ITEM NO. 08A IDOT LETTING: AUGUST 3, 2018

LE051
TOTAL SHEETS = 74

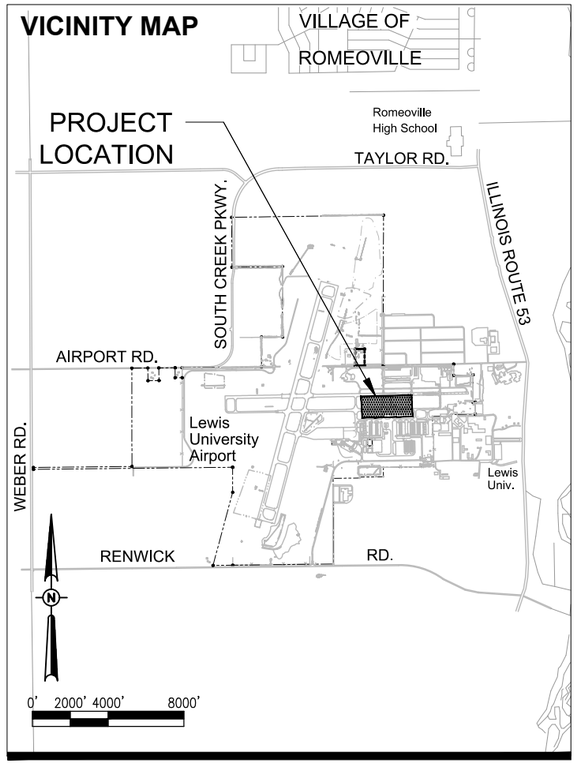
CONSTRUCTION PLANS

REHABILITATE TAXIWAY B, PHASE 2

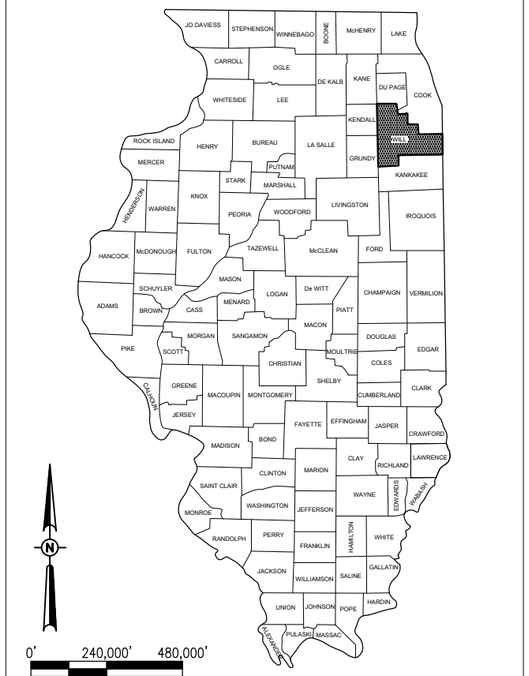
JOLIET REGIONAL PORT DISTRICT
LEWIS UNIVERSITY AIRPORT (LOT)
ROMEOVILLE, WILL COUNTY, ILLINOIS

IDA PROJECT NO. LOT-4567
SBGP PROJECT NO. 3-17-SBGP-XX
BCM CONTRACT NO. LE051

VICINITY MAP



LOCATION MAP



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

KEVIN M. SPITZ 062-032152 LICENSED PROFESSIONAL ENGINEER STATE OF ILLINOIS

Date of Plans

JUNE 8, 2018

Kevin M. Spitz, P.E., Project Engineer — Date

Seal
(For sheets 48-68)

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

EXPIRES: 11/30/2019

JUNE 8, 2018

Kevin N. Lightfoot, P.E., Project Electrical Engineer — Date

HANSON

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750 Warrenville Road, Suite 200
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Fax: 630.990.3801

JUNE 8, 2018

Ronald M. Hudson, AICP Project Manager — Date

Lewis University Airport

JOLIET REGIONAL PORT DISTRICT

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Romeoville, Illinois 60446
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Fax: 815.838.9524

JUNE 8, 2018

Chris Lawson, Director of Aviation — Date

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40	CROSS SECTIONS - TAXIWAY D STA. 401+50 - STA. 402+51
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SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	AS-BID QUANTITY	RECORD PAID
AR108158	1/C #8 5KV UG CABLE IN UD	LINEAR FOOT	5285.00	
AR108258	2/C #8 5KV UG CABLE IN UD	LINEAR FOOT	3589.00	
AR108960	REMOVE CABLE	LINEAR FOOT	1768.00	
AR109200	INSTALL ELECTRICAL EQUIPMENT	LUMP SUM	1.00	
AR110504	4-WAY CONCRETE ENCASED DUCT	LINEAR FOOT	78.00	
AR110551	EXTEND DUCT	LINEAR FOOT	61.00	
AR110710	ELECTRICAL MANHOLE	EACH	1.00	
AR110900	REMOVE DUCT	LINEAR FOOT	181.00	
AR125410	MITL-STAKE MOUNTED	EACH	29.00	
AR125415	MITL-BASE MOUNTED	EACH	6.00	
AR125442	TAXI GUIDANCE SIGN, 2 CHARACTER	EACH	2.00	
AR125443	TAXI GUIDANCE SIGN, 3 CHARACTER	EACH	4.00	
AR125444	TAXI GUIDANCE SIGN, 4 CHARACTER	EACH	2.00	
AR125445	TAXI GUIDANCE SIGN, 5 CHARACTER	EACH	1.00	
AR125505	MIRL, STAKE MOUNTED	EACH	1.00	
AR125901	REMOVE STAKE MOUNTED LIGHT	EACH	30.00	
AR125902	REMOVE BASE MOUNTED LIGHT	EACH	6.00	
AR125903	REMOVE INPAVEMENT LIGHT	EACH	1.00	
AR125904	REMOVE TAXI GUIDANCE SIGN	EACH	9.00	
AR150510	ENGINEER'S FIELD OFFICE	LUMP SUM	1.00	
AR150520	MOBILIZATION	LUMP SUM	1.00	
AR150530	TRAFFIC MAINTENANCE	LUMP SUM	1.00	
AR150540	HAUL ROUTE	LUMP SUM	1.00	
AR152410	UNCLASSIFIED EXCAVATION	CUBIC YARD	4406.00	
AR152540	SOIL STABILIZATION FABRIC	SQUARE YARD	7486.00	
AR154606	GRANULAR DRAINAGE SUBBASE - 6"	SQUARE YARD	10655.00	
AR156510	SILT FENCE	LINEAR FOOT	120.00	
AR156513	SEPARATION FABRIC	SQUARE YARD	3177.00	
AR156520	INLET PROTECTION	EACH	2.00	
AR156533	TEMPORARY SEED AND MULCH	ACRE	1.70	
AR209612	CRUSHED AGG. BASE COURSE - 12"	SQUARE YARD	2241.00	
AR401613	BIT. SURF CSE. - METHOD I, SUPERPAVE	TON	322.00	
AR401650	BITUMINOUS PAVEMENT MILLING	SQUARE YARD	519.00	
AR401660	SAW & SEAL BIT. JOINTS	LINEAR FOOT	302.00	
AR401665	BITUMINOUS PAVEMENT SAWING	LINEAR FOOT	660.00	
AR401900	REMOVE BITUMINOUS PAVEMENT	SQUARE YARD	9715.00	
AR403613	BIT. BASE CSE. - METHOD I, SUPERPAVE	TON	555.00	
AR501510	10" PCC PAVEMENT	SQUARE YARD	8490.00	
AR501530	PCC TEST BATCH	EACH	1.00	
AR501665	PCC PAVEVEMENT SAWING	LINEAR FOOT	91.00	
AR501900	REMOVE PCC PAVEMENT	SQUARE YARD	18.00	
AR602510	BITUMINOUS PRIME COAT	GALLON	646.00	
AR603510	BITUMINOUS TACK COAT	GALLON	763.00	
AR620520	PAVEMENT MARKING- WATERBORNE	SQUARE FOOT	1226.00	
AR620525	PAVEMENT MARKING-BLACK BORDER	SQUARE FOOT	3068.00	
AR620530	PAVEMENT MARKING-EPOXY	SQUARE FOOT	1662.00	
AR620590	TEMPORARY MARKING	SQUARE FOOT	275.00	
AR620595	TEMPORARY MARKING & REMOVAL	SQUARE FOOT	275.00	
AR620900	PAVEMENT MARKING REMOVAL	SQUARE FOOT	819.00	
AR701512	12" RCP, CLASS IV	LINEAR FOOT	93.00	
AR701900	REMOVE PIPE	LINEAR FOOT	104.00	
AR705506	6" PERFORATED UNDERDRAIN	LINEAR FOOT	2868.00	
AR705630	UNDERDRAIN INSPECTION HOLE	EACH	15.00	
AR705640	UNDERDRAIN CLEANOUT	EACH	5.00	
AR705900	REMOVE UNDERDRAIN	LINEAR FOOT	2773.00	
AR705903	REMOVE INSPECTION HOLE	EACH	4.00	
AR705904	REMOVE CLEANOUT	EACH	9.00	
AR752412	PRECAST REINFORCED CONC. FES 12"	EACH	2.00	
AR752512	GRATING FOR CONC. FES 12"	EACH	2.00	
AR752900	REMOVE END SECTION	EACH	4.00	
AR800934	TEMP. CONSTRUCT. SIGNS	LUMP SUM	1.00	
AR803015	TEMPORARY PAVEMENT	SQUARE YARD	329.00	
AR901510	SEEDING	ACRE	2.50	
AR905510	TOPSOILING (FROM ON SITE)	CUBIC YARD	1581.00	
AR908510	MULCHING	ACRE	2.50	

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

HANSON
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Illinois Licensed
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fax: 815.838.9524

REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

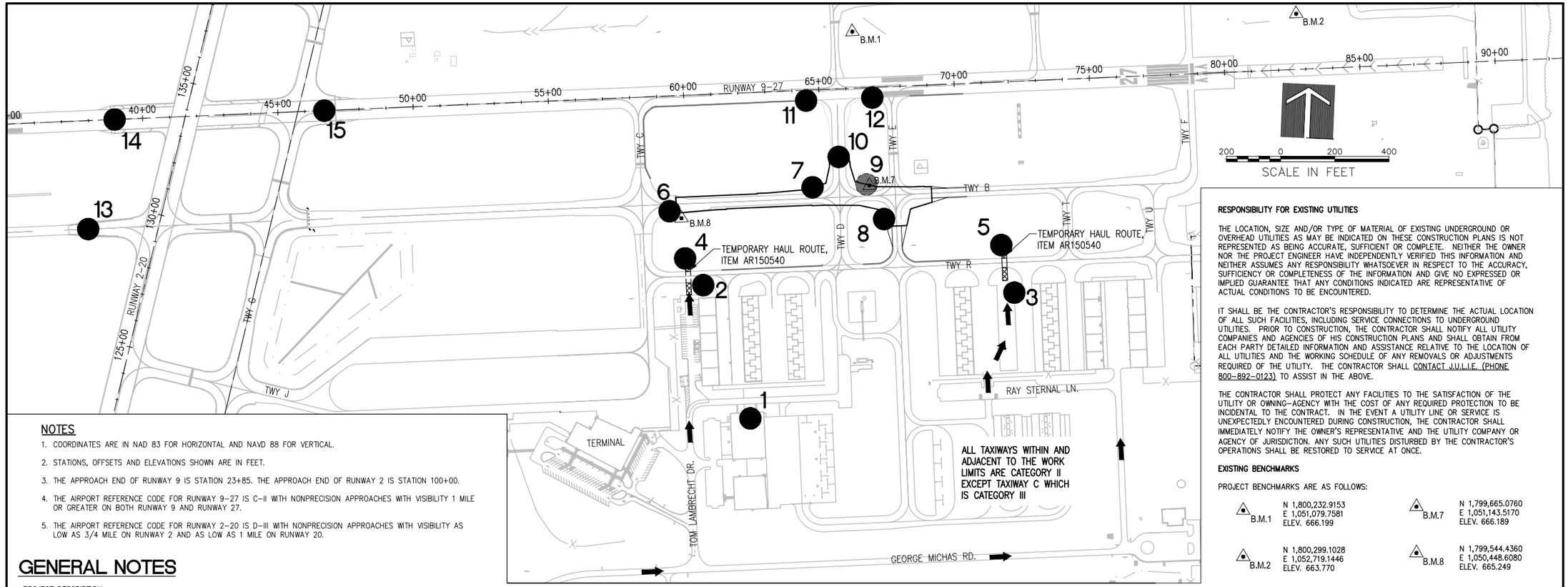
LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 02-SOQ.DWG
DESIGN BY: KMS 5/11/2018
DRAWN BY: KMS 5/11/2018
REVIEWED BY: LDH 6/7/18

SHEET TITLE

SHEET INDEX AND SUMMARY OF QUANTITIES



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 C–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.

GENERAL NOTES

PROJECT DESCRIPTION

THIS PROJECT IS TO REHABILITATE A PORTION OF TAXIWAY B, TAXIWAY D, AND TAXIWAY E AT LEWIS UNIVERSITY AIRPORT INCLUDING, AMONG OTHER INCIDENTAL WORK, THE FOLLOWING ITEMS:

- PLACEMENT OF TEMPORARY SOIL EROSION CONTROL MEASURES.
- PROVISION OF TRAFFIC MAINTENANCE.
- REMOVAL OF PAVEMENTS INCLUDING, BUT NOT LIMITED TO, PORTIONS OF TAXIWAYS B, D AND E.
- PROVISION OF REQUIRED UNCLASSIFIED EXCAVATION. DISPOSAL OF EXCESS CUT MATERIAL AT AN OFF–SITE LOCATION.
- REMOVAL AND EXTENSION OF DRAINAGE CULVERTS AND STRUCTURES.
- REMOVAL AND REPLACEMENT OF UNDERDRAIN PIPE AND STRUCTURES.
- CONSTRUCTION OF NEW PCC AND HMA PAVEMENTS TO REPLACE PORTIONS OF TAXIWAY B, D AND E.
- REMOVAL OF EXISTING, AND INSTALLATION OF NEW, AIRFIELD LIGHTING CABLES, EDGE LIGHT FIXTURES AND GUIDANCE SIGNS.
- INSTALLATION OF NEW EQUIPMENT IN EXISTING ELECTRICAL VAULT.
- 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, 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 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.7	N 1,799,665.0760 E 1,051,143.5170 ELEV. 666.189
B.M.2	N 1,800,299.1028 E 1,052,719.1446 ELEV. 663.770	B.M.8	N 1,799,544.4360 E 1,050,448.6080 ELEV. 665.249

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	ENGINEER'S FIELD OFFICE	ALL	STATIONARY	665.5	680.5	41° 36' 18.5568"	88° 05' 25.2531"	61+96.00	1201.82	668.7	127+81.53	2,290.50	668.5
2	CONTRACTOR'S CONSTRUCTION STORAGE	ALL	STATIONARY	667.1	687.1	41° 36' 23.4227"	88° 05' 27.5253"	60+42.94	702.88	668.7	132+18.96	2,005.86	668.3
3	CONTRACTOR'S CONSTRUCTION STORAGE	ALL	STATIONARY	666.6	686.6	41° 36' 23.1175"	88° 05' 12.4008"	71+89.83	779.09	668.7	134+61.82	3,129.30	668.3
4	CONSTRUCTION EQUIPMENT	1,4,5,6	MOVING	666.1	686.1	41° 36' 24.3990"	88° 05' 28.4029"	59+80.26	601.50	668.7	132+99.13	1,917.63	668.3
5	CONSTRUCTION EQUIPMENT	2,3	MOVING	665.6	685.6	41° 36' 24.8548"	88° 05' 13.0287"	71+49.10	601.50	668.7	136+21.30	3,041.20	668.3
6	CONSTRUCTION EQUIPMENT	1	MOVING	666.0	686.0	41° 36' 26.1218"	88° 05' 29.1558"	59+30.00	425.00	668.7	134+54.94	1,820.67	668.3
7	CONSTRUCTION EQUIPMENT	1	MOVING	666.3	686.3	41° 36' 26.9799"	88° 05' 22.1966"	64+61.68	359.09	668.7	136+64.85	2,313.59	668.3
8	CONSTRUCTION EQUIPMENT	2	MOVING	666.1	686.1	41° 36' 25.8146"	88° 05' 18.7222"	67+20.76	487.36	668.7	136+12.95	2,597.99	668.3
9	CONSTRUCTION EQUIPMENT	3	MOVING	666.0	686.0	41° 36' 27.0792"	88° 05' 19.5746"	66+61.11	356.91	668.7	137+21.91	2504.69	668.3
10	CONSTRUCTION EQUIPMENT	4	MOVING	667.6	687.6	41° 36' 28.0864"	88° 05' 20.9234"	65+62.75	251.00	668.7	137+96.61	2380.95	668.1
11	CONSTRUCTION EQUIPMENT	5	MOVING	667.4	687.4	41° 36' 30.1438"	88° 05' 22.4995"	64+51.33	38.19	668.7	139+70.46	2215.19	667.8
12	CONSTRUCTION EQUIPMENT	6	MOVING	667.5	687.5	41° 36' 30.2462"	88° 05' 19.2813"	66+96.02	37.48	668.7	140+38.59	2450.20	667.5
13	TRAFFIC BARRICADE	5,6	STATIONARY	667.9	672.9	41° 36' 25.5295"	88° 05' 57.4222"	37+82.01	400.00	668.2	128+86.91	251.00	668.4
14	TRAFFIC BARRICADE	5,6	STATIONARY	668.3	673.3	41° 36' 29.5231"	88° 05' 56.1219"	38+96.71	0.00	668.3	133+03.03	251.00	668.3
15	TRAFFIC BARRICADE	5,6	STATIONARY	667.2	672.2	41° 36' 29.8261"	88° 05' 45.9276"	46+71.73	0.00	667.2	135+16.65	494.00	668.3

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	673.1
RUNWAY 27 END	41°36'31.08" N	88°05'03.66" W	78+85.15	665.9
RUNWAY 2 END	41°35'57.23" N	88°06'03.23" W	100+00.40	679.1
RUNWAY 20 END	41°36'59.61" N	88°05'42.92" W	165+00.00	666.3

Call Before You Dig
JULIE ILLINOIS ONE-CALL SYSTEM
800.892.0123

PROJECT IS LOCATED IN NORTHEAST 1/4 OF SECTION 16, LOCKPORT TOWNSHIP, WILL COUNTY

HANSON Engineering | Planning | Allied Services

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Illinois Licensed
Professional Service Corporation
#184-001084

Lewis University Airport

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

REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION	DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 03-GENERALNOTES.DWG
DESIGN BY: KMS 1/6/2017
DRAWN BY: KMS 1/6/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

SITE AND SAFETY PLAN

JUN 06, 2018 8:45 AM SPITZ01394
I:\16JOBS\16A0087\16A0087D\CAD\AIRPORT\SHEET\03-GENERALNOTES.DWG

CONSTRUCTION AND SAFETY NOTES

SAFETY IS REQUIRED

CONSTRUCTION OF THE PROJECT SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH THE GUIDELINES SPECIFIED IN FAA ADVISORY CIRCULAR 150/5370-2 (CURRENT ISSUE) AND THE AIRPORT RULES AND REGULATIONS (AS PUBLISHED ON LEWIS UNIVERSITY AIRPORT'S WEBSITE AT 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 OF 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 RUNWAYS, 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 CLOSURE OF RUNWAY 9-27; SEE PHASING PLANS ON SHEETS 6-13 AND DETAIL E, SHEET 5. 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 SHEET 5 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 PAID UNDER ITEM AR150530 TRAFFIC MAINTENANCE.

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 PAID UNDER ITEM AR150530 TRAFFIC MAINTENANCE. 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-EQUIPED 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 PAID UNDER ITEM AR150530 TRAFFIC MAINTENANCE.

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 RESCISSION 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 250 FEET FROM THE CENTERLINE AND 1,000 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 250 FEET FROM THE CENTERLINE AND 1,000 FEET FROM THE END OF RUNWAY 9-27), 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 PAID UNDER ITEM AR150540 HAUL ROUTE. 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 20 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

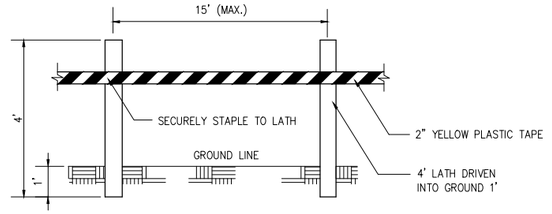
CONTRACTOR'S ACCESS TO THE PROJECT WHEN ON AIRPORT PROPERTY IS SHOWN IN THE PLANS. CONTRACTOR'S ACCESS TO THE AIRPORT ITSELF IS TO BE PROVIDED BY PUBLIC RIGHTS-OF-WAY. THE CONTRACTOR IS TO SECURE ALL NECESSARY PERMITS FOR THE USE OF ANY PUBLIC RIGHTS-OF-WAY AND IS TO MAINTAIN TRAFFIC ON THESE PUBLIC 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, PAID UNDER ITEM AR150540 HAUL ROUTE.

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.

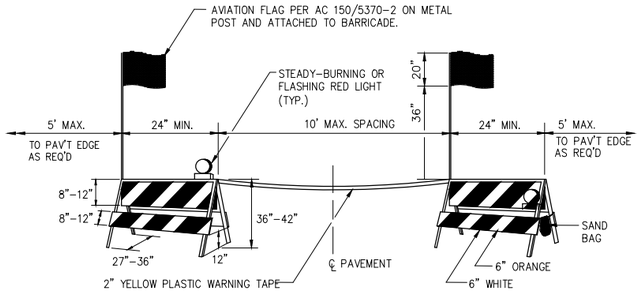
UTILITY OUTAGES AND SHUTDOWNS

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.



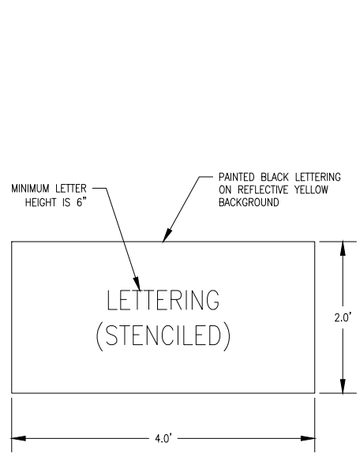
MATERIALS ARE TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION. COST OF MATERIALS, INSTALLATION, RELOCATION AND MAINTENANCE OF LATHING AND WARNING TAPE IS TO BE PAID UNDER ITEM AR150530 TRAFFIC MAINTENANCE.

DETAIL A
LATHING AND WARNING TAPE

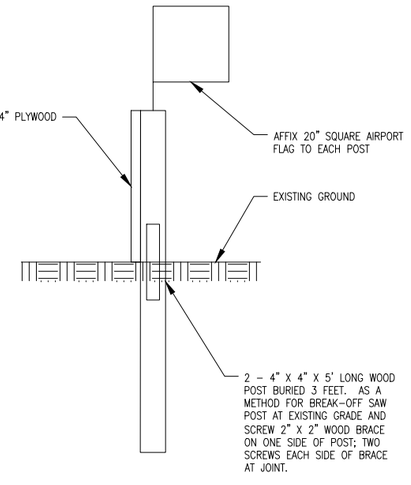


BARRICADES ARE TO BE OF IDOT TYPE II. A STEADY-BURNING OR FLASHING RED LIGHT FACING PASSING TRAFFIC IS TO BE MOUNTED ABOVE THE TOP OF EACH BARRICADE FRAME. THE BARRICADE IS TO BE STABILIZED FROM WIND BY SANDBAGS PLACED ON THE FRAME OR OTHER METHODS APPROVED BY THE RESIDENT ENGINEER. NO PART OF THE REFLECTORIZED PORTION OF THE BARRICADE IS TO BE OBSTRUCTED IN ANY MANNER. COST OF FURNISHING, INSTALLING, RELOCATING, MAINTAINING AND REMOVING BARRICADES IS TO BE PAID UNDER ITEM AR150530 TRAFFIC MAINTENANCE.

DETAIL B
STANDARD PAVEMENT BARRICADES



SIGN FACE DETAIL



SIDE DETAIL

NOTES:

1. ALL WORK PAID UNDER ITEM AR150530 TRAFFIC MAINTENANCE.
2. SIGN CONTENTS ARE SHOWN ON THE PHASING PLANS.

DETAIL C
TEMPORARY SIGN DETAIL

DETAILS SHOWN ARE NOT TO SCALE

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REHABILITATE TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 04-SAFETY NOTES.DWG
DESIGN BY: KMS 3/9/2017
DRAWN BY: KMS 3/9/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

SITE AND SAFETY PLAN NOTES 1

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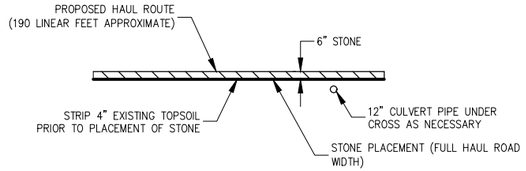
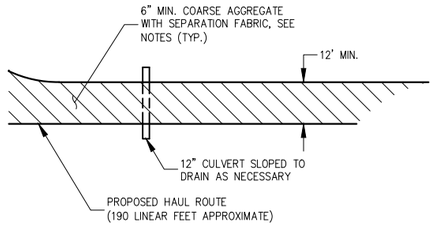
CONSTRUCTION AND SAFETY NOTES



CROSS SECTION



PLAN

NOTES:

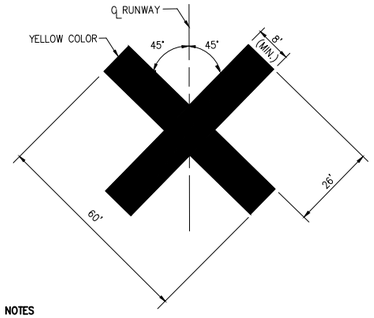
1. STRIP 4" OF EXISTING TOPSOIL PRIOR TO PLACEMENT OF STONE.
2. STONE SHALL BE 2–INCH SIZE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT, OR RECYCLED ASPHALT.
3. HAUL ROUTE THICKNESS SHALL NOT BE LESS THAN SIX INCHES.
4. HAUL ROUTE WIDTH SHALL BE 12 FEET MINIMUM.
5. SURFACE WATER FLOWING OR DIVERTED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

DETAIL D
HAUL ROUTE

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 PAID UNDER ITEM AR150530 TRAFFIC MAINTENANCE.
6. ALL OPERATING COSTS SHALL BE PAID UNDER ITEM AR150530 TRAFFIC MAINTENANCE.

LIGHTED RUNWAY CLOSURE MARKER

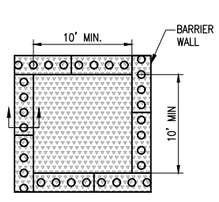


NOTES

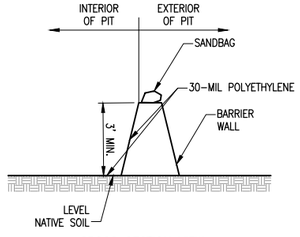
1. VINYL MARKERS SHALL BE FURNISHED BY THE OWNER. THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS FOR INSTALLING, RELOCATING AND MAINTAINING THE MARKERS, WHOSE COST SHALL BE PAID UNDER ITEM AR150530 TRAFFIC MAINTENANCE.
2. CONTRACTOR SHALL LOCATE THE MARKERS ON TOP OF THE RUNWAY NUMERALS DURING CLOSURE OF THE RUNWAY.
3. MARKERS TO BE SECURED BY CONTRACTOR AS RECOMMENDED BY THE MANUFACTURER.

VINYL RUNWAY CLOSURE MARKER
(DAYLIGHT USE ONLY)

DETAIL E
RUNWAY CLOSURE MARKERS



PLAN VIEW



CROSS SECTION VIEW

NOTES:

1. IMPERMEABLE SHEETING MUST EXTEND OVER ENTIRE BASIN AND BERM TO PREVENT ESCAPE OF DISCHARGE.
2. PROTECT AREA AROUND UNIT FOR 10 FEET WITH PLASTIC UNDER AND AROUND UNIT TO CONTAIN SPILLS OR OVERFLOW.
3. FACILITY LINED WITH 30–MIL POLYETHYLENE LINER AND SECURED USING SAND BAGS, OR OTHER ANCHORS, AND SHALL BE FREE OF HOLES OR TEARS.
4. FACILITY IS TO BE LOCATED ON LEVEL GROUND.
5. WASHOUT NEEDS TO BE COVERED OR LIQUIDS TO BE REMOVED PRIOR TO IMPENDING STORMS TO PREVENT OVERFLOW.
6. IF EFFLUENT CANNOT BE REMOVED PRIOR TO ANTICIPATED RAINFALL EVENT, PLACE AND SECURE A NON–COLLAPSING, NON WATER COLLECTING COVER OVER THE WASHOUT FACILITY TO PREVENT ACCUMULATION AND PRECIPITATION OVERFLOW.
7. REMOVE WASHOUT WATER FROM HIGH VOLUME FACILITIES WITH A VACUUM TRUCK AND DISPOSE OF PROPERLY. DO NOT DISCHARGE WASTEWATER INTO THE ENVIRONMENT. (NOTE: ACIDITY, NOT PARTICULATES, IS ENVIRONMENTALLY HAZARDOUS)
8. DO NOT DISCHARGE WASHOUT WATER INTO THE ENVIRONMENT; FACILITATE EVAPORATION OF LOW VOLUME WASHOUT WATER.
9. INSPECT LINE FOR TEARS. AN INTACT LINER WILL ENSURE THAT CONCRETE WASTEWATER WILL NOT ESCAPE THE WASHOUT FACILITY.
10. REPLACE DAMAGED LINER IMMEDIATELY.
11. CHECK AREA SURROUNDING FACILITY FOR SIGNS OF EFFLUENT ESCAPING CONTAINMENT.
12. INSPECT WASHOUT AREA FOLLOWING POUR TO EVALUATE EFFECTIVENESS.
13. CHECK DEPTH OF SOLIDS TO ENSURE VOLUME IS SUFFICIENT FOR NEXT POUR.
14. INSPECT WASHOUTS PRIOR TO POUR TO ENSURE SUFFICIENT VOLUME IS AVAILABLE TO CONTAIN WASHOUT.
15. REMOVE TEMPORARY CONCRETE WASHOUT FACILITIES WHEN NO LONGER NEEDED AND RESTORE DISTURBED AREAS TO ORIGINAL CONDITION.
16. DISPOSE OF SOLIDIFIED CONCRETE WASTE, CONSIDERED CLEAN CONSTRUCTION OR DEMOLITION DEBRIS (CCDD) AS PER THE IEPA ACT (415 ILCS5).
17. SEE SPECIAL PROVISIONS ITEM AR150510 ENGINEER'S FIELD OFFICE AND ITEM AR501510 10" PCC PAVEMENT. CONCRETE WASHOUT PIT IS PAID UNDER THESE ITEMS.

CONCRETE WASHOUT PIT

DETAILS SHOWN ARE NOT TO SCALE

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
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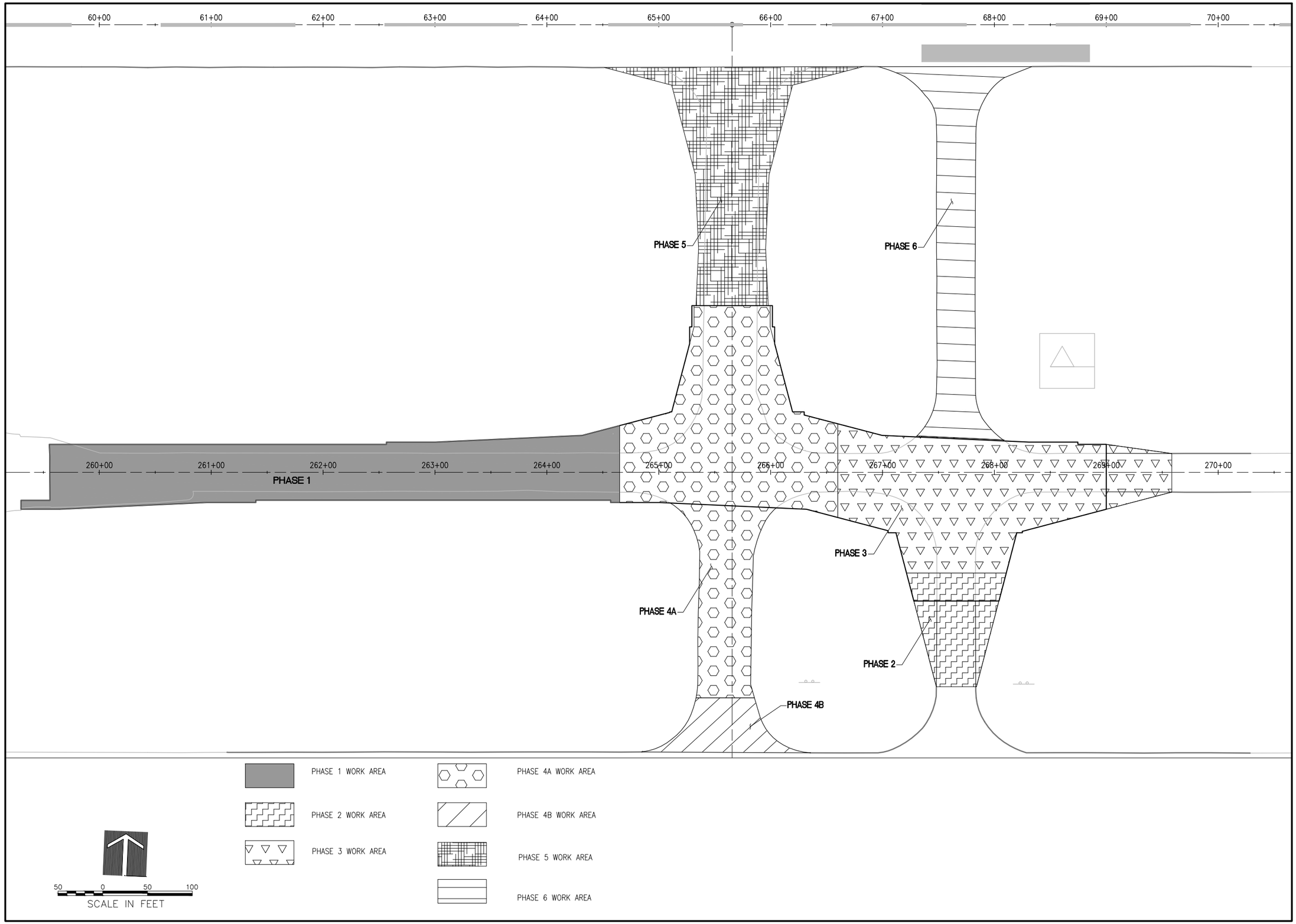
PROJECT NO: 16A0087
CAD FILE: 04-SAFETY NOTES 2.DWG
DESIGN BY: KMS 3/9/2017
DRAWN BY: KMS 3/9/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

SITE AND SAFETY
PLAN NOTES 2

JUN 08, 2018 8:46 AM SPITZ01394
I:\16JOBS\16A0087\16A0087D\CAD\AIRPORT\SHEET\04-SAFETY NOTES 2.DWG



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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

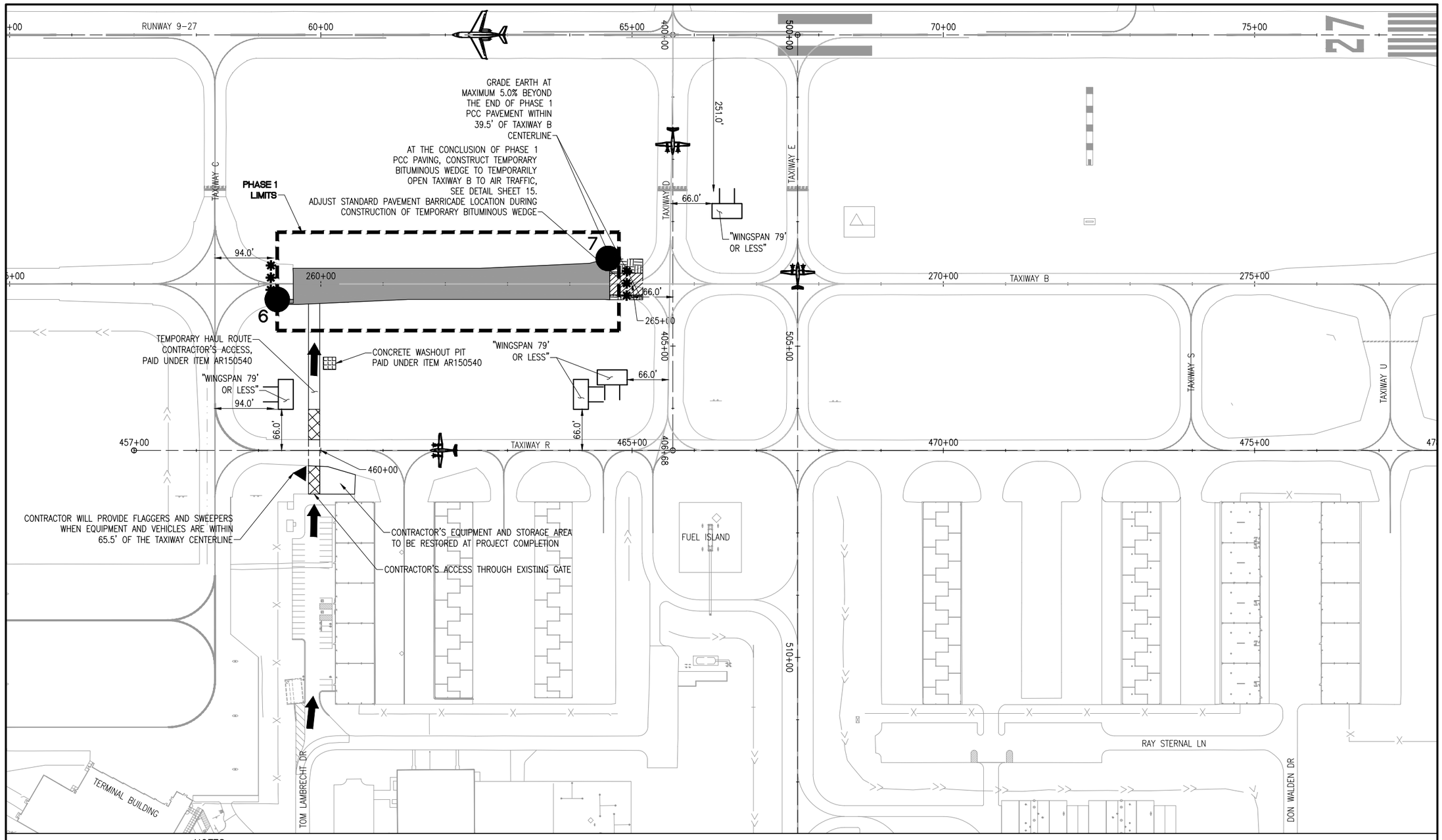
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 05-COMPOSITE PHASING F
DESIGN BY: KMS 3/10/2017
DRAWN BY: KMS 3/10/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

COMPOSITE PHASING PLAN

JUN 08, 2018 8:47 AM SPITZ01394
I:\16JOBS\16A0087\16A0087D\CAD\AIRPORT\SHEET\05-COMPOSITE PHASING PLAN.DWG



80 0 80 160
SCALE IN FEET

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 20 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 9-27 AT ANY TIME EXCEPT AS SHOWN IN THE PHASING PLANS.
4. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
5. SEE CONSTRUCTION SITE PLAN ON SHEET 3 AND SAFETY NOTES ON SHEET 4 AND 5

CONSTRUCTION VEHICLES SHALL BE CONTROLLED BY CONTRACTOR AND SHALL ALWAYS YIELD TO AIRCRAFT. ACTIVE PAVEMENT SHALL BE SWEPT AT ALL TIMES DURING WORK. SEE SPECIAL PROVISIONS.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 1:

1. REMOVAL OF ALL PAVEMENTS WITHIN THE PHASE 1 LIMITS.
2. EXCAVATE TO DEPTH UNDER EXISTING PAVEMENTS AND FOR SHOULDER WIDENING WITHIN PHASE 1 LIMITS.
3. INSTALL UNDERDRAIN AND UNDERDRAIN STRUCTURES WITHIN PHASE 1 LIMITS.
4. INSTALL LIGHTS, SIGNS, AND ELECTRICAL CABLE WITHIN THE PHASE 1 LIMITS.
5. INSTALL GRANULAR DRAINAGE SUBBASE, CRUSHED AGGREGATE BASE, AND PCC PAVEMENTS WITHIN THE PHASE 1 LIMITS.
6. INSTALL PAVEMENT MARKINGS WITHIN PHASE 1 LIMITS.
7. GRADE, TOPSOIL AND LANDSCAPE WITHIN PHASE 1 LIMITS.

- TEMPORARY TYPE A BARRICADES
- TEMPORARY CONSTRUCTION SIGN
- GRASS HAUL ROUTE
- AGGREGATE HAUL ROUTE
- EARTHEN CUSHION
- HAUL ROUTE ON EXISTING PAVEMENT
- AIRPLANE MOVEMENTS (ADG II, WINGSPAN = 79')
- VEHICLE MOVEMENTS
- PAVEMENTS TO BE CONSTRUCTED
- PAVEMENTS TO BE REMOVED
- AIRPLANE MOVEMENTS (ADG III, WINGSPAN = 118')

JUN 08, 2018 8:47 AM SPITZ01394
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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

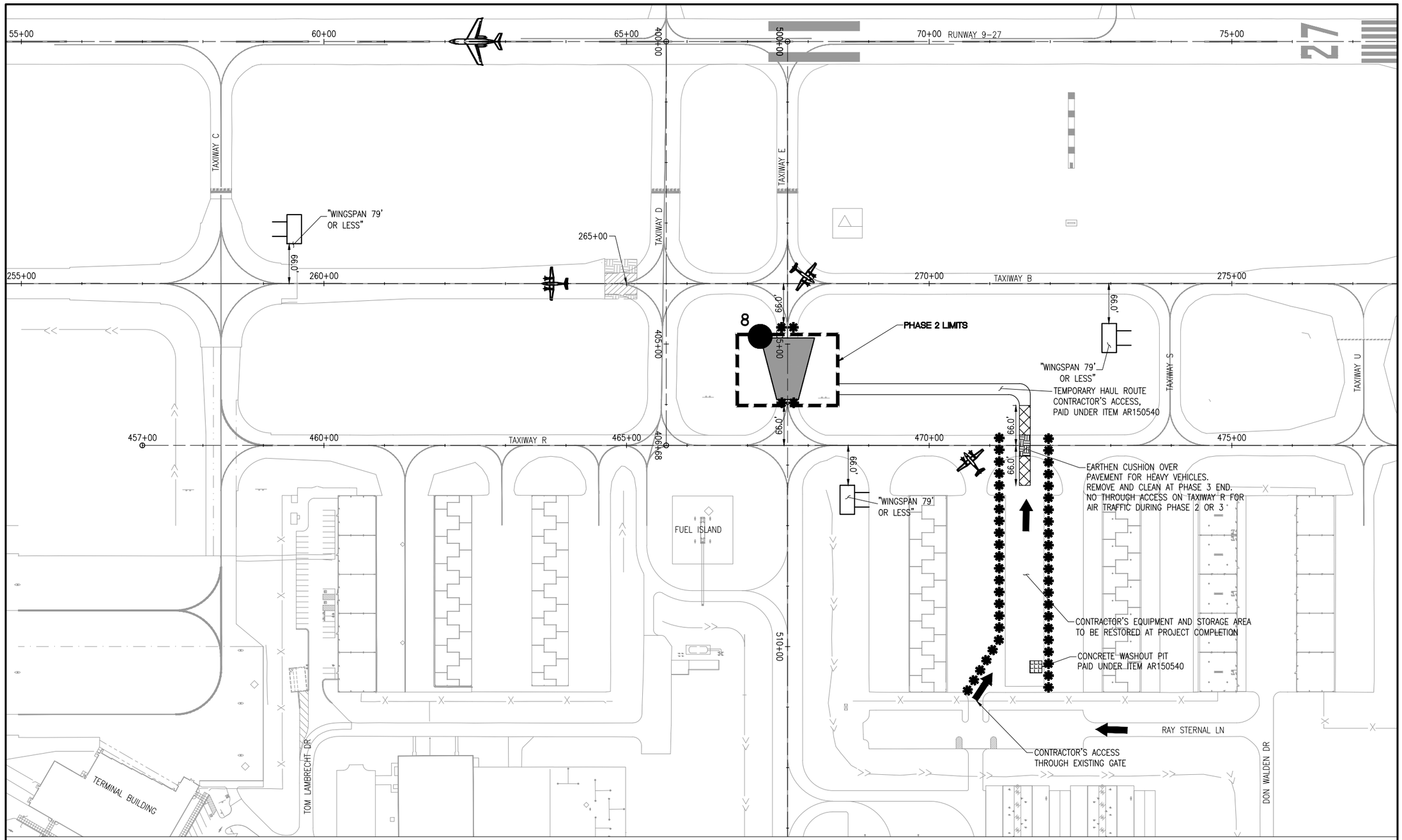
LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 06-PHASING PLAN PHASE
DESIGN BY: KMS 2/13/2017
DRAWN BY: KMS 2/13/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

PHASING PLAN - PHASE 1



NOTES

1. SEE SHEET 7 FOR NOTES AND LEGEND

80 0 80 160
SCALE IN FEET

CONSTRUCTION VEHICLES SHALL BE CONTROLLED BY CONTRACTOR AND SHALL ALWAYS YIELD TO AIRCRAFT. ACTIVE PAVEMENT SHALL BE SWEPT AT ALL TIMES DURING WORK. SEE SPECIAL PROVISIONS.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 2:

1. REMOVAL OR MILLING OF PAVEMENTS AS DIRECTED WITHIN THE PHASE 2 LIMITS.
2. EXCAVATE TO DEPTH UNDER EXISTING PAVEMENTS AND FOR SHOULDER WIDENING WITHIN PHASE 2 LIMITS.
3. INSTALL UNDERDRAIN AND UNDERDRAIN STRUCTURES WITHIN PHASE 2 LIMITS.
4. INSTALL LIGHTS, SIGNS, AND ELECTRICAL CABLE WITHIN THE PHASE 2 LIMITS.
5. INSTALL GRANULAR DRAINAGE SUBBASE, CRUSHED AGGREGATE BASE, BITUMINOUS AND PCC PAVEMENTS WITHIN THE PHASE 2 LIMITS.
6. INSTALL PAVEMENT MARKINGS WITHIN PHASE 2 LIMITS.
7. GRADE, TOPSOIL AND LANDSCAPE WITHIN PHASE 2 LIMITS.

