ITEM NO. 07A IDOT LETTING: JUNE 13, 2014

BO003
TOTAL SHEETS = 168

CONSTRUCTION PLANS

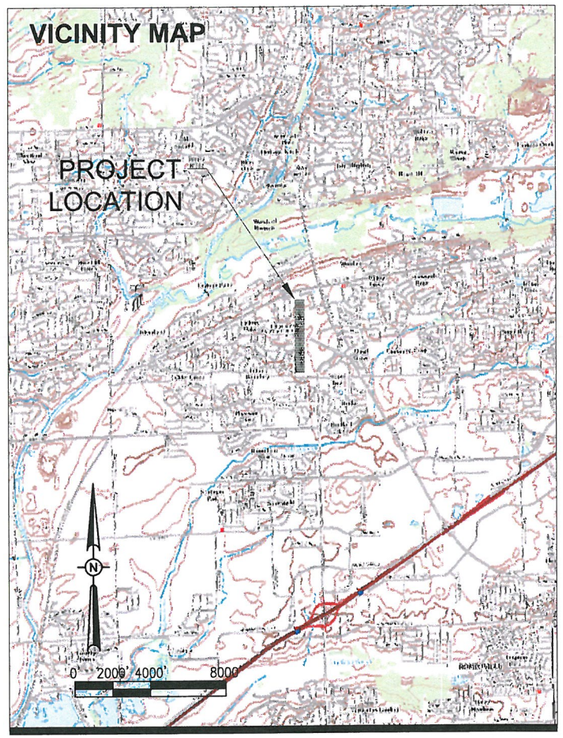
CONSTRUCT REPLACEMENT RUNWAY 18-36

VILLAGE OF BOLINGBROOK
BOLINGBROOK'S CLOW INTERNATIONAL AIRPORT (1C5)
BOLINGBROOK, WILL COUNTY, ILLINOIS

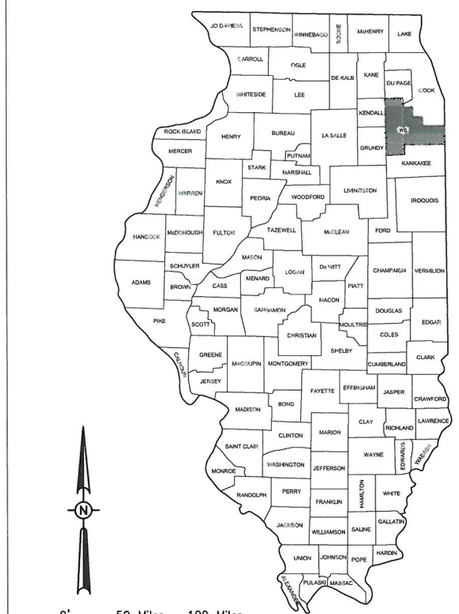
IDA PROJECT NO. 1C5-4303
SBG PROJECT NO. 3-17-SBGP-TBD

THIS PROJECT IS ACTIVELY SEEKING FAA DISCRETIONARY FUNDING, AND CONTRACT AWARD WILL NOT OCCUR UNTIL ALL FUNDS ARE IN PLACE. WHILE THESE FUNDS ARE BEING FINALIZED, IT IS NOT EXPECTED THAT CONSTRUCTION WILL BEGIN BEFORE MAY 2015.

VICINITY MAP



LOCATION MAP



No.	Issue/Description	Sheets Changed	Date	By

NOTICE TO CONTRACTORS AND BIDDERS

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

Seal

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

4/25/2014
EXPIRES 11/30/2014

For Sheets 109-143

Kevin N. Lightfoot, P.E. — Date

Seal

LICENSED PROFESSIONAL ENGINEER
LINDSAY DENET HAUSMAN
062-059464
STATE OF ILLINOIS

EXP - 11/30/2015

09 May 2014

Lindsay D. Hausman, P.E.
Project Engineer — Date

HANSON

HANSON PROFESSIONAL SERVICES INC.
815 Commerce Drive, Suite 200 Oak
Brook, Illinois 60523
Telephone: 630.990.3800
Fax: 630.990.3801

09 May 2014

Ronald M. Hudson, AICP
Project Manager — Date

Bolingbrook
a place to grow

VILLAGE OF BOLINGBROOK
375 West Briarcliff Road
Bolingbrook, Illinois 60440
Telephone: 630.226.8400

5/8/14

Lucas Rickelman — Date
Director of Public Services & Development

I:\14\JOBS\00844\14A0002\DIDRAWINGS\SHEETS\0001-COVER.DWG MAY 08, 2014 8:53AM HAUSM00882

BASE BID

SUMMARY OF QUANTITIES						
ITEM NO.	DESCRIPTION	UNIT	AIP QUANTITY	LOCAL ONLY QUANTITY	TOTAL QUANTITY	RECORD PAID
AR108108	1/C #8 5 KV UG CABLE	LINEAR FOOT	190.0	0.0	190.0	
AR108158	1/C #8 5 KV UG CABLE IN UD	LINEAR FOOT	8,890.0	0.0	8,890.0	
AR109110	ERECT PREFABRICATED VAULT	LUMP SUM	1.0	0.0	1.0	
AR109200	INSTALL ELECTRICAL EQUIPMENT	LUMP SUM	1.0	0.0	1.0	
AR109535	ELECTRIC SERVICE ENTRANCE	LUMP SUM	1.0	0.0	1.0	
AR110202	2" PVC DUCT, DIRECT BURY	LINEAR FOOT	190.0	0.0	190.0	
AR110502	2-WAY CONCRETE ENCASED DUCT	LINEAR FOOT	409.0	0.0	409.0	
AR110504	4-WAY CONCRETE ENCASED DUCT	LINEAR FOOT	415.0	0.0	415.0	
AR110610	ELECTRICAL HANDHOLE	EACH	1.0	0.0	1.0	
AR125100	ELEVATED RETROREFLECTIVE MARKER	EACH	86.0	0.0	86.0	
AR125410	MITL - STAKE MOUNTED	EACH	14.0	0.0	14.0	
AR125442	TAXI GUIDANCE SIGN, 2 CHARACTER	EACH	2.0	0.0	2.0	
AR125445	TAXI GUIDANCE SIGN, 5 CHARACTER	EACH	2.0	0.0	2.0	
AR125505	MIRL, STAKE MOUNTED	EACH	26.0	0.0	26.0	
AR125510	MIRL, BASE MOUNTED	EACH	6.0	0.0	6.0	
AR125545	MI THRESHOLD LIGHT BASE MTD	EACH	16.0	0.0	16.0	
AR150510	ENGINEER'S FIELD OFFICE	LUMP SUM	1.0	0.0	1.0	
AR150520	MOBILIZATION	LUMP SUM	1.0	0.0	1.0	
AR150540	HAUL ROUTE	LUMP SUM	1.0	0.0	1.0	
AR152410	UNCLASSIFIED EXCAVATION	CUBIC YARD	90,975.0	0.0	90,975.0	
AR152441	ON-SITE BORROW	CUBIC YARD	5,990.0	0.0	5,990.0	
AR152442	OFFSITE BORROW EXCAVATION	CUBIC YARD	118,295.0	0.0	118,295.0	
AR156510	SILT FENCE	LINEAR FOOT	3,364.0	0.0	3,364.0	
AR156511	DITCH CHECK	EACH	67.0	0.0	67.0	
AR156513	SEPARATION FABRIC	SQUARE YARD	29,411.0	5,800.0	35,211.0	
AR156520	INLET PROTECTION	EACH	29.0	0.0	29.0	
AR156531	EROSION CONTROL BLANKET	SQUARE YARD	36,374.0	0.0	36,374.0	
AR156545	RIPRAP - GRADATION NO. 5	SQUARE YARD	27.0	0.0	27.0	
AR209606	CRUSHED AGG. BASE COURSE - 6"	SQUARE YARD	29,453.0	5,800.0	35,253.0	
AR401614	BIT. SURF. CSE. - METHOD II, SUPERPAVE	TON	3,361.0	690.0	4,051.0	
AR401630	BITUMINOUS SURFACE TEST SECTON	EACH	1.0	0.0	1.0	
AR401650	BITUMINOUS PAVEMENT MILLING	SQUARE YARD	23,805.0	0.0	23,805.0	
AR401660	SAW & SEAL BIT. JOINTS	LINEAR FOOT	735.0	0.0	735.0	
AR401665	BITUMINOUS PAVEMENT SAWING	LINEAR FOOT	1,208.0	0.0	1,208.0	
AR401910	REMOVE & REPLACE BIT. PAVEMENT	SQUARE YARD	64.0	0.0	64.0	
AR403614	BIT. BASE CSE. - METHOD II SUPERPAVE	TON	6,720.0	1,375.0	8,095.0	
AR403630	BITUMINOUS BASE TEST SECTION	EACH	1.0	0.0	1.0	
AR501604	4" PCC SIDEWALK	SQUARE FOOT	42.0	0.0	42.0	
AR602510	BITUMINOUS PRIME COAT	GALLONS	8,520.0	1,740.0	10,260.0	
AR603510	BITUMINOUS TACK COAT	GALLONS	8,510.0	1,740.0	10,250.0	
AR620520	PAVEMENT MARKING - WATERBORNE	SQUARE FOOT	23,266.0	0.0	23,266.0	
AR620525	PAVEMENT MARKING - BLACK BORDER	SQUARE FOOT	668.0	0.0	668.0	
AR701512	12" RCP, CLASS IV	LINEAR FOOT	672.0	0.0	672.0	
AR701518	18" RCP, CLASS IV	LINEAR FOOT	593.0	0.0	593.0	
AR701524	24" RCP, CLASS IV	LINEAR FOOT	692.0	0.0	692.0	
AR701530	30" RCP, CLASS IV	LINEAR FOOT	1,144.5	0.0	1,144.5	
AR701536	36" RCP, CLASS IV	LINEAR FOOT	94.5	0.0	94.5	
AR701542	42" RCP, CLASS IV	LINEAR FOOT	1,009.0	0.0	1,009.0	
AR701900	REMOVE PIPE	LINEAR FOOT	431.0	0.0	431.0	
AR705506	6" PERFORATED UNDERDRAIN	LINEAR FOOT	7,017.0	0.0	7,017.0	
AR705630	UNDERDRAIN INSPECTION HOLE	EACH	10.0	0.0	10.0	
AR705640	UNDERDRAIN CLEANOUT	EACH	10.0	0.0	10.0	
AR751411	INLET - TYPE A	EACH	8.0	0.0	8.0	
AR751412	INLET - TYPE B	EACH	2.0	0.0	2.0	
AR751540	MANHOLE 4'	EACH	1.0	0.0	1.0	
AR751550	MANHOLE 5'	EACH	3.0	0.0	3.0	
AR751560	MANHOLE 6'	EACH	4.0	0.0	4.0	
AR751567	MANHOLE 7'	EACH	3.0	0.0	3.0	
AR751568	MANHOLE 8'	EACH	2.0	0.0	2.0	
AR751569	MANHOLE 9'	EACH	1.0	0.0	1.0	
AR752412	PRECAST REINFORCED CONC. FES 12"	EACH	4.0	0.0	4.0	
AR752418	PRECAST REINFORCED CONC. FES 18"	EACH	1.0	0.0	1.0	
AR752430	PRECAST REINFORCED CONC. FES 30"	EACH	1.0	0.0	1.0	
AR752442	PRECAST REINFORCED CONC. FES 42"	EACH	1.0	0.0	1.0	
AR752512	GRATING FOR CONC. FES 12"	EACH	4.0	0.0	4.0	
AR752518	GRATING FOR CONC. FES 18"	EACH	1.0	0.0	1.0	
AR752530	GRATING FOR CONC. FES 30"	EACH	1.0	0.0	1.0	
AR752542	GRATING FOR CONC. FES 42"	EACH	1.0	0.0	1.0	
AR800907	INFILTRATION TRENCH	LINEAR FOOT	319.0	0.0	319.0	
AR800927	GRANULAR DRAINAGE SUBBBASE 6"	SQUARE YARD	29,411.0	5,800.0	35,211.0	
AR803001	REMOVE AIRFIELD LIGHT	EACH	44.0	0.0	44.0	
AR803002	TURF REINFORCING MAT	SQUARE YARD	2,503.0	0.0	2,503.0	
AR803003	CONCRETE CABLE BOTTOM	SQUARE YARD	958.0	0.0	958.0	
AR803004	CLEARING TREES 0-1.5' BUTT. DIA.	EACH	49.0	0.0	49.0	
AR803005	CLEARING TREES 1.5-3.0' BUTT. DIA.	EACH	32.0	0.0	32.0	
AR803006	STUMP REMOVAL 0-1.5' BUTT. DIA.	EACH	49.0	0.0	49.0	
AR803007	STUMP REMOVAL 1.5-3.0' BUTT. DIA.	EACH	32.0	0.0	32.0	
AR803008	TEMPORARY SEED AND MULCH	ACRE	29.6	0.0	29.6	
AR803009	FIELD PIPE COLLAR	EACH	1.0	0.0	1.0	
AR803010	CONSERVATION COVER	ACRE	4.1	0.0	4.1	
AR901510	SEEDING	ACRE	21.7	0.0	21.7	
AR904510	SODDING	SQUARE YARD	18,377.0	0.0	18,377.0	
AR905510	TOPSOILING (FROM ON SITE)	CUBIC YARD	16,976.0	0.0	16,976.0	
AR908510	MULCHING	ACRE	17.7	0.0	17.7	

ADDITIVE ALTERNATE NO. 1

SUMMARY OF QUANTITIES						
ITEM NO.	DESCRIPTION	UNIT	AIP QUANTITY	LOCAL ONLY QUANTITY	TOTAL QUANTITY	RECORD PAID
AS108158	1/C #8 5 KV UG CABLE IN UD	LINEAR FOOT	287.0	0.0	287.0	
AS110504	4-WAY CONCRETE ENCASED DUCT	LINEAR FOOT	36.0	0.0	36.0	
AS125100	ELEVATED RETROREFLECTIVE MARKER	EACH	2.0	0.0	2.0	
AS125410	MITL - STAKE MOUNTED	EACH	8.0	0.0	8.0	
AS125445	TAXI GUIDANCE SIGN, 5 CHARACTER	EACH	1.0	0.0	1.0	
AS156513	SEPARATION FABRIC	SQUARE YARD	1,001.0	0.0	1,001.0	
AS209606	CRUSHED AGG. BASE COURSE - 6"	SQUARE YARD	1,001.0	0.0	1,001.0	
AS401614	BIT. SURF. CSE. - METHOD II, SUPERPAVE	TON	115.0	0.0	115.0	
AS403614	BIT. BASE CSE. - METHOD II SUPERPAVE	TON	230.0	0.0	230.0	
AS602510	BITUMINOUS PRIME COAT	GALLONS	288.0	0.0	288.0	
AS603510	BITUMINOUS TACK COAT	GALLONS	288.0	0.0	288.0	
AS620520	PAVEMENT MARKING - WATERBORNE	SQUARE FOOT	712.0	0.0	712.0	
AS620525	PAVEMENT MARKING - BLACK BORDER	SQUARE FOOT	151.0	0.0	151.0	
AS800927	GRANULAR DRAINAGE SUBBBASE 6"	SQUARE YARD	1,001.0	0.0	1,001.0	

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

NOTICE TO CONTRACTORS AND BIDDERS

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

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2	SHEET INDEX AND SUMMARY OF QUANTITIES
3	SITE PLAN AND GENERAL NOTES
4	CONSTRUCTION AND SAFETY NOTES AND DETAILS
5	PHASING PLAN - STAGES 1 AND 2
6	PHASING PLAN - STAGE 3
7-10	ALIGNMENT DATA AND PAVEMENT LAYOUT
11	PAVEMENT ELIGIBILITY LIMITS
12	TYPICAL SECTIONS AND PAVEMENT DETAILS
13-16	STORM WATER POLLUTION PREVENTION PLAN
17	SWPPP DETAILS
18-20	REMOVAL PLAN
21-24	CLEARING AND GRUBBING PLAN
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29	UNDERDRAIN DETAILS
30	UNDERDRAIN SCHEDULE
31-33	DRAINAGE DETAILS
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35-42	PLAN AND PROFILE - RUNWAY 18-36
43-46	PLAN AND PROFILE - TAXIWAY A
47	PLAN AND PROFILE - TAXIWAY A1
48	PLAN AND PROFILE - TAXIWAY B/A2
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99	TOPSOIL REMOVAL AND SATISFACTORY FILL LOCATIONS
100-103	PROPOSED GRADING
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109-115	LIGHTING, REFLECTOR, AND SIGNAGE PLAN
116	ELECTRICAL VAULT SITE PLAN
117	AIRFIELD LIGHTING AND SIGNAGE SCHEDULES
118	AIRFIELD REFLECTIVE MARKER SCHEDULE
119	ELECTRICAL DETAILS SHEET 1
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128	PROPOSED VAULT LIGHTING AND RECEPTACLE PLAN
129	PROPOSED FIRE ALARM DETECTION PLAN
130	ELECTRICAL VAULT ELEVATIONS SHEET 1
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141	LIGHTING CONTACTOR SCHEMATIC
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155-158	PROTECTION PLAN
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Hanson Professional Services Inc.
815 Commerce Drive, Suite 200
Oak Brook, IL 60523
phone: 630-990-3800
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#184-001084

Bolingbrook
a place to grow

Village of Bolingbrook
375 West Briarcliff Road
Bolingbrook, IL 60440
phone: 630-226-8400

CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 002-SOQ.DWG
LAYOUT BY: LDH XX/XX/XXXX
DRAWN BY: LDH XX/XX/XXXX
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

SHEET INDEX AND SUMMARY OF QUANTITIES

MAY 12, 2014 2:17 PM SPITZ01394
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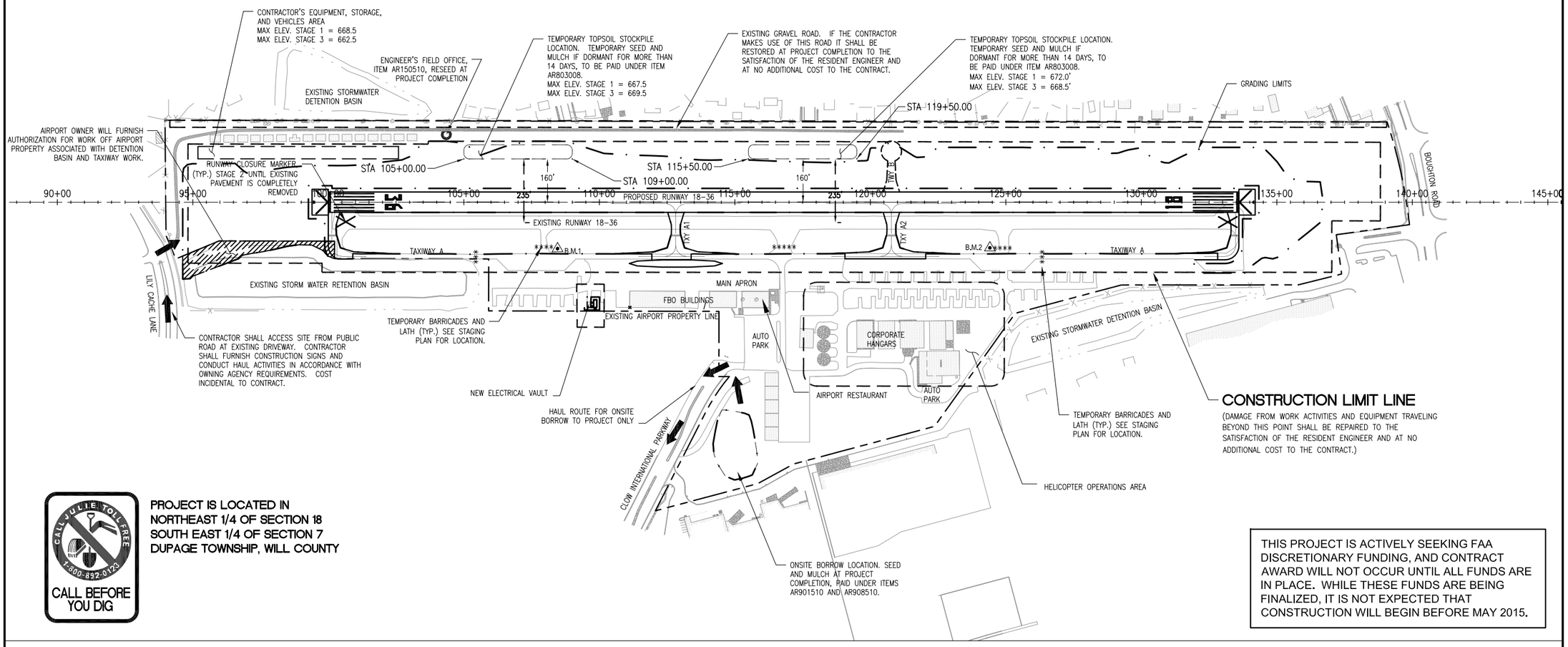

CALL J.U.L.I.E. TOLL FREE 1-800-892-0123
CALL BEFORE YOU DIG

PROJECT IS LOCATED IN
NORTHEAST 1/4 OF SECTION 18
SOUTH EAST 1/4 OF SECTION 7
DUPAGE TOWNSHIP, WILL COUNTY

THIS PROJECT IS ACTIVELY SEEKING FAA DISCRETIONARY FUNDING, AND CONTRACT AWARD WILL NOT OCCUR UNTIL ALL FUNDS ARE IN PLACE. WHILE THESE FUNDS ARE BEING FINALIZED, IT IS NOT EXPECTED THAT CONSTRUCTION WILL BEGIN BEFORE MAY 2015.

GENERAL NOTES

PROJECT DESCRIPTION

THIS PROJECT IS TO REPLACE RUNWAY 18–36 AT BOLINGBROOK'S CLOW INTERNATIONAL AIRPORT INCLUDING, AMONG OTHER INCIDENTAL WORK, THE FOLLOWING ITEMS:

- PLACEMENT OF TEMPORARY SOIL EROSION CONTROL MEASURES.
- REMOVAL OF TREES.
- REMOVAL OF EXISTING RUNWAY AND CONNECTING TAXIWAY PAVEMENTS.
- REMOVAL OF EXISTING RUNWAY LIGHTING.
- PROVISION OF UNCLASSIFIED EXCAVATION, ON–SITE BORROW EXCAVATION AND BORROW EXCAVATION.
- CONSTRUCTION OF NEW STORM SEWER SYSTEM.
- CONSTRUCTION OF NEW SUBSURFACE UNDERDRAIN PIPE SYSTEM AND STRUCTURES.
- ADDITION OF NEW GRANULAR DRAINAGE SUBBASE, CRUSHED AGGREGATE BASE COURSE, AND HMA BASE AND SURFACE COURSE PAVEMENTS.
- PLACEMENT OF PAVEMENT MARKINGS.
- ADDITION OF REFLECTIVE MARKERS, MIRL EDGE LIGHTS, THRESHOLD LIGHTS, AND AIRFIELD GUIDANCE SIGNS.
- INSTALLATION OF NEW AIRFIELD CABLE IN UNIT DUCT.
- CONSTRUCTION OF AIRFIELD ELECTRICAL VAULT AND INSTALLATION AND TESTING OF AIRFIELD ELECTRICAL VAULT EQUIPMENT.
- TOPSOILING, SEEDING AND MULCHING, AND SODDING ALONG NEW PAVEMENT EDGES.

AS ADDITIVE ALTERNATE NO. 01, THE HMA PAVING OF ACCESS TAXIWAY B SHALL ALSO BE FURNISHED. THE AWARD OF THIS ADDITIVE WILL BE DETERMINED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

PROTECTION OF EXISTING AIRPORT FACILITIES

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

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

CONTRACTOR'S ACCESS AND TEMPORARY FACILITIES

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

THE CONTRACTOR IS TO PROVIDE TEMPORARY CONSTRUCTION ROADS WITHIN THE CONSTRUCTION LIMIT LINES AS MAY BE REQUIRED BY HIS ACTIVITIES. HEAVY VEHICLES SHALL NOT CROSS EXISTING PAVEMENT SURFACES EXCEPT AS APPROVED BY THE AIRPORT MANAGER AND THE OWNER'S REPRESENTATIVE. ANY DAMAGE TO PAVEMENTS THAT MAY OCCUR BY THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE AIRPORT MANAGER AND THE OWNER'S REPRESENTATIVE.

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

RESPONSIBILITY FOR EXISTING UTILITIES

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

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

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

EXISTING BENCHMARKS

PROJECT BENCHMARKS ARE AS FOLLOWS:

MF1806
N 1831019.5810
E 1040117.8070
ELEV. 655.197
B.M.1

MF1807
N 1832614.1100
E 1040065.1010
ELEV. 663.337
B.M.2

200 0 200 400
SCALE IN FEET

NOTES

1. THE MAXIMUM HEIGHT OF CONTRACTOR'S EQUIPMENT VARIES BY CONSTRUCTION STAGE. SEE PHASING PLAN FOR DETAILS.
2. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES. CONSTRUCTION ACTIVITY ALSO SHALL NOT OBSTRUCT ACCESS TO ON–AIRPORT RESTAURANT AND HELICOPTER OPERATIONS AREAS.
3. **FOR PHASING INFORMATION, SEE PHASING PLAN.**

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 003-SITE PLAN.DWG
LAYOUT BY: LDH 4/29/2014
DRAWN BY: LDH 4/29/2014
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

SITE PLAN AND
GENERAL NOTES

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CONSTRUCTION AND SAFETY NOTES

SEQUENCE OF CONSTRUCTION

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

LATHING AND WARNING TAPE

THE PROJECT WILL REQUIRE THE PLACEMENT OF LATHING AND WARNING TAPE TO DELINEATE THE WORK AREA FROM ACTIVE AIRPORT OPERATIONS AREAS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE, PLACE AND MAINTAIN LATHING AND WARNING TAPE SHOWN ON THE PHASING PLAN ON SHEETS 5 AND 6 AND IN DETAIL A, THIS SHEET, AND AS DIRECTED BY THE RESIDENT ENGINEER AND THE AIRPORT OWNER. THE CONTRACTOR WILL FURNISH, PLACE, MAINTAIN AND RELOCATE THE LATHING AND WARNING TAPE AS REQUIRED. THE COST OF THESE ITEMS, AND THEIR MAINTENANCE, IS TO BE INCIDENTAL TO THE CONTRACT.

TEMPORARY BARRICADES ON AIRFIELD

THE PROJECT WILL REQUIRE THE PLACEMENT OF BARRICADES TO DELINEATE PORTIONS OF THE CONSTRUCTION AREA AND TO EFFECT TEMPORARY CLOSURES OF ACTIVE RUNWAYS, TAXIWAYS AND APRONS. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH, PLACE AND MAINTAIN BARRICADES AS SHOWN ON THE PHASING PLAN ON SHEETS 6 AND 7 AND IN DETAIL B, THIS SHEET, AND AS DIRECTED BY THE RESIDENT ENGINEER AND AIRPORT OWNER. THE COST OF THESE ITEMS, AND THEIR MAINTENANCE, IS TO BE INCIDENTAL TO THE CONTRACT. ANY WORK THAT REQUIRES PORTIONS OF AN ACTIVE TAXIWAY OR APRON TO BE CLOSED MUST BE COMPLETED EXPEDITIOUSLY TO MINIMIZE DISRUPTION TO AIRCRAFT OPERATIONS.

OPEN TRENCHES, EXCAVATIONS AND STOCKPILED MATERIAL AT THE CONSTRUCTION SITE SHALL BE DELINEATED WITH THE USE OF BARRICADES DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS. NO OPEN TRENCHES OR DROPOFFS FROM PAVEMENT EDGES GREATER THAT 3 INCHES SHALL BE ALLOWED WITHIN AN ACTIVE RUNWAY SAFETY AREA (RSA) OR AN ACTIVE TAXIWAY SAFETY AREA (TSA). THE RSA IS DEFINED AS 60 FEET FROM THE RUNWAY 18-36 CENTERLINE, AND 240 FEET FROM THE RUNWAY END. THE TSA IS MEASURED AT 24.5 FEET FROM THE CATEGORY 1 TAXIWAY CENTERLINE. THE CONTRACTOR WILL HAVE STEEL PLATES ON-SITE TO ALLOW FOR THE RAPID COVERING OF TRENCHES IN AN ACTIVE RSA OR TSA IN THE EVENT OF UNEXPECTED WORK STOPPAGES FOR WEATHER OR AIRPORT EMERGENCIES.

RUNWAY CLOSURE

THE PROJECT WILL REQUIRE THE PLACEMENT, OPERATION AND MAINTENANCE OF RUNWAY CLOSURE MARKERS; SEE PHASING PLAN ON SHEETS 5 AND 6 AND DETAIL C, THIS SHEET. TO MINIMIZE DISRUPTION TO AIRCRAFT OPERATIONS ASSOCIATED WITH THE RUNWAY CLOSURE, CONSTRUCTION WORK MUST BE COMPLETED EXPEDITIOUSLY. RUNWAY CLOSINGS SHALL ONLY BE PERMITTED BY PRIOR AUTHORIZATION OF THE RESIDENT ENGINEER AND THE AIRPORT OWNER.

THE CONTRACTOR WILL INSTALL, OPERATE, MAINTAIN AND REMOVE RUNWAY CLOSURE MARKERS FURNISHED BY THE OWNER AS SPECIFIED ON THIS SHEET AND IN THE SPECIAL PROVISIONS. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL, RELOCATE AND MAINTAIN RUNWAY CLOSURE MARKERS AT THE LOCATIONS SHOWN IN THE PLAN, AND AS DIRECTED BY THE RESIDENT ENGINEER AND AIRPORT OWNER. THE COST OF PLACING AND RELOCATING THESE ITEMS, AND THEIR OPERATION AND MAINTENANCE, IS TO BE INCIDENTAL TO THE CONTRACT.

THE AIRPORT OWNER WILL DE-ENERGIZE AIRPORT/RUNWAY NAVAIDS, AND AIRFIELD LIGHTING POWER AND CONTROL CIRCUITS WHEN THE RUNWAY IS CLOSED.

VEHICULAR TRAFFIC CONTROL

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE AND PLACE ROAD WARNING SIGNS AND BARRICADES ON THE EXISTING ROADWAYS PRIOR TO THE START OF CONSTRUCTION IN THE VICINITY. THE CONTRACTOR SHALL PROVIDE, INSTALL AND RELOCATE THE ITEMS AS REQUIRED. THE COST OF THIS WORK IS TO BE INCIDENTAL TO THE CONTRACT.

THE CONTRACTOR SHALL SECURE ANY PERMITS FOR HAULING ON LOCAL STREET OR STATE HIGHWAYS AS REQUIRED.

CONTRACTOR SHALL PROVIDE, INSTALL AND REMOVE ALL TRAFFIC CONTROL ITEMS WHEN CONSTRUCTION ACTIVITIES ARE WITHIN 15 FEET OF AN ACTIVE ROADWAY EDGE OR AS REQUIRED BY THE SITE PLAN. COST OF THIS WORK IS TO BE INCIDENTAL TO THE CONTRACT.

AIRFIELD OPERATIONAL SAFETY DURING CONSTRUCTION

ALL CONSTRUCTION TRAFFIC AND PERSONNEL SHALL REMAIN WITHIN THE CONSTRUCTION LIMIT LINE SHOWN ON THE PHASING PLAN FOR THE CURRENT WORK. CONTRACTOR'S PERSONNEL AND EQUIPMENT MUST REMAIN AT LEAST 125 FEET FROM THE CENTERLINE OF ACTIVE RUNWAYS, 400 FEET FROM THE END OF ACTIVE RUNWAYS, 44.5 FEET FROM ACTIVE CATEGORY I TAXIWAY CENTERLINES, AND 10 FEET FROM THE EDGE OF ACTIVE APRONS.

WHEN IT IS NECESSARY FOR CONSTRUCTION VEHICLES TO OPERATE ON OR WITHIN THESE LIMITS, THE RUNWAY, TAXIWAYS OR APRON MUST BE CLOSED. ALL CONTRACTOR'S EQUIPMENT USED IN ACTIVE AIRPORT OPERATIONS AREAS SHALL BE EQUIPPED WITH A FAA-STANDARD FLAG, AS REFERENCED IN FAA AC 150/5370-2, CURRENT ISSUE. AIRCRAFT SHALL HAVE THE RIGHT-OF-WAY. CONSTRUCTION VEHICLES SHALL NOT CROSS AN ACTIVE RUNWAY. THE COST OF ALL TRAFFIC CONTROL, BOTH WITHIN AND OUTSIDE OF AIRPORT OPERATIONS AREAS, IS TO BE INCIDENTAL TO THE CONTRACT.

WHEN NOT IN USE AND DURING NONWORKING HOURS, CONTRACTOR'S EQUIPMENT SHALL BE PARKED WITHIN THE CONTRACTOR'S EQUIPMENT STORAGE AND PARKING AREAS. THE EQUIPMENT STORAGE AND PARKING AREAS ARE TO BE LOCATED AS SHOWN ON THE SITE PLAN, SHEET 3. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING THE CONSTRUCTION ENTRANCE IN GOOD CONDITION. THE COST OF MAINTAINING THE CONSTRUCTION ENTRANCE IS TO BE INCIDENTAL TO THE CONTRACT.

AT NO TIME SHALL THE CONTRACTOR OPERATE OR PARK EQUIPMENT OR STOCKPILE MATERIAL SO AS TO OBSTRUCT AN AIRPORT IMAGINARY SURFACE.

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

ALL CONTRACTOR EQUIPMENT IS LIMITED TO THE HEIGHT SHOWN IN EACH PHASE OF THE PHASING PLAN.

NOTIFICATIONS BY CONTRACTOR

THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND AIRPORT OWNER 5 DAYS IN ADVANCE OF THE CONTRACTOR'S CLOSING OF ACTIVE TAXIWAYS AND APRONS. CLOSING OF RUNWAY 18-36 IN STAGE 2 SHALL REQUIRE 14 DAYS ADVANCE NOTICE. THE DATE, TIME AND SCHEDULED DURATION OF THE CLOSING MUST BE APPROVED BY THE RESIDENT ENGINEER AND THE AIRPORT OWNER. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND AIRPORT OWNER 72 HOURS IN ADVANCE OF THE CONTRACTOR'S CLOSING OF OTHER ACTIVE ROADWAYS, AIRFIELD OR ROADWAY LIGHTING CIRCUITS, OR OTHER AIRPORT FACILITIES.

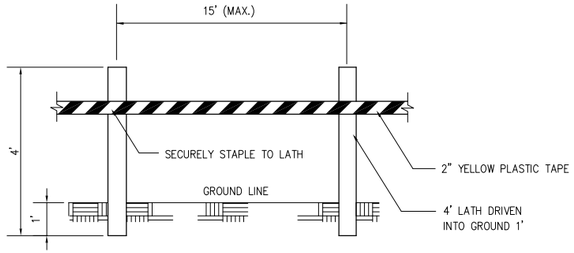
CONTRACTOR'S USE OF SITE

THE CONTRACTOR SHALL NOT OPERATE WITHIN, ENCROACH UPON OR OBSTRUCT AIRPORT OPERATIONAL AREAS, INCLUDING ACTIVE RUNWAY, TAXIWAYS AND APRON SAFETY AREAS, OBJECT AND OBSTACLE FREE ZONES, RUNWAY PROTECTION ZONES AND AIRPORT IMAGINARY SURFACES AS DEFINED IN FEDERAL AVIATION REGULATIONS (FAR) PART 77, "OBJECTS AFFECTING NAVIGABLE AIRSPACE".

THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF THE WORK AREA PRIOR TO BEGINNING WORK AT A NEW LOCATION.

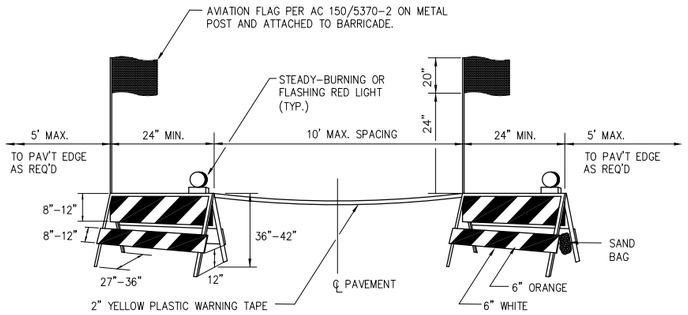
UTILITY OUTAGES AND SHUTDOWNS

THE CONTRACTOR SHALL PROVIDE 72 HOURS PRIOR NOTICE OF ANY OUTAGES OR SHUTDOWNS TO THE OWNER AND THE AGENCY OWNING THE AFFECTED UTILITY. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY CONNECTIONS OR OTHER MEASURES AS MAY BE REQUIRED TO MAINTAIN SERVICE AS MAY BE REQUIRED BY THE OWNING AGENCY AT NO COST TO THE OWNER.



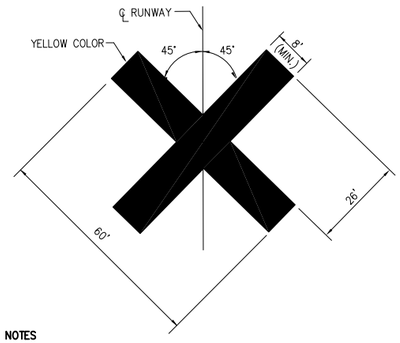
MATERIALS ARE TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION. COST OF MATERIALS, INSTALLATION, RELOCATION AND MAINTENANCE OF LATHING AND WARNING TAPE IS TO BE INCIDENTAL TO THE CONTRACT.

DETAIL A
LATHING AND WARNING TAPE



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

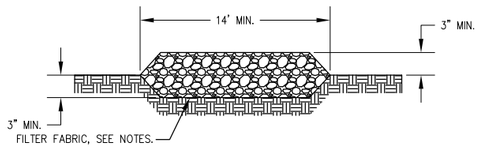
DETAIL B
PAVEMENT BARRICADES



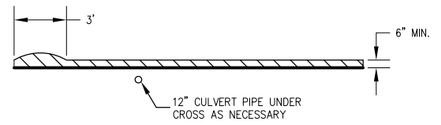
NOTES

1. VINYL MARKERS SHALL BE FURNISHED BY THE OWNER. THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS FOR INSTALLING, RELOCATING AND MAINTAINING THE MARKERS, WHOSE COST SHALL BE INCIDENTAL TO THE CONTRACT.
2. CONTRACTOR SHALL LOCATE THE MARKERS ON TOP OF THE RUNWAY NUMERALS DURING CLOSURE OF THE RUNWAY, OR IN THE TURF 50' BEFORE THE RUNWAY END FOR WORK ON THE PAVEMENT ITSELF.
3. MARKERS TO BE SECURED BY CONTRACTOR AS RECOMMENDED BY THE MANUFACTURER.

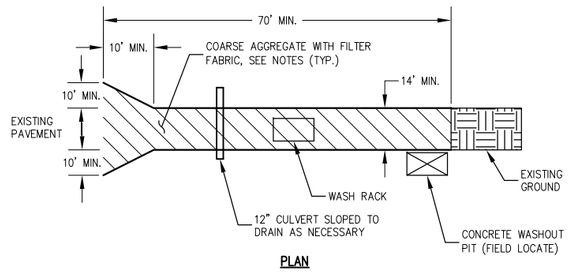
DETAIL C
VINYL RUNWAY CLOSURE MARKERS



CROSS SECTION



ELEVATION



PLAN

NOTES:

1. STRIP 3" OF EXISTING TOPSOIL PRIOR TO PLACEMENT OF STONE.
2. ROCK OR RECLAIMED CONCRETE SHALL MEET ONE OF THE FOLLOWING IDOT COARSE AGGREGATE GRADATIONS: CA-1, CA-2, CA-3 OR CA-4 AND BE PLACED ACCORDING TO SECTION 25 ROCKFILL IN THE ILLINOIS URBAN MANUAL USING METHOD I PLACEMENT AND CLASS III COMPACTION.
3. THICKNESS SHALL NOT BE LESS THAN SIX INCHES.
4. WIDTH SHALL BE 14 FEET MINIMUM.
5. SURFACE WATER FLOWING OR DIVERTED SHALL BE CARRIED IN CULVERT (CMP, STEEL OR HDPE).
6. PLACE FILTER FABRIC PRIOR TO STONE PLACEMENT FOR FULL WIDTH OF HAUL ROUTE. FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 592 GEOTEXTILE IN THE ILLINOIS URBAN MANUAL, TABLE 1 OR 2, CLASS I, II, OR IV. COST OF FABRIC AND ASSOCIATED WORK IS INCIDENTAL TO ITEM AR150540.
7. A CONCRETE WASHOUT PIT TO PROHIBIT STORM WATER DISCHARGE SHALL ALSO BE FURNISHED, AND SHALL BE BUILT MEETING THE REQUIREMENTS OF THE ILLINOIS URBAN MANUAL.
8. IF WASH RACKS ARE USED THEY SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
9. THE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO AIRPORT PAVEMENTS OR PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL AGGREGATE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO AIRPORT PAVEMENTS OR PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
10. PERIODIC INSPECTION SHALL BE PERFORMED AND REQUIRED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN EVENT.
11. CONSTRUCTION ENTRANCE AND WASHOUT PIT TO BE REMOVED AT PROJECT END. AREA TO BE RESTORED AND RESEEDED AND LEFT IN A CONDITION SATISFACTORY TO THE RESIDENT ENGINEER.
12. COST OF INSTALLING, MAINTAINING, REMOVING AND RESTORING CONSTRUCTION ENTRANCE SHALL BE PAID UNDER ITEM AR150540.
13. ANY ADDITIONAL HAUL ROUTES REQUIRED TO COMPLETE THE WORK WITHOUT DELAYS FROM WEATHER OR PASSAGEWAY CONDITIONS SHALL BE WITHIN THE PROJECT LIMITS AND MAY BE OF A TYPE SELECTED BY THE CONTRACTOR. ANY ROUTES LOCATED OUTSIDE THE PROPOSED SEEDING AND MULCHING AREA SHALL BE RESTORED TO A VEGETATED CONDITION ACCEPTABLE TO THE RESIDENT ENGINEER AT PROJECT COMPLETION. THE COST OF THESE ROUTES AND ALL WORK ASSOCIATED WITH THEM INCLUDING ANY REQUIRED SEEDING AND MULCHING SHALL BE INCIDENTAL TO ITEM AR150540.

DETAIL D
STABILIZED CONSTRUCTION ENTRANCE

(PER ILLINOIS URBAN MANUAL, SECTION 930)

DETAILS SHOWN ARE NOT TO SCALE

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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		

LAY DWN REV

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CONSTRUCTION AND SAFETY NOTES AND DETAILS

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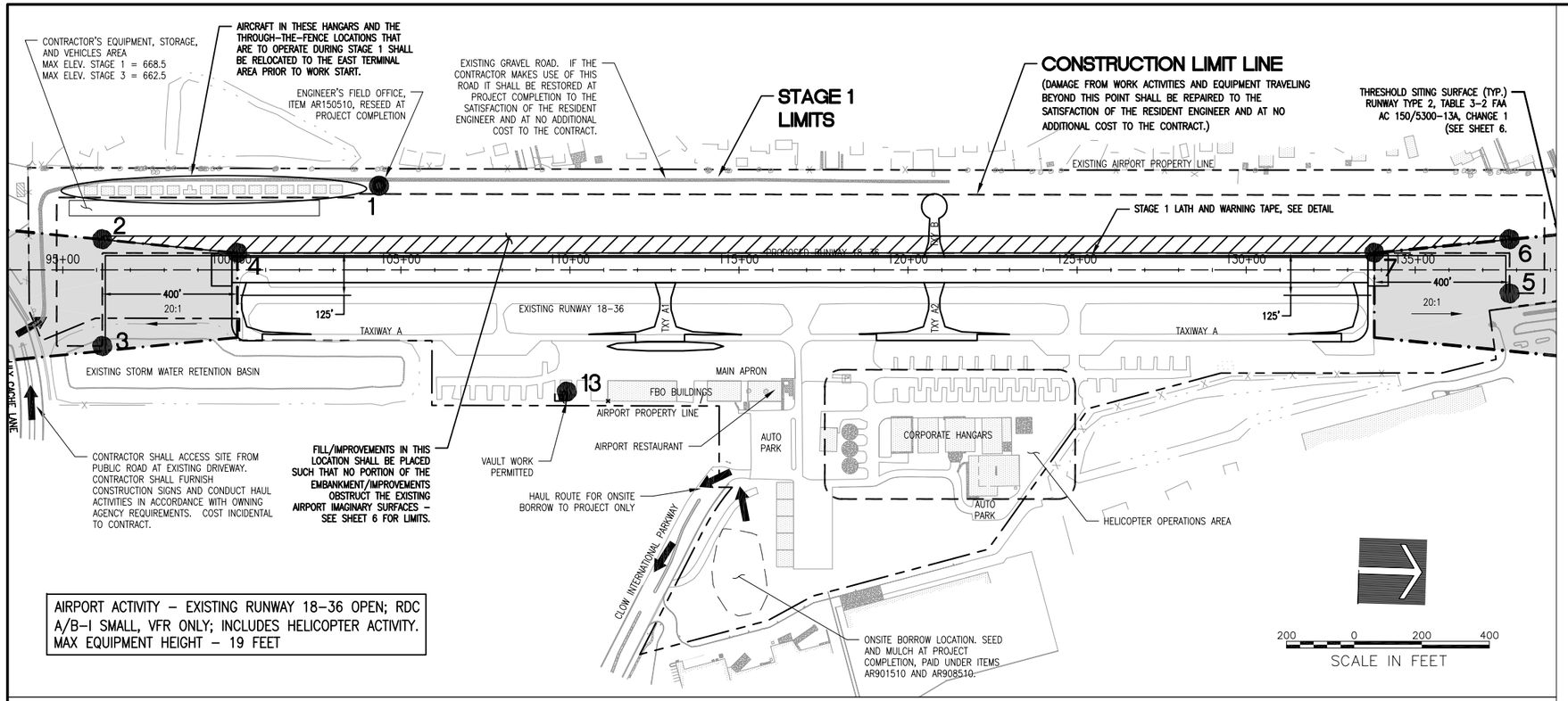

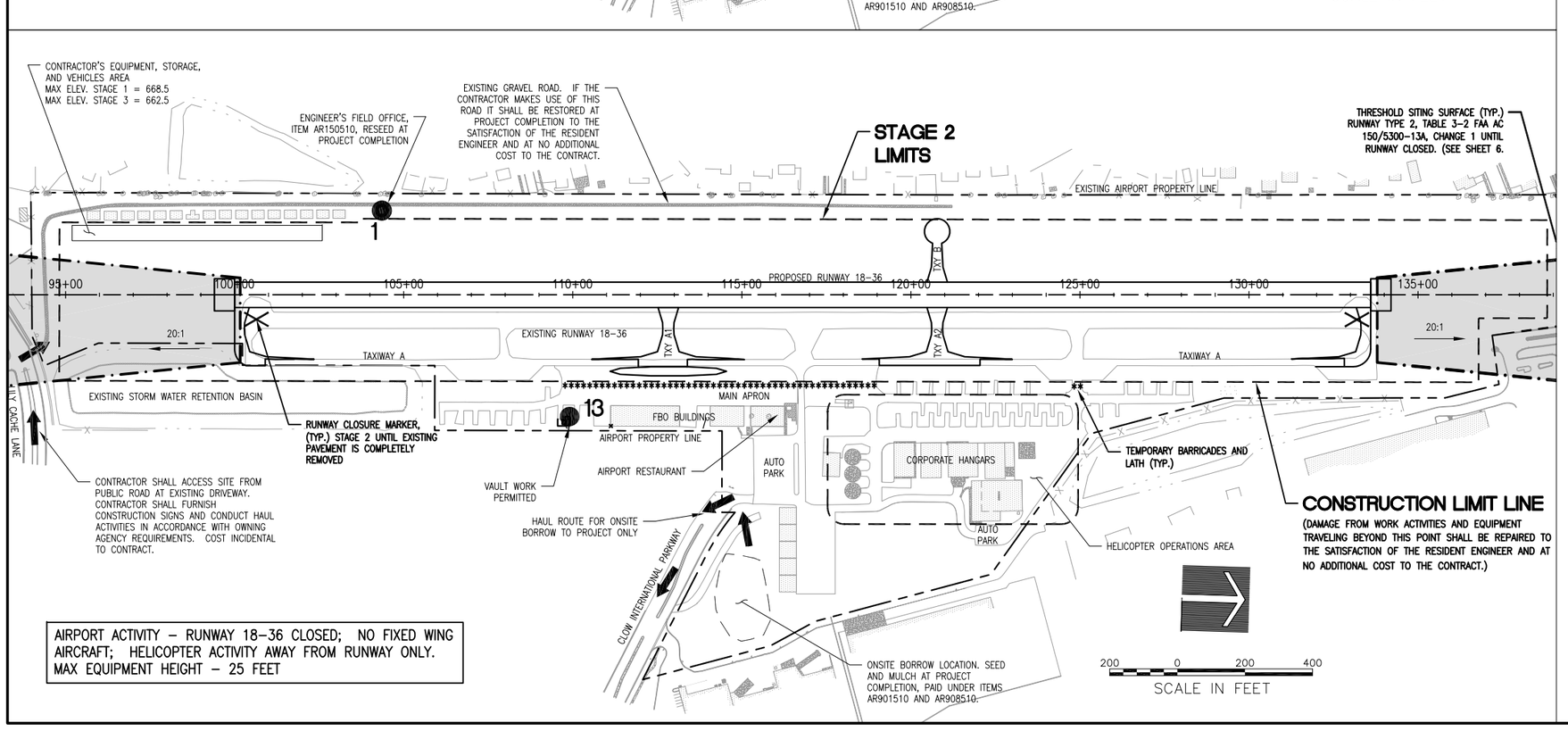

NOTES - ALL STAGES

1. ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
2. CONTRACTOR'S EQUIPMENT MAY NOT DISRUPT FLIGHT OPERATIONS ON RUNWAY 18/36 DURING STAGE 1 AND STAGE 3 WORK.
3. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
4. SEE CONSTRUCTION AND SAFETY NOTES.

STAGE 1 NOTES

- WORK SHALL BE LIMITED TO 125 FEET FROM EXISTING RUNWAY 18-36 CENTERLINE AND 400 FEET FROM THE RUNWAY ENDS. NEW CONSTRUCTION SHALL NOT OBSTRUCT SURFACES SHOWN ON SHEET 6, NOR THE THRESHOLD SITING SURFACE.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 19 FEET IN STAGE 1.
- AIRPORT SHALL ISSUE ALL NOTICES TO AIRMEN FOR CONSTRUCTION.
- THE RUNWAY WILL BE AVAILABLE FOR DAY/NIGHT VFR USE ONLY.
- CIRCLE TO LAND APPROACH SHALL BE OUT OF SERVICE.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN STAGE 1:

- PLACEMENT OF TEMPORARY SOIL EROSION CONTROL MEASURES
- TREE REMOVAL
- PROVISION OF UNCLASSIFIED EXCAVATION AND GRADING WITHIN STAGE 1 LIMITS, WITH HEIGHT LIMITS SHOWN ON SHEET 6
- TEMPORARY SEEDING AS REQUIRED
- INSTALLATION AND CONSTRUCTION OF DRAINAGE ITEMS WITHIN STAGE 1 LIMITS
- TOPSOILING, SEEDING AND MULCHING
- CONSTRUCTION OF PREFABRICATED VAULT
- INSTALLATION AND TESTING OF AIRFIELD ELECTRICAL VAULT EQUIPMENT

STAGE 2 NOTES

- AIRPORT SHALL ISSUE ALL NOTICES TO AIRMEN.
- RUNWAY 18-36 CLOSED TO ALL AIRCRAFT.
- CIRCLE TO LAND APPROACH SHALL BE OUT OF SERVICE.
- HELICOPTER ACTIVITY LIMITED TO AREA SHOWN.
- WORK WITHIN THE RUNWAY OBJECT FREE ZONE, OR WITHIN 125 FEET OF RUNWAY 18-36 CENTERLINE AND 240 FEET OF THE RUNWAY END, WILL BE PERFORMED AFTER THE CONTRACTOR HAS CLOSED THE RUNWAY.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 25 FEET UNLESS PRIOR APPROVAL GIVEN BY THE ENGINEER.
- **THE AIRPORT WILL BE CLOSED DURING STAGE 2 WORK EXCEPT FOR HELICOPTER ACTIVITY. THE CONTRACTOR SHALL FURNISH 14 DAYS NOTICE PRIOR TO WORKING IN STAGE 2 AREA.**
- **RUNWAY CLOSURE MARKERS SHALL REMAIN IN PLACE IN STAGE 2 UNTIL THE EXISTING RUNWAY PAVEMENTS HAVE BEEN ELIMINATED.**
- **CONTRACTOR SHALL PLAN HIS WORK TO ALLOW PRIMARY CABLE CROSSING RUNWAY 18-36 TO REMAIN IN OPERATION. 2-WAY CONCRETE ENCASED DUCT FOR PRIMARY ELECTRIC CABLES CROSSING RUNWAY 18-36 SHALL BE CONSTRUCTED AS SOON AS PRACTICABLE AT THE BEGINNING OF STAGE 2.**

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN STAGE 2:

- REMOVAL EXISTING PAVEMENTS AND RUNWAY LIGHTING
- PROVISION OF UNCLASSIFIED EXCAVATION AND BACKFILL
- TEMPORARY SEEDING AS REQUIRED
- CONSTRUCTION OF NEW PAVEMENT UNDERDRAIN AND DRAINAGE SYSTEM
- ADDITION OF NEW GRANULAR DRAINAGE SUBBASE, AGGREGATE BASE COURSE AND HMA BASE AND SURFACE PAVEMENTS
- PLACEMENT OF PAVEMENT MARKINGS
- INSTALLATION OF NEW RUNWAY AND TAXIWAY LIGHTS AND SIGNS, AND REFLECTIVE MARKERS
- INSTALLATION OF NEW AIRFIELD CABLE IN UD
- TOPSOIL, SEEDING AND MULCHING AND SODDING, **EXCEPT AREA SHOWN IN STAGE 3**

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375 West Briarcliff Road
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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
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SHEET TITLE

PHASING PLAN - STAGES 1 AND 2

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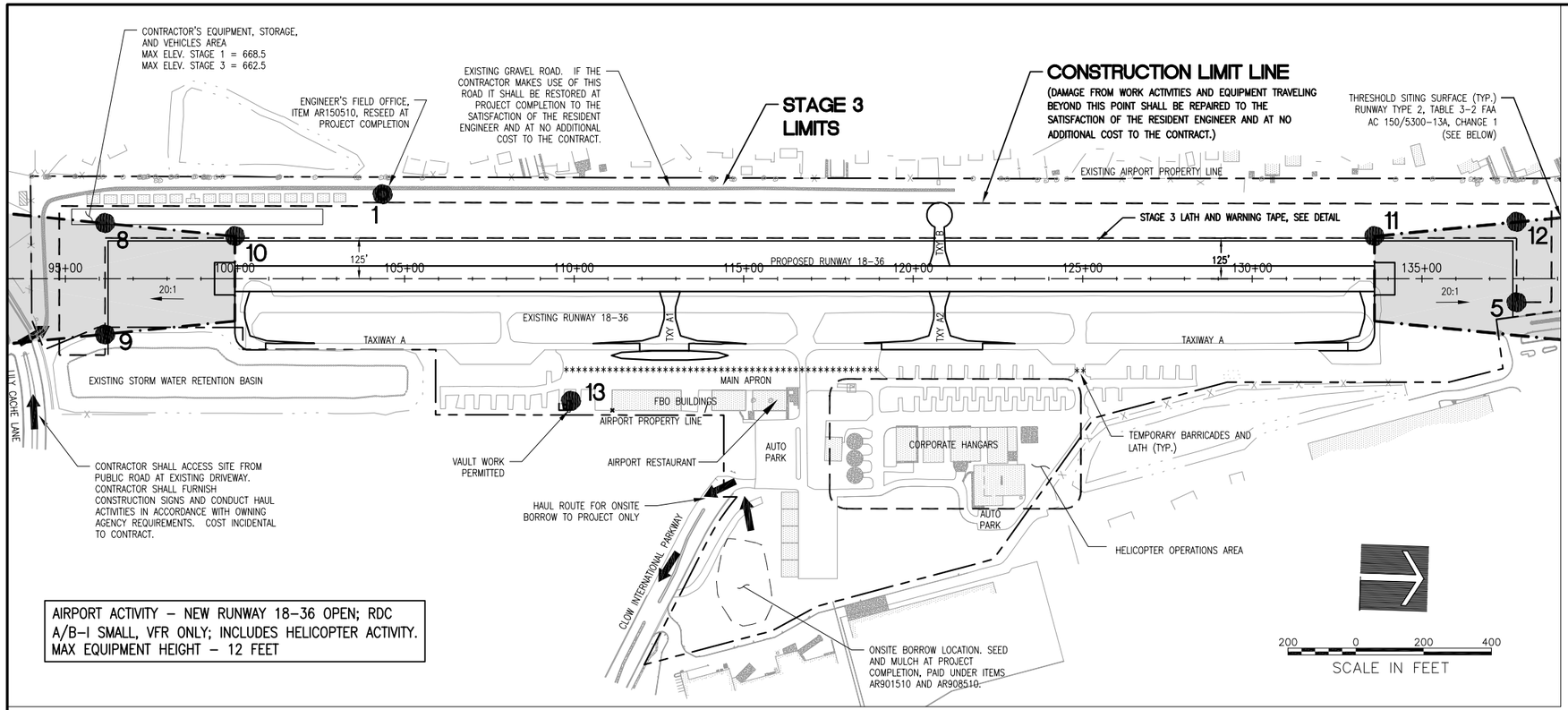


AIRPORT ACTIVITY – NEW RUNWAY 18-36 OPEN; RDC A/B-I SMALL, VFR ONLY; INCLUDES HELICOPTER ACTIVITY. MAX EQUIPMENT HEIGHT – 12 FEET

NOTES – ALL STAGES

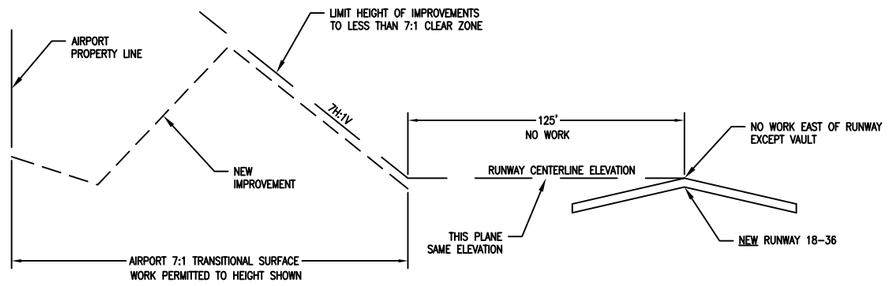
1. ALL CONTRACTOR ACTIVITIES SHALL TAKE PLACE WITHIN CONSTRUCTION LIMIT LINES AS SHOWN.
2. CONTRACTOR'S EQUIPMENT MAY NOT DISRUPT FLIGHT OPERATIONS ON RUNWAY 18/36 DURING STAGE 3 WORK.
3. TRAFFIC TO BE MAINTAINED ON ALL AIRPORT ROADWAYS AT ALL TIMES.
4. SEE CONSTRUCTION AND SAFETY NOTES.

