

ITEM NO. 18A IDOT LETTING: JULY 29, 2016

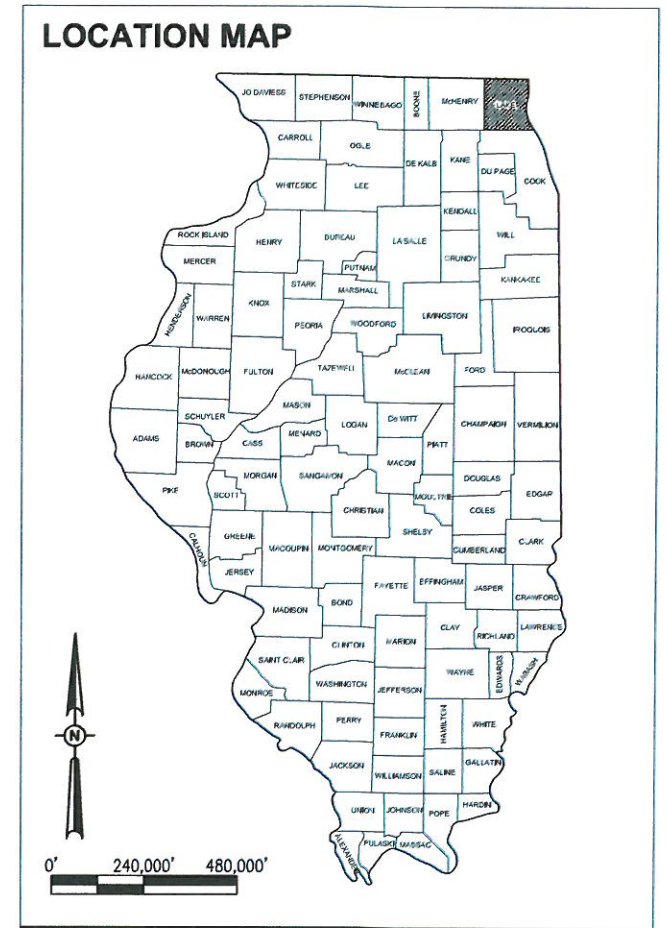
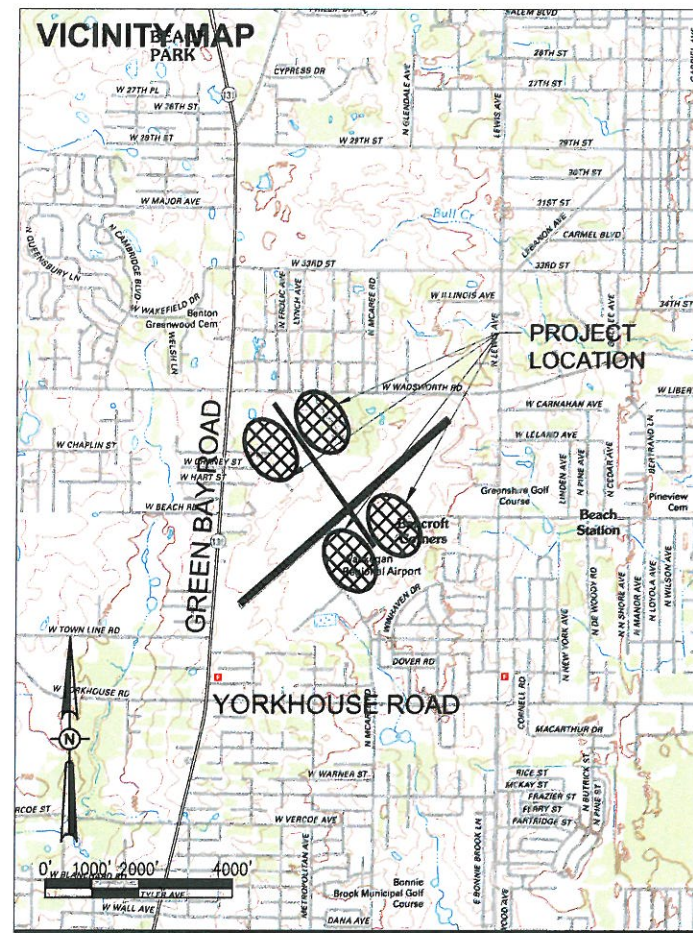
WA071
TOTAL SHEETS = 103

CONSTRUCTION PLANS

REHABILITATE PORTIONS OF TAXIWAYS
B & C, PHASE 2

WAUKEGAN PORT DISTRICT
WAUKEGAN NATIONAL AIRPORT (UGN)
WAUKEGAN, LAKE COUNTY, ILLINOIS

SBG PROJECT NO. 3-17-SBGP-TBD
IDA PROJECT NO. UGN-4521



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.

No.	Issue/Description	Sheets Changed	Date	By

Seal Date of Plans

Kevin M. Spitz

KEVIN M. SPITZ
062-081742
LICENSED PROFESSIONAL ENGINEER
STATE OF ILLINOIS

Kevin M. Spitz
Project Engineer June 21, 2016
Date

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Ronald M. Hudson

Ronald M. Hudson, AICP
Project Manager June 21, 2016
Date

WAUKEGAN NATIONAL AIRPORT

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Skip Goss

Skip Goss
Airport Manager June 21, 2016
Date



SUMMARY OF QUANTITIES

INDEX OF SHEETS	
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ITEM NO.	DESCRIPTION	UNIT	AS BID QUANTITY	RECORD PAID
AR108158	1/C #8 5KV UG CABLE IN UD	LINEAR FOOT	7,879.0	
AR108960	REMOVE CABLE	LINEAR FOOT	2,737.0	
AR110504	4-WAY CONCRETE ENCASED DUCT	LINEAR FOOT	59.0	
AR110551	EXTEND DUCT	LINEAR FOOT	124.0	
AR110900	REMOVE DUCT	LINEAR FOOT	60.0	
AR125410	MITL-STAKE MOUNTED	EACH	43.0	
AR125415	MITL-BASE MOUNTED	EACH	11.0	
AR125565	SPLICE CAN	EACH	2.0	
AR125901	REMOVE STAKE MOUNTED LIGHT	EACH	52.0	
AR125902	REMOVE BASE MOUNTED LIGHT	EACH	7.0	
AR125906	REMOVE SPLICE CAN	EACH	1.0	
AR125941	ADJUST STAKE MOUNTED LIGHT	EACH	10.0	
AR125942	ADJUST BASE MOUNTED LIGHT	EACH	2.0	
AR150510	ENGINEER'S FIELD OFFICE	LUMP SUM	1.0	
AR150530	TRAFFIC MAINTENANCE	LUMP SUM	1.0	
AR152410	UNCLASSIFIED EXCAVATION	CUBIC YARD	4,514.0	
AR156510	SILT FENCE	LINEAR FOOT	880.0	
AR156513	SEPARATION FABRIC	SQUARE YARD	5,926.0	
AR156520	INLET PROTECTION	EACH	2.0	
AR201661	CLEAN & SEAL BITUMINOUS CRACKS	LINEAR FOOT	2,567.0	
AR201663	SAND MIX CRACK REPAIR	LINEAR FOOT	4,856.0	
AR209605	CRUSHED AGG. BASE COURSE - 5"	SQUARE YARD	4,855.0	
AR209606	CRUSHED AGG. BASE COURSE - 6"	SQUARE YARD	798.0	
AR209607	CRUSHED AGG. BASE COURSE - 7"	SQUARE YARD	3,894.0	
AR209609	CRUSHED AGG. BASE COURSE - 9"	SQUARE YARD	1,113.0	
AR209612	CRUSHED AGG. BASE COURSE - 12"	SQUARE YARD	122.0	
AR302611	ASPHALT TREATED PERMEABLE SUBBASE	SQUARE YARD	4,855.0	
AR302630	ATPS TEST SECTION	EACH	1.0	
AR401613	BIT. SURF. CSE.-METHOD I, SUPERPAVE	TON	2,093.0	
AR401650	BITUMINOUS PAVEMENT MILLING	SQUARE YARD	3,511.0	
AR401660	SAW & SEAL BIT. JOINTS	LINEAR FOOT	1,060.0	
AR401665	BITUMINOUS PAVEMENT SAWING	LINEAR FOOT	1,977.0	
AR401900	REMOVE BITUMINOUS PAVEMENT	SQUARE YARD	774.0	
AR401910	REMOVE & REPLACE BIT. PAVEMENT	SQUARE YARD	573.0	
AR403614	BIT. BASE CSE.-METHOD II, SUPERPAVE	TON	3,116.0	

ITEM NO.	DESCRIPTION	UNIT	AS BID QUANTITY	RECORD PAID
AR403630	BITUMINOUS BASE TEST SECTION	EACH	1.0	
AR501514	14" PCC PAVEMENT	SQUARE YARD	4,733.0	
AR501530	PCC TEST BATCH	EACH	1.0	
AR501665	PCC PAVEMENT SAWING	LINEAR FOOT	561.0	
AR501900	REMOVE PCC PAVEMENT	SQUARE YARD	6,404.0	
AR602510	BITUMINOUS PRIME COAT	GALLONS	3,234.0	
AR603510	BITUMINOUS TACK COAT	GALLONS	4,552.0	
AR620520	PAVEMENT MARKING-WATERBORNE	SQUARE FOOT	6,197.0	
AR620525	PAVEMENT MARKING-BLACK BORDER	SQUARE FOOT	6,799.0	
AR620530	PAVEMENT MARKING-EPOXY	SQUARE FOOT	2,717.0	
AR620590	TEMPORARY MARKING	SQUARE FOOT	2,882.0	
AR620900	PAVEMENT MARKING REMOVAL	SQUARE FOOT	1,629.0	
AR701512	12" RCP, CLASS IV	LINEAR FOOT	115.0	
AR705506	6" PERFORATED UNDERDRAIN	LINEAR FOOT	5,113.0	
AR705630	UNDERDRAIN INSPECTION HOLE	EACH	9.0	
AR705640	UNDERDRAIN CLEANOUT	EACH	13.0	
AR705903	REMOVE UNDERDRAIN INSPECTION HOLE	EACH	7.0	
AR705904	REMOVE UNDERDRAIN CLEANOUT	EACH	2.0	
AR705943	ADJUST UNDERDRAIN INSPECTION HOLE	EACH	2.0	
AR705944	ADJUST UNDERDRAIN CLEANOUT	EACH	2.0	
AR751411	INLET-TYPE A	EACH	1.0	
AR751540	MANHOLE 4'	EACH	1.0	
AR751900	REMOVE INLET	EACH	1.0	
AR751943	ADJUST MANHOLE	EACH	2.0	
AR800938	CRACK CONTROL OVERLAY MATERIAL (8501)	SQUARE YARD	1,319.0	
AR800939	CRACK CONTROL REPAIR MATERIAL (8502)	SQUARE YARD	1,415.0	
AR800954	4" SECONDARY UNDERDRAIN	LINEAR FOOT	451.0	
AR800971	GRANULAR DRAINAGE SUBBASE - 8"	SQUARE YARD	5,926.0	
AR800972	BITUMINOUS SAND MIX - 2"	SQUARE YARD	787.0	
AR800987	RELOCATE LIGHTED SIGN	EACH	2.0	
AR800988	RELOCATE UNLIGHTED SIGN	EACH	6.0	
AR901510	SEEDING	ACRE	3.4	
AR905510	TOPSOILING (FROM ON SITE)	CUBIC YARD	1,138.0	
AR908510	MULCHING	ACRE	3.4	

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 02-SOQ.DWG
DESIGN BY: KMS 06/06/2016
DRAWN BY: KMS 06/06/2016
REVIEWED BY: LDH 6/9/2016

SHEET TITLE

SHEET INDEX AND SUMMARY OF QUANTITIES

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



GENERAL NOTES

PROJECT DESCRIPTION

THIS PROJECT IS TO REHABILITATE PORTIONS OF TAXIWAY B AND C AT WAUKEGAN NATIONAL AIRPORT INCLUDING, AMONG OTHER INCIDENTAL WORK, THE FOLLOWING ITEMS:

- PLACEMENT OF TEMPORARY SOIL EROSION CONTROL MEASURES.
- PROVISION OF TRAFFIC MAINTENANCE.
- PROVISION OF REQUIRED UNCLASSIFIED EXCAVATION. DISPOSAL OF EXCESS CUT MATERIAL AT AN OFF-SITE LOCATION.
- CRACK REPAIR AND HMA OVERLAY OF DESIGNATED AREAS OF EXISTING HMA PAVEMENTS.
- FULL DEPTH REMOVAL AND REPLACEMENT OF DESIGNATED EXISTING PCC PAVEMENTS, INCLUDING STABILIZED SUBBASE.
- REMOVAL AND REPLACEMENT OF DESIGNATED EXISTING PCC PAVEMENTS, INCLUDING STABILIZED SUBBASE.
- ADJUSTMENT OF EXISTING DRAINAGE STRUCTURES, AND INSTALLATION OF NEW DRAINAGE STRUCTURES.
- INSTALLATION OF UNDERDRAINS.
- REMOVAL OR RELOCATION OF EXISTING, AND INSTALLATION OF NEW, AIRFIELD LIGHTING CABLES AND FIXTURES.
- PLACEMENT OF PAVEMENT MARKINGS.
- TOPSOILING, SEEDING AND MULCHING IN ALL DISTURBED AREAS, INCLUDING ALONG NEW PAVEMENT EDGES.

PROTECTION OF EXISTING AIRPORT FACILITIES

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

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE FAA (SMO) THROUGH THE RESIDENT ENGINEER TO LOCATE ALL FAA CABLES ON THE PROJECT SITE. ALL FAA CABLES SHALL BE PROTECTED AT ALL TIMES.

CONTRACTOR'S ACCESS AND TEMPORARY FACILITIES

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

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

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

RESPONSIBILITY FOR EXISTING UTILITIES

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

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND AGENCIES OF HIS CONSTRUCTION PLANS AND SHALL OBTAIN FROM EACH PARTY DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF ALL UTILITIES AND THE WORKING SCHEDULE OF ANY REMOVALS OR ADJUSTMENTS REQUIRED OF THE UTILITY. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (PHONE 800-892-0123) TO ASSIST IN THE ABOVE.

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.

THE CONTRACTOR SHALL PROTECT ANY FACILITIES TO THE SATISFACTION OF THE UTILITY OR OWNING-AGENCY WITH THE COST OF ANY REQUIRED PROTECTION TO BE INCIDENTAL TO THE CONTRACT. IN THE EVENT A UTILITY LINE OR SERVICE IS UNEXPECTEDLY ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE AND THE UTILITY COMPANY OR AGENCY OF JURISDICTION. ANY SUCH UTILITIES DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO SERVICE IMMEDIATELY.

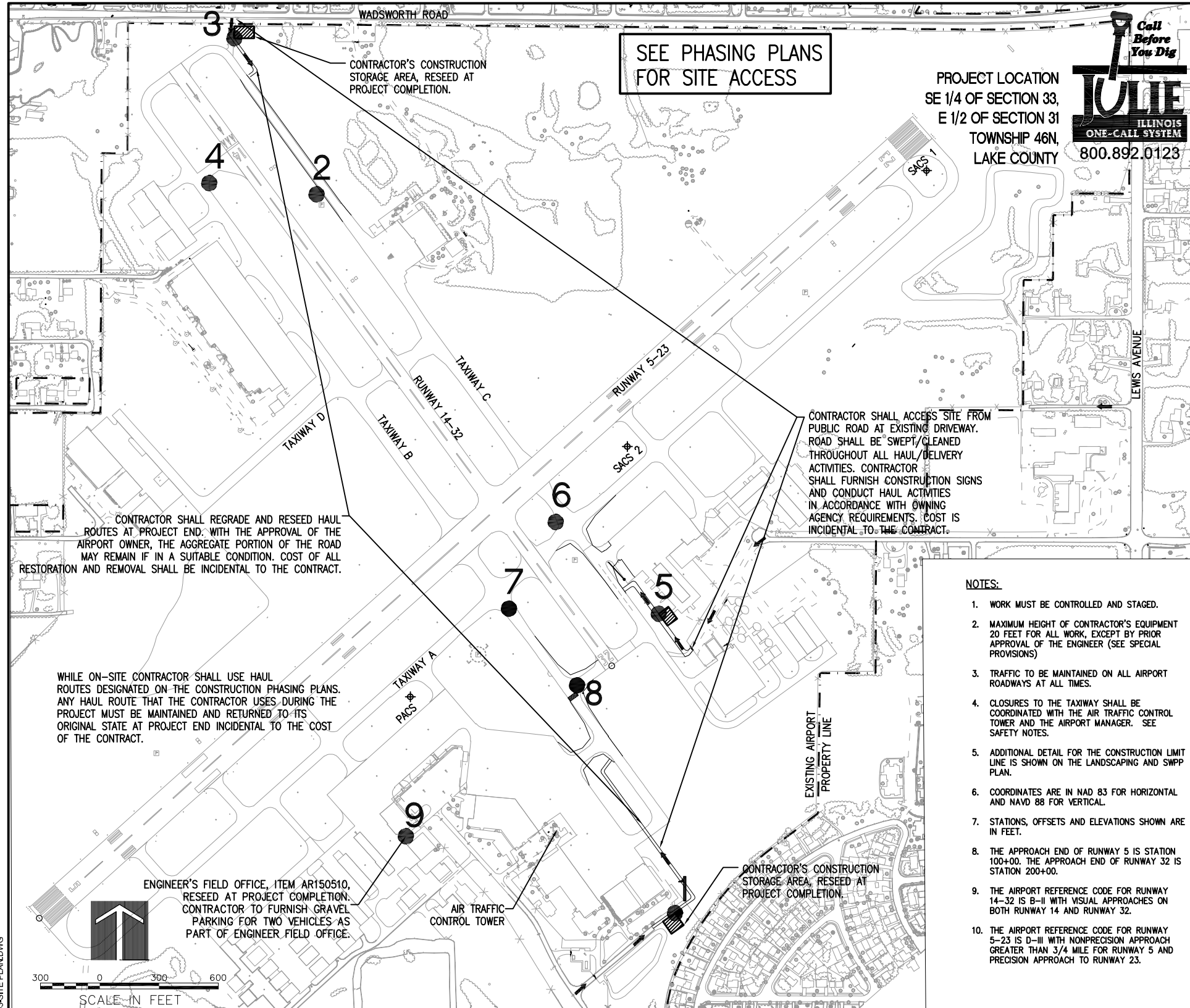
AIRPORT SECURITY

THE CONTRACTOR IS TO COORDINATE GATE SECURITY, THROUGH THE RESIDENT ENGINEER, WITH THE AIRPORT MANAGEMENT. AIRPORT SECURITY SHALL BE MAINTAINED AT ALL TIMES.

EXISTING CONTROL POINTS

PACS: N 2095587.482 E 1109729.492 ELEV. 705.1
SACS 1 N 2098251.587 E 1112341.241 ELEV. 717.6
SACS 2 N 2096854.703 E 1110827.340 ELEV. 709.1

RUNWAY END COORDINATES				
DESCRIPTION	LATITUDE	LONGITUDE	STATION	ELEVATION
RUNWAY 5 END	42° 24' 57.07" N	87° 52' 32.19" W	100+00.00	724.7
RUNWAY 23 END	42° 25' 36.37" N	87° 51' 32.33" W	159+98.70	723.1
RUNWAY 14 END	42° 25' 39.58" N	87° 52' 22.73" W	237+49.37	727.8
RUNWAY 14 END (DISPLACED)	42° 25' 35.65" N	87° 52' 18.90" W	232+49.41	727.6
RUNWAY 32 END	42° 25' 09.54" N	87° 51' 53.48" W	200+00.00	712.1



SEE PHASING PLANS FOR SITE ACCESS

Call Before You Dig
JULIE
ILLINOIS ONE-CALL SYSTEM
800.892.0123

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

CONTRACTOR SHALL REGRADE AND RESEED HAUL ROUTES AT PROJECT END. WITH THE APPROVAL OF THE AIRPORT OWNER, THE AGGREGATE PORTION OF THE ROAD MAY REMAIN IF IN A SUITABLE CONDITION. COST OF ALL RESTORATION AND REMOVAL SHALL BE INCIDENTAL TO THE CONTRACT.

WHILE ON-SITE CONTRACTOR SHALL USE HAUL ROUTES DESIGNATED ON THE CONSTRUCTION PHASING PLANS. ANY HAUL ROUTE THAT THE CONTRACTOR USES DURING THE PROJECT MUST BE MAINTAINED AND RETURNED TO ITS ORIGINAL STATE AT PROJECT END INCIDENTAL TO THE COST OF THE CONTRACT.

ENGINEER'S FIELD OFFICE, ITEM AR150510, RESEED AT PROJECT COMPLETION. CONTRACTOR TO FURNISH GRAVEL PARKING FOR TWO VEHICLES AS PART OF ENGINEER FIELD OFFICE.

NOTES:

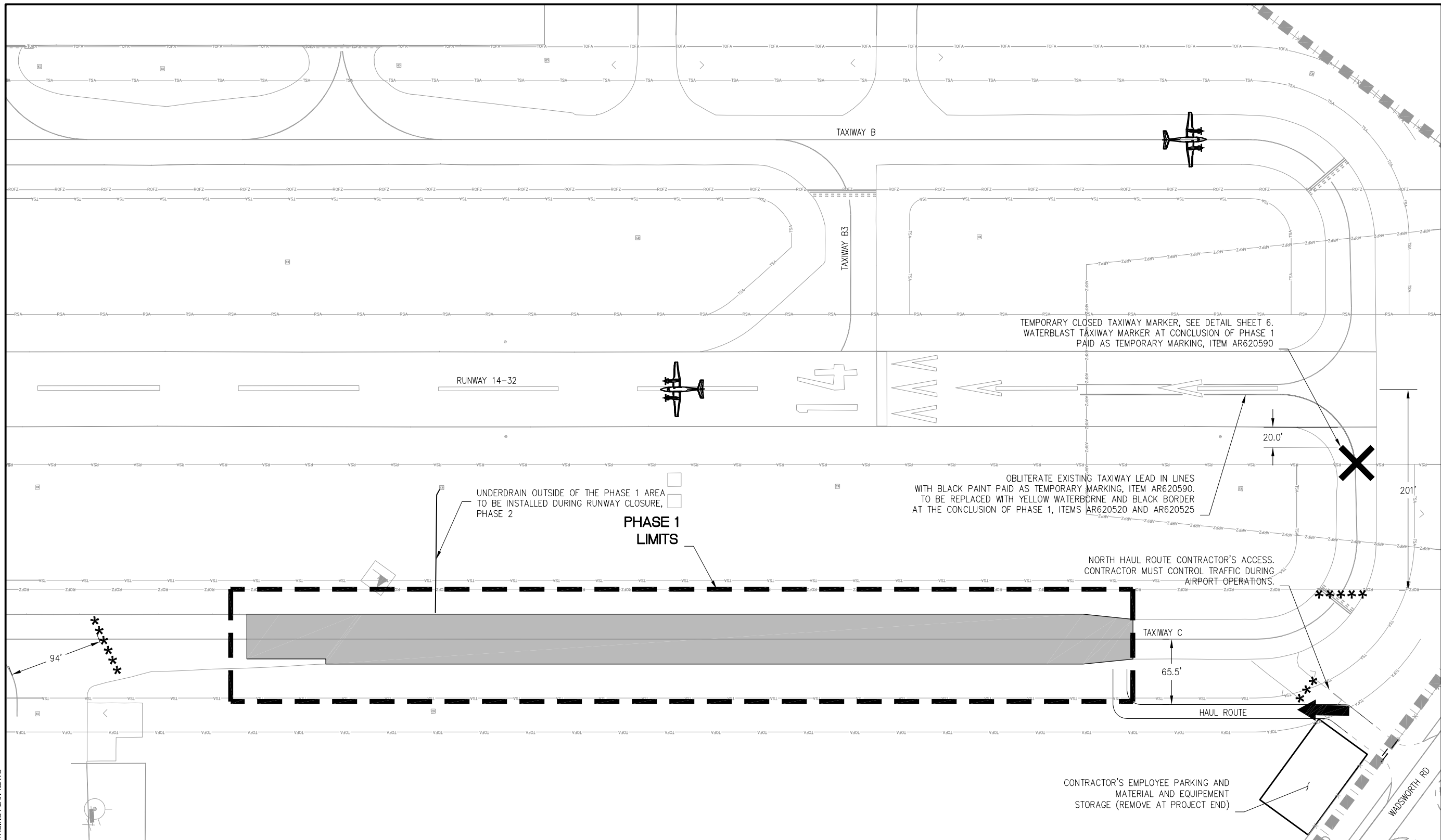
1. WORK MUST BE CONTROLLED AND STAGED.
2. MAXIMUM HEIGHT OF CONTRACTOR'S EQUIPMENT 20 FEET FOR ALL WORK, EXCEPT BY PRIOR APPROVAL OF THE ENGINEER (SEE SPECIAL PROVISIONS)
3. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
4. CLOSURES TO THE TAXIWAY SHALL BE COORDINATED WITH THE AIR TRAFFIC CONTROL TOWER AND THE AIRPORT MANAGER. SEE SAFETY NOTES.
5. ADDITIONAL DETAIL FOR THE CONSTRUCTION LIMIT LINE IS SHOWN ON THE LANDSCAPING AND SWPP PLAN.
6. COORDINATES ARE IN NAD 83 FOR HORIZONTAL AND NAVD 88 FOR VERTICAL.
7. STATIONS, OFFSETS AND ELEVATIONS SHOWN ARE IN FEET.
8. THE APPROACH END OF RUNWAY 5 IS STATION 100+00. THE APPROACH END OF RUNWAY 32 IS STATION 200+00.
9. THE AIRPORT REFERENCE CODE FOR RUNWAY 14-32 IS B-II WITH VISUAL APPROACHES ON BOTH RUNWAY 14 AND RUNWAY 32.
10. THE AIRPORT REFERENCE CODE FOR RUNWAY 5-23 IS D-III WITH NONPRECISION APPROACH GREATER THAN 3/4 MILE FOR RUNWAY 5 AND PRECISION APPROACH TO RUNWAY 23.

OBJECT INFORMATION

ITEM NO.	DESCRIPTION	PHASE	MOBILITY	GROUND ELEVATION	OBJECT ELEVATION	LATITUDE	LONGITUDE	RUNWAY 5-23 STATION	RUNWAY 5-23 OFFSET	RUNWAY 5-23 EXIST EL.	RUNWAY 14-32 STATION	RUNWAY 14-32 OFFSET	RUNWAY 14-32 EXIST EL.
1	CONTRACTOR'S CONSTRUCTION STORAGE	ALL	STATIONARY	704.2	729.2	42° 24' 57.1532" N	87° 51' 49.3065" W	---	---	---	188+00	479.1	708.0
2	CONSTRUCTION EQUIPMENT	1	MOVING	723.5	748.5	42° 25' 33.1930" N	87° 52' 13.2190" W	---	---	---	228+08.3	200.0	725.0
3	CONTRACTOR'S CONSTRUCTION STORAGE	ALL	STATIONARY	730.0	755.0	42° 25' 41.0258" N	87° 52' 18.7054" W	---	---	---	236+92.1	330.1	727.8
4	CONSTRUCTION EQUIPMENT	2	MOVING	726.0	751.0	42° 25' 33.7846" N	87° 52' 20.4559" W	---	---	---	231+74.3	205.2	727.0
5	CONTRACTOR'S CONSTRUCTION STORAGE	ALL	STATIONARY	710.0	735.0	42° 25' 12.1254" N	87° 51' 50.2911" W	133+62.6	943.7	711.0	200+72.6	347.5	711.5
6	CONSTRUCTION EQUIPMENT	1 & 2	MOVING	705.5	730.5	42° 25' 16.7413" N	87° 51' 57.2072" W	132+84.3	250.0	710.5	207+55	200.0	709.2
7	CONSTRUCTION EQUIPMENT	3	MOVING	708.0	733.0	42° 25' 12.4216" N	87° 52' 00.3933" W	128+15.4	418.7	709.5	205+40.1	249.6	709.5
8	CONSTRUCTION EQUIPMENT	3	MOVING	709.8	734.8	42° 25' 08.5704" N	87° 51' 55.8281" W	128+13.1	937.6	709.5	200+23.6	200.0	712.0
9	ENGINEER'S FIELD OFFICE	ALL	STATIONARY	705.0	730.0	42° 25' 01.0673" N	87° 52' 07.4312" W	116+60	928.8	710.2	199+50.6	1350.1	710.5



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
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Fax: 847.244.3813



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 05-STAGING PLAN 1.DWG
DESIGN BY: KMS 06/01/2016
DRAWN BY: KMS 06/03/2016
REVIEWED BY: LDH 6/9/2016

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SHEET TITLE

PHASING PLAN - NORTH PHASE 1

NOTES

- ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 20 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER (SEE SPECIAL PROVISIONS).
- CONTRACTOR'S EQUIPMENT MAY NOT DISRUPT FLIGHT OPERATIONS ON RUNWAY 14-32 OR 5-23 AT ANY TIME.
- TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
- SEE CONSTRUCTION SITE PLAN ON SHEET 3 AND SAFETY NOTES ON SHEET 4.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 1 NORTH:

- CRACK CONTROL AND PAVEMENT REPAIR WITHIN PHASE 1 LIMITS.
- EXCAVATE FOR SHOULDER WIDENING WITHIN PHASE 1 LIMITS.
- INSTALL UNDERDRAIN AND UNDERDRAIN STRUCTURES WITHIN PHASE 1 LIMITS.
- INSTALL AGGREGATE BASE, BITUMINOUS BASE, AND BITUMINOUS SURFACE WITHIN PHASE 1 LIMITS.
- INSTALL PAVEMENT MARKINGS WITHIN PHASE 1 LIMITS.
- GRADE, TOPSOIL AND LANDSCAPE WITHIN PHASE 1 LIMITS.

- HAUL ROUTE
- HAUL ROUTE ON EXISTING PAVEMENT
- TEMPORARY LOW PROFILE BARRICADES
- TEMPORARY TYPE A BARRICADES

- AIRPLANE MOVEMENTS
- VEHICLE MOVEMENTS
- PAVEMENTS TO BE CONSTRUCTED

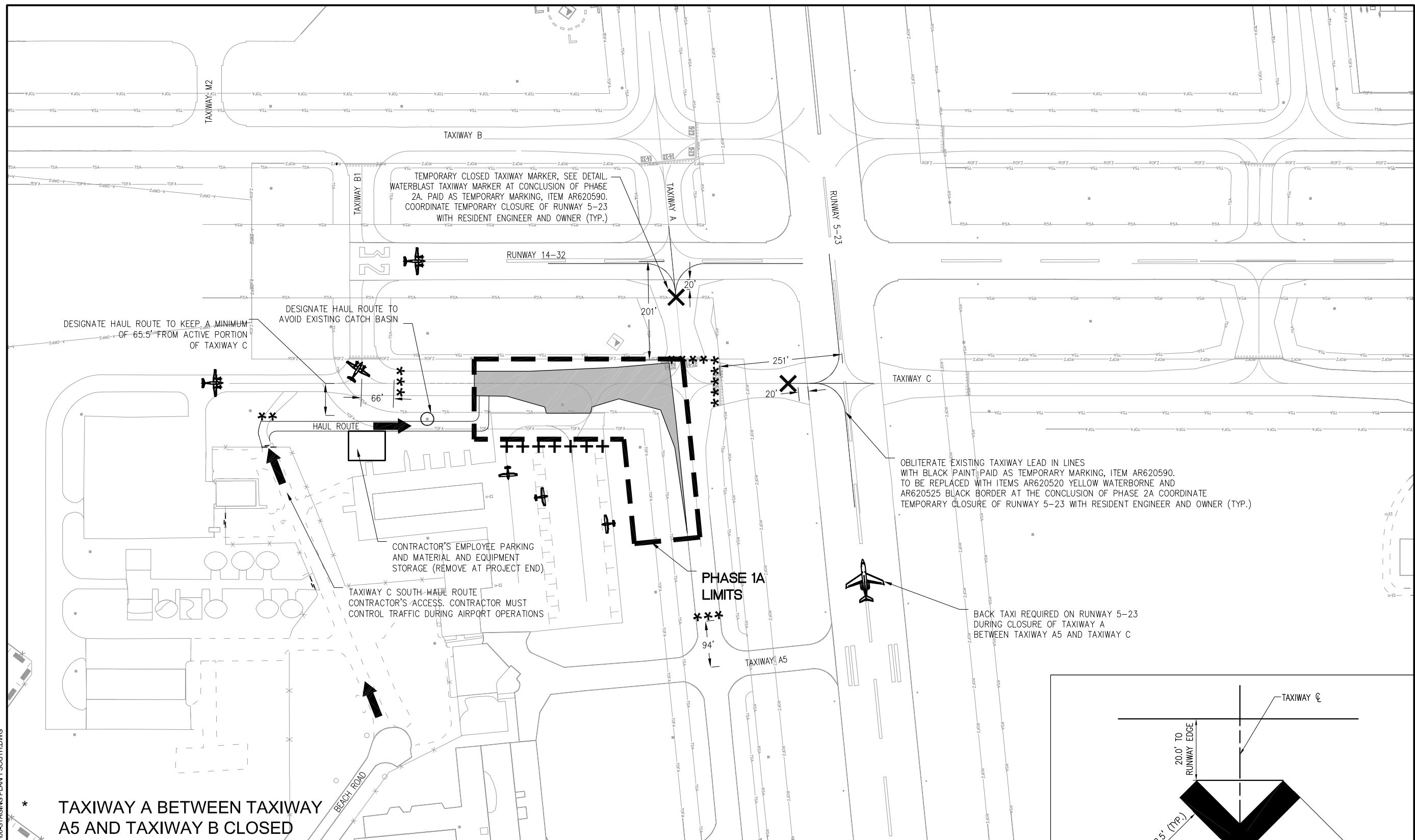


CONSTRUCTION VEHICLES SHALL BE CONTROLLED BY CONTRACTOR AND SHALL ALWAYS YIELD TO AIRCRAFT. SEE SPECIAL PROVISIONS.

JUN 21, 2016 3:08 PM SPITZ01394
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WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
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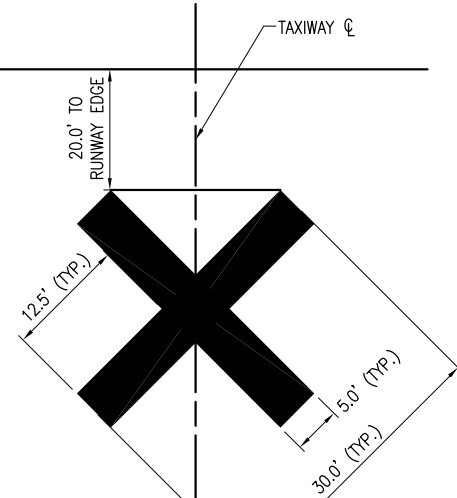
* TAXIWAY A BETWEEN TAXIWAY A5 AND TAXIWAY B CLOSED

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 1A SOUTH:

1. CONCRETE AND BITUMINOUS PAVEMENT REMOVAL WITHIN PHASE 1A LIMITS.
2. INSTALL PIPE, MANHOLE, INLET, UNDERDRAIN AND UNDERDRAIN STRUCTURES WITHIN PHASE 1A LIMITS.
3. INSTALL DRAINAGE SUBBASE, AGGREGATE BASE, BITUMINOUS BASE, AND BITUMINOUS SURFACE WITHIN PHASE 1A LIMITS.
4. INSTALL PAVEMENT MARKINGS WITHIN PHASE 1A LIMITS.
5. GRADE, TOPSOIL AND LANDSCAPE WITHIN PHASE 1A LIMITS.

NOTES

1. SEE SHEET 5 FOR NOTES AND LEGEND.



CLOSED TAXIWAY MARKING DETAIL

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 06-STAGING PLAN 1 SOUTH.DWG
DESIGN BY: KMS 06/01/2016
DRAWN BY: KMS 06/03/2016
REVIEWED BY: LDH 6/9/2016
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SHEET TITLE

PHASING PLAN - SOUTH PHASE 1A



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

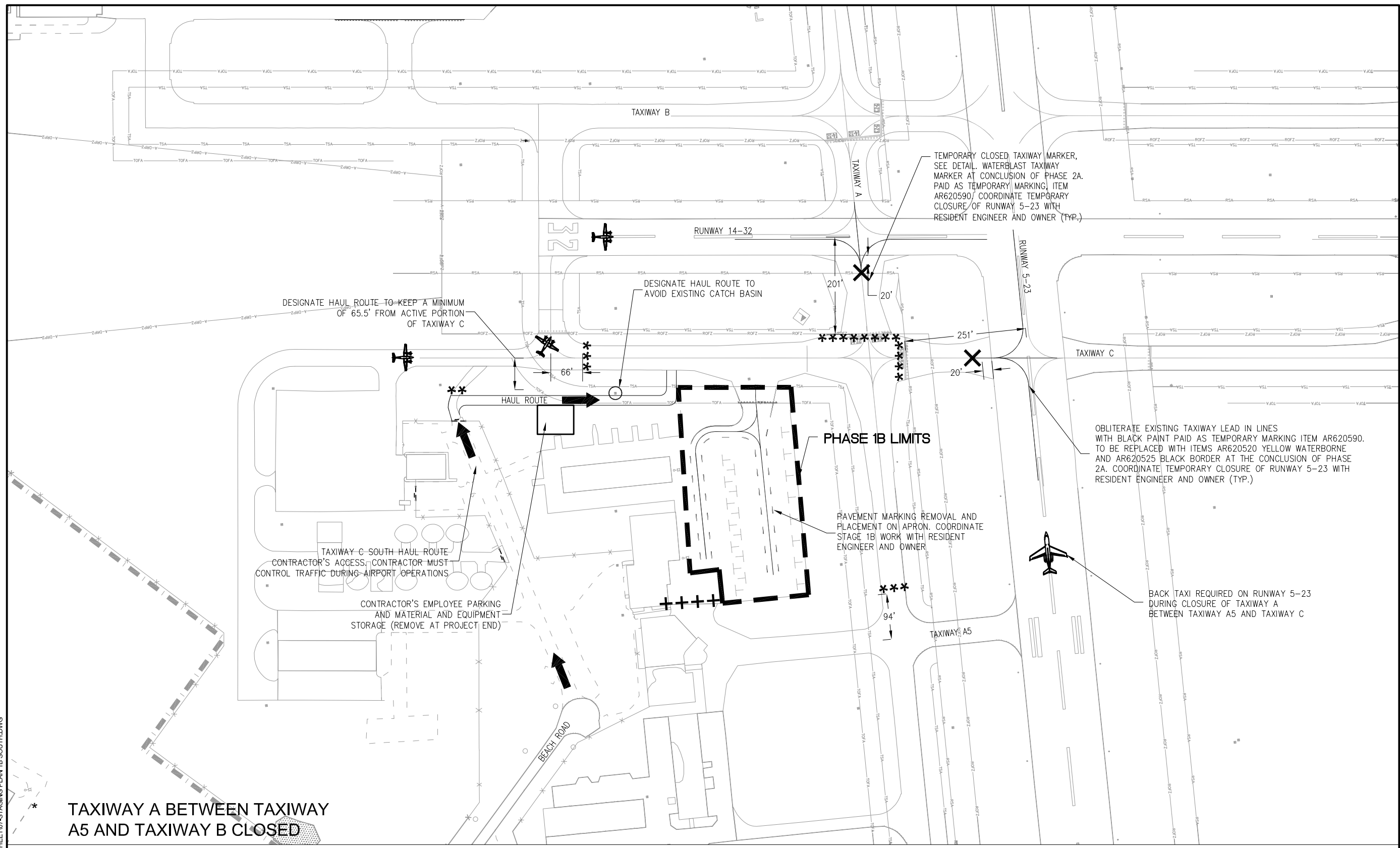
IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 07-STAGING PLAN 1B SO
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PHASING PLAN -
SOUTH
PHASE 1B

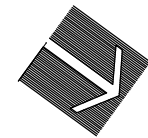


THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 1B SOUTH:

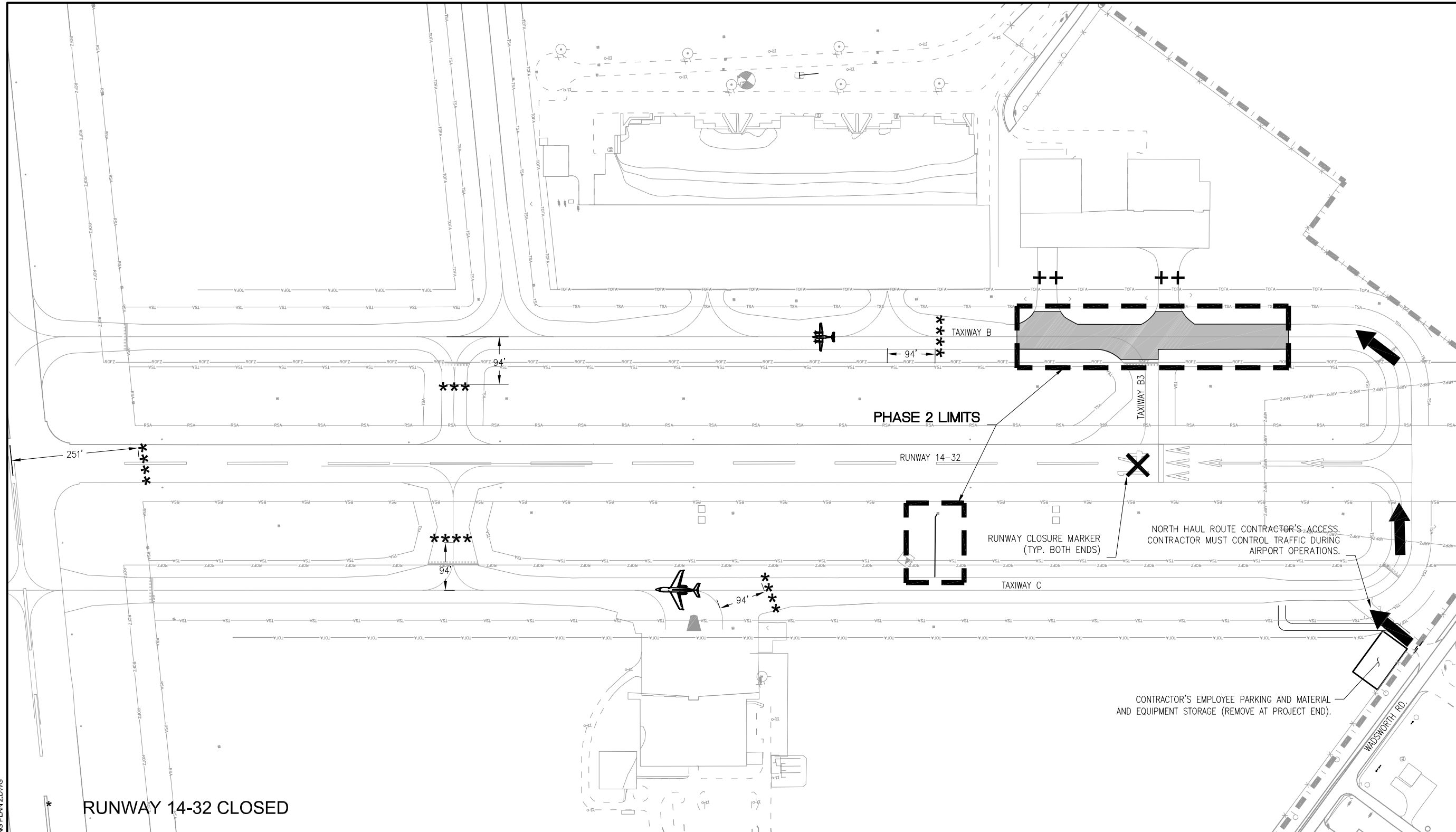
1. PAVEMENT MARKING REMOVAL AND PLACEMENT ON APRON.

NOTES

1. SEE SHEET 5 FOR NOTES AND LEGEND.



JUN 21, 2016 3:12 PM SPTZ01394
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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 16A0013
CAD FILE: 08-STAGING PLAN 2.DWG
DESIGN BY: KMS 06/01/2016
DRAWN BY: KMS 06/03/2016
REVIEWED BY: LDH 6/9/2016

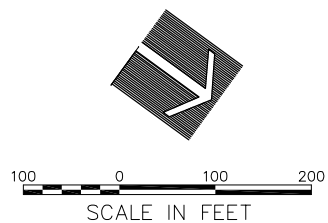
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SHEET TITLE

PHASING PLAN
NORTH
PHASE 2

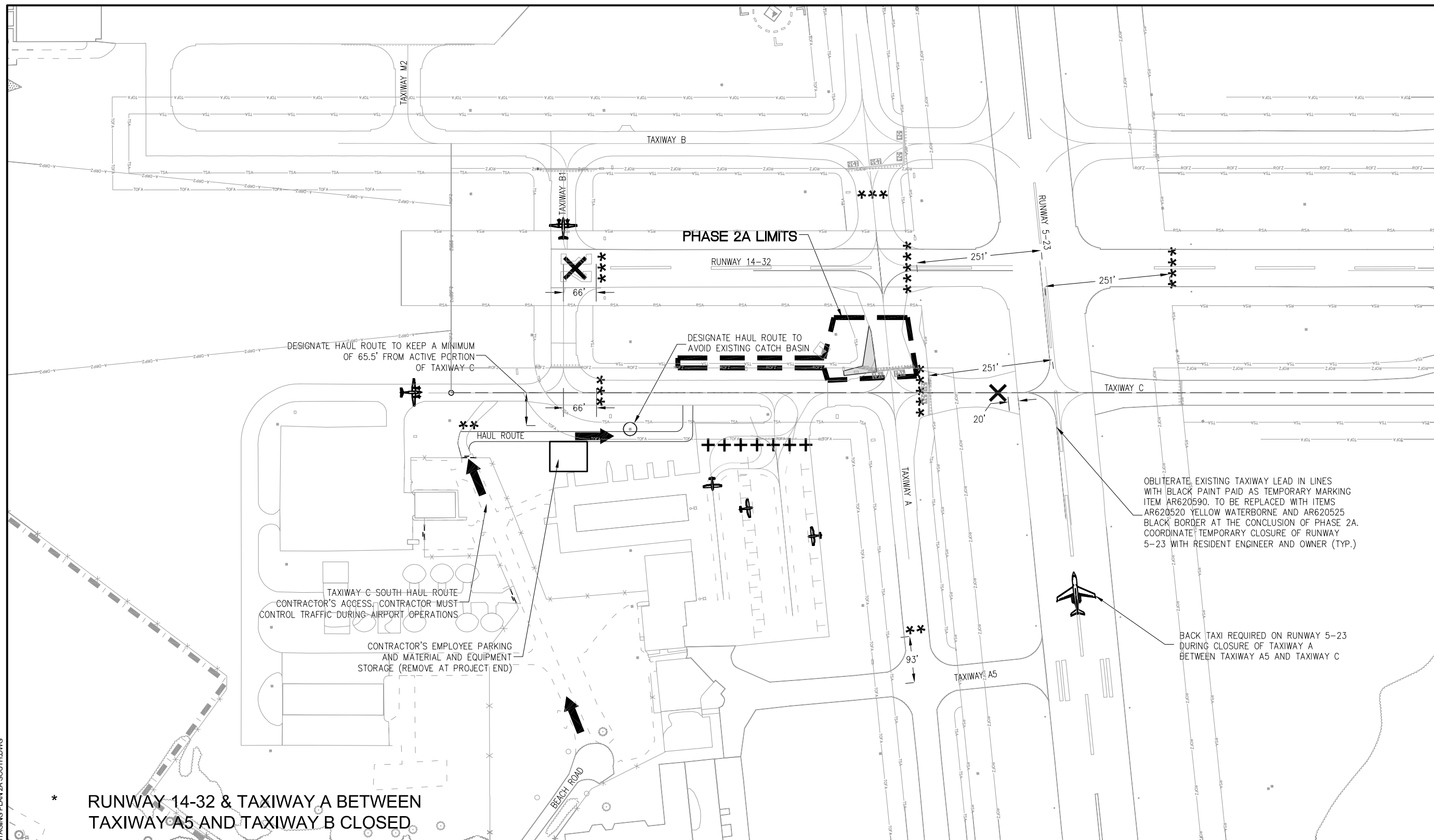
THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 2 NORTH:

1. CRACK CONTROL AND PAVEMENT REPAIR WITHIN PHASE 2 LIMITS.
2. ADJUST UNDERDRAIN STRUCTURE WITHIN PHASE 2 LIMITS.
3. ADJUST TAXIWAY EDGE LIGHTS WITHIN PHASE 2 LIMITS.
4. INSTALL BITUMINOUS SURFACE COURSE WITHIN PHASE 2 LIMITS.
5. INSTALL PAVEMENT MARKINGS WITHIN PHASE 2 LIMITS.
6. GRADE, TOPSOIL AND LANDSCAPE WITHIN PHASE 2 LIMITS.

- NOTES:**
1. SEE SHEET 5 FOR NOTES AND LEGEND.
 2. WORK IN THIS PHASE SHALL BE COMPLETED EXPEDITIOUSLY TO MINIMIZE PAVEMENT CLOSURES AND REDUCE IMPACTS TO THE AIRPORT USERS AND TENANTS.



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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

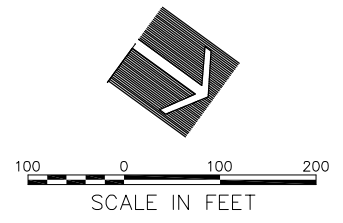
ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 09-STAGING PLAN 2A SO
DESIGN BY: KMS 06/01/2016
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SHEET TITLE

PHASING PLAN
SOUTH
PHASE 2A

- THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 2A SOUTH:
1. CONCRETE AND BITUMINOUS PAVEMENT REMOVAL WITHIN THE PHASE 2A LIMITS.
 2. INSTALL UNDERDRAIN AND UNDERDRAIN STRUCTURES WITHIN THE PHASE 2A LIMITS.
 3. INSTALL LIGHTS, SIGNS, AND ELECTRICAL CABLE WITHIN THE PHASE 2A LIMITS.
 4. INSTALL DRAINAGE SUBBASE, AGGREGATE BASE, BITUMINOUS BASE, AND BITUMINOUS SURFACE WITHIN THE PHASE 2A LIMITS.
 5. INSTALL PAVEMENT MARKINGS WITHIN THE PHASE 2A LIMITS.
 6. GRADE, TOPSOIL AND LANDSCAPE WITHIN THE PHASE 2A LIMITS.

- NOTES
1. SEE SHEET 5 FOR NOTES AND LEGEND.
 2. WORK IN THIS PHASE SHALL BE COMPLETED EXPEDITIOUSLY TO MINIMIZE PAVEMENT CLOSURES AND REDUCE IMPACTS TO THE AIRPORT USERS AND TENANTS.





WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

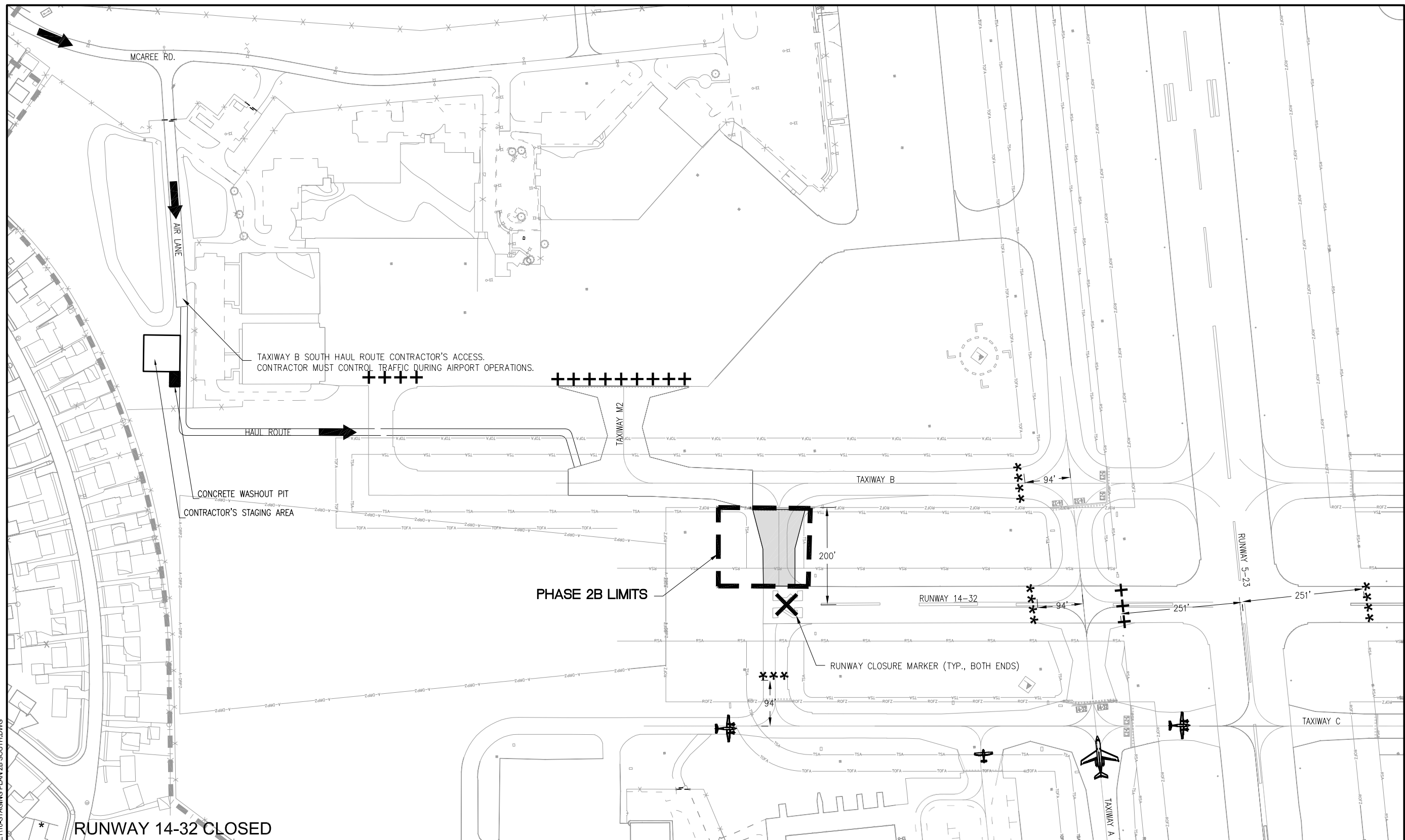
Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 10-STAGING PLAN 2B SOUTH SO
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REVIEWED BY: LDH 6/9/2016

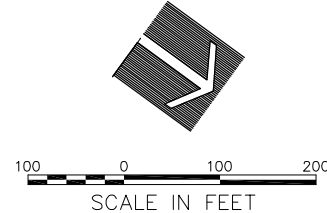
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SHEET TITLE

PHASING PLAN SOUTH PHASE 2B



- THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 2B SOUTH:**
1. CRACK CONTROL AND PAVEMENT REPAIR WITHIN THE PHASE 2B LIMITS.
 2. EXCAVATE FOR PAVEMENT FILLETS WITHIN THE PHASE 2B LIMITS.
 3. INSTALL UNDERDRAIN AND UNDERDRAIN STRUCTURES WITHIN PHASE 2B LIMITS.
 4. INSTALL LIGHTS, SIGNS, AND ELECTRICAL CABLE WITHIN THE PHASE 2B LIMITS.
 5. INSTALL DRAINAGE SUBBASE, AGGREGATE BASE, BITUMINOUS BASE, AND BITUMINOUS SURFACE WITHIN THE PHASE 2B LIMITS.
 6. INSTALL PAVEMENT MARKINGS WITHIN THE PHASE 2B LIMITS.
 7. GRADE, TOPSOIL AND LANDSCAPE WITHIN THE PHASE 2B LIMITS.

- NOTES**
1. SEE SHEET 5 FOR NOTES AND LEGEND.
 2. WORK IN THIS PHASE SHALL BE COMPLETED EXPEDITIOUSLY TO MINIMIZE PAVEMENT CLOSURES AND REDUCE IMPACTS TO THE AIRPORT USERS AND TENANTS.



JUN 21, 2016 3:39 PM SPITZ01394
I:\16\OBS\16A0013\16A0013D\CAD\AIRPORT\SHEET10-STAGING PLAN 2B SOUTH.DWG

RUNWAY 14-32 CLOSED

TAXIWAY B SOUTH HAUL ROUTE. CONTRACTOR'S ACCESS.
CONTRACTOR MUST CONTROL TRAFFIC DURING AIRPORT OPERATIONS.

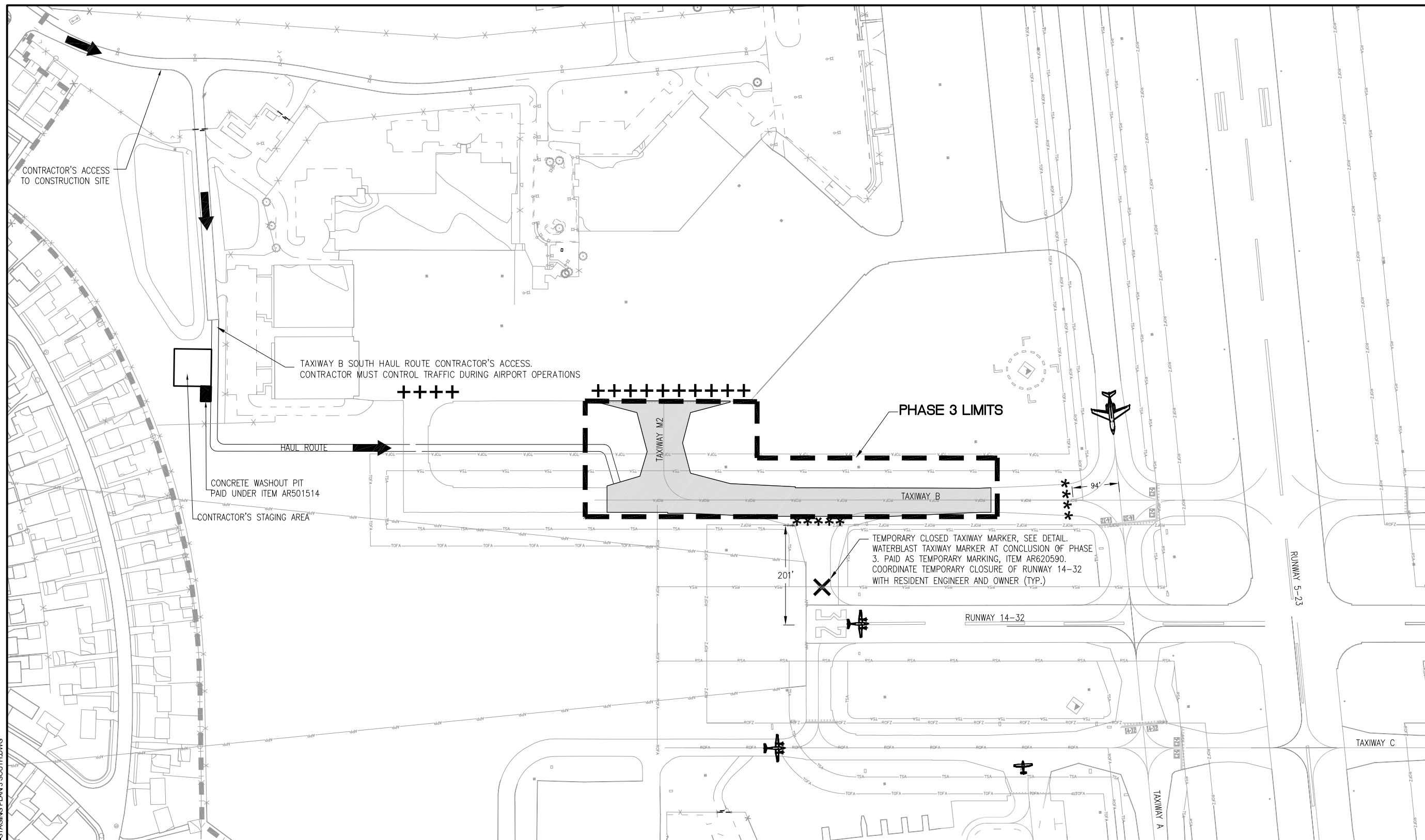
CONCRETE WASHOUT PIT
CONTRACTOR'S STAGING AREA

PHASE 2B LIMITS

RUNWAY CLOSURE MARKER (TYP., BOTH ENDS)



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
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Fax: 847.244.3813



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 16A0013
CAD FILE: 11-STAGING PLAN 3 SOUTH
DESIGN BY: KMS 06/01/2016
DRAWN BY: KMS 06/03/2016
REVIEWED BY: LDH 6/9/2016

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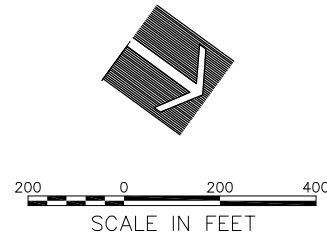
PHASING PLAN - SOUTH PHASE 3

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN PHASE 3 SOUTH:

1. CRACK CONTROL AND PAVEMENT REPAIR WITHIN THE PHASE 3 LIMITS.
2. REMOVE CONCRETE PAVEMENT AND EXCAVATE FOR MAINLINE AND FILLET PAVEMENTS WITHIN THE PHASE 3 LIMITS.
3. INSTALL UNDERDRAIN AND UNDERDRAIN STRUCTURES WITHIN PHASE 3 LIMITS.
4. INSTALL LIGHTS, SIGNS, AND ELECTRICAL CABLE WITHIN THE PHASE 3 LIMITS.
5. INSTALL DRAINAGE SUBBASE, AGGREGATE BASE, ASPHALT TREATED SUBBASE, BITUMINOUS BASE, AND BITUMINOUS SURFACE WITHIN THE PHASE 3 LIMITS.
6. INSTALL PAVEMENT MARKINGS WITHIN THE PHASE 3 LIMITS
7. GRADE, TOPSOIL AND LANDSCAPE WITHIN THE PHASE 3 LIMITS.

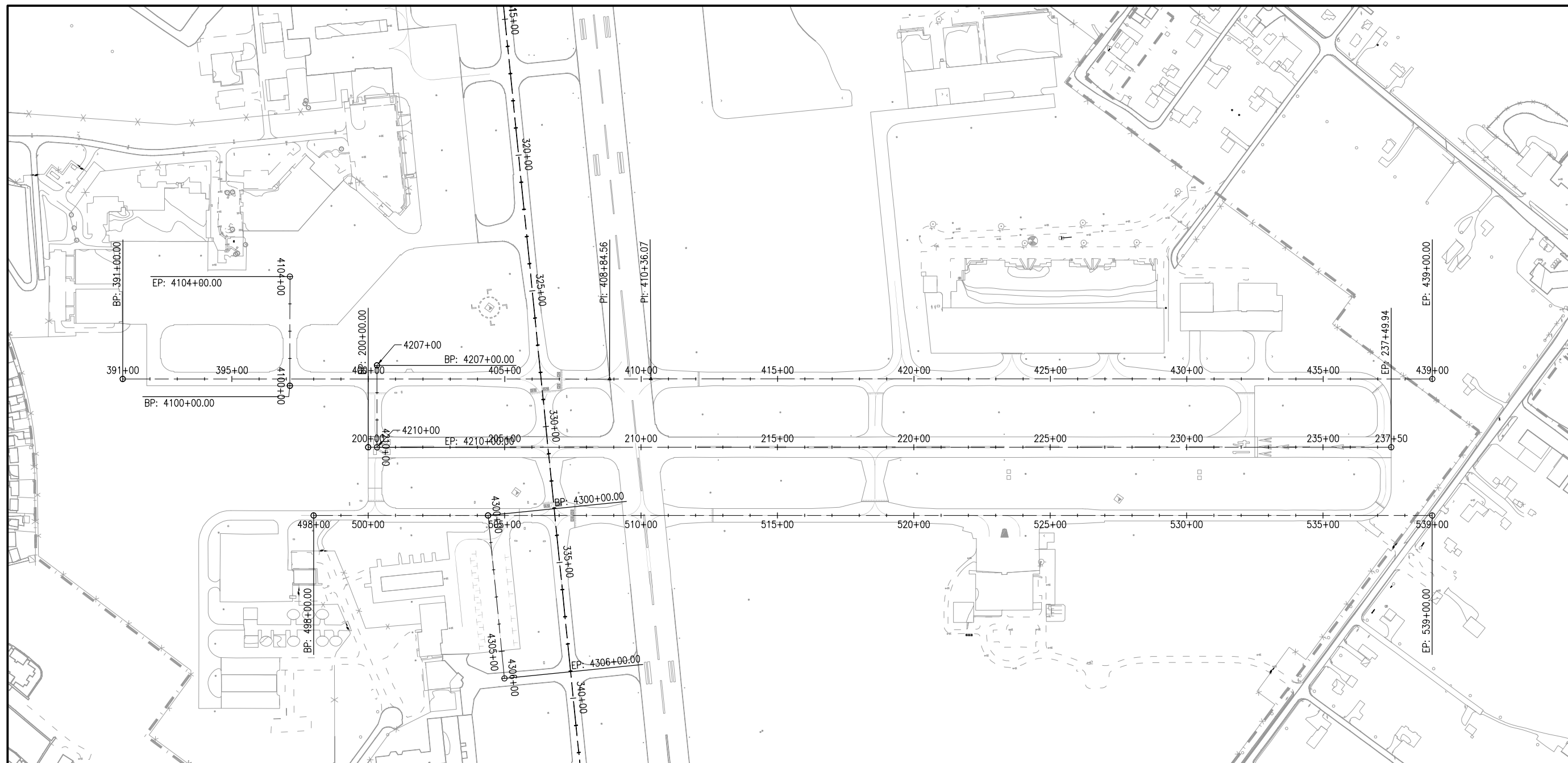
NOTES

1. SEE SHEET 5 FOR NOTES AND LEGEND.
2. ALL PHASE 3 WORK SHALL TAKE PLACE OUTSIDE THE RUNWAY OBSTACLE FREE ZONE 200' FROM RUNWAY 14-32 CENTERLINE.



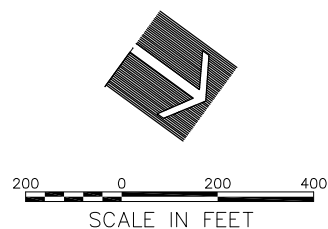


WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813



Runway/Taxiway	Description	Station	Project Coordinates	
			Northing	Easting
TAXIWAY B	BEGINNING OF ALIGNMENT	391+00.00	2094870.5559	1111076.7478
	PI	408+84.56	2096312.6588	1110025.5598
	PI	410+36.07	2096434.5491	1109935.5798
	END OF ALIGNMENT	439+00.00	2098748.4696	1108248.0146
TAXIWAY C	BEGINNING OF ALIGNMENT	498+00.00	2095730.3987	1111068.5625
	END OF ALIGNMENT	539+00.00	2099042.7997	1108652.3721
RUNWAY 14-32	BEGINNING OF ALIGNMENT	200+00.00	2095744.6506	1110748.7236
	END OF ALIGNMENT	237+49.94	2098774.2361	1108538.8296
TAXIWAY A	BEGINNING OF ALIGNMENT	320+00.00	2095559.3315	1109559.0912
	END OF ALIGNMENT	345+00.00	2097227.5091	1111421.1287

Runway/Taxiway	Description	Station	Project Coordinates	
			Northing	Easting
TAXIWAY B1	BEGINNING OF ALIGNMENT	4207+00.00	2095593.9970	1110487.2799
	END OF ALIGNMENT	4210+00.00	2095770.7938	1110729.6538
TAXIWAY M2	BEGINNING OF ALIGNMENT	4100+00.00	2095380.2238	1110735.9537
	END OF ALIGNMENT	4104+00.00	2095144.6055	1110412.7139
SKILL APRON	BEGINNING OF ALIGNMENT	4300+00.00	2096247.0763	1110691.6784
	END OF ALIGNMENT	4306+00.00	2096647.4389	1111138.5674



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

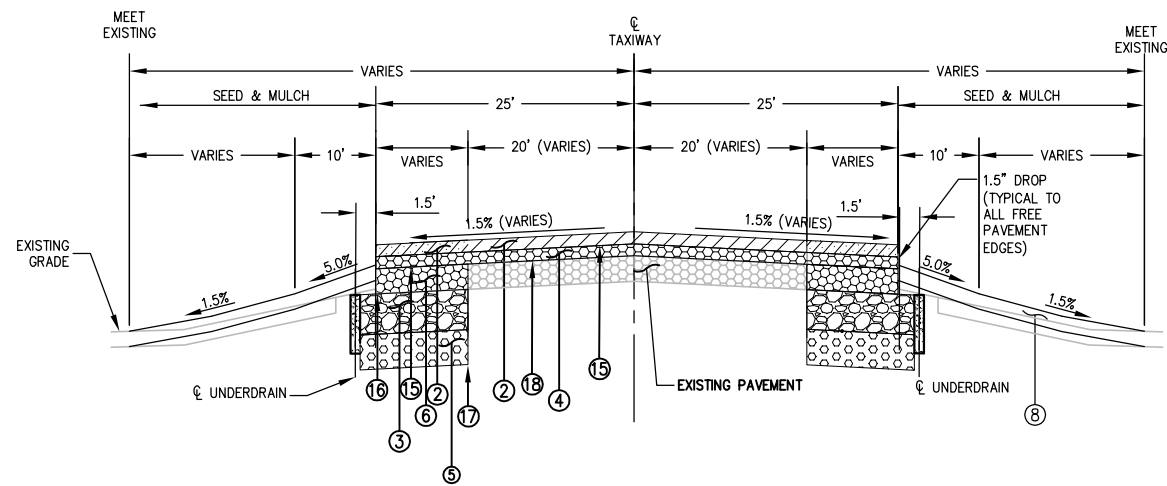
Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

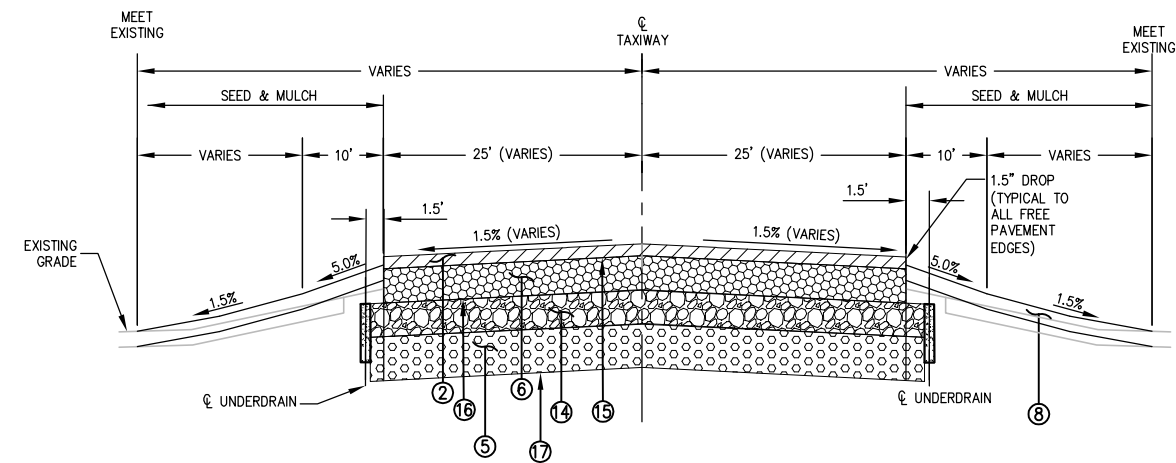
ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 12-ALIGNMENTS.DWG
DESIGN BY: KMS 04/05/2016
DRAWN BY: KMS 04/12/2016
REVIEWED BY: LDH 6/9/2016
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ALIGNMENT DATA

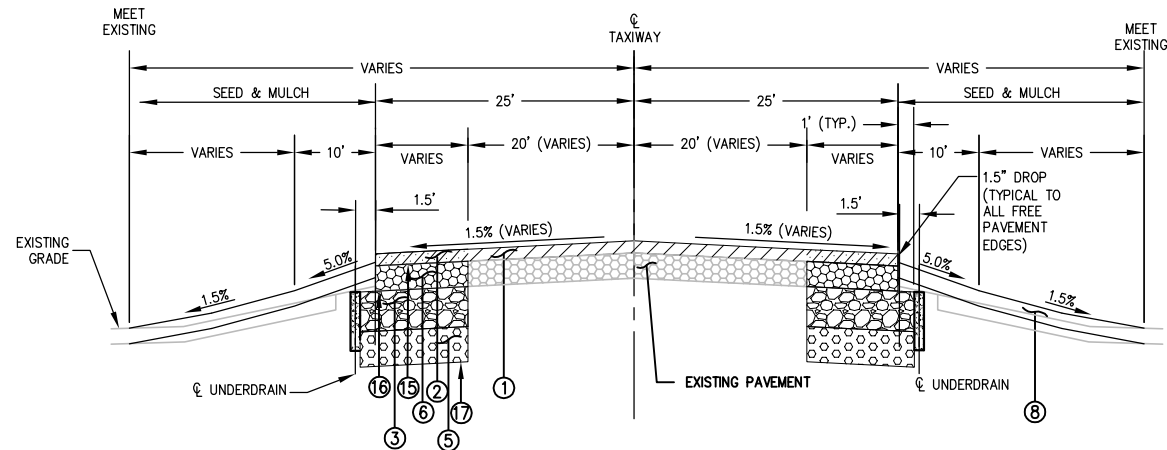
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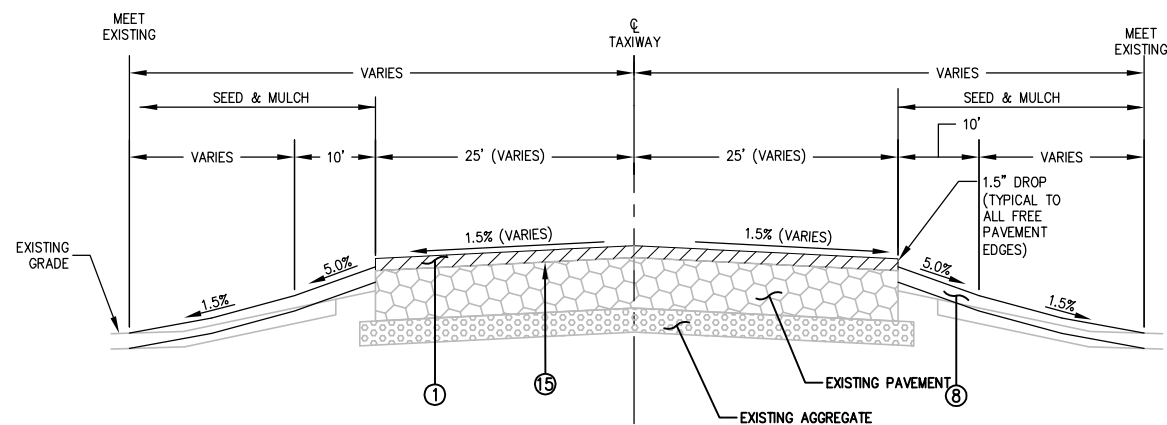
LOOKING NW TWY C NORTH - BITUMINOUS TAXIWAY
STA. 526+19.24 - STA. 529+00.00 OVERLAY TYPICAL
SECTION WITH WIDENING



LOOKING NW TWY C SOUTH - BITUMINOUS TAXIWAY
STA. 502+54 - STA. 506+25 FULL DEPTH REPLACEMENT
TYPICAL SECTION



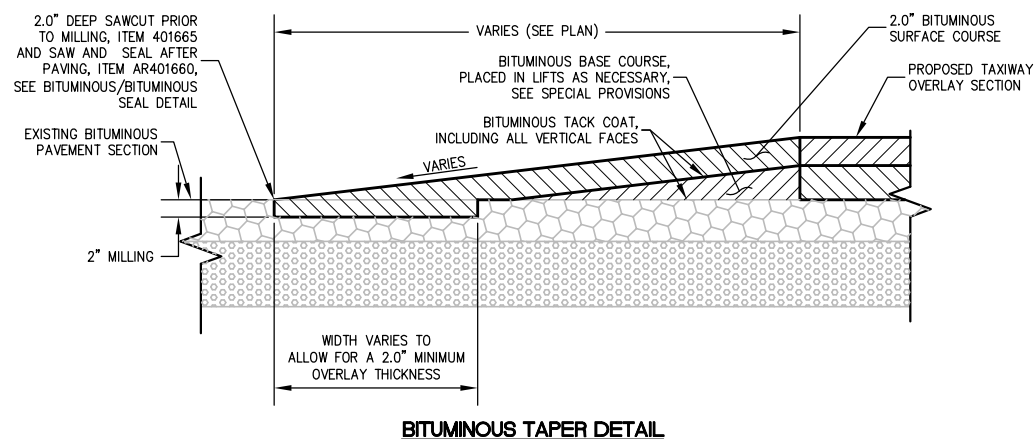
LOOKING NW TWY C NORTH - BITUMINOUS TAXIWAY
STA. 529+00.00 - STA. 534+56.16 OVERLAY TYPICAL
SECTION WITH WIDENING



LOOKING NW TWY B NORTH - BITUMINOUS TAXIWAY
STA. 430+08.51 - STA. 434+75.77 OVERLAY TYPICAL
SECTION

PAVEMENT LEGEND	
①	PROPOSED 2.0 INCH NOMINAL BITUMINOUS SURFACE COURSE, (DEPTH VARIES APPROXIMATELY 1.0" TO 3.0") ITEM AR401613.
②	PROPOSED 2.0 INCH BITUMINOUS SURFACE COURSE, ITEM AR401613.
③	PROPOSED 9 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209609.
④	PROPOSED BITUMINOUS BASE LEVELING COURSE (DEPTH VARIES APPROXIMATELY 1.50" TO 3.75"), ITEM AR403614.
⑤	PROPOSED 8 INCH GRANULAR DRAINAGE SUBBASE, ITEM AR800971.
⑥	PROPOSED 7 INCH BITUMINOUS BASE COURSE, ITEM AR403614.
⑦	PROPOSED 9.5 INCH BITUMINOUS BASE COURSE, ITEM AR403614.
⑧	PROPOSED TOPSOIL, ITEM AR905510. SEEDING AND MULCHING AREAS, ITEMS AR901510 AND AR908510.
⑨	PROPOSED 6 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209606.
⑩	PROPOSED 12 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209612.
⑪	PROPOSED 14 INCH PCC CONCRETE, ITEM AR501514.
⑫	PROPOSED 5 INCH ASPHALT TREATED PERMEABLE SUBBASE, ITEM AR302611.
⑬	PROPOSED 5 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209605.
⑭	PROPOSED 7 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209607.
⑮	PROPOSED BITUMINOUS TACK COAT, ITEM AR603510.
⑯	PROPOSED BITUMINOUS PRIME COAT, ITEM AR602510.
⑰	PROPOSED SEPARATION FABRIC, ITEM AR156513.
⑱	PROPOSED CRACK CONTROL MATERIAL (8501), ITEM AR800938.