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REHABILITATE TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

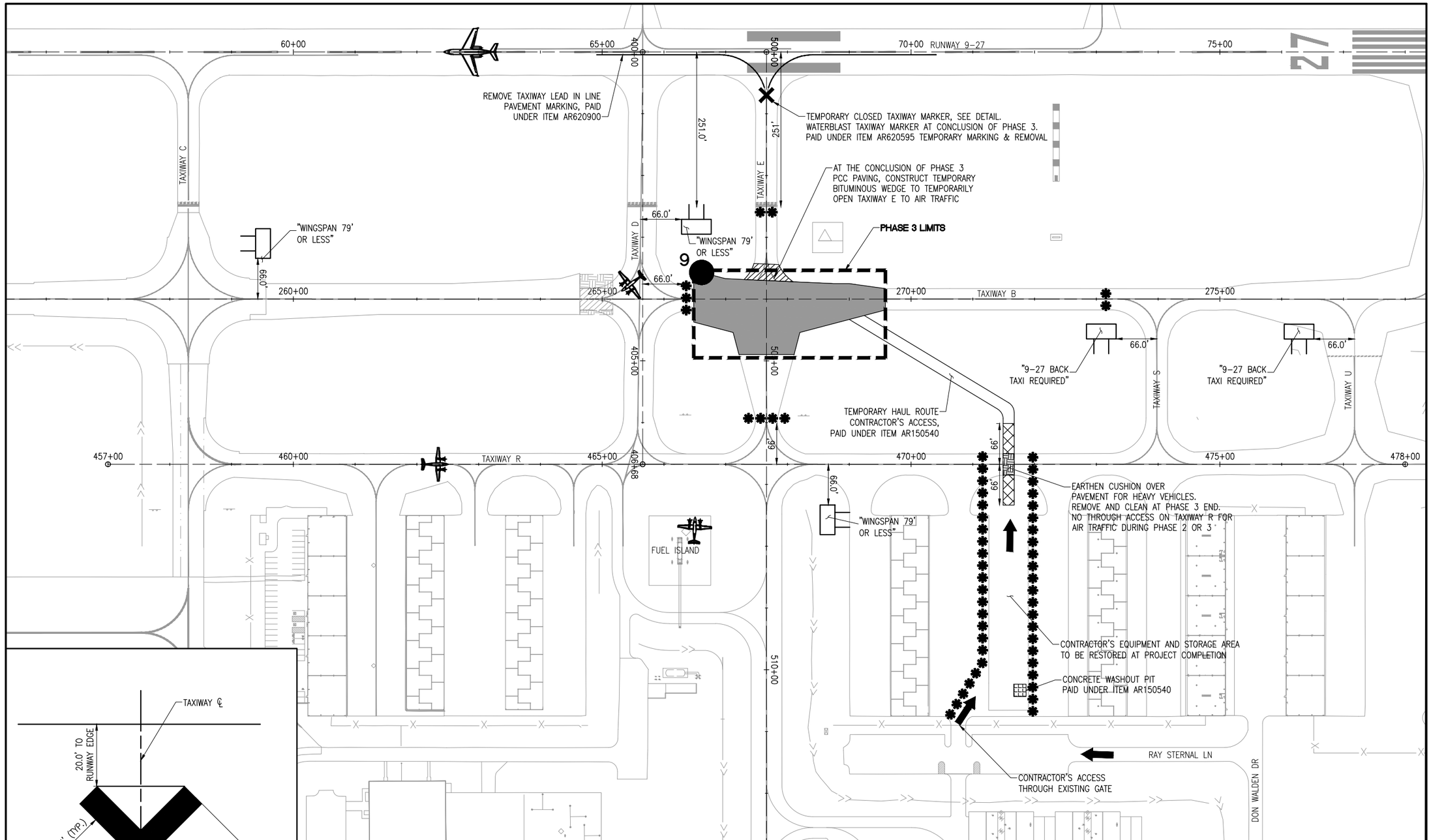
LE051

NO.	DATE	DESCRIPTION	DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 07-PHASING PLAN PHASE 2
DESIGN BY: KMS 2/1/2017
DRAWN BY: KMS 2/1/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

PHASING PLAN - PHASE 2



CLOSED TAXIWAY MARKING DETAIL

80 0 80 160
SCALE IN FEET

NOTES

1. SEE SHEET 7 FOR NOTES AND LEGEND

CONSTRUCTION VEHICLES SHALL BE CONTROLLED BY CONTRACTOR AND SHALL ALWAYS YIELD TO AIRCRAFT. ACTIVE PAVEMENT SHALL BE SWEPT AT ALL TIMES DURING WORK. SEE SPECIAL PROVISIONS.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 3:

1. REMOVAL OR MILLING OF PAVEMENTS WITHIN THE PHASE 3 LIMITS.
2. EXCAVATE TO DEPTH UNDER EXISTING PAVEMENTS AND FOR SHOULDER WIDENING WITHIN PHASE 3 LIMITS.
3. INSTALL UNDERDRAIN AND UNDERDRAIN STRUCTURES WITHIN PHASE 3 LIMITS.
4. INSTALL LIGHTS, SIGNS, AND ELECTRICAL CABLE WITHIN THE PHASE 3 LIMITS.
5. INSTALL GRANULAR DRAINAGE SUBBASE, CRUSHED AGGREGATE BASE, PCC PAVEMENT AND BITUMINOUS PAVEMENTS WITHIN THE PHASE 3 LIMITS.
6. INSTALL PAVEMENT MARKINGS WITHIN PHASE 3 LIMITS.
7. GRADE, TOPSOIL AND LANDSCAPE WITHIN PHASE 3 LIMITS.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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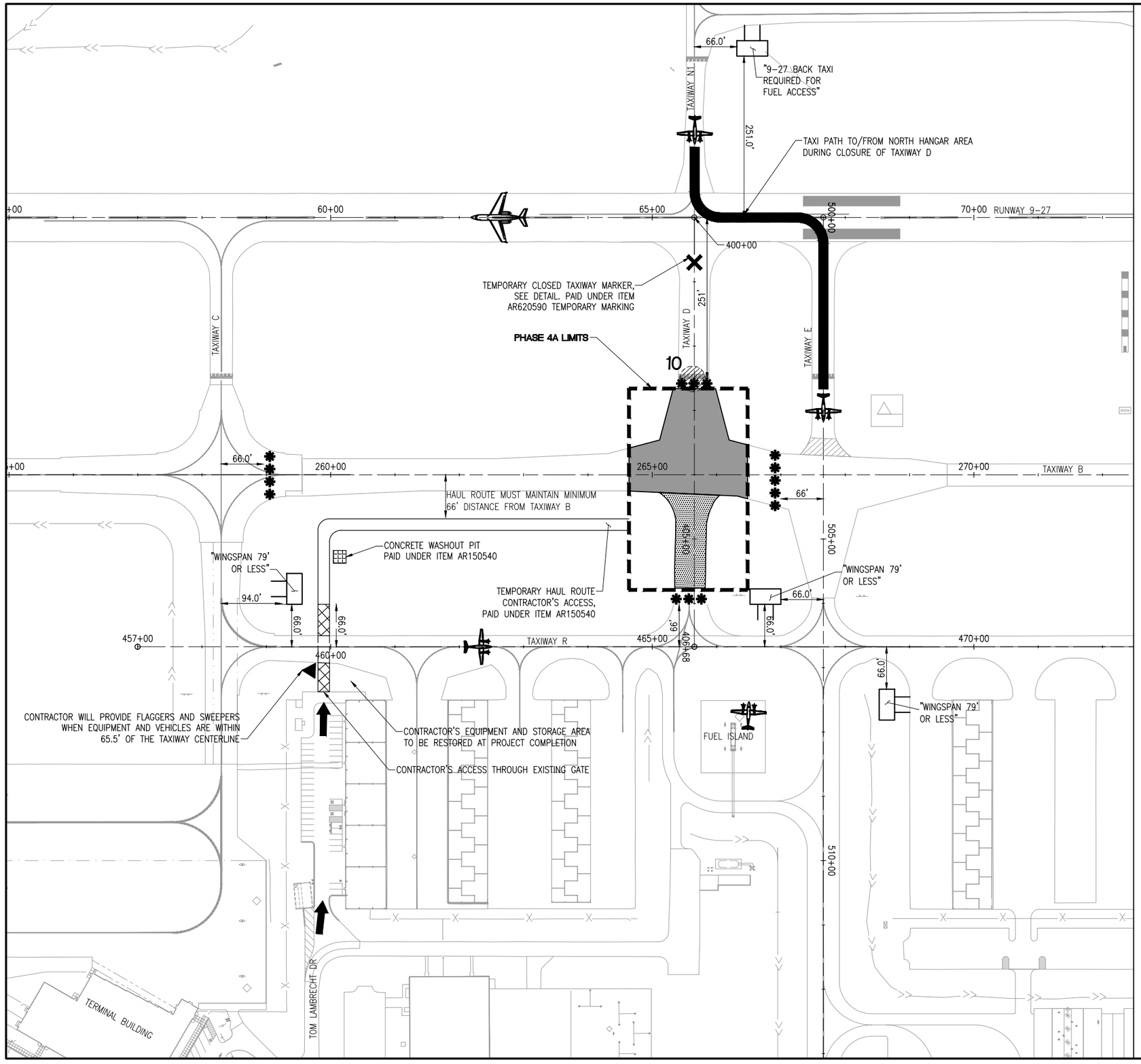
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 09-PHASING PLAN PHASE 3
DESIGN BY: KMS 2/1/2017
DRAWN BY: KMS 2/1/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

PHASING PLAN - PHASE 3



THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 4A:

1. REMOVAL OF PAVEMENTS WITHIN THE PHASE 4A LIMITS.
2. EXCAVATE TO DEPTH UNDER EXISTING PAVEMENTS AND FOR SHOULDER WIDENING WITHIN PHASE 4A LIMITS.
3. INSTALL UNDERDRAIN AND UNDERDRAIN STRUCTURES WITHIN PHASE 4A LIMITS.
4. INSTALL LIGHTS, SIGNS, AND ELECTRICAL CABLE WITHIN THE PHASE 4A LIMITS.
5. INSTALL GRANULAR DRAINAGE SUBBASE, CRUSHED AGGREGATE BASE, AND PCC PAVEMENT WITHIN THE PHASE 4A LIMITS.
6. INSTALL PAVEMENT MARKINGS WITHIN PHASE 4A LIMITS.
7. GRADE, TOPSOIL AND LANDSCAPE WITHIN PHASE 4A LIMITS.

NOTES

1. SEE SHEET 7 FOR NOTES AND LEGEND

CONSTRUCTION VEHICLES SHALL BE CONTROLLED BY CONTRACTOR AND SHALL ALWAYS YIELD TO AIRCRAFT. ACTIVE PAVEMENT SHALL BE SWEPT AT ALL TIMES DURING WORK. SEE SPECIAL PROVISIONS.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 10-PHASING PLAN PHASE 4
DESIGN BY: KMS 2/1/2017
DRAWN BY: KMS 2/1/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

PHASING PLAN - PHASE 4A

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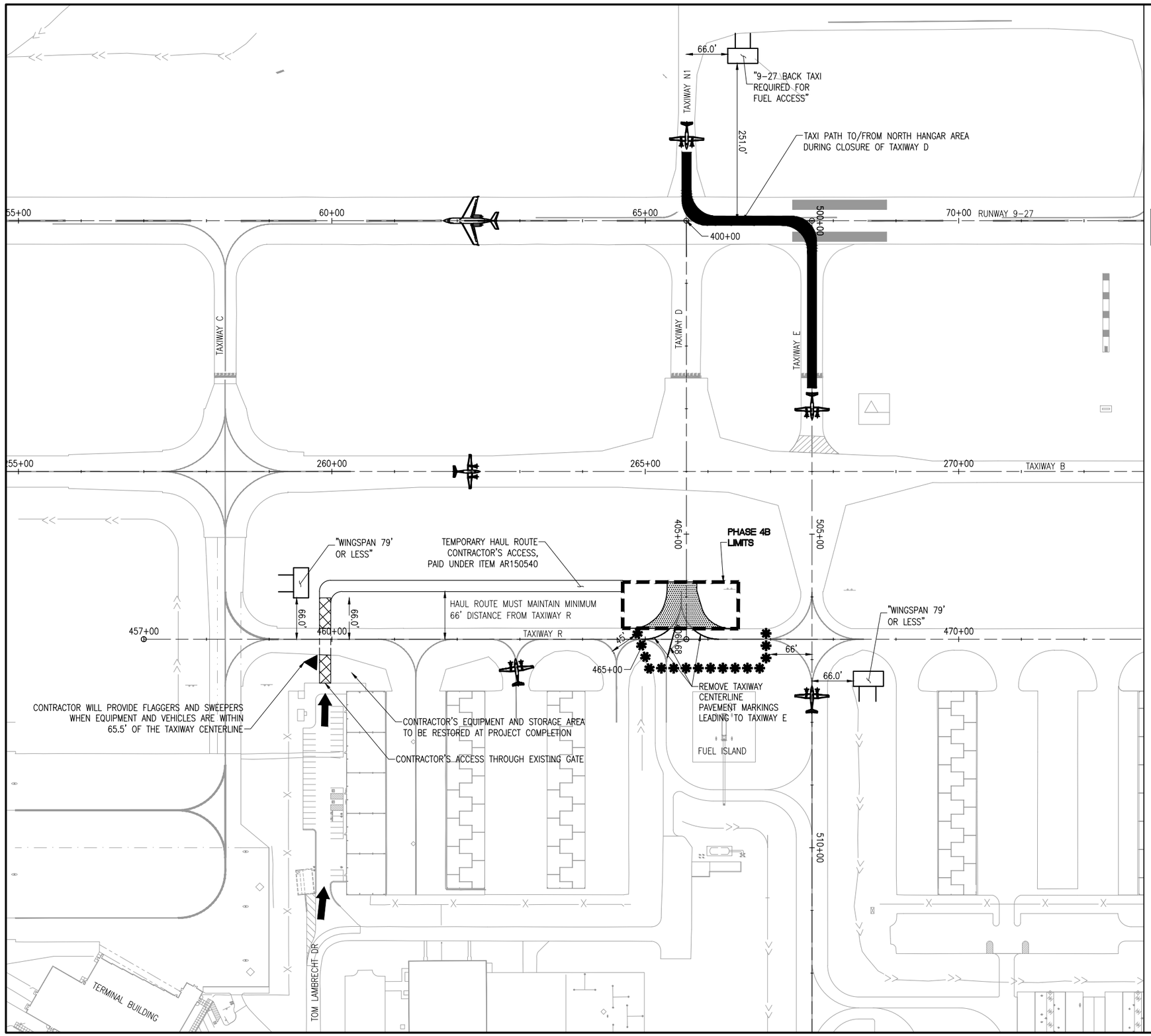

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 4B:

1. REMOVAL OF PAVEMENTS WITHIN THE PHASE 4B LIMITS.
2. PAVEMENT MARKING REMOVAL WITHIN THE PHASE 4B LIMITS.
3. GRADE, TOPSOIL AND LANDSCAPE WITHIN PHASE 4B LIMITS.

NOTES

1. SEE SHEET 7 FOR NOTES AND LEGEND

CONSTRUCTION VEHICLES SHALL BE CONTROLLED BY CONTRACTOR AND SHALL ALWAYS YIELD TO AIRCRAFT. ACTIVE PAVEMENT SHALL BE SWEPT AT ALL TIMES DURING WORK. SEE SPECIAL PROVISIONS.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 11-PHASING PLAN PHASE 4
DESIGN BY: KMS 2/1/2017
DRAWN BY: KMS 2/1/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

PHASING PLAN - PHASE 4B

JUN 08, 2018 8:50 AM SPITZ01394
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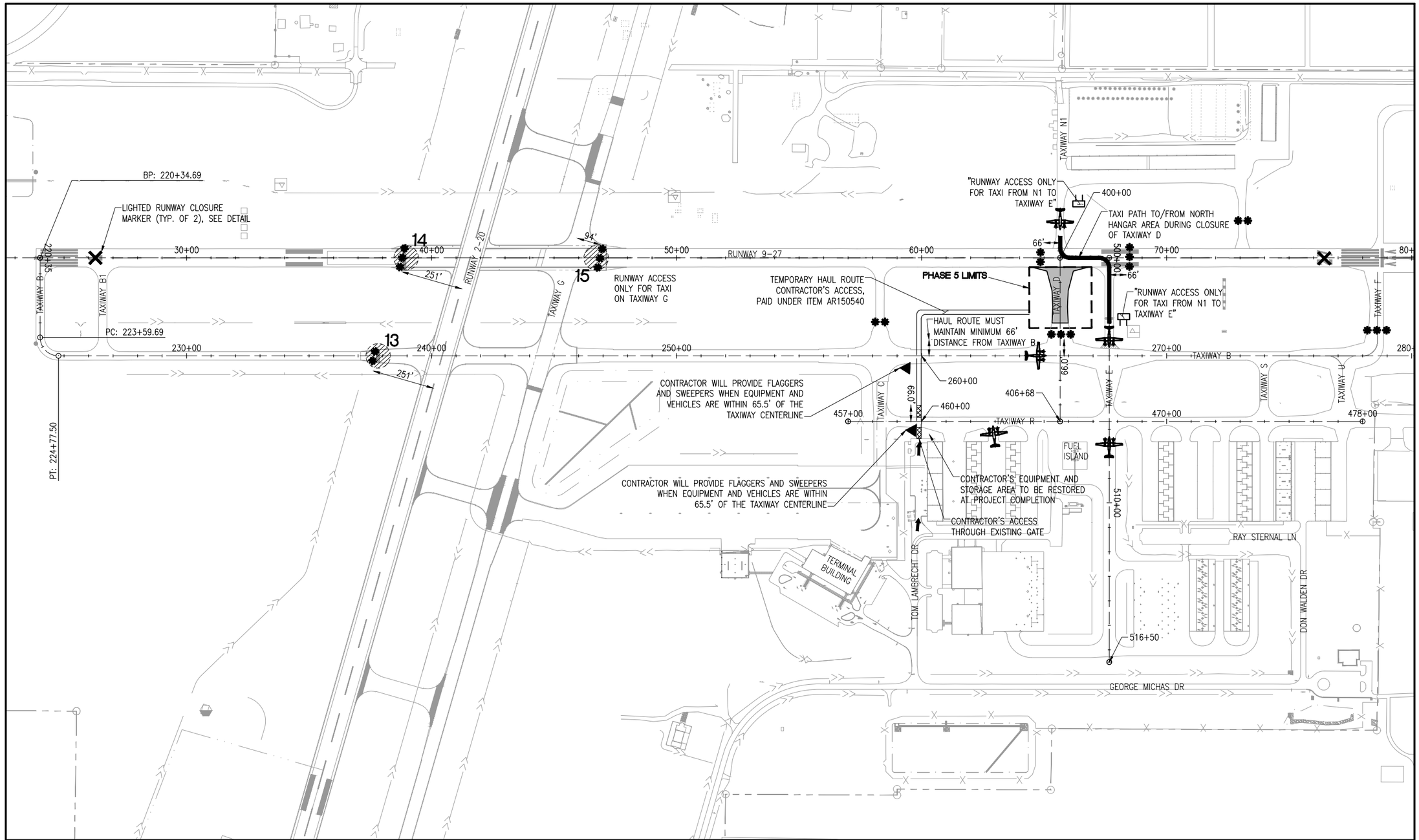

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 5:

1. REMOVAL OF PAVEMENTS WITHIN THE PHASE 5 LIMITS.
2. EXCAVATE TO DEPTH UNDER EXISTING PAVEMENTS AND FOR SHOULDER WIDENING WITHIN PHASE 5 LIMITS.
3. INSTALL UNDERDRAIN AND UNDERDRAIN STRUCTURES WITHIN PHASE 5 LIMITS.
4. INSTALL LIGHTS, SIGNS, AND ELECTRICAL CABLE WITHIN THE PHASE 5 LIMITS.
5. INSTALL GRANULAR DRAINAGE SUBBASE, CRUSHED AGGREGATE BASE, BITUMINOUS BASE AND BITUMINOUS SURFACE PAVEMENT WITHIN THE PHASE 5 LIMITS.
6. INSTALL PAVEMENT MARKINGS WITHIN PHASE 5 LIMITS.
7. GRADE, TOPSOIL AND LANDSCAPE WITHIN PHASE 5 LIMITS.

NOTES

1. SEE SHEET 7 FOR NOTES AND LEGEND

CONSTRUCTION VEHICLES SHALL BE CONTROLLED BY CONTRACTOR AND SHALL ALWAYS YIELD TO AIRCRAFT. ACTIVE PAVEMENT SHALL BE SWEPT AT ALL TIMES DURING WORK. SEE SPECIAL PROVISIONS.

* **RUNWAY 9-27 IS CLOSED DURING PHASE 5**

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SCALE IN FEET

JUN 08, 2018 8:51 AM SPITZ01394
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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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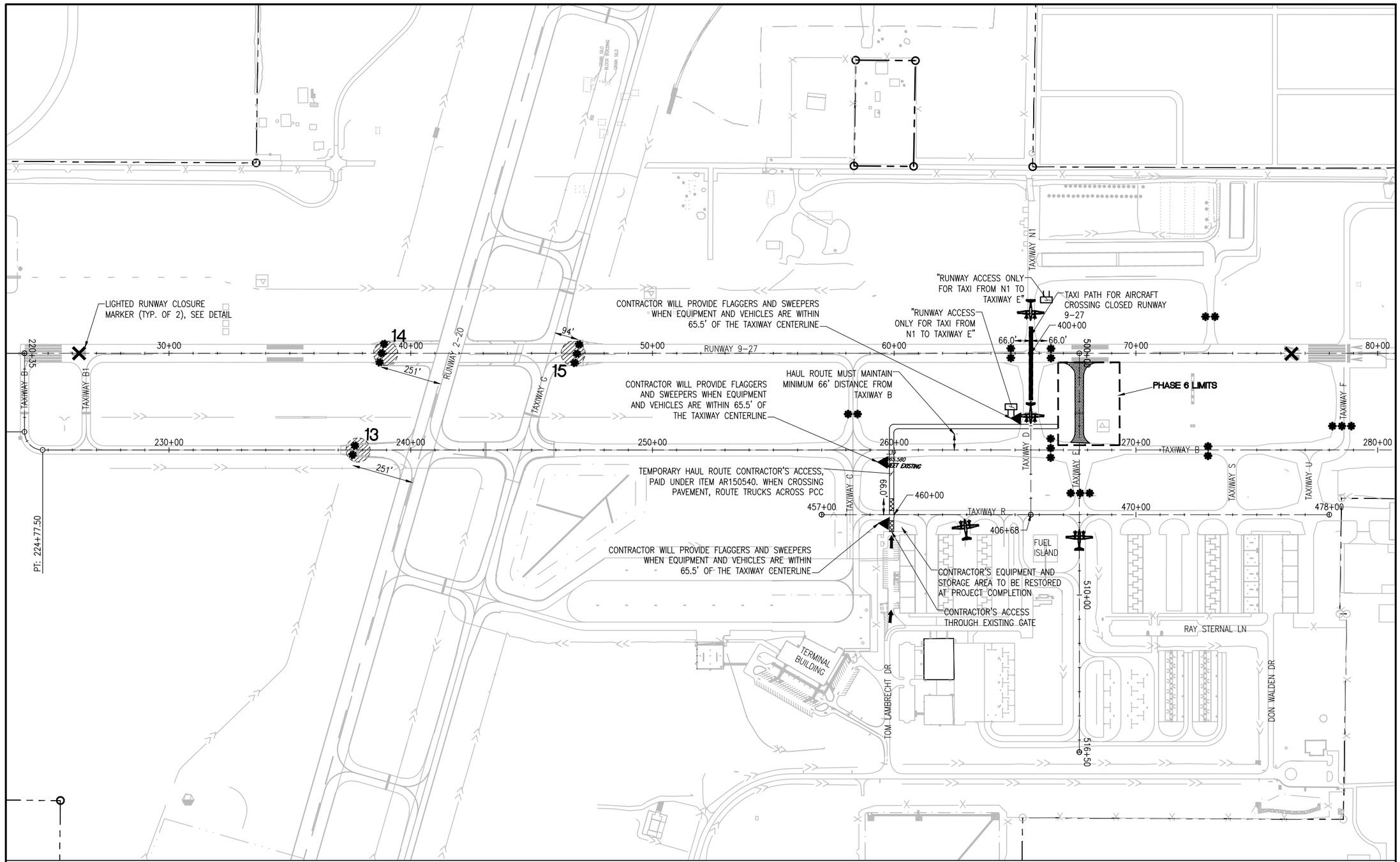
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 12-PHASING PLAN PHASE 5
DESIGN BY: KMS 2/8/2017
DRAWN BY: KMS 2/8/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

PHASING PLAN - PHASE 5



THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 6:

1. REMOVAL OF PAVEMENTS WITHIN THE PHASE 6 LIMITS.
2. INSTALL LIGHTS, SIGNS, AND ELECTRICAL CABLE WITHIN THE PHASE 6 LIMITS.
3. GRADE, TOPSOIL AND LANDSCAPE WITHIN PHASE 6 LIMITS.
4. REMOVE ALL TEMPORARY CONSTRUCTION SIGNS AT THE END OF PHASE 6.
5. SWEEP ALL PAVEMENTS, REMOVE TRAFFIC CONTROL AND OPEN TO TRAFFIC.

NOTES

1. SEE SHEET 7 FOR NOTES AND LEGEND

CONSTRUCTION VEHICLES SHALL BE CONTROLLED BY CONTRACTOR AND SHALL ALWAYS YIELD TO AIRCRAFT. ACTIVE PAVEMENT SHALL BE SWEPT AT ALL TIMES DURING WORK. SEE SPECIAL PROVISIONS.

* **RUNWAY 9-27 IS CLOSED DURING PHASE 6**

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SCALE IN FEET

JUN 08, 2018 8:51 AM SPITZ01394
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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

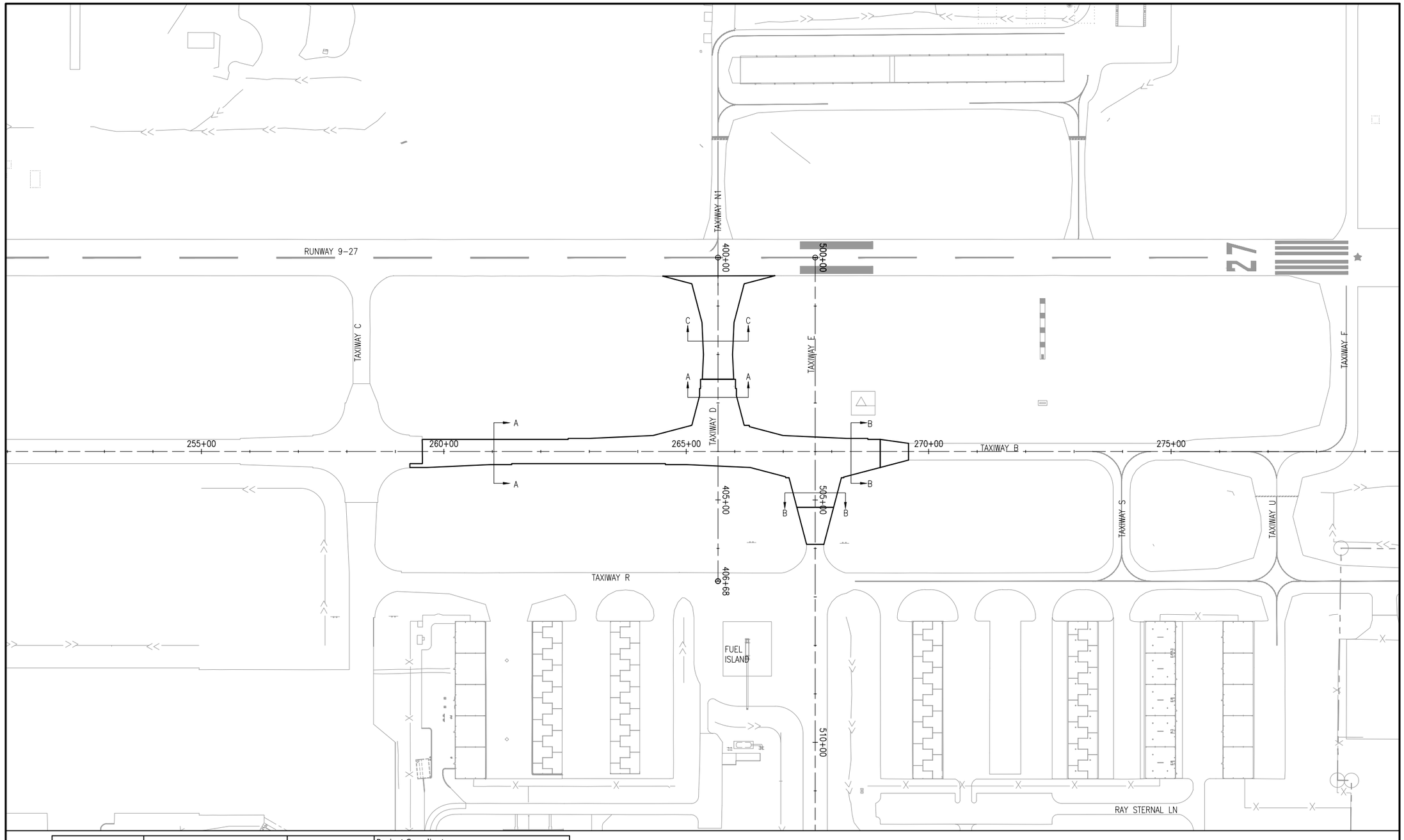
LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 13-PHASING PLAN PHASE 6
DESIGN BY: KMS 2/8/2017
DRAWN BY: KMS 2/8/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

PHASING PLAN - PHASE 6



Taxiway	Description	Station	Project Coordinates	
			Northing	Easting
TAXIWAY B	BEGINNING OF ALIGNMENT	255+00.00	1799577.0172	1049973.9309
	END OF ALIGNMENT	275+00.00	1799661.6142	1051972.1410
TAXIWAY D	BEGINNING OF ALIGNMENT	400+00.00	1800021.7301	1051021.6018
	END OF ALIGNMENT	406+67.59	1799354.8275	1051049.8361
TAXIWAY E	BEGINNING OF ALIGNMENT	500+00.00	1800030.2091	1051221.8782
	END OF ALIGNMENT	510+00.00	1799031.1040	1051264.1767

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

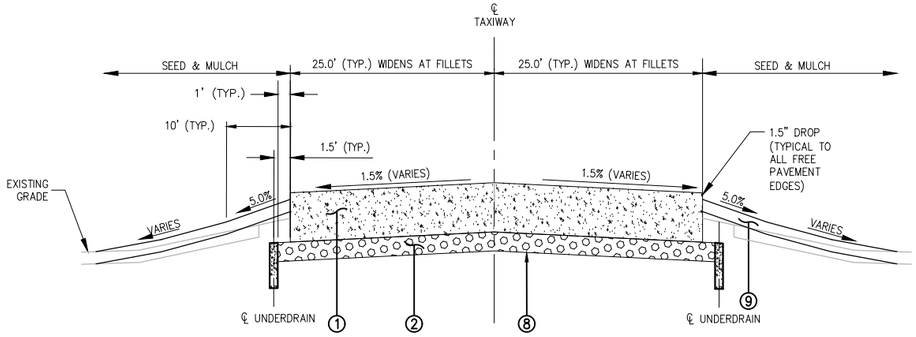
LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

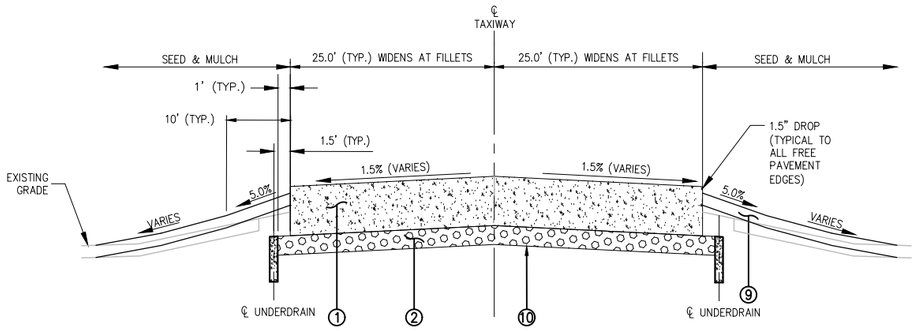
ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 14-ALIGNMENT DATA.DWG
DESIGN BY: KMS 4/7/2017
DRAWN BY: KMS 4/7/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

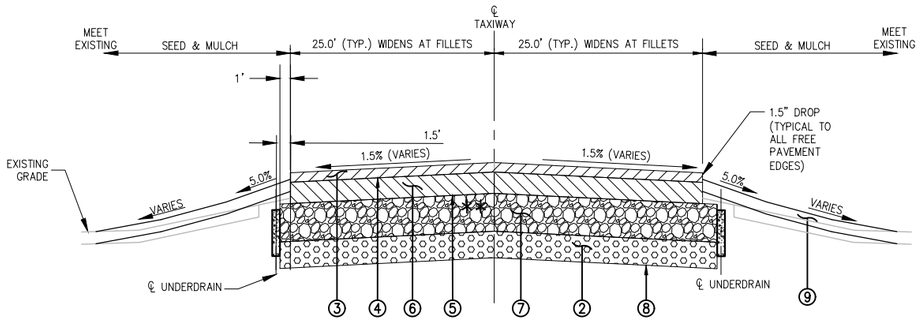
ALIGNMENT DATA TABLE



CONCRETE TAXIWAY SECTION A-A
TAXIWAY B STA 259+30 - STA 266+20
TAXIWAY D STA 402+51 - STA 403+46



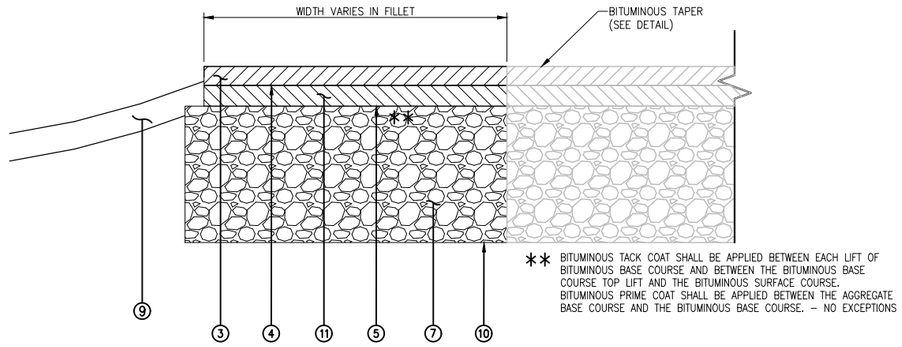
CONCRETE TAXIWAY SECTION B-B
TAXIWAY B STA 266+20 - STA 269+00 TYPICAL SECTION
TAXWAY E STA 504+54 - 506+27



FULL DEPTH BITUMINOUS TAXIWAY SECTION C-C
STA. 400+00 - STA. 402+51

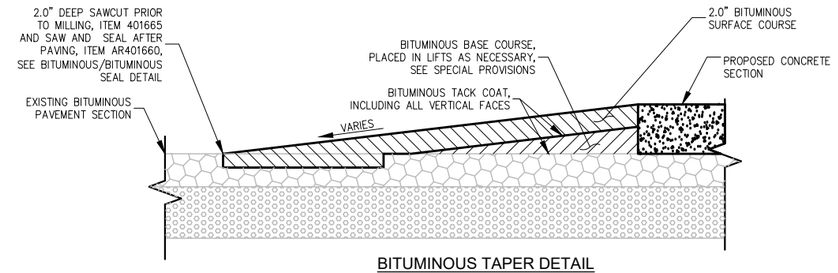
PAVEMENT LEGEND

1. PROPOSED 10 INCH PCC CONCRETE, ITEM AR501510.
2. PROPOSED 6 INCH GRANULAR DRAINAGE SUBBASE, ITEM AR154606.
3. PROPOSED 2 INCH BITUMINOUS SURFACE COURSE, ITEM AR401613.
4. PROPOSED BITUMINOUS TACK COAT, ITEM AR603510.
5. PROPOSED BITUMINOUS PRIME COAT, ITEM AR602510.
6. PROPOSED 4.5 INCH BITUMINOUS BASE COURSE, ITEM AR403613.
7. PROPOSED 12 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209612.
8. PROPOSED SOIL STABILIZATION FABRIC, ITEM AR152540
9. PROPOSED TOPSOIL, ITEM AR905510. SEEDING AND MULCHING AREAS, ITEMS AR901510 AND AR908510.
10. PROPOSED SEPARATION FABRIC, ITEM AR156513.
11. PROPOSED 2 INCH BITUMINOUS BASE COURSE, ITEM AR403613.

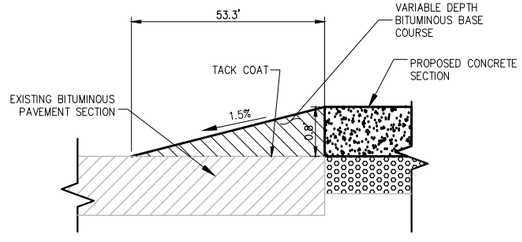


** BITUMINOUS TACK COAT SHALL BE APPLIED BETWEEN EACH LIFT OF BITUMINOUS BASE COURSE AND BETWEEN THE BITUMINOUS BASE COURSE TOP LIFT AND THE BITUMINOUS SURFACE COURSE. BITUMINOUS PRIME COAT SHALL BE APPLIED BETWEEN THE AGGREGATE BASE COURSE AND THE BITUMINOUS BASE COURSE. – NO EXCEPTIONS

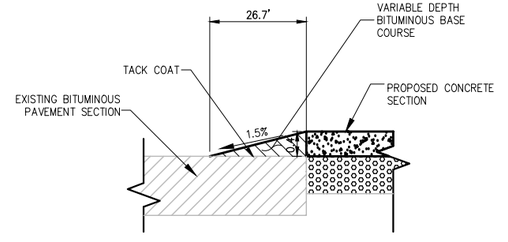
FULL DEPTH BITUMINOUS TRANSITION FILLETS SECTION



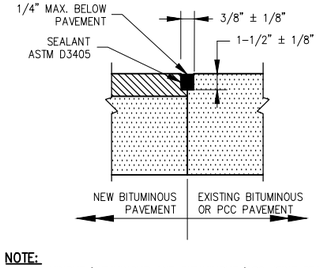
BITUMINOUS TAPER DETAIL



PHASE 1 TEMPORARY BITUMINOUS TRANSITION DETAIL



PHASE 3 TEMPORARY BITUMINOUS TRANSITION DETAIL



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

BITUMINOUS/BITUMINOUS OR BITUMINOUS/PCC SEAL

NOTES:

1. FOR ADDITIONAL LANDSCAPING INFORMATION, SEE LANDSCAPING PLAN.
2. ITEMS AR152540 SOIL STABILIZATION FABRIC, AR209612 CRUSHED AGGREGATE BASE COURSE AND AR154606 GRANULAR DRAINAGE SUBBASE SHALL EXTEND 1' OUTSIDE ALL UNCONSTRAINED PAVEMENT EDGES.
3. ALL HMA MIXES SHALL BE SUPERPAVE.

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George Michas Drive
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fax: 815.838.9524

REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 15-TYPICAL SECTIONS.DW
DESIGN BY: KMS 2/13/2017
DRAWN BY: KMS 2/13/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

TYPICAL SECTIONS AND PAVEMENT DETAILS

LEGEND:

- PROPOSED INLET PROTECTION AT EXISTING STRUCTURES
- PROPOSED INLET PROTECTION AT FES
- EXISTING STORM SEWER MANHOLE
- EXISTING STORM SEWER INLET

CONSTRUCTION SEQUENCING:

1. INSTALLATION OF SOIL EROSION AND SEDIMENT CONTROL SE/SC MEASURES INCLUDING SELECTIVE VEGETATION REMOVAL FOR SILT FENCE INSTALLATION.
2. SILT FENCE INSTALLATION.
3. SITE WORK INCLUDING EXCAVATION, PAVING AND DRAINAGE ITEMS.
4. GRADE AS SHOWN IN PLANS.
5. PERMANENT SEED AND MULCH AREAS AFTER GRADING AS COMPLETED.
6. PERMANENTLY STABILIZE AREAS.
7. REMOVE ALL TEMPORARY SE/SC MEASURES AFTER THE SITE IS STABILIZED WITH VEGETATION.
8. SEE PLANS FOR UTILITY AND AIRFIELD LIGHTING LEGEND.

NOTES:

1. SOIL EROSION AND SEDIMENT CONTROL MAINTENANCE MUST OCCUR, AT A MINIMUM, EVERY WEEK OR AFTER EVERY ½ INCH OR GREATER RAINFALL EVENT.
2. CONTRACTOR IS RESPONSIBLE FOR ALL SITE MAINTENANCE UNTIL THE SITE IS TURNED OVER. THIS INCLUDES MOWING WHERE VEGETATION HAS BEGUN TO GROW BEFORE SUBSTANTIAL COMPLETION.
3. 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, ITEM AR156533, 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 SEED 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.
4. THE QUANTITIES SHOWN INCLUDE THE ESTIMATED TEMPORARY SEEDING AND MULCHING, ITEM AR156533, THAT MAY BE PLACED OUTSIDE THE REGULAR PLANTING SEASON. TEMPORARY SEEDING AND MULCHING PLACED DURING THE REGULAR PLANTING SEASON IS INCIDENTAL TO THE CONTRACT.

CONTRACTOR'S CERTIFICATION STATEMENT

THIS CERTIFICATION STATEMENT IS A PART OF THE STORM WATER POLLUTION PREVENTION PLAN FOR THE PROJECT DESCRIBED BELOW IN ACCORDANCE WITH NPDES PERMIT NO. ILR10 ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

PROJECT INFORMATION:

AIRPORT: _____ PROJECT: _____

PROJECT NO: _____ COUNTY: _____

CONTRACT NUMBER: _____

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT (ILR10) THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

SIGNATURE: _____ DATE: _____

PRINTED NAME: _____ TITLE: _____

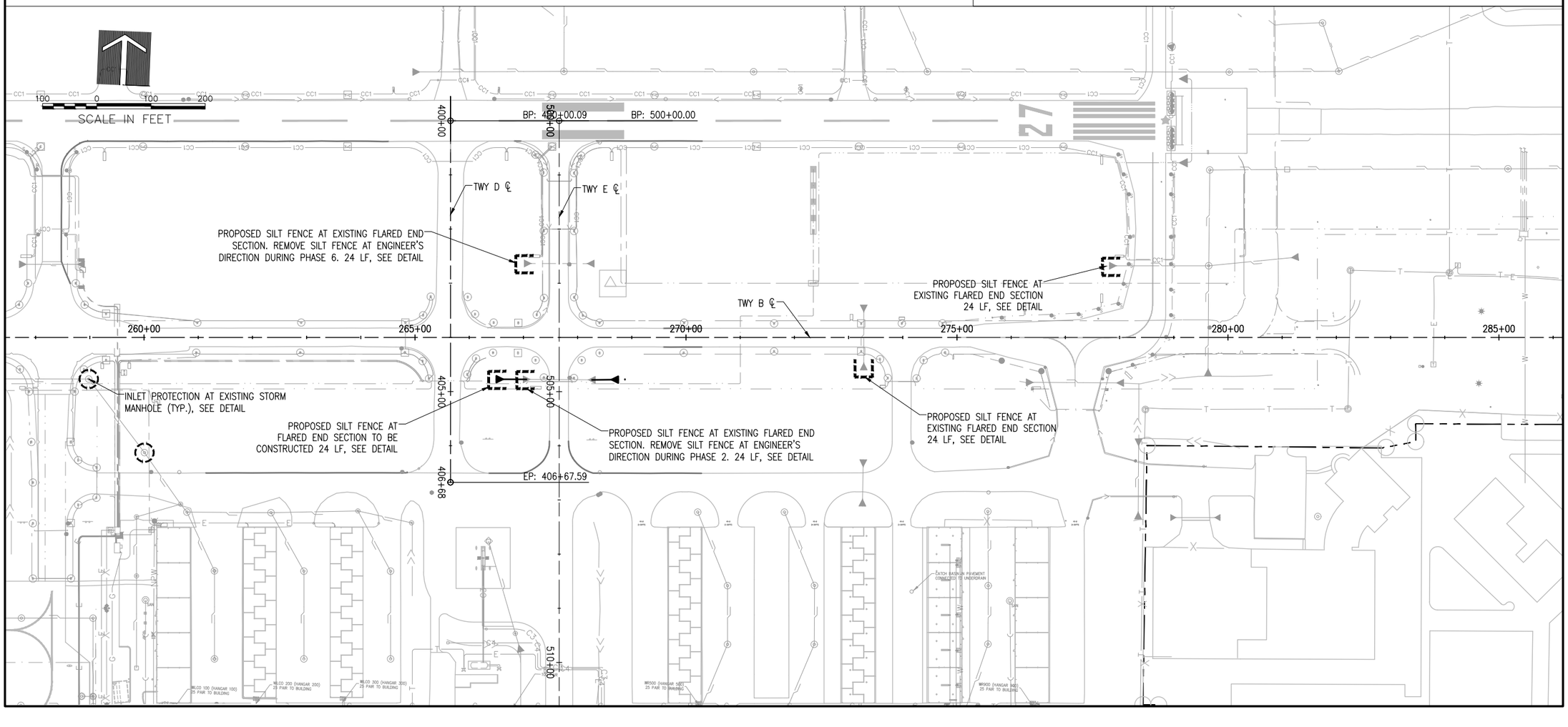
NAME OF FIRM: _____

STREET ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE NUMBER: _____

THE INFORMATION WITHIN THIS BOX SHALL BE COMPLETED BY THE CONTRACTOR AFTER THE AWARD OF THE CONTRACTO TO OBTAIN THE REQUIRED NPDES PERMIT FROM IEPA. COMPLETION OF THIS IS A CONTRACT REQUIREMENT.



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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION	DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 16-SWPPP.DWG
DESIGN BY: KMS 3/10/2017
DRAWN BY: KMS 3/10/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

STORMWATER POLLUTION PREVENTION PLAN

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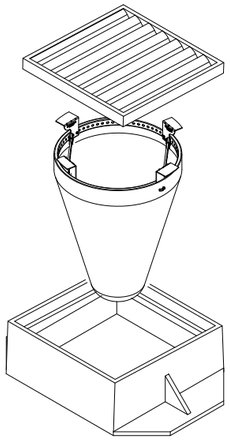
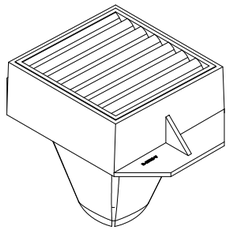
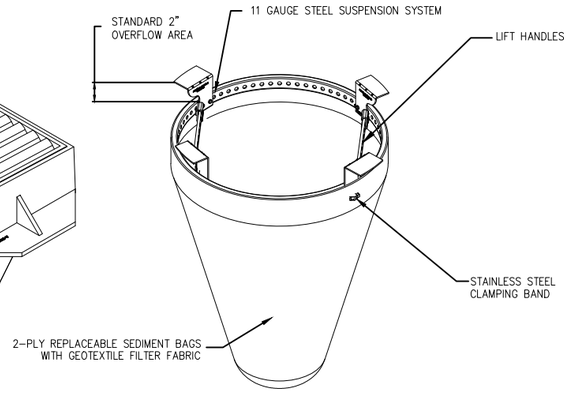






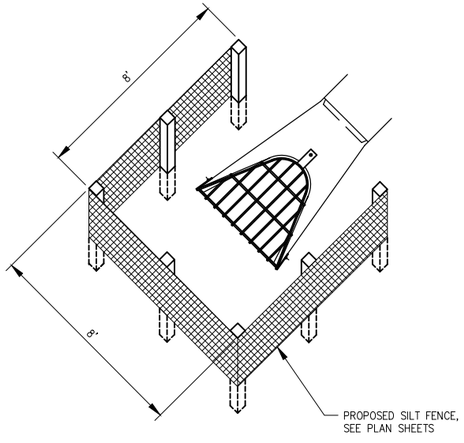
INSTALLATION:
1. REMOVE GRATE
2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
3. REPLACE GRATE

TYPICAL ROUND INLET FILTER

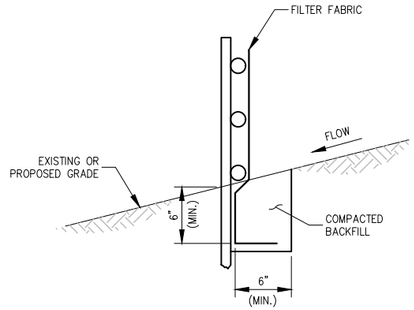
NOTES:

1. FILTER FABRIC INLET PROTECETION SHALL CONSIST OF INLET BASKET AND FABRIC INSERT, IPP FLEXSTORM CATCH-IT BY ADVANCED DRAINAGE SYSTEMS, FLOGARD TEMPORARY INLET FILTER BY OLDCASTLE, 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.

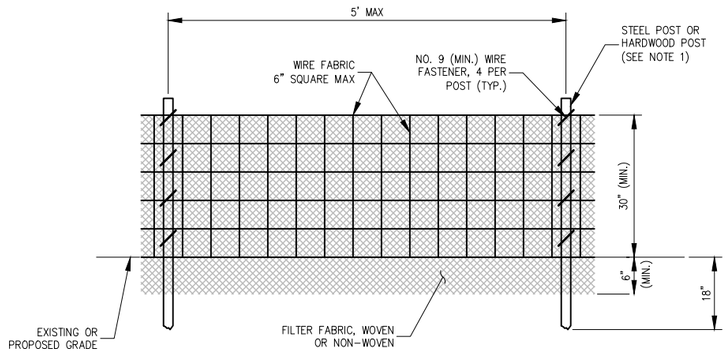
INLET PROTECTION



SILT FENCE PLACEMENT AT FLARED END SECTIONS (FES)



FABRIC ANCHOR DETAIL



ELEVATION

NOTES:

1. FENCE POST SHALL BE EITHER STEEL "T" 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.
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. 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.
9. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN BULGES DEVELOP IN THE SILT FENCE.
10. FENCE POSTS SHALL BE REMOVED WHEN DIRECTED AT PROJECT END.
11. 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

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.

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DESIGN BY: KMS 3/10/2017
DRAWN BY: KMS 3/10/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

SWPPP DETAILS

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.

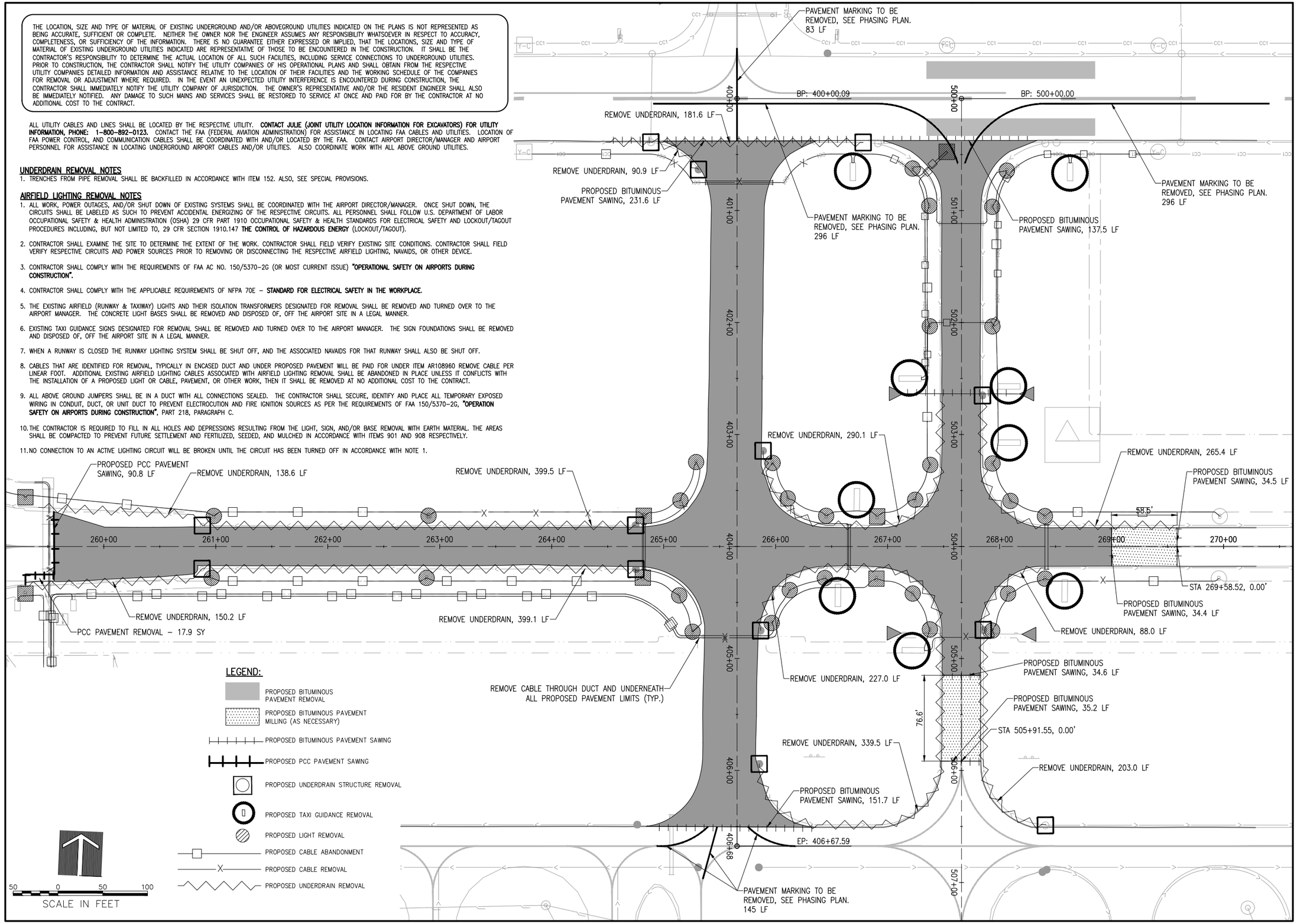
ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION 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.

