WIND CONE & RWY 27 REILS**

**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

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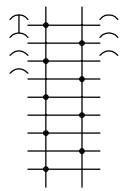
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**PROPOSED
ELECTRICAL ONE
LINE FOR WIND
CONE & RWY 27 REILS**

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WIND CONE PANELBOARD SCHEDULE

CKT #	DUTY	SIZE	SIZE	DUTY	CKT #
1	MAIN BREAKER	20A, 2P	15A, 1P	WIND CONE	2
3			15A, 1P	SPARE	4
5	SPARE	20A, 1P	15A, 1P	SPARE	6
7	SPARE	20A, 1P		BLANK	8
9	BLANK			BLANK	10
11	BLANK			BLANK	12
13	BLANK			BLANK	14
15	BLANK			BLANK	16
17	BLANK			BLANK	18



100 AMP, 120/240VAC, 1Ø, 3 WIRE, 18 CIRCUIT PANELBOARD WITH MAIN LUGS AND 20 AMP, 2 POLE REVERSE FEED MAIN CIRCUIT BREAKER. INCLUDE COPPER SOLID NEUTRAL AND SEPARATE COPPER GROUND BUS. PANELBOARD SHALL BE SQUARE D CLASS 1630, CAT. NO. NQ18L1C IN A NEMA 3R & 12 ENCLOSURE WITH HINGED COVER, OR APPROVED EQUAL.

NOTES

- PANELBOARD BUSSES SHALL BE COPPER, NEUTRAL BUS SHALL BE COPPER, EQUIPMENT GROUND BAR SHALL BE COPPER.
- INCLUDE WEATHERPROOF ENGRAVED PHENOLIC NAMEPLATES LABELED "WIND CONE PANELBOARD" AND "120/240VAC, 1 PH, 3-WIRE FED FROM RUNWAY 27 DIST. PANEL".
- ALL CIRCUIT BREAKERS SHALL BE A BOLT-ON TYPE WITH 10,000 AIC (MIN.) AT 120/240VAC.
- ALL METAL CONDUIT TERMINATIONS IN THE PANELBOARD SHALL HAVE FITTINGS UL LISTED SUITABLE FOR GROUNDING.
- PANELBOARD SHALL BE MANUFACTURED IN THE U.S.A. TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS OR CONTRACTOR SHALL REQUEST AN FAA WAIVER.

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

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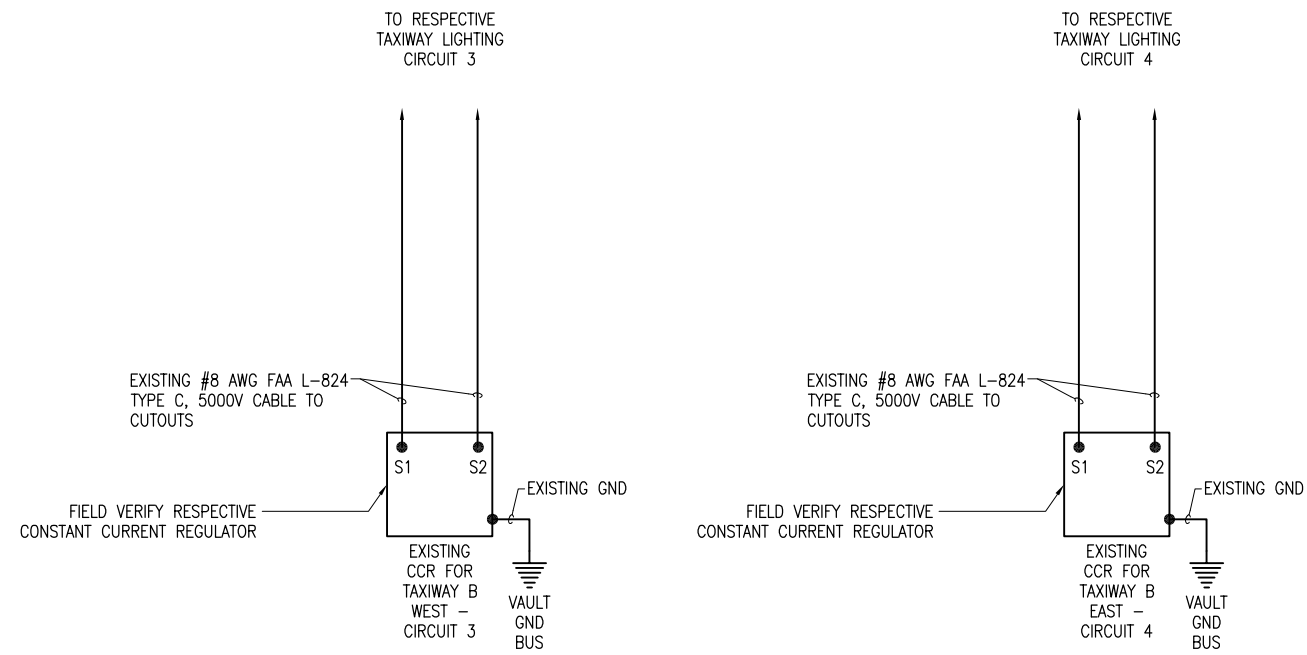
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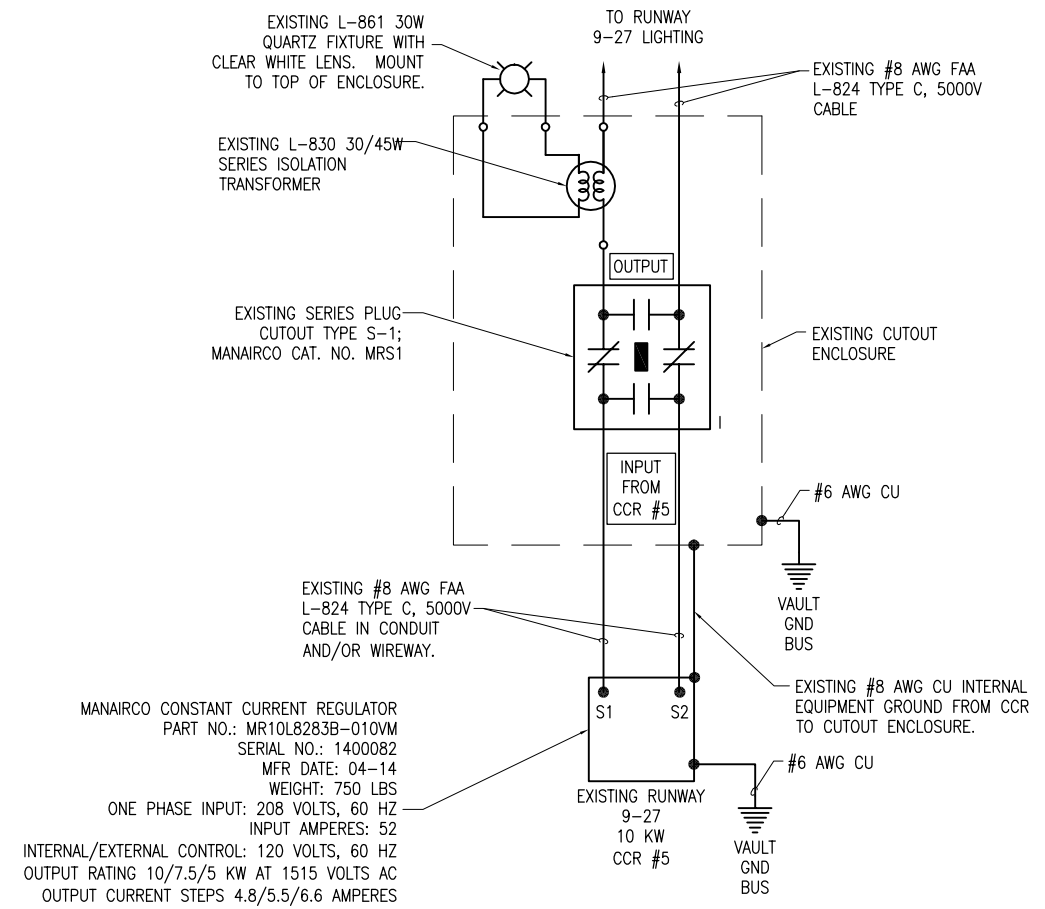
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WIND CONE PANELBOARD SCHEDULE



EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAY B



EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAY 9-27

NOTES:

1. THE AIRPORT HAS TWO AIRPORT ELECTRICAL VAULTS. ONE VAULT CONTAINS CCR'S THAT POWER THE TAXIWAY B LIGHTING CIRCUITS. THE VAULT WITH TAXIWAY B CCR'S HAS EXPOSED 5,000 VOLT SERIES CIRCUIT WIRING. THE SECOND VAULT CONTAINS CCR'S THAT POWER RUNWAY 2-20 LIGHTING CIRCUIT, CCR'S THAT POWER THE PARALLEL TAXIWAY LIGHTING CIRCUITS (PARALLEL TO RUNWAY 2-20), AND THE CCR THAT POWERS THE RUNWAY 9-27 LIGHTING CIRCUIT. THE CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULTS AND ON THE AIRFIELD.
2. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND THE RESPECTIVE FAA ATCT PERSONNEL. 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. CONTRACTOR SHALL EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS. NOTE THE LEWIS UNIVERSITY AIRPORT HAS TWO AIRPORT ELECTRICAL VAULTS. CONTRACTOR SHALL CONFIRM POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO WORKING ON THE RESPECTIVE CIRCUITS.
4. THE RESPECTIVE PERSONNEL PERFORMING AIRFIELD LIGHTING WORK, VAULT WORK, AND/OR TESTS SHALL BE FAMILIAR WITH, AND QUALIFIED TO WORK ON, 5000 VOLT AIRFIELD LIGHTING SERIES CIRCUITS, CONSTANT CURRENT REGULATORS, AND ASSOCIATED AIRPORT ELECTRICAL VAULT EQUIPMENT.
5. NOTE THE CONDITION OF THE EXISTING TAXIWAY CIRCUIT CUTOUTS IS UNKNOWN. IT IS POSSIBLE THAT SOME CUTOUTS MIGHT NOT FUNCTION PROPERLY. CONTRACTOR SHALL EXERCISE CAUTION, PRACTICE SAFETY, AND DISCONNECT THE SERIES CIRCUITS FROM THE RESPECTIVE CONSTANT CURRENT REGULATORS, AS APPLICABLE WHEN PERFORMING WORK ON THE AIRFIELD LIGHTING OR WORK THAT MIGHT AFFECT THE AIRFIELD LIGHTING. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO DISCONNECT POWER AND LOCKOUT CIRCUITS FOR PROTECTION OF PERSONNEL.
6. CONDUCT TESTS FOR AREAS OF WORK WHERE THE RESPECTIVE CIRCUITS MIGHT BE AFFECTED. MEGGER TEST AND RECORD EXISTING SERIES CIRCUITS (WITH A CABLE INSULATION TESTER) PRIOR TO CABLE WORK AND AGAIN AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, AND/OR UPGRADES HAVE BEEN COMPLETED. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE WITH AN OHMMETER.
7. CCR FOR TAXIWAY B WEST CIRCUIT 3 AND CCR FOR TAXIWAY B EAST CIRCUIT 4 ARE EXISTING, AND ARE LOCATED IN A SEPARATE VAULT.
8. CCR FOR RUNWAY 9-27 IS EXISTING AND IS LOCATED IN THE VAULT WITH THE RUNWAY 2-20 CCR'S. NOTE THIS VAULT IS A SECOND VAULT FOR THE AIRFIELD LIGHTING.
9. THE RESPECTIVE CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE ANY AIRFIELD WORK THAT MIGHT AFFECT LIGHTING CIRCUITS, REMOVAL WORK, MODIFICATIONS, AND/OR ADDITIONS AND AGAIN AFTER THE AIRFIELD WORK AND ADDITIONS HAVE BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES (WHERE APPLICABLE) OF OPERATIONS. PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND THE PROJECT ENGINEER. WRITTEN TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND THE PROJECT ENGINEER.