- NOTES:**
- FOR ADDITIONAL LANDSCAPING INFORMATION, SEE LANDSCAPING PLAN.
 - ITEMS AR209XXX CRUSHED AGGREGATE BASE COURSE, AR800971 GRANULAR DRAINAGE SUBBASE AND AR302611 ASPHALT TREATED PERMEABLE SUBBASE EXTEND 1' OUTSIDE ALL PAVEMENT EDGES



BITUMINOUS TAPER DETAIL

REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

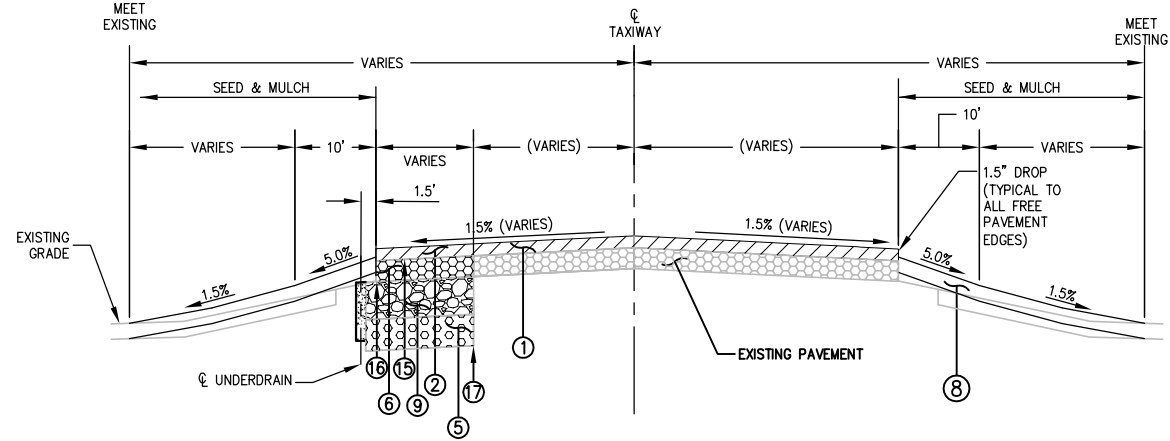
IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

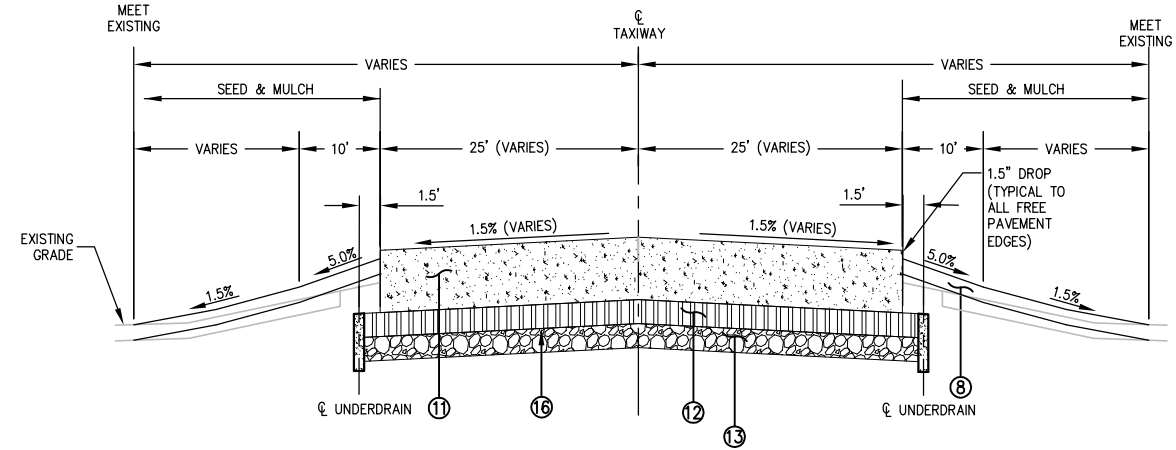
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 16A0013
CAD FILE: 13-TYPICAL SECTION.DW
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TYPICAL SECTIONS
& PAVEMENT DETAILS



LOOKING NE TWY B SOUTH - BITUMINOUS TAXIWAY
OVERLAY B1 WITH FULL DEPTH FILLET WIDENING
TYPICAL SECTION



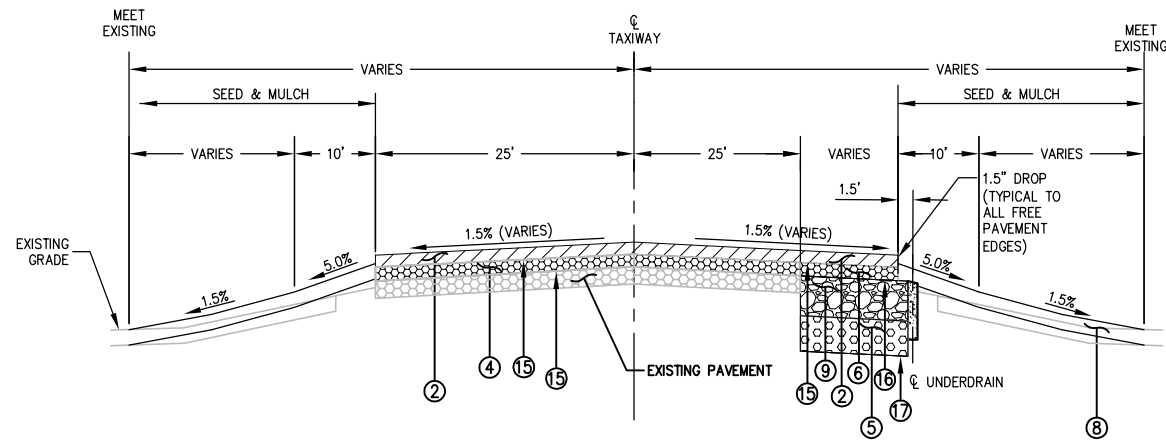
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395+98 - STA 399+78 TYPICAL SECTION

PAVEMENT LEGEND

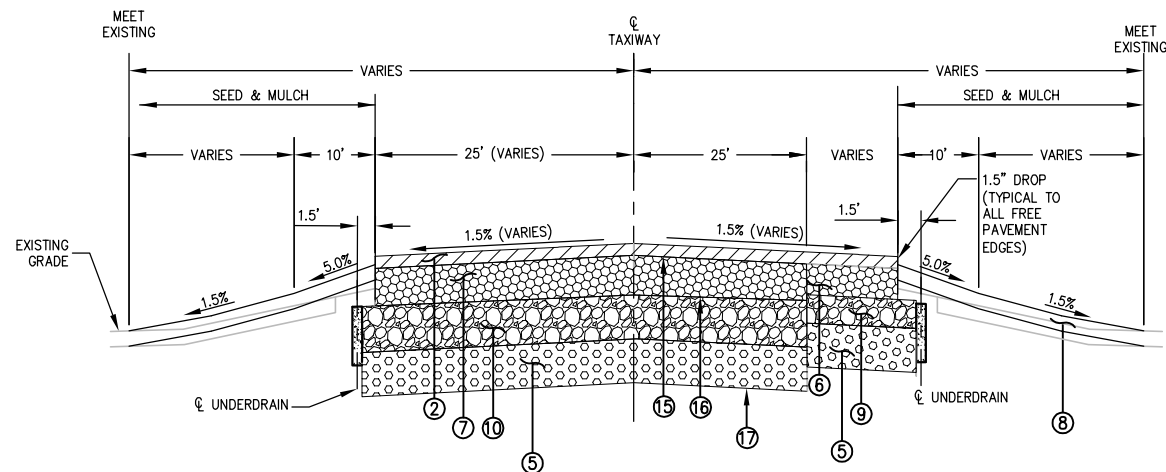
- ① PROPOSED 2.0 INCH NOMINAL BITUMINOUS SURFACE COURSE, (DEPTH VARIES APPROXIMATELY 1.0" TO 3.0") ITEM AR401613.
- ② PROPOSED 2.0 INCH BITUMINOUS SURFACE COURSE, ITEM AR401613.
- ③ PROPOSED 9 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209609.
- ④ PROPOSED BITUMINOUS BASE LEVELING COURSE (DEPTH VARIES APPROXIMATELY 1.50" TO 3.75"), ITEM AR403614.
- ⑤ PROPOSED 8 INCH GRANULAR DRAINAGE SUBBASE, ITEM AR800971.
- ⑥ PROPOSED 7 INCH BITUMINOUS BASE COURSE, ITEM AR403614.
- ⑦ PROPOSED 9.5 INCH BITUMINOUS BASE COURSE, ITEM AR403614.
- ⑧ PROPOSED TOPSOIL, ITEM AR905510. SEEDING AND MULCHING AREAS, ITEMS AR901510 AND AR908510.
- ⑨ PROPOSED 6 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209606.
- ⑩ PROPOSED 12 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209612.
- ⑪ PROPOSED 14 INCH PCC CONCRETE, ITEM AR501514.
- ⑫ PROPOSED 5 INCH ASPHALT TREATED PERMEABLE SUBBASE, ITEM AR302611.
- ⑬ PROPOSED 5 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209605.
- ⑭ PROPOSED 7 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209607.
- ⑮ PROPOSED BITUMINOUS TACK COAT, ITEM AR603510.
- ⑯ PROPOSED BITUMINOUS PRIME COAT, ITEM AR602510.
- ⑰ PROPOSED SEPARATION FABRIC, ITEM AR156513.
- ⑱ PROPOSED CRACK CONTROL MATERIAL (8501), ITEM AR800938.

NOTES:

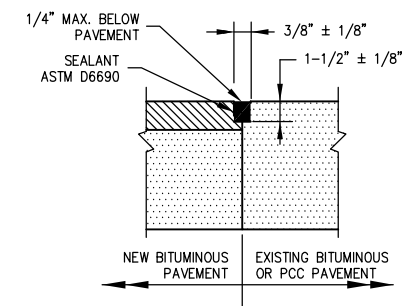
1. FOR ADDITIONAL LANDSCAPING INFORMATION, SEE LANDSCAPING PLAN.
2. ITEMS AR209XXX CRUSHED AGGREGATE BASE COURSE, AR800971 GRANULAR DRAINAGE SUBBASE AND AR302611 ASPHALT TREATED PERMEABLE SUBBASE EXTEND 1' OUTSIDE ALL PAVEMENT EDGES



LOOKING NW TWY B SOUTH - BITUMINOUS MAIN
TAXIWAY STA 400+86 - STA 402+50 OVERLAY WITH
FILLET TYPICAL SECTION



LOOKING NW TWY B SOUTH - BITUMINOUS TAXIWAY STA
399+78 - STA 400+00 FULL DEPTH MAIN WITH FILLET
TYPICAL SECTION



NOTE:

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

BITUMINOUS/BITUMINOUS OR BITUMINOUS/PCC SEAL

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

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TYPICAL SECTIONS & PAVEMENT DETAILS



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

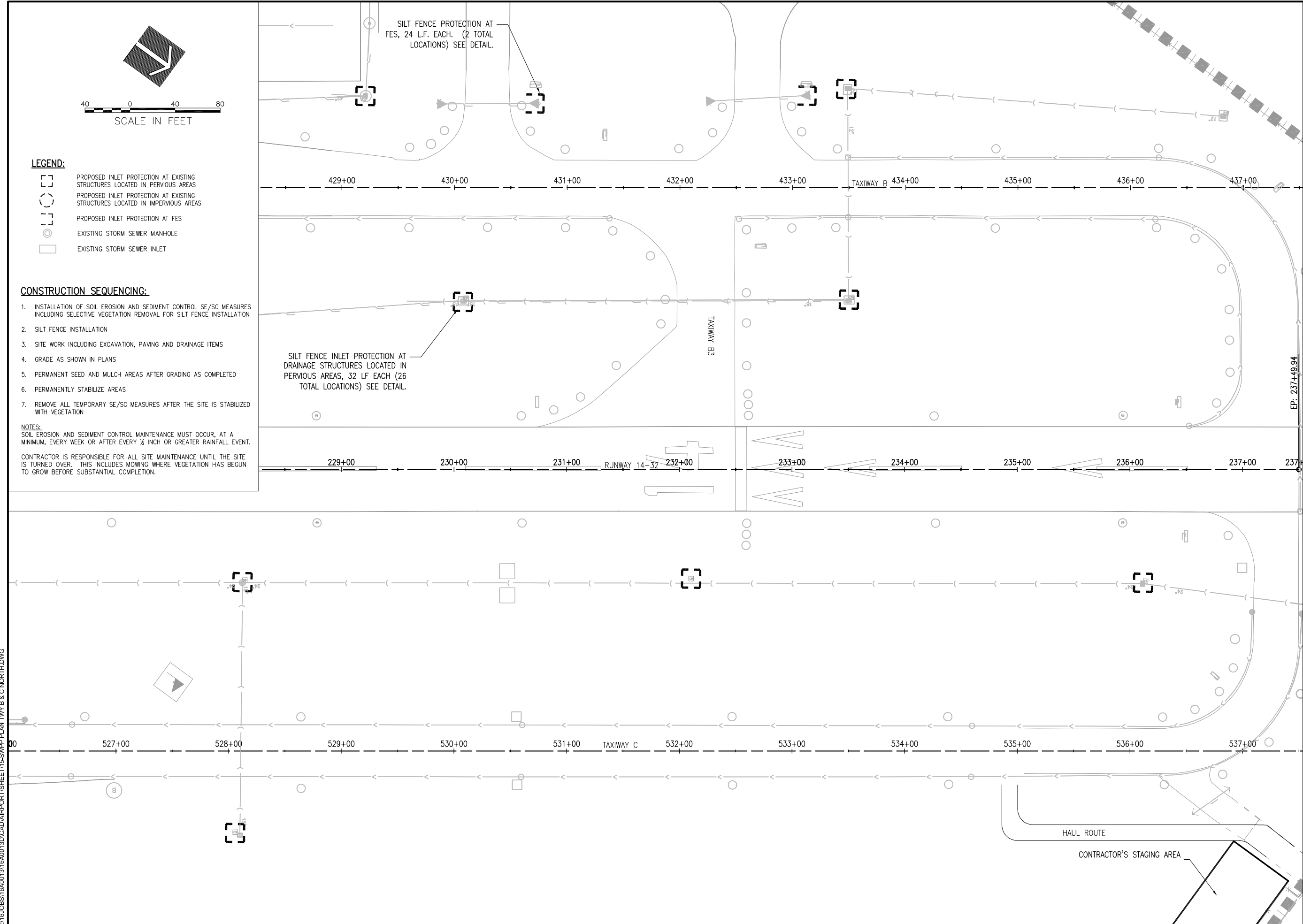
IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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CAD FILE: 15-SWPP PLAN TWY B & C NOR
DESIGN BY: KMS 06/02/2016
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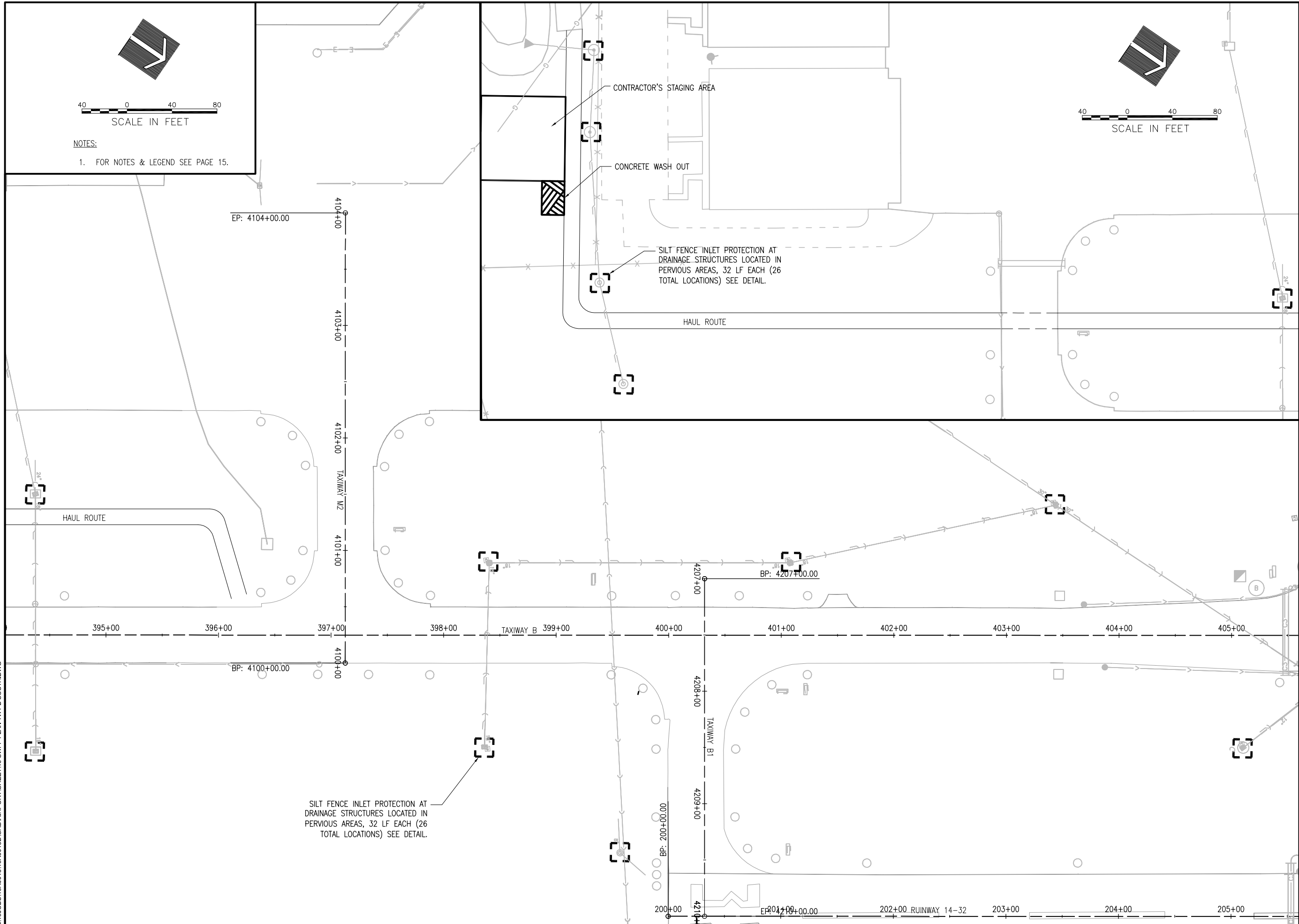
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SWPP PLAN TAXIWAY B & C NORTH



JUN 21, 2016 11:10 AM HALUSM0082
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WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 16-SWPP PLAN TWY B SOUTI
DESIGN BY: KMS 06/02/2016
DRAWN BY: SJM 06/02/2016
REVIEWED BY: LDH 6/9/2016

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SHEET TITLE

SWPP PLAN
TAXIWAY B SOUTH



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

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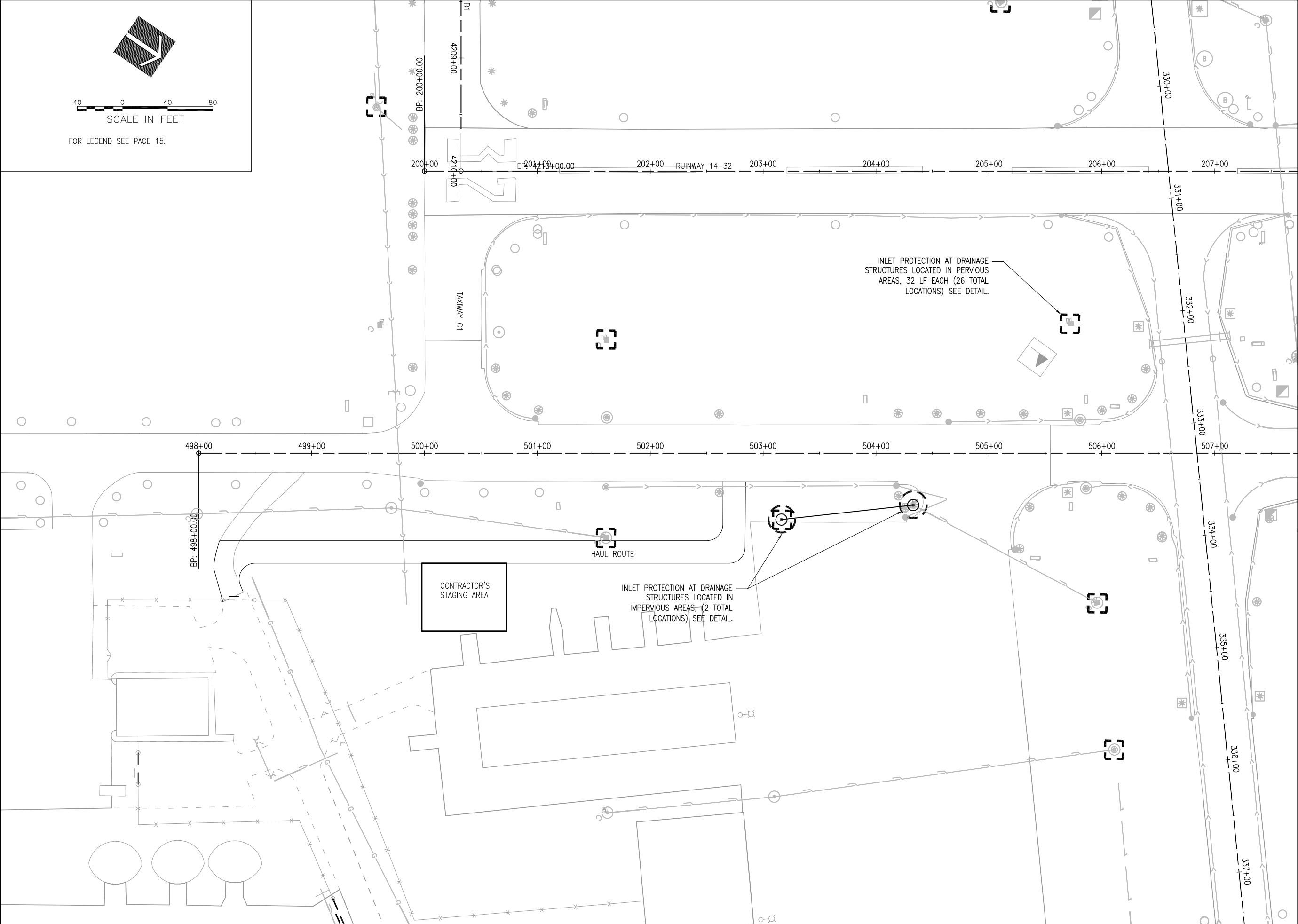
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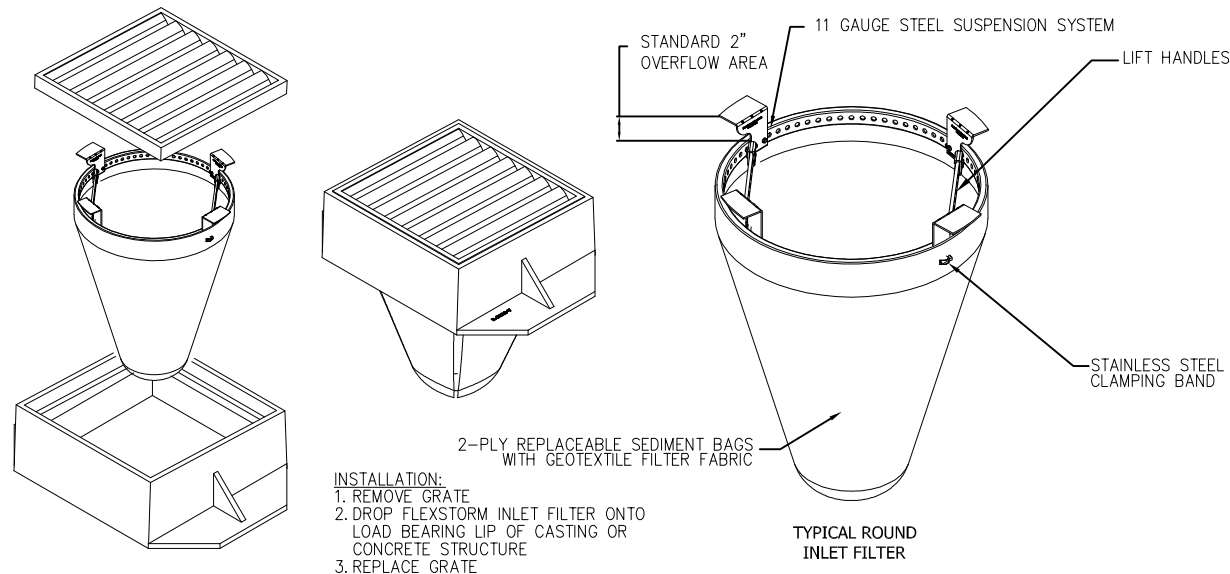
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SWPP PLAN TAXIWAY C SOUTH



SCALE IN FEET
FOR LEGEND SEE PAGE 15.

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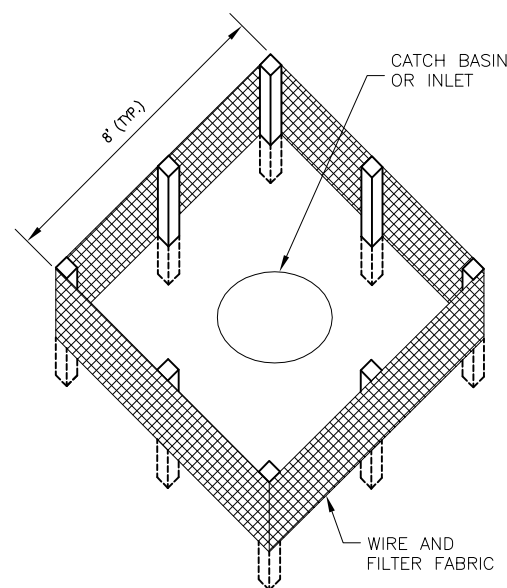


INSTALLATION:
1. REMOVE GRATE
2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
3. REPLACE GRATE

NOTES:

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

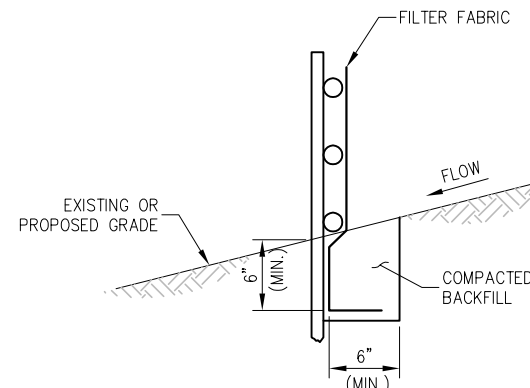
INLET PROTECTION - IMPERVIOUS AREAS



SILT FENCE PLACEMENT AT MANHOLES

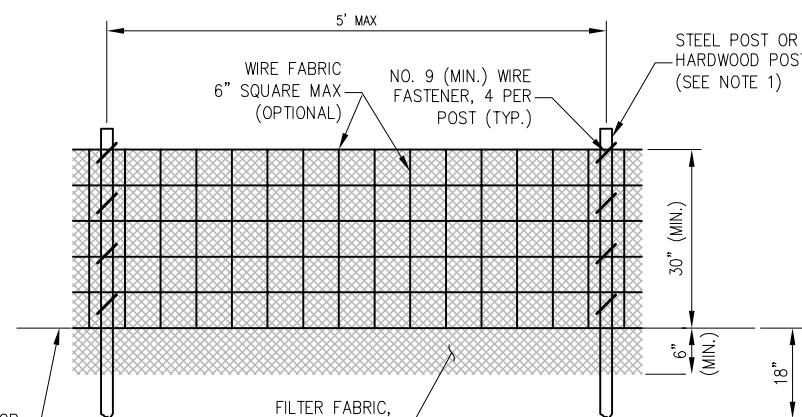
NOTES:

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

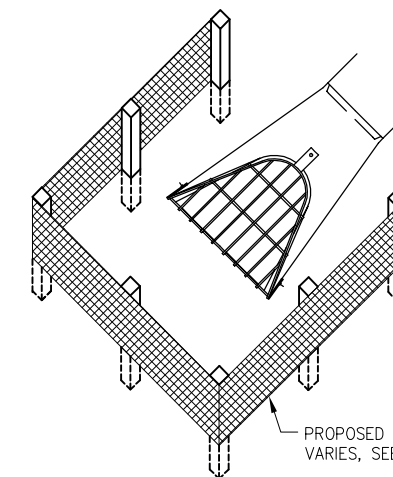


FABRIC ANCHOR DETAIL

SILT FENCE



ELEVATION



SILT FENCE PLACEMENT AT FLARED END SECTIONS (FES)

INLET PROTECTION - PERVIOUS AREAS

NOTES:

1. FENCE POST SHALL BE EITHER STEEL "T" LINE POST OR HARDWOOD POST WITH A MINIMUM SECTIONAL AREA OF 2.0 SQUARE INCHES. A CARPENTER'S (NOMINAL) 2"x2" POST WILL MEET SPECIFICATIONS.
2. TOP AND BOTTOM WIRE OF WIRE FABRIC SHALL BE MINIMUM GAGE NO. 9. INTERMEDIATE WIRES OF THE WIRE FABRIC SHALL BE MINIMUM GAGE NO. 11.
3. WIRE FABRIC SHALL BE SECURELY FASTENED TO FENCE POSTS WITH NO. 9 GAGE WIRE MINIMUM. FOUR (4) FASTENERS PER POST REQUIRED.
4. FILTER FABRIC SHALL BE SECURELY FASTENED TO WIRE FABRIC AND POSTS WITH TIES OR STAPLES SPACED AT 12" APART AT THE TOP, MIDDLE AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER FABRIC MEET, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED AND ATTACHED TO THE WIRE FABRIC AT A POST.
6. FILTER FABRIC SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS WITH APPARENT OPENING SIZE (AOS) OF AT LEAST 40 FOR NONWOVEN AND WOVEN (OR MAXIMUM OF 0.60mm).
7. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. SOIL STABILIZATION MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS AND THE USE OF TEMPORARY OR PERMANENT MEASURES.
8. ALL STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
9. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED. PERIODIC INSPECTION SHALL BE PERFORMED AND REQUIRED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.
10. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN BULGES DEVELOP IN THE SILT FENCE.
11. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION. DISCHARGES SHALL BE ROUTED THROUGH AN EFFECTIVE SEDIMENT CONTROL MEASURE (E.G. SEDIMENT TRAP, SEDIMENT BASIN, OR OTHER APPROPRIATE MEASURE).
12. FENCE POSTS SHALL BE REMOVED WHEN DIRECTED AT PROJECT END.
13. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER OR GOVERNING AGENCY.

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

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SWPPP DETAILS

SEDIMENTATION AND EROSION CONTROL NOTES:

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

STORM WATER POLLUTION PREVENTION NOTES

GENERAL

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

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

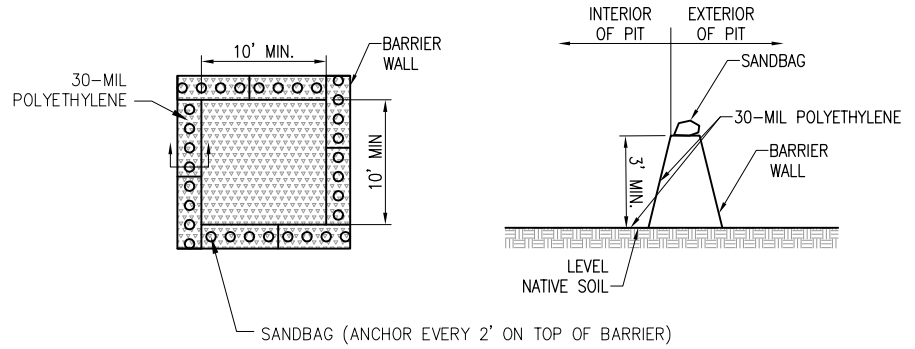
POLLUTION PREVENTION MEASURES

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

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

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

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



NOTES:

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

CONCRETE WASHOUT PIT

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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

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REMOVAL PLAN TAXIWAY B NORTH

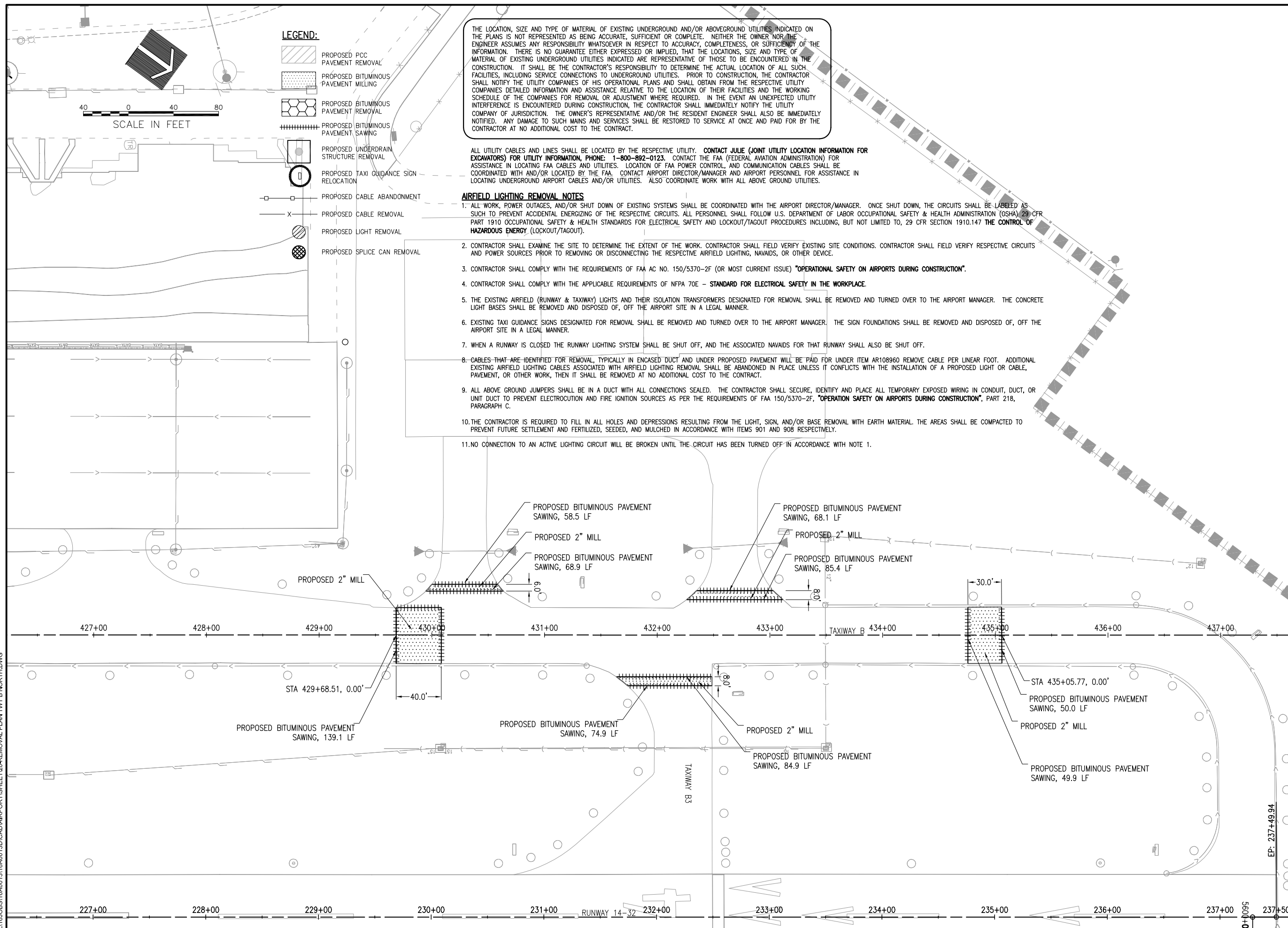
THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY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

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

AIRFIELD LIGHTING REMOVAL NOTES

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAIDS, OR OTHER DEVICE.
3. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
4. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
5. THE EXISTING AIRFIELD (RUNWAY & TAXIWAY) LIGHTS AND THEIR ISOLATION TRANSFORMERS DESIGNATED FOR REMOVAL SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT MANAGER. THE CONCRETE LIGHT BASES SHALL BE REMOVED AND DISPOSED OF, OFF THE AIRPORT SITE IN A LEGAL MANNER.
6. EXISTING TAXI GUIDANCE SIGNS DESIGNATED FOR REMOVAL SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT MANAGER. THE SIGN FOUNDATIONS SHALL BE REMOVED AND DISPOSED OF, OFF THE AIRPORT SITE IN A LEGAL MANNER.
7. WHEN A RUNWAY IS CLOSED THE RUNWAY LIGHTING SYSTEM SHALL BE SHUT OFF, AND THE ASSOCIATED NAVAIDS FOR THAT RUNWAY SHALL ALSO BE SHUT OFF.
8. CABLES THAT ARE IDENTIFIED FOR REMOVAL, TYPICALLY IN ENCASED DUCT AND UNDER PROPOSED PAVEMENT WILL BE PAID FOR UNDER ITEM AR108960 REMOVE CABLE PER LINEAR FOOT. ADDITIONAL EXISTING AIRFIELD LIGHTING CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVAL SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH THE INSTALLATION OF A PROPOSED LIGHT OR CABLE, PAVEMENT, OR OTHER WORK, THEN IT SHALL BE REMOVED AT NO ADDITIONAL COST TO THE CONTRACT.
9. ALL ABOVE GROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2F, "OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION", PART 218, PARAGRAPH C.
10. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE LIGHT, SIGN, AND/OR BASE REMOVAL WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
11. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

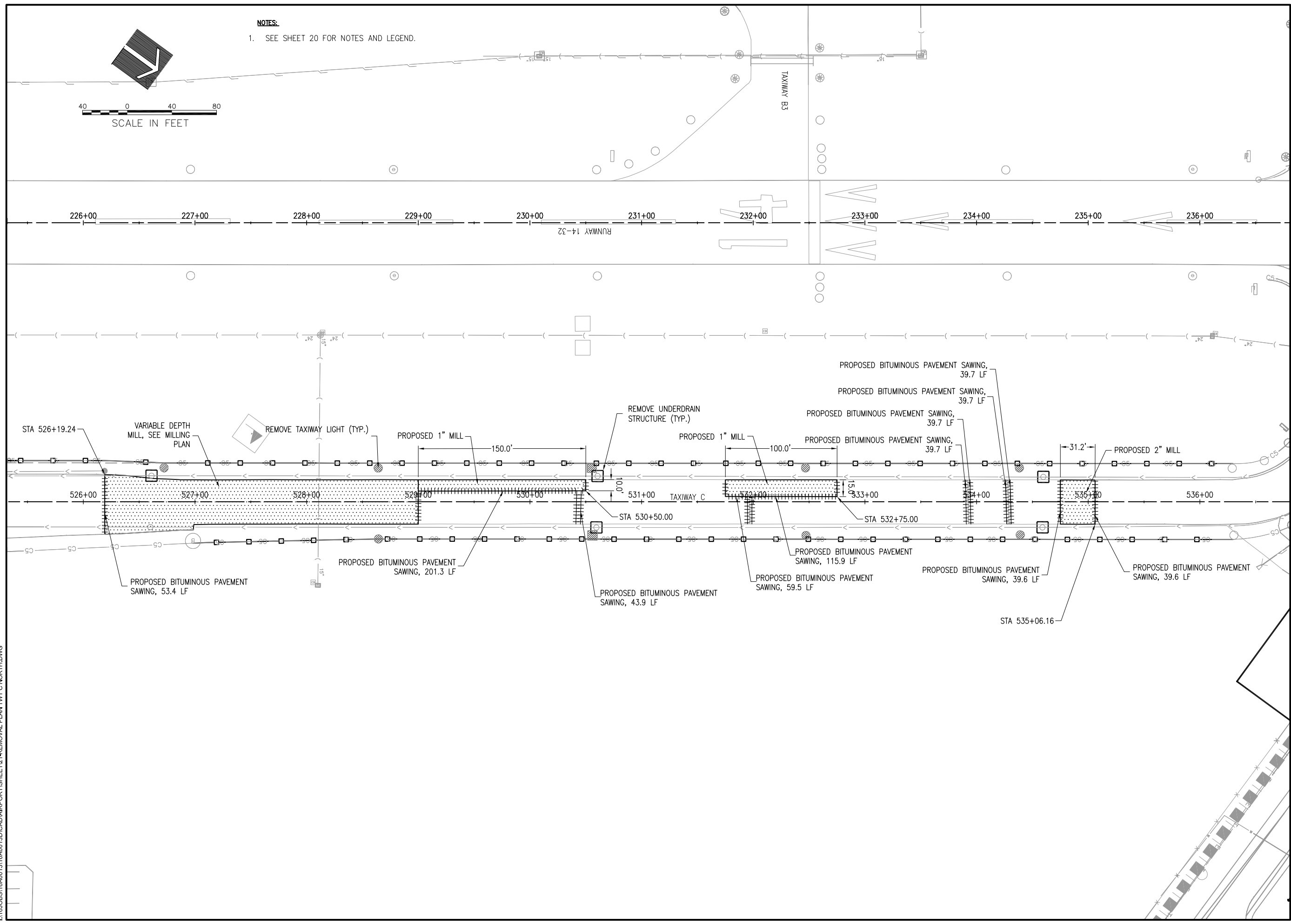
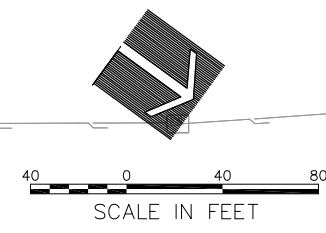
- LEGEND:**
- PROPOSED PCC PAVEMENT REMOVAL
 - PROPOSED BITUMINOUS PAVEMENT MILLING
 - PROPOSED BITUMINOUS PAVEMENT REMOVAL
 - PROPOSED BITUMINOUS PAVEMENT SAWING
 - PROPOSED UNDERDRAIN STRUCTURE REMOVAL
 - PROPOSED TAXI GUIDANCE SIGN RELOCATION
 - PROPOSED CABLE ABANDONMENT
 - PROPOSED CABLE REMOVAL
 - PROPOSED LIGHT REMOVAL
 - PROPOSED SPLICE CAN REMOVAL



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NOTES:
1. SEE SHEET 20 FOR NOTES AND LEGEND.



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

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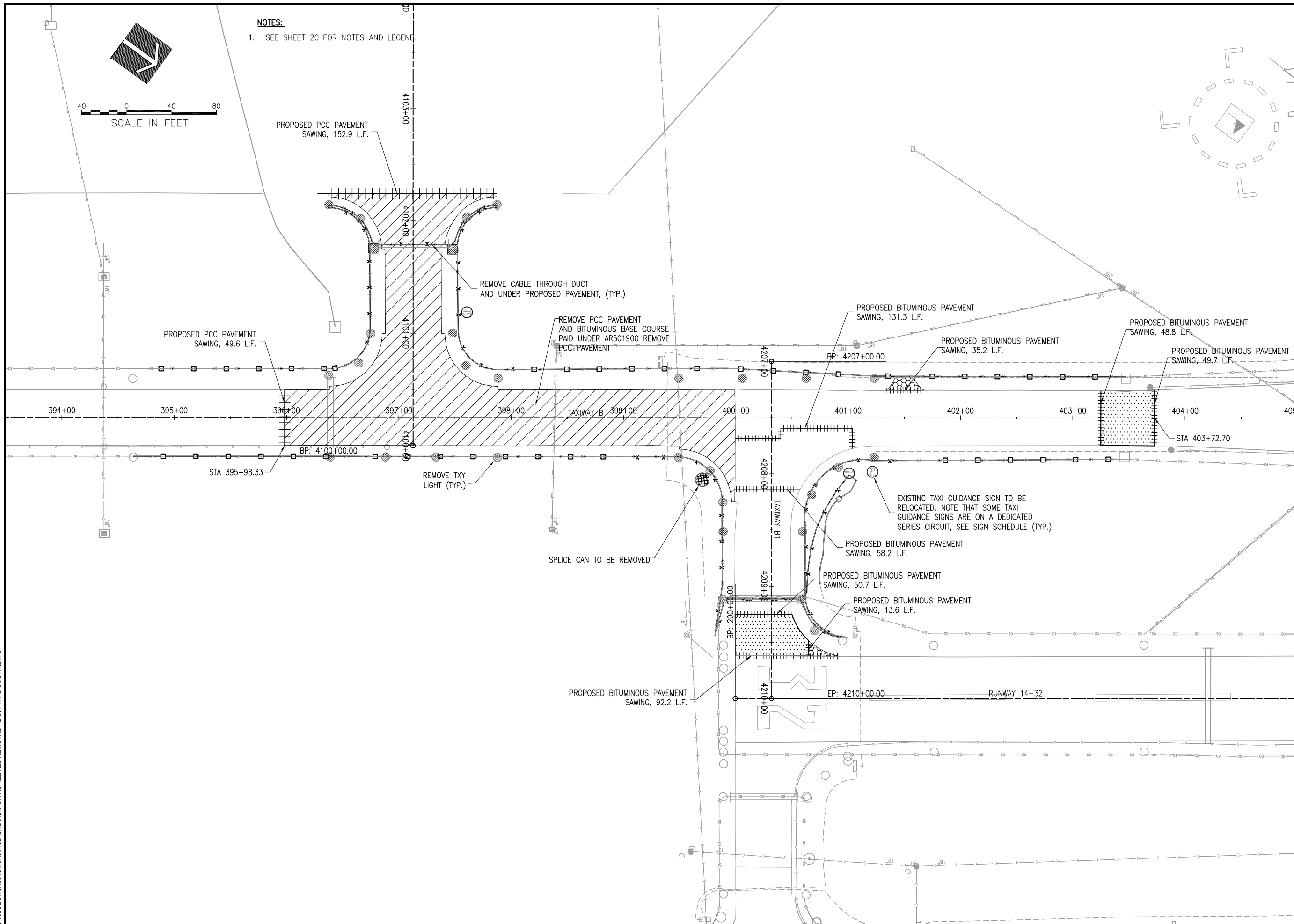
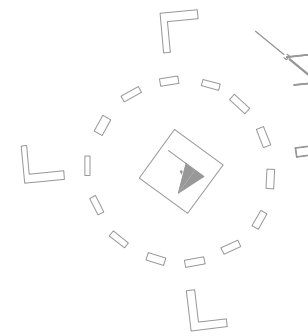
REMOVAL PLAN TAXIWAY C NORTH

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SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016

PROJECT NO: 16A0013

CAD FILE: 22-REMOVAL PLAN TWY

DESIGN BY: KMS 04/23/2016

DRAWN BY: KMS 04/25/2016

REVIEWED BY: LDH 6/9/2016

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SHEET TITLE

REMOVAL PLAN TAXIWAY B SOUTH

JUN 21, 2016 4:30 PM SPITZ01394
I:\16_JOBS\16A0013\16A0013\CAD\AIRPORTSHEET\22-REMOVAL PLAN TWY B SOUTH.DWG



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016

PROJECT NO: 16A0013
CAD FILE: 23-REMOVAL PLAN TWY C SOL
DESIGN BY: KMS 04/23/2016
DRAWN BY: KMS 04/25/2016
REVIEWED BY: LDH 6/9/2016

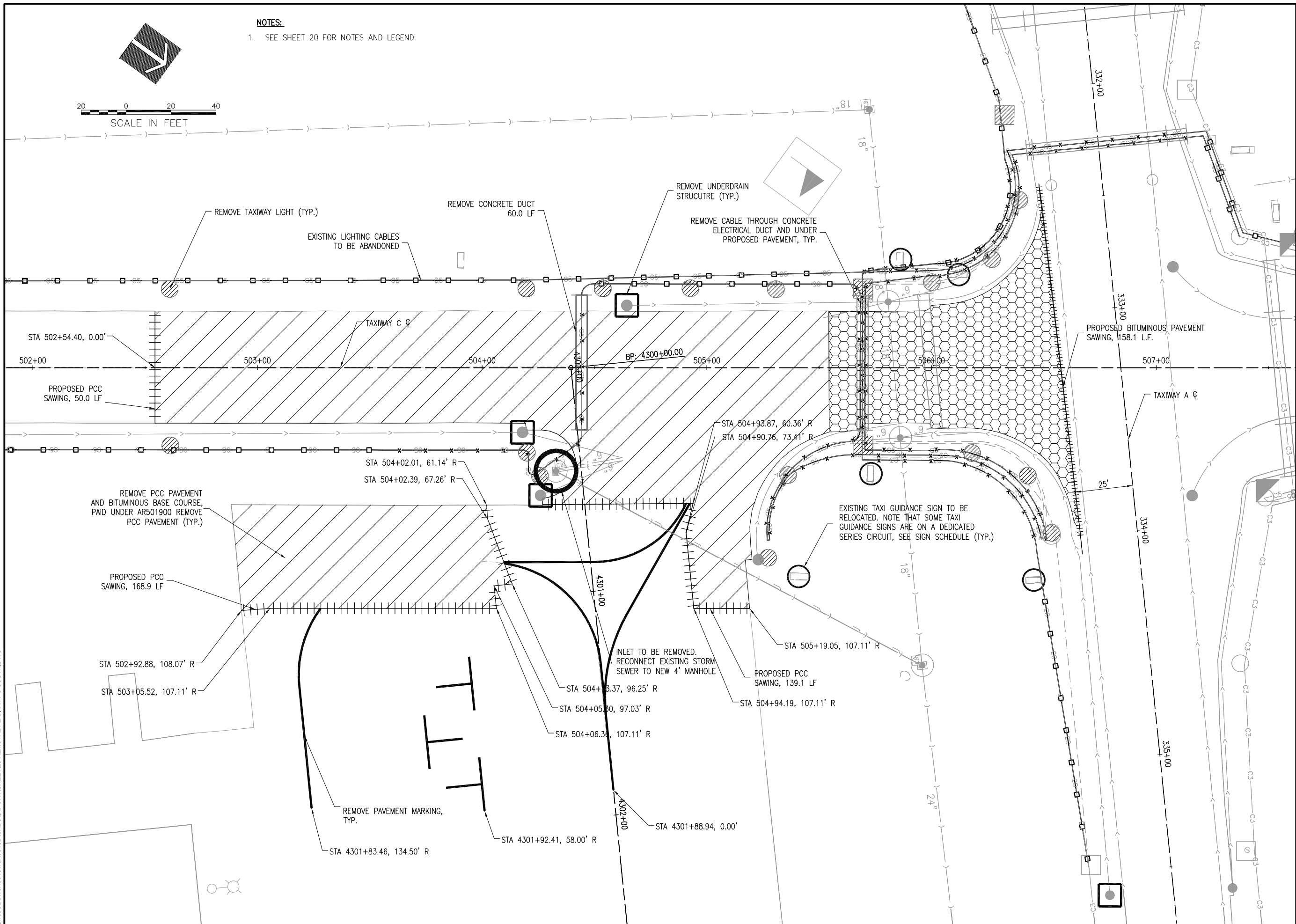
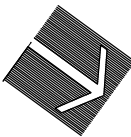
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SHEET TITLE

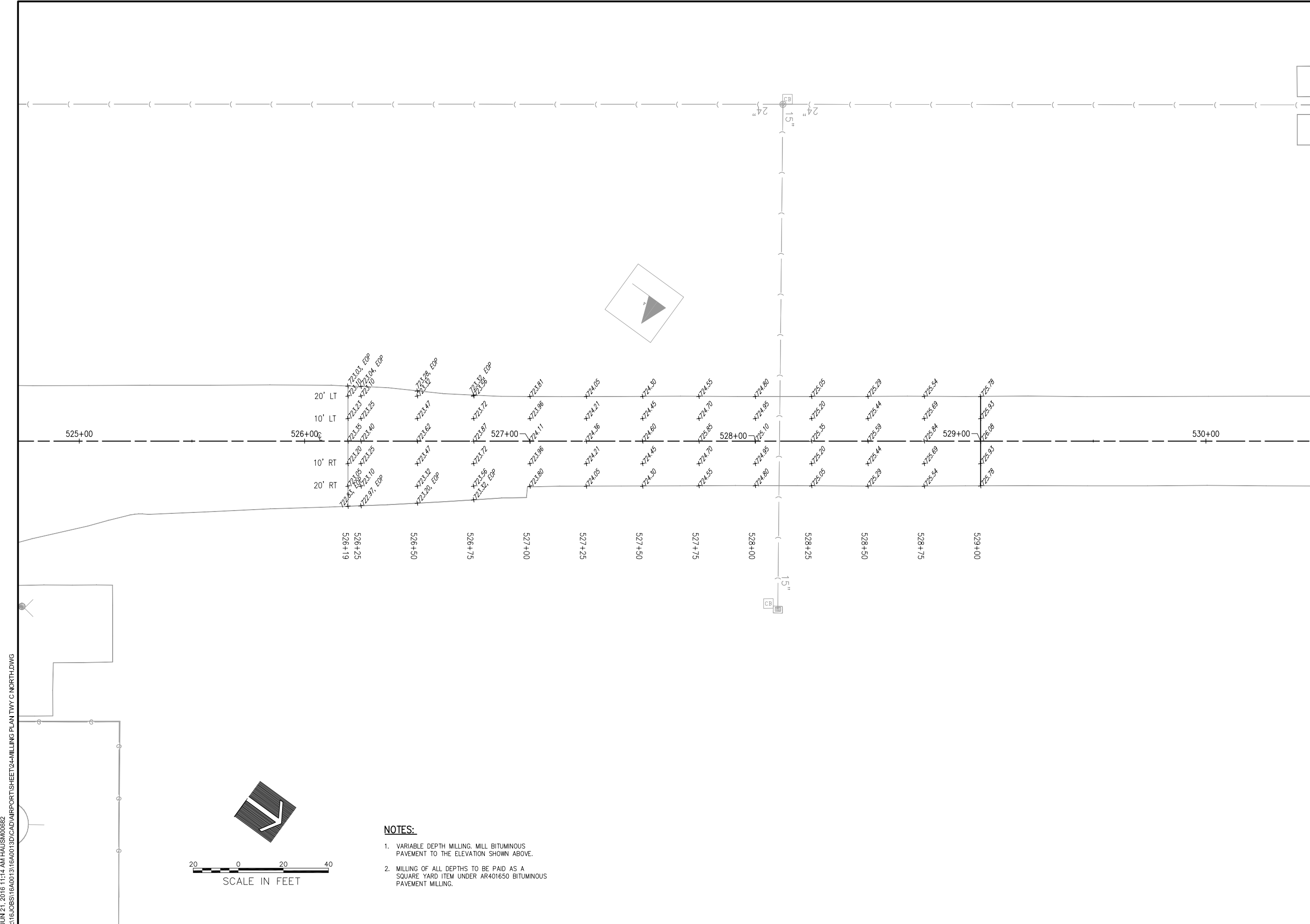
REMOVAL PLAN
TAXIWAY C SOUTH

NOTES:

1. SEE SHEET 20 FOR NOTES AND LEGEND.



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NOTES:

- VARIABLE DEPTH MILLING. MILL BITUMINOUS PAVEMENT TO THE ELEVATION SHOWN ABOVE.
- MILLING OF ALL DEPTHS TO BE PAID AS A SQUARE YARD ITEM UNDER AR401650 BITUMINOUS PAVEMENT MILLING.



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 24-MILLING PLAN TWY C NOR
DESIGN BY: KMS XX/XX/XXXX
DRAWN BY: KMS XX/XX/XXXX
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SHEET TITLE

MILLING PLAN TAXIWAY C NORTH

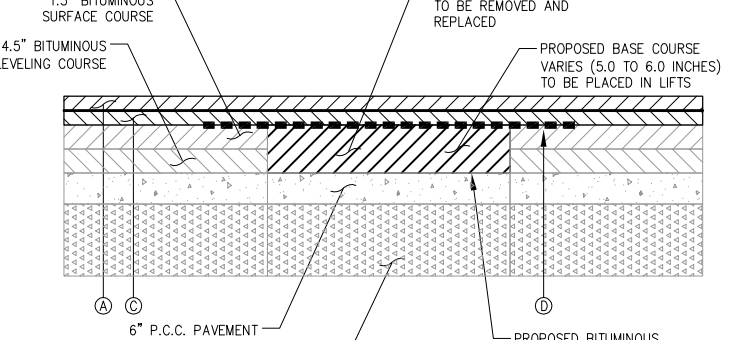
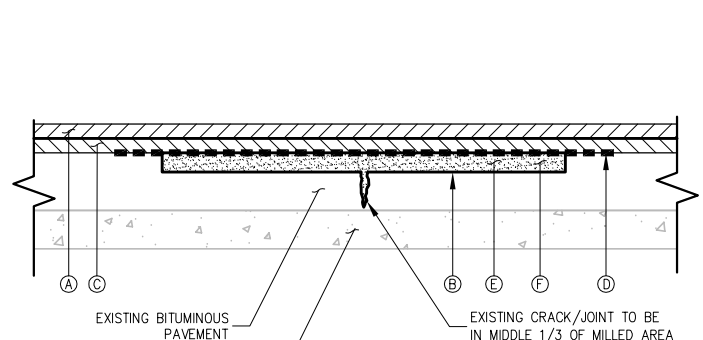
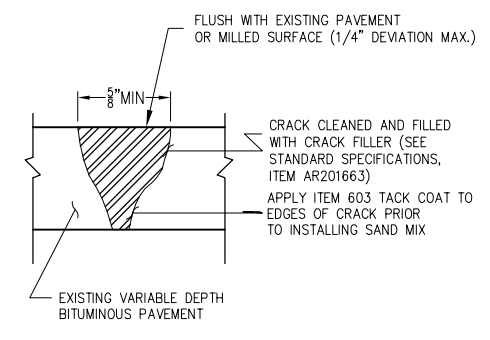
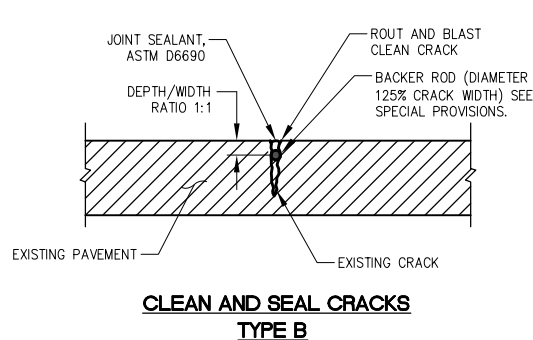
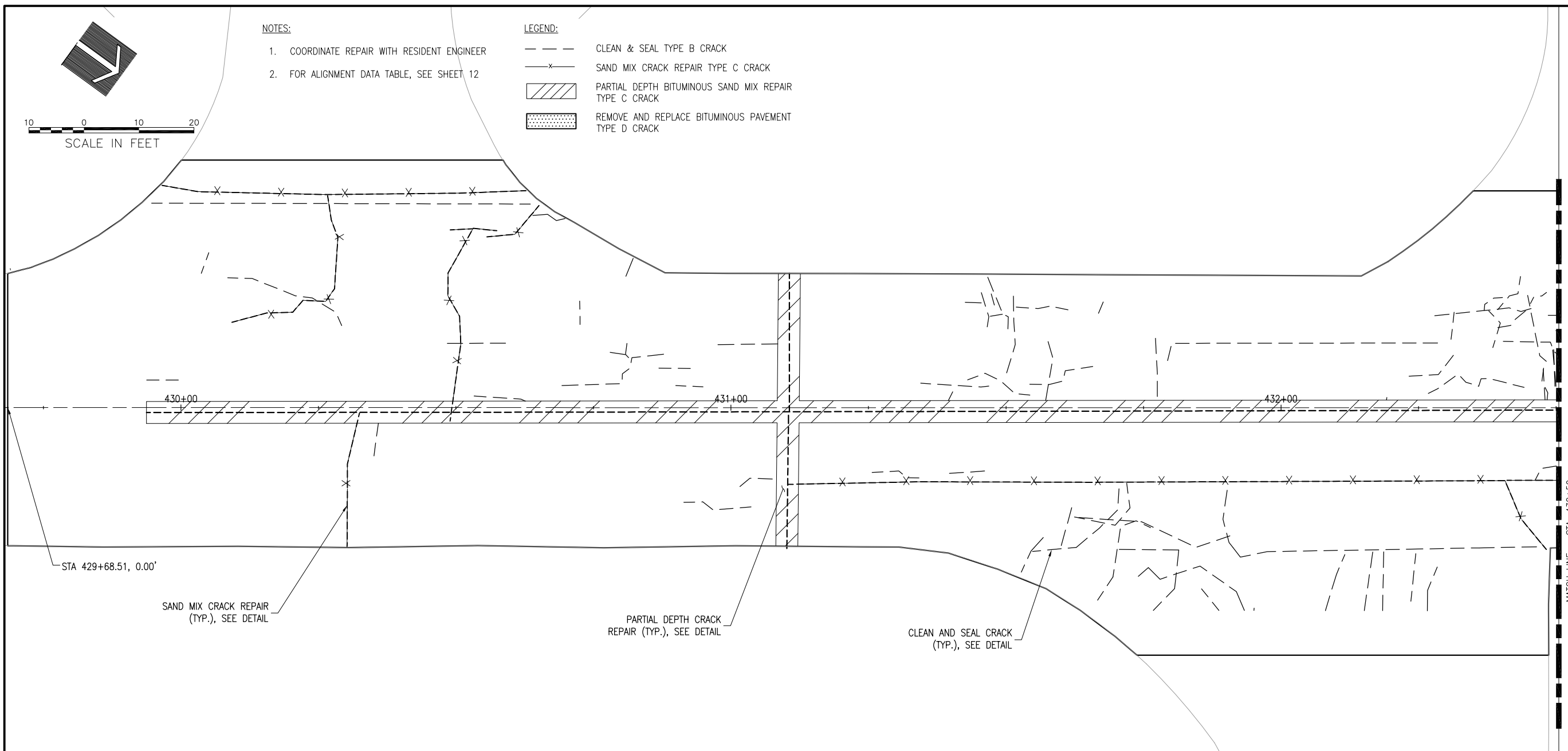


NOTES:

- COORDINATE REPAIR WITH RESIDENT ENGINEER
- FOR ALIGNMENT DATA TABLE, SEE SHEET 12

LEGEND:

- CLEAN & SEAL TYPE B CRACK
- x- SAND MIX CRACK REPAIR TYPE C CRACK
- [Hatched Box] PARTIAL DEPTH BITUMINOUS SAND MIX REPAIR TYPE C CRACK
- [Dotted Box] REMOVE AND REPLACE BITUMINOUS PAVEMENT TYPE D CRACK



REPAIR LEGEND

(A)	PROPOSED OVERLAY
(B)	PROPOSED BITUMINOUS TACK COAT, ITEM AR603510.
(C)	PROPOSED OVERLAY
(D)	CRACK CONTROL MATERIAL (60" WIDE), ITEM AR800939.
(E)	BITUMINOUS SAND MIX - 2 INCH, ITEM AR800972.
(F)	PAVEMENT MILLING, ITEM AR401650.

- NOTES:**
- CRACKS TO BE FILLED WITH SAND MIX SHALL BE AS SHOWN IN PLANS OR AS DESIGNATED BY THE RESIDENT ENGINEER.
 - SAND MIX CRACK REPAIR SHALL BE USED ON ALL TYPE C CRACKS GREATER THAN 5/8" WIDE NOT DESIGNATED FOR PARTIAL DEPTH BITUMINOUS REPAIR, OR AS DESIGNATED BY THE RESIDENT ENGINEER.
 - CONTRACTOR SHALL ROUTE, CRACK PLOW AND REMOVE LOOSE FILLER, LOOSE AGGREGATE AND LAITANCE WITH COMPRESSED AIR AS SPECIFIED PRIOR TO TACK COAT AND SEALING.

- NOTES:**
- TACK COAT SHALL BE APPLIED TO MILLED SURFACE OUTSIDE OF CRACK CONTROL MATERIAL.
 - CRACK CONTROL MATERIAL SHALL OVERLAP BITUMINOUS SAND MIX 6" EACH SIDE.

- NOTES:**
- TACK COAT TO BE PLACED BETWEEN LIFTS OF BASE COURSE.
 - CRACK CONTROL MATERIAL SHALL OVERLAP BITUMINOUS PATCH 6" EACH SIDE.
 - BITUMINOUS PAVEMENT SAWING TO BE PAID UNDER ITEM AR401665.
 - WHERE WIDTH IS GREATER THAN 60-INCHES, THE CRACK CONTROL MATERIAL SHALL BE OVERLAPED BY 12-INCHES. THE OVERLAP SHALL NOT BE MEASURED FOR PAYMENT BUT SHALL BE INCLUDED IN THE COST FOR CRACK CONTROL MATERIAL.

