

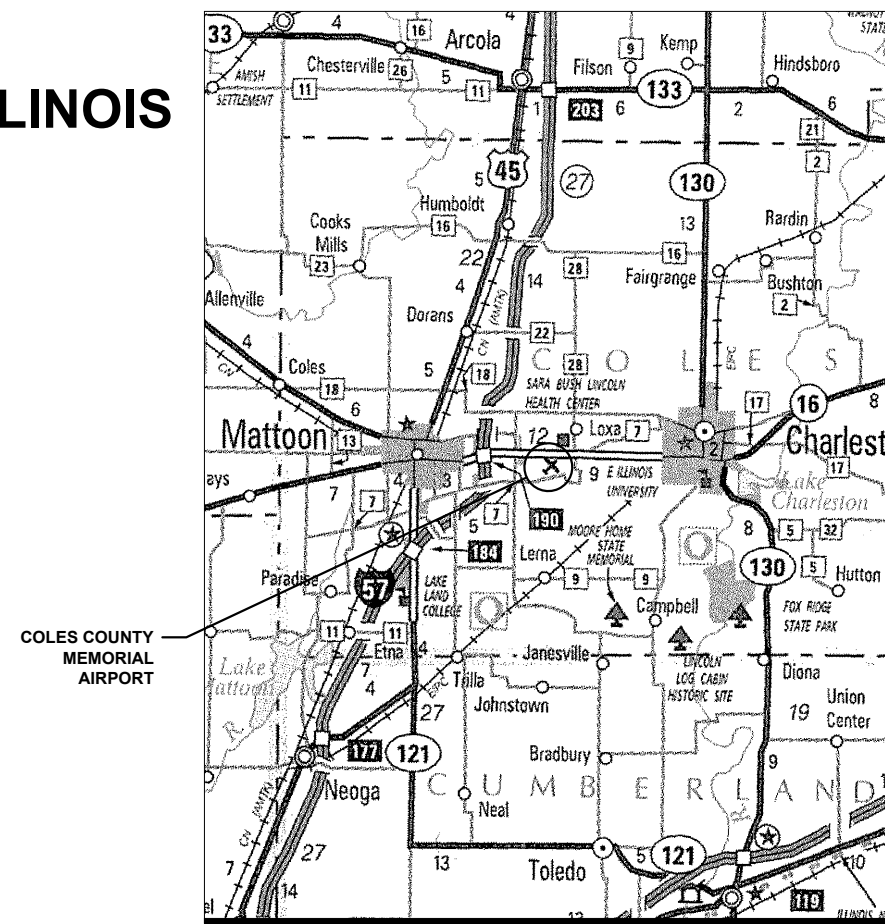
CONSTRUCTION PLANS

PHASE 2: RECONSTRUCT TAXIWAY B

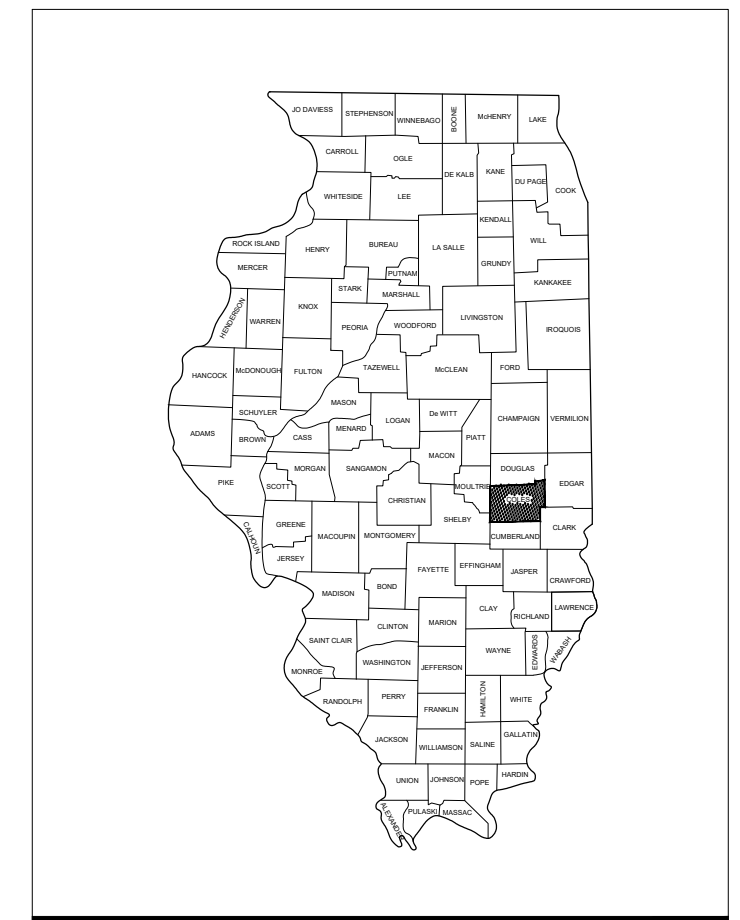
COLES COUNTY AIRPORT AUTHORITY
COLES COUNTY MEMORIAL AIRPORT (MTO)
MATTOON-CHARLESTON, COLES COUNTY, ILLINOIS

ILLINOIS PROJECT NO. MTO-4752
SBG PROJECT NO. 3-17-SBGP-159

NOVEMBER 15, 2019



VICINITY MAP



LOCATION MAP

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

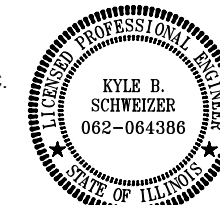
Kevin N. Lightfoot, P.E.
Electrical Engineer Lic. Exp. 11/30/2021



November 8, 2019
Date

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HANSON PROFESSIONAL SERVICES INC.
1525 S. Sixth St.
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Telephone: 217.788.2450
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Kyle B. Schweizer, P.E.
Project Engineer Lic. Exp. 11/30/2021



November 8, 2019
Date



Andrew J. Fearn
Airport Manager

COLES COUNTY MEMORIAL AIRPORT
COLES COUNTY AIRPORT AUTHORITY
432 Airport Road
Mattoon, Illinois 61938
Telephone: 217.234.7120
Fax: 217.234.7116

November 8, 2019
Date

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SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITY	AS-BUILT QUANTITY
AR108084	1/C #4 XLP-USE	L.F.	6,551	
AR108108	1/C #8 5 KV UG CABLE	L.F.	4,017	
AR108158	1/C #8 5 KV UG CABLE IN UD	L.F.	4,244	
AR110013	3" DIRECTIONAL BORE	L.F.	1,560	
AR110504	4-WAY CONCRETE ENCASED DUCT	L.F.	310	
AR115610	ELECTRICAL HANDHOLE	EACH	2	
AR115710	ELECTRICAL MANHOLE	EACH	2	
AR125416	MITL-BASE MOUNTED-LED	EACH	9	
AR125442	TAXI GUIDANCE SIGN, 2 CHARACTER	EACH	1	
AR125446	TAXI GUIDANCE SIGN, 6 CHARACTER	EACH	1	
AR125932	REPLACE SIGN PANEL	EACH	58	
AR125943	ADJUST INPAVEMENT LIGHT	EACH	1	
AR125961	RELOCATE STAKE MOUNTED LIGHT	EACH	23	
AR125964	RELOCATE TAXI GUIDANCE SIGN	EACH	3	
AR150510	ENGINEER'S FIELD OFFICE	L.S.	1	
AR150520	MOBILIZATION	L.S.	1	
AR150540	HAUL ROUTE	L.S.	1	
AR152410	UNCLASSIFIED EXCAVATION	C.Y.	770	
AR152480	SHOULDER ADJUSTMENT	S.Y.	9,575	
AR156510	SILT FENCE	L.F.	688	
AR156513	SEPARATION FABRIC	S.Y.	1,710	
AR156530	TEMPORARY SEEDING	ACRE	3	
AR208540	OVERSIZE AGGREGATE	TON	600	
AR209606	CRUSHED AGG. BASE COURSE-6"	S.Y.	1,710	
AR401614	BIT. SURF. CSE.-METHOD II, SUPERPAVE	TON	4,050	
AR401630	BITUMINOUS SURFACE TEST SECTION	EACH	1	
AR401640	BITUMINOUS PAVEMENT GROOVING	S.Y.	3,345	
AR401650	BITUMINOUS PAVEMENT MILLING	S.Y.	1,750	
AR401663	LONGITUDINAL JOINT SEALANT	L.F.	7,300	
AR403614	BIT. BASE CSE.-METHOD II, SUPERPAVE	TON	4,550	
AR403630	BITUMINOUS BASE TEST SECTION	EACH	1	
AR501120	RUBBLIZE PAVEMENT	S.Y.	31,935	
AR501550	PCC PAVEMENT MILLING	S.Y.	31,935	
AR501900	REMOVE PCC PAVEMENT	S.Y.	1,991	
AR501910	REMOVE & REPLACE PCC PAVEMENT	S.Y.	34	
AR602510	BITUMINOUS PRIME COAT	GAL.	577	
AR603510	BITUMINOUS TACK COAT	GAL.	5,500	
AR620520	PAVEMENT MARKING-WATERBORNE	S.F.	13,025	
AR620525	PAVEMENT MARKING-BLACK BORDER	S.F.	10,730	
AR620900	PAVEMENT MARKING REMOVAL	S.F.	3,550	
AR701512	12" RCP, CLASS IV	L.F.	64	
AR705526	6" PERFORATED UNDERDRAIN W/SOCK	L.F.	10,240	
AR705546	6" NON PERFORATED UNDERDRAIN	L.F.	574	
AR705630	UNDERDRAIN INSPECTION HOLE	EACH	7	
AR705635	UNDERDRAIN COLLECTION STRUCTURE	EACH	7	
AR705640	UNDERDRAIN CLEANOUT	EACH	14	
AR705900	REMOVE UNDERDRAIN	L.F.	453	
AR705904	REMOVE UNDERDRAIN CLEANOUT	EACH	8	
AR751410	INLET	EACH	1	
AR751550	MANHOLE 5'	EACH	1	
AR751900	REMOVE INLET	EACH	1	
AR760708	8" STEEL CASING	L.F.	108	
AR901510	SEEDING	ACRE	3	
AR905530	TOPSOILING	S.Y.	4,500	
AR908510	MULCHING	ACRE	3	

UTILITY NOTE

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

GENERAL NOTES

- THE PROJECT PAY ITEMS ARE INTENDED TO BE INCLUSIVE OF ALL WORK TO BE PERFORMED AS SHOWN IN THESE PLANS. ALL INCIDENTAL WORK REQUIRED TO COMPLETE THE PROJECT TO THE SATISFACTION OF THE RESIDENT ENGINEER IS TO BE INCLUDED IN THE COSTS OF PERFORMING THESE ITEMS. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, AND TRANSPORTATION NECESSARY TO CONSTRUCT ALL ELEMENTS OF THE PROJECT AS DESCRIBED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS.
- THE RULES, REGULATIONS, AND SPECIFICATIONS ENUMERATED HEREIN SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS. THEY SHALL NOT PROHIBIT THE CONTRACTOR FROM FURNISHING AND INSTALLING HIGHER GRADES OF MATERIAL THAN ARE SPECIFIED HEREIN, IF APPROVED BY THE ENGINEER.
- ACCESS TO THE SITE SHALL BE RESTRICTED EXCLUSIVELY TO THE DESIGNATED CONSTRUCTION ENTRANCE, STAGING AREA, AND HAUL ROUTE. NO EQUIPMENT OR PERSONNEL SHALL BE PERMITTED OUTSIDE THE GENERAL PROJECT AREA.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT AND KEEP CLEAN OF DEBRIS ALL EXISTING AIRFIELD AND ROADWAY PAVEMENTS AT ALL TIMES. ANY DAMAGE TO EXISTING ELECTRICAL, DRAINAGE, AND PAVEMENT STRUCTURES SHALL BE IMMEDIATELY REPAIRED AT NO ADDITIONAL COST TO THE CONTRACT.
- CONTRACTOR IS REQUIRED TO PROVIDE THEIR OWN RESTROOM FACILITIES.
- THE LOCATION OF THE ENGINEER'S FIELD OFFICE WILL BE DETERMINED AT THE PRE-CONSTRUCTION MEETING.
- THE OWNER SHALL HAVE THE RIGHT OF FIRST REFUSAL FOR ALL SALVAGEABLE MATERIAL REMOVED ON THE PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS FOR HAULING ON PUBLIC ROADS, AS APPLICABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY DAMAGES TO ANY PAVEMENTS (PUBLIC OR PRIVATE) CAUSED BY HIS/HER CONSTRUCTION EQUIPMENT OR PERSONNEL.
- THE CONTRACTOR SHALL PROVIDE ONE SET OF PRELIMINARY REDLINED RECORD DRAWINGS TO THE RESIDENT ENGINEER AT THE COMPLETION OF THE PROJECT FOR INCORPORATION INTO THE OFFICIAL RECORD DRAWINGS HE WILL PREPARE.
- APPROXIMATE LOCATIONS OF UNDERGROUND UTILITIES ARE SHOWN THROUGHOUT THESE PLANS. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND PROTECT THESE UTILITIES DURING CONSTRUCTION. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COORDINATE WITH THE PROPER AUTHORITIES FOR THE PURPOSE OF LOCATING AND PROTECTING EXISTING UNDERGROUND UTILITIES.
- NPDES PERMIT - THIS PROJECT WILL DISTURB MORE THAN 1 ACRE, THEREFORE A NPDES PERMIT IS REQUIRED.
- MATERIAL CERTIFICATIONS - MATERIALS CANNOT BE INSTALLED UNTIL ALL THE MATERIAL CERTIFICATIONS FOR THAT ITEM HAVE BEEN RECEIVED, REVIEWED AND ACCEPTED BY THE RESIDENT ENGINEER. MATERIALS INSTALLED WITHOUT APPROVAL ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- CERTIFIED PAYROLLS - THE RESIDENT ENGINEER CANNOT FORWARD A CONSTRUCTION REPORT FOR PAYMENT TO THE IDOT-DIVISION OF AERONAUTICS FOR PROCESSING UNTIL ALL CERTIFIED PAYROLLS FOR THAT PERIOD HAVE BEEN RECEIVED.

J.U.L.I.E. INFORMATION

COUNTY_____COLES
 CITY_____MATTOON
 TOWNSHIP_____LAFAYETTE
 SECTION NO._____14,15,22,23
 ADDRESS_____COLES COUNTY MEMORIAL AIRPORT
 432 AIRPORT ROAD
 MATTON, ILLINOIS 61938



Offices Nationwide
 www.hanson-inc.com

Hanson Professional Services Inc.
 1525 S. 6th Street
 Springfield, IL 62568
 phone: 217-788-2450
 fax: 217-788-2503

Illinois Licensed
 Professional Service Corporation
 #184-001084



PHASE 2:
 RECONSTRUCT
 TAXIWAY B

IDA No: MTO-4752

SBG Project No:
 3-17-SBGP-159

Contract No. CO067

NO.	DATE	DESCRIPTION	DES	DWN	REV

ISSUE: 11/15/2019
 PROJECT NO: 19A0001
 CAD FILE: C-002-SOQ.DWG
 DESIGN BY: JAP 5/2018
 DRAWN BY: JAP 5/2018
 REVIEWED BY: KBS 11/08/2019

SHEET TITLE

SUMMARY OF
 QUANTITIES, INDEX
 TO SHEETS, AND
 GENERAL NOTES

CONSTRUCTION SAFETY PLAN

- EAST PROJECT AREA SCOPE OF WORK** - THE PROPOSED WORK CONSISTS OF RECONSTRUCTING THE EAST HALF OF TAXIWAY "B" BY CONCRETE RUBBLIZATION AND ASPHALT RESURFACING. ASSOCIATED WORK ITEMS INCLUDE PCC RUBBLIZATION, PAVEMENT MILLING, ASPHALT PAVING, UNDERDRAINS, PAVEMENT MARKING, SHOULDER ADJUSTMENT, SEEDING, AND MULCHING.
- WEST PROJECT AREA SCOPE OF WORK** - THE PROPOSED WORK CONSISTS OF REMOVING A PORTION OF CONCRETE TAXIWAY C AND CONSTRUCTING NEW ASPHALT TAXIWAY A2 120 FEET TO THE WEST TO MITIGATE A DIRECT-ACCESS CONCERN. ASSOCIATED WORK ITEMS INCLUDE PCC PAVEMENT REMOVAL, UNCLASSIFIED EXCAVATION, GRADING, DRAINAGE, AGGREGATE BASE COURSE, ASPHALT PAVING, UNDERDRAINS, SEEDING AND MULCHING, TAXIWAY EDGE LIGHTING, AND MODIFICATIONS OF MULTIPLE AIRFIELD LIGHTING AND NAVAID CIRCUITS.
- GENERAL** - THE COLES COUNTY MEMORIAL AIRPORT IS NON-TOWER CONTROLLED, PART 139, GENERAL AVIATION AIRPORT COMPRISED OF TWO PAVED RUNWAYS AND ONE SOD SHORT TAKEOFF AND LANDING (STOL) RUNWAY. THE PROPOSED EAST PROJECT AREA CONSTRUCTION WILL NECESSITATE THE CLOSING OF THE EAST HALF OF TAXIWAY B, B2 AND B3 FOR THE DURATION OF THE WORK, AND THE PERIODIC CLOSURES OF RUNWAYS 11-29 AND 6-24. THE PROPOSED WEST PROJECT AREA WORK WILL REQUIRE THE CLOSURE OF THE AREA SURROUNDING THE INTERSECTION OF TAXIWAYS B AND C.
- CONSTRUCTION STAGING AND PHASING HAS BEEN ARRANGED TO ALLOW FOR CONCURRENT WORK ON BOTH PROJECT AREAS.
- AT NO TIME MAY RUNWAY 11/29 AND 6/24 BE CLOSED CONCURRENTLY, EXCEPT WHEN DURING PHASE 3 WHILE WORKING WITHIN THE RUNWAY INTERSECTION.

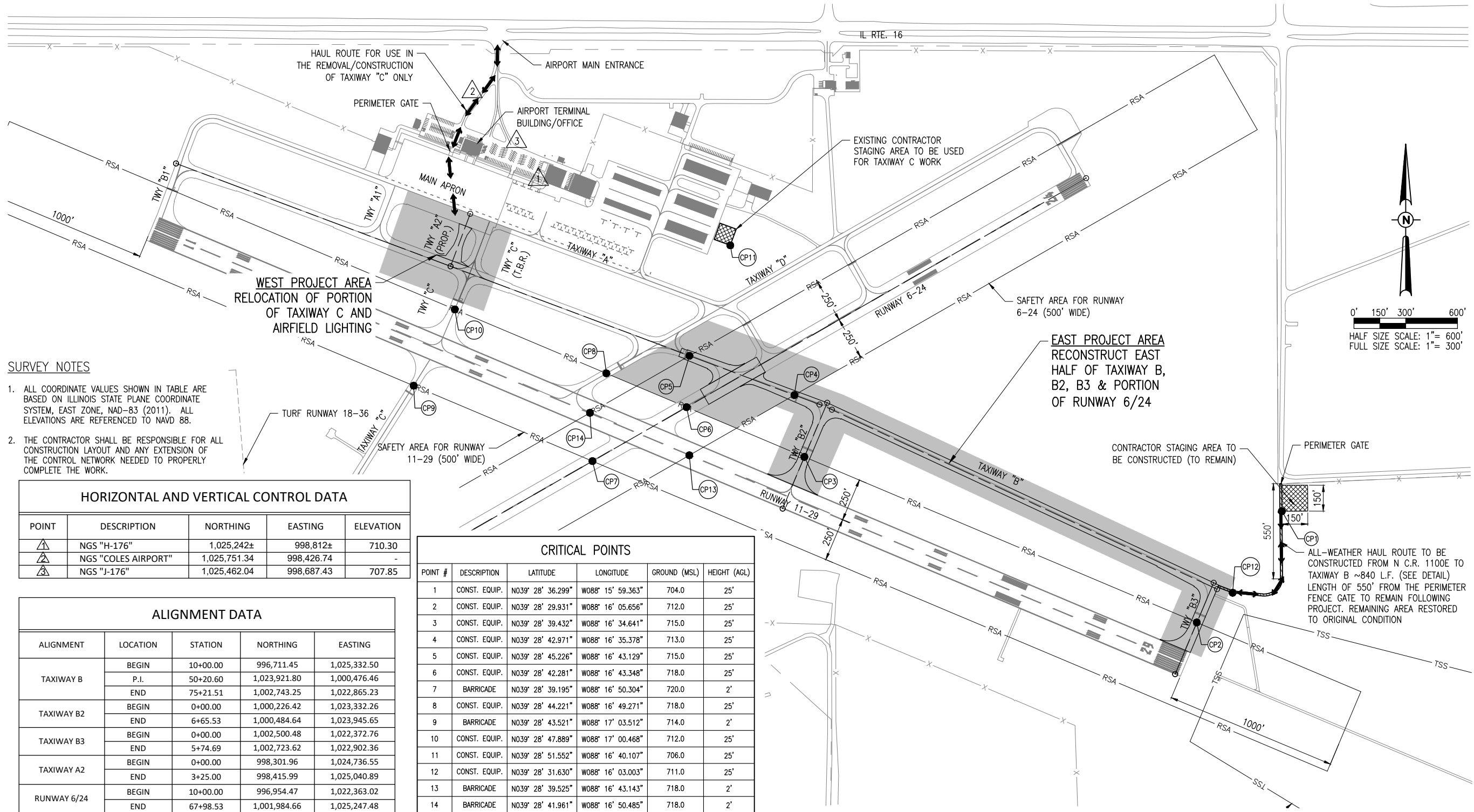
- CONTRACTOR SHALL SCHEDULE THE WORK SUCH THAT ALL AIRFIELD PAVEMENTS ARE RE-OPENED TO AIRFIELD TRAFFIC BY AUGUST 15TH, 2020 TO ALLOW FOR THE AIRPORT'S BIENNIAL AIRSHOW. PHASE 7 WORK CONSISTING OF THE RUNWAY 6-24 PAVEMENT GROOVING AND SECOND COAT OF MARKING MAY BE COMPLETED FOLLOWING THE AIRSHOW. CALENDAR DAYS WILL BE SUSPENDED OVER THIS TIME IF NECESSARY.
- AIRFIELD SAFETY ASSURANCE** - 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.
- 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 OPERATIONS, DURING WHICH TIME HE WILL PROVIDE A PERSON TO MONITOR THE GATE AREA.
- RADIO CONTROL** - THE CONTRACTOR WILL BE REQUIRED TO BE IN TWO-WAY RADIO CONTACT WITH THE AIRPORT UNICOM (122.70 MHz) ANY TIME THERE ARE WORKERS OR EQUIPMENT ON THE AIRFIELD.



Offices Nationwide
www.hanson-inc.com

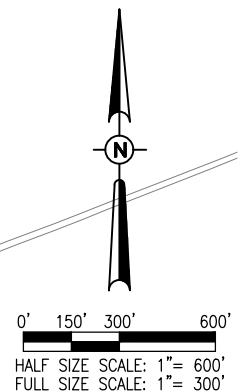
Hanson Professional Services Inc.
1525 S. 6th Street
Springfield, IL 62568
phone: 217-788-2450
fax: 217-788-2503

Illinois Licensed
Professional Service Corporation
#184-001084



SURVEY NOTES

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



PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019

PROJECT NO: 19A0001

CAD FILE: C-101-SOW.DWG

DESIGN BY: KBS 05/2019

DRAWN BY: JAP 05/2019

REVIEWED BY: LDH 11/06/2019

SHEET TITLE

SCOPE OF WORK
AND SAFETY PLAN

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PHASE 1 NOTES:

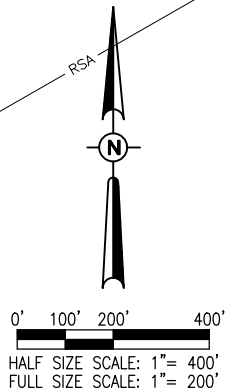
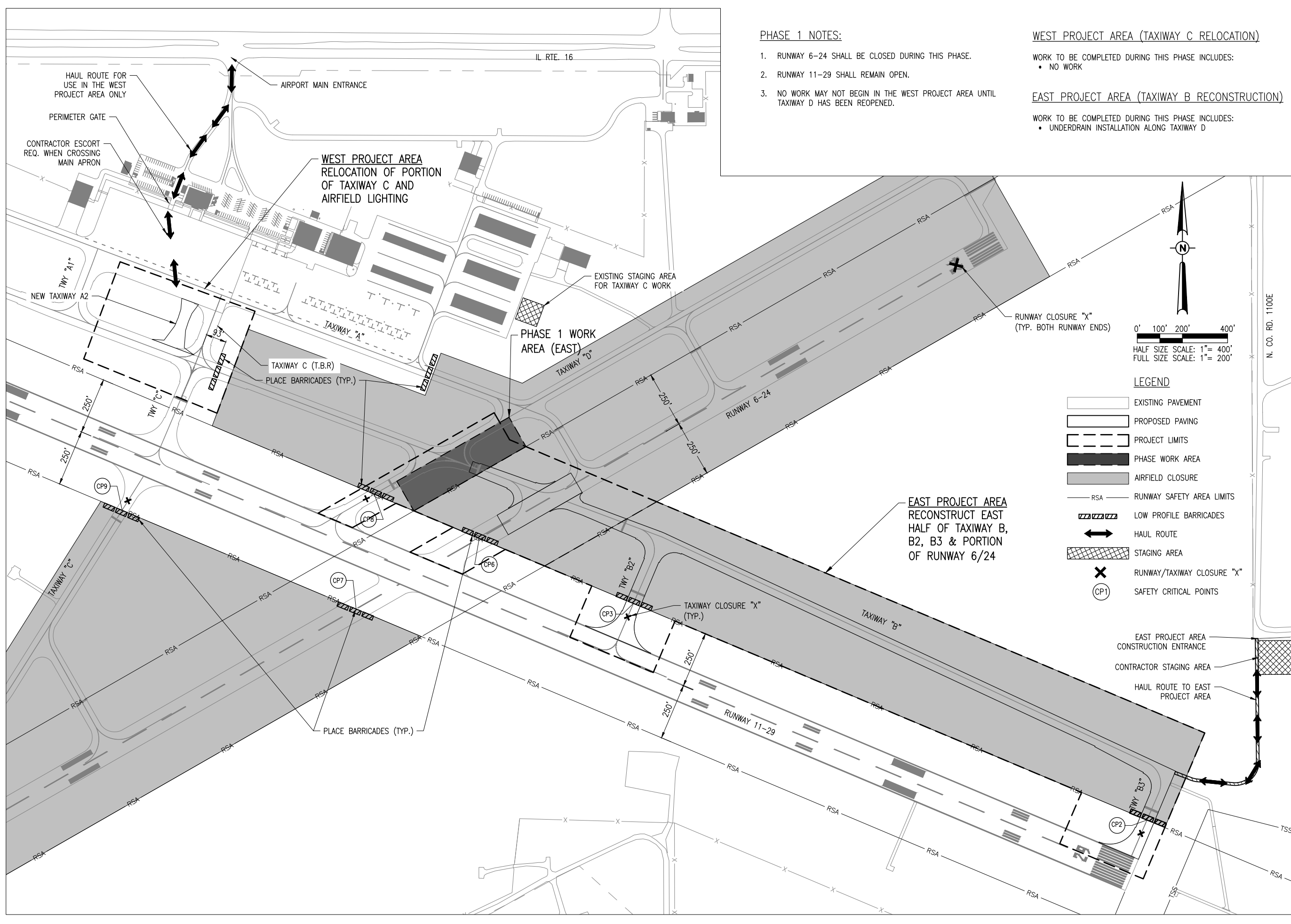
1. RUNWAY 6-24 SHALL BE CLOSED DURING THIS PHASE.
2. RUNWAY 11-29 SHALL REMAIN OPEN.
3. NO WORK MAY NOT BEGIN IN THE WEST PROJECT AREA UNTIL TAXIWAY D HAS BEEN REOPENED.

WEST PROJECT AREA (TAXIWAY C RELOCATION)

- WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:
- NO WORK

EAST PROJECT AREA (TAXIWAY B RECONSTRUCTION)

- WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:
- UNDERDRAIN INSTALLATION ALONG TAXIWAY D



LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVING
- PROJECT LIMITS
- PHASE WORK AREA
- AIRFIELD CLOSURE
- RSA - RUNWAY SAFETY AREA LIMITS
- LOW PROFILE BARRICADES
- HAUL ROUTE
- STAGING AREA
- RUNWAY/TAXIWAY CLOSURE "X"
- (CP1) SAFETY CRITICAL POINTS

EAST PROJECT AREA RECONSTRUCT EAST HALF OF TAXIWAY B, B2, B3 & PORTION OF RUNWAY 6/24

PHASE 2: RECONSTRUCT TAXIWAY B

IDA No: MTO-4752
 SBG Project No: 3-17-SBGP-159
 Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
 PROJECT NO: 19A0001
 CAD FILE: C-102-CSPP.DWG
 DESIGN BY: KBS 10/2019
 DRAWN BY: KBS 10/2019
 REVIEWED BY: LDH 11/06/2019

CONSTRUCTION PHASING PLAN - PHASE 1

PHASE 2 NOTES:

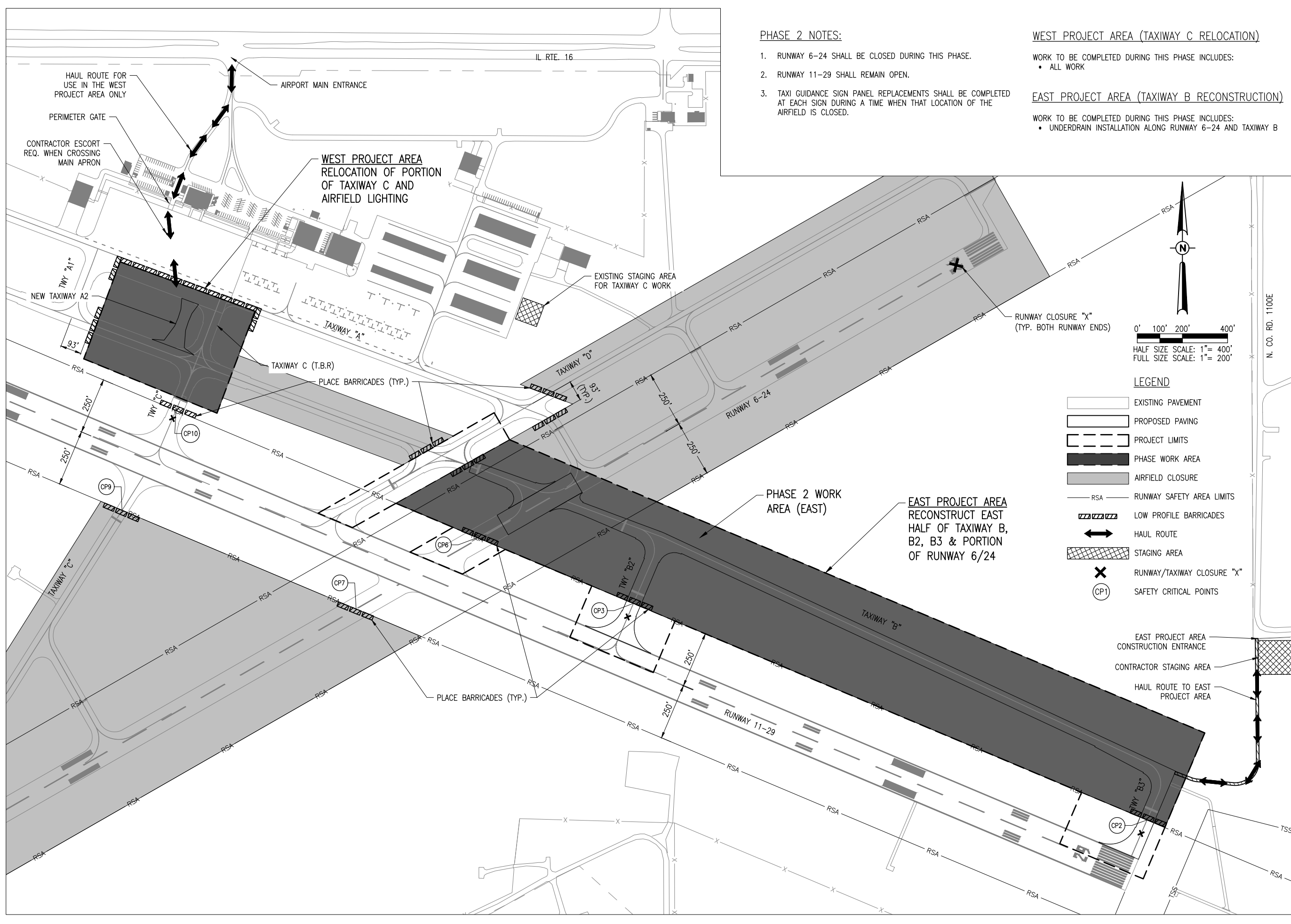
1. RUNWAY 6-24 SHALL BE CLOSED DURING THIS PHASE.
2. RUNWAY 11-29 SHALL REMAIN OPEN.
3. TAXI GUIDANCE SIGN PANEL REPLACEMENTS SHALL BE COMPLETED AT EACH SIGN DURING A TIME WHEN THAT LOCATION OF THE AIRFIELD IS CLOSED.

WEST PROJECT AREA (TAXIWAY C RELOCATION)

- WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:
- ALL WORK

EAST PROJECT AREA (TAXIWAY B RECONSTRUCTION)

- WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:
- UNDERDRAIN INSTALLATION ALONG RUNWAY 6-24 AND TAXIWAY B



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019

PROJECT NO: 19A0001
CAD FILE: C-102-CSPP.DWG

DESIGN BY: KBS 10/2019
DRAWN BY: KBS 10/2019

REVIEWED BY: LDH 11/06/2019

SHEET TITLE

**CONSTRUCTION
PHASING PLAN -
PHASE 2**

PHASE 3 NOTES:

1. ALL AIRFIELD PAVEMENTS EXCEPT RAMP AND T-HANGAR AREAS SHALL BE CLOSED DURING THIS PHASE.
2. THE CONTRACTOR WILL HAVE TWO DAYS TO COMPLETE THIS WORK AND MOVE TO PHASE 4.

WEST PROJECT AREA (TAXIWAY C RELOCATION)

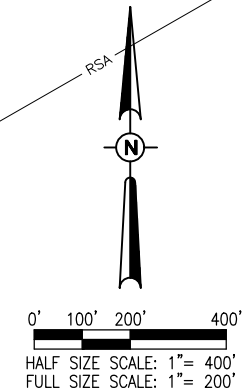
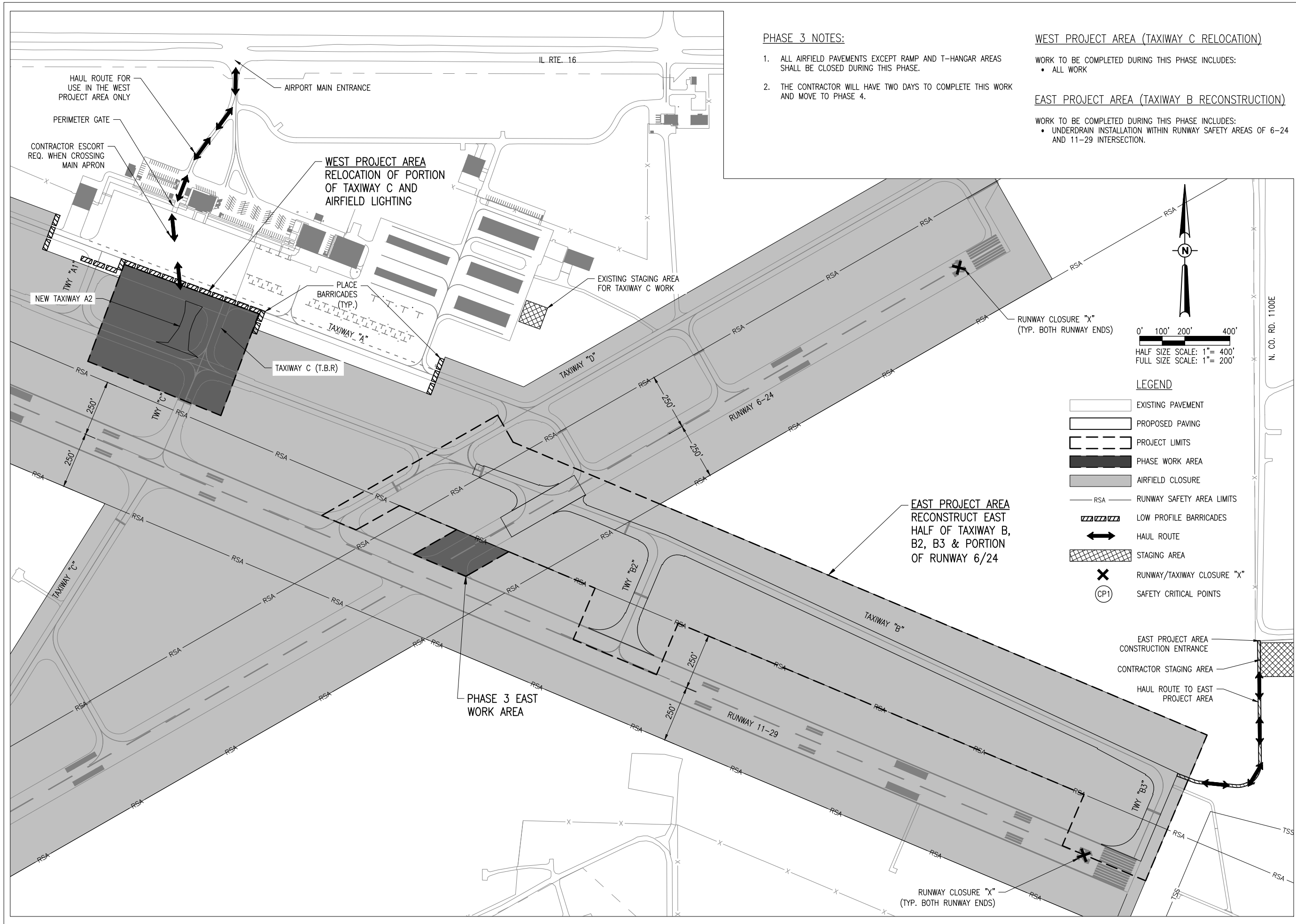
WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:

- ALL WORK

EAST PROJECT AREA (TAXIWAY B RECONSTRUCTION)

WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:

- UNDERDRAIN INSTALLATION WITHIN RUNWAY SAFETY AREAS OF 6-24 AND 11-29 INTERSECTION.



LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVING
- PROJECT LIMITS
- PHASE WORK AREA
- AIRFIELD CLOSURE
- RSA - RUNWAY SAFETY AREA LIMITS
- LOW PROFILE BARRICADES
- HAUL ROUTE
- STAGING AREA
- RUNWAY/TAXIWAY CLOSURE "X"
- SAFETY CRITICAL POINTS

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
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DESIGN BY: KBS 10/2019
DRAWN BY: KBS 10/2019
REVIEWED BY: LDH 11/06/2019

**CONSTRUCTION
PHASING PLAN -
PHASE 3**

PHASE 4 NOTES:

1. RUNWAY 11-29 SHALL BE CLOSED DURING THIS PHASE.
2. RUNWAY 6-24 SHALL REMAIN OPEN.
3. WORK MAY NOT PROCEED TO PHASE 5 UNTIL THE RUNWAY 11-29 SAFETY AREA HAS BEEN RESTORED TO WITHIN CRITERIA AND IT HAS BEEN REOPENED.

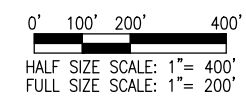
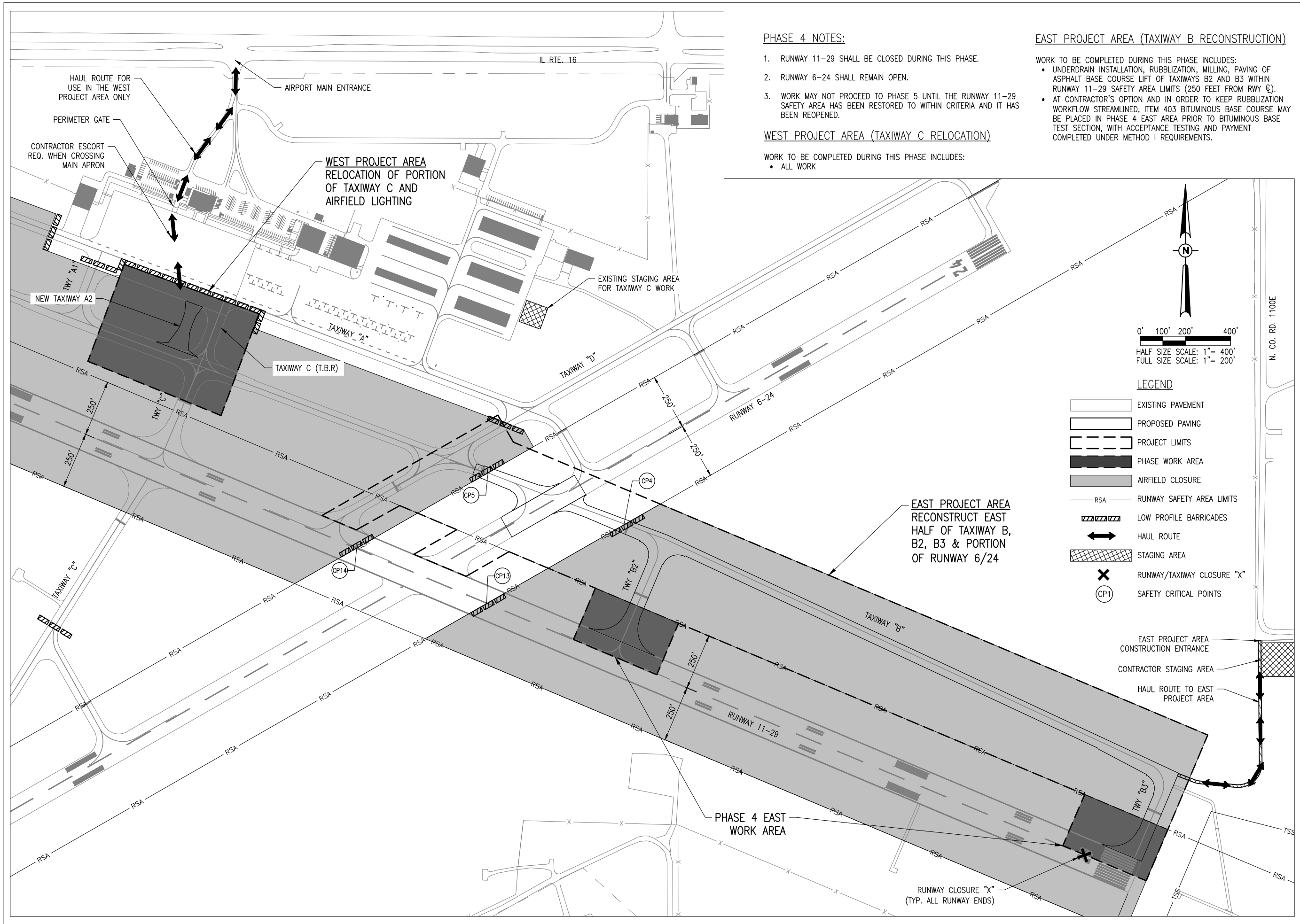
WEST PROJECT AREA (TAXIWAY C RELOCATION)

- WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:
- ALL WORK

EAST PROJECT AREA (TAXIWAY B RECONSTRUCTION)

WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:

- UNDERDRAIN INSTALLATION, RUBBLIZATION, MILLING, PAVING OF ASPHALT BASE COURSE LIFT OF TAXIWAYS B2 AND B3 WITHIN RUNWAY 11-29 SAFETY AREA LIMITS (250 FEET FROM RWY E).
- AT CONTRACTOR'S OPTION AND IN ORDER TO KEEP RUBBLIZATION WORKFLOW STREAMLINED, ITEM 403 BITUMINOUS BASE COURSE MAY BE PLACED IN PHASE 4 EAST AREA PRIOR TO BITUMINOUS BASE TEST SECTION, WITH ACCEPTANCE TESTING AND PAYMENT COMPLETED UNDER METHOD 1 REQUIREMENTS.



LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVING
- PROJECT LIMITS
- PHASE WORK AREA
- AIRFIELD CLOSURE
- RSA - RUNWAY SAFETY AREA LIMITS
- LOW PROFILE BARRICADES
- HAUL ROUTE
- STAGING AREA
- RUNWAY/TAXIWAY CLOSURE "X"
- SAFETY CRITICAL POINTS

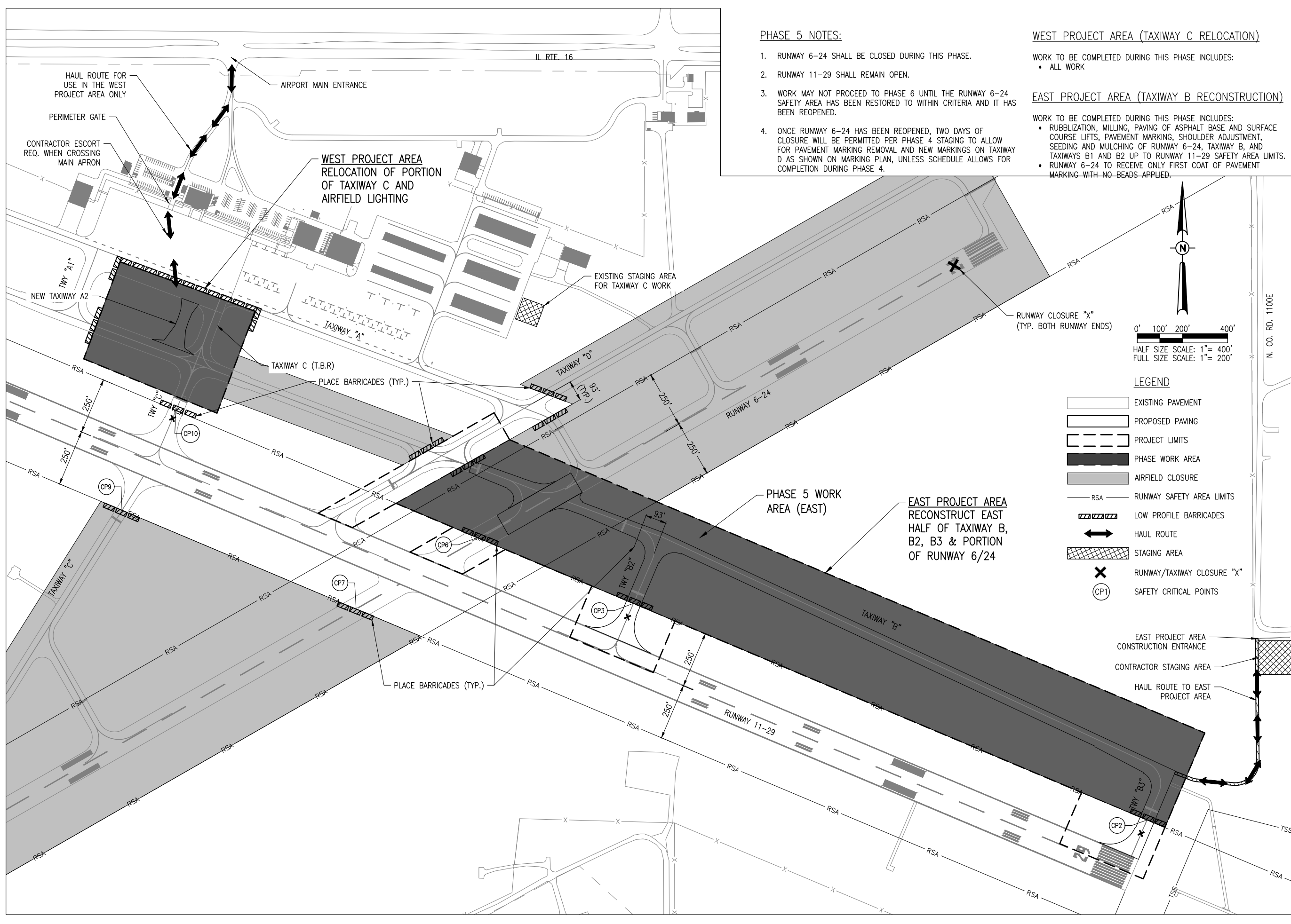
**PHASE 2:
RECONSTRUCT
TAXIWAY B**

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**CONSTRUCTION
PHASING PLAN -
PHASE 4**



PHASE 5 NOTES:

1. RUNWAY 6-24 SHALL BE CLOSED DURING THIS PHASE.
2. RUNWAY 11-29 SHALL REMAIN OPEN.
3. WORK MAY NOT PROCEED TO PHASE 6 UNTIL THE RUNWAY 6-24 SAFETY AREA HAS BEEN RESTORED TO WITHIN CRITERIA AND IT HAS BEEN REOPENED.
4. ONCE RUNWAY 6-24 HAS BEEN REOPENED, TWO DAYS OF CLOSURE WILL BE PERMITTED PER PHASE 4 STAGING TO ALLOW FOR PAVEMENT MARKING REMOVAL AND NEW MARKINGS ON TAXIWAY D AS SHOWN ON MARKING PLAN, UNLESS SCHEDULE ALLOWS FOR COMPLETION DURING PHASE 4.

WEST PROJECT AREA (TAXIWAY C RELOCATION)

WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:

- ALL WORK

EAST PROJECT AREA (TAXIWAY B RECONSTRUCTION)

WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:

- RUBBLIZATION, MILLING, PAVING OF ASPHALT BASE AND SURFACE COURSE LIFTS, PAVEMENT MARKING, SHOULDER ADJUSTMENT, SEEDING AND MULCHING OF RUNWAY 6-24, TAXIWAY B, AND TAXIWAYS B1 AND B2 UP TO RUNWAY 11-29 SAFETY AREA LIMITS.
- RUNWAY 6-24 TO RECEIVE ONLY FIRST COAT OF PAVEMENT MARKING WITH NO BEADS APPLIED.

- LEGEND**
- EXISTING PAVEMENT
 - PROPOSED PAVING
 - PROJECT LIMITS
 - PHASE WORK AREA
 - AIRFIELD CLOSURE
 - RSA - RUNWAY SAFETY AREA LIMITS
 - LOW PROFILE BARRICADES
 - HAUL ROUTE
 - STAGING AREA
 - RUNWAY/TAXIWAY CLOSURE "X"
 - SAFETY CRITICAL POINTS

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
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DESIGN BY: KBS 10/2019
DRAWN BY: KBS 10/2019
REVIEWED BY: LDH 11/06/2019

SHEET TITLE

**CONSTRUCTION
PHASING PLAN -
PHASE 5**



PHASE 6 NOTES:

1. RUNWAY 11-29 SHALL BE CLOSED DURING THIS PHASE.
2. RUNWAY 6-24 SHALL REMAIN OPEN.

WEST PROJECT AREA (TAXIWAY C RELOCATION)

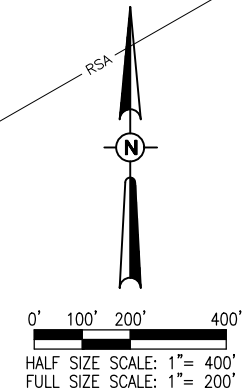
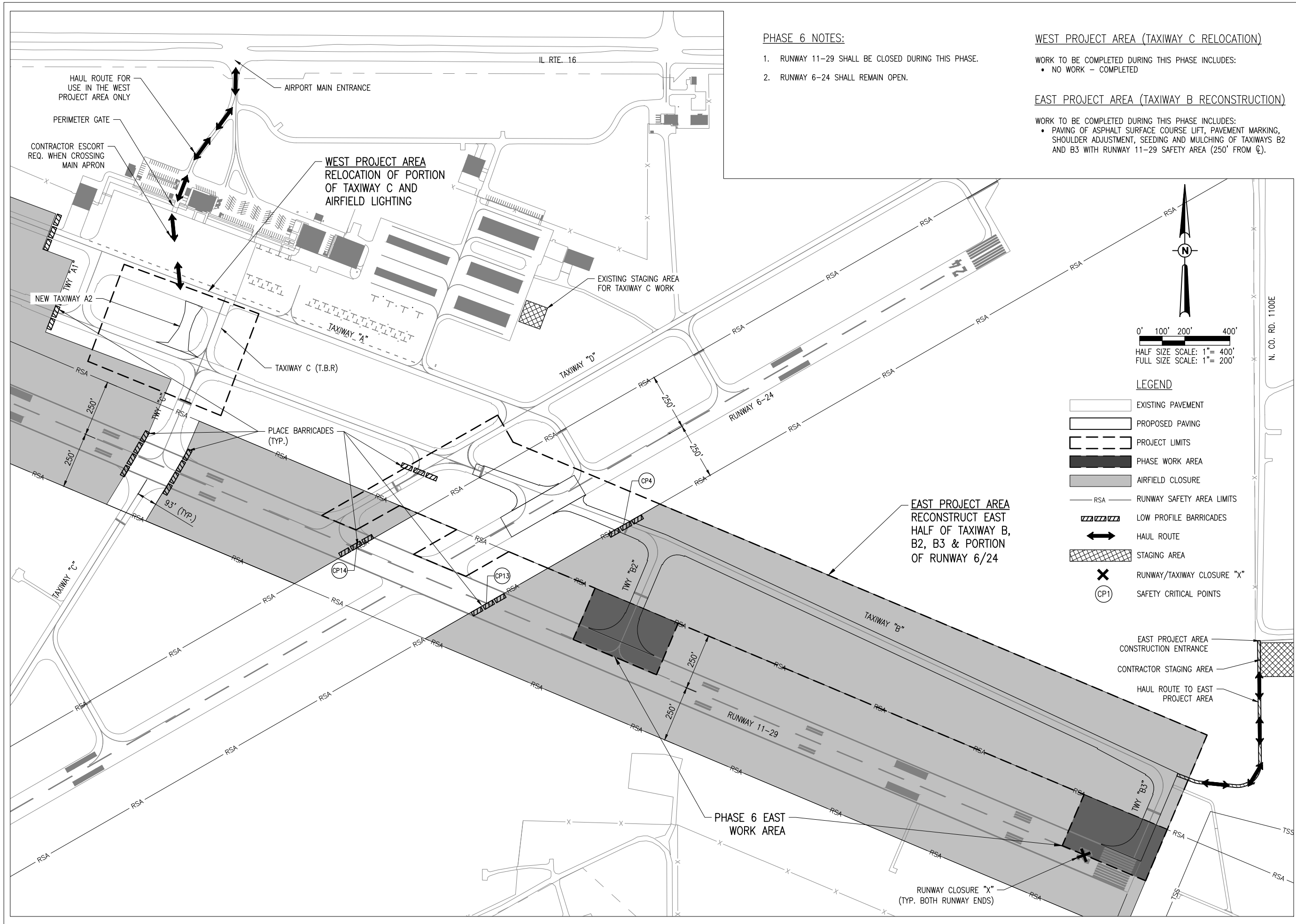
WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:

- NO WORK - COMPLETED

EAST PROJECT AREA (TAXIWAY B RECONSTRUCTION)

WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:

- PAVING OF ASPHALT SURFACE COURSE LIFT, PAVEMENT MARKING, SHOULDER ADJUSTMENT, SEEDING AND MULCHING OF TAXIWAYS B2 AND B3 WITH RUNWAY 11-29 SAFETY AREA (250' FROM Q).



LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- PROJECT LIMITS
- PHASE WORK AREA
- AIRFIELD CLOSURE
- RSA - RUNWAY SAFETY AREA LIMITS
- LOW PROFILE BARRICADES
- HAUL ROUTE
- STAGING AREA
- RUNWAY/TAXIWAY CLOSURE "X"
- SAFETY CRITICAL POINTS

**EAST PROJECT AREA
RECONSTRUCT EAST
HALF OF TAXIWAY B,
B2, B3 & PORTION
OF RUNWAY 6/24**

**PHASE 6 EAST
WORK AREA**

**RUNWAY CLOSURE "X"
(TYP. BOTH RUNWAY ENDS)**

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
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CAD FILE: C-102-CSPP.DWG
DESIGN BY: KBS 10/2019
DRAWN BY: KBS 10/2019
REVIEWED BY: LDH 11/06/2019

SHEET TITLE

**CONSTRUCTION
PHASING PLAN -
PHASE 6**

PHASE 7 NOTES:

1. RUNWAY 6-24 SHALL BE CLOSED DURING THIS PHASE.
2. RUNWAY 11-29 SHALL REMAIN OPEN.

WEST PROJECT AREA (TAXIWAY C RELOCATION)

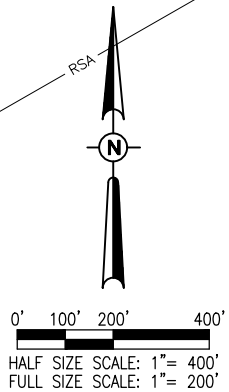
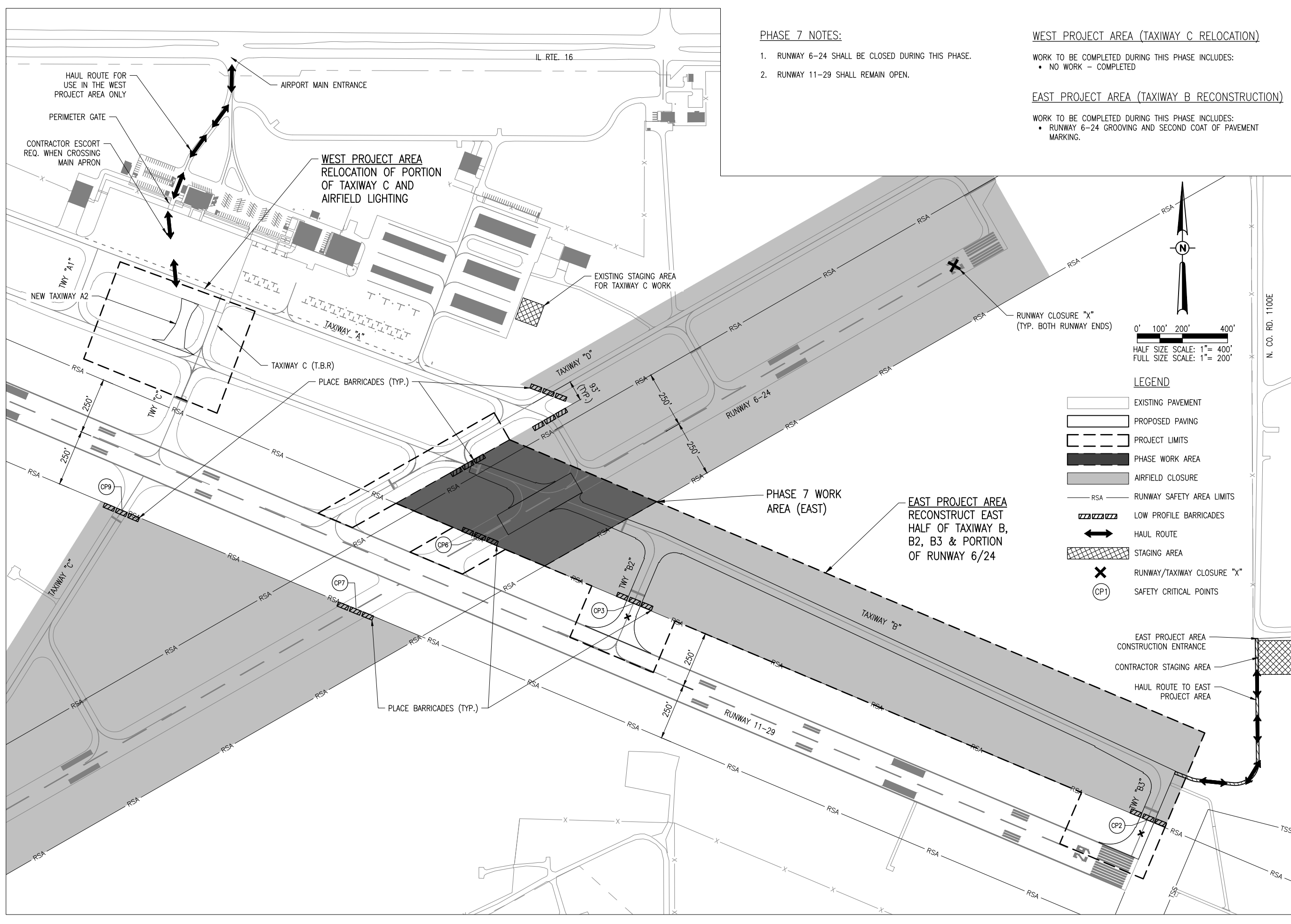
WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:

- NO WORK - COMPLETED

EAST PROJECT AREA (TAXIWAY B RECONSTRUCTION)

WORK TO BE COMPLETED DURING THIS PHASE INCLUDES:

- RUNWAY 6-24 GROOVING AND SECOND COAT OF PAVEMENT MARKING.



LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVING
- PROJECT LIMITS
- PHASE WORK AREA
- AIRFIELD CLOSURE
- RSA - RUNWAY SAFETY AREA LIMITS
- LOW PROFILE BARRICADES
- HAUL ROUTE
- STAGING AREA
- RUNWAY/TAXIWAY CLOSURE "X"
- SAFETY CRITICAL POINTS

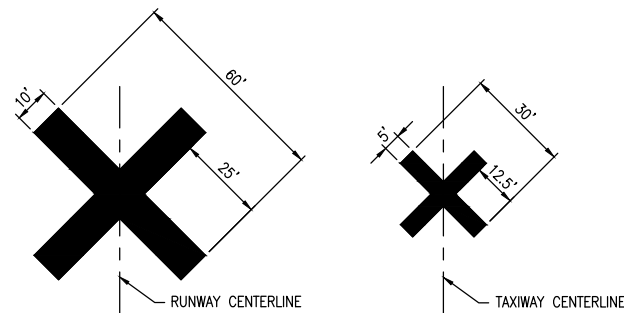
**PHASE 2:
RECONSTRUCT
TAXIWAY B**

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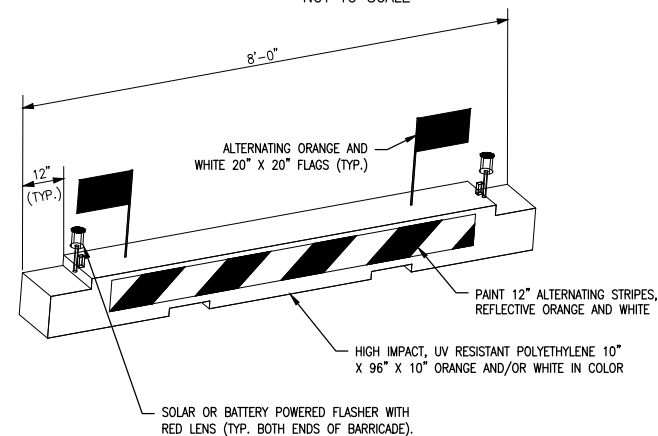
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**CONSTRUCTION
PHASING PLAN -
PHASE 7**



- 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.

TEMPORARY CLOSURE CROSS DETAIL
NOT TO SCALE



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.

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 250' OF ANY ACTIVE RUNWAY CENTERLINE OR WITHIN 93' OF ANY OTHER ACTIVE AIRPORT TAXIWAY OR APRON.
- 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 500' OF ANY ACTIVE RUNWAY, WITHIN 93' 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 SWEEPED, 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.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

Contract No. CO067

NO.	DATE	DESCRIPTION		
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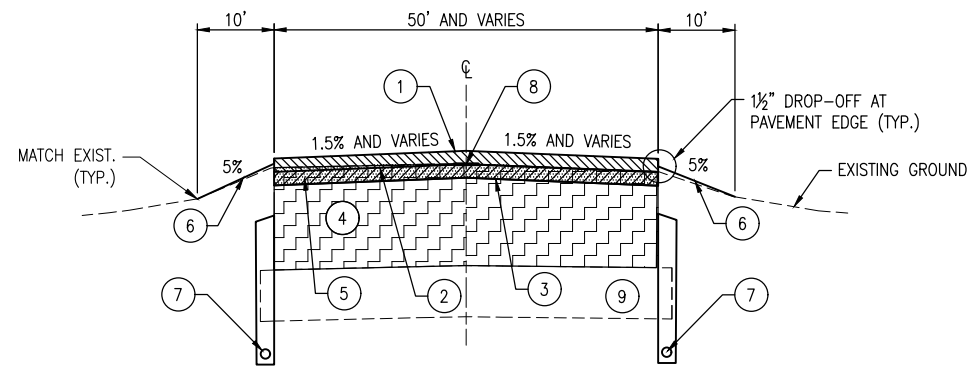
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PROJECT NO: 19A0001
CAD FILE: C-104-SPDET.DWG
DESIGN BY: JAP 05/2018
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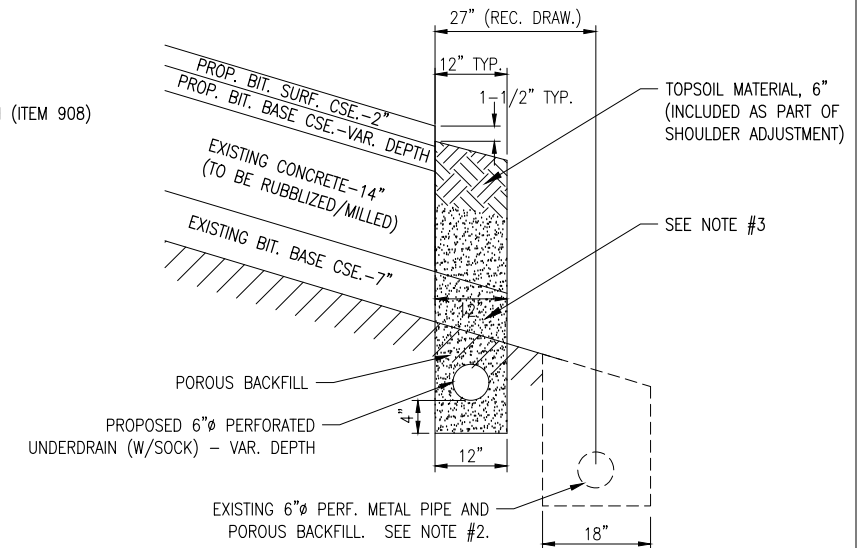
**SAFETY NOTES AND
DETAILS**

LEGEND FOR TYPICAL SECTION A-A

- ① PROPOSED BITUMINOUS SURFACE COURSE - 2" DEPTH (ITEM 401)
- ② PROPOSED BITUMINOUS TACK COAT APPLIED AT 0.05-0.15 GAL./S.Y. (ITEM 603) - SEE NOTE #2
- ③ PROPOSED BITUMINOUS BASE COURSE - 2" DEPTH (ITEM 403)
- ④ PROPOSED CONCRETE PAVEMENT RUBBLIZATION - 14" DEPTH (ITEM 501120)
- ⑤ PROPOSED VAR.-DEPTH CONCRETE PAVEMENT MILLING (FOLLOWING RUBBLIZATION) (ITEM 501550)
- ⑥ PROPOSED SHOULDER ADJUSTMENT (ITEM 152), SEEDING (ITEM 901), & HYDRO-MULCH (ITEM 908)
- ⑦ PROPOSED UNDERDRAIN - SEE DETAIL (ITEM 705)
- ⑧ PROPOSED LONGITUDINAL JOINT SEALANT (ITEM 401663) - CENTERLINE JOINT ONLY
- ⑨ EXISTING BITUMINOUS BASE, 7"



TYPICAL SECTION "A-A" - TAXIWAY B
NOT TO SCALE



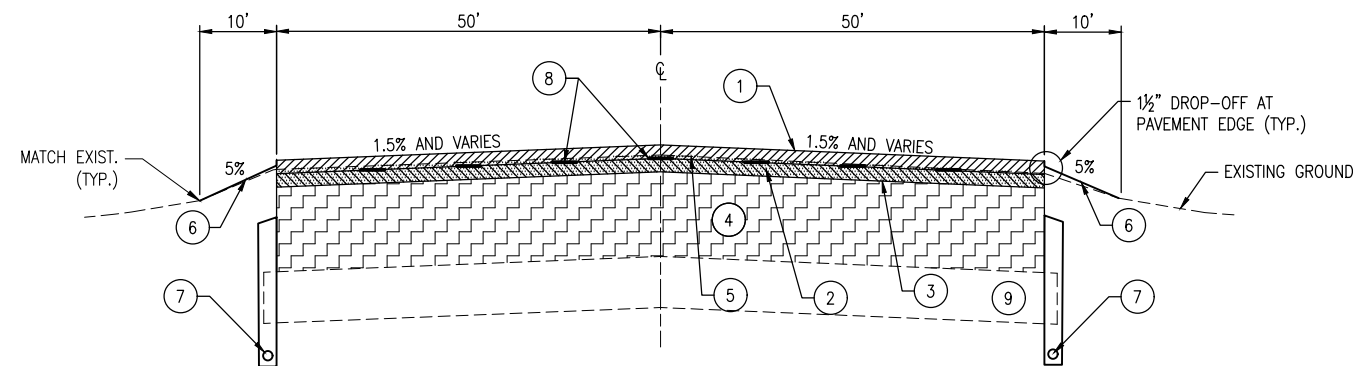
TYPICAL SECTION FOR EDGE DRAINS
NOT TO SCALE

NOTES:

- 1. MILLING OF CONCRETE PAVEMENT TO GRADE SHALL TAKE PLACE FOLLOWING PAVEMENT RUBBLIZATION.
- 2. EXISTING UNDERDRAINS SHALL BE REMOVED AND PAID FOR WHERE CALLED OUT IN THE PLANS. THEY SHALL BE PLUGGED AND ABANDONED IN ANY OTHER AREAS WHERE ENCOUNTERED AS AN INCIDENTAL ITEM.
- 3. REMOVAL OR TRENCHING THROUGH EXISTING EXTENDED 12" WIDE BITUMINOUS BASE, AND THE ORIGINAL BITUMINOUS RUNWAY PAVEMENT UNDER TAXIWAY B SHALL BE INCIDENTAL TO THE PROPOSED UNDERDRAIN INSTALLATION.

