

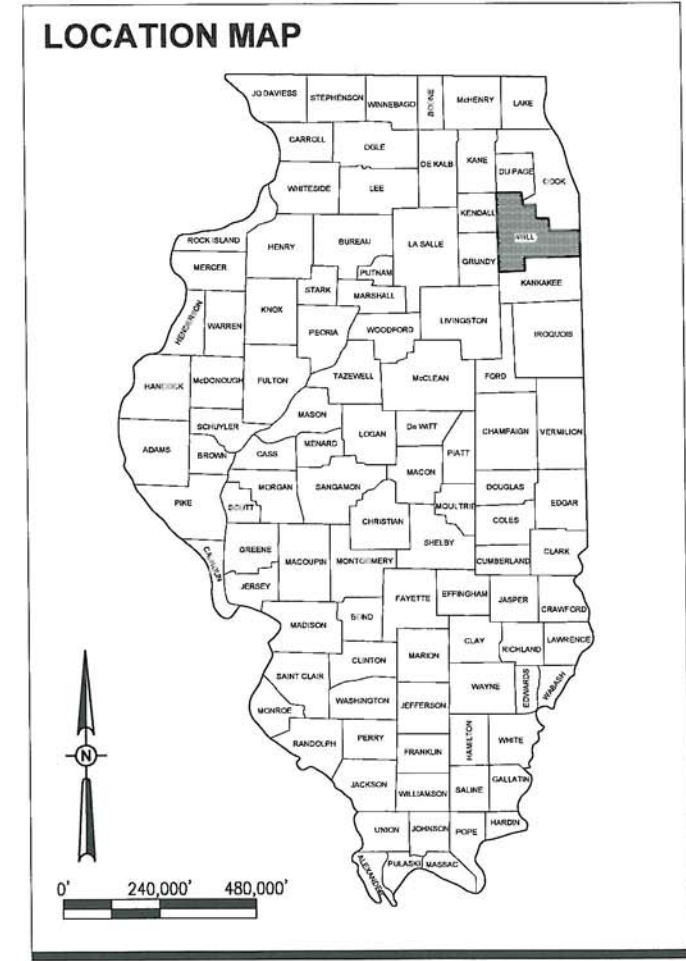
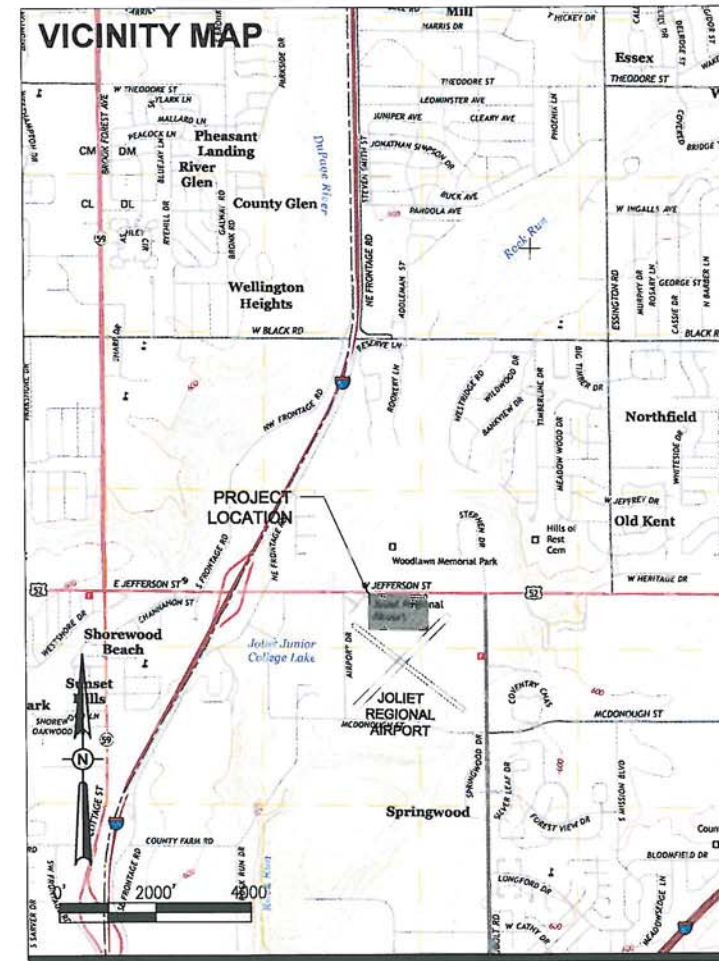
CONSTRUCTION PLANS

T-HANGAR TAXILANE REHABILITATION AND WIDENING:
TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

JOLIET PARK DISTRICT
JOLIET REGIONAL AIRPORT (JOT)
JOLIET, WILL COUNTY, ILLINOIS

IDA PROJECT NO. JOT-4313
SBGP PROJECT NOS. 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

PLAN DATE: APRIL 21, 2017



No.	Issue/Description	Sheets Changed	Date	By

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

Seal
Date of Plans
Exp 11/30/17
LINDSAY DENET HAUSMAN
062-059464
STATE OF ILLINOIS
Lindsay D. Hausman, P.E.,
Project Engineer
APRIL 21, 2017
Date

Seal
(For sheets 39-63)
EXPIRES:
11/30/2017
4/10/2017
KEVIN N. LIGHTFOOT
062-047643
STATE OF ILLINOIS
Kevin N. Lightfoot, P.E.,
Project Engineer
APRIL 21, 2017
Date

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APRIL 21, 2017
Date

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Telephone: 815.741.7267
Sennette McLeod
APRIL 21, 2017
Date

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SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	AS-BID QUANTITY	RECORD PAID
AR108051	POWER CABLE IN UNIT DUCT	L.F.	825.0	
AR108086	1/C #6 XLP-USE	L.F.	2,434.0	
AR108088	1/C #8 XLP-USE	L.F.	4,259.0	
AR108960	REMOVE CABLE	L.F.	3,534.0	
AR109924	REPLACE ELECTRICAL SERVICES	L.S.	1.0	
AR110014	4" DIRECTIONAL BORE	L.F.	70.0	
AR110203	3" PVC DUCT, DIRECT BURY	L.F.	285.0	
AR110503	3-WAY CONCRETE ENCASED DUCT	L.F.	547.0	
AR110550	SPLIT DUCT	L.F.	83.0	
AR110900	REMOVE DUCT	L.F.	353.0	
AR115610	ELECTRICAL HANDHOLE	EACH	1.0	
AR115710	ELECTRICAL MANHOLE	EACH	1.0	
AR115966	RELOCATE ELECTRICAL HANDHOLE	EACH	1.0	
AR150510	ENGINEER'S FIELD OFFICE	L.S.	1.0	
AR152410	UNCLASSIFIED EXCAVATION	C.Y.	5,831.0	
AR152540	SOIL STABILIZATION FABRIC	S.Y.	7,143.0	
AR152620	FOUNDATION REMOVAL	S.Y.	25.0	
AR154606	GRANULAR DRAINAGE SUBBASE - 6"	S.Y.	7,143.0	
AR156510	SILT FENCE	L.F.	1,468.0	
AR156520	INLET PROTECTION	EACH	4.0	
AR156533	TEMPORARY SEED AND MULCH	ACRE	1.8	
AR209606	CRUSHED AGG. BASE COURSE - 6"	S.Y.	7,143.0	
AR401613	BIT. SURF. CSE.-METHOD I, SUPERPAVE	TON	819.0	
AR401650	BITUMINOUS PAVEMENT MILLING	S.Y.	100.0	
AR401660	SAW & SEAL BIT. JOINTS	L.F.	2,114.0	
AR401665	BITUMINOUS PAVEMENT SAWING	L.F.	2,236.0	
AR401900	REMOVE BITUMINOUS PAVEMENT	S.Y.	4,841.0	
AR403613	BIT. BASE CSE.-METHOD I, SUPERPAVE	TON	807.0	
AR501665	PCC PAVEMENT SAWING	L.F.	57.0	
AR501900	REMOVE PCC PAVEMENT	S.Y.	487.0	
AR510900	REMOVE TIE DOWN	EACH	15.0	
AR602510	BITUMINOUS PRIME COAT	GAL.	2,070.0	
AR603510	BITUMINOUS TACK COAT	GAL.	1,050.0	
AR620520	PAVEMENT MARKING-WATERBORNE	S.F.	3,222.0	
AR701008	8" PVC STORM SEWER	L.F.	159.0	
AR701512	12" RCP, CLASS IV	L.F.	552.0	
AR701900	REMOVE PIPE	L.F.	531.0	
AR705506	6" PERFORATED UNDERDRAIN	L.F.	2,635.0	
AR705630	UNDERDRAIN INSPECTION HOLE	EACH	1.0	
AR705640	UNDERDRAIN CLEANOUT	EACH	12.0	
AR751001	TRENCH DRAIN	L.F.	460.0	
AR751411	INLET - TYPE A	EACH	4.0	
AR751412	INLET - TYPE B	EACH	1.0	
AR751540	MANHOLE 4'	EACH	1.0	
AR751550	MANHOLE 5'	EACH	1.0	
AR751560	MANHOLE 6'	EACH	2.0	
AR751900	REMOVE INLET	EACH	5.0	
AR751903	REMOVE MANHOLE	EACH	1.0	
AR751927	REPLACE FRAME & GRATE	EACH	4.0	
AR751943	ADJUST MANHOLE	EACH	3.0	
AR752412	PRECAST REINFORCED CONC. FES 12"	EACH	4.0	
AR752512	GRATING FOR CONC. FES 12"	EACH	4.0	
AR803047	RELOCATE FUEL TANK	L.S.	1.0	
AR901510	SEEDING	ACRE	2.4	
AR905510	TOPSOILING (FROM ON SITE)	C.Y.	1,354.0	
AR908510	MULCHING	ACRE	2.4	
AR910200	ROADWAY SIGN	EACH	2.0	

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

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

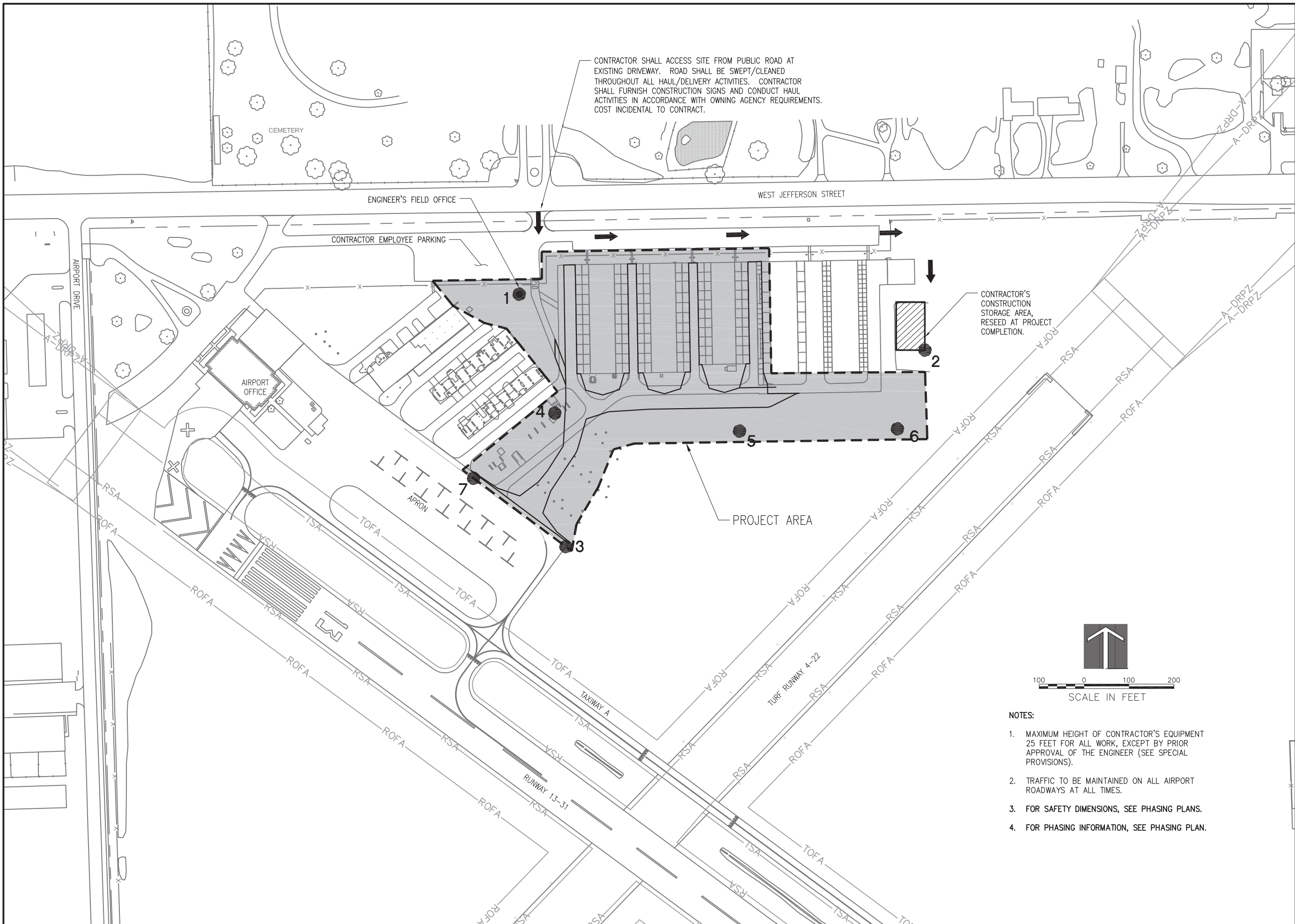
JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 02-S00.DWG
DESIGN BY: LDH 11/4/16
DRAWN BY: LDH 11/4/16
REVIEWED BY: SJM 12/2/16

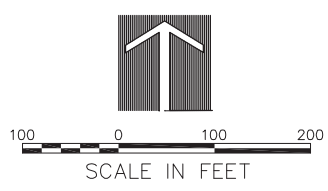
SHEET TITLE

SHEET INDEX
AND SUMMARY
OF QUANTITIES



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

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



- NOTES:**
1. MAXIMUM HEIGHT OF CONTRACTOR'S EQUIPMENT 25 FEET FOR ALL WORK, EXCEPT BY PRIOR APPROVAL OF THE ENGINEER (SEE SPECIAL PROVISIONS).
 2. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
 3. FOR SAFETY DIMENSIONS, SEE PHASING PLANS.
 4. FOR PHASING INFORMATION, SEE PHASING PLAN.

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
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JO023

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CAD FILE: 03-SITEPLAN.DWG
DESIGN BY: LDH 7/19/16
DRAWN BY: LDH 7/19/16
REVIEWED BY: SJM 12/2/16

SHEET TITLE

SITE AND SAFETY PLAN

GENERAL NOTES

PROJECT DESCRIPTION

THIS PROJECT IS TO REHABILITATE THE T-HANGAR AND ACCESS TAXIWAY PAVEMENTS AT JOLIET REGIONAL AIRPORT INCLUDING, AMONG OTHER INCIDENTAL WORK, THE FOLLOWING ITEMS:

- PLACEMENT OF TEMPORARY SOIL EROSION CONTROL MEASURES.
- REMOVAL OF PAVEMENTS.
- RELOCATION OF FUEL TANKS AND APPURTENANCES.
- PROVISION OF REQUIRED UNCLASSIFIED EXCAVATION.
- ADJUSTMENT OF EXISTING DRAINAGE STRUCTURES, AND INSTALLATION OF NEW DRAINAGE STRUCTURES.
- INSTALLATION OF NEW DRAINAGE LAYER, AGGREGATES AND BITUMINOUS (HMA) PAVEMENTS.
- INSTALLATION OF UNDERDRAINS.
- PLACEMENT OF PAVEMENT MARKINGS.
- TOPSOILING, SEEDING AND MULCHING IN ALL DISTURBED AREAS, INCLUDING ALONG NEW PAVEMENT EDGES.

PROTECTION OF EXISTING AIRPORT FACILITIES

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

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

CONTRACTOR'S ACCESS AND TEMPORARY FACILITIES

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

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

THE CONTRACTOR IS TO PROVIDE AN EQUIPMENT STORAGE AND PARKING AREA AT THE LOCATIONS SHOWN ON SHEET 3. 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:

MF1784
N 1,767,814.886
E 1,026,441.694
ELEV. 579.893

MF0081
N 1,767,965.5
E 1,026,578.7
ELEV. 583.15



PROJECT IS LOCATED IN NORTHWEST 1/4 OF SECTION 14, TROY TOWNSHIP, WILL COUNTY

NOTES

1. COORDINATES ARE IN NAD 83 FOR HORIZONTAL AND NAVD 88 FOR VERTICAL.
2. STATIONS, OFFSETS AND ELEVATIONS SHOWN ARE IN FEET.
3. THE AIRPORT REFERENCE CODE FOR RUNWAY 13-31 IS B-1. RUNWAY 13 HAS A NON-PRECISION APPROACH WITH VISIBILITY 1 MILE. RUNWAY 31 HAS A VISUAL APPROACH.
4. THE AIRPORT REFERENCE CODE FOR RUNWAY 4-22 IS A-1 WITH VISUAL APPROACHES ON BOTH RUNWAYS 4 AND 22.

RUNWAY END COORDINATES

DESCRIPTION	LATITUDE	LONGITUDE	RUNWAY ELEVATION
RUNWAY 13 END	41°31'11.79" N	88°10'46.85" W	580.2
RUNWAY 31 END	41°30'54.48" N	88°10'15.86" W	577.3
RUNWAY 4 END	41°30'54.66" N	88°10'45.64" W	574.6
RUNWAY 22 END	41°31'14.09" N	88°10'20.47" W	578.4

OBJECT INFORMATION													
ITEM NO.	DESCRIPTION	PHASE	MOBILITY	GROUND ELEVATION	OBJECT ELEVATION	LATITUDE	LONGITUDE	RUNWAY 13-31 STATION	RUNWAY 13-31 OFFSET	RUNWAY 13-31 EXIST EL	RUNWAY 4-22 STATION	RUNWAY 4-22 OFFSET	RUNWAY 4-22 EXIST EL.
1	ENGINEER'S FIELD OFFICE	ALL	STATIONARY	581.5	596.5	41° 31' 16.3309" N	88° 10' 36.5839" W	23+85.70	834.67	580.1	240+53.84	1,035.15	580.1
2	CONTRACTOR'S CONSTRUCTION STORAGE	ALL	STATIONARY	578.1	603.1	41° 31' 15.0858" N	88° 10' 24.7201" W	31+85.06	1,272.06	579.4	245+92.22	300.00	579.3
3	CONSTRUCTION EQUIPMENT	PHASE 1 & 4	MOVING	579.0	604.0	41° 31' 10.7822" N	88° 10' 35.2324" W	28+03.32	445.35	578.9	237+22.60	570.11	580.3
4	CONSTRUCTION EQUIPMENT	PHASE 2	MOVING	580.1	605.1	41° 31' 13.7156" N	88° 10' 35.5482" W	26+06.88	669.26	579.4	239+18.85	794.20	579.6
5	CONSTRUCTION EQUIPMENT	PHASE 2	MOVING	579.9	604.9	41° 31' 13.3142" N	88° 10' 30.1469" W	29+60.81	881.84	578.7	241+75.97	471.17	580.6
6	CONSTRUCTION EQUIPMENT	PHASE 3 & 4	MOVING	578.8	603.8	41° 31' 13.3557" N	88° 10' 25.5295" W	32+40.16	1,094.81	579.6	244+23.71	222.15	579.8
7	CONSTRUCTION EQUIPMENT	PHASE 4	MOVING	579.2	604.2	41° 31' 12.2877" N	88° 10' 37.9276" W	25+47.87	445.29	579.6	236+89.07	823.34	580.3



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JOLIET REGIONAL AIRPORT
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T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
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3-17-SBGP-133

JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 04-GENERALNOTES.DWG
DESIGN BY: LDH 7/19/16
DRAWN BY: LDH 7/19/16
REVIEWED BY: SJM 12/2/16

SHEET TITLE

SITE AND SAFETY PLAN NOTES

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 150/5320-2 (CURRENT ISSUE). ANY CONTRACTOR ACTIVITIES REQUIRED FOR PROJECT SAFETY SHALL BE PROVIDED BY THE CONTRACTOR AND INCIDENTAL TO THE CONTRACT.

PRIOR TO THE ISSUANCE OF A CONSTRUCTION NOTICE-TO-PROCEED (NTP) BY THE ILLINOIS DIVISION OF AERONAUTICS, THE CONTRACTOR SHALL PREPARE AND SUBMIT A SAFETY PLAN COMPLIANCE DOCUMENT (SPCD) IN ACCORDANCE WITH FAA ADVISORY CIRCULAR 150/5370-2F, PARAGRAPH 204B, OR EQUIVALENT SECTION IN SUBSEQUENT/CURRENT ISSUE. THE SPCD SHALL BE REVIEWED AND APPROVED BY THE AIRPORT MANAGER/DIRECTOR/AIRPORT DIRECTOR, WHO WILL THEN SUBMIT THE DOCUMENT TO THE ILLINOIS DIVISION OF AERONAUTICS FOR THEIR APPROVAL PRIOR TO NOTICE TO PROCEED.

SEQUENCE OF CONSTRUCTION

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

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

RUNWAY CLOSURE

NO RUNWAY CLOSURES WILL BE PERMITTED AS PART OF THIS PROJECT.

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 DETAILS B AND C, THIS SHEET, AND AS DIRECTED BY THE RESIDENT ENGINEER AND AIRPORT DIRECTOR. WHERE CONTRACTOR EQUIPMENT IS OPERATING WITHIN ACTIVE AIRCRAFT OPERATIONS AREAS, RADIO-EQUIPPED FLAGGERS SHALL BE FURNISHED BY THE CONTRACTOR. CONTINUOUS PAVEMENT SWEEPING SHALL BE FURNISHED TO REMOVE DEBRIS FROM ACTIVE AIRCRAFT MOVEMENT PATHS. THE COST OF TRAFFIC CONTROL/FLAGGERS AND PAVEMENT SWEEPING SHALL BE INCIDENTAL TO THE CONTRACT.

VEHICULAR TRAFFIC CONTROL

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

AIRFIELD OPERATIONAL SAFETY DURING CONSTRUCTION

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

- ALL EMPLOYEES OF THE CONTRACTOR SHALL PARK THEIR PERSONAL VEHICLES IN THE DESIGNATED EQUIPMENT PARKING AND STORAGE AREA. EACH PERSON OR VEHICLE ENTERING THE CONTRACTOR AREA SHALL DO SO IN ACCORDANCE WITH THE POLICIES AND PROCEDURES OF THE AIRPORT OWNER. THE CONTRACTOR WILL TRANSPORT THE WORKERS FROM THE PARKING AREAS TO THE WORK AREA. ONLY CONTRACTOR VEHICLES WILL BE ALLOWED OUTSIDE OF THE PROPOSED EQUIPMENT STORAGE AND PARKING AREAS.
- SHOULD ANY CONTRACTOR PERSONNEL BE IDENTIFIED AS NONCOMPLIANT WITH ANY VEHICLE DRIVING SAFETY REQUIREMENTS IN THIS PROJECT SAFETY PLAN OR IN THE AIRPORT VEHICLE OPERATIONS REGULATIONS, SUCH DRIVERS SHALL BE PENALIZED BY REVOICATION 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 125 FEET FROM THE CENTERLINE AND 240 FEET FROM THE END OF ACTIVE RUNWAY 13-31 AND 4-22. 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 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.

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 60 FEET FROM THE CENTERLINE AND 240 FEET FROM THE END OF RUNWAY 13-31 AND 4-22. THE TSA IS MEASURED AT 24.5 FEET FROM THE CATEGORY I TAXIWAY CENTERLINE AND 39.5 FEET FROM THE CATEGORY II TAXIWAY CENTERLINE. NO VERTICAL DROP OF GREATER THAN 3-INCHES IN HEIGHT FROM PAVEMENT EDGE TO EARTH GRADE OR EARTH GRADE TO EARTH GRADE WITHIN THE RSA OR TSA WILL BE PERMITTED WHEN THE RUNWAY OR TAXIWAY IS OPEN TO AIR TRAFFIC. THE CONTRACTOR WILL HAVE STEEL PLATES ON-SITE TO ALLOW FOR THE RAPID COVERING OF TRENCHES OR EARTH DROPS IN THE EVENT OF UNEXPECTED WORK STOPPAGES FOR WEATHER OR AIRPORT EMERGENCIES.

WHEN NOT IN USE AND DURING NONWORKING HOURS, CONTRACTOR'S EQUIPMENT SHALL BE PARKED WITHIN THE CONTRACTOR'S EQUIPMENT STORAGE AND PARKING AREAS. THE EQUIPMENT STORAGE AND PARKING AREAS ARE TO BE LOCATED AS SHOWN ON THE PHASING PLAN. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THE CONSTRUCTION ENTRANCES IN GOOD CONDITION. THE COST OF MAINTAINING THE CONSTRUCTION ENTRANCE AND CONTRACTOR AREAS IS TO BE INCIDENTAL TO THE CONTRACT. THE CONTRACTOR SHALL PROTECT ALL EXISTING PAVEMENT EDGES FROM DAMAGE FROM CONSTRUCTION EQUIPMENT AND HAUL VEHICLES.

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

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

ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE APPROVED PROJECT SAFETY PLAN, ISSUED BY THE ILLINOIS DIVISION OF AERONAUTICS.

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

NOTIFICATIONS BY CONTRACTOR

THE CONTRACTOR MUST NOTIFY THE RESIDENT ENGINEER AND THE AIRPORT OWNER 3 DAYS IN ADVANCE OF ANY REQUIRED PARTIAL OR COMPLETE CLOSING OF ANY RUNWAY, TAXIWAY OR APRON. THE DATE, TIME AND SCHEDULED DURATION OF THE CLOSING MUST BE APPROVED BY THE RESIDENT ENGINEER AND THE AIRPORT OWNER. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND AIRPORT OWNER 3 DAYS IN ADVANCE OF THE CONTRACTOR'S CLOSING OF OTHER ACTIVE ROADWAYS, AIRFIELD OR ROADWAY LIGHTING CIRCUITS, OR OTHER AIRPORT FACILITIES.

CONTRACTOR'S USE OF SITE

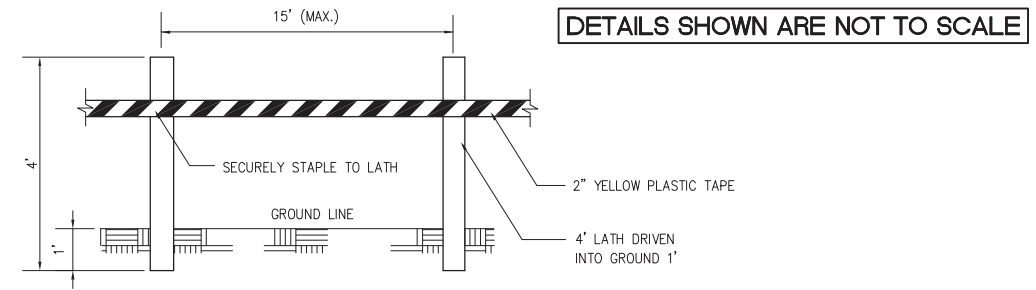
CONTRACTOR'S ACCESS TO THE PROJECT WHEN ON AIRPORT PROPERTY IS SHOWN IN THE PLANS. CONTRACTOR'S ACCESS TO THE AIRPORT ITSELF IS TO BE PROVIDED BY PUBLIC RIGHTS-OF-WAY. THE CONTRACTOR IS TO SECURE ALL NECESSARY PERMITS FOR THE USE OF ANY PUBLIC RIGHTS-OF-WAY AND IS TO MAINTAIN TRAFFIC ON THESE PUBLIC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

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

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

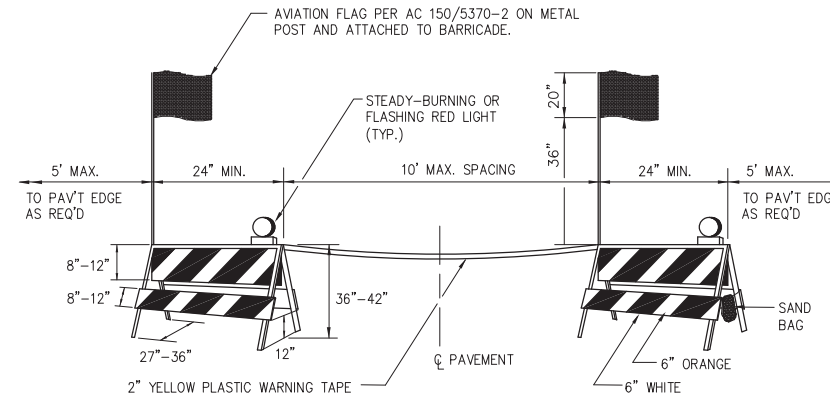
UTILITY OUTAGES AND SHUTDOWNS

THE CONTRACTOR SHALL PROVIDE 3 DAYS PRIOR NOTICE OF ANY OUTAGES OR SHUTDOWNS TO THE OWNER AND THE AGENCY OWNING THE AFFECTED UTILITY. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY CONNECTIONS OR OTHER MEASURES AS MAY BE REQUIRED TO MAINTAIN SERVICE AS MAY BE REQUIRED BY THE OWNING AGENCY AT NO COST TO THE OWNER.



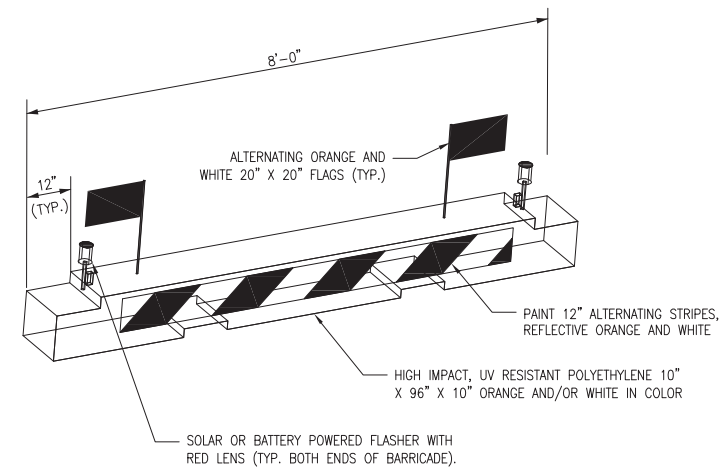
MATERIALS ARE TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION. COST OF MATERIALS, INSTALLATION, RELOCATION AND MAINTENANCE OF LATHING AND WARNING TAPE IS TO BE INCIDENTAL TO THE CONTRACT.

**DETAIL A
LATHING AND WARNING TAPE**



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

**DETAIL B
STANDARD PAVEMENT BARRICADES**



NOTES:

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

**DETAIL C
LOW PROFILE AIRCRAFT BARRICADE DETAIL**



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fax: 630-990-3801

Illinois Licensed
Professional Service Corporation
#184-001084

JOLIET REGIONAL AIRPORT
JOLIET PARK DISTRICT
4000 W. Jefferson Street
Joliet, Illinois 60435
phone: 815.741.7267

**T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4**

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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DESIGN BY: LDH 7/19/16
DRAWN BY: LDH 7/19/16
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SHEET TITLE

**CONSTRUCTION
SAFETY NOTES
AND DEATILS**

**T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4**

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SHEET TITLE

**PHASING PLAN
PHASE 1 & 2**

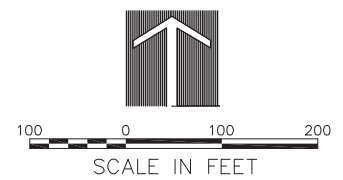
PHASE 1

NOTES

1. ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
2. ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 25 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER (SEE SPECIAL PROVISIONS).
3. CONTRACTOR'S EQUIPMENT MAY NOT DISRUPT FLIGHT OPERATIONS ON RUNWAY 13-31 OR 4-22 AT ANY TIME DURING PHASE 1.
4. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
5. SEE CONSTRUCTION SITE PLAN ON SHEET 3 AND 4 AND SAFETY NOTES ON SHEET 5.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 1:

1. REMOVE PAVEMENT WITHIN PHASE 1 LIMITS.
2. REMOVE CABLE AND ASSOCIATED ELECTRICAL ITEMS WITHIN PHASE 1 LIMITS.
3. INSTALL NEW AND ADJUST EXISTING STORM SEWER WITHIN PHASE 1 LIMITS.
4. INSTALL CABLE AND ASSOCIATED ELECTRICAL ITEMS WITHIN PHASE 1 LIMITS.
5. RELOCATE FUEL TANK AND APPURTENANCES.
6. INSTALL UNDERDRAIN WITHIN PHASE 1 LIMITS.
7. INSTALL DRAINAGE LAYER, AGGREGATE BASE AND BITUMINOUS BASE COURSE WITHIN PHASE 1 LIMITS.
8. SEEDING AND MULCHING WITHIN PHASE 1 LIMITS.



PHASE 2

NOTES

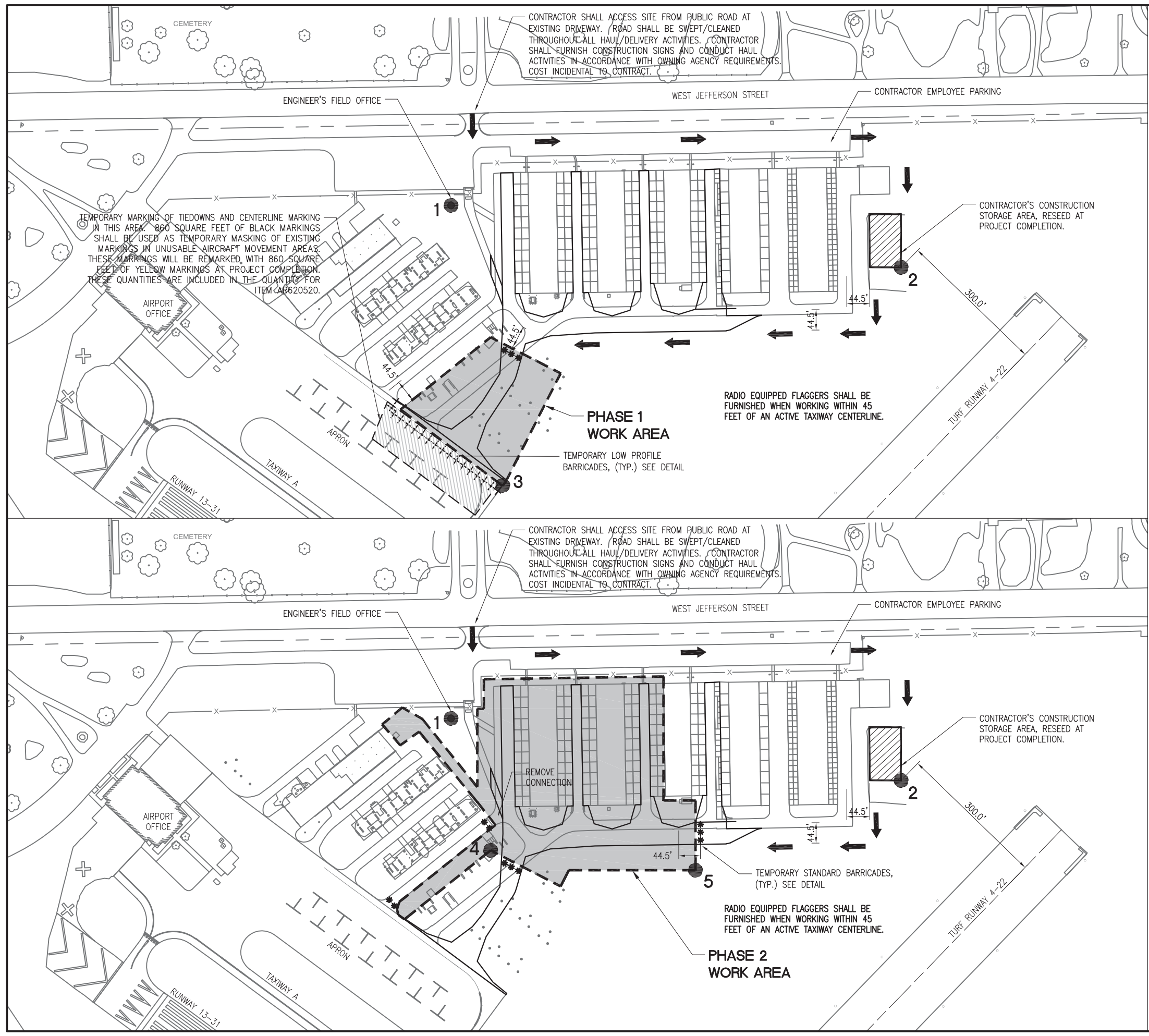
1. ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
2. ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 25 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER (SEE SPECIAL PROVISIONS).
3. CONTRACTOR'S EQUIPMENT MAY NOT DISRUPT FLIGHT OPERATIONS ON RUNWAY 13-31 OR 4-22 AT ANY TIME DURING PHASE 2.
4. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
5. SEE CONSTRUCTION SITE PLAN ON SHEET 3 AND 4 AND SAFETY NOTES ON SHEET 5.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 2:

1. REMOVE PAVEMENT WITHIN PHASE 2 LIMITS.
2. REMOVE CABLE AND ASSOCIATED ELECTRICAL ITEMS WITHIN PHASE 2 LIMITS.
3. INSTALL NEW AND ADJUST EXISTING STORM SEWER WITHIN PHASE 2 LIMITS.
4. INSTALL CABLE AND ASSOCIATED ELECTRICAL ITEMS WITHIN PHASE 2 LIMITS.
5. RELOCATE FUEL TANK AND APPURTENANCES.
6. INSTALL UNDERDRAIN WITHIN PHASE 2 LIMITS.
7. INSTALL DRAINAGE LAYER, AGGREGATE BASE AND BITUMINOUS BASE COURSE WITHIN PHASE 2 LIMITS.
8. SEEDING AND MULCHING WITHIN PHASE 2 LIMITS.

LEGEND

- *** STANDARD BARICADES
- ++++ LOW-PROFILE BARICADES



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

TEMPORARY MARKING OF TIEDOWNS AND CENTERLINE MARKING IN THIS AREA. 860 SQUARE FEET OF BLACK MARKINGS SHALL BE USED AS TEMPORARY MASKING OF EXISTING MARKINGS IN UNUSABLE AIRCRAFT MOVEMENT AREAS. THESE MARKINGS WILL BE REMARKED WITH 860 SQUARE FEET OF YELLOW MARKINGS AT PROJECT COMPLETION. THESE QUANTITIES ARE INCLUDED IN THE QUANTITIES FOR ITEM CA820520.

RADIO EQUIPPED FLAGGERS SHALL BE FURNISHED WHEN WORKING WITHIN 45 FEET OF AN ACTIVE TAXIWAY CENTERLINE.

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

RADIO EQUIPPED FLAGGERS SHALL BE FURNISHED WHEN WORKING WITHIN 45 FEET OF AN ACTIVE TAXIWAY CENTERLINE.

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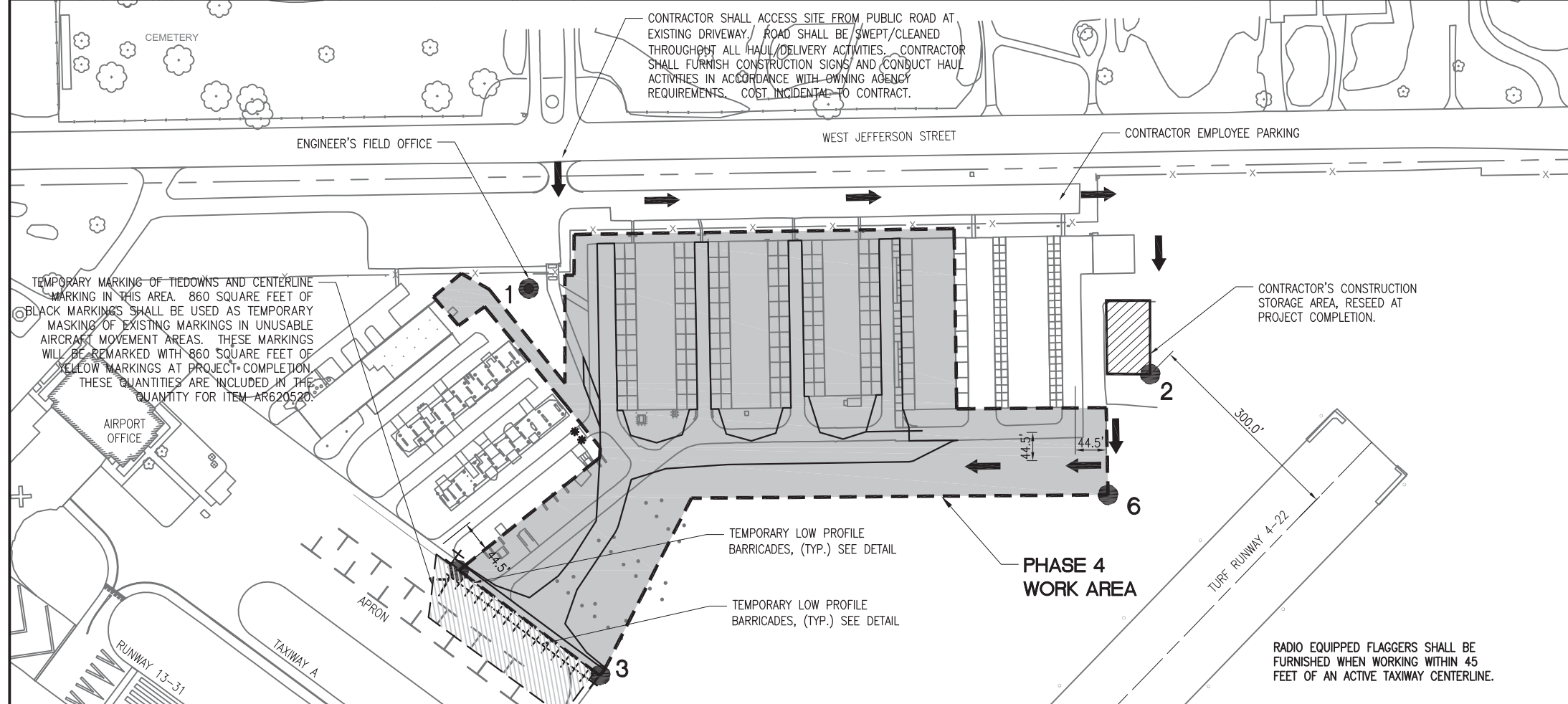
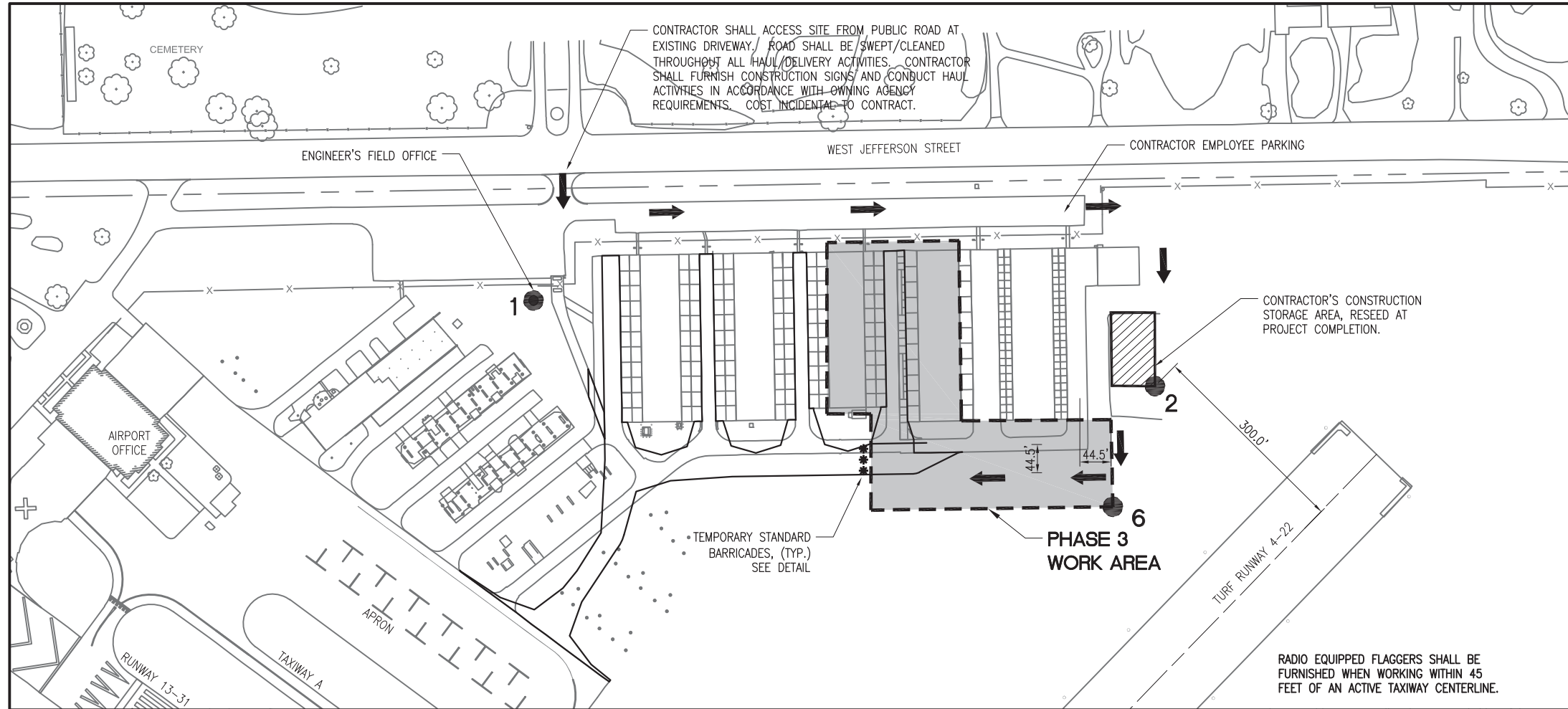
PHASE 3

NOTES

1. ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
2. ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 25 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER (SEE SPECIAL PROVISIONS).
3. CONTRACTOR'S EQUIPMENT MAY NOT DISRUPT FLIGHT OPERATIONS ON RUNWAY 13-31 OR 4-22 AT ANY TIME DURING PHASE 3.
4. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
5. SEE CONSTRUCTION SITE PLAN ON SHEET 3 AND 4 AND SAFETY NOTES ON SHEET 5.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 3:

1. REMOVE PAVEMENT WITHIN PHASE 3 LIMITS.
2. REMOVE CABLE AND ASSOCIATED ELECTRICAL ITEMS WITHIN PHASE 3 LIMITS.
3. INSTALL NEW AND ADJUST EXISTING STORM SEWER WITHIN PHASE 3 LIMITS.
4. INSTALL CABLE AND ASSOCIATED ELECTRICAL ITEMS WITHIN PHASE 3 LIMITS.
5. INSTALL UNDERDRAIN WITHIN PHASE 3 LIMITS.
6. INSTALL DRAINAGE LAYER, AGGREGATE BASE AND BITUMINOUS BASE COURSE WITHIN PHASE 3 LIMITS.
7. SEEDING AND MULCHING WITHIN PHASE 3 LIMITS.



PHASE 4

NOTES

1. ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
2. ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 25 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER (SEE SPECIAL PROVISIONS).
3. CONTRACTOR'S EQUIPMENT MAY NOT DISRUPT FLIGHT OPERATIONS ON RUNWAY 13-31 OR 4-22 AT ANY TIME DURING PHASE 4.
4. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
5. SEE CONSTRUCTION SITE PLAN ON SHEET 3 AND 4 AND SAFETY NOTES ON SHEET 5.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 4:

1. INSTALL BITUMINOUS SURFACE COURSE WITHIN PHASE 4 LIMITS.
2. MARKING WITHIN PHASE 4 LIMITS.
3. SEEDING AND MULCHING WITHIN PHASE 4 LIMITS.