UNDERDRAIN REMOVAL NOTES

1. TRENCHES FROM PIPE REMOVAL SHALL BE BACKFILLED IN ACCORDANCE WITH ITEM 152. ALSO, SEE SPECIAL PROVISIONS.

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. 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. 150/5370-2G (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 (RUNWAY & TAXIWAY) LIGHTS AND THEIR ISOLATION TRANSFORMERS DESIGNATED FOR REMOVAL SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT MANAGER. THE CONCRETE LIGHT BASES SHALL BE REMOVED AND DISPOSED OF, OFF THE AIRPORT SITE IN A LEGAL MANNER.
6. EXISTING TAXI GUIDANCE SIGNS DESIGNATED FOR REMOVAL SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT MANAGER. THE SIGN FOUNDATIONS SHALL BE REMOVED AND DISPOSED OF, OFF THE AIRPORT SITE IN A LEGAL MANNER.
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. CABLES THAT ARE IDENTIFIED FOR REMOVAL, TYPICALLY IN ENCASED DUCT AND UNDER PROPOSED PAVEMENT WILL BE PAID FOR UNDER ITEM AR108960 REMOVE CABLE PER LINEAR FOOT. ADDITIONAL EXISTING AIRFIELD LIGHTING CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVAL 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 AT NO ADDITIONAL COST TO THE CONTRACT.
9. 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 150/5370-2G, **"OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION"**, PART 218, PARAGRAPH C.
10. 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.
11. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.



JUN 08, 2018 8:54 AM SPITZ01394
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REHABILITATE TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

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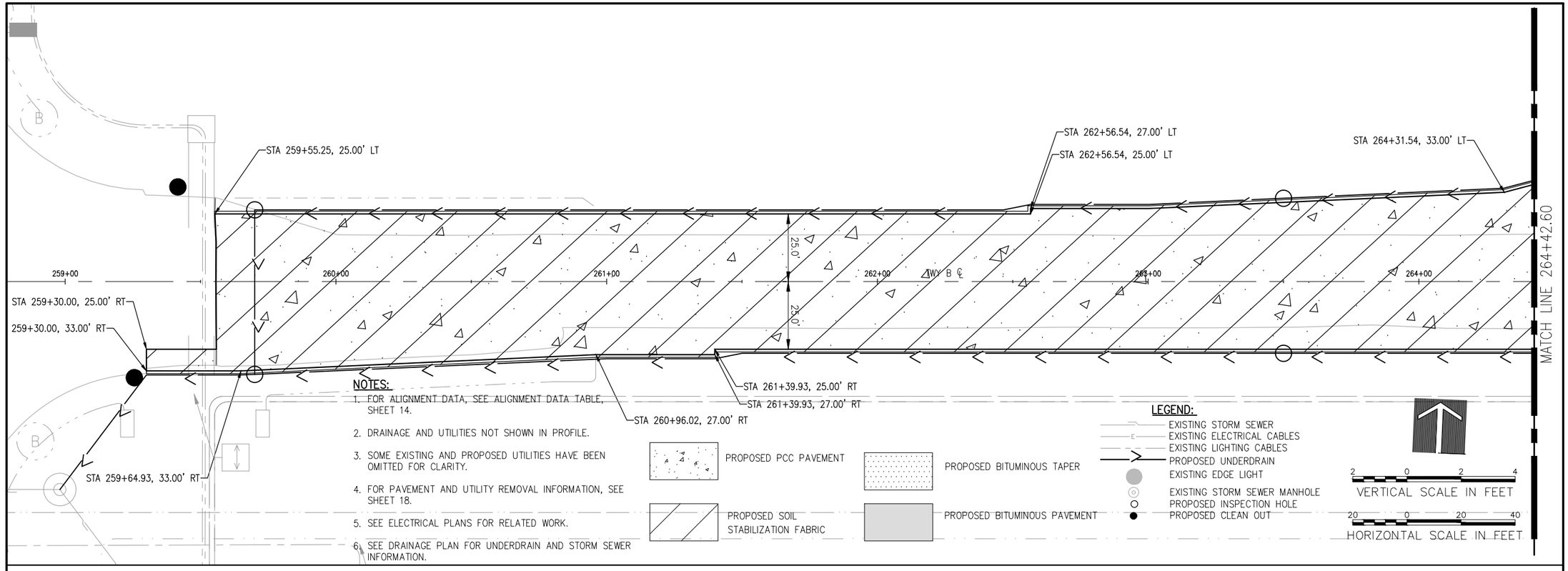
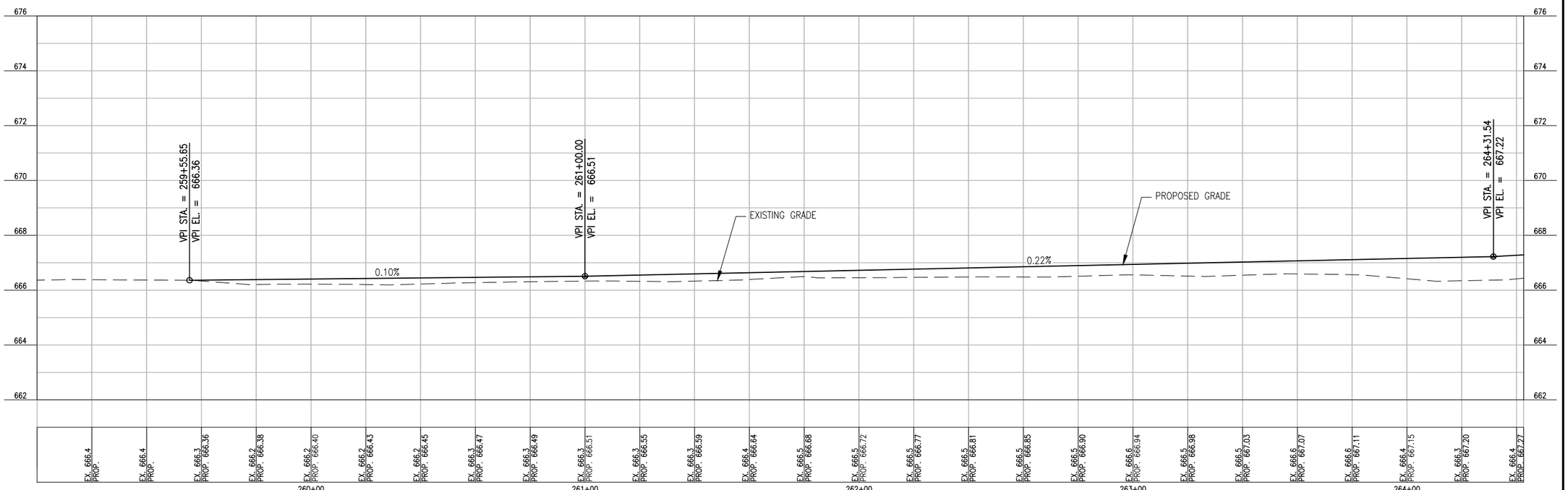
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 18-REMOVAL PLAN.DWG
DESIGN BY: KMS 3/10/2017
DRAWN BY: KMS 3/10/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

REMOVAL PLAN





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IDA No: LOT-4567
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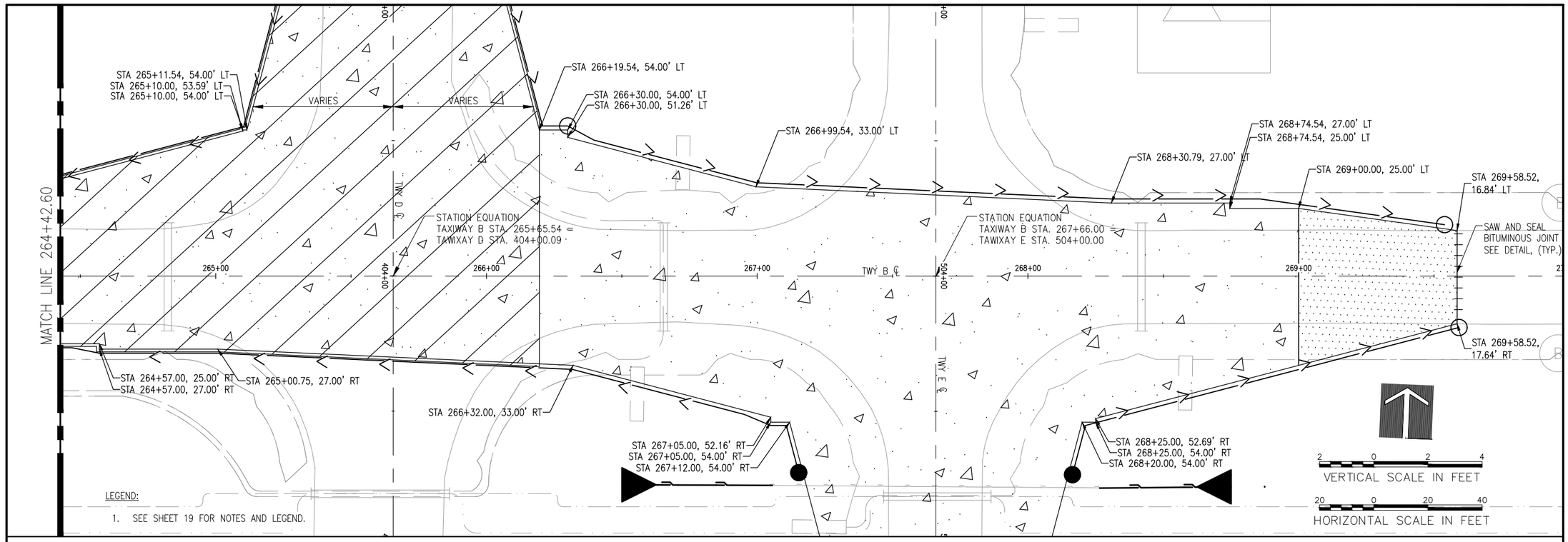
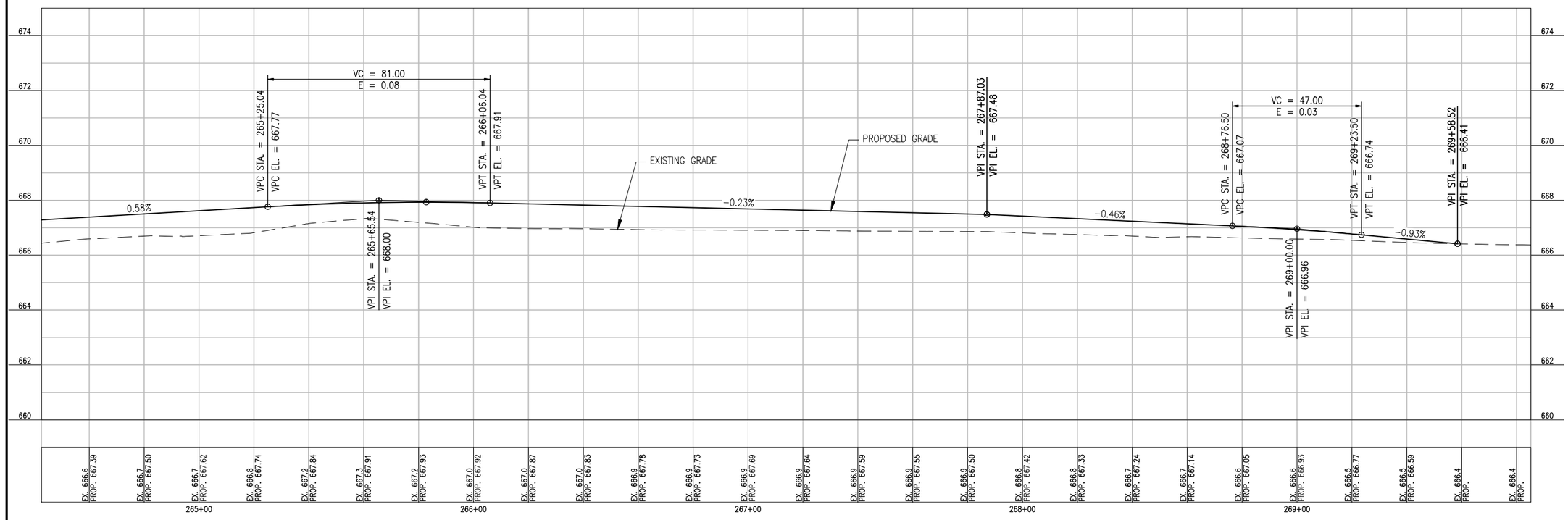
ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 19-VFG - TAXIWAY B - (1) - (
DESIGN BY: KMS 3/16/2017
DRAWN BY: KMS 3/16/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

PLAN & PROFILE - TAXIWAY B





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IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 20-VFG - TAXIWAY B - (1) -
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REVIEWED BY: LDH 6/7/18

SHEET TITLE

PLAN & PROFILE - TAXIWAY B

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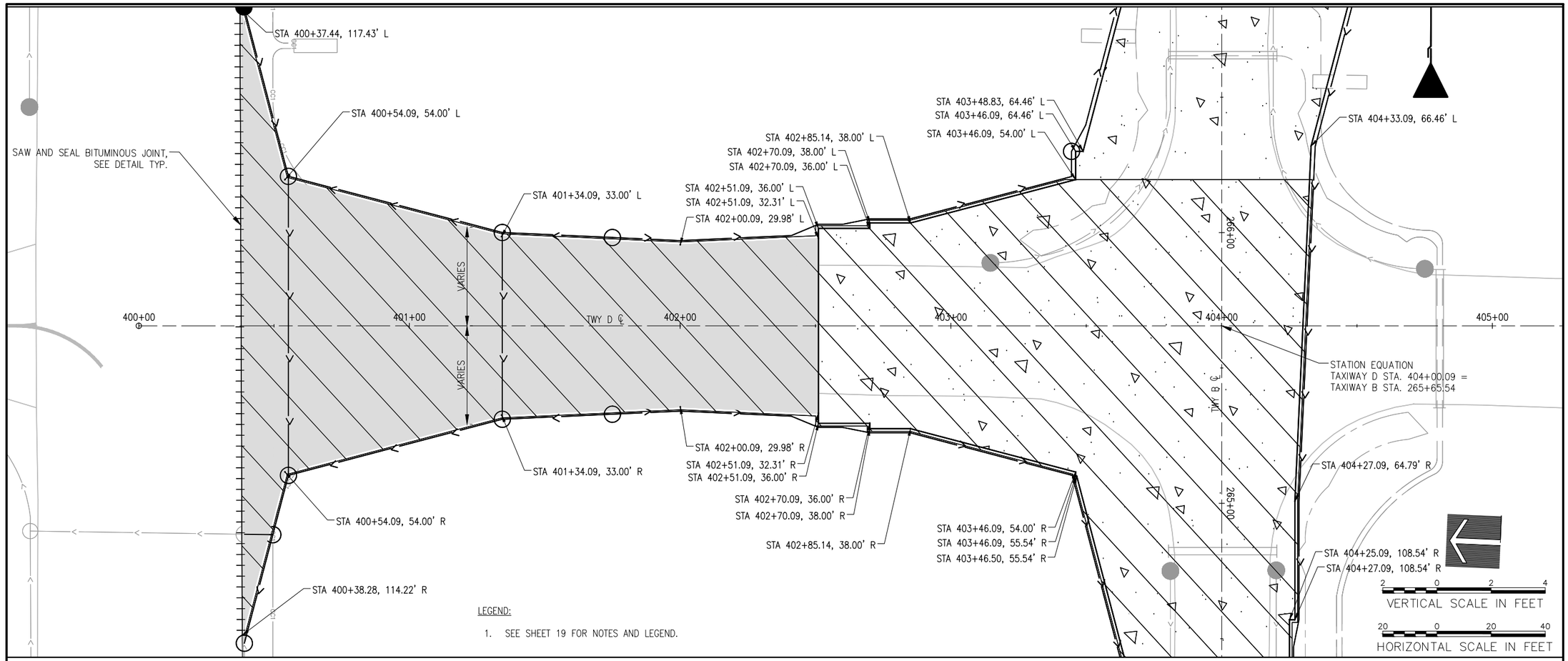

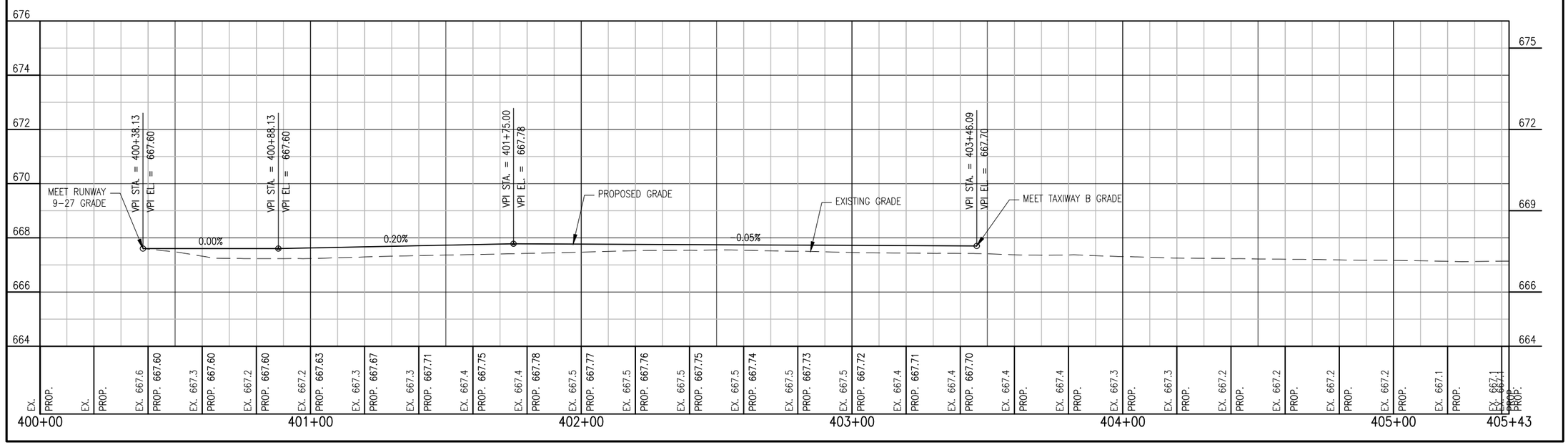

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IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 21-VFG - TAXIWAY D - (2) -
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REVIEWED BY: LDH 6/7/18

SHEET TITLE

PLAN & PROFILE - TAXIWAY D

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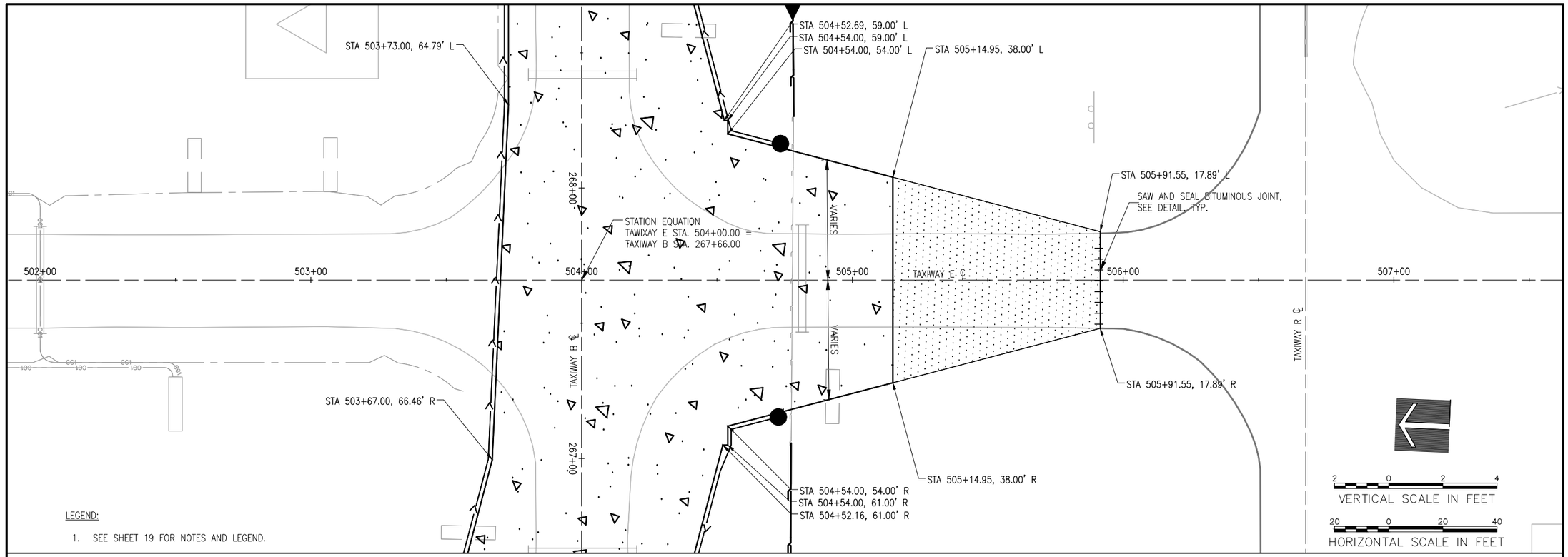

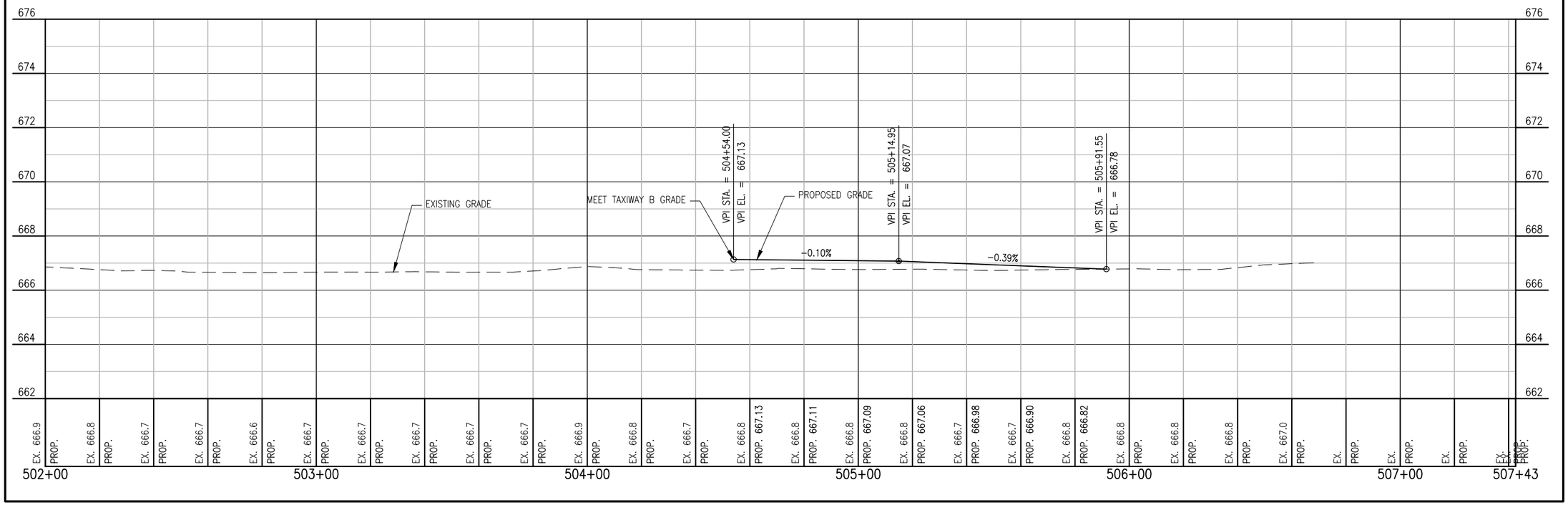

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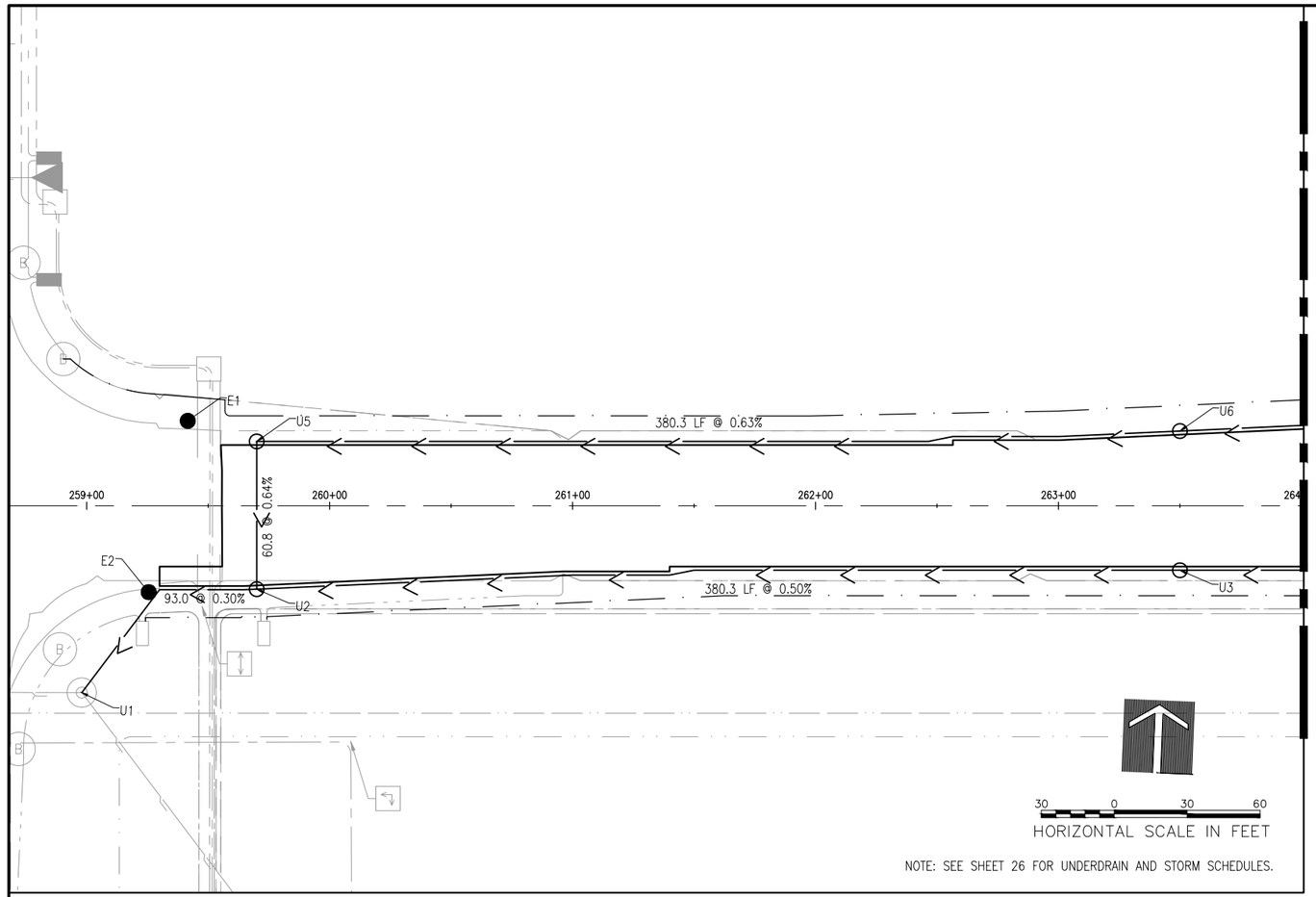
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 22-VFG - TAXIWAY E - (3) -
DESIGN BY: KMS 06/21/2017
DRAWN BY: KMS 06/21/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

PLAN & PROFILE - TAXIWAY E

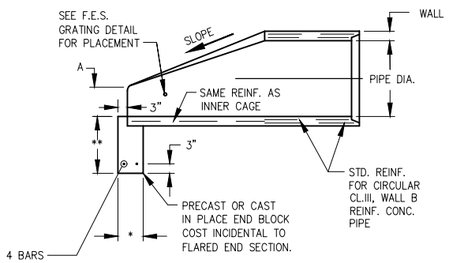


NOTE: SEE SHEET 26 FOR UNDERDRAIN AND STORM SCHEDULES.

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

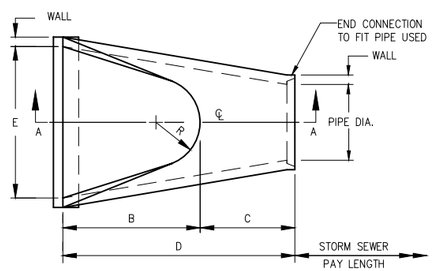
NOTES

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.
5. SEE SPECIAL PROVISIONS FOR COORDINATION WITH GRATING AND FLARED END SECTION.

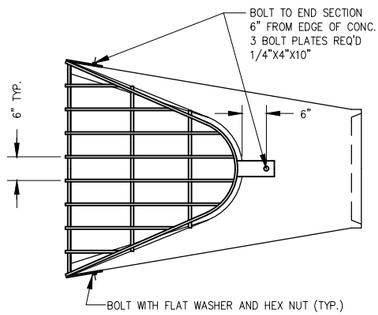


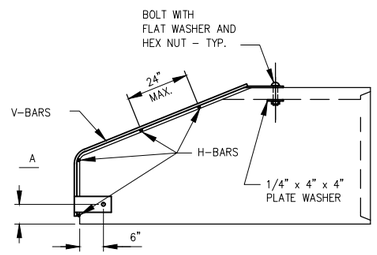
* 8" - 36" DIA. PIPE OR LESS
** 18" - 36" DIA. PIPE OR LESS

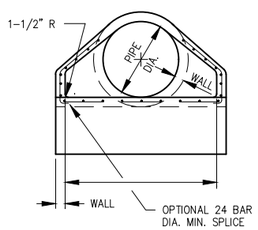
SECTION A-A



TOP VIEW







END VIEW

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

NOTES

1. BARS AND PLATES ARE HOT ROLLED STEEL.
2. BARS, PLATES, PIPE AND BOLTS ARE GALVANIZED.
3. SEE SPECIAL PROVISIONS FOR COORDINATION WITH GRATING AND FLARED END SECTION.

GRATING FOR FLARED END SECTION

PRECAST CONCRETE FLARED END SECTION

(IDOT STANDARD 542301-MODIFIED)

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TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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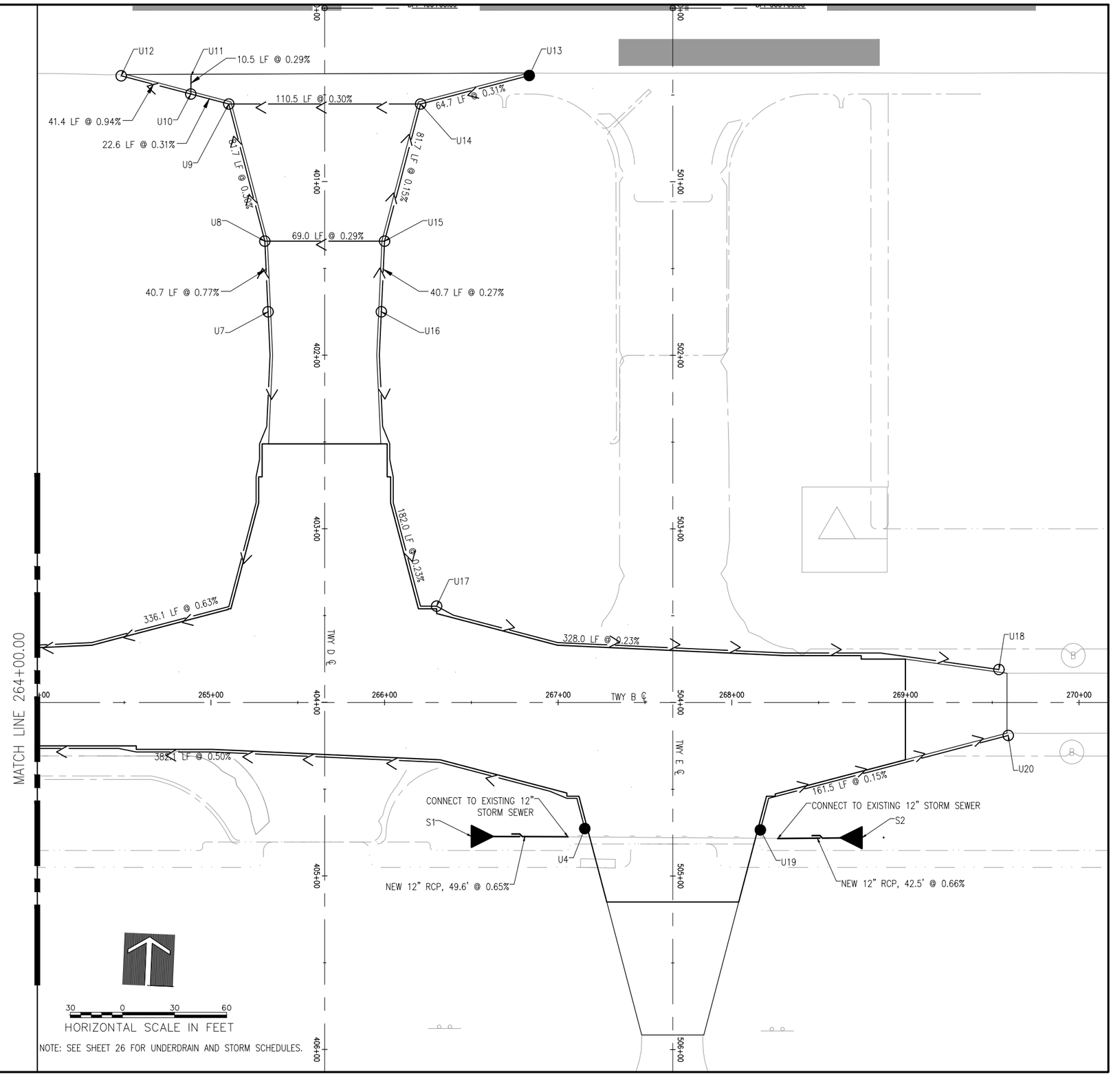
NO.	DATE	DESCRIPTION	DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: DRAINAGE PLAN.DWG
DESIGN BY: KMS 3/16/2017
DRAWN BY: KMS 3/16/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

DRAINAGE PLAN AND DETAILS



NOTE: SEE SHEET 26 FOR UNDERDRAIN AND STORM SCHEDULES.

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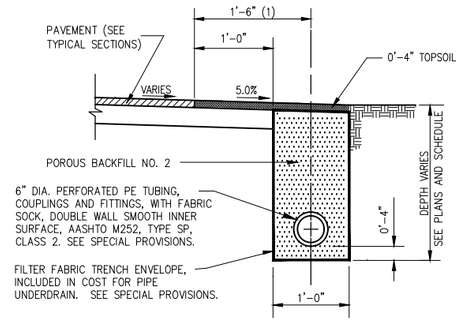
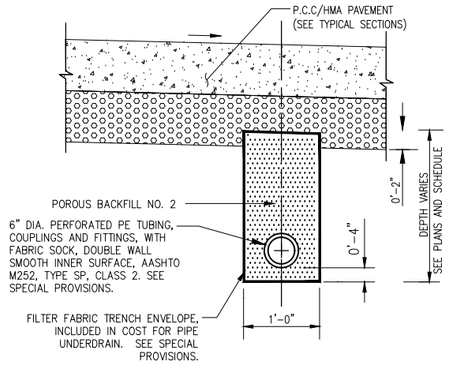
CAD FILE: DRAINAGE PLAN 2.DWG
DESIGN BY: KMS 3/16/2017
DRAWN BY: KMS 3/16/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

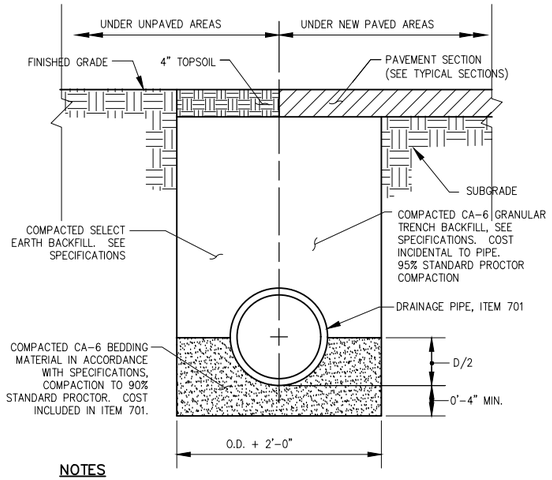
DRAINAGE PLAN



UNDERDRAIN ALONG PAVEMENT EDGE



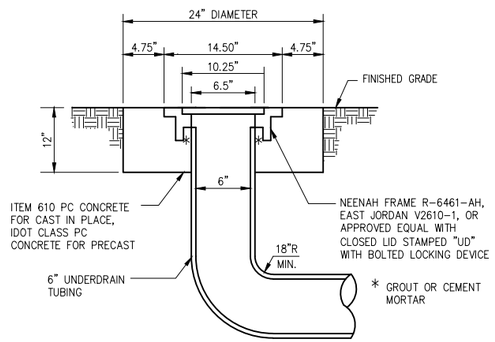
UNDERDRAIN UNDER PAVEMENT



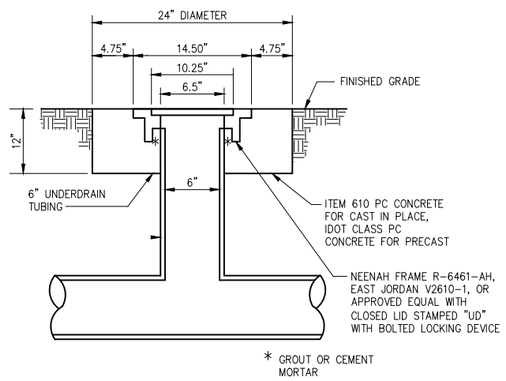
NOTES

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.

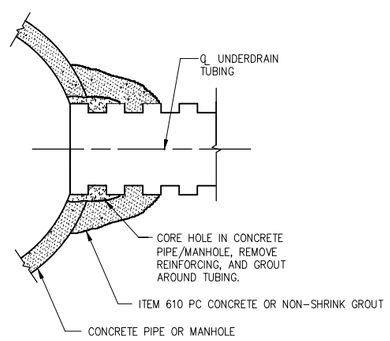
PIPE TRENCH



UNDERDRAIN CLEANOUT



UNDERDRAIN INSPECTION HOLE



STORM SEWER CONCRETE COLLAR AND GROUT CONNECTION

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CAD FILE: 23-DRAINAGEDET.DWG
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DRAWN BY: KMS 3/15/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

DRAINAGE DETAILS

UNDERDRAIN SCHEDULE

STRUCTURE	STATION	OFFSET		TYPE	RIM EL.	INVERT EL.	PAY LENGTH	SLOPE%
U1	258+98.03	76.82	RT	Connection to Existing MH	664.38	660.00		
							93.0	0.30
U2	259+70.00	34.28	RT	Inspection Hole	665.69	660.28		
							380.3	0.50
U3	263+50.00	26.50	RT	Inspection Hole	666.47	662.18		
							382.1	0.50
U4	504+72.65	50.66	RT	Cleanout	666.56	664.08		
U5	259+70.00	26.50	LT	Inspection Hole	665.95	660.67		
							60.8	0.64
U2	259+70.00	34.28	RT	Inspection Hole	665.69	660.28		
U7	401+75.00	32.63	RT	Inspection Hole	667.16	665.16		
							336.1	0.63
U6	263+50.00	30.77	LT	Inspection Hole	666.41	663.05		
							380.3	0.63
U5	259+70.00	26.50	LT	Inspection Hole	665.95	660.67		
U7	401+75.00	32.63	RT	Inspection Hole	667.16	665.16		
							40.7	0.77
U8	401+34.32	34.49	RT	Inspection Hole	667.05	664.85		
							81.7	0.30
U9	400+55.32	55.23	RT	Inspection Hole	667.09	664.60		
							22.6	0.31
U10	400+49.57	77.13	RT	Inspection Hole	667.13	664.53		
							10.5	0.29
U11	400+39.09	76.98	RT	Connect to Existing UD	667.49	664.50		
U12	400+39.05	117.22	RT	Connect to Existing UD and Inspection Hole	667.42	664.92		
							41.4	0.94
U10	400+49.57	77.13	RT	Inspection Hole	667.13	664.53		
U13	400+38.89	117.81	LT	Cleanout	667.38	665.13		
							64.7	0.31
U14	400+55.32	55.23	LT	Inspection Hole	667.10	664.93		
							110.5	0.30
U9	400+55.32	55.23	RT	Inspection Hole	667.09	664.60		
U15	401+34.32	34.49	LT	Inspection Hole	667.05	665.05		
							81.7	0.15
U14	400+55.32	55.23	LT	Inspection Hole	667.10	664.93		
U15	401+34.32	34.49	LT	Inspection Hole	667.05	665.05		
							69.0	0.29
U8	401+34.32	34.49	RT	Inspection Hole	667.05	664.85		
U16	401+75.00	32.63	LT	Inspection Hole	667.16	665.16		
							40.7	0.27
U15	401+34.32	34.49	LT	Inspection Hole	667.05	665.05		
U16	401+75.00	32.63	LT	Inspection Hole	667.16	665.16		
							182.0	0.23
U17	266+30.00	55.50	LT	Inspection Hole	666.80	664.75		
							328.0	0.23
U18	269+53.88	19.00	LT	Connection to Existing Underdrain W/ New Inspection Hole	666.24	664.01		
U19	504+73.42	50.45	LT	Cleanout	666.49	664.36		
							161.5	0.15
U20	269+59.24	19.00	RT	Connect to Existing Underdrain W/ New Inspection Hole	666.22	664.11		

EXISTING UNDERDRAIN SCHEDULE

STRUCTURE	STATION	OFFSET		TYPE	RIM EL.	INVERT EL.
E1	259+41.61	34.96	LT	Cleanout	665.74	Meet Existing
E2	259+25.53	35.50	RT	Cleanout	665.79	Meet Existing

STORM SEWER SCHEDULE

STRUCTURE	STATION	OFFSET		TYPE	INVERT EL.	PIPE PAY LENGTH	SIZE	TYPE	SLOPE %
S1	266+50.06	77.15	RT	FES	665.50				
						49.6	12.0	RCP	0.65%
EXISTING	267+05.63	77.36	RT	EXISTING 12" SS	665.18				
EXISTING	268+26.50	78.38	RT	EXISTING 12" SS	664.40				
						42.5	12.0	RCP	0.66%
S2	268+75.03	77.92	RT	FES	664.12				

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
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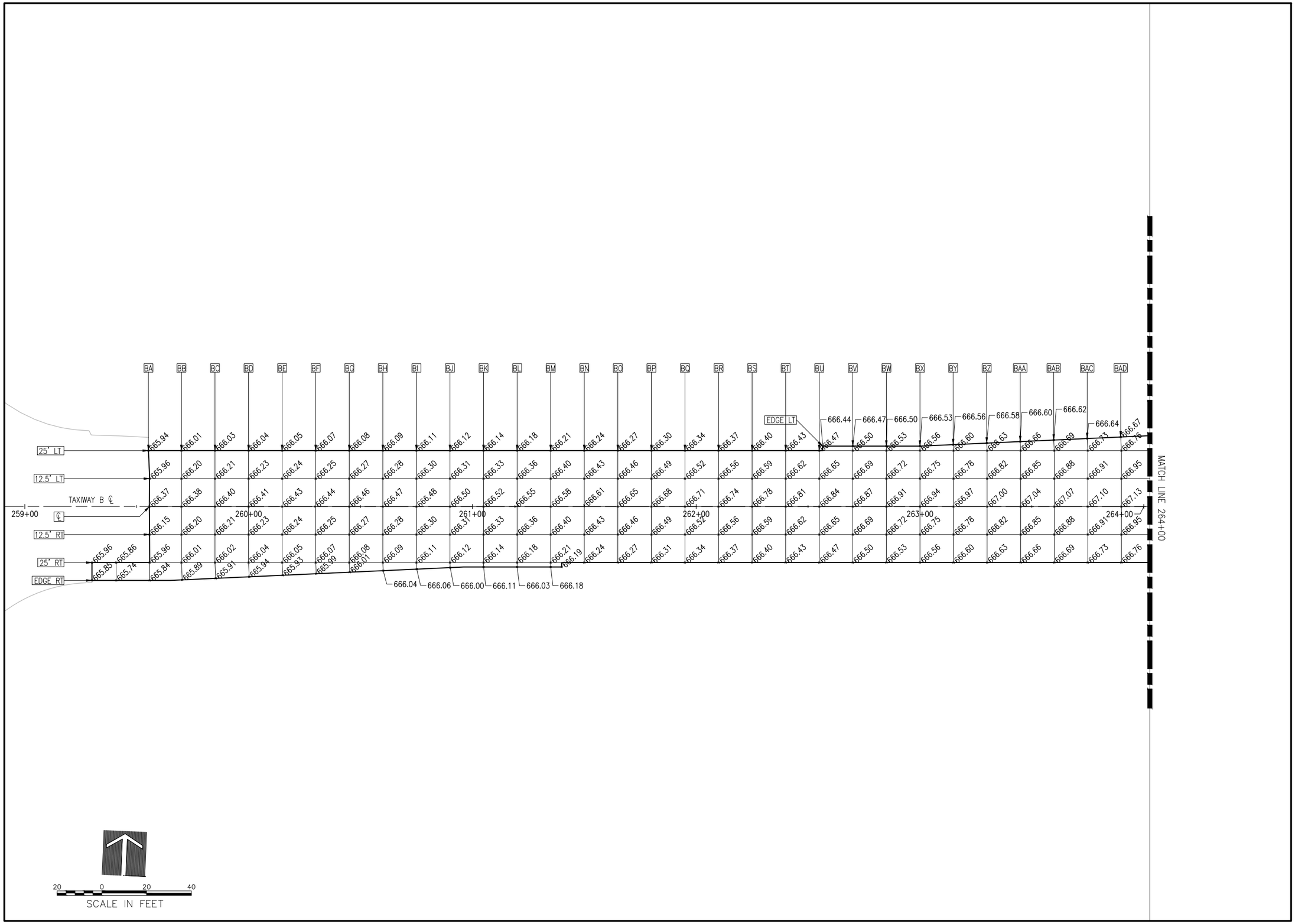
ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 24-DRAINAGE SCHEDULE.I
DESIGN BY: KMS 4/10/2017
DRAWN BY: KMS 4/10/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

DRAINAGE
SCHEDULES



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I:\16JOBS\16A0087\16A0087D\CAD\AIRPORT\SHEET\25 STAKING PLAN 1.DWG

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LE051

NO.	DATE	DESCRIPTION		
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ISSUE: 6/8/18