LEGEND FOR TYPICAL SECTION B-B

- ① PROPOSED BITUMINOUS SURFACE COURSE - 2" DEPTH (ITEM 401)
- ② PROPOSED BITUMINOUS TACK COAT APPLIED AT 0.05-0.15 GAL./S.Y. (ITEM 603) - SEE NOTE #2
- ③ PROPOSED BITUMINOUS BASE COURSE - 2" DEPTH (ITEM 403)
- ④ PROPOSED CONCRETE PAVEMENT RUBBLIZATION - 14" DEPTH (ITEM 501120)
- ⑤ PROPOSED VAR.-DEPTH CONCRETE PAVEMENT MILLING (FOLLOWING RUBBLIZATION) (ITEM 501550)
- ⑥ PROPOSED SHOULDER ADJUSTMENT (ITEM 152), SEEDING (ITEM 901), & HYDRO-MULCH (ITEM 908)
- ⑦ PROPOSED UNDERDRAIN - SEE DETAIL (ITEM 705)
- ⑧ PROPOSED LONGITUDINAL JOINT SEALANT (ITEM 401663) - ALL PAVING JOINTS
- ⑨ EXISTING BITUMINOUS BASE, 7"



TYPICAL SECTION "B-B" - RUNWAY 6-24
NOT TO SCALE

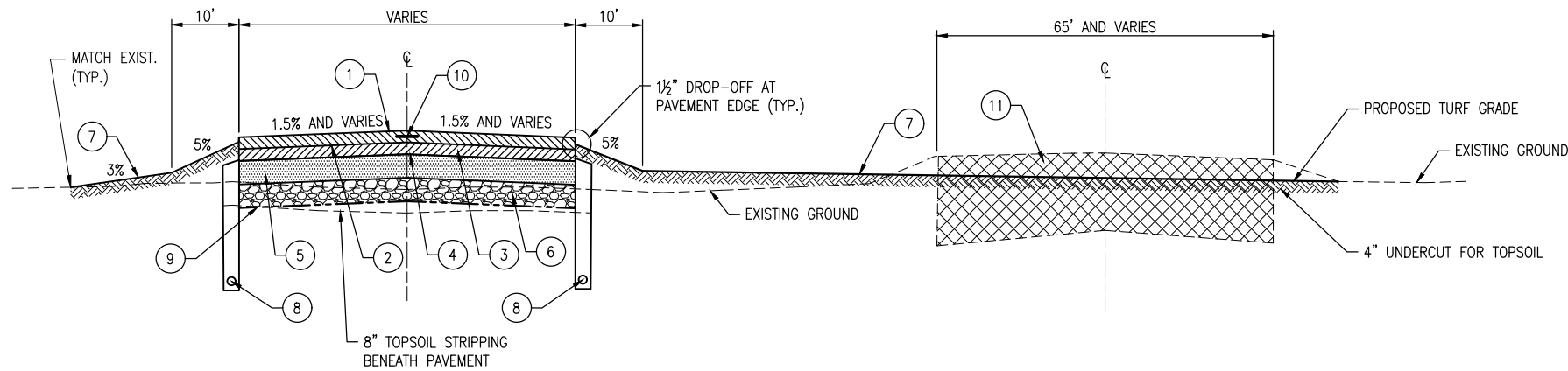
**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

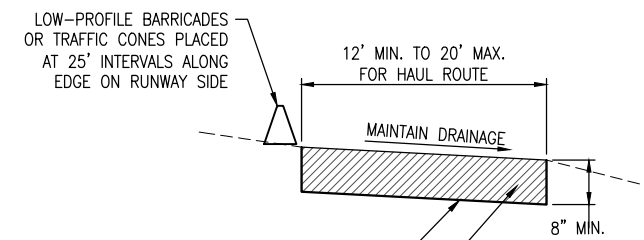
SHEET TITLE

TYPICAL SECTIONS
AND DETAILS -
SHEET 1



**TYPICAL SECTION "C-C" - PROPOSED TAXIWAY A2
REMOVAL OF EXISTING TAXIWAY C (NORTH OF TAXIWAY B)**
NOT TO SCALE

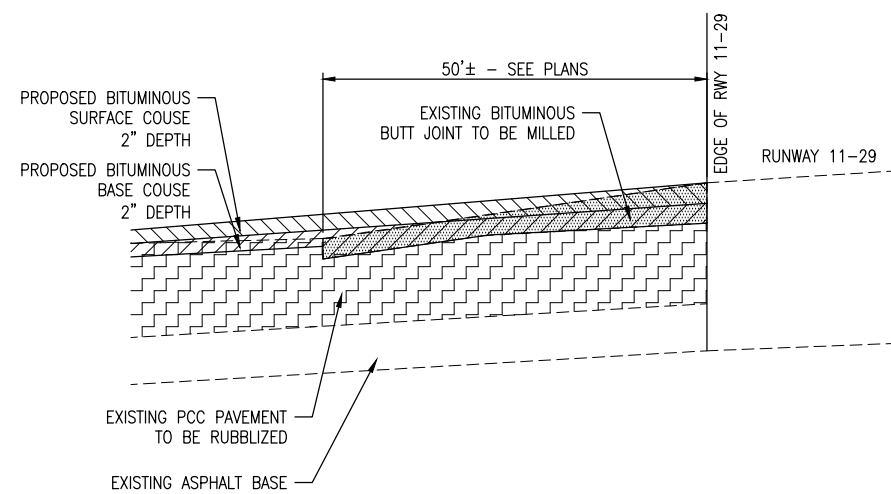
- LEGEND FOR TYPICAL SECTION C-C**
- ① PROPOSED BITUMINOUS SURFACE COURSE - 4" DEPTH (ITEM 401)
 - ② PROPOSED BITUMINOUS TACK COAT APPLIED AT 0.05-0.15 GAL./S.Y. (ITEM 603) - NTEA ONLY APPLIED BETWEEN ALL LIFTS
 - ③ PROPOSED BITUMINOUS BASE COURSE - 5" DEPTH (ITEM 403)
 - ④ PROPOSED BITUMINOUS PRIME COAT (ITEM 602)
 - ⑤ PROPOSED CRUSHED AGGREGATE BASE COURSE - 6" DEPTH (ITEM 209)
 - ⑥ PROPOSED OVERSIZED AGGREGATE BASE COURSE - 6" DEPTH (ITEM 208)
 - ⑦ PROPOSED TOPSOILING - 4" (ITEM 905), SEEDING (ITEM 901), & HYDRO-MULCH (ITEM 908)
 - ⑧ PROPOSED UNDERDRAIN - SEE DETAIL (ITEM 705)
 - ⑨ PROPOSED SEPARATION FABRIC (ITEM 156513)
 - ⑩ PROPOSED LONGITUDINAL JOINT SEALANT (ITEM 401663) - CENTERLINE JOINT ONLY
 - ⑪ EXISTING PCC (14") AND BITUMINOUS PAVEMENT (7") TO BE REMOVED (ITEM 501900)



**HAUL ROUTE/STAGING AREA DETAIL
N.T.S.**

NOTES:

1. HAUL ROUTE TO BE REMOVED AND RESTORED TO ORIGINAL CONDITION AT COMPLETION OF PROJECT UNLESS OTHERWISE SHOWN TO REMAIN. RESTORATION INCLUDES TILLAGE OF ANY EXISTING FARM GROUND NECESSARY DUE TO COMPACTION.
2. RESIDENT ENGINEER/TECHNICIAN WILL CONFIRM HAUL ROUTE LIMITS/LOCATION PRIOR TO INSTALLATION. CONTRACTOR MAY INCREASE WIDTH/DEPTH OF HAUL ROUTE AT THEIR EXPENSE IF NECESSARY. MAX SIZE OF STAGING AREA IS 150' X 150'.
3. ALL WORK AND MATERIALS INVOLVING HAUL ROUTE SHALL BE PAID FOR UNDER ITEM AR150540 "HAUL ROUTE" - PER LUMP SUM.



**BUTT JOINT DETAIL "B"
TXY B2/RWY 11-29 AND TXY B3/RWY 11-29**
NOT TO SCALE

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

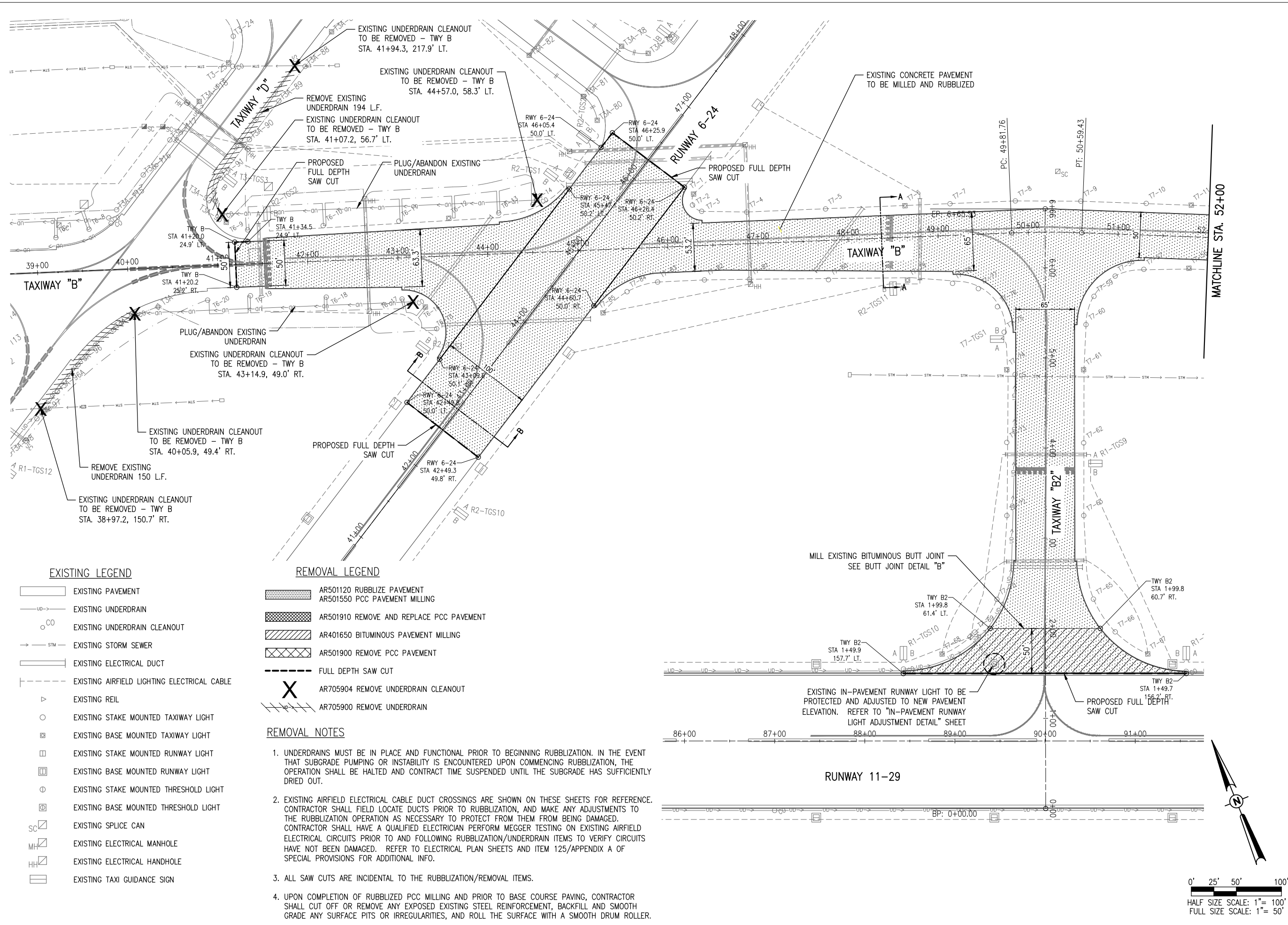
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-301-TYP.DWG
DESIGN BY: KBS 05/2019
DRAWN BY: JAP 05/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**TYPICAL SECTIONS
AND DETAILS -
SHEET 2**



EXISTING LEGEND

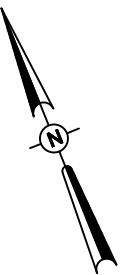
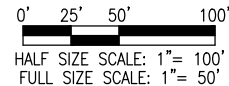
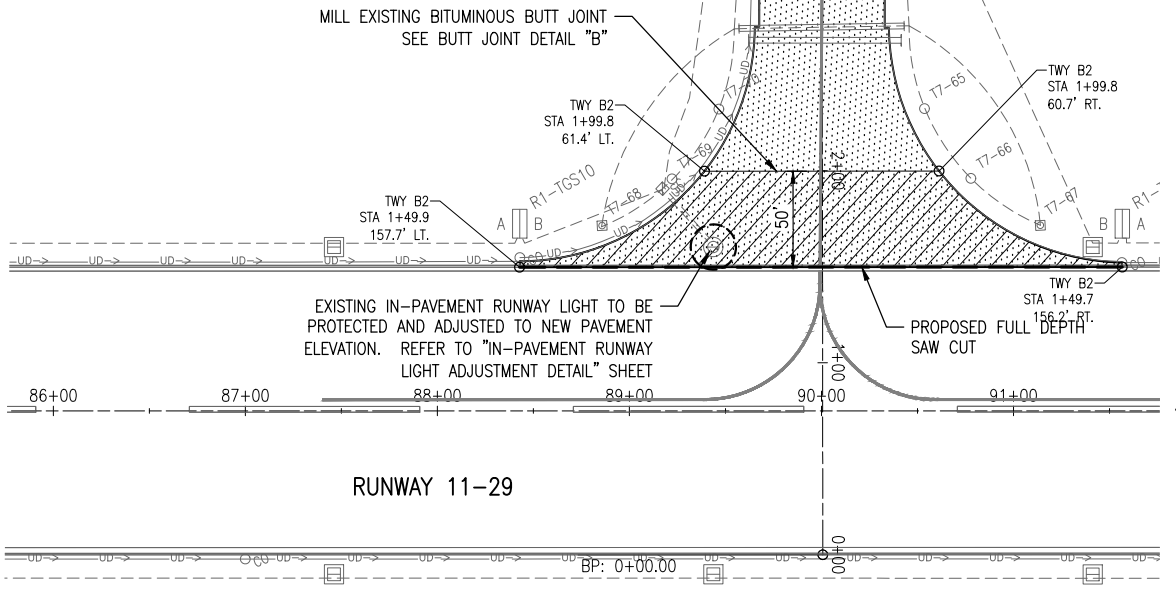
- EXISTING PAVEMENT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING ELECTRICAL DUCT
- EXISTING AIRFIELD LIGHTING ELECTRICAL CABLE
- EXISTING REIL
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING SPLICE CAN
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL HANDHOLE
- EXISTING TAXI GUIDANCE SIGN

REMOVAL LEGEND

- AR501120 RUBBLIZE PAVEMENT
- AR501550 PCC PAVEMENT MILLING
- AR501910 REMOVE AND REPLACE PCC PAVEMENT
- AR401650 BITUMINOUS PAVEMENT MILLING
- AR501900 REMOVE PCC PAVEMENT
- FULL DEPTH SAW CUT
- AR705904 REMOVE UNDERDRAIN CLEANOUT
- AR705900 REMOVE UNDERDRAIN

REMOVAL NOTES

1. UNDERDRAINS MUST BE IN PLACE AND FUNCTIONAL PRIOR TO BEGINNING RUBBLIZATION. IN THE EVENT THAT SUBGRADE PUMPING OR INSTABILITY IS ENCOUNTERED UPON COMMENCING RUBBLIZATION, THE OPERATION SHALL BE HALTED AND CONTRACT TIME SUSPENDED UNTIL THE SUBGRADE HAS SUFFICIENTLY DRIED OUT.
2. EXISTING AIRFIELD ELECTRICAL CABLE DUCT CROSSINGS ARE SHOWN ON THESE SHEETS FOR REFERENCE. CONTRACTOR SHALL FIELD LOCATE DUCTS PRIOR TO RUBBLIZATION, AND MAKE ANY ADJUSTMENTS TO THE RUBBLIZATION OPERATION AS NECESSARY TO PROTECT FROM THEM FROM BEING DAMAGED. CONTRACTOR SHALL HAVE A QUALIFIED ELECTRICIAN PERFORM MEGGER TESTING ON EXISTING AIRFIELD ELECTRICAL CIRCUITS PRIOR TO AND FOLLOWING RUBBLIZATION/UNDERDRAIN ITEMS TO VERIFY CIRCUITS HAVE NOT BEEN DAMAGED. REFER TO ELECTRICAL PLAN SHEETS AND ITEM 125/APPENDIX A OF SPECIAL PROVISIONS FOR ADDITIONAL INFO.
3. ALL SAW CUTS ARE INCIDENTAL TO THE RUBBLIZATION/REMOVAL ITEMS.
4. UPON COMPLETION OF RUBBLIZED PCC MILLING AND PRIOR TO BASE COURSE PAVING, CONTRACTOR SHALL CUT OFF OR REMOVE ANY EXPOSED EXISTING STEEL REINFORCEMENT, BACKFILL AND SMOOTH GRADE ANY SURFACE PITS OR IRREGULARITIES, AND ROLL THE SURFACE WITH A SMOOTH DRUM ROLLER.



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

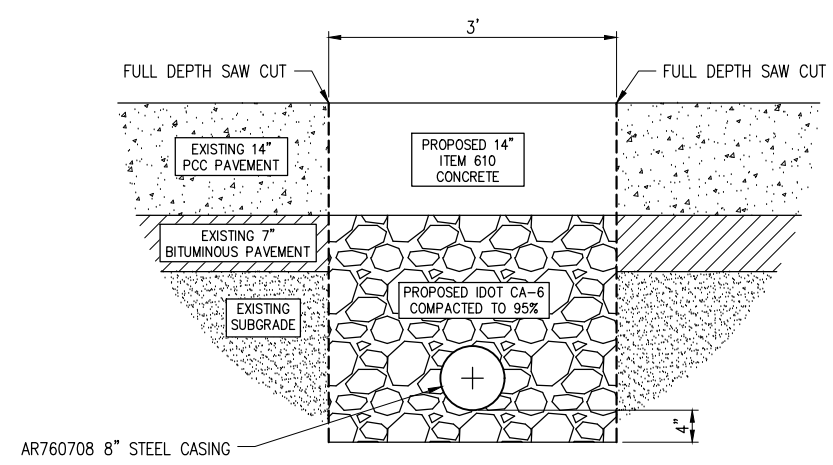
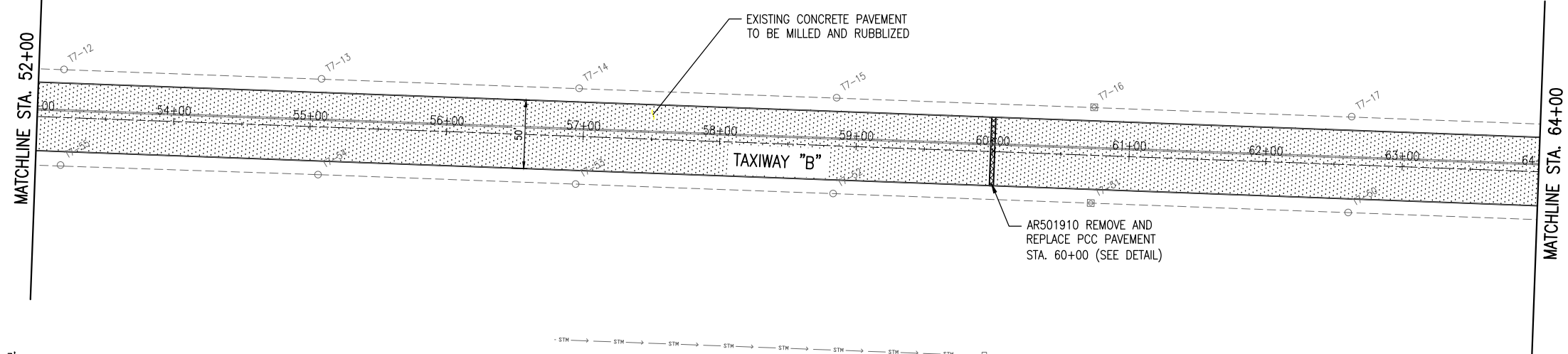
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

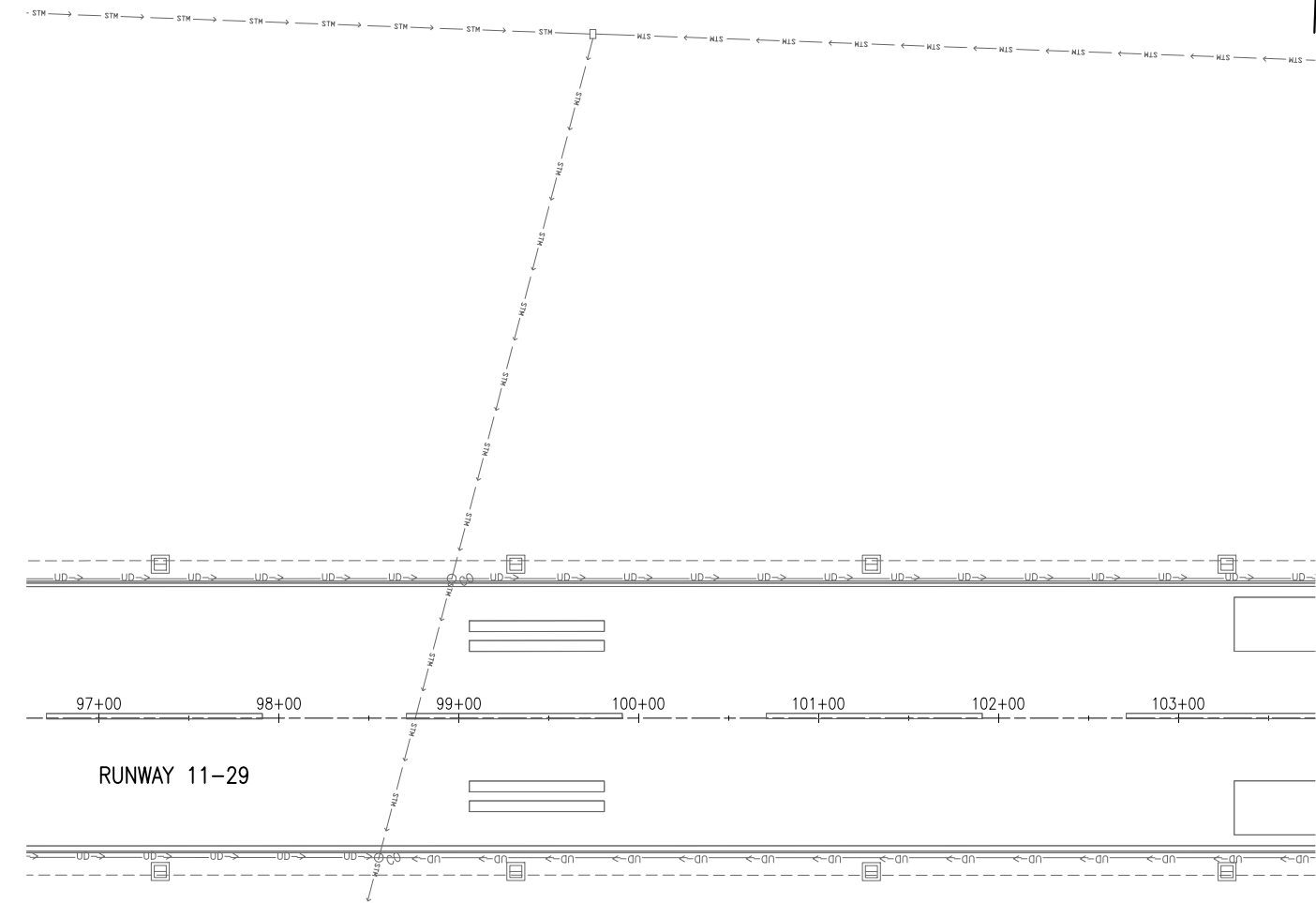
ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-111-REM.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

**REMOVAL PLAN
TAXIWAY B STA.
40+00 TO 52+00 AND
TAXIWAY B2**

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REMOVE AND REPLACE PCC PAVEMENT DETAIL
(AR501910)



RUNWAY 11-29

EXISTING LEGEND

- EXISTING PAVEMENT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING ELECTRICAL DUCT
- EXISTING AIRFIELD LIGHTING ELECTRICAL CABLE
- EXISTING REIL
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING SPLICE CAN
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL HANDHOLE
- EXISTING TAXI GUIDANCE SIGN

REMOVAL LEGEND

- AR501120 RUBBLIZE PAVEMENT
- AR501550 PCC PAVEMENT MILLING
- AR501910 REMOVE AND REPLACE PCC PAVEMENT
- AR401650 BITUMINOUS PAVEMENT MILLING
- AR501900 REMOVE PCC PAVEMENT
- FULL DEPTH SAW CUT
- AR705904 REMOVE UNDERDRAIN CLEANOUT
- AR705900 REMOVE UNDERDRAIN

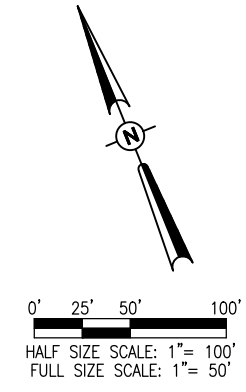
**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
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ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-111-REM.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

**REMOVAL PLAN
TAXIWAY B STA.
52+00 TO 63+00**



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**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

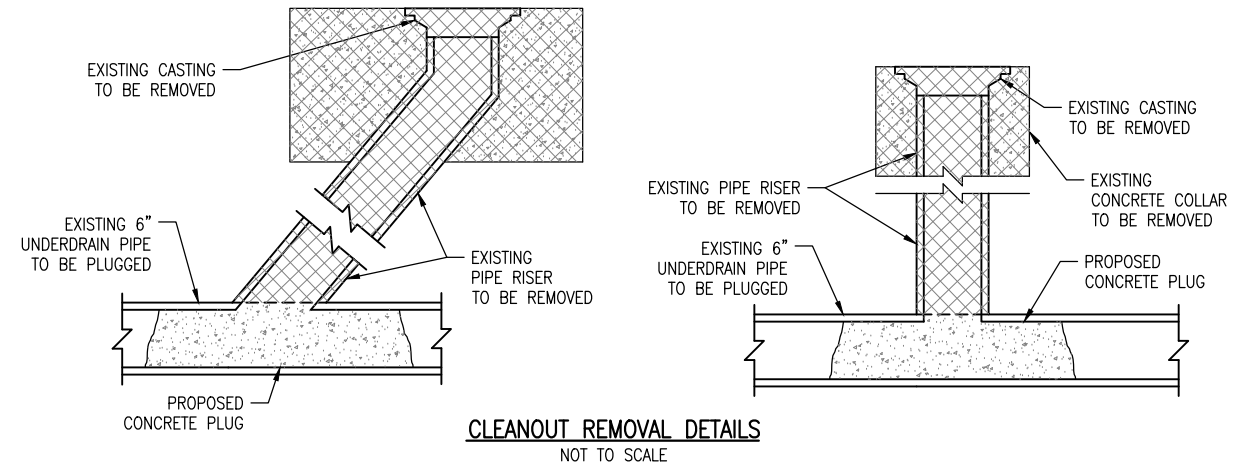
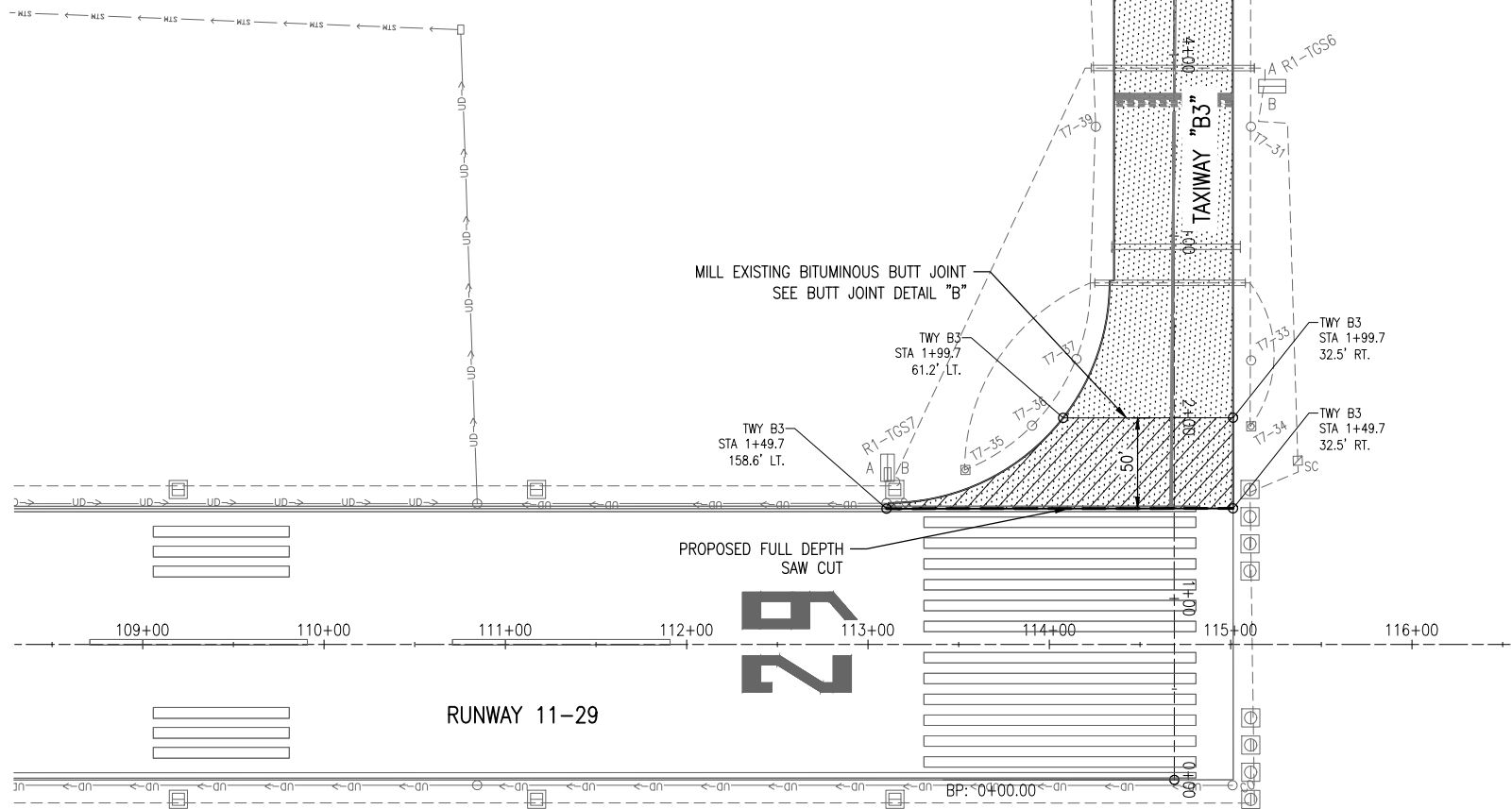
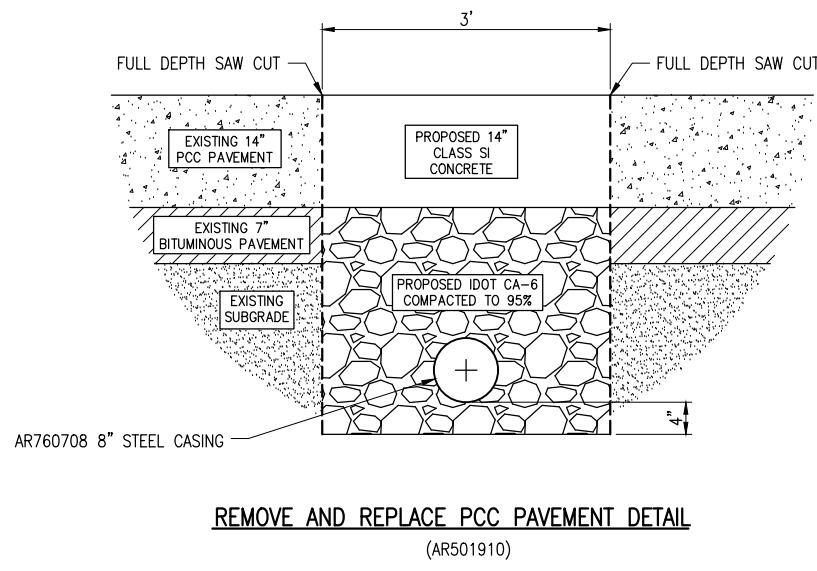
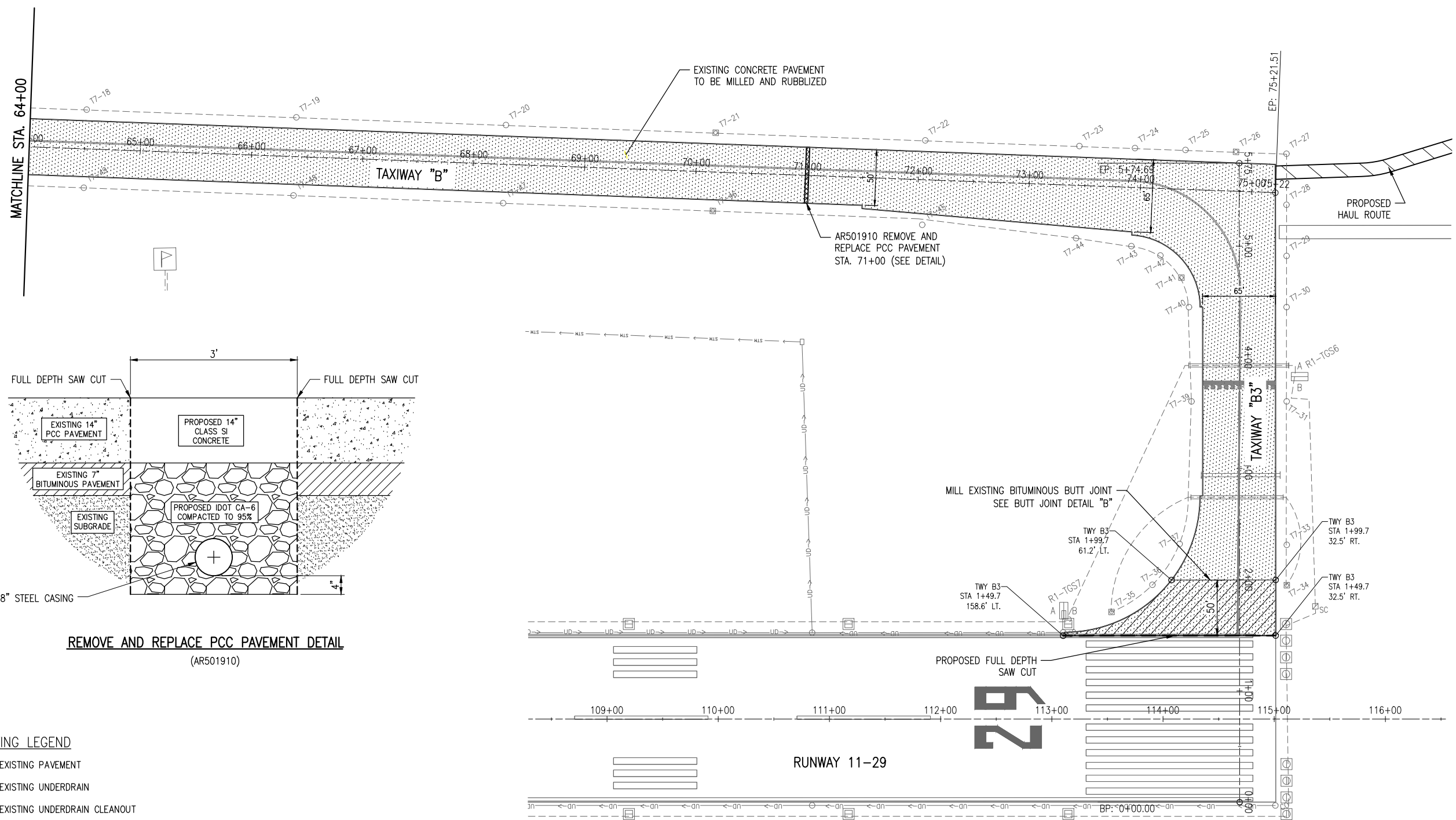
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-111-REM.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**REMOVAL PLAN
TAXIWAY B STA.
63+00 TO 75+21.48
AND TAXIWAY B3**



EXISTING LEGEND

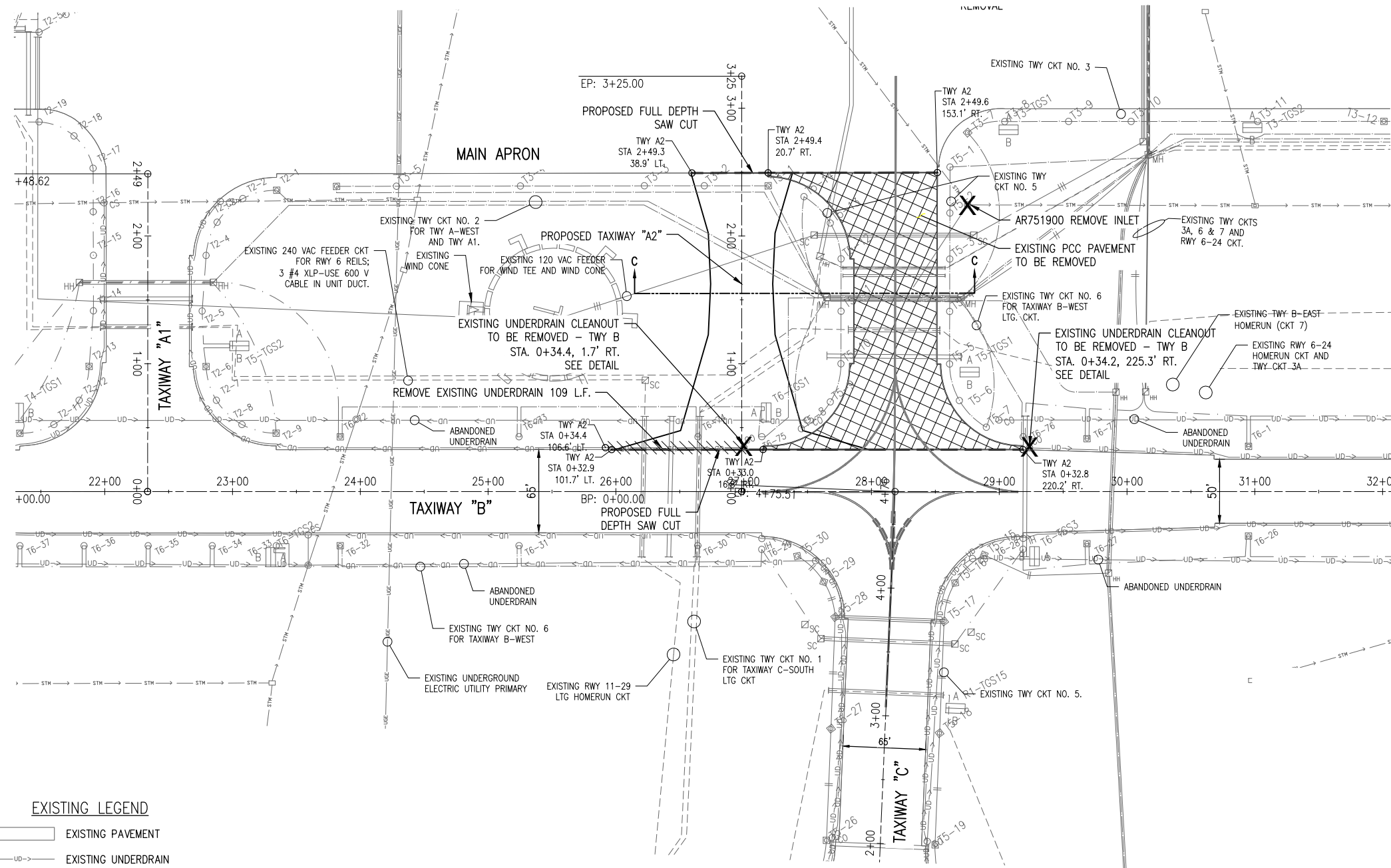
- EXISTING PAVEMENT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING ELECTRICAL DUCT
- EXISTING AIRFIELD LIGHTING ELECTRICAL CABLE
- EXISTING REIL
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT
- EXISTING SPLICE CAN
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL HANDHOLE
- EXISTING TAXI GUIDANCE SIGN

REMOVAL LEGEND

- AR501120 RUBBLIZE PAVEMENT
- AR501550 PCC PAVEMENT MILLING
- AR501910 REMOVE AND REPLACE PCC PAVEMENT
- AR401650 BITUMINOUS PAVEMENT MILLING
- AR501900 REMOVE PCC PAVEMENT
- FULL DEPTH SAW CUT
- AR705904 REMOVE UNDERDRAIN CLEANOUT
- AR705900 REMOVE UNDERDRAIN

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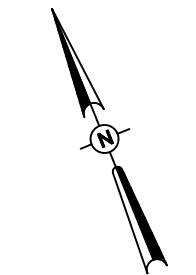
REMOVAL SCHEDULE	
DESCRIPTION	UNIT
AR401650 BITUMINOUS PAVEMENT MILLING	S.Y.
TX Y B2 & RWY 11-29	1045
TX Y B3 & RWY 11-29	705
TOTAL	1750
AR501120 RUBBLIZE PAVEMENT	S.Y.
TWY B - W OF RWY 6-24	2512
RWY 6-24	4190
TWY B, B2, B3	25233
TOTAL	31935
AR501550 PCC PAVEMENT MILLING	S.Y.
TWY B - W OF RWY 6-24	2512
RWY 6-24	4190
TWY B, B2, B3	25233
TOTAL	31935
AR501900 REMOVE PCC PAVEMENT	S.Y.
EXISTING TWY C - N OF TWY B	1991
TOTAL	1991
AR705900 REMOVE UNDERDRAIN	L.F.
EXISTING TX Y C - N OF TWY B	109
TWY B - W OF RWY 6-24	344
TOTAL	453
AR705904 REMOVE UNDERDRAIN CLEANOUT	EACH
EXISTING TX Y C - N OF TWY B	2
TWY B - W OF RWY 6-24	6
TOTAL	8
AR501910 REMOVE AND REPLACE PCC PAVEMENT	S.Y.
TWY B - STA. 60+00	16.7
TWY B - STA. 71+00	16.8
TOTAL	34
AR751900 REMOVE INLET	EACH
TWY C - STA. 2+24, 177' RT	1
TOTAL	1



NOTE:
SEE ELECTRICAL PLANS FOR REMOVAL AND RELOCATION OF ELECTRICAL ITEMS.

- EXISTING LEGEND**
- EXISTING PAVEMENT
 - EXISTING UNDERDRAIN
 - EXISTING UNDERDRAIN CLEANOUT
 - EXISTING STORM SEWER
 - EXISTING ELECTRICAL DUCT
 - EXISTING AIRFIELD LIGHTING ELECTRICAL CABLE
 - EXISTING REIL
 - EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - EXISTING BASE MOUNTED TAXIWAY LIGHT
 - EXISTING STAKE MOUNTED RUNWAY LIGHT
 - EXISTING BASE MOUNTED RUNWAY LIGHT
 - EXISTING STAKE MOUNTED THRESHOLD LIGHT
 - EXISTING BASE MOUNTED THRESHOLD LIGHT
 - EXISTING SPLICE CAN
 - EXISTING ELECTRICAL MANHOLE
 - EXISTING ELECTRICAL HANDHOLE
 - EXISTING TAXI GUIDANCE SIGN

- REMOVAL LEGEND**
- AR501120 RUBBLIZE PAVEMENT
 - AR501550 PCC PAVEMENT MILLING
 - AR501910 REMOVE AND REPLACE PCC PAVEMENT
 - AR401650 BITUMINOUS PAVEMENT MILLING
 - AR501900 REMOVE PCC PAVEMENT
 - FULL DEPTH SAW CUT
 - AR705904 REMOVE UNDERDRAIN CLEANOUT
 - AR705900 REMOVE UNDERDRAIN



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

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

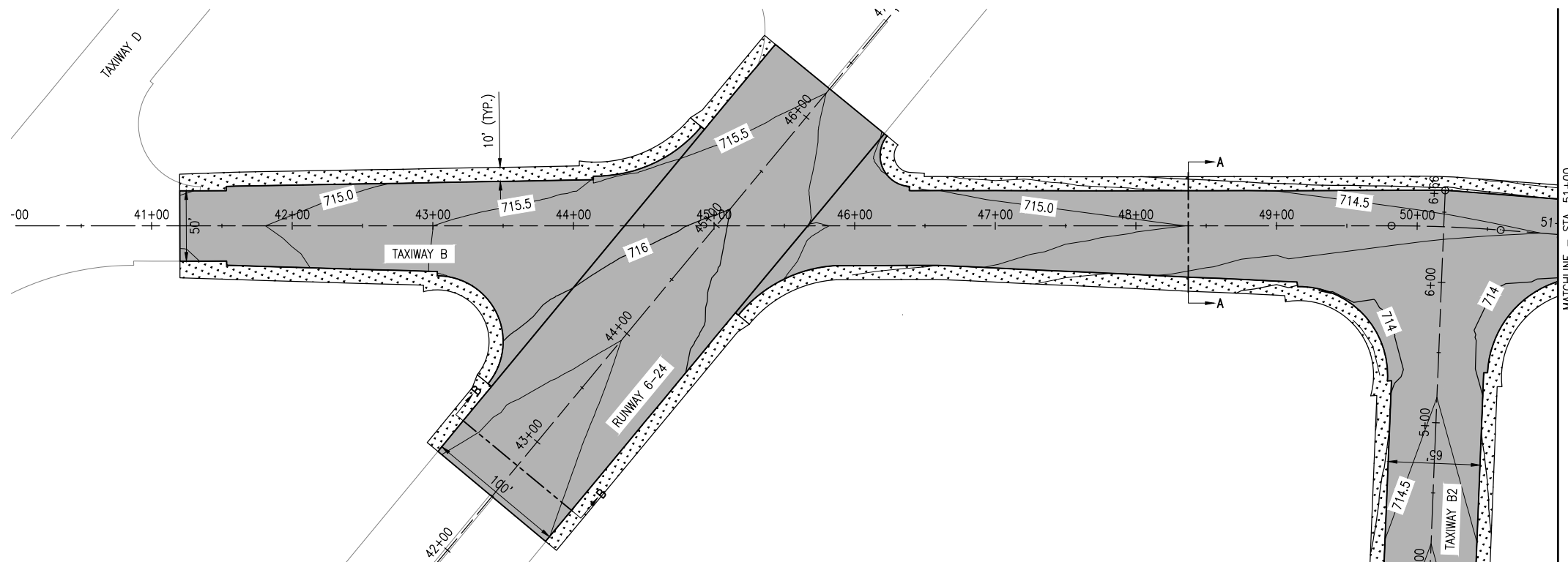
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

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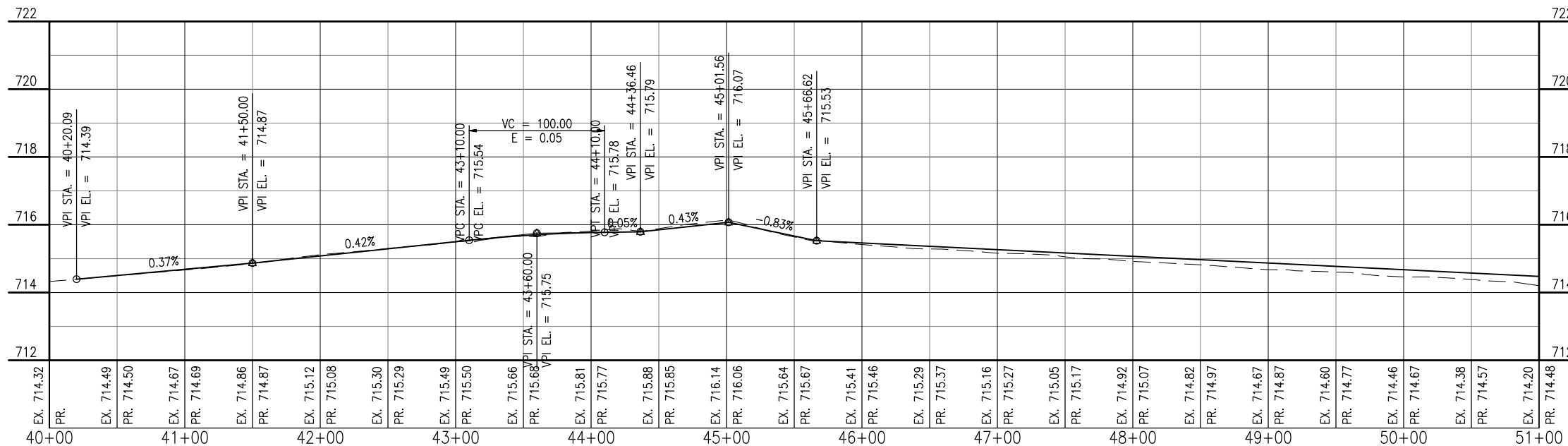
ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-111-REM.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**REMOVAL PLAN
TAXIWAY C**



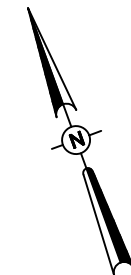
PLAN VIEW - TAXIWAY B STA. 41+20 TO STA. 51+00



PROFILE VIEW - TAXIWAY B STA. 41+20 TO STA. 51+00

LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- PROPOSED SHOULDER ADJUSTMENT



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

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

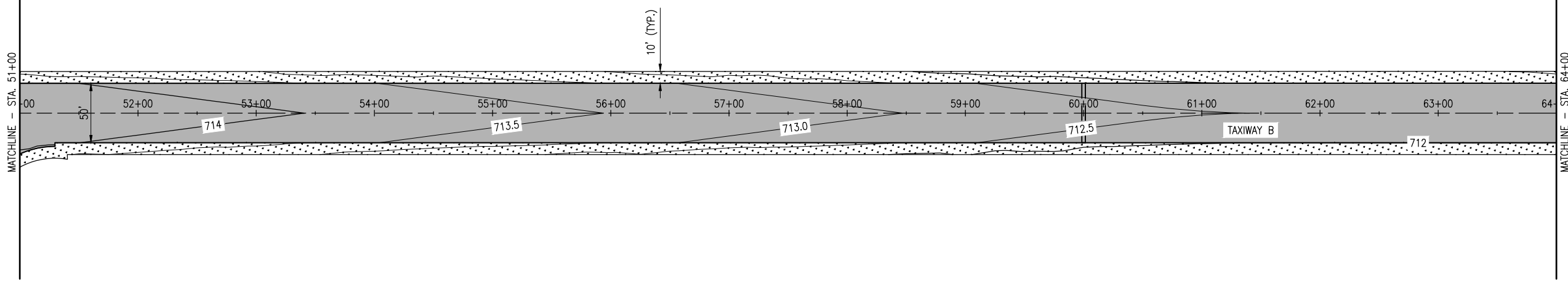
Contract No. CO067

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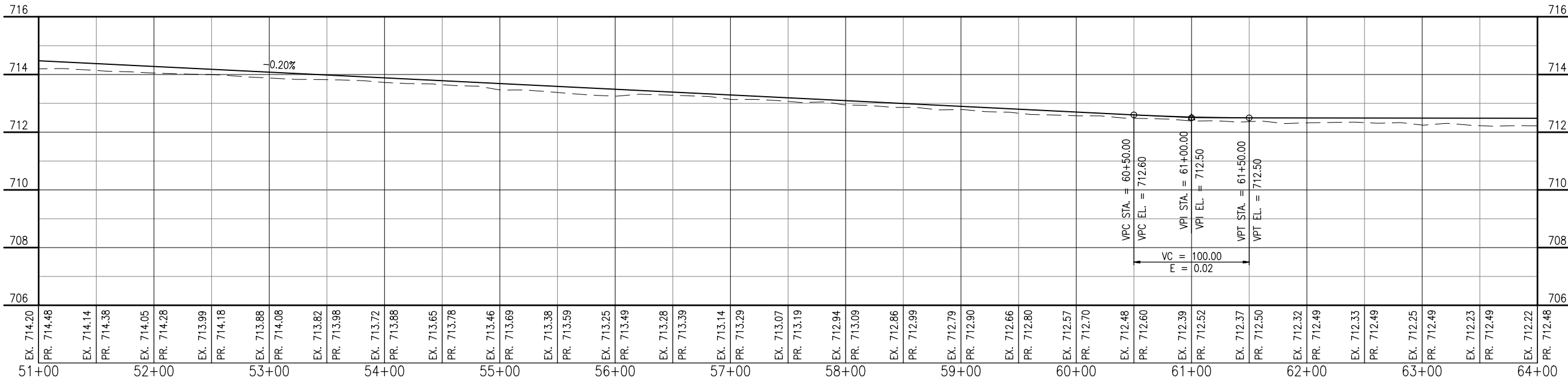
ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-701-PNP.DWG
DESIGN BY: JRH 05/08/2019
DRAWN BY: JRH 05/08/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**PLAN AND PROFILE -
TAXIWAY B STA. 41+20
TO STA. 51+00**



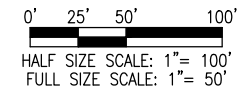
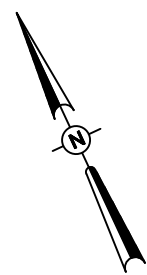
PLAN VIEW - TAXIWAY B STA. 41+20 TO STA. 51+00



PROFILE VIEW - TAXIWAY B STA. 41+20 TO STA. 51+00

LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVING AREA
- AR152480 SHOULDER ADJUSTMENT
- AR901510 SEEDING
- AR908510 MULCHING



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

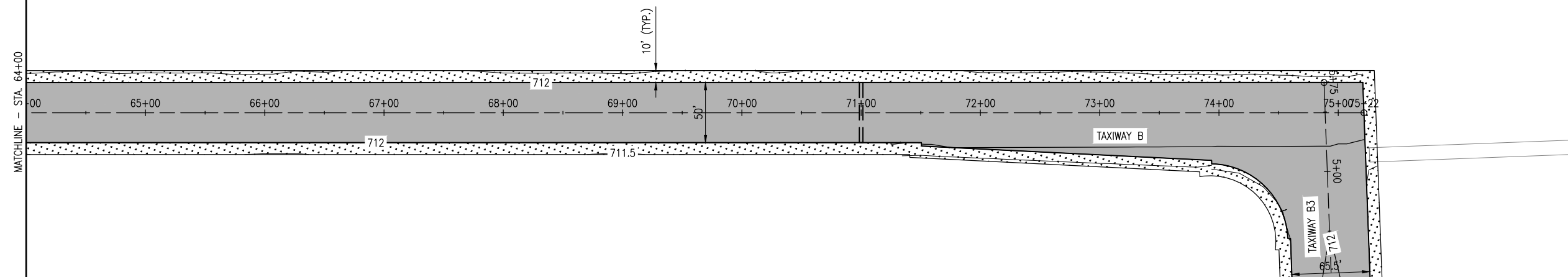
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3-17-SBGP-159
Contract No. CO067

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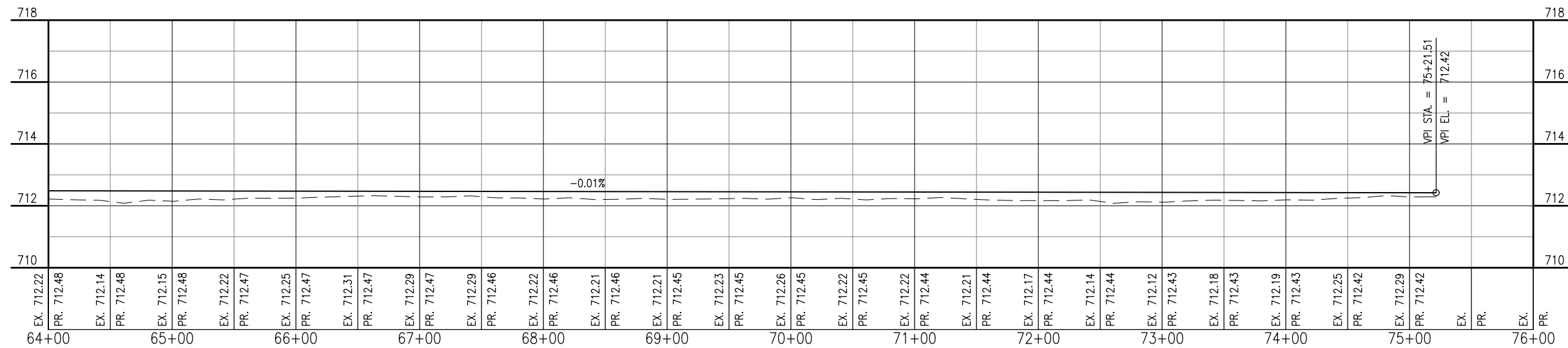
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PROJECT NO: 19A0001
CAD FILE: C-701-PNP.DWG
DESIGN BY: JRH 05/08/2019
DRAWN BY: JRH 05/08/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**PLAN AND PROFILE -
TAXIWAY B STA. 51+00
TO STA. 64+00**



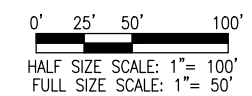
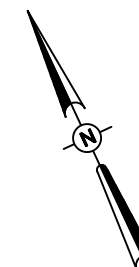
PLAN VIEW - TAXIWAY B STA. 41+20 TO STA. 51+00



PROFILE VIEW - TAXIWAY B STA. 41+20 TO STA. 51+00

LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVING AREA
- AR152480 SHOULDER ADJUSTMENT
- AR901510 SEEDING
- AR908510 MULCHING



PHASE 2:
RECONSTRUCT
TAXIWAY B

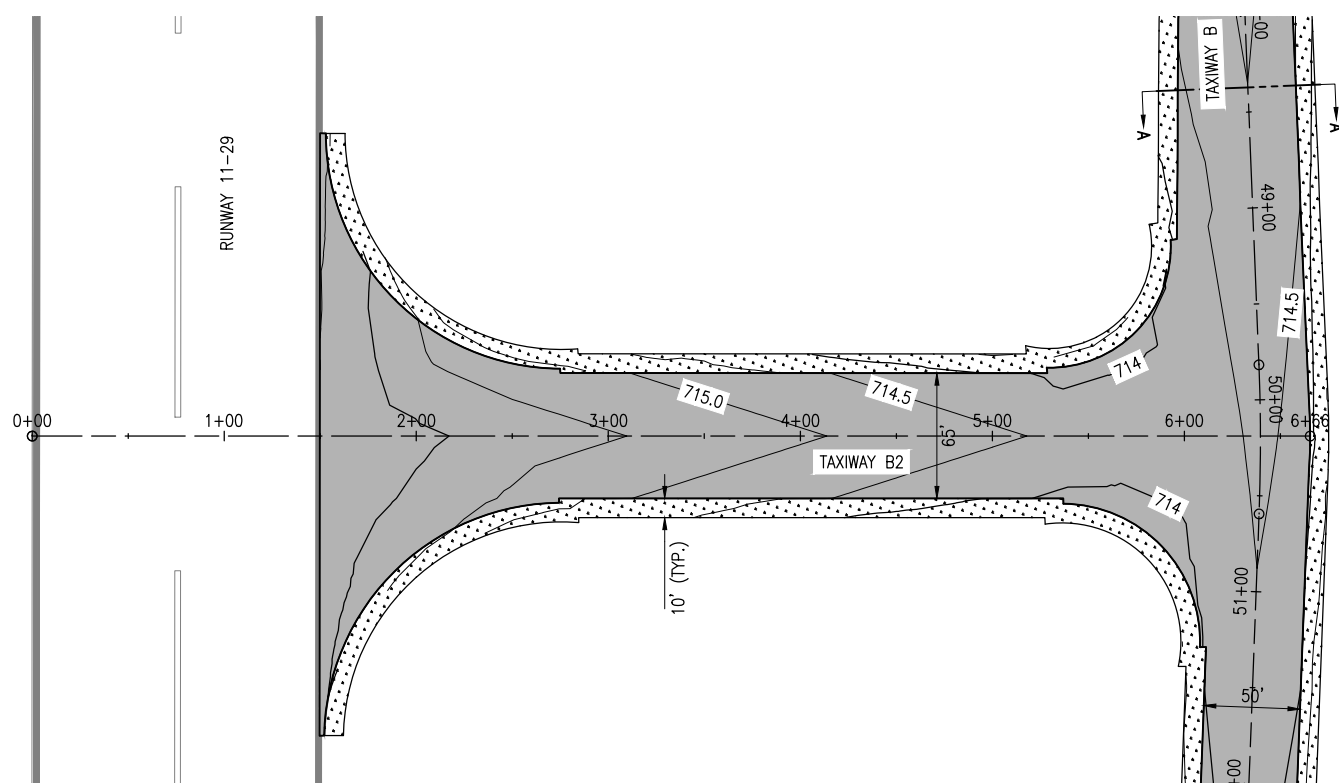
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

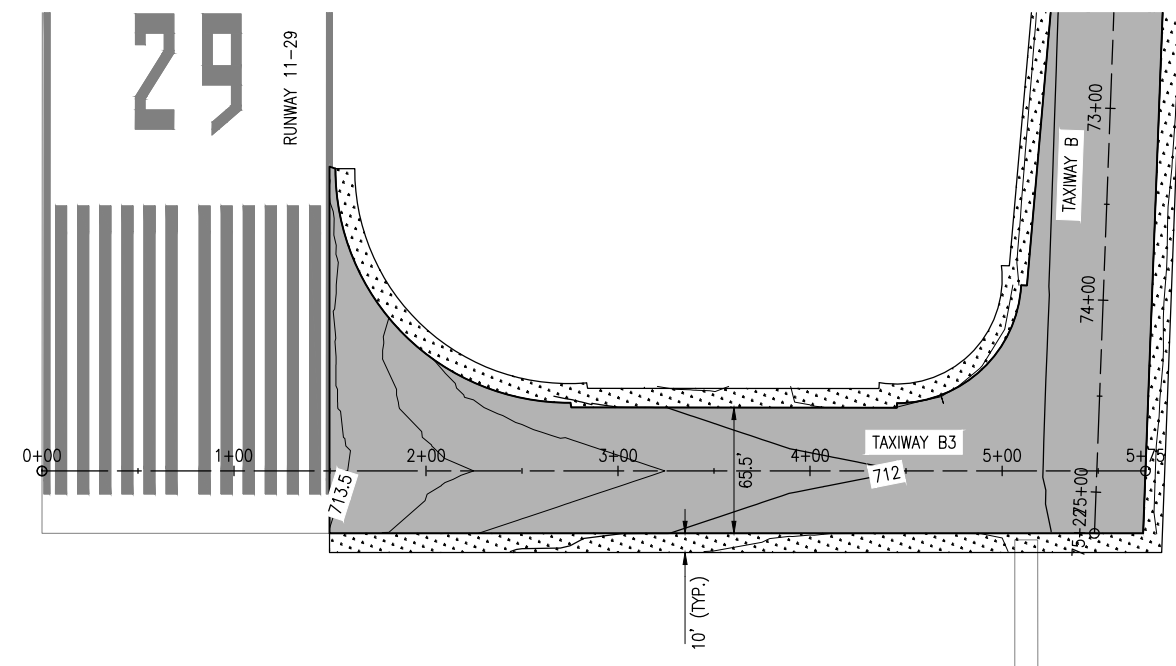
ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-701-PNP.DWG
DESIGN BY: JRH 05/08/2019
DRAWN BY: JRH 05/08/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