LEGEND

"CCR" DENOTES CONSTANT CURRENT REGULATOR

RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

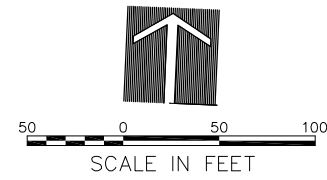
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 69-E-603.DWG
DESIGN BY: KNL 5/11/16
DRAWN BY: LDH 5/12/16
REVIEWED BY: SJM 6/6/16

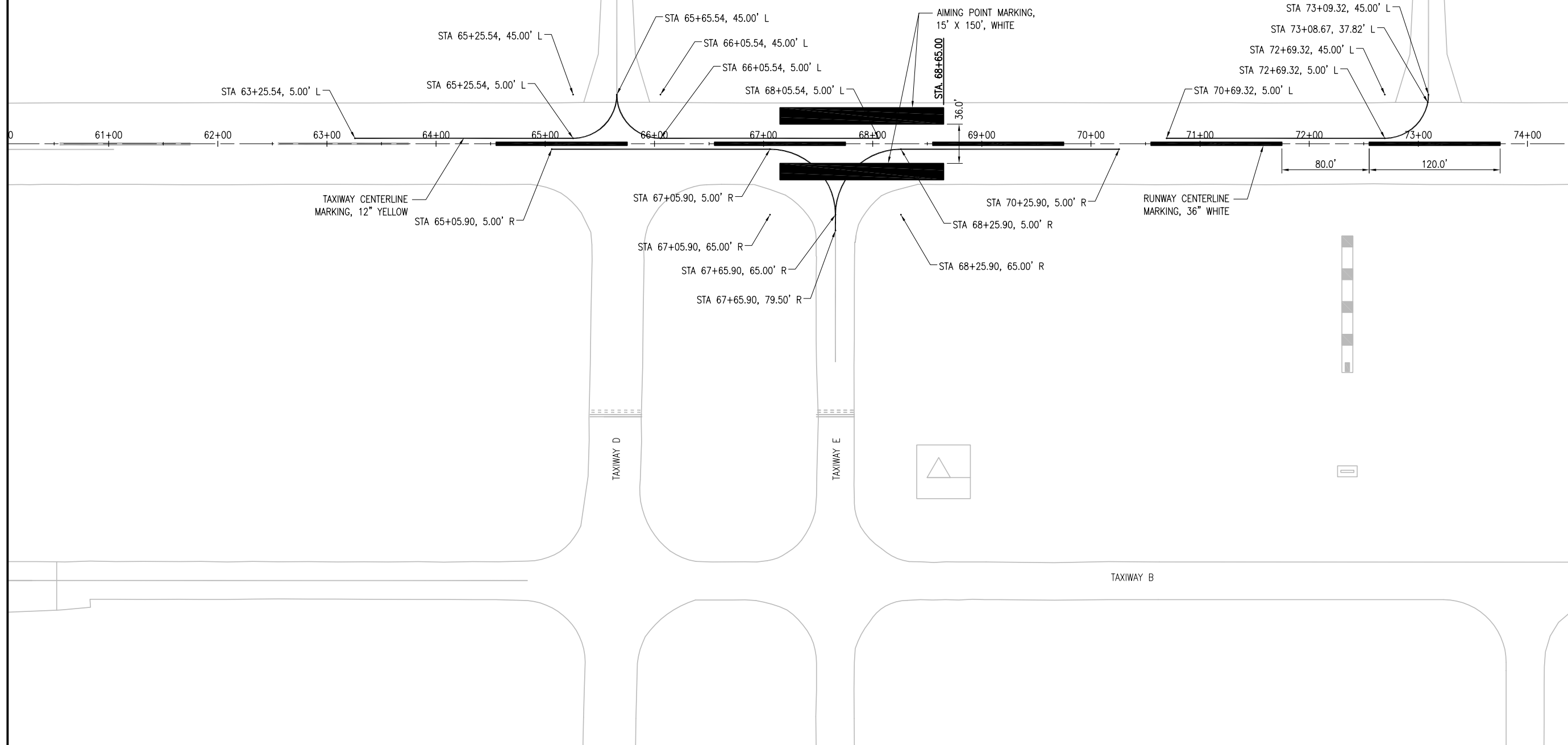
SHEET TITLE

HIGH VOLTAGE WIRING SCHEMATIC FOR TXY B & RWY 9-27



NOTES:

1. GLASS SPHERES SHALL BE USED FOR ALL WHITE AND YELLOW MARKINGS. GLASS SPHERES NOT REQUIRED FOR BLACK MARKING.
2. WATERBORNE MARKING SHALL BE USED ON BITUMINOUS PAVEMENT.
3. ALL MARKINGS PLACED ON PAVEMENT THAT WAS NOT REPLACED OR OVERLAID AS PART OF THIS PROJECT SHALL HAVE A 6 INCH BLACK BORDER. THIS QUANTITY IS INCLUDED IN THE QUANTITY FOR ITEM AR620525 PAVEMENT MARKING - BLACK BORDER.



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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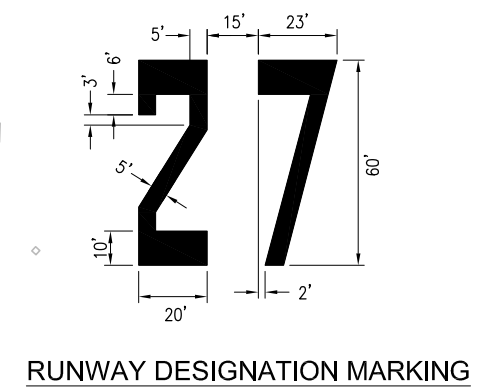
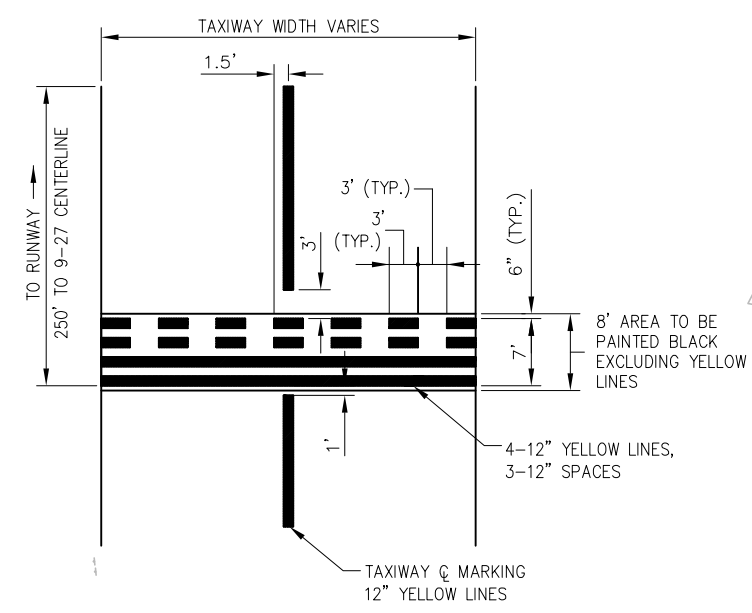
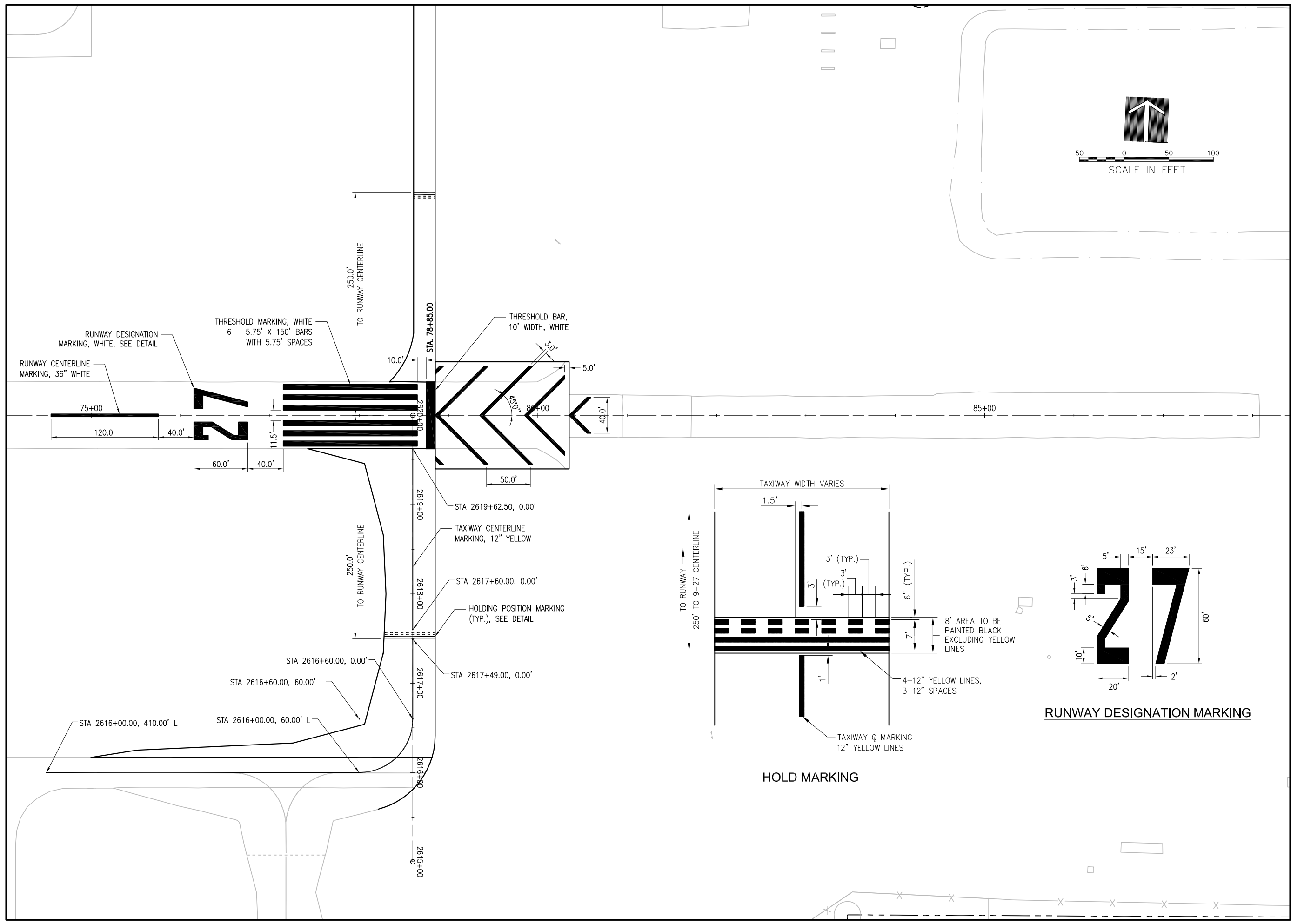
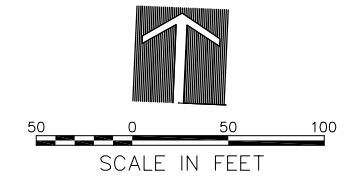
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ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 70-MARKING.DWG
DESIGN BY: LDH 4/5/16
DRAWN BY: LDH 4/5/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

MARKING PLAN

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RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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		DES	DWN	REV

ISSUE: JUNE 17, 2016

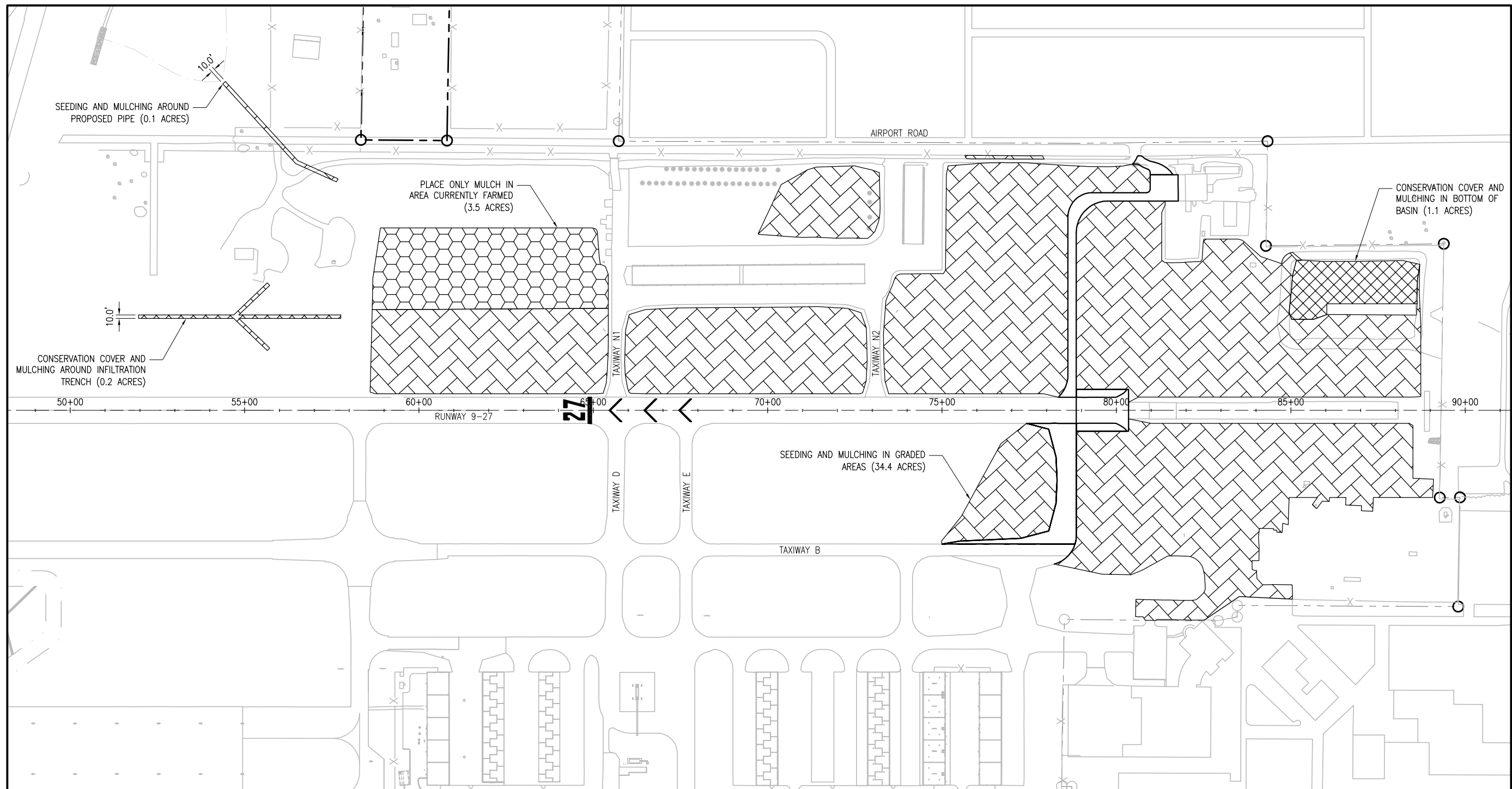
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CAD FILE: 71-MARKING.DWG

DESIGN BY: LDH 4/5/16
DRAWN BY: LDH 4/5/16

REVIEWED BY: SJM 6/6/16

SHEET TITLE

MARKING PLAN



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

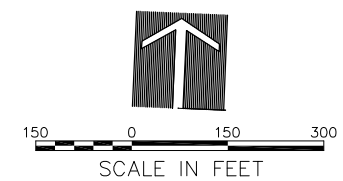
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 72-LANDSCAPING.DWG
DESIGN BY: LDH 6/2/16
DRAWN BY: LDH 6/2/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