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

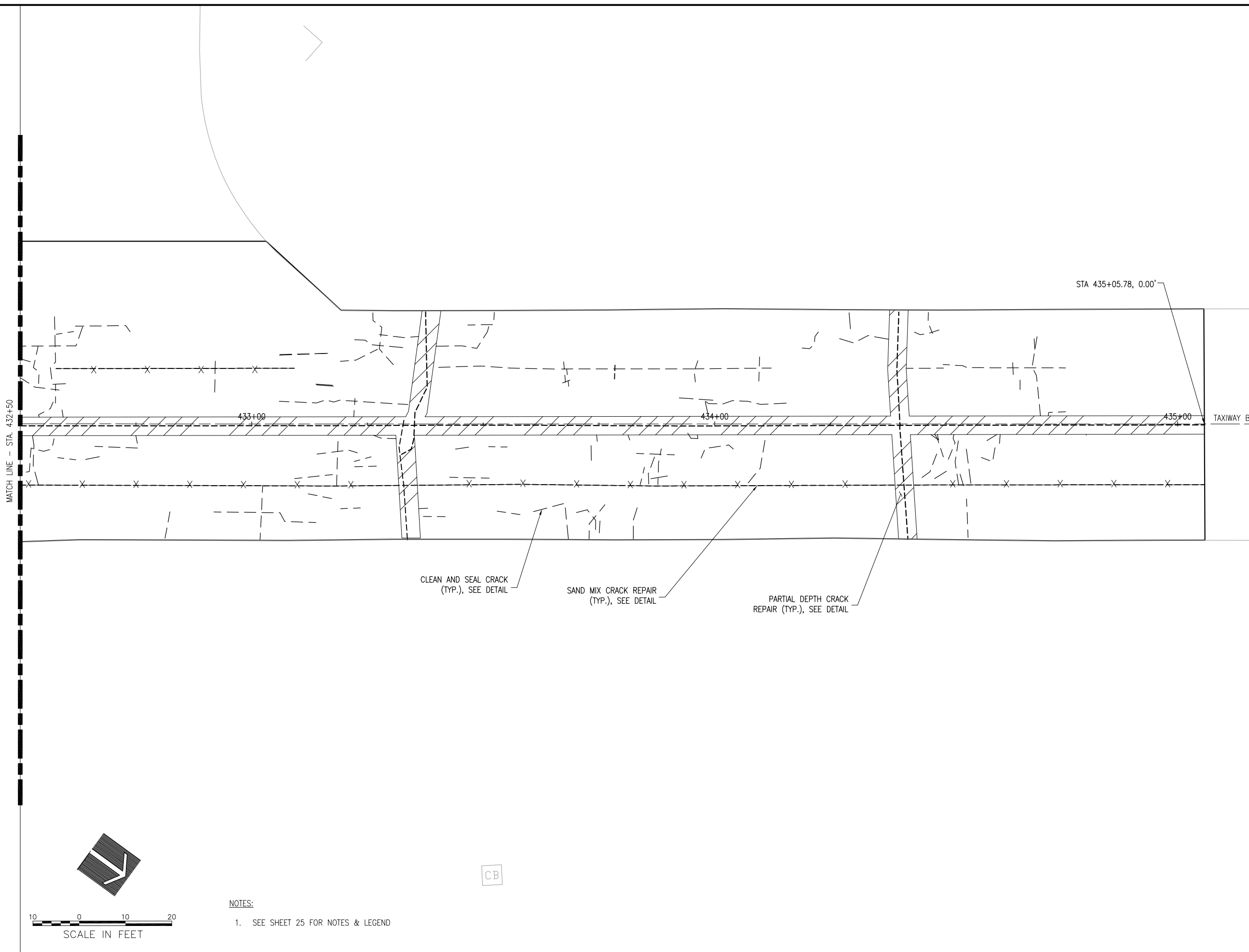
ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 25-CRACK REPAIR PLAN
DESIGN BY: KMS 03/29/16
DRAWN BY: KMS 03/29/16
REVIEWED BY: LDH 6/9/2016
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SHEET TITLE

CRACK REPAIR PLAN TAXIWAY B - NORTH STA. 429+70 432+50

JUN 21, 2016 1:51 PM SPTZ01394
R316:JOBS\16A0013\16A0013\CAD\AIRPORT\SHEET25-CRACK REPAIR PLAN TWY B NORTH 1.DWG



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WAUKEGAN PORT DISTRICT
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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

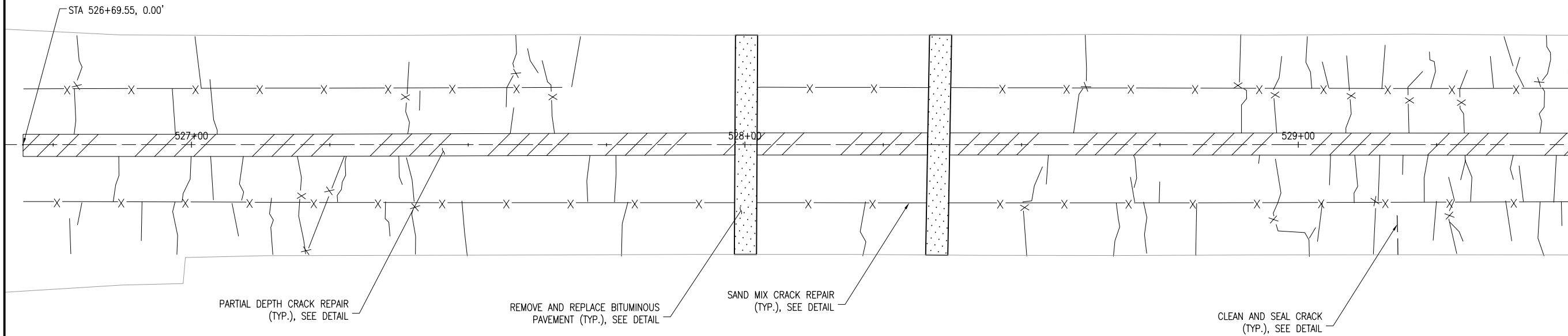
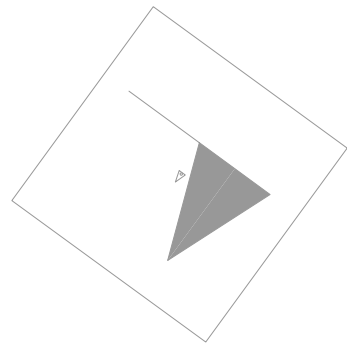
Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 26-CRACK REPAIR PLAN TWY B NORTH
DESIGN BY: KMS 03/29/16
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SHEET TITLE

CRACK REPAIR PLAN TAXIWAY B - NORTH STA. 432+50 - 435+06

- NOTES:
1. SEE SHEET 25 FOR NOTES & LEGEND



PARTIAL DEPTH CRACK REPAIR (TYP.), SEE DETAIL

REMOVE AND REPLACE BITUMINOUS PAVEMENT (TYP.), SEE DETAIL

SAND MIX CRACK REPAIR (TYP.), SEE DETAIL

CLEAN AND SEAL CRACK (TYP.), SEE DETAIL

CB

NOTES:

1. SEE SHEET 25 FOR NOTES & LEGEND

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

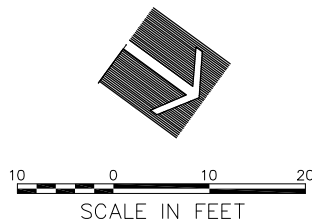
Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 27-CRACK REPAIR PLAN
DESIGN BY: KMS 03/29/16
DRAWN BY: KMS 03/29/16
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SHEET TITLE

**CRACK REPAIR PLAN
TAXIWAY C - NORTH
STA. 526+70 - 529+50**





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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

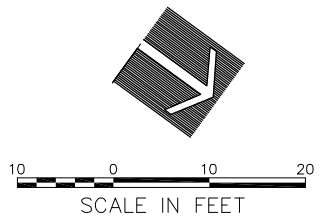
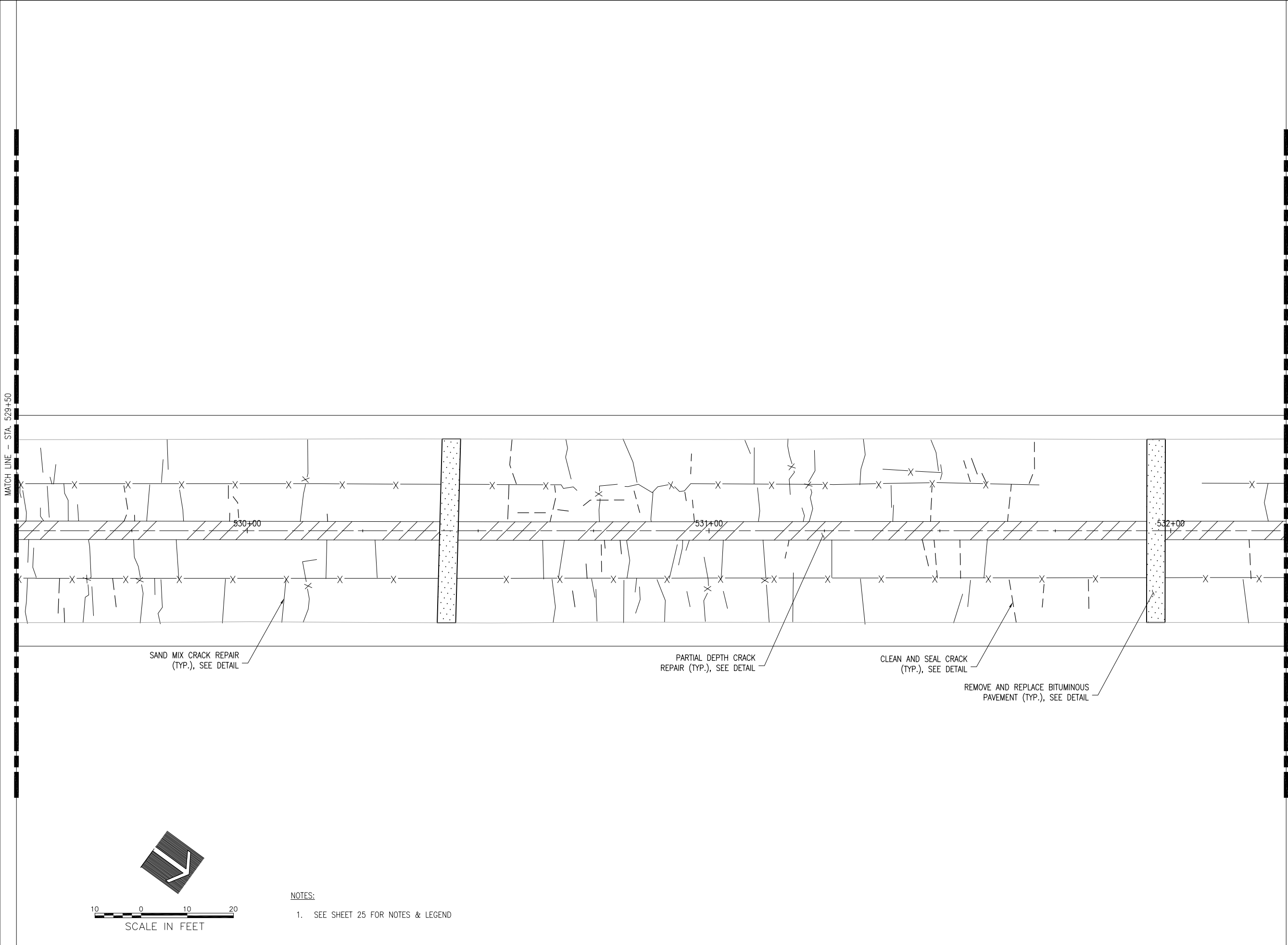
Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 28-CRACK REPAIR PLAN
DESIGN BY: KMS 03/29/16
DRAWN BY: KMS 03/29/16
REVIEWED BY: LDH 6/9/2016

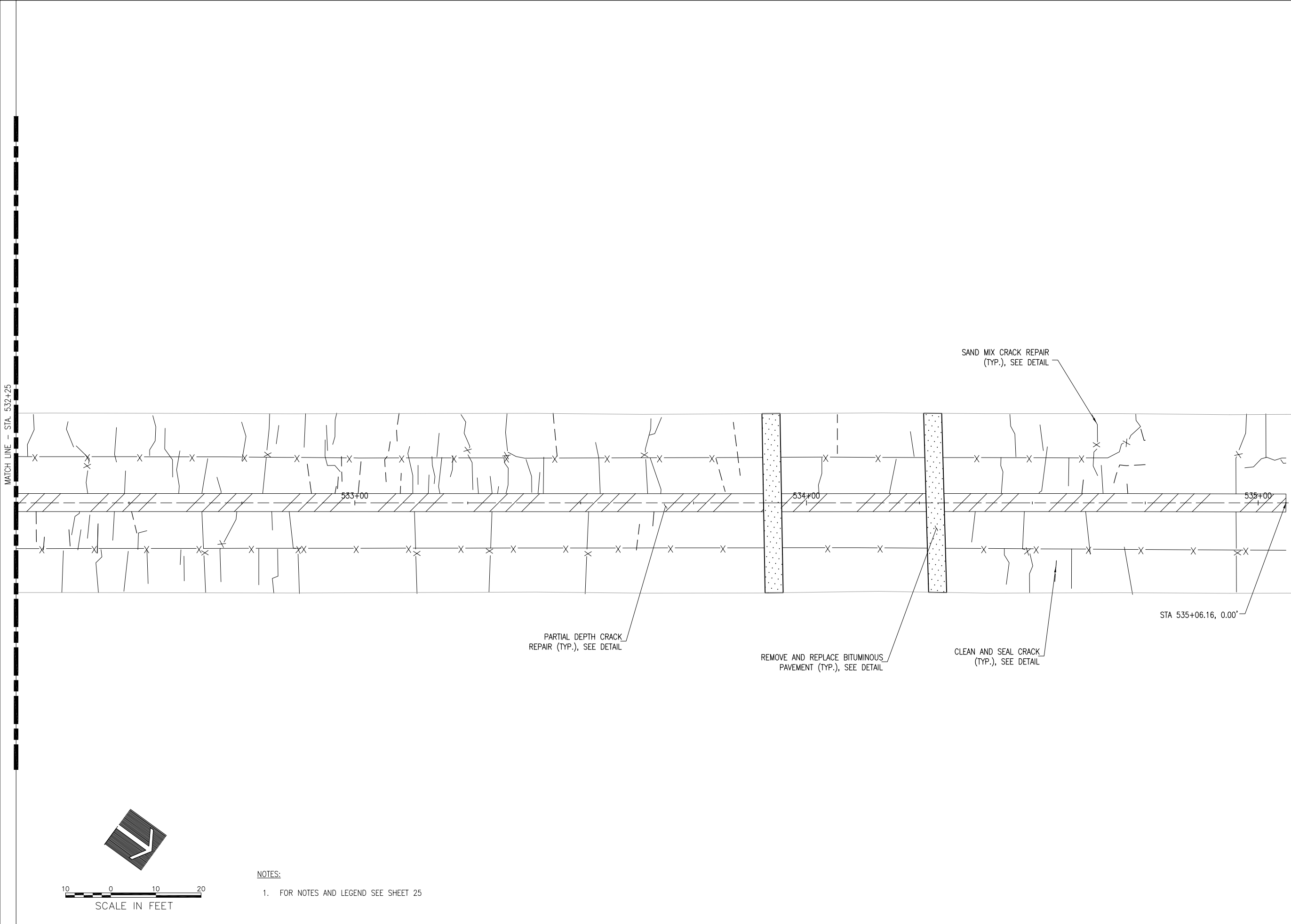
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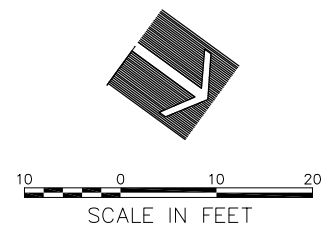


NOTES:
1. SEE SHEET 25 FOR NOTES & LEGEND

JUN 21, 2016 2:01 PM SPTZ01394
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JUN 21, 2016 2:06 PM SPITZ01394
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- NOTES:
- FOR NOTES AND LEGEND SEE SHEET 25

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 29-CRACK REPAIR PLAN
DESIGN BY: KMS 03/29/16
DRAWN BY: KMS 03/29/16
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SHEET TITLE

CRACK REPAIR PLAN TAXIWAY C - NORTH STA 532+25 - 535+06



REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

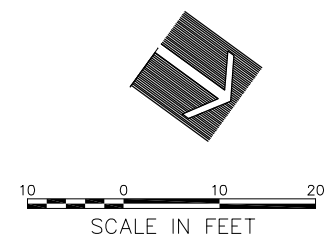
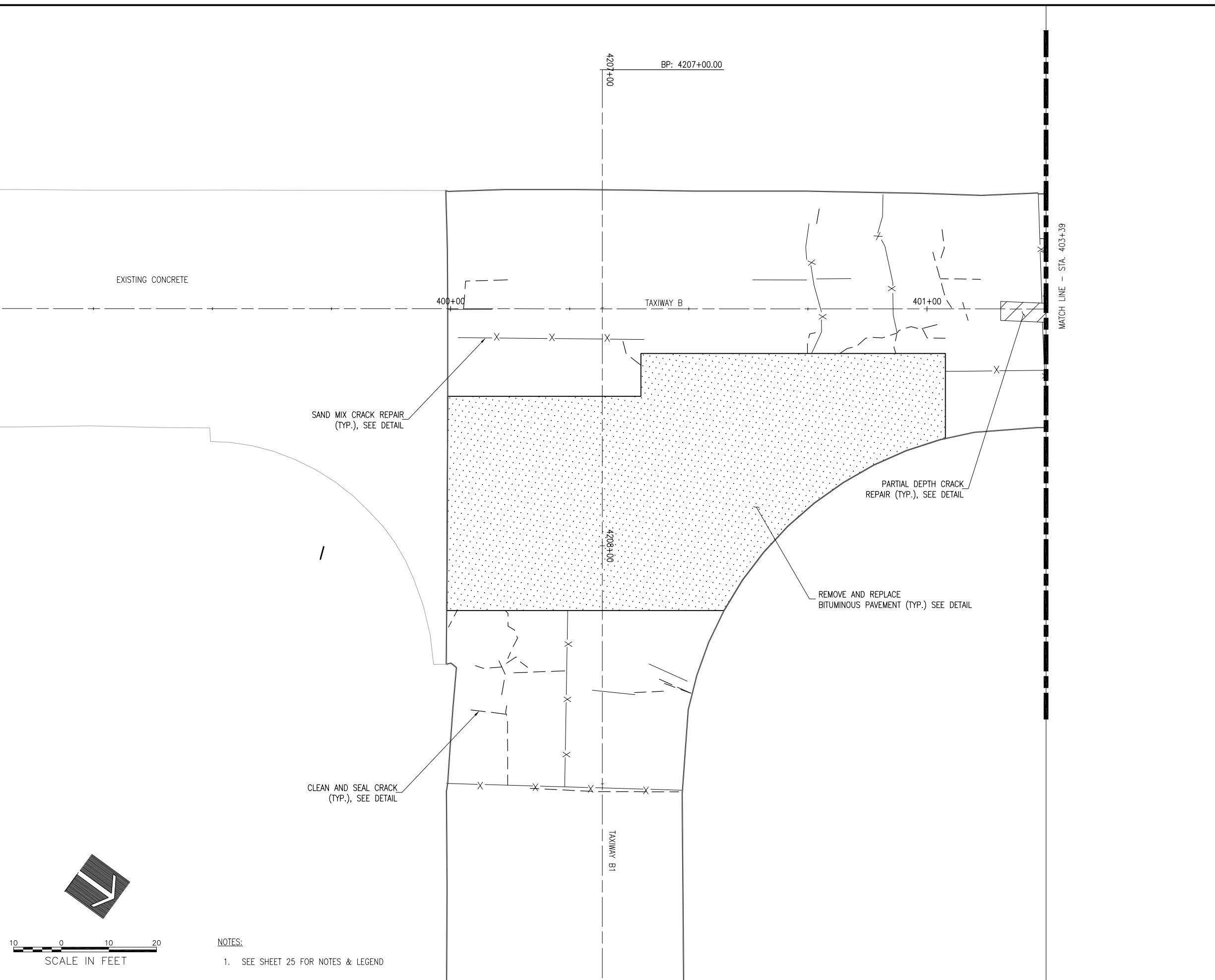
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
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DESIGN BY: KMS 03/29/16
DRAWN BY: KMS 03/29/16
REVIEWED BY: LDH 6/9/2016

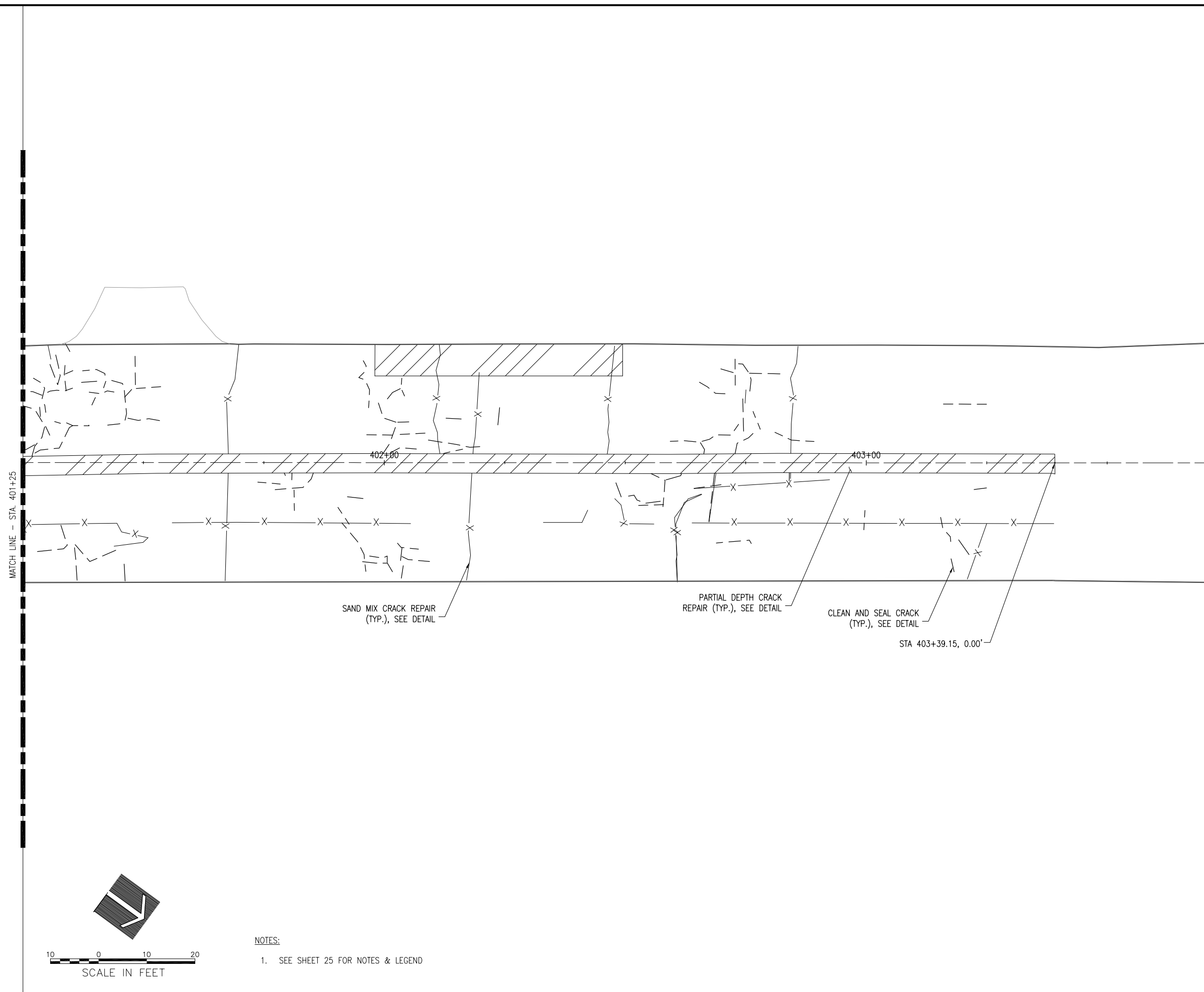
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SHEET TITLE

CRACK REPAIR PLAN
TAXIWAY B - SOUTH
STA. 401+25- 403+39

JUN 21, 2016 2:08 PM SPITZ01394
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NOTES:
1. SEE SHEET 25 FOR NOTES & LEGEND



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016

PROJECT NO: 16A0013
CAD FILE: 31-CRACK REPAIR PLAN TWY B SOUTH
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**CRACK REPAIR PLAN
TAXIWAY B - SOUTH
STA. 401+25- 403+39**

NOTES:

- SEE SHEET 25 FOR NOTES & LEGEND



SCALE IN FEET

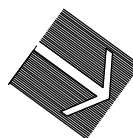
MATCH LINE - STA. 401+25

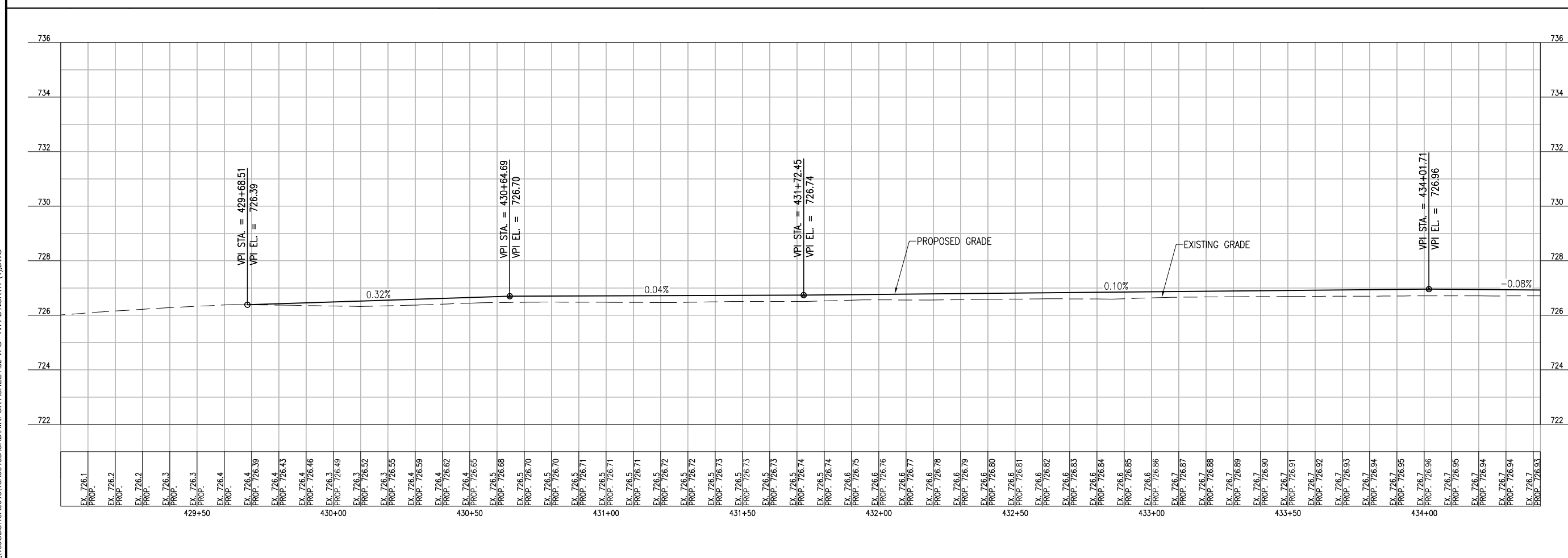
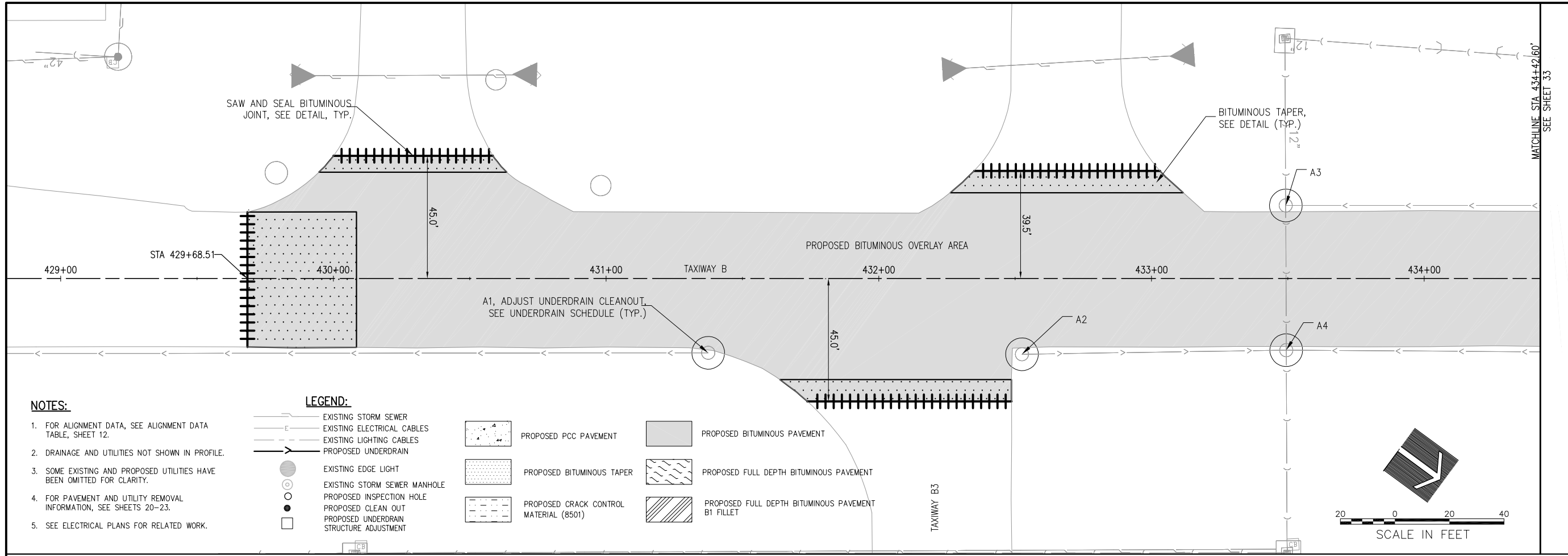
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PARTIAL DEPTH CRACK REPAIR (TYP.), SEE DETAIL

CLEAN AND SEAL CRACK (TYP.), SEE DETAIL

STA 403+39.15, 0.00'





REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

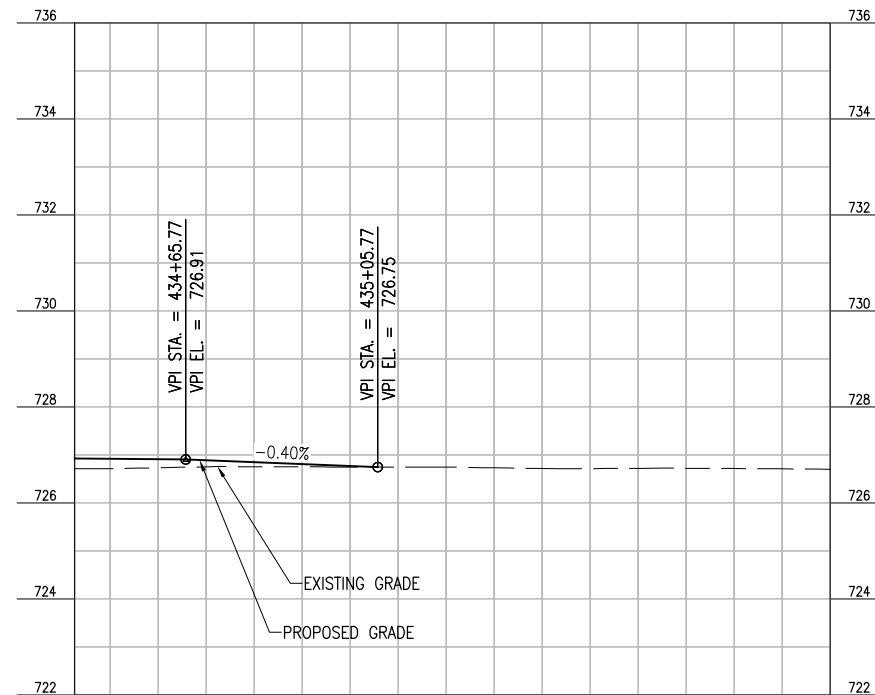
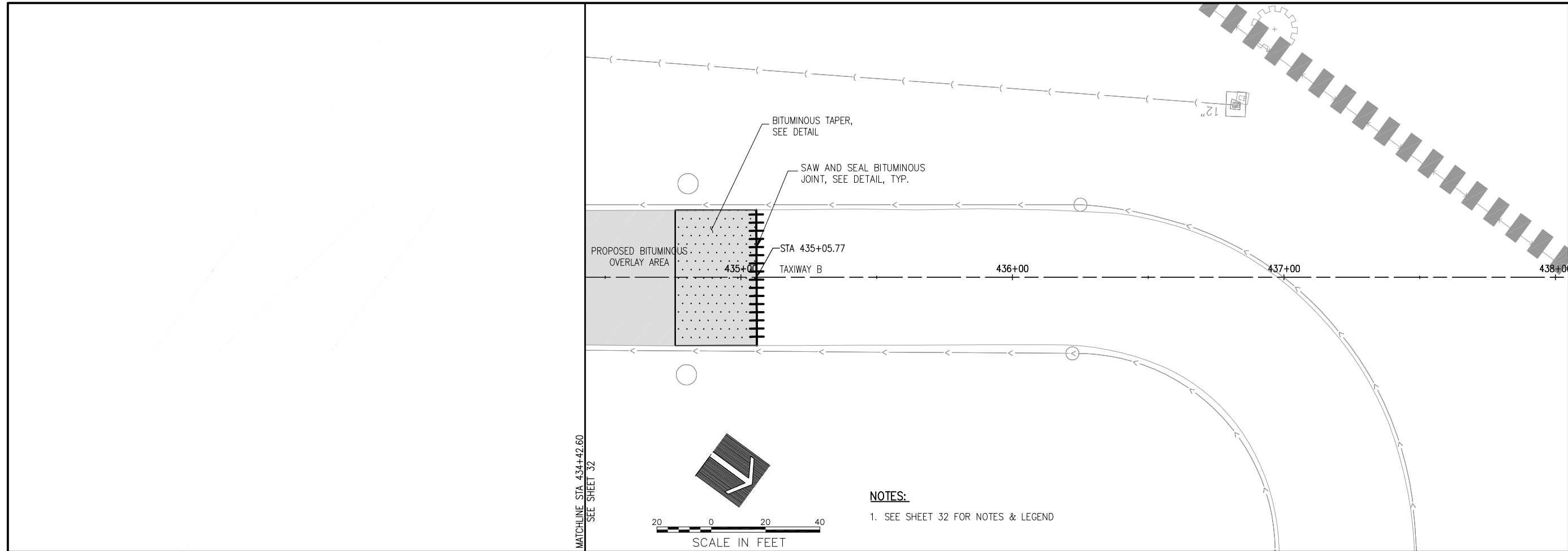
ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 32-VFG - TWY B NORTH- (1)
DESIGN BY: KMS 05/04/2016
DRAWN BY: KMS 05/12/2016
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PLAN AND PROFILE TAXIWAY B NORTH



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813



EX. 726.7	PROP. 726.92
EX. 726.7	PROP. 726.91
EX. 726.8	PROP. 726.89
EX. 726.8	PROP. 726.85
EX. 726.8	PROP. 726.81
EX. 726.8	PROP. 726.77
EX. 726.7	PROP. 726.75
EX. 726.7	PROP. 726.7
EX. 726.7	PROP. 726.7
EX. 726.7	PROP. 726.7
EX. 726.7	PROP. 726.7
EX. 726.7	PROP. 726.7
EX. 726.7	PROP. 726.7
EX. 726.7	PROP. 726.7
EX. 726.7	PROP. 726.7

434+50 435+00 435+50

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 33-VFG - TWY B NORTH- (2)
DESIGN BY: KMS 05/04/2016
DRAWN BY: KMS 05/12/2016
REVIEWED BY: LDH 6/9/2016

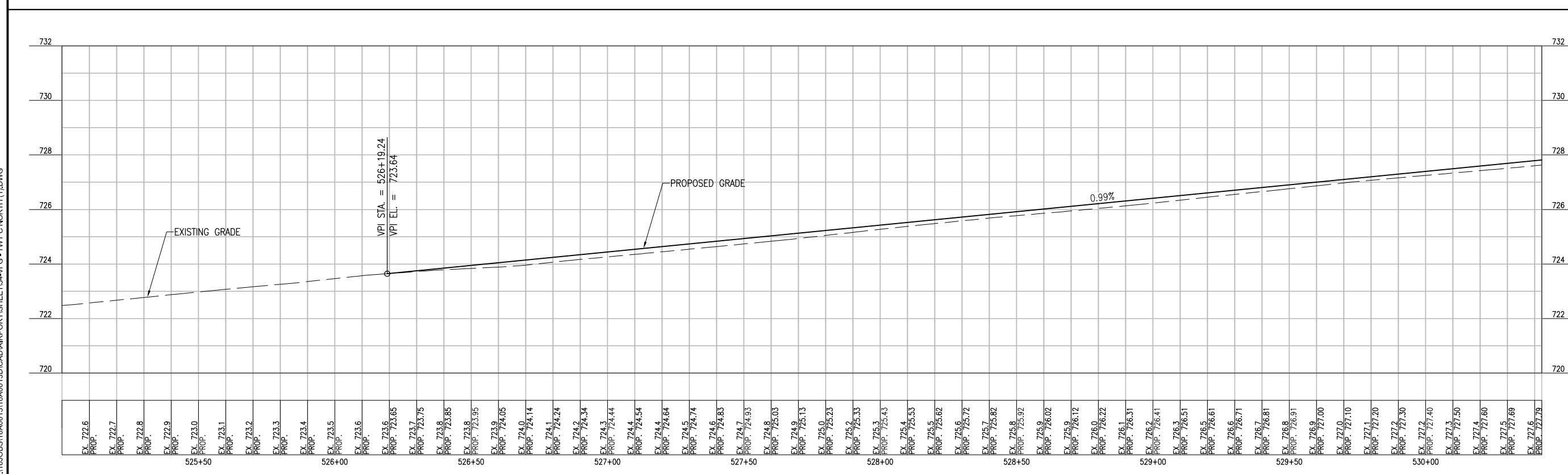
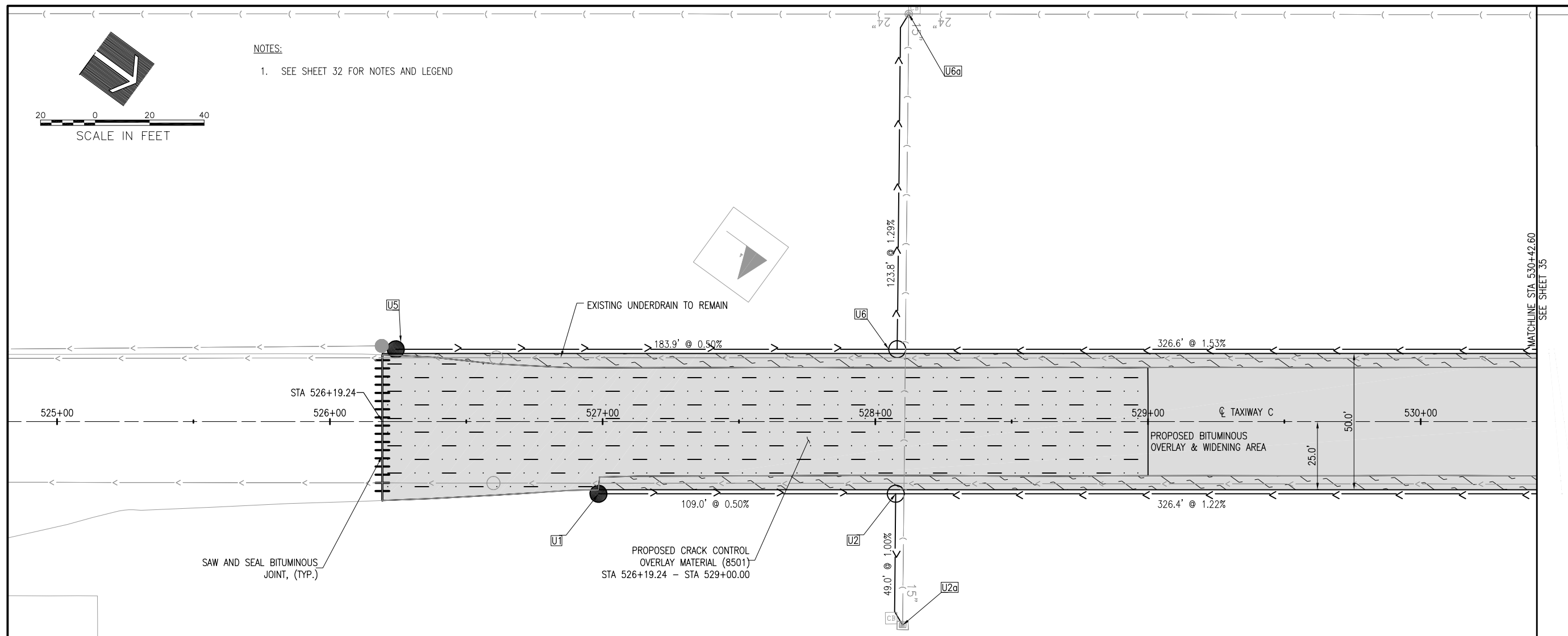
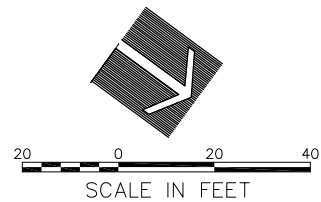
SHEET TITLE

PLAN AND PROFILE TAXIWAY B NORTH



NOTES:

1. SEE SHEET 32 FOR NOTES AND LEGEND



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 34-VFG - TWY C NORTH (1).DWG
DESIGN BY: KMS 05/04/2016
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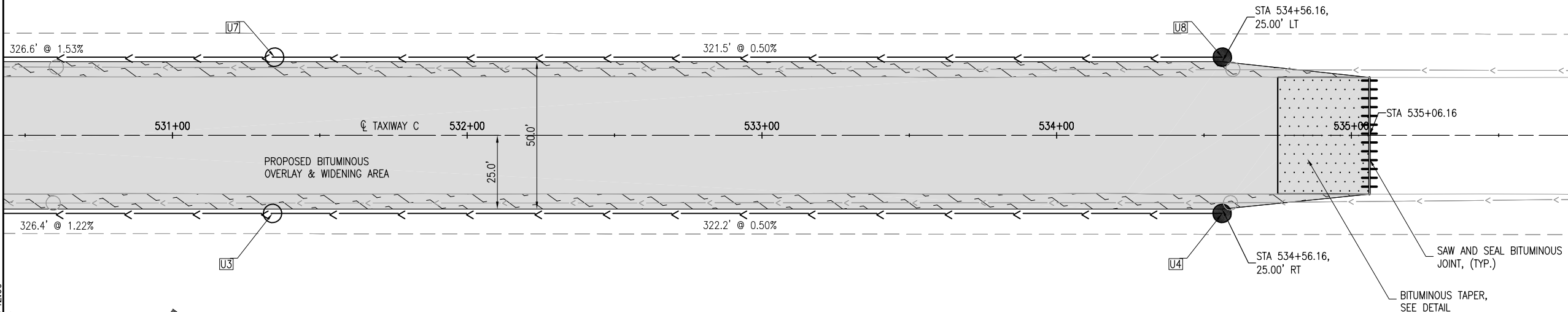
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PLAN AND PROFILE TAXIWAY C NORTH



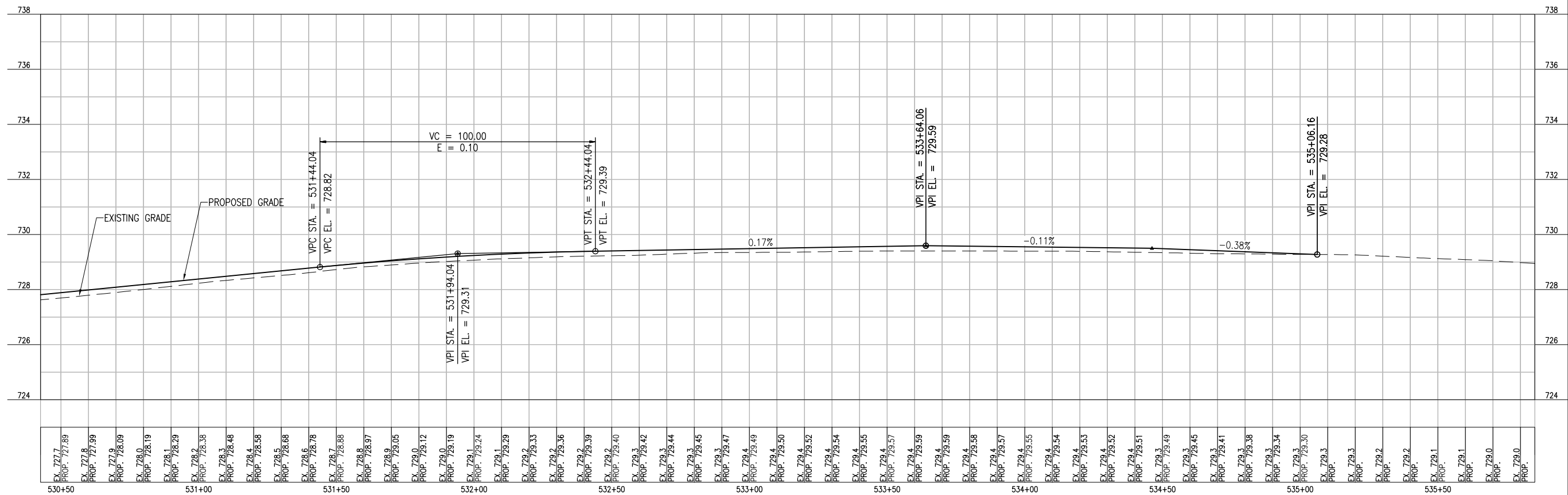
WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

MATCHLINE STA. 530+42.60
SEE SHEET 34



NOTES:

1. SEE SHEET 32 FOR NOTES AND LEGEND



EX. 727.7	PROP. 727.89	
EX. 727.8	PROP. 727.99	
EX. 727.9	PROP. 728.09	
EX. 728.0	PROP. 728.19	
EX. 728.1	PROP. 728.29	
EX. 728.2	PROP. 728.38	
EX. 728.3	PROP. 728.48	
EX. 728.4	PROP. 728.58	
EX. 728.5	PROP. 728.68	
EX. 728.6	PROP. 728.78	
EX. 728.7	PROP. 728.88	
EX. 728.8	PROP. 728.97	
EX. 728.9	PROP. 729.05	
EX. 729.0	PROP. 729.12	
EX. 729.1	PROP. 729.19	
EX. 729.2	PROP. 729.24	
EX. 729.3	PROP. 729.29	
EX. 729.4	PROP. 729.33	
EX. 729.5	PROP. 729.36	
EX. 729.6	PROP. 729.39	
EX. 729.7	PROP. 729.40	
EX. 729.8	PROP. 729.42	
EX. 729.9	PROP. 729.44	
EX. 729.0	PROP. 729.45	
EX. 729.1	PROP. 729.47	
EX. 729.2	PROP. 729.49	
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EX. 729.5	PROP. 729.52	
EX. 729.6	PROP. 729.51	
EX. 729.7	PROP. 729.49	
EX. 729.8	PROP. 729.45	
EX. 729.9	PROP. 729.41	
EX. 729.0	PROP. 729.38	
EX. 729.1	PROP. 729.34	
EX. 729.2	PROP. 729.30	
EX. 729.3	PROP. 729.28	
EX. 729.4	PROP. 729.28	
EX. 729.5	PROP. 729.28	
EX. 729.6	PROP. 729.28	
EX. 729.7	PROP. 729.28	
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EX. 729.0	PROP. 729.28	
EX. 729.1	PROP. 729.28	
EX. 729.2	PROP. 729.28	
EX. 729.3	PROP. 729.28	
EX. 729.4	PROP. 729.28	
EX. 729.5	PROP. 729.28	
EX. 729.6	PROP. 729.28	
EX. 729.7	PROP. 729.28	
EX. 729.8	PROP. 729.28	
EX. 729.9	PROP. 729.28	
EX. 729.0	PROP. 729.28	

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 35-VFG - TWY C NORTH (C)
DESIGN BY: KMS 05/09/2016
DRAWN BY: KMS 05/16/2016
REVIEWED BY: LDH 6/9/2016

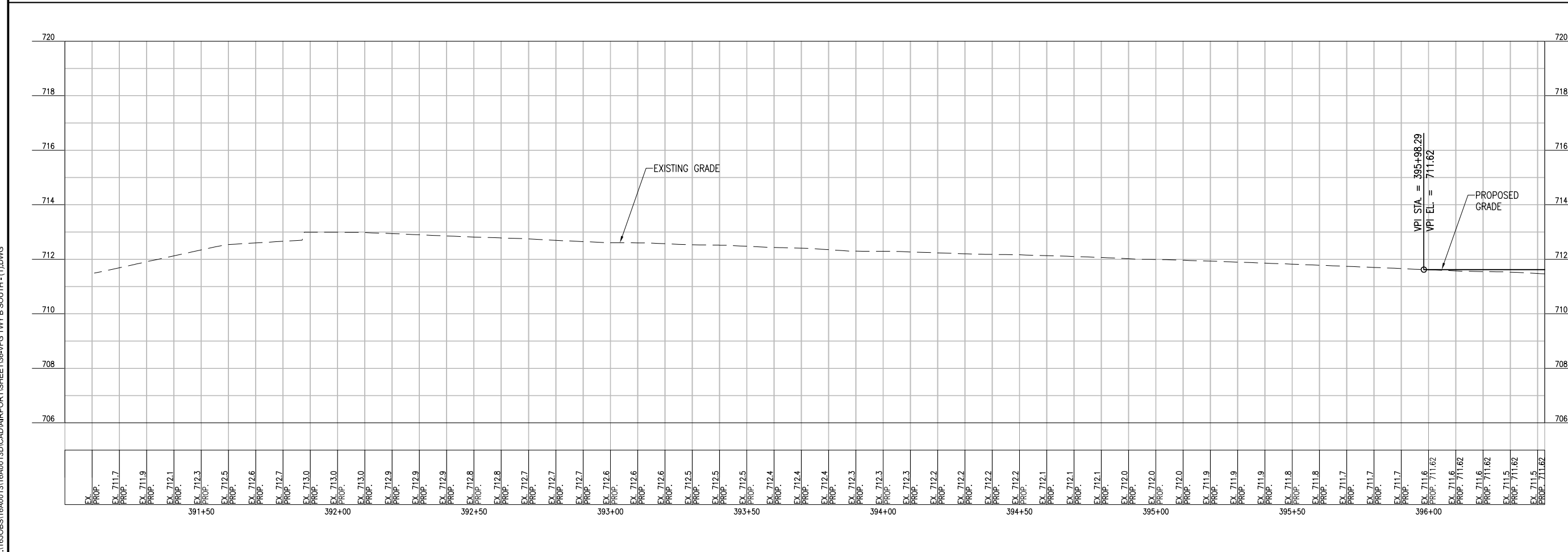
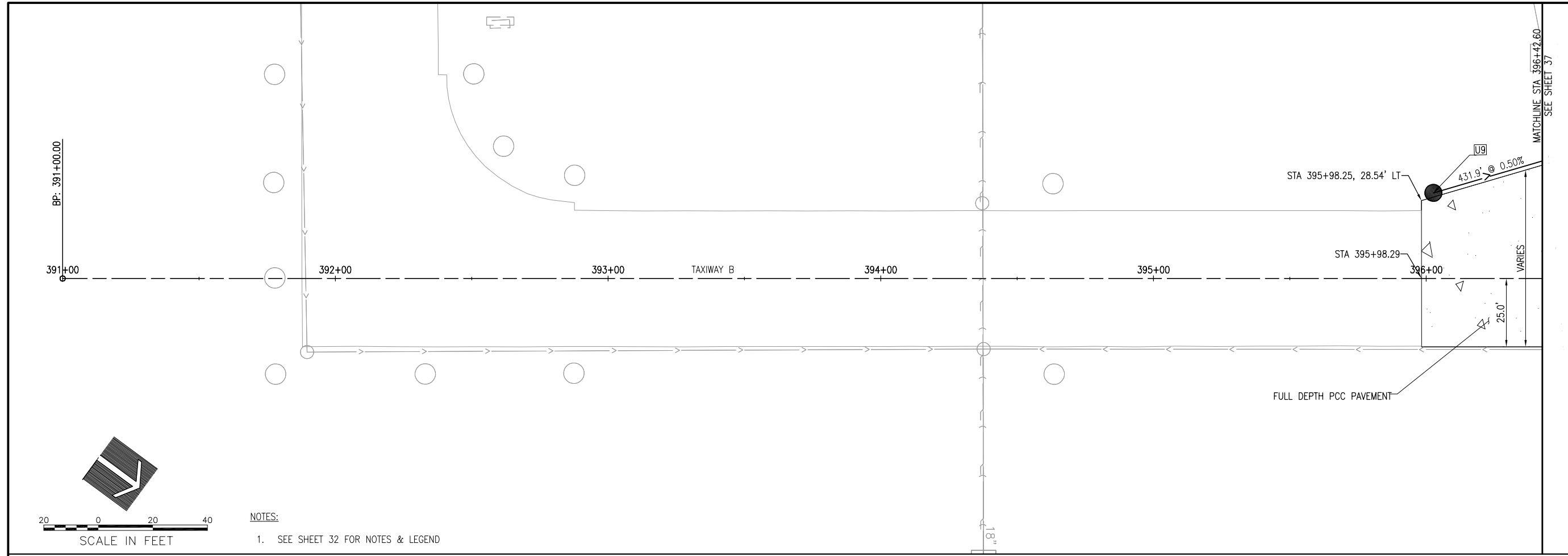
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SHEET TITLE

PLAN AND PROFILE TWY C NORTH



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813



REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 36-VFG TWY B SOUTH - (1).DWG
DESIGN BY: KMS 05/23/2016
DRAWN BY: KMS 05/24/2016
REVIEWED BY: LDH 6/9/2016

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PLAN AND PROFILE
TAXIWAY B SOUTH



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

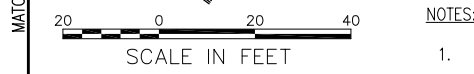
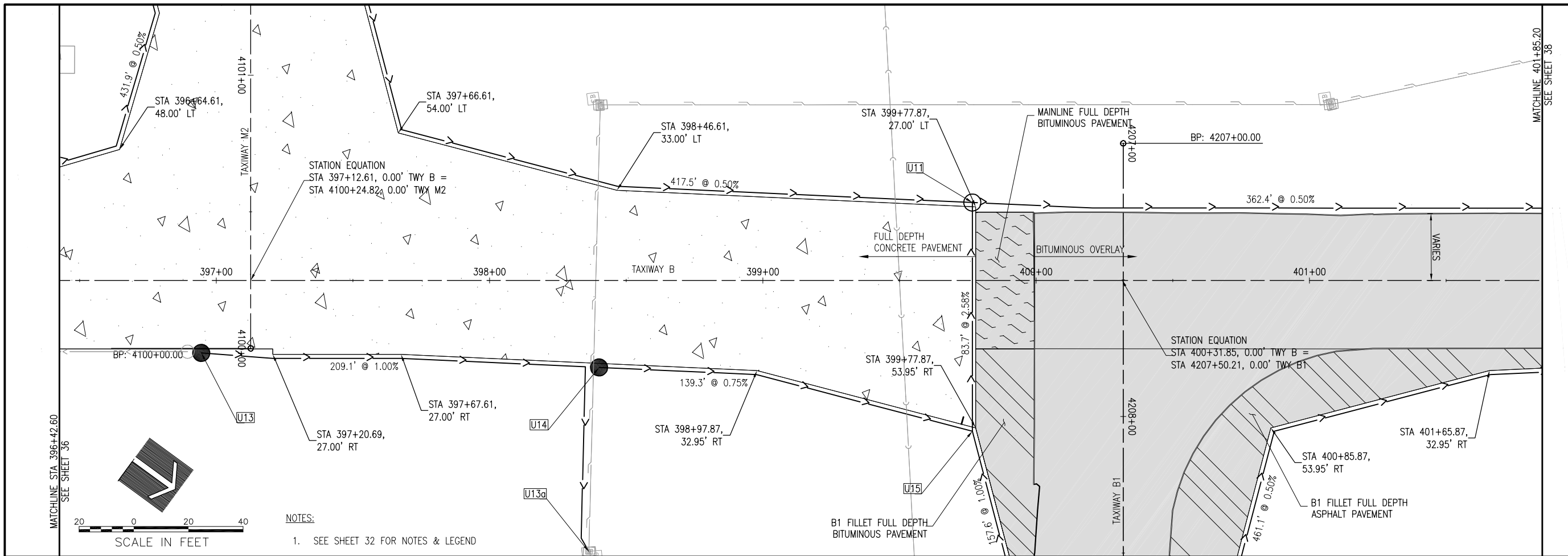
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			DES	DWN	REV

ISSUE: July 29, 2016
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DESIGN BY: KMS 05/16/2016
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REVIEWED BY: LDH 6/9/2016

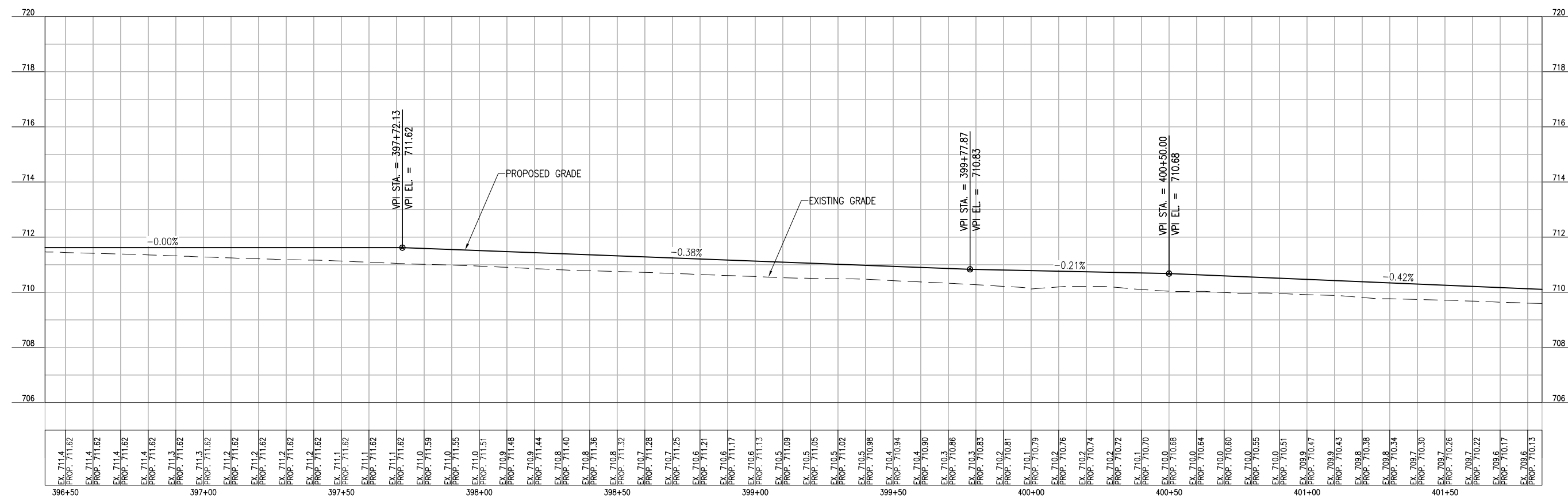
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PLAN AND PROFILE TWY B SOUTH

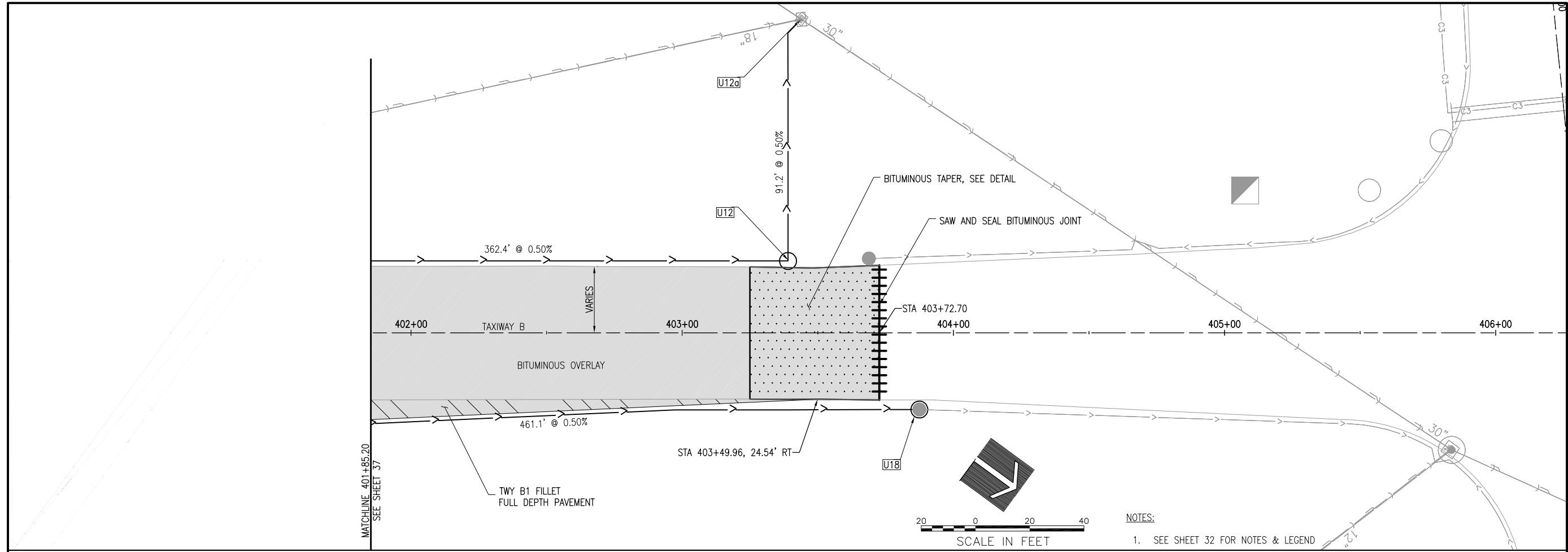


NOTES:
1. SEE SHEET 32 FOR NOTES & LEGEND



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EX 711.4	PROP: 711.62
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EX 711.4	PROP: 711.62
EX 711.3	PROP: 711.62
EX 711.3	PROP: 711.62
EX 711.2	PROP: 711.62
EX 711.2	PROP: 711.62
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EX 710.7	PROP: 711.28
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EX 710.6	PROP: 711.21
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EX 710.6	PROP: 711.13
EX 710.5	PROP: 711.09
EX 710.5	PROP: 711.05
EX 710.5	PROP: 711.02
EX 710.5	PROP: 710.98
EX 710.4	PROP: 710.94
EX 710.4	PROP: 710.90
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EX 710.3	PROP: 710.83
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EX 710.2	PROP: 710.74
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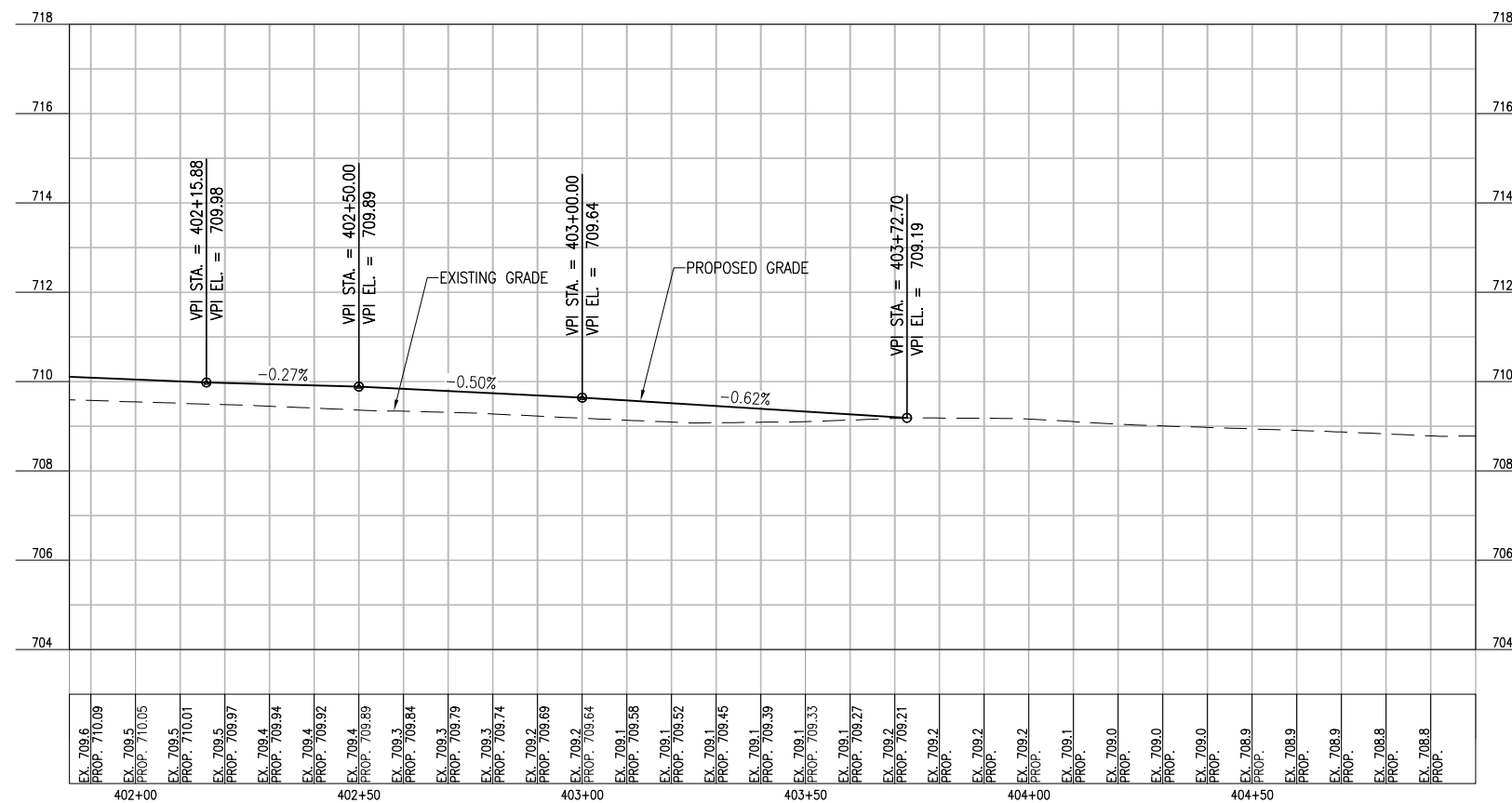
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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071



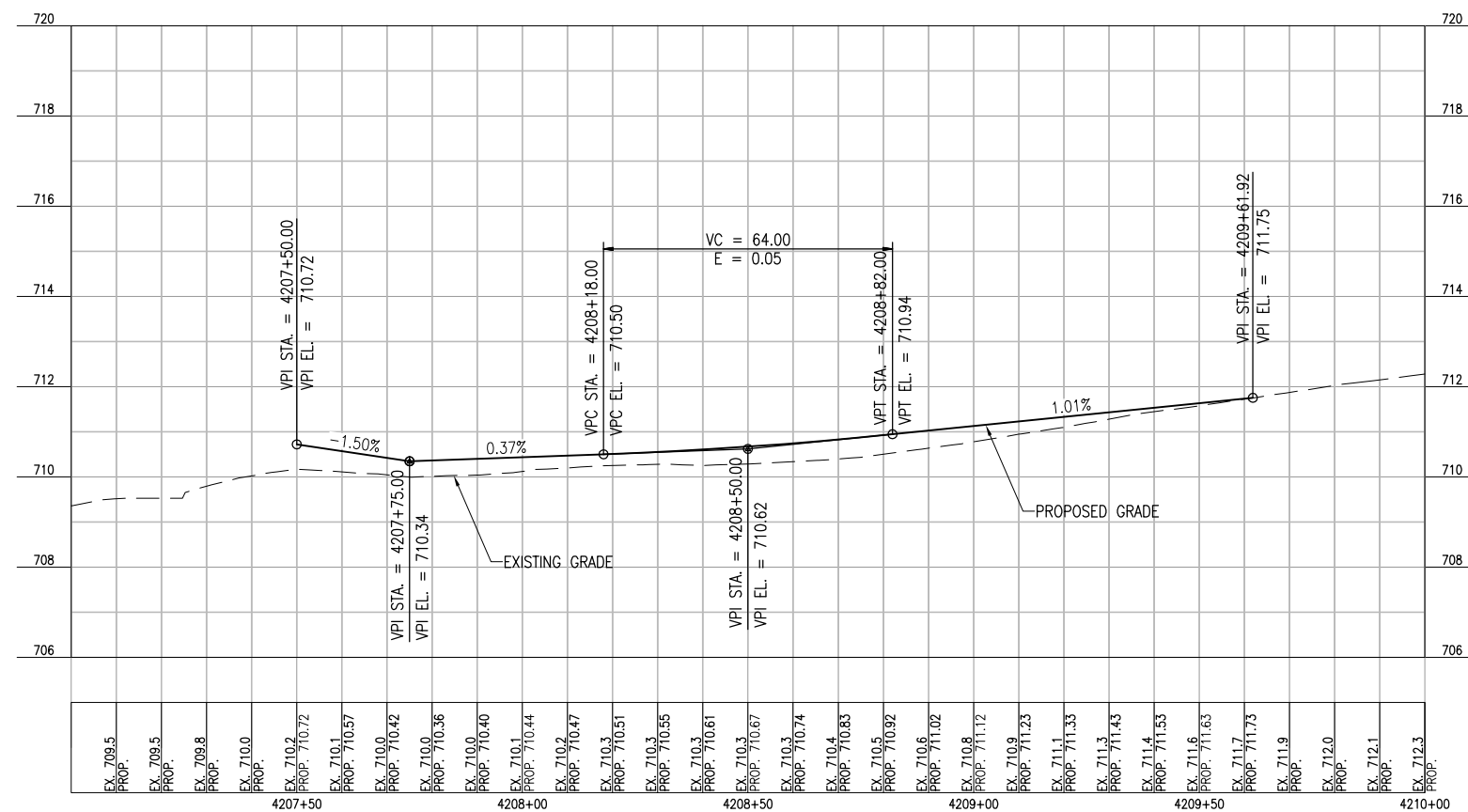
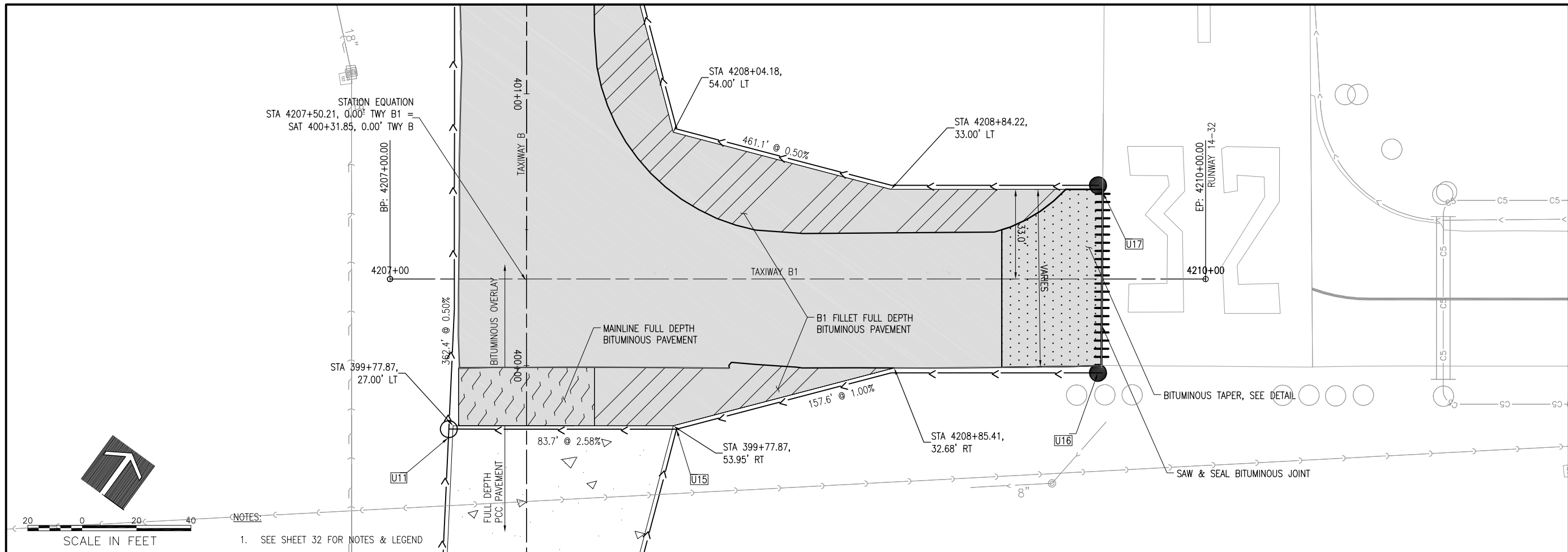
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		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 38-VFG TWY B SOUTH - (3).DWG
DESIGN BY: KMS 05/10/2016
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PLAN AND PROFILE TAXIWAY B SOUTH



REHABILITATE
PORTIONS OF
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PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

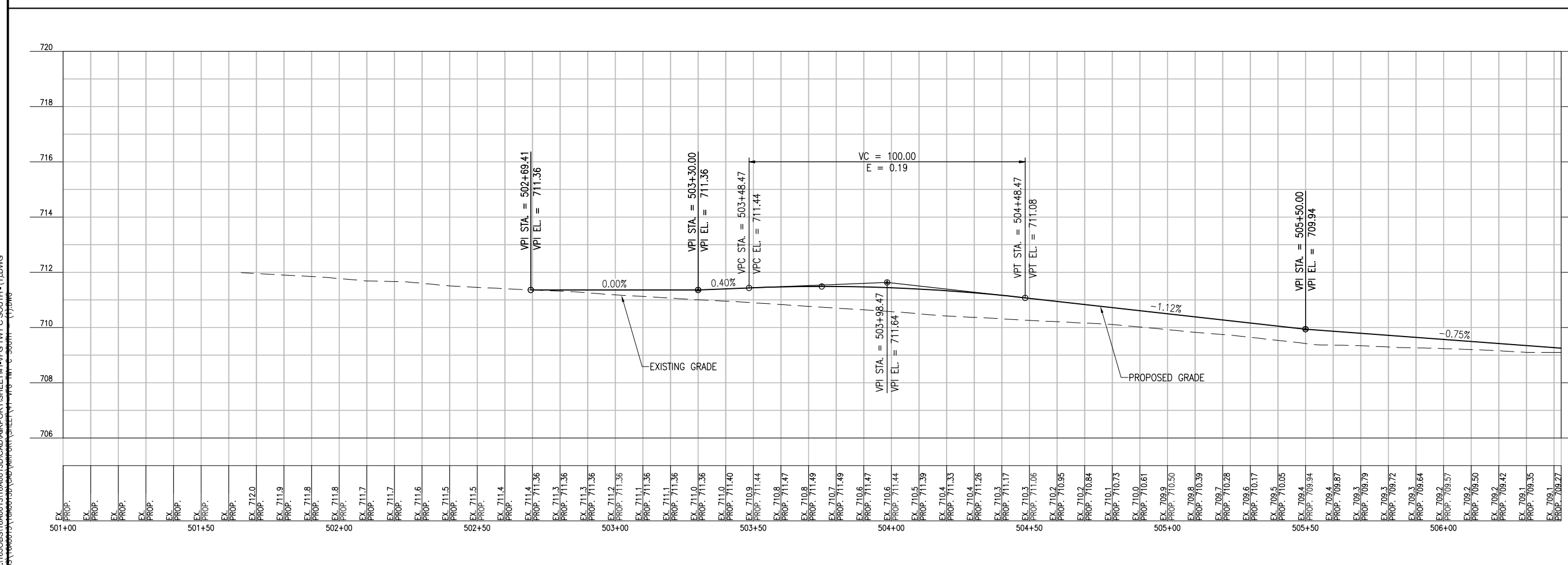
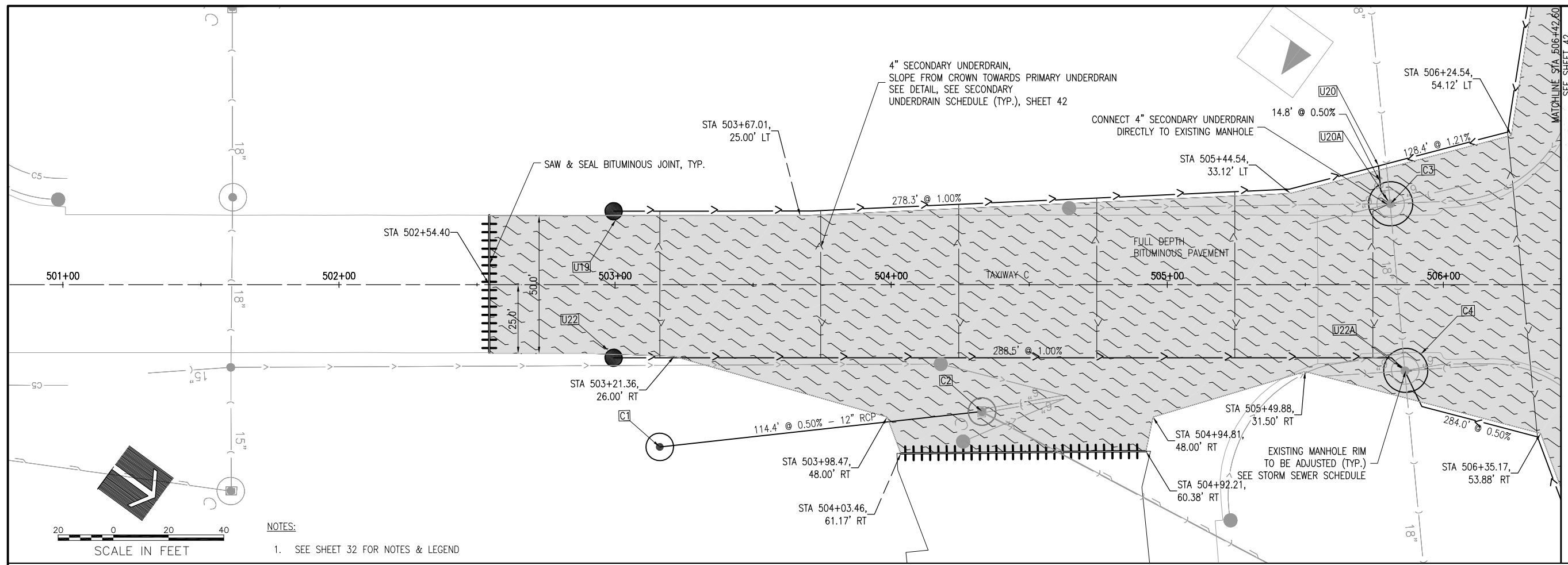
ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 40-VFG TWY B1 - (1).DWG
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PLAN AND PROFILE
TWY B1