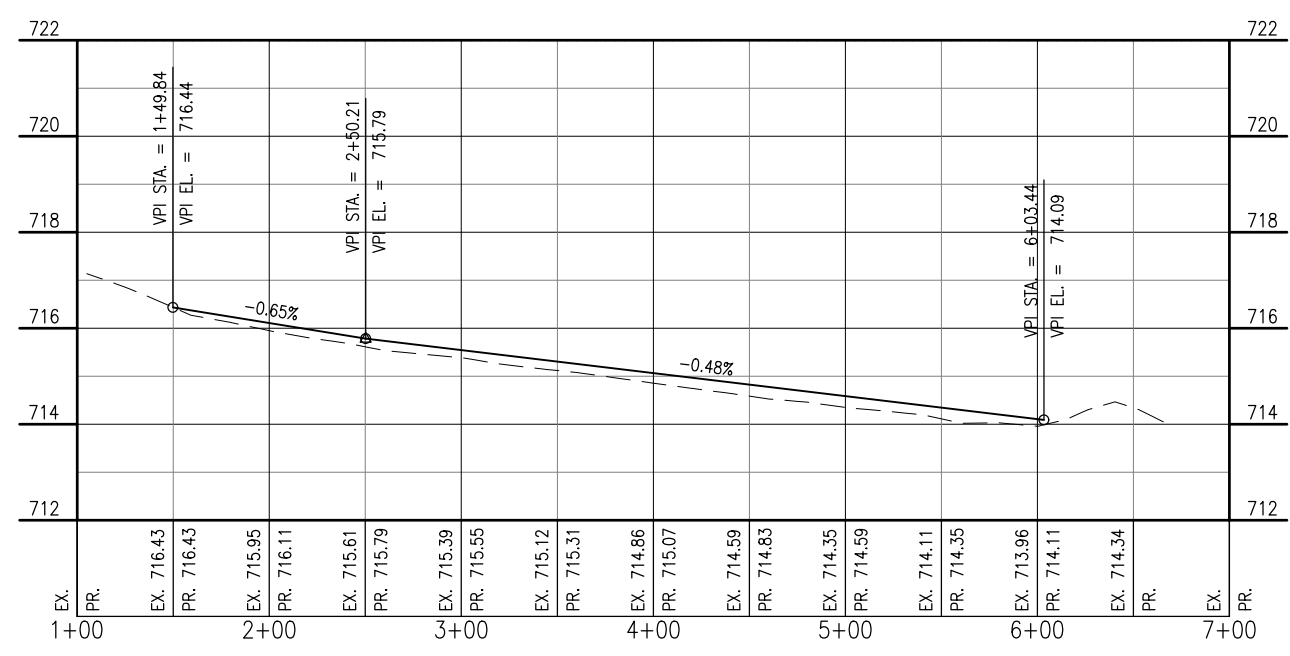
PLAN AND PROFILE -
TAXIWAY B STA. 64+00
TO STA. 75+22



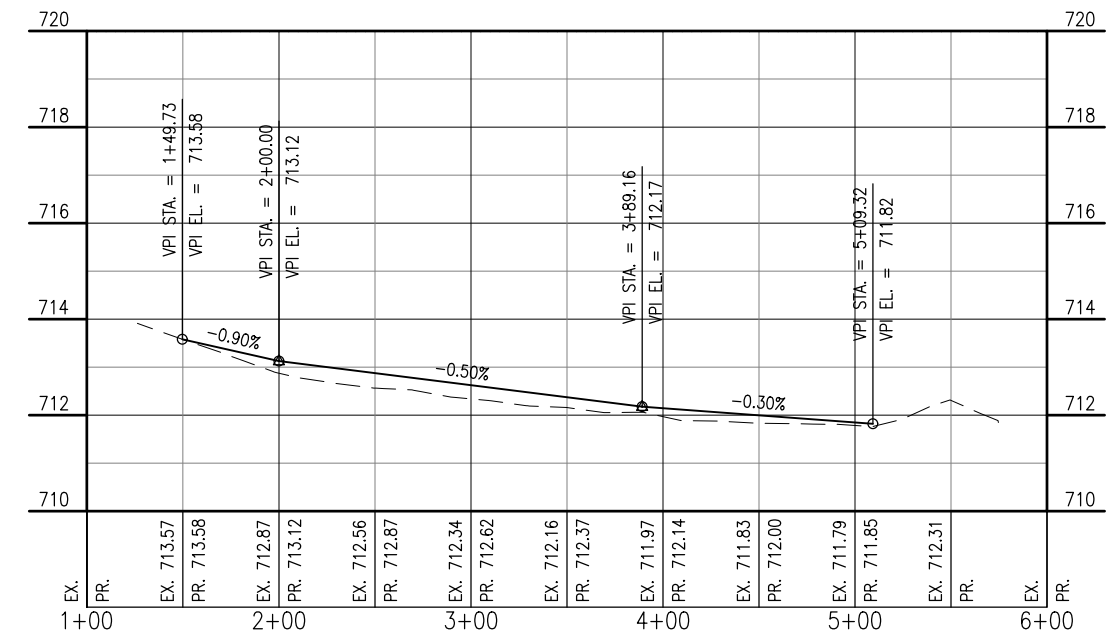
PLAN VIEW - TAXIWAY B2



PLAN VIEW - TAXIWAY B3

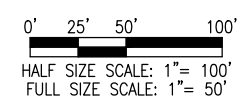
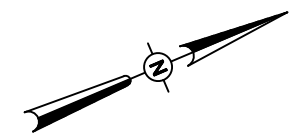


PROFILE VIEW - TAXIWAY B2



PROFILE VIEW - TAXIWAY B3

- LEGEND**
- EXISTING PAVEMENT
 - PROPOSED PAVING AREA
 - AR152480 SHOULDER ADJUSTMENT
 - AR901510 SEEDING
 - AR908510 MULCHING



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

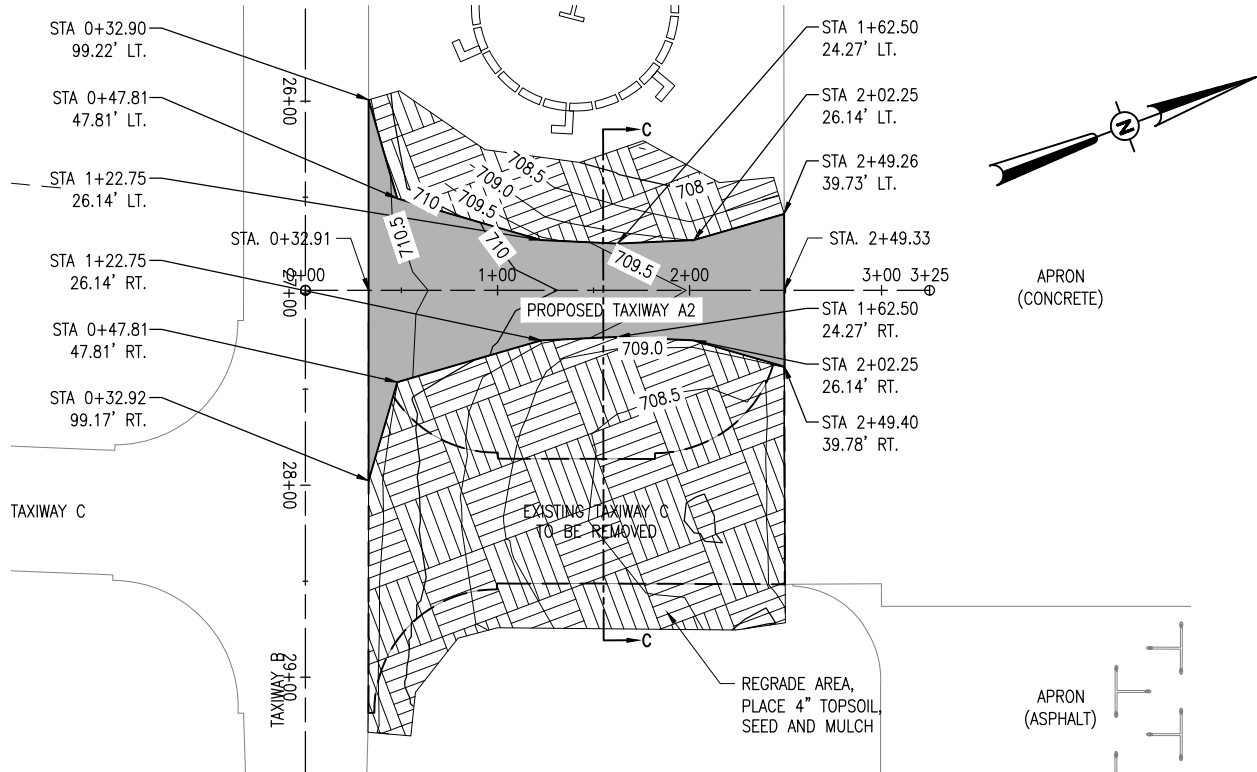
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SBG Project No:
3-17-SBGP-159
Contract No. CO067

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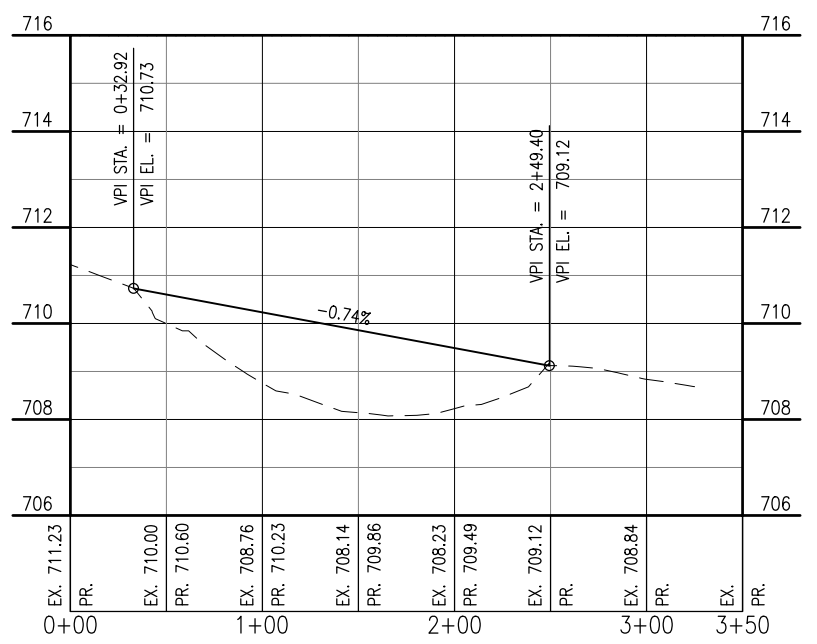
ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-701-PNP.DWG
DESIGN BY: JRH 05/08/2019
DRAWN BY: JRH 05/08/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

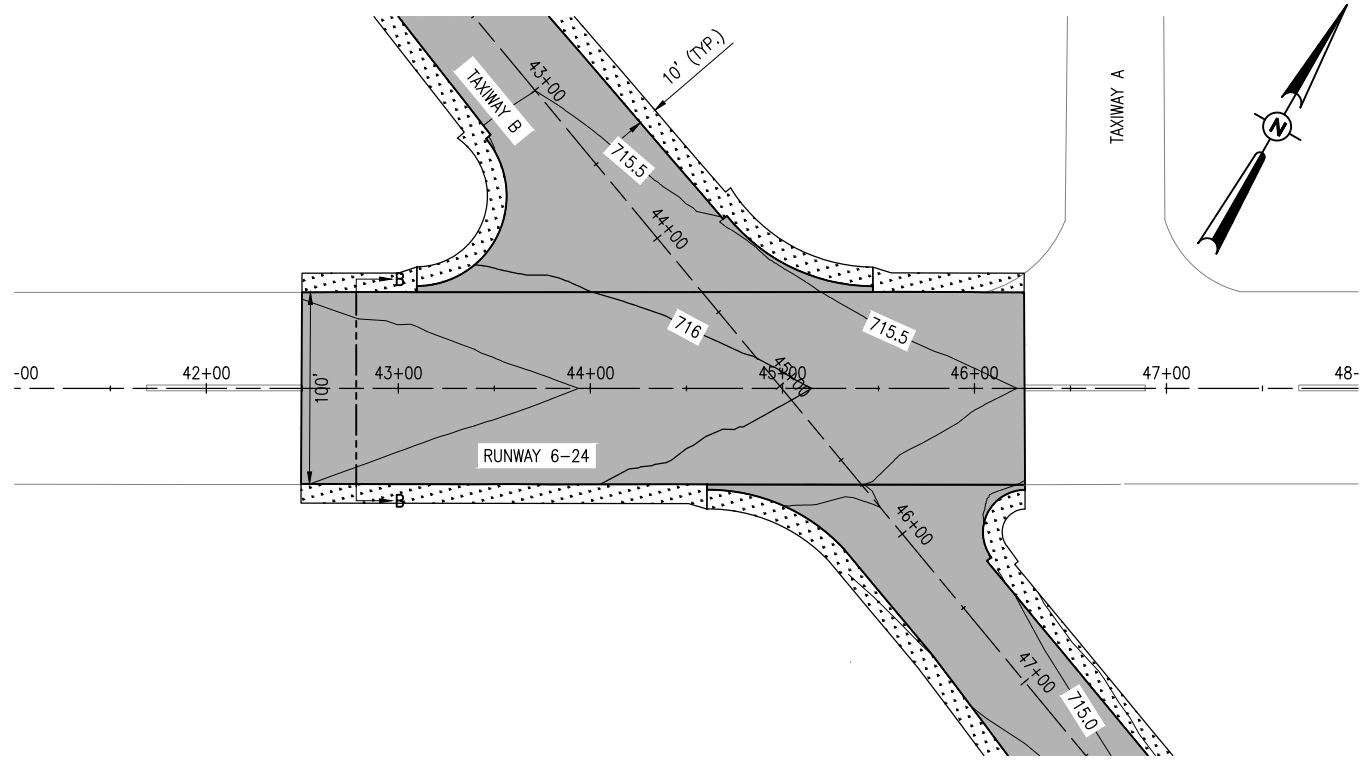
**PLAN AND PROFILE -
TAXIWAY B2 & B3**



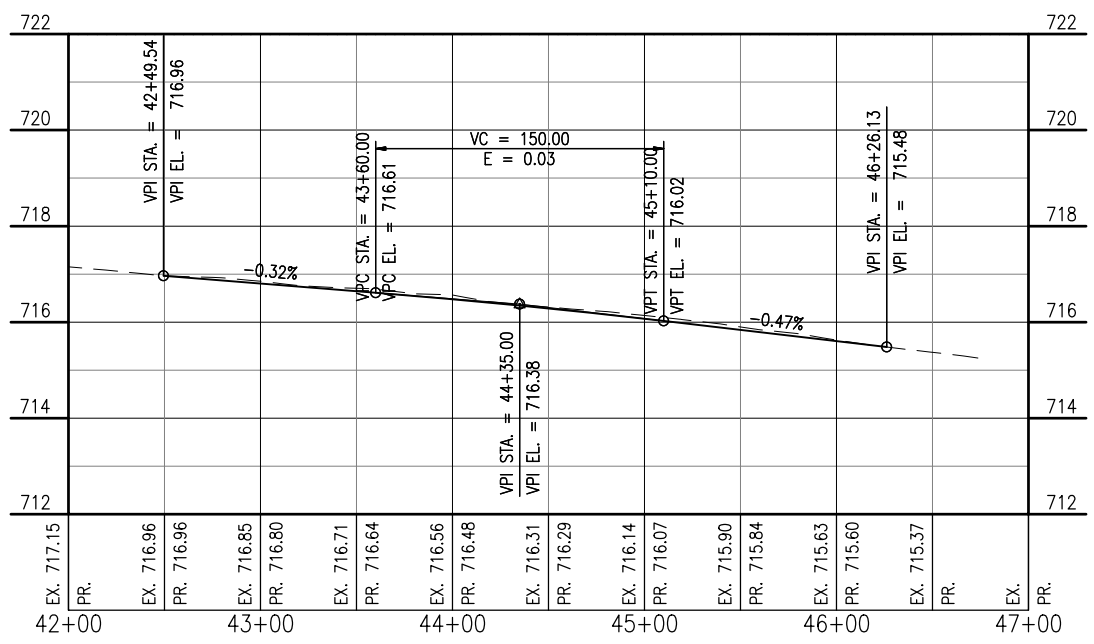
PLAN VIEW - TAXIWAY A2



PROFILE VIEW - TAXIWAY A2

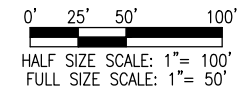


PLAN VIEW - RUNWAY 6-24



PROFILE VIEW - RUNWAY 6-24

- LEGEND**
- EXISTING PAVEMENT
 - PROPOSED PAVING AREA
 - AR152480 SHOULDER ADJUSTMENT
 - AR901510 SEEDING
 - AR908510 MULCHING
 - AR905530 TOPSOILING (4" THICKNESS)
 - AR901510 SEEDING
 - AR908510 MULCHING



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

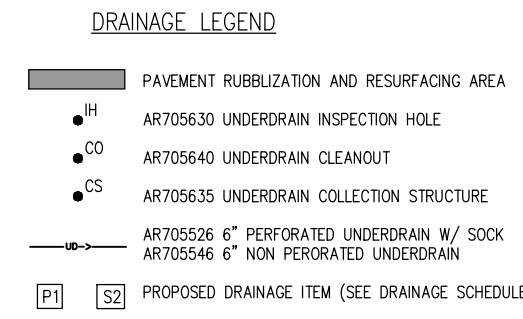
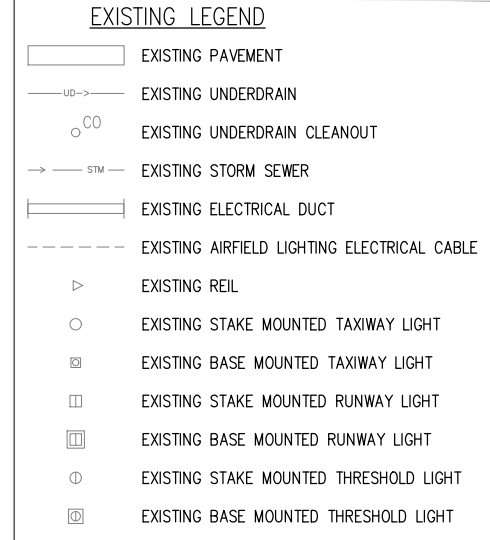
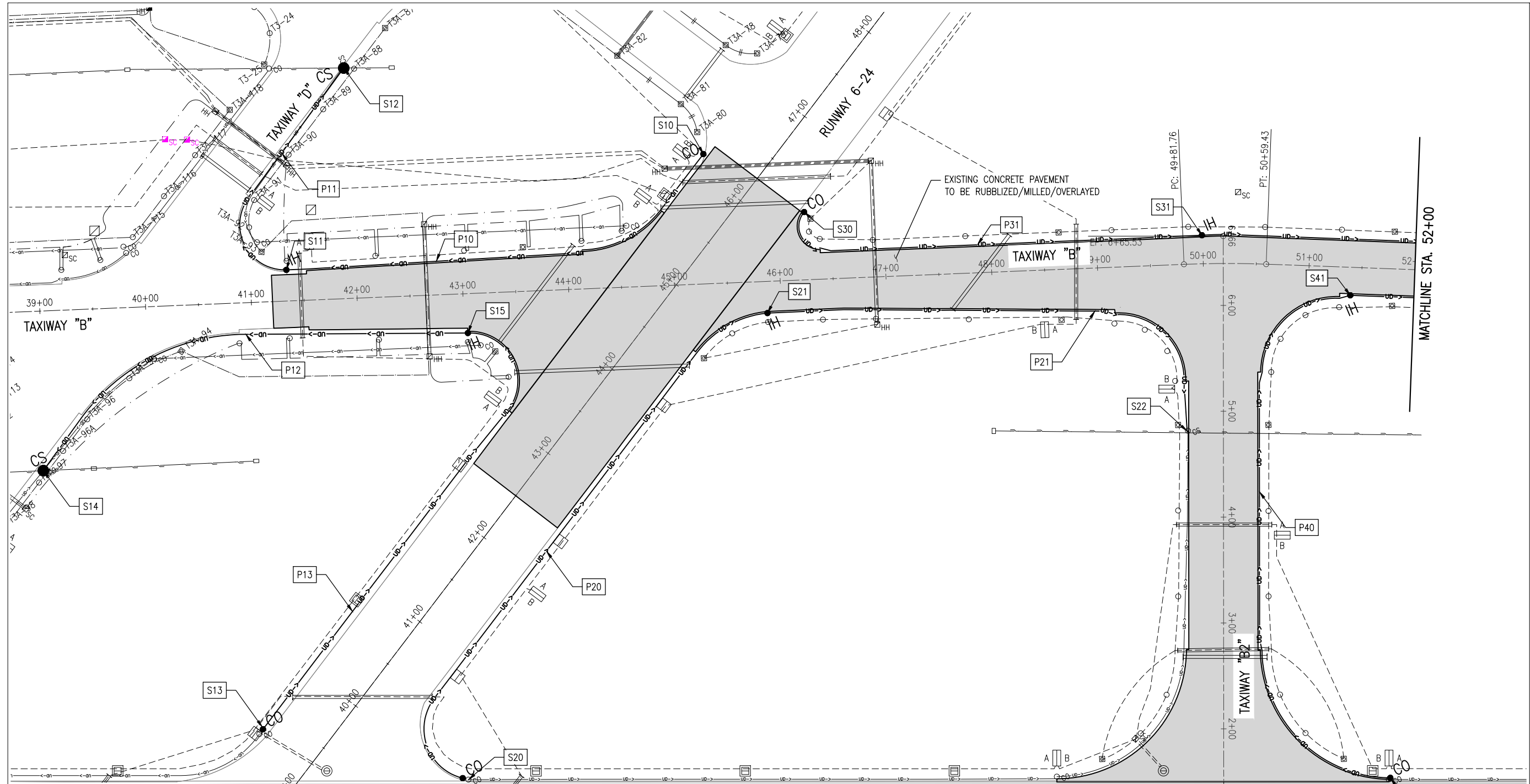
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SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

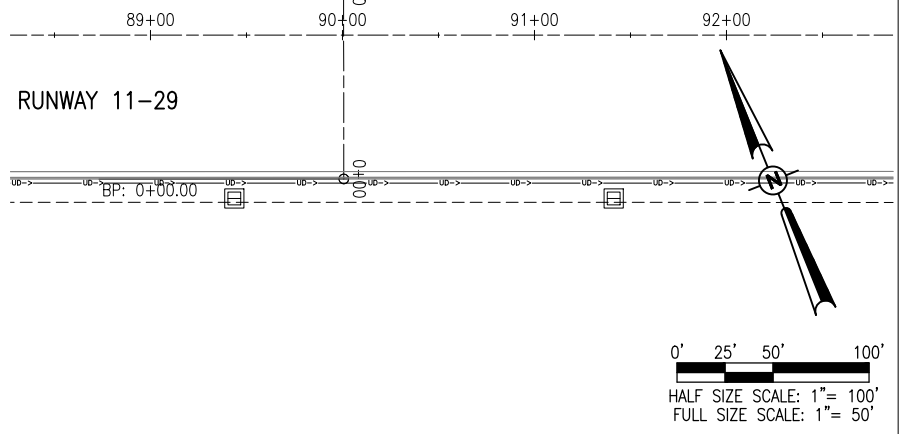
ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-701-PNP.DWG
DESIGN BY: JRH 05/08/2019
DRAWN BY: JRH 05/08/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**PLAN AND PROFILE -
TAXIWAY A2 &
RUNWAY 6-24**



- NOTES:**
1. EXISTING AIRFIELD ELECTRICAL CABLE DUCT CROSSINGS ARE SHOWN ON THESE SHEETS FOR REFERENCE. PRIOR TO BEGINNING UNDERDRAIN INSTALLATION, CONTRACTOR SHALL LOCATE, POT HOLE, AND SURVEY ELEVATIONS OF ALL DUCT CROSSINGS TO CONFIRM THERE ARE NO CONFLICTS WITH THE PROPOSED UNDERDRAIN INSTALLATION. ANY AREAS OF ANTICIPATED CONFLICT SHALL BE REPORTED TO THE PROJECT ENGINEER IMMEDIATELY.
 2. ALL CONNECTIONS REQUIRED TO PROPERLY CONNECT THE UNDERDRAIN PIPE TO EXISTING/PROPOSED DRAINAGE SYSTEM ARE INCIDENTAL TO THE UNDERDRAIN PAY ITEM.
 3. TURF RESTORATION OF UNDERDRAIN INSTALLED IN AREAS NOT SHOWN FOR SHOULDER ADJUSTMENT OR TOPSOILING SHALL BE SEEDED AND MULCHED PER ITEMS 901 AND 908 AS AN INCIDENTAL COST TO THE UNDERDRAIN PAY ITEM.
 4. SUPPLEMENTAL QUANTITY OF 400 L.F. OF 6" PERFORATED UNDERDRAIN W/SOCK HAS BEEN INCLUDED TO ADDRESS ISOLATED POORLY DRAINED TURF INFIELD AREAS OF TAXIWAY B AND RUNWAY 11-29. THE AREAS WILL BE IDENTIFIED IN THE FIELD BY THE RESIDENT ENGINEER/TECHNICIAN. UNDERDRAIN SHALL BE INSTALLED IN THESE AREAS AND TIED IN TO THE EXISTING OR PROPOSED DRAINAGE NETWORK.



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

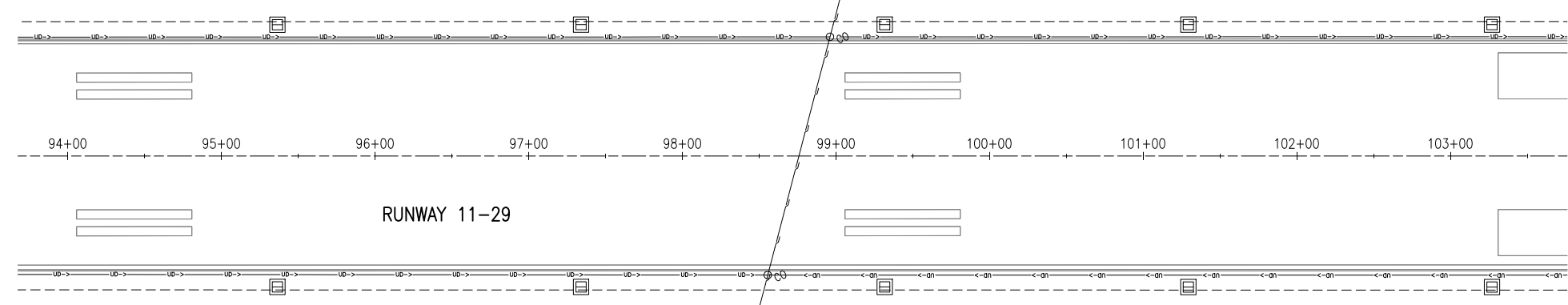
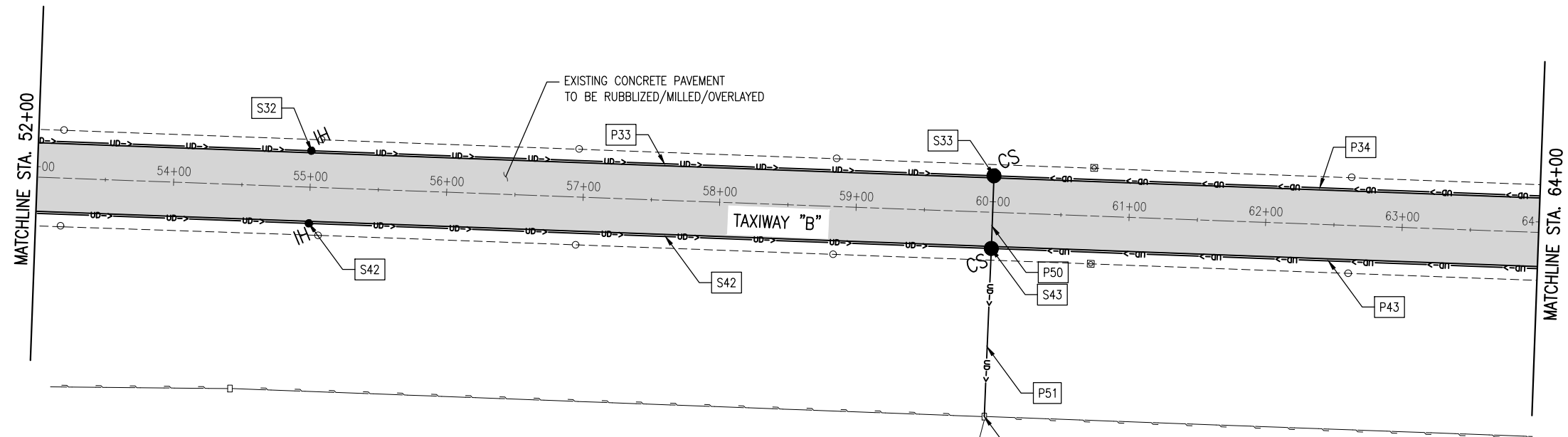
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
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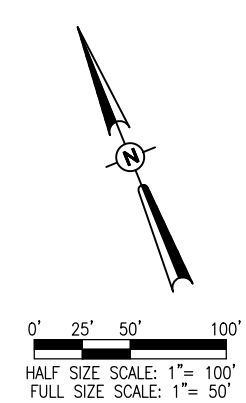
SHEET TITLE

**UNDERDRAIN PLAN
TAXIWAY B STA.
41+00 TO 52+00 AND
TAXIWAY B2**



- EXISTING LEGEND**
- EXISTING PAVEMENT
 - EXISTING UNDERDRAIN
 - EXISTING UNDERDRAIN CLEANOUT
 - EXISTING STORM SEWER
 - EXISTING ELECTRICAL DUCT
 - EXISTING AIRFIELD LIGHTING ELECTRICAL CABLE
 - EXISTING REIL
 - EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - EXISTING BASE MOUNTED TAXIWAY LIGHT
 - EXISTING STAKE MOUNTED RUNWAY LIGHT
 - EXISTING BASE MOUNTED RUNWAY LIGHT
 - EXISTING STAKE MOUNTED THRESHOLD LIGHT
 - EXISTING BASE MOUNTED THRESHOLD LIGHT

- DRAINAGE LEGEND**
- PAVEMENT RUBBLIZATION AND RESURFACING AREA
 - AR705630 UNDERDRAIN INSPECTION HOLE
 - AR705640 UNDERDRAIN CLEANOUT
 - AR705635 UNDERDRAIN COLLECTION STRUCTURE
 - AR705526 6" PERFORATED UNDERDRAIN W/ SOCK
 - AR705546 6" NON PERORATED UNDERDRAIN
 - PROPOSED DRAINAGE ITEM (SEE DRAINAGE SCHEDULE)



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-130-DRPL.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**UNDERDRAIN PLAN
TAXIWAY B STA.
52+00 TO 64+00**

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

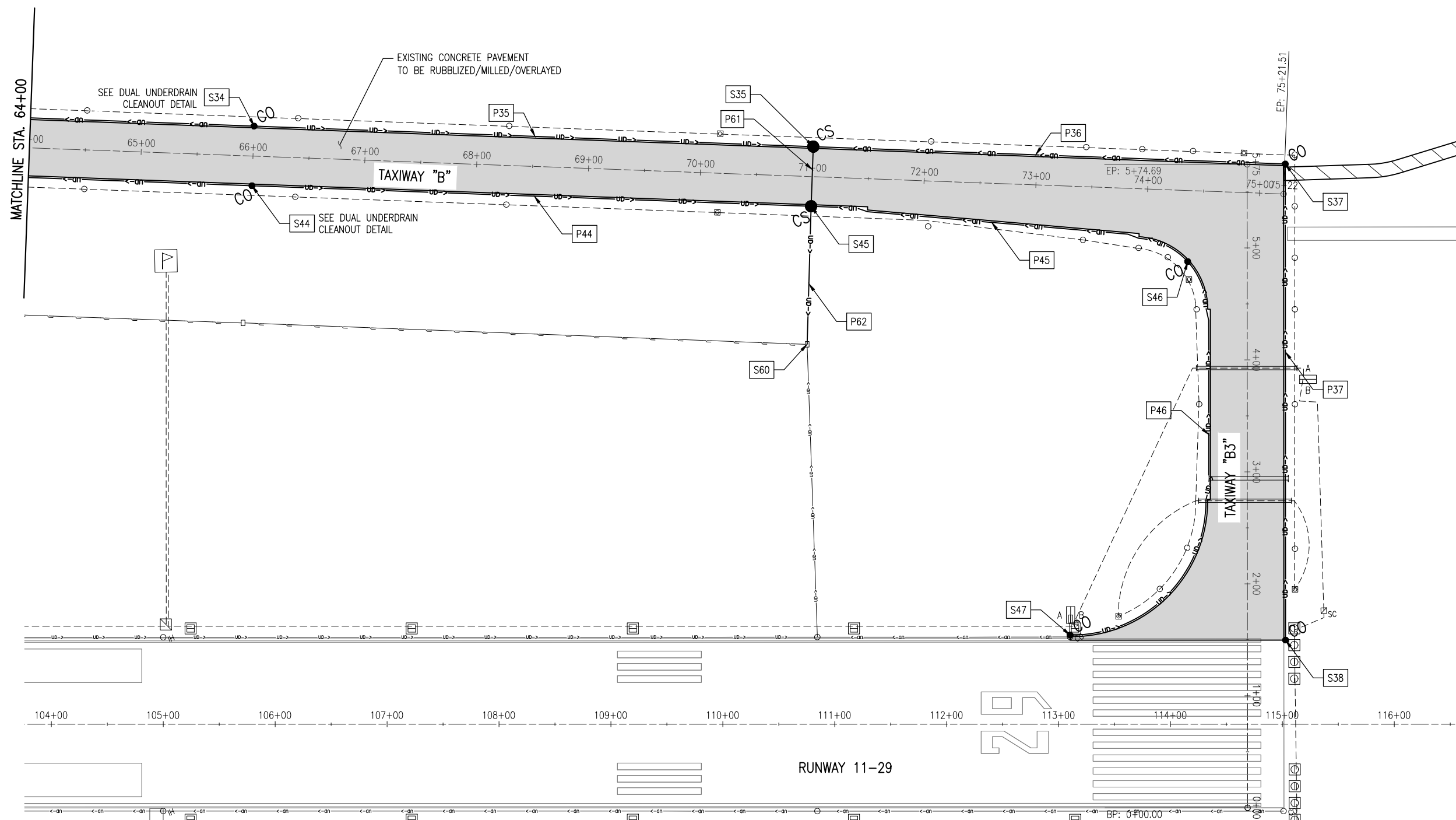
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-130-DRPL.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**UNDERDRAIN PLAN
TAXIWAY B STA.
64+00 TO 75+22 AND
TAXIWAY B3**

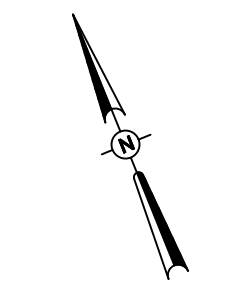


EXISTING LEGEND

- EXISTING PAVEMENT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING ELECTRICAL DUCT
- EXISTING AIRFIELD LIGHTING ELECTRICAL CABLE
- EXISTING REIL
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY LIGHT
- EXISTING STAKE MOUNTED THRESHOLD LIGHT
- EXISTING BASE MOUNTED THRESHOLD LIGHT

DRAINAGE LEGEND

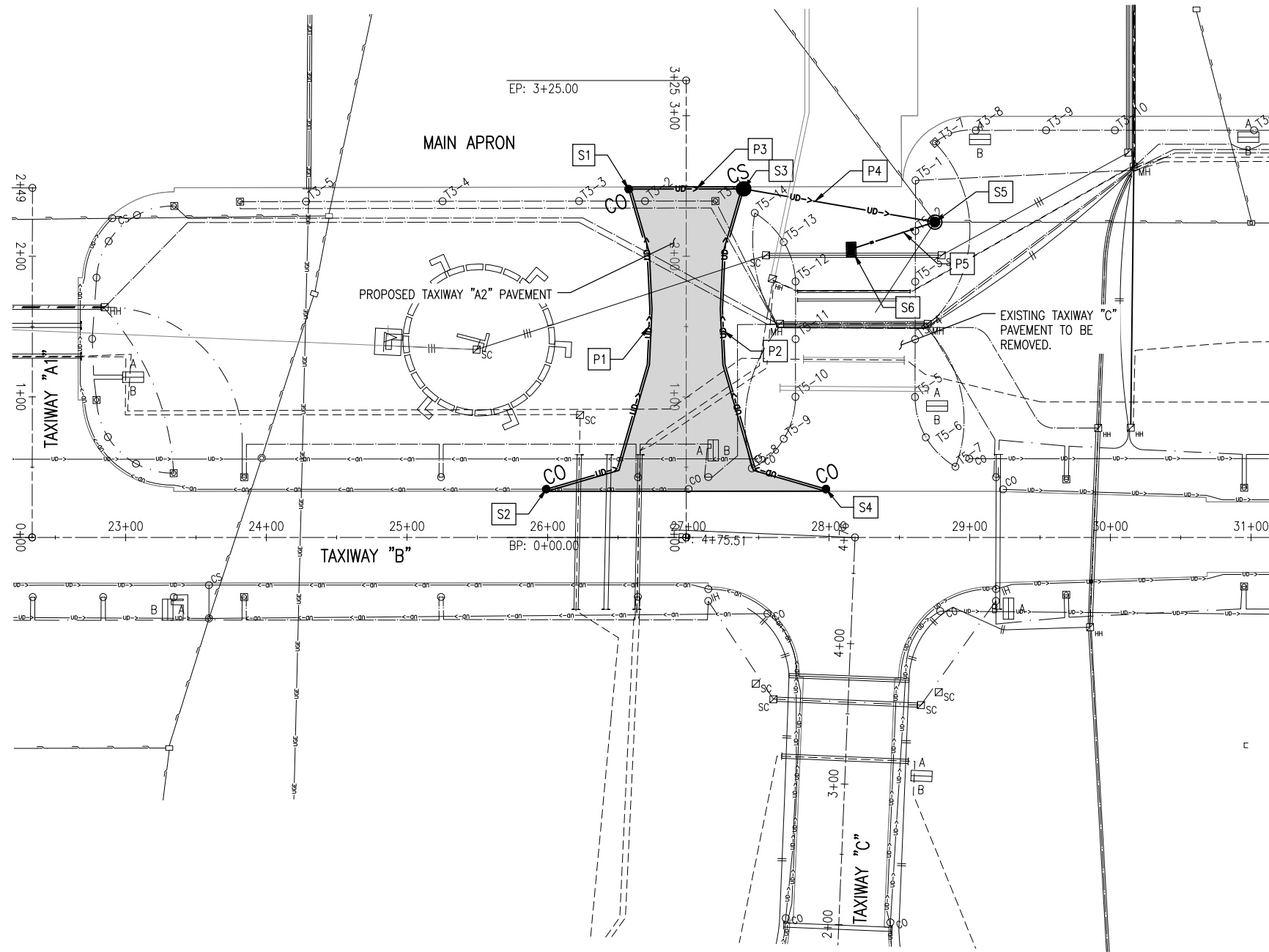
- PAVEMENT RUBBLIZATION AND RESURFACING AREA
- AR705630 UNDERDRAIN INSPECTION HOLE
- AR705640 UNDERDRAIN CLEANOUT
- AR705635 UNDERDRAIN COLLECTION STRUCTURE
- AR705526 6" PERFORATED UNDERDRAIN W/ SOCK
- AR705546 6" NON PERORATED UNDERDRAIN
- PROPOSED DRAINAGE ITEM (SEE DRAINAGE SCHEDULE)
- PROPOSED DRAINAGE ITEM (SEE DRAINAGE SCHEDULE)



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

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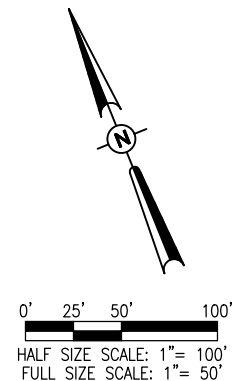
DRAINAGE STRUCTURE SCHEDULE							
S#	BASELINE	STA.	OFF		RIM	INVERT	TYPE
S1	TWY C North	2+47.8	40.9	LT	709.06	707.06	UNDERDRAIN CLEANOUT STRUCTURE
S2	TWY C North	0+34.4	99.4	LT	710.57	707.57	UNDERDRAIN CLEANOUT STRUCTURE
S3	TWY C North	2+47.9	40.9	RT	709.09	706.59	UNDERDRAIN COLLECTION STRUCTURE
S4	TWY C North	0+34.4	99.4	RT	710.94	707.94	UNDERDRAIN CLEANOUT STRUCTURE
S5	TWY C North	2+24.3	176.8	RT	707.88	704.37	PROPOSED MANHOLE - 5'
S6	TWY C North	2+05.0	116.7	RT	707.90	705.00	PROPOSED INLET-TY A
S10	TWY B	45+32.5	122.6	LT	715.00	712.30	UNDERDRAIN CLEANOUT STRUCTURE
S11	TWY B	41+34.4	29.4	LT	713.25	710.09	UNDERDRAIN INSPECTION HOLE
S12	TWY B	41+96.3	217.7	LT	711.22	707.11	UNDERDRAIN COLLECTION STRUCTURE
S13	RWY 624	39+29.5	56.6	LT	716.91	713.91	UNDERDRAIN CLEANOUT STRUCTURE
S14	TWY B	38+97.2	150.7	RT	712.65	709.51	UNDERDRAIN COLLECTION STRUCTURE
S15	TWY B	43+03.2	37.2	RT	715.40	711.64	UNDERDRAIN INSPECTION HOLE
S20	RWY 624	40+070.0	121.9	RT	716.59	714.51	UNDERDRAIN CLEANOUT STRUCTURE
S21	TWY B	45+86.8	30.0	RT	715.22	712.58	UNDERDRAIN INSPECTION HOLE
S22	TWY B2	4+81.3	34.3	LT	713.69	711.00	EXISTING CLEANOUT STRUCTURE
S30	RWY 624	46+27.9	54.5	RT	714.87	712.37	UNDERDRAIN CLEANOUT STRUCTURE
S31	TWY B	50+00.0	26.8	LT	714.06	711.07	UNDERDRAIN INSPECTION HOLE
S32	TWY B	55+00.0	26.8	LT	713.12	709.46	UNDERDRAIN INSPECTION HOLE
S33	TWY B	60+00.0	26.8	LT	712.15	707.86	UNDERDRAIN COLLECTION STRUCTURE
S34	TWY B	66+00.0	26.8	LT	711.82	709.32	UNDERDRAIN CLEANOUT STRUCTURE (DUAL)
S35	TWY B	71+00.0	26.8	LT	711.99	707.92	UNDERDRAIN COLLECTION STRUCTURE
S37	TWY B	75+22.0	26.8	LT	711.82	709.32	UNDERDRAIN CLEANOUT STRUCTURE
S38	TWY B3	1+50.0	34.0	RT	713.43	710.93	UNDERDRAIN CLEANOUT STRUCTURE
S40	TWY B2	1+55.0	157.4	RT	716.03	713.53	UNDERDRAIN CLEANOUT STRUCTURE
S41	TWY B	50+39.9	26.8	RT	713.77	711.17	UNDERDRAIN INSPECTION HOLE
S42	TWY B	55+00.0	26.8	RT	713.13	709.68	UNDERDRAIN INSPECTION HOLE
S43	TWY B	60+00.0	26.8	RT	712.24	707.67	UNDERDRAIN COLLECTION STRUCTURE
S44	TWY B	66+00.0	26.8	RT	711.92	709.43	UNDERDRAIN CLEANOUT STRUCTURE (DUAL)
S45	TWY B	71+00.0	26.8	RT	711.99	707.83	UNDERDRAIN COLLECTION STRUCTURE
S46	TWY B	74+38.1	63.5	RT	711.64	709.19	UNDERDRAIN CLEANOUT STRUCTURE
S47	TWY B3	1+55.0	158.5	LT	713.29	711.29	UNDERDRAIN CLEANOUT STRUCTURE
S50	TWY B	60+00.0	149.6	RT	708.69	707.24	EXISTING INLET
S60	TWY B	71+01.0	149.7	RT	708.77	707.48	EXISTING INLET



DRAINAGE PIPE SCHEDULE					
P#	FROM	TO	L.F.	SLOPE	TYPE
P1	S2	S1	256.3	0.20%	6" PERFORATED UNDERDRAIN W/SOCK
P2	S4	S3	256.3	0.53%	6" PERFORATED UNDERDRAIN W/SOCK
P3	S1	S3	82	0.57%	6" NON-PERFORATED UNDERDRAIN
P4	S3	S5	138	1.61%	6" NON-PERFORATED UNDERDRAIN
P5	S6	S5	64	1.00%	12" RCP STORM SEWER
P10	S10	S11	435	0.50%	6" PERFORATED UNDERDRAIN W/SOCK
P11	S11	S12	248.1	1.72%	6" PERFORATED UNDERDRAIN W/SOCK
P12	S15	S14	452	0.47%	6" PERFORATED UNDERDRAIN W/SOCK
P13	S13	S15	483	0.47%	6" PERFORATED UNDERDRAIN W/SOCK
P20	S20	S21	584	0.33%	6" PERFORATED UNDERDRAIN W/SOCK
P21	S21	S22	478	0.33%	6" PERFORATED UNDERDRAIN W/SOCK
P31	S30	S31	407.9	0.32%	6" PERFORATED UNDERDRAIN W/SOCK
P32	S31	S32	502.3	0.32%	6" PERFORATED UNDERDRAIN W/SOCK
P33	S32	S33	500	0.32%	6" PERFORATED UNDERDRAIN W/SOCK
P34	S34	S33	600	0.25%	6" PERFORATED UNDERDRAIN W/SOCK
P35	S34	S35	500	0.28%	6" PERFORATED UNDERDRAIN W/SOCK
P36	S37	S35	422	0.33%	6" PERFORATED UNDERDRAIN W/SOCK
P37	S38	S37	425	0.38%	6" PERFORATED UNDERDRAIN W/SOCK
P40	S40	S41	576	0.41%	6" PERFORATED UNDERDRAIN W/SOCK
P41	S41	S42	361	0.41%	6" PERFORATED UNDERDRAIN W/SOCK
P42	S42	S43	500	0.41%	6" PERFORATED UNDERDRAIN W/SOCK
P43	S44	S43	600	0.29%	6" PERFORATED UNDERDRAIN W/SOCK
P44	S44	S45	500	0.32%	6" PERFORATED UNDERDRAIN W/SOCK
P45	S46	S45	344.6	0.46%	6" PERFORATED UNDERDRAIN W/SOCK
P46	S47	S46	408	0.46%	6" PERFORATED UNDERDRAIN W/SOCK
P50	S33	S43	54	0.35%	6" NON-PERFORATED UNDERDRAIN IN 8" STEEL CASING
P51	S43	S50	123	0.35%	6" NON-PERFORATED UNDERDRAIN
P61	S35	S45	54	0.28%	6" NON-PERFORATED UNDERDRAIN IN 8" STEEL CASING
P62	S45	S60	123	0.28%	6" NON-PERFORATED UNDERDRAIN

- EXISTING LEGEND**
- EXISTING PAVEMENT
 - EXISTING UNDERDRAIN
 - EXISTING UNDERDRAIN CLEANOUT
 - EXISTING STORM SEWER
 - EXISTING ELECTRICAL DUCT
 - EXISTING AIRFIELD LIGHTING ELECTRICAL CABLE
 - EXISTING REIL
 - EXISTING STAKE MOUNTED TAXIWAY LIGHT
 - EXISTING BASE MOUNTED TAXIWAY LIGHT
 - EXISTING STAKE MOUNTED RUNWAY LIGHT
 - EXISTING BASE MOUNTED RUNWAY LIGHT
 - EXISTING STAKE MOUNTED THRESHOLD LIGHT
 - EXISTING BASE MOUNTED THRESHOLD LIGHT

- DRAINAGE LEGEND**
- PROPOSED PAVEMENT AREA
 - AR705630 UNDERDRAIN INSPECTION HOLE
 - AR705640 UNDERDRAIN CLEANOUT
 - AR705635 UNDERDRAIN COLLECTION STRUCTURE
 - AR751550 MANHOLE 5'
 - AR751410 INLET
 - AR705526 6" PERFORATED UNDERDRAIN W/ SOCK
 - AR705546 6" NON PERORATED UNDERDRAIN
 - PROPOSED DRAINAGE ITEM (SEE DRAINAGE SCHEDULE)
 - PROPOSED DRAINAGE ITEM (SEE DRAINAGE SCHEDULE)



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

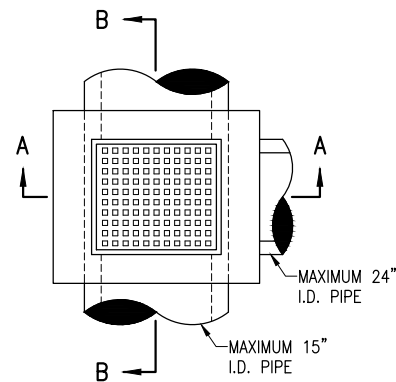
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
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ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-130-DRPL.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**UNDERDRAIN PLAN
TAXIWAY A2**

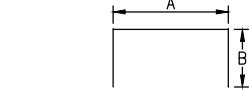


INLET NOTES

INLET TO BE CONSTRUCTED OF STRUCTURAL P.C. CONCRETE. THE CONTRACT UNIT PRICE PER INLET SHALL INCLUDE THE FRAME, GRATE AND STEPS IN PLACE AND COMPLETE PER UNIT.

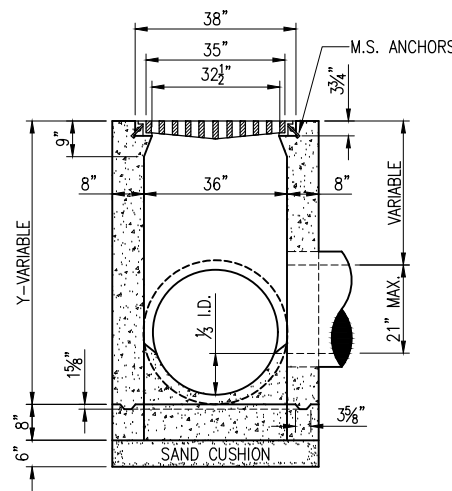
1/2" CHAMFER TO BE USED ON ALL EXPOSED CORNERS OF INLETS. BARS TO BE INSTALLED 2" FROM FACE OF WALLS.

THE FRAME AND GRATE SHALL BE NEENAH R-3475-A, DEETER 2425-E, OR APPR. EQUAL.



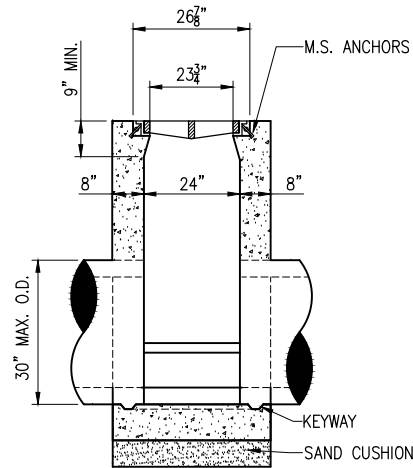
REINFORCING STEEL BAR TYPE

REINFORCING BARS SCHEDULE					
TYPE	QUANTITY PER INLET	DIMENSIONS		SIZE	APPROX. WT. OF BARS IN INLET
A		A	B		
A	2	3'-4"	2'-4"	#5	16.7

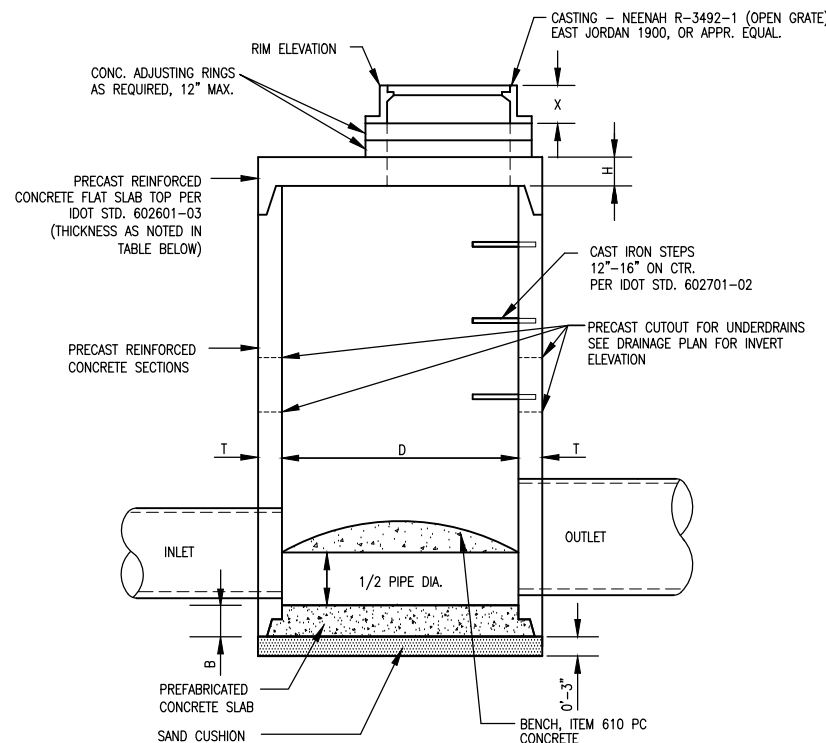


SECTION A-A

TYPE A INLET



SECTION B-B



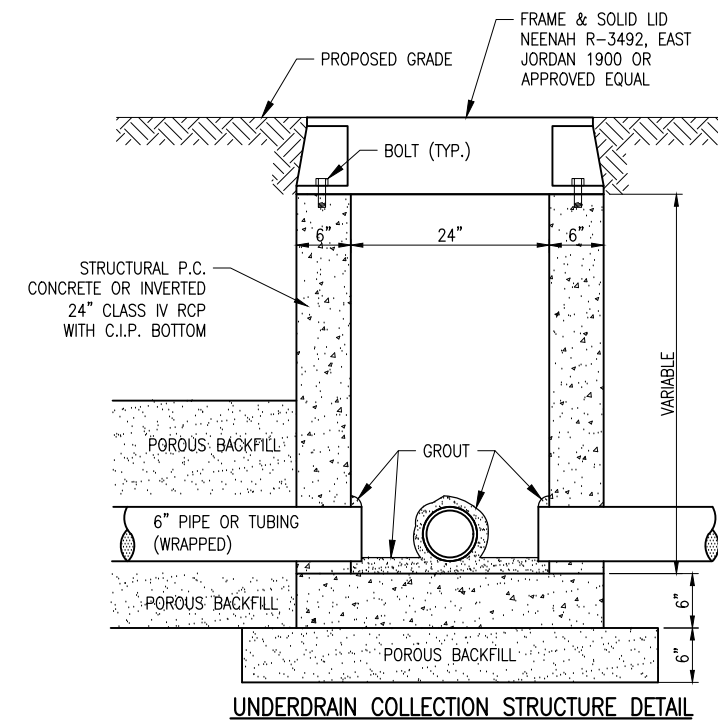
INSIDE DIA. "D" (IN.)	WALL THICKNESS "T" (IN.)	TOP THICKNESS "H" (IN.)	BOTTOM THICKNESS "B" (IN.)
60	5	8	8

MANHOLE WITH FLAT SLAB TOP

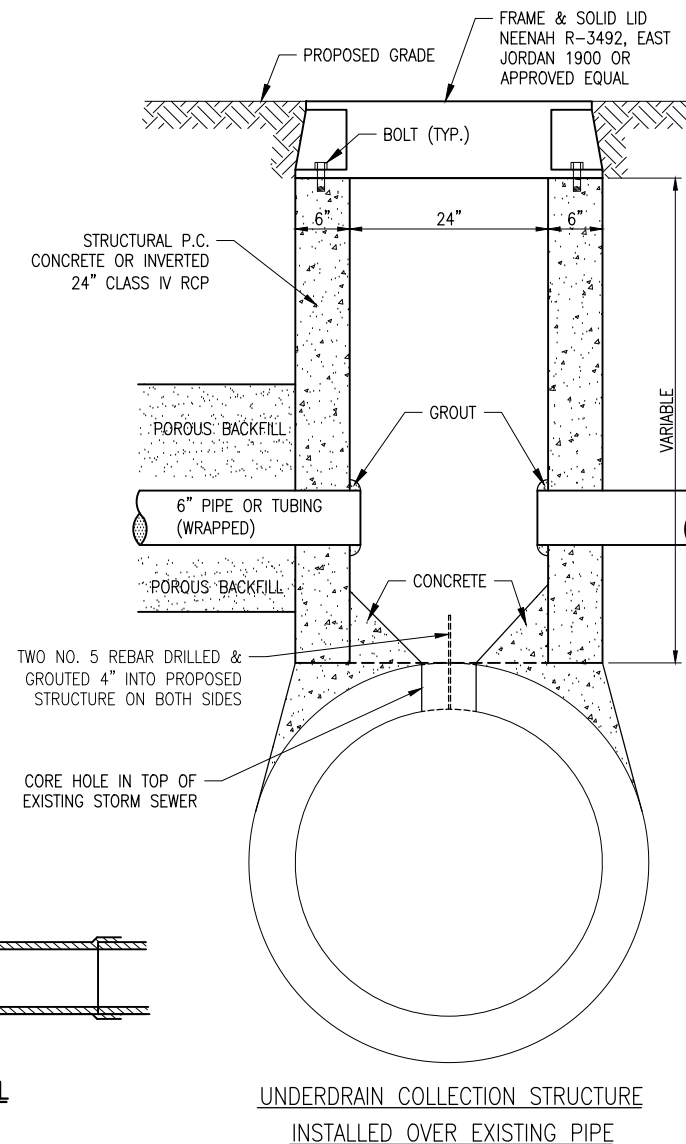
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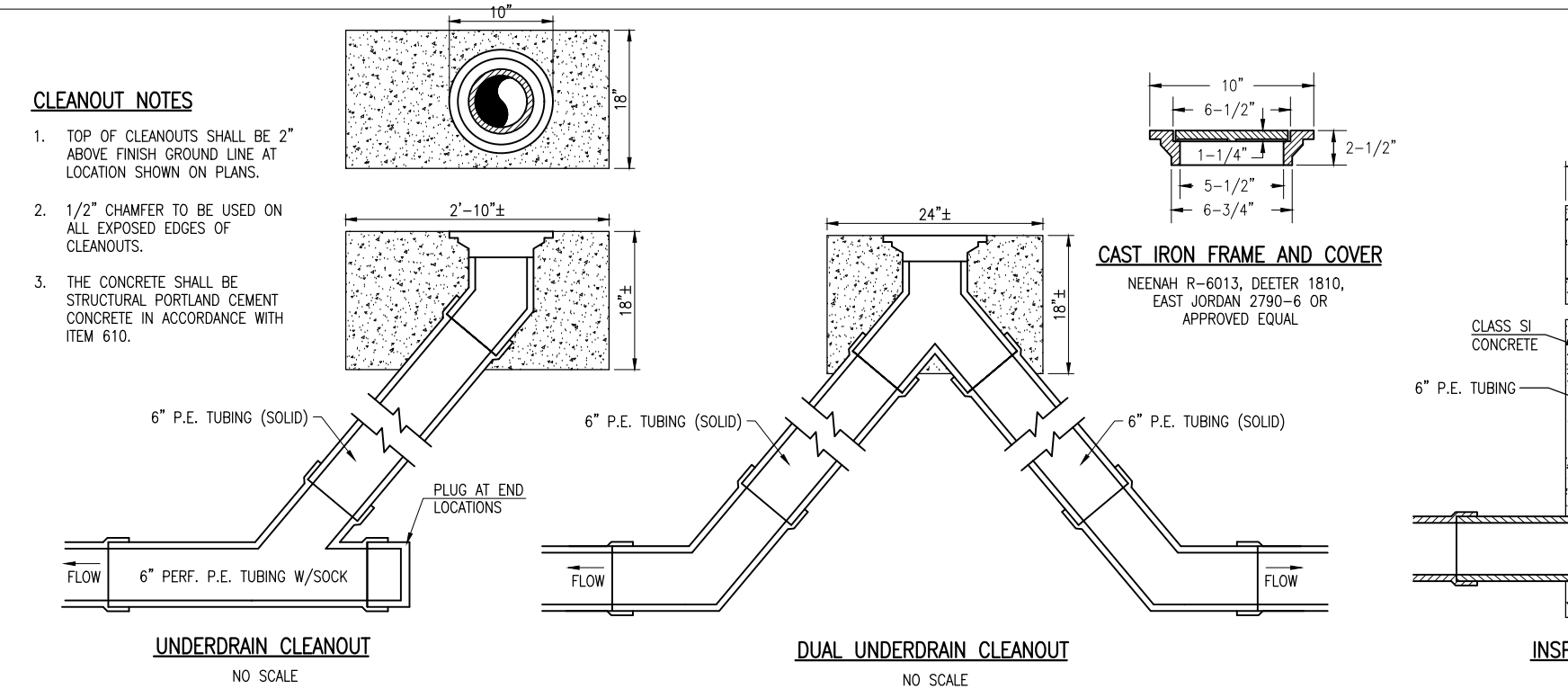
- ALL STORM SEWER AND UNDERDRAIN CONNECTIONS ARE INCIDENTAL TO THE APPLICABLE PIPE OR STRUCTURE PAY ITEM.
- UNDERDRAIN COLLECTION STRUCTURE WILL BE PLACED IMMEDIATELY ADJACENT TO THE PROPOSED COURSE OF RUBBLIZED 501 CONCRETE PAVEMENT (HORIZONTALLY) AND THE TUBING DIRECTED TO INTERSECT AS SHOWN.