PROJECT NO: 16A0087
CAD FILE: 25 STAKING PLAN 1.DWG
DESIGN BY: KMS 3/6/2017
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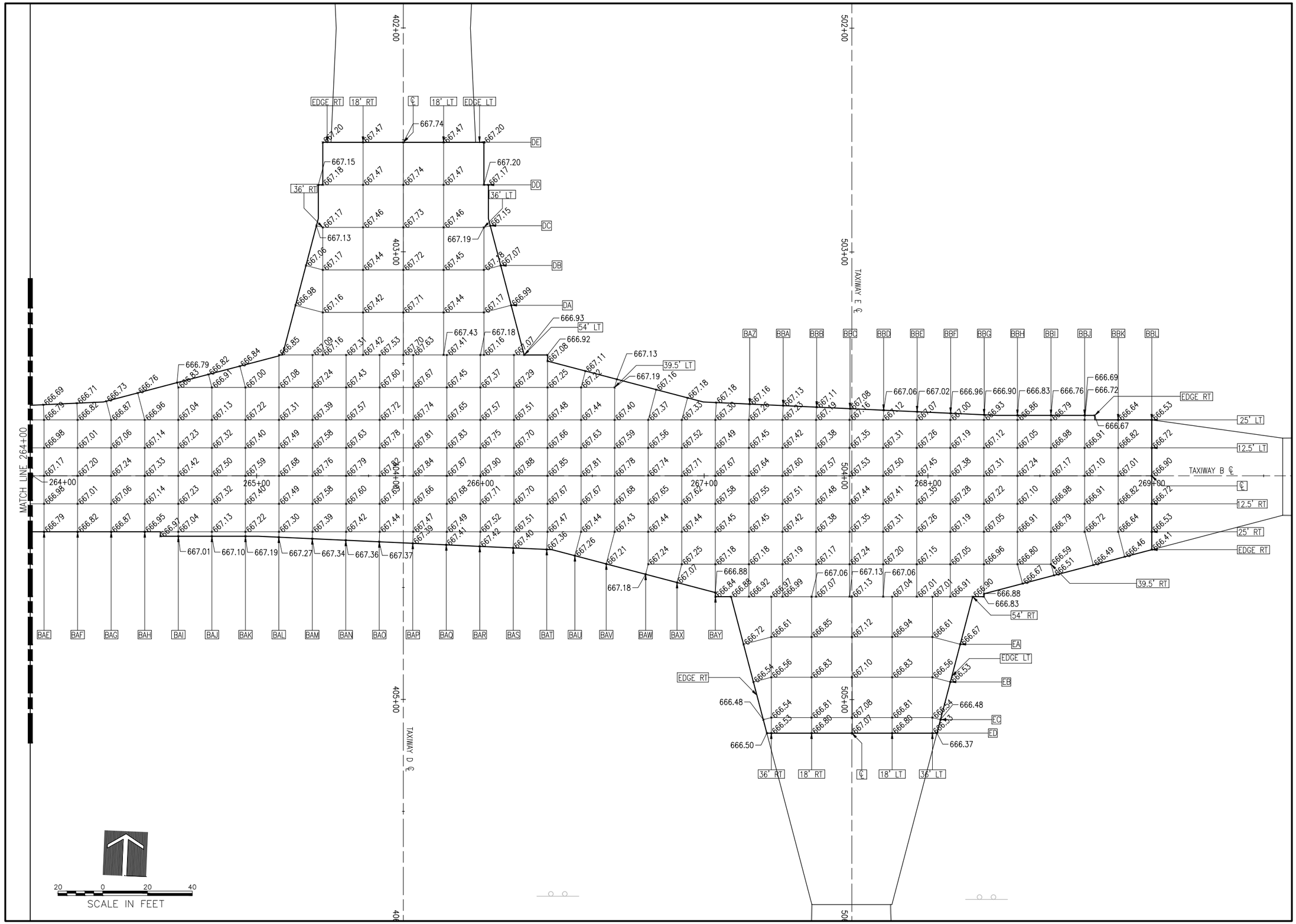
REVIEWED BY: LDH 6/7/18

SHEET TITLE

PCC SLAB
ELEVATION PLAN - 1



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		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: 26 STAKING PLAN 2.DWG
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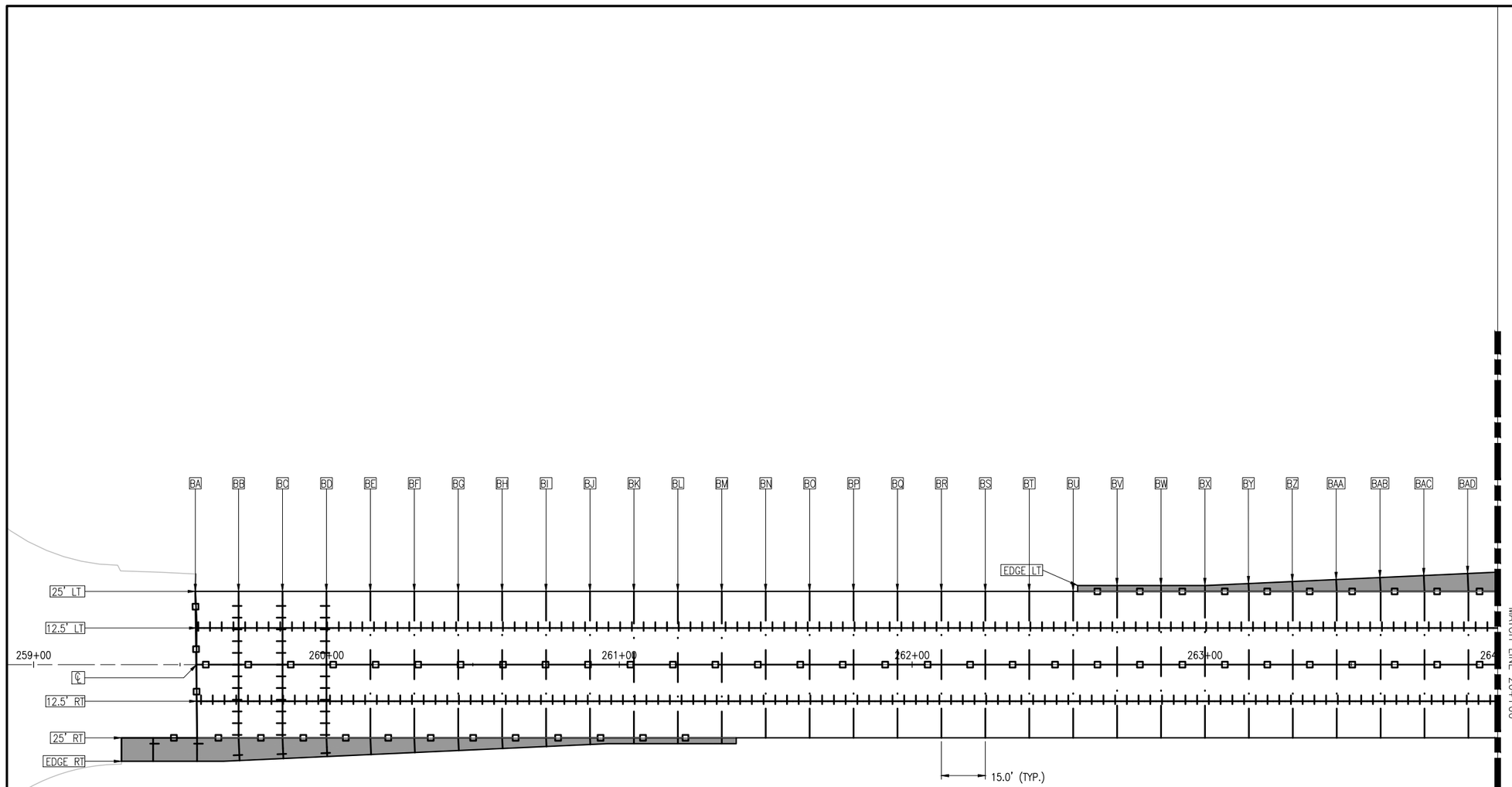
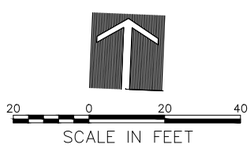
DRAWN BY: KMS 3/6/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

PCC SLAB
ELEVATION PLAN - 2





LEGEND:

- TYPE A–1 – REINFORCED ISOLATION JOINT
- TYPE C – DOWELED CONTRACTION JOINT
- TYPE D – DUMMY CONTRACTION JOINT
- TYPE E – DOWELED CONSTRUCTION JOINT
- BITUMINOUS PRESSURE RELIEF JOINT
- REINFORCED CONCRETE SLABS

NOTES:

1. ALL WELDED WIRE FABRIC TO BE 10" X 10"– W5 X W5, WITH 65,000 PSI YIELD STRENGTH. WIRE SIZE AND SPACING MAY BE ALTERED AS LONG AS A MINIMUM W5 WIRE SIZE IS USED AND THE SECTIONAL AREA IS A MINIMUM OF 0.06 SQUARE INCHES PER FOOT AND 12" MAX WIRE SPACING.
2. EDGE SPACING FOR THE WELDED WIRE FABRIC TO BE THREE (3) INCHES. A MINIMUM OF THREE (3) WIRES ARE TO BE PROVIDED IN ANY ONE DIRECTION IN EACH SLAB.
3. WELDED WIRE FABRIC, JOINT REINFORCING, JOINT EXPANSION MATERIAL AND JOINT SAWING AND SEALING ARE INCIDENTAL TO P.C.C. PAVEMENT.
4. STATIONS TO BE IMPRINTED ON TAXIWAY B AT 500' INTERVALS. LETTERING IS TO BE 4" TALL AND IMPRINTED 1/2" INTO P.C.C.
5. DUCT CROSSINGS TO BE IMPRINTED ON TAXIWAY WITH A LETTER "D." LETTERING IS TO BE 4" TALL AND IMPRINTED 1/2" INTO P.C.C.
6. SEE SHEET 31 FOR JOINTING DETAILS.
7. SEE SHEETS 27–28 STAKING PLAN FOR CONCRETE SLAB ELEVATIONS.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
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SHEET TITLE

PCC JOINTING PLAN - 1

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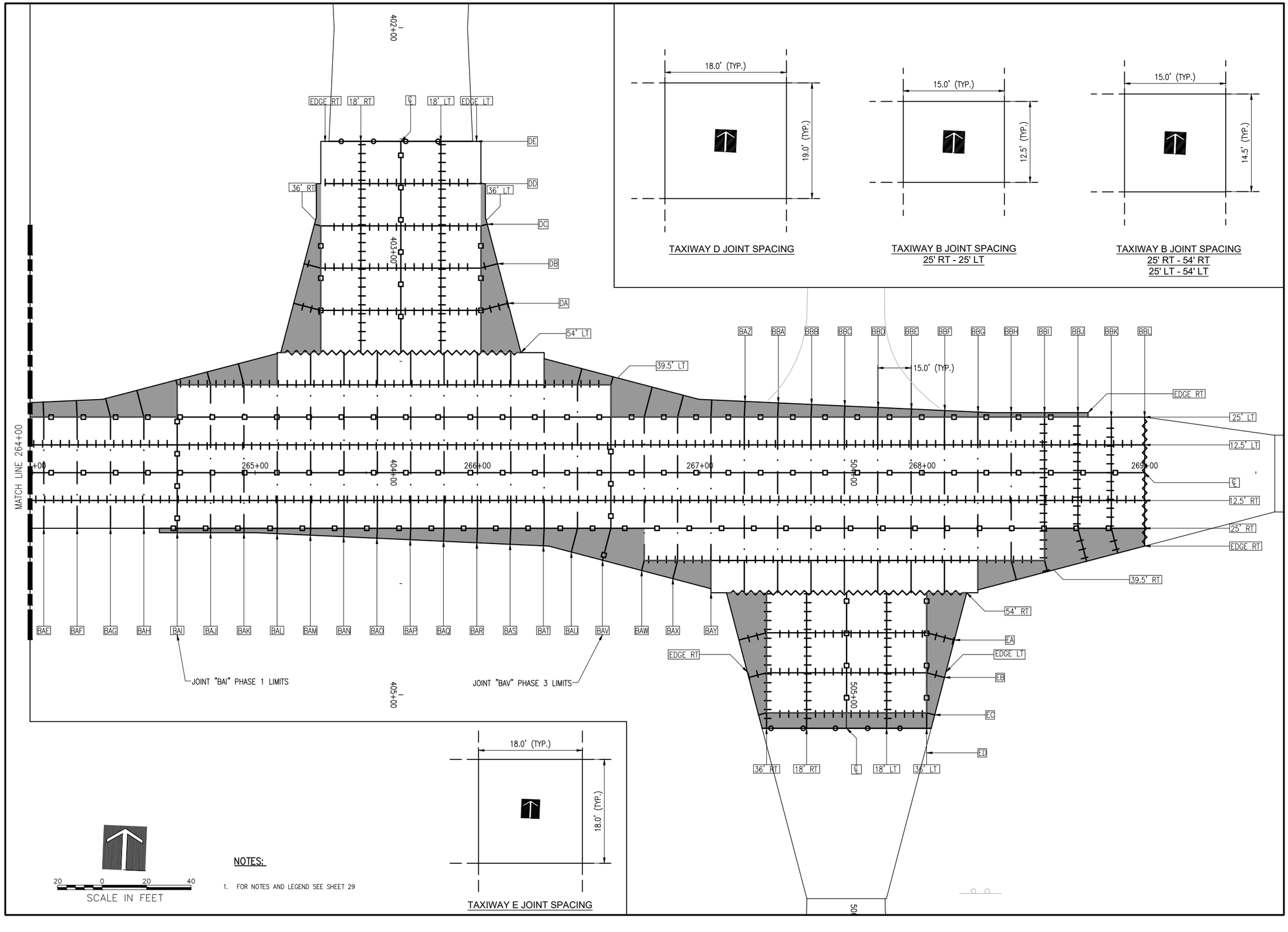

NOTES:

1. FOR NOTES AND LEGEND SEE SHEET 29

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SHEET TITLE

PCC JOINTING PLAN - 2

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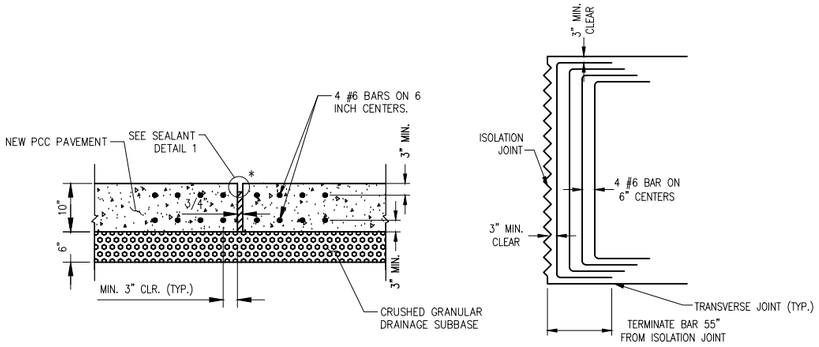
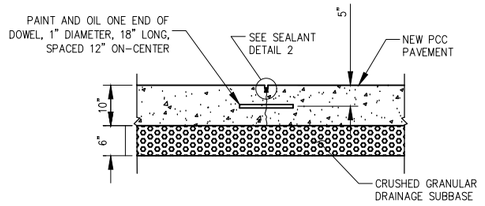
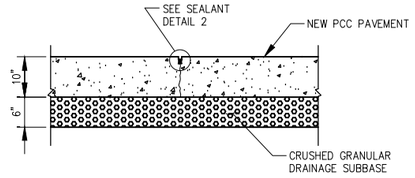


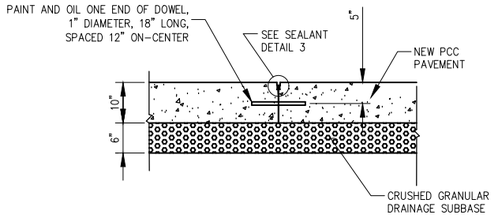
TYPE A-1 - REINFORCED ISOLATION JOINT



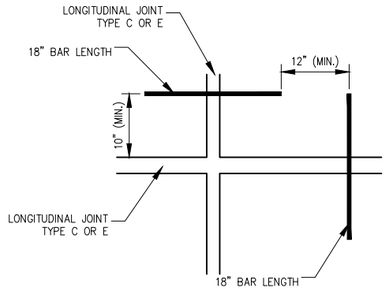
TYPE C - DOWELED CONTRACTION JOINT



TYPE D - DUMMY CONTRACTION JOINT

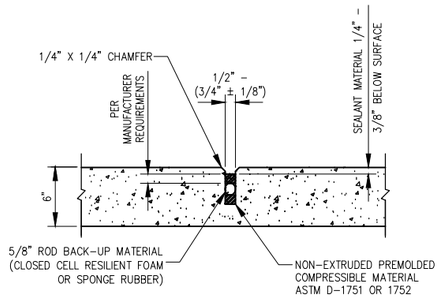


TYPE E - DOWELED CONSTRUCTION JOINT

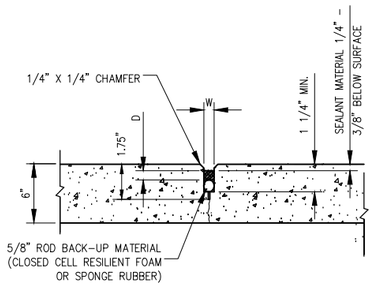


POSITION OF DOWELS AT EDGE OF JOINT TYPE C OR E

DOWEL PLAN VIEW

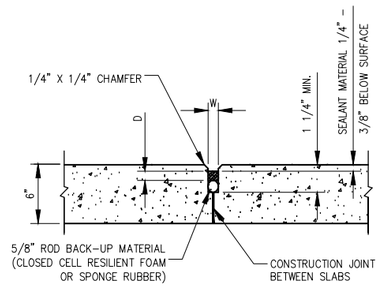


DETAIL 1 - SEALANT



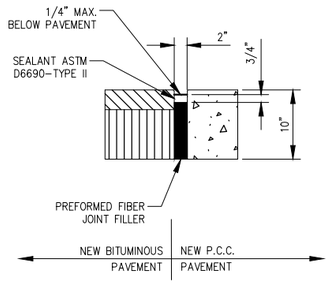
NOTE:
1. INITIAL SAWCUT 1.66" - 2" WHEN USING AN EARLY ENTRY SAW.
2. FIELD POURED SEALANT RESERVOIR SIZED TO PROVIDE PROPER SHAPE FACTOR BASED UPON MANUFACTURER REQUIREMENTS.
3. DIMENSIONS D AND W ARE PER MANUFACTURER REQUIREMENTS.

DETAIL 2 - SEALANT



NOTE:
1. DIMENSIONS D AND W ARE PER MANUFACTURER REQUIREMENTS.

DETAIL 3 - SEALANT



BITUMINOUS PRESSURE RELIEF JOINT

NOTE:
ALL JOINT SEALING TO BE INCIDENTAL TO ITEM AR501510 10" PCC PAVEMENT

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TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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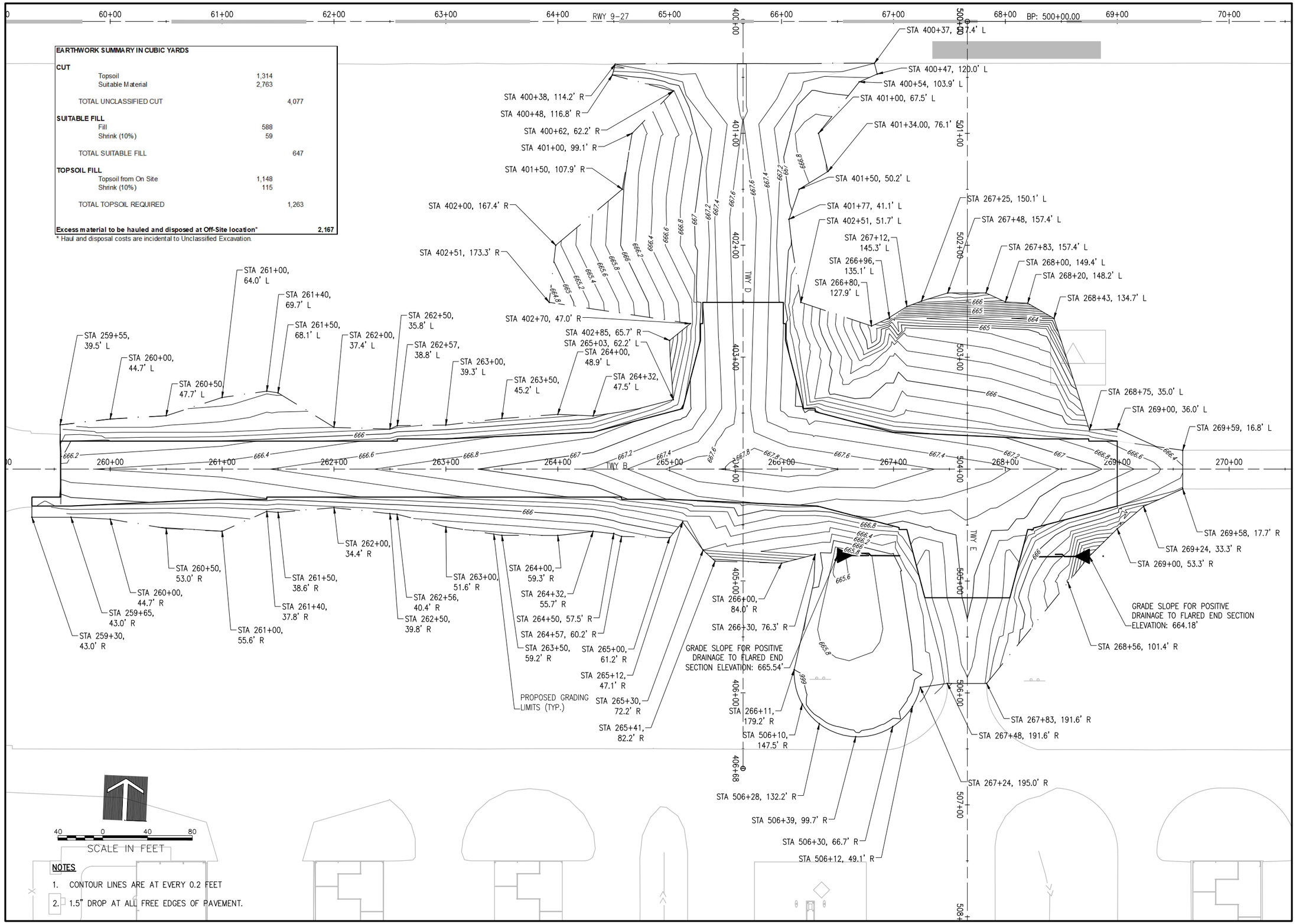
REVIEWED BY: LDH 6/7/18

SHEET TITLE

JOINTING DETAILS



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SHEET TITLE

GRADING PLAN

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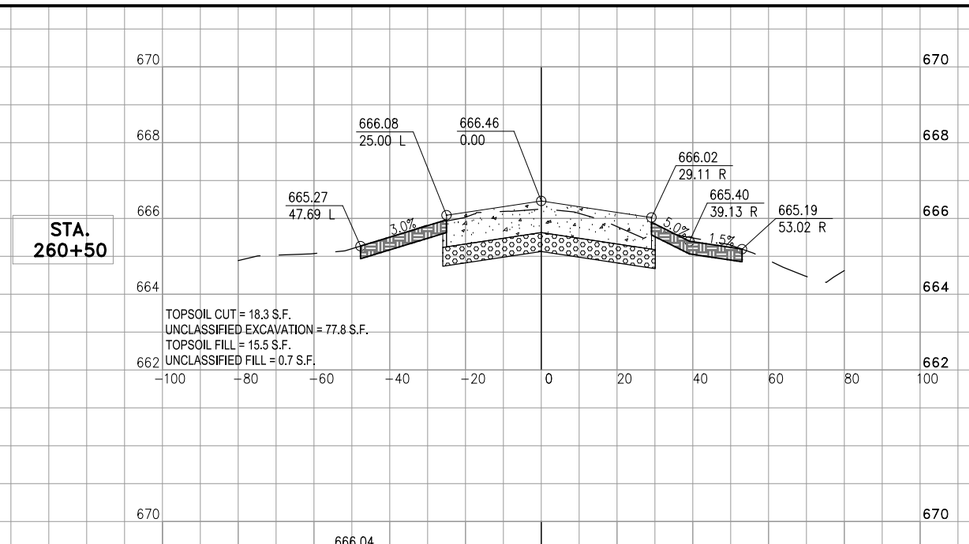

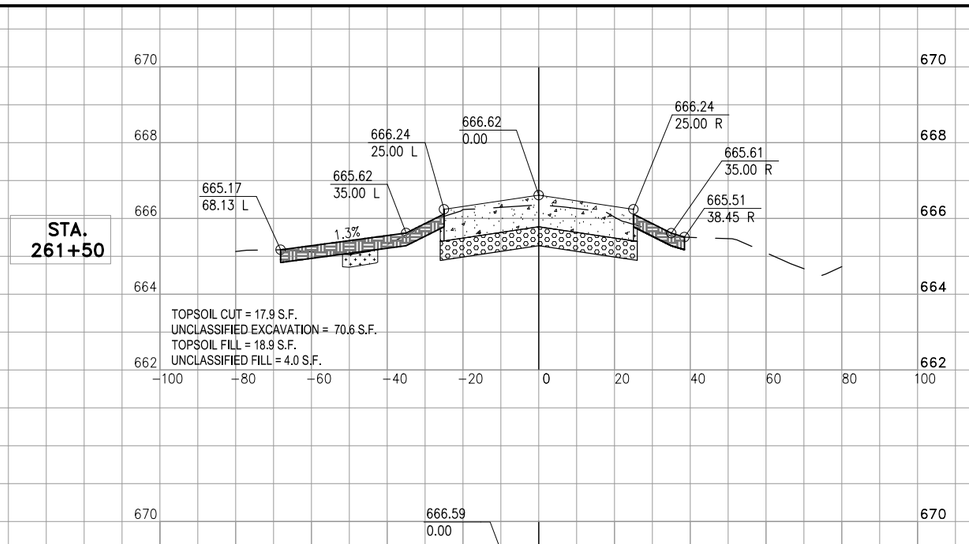

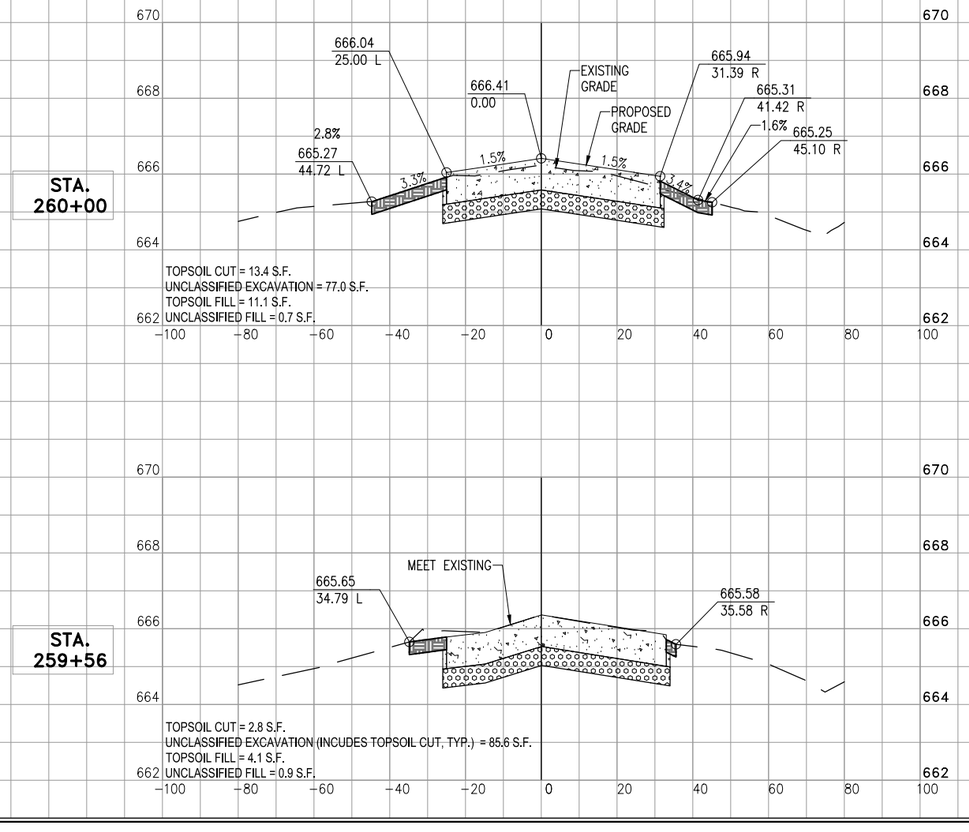

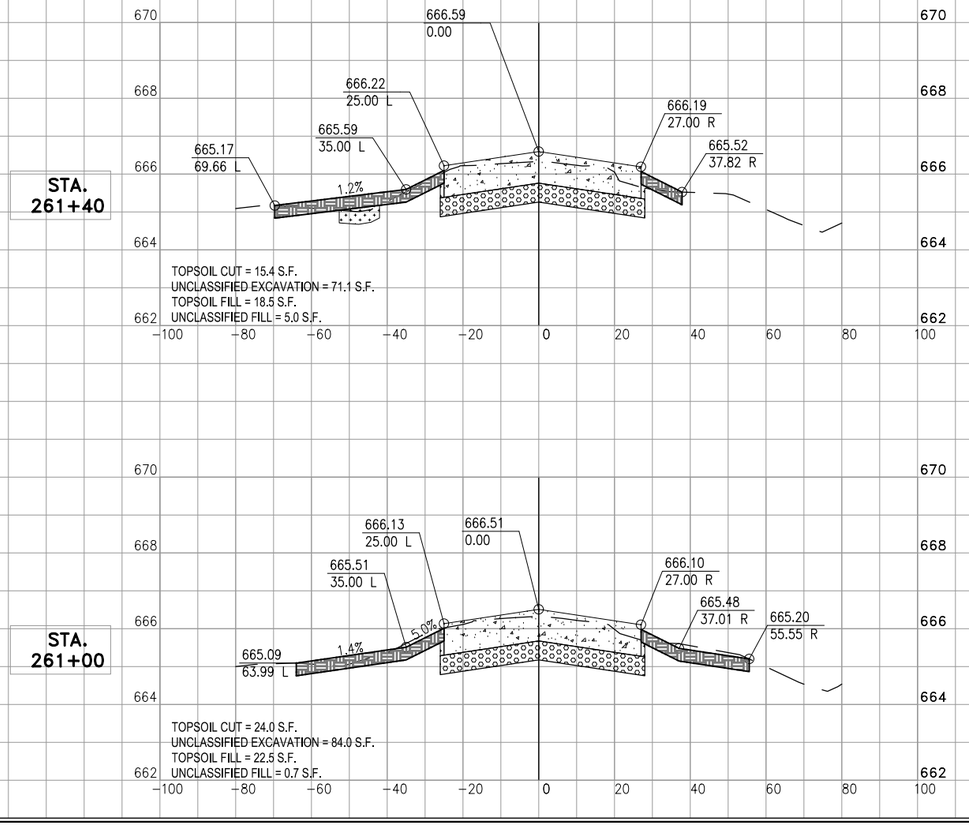

LEGEND

- AR501510 – 10 INCH PCC PAVEMENT
- AR152410 – UNCLASSIFIED FILL
- AR401613 BIT. SURFACE COURSE – METHOD I, SUPERPAVE
- AR209612 – CRUSHED AGG. BASE COURSE – 12"
- AR154606 GRANULAR DRAINAGE SUBBASE – 6"
- AR905510 – TOPSOILING FROM ON SITE
- AR403613 BIT. BASE COURSE – METHOD I, SUPERPAVE

NOTE: 1.5" DROP OFF TO SHOULDER OFF ALL PAVEMENT EDGES

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TAXIWAY B, PHASE 2

IDA No: LOT-4567
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ISSUE: 6/8/18
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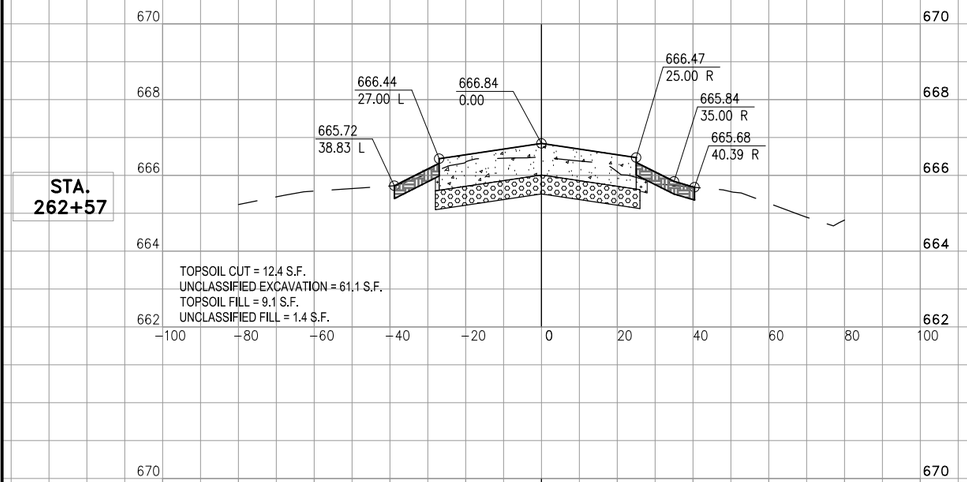
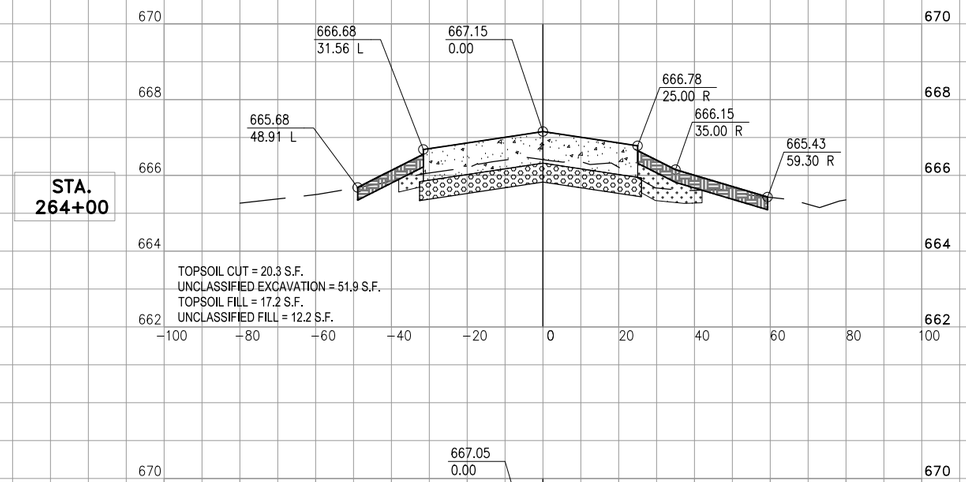
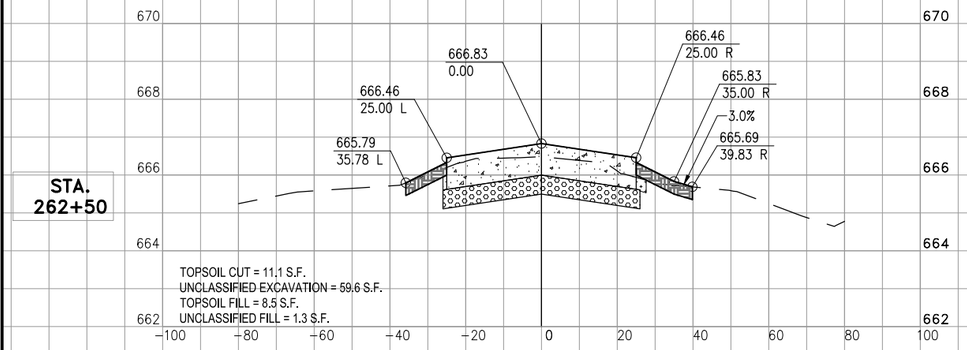
DRAWN BY: KMS 06/08/2018
REVIEWED BY: LDH 6/7/18

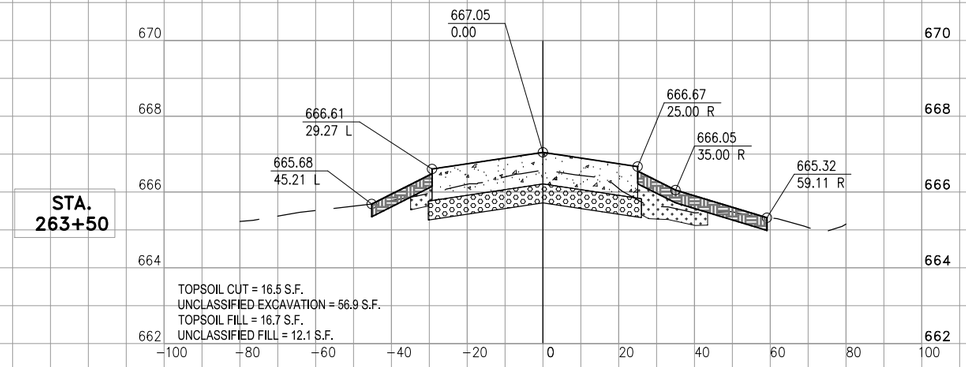
SHEET TITLE

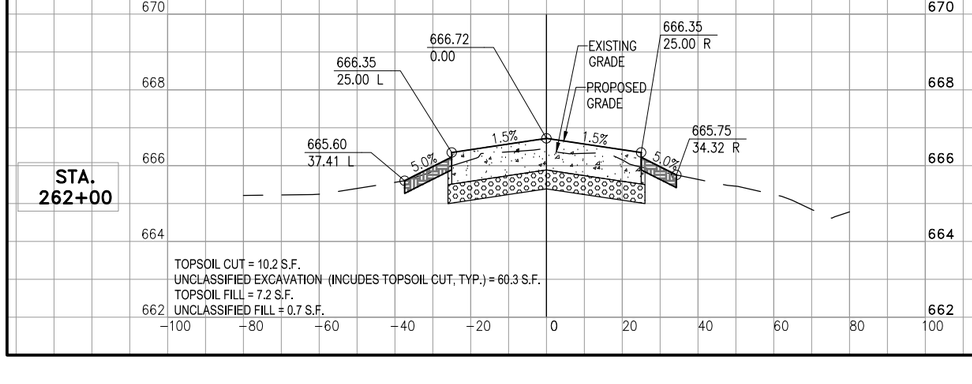
CROSS SECTIONS - TAXIWAY B STA. 259+56 - STA. 261+50

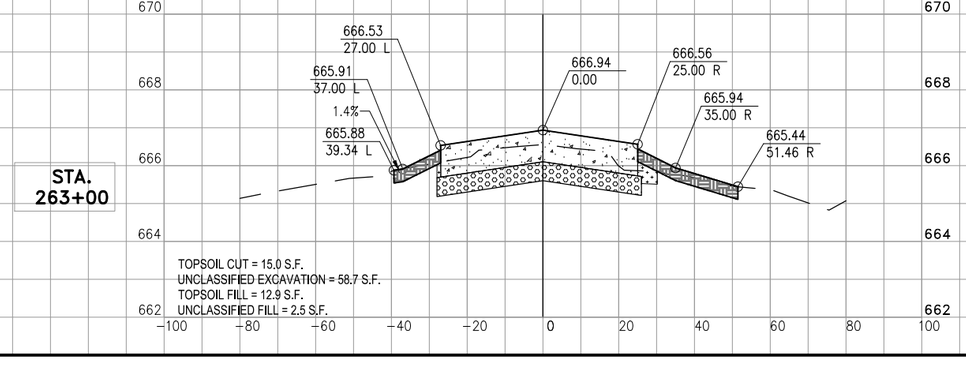












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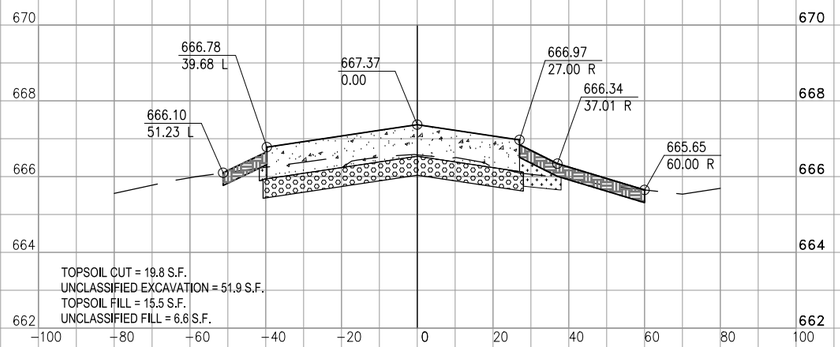
REVIEWED BY: LDH 6/7/18

SHEET TITLE

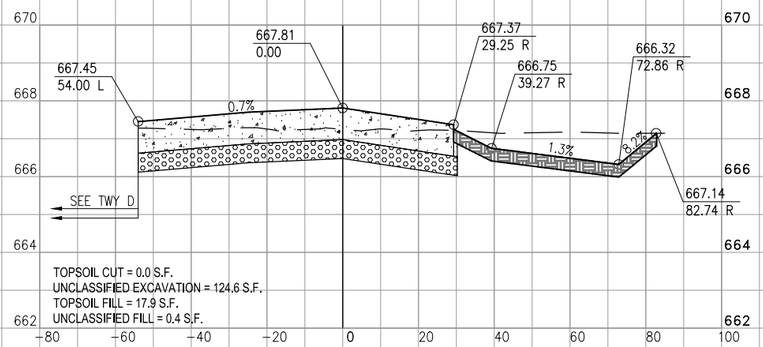
CROSS SECTIONS - TAXIWAY B STA. 262+00 - STA. 264+00

STA. 264+57



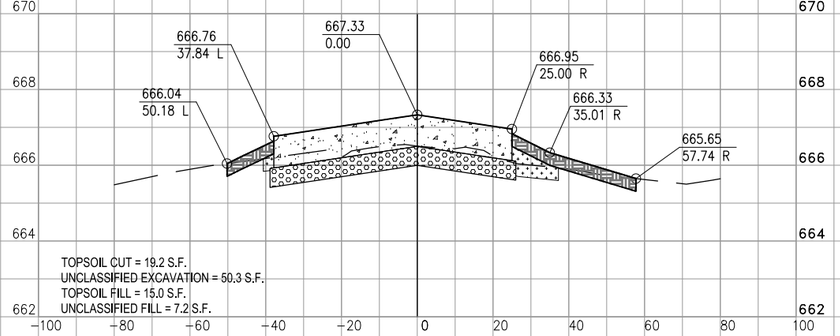
TOPSOIL CUT = 19.8 S.F.
UNCLASSIFIED EXCAVATION = 51.9 S.F.
TOPSOIL FILL = 15.5 S.F.
UNCLASSIFIED FILL = 6.6 S.F.

STA. 265+50



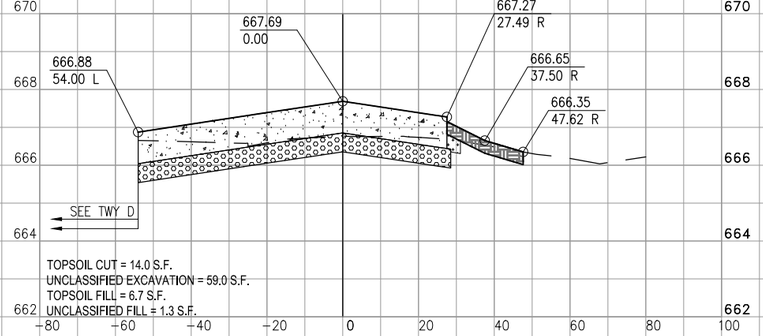
TOPSOIL CUT = 0.0 S.F.
UNCLASSIFIED EXCAVATION = 124.6 S.F.
TOPSOIL FILL = 17.9 S.F.
UNCLASSIFIED FILL = 0.4 S.F.

STA. 264+50



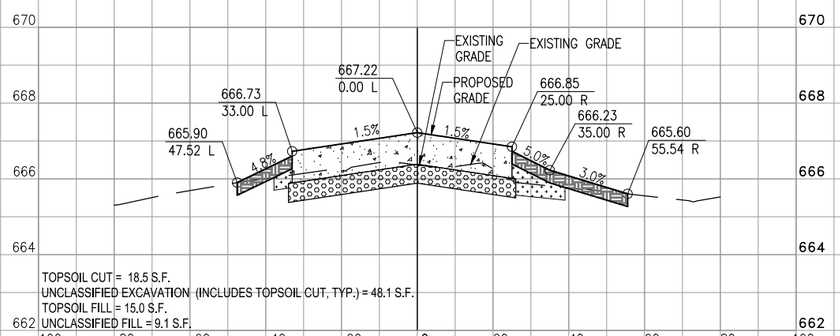
TOPSOIL CUT = 19.2 S.F.
UNCLASSIFIED EXCAVATION = 50.3 S.F.
TOPSOIL FILL = 15.0 S.F.
UNCLASSIFIED FILL = 7.2 S.F.

STA. 265+12



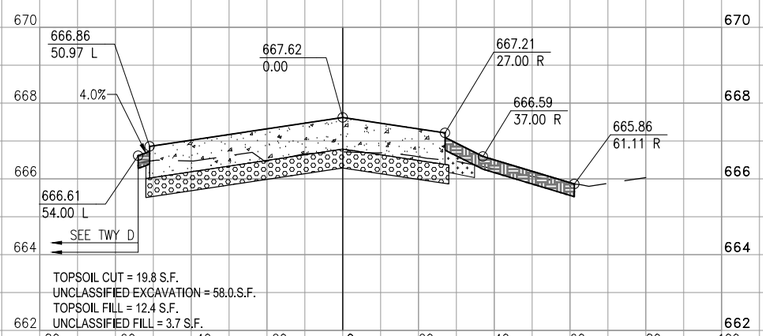
TOPSOIL CUT = 14.0 S.F.
UNCLASSIFIED EXCAVATION = 59.0 S.F.
TOPSOIL FILL = 6.7 S.F.
UNCLASSIFIED FILL = 1.3 S.F.

STA. 264+32



TOPSOIL CUT = 18.5 S.F.
UNCLASSIFIED EXCAVATION (INCLUDES TOPSOIL CUT, TYP.) = 48.1 S.F.
TOPSOIL FILL = 15.0 S.F.
UNCLASSIFIED FILL = 9.1 S.F.