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WAUKEGAN PORT DISTRICT
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Waukegan, Illinois 60087
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Fax: 847.244.3813



REHABILITATE
PORTIONS OF
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PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
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ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 41-VFG TWY C SOUTH - (1).DWG
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PLAN AND PROFILE
TWY C SOUTH

JUN 21, 2016 2:07 PM BIELA01690
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Waukegan, Illinois 60087
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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

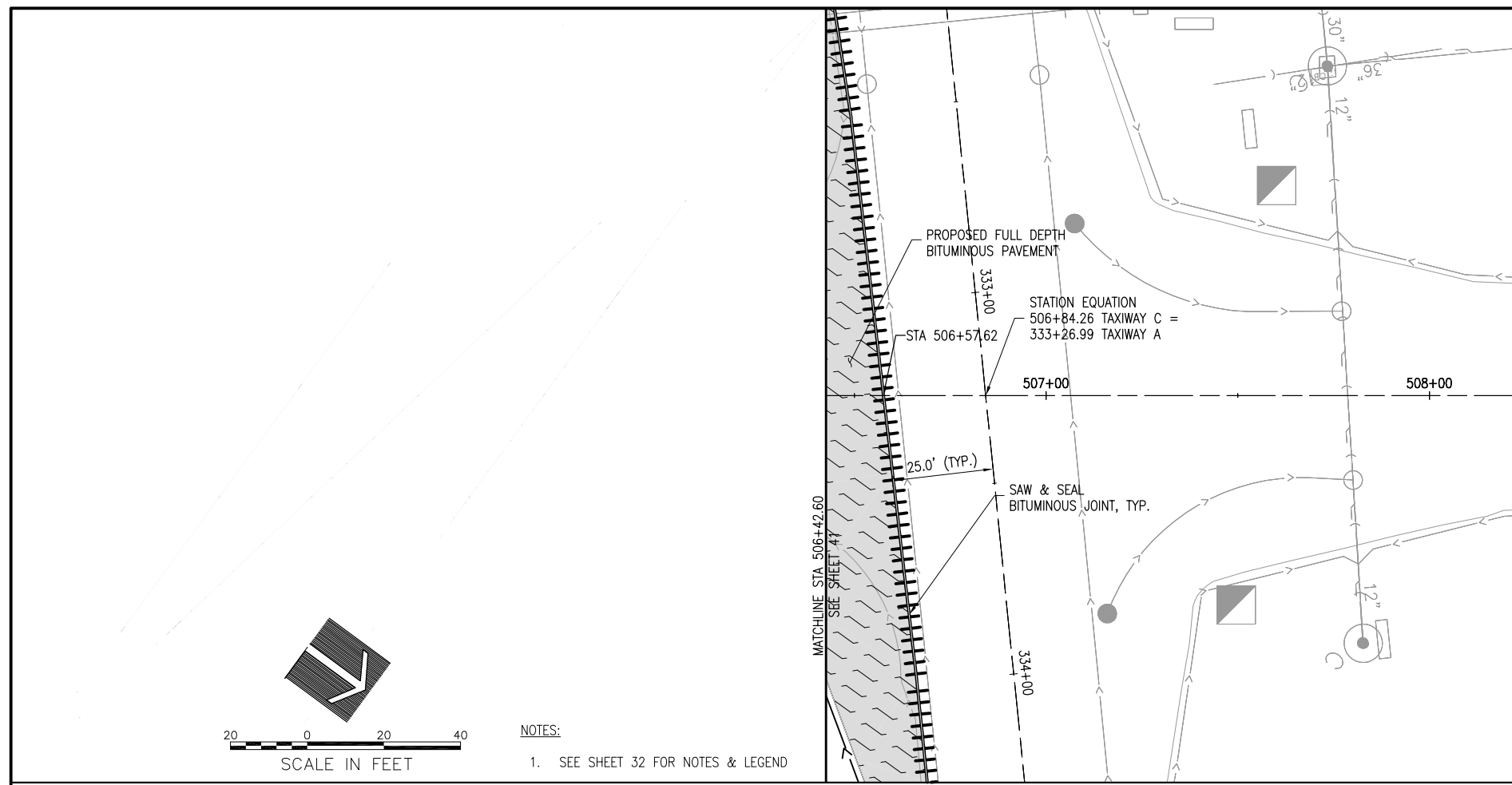
Contract No: WA071

NO.	DATE	DESCRIPTION		
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	July 29, 2016			

ISSUE: July 29, 2016
PROJECT NO: 16A0013
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REVIEWED BY: LDH 6/9/2016

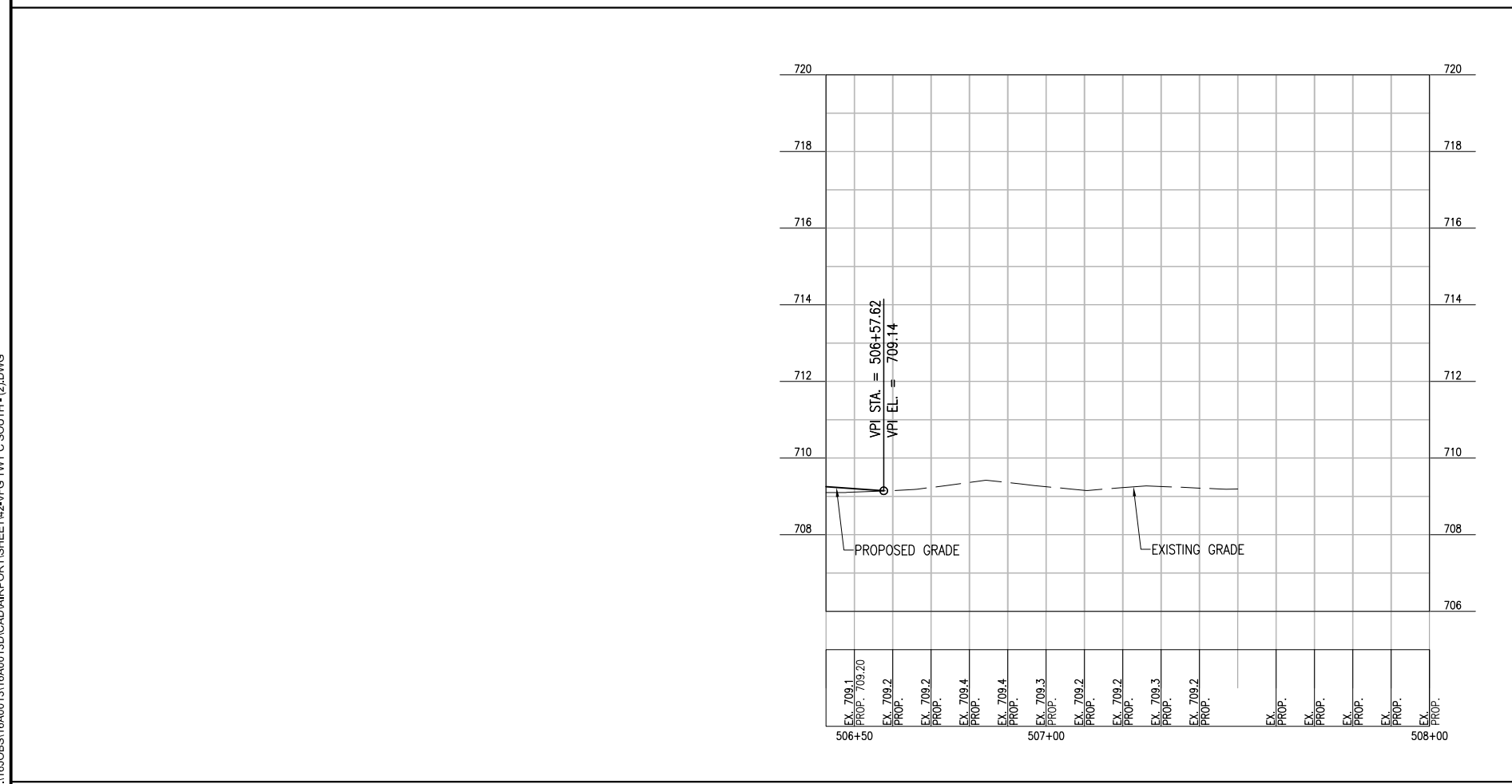
SHEET TITLE

PLAN AND PROFILE TAXIWAY C SOUTH



4" SECONDARY UNDERDRAIN SCHEDULE

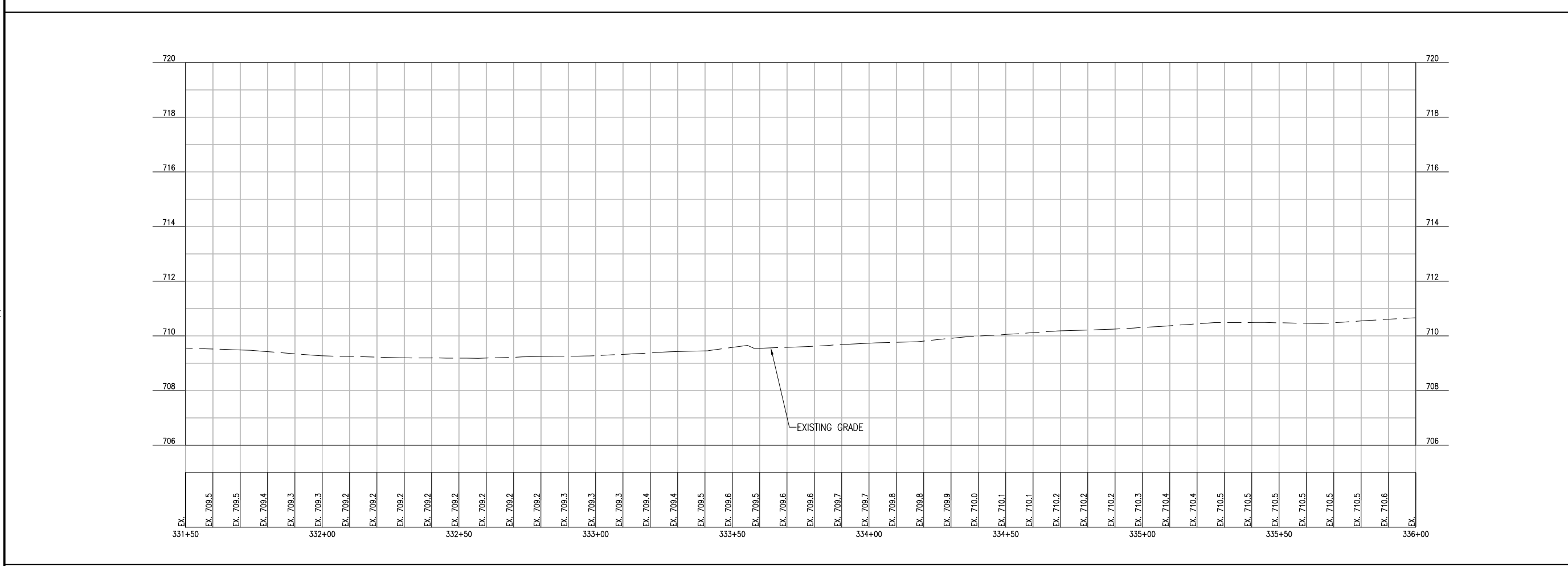
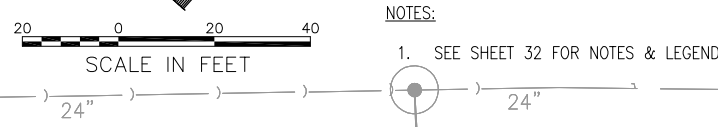
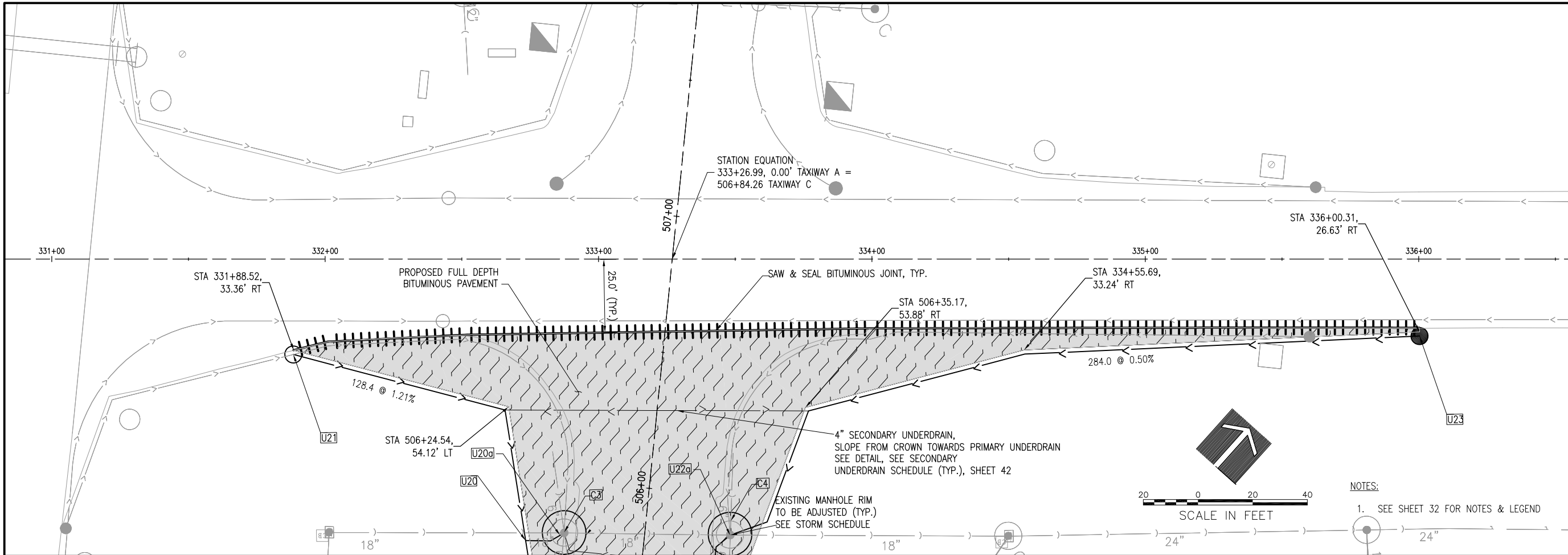
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503+16.16	26.50 RT		708.61	
503+74.43	26.84 LT		708.03	26.8
503+74.43	0.00 RT	709.49		26.5
503+74.43	26.50 RT		708.03	
504+24.43	29.13 LT		707.53	29.1
504+24.43	0.00 RT	709.30		26.5
504+24.43	26.50 RT		707.53	
504+74.43	31.41 LT		707.03	31.4
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504+74.43	26.50 RT		707.03	
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505+24.43	0.00 RT	708.24		26.5
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505+80.85	29.35 LT		706.00	33.4
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505+74.43	26.50 RT		706.03	
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WAUKEGAN PORT DISTRICT
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REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 43-VFG TWY A - (1).DWG
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PLAN AND PROFILE
TAXIWAY A

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Waukegan, Illinois 60087
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REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016

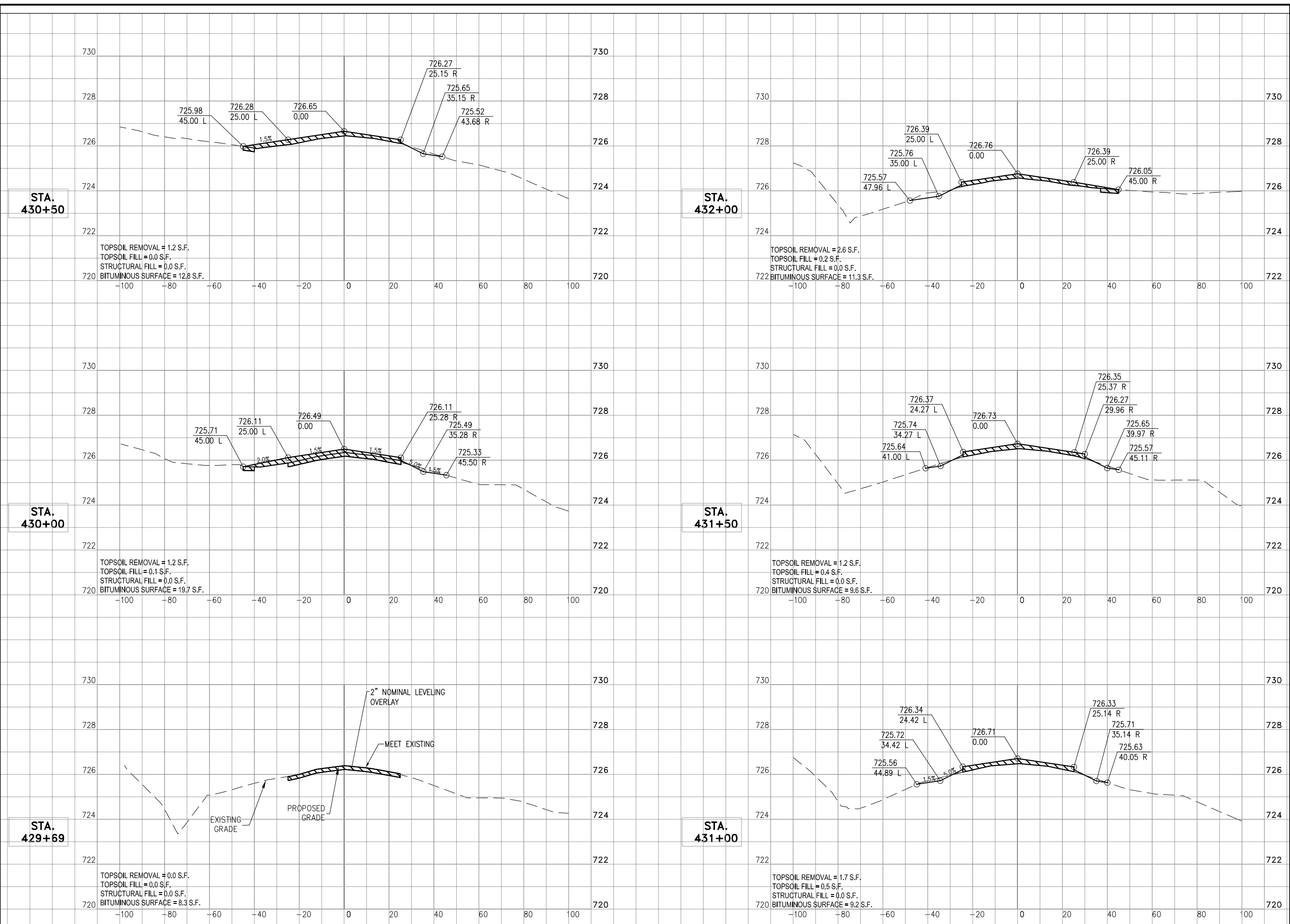
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TAXIWAY B NORTH

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Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

REHABILITATE
PORTIONS OF
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PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
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ISSUE: July 29, 2016

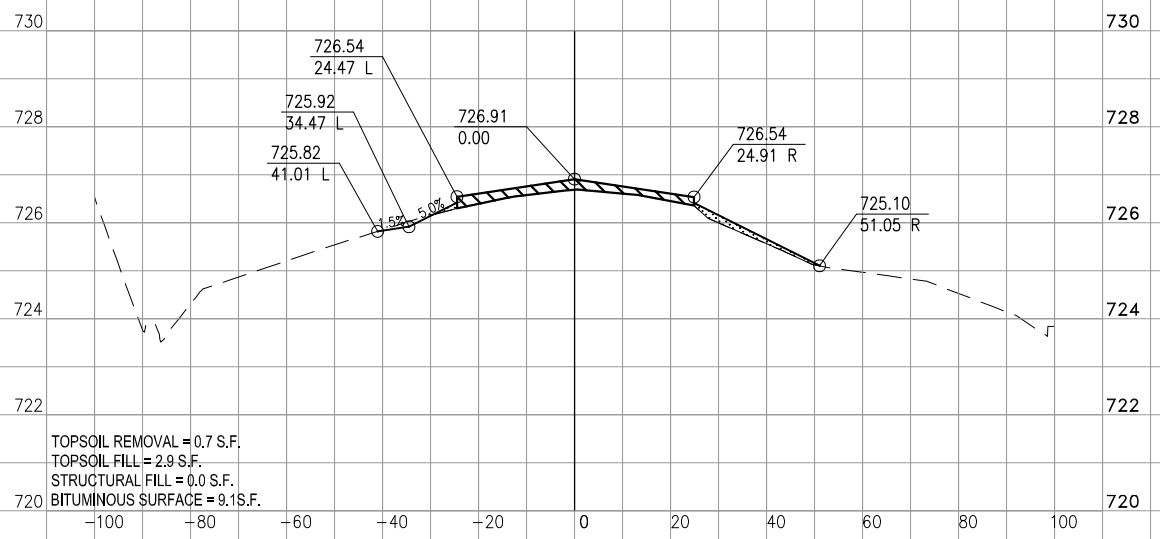
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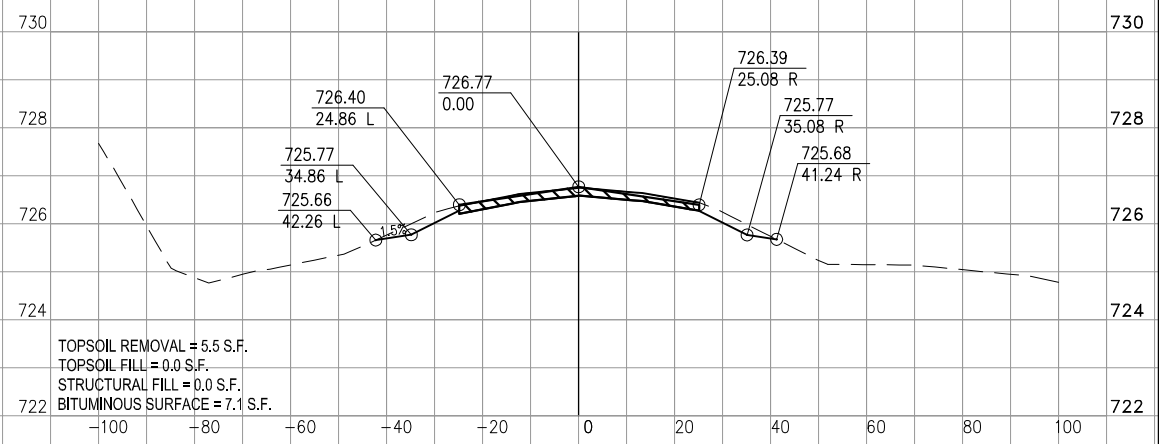
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TAXIWAY B NORTH

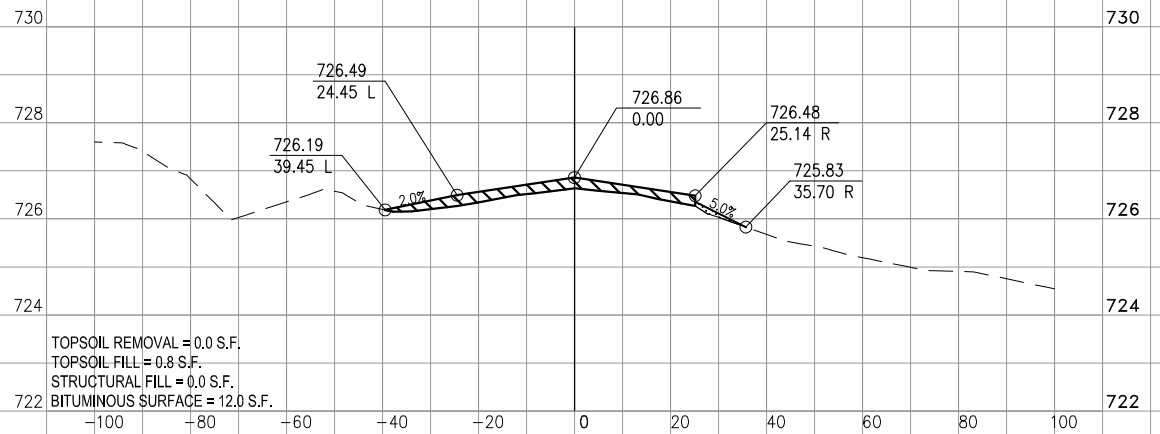
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433+50



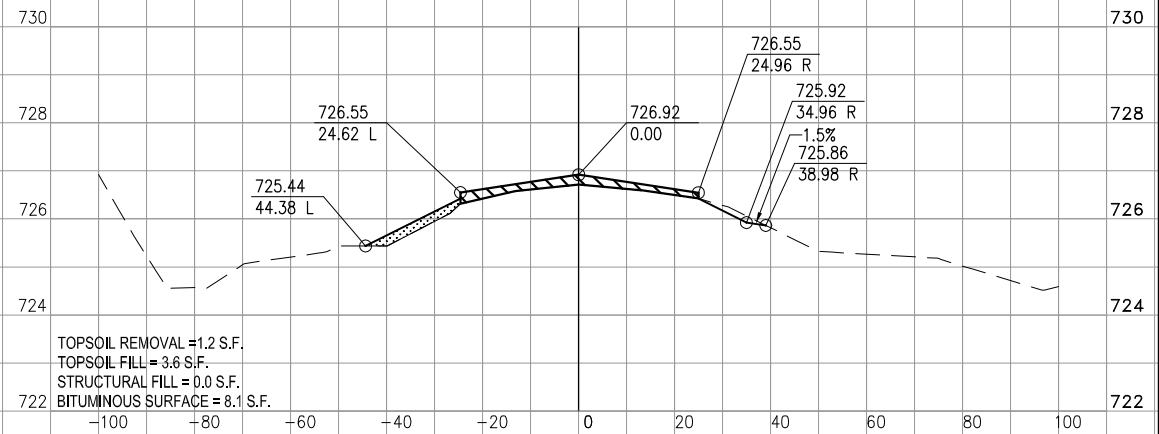
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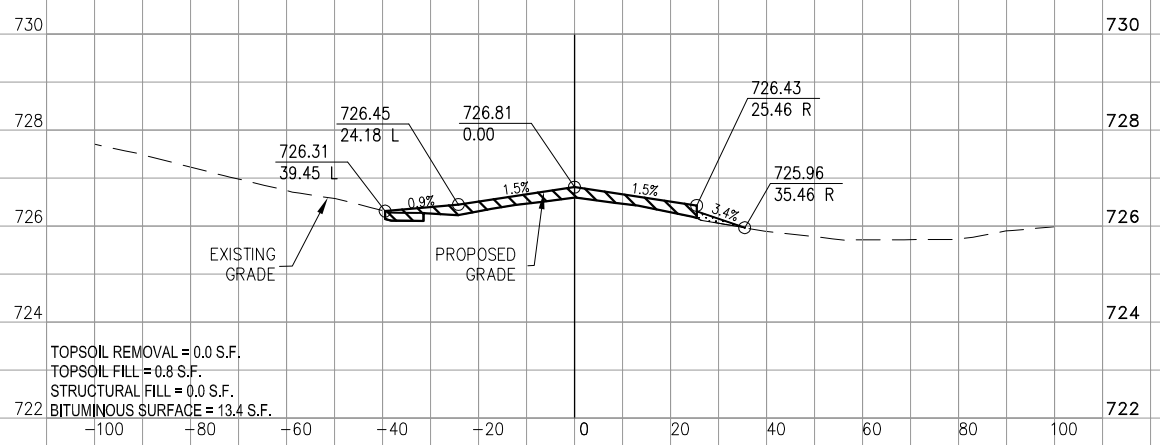
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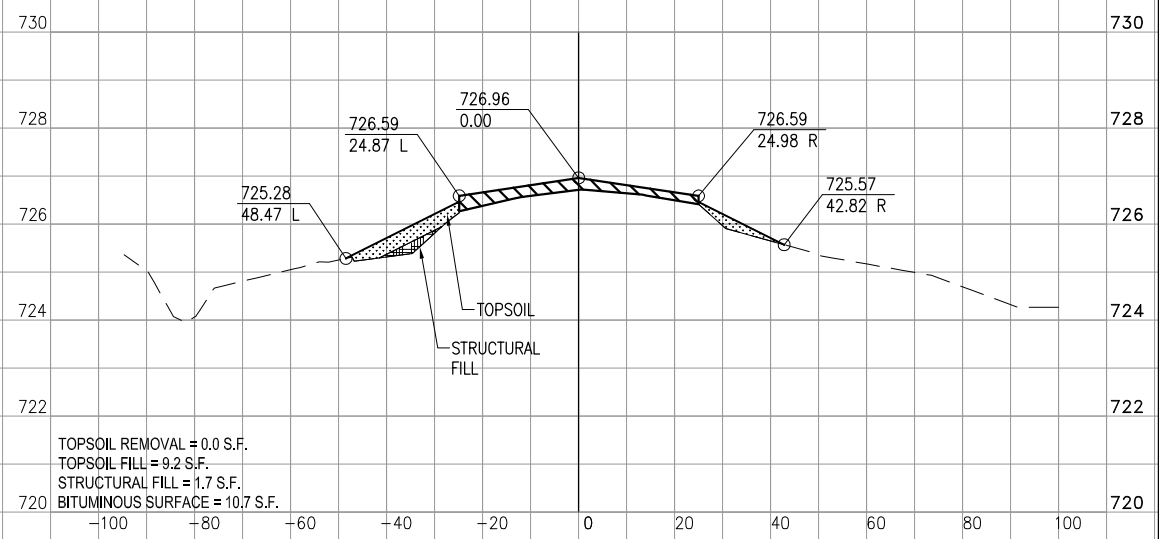
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434+50



STA.
432+50



STA.
434+00



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REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
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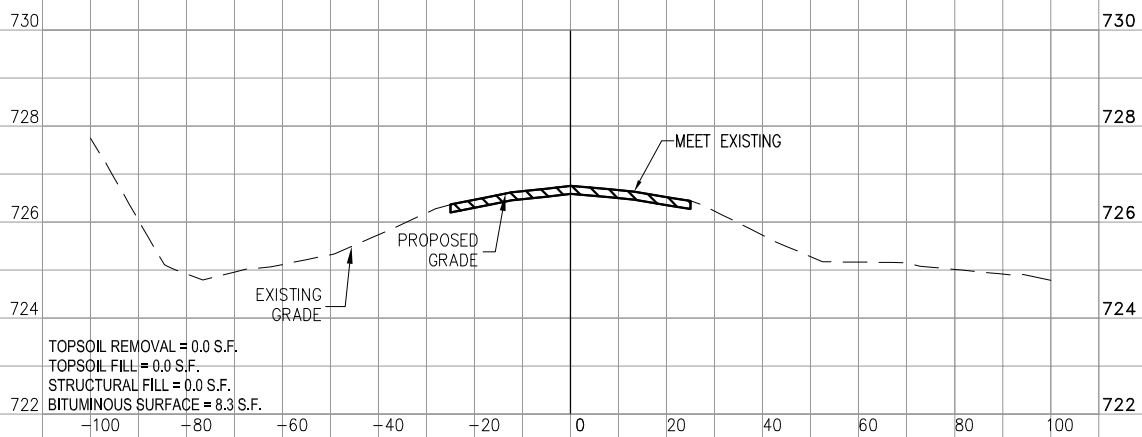
ISSUE: July 29, 2016

PROJECT NO: 16A0013
CAD FILE: 46-CROSS SECTIONS TWY B NORTH 3.DWG
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TAXIWAY B NORTH





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Telephone: 847.244.0055
Fax: 847.244.3813

REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

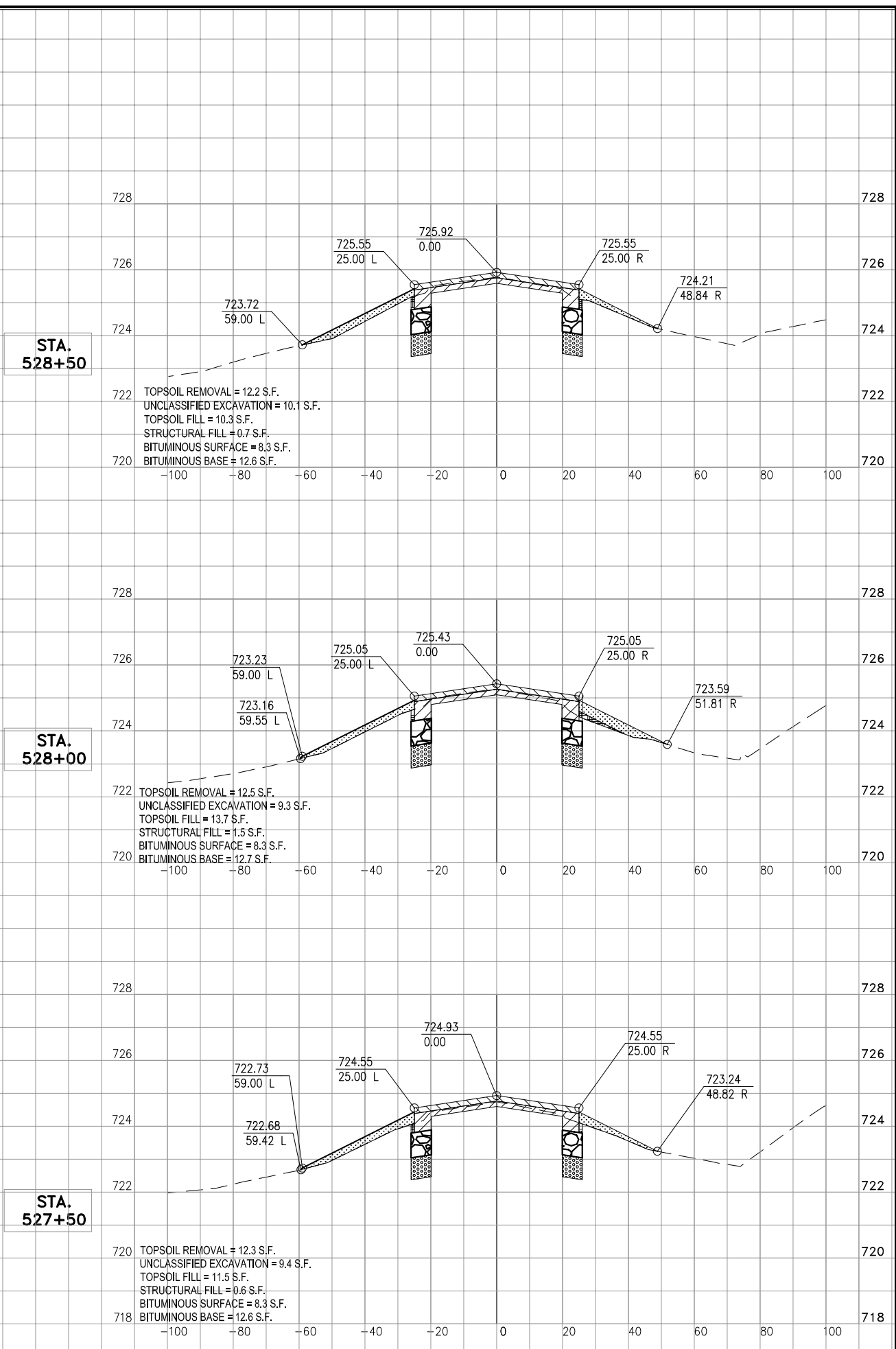
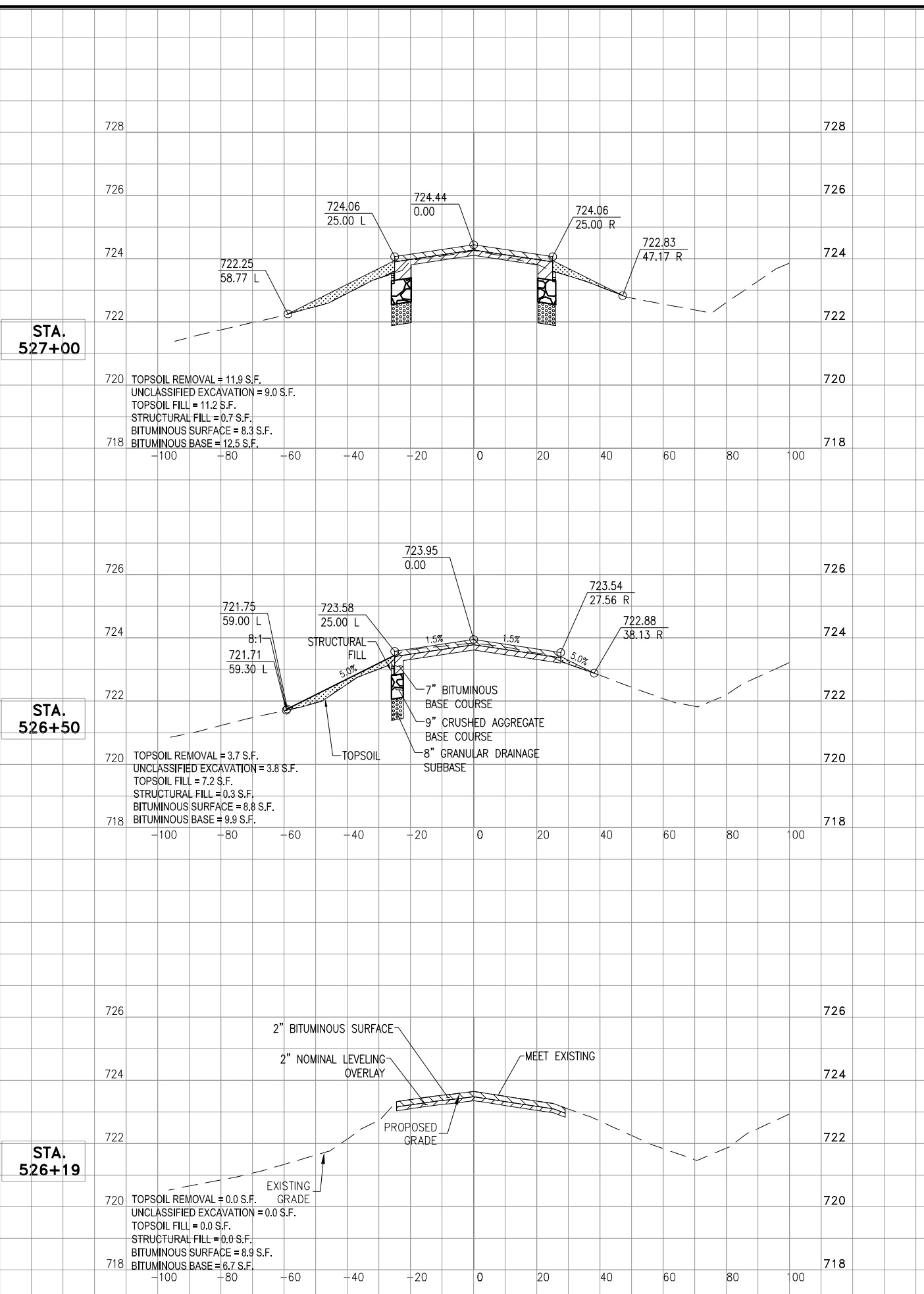
IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
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ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 47-CROSS SECTIONS TWY C NORTH
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CROSS SECTIONS
TAXIWAY C NORTH



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WAUKEGAN PORT DISTRICT
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Waukegan, Illinois 60087
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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
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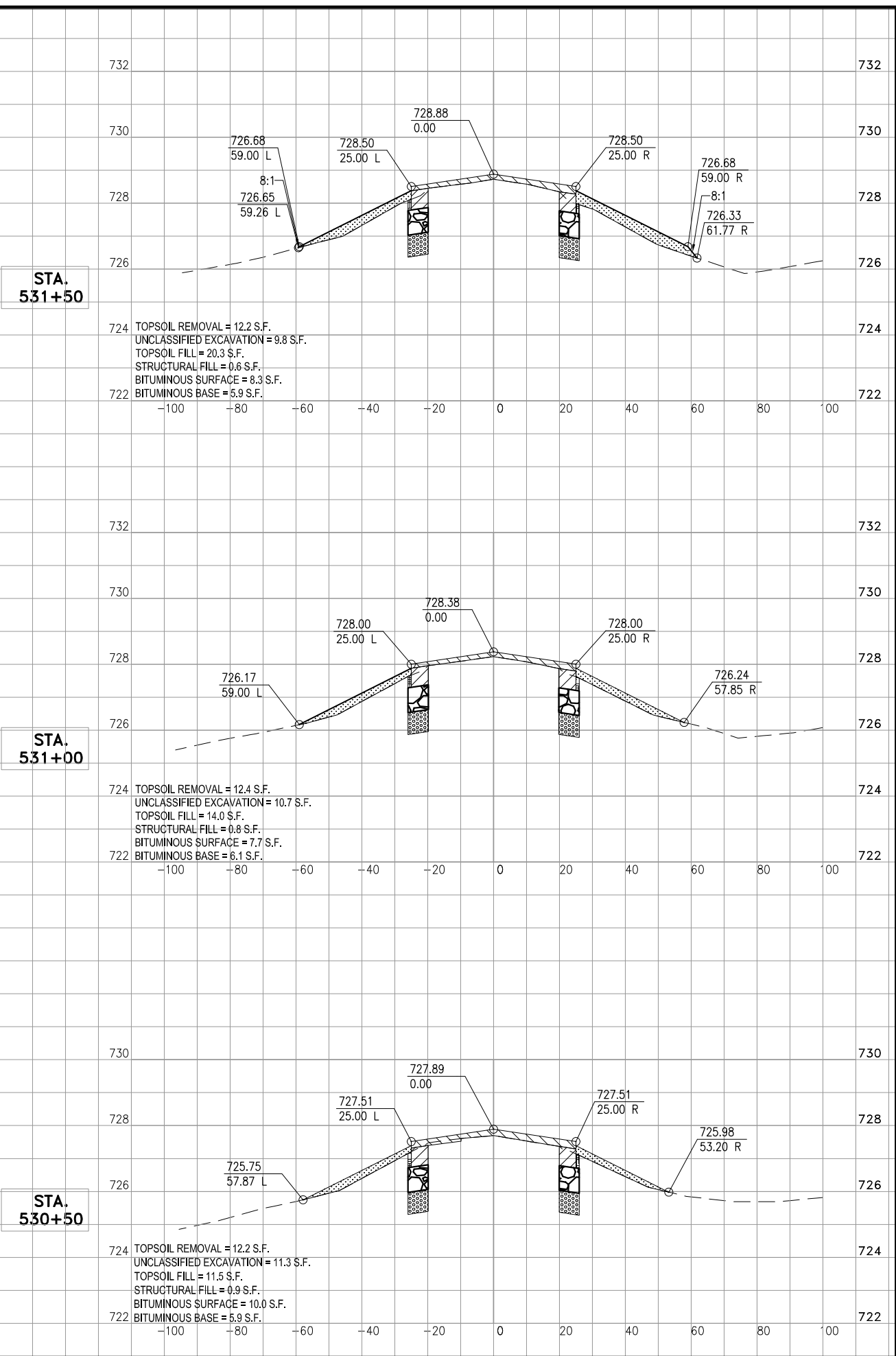
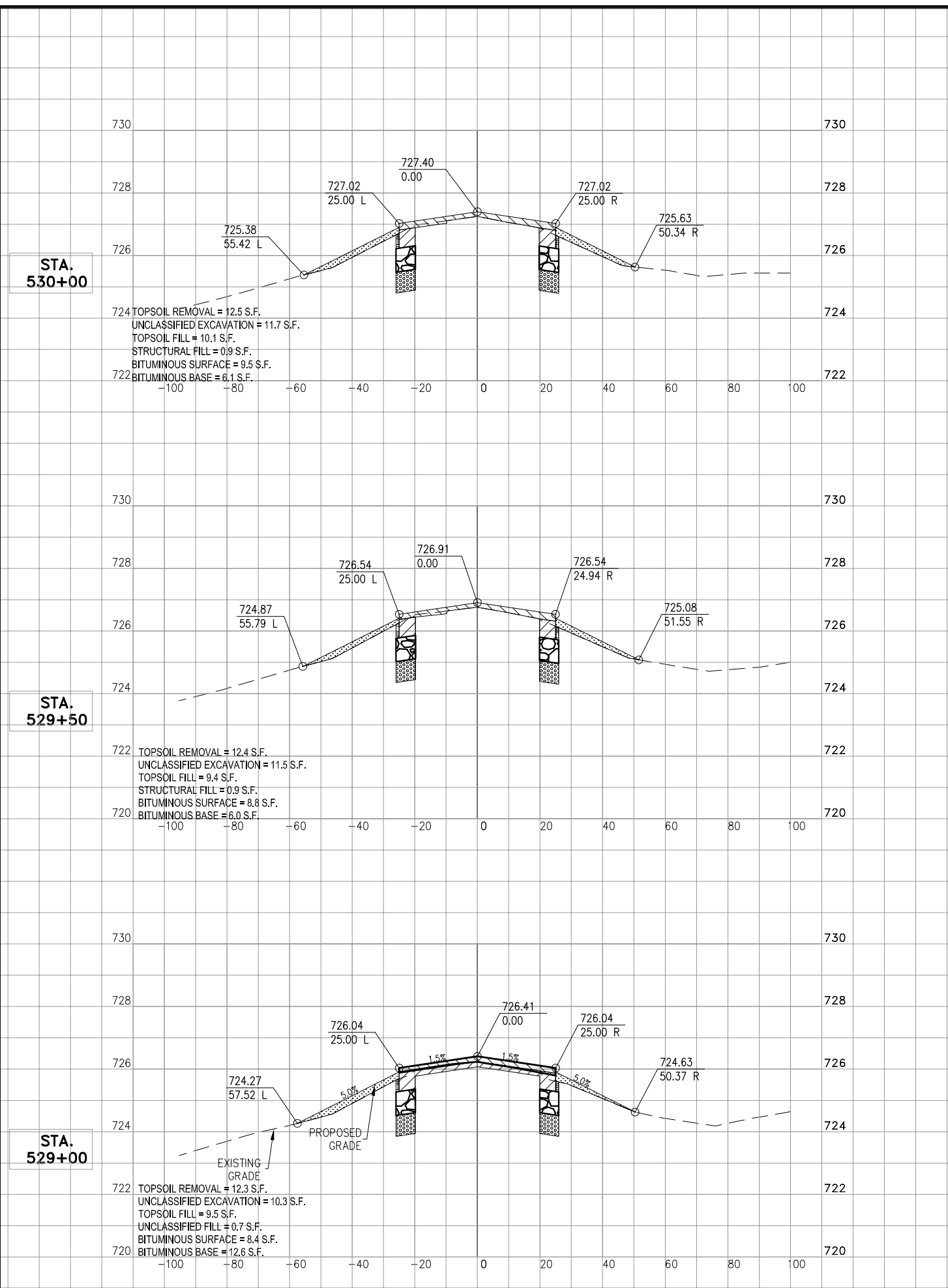
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CROSS SECTIONS TAXIWAY C NORTH

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PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

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		DES	DWN	REV

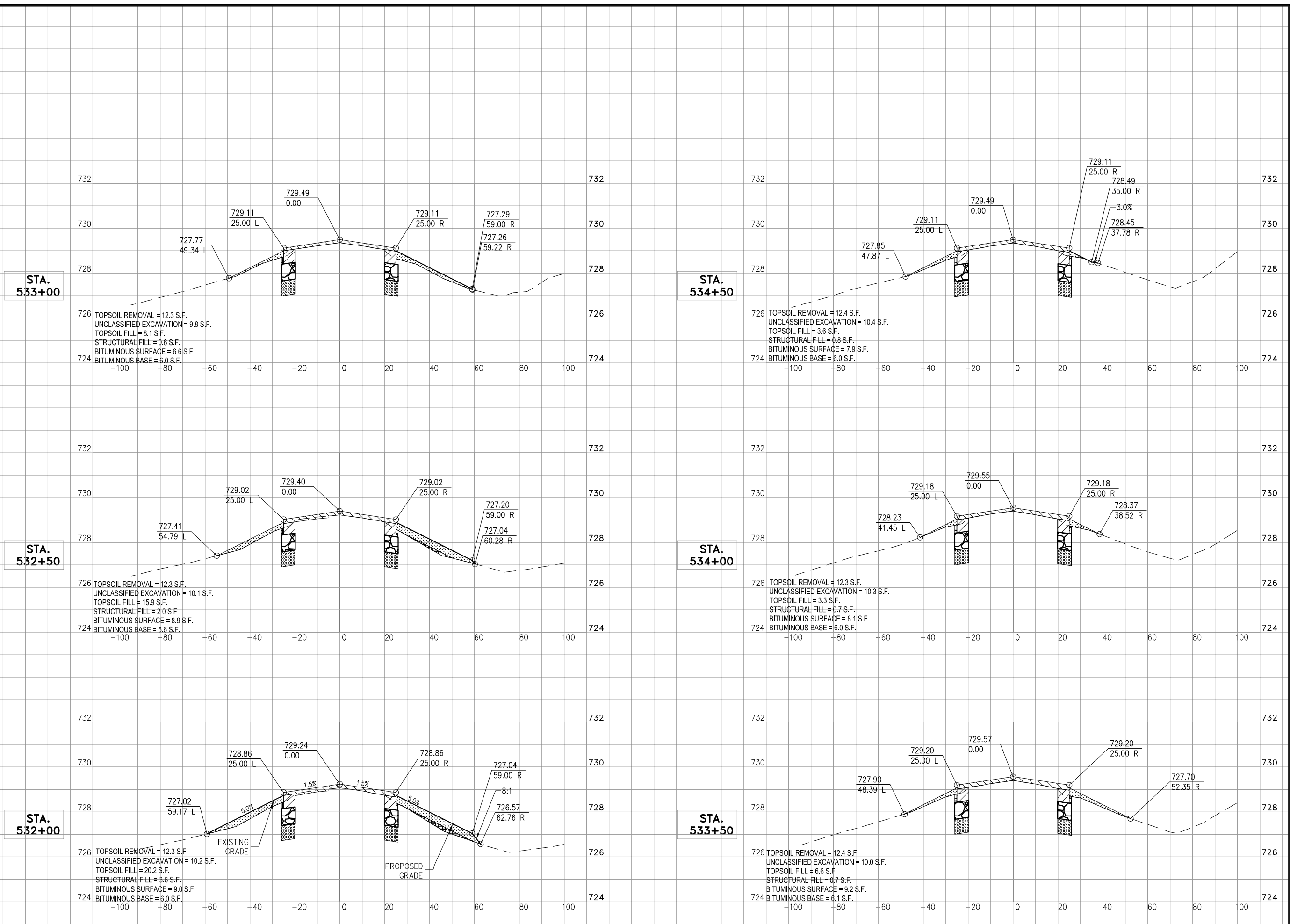
ISSUE: July 29, 2016

PROJECT NO: 16A0013
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SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
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PROJECT NO: 16A0013
CAD FILE: 50-CROSS SECTIONS TWY C NORTH
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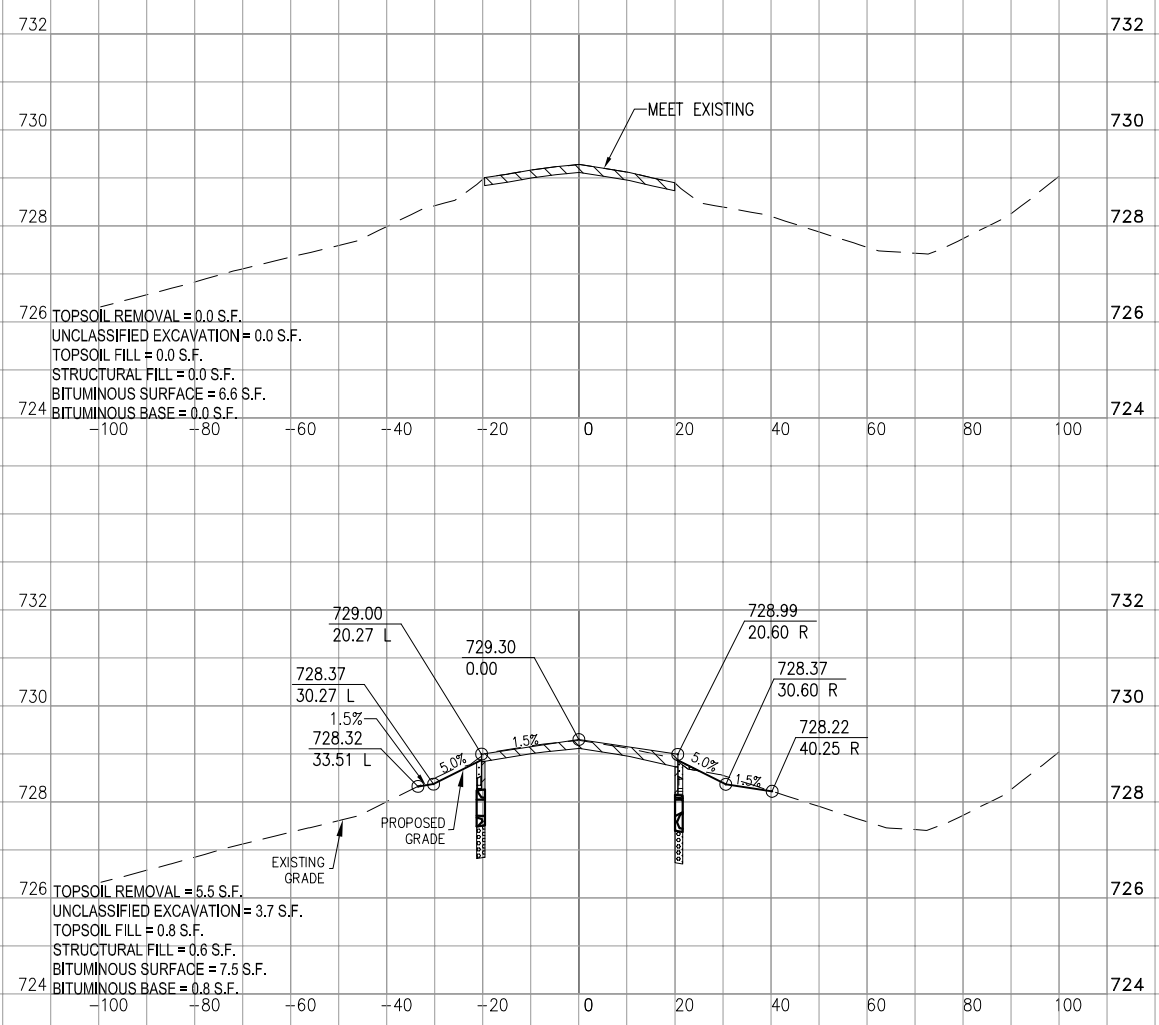
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CROSS SECTIONS
TAXIWAY C NORTH

STA.
535+06

STA.
535+00





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WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGp-TBD

Contract No: WA071

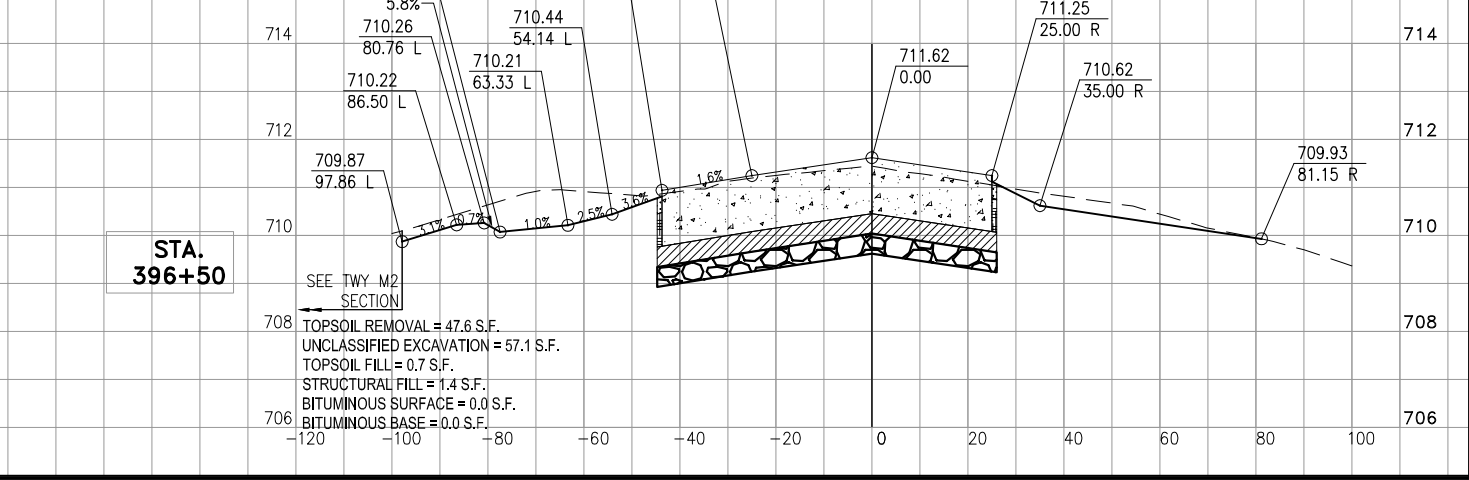
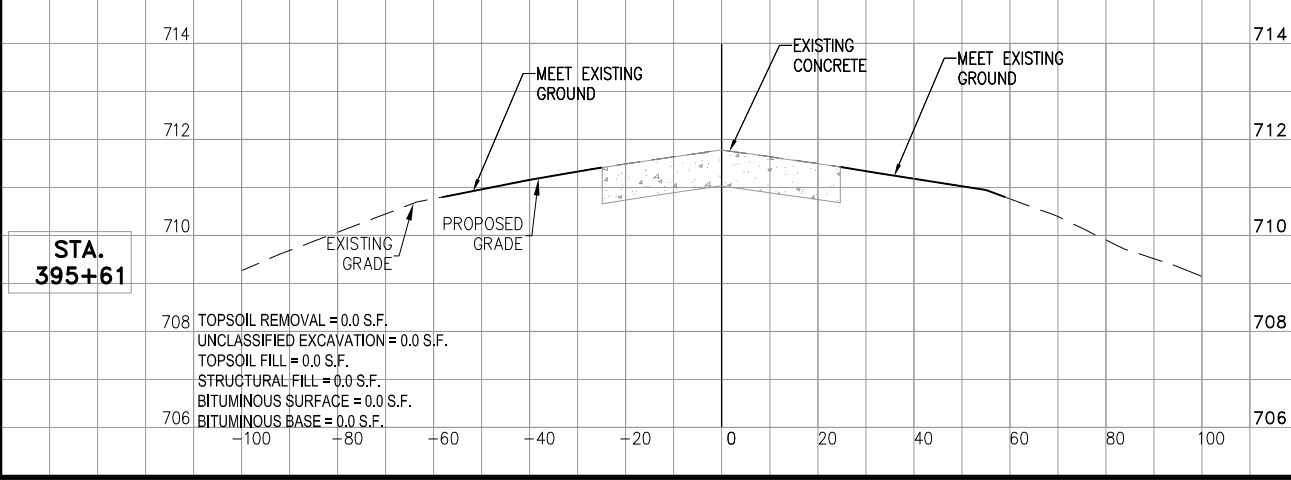
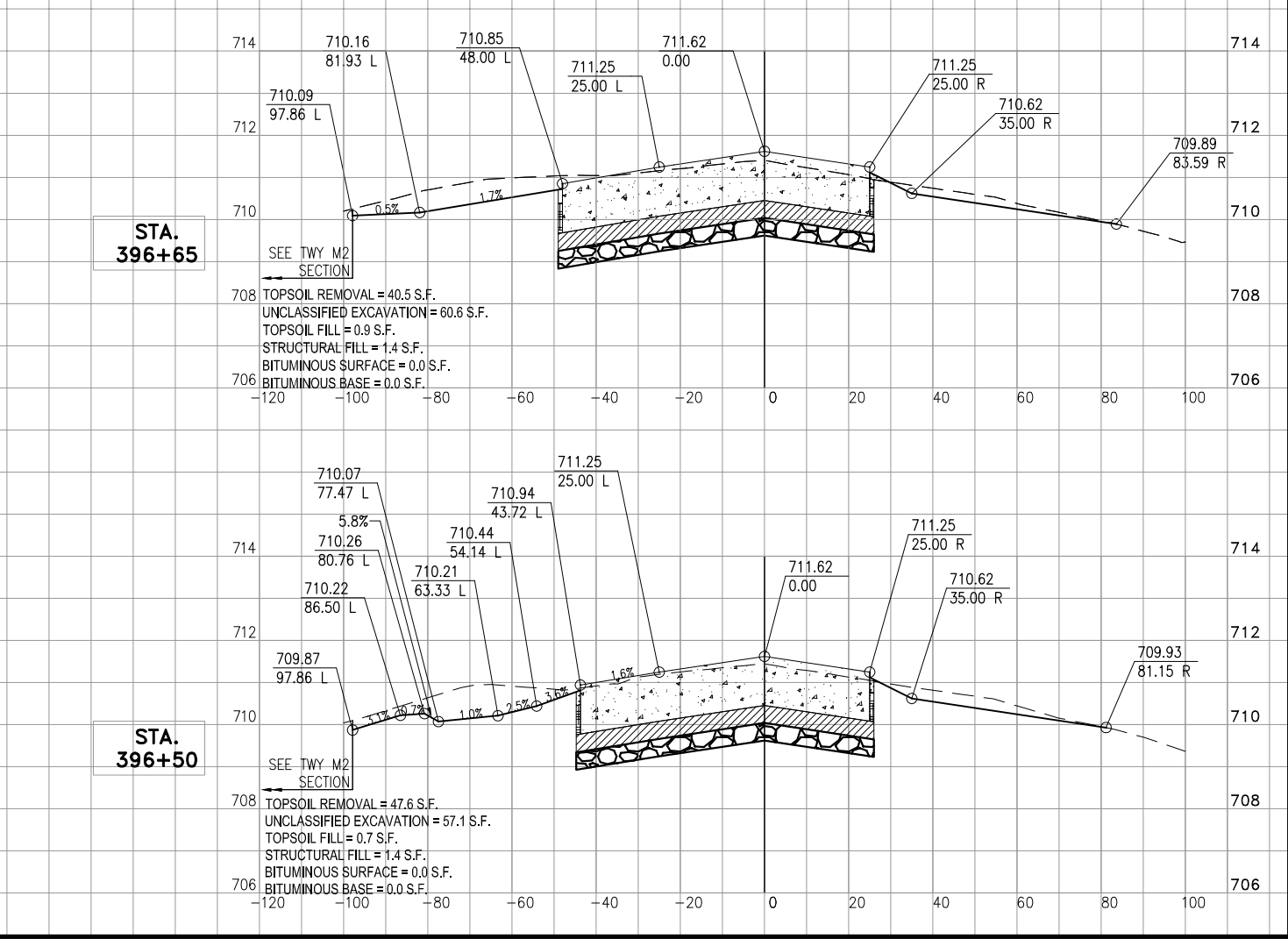
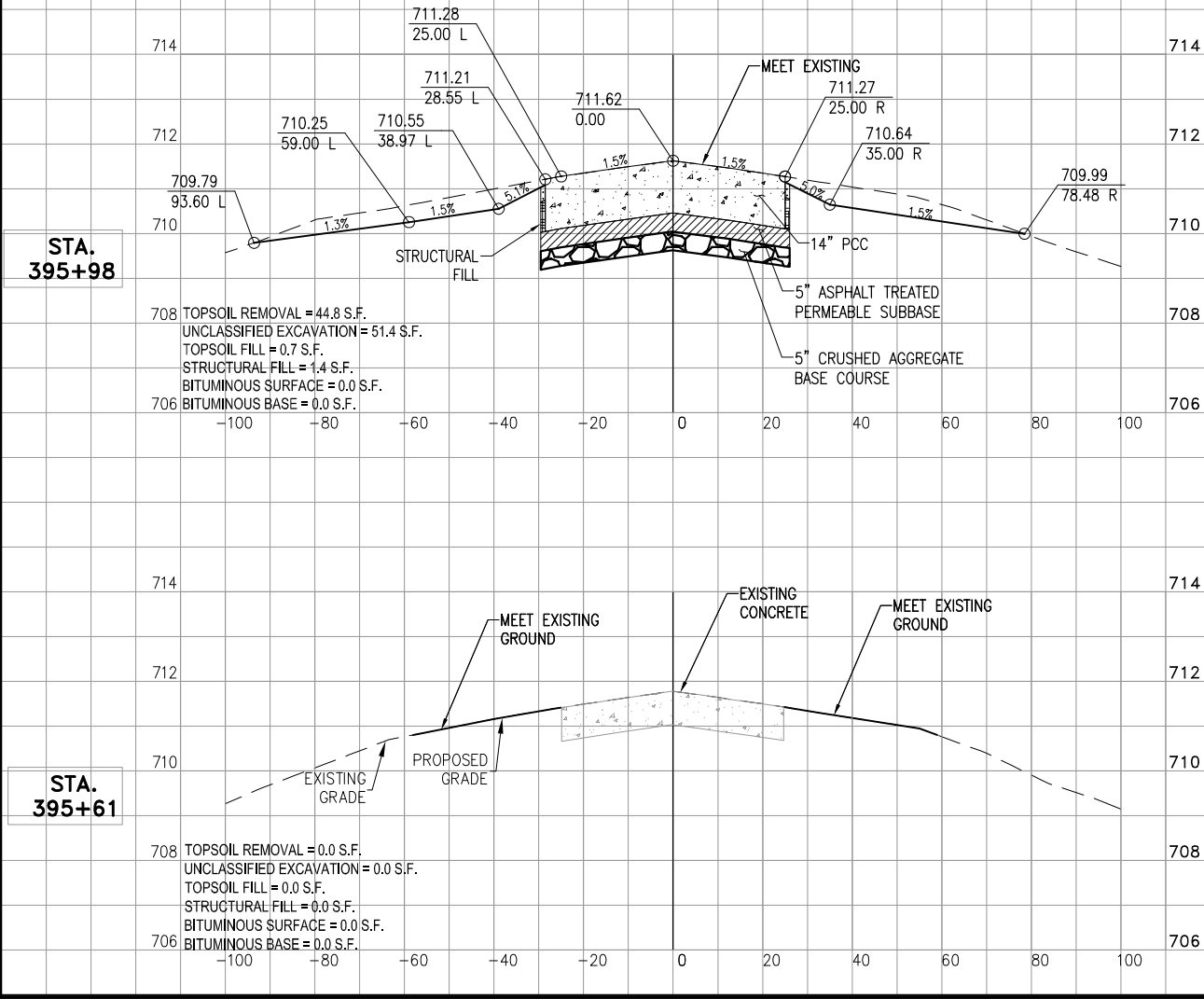
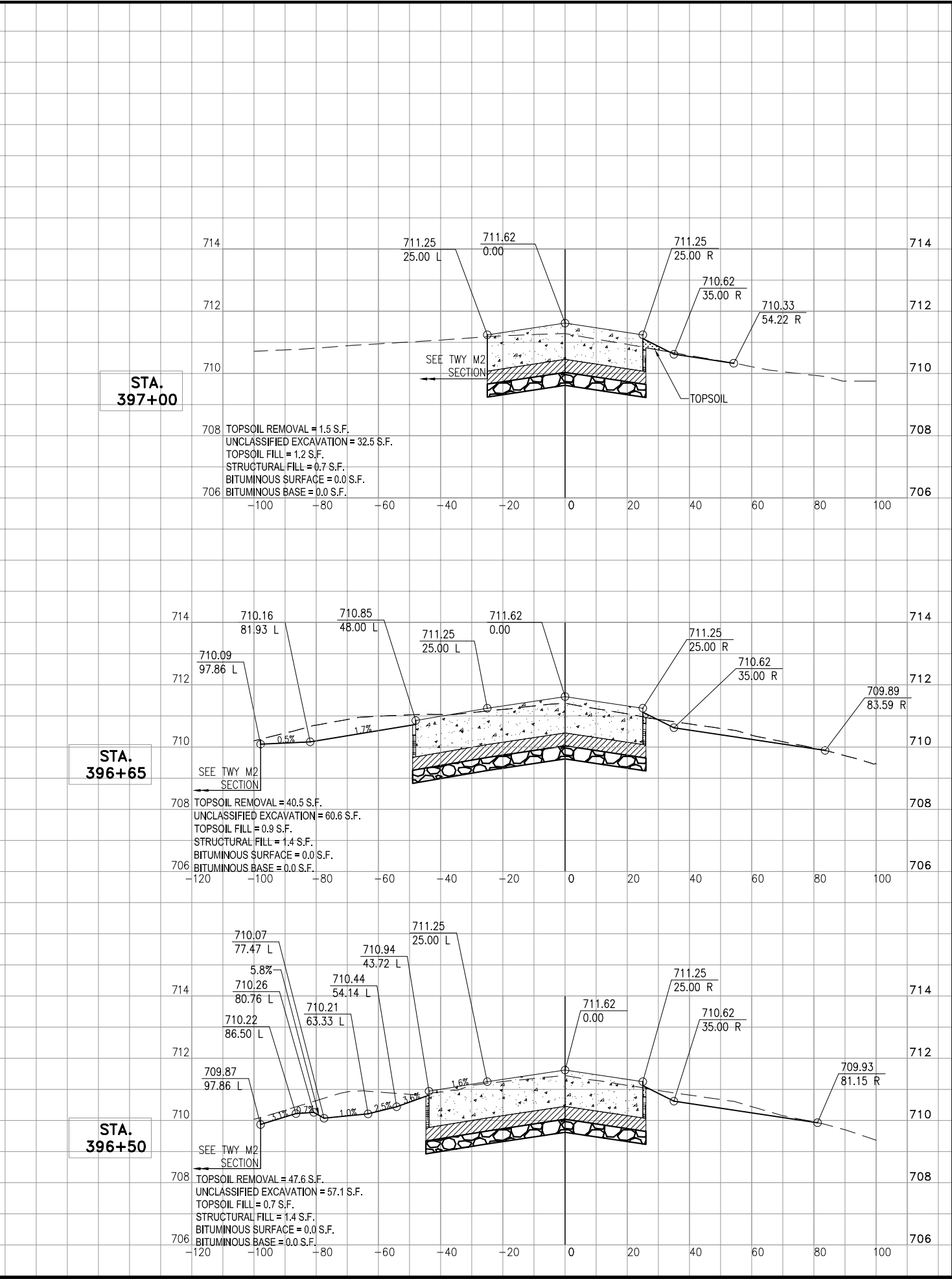
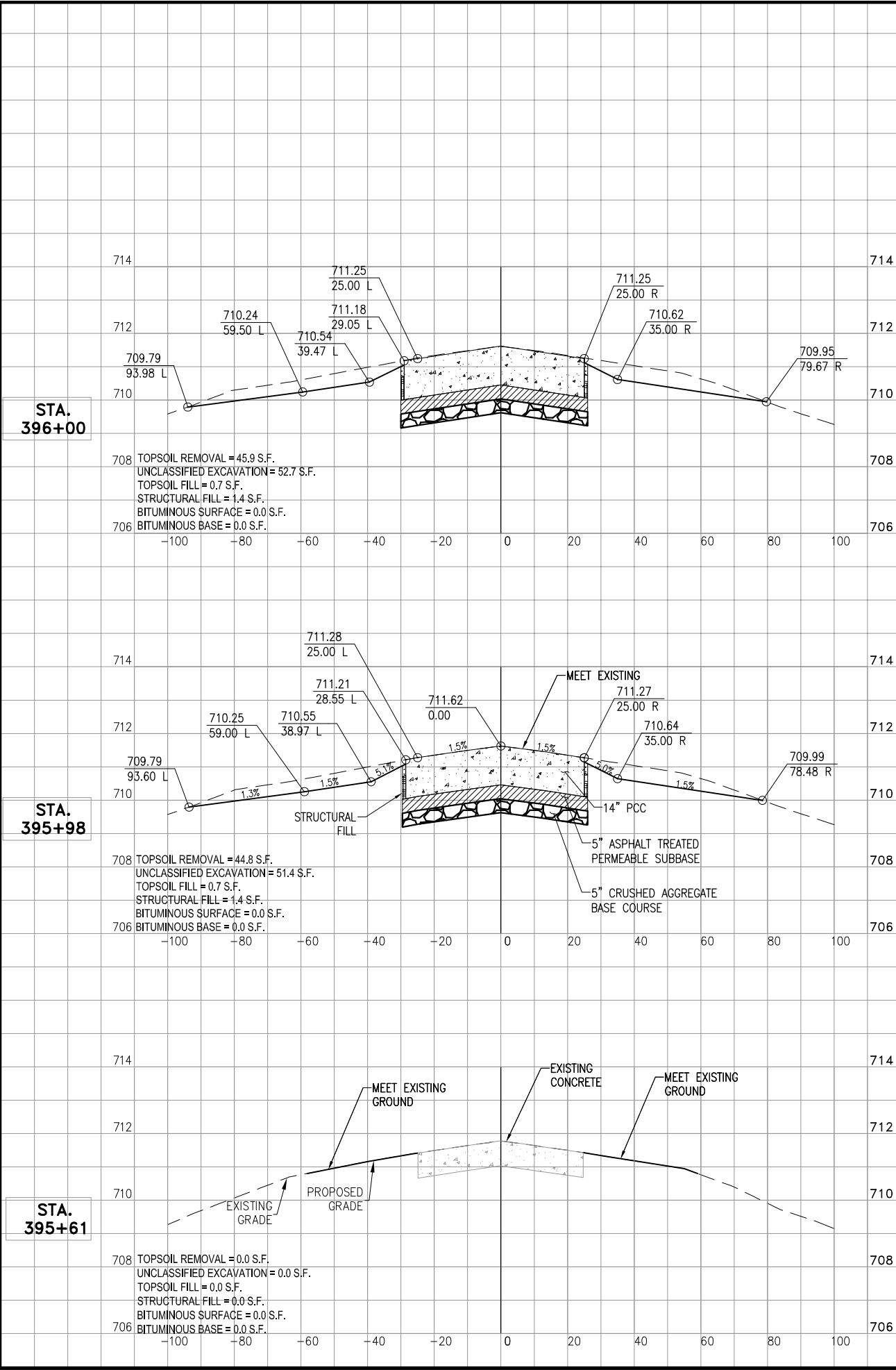
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ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 51-CROSS SECTIONS TWY B SOL
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SHEET TITLE