LANDSCAPING PLAN



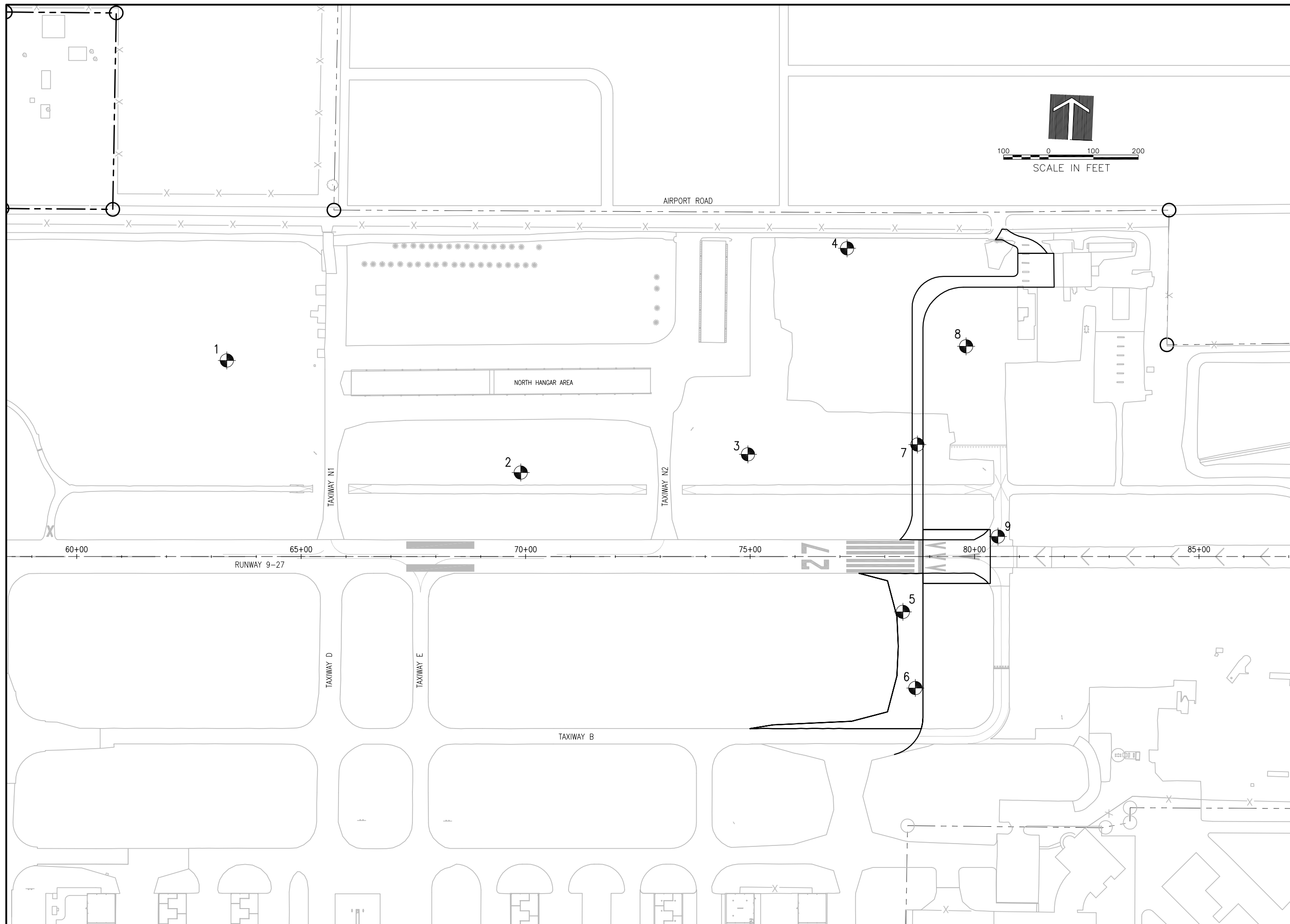
SEE EXCESS MATERIAL PLACEMENT PLAN FOR ADDITIONAL QUANTITY.

- CONSERVATION COVER AND MULCHING
- SEEDING AND MULCHING
- MULCHING ONLY

NOTES:

THE CONTRACTOR SHALL LIMIT THE ACREAGE OF DISTURBED GROUND TO ONLY THAT NECESSARY FOR THE CONDUCT OF AN EFFICIENT CONSTRUCTION PROCESS WITHOUT OVER-EXPOSING NON-VEGETATED AREAS. ANY DISTURBED AREA OF CONSTRUCTION THAT WILL NOT BE REWORKED FOR A PERIOD LONGER THAN 14 DAYS MUST BE SEEDED OR MULCHED, WITH EITHER PERMANENT SEEDING, OR TEMPORARY SEEDING AND MULCHING, ITEM AR803008, AFTER APPROVAL BY THE RESIDENT ENGINEER OF THIS PROPOSED ACTION. THE CONTRACTOR SHALL MAKE BEST EFFORT TO REDUCE THE NEED FOR TEMPORARY COVERING BY SCHEDULING HIS EARTHWORK ACTIVITIES IN A PROPER SEQUENCE AND APPLY PERMANENT COVERING AT THE EARLIEST POSSIBLE DATE, WITHIN 14 DAYS, AFTER REACHING FINAL GRADE. OUTSIDE THE REGULAR PLANTING SEASON, TEMPORARY SEED AND MULCH SHALL BE PLACED AS STATED HERE. HOWEVER, NO PAYMENT FOR TEMPORARY SEEDING AND MULCHING WILL BE MADE IF THE TIME OF APPLICATION IS WITHIN THE REGULAR PLANTING SEASON(S) STATED IN THE SPECIAL PROVISIONS. DURING THE REGULAR PLANTING SEASON(S), ONLY PERMANENT COVERING SHALL BE PAID.

THE QUANTITIES SHOWN INCLUDE THE ESTIMATED TEMPORARY SEEDING AND MULCHING, ITEM AR803008, THAT MAY BE PLACED OUTSIDE THE REGULAR PLANTING SEASON. TEMPORARY SEEDING AND MULCHING PLACED DURING THE REGULAR PLANTING SEASON IS INCIDENTAL TO THE CONTRACT.



**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

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		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 73-BORINGMAP.DWG
DESIGN BY: LDH 6/2/16
DRAWN BY: LDH 6/2/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

**BORING LOCATION
MAP**

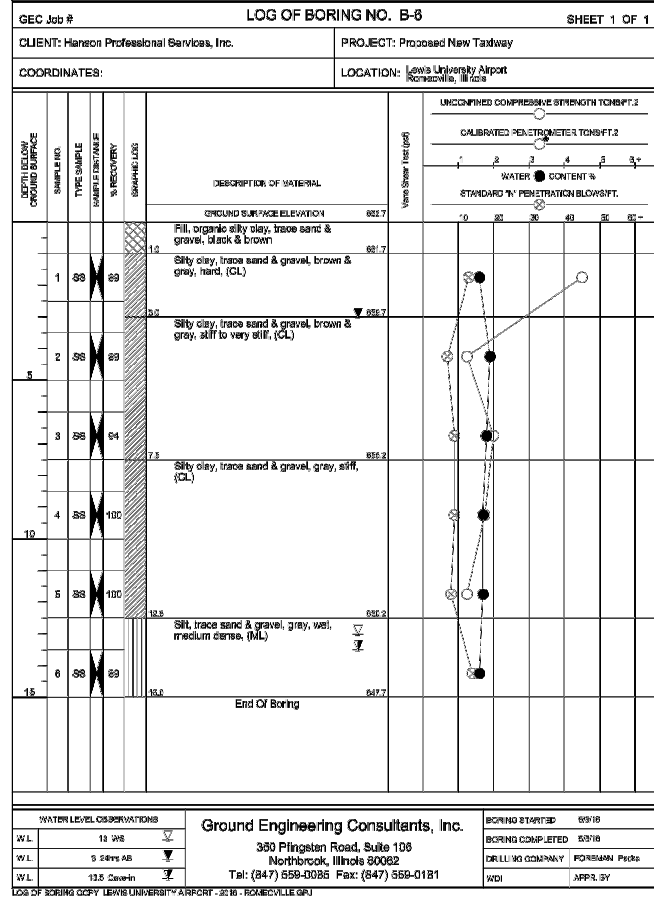
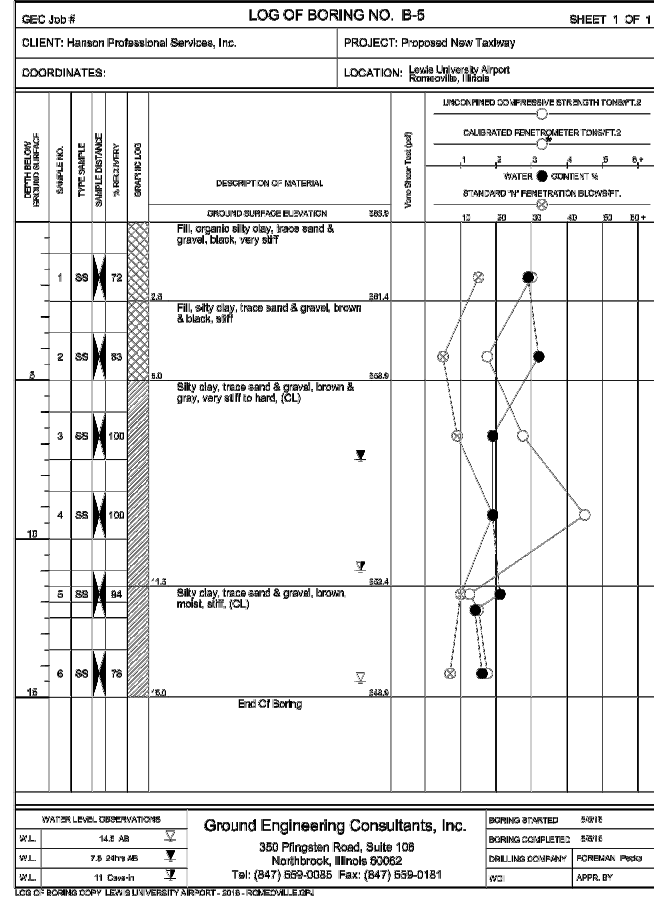
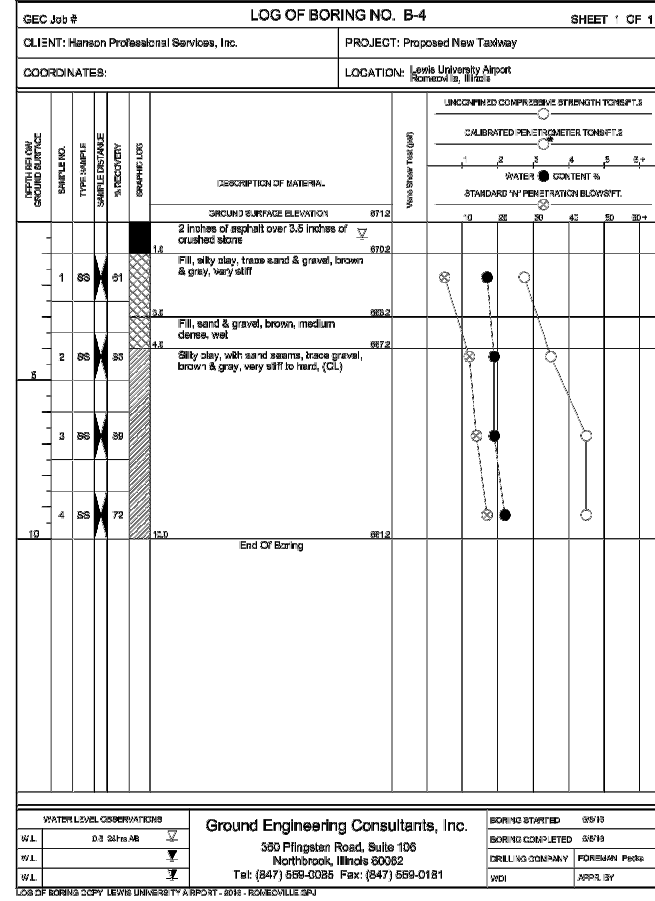
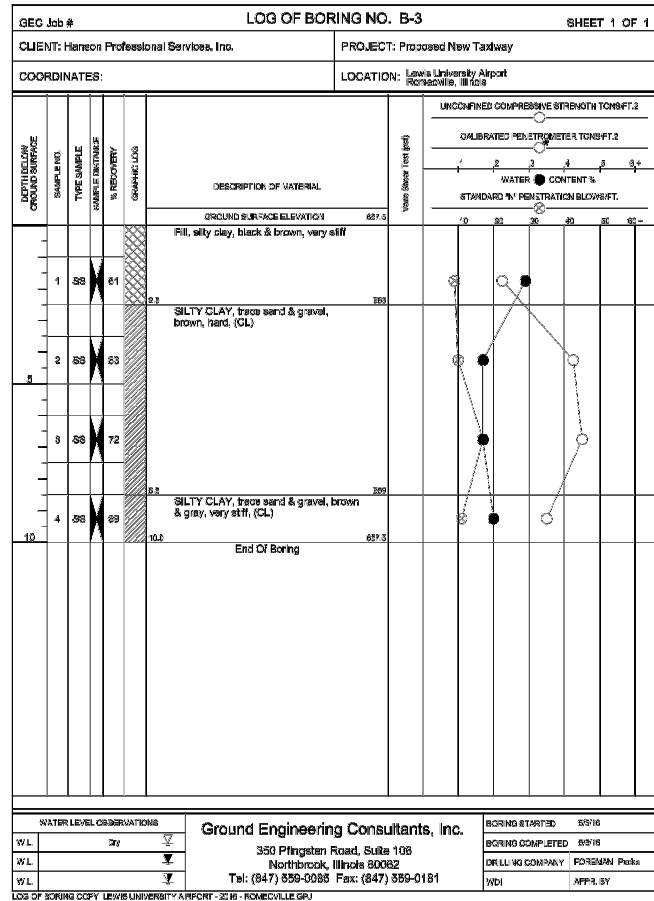
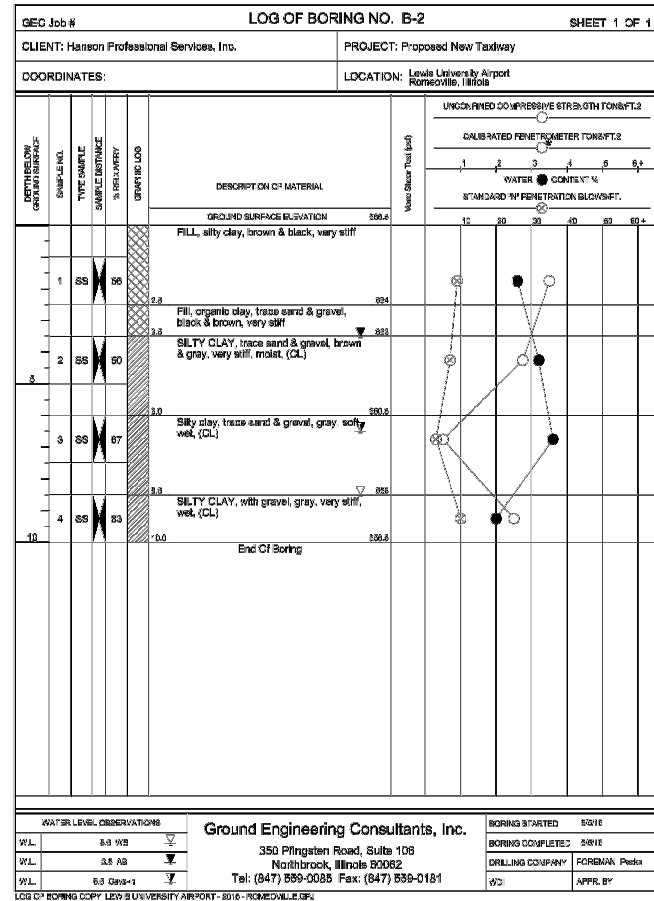
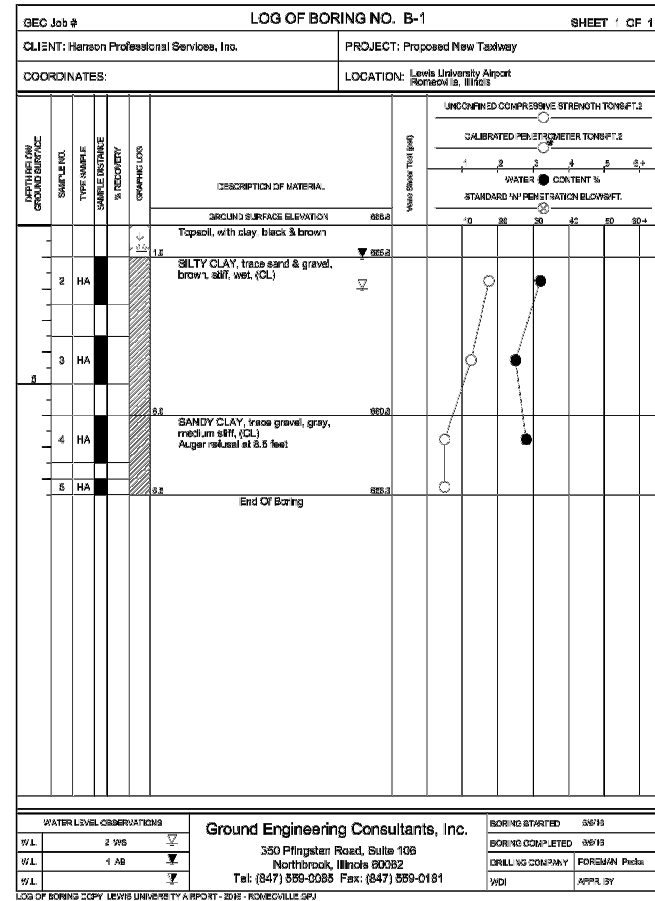
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 74-BORINGS.DWG
DESIGN BY: LDH 6/2/16
DRAWN BY: LDH 6/2/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