STA. 265+00



TOPSOIL CUT = 19.8 S.F.
UNCLASSIFIED EXCAVATION = 58.0 S.F.
TOPSOIL FILL = 12.4 S.F.
UNCLASSIFIED FILL = 3.7 S.F.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

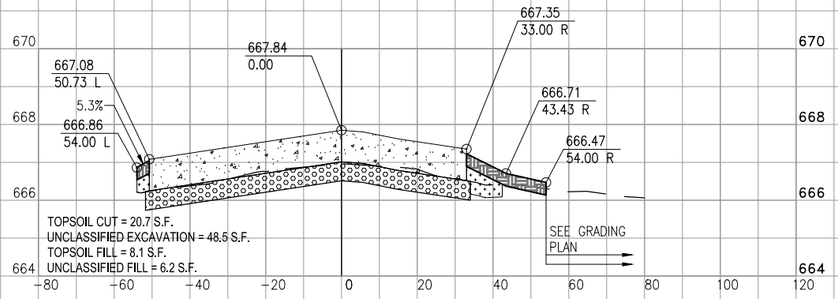
ISSUE: 6/8/18

PROJECT NO: 16A0087
CAD FILE: CROSS SECTIONS.DWG
DESIGN BY: KMS 06/08/2018
DRAWN BY: KMS 06/08/2018
REVIEWED BY: LDH 6/7/18

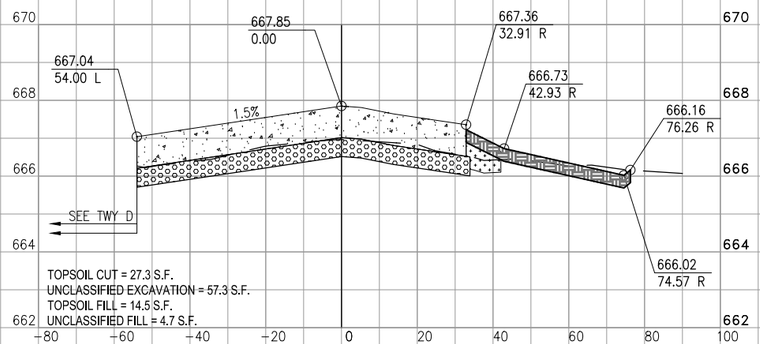
SHEET TITLE

CROSS SECTIONS - TAXIWAY B STA. 264+32 - STA. 265+50

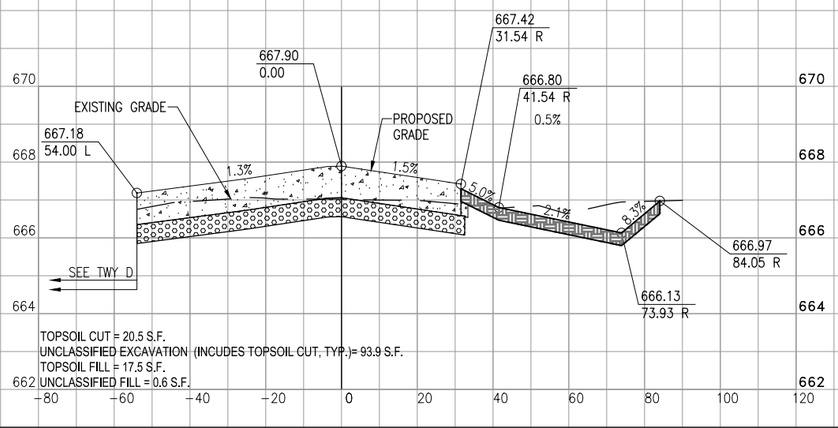
STA. 266+32



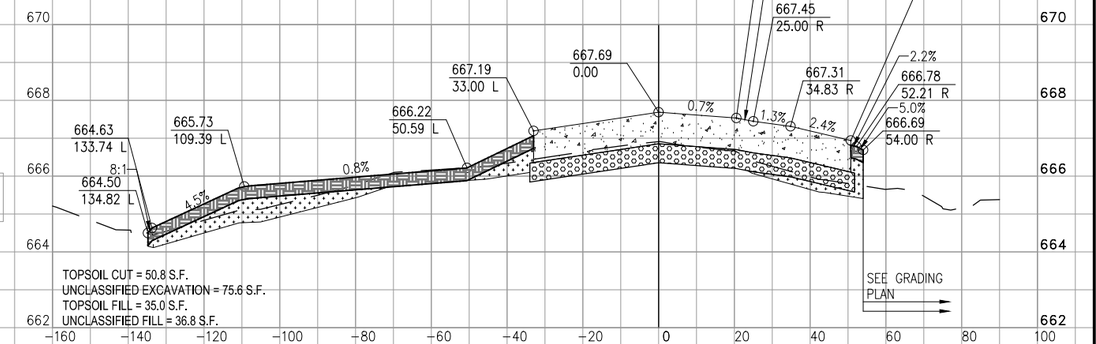
STA. 266+30



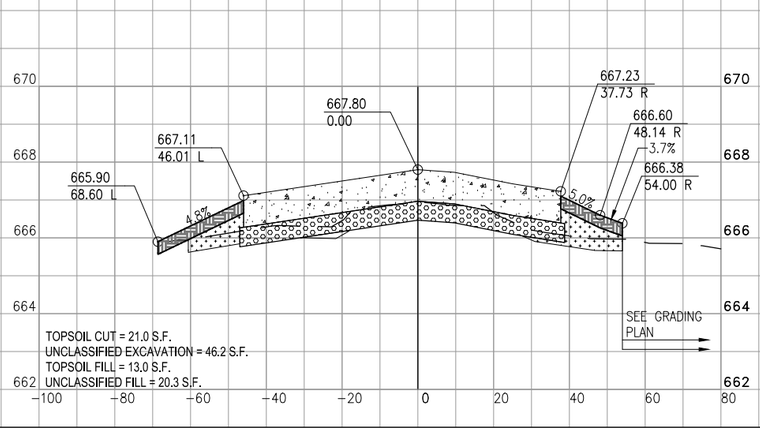
STA. 266+00



STA. 267+00



STA. 266+50



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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

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ISSUE: 6/8/18

PROJECT NO: 16A0087
CAD FILE: CROSS SECTIONS.DWG
DESIGN BY: KMS 06/08/2018
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REVIEWED BY: LDH 6/7/18

SHEET TITLE

CROSS SECTIONS - TAXIWAY B STA. 266+00 - STA. 267+00

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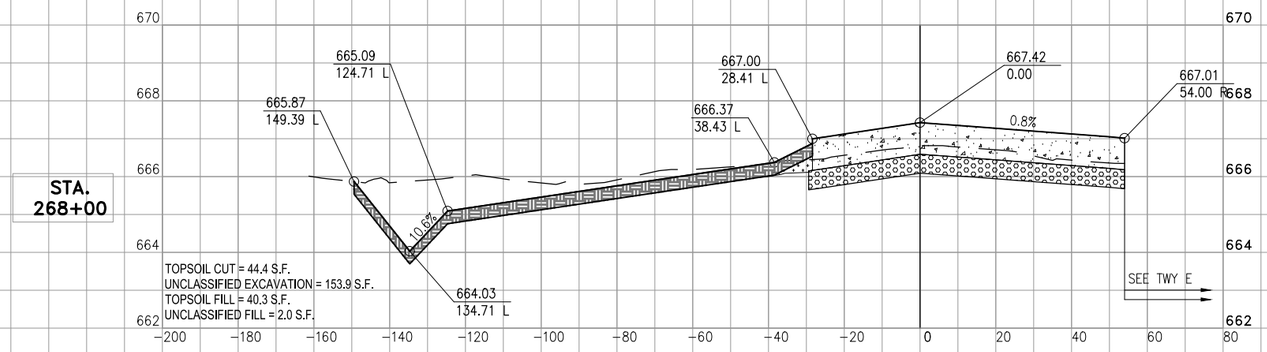

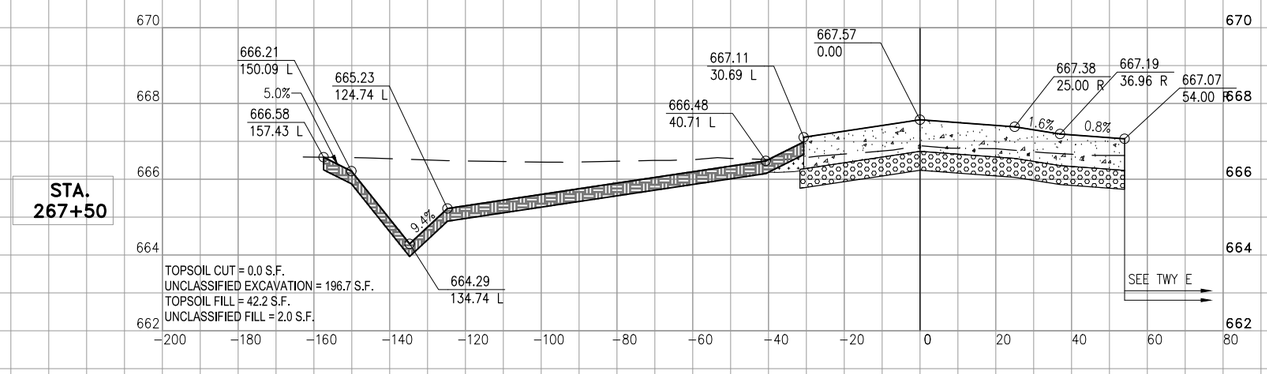

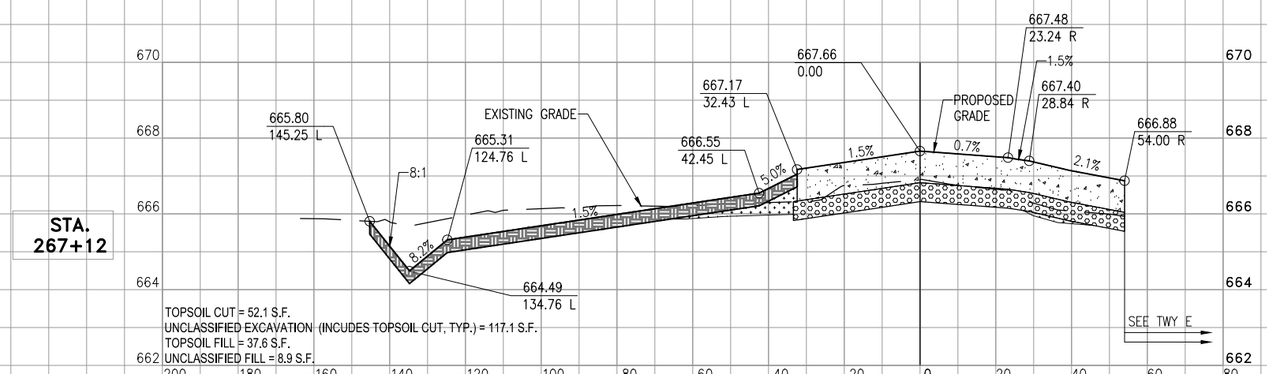

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SHEET TITLE

CROSS SECTIONS - TAXIWAY B STA. 267+12 - STA. 268+00

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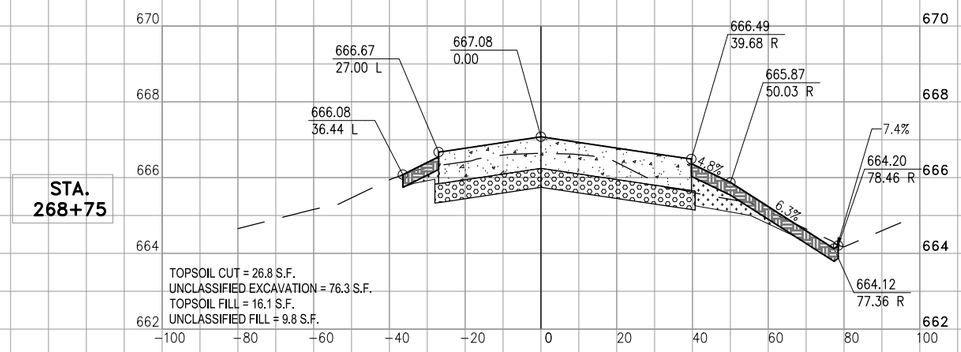

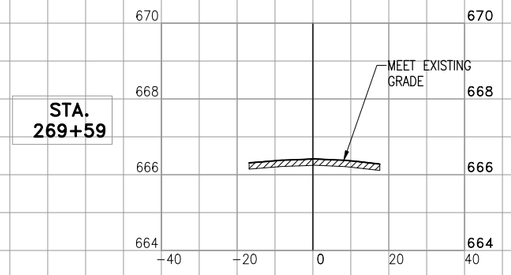

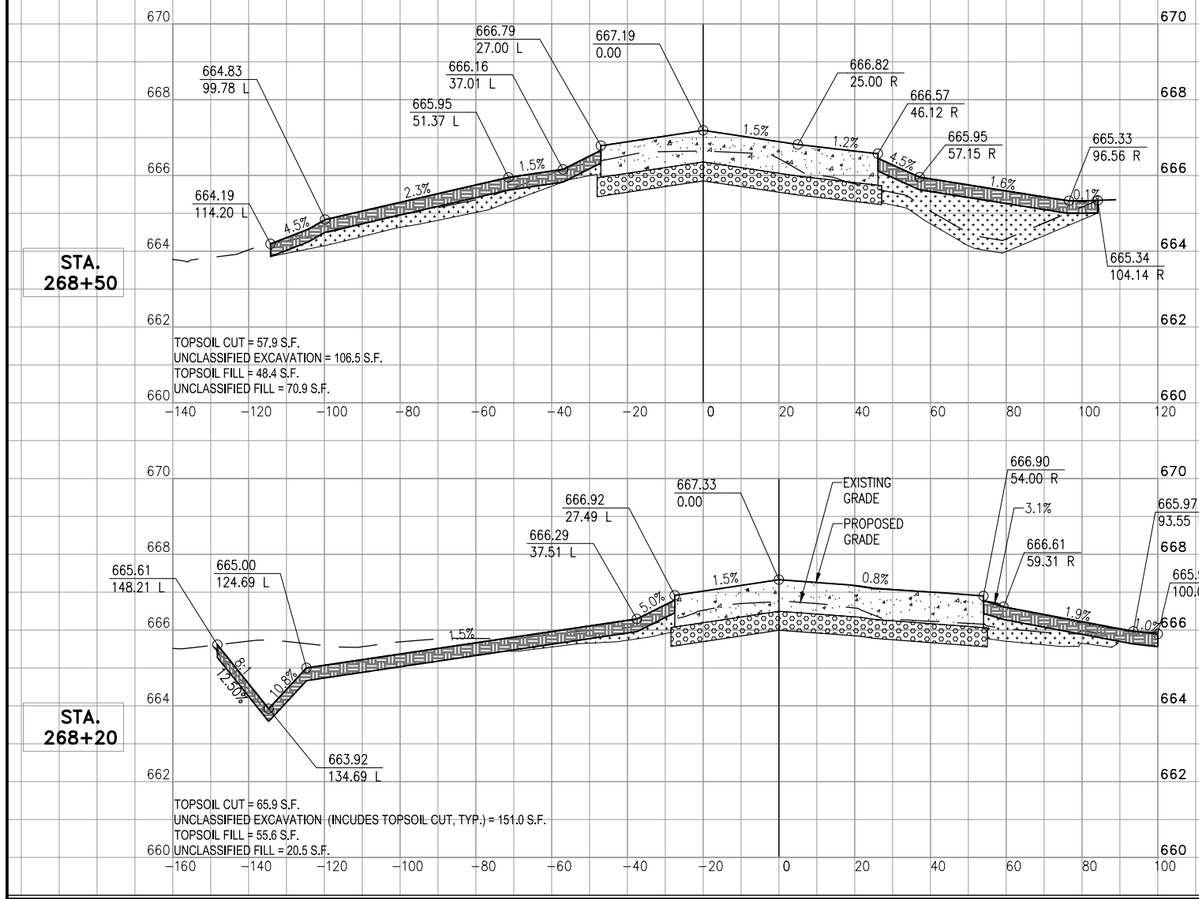

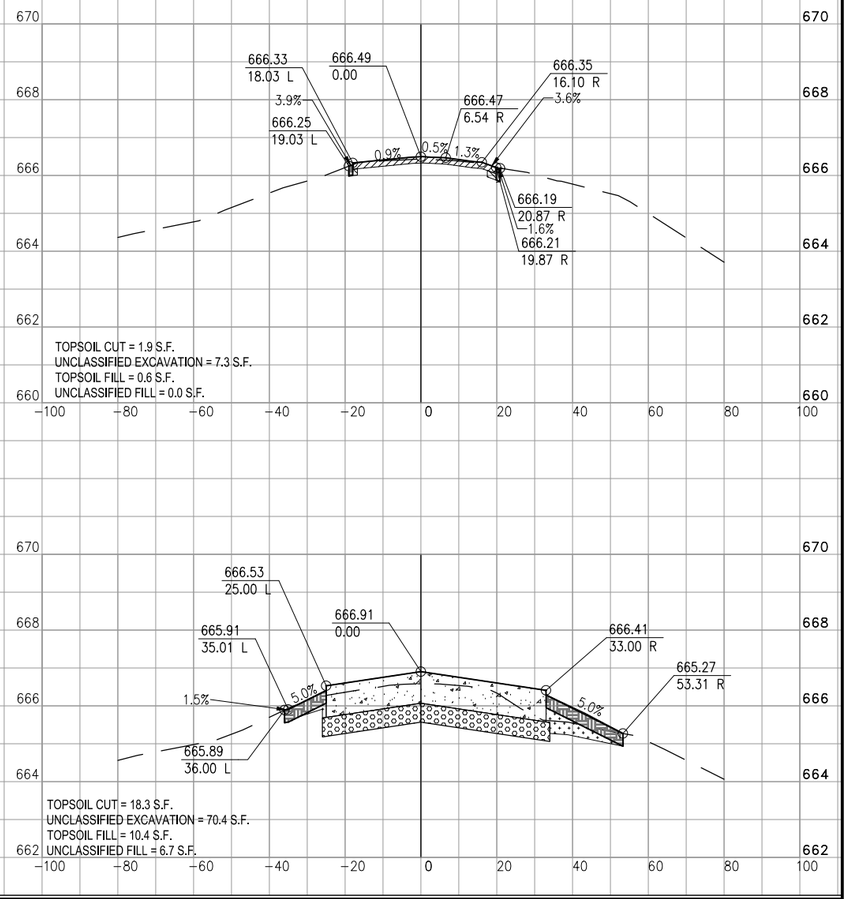

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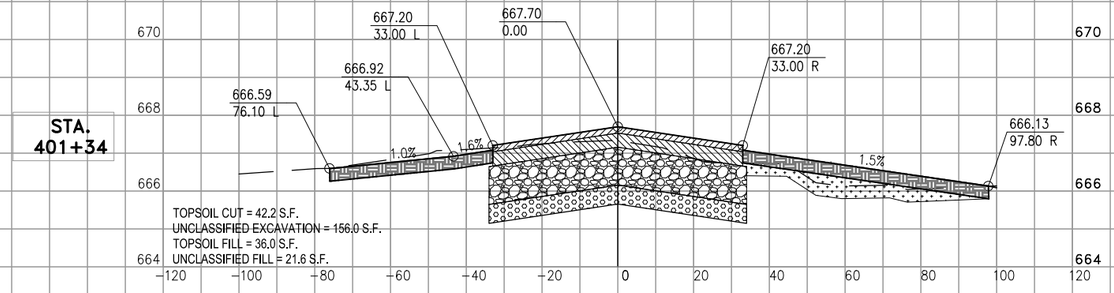
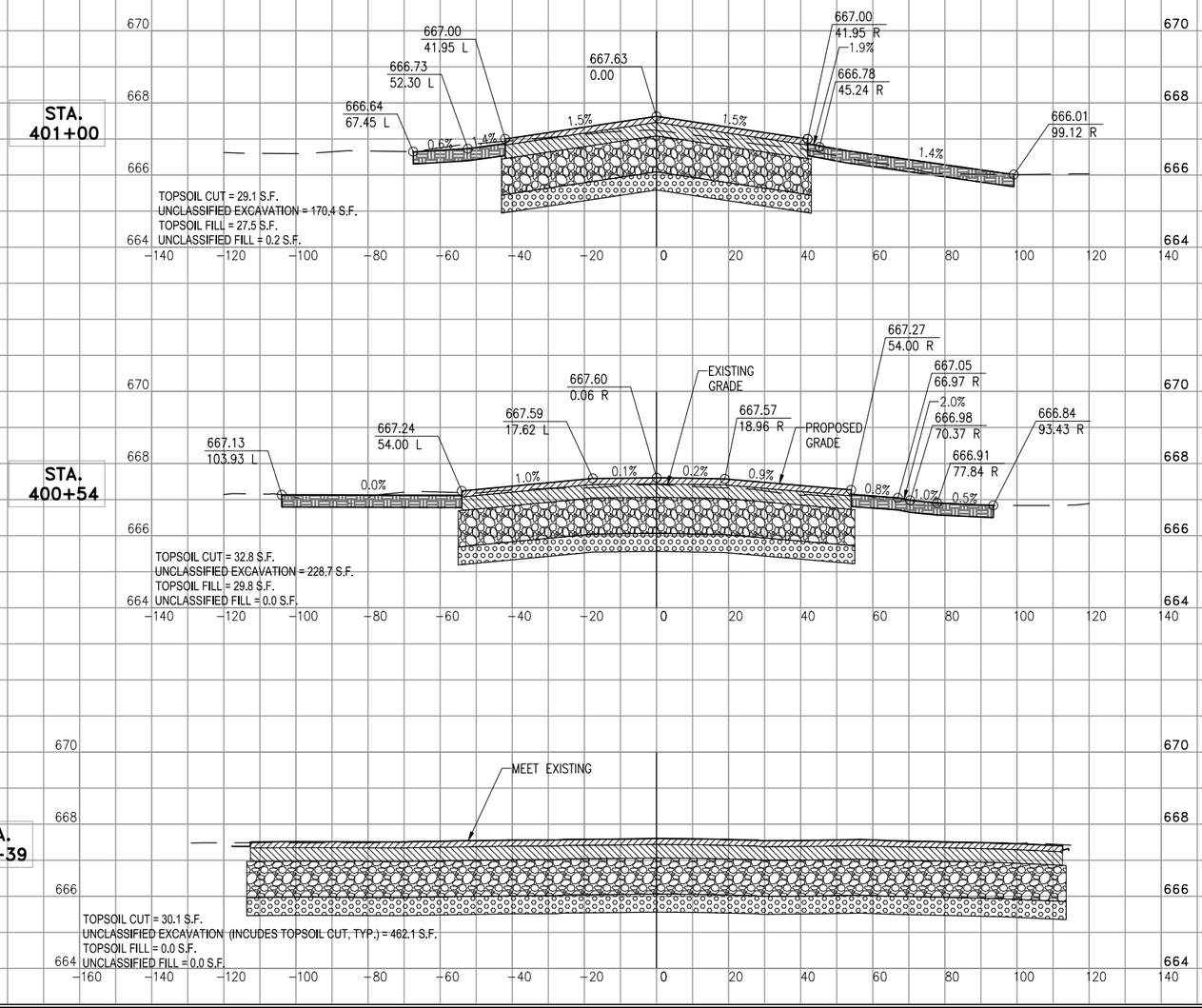
SHEET TITLE

CROSS SECTIONS - TAXIWAY B STA. 268+20 - STA. 269+59





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SHEET TITLE

CROSS SECTIONS - TAXIWAY D STA. 400+39 - STA. 401+34

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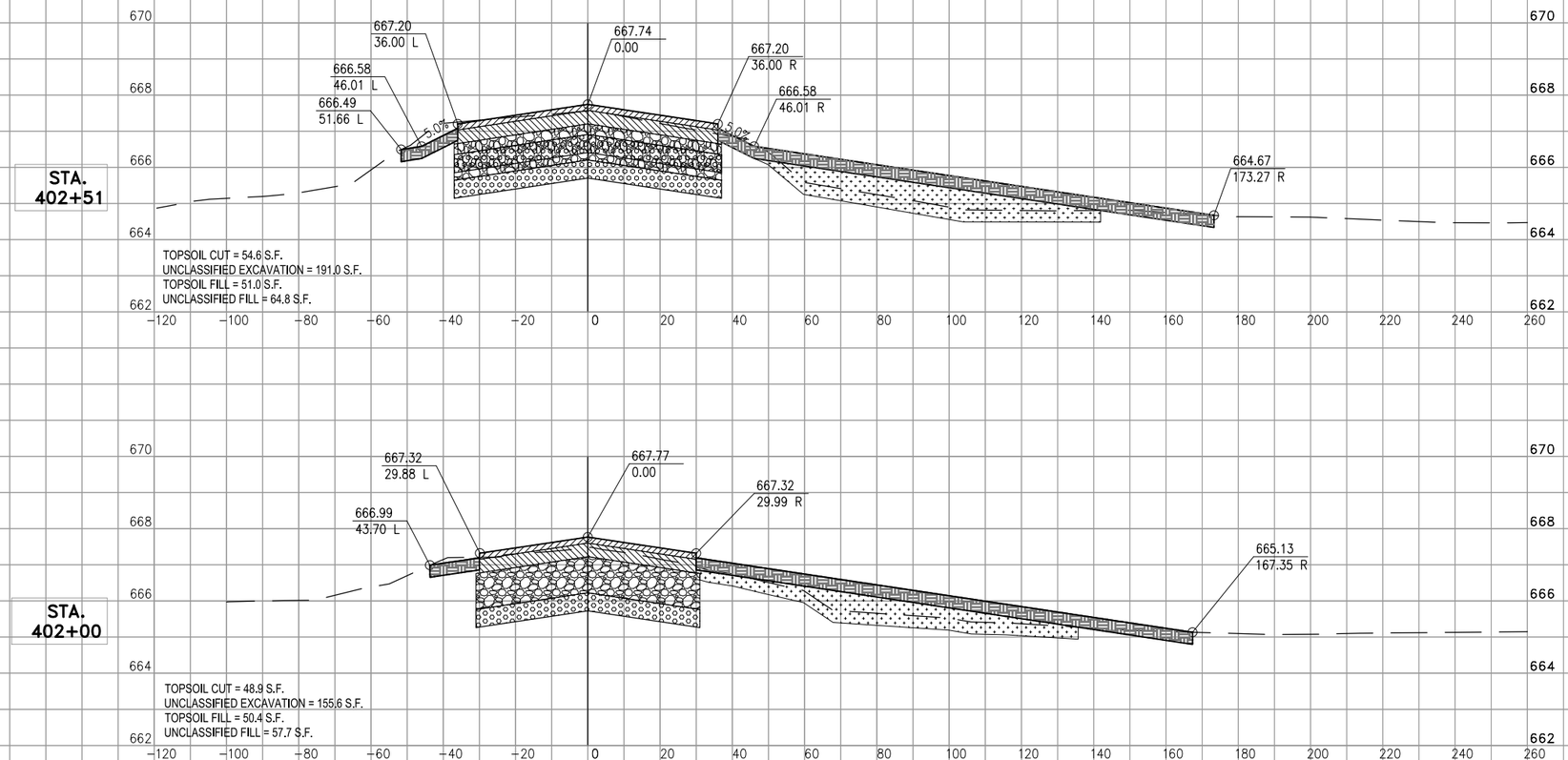

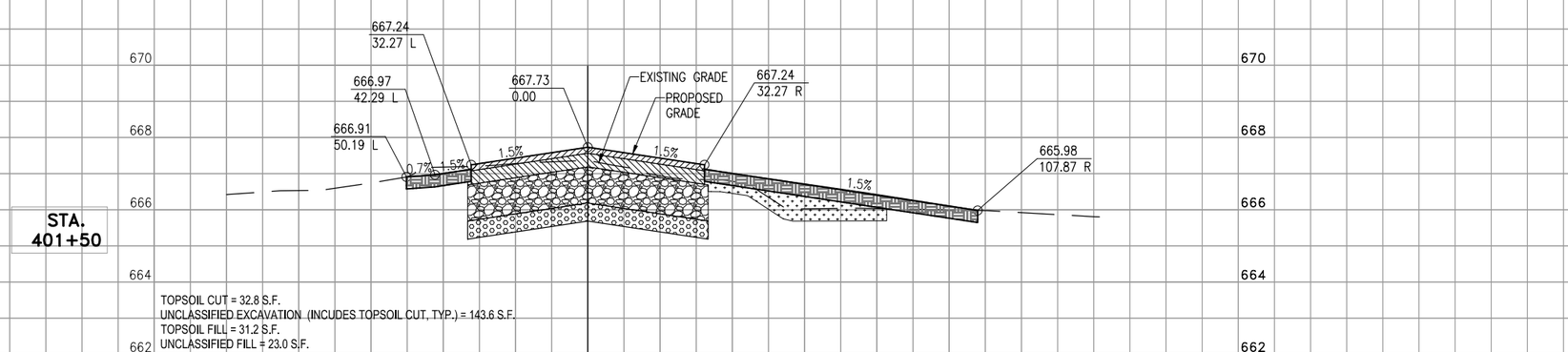

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SHEET TITLE

CROSS SECTIONS - TAXIWAY D STA. 401+50 - STA. 402+51

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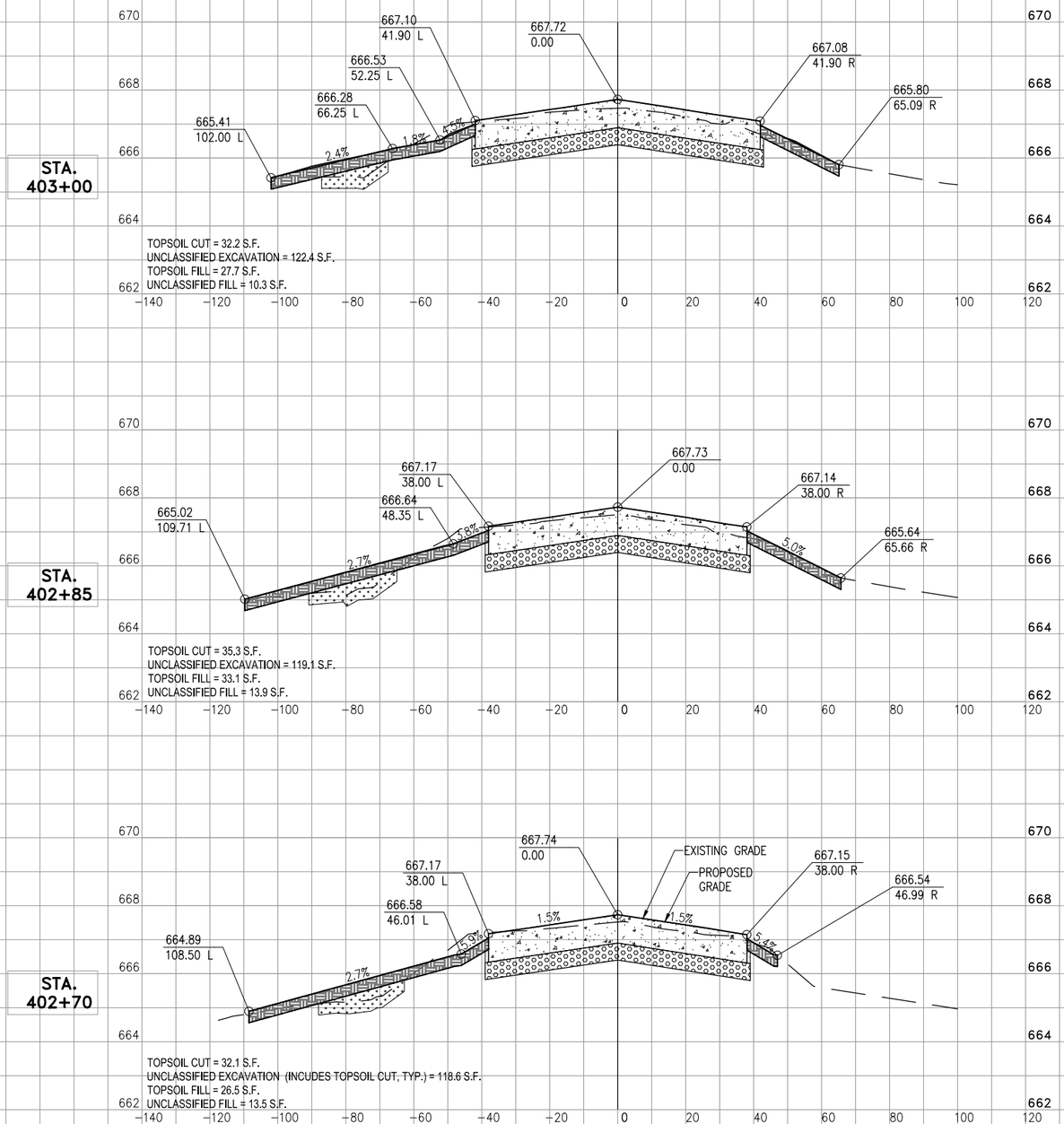

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

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DESIGN BY: KMS 06/08/2018
DRAWN BY: KMS 06/08/2018
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SHEET TITLE

CROSS SECTIONS -
TAXIWAY D STA.
402+70 - STA. 403+00

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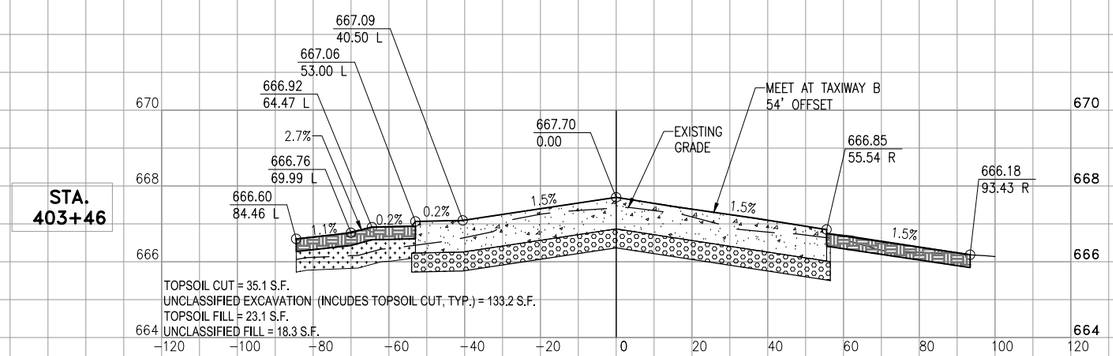

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SHEET TITLE

CROSS SECTIONS - TAXIWAY D STA. 403+46

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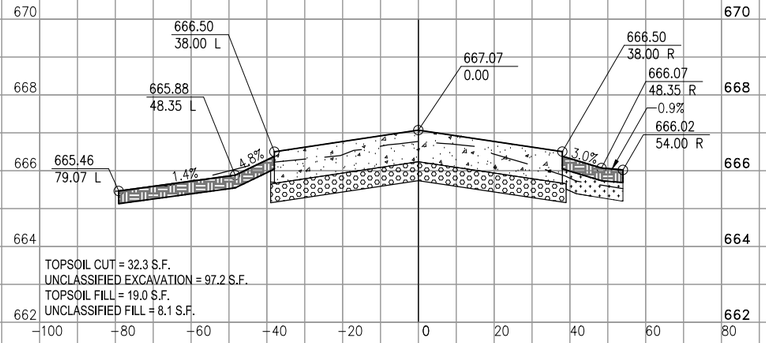
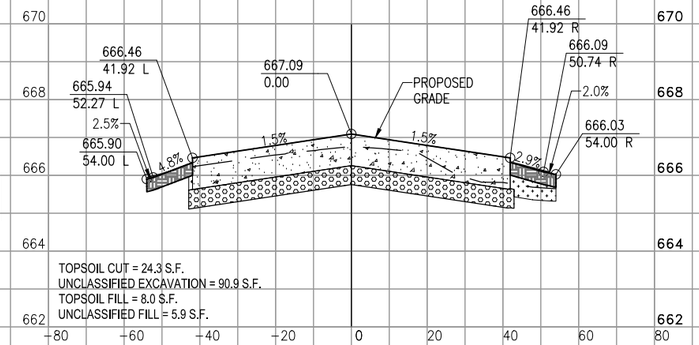
STA. 505+15



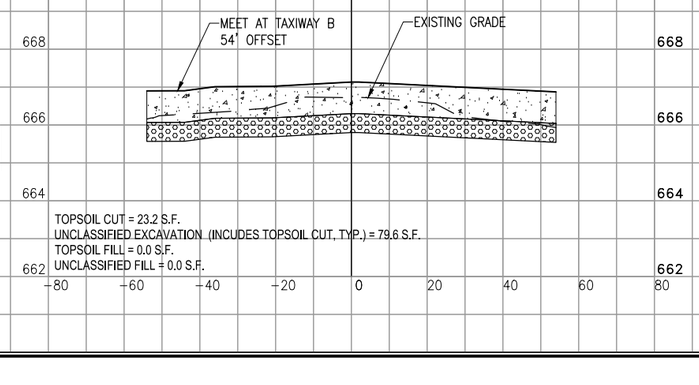
TOPSOIL CUT = 32.3 S.F.
UNCLASSIFIED EXCAVATION = 97.2 S.F.
TOPSOIL FILL = 19.0 S.F.
UNCLASSIFIED FILL = 8.1 S.F.

STA. 505+00



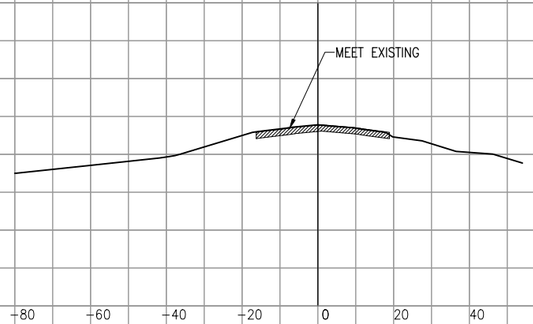
TOPSOIL CUT = 24.3 S.F.
UNCLASSIFIED EXCAVATION = 90.9 S.F.
TOPSOIL FILL = 8.0 S.F.
UNCLASSIFIED FILL = 5.9 S.F.

STA. 504+54

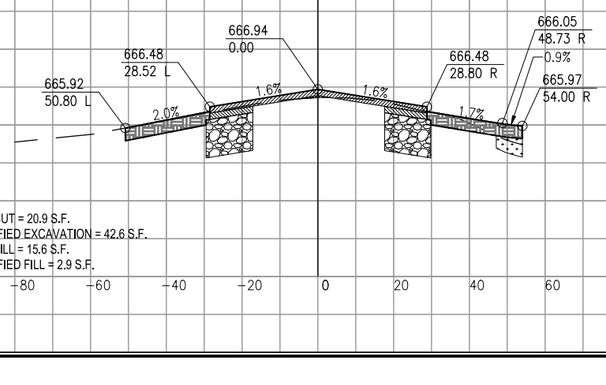


TOPSOIL CUT = 23.2 S.F.
UNCLASSIFIED EXCAVATION (INCUDES TOPSOIL CUT, TYP.) = 79.6 S.F.
TOPSOIL FILL = 0.0 S.F.
UNCLASSIFIED FILL = 0.0 S.F.

STA. 505+92



STA. 505+50



TOPSOIL CUT = 20.9 S.F.
UNCLASSIFIED EXCAVATION = 42.6 S.F.
TOPSOIL FILL = 15.6 S.F.
UNCLASSIFIED FILL = 2.9 S.F.

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SHEET TITLE

CROSS SECTIONS -
TAXIWAY E STA.
504+54 - STA. 505+92

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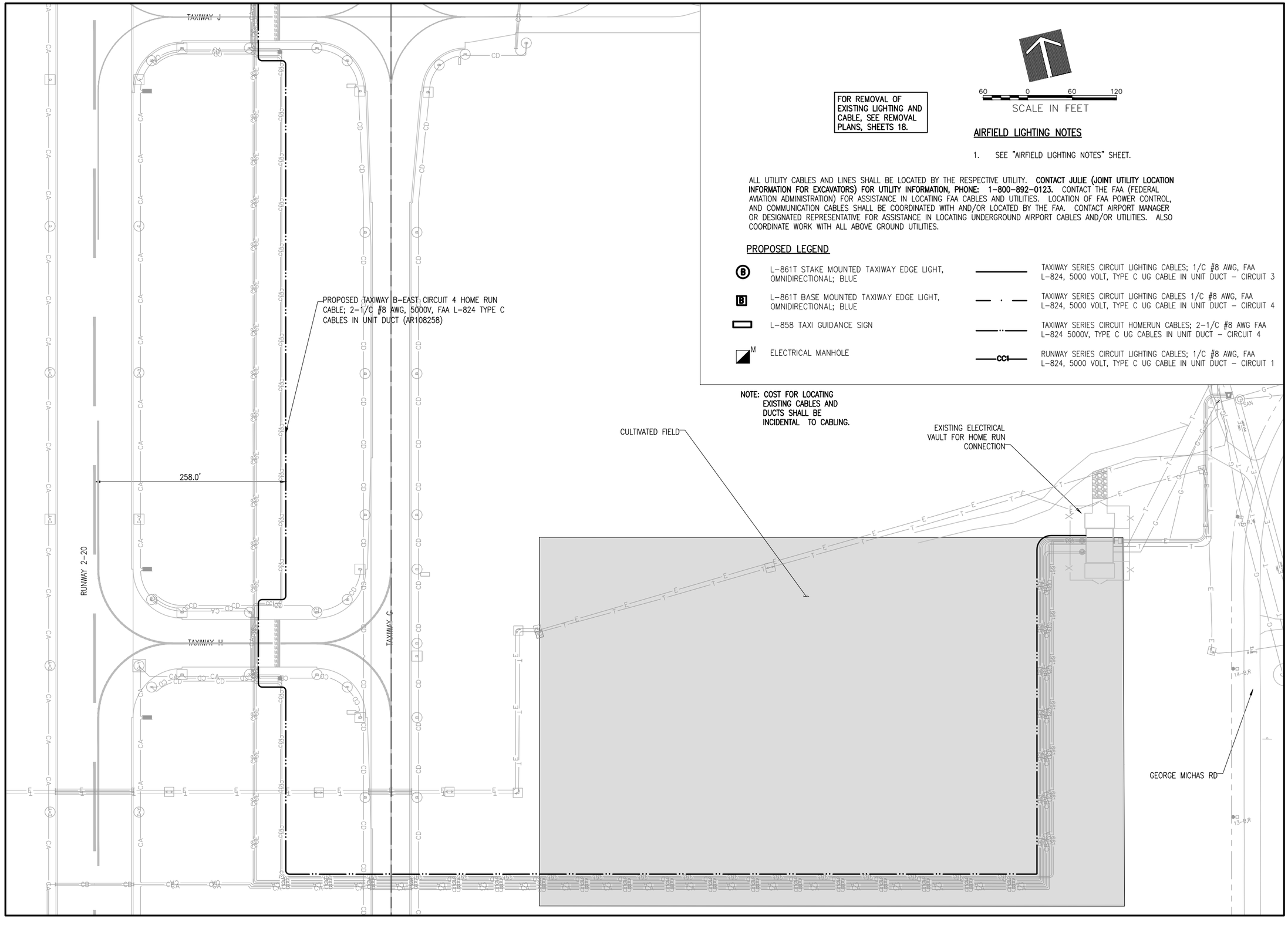

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SBGP No: 3-17-SBGP-XX

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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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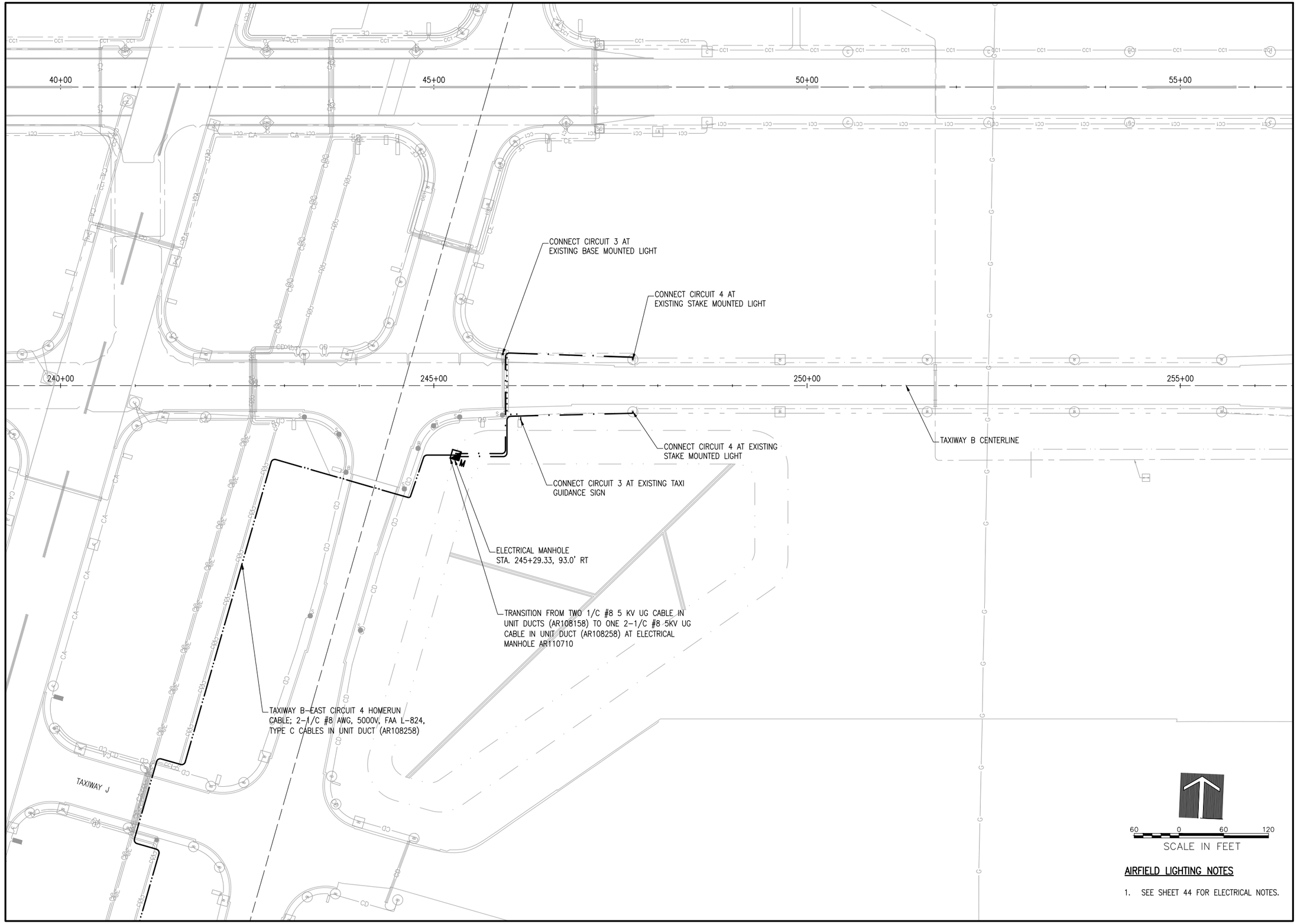
CAD FILE: ELECTRICAL SITE PLAN 1A
DESIGN BY: KMS 3/13/2017
DRAWN BY: KMS 3/13/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

ELECTRICAL SITE PLAN - HOME RUN



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SCALE IN FEET

AIRFIELD LIGHTING NOTES

1. SEE SHEET 44 FOR ELECTRICAL NOTES.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
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SHEET TITLE

ELECTRICAL SITE
PLAN 1

RUNWAY 9-27

TAXIWAY B

TAXIWAY D

TAXIWAY E

BP: 500+00.00

CONNECT EXISTING RUNWAY 9-27 CIRCUIT 1 CABLE TO NEW CABLE AT EXISTING BASE MOUNTED LIGHT

CONNECT EXISTING RUNWAY 9-27 CIRCUIT 1 CABLE TO NEW CABLE AT EXISTING STAKE MOUNTED LIGHT

CONNECT NEW CABLE TO EXISTING CIRCUIT 4 AT EXISTING STAKE MOUNTED LIGHT

CONNECT EXISTING TAXIWAY B CIRCUIT 4 CABLE TO NEW CABLE AT EXISTING STAKE MOUNTED LIGHT

1/C #8 5KV UG CABLE IN UD (AR108158)

PROPOSED 4-WAY CONCRETE ENCASED DUCT 78 L.F. ITEM AR110504. PROVIDE CONDUIT BELL ENDS OR COUPLINGS AT TERMINATIONS TO ACCOMMODATE FUTURE DUCT BANK EXTENSIONS.

CONNECT NEW CABLE TO EXISTING SIGN

CONNECT NEW CABLE TO EXISTING CIRCUIT 4 AT EXISTING SIGN

EXISTING PRIMARY WIND CONE CABLE

EXISTING RUNWAY 27 LOCALIZER POWER CABLE

EXTEND EXISTING 4-WAY DUCT, SEE DETAIL

CONNECT EXISTING TAXIWAY B CIRCUIT 4 CABLE TO NEW CABLE AT EXISTING STAKE MOUNTED LIGHT

B-101 B-102 B-103 B-104 B-105 B-106 B-107 B-108 B-109 B-110 B-111 B-201 B-202 B-203 B-204 B-205 B-206 B-207 B-208 B-209 B-210 B-211 B-212 B-213 B-214 B-215 B-216 B-217 B-218 B-219 B-220 B-221 B-222 B-223 B-224 B-TGS5 B-TGS6 B-TGS7 B-TGS8 B-TGS9 B-TGS10 C1-TGS5 C1-TGS6 C1-TGS7 19-1-060

CC1 CC2 CC3

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SCALE IN FEET

NOTES

1. SEE SHEET 44 FOR NOTES AND LEGEND.

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SHEET TITLE

ELECTRICAL SITE PLAN 2

TWY B Circuit											
FIXTURE ID.	DESCRIPTION	TYPE	DIRECTION	COLOR	MOUNTING	ALIGNMENT	STATION	OFFSET		TAG ID.	FIXTURE ID
B-101	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	Taxiway B	259+66.45	43.06	RT	19-4-101	B-101
B-102	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	261+97.59	35.00	RT	19-4-102	B-102
B-103	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	264+30.00	35.00	RT	19-4-103	B-103
B-104	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	264+80.00	37.00	RT	19-4-104	B-104
B-105	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	265+30.00	38.35	RT	19-4-105	B-105
B-106	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	265+80.00	40.63	RT	19-4-106	B-106
B-107	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	266+30.49	42.94	RT	19-4-107	B-107
B-108	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	266+67.00	52.57	RT	19-4-108	B-108
B-109	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	267+03.81	62.19	RT	19-4-109	B-109
B-110	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	268+28.19	62.19	RT	19-4-110	B-110
B-111	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	Taxiway B	268+75.15	49.86	RT	19-4-111	B-111
B-224	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	Taxiway B	268+75.15	35.00	LT	19-4-224	B-224
B-223	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	268+25.00	37.28	LT	19-4-223	B-223
B-222	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	267+88.00	38.97	LT	19-4-222	B-222
B-221	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	267+51.00	40.66	LT	19-4-221	B-221
B-220	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	267+01.06	42.94	LT	19-4-220	B-220
B-219	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	266+64.39	52.57	LT	19-4-219	B-219
B-218	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	266+27.73	62.19	LT	19-4-218	B-218
B-217	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway D	403+01.24	52.57	LT	19-4-217	B-217
B-216	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway D	402+64.58	46.00	LT	19-4-216	B-216
B-215	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	Taxiway D	402+00.00	40.00	LT	19-4-215	B-215
B-214	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway D	401+34.55	43.00	LT	19-4-214	B-214
B-213	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway D	400+98.41	52.59	LT	19-4-213	B-213
B-212	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway D	400+62.28	62.19	LT	19-4-212	B-212
B-211	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway D	400+62.28	62.19	RT	19-4-211	B-211
B-210	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway D	400+98.41	52.59	RT	19-4-210	B-210
B-209	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway D	401+34.55	43.00	RT	19-4-209	B-209
B-208	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	Taxiway D	402+00.00	40.00	RT	19-4-208	B-208
B-207	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway D	402+64.58	46.00	RT	19-4-207	B-207
B-206	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway D	403+01.24	52.57	RT	19-4-206	B-206
B-205	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	265+03.35	62.19	LT	19-4-205	B-205
B-204	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	264+66.86	52.61	LT	19-4-204	B-204
B-203	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	264+30.00	42.94	LT	19-4-203	B-203
B-202	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	Taxiway B	261+97.59	35.00	LT	19-4-202	B-202
B-201	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	Taxiway B	259+66.45	35.00	LT	19-4-201	B-201

RWY 9-27 CIRCUIT										
TAG ID.	DESCRIPTION	TYPE	DIRECTION	COLOR	MOUNTING	ALIGNMENT	STATION	OFFSET		TAG ID.
19-1-060	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	Taxiway D	400+47.59	187.32	LT	19-1-060

RWY 9-27 Circuit									
TAG ID.	DESCRIPTION	TYPE	DIRECTION	SIDE A	SIDE B	STATION	OFFSET		TAG ID.
C1-TGS5	Sign	L-858Y	Double Face	BLANK	← D	400+58.85	93.00	LT	C1-TGS5
C1-TGS6	Sign	L-858L/R	Double Face	BLANK	D 9-27	400+58.85	93.00	RT	C1-TGS6
C1-TGS7	Sign	L-858Y	Double Face	D →	BLANK	400+72.15	89.68	RT	C1-TGS7

TAXI GUIDANCE SIGN SCHEDULE

27	TYPE L-858R MANDATORY INSTRUCTION SIGN – BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON A RED BACKGROUND
B →	TYPE L-858Y DIRECTION SIGN – BLACK LEGEND ON A YELLOW BACKGROUND
A	TYPE L-858L LOCATION SIGN – YELLOW BORDER AND LEGEND ON A BLACK BACKGROUND

TWY B Circuit									
TAG ID.	DESCRIPTION	TYPE	DIRECTION	SIDE A	SIDE B	STATION	OFFSET		TAG ID.
B-TGS5	Sign	L-858L/Y	Double Face	BLANK	B D →	266+58.54	59.97	RT	B-TGS5
B-TGS6	Sign	L-858L/Y	Double Face	BLANK	E ←B→	504+93.10	63.74	RT	B-TGS6
B-TGS7	Sign	L-858L/Y	Double Face	BLANK	B ← E	268+59.00	63.76	RT	B-TGS7
B-TGS8	Sign	L-858L/Y	Double Face	B E →	BLANK	266+73.00	59.97	LT	B-TGS8
B-TGS9	Sign	L-858L/Y	Double Face	D ←B→	BLANK	403+07.09	63.76	LT	B-TGS9
B-TGS10	Sign	L-858L/Y	Double Face	B ← D	BLANK	264+72.54	64.79	LT	B-TGS10

TAXI GUIDANCE SIGN NOTES

1. THE PROPOSED TAXI GUIDANCE SIGNS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345 (CURRENT ISSUE) 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).
2. 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.
3. 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.
4. THE PROPOSED TAXI GUIDANCE SIGNS SHALL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 20' FROM THE PAVEMENT EDGE.
5. ALL PROPOSED TAXI GUIDANCE SIGNS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE SIGN NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS.
6. RUNWAY EXIT/TAXIWAY ENTRANCE SIGNS (TAXIWAY GUIDANCE SIGNS TO DEFINE THE THROAT OR ENTRANCE INTO THE INTERSECTING TAXIING 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."
7. 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."