STAGE 3 NOTES

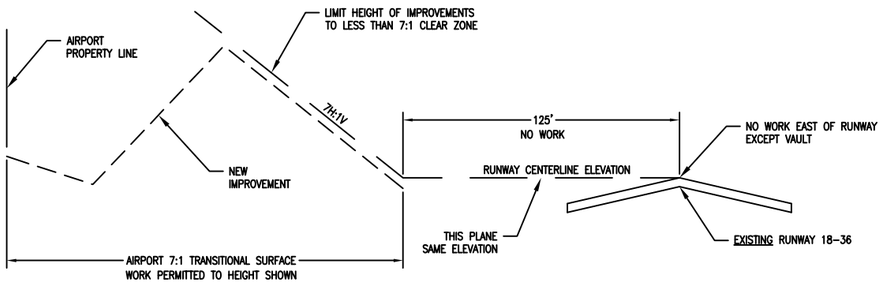
- WORK SHALL BE LIMITED TO 125 FEET FROM NEW RUNWAY 18-36 CENTERLINE AND 400 FEET FROM THE RUNWAY ENDS. NEW CONSTRUCTION SHALL NOT OBSTRUCT SURFACES SHOWN, NOR THE THRESHOLD SITING SURFACE.
- ALL CONSTRUCTION EQUIPMENT WILL BE LIMITED TO A HEIGHT OF 12 FEET IN STAGE 3.
- AIRPORT SHALL ISSUE ALL NOTICES TO AIRMEN FOR CONSTRUCTION.
- THE RUNWAY WILL BE AVAILABLE FOR DAY/NIGHT VFR USE ONLY.
- CIRCLE TO LAND APPROACH SHALL BE OUT OF SERVICE.

THE FOLLOWING ITEMS ARE TO BE COMPLETED IN STAGE 3:

- TOPSOILING, SEEDING AND MULCHING WITHIN STAGE 3 LIMITS
- CLEANUP



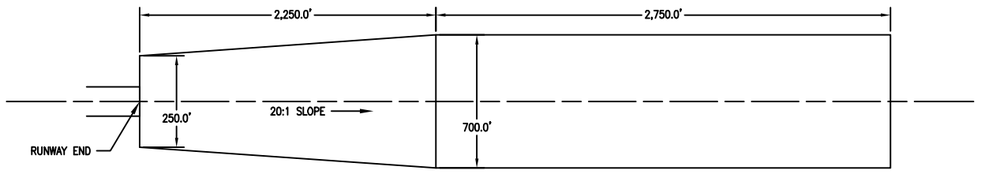
STAGE 3



STAGE 1

LIMIT ON IMPROVEMENT HEIGHTS WHEN RUNWAY IS OPEN

(LOOKING NORTH)



THRESHOLD SITING SURFACE

NOTE: 20:1 SLOPE STARTS AT RUNWAY END

RUNWAY END COORDINATES

DESCRIPTION	LATITUDE	LONGITUDE	RUNWAY STATION
EXISTING RUNWAY 18 END	41°42'02.0850" N	88°07'45.8190" W	133+79.11
EXISTING RUNWAY 36 END	41°41'28.8860" N	88°07'44.5540" W	100+16.40
PROPOSED RUNWAY 18 END	41°42'01.8756" N	88°07'46.7962" W	133+60.00
PROPOSED RUNWAY 36 END	41°41'28.6937" N	88°07'45.5215" W	100+00.00

NOTES

1. COORDINATES ARE IN NAD 83 FOR HORIZONTAL AND NAVD 88 FOR VERTICAL.
2. STATIONS, OFFSETS AND ELEVATIONS SHOWN ARE IN FEET.

OBJECT INFORMATION

ITEM NO.	DESCRIPTION	STAGE	MOBILITY	GROUND ELEVATION	OBJECT ELEVATION	LATITUDE	LONGITUDE	RUNWAY 18-36 STATION	EXISTING RUNWAY 18-36 OFFSET	EXISTING RUNWAY 18-36 EL.	PROPOSED RUNWAY 18-36 OFFSET	PROPOSED RUNWAY 18-36 EL.
1	ENGINEER'S FIELD OFFICE	ALL	STATIONARY	650.0	665.0	41° 41' 32.9223" N	88° 07' 48.9704" W	104+35.36	324.2	650.6	249.2	658.9
2	CONSTRUCTION EQUIPMENT	1	MOVING	650.6	669.6	41° 41' 24.8841" N	88° 07' 46.5746" W	96+16.85	166.0	653.0	--	--
3	CONSTRUCTION EQUIPMENT	1	MOVING	641.0	660.0	41° 41' 24.9739" N	88° 07' 42.4114" W	96+16.85	150.0	653.0	--	--
4	CONSTRUCTION EQUIPMENT	1	MOVING	651.7	670.7	41° 41' 28.8412" N	88° 07' 46.1997" W	100+16.40	126.0	653.0	--	--
5	CONSTRUCTION EQUIPMENT	ALL	MOVING	670.0	689.0	41° 42' 06.0342" N	88° 07' 46.0430" W	137+79.11	5.8	670.0	69.2	675.0
6	CONSTRUCTION EQUIPMENT	1	MOVING	670.0	689.0	41° 42' 05.9886" N	88° 07' 48.1544" W	137+79.11	166.0	670.0	--	--
7	CONSTRUCTION EQUIPMENT	1	MOVING	670.7	689.7	41° 42' 02.0498" N	88° 07' 47.4755" W	133+79.11	126.0	670.0	--	--
8	CONSTRUCTION EQUIPMENT	3	MOVING	650.1	662.1	41° 41' 24.8632" N	88° 07' 47.5411" W	96+16.85	--	--	164.3	657.0
9	CONSTRUCTION EQUIPMENT	3	MOVING	651.1	663.1	41° 41' 24.9567" N	88° 07' 43.2113" W	96+16.85	--	--	164.3	657.0
10	CONSTRUCTION EQUIPMENT	3	MOVING	650.9	662.9	41° 41' 28.6579" N	88° 07' 47.1816" W	100+00.00	--	--	126.0	657.0
11	CONSTRUCTION EQUIPMENT	3	MOVING	669.1	681.1	41° 42' 01.8398" N	88° 07' 48.4565" W	133+60.00	--	--	126.0	675.0
12	CONSTRUCTION EQUIPMENT	3	MOVING	670.0	682.0	41° 42' 05.9668" N	88° 07' 49.1678" W	137+79.11	--	--	167.9	675.0
13	CONSTRUCTION EQUIPMENT	ALL	MOVING	658.5	677.5	41° 41' 38.5795" N	88° 07' 41.1575" W	109+90.68	284.7	653.2	359.7	661.3

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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 006-STAGINGPLAN.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: LDH 3/10/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

PHASING PLAN - STAGE 3

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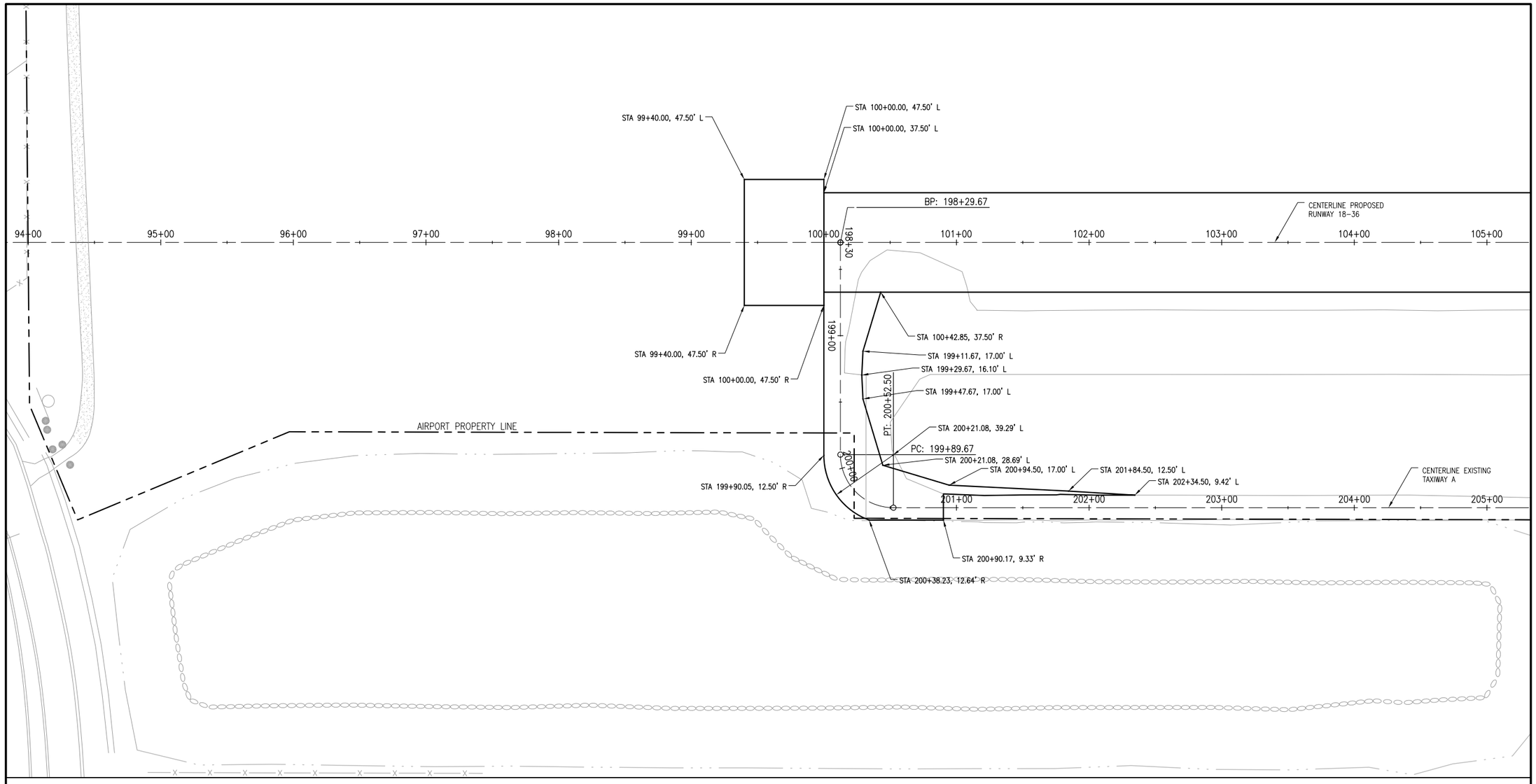

Alignment	Description	Station	Project Coordinates	
			Northing	Easting
Proposed Runway 18-36	Beginning of Alignment	66+40.00	1826810.5595	1040077.5992
	End of Alignment	167+20.00	1836885.6697	1039763.6650
Existing Taxiway A	Beginning of Alignment	198+29.67	1830181.4235	1039972.5652
	Curve 01 PC	199+89.67	1830186.4065	1040132.4876
	Curve 01 Center (40.0' R)	200+52.50	1830226.3871	1040131.2418
	Curve 01 PT	200+52.50	1830227.6329	1040171.2224
	Curve 02 PC	233+07.50	1833481.0539	1040069.8478
	Curve 02 Center (40.0' R)	233+07.50	1833479.8081	1040029.8672
	Curve 02 PT	233+70.33	1833519.7887	1040028.6214
	End of Alignment	235+30.33	1833514.8057	1039868.6991

40 0 40 80
SCALE IN FEET

Alignment	Description	Station	Project Coordinates	
			Northing	Easting
Proposed Taxiway A1	Beginning of Alignment	300+00.00	1831450.6607	1039933.0165
	End of Alignment	303+00.00	1831460.0040	1040232.8710
Proposed Taxiway A2	Beginning of Alignment	397+50.00	1832237.7828	1039658.3690
	End of Alignment	403+00.00	1832254.9122	1040208.1022

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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

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NO.	DATE	DESCRIPTION		
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DRAWN BY: LDH 3/10/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

ALIGNMENT DATA AND PAVEMENT LAYOUT

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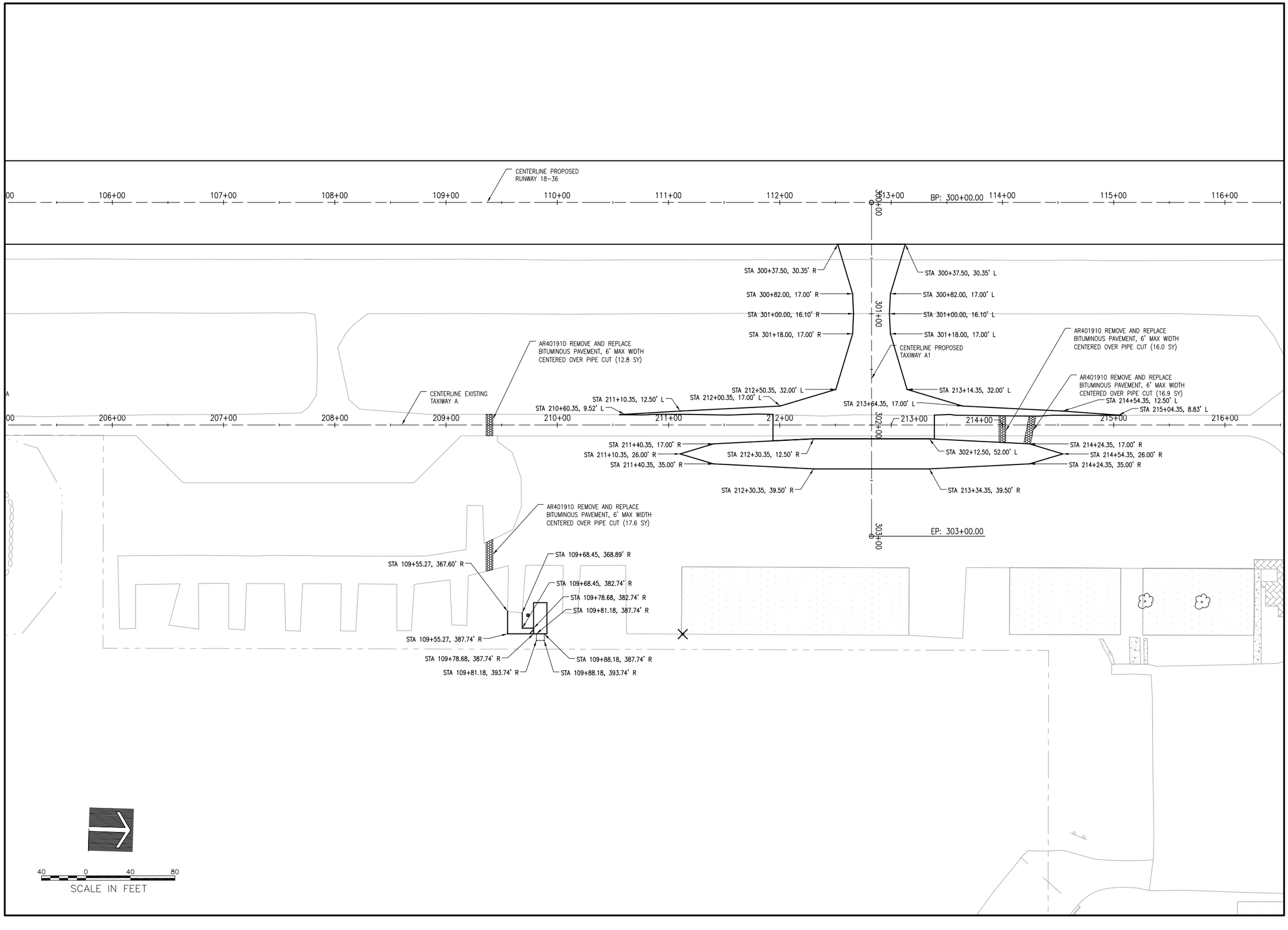

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REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

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NO.	DATE	DESCRIPTION		
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REVIEWED BY: RMH 5/7/2014

SHEET TITLE

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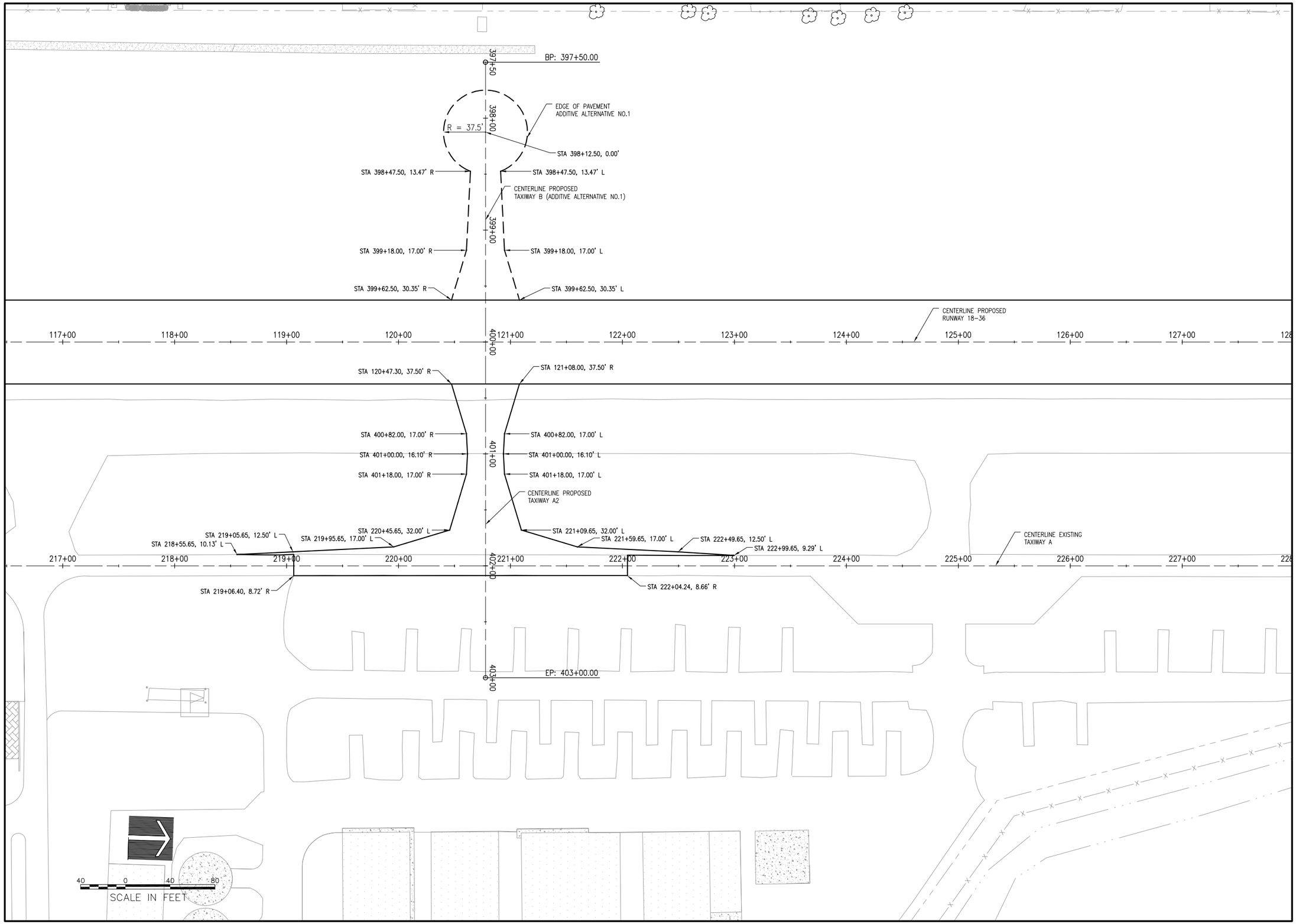
AND PAVEMENT
LAYOUT



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RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

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AND PAVEMENT
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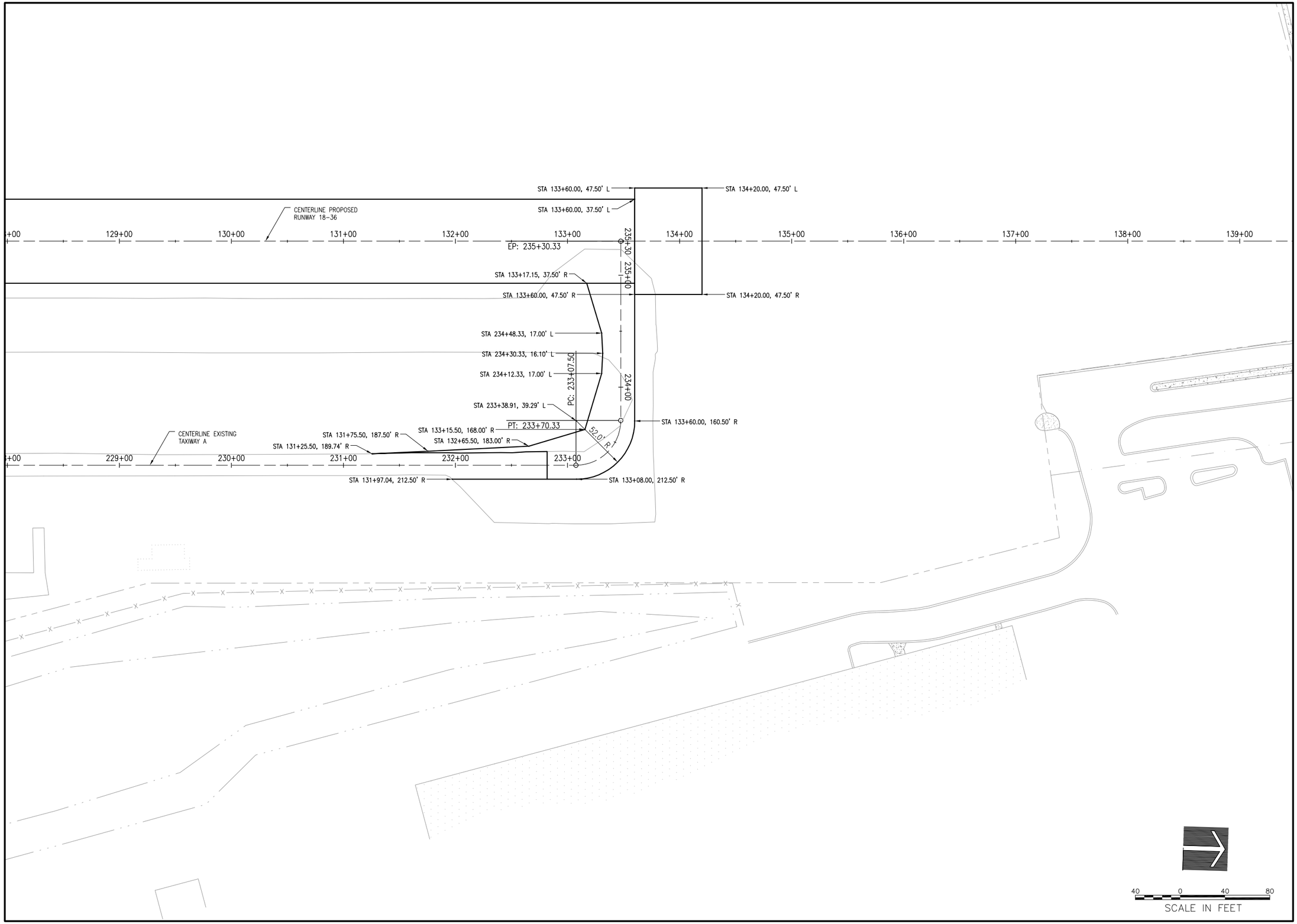

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RUNWAY 18-36

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SBG No: 3-17-SBGP-TBD

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SHEET TITLE

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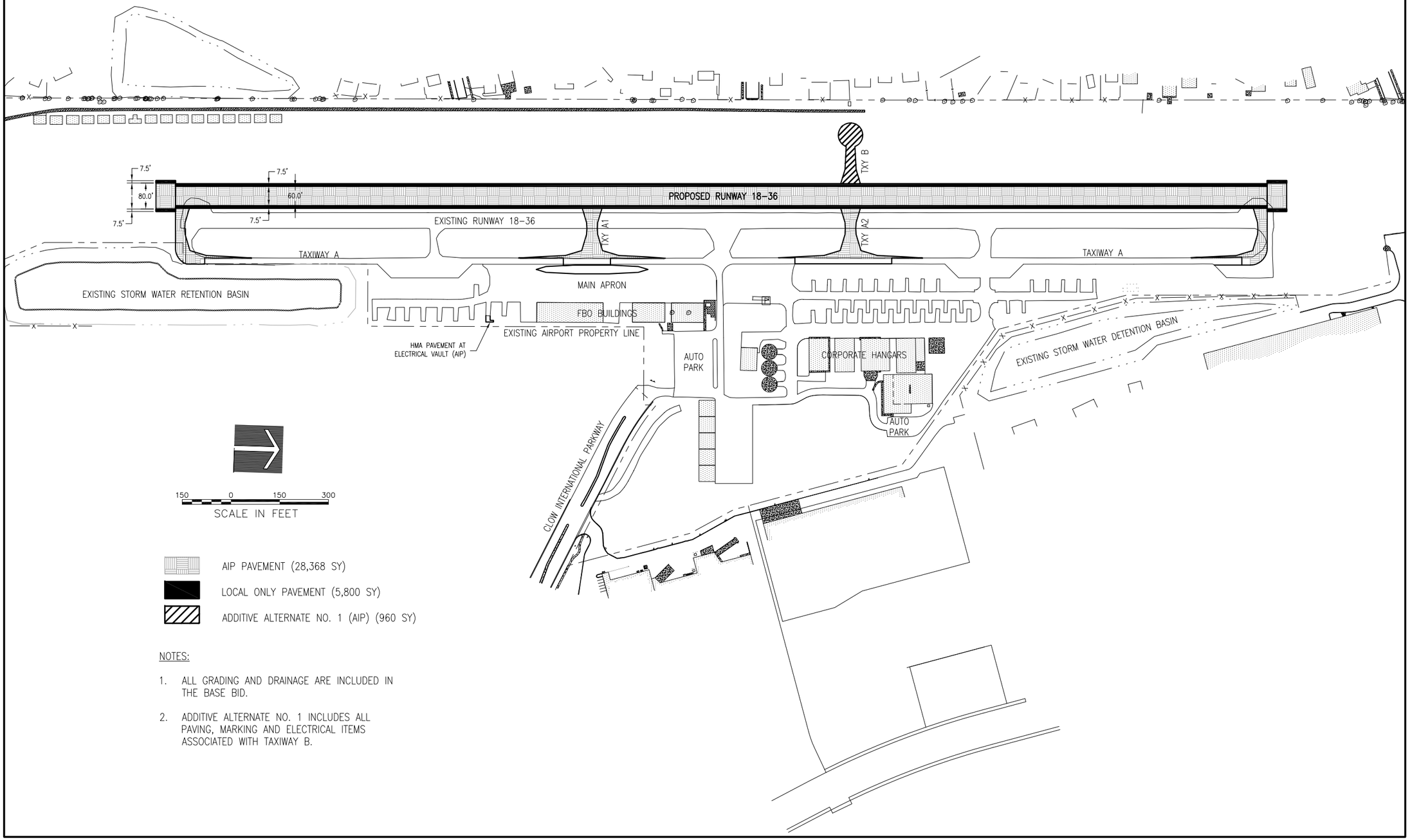
AND PAVEMENT
LAYOUT



NOTES:

1. ALL GRADING AND DRAINAGE ARE INCLUDED IN THE BASE BID.
2. ADDITIVE ALTERNATE NO. 1 INCLUDES ALL PAVING, MARKING AND ELECTRICAL ITEMS ASSOCIATED WITH TAXIWAY B.

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PROJECT NO: 14A0002
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REVIEWED BY: RMH 5/7/2014

SHEET TITLE

PAVEMENT
ELIGIBILITY LIMITS

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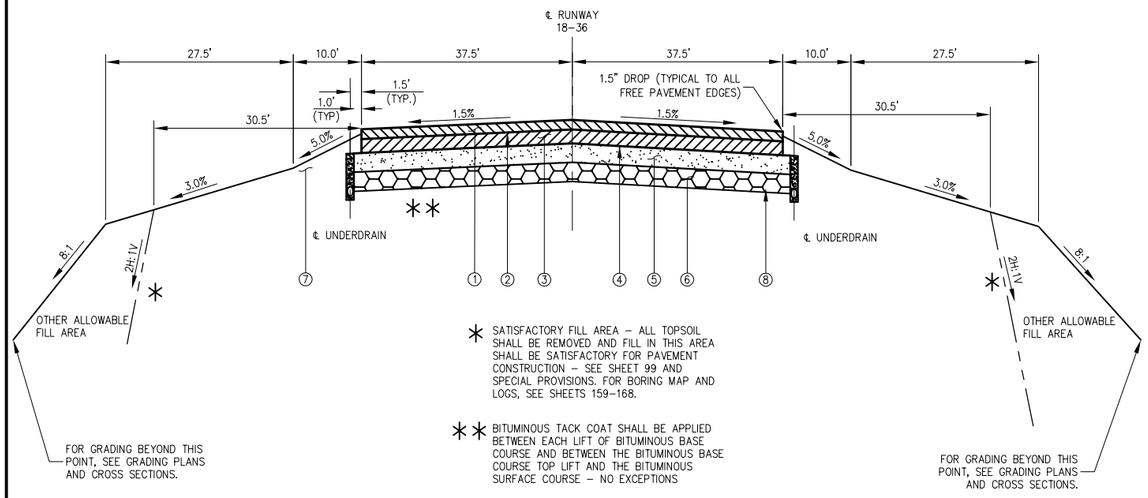
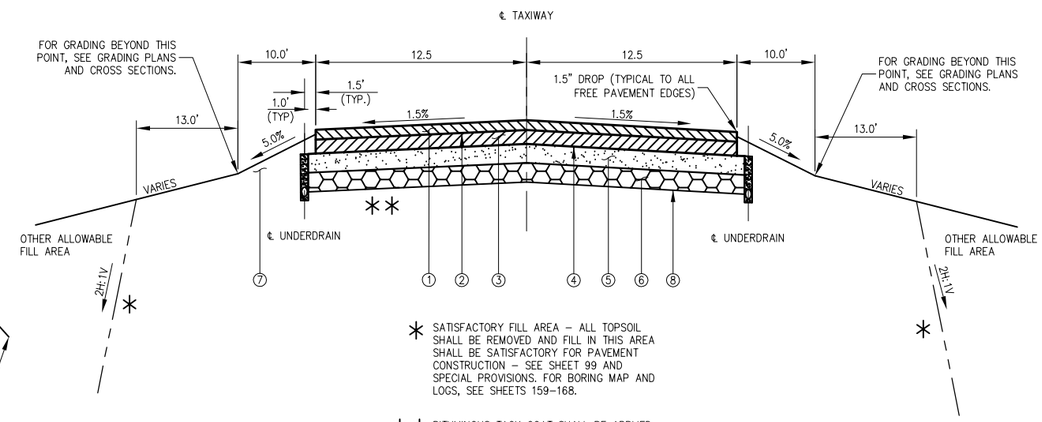




NOTE:

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

TYPICAL SECTION – RUNWAY 18-36

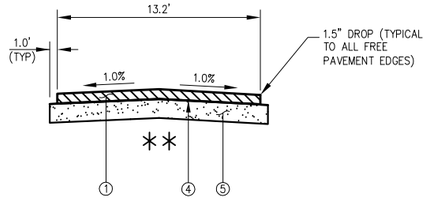
(SECTION SHOWN LOOKING NORTH)

① PROPOSED 2 INCH BITUMINOUS SURFACE COURSE, ITEM AR401614
② PROPOSED BITUMINOUS TACK COAT, ITEM AR603510 (BETWEEN ALL LIFTS, .15 GALLONS/SQUARE YARD)
③ PROPOSED 4 INCH BITUMINOUS BASE COURSE, ITEM AR403614
④ PROPOSED BITUMINOUS PRIME COAT, ITEM AR602510 (.30 GALLONS/SQUARE YARD)
⑤ PROPOSED 6 INCH CRUSHED AGGREGATE BASE COURSE, ITEM AR209606
⑥ PROPOSED 6 INCH GRANULAR DRAINAGE SUBBASE, ITEM AR800927
⑦ PROPOSED 4 INCH TOPSOIL, ITEM AR905510
⑧ PROPOSED SEPARATION FABRIC, ITEM AR156513

ADDITIVE ALTERNATIVE NO. 01 PAID UNDER "AS" NUMBERS

TYPICAL SECTION – CONNECTING TAXIWAYS A1, A2, AND B

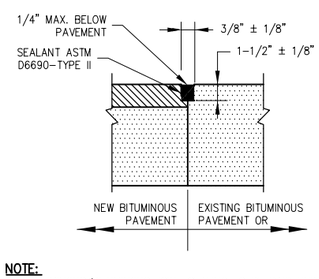
(TAXIWAY B PAVEMENT IS ADDITIVE ALTERNATIVE NO. 01)
(SECTION SHOWN LOOKING WEST)



PARKING PAD AT VAULT

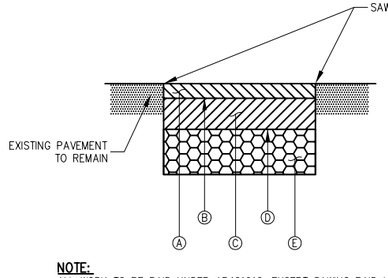
(SECTION SHOWN LOOKING WEST)

FOR PAVEMENT LOCATIONS SEE SHEET 8 AND ELECTRICAL PLANS



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

BITUMINOUS/BITUMINOUS SEAL



NOTE:
ALL WORK TO BE PAID UNDER AR401910, EXCEPT SAWING PAID UNDER AR401665.

REMOVE AND REPLACE BITUMINOUS PAVEMENT

Ⓐ PROPOSED BITUMINOUS SURFACE COURSE ITEM AR401614, 2" MIN, MATCH EXISTING
Ⓑ PROPOSED BITUMINOUS TACK COAT, ITEM AR603510 (BETWEEN ALL LIFTS, .15 GALLONS/SQUARE YARD)
Ⓒ PROPOSED BITUMINOUS BASE COURSE ITEM AR403614, 2" MIN, MATCH EXISTING
Ⓓ PROPOSED BITUMINOUS PRIME COAT, ITEM AR602510 (.30 GALLONS/SQUARE YARD)
Ⓔ PROPOSED CRUSHED AGGREGATE BASE COURSE ITEM AR209606, 6" MIN, MATCH EXISTING

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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 012-TYP SECT.DWG
LAYOUT BY: LDH 4/25/2014
DRAWN BY: LDH 4/25/2014
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

TYPICAL SECTIONS AND PAVEMENT DETAILS

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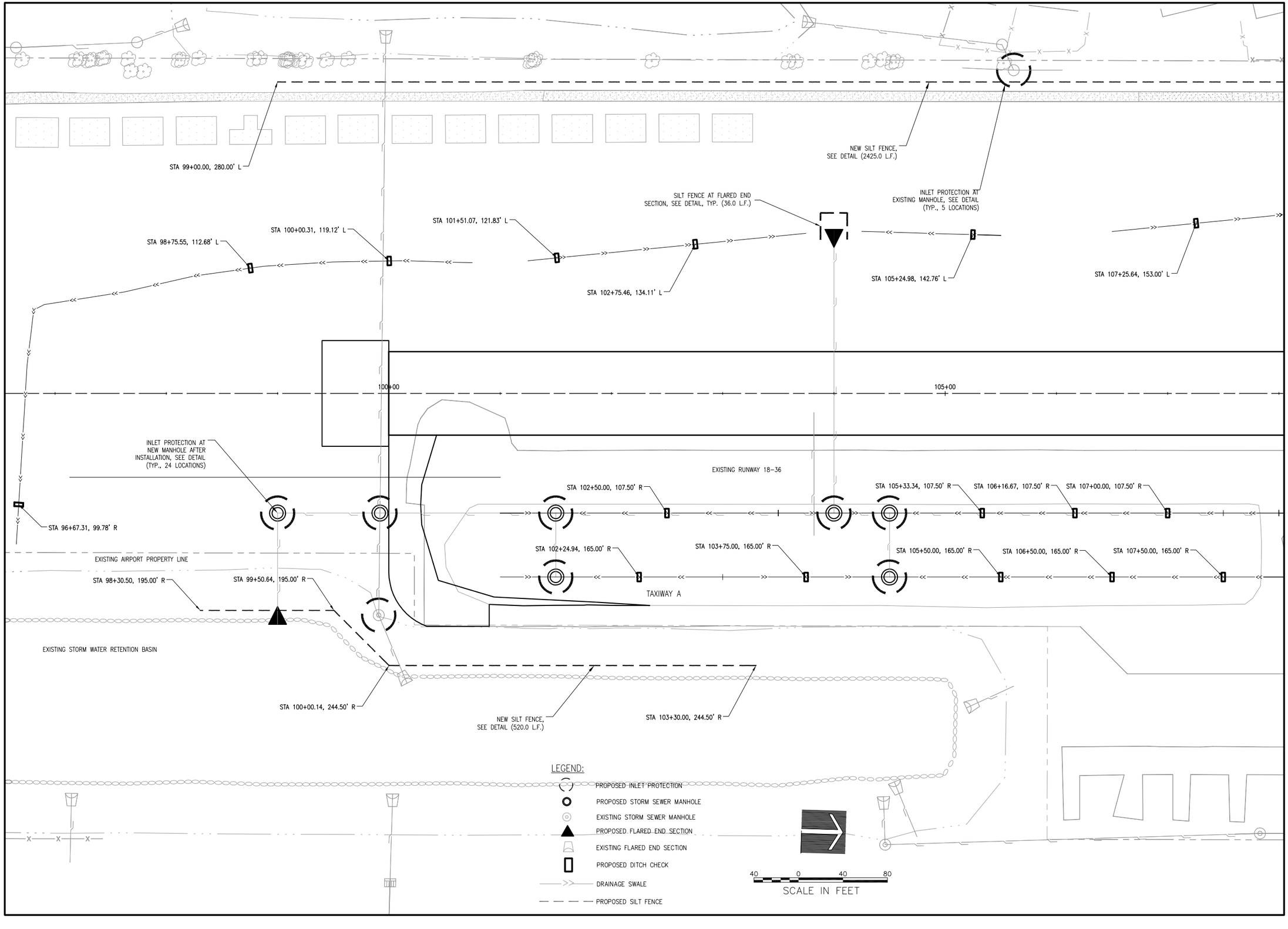

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RUNWAY 18-36

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SHEET TITLE

STORM WATER
POLLUTION
PREVENTION PLAN

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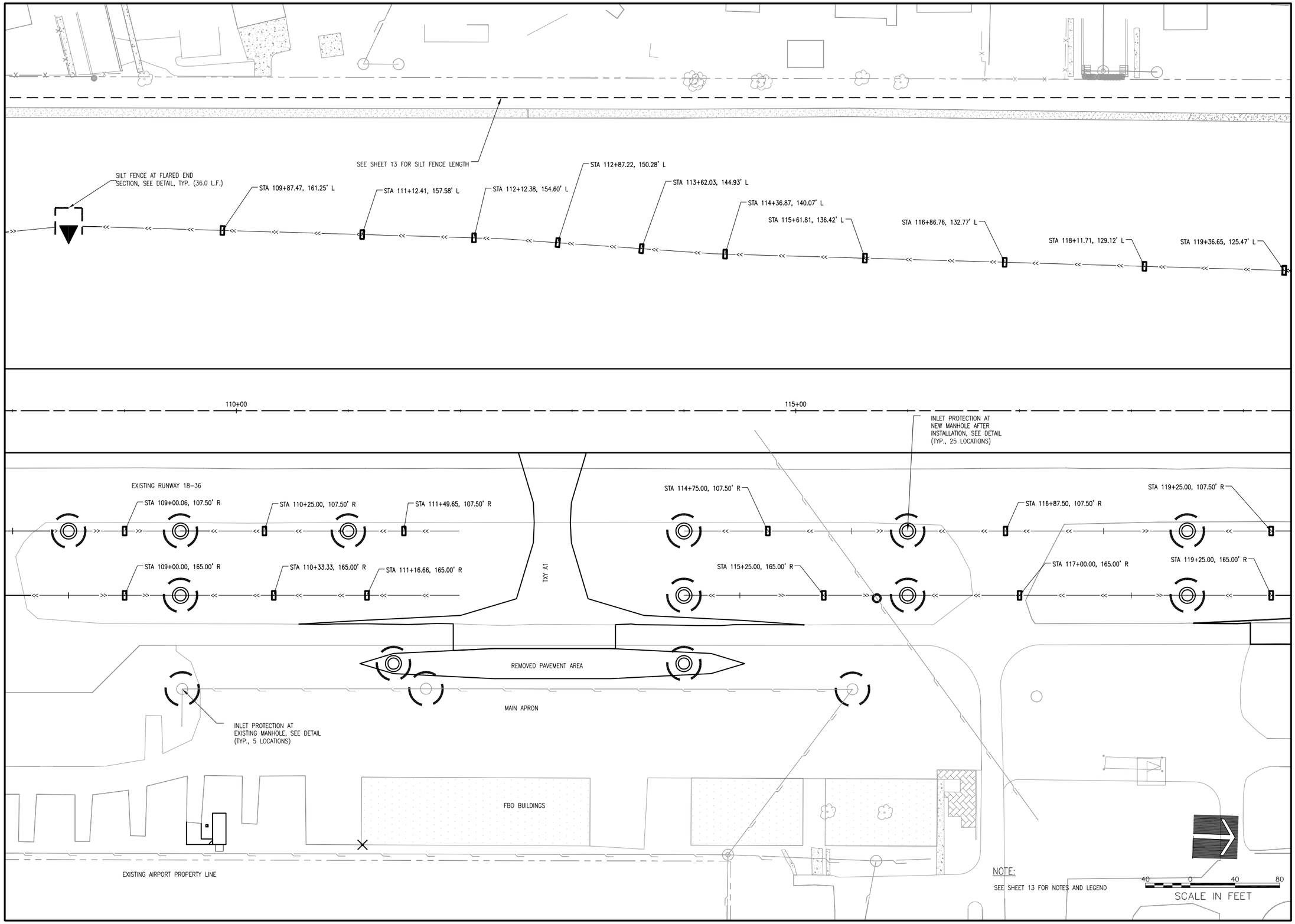

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
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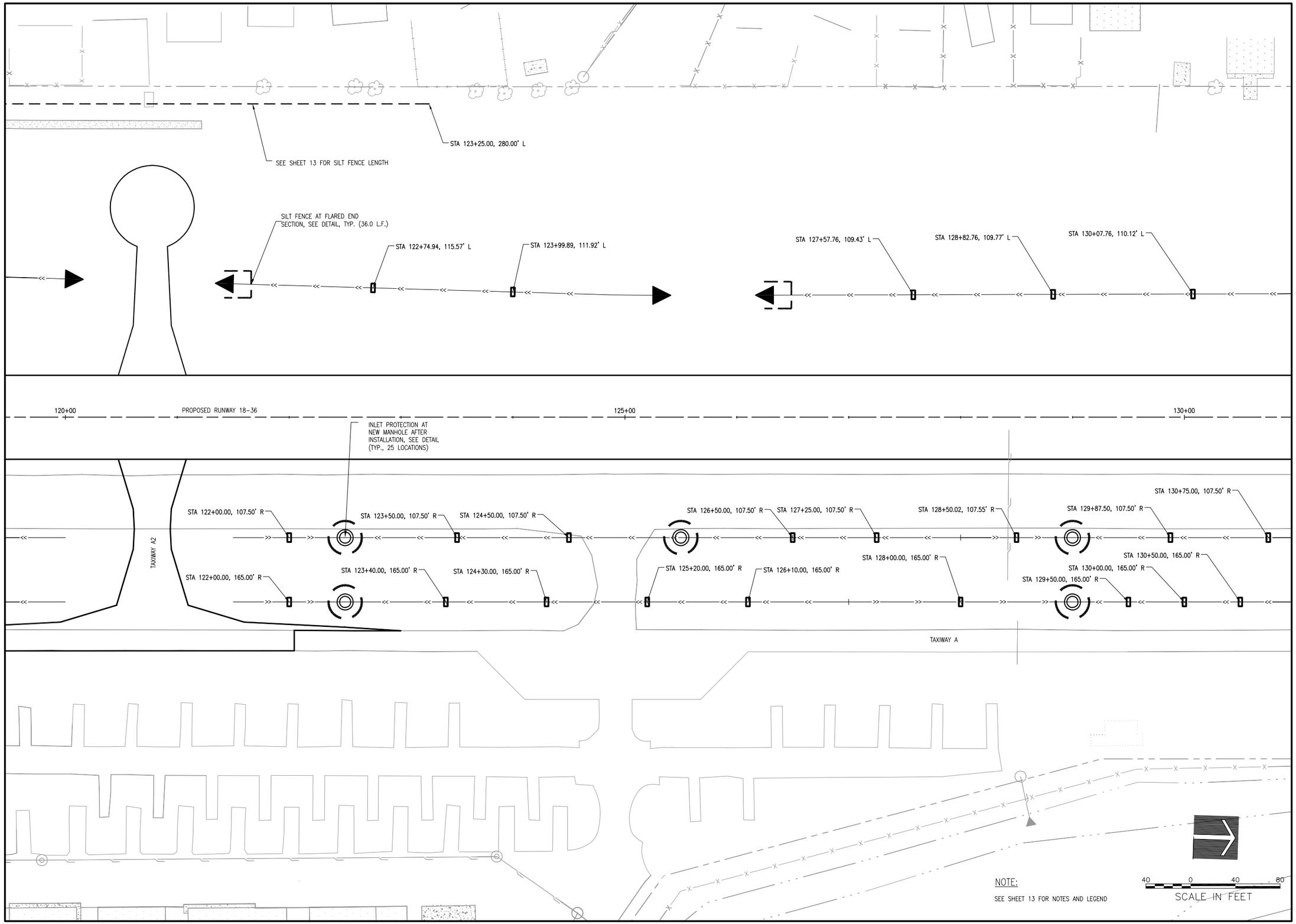
SHEET TITLE

STORM WATER
POLLUTION
PREVENTION PLAN



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CONSTRUCT REPLACEMENT RUNWAY 18-36

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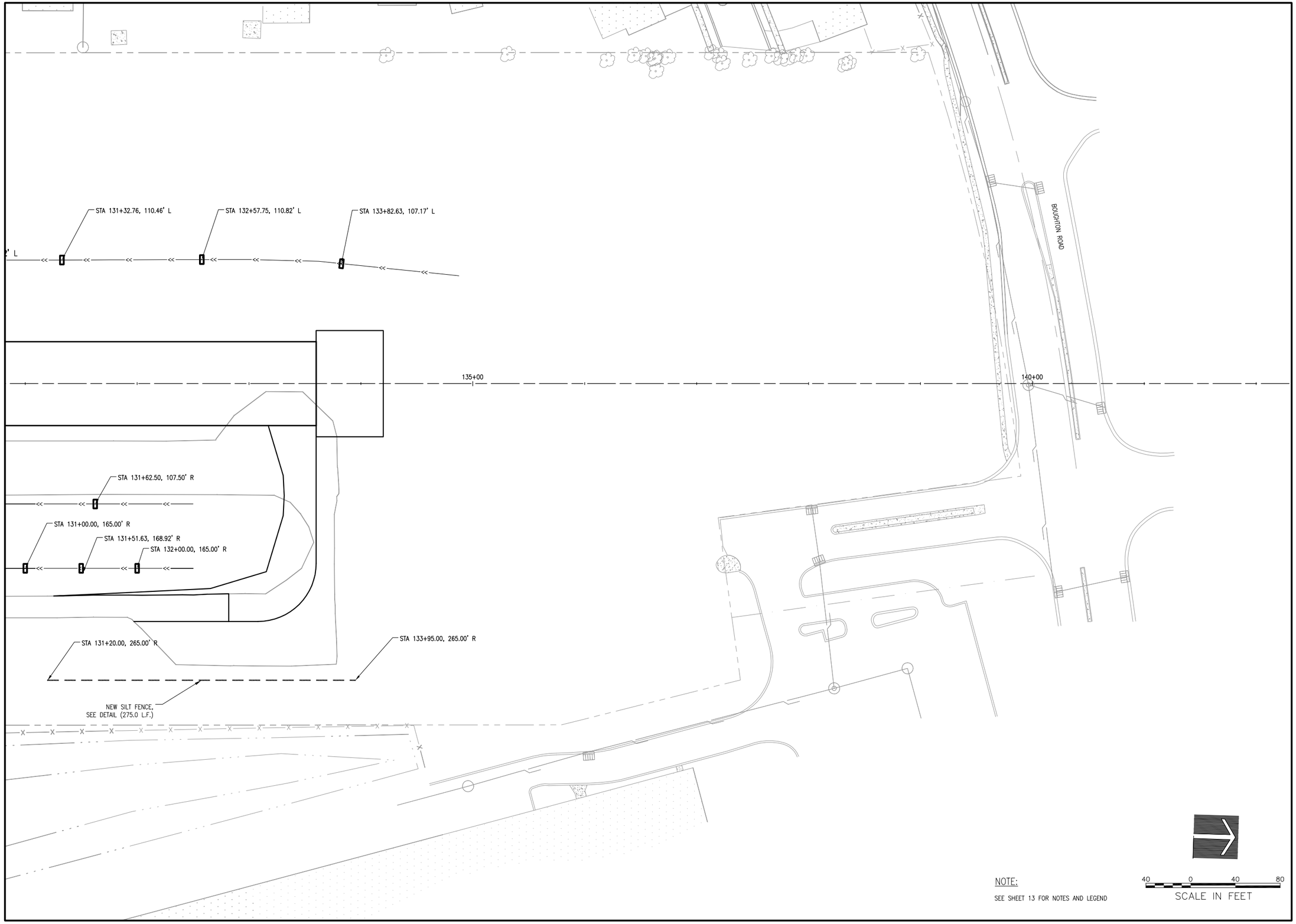
SHEET TITLE

STORM WATER POLLUTION PREVENTION PLAN



NOTE:

SEE SHEET 13 FOR NOTES AND LEGEND

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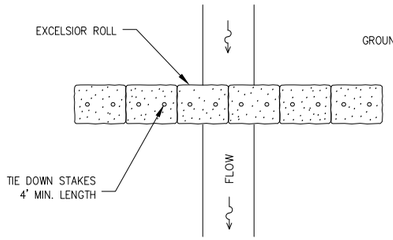
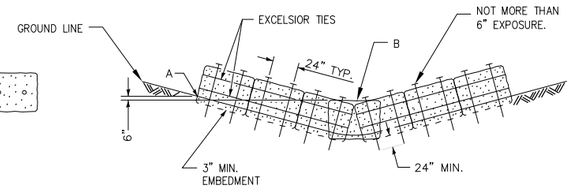
SHEET TITLE

STORM WATER
POLLUTION
PREVENTION PLAN



PLAN

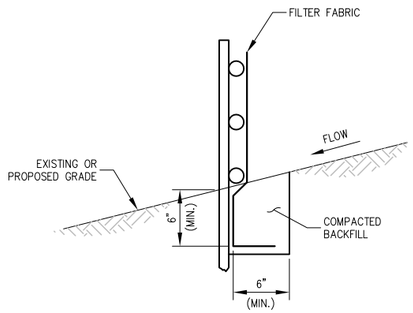


ELEVATION

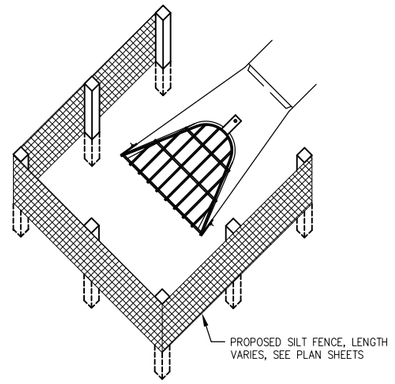
NOTES:

1. PT. A HIGHER THAN PT. B
2. DIAMETER OF EXCELSIOR ROLL IS 15".

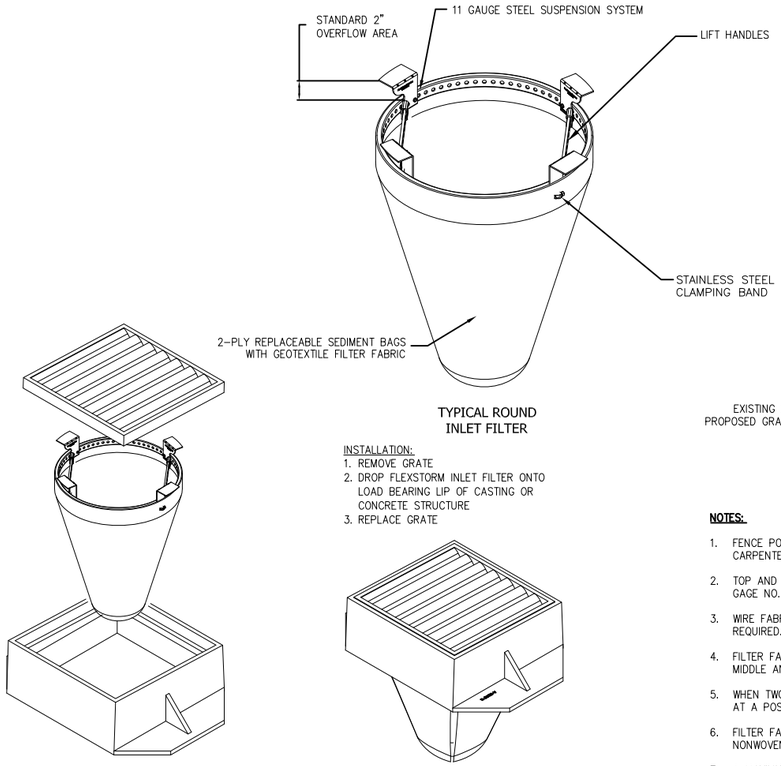
DITCH CHECK



FABRIC ANCHOR DETAIL



SILT FENCE PLACEMENT
AT FLARED END SECTIONS (FES)



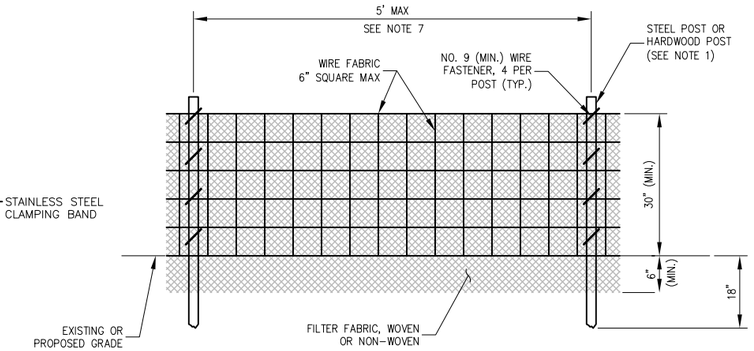
TYPICAL ROUND
INLET FILTER

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 PROTECETION SHALL CONSIST OF INLET BASKET AND FABRIC INSERT, IPP FLEXSTORM BY EROTEX OR 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 SIVZE (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



ELEVATION

NOTES:

1. FENCE POST SHALL BE EITHER STEEL "T" LINE POST OR HARDWOOD POST WITH A MINIMUM SECTIONAL AREA OF 2.0 SQUARE INCHES. A CARPENTER'S (NOMINAL) 2"x2" POST WILL MEET SPECIFICATIONS.
2. TOP AND BOTTOM WIRE OF WIRE FABRIC SHALL BE MINIMUM GAGE NO. 9. INTERMEDIATE WIRES OF THE WIRE FABRIC SHALL BE MINIMUM GAGE NO. 11.
3. WIRE FABRIC SHALL BE SECURELY FASTENED TO FENCE POSTS WITH NO. 9 GAGE WIRE MINIMUM. FOUR (4) FASTENERS PER POST REQUIRED.
4. FILTER FABRIC SHALL BE SECURELY FASTENED TO WIRE FABRIC AND POSTS WITH TIES OR STAPLES SPACED AT 12" APART AT THE TOP, MIDDLE AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER FABRIC MEET, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED AND ATTACHED TO THE WIRE FABRIC AT A POST.
6. FILTER FABRIC SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS WITH APPARENT OPENING SIZE (AOS) OF AT LEAST 40 FOR NONWOVEN AND WOVEN (OR MAXIMUM OF 0.60mm).
7. A MAXIMUM OF 5 FEET IS USED FOR POST-TO-POST SPACING.
8. 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.
9. ALL STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.
10. 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.
11. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN BULGES DEVELOP IN THE SILT FENCE.
12. 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).
13. FENCE POSTS SHALL BE REMOVED WHEN DIRECTED AT PROJECT END.
14. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER OR GOVERNING AGENCY.

SILT FENCE

SEDIMENTATION AND EROSION CONTROL NOTES:

A. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. SOIL STABILIZATION MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS AND THE USE OF TEMPORARY OR PERMANENT MEASURES.

B. SOIL EROSION AND SEDIMENT CONTROL FEATURES SHALL BE CONSTRUCTED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.

C. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN 14 CALENDAR DAYS OF THE END OF ACTIVE HYDROLOGIC DISTURBANCE, OR REDISTURBANCE.

D. AREAS OR EMBANKMENTS HAVING SLOPES GREATER THAN OR EQUAL TO 8H:1V SHALL BE STABILIZED WITH SOD, MAT OR BLANKET IN COMBINATION WITH SEEDING.

E. EROSION CONTROL BLANKET SHALL BE REQUIRED ON ALL INTERIOR DETENTION BASIN SIDE SLOPES BETWEEN NORMAL WATER LEVEL AND HIGH WATER LEVEL.

F. ALL STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED, BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.

G. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.

H. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE PROPERTY OWNER SHALL BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE AND REPAIR.

I. A STABILIZED MAT OF AGGREGATE UNDERLAIN WITH FILTER CLOTH (OR OTHER APPROPRIATE MEASURE) SHALL BE LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM A PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA. ANY SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.

