

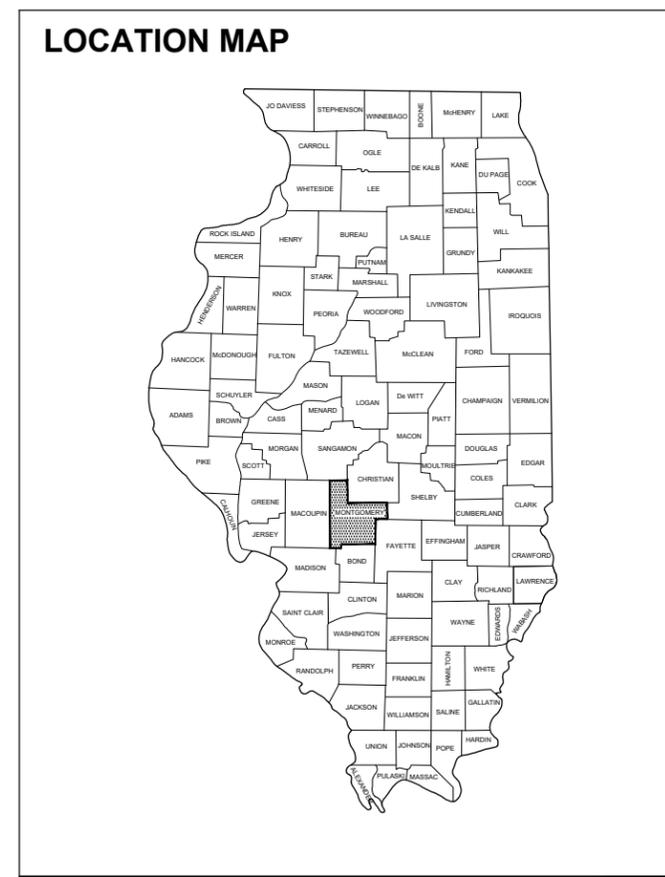
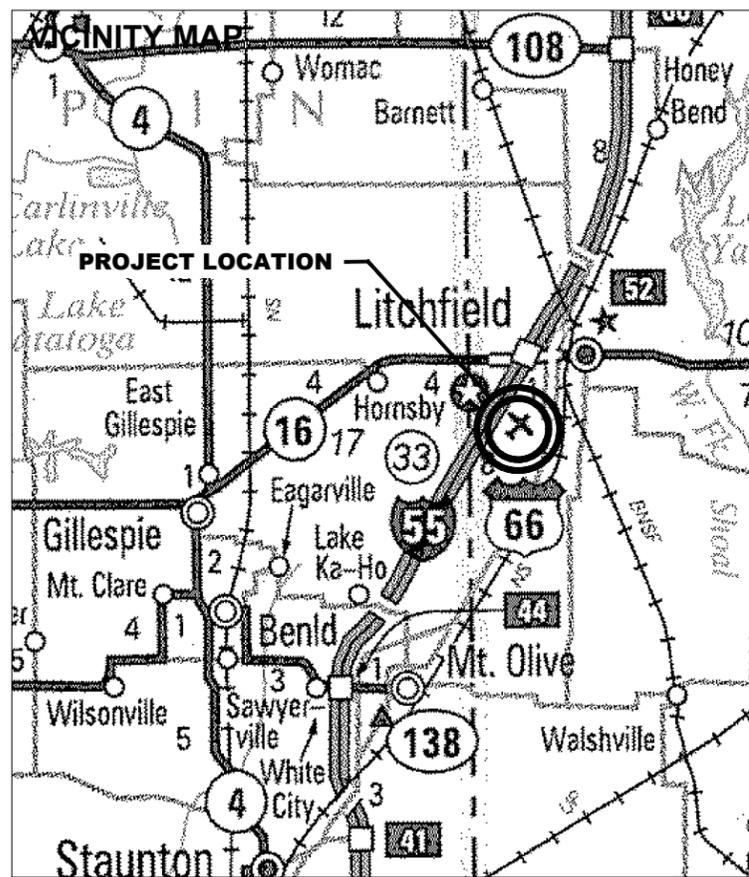
CONSTRUCTION PLANS

EXTEND PARTIAL PARALLEL TAXIWAY B AND RELATED LIGHTING/ELECTRICAL FROM EXISTING END TO RUNWAY 9 TURNAROUND

LITCHFIELD AIRPORT AUTHORITY
LITCHFIELD MUNICIPAL AIRPORT (3LF)
LITCHFIELD, MONTGOMERY COUNTY, ILLINOIS

IDA PROJECT NO.: 3LF-4819
FAA AIP PROJECT : 3-17-SBGP-144/156/162

NOVEMBER 20, 2020



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.

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No.	Issue/Description	Sheets Changed	Date	By

COVERING ELECTRICAL DESIGN

Kevin N. Lightfoot
Kevin N. Lightfoot, P.E.
Electrical Engineer
Lic. Exp. 11/30/2021

NOVEMBER 20, 2020
Date

HANSON
HANSON PROFESSIONAL SERVICES INC.
1525 South Sixth Street
Springfield, Illinois 62703-2886
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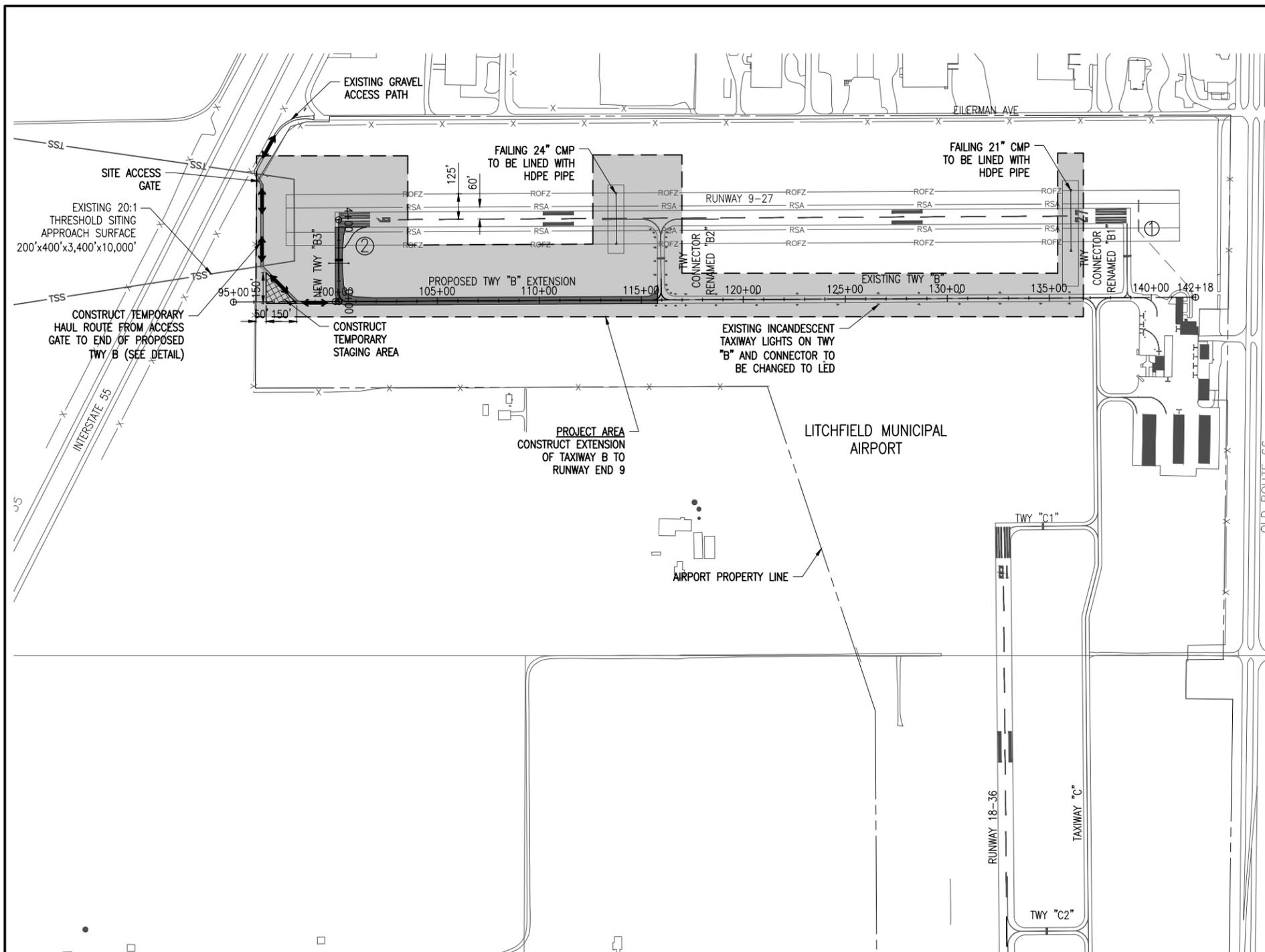
Kyle B. Schweizer
Kyle B. Schweizer, P.E.
Project Engineer
Lic. Exp. 11/30/2021

NOVEMBER 20, 2020
Date

Litchfield Airport Authority
P. O. Box 381
Litchfield, Illinois 62056

Nic Weatherford
Nic Weatherford,
Airport Manager

NOVEMBER 20, 2020
Date



SCOPE OF WORK

1. THIS PROJECT CONSISTS OF EXTENDING EXISTING PARTIAL PARALLEL TAXIWAY B TO RUNWAY END 9. WORK ITEMS SHALL INCLUDE, BUT ARE NOT LIMITED TO, UNCLASSIFIED EXCAVATION AND GRADING, LIME STABILIZATION OF THE SUBGRADE, INSTALLATION OF UNDERDRAINS AND DRAINAGE STRUCTURES, CRUSHED AGGREGATE BASE COURSE, ASPHALT PAVING, PAVEMENT MARKING, TURFING AND EROSION CONTROL, EXTENSION OF THE TAXIWAY EDGE LIGHTING SYSTEM AND SIGNAGE. ADDITIONALLY TWO FAILING CORRUGATED METALLIC PIPE CULVERTS BENEATH RUNWAY 9-27 WILL BE RE-LINED WITH HDPE PIPE..

GENERAL

1. THE LITCHFIELD MUNICIPAL AIRPORT IS A NON-TOWER CONTROLLED GENERAL AVIATION AIRPORT COMPRISED OF TWO PAVED RUNWAYS.
2. THE PROPOSED CONSTRUCTION WILL REQUIRE THE CLOSURE OF TAXIWAY B FOR THE PROJECT DURATION, AND THE TEMPORARY CLOSURE OF RUNWAY 9-27. RUNWAY 18-36 SHALL REMAIN OPEN AT ALL TIMES.
3. WHEN OPEN DURING PHASE 1, THE RUNWAY 9 APPROACH WILL BE TEMPORARILY REDUCED VIA NOTAM TO VISUAL-ONLY.
4. THE CONTRACTOR IS NOT PERMITTED TO USE THE AIRPORT ENTRANCE DRIVE AND AUTO PARKING LOT FOR MATERIAL AND EQUIPMENT HAULING OR STORAGE. THE CONSTRUCTION ENTRANCE AS SHOWN ON THE SCOPE OF WORK AND/OR SAFETY PHASING PLAN ARE ONLY TO BE USED FOR THE PROJECT. ACCESS TO THE PROJECT FOR ALL HAULING OF MATERIALS AND EQUIPMENT SHALL BE RESTRICTED TO THE DESIGNATED CONSTRUCTION ENTRANCE UNLESS OTHERWISE AUTHORIZED BY THE AIRPORT MANAGER..

AIRFIELD SAFETY

1. AIRFIELD SAFETY SHALL BE HELD PARAMOUNT AT ALL TIMES. ANY INDIVIDUALS RESPONSIBLE FOR INCURSIONS OR POTENTIAL INCURSIONS WITH AIR TRAFFIC DUE TO NON-COMPLIANCE WITH REQUIREMENTS SET FORTH IN THESE PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND FAA ADVISORY CIRCULAR 150/5370-2 (CURRENT EDITION) WILL BE SUBJECT TO AN IMMEDIATE SUSPENSION OF DRIVING PRIVILEGES ON THE AIRPORT OR A COMPLETE RESTRICTION FROM ENTERING THE AIR OPERATIONS AREA ALTOGETHER. THE AIRPORT MANAGER OR RESIDENT ENGINEER/TECHNICIAN MAY STOP THE WORK AT ANY TIME THEY BELIEVE AIRFIELD SAFETY IS BEING COMPROMISED.
2. AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES. ONLY CONTRACTOR EMPLOYEES SHALL BE ALLOWED WITHIN THE PROJECT LIMITS. GATES SHALL BE CLOSED AT ALL TIMES UNLESS THE CONTRACTOR IS IN A CONTINUOUS HAULING OPERATION.
3. RADIO CONTROL - THE CONTRACTOR WILL BE REQUIRED TO BE IN TWO-WAY RADIO CONTACT WITH THE AIRPORT UNICOM (122.80 MHz) ANY TIME THERE ARE WORKERS OR EQUIPMENT ON THE AIRFIELD.

SURVEY NOTES

1. ALL COORDINATE VALUES SHOWN IN TABLE ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD-83 (2011). ALL ELEVATIONS ARE REFERENCED TO NAVD 88.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT AND ANY EXTENSION OF THE CONTROL NETWORK NEEDED TO PROPERLY COMPLETE THE WORK.

LITCHFIELD MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731

EXTEND PARTIAL PARALLEL TAXIWAY B & RELATED LIGHTING/ELECTRICAL FROM EXISTING END TO RWY 9 TURNAROUND

IDA No: 3LF-4819
SBG NO.
3-17-SBGP-144/156/162
Contract No. LI039

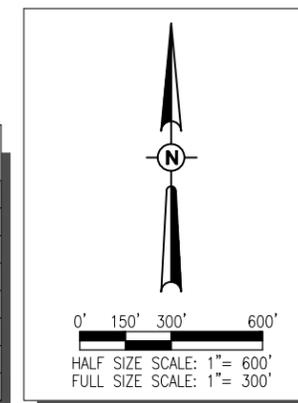
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/20/2020 (For Bid)
PROJECT NO: 20A0040
CAD FILE: C-101-SOW.DWG
DESIGN BY: KBS 09/15/2020
DRAWN BY: HLE 09/15/2020
REVIEWED BY: KBS 11/20/2020

ALIGNMENT DATA				
ALIGNMENT	LOCATION	STATION	NORTHING	EASTING
TAXIWAY B	BEGIN	95+00.00	910,550.33	2,432,963.91
	END	142+17.50	910,573.82	2,437,681.35
TAXIWAY B3	BEGIN	0+00.00	910,552.91	2,433,481.40
	END	4+00.00	910,952.90	2,433,479.41

CONTROL POINT DATA				
POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
①	"LIPORT" NGS PT, STEEL ROD IN 5" LOGO CAP	910,853.98	2,433,591.55	679.81'
②	"LITPORT AZ MK NGS PT, STEEL ROD IN 5" LOGO CAP	910,877.69	2,437,462.58	688.51'

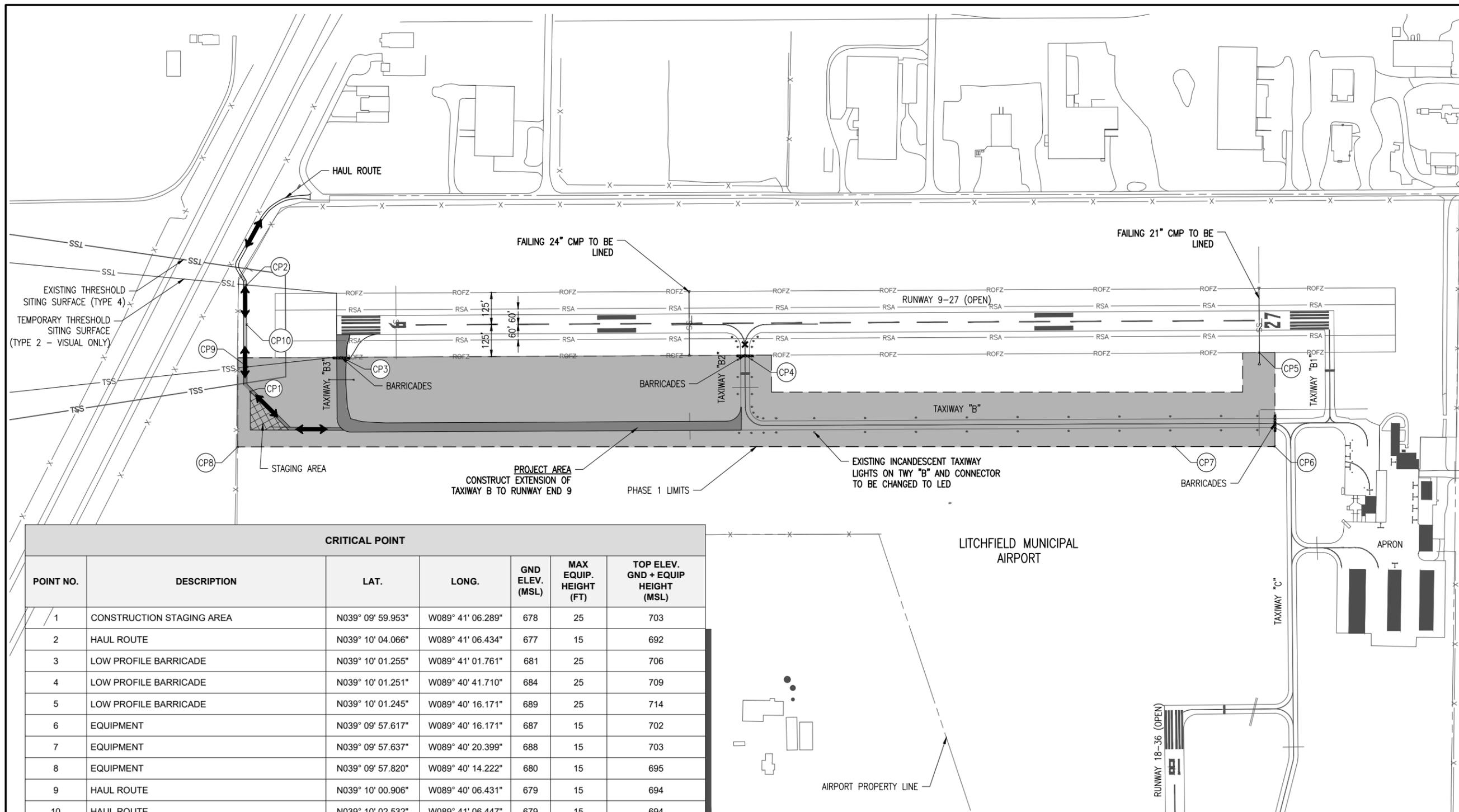
EXISTING	PROPOSED	LEGEND
		RUNWAY SAFETY AREA (RSA)
		RUNWAY OBSTACLE FREE ZONE (ROFZ)
		THRESHOLD SITING SURFACE (TSS)
		AIRPORT PROPERTY LINE
		AIRPORT IMPROVEMENTS
		PROJECT AREA
		STAGING AREA
		TEMPORARY HAUL ROUTE / ACCESS ROUTE



SCOPE OF WORK AND SAFETY PLAN

LITCHFIELD MUNICIPAL AIRPORT

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 Litchfield, IL 62056
 Phone: (217) 324-4731



CRITICAL POINT						
POINT NO.	DESCRIPTION	LAT.	LONG.	GND ELEV. (MSL)	MAX EQUIP. HEIGHT (FT)	TOP ELEV. GND + EQUIP HEIGHT (MSL)
1	CONSTRUCTION STAGING AREA	N039° 09' 59.953"	W089° 41' 06.289"	678	25	703
2	HAUL ROUTE	N039° 10' 04.066"	W089° 41' 06.434"	677	15	692
3	LOW PROFILE BARRICADE	N039° 10' 01.255"	W089° 41' 01.761"	681	25	706
4	LOW PROFILE BARRICADE	N039° 10' 01.251"	W089° 40' 41.710"	684	25	709
5	LOW PROFILE BARRICADE	N039° 10' 01.245"	W089° 40' 16.171"	689	25	714
6	EQUIPMENT	N039° 09' 57.617"	W089° 40' 16.171"	687	15	702
7	EQUIPMENT	N039° 09' 57.637"	W089° 40' 20.399"	688	15	703
8	EQUIPMENT	N039° 09' 57.820"	W089° 40' 14.222"	680	15	695
9	HAUL ROUTE	N039° 10' 00.906"	W089° 40' 06.431"	679	15	694
10	HAUL ROUTE	N039° 10' 02.532"	W089° 41' 06.447"	679	15	694

PHASE 1 NOTES

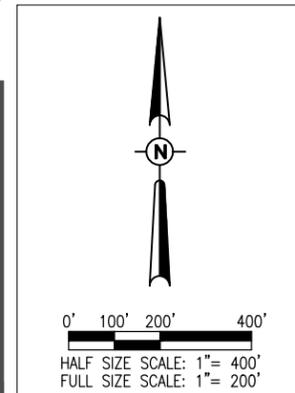
WORK TO BE COMPLETED:

INITIAL WORK OUTSIDE OF RUNWAY 9-27 OBSTACLE FREE ZONE (ROFZ - MORE THAN 125' AWAY FROM RUNWAY CENTERLINE), INCLUDING: HAUL ROUTE/STAGING AREA CONSTRUCTION; UNCLASSIFIED EXCAVATION AND GRADING; LIME STABILIZATION OF THE SUBGRADE; UNDERDRAIN INSTALLATION; DRAINAGE PIPE AND STRUCTURES.

AIRFIELD CLOSURES AND CHANGES:

1. RUNWAY 9/27 AND RUNWAY 18/36 WILL REMAIN OPEN. THE RUNWAY 9 APPROACH WILL BE REDUCED TO "VISUAL ONLY" PER NOTAM.
2. TAXIWAY B WEST OF THE APRON, ALONG WITH CONNECTORS B2 AND B3 WILL BE CLOSED.
3. RUNWAY 9/27 WILL BE CLOSED PER PHASE 2 ONCE GRADING, DRAINAGE, UNDERDRAINS, AND LIME STABILIZATION WORK HAS BEEN COMPLETED.

EXISTING	PROPOSED	LEGEND
---	---	RUNWAY SAFETY AREA (RSA)
---	---	RUNWAY OBSTACLE FREE ZONE (OFZ)
---	---	THRESHOLD SITING SURFACE (TSS)
	█	PHASE WORK AREA
	█	PROPOSED PAVEMENT
	█	STAGING AREA (AR150520)
	✕	TEMPORARY RUNWAY CLOSURE CROSS
	✕	TEMPORARY TAXIWAY CLOSURE CROSS
	▨	LOW PROFILE BARRICADE
	↔	TEMPORARY HAUL ROUTE / ACCESS ROUTE (AR150540)



EXTEND PARTIAL PAR TAXIWAY B & RELATED LIGHTING/ELECTRICAL FROM EXISTING END TO RWY 9 TURNAROUND

IDA No: 3LF-4819
 SBG NO.
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NO.	DATE	DESCRIPTION		
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ISSUE: 11/20/2020 (For Bid)
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 DESIGN BY: KBS 09/14/2020
 DRAWN BY: HLE 09/14/2020
 REVIEWED BY: KBS 11/20/2020

CONSTRUCTION PHASING PLAN - PHASE 1

LITCHFIELD MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731

EXTEND PARTIAL PAR
TAXIWAY B & RELATED
LIGHTING/ELECTRICAL
FROM EXISTING END TO
RWY 9 TURNAROUND

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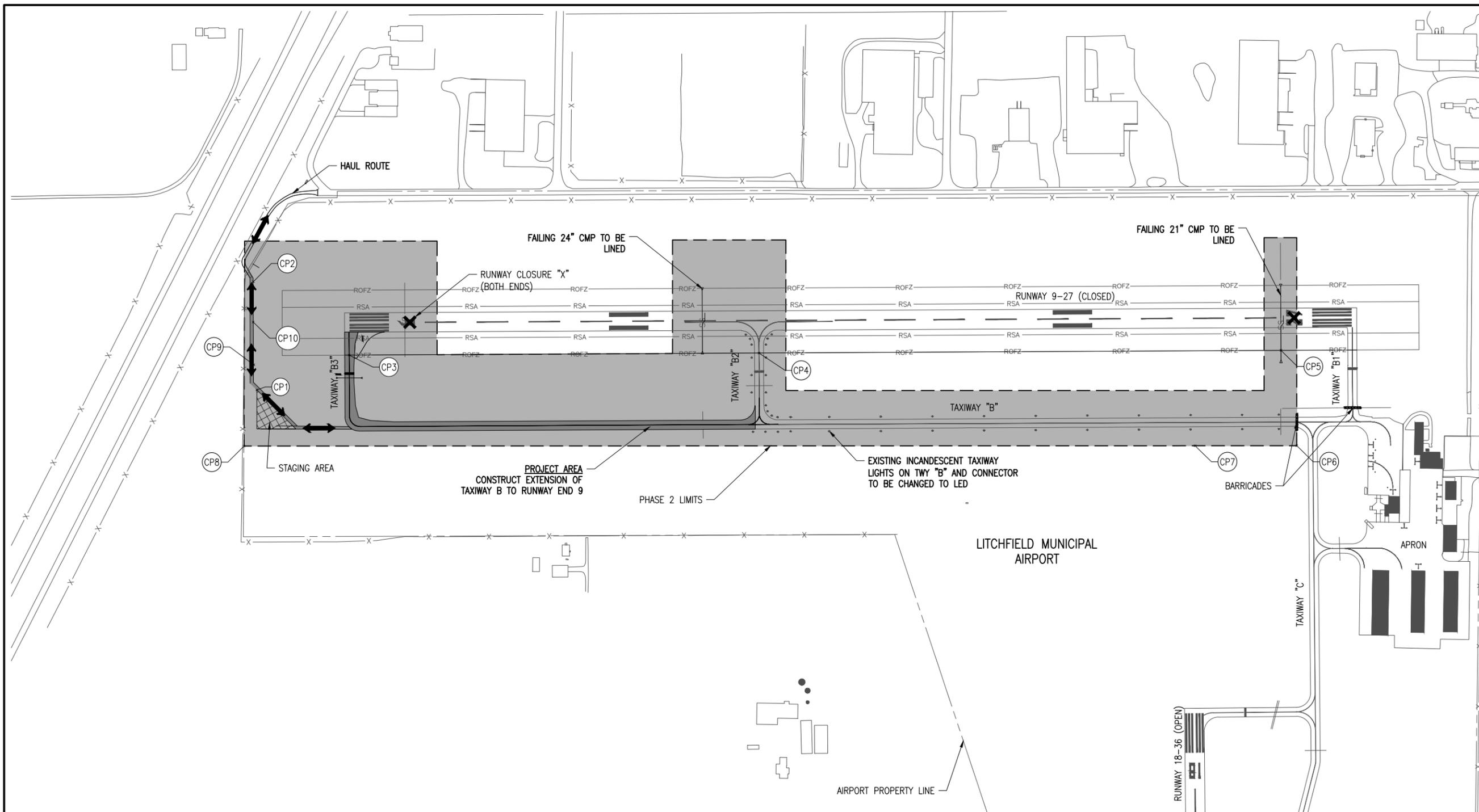
CAD FILE: C-102-CSPPP.DWG

DESIGN BY: KBS 09/14/2020

DRAWN BY: HLE 09/14/2020

REVIEWED BY: KBS 11/20/2020

CONSTRUCTION
PHASING PLAN -
PHASE 2



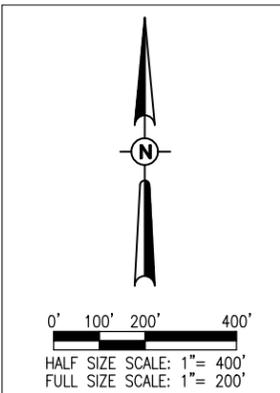
PHASE 2 NOTES

WORK TO BE COMPLETED:
WORK WITHIN THE RUNWAY 9-27 OBSTACLE FREE ZONE (ROFZ - WITHIN 125' OF THE RWY CENTERLINE), AND ALL OTHER REMAINING WORK ITEMS, INCLUDING: PAVEMENT REMOVAL AND MILLING OF THE EXISTING RUNWAY 9 TURNAROUND; AGGREGATE BASE COURSE; ASPHALT PAVING; SEEDING AND MULCHING; PAVEMENT MARKING; HDPE LINING OF RWY 9-27 CORRUGATED METALLIC PIPES; REMOVAL AND RESTORATION OF HAUL ROUTE AND STAGING AREA.

AIRFIELD CLOSURES AND CHANGES:

1. RUNWAY 9/27 WILL BE CLOSED. RUNWAY 18/36 WILL REMAIN OPEN.
2. TAXIWAY B, ALONG WITH CONNECTORS B1, B2, AND B3 WILL BE CLOSED.

EXISTING	PROPOSED	LEGEND
— RSA —		RUNWAY SAFETY AREA (RSA)
— TSS —		THRESHOLD SITING SURFACE (TSS)
— OFZ —		OBSTACLE FREE ZONE (OFZ)
	■	PHASE WORK AREA
	■	PROPOSED PAVEMENT WORK
	■	STAGING AREA (AR150520)
	✕	TEMPORARY RUNWAY CLOSURE CROSS
	✕	TEMPORARY TAXIWAY CLOSURE CROSS
	▨	LOW PROFILE BARRICADE
	↔	TEMPORARY HAUL ROUTE / ACCESS ROUTE (AR150540)



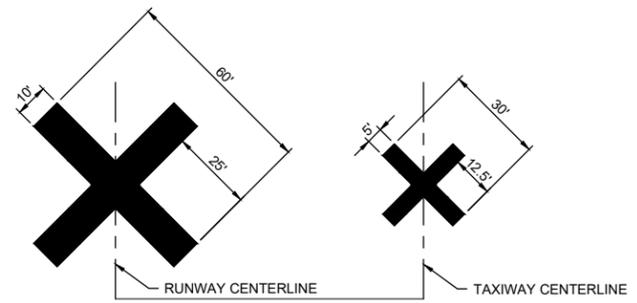
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SAFETY NOTES

- ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2 (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN, OR AS MODIFIED BY THE OWNER THROUGH THE RESIDENT ENGINEER/TECHNICIAN AT THE PRECONSTRUCTION CONFERENCE, OR DURING THE COURSE OF THE CONTRACT.
- THE CONTRACTORS SHALL MINIMIZE DISRUPTION OF STANDARD OPERATING PROCEDURES FOR AERONAUTICAL ACTIVITY BY REMAINING WITHIN THE PRESCRIBED STAGING, CONSTRUCTION, AND PHASING AREAS PRESENTED ON THE CONSTRUCTION SAFETY AND PHASING PLAN SHEETS.
- NO UNAUTHORIZED PERSONNEL SHALL ENTER ANY AREA OF THE AIRPORT THAT COULD POTENTIALLY BE HAZARDOUS. THE AIRPORT MANAGER RESERVES THE RIGHT TO SUSPEND OPERATIONS IN ORDER TO MAINTAIN SAFETY AT THE AIRPORT.
- PRIOR TO ACCESSING THE AIRFIELD, ANY DESIGNATED CONTRACTOR OR SUBCONTRACTOR EMPLOYEES WHO WILL BE OPERATING OR ESCORTING A VEHICLE ON AN ACTIVE AREA OF THE AIRFIELD MUST ATTEND A 1 HOUR AIRFIELD SAFETY TRAINING AND ORIENTATION PROVIDED BY THE AIRPORT. PRIOR TO THE TRAINING, THE EMPLOYEES MUST BE FAMILIAR WITH THE "FAA GUIDE TO GROUND VEHICLE OPERATIONS", AND KEEP A HARD COPY IN THE VEHICLE FOR REFERENCE. THE GUIDE CAN BE FOUND AT: https://www.faa.gov/airports/runway_safety/media/Ground_Vehicle_Guide_Proof_Final.pdf
- NO CONSTRUCTION VEHICLES SHALL BE DRIVEN ACROSS ANY ACTIVE AIRFIELD PAVEMENT AREA WITHOUT AN APPROPRIATE ESCORT. CONSTRUCTION EQUIPMENT OR CONSTRUCTION ACTIVITY WILL NOT BE PERMITTED WITHIN 125' OF ANY ACTIVE RUNWAY CENTERLINE OR WITHIN 66' OF ANY OTHER ACTIVE AIRPORT TAXIWAY OR APRON UNLESS OTHERWISE NOTED.
- CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRECONSTRUCTION CONFERENCE.
- ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A CHECKERBOARD FLAG PROPERLY LOCATED OR A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
- NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 250' OF ANY ACTIVE RUNWAY, WITHIN 66' OF ANY OTHER ACTIVE AIRPORT OPERATIONS AREA, OR PENETRATE A PART 77 IMAGINARY SURFACE (PROVIDED BY THE RESIDENT ENGINEER/TECHNICIAN) EXTENDING OUT AND UPWARDS FROM ALL SIDES OF AN ACTIVE RUNWAY.
- CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION", LATEST EDITION. LIGHTED BARRICADES MUST BE NO TALLER THAN 18" (EXCLUSIVE OF SUPPLEMENTARY LIGHTS AND FLAGS) ON THE TAXIWAYS AND COMPLY WITH ADVISORY CIRCULAR 150/5370-2, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
- OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHOULD BE PROMINENTLY MARKED WITH ORANGE FLAGS AND LIGHTED WITH FLASHING RED LIGHTS DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS.
- NO CONSTRUCTION EQUIPMENT GREATER THAN 25' TALL WILL BE PERMITTED ON THE AIRPORT WITHOUT THE APPROVAL OF THE AIRPORT MANAGER AND ADDITIONAL AIRSPACE APPROVAL BY THE FAA. AIRSPACE APPROVALS REQUIRE CONSIDERABLE LEAD TIME AND SHOULD BE REQUESTED WELL IN ADVANCE.
- NO OPEN FLAME WELDING OR TORCH CUTTING OPERATION IS PERMITTED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER NO FLARE POTS ARE ALLOWED ON THE PROJECT.
- SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRUCKED ONTO AIRPORT ROADS, TAXIWAYS, AND SOD SURFACES, OR WHICH CAN BE BLOWN ONTO SUCH SURFACES, SHALL BE IMMEDIATELY SWEEP, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
- CONTRACTOR SHALL TAKE MEASURES TO AVOID TRACKING BITUMINOUS TACK COAT ASSOCIATED WITH PAVING PROJECTS ONTO ADJACENT PAVEMENT AREAS, ESPECIALLY GROOVED RUNWAY PAVEMENTS, UNLESS SUFFICIENT PROTECTION HAS BEEN APPLIED. HEAVY TRACKING OR DAMAGE TO ADJACENT PAVEMENTS AND GROOVED SURFACES MAY BE CAUSE FOR STOPPING THE WORK UNTIL ACCEPTABLE PROTECTION OR CHANGE IN WORK METHODS HAS BEEN PROVIDED.
- EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND RESIDENT ENGINEER/TECHNICIAN. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS. STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
- ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
- CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE RESIDENT ENGINEER/TECHNICIAN.
- CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.

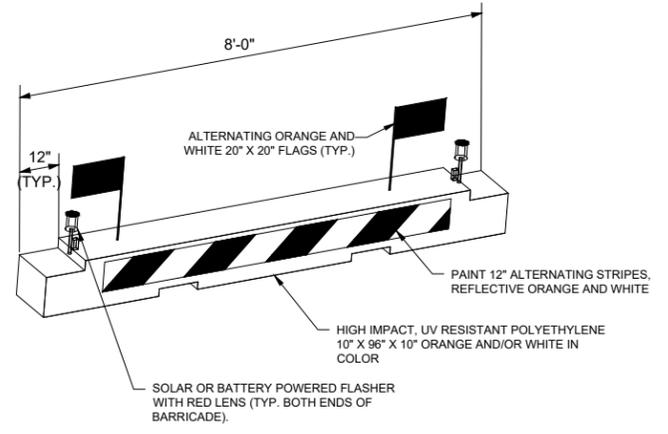
- THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
- CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE RESIDENT ENGINEER/TECHNICIAN AT NO ADDITIONAL COST.
- CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE RESIDENT ENGINEER/TECHNICIAN.
- CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
- THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE RESIDENT ENGINEER/TECHNICIAN AS NECESSARY TO CONTROL DUST.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING MEASURES TO CONTROL OR AVOID CREATING ATTRACTANTS TO WILDLIFE. MEASURES MAY INCLUDE CONTINUOUSLY REMOVING ANY WASTE OR LOOSE MATERIALS, PLACEMENT OF MATERIALS IN APPROPRIATE STORAGE CONTAINERS, PROPERLY MAINTAINING FENCES AND GATES TO PREVENT ACCESS, AND PREVENTING PONDING OF WATER THROUGHOUT THE SITE.
- UNLESS SPECIFIED OTHERWISE, COST FOR SAFETY, STAGING, AND TRAFFIC MAINTENANCE ITEMS IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.
- THE CONTRACTOR SHALL HAVE THE SAFETY PLAN COMPLIANCE DOCUMENT (SPCD), AS DETAILED IN THE SPECIAL PROVISIONS, SUBMITTED AND APPROVED PRIOR TO BEING ISSUED "NOTICE TO PROCEED".
- ALL RUNWAY/TAXIWAY CLOSURES SHALL BE COORDINATED WITH AIRPORT MANAGEMENT A MINIMUM OF 7 DAYS BEFORE THE DESIRED CLOSING TIME TO ALLOW FOR THE PROPER COORDINATION. AIRPORT MANAGEMENT HAS COMPLETE AUTHORITY IN DETERMINING WHEN THE RUNWAY/TAXIWAY MAY BE CLOSED.
- RUNWAY/TAXIWAY CLOSURE PROCEDURES:
 - CONTACT THE AIRPORT MANAGEMENT OR ASSIGNED REPRESENTATIVE A MINIMUM OF 7 DAYS BEFORE THE DESIRED CLOSING TIME.
 - ISSUANCE OF NOTAM AND DEACTIVATION OF THE APPLICABLE AIRFIELD LIGHTING AND NAVAIDS BY THE AIRPORT MANAGEMENT AND/OR FAA.
 - PLACEMENT OF CROSSES AND BARRICADES.
 - ONLY AT THE TIME THAT ALL OF THE ABOVE ARE COMPLETED MAY ANY CONSTRUCTION OPERATIONS BEGIN WITHIN THE RUNWAY/TAXIWAY AIR OPERATIONS AREA.

- RUNWAY/TAXIWAY RE-OPENING PROCEDURES:
- ENSURE ALL PERSONNEL, EQUIPMENT AND MATERIALS ARE CLEAR OF THE AIR OPERATIONS AREA.
 - INSPECT THE AREA FOR LOOSE OR TRACKED DEBRIS, PAVEMENT DROP-OFFS, AND OPEN TRENCHES.
 - CONTACT AIRPORT MANAGEMENT OR REPRESENTATIVE FOR FINAL INSPECTION OF THE AREA.
 - REMOVE BARRICADES AND CROSSES.
 - ACTIVATION OF THE AIRFIELD LIGHTING AND NAVAIDS AND CANCELLATION OF THE NOTAM BY THE AIRPORT MANAGEMENT AND/OR FAA.



TEMPORARY CLOSURE CROSS DETAIL
NOT TO SCALE

- TEMPORARY "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS SHALL BE "AVIATION YELLOW"
- TEMPORARY "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS SHALL BE CONSTRUCTED OF PLYWOOD, DOUBLE-LAYERED SNOW FENCE OR APPROVED FABRIC AND SHALL BE SECURED TO PAVEMENT BY SANDBAGS OR OTHER APPROVED METHOD.
- TEMPORARY "CLOSED RUNWAY" MARKINGS SHALL BE PLACED OVER THE RUNWAY DESIGNATION NUMBERS UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER/TECHNICIAN.
- COST FOR PROVIDING, PLACING, MAINTAINING, RELOCATING AND REMOVING "CLOSED RUNWAY" AND "CLOSED TAXIWAY" MARKINGS SHALL BE INCLUDED AS AN INCIDENTAL COST TO THE CONTRACT, UNLESS OTHERWISE NOTED.



LOW PROFILE AIRCRAFT BARRICADE DETAIL

BARRICADE NOTES

- ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE ILLINOIS SUPPLEMENT (LATEST EDITION) AND THE FAA ADVISORY CIRCULARS (LATEST EDITION) UNLESS NOTED OTHERWISE. THE FAA OR MORE STRINGENT SPECIFICATIONS SHALL GOVERN.
- BARRICADES SHALL BE INTERLOCKED END TO END OVER THE LENGTH OF THE PAVEMENT WHERE PROTECTING OPEN RUNWAYS, AND SPACED END TO END A MAXIMUM OF 4 FEET IN OTHER ALL OTHER AREAS. BARRICADES ARE TO BE SET BACK FROM THE ACTIVE RUNWAY OR TAXIWAY CENTERLINE THE DISTANCE AS SHOWN ON THE PLANS.
- CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
- THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
- BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
- THE ONLY COLOR COMBINATION ON BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
- COST FOR PROVIDING, PLACING, MAINTAINING, RELOCATING AND REMOVING BARRICADES SHALL BE INCLUDED AS AN INCIDENTAL COST TO THE CONTRACT, UNLESS OTHERWISE NOTED.



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 Hanson Professional Services Inc.
 1525 S. Sixth St.
 Springfield, IL 62703
 Phone: (217) 788-2450
 Offices Nationwide
 www.hanson-inc.com

LITCHFIELD MUNICIPAL AIRPORT
 1201 US Route 66 South
 Litchfield, IL 62056
 Phone: (217) 324-4731

EXTEND PARTIAL PAR
 TAXIWAY B & RELATED
 LIGHTING/ELECTRICAL
 FROM EXISTING END TO
 RWY 9 TURNAROUND

IDA No: 3LF-4819
 SBG NO.
 3-17-SBGP-144/156/162
 Contract No. LI039

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/20/2020 (For Bid)
 PROJECT NO: 20A0040
 CAD FILE: C-102-CSPP.DWG
 DESIGN BY: KBS 09/14/2020
 DRAWN BY: HLE 09/14/2020
 REVIEWED BY: KBS 11/20/2020

CONSTRUCTION
 PHASING PLAN -
 NOTES AND DETAILS

DEC 04, 2020 4:05 PM ENGEL01809
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LITCHFIELD MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731

EXTEND PARTIAL PAR
TAXIWAY B & RELATED
LIGHTING/ELECTRICAL
FROM EXISTING END TO
RWY 9 TURNAROUND

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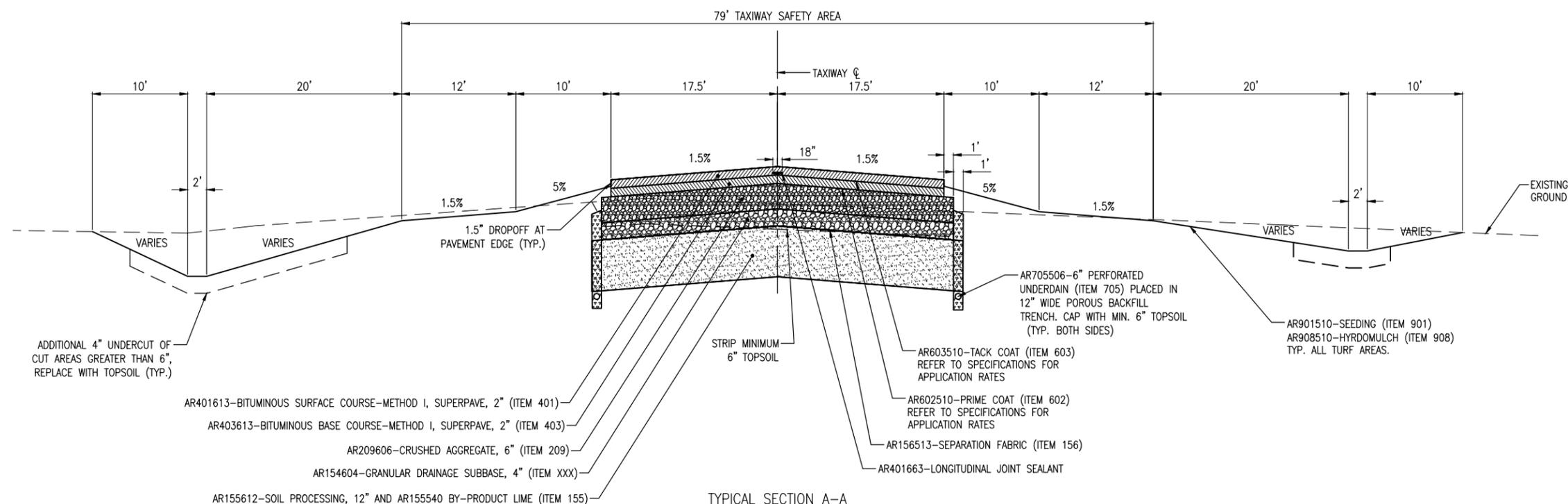
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DESIGN BY: KBS 09/15/2020

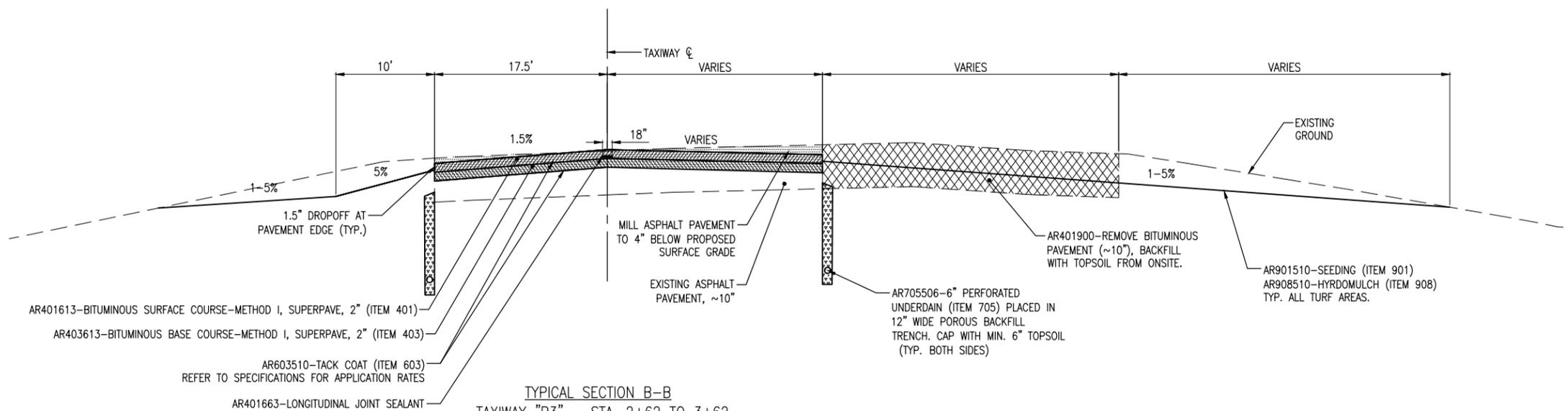
DRAWN BY: HLE 09/15/2020

REVIEWED BY: KBS 11/20/2020

TYPICAL PAVEMENT
SECTIONS



TYPICAL SECTION A-A
TAXIWAY "B" &
TAXIWAY "B3" - STA. 0+00 TO 2+62
(SLOPES AND DIMENSIONS VARY AT INTERSECTIONS)
NOT TO SCALE



TYPICAL SECTION B-B
TAXIWAY "B3" - STA. 2+62 TO 3+62
(SLOPES AND DIMENSIONS VARY AT INTERSECTIONS)
NOT TO SCALE

**EXTEND PARTIAL PAR
TAXIWAY B & RELATED
LIGHTING/ELECTRICAL
FROM EXISTING END TO
RWY 9 TURNAROUND**

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PROJECT NO: 20A0040

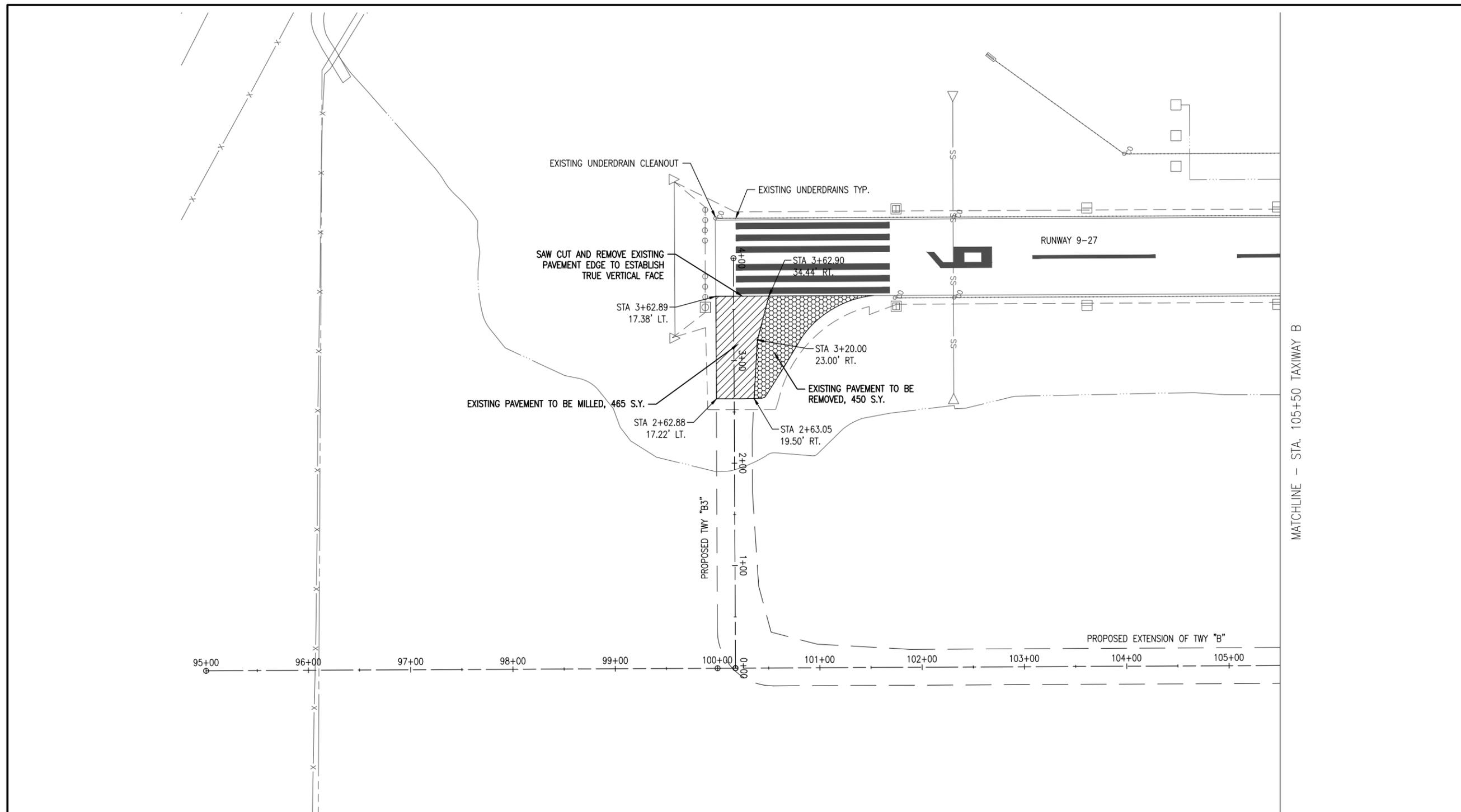
CAD FILE: C-111-SIT.DWG

DESIGN BY: KBS 09/24/2020

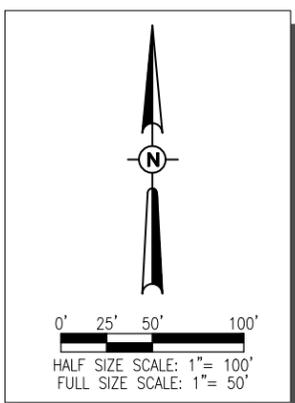
DRAWN BY: HLE 09/24/2020

REVIEWED BY: KBS 11/20/2020

**CIVIL SITE
DEMOLITION PLAN
(STA. 95+00-105+50)**



EXISTING	PROPOSED	LEGEND
		UNDERDRAIN
		AIRPORT PROPERTY LINE
		MANHOLE/INLET
		PAVEMENT
		AR401650 - BITUMINOUS PAVEMENT MILLING
		AR401900 - REMOVE BITUMINOUS PAVEMENT
		UNDERDRAIN REMOVAL



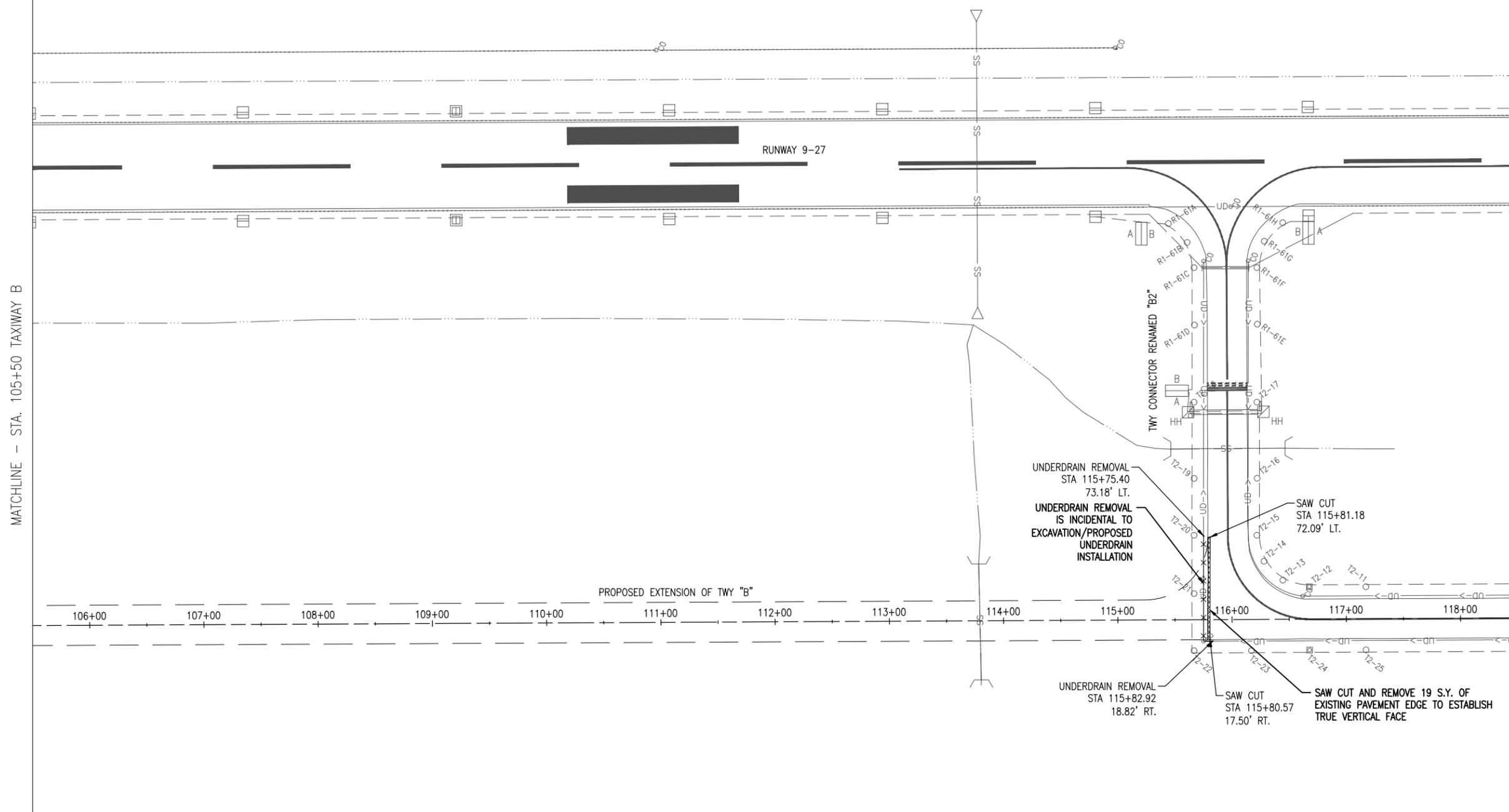
EXISTING CIVIL SITE PLAN AND DEMOLITION NOTES

- SEE ELECTRICAL SHEETS FOR AIRFIELD LIGHTING DEMOLITION.