BORING LOGS
B-1 THRU B-6



**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

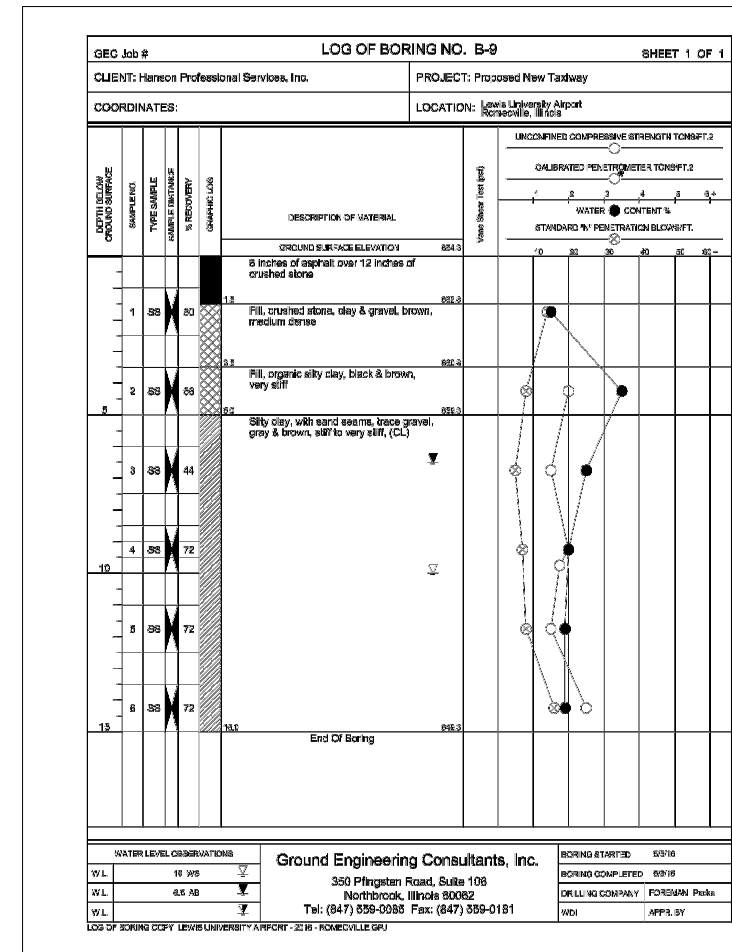
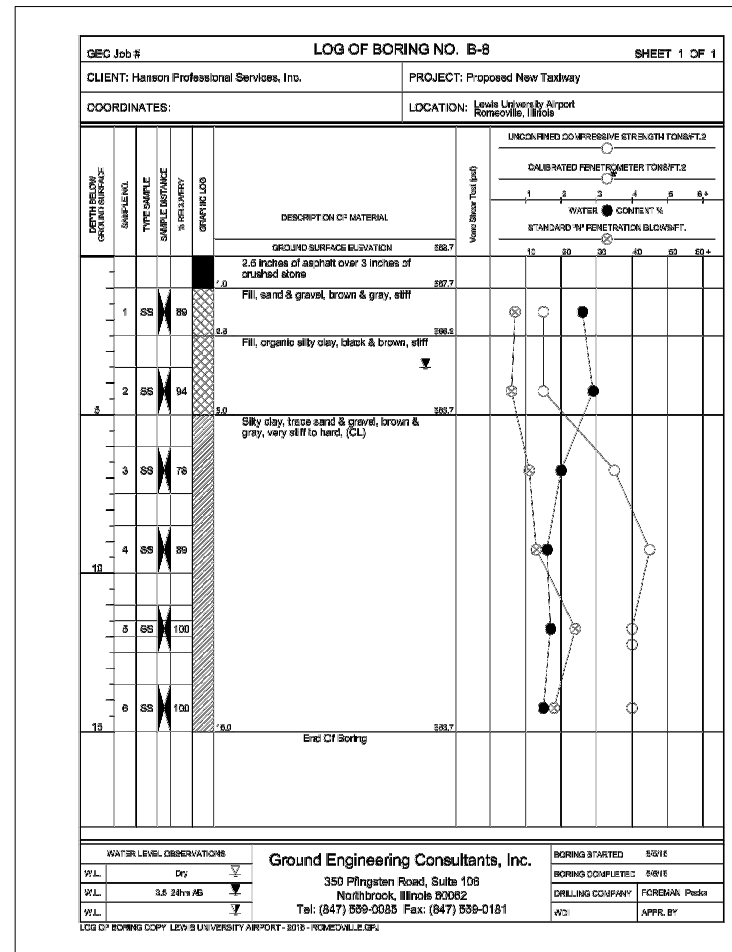
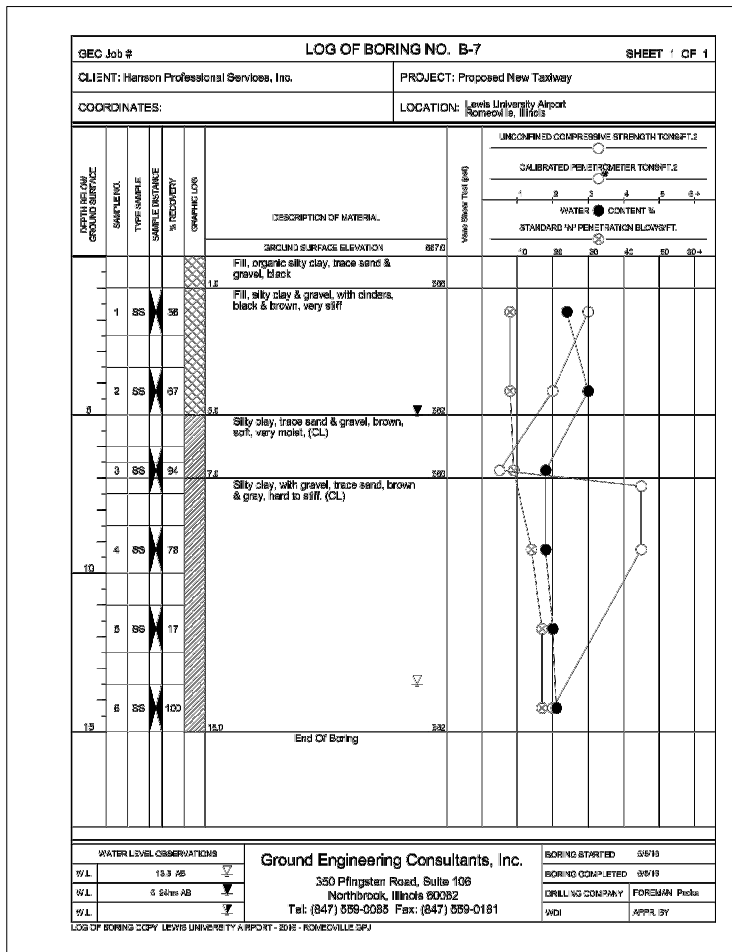
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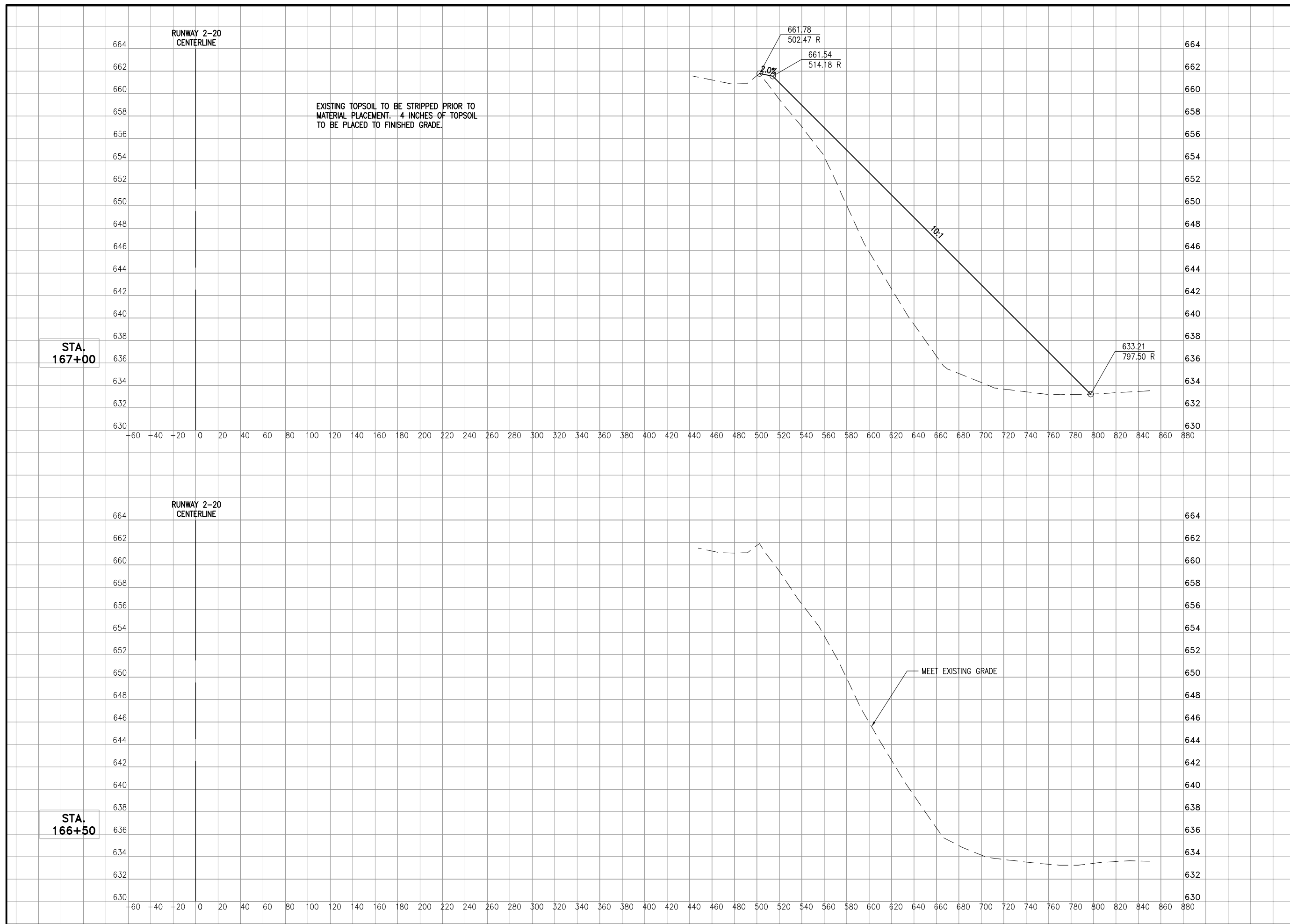
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ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 75-BORINGS.DWG
DESIGN BY: LDH 6/2/16
DRAWN BY: LDH 6/2/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