J. SOIL STOCKPILES SHALL NOT BE LOCATED IN A FLOOD PRONE AREA OR A DESIGNATED BUFFER. NO STOCKPILES SHALL BE LOCATED WITHIN AN ACTIVE RUNWAY SAFETY AREA, RUNWAY OBJECT FREE AREA, RUNWAY OBSTACLE FREE ZONE, OR ACTIVE TAXIWAY OBJECT FREE AREA.

K. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION. DISCHARGES SHALL BE ROUTED THROUGH AN EFFECTIVE SEDIMENT CONTROL MEASURE (e.g. SEDIMENT TRAP, SEDIMENT BASIN, OR OTHER APPROPRIATE MEASURE.

L. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER OR GOVERNING AGENCY.

STORM WATER POLLUTION PREVENTION NOTES

GENERAL

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

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

POLLUTION PREVENTION MEASURES

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

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

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

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

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

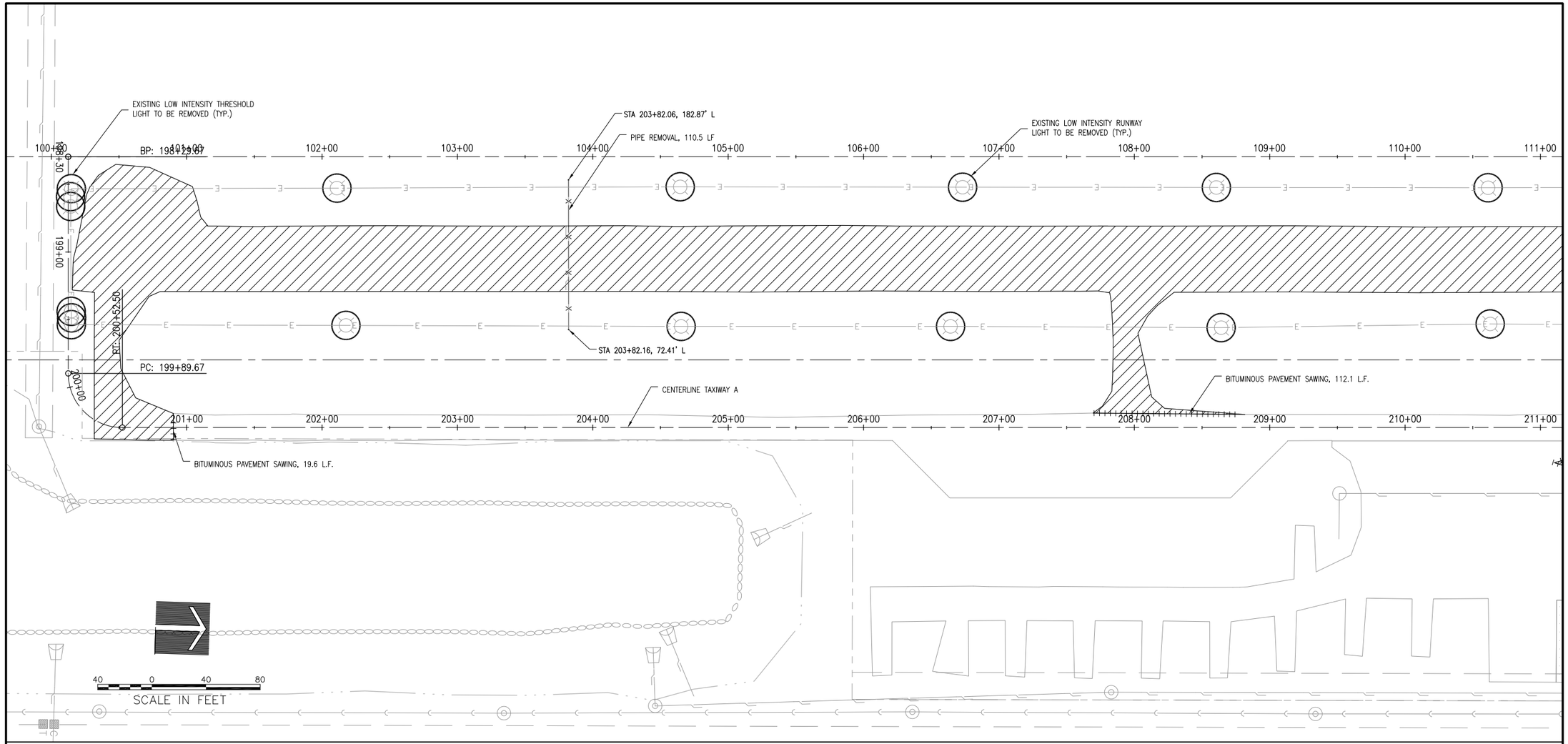
BO003

NO.	DATE	DESCRIPTION		

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 017- SWPPP DETAILS.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

SWPPP
DETAILS



ITEM	QUANTITY
BITUMINOUS PAVEMENT MILLING	23,805 S.Y.
BITUMINOUS PAVEMENT SAWING	1,029 L.F.
PIPE REMOVAL	431 L.F.
AIRFIELD LIGHT REMOVAL	44 EACH

NOTE:

1. BITUMINOUS PAVEMENT REMOVAL SHALL BE PAID UNDER ITEM AR401650 BITUMINOUS PAVEMENT MILLING AND WILL INCLUDE REMOVAL OF THE ASPHALT PAVEMENT ONLY. CRUSHED AGGREGATE AND ALL OTHER REMOVAL REQUIRED FOR THIS JOB SHALL BE PAID UNDER ITEM AR152410.
2. THE MILLINGS SHALL BE REINCORPORATED INTO THE SITE OUTSIDE THE AREAS REQUIRING SATISFACTORY FILL AND NOT WITHIN 25 FEET OF ANY DRAINAGE STRUCTURES OR ELECTRICAL DUCT.

LEGEND:

- PROPOSED BITUMINOUS PAVEMENT REMOVAL
- PROPOSED BITUMINOUS PAVEMENT SAWING
- PROPOSED PIPE REMOVAL
- PROPOSED LIGHT REMOVAL
- EXISTING ELECTRICAL HANDHOLE/ JUNCTION STRUCTURE
- EXISTING ELECTRIC
- EXISTING STORM SEWER

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. POWER FOR THE EXISTING LOW INTENSITY RUNWAY LIGHTING IS UNDERSTOOD TO BE POWERED FROM THE AIRPORT OFFICE BUILDING. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAIDS, OR OTHER DEVICE.
3. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) **"OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".**
4. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E – **STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.**
5. THE EXISTING AIRFIELD RUNWAY LIGHTS DESIGNATED FOR REMOVAL SHALL BE DISCONNECTED, 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. THE EXISTING AIRFIELD LIGHTING CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH THE INSTALLATION OF A PROPOSED LIGHT OR CABLE, PAVEMENT, OR OTHER WORK, THEN IT SHALL BE REMOVED AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES.
7. WHEN A RUNWAY IS CLOSED THE RUNWAY LIGHTING SYSTEM SHALL BE SHUT OFF, AND THE ASSOCIATED NAVAIDS FOR THAT RUNWAY SHALL ALSO BE SHUT OFF.
8. ALL ABOVE GROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2F, **"OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION"**, PART 218, PARAGRAPH C.
9. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE LIGHT, SIGN, AND/OR BASE REMOVAL WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
10. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

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SHEET TITLE

REMOVAL PLAN

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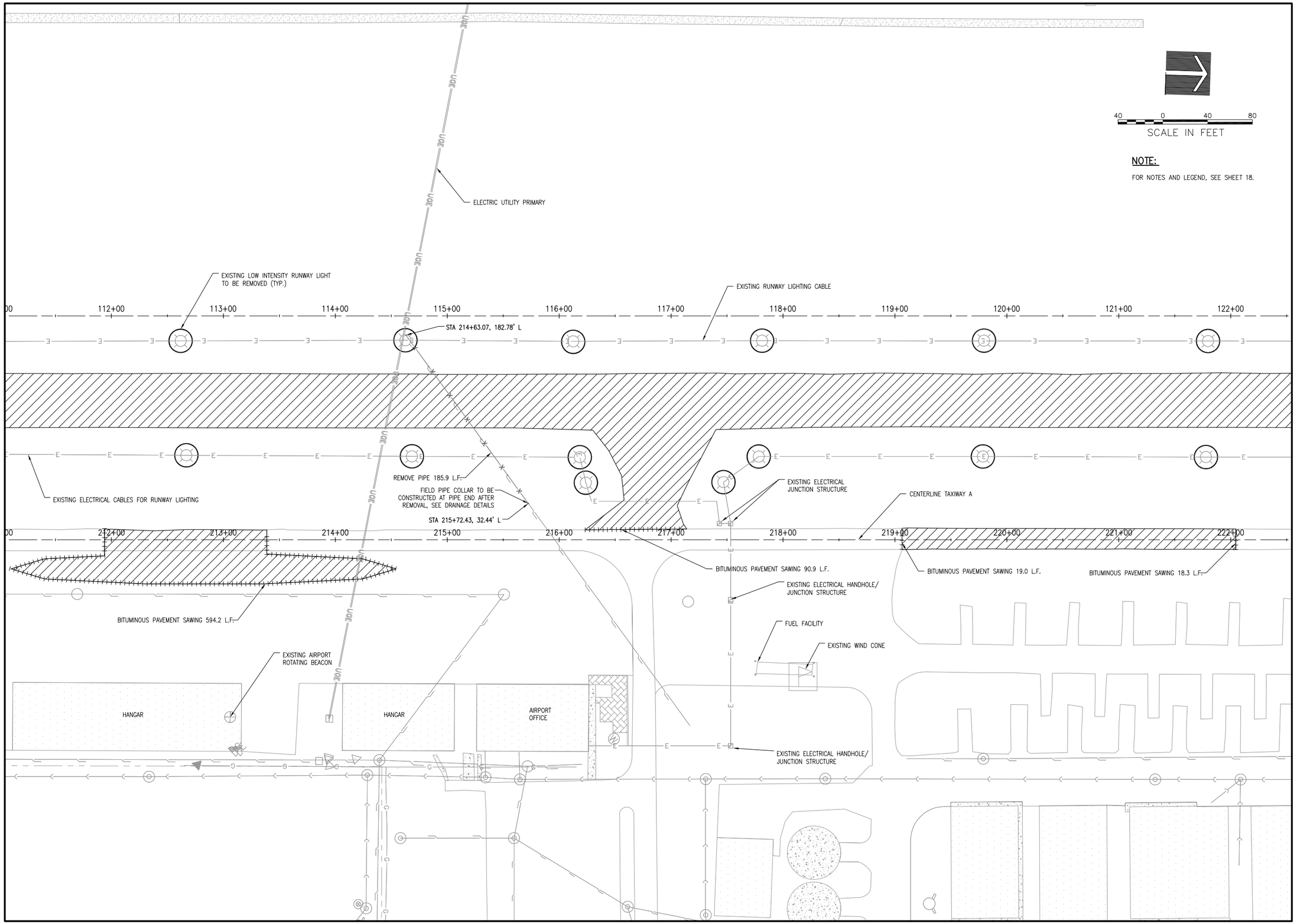

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SHEET TITLE

REMOVAL PLAN

MAY 09, 2014 8:12 AM SPITZ01394
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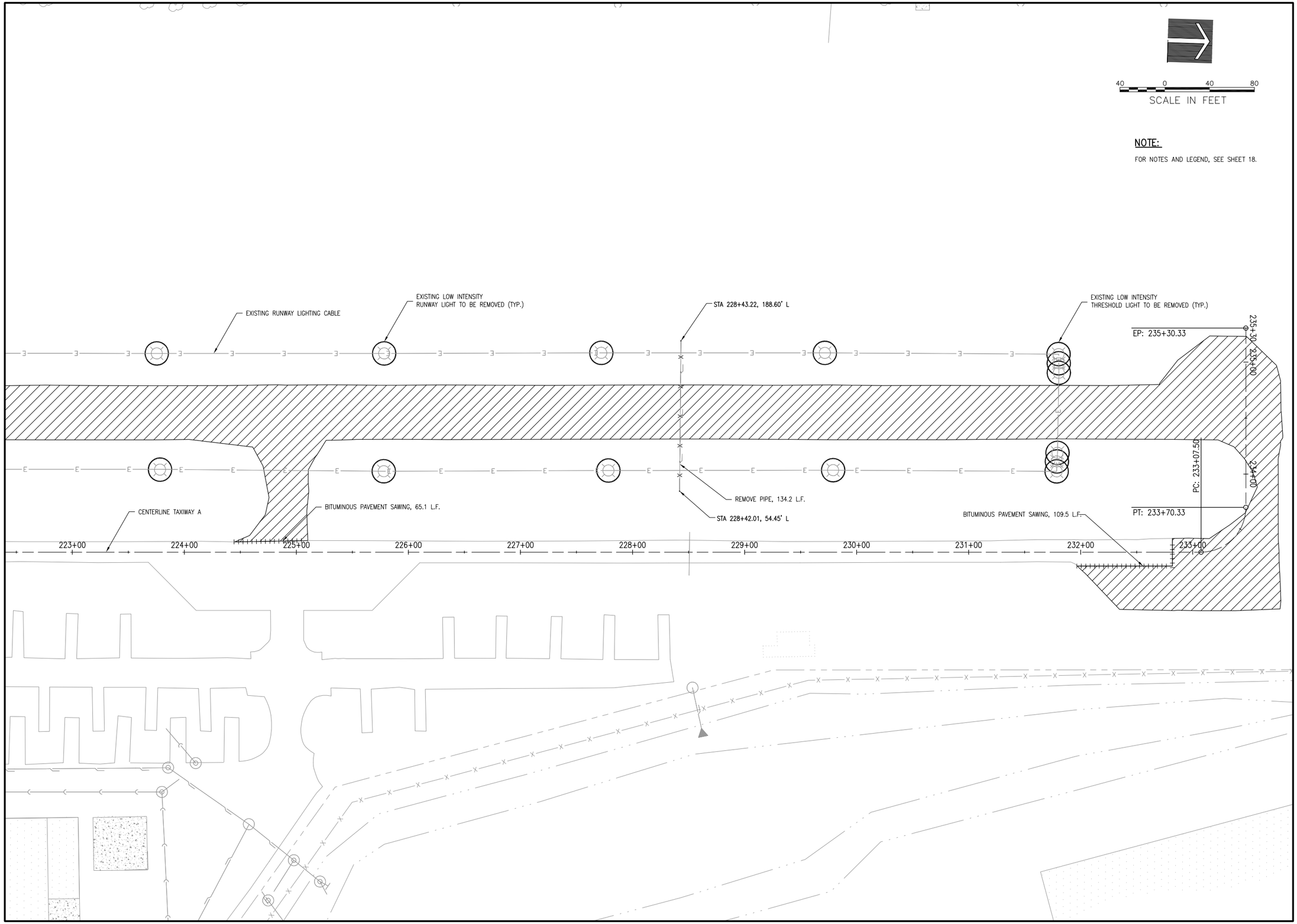

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
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SHEET TITLE

REMOVAL PLAN

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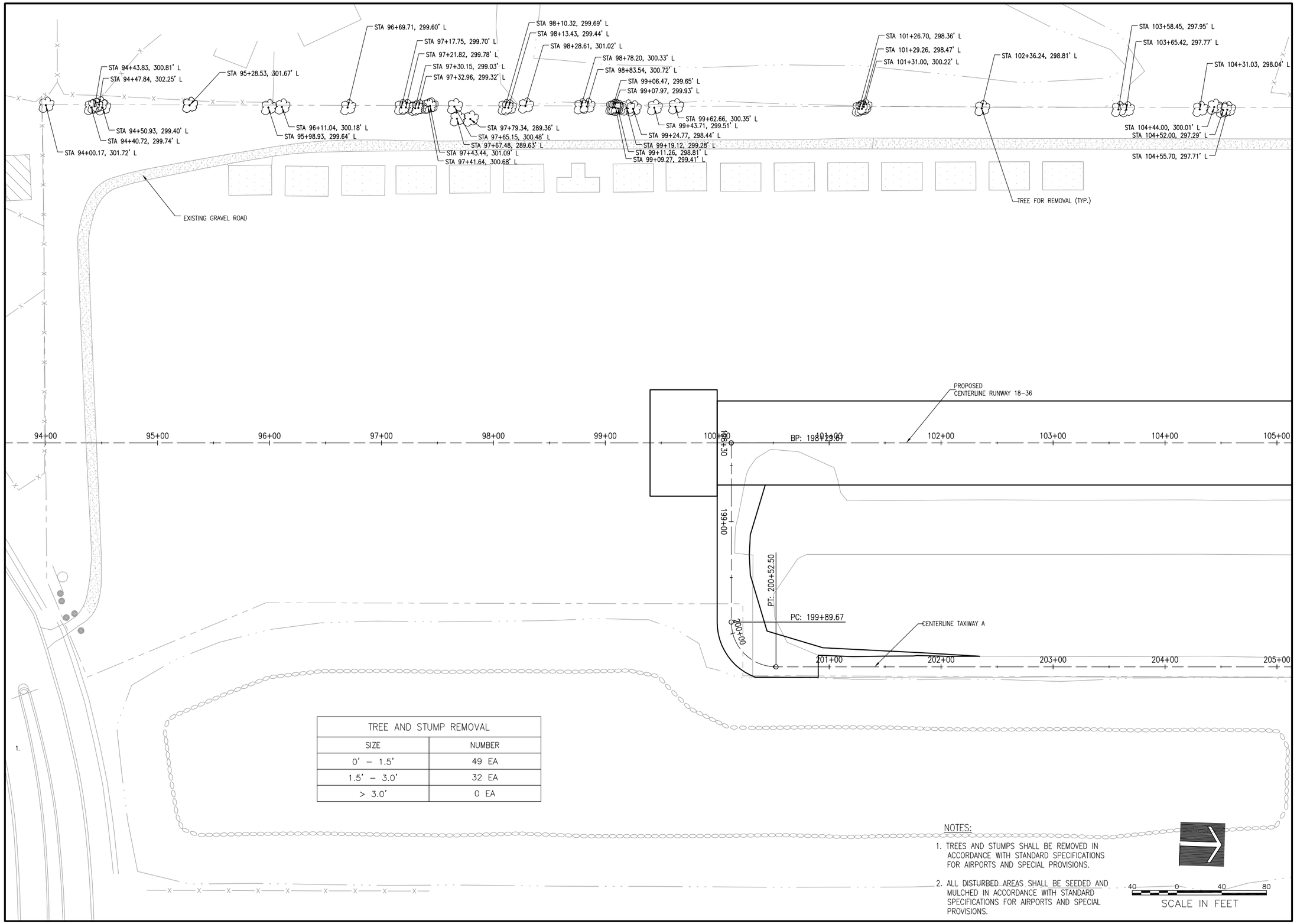

TREE AND STUMP REMOVAL	
SIZE	NUMBER
0' – 1.5'	49 EA
1.5' – 3.0'	32 EA
> 3.0'	0 EA

NOTES:

1. TREES AND STUMPS SHALL BE REMOVED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR AIRPORTS AND SPECIAL PROVISIONS.
2. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR AIRPORTS AND SPECIAL PROVISIONS.

40 0 40 80
SCALE IN FEET

MAY 09, 2014 8:14 AM SPITZ01394
B:\14JOBS\00844\14A0002D\DRAWINGS\SHEETS\021-CLEARING AND GRUBBING.DWG

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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
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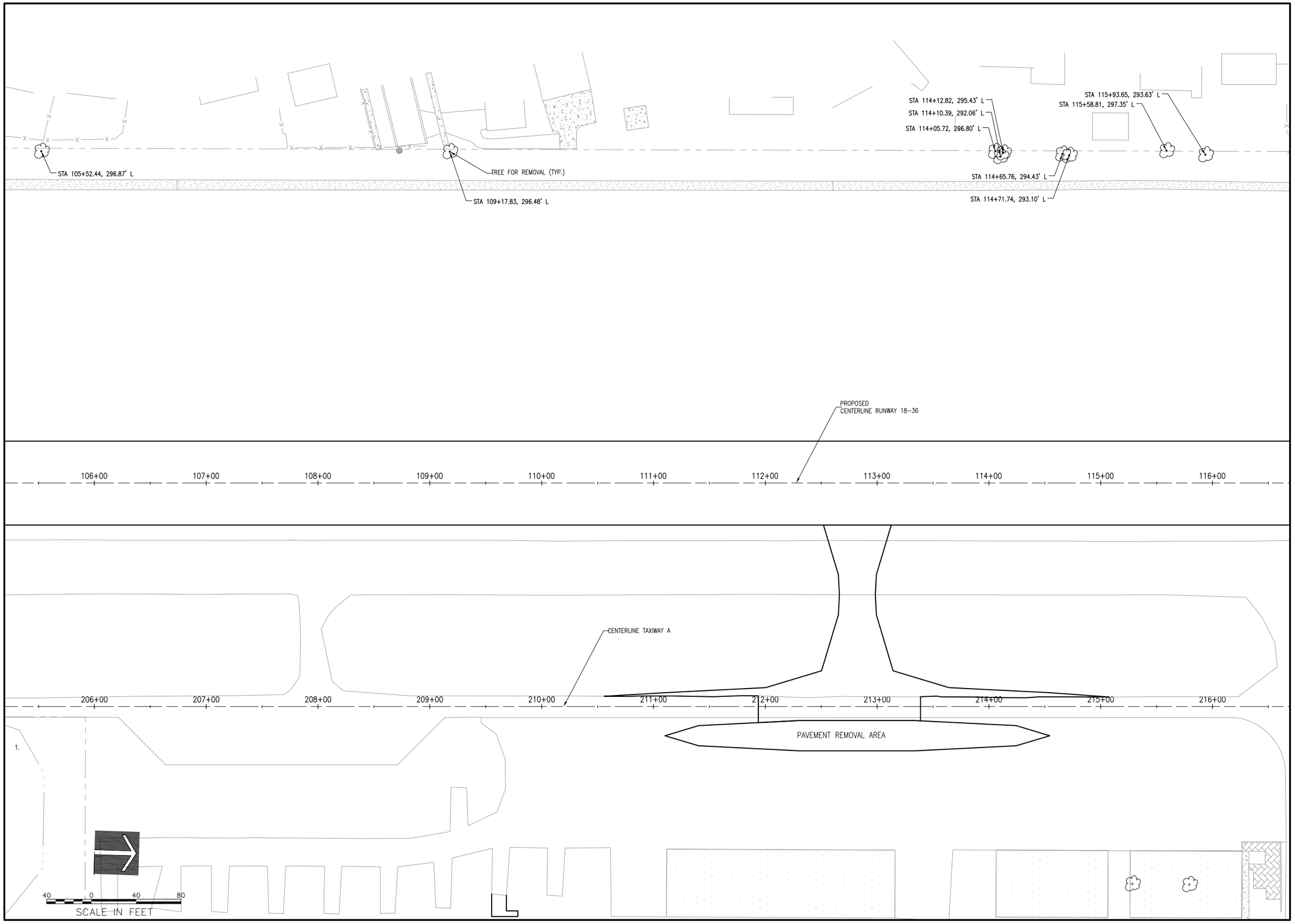
CLEARING AND GRUBBING PLAN



MAY 09, 2014 8:15 AM SPITZ01394
R:\14JOBS\00844\114A0002D\DRAWINGS\SHEETS\022-CLEARING AND GRUBBING.DWG

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

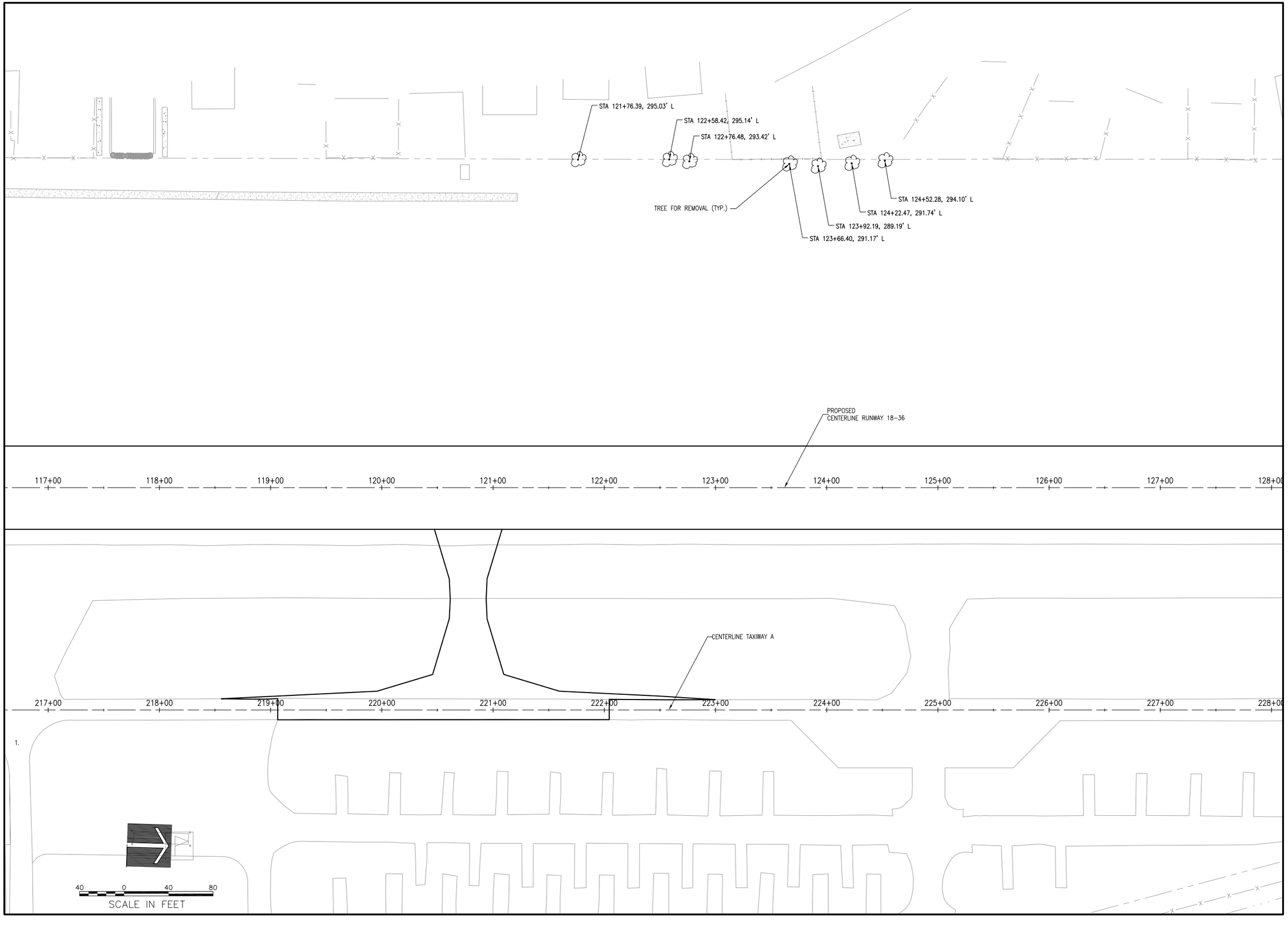
BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 022-CLEARING AND GRUBBIN
LAYOUT BY: LDH 3/10/14
DRAWN BY: LDH 3/10/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CLEARING AND
GRUBBING PLAN



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CONSTRUCT
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RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
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CAD FILE: 023-CLEARING AND GRUBBIN
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REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CLEARING AND
GRUBBING PLAN

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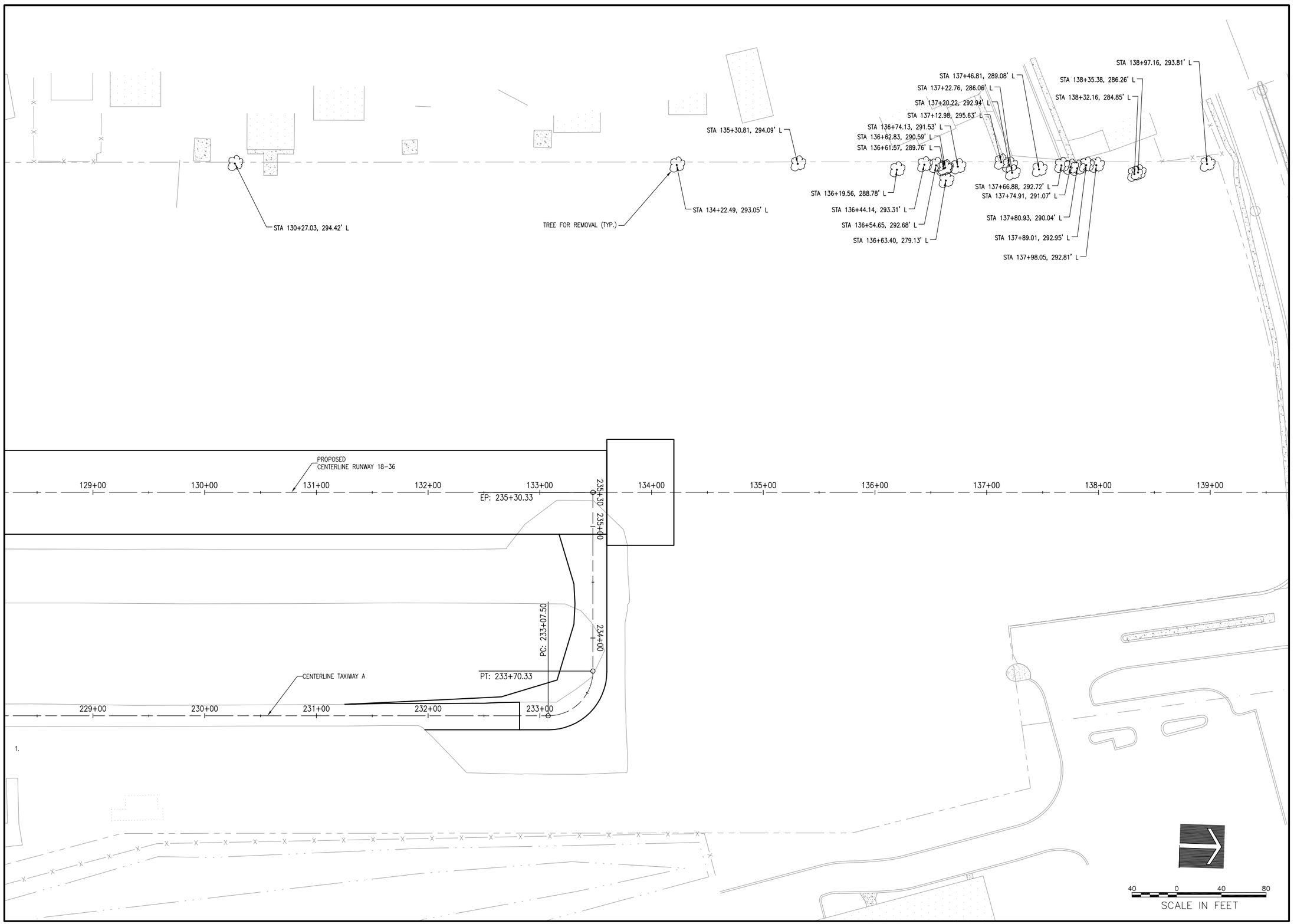

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SHEET TITLE

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GRUBBING PLAN

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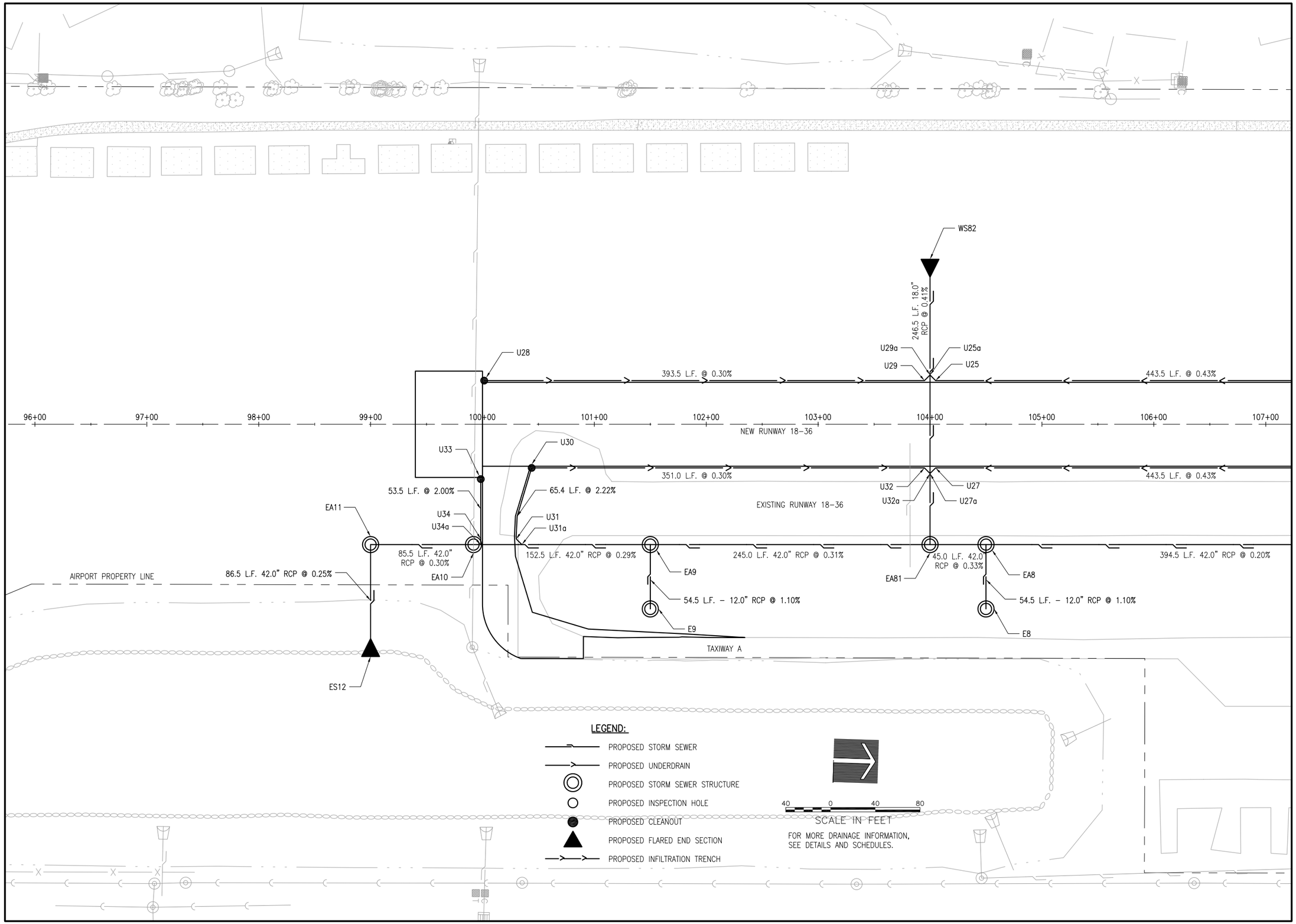

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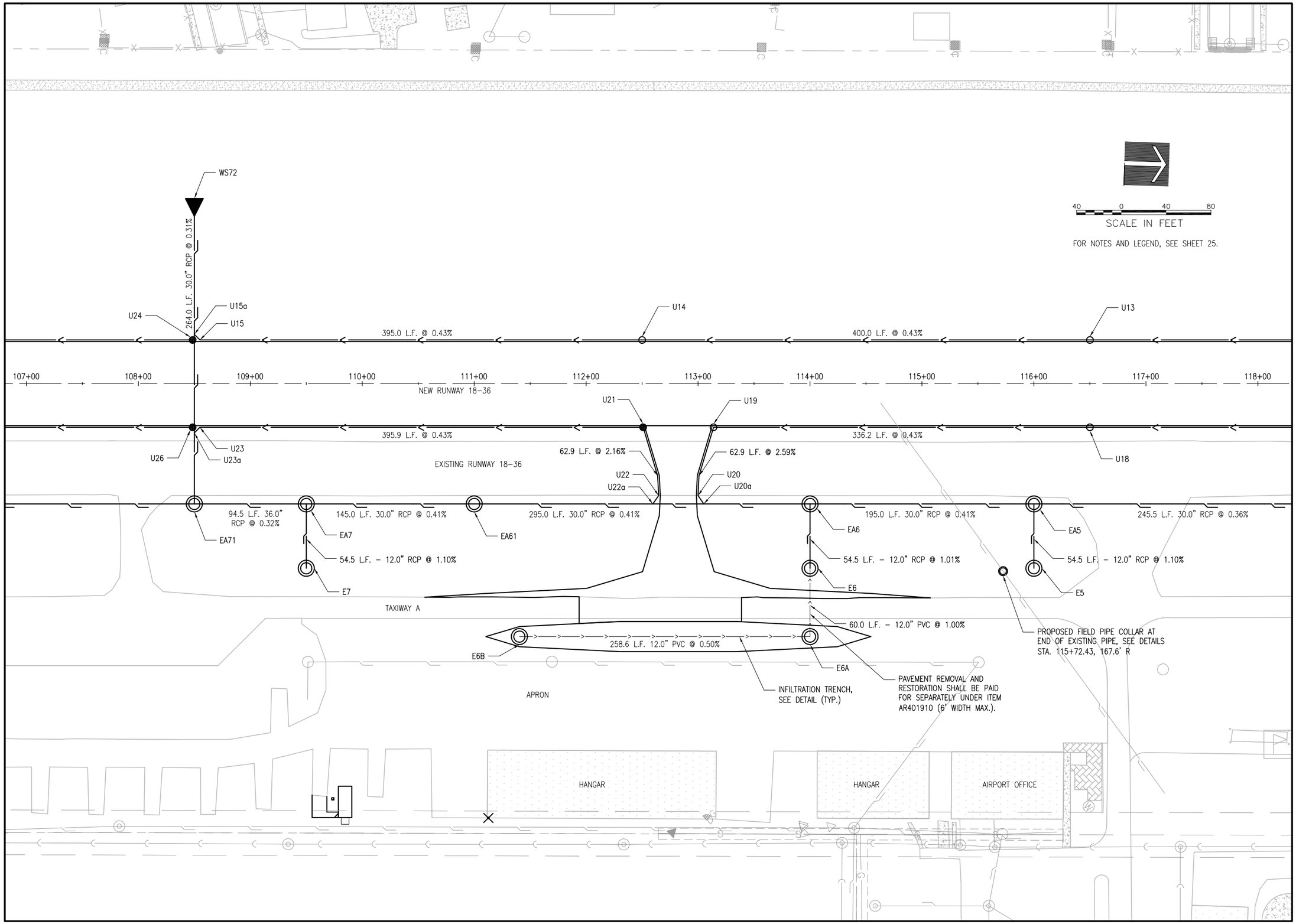
SHEET TITLE

DRAINAGE PLAN



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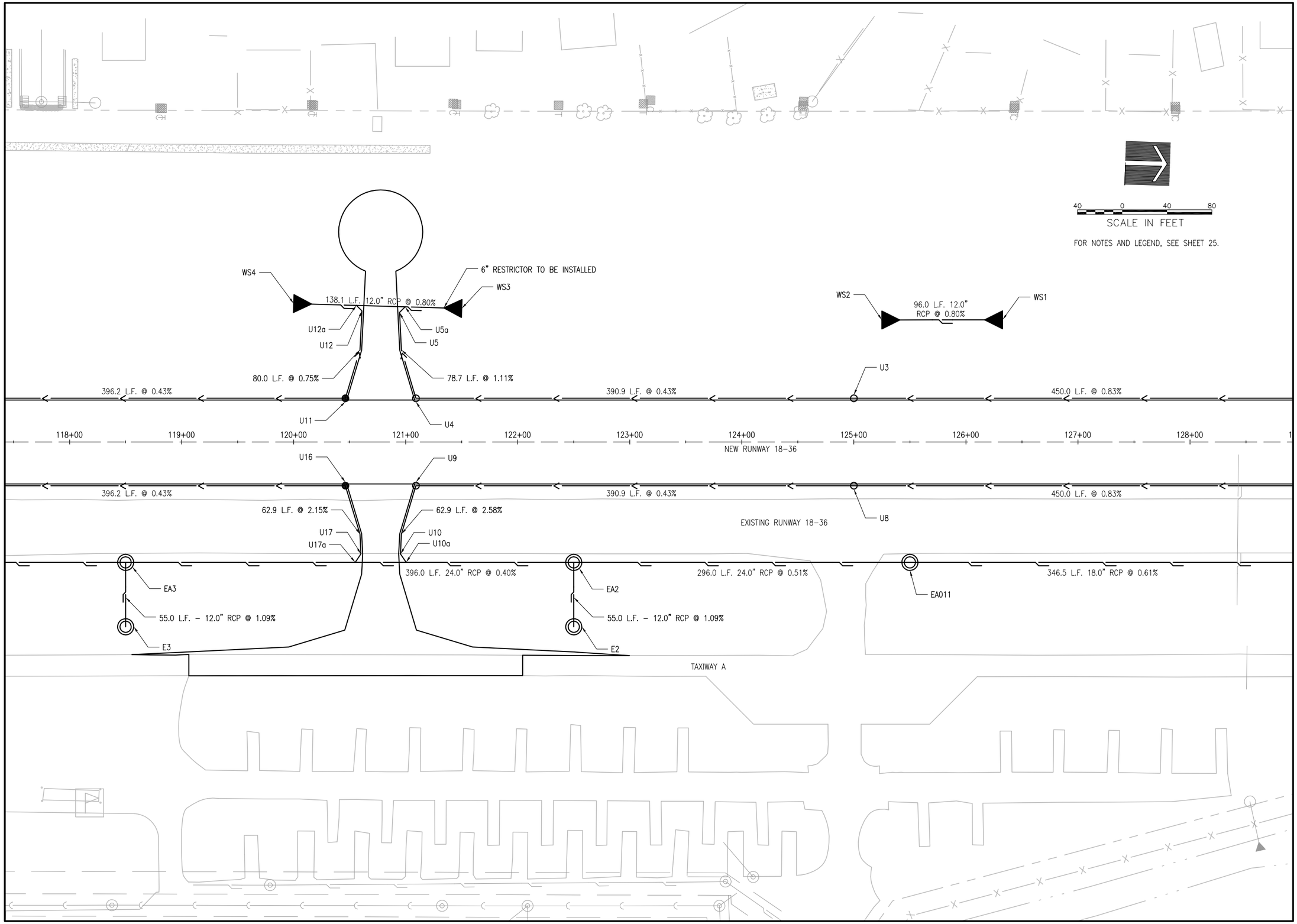
SHEET TITLE

DRAINAGE PLAN



FOR NOTES AND LEGEND, SEE SHEET 25.

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SHEET TITLE

DRAINAGE PLAN

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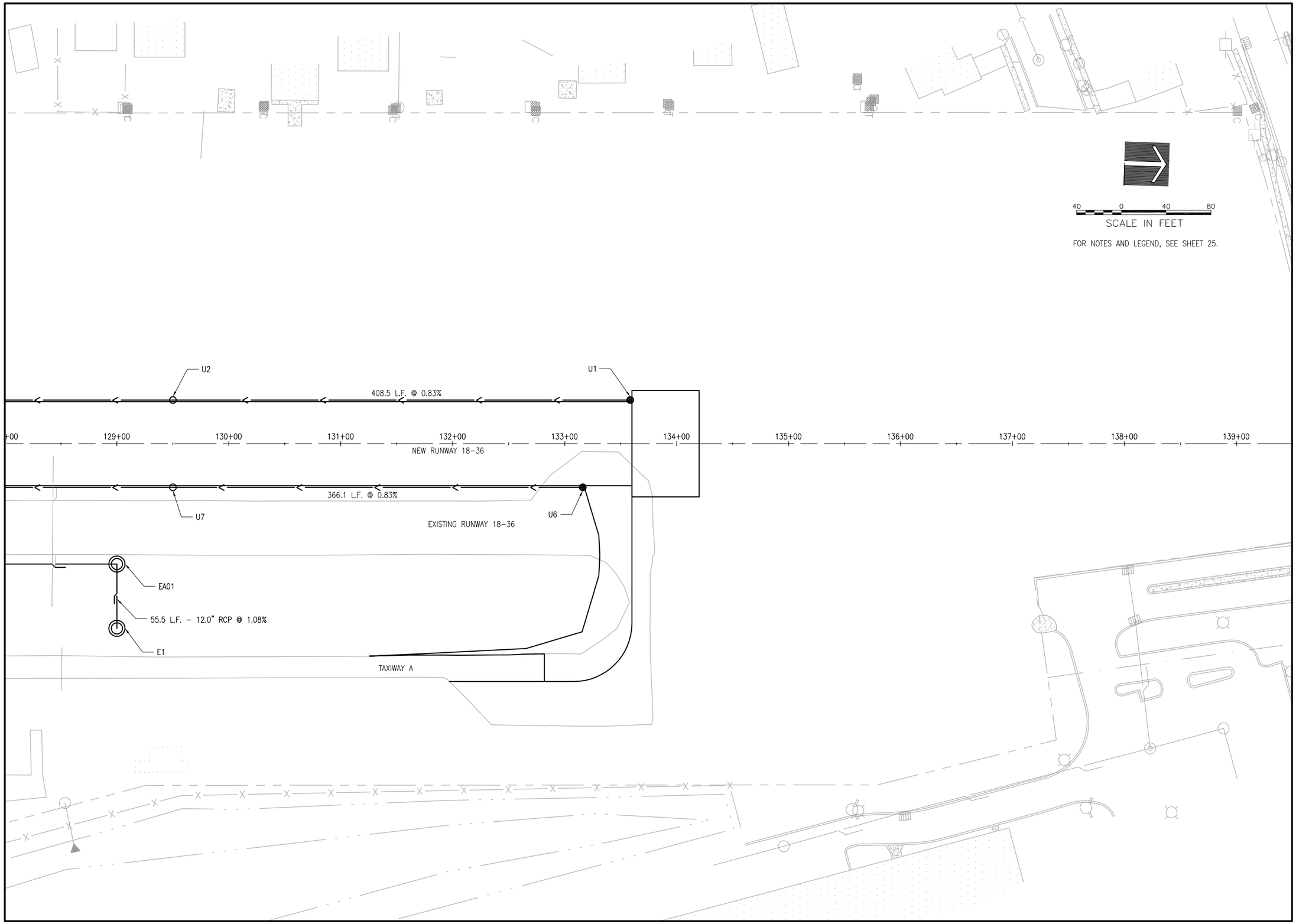

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SHEET TITLE

DRAINAGE PLAN

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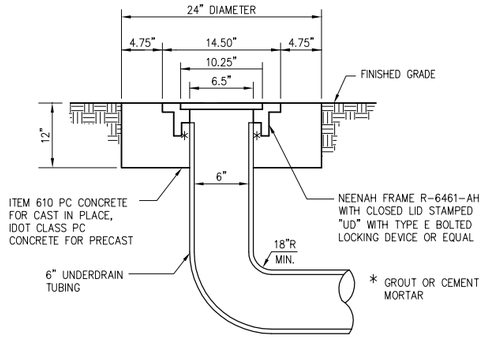
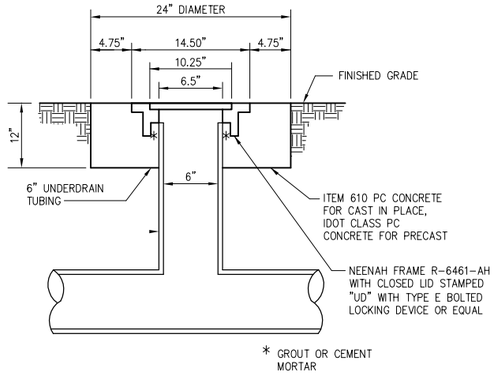
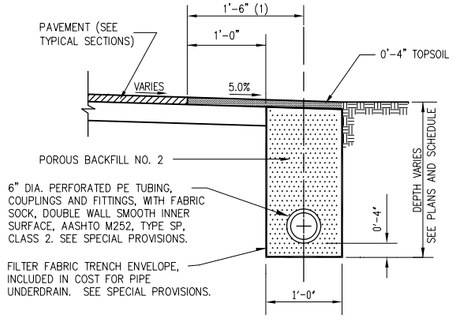


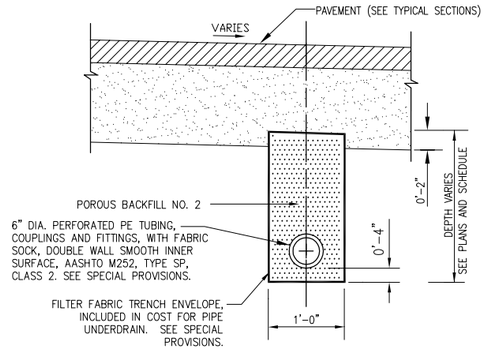
UNDERDRAIN CLEANOUT



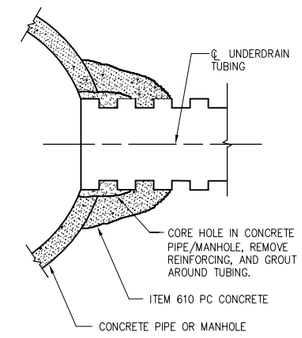
UNDERDRAIN INSPECTION HOLE



UNDERDRAIN ALONG PAVEMENT EDGE



UNDERDRAIN UNDER PAVEMENT



STORM SEWER CONCRETE COLLAR AND GROUT CONNECTION

DETAILS SHOWN ARE NOT TO SCALE

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NO.	DATE	DESCRIPTION		
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DRAWN BY: LDH 3/7/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

UNDERDRAIN DETAILS

UNDERDRAIN SCHEDULE

Structure	Station	Offset	Type	Rim El.	Invert El.	Pay Length	Slope %
U1	133+58.50	39.00 LT	Cleanout	674.24	671.74		
						408.5	0.83
U2	129+50.00	39.00 LT	Inspection Hole	670.82	668.32		
						450.0	0.83
U3	125+00.00	39.00 LT	Inspection Hole	667.10	664.60		
						390.9	0.43
U4	121+09.11	39.00 LT	Inspection Hole	665.40	662.90		
						78.7	1.11
U5	120+94.46	115.71 LT	Slope Change	---	662.03		
						5.0	---
U5a	120+94.21	120.86 LT	RCP Connection	---	658.57		
U6	133+16.10	39.00 RT	Cleanout	673.87	671.37		
						366.1	0.83
U7	129+50.00	39.00 RT	Inspection Hole	670.82	668.32		
						450.0	0.83
U8	125+00.00	39.00 RT	Inspection Hole	667.10	664.60		
						390.9	0.43
U9	121+09.11	39.00 RT	Inspection Hole	665.40	662.90		
						62.9	2.58
U10	120+95.25	100.00 RT	Slope Change	---	661.28		
						7.5	---
U10a	120+95.25	107.50 RT	RCP Connection	---	653.48		
U11	120+46.18	39.00 LT	Cleanout	665.13	662.63		
						80.0	0.75
U12	120+60.90	117.04 LT	Slope Change	---	662.03		
						5.0	---
U12a	120+61.14	121.83 LT	RCP Connection	---	658.41		
U11	120+46.18	39.00 LT	Cleanout	665.13	662.63		
						396.2	0.43
U13	116+50.00	39.00 LT	Inspection Hole	663.41	660.91		
						400.0	0.43
U14	112+50.00	39.00 LT	Inspection Hole	661.66	659.16		
						395.0	0.43
U15	108+55.00	39.00 LT	Slope Change	---	657.44		
						5.0	---
U15a	108+50.00	39.00 LT	RCP Connection	---	648.27		
U16	120+46.18	39.00 RT	Cleanout	665.13	662.63		
						62.9	2.15
U17	120+60.05	100.00 RT	Slope Change	---	661.28		
						7.5	---
U17a	120+60.05	107.50 RT	RCP Connection	---	653.34		
U16	120+46.18	39.00 RT	Cleanout	665.13	662.63		
						396.2	0.43
U18	116+50.00	39.00 RT	Inspection Hole	663.41	660.91		
						336.2	0.43
U19	113+13.82	39.00 RT	Inspection Hole	661.95	659.45		
						62.9	2.59
U20	112+99.96	100.00 RT	Slope Change	---	657.82		
						7.5	---
U20a	112+99.96	107.50 RT	RCP Connection	---	650.18		

Structure	Station	Offset	Type	Rim El.	Invert El.	Pay Length	Slope %
U21	112+50.89	39.00 RT	Cleanout	661.68	659.18		
						62.9	2.16
U22	112+64.75	100.00 RT	Slope Change	---	657.82		
						7.5	---
U22a	112+64.75	107.50 RT	RCP Connection	---	650.04		
U21	112+50.89	39.00 RT	Cleanout	661.68	659.18		
						395.9	0.43
U23	108+55.00	39.00 RT	Slope Change	---	657.44		
						5.0	---
U23a	108+50.00	39.00 RT	RCP Connection	---	648.04		
U24	108+48.50	39.00 LT	Cleanout	659.94	657.44		
						443.5	0.43
U25	104+05.00	39.00 LT	Slope Change	---	655.48		
						5.0	---
U25a	104+00.00	39.00 LT	RCP Connection	---	648.17		
U26	108+48.50	39.00 RT	Cleanout	659.94	657.44		
						443.5	0.43
U27	104+05.00	39.00 RT	Slope Change	---	655.48		
						5.0	---
U27a	104+00.00	39.00 RT	RCP Connection	---	647.85		
U28	100+01.50	39.00 LT	Cleanout	656.24	653.74		
						393.5	0.30
U29	103+95.00	39.00 LT	Slope Change	---	652.54		
						5.0	---
U29a	104+00.00	39.00 LT	RCP Connection	---	648.17		
U30	100+43.97	39.00 RT	Cleanout	656.43	653.93		
						65.4	2.22
U31	100+30.23	102.50 RT	Slope Change	---	652.48		
						5.0	---
U31a	100+30.48	107.50 RT	RCP Connection	---	645.96		
U30	100+43.97	39.00 RT	Cleanout	656.43	653.93		
						351.0	0.30
U32	103+95.00	39.00 RT	Slope Change	---	652.86		
						5.0	---
U32a	104+00.00	39.00 RT	RCP Connection	---	647.85		
U33	99+98.50	49.00 RT	Cleanout	656.05	653.55		
						53.5	2.00
U34	99+98.50	102.50 RT	Slope Change	---	652.48		
						5.0	---
U34a	99+98.50	107.50 RT	RCP Connection	---	645.86		

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CONSTRUCT
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RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
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ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 030-UD SCH.DWG
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DRAWN BY: LDH 3/7/14
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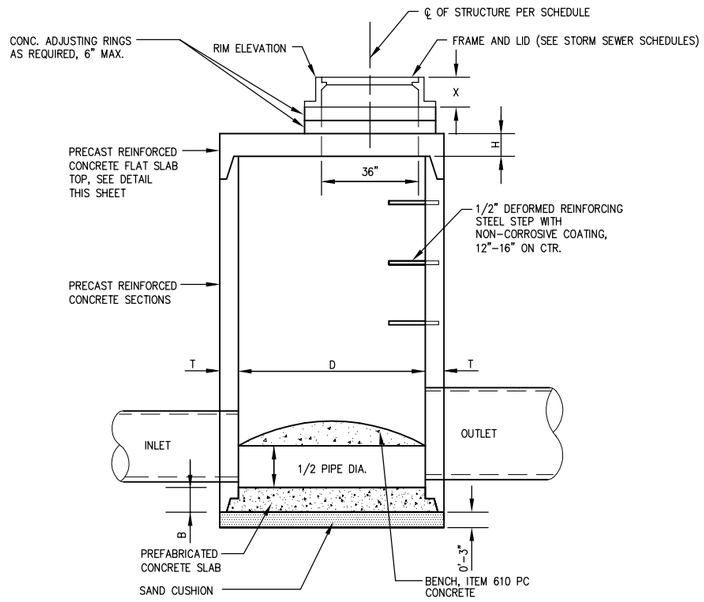
SHEET TITLE

UNDERDRAIN
SCHEDULE



MANHOLE DATA

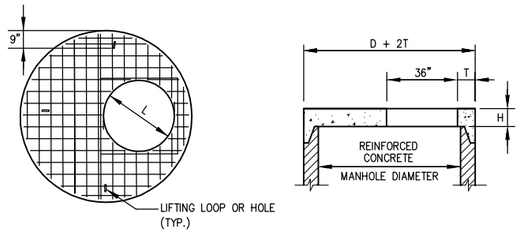
INSIDE DIA. "D" (IN.)	WALL THICKNESS "T" (IN.)	TOP THICKNESS "H" (IN.)	BOTTOM THICKNESS "B" (IN.)
48	5	6	6
60	5	8	8
72	6	8	8
84	7	8	8
96	8	8	8
108	9	8	8

NOTES

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

MANHOLE WITH FLAT SLAB TOP

(IDOT STANDARD 602401-MODIFIED)

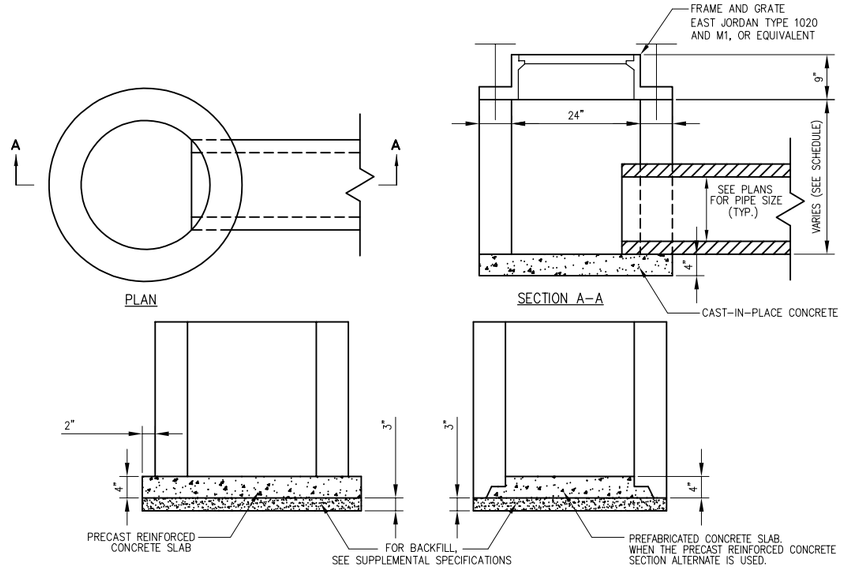


NOTES

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

PRECAST REINFORCED CONCRETE FLAT SLAB TOP

(IDOT STANDARD 602601)



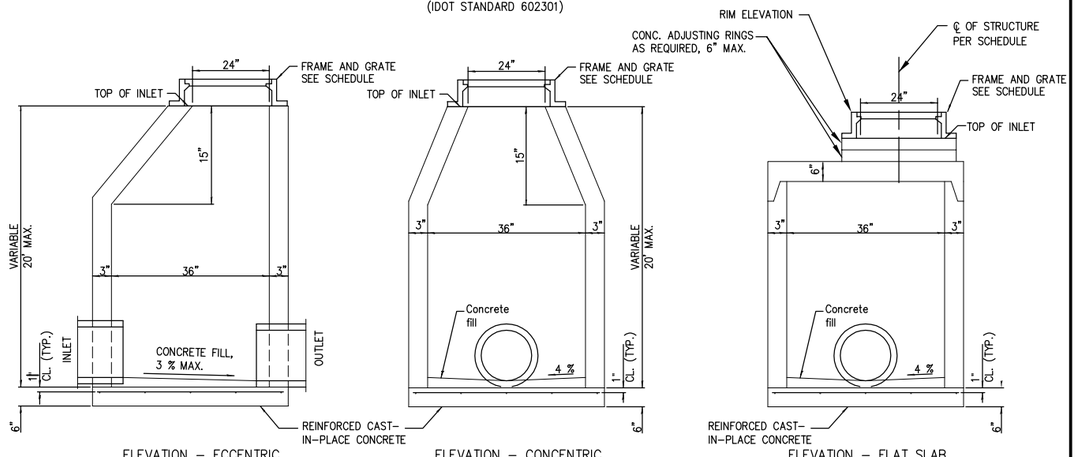
ALTERNATE METHODS

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

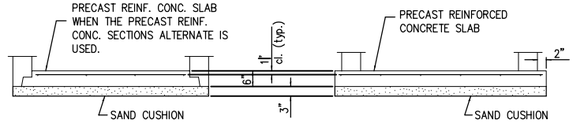
(IDOT STANDARD 602301)



ELEVATION – ECCENTRIC

ELEVATION – CONCENTRIC

ELEVATION – FLAT SLAB



ALTERNATE BOTTOM SLAB

NOTES:

1. BOTTOM SLABS SHALL BE REINFORCED WITH A MINIMUM OF 0.20 SQ. IN./FT. IN BOTH DIRECTION WITH A MAXIMUM SPACING OF 12".
2. BOTTOM SLABS MAY BE CONNECTED TO THE RISER AS DETERMINED BY THE FABRICATOR; HOWEVER, ONLY A SINGLE ROW OF REINFORCEMENT AROUND THE PERIMETER MAY BE UTILIZED.
3. SEE STANDARD 602301-04 FOR INLET TYPE A AND 602306-03 FOR INLET TYPE B. SEE STANDARD 602601-03 FOR OPTIONAL PRECAST REINFORCED CONCRETE FLAT SLAB TOP.