CROSS SECTIONS TAXIWAY B SOUTH

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E:\16\JOBS\16A0013\16A0013\CAD\AIRPORT\SHEET\51-CROSS SECTIONS TWY B SOUTH.1.DWG





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Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

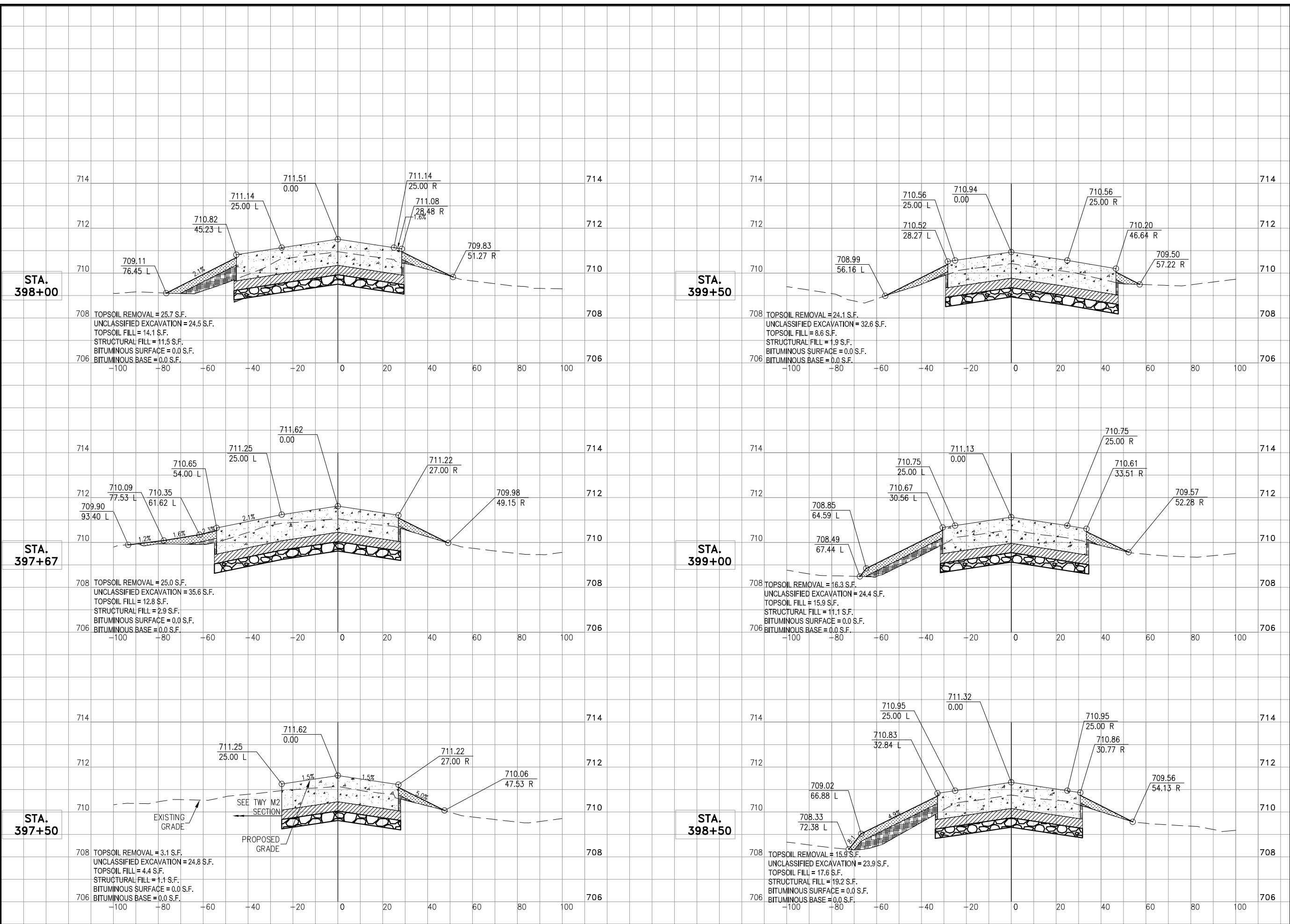
ISSUE: July 29, 2016

PROJECT NO: 16A0013
CAD FILE: 52-CROSS SECTIONS TWY B SOL
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CROSS SECTIONS
TAXIWAY B SOUTH



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REHABILITATE
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PHASE 2

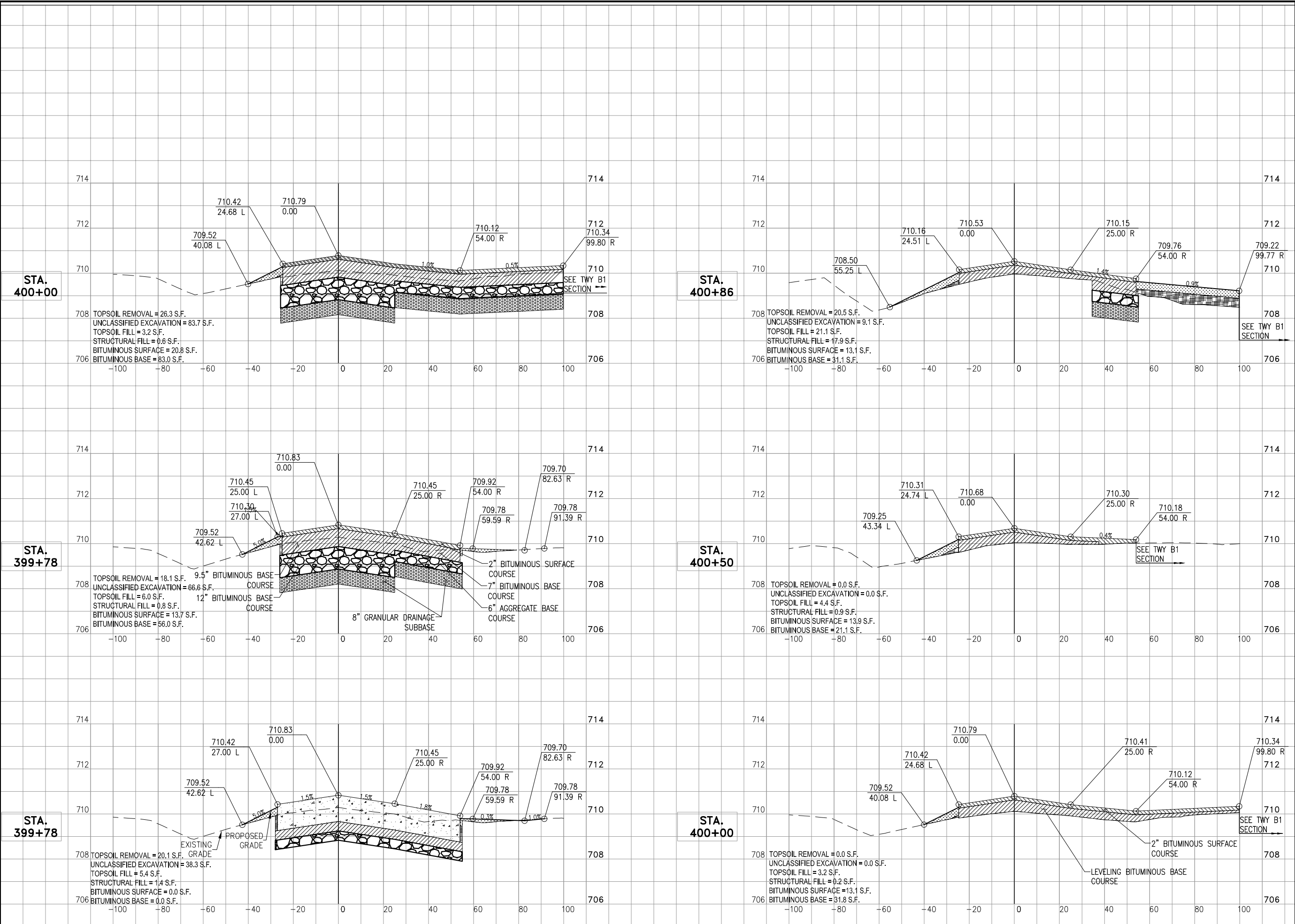
IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

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PROJECT NO: 16A0013
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CROSS SECTIONS
TAXIWAY B SOUTH



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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

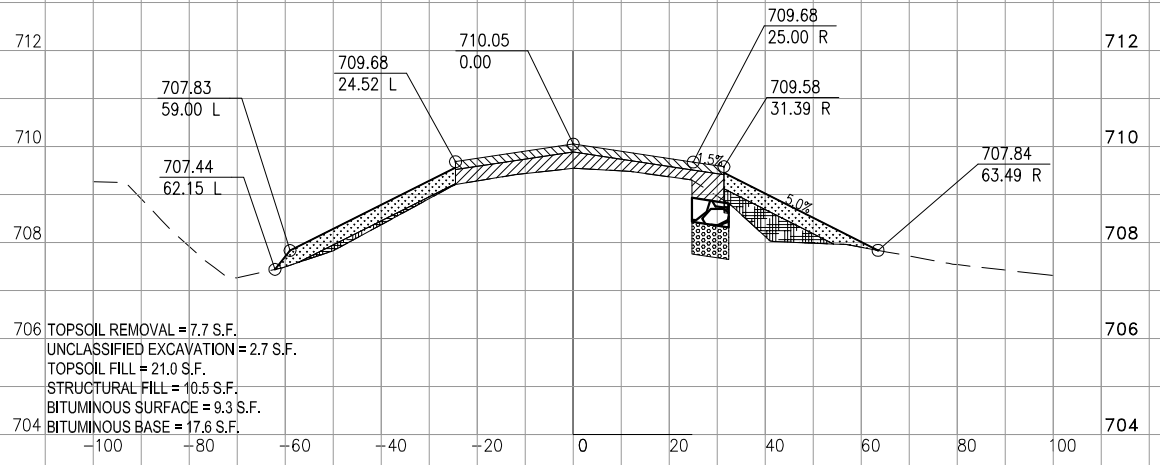
ISSUE: July 29, 2016
PROJECT NO: 16A0013
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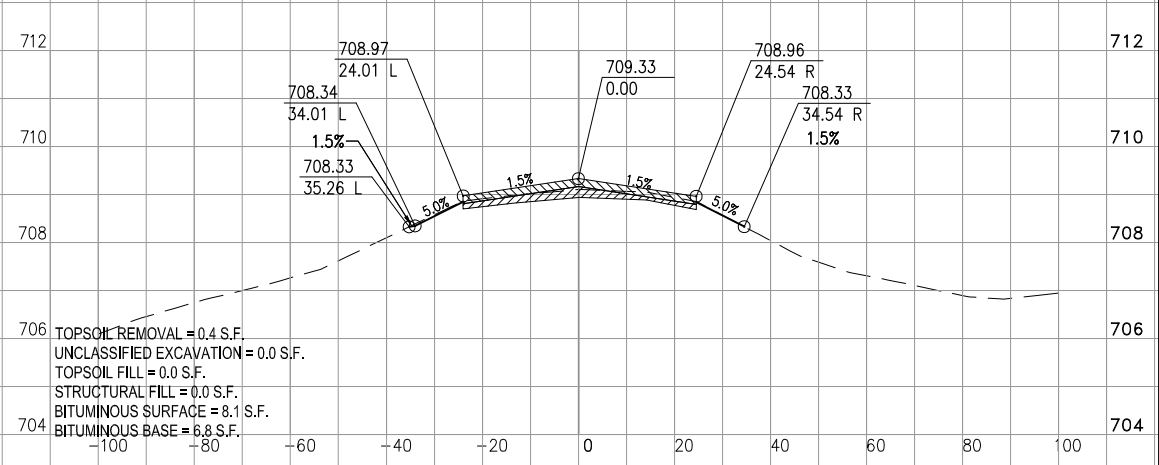
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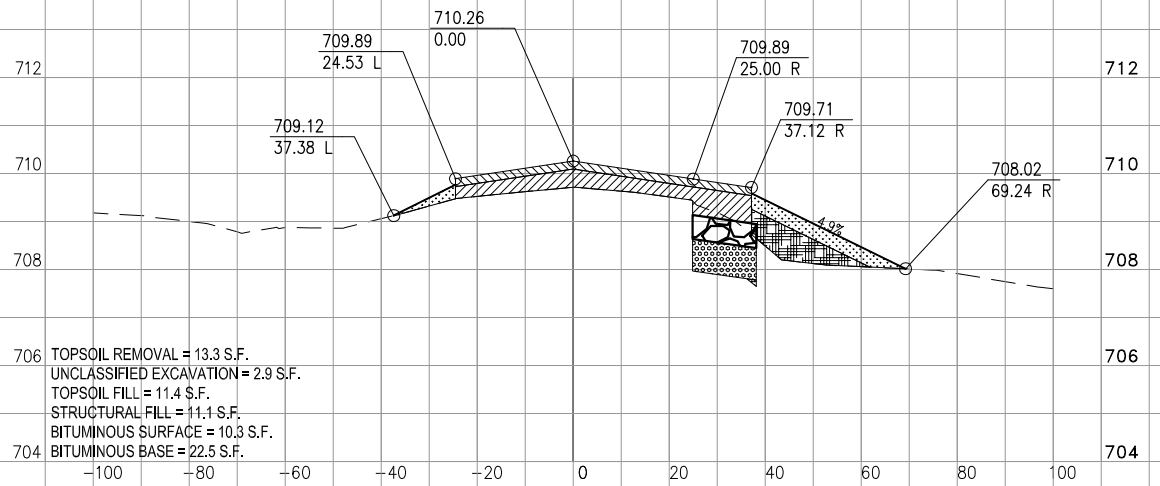
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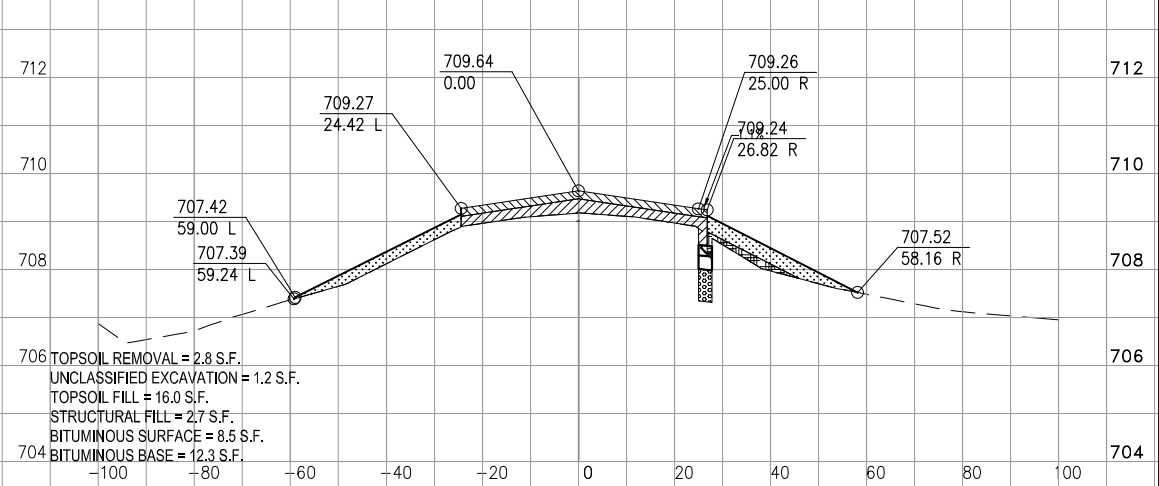
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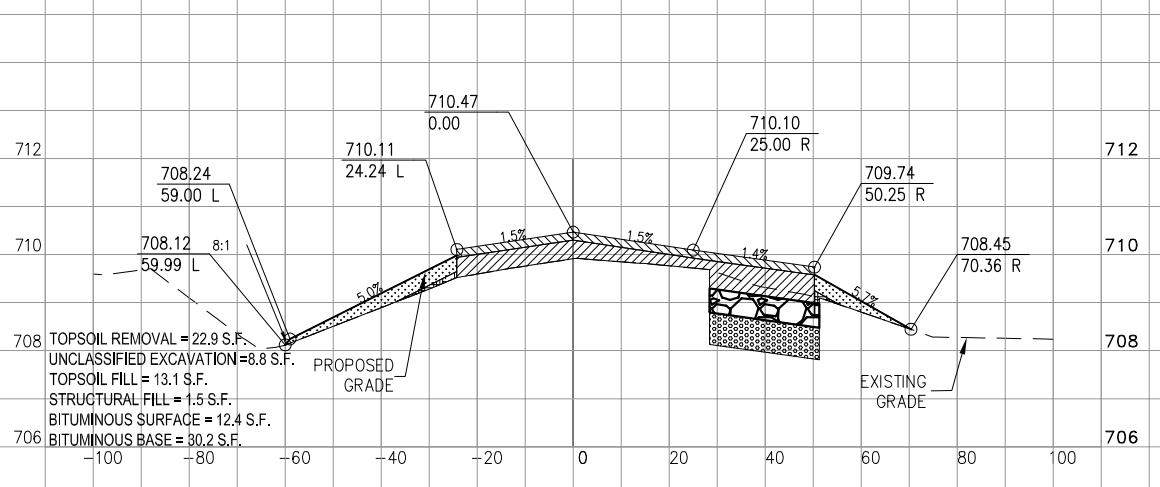
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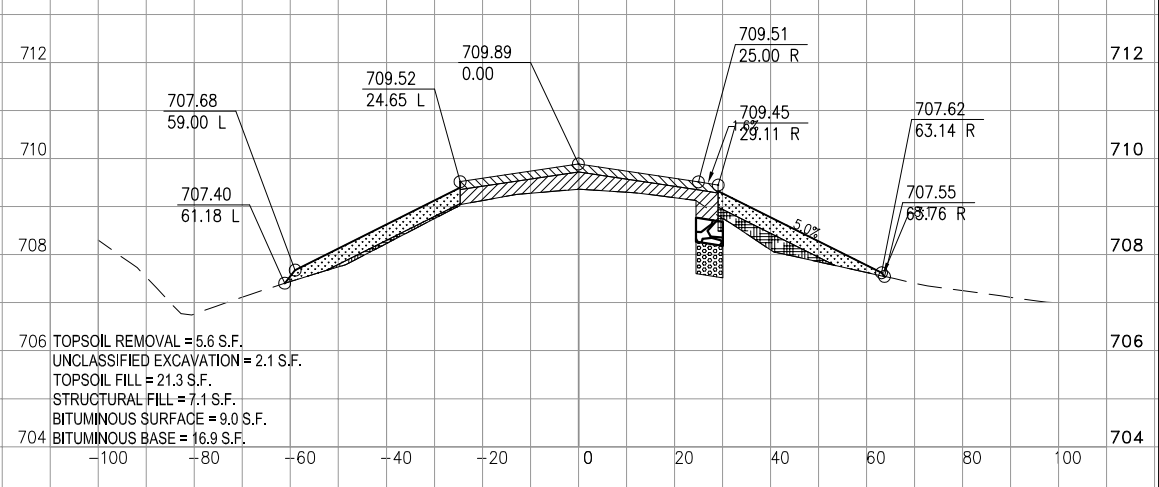
STA. 403+00



STA. 401+00



STA. 402+50





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REHABILITATE
PORTIONS OF
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PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

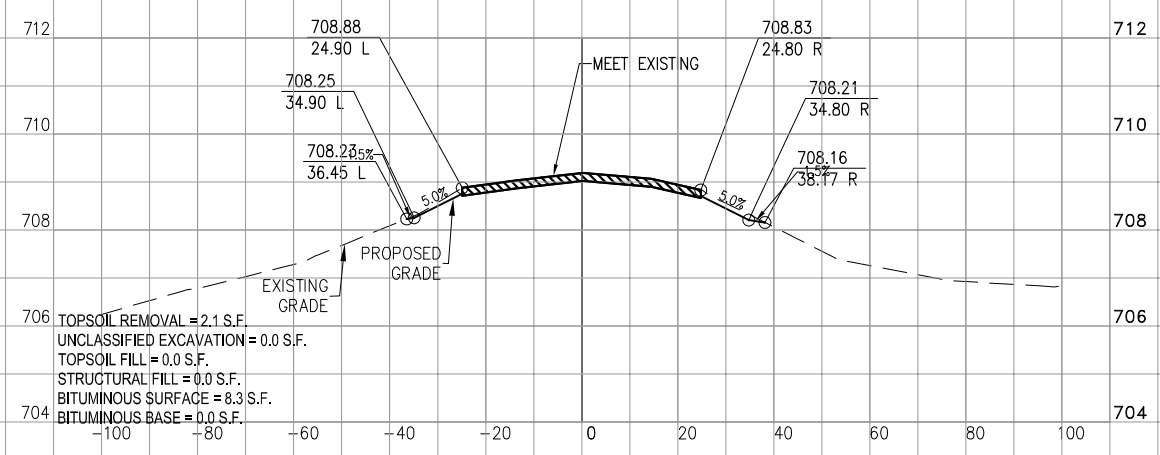
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PROJECT NO: 16A0013
CAD FILE: 55-CROSS SECTIONS TWY B SOUTH
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CROSS SECTIONS
TAXIWAY B SOUTH





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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

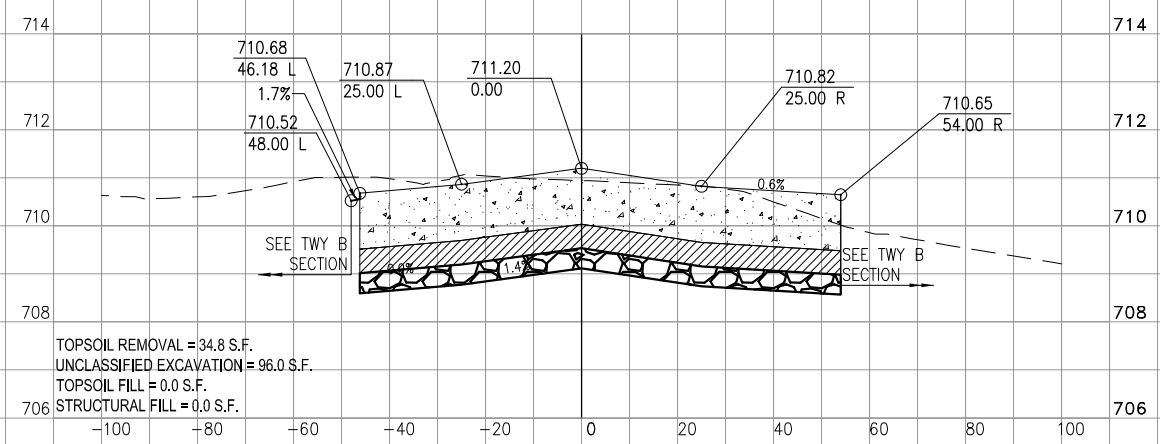
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PROJECT NO: 16A0013
CAD FILE: 56-CROSS SECTIONS TWY S5
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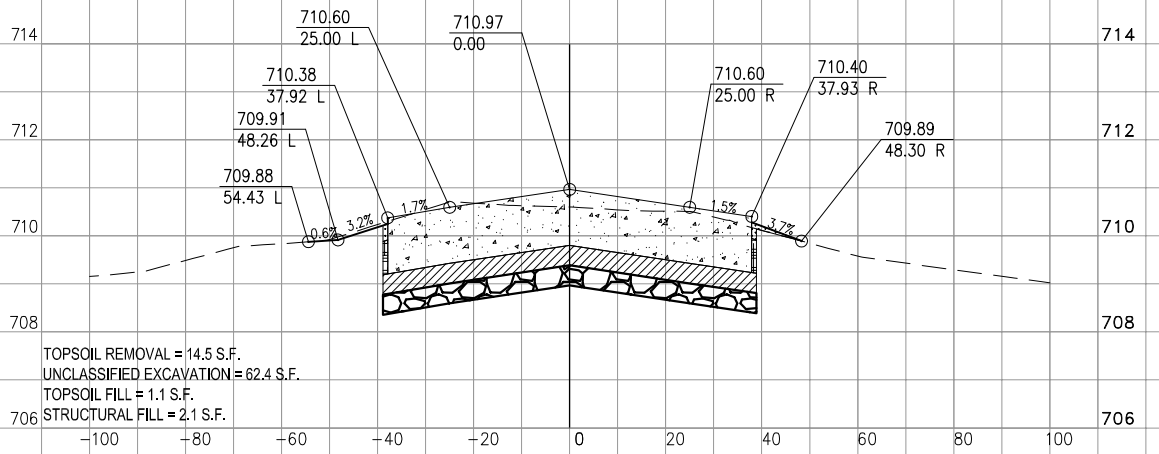
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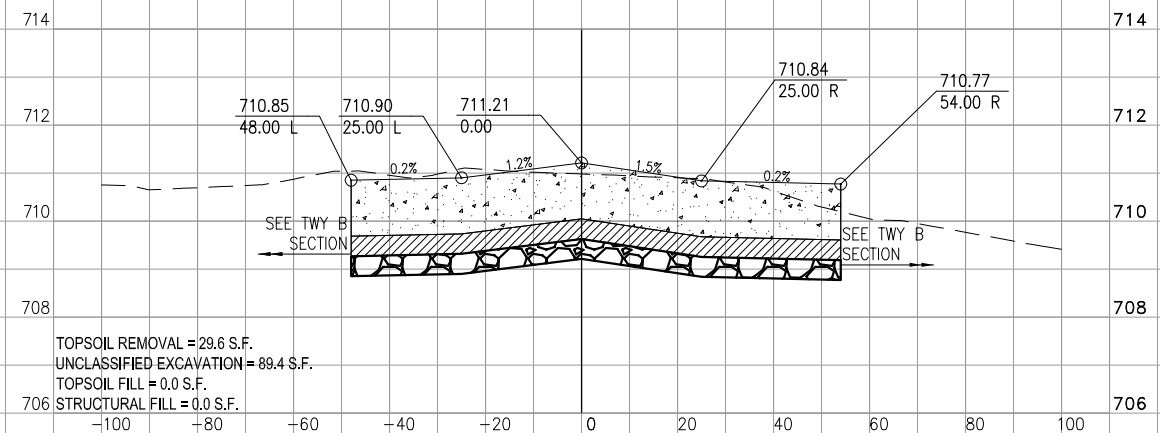
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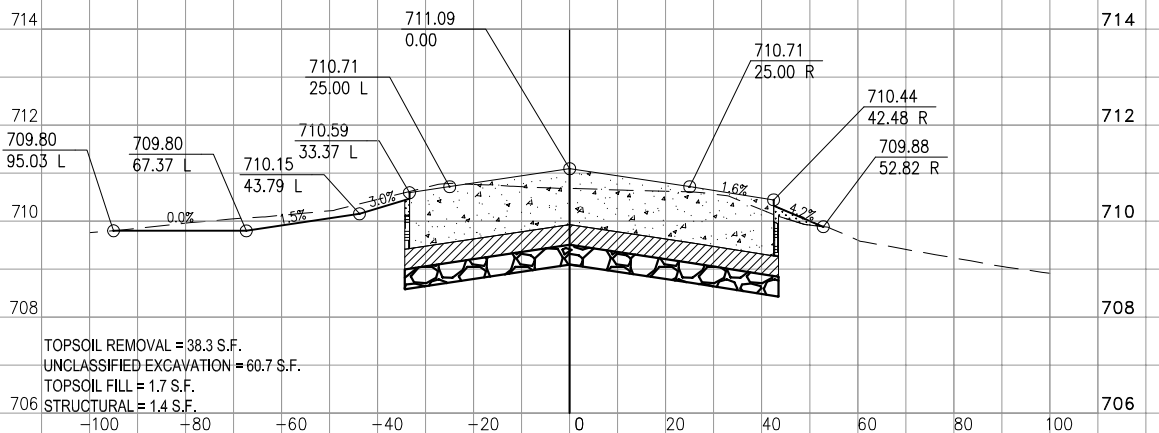
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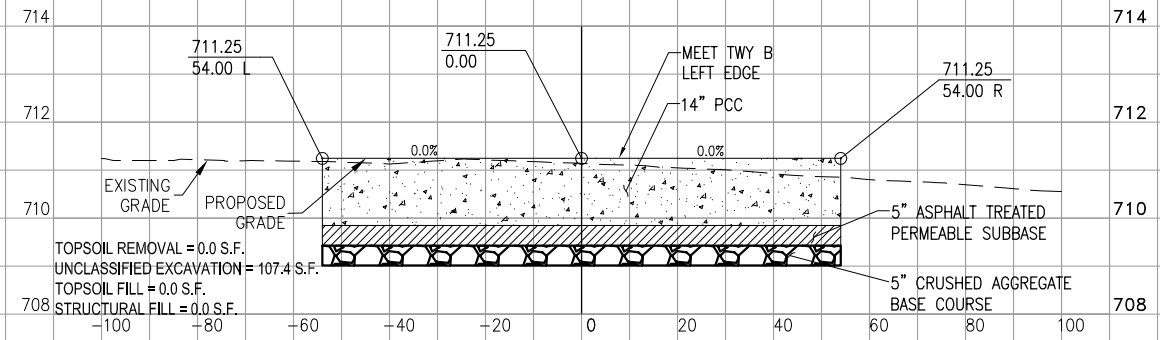
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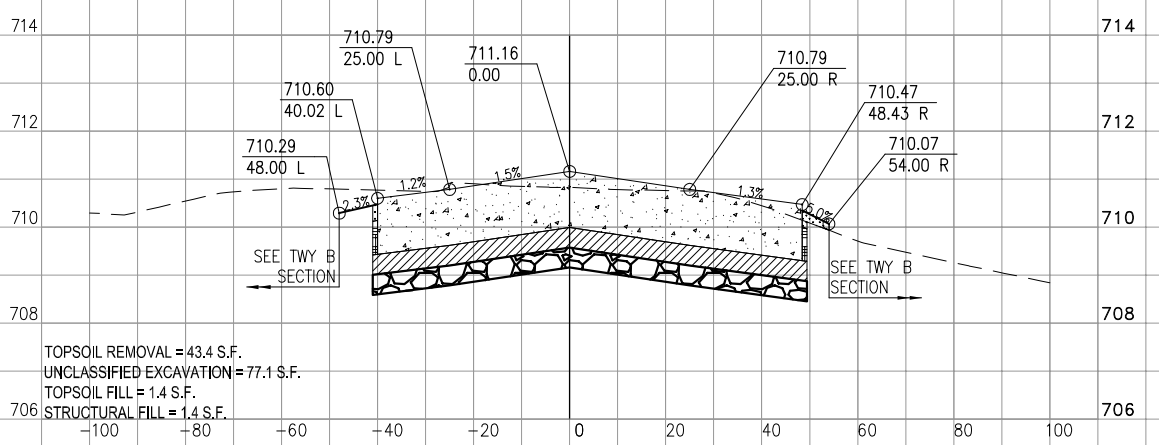
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STA. 4100+50



STA. 4101+00





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REHABILITATE
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IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

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PROJECT NO: 16A0013
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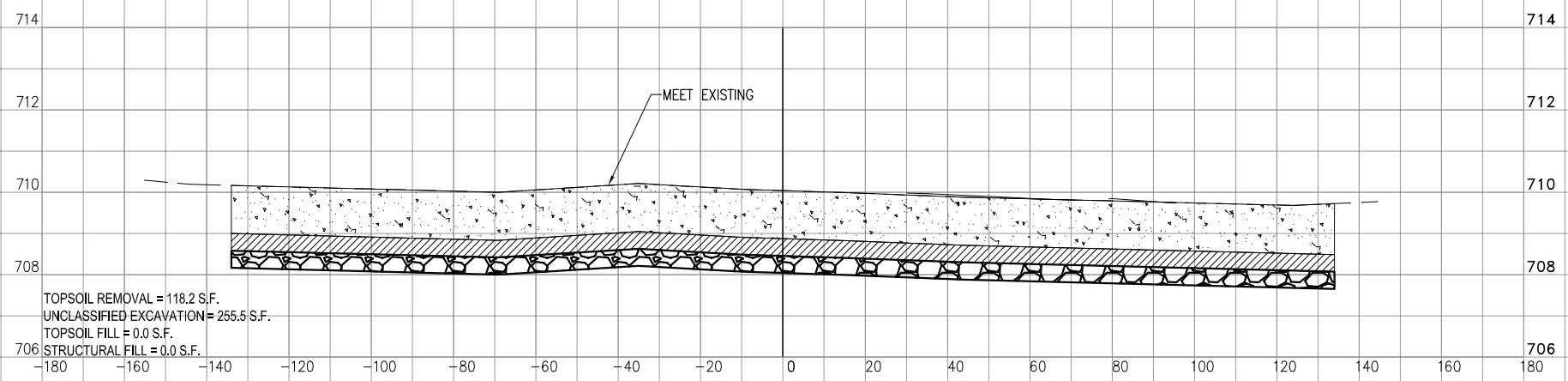
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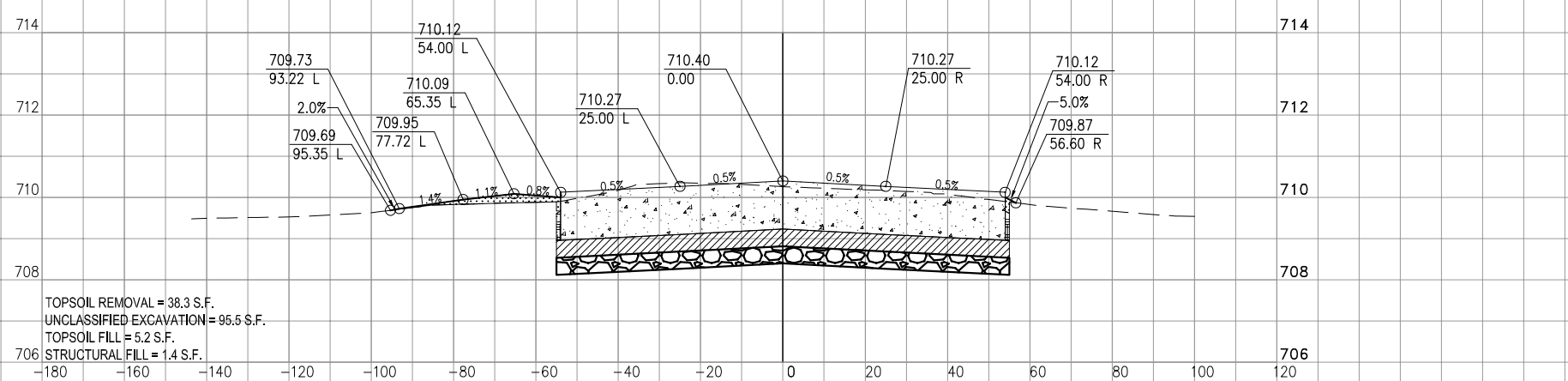
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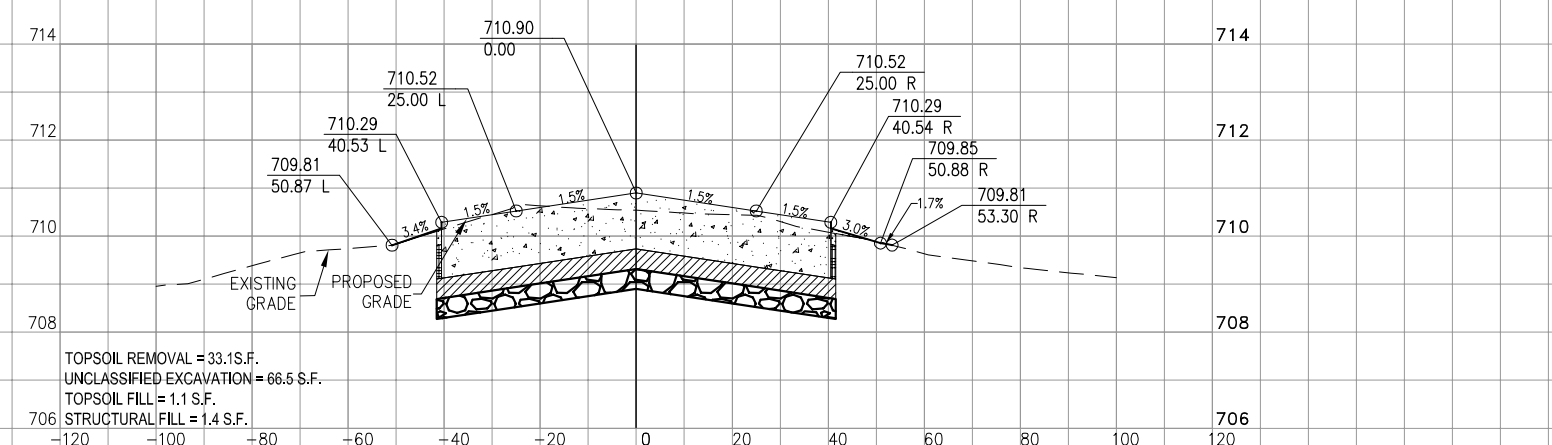
STA.
4102+25



STA.
4102+00



STA.
4101+50





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IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

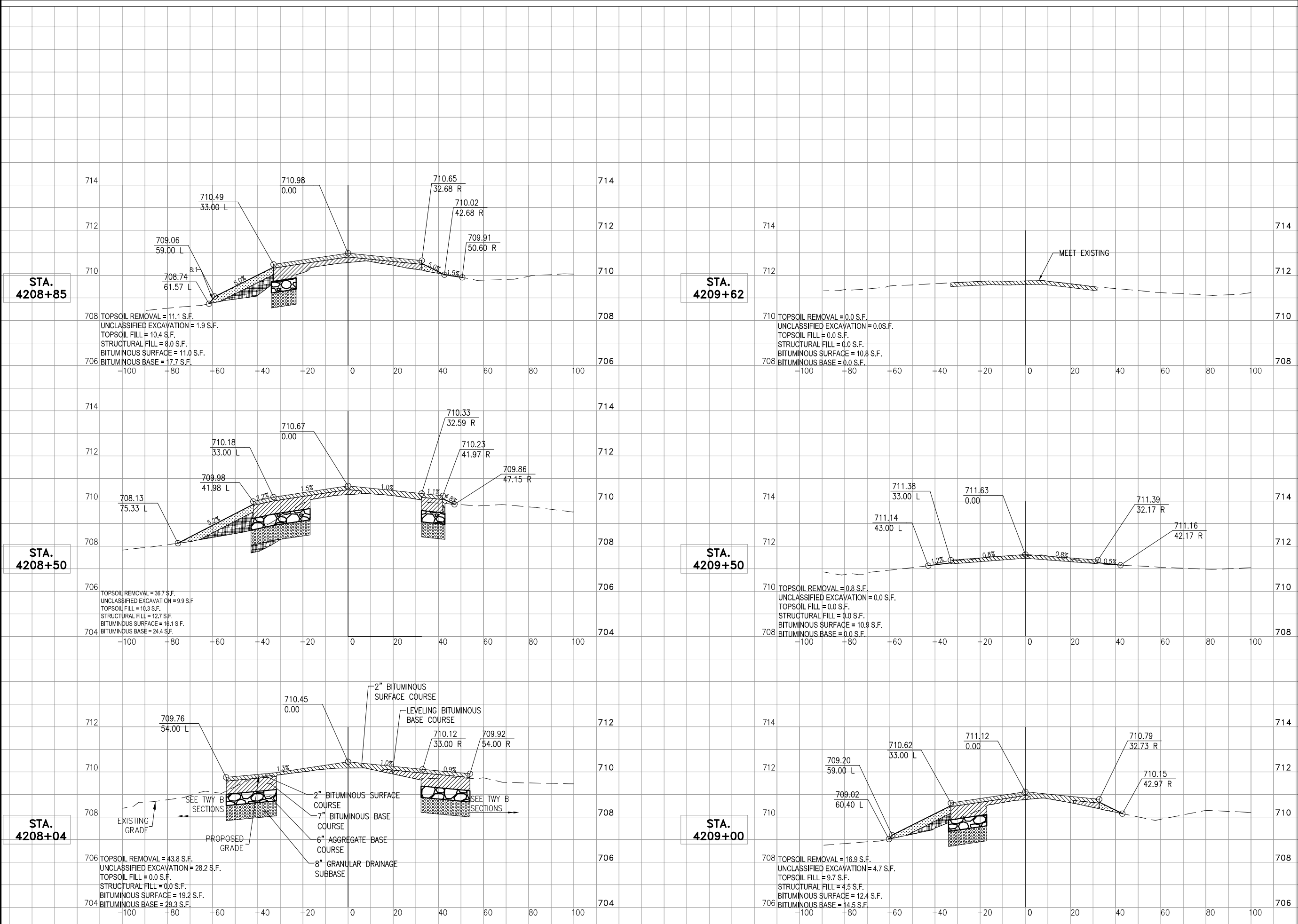
ISSUE: July 29, 2016

PROJECT NO: 16A0013
CAD FILE: 58-CROSS SECTIONS TWY B
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CROSS SECTIONS
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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

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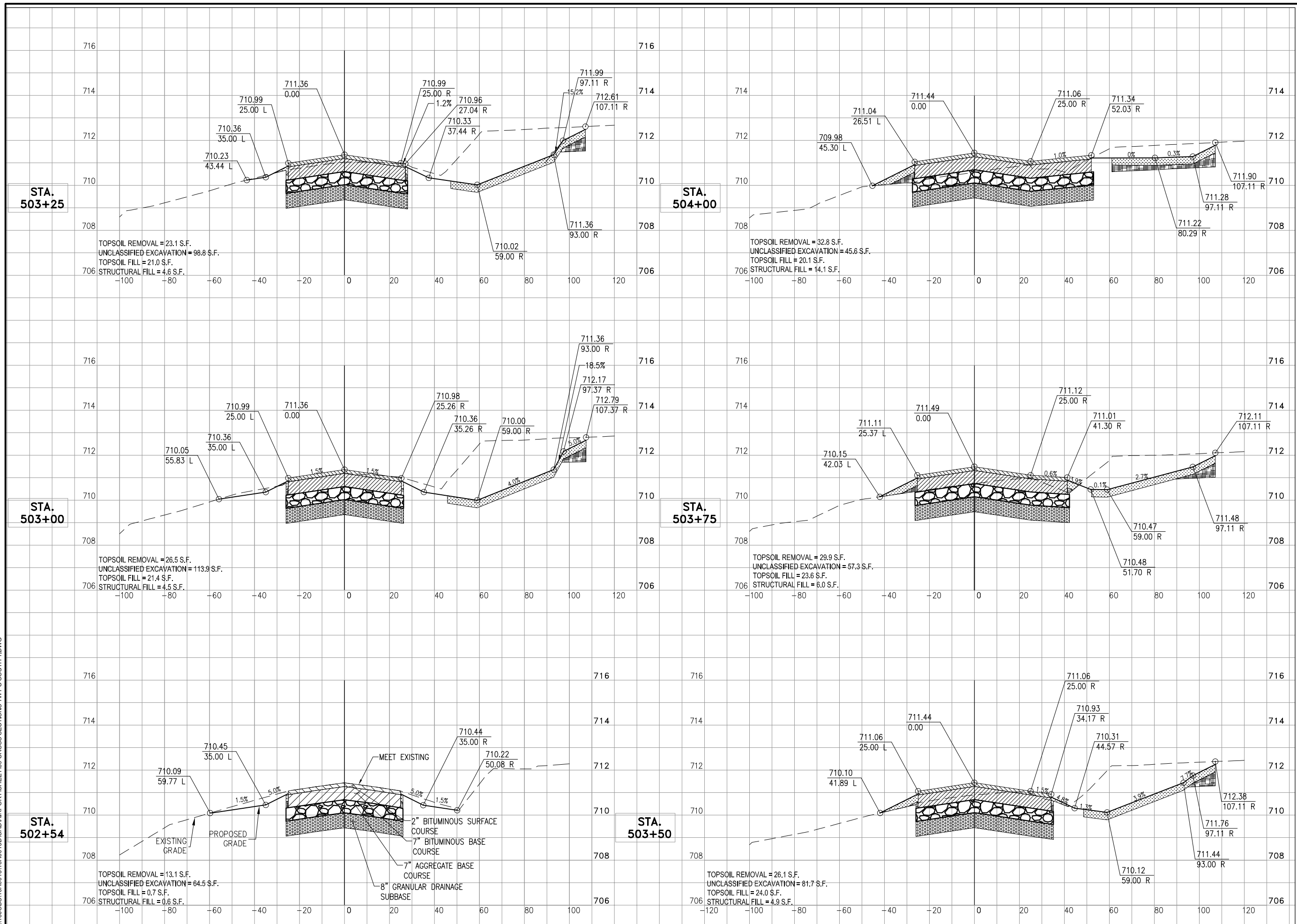
ISSUE: July 29, 2016

PROJECT NO: 16A0013
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CROSS SECTIONS TAXIWAY C SOUTH



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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

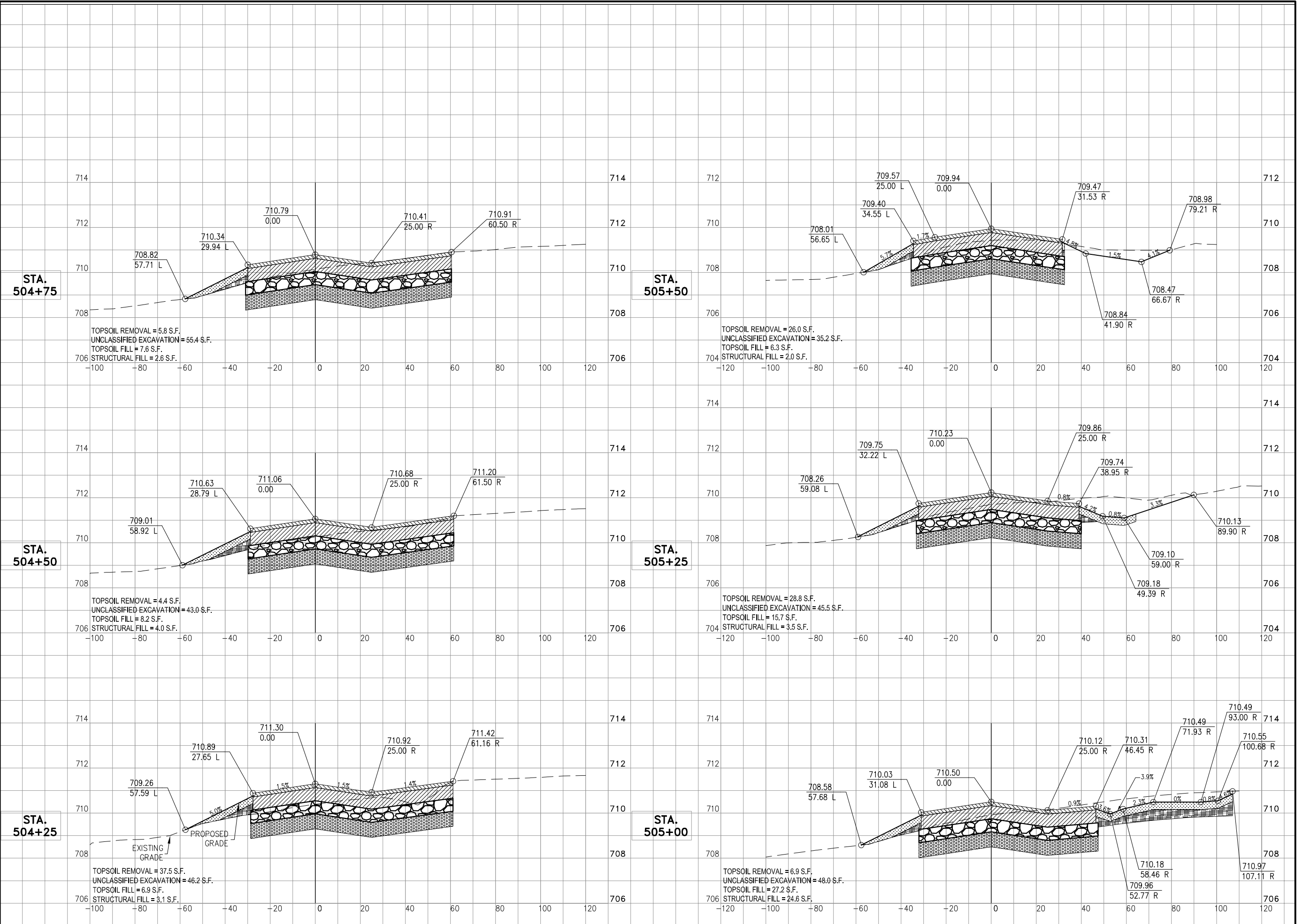
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REHABILITATE
PORTIONS OF
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PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
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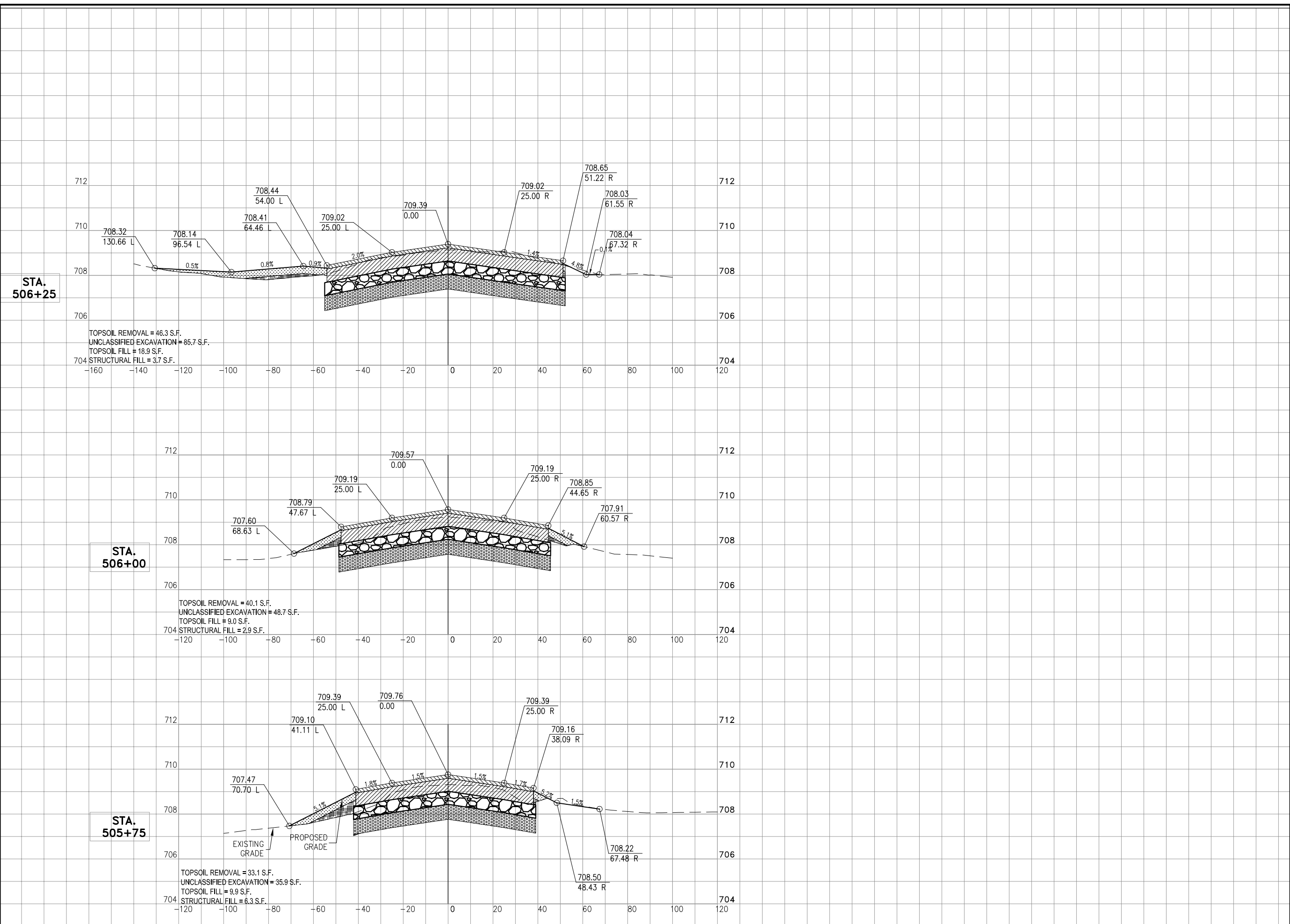
ISSUE: July 29, 2016

PROJECT NO: 16A0013
CAD FILE: 61-CROSS SECTIONS TWY C SOUTH
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TAXIWAY C SOUTH



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REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

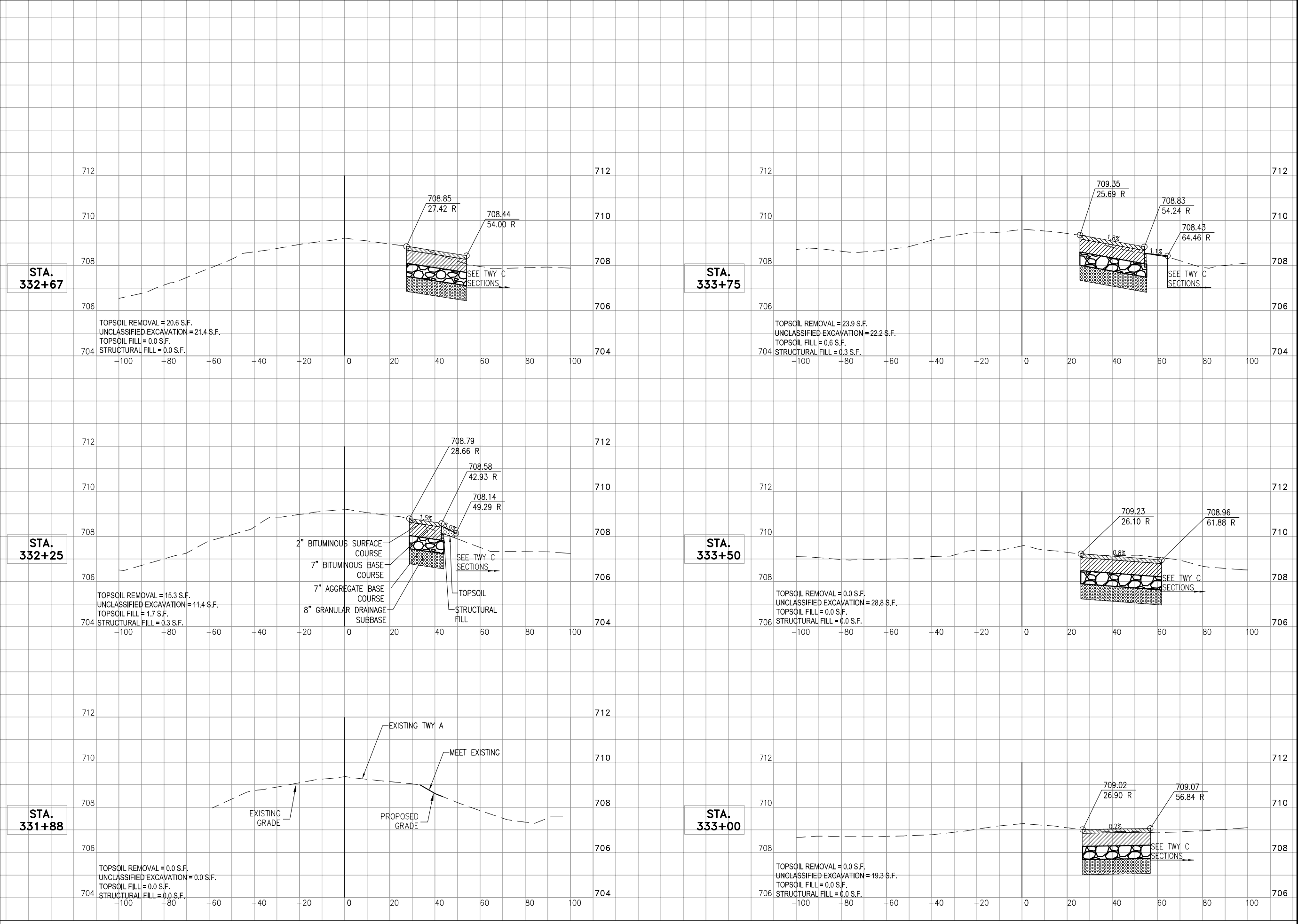
Contract No: WA071

NO.	DATE	DESCRIPTION		
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ISSUE: July 29, 2016
PROJECT NO: 16A0013
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CROSS SECTIONS
TAXIWAY A



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Telephone: 847.244.0055
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REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

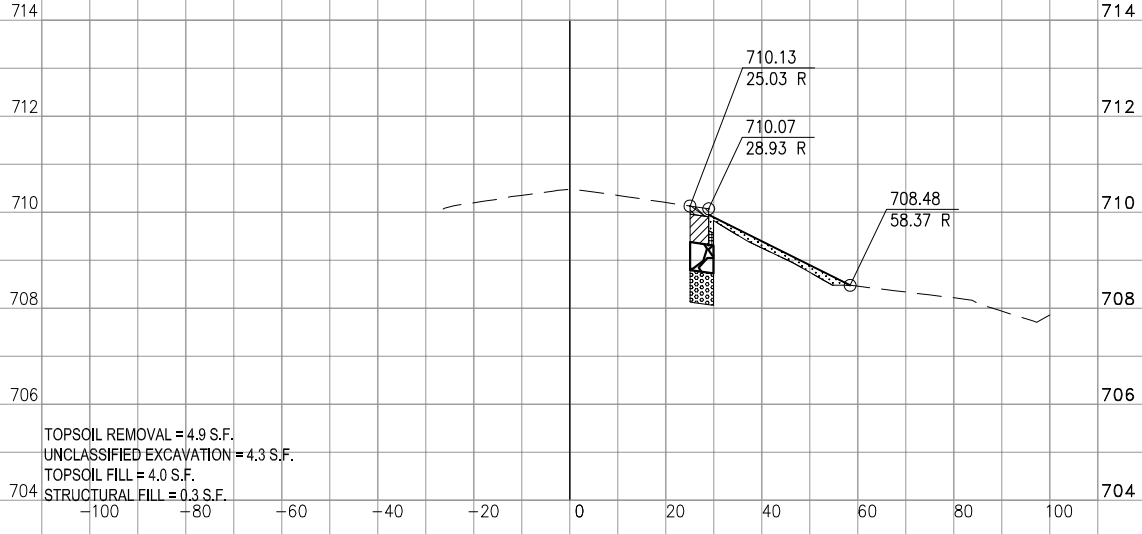
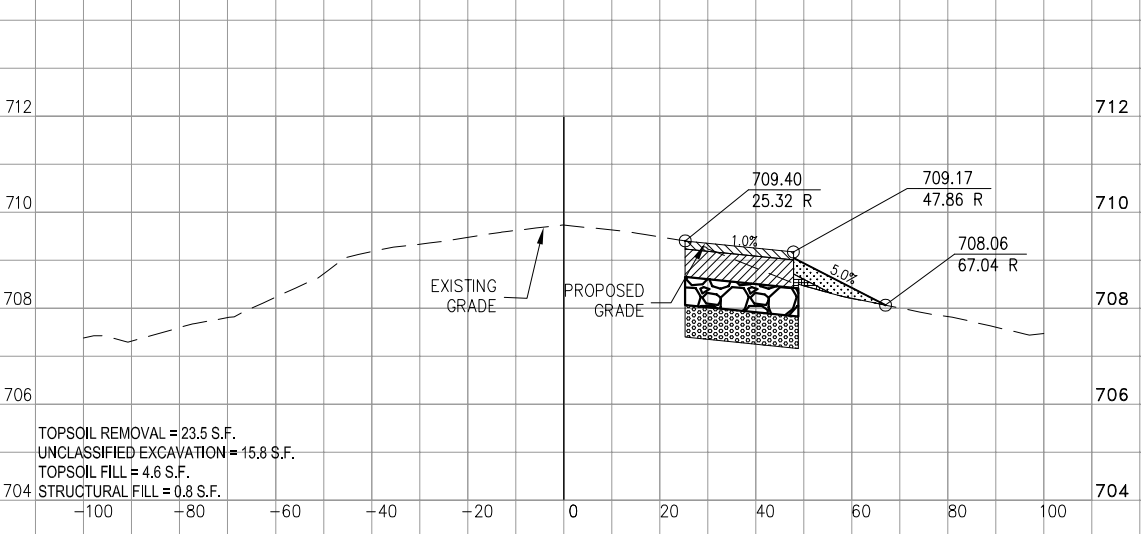
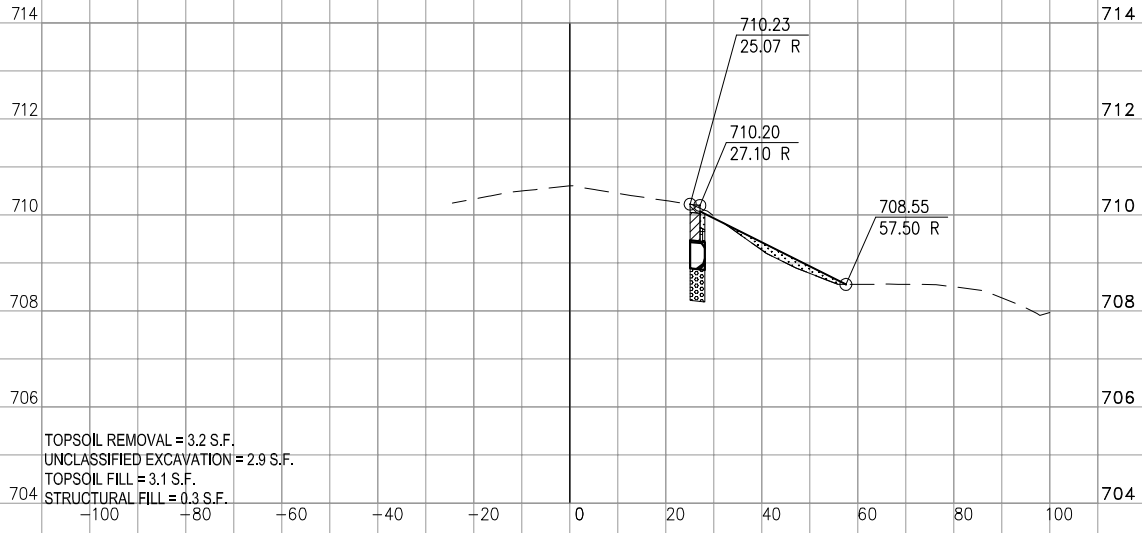
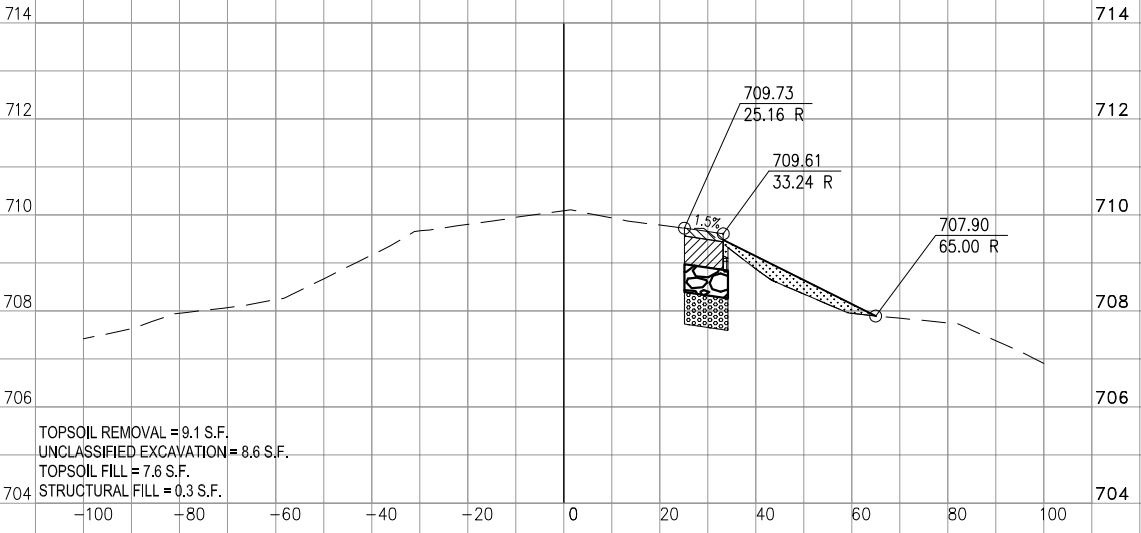
IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
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ISSUE: July 29, 2016
PROJECT NO: 16A0013
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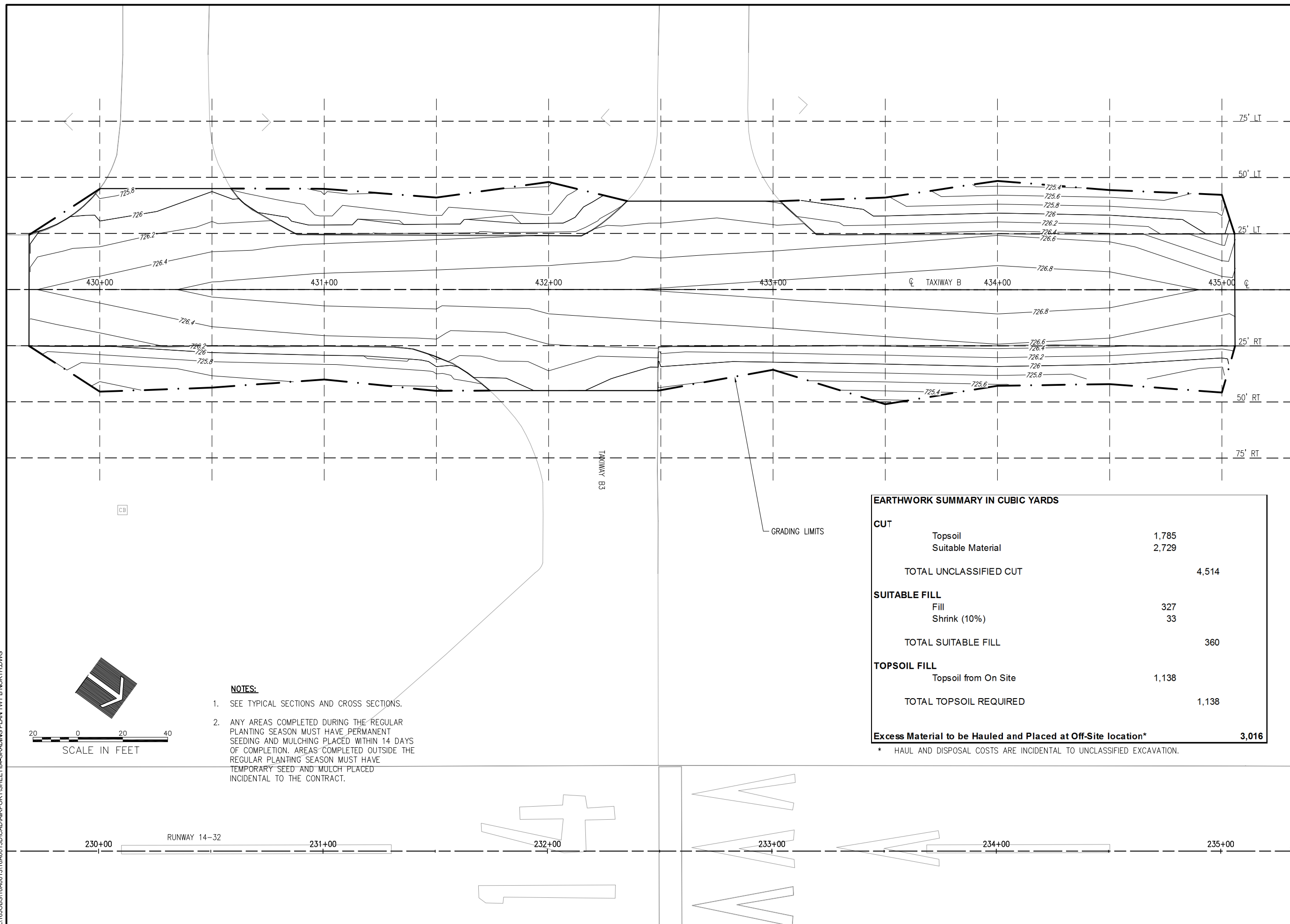
CROSS SECTIONS
TAXIWAY A



JUN 21, 2016 11:42 AM HAUSM00682
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NOTES:

1. SEE TYPICAL SECTIONS AND CROSS SECTIONS.
2. ANY AREAS COMPLETED DURING THE REGULAR PLANTING SEASON MUST HAVE PERMANENT SEEDING AND MULCHING PLACED WITHIN 14 DAYS OF COMPLETION. AREAS COMPLETED OUTSIDE THE REGULAR PLANTING SEASON MUST HAVE TEMPORARY SEED AND MULCH PLACED INCIDENTAL TO THE CONTRACT.

EARTHWORK SUMMARY IN CUBIC YARDS		
CUT	Topsoil	1,785
	Suitable Material	2,729
	TOTAL UNCLASSIFIED CUT	4,514
SUITABLE FILL	Fill	327
	Shrink (10%)	33
	TOTAL SUITABLE FILL	360
TOPSOIL FILL	Topsoil from On Site	1,138
	TOTAL TOPSOIL REQUIRED	1,138
Excess Material to be Hauled and Placed at Off-Site location*		3,016

* HAUL AND DISPOSAL COSTS ARE INCIDENTAL TO UNCLASSIFIED EXCAVATION.