**BORING LOGS
B-7 THRU B-9**





RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

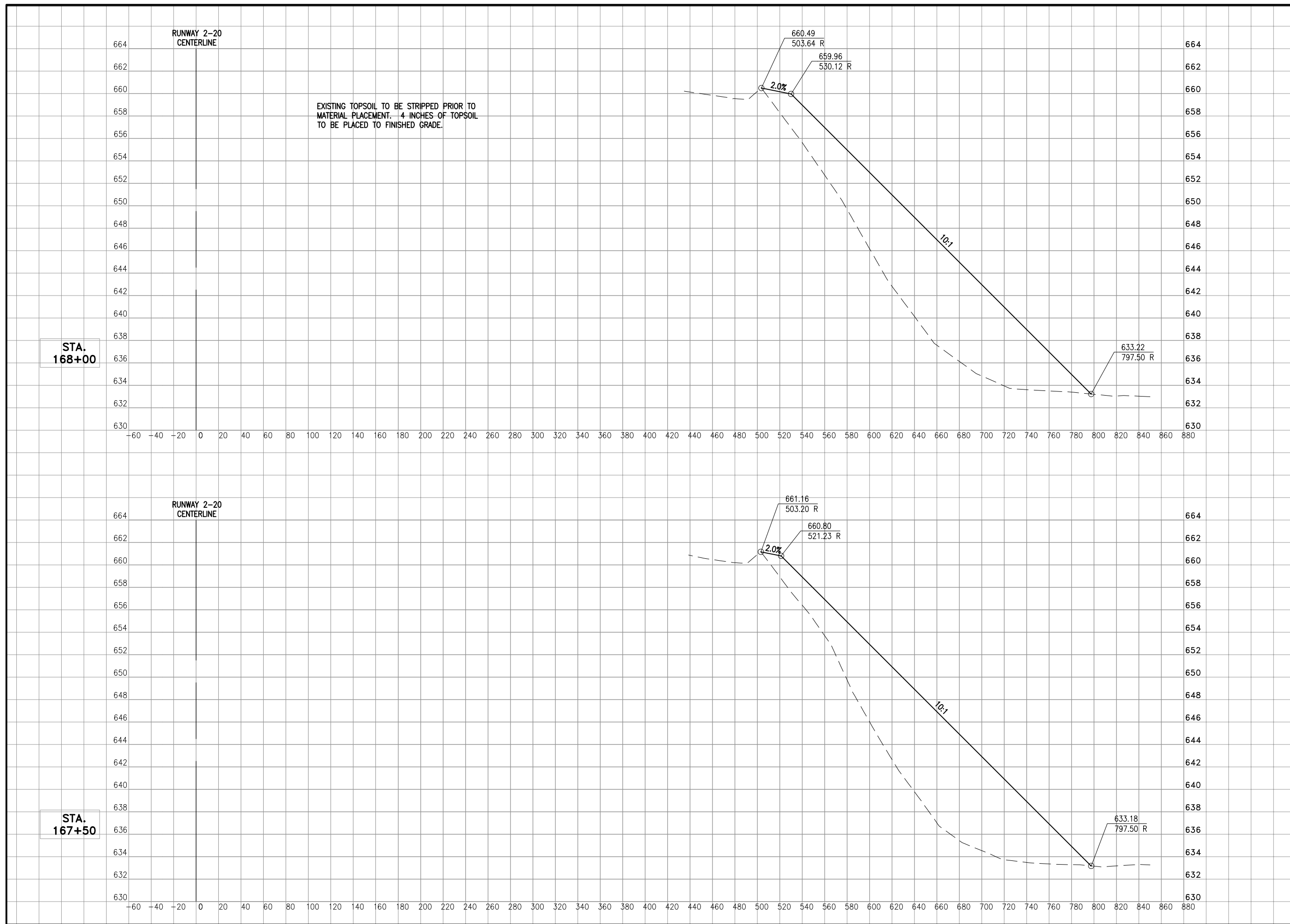
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 16A0012
CAD FILE: 77-SECTIONS.DWG
DESIGN BY: LDH 5/26/16
DRAWN BY: LDH 5/26/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

CROSS SECTIONS EXCESS MATERIAL PLACEMENT



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

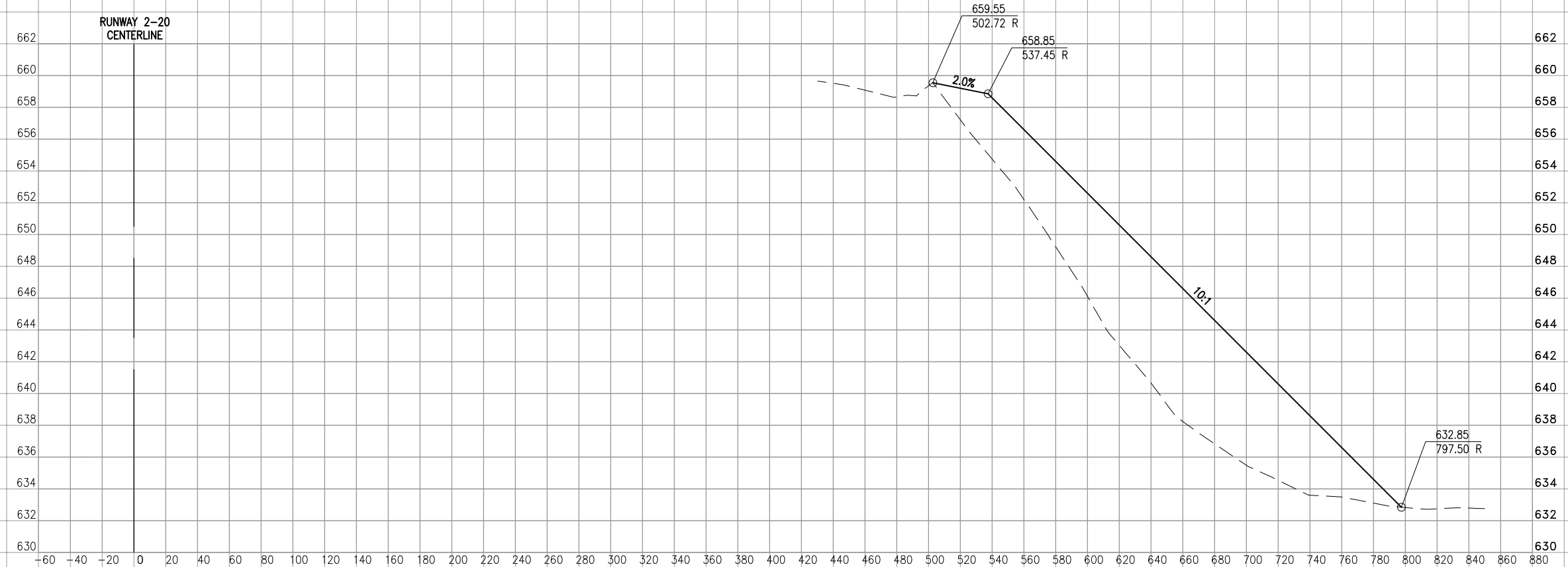
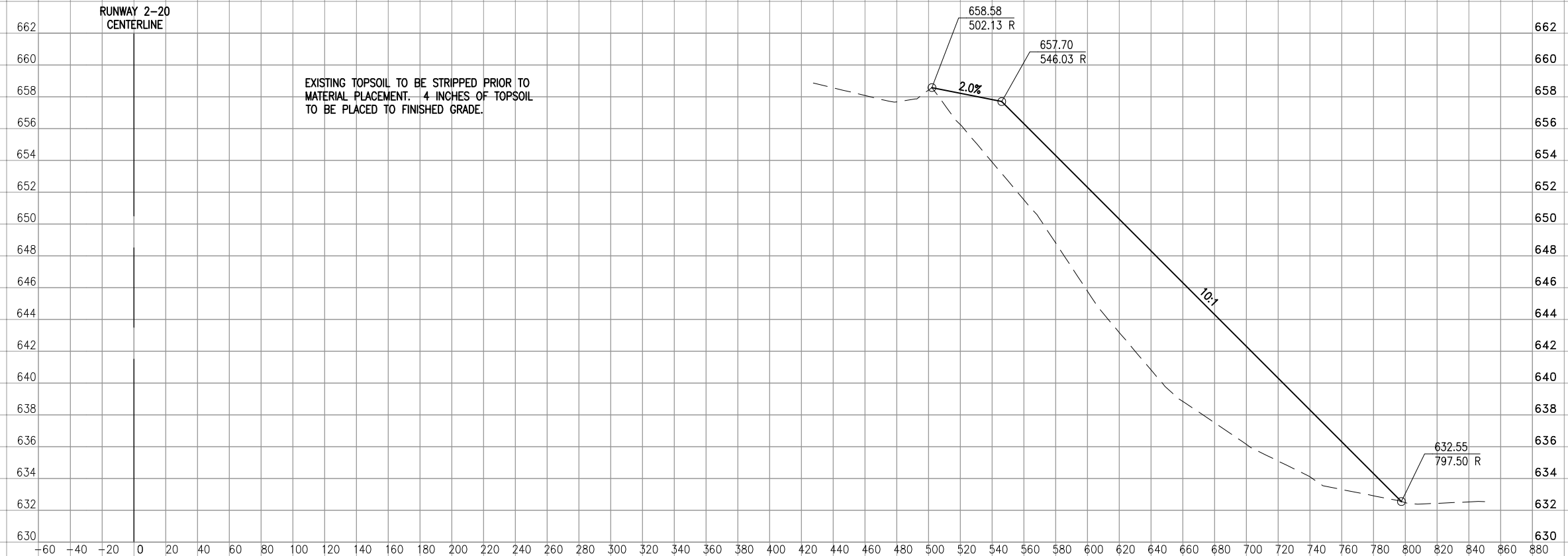
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ISSUE: JUNE 17, 2016
 PROJECT NO: 16A0012
 CAD FILE: 78-SECTIONS.DWG
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 DRAWN BY: LDH 5/26/16
 REVIEWED BY: SJM 6/6/16

SHEET TITLE

CROSS SECTIONS EXCESS MATERIAL PLACEMENT

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RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