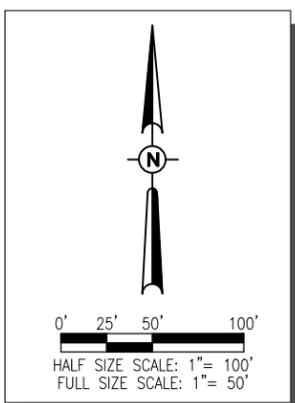
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NO.	DATE	DESCRIPTION	
		DES	DWN

ISSUE: 11/20/2020 (For Bid)
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CAD FILE: C-111-SIT.DWG
DESIGN BY: KBS 09/24/2020
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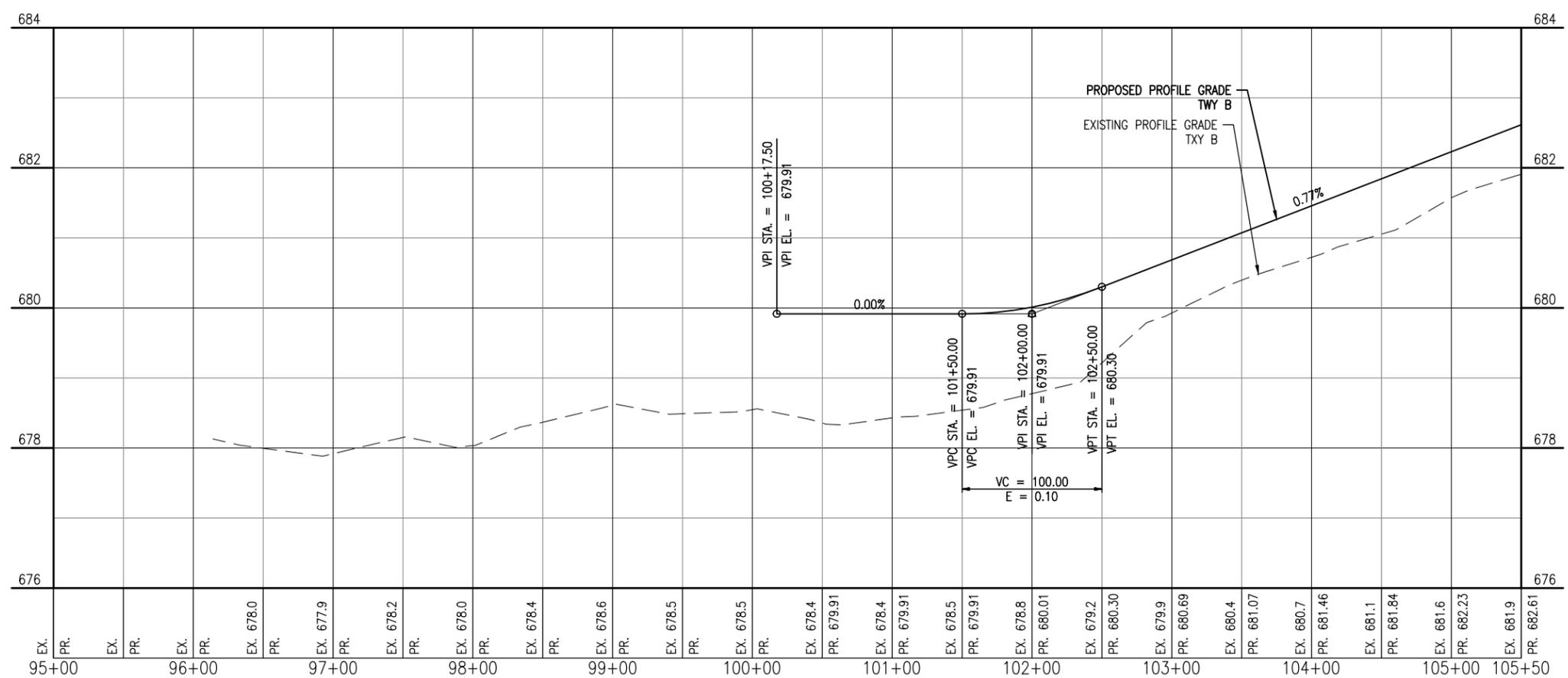
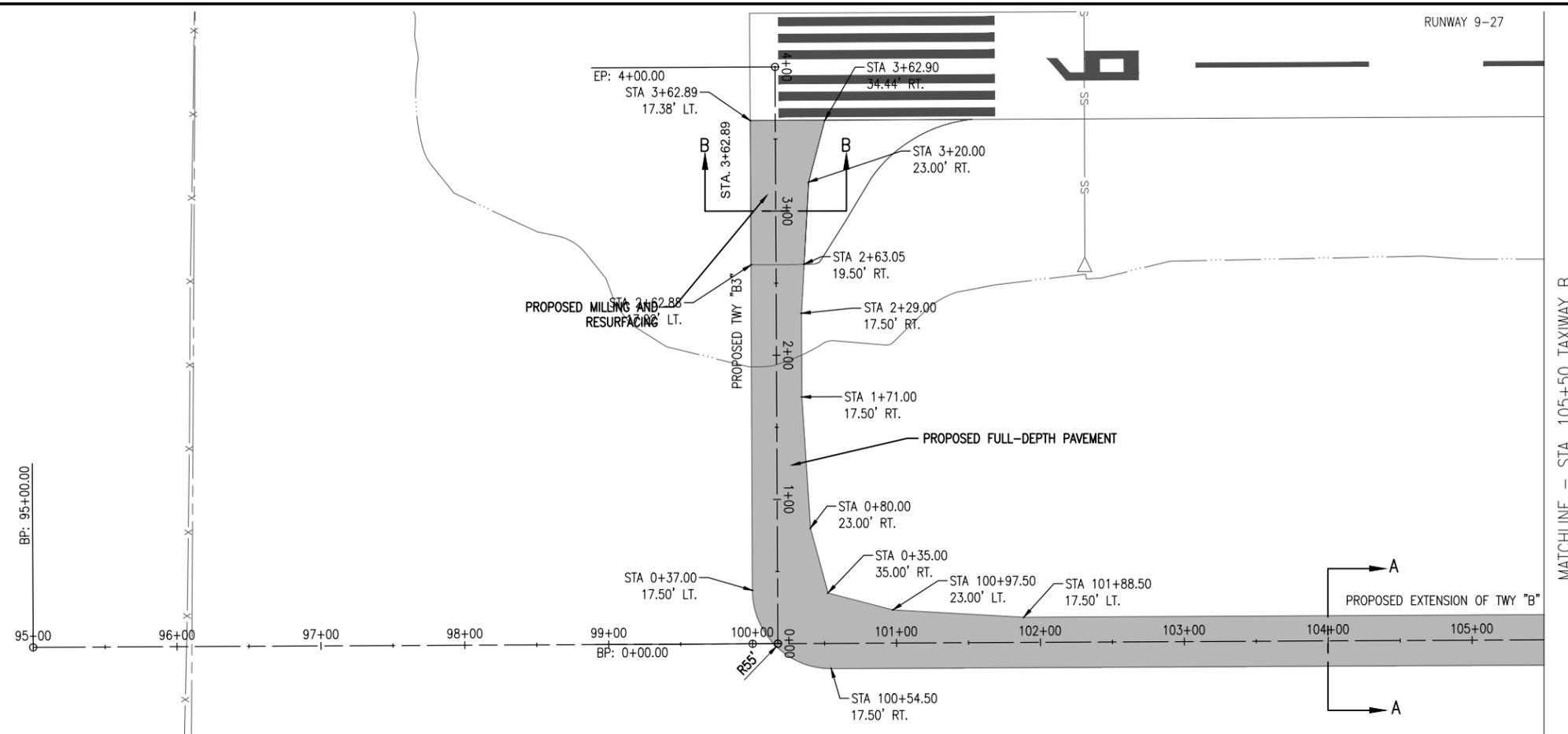
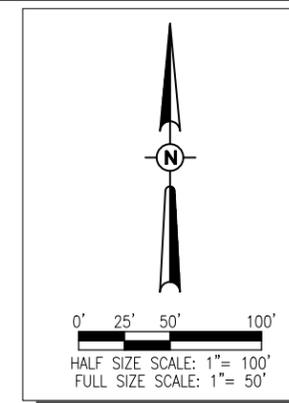
EXISTING	PROPOSED	LEGEND
		UNDERDRAIN
		AIRPORT PROPERTY LINE
		MANHOLE/INLET
		PAVEMENT
		AR401650 - BITUMINOUS PAVEMENT MILLING
		AR401900 - REMOVE BITUMINOUS PAVEMENT
		UNDERDRAIN REMOVAL



EXISTING CIVIL SITE PLAN AND DEMOLITION NOTES

- SEE ELECTRICAL SHEETS FOR AIRFIELD LIGHTING DEMOLITION.

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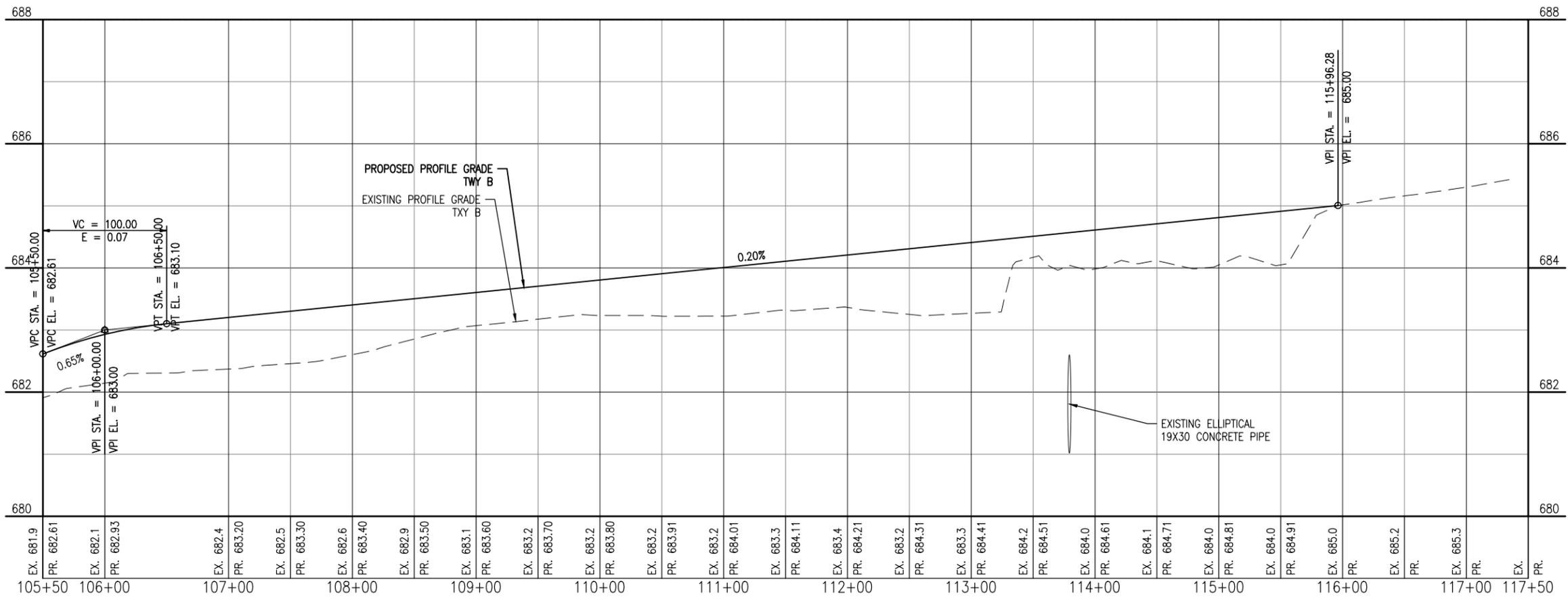
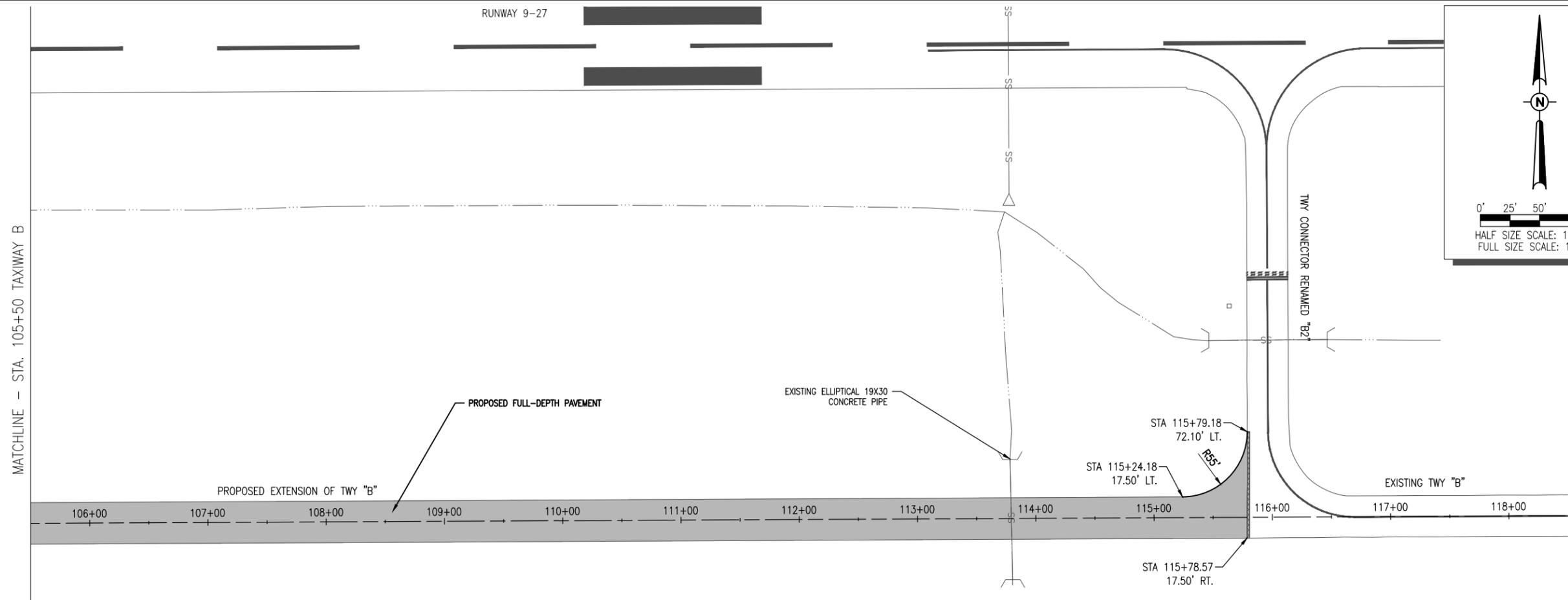
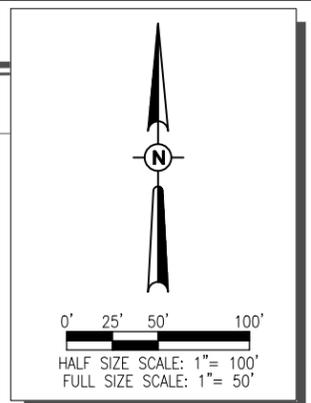
EXTEND PARTIAL PAR
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 PROJECT NO: 20A0040
 CAD FILE: C-701-PNP.DWG
 DESIGN BY: KBS 09/24/2020
 DRAWN BY: HLE 09/24/2020
 REVIEWED BY: KBS 11/20/2020

PLAN AND PROFILE
 TAXIWAY B (STA.
 95+00-105+50)



EXTEND PARTIAL PAR
TAXIWAY B & RELATED
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3-17-SBGP-144/156/162
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PROJECT NO: 20A0040

CAD FILE: C-701-PNP.DWG

DESIGN BY: KBS 09/24/2020

DRAWN BY: HLE 09/24/2020

REVIEWED BY: KBS 11/20/2020

PLAN AND PROFILE
TAXIWAY B (STA.
105+50-118+50)

NO.	DATE	DESCRIPTION
DES	DWN	REV

ISSUE: 11/20/2020 (For Bid)

PROJECT NO: 20A0040

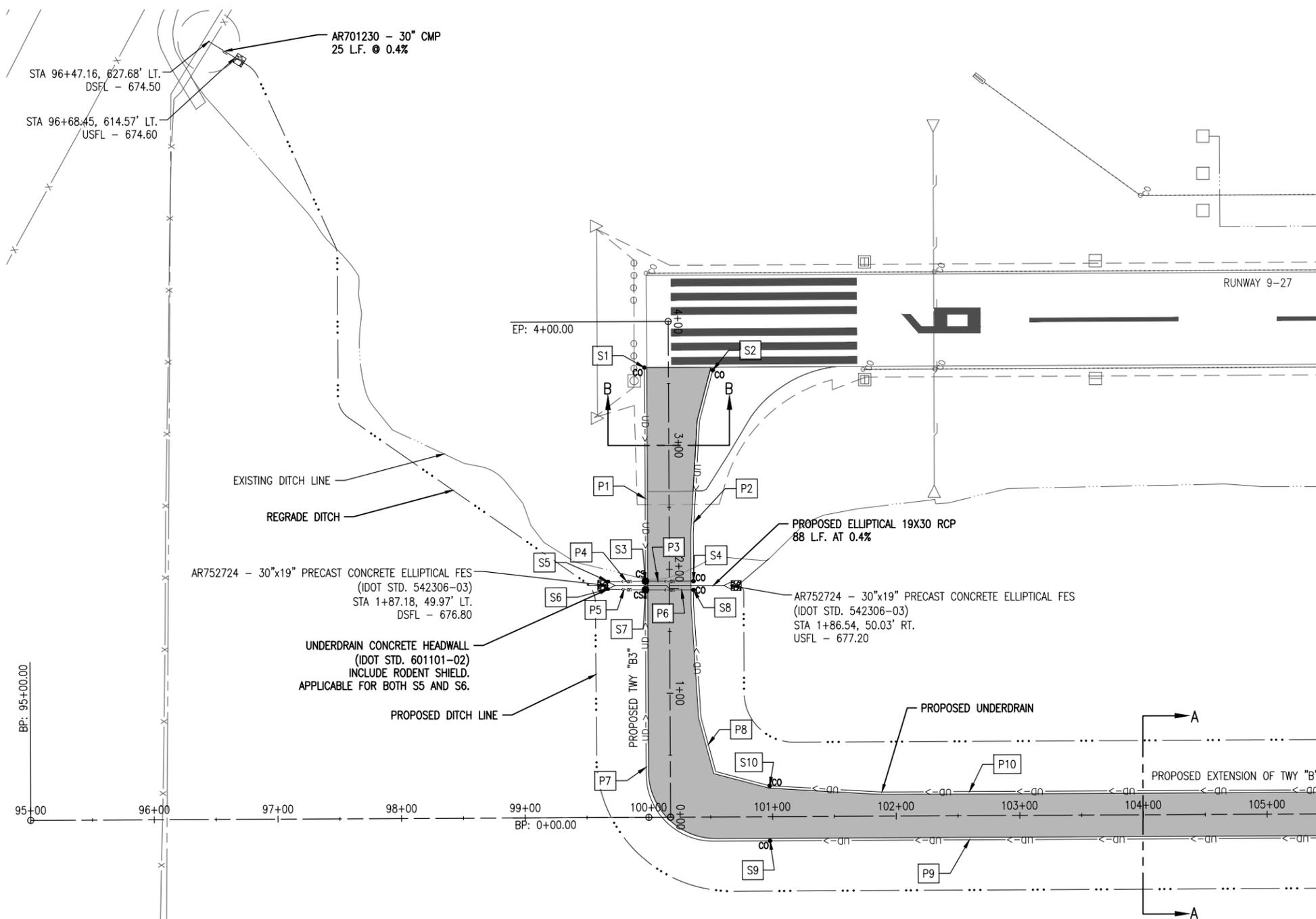
CAD FILE: C-121-DRN.DWG

DESIGN BY: KBS 09/25/2020

DRAWN BY: HLE 09/25/2020

REVIEWED BY: KBS 11/20/2020

DRAINAGE PLAN
(STA. 95+00-105+50)

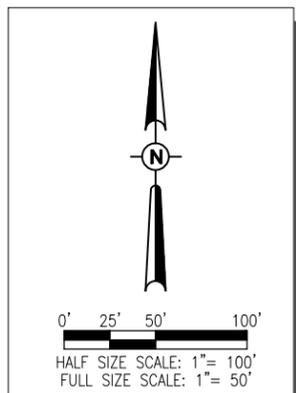


MATCHLINE - STA. 105+50 TAXIWAY B

BP: 95+00.00

EP: 4+00.00

BP: 0+00.00



EXISTING	PROPOSED	LEGEND
		PAVEMENT
		AR705610 - CONCRETE UNDERDRAIN HDWL
		AR705635 - COLLECTION STRUCTURE
		AR705640 - UNDERDRAIN CLEANOUT
		AR705506 - 6" PERFORATED UNDERDRAIN
		AR705546 - 6" NON PERFORATED UNDERDRAIN
		DITCH LINE
		AR701713 - RECP SPAN 30 RISE 19

UNDERDRAIN STRUCTURE SCHEDULE						
S#	BASELINE	STA.	OFFSET	RIM	INVERT	TYPE
S1	TWY B3	3+62.9	19.4 LT	681.66	678.91	UNDERDRAIN CLEANOUT STRUCTURE
S2	TWY B3	3+60.5	35.9 RT	681.72	678.97	UNDERDRAIN CLEANOUT STRUCTURE
S3	TWY B3	1+90.5	19.3 LT	680.33	678.08	UNDERDRAIN COLLECTION STRUCTURE
S4	TXY B3	1+90.5	19.5 RT	680.33	678.33	UNDERDRAIN CLEANOUT STRUCTURE
S5	TWY B3	1+90.3	50 LT	680.33	677.83	UNDERDRAIN CONCRETE HEADWALL
S6	TWY B3	1+84.3	50 LT	680.30	677.80	UNDERDRAIN CONCRETE HEADWALL
S7	TXY B3	1+83.5	19.4 LT	680.30	677.70	UNDERDRAIN COLLECTION STRUCTURE
S8	TWY B3	1+83.5	19.4 LT	680.30	677.90	UNDERDRAIN CLEANOUT STRUCTURE
S9	TWY B	100+97.8	19.5 RT	679.55	676.75	UNDERDRAIN CLEANOUT STRUCTURE
S10	TXY B	100+97.8	25 LT	679.47	676.97	UNDERDRAIN CLEANOUT STRUCTURE
S11	TWY B	108+00.0	19.3 RT	682.65	679.85	UNDERDRAIN CLEANOUT STRUCTURE
S12	TWY B	108+00.0	19.6 LT	682.65	680.15	UNDERDRAIN CLEANOUT STRUCTURE
S13	TWY B	113+80.3	18.9 RT	684.15	682.15	UNDERDRAIN CLEANOUT STRUCTURE
S14	TWY B	113+80.3	19.5 LT	684.10	681.98	UNDERDRAIN CLEANOUT STRUCTURE
S15	TWY B	115+74.9	18.8 RT	684.43	681.57	UNDERDRAIN COLLECTION STRUCTURE
S16	TWY B	115+75.4	64.6 LT	684.32	681.32	UNDERDRAIN COLLECTION STRUCTURE

UNDERDRAIN PIPE SCHEDULE					
P#	FROM	TO	L.F.	SLOPE	TYPE
P1	S1	S3	172	0.48%	6" PERFORATED UNDERDRAIN
P2	S2	S4	172	0.37%	6" PERFORATED UNDERDRAIN
P3	S3	S4	39	0.64%	6" NON PERFORATED UNDERDRAIN
P4	S3	S5	31	0.82%	6" NON PERFORATED UNDERDRAIN
P5	S6	S7	31	0.33%	6" NON PERFORATED UNDERDRAIN
P6	S7	S8	39	0.51%	6" NON PERFORATED UNDERDRAIN
P7	S7	S9	280	0.34%	6" PERFORATED UNDERDRAIN
P8	S8	S10	194	0.48%	6" PERFORATED UNDERDRAIN
P9	S9	S11	702	0.44%	6" PERFORATED UNDERDRAIN
P10	S10	S12	702	0.45%	6" PERFORATED UNDERDRAIN
P11	S11	S13	580	0.40%	6" PERFORATED UNDERDRAIN
P12	S12	S14	580	0.32%	6" PERFORATED UNDERDRAIN
P13	S13	S15	195	0.30%	6" PERFORATED UNDERDRAIN
P14	S14	S16	219	0.30%	6" PERFORATED UNDERDRAIN
P15	S15	S16	83	0.30%	6" NON PERFORATED UNDERDRAIN

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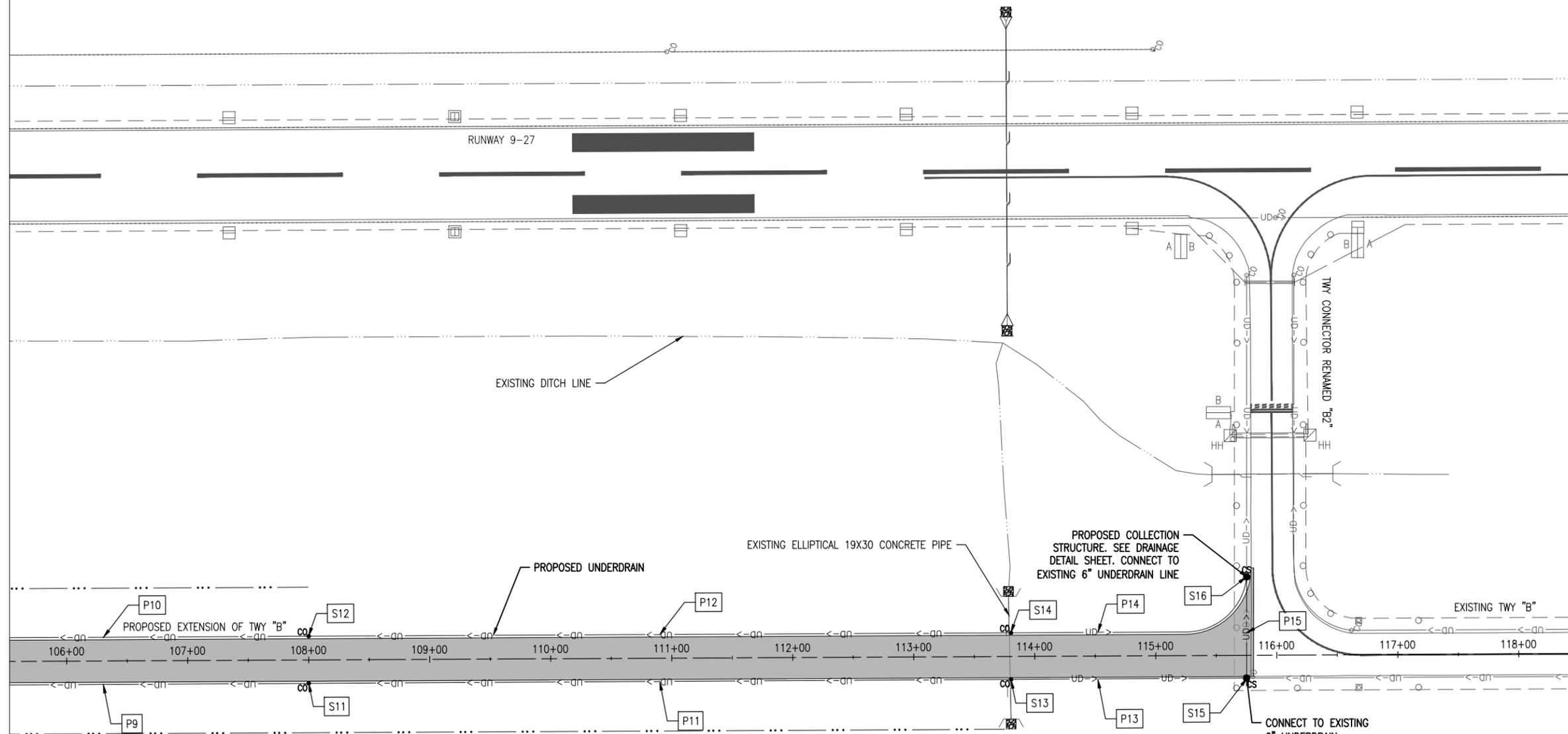
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DESIGN BY: KBS 09/25/2020

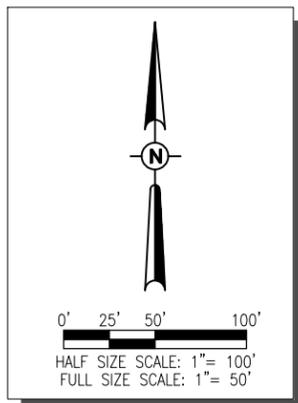
DRAWN BY: HLE 09/25/2020

REVIEWED BY: KBS 11/20/2020

MATCHLINE - STA. 105+50 TAXIWAY B

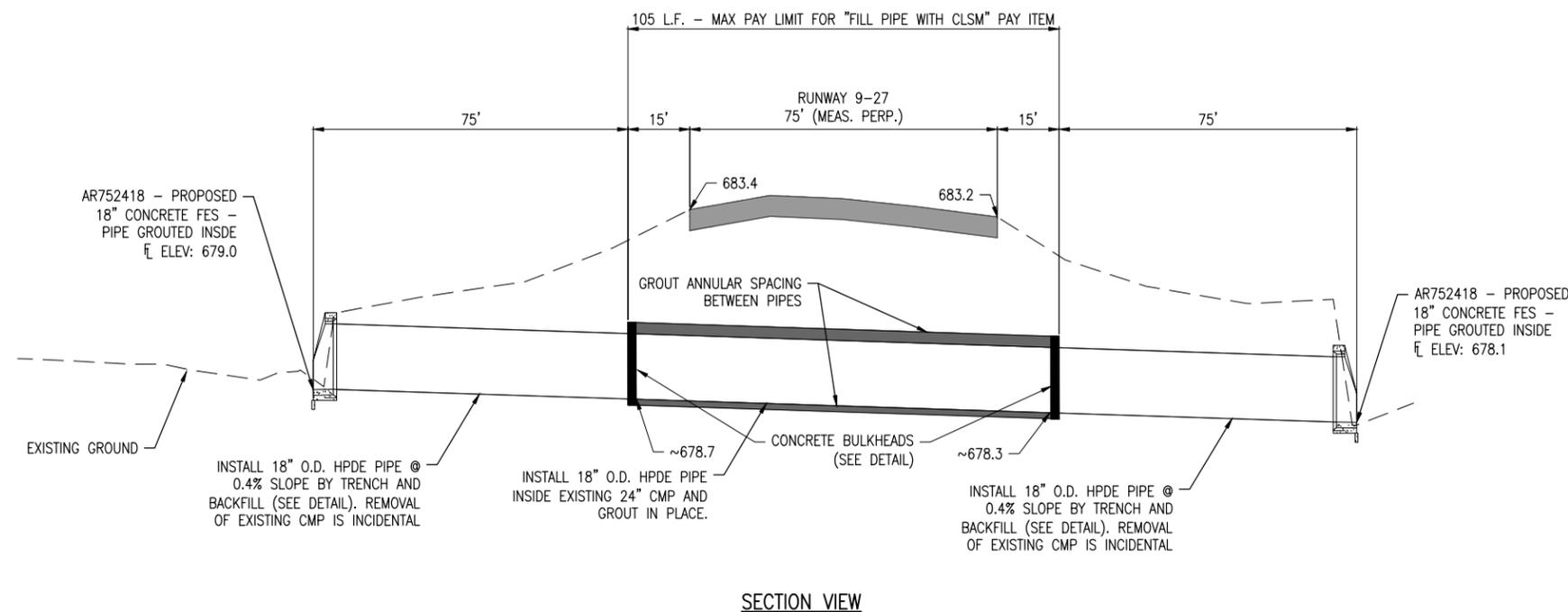
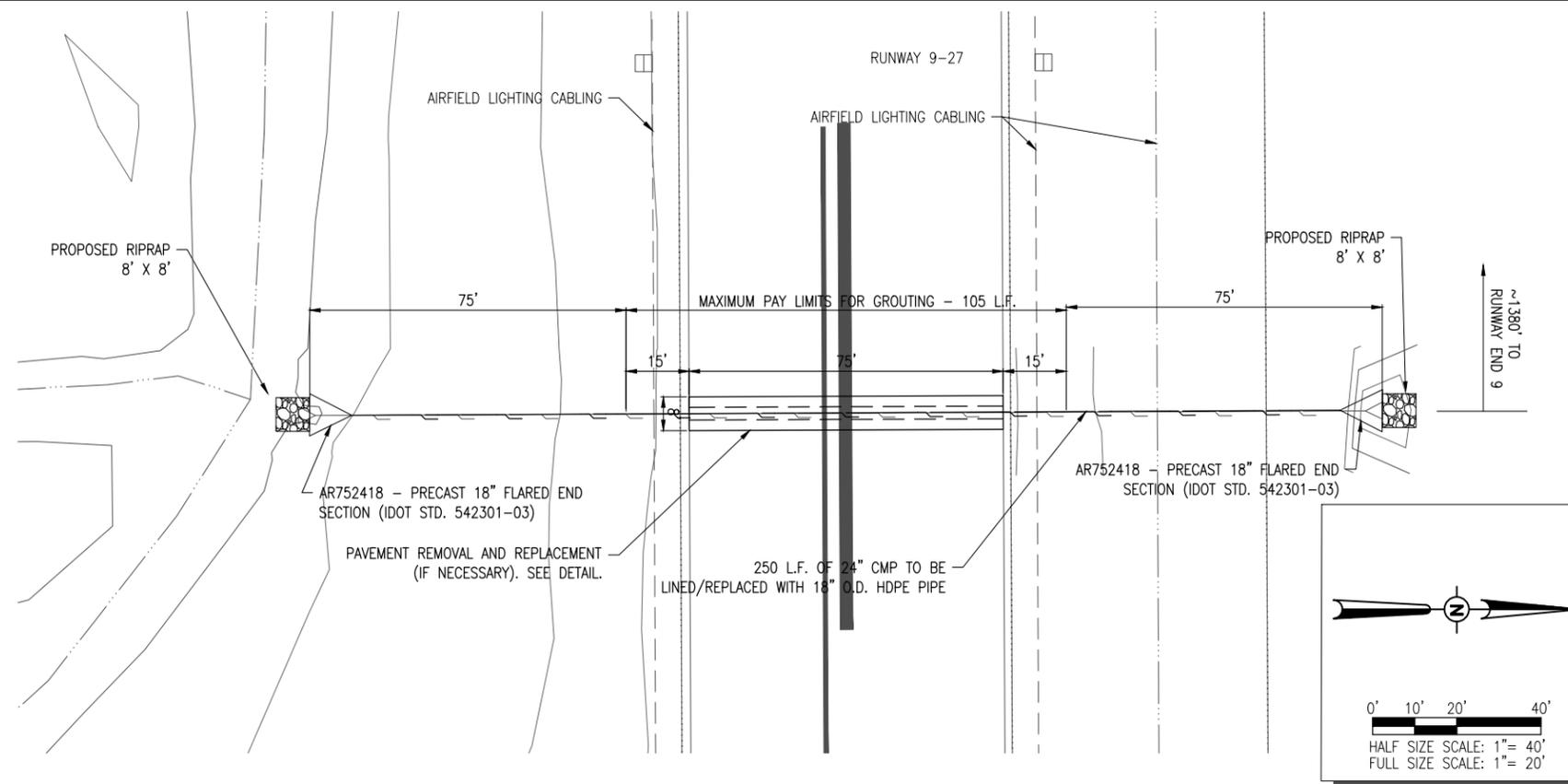


EXISTING	PROPOSED	LEGEND
		PAVEMENT
		OUTLET
		AR705635 - COLLECTION STRUCTURE
		AR705640 - UNDERDRAIN CLEANOUT
		AR705506 - 6" PERFORATED UNDERDRAIN AR705546 - 6" NON PERFORATED UNDERDRAIN
		DITCH LINE
		STORM PIPE



PIPE LINING NOTES:

1. TWO EXISTING CORRUGATED METALLIC PIPES (21" AND 24" DIA.) BENEATH RUNWAY 9-27 ARE DESIGNATED FOR LINING WITH SMALLER DIAMETER HDPE PIPES. EXISTING PIPES WERE INSPECTED WITH REMOTE EQUIPMENT IN SUMMER 2020 AND PORTIONS BENEATH THE RUNWAY ARE BELIEVED TO BE IN SUITABLE CONDITION TO BE LINED. PORTIONS OUTSIDE THE RUNWAY LIMITS WILL BE INSTALLED BY REMOVAL AND REPLACEMENT OF THE EXISTING PIPE.
2. PRIOR TO ATTEMPTING LINING, CONTRACTOR SHALL REMOVE EXISTING PIPE UP TO THE LINING LIMITS (15' ON EITHER SIDE OF RUNWAY EDGE OF PAVEMENT), AND REINSPECT PORTIONS OF PIPES TO BE LINED TO CONFIRM SUITABILITY. IF IT IS DETERMINED THE PIPES ARE NO LONGER SUITABLE FOR LINING, PIPE SHALL INSTEAD BE INSTALLED BY THE REMOVE AND REPLACE METHOD, AS PER DETAIL.
3. CONTRACTOR MAY ELECT TO LINE ADDITIONAL LENGTHS OF CMP BEYOND LIMITS OF WHAT IS SHOWN FOR GROUTING IN LIEU OF REMOVAL AND REPLACEMENT - AFTER VERIFYING SUITABILITY OF ADDITIONAL LENGTHS - HOWEVER MAX PAY LIMITS FOR GROUTING WILL NOT BE ADJUSTED.
4. CONTRACTOR SHALL SURVEY PIPE INVERTS AT BULKHEAD LOCATIONS AND CONFIRM ALL PROPOSED ELEVATIONS WITH PROJECT ENGINEER PRIOR TO INSTALLATION.
5. CONTRACTOR SHALL IDENTIFY AND LOCATE AIRFIELD LIGHTING CABLING AND UNDERDRAINS IN VICINITY PRIOR TO ANY EXCAVATION.
6. ALL DISTURBED AREAS SHALL BE GRADED, SEEDED AND MULCHED PER ITEMS 901 AND 908.
7. COST OF HDPE PIPE AND INSTALLATION, INCLUDING TRENCHING AND BACKFILL IN TURF AREAS AND SLIP-LINING WILL BE PAID UNDER THE APPLICABLE SIZE "## HDPE PIPE" PAY ITEM.
8. COST OF CONCRETE BULKHEADS AND GROUTING OF ANNULAR SPACING BETWEEN PIPES WILL BE PAID FOR UNDER AR800567 "FILL PIPE WITH CLSM".
9. COST OF PAVEMENT REMOVAL AND REPLACEMENT - IF UTILIZED AS A CONTINGENCY ITEM IN LIEU OF LINING/GROUTING - INCLUDING FLOWABLE FILL BACKFILL AROUND PIPE, WILL BE PAID FOR UNDER AR401900 "REMOVE AND REPLACE BITUMINOUS PAVEMENT".



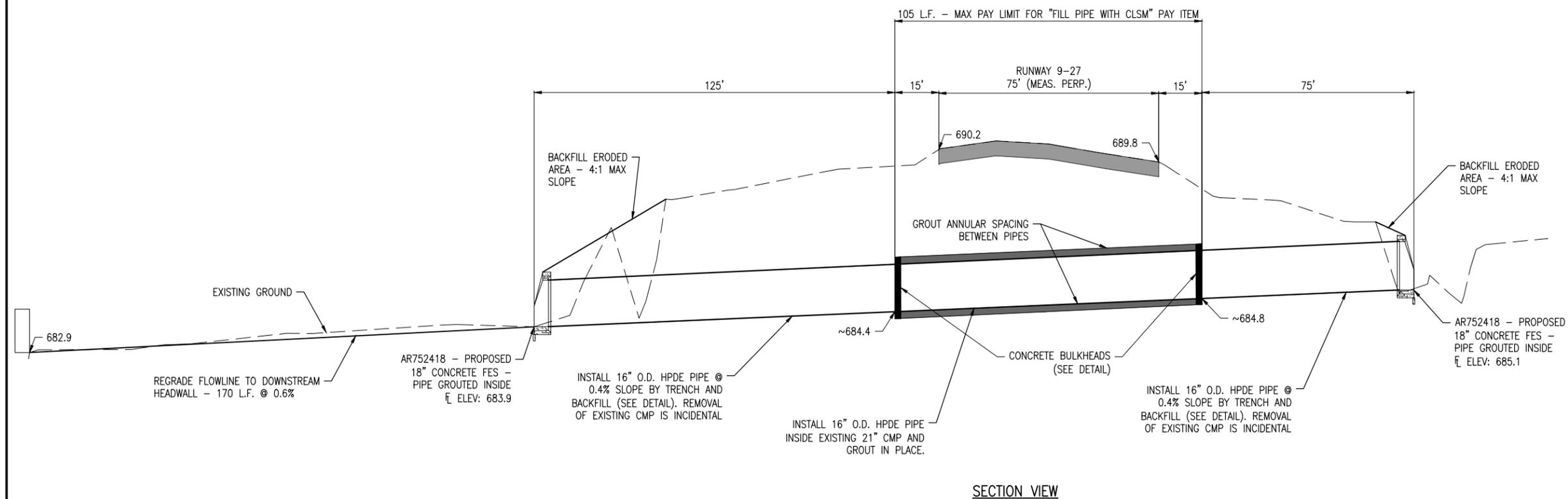
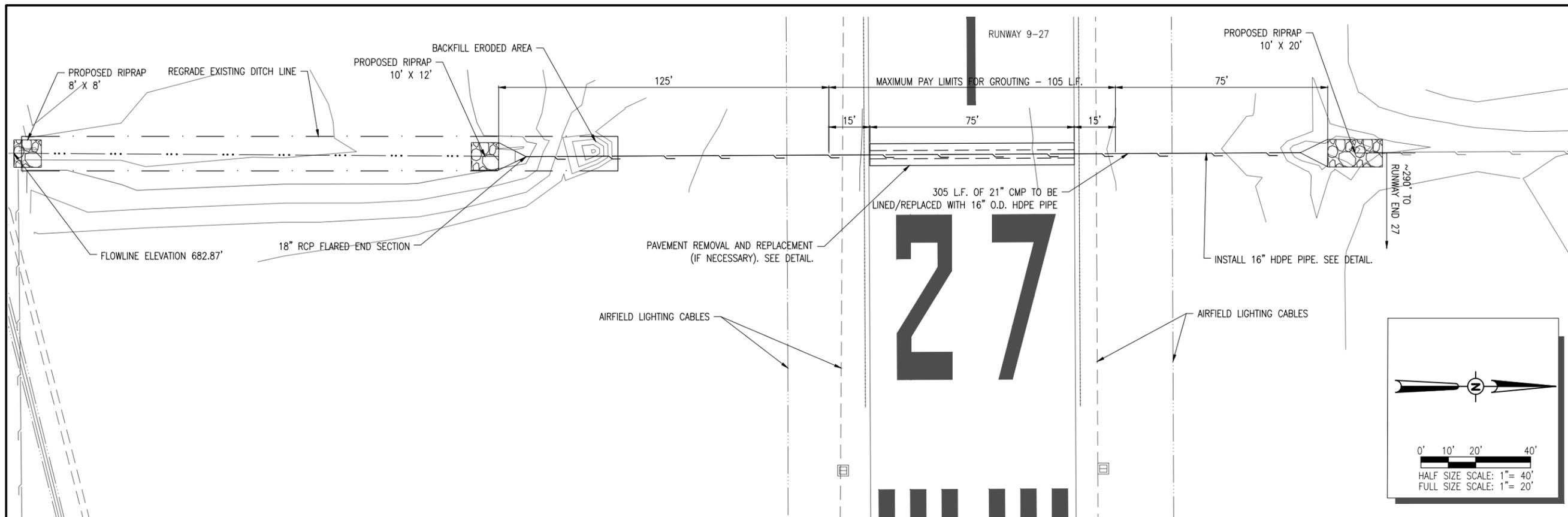
EXTEND PARTIAL PAR TAXIWAY B & RELATED LIGHTING/ELECTRICAL FROM EXISTING END TO RWY 9 TURNAROUND

IDA No: 3LF-4819
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CAD FILE: C-122-DRN.DWG
DESIGN BY: KBS 09/25/2020
DRAWN BY: HLE 09/25/2020
REVIEWED BY: KBS 11/20/2020

DRAINAGE PLAN - RELINE WEST PIPE



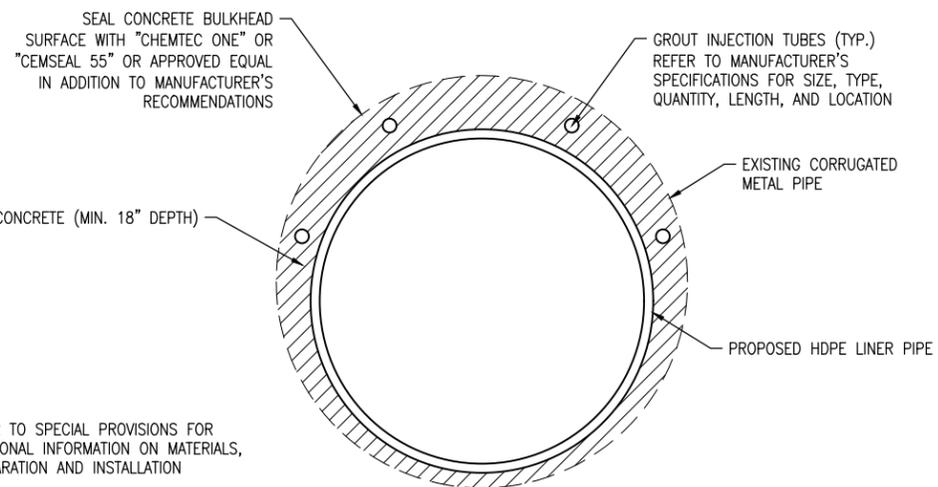
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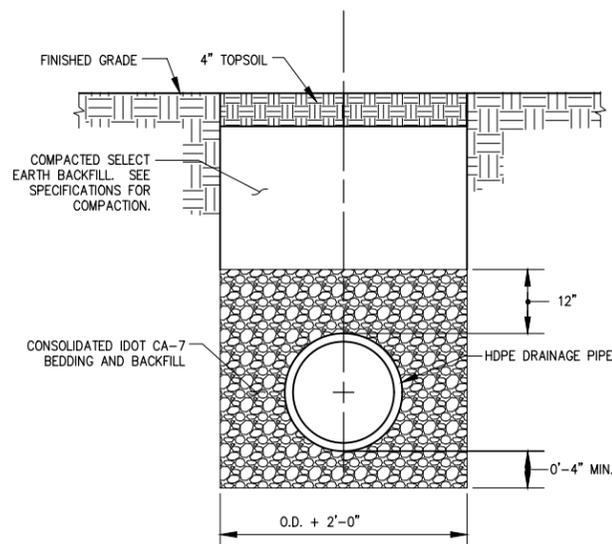
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DESIGN BY: KBS 09/25/2020
DRAWN BY: HLE 09/25/2020
REVIEWED BY: KBS 11/20/2020

DRAINAGE PLAN -
RELINE EAST PIPE



BULKHEAD DETAIL
NOT TO SCALE

NOTE
REFER TO SPECIAL PROVISIONS FOR
ADDITIONAL INFORMATION ON MATERIALS,
PREPARATION AND INSTALLATION

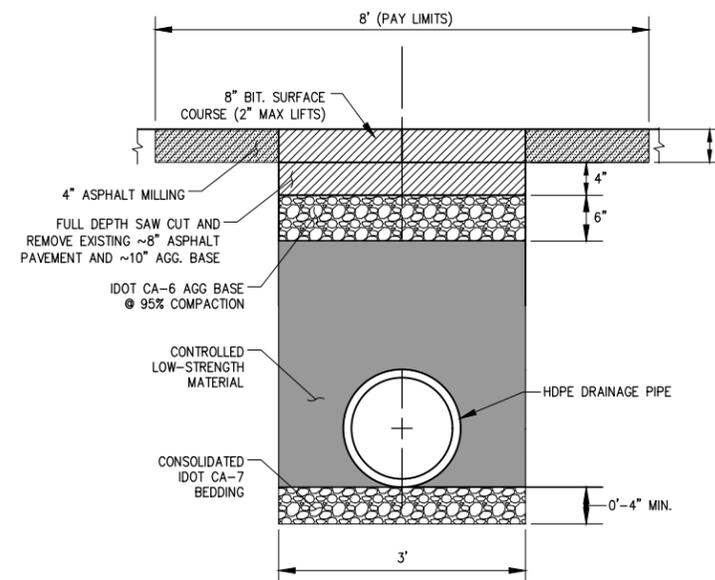


NOTES

1. UNSUITABLE MATERIAL ENCOUNTERED DURING PLACEMENT OF BEDDING SHALL BE REMOVED AND REPLACED.
2. WITHIN 3 FEET OF PAVED AREA, GRANULAR BACKFILL IS TO BE USED INSTEAD OF EARTH BACKFILL.
3. ALL WORK AND MATERIALS SHOWN TO BE PAID FOR AS PART OF ASSOCIATED "HDPE PIPE" PAY ITEM.