LEGEND

- *** STANDARD BARRICADES
- ++++ LOW-PROFILE BARRICADES

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
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IDA No: JOT-4313
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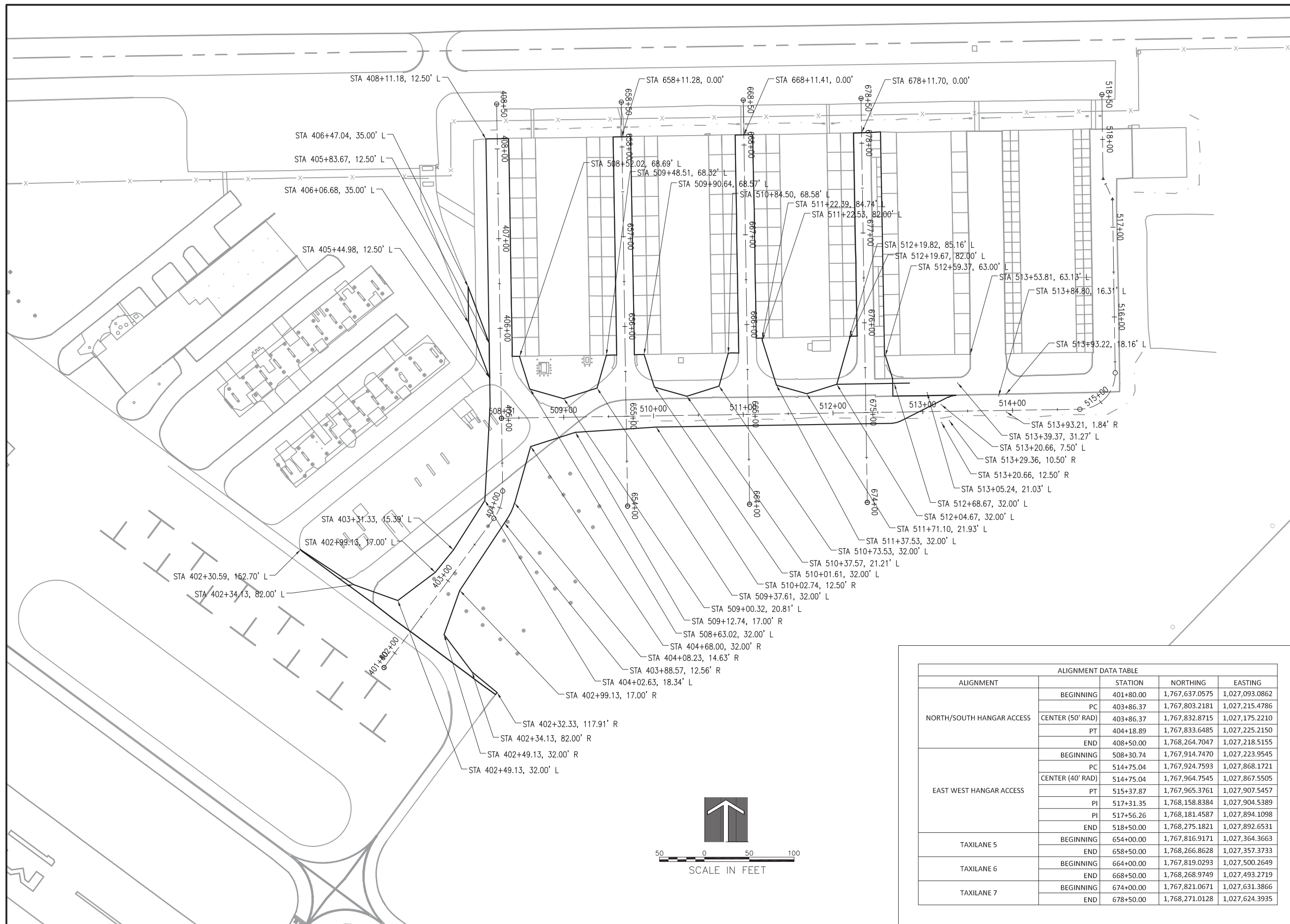
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PHASING PLAN
PHASE 3



**T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4**

IDA No: JOT-4313
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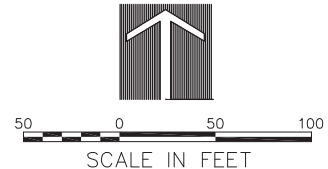
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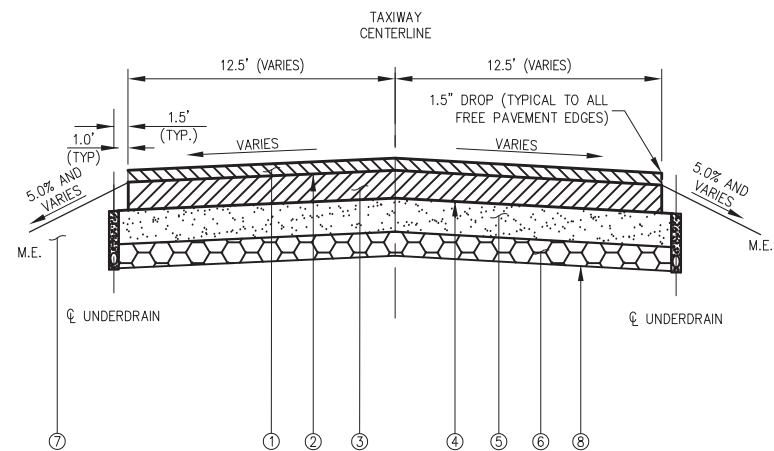
SHEET TITLE

**ALIGNMENT TABLE
AND PAVEMENT
LAYOUT**

ALIGNMENT DATA TABLE				
ALIGNMENT		STATION	NORTHING	EASTING
NORTH/SOUTH HANGAR ACCESS	BEGINNING	401+80.00	1,767,637.0575	1,027,093.0862
	PC	403+86.37	1,767,803.2181	1,027,215.4786
	CENTER (50' RAD)	403+86.37	1,767,832.8715	1,027,175.2210
	PT	404+18.89	1,767,833.6485	1,027,225.2150
	END	408+50.00	1,768,264.7047	1,027,218.5155
EAST WEST HANGAR ACCESS	BEGINNING	508+30.74	1,767,914.7470	1,027,223.9545
	PC	514+75.04	1,767,924.7593	1,027,868.1721
	CENTER (40' RAD)	514+75.04	1,767,964.7545	1,027,867.5505
	PT	515+37.87	1,767,965.3761	1,027,907.5457
	PI	517+31.35	1,768,158.8384	1,027,904.5389
	PI	517+56.26	1,768,181.4587	1,027,894.1098
	END	518+50.00	1,768,275.1821	1,027,892.6531
TAXILANE 5	BEGINNING	654+00.00	1,767,816.9171	1,027,364.3663
	END	658+50.00	1,768,266.8628	1,027,357.3733
TAXILANE 6	BEGINNING	664+00.00	1,767,819.0293	1,027,500.2649
	END	668+50.00	1,768,268.9749	1,027,493.2719
TAXILANE 7	BEGINNING	674+00.00	1,767,821.0671	1,027,631.3866
	END	678+50.00	1,768,271.0128	1,027,624.3935



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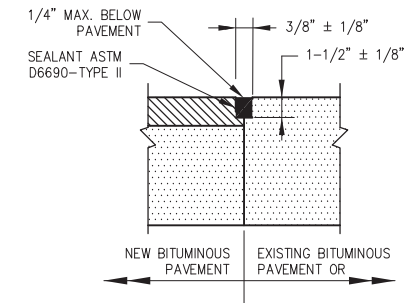


TYPICAL SECTION - TAXIWAY/TAXILANE PAVEMENTS

- ① PROPOSED 2.0 INCH BITUMINOUS SURFACE COURSE, ITEM AR401613
- ② PROPOSED BITUMINOUS TACK COAT, ITEM AR603510 *
- ③ PROPOSED 2.0 INCH BITUMINOUS BASE COURSE, ITEM AR403613
- ④ PROPOSED BITUMINOUS PRIME COAT, ITEM AR602510
- ⑤ PROPOSED 6 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209606
- ⑥ PROPOSED 6 INCH GRANULAR DRAINAGE SUBBASE, ITEM AR800927
- ⑦ PROPOSED 4 INCH TOPSOIL, ITEM AR905510
- ⑧ PROPOSED SOIL STABILIZATION FABRIC, ITEM AR152540

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

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



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

BITUMINOUS/BITUMINOUS SEAL

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 15A0062
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SHEET TITLE

TYPICAL SECTIONS
AND PAVEMENT
DETAILS

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

NOTES:
SOIL EROSION AND SEDIMENT CONTROL MAINTENANCE MUST OCCUR, AT A MINIMUM, EVERY WEEK OR AFTER EVERY 1/2 INCH OR GREATER RAINFALL EVENT.

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.

LEGEND:

- PROPOSED INLET PROTECTION AT EXISTING STRUCTURES LOCATED IN PERVIOUS AREAS
- PROPOSED INLET PROTECTION AT EXISTING STRUCTURES LOCATED IN IMPERVIOUS AREAS
- PROPOSED INLET PROTECTION AT FES
- EXISTING STORM SEWER MANHOLE
- EXISTING STORM SEWER INLET
- PROPOSED MANHOLE OR INLET
- PROPOSED FLARED END SECTION

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
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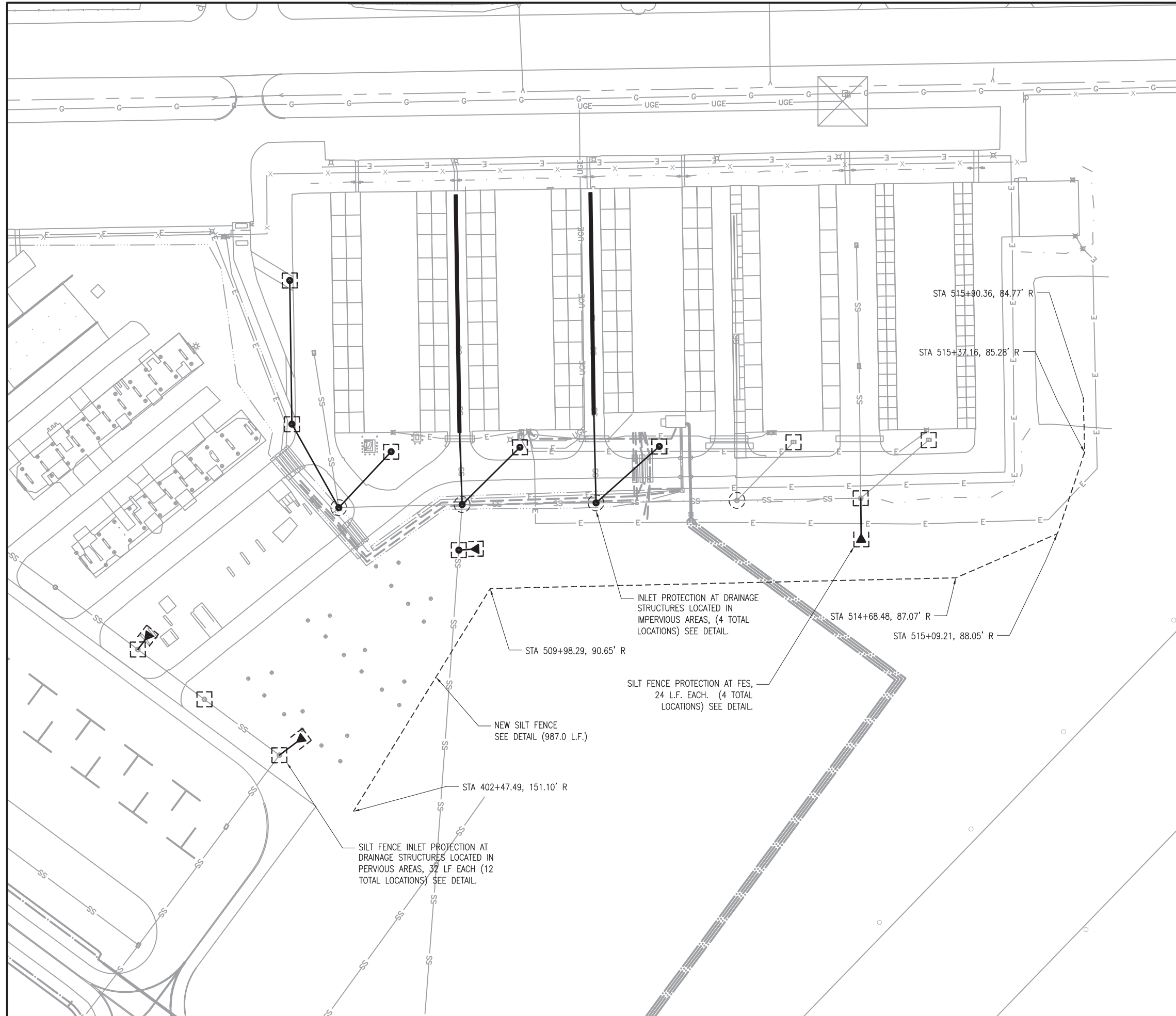
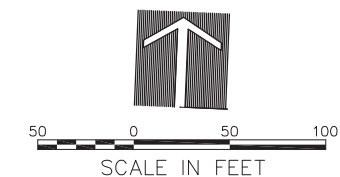
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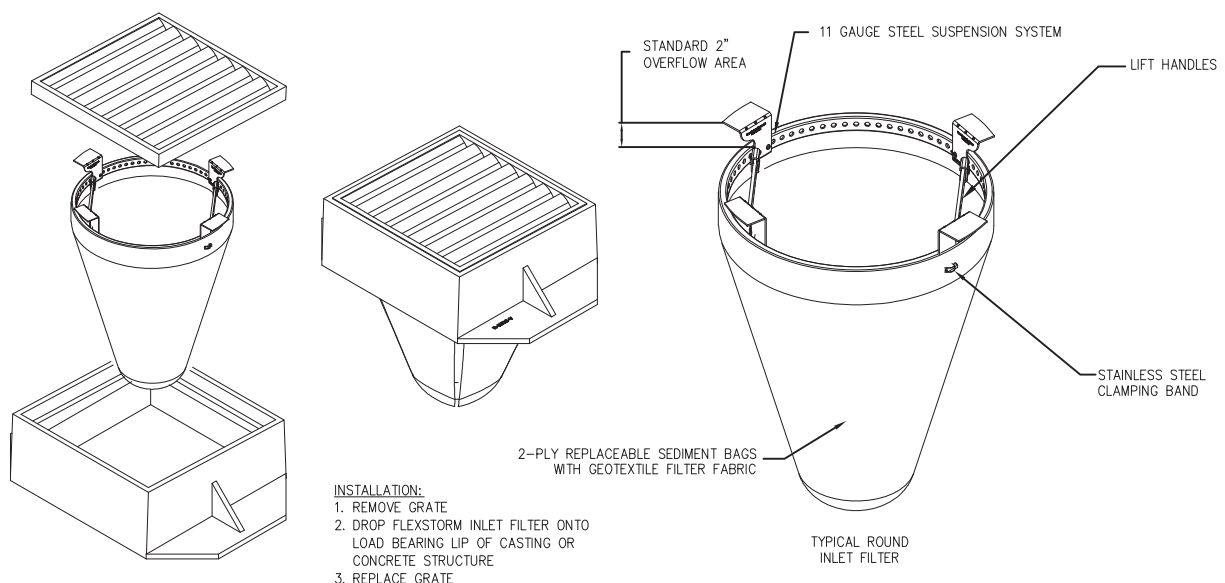
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SHEET TITLE

STORM WATER POLLUTION PREVENTION PLAN



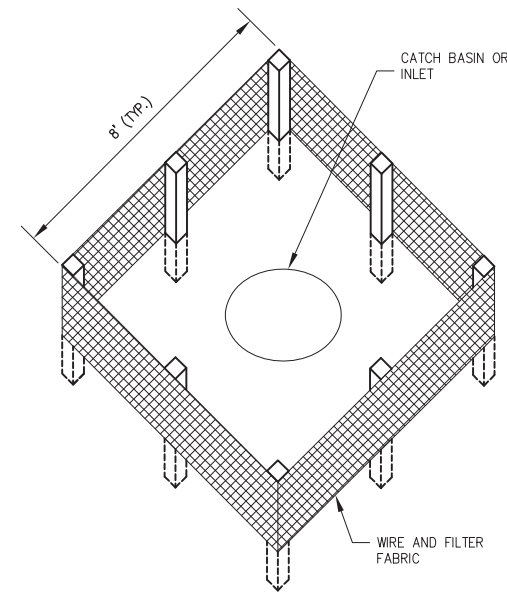


INSTALLATION:
1. REMOVE GRATE
2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
3. REPLACE GRATE

NOTES:

1. FILTER FABRIC INLET PROTECTION SHALL CONSIST OF INLET BASKET AND FABRIC INSERT, 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.

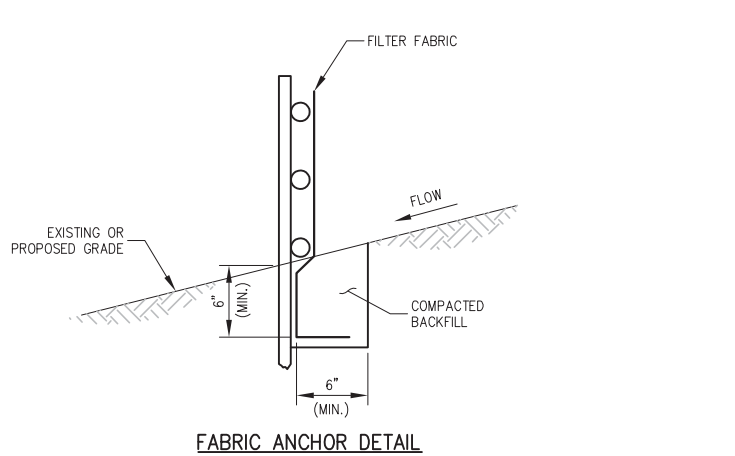
INLET PROTECTION



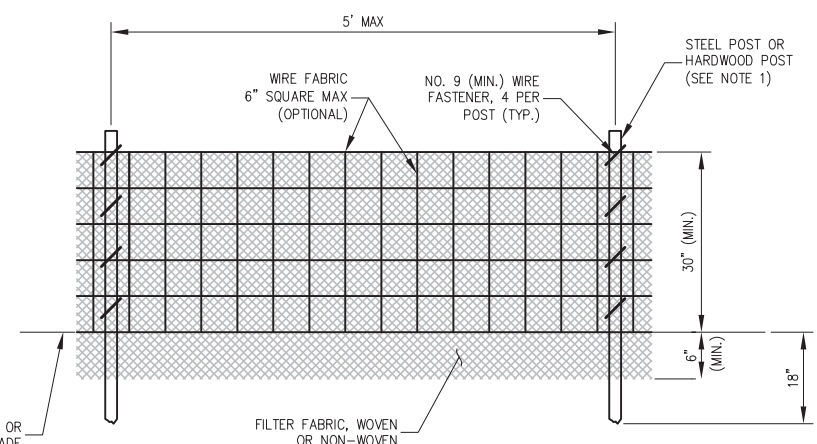
SILT FENCE PLACEMENT AT MANHOLES

NOTES:

1. FILTER FABRIC SHALL BE EMBEDDED 8" INTO THE SOIL.
2. INSPECTION SHALL BE FREQUENT AND REPAIR/REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
3. SILT FENCE SHALL BE REMOVED WHEN IT HAS SERVED ITS USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE. CONTRACTOR SHALL PLACE SEED AND MULCH AROUND STRUCTURES PER LANDSCAPING PLAN. COST OF REMOVAL SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR SILT FENCE.
4. AREAS DISTURBED OUTSIDE OF CONSTRUCTION LIMITS DURING PLACEMENT OF INLET PROTECTION TO BE RE-GRADED, SEEDED AND MULCHED, COST INCIDENTAL TO SILT FENCE.
5. FENCE AND POSTS SHALL BE REMOVED WHEN DIRECTED AT PROJECT END.



FABRIC ANCHOR DETAIL

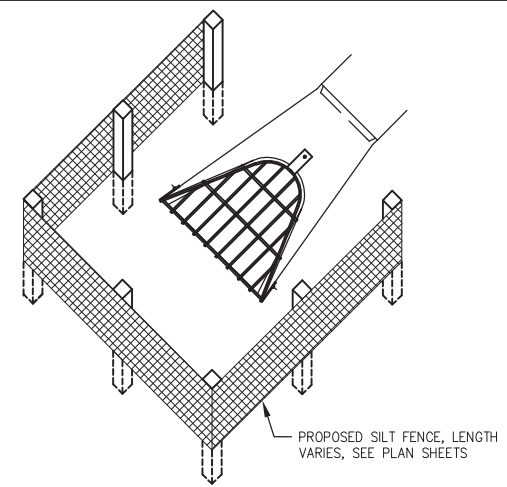


ELEVATION

NOTES:

1. FENCE POST SHALL BE EITHER STEEL 1" LINE POST OR HARDWOOD POST WITH A MINIMUM SECTIONAL AREA OF 2.0 SQUARE INCHES. A CARPENTER'S (NOMINAL) 2"x2" POST WILL MEET SPECIFICATIONS.
2. TOP AND BOTTOM WIRE OF WIRE FABRIC SHALL BE MINIMUM GAGE NO. 9. INTERMEDIATE WIRES OF THE WIRE FABRIC SHALL BE MINIMUM GAGE NO. 11.
3. WIRE FABRIC SHALL BE SECURELY FASTENED TO FENCE POSTS WITH NO. 9 GAGE WIRE MINIMUM. FOUR (4) FASTENERS PER POST REQUIRED.
4. FILTER FABRIC SHALL BE SECURELY FASTENED TO WIRE FABRIC AND POSTS WITH TIES OR STAPLES SPACED AT 12" APART AT THE TOP, MIDDLE AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER FABRIC MEET, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED AND ATTACHED TO THE WIRE FABRIC AT A POST.
6. FILTER FABRIC SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS WITH APPARENT OPENING SIZE (AOS) OF AT LEAST 40 FOR NONWOVEN AND WOVEN (OR MAXIMUM OF 0.60mm).
7. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. SOIL STABILIZATION MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS AND THE USE OF TEMPORARY OR PERMANENT MEASURES.
8. ALL STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
9. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED. PERIODIC INSPECTION SHALL BE PERFORMED AND REQUIRED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.
10. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN BULGES DEVELOP IN THE SILT FENCE.
11. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION. DISCHARGES SHALL BE ROUTED THROUGH AN EFFECTIVE SEDIMENT CONTROL MEASURE (E.G. SEDIMENT TRAP, SEDIMENT BASIN, OR OTHER APPROPRIATE MEASURE).
12. FENCE POSTS SHALL BE REMOVED WHEN DIRECTED AT PROJECT END.
13. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER OR GOVERNING AGENCY.

SILT FENCE



SILT FENCE PLACEMENT AT FLARED END SECTIONS (FES)

SEDIMENTATION AND EROSION CONTROL NOTES:

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

STORM WATER POLLUTION PREVENTION NOTES

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

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

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

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

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

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

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

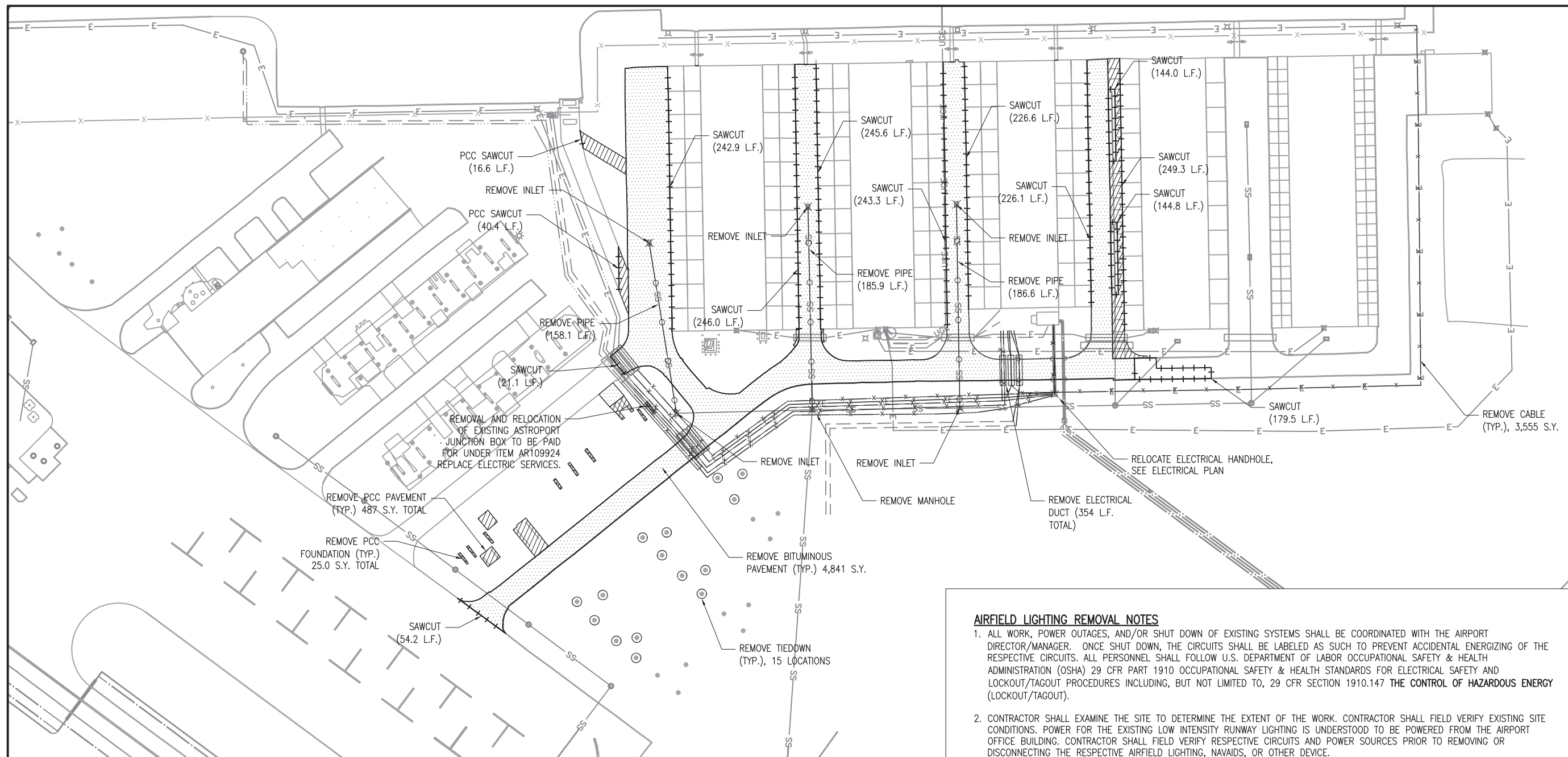
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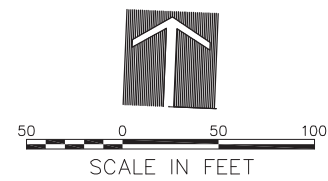
SWPPP DETAILS



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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.



- LEGEND:**
- PROPOSED BITUMINOUS PAVEMENT REMOVAL
 - PROPOSED PCC PAVEMENT REMOVAL
 - PROPOSED PCC FOUNDATION REMOVAL
 - PROPOSED BITUMINOUS PAVEMENT SAWING
 - PROPOSED CABLE REMOVAL
 - PROPOSED PIPE REMOVAL

AIRFIELD LIGHTING REMOVAL NOTES

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. POWER FOR THE EXISTING LOW INTENSITY RUNWAY LIGHTING IS UNDERSTOOD TO BE POWERED FROM THE AIRPORT OFFICE BUILDING. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAIDS, OR OTHER DEVICE.
3. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
4. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
5. THE EXISTING AIRFIELD LIGHTS AND SIGNS DESIGNATED FOR REMOVAL SHALL BE DISCONNECTED, REMOVED AND TURNED OVER TO THE AIRPORT MANAGER. THE CONCRETE LIGHT BASES AND FOUNDATIONS SHALL BE REMOVED AND DISPOSED OF, OFF THE AIRPORT SITE IN A LEGAL MANNER.
6. THE EXISTING AIRFIELD LIGHTING CABLES, THAT ARE NOT IDENTIFIED FOR REMOVAL, BUT ARE ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH THE INSTALLATION OF A PROPOSED LIGHT OR CABLE, PAVEMENT, OR OTHER WORK, THEN IT SHALL BE REMOVED AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES.
7. WHEN A RUNWAY IS CLOSED THE RUNWAY LIGHTING SYSTEM SHALL BE SHUT OFF, AND THE ASSOCIATED NAVAIDS FOR THAT RUNWAY SHALL ALSO BE SHUT OFF.
8. ALL ABOVE GROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2F, "OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION", PART 218, PARAGRAPH C.
9. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE LIGHT, SIGN, AND/OR BASE REMOVAL WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
10. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

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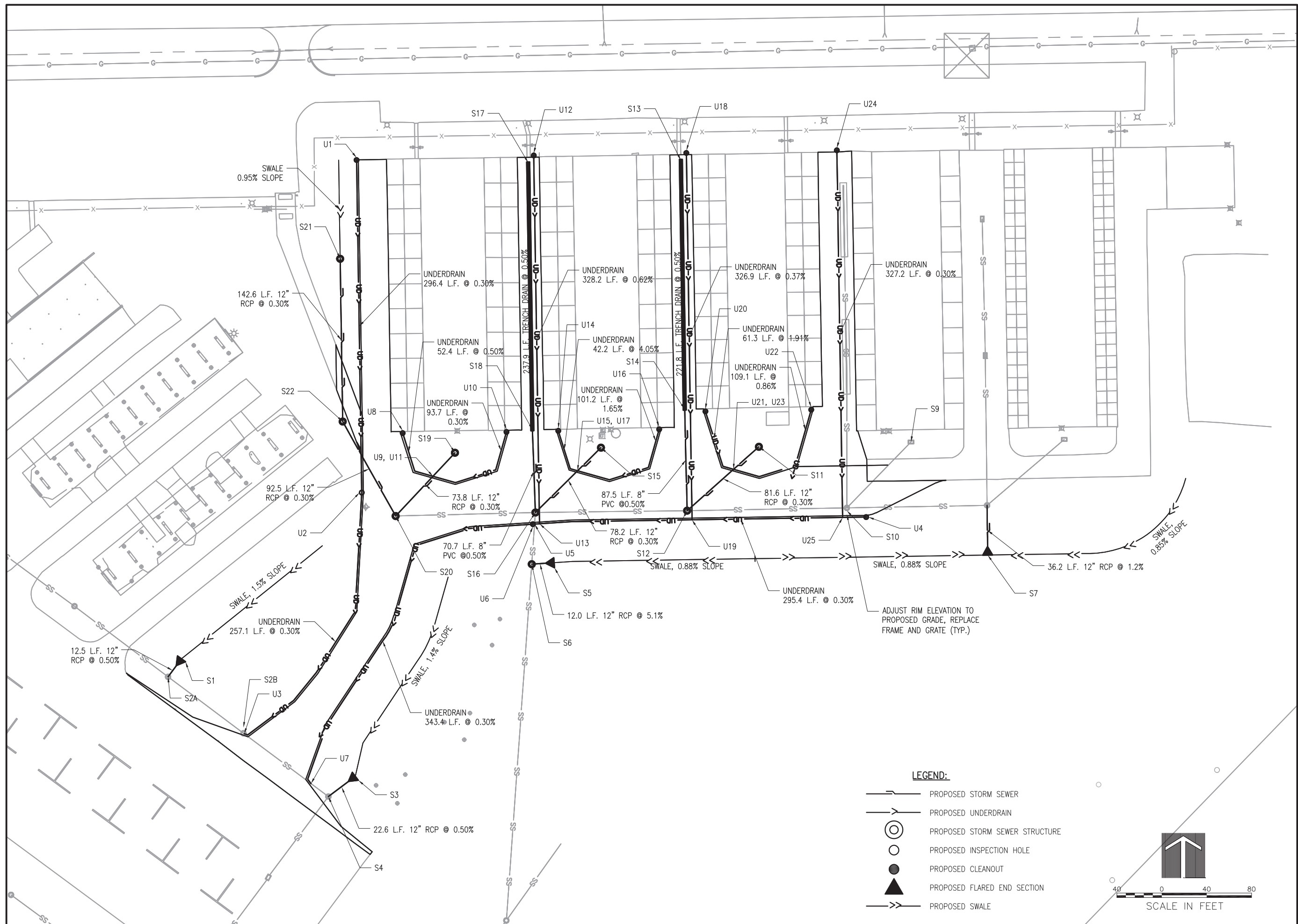
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REMOVAL PLAN



**T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4**

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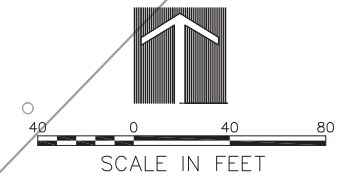
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SHEET TITLE

DRAINAGE PLAN

- LEGEND:**
- PROPOSED STORM SEWER
 - PROPOSED UNDERDRAIN
 - ⊙ PROPOSED STORM SEWER STRUCTURE
 - PROPOSED INSPECTION HOLE
 - PROPOSED CLEANOUT
 - ▲ PROPOSED FLARED END SECTION
 - PROPOSED SWALE



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STORM SEWER SCHEDULE

Structure	Station	Offset	Type	Rim EL	Invert EL	Pipe Lay Length	Size	Type	Slope %	
S1	402+70.04	120.9	LT	FES	—	576.33				
S2A	402+50.05	121.1	LT	Existing Inlet Type B	578.16	NE 576.13 NW 576.13 SE 576.13	12.5	12.0	RCP	0.50
S3	402+77.59	65.9	RT	FES	—	575.65				
S4	402+48.77	57.2	RT	Existing Inlet Type B	578.62	NE 575.50 NW 575.49 SW 575.55	22.6	12.0	RCP	0.50
S5	509+87.13	50.3	RT	FES	—	577.52				
S6	509+67.16	51.3	RT	4' Manhole	579.43	E 576.51 N 575.80 S 575.80	12.0	12.0	RCP	5.10
S7	513+73.39	49.5	RT	FES	—	577.27				
S8	513+73.54	5.3	RT	Existing 4' Manhole	578.88	S 576.73 NE 576.73 N 576.73 W 576.73	36.2	12.0	RCP	1.22
S11	511+71.10	50.1	LT	Type A Inlet	579.30	SW 576.59	81.6	12.0	RCP	0.30
S12	511+06.31	5.8	RT	6' Manhole	580.27	NE 576.33 W 576.28 N 577.92 E 576.33				
S13	668+06.41	0.0		Trench Drain	580.57	579.48	221.8	8.0	Trench Drain	0.50
S14	665+84.66	0.0		Trench Drain	580.63	578.37	87.5	8.0	PVC	0.50
S12	511+06.31	5.8	RT	6' Manhole	580.27	N 577.92				
S15	510+30.44	51.5	LT	Type A Inlet	579.31	SW 576.19	78.2	12.0	RCP	0.30
S16	509+71.16	5.3	RT	6' Manhole	580.34	NE 575.94 W 576.04 N 578.30 E 576.09 S 575.94				
S17	658+06.28	0.0		Trench Drain	580.95	579.86	237.9	8.0	Trench Drain	0.50
S18	655+68.37	0.0		Trench Drain	580.74	578.67	70.7	8.0	PVC	0.50
S16	509+71.16	5.3	RT	6' Manhole	580.34	N 578.30				
S19	509+00.32	49.0	LT	Type A Inlet	579.49	SW 577.55	73.8	12.0	RCP	0.30
S20	508+46.60	6.5	RT	5' Manhole	580.45	NE 576.78 NW 576.78 E 576.78				
S21	407+23.44	30.0	LT	Type A Inlet	579.74	S 577.51	142.6	12.0	RCP	0.30
S22	406+08.60	30.0	LT	Type B Inlet	580.45	N 577.07 SE 577.07	92.5	12.0	RCP	0.30
S20	508+46.60	6.5	RT	5' Manhole	580.45	NW 576.78 NE 576.78 E 576.78				

STRUCTURE SCHEDULE

Structure Number	Structure Type	Diameter "D" (in.)	Frame Height (in.)	Grate Diameter (in.)	Frame Type (Neeah/East Jordan) or Approved Equal	Cover/Grate (Neeah/East Jordan) or Approved Equal
S2B	Existing Inlet Type B	36	7	25-3/4	R-1590/1040	Closed/Cover
S4	Existing Inlet Type B	36	7	25-3/4	R-1590/1040	Closed/Cover
S6	Manhole	48	9	32-3/8	R-3492-A/1895	Type C/Grate
S9	Existing Inlet Type A	24	7	25-3/4	R-2390/1040	Type C/Grate
S10	Existing Manhole	48	9	32-3/8	R-3492-A/1895	Closed/Cover
S11	Inlet Type A	24	7	25-3/4	R-2390/1040	Type C/Grate
S12	Manhole	72	9	32-3/8	R-3492-A/1895	Closed/Cover
S15	Inlet Type A	24	7	25-3/4	R-2390/1040	Type C/Grate
S16	Manhole	72	9	32-3/8	R-3492-A/1895	Closed/Cover
S19	Inlet Type A	24	7	25-3/4	R-2390/1040	Type C/Grate
S20	Manhole	60	9	32-3/8	R-3492-A/1895	Closed/Cover
S21	Inlet Type A	24	7	25-3/4	R-2390/1040	Type C/Grate
S22	Inlet Type B	36	7	25-3/4	R-2390/1040	Type C/Grate

ADJUSTMENT SCHEDULE

Existing Structure	New Grate Type (Neeah/East Jordan) or Approved Equal	Station	Offset	Existing Rim Elevation	Proposed Rim Elevation
S2B	R-1590/1040 Cover	402+49.41	37.1	LT 578.24	578.64
S9	R-2390-C/1040 Grate	513+06.65	52.3	LT 579.42	579.20
S10	R-3492-A/1895 Cover	512+48.61	5.5	RT 578.73	580.17



Offices Nationwide
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JOLIET REGIONAL AIRPORT
JOLIET PARK DISTRICT
4000 W. Jefferson Street
Joliet, Illinois 60435
phone: 815.741.7267

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 14-DRN SCH.DWG
DESIGN BY: LDH 5/13/16
DRAWN BY: LDH 5/13/16
REVIEWED BY: SJM 12/2/16

SHEET TITLE

STORM SEWER
SCHEDULE

UNDERDRAIN SCHEDULE

Structure	Station	Offset		Type	Rlm El.	Invert El.	Pay Length	Slope %
U1	408+11.18	14.00	LT	Cleanout	580.73	578.23		
							296.4	0.30
U2	405+14.83	14.00	LT	Inspection Hole	580.33	577.34		
							257.1	0.30
U3	402+49.40	36.30	LT	RCP Connection	--	576.57		
U4	512+65.66	14.00	RT	Cleanout	579.86	577.21		
							295.4	0.30
U5	509+70.26	15.63	RT	RCP Connection	--	576.32		
U6	509+68.76	15.70	RT	Cleanout	580.06	577.56		
							343.4	0.30
U7	402+48.90	37.96	RT	RCP Connection	--	576.03		
U8	508+54.02	67.25	LT	Cleanout	580.90	578.40		
							52.4	0.50
U9	508+80.36	28.37	LT	RCP Connection	--	578.14		
U10	509+46.51	66.87	LT	Cleanout	580.87	578.37		
							93.7	0.30
U11	508+80.36	28.37	LT	RCP Connection	--	578.09		
U12	658+12.78	5.00	RT	Cleanout	580.85	578.35		
							328.2	0.62
U13	654+84.59	5.00	RT	RCP Connection	--	576.33		
U14	509+92.64	67.13	LT	Cleanout	580.81	578.31		
							42.2	4.05
U15	510+09.30	31.26	LT	RCP Connection	--	576.60		
U16	510+82.49	67.09	LT	Cleanout	580.77	578.27		
							101.2	1.65
U17	510+09.30	31.26	LT	RCP Connection	--	576.60		
U18	668+12.91	5.00	RT	Cleanout	580.46	577.96		
							326.9	0.37
U19	664+86.00	5.00	RT	RCP Connection	--	576.74		
U20	511+23.97	82.43	LT	Cleanout	580.67	578.17		
							61.3	1.91
U21	511+48.21	30.36	LT	RCP Connection	--	577.00		
U22	512+18.23	82.43	LT	Cleanout	580.44	577.94		
							109.1	0.86
U23	511+48.21	30.36	LT	RCP Connection	--	577.00		
U24	678+13.20	8.00	RT	Cleanout	580.37	578.12		
							327.2	0.30
U25	674+86.00	8.00	RT	RCP Connection	--	577.15		

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

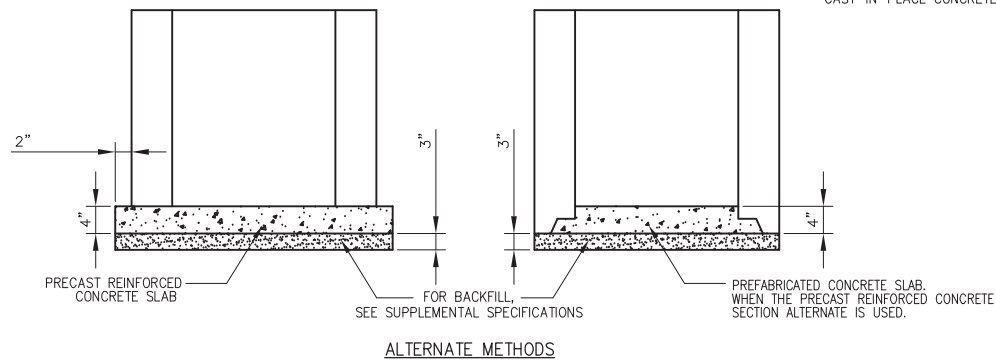
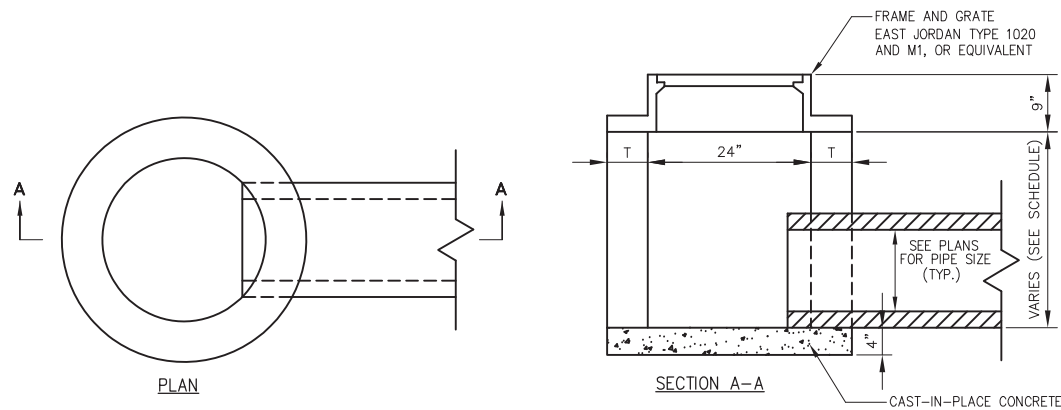
JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 15-UD SCH.DWG
DESIGN BY: LDH 10/11/16
DRAWN BY: LDH 10/11/16
REVIEWED BY: SJM 12/2/16

SHEET TITLE

UNDERDRAIN
SCHEDULE

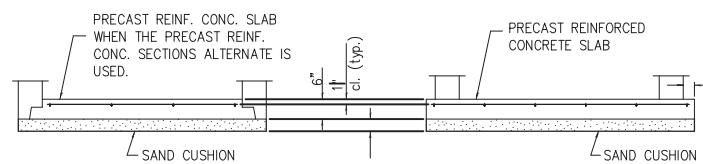
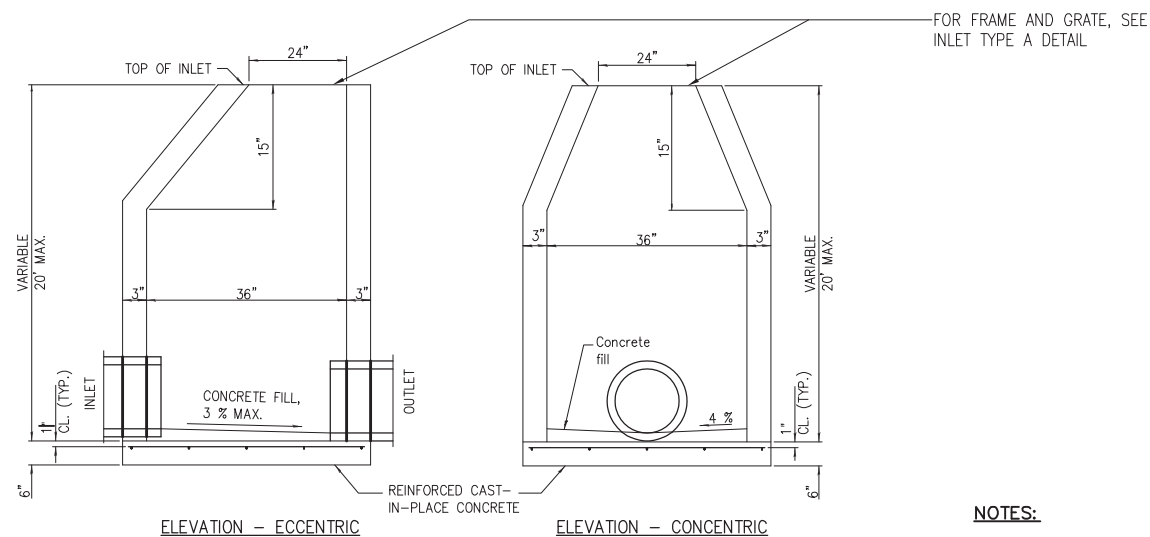


NOTES

1. SEE DRAINAGE AND UNDERDRAIN SCHEDULE FOR LOCATION, SIZE AND NUMBER OF PIPE CONNECTIONS.
2. INLETS TO BE PRECAST REINFORCED CONCRETE SECTIONS (T = 5").

INLET TYPE A

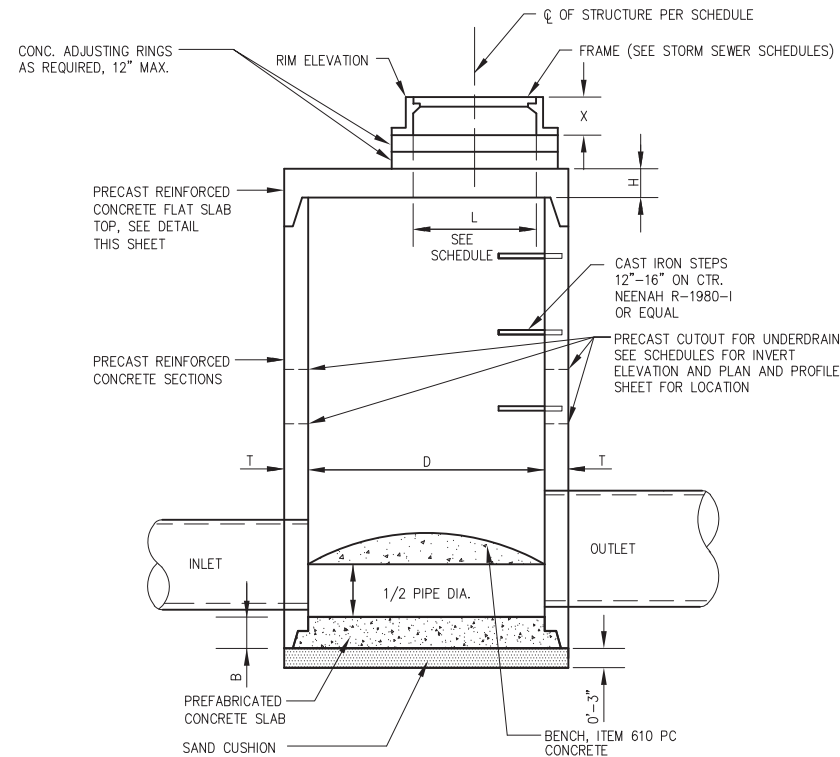
(IDOT STANDARD 602301)



ALTERNATE BOTTOM SLAB

INLET TYPE B

(IDOT STANDARD 602306)



MANHOLE DATA

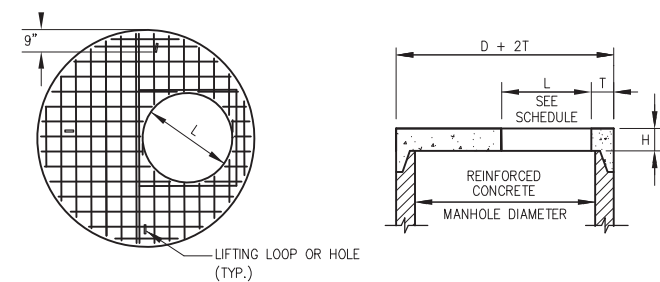
INSIDE DIA. "D" (IN.)	WALL THICKNESS "T" (IN.)	TOP THICKNESS "H" (IN.)	BOTTOM THICKNESS "B" (IN.)
48	5	6	6
60	5	8	8
72	7	8	8
108	9	9	8

NOTES

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

MANHOLE WITH FLAT SLAB TOP

(IDOT STANDARD 602401-MODIFIED)



NOTES

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

PRECAST REINFORCED CONCRETE FLAT SLAB TOP

(IDOT STANDARD 602601)

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
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REVIEWED BY: SJM 12/2/16

SHEET TITLE

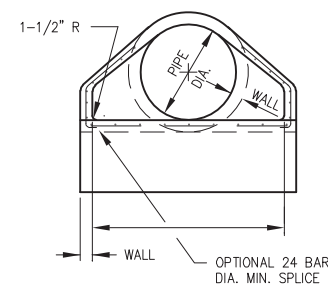
**DRAINAGE
DETAILS**

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

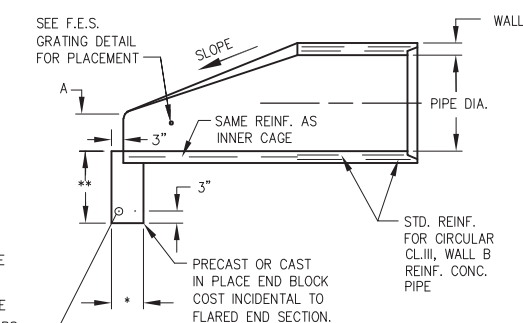
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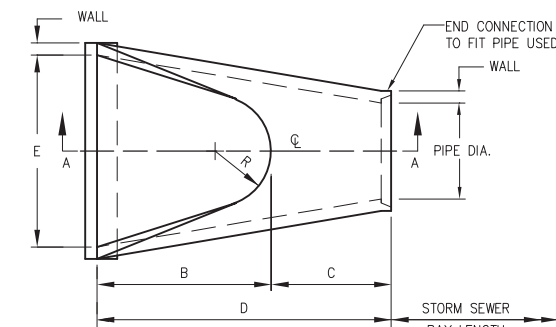
DRAINAGE
DETAILS



END VIEW



SECTION A-A



TOP VIEW

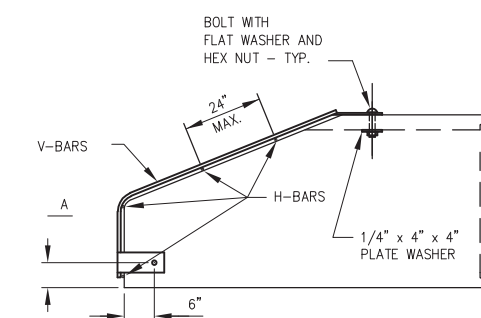
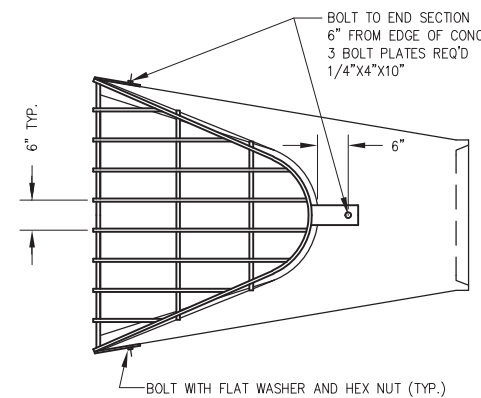
NOTES

- GRATING SHALL BE PAID FOR UNDER ITEM AR752512.
- 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.
- PRECAST CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-170 CLASS III, WALL B REINFORCED CONCRETE PIPE.
- MODIFICATION IS DUE TO THE RELOCATION OF THE CONNECTION POINT BETWEEN THE GRATE AND THE FLARED END SECTION.