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SBGP No: 3-17-SBGP-XX

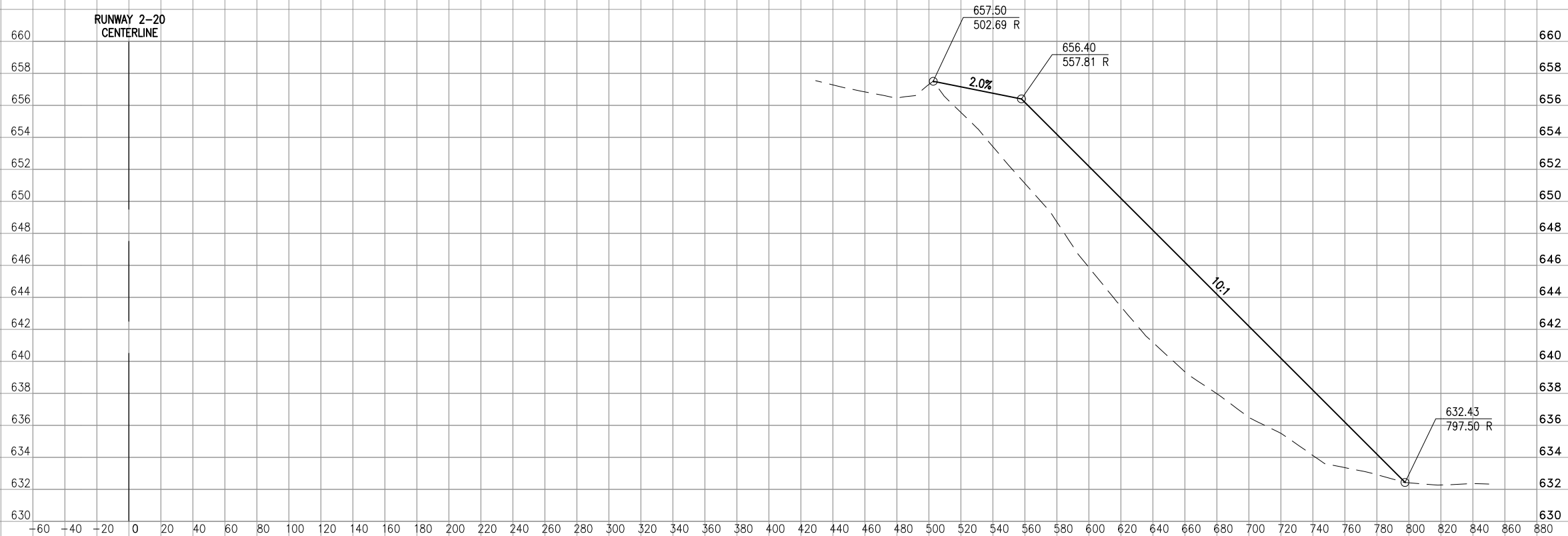
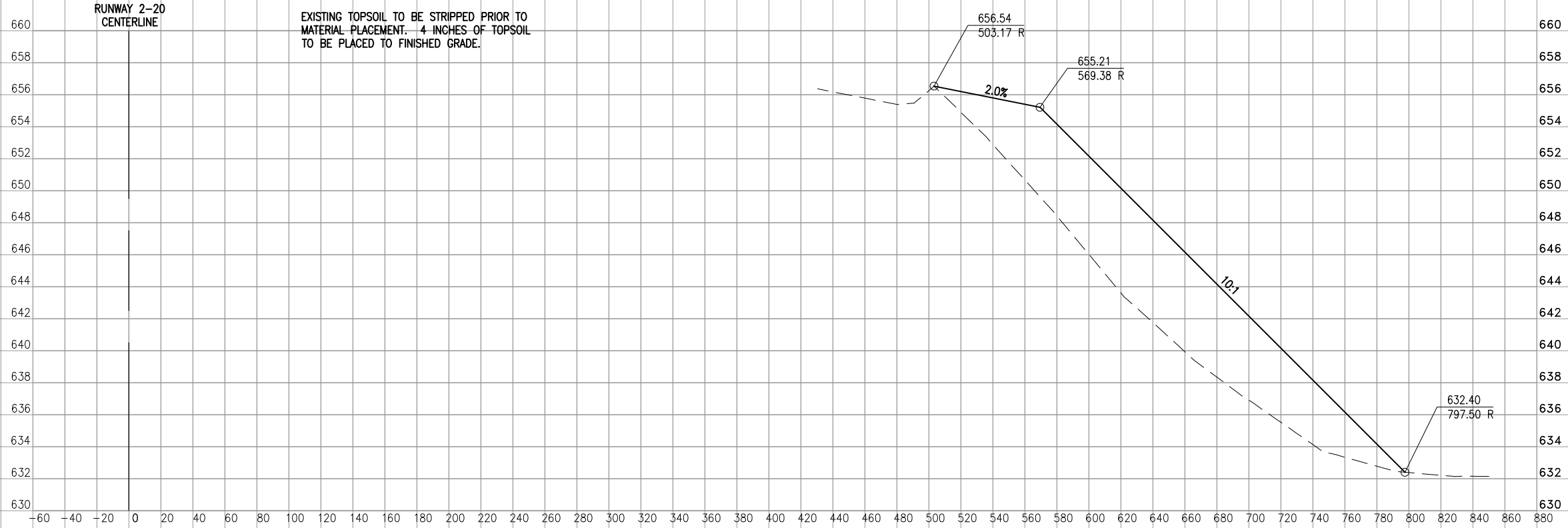
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 79-SECTIONS.DWG
DESIGN BY: LDH 5/26/16
DRAWN BY: LDH 5/26/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

CROSS SECTIONS EXCESS MATERIAL PLACEMENT



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
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DRAWN BY: LDH 5/26/16
REVIEWED BY: SJM 6/6/16

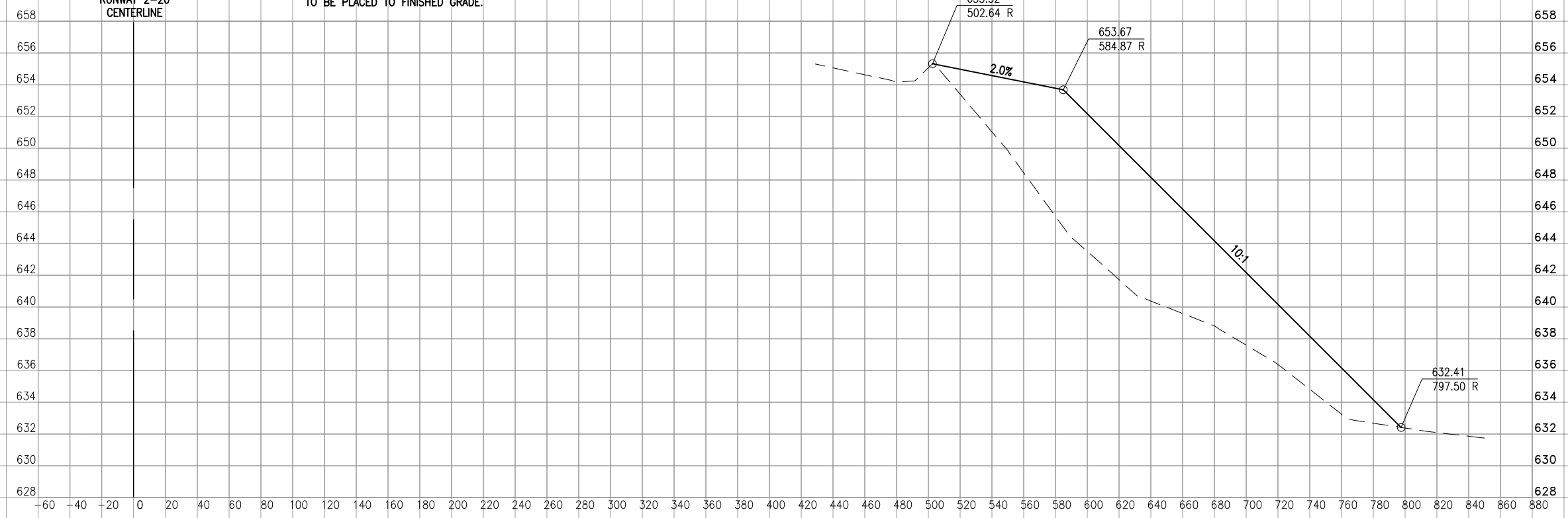
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CROSS SECTIONS EXCESS MATERIAL PLACEMENT

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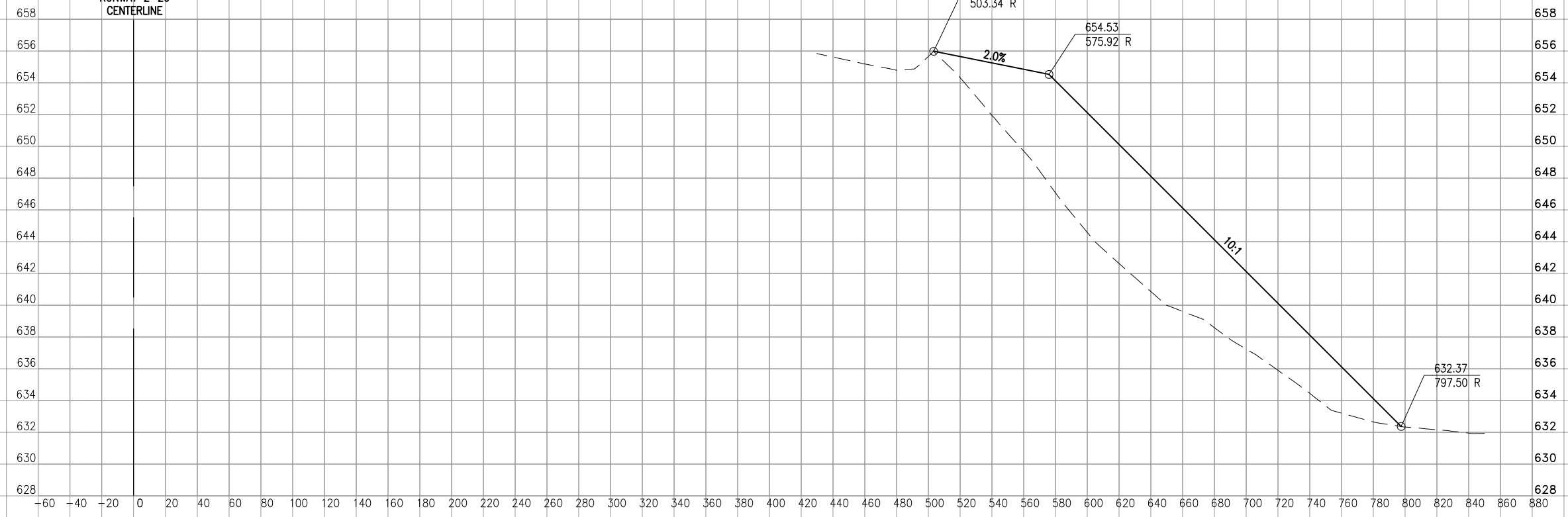
EXISTING TOPSOIL TO BE STRIPPED PRIOR TO
MATERIAL PLACEMENT. 4 INCHES OF TOPSOIL
TO BE PLACED TO FINISHED GRADE.

RUNWAY 2-20
CENTERLINE



STA.
171+00

RUNWAY 2-20
CENTERLINE



STA.
170+50

**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 81-SECTIONS.DWG
DESIGN BY: LDH 5/26/16
DRAWN BY: LDH 5/26/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

**CROSS SECTIONS
EXCESS MATERIAL
PLACEMENT**

**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

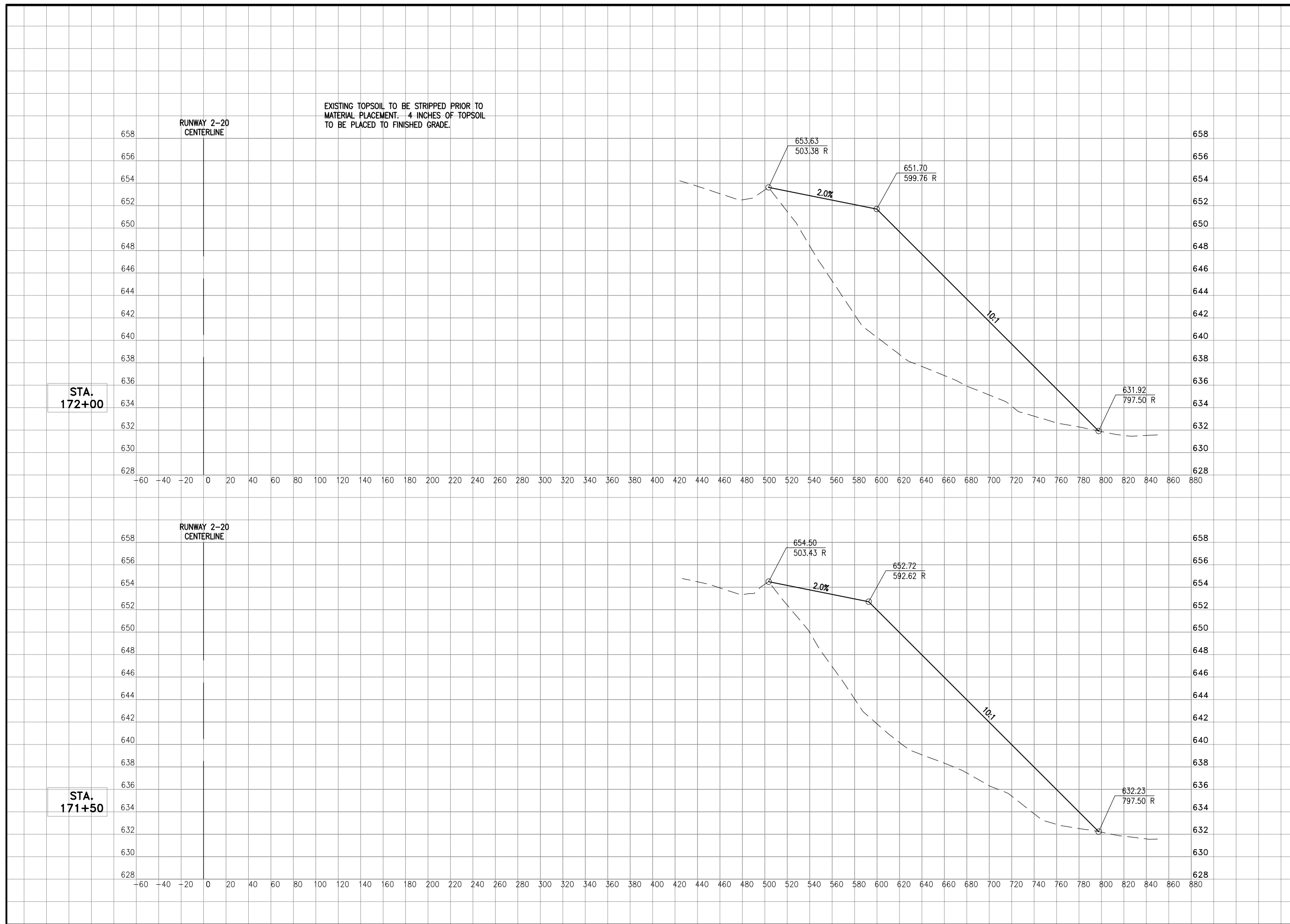
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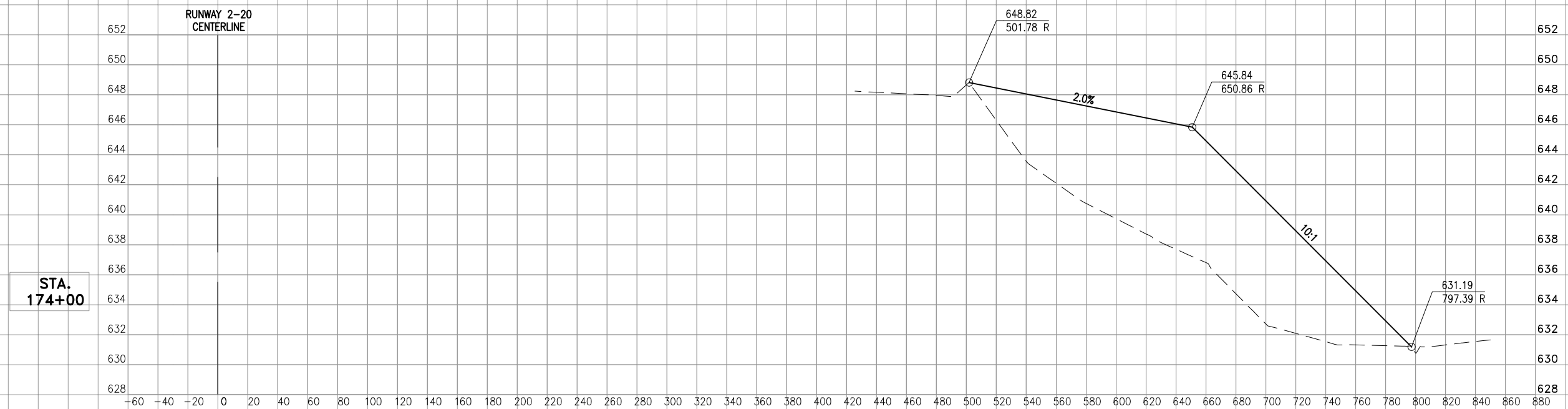
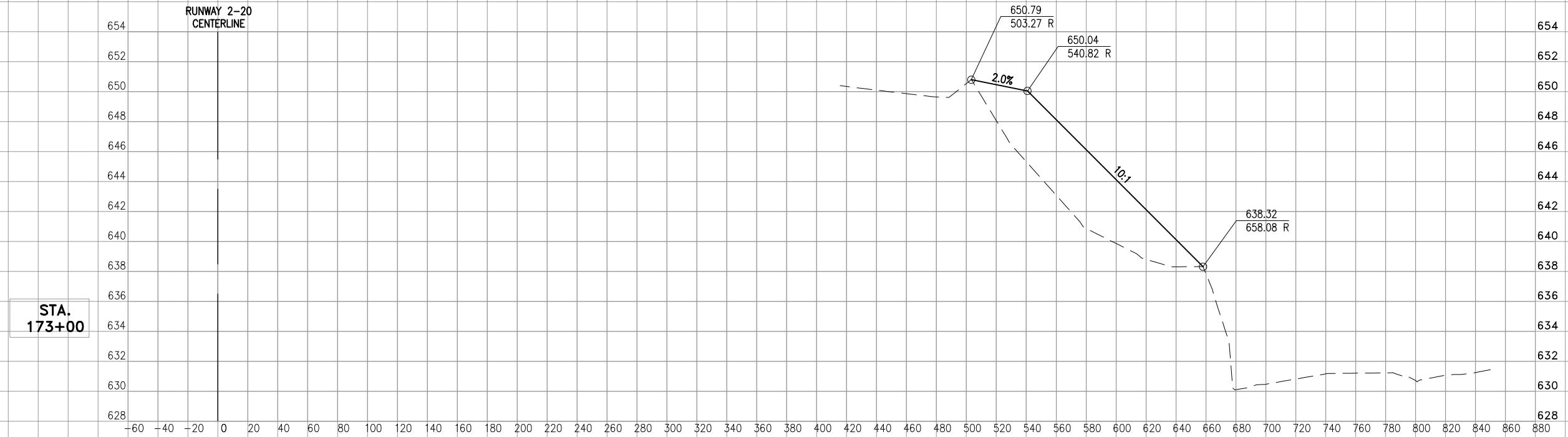
ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 82-SECTIONS.DWG
DESIGN BY: LDH 5/26/16
DRAWN BY: LDH 5/26/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