UNDERDRAIN COLLECTION STRUCTURE DETAIL



**UNDERDRAIN COLLECTION STRUCTURE
INSTALLED OVER EXISTING PIPE**



UNDERDRAIN CLEANOUT

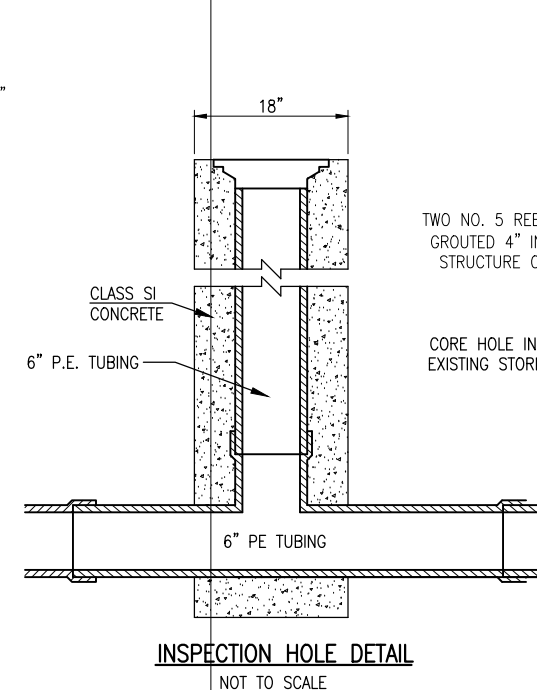
NO SCALE

DUAL UNDERDRAIN CLEANOUT

NO SCALE

CAST IRON FRAME AND COVER

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



INSPECTION HOLE DETAIL

NOT TO SCALE

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

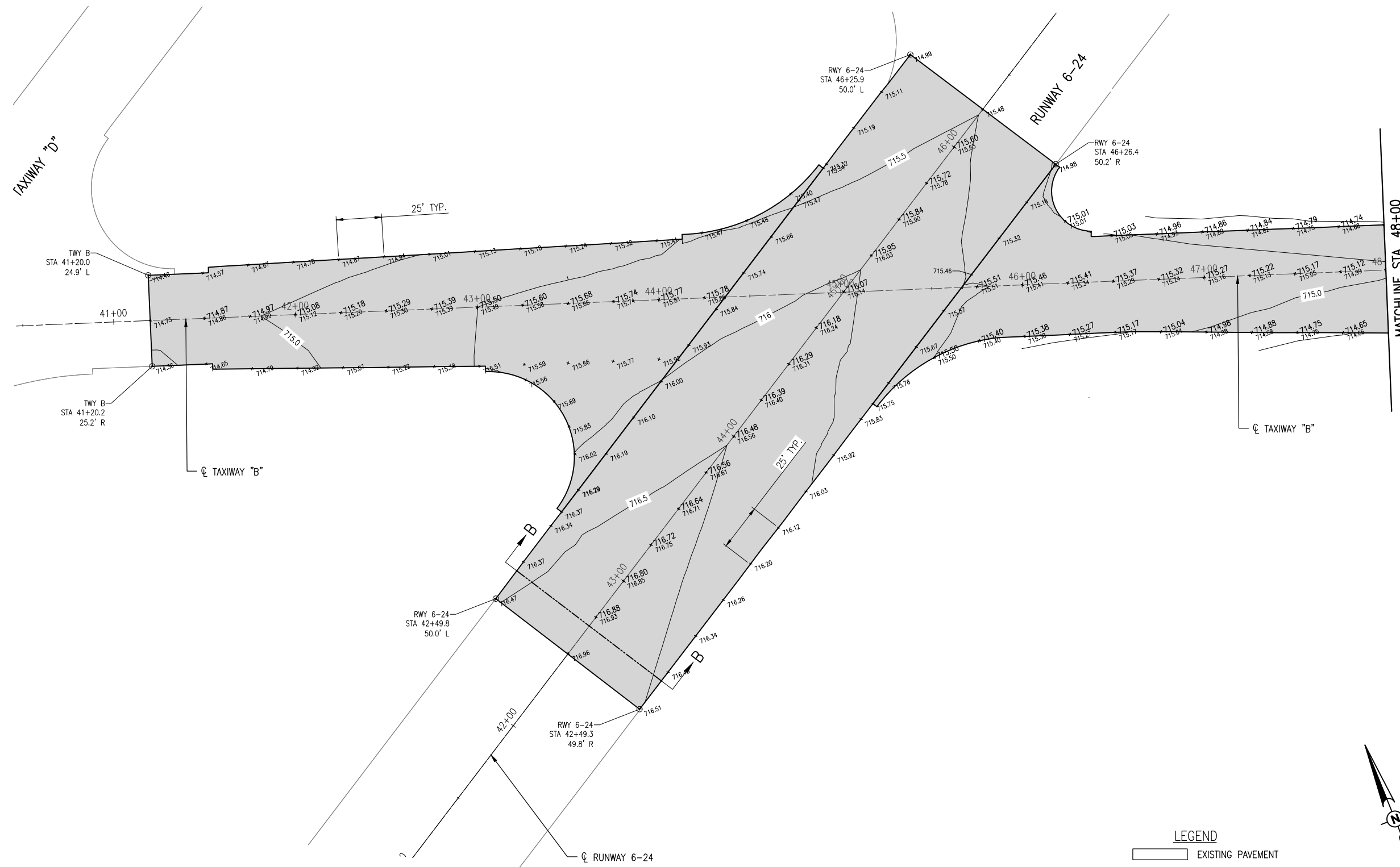
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-131-DRN.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

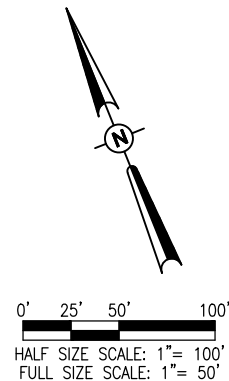
SHEET TITLE

DRAINAGE DETAILS



LEGEND

	EXISTING PAVEMENT
	PROPOSED PAVEMENT
	EXISTING GRADE
	PROPOSED GRADE
	PROPOSED CONTOURS



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

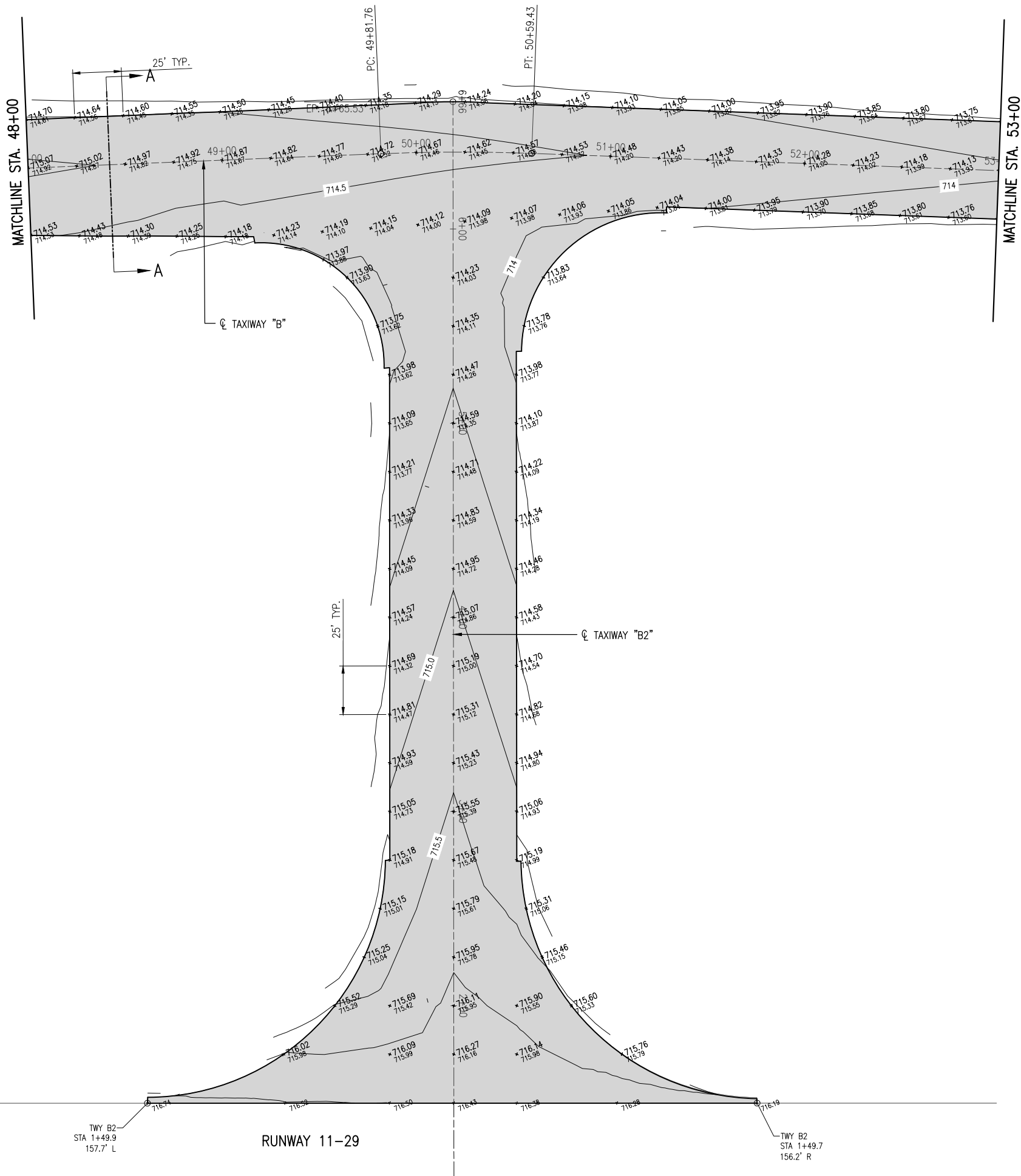
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019

PROJECT NO: 19A0001
CAD FILE: C-161-STK.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

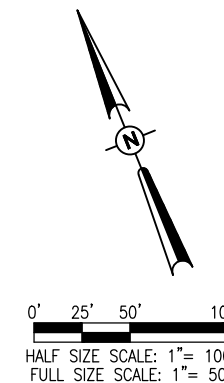
SHEET TITLE

**STAKING PLAN
TAXIWAY B STA.
41+00 TO 48+00 AND
RUNWAY 6-24**



LEGEND

	EXISTING PAVEMENT
	PROPOSED PAVEMENT
+713.75	EXISTING GRADE
*713.75	PROPOSED GRADE
— 715 —	PROPOSED CONTOURS



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

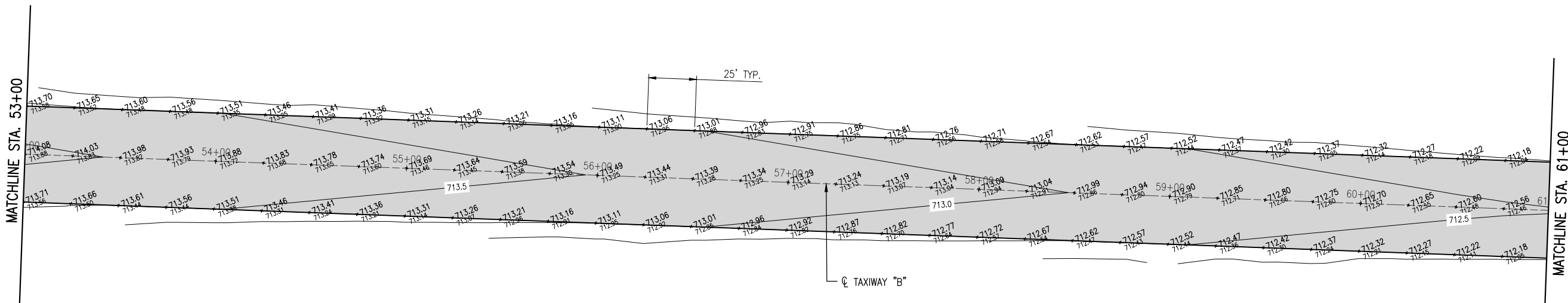
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 SBG Project No:
 3-17-SBGP-159
 Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
 PROJECT NO: 19A0001
 CAD FILE: C-161-STK.DWG
 DESIGN BY: JAP 05/2018
 DRAWN BY: JAP 05/2018
 REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**STAKING PLAN
TAXIWAY B STA.
48+00 TO 53+00 AND
TAXIWAY B2**



PHASE 2:
RECONSTRUCT
TAXIWAY B

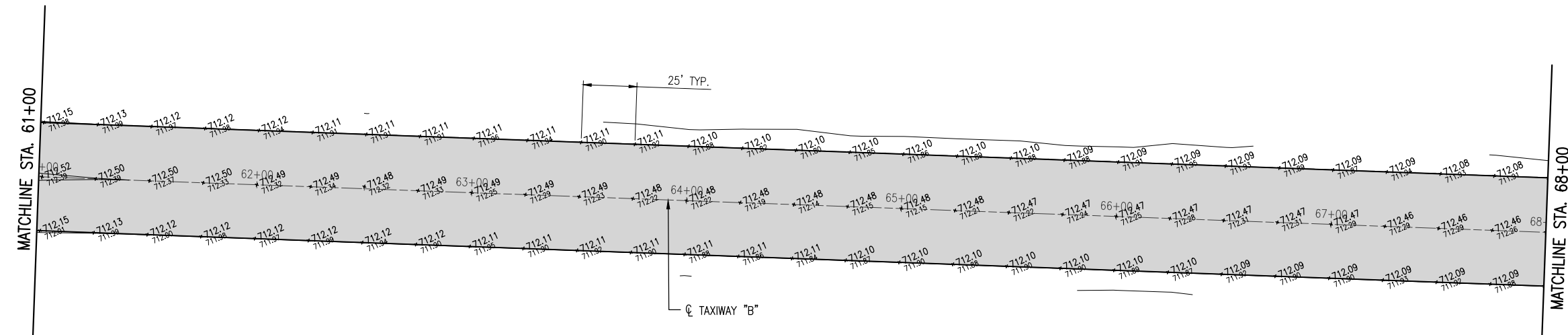
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SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
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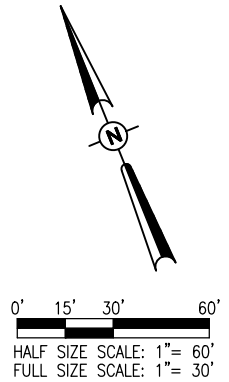
ISSUE: 11/15/2019
PROJECT NO: 19A0001
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DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

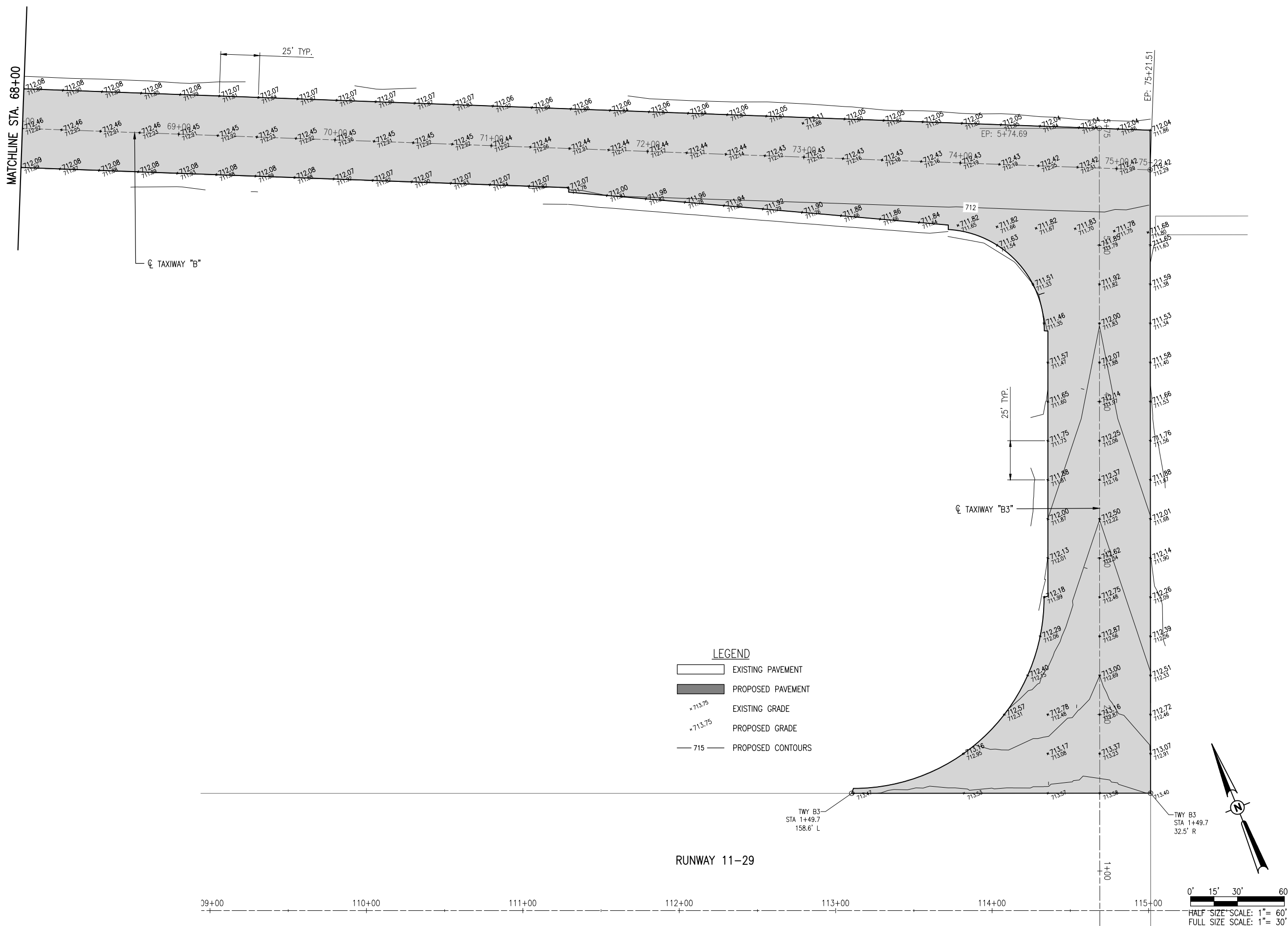
SHEET TITLE

STAKING PLAN
TAXIWAY B STA.
53+00 TO 68+00



- LEGEND**
- EXISTING PAVEMENT
 - PROPOSED PAVEMENT
 - EXISTING GRADE
 - PROPOSED GRADE
 - 715 PROPOSED CONTOURS





**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

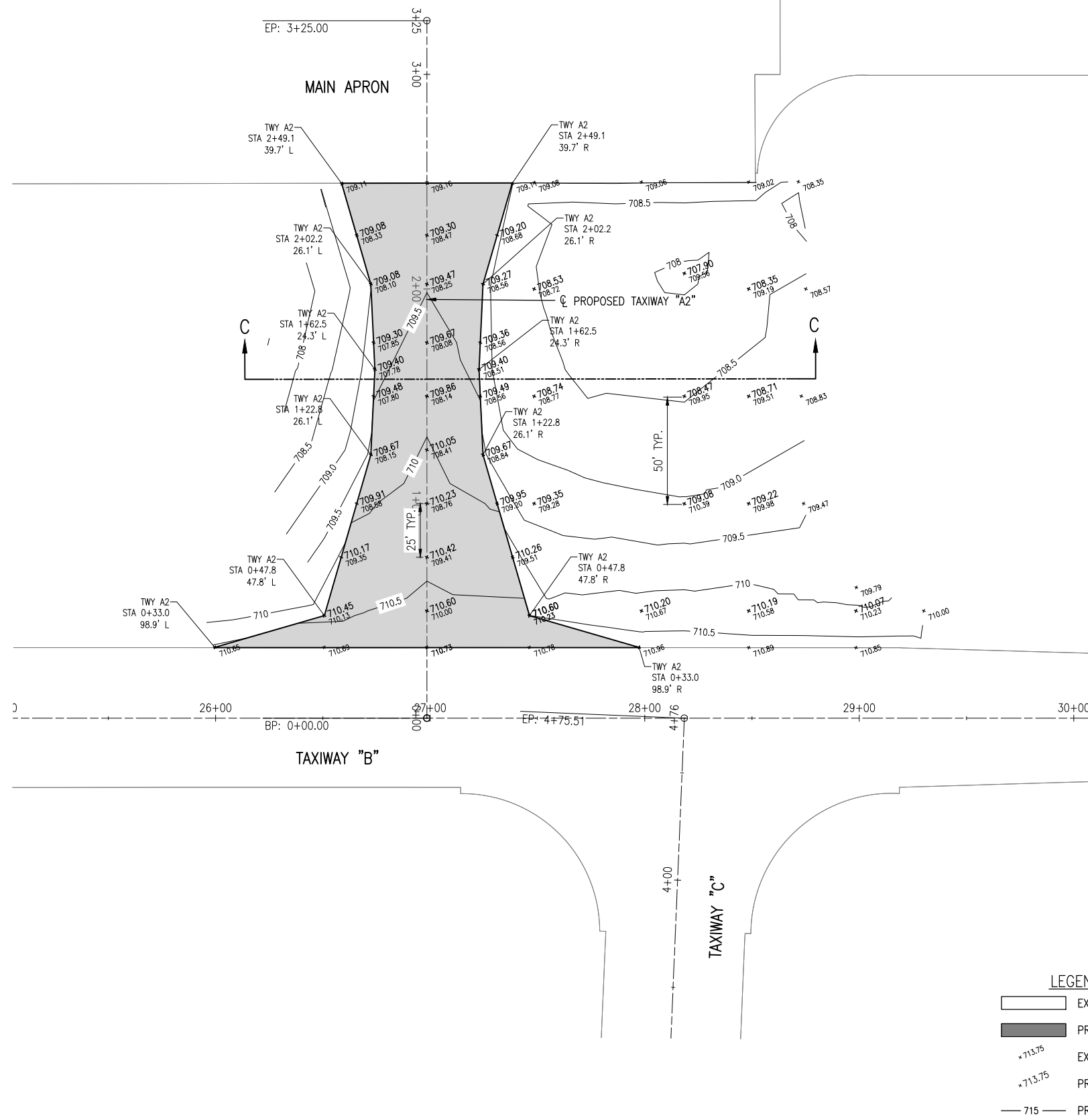
ISSUE: 11/15/2019

PROJECT NO: 19A0001
CAD FILE: C-161-STK.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**STAKING PLAN
TAXIWAY B STA.
68+00 TO 75+22 AND
TAXIWAY B3**

NOV 13, 2019 8:53 AM SCHW01206
1193JOBS119A000119A0001D\CAD\AIRPORT\SHHEET\C-161-STK.DWG



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

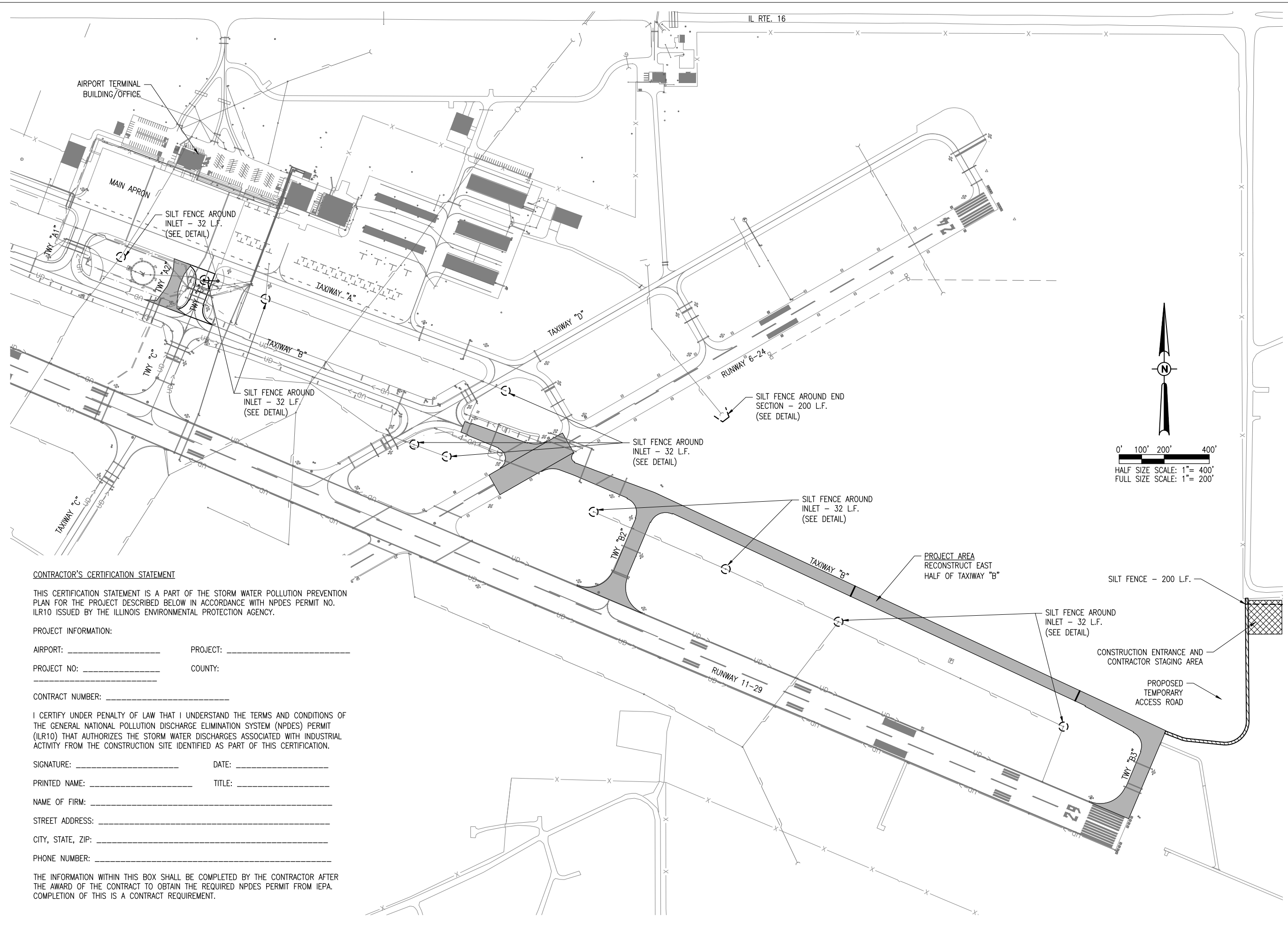
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-161-STK.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**STAKING PLAN
TAXIWAY A2**

NOV 13, 2019 8:53 AM SCHW01206
I:\19\JOBS\19A0001\19A0001D\CAD\AIRPORT\STK\161-STK.DWG



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 (LR10) 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: _____

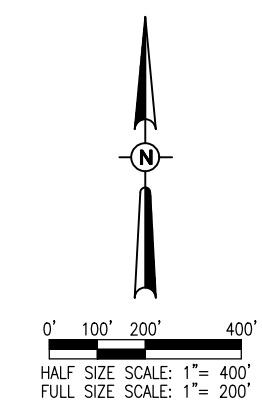
NAME OF FIRM: _____

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.



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

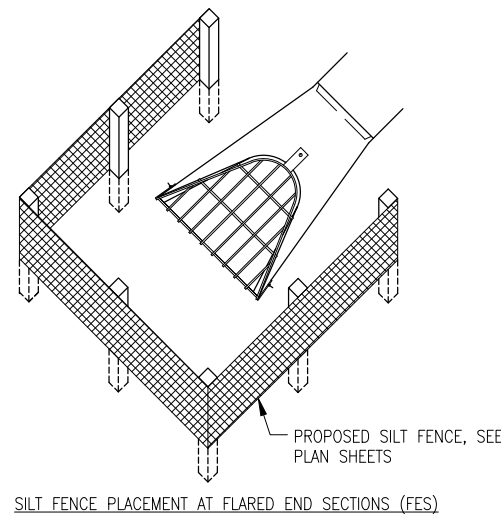
ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-591-SWP.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

**STORMWATER
POLLUTION
PREVENTION PLAN**

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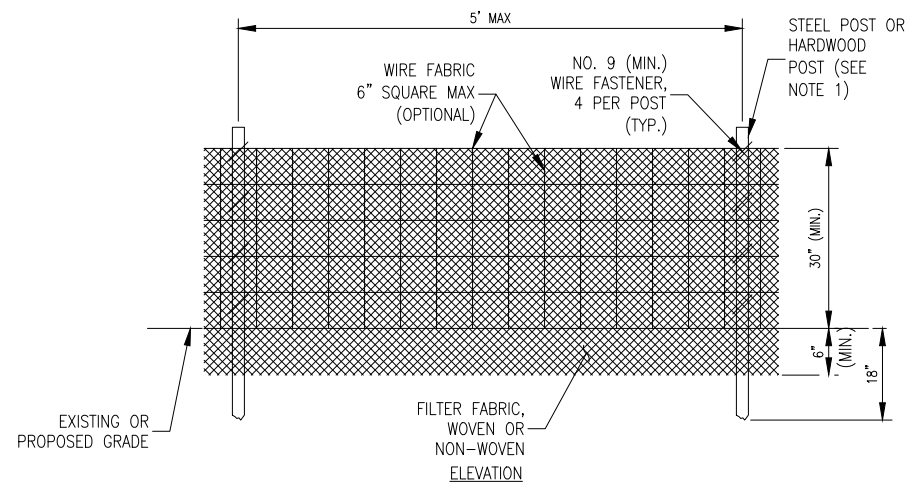
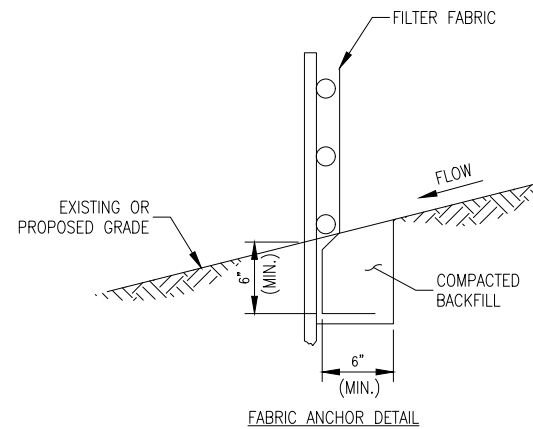
NOTES:

- 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.



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.

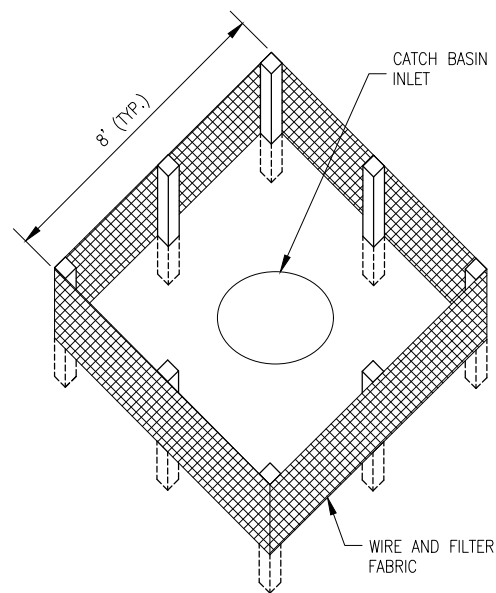
POLLUTION CONTROL ITEMS SHALL BE PROVIDED AS NOTED ON THE STORM WATER POLLUTION PREVENTION PLAN AND IN THE STORM WATER POLLUTION PREVENTION DETAILS AND AS DIRECTED BY THE ENGINEER. THE LIMITS OF SUCH MEASURES SHALL BE STAKED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. SUCH LIMITS MAY 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.

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.



NOTES:

- FILTER FABRIC SHALL BE EMBEDDED 8" INTO THE SOIL.
- INSPECTION SHALL BE FREQUENT AND REPAIR/REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- SILT FENCE SHALL BE REMOVED WHEN IT HAS SERVED ITS USEFULNESS AT THE DIRECTION OF THE AIRPORT REPRESENTATIVE OR OWNER SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE. CONTRACTOR SHALL PLACE SEED AND MULCH PER LANDSCAPING PLAN. COST OF REMOVAL SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR SILT FENCE.
- AREAS DISTURBED OUTSIDE OF CONSTRUCTION LIMITS DURING PLACEMENT OF INLET PROTECTION TO BE RE-GRADED, SEEDED AND MULCHED, COST INCIDENTAL TO SILT FENCE.
- FENCE AND POSTS SHALL BE REMOVED WHEN DIRECTED AT PROJECT END.
- PAID UNDER AR156510 SILT FENCE.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

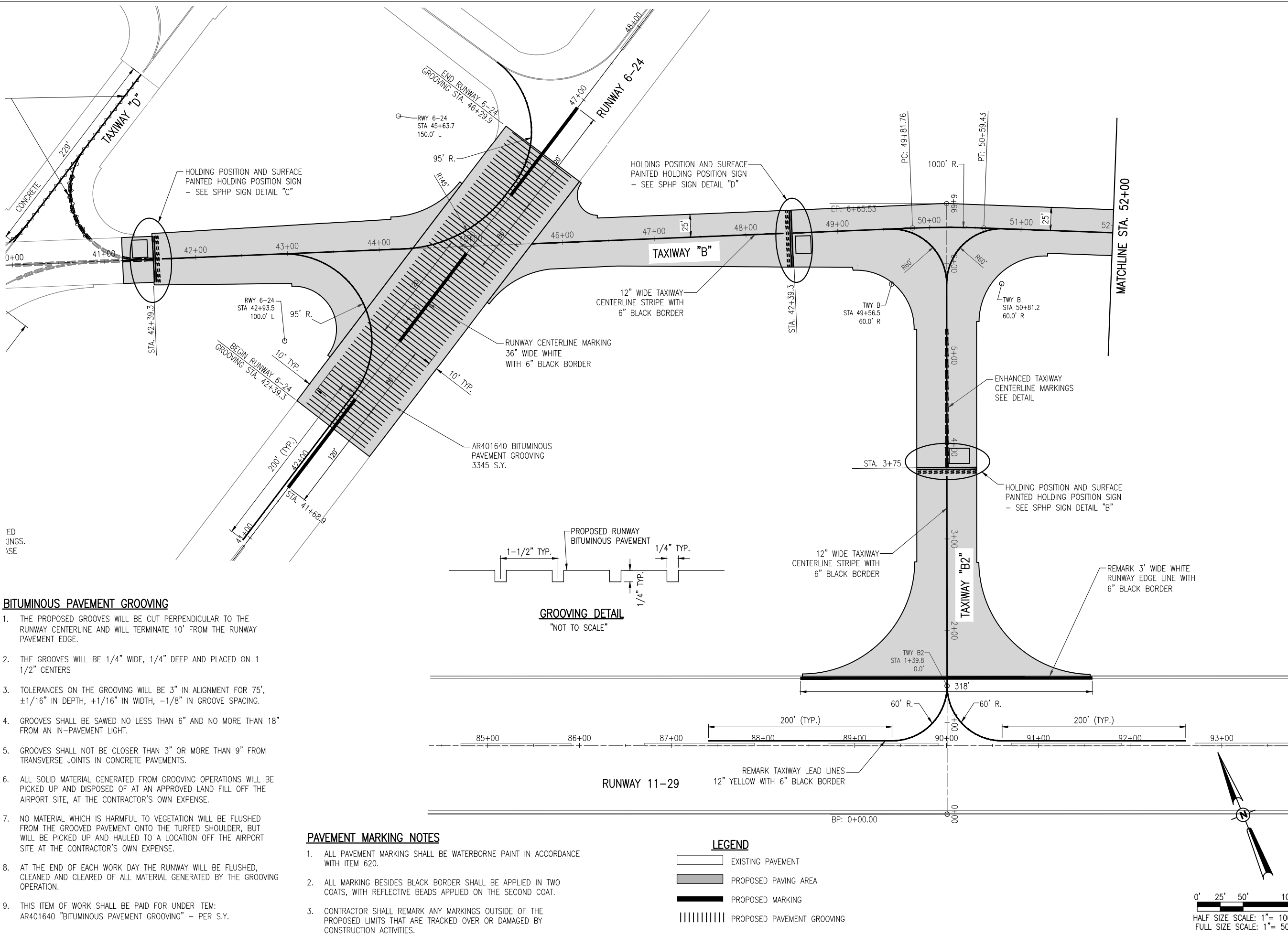
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-591-SWP.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

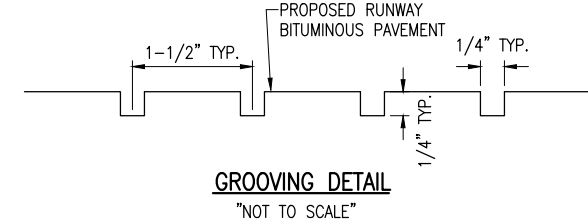
**STORMWATER
POLLUTION
PREVENTION PLAN
DETAILS**



ED
INGRS.
USE

BITUMINOUS PAVEMENT GROOVING

1. THE PROPOSED GROOVES WILL BE CUT PERPENDICULAR TO THE RUNWAY CENTERLINE AND WILL TERMINATE 10' FROM THE RUNWAY PAVEMENT EDGE.
2. THE GROOVES WILL BE 1/4" WIDE, 1/4" DEEP AND PLACED ON 1 1/2" CENTERS
3. TOLERANCES ON THE GROOVING WILL BE 3" IN ALIGNMENT FOR 75', ±1/16" IN DEPTH, +1/16" IN WIDTH, -1/8" IN GROOVE SPACING.
4. GROOVES SHALL BE SAWED NO LESS THAN 6" AND NO MORE THAN 18" FROM AN IN-PAVEMENT LIGHT.
5. GROOVES SHALL NOT BE CLOSER THAN 3" OR MORE THAN 9" FROM TRANSVERSE JOINTS IN CONCRETE PAVEMENTS.
6. ALL SOLID MATERIAL GENERATED FROM GROOVING OPERATIONS WILL BE PICKED UP AND DISPOSED OF AT AN APPROVED LAND FILL OFF THE AIRPORT SITE, AT THE CONTRACTOR'S OWN EXPENSE.
7. NO MATERIAL WHICH IS HARMFUL TO VEGETATION WILL BE FLUSHED FROM THE GROOVED PAVEMENT ONTO THE TURFED SHOULDER, BUT WILL BE PICKED UP AND HAULED TO A LOCATION OFF THE AIRPORT SITE AT THE CONTRACTOR'S OWN EXPENSE.
8. AT THE END OF EACH WORK DAY THE RUNWAY WILL BE FLUSHED, CLEANED AND CLEARED OF ALL MATERIAL GENERATED BY THE GROOVING OPERATION.
9. THIS ITEM OF WORK SHALL BE PAID FOR UNDER ITEM: AR401640 "BITUMINOUS PAVEMENT GROOVING" - PER S.Y.

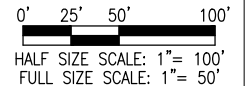


PAVEMENT MARKING NOTES

1. ALL PAVEMENT MARKING SHALL BE WATERBORNE PAINT IN ACCORDANCE WITH ITEM 620.
2. ALL MARKING BESIDES BLACK BORDER SHALL BE APPLIED IN TWO COATS, WITH REFLECTIVE BEADS APPLIED ON THE SECOND COAT.
3. CONTRACTOR SHALL REMARK ANY MARKINGS OUTSIDE OF THE PROPOSED LIMITS THAT ARE TRACKED OVER OR DAMAGED BY CONSTRUCTION ACTIVITIES.

LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVING AREA
- PROPOSED MARKING
- PROPOSED PAVEMENT GROOVING



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

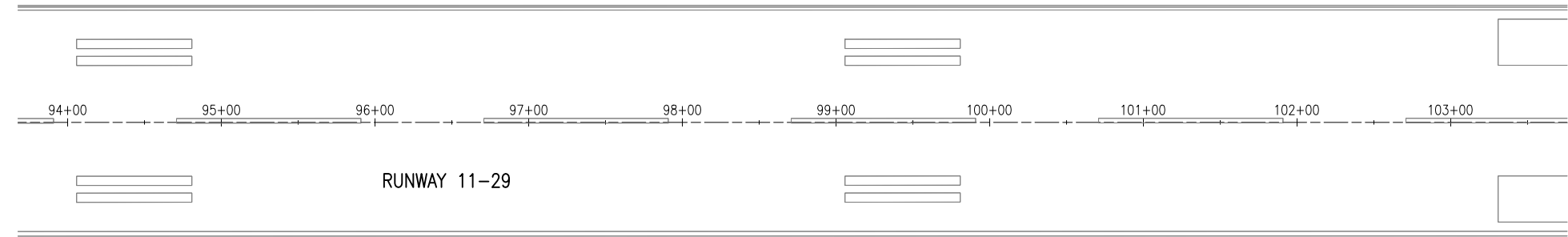
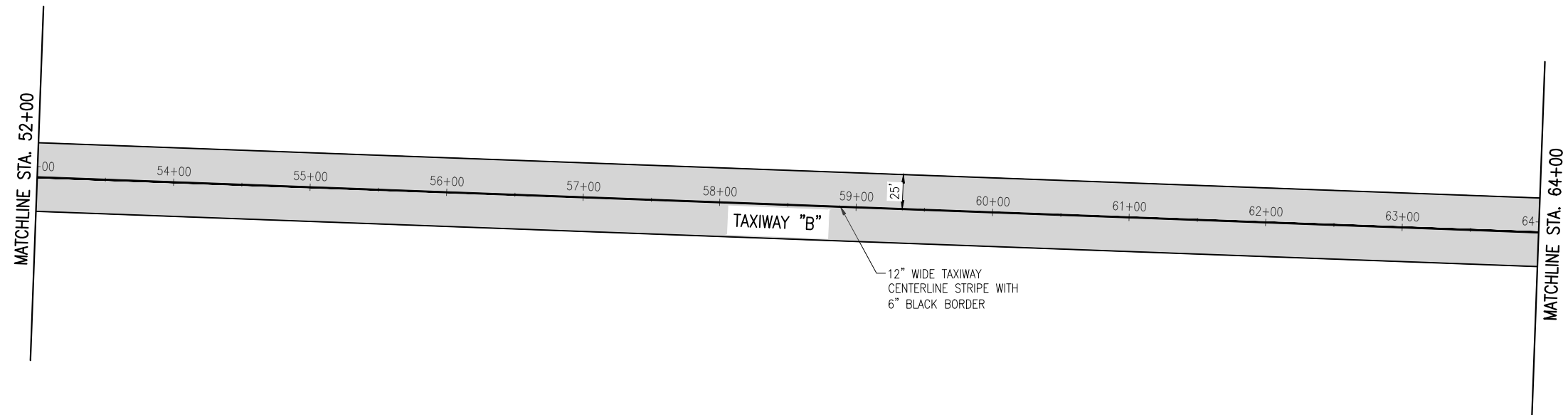
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-151-MRK.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**MARKING PLAN
TAXIWAY B STA.
41+00 TO 52+00 AND
TAXIWAY B2**

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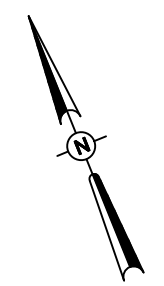


PAVEMENT MARKING NOTES

1. ALL PAVEMENT MARKING SHALL BE WATERBORNE PAINT IN ACCORDANCE WITH ITEM 620.
2. ALL MARKING BESIDES BLACK BORDER SHALL BE APPLIED IN TWO COATS, WITH REFLECTIVE BEADS APPLIED ON THE SECOND COAT.
3. CONTRACTOR SHALL REMARK ANY MARKINGS OUTSIDE OF THE PROPOSED LIMITS THAT ARE TRACKED OVER OR DAMAGED BY CONSTRUCTION ACTIVITIES.

LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVING AREA
- PROPOSED MARKING



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

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-151-MRK.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**MARKING PLAN
TAXIWAY B STA.
52+00 TO 64+00**

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

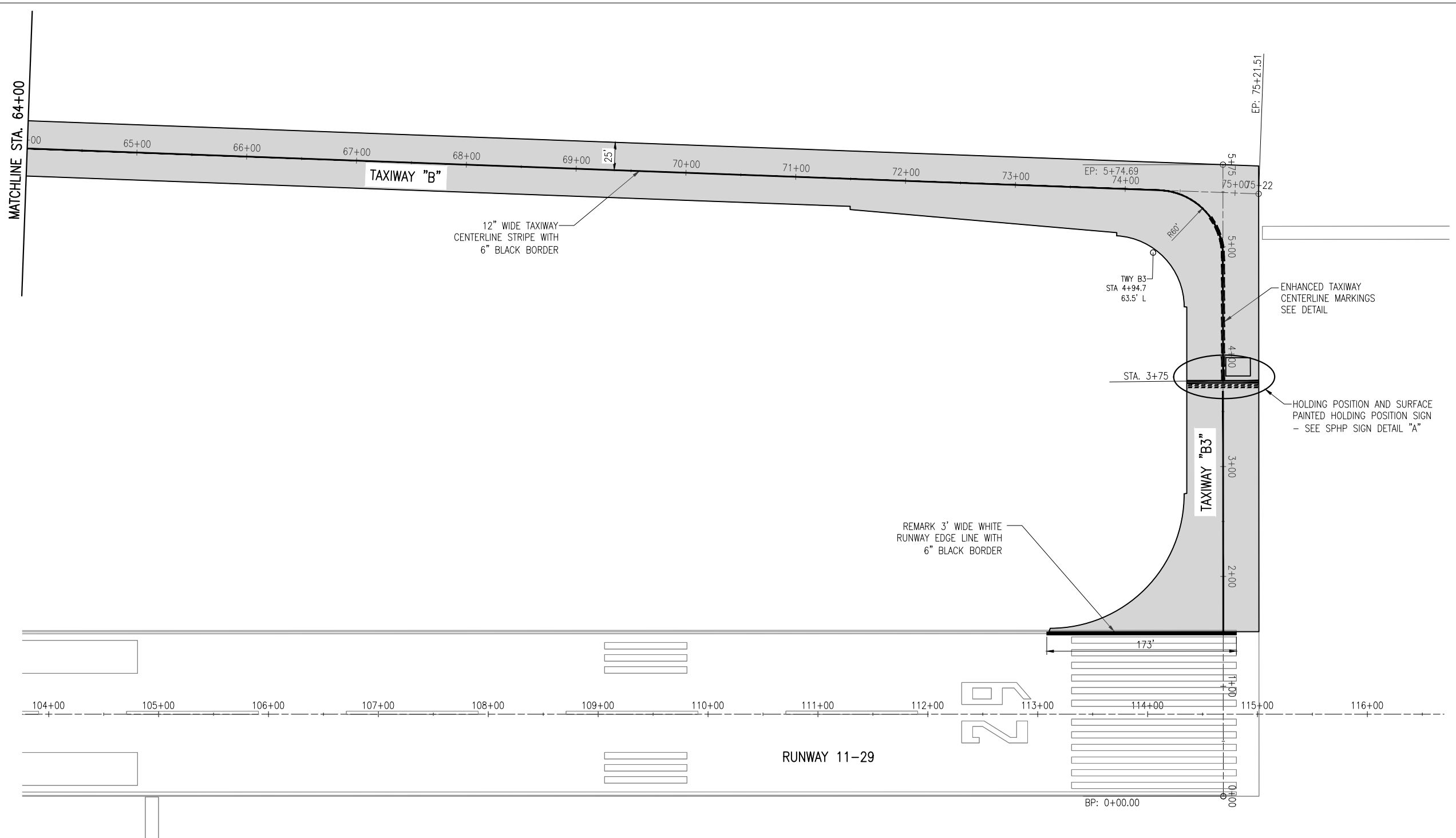
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-151-MRK.DWG
DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**MARKING PLAN
TAXIWAY B STA.
64+00 TO 75+22 AND
TAXIWAY B3**

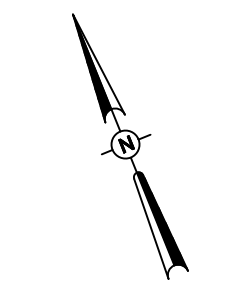


PAVEMENT MARKING NOTES

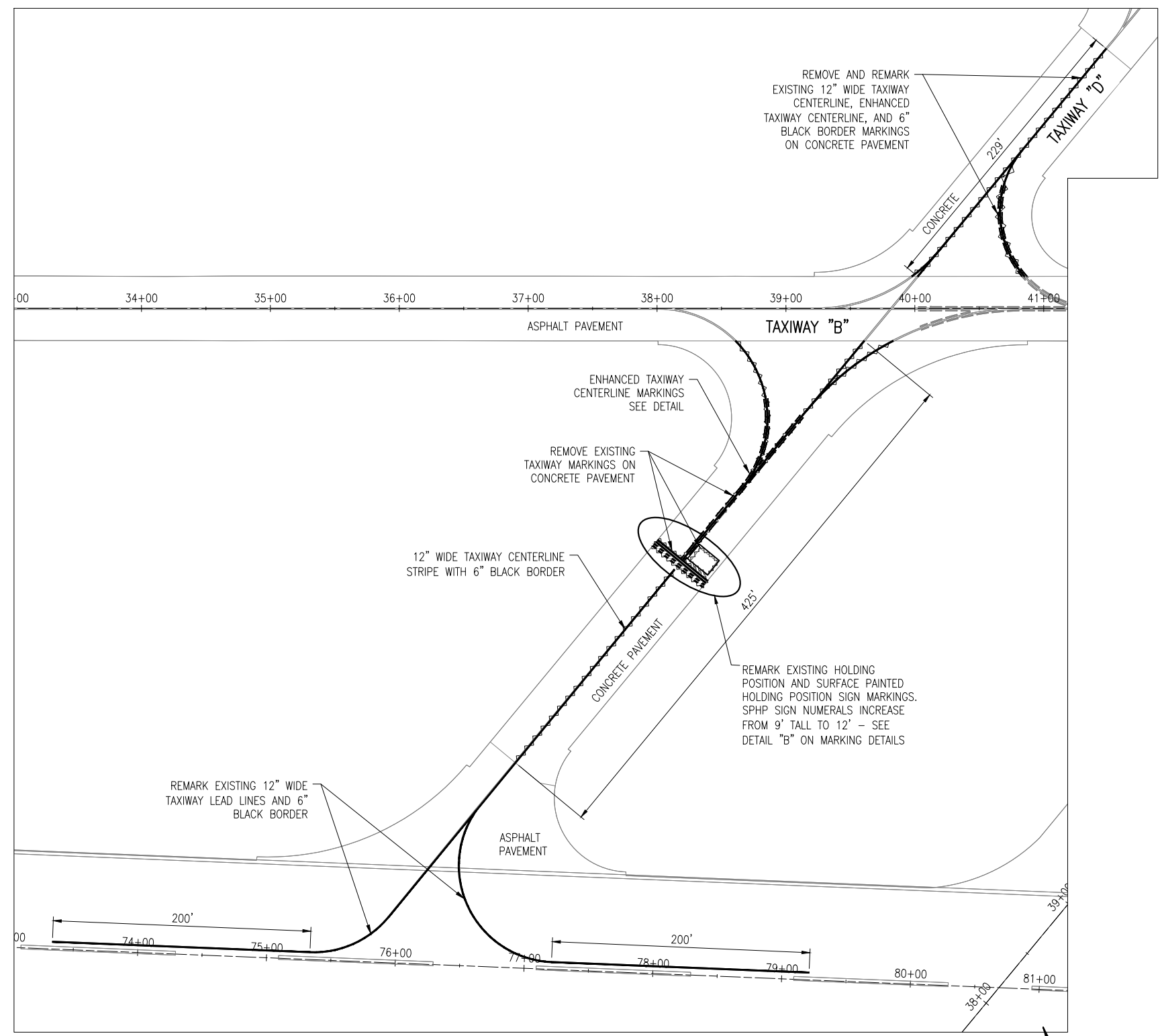
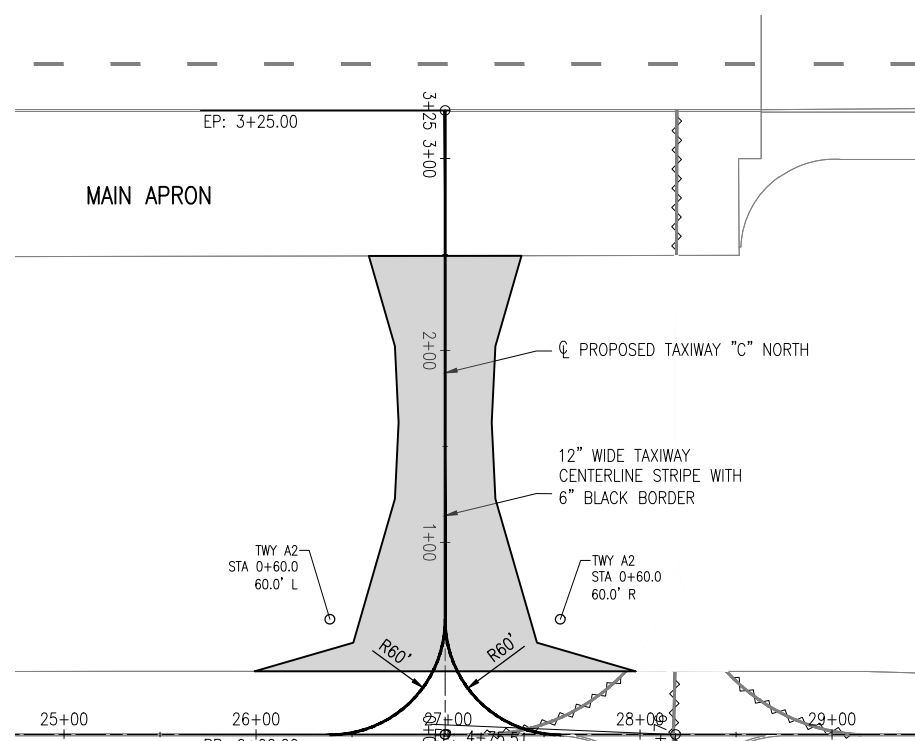
1. ALL PAVEMENT MARKING SHALL BE WATERBORNE PAINT IN ACCORDANCE WITH ITEM 620.
2. ALL MARKING BESIDES BLACK BORDER SHALL BE APPLIED IN TWO COATS, WITH REFLECTIVE BEADS APPLIED ON THE SECOND COAT.
3. CONTRACTOR SHALL REMARK ANY MARKINGS OUTSIDE OF THE PROPOSED LIMITS THAT ARE TRACKED OVER OR DAMAGED BY CONSTRUCTION ACTIVITIES.

LEGEND

- EXISTING PAVEMENT
- PROPOSED PAVING AREA
- PROPOSED MARKING



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



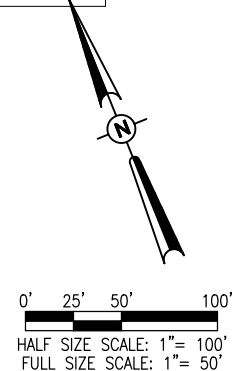
MARKING AND GROOVING SCHEDULE	
AR620900 PAVEMENT MARKING REMOVAL	AREA (S.F.)
EXISTING TXY C - N OF TXY B	712
TWY D - N. OF TWY B	834
TWY D - S. OF TWY B	2004
TOTAL MARKING REMOVAL	3550
AR620520 PAVEMENT MARKING-WATERBORNE - WHITE	AREA (S.F.)
RUNWAY 11-29 EDGE LINES	1473
RUNWAY 6-24 CENTERLINE STRIPES	1080
SURFACE PAINTED HOLDING POSITIONS (INCL. RED)	1261
TOTAL WHITE	3814
AR620520 PAVEMENT MARKING-WATERBORNE - YELLOW	AREA (S.F.)
TAXIWAY CENTERLINE AND LEAD IN STRIPE	7829
TAXIWAY HOLD LINES	884
TAXIWAY ENHANCED CENTERLINES	498
TOTAL YELLOW	9211
AR620525 PAVEMENT MARKING-BLACK BORDER - 6"	AREA (S.F.)
RUNWAY 11-29 EDGE LINES	491
RUNWAY 6-24 CENTERLINE STRIPE	372
TAXIWAY CENTERLINE AND LEAD IN STRIPE	7833
TAXIWAY HOLD LINES	1456
TAXIWAY ENHANCED CENTERLINES	414
SURFACE PAINTED HOLDING POSITIONS	164
TOTAL BLACK	10730
AR401640 BITUMINOUS PAVEMENT GROOVING	AREA (S.Y.)
RUNWAY 6-24	3345
TOTAL GROOVING	3345

PAVEMENT MARKING NOTES

1. ALL PAVEMENT MARKING SHALL BE WATERBORNE PAINT IN ACCORDANCE WITH ITEM 620.
2. ALL MARKING BESIDES BLACK BORDER SHALL BE APPLIED IN TWO COATS, WITH REFLECTIVE BEADS APPLIED ON THE SECOND COAT.
3. CONTRACTOR SHALL REMARK ANY MARKINGS OUTSIDE OF THE PROPOSED LIMITS THAT ARE TRACKED OVER OR DAMAGED BY CONSTRUCTION ACTIVITIES AT THEIR OWN EXPENSE.

LEGEND

	EXISTING PAVEMENT
	PROPOSED PAVING AREA
	PROPOSED WATERBORNE MARKING
	PROPOSED PAVEMENT MARKING REMOVAL



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

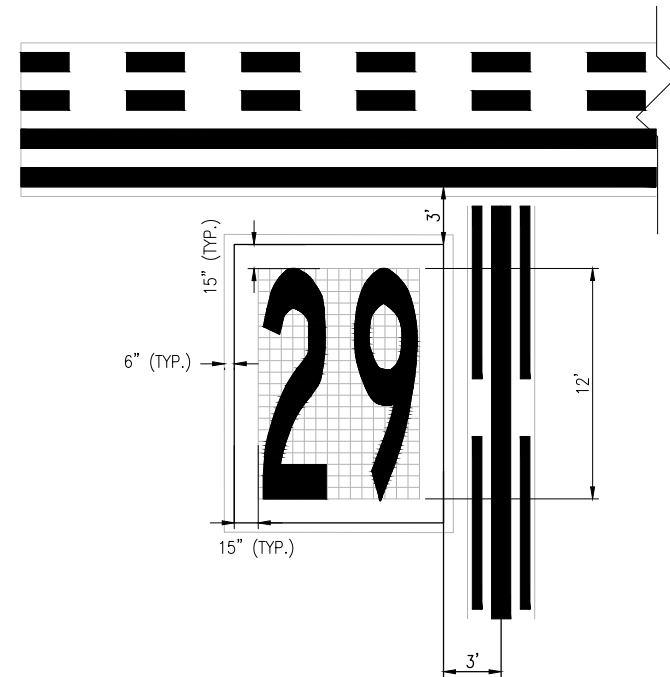
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
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DESIGN BY: JAP 05/2018
DRAWN BY: JAP 05/2018
REVIEWED BY: KBS 11/08/2019

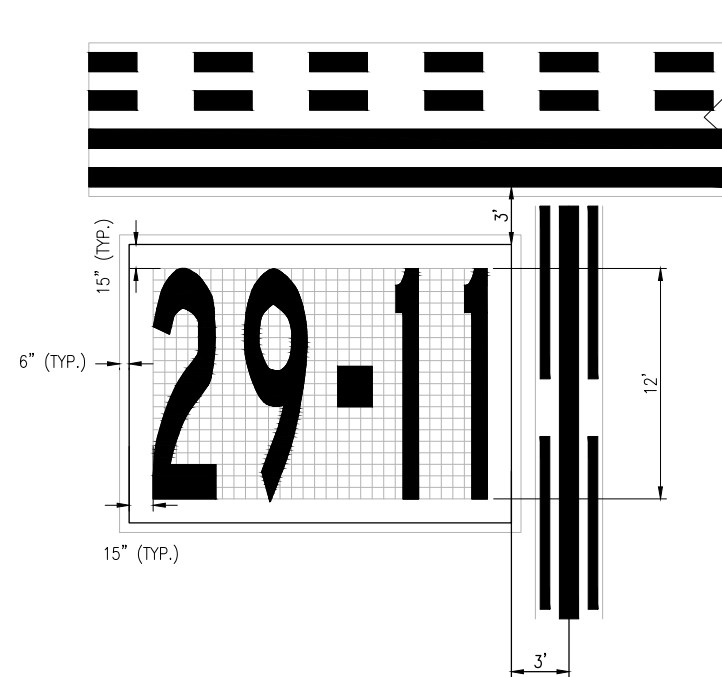
SHEET TITLE

**MARKING PLAN
TAXIWAYS A2 & D**



SURFACE PAINTED HOLDING POSITION SIGN DETAIL "A"
NOT TO SCALE

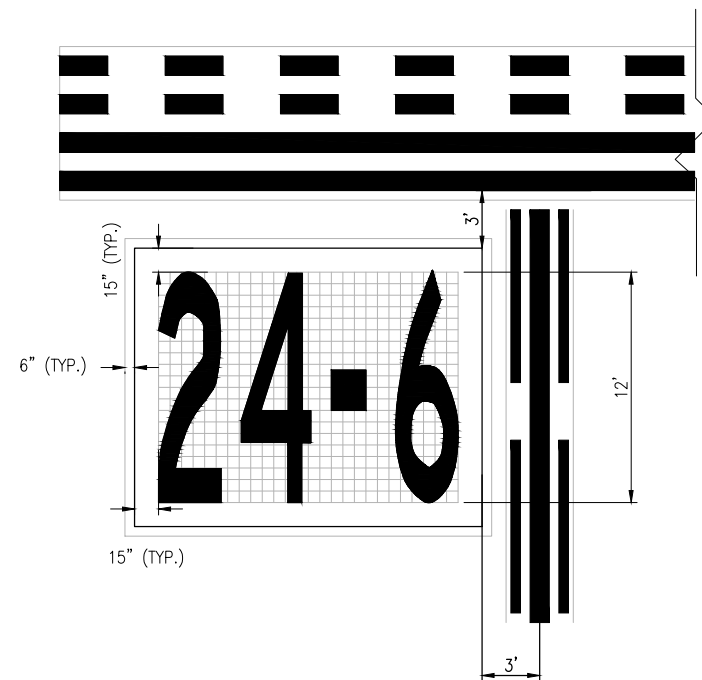
NOTE: GRID SHOWN FOR PROPER SIZING OF INSCRIPTIONS
- NOT TO BE PAINTED. GRID SPACING IS 0.60 FEET.
THIS SIGN WILL BE PAINTED USING WATERBORNE PAINT



SURFACE PAINTED HOLDING POSITION SIGN DETAIL "B"
NOT TO SCALE

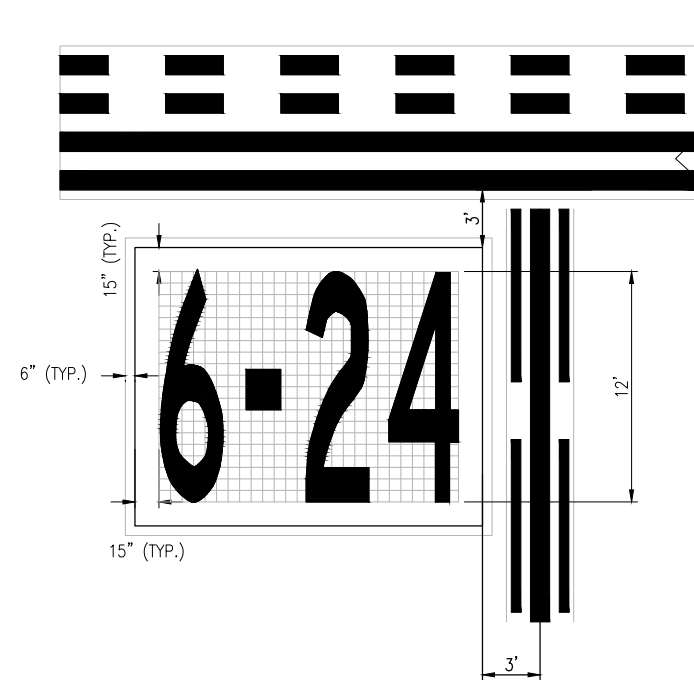
NOTE: GRID SHOWN FOR PROPER SIZING OF INSCRIPTIONS
- NOT TO BE PAINTED. GRID SPACING IS 0.60 FEET.
THIS SIGN WILL BE PAINTED USING WATERBORNE PAINT

NOTE: CONTRACTOR SHALL TURN OVER
STENCILS USED FOR SURFACE PAINTED
HOLDING POSITION SIGNS AT COMPLETION
OF MARKING TO AIRPORT FOR FUTURE
MAINTENANCE USE.



SURFACE PAINTED HOLDING POSITION SIGN DETAIL "C"
NOT TO SCALE

NOTE: GRID SHOWN FOR PROPER SIZING OF INSCRIPTIONS
- NOT TO BE PAINTED. GRID SPACING IS 0.60 FEET.
THIS SIGN WILL BE PAINTED USING WATERBORNE PAINT



SURFACE PAINTED HOLDING POSITION SIGN DETAIL "D"
NOT TO SCALE

NOTE: GRID SHOWN FOR PROPER SIZING OF INSCRIPTIONS
- NOT TO BE PAINTED. GRID SPACING IS 0.60 FEET.
THIS SIGN WILL BE PAINTED USING WATERBORNE PAINT

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019

PROJECT NO: 19A0001

CAD FILE: C-152-MRK-DET.DWG

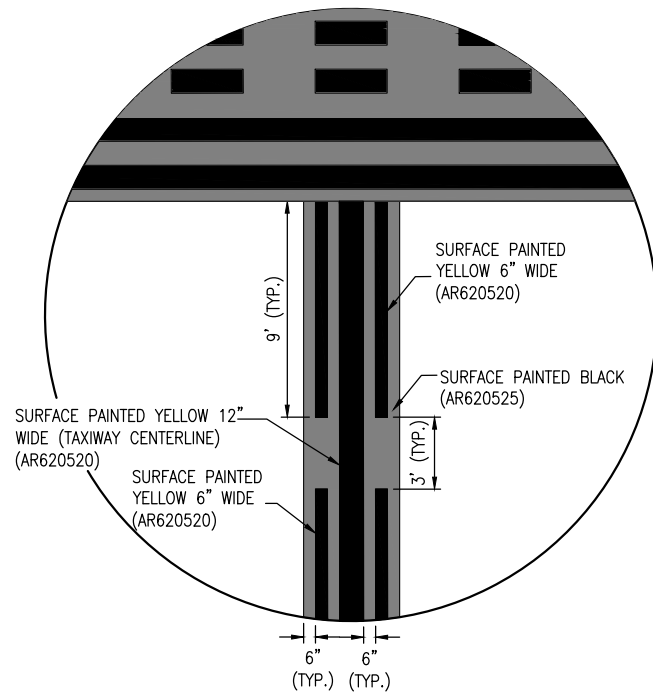
DESIGN BY: JAP 05/06/2019

DRAWN BY: JAP 05/06/2019

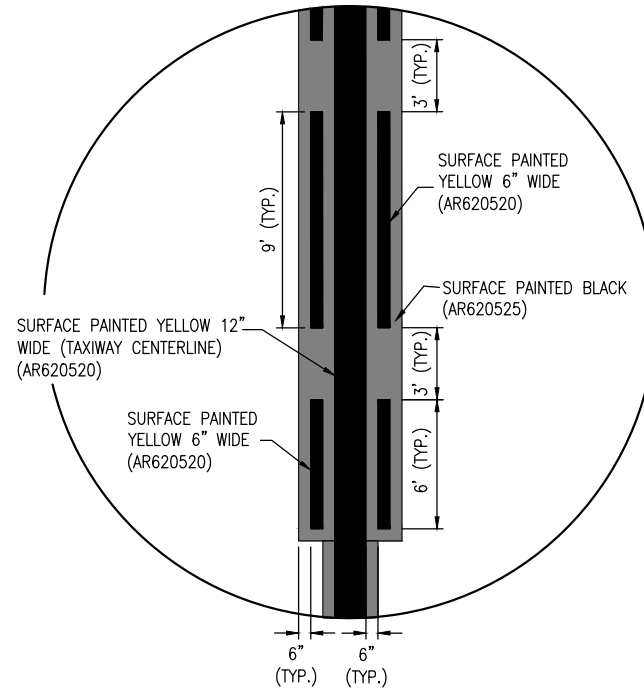
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

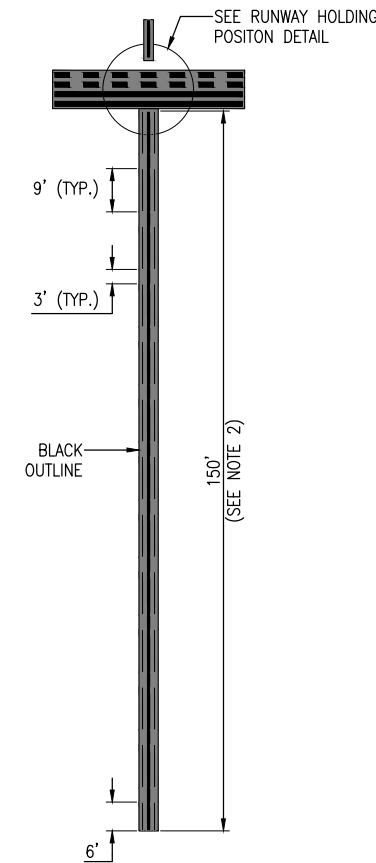
**MARKING DETAILS -
SHEET 1**



ENHANCED TAXIWAY CENTERLINE MARKING DETAIL (BEGIN)
NOT TO SCALE



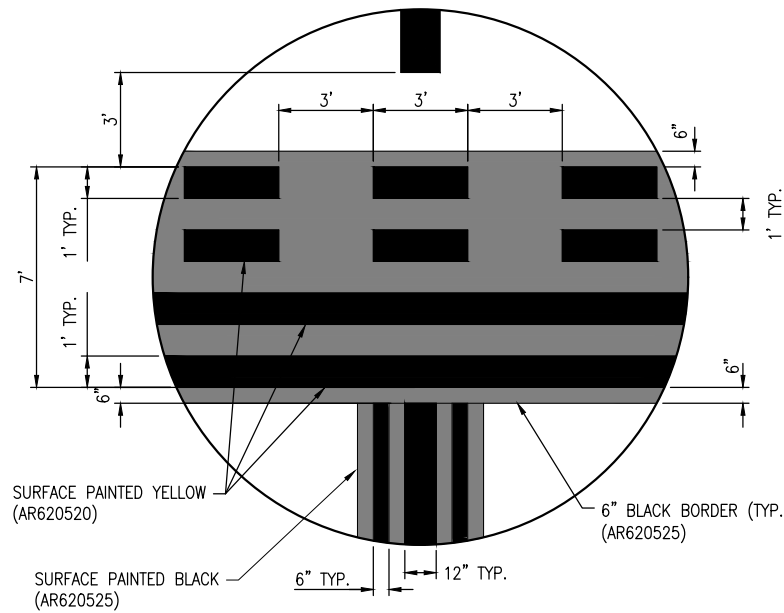
ENHANCED TAXIWAY CENTERLINE MARKING DETAIL (END)
NOT TO SCALE



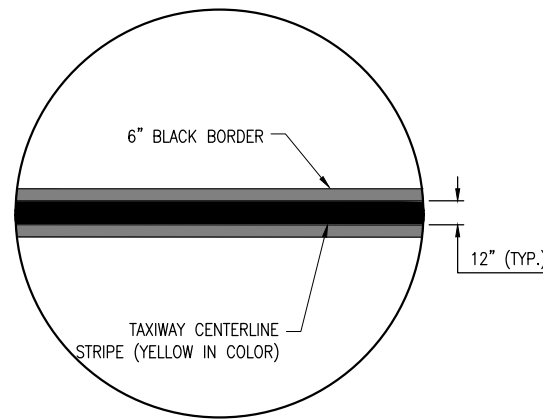
ENHANCED TAXIWAY CENTERLINE MARKING DETAIL

ENHANCED TAXIWAY CENTERLINE MARKING NOTES:

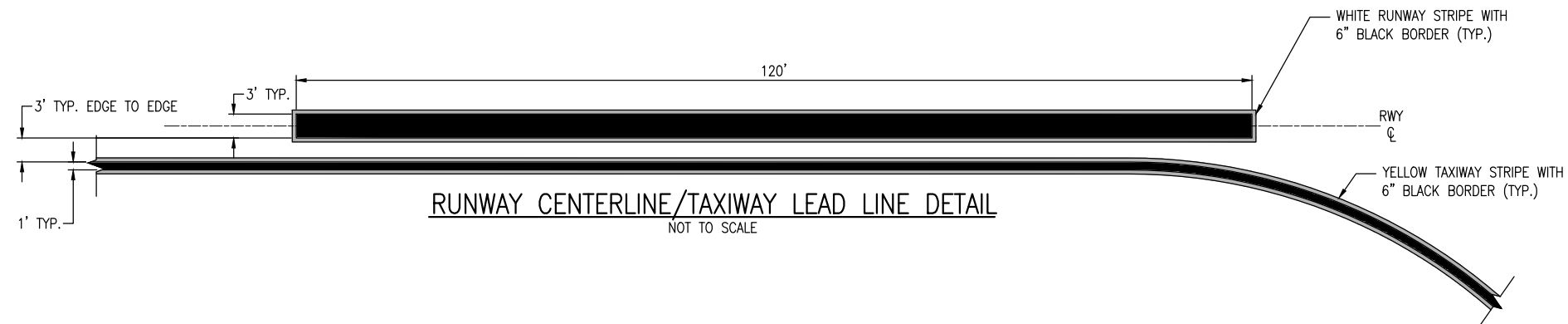
1. TAXIWAY CENTERLINE MARKINGS SHALL BE YELLOW IN COLOR AND OUTLINED IN BLACK.
2. TAXIWAY CENTERLINE MARKINGS SHALL BE ENHANCED FOR 150-FT PRIOR TO A RUNWAY HOLDING POSITION MARKING, UNLESS NOTED OTHERWISE. FOR A CURVED TAXIWAY CENTERLINE, THIS DISTANCE SHALL BE MEASURED ALONG THE CENTERLINE BEING ENHANCED TO A DISTANCE OF 150-FT.
3. WHERE TWO TAXIWAY CENTERLINES CONVERGE AT OR BEFORE THE RUNWAY HOLDING POSITION MARKING, PARTIAL INNER DASHED LINES LESS THAN 5 FEET AT THE POINT OF CONVERGENCE MAY BE OMITTED.
4. DASHES ON EITHER SIDE OF THE TAXIWAY CENTERLINE MUST BE ALIGNED, STARTING AND STOPPING WITH THE DASHES ON THE OPPOSITE SIDE OF THE CENTERLINE. TO ACCOMPLISH THIS FOR CURVED TAXIWAY CENTERLINES, THE MEASUREMENTS FOR THE DASHES AND GAPS SHALL BE MADE AT THE CENTERLINE AND EXTENDED PERPENDICULAR FROM THE CENTERLINE TO OBTAIN THE LOCATIONS OF THE DASHES.
5. ENHANCED TAXIWAY CENTERLINE MARKINGS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF FAA AC 150/5340-1, STANDARDS FOR AIRPORT MARKING.
6. IF THE CONTRACTOR ELECTS TO "BLOCK PAINT" THE BLACK PAINT AND THEN PAINT EITHER YELLOW OR WHITE PAINT OVER THE BLACK PAINT; ONLY THE VISIBLE BLACK PAINT WILL BE ELIGIBLE FOR PAYMENT.