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

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

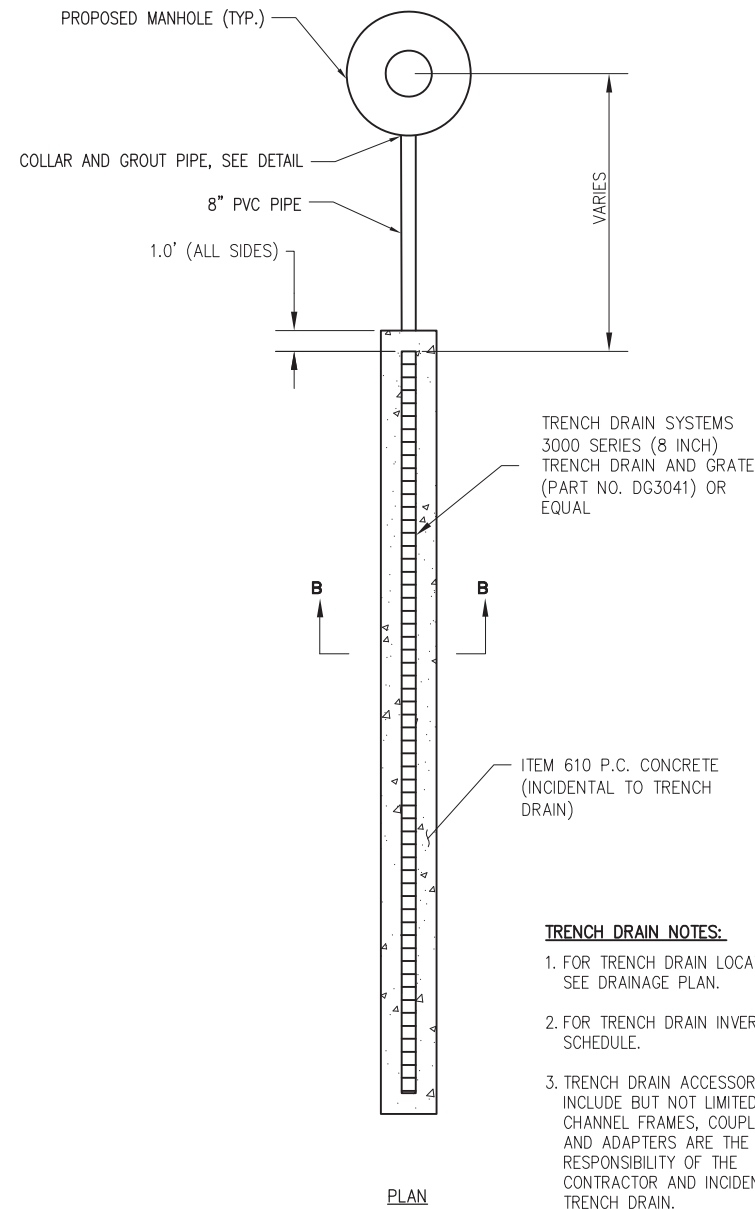
END SECTIONS	DIA. INCHES	V-BAR SIZE	H-BAR SIZE	No. OF H-BARS REQ'D.	BOLT DIA.	"A" DIM.
	INCHES		INCHES			
12	1/2	5/8	5/8	3	1/2	4
15	1/2	5/8	5/8	3	1/2	4 1/2
18	1/2	5/8	5/8	4	1/2	4 1/2
21	1/2	5/8	5/8	4	1/2	5
24	5/8	3/4	3/4	4	1/2	5
27	5/8	3/4	3/4	4	1/2	5 1/2
30	5/8	3/4	3/4	4	1/2	5 1/2
36	3/4	1	1	4	3/4	8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



GRATING FOR FLARED END SECTION

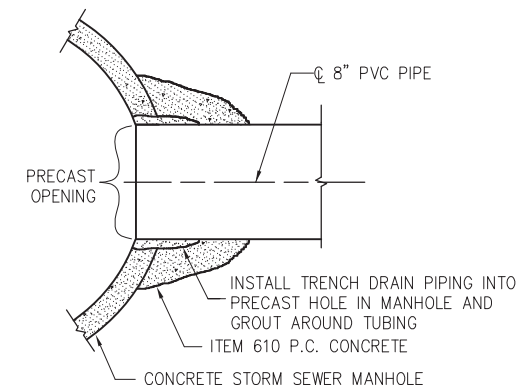
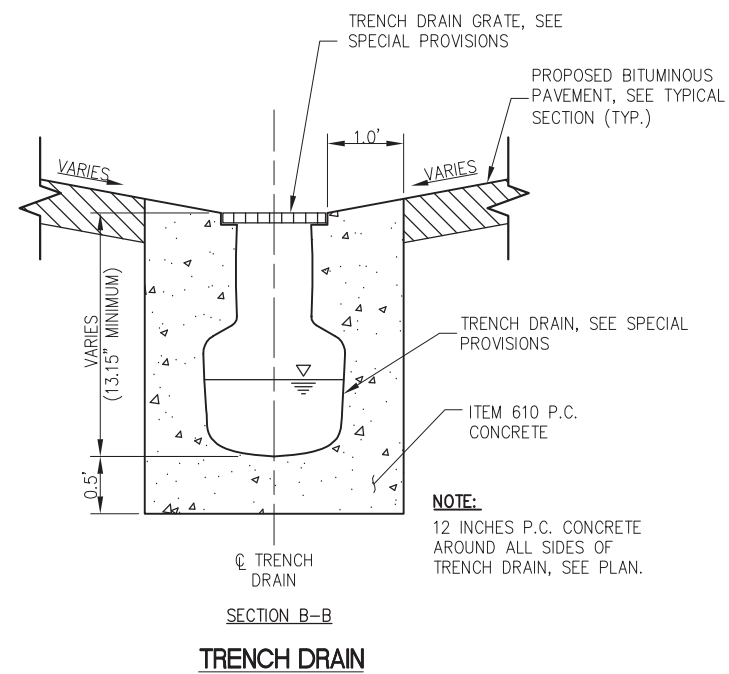
NOTES

- BARS AND PLATES ARE HOT ROLLED STEEL.
- BARS, PLATES, PIPE AND BOLTS ARE GALVANIZED.



TRENCH DRAIN NOTES:

1. FOR TRENCH DRAIN LOCATION, SEE DRAINAGE PLAN.
2. FOR TRENCH DRAIN INVERTS SEE SCHEDULE.
3. TRENCH DRAIN ACCESSORIES, TO INCLUDE BUT NOT LIMITED TO, CHANNEL FRAMES, COUPLERS, AND ADAPTERS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND INCIDENTAL TO TRENCH DRAIN.



NOTES

1. HOLE FOR TRENCH DRAIN PIPING TO BE PRECAST INTO MANHOLE AT ELEVATION SPECIFIED IN TRENCH DRAIN SCHEDULE.
2. CONNECTIONS INCIDENTAL TO UNDERDRAIN.

TRENCH DRAIN CONCRETE COLLAR AND GROUT CONNECTION

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

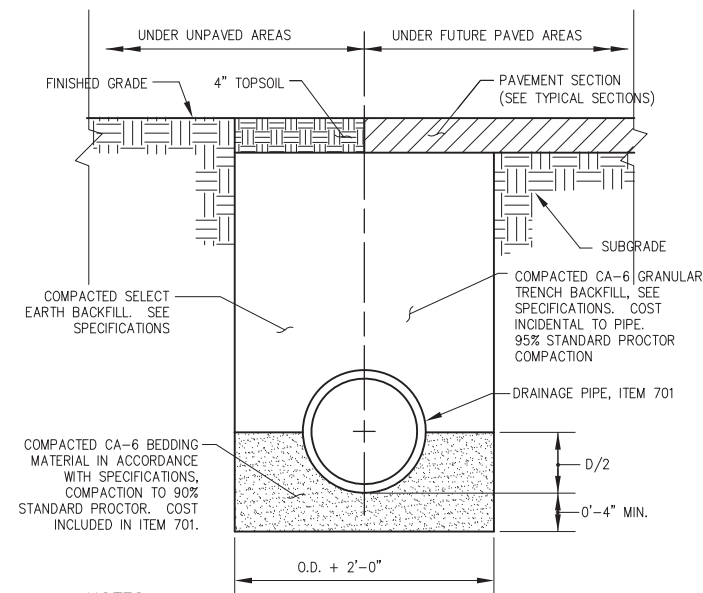
JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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REVIEWED BY: SJM 12/2/16

SHEET TITLE

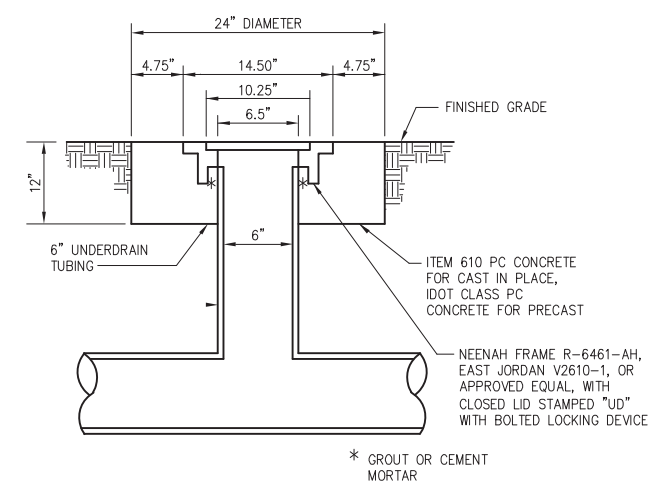
DRAINAGE AND UNDERDRAIN DETAILS



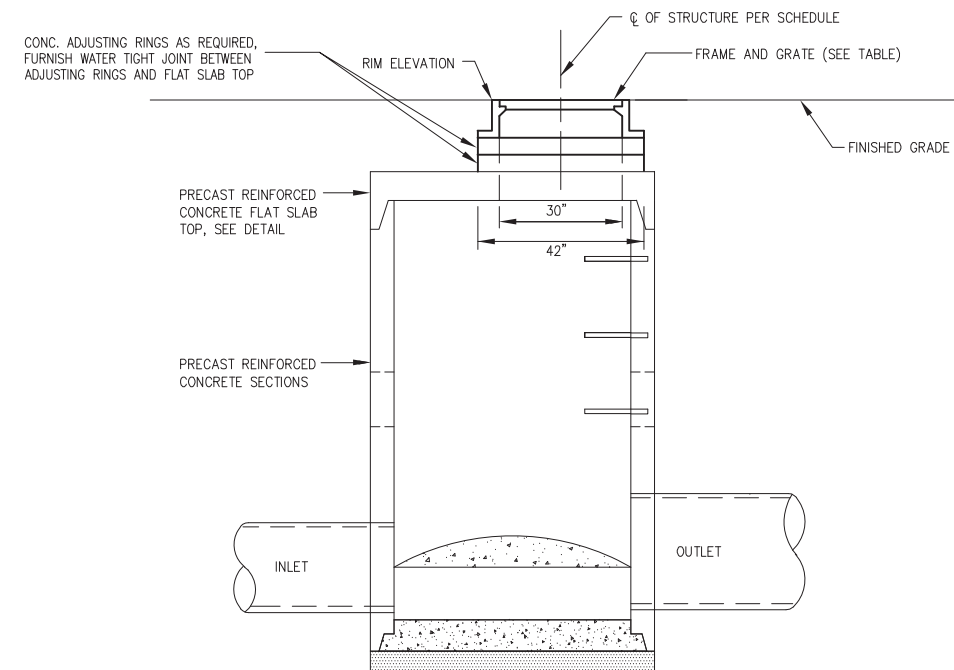
NOTES

- UNDESIRABLE MATERIAL ENCOUNTERED DURING PLACEMENT OF BEDDING SHALL BE REMOVED AND REPLACED.
- WITHIN 3 FEET OF FUTURE PAVED AREA, GRANULAR BACKFILL IS TO BE USED INSTEAD OF EARTH BACKFILL.
- 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.
- CA-7 BEDDING MAY BE PERMITTED IN CERTAIN CONDITIONS AS SPECIFIED IN STANDARD SPECIFICATIONS.

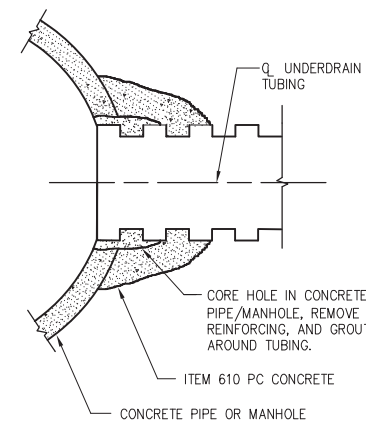
PIPE TRENCH



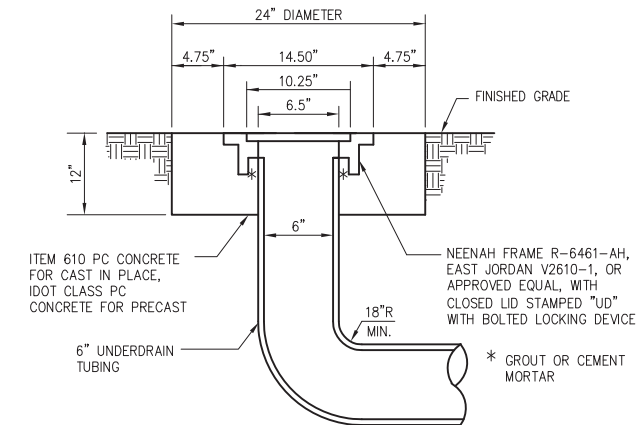
UNDERDRAIN INSPECTION HOLE



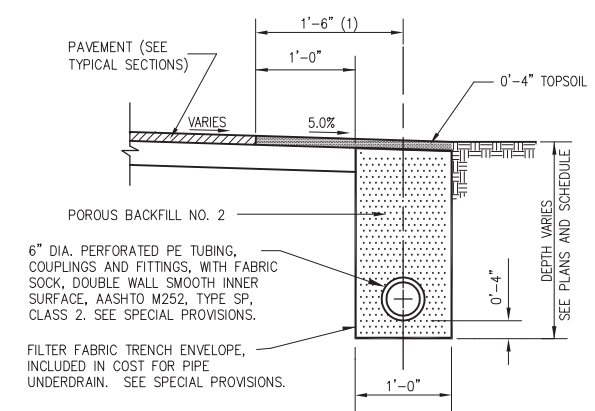
EXISTING MANHOLE ADJUSTMENT



STORM SEWER CONCRETE COLLAR AND GROUT CONNECTION



UNDERDRAIN CLEANOUT



UNDERDRAIN ALONG PAVEMENT EDGE

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

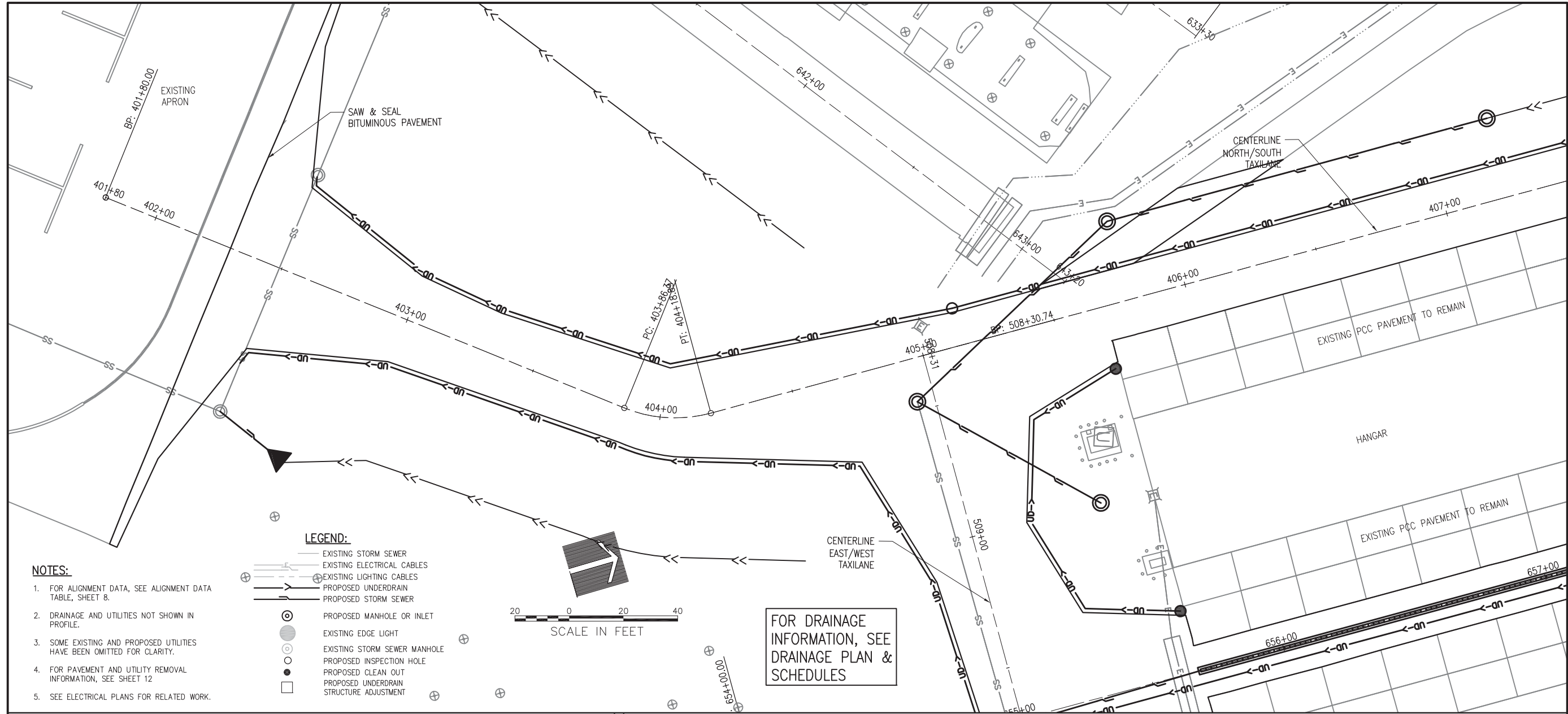
JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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CAD FILE: 19-DRAINAGEDET.DWG
DESIGN BY: LDH 9/6/16
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REVIEWED BY: SJM 12/2/16

SHEET TITLE

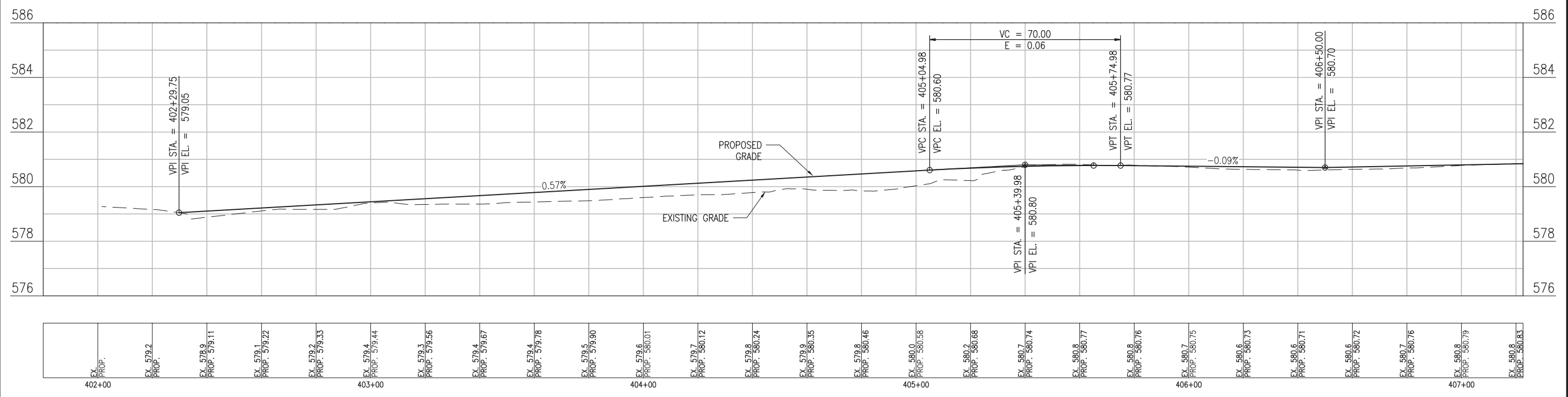
DRAINAGE AND
UNDERDRAIN
DETAILS



- NOTES:**
- FOR ALIGNMENT DATA, SEE ALIGNMENT DATA TABLE, SHEET 8.
 - DRAINAGE AND UTILITIES NOT SHOWN IN PROFILE.
 - SOME EXISTING AND PROPOSED UTILITIES HAVE BEEN OMITTED FOR CLARITY.
 - FOR PAVEMENT AND UTILITY REMOVAL INFORMATION, SEE SHEET 12
 - SEE ELECTRICAL PLANS FOR RELATED WORK.

- LEGEND:**
- EXISTING STORM SEWER
 - EXISTING ELECTRICAL CABLES
 - EXISTING LIGHTING CABLES
 - PROPOSED UNDERDRAIN
 - PROPOSED STORM SEWER
 - PROPOSED MANHOLE OR INLET
 - EXISTING EDGE LIGHT
 - EXISTING STORM SEWER MANHOLE
 - PROPOSED INSPECTION HOLE
 - PROPOSED CLEAN OUT
 - PROPOSED UNDERDRAIN STRUCTURE ADJUSTMENT

FOR DRAINAGE INFORMATION, SEE DRAINAGE PLAN & SCHEDULES



STATION	EXISTING ELEVATION	PROPOSED ELEVATION
402+00	EX. 579.2	PROP. 579.2
402+10	EX. 579.9	PROP. 579.11
402+20	EX. 579.1	PROP. 579.22
402+30	EX. 579.2	PROP. 579.33
402+40	EX. 579.4	PROP. 579.44
402+50	EX. 579.3	PROP. 579.56
402+60	EX. 579.4	PROP. 579.67
402+70	EX. 579.4	PROP. 579.78
402+80	EX. 579.5	PROP. 579.90
402+90	EX. 579.6	PROP. 580.01
403+00	EX. 579.7	PROP. 580.12
403+10	EX. 579.8	PROP. 580.24
403+20	EX. 579.9	PROP. 580.35
403+30	EX. 579.8	PROP. 580.46
403+40	EX. 580.0	PROP. 580.58
403+50	EX. 580.2	PROP. 580.68
403+60	EX. 580.7	PROP. 580.74
403+70	EX. 580.8	PROP. 580.77
403+80	EX. 580.8	PROP. 580.76
403+90	EX. 580.7	PROP. 580.75
404+00	EX. 580.6	PROP. 580.73
404+10	EX. 580.6	PROP. 580.71
404+20	EX. 580.6	PROP. 580.72
404+30	EX. 580.7	PROP. 580.76
404+40	EX. 580.8	PROP. 580.79
404+50	EX. 580.8	PROP. 580.83

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

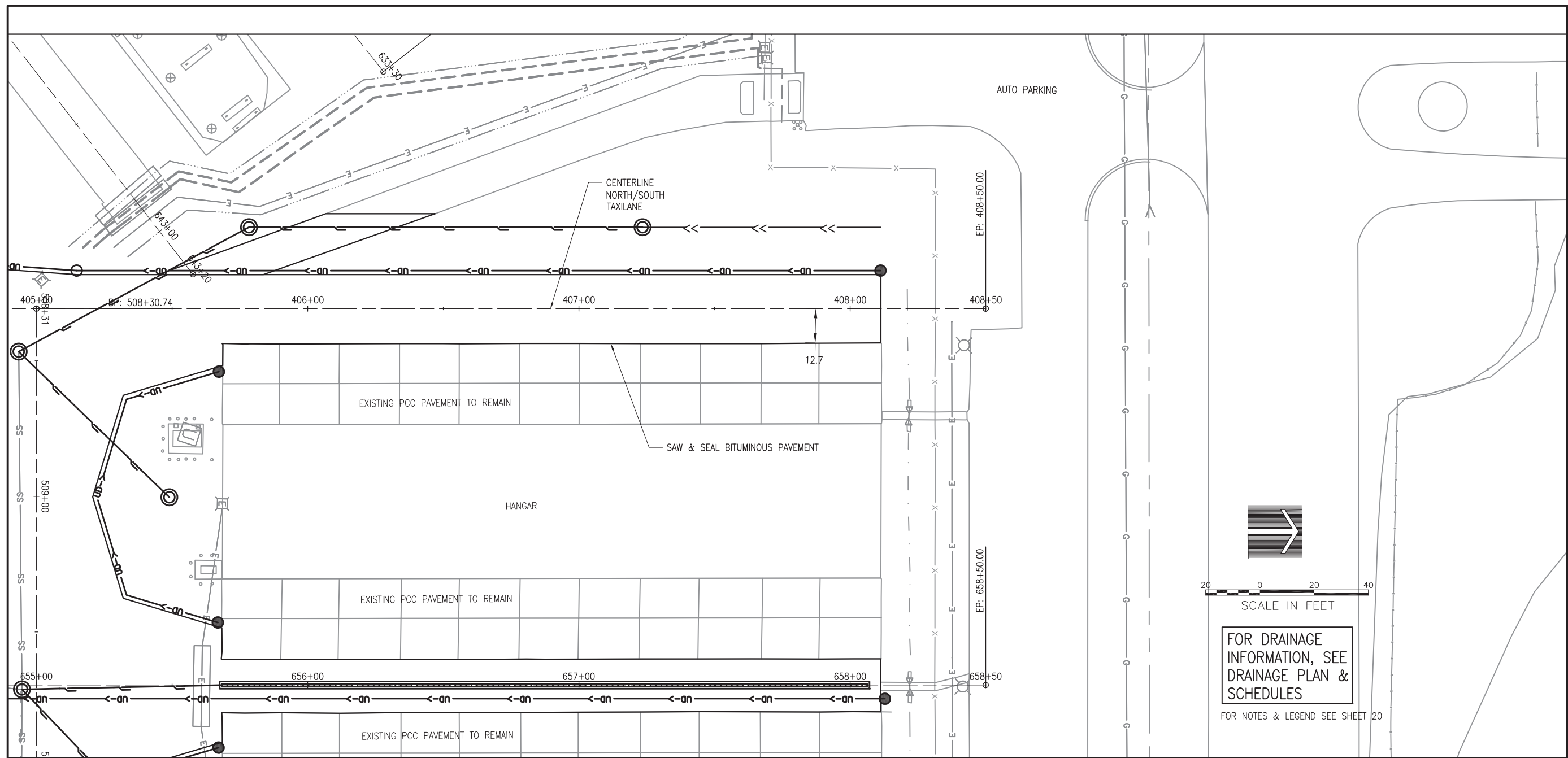
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		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 20-P&P NS.DWG
DESIGN BY: LDH 8/3/16
DRAWN BY: JAB 8/5/16
REVIEWED BY: SJM 12/2/16

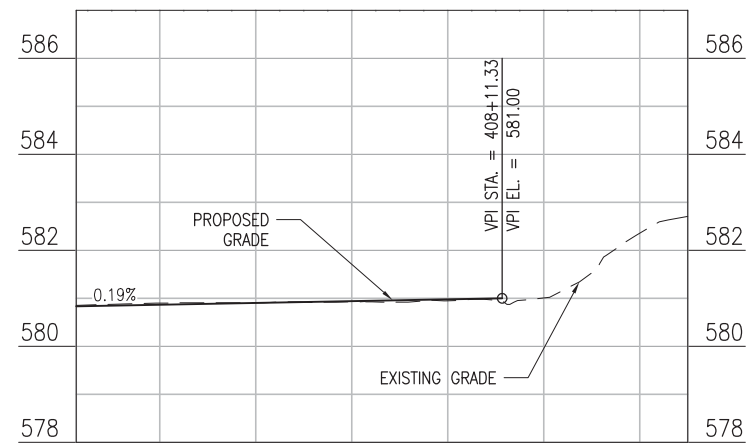
SHEET TITLE

PLAN & PROFILE
NORTH/SOUTH
TAXILANE



FOR DRAINAGE
INFORMATION, SEE
DRAINAGE PLAN &
SCHEDULES

FOR NOTES & LEGEND SEE SHEET 20



EX. 560.9	PROP. 560.87
EX. 560.9	PROP. 560.90
EX. 560.9	PROP. 560.94
EX. 560.9	PROP. 560.98
EX. 561.0	PROP.
EX. 562.4	PROP.

408+00

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T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

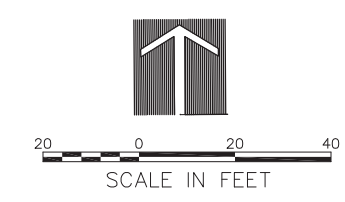
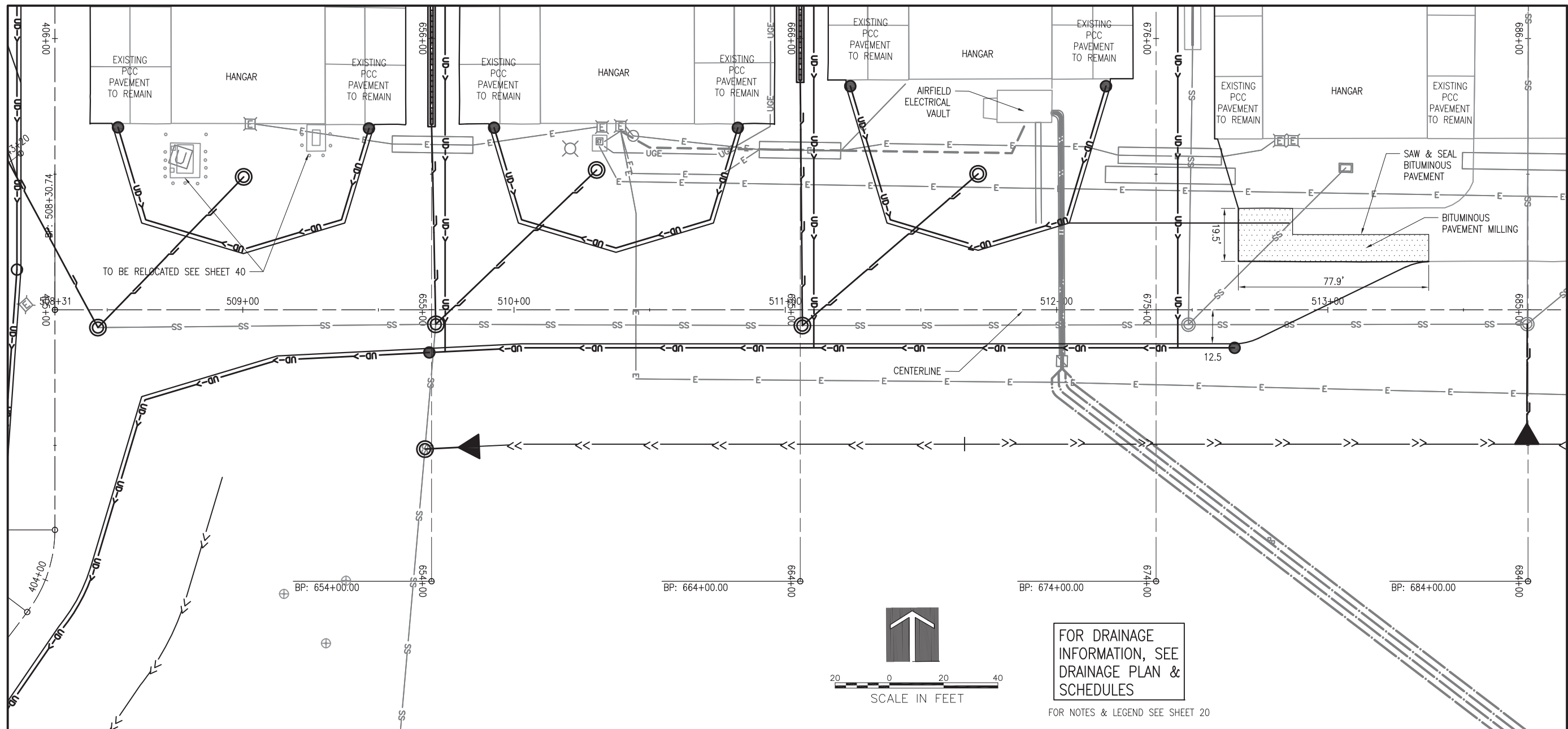
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		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 21-P&P NS.DWG
DESIGN BY: LDH 8/3/16
DRAWN BY: JAB 8/5/16
REVIEWED BY: SJM 12/2/16

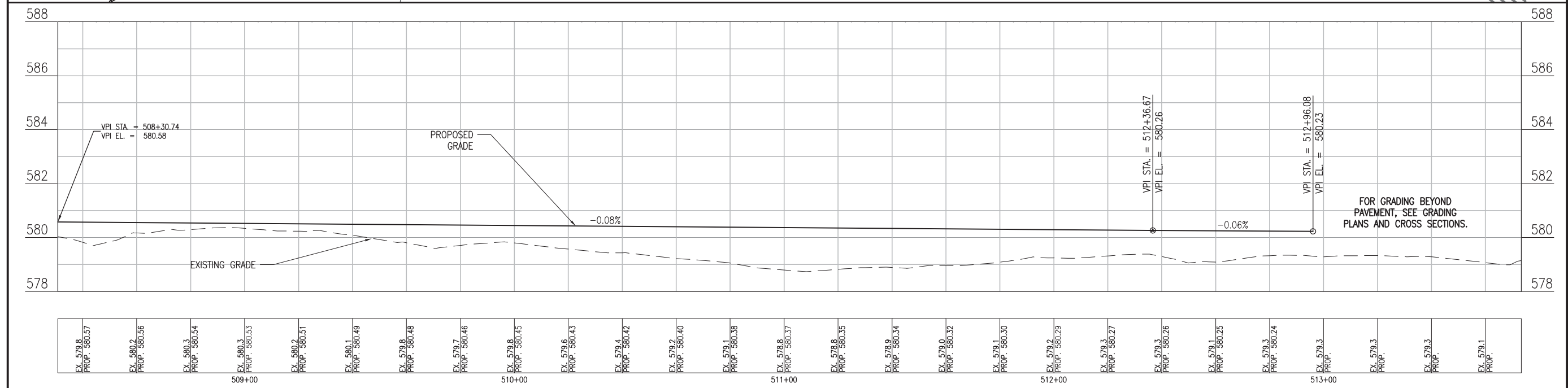
SHEET TITLE

PLAN & PROFILE
NORTH/SOUTH
TAXILANE



FOR DRAINAGE
INFORMATION, SEE
DRAINAGE PLAN &
SCHEDULES

FOR NOTES & LEGEND SEE SHEET 20



EX. 579.8 PROP. 580.57	EX. 580.2 PROP. 580.56	EX. 580.3 PROP. 580.54	EX. 580.3 PROP. 580.53	EX. 580.2 PROP. 580.51	EX. 580.1 PROP. 580.49	EX. 579.8 PROP. 580.48	EX. 579.7 PROP. 580.46	EX. 579.8 PROP. 580.45	EX. 579.6 PROP. 580.43	EX. 579.4 PROP. 580.42	EX. 579.2 PROP. 580.40	EX. 579.1 PROP. 580.38	EX. 578.8 PROP. 580.37	EX. 578.8 PROP. 580.35	EX. 578.9 PROP. 580.34	EX. 579.0 PROP. 580.32	EX. 579.1 PROP. 580.30	EX. 579.2 PROP. 580.29	EX. 579.3 PROP. 580.27	EX. 579.3 PROP. 580.26	EX. 579.1 PROP. 580.25	EX. 579.3 PROP. 580.24	EX. 579.3 PROP.	EX. 579.3 PROP.	EX. 579.3 PROP.	EX. 579.1 PROP.
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T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

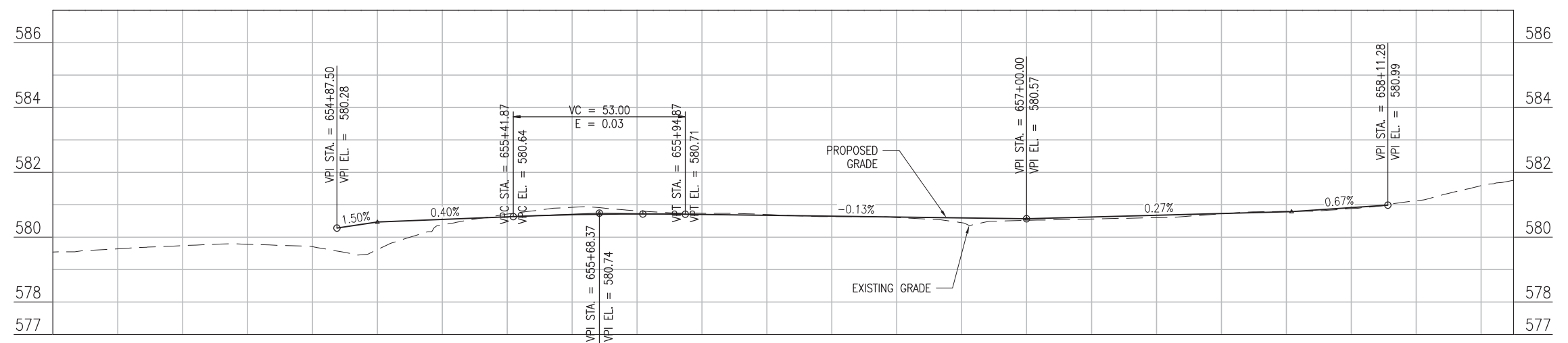
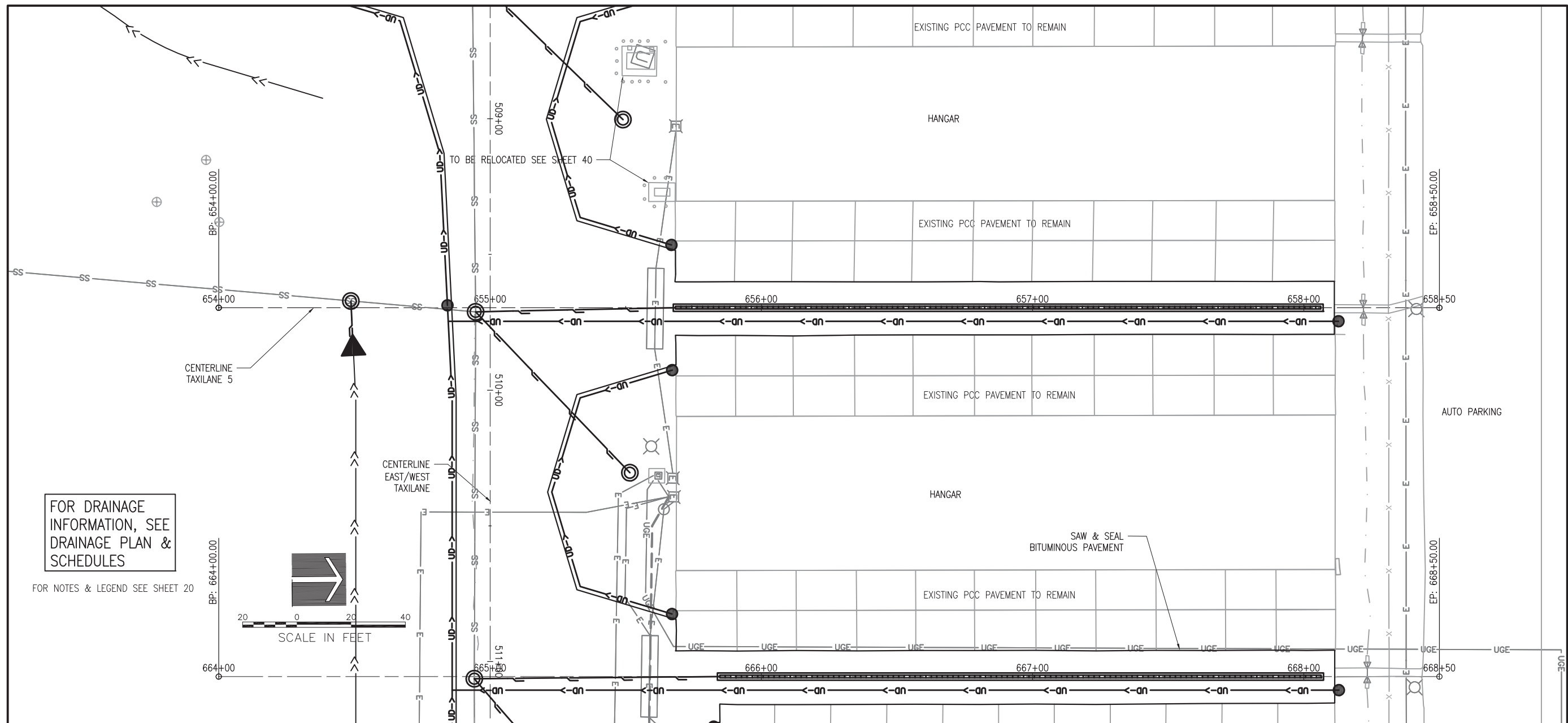
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		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 22-P&P EW.DWG
DESIGN BY: LDH 8/3/16
DRAWN BY: JAB 8/5/16
REVIEWED BY: SJM 12/2/16

SHEET TITLE

PLAN & PROFILE
EAST/WEST
TAXILANE



EX. 579.6 PROP.	EX. 579.7 PROP.	EX. 579.8 PROP.	EX. 579.7 PROP.	EX. 579.6 PROP.	EX. 580.4 PROP.	EX. 580.5 PROP.	EX. 580.7 PROP.	EX. 580.6 PROP.	EX. 580.9 PROP.	EX. 580.8 PROP.	EX. 580.6 PROP.	EX. 580.6 PROP.	EX. 580.7 PROP.	EX. 580.8 PROP.	EX. 580.9 PROP.	EX. 581.1 PROP.	EX. 581.6 PROP.
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T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

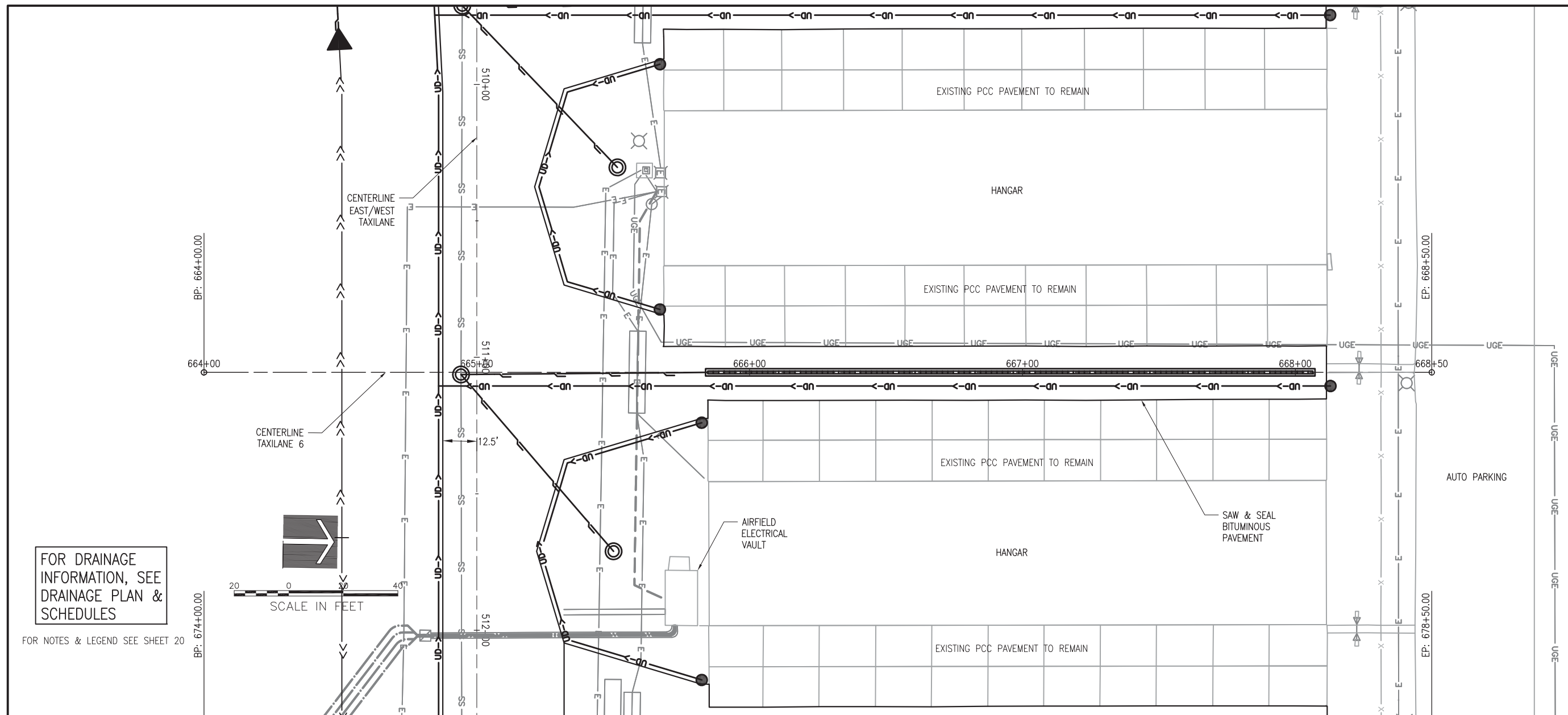
IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 23-P&P 5.DWG
DESIGN BY: LDH 8/3/16
DRAWN BY: JAB 8/5/16
REVIEWED BY: SJM 12/2/16

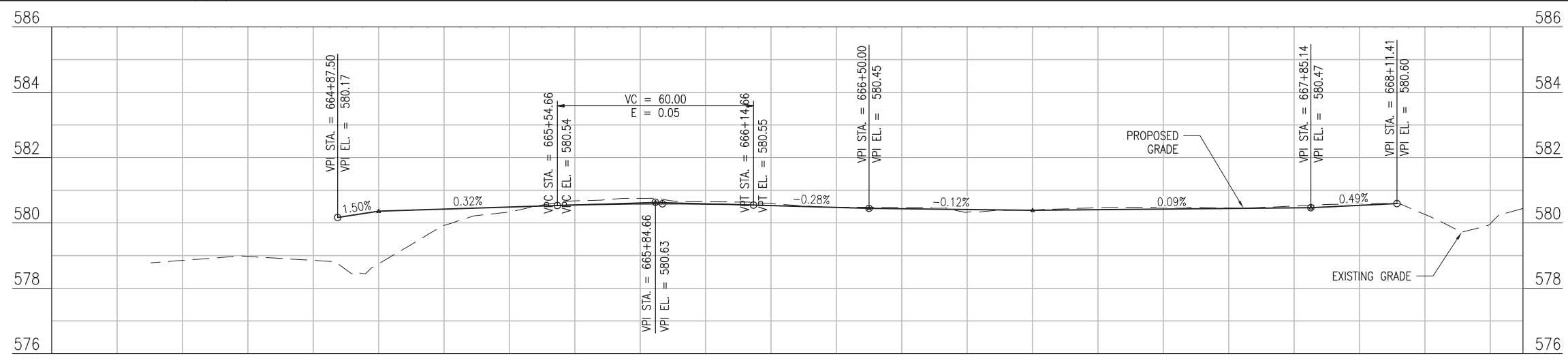
PLAN & PROFILE
TAXILANE 5



FOR DRAINAGE INFORMATION, SEE DRAINAGE PLAN & SCHEDULES



FOR NOTES & LEGEND SEE SHEET 20



EX PROP.	EX 578.9 PROP.	EX 579.0 PROP.	EX 578.9 PROP.	EX 578.8 PROP.	EX 579.9 PROP.	EX 580.3 PROP.	EX 580.7 PROP.	EX 580.6 PROP.	EX 580.5 PROP.	EX 580.5 PROP.	EX 580.3 PROP.	EX 580.4 PROP.	EX 580.5 PROP.	EX 580.5 PROP.	EX 580.6 PROP.	EX 580.3 PROP.	EX 580.0 PROP.
				665+00			666+00					667+00				668+00	

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

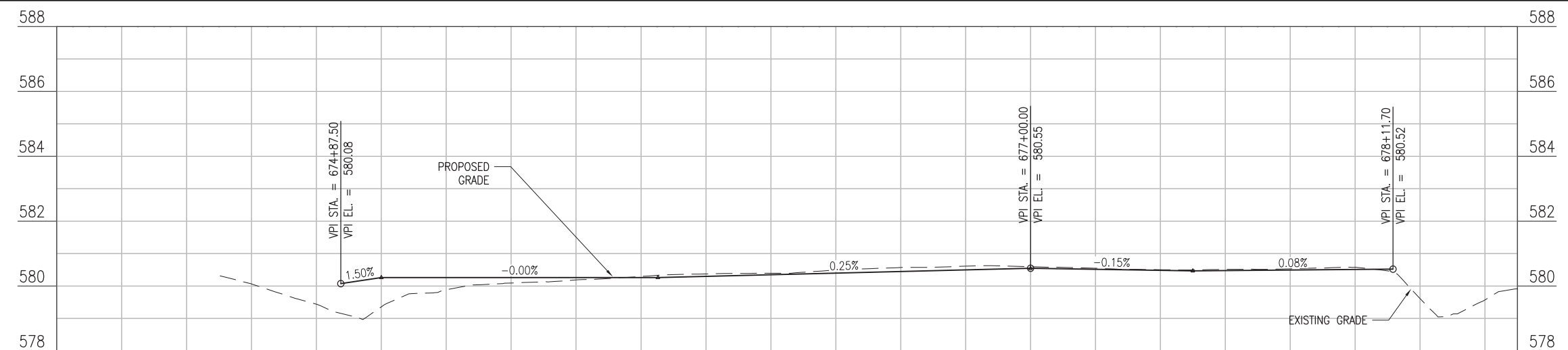
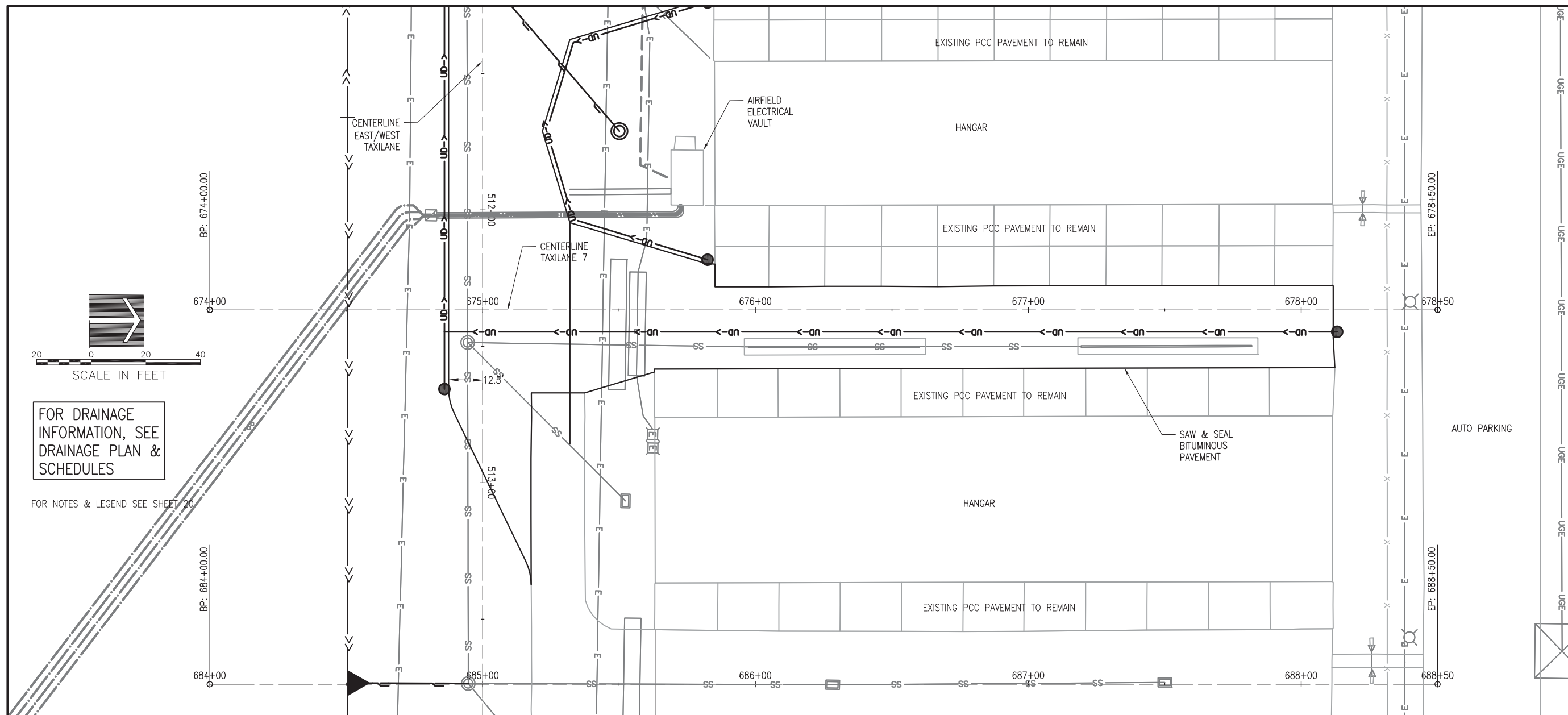
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 24-P&P 6.DWG
DESIGN BY: LDH 8/3/16
DRAWN BY: JAB 8/5/16
REVIEWED BY: SJM 12/2/16

SHEET TITLE

PLAN & PROFILE TAXILANE 6



EX. PROP.	EX. PROP.	EX. 580.1 PROP.	EX. 579.4 PROP.	EX. 579.4 PROP.	EX. 579.9 PROP.	EX. 580.1 PROP.	EX. 580.2 PROP.	EX. 580.3 PROP.	EX. 580.4 PROP.	EX. 580.4 PROP.	EX. 580.5 PROP.	EX. 580.6 PROP.	EX. 580.6 PROP.	EX. 580.5 PROP.	EX. 580.5 PROP.	EX. 580.5 PROP.	EX. 580.5 PROP.	EX. 580.5 PROP.	EX. 579.6 PROP.	EX. 579.6 PROP.	
				675+00					676+00				677+00						678+00		

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

JO023

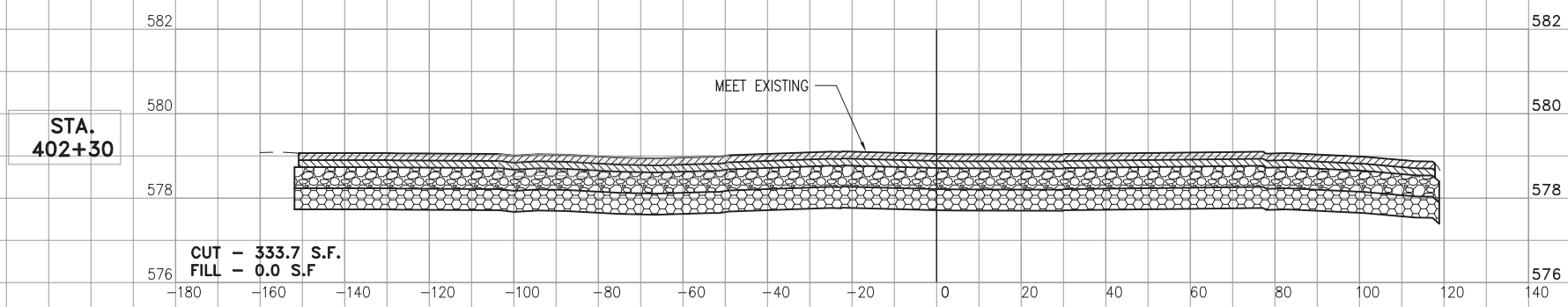
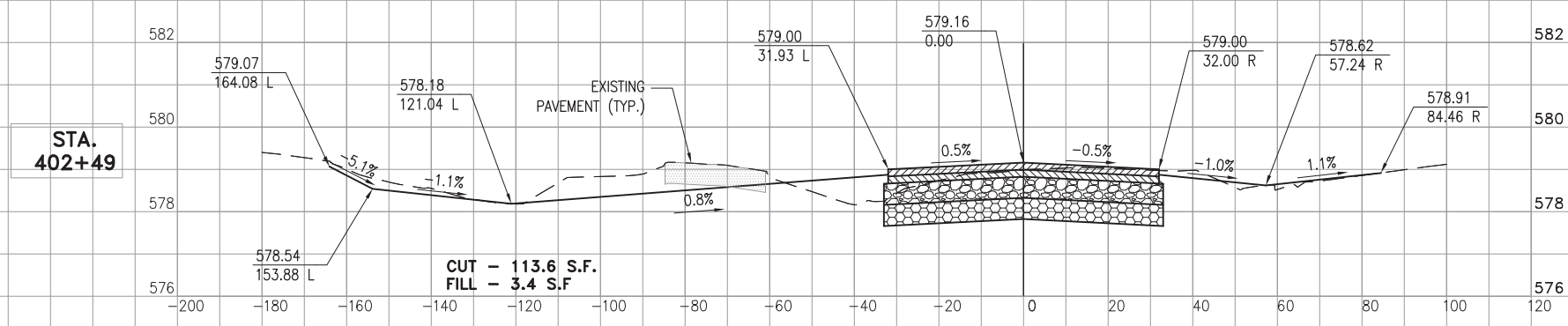
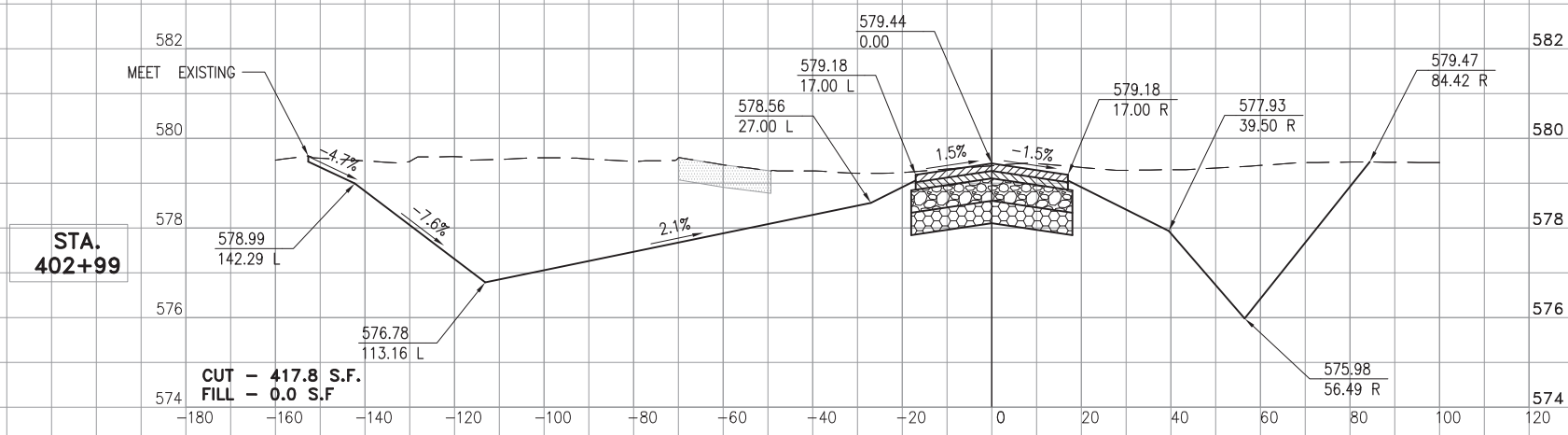
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		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 25-P&P 7.DWG
DESIGN BY: LDH 8/3/16
DRAWN BY: JAB 8/5/16
REVIEWED BY: SJM 12/2/16

SHEET TITLE

PLAN & PROFILE TAXILANE 7

NOTE - TOPSOIL QUANTITIES WERE DETERMINED
BASED ON AREA TO BE TOPSOILED AT 4 INCH
DEPTH. THESE QUANTITIES ARE NOT DEPICTED
IN THE INDIVIDUAL SECTION FILL VALUES.