**CROSS SECTIONS
EXCESS MATERIAL
PLACEMENT**



EXISTING TOPSOIL TO BE STRIPPED PRIOR TO MATERIAL PLACEMENT. 4 INCHES OF TOPSOIL TO BE PLACED TO FINISHED GRADE.



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

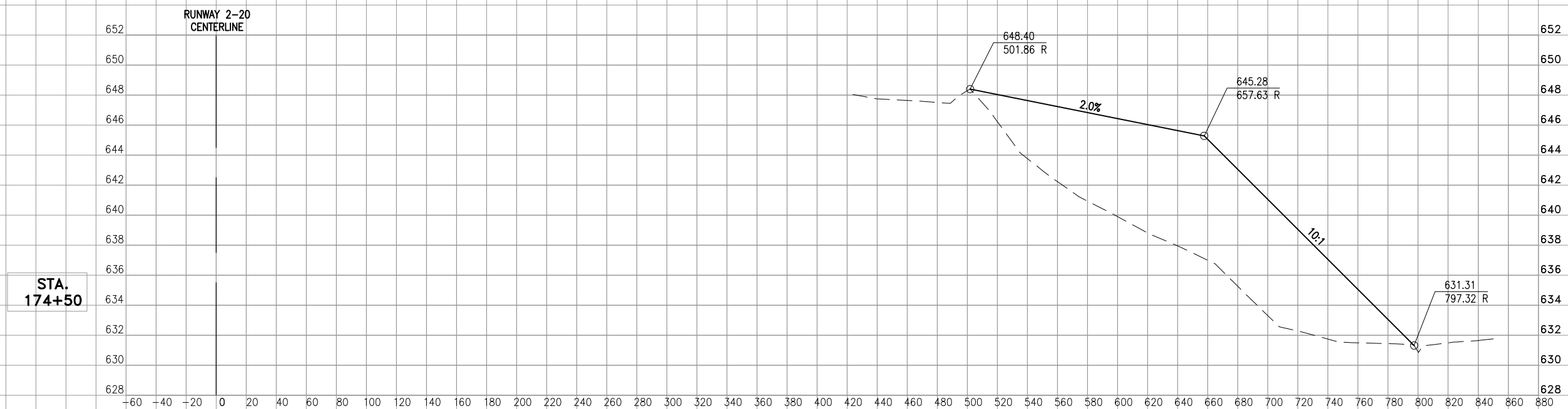
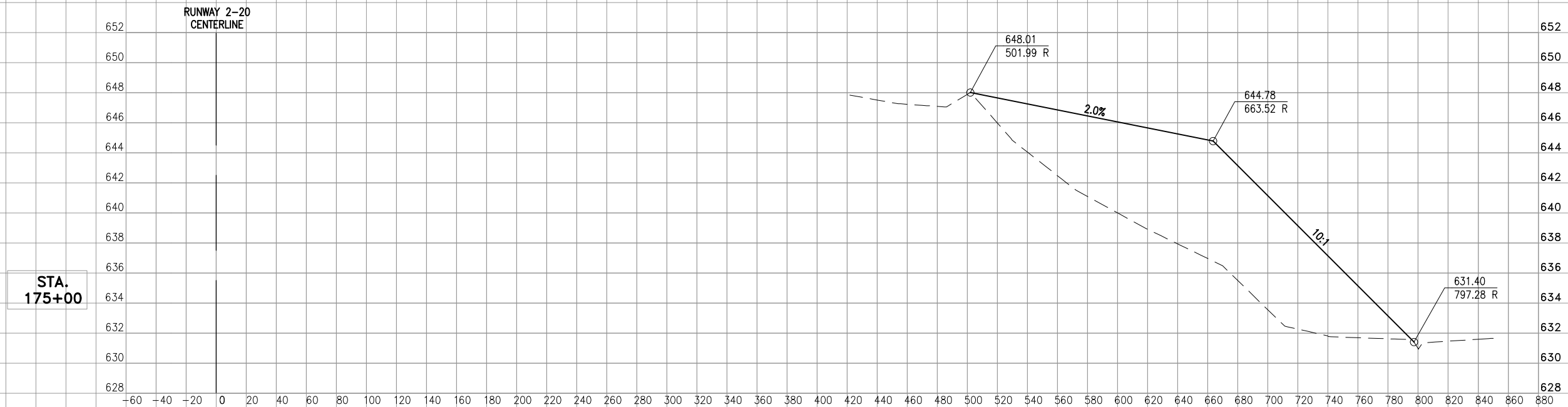
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ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 83-SECTIONS.DWG
DESIGN BY: LDH 5/26/16
DRAWN BY: LDH 5/26/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

CROSS SECTIONS EXCESS MATERIAL PLACEMENT

EXISTING TOPSOIL TO BE STRIPPED PRIOR TO
MATERIAL PLACEMENT. 4 INCHES OF TOPSOIL
TO BE PLACED TO FINISHED GRADE.



**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

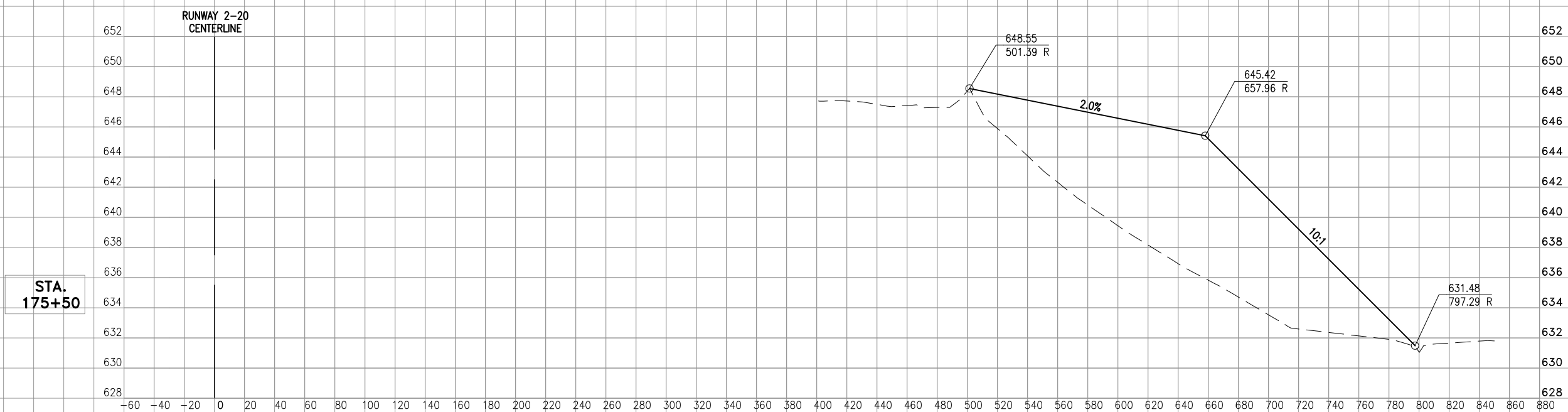
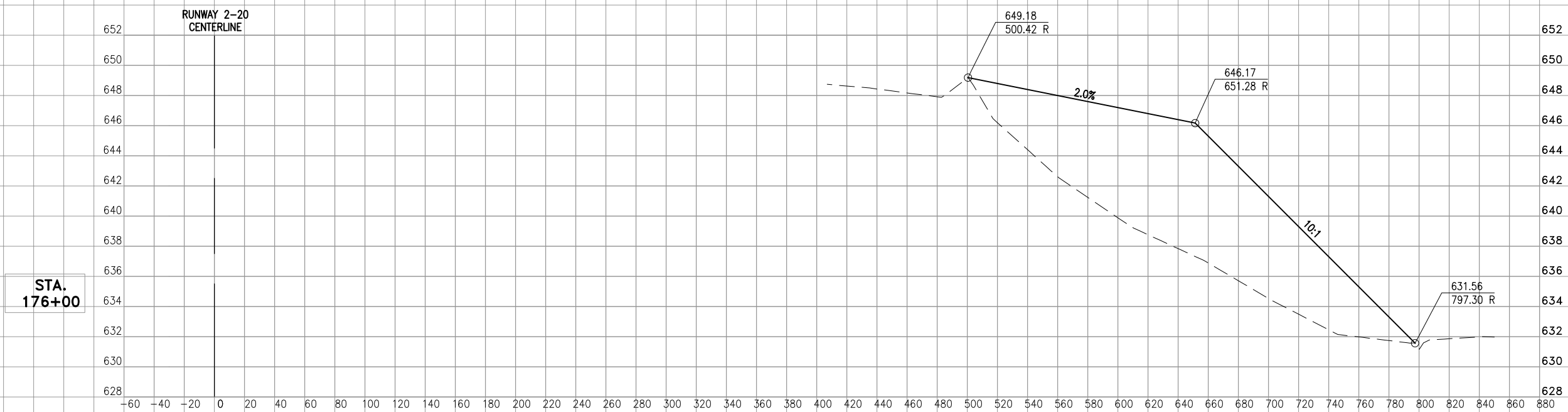
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ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 84-SECTIONS.DWG
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DRAWN BY: LDH 5/26/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

**CROSS SECTIONS
EXCESS MATERIAL
PLACEMENT**

EXISTING TOPSOIL TO BE STRIPPED PRIOR TO MATERIAL PLACEMENT. 4 INCHES OF TOPSOIL TO BE PLACED TO FINISHED GRADE.