PIPE TRENCH DETAIL (TURF AREAS)

N.T.S.



NOTES

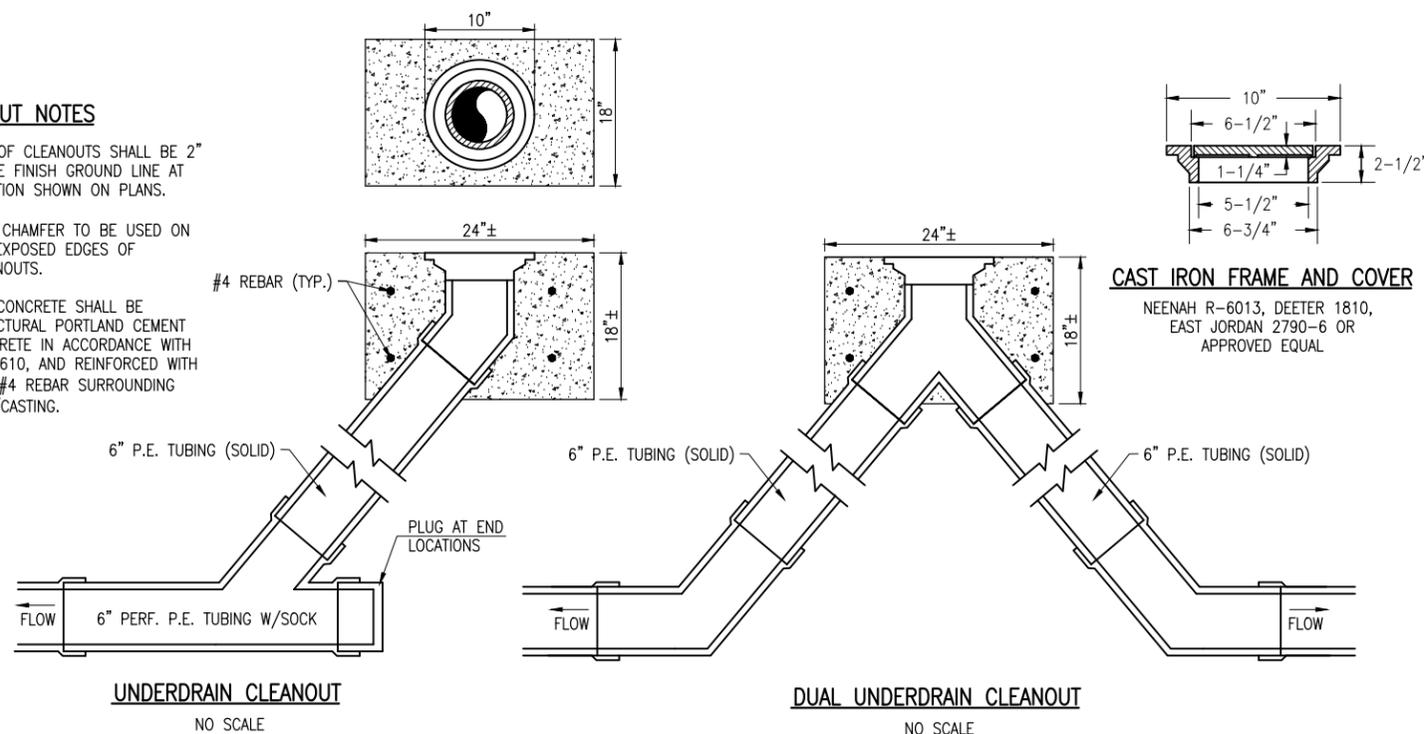
1. WORK ITEM IS INCLUDED AS CONTINGENCY ONLY, AND WILL BE DELETED FROM CONTRACT IF PROPOSED PIPE LINING CAN BE COMPLETED SUCCESSFULLY.
2. UNSUITABLE MATERIAL ENCOUNTERED DURING PLACEMENT OF BEDDING SHALL BE REMOVED AND REPLACED.
3. ALL WORK AND MATERIALS SHOWN, EXCLUDING PIPE, TO BE PAID FOR UNDER AR401910 "REMOVE AND REPLACE BITUMINOUS PAVEMENT" PAY ITEM.

REMOVE AND REPLACE BITUMINOUS PAVEMENT DETAIL

N.T.S.

CLEANOUT NOTES

1. TOP OF CLEANOUTS SHALL BE 2" ABOVE FINISH GROUND LINE AT LOCATION SHOWN ON PLANS.
2. 1/2" CHAMFER TO BE USED ON ALL EXPOSED EDGES OF CLEANOUTS.
3. THE CONCRETE SHALL BE STRUCTURAL PORTLAND CEMENT CONCRETE IN ACCORDANCE WITH ITEM 610, AND REINFORCED WITH TWO #4 REBAR SURROUNDING PIPE/CASTING.



CAST IRON FRAME AND COVER

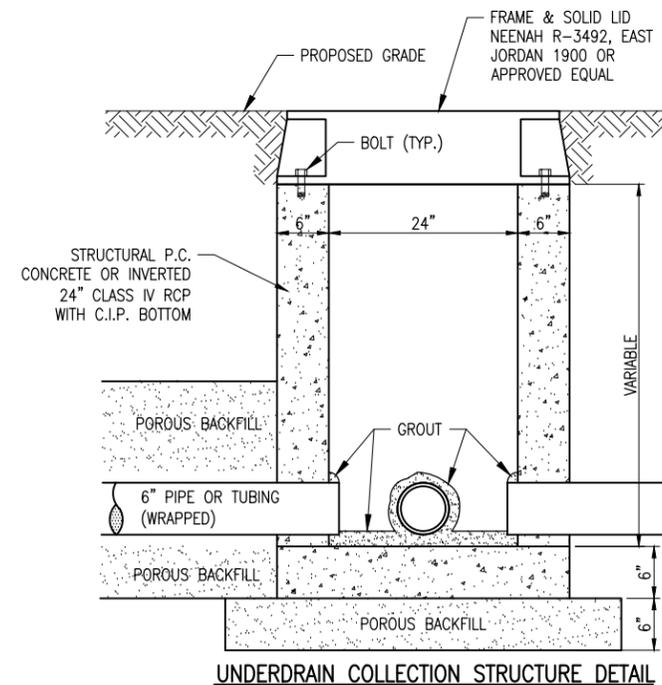
NEENAH R-6013, DEETER 1810,
EAST JORDAN 2790-6 OR
APPROVED EQUAL

UNDERDRAIN CLEANOUT

NO SCALE

DUAL UNDERDRAIN CLEANOUT

NO SCALE



UNDERDRAIN COLLECTION STRUCTURE DETAIL

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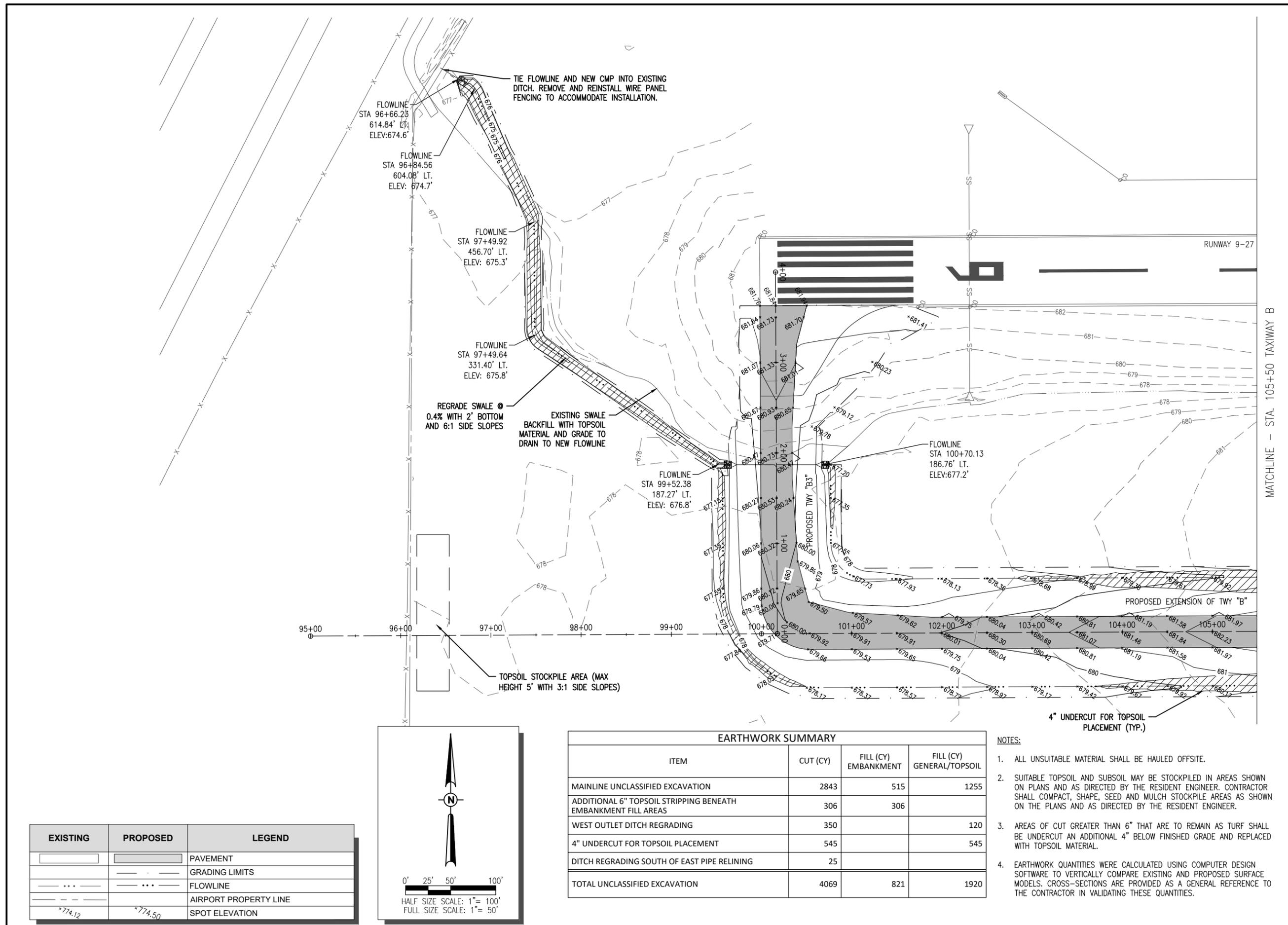
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CAD FILE: C-123-DRN.DWG
DESIGN BY: KNL 09/15/2020
DRAWN BY: HLE 09/15/2020
REVIEWED BY:

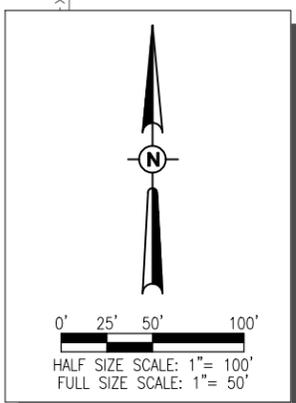
DRAINAGE DETAILS

NO.	DATE	DESCRIPTION		
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 CAD FILE: C-131-GRD.DWG
 DESIGN BY: KBS 09/25/2020
 DRAWN BY: HLE 09/25/2020
 REVIEWED BY: KBS 11/20/2020



EXISTING	PROPOSED	LEGEND
		PAVEMENT
		GRADING LIMITS
		FLOWLINE
		AIRPORT PROPERTY LINE
		SPOT ELEVATION



EARTHWORK SUMMARY			
ITEM	CUT (CY)	FILL (CY) EMBANKMENT	FILL (CY) GENERAL/TOPSOIL
MAINLINE UNCLASSIFIED EXCAVATION	2843	515	1255
ADDITIONAL 6" TOPSOIL STRIPPING BENEATH EMBANKMENT FILL AREAS	306	306	
WEST OUTLET DITCH REGRADING	350		120
4" UNDERCUT FOR TOPSOIL PLACEMENT	545		545
DITCH REGRADING SOUTH OF EAST PIPE RELINING	25		
TOTAL UNCLASSIFIED EXCAVATION	4069	821	1920

- NOTES:
- ALL UNSUITABLE MATERIAL SHALL BE HAULED OFFSITE.
 - SUITABLE TOPSOIL AND SUBSOIL MAY BE STOCKPILED IN AREAS SHOWN ON PLANS AND AS DIRECTED BY THE RESIDENT ENGINEER. CONTRACTOR SHALL COMPACT, SHAPE, SEED AND MULCH STOCKPILE AREAS AS SHOWN ON THE PLANS AND AS DIRECTED BY THE RESIDENT ENGINEER.
 - AREAS OF CUT GREATER THAN 6" THAT ARE TO REMAIN AS TURF SHALL BE UNDERCUT AN ADDITIONAL 4" BELOW FINISHED GRADE AND REPLACED WITH TOPSOIL MATERIAL.
 - EARTHWORK QUANTITIES WERE CALCULATED USING COMPUTER DESIGN SOFTWARE TO VERTICALLY COMPARE EXISTING AND PROPOSED SURFACE MODELS. CROSS-SECTIONS ARE PROVIDED AS A GENERAL REFERENCE TO THE CONTRACTOR IN VALIDATING THESE QUANTITIES.

LITCHFIELD MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731

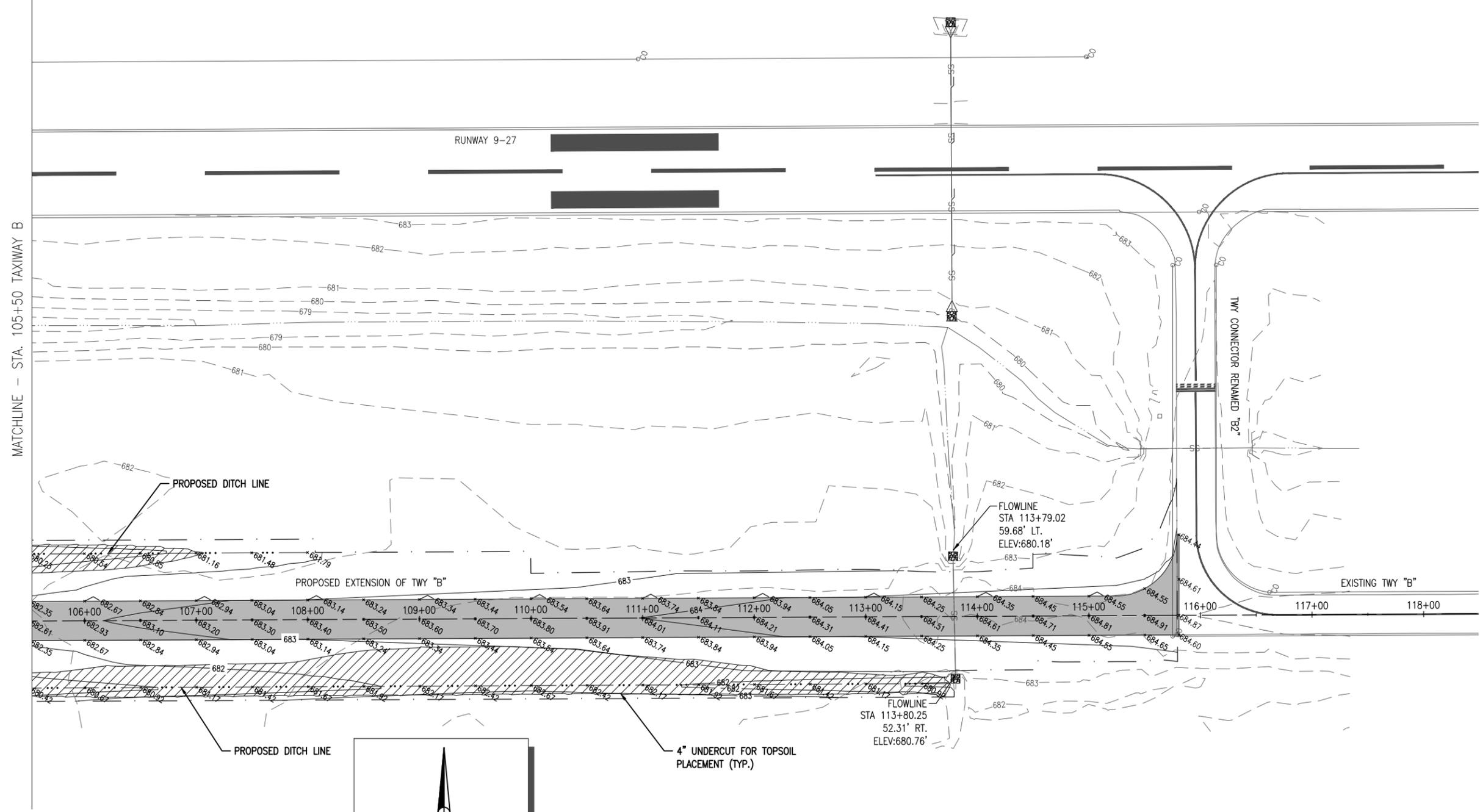
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3-17-SBGP-144/156/162
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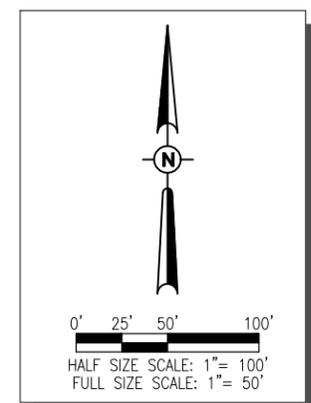
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/20/2020 (For Bid)
PROJECT NO: 20A0040
CAD FILE: C-131-GRD.DWG
DESIGN BY: KBS 09/25/2020
DRAWN BY: HLE 09/25/2020
REVIEWED BY: KBS 11/20/2020

GRADING PLAN (STA.
105+50-118+50)



EXISTING	PROPOSED	LEGEND
		PAVEMENT
		GRADING LIMITS
		FLOWLINE
		AIRPORT PROPERTY LINE
		SPOT ELEVATION



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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/20/2020 (For Bid)

PROJECT NO: 20A0040

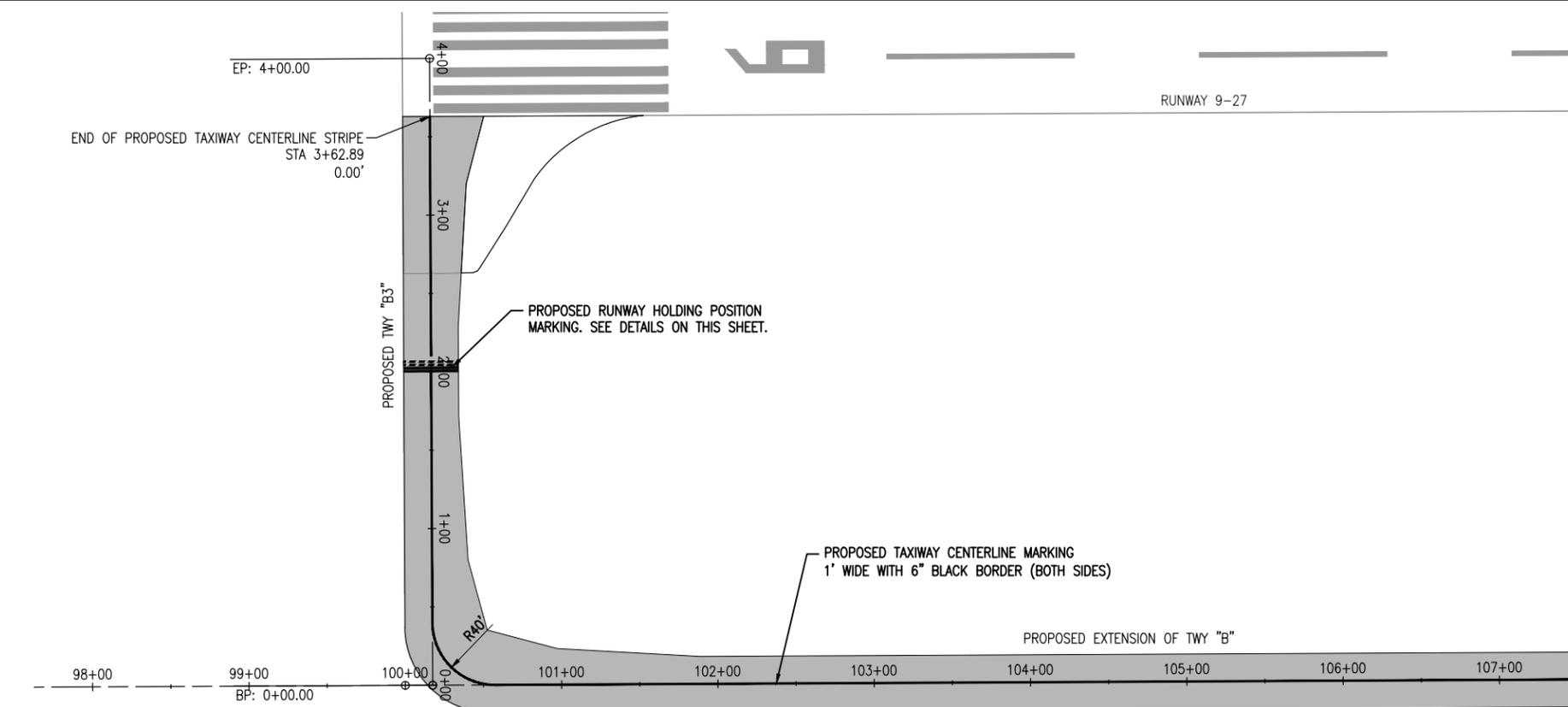
CAD FILE: C-151-MRK.DWG

DESIGN BY: KBS 10/06/2020

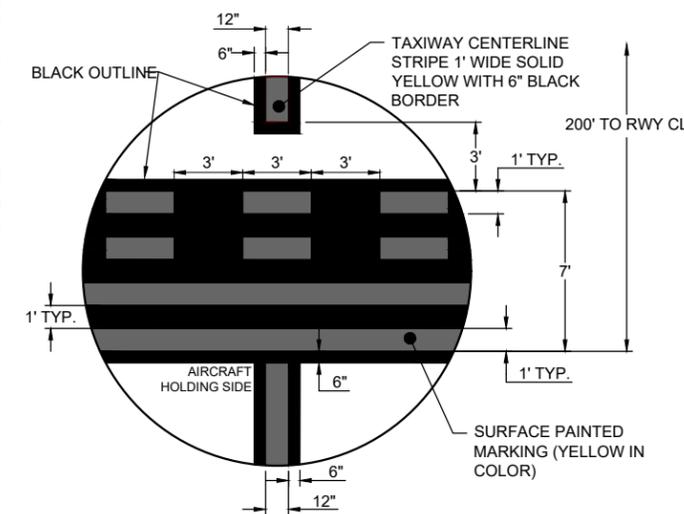
DRAWN BY: HLE 10/06/2020

REVIEWED BY:

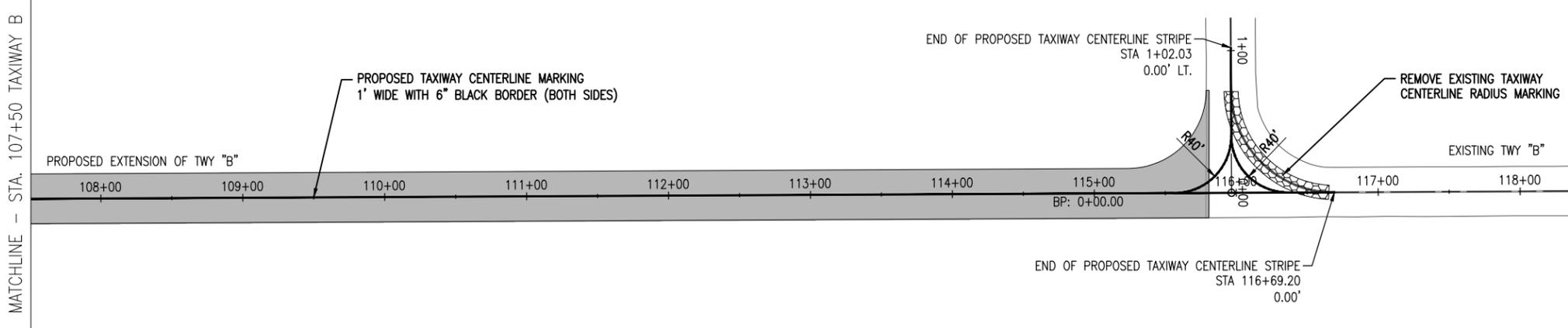
MARKING PLAN



MATCHLINE - STA. 107+50 TAXIWAY B



RUNWAY HOLDING POSITION DETAIL
"NOT TO SCALE"

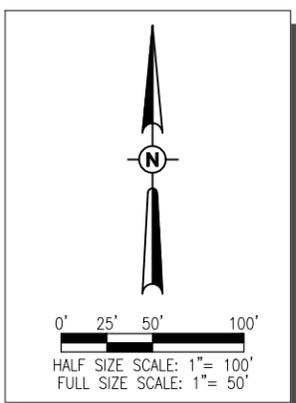


MATCHLINE - STA. 107+50 TAXIWAY B

PAVEMENT MARKING NOTES

- TYPE B GLASS BEADS SHALL BE REQUIRED FOR ALL YELLOW PERMANENT PAINT MARKINGS. GLASS BEADS ARE NOT REQUIRED FOR TEMPORARY MARKINGS OR BLACK PAINT. REFER TO SPECIFICATION ITEM 620 FOR ADDITIONAL INFORMATION.
- PAINT SHALL MEET REQUIREMENTS OF TECHNICAL SPECIFICATION ITEM 620, WATERBORNE PAINT.
- IMMEDIATELY PRIOR TO THE APPLICATION OF PAINT, ALL SURFACES SHALL BE DRY AND FREE FROM DIRT, GREASE, OIL, LAITANCE, OR OTHER FOREIGN MATERIAL WHICH WOULD REDUCE THE BOND BETWEEN THE PAINT AND THE PAVEMENT. THIS SHALL INCLUDE PAINTED AREAS ON THE EXISTING PAVEMENTS. REFER TO SPECIFICATION ITEM 620-3.3 FOR ADDITIONAL INFORMATION.
- EXISTING PAVEMENT MARKINGS OUTSIDE THE LIMITS OF THE MARKINGS SHOWN ON THESE PLANS WHICH ARE REMOVED OR WORN DUE TO CONSTRUCTION ACTIVITY SHALL BE REPAINTED. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR THIS WORK.
- GRINDING SHALL BE USED FOR MARKING REMOVAL.

EXISTING	PROPOSED	LEGEND
		PAVEMENT
		MARKING
		MARKING REMOVAL



CONTRACTOR'S CERTIFICATION STATEMENT

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

PROJECT INFORMATION:

AIRPORT: _____ PROJECT: _____

PROJECT NO: _____ COUNTY: _____

CONTRACT NUMBER: _____

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

SIGNATURE: _____ DATE: _____

PRINTED NAME: _____ TITLE: _____

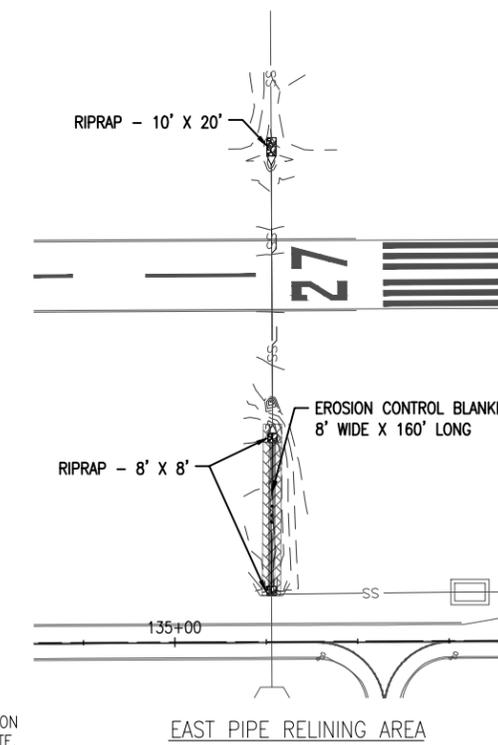
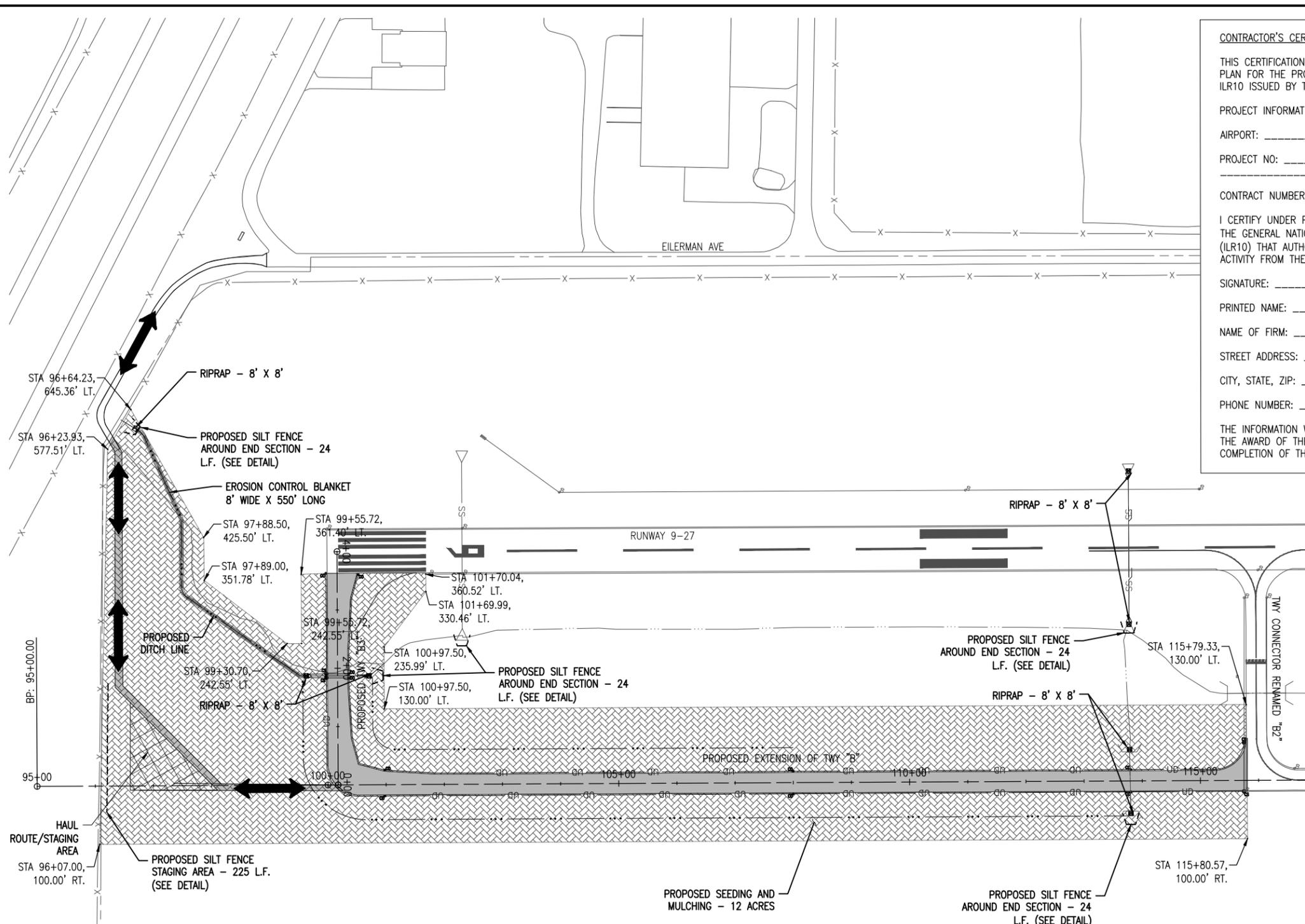
NAME OF FIRM: _____

STREET ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE NUMBER: _____

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



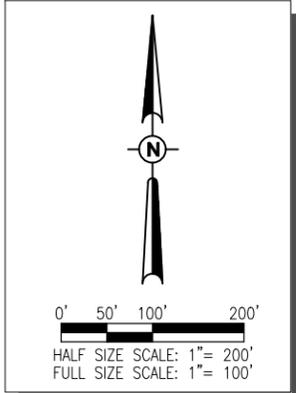
EXTEND PARTIAL PAR TAXIWAY B & RELATED LIGHTING/ELECTRICAL FROM EXISTING END TO RWY 9 TURNAROUND

IDA No: 3LF-4819
SBG NO.
3-17-SBGP-144/156/162
Contract No. LI039

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/20/2020 (For Bid)
PROJECT NO: 20A0040
CAD FILE: C-181-SWP.DWG
DESIGN BY: KBS 09/25/2020
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REVIEWED BY: KBS 11/20/2020

EXISTING	PROPOSED	LEGEND
		PAVEMENT
		GRADING LIMITS
		FLOWLINE
		AR156510 SILT FENCE
		AR156531 EROSION CONTROL BLANKET
		AR156543 RIPRAP GRADATION NO. 3
		AR901510/SEEDING/AR908510 MULCHING



STORM WATER POLLUTION PREVENTION NOTES

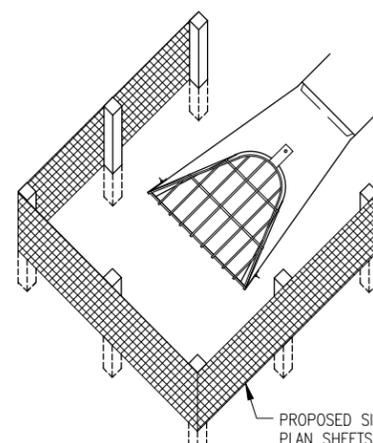
1. THE CONTRACTOR SHALL IMPLEMENT ALL PROVISIONS OF THE CONTRACT DOCUMENTS TO ASSURE THAT STORM WATER POLLUTION PREVENTION ITEMS ARE CONSTRUCTED AND MAINTAINED IN A TIMELY MANNER. SEDIMENTATION MUST NOT BE TRANSPORTED OFF THE CONSTRUCTION SITE. PERMANENT DRAINAGE FEATURES AND VEGETATIVE MEASURES SHALL BE PROVIDED AS SOON AS POSSIBLE.
2. THE CONTRACTOR SHALL BE REQUIRED TO IMPLEMENT AND MAINTAIN STORM WATER POLLUTION PREVENTION PRACTICES AND MEASURES PRIOR TO THE STRIPPING OF EXISTING VEGETATION WHERE EVER POSSIBLE AND AS SOON AS CONSTRUCTION PERMITS IN OTHER AREAS. POLLUTION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, INCLUDING THESE CONSTRUCTION PLANS, AND WITH STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, CURRENT ISSUE. THE CONTRACTOR SHALL ADJUST HIS OPERATIONS AND IMPLEMENT POLLUTION CONTROL MEASURES SO THAT NO RUNOFF FROM STRIPPED AREAS WILL LEAVE THE CONSTRUCTION SITE OTHER THAN THROUGH SEDIMENT TRAPS OR OTHER SUITABLE CONTROL MEASURES.
3. THE CONTRACTOR IS TO MAINTAIN AND ADJUST, REPAIR OR REPLACE ALL STORMWATER 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.
4. AN ADDITIONAL 600 L.F. OF SILT FENCE HAS BEEN ALLOTTED TO BE PLACED AS DIRECTED BY THE RESIDENT ENGINEER AROUND STOCKPILES OR OTHER AREAS IN NEED OF EROSION CONTROL BASED ON ACTUAL SITE CONDITIONS.

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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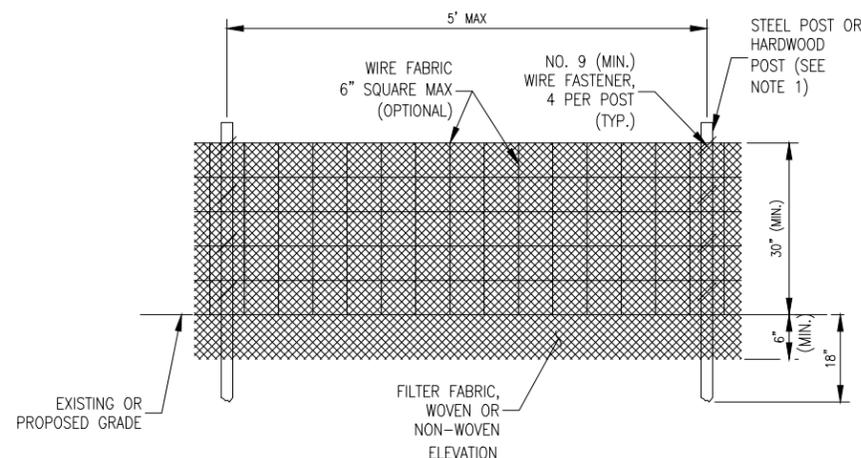
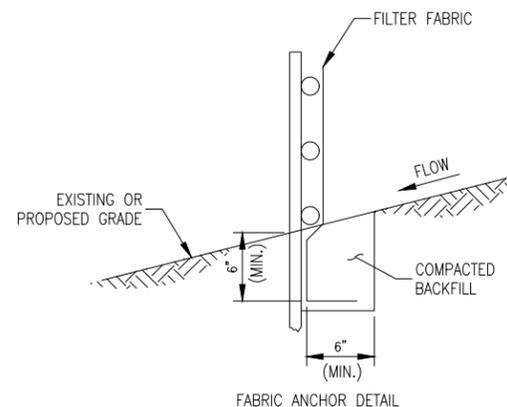
- FENCE POST SHALL BE EITHER STEEL "T" LINE POST OR HARDWOOD POST WITH A MINIMUM SECTIONAL AREA OF 2.0 SQUARE INCHES. A CARPENTER'S (NOMINAL) 2"x2" POST WILL MEET SPECIFICATIONS.
- TOP AND BOTTOM WIRE OF WIRE FABRIC SHALL BE MINIMUM GAGE NO. 9. INTERMEDIATE WIRES OF THE WIRE FABRIC SHALL BE MINIMUM GAGE NO. 11.
- WIRE FABRIC SHALL BE SECURELY FASTENED TO FENCE POSTS WITH NO. 9 GAGE WIRE MINIMUM. FOUR (4) FASTENERS PER POST REQUIRED.
- 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.
- WHEN TWO SECTIONS OF FILTER FABRIC MEET, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED AND ATTACHED TO THE WIRE FABRIC AT A POST.
- FILTER FABRIC SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS WITH APPARENT OPENING SIZE (AOS) OF AT LEAST 40 FOR NONWOVEN AND WOVEN. THE FABRIC MUST MEET THE APPLICABLE STANDARDS OF AASHTO 288-00 (Article IV, Section B.1.j.1.f.i, AS AMENDED), OR EQUIVALENT.



SILT FENCE PLACEMENT AND INLET PROTECTION AT FLARED END SECTIONS (FES)
NOT TO SCALE

NOTES:

- A MAXIMUM OF 5 FEET IS USED FOR POST-TO-POST SPACING.
- 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.
- ALL STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
- 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.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN BULGES DEVELOP IN THE SILT FENCE.
- 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).
- FENCE POSTS SHALL BE REMOVED WHEN DIRECTED AT PROJECT END.
- 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.

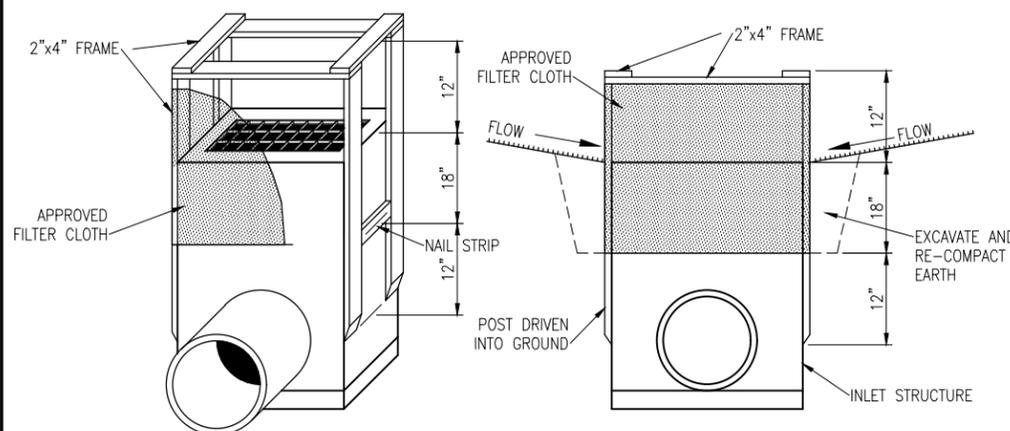
THE MAINTENANCE OF ALL STORM WATER POLLUTION PREVENTION MEASURES IS INCIDENTAL TO THE ASSOCIATED ITEM.

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.

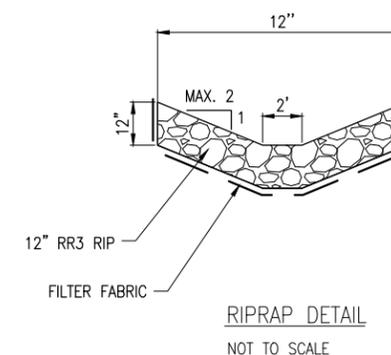
ADDITIONAL STORMWATER POLLUTION PREVENTION MEASURES ARE EXISTING ON SITE LOCATED AT DRAINAGE FACILITIES AND ALONG THE PROPERTY LINE.



INLET PROTECTION DETAIL
NOT TO SCALE

SEDIMENTATION AND EROSION CONTROL NOTES:

- SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.
- FOR THOSE DEVELOPMENTS THAT REQUIRE A DESIGNATED EROSION CONTROL INSPECTOR (DECI), INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM:
 - UPON COMPLETION OF SEDIMENT AND RUNOFF CONTROL MEASURES (INCLUDING PERIMETER CONTROLS AND DIVERSIONS), PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
 - AFTER EVERY SEVEN (7) CALENDAR DAYS OR STORM EVENT WITH GREATER THAN 0.5 INCH OF RAINFALL OR LIQUID EQUIVALENT PRECIPITATION.
- SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. IF STRIPPING, CLEARING, GRADING, OR LANDSCAPING ARE TO BE DONE IN PHASES, THE PERMITTEE SHALL PLAN FOR APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL MEASURES.
- A STABILIZED MAT OF CRUSHED STONE MEETING IDOT GRADATION CA-01 AND/OR RR-01 UNDERLAIN WITH FILTER FABRIC AND IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL, OR OTHER APPROPRIATE MEASURE(S) AS APPROVED BY THE ENFORCEMENT OFFICER, SHALL BE INSTALLED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE. 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.
- TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED AS NECESSARY TO DIRECT ALL RUNOFF FROM HYDROLOGICALLY DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAP OR BASIN.
- DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE END OF ACTIVE HYDROLOGIC DISTURBANCE OR REDISTURBANCE.
- ALL STOCKPILES SHALL HAVE APPROPRIATE MEASURES TO PREVENT EROSION. STOCKPILES SHALL NOT BE PLACED IN FLOOD PRONE AREAS OR WETLANDS AND DESIGNATED BUFFERS.
- SLOPES STEEPER THAN 3H:1V SHALL BE STABILIZED WITH APPROPRIATE MEASURES AS APPROVED BY THE ENFORCEMENT OFFICER.
- APPROPRIATE EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL INTERIOR DETENTION BASIN SIDE SLOPES BETWEEN THE NORMAL WATER LEVEL AND HIGH WATER LEVEL.
- STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
- IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DISCHARGES SHALL BE ROUTED THROUGH AN APPROVED ANIONIC POLYMER DEWATERING SYSTEM OR A SIMILAR MEASURE AS APPROVED BY THE ENFORCEMENT OFFICER. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE ENFORCEMENT OFFICER, OR APPROVED REPRESENTATIVE, MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.
- IF INSTALLED SOIL EROSION AND SEDIMENT CONTROL MEASURES DO NOT MINIMIZE SEDIMENT LEAVING THE DEVELOPMENT SITE, ADDITIONAL MEASURES SUCH AS ANIONIC POLYMERS OR FILTRATION SYSTEMS MAY BE REQUIRED BY THE ENFORCEMENT OFFICER.
- 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.
- ALL TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.
- THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, ENFORCEMENT OFFICER, OR OTHER GOVERNING AGENCY.