T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

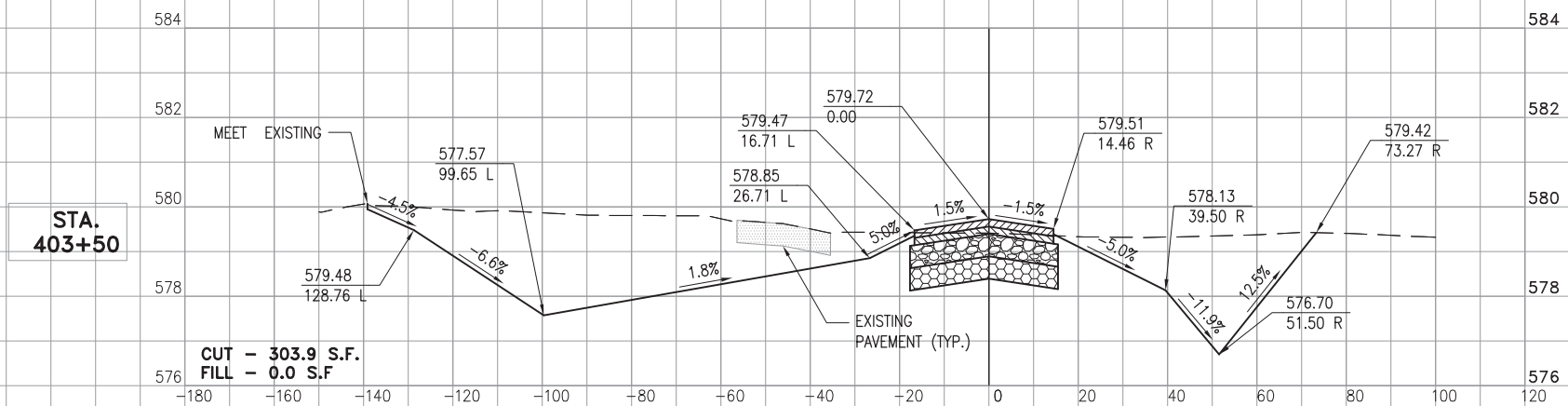
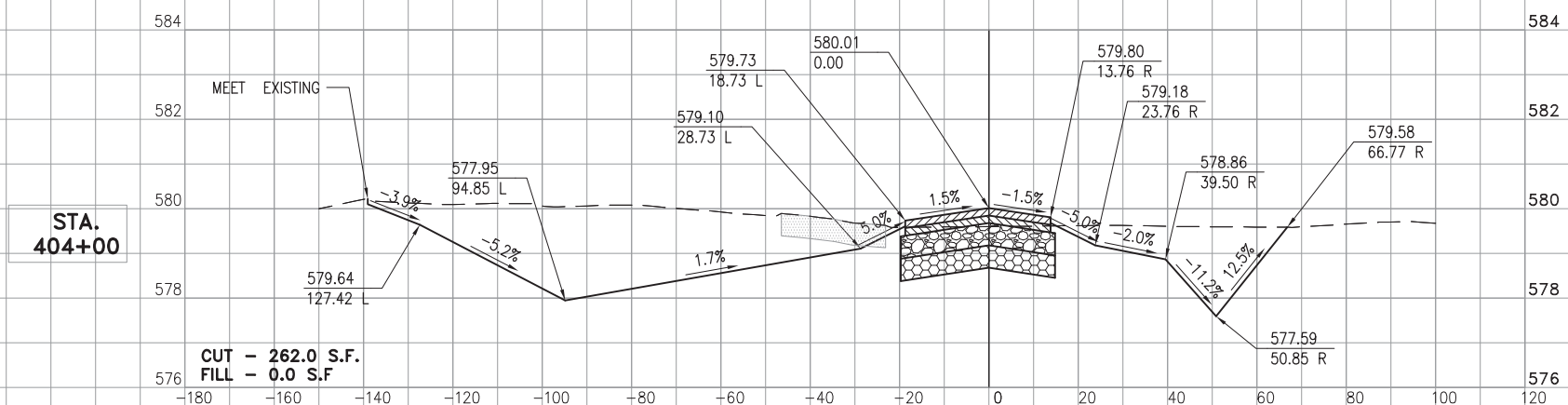
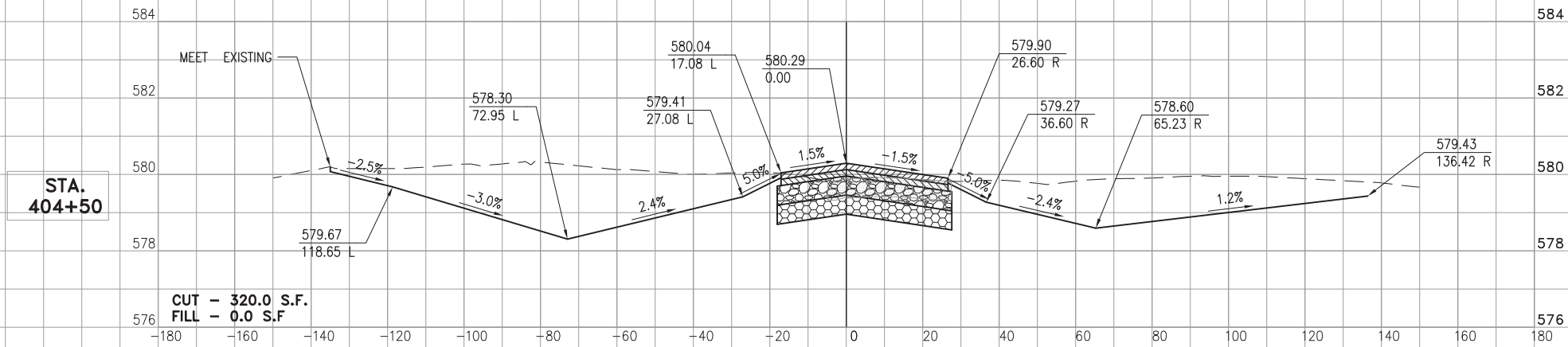
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ISSUE: April 21, 2017
PROJECT NO: 15A0062
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DESIGN BY: LDH 9/7/16
DRAWN BY: LDH 9/7/16
REVIEWED BY: SJM 12/2/16

SHEET TITLE

CROSS SECTIONS
NORTH/SOUTH
TAXILANE



**T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4**

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 27-SECTIONS02.DWG
DESIGN BY: LDH 9/7/2016
DRAWN BY: LDH 9/7/2016
REVIEWED BY: SJM 12/2/16

SHEET TITLE

**CROSS SECTIONS
NORTH/SOUTH
TAXILANE**

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

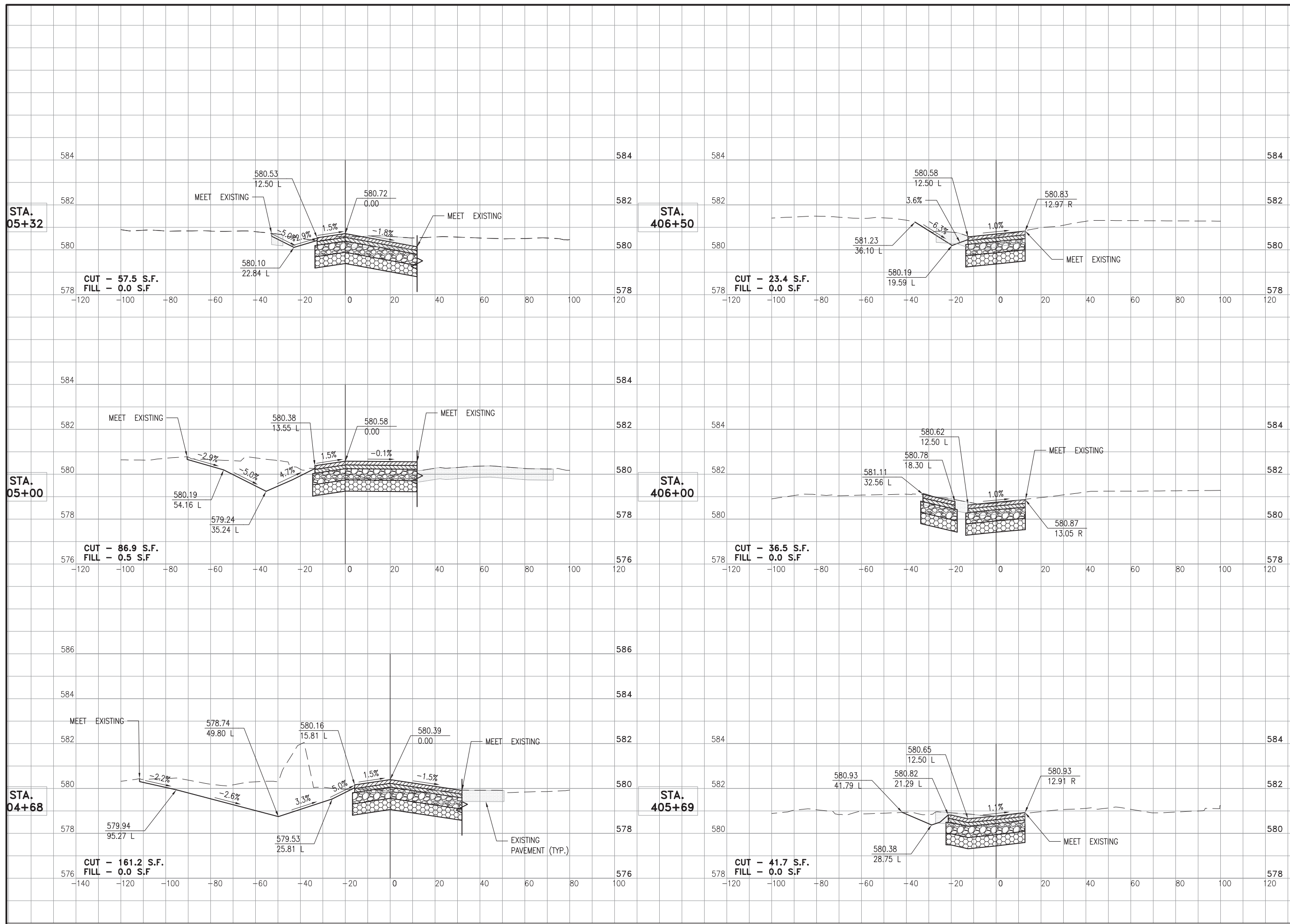
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ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 28-SECTIONS03.DWG
DESIGN BY: LDH 9/7/2016
DRAWN BY: LDH 9/7/2016
REVIEWED BY: SJM 12/2/16

SHEET TITLE

CROSS SECTIONS
NORTH/SOUTH
TAXILANE



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T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

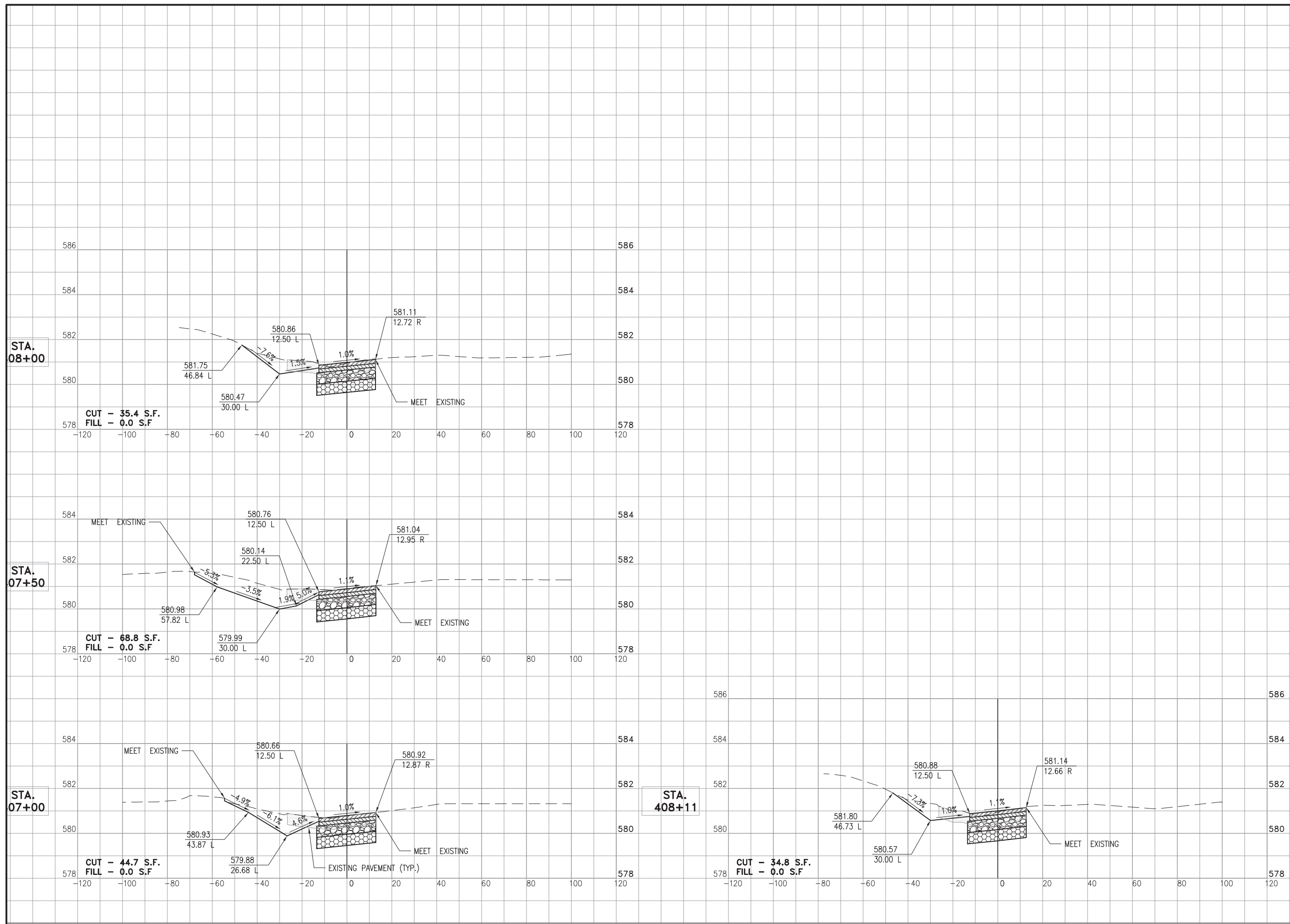
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		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 29-SECTIONS04.DWG
DESIGN BY: LDH 9/7/2016
DRAWN BY: LDH 9/7/2016
REVIEWED BY: SJM 12/2/16

SHEET TITLE

CROSS SECTIONS
NORTH/SOUTH
TAXILANE



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T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

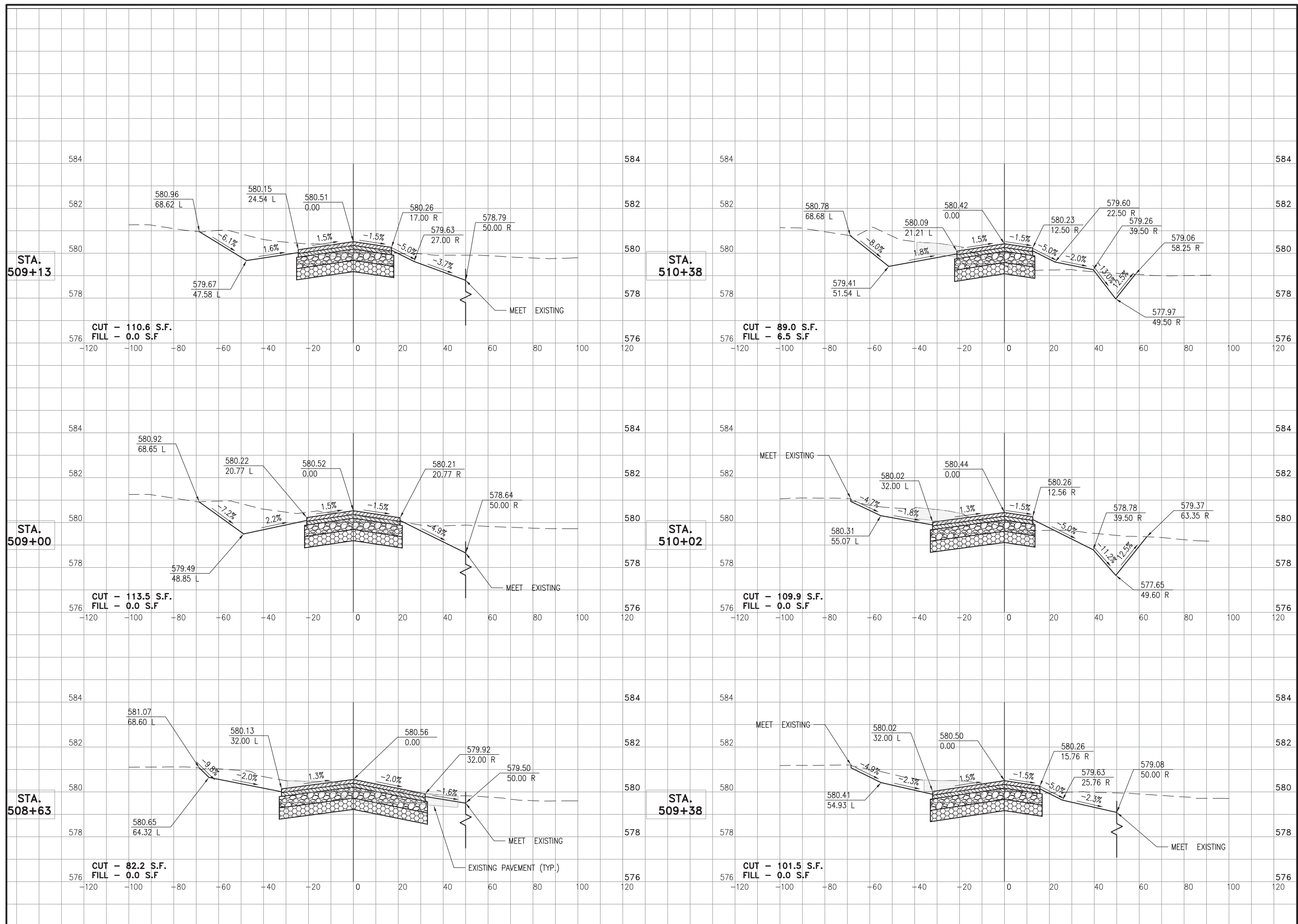
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NO.	DATE	DESCRIPTION		
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ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 30-SECTIONS05.DWG
DESIGN BY: LDH 9/7/2016
DRAWN BY: LDH 9/7/2016
REVIEWED BY: SJM 12/2/16

SHEET TITLE

CROSS SECTIONS
EAST/WEST
TAXILANE



APR 24, 2017 2:25 PM HANSON0062 1:15:JOBS15A0062\15A0062\CAD\AIRPORT\SHEET\30-SECTIONS05.DWG

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

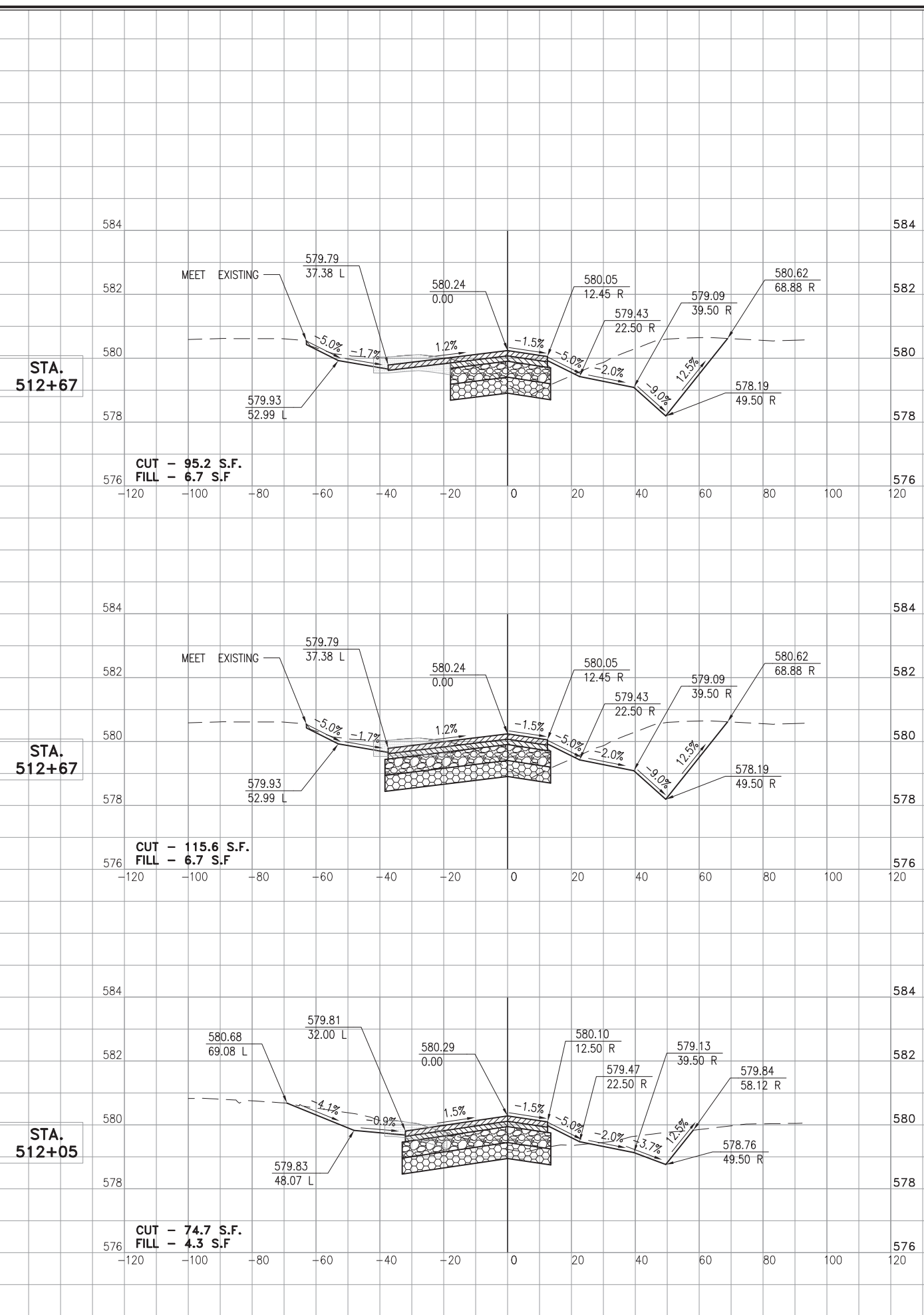
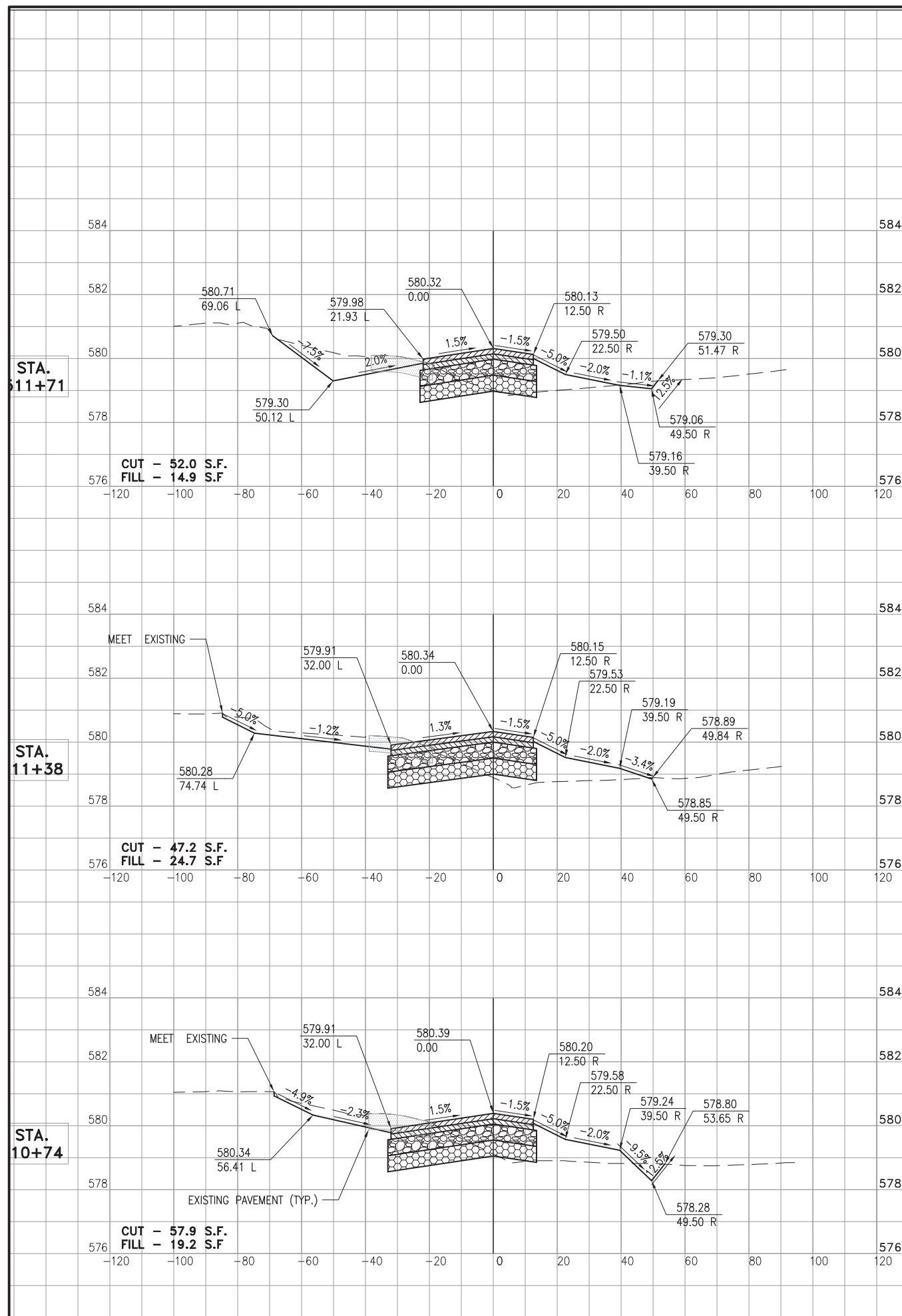
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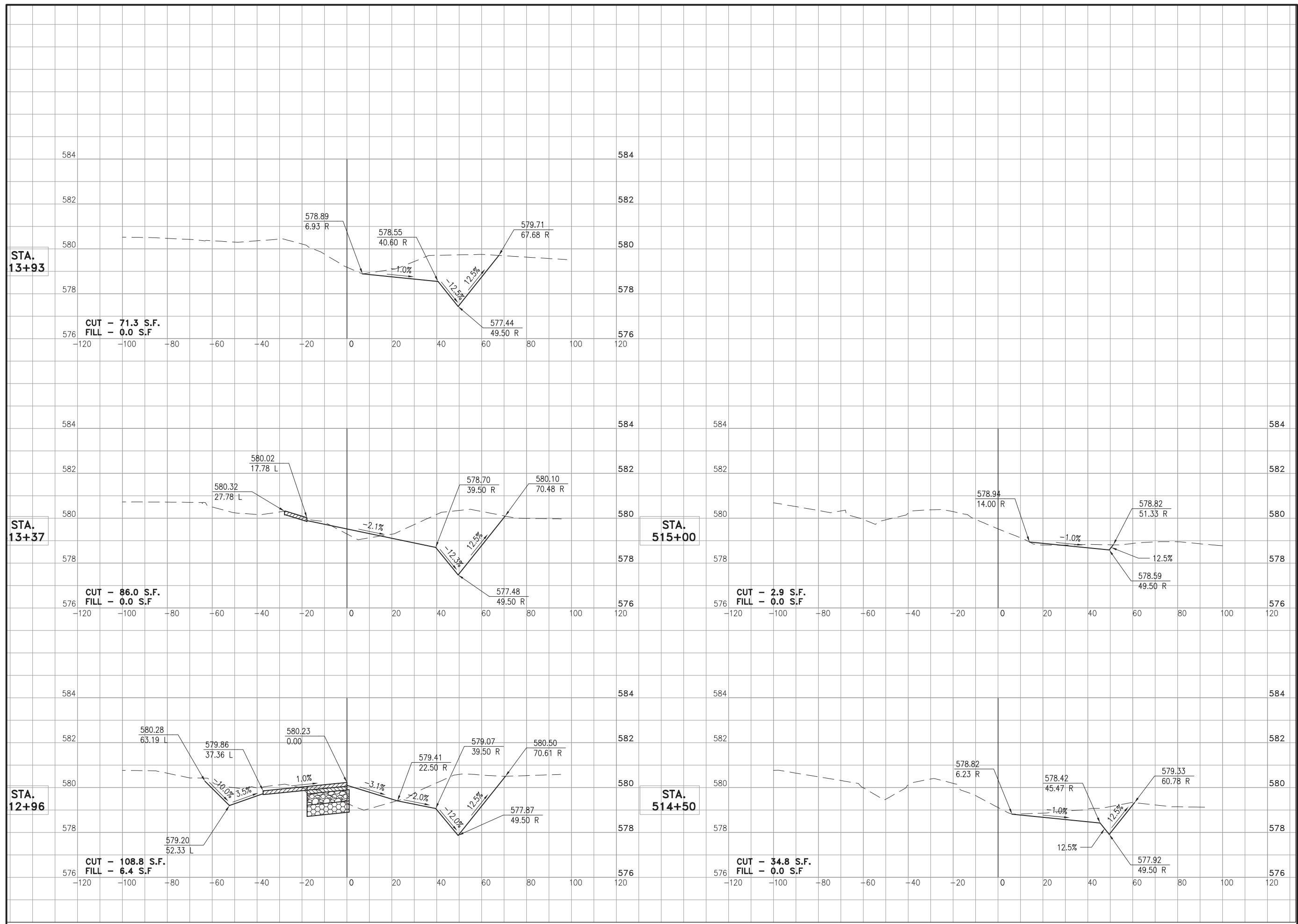
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PROJECT NO: 15A0062
CAD FILE: 31-SECTIONS06.DWG
DESIGN BY: LDH 9/7/2016
DRAWN BY: LDH 9/7/2016
REVIEWED BY: SJM 12/2/16

SHEET TITLE

CROSS SECTIONS
EAST/WEST
TAXILANE



APR 24, 2017 2:26 PM H:\JMS\0062\15A0062\CAD\AIRPORT\SHEET131-SECTIONS06.DWG



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**T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4**

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017

PROJECT NO: 15A0062

CAD FILE: 32-SECTIONS07.DWG

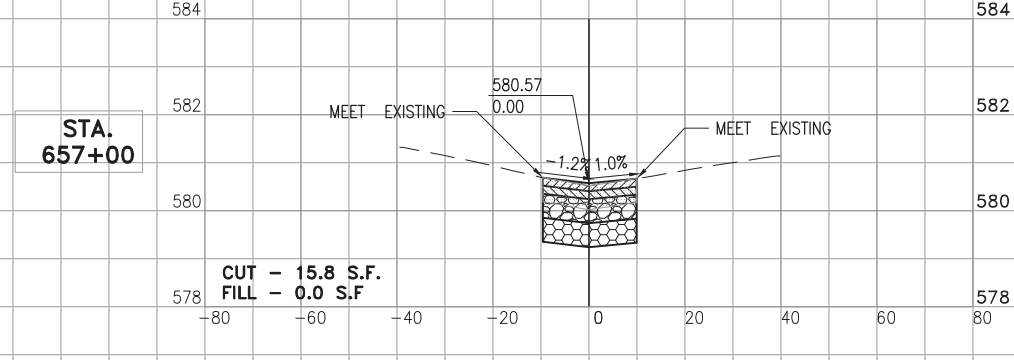
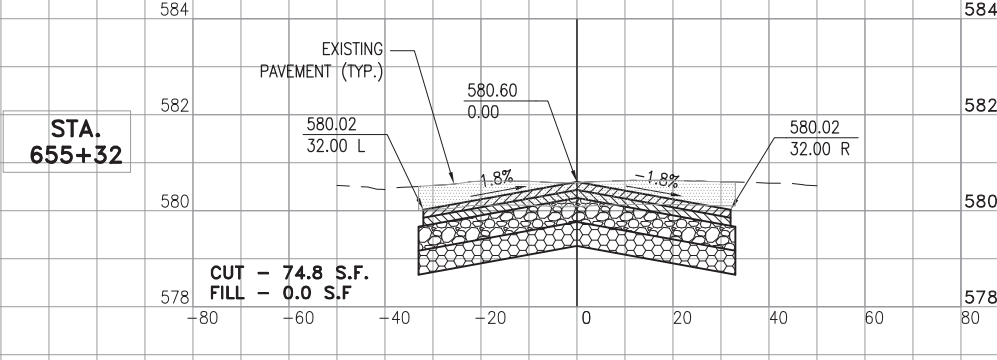
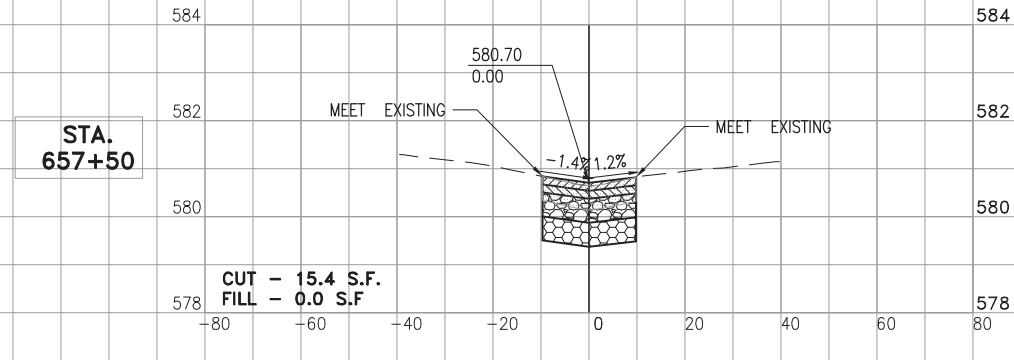
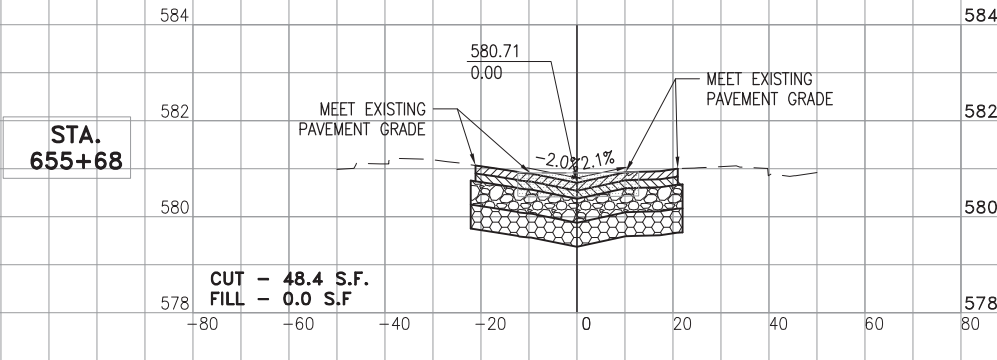
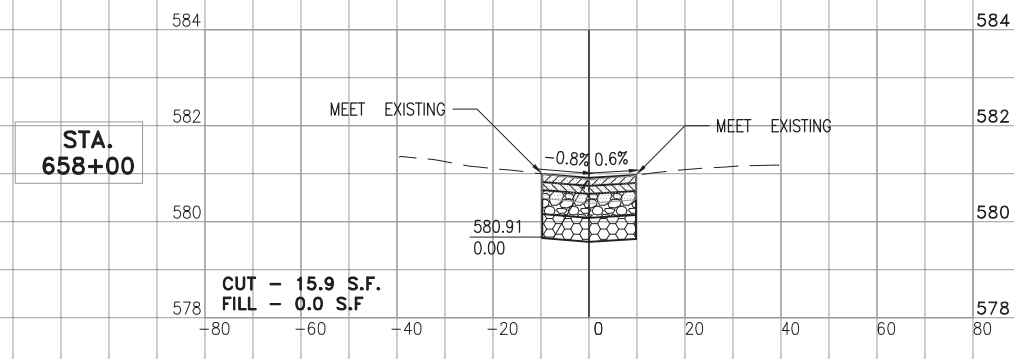
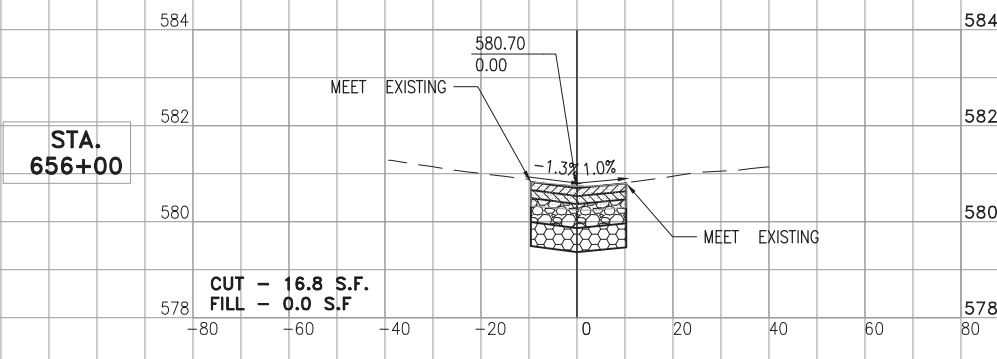
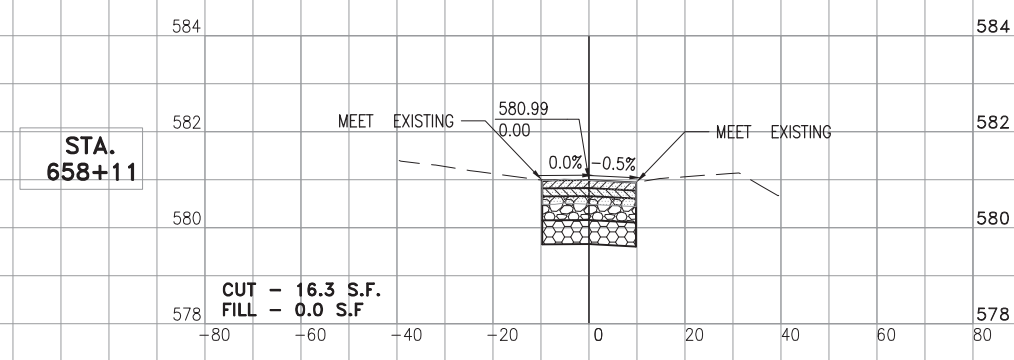
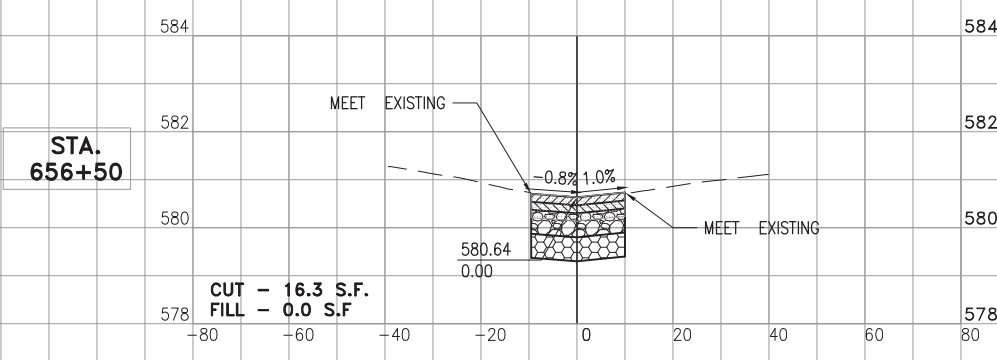
DESIGN BY: LDH 9/7/2016

DRAWN BY: LDH 9/7/2016

REVIEWED BY: SJM 12/2/16

SHEET TITLE

**CROSS SECTIONS
EAST/WEST
TAXILANE**



T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 33-SECTIONS08.DWG
DESIGN BY: LDH 9/7/2016
DRAWN BY: LDH 9/7/2016
REVIEWED BY: SJM 12/2/16

SHEET TITLE

CROSS SECTIONS
TAXILANE 5

APR 24, 2017 2:27 PM H:\JUSM00682\15A0062\CAD\AIRPORT\TSHEET133-SECTIONS08.DWG

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

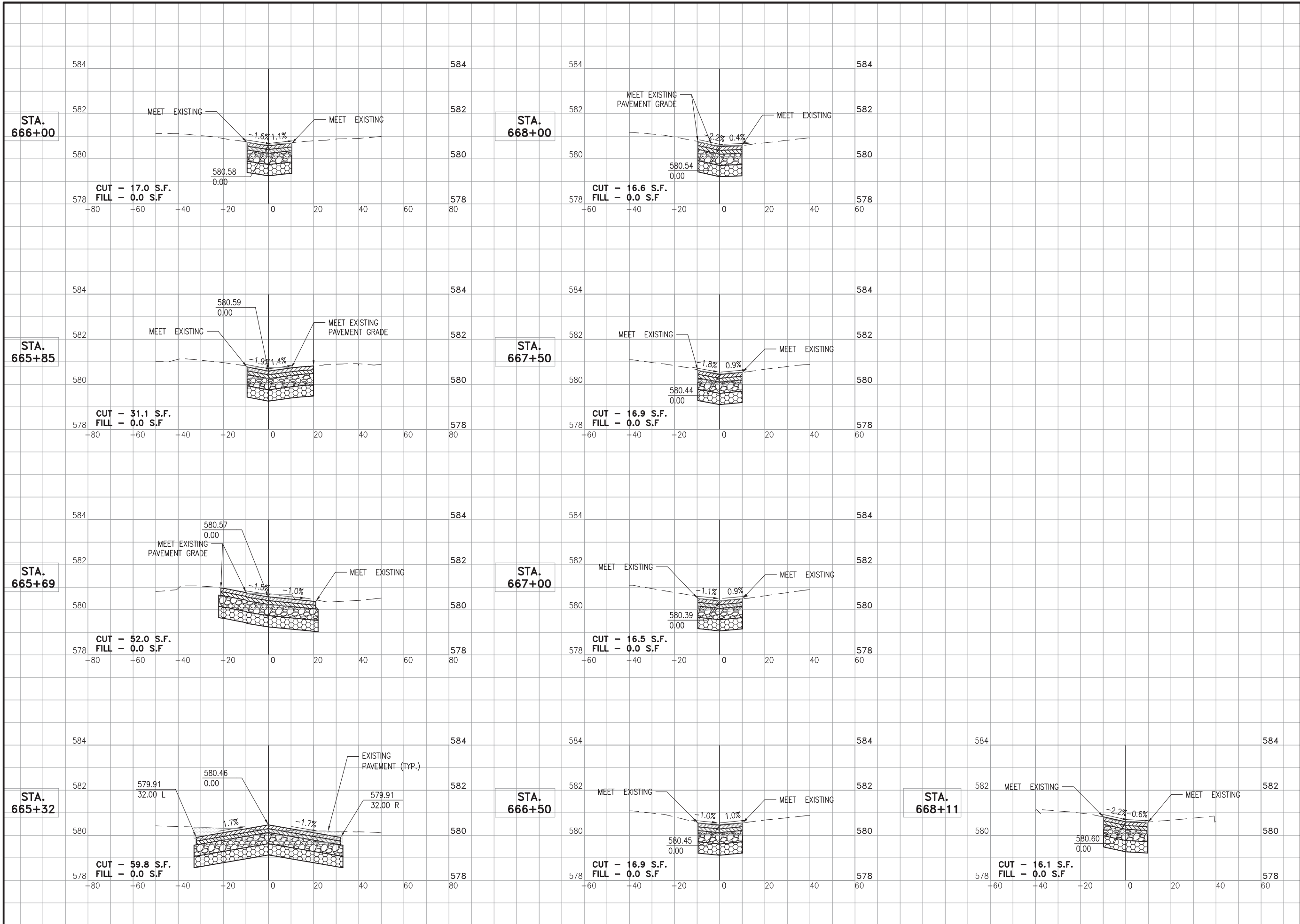
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 34-SECTIONS09.DWG
DESIGN BY: LDH 9/7/2016
DRAWN BY: LDH 9/7/2016
REVIEWED BY: SJM 12/2/16