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 64-GRADING PLAN TWY B
DESIGN BY: KMS 05/27/2016
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REVIEWED BY: LDH 6/9/2016

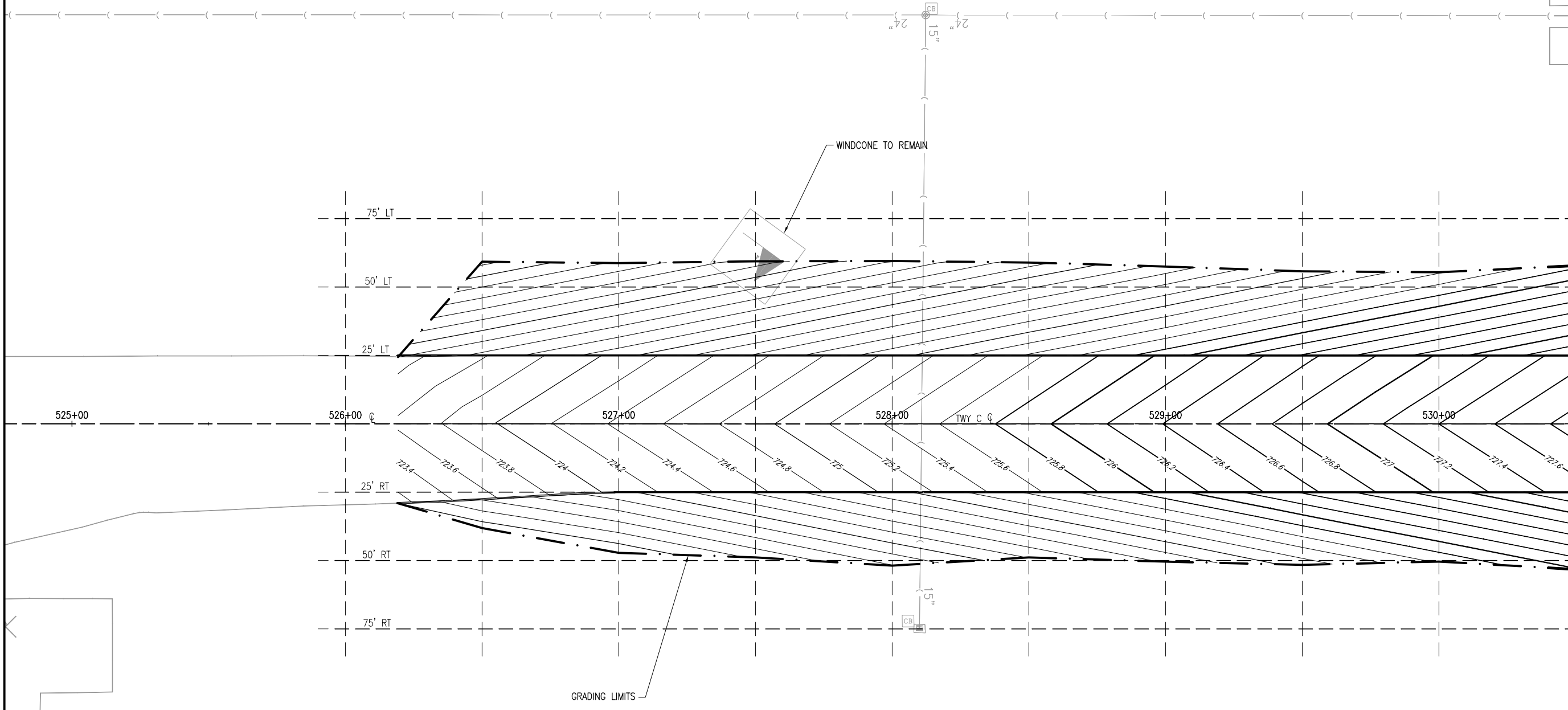
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GRADING PLAN TAXIWAY B NORTH



NOTES:

1. SEE SHEET 64 FOR NOTES



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 65-GRADING PLAN TWY C
DESIGN BY: KMS 05/27/2016
DRAWN BY: KMS 06/03/2016
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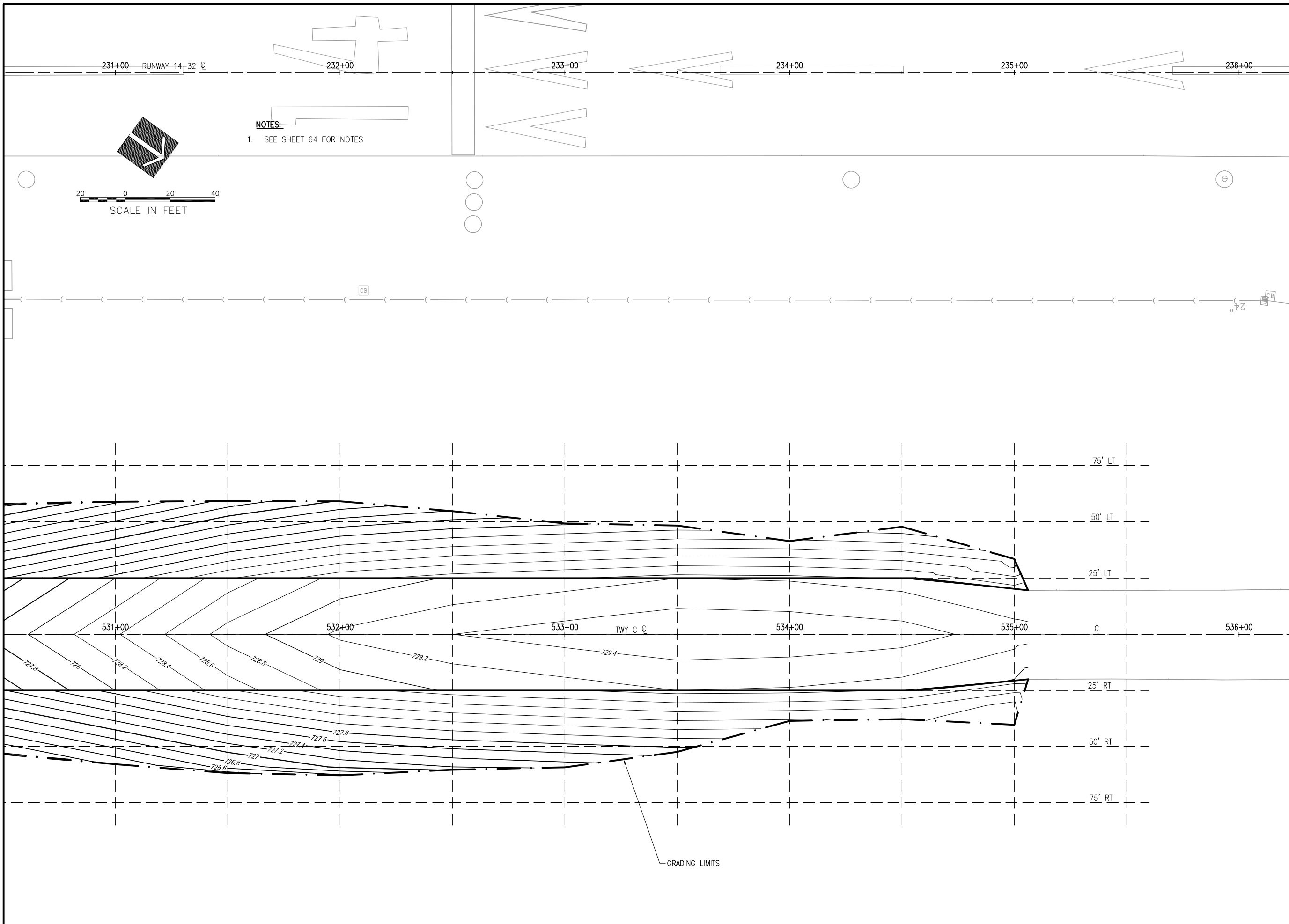
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GRADING PLAN TAXIWAY C NORTH

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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 66-GRADING PLAN TWY C
DESIGN BY: KMS 05/27/2016
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GRADING PLAN TAXIWAY C NORTH

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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

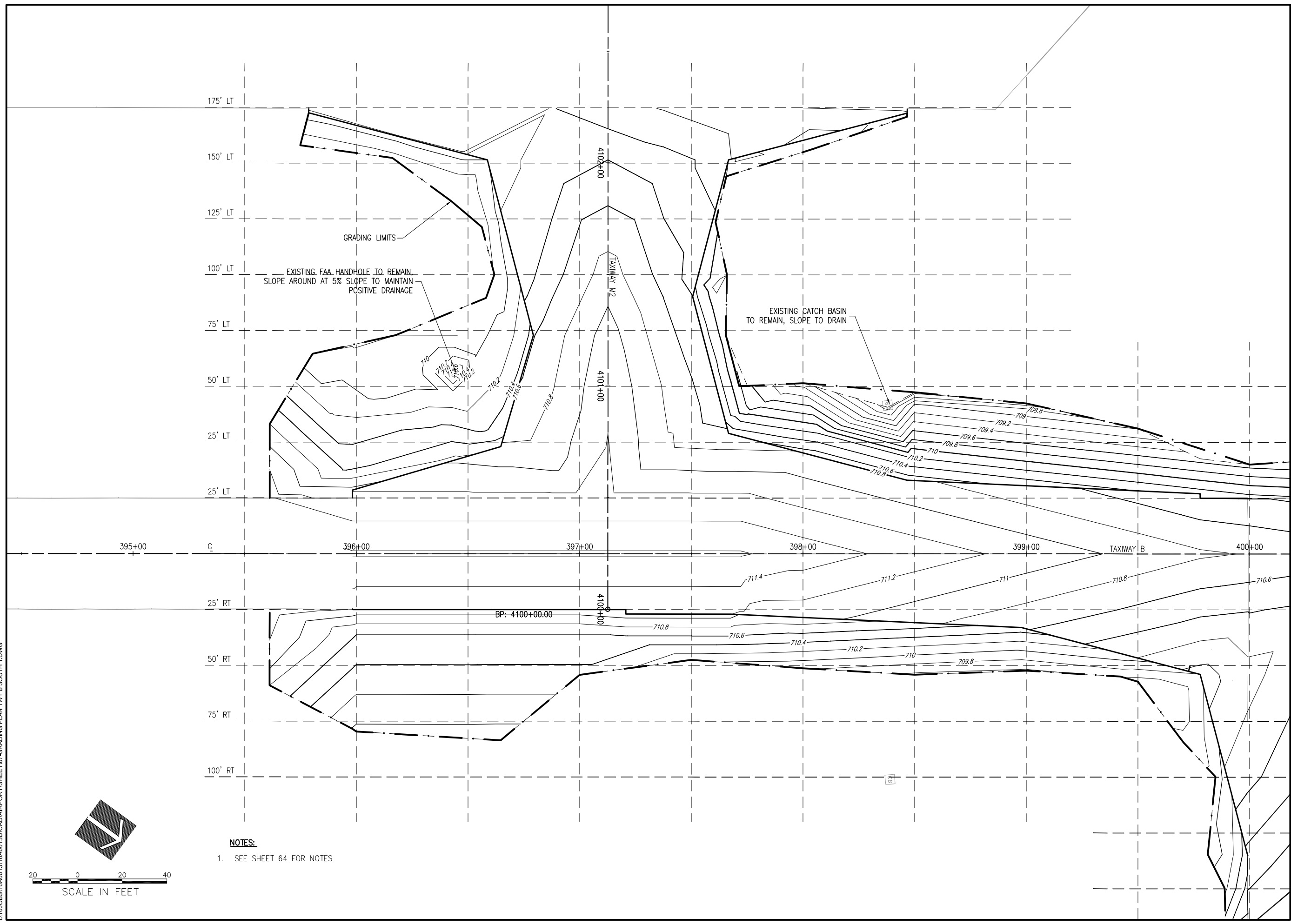
Contract No: WA071

NO.	DATE	DESCRIPTION		
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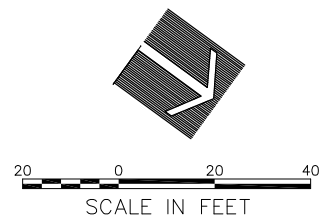
ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 67-GRADING PLAN TWY B
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GRADING PLAN TAXIWAY B SOUTH



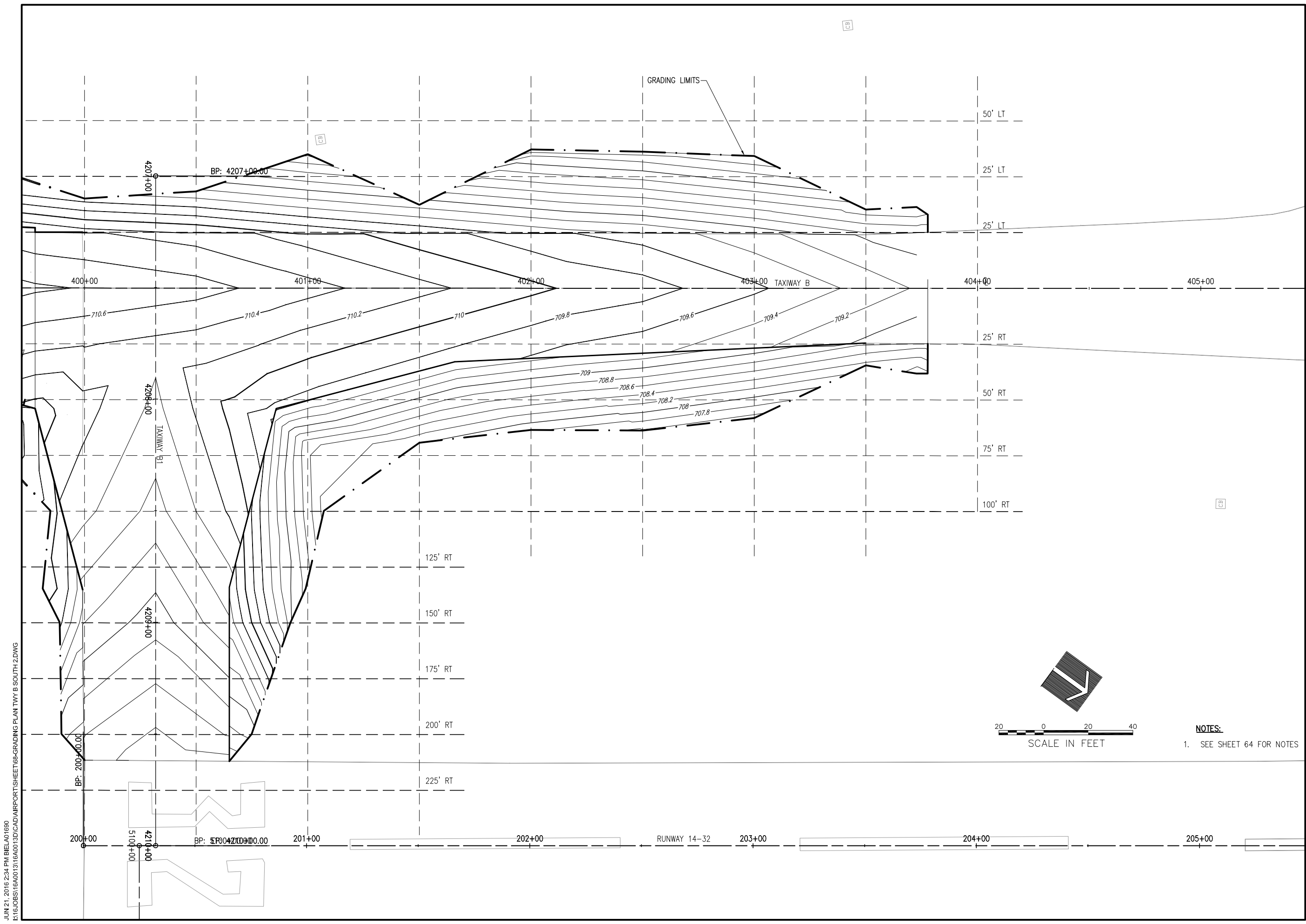
NOTES:
1. SEE SHEET 64 FOR NOTES



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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

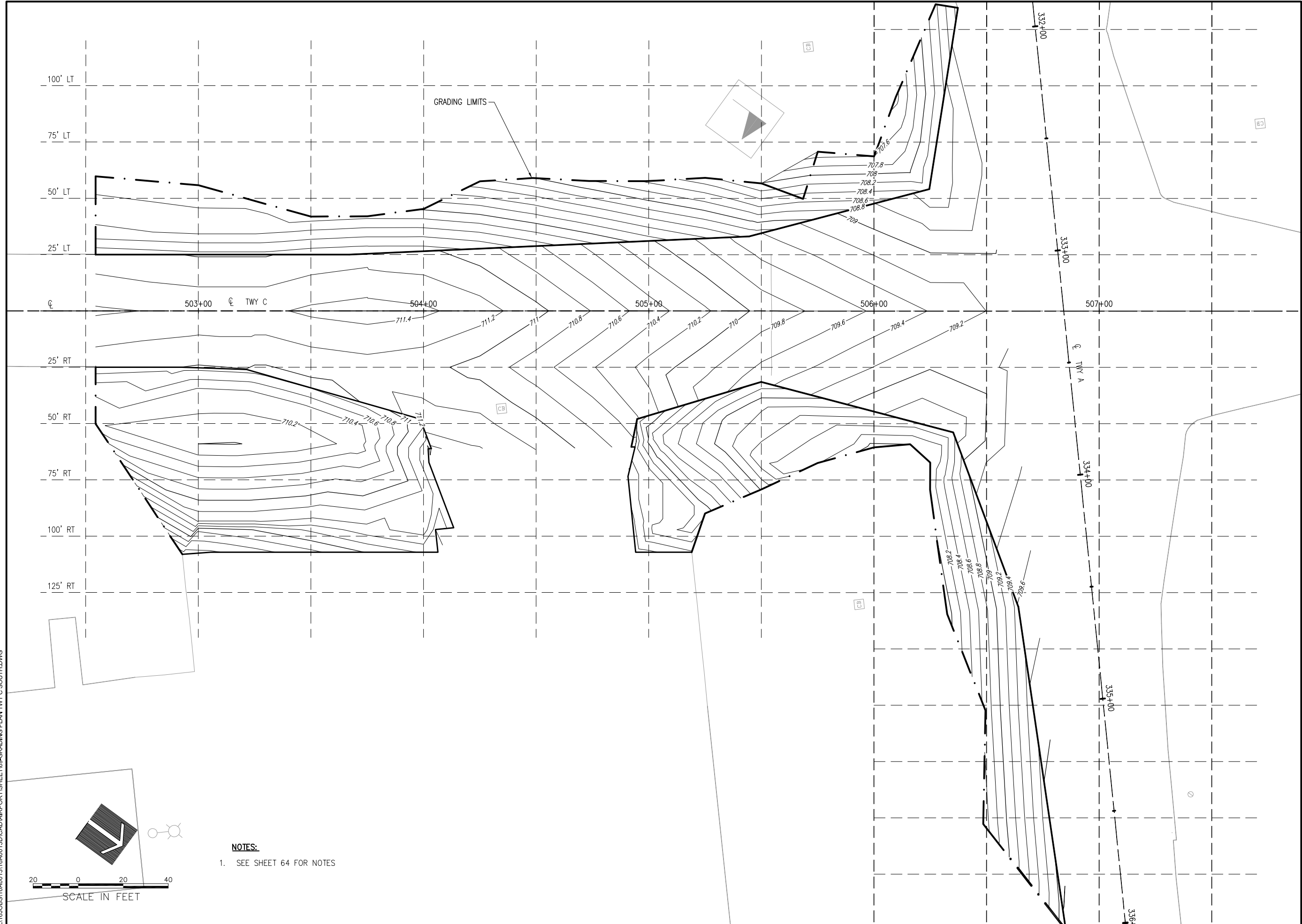
ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 68-GRADING PLAN TWY B SOUTH 2.DWG
DESIGN BY: KMS 05/27/2016
DRAWN BY: KMS 06/03/2016
REVIEWED BY: LDH 6/9/2016
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NOTES:
1. SEE SHEET 64 FOR NOTES

GRADING PLAN TAXIWAY B SOUTH



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
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CAD FILE: 69-GRADING PLAN TWY C
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GRADING PLAN TAXIWAY C SOUTH

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NOTES:
1. SEE SHEET 64 FOR NOTES





REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

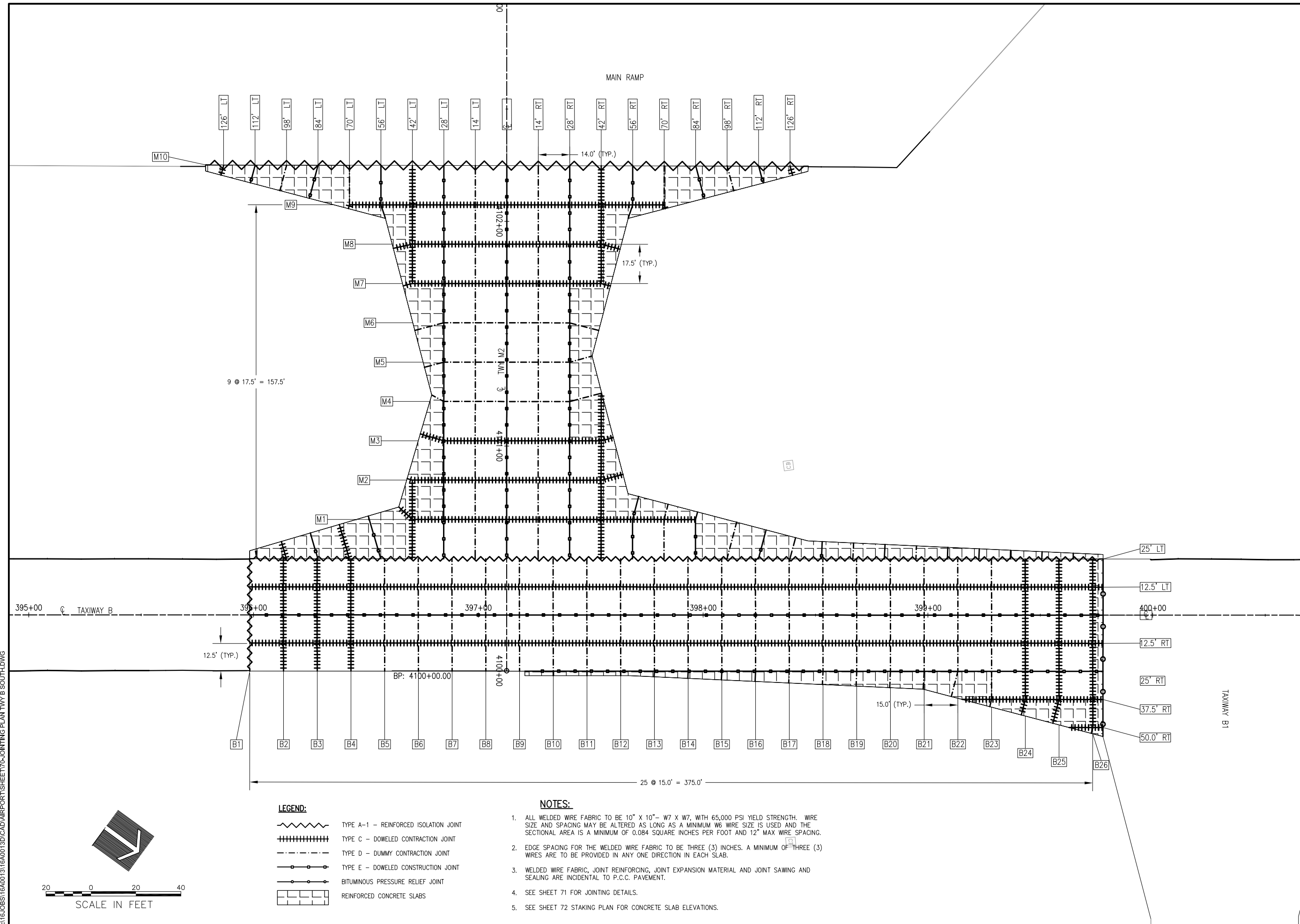
IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 70-JOINTING PLAN TWY B SOUTH.DWG
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JOINTING PLAN
TAXIWAY B SOUTH



LEGEND:

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

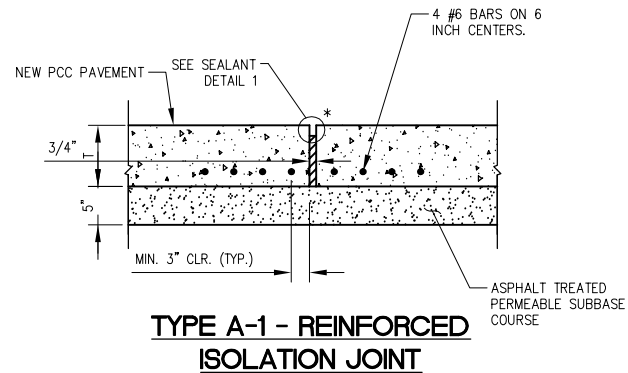
NOTES:

1. ALL WELDED WIRE FABRIC TO BE 10" X 10" - W7 X W7, WITH 65,000 PSI YIELD STRENGTH. WIRE SIZE AND SPACING MAY BE ALTERED AS LONG AS A MINIMUM W6 WIRE SIZE IS USED AND THE SECTIONAL AREA IS A MINIMUM OF 0.084 SQUARE INCHES PER FOOT AND 12" MAX WIRE SPACING.
2. EDGE SPACING FOR THE WELDED WIRE FABRIC TO BE THREE (3) INCHES. A MINIMUM OF THREE (3) WIRES ARE TO BE PROVIDED IN ANY ONE DIRECTION IN EACH SLAB.
3. WELDED WIRE FABRIC, JOINT REINFORCING, JOINT EXPANSION MATERIAL AND JOINT SAWING AND SEALING ARE INCIDENTAL TO P.C.C. PAVEMENT.
4. SEE SHEET 71 FOR JOINTING DETAILS.
5. SEE SHEET 72 STAKING PLAN FOR CONCRETE SLAB ELEVATIONS.

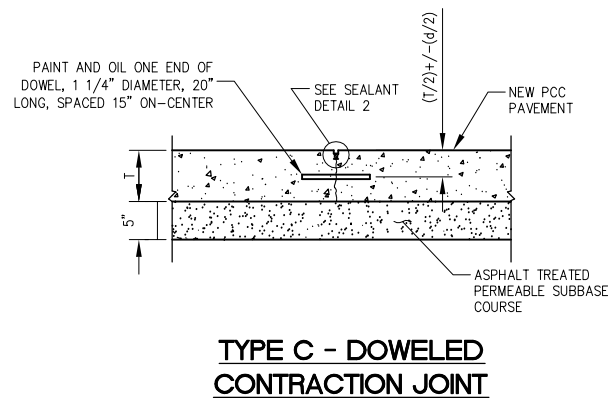
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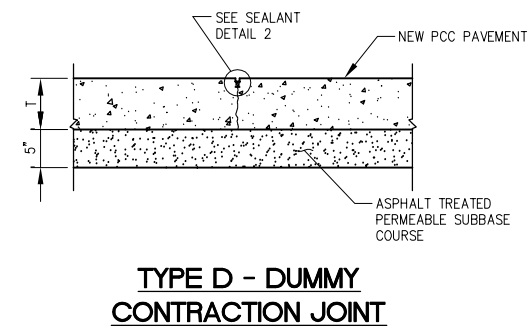
WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813



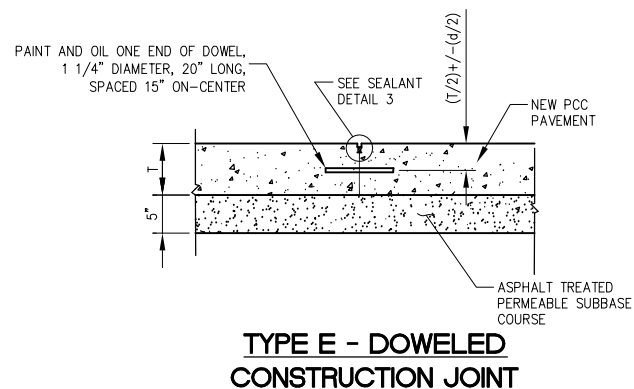
TYPE A-1 - REINFORCED ISOLATION JOINT



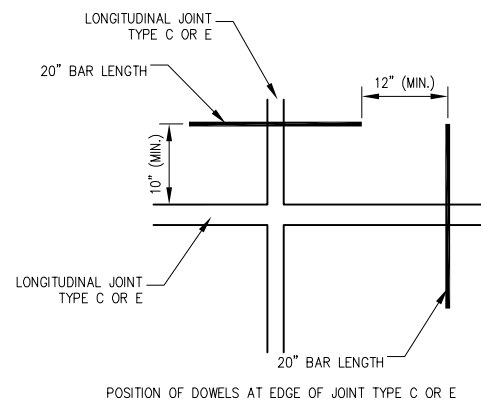
TYPE C - DOWELED CONTRACTION JOINT



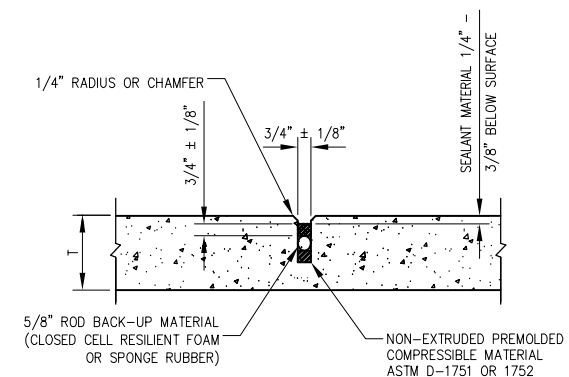
TYPE D - DUMMY CONTRACTION JOINT



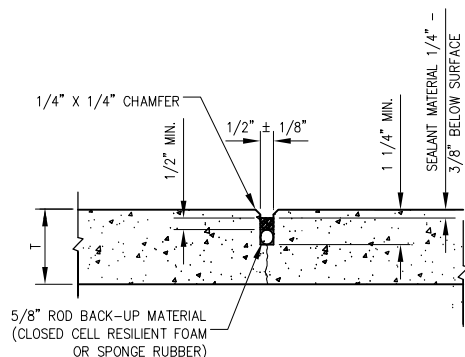
TYPE E - DOWELED CONSTRUCTION JOINT



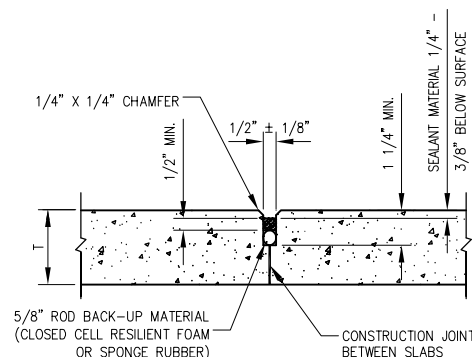
DOWEL PLAN VIEW



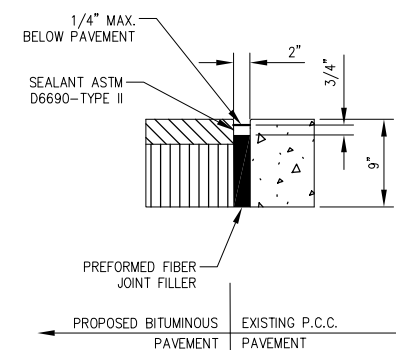
DETAIL 1 - SEALANT



DETAIL 2 - SEALANT



DETAIL 3 - SEALANT



BITUMINOUS PRESSURE RELIEF JOINT

NOTE:
ALL JOINT SEALING TO BE INCIDENTAL TO ITEM AR501514 14" PCC PAVEMENT

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
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JOINTING DETAILS



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WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

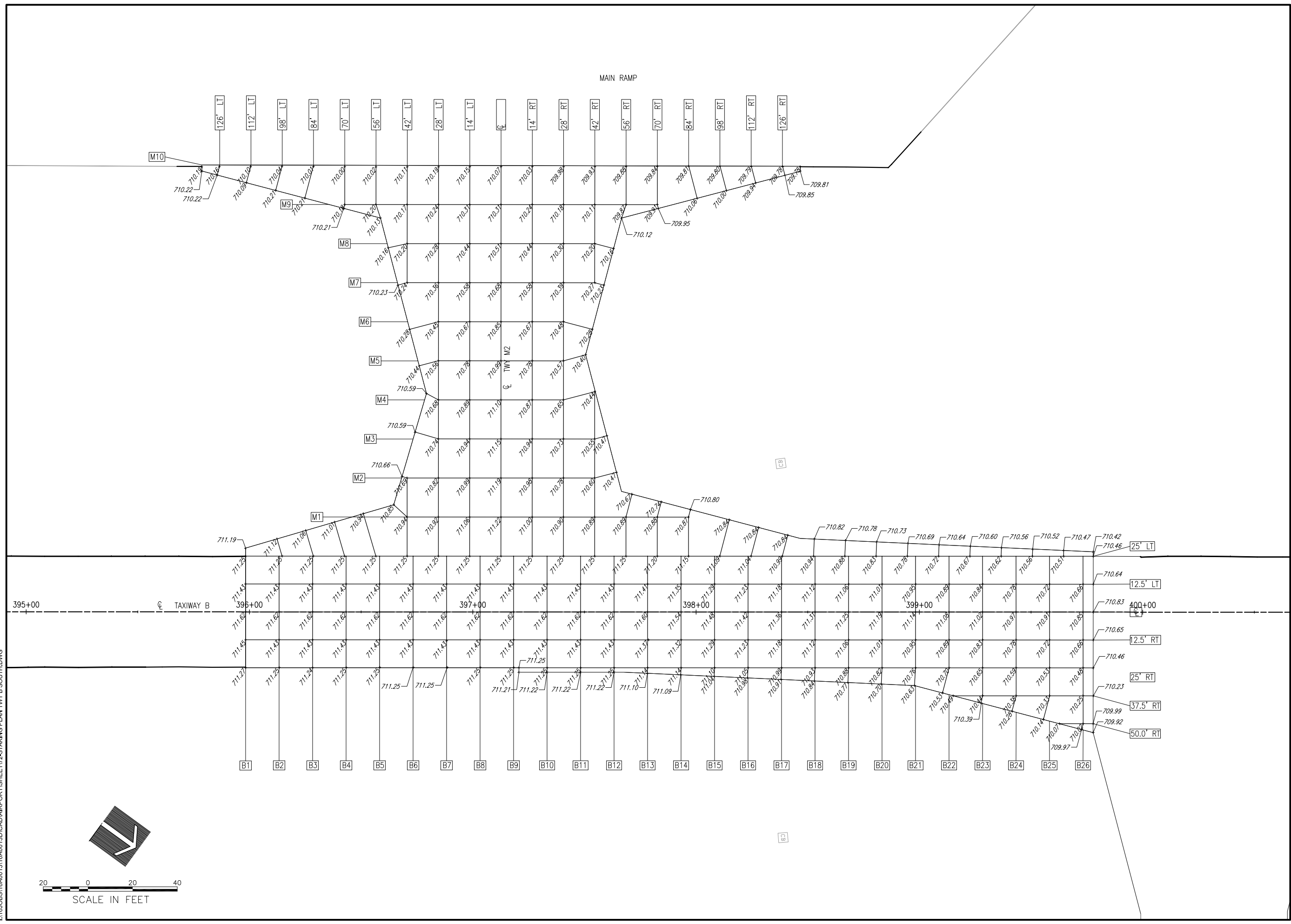
Contract No: WA071

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		DES	DWN	REV

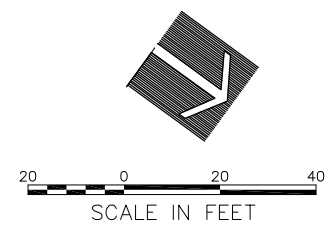
ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 72-STAKING PLAN TWY B
DESIGN BY: KMS 05/02/2016
DRAWN BY: KMS 05/10/2016
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STAKING PLAN
TAXIWAY B SOUTH



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UNDERDRAIN SCHEDULE

Structure	Station	Offset	Type	Rim EL.	Invert EL.	Pay Length	Slope %
U1	526+98.48	26.50 RT	Cleanout	723.84	721.34	109.0	0.50%
U2	528+07.50	26.50 RT	Inspection Hole	724.93	720.79		
U4	534+56.16	26.50 RT	Cleanout	728.88	726.38	322.2	0.50%
U3	531+33.93	26.50 RT	Inspection Hole	728.14	724.78	326.4	1.22%
U2	528+07.50	26.50 RT	Inspection Hole	724.93	720.79	49.0	1.00%
U2a	528+10.02	74.69 RT	RCP Connection @ Manhole	723.42	720.30		
					716.92		
U5	526+24.17	26.50 LT	Cleanout	723.20	720.70	183.9	0.50%
U6	528+08.04	26.53 LT	Inspection Hole	724.93	719.78		
U8	534+56.24	26.50 LT	Cleanout	728.88	726.38	321.5	0.50%
U7	531+34.64	26.50 LT	Inspection Hole	728.15	724.77	326.6	1.53%
U6	528+08.04	26.53 LT	Inspection Hole	724.93	719.78	123.8	1.29%
U6a	528+12.27	149.48 LT	RCP Connection @ Manhole	720.68	718.18		
					713.69		
U9	396+02.63	31.38 LT	Cleanout	710.97	708.47	431.9	0.50%
U9a	4102+20.79	290.44 LT	RCP Connection @ Inspection Hole	710.19	706.31		
U10	4102+20.85	134.38 RT	Cleanout	709.59	707.09	417.5	0.50%
U11	399+76.65	28.56 LT	Inspection Hole	710.23	705.00	362.4	0.50%
U12	403+39.03	26.50 LT	Inspection Hole	708.84	703.19	91.2	0.50%
U12a	403+43.92	115.86' LT	RCP Connection @ Manhole	709.07	702.73		

Structure	Station	Offset	Type	Rim EL.	Invert EL.	Pay Length	Slope %
U13	396+94.53	26.50 RT	Cleanout	711.05	708.55	209.1	1.00%
U13a	398+36.33	99.28 RT	RCP Connection @ Manhole	709.07	706.46		
					705.72		
U14	398+40.06	31.81 RT	Cleanout	710.70	708.20	139.3	0.75%
U15	399+76.65	55.18 RT	T-Connection	709.66	707.16	157.6	1.00%
U16	4209+60.42	34.50 RT	Cleanout	711.27	708.74		
U15	399+76.65	55.18 RT	T-Connection	709.66	707.16	83.7	2.58%
U11	399+76.65	28.56 LT	T-Connection w/Inspection Hole	710.23	705.00		
U17	4209+60.67	34.50 LT	Cleanout	711.43	708.43	461.1	0.50%
U18	403+87.47	28.33 RT	Connect to Existing UD w/Inspection Hole	708.67	706.12		
U19	502+99.43	26.50 LT	Cleanout	710.78	708.28	278.3	1.00%
U20	505+76.49	43.05 LT	T-Connection	708.99	705.50	128.4	1.21%
U21	331+88.37	34.87 RT	Inspection Hole @ Existing Underdrain	708.80	707.05		
U20	505+76.49	43.05 LT	T-Connection	708.99	705.50	14.8	0.50%
U20a	505+80.85	29.35' LT	RCP Connection @ Manhole	709.14	705.43		
U22	502+99.43	26.50 RT	Cleanout	710.79	708.29	288.5	1.00%
U22a	505+85.96	31.22 RT	RCP Connection @ Manhole	709.10	705.40		
U23	336+00.31	28.13 RT	Cleanout	710.06	707.56	284.0	0.50%
U22a	505+85.96	31.22 RT	RCP Connection @ Manhole	709.10	706.14		

STORM SEWER SCHEDULE

Structure	Station	Offset	Type	Structure Diameter	Frame & Grate Type	Rim Elevation	Invert		Pay Length	Size	Type	Slope
							Elevation	Direction				
C1	503+16.14	59.00 RT	Inlet Type A	2.00	Neenah R-2293-C	709.99	707.93	NW	114.4	12.0"	RCP	0.50
C2	504+32.88	45.99 RT	Manhole 4'	4.00	Neenah R-3492	711.13	707.34	SE				
C3 (Existing)	505+80.85	29.35 LT	Existing Manhole	--	Neenah R-3492	709.27						
C4 (Existing)	505+85.96	31.22 RT	Existing Manhole	--	Neenah R-3492	709.19						

UNDERDRAIN ADJUSTMENT SCHEDULE

Structure	Station	Offset	Type	Rim EL.
A1	431+37.46	27.21 RT	Adjust Underdrain Cleanout	726.16
A2	432+52.50	27.74 RT	Adjust Underdrain Cleanout	726.22
A3	433+49.25	26.78 LT	Adjust Underdrain Inspection Hole	726.30
A4	433+49.40	26.25 RT	Adjust Underdrain Inspection Hole	726.35



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#184-001084



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
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REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION			
			DES	DWN	REV

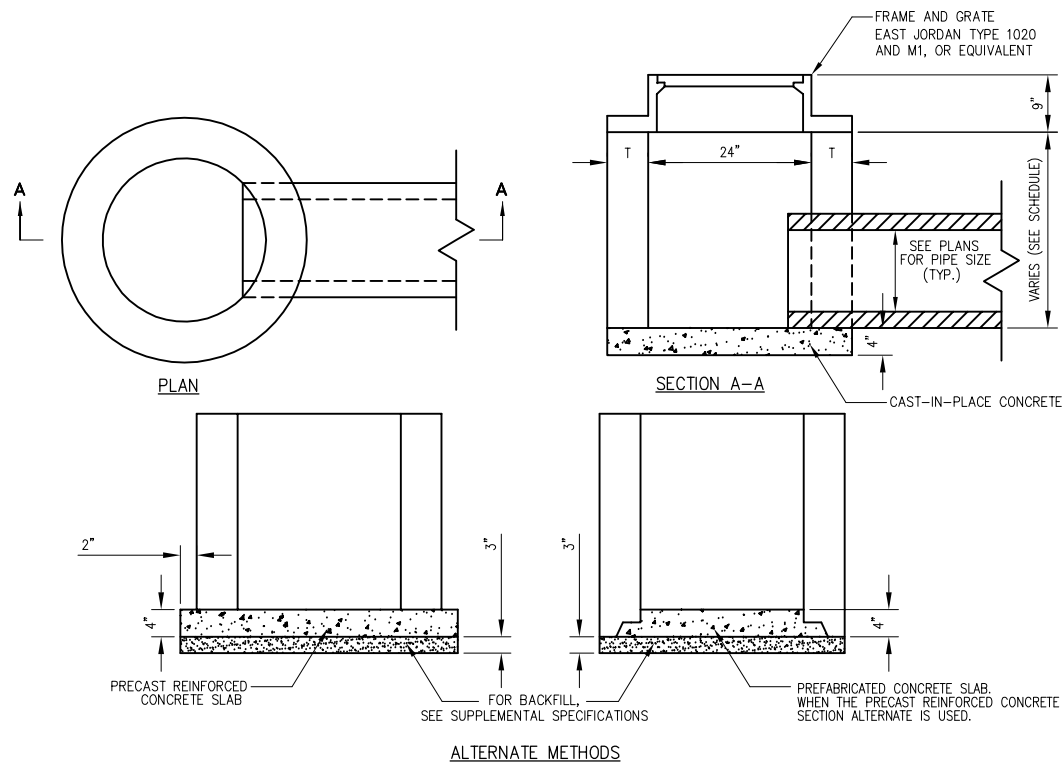
ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 73-DRAINAGE SCHEDULE.I
DESIGN BY: KMS 06/06/2016
DRAWN BY: KMS 06/06/2016
REVIEWED BY: LDH 6/9/2016
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DRAINAGE SCHEDULES

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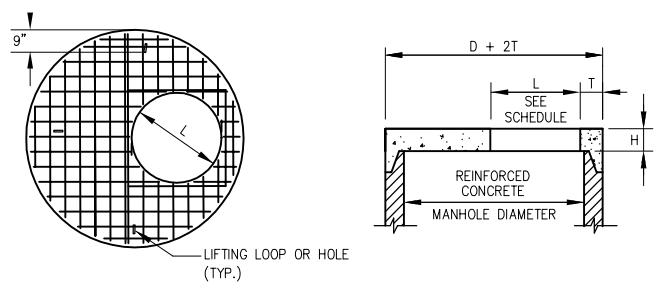


WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813



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

INLET TYPE A
(IDOT STANDARD 602301)



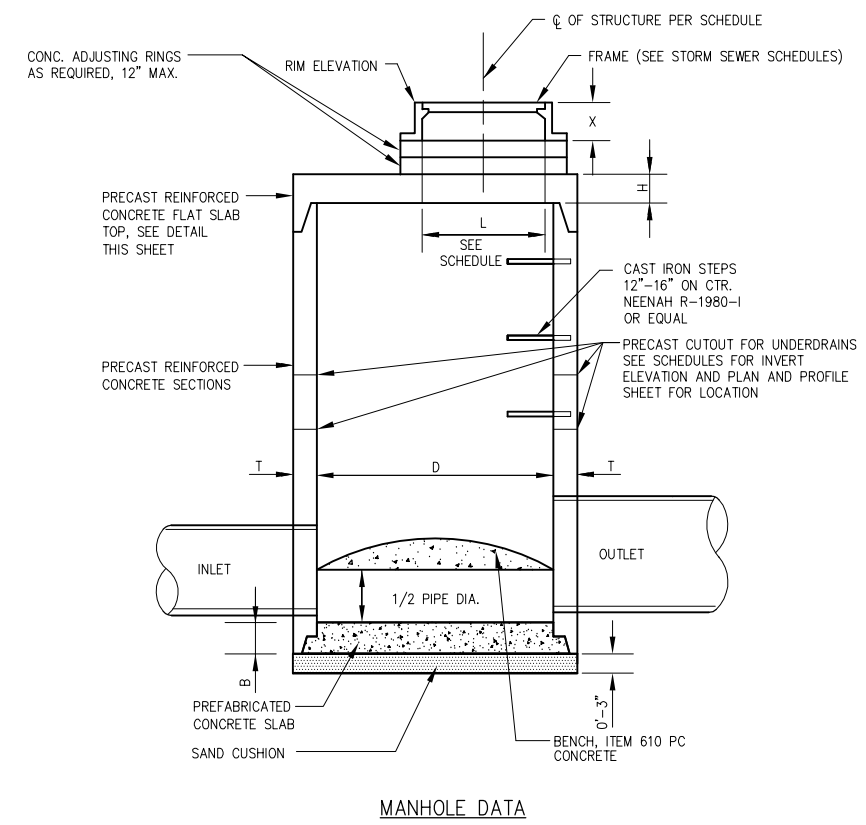
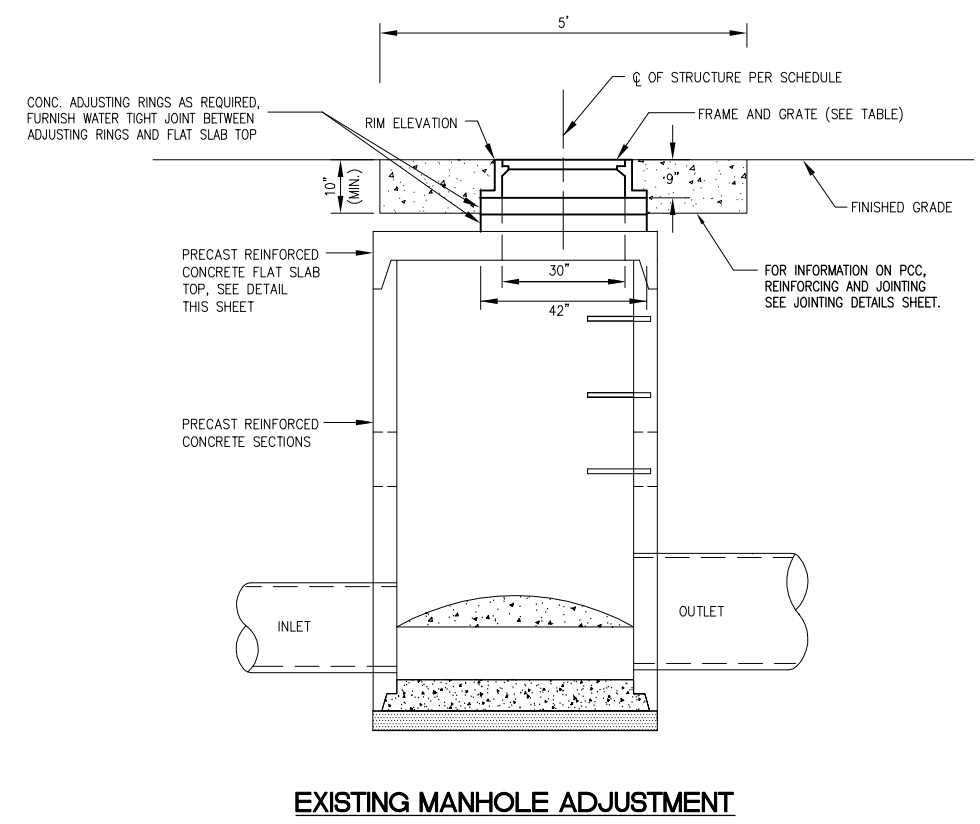
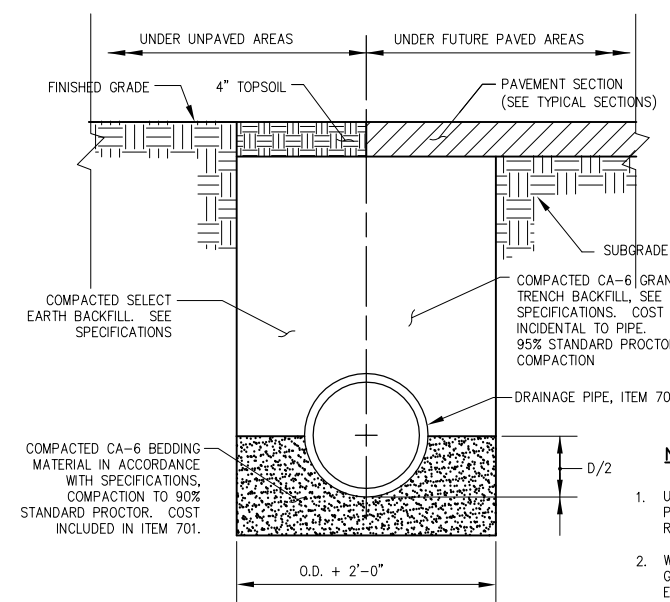
- NOTES**
1. ADDITIONAL TOP AND BOTTOM BARS PLACED ADJACENT TO ACCESS HOLE.
 2. MINIMUM 1" COVER ON STEEL BARS.
 3. THREE LIFTING LOOPS OR HOLES.
 4. MINIMUM STEEL REINFORCEMENT IN EACH DIRECTION TO BE WWF 1.06 SQ. IN./FT. IN ACCORDANCE WITH AASHTO M199 AND IDOT STANDARDS.
 5. FOR "L" DIMENSION SEE STORM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

PRECAST REINFORCED CONCRETE FLAT SLAB TOP
(IDOT STANDARD 602601)

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

- NOTES**
1. UNSUITABLE MATERIAL ENCOUNTERED DURING PLACEMENT OF BEDDING SHALL BE REMOVED AND REPLACED.
 2. WITHIN 3 FEET OF FUTURE PAVED AREA, GRANULAR BACKFILL IS TO BE USED INSTEAD OF EARTH BACKFILL.
 3. AT CONTRACTOR'S OPTION IDOT CONTROLLED LOW STRENGTH MATERIAL WITH A HIGH EARLY STRENGTH, "FLASH FILL", MAY BE USED INSTEAD OF GRANULAR TRENCH BACKFILL UNDER PAVEMENTS.

PIPE TRENCH



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

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

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

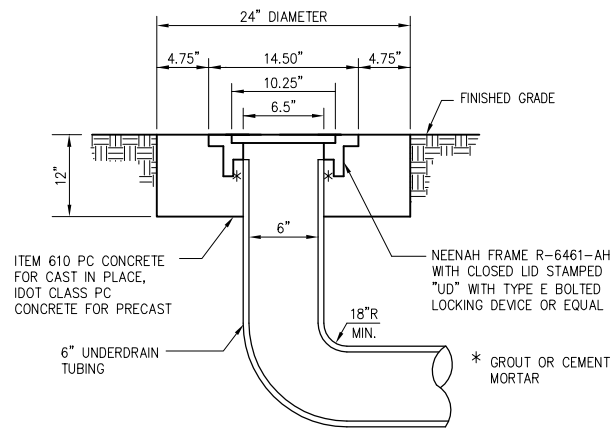
IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

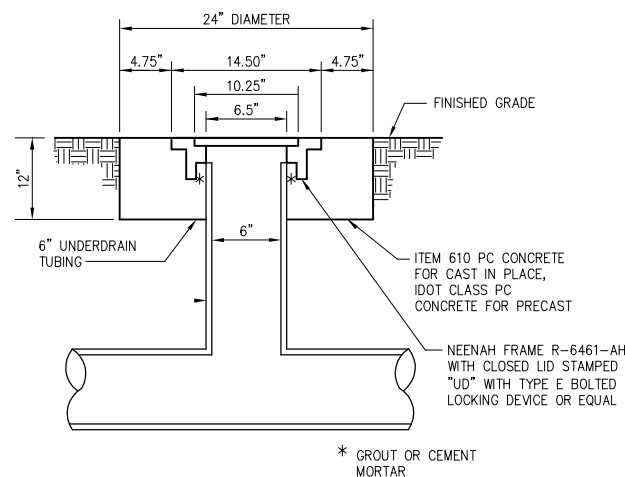
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 74-DRAINAGE DETAILS.D
DESIGN BY: KMS 04/08/2016
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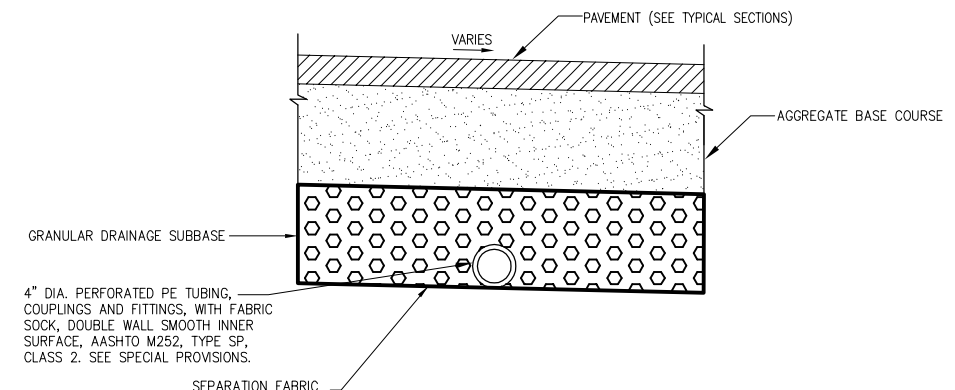
DRAINAGE DETAILS



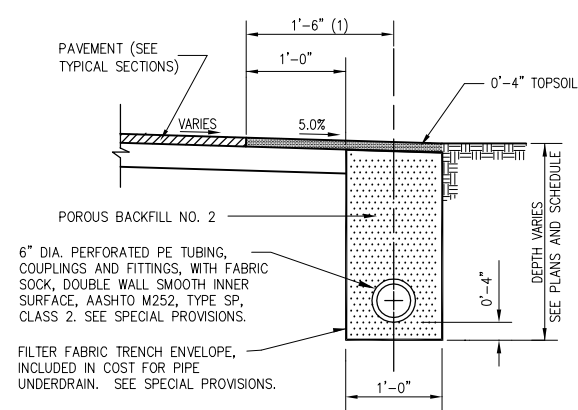
UNDERDRAIN CLEANOUT



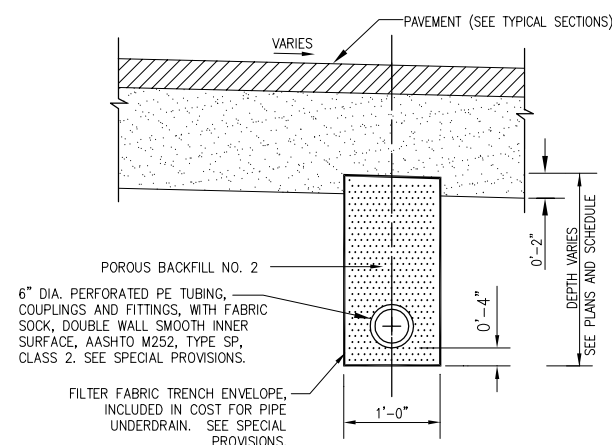
UNDERDRAIN INSPECTION HOLE



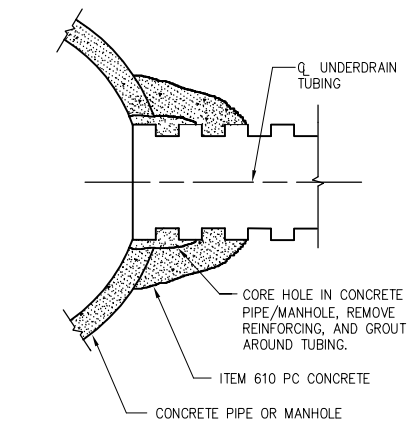
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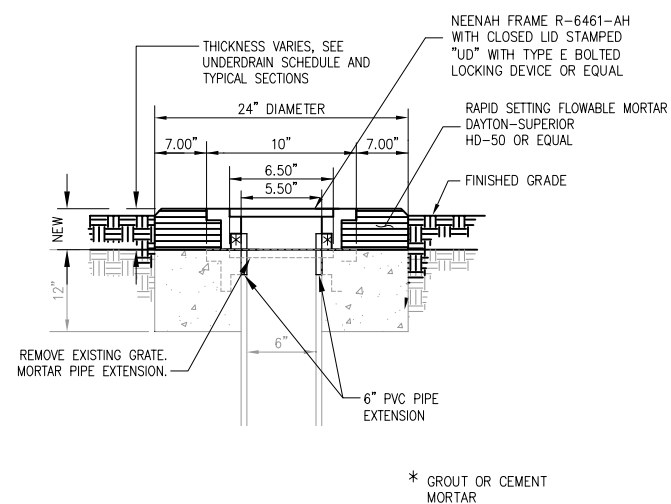
UNDERDRAIN ALONG PAVEMENT EDGE



UNDERDRAIN UNDER PAVEMENT

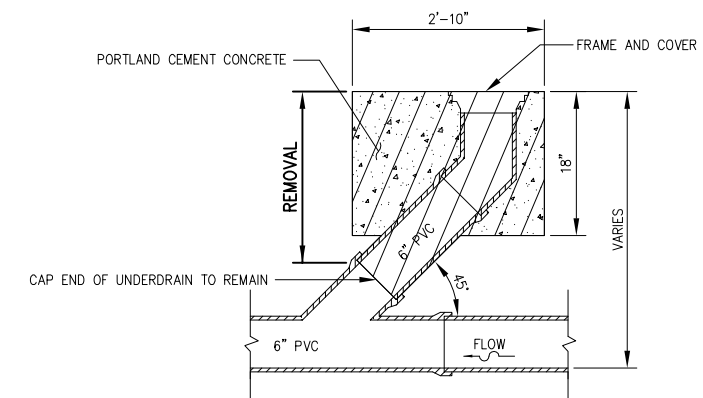


MANHOLE CONCRETE COLLAR AND GROUT CONNECTION



PROPOSED UNDERDRAIN STRUCTURE ADJUSTMENT

DETAILS SHOWN ARE NOT TO SCALE



EXISTING UNDERDRAIN STRUCTURE REMOVAL

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

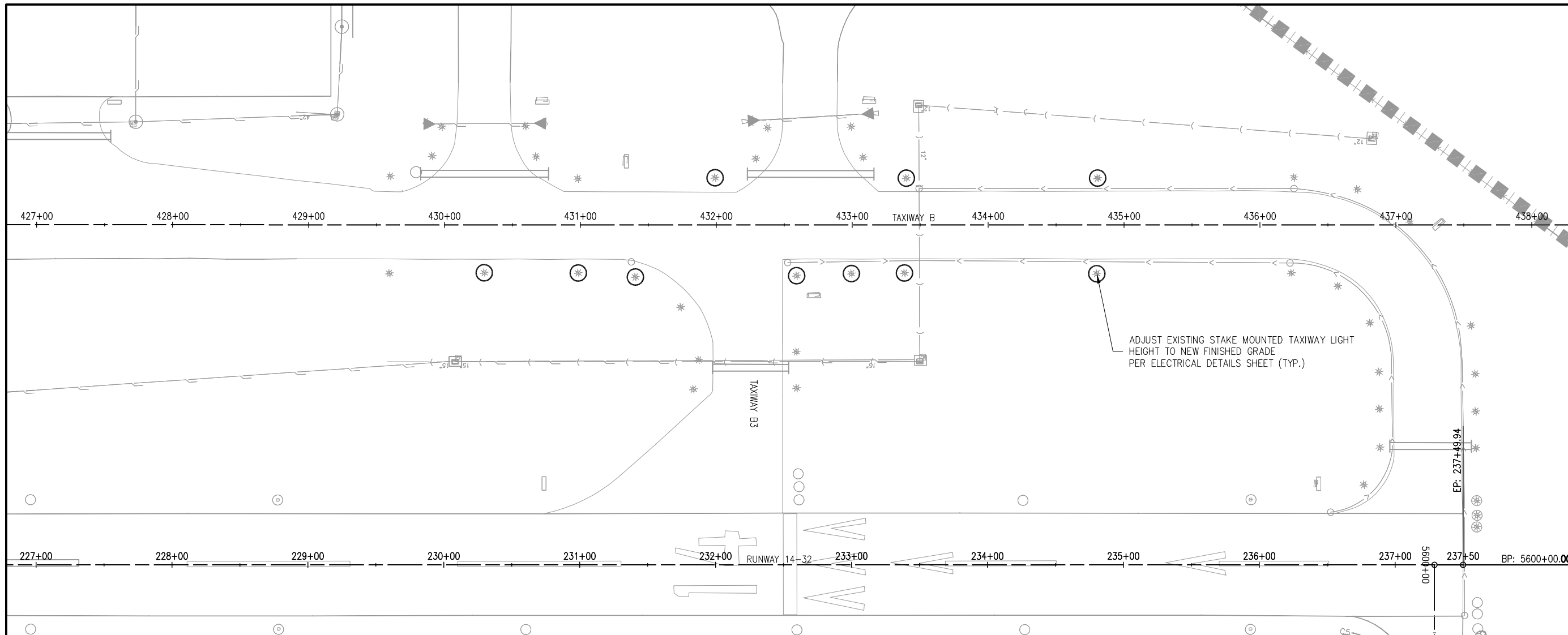
NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 75-UNDERDRAIN DETAILS.I
DESIGN BY: KMS 04/08/2016
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UNDERDRAIN DETAILS



WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813



ADJUST EXISTING STAKE MOUNTED TAXIWAY LIGHT HEIGHT TO NEW FINISHED GRADE PER ELECTRICAL DETAILS SHEET (TYP.)

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

AIRFIELD LIGHTING 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 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.
- PROPOSED TAXIWAY LIGHTS SHALL BE PLACED 10' (FT.) FROM THE PAVEMENT EDGE UNLESS SHOWN OTHERWISE ON THESE CONSTRUCTION DRAWINGS. PROPOSED TAXI GUIDANCE SIGNS SHALL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 20' FROM THE PAVEMENT EDGE, UNLESS SHOWN OTHERWISE.
- PROPOSED RUNWAY LIGHTS, THRESHOLD LIGHTS, TAXIWAY LIGHTS, GUIDANCE SIGNS, OTHER AIRFIELD LIGHTING, SPLICE CANS, HANDHOLES, MANHOLES, ELECTRICAL DUCTS, AND CABLE SHALL BE INSTALLED AT THE LOCATIONS SHOWN AND IN COMPLIANCE WITH THE SPECIFICATIONS, SPECIAL PROVISIONS, RESPECTIVE DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
- PROPOSED CABLE FOR TAXIWAY LIGHTING SHALL BE INSTALLED APPROXIMATELY 12' FROM THE PAVEMENT EDGE. CABLES SHALL BE PLACED A MINIMUM OF 18" BELOW FINISHED GRADE.
- THE PROPOSED TAXIWAY LIGHTING CABLE SHALL BE 1/C, #8 AWG, FAA L-824, 5000 VOLT, TYPE C UNDERGROUND CABLE IN UNIT DUCT.
- 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.
- ALL PROPOSED TAXIWAY LIGHTS WILL BE FITTED WITH 360° BLUE LENSES.
- ALL PROPOSED RUNWAY, THRESHOLD, AND TAXIWAY LIGHTS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE LIGHT NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS.
- THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA AC 150/5370-2F, PART 218, C. ALL LABOR, MATERIALS, AND TIME NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT.
- EXISTING AIRFIELD LIGHTING CABLES IN AREAS OF NEW WORK SHALL BE DISCONNECTED & REMOVED WHERE IN CONFLICT WITH NEW CONSTRUCTION. IN OTHER AREAS CABLES MAY BE ABANDONED IN PLACE. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES.
- 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.
- THE CONTRACTOR IS REQUIRED TO RESTORE ALL DISTURBED PAVEMENT ASSOCIATED WITH NEW AIRFIELD LIGHTING INSTALLATIONS.
- EVERY AIRFIELD LIGHTING CABLE SPLICER SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED AT AND/OR ABOVE 5,000 VOLTS AC. CABLE SPLICING/TERMINATING PERSONNEL SHALL HAVE A MINIMUM OF THREE (3) YEARS CONTINUOUS EXPERIENCE IN TERMINATING/SPLICING MEDIUM VOLTAGE CABLE.
- NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

EXISTING LEGEND

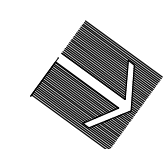
- C1 — LIGHTING CABLES (CIRCUIT 1)
- C2 — LIGHTING CABLES (CIRCUIT 2)
- C3 — LIGHTING CABLES (CIRCUIT 3)
- C4 — LIGHTING CABLES (CIRCUIT 4)
- C5 — LIGHTING CABLES (CIRCUIT 5)
- C6 — LIGHTING CABLES (CIRCUIT 6)
- - - - - SIGN CABLES (CIRCUIT 7)
- - - - - ABANDONED CABLE
- AIRFIELD SIGN
- L-861 EDGE LIGHT, OMNIDIRECTIONAL
- ▭ CONCRETE ENCASED DUCT, OR DIRECT BURIAL

LOC = LOCATION SIGN FACE, YELLOW ON BLACK
DIR = DIRECTIONAL SIGN FACE, BLACK ON YELLOW
DES = DESTINATION SIGN FACE, BLACK ON YELLOW
MAN = MANDATORY SIGN FACE, WHITE ON RED

NOTE: LOC LETTER IS ALWAYS THE FIRST CHARACTER ON THE SIGN FACE

PROPOSED LEGEND

- ◻ RELOCATED L-858 AIRFIELD SIGN SIZE 1, STYLE 5, CLASS 2 WITH L-830 ISOLATION TRANSFORMER
- ◻ L-861T BASE MOUNTED TAXIWAY EDGE LIGHT, OMNIDIRECTIONAL: BLUE
- ◻ L-861T STAKE MOUNTED TAXIWAY EDGE LIGHT, OMNIDIRECTIONAL: BLUE
- ▭ EXTEND ELECTRICAL DUCT
- SERIES CIRCUIT LIGHTING CABLES: 1/C #8 AWG, FAA L-824, 5000 VOLT, TYPE C UG CABLE IN UNIT DUCT
- E — SIGN CABLES: 1/C #8 AWG, FAA L-824, 5000 VOLT, TYPE C UG CABLE IN UNIT DUCT



NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016

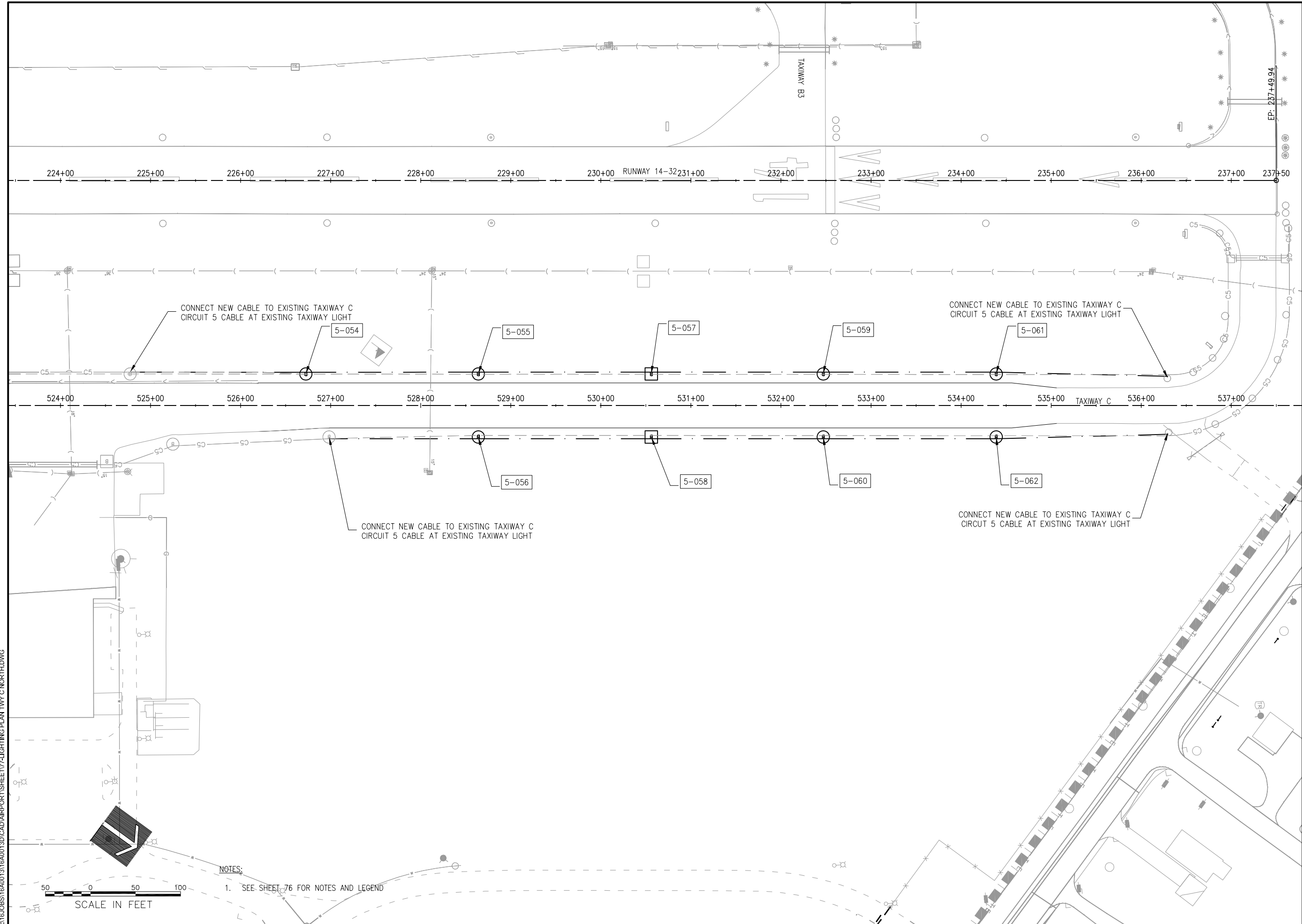
PROJECT NO: 16A0013
CAD FILE: 76-LIGHTING PLAN TWY B NOR
DESIGN BY: KMS 03/31/2016
DRAWN BY: KMS 04/06/2016
REVIEWED BY: LDH 6/9/2016

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SHEET TITLE

ELECTRICAL PLAN TAXIWAY B NORTH

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NOTES:
1. SEE SHEET 76 FOR NOTES AND LEGEND

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 77-LIGHTING PLAN TWY C NOR
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REVIEWED BY: LDH 6/9/2016
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SHEET TITLE

ELECTRICAL PLAN TAXIWAY C NORTH



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

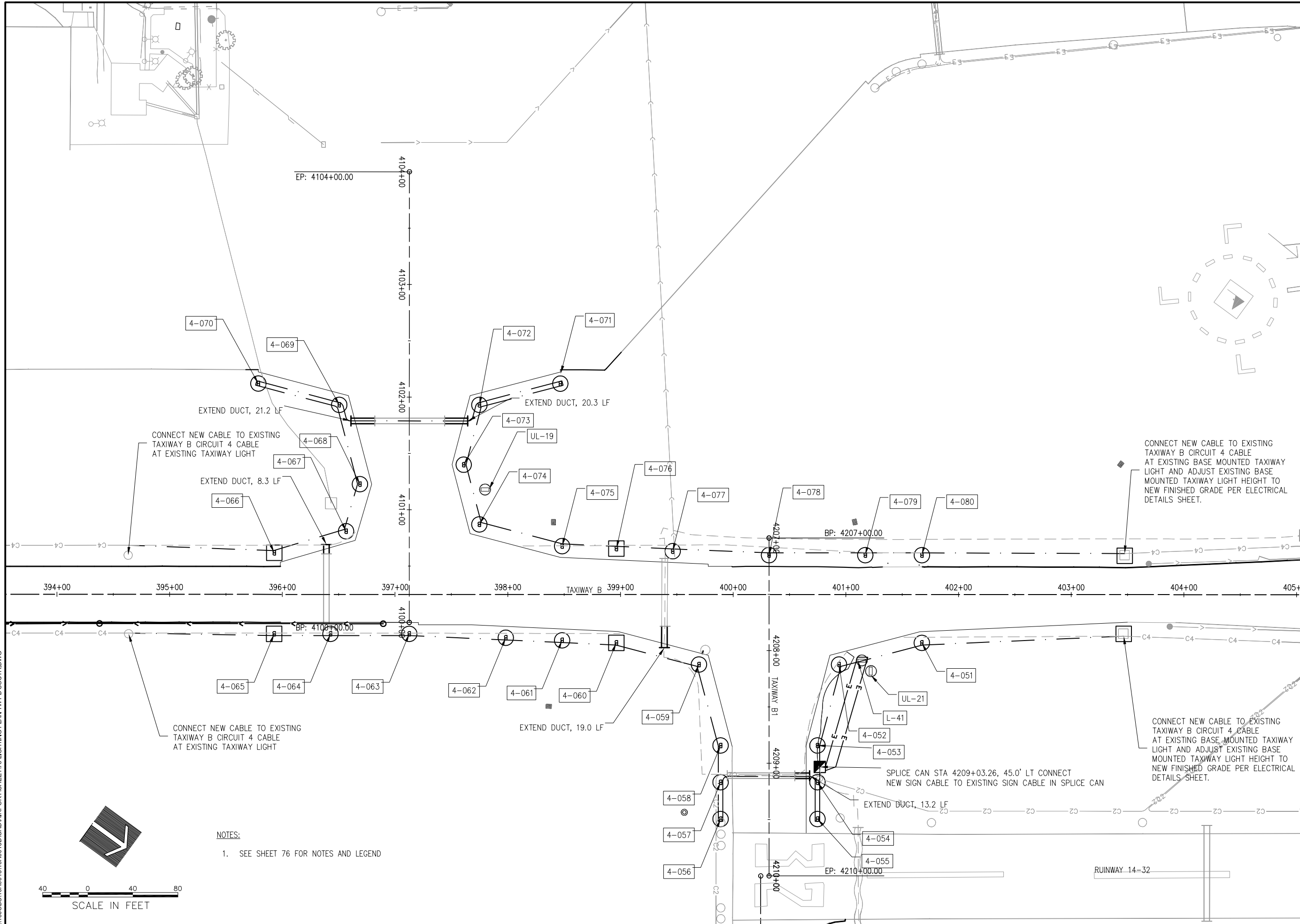
ISSUE: July 29, 2016

PROJECT NO: 16A0013
CAD FILE: 78-LIGHTING PLAN TWY B SOUTH.DWG
DESIGN BY: KMS 03/31/2016
DRAWN BY: KMS 04/06/2016
REVIEWED BY: LDH 6/9/2016

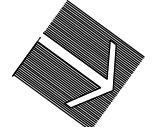
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ELECTRICAL PLAN TWY B SOUTH