RIPRAP DETAIL
NOT TO SCALE

EXTEND PARTIAL PAR
TAXIWAY B & RELATED
LIGHTING/ELECTRICAL
FROM EXISTING END TO
RWY 9 TURNAROUND

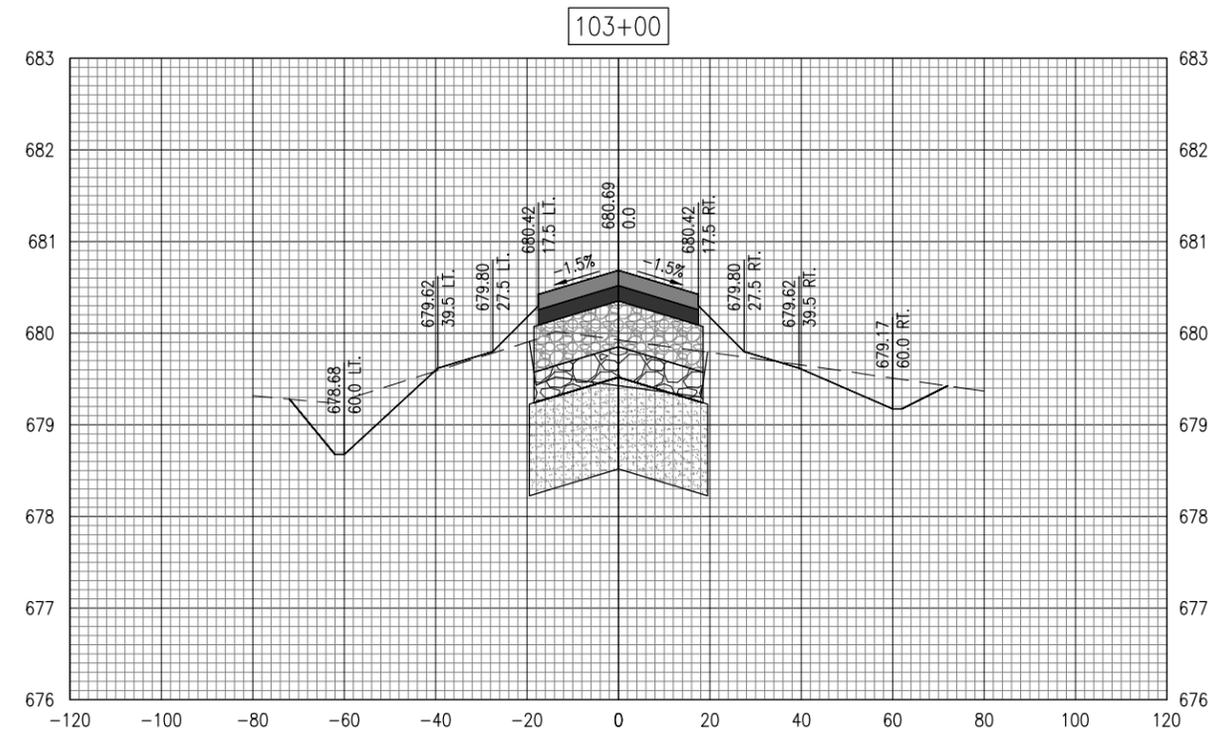
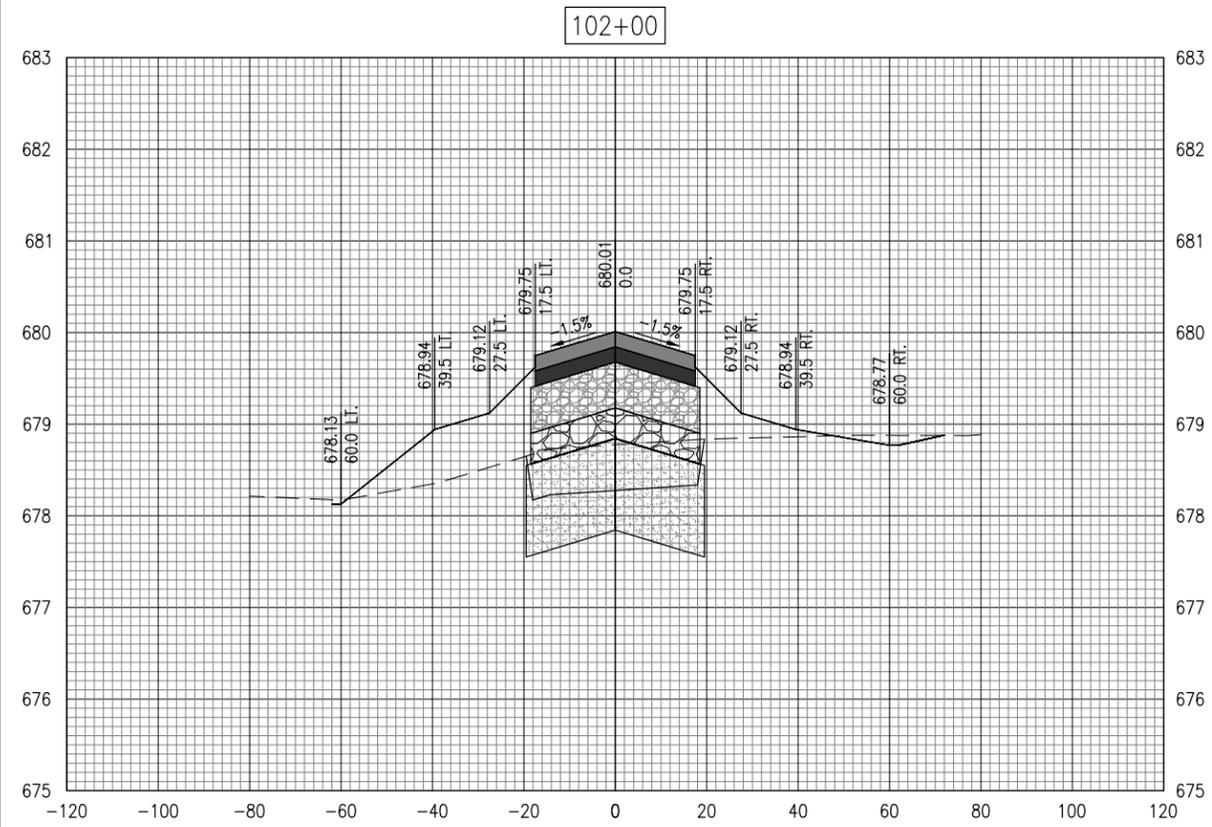
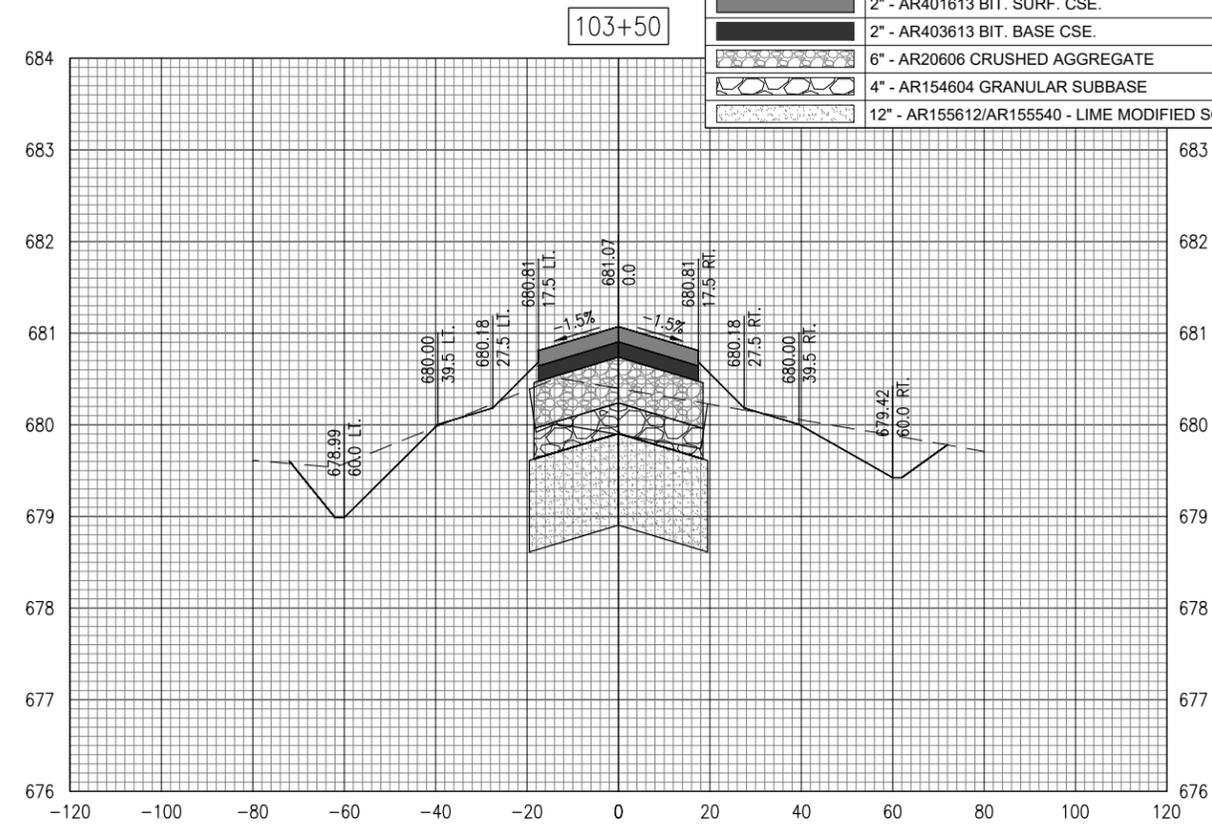
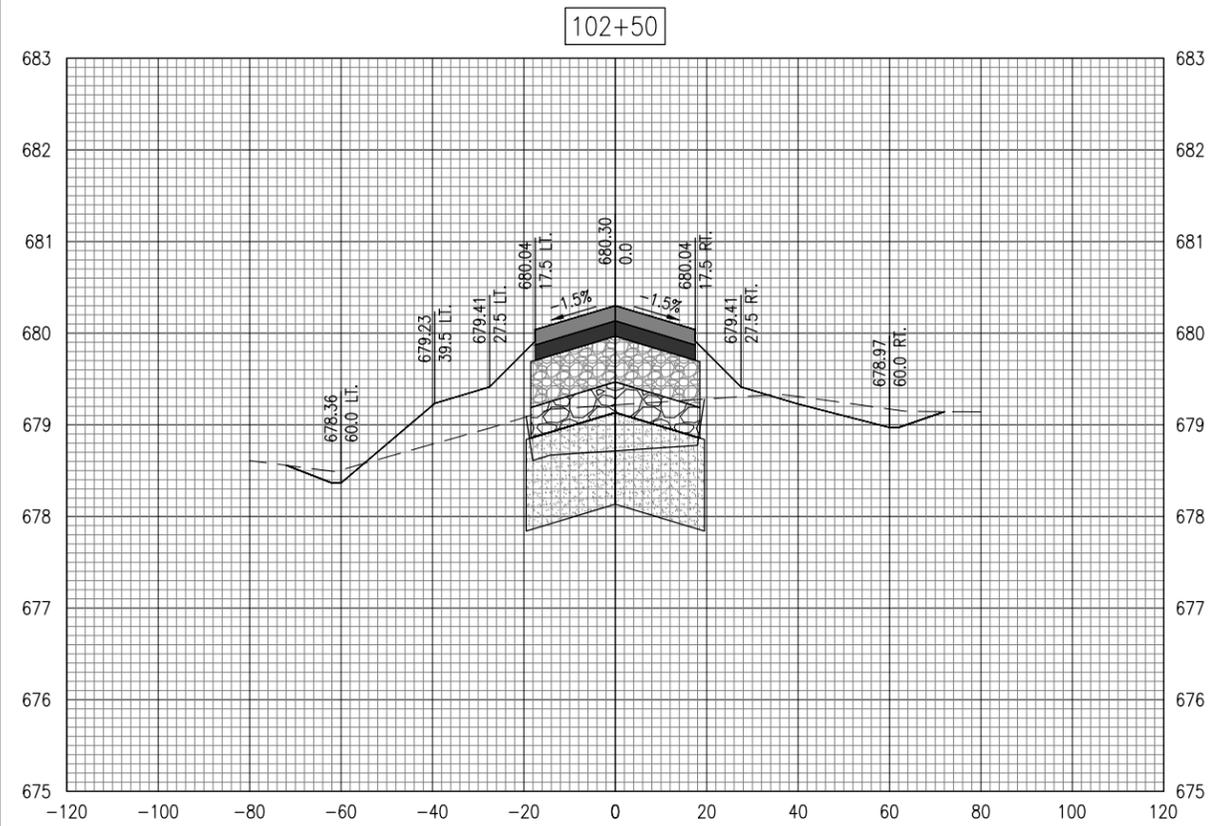
IDA No: 3LF-4819
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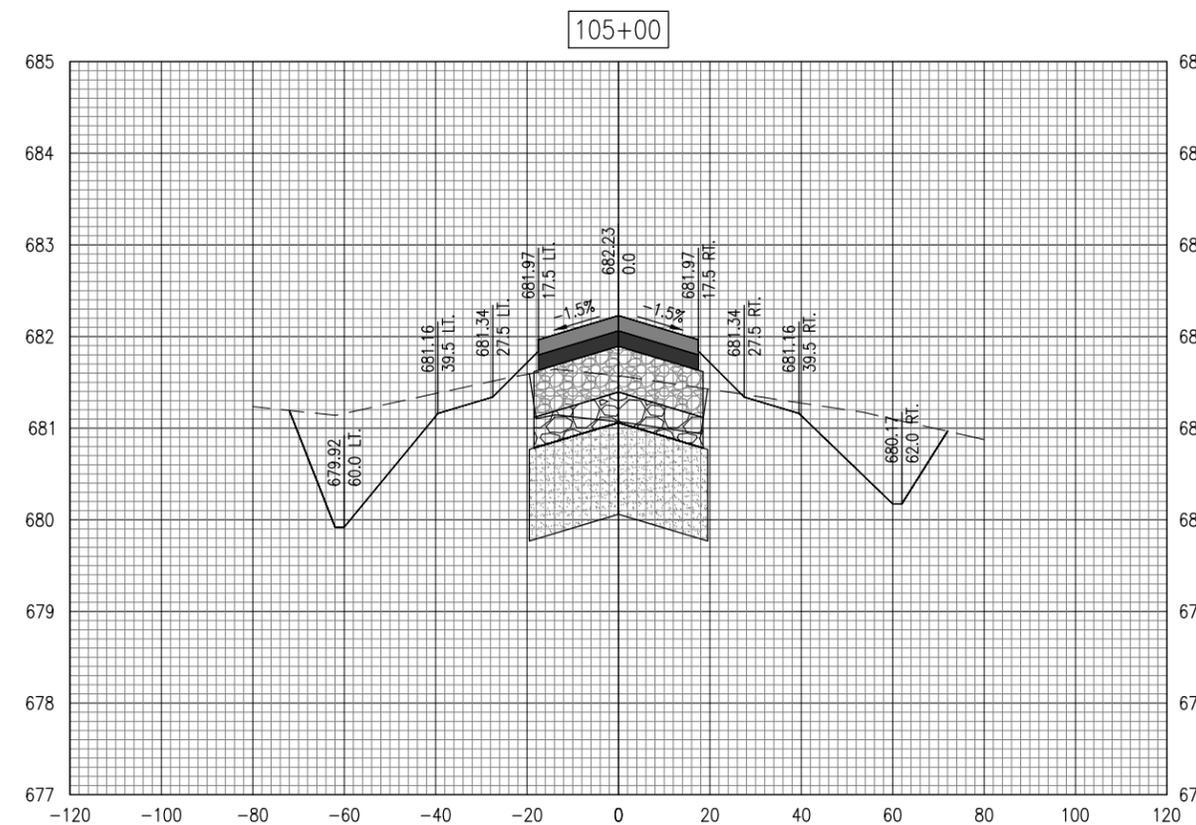
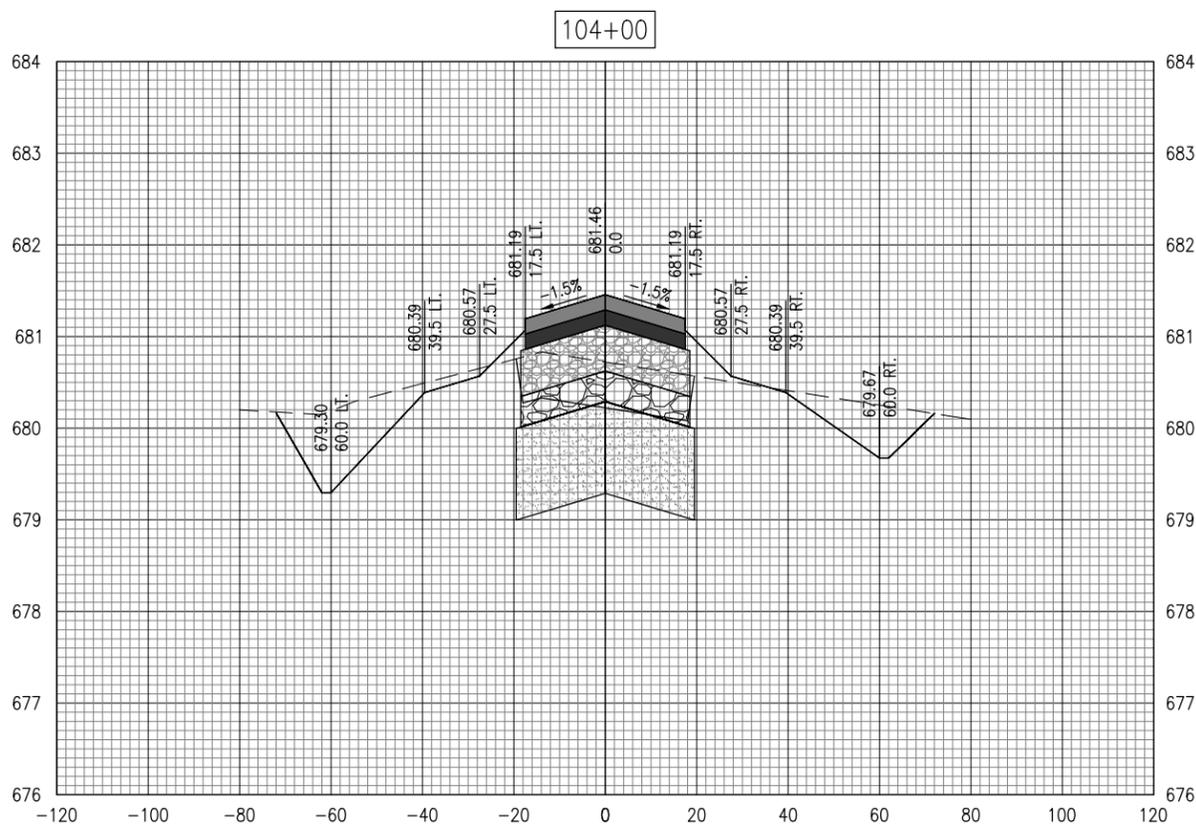
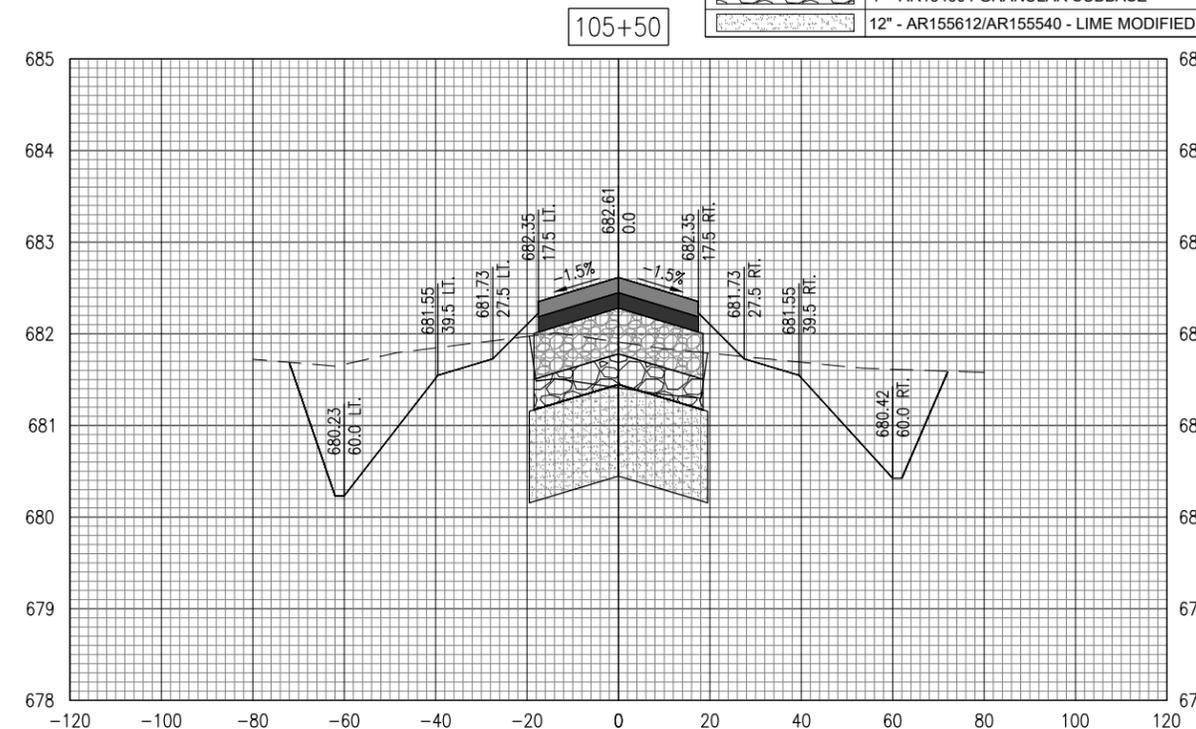
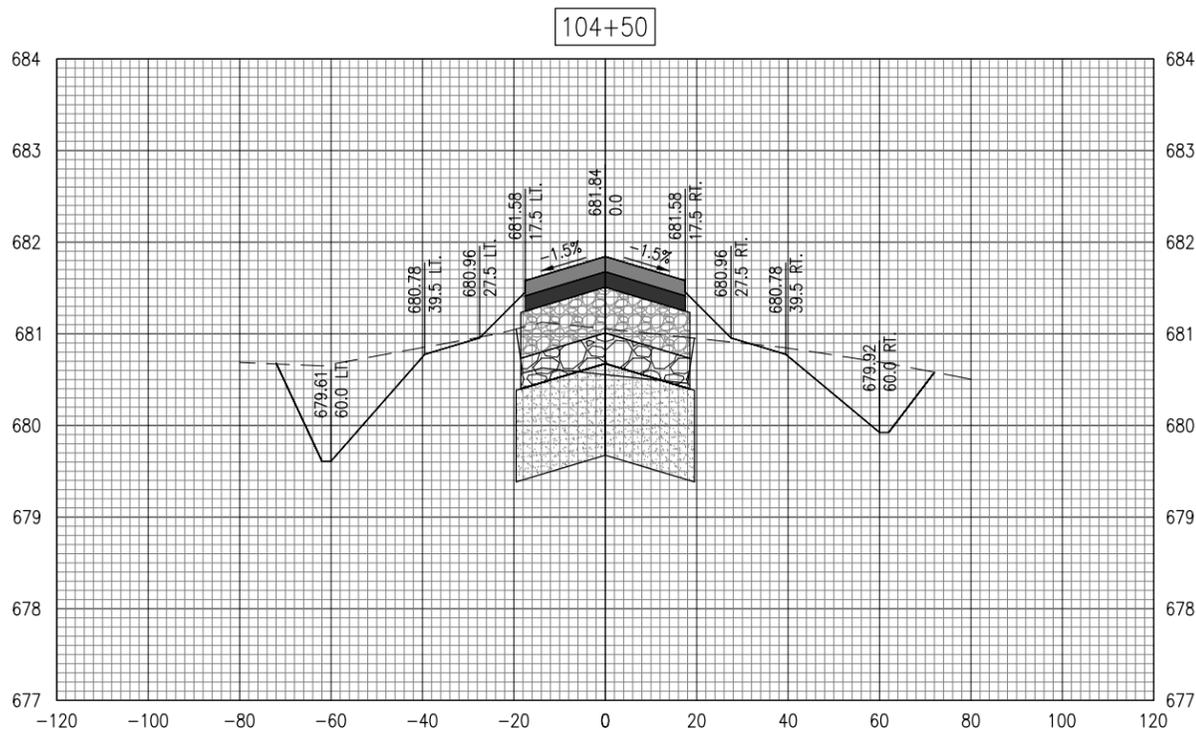
ISSUE: 11/20/2020 (For Bid)
PROJECT NO: 20A0040
CAD FILE: C-301-XS.DWG
DESIGN BY: KNL 10/06/2020
DRAWN BY: HLE 10/06/2020
REVIEWED BY: KBS 11/20/2020

TWY B
CROSS-SECTIONS
102+00 - 103+50

LEGEND	
---	SURFACE
▬	2" - AR401613 BIT. SURF. CSE.
▬	2" - AR403613 BIT. BASE CSE.
▬	6" - AR20606 CRUSHED AGGREGATE
▬	4" - AR154604 GRANULAR SUBBASE
▬	12" - AR155612/AR155540 - LIME MODIFIED SOIL



LEGEND	
---	SURFACE
▬	2" - AR401613 BIT. SURF. CSE.
▬	2" - AR403613 BIT. BASE CSE.
▬	6" - AR20606 CRUSHED AGGREGATE
▬	4" - AR154604 GRANULAR SUBBASE
▬	12" - AR155612/AR155540 - LIME MODIFIED SOIL



LITCHFIELD MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731

EXTEND PARTIAL PAR
TAXIWAY B & RELATED
LIGHTING/ELECTRICAL
FROM EXISTING END TO
RWY 9 TURNAROUND

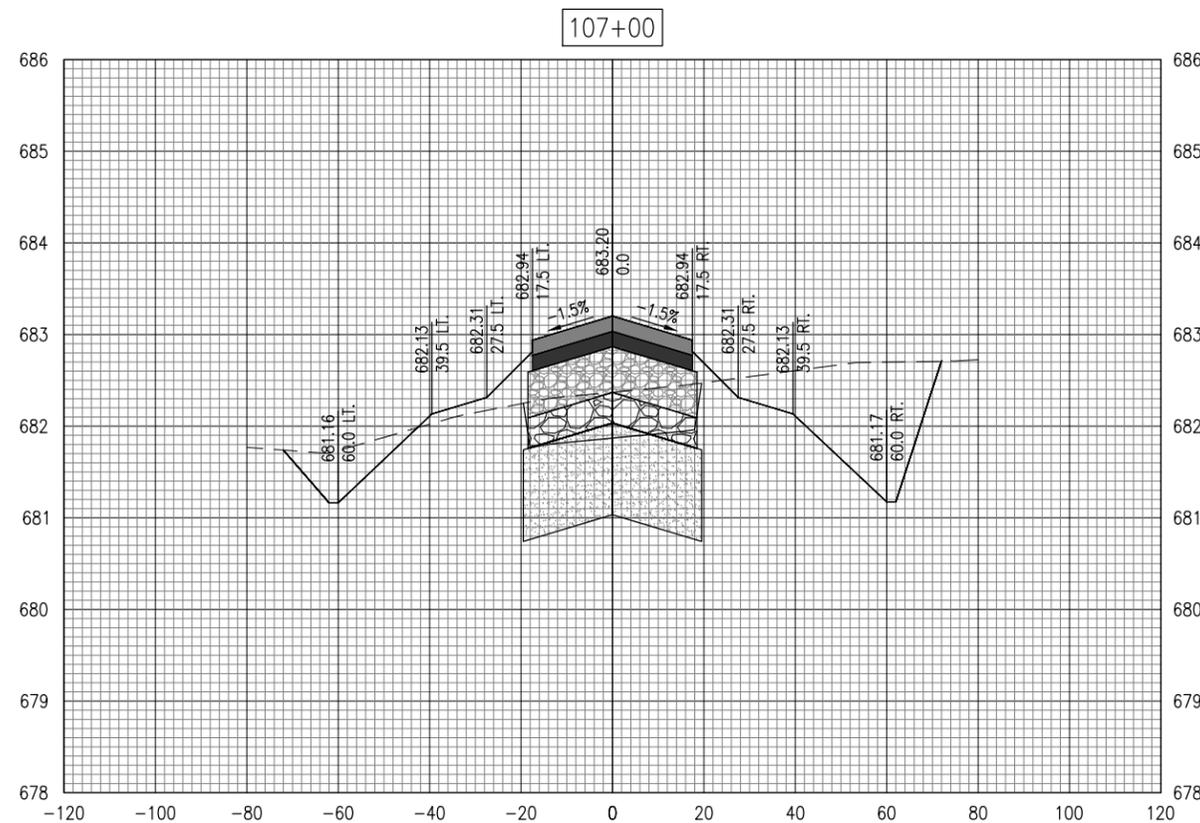
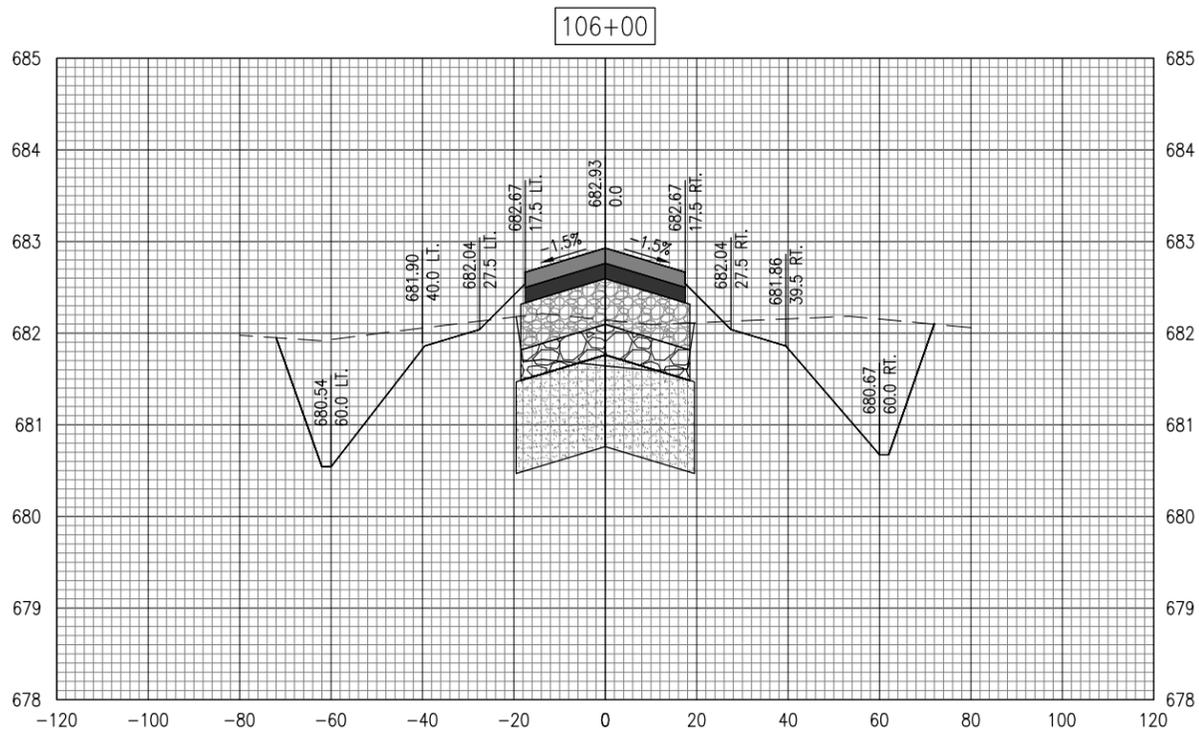
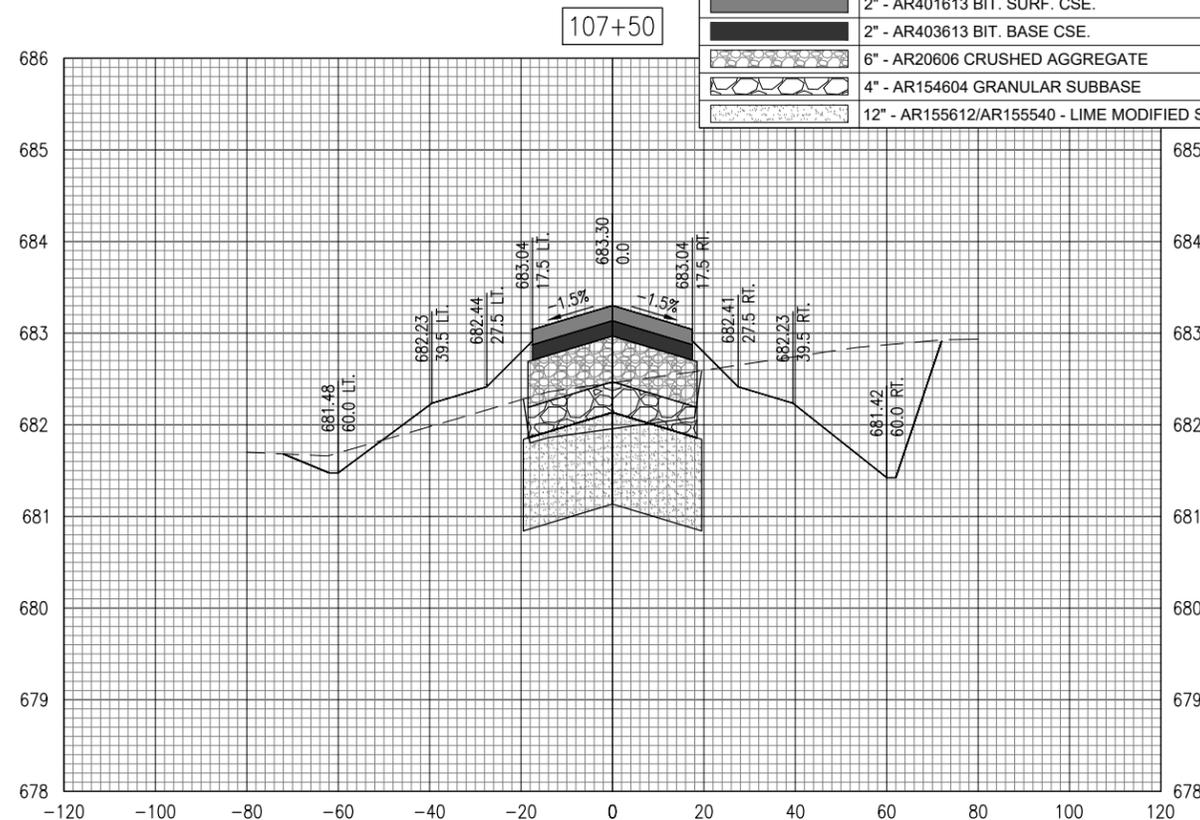
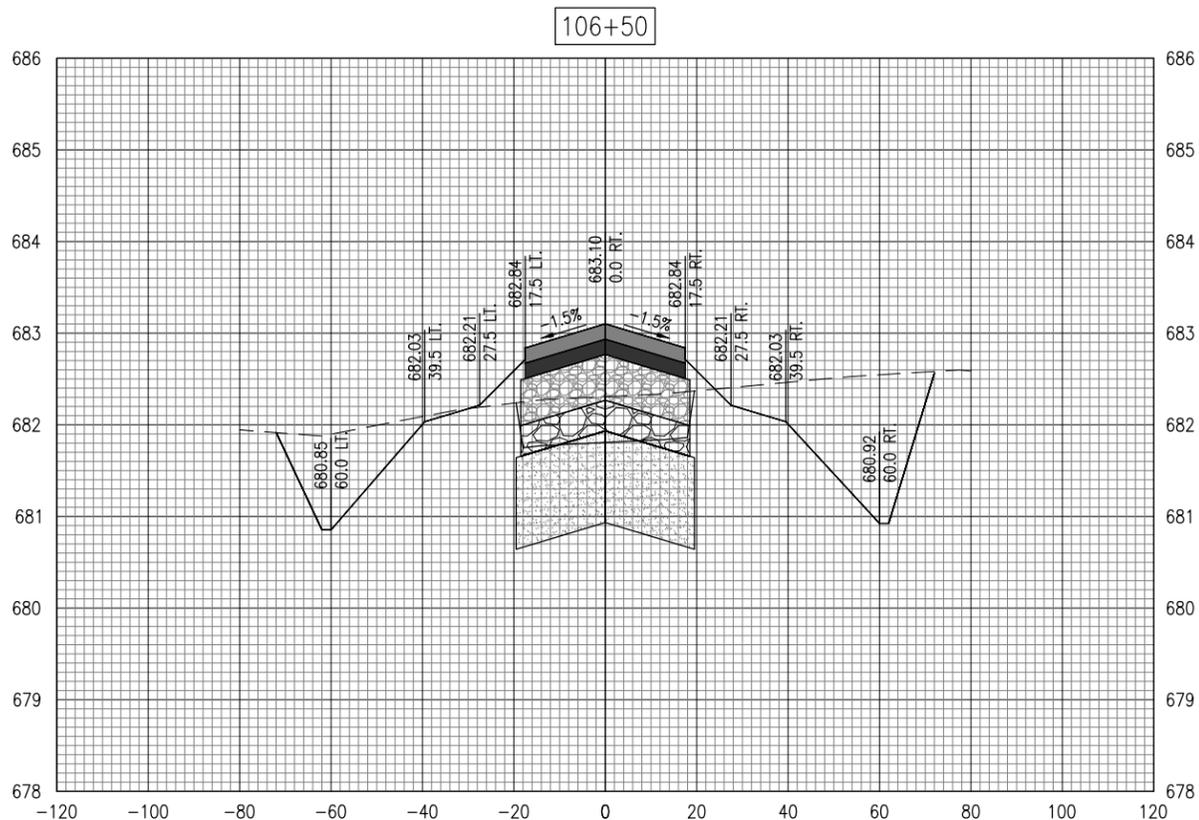
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TWY B
CROSS-SECTIONS
104+00 - 105+50

LEGEND	
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▬	2" - AR401613 BIT. SURF. CSE.
▬	2" - AR403613 BIT. BASE CSE.
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LITCHFIELD MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731

EXTEND PARTIAL PAR
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TWY B
CROSS-SECTIONS
106+00 - 107+50

EXTEND PARTIAL PAR
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LIGHTING/ELECTRICAL
FROM EXISTING END TO
RWY 9 TURNAROUND

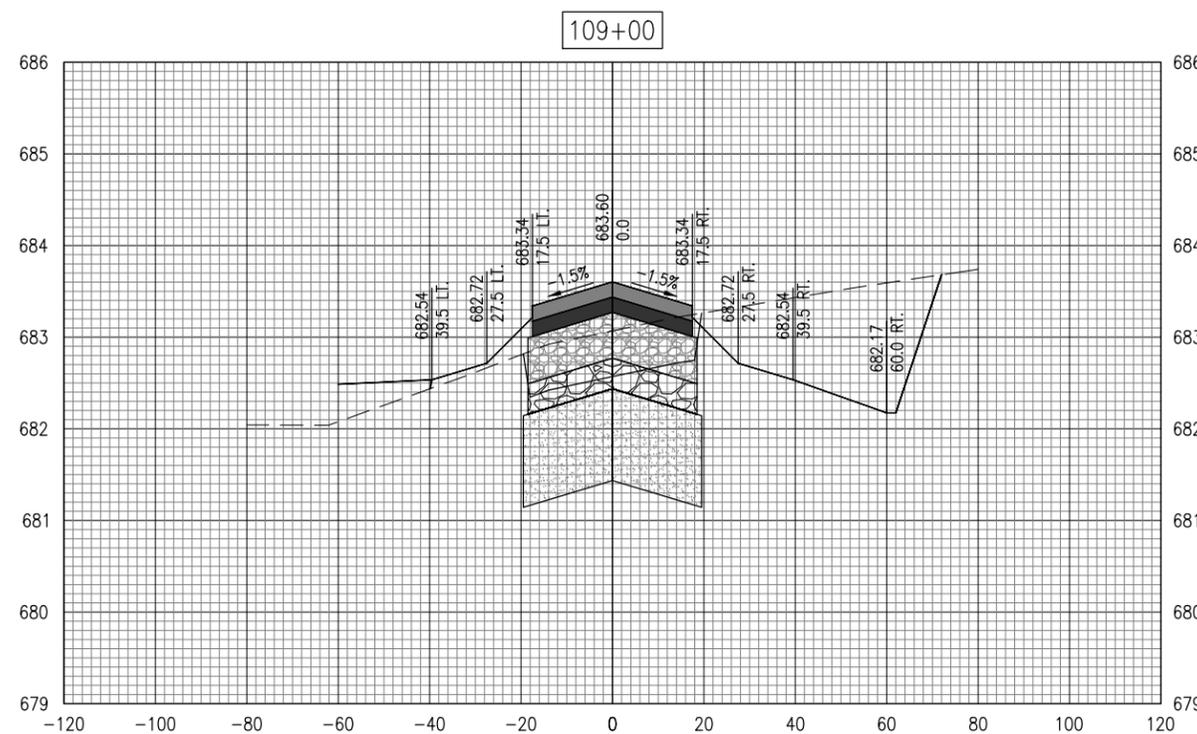
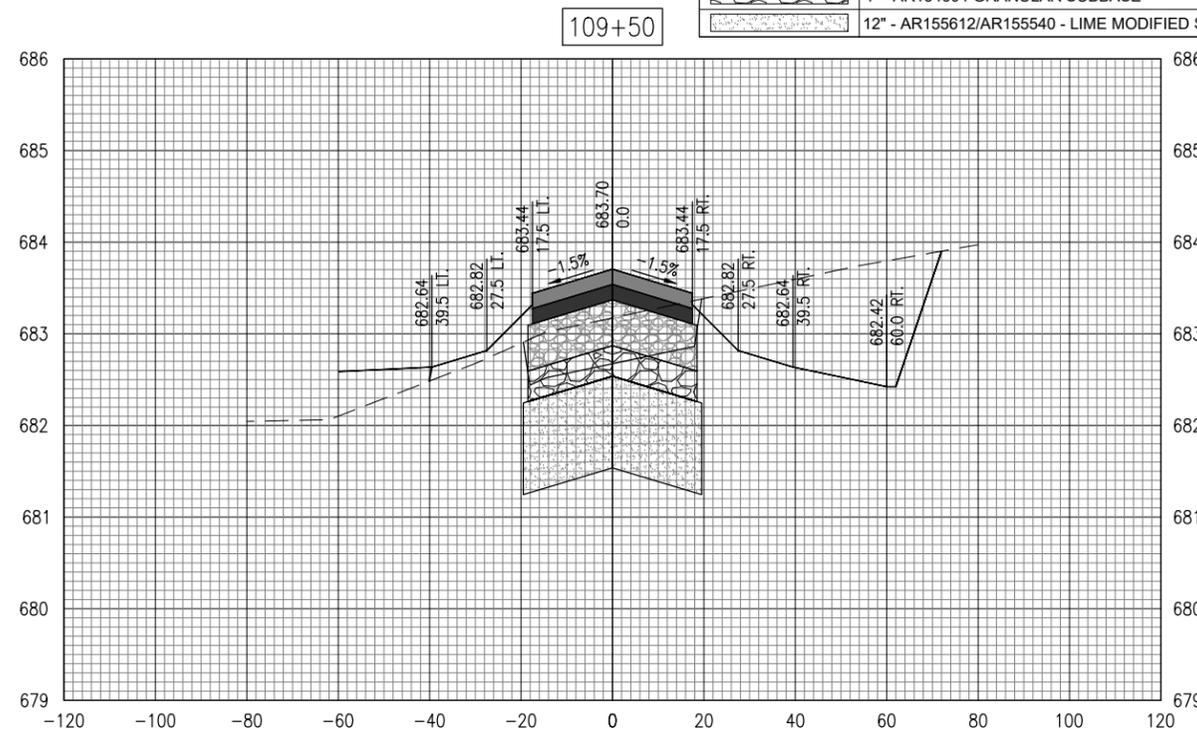
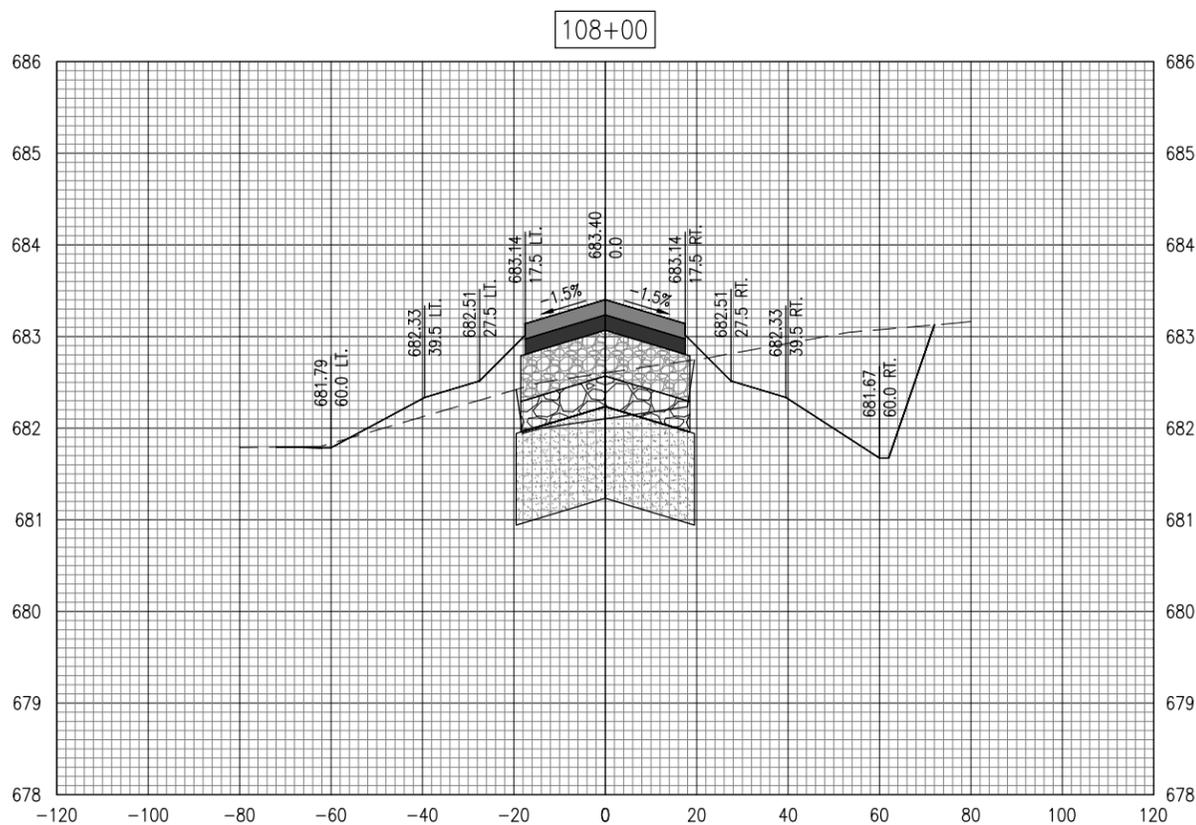
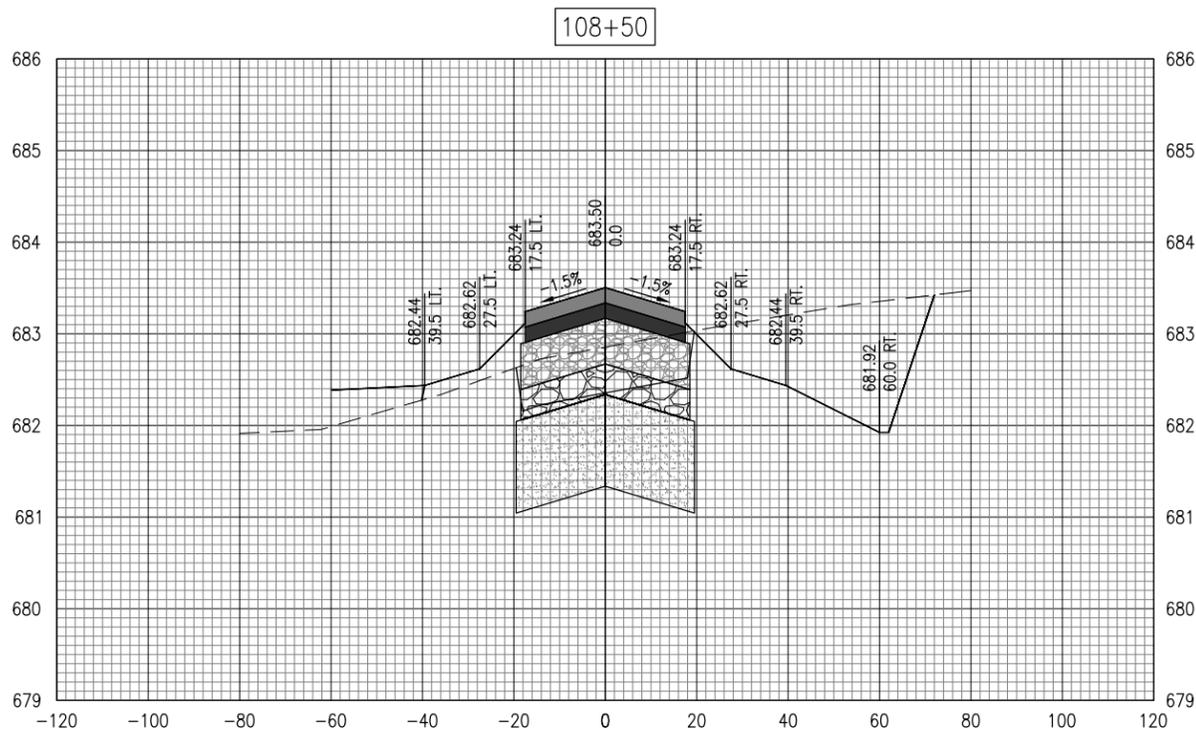
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PROJECT NO: 20A0040
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DESIGN BY: KNL 10/06/2020
DRAWN BY: HLE 10/06/2020
REVIEWED BY: KBS 11/20/2020

TWY B
CROSS-SECTIONS
108+00 - 109+50

LEGEND	
---	SURFACE
▬	2" - AR401613 BIT. SURF. CSE.
▬	2" - AR403613 BIT. BASE CSE.
▬	6" - AR20606 CRUSHED AGGREGATE
▬	4" - AR154604 GRANULAR SUBBASE
▬	12" - AR155612/AR155540 - LIME MODIFIED SOIL