SHEET TITLE

CROSS SECTIONS
TAXILANE 6



T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

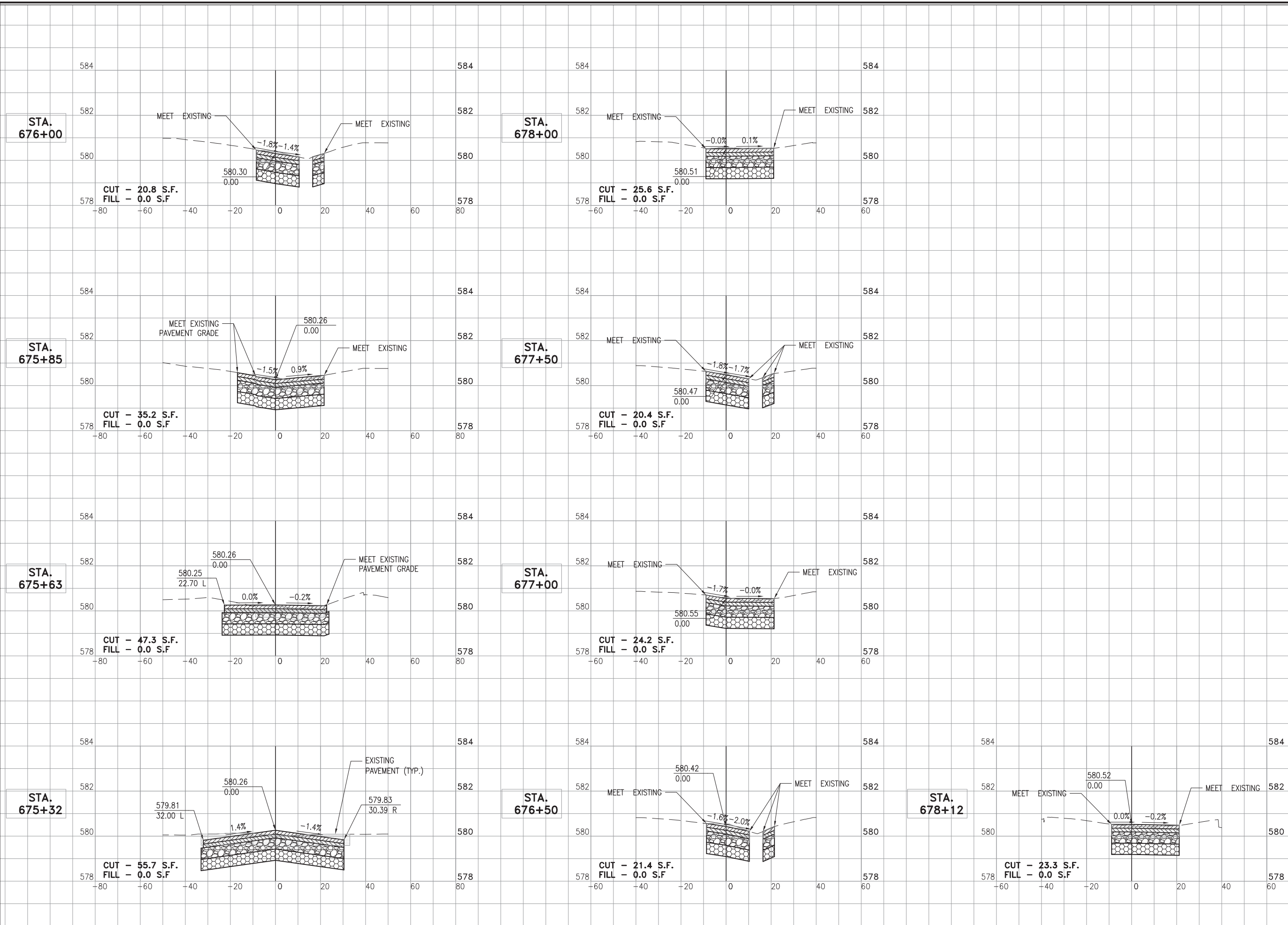
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 35-SECTIONS10.DWG
DESIGN BY: LDH 9/7/2016
DRAWN BY: LDH 9/7/2016
REVIEWED BY: SJM 12/2/16

SHEET TITLE

CROSS SECTIONS
TAXILANE 7



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**T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4**

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

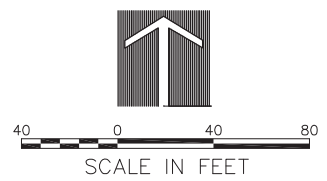
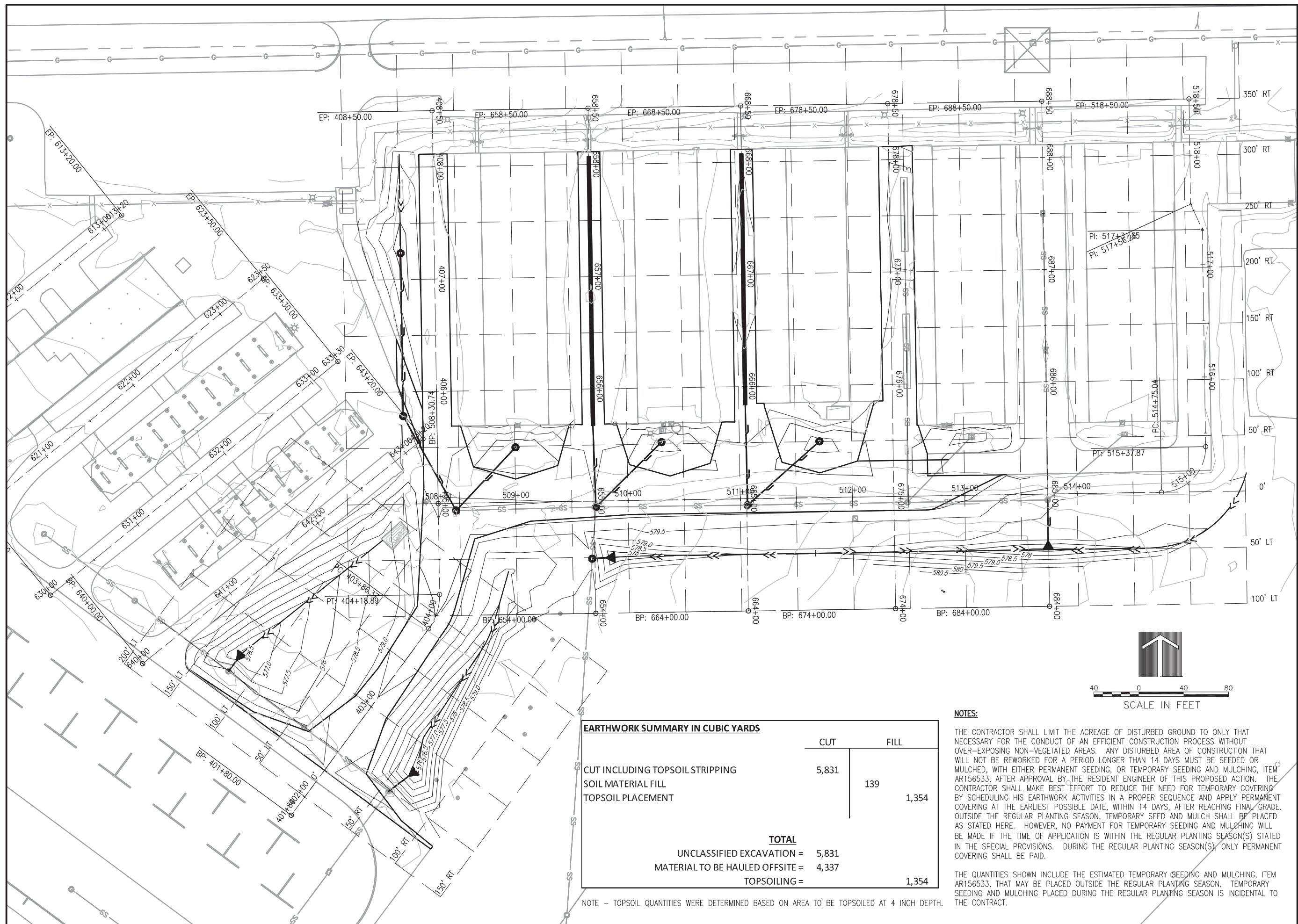
JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 36-GRADING PLAN.DWG
DESIGN BY: LDH 9/15/16
DRAWN BY: LDH 9/15/16
REVIEWED BY: SJM 12/2/16

SHEET TITLE

**GRADING
PLAN**



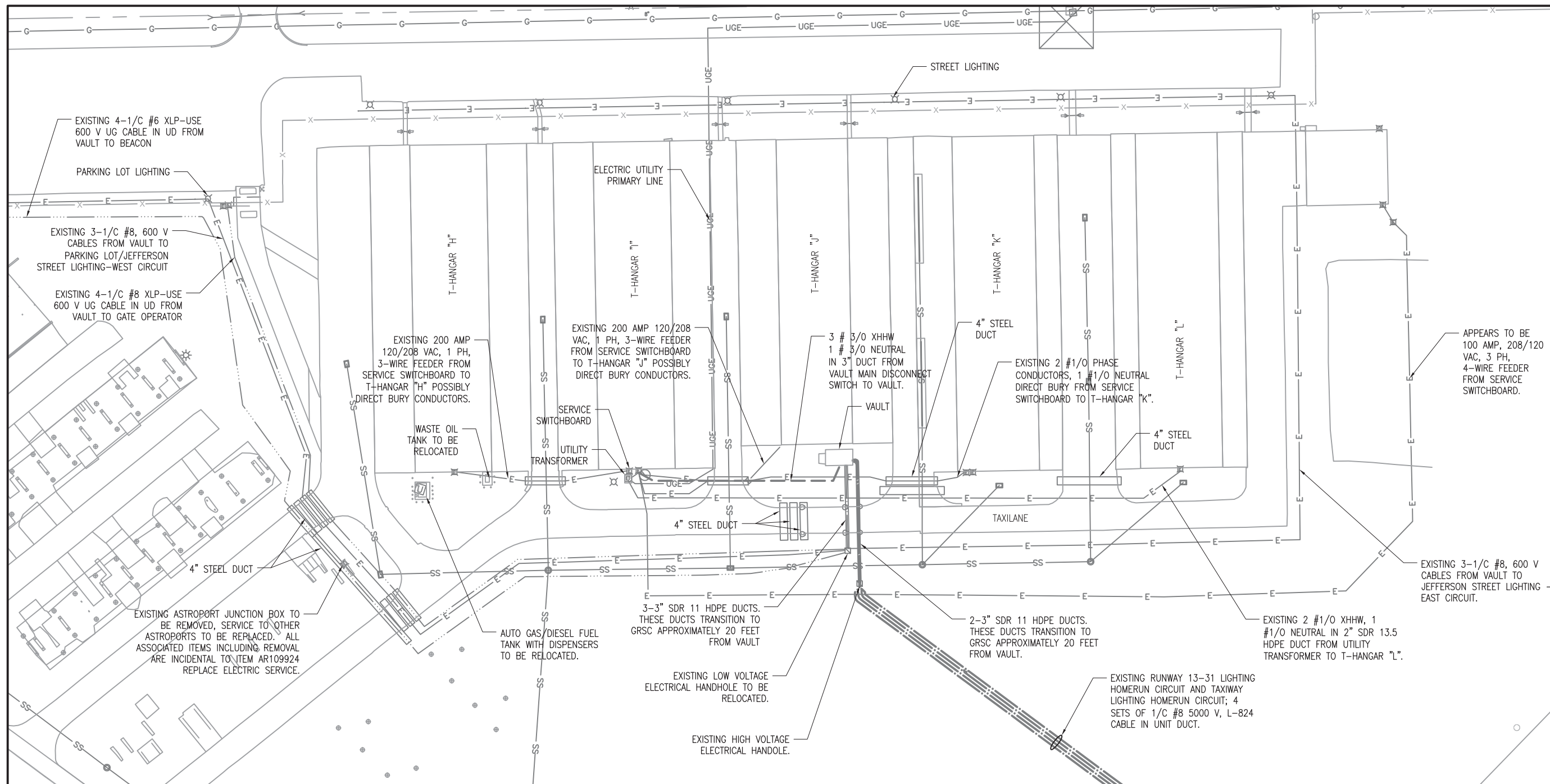
EARTHWORK SUMMARY IN CUBIC YARDS		
	CUT	FILL
CUT INCLUDING TOPSOIL STRIPPING	5,831	
SOIL MATERIAL FILL		139
TOPSOIL PLACEMENT		1,354
TOTAL		
UNCLASSIFIED EXCAVATION =	5,831	
MATERIAL TO BE HAULED OFFSITE =	4,337	
TOPSOILING =		1,354

NOTE - TOPSOIL QUANTITIES WERE DETERMINED BASED ON AREA TO BE TOPSOILED AT 4 INCH DEPTH.

NOTES:

THE CONTRACTOR SHALL LIMIT THE ACREAGE OF DISTURBED GROUND TO ONLY THAT NECESSARY FOR THE CONDUCT OF AN EFFICIENT CONSTRUCTION PROCESS WITHOUT OVER-EXPOSING NON-VEGETATED AREAS. ANY DISTURBED AREA OF CONSTRUCTION THAT WILL NOT BE REWORKED FOR A PERIOD LONGER THAN 14 DAYS MUST BE SEED OR MULCHED, WITH EITHER PERMANENT SEEDING, OR TEMPORARY SEEDING AND MULCHING, 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 SEEDING AND MULCHING WILL BE MADE IF THE TIME OF APPLICATION IS WITHIN THE REGULAR PLANTING SEASON(S) STATED IN THE SPECIAL PROVISIONS. DURING THE REGULAR PLANTING SEASON(S), ONLY PERMANENT COVERING SHALL BE PAID.

THE QUANTITIES SHOWN INCLUDE THE ESTIMATED TEMPORARY SEEDING AND MULCHING, ITEM 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.

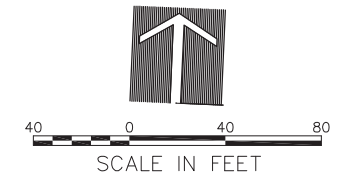


NOTES

- 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).
- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. EXISTING SITE INFORMATION IS BASED ON SURVEYS, RECORD DRAWINGS, AND IN PART INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, STREET LIGHTING, GATE OPERATOR, FUEL EQUIPMENT, NAVAID, OR OTHER DEVICE.
- THE SITE AND AREAS OF WORK MAY ALSO CONTAIN ABANDONED CABLES. ABANDONED CABLES POSSIBLY INCLUDE, BUT ARE NOT LIMITED TO, CABLES THAT PREVIOUSLY POWERED THE RUNWAY LIGHTING, CABLES THAT PREVIOUSLY POWERED THE GATE OPERATOR, AND CABLES THAT PREVIOUSLY POWERED THE AIRPORT ROTATING BEACON.
- CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
- CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
- 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 150/5370-2F, OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 218, c.
- NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT SHALL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH THE ABOVE NOTE 1.

EXISTING LEGEND

- --- EXISTING 1/C #8 5000 V CABLE IN UD
- --- EXISTING 4 1/C CABLES IN UD
- E— EXISTING ELECTRIC
- UG— EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- G— EXISTING GAS LINE
- SS— EXISTING STORM SEWER
- — EXISTING DUCT



FOR REMOVAL OF EXISTING DUCTS AND CABLE, SEE REMOVAL PLAN, SHEET 12.

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
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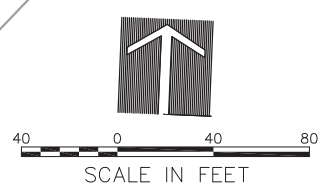
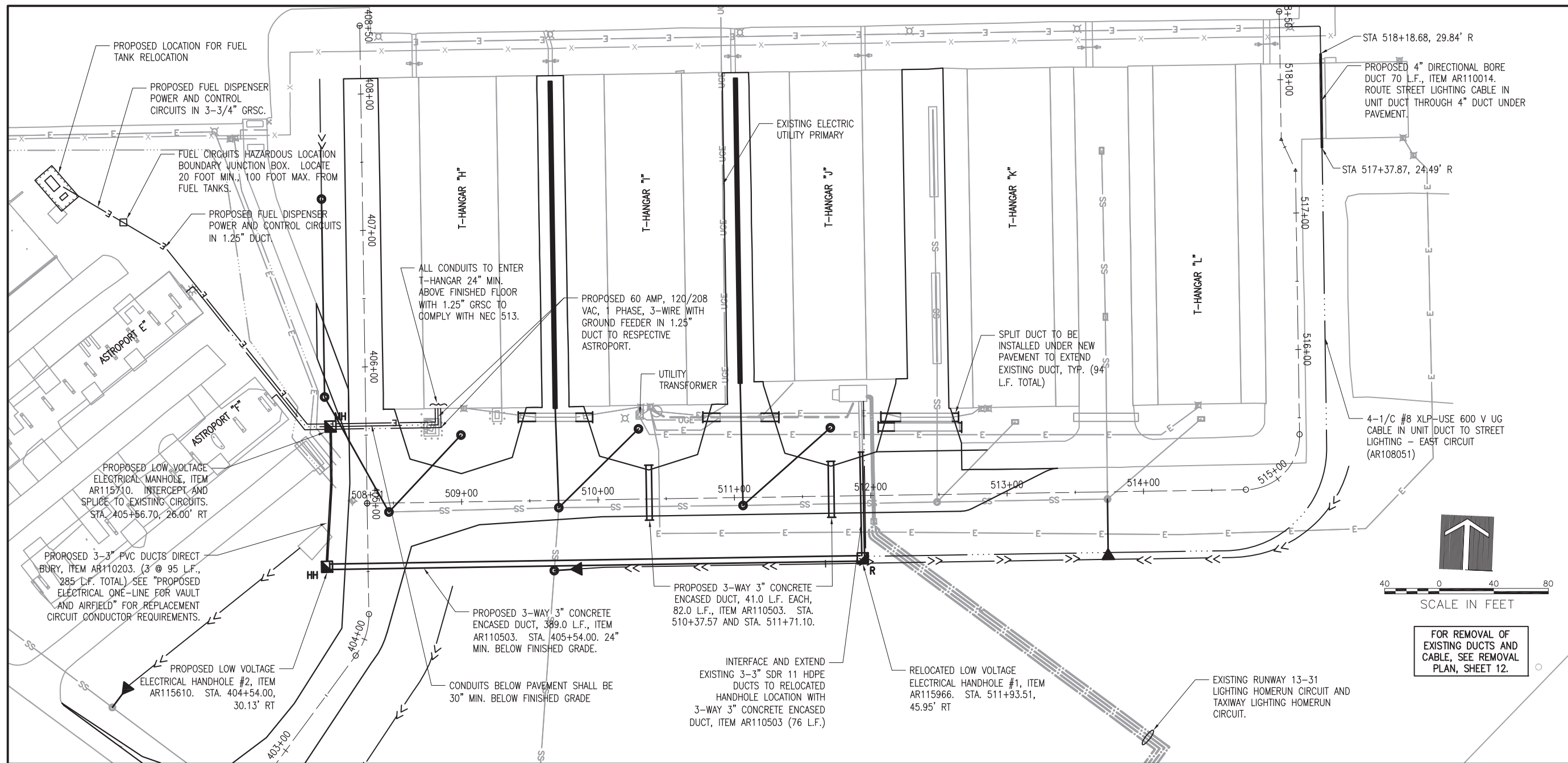
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SHEET TITLE

EXISTING ELECTRICAL PLAN



FOR REMOVAL OF EXISTING DUCTS AND CABLE, SEE REMOVAL PLAN, SHEET 12.

NOTES

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

PROPOSED LEGEND

- RELOCATED HANDHOLE
- PROPOSED HANDHOLE OR MANHOLE
- PROPOSED FUEL DISPENSER POWER AND CONTROL CIRCUIT
- PROPOSED ELECTRIC CABLES IN DUCT OR UNIT DUCT
- PROPOSED CONCRETE ENCASED DUCT
- PROPOSED DIRECTIONAL BORE OR DIRECT BURY DUCT
- EXISTING 4-1/C CABLE IN UNIT DUCT
- EXISTING ELECTRICAL

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

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

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

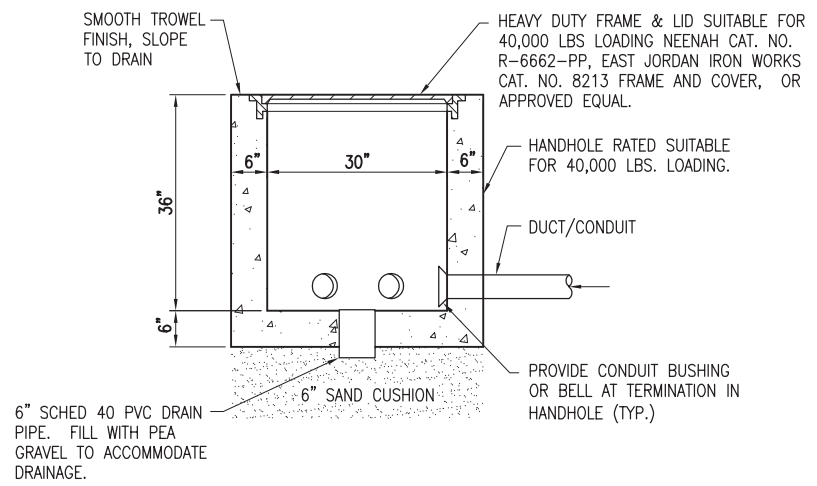
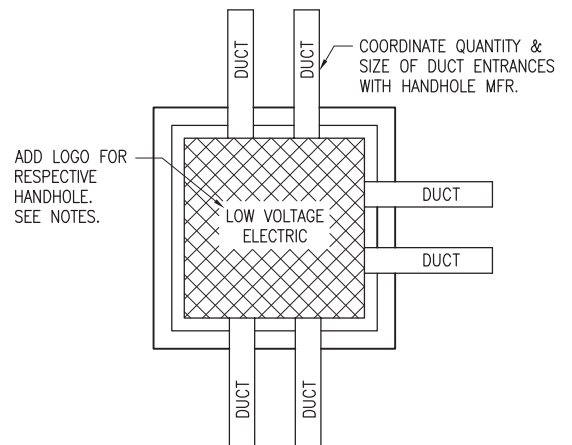
IDA No: JOT-4313
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NO.	DATE	DESCRIPTION		
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SHEET TITLE

PROPOSED ELECTRICAL PLAN



NOTES:

1. HANDHOLE FRAME AND LID SHALL BE HEAVY DUTY SUITABLE OR 40,000 POUND LOADING. LIDS FOR LOW VOLTAGE HANDHOLES SHALL BE LABELED "LOW VOLTAGE ELECTRIC" TO COMPLY WITH NEC ARTICLE 314.30 (D) "COVERS". 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.
2. HANDHOLES SHALL BE PRECAST. PRECAST MANUFACTURERS MUST BE ON THE IDOT (ILLINOIS DEPT. OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
3. MINIMUM CONCRETE STRENGTH SHALL BE 4,500 PSI (MINIMUM) AFTER 28 DAYS.
4. COORDINATE INSTALLATION OF HANDHOLES WITH RESPECTIVE FINISHED GRADE ELEVATIONS.
5. 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.
6. HANDHOLES WILL BE PAID FOR UNDER ITEM AR115610 ELECTRICAL HANDHOLE PER EACH.
7. RELOCATION OF EXISTING HANDHOLES WILL BE PAID FOR UNDER ITEM AR110966 RELOCATE ELECTRICAL HANDHOLE PER EACH.

ELECTRICAL HANDHOLE
"NOT TO SCALE"

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
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SHEET TITLE

ELECTRICAL HANDHOLE DETAILS

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SHEET TITLE

ELECTRICAL
MANHOLE DETAILS

PRECAST 4'x4'x4' ELECTRICAL MANHOLE NOTES

1. 4'x4'x4' ELECTRICAL MANHOLE SHALL BE CONSTRUCTED TO MEET THE FOLLOWING:

DESIGN CRITERIA:

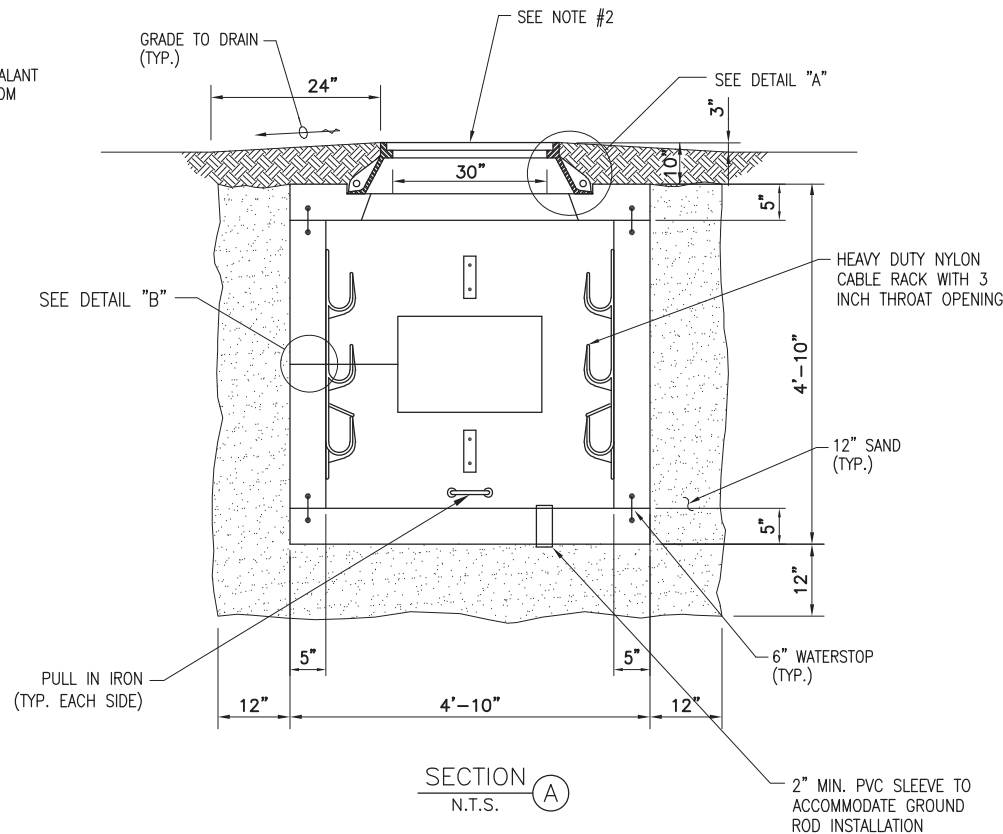
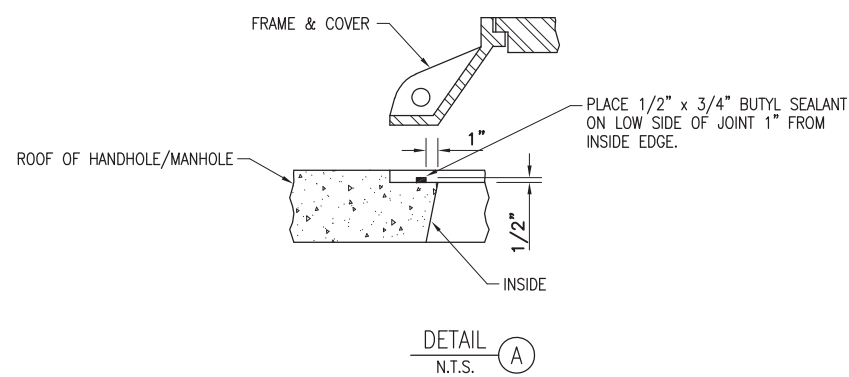
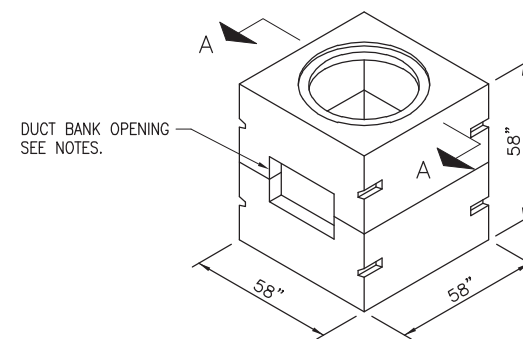
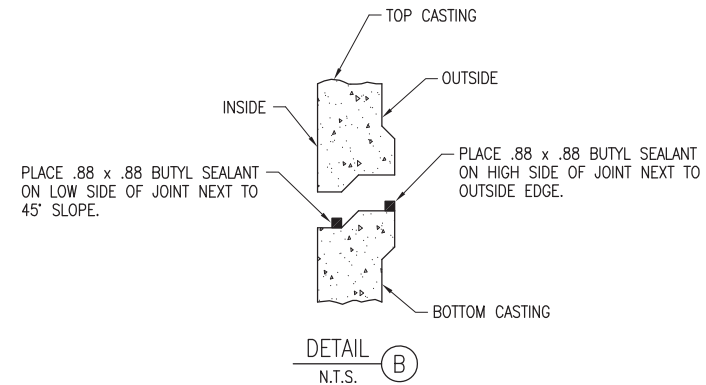
- 1) DESIGN SPECIFICATION: ACI 318, AASHTO LOAD FACTOR DESIGN METHOD, AND ASTM C858
- 2) DESIGN LOADING: AASHTO HS20 (32,000 LB/AXLE)
- 3) LIVE LOAD SURCHARGE: .5% OF THE WHEEL LOADING APPLIED TO 8'-0" OF DEPTH.
- 4) CONCRETE COMPRESSIVE STRENGTH: $F'_c = 4500$ PSI
- 5) REINFORCING STEEL: ASTM A706, $F_y = 60000$ PSI

DESIGN ASSUMPTIONS:

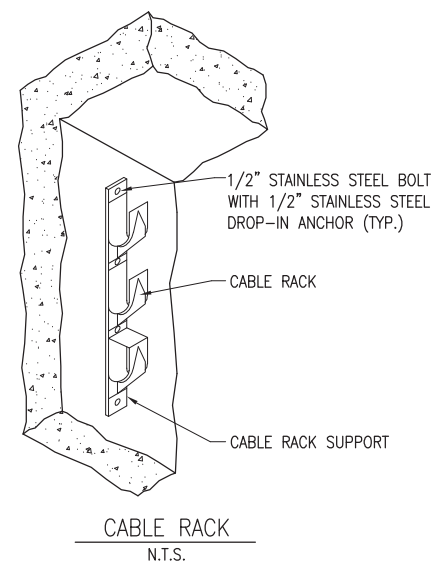
- 1) GROUND WATER LEVEL: 3'-6" BELOW GRADE.
- 2) EARTH COVER: 2'-0" MINIMUM TO 5'-0" MAXIMUM
- 3) LIVE LOAD IMPACT:
 - 2'-0" $1 = 20\%$
 - 2'-1" TO 2'-11" $1 = 10\%$
 - 3'-0" TO 5'-0" $1 = 0\%$
- 4) COEFFICIENT OF ACTIVE EARTH PRESSURE: $K_a = 0.3$
- 5) SPECIFIC WEIGHT OF STD. AGGREGATE CONCRETE: 150 PCF
- 6) SPECIFIC WEIGHT OF DRY EARTH: 100 PCF
- 7) SPECIFIC WEIGHT OF SATURATED EARTH: 120 PCF
- 8) EQUIVALENT FLUID PRESSURE OF DRY EARTH: 30 PSF
- 9) EQUIVALENT FLUID PRESSURE OF SATURATED EARTH: 80 PSF

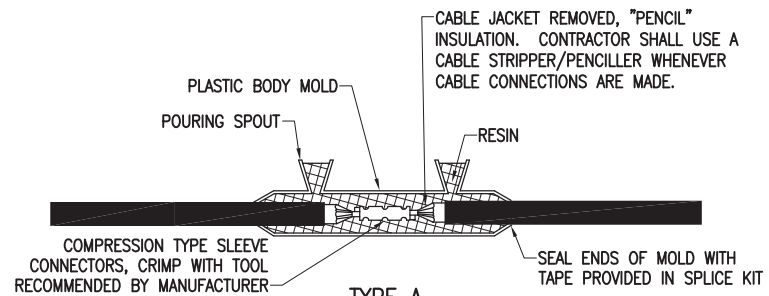
THE SUPPLIER SHALL PROVIDE CERTIFICATION THAT THE PRECAST MANHOLES MEET OR EXCEED THESE REQUIREMENTS PRIOR TO INSTALLATION.

2. MANHOLE FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 50,000 POUND LOADS. MANHOLE FRAME & LID SHALL BE NEENAH CATALOG NO. R-1640-C MANHOLE FRAME A SOLID LID, EAST JORDAN IRON WORKS CATALOG NO. 1825 FRAME AND COVER, OR APPROVED EQUAL. LID FOR LOW VOLTAGE MANHOLES SHALL BE LABELED "LOW VOLTAGE ELECTRIC" OR "0V-600V". LIDS FOR HIGH VOLTAGE MANHOLES CONTAINING AIRFIELD LIGHTING SERIES CIRCUIT WIRING SHALL BE LABELED "DANGER HIGH VOLTAGE KEEP OUT 5000 VOLTS" TO COMPLY WITH 2014 NEC ARTICLE 300.45 "WARNING SIGNS" AND 2014 NEC ARTICLE 314.30(D) "COVERS". COORDINATE LETTERING WITH MFR.
3. COORDINATE DUCT BANK INTERFACE & OPENINGS WITH THE MANHOLE MFR. CONTRACTOR SHALL SLOPE DUCT BANK TO PRECAST MANHOLE OPENINGS. ALL OPENINGS SHALL BE SEALED WATERTIGHT AFTER DUCT BANK INSTALLATION.
4. 4'x4'x4' MANHOLE SHALL BE MANUFACTURED BY A CONCRETE ELECTRICAL MANHOLE PRODUCER ON THE ILLINOIS DEPARTMENT OF TRANSPORTATION APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS..
5. 4'x4'x4' MANHOLE SHALL BE PAID FOR UNDER ITEM AR115710 ELECTRICAL MANHOLE PER EACH.
6. CABLE RACKS SHALL BE HEAVY DUTY CORROSION RESISTANT NYLON MATERIAL WITH CORROSION RESISTANT STAINLESS STEEL MOUNTING HARDWARE; UNDERGROUND DEVICES, INC. CAT. NO. 3SR1N, 3SR2N OR 3SR3N OR EQUAL. PROVIDE AT LEAST TWO TRIPLE HOOK CABLE RACKS ON EACH MANHOLE WALL, SPACED TO SUPPORT RESPECTIVE CABLES.
7. COORDINATE INSTALLATION OF MANHOLES WITH RESPECTIVE FINISHED GRADE ELEVATIONS.
8. INCLUDE FLOOR SUMP OR DRAINAGE PIPE.
9. 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 MANHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
10. INCLUDE 2" MIN. SCHED. 40 PVC CONDUIT SLEEVE IN BOTTOM OF MANHOLE TO ACCOMMODATE GROUND ROD INSTALLATION.
11. ALTERNATE LAYOUT CAN BE SUBMITTED AFTER AWARD TO BE REVIEWED AND APPROVED BY ENGINEER.



PRECAST 4' x 4' x 4' MANHOLE DETAILS
N.T.S. (NOT TO SCALE)

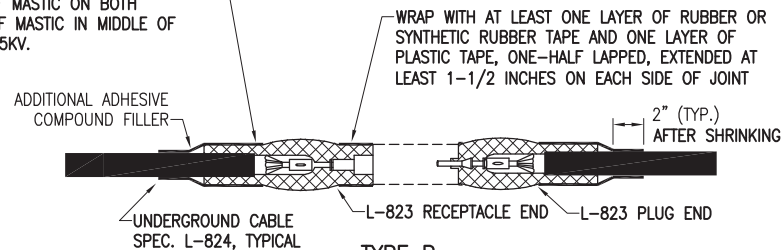




TYPE A

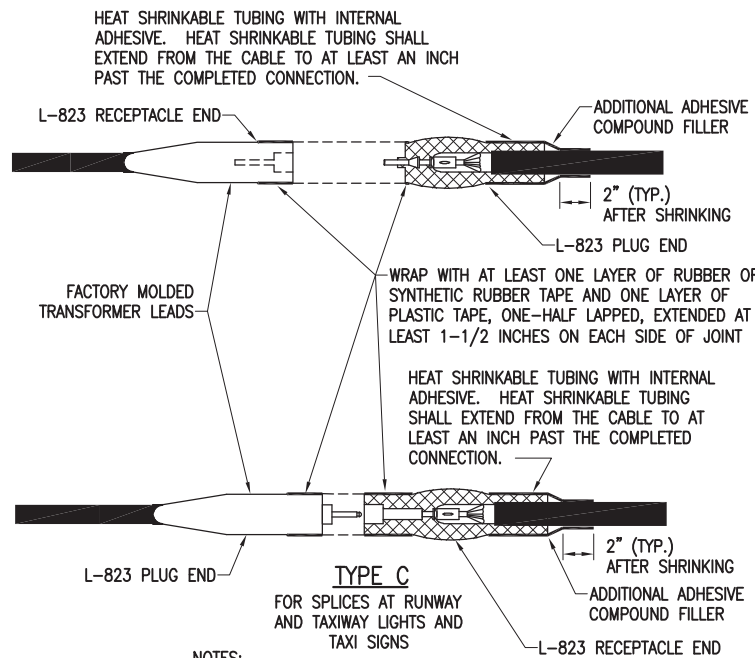
FOR SPLICES IN LOW VOLTAGE CABLE (600V) HOMERUNS FOR EXTENSIONS TO EXISTING LOW VOLTAGE CABLES ONLY. TYPE A SPLICES SHALL BE MADE IN SPLICE CANS, HANDHOLES, MANHOLES, OR JUNCTIONS BOXES

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



TYPE B

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

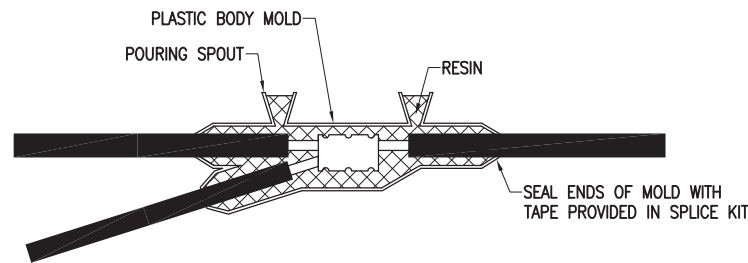


TYPE C

FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS AND TAXI SIGNS

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

CABLE SPLICES
(NOT TO SCALE)



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 WYE RESIN TYPE POWER CABLE TAP SPLICE KIT SUITABLE FOR THE RESPECTIVE CABLES AND RESPECTIVE APPLICATION.

NOTES:

- SPLICE DETAILS ARE PROVIDED FOR NEW WORK AND TO ASSIST IN REPAIRS OF ACCIDENTAL OR UNEXPECTED INTERRUPTIONS AND/OR CUTS TO AIRFIELD LIGHTING CABLES.
- CONTRACTOR SHALL KEEP ON HAND A MINIMUM OF 10 SETS OF SPLICE KITS FOR L-823 CONNECTORS AND A MINIMUM OF 10 SETS OF TYPE A LOW VOLTAGE SPLICE KITS TO ACCOMMODATE REPAIRS.
- EVERY AIRFIELD LIGHTING CABLE SPICER 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 150/5370G-10G ITEM L-108.
- WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.
- INSIDE DIAMETER OF RESPECTIVE CABLE CONNECTOR SHALL PROPERLY MATCH OUTSIDE DIAMETER OF CABLE.
- WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF 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 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.
- 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.
- 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. 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.

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

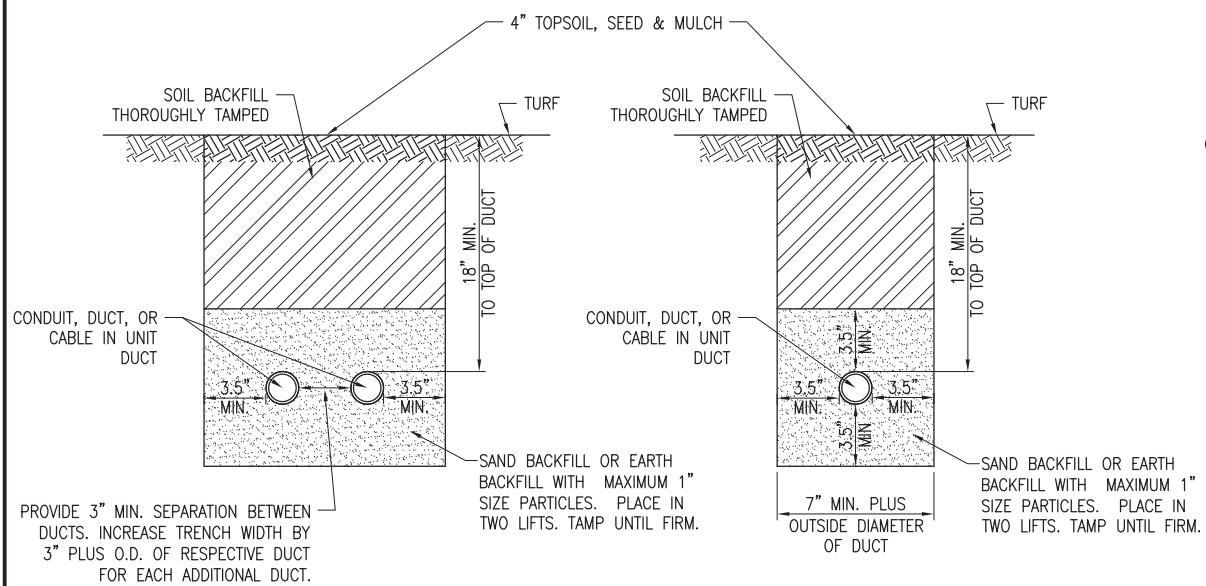
JO023

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SHEET TITLE

**AIRFIELD LIGHTING
CABLE SPLICE
DETAILS**



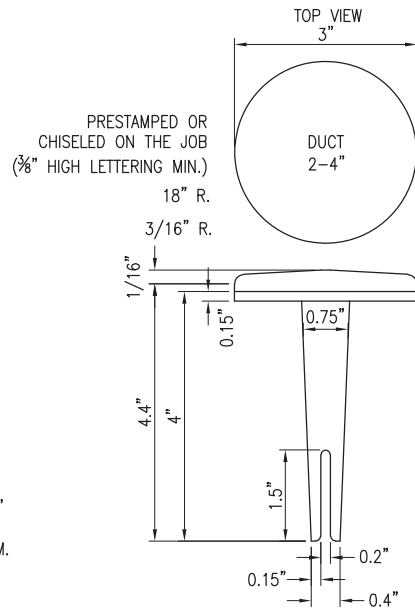
CONDUIT IN TRENCH – NON-PAVEMENT AREAS

"NOT TO SCALE"

PROVIDE 3" MIN. SEPARATION BETWEEN DUCTS. INCREASE TRENCH WIDTH BY 3" PLUS O.D. OF RESPECTIVE DUCT FOR EACH ADDITIONAL DUCT.

SAND BACKFILL OR EARTH BACKFILL WITH MAXIMUM 1" SIZE PARTICLES. PLACE IN TWO LIFTS. TAMP UNTIL FIRM.

SAND BACKFILL OR EARTH BACKFILL WITH MAXIMUM 1" SIZE PARTICLES. PLACE IN TWO LIFTS. TAMP UNTIL FIRM.



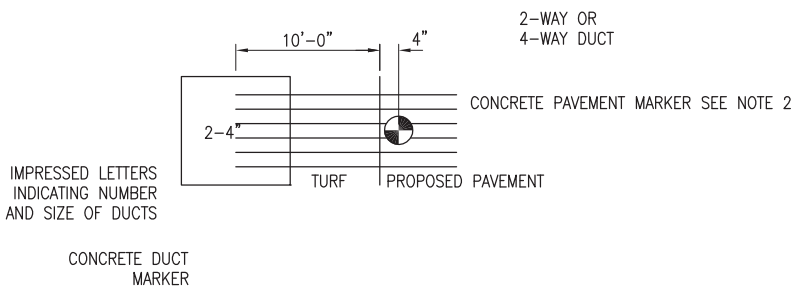
INDICATES NUMBER AND SIZE OF DUCT BANK

BITUMINOUS PAVEMENT DUCT MARKERS

"NOT TO SCALE"

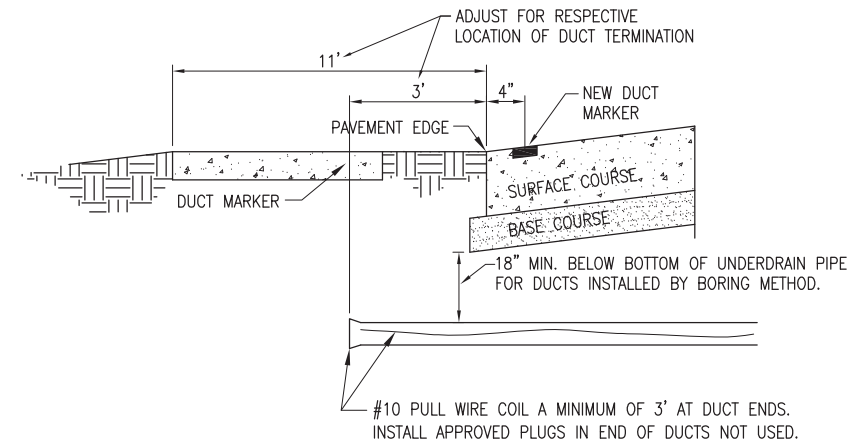
NOTES:

- TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE.
- BRASS DUCT MARKERS ARE AVAILABLE FROM G&S FOUNDRY & MANUFACTURING CO., INC., 210 KASKASKIA DRIVE, RED BUD, IL 62278, PHONE: (618)-282-4114, SURV-KAP, 3225 E. 47TH ST., TUCSON, AZ, 85713, PHONE: (520)622-6011, OR OTHER EQUIVALENT MANUFACTURER.



DUCT MARKER DETAIL

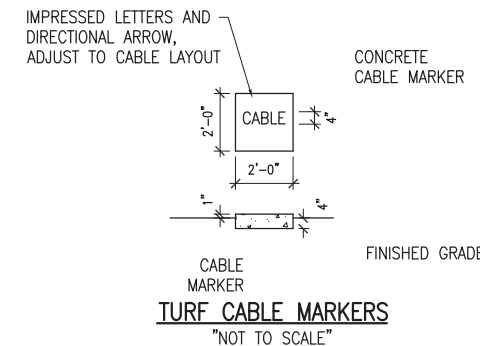
"NOT TO SCALE"



UNDERGROUND ELECTRICAL DUCT

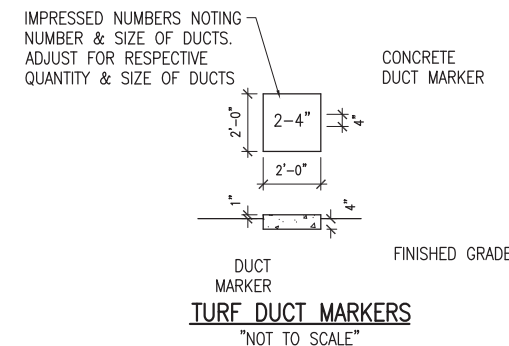
(NOT TO SCALE)

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



TURF CABLE MARKERS

"NOT TO SCALE"



TURF DUCT MARKERS

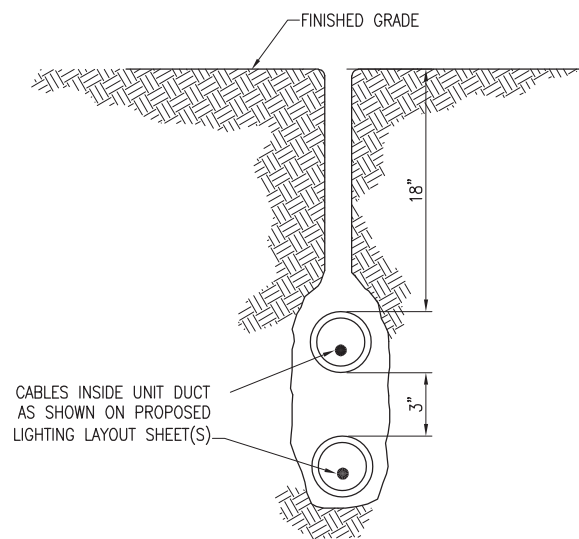
"NOT TO SCALE"

CABLE & DUCT MARKER NOTES:

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

NOTES:

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



PLOWED CABLE

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

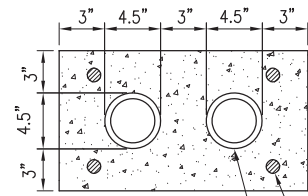
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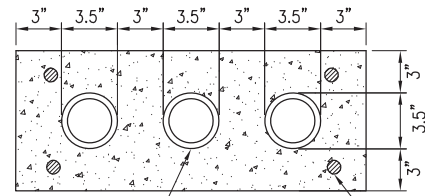
CONDUIT TRENCH DETAILS



2 WAY 4" DUCT BANK
(NOT TO SCALE)

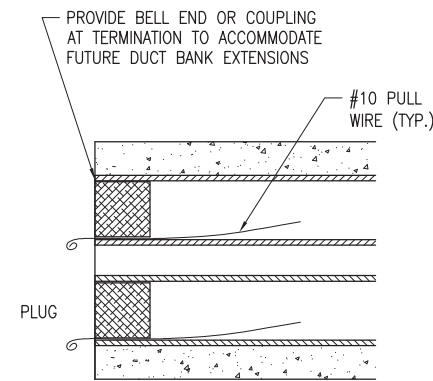
1/2" Ø REBAR
3' LONG IN EACH
CORNER WHERE
APPLICABLE (TYP.)

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

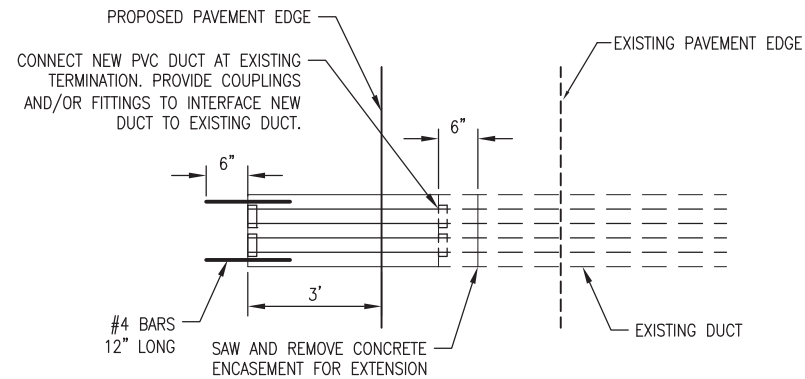


3-WAY 3" DUCT BANK
(NOT TO SCALE)

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



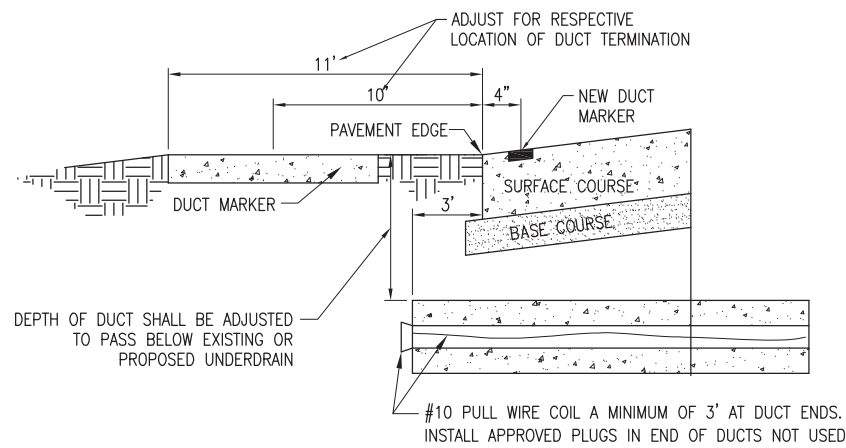
TYPICAL SECTION
(NOT TO SCALE)



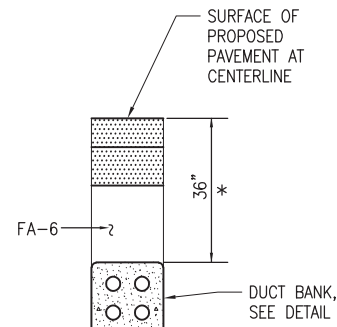
DUCT EXTENSION

DUCT BANK NOTES:

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



UNDERGROUND ELECTRICAL DUCT
(NOT TO SCALE)



* DEPTH TO BE ADJUSTED SO THAT TOP OF
DUCT ENCASEMENT TO BE 12" BELOW INVERT
OF UNDERDRAIN TUBING OR OTHER UTILITY.