HOLDING POSITION DETAIL
NOT TO SCALE



TAXIWAY CENTERLINE DETAIL
NOT TO SCALE



RUNWAY CENTERLINE/TAXIWAY LEAD LINE DETAIL
NOT TO SCALE

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

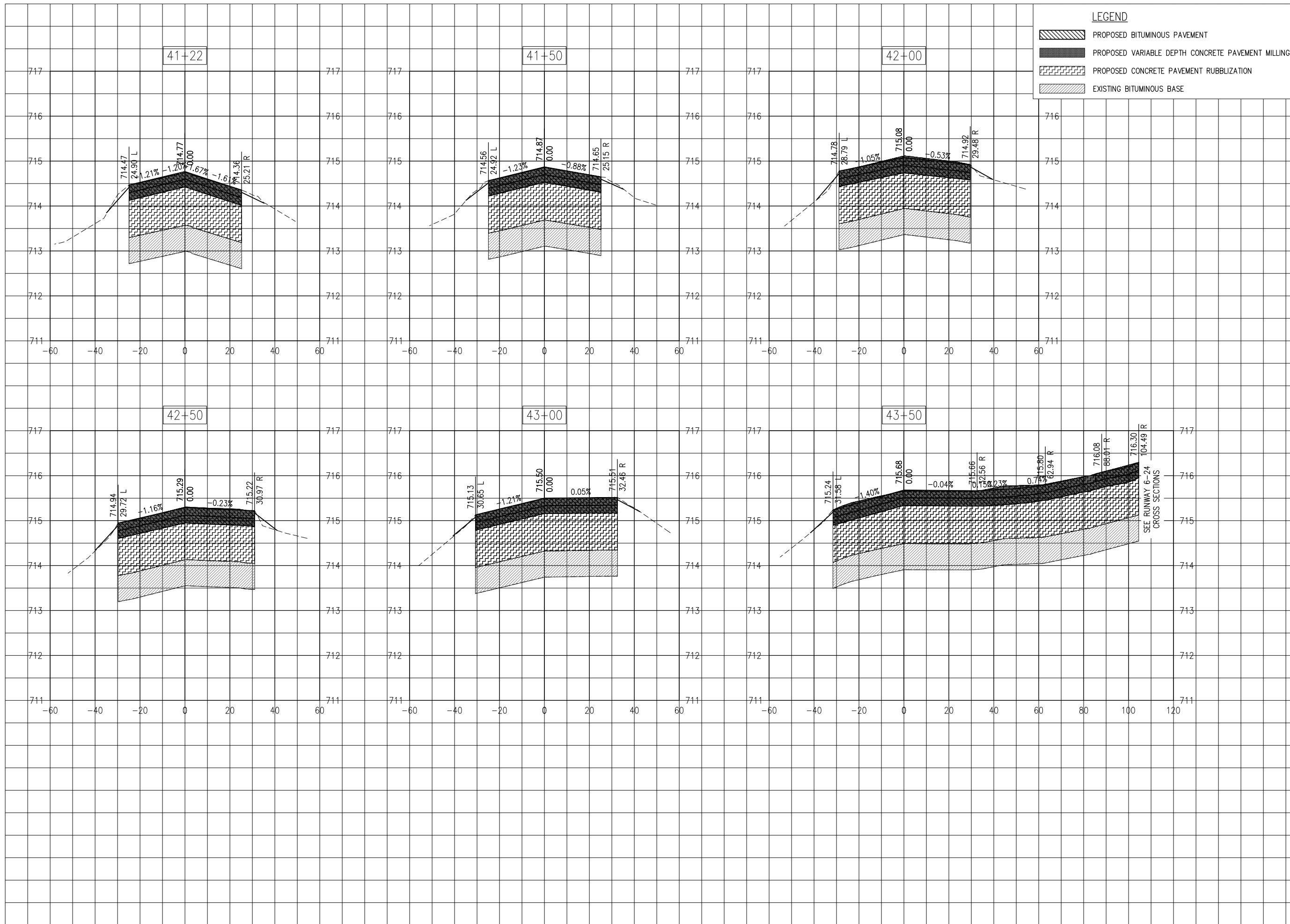
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-152-MRK-DET.DWG
DESIGN BY: JAP 05/06/2019
DRAWN BY: JAP 05/06/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**MARKING DETAILS -
SHEET 2**



LEGEND

- PROPOSED BITUMINOUS PAVEMENT
- PROPOSED VARIABLE DEPTH CONCRETE PAVEMENT MILLING
- PROPOSED CONCRETE PAVEMENT RUBBLIZATION
- EXISTING BITUMINOUS BASE

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

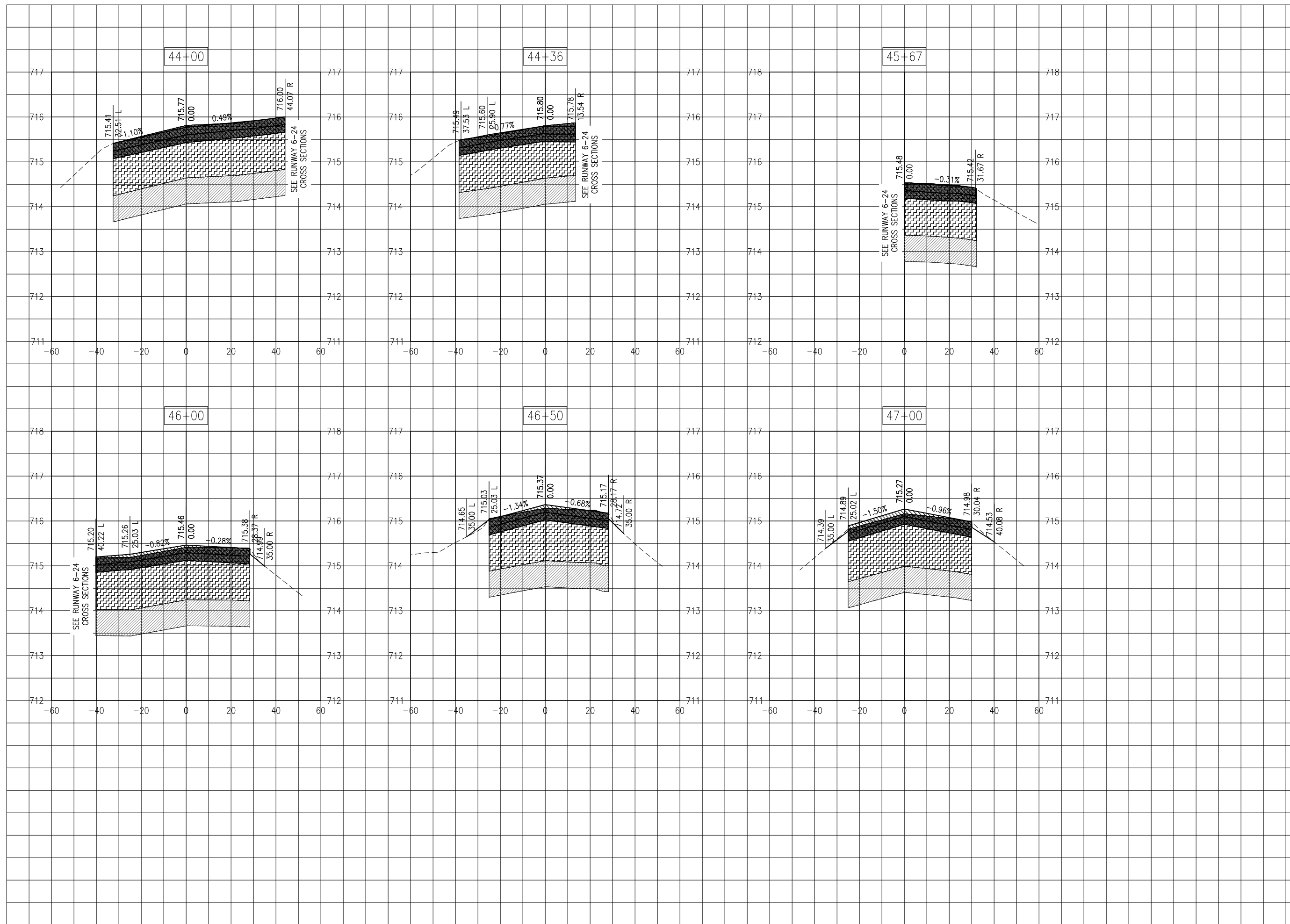
NO.	DATE	DESCRIPTION		
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ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-301-XS.DWG
DESIGN BY: KWS 05/2019
DRAWN BY: NLD 05/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**TAXIWAY B CROSS
SECTIONS - STA.
41+22 - STA. 43+50**

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PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
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DESIGN BY: KWS 05/2019
DRAWN BY: NLD 05/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

TAXIWAY B CROSS
SECTIONS - STA.
44+00 - STA. 47+00



PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

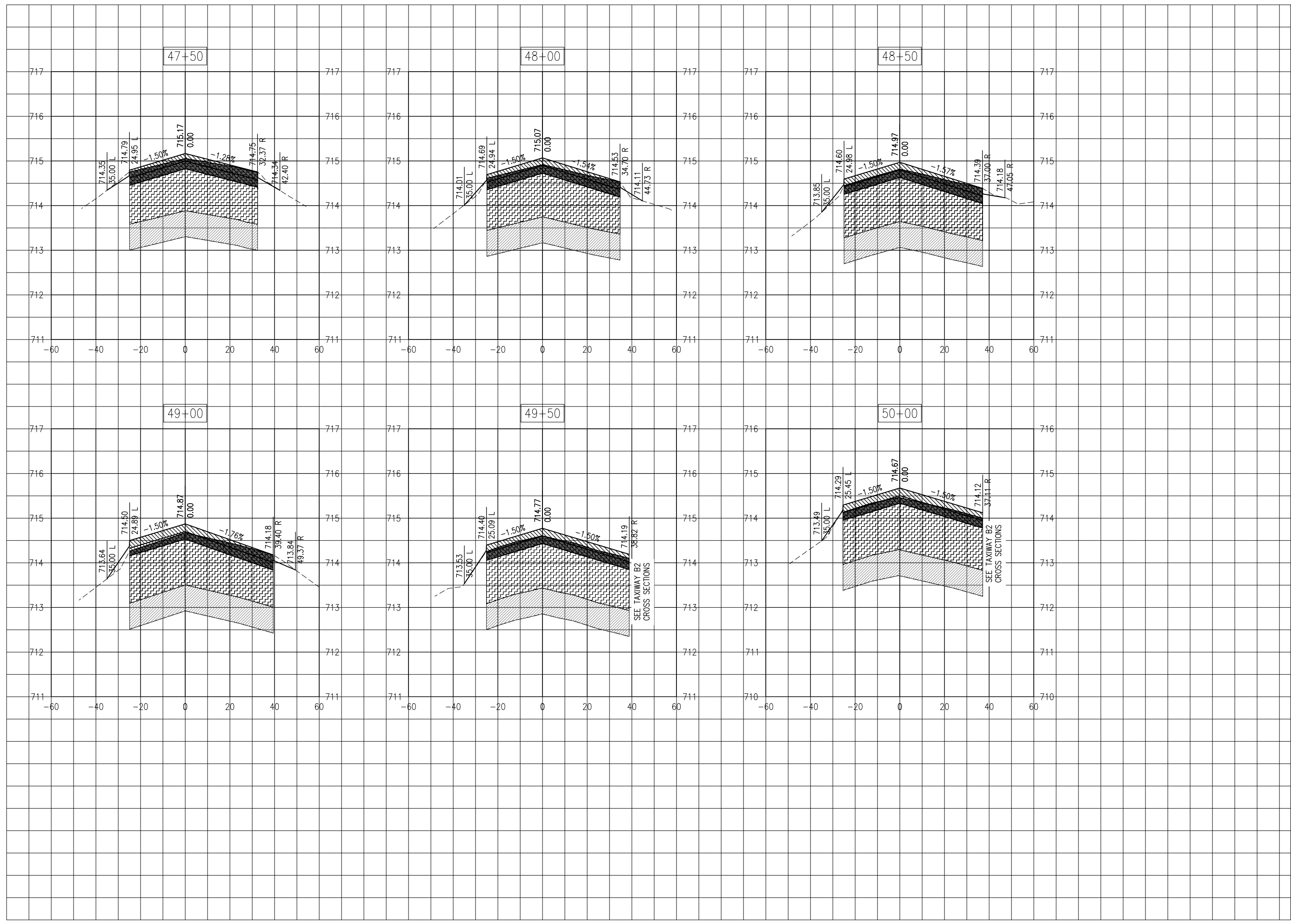
Contract No. CO067

NO.	DATE	DESCRIPTION		
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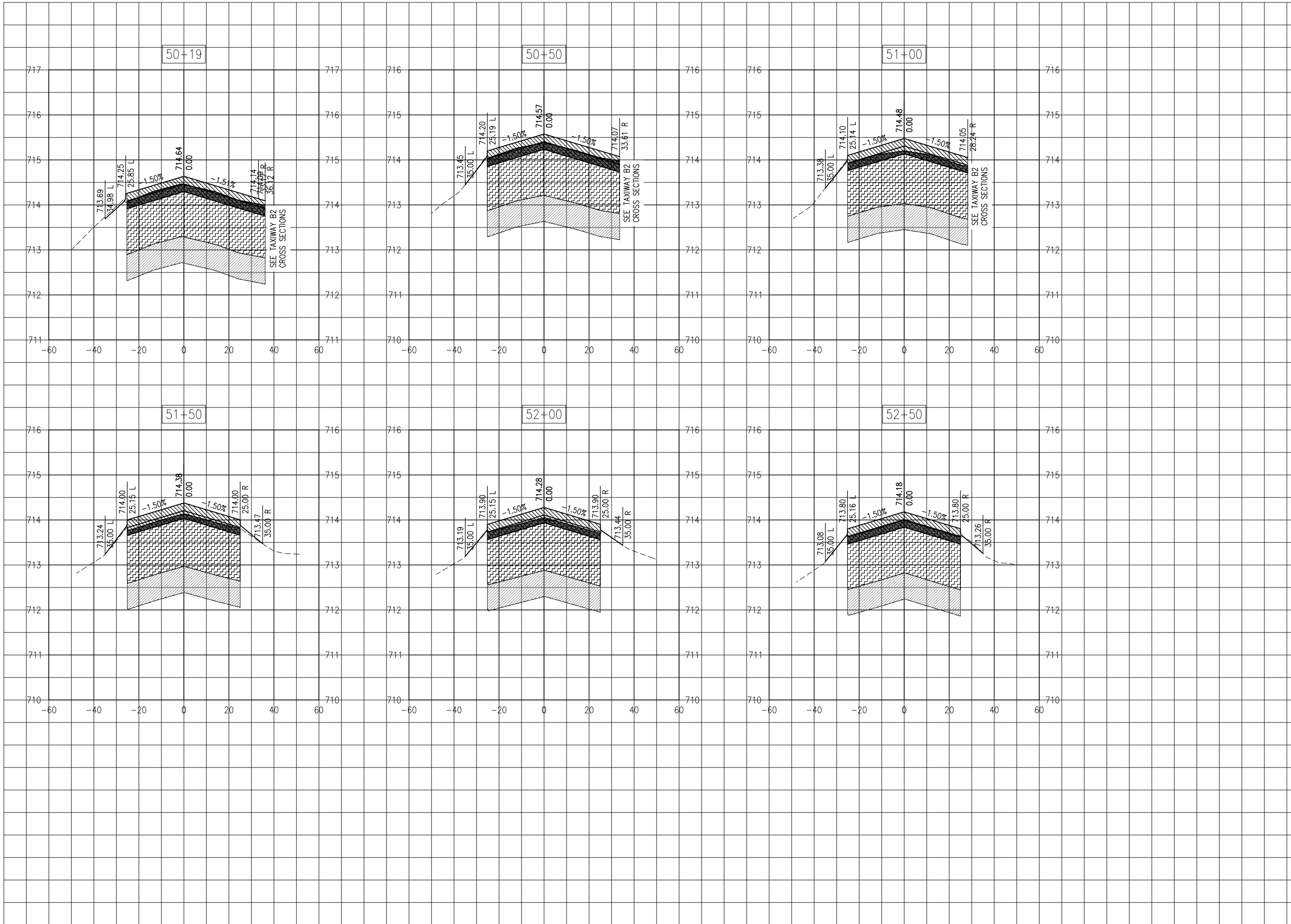
ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-301-XS.DWG
DESIGN BY: KWS 05/2019
DRAWN BY: NLD 05/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

TAXIWAY B CROSS
SECTIONS - STA.
47+50 - STA. 50+00



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PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

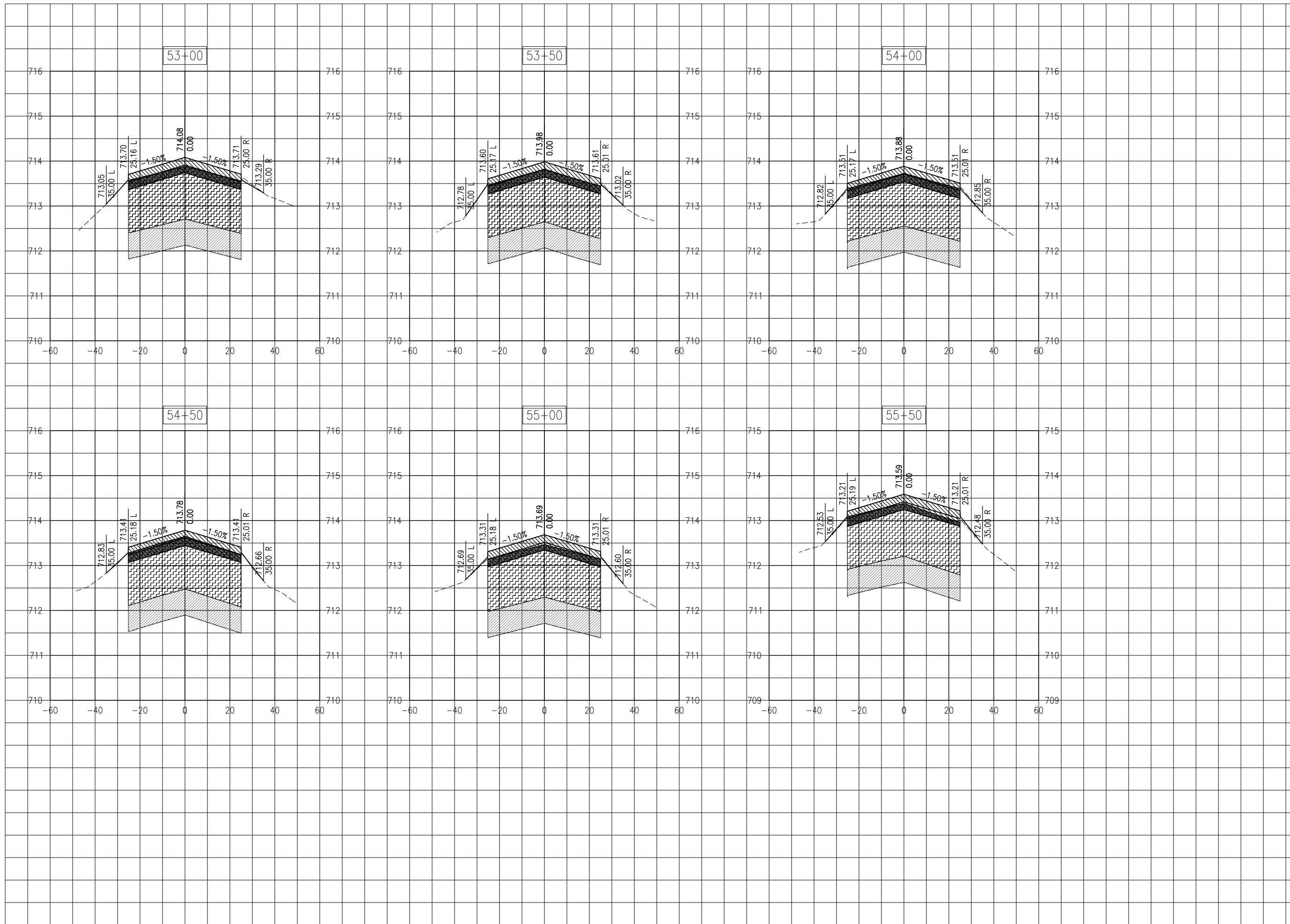
Contract No. CO067

NO.	DATE	DESCRIPTION		
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ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-301-XS.DWG
DESIGN BY: KWS 05/2019
DRAWN BY: NLD 05/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

TAXIWAY B CROSS
SECTIONS - STA.
50+19 - STA. 52+50



PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

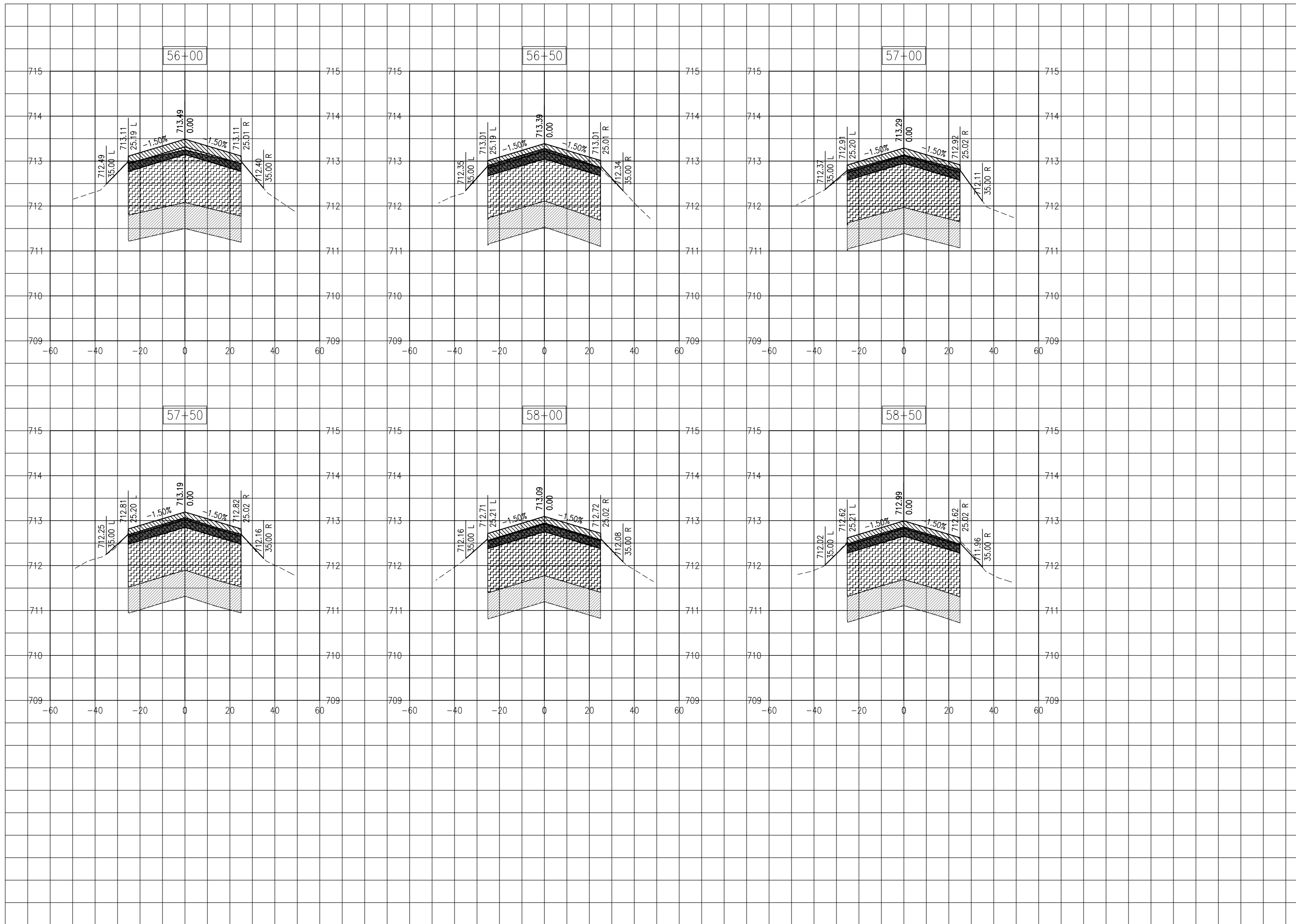
Contract No. CO067

NO.	DATE	DESCRIPTION		
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ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-301-XS.DWG
DESIGN BY: KWS 05/2019
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REVIEWED BY: KBS 11/08/2019

SHEET TITLE

TAXIWAY B CROSS
SECTIONS - STA.
53+00 - STA. 55+50



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

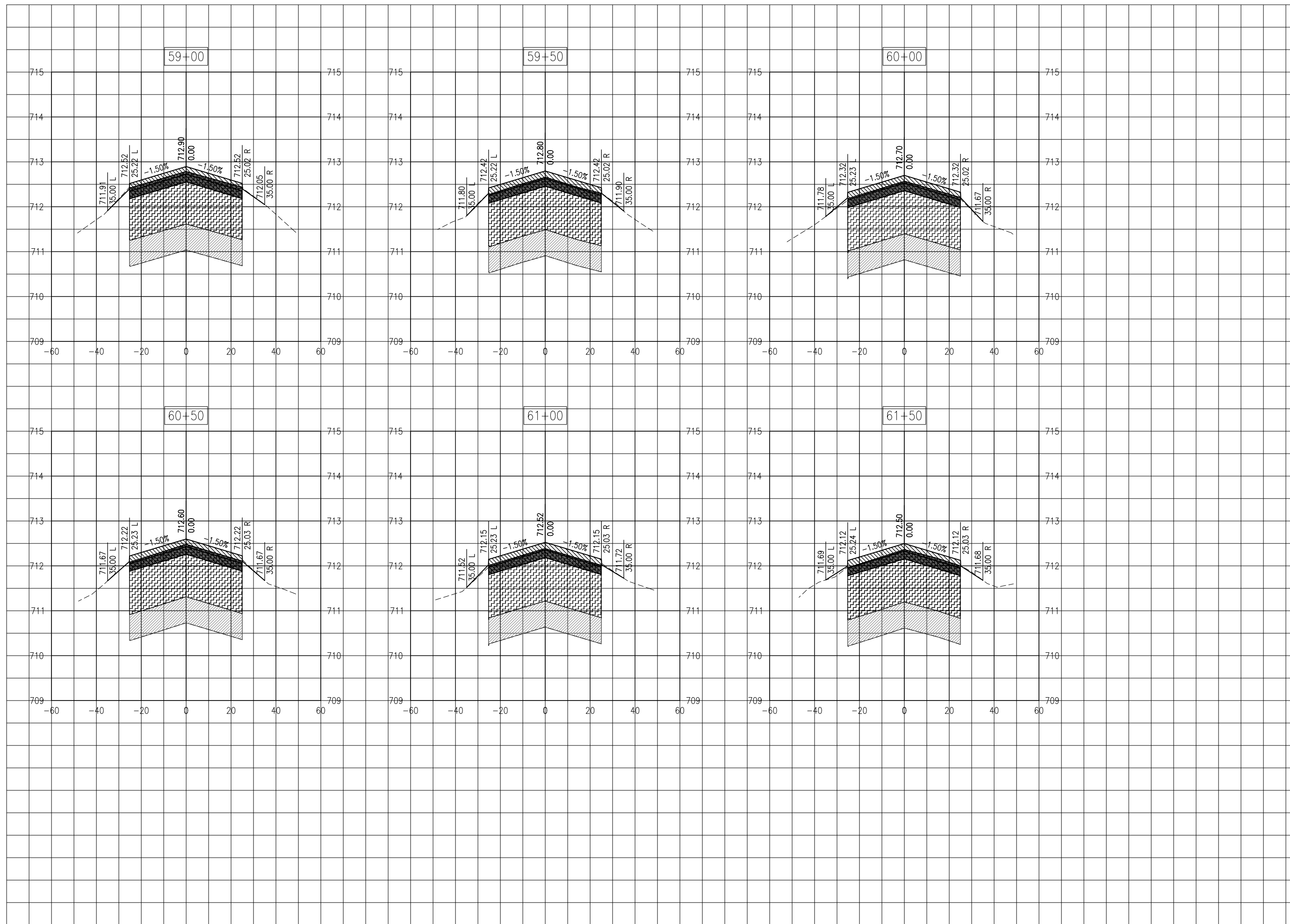
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SBG Project No:
3-17-SBGP-159
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NO.	DATE	DESCRIPTION		
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ISSUE: 11/15/2019
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SHEET TITLE

**TAXIWAY B CROSS
SECTIONS - STA.
56+00 - STA. 58+50**



PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

Contract No. CO067

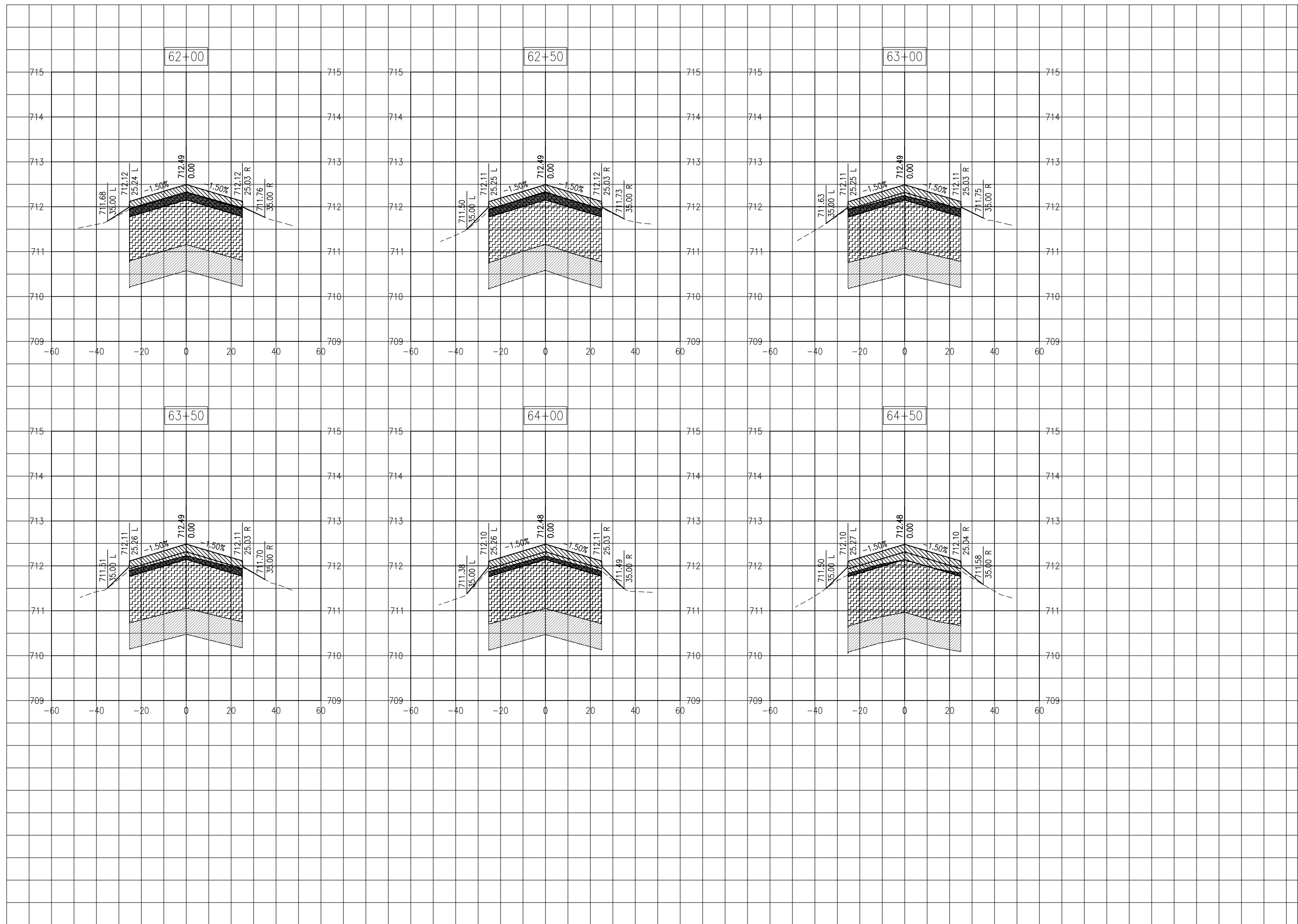
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ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-301-XS.DWG
DESIGN BY: KWS 05/2019
DRAWN BY: NLD 05/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

TAXIWAY B CROSS
SECTIONS - STA.
59+00 - STA. 61+50

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PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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CAD FILE: C-301-XS.DWG
DESIGN BY: KWS 05/2019
DRAWN BY: NLD 05/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

TAXIWAY B CROSS
SECTIONS -
STA. 62+00 - STA.
64+50



PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

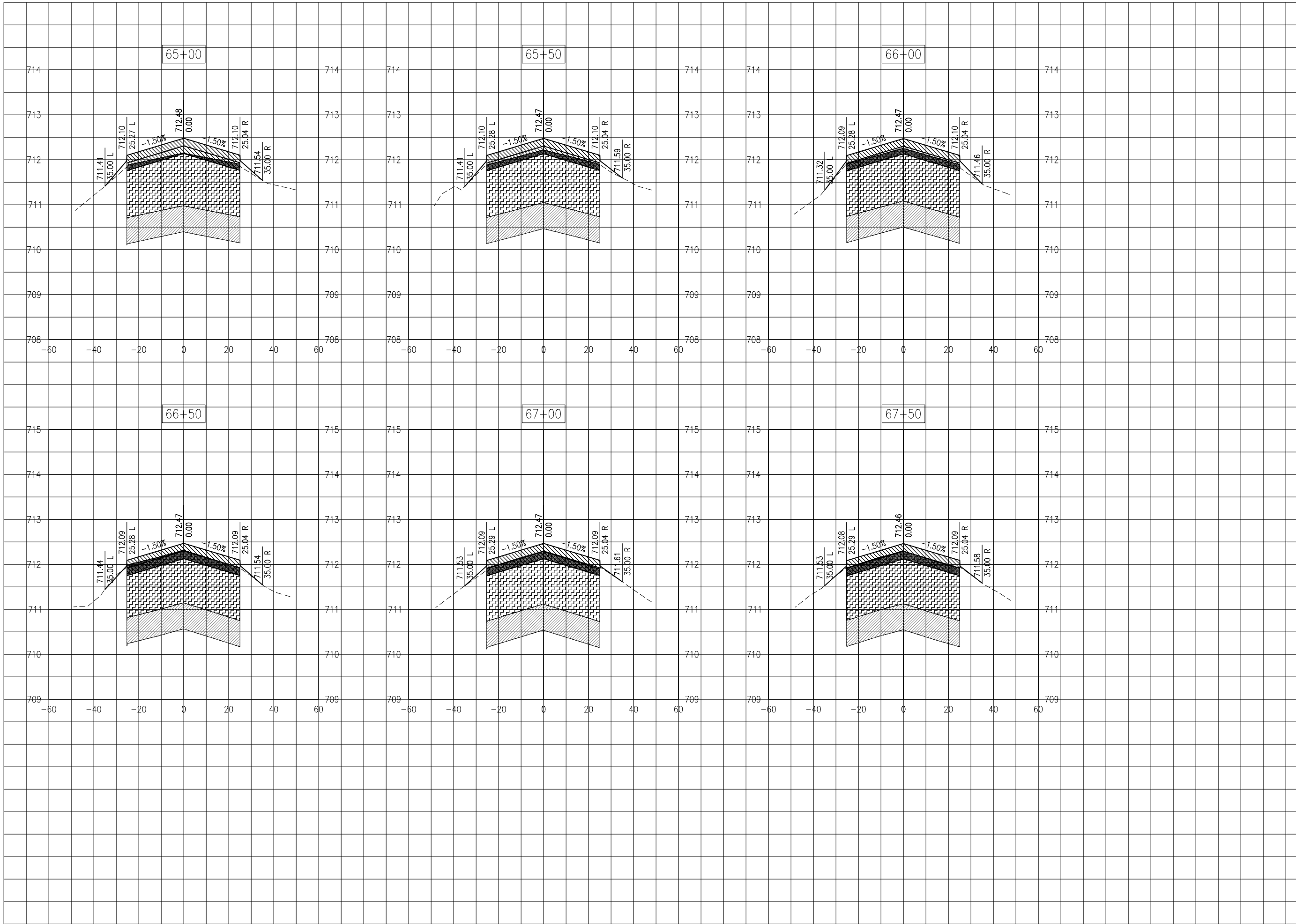
Contract No. CO067

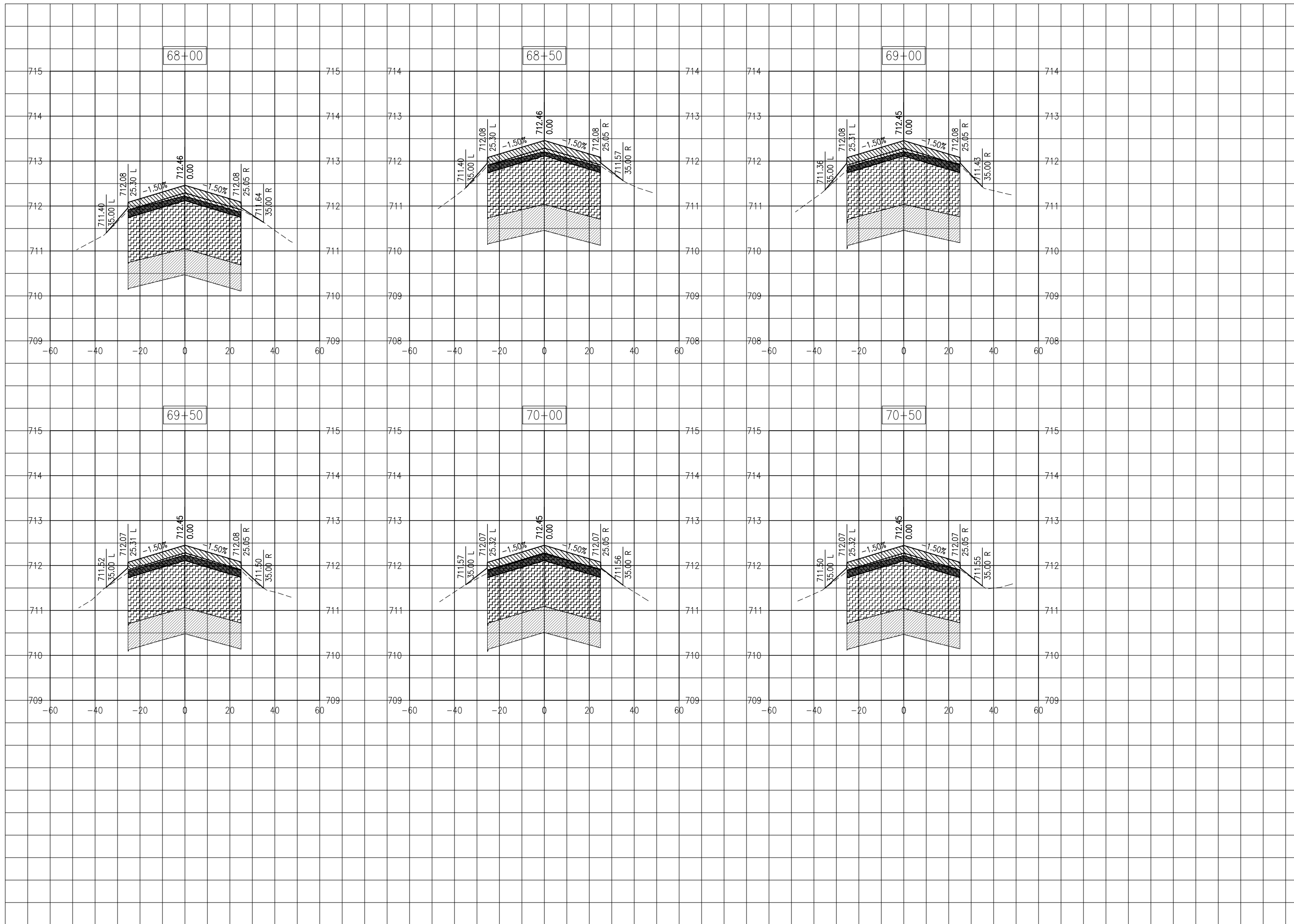
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CAD FILE: C-301-XS.DWG
DESIGN BY: KWS 05/2019
DRAWN BY: NLD 05/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

TAXIWAY B CROSS
SECTIONS - STA.
65+00 - STA. 67+50





PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

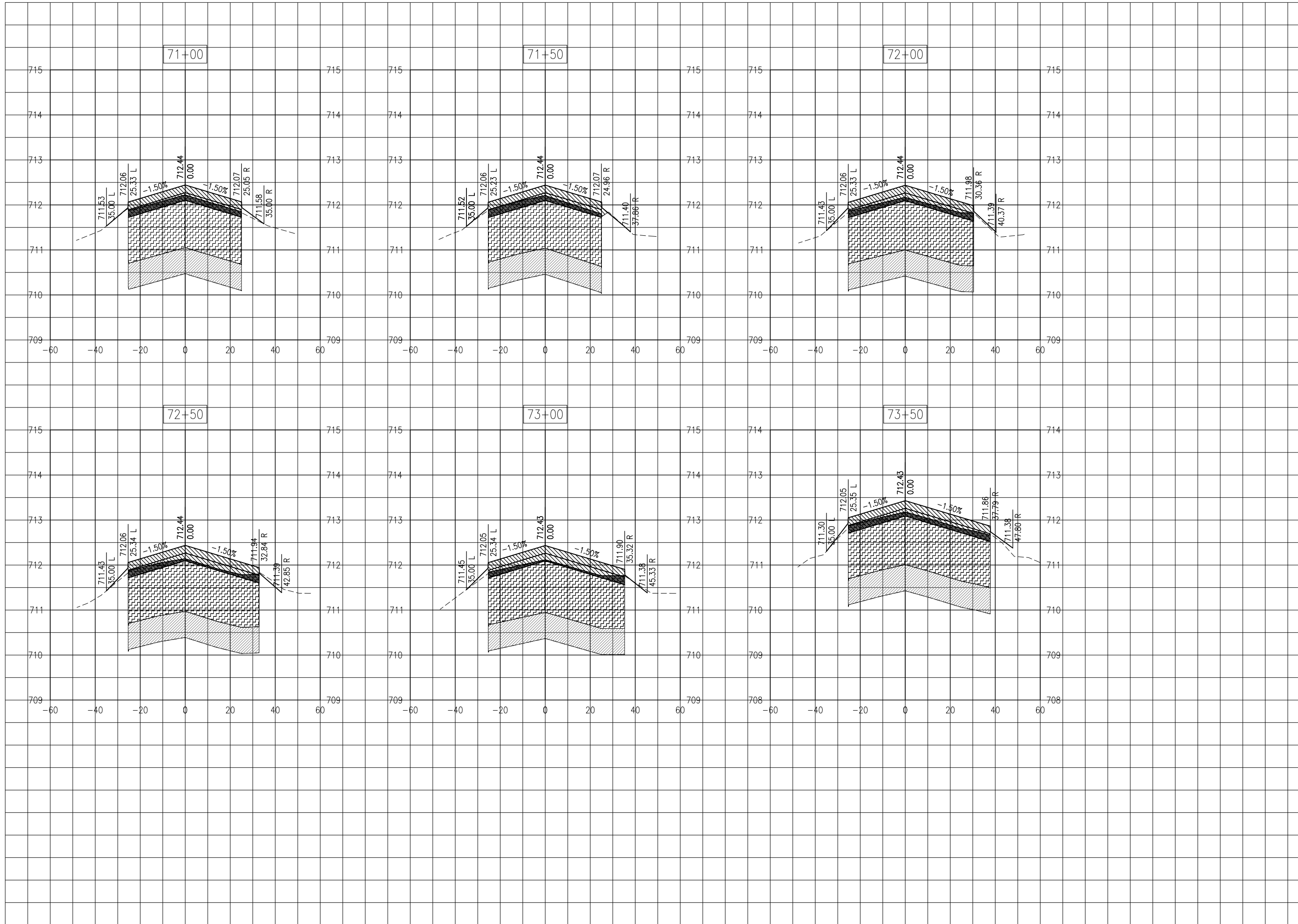
Contract No. CO067

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SHEET TITLE

TAXIWAY B CROSS
SECTIONS - STA.
68+00 - STA. 70+50



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

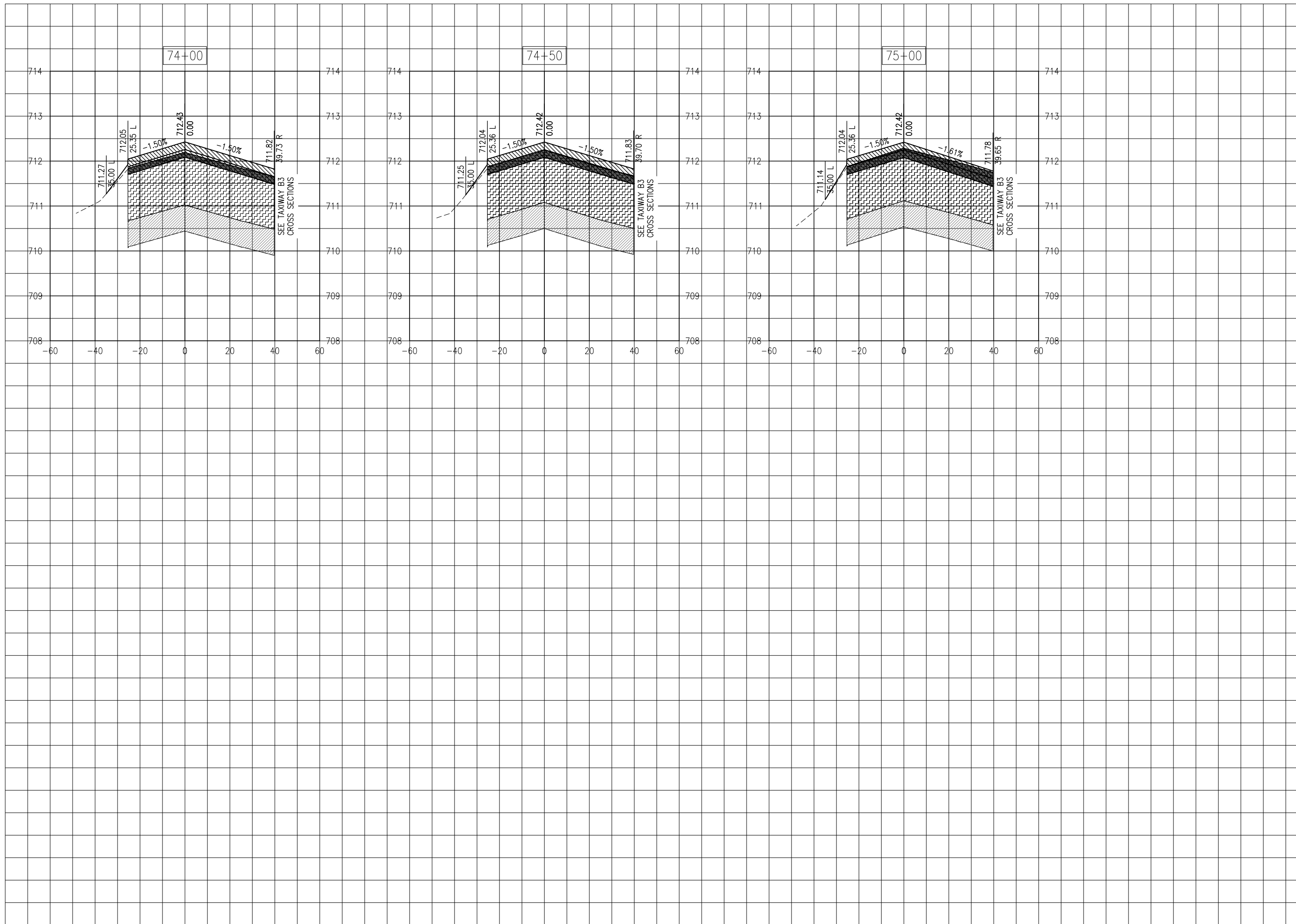
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ISSUE: 11/15/2019
PROJECT NO: 19A0001
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DRAWN BY: NLD 05/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

**TAXIWAY B CROSS
SECTIONS - STA.
71+00 - STA. 73+50**



PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

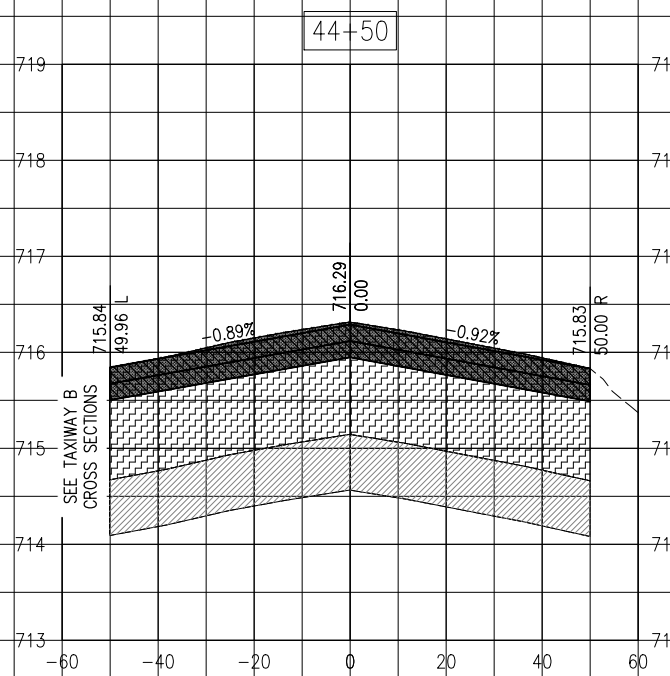
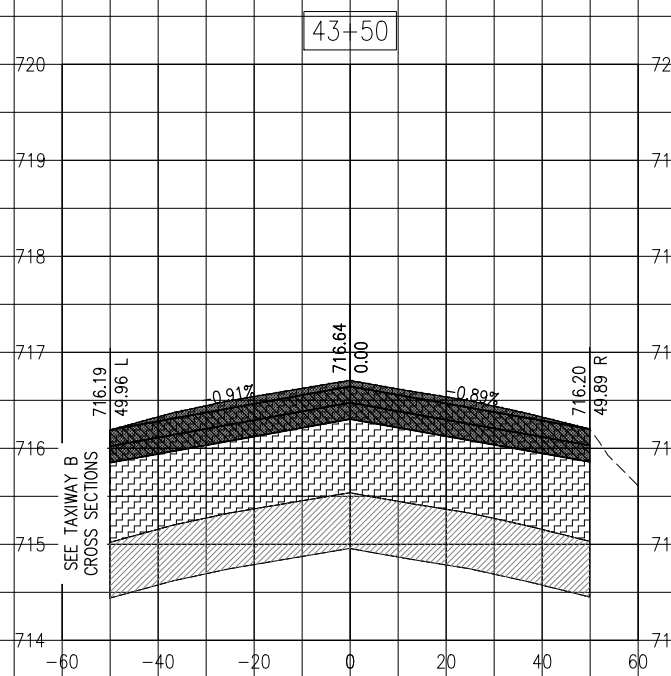
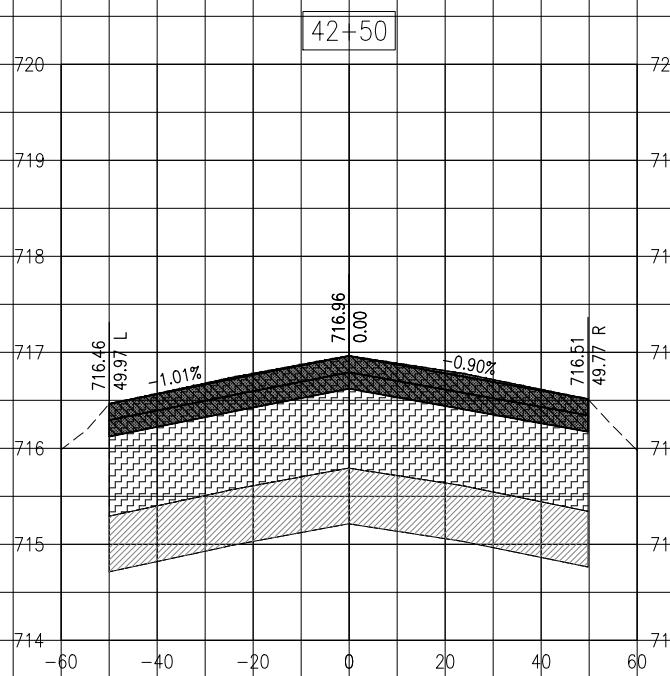
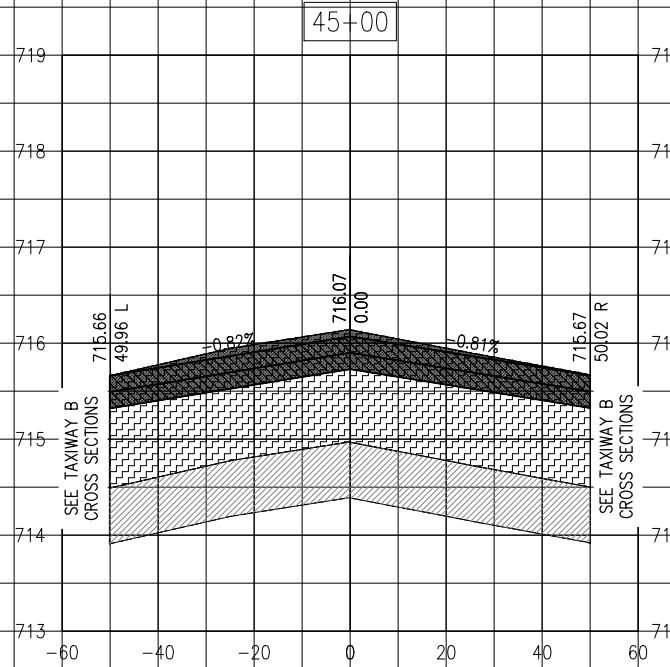
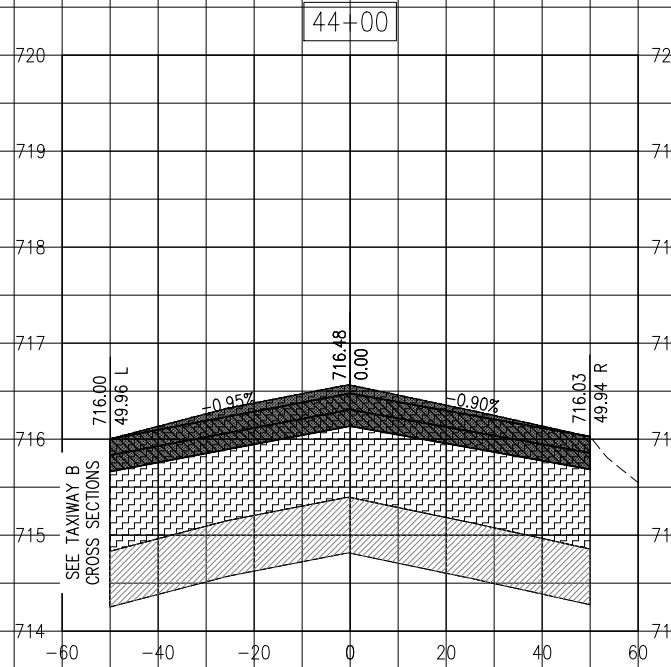
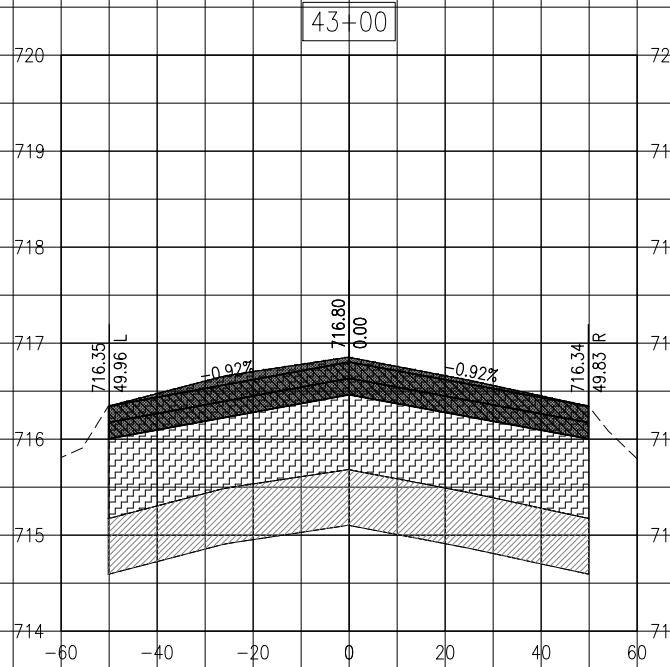
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CAD FILE: C-301-XS.DWG
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DRAWN BY: NLD 05/2019
REVIEWED BY: KBS 11/08/2019

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TAXIWAY B CROSS
SECTIONS - STA.
74+00 - STA. 75+00

LEGEND

	PROPOSED BITUMINOUS PAVEMENT
	PROPOSED VARIABLE DEPTH CONCRETE PAVEMENT MILLING
	PROPOSED CONCRETE PAVEMENT RUBBLIZATION
	EXISTING BITUMINOUS BASE



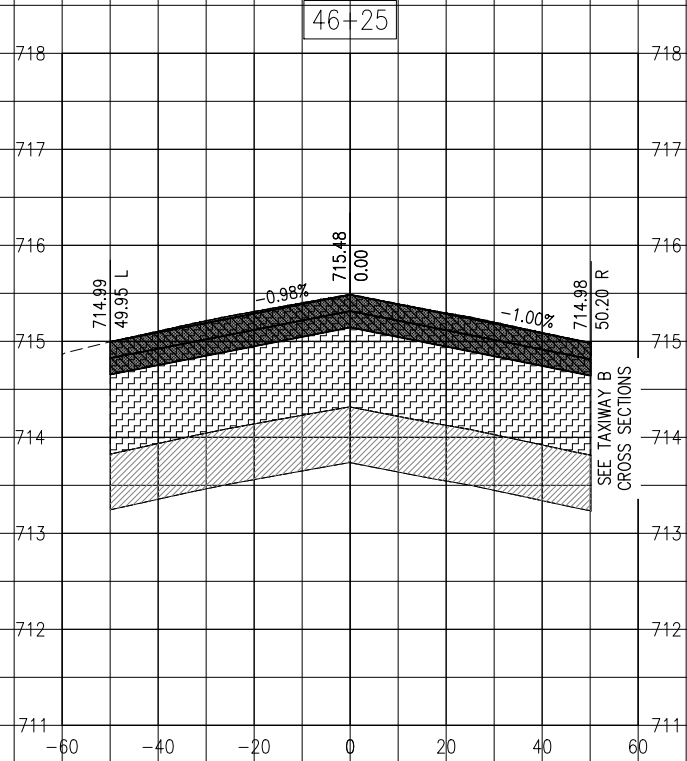
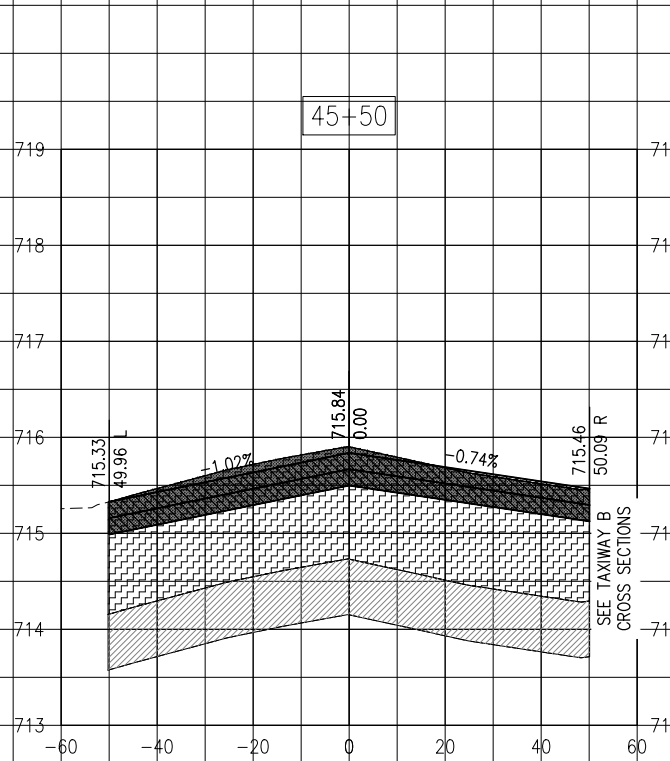
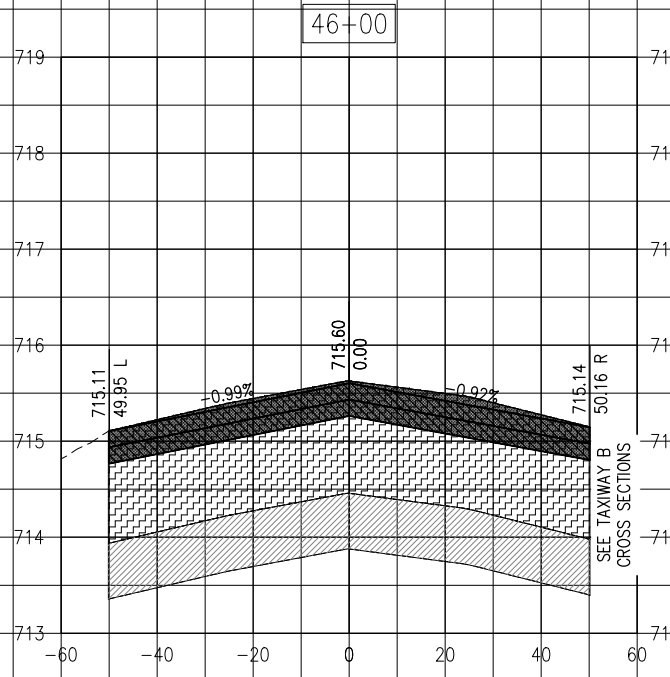
**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