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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NO.	DATE	DESCRIPTION		
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SHEET TITLE

LIGHT AND SIGN SCHEDULES

GENERAL NOTES

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

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

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

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

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

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

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

8. ANY AND ALL INSTRUCTIONS FROM THE RESIDENT ENGINEER/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 TECHNICIAN REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.

9. A MINIMUM OF THREE COPIES OF THE INSTRUCTION BOOK SHALL BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE BOOKS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATORS, PAPI, REIL, ETC. AS A MINIMUM SHALL CONTAIN THE FOLLOWING:

   A. A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.

   B. THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.

   C. INSTALLATION INSTRUCTION.

   D. START–UP INSTRUCTIONS.

   E. PREVENTATIVE MAINTENANCE REQUIREMENTS.

   F. CHART FOR TROUBLE–SHOOTING.

   G. COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT – "BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OF THE NARRATIVE SHALL SHOW VOLTAGE/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLE–SHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL MODES OF OPERATION, SUCH AS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS SHALL BE INDICATED FOR ALL DIFFERENT MODES.

   H. PARTS LIST WHICH WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS SUCH AS RESISTORS, DIODES, ETC. IT SHALL INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER.

   I. SAFETY INSTRUCTIONS.

POWER AND CONTROL NOTES

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

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

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

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

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

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

7. THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:

   A. IN STRAIGHT PULLS THE LENGTH OF THE BOX SHALL NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS–SECTIONAL AREA) OF A BOX END SHALL BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS–SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.

   B. IN ANGLE PULLS OR 'U' PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX SHALL NOT BE LESS THAN SIX (6) TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE SHALL BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL AS THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR SHALL NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.

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

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

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

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

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

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

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

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

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

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

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

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

20. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.

21. WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF HIGH VOLTAGE ELECTRICAL INSULATING TAPE (RUBBER SPLICING TAPE SUITABLE FOR PRIMARY ELECTRICAL INSULATION FOR SPLICING CABLE FROM 600 VOLTS TO 69,000 VOLTS) AND COVER WITH VINYL ELECTRICAL TAPE (ALL–WEATHER VINYL INSULATING TAPE SUITABLE FOR PROTECTIVE JACKETING FOR HIGH–VOLTAGE CABLE SPLICES AND REPAIRS) FOR FULL VALUE OF CABLE INSULATION VOLTAGE. PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125 AND FAA AC 150/5370–10G ITEM L–108, HIGH VOLTAGE ELECTRICAL INSULATING TAPE SHALL BE 3M SCOTCH 23, 3M SCOTCH 130C OR APPROVED EQUIVALENT, AND VINYL ELECTRICAL TAPE SHALL BE 3M SCOTCH 88 OR APPROVED EQUIVALENT. TAPES MUST BE RATED SUITABLE FOR THE APPLICATION.

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

23. THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:

   A. FOR INTERIOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 12 (DUST TIGHT) ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. FOR EXTERIOR/OUTDOOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 4X STAINLESS STEEL ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. ALL CONDUIT ENTRIES INTO NEMA 4, 4X ENCLOSURES SHALL HAVE NEMA 4 HUBS LISTED SUITABLE FOR THE RESPECTIVE ENCLOSURE TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE.

   B. THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.

   C. ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN–EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED–EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.

   D. WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING AND TERMINALS SHALL BE EXPOSED AND ACCESSIBLE WITHOUT REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.

   E. ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.

   F. EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.

   G. A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.

   H. THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.

   I. ALL WIRING SHALL BE NEATLY TRAINED AND LACED.

   J. MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.

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

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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SHEET TITLE

ELECTRICAL NOTES
SHEET 1

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AIRFIELD LIGHTING NOTES

1. UNLESS OTHERWISE NOTED, ALL UNDERGROUND AIRFIELD LIGHTING SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED 5000 VOLT L-824 TYPE. ALL UNDERGROUND FIELD POWER LOW VOLTAGE (600 VOLT & BELOW) CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE UL LISTED 600 VOLT, TYPE XLP-USE-2 COPPER CONDUCTORS. CONDUCTOR SIZES SHALL BE AS SPECIFIED, HEREIN.

2. NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.

3. THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REIL, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKABLE COUPLING(S) AT THE GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.

4. THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN ON AIRFIELD LIGHTING CABLE SPLICE DETAILS.

5. THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE, AS SHOWN ON AIRFIELD LIGHTING CABLE SPLICE DETAILS.

6. L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).

7. THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURE AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.

8. ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.

9. DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF TEN (10") INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION TWELVE (12") INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.

10. A SLACK OF THREE (3') FEET, MINIMUM, 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.

11. DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO RIGHT IS CODED BLUE. THIS APPLIES TO STAKE MOUNTED LIGHTS AND BASE MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.

12. L-867 BASES SHALL BE SIZE B, 24" DEEP, CLASS I, UNLESS OTHERWISE NOTED.

13. BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL BE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.

14. THE ELEVATION OF THE BREAKABLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE MOUNTED COUPLINGS.

15. WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.

16. TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.

17. PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.

18. THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE: ONE (1) INCH. IN CASE OF STAKE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.

19. THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.

20. ENTRANCES INTO L-867 BASES SHALL HAVE CONDUIT COUPLINGS OR REDUCERS TO INTERFACE UNIT DUCT/CONDUIT TO L-867 BASE HUBS, OR SHALL BE SEALED WITH HEAT SHRINK.

21. GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.

22. EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.

23. CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS SHALL BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.

24. ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLES.

25. THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.

26. APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.

27. LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.

28. WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "T" SPLICES SHALL BE OF THE CAST TYPE.

29. CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKINGS, ETC. SHALL BE 3500 PSI (MINIMUM) AT 14 DAYS, IN ACCORDANCE WITH ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.

30. ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE-ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.

31. THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVE GROUND UTILITIES.

32. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

1. GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. A GROUND ROD MUST BE INSTALLED AT EACH LIGHT FIXTURE, TAXI GUIDANCE SIGN AND L-867/L-868 BASE. 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. CONNECTIONS TO LIGHT BASES MAY ALSO BE MADE WITH A UL 467 LISTED PIPE CLAMP CONNECTED TO THE GRSC NIPPLE EXTENDING FROM A THREADED LIGHT BASE HUB. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY PENTAIR ERICO PRODUCTS, INC., THERMOWELD BY CONTINENTAL INDUSTRIES, INC., ULTRAWELD BY HARGER, OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.

2. PER THE REQUIREMENTS OF FAA AC 150/5340-30J DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6 "LIGHT FIXTURE BONDING" IT NOTES THE FOLLOWING: BOND THE LIGHT FIXTURE TO THE LIGHT BASE INTERNAL GROUND LUG VIA A NO. 6 AWG STRANDED COPPER WIRE RATED 600 VOLTS WITH GREEN XHHW, THWN-2, OR OTHER SUITABLE INSULATION, BARE STRANDED CONDUCTOR OR A BRAIDED GROUND STRAP OF EQUIVALENT CURRENT RATING. THE BONDING CONDUCTOR 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 TO THE FIXTURE

3. STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.

4. 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.

5. THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.

6. FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, JUNCTION STRUCTURE/L-867 BASE/L-868 BASE, OR OTHER AIRFIELD LIGHT FIXTURE, 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 AIRFIELD LIGHT FIXTURE AND EACH TAXI GUIDANCE SIGN INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, LONGER GROUND RODS OR ADDITIONAL GROUND RODS MIGHT BE REQUIRED. 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 AND THE PROJECT ENGINEER.

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SHEET TITLE

ELECTRICAL NOTES
SHEET 2

AIRFIELD LIGHTING REMOVAL AND INSTALLATION 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. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICE.

3. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (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 DUCTS AND CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS, RELOCATIONS, AND/OR CABLE OR DUCT REPLACEMENTS 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.

6. EXISTING AIRFIELD LIGHTS, INCLUDING TRANSFORMERS AND MOUNTING HARDWARE, THAT ARE DESIGNATED FOR REMOVAL SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT. WHERE THE LIGHT BASES ARE NOT DESIGNATED FOR RE-USE OR RELOCATION, THEY SHALL BE DISPOSED OF OFF THE AIRPORT SITE IN A LEGAL MANNER.

7. EXISTING SPLICE CANS DESIGNATED FOR REMOVAL SHALL BE REMOVED AND DISPOSED OF OFF THE AIRPORT SITE IN A LEGAL MANNER.

8. IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE AND DUCT CROSSES AN EXISTING CABLE, THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH NECESSARY FOR THE PROPOSED CABLE AND DUCT. AT OTHER LOCATIONS, THE PROPOSED CABLE AND DUCT 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. ONLY CABLE IN DUCT OR UNIT DUCT SHALL BE INSTALLED BY PLOWING METHOD.

9. 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. THE PROPOSED TAXI GUIDANCE SIGNS SHALL USE LED (LIGHT EMITTING DIODE) TYPE ILLUMINATION. ALSO SEE FAA ENGINEERING BRIEF 67 (MOST CURRENT ISSUE) "LIGHT SOURCES OTHER THAN INCANDESCENT AND XENON FOR AIRPORT AND OBSTRUCTION LIGHTING FIXTURES".

10. ALL SIGNS SHALL BE FURNISHED WITH TETHERS. TETHERS SHALL BE 3/16" STAINLESS STEEL AIRCRAFT CABLE WITH A FORMED EYE ON BOTH ENDS. THE TETHER EYE SHALL BE ATTACHED TO THE SIGN AND BASE BY BEING SANDWICHED BETWEEN TWO STAINLESS STEEL FENDER WASHERS WITH A 1/2" MINIMUM STAINLESS STEEL BOLT. THE TETHER SHALL BE OF SUFFICIENT LENGTH TO HAVE A MINIMUM OF 6" OF SLACK WHEN ATTACHED BETWEEN THE SIGN AND THE SIGN BASE. THE TETHERS AND BONDING CONDUCTORS SHALL BE OF SUFFICIENT LENGTH TO ALLOW THE FRANGIBLE COUPLINGS TO OPERATE WITHOUT RESTRICTIONS AND TO ALLOW THE POWER CABLE TO DISCONNECT IF THE SIGN FALLS OVER. PROVIDE 3" ± 1/2" SLACK IN TETHER AND ALL TETHERS SHALL BE THE SAME LENGTH.

11. ALL SIGNS SHALL BE ORIENTED SUCH THAT THE LONGITUDINAL CENTERLINE OF THE SIGN IS PERPENDICULAR TO THE RESPECTIVE TAXIWAY/RUNWAY CENTERLINE, UNLESS NOTED OTHERWISE.

12. ALL MANDATORY SIGNS (SIZE 1) SHALL BE LOCATED 20' OFF THE EDGE OF FULL STRENGTH PAVEMENT, (UNLESS DETAILED OTHERWISE) AND ALIGNED WITH THE FRONT EDGE OF THE FIRST YELLOW STRIPE (FURTHEST FROM THE RUNWAY) OF THE HOLD POSITION MARKING UNLESS SHOWN OTHERWISE FOR A RESPECTIVE SIGN. CONFIRM LOCATIONS WITH THE RESIDENT ENGINEER.

13. RUNWAY EXIT/TAXIWAY ENTRANCE SIGNS (TAXIWAY GUIDANCE SIGNS TO DEFINE THE THROAT OR ENTRANCE INTO THE INTERSECTING TAXIING ROUTE) OR RUNWAY EXIT/TAXIWAY ENTRANCE LIGHTS 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", AND/OR FAA AC 150/5340-30J PART 2.5.3.4.

14. HOLDING POSITION SIGNS FOR RUNWAYS SHALL BE CONNECTED TO THE RESPECTIVE RUNWAY SERIES CIRCUIT TO BE ILLUMINATED WHEN THE ASSOCIATED RUNWAY LIGHTS ARE ILLUMINATED TO COMPLY WITH FAA AC150/5340-18F, CHAPTER 1, PART 15 "SIGN OPERATION.

15. CONCRETE STEEL REINFORCEMENT SHALL BE TYPE ASTM A615 OR A706 GRADE 60. ALL REINFORCEMENT SHALL HAVE A 3" MINIMUM CONCRETE COVER. REINFORCEMENT MAY BE ADJUSTED TO MISS INTERFERENCES. CONCRETE SHALL CONFORM TO ITEM P-610 STRUCTURAL PORTLAND CEMENT CONCRETE.

16. RUNWAY LIGHTING CIRCUITS SHALL BE ACTIVE AT THE END OF EACH CONSTRUCTION DAY FOR AN OPEN RUNWAY. THE CONTRACTOR SHALL PROVIDE TEMPORARY CABLE & CONNECTIONS WHERE NECESSARY TO MAINTAIN A RUNWAY OR TAXIWAY LIGHTING SYSTEM. TEMPORARY CABLE SHALL BE 1/C #8 FAA L-824 5KV UG CABLE IN DUCT OR UNIT DUCT. THIS SHALL BE INCIDENTAL TO THE CONTRACT.

17. ALL ABOVEGROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2G, OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 2.18.3 "LIGHTING AND VISUAL NAVAIDS". 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.

18. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT.

19. EXISTING AIRFIELD LIGHTING CABLES AND CONDUIT IN AREAS OF NEW WORK SHALL BE DISCONNECTED & REMOVED WHERE IN CONFLICT WITH NEW CONSTRUCTION. IN OTHER AREAS CABLES AND CONDUIT MAY BE ABANDONED IN PLACE.

20. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE LIGHT, AND/OR BASE REMOVAL WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.

21. WHEN A RESPECTIVE RUNWAY IS CLOSED THE RESPECTIVE RUNWAY LIGHTING AND NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.

22. CONTRACTOR SHALL CONFIRM QUANTITY OF LIGHTS TO BE REMOVED WITH RESIDENT ENGINEER/TECHNICIAN PRIOR TO REMOVAL.

23. A GROUND ROD MUST BE INSTALLED AT EACH LIGHT FIXTURE. THE PURPOSE OF THE LIGHT BASE GROUND IS 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. PER NATIONAL ELECTRICAL CODE ARTICLE 250.53 "GROUNDING ELECTRODE SYSTEM INSTALLATION" RESISTANCE FROM THE GROUND ROD/ELECTRODE TO EARTH GROUND MUST BE 25 OHMS OR LESS VIA MEASUREMENT WITH A GROUND TESTER. GROUNDS RODS FOR LIGHT BASE GROUNDS SHALL BE 3/4-INCH BY 10-FEET MINIMUM LENGTH UL LISTED COPPER-CLAD STEEL SECTIONAL RODS. GROUND RODS SHALL BE PRODUCED FROM 100% DOMESTIC STEEL. EACH GROUND ROD SHALL BE TESTED AND THE RESULTS RECORDED FOR EACH AIRFIELD LIGHT FIXTURE INSTALLATION. COPIES OF GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE PROJECT ENGINEER AND/OR THE RESIDENT ENGINEER.

24. PER FAA AC 150/5270-10G "STANDARDS FOR SPECIFYING CONSTRUCTION OF AIRPORTS", ITEM L-108 "UNDERGROUND POWER CABLE FOR AIRPORT", EVERY AIRFIELD LIGHTING CABLE SPLICER SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED ABOVE 5,000 VOLTS AC. CABLE SPLICING/TERMINATING PERSONNEL SHALL HAVE A MINIMUM OF THREE (3) YEARS CONTINUOUS EXPERIENCE IN TEMINATING/SPLICING MEDIUM VOLTAGE CABLE.

25. CONTRACTOR SHALL INTERFACE EXISTING AIRFIELD LIGHTING TO THE NEW, REMOVED, REINSTALLED, ADJUSTED, REPLACED, AND/OR RELOCATED AIRFIELD LIGHTING AND ASSOCIATED CIRCUITS.

26. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION STRUCTURE, OR HANDHOLE.

27. PROVIDE AND/OR RELOCATE TAXIWAY LIGHT FIXTURE TAGS TO ACCOMMODATE TAXIWAY LIGHT FIXTURE REMOVALS, RELOCATIONS, SERIES CIRCUIT CHANGES, AND RENUMBERING. ALL PROPOSED TAXI GUIDANCE SIGNS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE SIGN NUMBERS SHOWN ON THE PLANS.

28. IT IS INTENDED THAT THE NEW HOMERUN CABLES TO BE INSTALLED SHALL BE A CONTINUOUS RUN. AT THE CONTRACTOR'S OPTION, THE CONTRACTOR MAY INSTALL SPLICE CANS TO ACCOMMODATE THE HOMERUN AIRFIELD LIGHTING SERIES CIRCUIT. SPLICE CANS SHALL BE AT LEAST 1000 FEET APART, AND THE COST OF ANY OPTIONAL SPLICE CANS SHALL BE INCIDENTAL TO THE CONTRACTOR. SPLICE CANS FOR AIRFIELD LIGHTING SERIES CIRCUITS SHALL BE L-867, SIZE D; (16" DIAMETER) BY 24" DEEP WITH 3/8" THICK GALVANIZED STEEL COVER LABELED "DANGER HIGH VOLTAGE KEEP OUT" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.71(E) "SUITABLE COVERS". THE OPTIONAL SPLICE CAN IS DETAILED IN THE CONSTRUCTION PLANS.

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

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
			DES	DWN	REV

ISSUE: 6/8/18

PROJECT NO: 16A0087
CAD FILE: E-005-NOTES.DWG
DESIGN BY: KNL 4/19/2018
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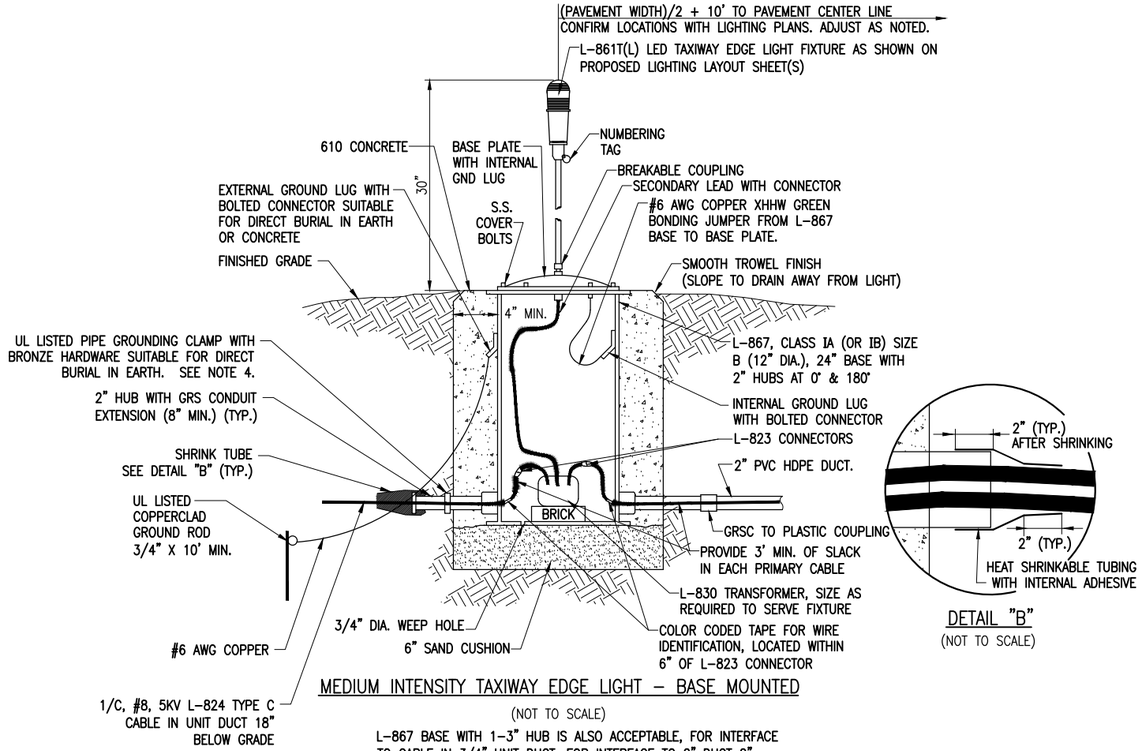
REVIEWED BY: LDH 6/7/18

SHEET TITLE

AIRFIELD LIGHTING NOTES



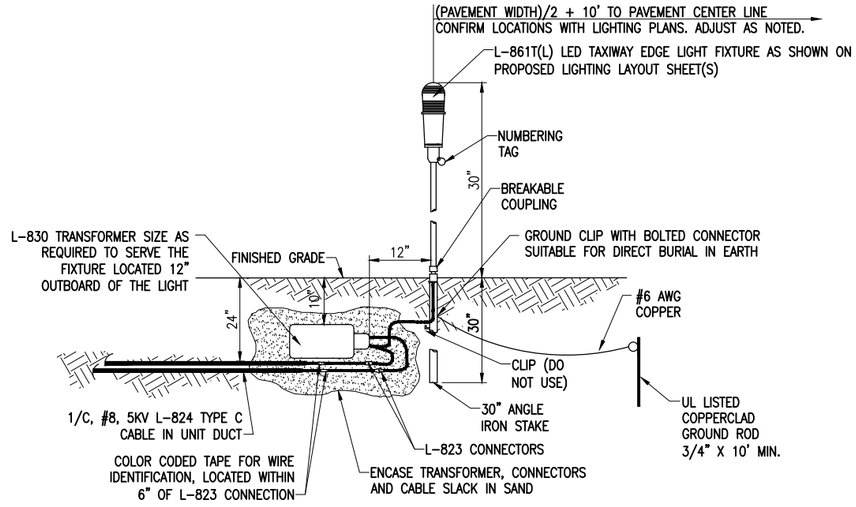
MEDIUM INTENSITY TAXIWAY EDGE LIGHT – BASE MOUNTED

(NOT TO SCALE)

L-867 BASE WITH 1-3" HUB IS ALSO ACCEPTABLE, FOR INTERFACE TO CABLE IN 3/4" UNIT DUCT. FOR INTERFACE TO 2" DUCT 2" HUBS LOCATED AT 0°, 180° ARE REQUIRED. ADDITIONAL HUBS WILL BE REQUIRED TO ACCOMMODATE MORE THAN TWO DUCT INTERFACES.

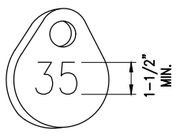
DETAIL "B"

(NOT TO SCALE)



MEDIUM INTENSITY TAXIWAY EDGE LIGHT – STAKE MOUNTED

(NOT TO SCALE)

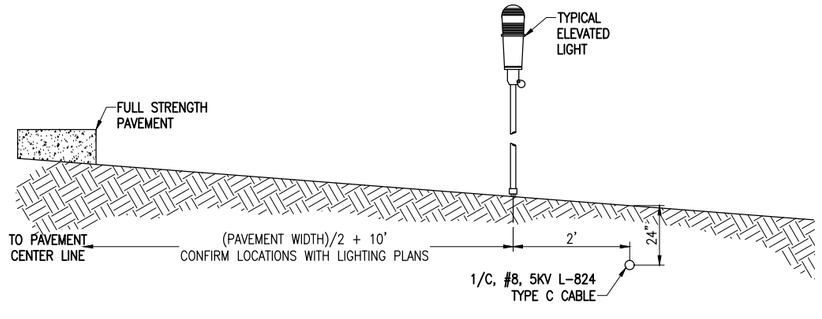


NOTES:

1. AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.
2. SEE NOTE 5.

NUMBERING TAG DETAIL

(NOT TO SCALE)



PROFILE VIEW

PLAN VIEW

LIGHT AND CABLE INSTALLATION DETAIL

(NOT TO SCALE)

NOTES:
SEE PROPOSED LIGHTING LAYOUT SHEET FOR LIGHT LOCATIONS.

NOTES:

1. SEE ELECTRICAL NOTES SHEETS.
2. SEE "ELECTRICAL NOTES SHEET 2" AND "GROUNDING NOTES" SHEET FOR GROUNDING NOTES FOR AIRFIELD LIGHTING.
3. SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR LIGHT LOCATIONS
4. WHERE GROUND LUGS ARE NOT ACCESSIBLE ON EXISTING BASE CANS SCHEDULED TO BE RELOCATED, PROVIDE A UL LISTED PIPE GROUND CLAMP RATED FOR DIRECT BURIAL IN EARTH AND BOND TO THE METAL CONDUIT EXTENSION TO PROVIDE GROUND PATH TO LIGHT BASE.
5. SEE SHEET 47 FOR TAG NUMBERS FOR LIGHTS AND SIGNS.

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 OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FEET LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD.

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REHABILITATE TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
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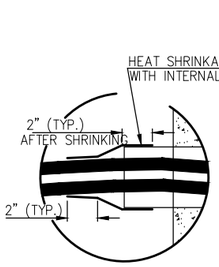
SHEET TITLE

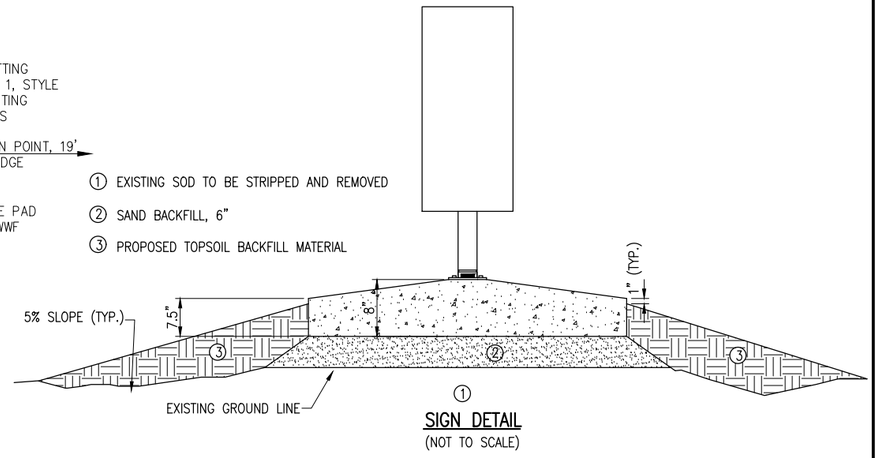
AIRFIELD LIGHTING DETAILS



DETAIL "B"
(NOT TO SCALE)

ELEVATION VIEW

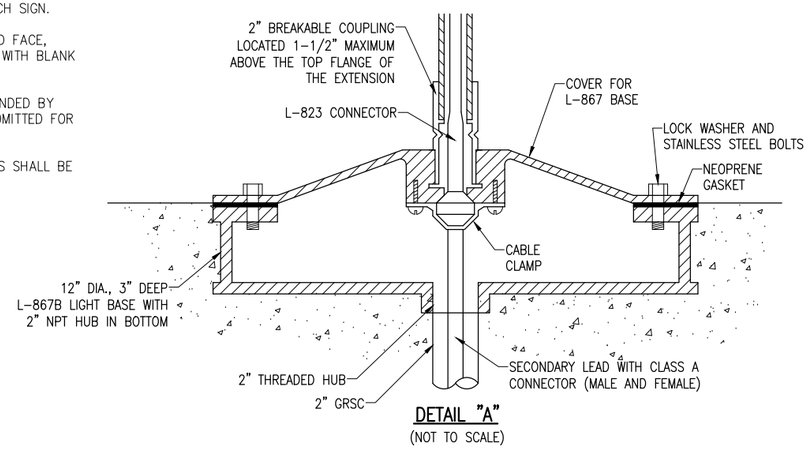
A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER 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.



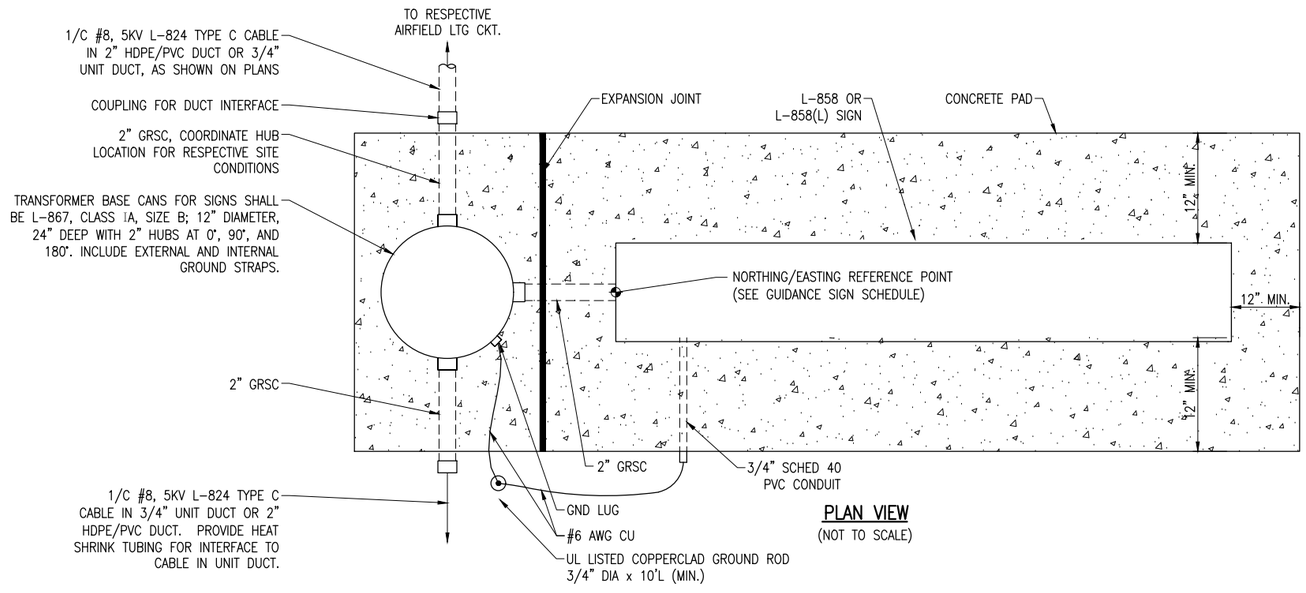
SIGN DETAIL
(NOT TO SCALE)

NOTES:

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

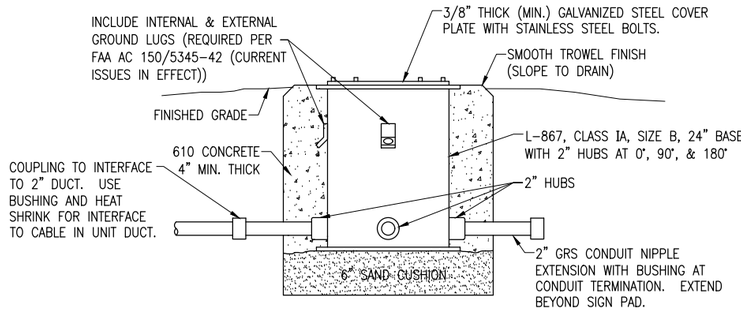


DETAIL "A"
(NOT TO SCALE)



PLAN VIEW
(NOT TO SCALE)

LIGHTED AIRPORT GUIDANCE SIGN



TRANSFORMER BASE CAN DETAIL FOR GUIDANCE SIGN
(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 150/5345-42 (CURRENT ISSUES IN EFFECT).

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REHABILITATE
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IDA No: LOT-4567
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SHEET TITLE

TAXI GUIDANCE SIGN DETAILS

JUN 08, 2018 9:12 AM SPITZ01394
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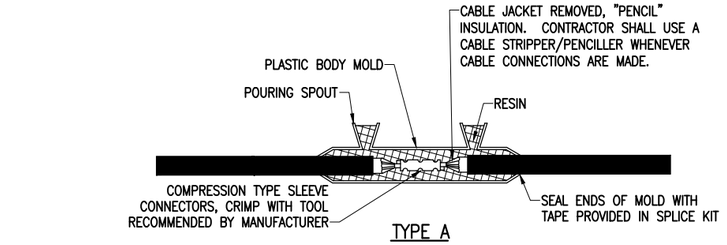
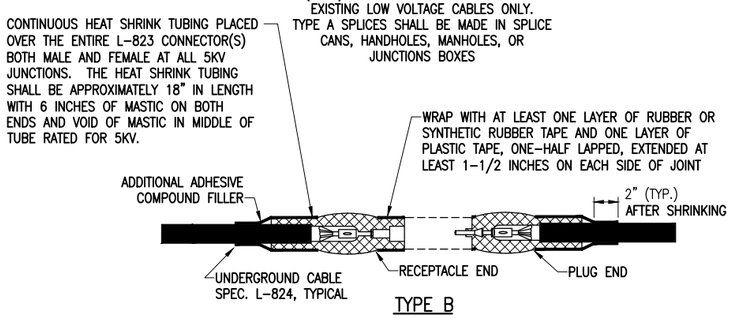


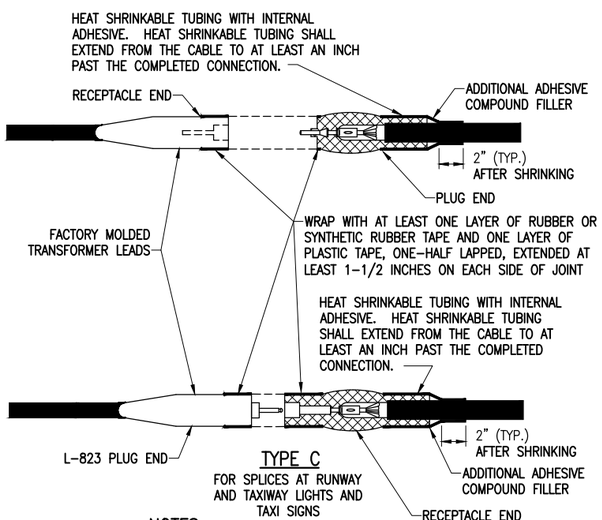
TYPE A

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 JUNCTIONS BOXES



TYPE B

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



TYPE C

FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS AND TAXI SIGNS

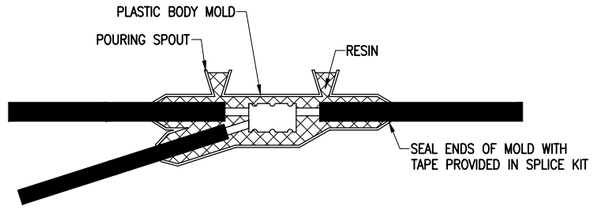
NOTES:

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

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

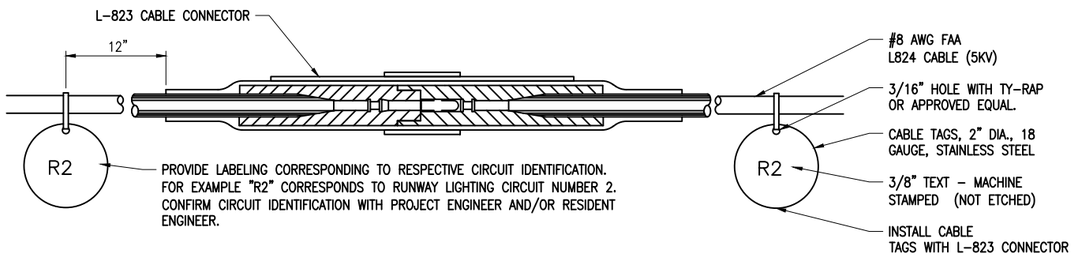
CABLE SPLICES

"NOT TO SCALE"



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.



PLUG CONNECTOR NOTES:

1. CONTRACTOR SHALL PROVIDE CABLE CIRCUIT IDENTIFICATION MARKERS ATTACHED TO BOTH SIDES OF EACH CABLE CONNECTION.
2. CABLE IDENTIFICATION TAGS SHALL BE STAINLESS STEEL OR BRASS..
3. THE CABLE SHALL THOROUGHLY BE CLEANED PRIOR TO THE INSTALLATION OF THE L-823 CONNECTOR KIT.
4. ATTACH EACH CABLE TIE ENOUGH TO HOLD IN PLACE WITHOUT COMPRESSING EDGE OF CABLE TAG INTO CONDUCTOR. TRIM OFF EXCESS CABLE TIE.
5. CABLE TAGS SHALL BE PROVIDED AT ALL POINTS OF ACCESS INCLUDING L-867 BASES, L-868 BASES, HANDHOLES, MANHOLES, JUNCTION BOXES, AND WIREWAYS.

CABLE TAG DETAIL

"NOT TO SCALE"

NOTES:

1. SPLICE DETAILS ARE PROVIDED FOR NEW WORK AND TO ASSIST IN REPAIRS OF ACCIDENTAL OR UNEXPECTED INTERRUPTIONS AND/OR CUTS TO AIRFIELD LIGHTING CABLES.
2. 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.
3. 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 TO COMPLY WITH THE REQUIREMENTS OF FAA AC 150/5370-10G ITEM L-108.
4. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.
5. INSIDE DIAMETER OF RESPECTIVE CABLE CONNECTOR SHALL PROPERLY MATCH OUTSIDE DIAMETER OF CABLE.
6. WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF HIGH VOLTAGE ELECTRICAL INSULATING TAPE (RUBBER SPLICING TAPE SUITABLE FOR PRIMARY ELECTRICAL INSULATION FOR SPLICING CABLE FROM 600 VOLTS TO 69,000 VOLTS) AND COVER WITH VINYL ELECTRICAL TAPE (ALL-WEATHER VINYL INSULATING TAPE SUITABLE FOR PROTECTIVE JACKETING FOR HIGH-VOLTAGE CABLE SPLICES AND REPAIRS) FOR FULL VALUE OF CABLE INSULATION VOLTAGE. PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125 AND FAA AC 150/5370-10G ITEM L-108, HIGH VOLTAGE ELECTRICAL INSULATING TAPE SHALL BE 3M SCOTCH 23, 3M SCOTCH 130C OR APPROVED EQUIVALENT, AND VINYL ELECTRICAL TAPE SHALL BE 3M SCOTCH 88 OR APPROVED EQUIVALENT. TAPES MUST BE RATED SUITABLE FOR THE APPLICATION.
7. 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.
8. CONNECTION OF CONDUCTORS MUST BE MADE BY USING CRIMP CONNECTORS AND A CRIMPING TOOL APPROVED BY THE CONNECTOR/LUG MANUFACTURER. THE TOOL MUST PRODUCE A COMPLETE CRIMP BEFORE IT CAN BE REMOVED. FOR L-823 CONNECTORS, THE CRIMPING TOOL USED MUST BE LISTED BY THE L-823 KIT MANUFACTURER. MAKE THE NUMBER AND TYPE OF CRIMPS PER THE KIT MANUFACTURER'S INSTRUCTIONS.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
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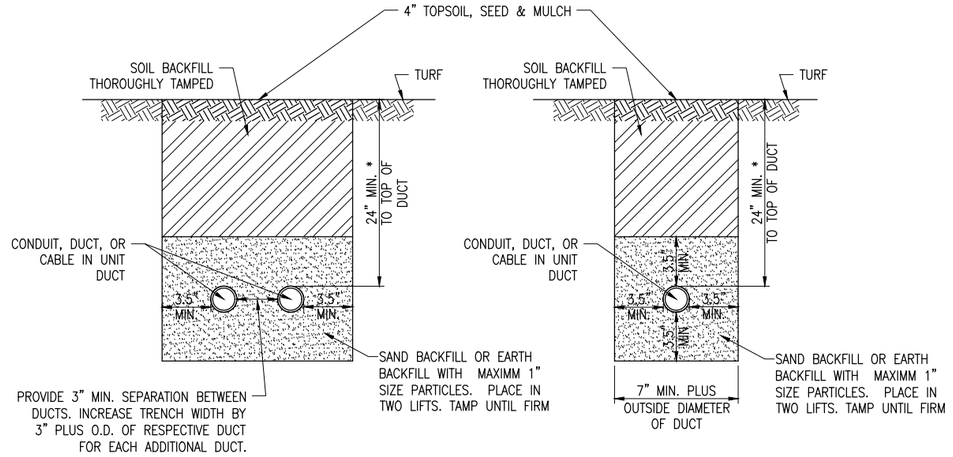
SHEET TITLE

CABLE SPLICE DETAILS



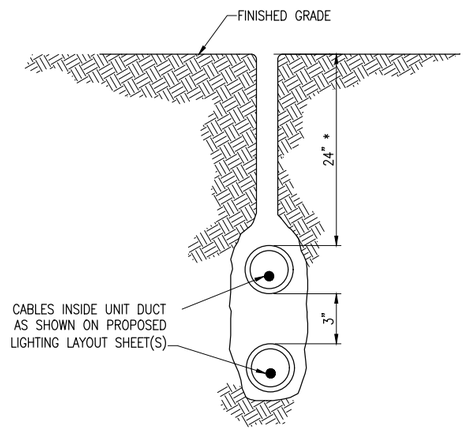
*CABLE IN TRENCH IN CULTIVATED FIELDS SHALL BE TRENCHED 42" DEEP.

CONDUIT IN TRENCH – NON–PAVEMENT AREAS

"NOT TO SCALE"

NOTES:

1. DIMENSIONS FOR COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
2. 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.
3. 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 24 INCHES. MINIMUM COVER REQUIREMENTS FOR DUCTS LOCATED IN CULTIVATED FIELDS IS 42". ADJUST/INCREASE BURIAL DEPTHS TO ACCOMMODATE SITE CONDITIONS, DRAINAGE, AND/OR OBSTRUCTIONS. 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.
4. 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.
5. 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.
6. ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.



*CABLE IN TRENCH IN CULTIVATED FIELDS SHALL BE PLOWED 42" DEEP.

PLOWED CABLE

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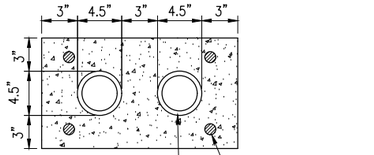
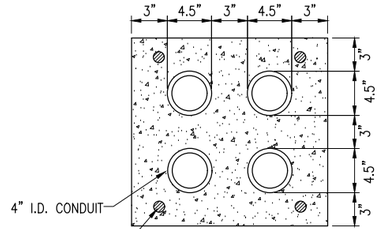
CONDUIT TRENCH DETAILS



2-DUCT BANK
(NOT TO SCALE)

1/2" ø REBAR 3' LONG IN EACH CORNER WHERE APPLICABLE (TYP.)

4" I.D. DUCT AS FOR 4" DUCT. SIZE OF DUCT SHALL BE AS DETAILED HEREIN FOR RESPECTIVE APPLICATION



4-DUCT BANK
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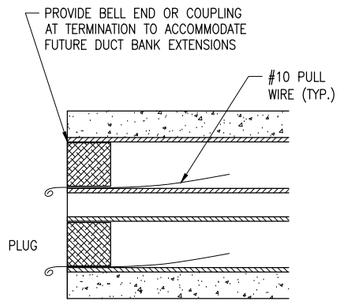

TYPICAL SECTION
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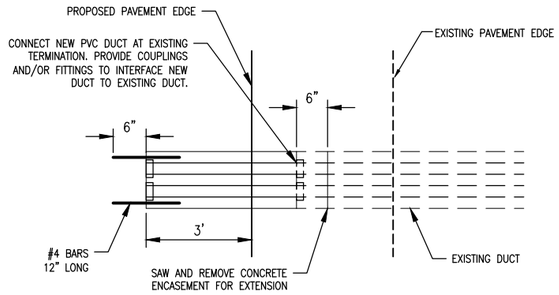
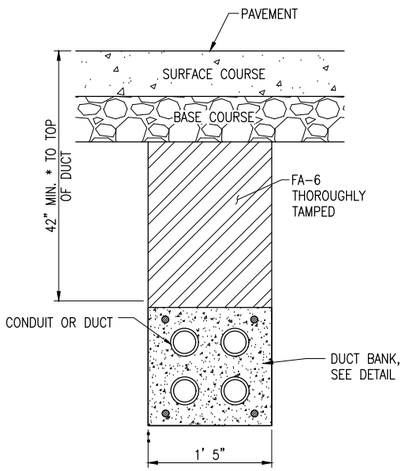


DUCT EXTENSION

DUCT BANK NOTES:

1. DIMENSIONS FOR CONCRETE COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
2. INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., OR APPROVED EQUAL TO MAINTAIN PROPER SEPARATION OF CONDUITS.
3. 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.
4. CONDUITS FOR CONCRETE ENCASED DUCT SHALL BE SCHEDULE 40 (MIN.) PVC OR HDPE CONFORMING TO ITEM 110.
5. DEPTH OF DUCT SHALL BE ADJUSTED TO PASS BELOW EXISTING OR PROPOSED UNDERDRAIN.
6. DUCTS SHALL EXTEND FOR 3 FEET BEYOND ANY EXISTING OR PROPOSED PAVEMENT EDGE.



* DEPTH REQUIRED SHALL BE ADJUSTED WHEN EXISTING OR PROPOSED UNDERDRAIN IS PRESENT SO THAT THE DUCT AND SAND BACKFILL IS BELOW THE UNDERDRAIN.

ENCASED DUCT CROSSING UNDER PAVEMENT
"NOT TO SCALE"

DUCT INSTALLATION NOTES

1. 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/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
2. CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
3. CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
4. THE 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 WHATEVER 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.
5. 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 TECHNICIAN AND THE AIRPORT MANAGER.
6. 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 TECHNICIAN AT THE CONTRACTOR'S EXPENSE. THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND OWNER SHALL BE NOTIFIED IMMEDIATELY IF ANY CABLES OR OTHER UTILITIES ARE DAMAGED.
7. 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.
8. 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.
9. 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.
10. 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.
11. INSTALLATION OF CONDUIT AND DUCTS SHALL CONFORM TO ITEM 110 AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS.
12. 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.
13. 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.
14. 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.
15. A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT LEFT VACANT.
16. 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.
17. CONTROL CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES.
18. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
19. 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.
20. CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.
21. 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, STAINLESS STEEL TAGS, OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.

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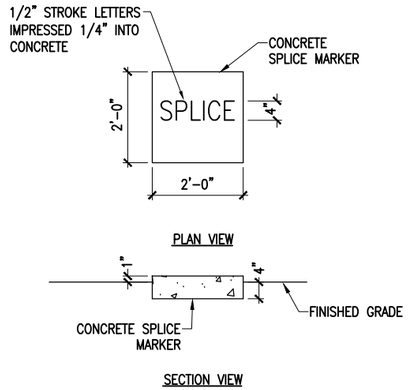
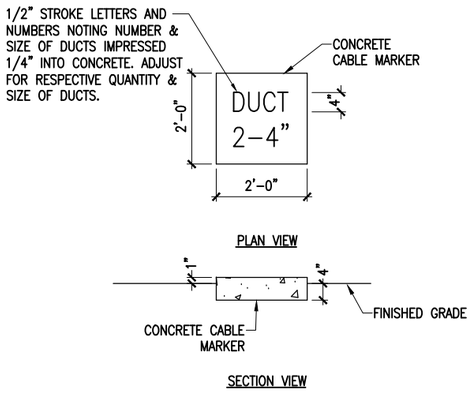
DUCT BANK DETAILS & NOTES



TURF CABLE MARKERS

"NOT TO SCALE"



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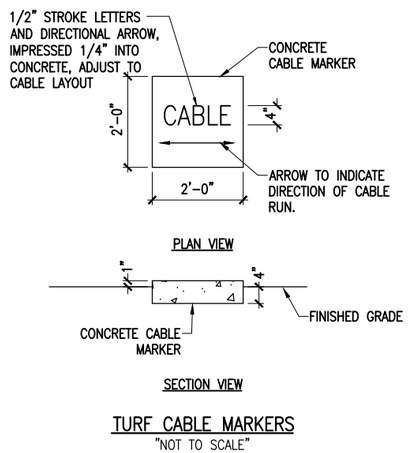

TURF CABLE MARKERS

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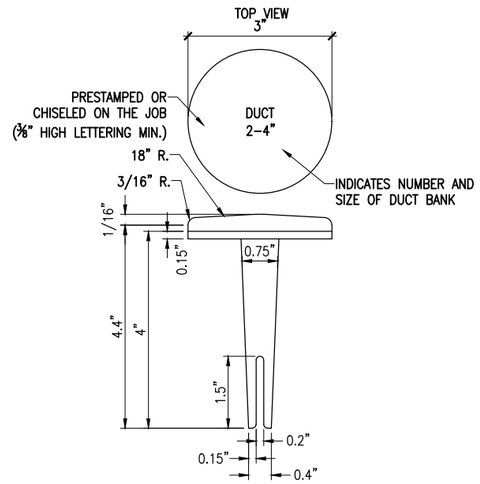


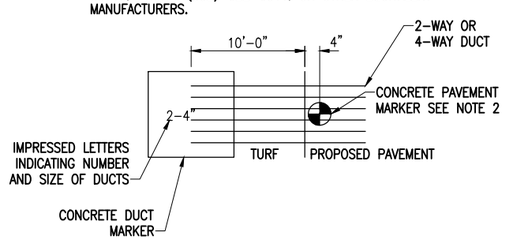
BITUMINOUS PAVEMENT DUCT MARKERS

"NOT TO SCALE"

NOTE:

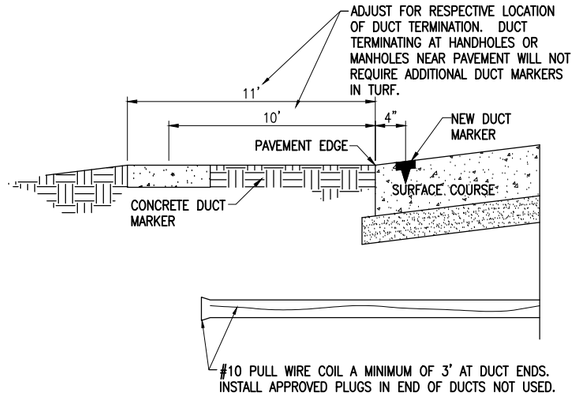
1. TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE

2. BRASS DUCT MARKERS ARE AVAILABLE FROM G&S FOUNDRY & MANUFACTURING CO. INC., 210 KASKASKIA DRIVE, RED BUD, IL 62278, PHONE: (618)-282-4114, SURV-KAP, 3225 E. 47TH ST., TUCSON, AZ 85713, PHONE: (502)-622-6011, OR OTHER EQUIVALENT MANUFACTURERS.