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

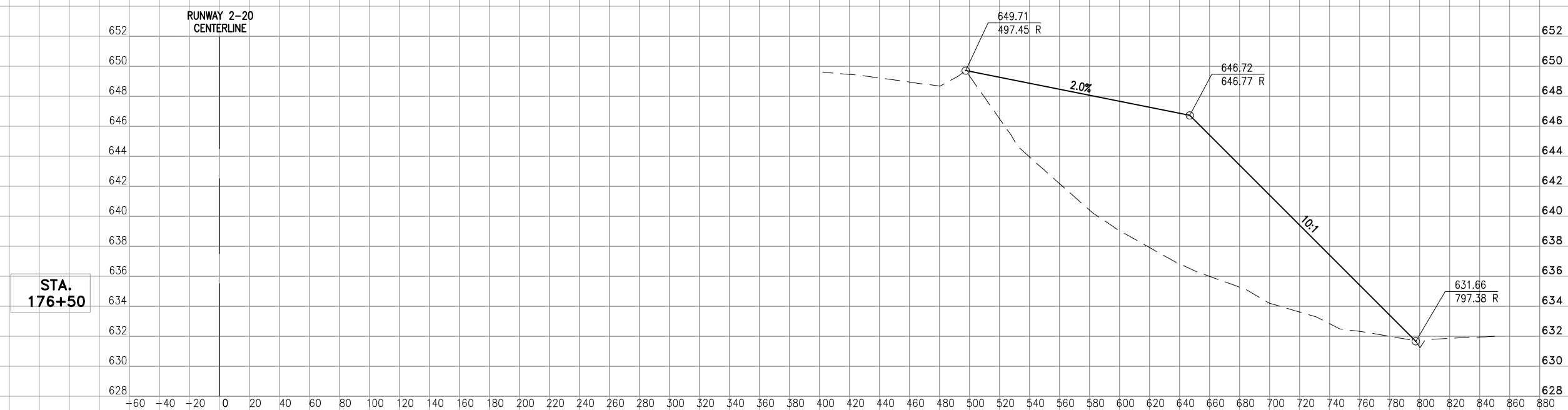
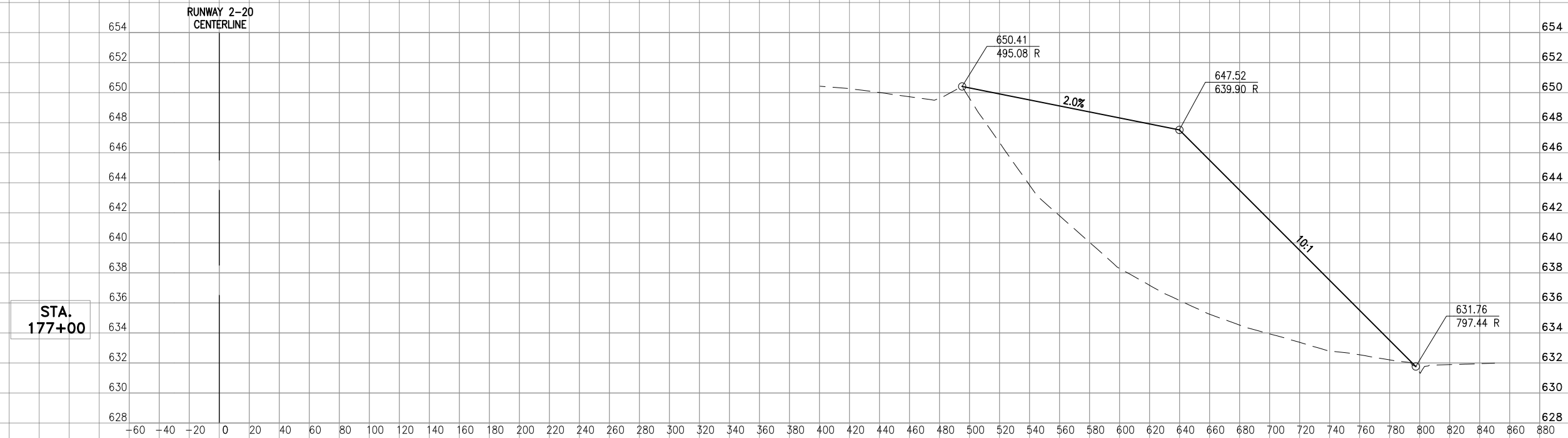
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ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
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DRAWN BY: LDH 5/26/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

CROSS SECTIONS EXCESS MATERIAL PLACEMENT

EXISTING TOPSOIL TO BE STRIPPED PRIOR TO
MATERIAL PLACEMENT. 4 INCHES OF TOPSOIL
TO BE PLACED TO FINISHED GRADE.



**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

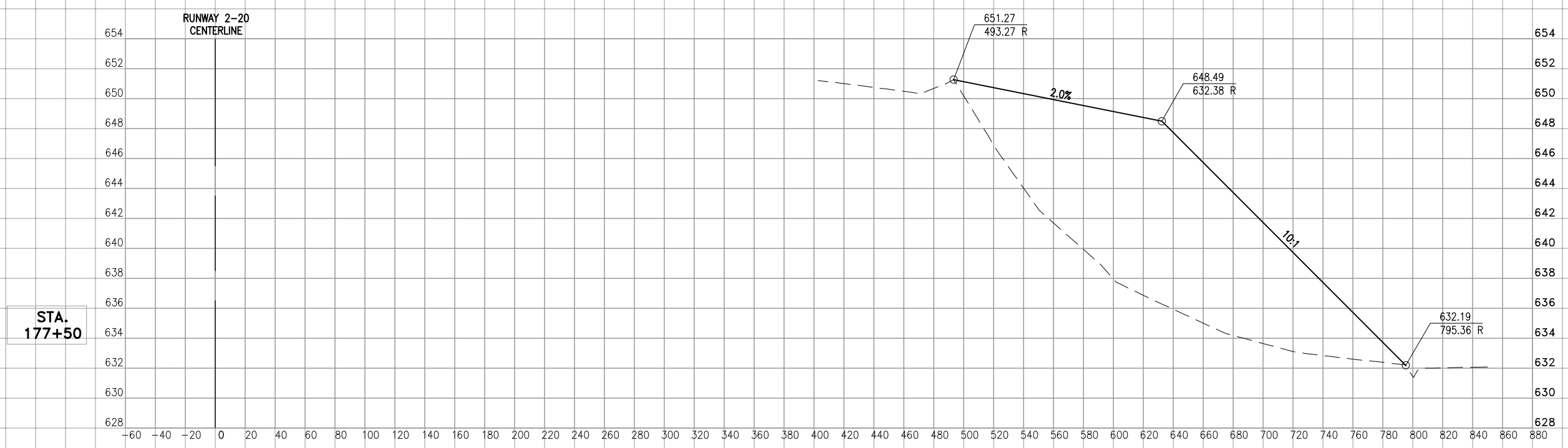
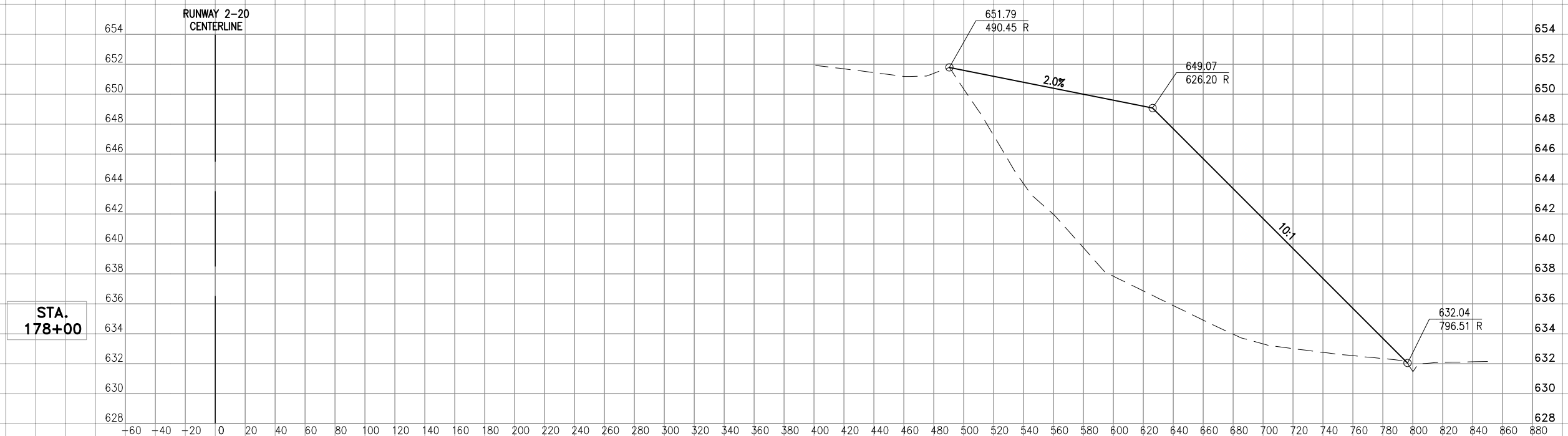
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: JUNE 17, 2016
PROJECT NO: 16A0012
CAD FILE: 86-SECTIONS.DWG
DESIGN BY: LDH 5/26/16
DRAWN BY: LDH 5/26/16
REVIEWED BY: SJM 6/6/16

SHEET TITLE

**CROSS SECTIONS
EXCESS MATERIAL
PLACEMENT**

EXISTING TOPSOIL TO BE STRIPPED PRIOR TO MATERIAL PLACEMENT. 4 INCHES OF TOPSOIL TO BE PLACED TO FINISHED GRADE.



RUNWAY 9-27 RUNWAY SAFETY AREA (RSA) MODIFICATIONS

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

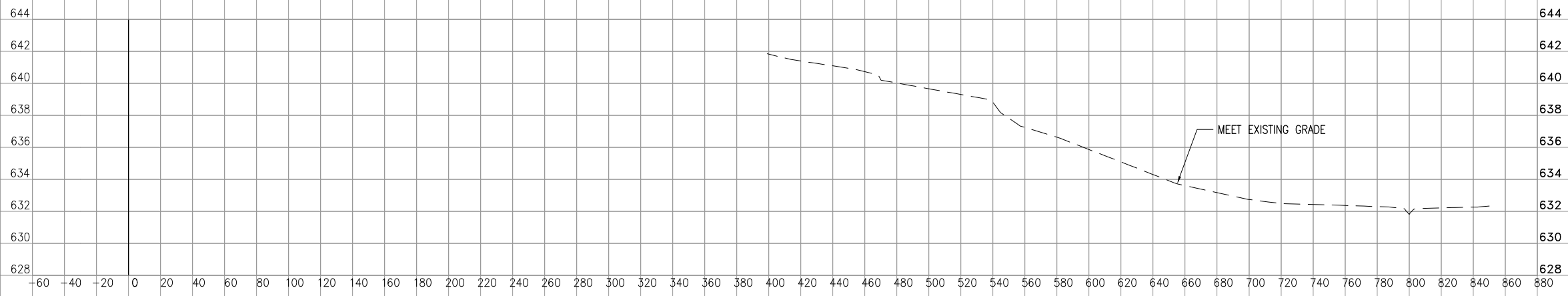
ISSUE: JUNE 17, 2016
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REVIEWED BY: SJM 6/6/16

SHEET TITLE

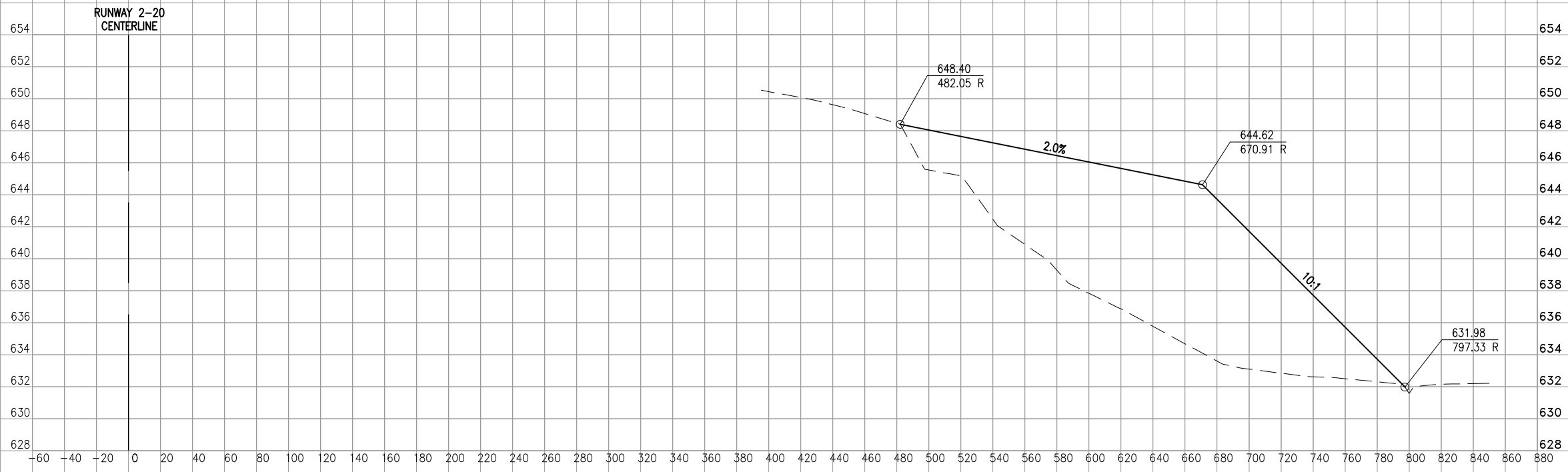
CROSS SECTIONS EXCESS MATERIAL PLACEMENT

EXISTING TOPSOIL TO BE STRIPPED PRIOR TO
MATERIAL PLACEMENT. 4 INCHES OF TOPSOIL
TO BE PLACED TO FINISHED GRADE.

STA.
179+00



STA.
178+50



**RUNWAY 9-27 RUNWAY
SAFETY AREA (RSA)
MODIFICATIONS**

IDA No: LOT-4520
SBGP No: 3-17-SBGP-XX

LE050

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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SHEET TITLE

**CROSS SECTIONS
EXCESS MATERIAL
PLACEMENT**