ENCASED DUCT CROSSING UNDER PAVEMENT

DUCT INSTALLATION NOTES

- ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
- CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY 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.
- ADJUSTMENTS TO DUCT BANK ROUTES MIGHT BE REQUIRED TO ACCOMMODATE EXISTING SITE CONDITIONS AND UNDERGROUND LINES AND UTILITIES. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL COORDINATE DUCT ROUTE ADJUSTMENTS WITH THE RESIDENT ENGINEER/ RESIDENT PROJECT REPRESENTATIVE AND THE AIRPORT MANAGER.
- CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING CABLES, LINES, OR UTILITIES WITHIN 10 FT OF PROPOSED EXCAVATING/TRENCHING AREA. ANY CABLES, LINES, AND UTILITIES FOUND INTERFERING WITH PROPOSED EXCAVATION OR CABLE/TRENCHING SHALL BE HAND DUG AND EXPOSED. ANY DAMAGED CABLES OR OTHER UTILITIES SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE AND OWNER SHALL BE NOTIFIED IMMEDIATELY IF ANY CABLES OR OTHER UTILITIES ARE DAMAGED.
- PAYMENT FOR LOCATING AND MARKING UNDERGROUND UTILITIES AND CABLES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION.
- THE CONTRACTOR WILL DETERMINE IF THERE IS A CONFLICT BETWEEN THE INSTALLATION OF THE PROPOSED ELECTRICAL DUCTS AND ANY EXISTING UTILITIES. HE WILL MAKE ALL NECESSARY ADJUSTMENTS IN DEPTH OF INSTALLATION TO AVOID ANY AND ALL PROPOSED/EXISTING UNDERGROUND IMPROVEMENTS.
- CONDUITS FOR DIRECT BURIAL OR CONCRETE ENCASED DUCT BANK SHALL BE SCHEDULE 40 PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651, LISTED SUITABLE FOR UNDERGROUND USE EITHER DIRECT-BURIED OR ENCASED IN CONCRETE, OR SCHEDULE 40 (MINIMUM) HDPE CONDUIT, UL LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND LISTED SUITABLE FOR UNDERGROUND USE; EITHER DIRECT BURY OR ENCASED IN CONCRETE.
- CONDUITS FOR DIRECTIONAL BORING SHALL BE SCHEDULE 40 PVC CONDUIT OR SCHEDULE 80 PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651 AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, SCHEDULE 80 HDPE CONDUIT, UL-LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, OR WALL TYPE SDR 13.5 OR SDR 11 HDPE CONDUIT MANUFACTURED IN ACCORDANCE WITH ASTM D-3350 (SPECIFICATION OF POLYETHYLENE PLASTICS PIPE AND FITTINGS MATERIALS) AND ASTM F2160 (STANDARD SPECIFICATION FOR SOLID WALL, HIGH-DENSITY POLYETHYLENE CONDUIT BASED ON CONTROLLED OUTSIDE DIAMETER), AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION. PER NEC 300.5 (K), RACEWAYS INSTALLED USING DIRECTIONAL BORING EQUIPMENT SHALL BE APPROVED FOR THE PURPOSE.
- INSTALLATION OF CONDUIT AND DUCTS SHALL CONFORM TO ITEM 110 AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS.
- DUCTS INSTALLED IN TRENCH SHALL BE INSTALLED 18 IN. MINIMUM BELOW GRADE IN TURF AREAS NOT SUBJECT TO FARMING. DUCTS LOCATED IN AREAS SUBJECT TO FARMING SHALL BE 42 IN. MINIMUM BELOW GRADE. MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 42" IN AREAS UNDER ROADWAYS. WHERE DETAILED ON THE PLANS OR WHERE REQUIRED TO AVOID OBSTRUCTIONS, DUCTS SHALL BE BURIED DEEPER.
- WHERE CONCRETE-ENCASED DUCT INTERFACES TO AN ELECTRICAL HANDHOLE OR MANHOLE, THE CONCRETE ENCASEMENT SHALL BE INSTALLED UP TO THE RESPECTIVE HANDHOLE OR MANHOLE. PROVIDE BUSHINGS OR BELLS AT CONDUIT TERMINATIONS IN ELECTRICAL HANDHOLES OR MANHOLES.
- UNDERGROUND DUCTS INSTALLED BY DIRECTIONAL-BORING METHOD SHALL BE INSTALLED IN A MANNER THAT WILL NOT DAMAGE ANY EXISTING UNDERGROUND UTILITIES, AND SHALL NOT DISTURB OR DAMAGE THE RESPECTIVE PAVEMENT OR ROADWAY SURFACE. DUCTS SHALL BE DIRECTIONAL-BORED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. THE DUCTS WILL BE BORED AT A MINIMUM DEPTH OF 42 IN. BELOW THE RESPECTIVE PAVEMENT IT IS BEING BORED UNDER.
- A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.
- HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
- CONTROL CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES.
- HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
- COORDINATE DUCT INTERFACE TO MANHOLES AND HANDHOLES. FIELD CUT OPENINGS FOR CONDUITS AND DUCTS TO INTERFACE TO MANHOLES AND/OR HANDHOLES. CUT WALL OF RESPECTIVE HANDHOLE OR MANHOLE WITH A TOOL DESIGNED FOR MATERIAL TO BE CUT. SIZE HOLES FOR RESPECTIVE DUCTS, CONDUITS, AND TERMINATION FITTINGS AND SEAL AROUND PENETRATIONS. ALL CORING, INTERFACE, CUTTING, AND SEALING WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION AND/OR RESPECTIVE HANDHOLE/MANHOLE INSTALLATION.
- CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.
- ALL POWER AND CONTROL CABLES IN HANDHOLES, MANHOLES, AND JUNCTION BOXES SHALL BE TAGGED TO IDENTIFY THE RESPECTIVE CABLE. A MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MANHOLE; ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT. CABLE TAGS SHALL BE STAMPED BRASS TAGS OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

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ELECTRICAL DUCT
BANK DETAILS
& NOTES

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SHEET TITLE

ELECTRICAL NOTES
SHEET 1

GENERAL NOTES

- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
- CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- THE CONTRACTOR SHALL ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM, INCLUDING FAA APPROVED EQUIPMENT, ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE NEW/EXISTING SYSTEM. ANY NONCOMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR SHALL BE REPLACED BY HIM AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER (DIFFERENT MODEL OR DIFFERENT MANUFACTURER) THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.
- IN CASE THE CONTRACTOR ELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTORS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATION, ANY COST FOR THESE ITEMS SHALL BE INCIDENTAL TO THE EQUIPMENT COST.
- THE CONTRACTOR INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) SHALL NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AIR NAVIGATION, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST WITH THE EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.
- WHEN A SPECIFIC TYPE, STYLE, CLASS, ETC. OF FAA APPROVED EQUIPMENT IS SPECIFIED ONLY THAT TYPE, STYLE, CLASS, WILL BE ACCEPTABLE, EVEN THOUGH EQUIPMENT OF OTHER TYPES STYLES, CLASSES, ETC. MAY BE APPROVED.
- ANY AND ALL INSTRUCTIONS FROM THE RESIDENT ENGINEER/RESIDENT TECHNICIAN TO THE CONTRACTOR REGARDING CHANGES IN OR DEVIATIONS FROM THE PLANS AND SPECIFICATIONS SHALL BE IN WRITING WITH COPIES SENT TO THE AIRPORT SPONSOR AND THE ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF AERONAUTICS). THE CONTRACTOR SHALL NOT ACCEPT ANY VERBAL INSTRUCTIONS FROM THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.
- A MINIMUM OF THREE COPIES OF THE INSTRUCTION BOOK SHALL BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE BOOKS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATORS, PAPI, REIL, ETC. AS A MINIMUM SHALL CONTAIN THE FOLLOWING:
 - A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.
 - THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.
 - INSTALLATION INSTRUCTION.
 - START-UP INSTRUCTIONS.
 - PREVENTATIVE MAINTENANCE REQUIREMENTS.
 - CHART FOR TROUBLE-SHOOTING.
 - COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT - "BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OF THE NARRATIVE SHALL SHOW VOLTAGE/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLE-SHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL MODES OF OPERATION, SUCH AS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS SHALL BE INDICATED FOR ALL DIFFERENT MODES.
 - PARTS LIST WHICH WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS SUCH AS RESISTORS, DIODES, ETC. IT SHALL INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER.
 - SAFETY INSTRUCTIONS.

POWER AND CONTROL NOTES

- PROVIDE LEGEND PLATES FOR ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO IDENTIFY THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT AREA TO INSTALL LEGEND PLATES, THE LEGEND PLATES SHALL BE INSTALLED ON THE WALL NEXT TO THE UNIT. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL. 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
- COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK AND RED SHALL BE USED FOR PHASE CONDUCTORS ON 120/240VAC SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, ORANGE (FOR HIGH LEG) AND BLUE SHALL BE USED FOR PHASE CONDUCTORS ON 240/120VAC THREE-PHASE, FOUR WIRE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, SHALL BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH. NEUTRAL CONDUCTORS LARGER THAN NO. 6 AWG SHALL BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR SIZES (AWG OR KCMIL).
- ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE SHALL BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING SHALL BE EXTENDED TO THE POINT OF UTILIZATION.
- IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
- LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS.
- NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND JUNCTION/PULL BOXES.
- THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:
 - IN STRAIGHT PULLS THE LENGTH OF THE BOX SHALL NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END SHALL BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.
 - IN ANGLE PULLS OR 'U' PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX SHALL NOT BE LESS THAN SIX (6) TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE SHALL BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL AS THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR SHALL NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.
- A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS, CAST, CONDUIT TYPE OUTLETS SHALL NOT BE TREATED AS PULL/JUNCTION BOXES.
- EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.
- SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
- CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE, MINIMUM FRAME.
- DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
- ALL INTERIOR WALL MOUNTED EQUIPMENT ENCLOSURES SHALL BE MOUNTED ON HOT DIPPED GALVANIZED STEEL STRUT SUPPORT, OR STAINLESS STEEL STRUT SUPPORT, WITH CORROSION RESISTANT HARDWARE.
- SUPPORT FOR EXTERIOR MOUNTED EQUIPMENT SHALL USE HOT DIPPED GALVANIZED STEEL STRUT SUPPORT OR STAINLESS STEEL STRUT SUPPORT WITH STAINLESS STEEL HARDWARE. PROVIDE ZINC RICH PAINT APPLIED TO FIELD CUTS OF GALVANIZED STEEL SUPPORT TO MINIMIZE THE POTENTIAL FOR CORROSION PER THE RESPECTIVE STRUT SUPPORT MANUFACTURER'S RECOMMENDATIONS.
- CONDUITS FOR ELECTRIC SERVICE ENTRANCE AND FEEDERS SHALL BE AS DETAILED HEREIN ON THE PLANS. WHERE GALVANIZED RIGID STEEL CONDUIT IS SPECIFIED IT SHALL HAVE THREADED FITTINGS. SET SCREW TYPE FITTINGS WILL NOT BE ACCEPTABLE. CONDUITS FOR UNDERGROUND APPLICATIONS SHALL BE AS DETAILED HEREIN. CONDUITS FOR GROUNDING ELECTRODE CONDUCTORS OR INDIVIDUAL GROUNDING CONDUCTORS SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC.
- PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT U.L. LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
- UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
- ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
- USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS.
- USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
- WRAP ALL PRIMARY AND SECONDARY POWER TRANSFORMER CONNECTIONS WITH SUFFICIENT LAYERS OF 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 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, ND VINYL ELECTRICAL TAPE SHALL BE 3M SCOTCH 88 OR APPROVED EQUIVALENT. TAPES MUST BE RATED SUITABLE FOR THE APPLICATION.
- UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINIMUM.
- THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:
 - FOR INTERIOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 12 (DUST TIGHT) ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. FOR EXTERIOR/OUTDOOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 4X STAINLESS STEEL ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. ALL CONDUIT ENTRIES INTO NEMA 4, 4X ENCLOSURES SHALL HAVE NEMA 4 HUBS LISTED SUITABLE FOR THE RESPECTIVE ENCLOSURE TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE.
 - THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.
 - ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED-EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.
 - WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING AND TERMINALS SHALL BE EXPOSED AND ACCESSIBLE WITHOUT REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.
 - ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.
 - EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.
 - A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.
 - THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.
 - ALL WIRING SHALL BE NEATLY TRAINED AND LACED.
 - MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
- FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, CUTOUT, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".

AIRFIELD LIGHTING NOTES

- 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, AIR-ENTRAINED.
30. ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE-ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.
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/RESIDENT PROJECT REPRESENTATIVE SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT J.U.L.I.E. FOR UTILITY INFORMATION AT 1-800-892-0123. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.
32. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

GROUNDING NOTES FOR AIRFIELD LIGHTING

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


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T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

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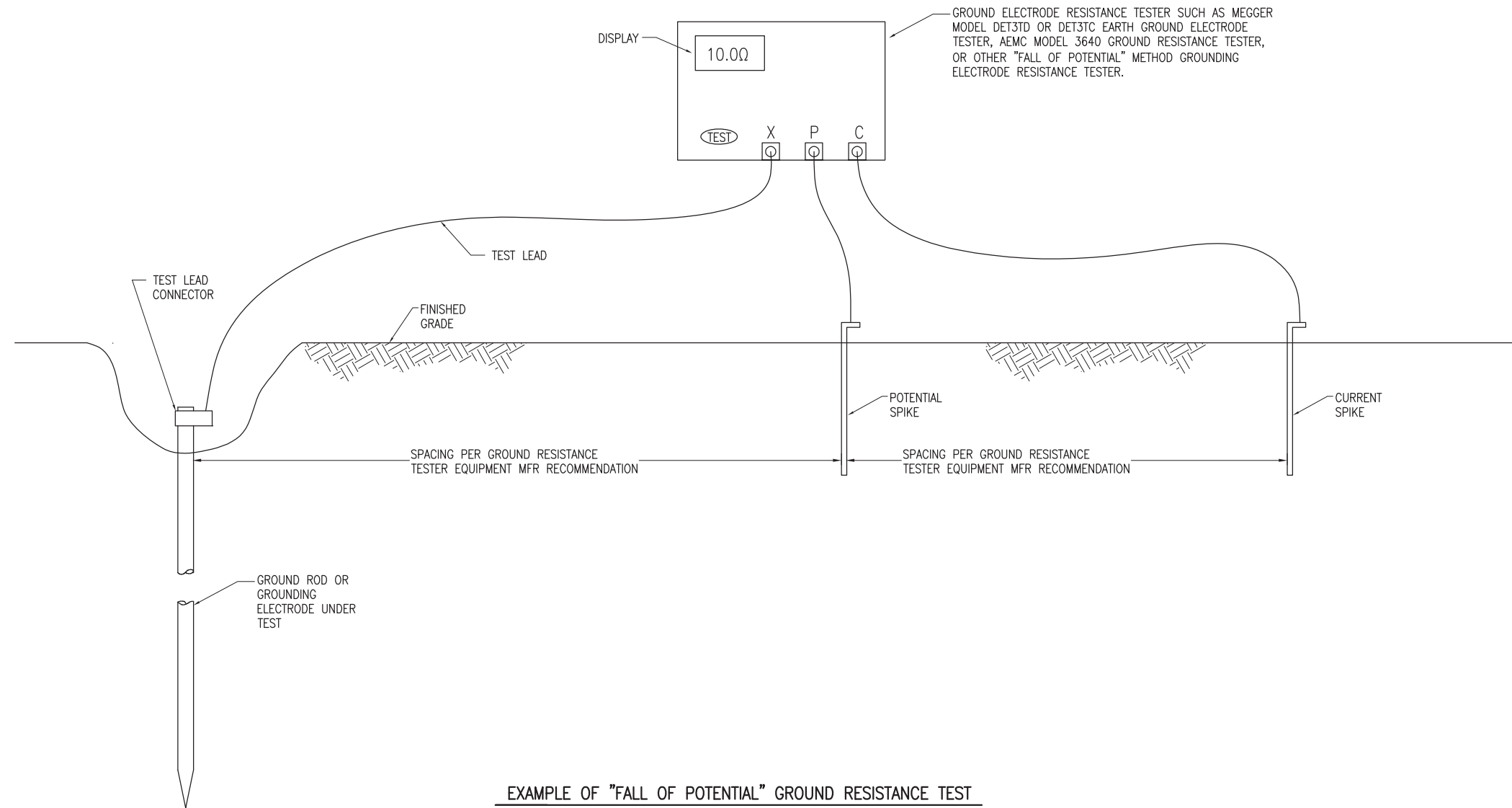
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EXAMPLE OF "FALL OF POTENTIAL" GROUND RESISTANCE TEST
(NOT TO SCALE)

NOTES

- 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.
- 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.
- GROUND RESISTANCE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE RESPECTIVE GROUND ELECTRODE RESISTANCE TESTING EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
- RECORD SITE CONDITIONS DURING TESTS.
- "FALL OF POTENTIAL" TYPE GROUND ELECTRODE RESISTANCE TESTER IS RECOMMENDED FOR TESTING INDIVIDUAL STAND ALONE GROUND RODS.

**T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4**

IDA No: JOT-4313
SBGP Nos: 3-17-SBG-111
3-17-SBG-120
3-17-SBG-133

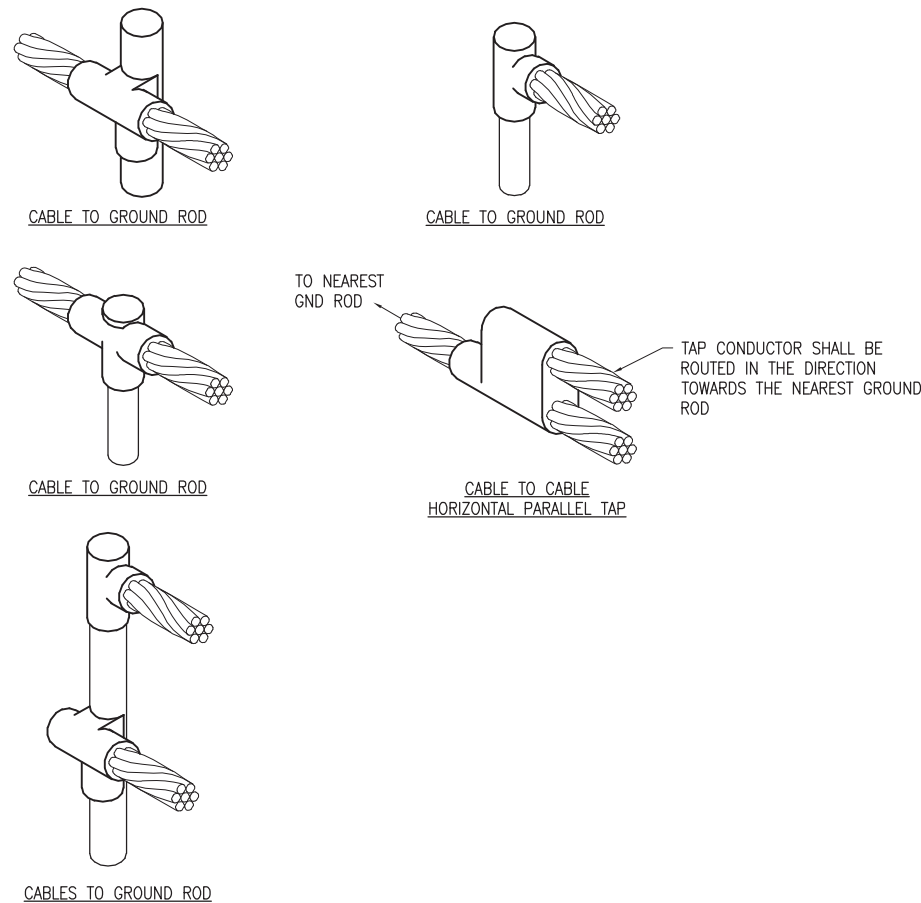
JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 46-E-509-DET.LDWG
DESIGN BY: KNL 9/23/16
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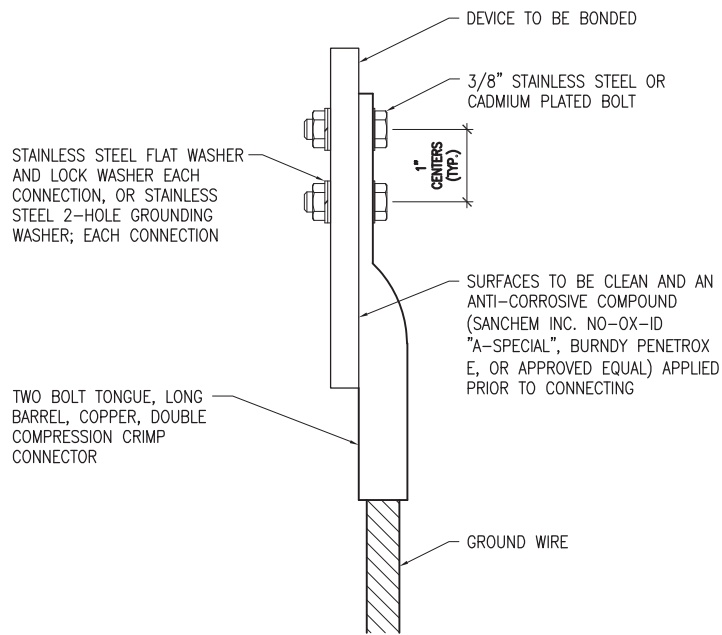
SHEET TITLE

**GROUND
RESISTANCE
TESTING DETAILS**

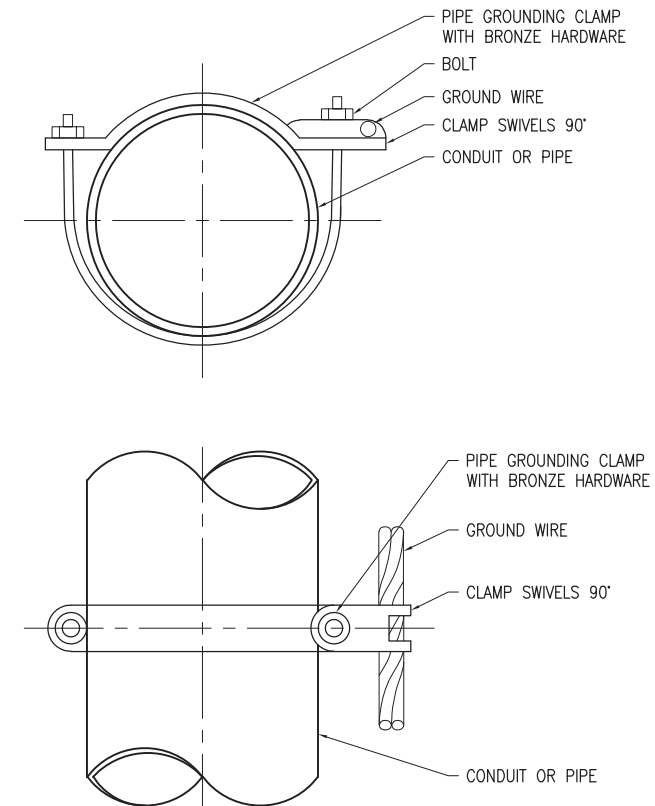


TO NEAREST GND ROD

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



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



PIPE GROUNDING CLAMP TABLE		
BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PIPE SIZE
GAR3902-BU	3902 BU	1/2" - 1"
GAR3903-BU	3903 BU	1 1/4" - 2"
GAR3904-BU	3904 BU	2 1/2" - 3 1/2"
GAR3905-BU	3905 BU	4" - 5"
GAR3906-BU	3906 BU	6"

DETAIL NOTES

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

NOTES

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

GROUNDING LUG CONNECTION DETAIL

NOTES

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

PIPE/CONDUIT GROUNDING CLAMP DETAIL

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

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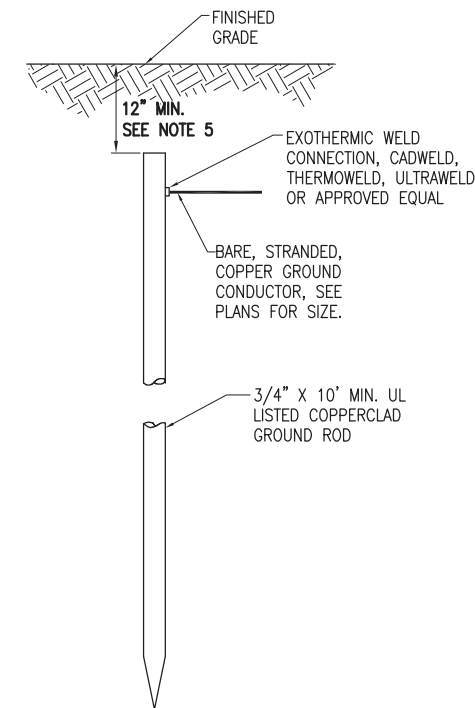
SHEET TITLE

GROUNDING DETAILS

GROUNDING NOTES

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

- ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2014 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHBOARD, ETC) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2014 NEC 250-102.
- IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.
- PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
- EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
- ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR APPROVED EQUAL.
- BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
- BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
- INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, DO NOT COMPLETELY 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.
- IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2014 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
- WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE RESIDENT ENGINEER OR PROJECT ENGINEER FOR FURTHER DIRECTIONS.
- GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.



10 FT. GROUND ROD

NOTES

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

GROUND RODS

(NOT TO SCALE)

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T-HANGAR TAXILANE
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TH/6-1, TH/6-2, TH/6-3
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SHEET TITLE

GROUNDING NOTES

ELECTRICAL LEGEND - ONE-LINE DIAGRAM

	TERMINAL, LUG OR SPLICE
	TRANSFORMER
	DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	CIRCUIT BREAKER
	THERMAL MAGNETIC CIRCUIT BREAKER
	ADJUSTABLE MOTOR CIRCUIT PROTECTOR TYPE BREAKER
	CIRCUIT BREAKER WITH SWITCHED NEUTRAL FEATURE
	FUSE
	TRANSIENT VOLTAGE SURGE SUPPRESSOR OR SURGE PROTECTOR DEVICE
	CONTACTOR
	COMBINATION CIRCUIT BREAKER/STARTER WITH OVERLOAD PROTECTION. # = NEMA SIZE NO.
	HP RATED MANUAL SWITCH
	THERMAL OVERLOAD PROTECTION
	GROUND - GROUND ROD, GROUNDING ELECTRODE, OR AT EARTH POTENTIAL
	INDICATING LIGHT
	MOTOR
	EXPLOSION PROOF MOTOR
	LOAD, MOTOR, # = HORSEPOWER
	EXPLOSION PROOF CONDUIT SEAL-OFF FITTING
	ELECTRIC UTILITY METER BASE
	JUNCTION BOX WITH SPLICE
	EQUIPMENT, XXX = DEVICE DESCRIPTION
	GROUND BUS OR TERMINAL
	NEUTRAL BUS

ELECTRICAL LEGEND - ONE-LINE DIAGRAM

	PANELBOARD WITH MAIN LUGS
	PANELBOARD WITH MAIN BREAKER
	FUSE PANEL WITH MAIN FUSE PULLOUT
	DUPLEX RECEPTACLE 120V SINGLE PHASE GROUNDING TYPE
	CONTROL STATION
	TRANSFER SWITCH
	ENGINE GENERATOR SET

ELECTRICAL 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 TESTING SERVICES
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. CONTRACTOR SHALL EXAMINE THE SITE AND VAULT TO DETERMINE EXISTING SITE CONDITIONS.
2. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
3. 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. ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES U.L. LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
7. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 500 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) & LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, OR HANDHOLE.

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

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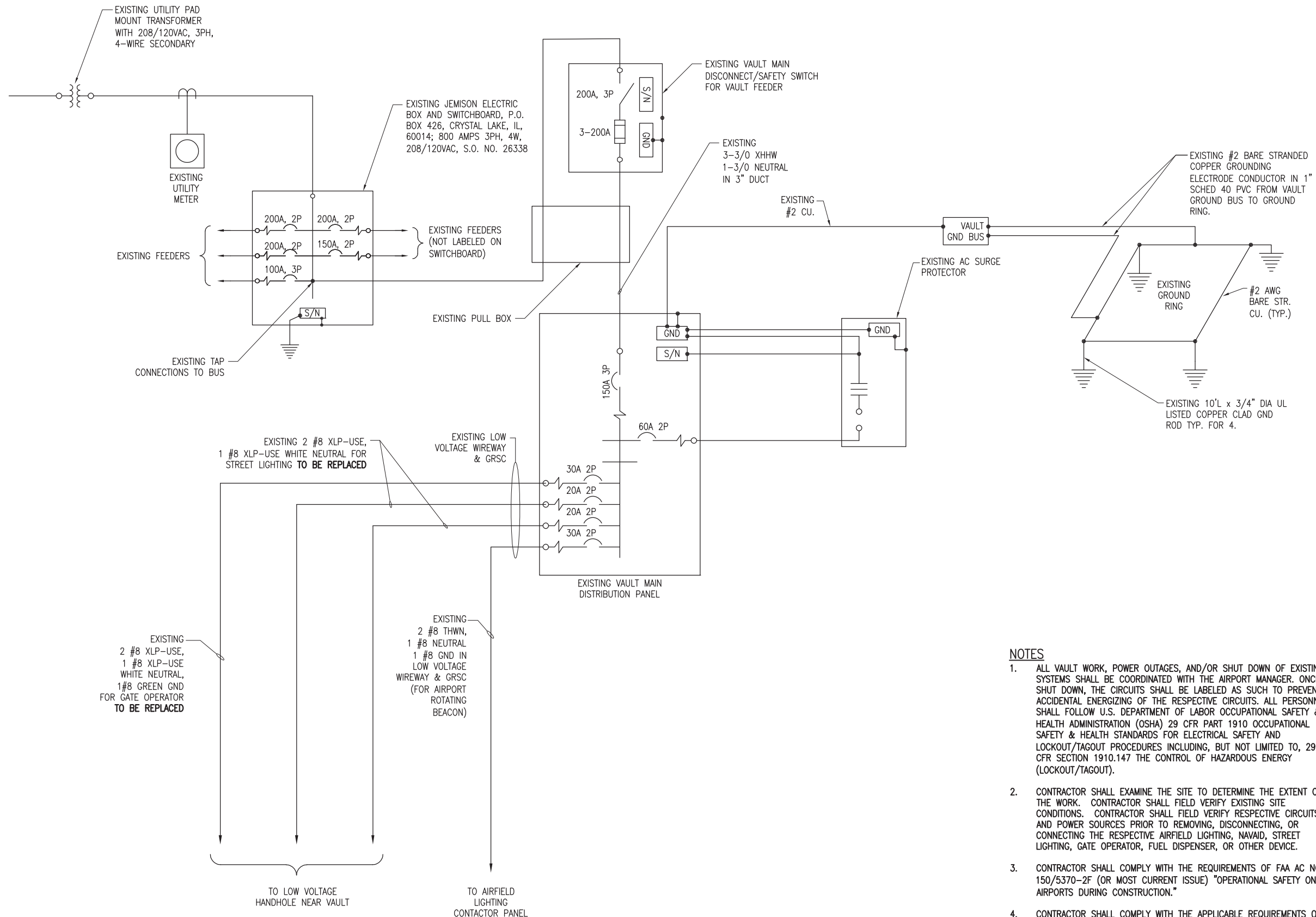
ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES

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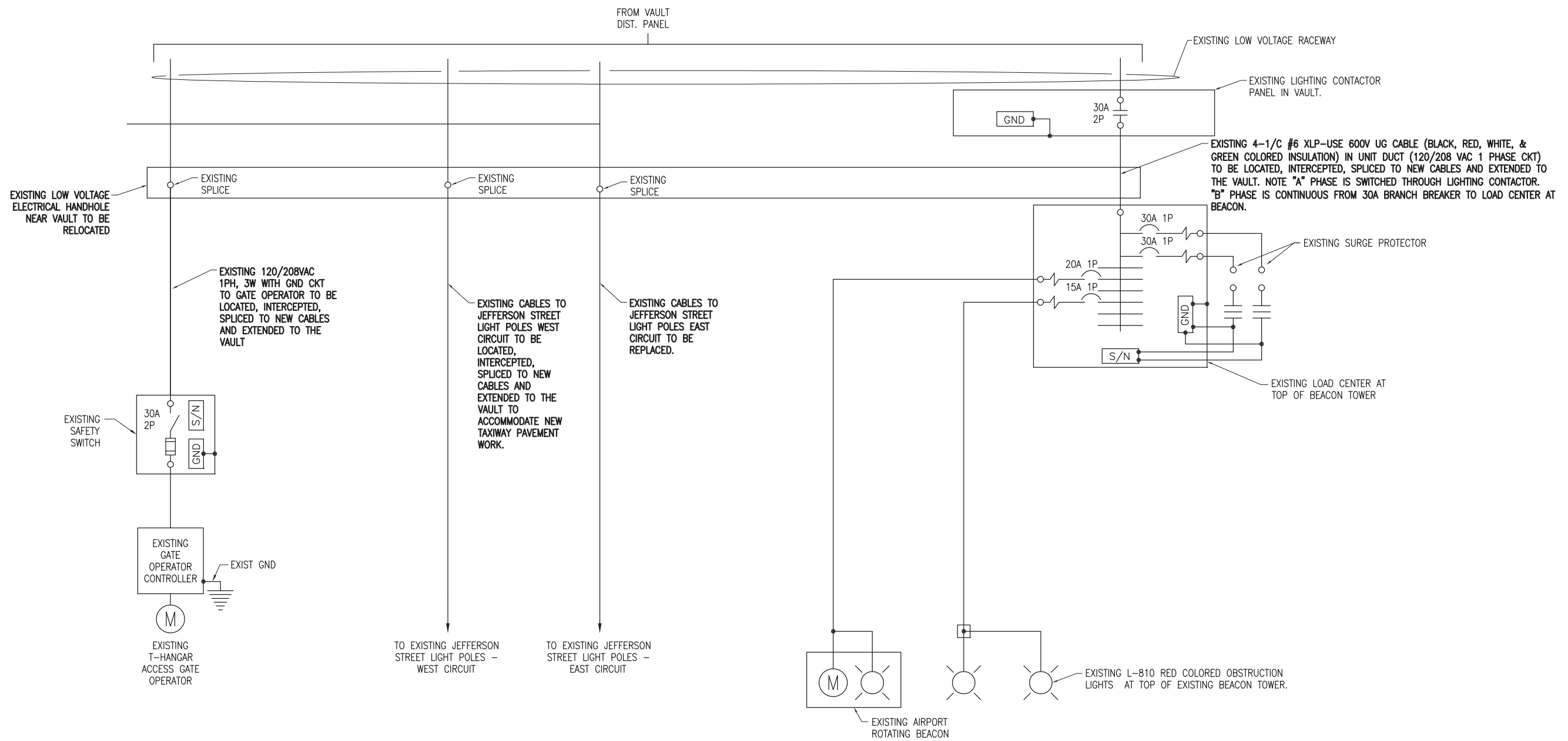
EXISTING ELECTRICAL
ONE-LINE FOR VAULT
AND AIRFIELD (1)



NOTES

- 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).
- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, OR CONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAID, STREET LIGHTING, GATE OPERATOR, FUEL DISPENSER, OR OTHER DEVICE.
- CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION."
- CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NEPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.

EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD



NOTES

SCHEDULED SHUTDOWN OF THE GATE OPERATOR, STREET LIGHTING, AIRPORT ROTATING BEACON, AND/OR ANY OTHER DEVICE OR SYSTEM ON THE AIRPORT MUST BE COORDINATED WITH THE AIRPORT MANAGER A MINIMUM OF 48 HOURS IN ADVANCE. SHUTDOWNS OF LIGHTING AND/OR NAVAIDS SHALL BE KEPT TO A MINIMUM TO ACCOMMODATE AIRPORT OPERATIONS.

EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD (CONTINUED)

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

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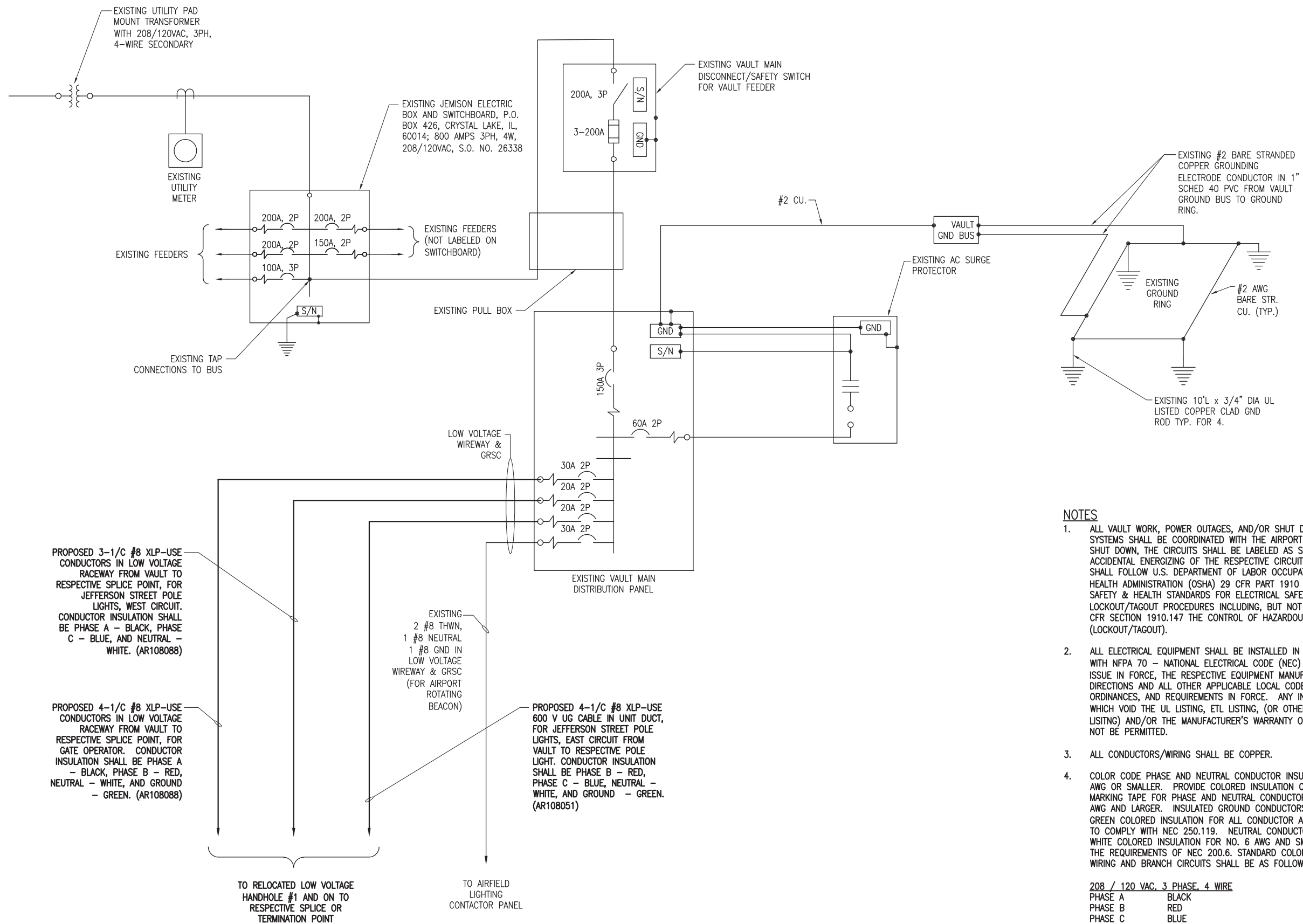
EXISTING ELECTRICAL
ONE-LINE FOR VAULT
AND AIRFIELD (2)

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AND AIRFIELD (1)

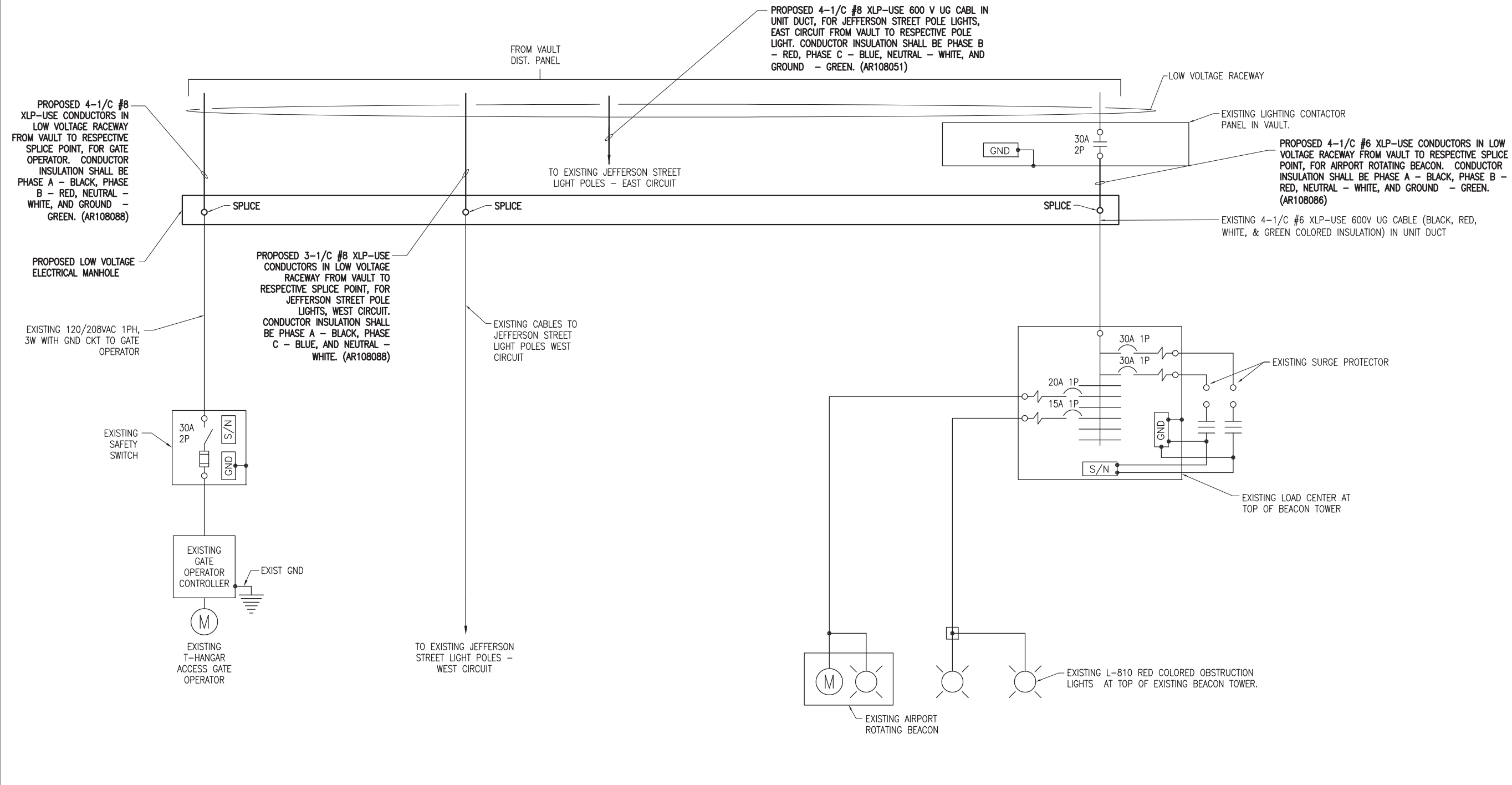


NOTES

- 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).
- 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 UL LISTING, ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- ALL CONDUCTORS/WIRING SHALL BE COPPER.
- 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
- HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 500 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 WIREWAY, CONDUIT, DUCT, OR HANDHOLE.

PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD



PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR VAULT AND AIRFIELD (CONTINUED)

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

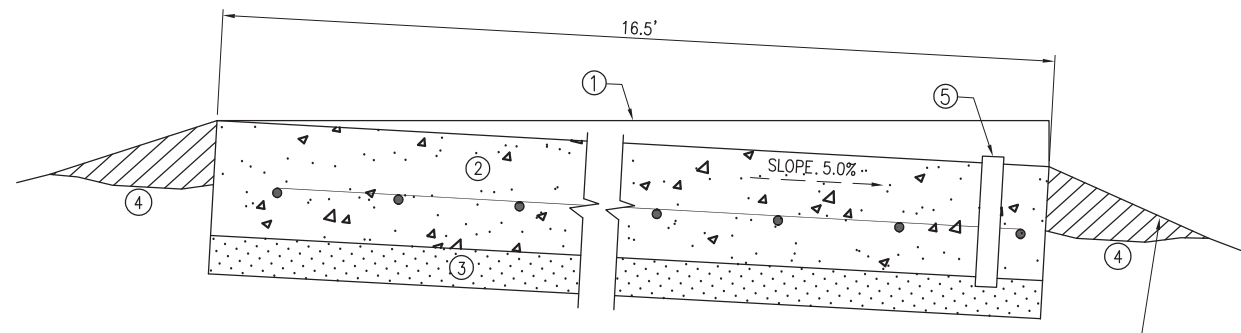
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ONE-LINE FOR VAULT
AND AIRFIELD (2)

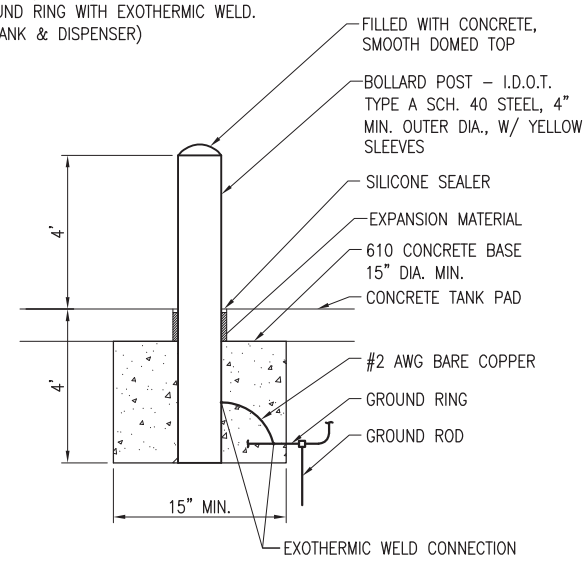


- ① PROPOSED CURB (TRANSITIONS FROM 0 TO 10 INCHES) POURED MONOLITHICALLY WITH SLAB.
- ② PROPOSED IDOT CLASS S.I. - 6" THICK P.C. CONCRETE REINFORCED w/ #5 REBAR SPACED 16" O.C. BOTH DIRECTIONS.
- ③ PROPOSED 209 - CRUSHED AGGREGATE BASE COURSE (4" DEPTH), SEE ITEM 209 CRUSHED AGGREGATE BASE COURSE OF THE ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORT FOR REQUIREMENTS.
- ④ EXISTING GROUND
- ⑤ COORDINATE SCHED. 40 PVC SLEEVES IN CONCRETE SLAB FOR GROUND WIRES AND FOR GALVANIZED RIGID STEEL CONDUIT ENTRIES

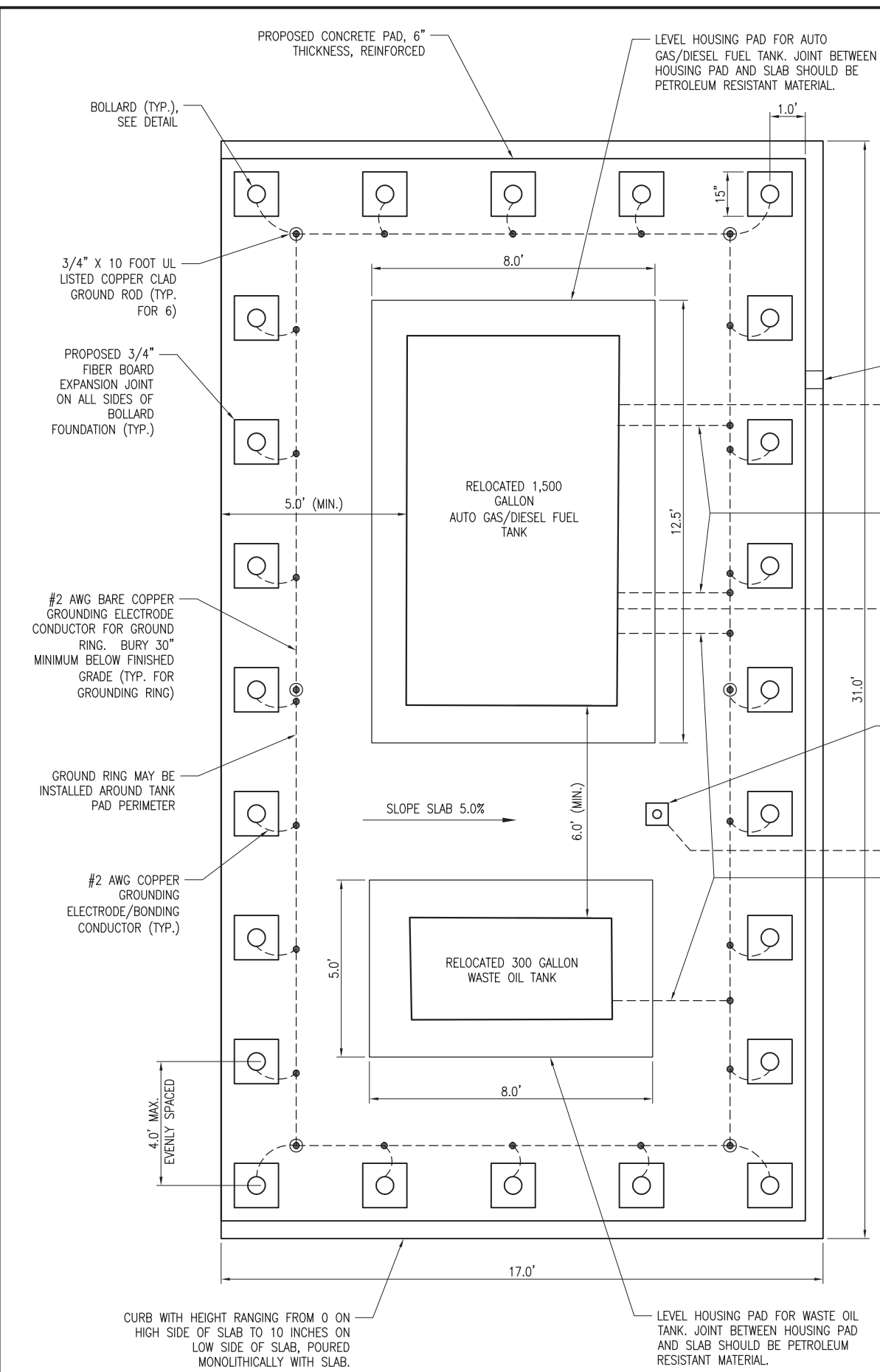
PROPOSED P.C.C. TANK PAD TYPICAL SECTION
"NOT TO SCALE"

CONSTRUCTION NOTES

1. THE CONCRETE PAD SHALL CONSIST OF 6" THICK CONCRETE PAVEMENT CONSTRUCTED USING PORTLAND CEMENT CONCRETE, REINFORCED IN ACCORDANCE WITH ITEM 610 ON 4" THICK CRUSHED AGGREGATE BASE COURSE IN ACCORDANCE WITH ITEM 209. CONCRETE SHALL OBTAIN 4,000 P.S.I. AT 28 DAYS. USE # 5 REBAR ON 16" CENTERS BOTH DIRECTIONS. THE REINFORCEMENT BARS SHALL BE PRODUCED FROM 100% DOMESTIC STEEL. THE BOLLARD PIPES SHALL BE PRODUCED FROM 100% DOMESTIC STEEL.
2. THE PROPOSED CONCRETE PAD WILL BE CONSTRUCTED TO MEET THE SPECIFIED SLOPE REQUIREMENTS AT THE EXISTING GRADE.
3. AFTER THE CONCRETE PAD HAS BEEN PLACED THE CONTRACTOR WILL SAW THE CONCRETE AFTER THE PAVEMENT HAS BEEN SET ENOUGH TO ALLOW THE WEIGHT OF THE CONCRETE SAW. THE PROPOSED SAW JOINTS WILL BE SUFFICIENT TO ENSURE PROPER STRUCTURAL STRESS RELIEF.
4. THE PROPOSED CRUSHED AGGREGATE BASE COURSE MATERIAL SHALL BE COMPACTED TO THE SATISFACTION OF THE ENGINEER.
5. THE CONSTRUCTION OF THE CONCRETE PAD WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE RELOCATE FUEL TANKS AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
6. FURNISH AND INSTALL GROUND RODS (10' LONG x 3/4" DIA. U.L. LISTED COPPER CLAD) TO FORM A GROUND RING AROUND THE FUEL TANK & DISPENSING SITE FOR GROUNDING THE FUEL SYSTEM EQUIPMENT. GROUND RODS SHALL BE SPACED NOT LESS THAN 12' TO NOT MORE THAN 30' APART, FURNISHED AS NECESSARY TO ACCOMMODATE RESPECTIVE EQUIPMENT. CONNECT GROUND RODS AND EQUIPMENT TOGETHER WITH #2 BARE COPPER GROUND WIRE. CONNECTIONS TO GROUND RODS AND GROUND RING SHALL BE EXOTHERMIC WELD. ALL ELECTRICAL EQUIPMENT AND ALL METALLIC OR CONDUCTIVE COMPONENTS RELATED TO THE FUEL SYSTEM, INCLUDING ABOVEGROUND FUEL STORAGE TANKS, SUPPORT SKIDS, PLATFORMS, FUEL DISPENSERS, BOLLARDS, PIPING AND PIPING SUPPORT STRUCTURES, PUMP BASES, MOTORS, STATIC GROUND REELS, ETC. SHALL BE GROUNDED IN CONFORMANCE WITH NFPA 70, AND AS REQUIRED BY ALL OTHER APPLICABLE CODES, LAWS, ORDINANCE AND REQUIREMENTS IN FORCE.
7. TANKS REQUIRE 5 FT. MIN. SEPARATION PER TITLE 41 IL ADM CODE - PART 160.
8. COORDINATE INSTALLATION OF CONDUITS, PIPING, & GROUNDING INTO PAD. SIZE AND QUANTITY OF THE CONDUIT SHALL BE IN ACCORDANCE WITH THE RESPECTIVE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND NFPA 70 - NATIONAL ELECTRIC CODE.
9. FURNISH AND INSTALL 2-UL CLASSIFICATION 40 B:C FIRE EXTINGUISHERS & MOUNT TO BOLLARD POSTS.
10. FURNISH AND INSTALL EMERGENCY SHUT OFF STATION (LOCATED AT THE FUEL DISPENSER SITE) TO SHUT OFF POWER TO ALL EQUIPMENT AT THE FUEL DISPENSER SITE. A SECOND EMERGENCY SHUT OFF SHALL BE LOCATED AT THE FUEL FACILITY HAZARDOUS LOCATION BOUNDARY JUNCTION BOX.
11. COORDINATE INSTALLATION OF POWER & CONTROL WIRING CONDUITS FOR FUEL DISPENSERS.
12. ALL CONNECTIONS TO GROUND RODS AND GROUND RING SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS, CADWELD, THERMOWELD, ULTRAWELD, OR APPROVED EQUAL.