EXTEND PARTIAL PAR
TAXIWAY B & RELATED
LIGHTING/ELECTRICAL
FROM EXISTING END TO
RWY 9 TURNAROUND

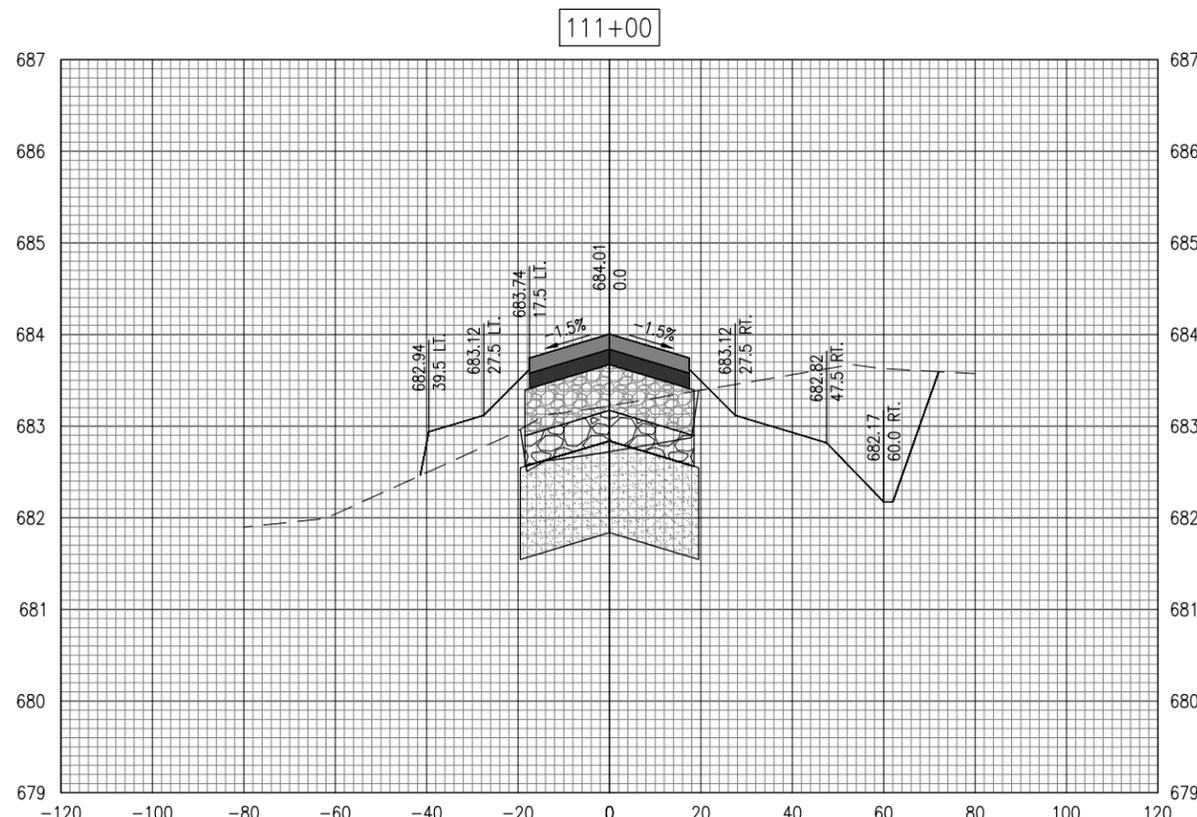
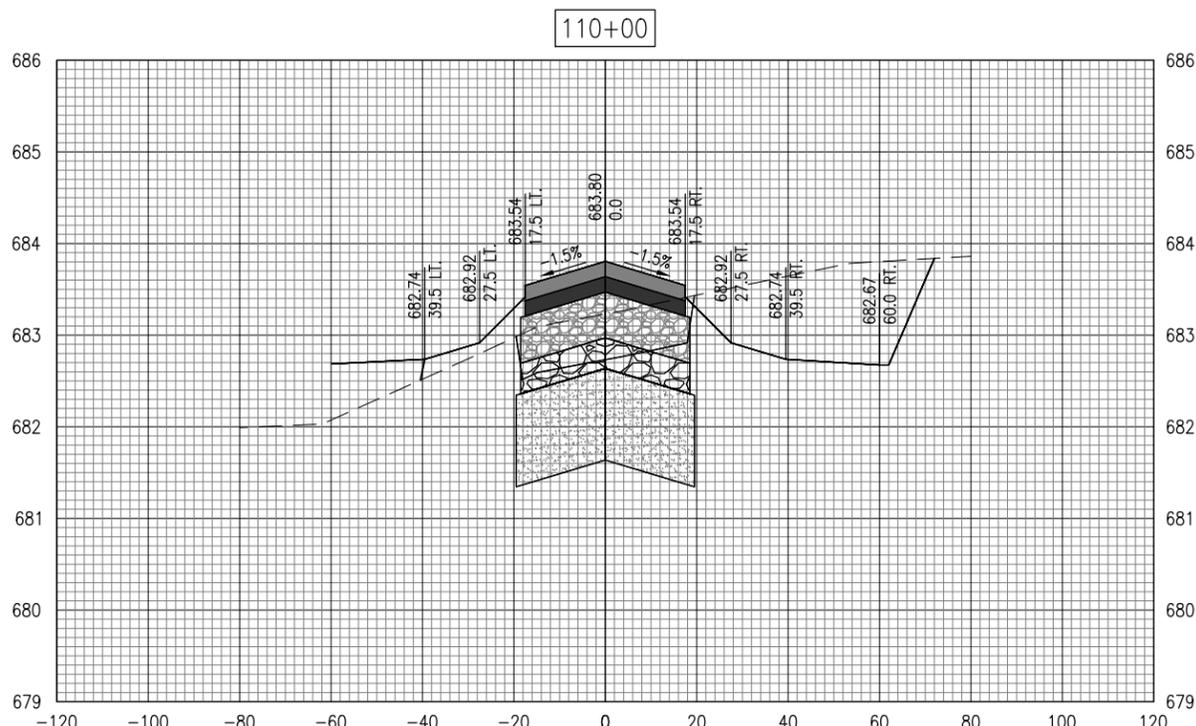
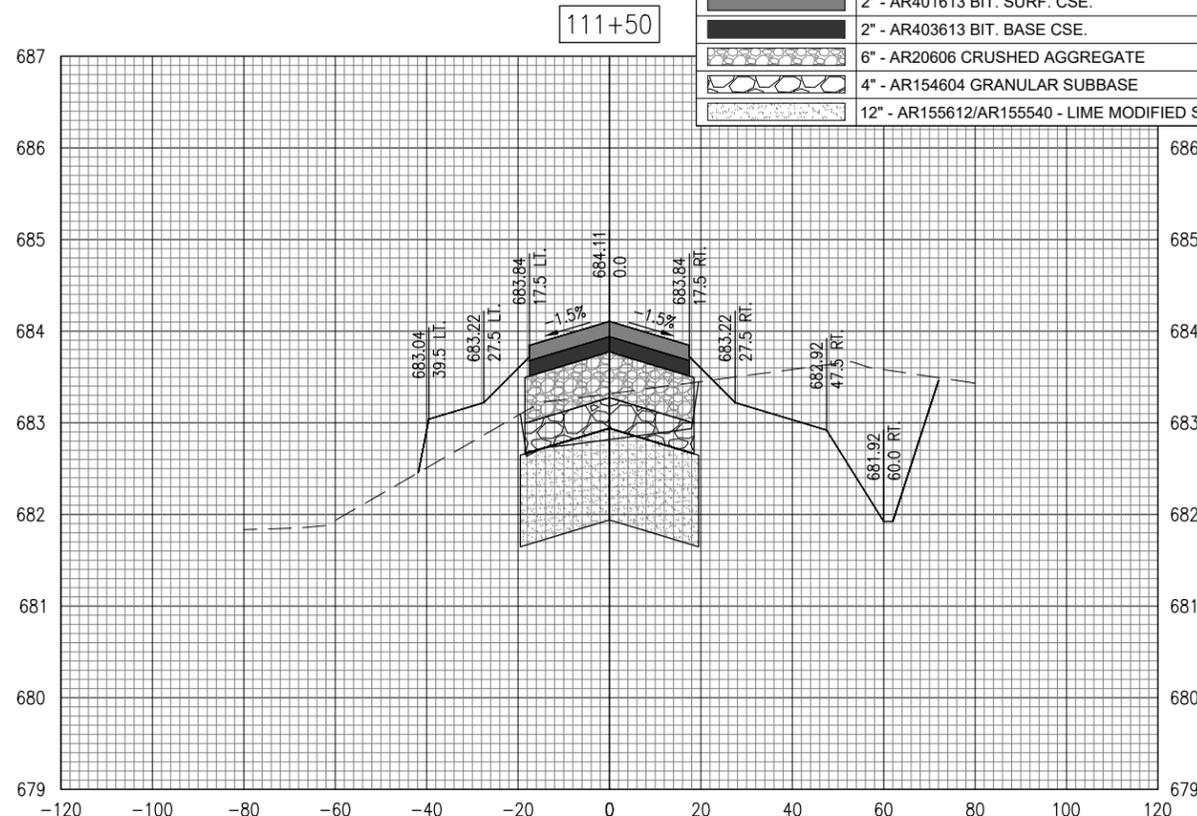
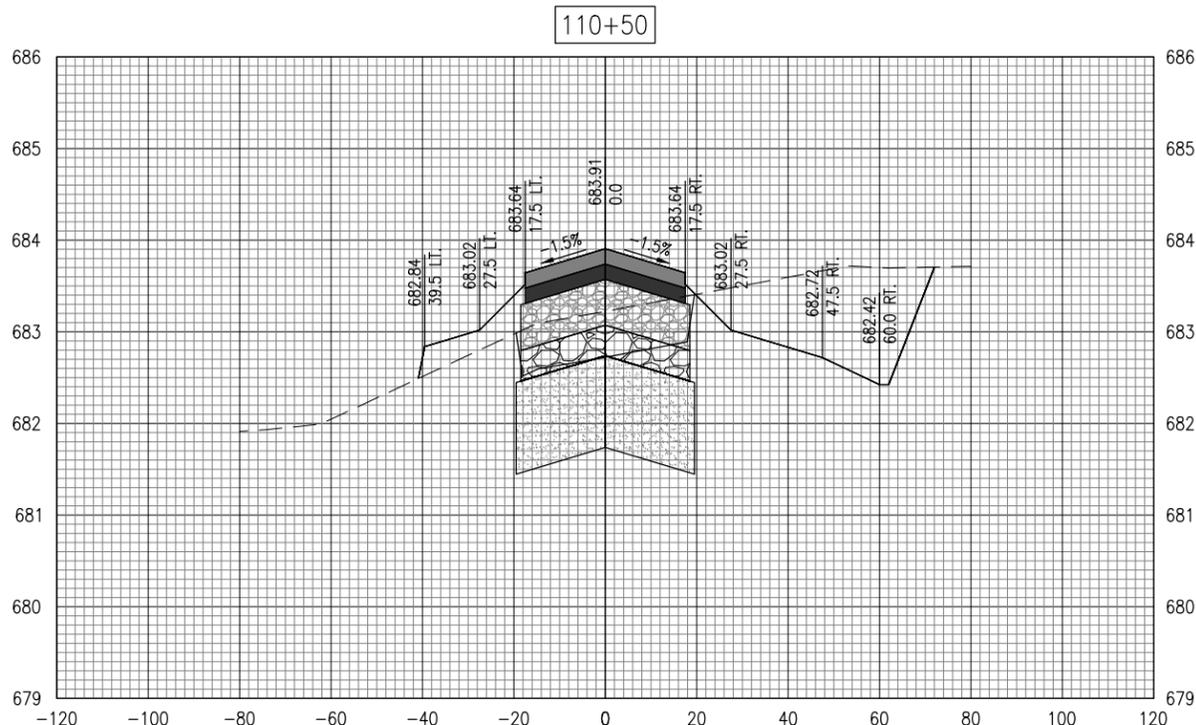
IDA No: 3LF-4819
SBG NO.
3-17-SBGP-144/156/162
Contract No. LI039

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/20/2020 (For Bid)
PROJECT NO: 20A0040
CAD FILE: C-301-XS.DWG
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REVIEWED BY: KBS 11/20/2020

TWY B
CROSS-SECTIONS
110+00 - 111+50

LEGEND	
---	SURFACE
▬	2" - AR401613 BIT. SURF. CSE.
▬	2" - AR403613 BIT. BASE CSE.
▬	6" - AR20606 CRUSHED AGGREGATE
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LITCHFIELD MUNICIPAL AIRPORT

1201 US Route 66 South
Litchfield, IL 62056
Phone: (217) 324-4731

EXTEND PARTIAL PAR
TAXIWAY B & RELATED
LIGHTING/ELECTRICAL
FROM EXISTING END TO
RWY 9 TURNAROUND

IDA No: 3LF-4819
SBG NO.
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NO.	DATE	DESCRIPTION		
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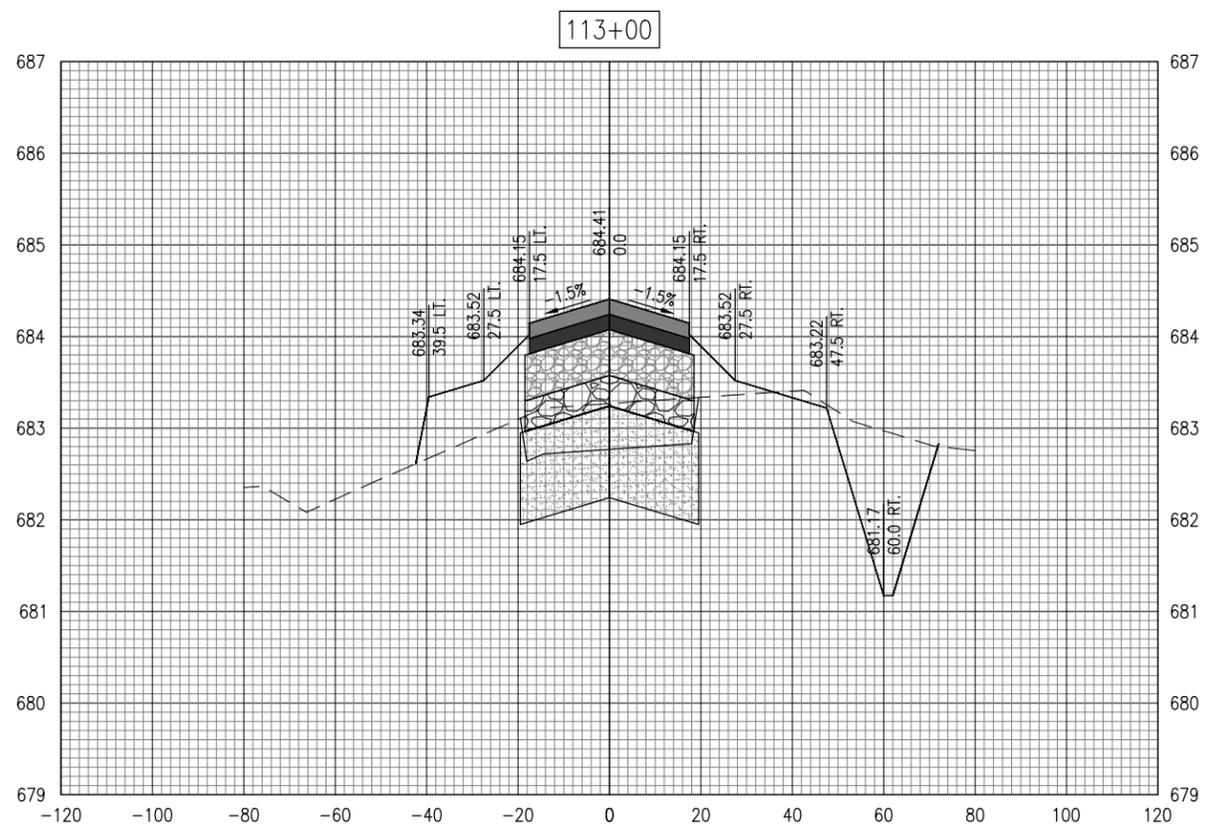
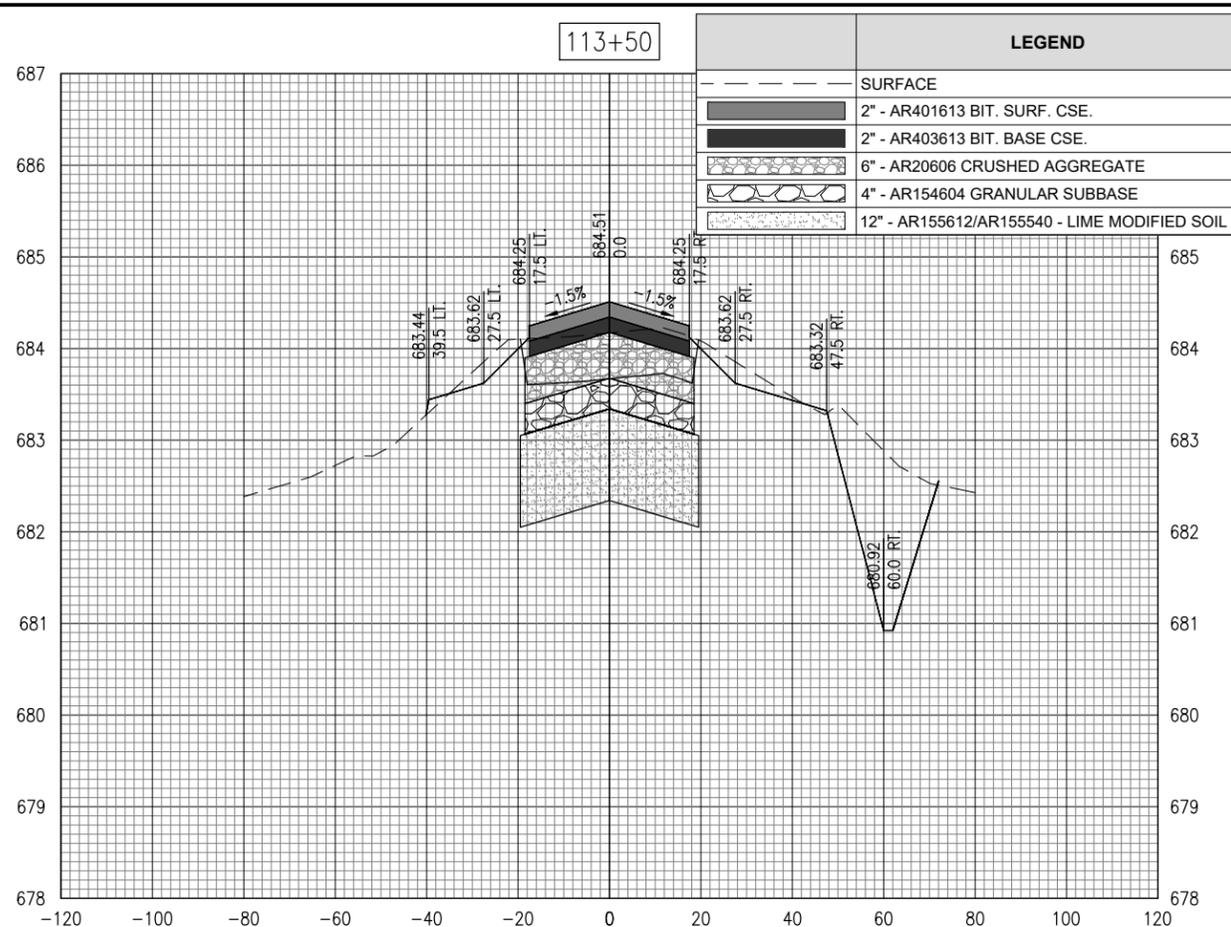
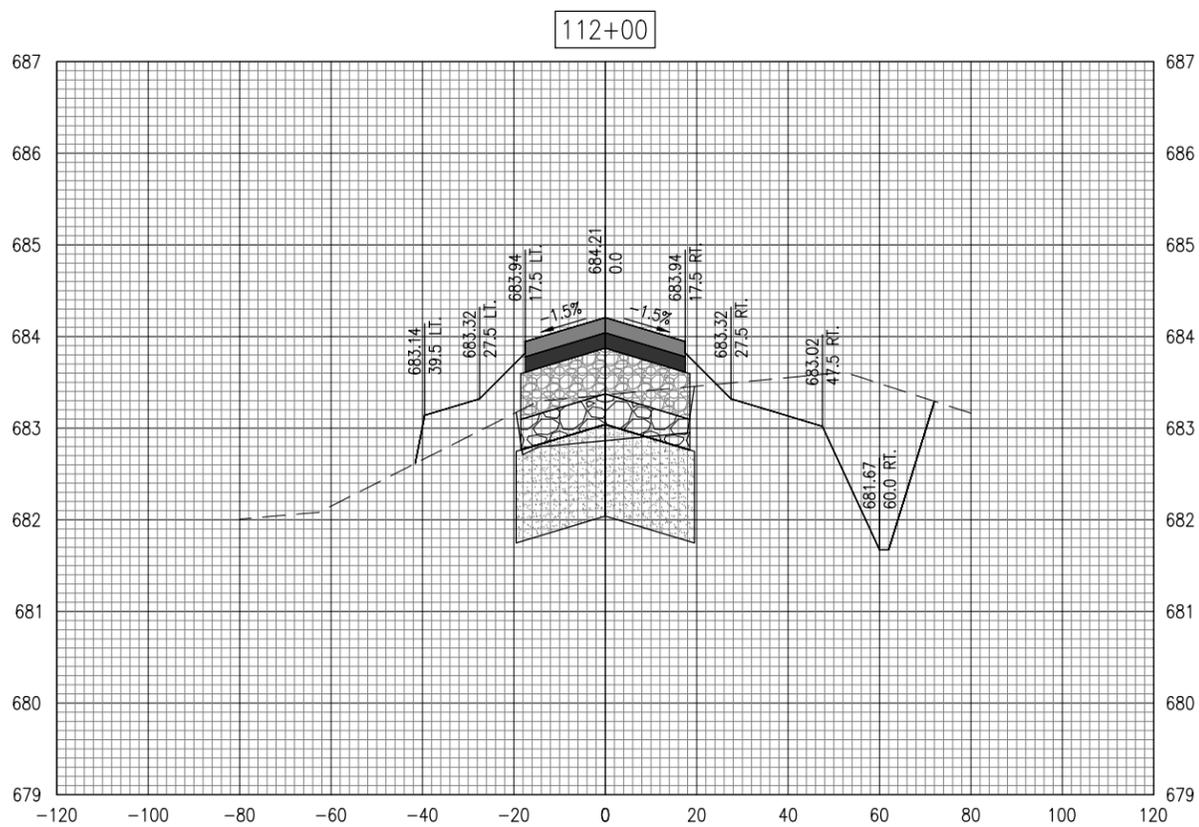
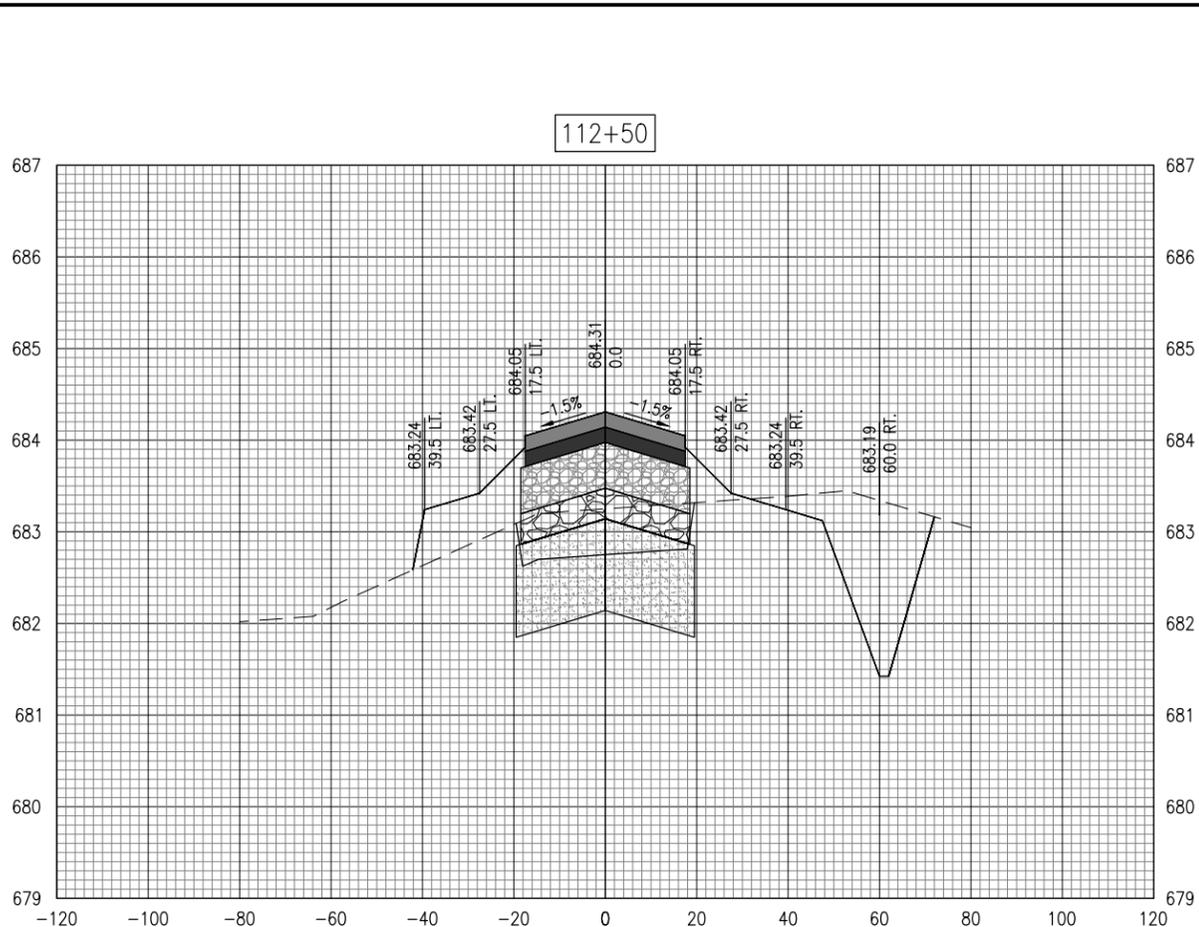
CAD FILE: C-301-XS.DWG

DESIGN BY: KNL 10/06/2020

DRAWN BY: HLE 10/06/2020

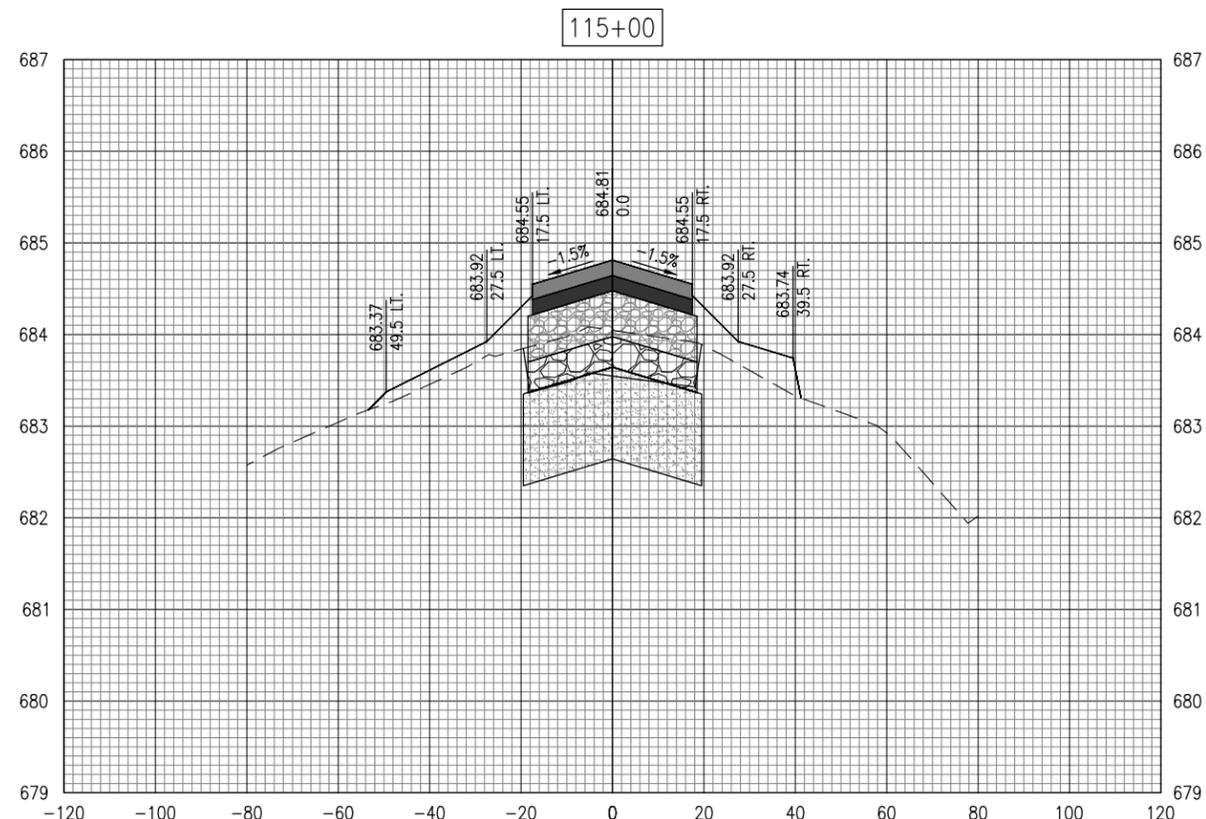
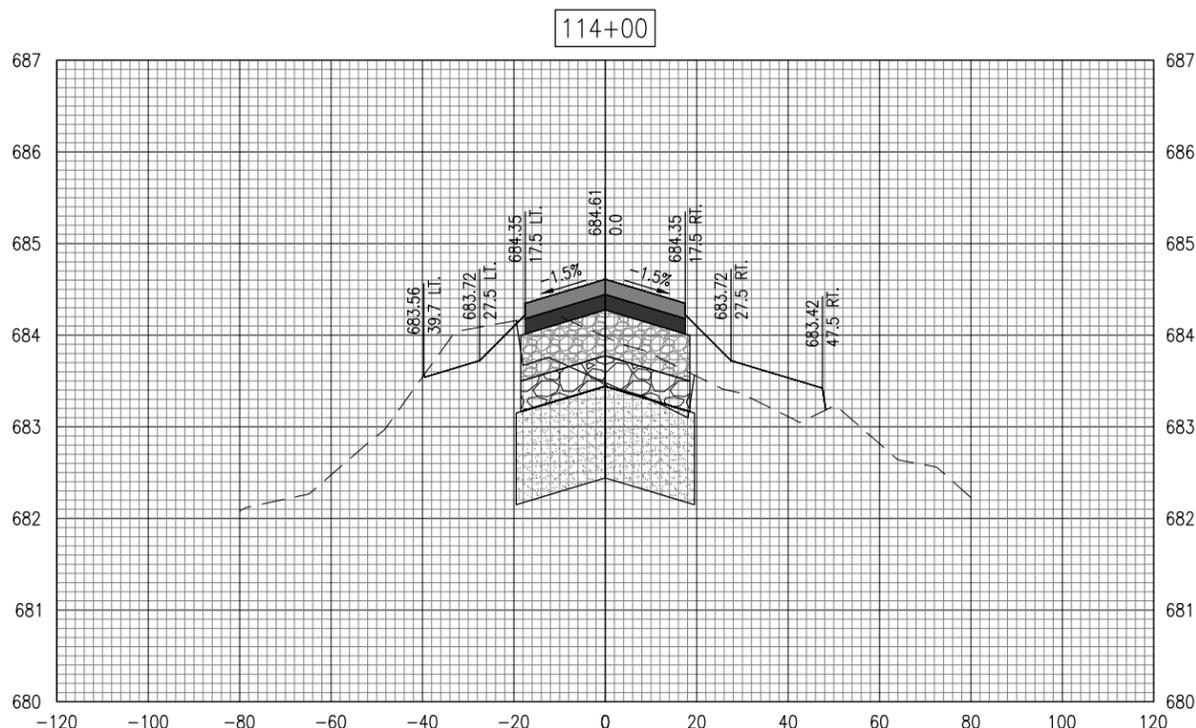
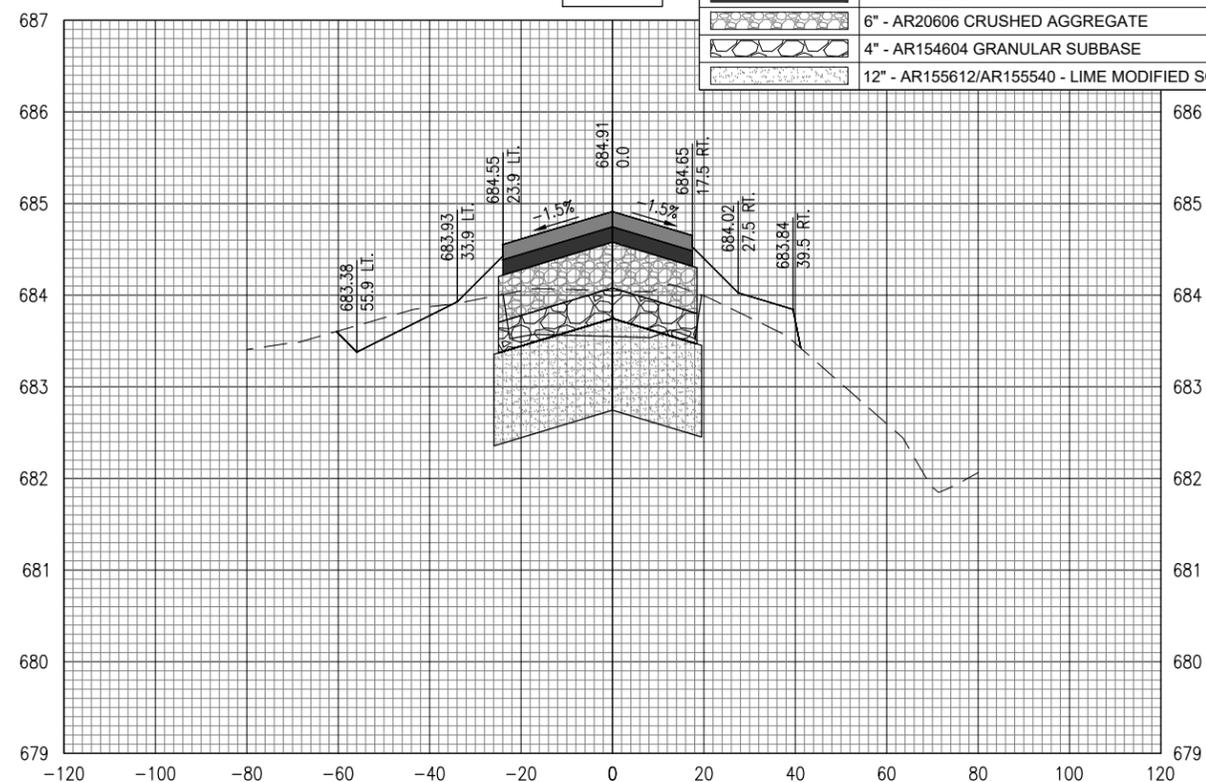
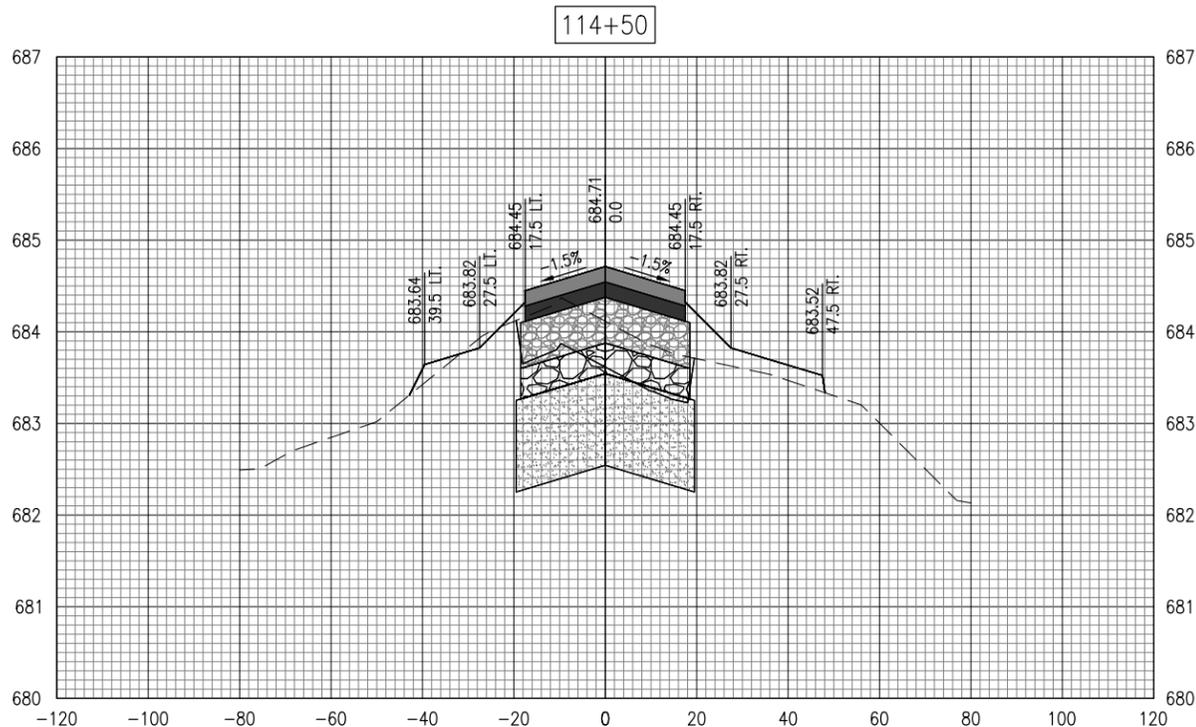
REVIEWED BY: KBS 11/20/2020

TWY B
CROSS-SECTIONS
112+00 - 113+50



LEGEND	
---	SURFACE
▬	2" - AR401613 BIT. SURF. CSE.
▬	2" - AR403613 BIT. BASE CSE.
▬	6" - AR20606 CRUSHED AGGREGATE
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▬	12" - AR155612/AR155540 - LIME MODIFIED SOIL

LEGEND	
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▬	2" - AR401613 BIT. SURF. CSE.
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EXTEND PARTIAL PAR
TAXIWAY B & RELATED
LIGHTING/ELECTRICAL
FROM EXISTING END TO
RWY 9 TURNAROUND

IDA No: 3LF-4819
SBG NO.
3-17-SBGP-144/156/162
Contract No. LI039

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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TWY B
CROSS-SECTIONS
114+00 - 115+50



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LEGEND	
---	EXISTING SURFACE
▬	2" - AR401613 BIT. SURF. CSE.
▬	2" - AR403613 BIT. BASE CSE.
▬	6" - AR20606 CRUSHED AGGREGATE
▬	4" - AR154604 GRANULAR SUBBASE
▬	12" - AR155612/AR155540 - LIME MODIFIED SOIL

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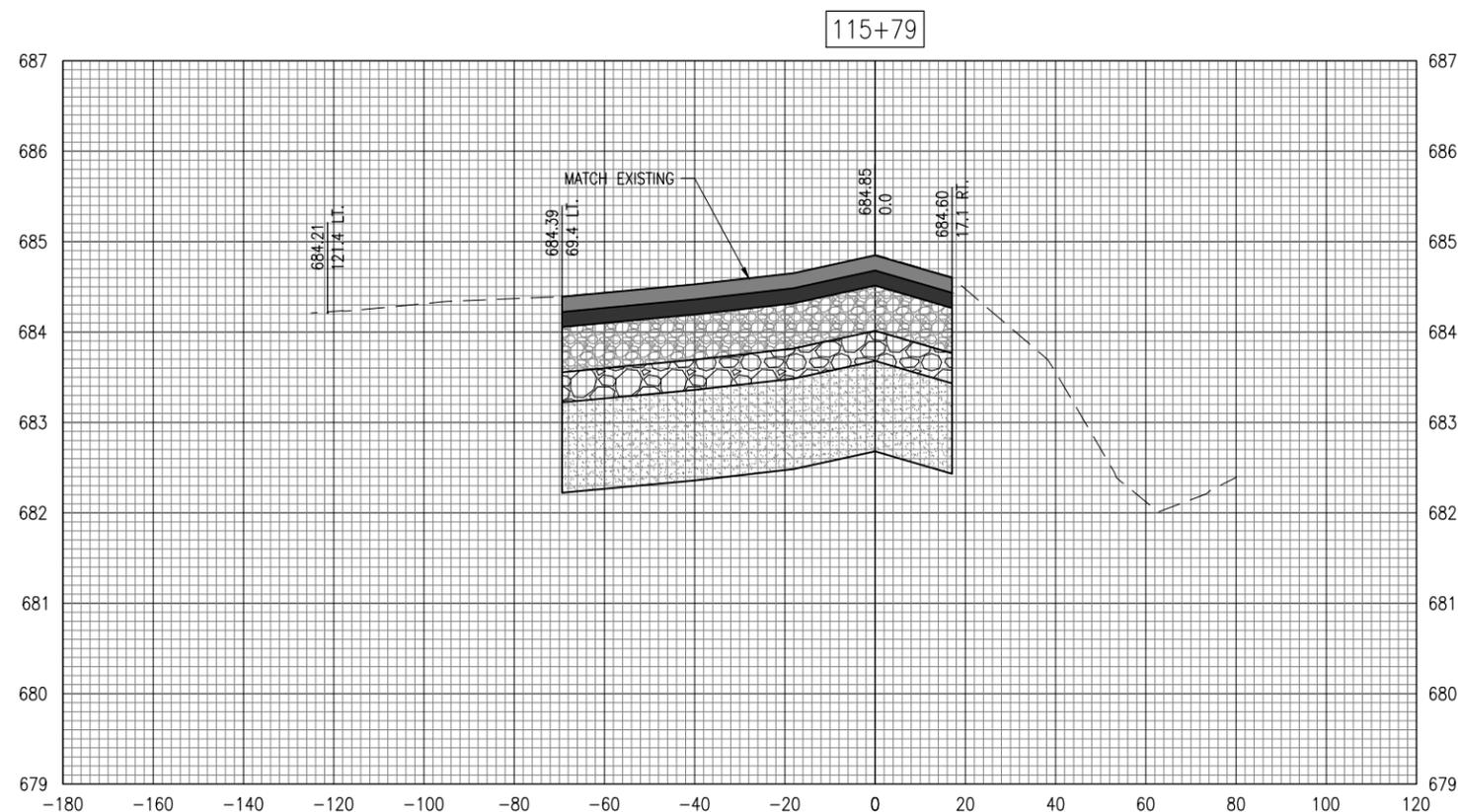
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DRAWN BY: HLE 10/06/2020

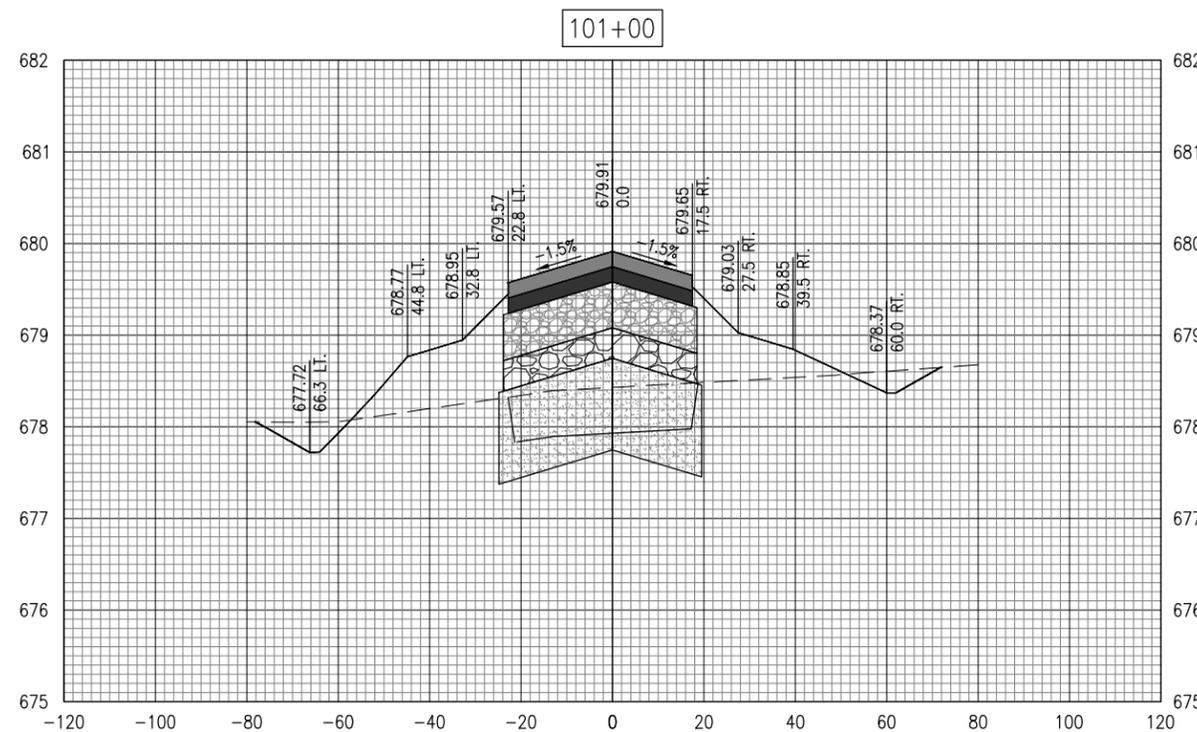
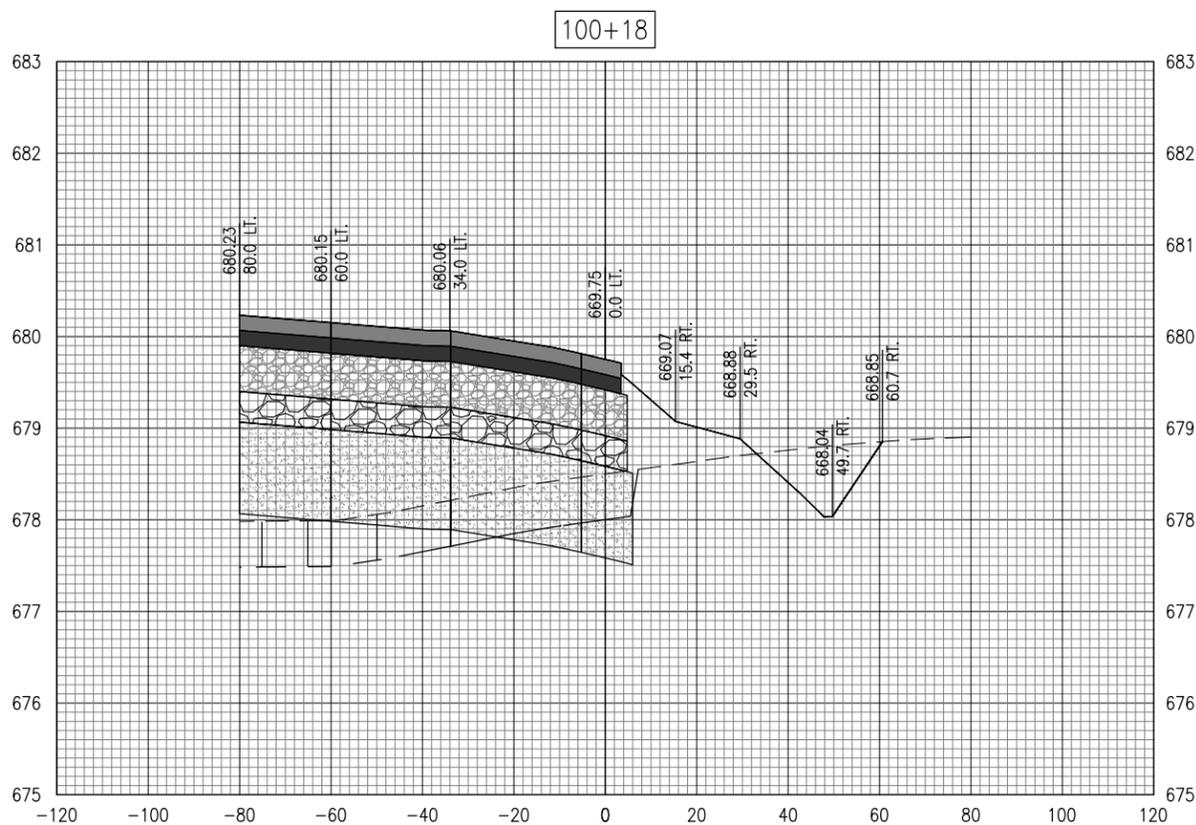
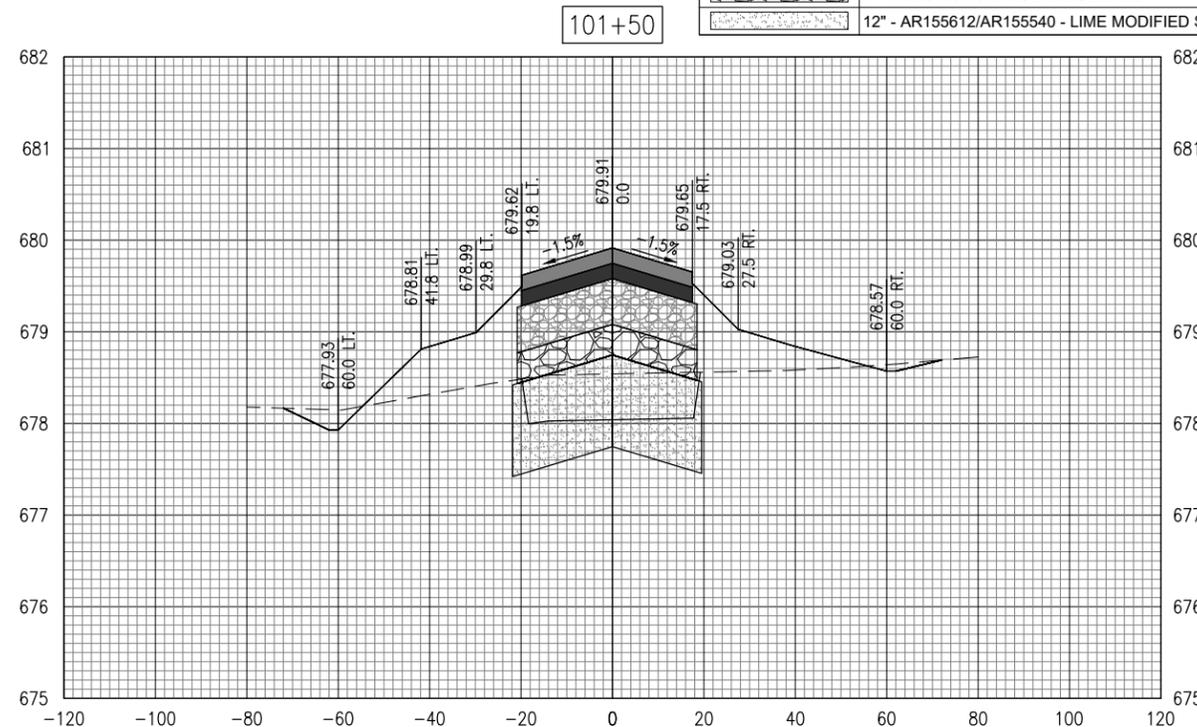
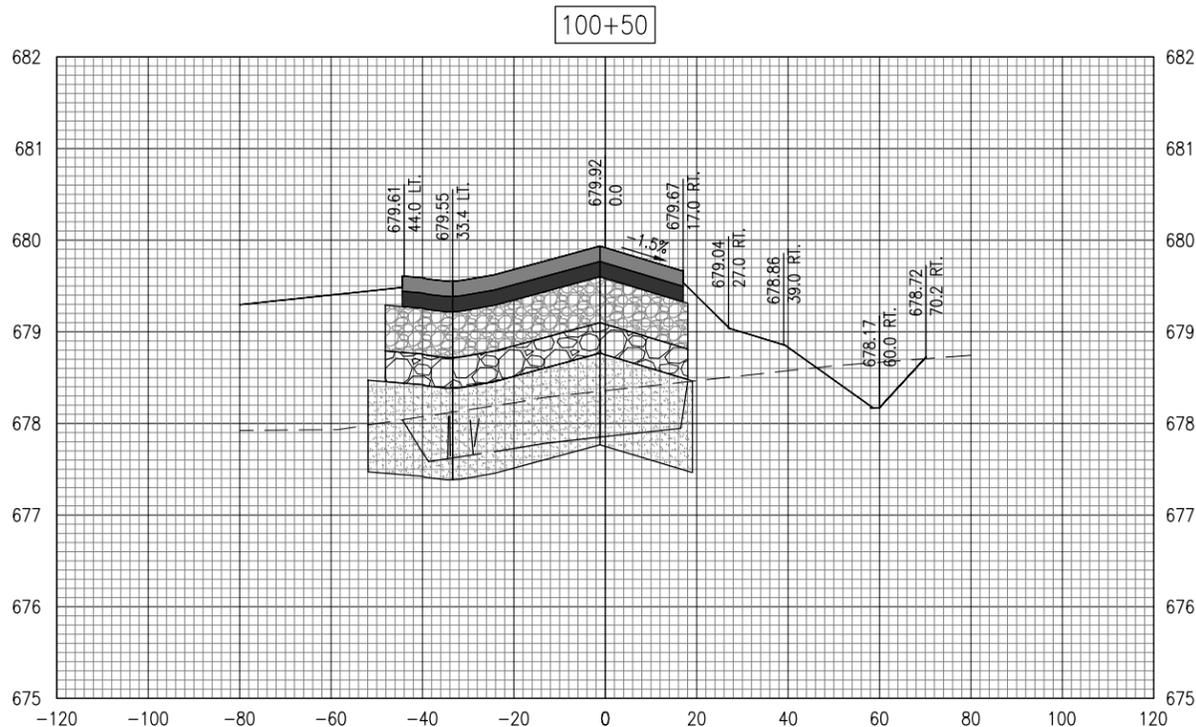
REVIEWED BY: KBS 11/20/2020

TWY B
CROSS-SECTIONS
114+00 - 115+79



DEC 04, 2020 4:10 PM ENGELO1809
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LEGEND	
---	SURFACE
▬	2" - AR401613 BIT. SURF. CSE.
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TWY B
CROSS-SECTIONS
100+18 - 101+50