SHEET TITLE

**RUNWAY 6-24 CROSS
SECTIONS STA. 42+50
- STA. 45+00**



PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

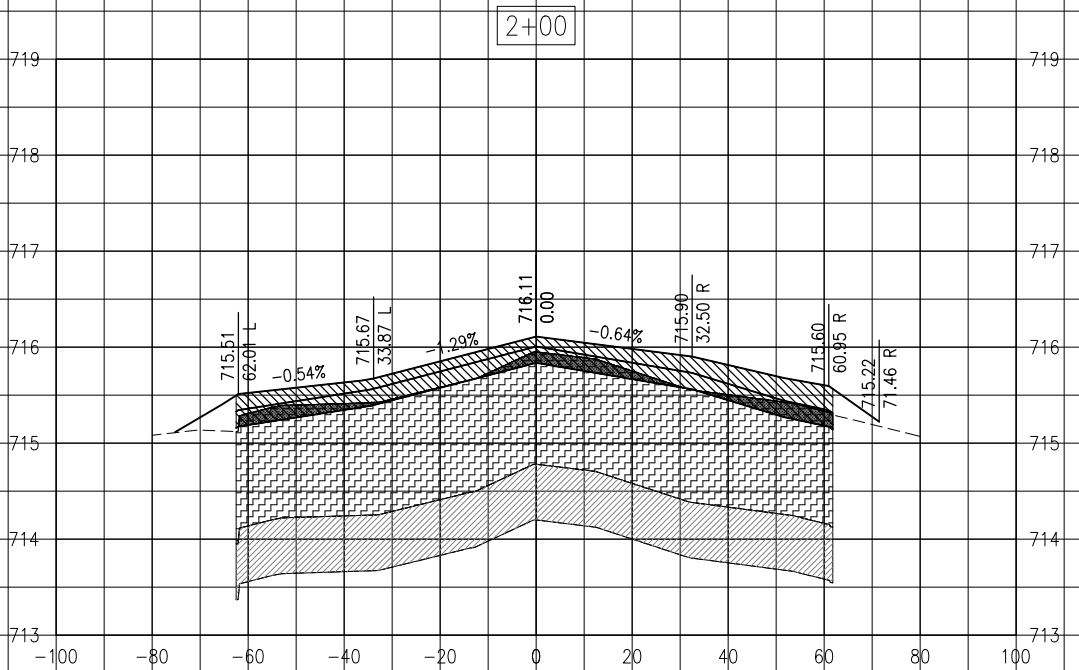
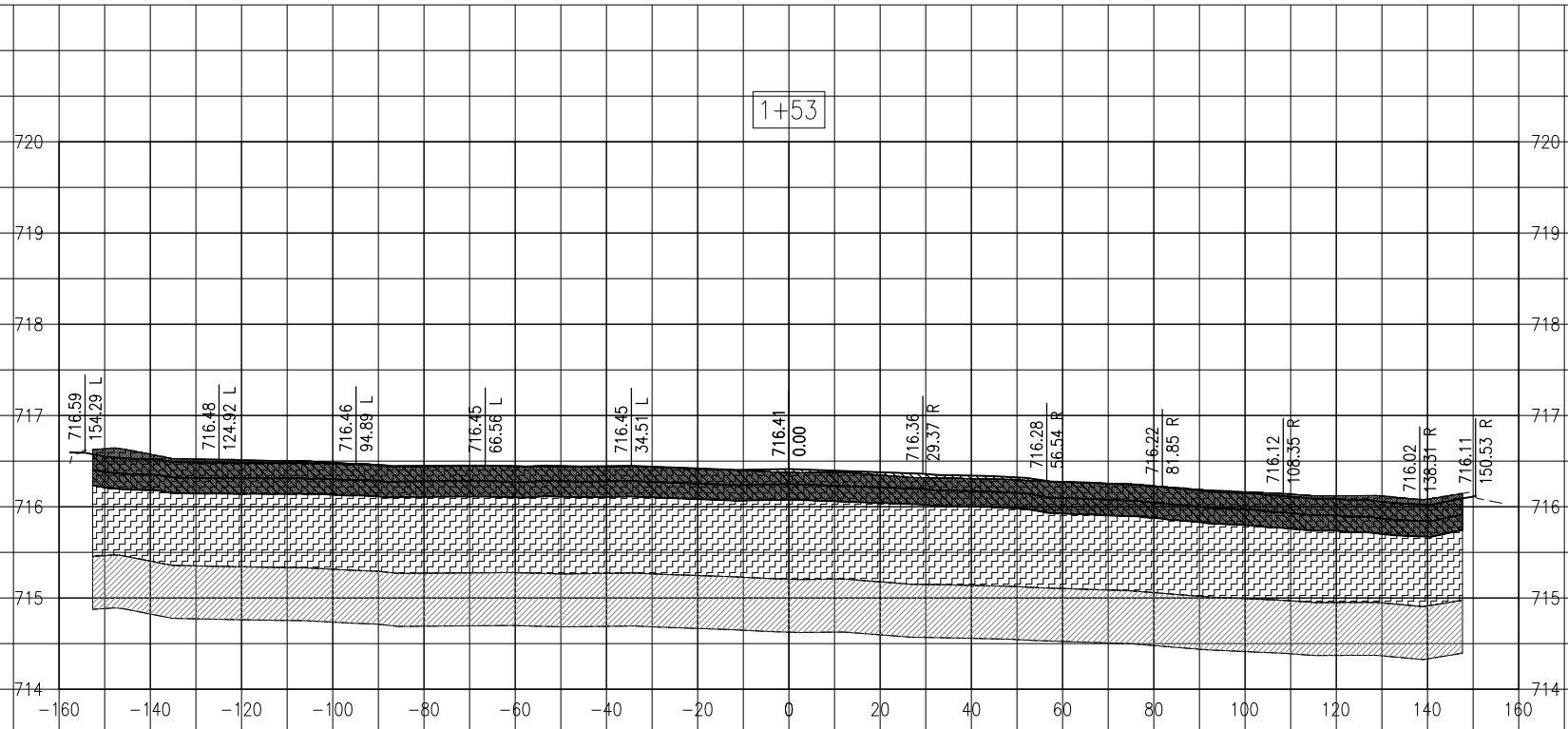
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ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-301-XS.DWG
DESIGN BY: KWS 05/2019
DRAWN BY: NLD 05/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

RUNWAY 6-24 CROSS
SECTIONS STA. 45+50
- STA. 46+25

- LEGEND**
- PROPOSED BITUMINOUS PAVEMENT
 - PROPOSED VARIABLE DEPTH CONCRETE PAVEMENT MILLING
 - PROPOSED CONCRETE PAVEMENT RUBBLIZATION
 - EXISTING BITUMINOUS BASE



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

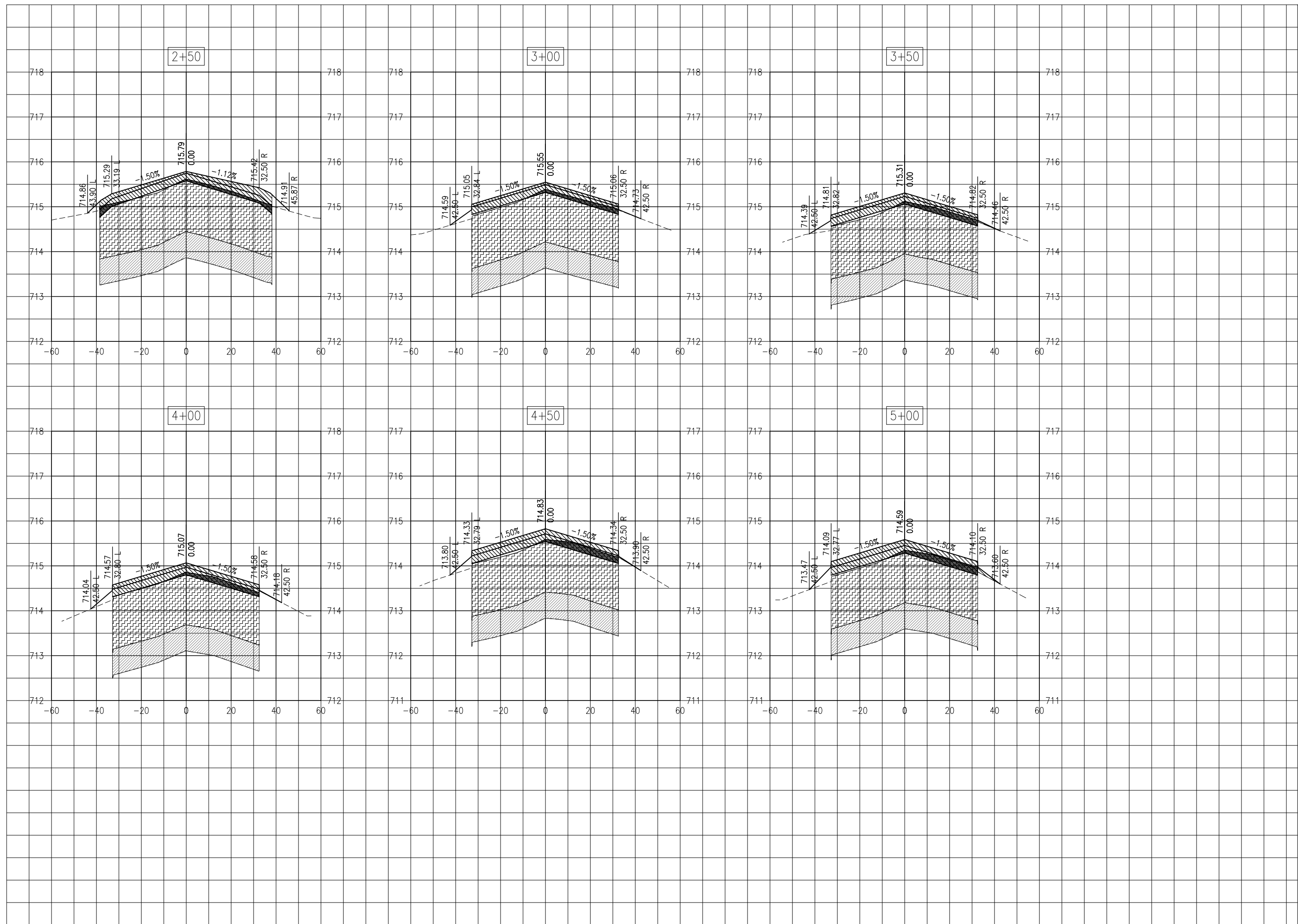
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SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-301-XS.DWG
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SHEET TITLE

TAXIWAY B2 CROSS
SECTIONS STA. 1+53
- STA. 2+00



PHASE 2:
RECONSTRUCT
TAXIWAY B

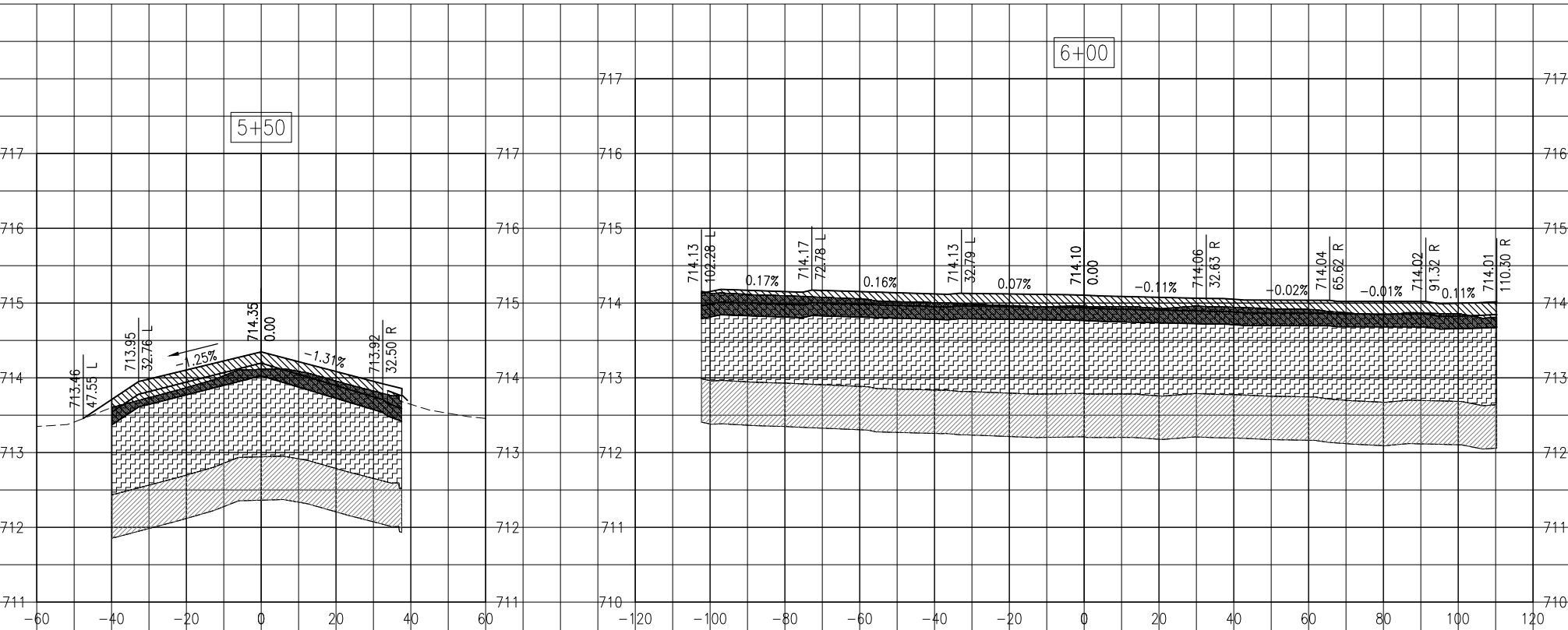
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SBG Project No:
3-17-SBGP-159
Contract No. CO067

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ISSUE: 11/15/2019
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SHEET TITLE

TAXIWAY B2 CROSS
SECTIONS STA. 2+50
- STA. 5+00



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

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Contract No. CO067

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		DES	DWN	REV

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PROJECT NO: 19A0001
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REVIEWED BY: KBS 11/08/2019

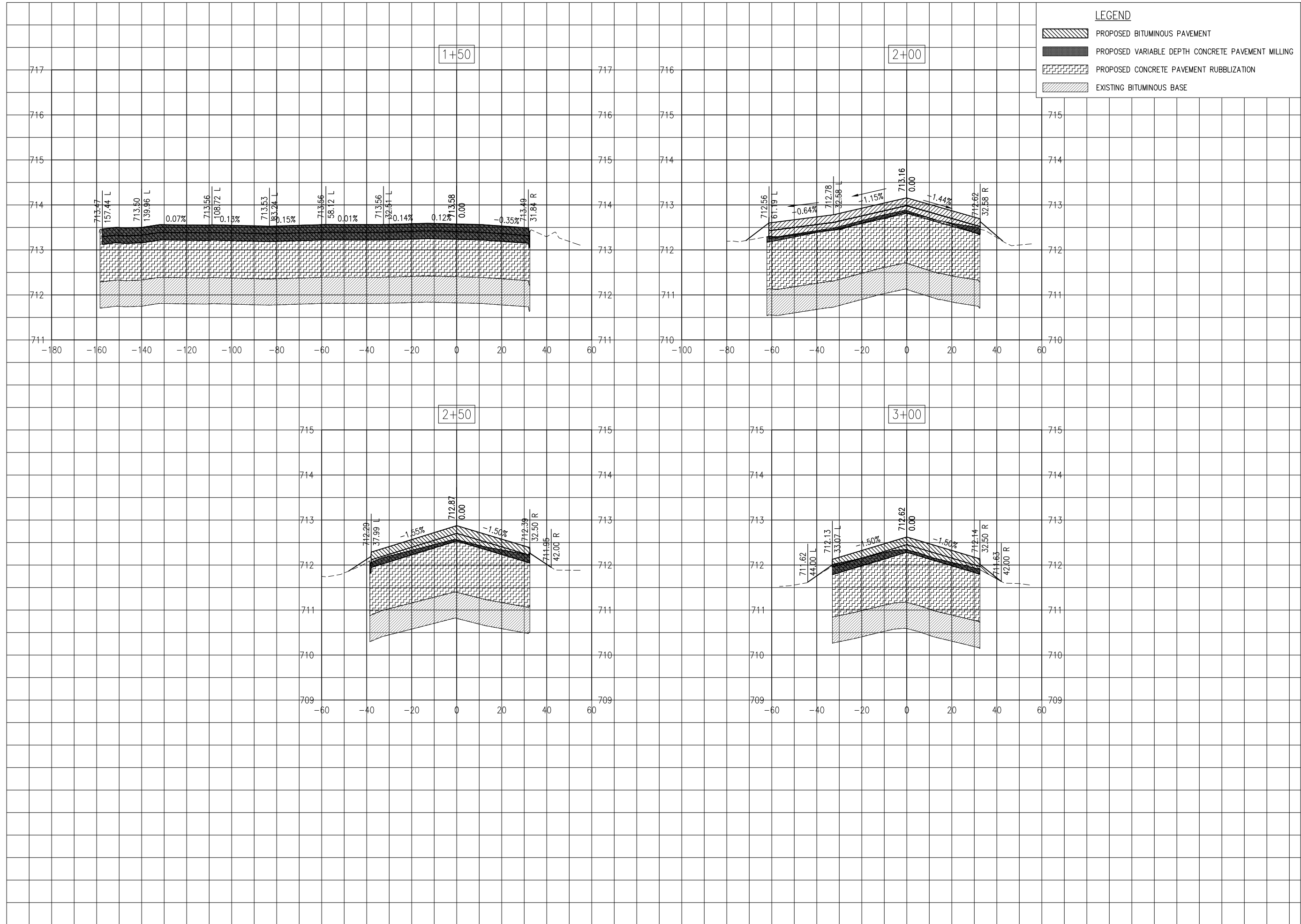
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**TAXIWAY B2 CROSS
SECTIONS STA. 5+50
- STA. 6+00**



LEGEND

	PROPOSED BITUMINOUS PAVEMENT
	PROPOSED VARIABLE DEPTH CONCRETE PAVEMENT MILLING
	PROPOSED CONCRETE PAVEMENT RUBBLIZATION
	EXISTING BITUMINOUS BASE



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

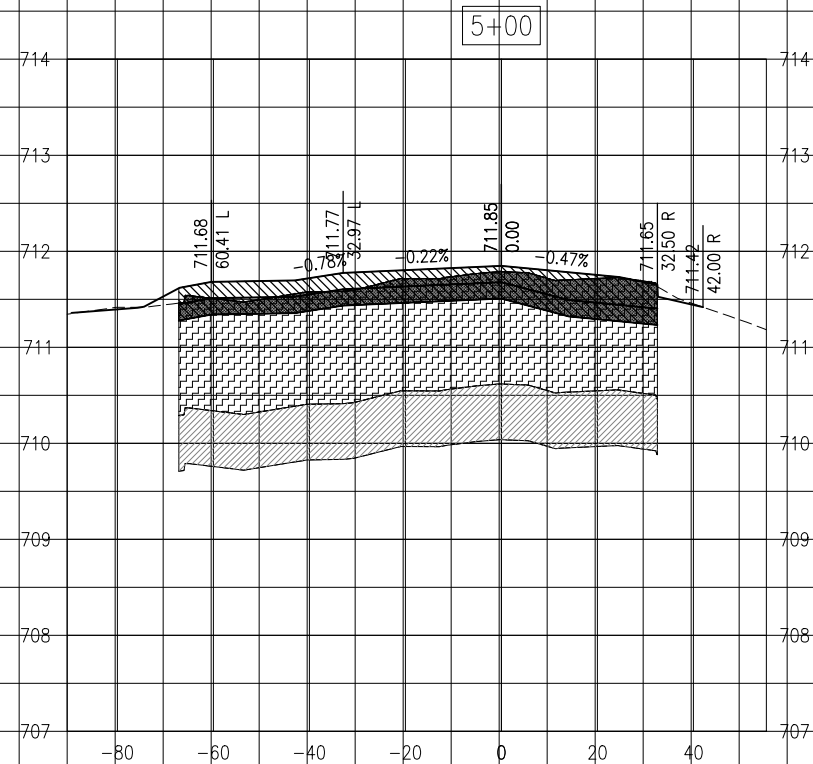
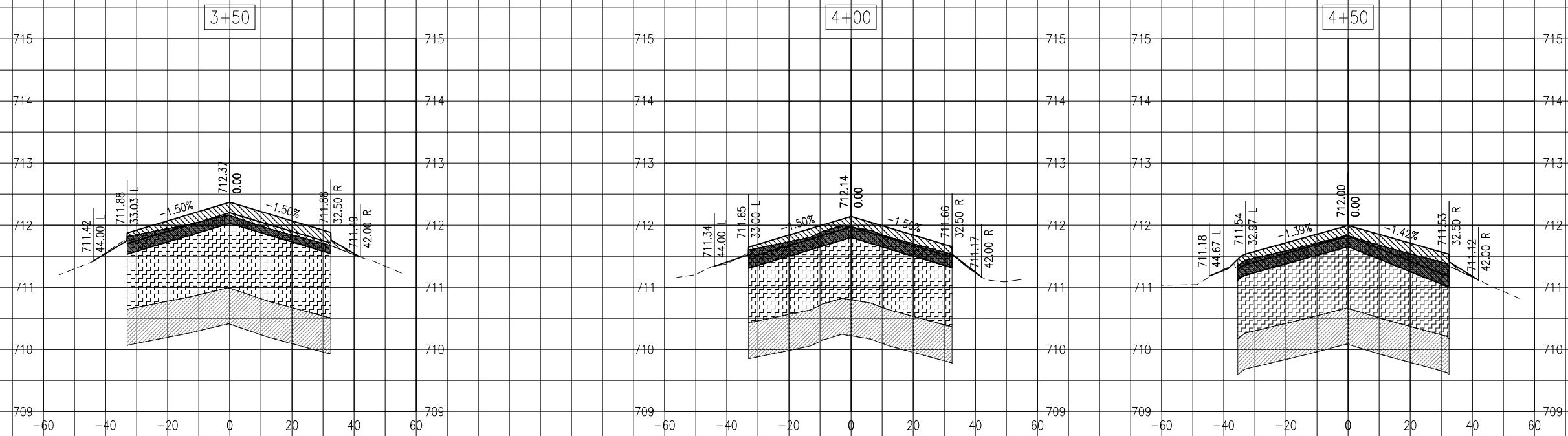
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SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
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DESIGN BY: KWS 05/2019
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SHEET TITLE

TAXIWAY B3 CROSS
SECTIONS STA. 1+50
- STA. 3+00



PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

Contract No. CO067

NO.	DATE	DESCRIPTION		
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ISSUE: 11/15/2019
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CAD FILE: C-301-XS.DWG
DESIGN BY: KWS 05/2019
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REVIEWED BY: KBS 11/08/2019

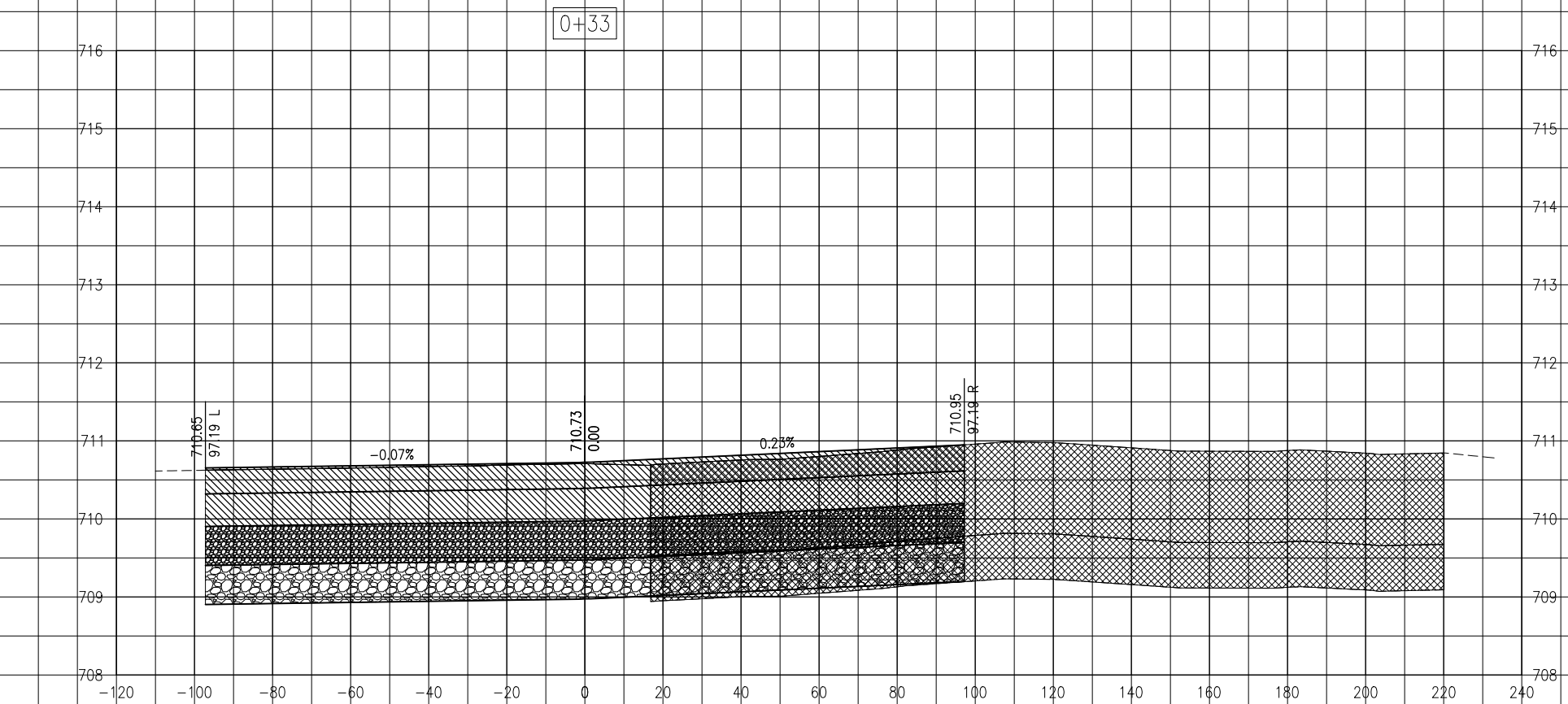
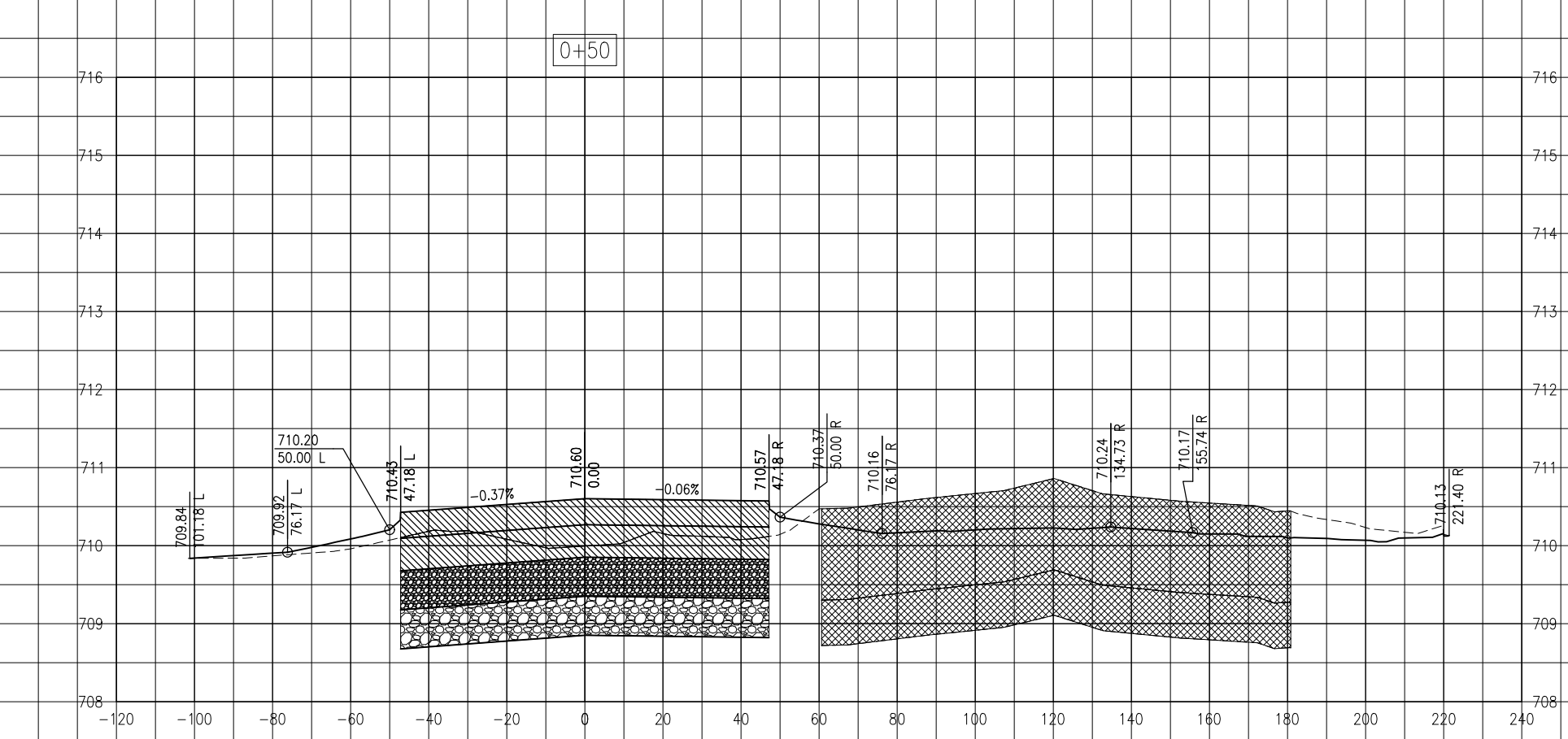
SHEET TITLE

TAXIWAY B3 CROSS
SECTIONS STA. 3+50
- STA. 5+00



LEGEND

	PROPOSED BITUMINOUS SURFACE COURSE - 4" DEPTH
	PROPOSED BITUMINOUS BASE COURSE - 5" DEPTH
	PROPOSED CRUSHED AGGREGATE BASE COURSE - 6" DEPTH
	PROPOSED OVERSIZED AGGREGATE BASE COURSE - 6" DEPTH
	EXISTING CONCRETE PAVEMENT STRUCTURE TO BE REMOVED



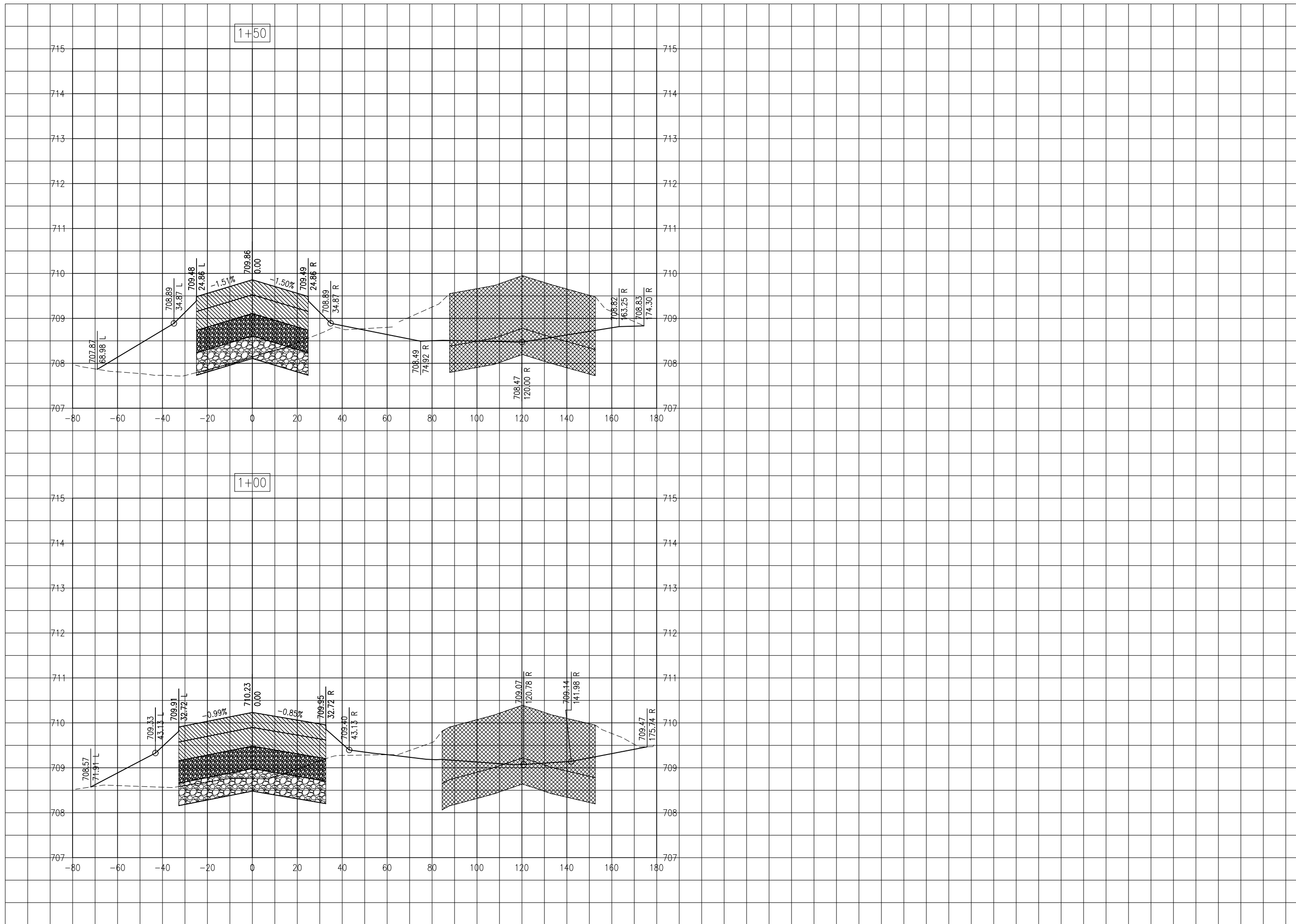
**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

SHEET TITLE

**TAXIWAY A2 CROSS
SECTIONS STA. 0+33
- STA. 0+50**



PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

Contract No. CO067

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ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-301-XS.DWG
DESIGN BY: KWS 05/2019
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REVIEWED BY: KBS 11/08/2019

SHEET TITLE

TAXIWAY A2 CROSS
SECTIONS STA. 1+00
- STA. 1+50



PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

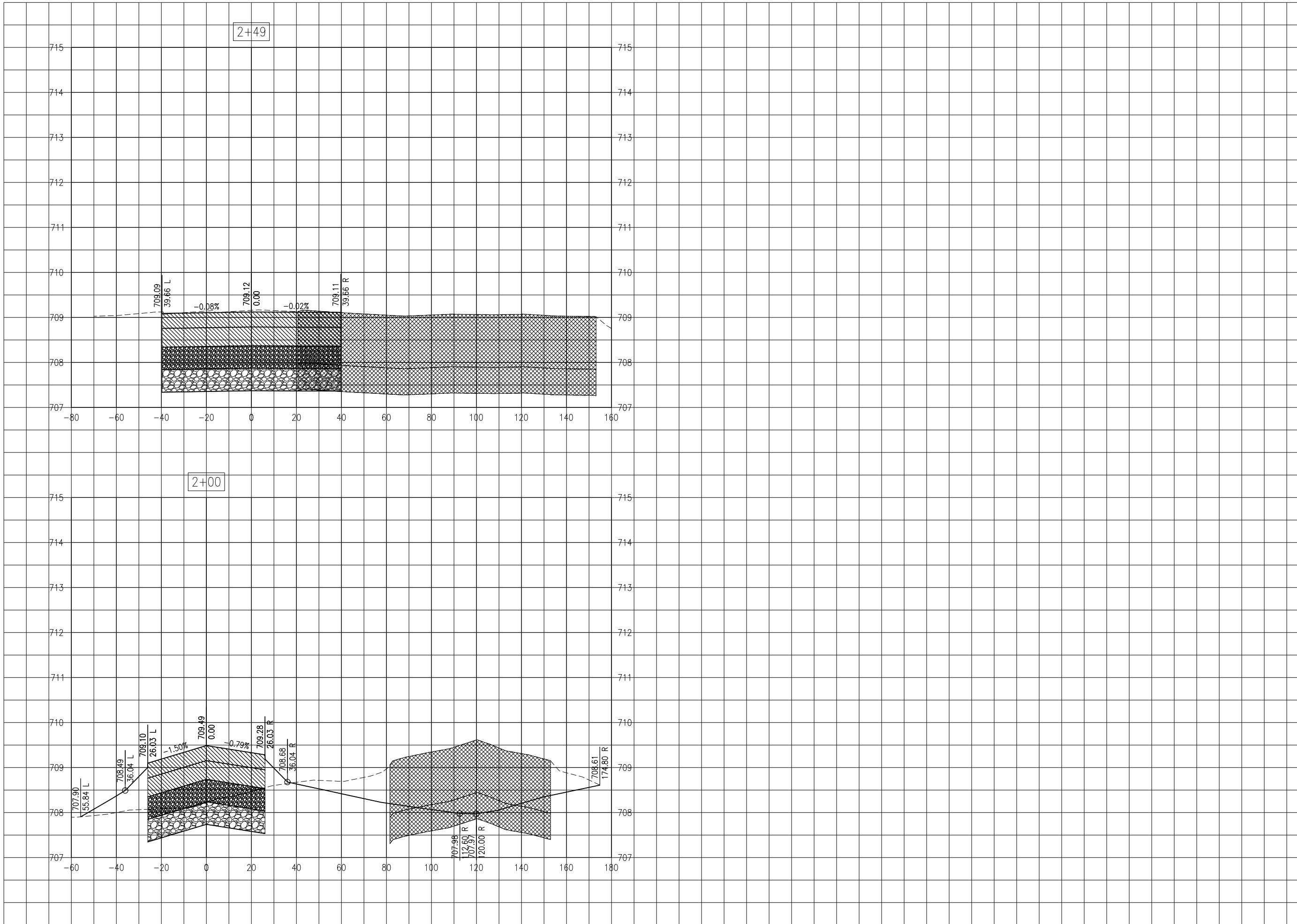
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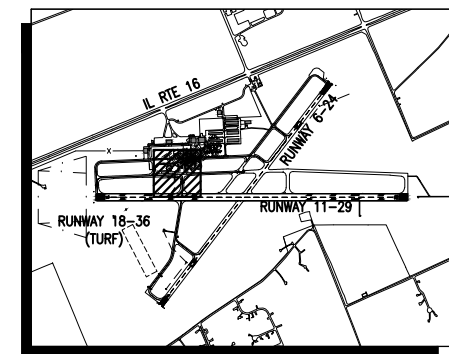
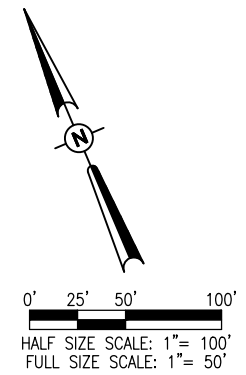
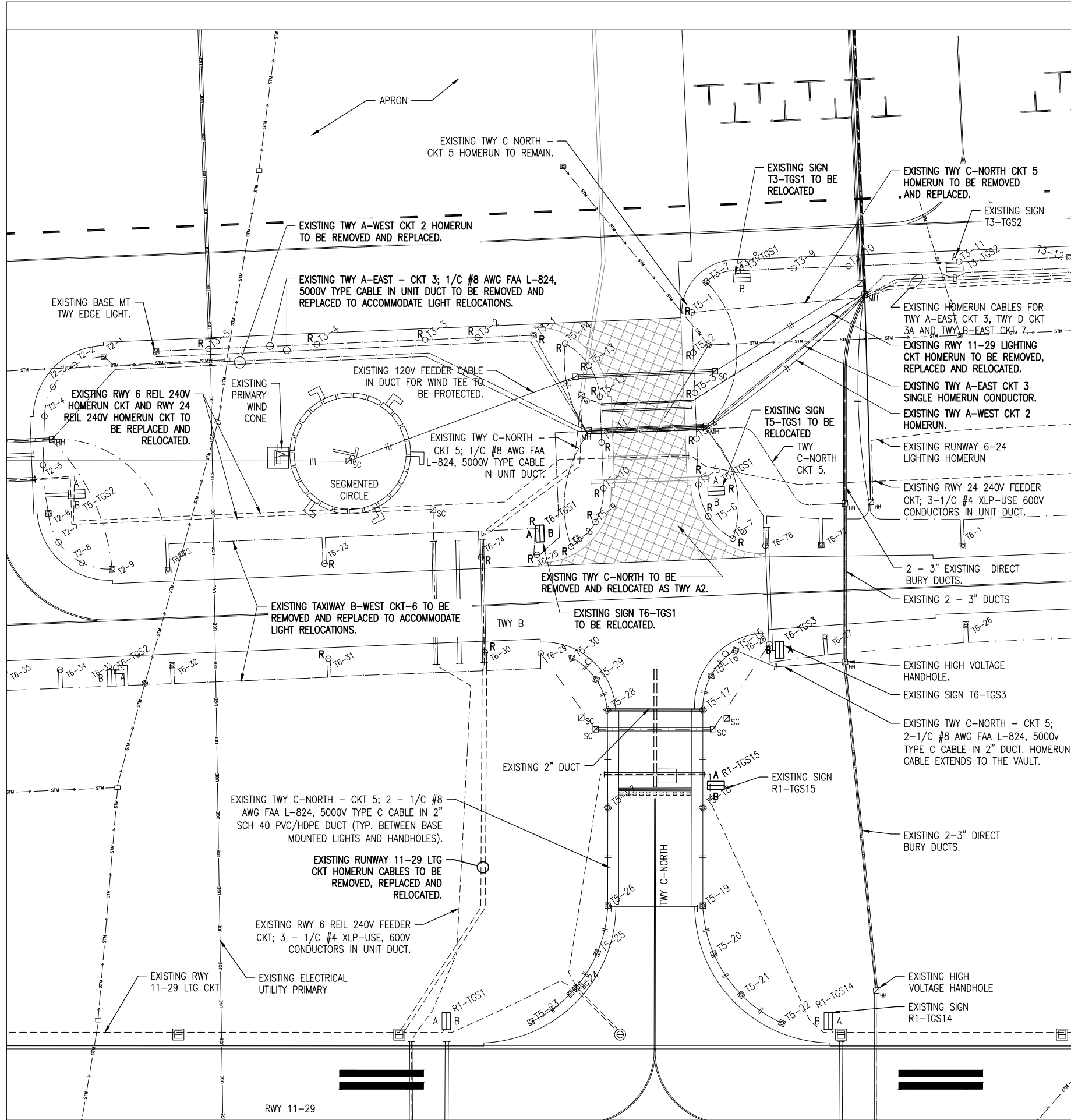
ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: C-301-XS.DWG
DESIGN BY: KWS 05/2019
DRAWN BY: NLD 05/2019
REVIEWED BY: KBS 11/08/2019

SHEET TITLE

TAXIWAY A2 CROSS
SECTIONS STA. 2+00
- STA. 2+49



NOV 13, 2019 8:57 AM SCHWEO1206
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KEY MAP

LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING 1/C #8AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- EXISTING CABLES IN 2" DUCT. (SLASHES INDICATE NUMBER OF CABLES).
- EXISTING WATER
- EXISTING TELEPHONE
- EXISTING UNDERDRAIN
- EXISTING STORM SEWER
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING UNDERGROUND ELECTRIC UTILITY PRIMARY
- EXISTING TAXI GUIDANCE SIGN
- EXISTING TAXI GUIDANCE SIGN TO BE RELOCATED
- EXISTING SLICE CAN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE RELOCATED
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE RELOCATED
- 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

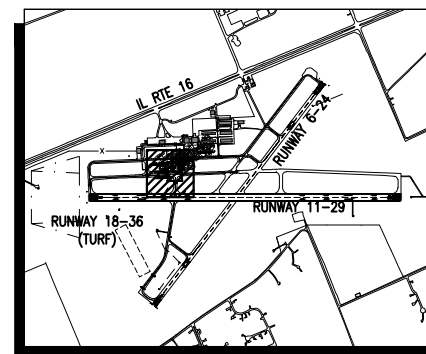
**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

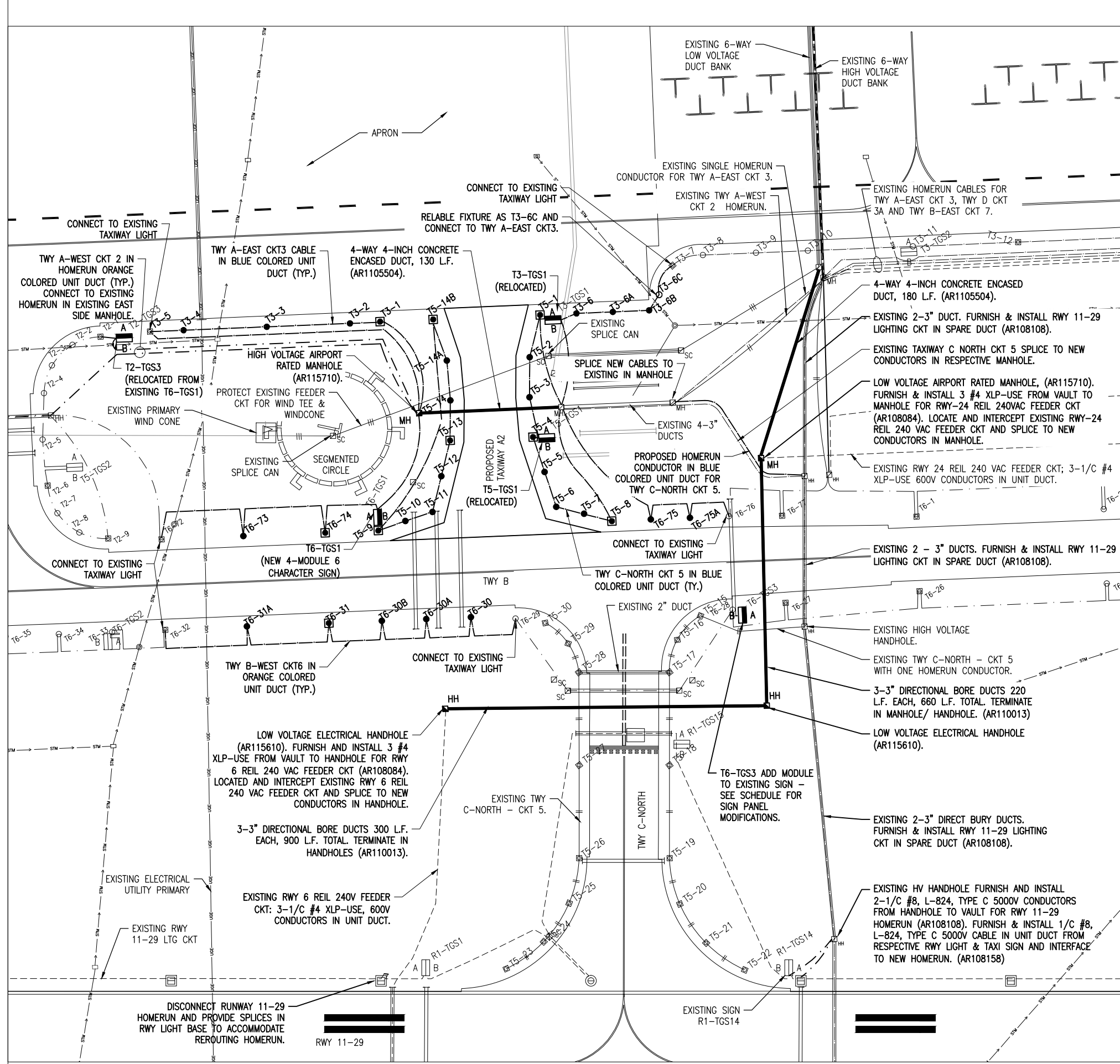
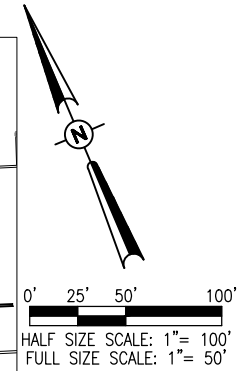
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ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-141-ELE.DWG
DESIGN BY: KNL 05/07/2019
DRAWN BY: CWS 05/08/2019
REVIEWED BY: KNL 06/26/2019

**EXISTING AIRFIELD
LIGHTING PLAN**



KEY MAP



LEGEND

- EXISTING PAVEMENT
- EXISTING BUILDING
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING ELECTRICAL CABLE
- EXISTING 1/C #8 AWG FAA L-824, 5000V CABLE IN UNIT DUCT
- EXISTING CABLES IN DUCT (SLASHES INDICATE NUMBER OF CABLES).
- PROPOSED 1/C #8AWG, 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 TAXI GUIDANCE SIGN
- NEW/RELOCATED/MODULE ADDITION TO TAXI GUIDANCE SIGN
- EXISTING STAKE MOUNTED TAXIWAY LIGHT
- RELOCATED STAKE MOUNTED TAXIWAY LIGHT
- EXISTING BASE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- EXISTING STAKE MOUNTED RUNWAY LIGHT
- EXISTING BASE MOUNTED RUNWAY 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 ELECTRICAL MANHOLE

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159

Contract No. CO067

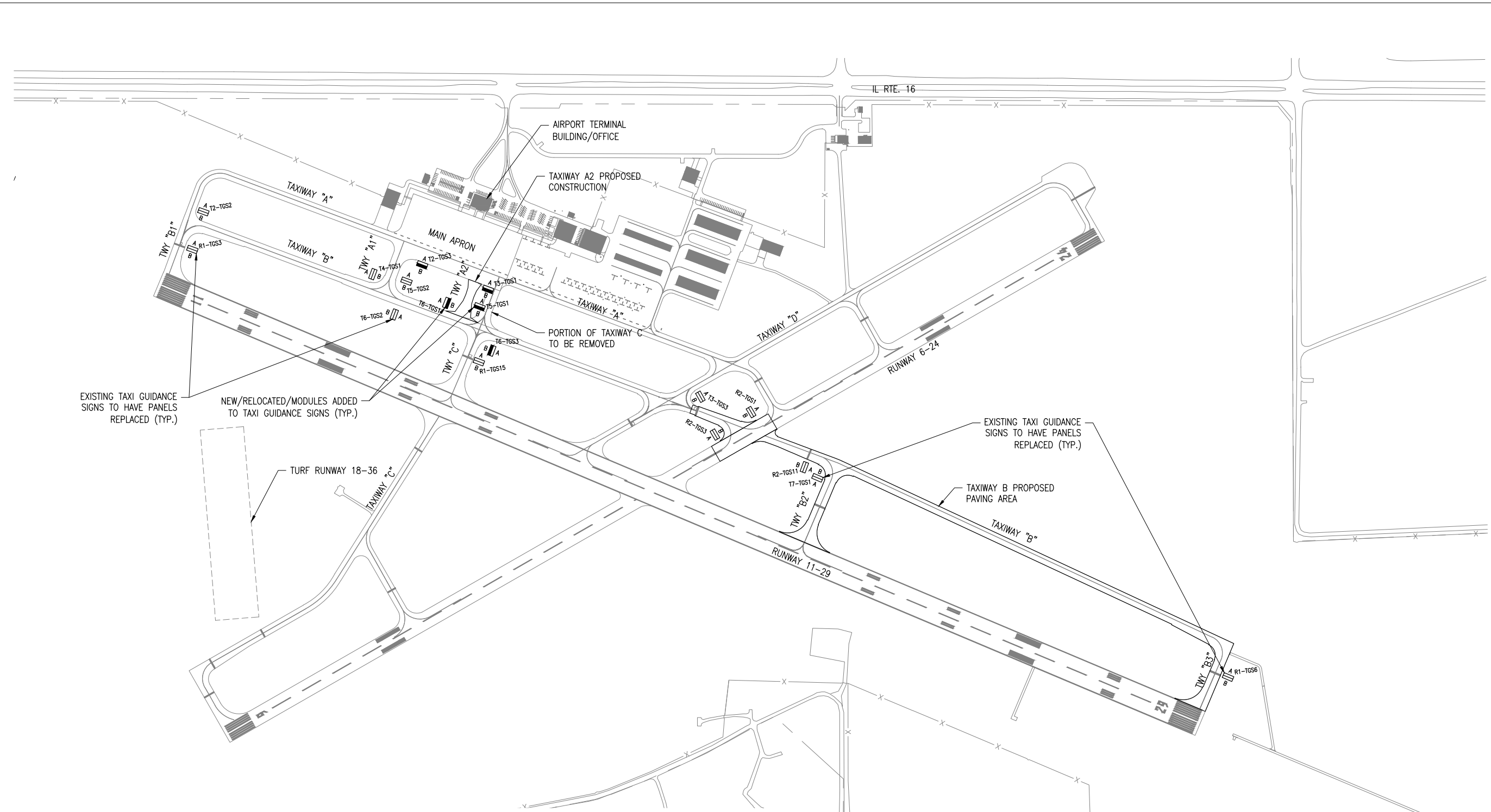
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PROJECT NO: 19A0001
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DESIGN BY: BSS/KNL 05/07/2019
DRAWN BY: CWS 05/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

**PROPOSED AIRFIELD
LIGHTING PLAN**

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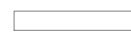



EXISTING TAXI GUIDANCE SIGNS TO HAVE PANELS REPLACED (TYP.)

NEW/RELOCATED/MODULES ADDED TO TAXI GUIDANCE SIGNS (TYP.)

EXISTING TAXI GUIDANCE SIGNS TO HAVE PANELS REPLACED (TYP.)

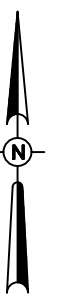
TAXIWAY B PROPOSED PAVING AREA

LEGEND

-  EXISTING PAVEMENT
-  EXISTING BUILDING
-  REPLACE PANEL(S) TO EXISTING TAXI GUIDANCE SIGN
-  NEW/RELOCATED/MODULE ADDITION TO TAXI GUIDANCE SIGN

NOTES

1. REFER TO TAXI GUIDANCE SIGN SCHEDULE SHEET FOR NEW/REPLACEMENT PANEL INFO.
2. REFER TO EXISTING/PROPOSED ELECTRICAL SHEETS FOR FURTHER DETAIL OF SIGNS AROUND PROPOSED TAXIWAY A2.
3. COST OF PANEL REPLACEMENTS FOR EXISTING SIGNS THAT ARE BEING RELOCATED SHALL BE PAID FOR UNDER THE AR125932 "REPLACE SIGN PANEL" PAY ITEM.
4. WORK AT EACH SIGN LOCATION MAY ONLY BE COMPLETED IN CONJUNCTION WITH OTHER WORK THAT REQUIRES CLOSING THAT PORTION OF THE AIRFIELD.



0' 150' 300' 600'
HALF SIZE SCALE: 1" = 600'
FULL SIZE SCALE: 1" = 300'

NOV 13, 2019 8:59 AM SCHWIE01296 1:13:05S19A000119A0001D\CAD\AIRPORT\143-TGS-P.DWG

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-143-TGS-P.DWG
DESIGN BY: KBS 05/2019
DRAWN BY: JAP 05/2019
REVIEWED BY: LDH 11/06/2019

SHEET TITLE

**TAXI GUIDANCE SIGN
MODIFICATION PLAN**

TAXI GUIDANCE SIGN SCHEDULE

SIGN NUMBER	LOCATION	EXISTING		PROPOSED		REMARKS
		SIDE A	SIDE B	SIDE A	SIDE B	
R1-TGS3	TAXIWAY B1 INTERSECTION WITH RUNWAY 11 AT HOLD LINE	B1 11	B1	NO CHANGE	B1 B→	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE B PANELS WITH NEW PANELS (1-1 MODULE PANEL).
R1-TGS6	TAXIWAY B3 INTERSECTION WITH RUNWAY 29 AT HOLD LINE	B3 29	B3	NO CHANGE	←B B3	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE B PANELS WITH NEW PANELS (1-1 MODULE PANEL).
R1-TGS15	TAXIWAY C INTERSECTION WITH RUNWAY 29-11 AT HOLD LINE	C 29 - 11	←APRON	NO CHANGE	←B C B→	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE B PANELS WITH NEW PANELS (3-1 MODULE PANELS).
R2-TGS1	RUNWAY 24 INTERSECTION WITH TAXIWAY B, WEST SIDE OF RUNWAY 24	APRON↗		B↗	NO CHANGE	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE A PANELS WITH NEW PANELS (3-1 MODULE PANELS).
R2-TGS3	RUNWAY 6 INTERSECTION WITH TAXIWAY B, WEST SIDE OF RUNWAY 6	←APRON		←B	NO CHANGE	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE A PANELS WITH NEW PANELS (3-1 MODULE PANELS).
R2-TGS11	TAXIWAY B INTERSECTION WITH RUNWAY 6-24 AT HOLD LINE	B 6-24	B	NO CHANGE	B 29↑	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE B PANELS WITH NEW PANELS (2-1 MODULE PANELS).
T2-TGS2	TAXIWAY A INTERSECTION WITH TAXIWAY B	←B A B1↑	APRON↑	NO CHANGE	B1 A↑	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE B PANELS WITH NEW PANELS (3-1 MODULE PANELS).
T2-TGS3	SOUTH SIDE OF APRON NEAR INTERSECTION WITH TAXIWAY A1	←APRON	B	A1	APRON↑	RELOCATE EXISTING SIGN NO. T6-TGS1. REPLACE SIDES A & B SIGN PANELS (3-1 MODULE PANELS/SIDE-6 TOTAL). CONNECT SIGN TO TAXIWAY A-WEST CIRCUIT 2.
T3-TGS1	SOUTH SIDE OF APRON NEAR INTERSECTION WITH TAXIWAY A2	6-29↑ 11→		A2	APRON↑	RELOCATE EXISTING SIGN. REPLACE SIDES A & B SIGN PANELS (3-1 MODULE PANELS/SIDE-6 TOTAL). CONNECT SIGN TO TAXIWAY A-EAST CIRCUIT 3.
T3-TGS3	TAXIWAY D AT INTERSECTION WITH TAXIWAY B	←29 11↗		←B D B↗	D 24↑	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDES A AND B PANELS WITH NEW PANELS (3-1 MODULE PANELS/SIDE-6 TOTAL).
T4-TGS1	TAXIWAY B AT WEST SIDE OF ACCESS TAXIWAY A1 TO WEST SIDE OF APRON	←APRON	11↑	←A1 B	NO CHANGE	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE A PANELS WITH NEW PANELS (3-1 MODULE PANELS).
T5-TGS1	TAXIWAY A2 AT INTERSECTION WITH TAXIWAY B	←29 6↑	APRON↑	←B→	A2	RELOCATE EXISTING SIGN. REPLACE EXISTING SIDES A AND B PANELS WITH NEW 3-1 MODULE PANELS/SIDE-6 TOTAL. CONNECT SIGN TO TAXIWAY C-NORTH CIRCUIT 5.
T5-TGS2	ACCESS TAXIWAY A1 TO WEST SIDE OF APRON AT INTERSECTION WITH TAXIWAY B	11→		←B→	A1	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE A AND B PANELS WITH NEW PANELS (3-1 MODULE PANELS).
T6-TGS1	TAXIWAY B AT INTERSECTION WITH TAXIWAY A2 AT WEST SIDE OF TAXIWAY A2			←A2 B C→	B	NEW 6-CHAR. 4-MODULE SIGN. CONNECT SIGN TO TAXIWAY B-WEST CIRCUIT 6.
T6-TGS2	TAXIWAY B AT EAST SIDE OF ACCESS TAXIWAY A1 TO WEST SIDE OF APRON	APRON→	B	B A1→	NO CHANGE	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE A PANELS WITH NEW PANELS (3-1 MODULE PANELS).
T6-TGS3	TAXIWAY B AT INTERSECTION WITH TAXIWAY C AT EAST SIDE OF TAXIWAY C	APRON→	B	←C B A2→	B	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE A PANELS (3-1 MODULE PANELS). ADD NEW 2 CHAR. SIGN TO OUTSIDE END (1-1 MODULE PANEL/SIDE).
T6-TGS5	TAXIWAY B AT INTERSECTION WITH TAXIWAY D	←24 29↑	APRON↑	←D B D↗	B	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDES A AND B PANELS WITH NEW PANELS (3-1 MODULE PANELS/SIDE-6 TOTAL).
T7-TGS1	TAXIWAY B2 AT INTERSECTION WITH TAXIWAY B	←APRON		←B→	NO CHANGE	EXISTING SIGN TO REMAIN IN PLACE; REPLACE EXISTING SIDE A PANELS WITH NEW PANELS (3-1 MODULE PANELS).

TAXI GUIDANCE SIGN LEGEND

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

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

Contract No. CO067

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 RELOCATED OR NEW AIRFIELD LIGHT FIXTURE AND EACH RELOCATED OR NEW TAXI GUIDANCE SIGN.
- ALL EXISTING SIGN PANELS TO BE REPLACED SHALL BE TURNED OVER TO THE AIRPORT.

LIGHT LOCATION TABLE

LIGHT NUMBER	NORTHING	EASTING	CIRCUIT	FIXTURE TYPE	GROUND RESISTANCE
T3-1	1024995.83	998291.91	TWY A-EAST CKT 3	NEW BASE MOUNTED L-861T(L)	
T3-2	1025005.28	998265.19	TWY A-EAST CKT 3	RELOCATED STAKE MOUNTED L-861T(L)	
T3-3	1025032.78	998191.80	TWY A-EAST CKT 3	RELOCATED STAKE MOUNTED L-861T(L)	
T3-4	1025060.28	998118.40	TWY A-EAST CKT 3	RELOCATED STAKE MOUNTED L-861T(L)	
T3-6	1024931.12	998465.26	TWY A-EAST CKT 3	RELOCATED STAKE MOUNTED L-861T(L)	
T3-6A	10244919.17	998497.33	TWY A-EAST CKT 3	RELOCATED STAKE MOUNTED L-861T(L)	
T3-6B	1024907.21	998529.41	TWY A-EAST CKT 3	RELOCATED STAKE MOUNTED L-861T(L)	
T5-1	1024943.08	998433.19	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	
T5-2	10244910.23	998408.74	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	
T5-3	1042875.64	998393.89	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	
T5-4	1024839.80	998382.34	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	
T5-5	1024805.24	998379.68	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	
T5-6	1024770.69	998377.01	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	
T5-7	1024754.61	998398.57	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	
T5-8	1024738.06	998419.95	TWY C-NORTH CKT 5	NEW BASE MOUNTED L-861T(L)	
T5-9	1024815.30	998213.94	TWY C-NORTH CKT 5	NEW BASE MOUNTED L-861T(L)	
T5-10	1024813.66	998240.95	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	
T5-11	1024811.61	998267.81	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	

LIGHT LOCATION TABLE

LIGHT NUMBER	NORTHING	EASTING	CIRCUIT	FIXTURE TYPE	GROUND RESISTANCE
T5-12	1024839.40	998288.51	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	
T5-13	1024867.20	998309.21	TWY C-NORTH CKT 5	NEW BASE MOUNTED L-861T(L)	
T5-14	1024901.80	998324.05	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	
T5-14A	1024937.64	998335.60	TWY C-NORTH CKT 5	RELOCATED STAKE MOUNTED L-861T(L)	
T5-14B	1024978.29	998338.73	TWY C-NORTH CKT 5	NEW BASE MOUNTED L-861T(L)	
T6-30	1024706.28	998262.58	TWY B-WEST CKT 6	RELOCATED STAKE MOUNTED L-861T(L)	
T6-30A	1024720.96	998223.34	TWY B-WEST CKT 6	RELOCATED STAKE MOUNTED L-861T(L)	
T6-30B	1024735.64	998184.10	TWY B-WEST CKT 6	NEW BASE MOUNTED L-861T(L)	
T6-31	1024753.16	998137.26	TWY B-WEST CKT 6	RELOCATED STAKE MOUNTED L-861T(L)	
T6-31A	1024780.16	998065.07	TWY B-WEST CKT 6	RELOCATED STAKE MOUNTED L-861T(L)	
T6-73	1024859.79	998094.91	TWY B-WEST CKT 6	RELOCATED STAKE MOUNTED L-861T(L)	
T6-74	1024832.76	998167.09	TWY B-WEST CKT 6	NEW BASE MOUNTED L-861T(L)	
T6-75	1024712.25	998488.88	TWY B-WEST CKT 6	RELOCATED STAKE MOUNTED L-861T(L)	
T6-75A	1024725.16	998454.41	TWY B-WEST CKT 6	RELOCATED STAKE MOUNTED L-861T(L)	
T2-TGS3	1025077.88	998057.17	TWY A-WEST CKT 2	RELOCATED TAXI GUIDANCE SIGN	
T3-TGS1	1024938.37	998431.44	TWY A-EAST CKT 3	RELOCATED TAXI GUIDANCE SIGN	
T5-TGS1	1024837.06	998383.55	TWY C-NORTH CKT 5	RELOCATED TAXI GUIDANCE SIGN	
T6-TGS1	1024820.00	998215.71	TWY B-WEST CKT 6	NEW TAXI GUIDANCE SIGN	

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-143-SCHD.DWG
DESIGN BY: KNL 05/05/2019
DRAWN BY: CWS 05/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

**LIGHT LOCATION
TABLE & TAXI
GUIDANCE SIGN
SCHEDULE**



AIRFIELD LIGHTING REMOVAL, RELOCATION, AND INSTALLATION NOTES

- 1. KEEP ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- 2. EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS.
- 3. VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, RELOCATING, INSTALLING, OR CONNECTING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICE.
- 4. INSTALL AIRFIELD LIGHTS, TAXIWAY LIGHTS, GUIDANCE SIGNS, OTHER AIRFIELD LIGHTING, SPLICE CANS, HANDHOLES, MANHOLES, ELECTRICAL DUCTS, AND CABLE AT THE LOCATIONS SHOWN AND IN COMPLIANCE WITH THE SPECIFICATIONS, SPECIAL PROVISIONS, RESPECTIVE DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
- 5. NEW CABLE FOR RUNWAY AND TAXIWAY LIGHTING CABLE IN AREAS ALONG THE RESPECTIVE PAVEMENT SHALL BE INSTALLED APPROXIMATELY 10' TO 14' FROM THE PAVEMENT EDGE. CABLES SHALL BE PLACED A MINIMUM OF 18" BELOW FINISHED GRADE.
- 6. LIGHTING CABLE FOR RUNWAY AND TAXIWAY LIGHTING SHALL BE 1/C, #8 AWG, FAA L-824, 5000 VOLT, TYPE C UNDERGROUND CABLE IN DUCT OR RACEWAY.
- 7. IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE CROSSES AN EXISTING CABLE, THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH NECESSARY FOR THE PROPOSED CABLE. AT OTHER LOCATIONS, THE PROPOSED CABLE MAY BE TRENCHED OR PLOWED INTO PLACE. HAND DIGGING, TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 8. GROUND ROD MUST BE INSTALLED AT EACH LIGHT FIXTURE AND TAXI SIGN. THE PURPOSE OF THE LIGHT BASE GROUND IS PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. PER NATIONAL ELECTRICAL CODE ARTICLE 250.53 "GROUNDING ELECTRODE SYSTEM INSTALLATION" RESISTANCE FROM THE GROUND ROD/ELECTRODE TO EARTH GROUND MUST BE 25 OHMS OR LESS VIA MEASUREMENT WITH A GROUND TESTER. GROUNDS RODS FOR LIGHT BASE GROUNDS SHALL BE 3/4-INCH BY 10- FEET MINIMUM LENGTH UL LISTED COPPER-CLAD STEEL SECTIONAL RODS. GROUND RODS SHALL BE PRODUCED FROM 100% DOMESTIC STEEL. EACH GROUND ROD SHALL BE TESTED AND THE RESULTS RECORDED FOR EACH AIRFIELD LIGHT FIXTURE AND TAXI SIGN INSTALLATION. COPIES OF GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE PROJECT ENGINEER AND/OR THE RESIDENT ENGINEER/TECHNICIAN.
- 9. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT.
- 10. THE RESPECTIVE RUNWAY AND TAXIWAY LIGHTING CCR'S (FOR THE AREAS OF WORK ON THIS PROJECT) SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, AND/OR ADDITIONS AND AFTER THE NEW CABLES AND LIGHTING SYSTEM MODIFICATIONS AND ADDITIONS HAVE BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATIONS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT ENGINEER/TECHNICIAN. TEST RESULTS SHALL BE PROVIDED TO THE PROJECT ENGINEER AND RESIDENT ENGINEER/TECHNICIAN.
- 11. FAA AC 150/5370-10G "STANDARDS FOR SPECIFYING CONSTRUCTION OF AIRPORTS", ITEM L-108 "UNDERGROUND POWER CABLE FOR AIRPORTS", REQUIRES THAT EVERY AIRFIELD LIGHTING CABLE SPLICER SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED ABOVE 5,000 VOLTS AC. CABLE SPLICING/TERMINATING PERSONNEL SHALL HAVE A MINIMUM OF THREE (3) YEARS CONTINUOUS EXPERIENCE IN TERMINATING/SPLICING MEDIUM VOLTAGE CABLE.
- 12. OTHER CONSTRUCTION PROJECTS MIGHT BE IN PROGRESS AT THE AIRPORT AT THE SAME TIME AS THIS PROJECT. THE CONTRACTOR WILL BE REQUIRED TO COOPERATE WITH ALL OTHER CONTRACTORS AND THE AIRPORT MANAGER IN THE COORDINATION OF THE WORK.
- 13. OBTAIN APPROVAL FROM THE AIRPORT MANAGER PRIOR TO SHUTTING DOWN A RUNWAY OR TAXIWAY. WHEN A RESPECTIVE RUNWAY IS CLOSED THE RESPECTIVE RUNWAY LIGHTING AND NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF. WHEN A RESPECTIVE TAXIWAY IS CLOSED THE RESPECTIVE TAXIWAY LIGHTING FOR THAT TAXIWAY SHALL BE SHUT OFF.
- 14. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE NEW WORK, WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
- 15. 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 DIRECTION.