DUCT MARKER DETAIL-PLAN

"NOT TO SCALE"



UNDERGROUND ELECTRICAL DUCT

(NOT TO SCALE)

CABLE & DUCT MARKER NOTES:

1. 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.

2. BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE INFORMED AS DESCRIBED IN NOTE 4.

3. UNDERGROUND CABLE RUNS MUST BE IDENTIFIED BY CABLE MARKERS AT 200 FEET (61 M) MAXIMUM SPACING WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS MUST BE INSTALLED ABOVE THE CABLE. CABLE MARKERS ARE NOT REQUIRED FOR CABLE RUNS BETWEEN RUNWAY/TAXIWAY EDGE LIGHTS.

4. CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE ½" AND ¼" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.

5. EMPLOY THE FOLLOWING METHODS WHERE ADDITIONAL SPACE TO FIT THE LEGEND IS REQUIRED:
   A. REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
   B. INCREASE THE MARKER SIZE TO 30" X 30".
   C. PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE

6. TURF DUCT MARKERS ARE NOT REQUIRED AT PAVEMENT CROSSINGS WHERE DUCTS TERMINATE IN HANDHOLES, OR JUNCTION STRUCTURES.

7. LOCATION OF ALL DIRECT EARTH BURIAL UNDERGROUND CABLE SPLICE/CONNECTIONS, EXCEPT THOSE AT ISOLATION TRANSFORMERS, MUST BE IDENTIFIED BY SPLICE MARKERS. SPLICE MARKERS MUST BE PLACED ABOVE THE SPLICE/CONNECTIONS. DIRECT EARTH BURIAL UNDERGROUND CABLE SPLICES SHALL BE AVOIDED WHERE POSSIBLE. CABLE SPLICES SHALL BE LOCATED IN SPLICE CANS, LIGHT BASES, HANDHOLES, MANHOLES, OR OTHER JUNCTION STRUCTURES UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER AND/OR THE RESIDENT ENGINEER.

8. THE CABLE AND SPLICE MARKERS MUST IDENTIFY THE CIRCUITS TO WHICH THE CABLES BELONG. FOR EXAMPLE: CIRCUIT 1, CIRCUIT 2, ETC. CONTACT RESIDENT ENGINEER.

9. LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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DESIGN BY: KNL 4/5/2018
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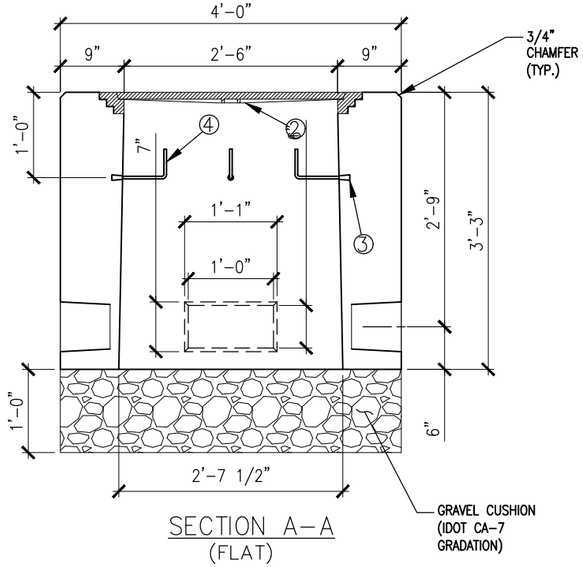
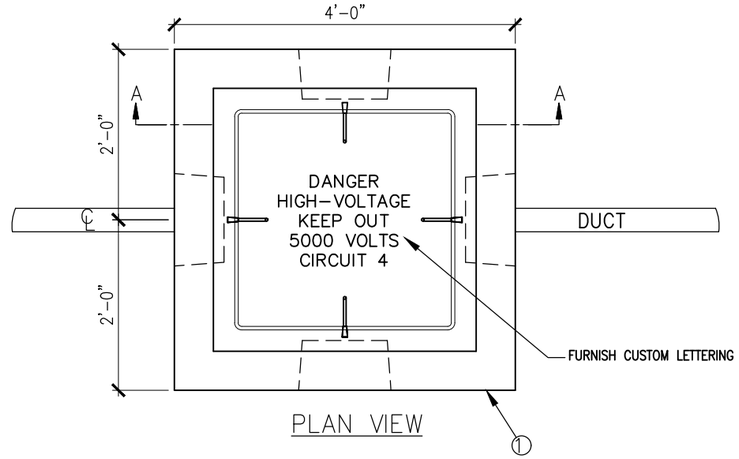
SHEET TITLE

CABLE & DUCT
MARKER DETAILS



SECTION A–A
(FLAT)



PLAN VIEW

HANDHOLE NOTES:

1. LIDS FOR LOW VOLTAGE HANDHOLES (CONTAINING CIRCUITS RATED 600 VOLTS AND BELOW) SHALL BE LABELED "LOW VOLTAGE" OR "0V – 600V ELECTRIC". LIDS FOR HIGH VOLTAGE HANDHOLES CONTAINING AIRFIELD LIGHTING SERIES CIRCUIT WIRING SHALL BE LABELED "DANGER HIGH VOLTAGE KEEP OUT 5000 VOLTS" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.30(D) "COVERS". COORDINATE LETTERING WITH MFR. HANDHOLES PROVIDED WITH THE WRONG LIDS SHALL HAVE THE LIDS REPLACED WITH THE CORRECT LIDS AT NO ADDITIONAL COST TO THE CONTRACT.
2. ELECTRICAL HANDHOLE, FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 40,000 POUND LOADS. FRAME & LID SHALL BE NEENAH CATALOG NO. R–6662–PH FRAME AND LID, EAST JORDAN IRON WORKS CAT NO. 8213 FRAME AND COVER, OR APPROVED EQUAL.
3. REINFORCEMENT SHALL BE #6 BARS AT 6" CENTERS BASE & WALLS EACH WAY.
4. CONCRETE SHALL BE 5000 PSI AT 28 DAYS.
5. HANDHOLES SHALL BE PRECAST. PRECAST MANUFACTURERS MUST BE ON THE ILLINOIS DEPARTMENT OF TRANSPORATION (IDOT) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
6. COORDINATE INSTALLATION OF HANDHOLES WITH RESPECTIVE FINISHED GRADE ELEVATION.
7. ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND/OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE HANDHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
8. GRAVEL CUSHION SHALL BE INCIDENTAL TO HANDHOLE.
9. HANDHOLES WILL BE PAID FOR UNDER ITEM AR110710 ELECTRICAL MANHOLE PER EACH.

PARTS LIST (PER EACH)		
ITEM	DESCRIPTION	QUANTITY
1	PRECAST CONCRETE JUNCTION BOX	1
2	CAST IRON FRAME & COVER; NEENAH FOUNDRY COMPANY CAT. NO. R–6662–PH OR APPROVED EQUAL. WITH CONCEALED HINGE COVER. LETTERING AS SHOWN.	1
3	3/8" PLASTIC THREADED INSERT	4
4	3/8" ø GALVANIZED CABLE HOOK	4
5	4T LIFTING ANCHORS	4

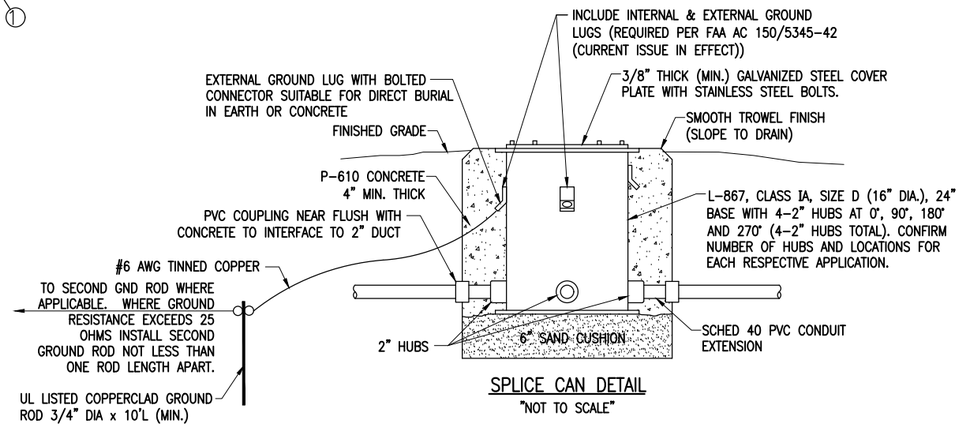
SPECIFICATIONS

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

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

WEIGHT: APPROX. 4,990# FLAT TOP

ELECTRICAL MANHOLE
"NOT TO SCALE"



SPLICE CAN DETAIL
"NOT TO SCALE"

NOTES FOR SPLICE CAN DETAIL:

1. SPLICE CANS SHALL CONFORM TO THE REQUIREMENTS OF FAA AC 150/5345–42F, OR MOST CURRENT ISSUE IN FORCE, FOR TYPE L–867, CLASS IA, 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.
2. 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 150/5345–42 (CURRENT ISSUE IN EFFECT).
3. APPLY AN OXIDE–INHIBITING, ANTI–SEIZING COMPOUND TO ALL SCREWS, NUTS, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL.
4. THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING CANS SHALL BE IN ACCORDANCE WITH ITEM P–610.
5. LIDS FOR THE SPLICE CANS CONTAINING HIGH VOLTAGE AIRFIELD LIGHTING CABLES SHALL INCLUDE MINIMUM 1/2–INCH HIGH LETTERING LABELED "DANGER HIGH VOLTAGE KEEP OUT" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.71(E) "SUITABLE COVERS". THIS WILL NEED TO BE COORDINATED WITH THE SPLICE CAN MANUFACTURER.
6. LIDS FOR THE SPLICE CANS CONTAINING LOW VOLTAGE CABLES (RATED 600 VOLTS AND BELOW) WILL BE ACCEPTABLE TO USE BLANK COVERS.

SPLICE CAN (IF REQUIRED – FURNISHED AT CONTRACTOR'S EXPENSE)
"NOT TO SCALE"

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
			DES	DWN	REV

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SHEET TITLE

HANDHOLE AND
SPLICE CAN DETAILS

GROUNDING NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE AND 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:

2. FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS FOR AIRFIELD LIGHTING (RUNWAY LIGHTING, TAXIWAY LIGHTING, TAXI GUIDANCE SIGNS & NAVAIDS) 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 PENTAIR ERICO PRODUCTS, INC., THERMOWELD BY CONTINENTAL INDUSTRIES, INC., ULTRAWELD BY HARGER, 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.

3. 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 TECHNICIAN, AND THE PROJECT ENGINEER.

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

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

6. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON–CONDUCTIVE MATERIAL, PER 2017 NATIONAL ELECTRICAL CODE ARTICLE 250–12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.

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

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

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

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

11. EACH 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 2017 NEC TABLE 250–122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT–GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.

12. ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON–METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER–BONDING JUMPER SIZED IN CONFORMANCE WITH 2017 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 2017 NEC 250–102.

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

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

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

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

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

18. BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.

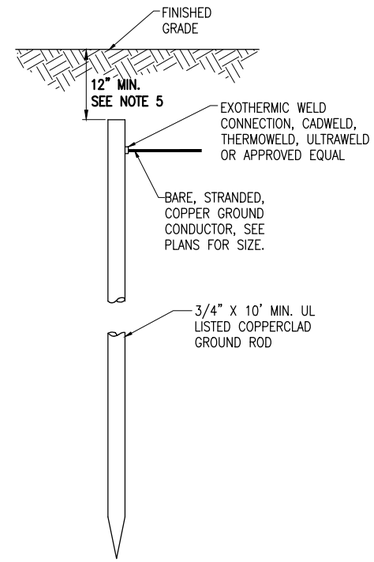
19. INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS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

20. 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 2017 NEC 250–102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.

21. NEVER REMOVE, ALTER, OR ATTEMPT TO REPAIR CONDUCTORS OR CONDUIT SYSTEMS PROVIDING GROUNDING OR ELECTRICAL BONDING FOR ANY ELECTRICAL EQUIPMENT UNTIL ALL POWER IS REMOVED FROM EQUIPMENT. WARN ALL PERSONNEL OF THE UNGROUNDED CONDITION OF THE EQUIPMENT. DISPLAY APPROPRIATE WARNING SIGNS, SUCH AS DANGER TAGS, TO WARN PERSONNEL OF THE POSSIBLE HAZARDS.

22. 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.

23. GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA FROM 100 PERCENT DOMESTIC STEEL TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS AND THE STEEL PRODUCTS PROCUREMENT ACT.



10 FT. GROUND ROD

NOTES

1. TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
2. THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
3. COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
4. GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.
5. TOP OF GROUND RODS SHALL BE 12" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN.
6. 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.
7. GROUND RODS FOR INDIVIDUAL SPLICE CANS SHALL BE TWO 3/4 INCH DIAMETER BY 10 FEET LONG GROUND RODS SPACED MINIMUM OF 10 FEET APART (ONE ROD LENGTH APART).

GROUND RODS
(NOT TO SCALE)

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REHABILITATE
TAXIWAY B, PHASE 2

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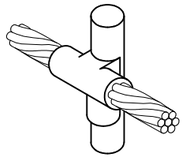
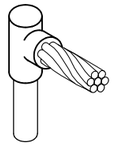
SHEET TITLE

GROUNDING NOTES



CABLE TO GROUND ROD



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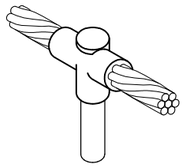

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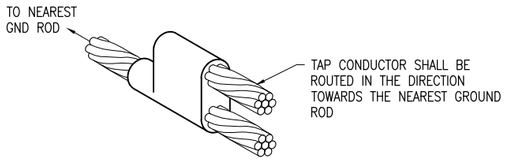
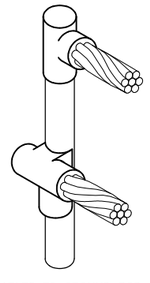


CABLE TO CABLE
HORIZONTAL PARALLEL TAP

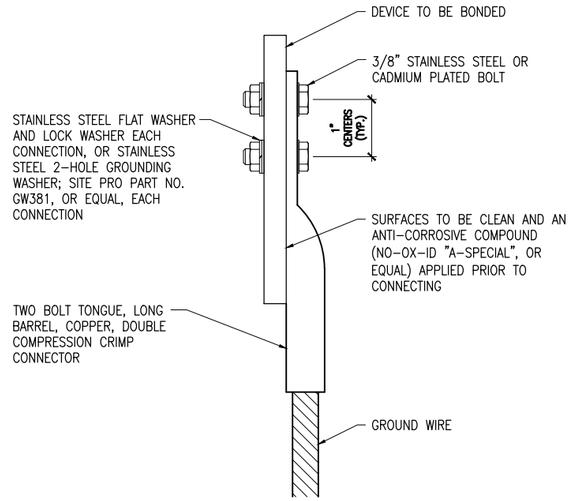


CABLES TO GROUND ROD

DETAIL NOTES

1. ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELD AS MANUFACTURED BY PENTAIR ERICO PRODUCTS, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES, OR APPROVED EQUAL. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
2. 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.
3. INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 40 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.

EXOTHERMIC WELD DETAILS

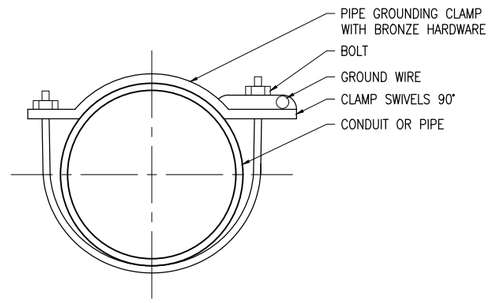


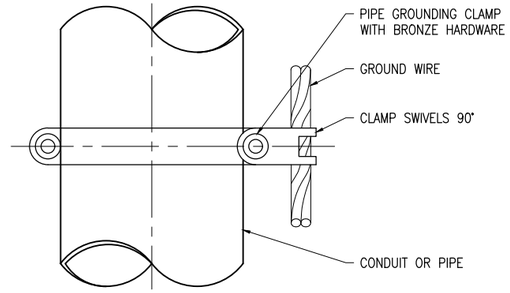
2 HOLE LONG BARREL COMPRESSION LUG TABLE (OR APPROVED EQUAL)			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	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

1. ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
2. GROUND WIRE CONNECTIONS TO EQUIPMENT SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE DEVICE OR WITH THE RESPECTIVE EQUIPT MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE.
3. GROUNDING ELECTRODE CONDUCTORS, BONDING JUMPERS, & INDIVIDUAL GROUND WIRES SHALL NOT BE INSTALLED IN METAL CONDUIT. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY 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.
4. ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", BURNDY PENETROX E, OR APPROVED EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.

GROUNDING LUG CONNECTION DETAIL





PIPE GROUNDING CLAMP TABLE (OR APPROVED EQUAL)		
ERICO CAT. NO.	BURNDY CAT. NO.	PIPE SIZE
CWP1JSH	GAR3902-BU	1/2" - 1"
CWP2JSH	GAR3903-BU	1 1/4" - 2"
CWP3JSH	GAR3904-BU	2 1/2" - 3 1/2"
CWP3JSH	GAR3905-BU	4" - 5"
-----	GAR3906-BU	6"

NOTES

1. 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

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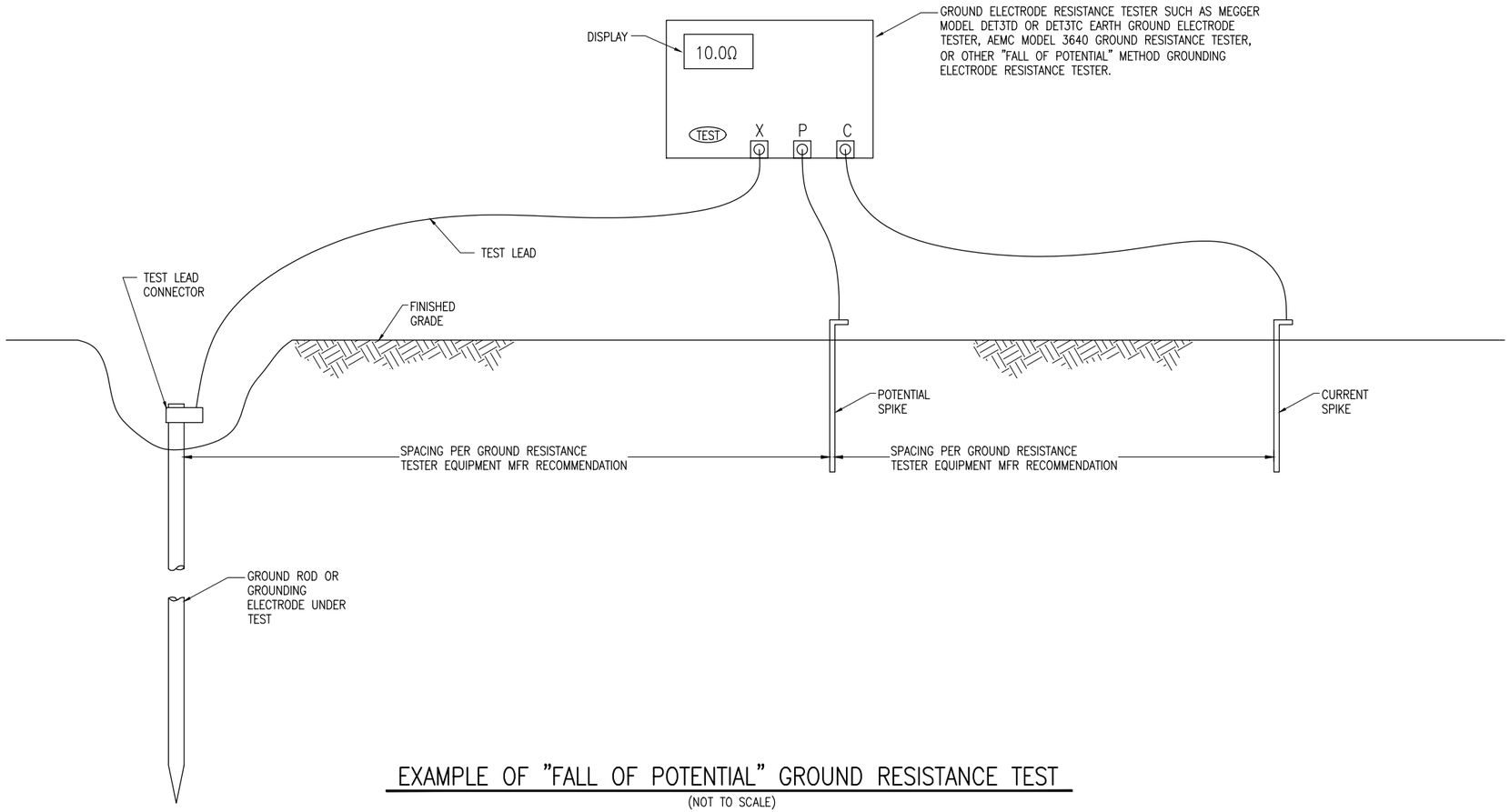
GROUNDING DETAILS



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, AND THE PROJECT ENGINEER.
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, AND THE PROJECT ENGINEER.
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.

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GROUND
RESISTANCE
TESTING DETAILS

ELECTRICAL LEGEND – ONE-LINE DIAGRAM

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

ELECTRICAL LEGEND – SCHEMATIC

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

ELECTRICAL ABBREVIATIONS

A.F.F.	ABOVE 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 CIRCULAR MIL
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRIC
OL	OVERLOAD

ELECTRICAL ABBREVIATIONS (CONTINUED)

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

AIRPORT EQUIPMENT/FACILITY ABBREVIATIONS

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

NOTES:

1. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 – NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
2. CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING/CONSTRUCTION FOR USE AS A REFERENCE.
3. 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).
4. 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

5. SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
6. 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.
7. ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES UL LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
8. 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, TAXI SIGN, NAVAID, OR OTHER DEVICE.
9. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION STRUCTURE OR HANDHOLE.

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ELECTRICAL VAULT
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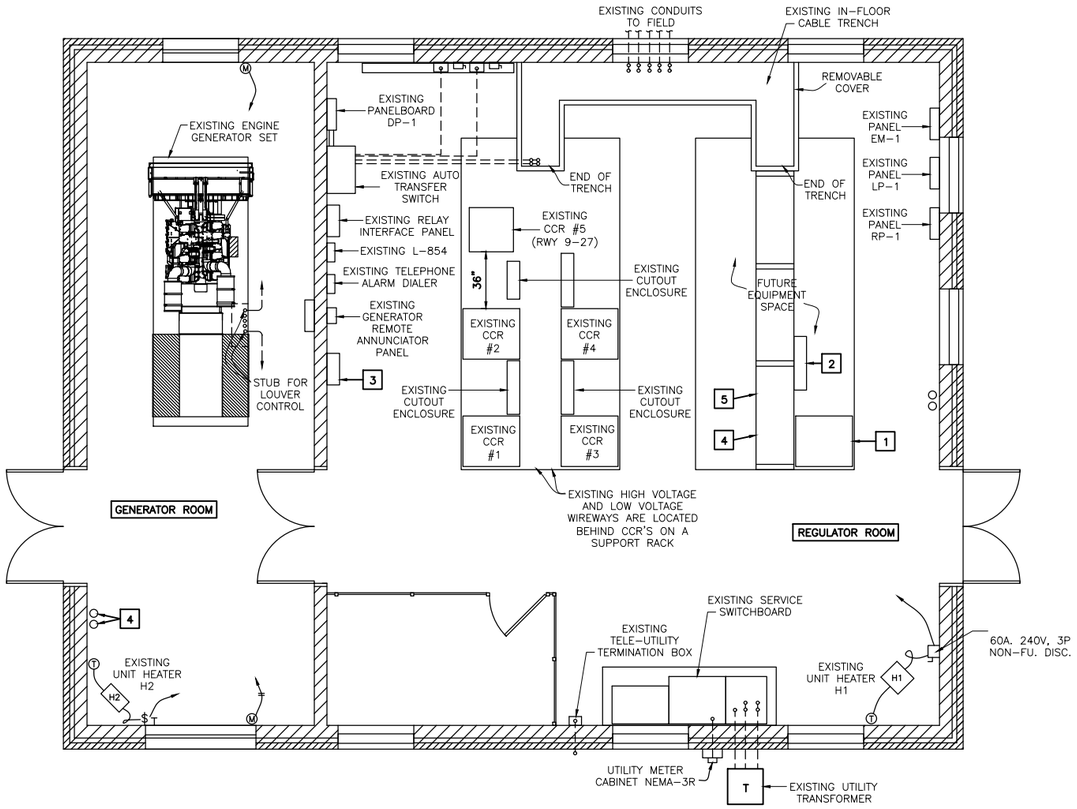
ABBREVIATIONS &
NOTES



ELECTRICAL POWER PLAN

GENERAL NOTES:

1. CONTRACTOR SHALL EXAMINE VAULT TO DETERMINE EXISTING CONDITIONS.
2. SEE "TXY B-EAST CCR ONE-LINE DIAGRAM" FOR LOW VOLTAGE INPUT POWER WIRING REQUIREMENTS TO CONSTANT CURRENT REGULATOR. SEE "HIGH VOLTAGE WIRING SCHEMATIC" FOR CCR OUTPUT WIRING REQUIREMENTS. SEE "RUNWAY 9-27 AND TAXIWAY B LIGHTING CONTROL WIRING SCHEMATIC" FOR CCR CONTROL WIRING REQUIREMENTS.
3. CONSTANT CURRENT REGULATORS AND THEIR RESPECTIVE SERIES PLUG CUTOUTS SHALL BE CLEARLY LABELED TO IDENTIFY THE RESPECTIVE REGULATOR DESIGNATION, RUNWAY OR TAXIWAY SERVED, POWER SOURCE OR CIRCUIT, AND VOLTAGE SYSTEM.
4. MAINTAIN SEPARATION OF HIGH VOLTAGE WIRING (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) FROM LOW VOLTAGE WIRING (RATED 600 VOLTS AND BELOW) TO COMPLY WITH NEC 300.3(C)(2). HIGH VOLTAGE AND LOW VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, WIREWAY, PULL BOX, SPLICE CAN, HANDHOLE, OR MANHOLE.
5. THE CONTRACTOR SHALL SECURE, IDENTIFY, AND PLACE ANY TEMPORARY EXPOSED WIRING IN CONDUIT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA AC 150/5370-2G OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 2.18.3 "LIGHTING AND VISUAL NAVAIDS"..
6. BOND EACH CCR FRAME/HOUSING TO VAULT GROUND BUS WITH #6 AWG COPPER BONDING JUMPER.
7. MAINTAIN SEPARATION OF HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW). LOW VOLTAGE WIRING (208 VAC POWER) SHALL ENTER THE RESPECTIVE CCR AT THE LOW VOLTAGE SECTION. HIGH VOLTAGE AIRFIELD LIGHTING SERIES CIRCUIT WIRING SHALL EXIT THE RESPECTIVE CCR AT THE HIGH VOLTAGE SECTION. CONTROL WIRING SHALL ENTER THE CCR AT THE RESPECTIVE CONTROL SECTION.

KEYED NOTES:

1. NEW TAXIWAY B-EAST CCR, SEE GENERAL NOTE 2.
2. NEW CUTOUT FOR TAXIWAY B-EAST CCR IN A NEMA 1 OR NEMA 12 ENCLOSURE WITH HINGED COVER AND PAD LOCKABLE FEATURE. PROVIDE 36" WIDE CLEAR WORKING SPACE IN FRONT OF CUTOUT TO COMPLY WITH NEC 110.32 AND 110.34. MOUNT TO NEW SUPPORT PACK. SEE GENERAL NOTE 2.
3. NEW RELAY INTERFACE PANEL FOR RUNWAY 9-27 AND TAXIWAY B TO REPLACE EXISTING CONTROL PANEL. FIELD VERIFY LOCATION TO ACCOMMODATE SITE CONDITIONS. INSTALL IN APPROXIMATELY THE SAME LOCATION AS THE EXISTING CONTROL PANEL. SEE GENERAL NOTE 2.
4. NEW SUPPORT RACK (FULL LENGTH OF HOUSEKEEPING/EQUIPMENT PAD) WITH 8" X 8" WIREWAY FOR LOW VOLTAGE AND COTROL WIRING AND SECOND SEPARATE 8" X 8" WIREWAY FOR HIGH VOLTAGE AIRFIELD LIGHTING SERIES CIRCUIT WIRING. INTERFACE EACH WIREWAY TO THE RESPECTIVE CONDUIT AND DUCT SYSTEMS. SEE DETAILS.
5. FURNISH AND INSTALL A 1/4" THICK BY 2" WIDE BY FULL LENGTH OF SUPPORT RACK, COPPER BUS BAR WITH STANDOFFS AND INSULATORS. CONNECT TO EXISTING VAULT GROUND BUS SYSTEM WITH 4/0 COPPER CONDUCTOR. CONNECTIONS TO GROUND BAR SHALL BE WITH 2-HOLE TONGUE LONG BARREL COMPRESSION LUGS AND 3/8" STAINLESS STEEL BOLTS, NUTS AND WASHERS.

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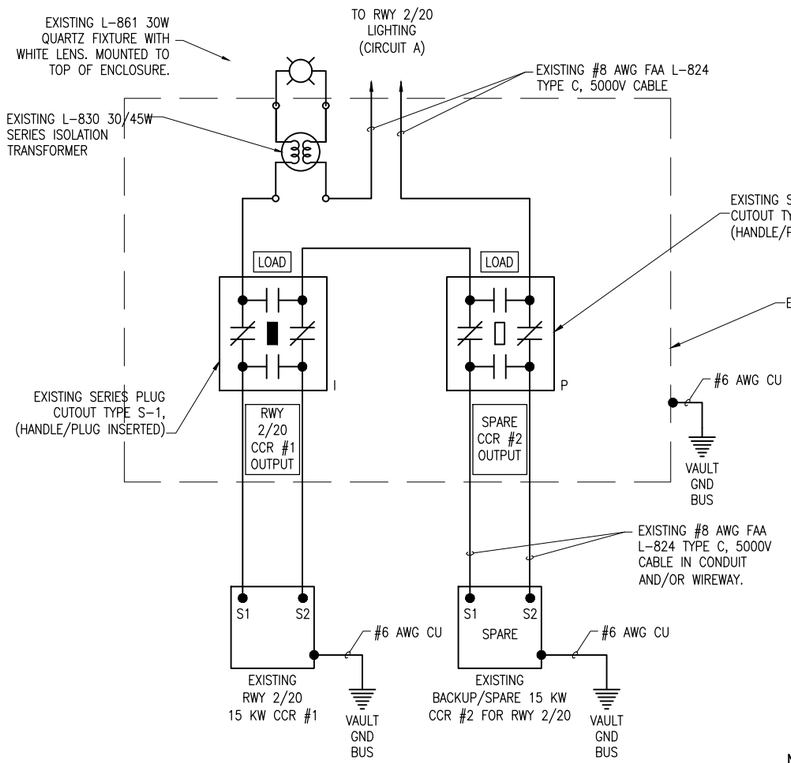

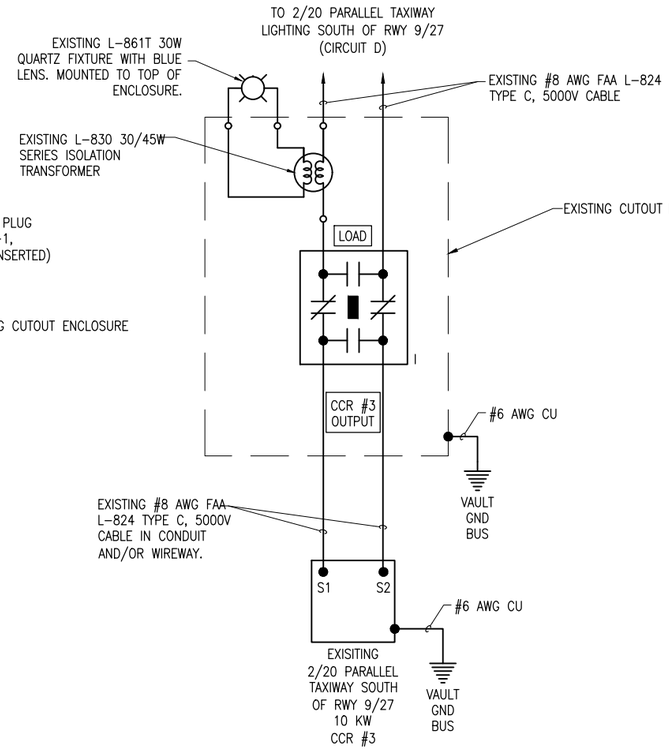

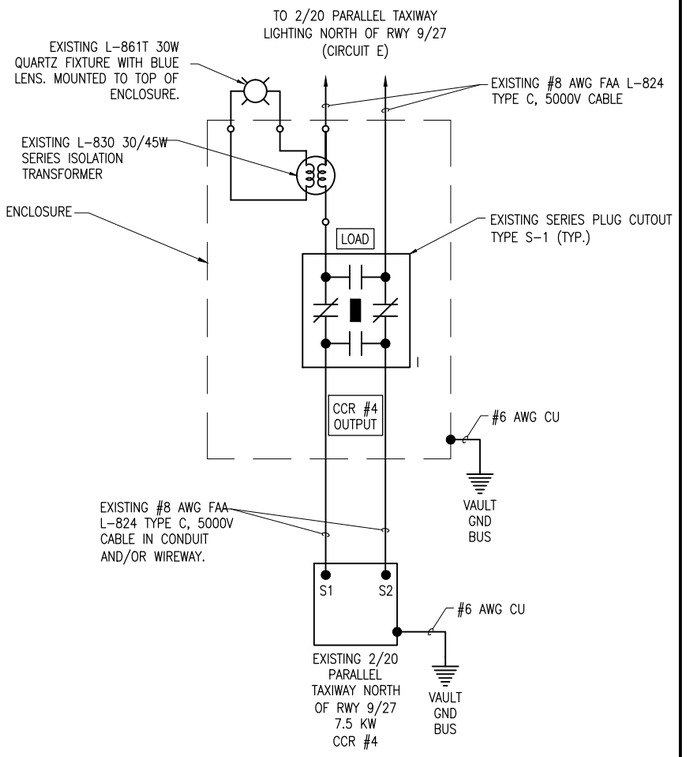

NOTES

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER AND RESIDENT ENGINEER. 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 OCCUPATIONS 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 CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER.
3. 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.
4. 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.
5. MEGGER TEST (WITH AN INSULATION RESISTANCE TESTER) AND RECORD EXISTING SERIES CIRCUITS 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).
6. THE RESPECTIVE RUNWAY AND TAXIWAY LIGHTING CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, AND/OR ADDITIONS AND AFTER THE NEW CABLES AND LIGHTING SYSTEM MODIFICATIONS 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 OF OPERATIONS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE PROJECT ENGINEER. TEST RESULTS SHALL BE PROVIDED TO THE PROJECT ENGINEER AND RESIDENT ENGINEER.
7. REFER TO INSTRUCTIONS IN THE VAULT FOR TRANSFER PROCEDURE TO BACKUP/SPARE CCR FOR RUNWAY 2-20.

LEGEND

"I" DENOTES PLUG CUTOUT WITH PLUG INSERTED

"P" DENOTES PLUG CUTOUT WITH PLUG PULLED

"CCR" DENOTES CONSTANT CURRENT REGULATOR

EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAY 2/20 AND PARALLEL TAXIWAY

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REHABILITATE TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION	DES	DWN	REV

ISSUE: 6/8/18
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DESIGN BY: KNL 04/18/2018
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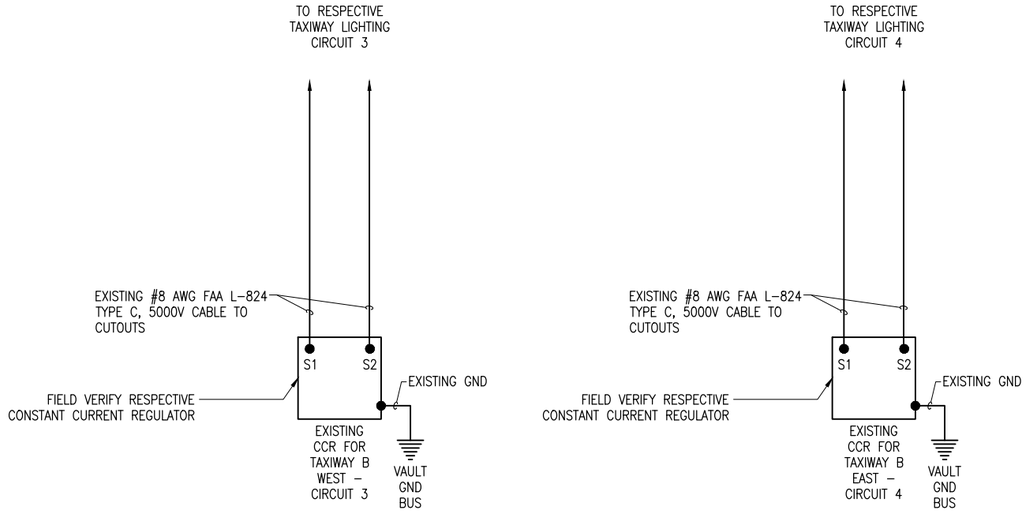
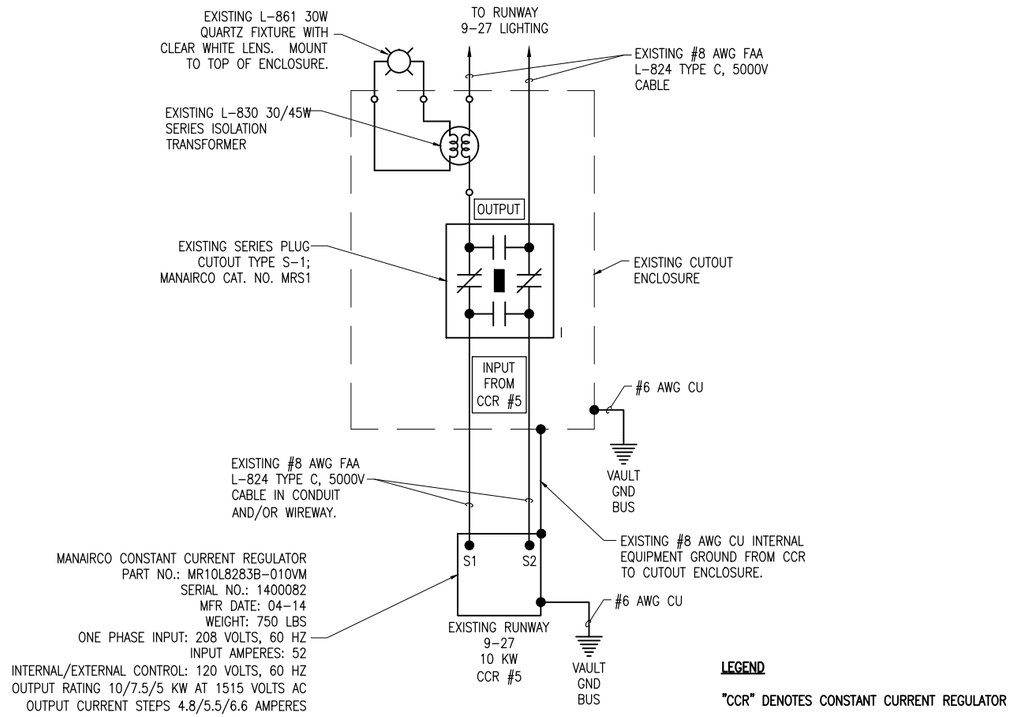
SHEET TITLE

EXISTING HIGH VOLTAGE WIRING SCHEMATIC RWY 2-20 & PARALLEL TWY



EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAY B



EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAY 9-27

NOTES:

1. LEWIS UNIVERSITY AIRPORT HAS TWO 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. CONTRACTOR SHALL EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL CONFIRM POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO WORKING ON THE RESPECTIVE CIRCUITS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO WORKING ON, DISCONNECTING, REMOVING, RELOCATING, OR CONNECTING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICE. 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. 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. 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.
4. NOTE THE CONDITION OF THE EXISTING TAXIWAY B 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.
5. 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.
6. CCR FOR TAXIWAY B WEST CIRCUIT 3 AND CCR FOR TAXIWAY B EAST CIRCUIT 4 ARE EXISTING, AND ARE LOCATED IN A SEPARATE VAULT.
7. 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.
8. EXISTING TAXIWAY B-EAST CIRCUIT 4 CCR SHALL BE DISCONNECTED, REMOVED, AND TURNED OVER TO THE AIRPORT. A NEW TWY B-EAST CCR SHALL BE FURNISHED AND INSTALLED IN THE VAULT WITH THE RUNWAY 2-20 CCR'S.
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.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

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		DES	DWN	REV

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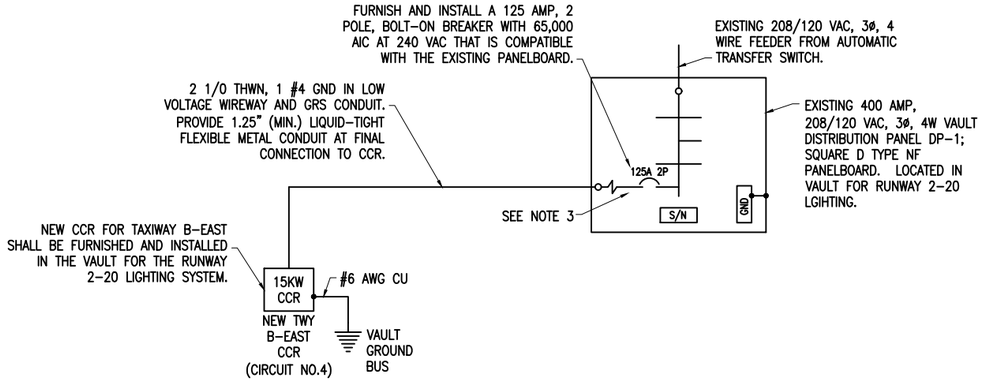
SHEET TITLE

EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR TWY B & RWY 9-27



TAXIWAY B-EAST CONSTANT CURRENT REGULATOR

ELECTRICAL ONE-LINE DIAGRAM

NOTES

1. CONTRACTOR SHALL EXAMINE THE SITE AND FIELD VERIFY EXISTING CONDITIONS.
2. 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).
3. 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.
4. ALL CONDUCTORS/WIRING SHALL BE COPPER.
5. CONTRACTOR SHALL CONFIRM POWER REQUIREMENTS WITH THE ACTUAL NAMEPLATE ON EACH CONSTANT CURRENT REGULATOR (OR OTHER RESPECTIVE EQUIPMENT) AND ADJUST CIRCUIT BREAKER, WIRE SIZES & CONDUIT SIZES TO CONFORM WITH NEC & MANUFACTURER'S RECOMMENDATIONS WHERE APPLICABLE. WIRE SIZES SHOWN ON THE PLANS ARE MINIMUM.
6. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLTS SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION STRUCTURE OR HANDHOLE.
7. 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.
8. BRANCH CIRCUITS TO REGULATORS SHALL BE INSTALLED IN THE RESPECTIVE LOW VOLTAGE WIREWAY/DUCT, WITH GRSC AT TRANSITIONS AND UL LISTED LIQUID TIGHT FLEXIBLE METAL CONDUIT AT FINAL CONNECTIONS TO THE REGULATORS. CONDUITS SHALL BE SIZED IN ACCORDANCE WITH NEC.
9. BOND ALL REGULATORS TO THE RESPECTIVE VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER FOR EACH REGULATOR.
10. VAULT WORK WILL BE PAID FOR UNDER ITEM AR109200 INSTALL ELECTRICAL EQUIPMENT PER LUMP SUM.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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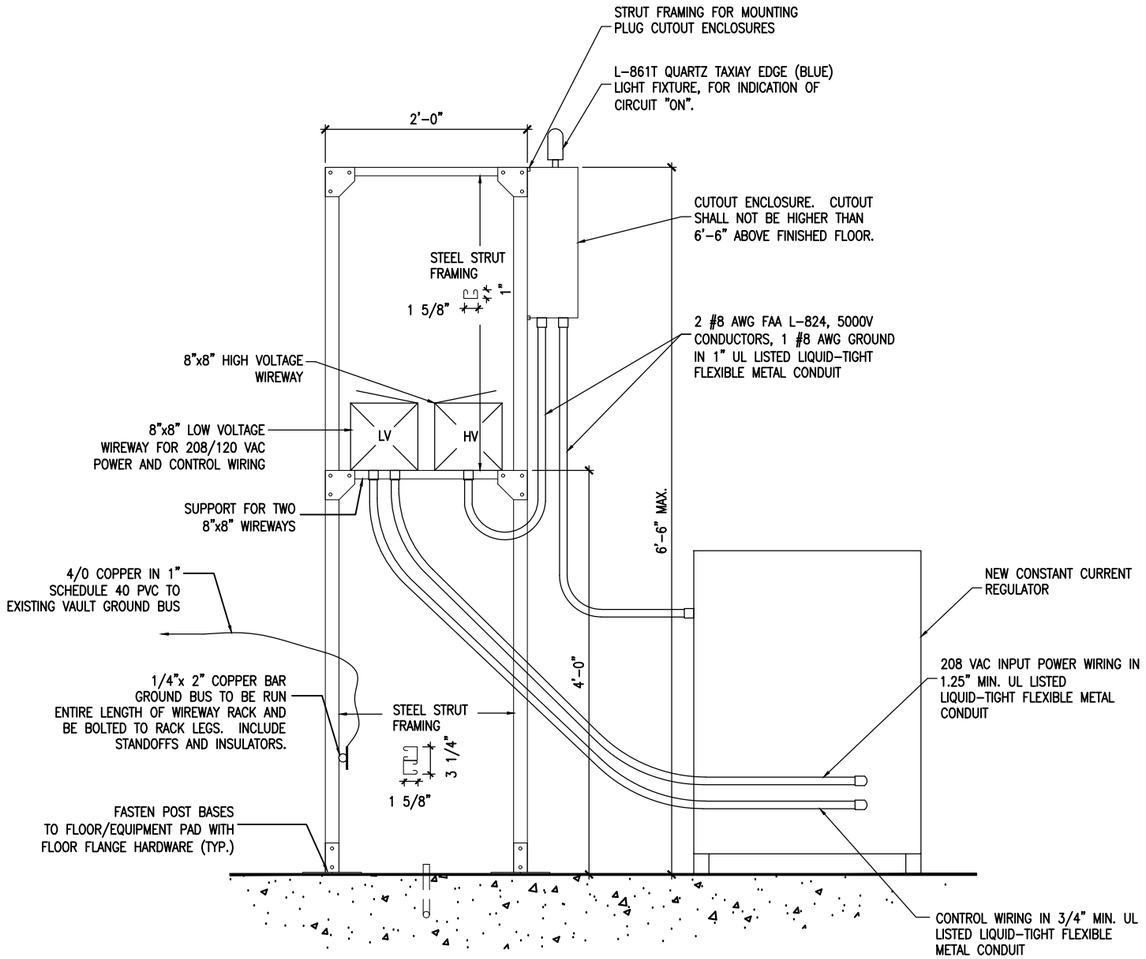
NEW TWY B-EAST
CCR ELECTRICAL
ONE LINE DIAGRAM



WIREWAY SUPPORT RACK ELEVATION
NOT TO SCALE

NOTES

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS NECESSARY FOR COMPLETE AND OPERATIONAL INSTALLATION OF THE VAULT EQUIPMENT, AS SPECIFIED HEREIN AND AS SHOWN ON THE PLANS. THE COMPLETE INSTALLATION AND WIRING SHALL BE DONE IN A NEAT, WORKMANLIKE MANNER. ALL ELECTRICAL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE NFPA 70 – NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS FOR THE RESPECTIVE APPLICATION. ANY INSTALLATIONS WHICH VOID THE UL 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.

2. CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES WITH THE AIRPORT MANAGER AND THE RESIDENT ENGINEER. ANY SHUTDOWN OF EXISTING SYSTEMS SHALL BE SCHEDULED WITH AND APPROVED BY THE AIRPORT MANAGER PRIOR TO SHUTDOWN. 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 AND 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 COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E – STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.

4. WIREWAYS SHALL BE 8 INCH BY 8 INCH, NEMA 1 WITH HINGED COVER AND WITHOUT KNOCKOUTS, UL LISTED AND LABELED IN CONFORMANCE WITH UL 870 STANDARDS FOR WIREWAYS, AUXILIARY GUTTERS, AND ASSOCIATED FITTINGS. WIREWAYS SHALL BE CONSTRUCTED OF DOMESTIC STEEL. PROVIDE INTERNAL EQUIPMENT GROUND BARS OR GROUND LUGS FOR EACH WIREWAY TO ACCOMMODATE TERMINATION OF EQUIPMENT GROUND WIRES. BOND EACH WIREWAY TO THE VAULT GROUND BUS BAR WITH A #6 AWG COPPER CONDUCTOR.