BOLLARD
"NOT TO SCALE"



CURB WITH HEIGHT RANGING FROM 0 ON HIGH SIDE OF SLAB TO 10 INCHES ON LOW SIDE OF SLAB, POURED MONOLITHICALLY WITH SLAB.

LEVEL HOUSING PAD FOR WASTE OIL TANK. JOINT BETWEEN HOUSING PAD AND SLAB SHOULD BE PETROLEUM RESISTANT MATERIAL.

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T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

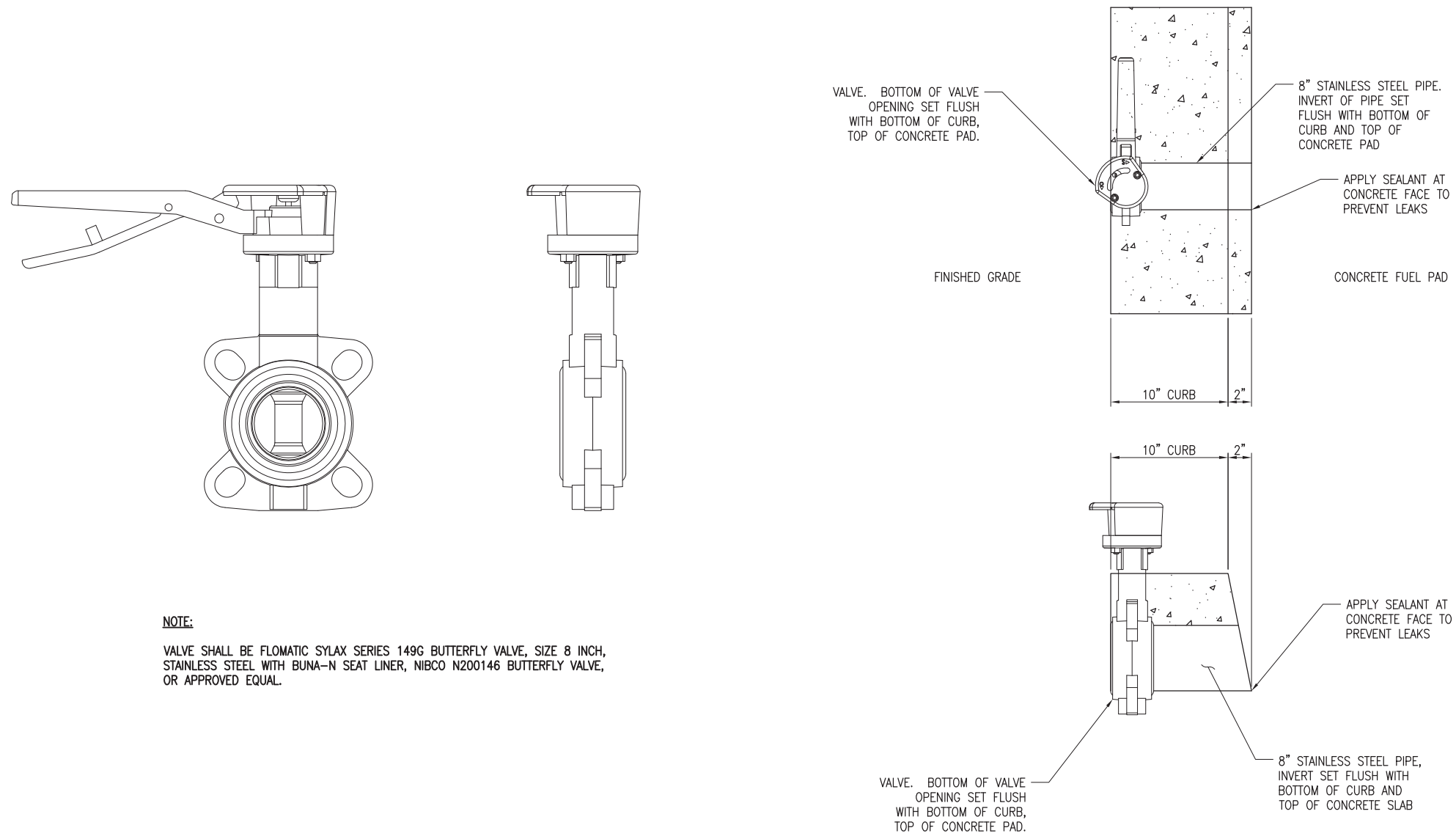
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SHEET TITLE

**PROPOSED FUEL
FACILITY PAD DETAIL**



NOTE:

VALVE SHALL BE FLOMATIC SYLAX SERIES 149G BUTTERFLY VALVE, SIZE 8 INCH, STAINLESS STEEL WITH BUNA-N SEAT LINER, NIBCO N200146 BUTTERFLY VALVE, OR APPROVED EQUAL.

FUEL PAD DRAIN/SHUT OFF VALVE

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
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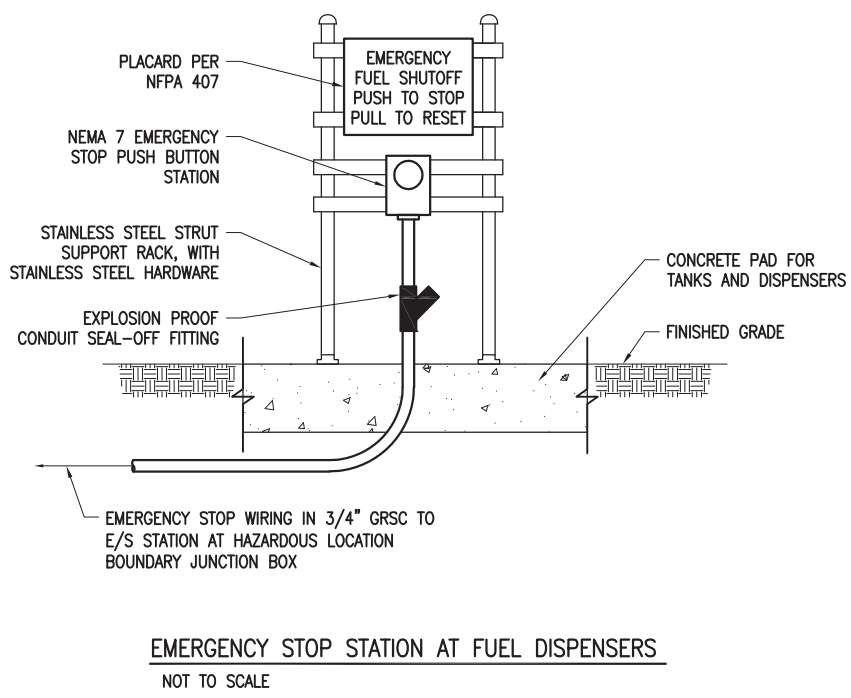
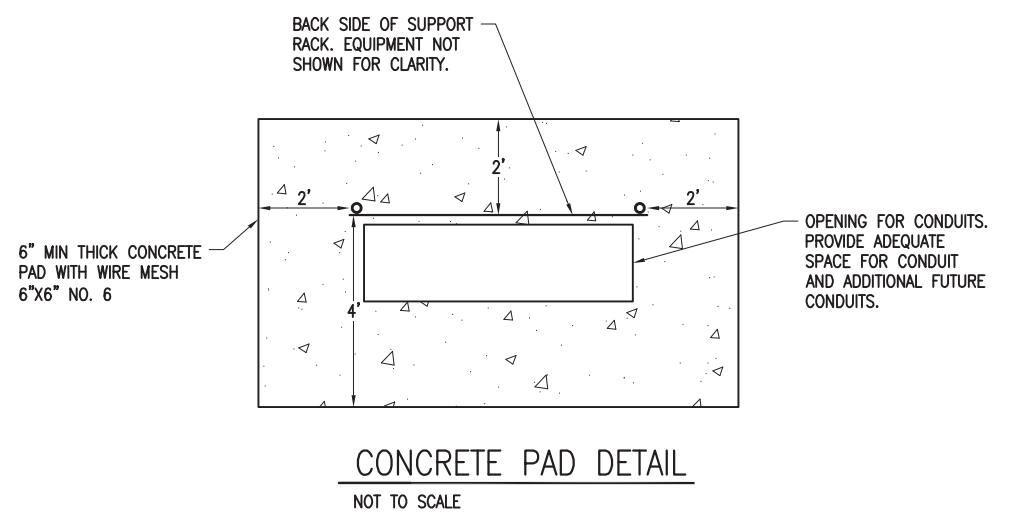
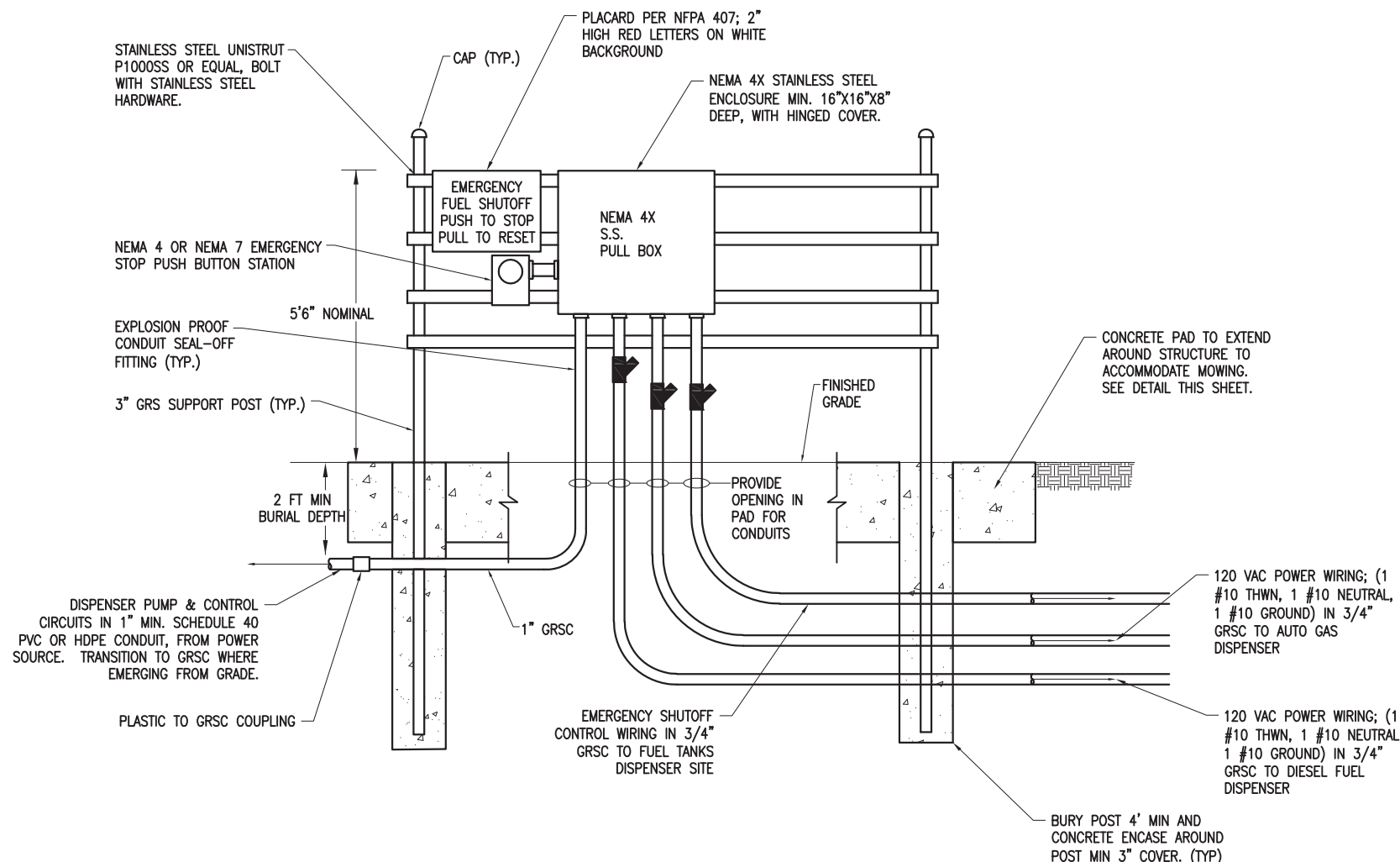
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SHEET TITLE

SHUT OFF VALVE
DETAIL



NOTES

1. PROVIDE EMERGENCY FUEL SHUT OFF STATION IN NEMA 7 FACTORY SEALED ENCLOSURE WITH 2\"/>

HAZARDOUS LOCATION BOUNDARY JUNCTION BOX
NOT TO SCALE

CONDUIT SEAL OFF NOTES:

1. CONDUIT SEAL OFF FITTINGS SHALL BE UL LISTED OR FM APPROVED SUITABLE FOR CLASS I, DIV. 1, GROUP D LOCATION. PER UL STANDARD 886 & NEC 501.15(C)(6), THE CROSS-SECTIONAL AREA OF THE CONDUCTORS PERMITTED IN A SEAL SHALL NOT EXCEED 25 PERCENT OF THE CROSS-SECTIONAL AREA OF A RIGID METAL CONDUIT OF THE SAME TRADE SIZE UNLESS IT IS SPECIFICALLY IDENTIFIED FOR A HIGHER PERCENTAGE OF FILL.
2. CONDUIT SEAL OFF FITTINGS ARE REQUIRED FOR ALL CONDUITS EMERGING FROM GRADE AT THE FUEL TANK & DISPENSER SITES IN CLASS I, DIVISION 1 OR 2, GROUP D LOCATIONS, AND SHALL BE THE FIRST FITTING AFTER THE CONDUIT EMERGES FROM GRADE.
3. CONDUIT SEAL OFF FITTINGS ARE REQUIRED FOR EACH CONDUIT RUN ENTERING AN ENCLOSURE (LOCATED IN A HAZARDOUS AREA) FOR SWITCHES, CIRCUIT BREAKERS, FUSES, RELAYS, RESISTORS OR OTHER APPARATUS WHICH MAY PRODUCE ARCS, SPARKS, OR HIGH TEMPERATURES, (WITHIN 18\"/>

T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
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3-17-SBGP-133

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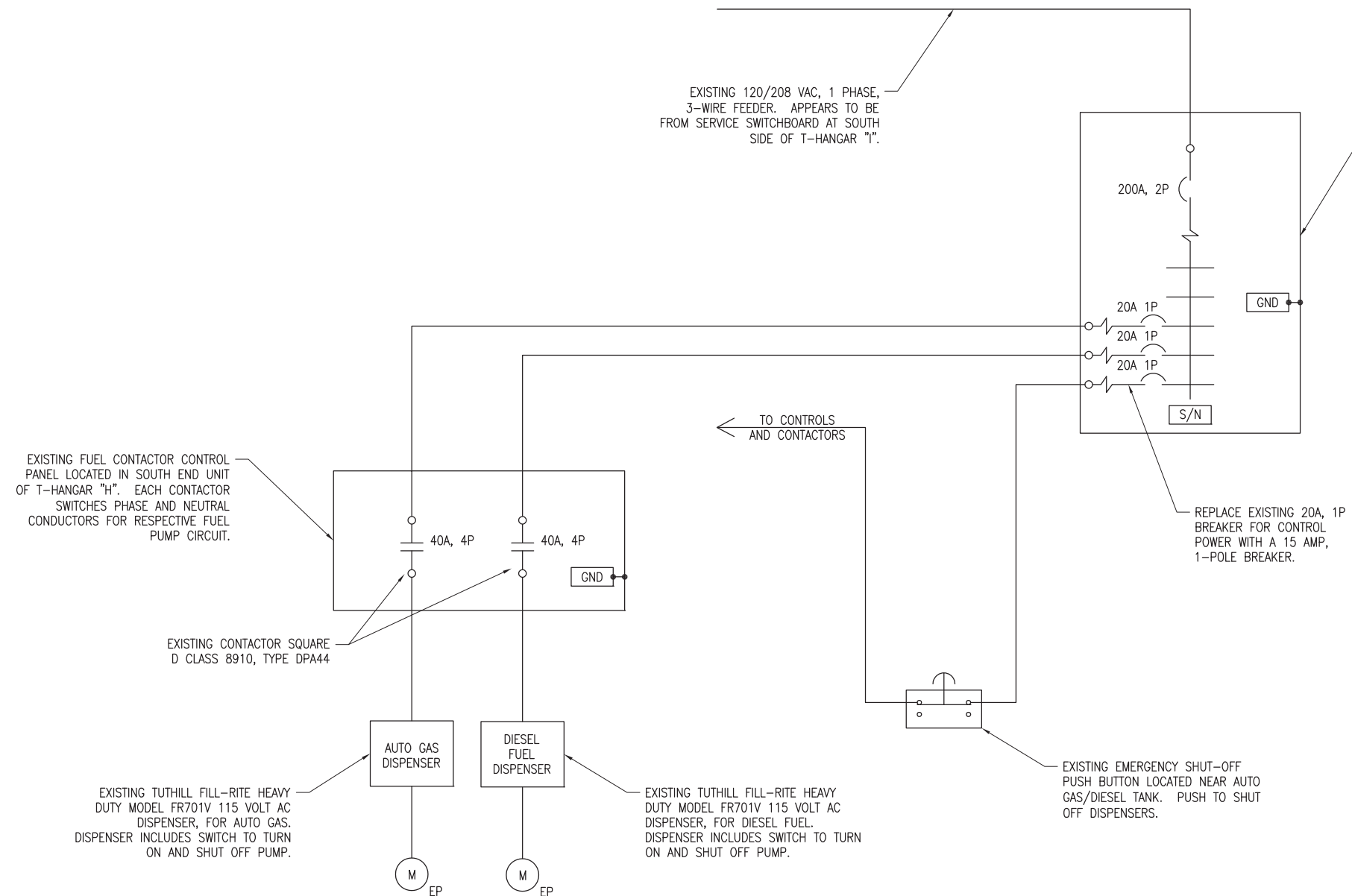
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SHEET TITLE

**HAZARDOUS
LOCATION BOUNDARY
JUNCTION BOX DETAIL**

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NOTES:

1. EXISTING ONE-LINE DIAGRAM WIRING IS BASED ON FIELD DATA AND INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND WIRING AND REPORT ANY VARIATIONS TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN.
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. 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, RELOCATING, DISCONNECTING OR CONNECTING THE RESPECTIVE FUEL SYSTEM EQUIPMENT, OR OTHER DEVICE.
4. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
5. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
6. NOTE THE T-HANGAR "H" BUILDING HAS APPARENT (NATIONAL ELECTRICAL CODE) VIOLATIONS WHICH MIGHT CAUSE UNSAFE WORKING CONDITIONS. APPARENT NEC VIOLATIONS INCLUDE, BUT ARE NOT LIMITED TO, MAIN DISCONNECT NOT IDENTIFIED, NO GROUNDING ELECTRODE CONNECTIONS TO MAIN DISTRIBUTION PANEL/LOAD CENTER, & POWER SOURCE NOT IDENTIFIED. CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING AT THIS SITE.
7. EXISTING AUTO GAS/DIESEL FUEL TANK AND DISPENSERS SHALL BE RELOCATED AND REWIRED. EXISTING WASTE OIL TANK SHALL BE RELOCATED.

EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR FUEL DISPENSERS

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

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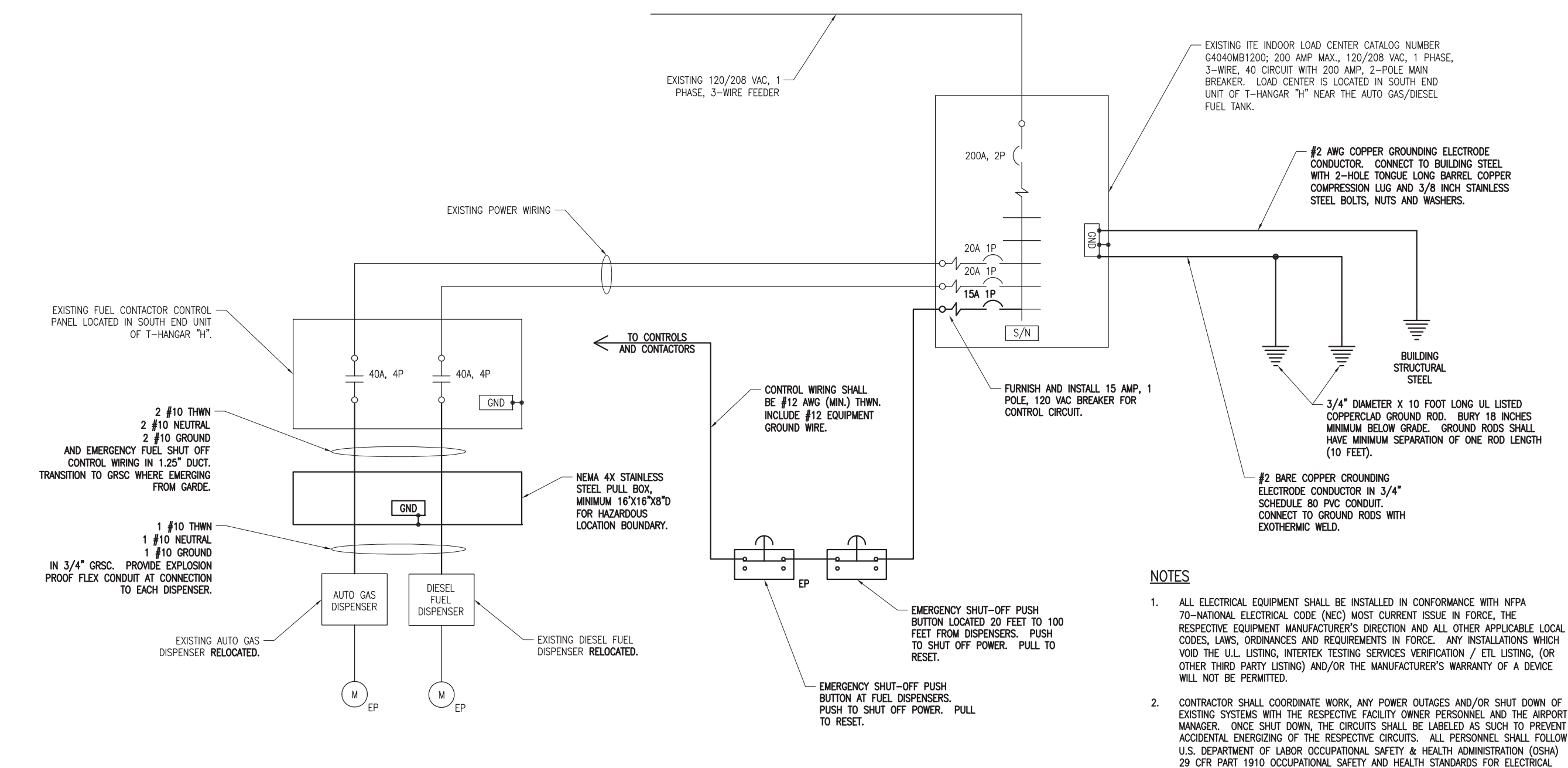
EXISTING ELECTRICAL ONE-LINE FOR FUEL DISPENSERS

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SHEET TITLE

PROPOSED ELECTRICAL ONE-LINE FOR FUEL DISPENSERS



NOTES

- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70-NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTION AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION / ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- CONTRACTOR SHALL COORDINATE WORK, ANY POWER OUTAGES AND/OR SHUT DOWN OF EXISTING 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 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).
- PER NEC 513 THE ENTIRE AREA OF THE HANGAR INCLUDING ANY ADJACENT AND COMMUNICATING AREAS NOT SUITABLY CUT OFF FROM THE HANGAR, SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 HAZARDOUS LOCATION UP TO A LEVEL 18 INCHES ABOVE THE FLOOR. PER NEC 513.3(C) "VICINITY OF AIRCRAFT", THE AREA WITHIN 5 FT. HORIZONTALLY FROM AIRCRAFT POWER PLANTS OR AIRCRAFT FUEL TANKS SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 LOCATION THAT SHALL EXTEND UPWARD FROM THE FLOOR TO A LEVEL 5 FT. ABOVE THE UPPER SURFACE OF WINGS AND OF ENGINE ENCLOSURES. ALL ELECTRICAL INSTALLATIONS IN CLASSIFIED HAZARDOUS LOCATIONS SHALL BE AVOIDED UNLESS SPECIFICALLY APPROVED FOR SUCH LOCATIONS AND INSTALLED IN CONFORMANCE WITH NEC 500, 501, AND 513 AS WELL AS OTHER APPLICABLE CODES AND REQUIREMENTS.
- ALL ELECTRICAL EQUIPMENT INSTALLED AT THE FUEL TANK & DISPENSER SITES IN CLASSIFIED HAZARDOUS LOCATIONS (CLASS I, DIV. 1 OR 2, GROUP D) SHALL BE SUITABLE FOR THE RESPECTIVE ENVIRONMENT AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEC (MOST CURRENT ISSUE) INCLUDING, BUT NOT LIMITED TO, ARTICLES 500, 501, 514 AND 515 AS WELL AS ALL MANUFACTURER REQUIREMENTS, AND ALL LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE.
- ALL EQUIPMENT NOT LABELED AS EXISTING IS NEW.
- SEE "REGULATORY NOTES AND REQUIREMENTS" SHEET FOR ADDITIONAL NOTES.
- RELOCATION OF THE FUEL TANK, DISPENSERS, WASTE OIL TANK AND ASSOCIATED ELECTRICAL WORK WILL BE PAID FOR UNDER ITEM AR803047 RELOCATE FUEL TANKS PER LUMP SUM.

**EMERGENCY FUEL SHUTOFF
PUSH TO STOP
PULL TO RESET**

PROVIDE PLACARD WITH 2" MIN HIGH RED LETTERING ON WHITE BACKGROUND TO COMPLY WITH NFPA 407. PROVIDE PLACARD FOR EACH EMERGENCY SHUTOFF STATION. PROVIDE BACKING FOR SUPPORT OF PLACARD.

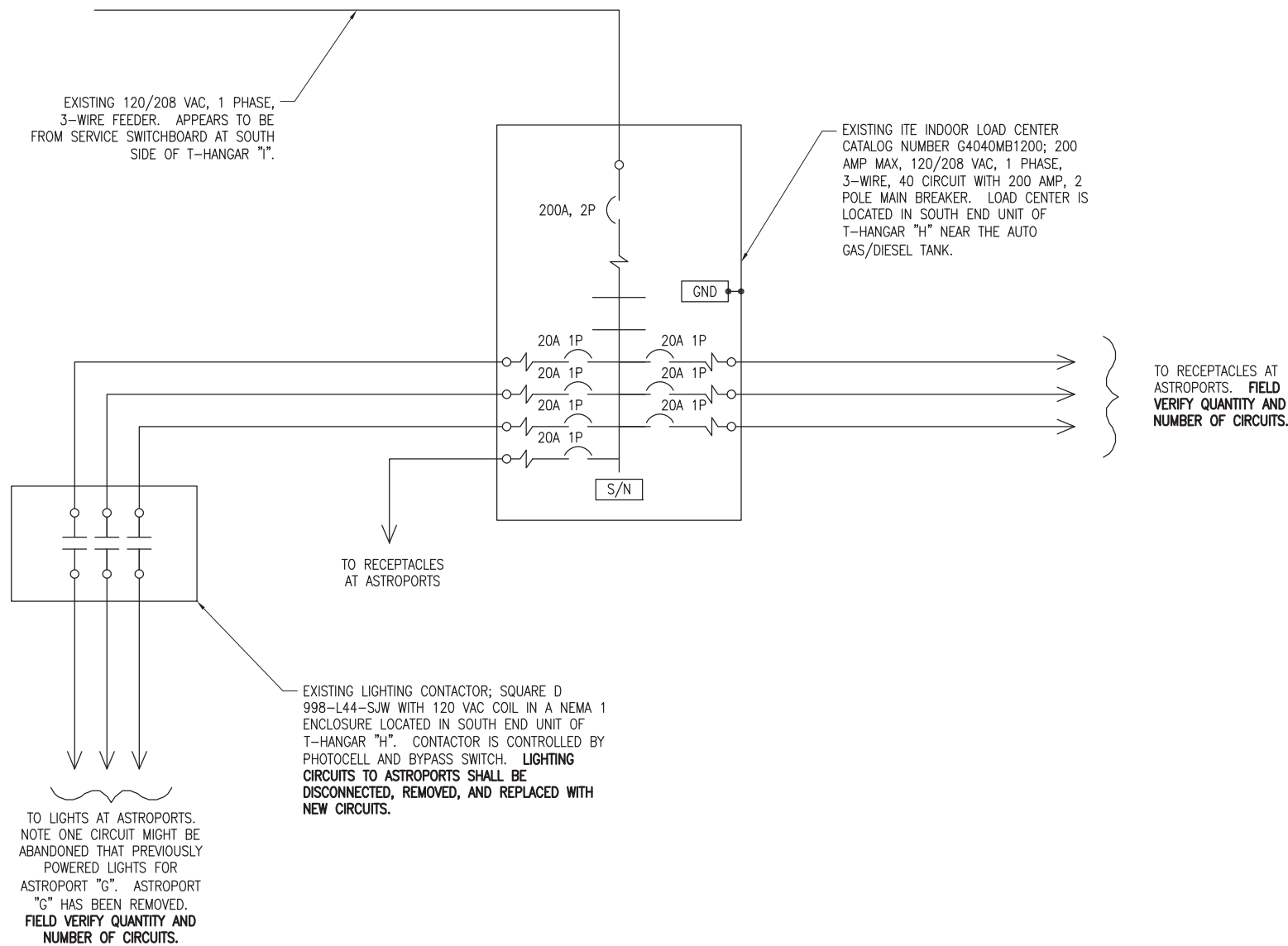
EMERGENCY SHUTOFF PLACARD DETAIL
NOT TO SCALE

NOTE:

- 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.
- 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 ARC-FLASH HAZARD WARNING.

LEGEND PLATE SCHEDULE	
DEVICE	LABEL
EXISTING MAIN BREAKER IN MAIN DISTRIBUTION LOAD CENTER FOR T-HANGAR "H"	MAIN DISCONNECT
EXISTING MAIN DISTRIBUTION LOAD CENTER IN T-HANGAR "H"	T-HANGAR "H" MAIN DIST. PANEL 120/208 VAC, 1 PH, 3-W FED FROM MAIN SERVICE SWITCHBOARD
EXISTING CONTACTOR PANEL FOR FUEL DISPENSING PUMPS SHUT OFF CONTROL LOCATED IN SOUTH END UNIT OF T-HANGAR "H"	AUTO GAS/DIESEL FUEL DISPENSERS CONTACTORS

PROPOSED ELECTRICAL ONE-LINE DIAGRAM FOR FUEL DISPENSERS



EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR ASTROPORTS E & F

NOTES:

1. EXISTING ONE-LINE DIAGRAM WIRING IS BASED ON FIELD DATA AND INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND WIRING AND REPORT ANY VARIATIONS TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN.
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. 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, RELOCATING, DISCONNECTING OR CONNECTING THE RESPECTIVE FUEL SYSTEM EQUIPMENT, OR OTHER DEVICE.
4. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
5. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
6. NOTE THE T-HANGAR "H" BUILDING HAS APPARENT (NATIONAL ELECTRICAL CODE) VIOLATIONS WHICH MIGHT CAUSE UNSAFE WORKING CONDITIONS. APPARENT NEC VIOLATIONS INCLUDE, BUT ARE NOT LIMITED TO, MAIN DISCONNECT NOT IDENTIFIED, NO GROUNDING ELECTRODE CONNECTIONS TO MAIN DISTRIBUTION PANEL/LOAD CENTER, POWER SOURCE NOT IDENTIFIED, & ABANDONED CIRCUITS THAT MIGHT BE ENERGIZED. CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING AT THIS SITE.
7. EXISTING BRANCH CIRCUITS FROM T-HANGAR "H" LOAD CENTER TO ASTROPORTS SHALL BE DISCONNECTED, REMOVED AND REPLACED WITH NEW 60 AMP, 120/208 VAC, 1 PHASE, 3-WIRE WITH GROUND FEEDER CIRCUITS.
8. ALL ELECTRICAL WORK, ELECTRICAL DEMOLITION, AND REMOVAL, ASSOCIATED WITH THE ASTROPORTS WILL BE PAID FOR UNDER ITEM AR109924 REPLACE ELECTRIC SERVICES PER LUMP SUM.

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

JO023

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		DES	DWN	REV

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DESIGN BY: KNL 10/12/16
DRAWN BY: LDH 10/13/16
REVIEWED BY: SJM 12/2/16

SHEET TITLE

EXISTING ELECTRICAL ONE-LINE FOR ASTROPORTS

ASTROPORT LOAD CENTER SCHEDULE (TYP. FOR 2)

CKT #	DUTY	SIZE	SIZE	DUTY	CKT #
1	RECEPTACLES NORTH ROW	20A 1P	20A 1P	LIGHTS	2
3	RECEPTACLES SOUTH ROW	20A 1P	20A 1P	SPARE	4
5	SPARE	20A 1P	20A 1P	SPARE	6
7	SPARE	20A 1P	15A 1P	SPARE	8
9	BLANK			BLANK	10
11	BLANK			BLANK	12



100 AMP (MINIMUM), 120/240 VAC, 1 PHASE, 3 WIRE, 12 CIRCUIT LOAD CENTER WITH A 50 AMP, 2 POLE MAIN BREAKER RATED 22,000 AIC AT 120/240 VAC IN A NEMA 3R RAINPROOF ENCLOSURE; SQUARE D CLASS 1130, CAT. NO. QO112L125GRB WITH QOM50VH, 50 AMP, 2 POLE MAIN BREAKER, COVER, AND PK9GTA EQUIPMENT GROUND BAR KIT, OR APPROVED EQUAL. BRANCH BREAKERS SHALL HAVE 10,000 AIC RATING AT 120/240 VAC.

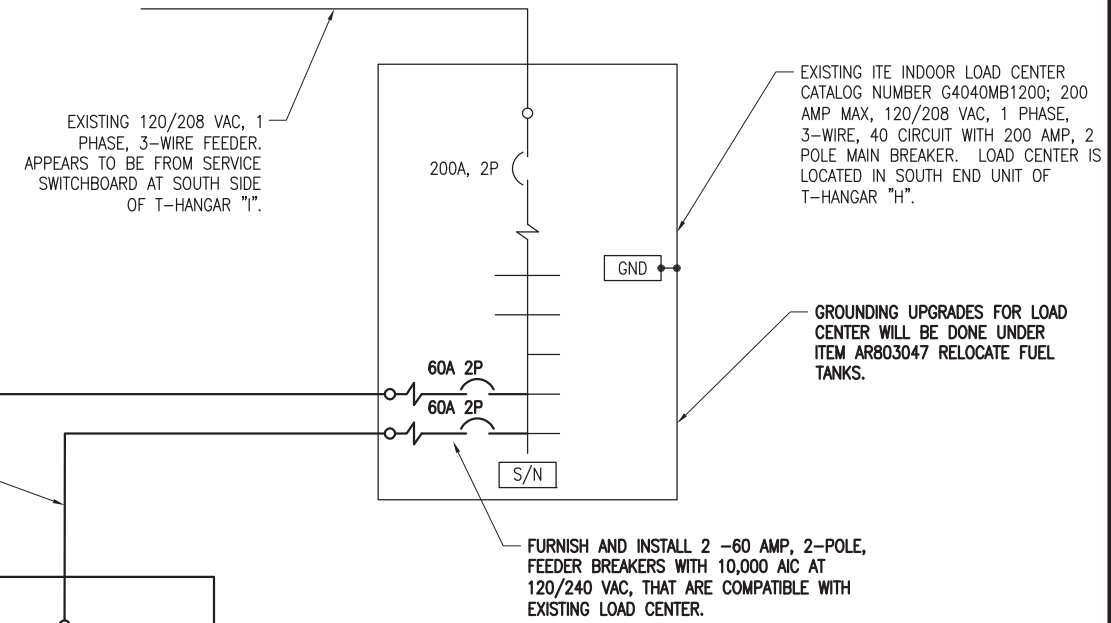
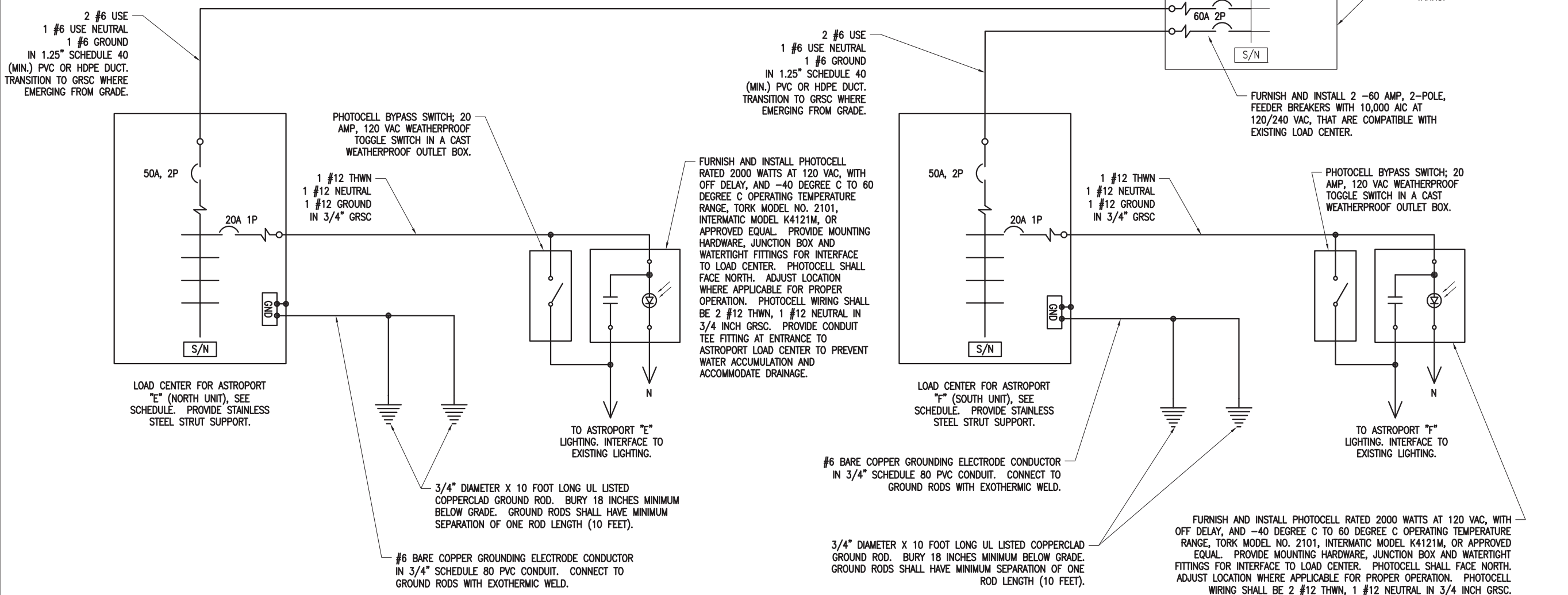
NOTES

- FURNISH & INSTALL A LOAD CENTER FOR EACH ASTROPORT ("E" - NORTH UNIT & "F" - SOUTH UNIT). INSTALL LOAD CENTERS SUCH THAT THE TOP OF ENCLOSURE IS NOMINALLY 5' ABOVE FINISHED GRADE.
- PROVIDE LEGEND PLATES FOR RESPECTIVE LOAD CENTERS LABELED "ASTROPORT "E" LOAD CENTER FED FROM T-HANGAR "H" LOAD CENTER" AND "ASTROPORT "F" LOAD CENTER FED FROM T-HANGAR "H" LOAD CENTER". VERIFY LABELING AND T-HANGAR NUMBERING WITH OWNER. FURNISH ADDITIONAL LEGEND PLATES LABELED "120/208 VAC, 1 PH, 3W" FOR EACH LOAD CENTER.
- BRANCH CIRCUIT CONDUCTORS FOR 15 AMP AND 20 AMP CIRCUITS IN EACH ASTROPORT SHALL BE #12 AWG THWN COPPER (MINIMUM).
- LOAD CENTERS SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. PROVIDE CERTIFICATION OF MANUFACTURE IN THE UNITED STATES WITH SHOP DRAWING SUBMITTAL.
- RECONNECT THE EXISTING LIGHTING AND RECEPTACLE BRANCH CIRCUITS TO EACH NEW LOAD CENTER. PROVIDE GRSC, BOXES, FITTINGS, AND THWN WIRING TO INTERFACE TO EXISTING CIRCUITS.

NOTES

- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70-NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTION 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.
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- PER NEC 513 THE ENTIRE AREA OF THE HANGAR INCLUDING ANY ADJACENT AND COMMUNICATING AREAS NOT SUITABLY CUT OFF FROM THE HANGAR, SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 HAZARDOUS LOCATION UP TO A LEVEL 18 INCHES ABOVE THE FLOOR. PER NEC 513.3(C) "VICINITY OF AIRCRAFT", THE AREA WITHIN 5 FT. HORIZONTALLY FROM AIRCRAFT POWER PLANTS OR AIRCRAFT FUEL TANKS SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 LOCATION THAT SHALL EXTEND UPWARD FROM THE FLOOR TO A LEVEL 5 FT. ABOVE THE UPPER SURFACE OF WINGS AND OF ENGINE ENCLOSURES. ALL ELECTRICAL INSTALLATIONS IN CLASSIFIED HAZARDOUS LOCATIONS SHALL BE AVOIDED UNLESS SPECIFICALLY APPROVED FOR SUCH LOCATIONS AND INSTALLED IN CONFORMANCE WITH NEC 500, 501, AND 513 AS WELL AS OTHER APPLICABLE CODES AND REQUIREMENTS.
- ALL EQUIPMENT NOT LABELED AS EXISTING IS NEW.
- ALL ELECTRICAL WORK ASSOCIATED WITH THE ASTROPORTS WILL BE PAID FOR UNDER ITEM AR109924 REPLACE ELECTRIC SERVICES PER LUMP SUM.



T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

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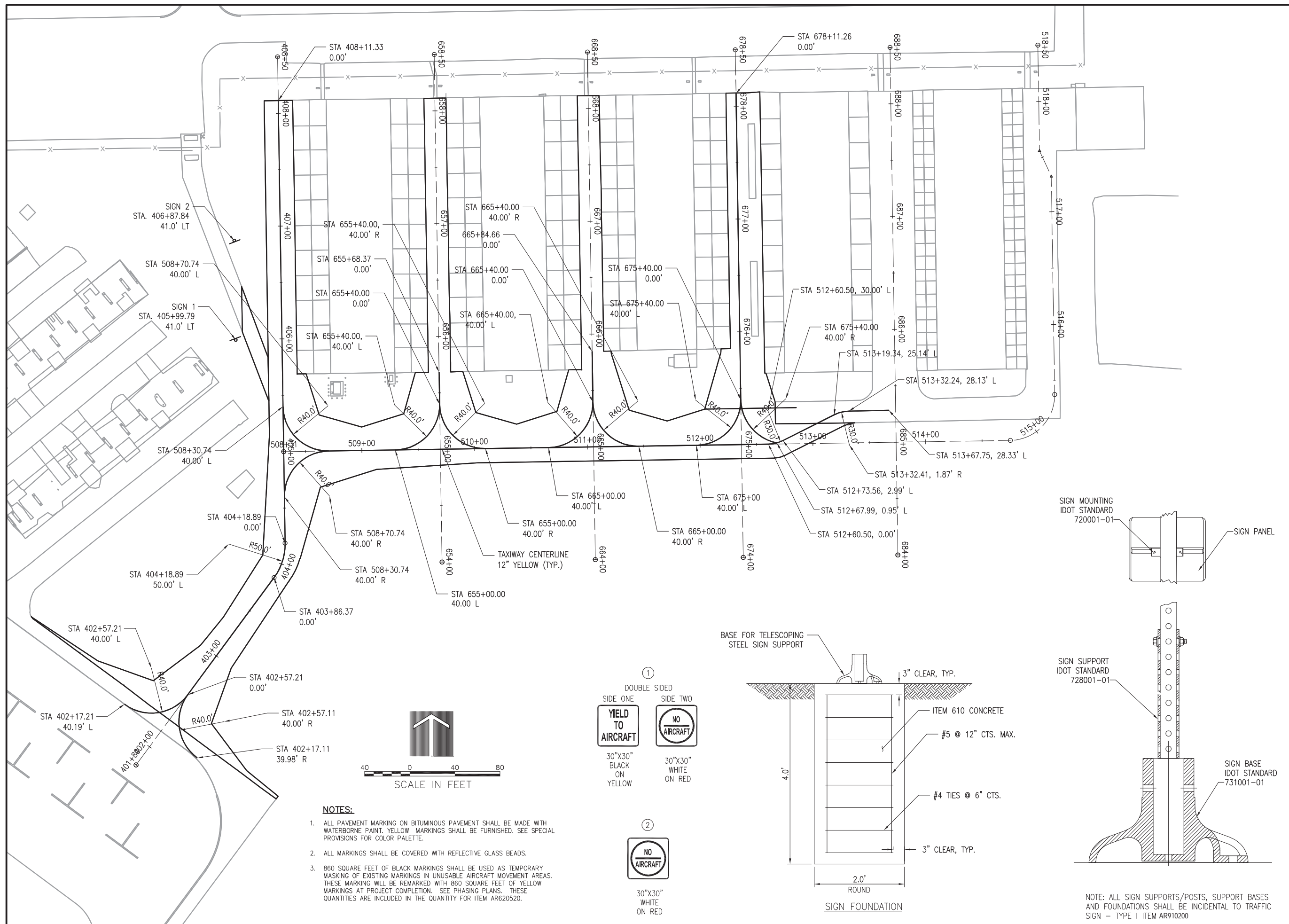
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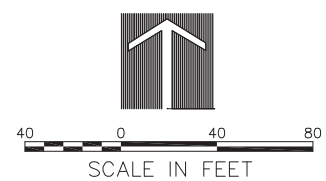
SHEET TITLE

PROPOSED ELECTRICAL ONE-LINE FOR ASTROPORTS

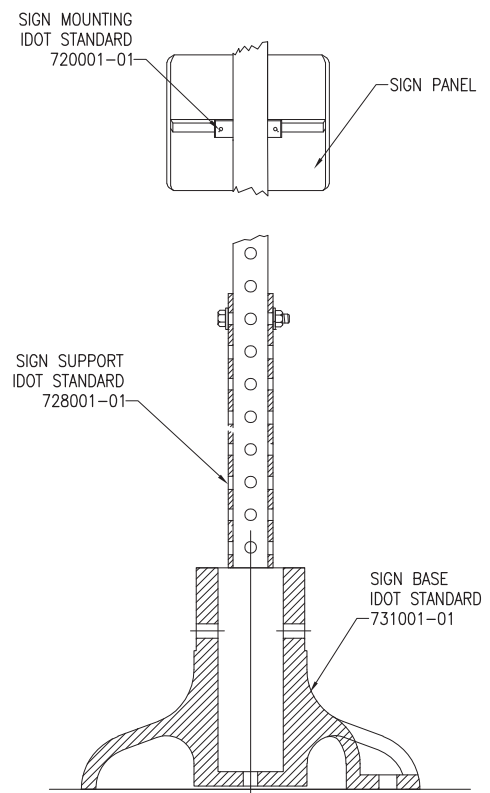
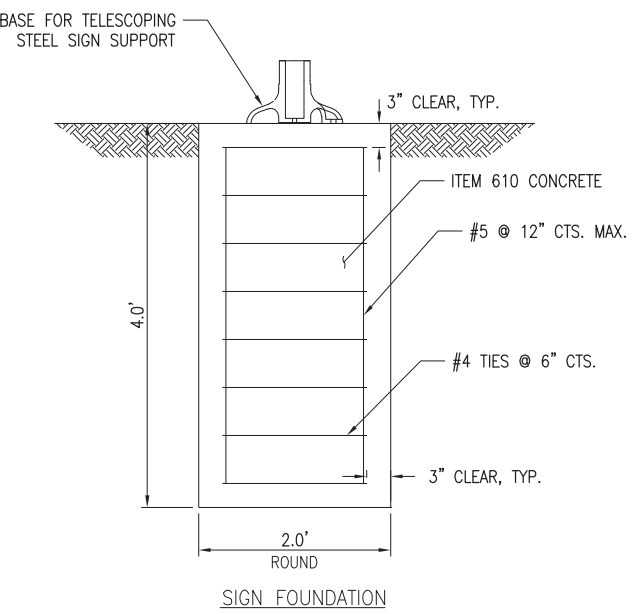
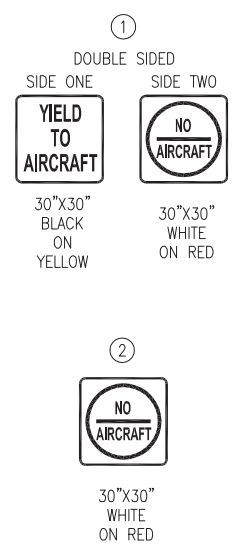
EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR ASTROPORTS E & F



APR 24, 2017 2:35 PM HANSON00682
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- NOTES:**
- ALL PAVEMENT MARKING ON BITUMINOUS PAVEMENT SHALL BE MADE WITH WATERBORNE PAINT. YELLOW MARKINGS SHALL BE FURNISHED. SEE SPECIAL PROVISIONS FOR COLOR PALETTE.
 - ALL MARKINGS SHALL BE COVERED WITH REFLECTIVE GLASS BEADS.
 - 860 SQUARE FEET OF BLACK MARKINGS SHALL BE USED AS TEMPORARY MASKING OF EXISTING MARKINGS IN UNUSABLE AIRCRAFT MOVEMENT AREAS. THESE MARKING WILL BE REMARKED WITH 860 SQUARE FEET OF YELLOW MARKINGS AT PROJECT COMPLETION. SEE PHASING PLANS. THESE QUANTITIES ARE INCLUDED IN THE QUANTITY FOR ITEM AR620520.