INLET TYPE B

(IDOT STANDARD 602306)

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SHEET TITLE

DRAINAGE
DETAILS

MAY 09, 2014 12:45 PM SPITZ01394
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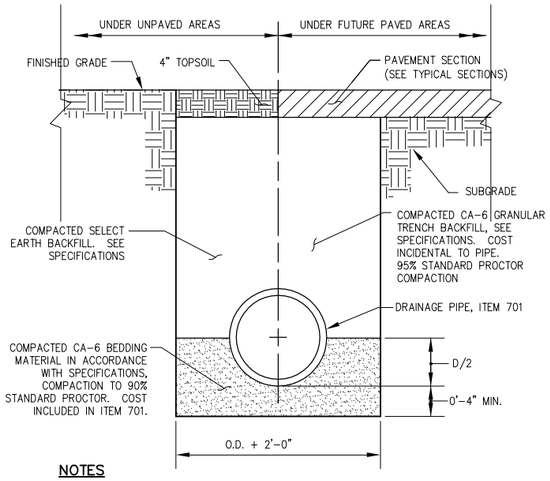
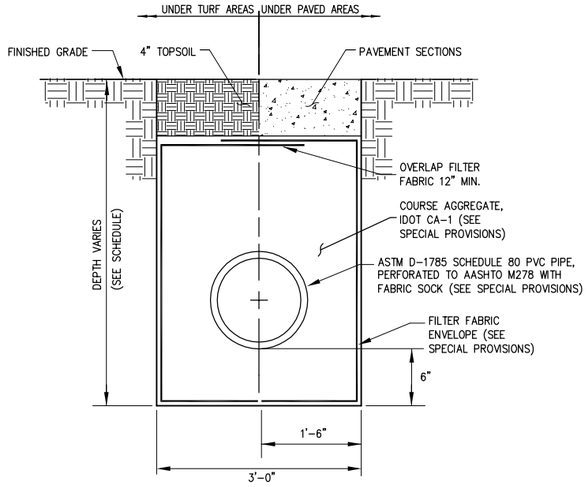


NOTES

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.

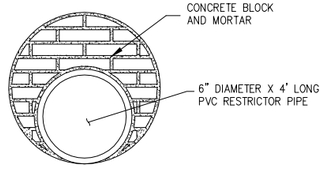
PIPE TRENCH



NOTES

1. UNSUITABLE MATERIAL ENCOUNTERED DURING PLACEMENT OF BEDDING SHALL BE REMOVED AND REPLACED.
2. COARSE AGGREGATE SHALL CONSIST OF IDOT GRADATION CA-1.
3. DO NOT COMPACT SOIL PLACED ABOVE THE COARSE AGGREGATE.
4. SEPARATE PAYMENT FOR COARSE AGGREGATE, FILTER FABRIC ENVELOPE, PVC PIPE, AND FABRIC SOCK WILL NOT BE MADE BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER LINEAR FOOT OF INFILTRATION TRENCH.

INFILTRATION TRENCH



NOTE:

ALL MATERIALS AND WORK SHALL BE INCIDENTAL TO STORM SEWER.

RESTRICTOR PIPE

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

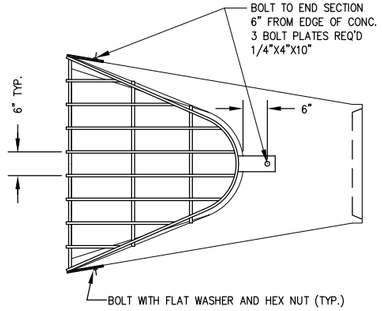
NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

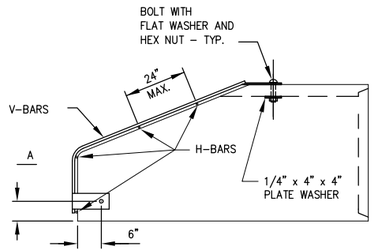
ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 032-DRAINAGEDET.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: LDH 3/10/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

DRAINAGE
DETAILS

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

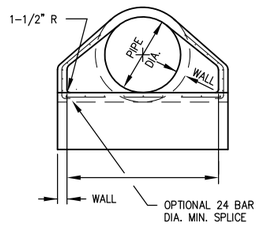




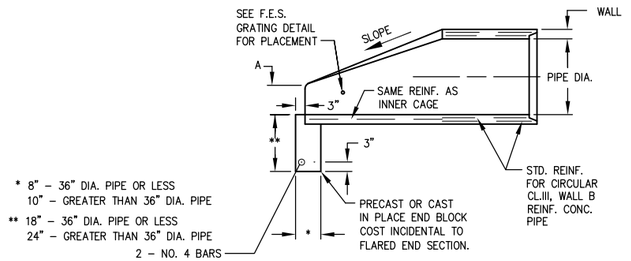
NOTES

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

GRATING FOR FLARED END SECTION



END VIEW



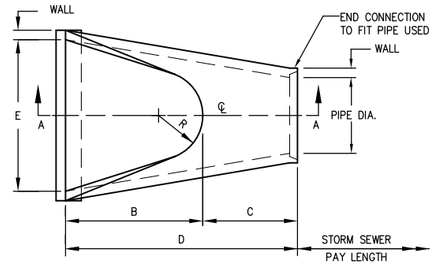
* 8" - 36" DIA. PIPE OR LESS
10" - GREATER THAN 36" DIA. PIPE

** 18" - 36" DIA. PIPE OR LESS
24" - GREATER THAN 36" DIA. PIPE

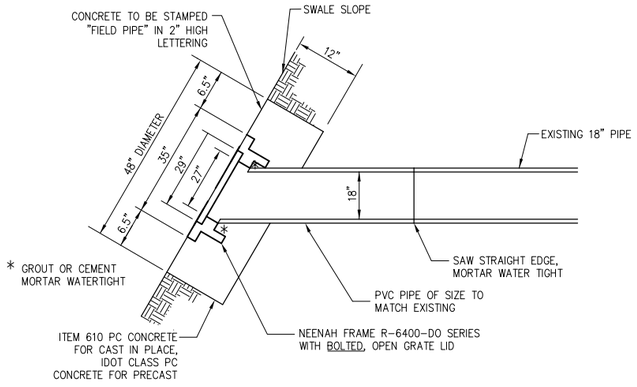
SECTION A-A

NOTES

1. GRATING SHALL BE PAID FOR UNDER ITEM AR752518.
2. THE END BLOCK SHALL BE PLACED PRIOR TO THE INSTALLATION OF THE FLARED END SECTION. THE END BLOCK SHALL BE BACKFILLED IN ACCORDANCE WITH ARTICLE 502.10 OF IDOT SPECIFICATIONS, WITH COST INCIDENTAL TO FLARED END SECTION.
3. PRECAST CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-170 CLASS III, WALL B REINFORCED CONCRETE PIPE.
4. **MODIFICATION IS DUE TO THE RELOCATION OF THE CONNECTION POINT BETWEEN THE GRATE AND THE FLARED END SECTION.**



TOP VIEW



NOTE:
ALL WORK AND MATERIALS ASSOCIATED WITH INSTALLATION ARE INCIDENTAL TO FIELD PIPE COLLAR.

FIELD PIPE COLLAR

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

PRECAST CONCRETE FLARED END SECTION

(IDOT STANDARD 542301-MODIFIED)

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 033-DRAINAGEDET.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: LDH 3/10/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

DRAINAGE
DETAILS

STORM SEWER SCHEDULE

Structure	Station	Offset		Type	Rim El.	Invert El.		Pipe Pay Length	Size	Type	Slope %
E1	129+00.00	165.0	RT	Inlet Type A	661.90	W	658.40				
								55.5	12.0	RCP	1.08
EA 01	129+00.00	107.5	RT	MH	665.48	E	657.80				
						S	657.30				
								346.5	18.0	RCP	0.61
EA 011	125+50.00	107.5	RT	MH	664.10	N	655.20				
						S	654.70				
								296.0	24.0	RCP	0.51
						N	653.20				
EA 2	122+50.00	107.5	RT	MH	661.10	E	655.30				
						S	653.10				
								396.0	24.0	RCP	0.40
						N	651.50				
EA 3	118+50.00	107.5	RT	MH	659.36	E	651.85				
						S	651.11				
								245.5	30.0	RCP	0.36
						N	650.23				
EA 5	116+00.00	107.5	RT	MH	656.27	E	650.35				
						S	650.18				
								195.0	30.0	RCP	0.41
						N	649.38				
EA 6	114+00.00	107.5	RT	MH	657.26	E	650.85				
						S	649.33				
								295.0	30.0	RCP	0.41
EA 61	111+00.00	107.5	RT	MH	656.81	N	648.13				
						S	648.08				
								145.0	30.0	RCP	0.41
						N	647.48				
EA 7	109+50.00	107.5	RT	MH	655.31	E	649.40				
						S	647.08				
								94.5	36.0	RCP	0.32
						N	646.78				
EA 71	108+50.00	1075.0	RT	MH	656.14	W	646.53				
						S	646.38				
								394.5	42.0	RCP	0.20
						N	645.58				
EA 8	104+50.00	107.5	RT	MH	653.14	E	646.90				
						S	645.53				
								45.0	42.0	RCP	0.33
						N	645.38				
EA 81	104+00.00	107.5	RT	MH	653.53	W	646.73				
						S	645.33				
								245.0	42.0	RCP	0.31
						N	644.58				
EA 9	101+50.00	107.5	RT	MH	651.91	E	645.90				
						S	644.53				
								152.5	42.0	RCP	0.29
						N	644.09				
EA 10	99+92.00	107.5	RT	MH	654.71	S	644.09				
						W	643.20				
						E	643.20				
								85.5	42.0	RCP	0.30
EA 11	99+00.00	107.5	RT	MH	652.92	N	643.83				
						E	643.73				
								86.5	42.0	RCP	0.25
ES 12	99+00.00	207.5	RT	FES	—		643.50				
E2	122+50.00	165.0	RT	Inlet Type A	659.40	W	655.90				
								55.0	12.0	RCP	1.09
						N	653.20				
EA 2	122+50.00	107.5	RT	MH	661.10	E	655.30				
						S	653.10				
E3	118+50.00	165.0	RT	Inlet Type A	654.95	W	652.45				
								55.0	12.0	RCP	1.09
						N	651.50				
EA 3	118+50.00	107.5	RT	MH	659.36	E	651.85				
						S	651.11				

Structure	Station	Offset		Type	Rim El.	Invert El.		Pipe Pay Length	Size	Type	Slope %
E5	116+00.00	165.0	RT	Inlet Type A	653.45	W	650.95				
								54.5	12.0	RCP	1.10
						N	650.23				
EA 5	116+00.00	107.5	RT	MH	656.27	E	650.35				
						S	650.18				
E6B	111+40.35	226.0	RT	Inlet Type A	656.12	N	653.12				
								258.6	12.0	PVC	0.50
E6A	114+00.00	226.0	RT	Inlet Type B	656.09	S	651.82				
						W	651.72				
								60.0	12.0	PVC	1.00
E6	114+00.00	165.0	RT	Inlet Type B	654.45	E	651.12				
						W	651.02				
								54.5	12.0	RCP	1.01
						N	649.38				
EA 6	114+00.00	107.5	RT	MH	657.26	E	650.47				
						S	649.33				
E7	109+50.00	165.0	RT	Inlet Type A	653.00	W	650.00				
								54.5	12.0	RCP	1.10
						N	647.48				
EA 7	109+50.00	107.5	RT	MH	655.31	E	649.40				
						S	647.08				
						N	646.78				
EA 71	108+50.00	107.5	RT	MH	656.14	W	646.53				
						S	646.38				
								264.0	30.0	RCP	-0.31
WS 72	108+50.00	165.4	LT	FES	—		647.35				
E8	104+50.00	165.0	RT	Inlet Type A	650.00	W	647.50				
								54.5	12.0	RCP	1.10
						N	645.58				
EA 8	104+50.00	107.5	RT	MH	653.14	E	646.90				
						S	645.53				
						N	645.38				
EA 81	104+00.00	107.5	RT	MH	653.53	W	646.73				
						S	645.33				
								246.5	18.0	RCP	-0.41
WS 82	104+00.00	147.4	LT	FES	—		647.75				
E9	101+50.00	165.0	RT	Inlet Type A	650.00	W	646.50				
								54.5	12.0	RCP	1.10
						N	644.58				
EA 9	101+50.00	107.5	RT	MH	651.91	E	645.90				
						S	644.53				
WS 1	126+32.76	109.1	LT	FES	—		662.66				
								96.0	12.0	RCP	0.80
WS 2	125+25.00	108.9	LT	FES	—		661.80				
WS 3	121+50.00	119.2	LT	FES	—		658.80				
								138.1	12.0**	RCP	0.80
WS 4	120+00.00	123.6	LT	FES	—		657.60				

** INDICATES A 6" PVC RESTRICTOR PIPE

FRAME AND LID SCHEDULE

Structure Number	Structure Type	Diameter "D" (in.)	Frame Height (in.)	Grate Diameter (in.)	Frame Type (Neenah)	Cover/Grate (Neenah)
EA 01	Manhole	48	8-5/8	36	R-2251	Type G
EA 011	Manhole	60	8-5/8	36	R-2251	Type G
EA 2	Manhole	60	8-5/8	36	R-2251	Type G
EA 3	Manhole	60	8-5/8	36	R-2251	Type G
EA 5	Manhole	72	8-5/8	36	R-2251	Type G
EA 6	Manhole	72	8-5/8	36	R-2251	Type G
EA 61	Manhole	72	8-5/8	36	R-2251	Type G
EA 7	Manhole	72	8-5/8	36	R-2251	Type G
EA 71	Manhole	96	8-5/8	36	R-2251	Type G
EA 8	Manhole	84	8-5/8	36	R-2251	Type G
EA 81	Manhole	84	8-5/8	36	R-2251	Type G
EA 9	Manhole	84	8-5/8	36	R-2251	Type G
EA 10	Manhole	96	8-5/8	36	R-1752	Closed Lid
EA 11	Manhole	108	8-5/8	36	R-2251	Type G
E1	Inlet Type A	24	7	25-3/4	R-2390	Type C
E2	Inlet Type A	24	7	25-3/4	R-2390	Type C
E3	Inlet Type A	24	7	25-3/4	R-2390	Type C
E5	Inlet Type A	24	7	25-3/4	R-2390	Type C
E6	Inlet Type B	24	7	25-3/4	R-2390	Type C
E6A	Inlet Type B	24	7	25-3/4	R-2390	Type C
E6B	Inlet Type A	24	7	25-3/4	R-2390	Type C
E7	Inlet Type A	24	7	25-3/4	R-2390	Type C
E8	Inlet Type A	24	7	25-3/4	R-2390	Type C
E9	Inlet Type A	24	7	25-3/4	R-2390	Type C

NOTES

1. ADJUST RIM ELEVATION AS NECESSARY TO MATCH PROPOSED GRADE..
2. FOR CONNECTIONS TO EXISTING PIPE,. EXISTING PIPE TO BE CLEARED OUT AND CLEANED PRIOR TO PLACEMENT OF NEW PIPE OR STRUCTURE.
3. SEE DETAILS FOR ADDITIONAL MANHOLE AND FLARED END SECTION INFORMATION.
4. ADJUSTING RINGS, 12-INCH MAX., NO MORE THAN TWO RINGS ALLOWED.
5. ALL MANHOLES TO HAVE FLAT SLAB TOP, SEE DETAIL.
6. COST OF CONNECTIONS TO MANHOLES, INLETS, R.C.P. AND INFILTRATION TRENCH ARE INCIDENTAL. CONNECTIONS AT MANHOLES/INLETS SHALL BE PRECAST WITH STRUCTURES OR CORED.
7. ALL FRAMES AND ADJUSTING RINGS SHALL BE MORTARED.
8. ALL MANHOLE AND INLET STRUCTURES TO BE PRECAST.
9. BOLTS AND WASHERS FOR BOLTED ASSEMBLIES SHALL BE STAINLESS STEEL.
10. NEENAH FRAME NUMBERS SHOWN. OTHER APPROVED EQUAL MANUFACTURER'S ARE ALLOWED.

NOTE
MANHOLES AND INLETS ARE LOCATED TO THE ℄ OF THE FRAME AND GRATE. THE CONTRACTOR IS RESPONSIBLE FOR FABRICATING AND OFFSETTING THE STRUCTURES AS NEEDED TO ALLOW FOR PROPER PLACEMENT OF THE FRAME AND GRATE.

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phone: 630-226-8400

CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

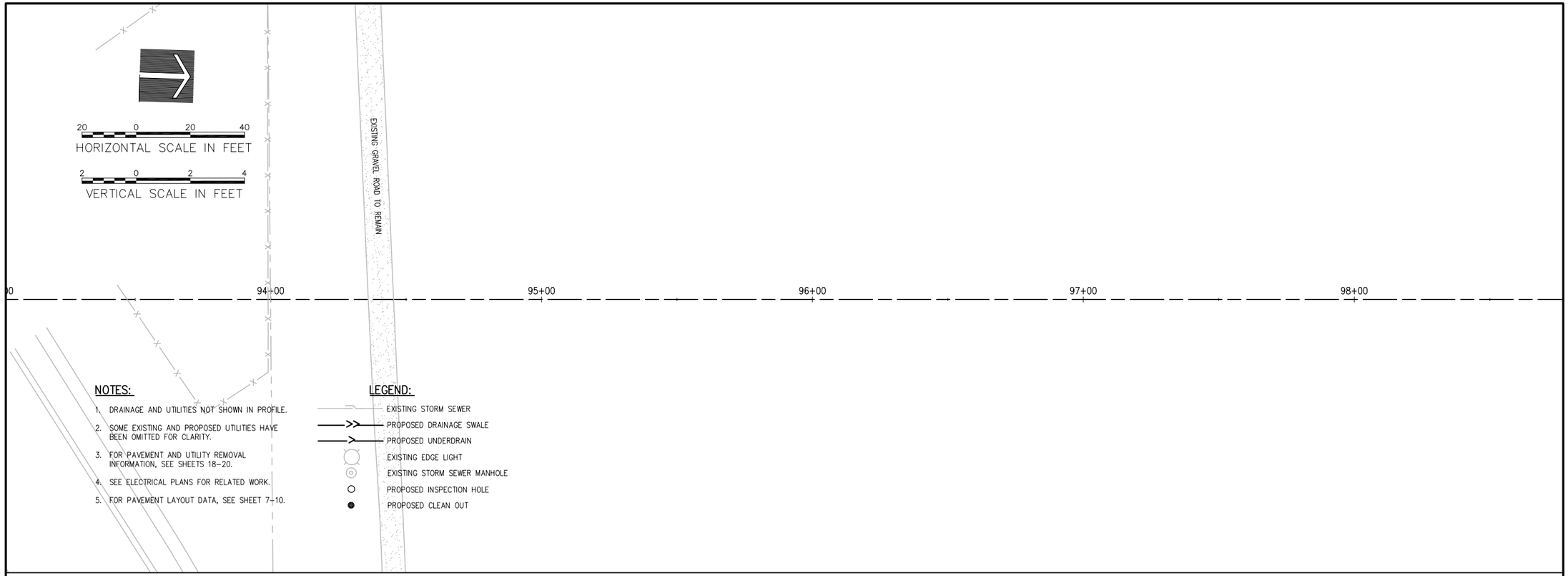
BO003

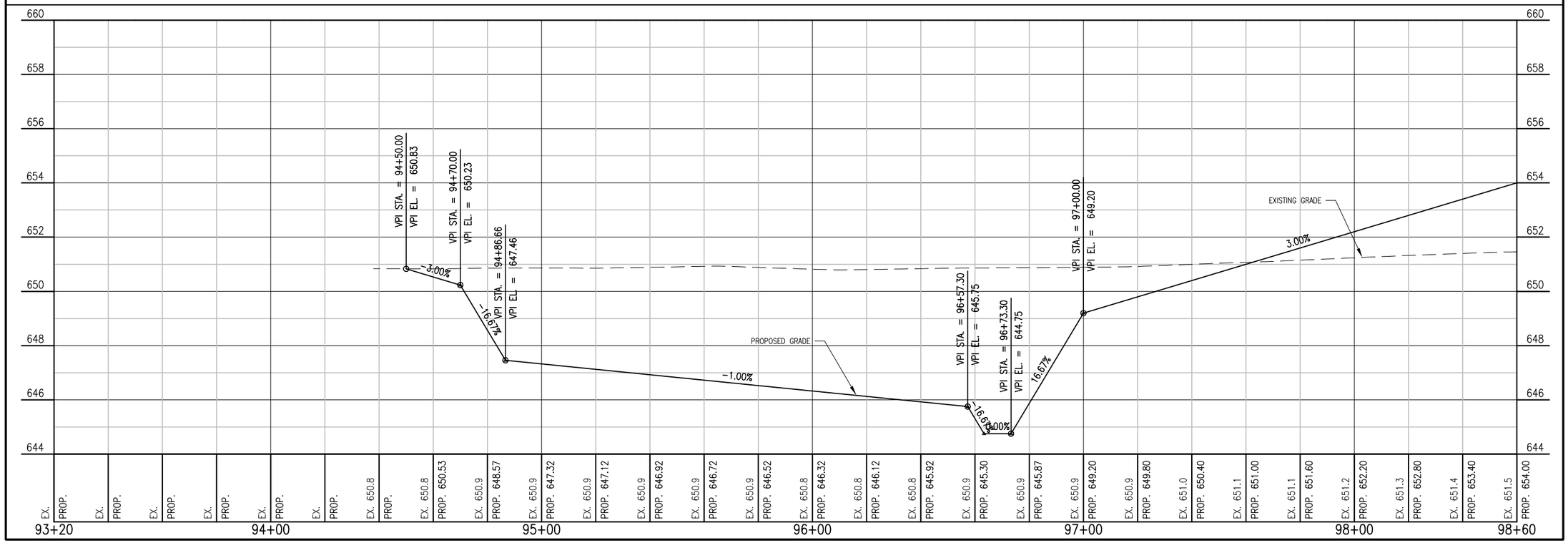
NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 034-DRAINAGESCH.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: LDH 3/10/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

STORM SEWER
SCHEDULE





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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

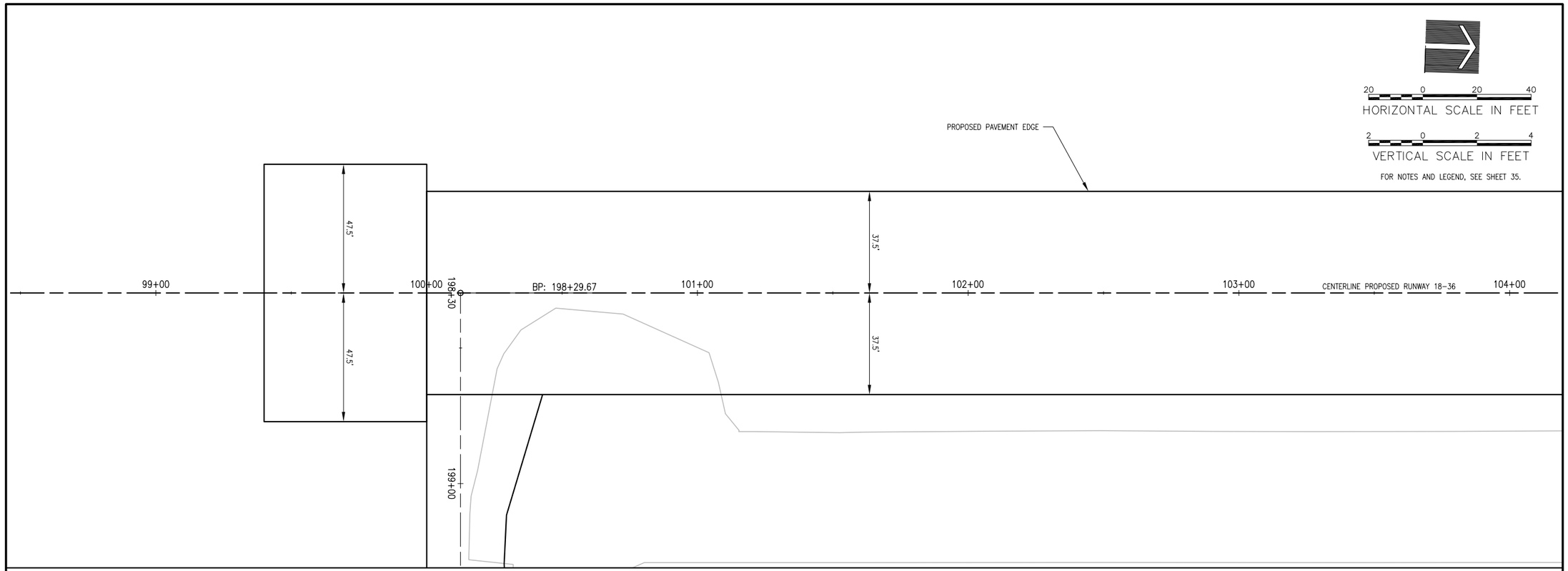
NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

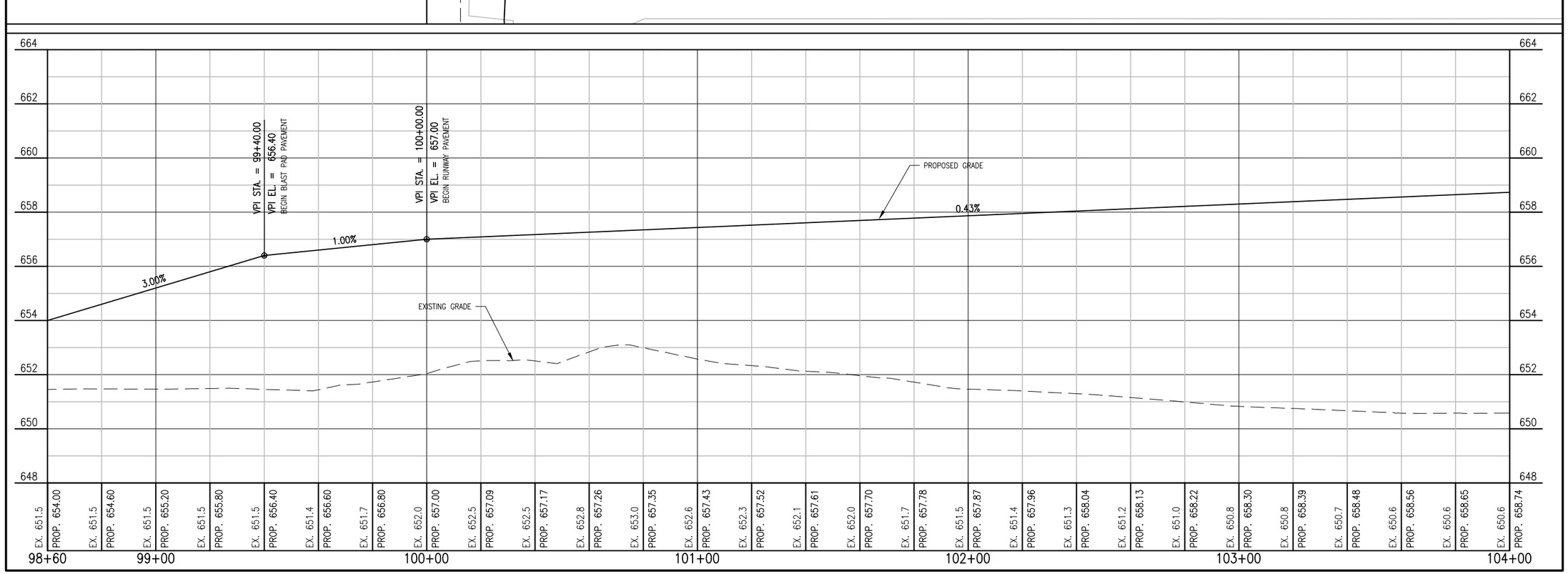
ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 035-RWYPANDP.DWG
LAYOUT BY: LDH 2/28/14
DRAWN BY: LDH 2/28/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

PLAN AND PROFILE
RUNWAY 18-36
STA. 94+50 - 98+60

MAY 09, 2014 8:30 AM SPITZ01394
K:\14JOBS\0084\14A0002D\DRAWINGS\SHEETS\035-RWYPANDP.DWG





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			LAY	DWN	REV

ISSUE: May 9, 2014
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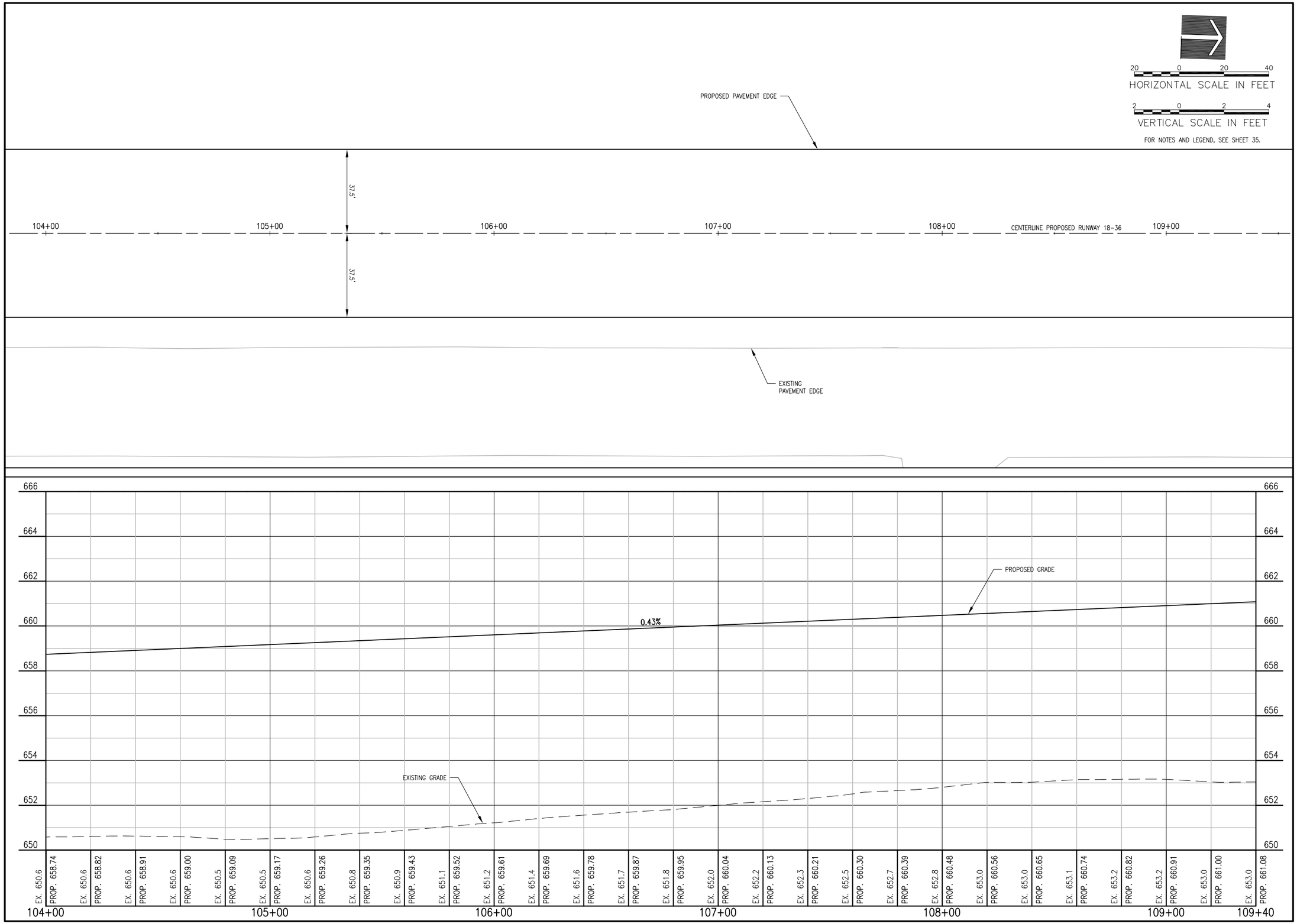

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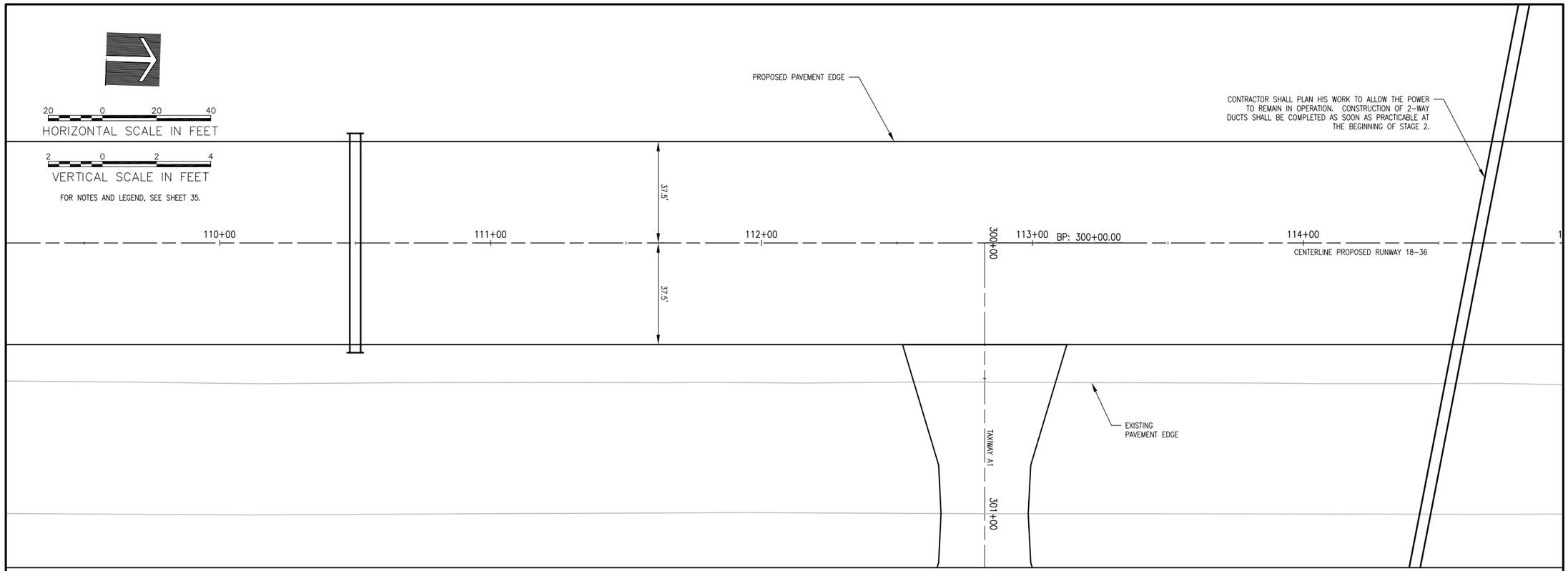

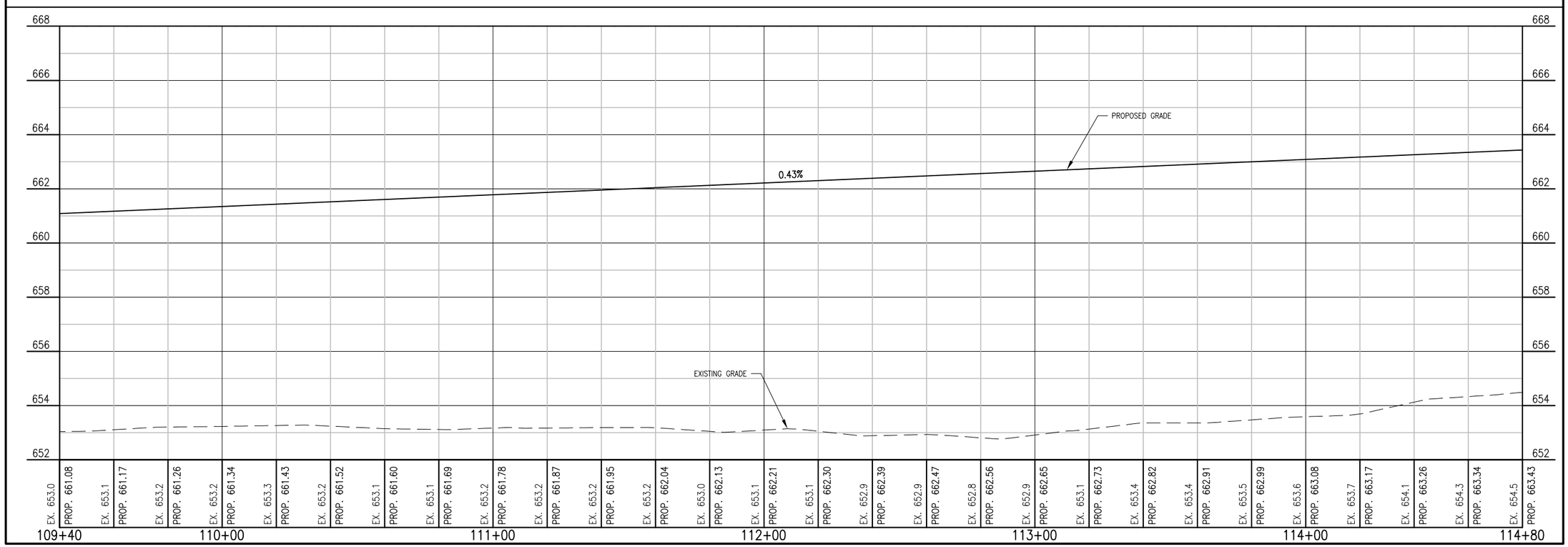

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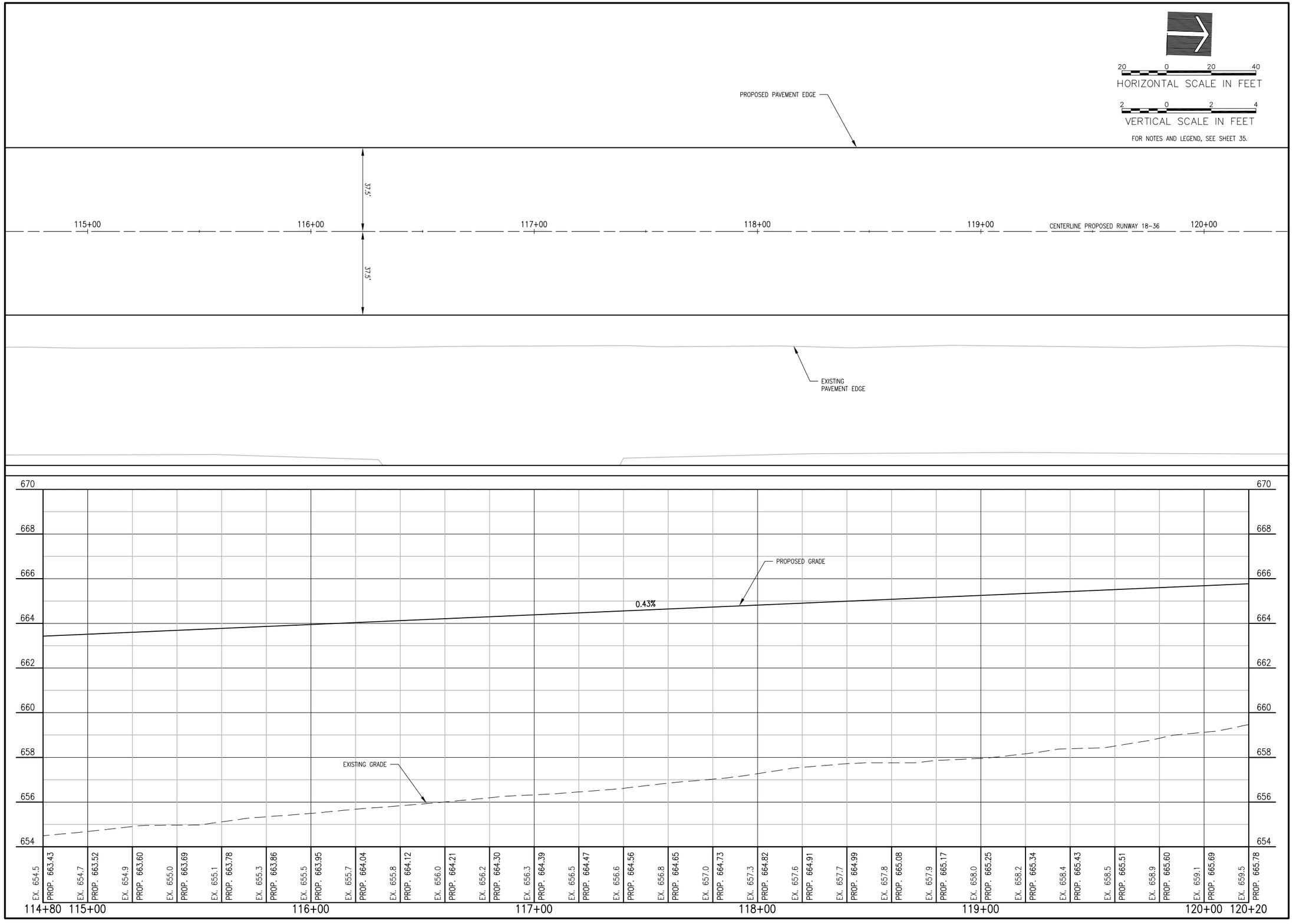

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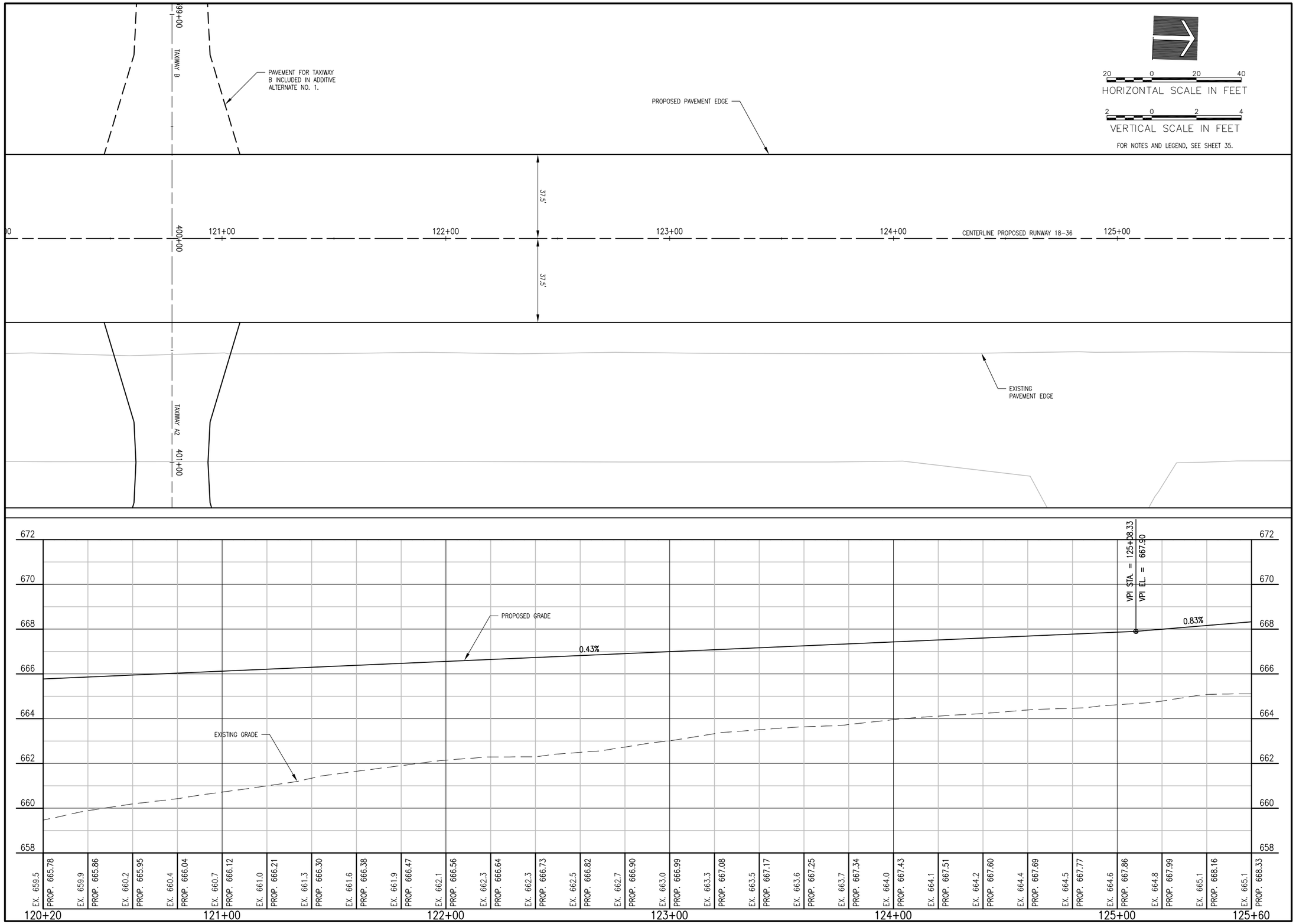

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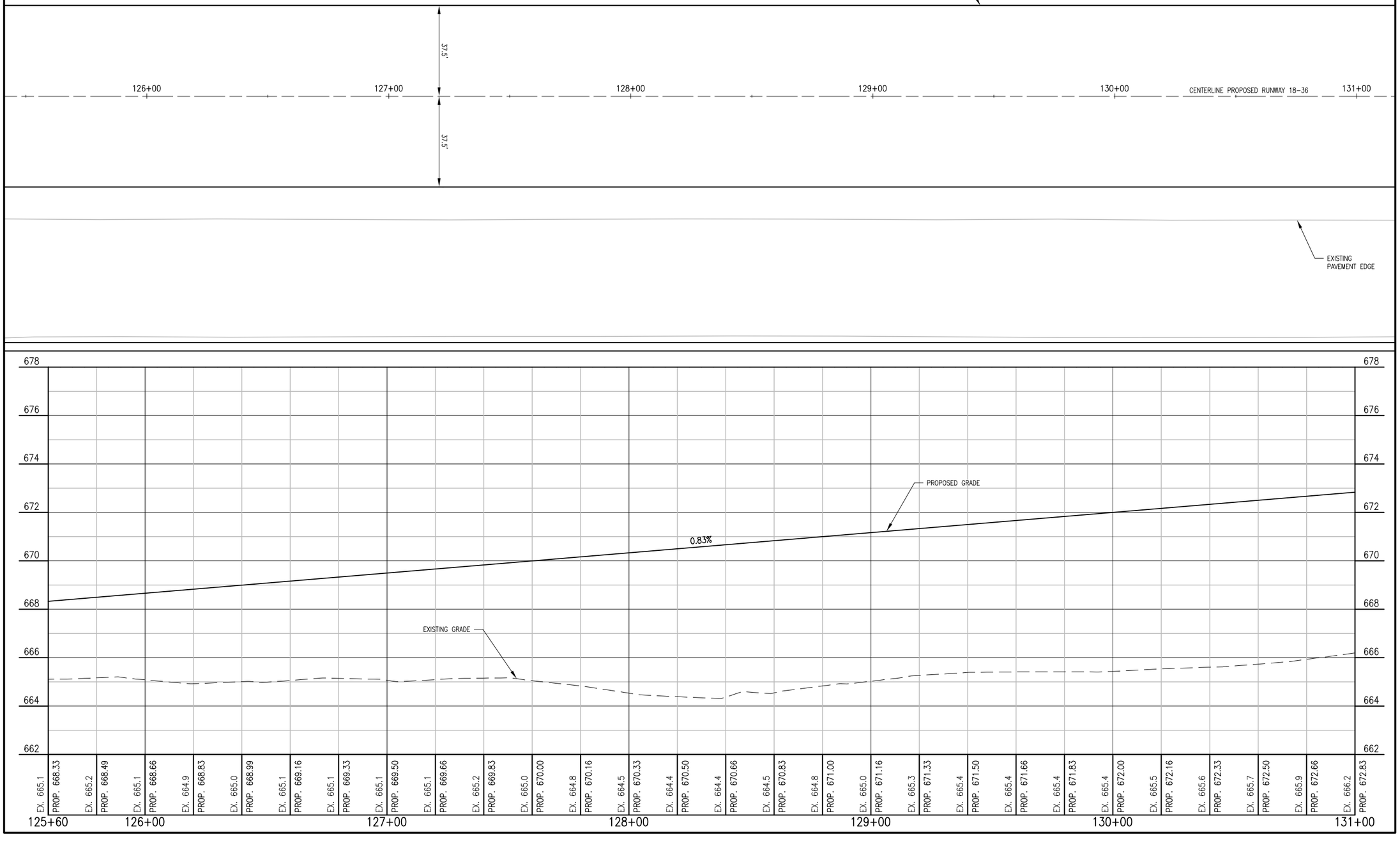
HORIZONTAL SCALE IN FEET

2 0 2 4
VERTICAL SCALE IN FEET

FOR NOTES AND LEGEND, SEE SHEET 35.