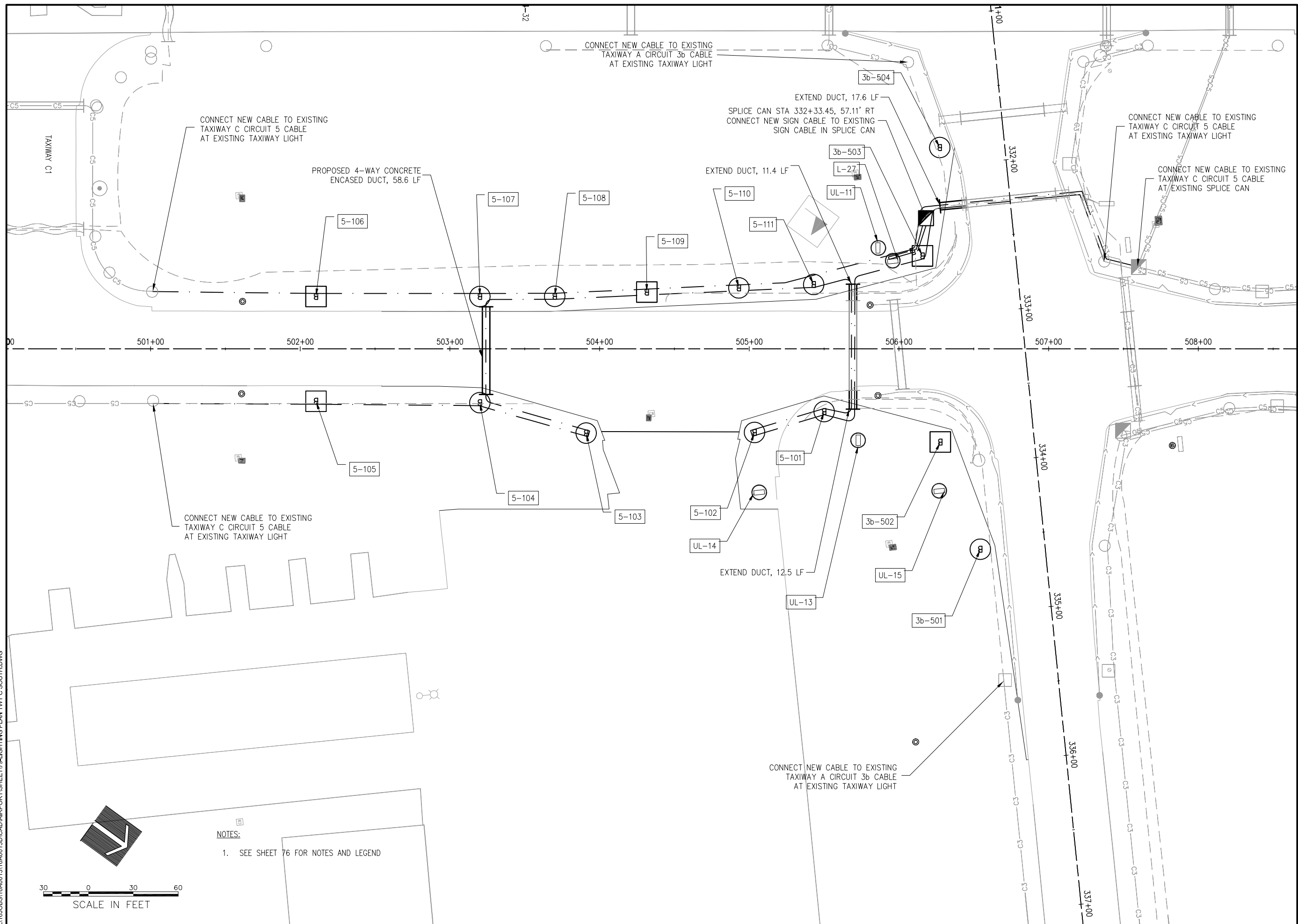
- NOTES:
- SEE SHEET 76 FOR NOTES AND LEGEND



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WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
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Telephone: 847.244.0055
Fax: 847.244.3813



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 79-LIGHTING PLAN TWY C SOUTH.DWG
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ELECTRICAL PLAN
TWY C SOUTH

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NOTES:
1. SEE SHEET 76 FOR NOTES AND LEGEND



LIGHT SCHEDULE

TAXIWAY C NORTH

TAG ID.	DESCRIPTION	TYPE	DIRECTION	COLOR	MOUNTING	STATION	OFFSET	TAG ID.
17-5-054	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	526+72.50	35.00	LT 17-5-054
17-5-055	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	528+64.00	35.00	LT 17-5-055
17-5-056	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	528+64.00	35.00	RT 17-5-056
17-5-057	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	530+56.00	35.00	LT 17-5-057
17-5-058	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	530+56.00	35.00	RT 17-5-058
17-5-059	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	532+47.00	35.00	LT 17-5-059
17-5-060	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	532+47.00	35.00	RT 17-5-060
17-5-061	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	534+39.00	35.00	LT 17-5-061
17-5-062	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	534+39.00	35.00	RT 17-5-062

TAXIWAY C SOUTH

TAG ID.	DESCRIPTION	TYPE	DIRECTION	COLOR	MOUNTING	STATION	OFFSET	TAG ID.
17-5-101	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	505+50.00	41.88	RT 17-5-101
17-5-102	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	505+03.50	55.84	RT 17-5-102
17-5-103	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	503+91.00	56.27	RT 17-5-103
17-5-104	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	503+20.00	35.94	RT 17-5-104
17-5-105	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	502+10.50	35.00	RT 17-5-105
17-5-106	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	502+10.50	35.00	LT 17-5-106
17-5-107	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	503+20.00	35.00	LT 17-5-107
17-5-108	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	503+70.00	35.15	LT 17-5-108
17-5-109	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	504+31.50	37.96	LT 17-5-109
17-5-110	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	504+93.00	40.77	LT 17-5-110
17-5-111	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	505+43.00	43.06	LT 17-5-111

TAXIWAY A SOUTH

TAG ID.	DESCRIPTION	TYPE	DIRECTION	COLOR	MOUNTING	STATION	OFFSET	TAG ID.
17-3b-501	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	334+57.20	43.18	RT 17-3b-501
17-3b-502	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	333+83.25	62.60	RT 17-3b-502
17-3b-503	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	332+58.31	62.01	RT 17-3b-503
17-3b-504	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	331+87.38	43.27	RT 17-3b-504

TAXIWAY B

TAG ID.	DESCRIPTION	TYPE	DIRECTION	COLOR	MOUNTING	STATION	OFFSET	TAG ID.
17-4-051	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	401+67.50	42.87	RT 17-4-051
17-4-052	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	400+94.00	62.14	RT 17-4-052
17-4-053	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4208+84.20	43.00	LT 17-4-053
17-4-054	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4209+16.85	43.00	LT 17-4-054
17-4-055	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4209+49.50	43.00	LT 17-4-055
17-4-056	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4209+49.50	43.00	RT 17-4-056
17-4-057	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4209+16.85	43.00	RT 17-4-057
17-4-058	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4208+84.20	43.00	RT 17-4-058
17-4-059	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	399+69.70	62.14	RT 17-4-059
17-4-060	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	398+96.35	42.90	RT 17-4-060
17-4-061	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	398+48.25	40.69	RT 17-4-061
17-4-062	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	397+98.25	38.41	RT 17-4-062
17-4-063	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	397+12.61	35.00	RT 17-4-063
17-4-064	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	396+42.75	35.00	RT 17-4-064
17-4-065	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	395+92.75	35.00	RT 17-4-065
17-4-066	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	395+92.75	36.92	LT 17-4-066
17-4-067	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	396+56.55	56.06	LT 17-4-067
17-4-068	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4101+22.70	43.79	LT 17-4-068
17-4-069	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4101+93.10	62.19	LT 17-4-069
17-4-070	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4102+12.00	134.00	LT 17-4-070
17-4-071	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4102+12.00	134.00	RT 17-4-071
17-4-072	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4101+93.10	62.19	RT 17-4-072
17-4-073	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	4101+40.00	48.26	RT 17-4-073
17-4-074	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	397+74.80	62.19	LT 17-4-074
17-4-075	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	398+48.25	42.94	LT 17-4-075
17-4-076	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Base	398+96.35	40.74	LT 17-4-076
17-4-077	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	399+46.35	38.45	LT 17-4-077
17-4-078	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	400+31.85	35.00	LT 17-4-078
17-4-079	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	401+17.25	35.00	LT 17-4-079
17-4-080	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	401+67.50	35.00	LT 17-4-080

SIGN SCHEDULE

TAG ID.	DESCRIPTION	Powered	DIRECTION	STATION	OFFSET	TAG ID.
UL-11	Relocate Taxi Guidance Sign	No	Double Face	505+85.95	64.0'	UL-11
UL-13	Relocate Taxi Guidance Sign	No	Double Face	505+72.74	57.5'	UL-13
UL-14	Relocate Taxi Guidance Sign	No	Double Face	505+03.14	96.3'	UL-14
UL-15	Relocate Taxi Guidance Sign	No	Double Face	334+15.76	63.1'	UL-15
UL-19	Relocate Taxi Guidance Sign	No	Double Face	4101+17.97	63.7'	UL-19
UL-21	Relocate Taxi Guidance Sign	No	Double Face	401+22.07	64.5'	UL-21
L-27	Relocate Taxi Guidance Sign	Yes	Double Face	332+59.82	78.6'	L-27
L-41	Relocate Taxi Guidance Sign	Yes	Double Face	4208+08.98	78.8'	L-41



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WAUKEGAN PORT DISTRICT
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Telephone: 847.244.0055
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REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

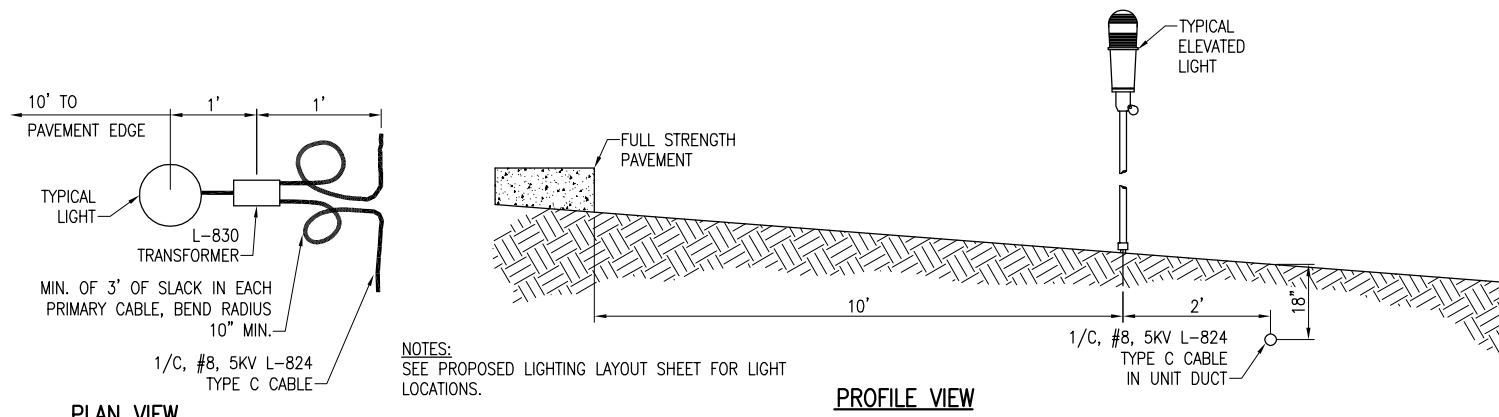
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ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 80-LIGHT AND SIGN SCHEDULE
DESIGN BY: KMS 06/01/2016
DRAWN BY: KMS 06/06/2016
REVIEWED BY: LDH 6/9/2016

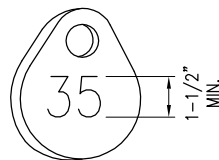
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LIGHT AND
SIGN SCHEDULE

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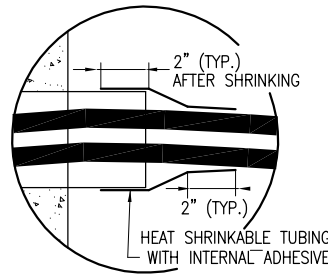


LIGHT AND CABLE INSTALLATION DETAIL
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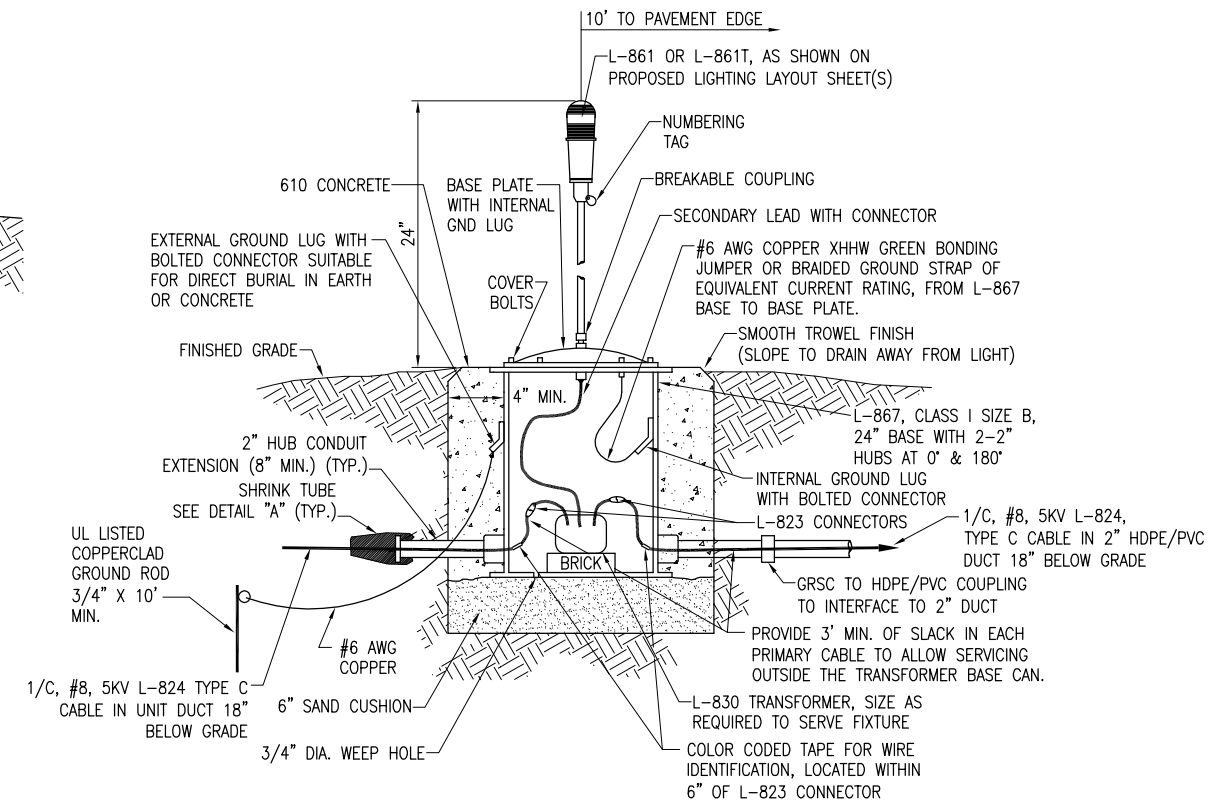


NOTE:
AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.

TAG DETAIL
(NOT TO SCALE)

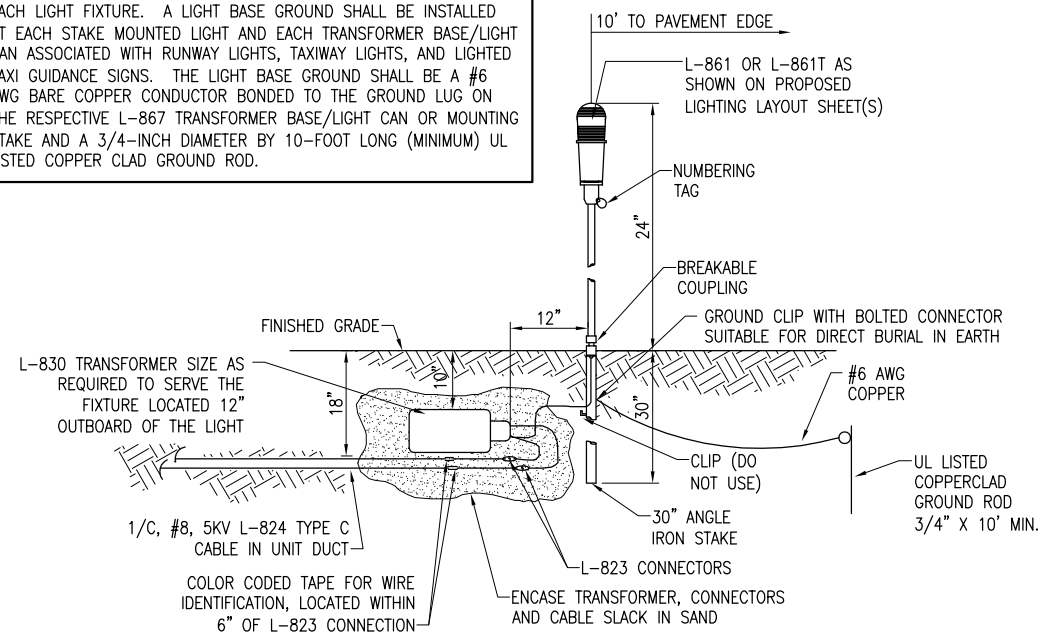


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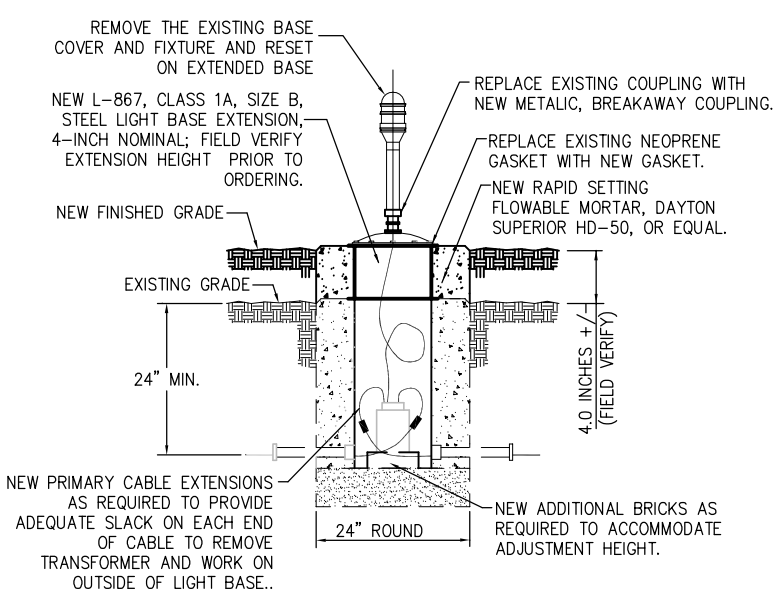


MEDIUM INTENSITY LIGHT - BASE MOUNTED
(NOT TO SCALE)

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

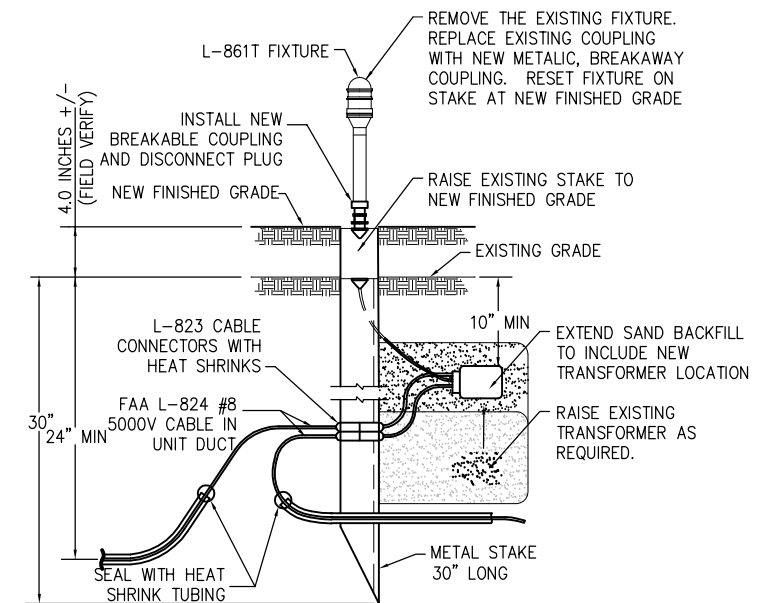


MEDIUM INTENSITY LIGHT - STAKE MOUNTED
(NOT TO SCALE)



- BREAKABLE COUPLING SHALL NOT BE OVER 1" ABOVE COVER.
- CONTRACTOR SHALL EXPOSE AND REROUTE PRIMARY CABLE AND/OR ADD CABLE EXTENSIONS IN A MANNER ACCEPTABLE TO RESIDENT ENGINEER SO THAT AT LEAST 1 FOOT OF SLACK IS PROVIDED ON EACH END OF CABLE.
- SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
- ALL MATERIALS REQUIRED TO FURNISH A COMPLETE, OPERATING FIXTURE SHALL BE PAID UNDER ITEM AR125942.

BASE MOUNTED LIGHT ADJUSTMENT



- BREAKABLE COUPLING SHALL NOT BE OVER 1" ABOVE STAKE.
- CONTRACTOR SHALL EXPOSE AND REROUTE PRIMARY CABLE AND/OR ADD CABLE EXTENSIONS IN A MANNER ACCEPTABLE TO RESIDENT ENGINEER SO THAT AT LEAST 1 FOOT OF SLACK IS PROVIDED ON EACH END OF CABLE.
- SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
- ALL MATERIALS REQUIRED TO FURNISH A COMPLETE, OPERATING FIXTURE SHALL BE PAID UNDER ITEM AR125941.

STAKE MOUNTED LIGHT ADJUSTMENT

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

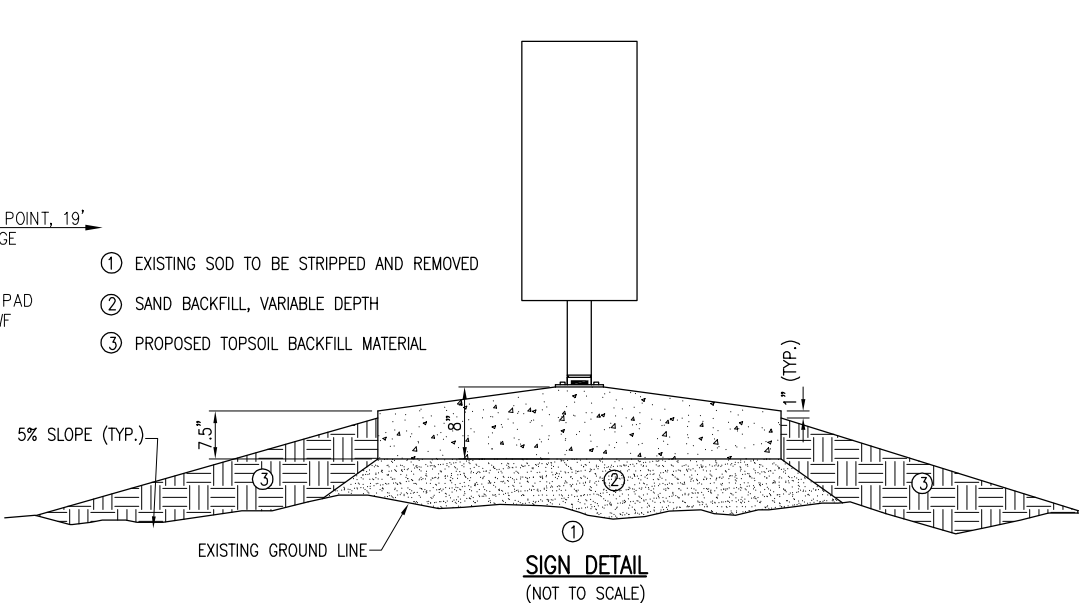
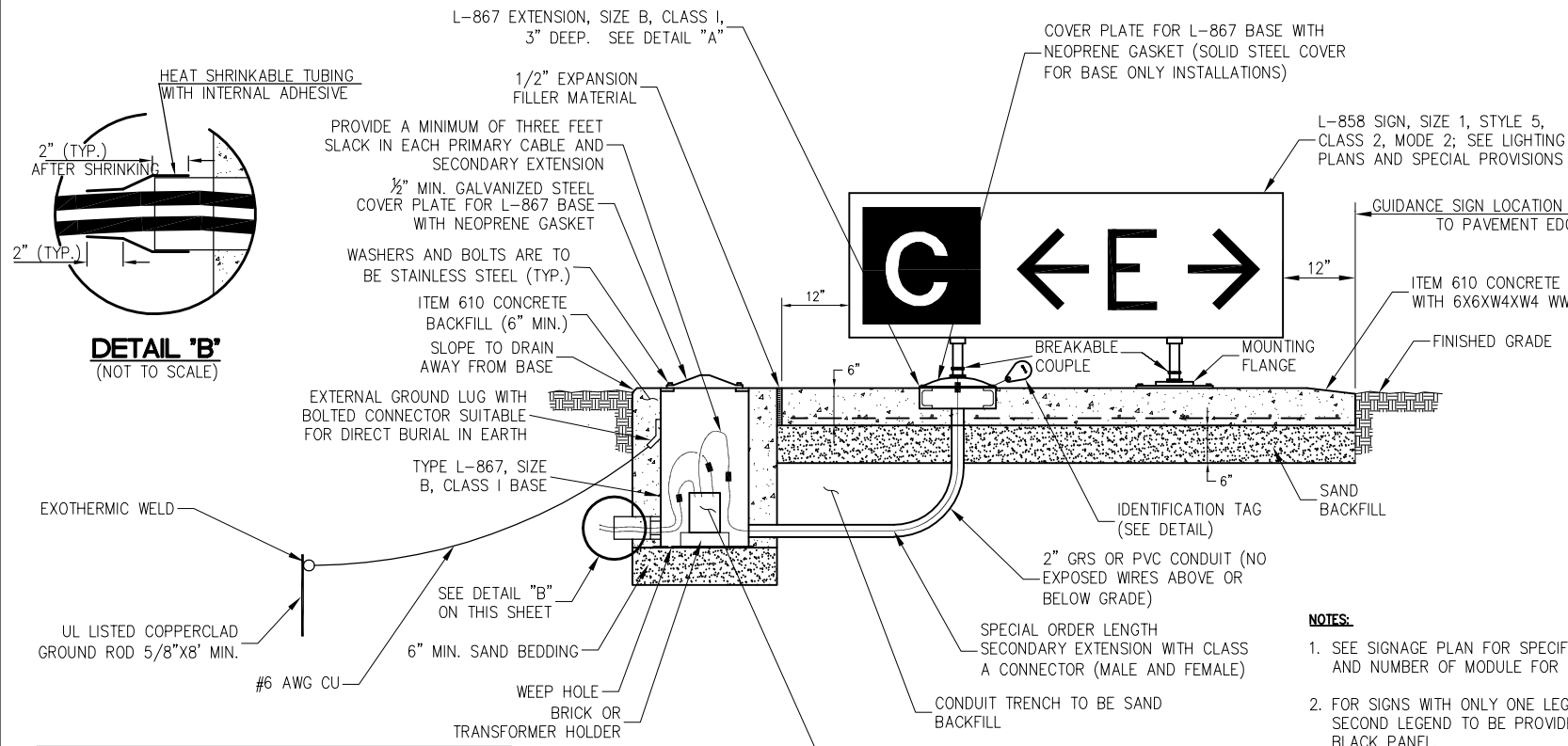
Contract No: WA071

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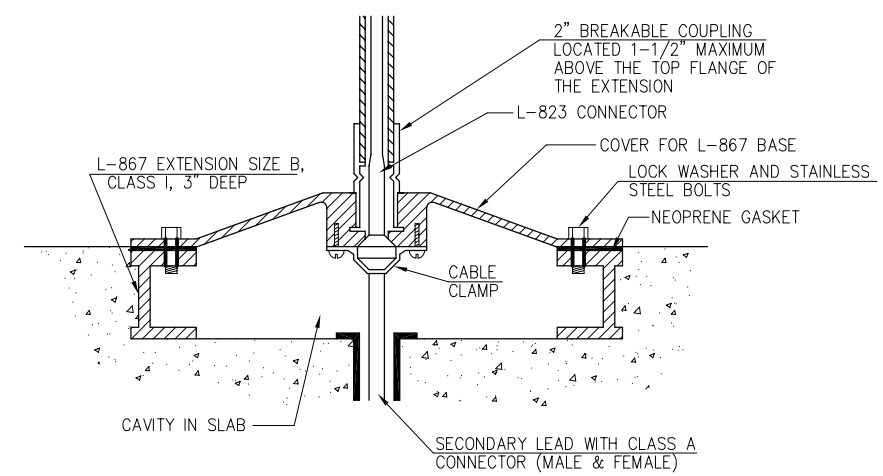
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PROJECT NO: 16A0013
CAD FILE: 81-E-501-DET.LDWG
DESIGN BY: KNL 5/11/16
DRAWN BY: JAB 6/15/16
REVIEWED BY: LDH 6/9/2016
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AIRFIELD LIGHTING DETAILS SHEET 1

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

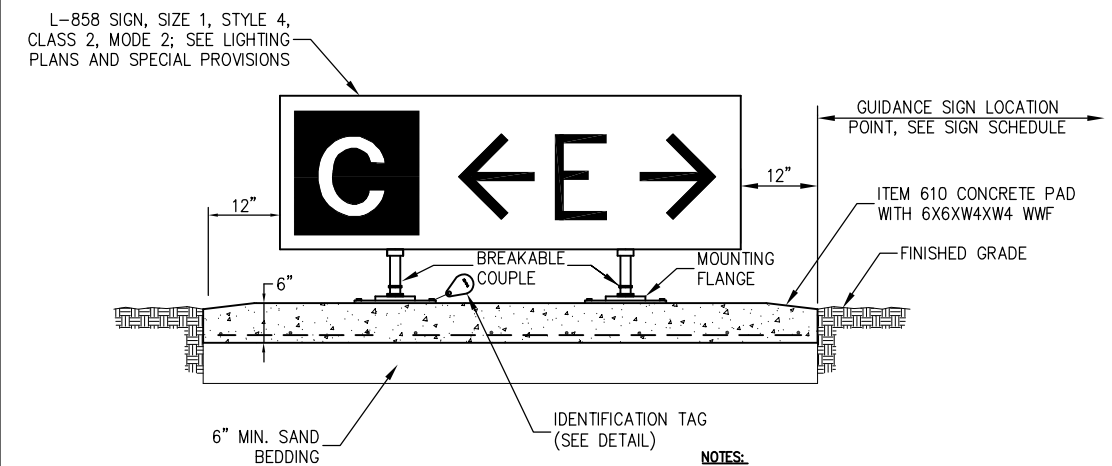


PER FAA AC 150/5340-30H DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR 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.

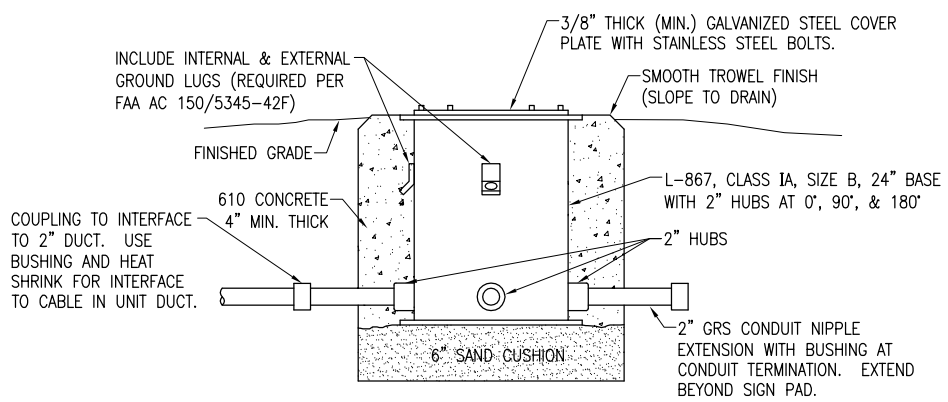
GENERAL NOTES

1. SEE LIGHTING LAYOUT SHEET FOR SIGN LEGEND, LOCATION, TYPE, SIZE, STYLE, AND CLASS.
2. SEE ELECTRICAL NOTES SHEETS.

LIGHTED AIRPORT GUIDANCE SIGN



- NOTES:**
1. SEE SIGNAGE PLAN FOR SPECIFIC LETTERING AND NUMBER OF MODULE FOR EACH SIGN.
 2. FOR SIGNS WITH ONLY ONE LEGEND FACE, SECOND LEGEND TO BE PROVIDED WITH BLANK BLACK PANEL.



NOTE:
FOR THE PURPOSE OF ENHANCING SAFETY, EACH BASE MUST HAVE INSTALLED, BY THE MANUFACTURER, AN INTERNAL AND EXTERNAL GROUND STRAP THAT IS AVAILABLE FOR THE PURPOSE OF ATTACHING A GROUND LUG THAT IS CONNECTED TO AN EARTH GROUND OR A SAFETY GROUND CONDUCTOR INSTALLED WITH THE RESPECTIVE CIRCUIT. FOR AIRPORT PROJECTS RECEIVING FEDERAL FUNDS THIS REQUIREMENT IS MANDATORY PER FAA AC 150/5345-42F.

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

TAXI GUIDANCE SIGN DETAILS

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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
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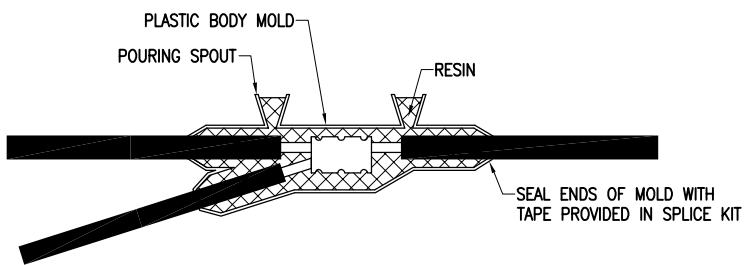
ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 83-E-503-DETL.DWG
DESIGN BY: KNL 5/11/16
DRAWN BY: JAB 6/15/2016
REVIEWED BY: LDH 6/9/2016

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AIRFIELD LIGHTING CABLE SPLICE DETAILS

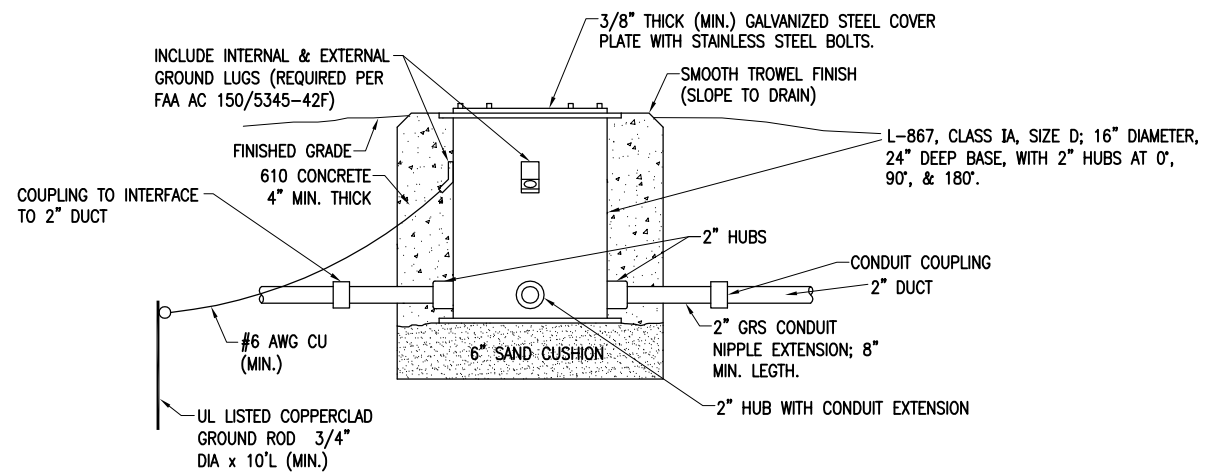
NOTES:

1. SPLICE DETAILS ARE PROVIDED FOR NEW WORK AND TO ASSIST IN REPAIRS OF ACCIDENTAL OR UNEXPECTED INTERRUPTIONS AND/OR CUTS TO AIRFIELD LIGHTING CABLES.
2. CONTRACTOR SHALL KEEP ON HAND A MINIMUM OF 10 SETS OF SPLICE KITS FOR L-823 CONNECTORS AND A MINIMUM OF 10 SETS OF TYPE A LOW VOLTAGE SPLICE KITS TO ACCOMMODATE REPAIRS.
3. EVERY AIRFIELD LIGHTING CABLE SPLICER SHALL BE QUALIFIED IN MAKING CABLE SPLICES AND TERMINATIONS ON CABLES RATED AT AND/OR ABOVE 5,000 VOLTS AC.
4. WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.
5. INSIDE DIAMETER OF RESPECTIVE CABLE CONNECTOR SHALL PROPERLY MATCH OUTSIDE DIAMETER OF CABLE.
6. WRAP ALL PRIMARY AND SECONDARY POWER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE (3M SCOTCH 23 ALL-VOLTAGE SPLICING TAPE, 3M SCOTCH 130C LINERLESS RUBBER SPLICEING TAPE, OR APPROVED EQUAL) AND COVER WITH VINYL ELECTRICAL TAPE (3M SCOTCH 88 VINYL ELECTRICAL TAPE OR APPROVED EQUAL) FOR FULL VALUE OF CABLE INSULATION VOLTAGE.
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.



LOW VOLTAGE UNDERGROUND TAP SPLICE

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

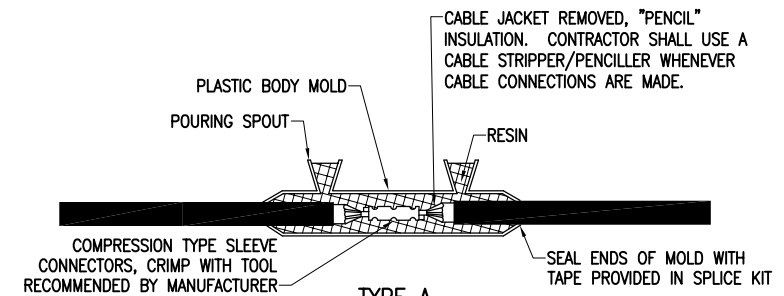


SPLICE CAN DETAIL

(NOT TO SCALE)

NOTES FOR SPLICE CAN DETAIL:

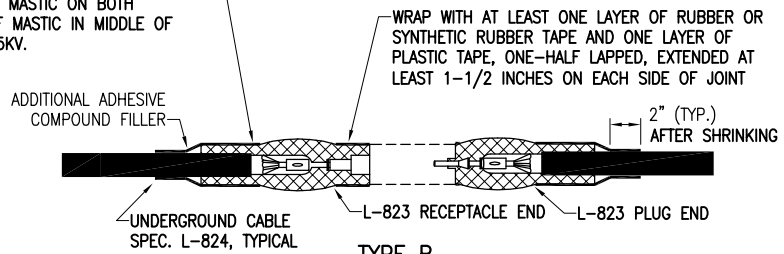
1. SPLICE CANS SHALL CONFORM TO THE REQUIREMENTS OF FAA AC 150/5345-42H, OR MOST CURRENT ISSUE IN FORCE, FOR TYPE L-867, CLASS IA, SIZE D, (16 IN. NOMINAL DIAMETER), AND 24 IN. DEEP AND/OR AS DETAILED ON THE PLANS. EACH SPLICE CAN SHALL INCLUDE INTERNAL AND EXTERNAL GROUND LUGS TO ACCOMMODATE THE RESPECTIVE APPLICATIONS. SPLICE CANS AND/OR JUNCTION CANS SHALL HAVE GALVANIZED STEEL COVERS, 3/8-INCH THICK (MINIMUM), WITH STAINLESS STEEL BOLTS.
2. FOR THE PURPOSE OF ENHANCING SAFETY, EACH BASE MUST HAVE INSTALLED, BY THE MANUFACTURER, AN INTERNAL AND EXTERNAL GROUND STRAP THAT IS AVAILABLE FOR THE PURPOSE OF ATTACHING A GROUND LUG THAT IS CONNECTED TO AN EARTH GROUND OR A SAFETY GROUND CONDUCTOR INSTALLED WITH THE RESPECTIVE CIRCUIT. FOR AIRPORT PROJECTS RECEIVING FEDERAL FUNDS THIS REQUIREMENT IS MANDATORY PER FAA AC 150/5345-42H.
3. APPLY AN OXIDE-INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS, AND ALL PLACES WHERE METAL COMES INTO CONTACT WITH METAL.
4. THE CONCRETE USED IN THE CONSTRUCTION OF THE BASES FOR THE AIRFIELD LIGHTING CANS SHALL BE IN ACCORDANCE WITH ITEM 610 STRUCTURAL PORTLAND CEMENT CONCRETE.



TYPE A

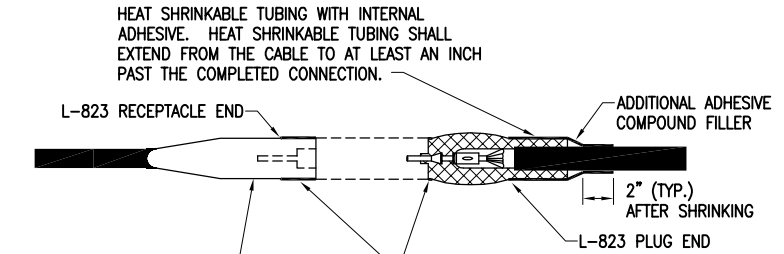
FOR SPLICES IN LOW VOLTAGE CABLE (600V) HOMERUNS FOR EXTENSIONS TO EXISTING LOW VOLTAGE CABLES ONLY. TYPE A SPLICES SHALL BE MADE IN SPLICE CANS, HANDHOLES, MANHOLES, OR JUNCTIONS BOXES

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



TYPE B

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



TYPE C

FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS AND TAXI SIGNS

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

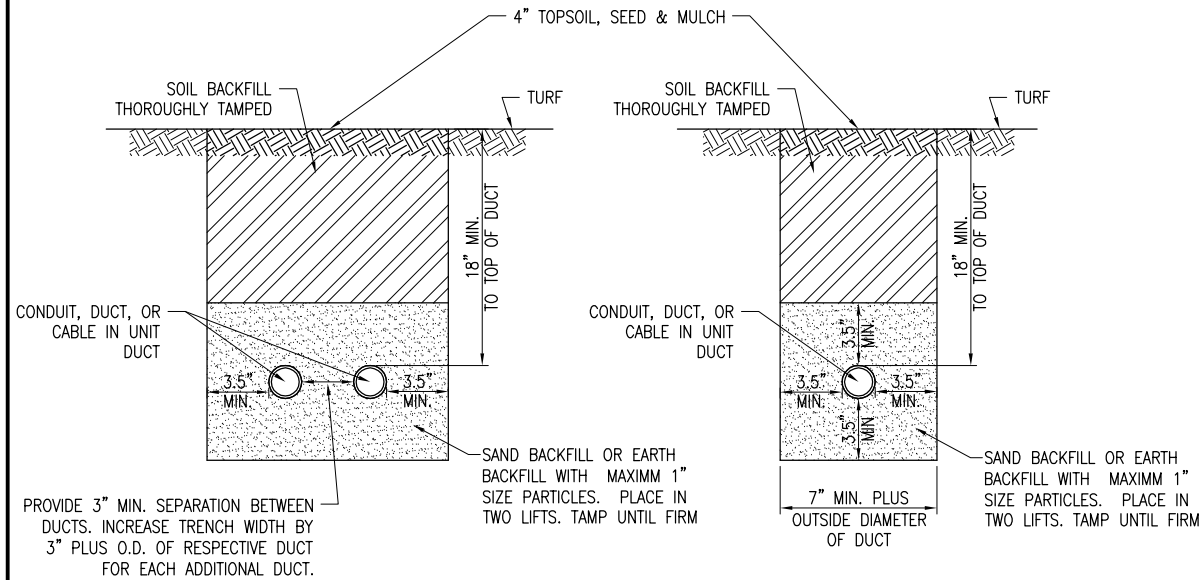
CABLE SPLICES

(NOT TO SCALE)

300W/24V/2000W/1500 AM-HAUSM00682
1316 JOBS\16A0013\16A0013D\CAD\AIRPORTS\SHEET\83-E-503-DETL.DWG



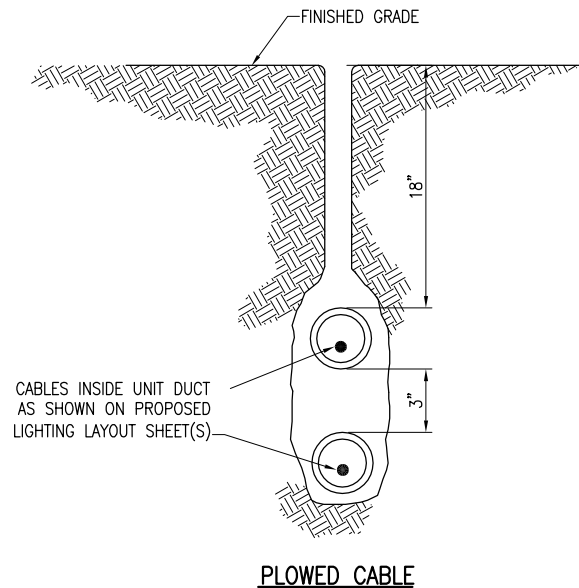
WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813



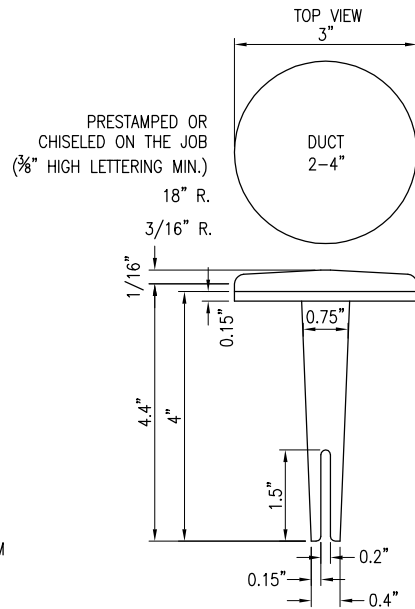
CONDUIT IN TRENCH – NON-PAVEMENT AREAS
"NOT TO SCALE"

NOTES:

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



PLOWED CABLE



BITUMINOUS PAVEMENT DUCT MARKERS
"NOT TO SCALE"

NOTES:

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

CABLE & DUCT MARKER NOTES:

- THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
- BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE FORMED AS DESCRIBED IN NOTE 4.
- CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
- CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/8" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.
- EMPLOY THE FOLLOWING METHODS WERE ADDITIONAL SPACE TO FIT LEGEND IS REQUIRED:
 - REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
 - INCREASE THE MARKER SIZE TO 30" X 30".
 - PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE.

INDICATES NUMBER AND SIZE OF DUCT BANK

IMPRESSED LETTERS INDICATING NUMBER AND SIZE OF DUCTS

CONCRETE DUCT MARKER

DUCT MARKER DETAIL
"NOT TO SCALE"

IMPRESSED LETTERS AND DIRECTIONAL ARROW, ADJUST TO CABLE LAYOUT

CONCRETE CABLE MARKER

CABLE MARKER

FINISHED GRADE

TURF CABLE MARKERS
"NOT TO SCALE"

IMPRESSED NUMBERS NOTING NUMBER & SIZE OF DUCTS. ADJUST FOR RESPECTIVE QUANTITY & SIZE OF DUCTS

CONCRETE DUCT MARKER

DUCT MARKER

FINISHED GRADE

TURF DUCT MARKERS
"NOT TO SCALE"

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

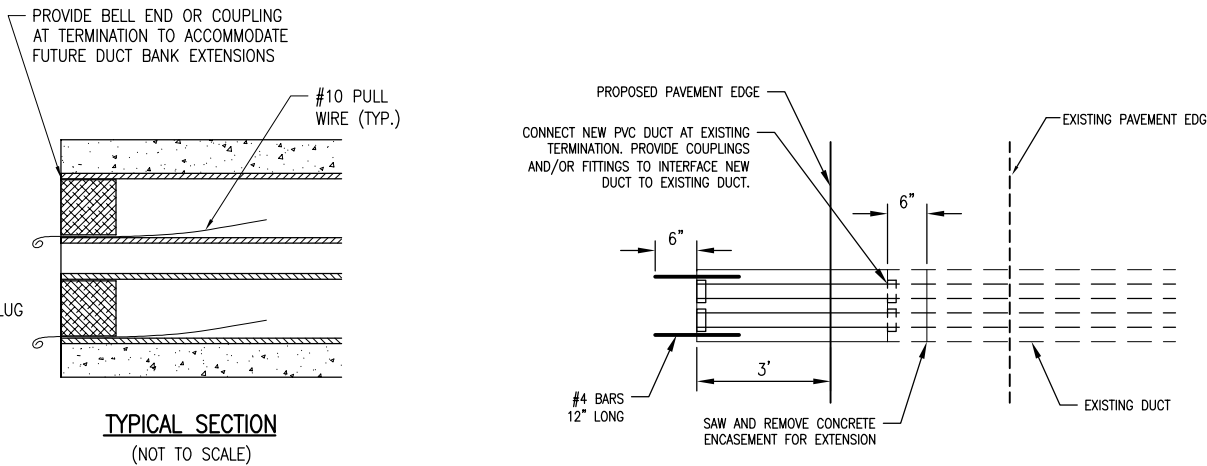
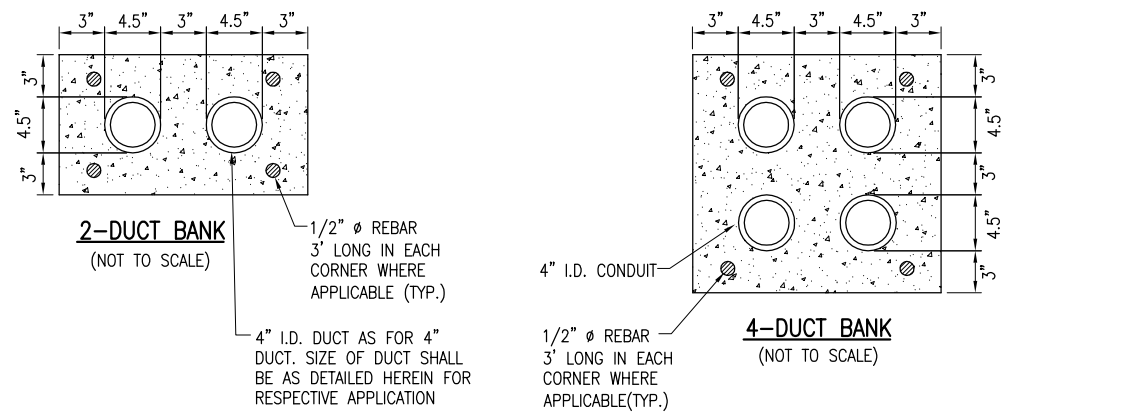
IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

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DRAWN BY: JAB 6/15/2016
REVIEWED BY: LDH 6/9/2016
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CONDUIT TRENCH DETAILS

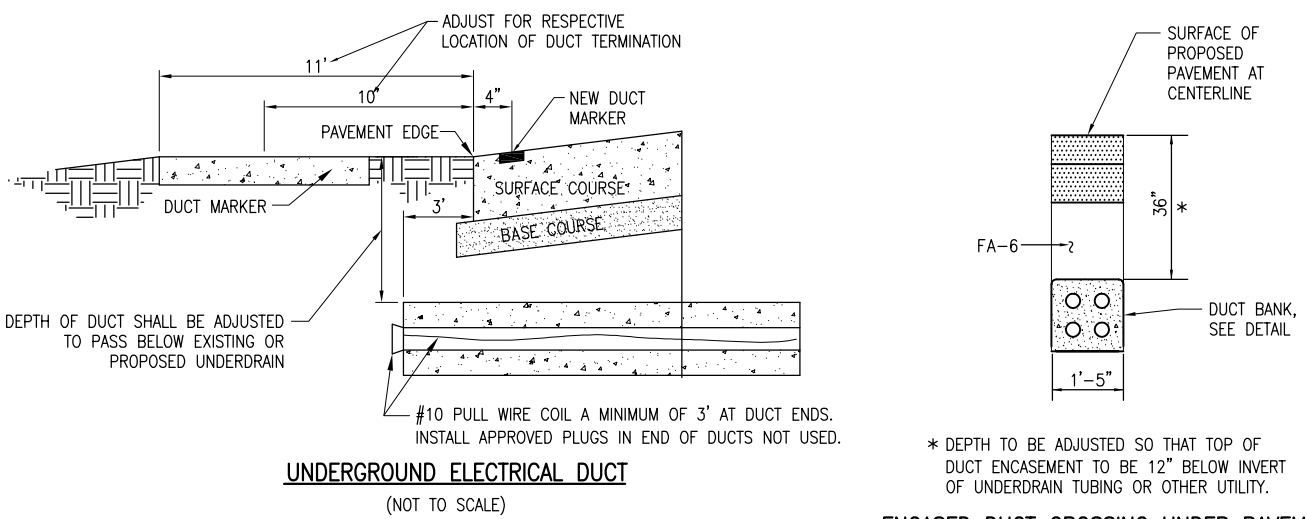


DUCT BANK NOTES:

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

DUCT INSTALLATION NOTES

- ALL ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 – NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, INTERTEK TESTING SERVICES VERIFICATION/LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
- CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.
- ADJUSTMENTS TO DUCT BANK ROUTES MIGHT BE REQUIRED TO ACCOMMODATE EXISTING SITE CONDITIONS AND UNDERGROUND LINES AND UTILITIES. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL COORDINATE DUCT ROUTE ADJUSTMENTS WITH THE RESIDENT ENGINEER/ RESIDENT PROJECT REPRESENTATIVE AND THE AIRPORT MANAGER.
- CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING CABLES, LINES, OR UTILITIES WITHIN 10 FT OF PROPOSED EXCAVATING/TRENCHING AREA. ANY CABLES, LINES, AND UTILITIES FOUND INTERFERING WITH PROPOSED EXCAVATION OR CABLE/TRENCHING SHALL BE HAND DUG AND EXPOSED. ANY DAMAGED CABLES OR OTHER UTILITIES SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE. THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE AND OWNER SHALL BE NOTIFIED IMMEDIATELY IF ANY CABLES OR OTHER UTILITIES ARE DAMAGED.
- PAYMENT FOR LOCATING AND MARKING UNDERGROUND UTILITIES AND CABLES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION.
- THE CONTRACTOR WILL DETERMINE IF THERE IS A CONFLICT BETWEEN THE INSTALLATION OF THE PROPOSED ELECTRICAL DUCTS AND ANY EXISTING UTILITIES. HE WILL MAKE ALL NECESSARY ADJUSTMENTS IN DEPTH OF INSTALLATION TO AVOID ANY AND ALL PROPOSED/EXISTING UNDERGROUND IMPROVEMENTS.
- CONDUITS FOR CONCRETE ENCASED DUCT BANK SHALL BE SCHEDULE 40 PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651, LISTED SUITABLE FOR UNDERGROUND USE EITHER DIRECT-BURIED OR ENCASED IN CONCRETE, OR SCHEDULE 40 (MINIMUM) HDPE CONDUIT, UL LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND LISTED SUITABLE FOR UNDERGROUND USE; EITHER DIRECT BURY OR ENCASED IN CONCRETE.
- CONDUITS FOR DIRECTIONAL BORING SHALL BE SCHEDULE 40 PVC CONDUIT OR SCHEDULE 80 PVC CONDUIT, UL-LISTED, RATED FOR 90°C CABLE-CONFORMING TO NEMA STANDARD TC-2 AND UL 651 AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, SCHEDULE 80 HDPE CONDUIT, UL-LISTED, CONFORMING TO NEMA STANDARD TC-7 AND UL 651B AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION, OR WALL TYPE SDR 13.5 OR SDR 11 HDPE CONDUIT MANUFACTURED IN ACCORDANCE WITH ASTM D-3350 (SPECIFICATION OF POLYETHYLENE PLASTICS PIPE AND FITTINGS MATERIALS) AND ASTM F2160 (STANDARD SPECIFICATION FOR SOLID WALL, HIGH-DENSITY POLYETHYLENE CONDUIT BASED ON CONTROLLED OUTSIDE DIAMETER), AND SUITABLE FOR DIRECTIONAL BORING INSTALLATION. PER NEC 300.5 (K), RACEWAYS INSTALLED USING DIRECTIONAL BORING EQUIPMENT SHALL BE APPROVED FOR THE PURPOSE.
- INSTALLATION OF CONDUIT AND DUCTS SHALL CONFORM TO ITEM 110 AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS.
- DUCTS INSTALLED IN TRENCH SHALL BE INSTALLED 18 IN. MINIMUM BELOW GRADE IN TURF AREAS NOT SUBJECT TO FARMING. DUCTS LOCATED IN AREAS SUBJECT TO FARMING SHALL BE 42 IN. MINIMUM BELOW GRADE. MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 42" IN AREAS UNDER ROADWAYS. WHERE DETAILED ON THE PLANS OR WHERE REQUIRED TO AVOID OBSTRUCTIONS, DUCTS SHALL BE BURIED DEEPER.
- WHERE CONCRETE-ENCASED DUCT INTERFACES TO AN ELECTRICAL HANDHOLE OR MANHOLE, THE CONCRETE ENCASEMENT SHALL BE INSTALLED UP TO THE RESPECTIVE HANDHOLE OR MANHOLE. PROVIDE BUSHINGS OR BELLS AT CONDUIT TERMINATIONS IN ELECTRICAL HANDHOLES OR MANHOLES.
- UNDERGROUND DUCTS INSTALLED BY DIRECTIONAL-BORING METHOD SHALL BE INSTALLED IN A MANNER THAT WILL NOT DAMAGE ANY EXISTING UNDERGROUND UTILITIES, AND SHALL NOT DISTURB OR DAMAGE THE RESPECTIVE PAVEMENT OR ROADWAY SURFACE. DUCTS SHALL BE DIRECTIONAL-BORED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. THE DUCTS WILL BE BORED AT A MINIMUM DEPTH OF 42 IN. BELOW THE RESPECTIVE PAVEMENT IT IS BEING BORED UNDER.
- A PULL WIRE SHALL BE INSTALLED IN EACH CONDUIT OR DUCT TO BE LEFT VACANT.
- HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 5000 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) AND LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
- CONTROL CABLES SHALL BE RUN IN SEPARATE DUCTS FROM POWER CABLES.
- HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
- COORDINATE DUCT INTERFACE TO MANHOLES AND HANDHOLES. FIELD CUT OPENINGS FOR CONDUITS AND DUCTS TO INTERFACE TO MANHOLES AND/OR HANDHOLES. CUT WALL OF RESPECTIVE HANDHOLE OR MANHOLE WITH A TOOL DESIGNED FOR MATERIAL TO BE CUT. SIZE HOLES FOR RESPECTIVE DUCTS, CONDUITS, AND TERMINATION FITTINGS AND SEAL AROUND PENETRATIONS. ALL CORING, INTERFACE, CUTTING, AND SEALING WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT INSTALLATION AND/OR RESPECTIVE HANDHOLE/MANHOLE INSTALLATION.
- CONTRACTOR SHALL COORDINATE DUCT MARKING WITH AIRPORT.
- ALL POWER AND CONTROL CABLES IN HANDHOLES, MANHOLES, AND JUNCTION BOXES SHALL BE TAGGED TO IDENTIFY THE RESPECTIVE CABLE. A MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MANHOLE; ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT. CABLE TAGS SHALL BE STAMPED BRASS TAGS OR OTHER WEATHERPROOF/WATERPROOF CORROSION RESISTANT MATERIAL.



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

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ELECTRICAL DUCT BANK DETAILS & NOTES



REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

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ELECTRICAL NOTES SHEET 1

GENERAL NOTES

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

POWER AND CONTROL NOTES

- PROVIDE LEGEND PLATES FOR ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO IDENTIFY THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT AREA TO INSTALL LEGEND PLATES, THE LEGEND PLATES SHALL BE INSTALLED ON THE WALL NEXT TO THE UNIT. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
- COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK AND RED SHALL BE USED FOR PHASE CONDUCTORS ON 120/240VAC SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, ORANGE (FOR HIGH LEG) AND BLUE SHALL BE USED FOR PHASE CONDUCTORS ON 240/120VAC THREE-PHASE, FOUR WIRE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, SHALL BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH. NEUTRAL CONDUCTORS LARGER THAN NO. 6 AWG SHALL BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR SIZES (AWG OR KCML).
- ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE SHALL BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING SHALL BE EXTENDED TO THE POINT OF UTILIZATION.
- IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
- LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS.
- NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND JUNCTION/PULL BOXES.
- THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:
 - IN STRAIGHT PULLS THE LENGTH OF THE BOX SHALL NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END SHALL BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.
 - IN ANGLE PULLS OR 'U' PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX SHALL NOT BE LESS THAN SIX (6) TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE SHALL BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL AS THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR SHALL NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.
- A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS. CAST, CONDUIT TYPE OUTLETS SHALL NOT BE TREATED AS PULL/JUNCTION BOXES.
- EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.
- SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
- CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE, MINIMUM FRAME.
- DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
- ALL INTERIOR WALL MOUNTED EQUIPMENT ENCLOSURES SHALL BE MOUNTED ON HOT DIPPED GALVANIZED STEEL STRUT SUPPORT, OR STAINLESS STEEL STRUT SUPPORT, WITH CORROSION RESISTANT HARDWARE.
- SUPPORT FOR EXTERIOR MOUNTED EQUIPMENT SHALL USE HOT DIPPED GALVANIZED STEEL STRUT SUPPORT OR STAINLESS STEEL STRUT SUPPORT WITH STAINLESS STEEL HARDWARE. PROVIDE ZINC RICH PAINT APPLIED TO FIELD CUTS OF GALVANIZED STEEL SUPPORT TO MINIMIZE THE POTENTIAL FOR CORROSION PER THE RESPECTIVE STRUT SUPPORT MANUFACTURER'S RECOMMENDATIONS.
- CONDUITS FOR ELECTRIC SERVICE ENTRANCE AND FEEDERS SHALL BE AS DETAILED HEREIN ON THE PLANS. WHERE GALVANIZED RIGID STEEL CONDUIT IS SPECIFIED IT SHALL HAVE THREADED FITTINGS. SET SCREW TYPE FITTINGS WILL NOT BE ACCEPTABLE. CONDUITS FOR UNDERGROUND APPLICATIONS SHALL BE AS DETAILED HEREIN. CONDUITS FOR GROUNDING ELECTRODE CONDUCTORS OR INDIVIDUAL GROUNDING CONDUCTORS SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC.
- PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
- UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
- ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
- USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS.
- USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
- WRAP ALL PRIMARY AND SECONDARY POWER TRANSFORMER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE (3M SCOTCH 23 ALL-VOLTAGE SPLICING TAPE, 3M SCOTCH 130C LINERLESS RUBBER SPLICING TAPE, OR APPROVED EQUAL) AND COVER WITH VINYL ELECTRICAL TAPE (3M SCOTCH 88 VINYL ELECTRICAL TAPE OR APPROVED EQUAL) FOR FULL VALUE OF CABLE INSULATION VOLTAGE.
- UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINIMUM.
- THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:
 - FOR INTERIOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 12 (DUST TIGHT) ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. FOR EXTERIOR/OUTDOOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 4X STAINLESS STEEL ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. ALL CONDUIT ENTRIES INTO NEMA 4, 4X ENCLOSURES SHALL HAVE NEMA 4 HUBS LISTED SUITABLE FOR THE RESPECTIVE ENCLOSURE TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE.
 - THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.
 - ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED-EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.
 - WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING AND TERMINALS SHALL BE EXPOSED AND ACCESSIBLE WITHOUT REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.
 - ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.
 - EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.
 - A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.
 - THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.
 - ALL WIRING SHALL BE NEATLY TRAINED AND LACED.
 - MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
- FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, CUTOUT, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".

AIRFIELD LIGHTING NOTES

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

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

GROUNDING NOTES FOR AIRFIELD LIGHTING

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



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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

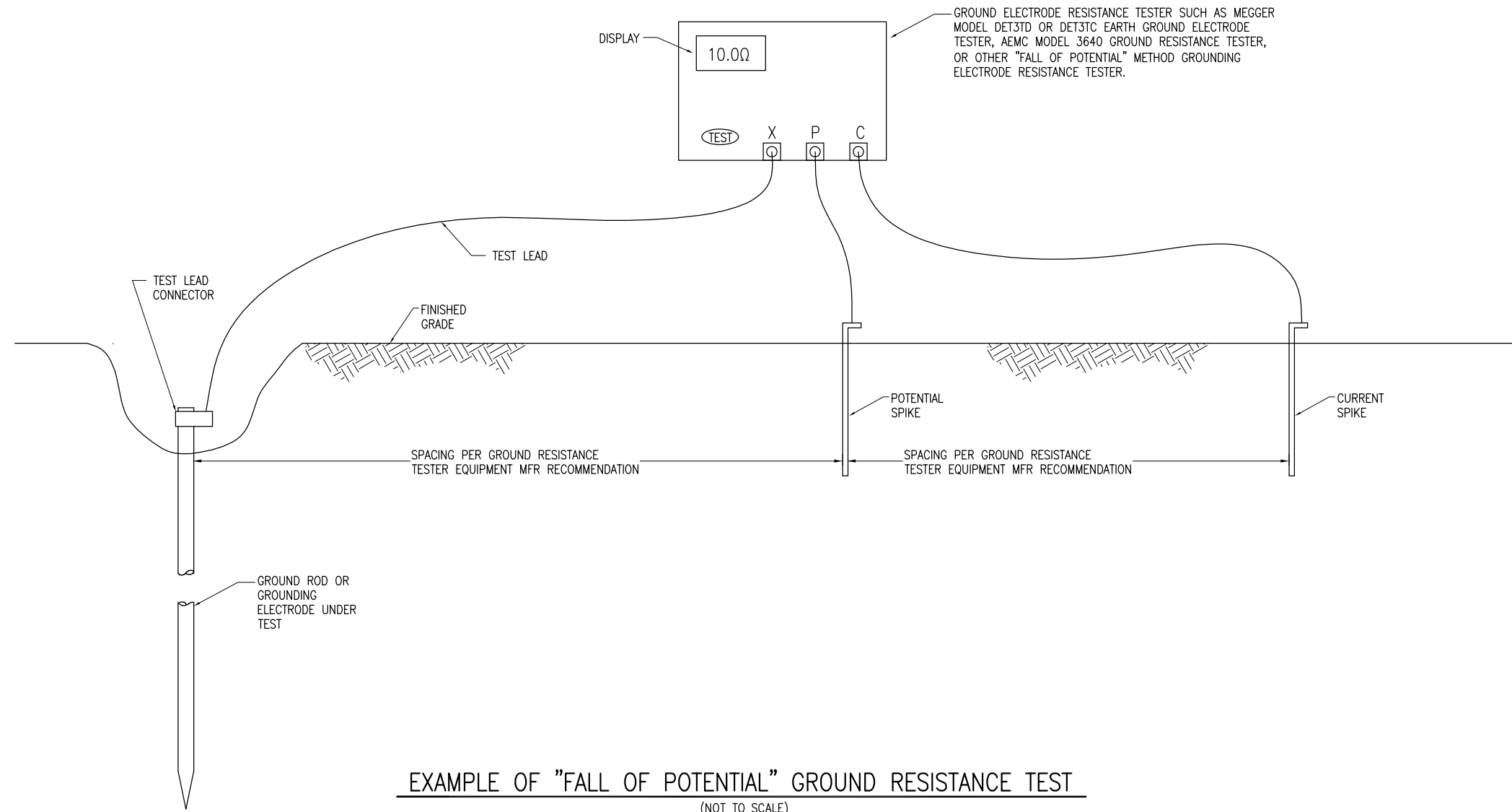
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SHEET TITLE

ELECTRICAL NOTES SHEET 2

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

NOTES

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

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

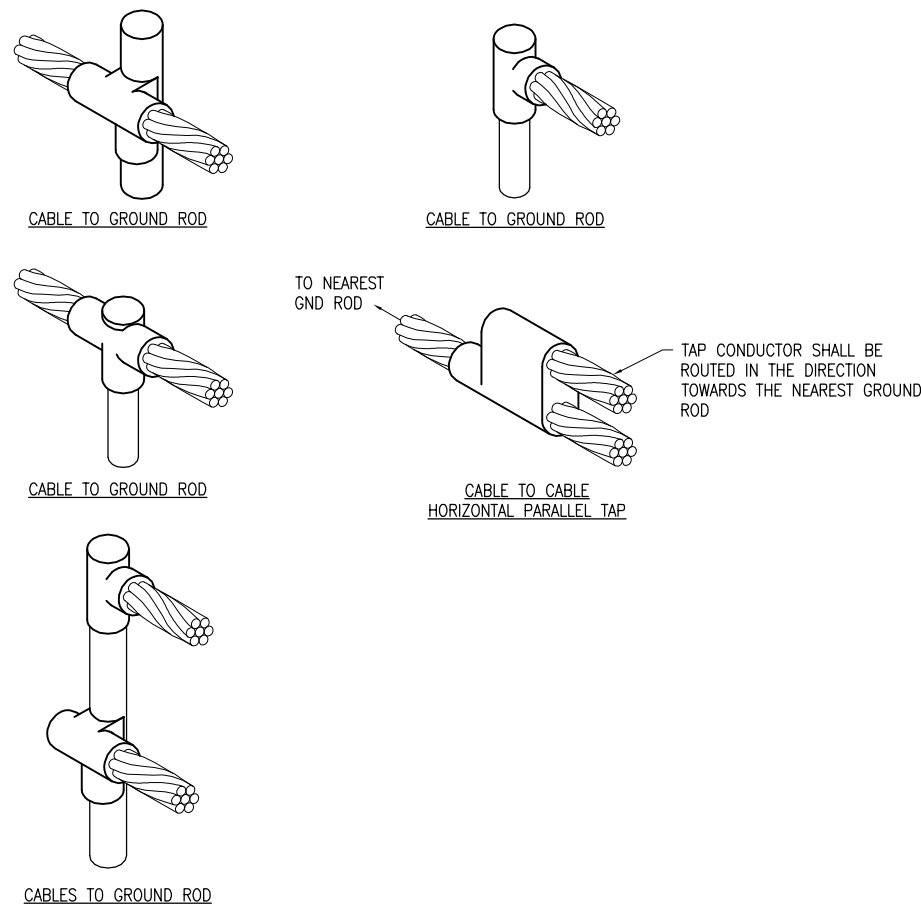
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GROUND RESISTANCE TESTING DETAILS

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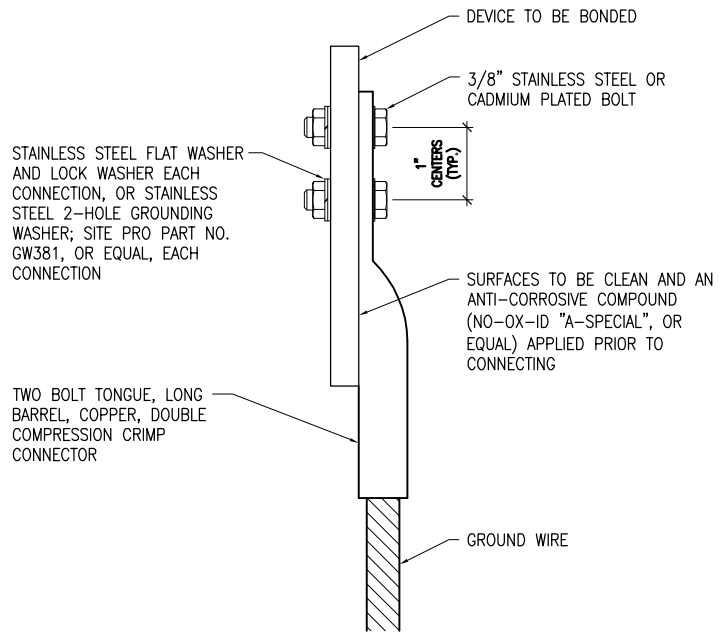


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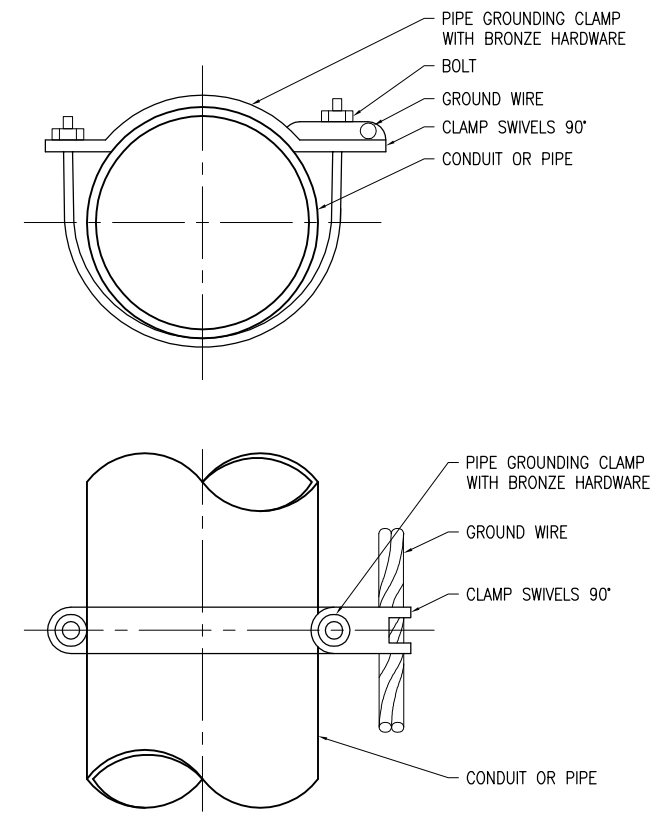


TO NEAREST GND ROD

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



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



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

DETAIL NOTES

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

EXOTHERMIC WELD DETAILS

NOTES

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

GROUNDING LUG CONNECTION DETAIL

NOTES

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

PIPE/CONDUIT GROUNDING CLAMP DETAIL

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
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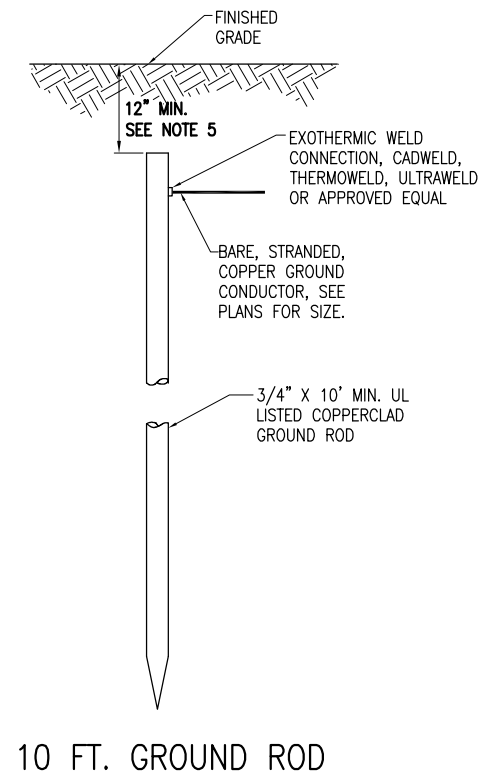
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SHEET TITLE

GROUNDING DETAILS

GROUNDING NOTES

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE AND FAA-STD-019e (LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT). THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:
2. FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS FOR AIRFIELD LIGHTING (RUNWAY LIGHTING, TAXIWAY LIGHTING, TAXI GUIDANCE SIGNS, & DISTANCE REMAINING SIGNS) SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS FOR OTHER APPLICATIONS SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS, AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE 1-800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE 918-663-1440) OR ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE 1-800-842-7437) OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS OR AT BURIED GROUNDING ELECTRODE CONDUCTORS.
3. CONTRACTOR SHALL TEST EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE.
4. ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
5. ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND BEFORE JOINING, SANCHEM INC. 'NO-OX-ID 'A-SPECIAL' COMPOUND, BURNDY PENETROX E, OR EQUAL.
6. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2014 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
7. METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT
8. ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
9. ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
10. PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC., ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE ENCLOSURES.
11. EACH NEW FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 2014 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.
12. ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2014 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHBOARD, ETC) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2014 NEC 250-102.
13. IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.
14. PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUND NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
15. EACH AND ALL GROUND CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
16. ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR APPROVED EQUAL.
17. BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
18. BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
19. INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, DO NOT COMPLETELY ENCIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS. GIRDLING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GIRDLING GROUND CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUND CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS GIRDLED DURING A LIGHTNING STRIKE RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 500,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. GIRDLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.
20. IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2014 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
21. WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE RESIDENT ENGINEER OR PROJECT ENGINEER FOR FURTHER DIRECTIONS.
22. GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.