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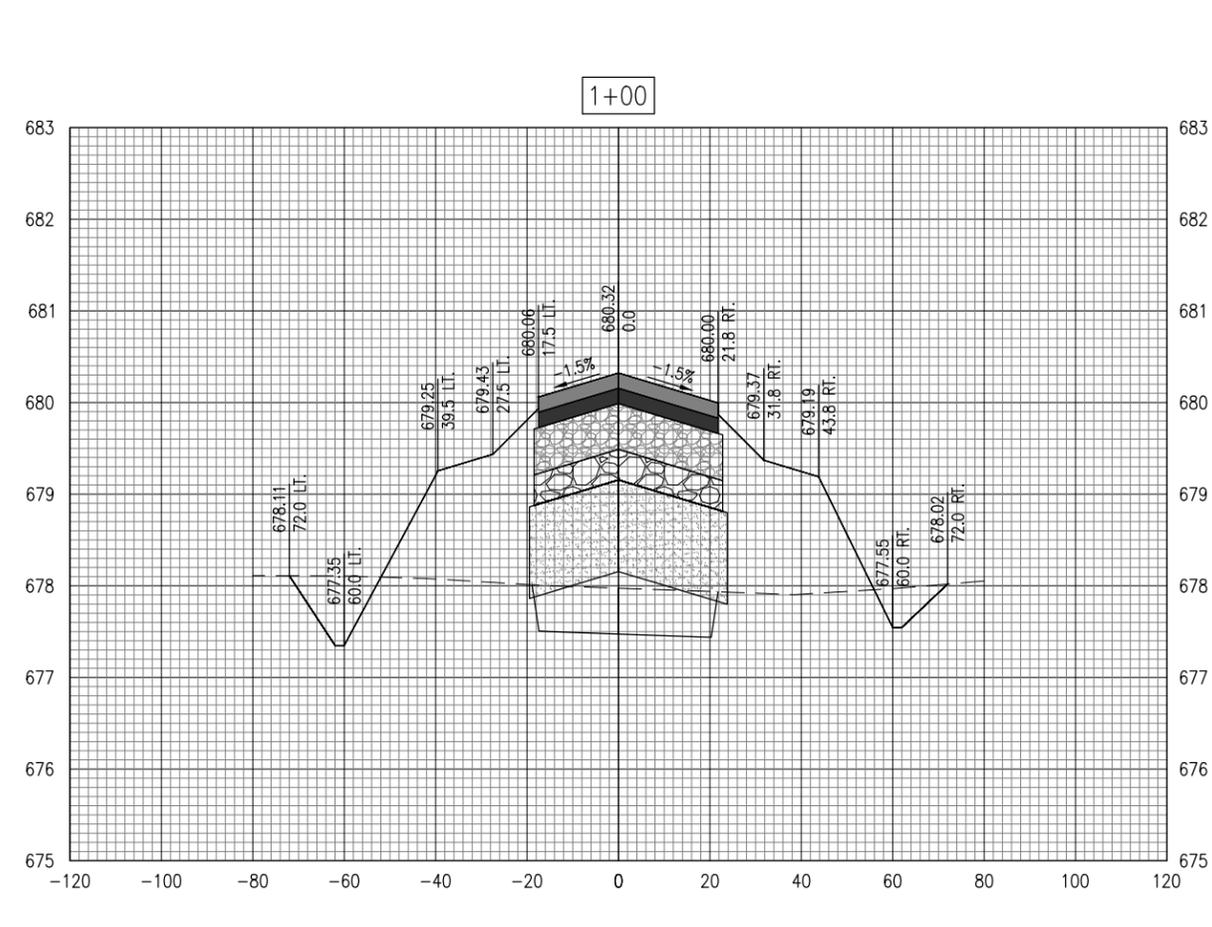
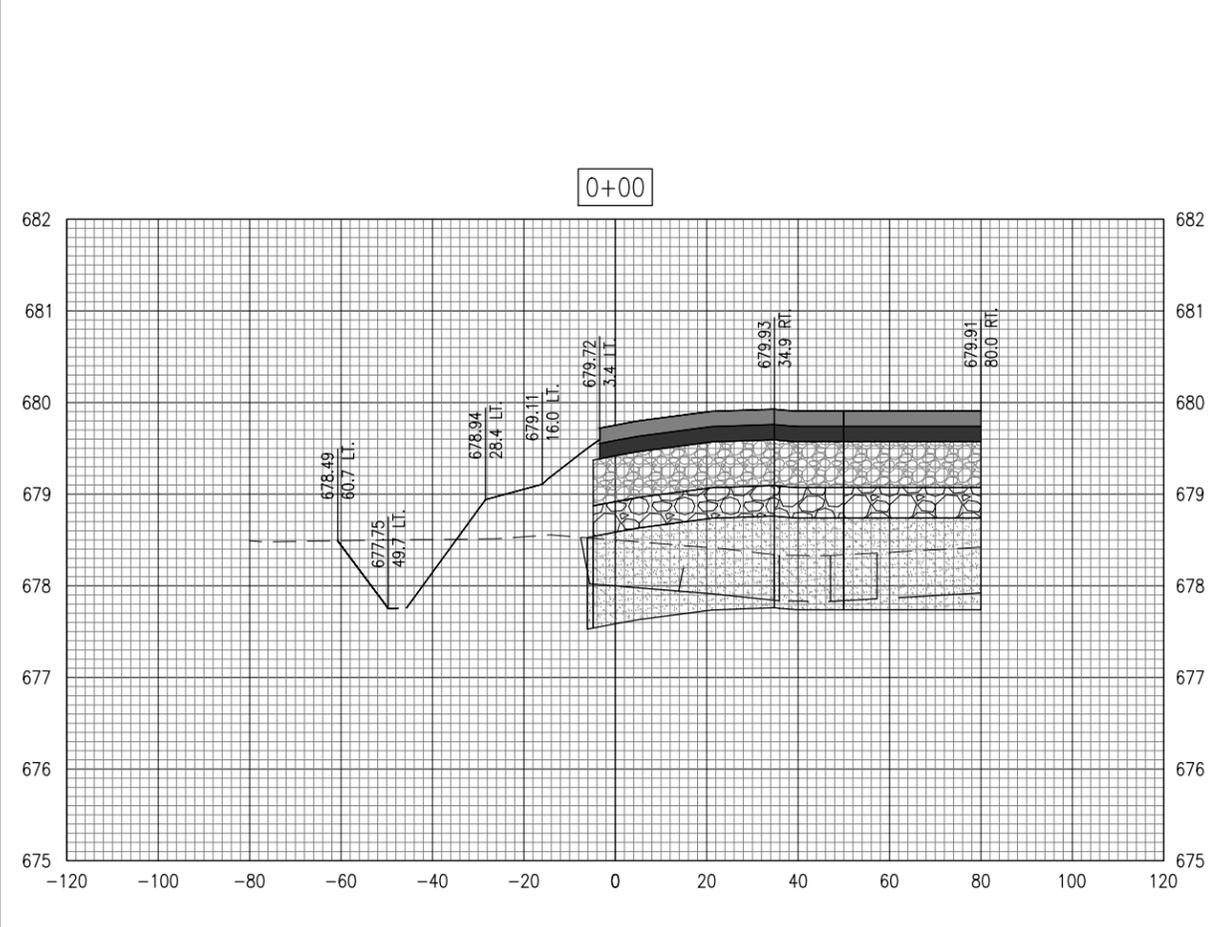
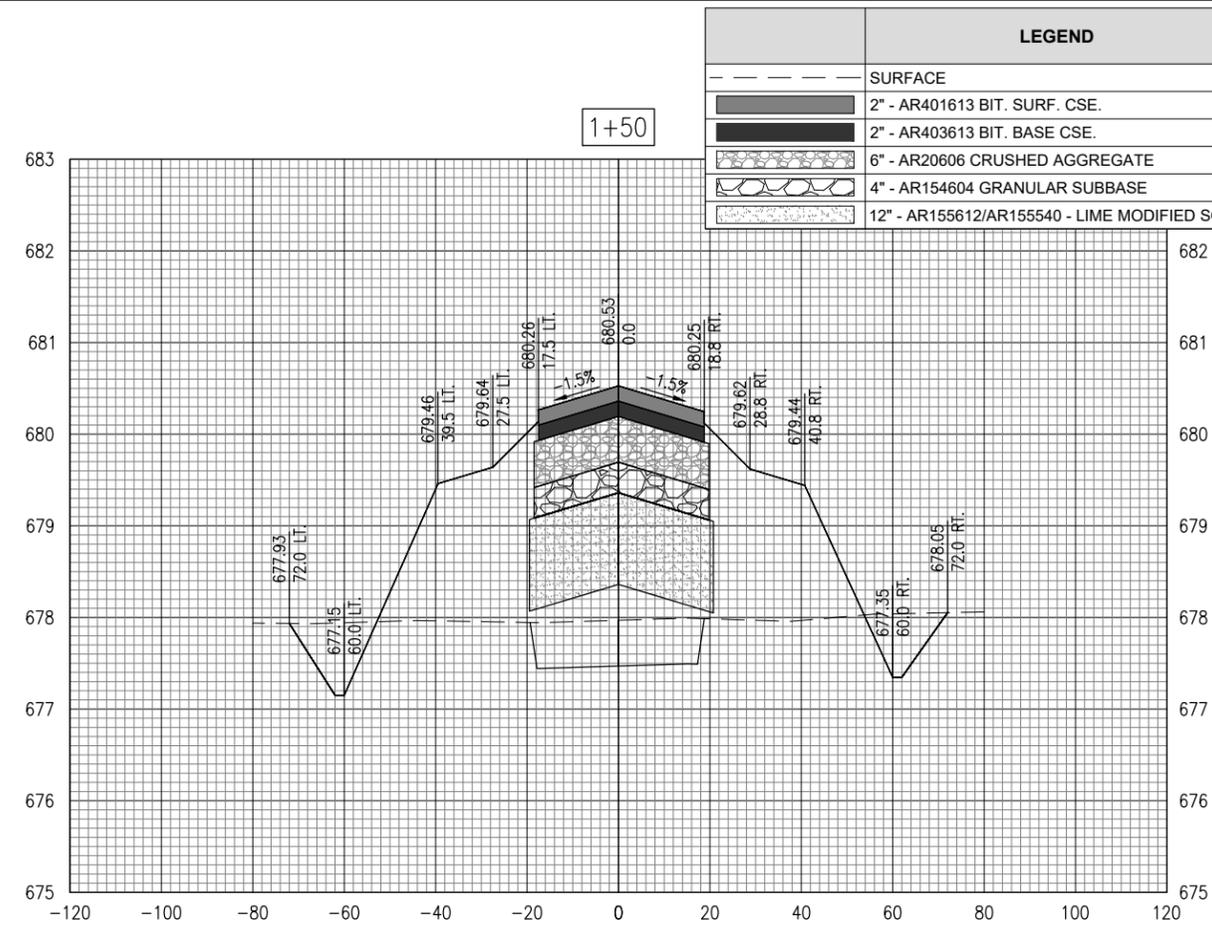
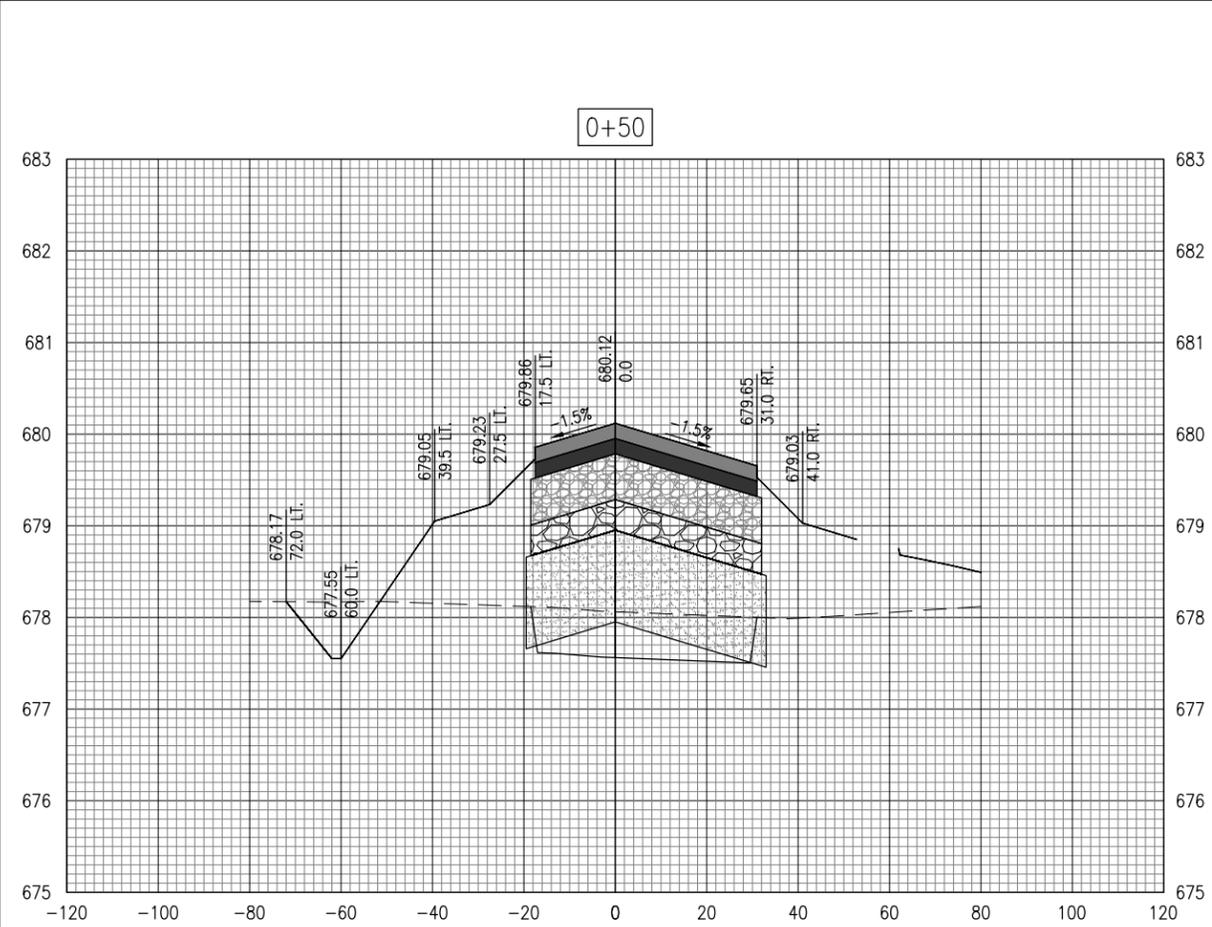
DESIGN BY: KNL 10/06/2020

DRAWN BY: HLE 10/06/2020

REVIEWED BY: KBS 11/20/2020

TWY B3
CROSS-SECTIONS
0+00 - 1+50

LEGEND	
---	SURFACE
▬	2" - AR401613 BIT. SURF. CSE.
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LEGEND	
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PROJECT NO: 20A0040

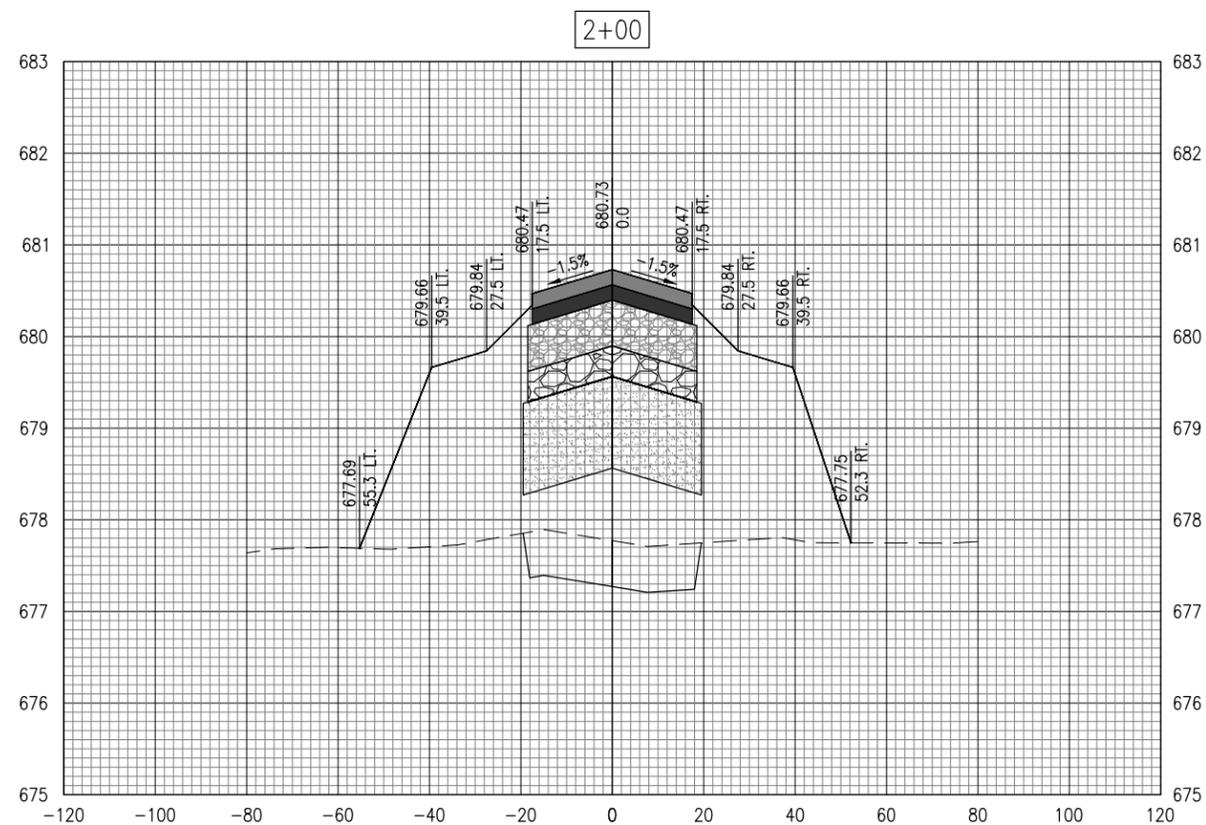
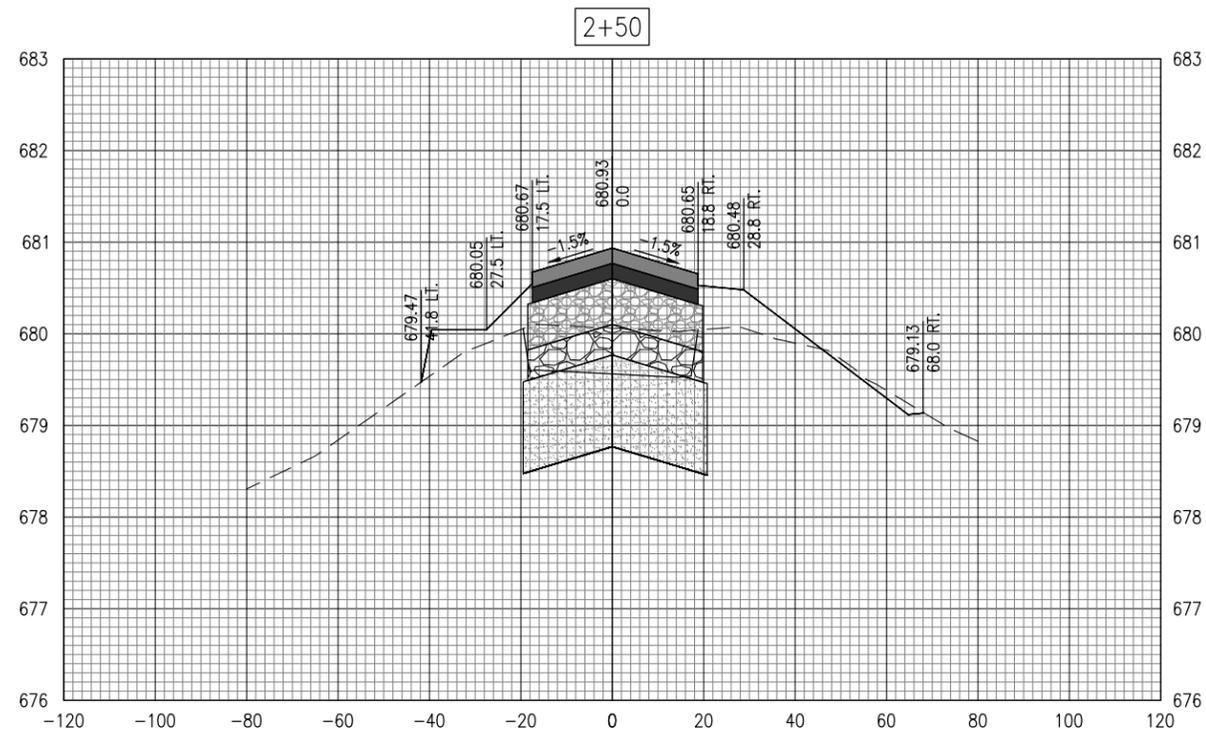
CAD FILE: C-301-XS.DWG

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DRAWN BY: HLE 10/06/2020

REVIEWED BY: KBS 11/20/2020

TWY B3
CROSS-SECTIONS
2+00 - 2+50





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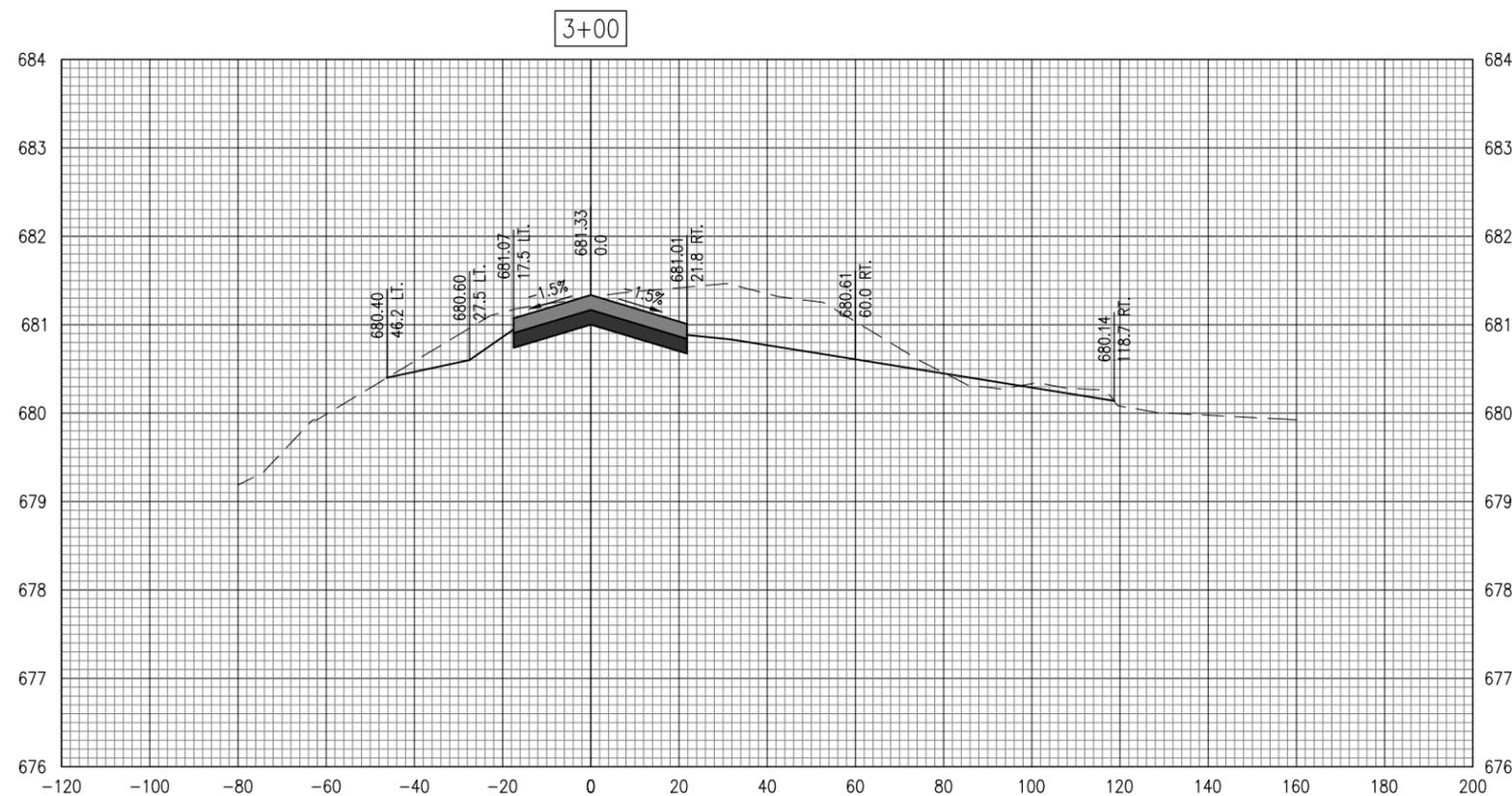
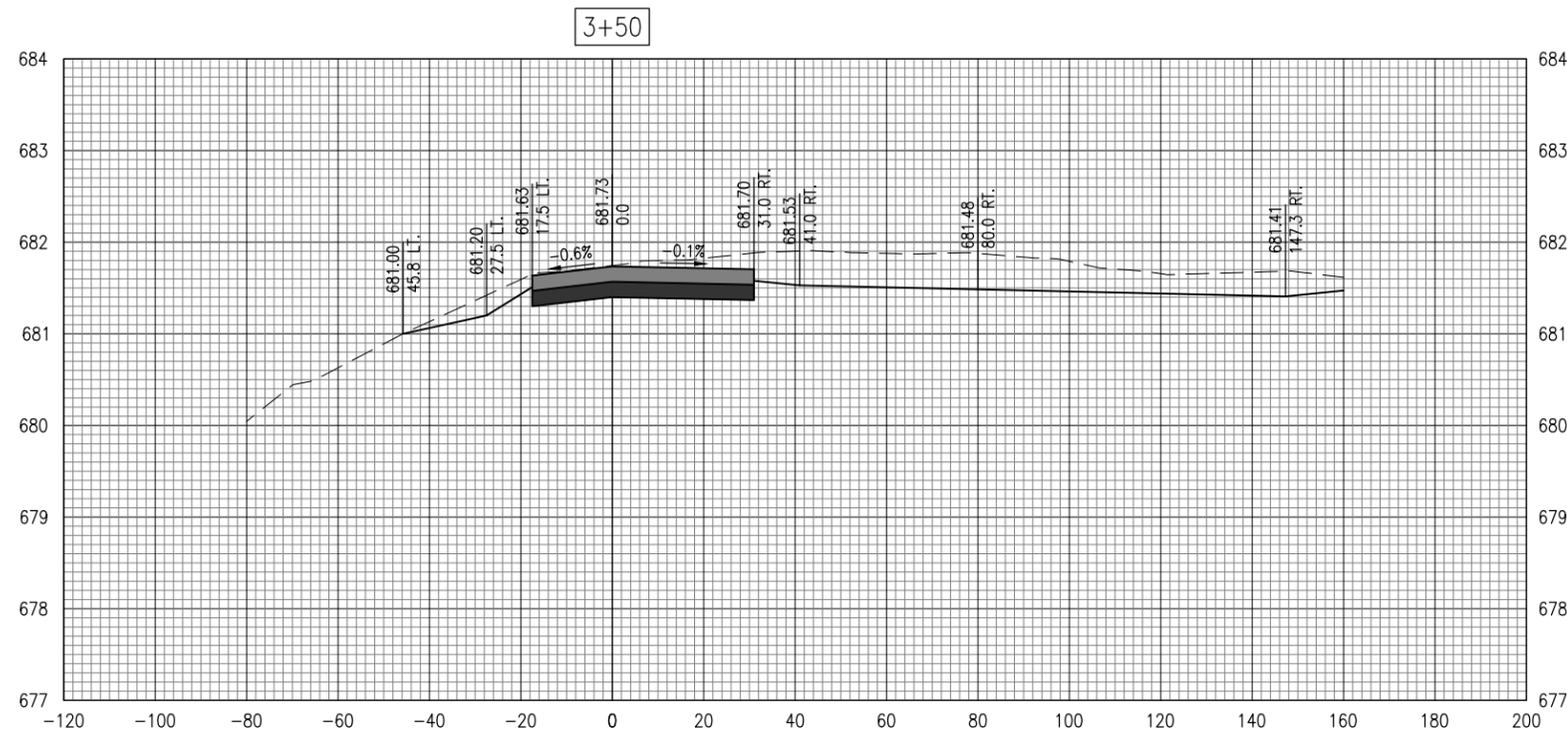
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TWY B3
CROSS-SECTIONS
3+00 - 3+50





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LEGEND	
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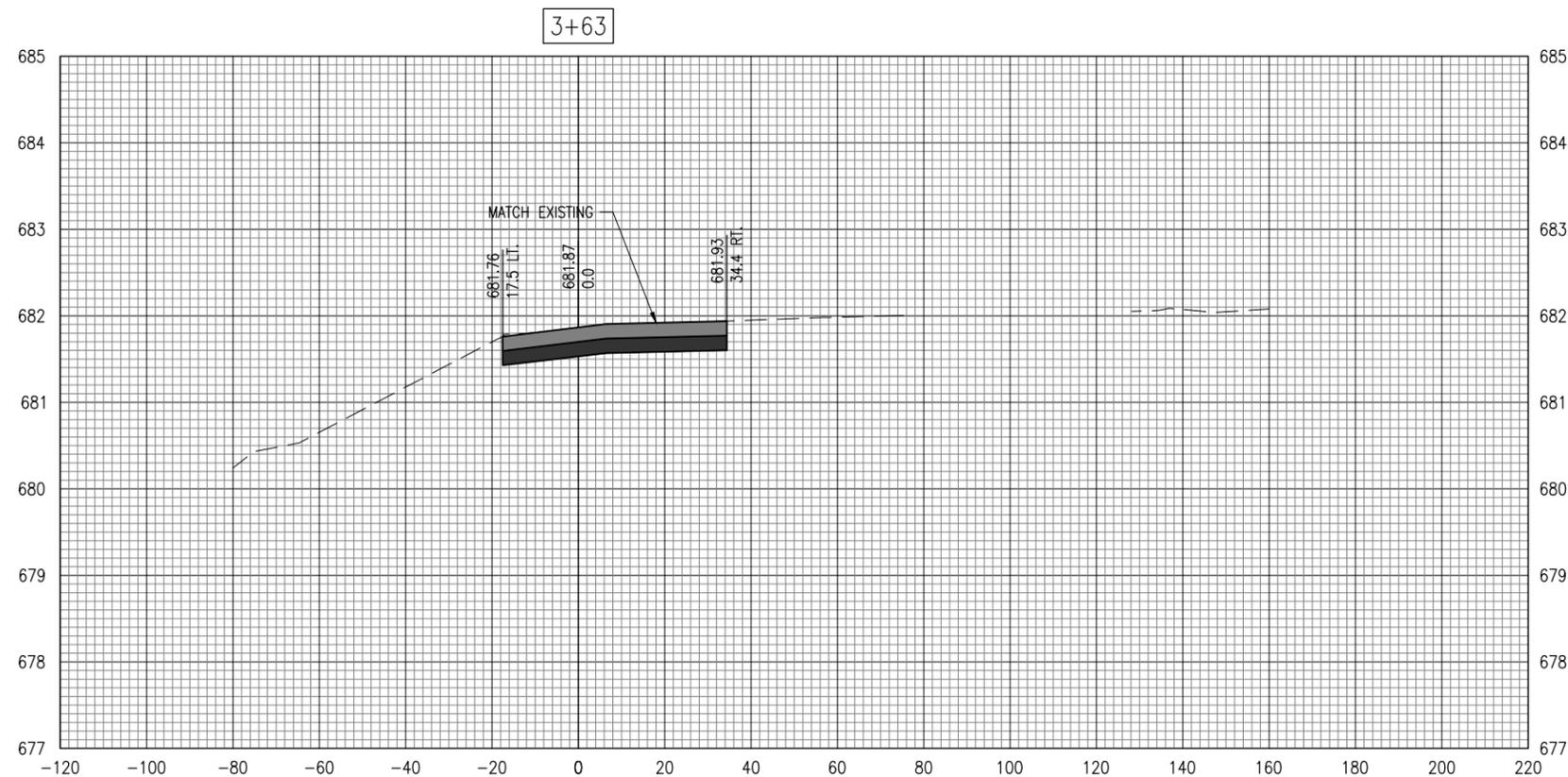
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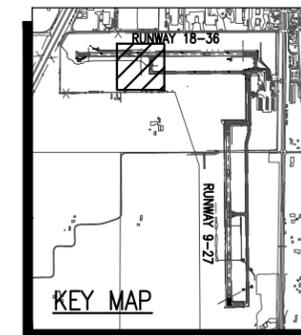
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REVIEWED BY: KBS 11/20/2020

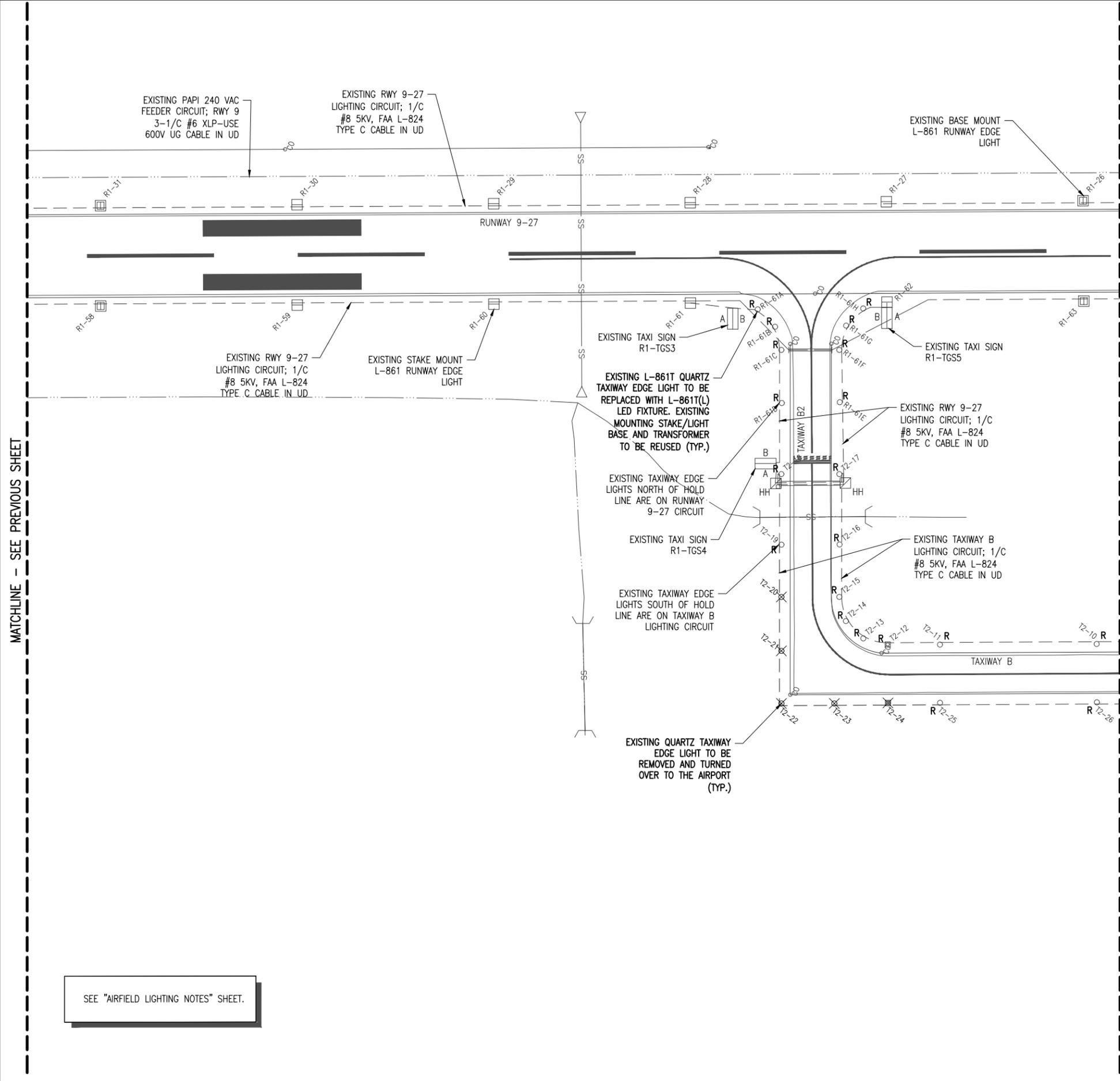
TWY B3
CROSS-SECTIONS
3+63

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0' 25' 50' 100'
 HALF SIZE SCALE: 1" = 100'
 FULL SIZE SCALE: 1" = 50'



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING 3-1/C 240V OR 120/240V ELECTRIC FEEDER
- EXISTING 2-1/C 120 V ELECTRIC FEEDER
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING STORM SEWER
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING RAIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SPLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE
- EXISTING CLEAN-OUT
- EXISTING QUARTZ STAKE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH L-861T(L) LED FIXTURE. EXISTING MOUNTING STAKE AND TRANSFORMER TO REMAIN AND BE REUSED.
- EXISTING QUARTZ BASE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH L-861T(L) LED FIXTURE. EXISTING BASE AND TRANSFORMER TO REMAIN AND BE REUSED.

MATCHLINE - SEE PREVIOUS SHEET

MATCHLINE - SEE NEXT SHEET

SEE "AIRFIELD LIGHTING NOTES" SHEET.

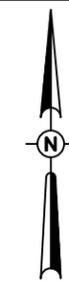
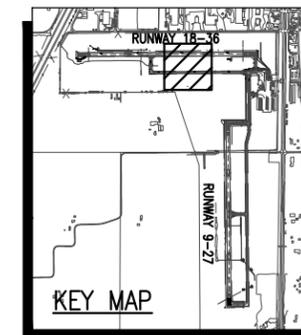
EXTEND PARTIAL PAR
 TAXIWAY B & RELATED
 LIGHTING/ELECTRICAL
 FROM EXISTING END TO
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IDA No: 3LF-4819
 SBG NO.
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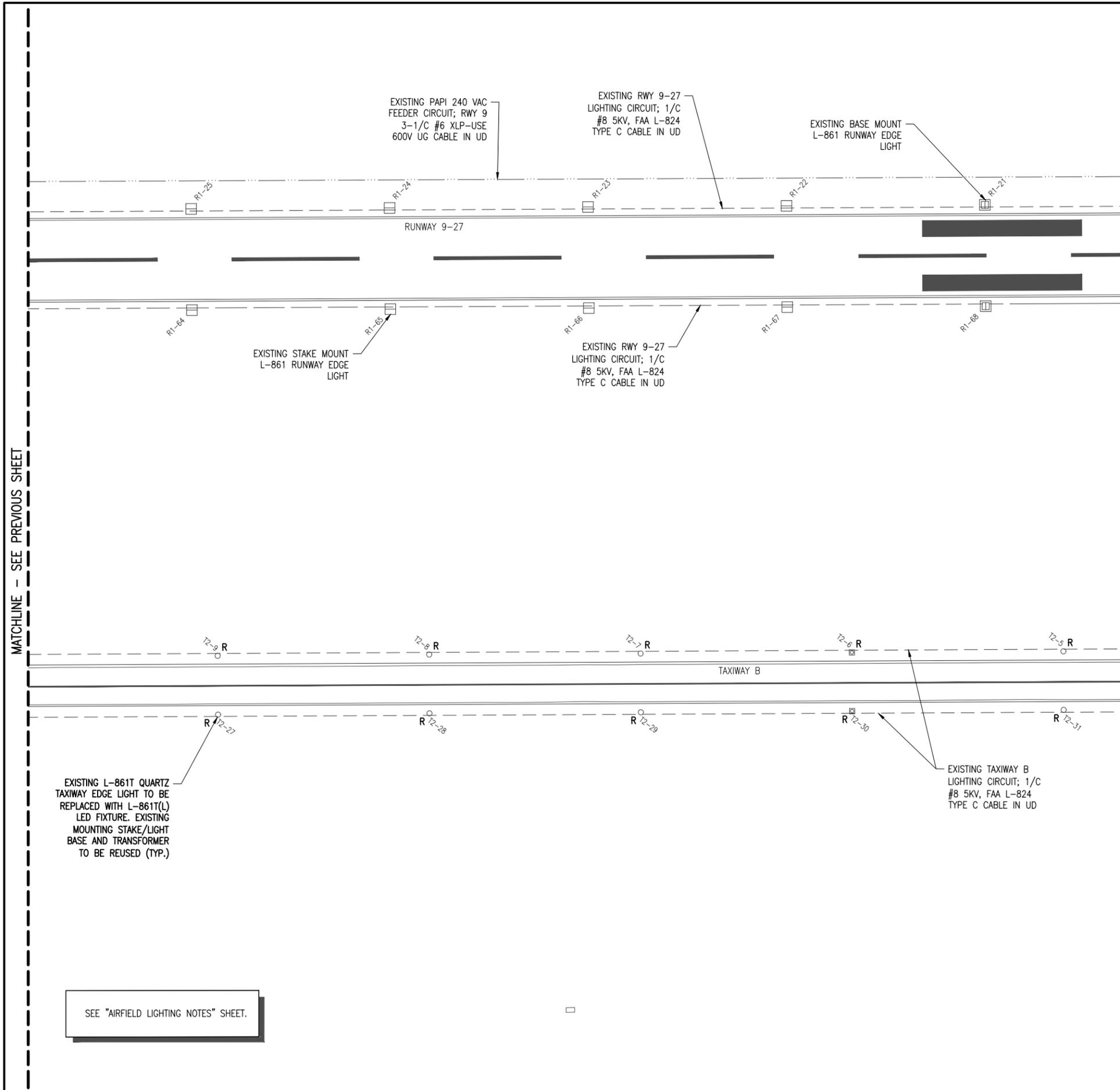
NO.	DATE	DESCRIPTION		
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ISSUE: 11/20/2020 (For Bid)
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 CAD FILE: E-141-ELE.DWG
 DESIGN BY: KNL 09/11/2020
 DRAWN BY: HLE 09/11/2020
 REVIEWED BY: KNL 09/23/2020

EXISTING AIRFIELD
 LIGHTING LAYOUT -
 SHEET 2



0' 25' 50' 100'
 HALF SIZE SCALE: 1" = 100'
 FULL SIZE SCALE: 1" = 50'



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING 3-1/C 240V OR 120/240V ELECTRIC FEEDER
- EXISTING 2-1/C 120 V ELECTRIC FEEDER
- EXISTING WATER
- EXISTING TELEPHONE
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- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING STORM SEWER
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SPLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL HANDHOLE
- EXISTING ELECTRICAL MANHOLE
- EXISTING CLEAN-OUT
- EXISTING QUARTZ STAKE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH L-861T(L) LED FIXTURE. EXISTING MOUNTING STAKE AND TRANSFORMER TO REMAIN AND BE REUSED.
- EXISTING QUARTZ BASE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH L-861T(L) LED FIXTURE. EXISTING BASE AND TRANSFORMER TO REMAIN AND BE REUSED.

MATCHLINE - SEE PREVIOUS SHEET

MATCHLINE - SEE NEXT SHEET

EXISTING L-861T QUARTZ TAXIWAY EDGE LIGHT TO BE REPLACED WITH L-861T(L) LED FIXTURE. EXISTING MOUNTING STAKE/LIGHT BASE AND TRANSFORMER TO BE REUSED (TYP.)

EXISTING TAXIWAY B LIGHTING CIRCUIT; 1/C #8 5KV, FAA L-824 TYPE C CABLE IN UD

SEE "AIRFIELD LIGHTING NOTES" SHEET.

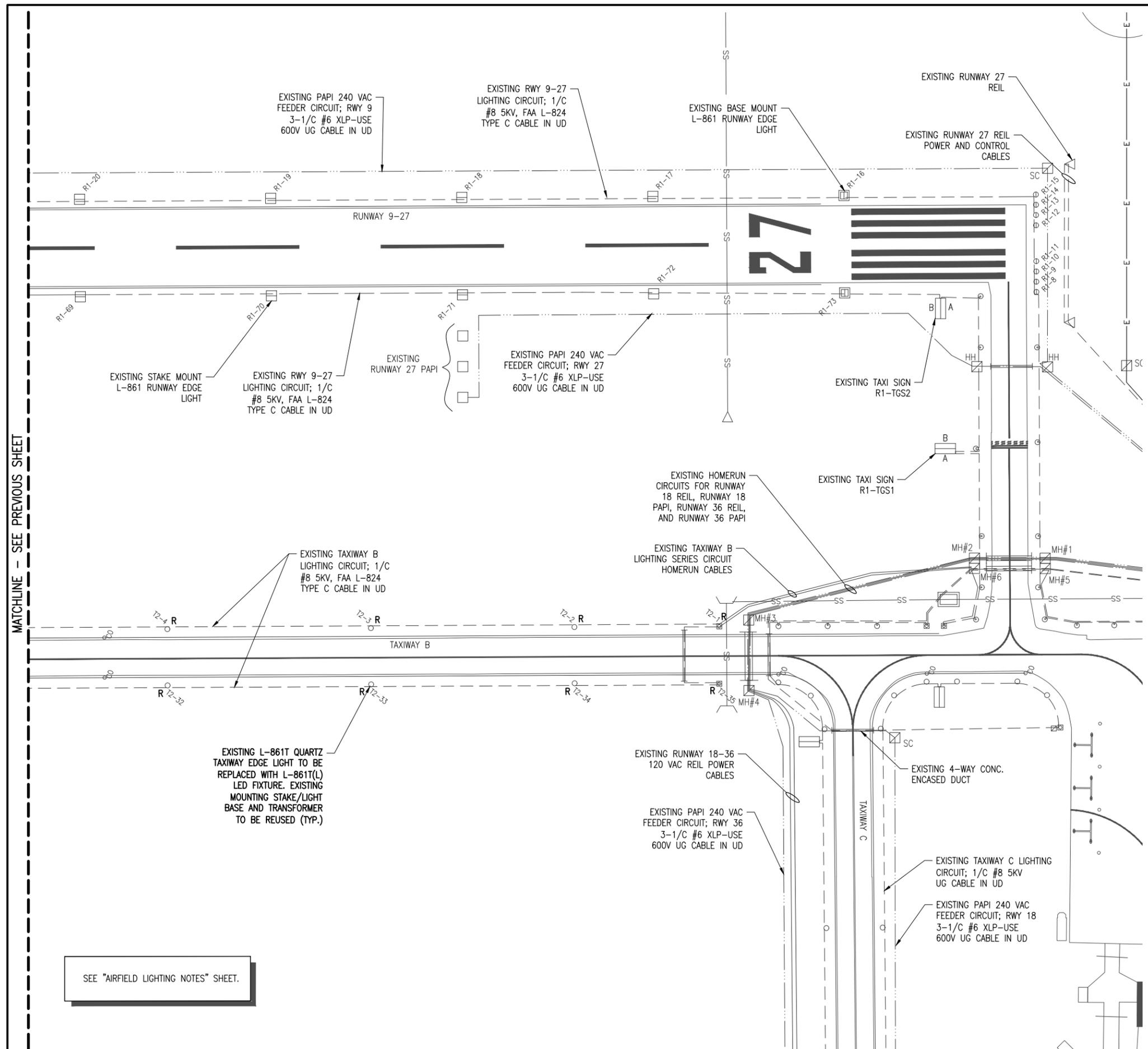
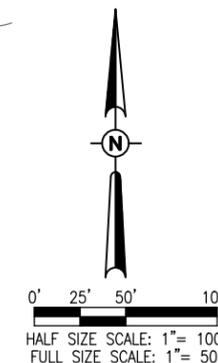
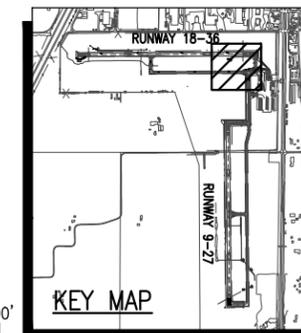
EXTEND PARTIAL PAR TAXIWAY B & RELATED LIGHTING/ELECTRICAL FROM EXISTING END TO RWY 9 TURNAROUND

IDA No: 3LF-4819
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EXISTING AIRFIELD LIGHTING LAYOUT - SHEET 3



- LEGEND**
- [Symbol] EXISTING PAVEMENT
 - [Symbol] EXISTING BUILDING
 - [Symbol] EXISTING ELECTRICAL DUCT
 - [Symbol] EXISTING ELECTRICAL CABLE
 - [Symbol] EXISTING 3-1/C 240V OR 120/240V ELECTRIC FEEDER
 - [Symbol] EXISTING 2-1/C 120 V ELECTRIC FEEDER
 - [Symbol] EXISTING WATER
 - [Symbol] EXISTING TELEPHONE
 - [Symbol] EXISTING UNDERDRAIN
 - [Symbol] EXISTING STORM SEWER
 - [Symbol] EXISTING GAS LINE
 - [Symbol] EXISTING SANITARY
 - [Symbol] EXISTING STORM SEWER
 - [Symbol] EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
 - [Symbol] EXISTING REIL
 - [Symbol] EXISTING TAXI GUIDANCE SIGN
 - [Symbol] EXISTING SPLICE CAN
 - [Symbol] EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - [Symbol] EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
 - [Symbol] EXISTING BASE MOUNTED TAXIWAY LIGHT
 - [Symbol] EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
 - [Symbol] EXISTING STAKE MOUNTED RUNWAY LIGHT
 - [Symbol] EXISTING BASE MOUNTED RUNWAY LIGHT
 - [Symbol] EXISTING STAKE MOUNTED THRESHOLD LIGHT
 - [Symbol] EXISTING BASE MOUNTED THRESHOLD LIGHT
 - [Symbol] EXISTING AIRPORT ROTATING BEACON
 - [Symbol] EXISTING UTILITY TRANSFORMER
 - [Symbol] EXISTING ELECTRICAL HANDHOLE
 - [Symbol] EXISTING ELECTRICAL MANHOLE
 - [Symbol] EXISTING CLEAN-OUT
 - [Symbol] EXISTING QUARTZ STAKE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH L-861T(L) LED FIXTURE. EXISTING MOUNTING STAKE AND TRANSFORMER TO REMAIN AND BE REUSED.
 - [Symbol] EXISTING QUARTZ BASE MOUNTED TAXIWAY LIGHT TO BE REPLACED WITH L-861T(L) LED FIXTURE. EXISTING BASE AND TRANSFORMER TO REMAIN AND BE REUSED.

MATCHLINE - SEE PREVIOUS SHEET

SEE "AIRFIELD LIGHTING NOTES" SHEET.

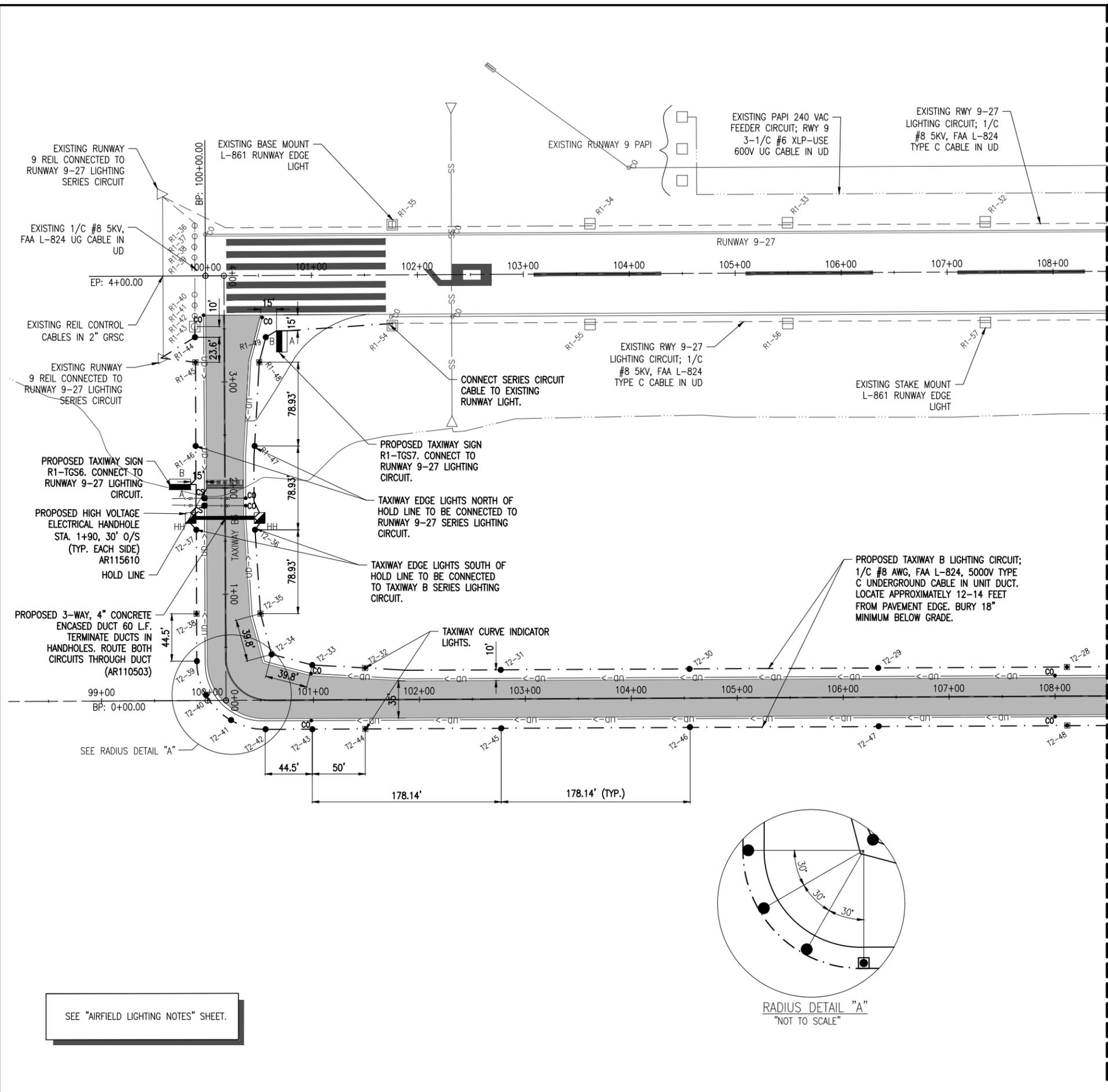
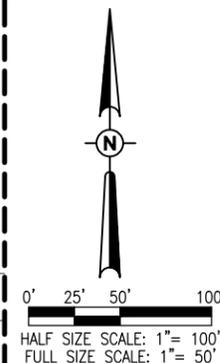
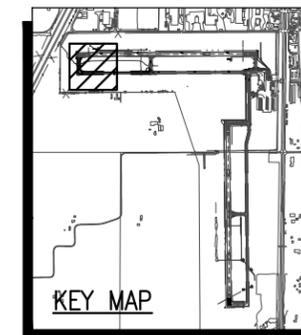
EXTEND PARTIAL PAR
TAXIWAY B & RELATED
LIGHTING/ELECTRICAL
FROM EXISTING END TO
RWY 9 TURNAROUND

IDA No: 3LF-4819
SBG NO.
3-17-SBGP-144/156/162
Contract No. LI039

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/20/2020 (For Bid)
PROJECT NO: 20A0040
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DESIGN BY: KNL 09/11/2020
DRAWN BY: HLE 09/11/2020
REVIEWED BY: KNL 09/23/2020

EXISTING AIRFIELD
LIGHTING LAYOUT -
SHEET 4



MATCHLINE - SEE NEXT SHEET

LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING 3-1/C 240V OR 120/240V ELECTRIC FEEDER
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- W EXISTING WATER
- T EXISTING TELEPHONE
- UD EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- G EXISTING GAS LINE
- SAN EXISTING SANITARY
- UGE EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SPLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED L-861(L) LED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED L-861(L) LED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- ET EXISTING UTILITY TRANSFORMER
- MH EXISTING ELECTRICAL MANHOLE
- HH EXISTING ELECTRICAL HANDHOLE
- CO EXISTING CLEAN-OUT
- SC PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN
- HH PROPOSED ELECTRICAL HANDHOLE
- R ● PROPOSED L-861(L) LED REPLACEMENT TAXIWAY LIGHT MOUNTED ON EXISTING (REUSED) STAKE WITH EXISTING (REUSED) TRANSFORMER.
- R ■ PROPOSED L-861(L) LED REPLACEMENT TAXIWAY LIGHT MOUNTED ON EXISTING (REUSED) BASE WITH EXISTING (REUSED) TRANSFORMER.