- 16. SIGNS AND/OR AIRFIELD LIGHTS THAT ARE DESIGNATED FOR RELOCATION SHALL BE DISCONNECTED AND CAREFULLY REMOVED BY THE CONTRACTOR AS NOT TO DAMAGE THE LIGHT. THE SIGN, LIGHT ASSEMBLY, MOUNTING HARDWARE AND MOUNTING STAKE SHALL BE RELOCATED AND INSTALLED IN THE LOCATION SHOWN. FURNISH AND INSTALL A NEW 3/4" DIAMETER BY 10 FEET LONG UL LISTED COPPERCLAD GROUND FOR EACH RELOCATED SIGN AND LIGHT FIXTURE. EXISTING GROUND RODS FOR SIGNS AND AIRFIELD LIGHT FIXTURES SCHEDULED FOR REMOVAL AND/OR RELOCATION SHALL BE REMOVED. EXISTING CABLES AND DUCTS ASSOCIATED WITH THE SIGN AND/OR AIRFIELD LIGHT FIXTURE RELOCATION SHALL BE DISCONNECTED AND REMOVED. THE CONTRACTOR IS ENCOURAGED TO INSPECT EACH EXISTING LIGHT AND/OR TAXI GUIDANCE SIGN PRIOR TO RELOCATION AND IDENTIFY TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN ANY DAMAGED OR INOPERATING PARTS. ONCE THE EXISTING LIGHT OR SIGN IS REMOVED, THE CONTRACTOR IS RESPONSIBLE FOR ALL FIXTURES DAMAGED DURING THE RELOCATION. ALL LIGHTS AND SIGNS WILL BE REINSTALLED IN PROPER WORKING ORDER, OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- 17. EXISTING DUCTS AND CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS, RELOCATIONS, AND/OR CABLE OR DUCT REPLACEMENTS SHALL BE REMOVED AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT. ALL CABLE AND DUCT REMOVAL ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS, RELOCATIONS, AND/OR CABLE OR DUCT REPLACEMENTS WILL BE CONSIDERED INCIDENTAL TO THE ASSOCIATED WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. PROVIDE TEMPORARY CABLES AND DUCTS TO ACCOMMODATE AIRFIELD LIGHTING CIRCUITS THAT ARE TO REMAIN ACTIVE DURING CONSTRUCTION. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES.
- 18. OWNER SHALL BE KEPT INFORMED OF WORK AND SCHEDULES.
- 19. ROUTE NEW CABLES AND DUCTS TO AVOID INTERFERENCES WITH OTHER UTILITIES, LINES, AND STRUCTURES.
- 20. ALL ABOVEGROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2G, OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 2.18.3 "LIGHTING AND VISUAL NAVAIDS". ALL LABOR, MATERIALS, AND TIME NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 21. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
- 22. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
- 23. WHEN A RESPECTIVE RUNWAY IS CLOSED THE NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF. KEEP RESPECTIVE NAVAIDS ACTIVE DURING TIMES WHEN RESPECTIVE RUNWAY IS OPEN.
- 24. CONTRACTOR SHALL INTERFACE EXISTING AIRFIELD LIGHTING AND/OR TAXI SIGNS TO THE NEW, REMOVED, REINSTALLED, ADJUSTED, REPLACED, AND/OR RELOCATED AIRFIELD LIGHTING AND ASSOCIATED CIRCUITS.
- 25. PROVIDE AND/OR RELOCATE TAXIWAY LIGHT FIXTURE TAGS TO ACCOMMODATE NEW LIGHT FIXTURES, TAXIWAY LIGHT FIXTURE REMOVALS, RELOCATIONS, SERIES CIRCUIT CHANGES AND RENUMBERING
- 26. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, RACEWAY, JUNCTION STRUCTURE, OR HANDHOLE.
- 27. THE PROPOSED TAXI GUIDANCE SIGNS AND 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 OF WHITE LEGEND ON RED BACKGROUND); AND/OR TYPE L-858L(L) LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND). THE REPLACEMENT SIGN PANELS SHALL BE MANUFACTURED BY THE ORIGINAL EQUIPMENT MANUFACTURER TO MAINTAIN THE ETL LISTING AND FAA APPROVAL OF EACH RESPECTIVE SIGN.
- 28. ALL SIGNS SHALL BE FURNISHED WITH TETHERS. TETHERS SHALL BE 3/16" STAINLESS STEEL AIRCRAFT CABLE WITH A FORMED EYE ON BOTH ENDS. THE TETHER EYE SHALL BE ATTACHED TO THE SIGN AND BASE BY BEING SANDWICHED BETWEEN TWO STAINLESS STEEL FENDER WASHERS, WITH A 1/2" MINIMUM STAINLESS STEEL BOLT. THE TETHER SHALL BE OF SUFFICIENT LENGTH TO HAVE A MINIMUM OF 6" OF SLACK WHEN ATTACHED BETWEEN THE SIGN AND THE SIGN BASE. THE TETHERS AND BONDING CONDUCTORS SHALL BE OF SUFFICIENT LENGTH TO ALLOW THE FRANGIBLE COUPLINGS TO OPERATE WITHOUT RESTRICTIONS AND TO ALLOW THE POWER CABLE TO DISCONNECT IF THE SIGN FALLS OVER. PROVIDE 3" ± 1/2" SLACK IN TETHER AND ALL TETHERS SHALL BE THE SAME LENGTH.
- 29. ALL SIGNS SHALL BE ORIENTATED SUCH THAT THE LONGITUDINAL CENTERLINE OF THE SIGN IS PERPENDICULAR TO THE RESPECTIVE TAXIWAY/RUNWAY CENTERLINE, UNLESS NOTED OTHERWISE.

- 30. ALL MANDATORY SIGNS (SIZE 1) SHALL BE LOCATED 15' OFF THE EDGE OF FULL STRENGTH PAVEMENT, (UNLESS DETAILED OTHERWISE) AND ALIGNED WITH THE FRONT EDGE OF THE FIRST YELLOW STRIPE (FURTHEST FROM THE RUNWAY) OF THE HOLD POSITION MARKING UNLESS SHOWN OTHERWISE FOR A RESPECTIVE SIGN. CONFIRM LOCATIONS WITH THE PROJECT ENGINEER.
- 31. RUNWAY EXIT/TAXIWAY ENTRANCE SIGNS (TAXIWAY GUIDANCE SIGNS TO DEFINE THE THROAT OR ENTRANCE INTO THE INTERSECTING TAXIWAY ROUTE) OR RUNWAY EXIT/TAXIWAY ENTRANCE LIGHTS SHALL BE CONNECTED TO THE RESPECTIVE RUNWAY CIRCUIT TO BE ILLUMINATED WHEN THE RUNWAY EDGE LIGHTS ARE ON TO COMPLY WITH FAA AC 150/5340-18F, CHAPTER 1, PART 15 "SIGN OPERATION", AND/OR FAA AC 150/5340-30J PART 2.5.3.4.
- 32. HOLDING POSITION SIGNS FOR RUNWAYS SHALL BE CONNECTED TO THE RESPECTIVE RUNWAY SERIES CIRCUIT TO BE ILLUMINATED WHEN THE ASSOCIATED RUNWAY LIGHTS ARE ILLUMINATED TO COMPLY WITH FAA AC150/5340-18F, CHAPTER 1, PART 15 "SIGN OPERATION".
- 33. CONCRETE STEEL REINFORCEMENT SHALL BE TYPE ASTM A615 OR A706 GRADE 60. ALL REINFORCEMENT SHALL HAVE A 3" MINIMUM CONCRETE COVER. REINFORCEMENT MAY BE ADJUSTED TO MISS INTERFERENCES. CONCRETE SHALL CONFORM TO ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.
- 34. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

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

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

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

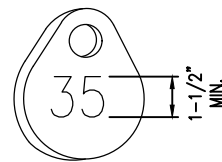
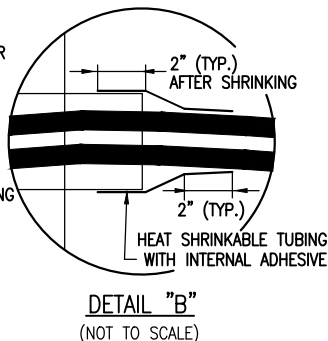
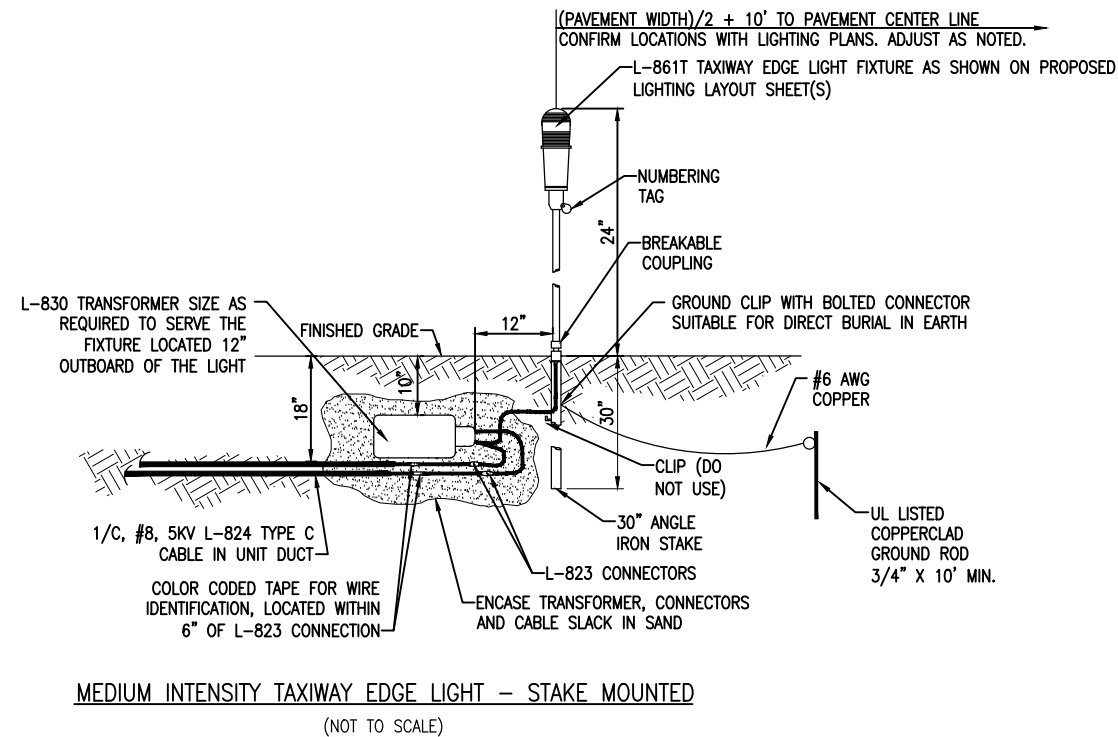
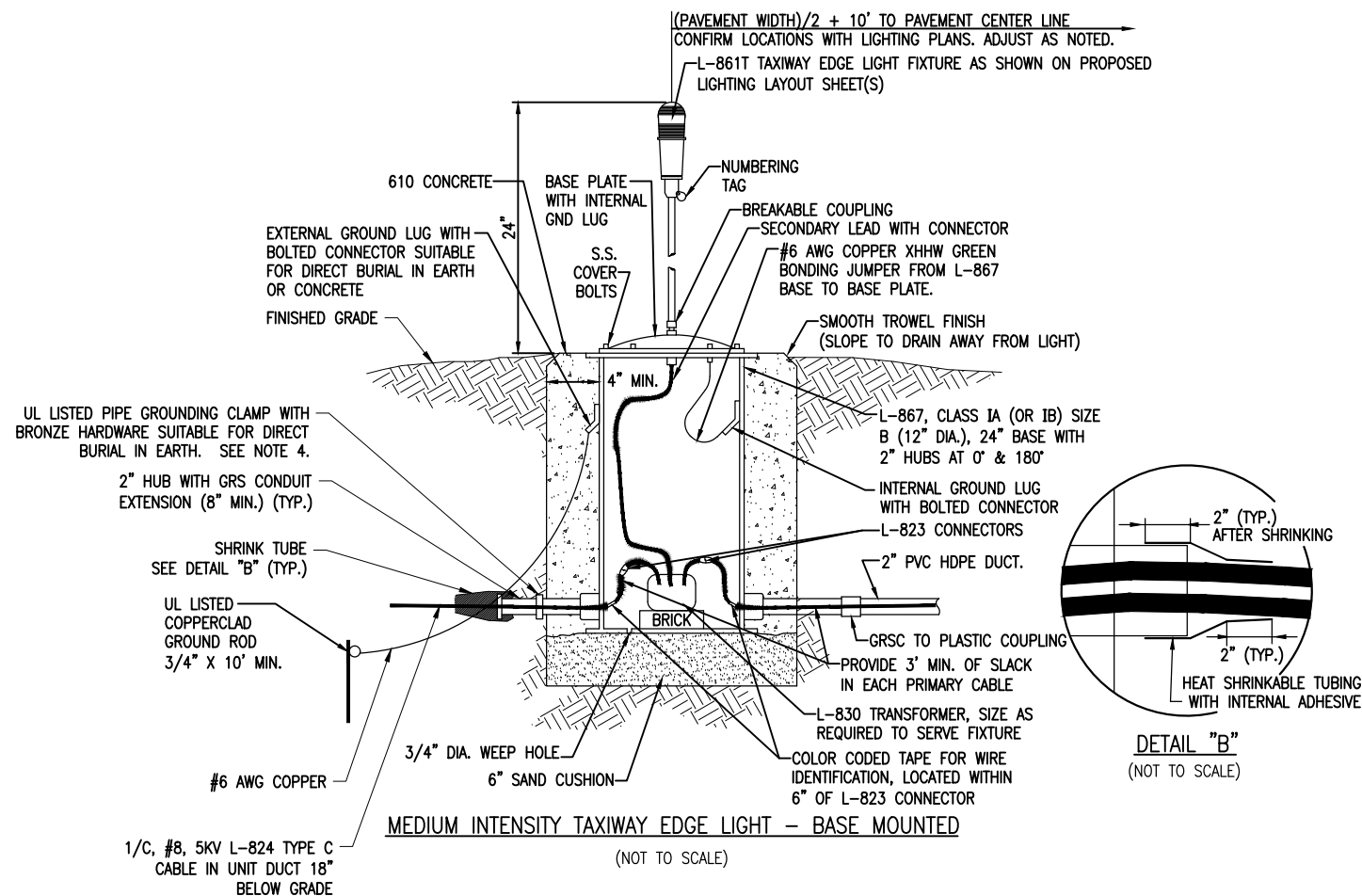
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SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-001-NOTES.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

**AIRFIELD LIGHTING
NOTES**



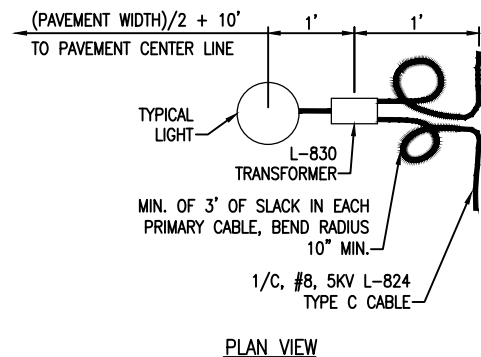
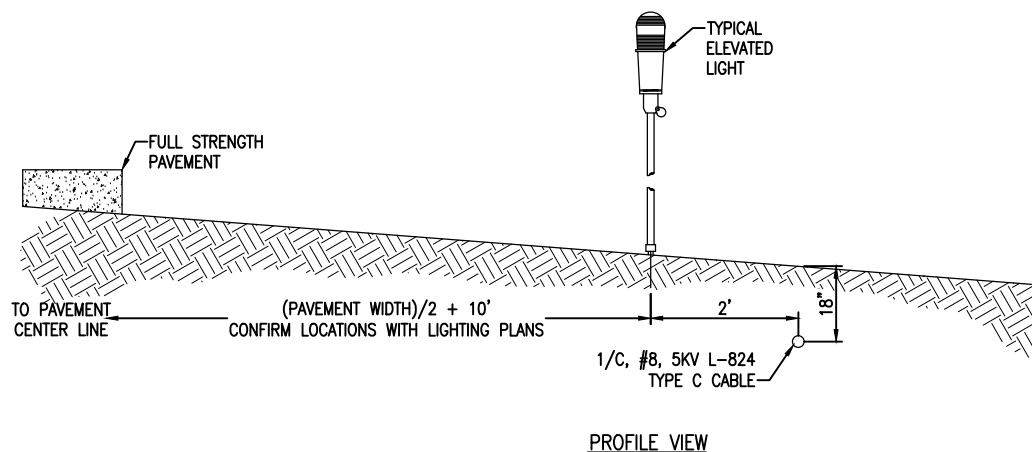
NOTE:
AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.

NUMBERING TAG DETAIL
(NOT TO SCALE)

NOTES:

- SEE ELECTRICAL NOTES SHEETS.
- SEE "ELECTRICAL NOTES SHEET 2" AND "GROUNDING NOTES" SHEET FOR GROUNDING NOTES FOR AIRFIELD LIGHTING.
- SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR LIGHT LOCATIONS
- WHERE GROUND LUGS ARE NOT ACCESSIBLE ON BASE CANS, PROVIDE A UL LISTED PIPE GROUND CLAMP RATED FOR DIRECT BURIAL IN EARTH AND BOND TO THE METAL CONDUIT EXTENSION TO PROVIDE GROUND PATH TO LIGHT BASE.

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



LIGHT AND CABLE INSTALLATION DETAIL
(NOT TO SCALE)

NOTES:
SEE PROPOSED LIGHTING LAYOUT SHEET FOR LIGHT LOCATIONS.

PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

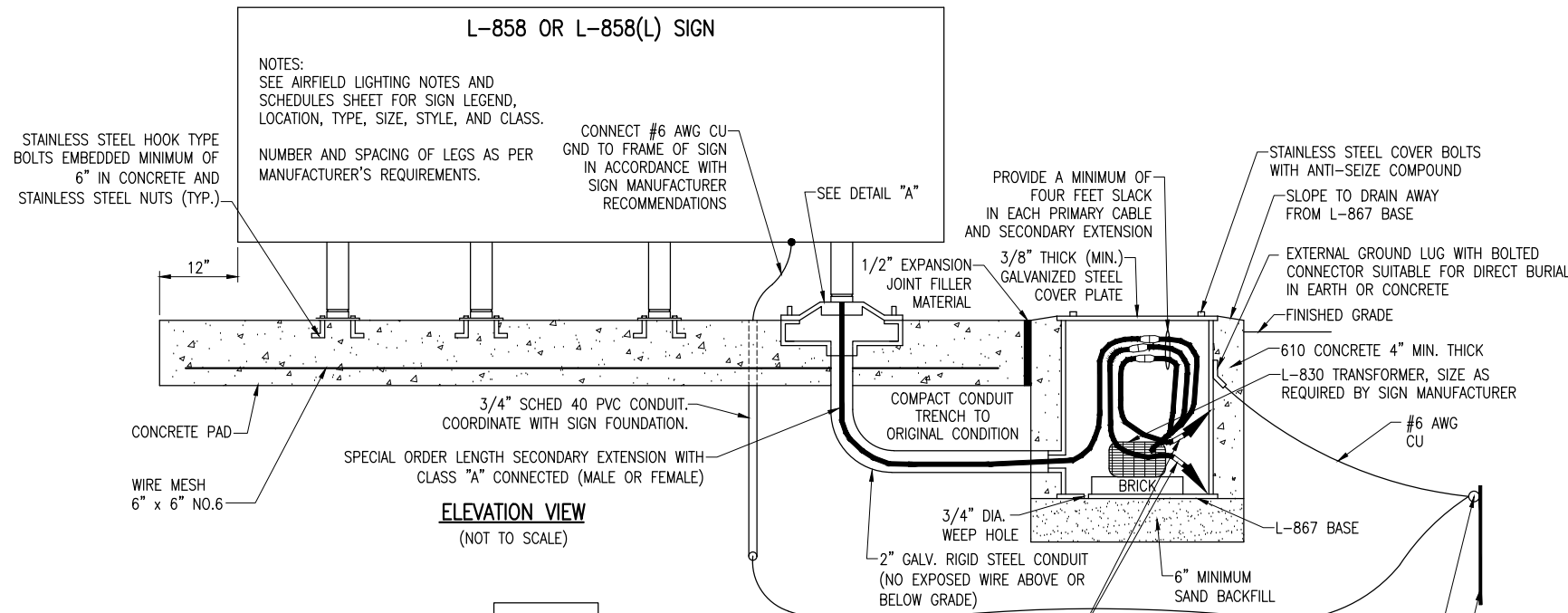
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NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-501-ELEC.DWG
DESIGN BY: KHL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

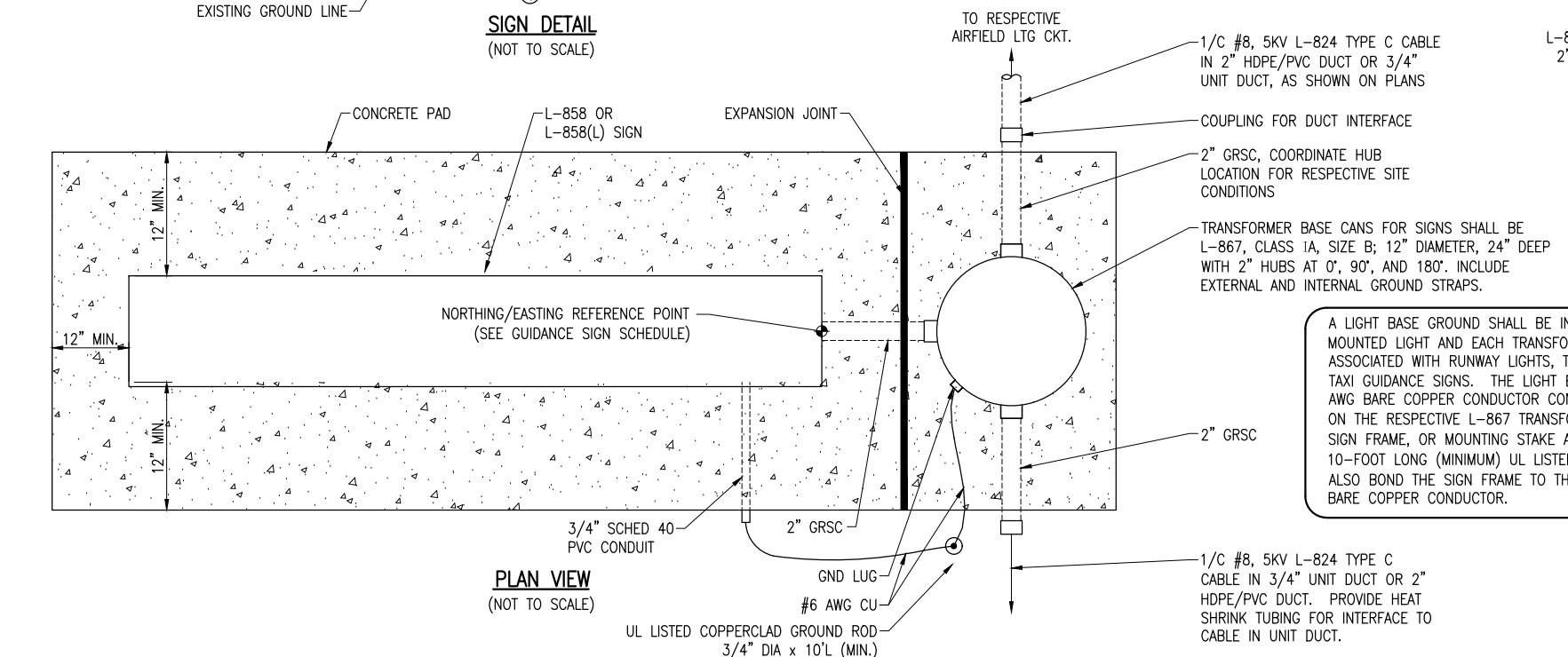
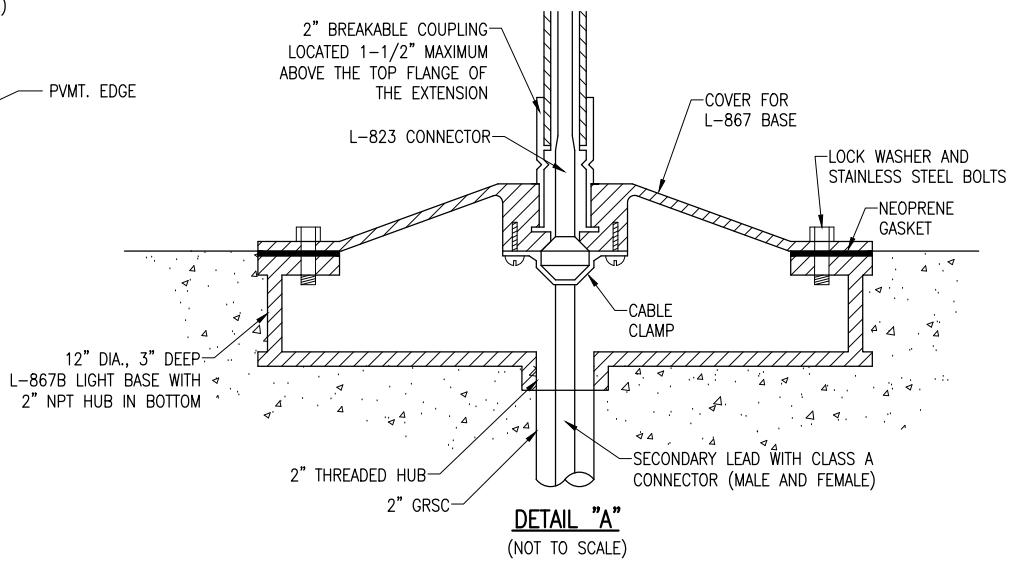
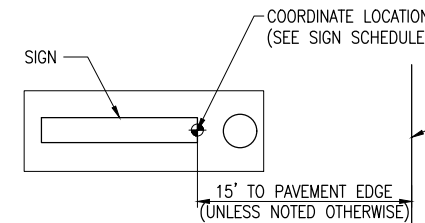
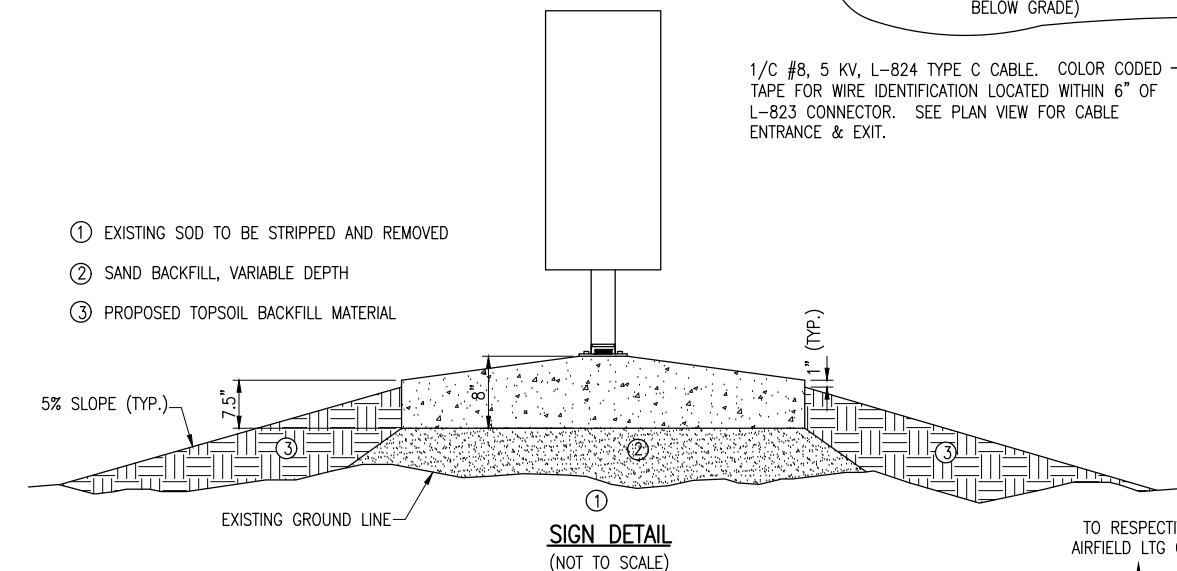
SHEET TITLE

TAXIWAY LIGHT
DETAILS



1/C #8, 5 KV, L-824 TYPE C CABLE. COLOR CODED TAPE FOR WIRE IDENTIFICATION LOCATED WITHIN 6" OF L-823 CONNECTOR. SEE PLAN VIEW FOR CABLE ENTRANCE & EXIT.

- ① EXISTING SOD TO BE STRIPPED AND REMOVED
- ② SAND BACKFILL, VARIABLE DEPTH
- ③ PROPOSED TOPSOIL BACKFILL MATERIAL



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.

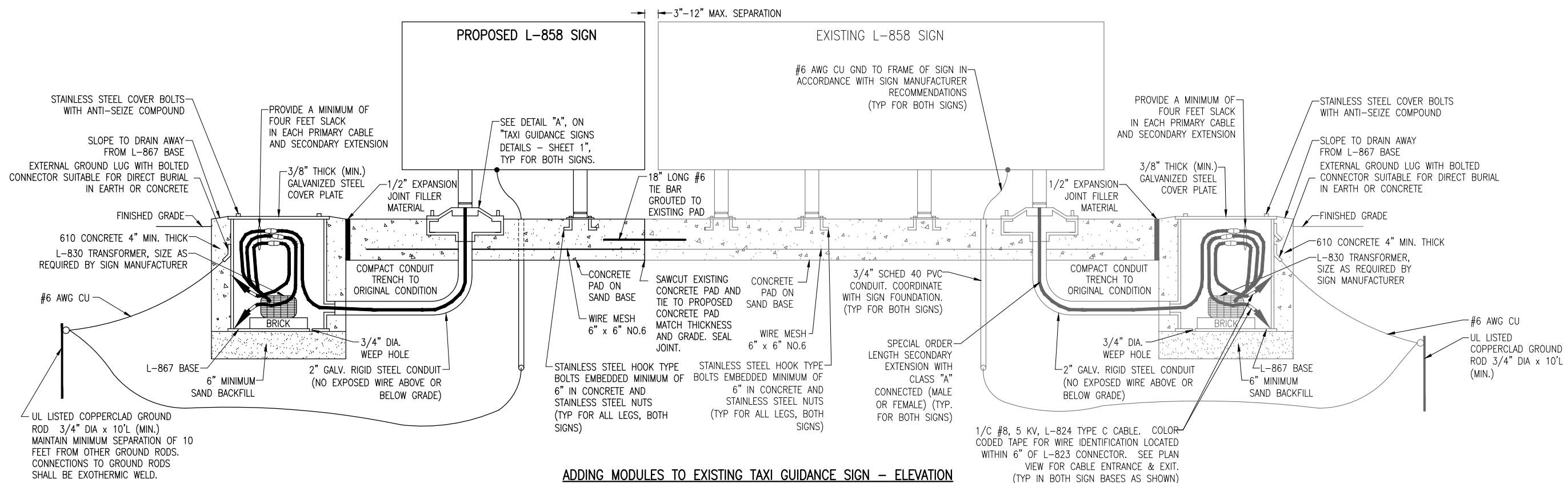
**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

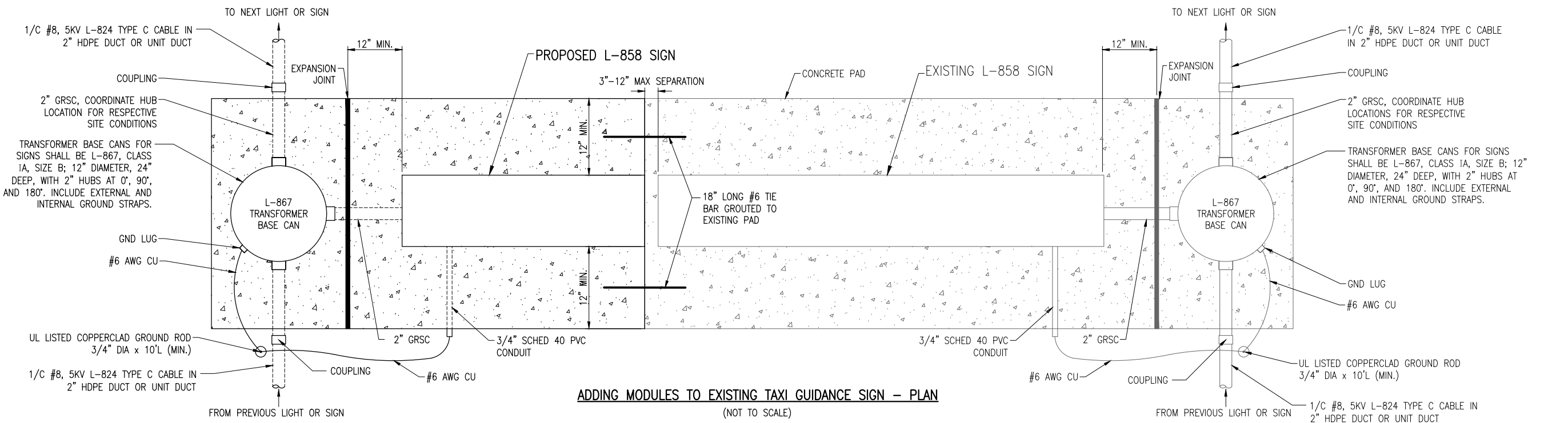
NO.	DATE	DESCRIPTION		
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ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-502-ELEC.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE
**TAXI GUIDANCE SIGN
DETAILS - SHEET 1**



ADDING MODULES TO EXISTING TAXI GUIDANCE SIGN – ELEVATION
(NOT TO SCALE)



ADDING MODULES TO EXISTING TAXI GUIDANCE SIGN – PLAN
(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. NEW MODULES INSTALLED NEXT TO EXISTING SIGNS WILL BE PAID UNDER THE APPLICABLE AR12544# "TAXI GUIDANCE SIGN, # CHARACTER" PAY ITEM. REPLACEMENT OF THE EXISTING SIGN PANEL, IF APPLICABLE, WILL BE PAID UNDER AR125932 "REPLACE SIGN PANEL".
3. SEE ELECTRICAL NOTES SHEETS.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
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ISSUE: 11/15/2019
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CAD FILE: E-502-ELEC.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

**TAXI GUIDANCE SIGN
DETAILS - SHEET 2**

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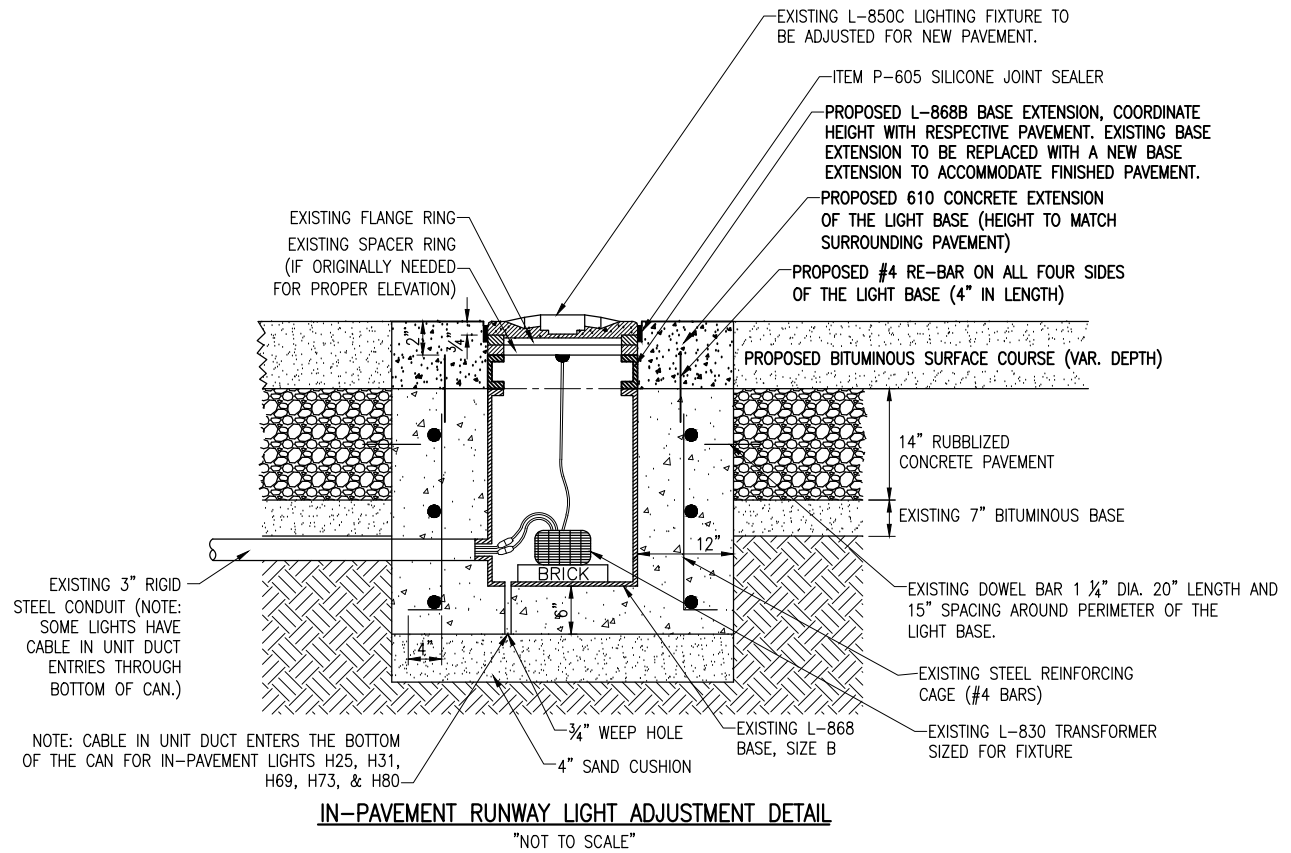
AIRFIELD LIGHTING ADJUSTMENT AND INSTALLATION NOTES

- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, 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.
- ALL ELECTRICAL EQUIPMENT (INCLUDING AIRFIELD LIGHTING AND NAVAIDS) SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRIC 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.
- PRIOR TO BEGINNING AIRFIELD LIGHTING MODIFICATIONS, CABLE OR DUCT INSTALLATION, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING SYSTEMS, ALL EXISTING SERIES CIRCUIT CABLES SHALL BE MEGGER TESTED WITH AN INSULATION RESISTANCE TESTER AND RECORDED AT THE VAULT. ALL EXISTING SERIES CIRCUIT CABLE LOOPS SHALL HAVE THE RESISTANCE MEASURED WITH AN OHMMETER AND RECORDED FOR EACH CIRCUIT AT THE VAULT. EACH CONSTANT CURRENT REGULATOR SHALL BE TESTED WITH RESULTS RECORDED. PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. COPIES OF TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND THE RESPECTIVE PROJECT ENGINEER WITHIN 5 BUSINESS DAYS OF CONDUCTING THE RESPECTIVE SET OF TESTS. SEE THE TESTING FORMS IN APPENDIX A, OF THE SPECIAL PROVISION SPECIFICATIONS.
- AFTER AIRFIELD LIGHTING MODIFICATIONS, ADDITIONS, UPGRADES, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING SYSTEMS HAVE BEEN COMPLETED, SERIES CIRCUIT CABLES SHALL BE MEGGER TESTED WITH AN INSULATION RESISTANCE TESTER AND RECORDED AT THE VAULT. ALL SERIES CIRCUIT CABLE LOOPS SHALL HAVE THE RESISTANCE MEASURED WITH AN OHMMETER AND RECORDED FOR EACH CIRCUIT AT THE VAULT. EACH CONSTANT CURRENT REGULATOR SHALL BE TESTED WITH RESULTS RECORDED. PROVIDE A TRUE RMS AMMETER FOR CURRENT MEASUREMENTS. COPIES OF TEST RESULTS SHALL BE PROVIDED TO THE RESIDENT ENGINEER/RESIDENT TECHNICIAN AND THE RESPECTIVE PROJECT ENGINEER WITHIN 5 BUSINESS DAYS OF CONDUCTING THE RESPECTIVE SET OF TESTS. SEE THE TESTING FORMS IN APPENDIX A, OF THE SPECIAL PROVISION SPECIFICATIONS.
- INSULATION RESISTANCE TESTING EQUIPMENT FOR USE WITH 5,000 VOLT SERIES CIRCUIT CABLES SHALL USE AN INSULATION RESISTANCE TESTER CAPABLE OF TESTING THE CABLES AT 5,000 VOLTS. OLDER SERIES CIRCUIT CABLES AND/OR CABLES IN POOR CONDITION MAY REQUIRE THE TEST VOLTAGE TO BE PERFORMED AT A VOLTAGE LOWER THAN 5,000 VOLTS (EXAMPLE 1,000 VOLTS, 500 VOLTS, OR LESS THAN 500 VOLTS). THE RESPECTIVE TEST VOLTAGE SHALL BE RECORDED FOR EACH CABLE INSULATION RESISTANCE TEST RESULT. INSULATION RESISTANCE TESTING EQUIPMENT FOR USE WITH 600 VOLT RATED CABLES SHALL USE A 500 VOLT INSULATION RESISTANCE TESTER. THE RESPECTIVE TEST VOLTAGE SHALL BE RECORDED FOR EACH CABLE INSULATION RESISTANCE TEST RESULT.
- EXISTING AIRFIELD LIGHTING, DUCTS, CONDUITS, CABLES, SPLICE CANS, HANDHOLES, AND/OR MANHOLES SCHEDULED TO REMAIN SHALL BE PROTECTED FROM DAMAGE. CONTRACTOR SHALL LOCATE AND PROTECT EXISTING FACILITIES AND COORDINATE THE PAVEMENT REMOVAL WORK TO AVOID AND DAMAGE TO AIRFIELD LIGHTING SYSTEMS AND OTHER FACILITIES.
- IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE AND DUCT CROSSES AN EXISTING CABLE, THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH NECESSARY FOR THE PROPOSED CABLE AND DUCT. AT OTHER LOCATIONS, THE PROPOSED CABLE AND DUCT MAY BE TRENCHED OR PLOWED INTO PLACE. HAND DIGGING, TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. ONLY CABLE IN DUCT OR UNIT DUCT SHALL BE INSTALLED BY PLOWING METHOD.

- CONCRETE STEEL REINFORCEMENT SHALL BE TYPE ASTM A615 OR A706 GRADE 60. ALL REINFORCEMENT SHALL HAVE A 3" MINIMUM CONCRETE COVER. REINFORCEMENT MAY BE ADJUSTED TO MISS INTERFERENCES. CONCRETE SHALL CONFORM TO ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.
- RUNWAY LIGHTING CIRCUITS SHALL BE ACTIVE AT THE END OF EACH CONSTRUCTION DAY FOR AN OPEN RUNWAY. THE CONTRACTOR SHALL PROVIDE TEMPORARY CABLE & CONNECTIONS WHERE NECESSARY TO MAINTAIN A RUNWAY OR TAXIWAY LIGHTING SYSTEM. TEMPORARY CABLE SHALL BE 1/C #8 FAA L-824 5KV UG CABLE IN DUCT OR UNIT DUCT
- ALL ABOVEGROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2G, OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 2.18.3 "LIGHTING AND VISUAL NAVAIDS". ALL LABOR, MATERIALS, AND TIME NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT.
- WHEN A RESPECTIVE RUNWAY IS CLOSED THE RESPECTIVE RUNWAY LIGHTING AND NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.
- PER FAA AC 150/5270-10G "STANDARDS FOR SPECIFYING CONSTRUCTION OF AIRPORTS", ITEM L-108 "UNDERGROUND POWER CABLE FOR AIRPORT", EVERY AIRFIELD LIGHTING CABLE SPLICER SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED ABOVE 5,000 VOLTS AC. CABLE SPLICING/TERMINATING PERSONNEL SHALL HAVE A MINIMUM OF THREE (3) YEARS CONTINUOUS EXPERIENCE IN TEMINATING/SPLICING MEDIUM VOLTAGE CABLE.
- 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.
- NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

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

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



IN-PAVEMENT RUNWAY LIGHT ADJUSTMENT DETAIL
"NOT TO SCALE"

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PHASE 2:
RECONSTRUCT
TAXIWAY B

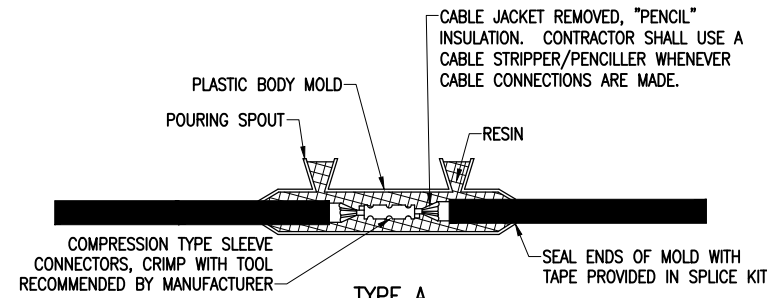
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-511-DET1.DWG
DESIGN BY: KNL 05/07/2019
DRAWN BY: CWS 05/08/2019
REVIEWED BY: KNL 06/26/2019

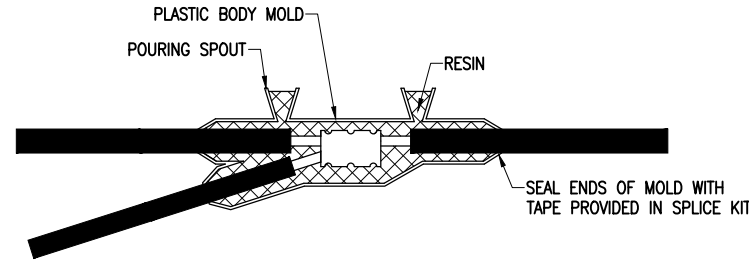
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IN-PAVEMENT
RUNWAY LIGHT
ADJUSTMENT DETAIL



TYPE A

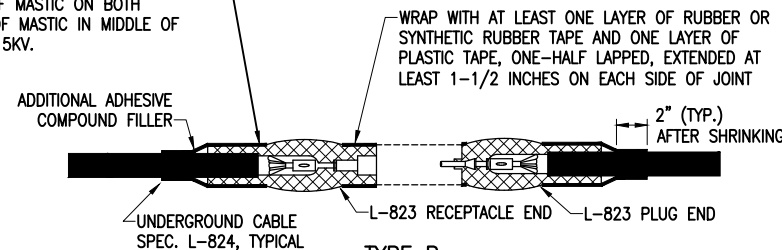
FOR SPLICES IN LOW VOLTAGE CABLE (600V) HOMERUNS FOR EXTENSIONS TO EXISTING LOW VOLTAGE CABLES ONLY. TYPE A SPLICES SHALL BE MADE IN SPLICE CANS, HANDHOLES, MANHOLES, OR JUNCTION BOXES



LOW VOLTAGE UNDERGROUND TAP SPLICE

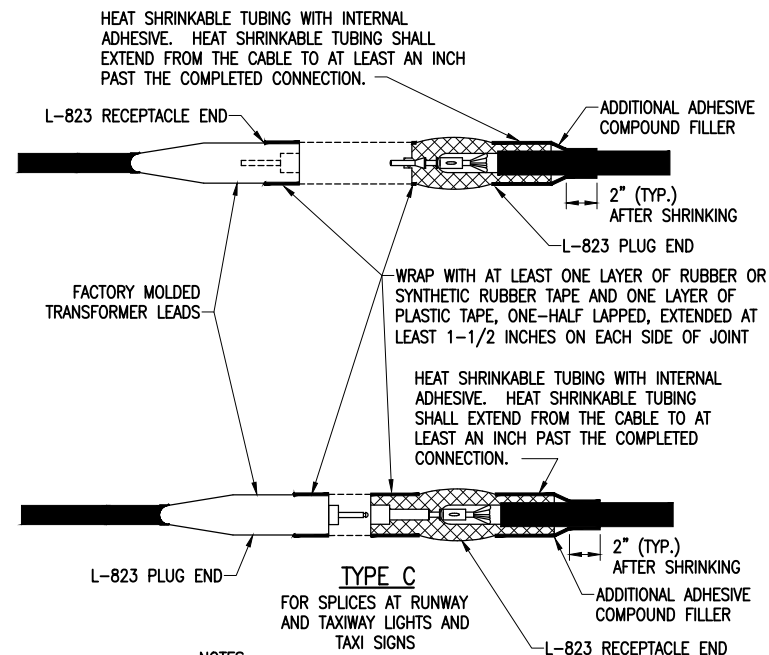
FOR TAP SPLICES IN LOW VOLTAGE (600V) CABLE. SPLICES SHALL BE RATED AND LISTED SUITABLE FOR DIRECT BURIAL LOCATIONS. FOR SPLICES UP TO #2 AWG CONDUCTOR, SPLICES SHALL BE WYE RESIN TYPE POWER CABLE TAP SPLICE KIT SUITABLE FOR THE RESPECTIVE CABLES AND RESPECTIVE APPLICATION.

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

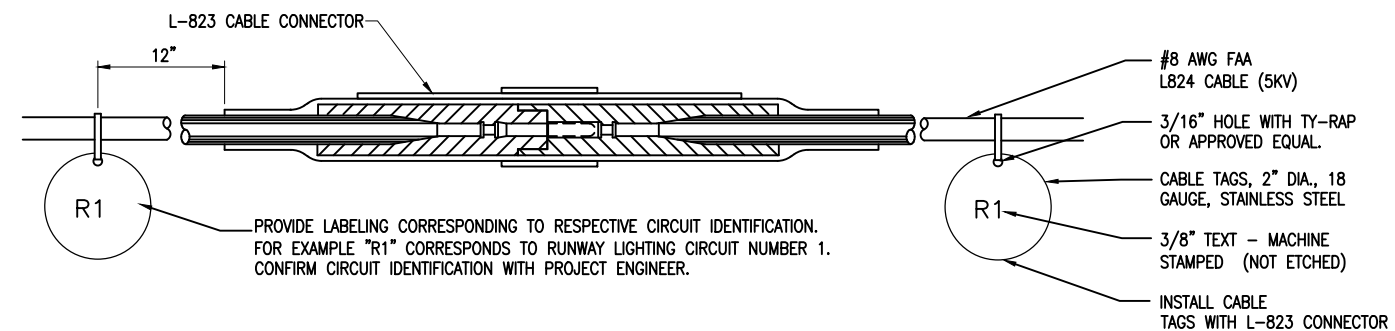


TYPE C

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"



CABLE TAG DETAIL
"NOT TO SCALE"

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.

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.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752

SBG Project No:
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Contract No. CO067

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ISSUE: 11/15/2019

PROJECT NO: 19A0001

CAD FILE: E-503-ELEC.DWG

DESIGN BY: KNL 04/07/2019

DRAWN BY: CWS 04/08/2019

REVIEWED BY: KNL 06/26/2019

SHEET TITLE

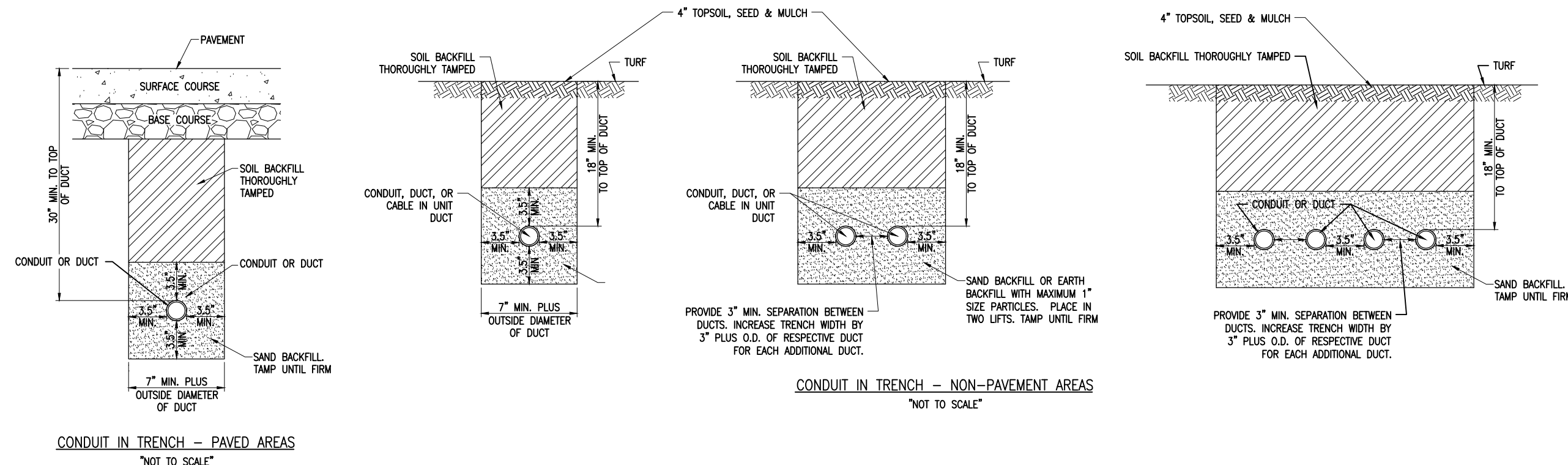
**AIRFIELD LIGHTING
CABLE SPLICE
DETAILS**

NO.	DATE	DESCRIPTION		
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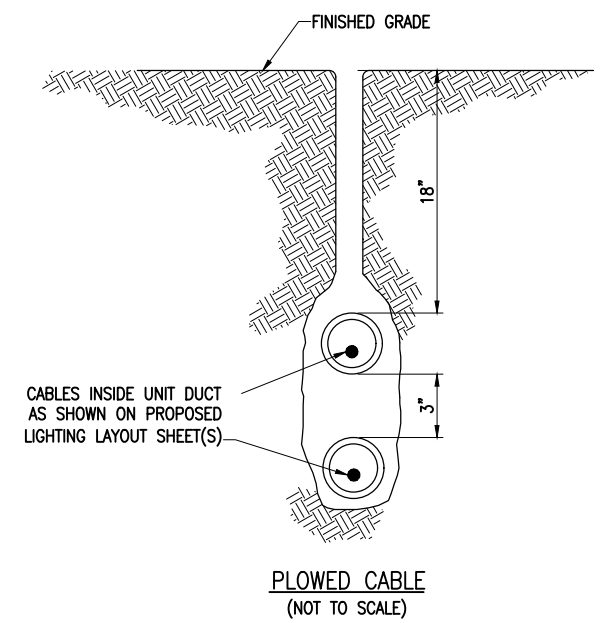
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SHEET TITLE

CONDUIT TRENCH
DETAILS



- NOTES:**
- DIMENSIONS FOR COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
 - TRENCHES WITH MORE THAN TWO DUCTS OR CABLE IN UNIT DUCTS SHALL BE INCREASED 3" IN WIDTH PLUS DIAMETER OF RESPECTIVE DUCT FOR EACH ADDITIONAL CONDUIT, DUCT, OR CABLE IN UNIT DUCT; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
 - DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS. MINIMUM COVER REQUIREMENTS FOR CABLES AND DUCTS AT AIRPORT RUNWAYS AND ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED IS 18 INCHES PER NEC 300.5 AND 300.50. MINIMUM COVER REQUIREMENTS FOR DUCTS LOCATED 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.



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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 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.

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

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

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

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

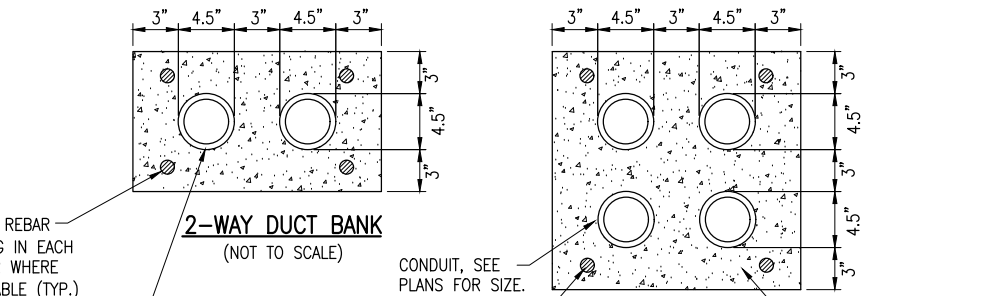
- CONTROL CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES. COMMUNICATION CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES.

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

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

- CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.

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



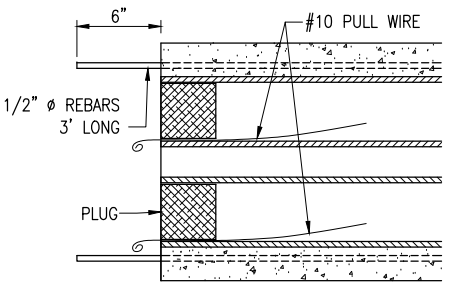
1/2" Ø REBAR
3' LONG IN EACH
CORNER WHERE
APPLICABLE (TYP.)

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

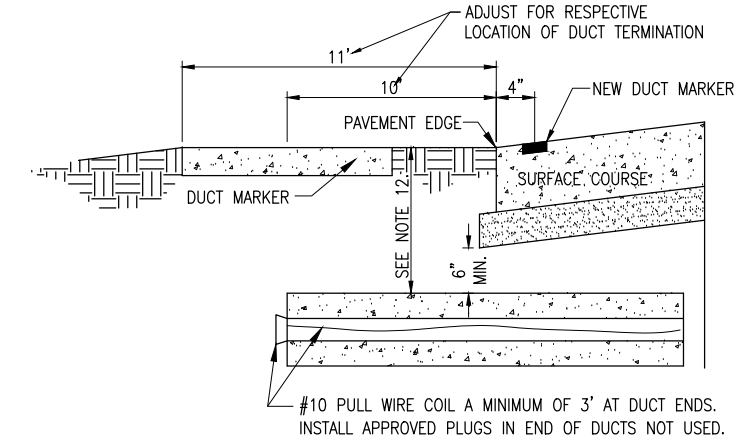
CONDUIT, SEE
PLANS FOR SIZE.

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.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

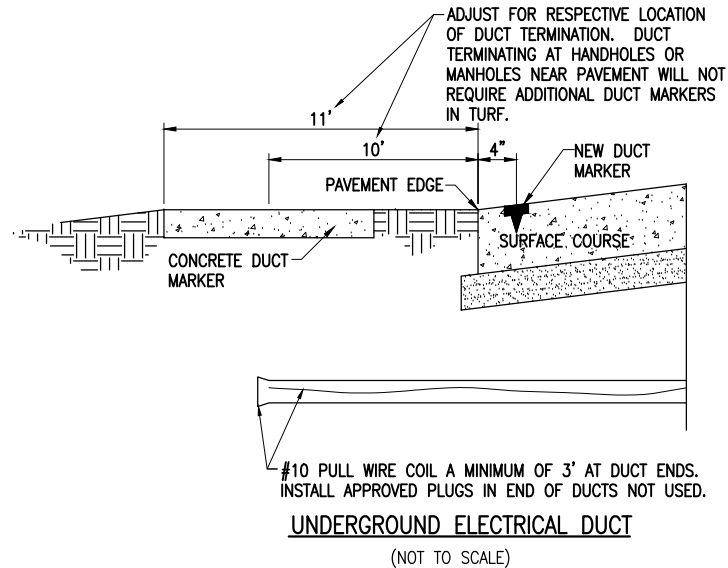
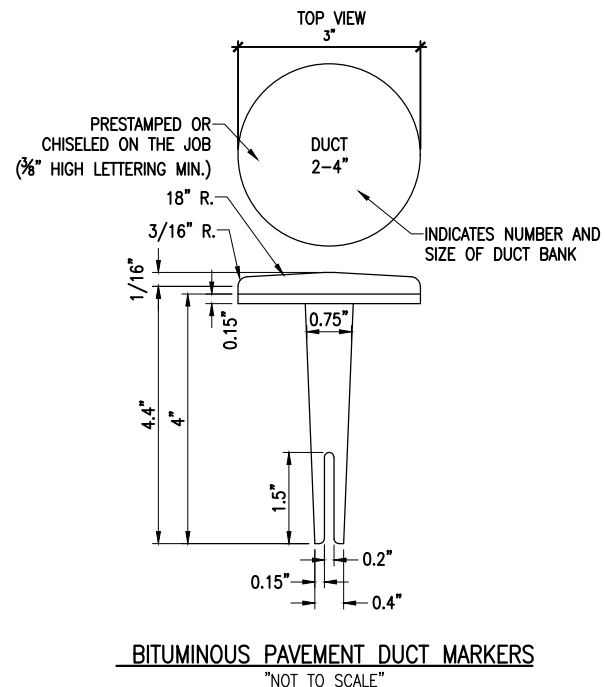
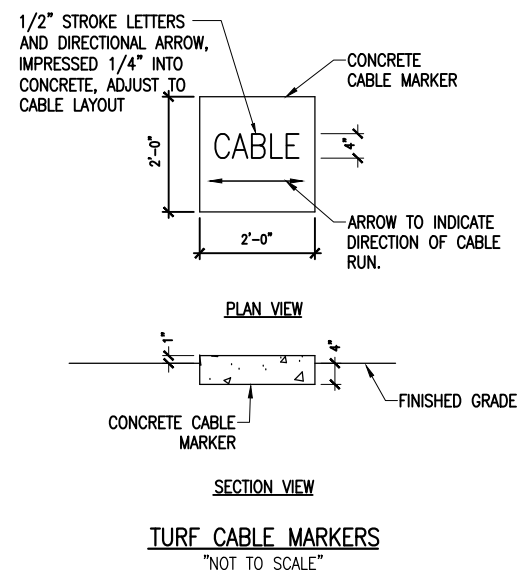
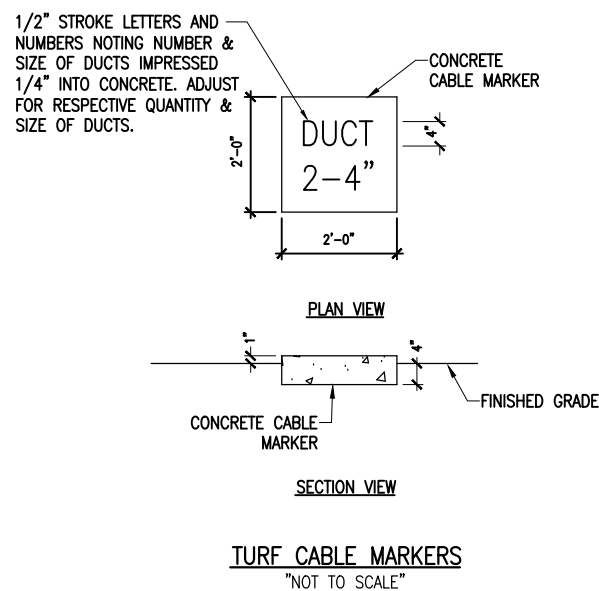
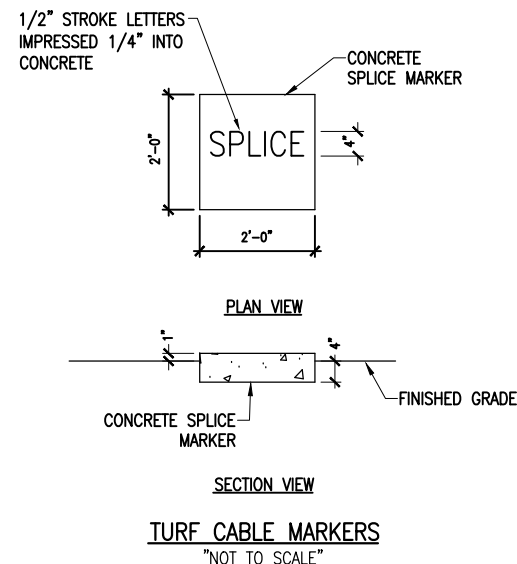
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-505-ELEC.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

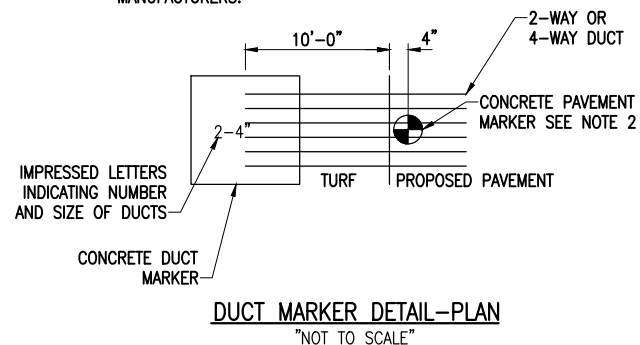
SHEET TITLE

**DUCT BANK DETAILS
AND NOTES**



NOTE:

- TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE
- BRASS DUCT MARKERS ARE AVAILABLE FROM G&S FOUNDRY & MANUFACTURING CO. INC., 210 KASKASKIA DRIVE, RED BUD, IL 62278, PHONE: (618)-282-4114, SURV-KAP, 3225 E. 47TH ST., TUCSON, AZ 85713, PHONE: (502)-622-6011, OR OTHER EQUIVALENT MANUFACTURERS.