5. STRUT SUPPORT SHALL BE HOT DIPPED GALVANIZED STEEL OR STAINLESS STEEL WITH STAINLESS STEEL HARDWARE. PROVIDE ZINC RICH PAINT APPLIED TO FIELD CUTS OF GALVANIZED STEEL STRUT SUPPORT TO MINIMIZE THE POTENTIAL FOR CORROSION PER THE RESPECTIVE STRUT SUPPORT MANUFACTURER'S RECOMMENDATION. STRUT SUPPORT SHALL BE ADEQUATELY SIZED FOR THE RESPECTIVE EQUIPMENT. STRUT SUPPORT CHANNEL SHALL BE MANUFACTURED FROM DOMESTIC STEEL.

6. REFER TO THE EXISTING SUPPORT RACK SYSTEM AND WIREWAYS FOR AN EXAMPLE OF THE SUPPORT RACK CONSTRUCTION.

7. HIGH-VOLTAGE CIRCUIT WIRING (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW-VOLTAGE CIRCUIT WIRING (RATED 600 VOLTS AND BELOW) SHALL MAINTAIN SEPARATION FROM EACH OTHER. HIGH-VOLTAGE WIRING AND LOW-VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, HANDHOLE, OR JUNCTION BOX.

8. INSTALL CONSTANT CURRENT REGULATORS IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. MAINTAIN WORKING CLEARANCES IN FRONT OF CONSTANT CURRENT REGULATORS PER THE REQUIREMENTS OF NEC 110.26 AND 110.34. MAINTAIN CLEARANCE AROUND CONSTANT CURRENT REGULATORS FOR AIR FLOW AND COOLING PER THE RESPECTIVE MANUFACTURER'S RECOMMENDATIONS. CONFIRM CIRCUIT BREAKER SIZES FOR CONSTANT CURRENT REGULATORS ARE SIZED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S RECOMMENDATIONS AND/OR REQUIREMENTS AND NEC. WHERE NECESSARY TO ACCOMMODATE THE RESPECTIVE CONSTANT CURRENT REGULATOR INPUT AMPERAGE REQUIREMENTS, CIRCUIT BREAKERS, CONDUCTORS, AND CONDUITS SHALL BE ADJUSTED (INCREASED IN SIZE) TO MEET THE MANUFACTURER'S RECOMMENDATIONS AND/OR REQUIREMENTS AND THE NEC. CONDUIT CONNECTIONS TO CONSTANT CURRENT REGULATORS SHALL BE WITH UL-LISTED, LIQUID-TIGHT, FLEXIBLE METAL CONDUIT. INCLUDE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUND WIRE WITH EACH PIECE OF LIQUID-TIGHT, FLEXIBLE METAL CONDUIT THAT IS CONNECTED TO A CONSTANT CURRENT REGULATOR TO COMPLY WITH NEC 350.60. HIGH-VOLTAGE WIRING SHALL ENTER EACH RESPECTIVE REGULATOR AT THE HIGH-VOLTAGE/SERIES CIRCUIT OUTPUT SECTION OF THE REGULATOR. 208 VAC OR 240 VAC INPUT POWER WIRING SHALL ENTER EACH RESPECTIVE REGULATOR AT THE LOW-VOLTAGE/INPUT POWER SECTION OF THE REGULATOR. FURNISH AND INSTALL CONTROL WIRING, AS DETAILED ON THE PLANS. CONTROL WIRING SHALL ENTER EACH RESPECTIVE REGULATOR AT THE CONTROL SECTION OF THE REGULATOR. BOND EACH CONSTANT CURRENT REGULATOR ENCLOSURE FRAME, TO THE VAULT GROUND BUS WITH A #6 AWG (MINIMUM), BARE-STRANDED, COPPER-BONDING JUMPER.

9. LIQUID-TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE UL-LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. DO NOT INSTALL LIQUID-TIGHT, FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID-TIGHT, FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLATION.

10. PROVIDE TWO 1" GALVANIZED RIGID STEEL CONDUITS FROM THE NEW RELAY INTERFACE PANEL FOR RUNWAY 9-27 AND TAXIWAY B TO THE LOW VOLTAGE WIREWAY. ONE CONDUIT SHALL BE A SPARE FOR FUTURE USE.

11. BOND THE SUPPORT RACK SYSTEM TO THE VAULT GROUND BUS WITH A #6 AWG MINIMUM COPPER CONDUCTOR.

12. SEE GROUNDING DETAILS AND NOTES FOR ADDITIONAL INFORMATION REGARDING GROUNDING REQUIREMENTS.

13. INTERFACE THE HIGH VOLTAGE WIREWAY TO THE HIGH VOLTAGE DUCT SYSTEM FOR THE AIRFIELD LIGHTING. PROVIDE CONDUITS AND FITTINGS TO INTERFACE THE WIREWAY TO THE AIRFIELD LIGHTING DUCT SYSTEM.

14. FURNISH AND INSTALL "DANGER – HIGH VOLTAGE" SIGNS OR LABELS ON ALL FIXED ELECTRICAL EQUIPMENT WHERE POTENTIALS OF 500 VOLTS OR MORE TERMINAL-TO-GROUND ARE EXPOSED (INCLUDING, BUT NOT LIMITED TO, CONSTANT CURRENT REGULATORS, SERIES CIRCUIT CUTOUT ENCLOSURES, HIGH VOLTAGE JUNCTION BOXES, AND HIGH VOLTAGE WIREWAYS) IN ACCORDANCE WITH FAA AC NO. 150/5340-26C "MAINTENANCE OF AIRPORT VISUAL AID FACILITIES" AND NATIONAL ELECTRICAL CODE ARTICLE 300.45 "WARNING SIGNS". PLACE SIGNS IN A CONSPICUOUS LOCATION, USUALLY ON THE OUTSIDE OF EQUIPMENT.

15. FURNISH AND INSTALL "LOW VOLTAGE" LEGEND PLATES AND/OR LABELS ON THE LOW VOLTAGE WIREWAY TO DISTINGUISH IT FROM THE HIGH VOLTAGE WIREWAY.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
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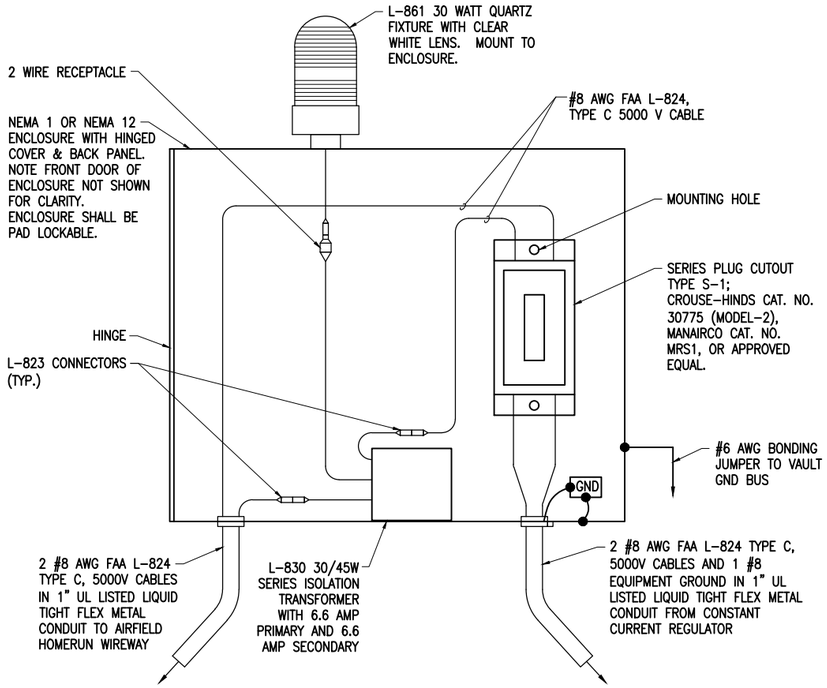
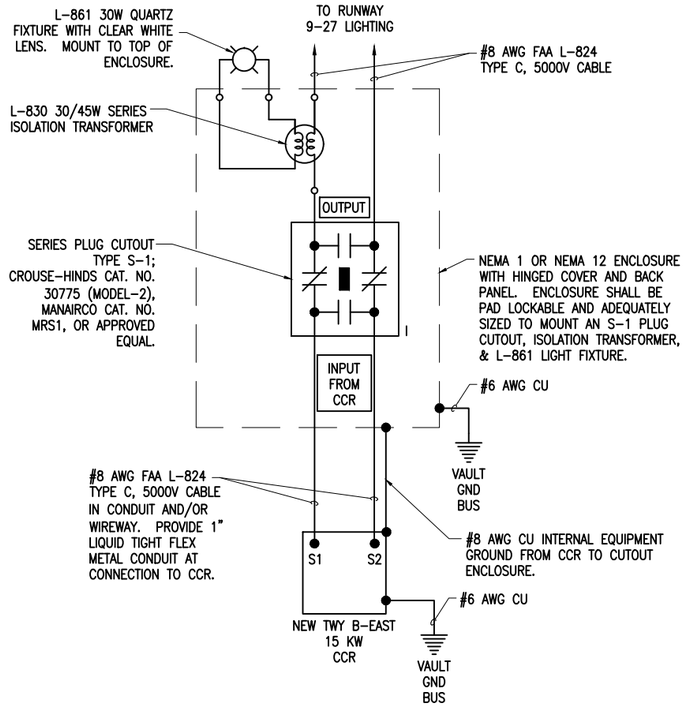
NEW ELECTRICAL
DETAILS FOR VAULT



SERIES PLUG CUTOUT
MOUNTING DETAIL FOR TAXIWAY B-EAST CIRCUIT



HIGH VOLTAGE WIRING SCHEMATIC
FOR TAXIWAY B-EAST

NOTES

1. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR NOTING THE RUNWAY AND/OR TAXIWAY SERVED.
2. EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE RUNWAY OR TAXIWAY CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF".
3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR THE CUTOUTS TO IDENTIFY THE RESPECTIVE REGULATOR OUTPUT CONNECTION AND THE RESPECTIVE CIRCUIT LOAD CONNECTION.
4. BOND EACH REGULATOR FRAME TO VAULT GROUND BUS WITH A DEDICATED #6 AWG COPPER BONDING JUMPER.
5. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS.
6. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
7. SERIES PLUG CUTOUTS SHALL BE TYPE S-1, RATED 5000 VOLTS, 20-AMP. SERIES PLUG CUTOUTS SHALL BE RATED SUITABLE FOR NORMAL OPERATION WITH HANDLE REMOVED OR HANDLE INSERTED. CUTOUTS SHALL DISCONNECT THE INPUT FROM THE OUTPUT, SHORT THE INPUT TERMINALS, AND SHORT THE OUTPUT TERMINALS WHEN THE HANDLE/PLUG IS REMOVED. SERIES PLUG CUTOUTS SHALL BE CROUSE-HINDS CAT. NO. 30775, MANAIRCO CAT. NO. MRS1, OR APPROVED EQUAL. THE RESPECTIVE MANUFACTURER SHALL CERTIFY IN WRITING THAT THEIR CUTOUT IS SUITABLE AND RATED FOR THE RESPECTIVE APPLICATION.
8. MAINTAIN SEPARATION OF HIGH VOLTAGE WIRING (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) FROM LOW VOLTAGE WIRING (RATED 600 VOLTS AND BELOW) TO COMPLY WITH NEC 300.3(C)(2). HIGH VOLTAGE AND LOW VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, WIREWAY, PULL BOX, SPLICE CAN, HANDHOLE, OR MANHOLE.

LEGEND

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

LEGEND PLATE SCHEDULE	
DEVICE	LABEL
TAXIWAY B-EAST CCR	TAXIWAY B-EAST
CUTOUT ENCLOSURE FOR TAXIWAY B-EAST	TAXIWAY B-EAST
CUTOUT INPUT SIDE CONNECTION TAXIWAY B-EAST	INPUT FROM CCR
CUTOUT (TAXIWAY B-EAST) OUTPUT SIDE CONNECTION	OUTPUT
EACH CUTOUT ENCLOSURE	CAUTION OPERATE CUTOUTS WITH CCR'S SHUT OFF
RUNWAY 9-27 AND TAXIWAY B RADIO RELAY INTERFACE PANEL	RUNWAY 9-27/TAXIWAY B RADIO RELAY INTERFACE PANEL
HIGH VOLTAGE WIREWAY (PROVIDE 4 LEGEND PLATES)	HIGH VOLTAGE
LOW VOLTAGE WIREWAY (PROVIDE 4 LEGEND PLATES)	LOW VOLTAGE

NOTES:

1. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
2. FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH SAFETY SWITCH, PANELBOARD, LOAD CENTER, CUTOUT, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION". LABELS SHALL BE HAZARD COMMUNICATION SYSTEMS, LLC (190 OLD MILFORD RD., BOX 1174, MILFORD, PA 18337, PHONE: 1-877-748-0244) PART NO. H6010-9VWHBJ OR APPROVED EQUAL.

"DANGER - HIGH VOLTAGE KEEP OUT" SIGN

PROVIDE WARNING SIGN ON VAULT EXTERIOR DOORS LABELED "DANGER - HIGH VOLTAGE - KEEP OUT" PER THE REQUIREMENTS OF NEC 110.34 (C). PROVIDE MINIMUM OF 4 SIGNS (ONE ON EACH DOOR TO THE VAULT). SIGNS SHALL BE APPROXIMATELY 10" X 14".

"DANGER - HIGH VOLTAGE" SIGN

FURNISH AND INSTALL "DANGER - HIGH VOLTAGE" LABELS/SIGNS FOR EACH CUTOUT ENCLOSURE, EACH CONSTANT CURRENT REGULATOR, AND THE HIGH VOLTAGE WIREWAY, TO COMPLY WITH FAA AC 150/5340-26B "MAINTENANCE OF AIRPORT VISUAL AID FACILITIES". LABELS SHALL BE APPROXIMATELY 4" X 6" OR 5" X 7".

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

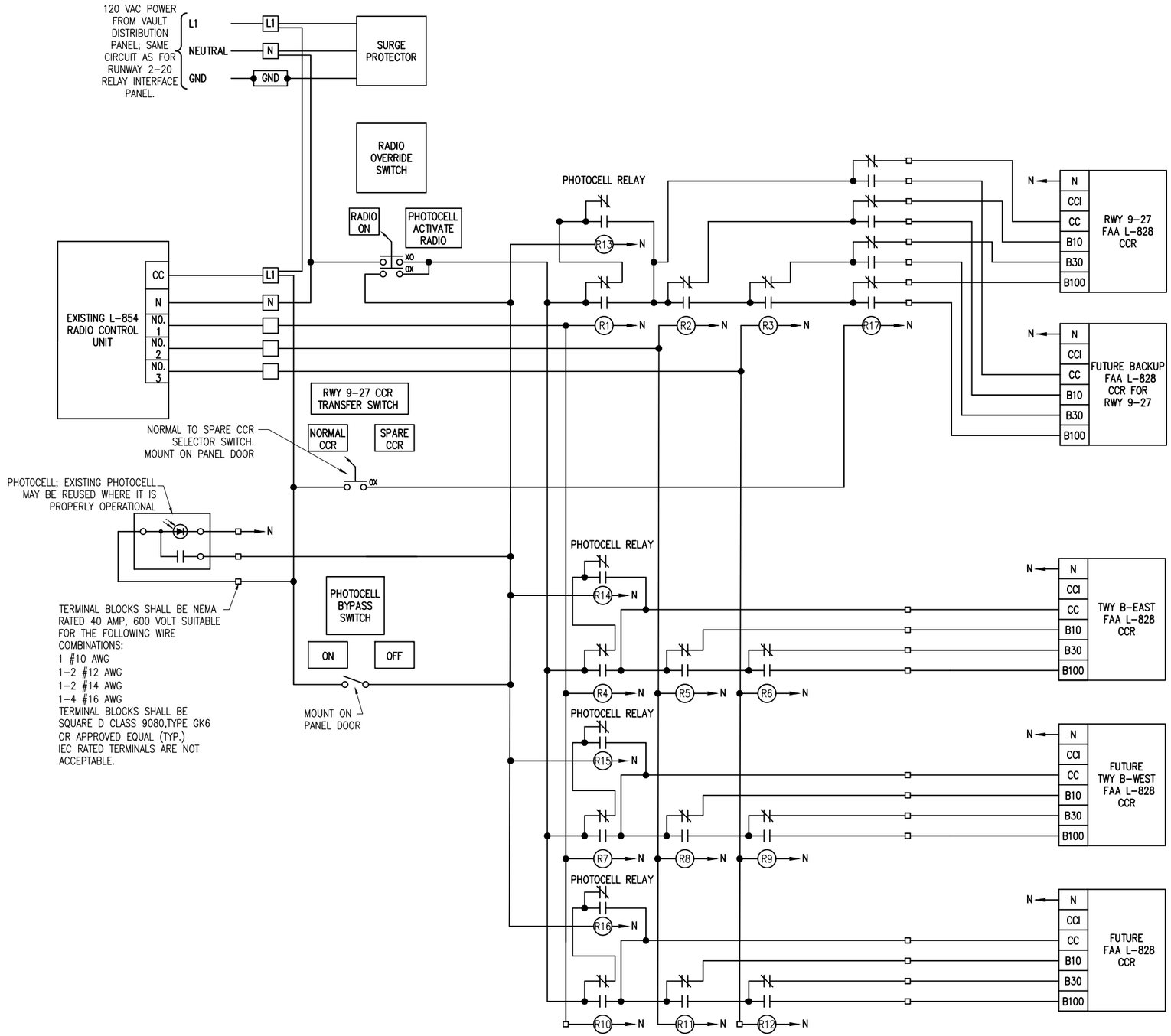
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18

PROJECT NO: 16A0087
CAD FILE: 49-E-603-HVW.DWG
DESIGN BY: KNL 04/18/18
DRAWN BY: KMS 04/19/18
REVIEWED BY: LDH 6/7/18

SHEET TITLE

NEW HIGH VOLTAGE WIRING SCHEMATIC FOR TWY B-EAST



RUNWAY 9-27 AND TAXIWAY B LIGHTING CONTROL WIRING SCHEMATIC

NOTES:

1. THE EXISTING RELAY INTERFACE CONTROL PANEL FOR RUNWAY 9–27 LIGHTING SHALL BE REPLACED WITH A NEW CONTROL PANEL FOR RWY 9–27 AND THE ASSOCIATED TAXIWAYS.
2. RELAY INTERFACE CONTROL PANEL SHALL BE MANUFACTURED BY AN FAA APPROVED L–821 PANEL BUILDER OR A UL 508 INDUSTRIAL CONTROL PANEL BUILDER, AND SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENT AND THE "BUY AMERICAN ACT". RELAY INTERFACE CONTROL PANEL SHALL BE A SEPARATE PANEL. WHERE THE RELAY INTERFACE PANEL IS BUILT BY AN L–821 PANEL MANUFACTURER IT SHALL BE LABELED AS AN L–821 PANEL.
3. PANEL SHALL BE IN A NEMA 12 ENCLOSURE WITH HINGED COVER. DRILL HOLE IN BOTTOM OF ENCLOSURE TO ALLOW CONDENSATION TO ESCAPE.
4. EXTERNAL CONTROL CABLE SHALL BE NO. 12 AWG COPPER, 600 VOLT CABLE. ALL PANEL INTERIOR CONTROL CABLE SHALL BE MINIMUM 16 AWG, COPPER, 600 VOLT CABLE.
5. IN THE AUTOMATIC MODE OF OPERATION THE RUNWAY 9–27 AND TAXIWAY B CCR'S (CONSTANT CURRENT REGULATORS) SHALL BE CONTROLLED BY THE PHOTOCELL & THE L–854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER:
   PHOTOCELL – 10% BRIGHTNESS & ACTIVATE RADIO CONTROL
   5 CLICKS – 30% BRIGHTNESS
   7 CLICKS – 100% BRIGHTNESS
6. THE RADIO OVERRIDE SWITCH WILL ACTIVATE L–854 RADIO CONTROL 24 HOURS PER DAY IN THE "RADIO ON" POSITION. THE PHOTOCELL WILL ACTIVATE RADIO CONTROL IN THE "PHOTOCELL ACTIVATE RADIO" POSITION.
7. EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH BRANCH CIRCUIT & EACH CONTROL CIRCUIT.
8. INCLUDE PHOTOCELL BYPASS SWITCH.
9. SURGE PROTECTOR SHALL BE UL LISTED PER UL 1449, SUITABLE FOR 120 VAC, 1 PH, 2 WIRE PLUS GROUND SYSTEM WITH SURGE CURRENT RATING OF 40 KA (MIN.), 8x20 MICROSECOND WAVE, AND STATUS INDICATION LIGHTS IN A WEATHERPROOF HOUSING, JOSLYN MODEL 1260–21, OR APPROVED EQUAL. MAINTAIN LEADS AS SHORT & AS STRAIGHT AS POSSIBLE. INCLUDE MOUNTING BRACKET.
10. INCLUDE EQUIPMENT GROUND BAR, ILSCO D167–12 OR EQUAL.
11. CONTROL RELAYS SHALL HAVE 10 AMP CONTACT RATINGS AT 240 VAC WITH 120 VAC COILS. PROVIDE 3 SPARE RELAYS FOR EACH TYPE USED IN THE RELAY INTERFACE PANEL.
12. COLOR CODING FOR THE CONTROL WIRING TO EACH CONSTANT CURRENT REGULATOR SHALL BE CONSISTENT FOR ALL REGULATORS. COLOR CODING SHALL BE AS FOLLOWS:
    CC –RED
    10% –ORANGE
    30% –YELLOW
    100% –BLUE
    NEUTRAL –WHITE
    EQUIPT. GND –GREEN
    ALSO TAG THE CONTROL WIRES WITH THE RESPECTIVE DESIGNATION (CC, 10%, 30%, 100%)
13. "N" DESIGNATES NEUTRAL CONNECTION OR NEUTRAL CONDUCTOR.
14. CONTROL WIRING SHALL ENTER EACH CCR WITH A DEDICATED UL LISTED LIQUID–TIGHT FLEXIBLE METAL CONDUIT CONNECTION AT THE CONTROL SECTION OF THE CCR.

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

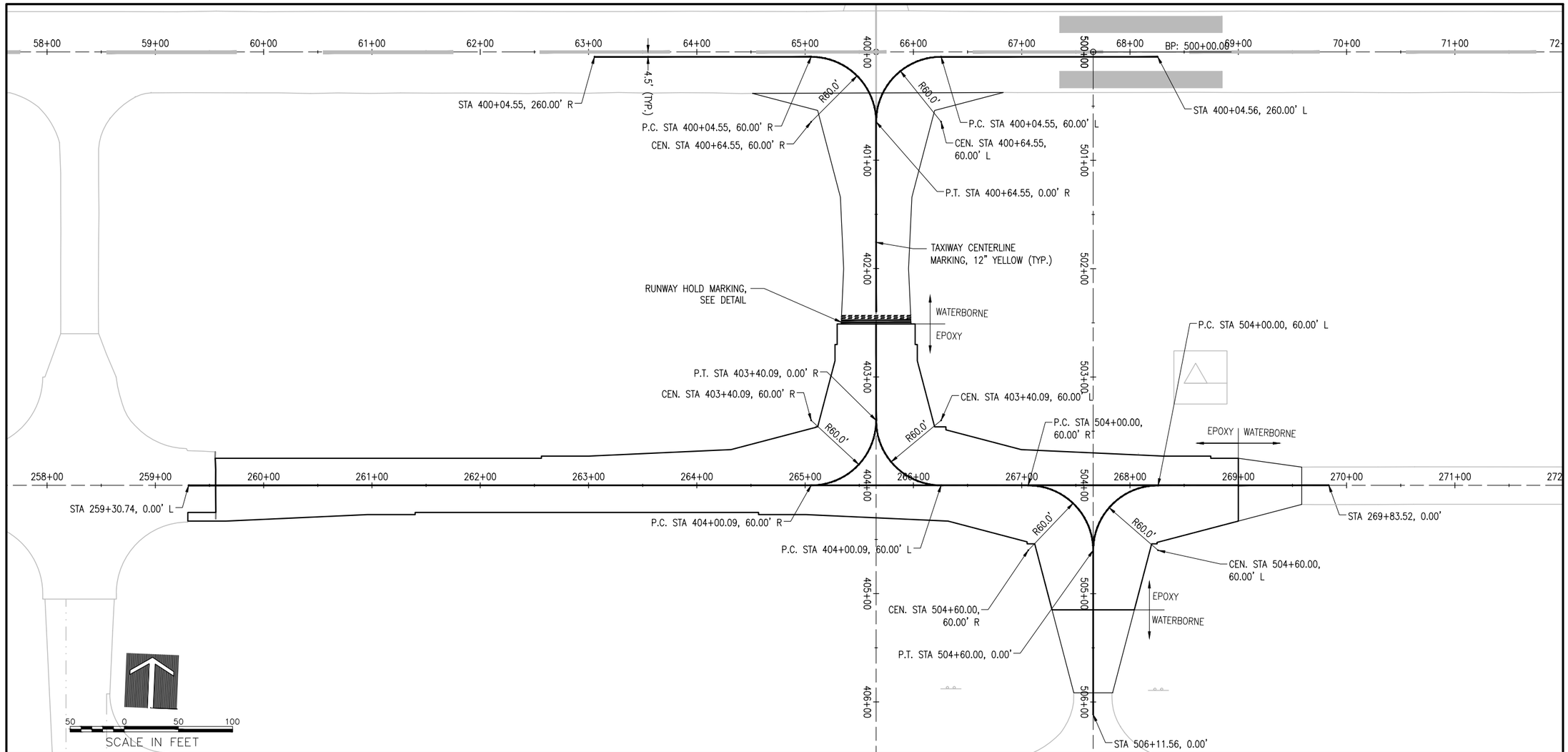
NO.	DATE	DESCRIPTION	DES	DWN	REV

ISSUE: 6/8/18

PROJECT NO: 16A0087
CAD FILE: 48-E-602-SCH.DWG
DESIGN BY: KNL 04/18/2018
DRAWN BY: KMS 04/19/2018
REVIEWED BY: LDH 6/7/18

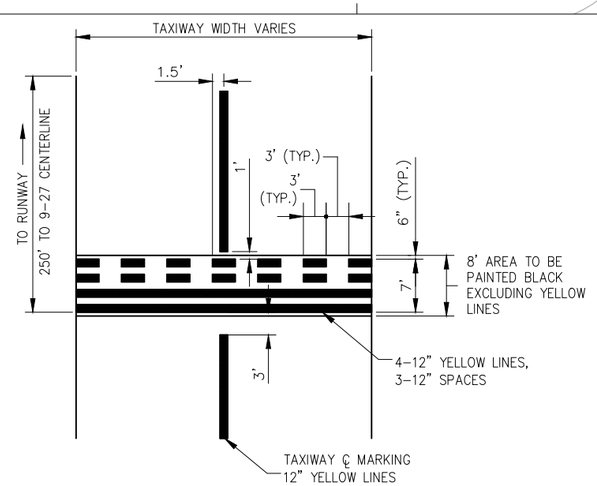
SHEET TITLE

NEW RWY 9-27 & TWY B LIGHTING CONTROL WIRING SCHEMATIC



NOTES

1. GLASS SPHERES SHALL BE USED FOR ALL YELLOW MARKINGS. GLASS SPHERES ARE NOT REQUIRED FOR BLACK MARKINGS.
2. WATERBORNE MARKING SHALL BE USED ON BITUMINOUS PAVEMENT.
3. EPOXY MARKINGS SHALL BE USED ON PCC PAVEMENT.
4. BLACK BORDER SHALL BE 6" PLACED AROUND ALL MARKINGS UNLESS OTHERWISE SHOWN.
5. ALL BLACK MARKINGS SHALL BE WATERBORNE.
6. All PAVEMENT MARKING REMOVAL MUST BE MADE USING HIGH PRESSURE WATER BLASTING.
7. SEE SPECIAL PROVISIONS AND STANDARD SPECIFICATIONS FOR SURFACE PREPARATION PAVEMENT REMOVAL REQUIREMENTS.



RUNWAY HOLD MARKING

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: MARKING.DWG
DESIGN BY: KMS 3/13/2017
DRAWN BY: KMS 3/13/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

MARKING PLAN

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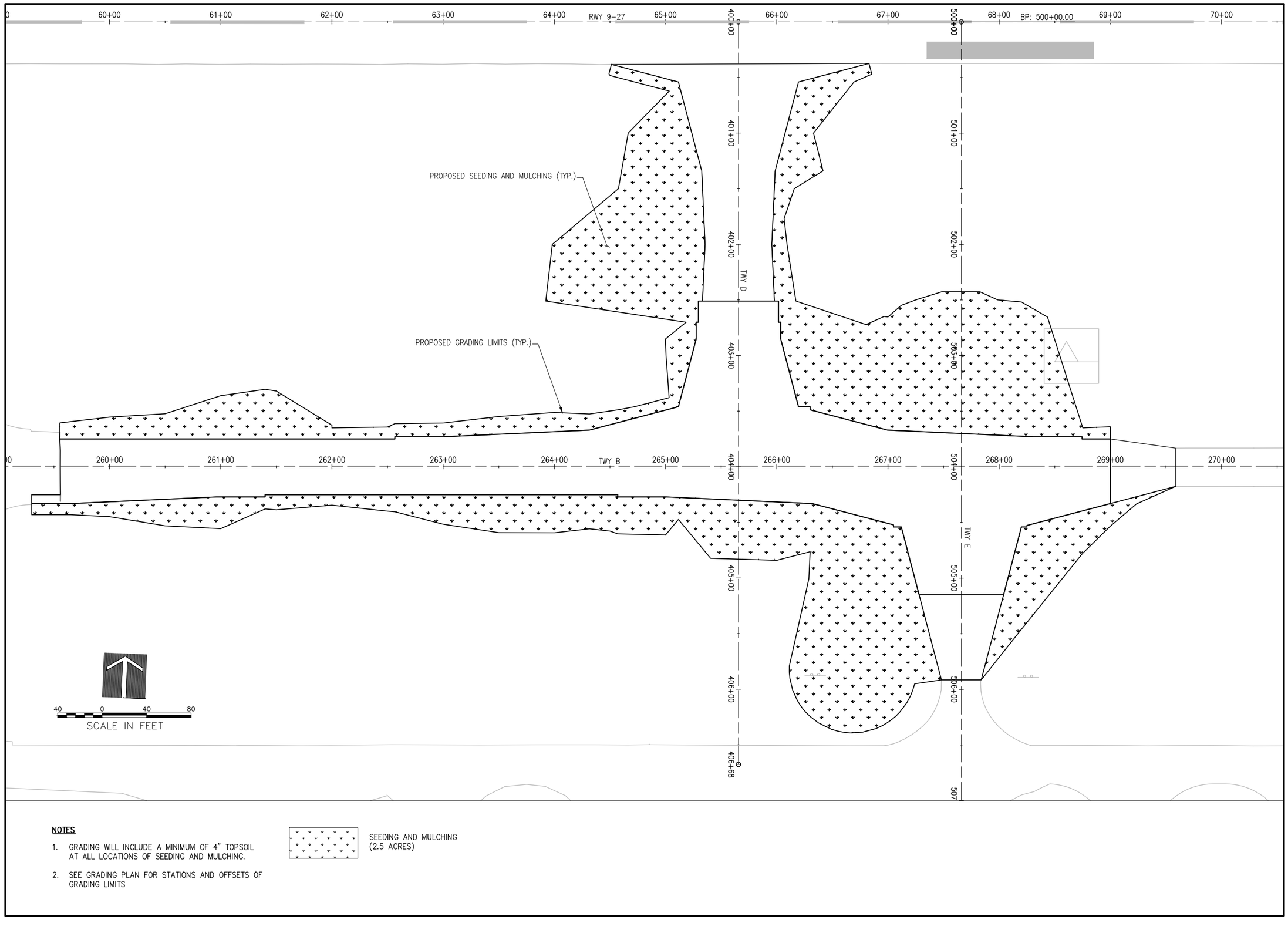

NOTES

1. GRADING WILL INCLUDE A MINIMUM OF 4" TOPSOIL AT ALL LOCATIONS OF SEEDING AND MULCHING.
2. SEE GRADING PLAN FOR STATIONS AND OFFSETS OF GRADING LIMITS

SEEDING AND MULCHING (2.5 ACRES)

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TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

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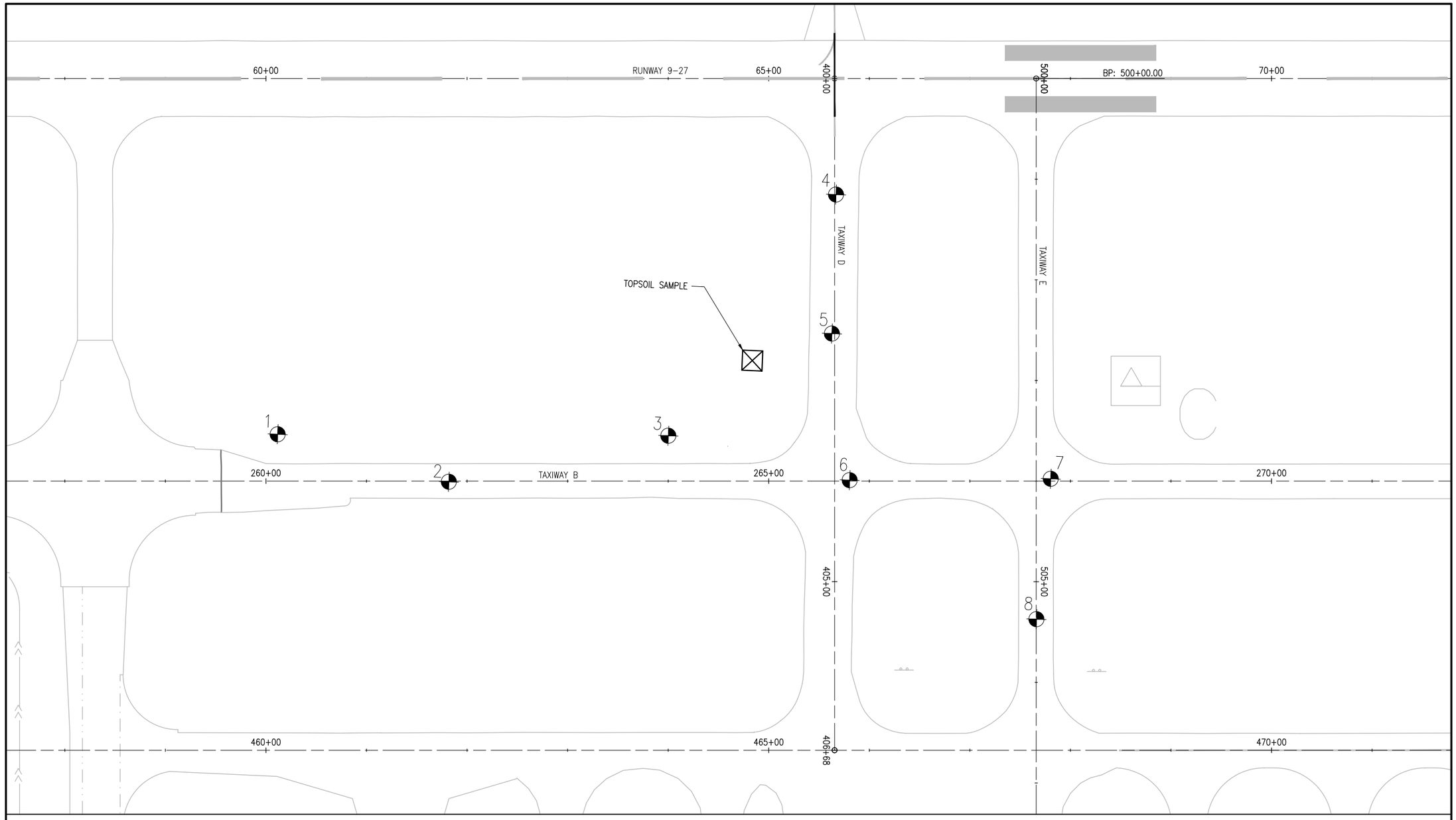
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: LANDSCAPING PLAN.DWG
DESIGN BY: KMS 3/13/2017
DRAWN BY: KMS 3/13/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

LANDSCAPING PLAN



50 0 50 100

SCALE IN FEET

Boring Number	Northing	Easting	Depth of Boring (FT)	Elevation
1	1799645.1267	1050483.1875	10	665.30
2	1799605.1820	1050655.2615	10	666.49
3	1799660.0746	1050871.3967	10	665.75
4	1799906.6148	1051027.8966	10	667.29
5	1799768.3954	1051029.6369	10	667.55
6	1799623.5921	1051053.4201	10	667.19
7	1799633.4311	1051253.1779	10	666.84
8	1799493.4506	1051244.8504	10	666.75
Topsoil Sample	1799738.2772	1050951.6979	- -	665.32

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
			DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: BORING LOCATION MAP.D
DESIGN BY: KMS 1/11/2017
DRAWN BY: KMS 1/11/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

BORING LOCATION MAP

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Page 1 of 1

BORING LOG B-01

Wang Engineering

wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

WEI Job No.: 410-25-01

Client: Hanson Professional Services, Inc.
Project: Lewis Airport
Location: Romeoville, Illinois

Datum: NGVD
Elevation: 665.13 ft
North: 1799645.13 ft
East: 1050483.13 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	664.8	4-inch thick, dark brown SILTY CLAY (CL-ML) --TOPSOIL--						
		Hard, brown LEAN CLAY with SAND (CL) --FILL--		SS	1	6 7 9	4.25 P	18
	662.1	Medium stiff, brown LEAN CLAY (CL) --L_L(%)=29, P_I(%)=18-- --%Gravel=0.0-- --%Sand=4.5-- --%Silt=65.0-- --%Clay=30.5--	5	SS	2	2 2 2	0.74 B	23
	659.6	Medium dense, brown poorly-graded SAND with SILT (SP-SM); wet to saturated		SS	3	4 4 6	NP	26
	657.1	Stiff, gray LEAN CLAY (CL)		SS	4	2 3 4	1.07 B	23
	655.1	Boring terminated at 10.00 ft	10					
			15					

GENERAL NOTES				WATER LEVEL DATA	
Begin Drilling	10-25-2016	Complete Drilling	10-25-2016	While Drilling	6.50 ft
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR (78%)	At Completion of Drilling	10.00 ft
Driller	R & N	Logger	J. Rowells	Time After Drilling	NA
Drilling Method	2.25" IDA HSA, backfilled upon completion	Checked by	C. Marin	Depth to Water	NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 410501.GPJ WANGENG.GDT 11/29/16

Page 1 of 1

BORING LOG B-02

Wang Engineering

wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

WEI Job No.: 410-25-01

Client: Hanson Professional Services, Inc.
Project: Lewis Airport
Location: Romeoville, Illinois

Datum: NGVD
Elevation: 666.49 ft
North: 1799605.18 ft
East: 1050655.23 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	666.2	3-inch thick, ASPHALT --PAVEMENT--						
	665.3	Brown, well-graded SAND with GRAVEL (SW); moist --BASE COURSE--						
		Very stiff to hard, brown and gray LEAN CLAY (CL)		SS	1	7 5 7	4.50 P	15
			5	SS	2	5 8 7	5.33 B	16
				SS	3	6 10 12	5.90 B	16
				SS	4	5 8 9	2.05 B	15
	656.5	Boring terminated at 10.00 ft	10					
			15					

GENERAL NOTES				WATER LEVEL DATA	
Begin Drilling	10-25-2016	Complete Drilling	10-25-2016	While Drilling	DRY
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR (78%)	At Completion of Drilling	DRY
Driller	R & N	Logger	J. Rowells	Time After Drilling	NA
Drilling Method	2.25" IDA HSA, backfilled upon completion	Checked by	C. Marin	Depth to Water	NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 410501.GPJ WANGENG.GDT 11/29/16

Page 1 of 1

BORING LOG B-03

Wang Engineering

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Telephone: 630 953-9928
Fax: 630 953-9938

WEI Job No.: 410-25-01

Client: Hanson Professional Services, Inc.
Project: Lewis Airport
Location: Romeoville, Illinois

Datum: NGVD
Elevation: 665.73 ft
North: 1799660.08 ft
East: 1050871.37 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	665.4	4-inch thick, dark brown SILTY CLAY (CL-ML) --TOPSOIL--						
		Medium stiff to hard, brown LEAN CLAY (CL) --L_L(%)=34, P_I(%)=20-- --%Gravel=0.6-- --%Sand=4.4-- --%Silt=61.4-- --%Clay=33.6--		SS	1	5 7 10	4.10 S	17
	662.7	Very soft (<0.25P) to medium stiff, brown and gray LEAN CLAY to SILTY CLAY (CL-ML)	5	SS	2	2 2 2	0.50 P	26
	659.0	Very stiff, brown LEAN CLAY (CL)		SS	3	2 3 5	3.00 P	21
	657.7	Medium dense, gray SILT (ML); wet --lean clay lenses--		SS	4	3 4 7	NP	21
	656.2	Gray, poorly-graded SAND (SP); saturated						
	655.7	Boring terminated at 10.00 ft	10					
			15					

GENERAL NOTES				WATER LEVEL DATA	
Begin Drilling	10-25-2016	Complete Drilling	10-25-2016	While Drilling	9.50 ft
Drilling Contractor	Wang Testing Service	Drill Rig	D-50 TMR (78%)	At Completion of Drilling	5.70 ft
Driller	R & N	Logger	J. Rowells	Time After Drilling	NA
Drilling Method	2.25" IDA HSA, backfilled upon completion	Checked by	C. Marin	Depth to Water	NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 410501.GPJ WANGENG.GDT 11/29/16

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18

PROJECT NO: 16A0087
CAD FILE: BORING LOGS-1.DWG
DESIGN BY: KMS 1/11/2017
DRAWN BY: KMS 1/11/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

BORING LOGS 1

Wang Engineering

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Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG B-04

WEI Job No.: 410-25-01

Client: Hanson Professional Services, Inc.
Project: Lewis Airport
Location: Romeoville, Illinois

Datum: NGVD
Elevation: 667.32 ft
North: 1799906.62 ft
East: 1051027.97 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	667.1	13-inch thick, ASPHALT --PAVEMENT--						
	666.3	9-inch thick, brown well-graded SAND with GRAVEL (SW) --BASE COURSE--						
		Very stiff, dark gray LEAN CLAY with SAND (CL) --FILL--			1	3 4 6	3.03 B	25
	663.4	Very stiff, brown LEAN CLAY (CL)	5		2	4 4 5	2.79 B	18
	660.6	Brown poorly-graded SAND (SP); wet			3	3 2 2	2.38 B	17
	659.3	Stiff, gray LEAN CLAY (CL)			4	3 2 2	1.07 B	22
	657.3	Boring terminated at 10.00 ft	10					
			15					

GENERAL NOTES

Begin Drilling: 10-25-2016 Complete Drilling: 10-25-2016
Drilling Contractor: Wang Testing Service Drill Rig: D-50 TMR (78%)
Driller: R & N Logger: J. Rowells Checked by: C. Marin
Drilling Method: 2.25" IDA HSA, backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 6.75 ft
At Completion of Drilling: ▼ DRY
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 410351.GPJ WANGENG.GDT 11/29/16

Wang Engineering

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BORING LOG B-05

WEI Job No.: 410-25-01

Client: Hanson Professional Services, Inc.
Project: Lewis Airport
Location: Romeoville, Illinois

Datum: NGVD
Elevation: 667.53 ft
North: 1799768.41 ft
East: 1051029.70 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	667.2	3.5-inch thick, ASPHALT --PAVEMENT--						
	666.5	8.5- inch thick, brown well-graded SAND with GRAVEL; moist (SW) --BASE COURSE--			1	4 4 7	3.44 B	24
		Very stiff, dark gray to gray LEAN CLAY (CL) --FILL-- --L_L(%)=46, P_L(%)=21-- --%Gravel=0.0-- --%Sand=2.6-- --%Silt=53.6-- --%Clay=43.8--			2	3 5 5	3.28 B	19
	663.4	Stiff to very stiff, brown and gray LEAN CLAY (CL)	5					
		--fine sand and silt lenses; moist--			3	2 3 5	2.05 B	24
	657.5	Boring terminated at 10.00 ft	10		4	3 3 4	1.07 B	22
			15					

GENERAL NOTES

Begin Drilling: 10-25-2016 Complete Drilling: 10-25-2016
Drilling Contractor: Wang Testing Service Drill Rig: D-50 TMR (78%)
Driller: R & N Logger: J. Rowells Checked by: C. Marin
Drilling Method: 2.25" IDA HSA, backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ DRY
At Completion of Drilling: ▼ 10.00 ft
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 410351.GPJ WANGENG.GDT 11/29/16

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BORING LOG B-06

WEI Job No.: 410-25-01

Client: Hanson Professional Services, Inc.
Project: Lewis Airport
Location: Romeoville, Illinois

Datum: NGVD
Elevation: 667.19 ft
North: 1799623.58 ft
East: 1051053.39 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	666.9	3.5-inch thick, ASPHALT --PAVEMENT--						
		Loose, brown well-graded SAND with GRAVEL (SW); moist --BASE COURSE--			1	4 3 4	NP	5
	664.2	Medium stiff to very stiff, brown LEAN CLAY (CL)						
		--silt lenses; moist--	5		2	4 4 6	2.13 B	21
		--sand lenses; wet--			3	3 2 3	0.90 B	23
	657.4	Brown, poorly-graded SAND (SP); saturated			4	5 6 10	2.62 B	26
	657.2	Boring terminated at 10.00 ft	10					
			15					

GENERAL NOTES

Begin Drilling: 10-25-2016 Complete Drilling: 10-25-2016
Drilling Contractor: Wang Testing Service Drill Rig: D-50 TMR (78%)
Driller: R & N Logger: J. Rowells Checked by: C. Marin
Drilling Method: 2.25" IDA HSA, backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 9.80 ft
At Completion of Drilling: ▼ 10.00 ft
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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fax: 815.838.9524

REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18
PROJECT NO: 16A0087
CAD FILE: BORING LOGS-2.DWG
DESIGN BY: KMS 1/11/2017
DRAWN BY: KMS 1/11/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

BORING LOGS 2

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BORING LOG B-07

WEI Job No.: 410-25-01

Client: Hanson Professional Services, Inc.
Project: Lewis Airport
Location: Romeoville, Illinois

Datum: NGVD
Elevation: 666.84 ft
North: 1799633.44 ft
East: 1051253.21 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	666.5	4-inch thick, ASPHALT --PAVEMENT--						
	665.5	Brown well-graded SAND with GRAVEL (SW); damp to moist --BASE COURSE--						
		Very stiff, dark gray to gray LEAN CLAY (CL) --FILL--			1	9 5 7	3.69 B	19
	663.2	Very stiff, brown LEAN CLAY (CL)			2	4 2 5	2.05 B	19
	662.3	Brown SILT (ML); saturated	5					
	661.3	Stiff, brown and gray LEAN CLAY (CL)			3	4 5 6	1.23 S	19
		--silt and sand lenses; wet--			4	2 5 13	1.50 P	20
	656.8	Boring terminated at 10.00 ft	10					
			15					

GENERAL NOTES

Begin Drilling: 10-25-2016 Complete Drilling: 10-25-2016
Drilling Contractor: Wang Testing Service Drill Rig: D-50 TMR (78%)
Driller: R & N Logger: J. Rowells Checked by: C. Marin
Drilling Method: 2.25" IDA HSA, backfilled upon completion

WATER LEVEL DATA

While Drilling: 4.50 ft
At Completion of Drilling: DRY
Time After Drilling: NA
Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 410250I.GPJ WANGENG.GDT 11/29/16

Page 1 of 1

BORING LOG B-08

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WEI Job No.: 410-25-01

Client: Hanson Professional Services, Inc.
Project: Lewis Airport
Location: Romeoville, Illinois

Datum: NGVD
Elevation: 666.78 ft
North: 1799493.48 ft
East: 1051244.84 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	666.5	3.5-inch thick, ASPHALT --PAVEMENT--						
	665.4	Brown, well-graded SAND with GRAVEL (SW); moist --BASE COURSE--						
		Hard (4.0P), dark gray LEAN CLAY with SAND (CL) --FILL--			1	12 6 7	NP	3
	663.8	Loose, brown to brown SILTY SAND (SM); wet to saturated			2	3 5 3	NP	22
	661.3	Stiff (1.75P), brown LEAN CLAY (CL)	5					
	660.5	Brown SILTY SAND (SM); wet to saturated			3	2 4 8	NP	21
	658.1	Very stiff, gray LEAN CLAY (CL) --silt seams; wet--			4	3 3 3	2.79 B	23
	656.8	Boring terminated at 10.00 ft	10					
			15					

GENERAL NOTES

Begin Drilling: 10-25-2016 Complete Drilling: 10-25-2016
Drilling Contractor: Wang Testing Service Drill Rig: D-50 TMR (78%)
Driller: R & N Logger: J. Rowells Checked by: C. Marin
Drilling Method: 2.25" IDA HSA, backfilled upon completion

WATER LEVEL DATA

While Drilling: 4.50 ft
At Completion of Drilling: DRY
Time After Drilling: NA
Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC 410250I.GPJ WANGENG.GDT 11/29/16

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REHABILITATE
TAXIWAY B, PHASE 2

IDA No: LOT-4567
SBGP No: 3-17-SBGP-XX

LE051

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 6/8/18

PROJECT NO: 16A0087
CAD FILE: BORING LOGS-3.DWG
DESIGN BY: KMS 1/11/2017
DRAWN BY: KMS 1/11/2017
REVIEWED BY: LDH 6/7/18

SHEET TITLE

BORING LOGS 3