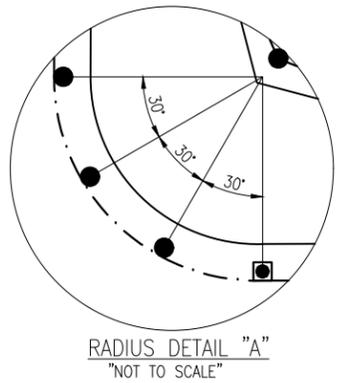
EXTEND PARTIAL PAR
 TAXIWAY B & RELATED
 LIGHTING/ELECTRICAL
 FROM EXISTING END TO
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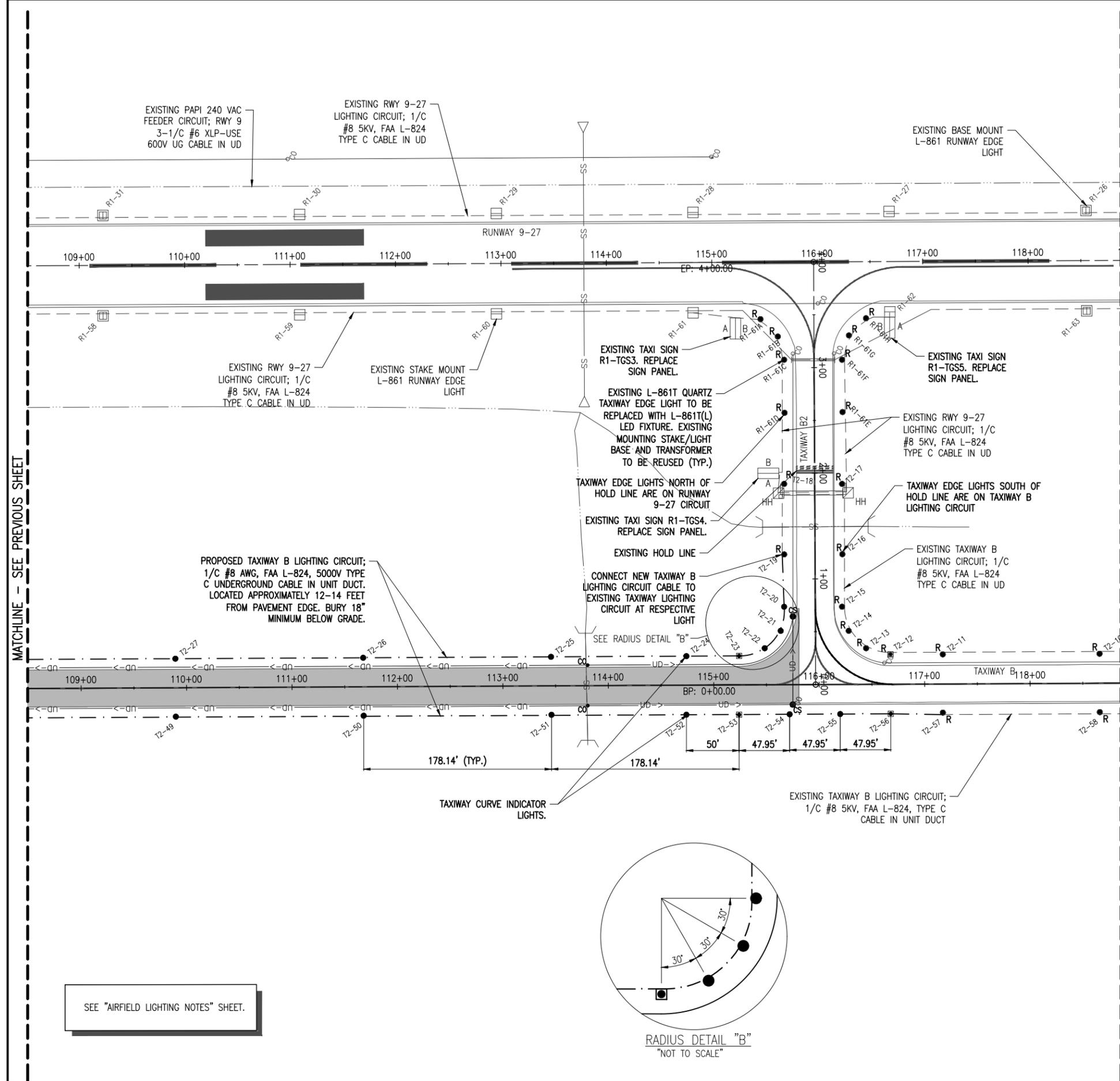
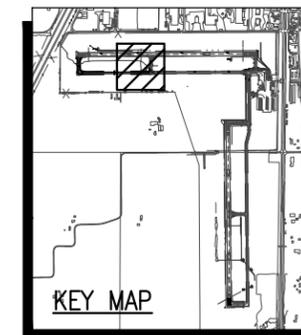
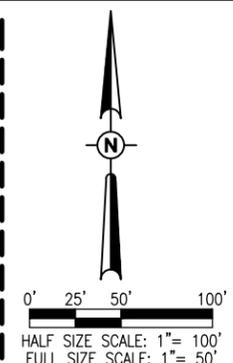
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 REVIEWED BY: KNL 09/23/2020

PROPOSED AIRFIELD
 LIGHTING LAYOUT -
 SHEET 1



SEE "AIRFIELD LIGHTING NOTES" SHEET.



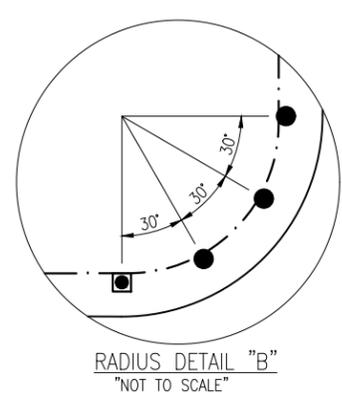
LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING 3-1/C 240V OR 120/240V ELECTRIC FEEDER
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SPLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED L-861(L) LED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED L-861(L) LED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL HANDHOLE
- EXISTING CLEAN-OUT
- PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE
- PROPOSED L-861(L) LED REPLACEMENT TAXIWAY LIGHT MOUNTED ON EXISTING (REUSED) STAKE WITH EXISTING (REUSED) TRANSFORMER.
- PROPOSED L-861(L) LED REPLACEMENT TAXIWAY LIGHT MOUNTED ON EXISTING (REUSED) BASE WITH EXISTING (REUSED) TRANSFORMER.

MATCHLINE - SEE PREVIOUS SHEET

MATCHLINE - SEE NEXT SHEET

SEE "AIRFIELD LIGHTING NOTES" SHEET.



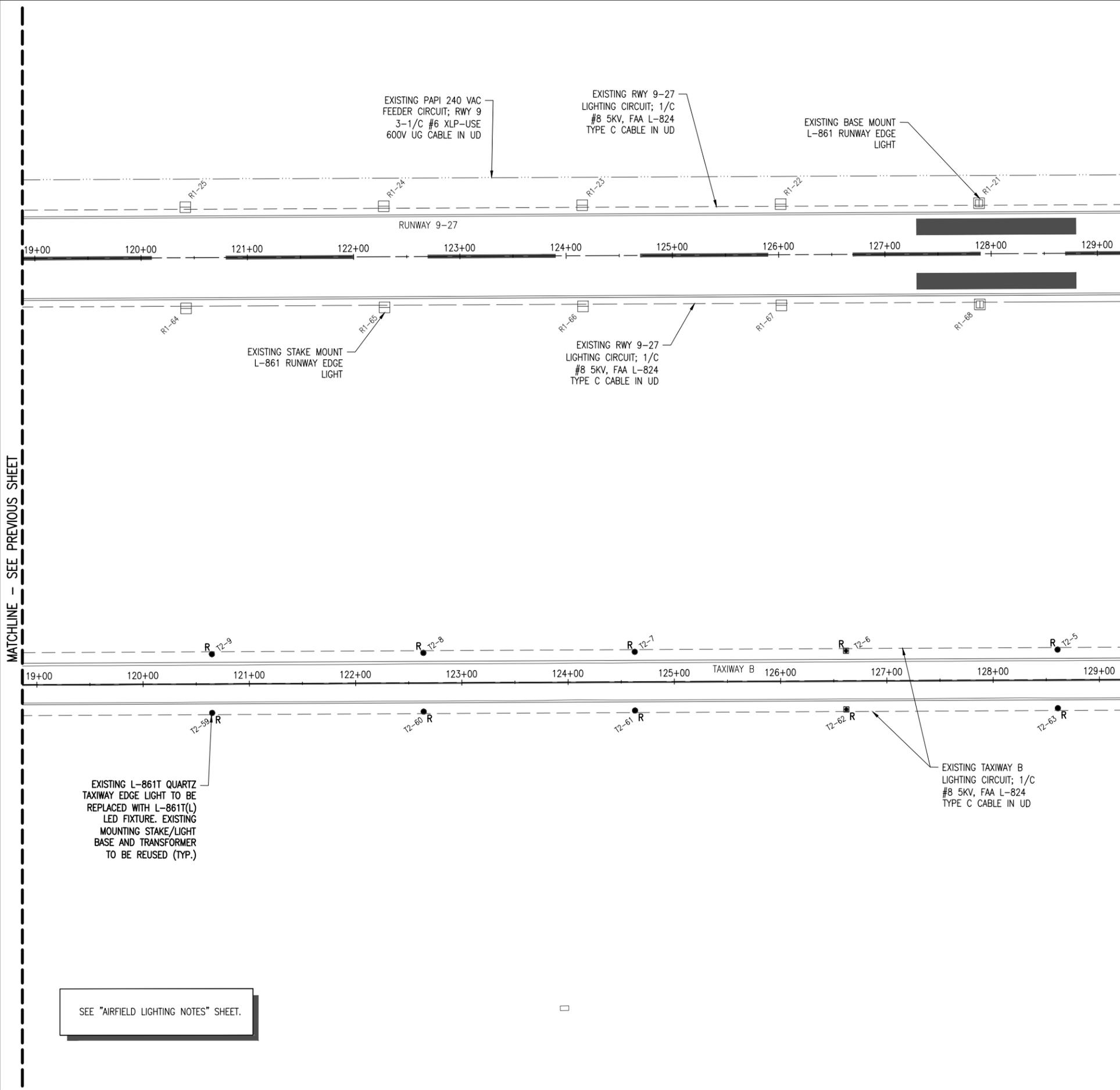
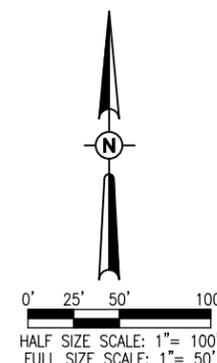
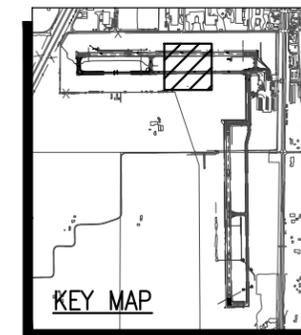
EXTEND PARTIAL PAR
 TAXIWAY B & RELATED
 LIGHTING/ELECTRICAL
 FROM EXISTING END TO
 RWY 9 TURNAROUND

IDA No: 3LF-4819
 SBG NO.
 3-17-SBGP-144/156/162
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PROPOSED AIRFIELD
 LIGHTING LAYOUT -
 SHEET 2



LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING 3-1/C 240V OR 120/240V ELECTRIC FEEDER
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SPLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED L-861T(L) LED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED L-861T(L) LED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL HANDHOLE
- EXISTING CLEAN-OUT
- PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE
- PROPOSED L-861T(L) LED REPLACEMENT TAXIWAY LIGHT MOUNTED ON EXISTING (REUSED) STAKE WITH EXISTING (REUSED) TRANSFORMER.
- PROPOSED L-861T(L) LED REPLACEMENT TAXIWAY LIGHT MOUNTED ON EXISTING (REUSED) BASE WITH EXISTING (REUSED) TRANSFORMER.

MATCHLINE - SEE PREVIOUS SHEET

MATCHLINE - SEE NEXT SHEET

EXISTING L-861T QUARTZ TAXIWAY EDGE LIGHT TO BE REPLACED WITH L-861T(L) LED FIXTURE. EXISTING MOUNTING STAKE/LIGHT BASE AND TRANSFORMER TO BE REUSED (TYP.)

EXISTING TAXIWAY B LIGHTING CIRCUIT; 1/C #8 5KV, FAA L-824 TYPE C CABLE IN UD

SEE "AIRFIELD LIGHTING NOTES" SHEET.

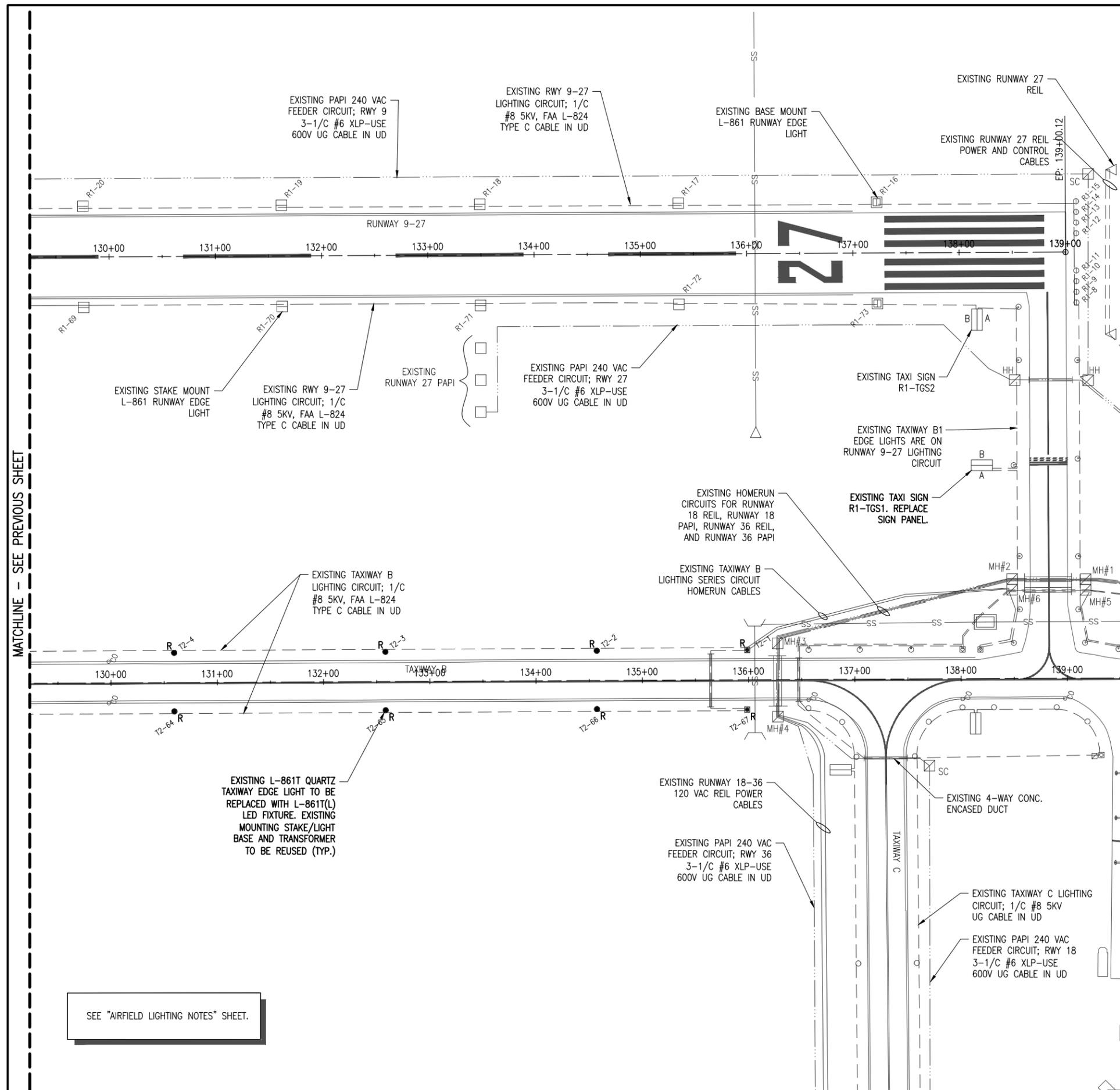
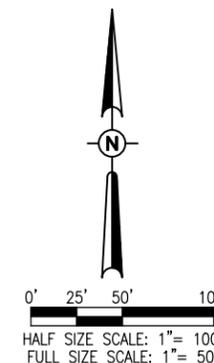
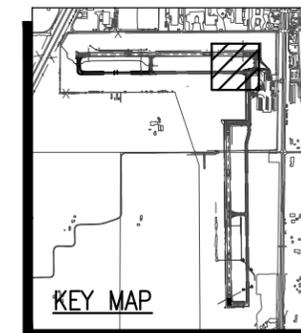
EXTEND PARTIAL PAR TAXIWAY B & RELATED LIGHTING/ELECTRICAL FROM EXISTING END TO RWY 9 TURNAROUND

IDA No: 3LF-4819
 SBG NO.
 3-17-SBGP-144/156/162
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PROPOSED AIRFIELD LIGHTING LAYOUT - SHEET 3



LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING 3-1/C 240V OR 120/240V ELECTRIC FEEDER
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING REIL
- EXISTING TAXI GUIDANCE SIGN
- EXISTING SPLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED STAKE MOUNTED L-861(L) LED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED L-861(L) LED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING AIRPORT ROTATING BEACON
- EXISTING UTILITY TRANSFORMER
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL HANDHOLE
- EXISTING CLEAN-OUT
- PROPOSED L-867, SIZE D, 24" DEEP SPLICE CAN
- PROPOSED ELECTRICAL HANDHOLE
- PROPOSED L-861(L) LED REPLACEMENT TAXIWAY LIGHT MOUNTED ON EXISTING (REUSED) STAKE WITH EXISTING (REUSED) TRANSFORMER.
- PROPOSED L-861(L) LED REPLACEMENT TAXIWAY LIGHT MOUNTED ON EXISTING (REUSED) BASE WITH EXISTING (REUSED) TRANSFORMER.

EXTEND PARTIAL PAR TAXIWAY B & RELATED LIGHTING/ELECTRICAL FROM EXISTING END TO RWY 9 TURNAROUND

IDA No: 3LF-4819
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DESIGN BY: KNL 09/11/2020				
DRAWN BY: HLE 09/11/2020				
REVIEWED BY: KNL 09/23/2020				

PROPOSED AIRFIELD LIGHTING LAYOUT - SHEET 4

MATCHLINE - SEE PREVIOUS SHEET

SEE "AIRFIELD LIGHTING NOTES" SHEET.

LITCHFIELD MUNICIPAL AIRPORT

 1201 US Route 66 South
 Litchfield, IL 62056
 Phone: (217) 324-4731

 EXTEND PARTIAL PAR
 TAXIWAY B & RELATED
 LIGHTING/ELECTRICAL
 FROM EXISTING END TO
 RWY 9 TURNAROUND

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TAXI GUIDANCE SIGN SCHEDULE

SIGN NUMBER	LOCATION	EXISTING		PROPOSED		REMARKS
		SIDE A	SIDE B	SIDE A	SIDE B	
R1-TGS1	TAXIWAY B1 INTERSECTION WITH RUNWAY 27 AT HOLD LINE				NO CHANGE	EXISTING LOCATION/MANDATORY HOLD SIGN TO REMAIN IN PLACE. REPLACE EXISTING SIDE A PANELS WITH NEW PANEL (1-1 MODULE PANEL).
R1-TGS2	RUNWAY 9 INTERSECTION WITH TAXIWAY B1			NO CHANGE	NO CHANGE	EXISTING DIRECTION SIGN TO REMAIN IN PLACE. NO CHANGES.
R1-TGS3	RUNWAY 9 INTERSECTION WITH TAXIWAY B2				NO CHANGE	EXISTING DIRECTION SIGN TO REMAIN IN PLACE. REPLACE EXISTING SIDE A PANEL WITH NEW PANELS (1-1 MODULE PANEL).
R1-TGS4	TAXIWAY B2 INTERSECTION WITH RUNWAY 9-27 AT HOLDLINE				NO CHANGE	EXISTING LOCATION/MANDATORY HOLD SIGN TO REMAIN IN PLACE. REPLACE EXISTING SIDE A PANEL WITH NEW PANEL (1-1 MODULE PANEL).
R1-TGS5	RUNWAY 27 INTERSECTION WITH TAXIWAY B2				NO CHANGE	EXISTING DIRECTION SIGN TO REMAIN IN PLACE. REPLACE EXISTING SIDE A PANEL WITH NEW PANEL (1-1 MODULE PANEL).
R1-TGS6	TAXIWAY B3 INTERSECTION WITH RUNWAY 9 AT HOLD LINE					NEW LOCATION/MANDATORY HOLD SIGN TO BE CONNECTED TO RUNWAY 9-27 LIGHTING CIRCUIT
R1-TGS7	RUNWAY 27 INTERSECTION WITH TAXIWAY B3					NEW DIRECTION SIGN TO BE CONNECTED TO RUNWAY 9-27 LIGHTING CIRCUIT

NOTES:

- EXISTING TAXI GUIDANCE SIGNS REQUIRING PANEL REPLACEMENTS ARE L-858(L), SIZE 1, STYLE 2, CLASS 2 MANUFACTURED BY LUMACURVE, STANDARD SIGNS, INC. CONTRACTOR SHALL FIELD VERIFY EXISTING SIGNS TO CONFIRM REPLACEMENT PANEL SIZES AND REQUIREMENTS.
- THE PROPOSED TAXI GUIDANCE SIGN REPLACEMENT PANELS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345-44 (CURRENT ISSUE IN EFFECT) AND BE FAA-APPROVED FOR TYPE L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGNS (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858R(L) MANDATORY INSTRUCTION SIGN (BLACK OUTLINE ON OUTSIDE EDGE ON WHITE LEGEND ON RED BACKGROUND); AND/OR TYPE L-858L(L) LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND). THE SIGN PANELS SHALL BE MANUFACTURED BY THE ORIGINAL EQUIPMENT MANUFACTURER TO MAINTAIN THE ETL LISTING AND FAA APPROVAL OF EACH SIGN.
- SEE SPECIFICATION ITEM L-125 FOR ADDITIONAL REQUIREMENTS ON TAXI GUIDANCE SIGNS.
- SEE "AIRFIELD LIGHTING NOTES" SHEET FOR ADDITIONAL REQUIREMENTS ON TAXI GUIDANCE SIGNS.
- CONTRACTOR SHALL TEST AND RECORD THE EARTH GROUND RESISTANCE FOR THE GROUND ROD AT EACH NEW TAXI GUIDANCE SIGN.
- ALL EXISTING SIGN PANELS TO BE REPLACED SHALL BE TURNED OVER TO THE AIRPORT.
- PER THE REQUIREMENTS OF FAA AC 150/5340-26C, CHAPTER 3, SECTION 3.6.6 USE OF ORIGINAL EQUIPMENT MANUFACTURER (OEM) PART, IT NOTES THE FOLLOWING: "THE USE OF NON-OEM PARTS OR LAMPS IN FAA APPROVED EQUIPMENT IS STRONGLY DISCOURAGED. THE FAA HAS STRICT SPECIFICATIONS FOR APPROVAL OF ALL AIRPORT LIGHTING EQUIPMENT AND USE OF NON-OEM PARTS OR LAMPS IN SUCH EQUIPMENT OR SYSTEMS CAN RENDER THE EQUIPMENT TO BE FUNCTIONALLY NON-FAA APPROVED. THIS COULD POSSIBLY LEAD TO SERIOUS LIABILITY CONSEQUENCES IN CASE OF AN AIRCRAFT INCIDENT AT AN AIRPORT FOLLOWING THESE PRACTICES. IN THE CASE OF RUNWAY AND TAXIWAY LIGHTING FIXTURES, THE USE OF A GENERIC, NON-APPROVED LAMP CAN RENDER THE PHOTOMETRIC OUTPUT OF THE FIXTURE OUT OF SPECIFICATION AND ADVERSELY AFFECT THE SAFETY OF LOW VISIBILITY OPERATIONS."

TAXI GUIDANCE SIGN LEGEND

- TYPE L-858L(L) LOCATION SIGN - YELLOW LEGEND AND BORDER ON A BLACK BACKGROUND
- TYPE L-858R(L) MANDATORY INSTRUCTION SIGN - BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON A RED BACKGROUND
- TYPE L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGN - BLACK LEGEND ON A YELLOW BACKGROUND
- BLANK - BLACK BACKGROUND

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DESIGN BY: KNL 9/16/2020

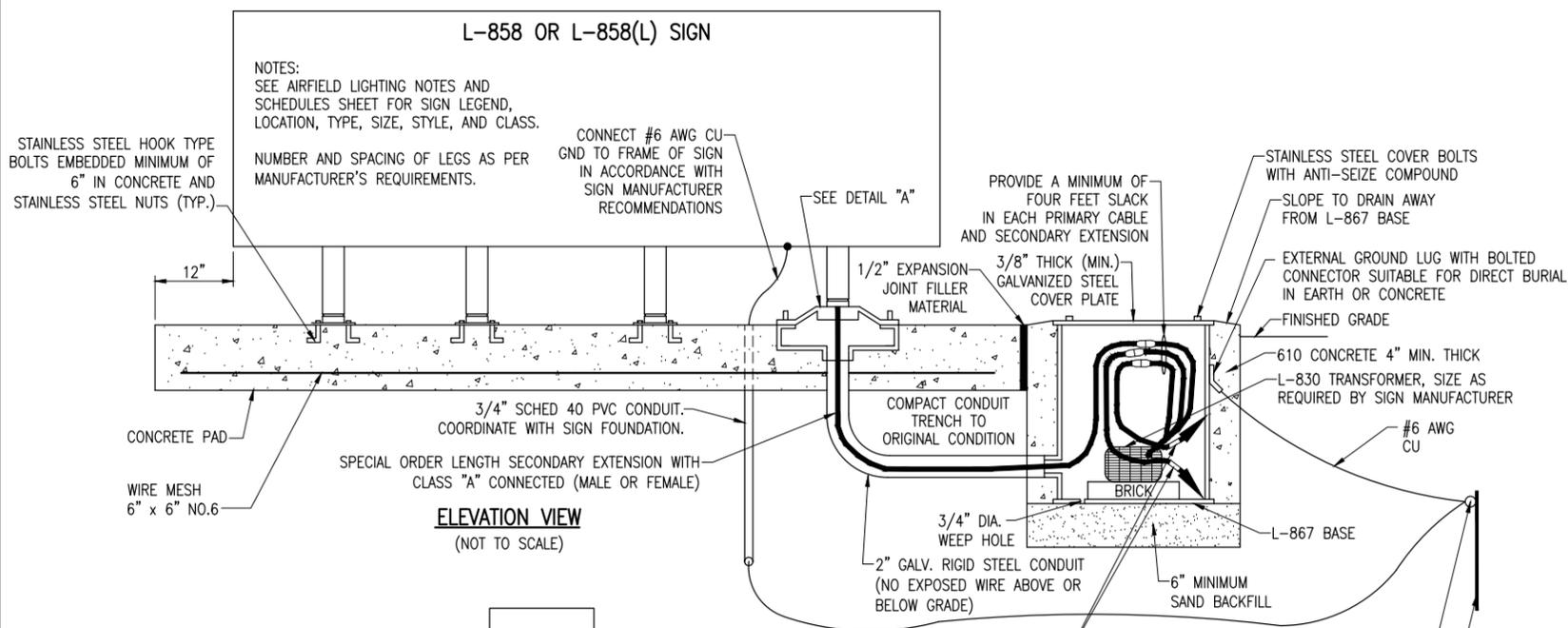
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REVIEWED BY: KNL 09/23/2020

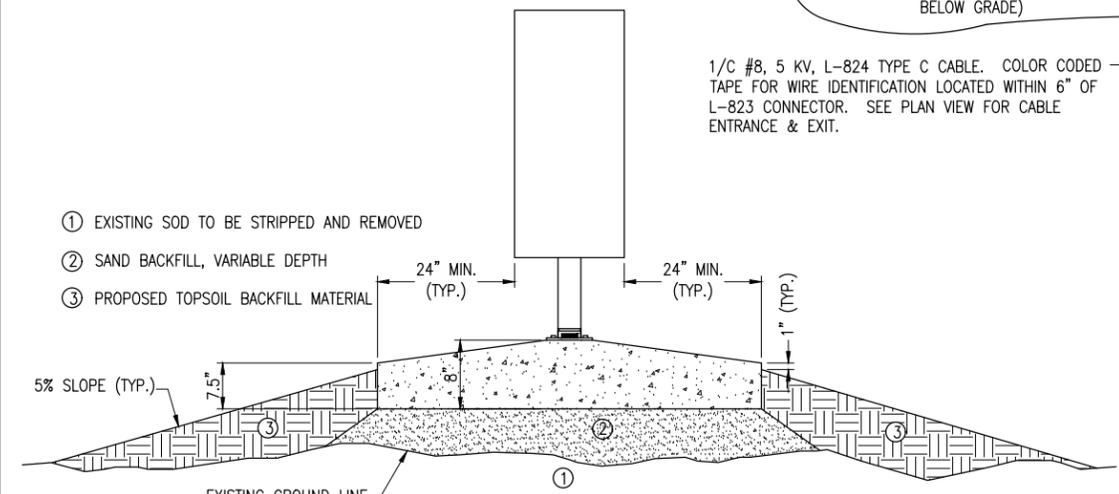
 TAXI GUIDANCE SIGN
 SCHEDULE

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

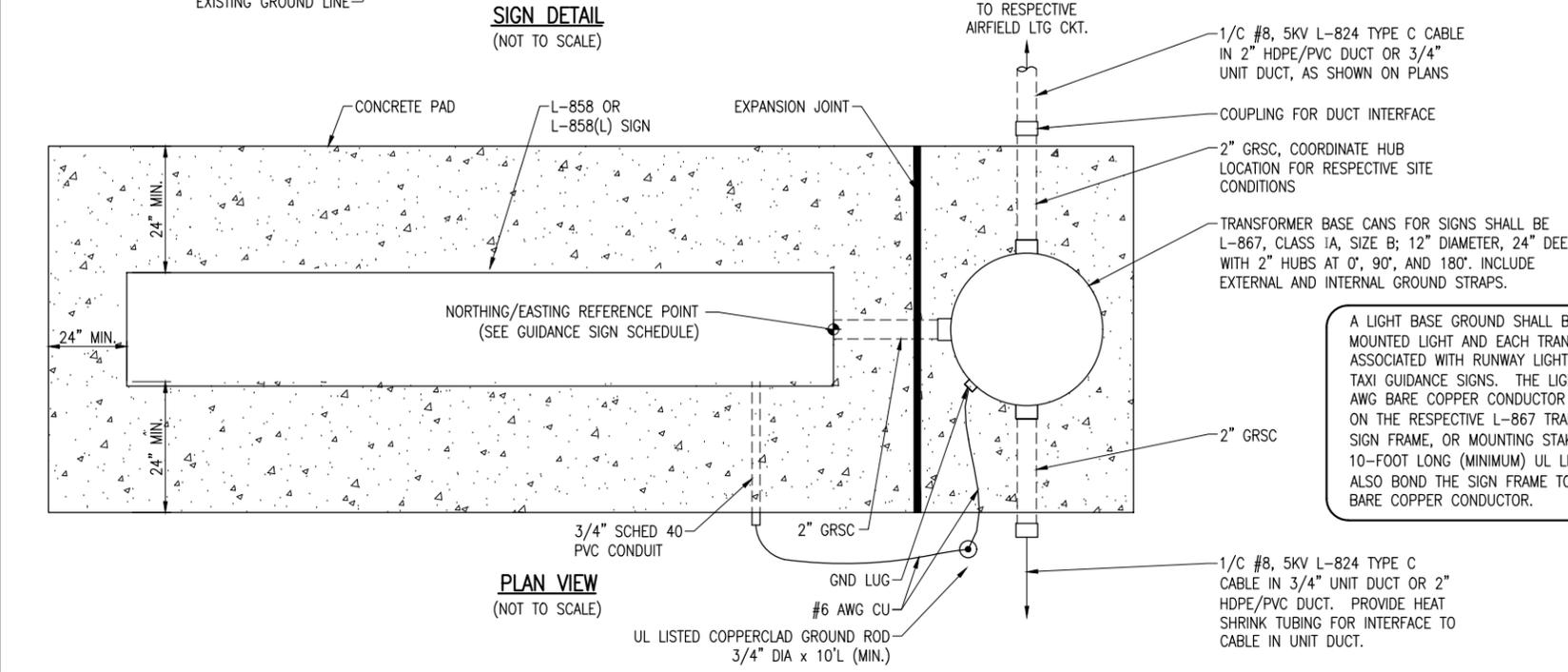
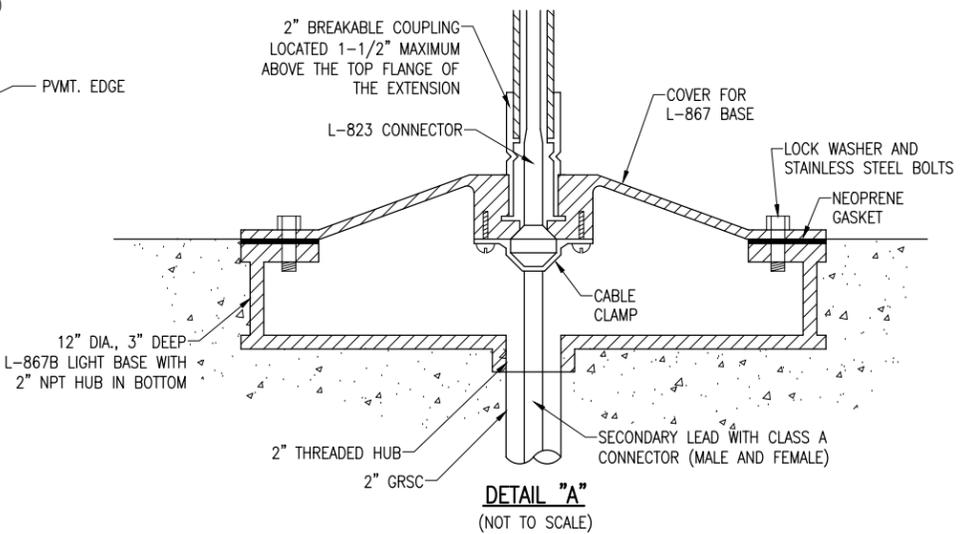
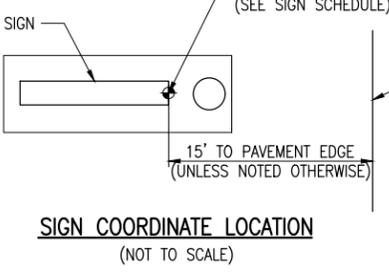
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CAD FILE:
DESIGN BY: KNL 6/29/2020
DRAWN BY: CWS 6/30/2020
REVIEWED BY: KNL 09/23/2020



ELEVATION VIEW
(NOT TO SCALE)



SIGN DETAIL
(NOT TO SCALE)



PLAN VIEW
(NOT TO SCALE)

A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN, TAXI SIGN FRAME, OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. ALSO BOND THE SIGN FRAME TO THE GROUND ROD WITH A #6 AWG BARE COPPER CONDUCTOR.

GENERAL NOTES

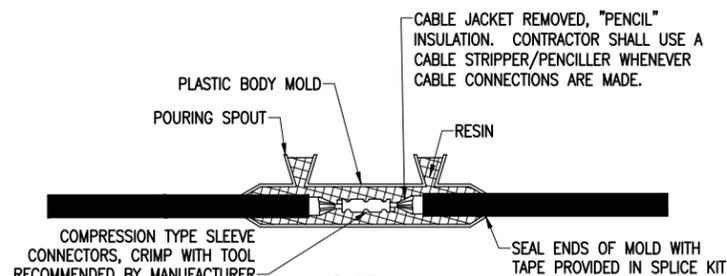
1. SEE PROPOSED ELECTRICAL SHEETS, AIRFIELD LIGHTING NOTES AND TAXI GUIDANCE SIGN SCHEDULES FOR SIGN LEGEND, LOCATION, TYPE, SIZE, STYLE, AND CLASS.
2. SEE ELECTRICAL NOTES SHEETS.

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NOTES:

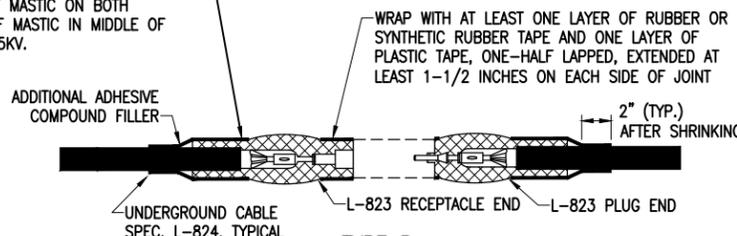
1. SPLICE DETAILS ARE PROVIDED FOR NEW WORK AND TO ASSIST IN REPAIRS OF ACCIDENTAL OR UNEXPECTED INTERRUPTIONS AND/OR CUTS TO AIRFIELD LIGHTING CABLES.
2. KEEP ON HAND A MINIMUM OF 10 SETS OF SPLICE KITS FOR L-823 CONNECTORS AND A MINIMUM OF 10 SETS OF TYPE A LOW VOLTAGE SPLICE KITS TO ACCOMMODATE REPAIRS.
3. EVERY AIRFIELD LIGHTING CABLE 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 AC 150/5370-10G ITEM L-108.
4. INSIDE DIAMETER OF RESPECTIVE CABLE CONNECTOR SHALL PROPERLY MATCH OUTSIDE DIAMETER OF CABLE.
5. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.
6. WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF HIGH VOLTAGE ELECTRICAL INSULATING TAPE (RUBBER SPLICING TAPE SUITABLE FOR PRIMARY ELECTRICAL INSULATION FOR SPLICING CABLE FROM 600 VOLTS TO 69,000 VOLTS) AND COVER WITH VINYL ELECTRICAL TAPE (ALL-WEATHER VINYL INSULATING TAPE SUITABLE FOR PROTECTIVE JACKETING FOR HIGH-VOLTAGE CABLE SPLICES AND REPAIRS) FOR FULL VALUE OF CABLE INSULATION VOLTAGE. PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125, AND FAA AC 150/5370-10H ITEM L-108, HIGH VOLTAGE ELECTRICAL INSULATING TAPE SHALL BE 3M SCOTCH 23, 3M SCOTCH 130C OR APPROVED EQUIVALENT, AND VINYL ELECTRICAL TAPE SHALL BE 3M SCOTCH 88 OR APPROVED EQUIVALENT. TAPES MUST BE RATED SUITABLE FOR THE APPLICATION.
7. PROVIDE CABLE TAGS TO IDENTIFY THE RESPECTIVE CIRCUITS ALL POINTS OF ACCESS INCLUDING L-867 BASES, L-868 BASES, HANDHOLES, MANHOLES, JUNCTION BOXES, AND WIREWAYS.
8. CONNECTION OF CONDUCTORS MUST BE MADE BY USING CRIMP CONNECTORS AND A CRIMPING TOOL APPROVED BY THE CONNECTOR/LUG MANUFACTURER. THE TOOL MUST PRODUCE A COMPLETE CRIMP BEFORE IT CAN BE REMOVED. FOR THE L-823 CONNECTORS, THE CRIMPING TOOL USED MUST BE LISTED BY THE L-823 KIT MANUFACTURER. MAKE THE NUMBER AND TYPE OF CRIMPS PER THE KIT MANUFACTURER'S INSTRUCTIONS.



TYPE A

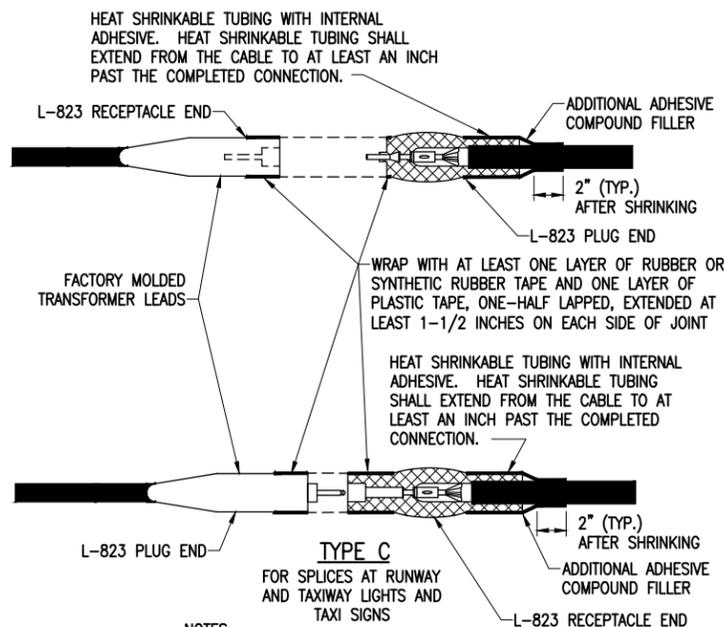
FOR SPLICES IN LOW VOLTAGE CABLE (600V) HOMERUNS FOR EXTENSIONS TO EXISTING LOW VOLTAGE CABLES ONLY. TYPE A SPLICES SHALL BE MADE IN SPLICE CANS, HANDHOLES, MANHOLES, OR JUNCTION BOXES

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

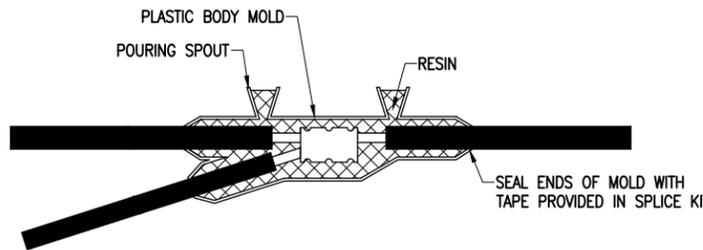


TYPE C

FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS AND TAXI SIGNS

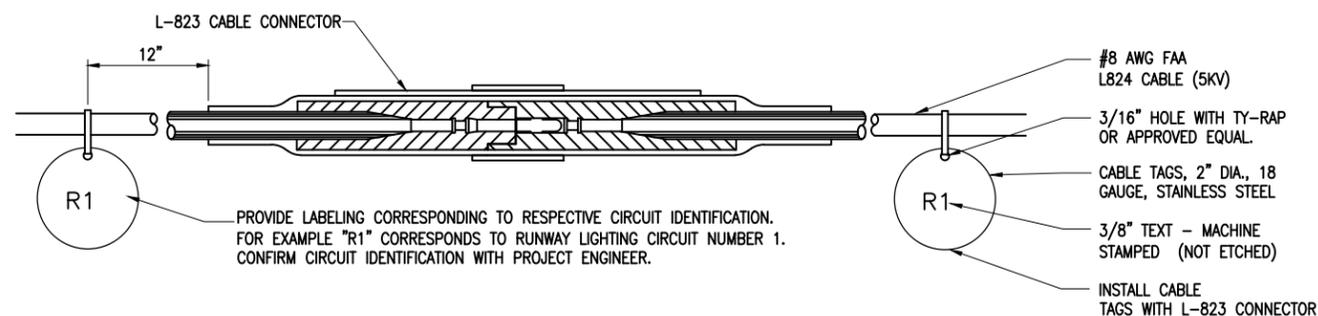
NOTES:
INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF CABLE.

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.



1. CONTRACTOR SHALL PROVIDE CABLE CIRCUIT IDENTIFICATION MARKERS ATTACHED TO BOTH SIDES OF EACH CABLE CONNECTION.
2. CABLE IDENTIFICATION TAGS SHALL BE STAINLESS STEEL OR BRASS.
3. THE CABLE SHALL THOROUGHLY BE CLEANED PRIOR TO THE INSTALLATION OF THE L-823 CONNECTOR KIT.
4. ATTACH EACH CABLE TIE ENOUGH TO HOLD IN PLACE WITHOUT COMPRESSING EDGE OF CABLE TAG INTO CONDUCTOR. TRIM OFF EXCESS CABLE TIE.
5. CABLE TAGS SHALL BE PROVIDED AT ALL POINTS OF ACCESS INCLUDING L-867 BASES, L-868 BASES, HANDHOLES, MANHOLES, JUNCTION BOXES, AND WIREWAYS.
6. CABLE TAGS SHALL BE LABELED AS FOLLOWS FOR RESPECTIVE AIRFIELD LIGHTING CIRCUITS,
RUNWAY 9-27 LIGHTING: R1
LIGHTING FOR PARALLEL TAXIWAY TO RUNWAY 9-27: T2
RUNWAY 18-36 LIGHTING: R2
LIGHTING FOR PARALLEL TAXIWAY TO RUNWAY 18-36: T

CABLE TAG DETAIL
"NOT TO SCALE"

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PROJECT NO: 20A0040

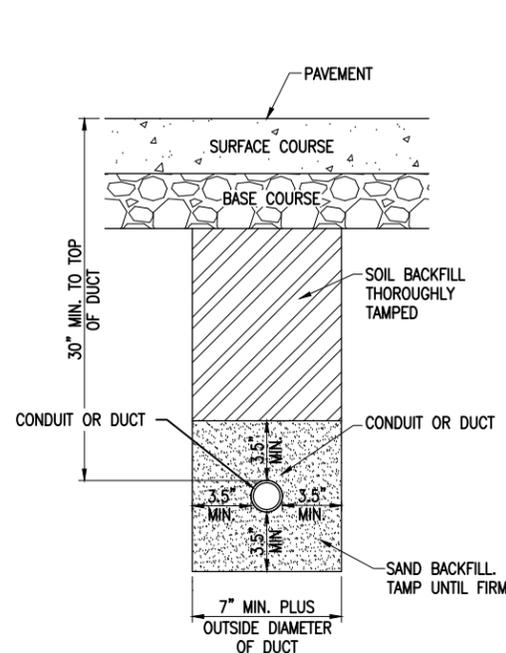
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DESIGN BY: KNL 6/29/2020

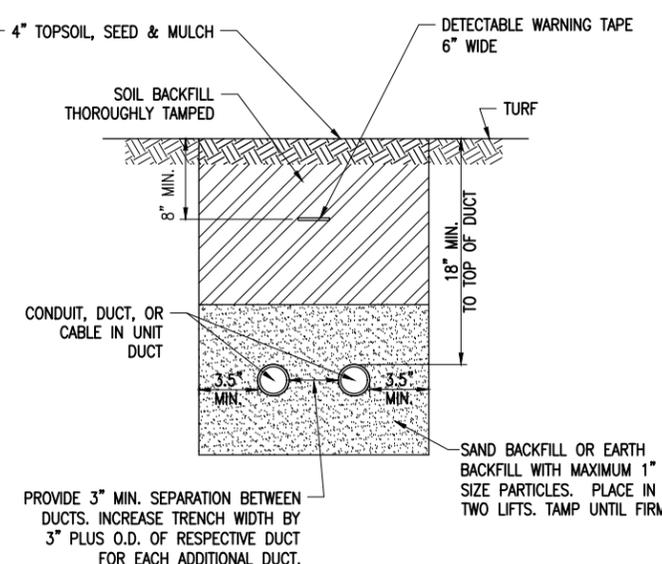
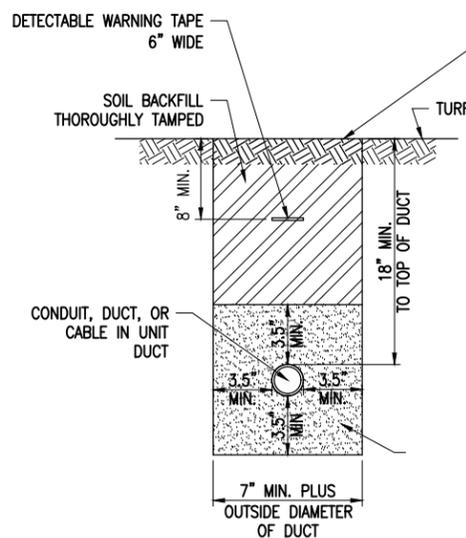
DRAWN BY: CWS 6/30/2020

REVIEWED BY: KNL 09/23/2020

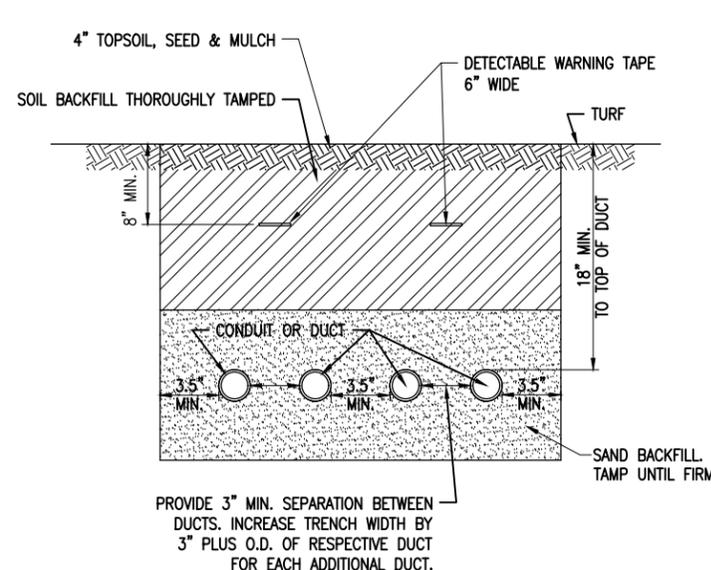
CONDUIT TRENCH
DETAILS



CONDUIT IN TRENCH – PAVED AREAS
"NOT TO SCALE"

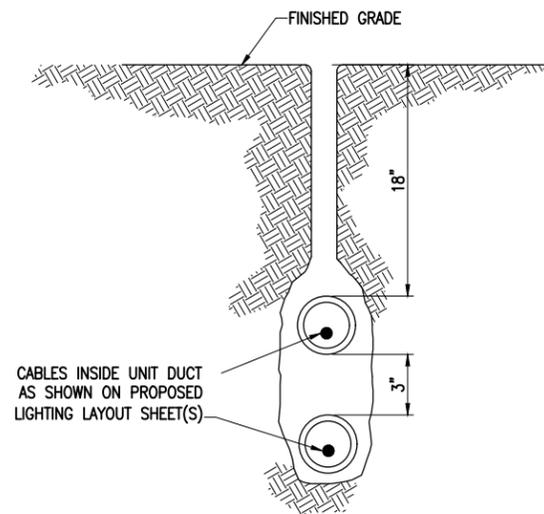


CONDUIT IN TRENCH – NON-PAVED AREAS
"NOT TO SCALE"



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 BELOW PAVEMENT OR ROADWAYS IS 30". MINIMUM COVER REQUIREMENTS FOR DUCTS LOCATED IN AREAS SUBJECT TO FARMING IS 42". ADJUST/INCREASE BURIAL DEPTHS TO ACCOMMODATE SITE CONDITIONS, DRAINAGE AND/OR OBSTRUCTIONS. COVER IS DEFINED AS THE SHORTEST DISTANCE IN INCHES MEASURED BETWEEN A POINT ON THE TOP SURFACE OF ANY DIRECT-BURIED CONDUCTOR, CABLE, CONDUIT, OR OTHER RACEWAY AND THE TOP SURFACE OF FINISHED GRADE, CONCRETE OR SIMILAR COVER.
- 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.
- CONDUIT, DUCT, CABLE, AND/OR CABLE IN UNIT DUCT INTERFACE TO HANDHOLES, MANHOLES, SPLICE CANS, OR OTHER JUNCTION STRUCTURES WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE CABLE PAY ITEM OR RESPECTIVE DUCT PAY ITEM.
- ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.