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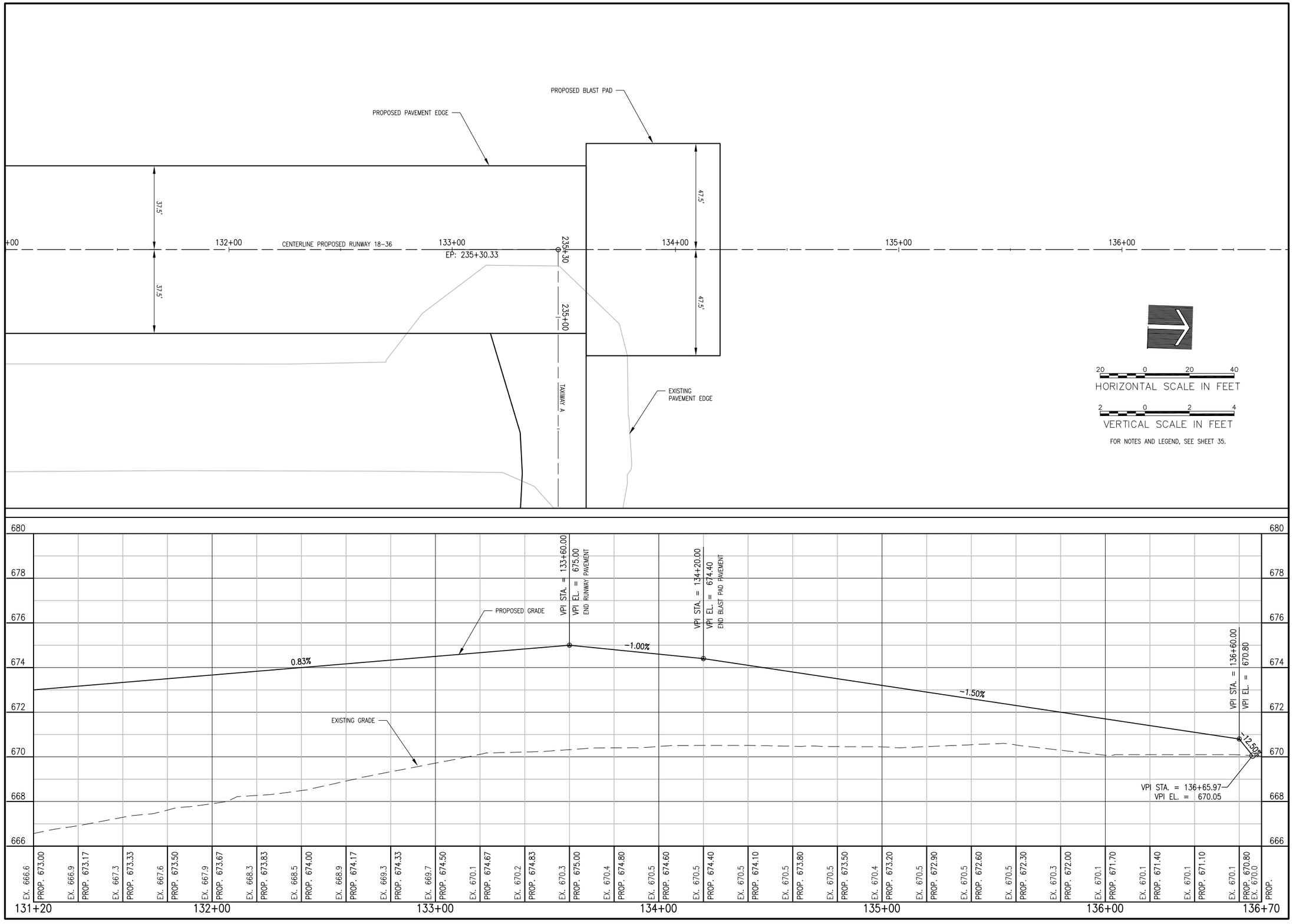

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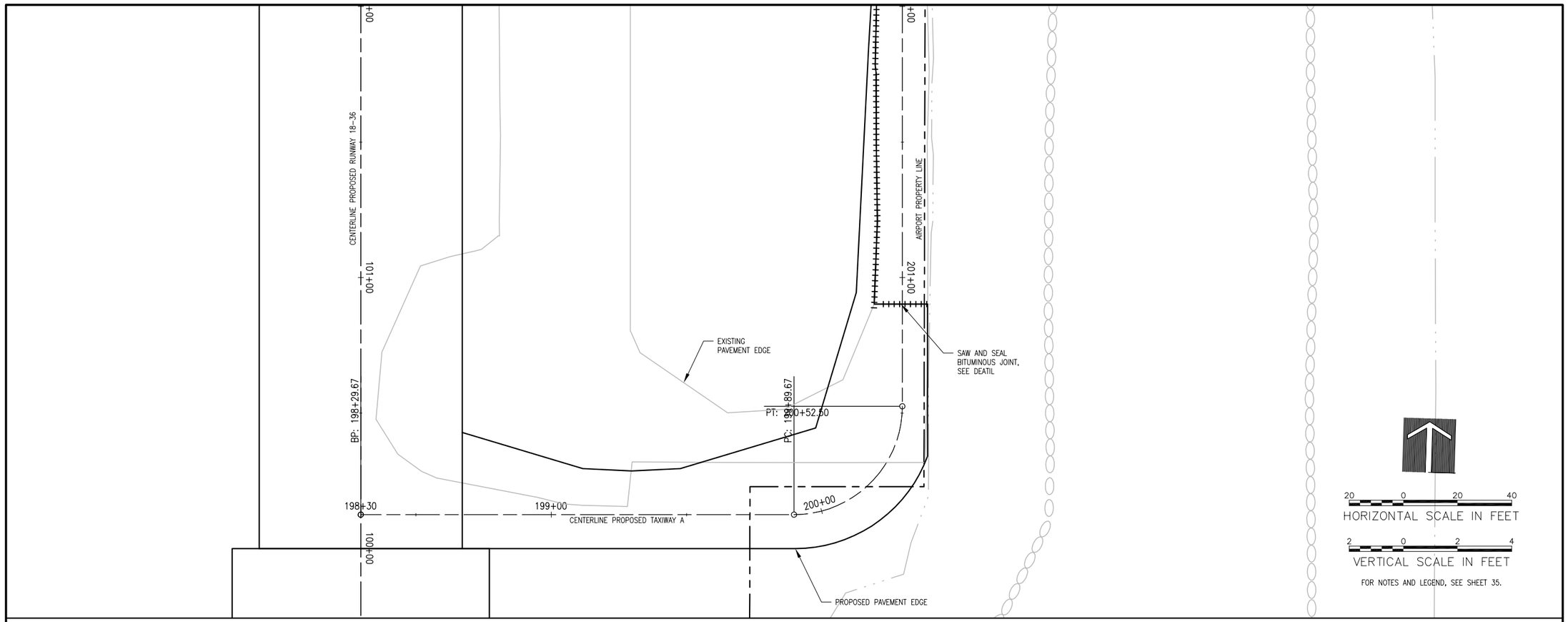

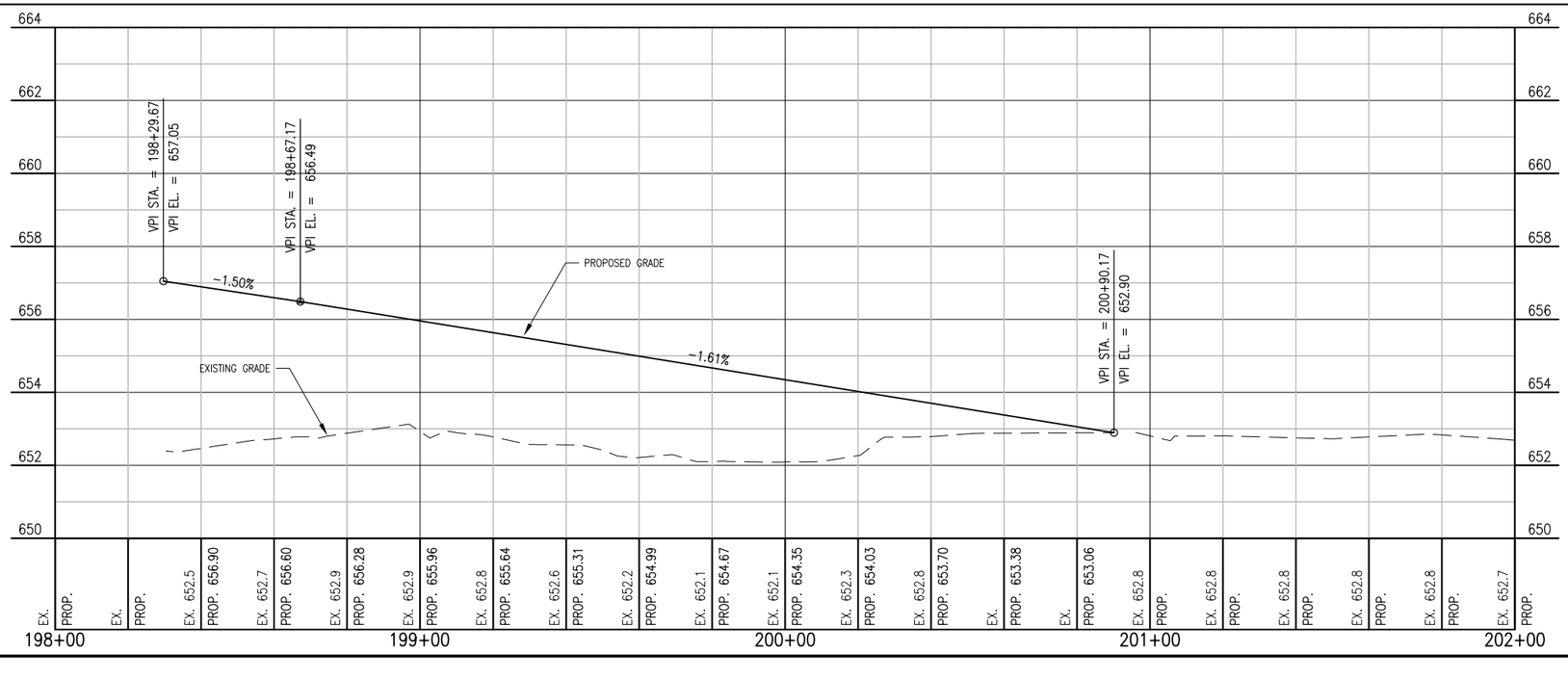

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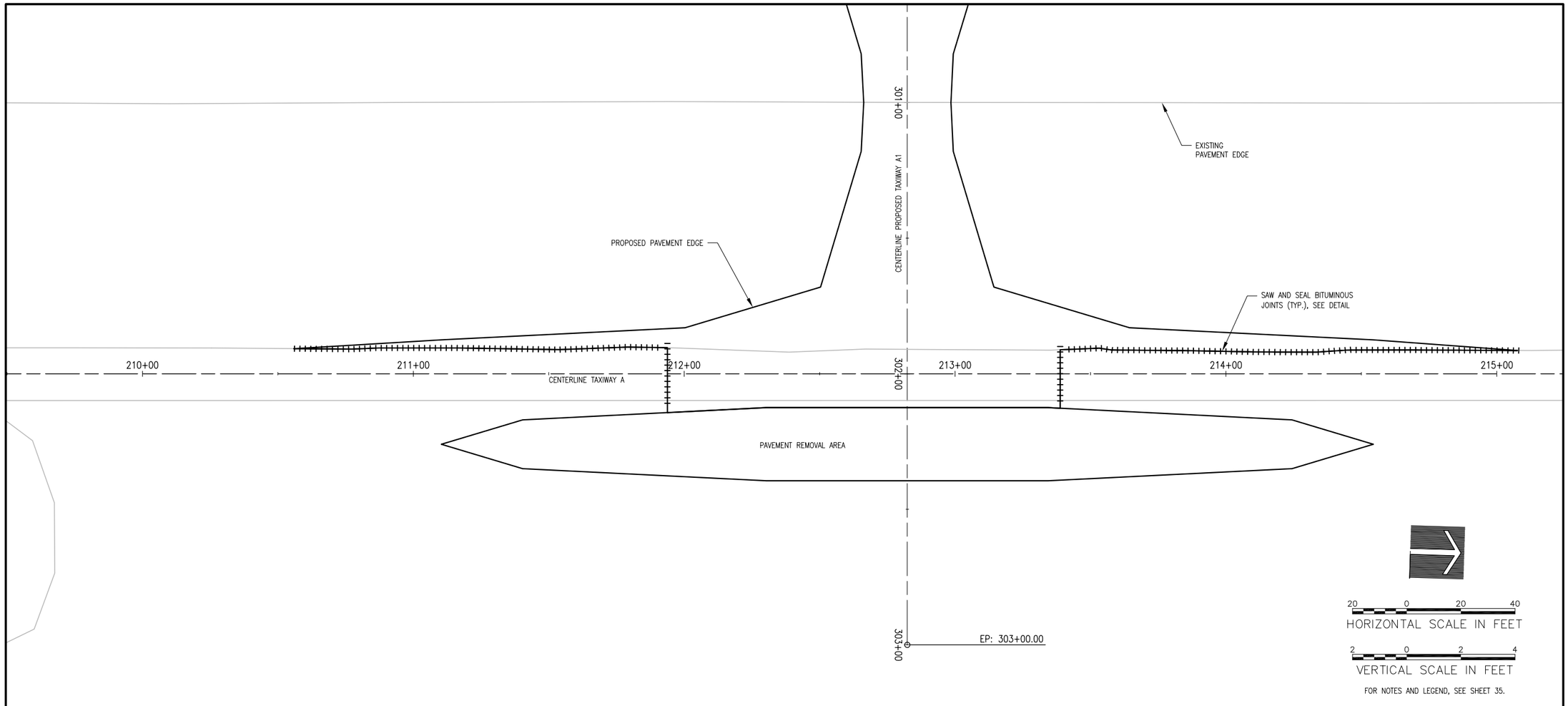
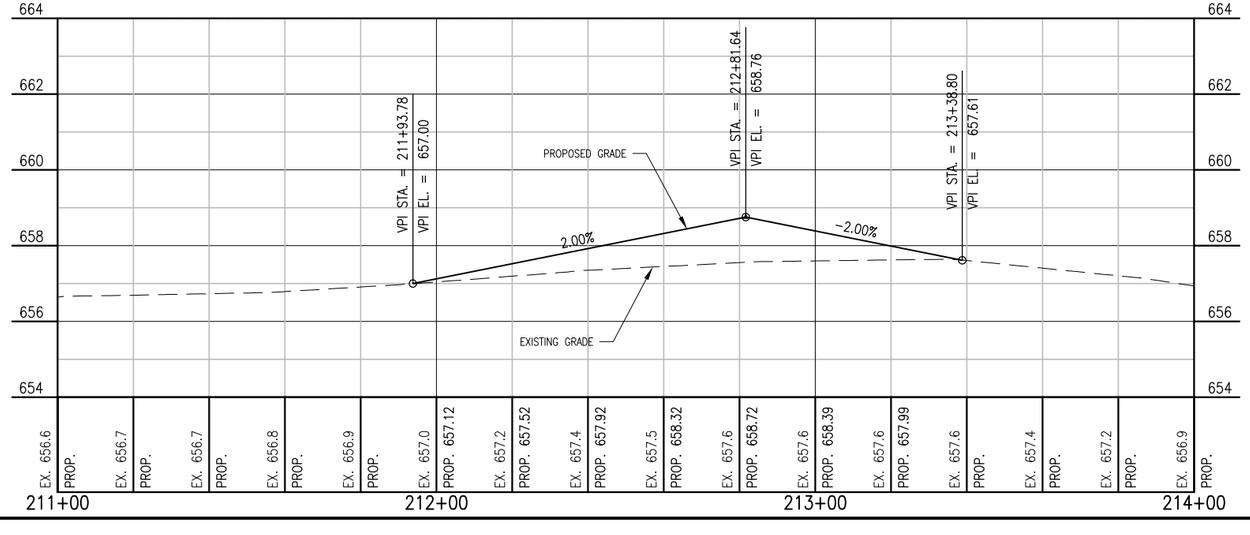


FOR NOTES AND LEGEND, SEE SHEET 35.



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TAXIWAY A

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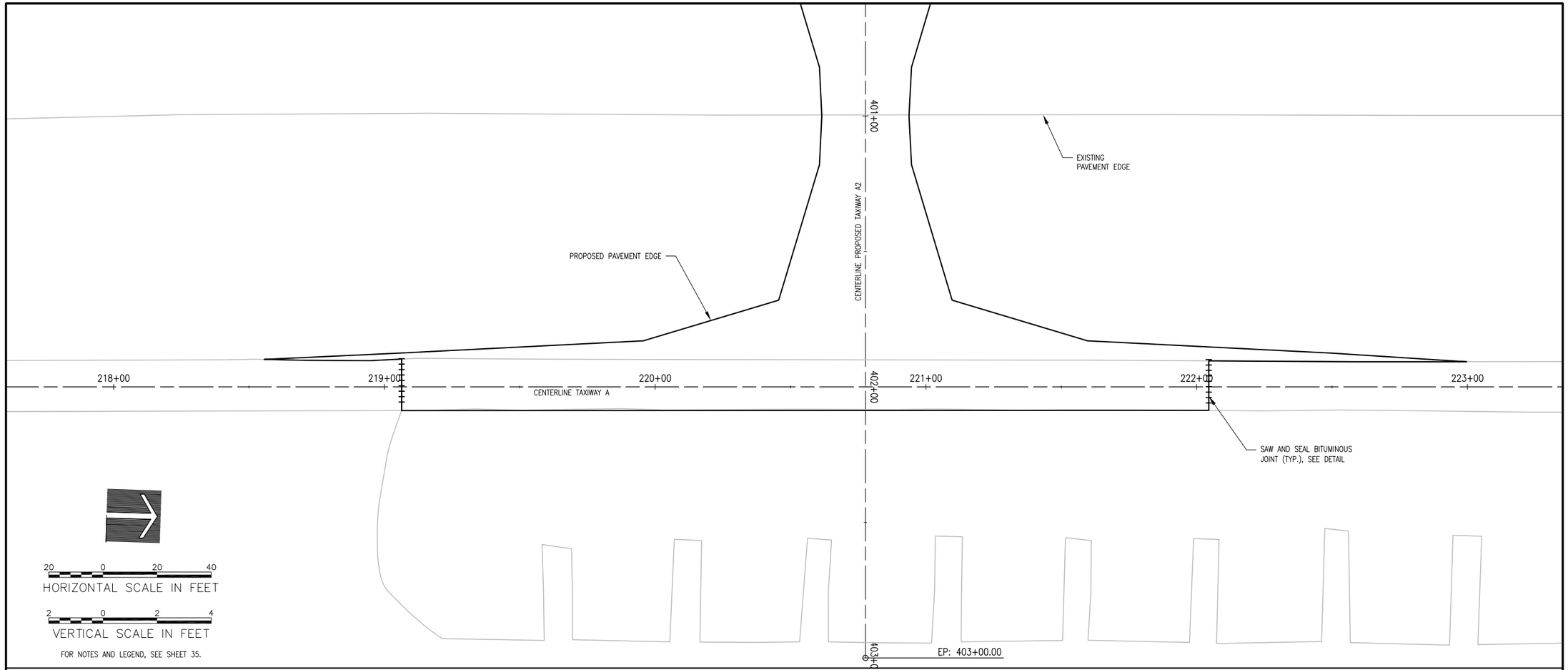

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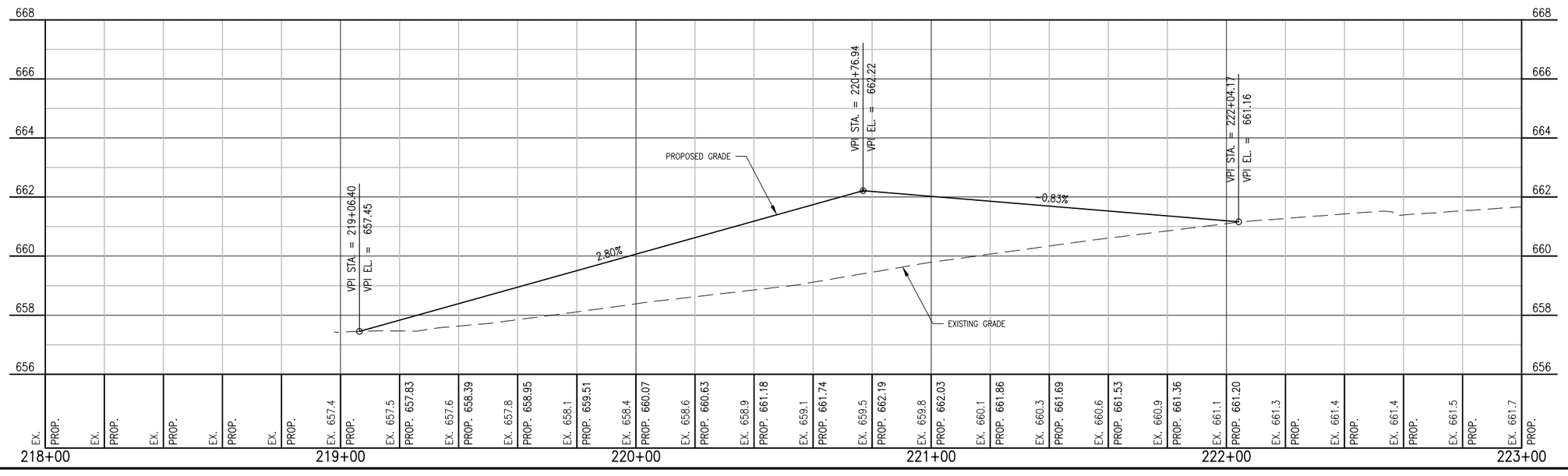

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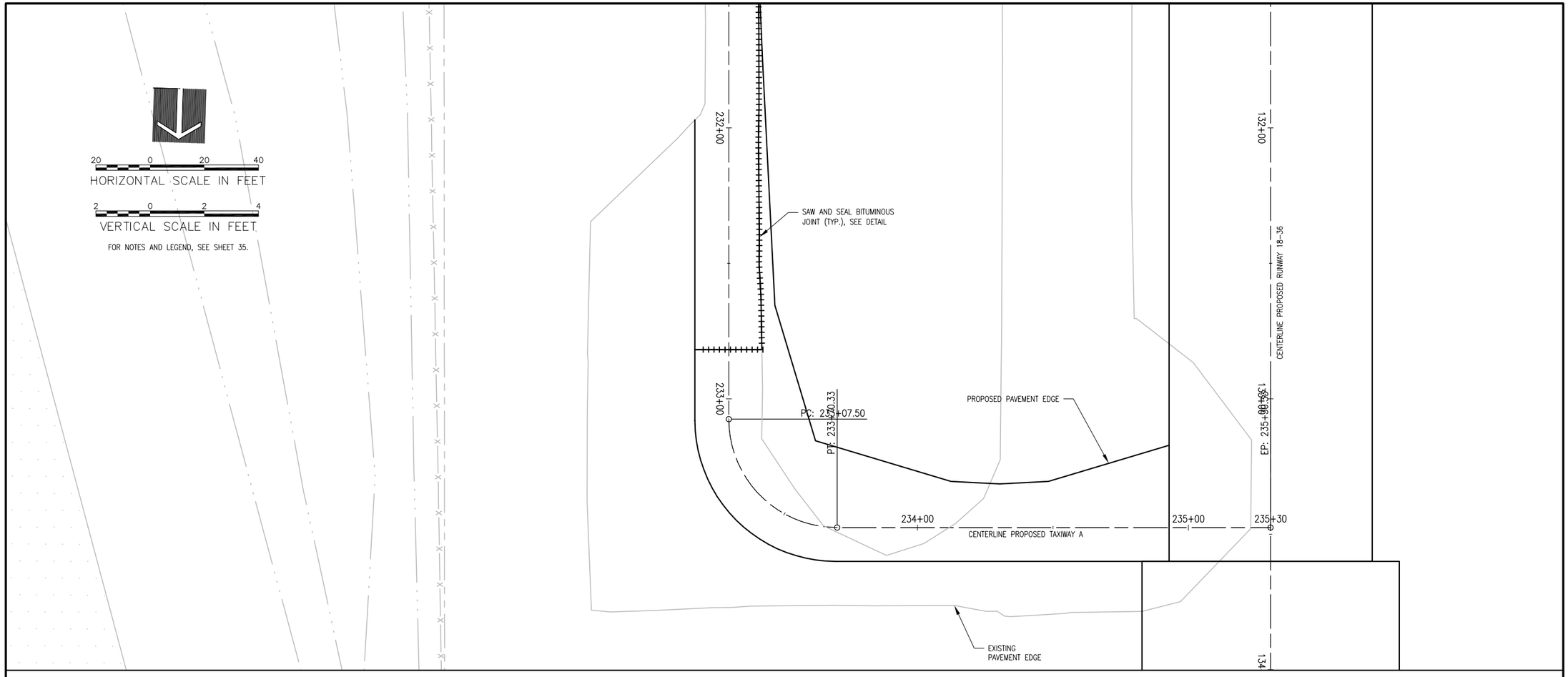

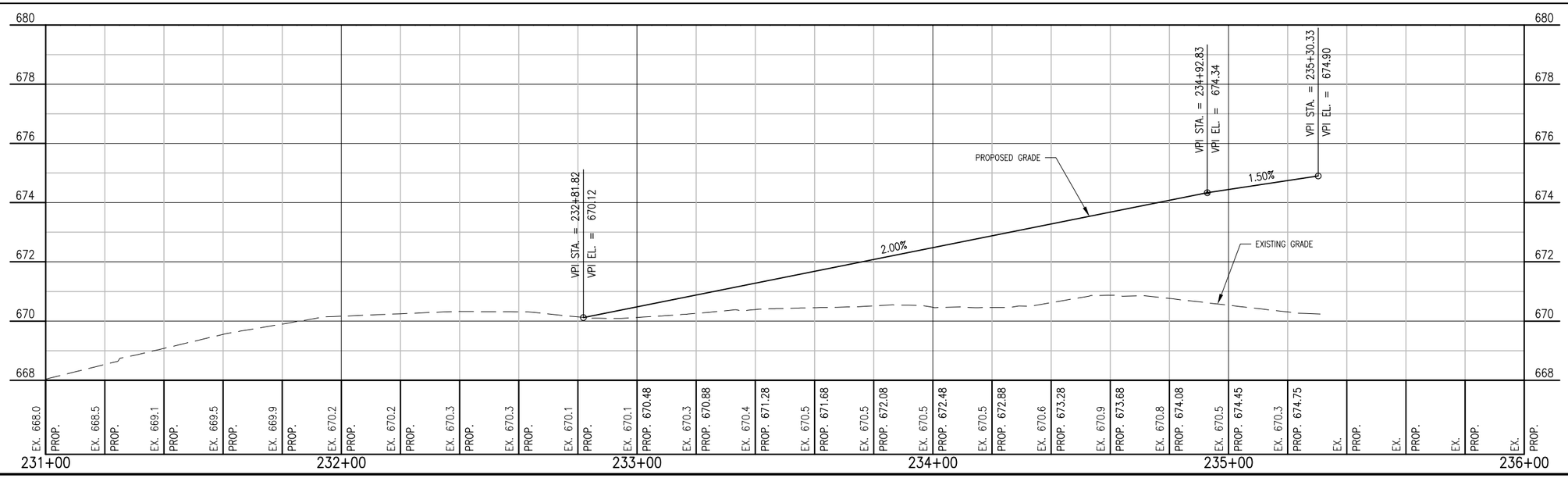

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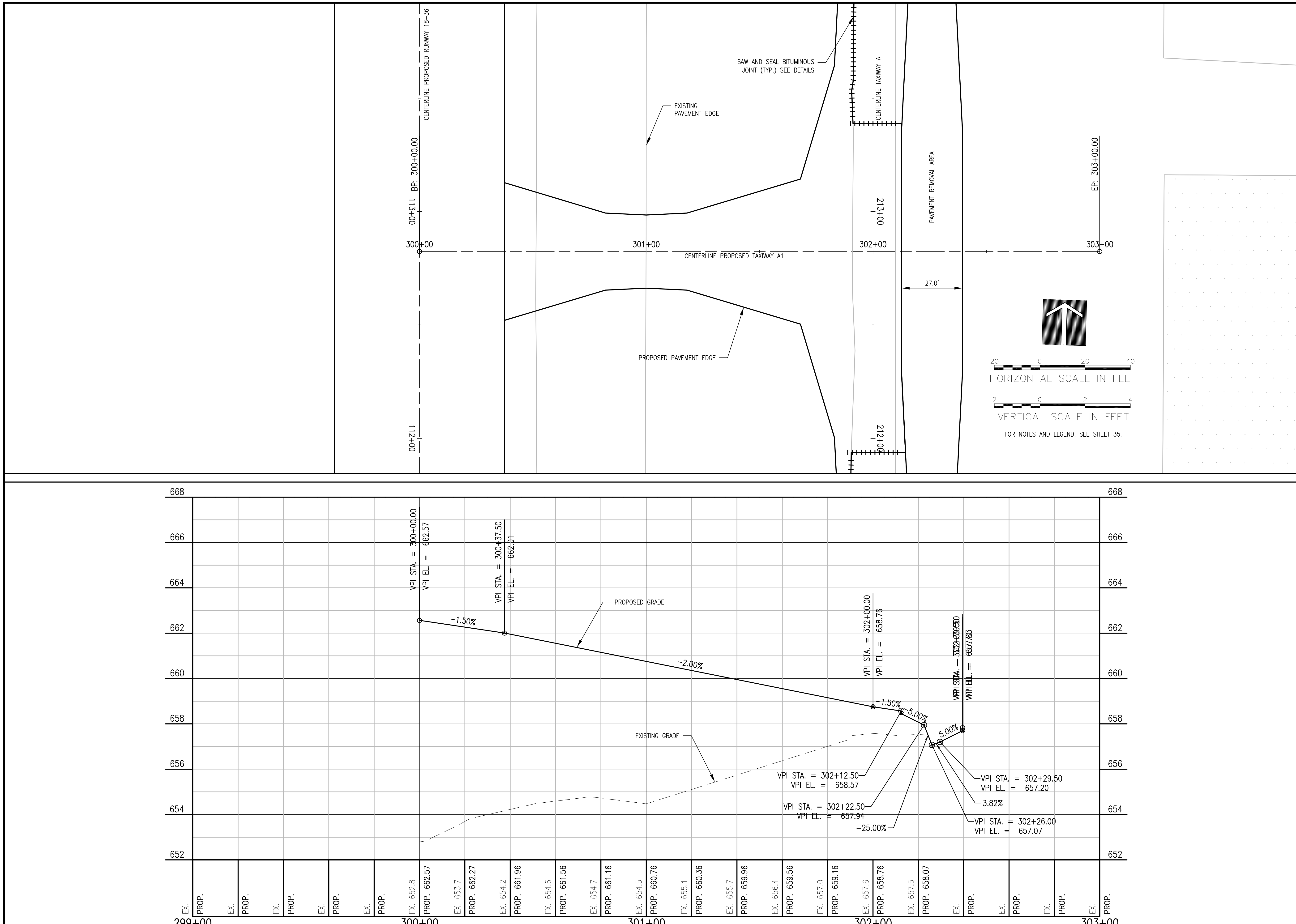

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PLAN AND PROFILE - TAXIWAY A1

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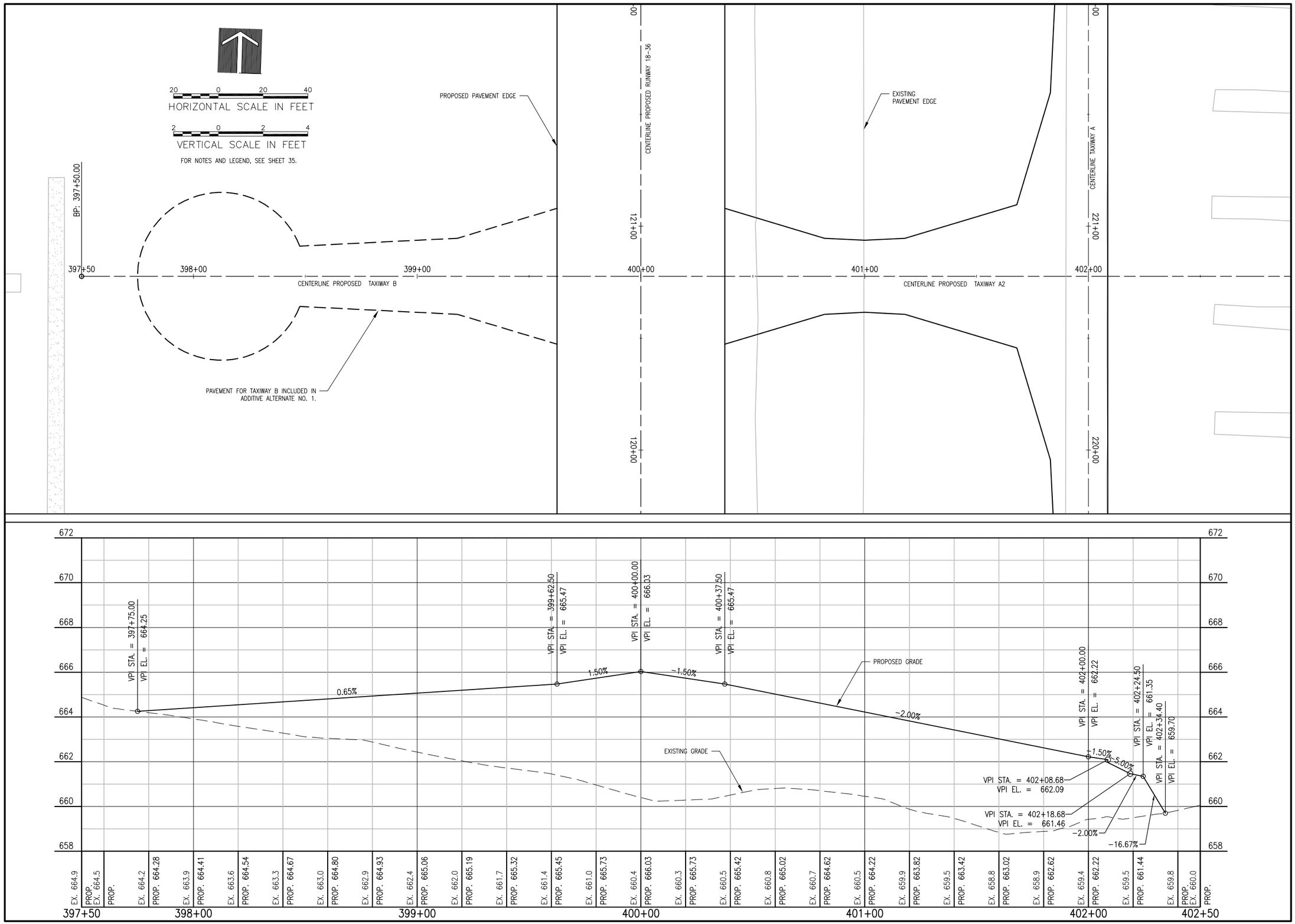

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PLAN AND PROFILE
TAXIWAY B/A2

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EARTHWORK SUMMARY IN CUBIC YARDS

CUT			
On-Site			
Other Than Topsoil Cut		24,240	
Topsoil		66,735	
	Paid as Unclassified Excavation		**90,975** (1)
FILL			
On-Site			
Other Than Topsoil Fill (Fill from On-Site Cut in Project Area)		24,240	
Less Shrink (25%) (3)		(6,060)	
Subtotal			18,180
Borrow (Fill from On-Airport Stockpile, See Plans for Location)		7,984	
Less Shrink (25%) (3)		(1,996)	
Subtotal			**5,988** *(2)
Topsoil (Used as Acceptable Fill Outside Satisfactory Area)		66,735	
Less Amount used for Topsoil Fill		**(16,976)**	
Less Shrink (25%) (3)		(16,684)	
Subtotal			33,075
Pavement Millings (Old Runway)		992	
			992
Off-Site			
Borrow Excavation (In-Place)		118,295	
			118,295 *(2)

*Payment made by measurement in place in project. Cut at stockpile or off-airport borrow not measured for payment.

SUMMARY TABLE NOTES:

1. MEASURED AS CUT IN CUBIC YARDS BASED UPON AVERAGE END AREAS. CUT INCLUDES TOPSOIL CUT AND UNSUITABLE UNDERCUT. PLACEMENT OF CUT AS EMBANKMENT OR OTHERWISE USED IN THE PROJECT IS NOT MEASURED FOR PAYMENT. EXCAVATION MEASURED ONLY ONCE.
2. MEASURED IN PLACE CUBIC YARDS. CONTRACTOR SHALL ACCOUNT FOR MATERIAL SHRINKAGE FROM COMPACTION IN HIS BID. CUT AT STOCKPILE OR AT OFF-AIRPORT LOCATION IS NOT MEASURED FOR PAYMENT.
3. MATERIAL SHRINKAGE FOR ON-SITE CUT ASSUMED AT 25% BASED UPON GEO-TECHNICAL INVESTIGATION.
4. FOR BORING LOCATIONS AND BORING LOGS, SEE SHEET 159-168.

CUT AND FILL MEASUREMENT NOTES:

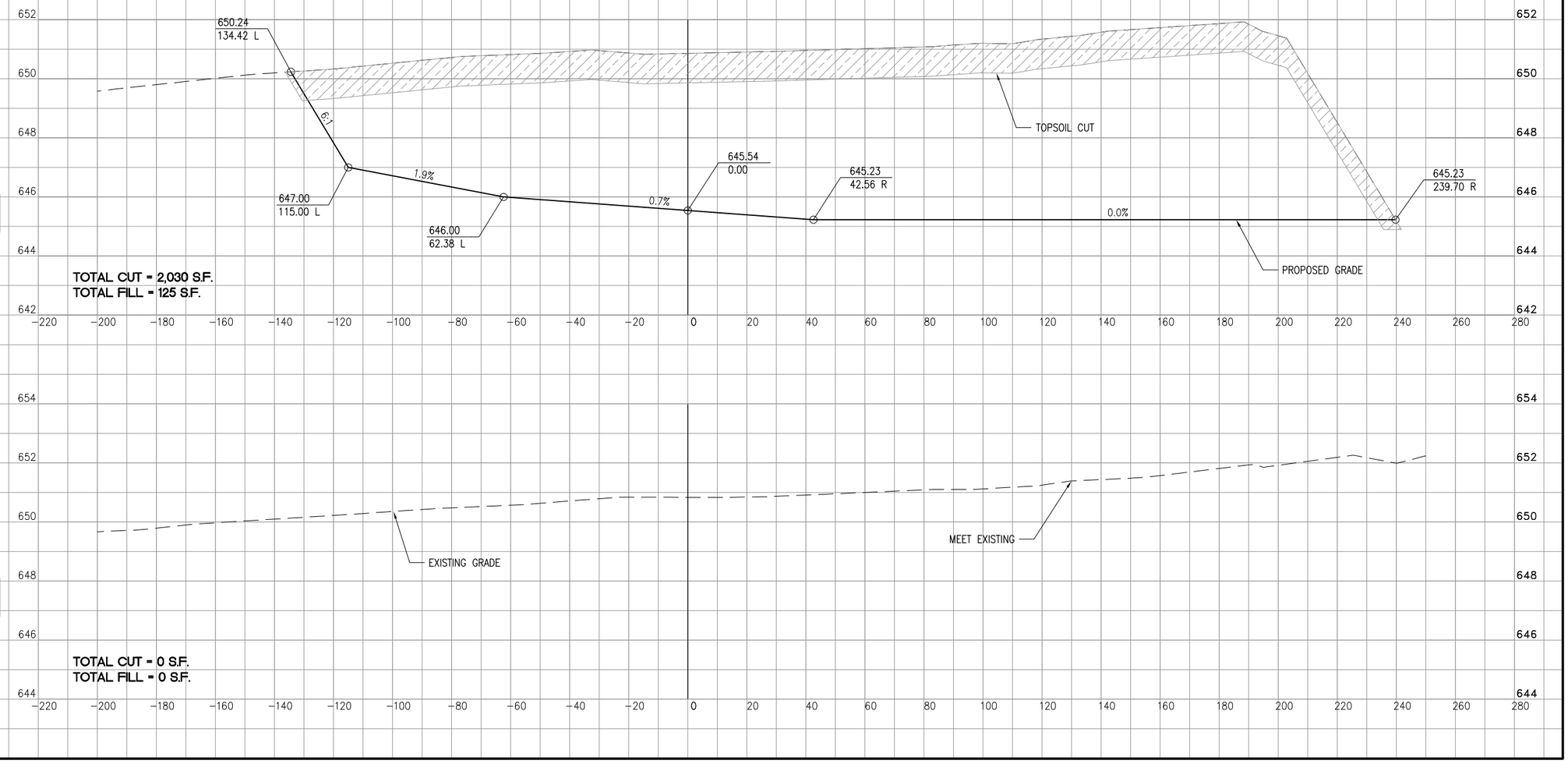
A. CUT SQUARE FOOT NUMBER INCLUDES ALL TOPSOIL CUT, ALL UNDERCUT, AND ALL OTHER THAN TOPSOIL CUT.

B. FILL SQUARE FOOT NUMBER INCLUDES ALL FILL PLACEMENT, INCLUDING EMBANKMENT FROM ON-SITE MATERIAL, ON-AIRPORT BORROW (PAID UNDER ITEM AR152441), OFF-AIRPORT BORROW (PAID UNDER ITEM AR152442) AND TOPSOILING (PAID UNDER ITEM AR905510)

C. SEE SUMMARY TABLE NOTES REGARDING PAYMENT OF FILL EMBANKMENT FOR ON-SITE BORROW CUT PAID UNDER ITEM AR152441.

2 0 2 4
VERTICAL SCALE IN FEET

20 0 20 40
HORIZONTAL SCALE IN FEET



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CROSS SECTIONS
SOUTH BASIN

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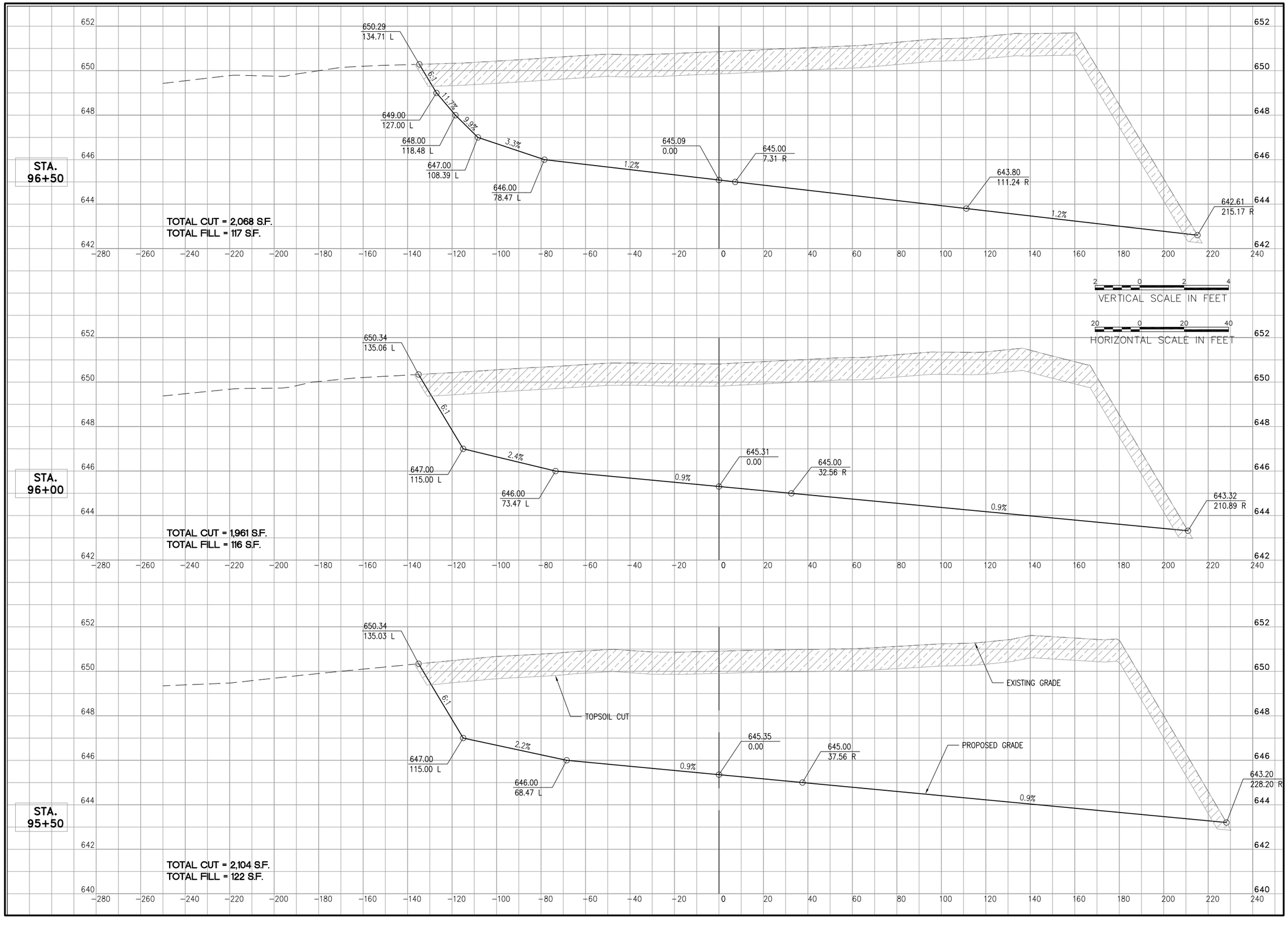

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RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 050- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
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SHEET TITLE

CROSS SECTIONS
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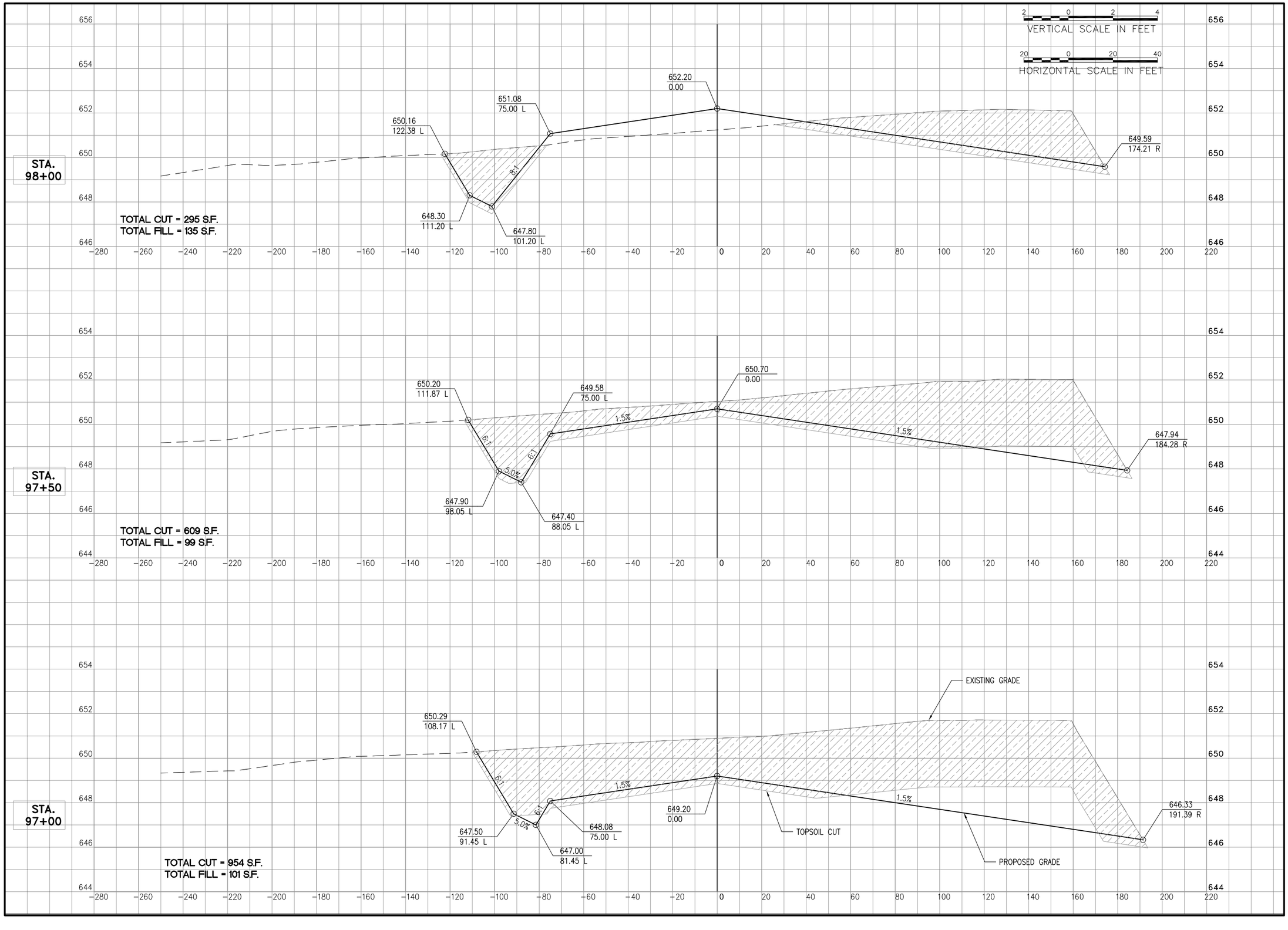

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IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 051- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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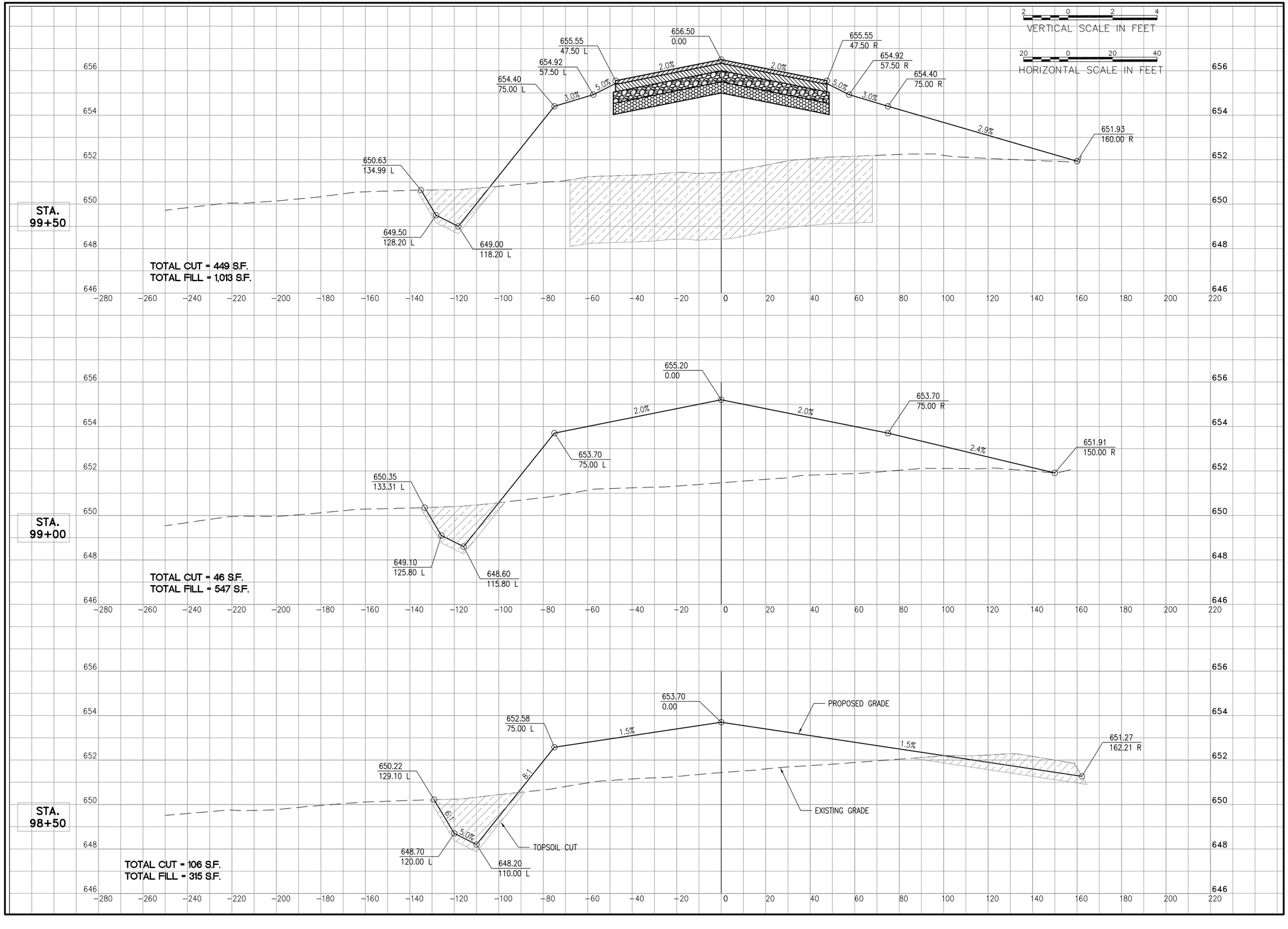

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SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 052- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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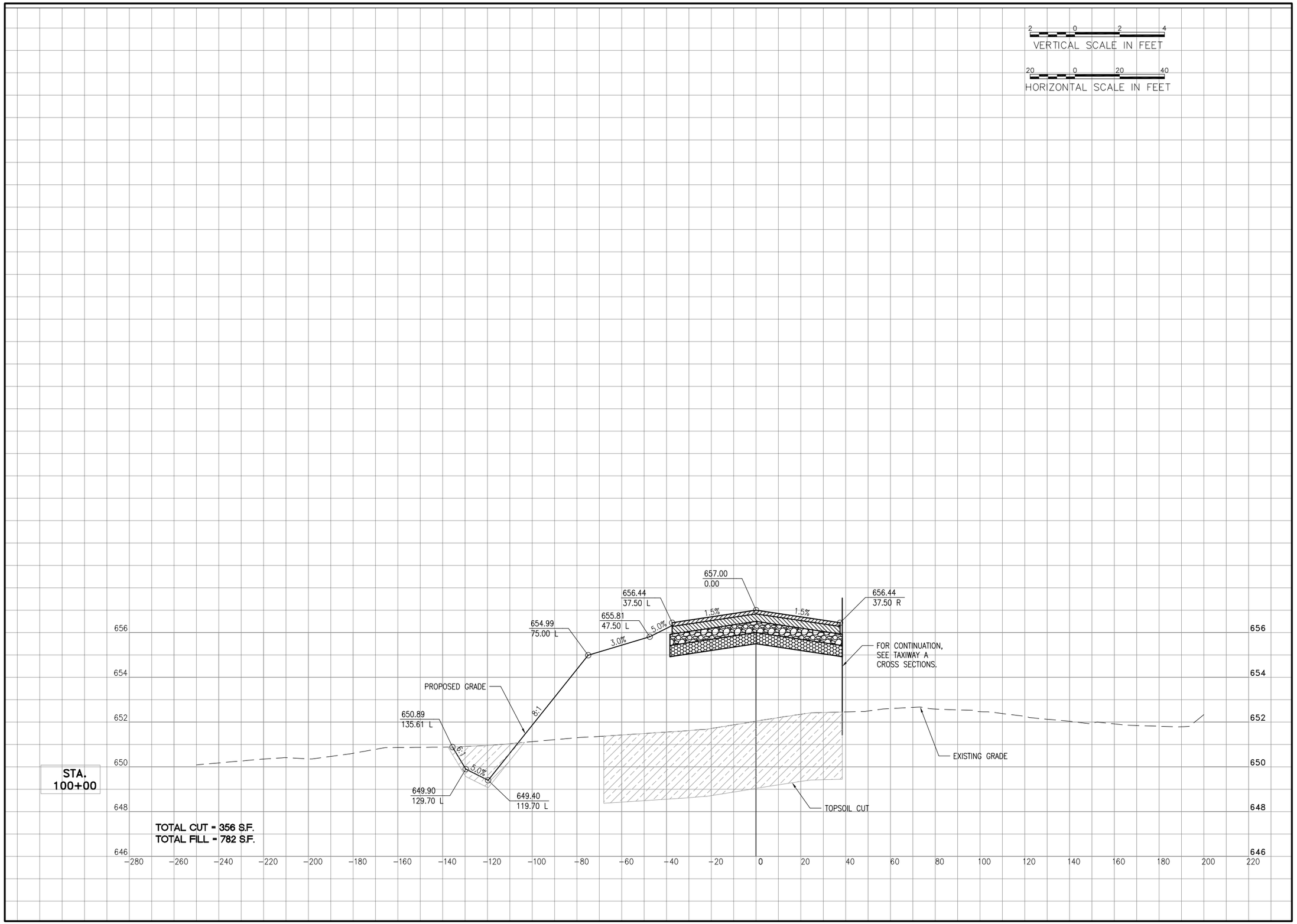

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SBG No: 3-17-SBGP-TBD

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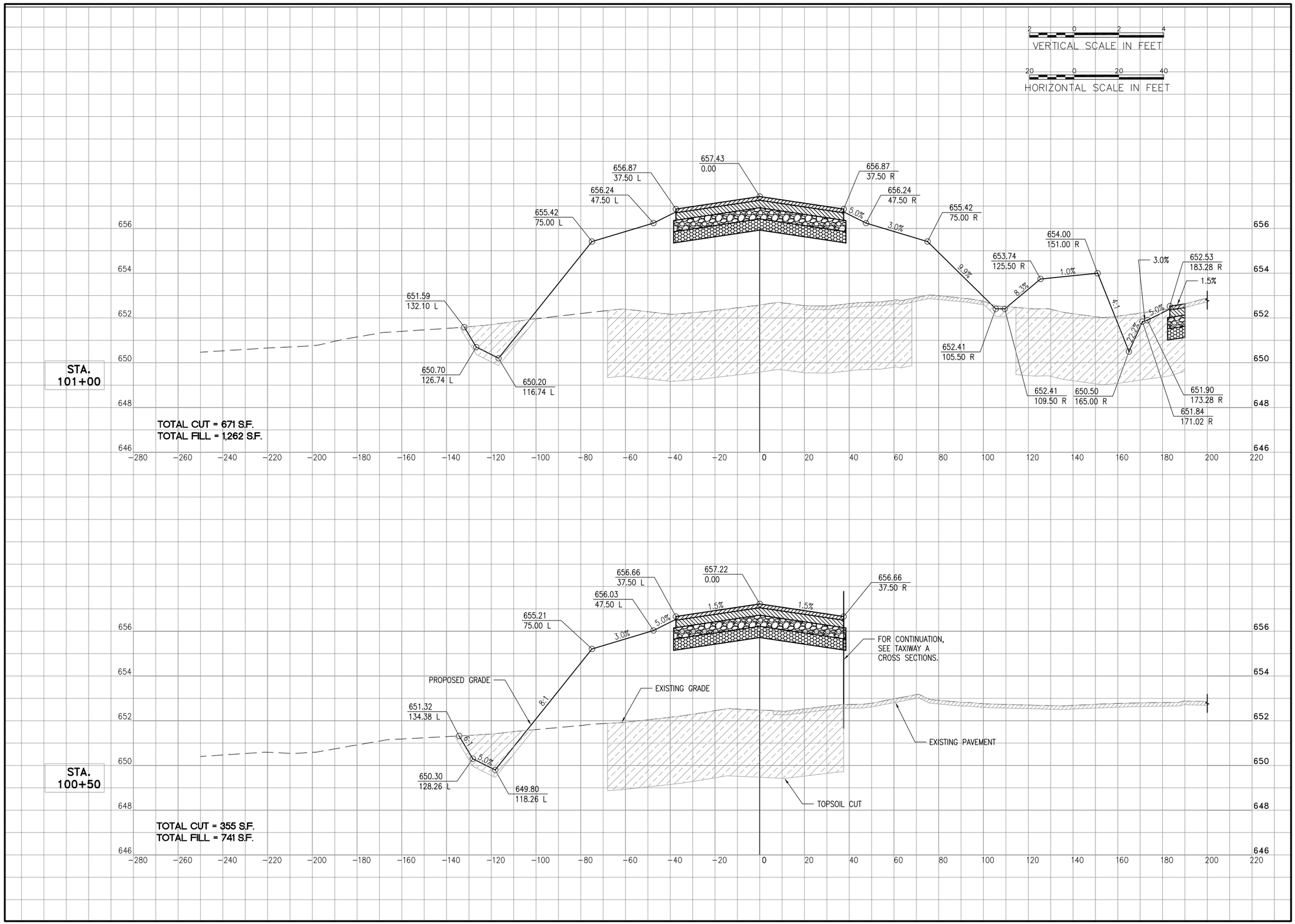
NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 053- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36



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SBG No: 3-17-SBGP-TBD

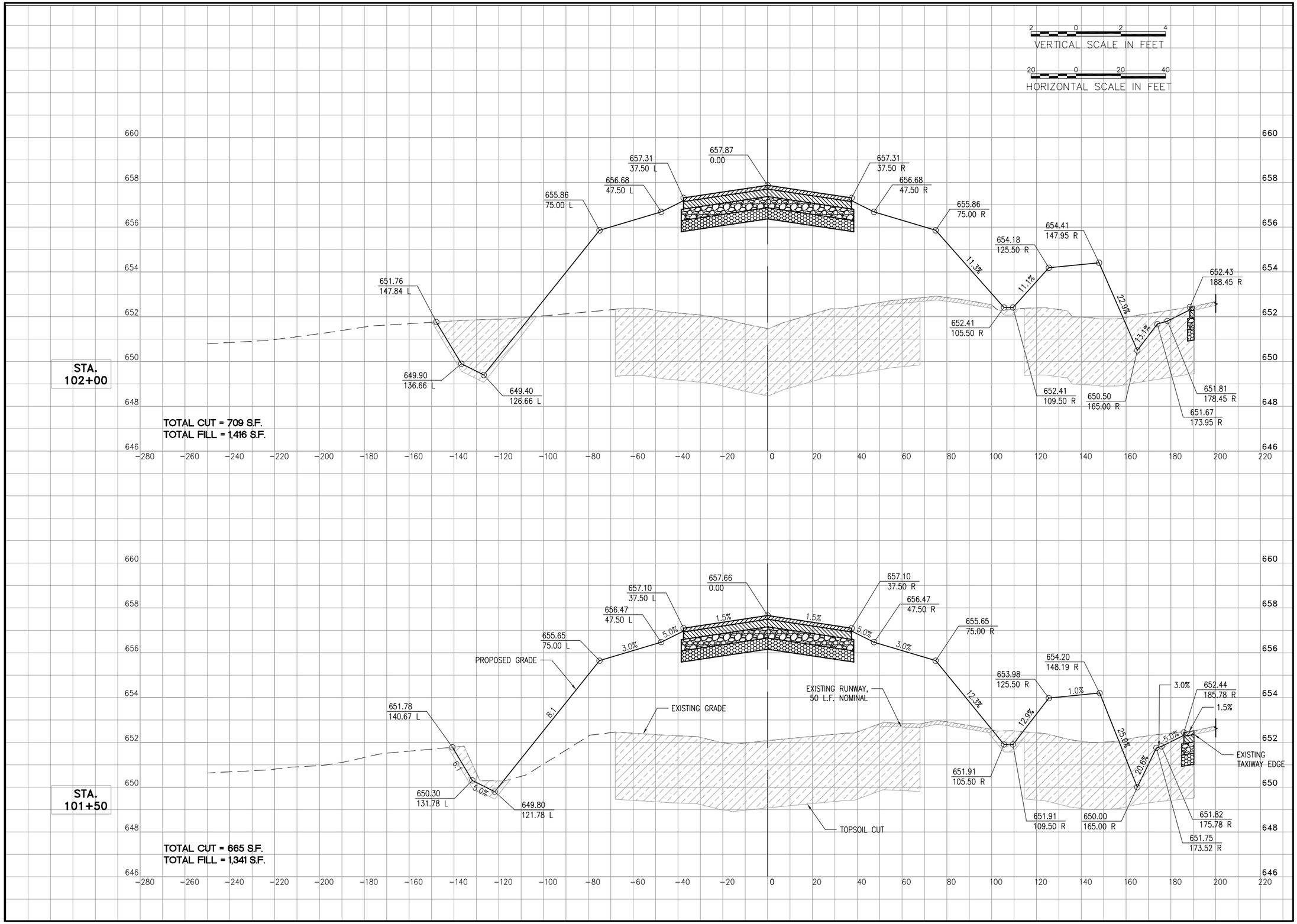
BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 054- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36