CABLE & DUCT MARKER NOTES:

- THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
- BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE INFORMED AS DESCRIBED IN NOTE 4.
- 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.
- CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.
- EMPLOY THE FOLLOWING METHODS WHERE ADDITIONAL SPACE TO FIT THE LEGEND IS REQUIRED:
 - REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
 - INCREASE THE MARKER SIZE TO 30" X 30".
 - PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE
- TURF DUCT MARKERS ARE NOT REQUIRED AT PAVEMENT CROSSINGS WHERE DUCTS TERMINATE IN HANDHOLES, OR JUNCTION STRUCTURES.
- 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.
- THE CABLE AND SPLICE MARKERS MUST IDENTIFY THE CIRCUITS TO WHICH THE CABLES BELONG. FOR EXAMPLE: RWY 4-22, PAPI-4, PAPI-22.
- LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS MUST BE IDENTIFIED BY DUCT MARKERS.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

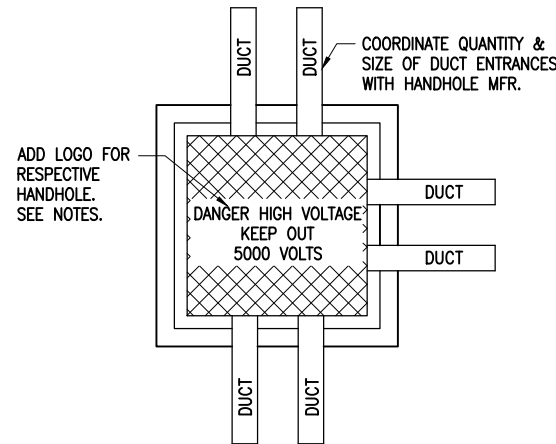
Contract No. CO067

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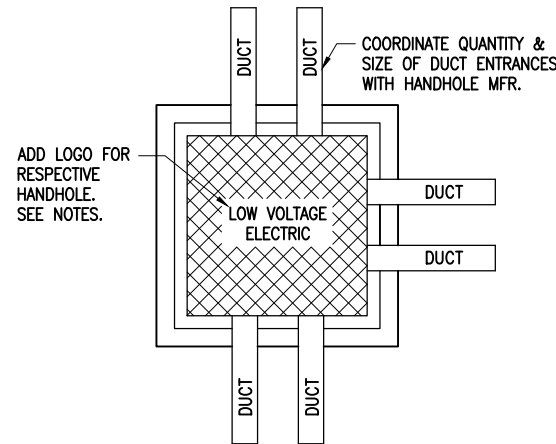
ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-506-ELEC.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

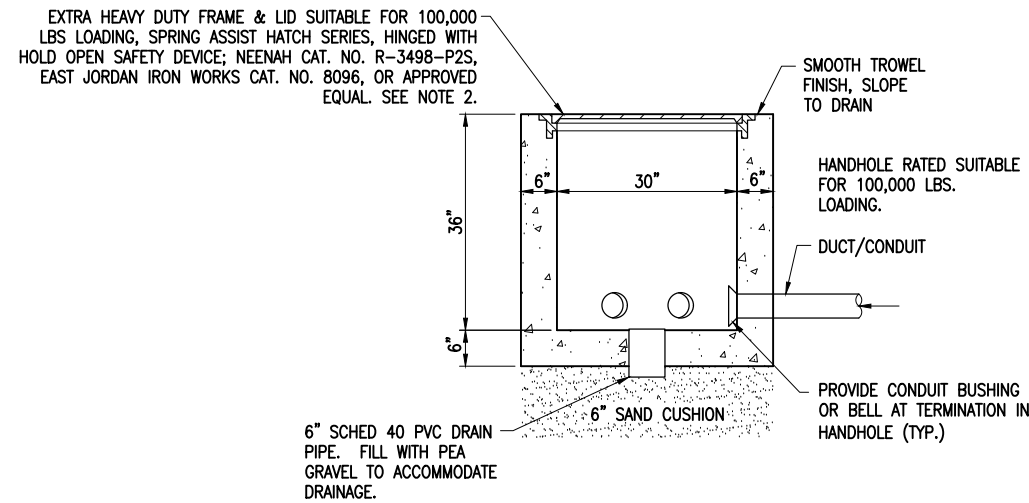
**CABLE AND DUCT
MARKER DETAILS**



HIGH VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"



LOW VOLTAGE HANDHOLE PLAN
"NOT TO SCALE"

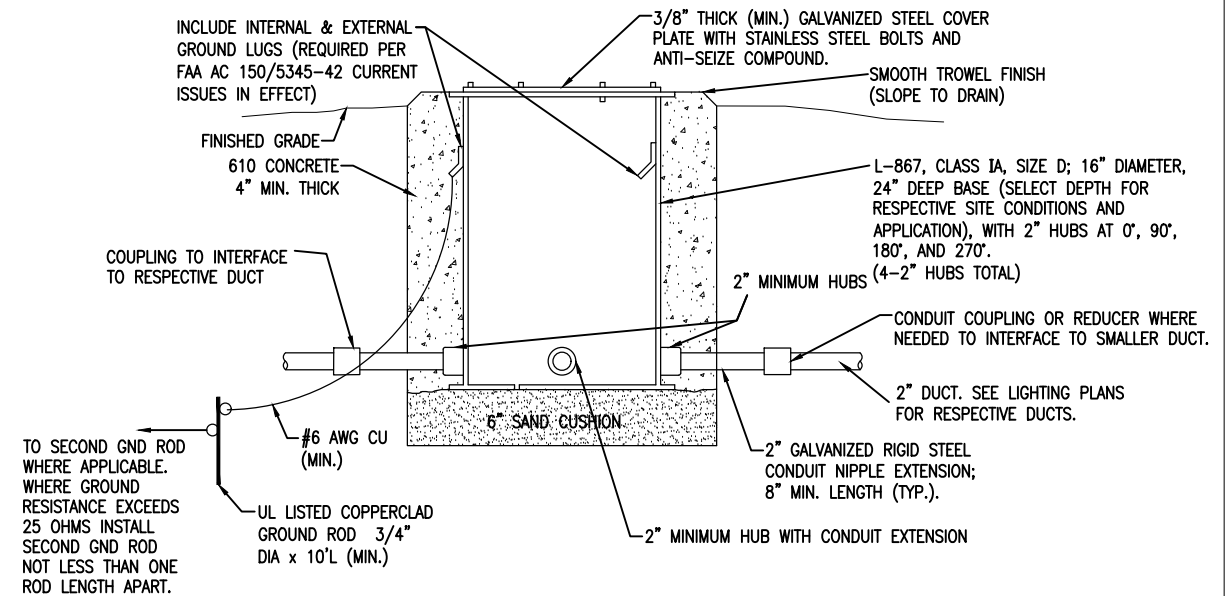


ELEVATION
"NOT TO SCALE"

HANDHOLE NOTES:

- LIDS FOR LOW VOLTAGE HANDHOLES (CONTAINING CIRCUITS RATED 600 VOLTS AND BELOW) SHALL BE LABELED "LOW VOLTAGE" OR "0V - 600V ELECTRIC". LIDS FOR HIGH VOLTAGE HANDHOLES CONTAINING AIRFIELD LIGHTING SERIES CIRCUIT WIRING SHALL BE LABELED "DANGER HIGH VOLTAGE KEEP OUT 5000 VOLTS" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.30(D) "COVERS". COORDINATE LETTERING WITH MFR. HANDHOLES PROVIDED WITH THE WRONG LIDS SHALL HAVE THE LIDS REPLACED WITH THE CORRECT LIDS AT NO ADDITIONAL COST TO THE CONTRACT.
- ELECTRICAL HANDHOLE, FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 100,000 POUND LOADS AS CALLED FOR IN FAA ADVISORY CIRCULAR AC 150/5320-6E APPENDIX 3 ITEM 2.d. (1). AIRPORT HANDHOLE HOLE FRAME & LID SHALL BE NEENAH CATALOG NO. R-3498-P2S, EAST JORDAN IRON WORKS CAT. NO. 8096, OR APPROVED EQUAL.
- REINFORCEMENT SHALL BE #6 BARS AT 6" CENTERS BASE & WALLS EACH WAY.
- CONCRETE SHALL BE 5000 PSI AT 28 DAYS.
- HANDHOLES SHALL BE PRECAST.
- COORDINATE INSTALLATION OF HANDHOLES WITH RESPECTIVE FINISHED GRADE ELEVATION.
- 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"



SPLICE CAN DETAIL
"NOT TO SCALE"

NOTES FOR SPLICE CAN DETAIL:

- SPLICE CANS SHALL CONFORM TO THE REQUIREMENTS OF FAA AC 150/5345-42 (CURRENT ISSUES IN EFFECT), FOR TYPE L-867, CLASS 1A, SIZE D, (16 IN. NOMINAL DIAMETER), AND 24 IN. DEEP AND/OR AS DETAILED ON THE PLANS. EACH SPLICE CAN SHALL INCLUDE INTERNAL AND EXTERNAL GROUND LUGS TO ACCOMMODATE THE RESPECTIVE APPLICATIONS. SPLICE CANS AND/OR JUNCTION CANS SHALL HAVE GALVANIZED STEEL COVERS, 3/8-INCH THICK (MINIMUM), WITH STAINLESS STEEL BOLTS.
- FOR THE PURPOSE OF ENHANCING SAFETY, EACH BASE MUST HAVE INSTALLED, BY THE MANUFACTURER, AN INTERNAL AND EXTERNAL GROUND STRAP THAT IS AVAILABLE FOR THE PURPOSE OF ATTACHING A GROUND LUG THAT IS CONNECTED TO AN EARTH GROUND OR A SAFETY GROUND CONDUCTOR INSTALLED WITH THE RESPECTIVE CIRCUIT. FOR AIRPORT PROJECTS RECEIVING FEDERAL FUNDS THIS REQUIREMENT IS MANDATORY PER FAA AC 150/5345-42 (CURRENT ISSUES IN EFFECT).
- APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL.
- THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING CANS SHALL BE IN ACCORDANCE WITH ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.
- LIDS FOR THE SPLICE CANS CONTAINING HIGH VOLTAGE AIRFIELD LIGHTING CABLES SHALL INCLUDE MINIMUM 1/2-INCH HIGH LETTERING LABELED "DANGER HIGH VOLTAGE KEEP OUT" TO COMPLY WITH NEC ARTICLE 300.45 "WARNING SIGNS" AND NEC ARTICLE 314.71(E) "SUITABLE COVERS". THIS WILL NEED TO BE COORDINATED WITH THE SPLICE CAN MANUFACTURER.
- LIDS FOR THE SPLICE CANS CONTAINING LOW VOLTAGE CABLES (RATED 600 VOLTS AND BELOW) WILL BE ACCEPTABLE TO USE BLANK COVERS.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

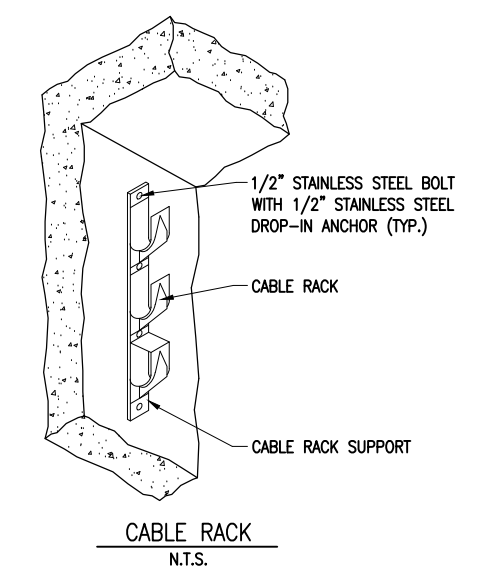
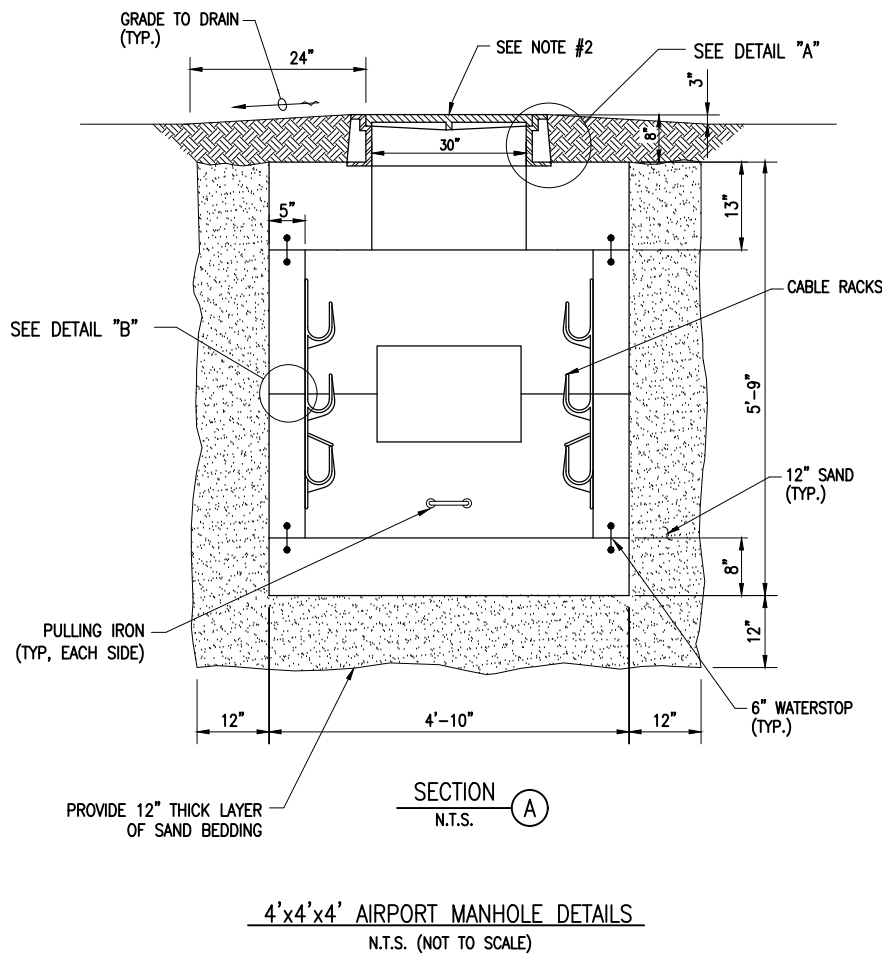
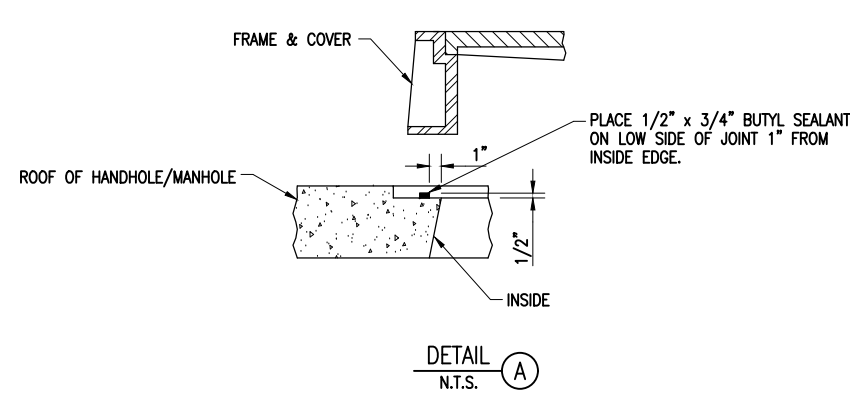
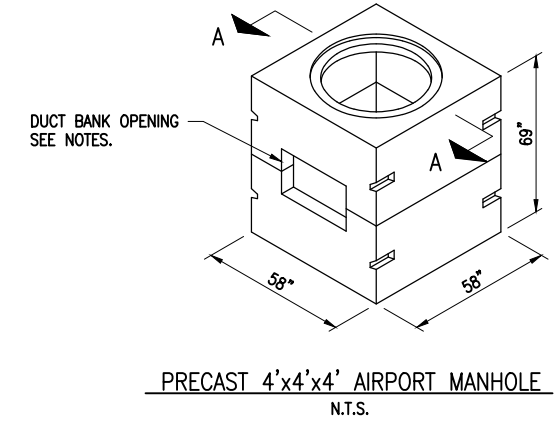
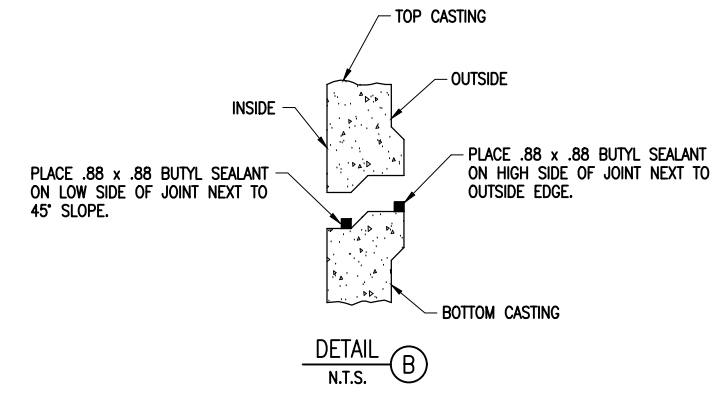
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-507-ELEC.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

**ELECTRICAL
HANDHOLE AND
SPLICE CAN DETAILS**



PRECAST 4'x4'x4' AIRPORT MANHOLE NOTES

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

DESIGN CRITERIA:

- 1) DESIGN SPECIFICATIONS: ACI 318, ASTM C858, FAA AC 150/5320-6F
- 2) DESIGN LOADING:
B727-200 (210,000 LB. TAXI WEIGHT, 97,600 LB. MAX. GEAR)
B777-200/300 (752,000 LB. TAXI WEIGHT, 352,000 LB. MAX. GEAR)
- 3) LIVE LOAD SURCHARGE: 24.5% OF THE WHEEL LOAD SOIL PRESSURE
- 4) CONCRETE COMPRESSIVE STRENGTH: F_c = 5,000 PSI
- 5) REINFORCING STEEL: ASTM A706, F_y = 60,000 PSI

DESIGN ASSUMPTIONS:

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

2. AIRPORT MANHOLE FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 100,000 POUND LOADS AS CALLED FOR IN FAA ADVISORY CIRCULAR 150/5320-6F APPENDIX B, ITEM B.2.4 DIRECT LOADING, I.e. AIRPORT MANHOLE FRAME & LID SHALL BE NEENAH CATALOG NO. R-3492-A AIRPORT MANHOLE FRAME & LID, EAST JORDAN IRON WORKS CATALOG NO. 1895 AIRPORT MANHOLE FRAME & COVER OR APPROVED EQUAL LIDS FOR LOW VOLTAGE MANHOLES SHALL BE LABELED "LOW VOLTAGE ELECTRIC" OR "0V-600V". LIDS FOR HIGH VOLTAGE MANHOLES CONTAINING AIRFIELD LIGHTING SERIES CIRCUIT WIRING SHALL BE LABELED "DANGER HIGH VOLTAGE KEEP OUT 5000 VOLTS" TO COMPLY WITH 2017 NEC ARTICLE 300.45 "WARNING SIGNS" & 2014 NEC ARTICLE 314.30(D) "COVERS". COORDINATE LETTERING WITH MFR.

3. COORDINATE DUCT & DUCT BANK INTERFACE & OPENINGS WITH THE MANHOLE MFR. CONTRACTOR SHALL SLOPE DUCT BANK TO PRECAST MANHOLE OPENINGS WHERE POSSIBLE. ALL OPENINGS SHALL BE SEALED WATERTIGHT AFTER DUCT BANK INSTALLATION.

4. 4'x4'x4' AIRPORT MANHOLE SHALL BE MANUFACTURED BY A CONCRETE ELECTRICAL MANHOLE PRODUCER ON THE ILLINOIS DEPARTMENT OF TRANSPORTATION APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.

5. 4'x4'x4' AIRPORT MANHOLE SHALL BE PAID FOR UNDER ITEM AR115710 ELECTRICAL MANHOLE PER EACH.

6. CABLE RACKS SHALL BE HEAVY DUTY CORROSION RESISTANT NYLON MATERIAL WITH CORROSION RESISTANT STAINLESS STEEL MOUNTING HARDWARE; UNDERGROUND DEVICES, INC. CAT. NO. 3SR1N, 3SR2N OR 3SR3N OR EQUAL. PROVIDE AT LEAST TWO TRIPLE HOOK CABLE RACKS ON EACH MANHOLE WALL, SPACED TO SUPPORT RESPECTIVE CABLES.

7. COORDINATE INSTALLATION OF MANHOLES WITH RESPECTIVE FINISHED GRADE ELEVATIONS.

8. AIRPORT RATED MANHOLES ARE REQUIRED FOR INSTALLATIONS LOCATED ON THE AIRFIELD.

9. INCLUDE FLOOR SUMP OR DRAINAGE PIPE.

10. ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, DUCT BANK, AND/OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE MANHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-508-ELEC.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

**4'X4'X4' AIRPORT
MANHOLE**



GENERAL NOTES

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

POWER AND CONTROL NOTES

1. PROVIDE LEGEND PLATES FOR ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO IDENTIFY THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT AREA TO INSTALL LEGEND PLATES, THE LEGEND PLATES SHALL BE INSTALLED ON THE WALL NEXT TO THE UNIT. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
2. COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK AND RED SHALL BE USED FOR PHASE CONDUCTORS ON 120/240VAC SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, ORANGE (FOR HIGH LEG) AND BLUE SHALL BE USED FOR PHASE CONDUCTORS ON 240/120VAC THREE-PHASE, FOUR WIRE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, SHALL BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH. NEUTRAL CONDUCTORS LARGER THAN NO. 6 AWG SHALL BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR SIZES (AWG OR KCMIL).
3. ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE SHALL BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING SHALL BE EXTENDED TO THE POINT OF UTILIZATION.
4. IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
5. LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS.
6. NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND JUNCTION/PULL BOXES.
7. THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:
 - A. IN STRAIGHT PULLS THE LENGTH OF THE BOX SHALL NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END SHALL BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.
 - B. IN ANGLE PULLS OR 'U' PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX SHALL NOT BE LESS THAN SIX (6) TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE SHALL BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL AS THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR SHALL NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.
8. A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS, CAST, CONDUIT TYPE OUTLETS SHALL NOT BE TREATED AS PULL/JUNCTION BOXES.
9. EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.
10. SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
11. CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE, MINIMUM FRAME.
12. DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
13. ALL INTERIOR WALL MOUNTED EQUIPMENT ENCLOSURES SHALL BE MOUNTED ON HOT DIPPED GALVANIZED STEEL STRUT SUPPORT, OR STAINLESS STEEL STRUT SUPPORT, WITH CORROSION RESISTANT HARDWARE. PROVIDE ZINC RICH PAINT APPLIED TO FIELD CUTS OF GALVANIZED STEEL SUPPORT TO MINIMIZE THE POTENTIAL FOR CORROSION PER THE RESPECTIVE STRUT SUPPORT MANUFACTURER'S RECOMENTATIONS.
14. SUPPORT FOR EXTERIOR MOUNTED EQUIPMENT SHALL USE STAINLESS STEEL STRUT SUPPORT WITH STAINLESS STEEL HARDWARE.
15. CONDUITS FOR ELECTRIC SERVICE ENTRANCE AND FEEDERS SHALL BE AS DETAILED HEREIN ON THE PLANS. WHERE GALVANIZED RIGID STEEL CONDUIT IS SPECIFIED IT SHALL HAVE THREADED FITTINGS. SET SCREW TYPE FITTINGS WILL NOT BE ACCEPTABLE. CONDUITS FOR UNDERGROUND APPLICATIONS SHALL BE AS DETAILED HEREIN. CONDUITS FOR GROUNDING ELECTRODE CONDUCTORS OR INDIVIDUAL GROUNDING CONDUCTORS SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC.
16. PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
17. UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
18. ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
19. USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS.
20. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
21. WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF HIGH VOLTAGE ELECTRICAL INSULATING TAPE (RUBBER SPLICING TAPE SUITABLE FOR PRIMARY ELECTRICAL INSULATION FOR SPLICING CABLE FROM 600 VOLTS TO 69,000 VOLTS) AND COVER WITH VINYL ELECTRICAL TAPE (ALL-WEATHER VINYL INSULATING TAPE SUITABLE FOR PROTECTIVE JACKETING FOR HIGH-VOLTAGE CABLE SPLICES AND REPAIRS) FOR FULL VALUE OF CABLE INSULATION VOLTAGE. PER ILLINOIS STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS ITEM 108, ITEM 125 AND FAA AC 150/5370-10H 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.
22. UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINIMUM.
23. THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:
 - A. FOR INTERIOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 12 (DUST TIGHT) ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. FOR EXTERIOR/OUTDOOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 4X STAINLESS STEEL ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. ALL CONDUIT ENTRIES INTO NEMA 4, 4X ENCLOSURES SHALL HAVE NEMA 4 HUBS LISTED SUITABLE FOR THE RESPECTIVE ENCLOSURE TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE.
 - B. THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.
 - C. ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED-EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.
 - D. WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING AND TERMINALS SHALL BE EXPOSED AND ACCESSIBLE WITHOUT REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.
 - E. ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.
 - F. EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.
 - G. A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.
 - H. THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.
 - I. ALL WIRING SHALL BE NEATLY TRAINED AND LACED.
 - J. MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
24. FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, CUTOUT, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "ARC FLASH HAZARD WARNING".

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-002-NOTES.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

**ELECTRICAL NOTES
SHEET 1**

AIRFIELD LIGHTING NOTES

- UNLESS OTHERWISE NOTED, ALL UNDERGROUND AIRFIELD LIGHTING SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED 5000 VOLT L-824 TYPE. ALL UNDERGROUND FIELD POWER LOW VOLTAGE (600 VOLT & BELOW) CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE UL LISTED 600 VOLT, TYPE XLP-USE-2 COPPER CONDUCTORS. CONDUCTOR SIZES SHALL BE AS SPECIFIED, HEREIN.
- NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
- THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REIL, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKABLE COUPLING(S) AT THE GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.
- THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN ON AIRFIELD LIGHTING CABLE SPLICE DETAILS.
- THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE, AS SHOWN ON AIRFIELD LIGHTING CABLE SPLICE DETAILS.
- L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
- THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURE AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.
- ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
- DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF TEN (10") INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION TWELVE (12") INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.
- A SLACK OF THREE (3') FEET, MINIMUM, PLUS DEPTH OF BASE CAN (IF APPLICABLE), SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS, THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER. THERE SHALL BE NO ADDITIONAL PAYMENT FOR CABLE SLACK AND THEREFORE THE QUANTITY OF PROPOSED CABLE SLACK HAS NOT BEEN INCLUDED IN THE RESPECTIVE CABLE PAY ITEMS.
- DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO RIGHT IS CODED BLUE. THIS APPLIES TO STAKE MOUNTED LIGHTS AND BASE MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.
- L-867 BASES SHALL BE SIZE B, 24" DEEP, CLASS I, UNLESS OTHERWISE NOTED.
- BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL BE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.
- THE ELEVATION OF THE BREAKABLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE MOUNTED COUPLINGS.
- WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
- TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
- PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
- THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE: ONE (1) INCH. IN CASE OF STAKE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.
- THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.

- ENTRANCES INTO L-867 BASES SHALL HAVE CONDUIT COUPLINGS OR REDUCERS TO INTERFACE UNIT DUCT/CONDUIT TO L-867 BASE HUBS, OR SHALL BE SEALED WITH HEAT SHRINK.
- GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
- EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
- CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS SHALL BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.
- ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLES.
- THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
- APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.
- LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.
- WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "T" SPLICES SHALL BE OF THE CAST TYPE.
- CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKINGS, ETC. SHALL BE 3500 PSI (MINIMUM) AT 14 DAYS, IN ACCORDANCE WITH ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.
- ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE-ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.
- THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVE GROUND UTILITIES.
- WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

GROUNDING NOTES FOR AIRFIELD LIGHTING

- GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. A GROUND ROD MUST BE INSTALLED AT EACH LIGHT FIXTURE, TAXI GUIDANCE SIGN AND L-867/L-868 BASE. THE PURPOSE OF THE LIGHT BASE GROUND IS TO PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A LIGHT BASE GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AND CONNECTED TO THE METAL FRAME OF EACH TAXI GUIDANCE SIGN AS DETAILED ON THE PLANS AND IN ACCORDANCE WITH THE RESPECTIVE TAXI GUIDANCE SIGN MANUFACTURER RECOMMENDATIONS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. CONNECTIONS TO GROUND LUGS ON THE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE SHALL BE WITH A UL LISTED GROUNDING CONNECTOR. CONNECTIONS TO LIGHT BASES MAY ALSO BE MADE WITH A UL 467 LISTED PIPE CLAMP CONNECTED TO THE GRSC NIPPLE EXTENDING FROM A THREADED LIGHT BASE HUB. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY PENTAIR ERICO PRODUCTS, INC., THERMOWELD BY CONTINENTAL INDUSTRIES, INC., ULTRAWELD BY HARGER, OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
- PER THE REQUIREMENTS OF FAA AC 150/5340-30J DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6 "LIGHT FIXTURE BONDING" IT NOTES THE FOLLOWING: BOND THE LIGHT FIXTURE TO THE LIGHT BASE INTERNAL GROUND LUG VIA A NO. 6 AWG STRANDED COPPER WIRE RATED 600 VOLTS WITH GREEN XHHW, THWN-2, OR OTHER SUITABLE INSULATION, BARE STRANDED CONDUCTOR OR A BRAIDED GROUND STRAP OF EQUIVALENT CURRENT RATING. THE BONDING CONDUCTOR LENGTH MUST BE SUFFICIENT TO ALLOW THE REMOVAL OF THE LIGHT FIXTURE FROM THE LIGHT BASE FOR ROUTINE MAINTENANCE. SEE THE LIGHT FIXTURE MANUFACTURER'S INSTRUCTIONS FOR PROPER METHODS OF ATTACHING A BONDING WIRE TO THE FIXTURE.
- STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.
- CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL PER 2017 NATIONAL ELECTRICAL CODE ARTICLE 250-12.
- THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
- FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, JUNCTION STRUCTURE/L-867 BASE/L-868 BASE, OR OTHER AIRFIELD LIGHT FIXTURE, THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE AND EACH TAXI GUIDANCE SIGN INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, LONGER GROUND RODS OR ADDITIONAL GROUND RODS MIGHT BE REQUIRED. IF GROUND RESISTANCE EXCEEDS 25 OHMS CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. 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.



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PHASE 2:
RECONSTRUCT
TAXIWAY B

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

Contract No. CO067

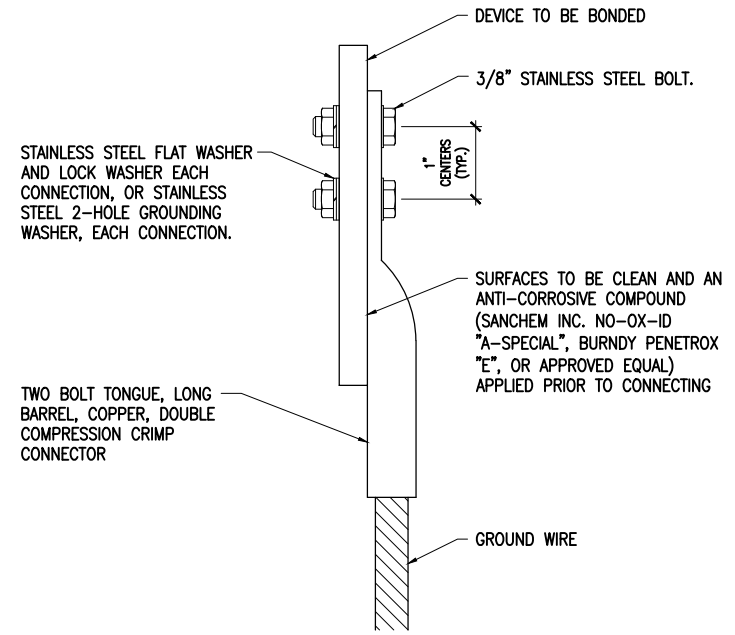
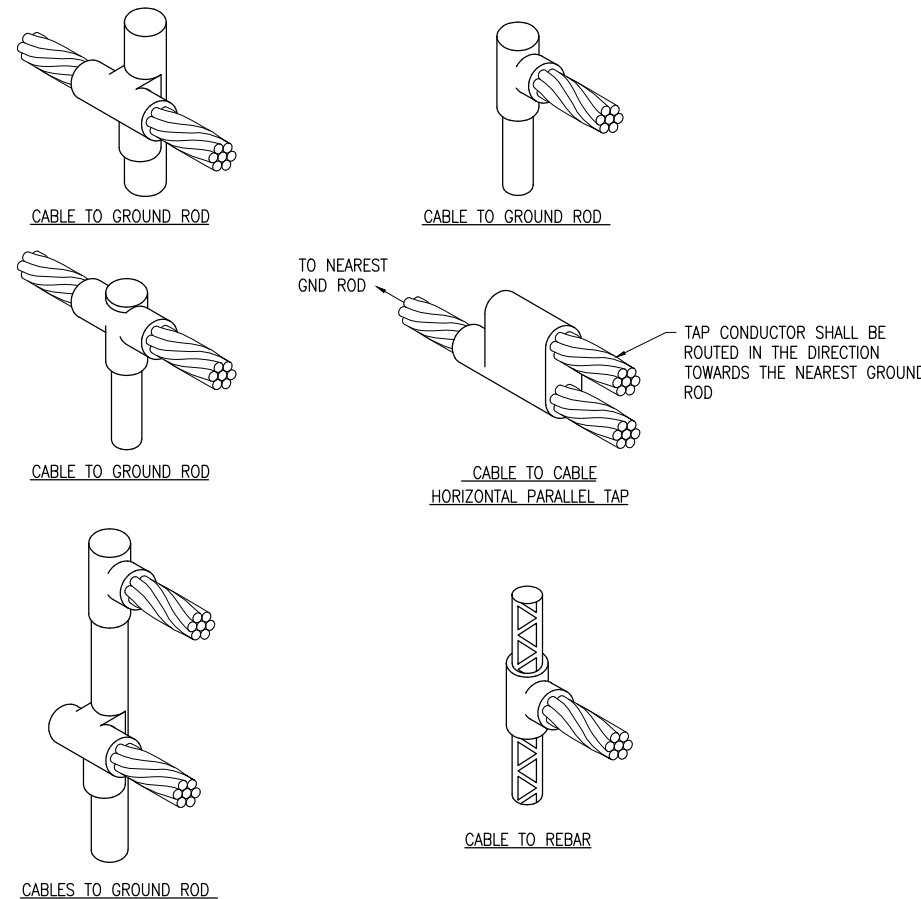
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-003-NOTES.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

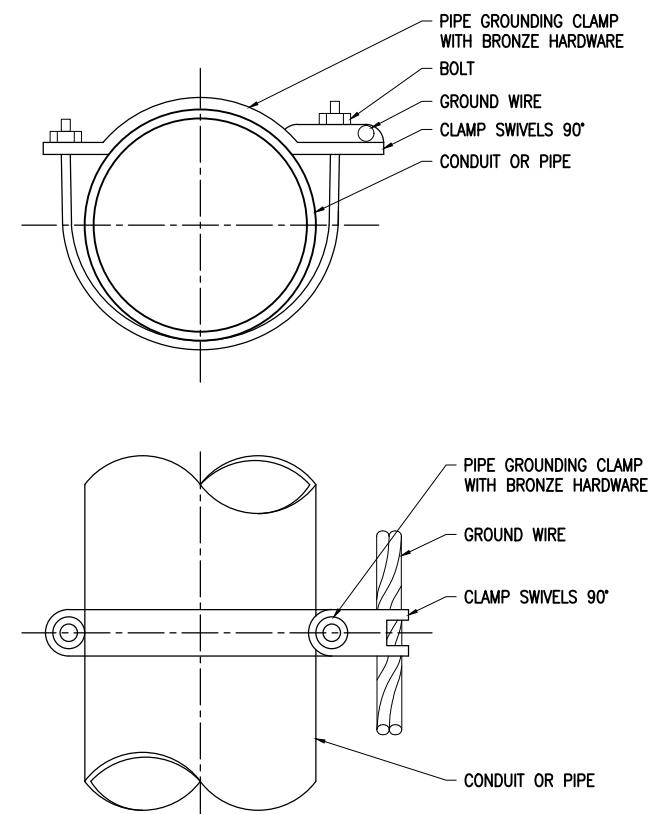
SHEET TITLE

ELECTRICAL NOTES
SHEET 2

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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 EQUIP 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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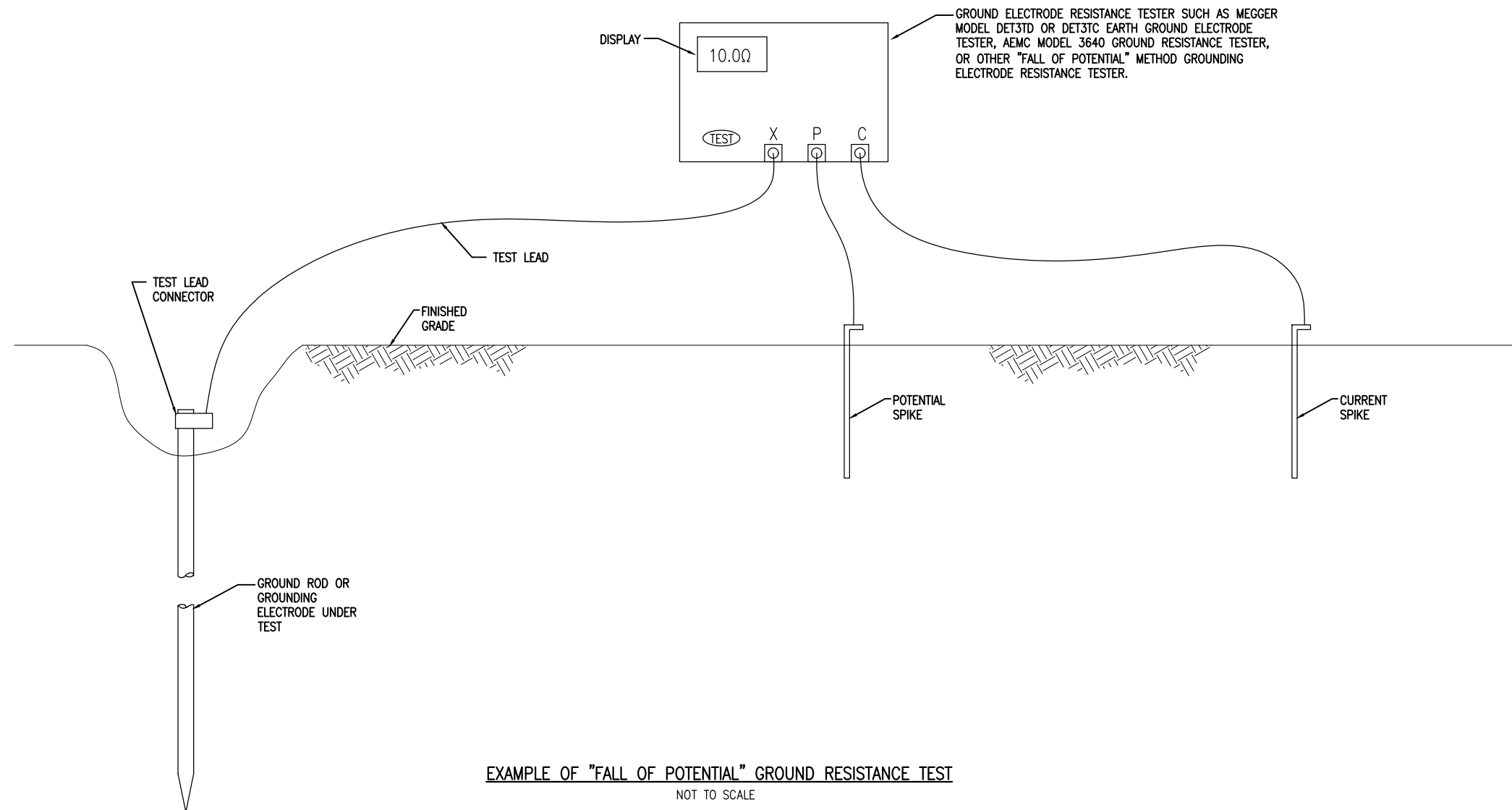
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-509-DTL.DWG
DESIGN BY: KNL 12/10/2018
DRAWN BY: CWS 12/10/2018
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

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.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-510-DETL.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

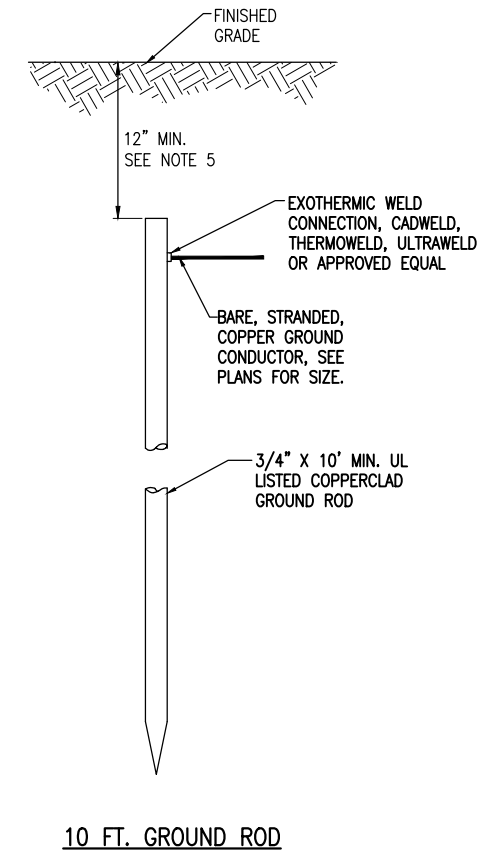
**GROUND
RESISTANCE
TESTING DETAILS**

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 GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
- EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
- ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, 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 ENIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS. GIRDLING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GIRDLING GROUND CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUND CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS GIRDLED DURING A LIGHTNING STRIKE RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 500,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. GIRDLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.
- IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 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.
- 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

GROUND RODS

NOT TO SCALE

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.

NOV 13, 2019 9:00 AM SCHWEN1296 I:\19\JOBS\19A000\119A0001\CAD\AIRPORT\SHEETE-004-NOTES.DWG



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Illinois Licensed
Professional Service Corporation
#184-001084



**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-004-NOTES.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

GROUNDING NOTES

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

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

ELECTRICAL ABBREVIATIONS	
A.F.F.	ABOVE FINISHED FLOOR
A, AMP	AMPERES
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CR	CONTROL RELAY
CU	COPPER
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
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)
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LTFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT (UL LISTED)
LTG	LIGHTING
LP	LIGHTING PANEL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCULAR MIL
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRIC
OL	OVERLOAD

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

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

NOTES:

- 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:

<u>120/240 VAC, 1 PHASE, 3 WIRE</u>	
PHASE A	BLACK
PHASE B	RED
NEUTRAL	WHITE
GROUND	GREEN
- SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
- LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.
- ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES 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, NAVIAD, 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.

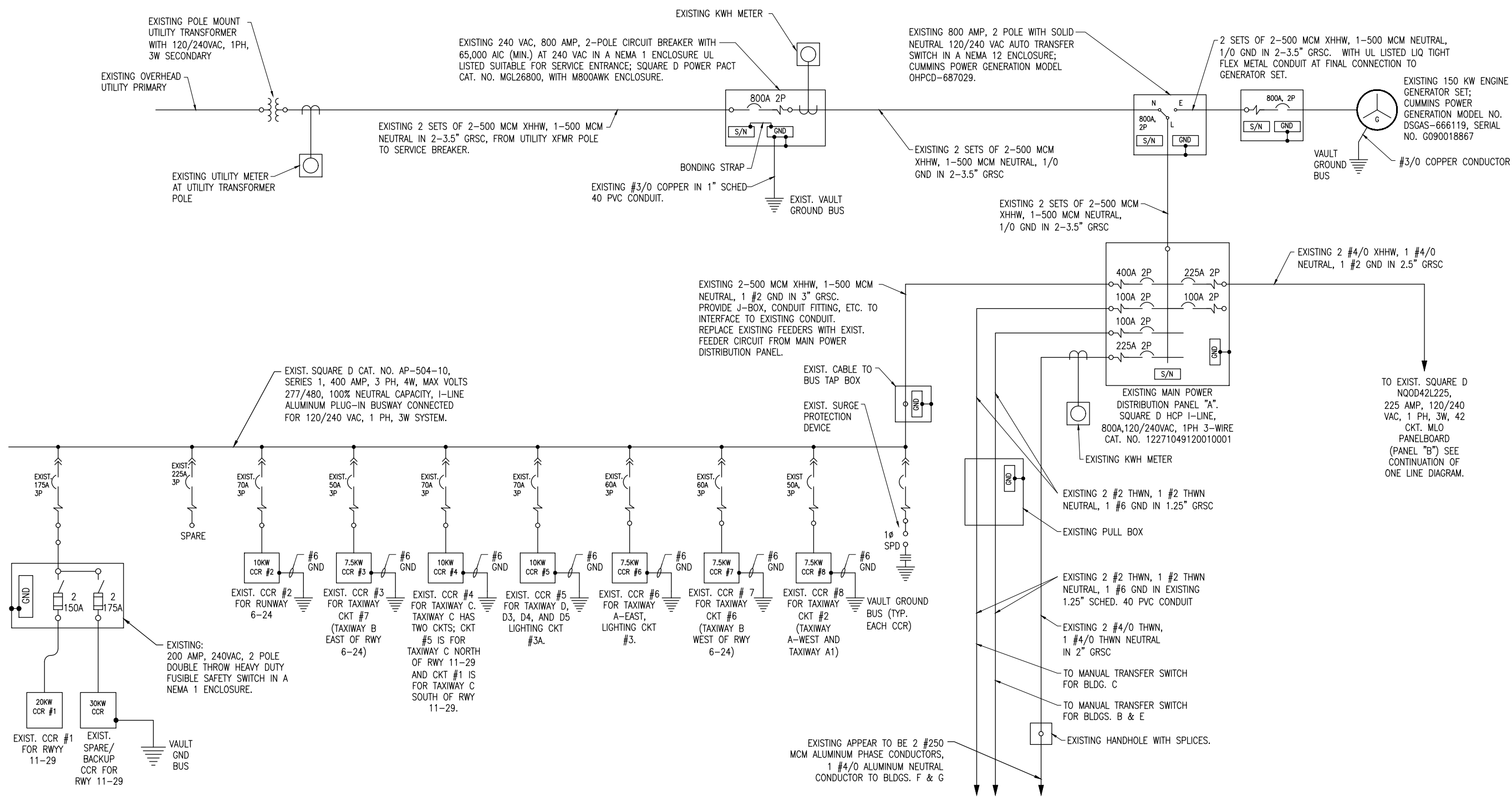
**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-005-LGND.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

**ELECTRICAL LEGEND
AND ABBREVIATIONS**



EXISTING ELECTRICAL ONE LINE DIAGRAM FOR VAULT

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 PROJECT ENGINEER AND THE RESIDENT ENGINEER/TECHNICIAN.
- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER/DIRECTOR AND THE AIRPORT MAINTENANCE STAFF. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING OR CONNECTING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICE.
- CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2G (CURRENT ISSUE IN EFFECT) "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 CLOSED THE RUNWAY LIGHTING AND ASSOCIATED AIRFIELD NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.
- WHEN A TAXIWAY IS CLOSED THE RESPECTIVE TAXIWAY LIGHTING SHALL BE SHUT OFF.

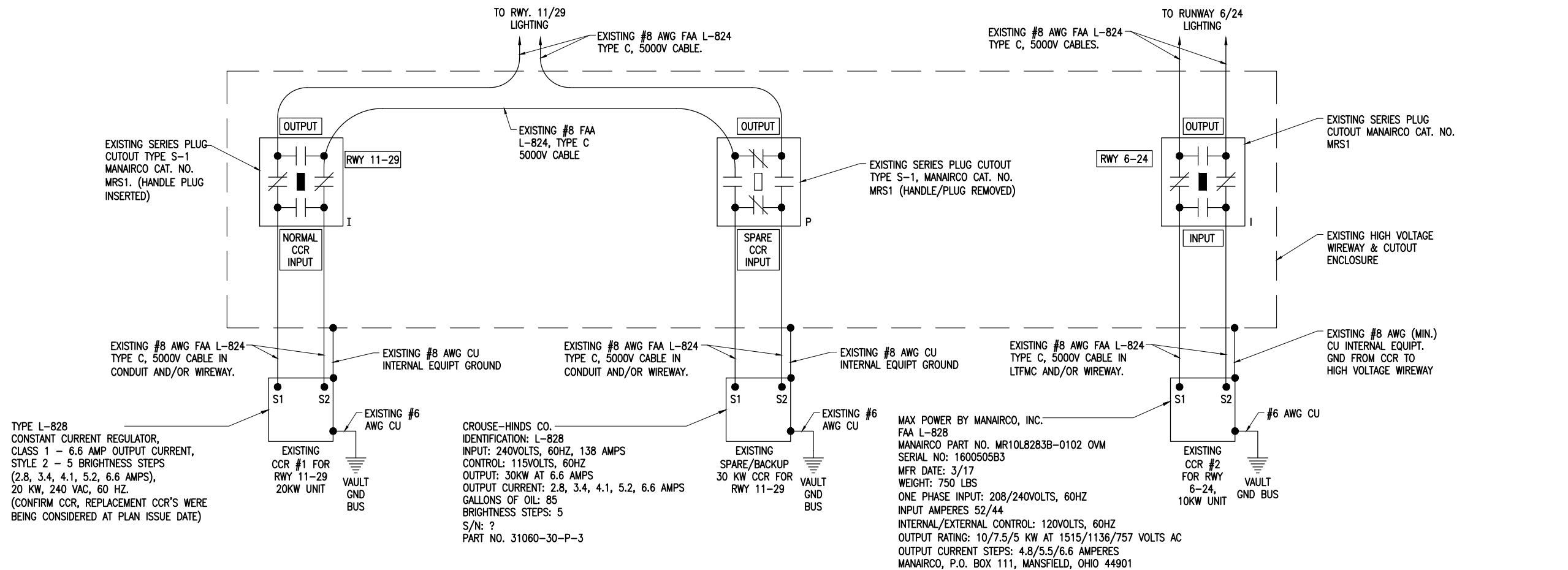
**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-601.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019
SHEET TITLE

**EXISTING
ELECTRICAL ONE
LINE DIAGRAM FOR
VAULT**



EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR RUNWAYS

NOTES:

- 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).
- EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
- VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICES. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER AND THE RESIDENT ENGINEER/TECHNICIAN. ALSO REFER TO EOR-47643 WHERE APPLICABLE.
- IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT.
- NEVER PULL A CUTOUT WITH THE CIRCUIT ENERGIZED. SHUT OFF CIRCUITS PRIOR TO PULLING A SERIES PLUG CUTOUT.
- 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.
- CONTRACTOR SHALL EXERCISE CAUTION, PRACTICE SAFETY, AND DISCONNECT THE SERIES CIRCUITS FROM THE RESPECTIVE CONSTANT CURRENT REGULATORS, AS APPLICABLE WHEN PERFORMING WORK ON THE AIRFIELD LIGHTING OR WORK THAT MIGHT AFFECT THE AIRFIELD LIGHTING. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO DISCONNECT POWER AND LOCKOUT CIRCUITS FOR PROTECTION OF PERSONNEL.
- MEGGER TEST (WITH AN INSULATION RESISTANCE TESTER) AND RECORD EXISTING SERIES CIRCUITS 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. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE, (WITH AN OHMMETER).
- THE RESPECTIVE RUNWAY AND TAXIWAY LIGHTING CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING SYSTEMS AND AFTER THE RESPECTIVE WORK HAS BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATIONS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT ENGINEER/TECHNICIAN. TEST RESULTS SHALL BE PROVIDED TO THE PROJECT ENGINEER AND RESIDENT ENGINEER/TECHNICIAN WITHIN 5 BUSINESS DAYS OF CONDUCTING TESTS.
- REFER TO INSTRUCTIONS IN THE VAULT FOR TRANSFER PROCEDURE TO BACKUP CCR FOR RUNWAY 11-29.

LEGEND

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

NOTE: INFORMATION SHOWN ON THIS SHEET IS TO HELP WITH IDENTIFYING EXISTING CONDITIONS.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752

SBG Project No:
3-17-SBGP-159

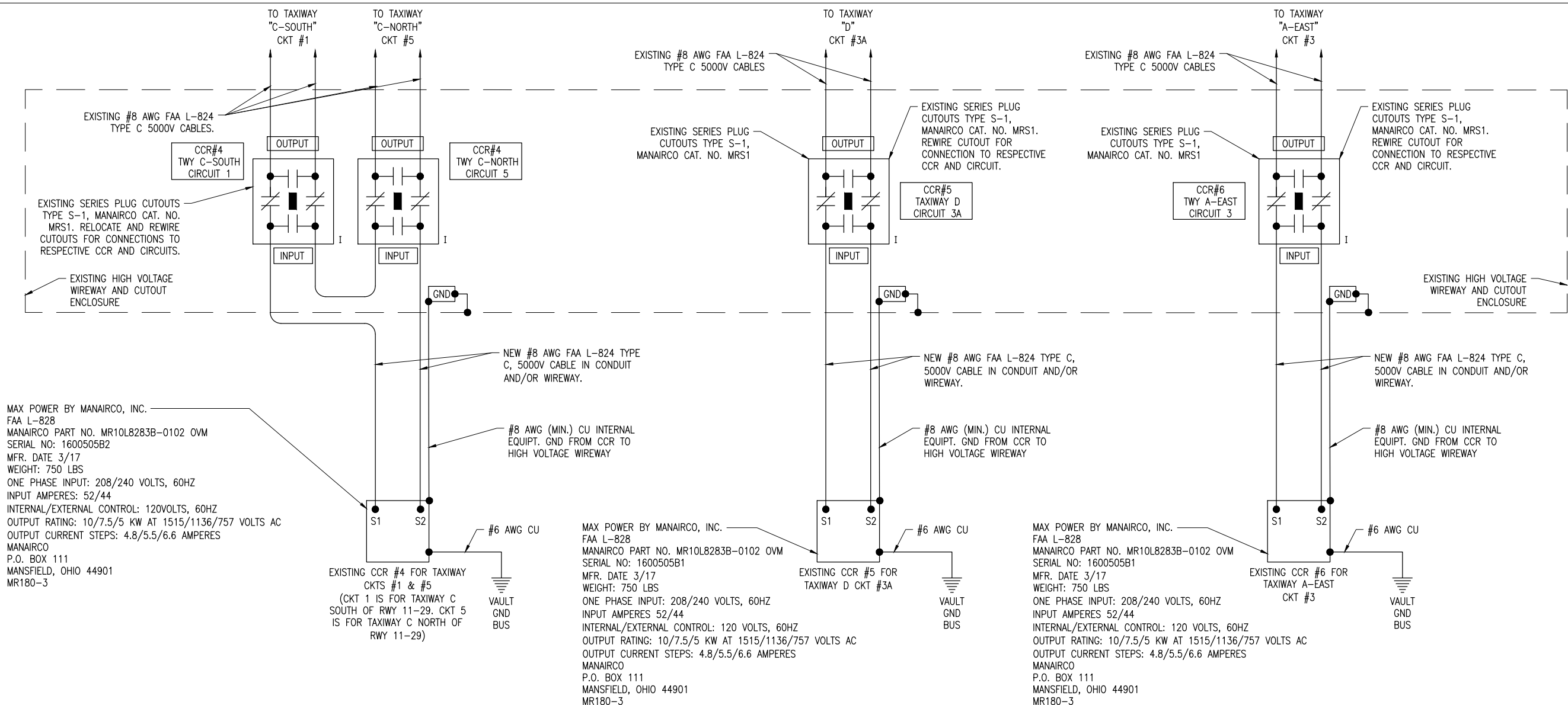
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-602.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

**EXISTING HIGH
VOLTAGE WIRING
SCHEMATIC FOR
RUNWAYS**



MAX POWER BY MANAIRCO, INC.
FAA L-828
MANAIRCO PART NO. MR10L8283B-0102 OVM
SERIAL NO: 1600505B2
MFR. DATE 3/17
WEIGHT: 750 LBS
ONE PHASE INPUT: 208/240 VOLTS, 60HZ
INPUT AMPERES: 52/44
INTERNAL/EXTERNAL CONTROL: 120VOLTS, 60HZ
OUTPUT RATING: 10/7.5/5 KW AT 1515/1136/757 VOLTS AC
OUTPUT CURRENT STEPS: 4.8/5.5/6.6 AMPERES
MANAIRCO
P.O. BOX 111
MANSFIELD, OHIO 44901
MR180-3

MAX POWER BY MANAIRCO, INC.
FAA L-828
MANAIRCO PART NO. MR10L8283B-0102 OVM
SERIAL NO: 1600505B1
MFR. DATE 3/17
WEIGHT: 750 LBS
ONE PHASE INPUT: 208/240 VOLTS, 60HZ
INPUT AMPERES 52/44
INTERNAL/EXTERNAL CONTROL: 120 VOLTS, 60HZ
OUTPUT RATING: 10/7.5/5 KW AT 1515/1136/757 VOLTS AC
OUTPUT CURRENT STEPS: 4.8/5.5/6.6 AMPERES
MANAIRCO
P.O. BOX 111
MANSFIELD, OHIO 44901
MR180-3

MAX POWER BY MANAIRCO, INC.
FAA L-828
MANAIRCO PART NO. MR10L8283B-0102 OVM
SERIAL NO: 1600505B1
MFR. DATE 3/17
WEIGHT: 750 LBS
ONE PHASE INPUT: 208/240 VOLTS, 60HZ
INPUT AMPERES 52/44
INTERNAL/EXTERNAL CONTROL: 120 VOLTS, 60HZ
OUTPUT RATING: 10/7.5/5 KW AT 1515/1136/757 VOLTS AC
OUTPUT CURRENT STEPS: 4.8/5.5/6.6 AMPERES
MANAIRCO
P.O. BOX 111
MANSFIELD, OHIO 44901
MR180-3

NOTES:

- 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).
- EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
- VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICES. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER AND THE RESIDENT ENGINEER/TECHNICIAN, ALSO REFER TO EOR-47643 WHERE APPLICABLE.
- IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT.
- NEVER PULL A CUTOUT WITH THE CIRCUIT ENERGIZED. SHUTOFF CIRCUITS PRIOR TO PULLING A SERIES PLUG CUTOUT.
- 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.
- CONTRACTOR SHALL EXERCISE CAUTION, PRACTICE SAFETY, AND DISCONNECT THE SERIES CIRCUITS FROM THE RESPECTIVE CONSTANT CURRENT REGULATORS, AS APPLICABLE WHEN PERFORMING WORK ON THE AIRFIELD LIGHTING OR WORK THAT MIGHT AFFECT THE AIRFIELD LIGHTING. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO DISCONNECT POWER AND LOCKOUT CIRCUITS FOR PROTECTION OF PERSONNEL.
- MEGGER TEST (WITH AN INSULATION RESISTANCE TESTER) AND RECORD EXISTING SERIES CIRCUITS 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. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE, (WITH AN OHMMETER).
- THE RESPECTIVE RUNWAY AND TAXIWAY LIGHTING CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING SYSTEMS, AND AFTER THE RESPECTIVE WORK HAS BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATIONS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT ENGINEER/TECHNICIAN. TEST RESULTS SHALL BE PROVIDED TO THE PROJECT ENGINEER AND RESIDENT ENGINEER/TECHNICIAN WITHIN 5 BUSINESS DAYS OF CONDUCTING TESTS.

EXISTING HIGH VOLTAGE WIRING SCHEMATIC FOR TAXIWAY CKTS 1, 3, 3A, & 5

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

NOTE: INFORMATION SHOWN ON THIS SHEET IS TO HELP WITH IDENTIFYING EXISTING CONDITIONS.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

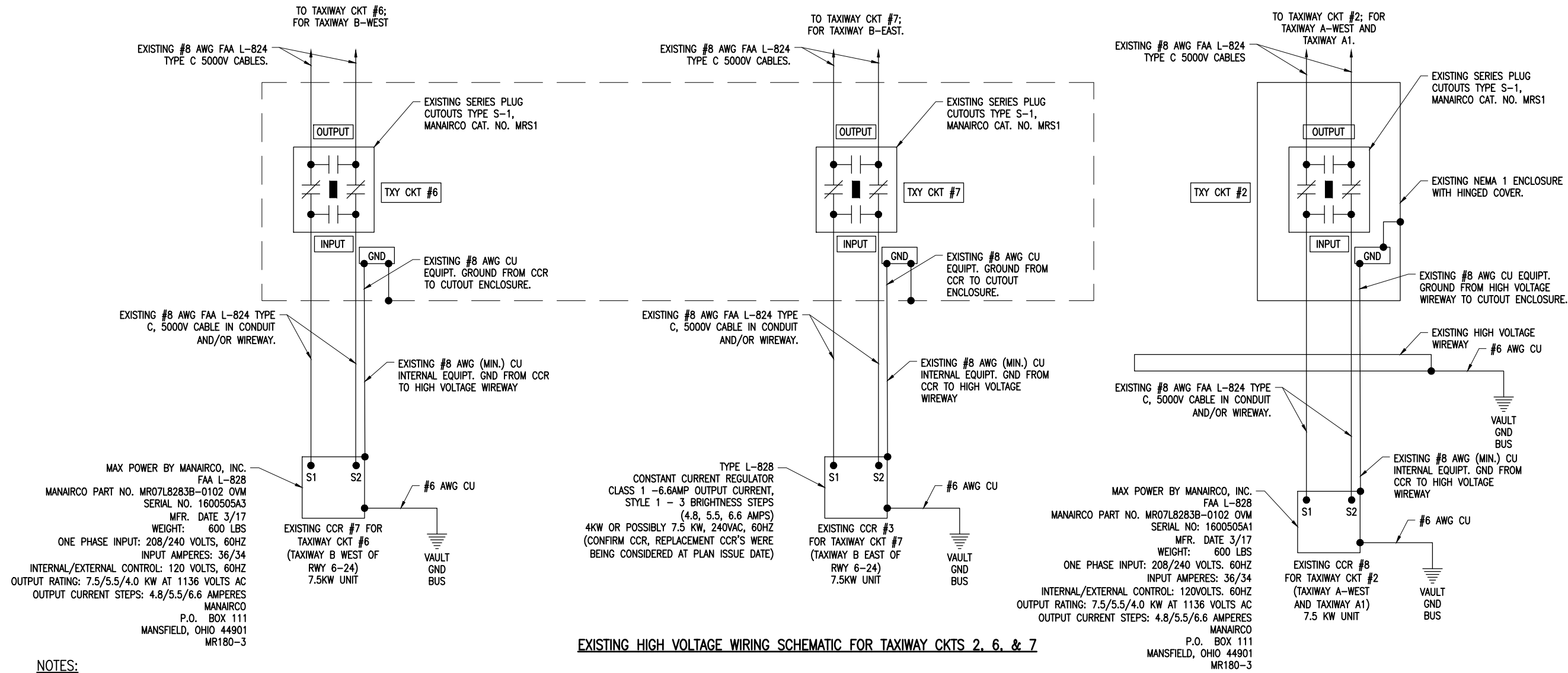
IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-603.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

**EXISTING HIGH
VOLTAGE WIRING
SCHEMATIC FOR
TWY CKTS 1,3,3A&5**



NOTES:

- 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).
- EXAMINE THE SITE TO CONFIRM AND FIELD VERIFY EXISTING SITE CONDITIONS.
- VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING, DISCONNECTING, WORKING ON, RELOCATING, RECONNECTING, AND/OR INSTALLING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICES. CONTRACTOR SHALL REPORT ANY VARIATIONS, DEFICIENCIES, AND/OR APPARENT SAFETY CONCERNS TO THE PROJECT ENGINEER RESIDENT ENGINEER/TECHNICIAN, ALSO REFER TO EOR-47643 WHERE APPLICABLE.
- IDENTIFY EACH RESPECTIVE CIRCUIT PRIOR TO PERFORMING WORK ON THAT CIRCUIT.
- NEVER PULL A CUTOUT WITH THE CIRCUIT ENERGIZED. SHUT OFF CIRCUITS PRIOR TO PULLING A SERIES PLUG CUTOUT.
- 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.
- CONTRACTOR SHALL EXERCISE CAUTION, PRACTICE SAFETY, AND DISCONNECT THE SERIES CIRCUITS FROM THE RESPECTIVE CONSTANT CURRENT REGULATORS, AS APPLICABLE WHEN PERFORMING WORK ON THE AIRFIELD LIGHTING OR WORK THAT MIGHT AFFECT THE AIRFIELD LIGHTING. CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS TO DISCONNECT POWER AND LOCKOUT CIRCUITS FOR PROTECTION OF PERSONNEL.
- MEGGER TEST (WITH AN INSULATION RESISTANCE TESTER) AND RECORD EXISTING SERIES CIRCUITS 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. ALSO TEST AND RECORD SERIES CIRCUIT LOOP RESISTANCE, (WITH AN OHMMETER).
- THE RESPECTIVE RUNWAY AND TAXIWAY LIGHTING CCR'S SHALL BE TESTED FOR PROPER OPERATION BEFORE REMOVAL WORK, MODIFICATIONS, ADDITIONS, AND/OR ANY OTHER WORK THAT MIGHT POSSIBLY AFFECT AIRFIELD LIGHTING SYSTEMS, AND AFTER THE RESPECTIVE WORK HAS BEEN COMPLETED. CONTRACTOR SHALL TEST AND RECORD THE INPUT CURRENT AND OUTPUT CURRENT FOR EACH CONSTANT CURRENT REGULATOR IN THE AUTOMATIC AND MANUAL MODES OF OPERATIONS. CONTRACTOR SHALL REPORT CONCERNS AND/OR DEFICIENCIES TO THE RESIDENT ENGINEER/TECHNICIAN. TEST RESULTS SHALL BE PROVIDED TO THE PROJECT ENGINEER AND RESIDENT ENGINEER/TECHNICIAN WITHIN 5 BUSINESS DAYS OF CONDUCTING TESTS.

**PHASE 2:
RECONSTRUCT
TAXIWAY B**

IDA No: MTO-4752
SBG Project No:
3-17-SBGP-159
Contract No. CO067

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: 11/15/2019
PROJECT NO: 19A0001
CAD FILE: E-604.DWG
DESIGN BY: KNL 04/07/2019
DRAWN BY: CWS 04/08/2019
REVIEWED BY: KNL 06/26/2019

SHEET TITLE

**EXISTING HIGH
VOLTAGE WIRING
SCHEMATIC FOR
TWY CKTS 2,6&7**