PLOWED CABLE
"NOT TO SCALE"

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CAD FILE:

DESIGN BY: KNL 6/29/2020

DRAWN BY: CWS 6/30/2020

REVIEWED BY: KNL 09/23/2020

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/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 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 TECHNICIAN 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 RESPECTIVE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. THE RESIDENT ENGINEER/RESIDENT TECHNICIAN 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 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.
- MINIMUM COVER REQUIREMENTS TO TOP OF ELECTRICAL DUCT ENCASEMENT SHALL BE AS FOLLOWS:
-18 IN. MIN. IN TURF AREAS AT AIRPORTS OR ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED, AND NOT SUBJECT TO FARMING.
-42 IN. MIN. IN AREAS SUBJECT TO FARMING.
-30 IN. MIN. WHERE LOCATED BELOW PAVEMENT OR ROADWAY.

WHERE DETAILED ON THE PLANS OR WHERE REQUIRED TO AVOID OBSTRUCTIONS, DUCTS SHALL BE BURIED DEEPER. 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.

13. WHERE CONCRETE-ENCASED DUCT INTERFACES TO AN ELECTRICAL HANDHOLE OR MANHOLE, THE CONCRETE ENCASEMENT SHALL BE INSTALLED UP TO THE RESPECTIVE HANDHOLE OR MANHOLE. PROVIDE BUSHINGS OR BELLS AT CONDUIT TERMINATIONS IN ELECTRICAL HANDHOLES OR MANHOLES.

14. UNDERGROUND DUCTS INSTALLED BY DIRECTIONAL-BORING METHOD SHALL BE INSTALLED IN A MANNER THAT WILL NOT DAMAGE ANY EXISTING UNDERGROUND UTILITIES, AND SHALL NOT DISTURB OR DAMAGE THE RESPECTIVE PAVEMENT OR ROADWAY SURFACE. DUCTS SHALL BE DIRECTIONAL-BORED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. THE DUCTS WILL BE BORED AT A MINIMUM DEPTH OF 42 IN. BELOW THE RESPECTIVE PAVEMENT IT IS BEING BORED UNDER.

15. A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.

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

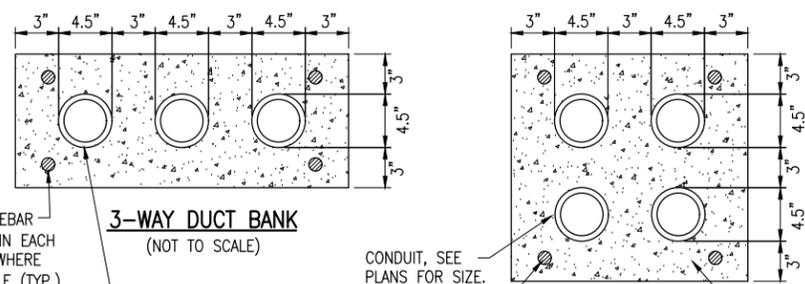
17. CONTROL CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES. COMMUNICATION CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES.

18. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.

19. COORDINATE DUCT INTERFACE TO MANHOLES AND HANDHOLES. FIELD CUT OPENINGS FOR CONDUITS AND DUCTS TO INTERFACE TO MANHOLES AND/OR HANDHOLES. CUT WALL OF RESPECTIVE HANDHOLE OR MANHOLE WITH A TOOL DESIGNED FOR MATERIAL TO BE CUT. SIZE HOLES FOR RESPECTIVE DUCTS, CONDUITS, AND TERMINATION FITTINGS AND SEAL AROUND PENETRATIONS. ALL CORING, INTERFACE, CUTTING, AND SEALING WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION AND/OR RESPECTIVE HANDHOLE/MANHOLE INSTALLATION.

20. CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.

21. ALL POWER AND CONTROL CABLES IN HANDHOLES, MANHOLES, AND JUNCTION BOXES SHALL BE TAGGED TO IDENTIFY THE RESPECTIVE CABLE. A MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MANHOLE; ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT. CABLE TAGS SHALL BE STAMPED BRASS TAGS OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.



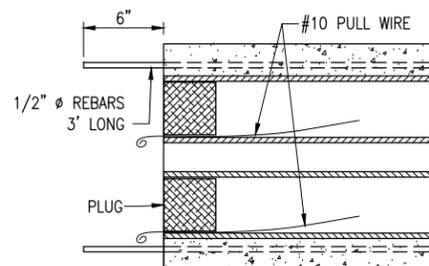
1/2" Ø REBAR 3' LONG IN EACH CORNER WHERE APPLICABLE (TYP.)

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

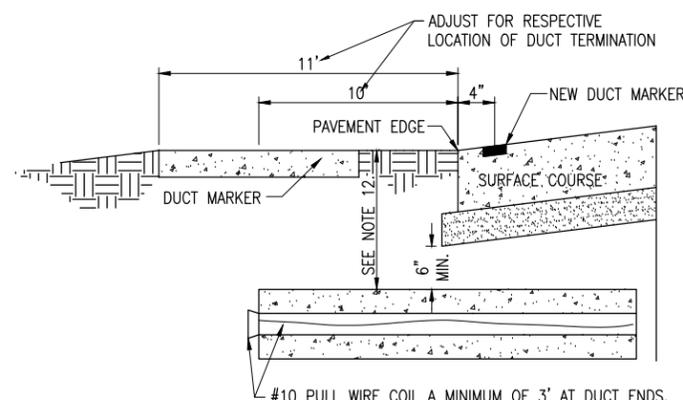
CONDUIT, SEE PLANS FOR SIZE.

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

ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE, 3,500 PSI (MIN.) AT 14 DAYS (TYPICAL FOR CONCRETE ENCASED DUCT)



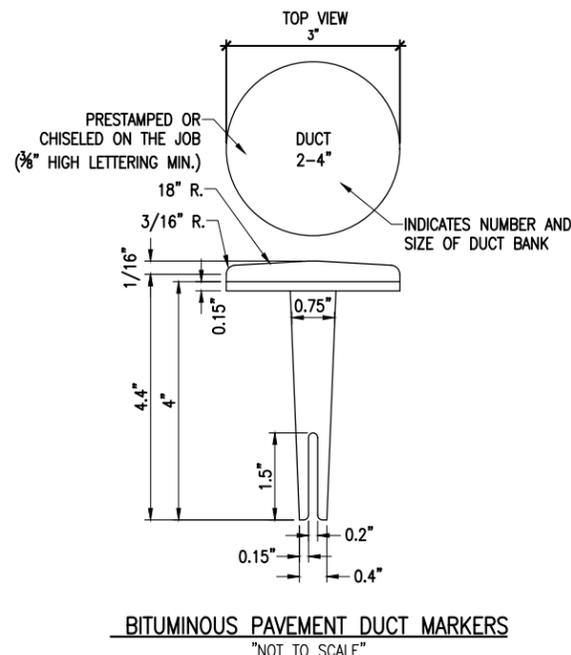
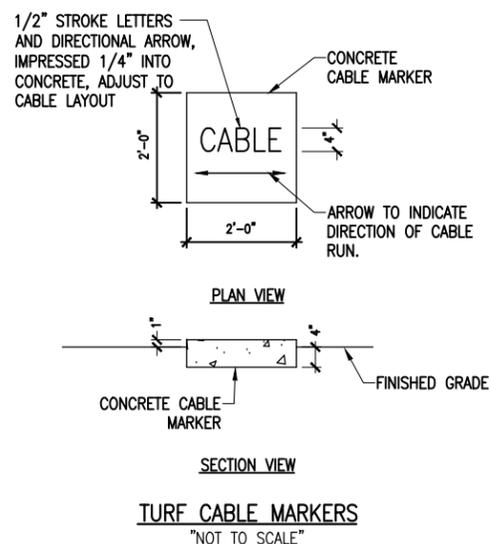
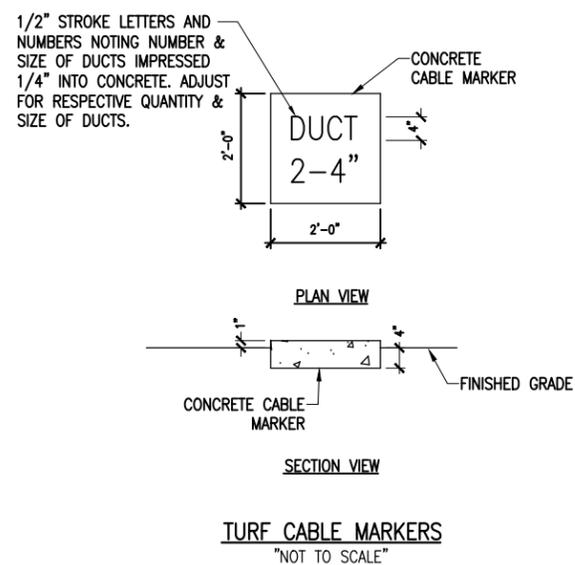
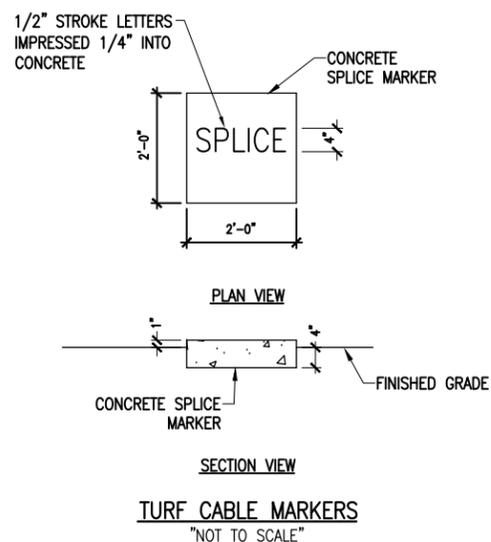
TYPICAL SECTION (NOT TO SCALE)



UNDERGROUND ELECTRICAL DUCT (NOT TO SCALE)

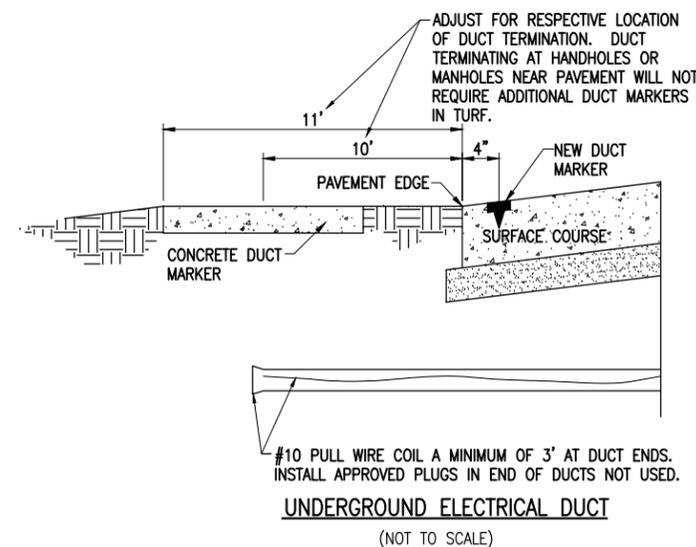
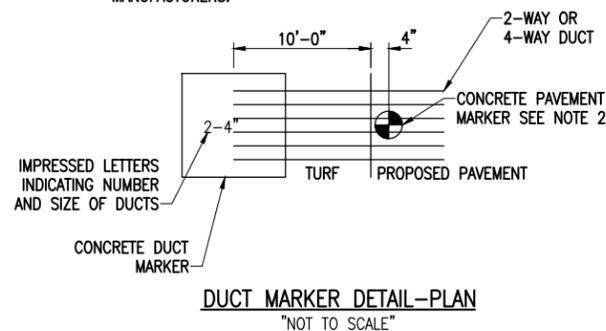
DUCT BANK NOTES:

- DIMENSIONS FOR CONCRETE COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
- INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., CARLON, CANTEX, OR APPROVED EQUAL TO MAINTAIN PROPER SEPARATION OF CONDUITS.
- PROVIDE REBAR WHERE APPLICABLE TO ACCOMMODATE INTERFACE OF CONCRETE ENCASED DUCT BANKS TERMINATING IN HANDHOLE OR MANHOLE. PROVIDE REBAR WHERE APPLICABLE TO EXTEND AN EXISTING CONCRETE DUCT BANK OR WHERE NECESSARY TO CONSTRUCT A DUCT BANK WITH MULTIPLE CONCRETE POURS AT DIFFERENT STAGES. PROVIDE REBAR REINFORCEMENT WHERE DUCT BANK IS LOCATED BELOW PAVEMENT. REBAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706, GRADE 60, OR ASTM A615, GRADE 60.



NOTE:

1. TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE
2. BRASS DUCT MARKERS ARE AVAILABLE FROM BERNTSEN INTERNATIONAL INC., P.O. BOX 8670, MADISON, WI. 53708-8670, PHONE: 1-877-959-8556, SURV-KAP, 3225 E. 47TH ST., TUCSON, AZ 85713, PHONE: (502)-622-6011, OR OTHER EQUIVALENT MANUFACTURERS.



CABLE & DUCT MARKER NOTES:

1. THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
2. BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE INFORMED AS DESCRIBED IN NOTE 4.
3. UNDERGROUND CABLE RUNS MUST BE IDENTIFIED BY CABLE MARKERS AT 200 FEET (61 M) MAXIMUM SPACING WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS MUST BE INSTALLED ABOVE THE CABLE. CABLE MARKERS ARE NOT REQUIRED FOR CABLE RUNS BETWEEN RUNWAY/TAXIWAY EDGE LIGHTS.
4. CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.
5. EMPLOY THE FOLLOWING METHODS WHERE ADDITIONAL SPACE TO FIT THE LEGEND IS REQUIRED:
 - A. REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
 - B. INCREASE THE MARKER SIZE TO 30" X 30".
 - C. PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE
6. TURF DUCT MARKERS ARE NOT REQUIRED AT PAVEMENT CROSSINGS WHERE DUCTS TERMINATE IN HANDHOLES, OR JUNCTION STRUCTURES.
7. LOCATION OF ALL DIRECT EARTH BURIAL UNDERGROUND CABLE SPLICE/CONNECTIONS, EXCEPT THOSE AT ISOLATION TRANSFORMERS, MUST BE IDENTIFIED BY SPLICE MARKERS. SPLICE MARKERS MUST BE PLACED ABOVE THE SPLICE/CONNECTIONS. DIRECT EARTH BURIAL UNDERGROUND CABLE SPLICES SHALL BE AVOIDED WHERE POSSIBLE. CABLE SPLICES SHALL BE LOCATED IN SPLICE CANS, LIGHT BASES, HANDHOLES, MANHOLES, OR OTHER JUNCTION STRUCTURES UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER.
8. THE CABLE AND SPLICE MARKERS MUST IDENTIFY THE CIRCUITS TO WHICH THE CABLES BELONG. FOR EXAMPLE: RWY 4-22, PAPI-4, PAPI-22.
9. LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS.

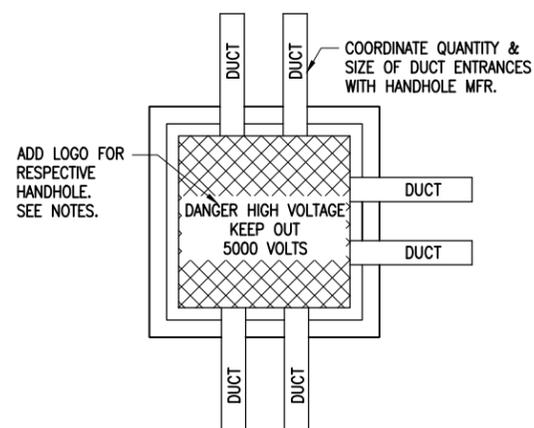
EXTEND PARTIAL PAR TAXIWAY B & RELATED LIGHTING/ELECTRICAL FROM EXISTING END TO RWY 9 TURNAROUND

IDA No: 3LF-4819
SBG NO.
3-17-SBGP-144/156/162
Contract No. LI039

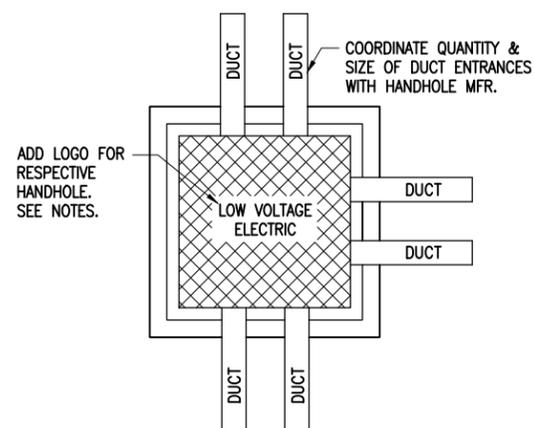
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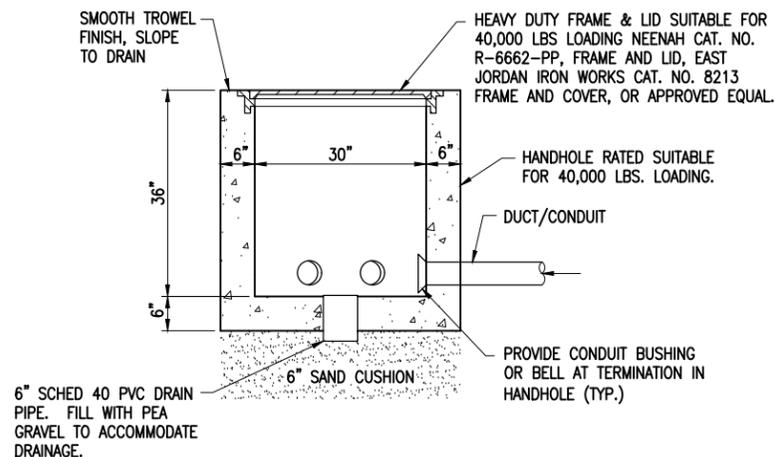
CABLE AND DUCT MARKER DETAILS



HIGH VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"



LOW VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"



ELEVATION
"NOT TO SCALE"

NOTES:

- 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.
- HANDHOLES SHALL BE PRECAST. PRECAST MANUFACTURERS MUST BE ON THE IDOT (ILLINOIS DEPT. OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
- FRAMES AND LIDS (CASTINGS) SHALL BE MADE IN THE USA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCES REQUIREMENTS.
- MINIMUM CONCRETE STRENGTH SHALL BE 5,000 PSI (MINIMUM) AFTER 28 DAYS.
- COORDINATE INSTALLATION OF HANDHOLES WITH RESPECTIVE FINISHED GRADE ELEVATIONS.
- 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.

ELECTRICAL HANDHOLE
"NOT TO SCALE"

LITCHFIELD MUNICIPAL AIRPORT

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Litchfield, IL 62056
Phone: (217) 324-4731

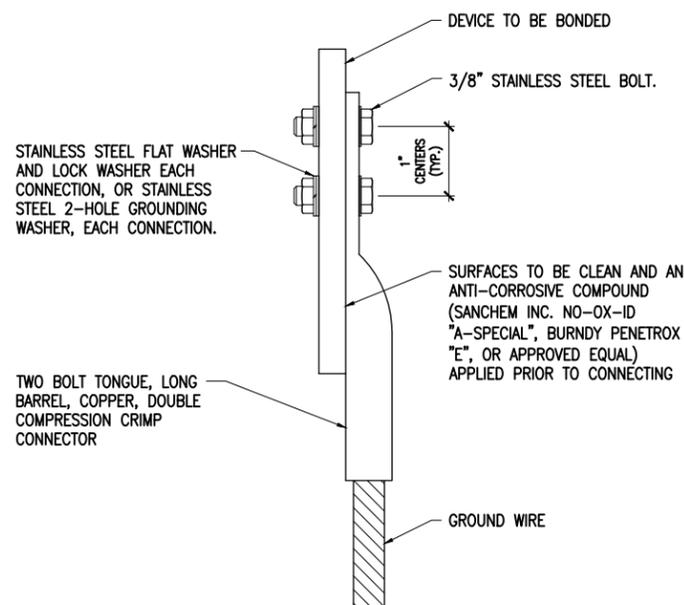
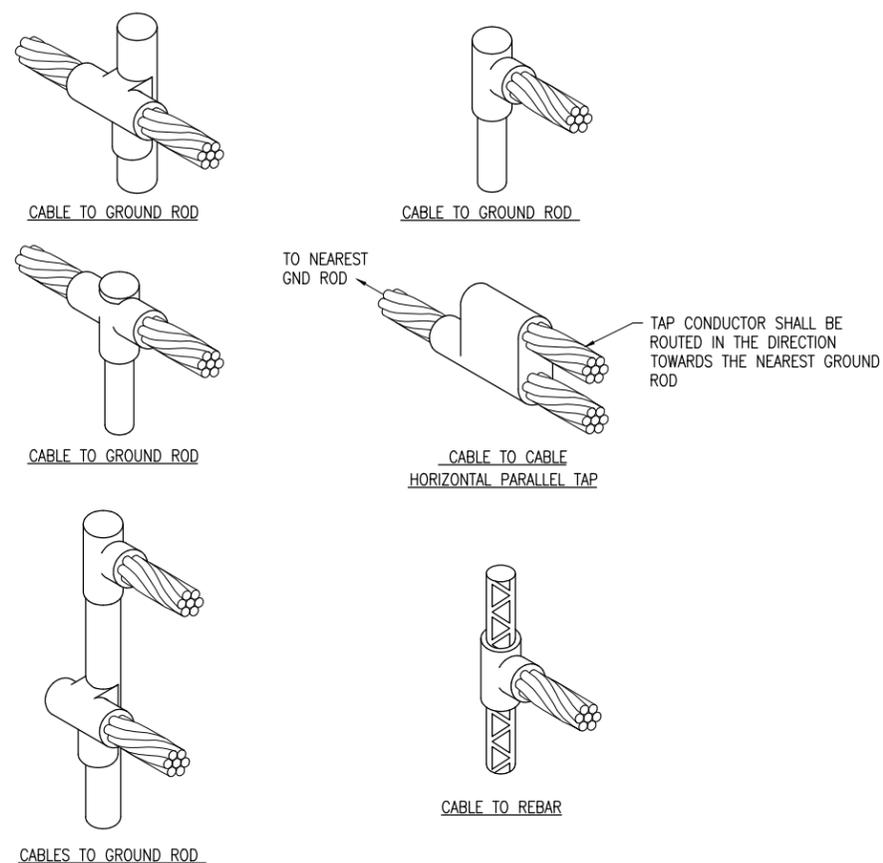
EXTEND PARTIAL PAR
TAXIWAY B & RELATED
LIGHTING/ELECTRICAL
FROM EXISTING END TO
RWY 9 TURNAROUND

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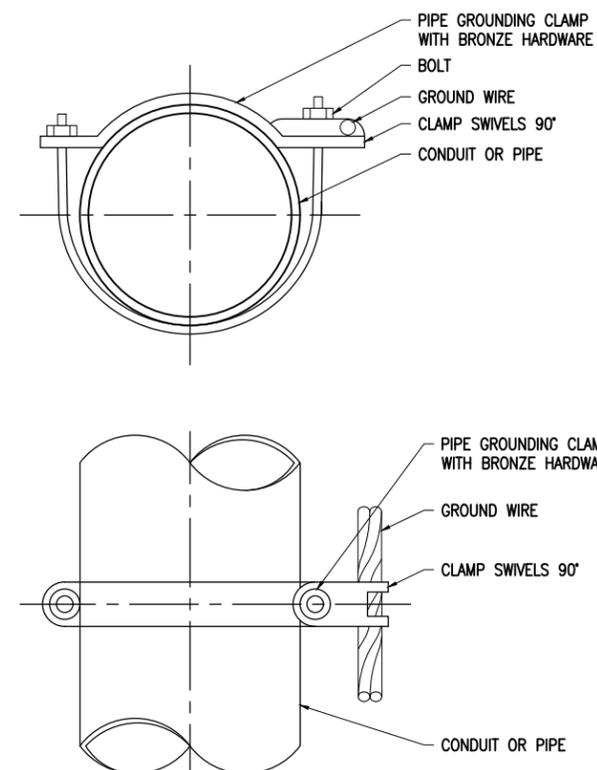
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ELECTRICAL
HANDHOLE DETAILS



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



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

DETAIL NOTES

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

EXOTHERMIC WELD DETAILS

NOTES

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

GROUNDING LUG CONNECTION DETAIL

NOTES

- PIPE GROUNDING CLAMPS SHALL HAVE BRONZE HARDWARE, BE CORROSION RESISTANT, SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE, & UL 467 LISTED.

PIPE/CONDUIT GROUNDING CLAMP DETAIL

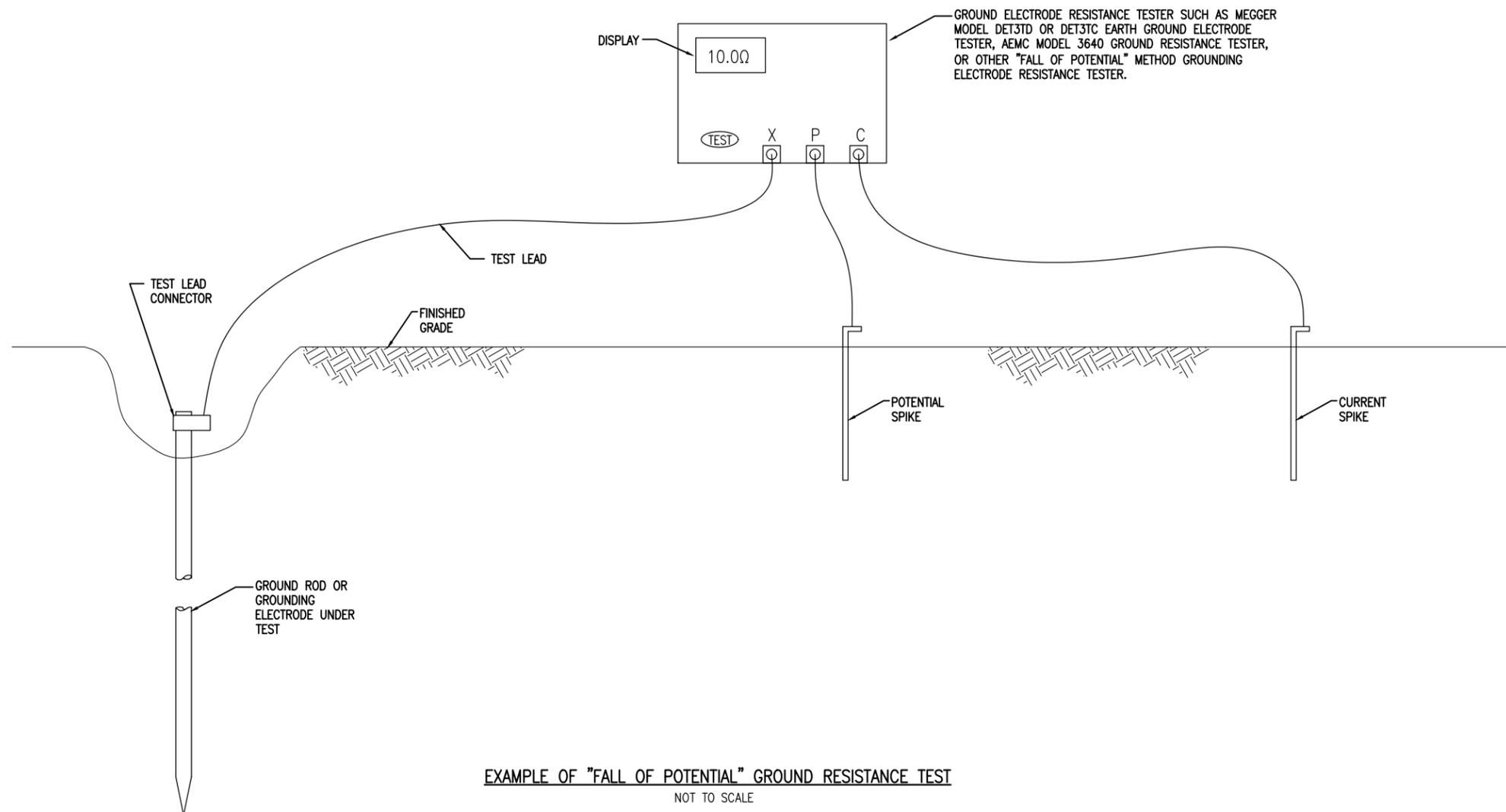
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GROUNDING DETAILS



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

NOTES

1. CONTRACTOR SHALL TEST AND RECORD THE RESISTANCE FOR EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING ELECTRODE SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN, AND THE PROJECT ENGINEER.
2. FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, SPLICE CAN 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. ALSO REFER TO EOR-47643 FOR ADDITIONAL INFORMATION ON GROUNDING REQUIREMENTS WHERE APPLICABLE. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER / RESIDENT TECHNICIAN, AND THE PROJECT ENGINEER.
3. GROUND RESISTANCE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE RESPECTIVE GROUND ELECTRODE RESISTANCE TESTING EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
4. RECORD SITE CONDITIONS DURING TESTS.
5. "FALL OF POTENTIAL" TYPE GROUND ELECTRODE RESISTANCE TESTER IS RECOMMENDED FOR TESTING INDIVIDUAL STAND ALONE GROUND RODS.

LITCHFIELD MUNICIPAL AIRPORT

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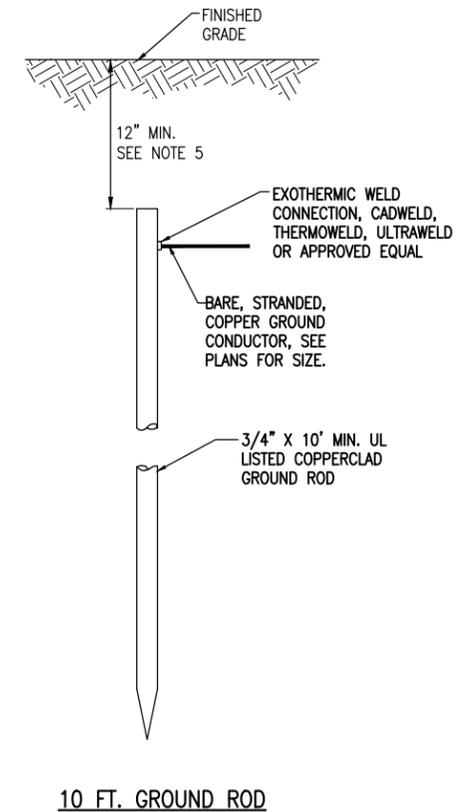
GROUND
RESISTANCE
TESTING DETAILS

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 SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING (UNLESS DETAILED OTHERWISE HEREIN). GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS, AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY PENTAIR ERICO PRODUCTS, INC., THERMOWELD BY CONTINENTAL INDUSTRIES, INC., ULTRAWELD BY HARGER, OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS OR AT BURIED GROUNDING ELECTRODE CONDUCTORS.
- 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. ALSO REFER TO EOR-47643 FOR ADDITIONAL INFORMATION ON GROUNDING REQUIREMENTS WHERE APPLICABLE. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND THE PROJECT ENGINEER.
- 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 APPROVED EQUAL.
- METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2017 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
- 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, DOSSERT CORPORATION, ILSCO CORPORATION, PENN-UNION CORPORATION, THOMAS & BETTS, OR APPROVED 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 2017 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.

- ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2017 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHBOARD, ETC) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2017 NEC 250-102.
- 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 GROUND 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, DOSSERT CORPORATION, ILSCO CORPORATION, PENN-UNION CORPORATION, THOMAS & BETTS, 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 2017 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
- NEVER REMOVE, ALTER, OR ATTEMPT TO REPAIR CONDUCTORS OR CONDUIT SYSTEMS PROVIDING GROUNDING OR ELECTRICAL BONDING FOR ANY ELECTRICAL EQUIPMENT UNTIL ALL POWER IS REMOVED FROM EQUIPMENT. WARN ALL PERSONNEL OF THE UNGROUNDED CONDITION OF THE EQUIPMENT. DISPLAY APPROPRIATE WARNING SIGNS, SUCH AS DANGER TAGS, TO WARN PERSONNEL OF THE POSSIBLE HAZARDS.
- GROUNDING WORK AND MODIFICATIONS SHALL NOT BE PERFORMED DURING A THUNDERSTORM OR WHEN A THUNDERSTORM IS PREDICTED IN THE AREA
- WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTIONS.
- GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA FROM 100 PERCENT DOMESTIC STEEL TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS AND THE STEEL PRODUCTS PROCUREMENT ACT.



10 FT. GROUND ROD

NOTES

- 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 FOR AIRFIELD LIGHT FIXTURES AND TAXI GUIDANCE SIGNS, SHALL BE 12" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN.
- GROUND RODS FOR INDIVIDUAL SPLICE CANS SHALL BE 3/4-IN DIAMETER BY 10 FOOT LONG. WHERE GROUND RESISTANCE EXCEEDS 25 OHMS FURNISH AND INSTALL A SECOND GROUND ROD SPACED MINIMUM OF 10 FEET APART (ONE ROD LENGTH APART), AND CONNECT TO FIRST GND ROD.

GROUND RODS

NOT TO SCALE



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GROUNDING NOTES

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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/ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING/CONSTRUCTION FOR USE AS A REFERENCE.
- VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER AND MAINTENANCE SUPERVISOR. 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).
- IN THE EVENT A CONFLICT IS DETERMINED WITH RESPECT TO MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTIONS.
- COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:

120/240 VAC, 1 PHASE, 3 WIRE	
PHASE A	BLACK
PHASE B	RED
NEUTRAL	WHITE
GROUND	GREEN
- SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
- LTFC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFC THAT IS NOT UL LISTED. CONFIRM LTFC BEARS THE UL LABEL PRIOR TO INSTALLATION.
- ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES UL LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
- CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, ADJUSTING, CONNECTING, OR WORKING ON THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT, OR OTHER DEVICE.
- HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION STRUCTURE OR HANDHOLE.

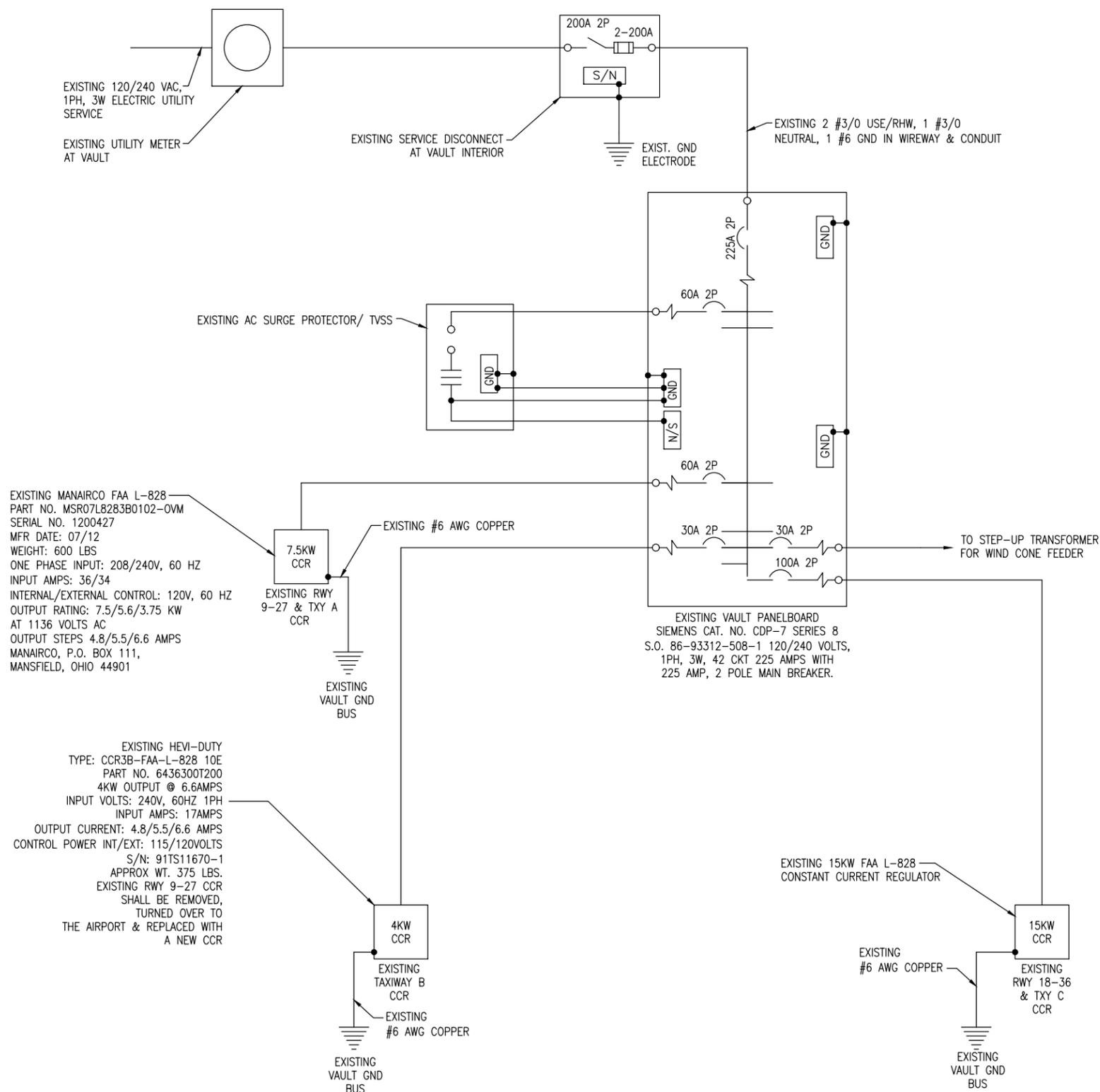
ELECTRICAL ABBREVIATIONS (CONTINUED)	
PB	PULL BOX
PC	PHOTO CELL
PDB	POWER DISTRIBUTION BLOCK
PNL	PANEL
RCPT	RECEPTACLE
R	RELAY
S	STARTER
SPD	SURGE PROTECTION DEVICE
SPST	SINGLE POLE SINGLE THROW
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UG	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITER'S 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 FACILITY
WC	WIND CONE

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
EOR	ENGINEER OF RECORD
EP	EXPLOSION PROOF
ES	EMERGENCY STOP
ETL	INTERTEK - ELECTRICAL TESTING LABS
ETM	ELAPSE TIME METER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRSC	GALVANIZED RIGID STEEL CONDUIT
HID	HIGH INTENSITY DISCHARGE
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
J	JUNCTION BOX
KVA	KILOVOLT AMPERE(S)
KNL	KEVIN NEIL LIGHTFOOT
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LTFC	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 LEGEND - SCHEMATIC	
	NORMALLY OPEN (N.O.) CONTACT
	NORMALLY CLOSED (N.C.) CONTACT
	STARTER COIL, * = STARTER NUMBER
	OVERLOAD RELAY CONTACT
	CONTROL RELAY, * = CONTROL RELAY NUMBER
	RELAY, * = RELAY NUMBER
	TOGGLE SWITCH / 2 POSITION SWITCH
	2-POSITION SELECTOR SWITCH
	3-POSITION SELECTOR SWITCH (H-O-A SHOWN)
	2 POLE DISCONNECT SWITCH
	3 POLE DISCONNECT SWITCH
	PHOTOCELL
	TERMINAL BLOCK, * = TERMINAL NUMBER
	DEVICE TERMINAL, * = DEVICE TERMINAL NUMBER
	INTERNAL PANEL WIRING
	FIELD WIRING
	FUSE
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	GROUND, GROUND ROD, GROUND BUS
	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
	S1 CUTOUT HANDLE REMOVED
	S1 CUTOUT HANDLE INSERTED
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH
	L-830 SERIES ISOLATION TRANSFORMER

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



NOTES:

- EXISTING ONE-LINE DIAGRAM WIRING IS BASED ON FIELD DATA AND INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND WIRING AND REPORT ANY VARIATIONS TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN.
- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, CONNECTING OR RECONNECTING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT OR OTHER DEVICE.
- CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
- CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
- WHEN A RUNWAY IS SHUT DOWN THE RUNWAY LIGHTING AND ASSOCIATED AIRFIELD NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF. WHEN A TAXIWAY IS SHUT DOWN THE TAXIWAY LIGHTS FOR THAT TAXIWAY WILL BE SHUT OFF.
- THIS PROJECT WILL AFFECT RUNWAY 9-27 LIGHTING CIRCUIT AND TAXIWAY B LIGHTING CIRCUIT AND THE ASSOCIATED CCR'S.
- EXISTING RUNWAY 18-36 AND TAXIWAY C CCR IS SCHEDULED TO REMAIN. NO CHANGES ARE PLANNED FOR RUNWAY 18-36 AND TAXIWAY C LIGHTING ON THIS PROJECT.
- EACH CONSTANT CURRENT REGULATOR SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS, AND/OR ANY AIRFIELD WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING CIRCUITS, AND AGAIN AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS AND/OR UPGRADES.

EXTEND PARTIAL PAR
 TAXIWAY B & RELATED
 LIGHTING/ELECTRICAL
 FROM EXISTING END TO
 RWY 9 TURNAROUND

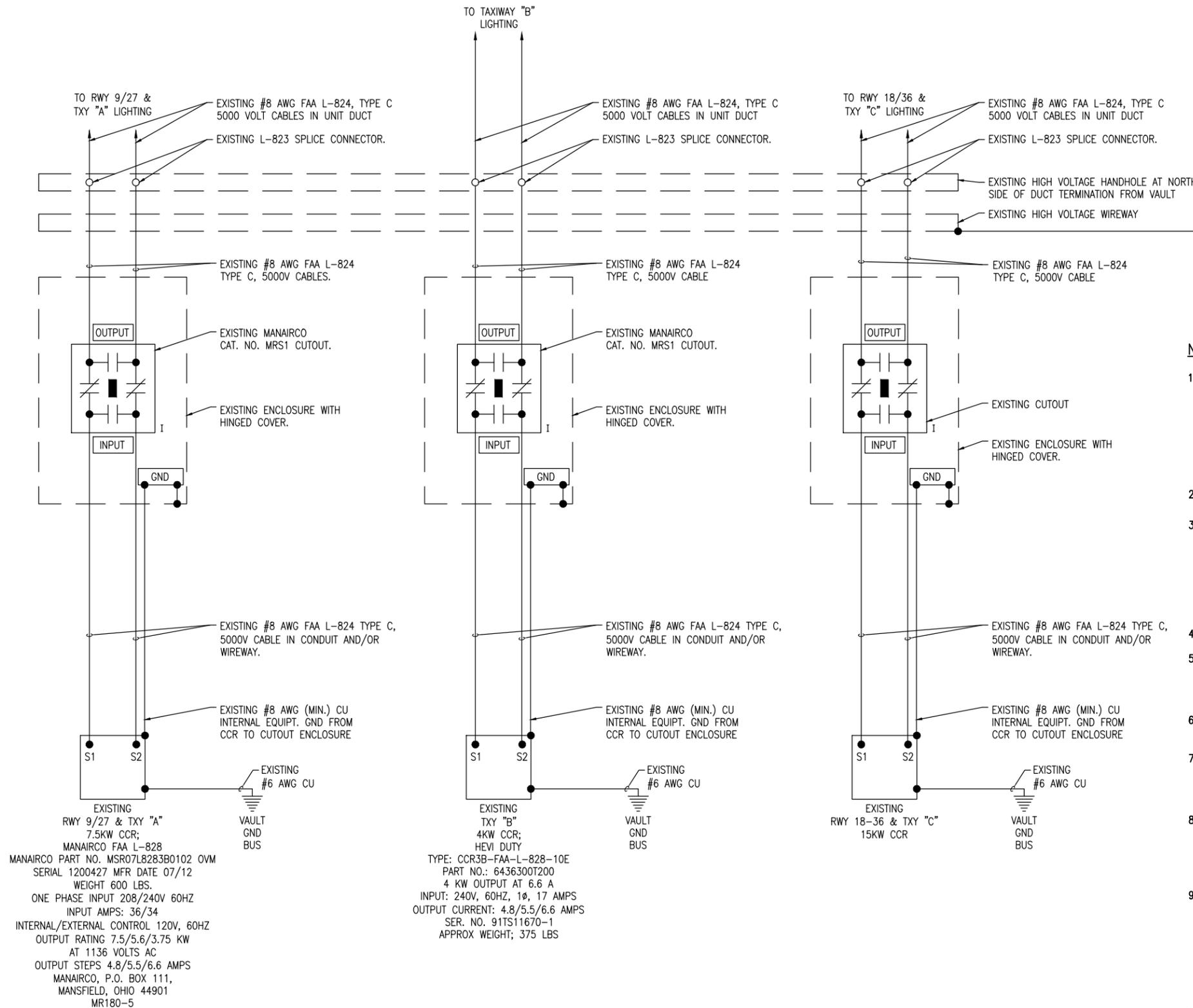
IDA No: 3LF-4819
 SBG NO.
 3-17-SBGP-144/156/162
 Contract No. LI039

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/20/2020 (For Bid)
 PROJECT NO: 20A0040
 CAD FILE:
 DESIGN BY: KNL 6/29/2020
 DRAWN BY: CWS 6/30/2020
 REVIEWED BY: KNL 09/23/2020

EXISTING
 ELECTRICAL
 ONE-LINE DIAGRAM
 FOR VAULT

EXISTING ELECTRICAL ONE-LINE DIAGRAM FOR VAULT



LEGEND

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

NOTES:

1. KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND RESIDENT ENGINEER/TECHNICIAN. 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. EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
3. VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES FOR RESPECTIVE SYSTEMS PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, VAULT EQUIPMENT, OR OTHER DEVICES. THE CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT 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. IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT.
5. NOTE THE EXISTING AIRPORT ELECTRICAL VAULT HAS APPARENT NATIONAL ELECTRICAL CODE WORKING CLEARANCE VIOLATIONS WHICH MIGHT CAUSE UNSAFE WORKING CONDITIONS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND CIRCUITS. CONTRACTOR WILL NEED TO EXERCISE CAUTION WHEN WORKING IN THE VAULT AND ON THE AIRFIELD.
6. NEVER REMOVE OR INSERT A CUTOUT WITH THE CIRCUIT ENERGIZED. SHUTOFF CIRCUITS PRIOR TO PULLING OR INSERTING A SERIES PLUG CUTOUT.
7. THE RESPECTIVE PERSONNEL PERFORMING AIRFIELD LIGHTING WORK, VAULT WORK, AND/OR TESTS SHALL BE FAMILIAR WITH, AND QUALIFIED TO WORK ON, 5000 VOLT AIRFIELD LIGHTING SERIES CIRCUITS, CONSTANT CURRENT REGULATORS, AND ASSOCIATED AIRPORT ELECTRICAL VAULT EQUIPMENT.
8. EXERCISE CAUTION, PRACTICE SAFETY, AND DISCONNECT THE SERIES CIRCUITS FROM THE RESPECTIVE CONSTANT CURRENT REGULATORS, AS APPLICABLE WHEN PERFORMING WORK ON THE AIRFIELD LIGHTING OR WORK THAT MIGHT AFFECT THE AIRFIELD LIGHTING. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO DISCONNECT POWER AND LOCKOUT CIRCUITS FOR PROTECTION OF PERSONNEL. EXISTING CCR'S DO NOT APPEAR TO HAVE CUTOUTS.
9. OVERSEE AND CONDUCT TESTS FOR AREAS OF WORK WHERE THE RESPECTIVE CIRCUITS MIGHT BE AFFECTED. MEGGER TEST AND RECORD EXISTING SERIES CIRCUITS (WITH A CABLE INSULATION TESTER) PRIOR TO CABLE WORK OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING SYSTEMS, AND AGAIN AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES AND/OR OTHER WORK HAS BEEN COMPLETED. PROVIDE 5KV INSULATION TESTER FOR 5,000 VOLT SERIES CIRCUIT CABLES. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE WITH AN OHMMETER. PROVIDE COPY OF TEST RESULTS TO THE ENGINEER OF RECORD (EOR) WITHIN 5 DAYS OF CONDUCTING TESTS.
10. RESPECTIVE CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS AND/OR ANY AIRFIELD WORK THAT MIGHT AFFECT LIGHTING CIRCUITS AND AGAIN AFTER THE AIRFIELD WORK AND ADDITIONS HAVE BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATION. PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR). WRITTEN TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT PROJECT REPRESENTATIVE AND THE ENGINEER OF RECORD (EOR).

EXISTING HIGH VOLTAGE WIRING SCHEMATIC

EXTEND PARTIAL PAR TAXIWAY B & RELATED LIGHTING/ELECTRICAL FROM EXISTING END TO RWY 9 TURNAROUND

IDA No: 3LF-4819
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