NOTE: ALL SIGN SUPPORTS/POSTS, SUPPORT BASES AND FOUNDATIONS SHALL BE INCIDENTAL TO TRAFFIC SIGN - TYPE I ITEM AR910200

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

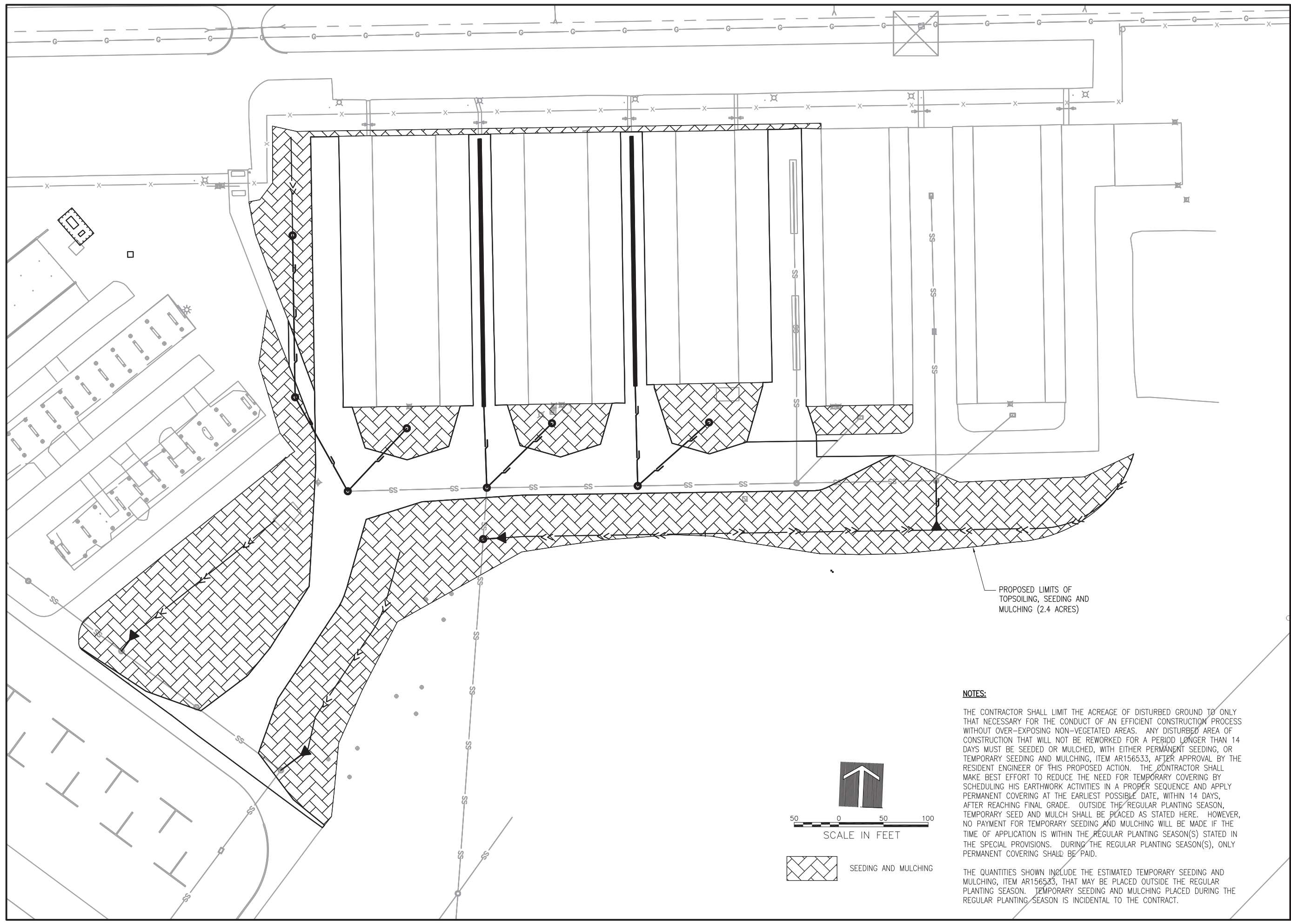
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REVIEWED BY: SJM 12/2/16

SHEET TITLE

MARKING AND SIGNAGE PLAN



PROPOSED LIMITS OF
TOPSOILING, SEEDING AND
MULCHING (2.4 ACRES)

NOTES:

THE CONTRACTOR SHALL LIMIT THE ACREAGE OF DISTURBED GROUND TO ONLY THAT NECESSARY FOR THE CONDUCT OF AN EFFICIENT CONSTRUCTION PROCESS WITHOUT OVER-EXPOSING NON-VEGETATED AREAS. ANY DISTURBED AREA OF CONSTRUCTION THAT WILL NOT BE REWORKED FOR A PERIOD LONGER THAN 14 DAYS MUST BE SEEDED OR MULCHED, WITH EITHER PERMANENT SEEDING, OR TEMPORARY SEEDING AND MULCHING, ITEM 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 SEEDING AND MULCHING WILL BE MADE IF THE TIME OF APPLICATION IS WITHIN THE REGULAR PLANTING SEASON(S) STATED IN THE SPECIAL PROVISIONS. DURING THE REGULAR PLANTING SEASON(S), ONLY PERMANENT COVERING SHALL BE PAID.

THE QUANTITIES SHOWN INCLUDE THE ESTIMATED TEMPORARY SEEDING AND MULCHING, ITEM 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.

**T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4**

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

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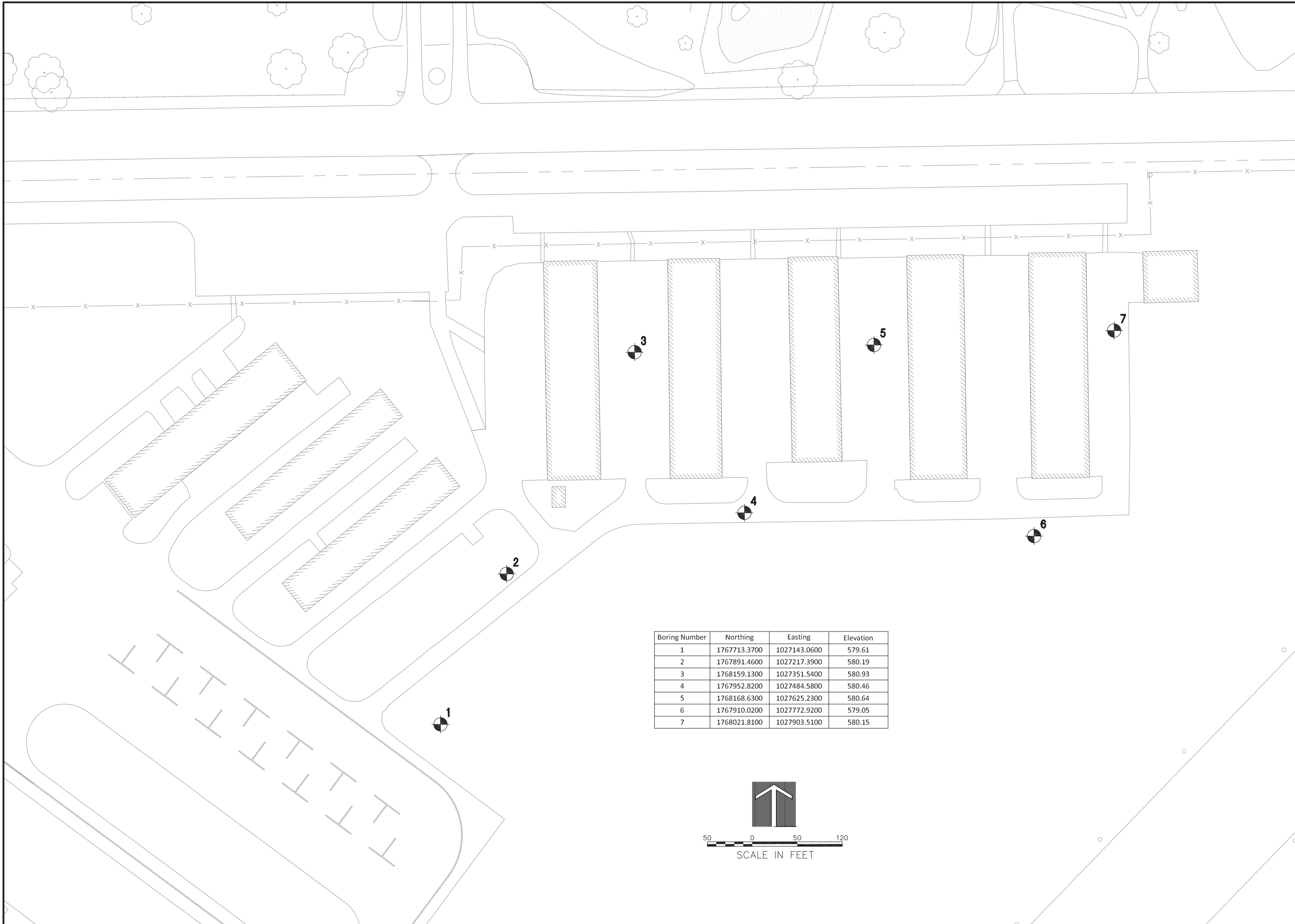
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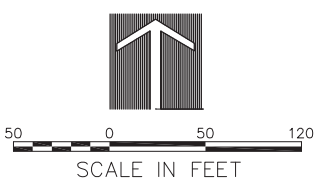
SHEET TITLE

**LANDSCAPING
PLAN**

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Boring Number	Northing	Easting	Elevation
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2	1767891.4600	1027217.3900	580.19
3	1768159.1300	1027351.5400	580.93
4	1767952.8200	1027484.5800	580.46
5	1768168.6300	1027625.2300	580.64
6	1767910.0200	1027772.9200	579.05
7	1768021.8100	1027903.5100	580.15



**T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4**

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

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**BORING
LOCATION PLAN**

**T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4**

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
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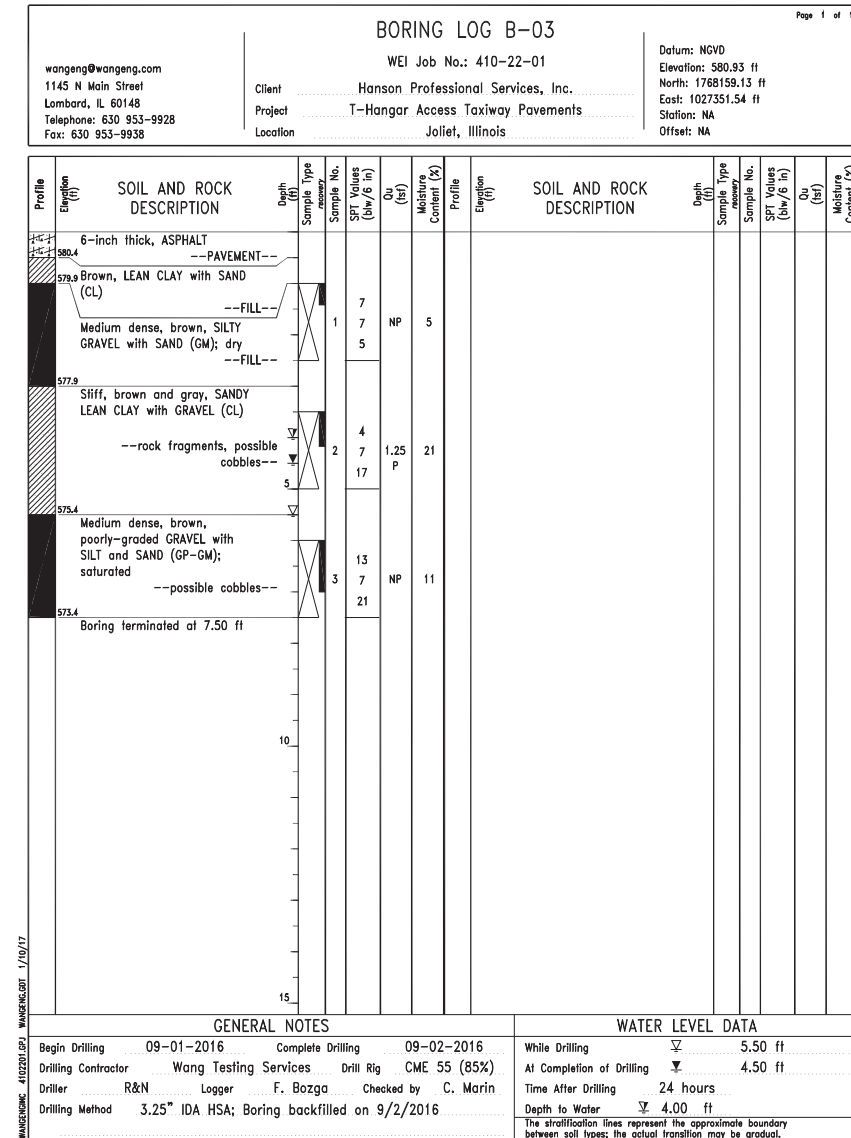
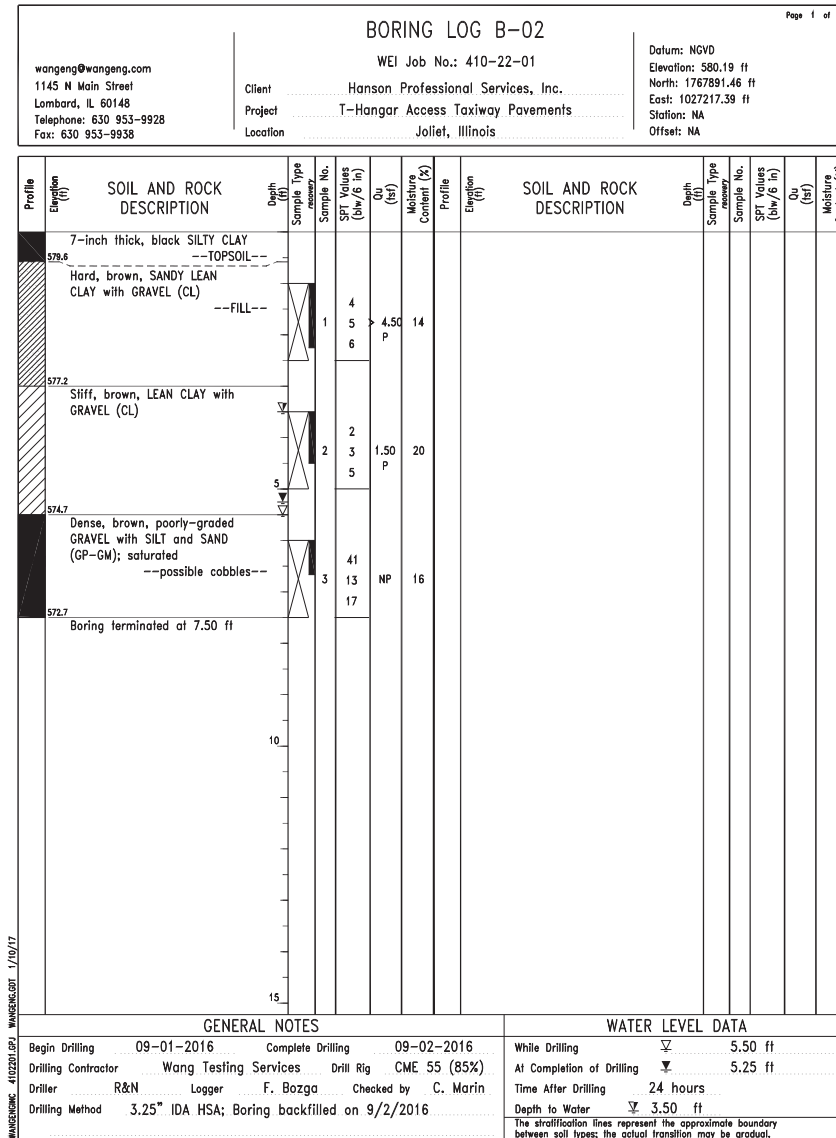
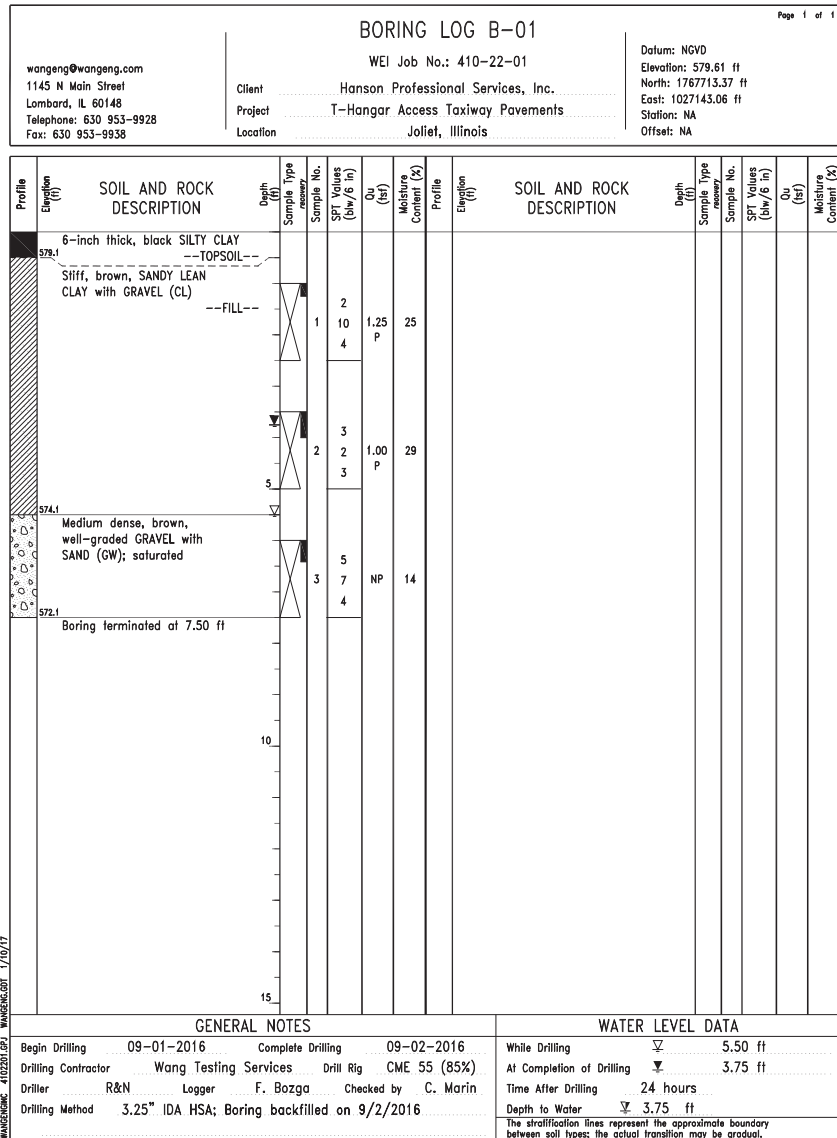
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SHEET TITLE

**BORING LOGS
B-1 THRU B-3**



T-HANGAR TAXILANE
REHABILITATION AND
WIDENING: TH/5, TH/6,
TH/6-1, TH/6-2, TH/6-3
AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
 3-17-SBGP-120
 3-17-SBGP-133

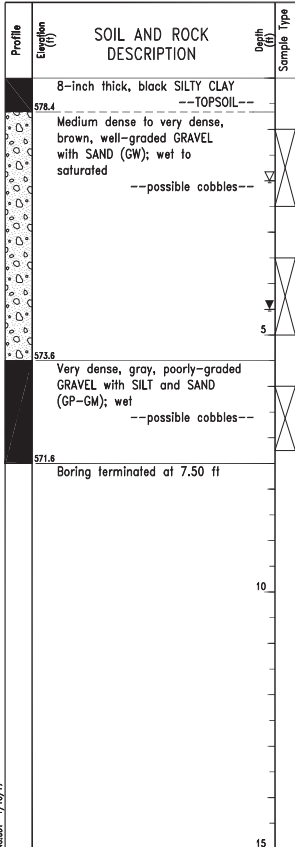
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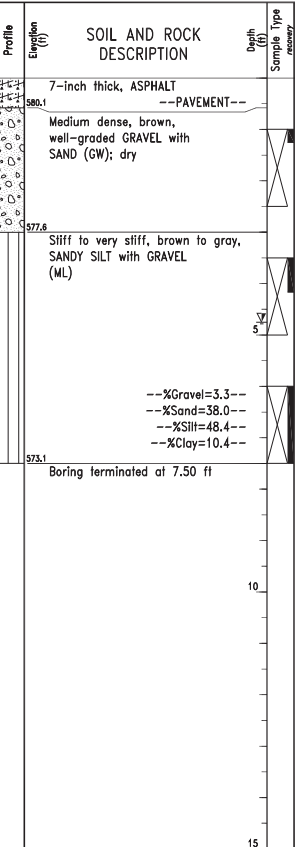
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		DES	DWN	REV

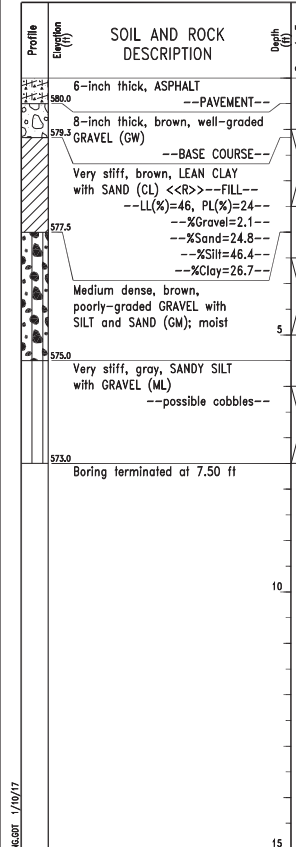
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SHEET TITLE

BORING LOGS
B-4 THRU B-6

BORING LOG B-06		Page 1 of 1																																																																																					
wangeng@wangeng.com 1145 N Main Street Lombard, IL 60148 Telephone: 630 953-9928 Fax: 630 953-9938	WEI Job No.: 410-22-01 Client: Hanson Professional Services, Inc. Project: T-Hangar Access Taxiway Pavements Location: Joliet, Illinois	Datum: NGVD Elevation: 580.64 ft North: 1768168.63 ft East: 1027625.23 ft Station: NA Offset: NA																																																																																					
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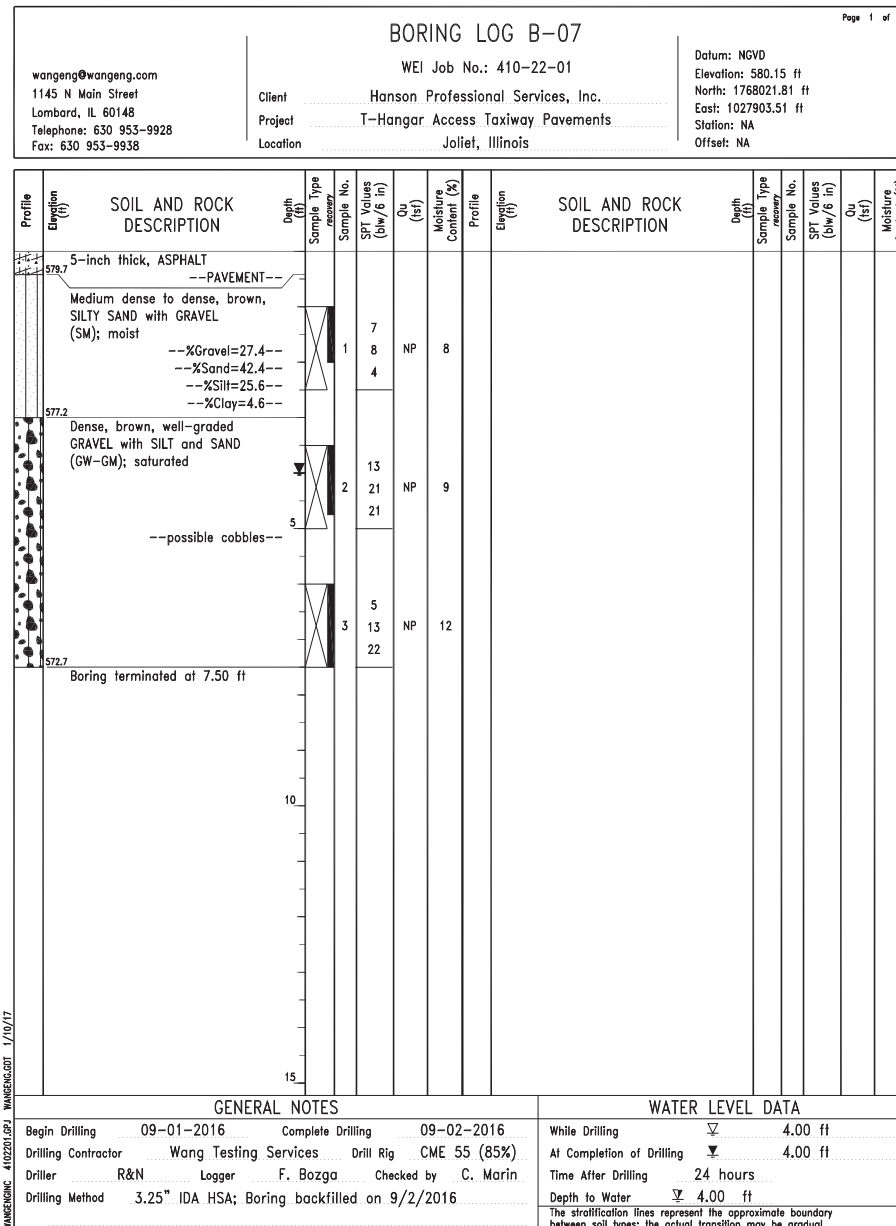
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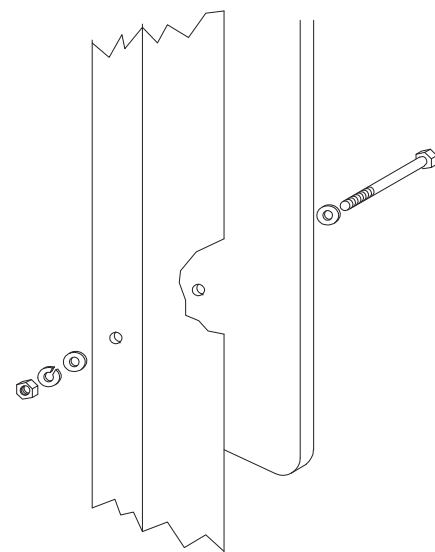
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 67-B7.DWG
DESIGN BY: LDH 10/15/16
DRAWN BY: LDH 10/15/16
REVIEWED BY: SJM 12/2/16

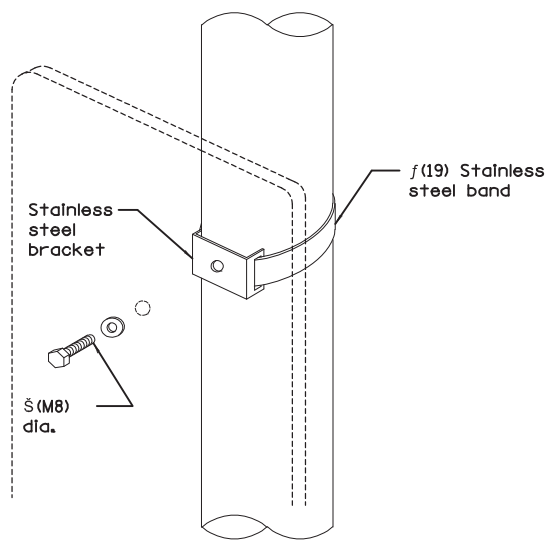
SHEET TITLE

BORING LOG
B-7



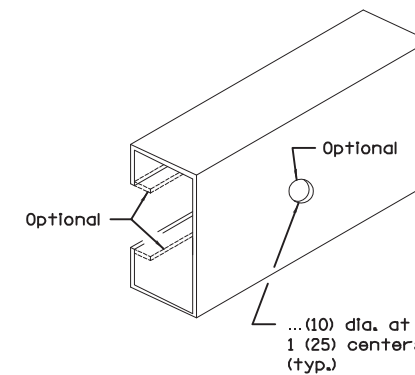
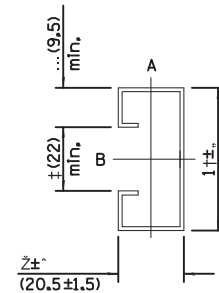


Sign panel 36 (900) wide or less

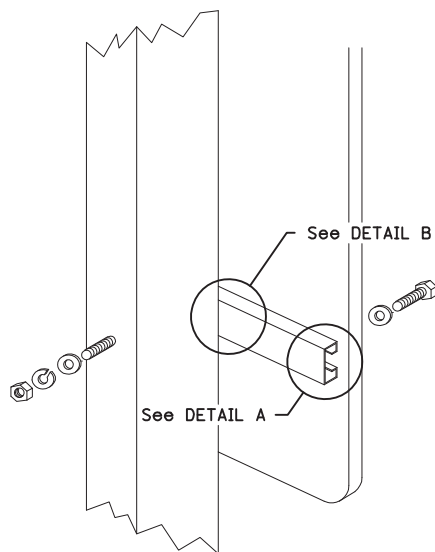


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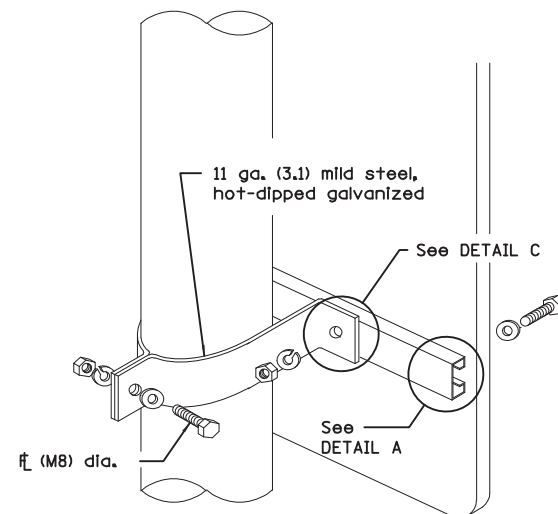
Section modulus (minimum)	Axis A	Axis B
Steel	0.050 in. ³ (819 mm ³)	0.105 in. ³ (1720 mm ³)
Aluminum	0.150 in. ³ (2458 mm ³)	0.315 in. ³ (5162 mm ³)



SUPPORTING CHANNEL DETAILS



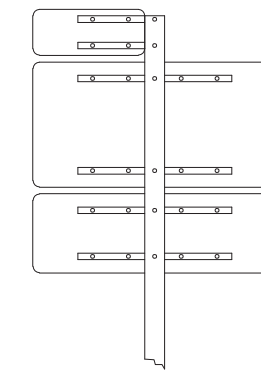
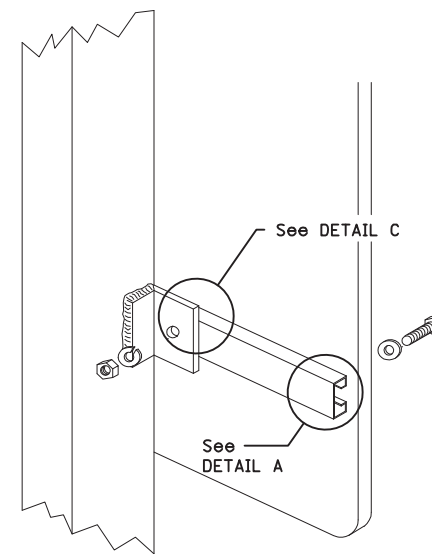
Sign panel over 36 (900) wide



Sign panel over 36 (900) wide

WOOD OR TELESCOPING STEEL POSTS

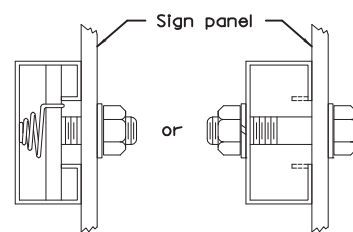
LIGHT OR SIGNAL STANDARDS



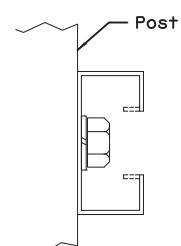
ROUTE MARKER ASSEMBLY

BREAKAWAY STEEL TUBING POSTS
(All sign panel sizes)

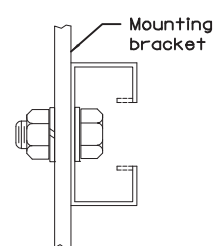
All dimensions are in inches (millimeters) unless otherwise shown.



DETAIL A



DETAIL B



DETAIL C

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-97	Renum. Standard 2319-6.

SIGN PANEL MOUNTING DETAILS

STANDARD 720001-01

Illinois Department of Transportation

APPROVED January 1, 2009

ENGINEER OF OPERATIONS

APPROVED January 1, 2009

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

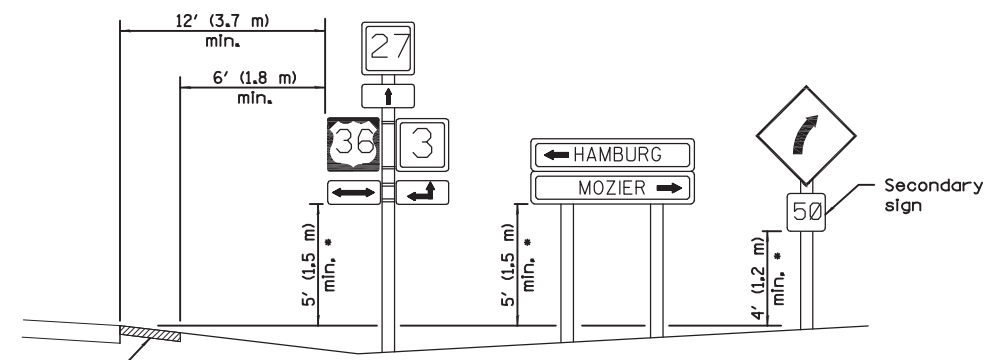
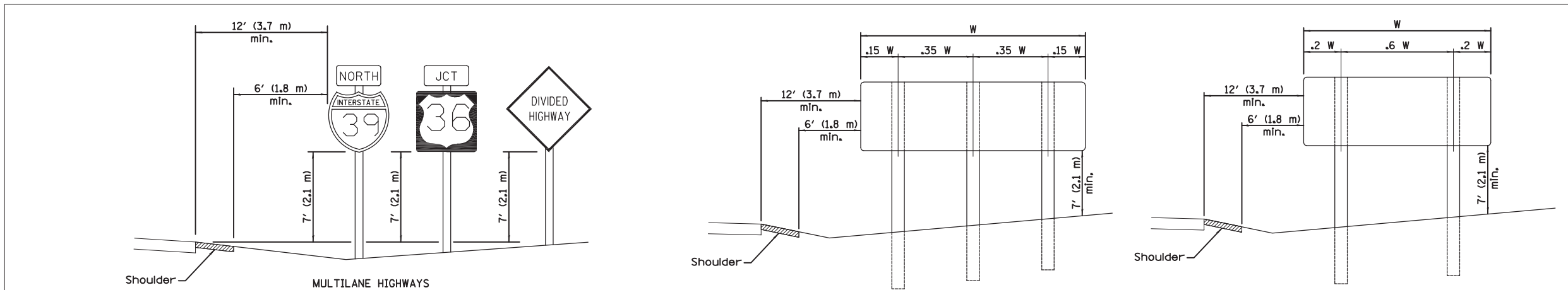
JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

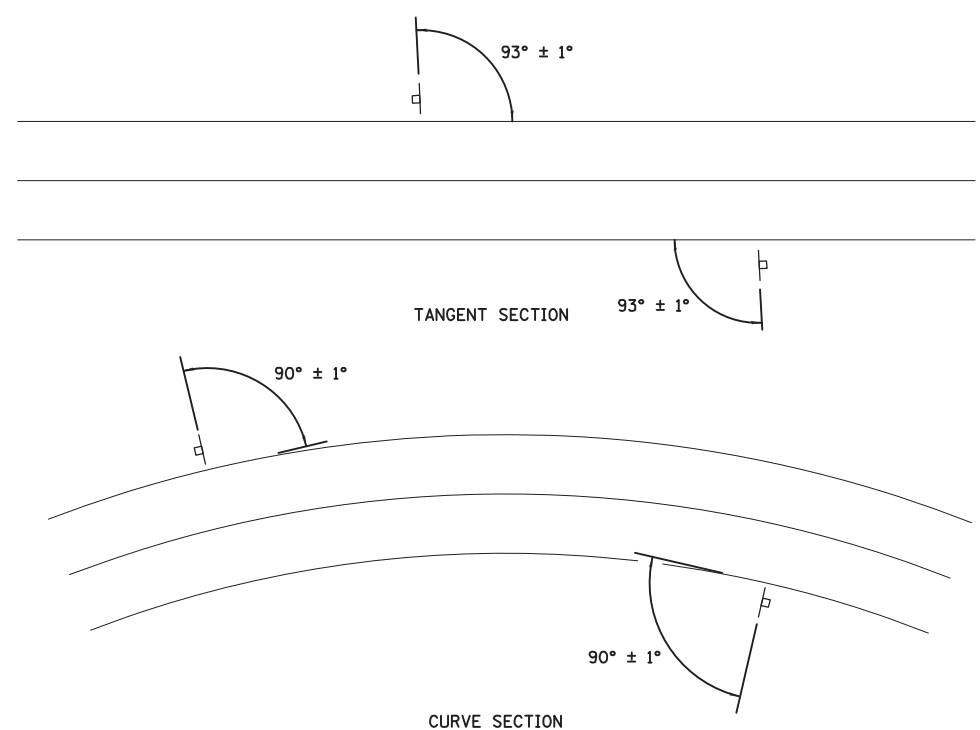
ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 68-SIGNSTD.DWG
DESIGN BY: LDH 4/24/17
DRAWN BY: LDH 4/24/17
REVIEWED BY: SJM 12/2/16

SHEET TITLE

SIGN STANDARDS

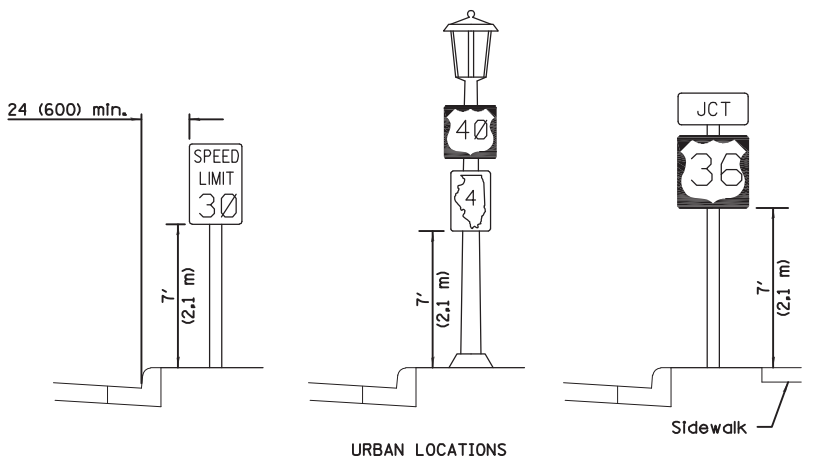


*In any area where parking is likely to occur or where there are obstructions to view or where signs are located over sidewalks, the height shall be at least 7' (2.1 m).



GROUND MOUNT SIGN POSITIONING

All dimensions are in inches (millimeters) unless otherwise shown.



TYPICAL INSTALLATIONS

Signs in any area shall be erected to a uniform height above the edge of the pavement.

Illinois Department of Transportation

APPROVED January 1, 2014
 ENGINEER OF OPERATIONS
 APPROVED January 1, 2014
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-17

DATE	REVISIONS
1-1-14	Added shoulders and slopes. Changed sign distances from roadway and shoulder.
1-1-12	Rev. sign elev. for multilane hwy's. Revised sign elev. and dist. to curb for rural loc.

SIGN PANEL ERECTION DETAILS

STANDARD 720006-04

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
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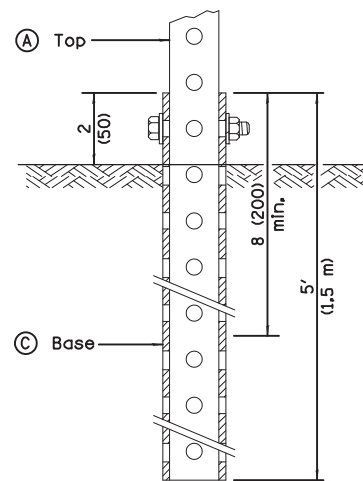
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 DRAWN BY: LDH 4/24/17
 REVIEWED BY: SJM 12/2/16

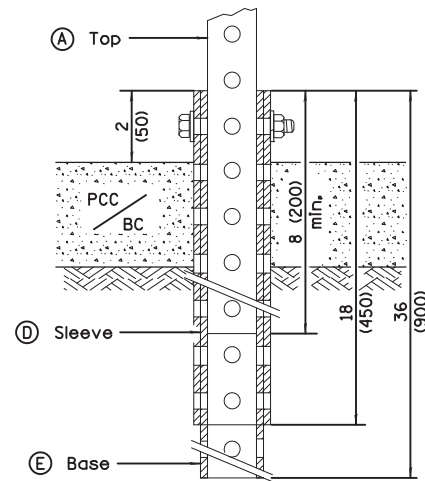
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SIGN STANDARDS

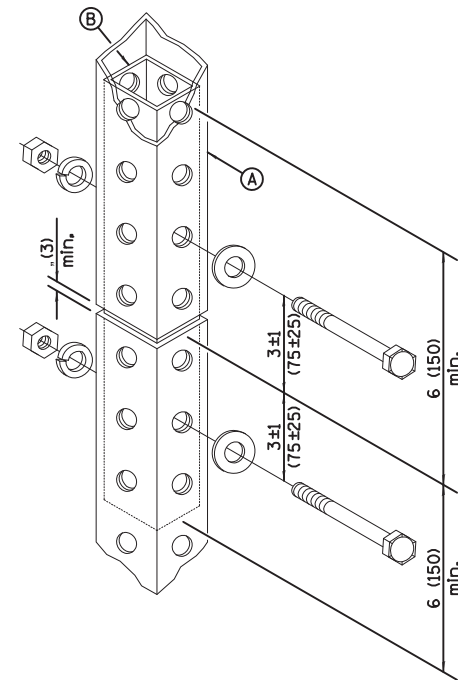
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GROUND MOUNT DETAIL



PAVEMENT MOUNT DETAIL



SPICE DETAIL

(A)	2 x 2 x var. (51 x 51 var.)
(B)	1 1/2 x 1 1/2 x 12 (44 x 44 x 300)
(C)	2 1/2 x 2 1/2 x 60 (57 x 57 x 1500)
(D)	2 1/2 x 2 1/2 x 18 (64 x 64 x 450)
(E)	2 1/2 x 2 1/2 x 36 (57 x 57 x 900)

GENERAL NOTES

All bolts ... (M10) hex head zinc or cadmium plated.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-07	New Standard. Used to be part of Standard 720006.

TELESCOPING STEEL SIGN SUPPORT

STANDARD 720001-01

Illinois Department of Transportation	
APPROVED January 1, 2009	ISSUED 7-10-11 03/ISS
ENGINEER OF OPERATIONS	
APPROVED January 1, 2009	
ENGINEER OF DESIGN AND ENVIRONMENT	

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

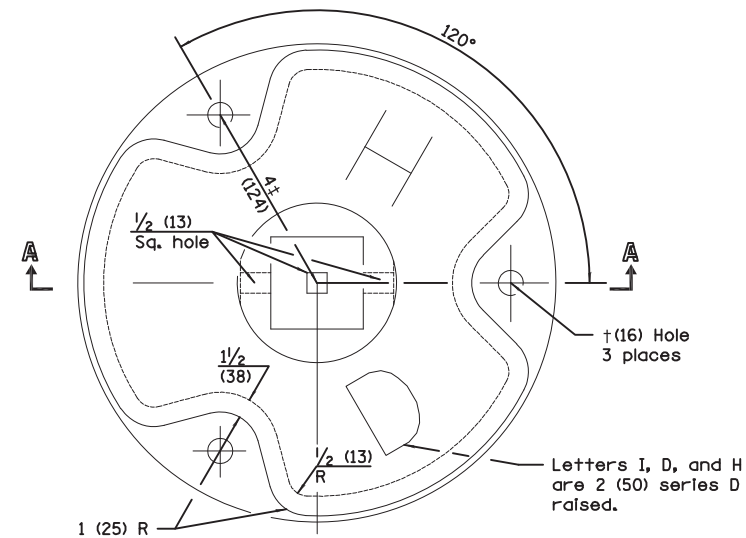
JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

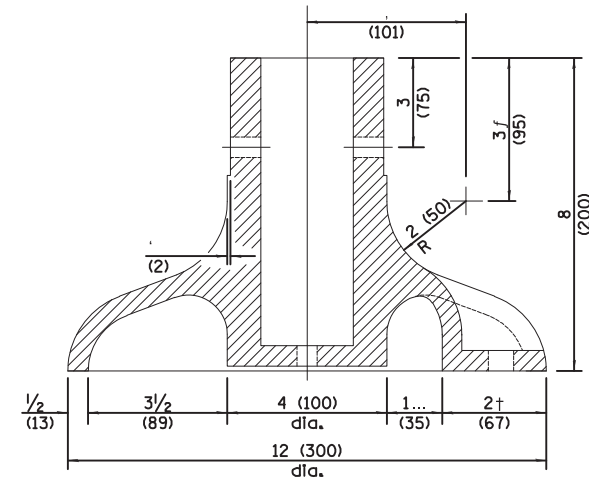
ISSUE: April 21, 2017
PROJECT NO: 15A0062
CAD FILE: 70-SIGNSTD.DWG
DESIGN BY: LDH 4/24/17
DRAWN BY: LDH 4/24/17
REVIEWED BY: SJM 12/2/16

SHEET TITLE

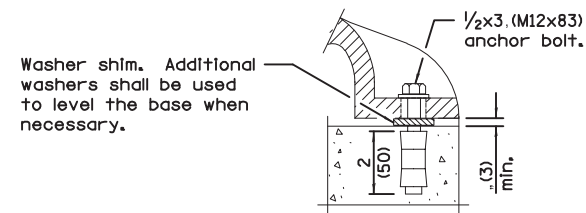
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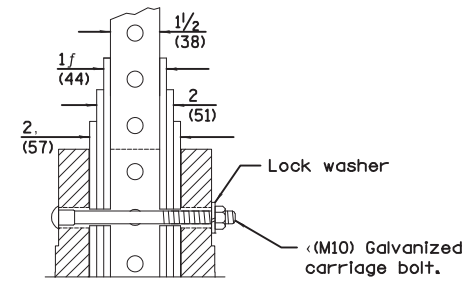
PLAN



SECTION A-A



ANCHOR BOLT DETAIL



POST ASSEMBLY DETAIL

Washer shim. Additional washers shall be used to level the base when necessary.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation	
APPROVED January 1, 2009	ISSUED 7-1-07
ENGINEER OF OPERATIONS	
APPROVED January 1, 2009	
ENGINEER OF DESIGN AND ENVIRONMENT	

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-07	New Standard. Used to be part of Standard 720006.

BASE FOR TELESCOPING STEEL SIGN SUPPORT

STANDARD 731001-01

T-HANGAR TAXILANE REHABILITATION AND WIDENING: TH/5, TH/6, TH/6-1, TH/6-2, TH/6-3 AND TH/6-4

IDA No: JOT-4313
SBGP Nos: 3-17-SBGP-111
3-17-SBGP-120
3-17-SBGP-133

JO023

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: April 21, 2017
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SHEET TITLE

SIGN STANDARDS