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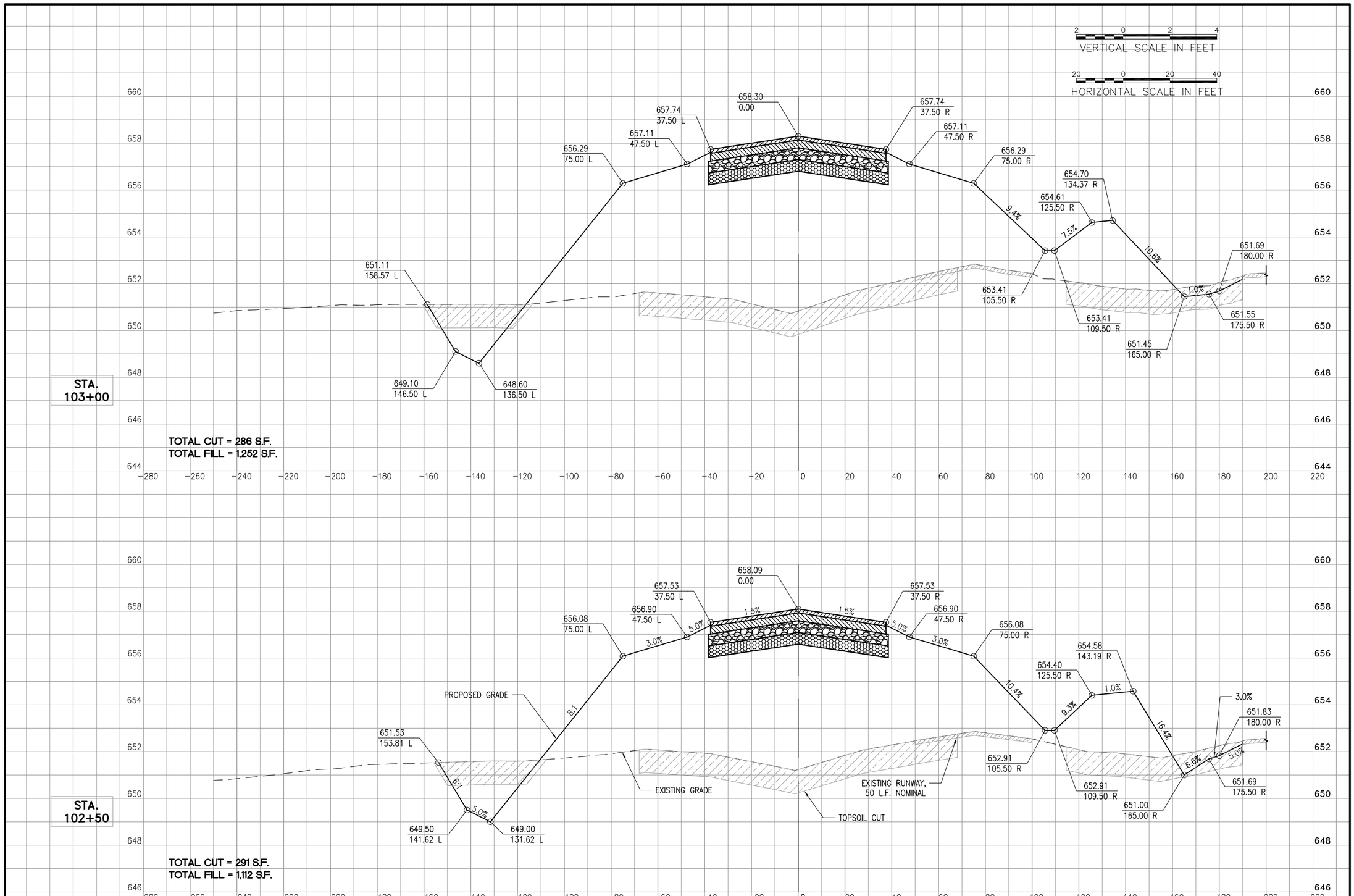
NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 055- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS RUNWAY 18-36



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		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 056- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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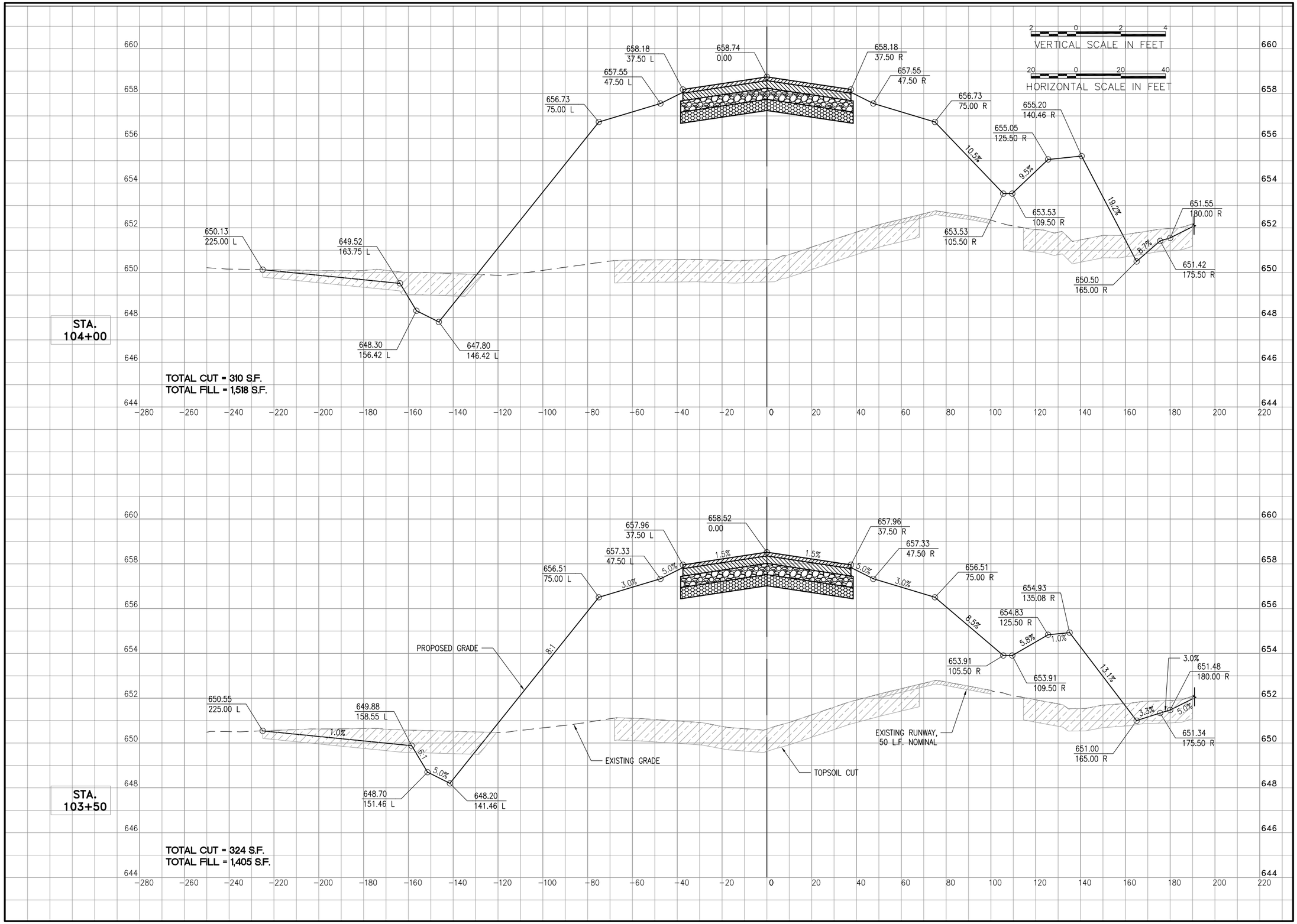

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			LAY	DWN	REV

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CAD FILE: 057- XSECTIONSRWY.DW
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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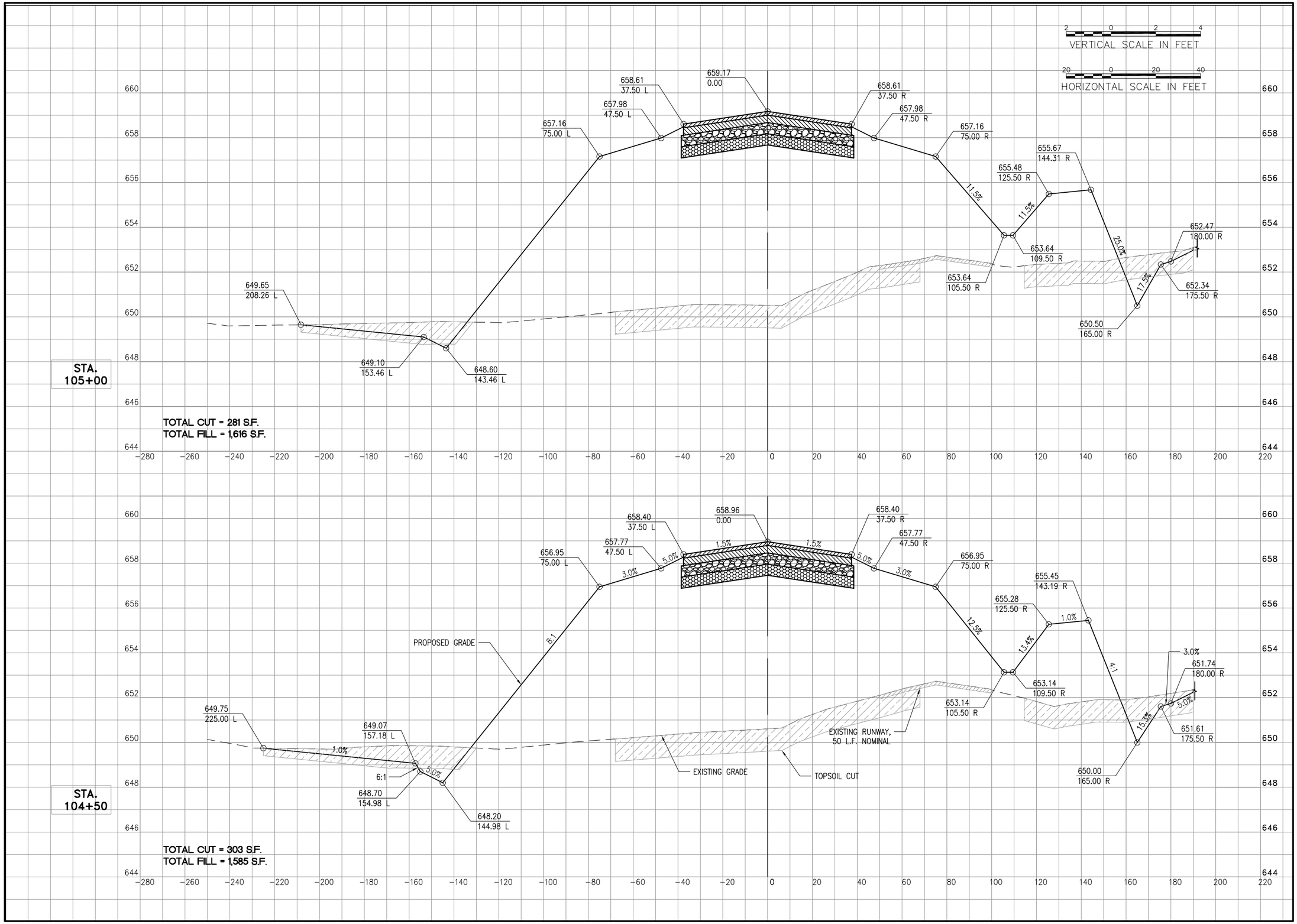

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		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 058- XSECTIONSRWY.DW
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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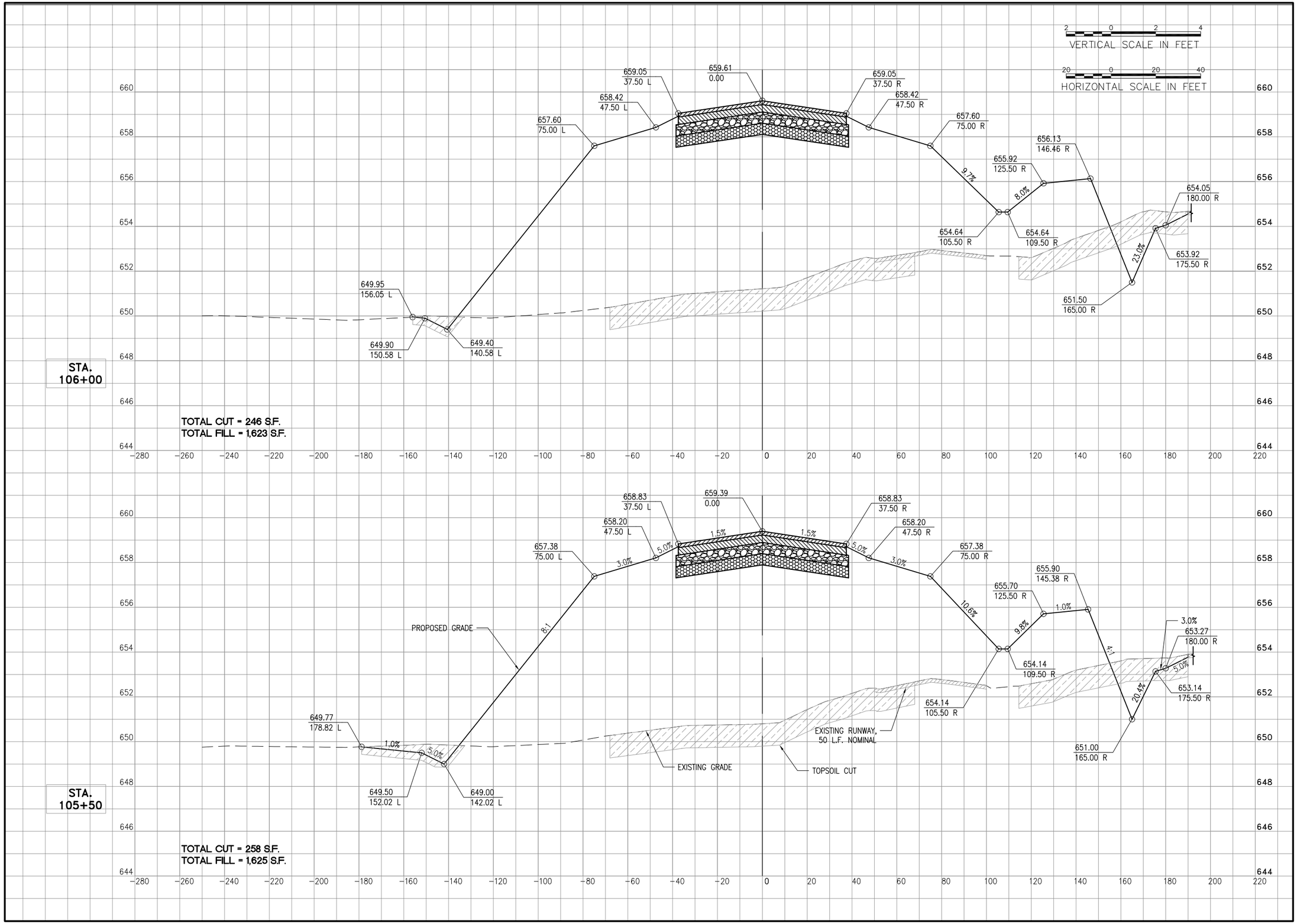

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ISSUE: May 9, 2014
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CAD FILE: 059- XSECTIONSRWY.DW
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SHEET TITLE

CROSS SECTIONS RUNWAY 18-36

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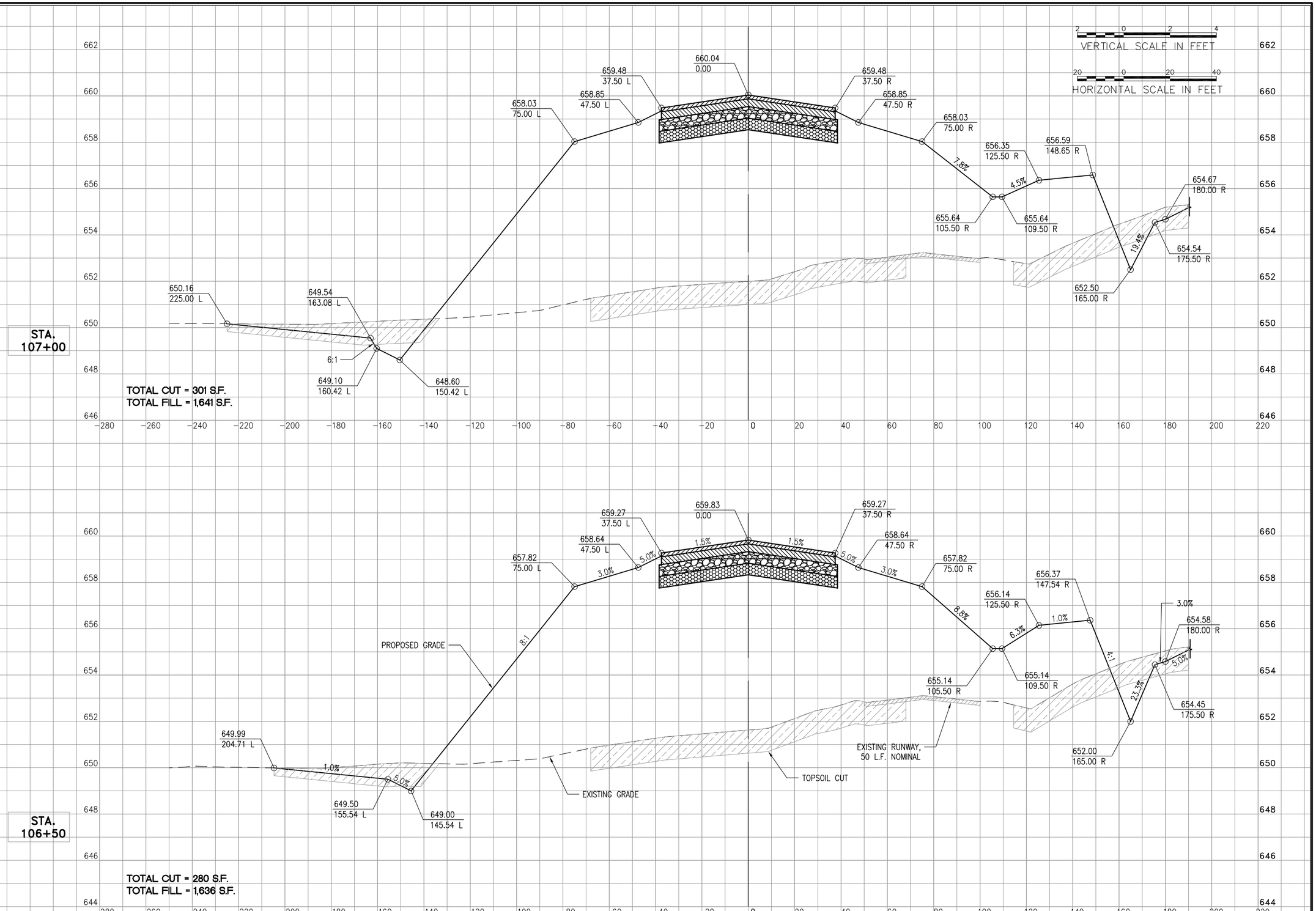

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ISSUE: May 9, 2014
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CAD FILE: 060- XSECTIONSRWY.DW
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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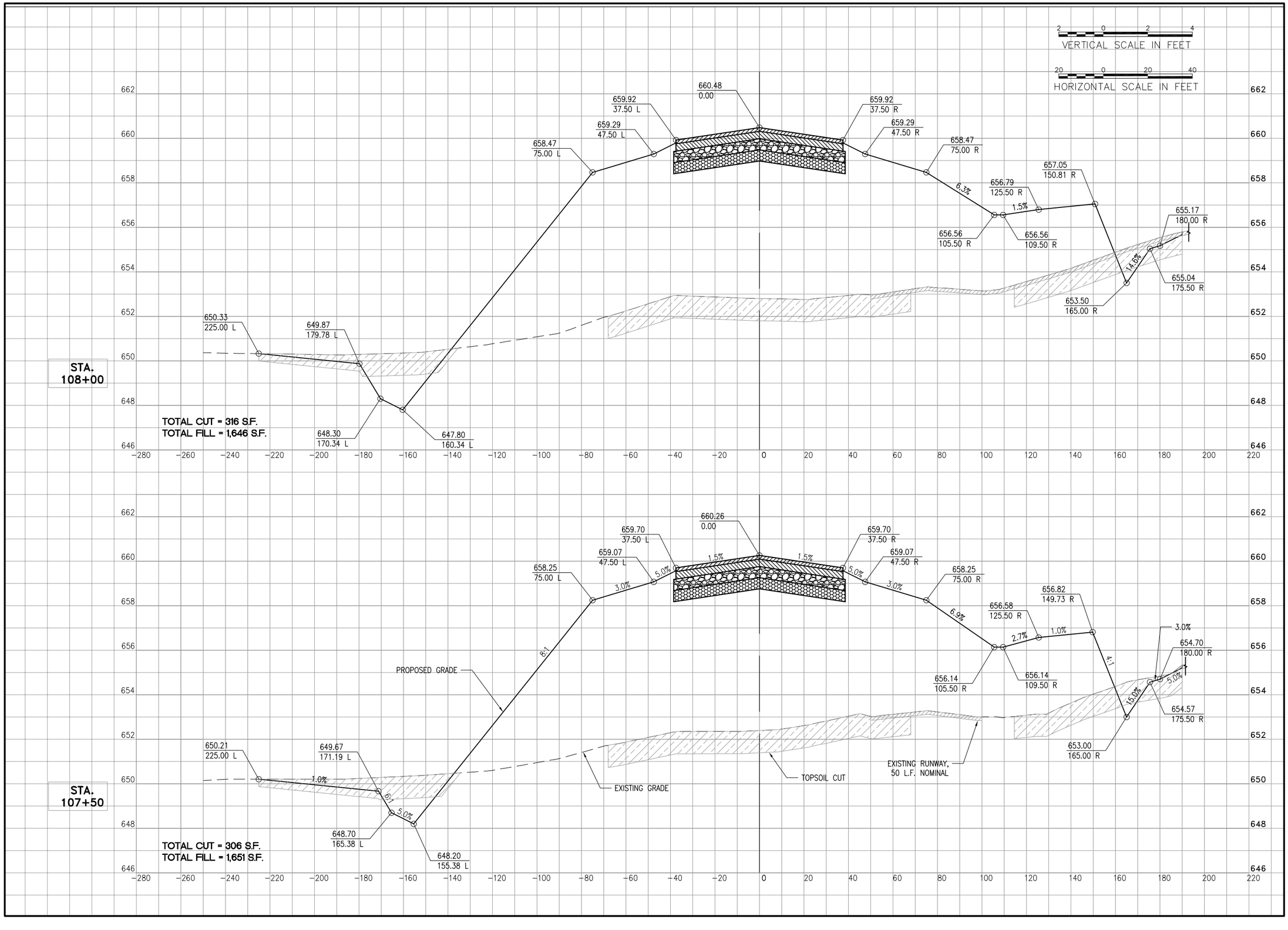

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NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
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CAD FILE: 061- XSECTIONSRWY.DW
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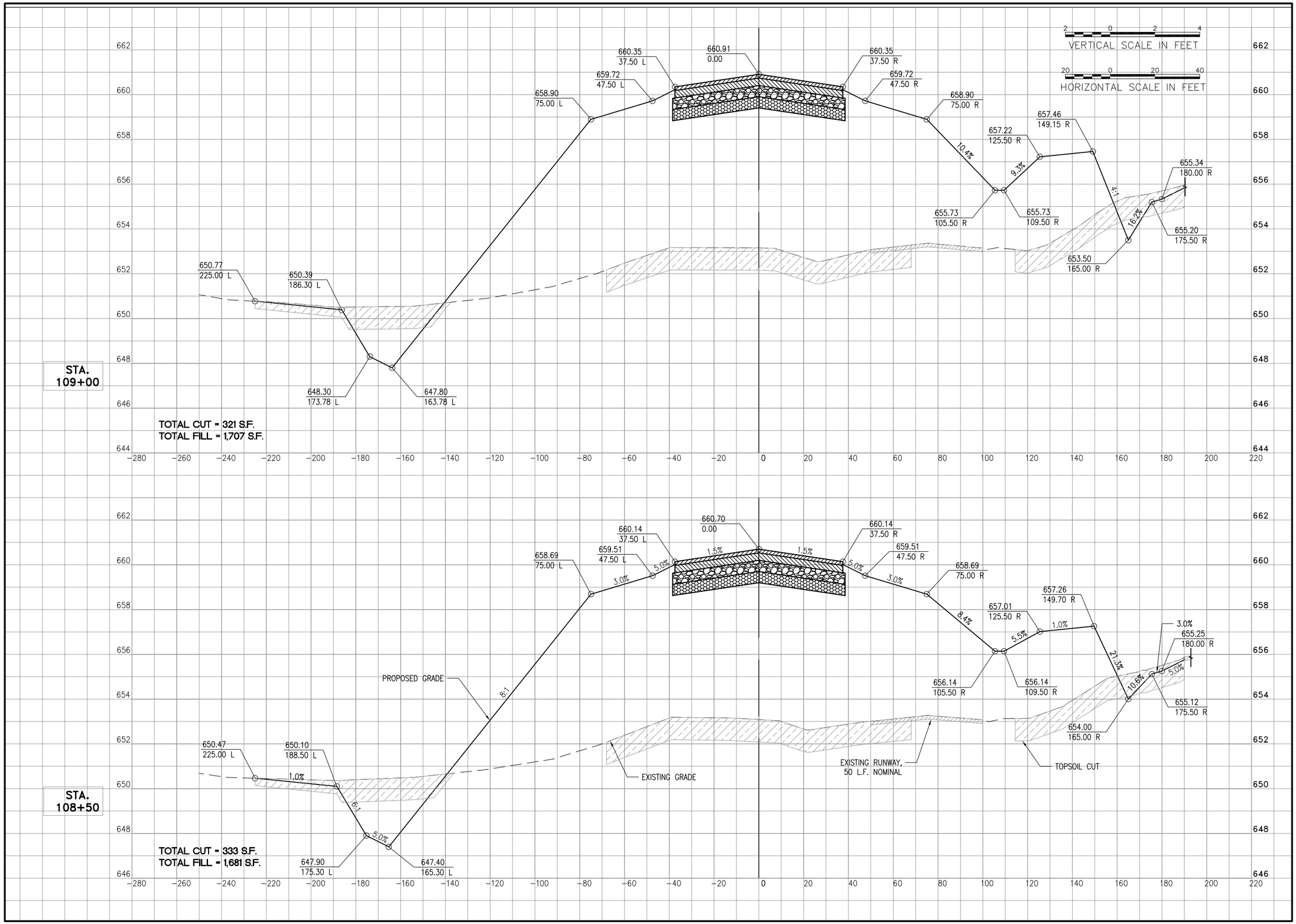
SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36



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NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 062- XSECTIONSRWY.DW
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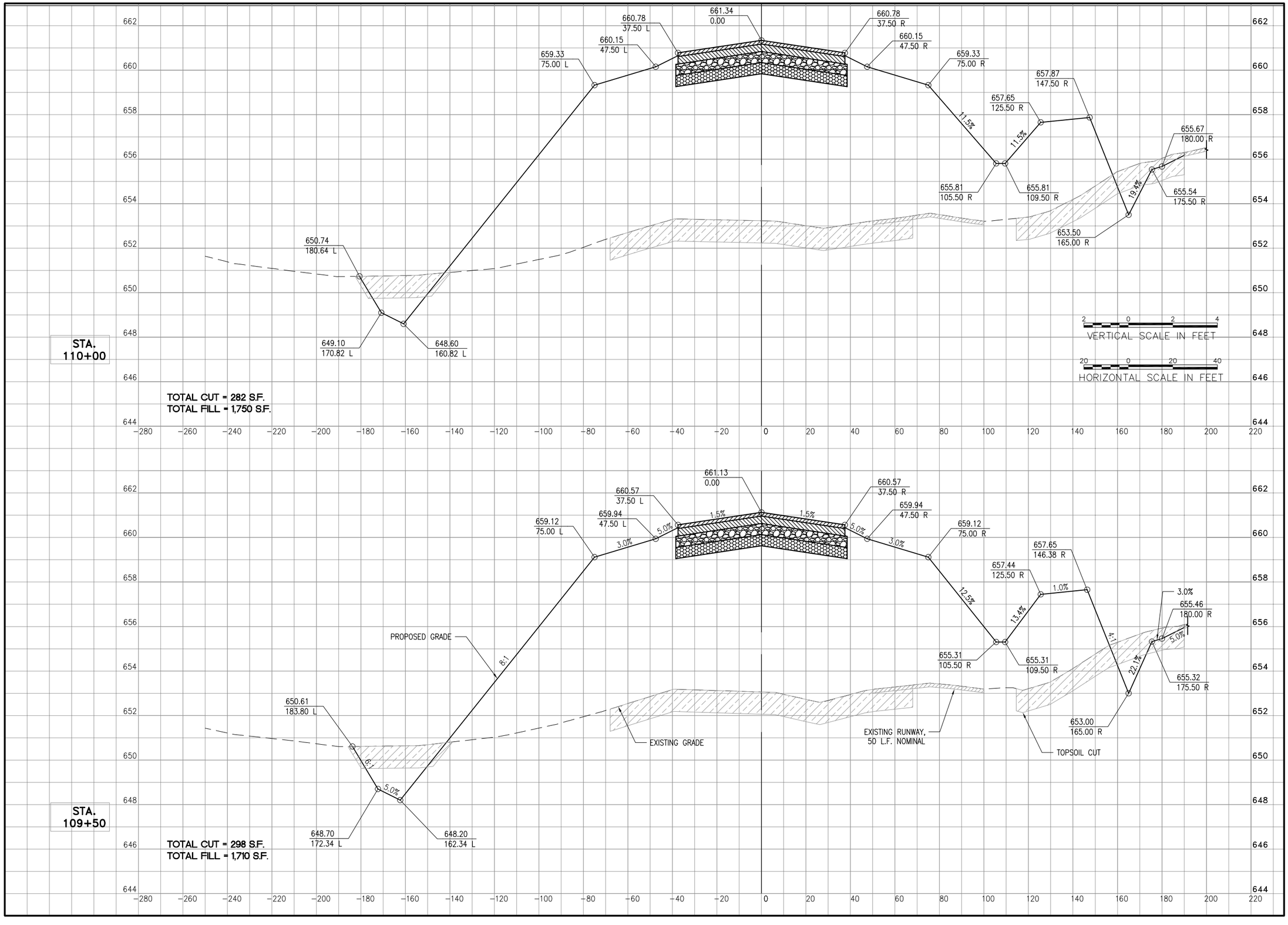
SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36



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SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 063- XSECTIONSRWY.DW
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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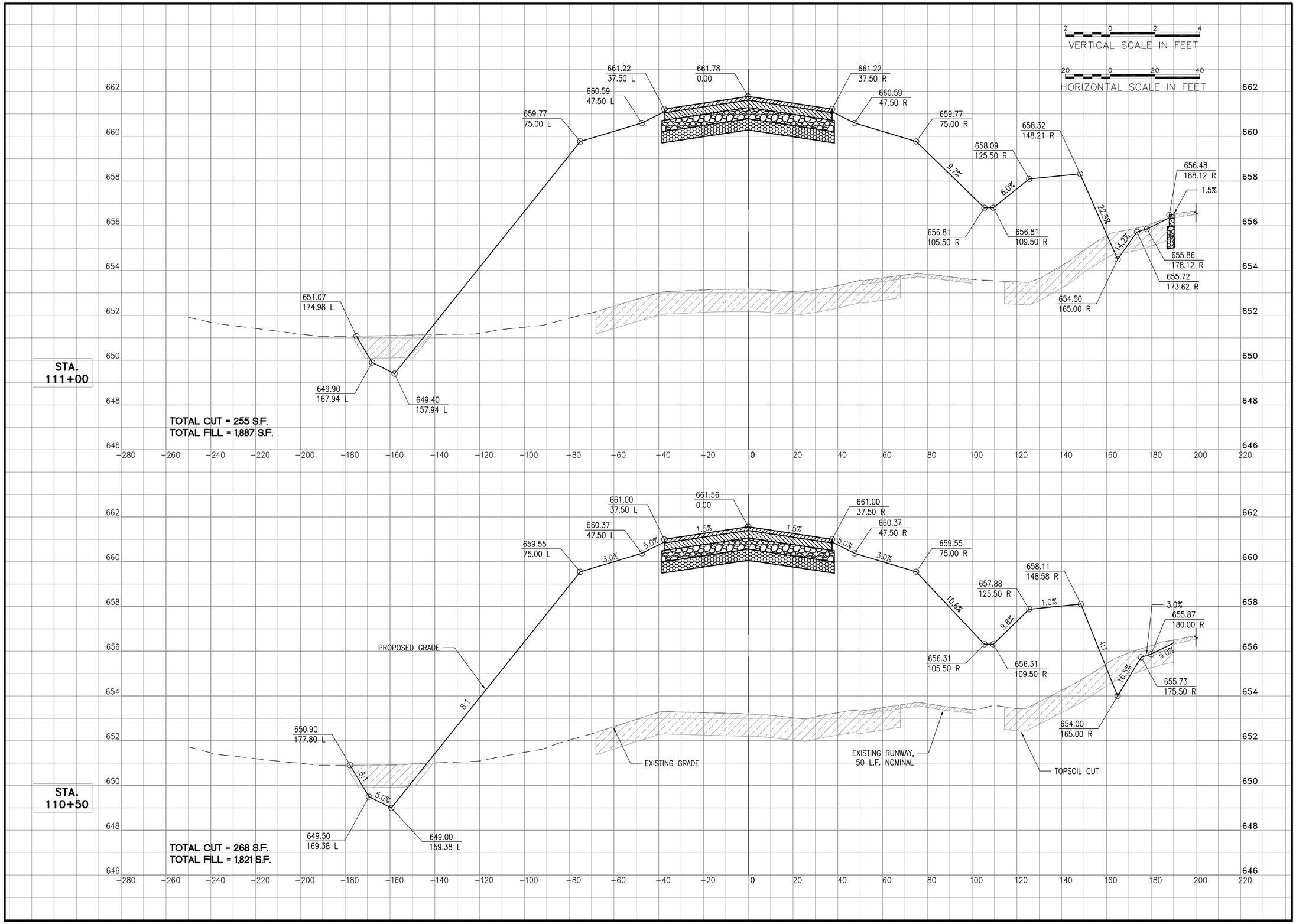

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			LAY	DWN	REV

ISSUE: May 9, 2014
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CAD FILE: 064- XSECTIONSRWY.DW
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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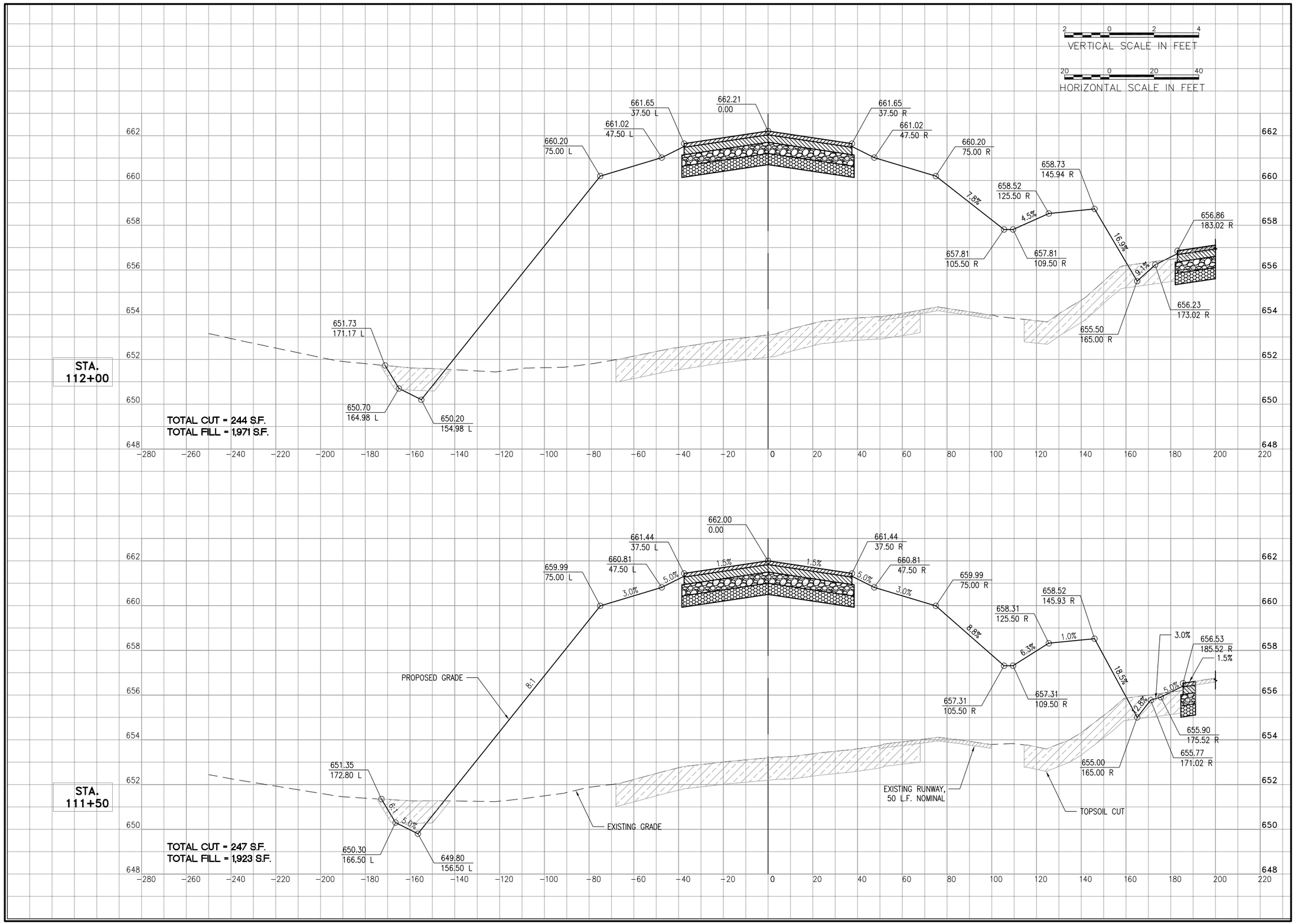

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		LAY	DWN	REV

ISSUE: May 9, 2014
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LAYOUT BY: LDH 3/6/14
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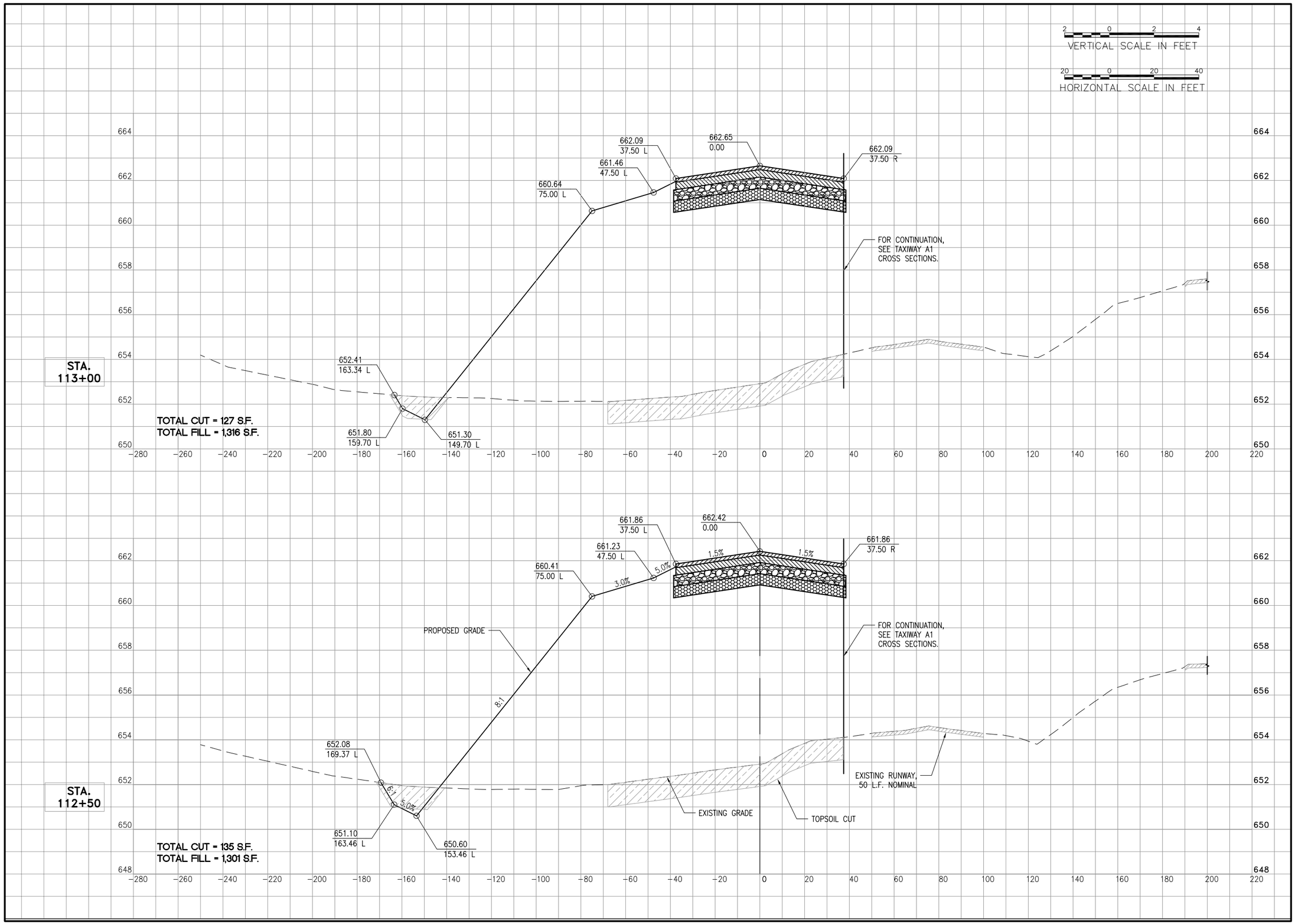
SHEET TITLE

CROSS SECTIONS RUNWAY 18-36



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SHEET TITLE

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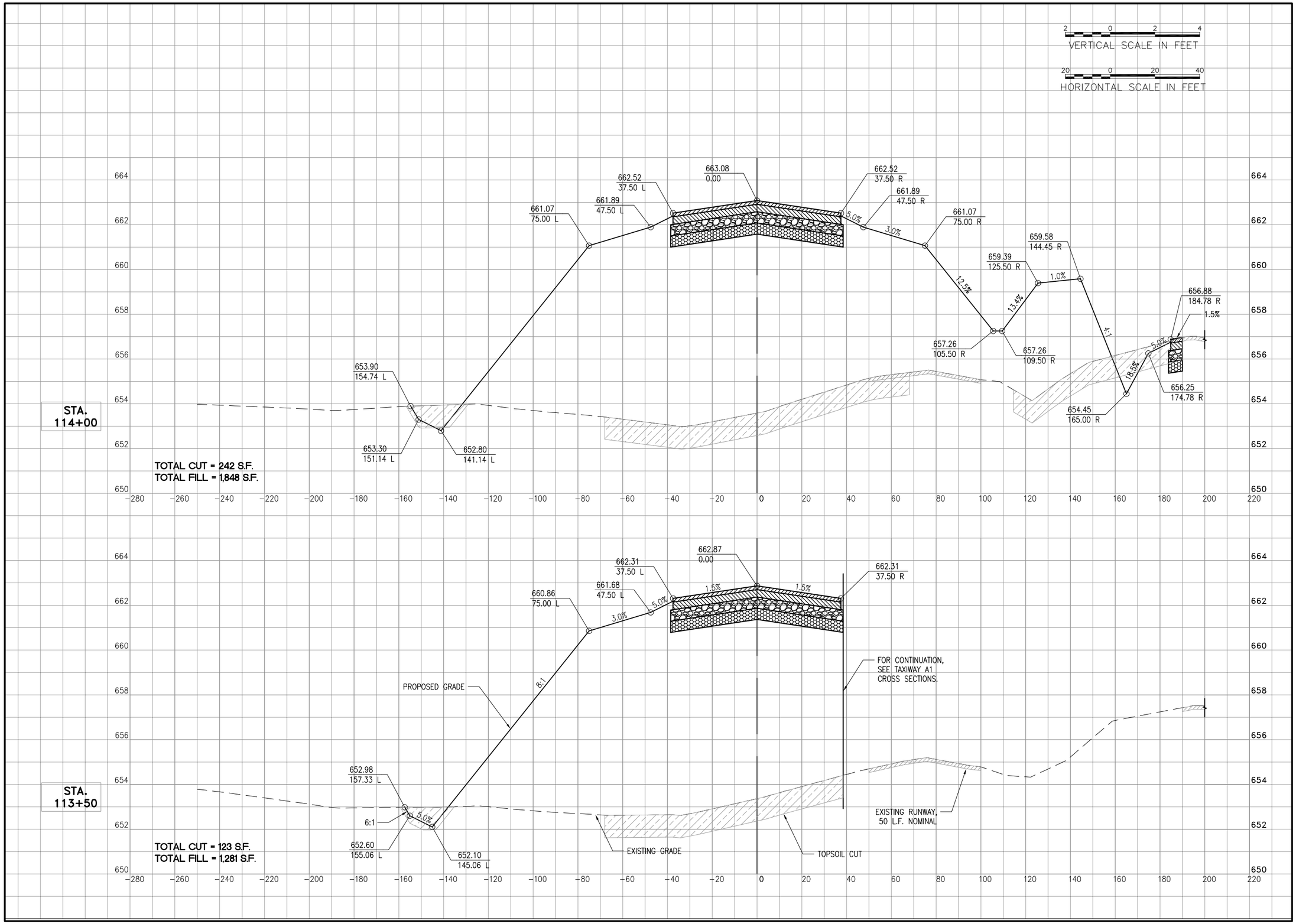

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RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 067- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

MAY 08, 2014 1:29 PM SPITZ01394
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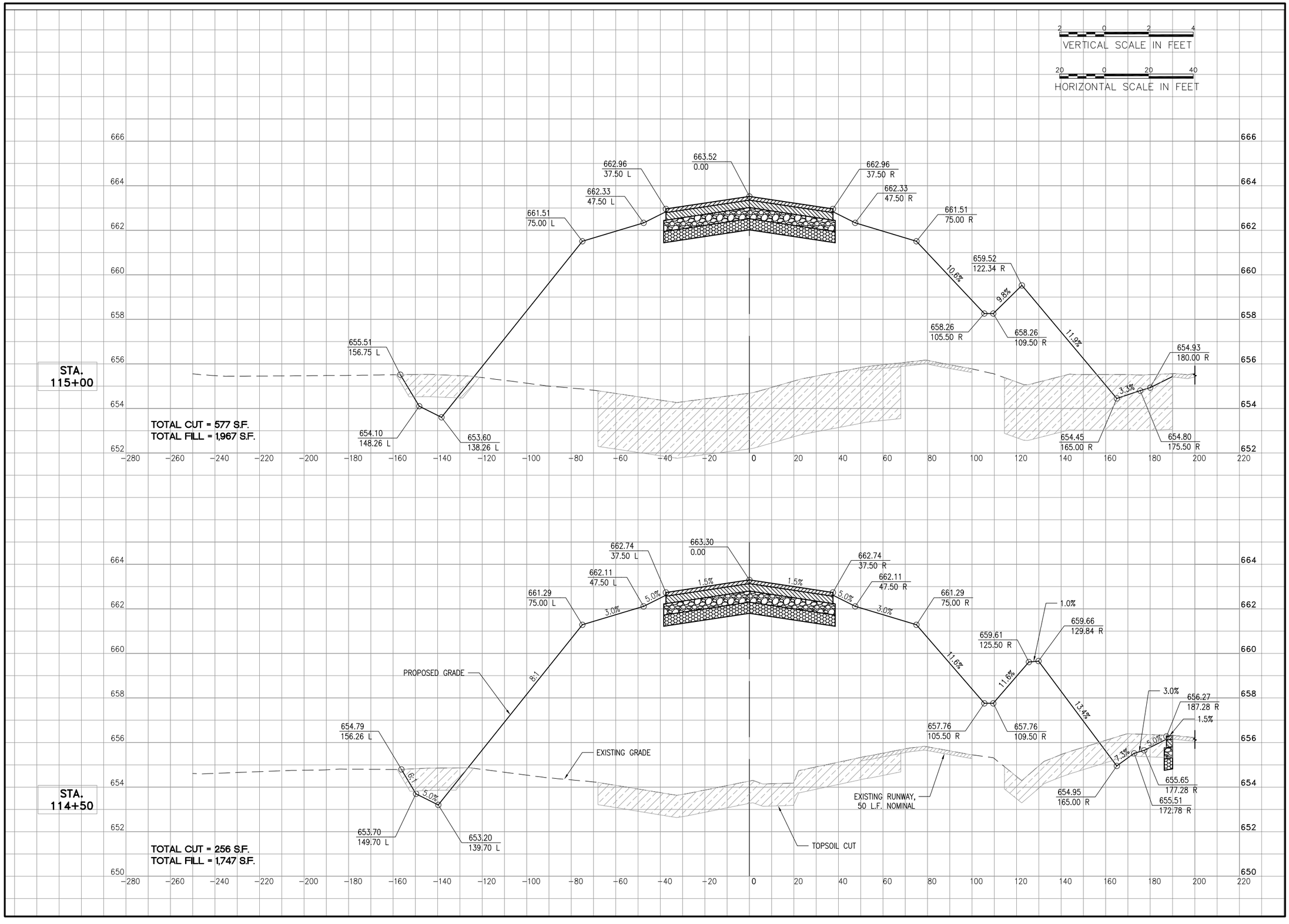

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IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 068- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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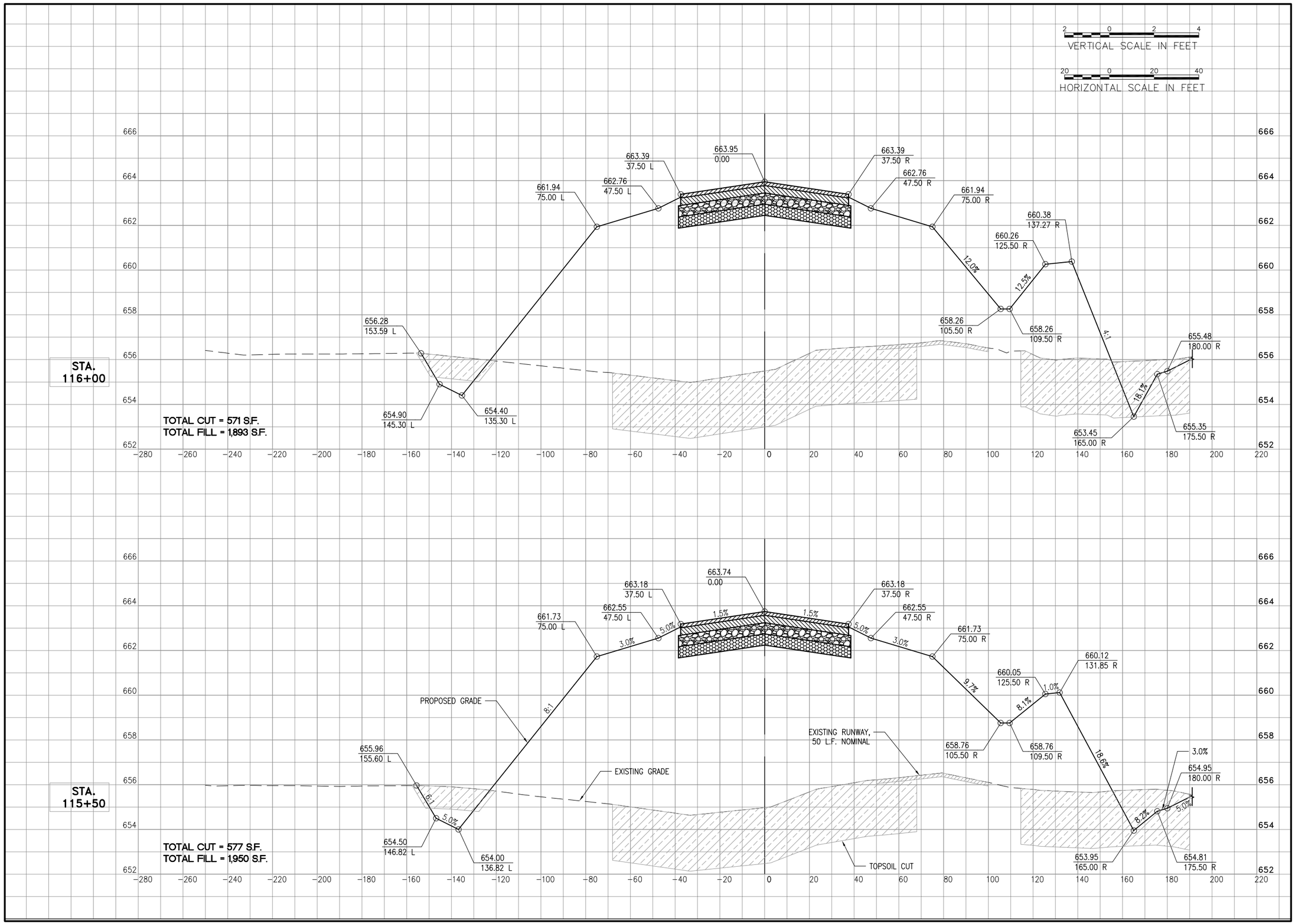

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IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 069- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

MAY 08, 2014 1:31 PM SPITZ01394
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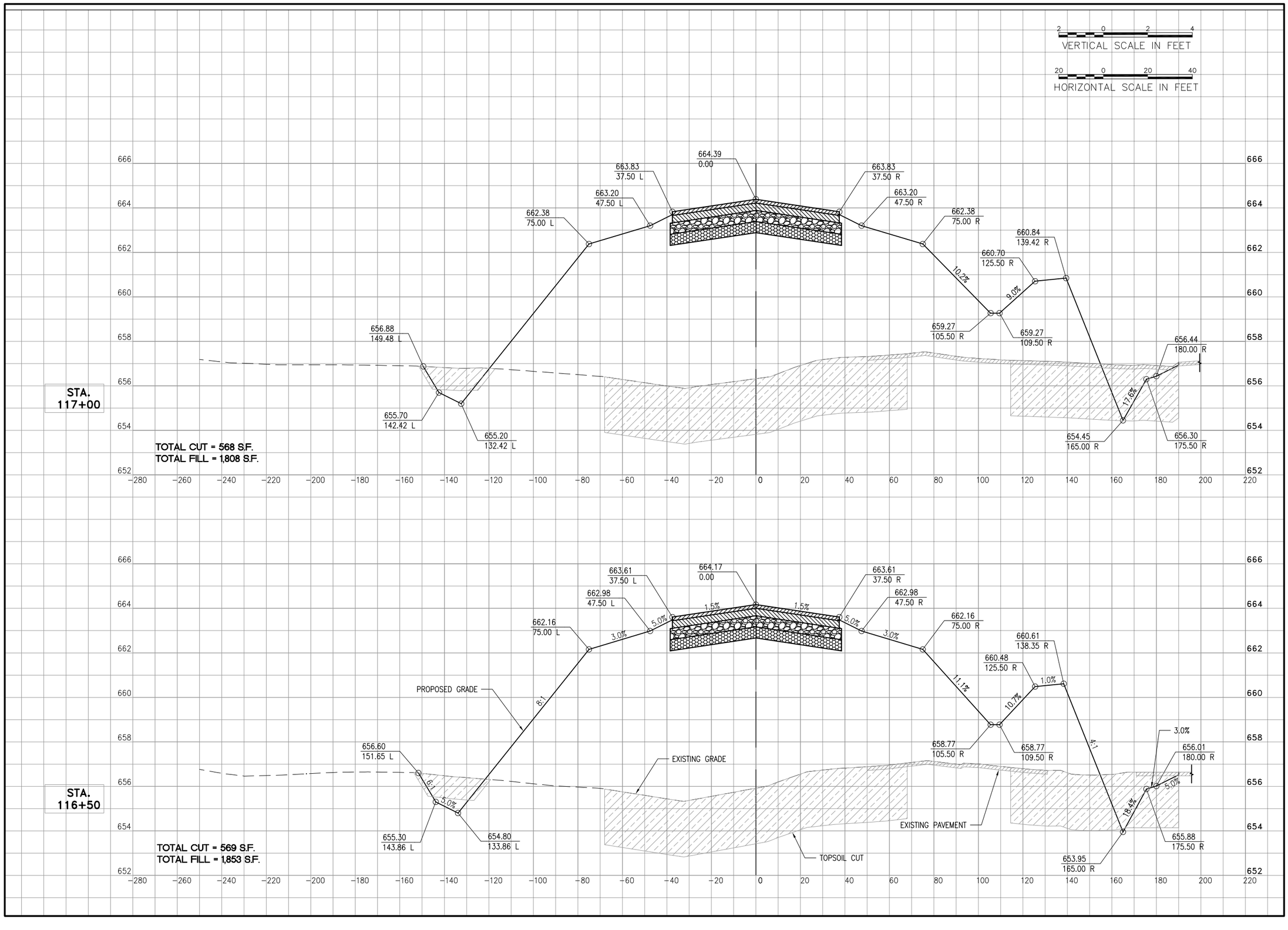