10 FT. GROUND ROD

NOTES

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

GROUND RODS

(NOT TO SCALE)

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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

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GROUNDING NOTES



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

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

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

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

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

NOTES:

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

208/120 VAC, 3 PHASE, 4 WIRE	
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUND	GREEN

120/240 VAC, 1 PHASE, 3 WIRE	
PHASE A	BLACK
PHASE B	RED
NEUTRAL	WHITE
GROUND	GREEN
5. SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
 6. LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.
 7. ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES U.L. LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
 8. HIGH VOLTAGE CIRCUITS (AIRFIELD LIGHTING 500 VOLT SERIES CIRCUITS AND/OR OTHER CIRCUITS RATED ABOVE 600 VOLTS) & LOW VOLTAGE CIRCUITS (RATED 600 VOLTS AND BELOW) SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, OR HANDHOLE.

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

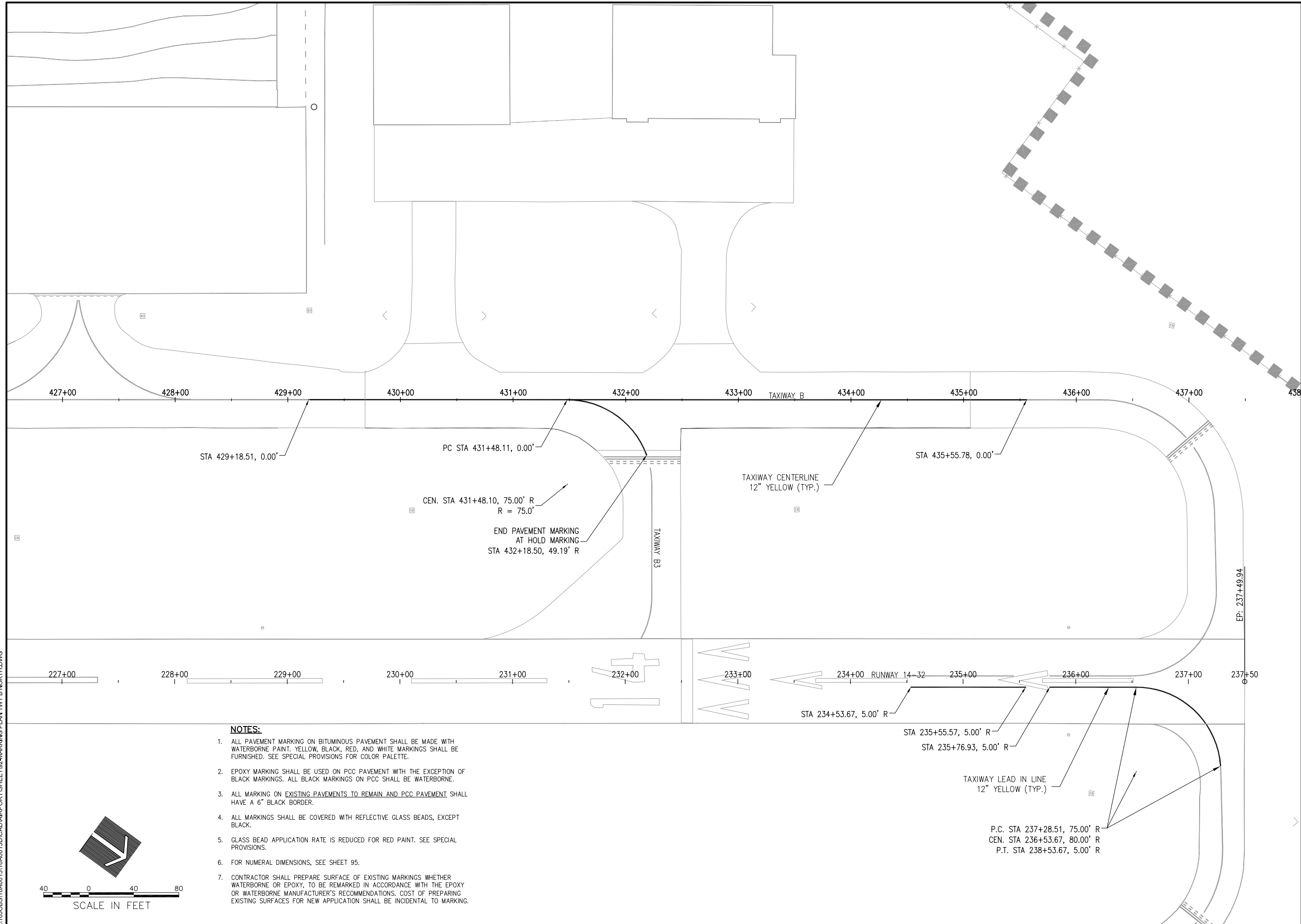
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SBG No: 3-17-SBGP-TBD

Contract No: WA071

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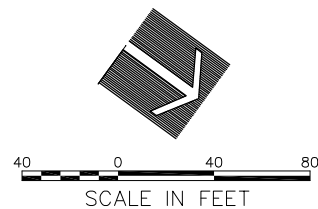
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ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES



NOTES:

1. ALL PAVEMENT MARKING ON BITUMINOUS PAVEMENT SHALL BE MADE WITH WATERBORNE PAINT. YELLOW, BLACK, RED, AND WHITE MARKINGS SHALL BE FURNISHED. SEE SPECIAL PROVISIONS FOR COLOR PALETTE.
2. EPOXY MARKING SHALL BE USED ON PCC PAVEMENT WITH THE EXCEPTION OF BLACK MARKINGS. ALL BLACK MARKINGS ON PCC SHALL BE WATERBORNE.
3. ALL MARKING ON EXISTING PAVEMENTS TO REMAIN AND PCC PAVEMENT SHALL HAVE A 6" BLACK BORDER.
4. ALL MARKINGS SHALL BE COVERED WITH REFLECTIVE GLASS BEADS, EXCEPT BLACK.
5. GLASS BEAD APPLICATION RATE IS REDUCED FOR RED PAINT. SEE SPECIAL PROVISIONS.
6. FOR NUMERAL DIMENSIONS, SEE SHEET 95.
7. CONTRACTOR SHALL PREPARE SURFACE OF EXISTING MARKINGS WHETHER WATERBORNE OR EPOXY, TO BE REMARKED IN ACCORDANCE WITH THE EPOXY OR WATERBORNE MANUFACTURER'S RECOMMENDATIONS. COST OF PREPARING EXISTING SURFACES FOR NEW APPLICATION SHALL BE INCIDENTAL TO MARKING.



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REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

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REHABILITATE
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PHASE 2

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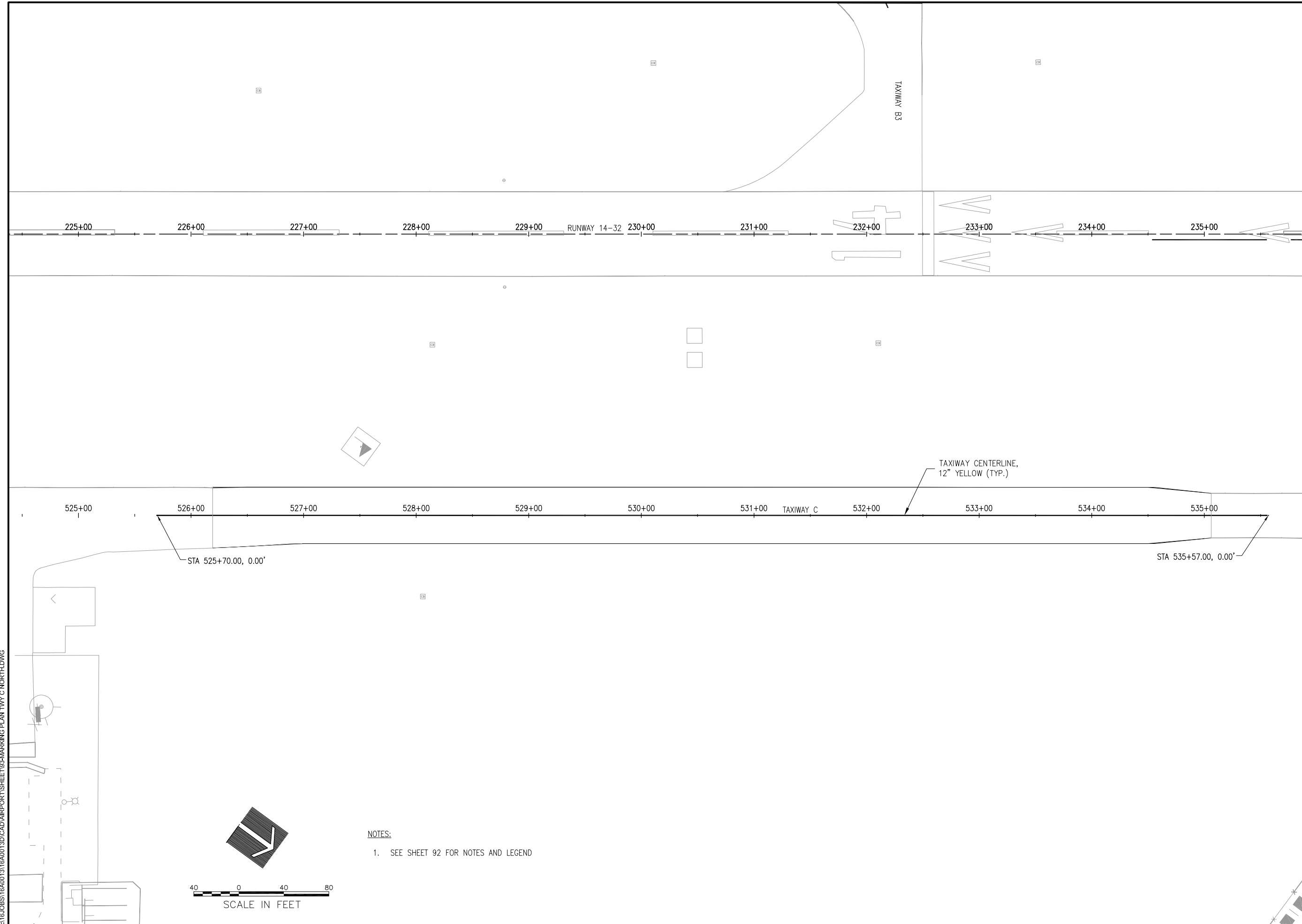
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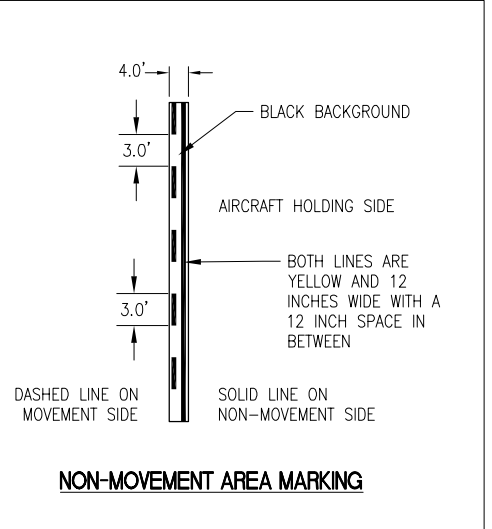
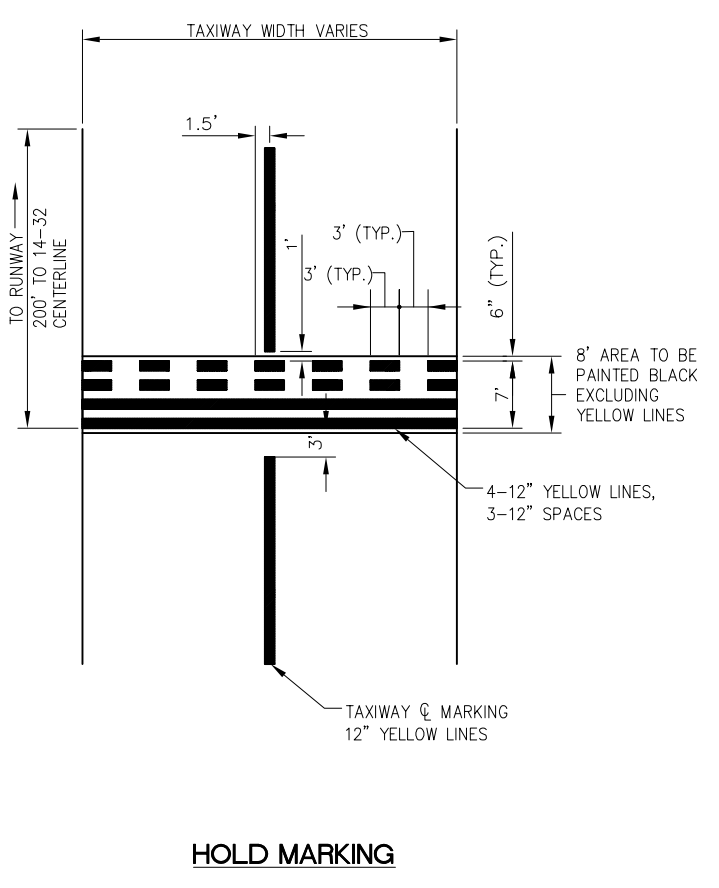
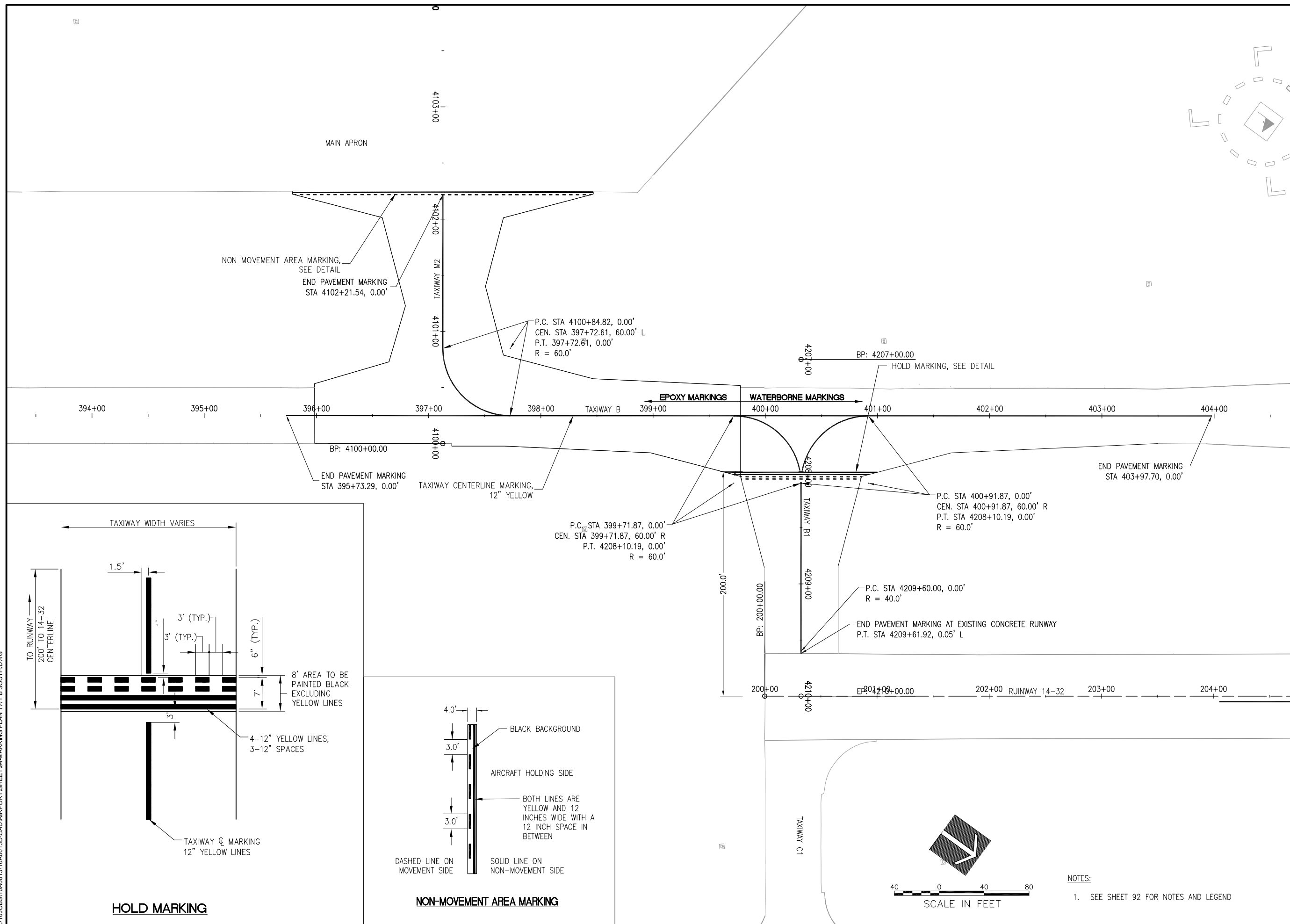
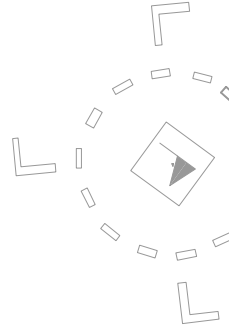
MARKING PLAN
TAXIWAY C NORTH



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NOTES:
1. SEE SHEET 92 FOR NOTES AND LEGEND

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

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Contract No: WA071

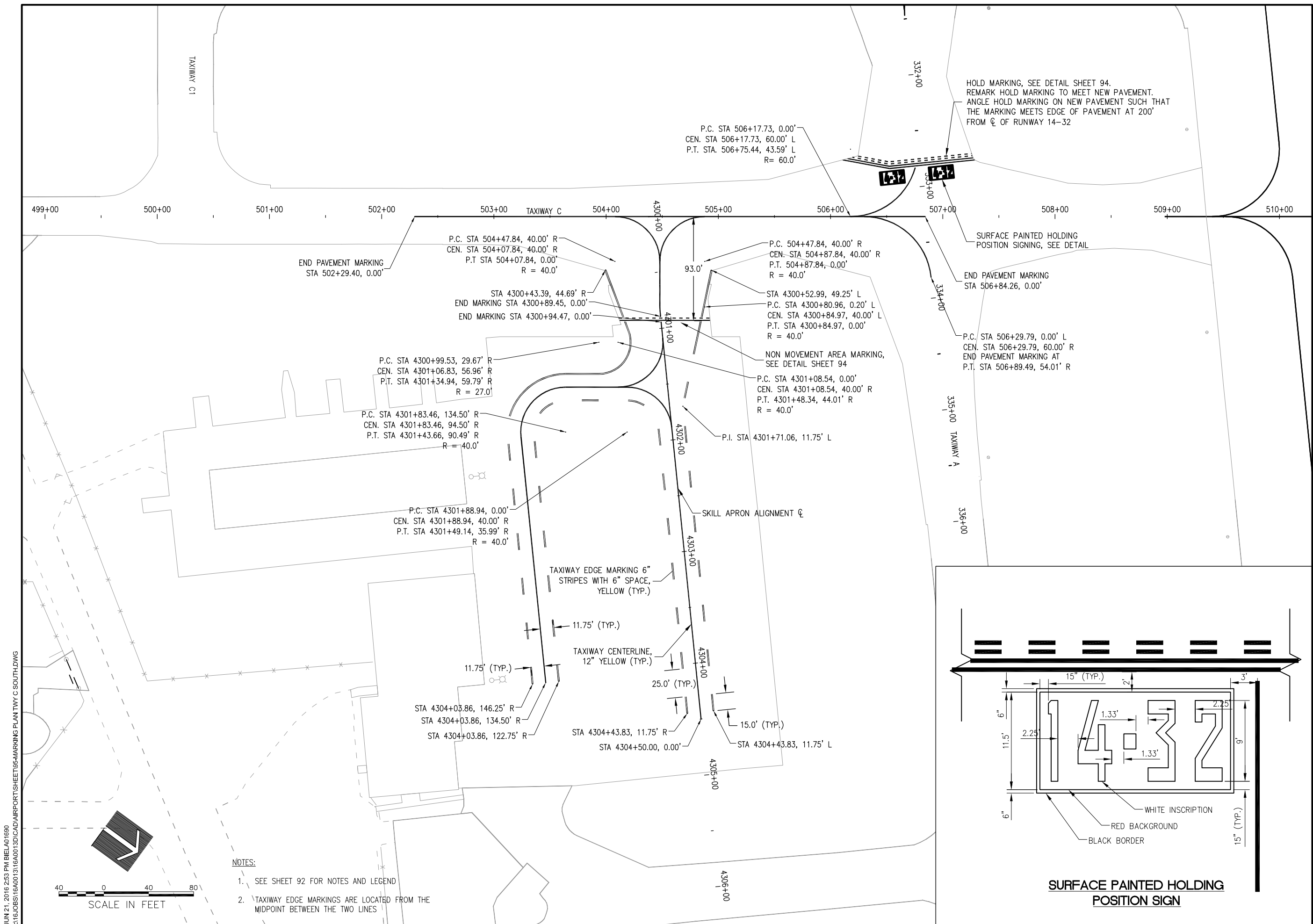
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MARKING PLAN TAXIWAY C - SOUTH



HOLD MARKING, SEE DETAIL SHEET 94.
REMARK HOLD MARKING TO MEET NEW PAVEMENT.
ANGLE HOLD MARKING ON NEW PAVEMENT SUCH THAT
THE MARKING MEETS EDGE OF PAVEMENT AT 200'
FROM C OF RUNWAY 14-32

SURFACE PAINTED HOLDING
POSITION SIGNING, SEE DETAIL

END PAVEMENT MARKING
STA 506+84.26, 0.00'

P.C. STA 506+29.79, 0.00' L
CEN. STA 506+29.79, 60.00' R
END PAVEMENT MARKING AT
P.T. STA 506+89.49, 54.01' R

NON MOVEMENT AREA MARKING,
SEE DETAIL SHEET 94

P.C. STA 4301+08.54, 0.00'
CEN. STA 4301+08.54, 40.00' R
P.T. 4301+48.34, 44.01' R
R = 40.0'

P.I. STA 4301+71.06, 11.75' L

P.C. STA 506+17.73, 0.00'
CEN. STA 506+17.73, 60.00' L
P.T. STA 506+75.44, 43.59' L
R = 60.0'

P.C. STA 504+47.84, 40.00' R
CEN. STA 504+07.84, 40.00' R
P.T. STA 504+07.84, 0.00'
R = 40.0'

STA 4300+43.39, 44.69' R
END MARKING STA 4300+89.45, 0.00'
END MARKING STA 4300+94.47, 0.00'

P.C. STA 4300+99.53, 29.67' R
CEN. STA 4301+06.83, 56.96' R
P.T. STA 4301+34.94, 59.79' R
R = 27.0'

P.C. STA 4301+83.46, 134.50' R
CEN. STA 4301+83.46, 94.50' R
P.T. STA 4301+43.66, 90.49' R
R = 40.0'

P.C. STA 4301+88.94, 0.00'
CEN. STA 4301+88.94, 40.00' R
P.T. STA 4301+49.14, 35.99' R
R = 40.0'

TAXIWAY EDGE MARKING 6"
STRIPES WITH 6" SPACE,
YELLOW (TYP.)

11.75' (TYP.)

TAXIWAY CENTERLINE,
12" YELLOW (TYP.)

11.75' (TYP.)

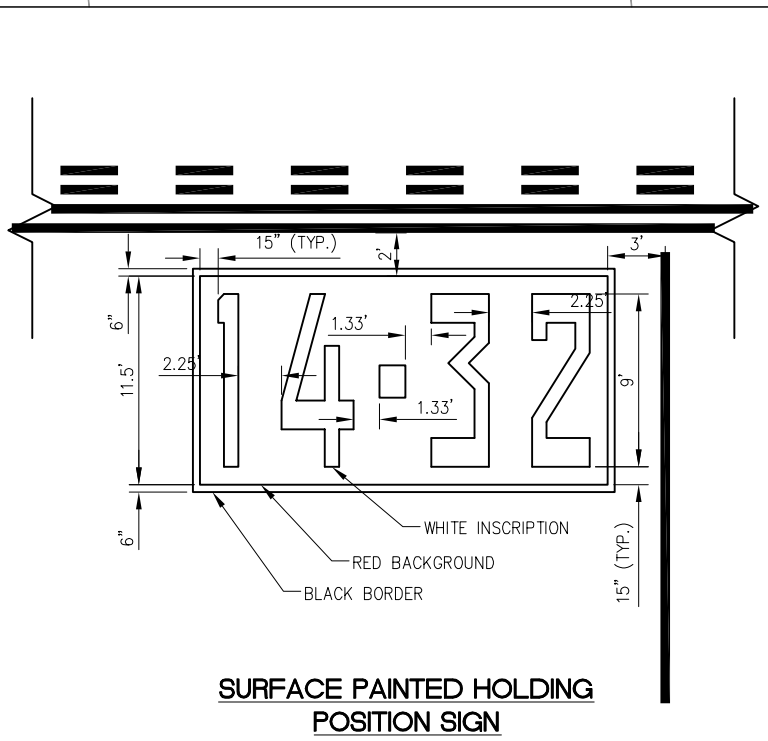
25.0' (TYP.)

STA 4304+03.86, 146.25' R
STA 4304+03.86, 134.50' R
STA 4304+03.86, 122.75' R

STA 4304+43.83, 11.75' R
STA 4304+50.00, 0.00'

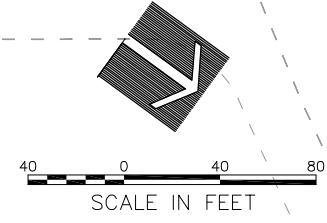
15.0' (TYP.)

STA 4304+43.83, 11.75' L



SURFACE PAINTED HOLDING POSITION SIGN

- NOTES:
- SEE SHEET 92 FOR NOTES AND LEGEND
 - TAXIWAY EDGE MARKINGS ARE LOCATED FROM THE MIDPOINT BETWEEN THE TWO LINES



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REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
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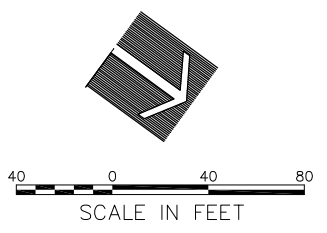
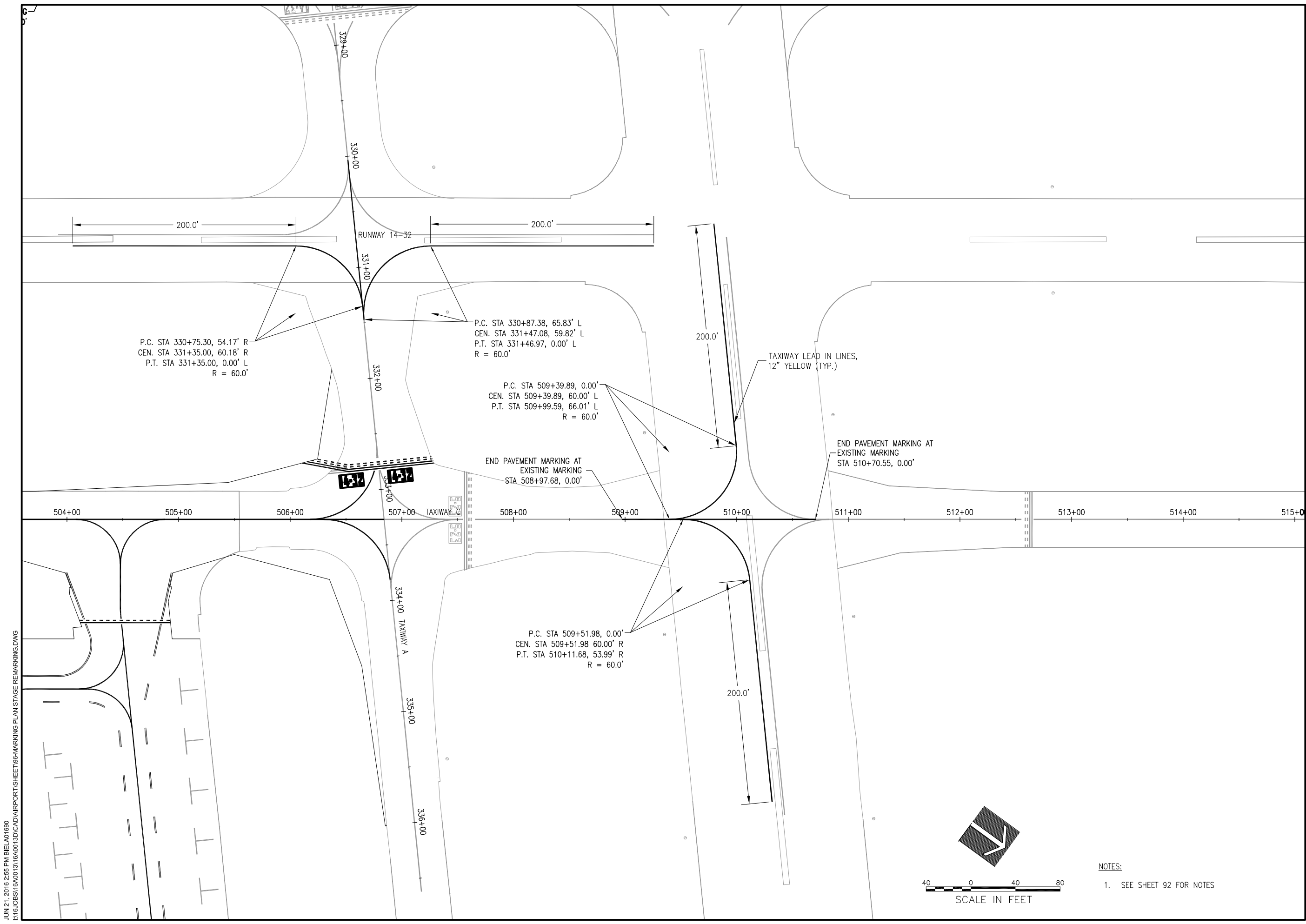
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MARKING PLAN
RUNWAY 14-32 / 5-23
STAGED REMARKING



NOTES:
1. SEE SHEET 92 FOR NOTES

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REHABILITATE
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PHASE 2

IDA No: UGN-4521
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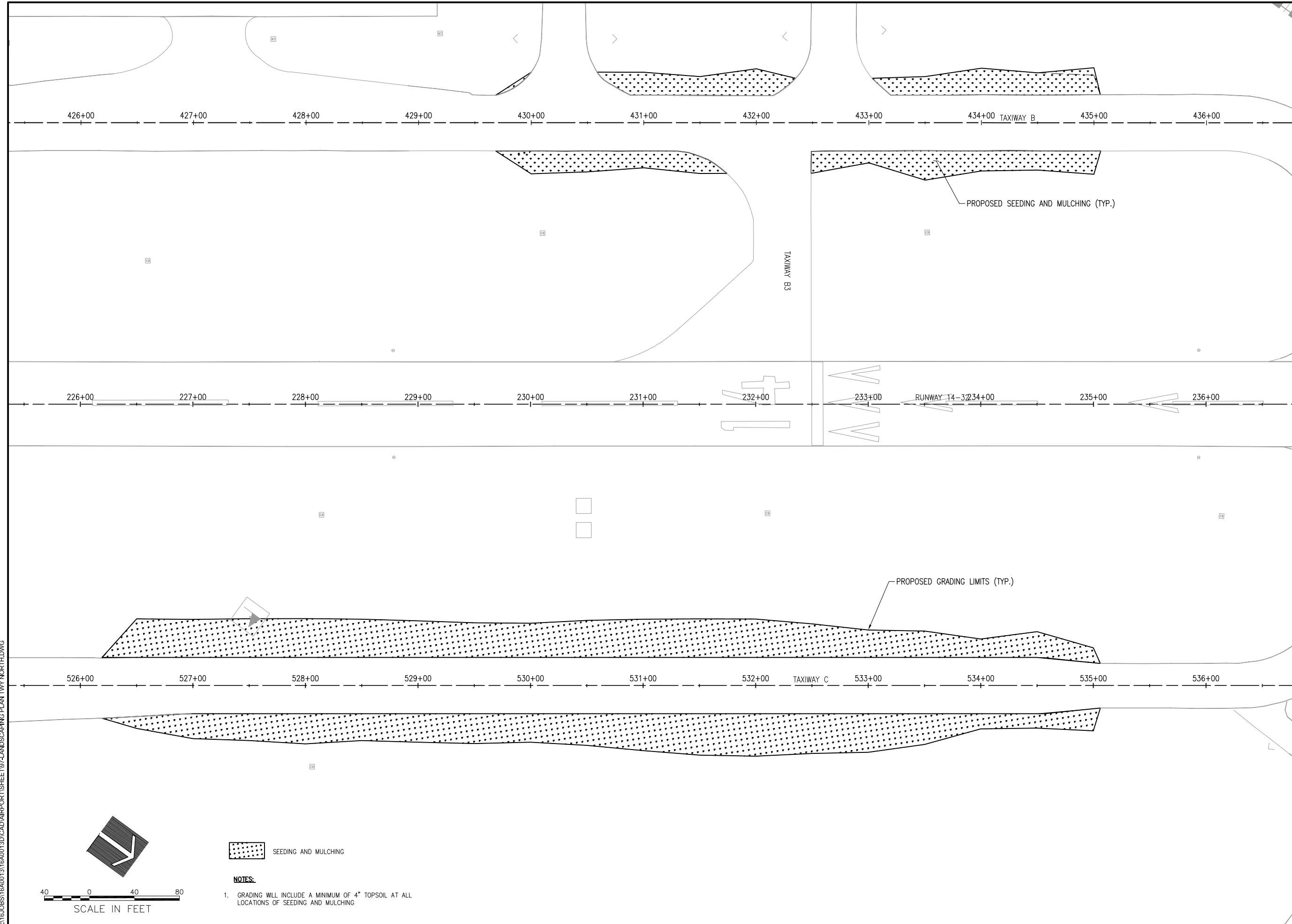
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LANDSCAPING PLAN
NORTH



SEEDING AND MULCHING

NOTES:

1. GRADING WILL INCLUDE A MINIMUM OF 4" TOPSOIL AT ALL LOCATIONS OF SEEDING AND MULCHING



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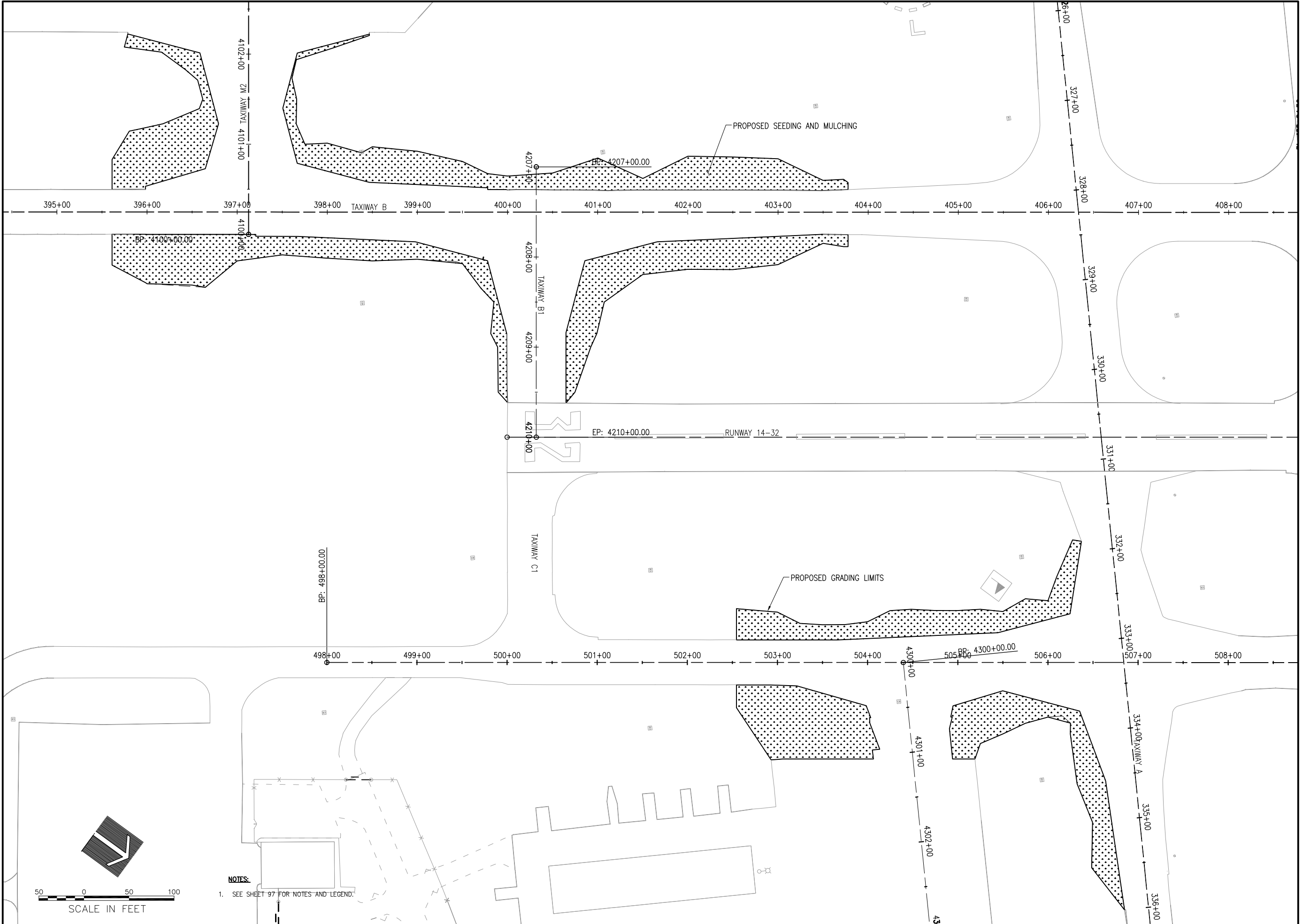
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LANDSCAPING PLAN
SOUTH



NOTES:
1. SEE SHEET 97 FOR NOTES AND LEGEND.

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WAUKEGAN NATIONAL AIRPORT
WAUKEGAN PORT DISTRICT
2601 Plane Rest Drive
Waukegan, Illinois 60087
Telephone: 847.244.0055
Fax: 847.244.3813

REHABILITATE PORTIONS OF TAXIWAYS B & C, PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

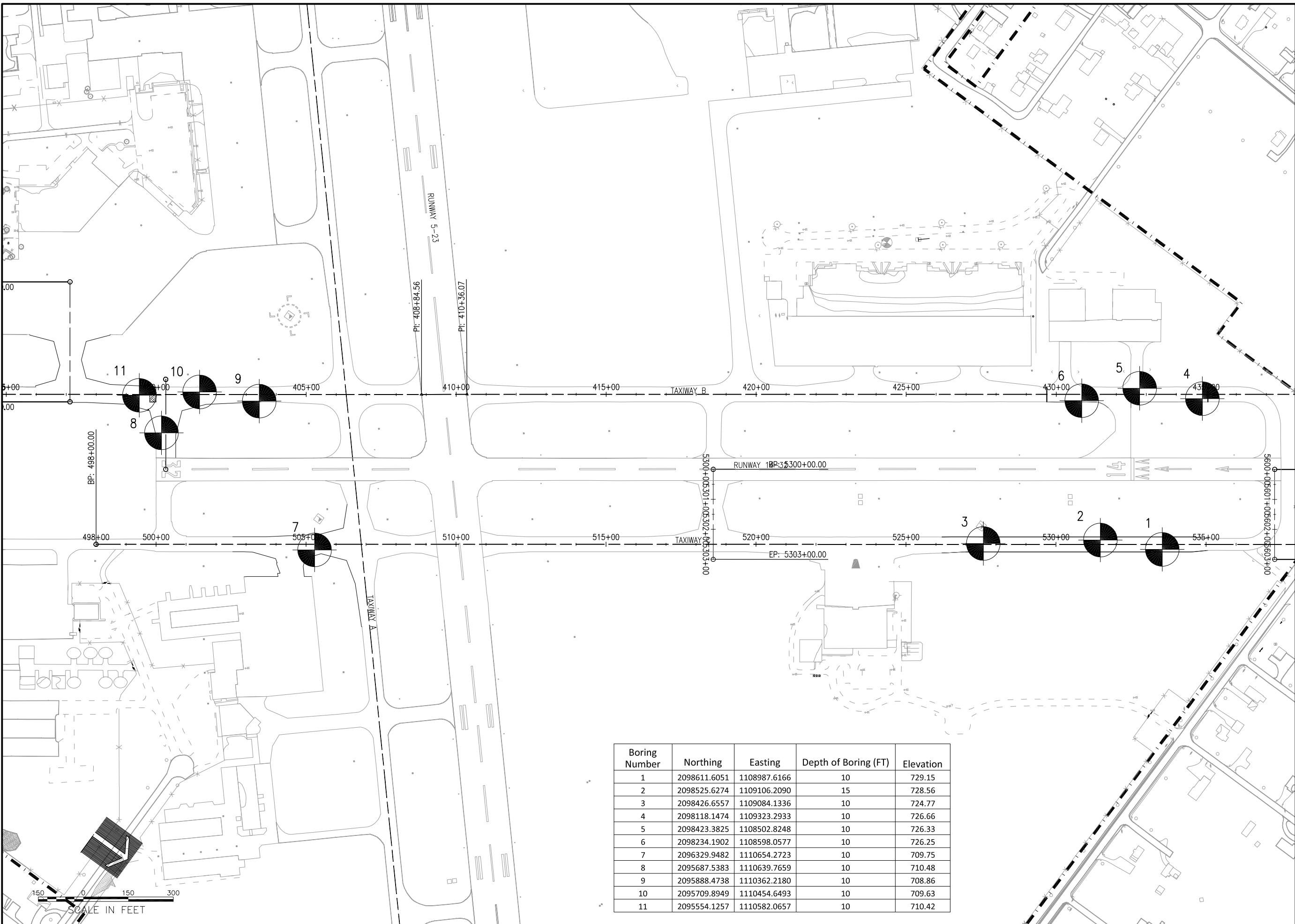
Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 99-BORING MAP.DWG
DESIGN BY: KMS 06/01/2016
DRAWN BY: KMS 06/06/2016
REVIEWED BY: LDH 6/9/2016

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BORING LOCATION MAP



Boring Number	Northing	Easting	Depth of Boring (FT)	Elevation
1	2098611.6051	1108987.6166	10	729.15
2	2098525.6274	1109106.2090	15	728.56
3	2098426.6557	1109084.1336	10	724.77
4	2098118.1474	1109323.2933	10	726.66
5	2098423.3825	1108502.8248	10	726.33
6	2098234.1902	1108598.0577	10	726.25
7	2096329.9482	1110654.2723	10	709.75
8	2095687.5383	1110639.7659	10	710.48
9	2095888.4738	1110362.2180	10	708.86
10	2095709.8949	1110454.6493	10	709.63
11	2095554.1257	1110582.0657	10	710.42

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REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

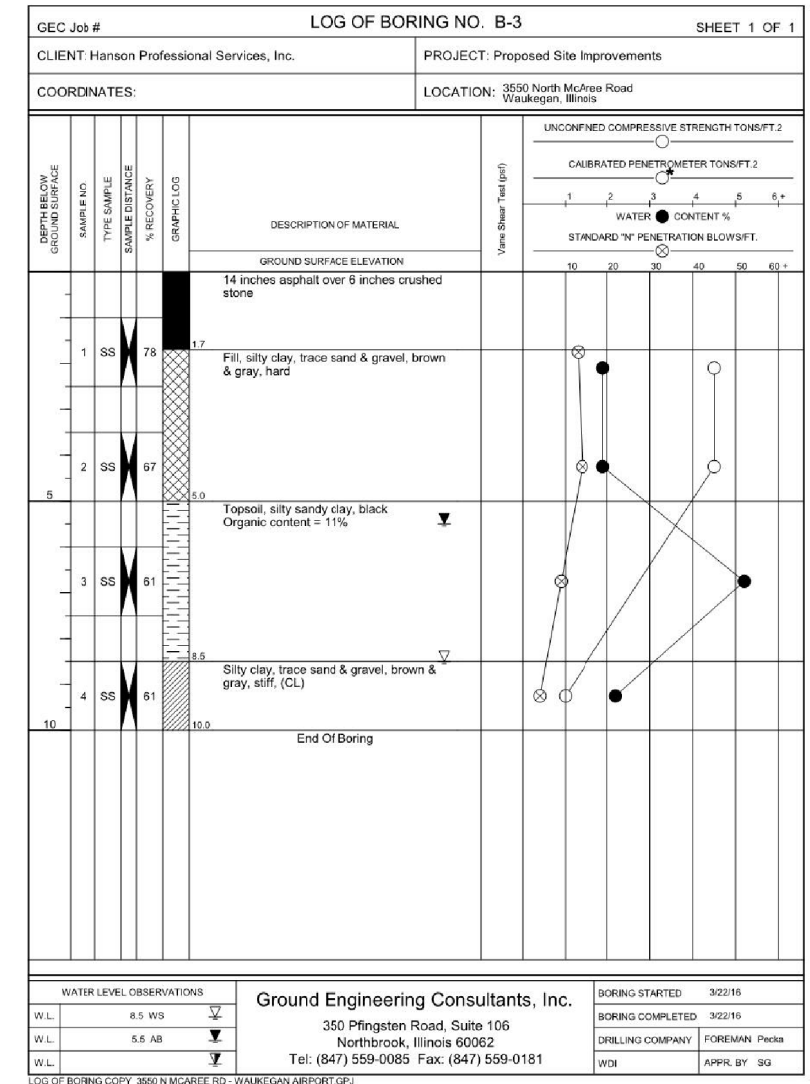
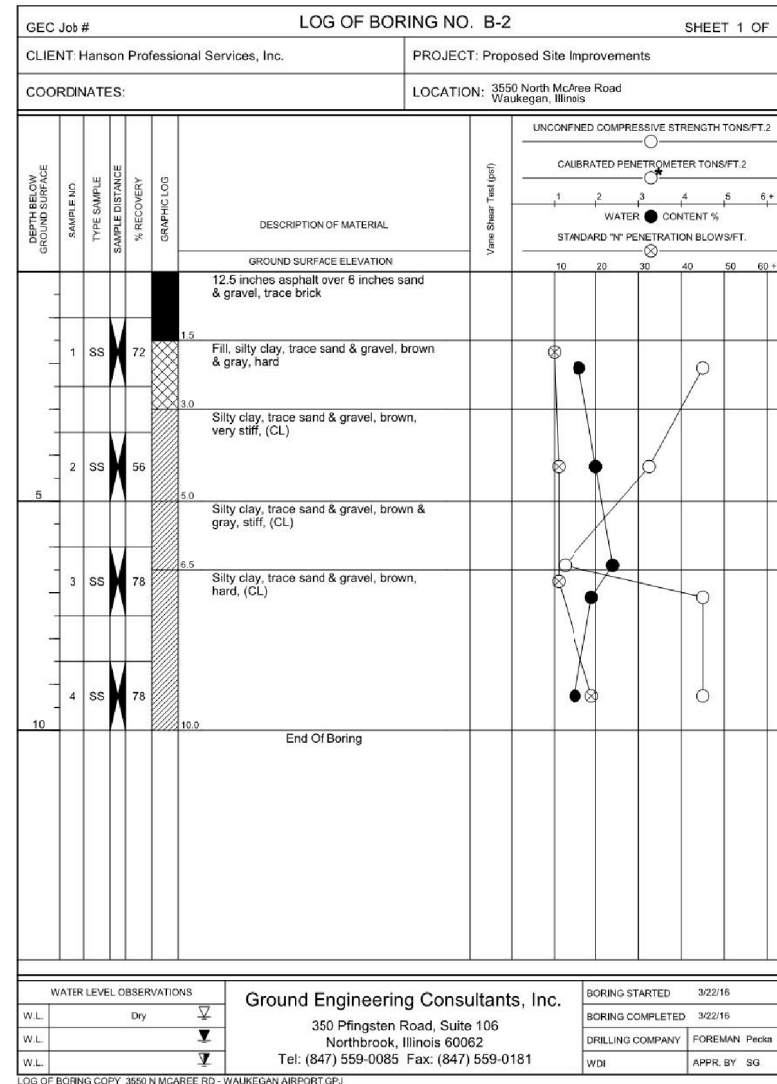
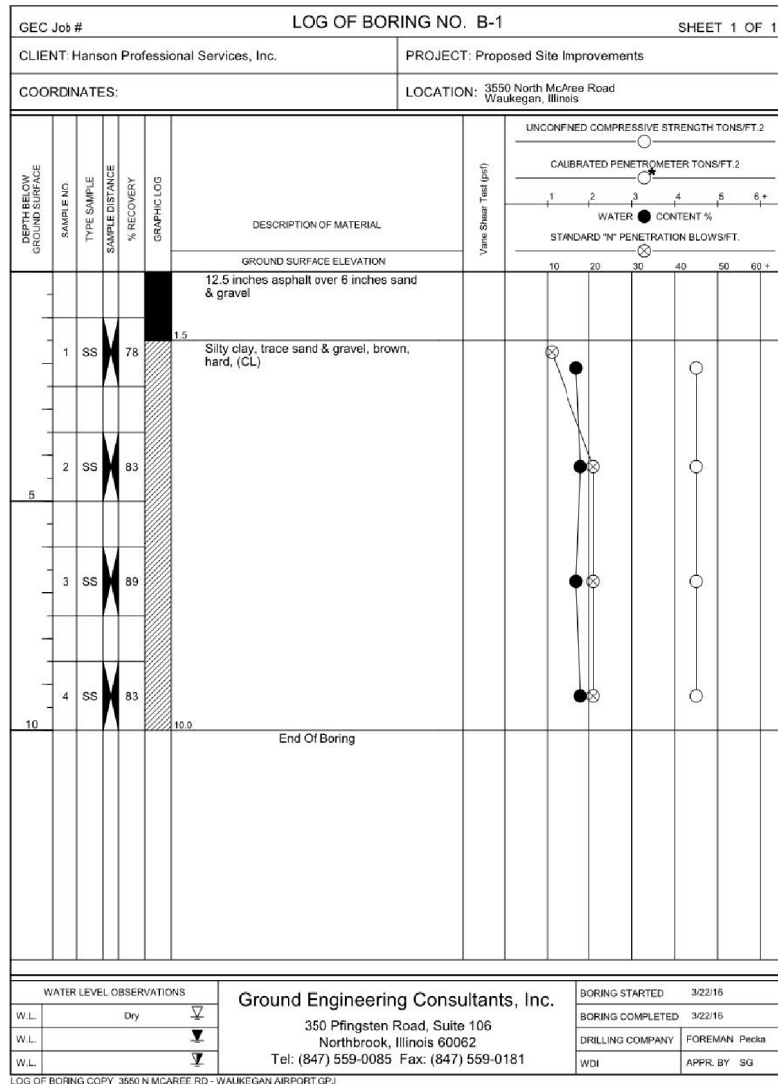
ISSUE: July 29, 2016

PROJECT NO: 16A0013
CAD FILE: 100-BORING LOGS 1.DWG
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REHABILITATE
PORTIONS OF
TAXIWAYS B & C,
PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBG-P-TBD

Contract No: WA071

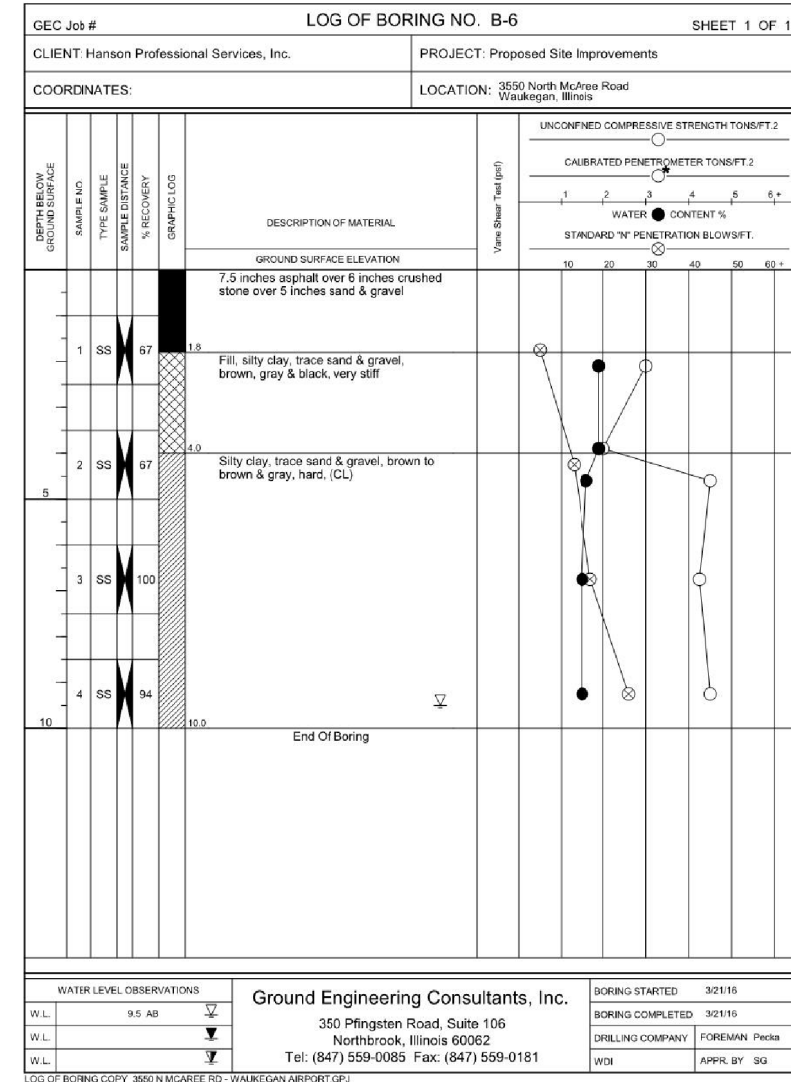
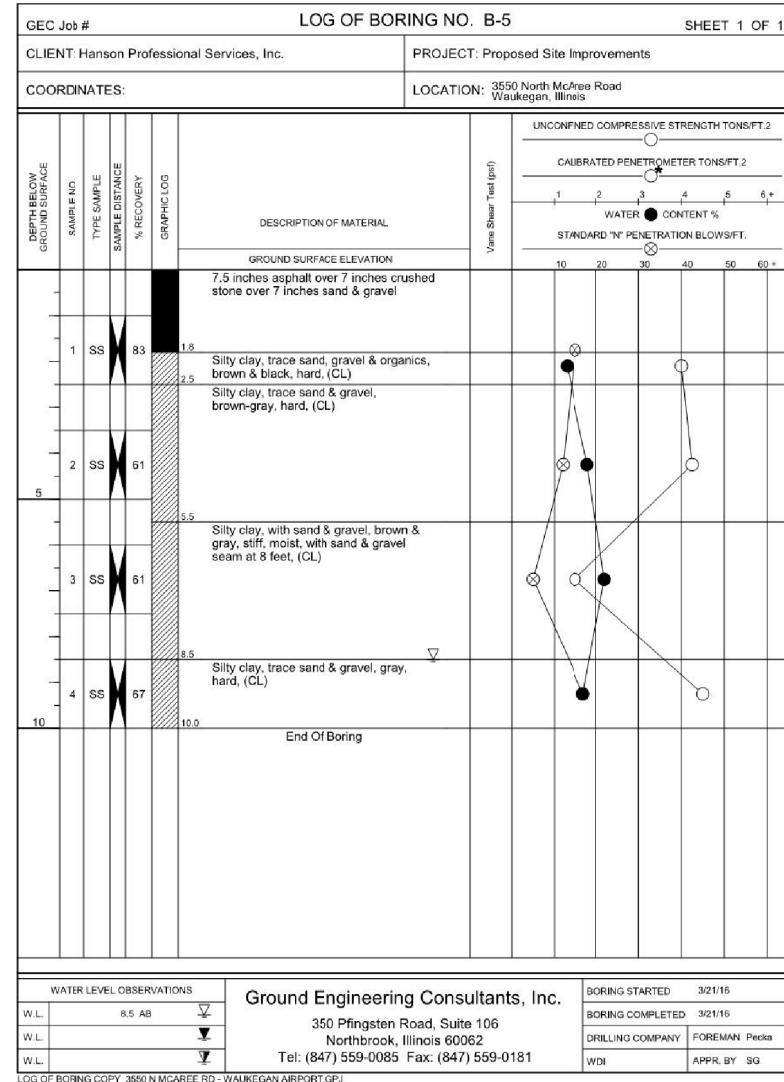
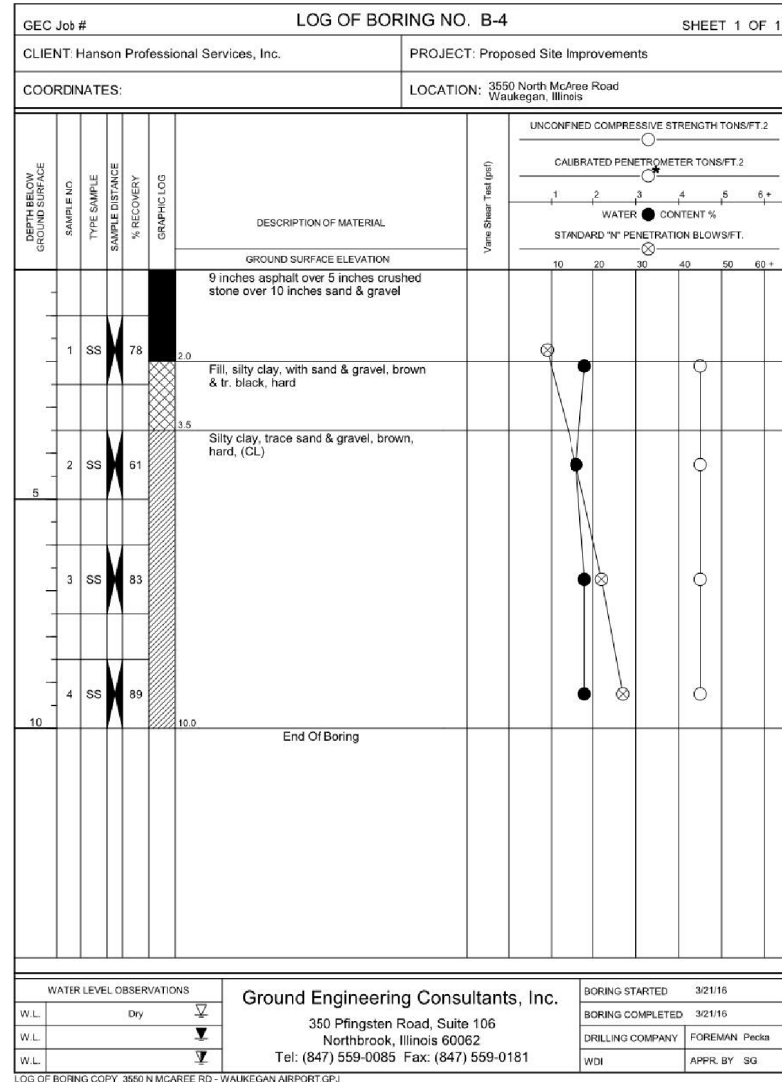
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		DWN
		REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
CAD FILE: 101-BORING LOGS 2.DWG
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PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

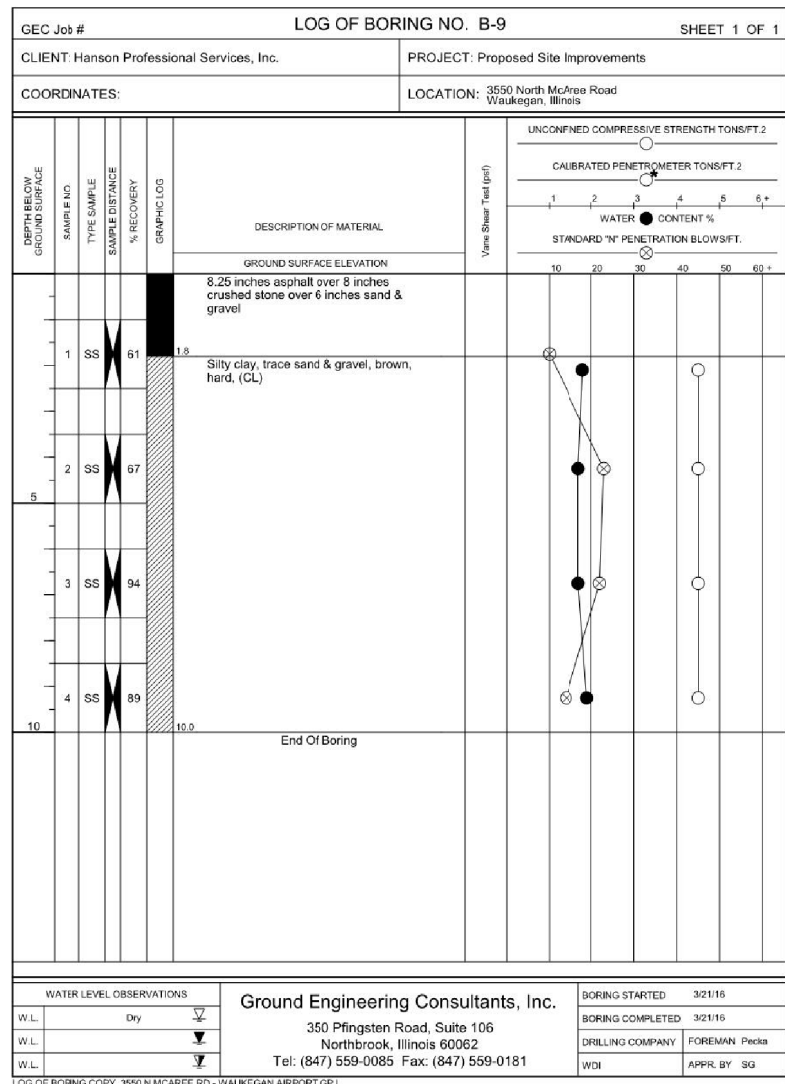
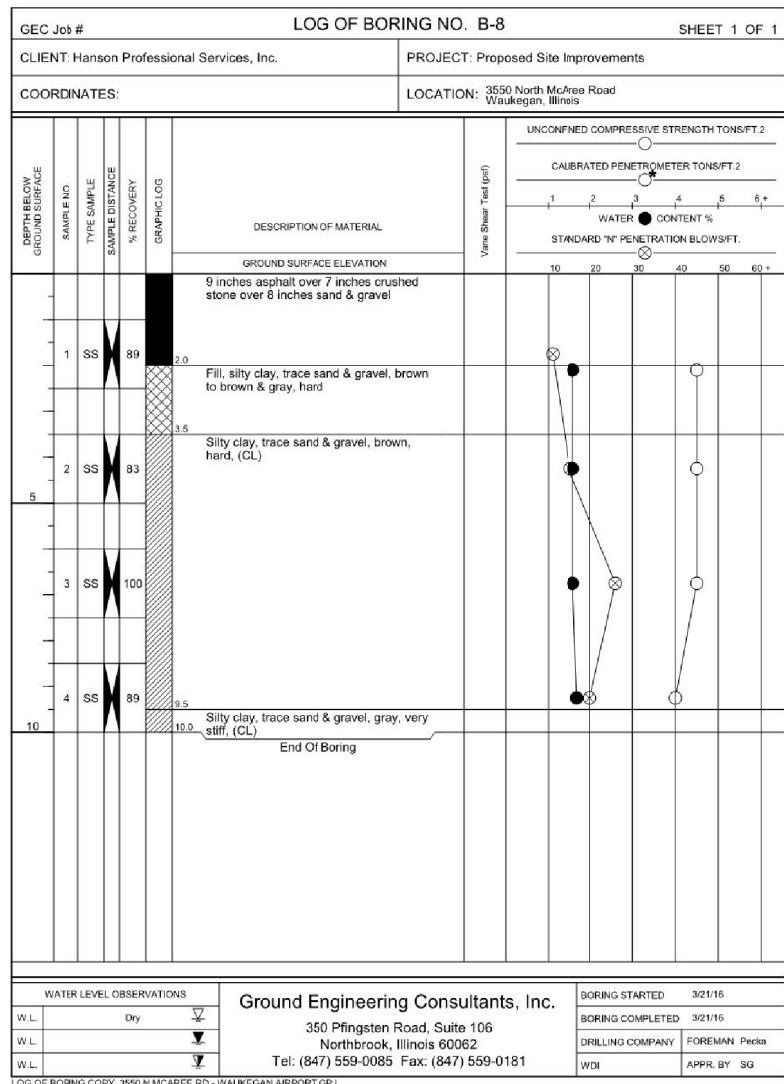
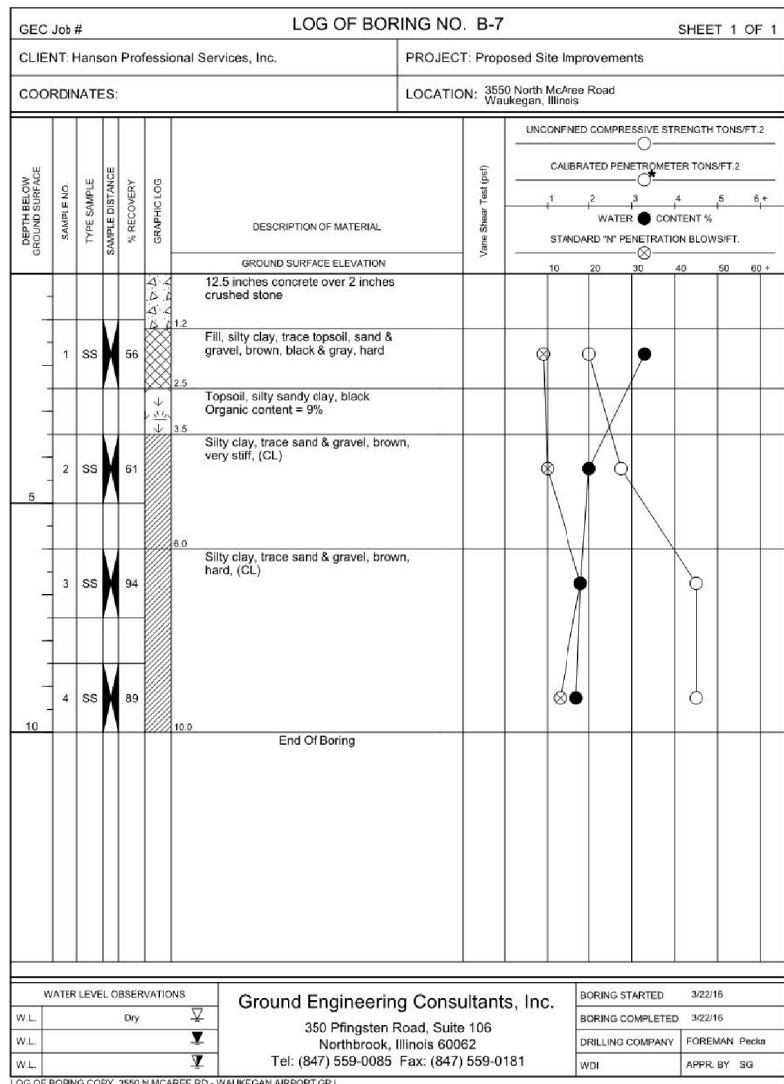
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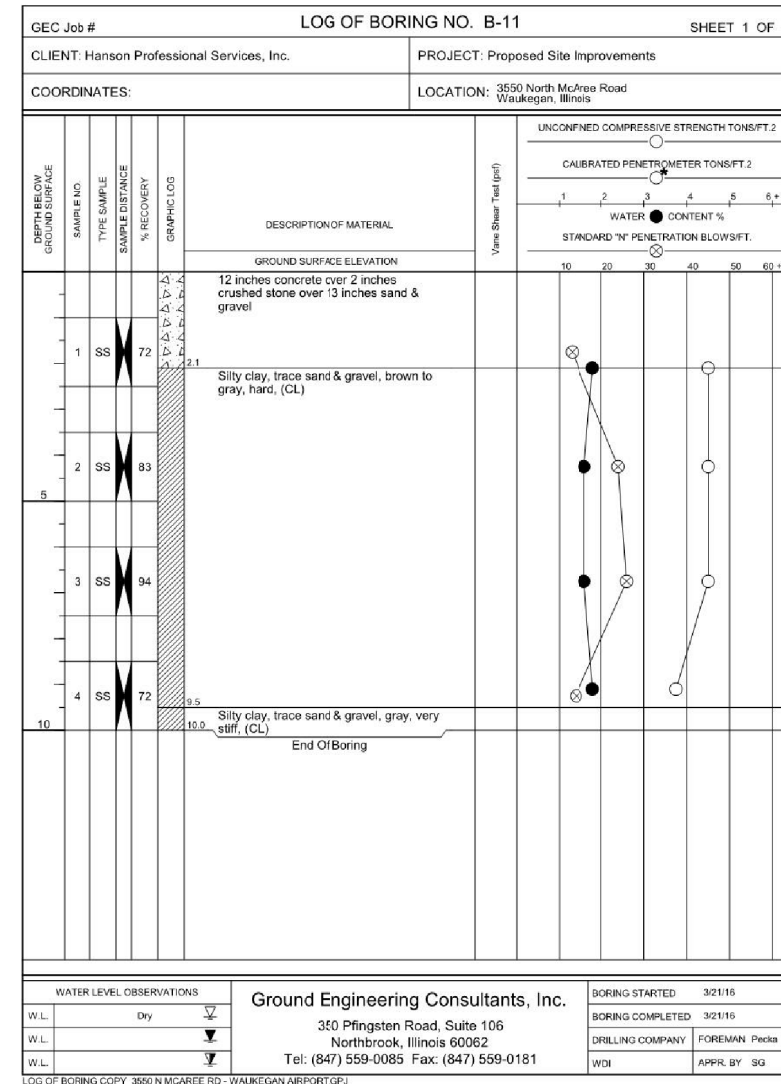
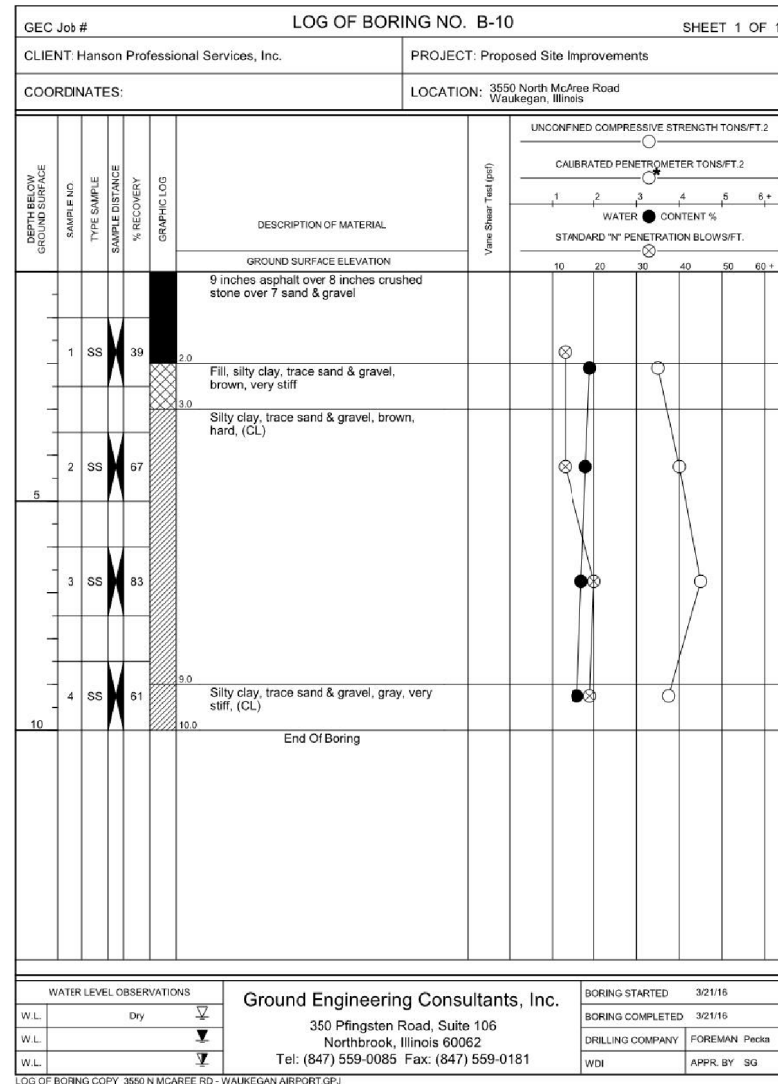
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PROJECT NO: 16A0013
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REHABILITATE
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PHASE 2

IDA No: UGN-4521
SBG No: 3-17-SBGP-TBD

Contract No: WA071

NO.	DATE	DESCRIPTION		
		DES	DWN	REV

ISSUE: July 29, 2016
PROJECT NO: 16A0013
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