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SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 070- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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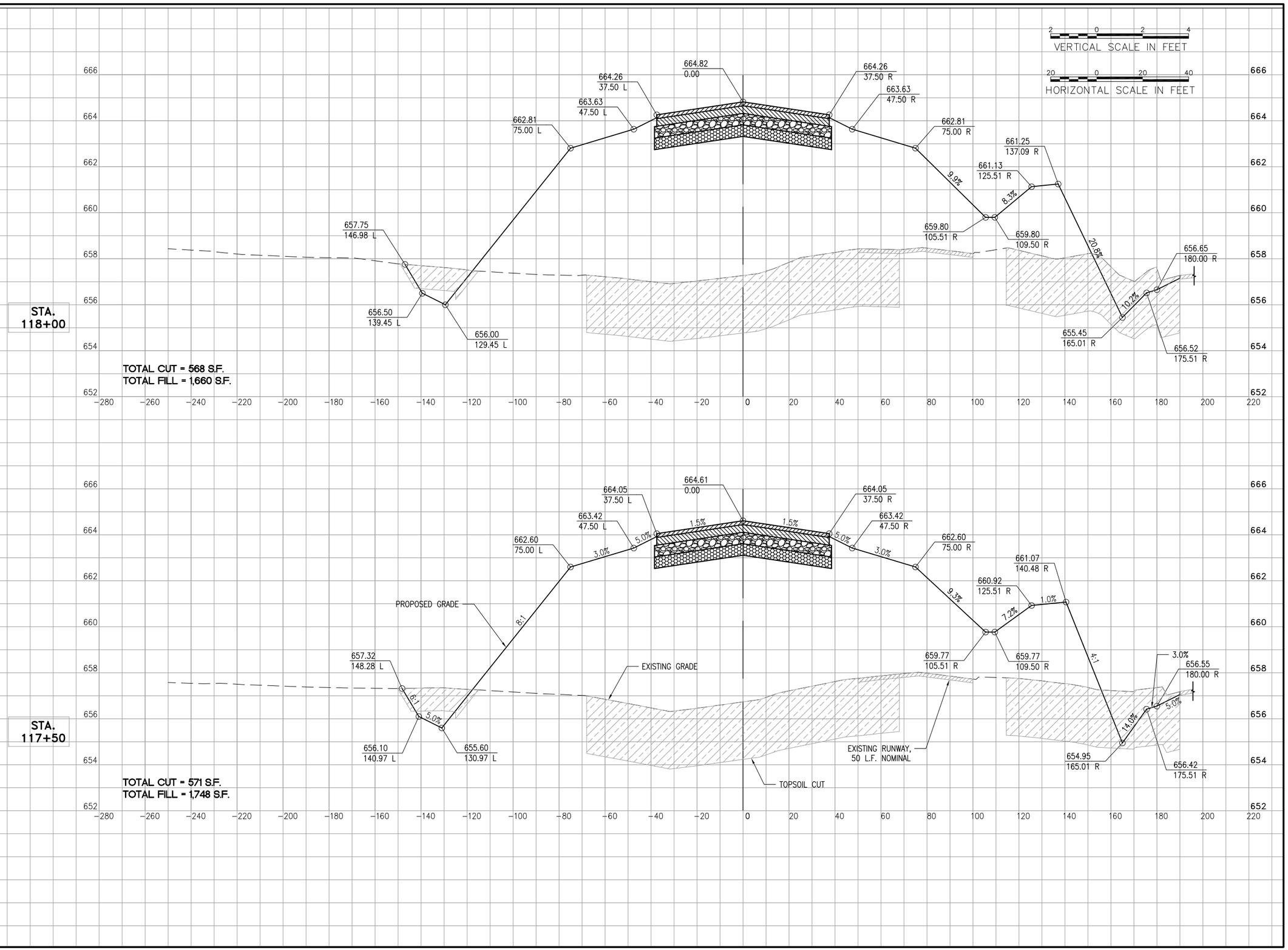

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SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 071- XSECTIONSRWY.DW
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SHEET TITLE

CROSS SECTIONS RUNWAY 18-36

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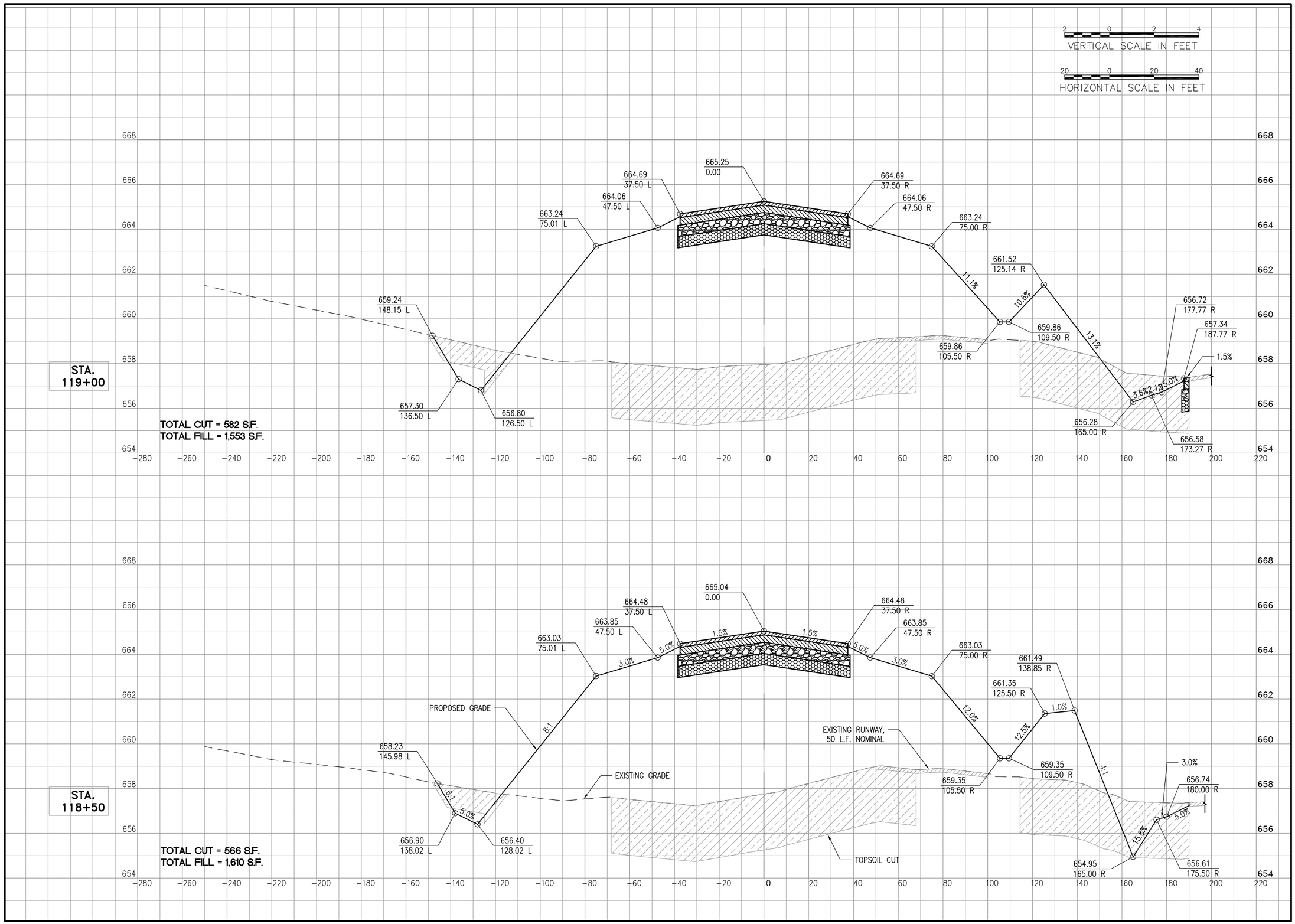

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SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 072- XSECTIONSRWY.DW
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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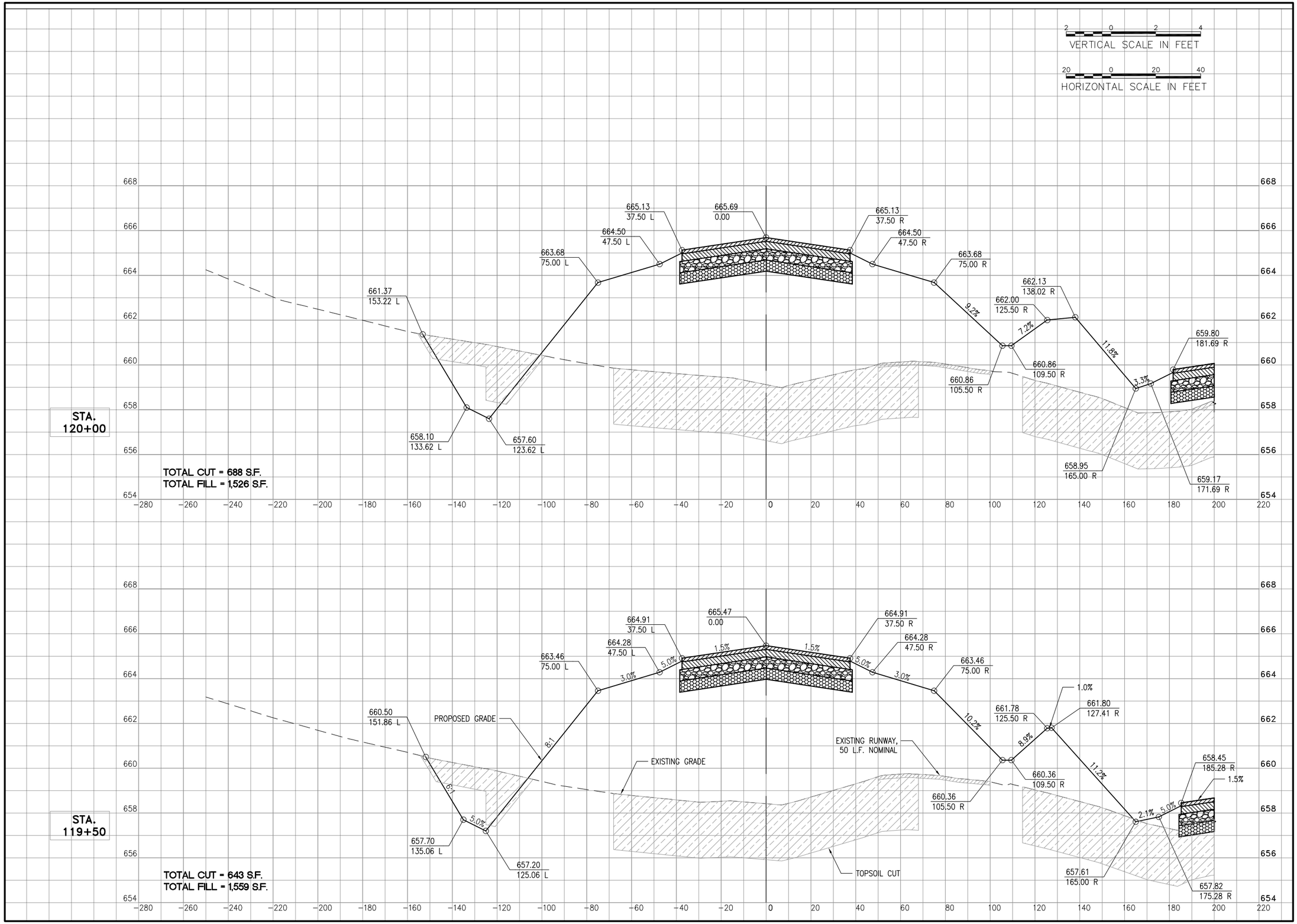

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NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 073- XSECTIONSRWY.DW
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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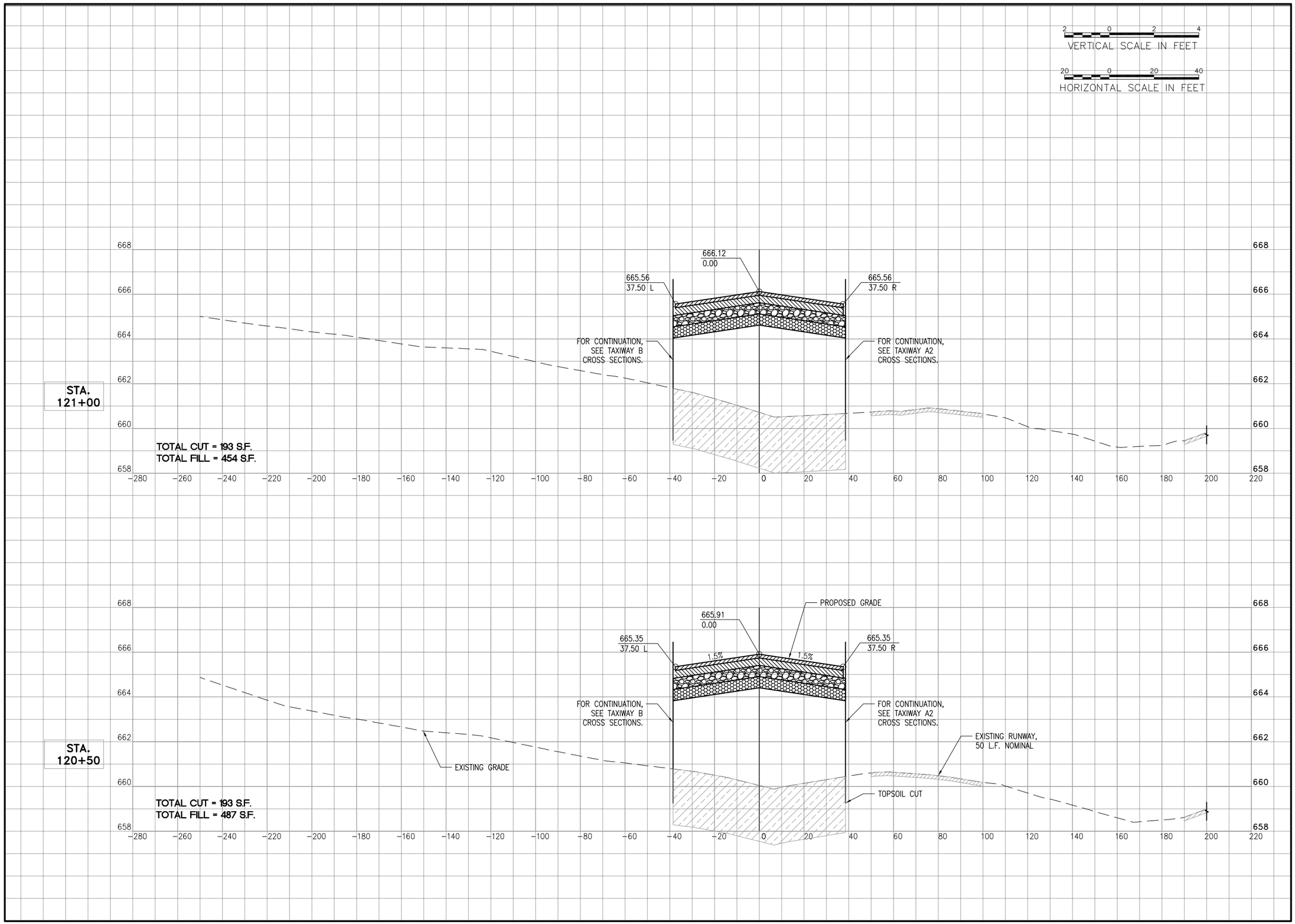

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			LAY	DWN	REV

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PROJECT NO: 14A0002
CAD FILE: 074- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
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SHEET TITLE

CROSS SECTIONS
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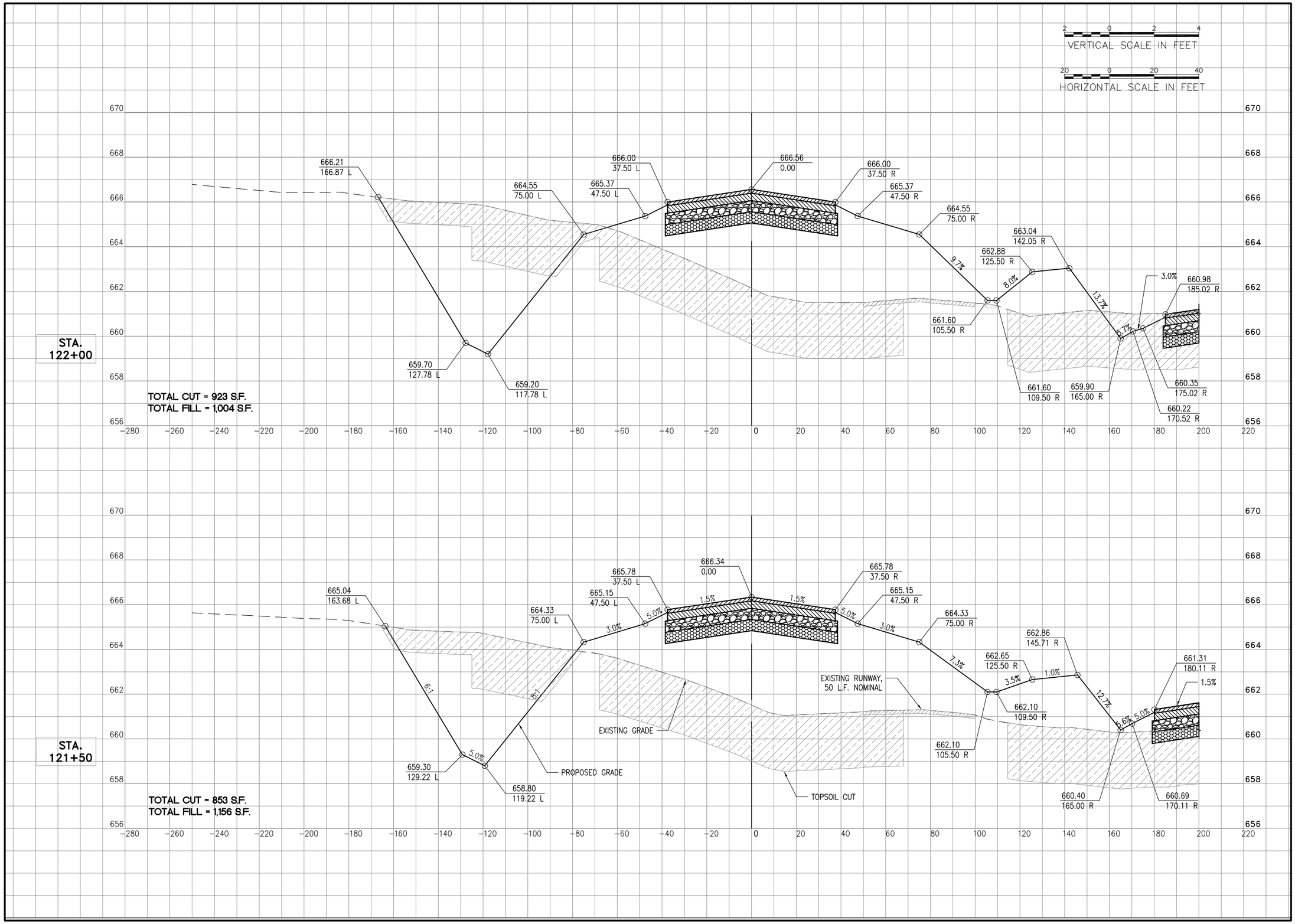

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NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

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PROJECT NO: 14A0002
CAD FILE: 075- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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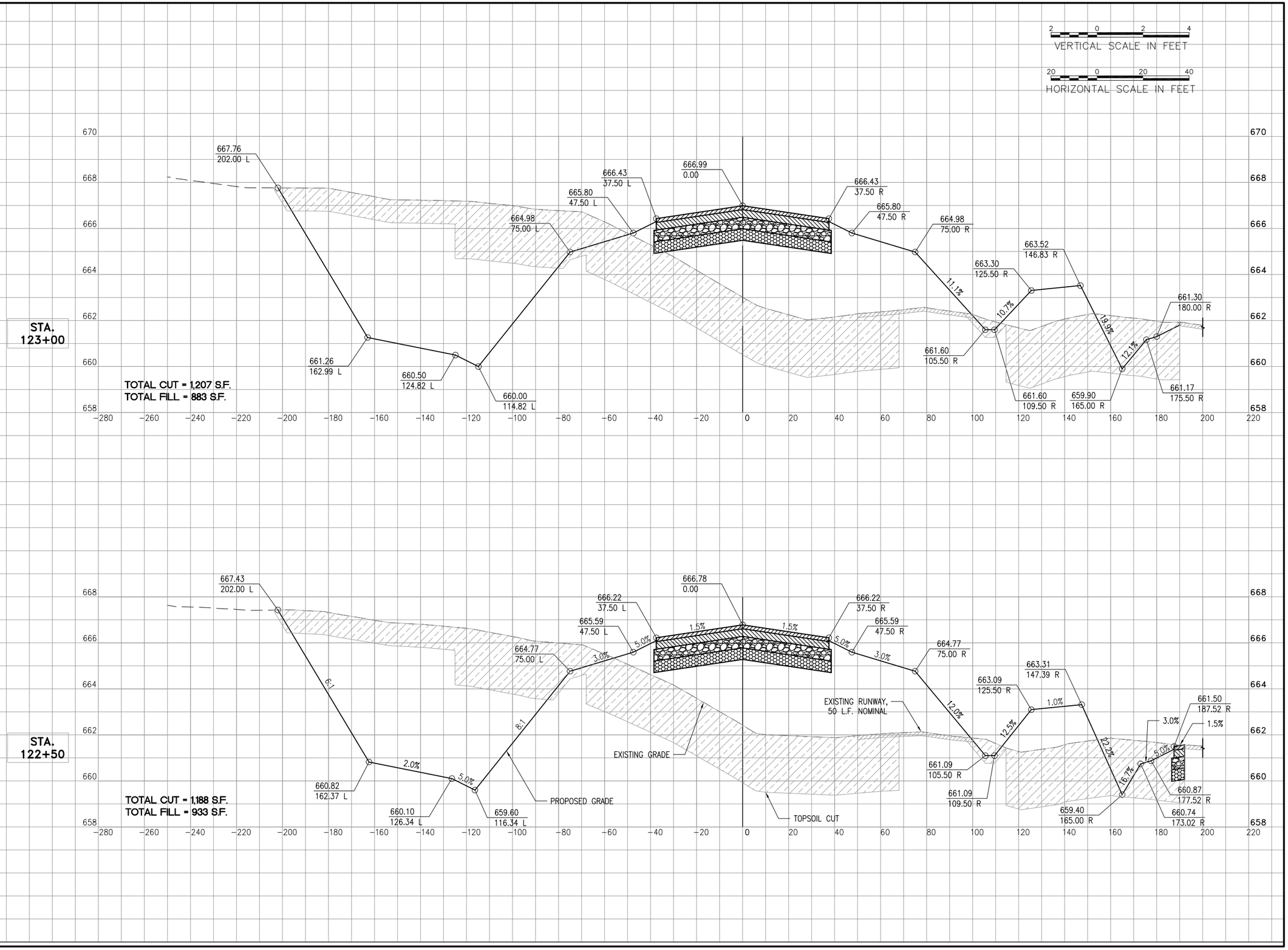

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NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 076- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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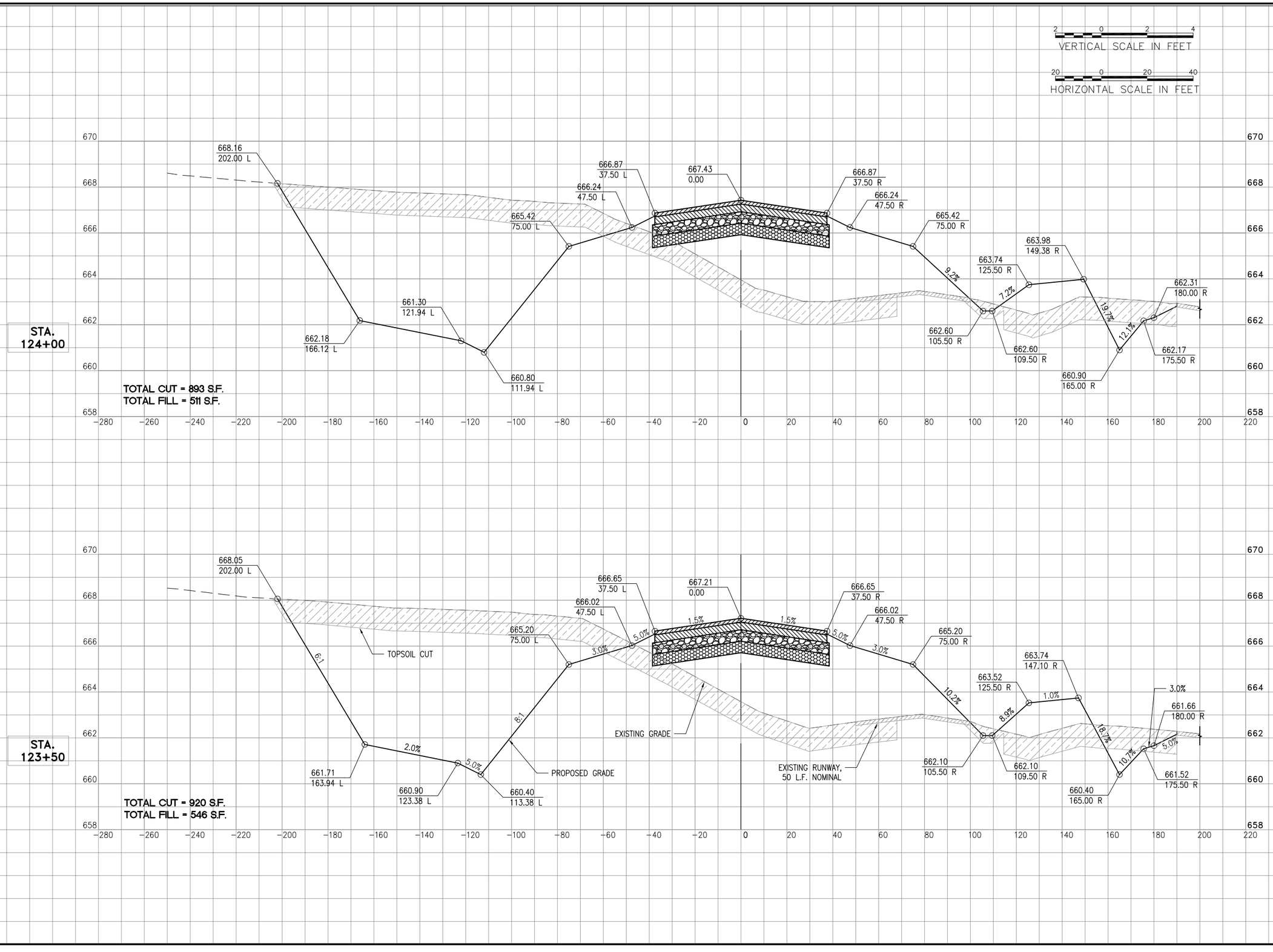

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NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 077- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
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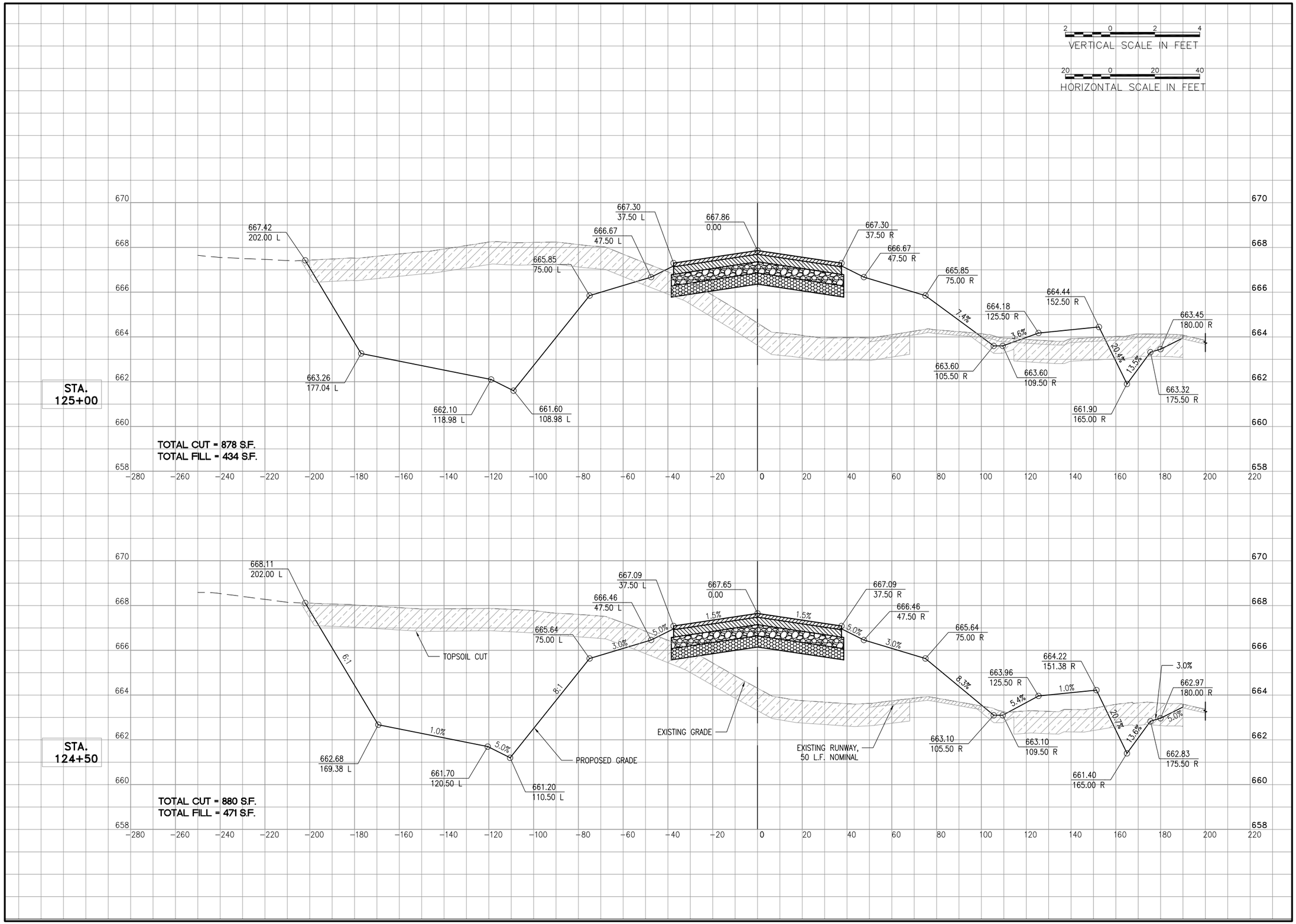
SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36



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SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 078- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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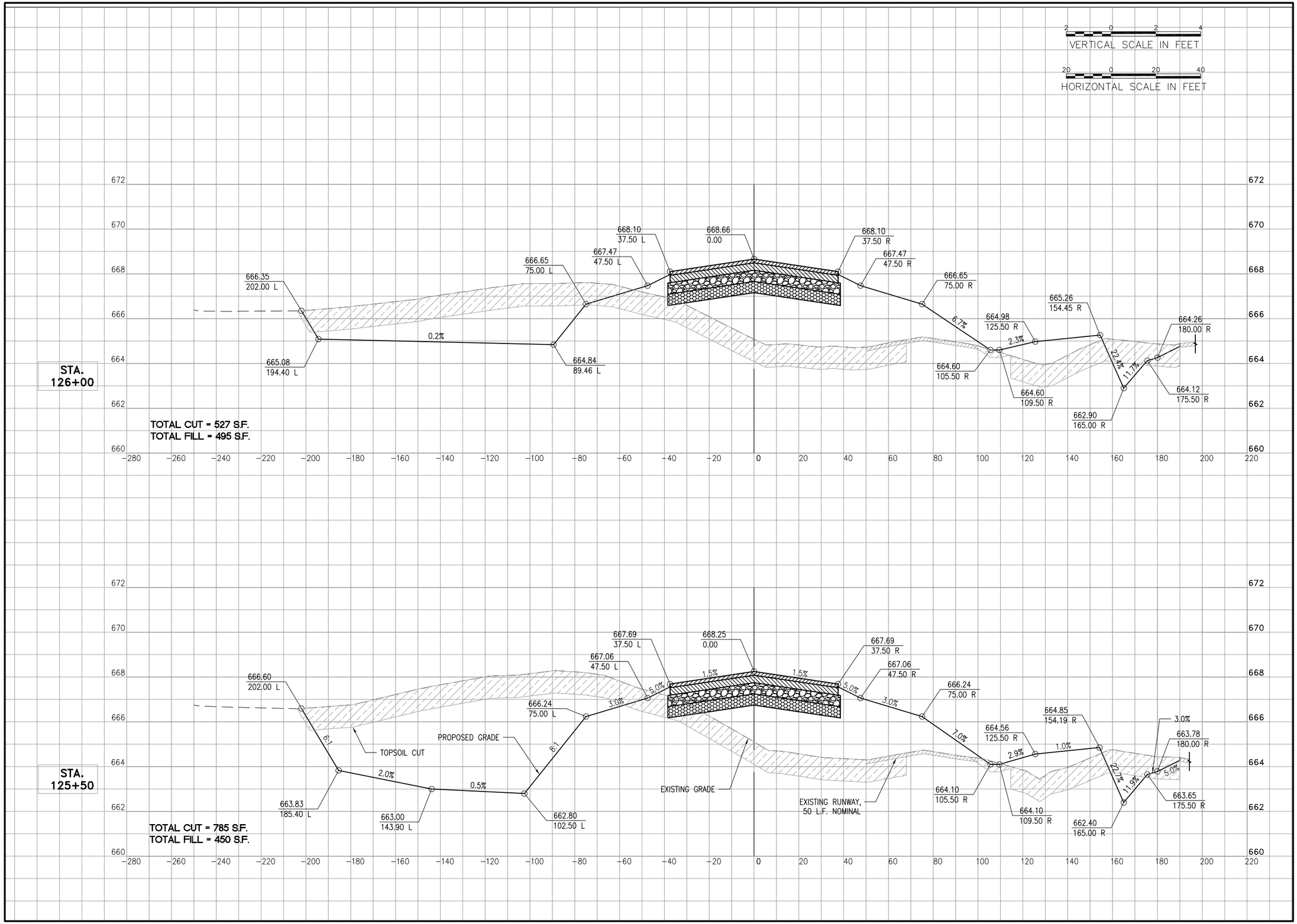

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SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 079- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
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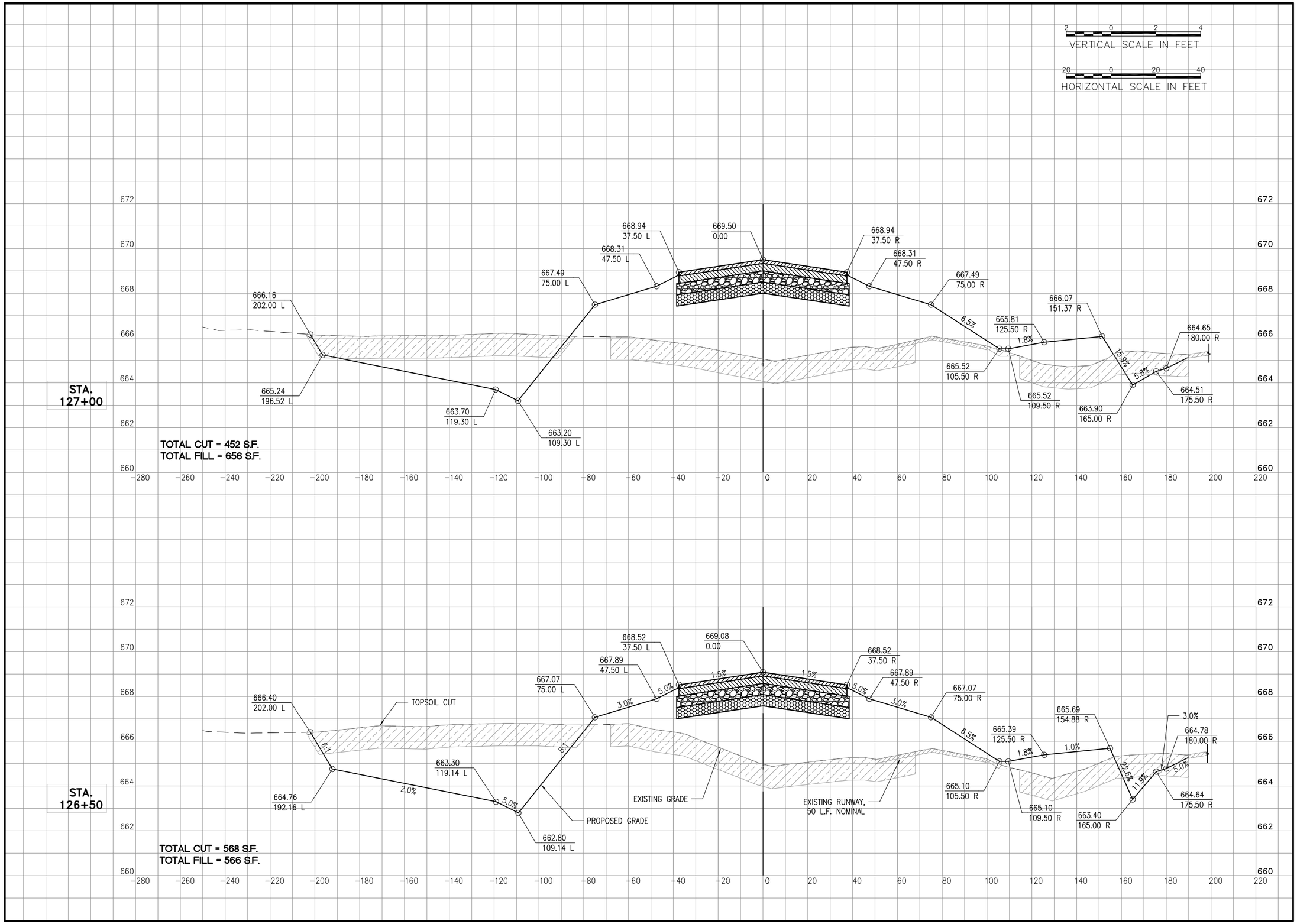
SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36



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SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 080- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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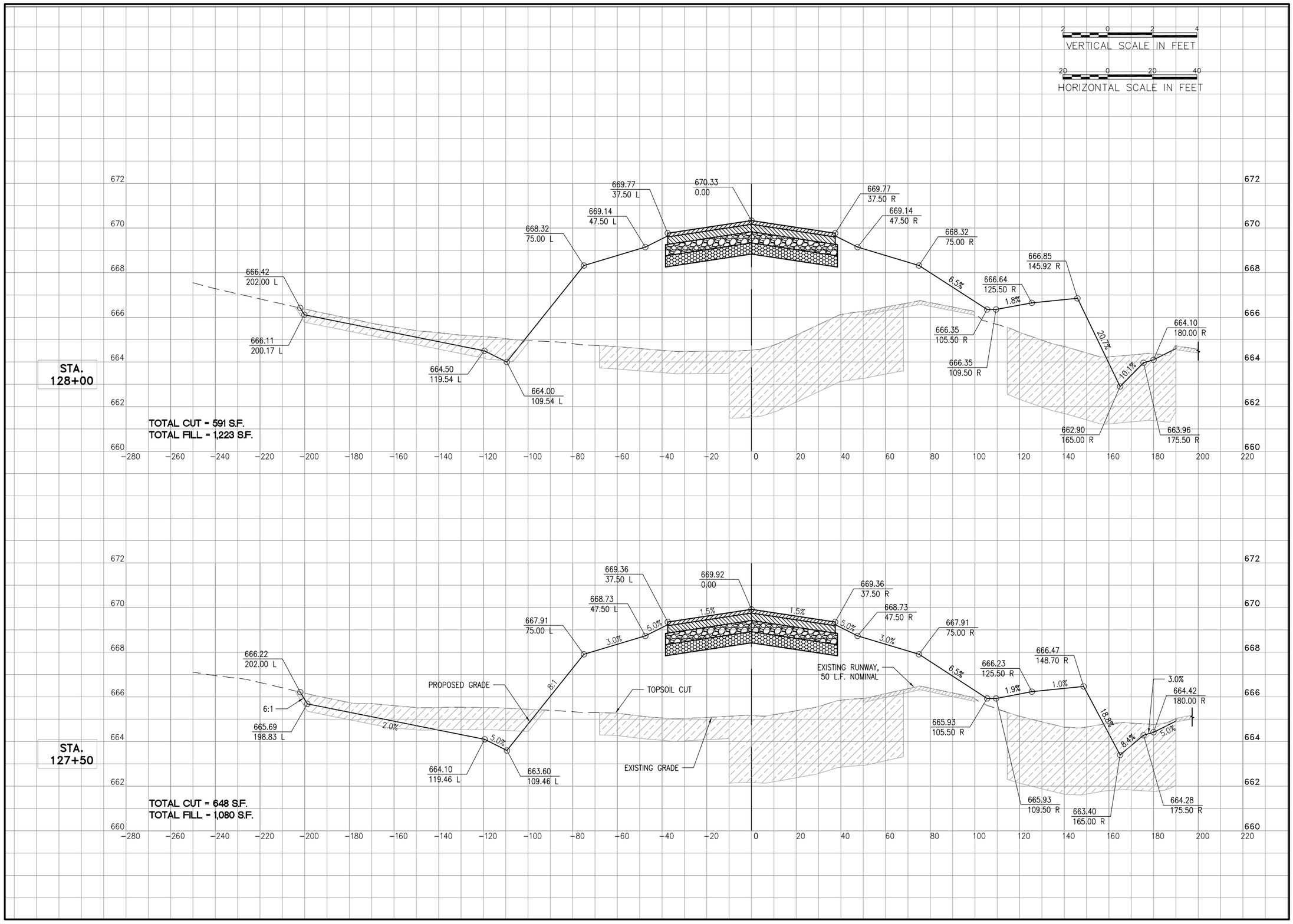

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SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 081- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
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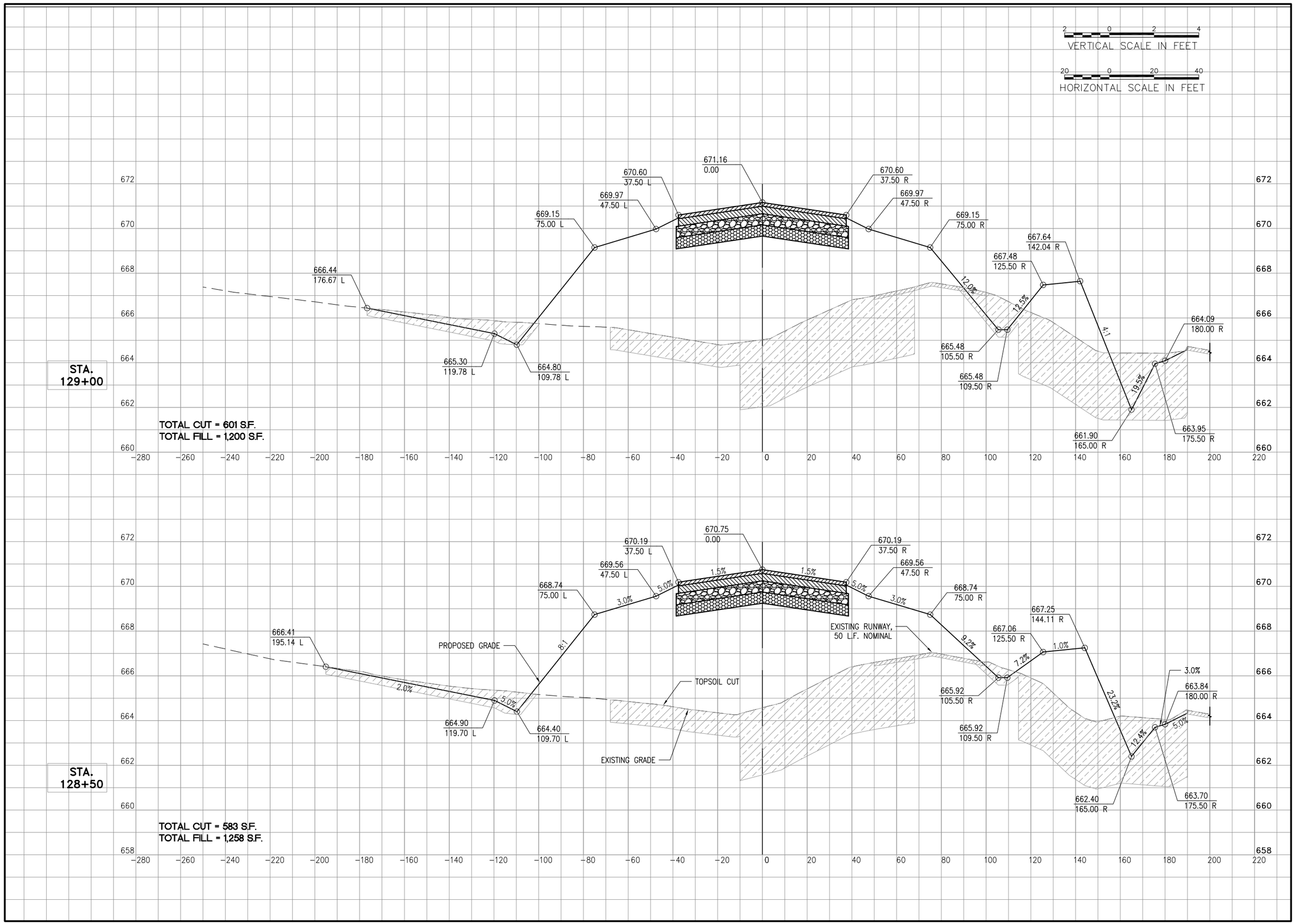
SHEET TITLE

CROSS SECTIONS RUNWAY 18-36



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SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 082- XSECTIONSRWY.DW
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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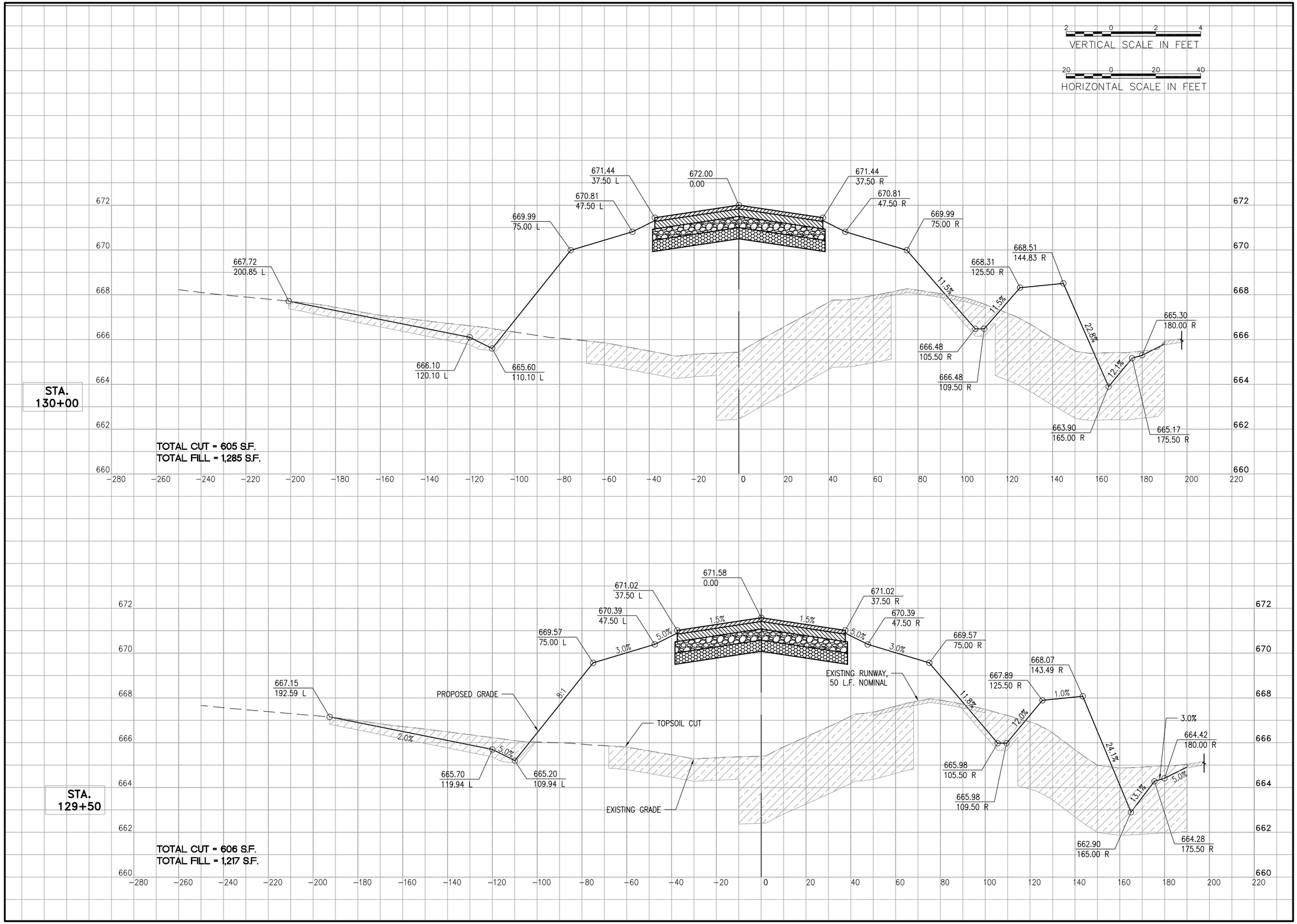

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SBG No: 3-17-SBGP-TBD

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NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

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CAD FILE: 083- XSECTIONSRWY.DW
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SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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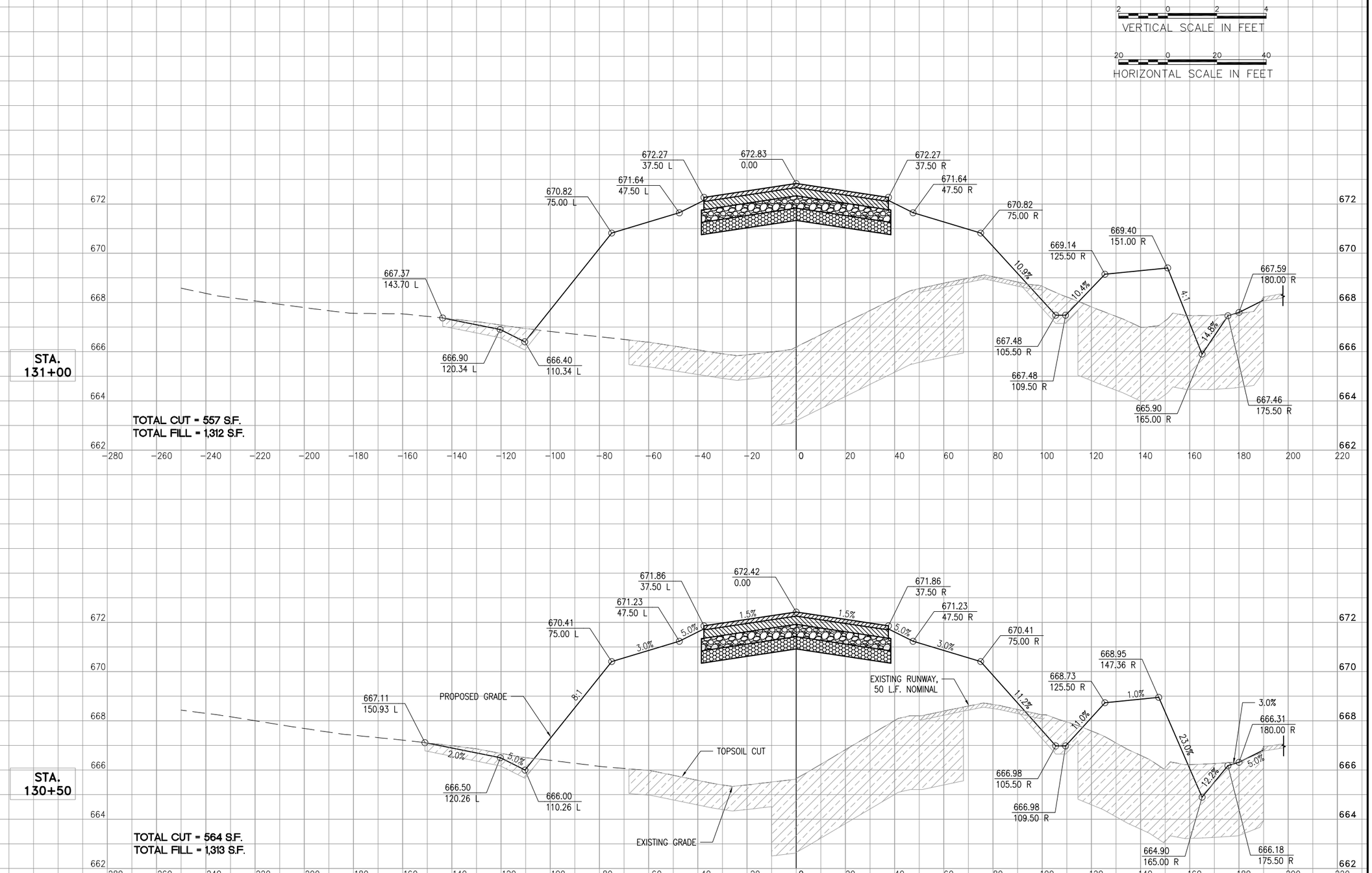

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 084- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

MAY 08, 2014 1:49 PM SPITZ01394
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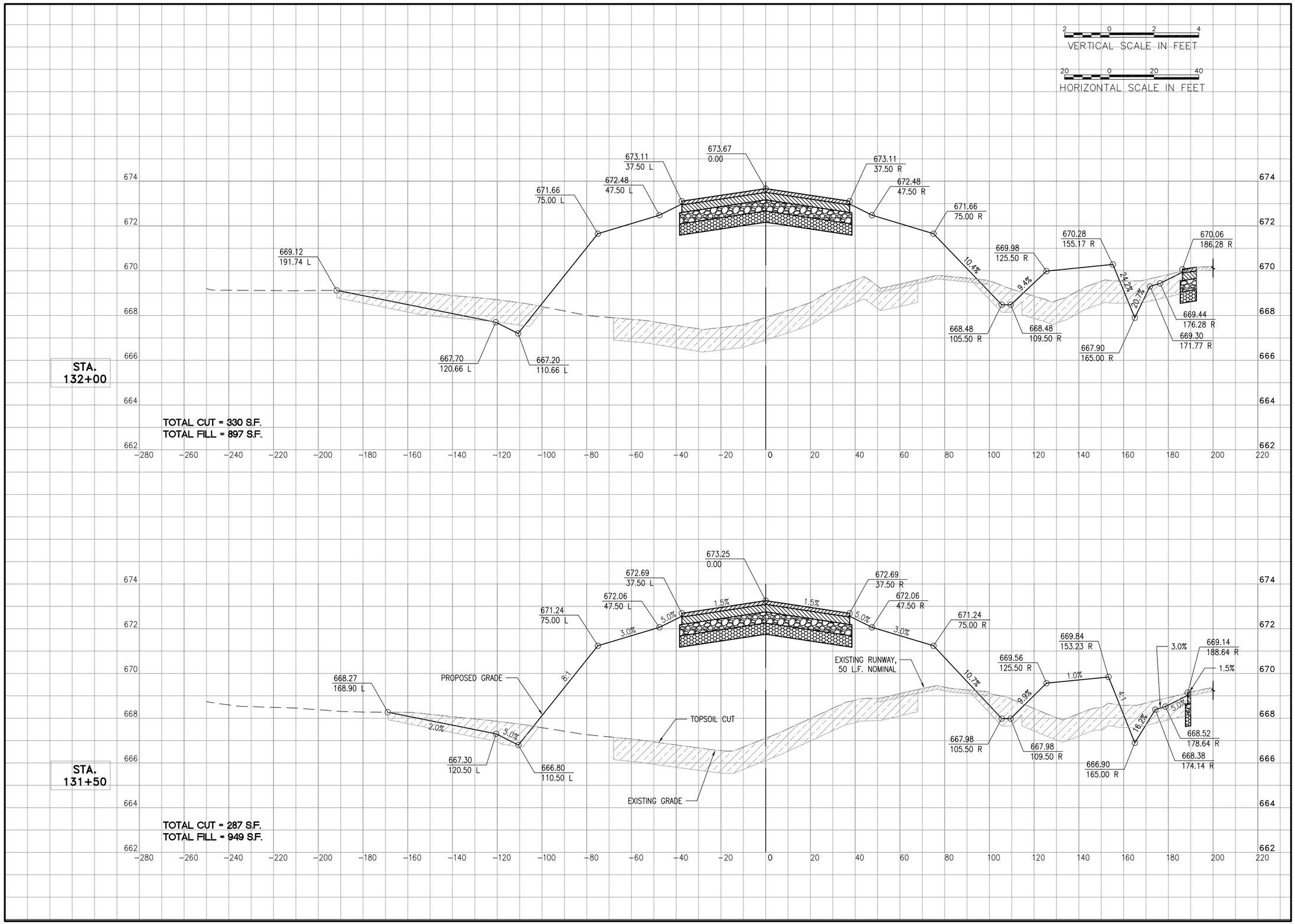

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 085- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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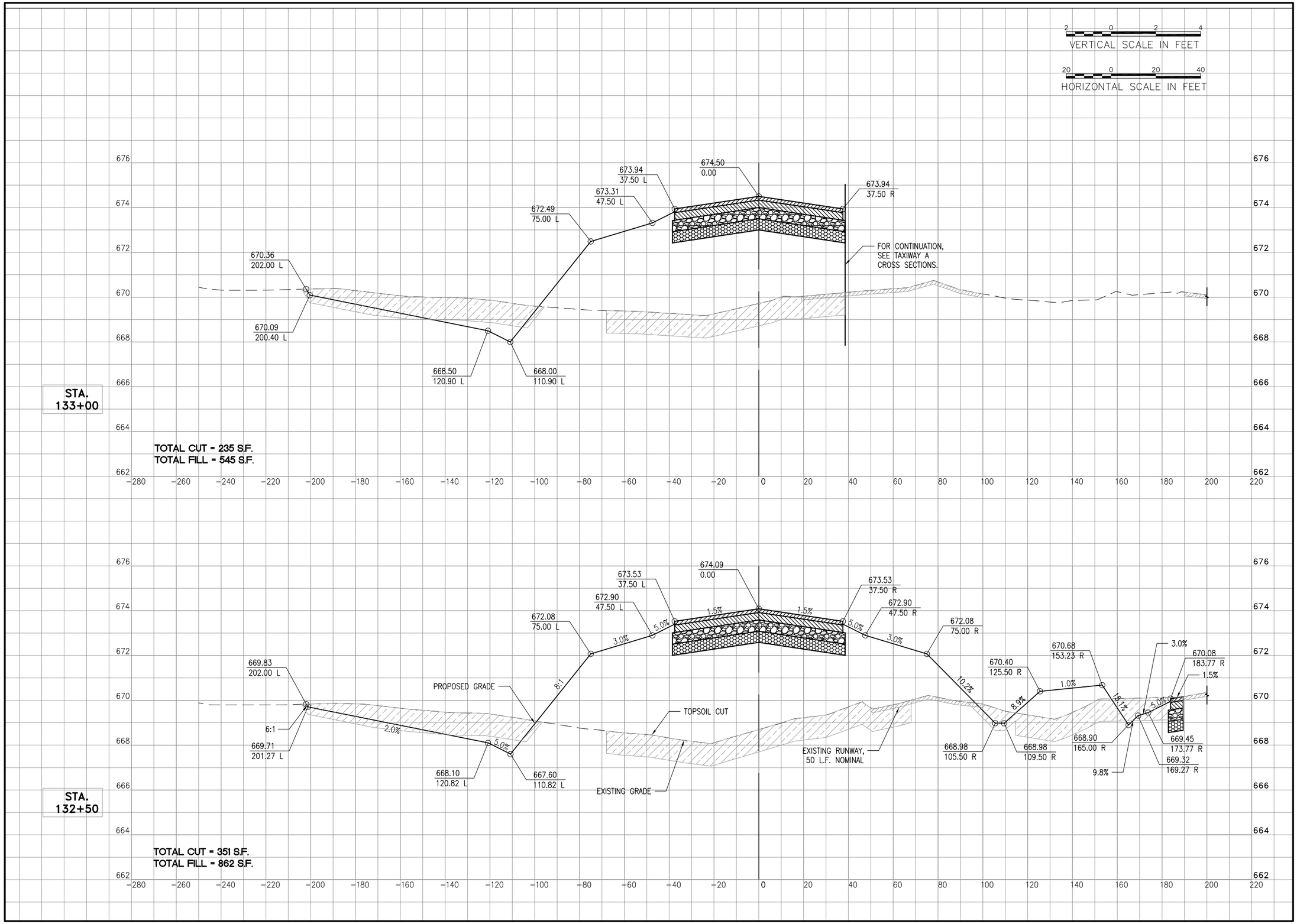

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

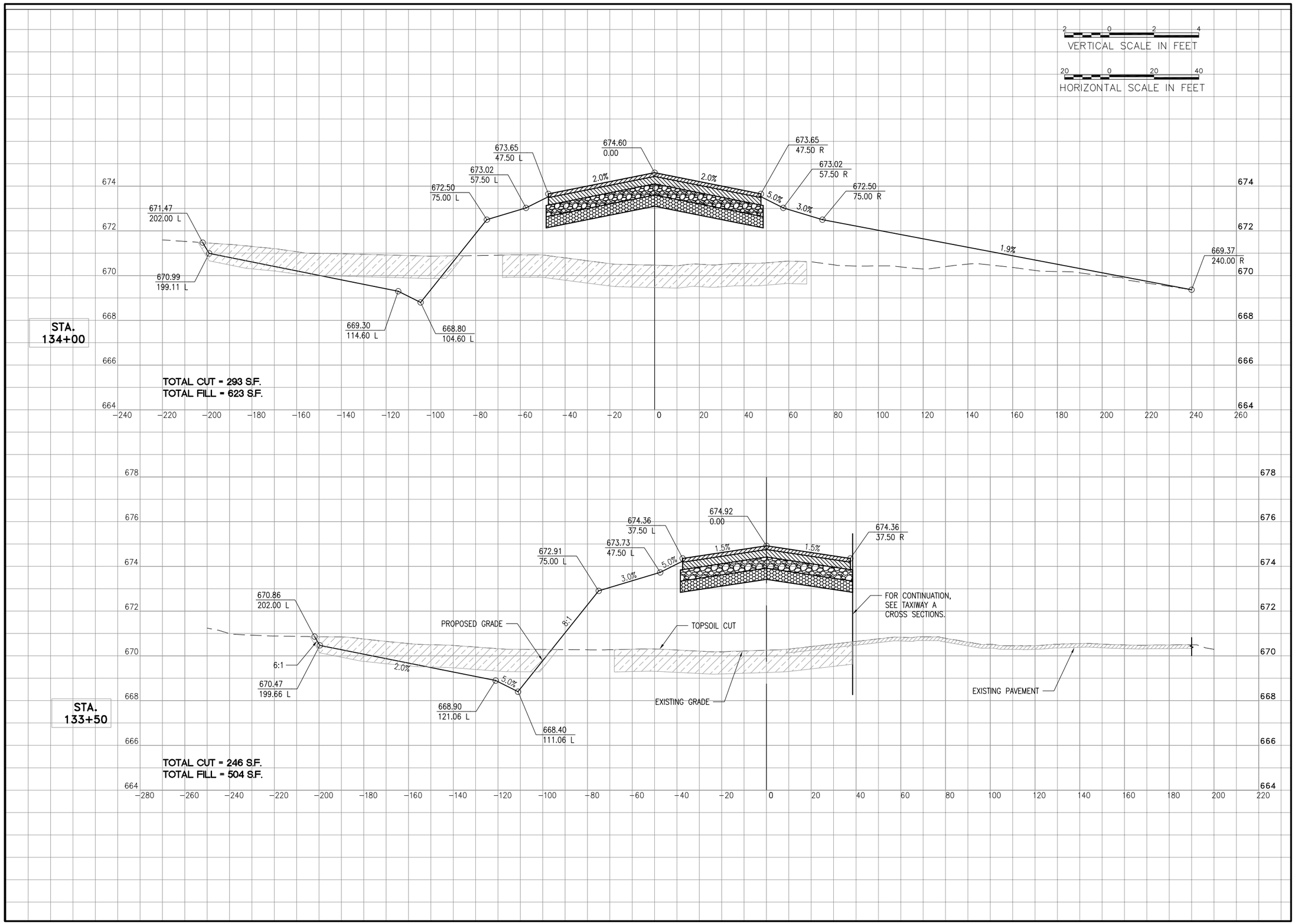
BO003

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 086- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36



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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

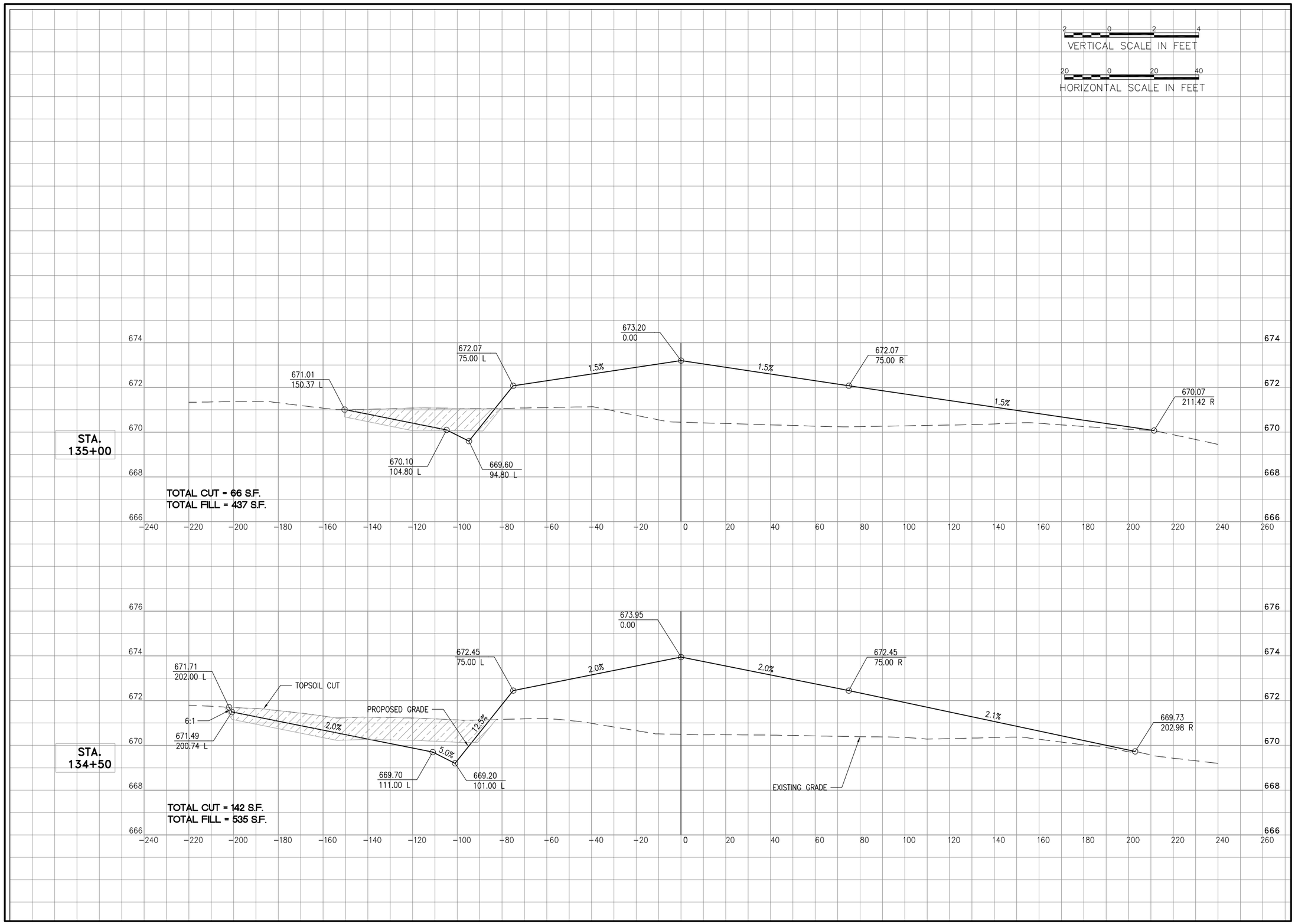
BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 087- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36



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RUNWAY 18-36

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BO003

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 088- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36

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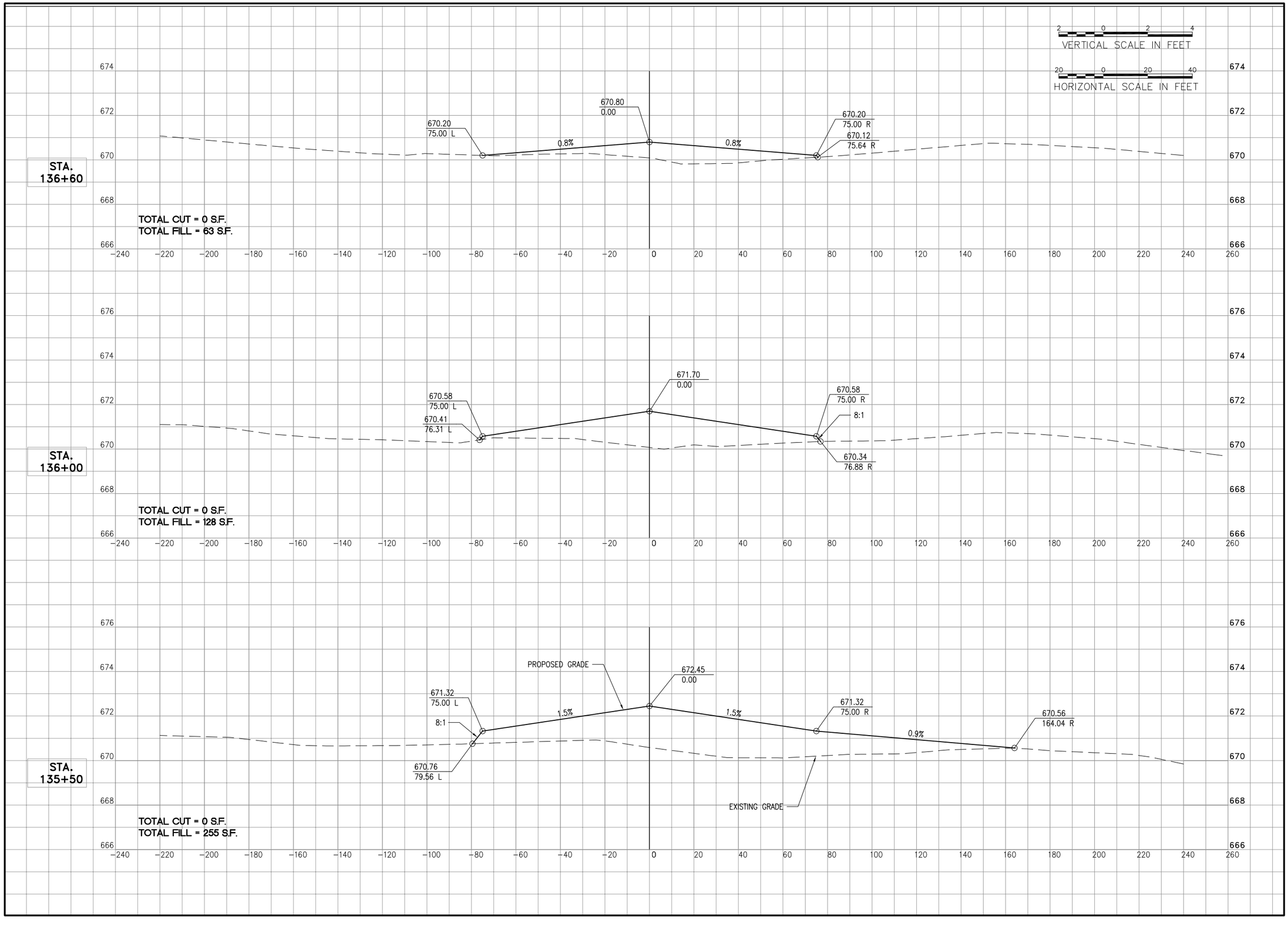

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

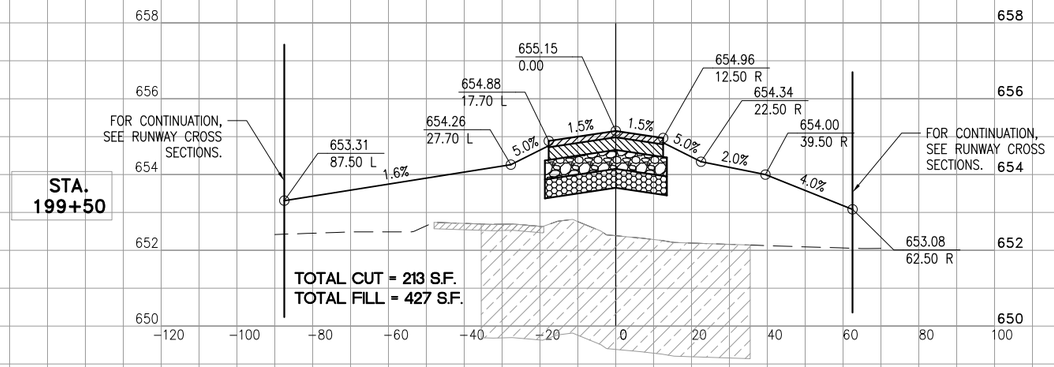
BO003

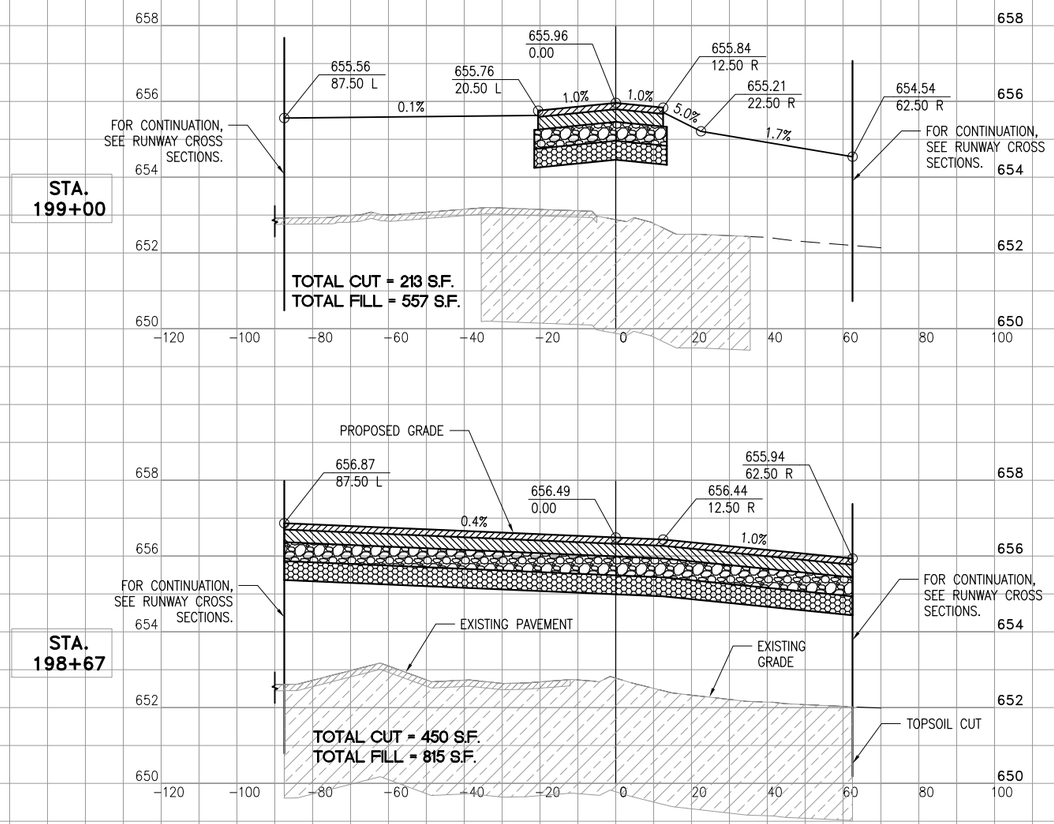
NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

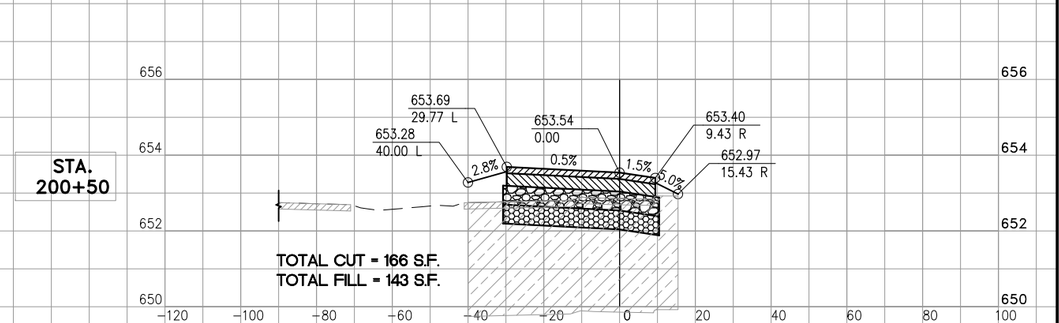
ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 089- XSECTIONSRWY.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

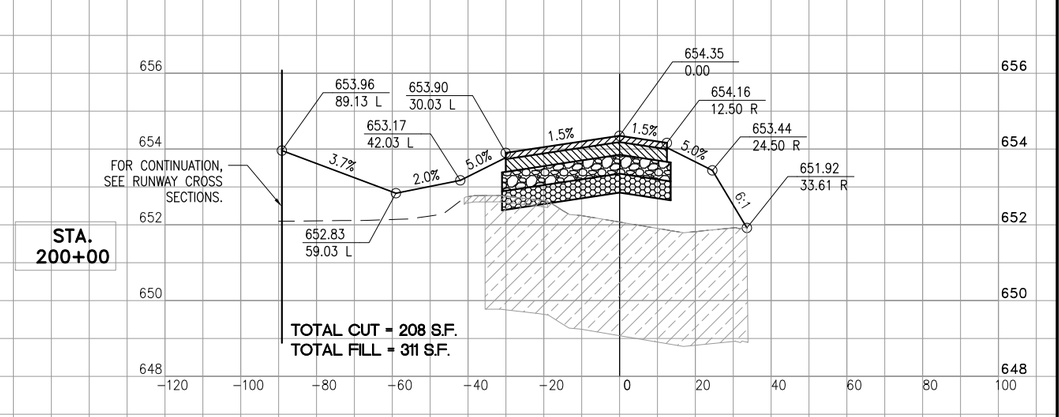
SHEET TITLE

CROSS SECTIONS
RUNWAY 18-36









2 0 2 4
VERTICAL SCALE IN FEET

20 0 20 40
HORIZONTAL SCALE IN FEET

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RUNWAY 18-36

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BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 090- XSECTIONSTWYA.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
TAXIWAY A

MAY 08, 2014 4:13 PM MCLAU01058
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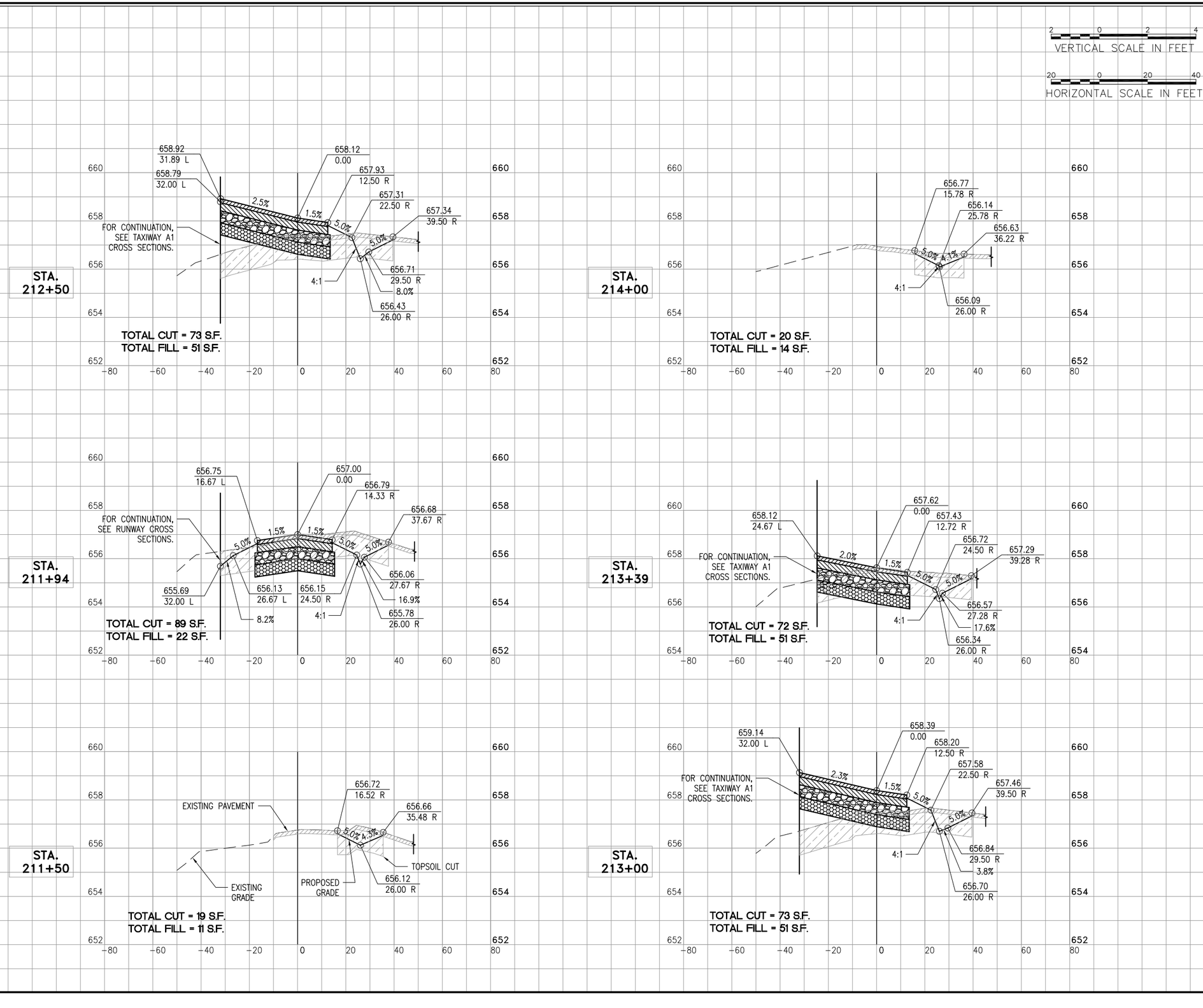

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RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

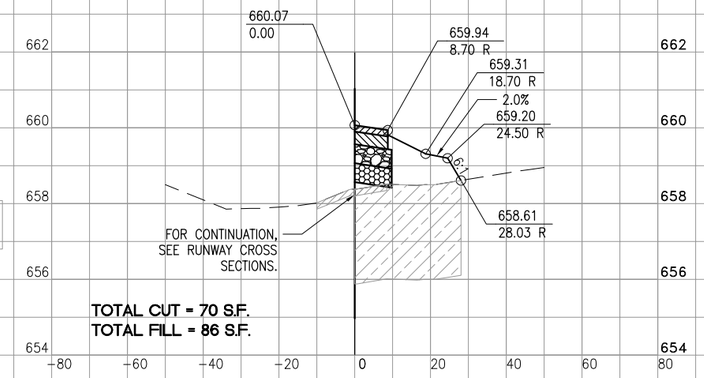
NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 091- XSECTIONSTWYA.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

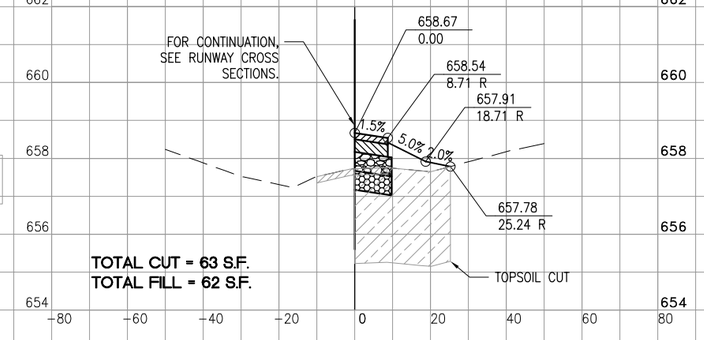
CROSS SECTIONS
TAXIWAY A

STA. 220+00



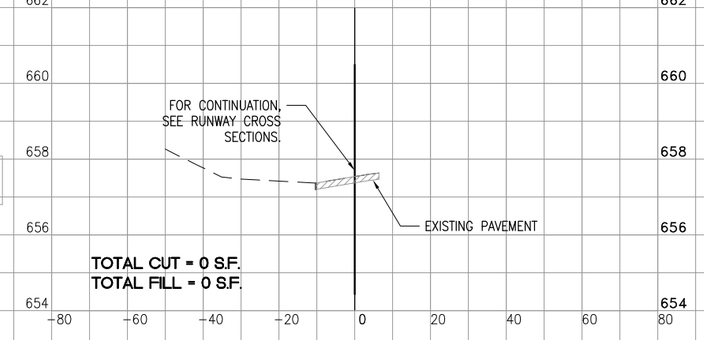
TOTAL CUT = 70 S.F.
TOTAL FILL = 86 S.F.

STA. 219+50



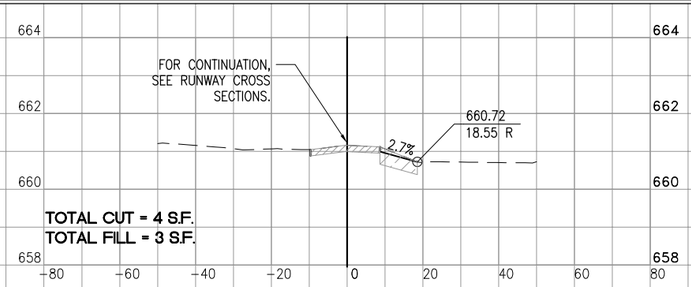
TOTAL CUT = 63 S.F.
TOTAL FILL = 62 S.F.

STA. 219+06



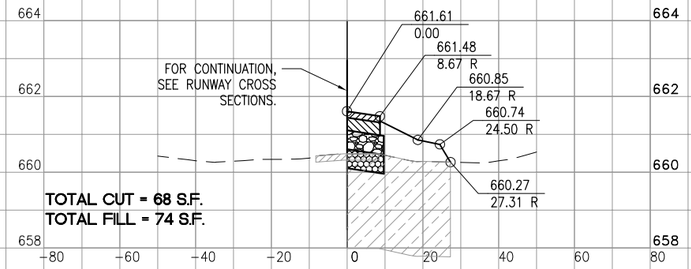
TOTAL CUT = 0 S.F.
TOTAL FILL = 0 S.F.

STA. 222+04



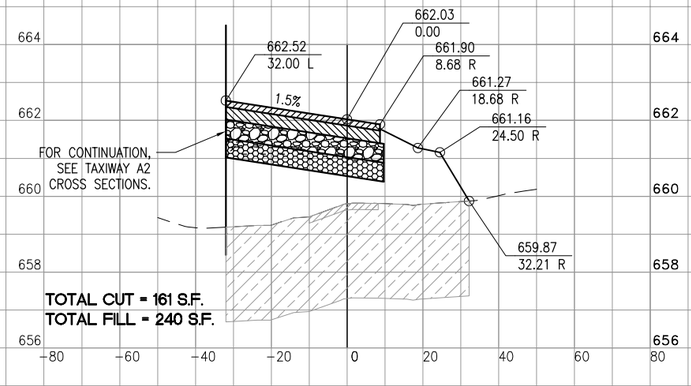
TOTAL CUT = 4 S.F.
TOTAL FILL = 3 S.F.

STA. 221+50



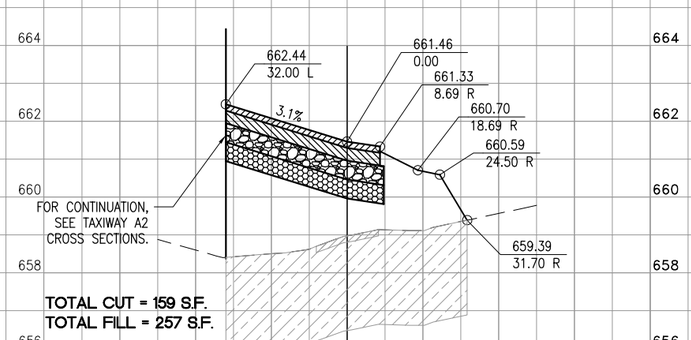
TOTAL CUT = 68 S.F.
TOTAL FILL = 74 S.F.

STA. 221+00



TOTAL CUT = 161 S.F.
TOTAL FILL = 240 S.F.

STA. 220+50



TOTAL CUT = 159 S.F.
TOTAL FILL = 257 S.F.

2 0 2 4
VERTICAL SCALE IN FEET

20 0 20 40
HORIZONTAL SCALE IN FEET

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

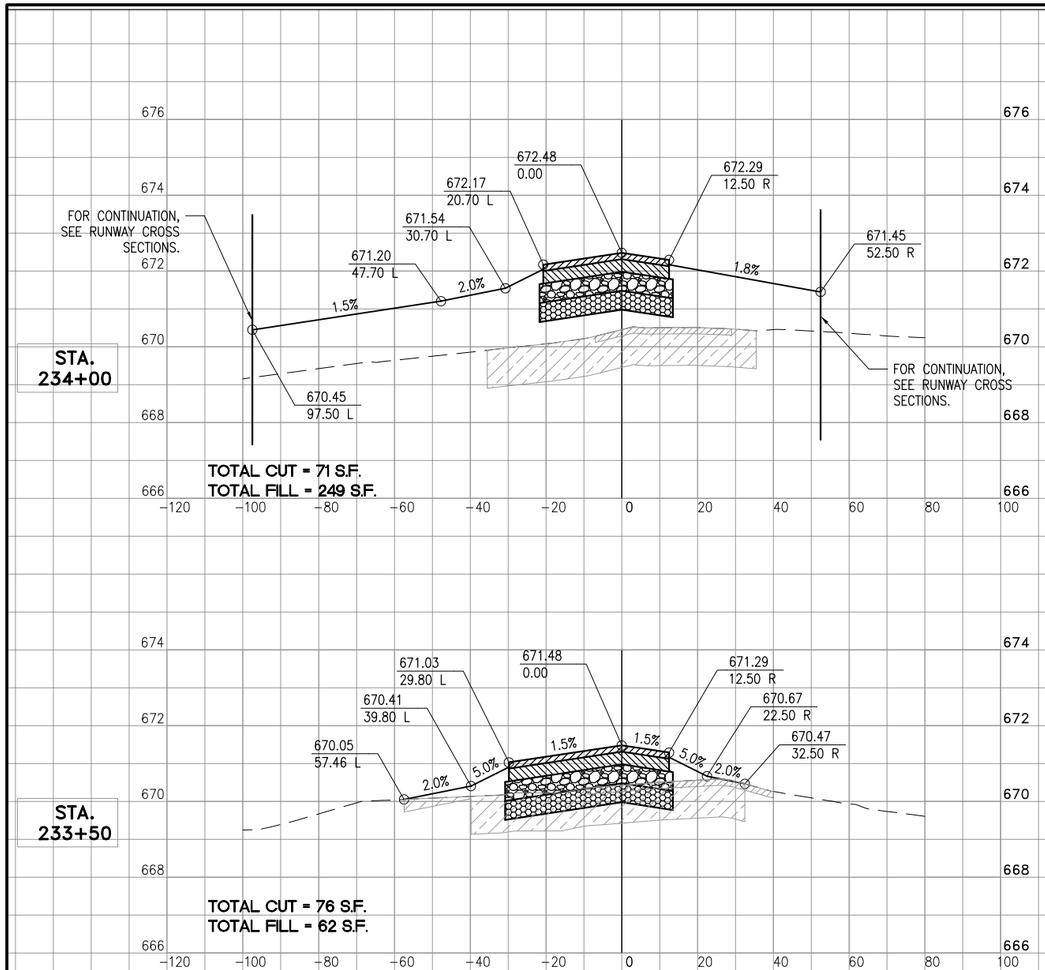
BO003

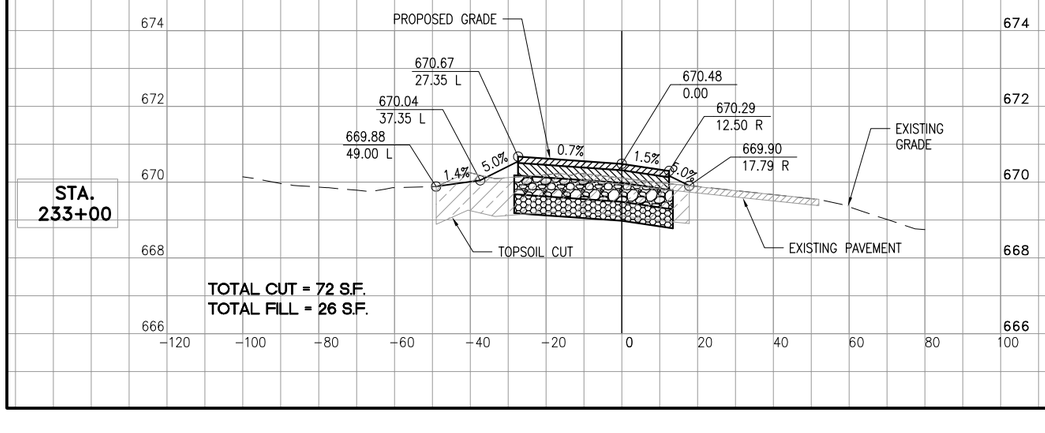
NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

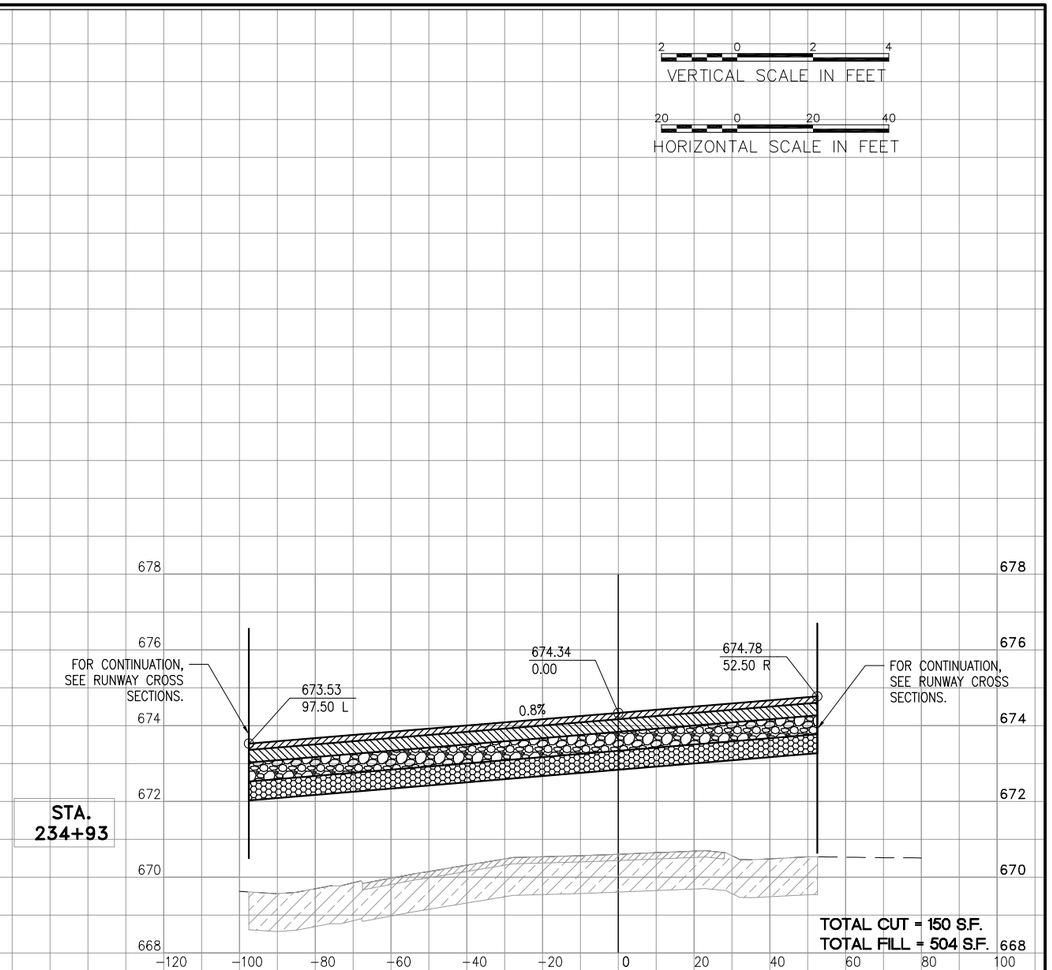
ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 092- XSECTIONSTWYA.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

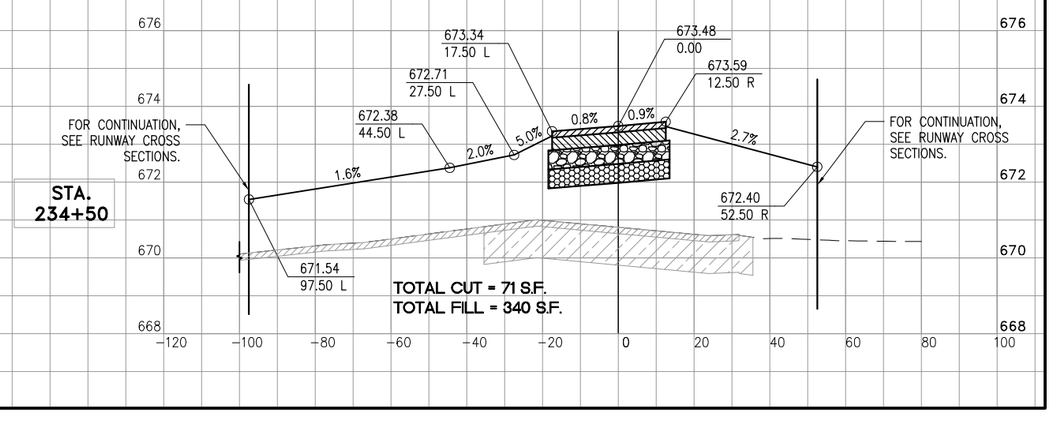
SHEET TITLE

CROSS SECTIONS
TAXIWAY A









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REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
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BO003

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		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 093- XSECTIONSTWYA.DW
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

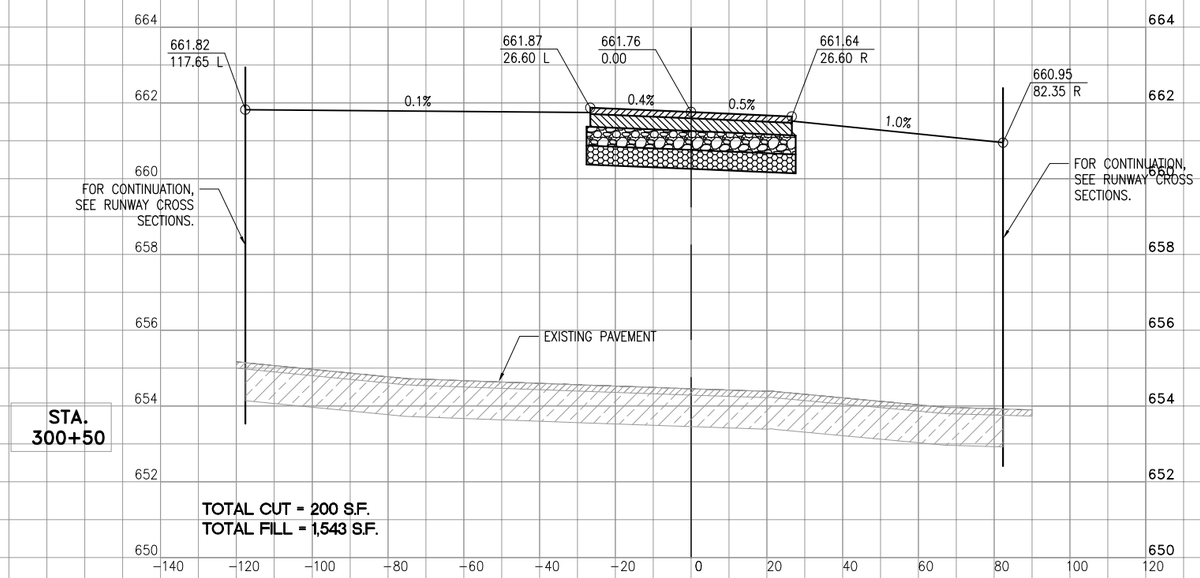
SHEET TITLE

CROSS SECTIONS
TAXIWAY A

MAY 08, 2014 2:02 PM SPITZ01394
I:\14JOBS\008441\14A0002D\DRAWINGS\SHEETS\093- XSECTIONSTWYA.DWG

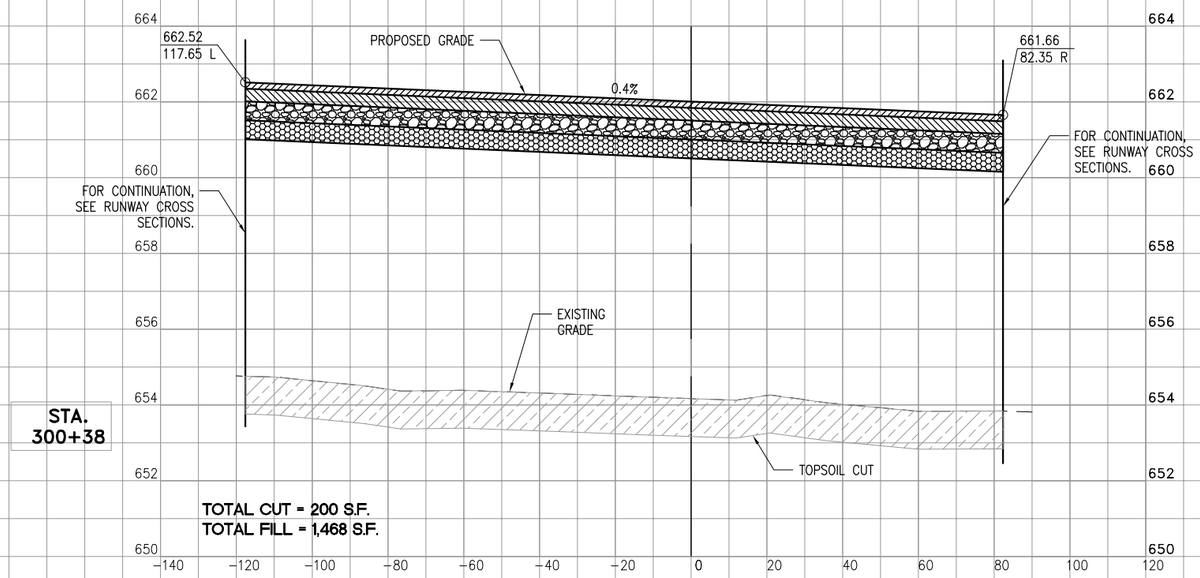
2 0 2 4
VERTICAL SCALE IN FEET

20 0 20 40
HORIZONTAL SCALE IN FEET



STA. 300+50

TOTAL CUT = 200 S.F.
TOTAL FILL = 1,543 S.F.



STA. 300+38

TOTAL CUT = 200 S.F.
TOTAL FILL = 1,468 S.F.

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ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 094- XSECTIONSTWYA1.D
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
TAXIWAY A1

MAY 08, 2014 2:03 PM SPITZ01394
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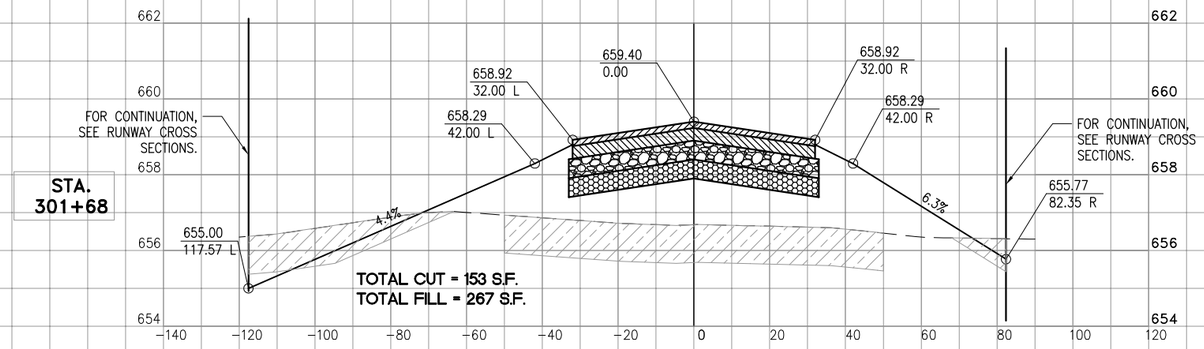
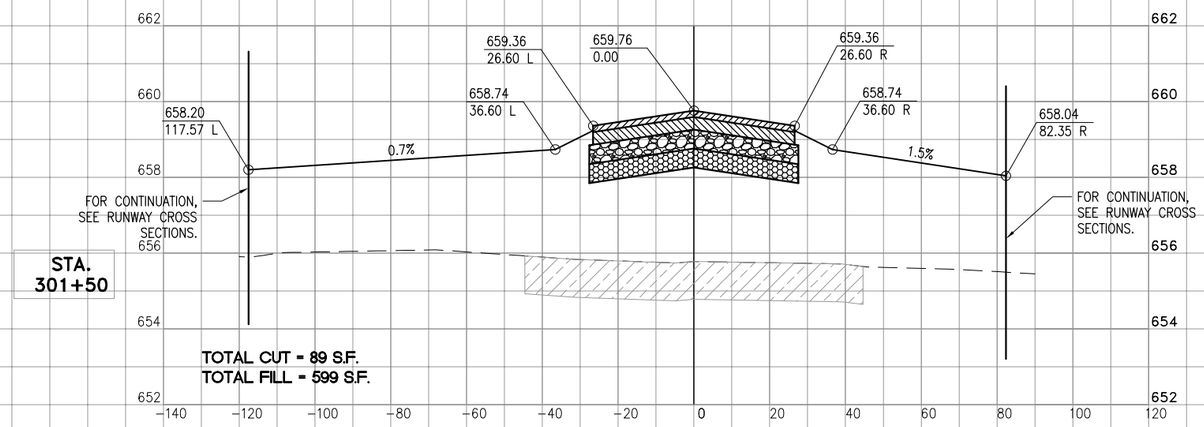
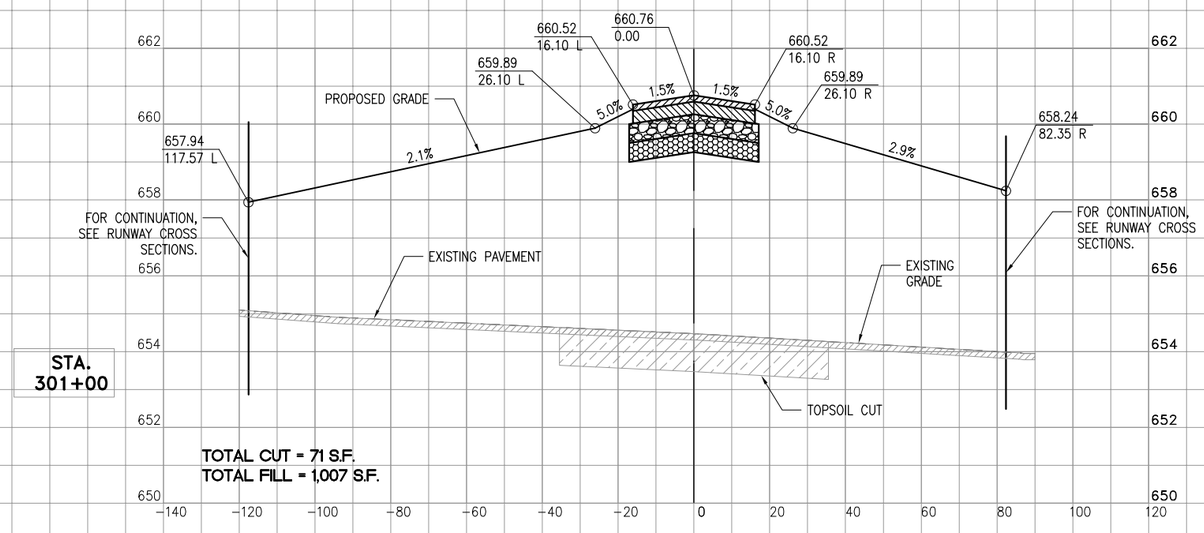


STA. 301+68



STA. 301+50



STA. 301+00

2 0 2 4
VERTICAL SCALE IN FEET

20 0 20 40
HORIZONTAL SCALE IN FEET

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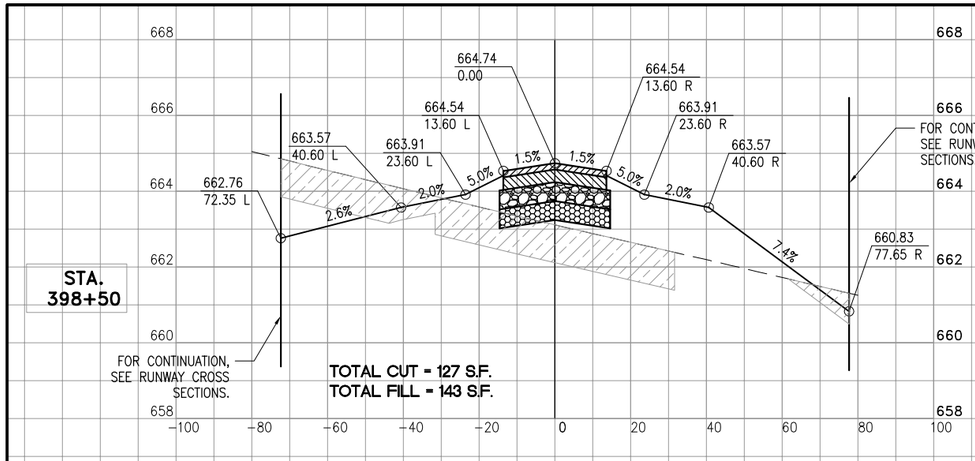
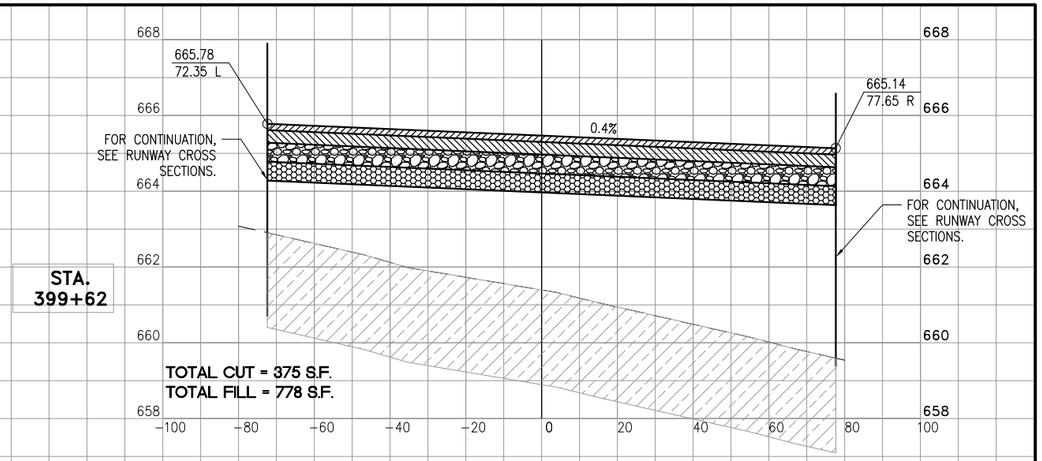
NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

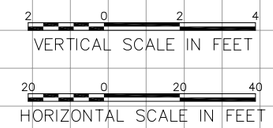
ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 095- XSECTIONSTWYA1.D
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

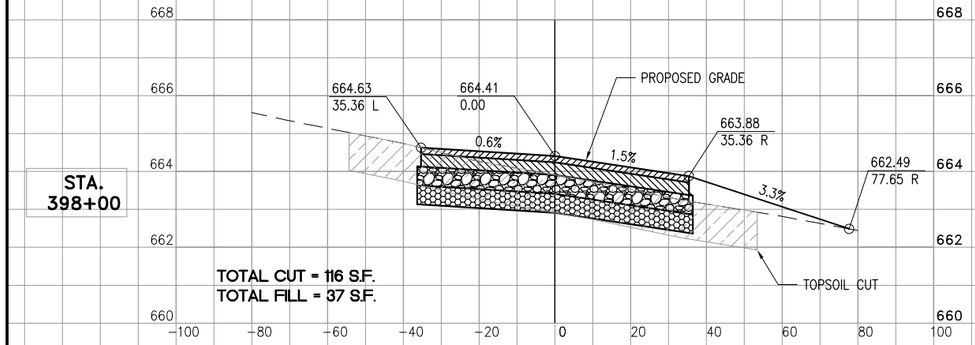
SHEET TITLE

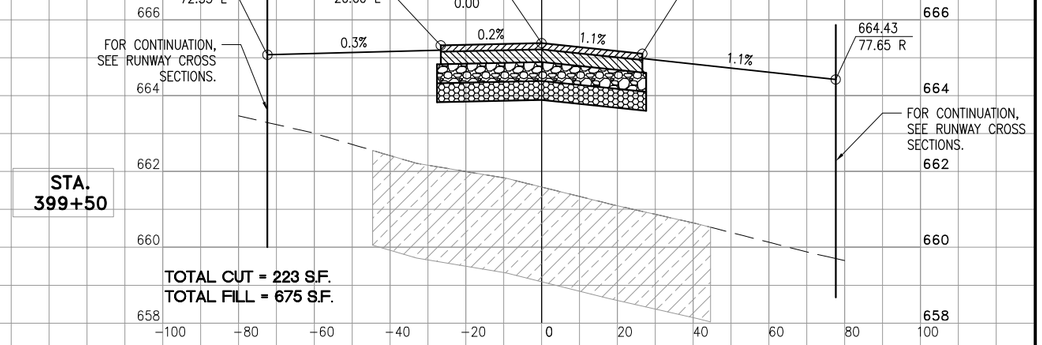
CROSS SECTIONS
TAXIWAY A1

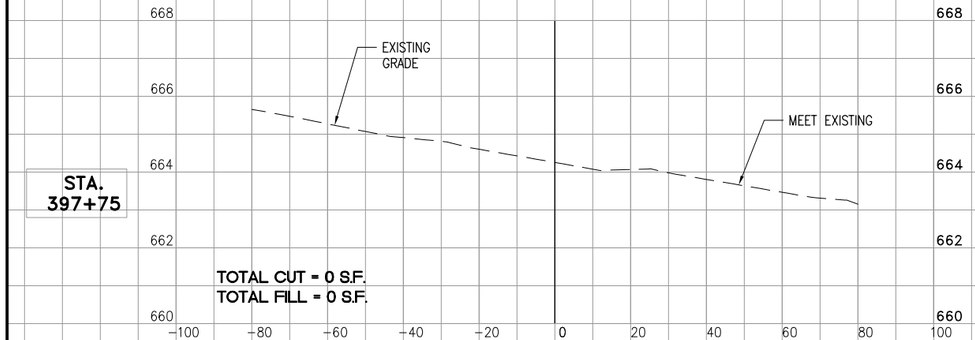


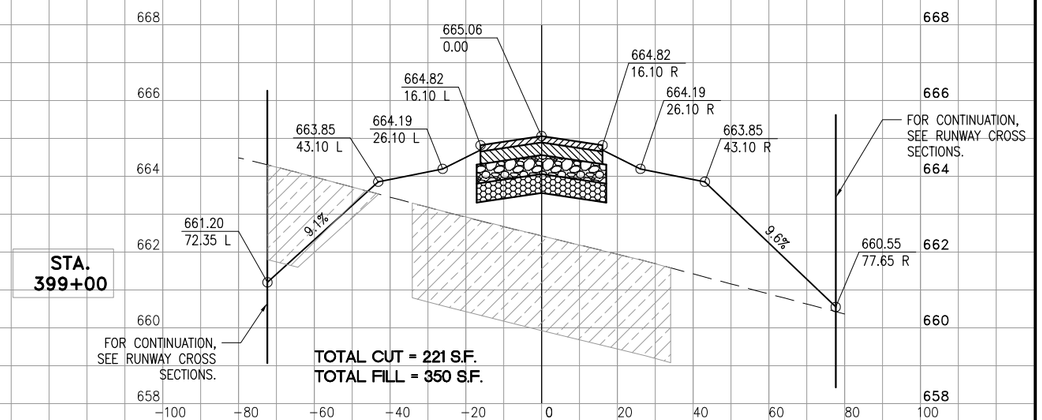












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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 096- XSECTIONSTWYA2.D
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
TAXIWAY A2

MAY 08, 2014 2:06 PM SPITZ01384
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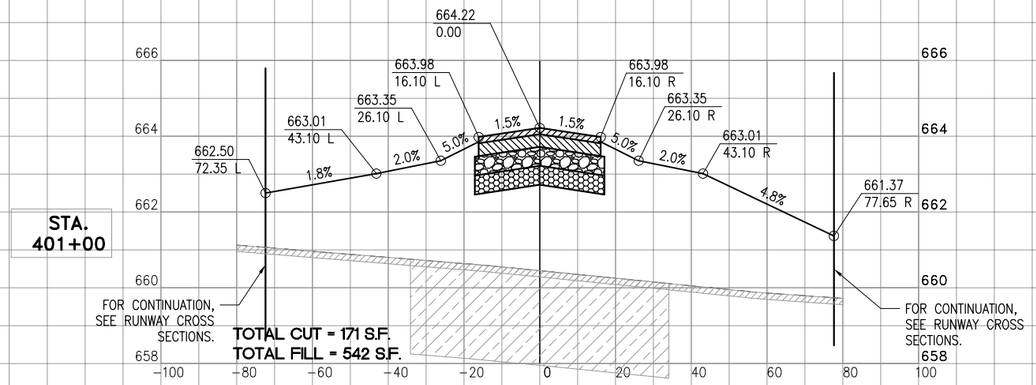

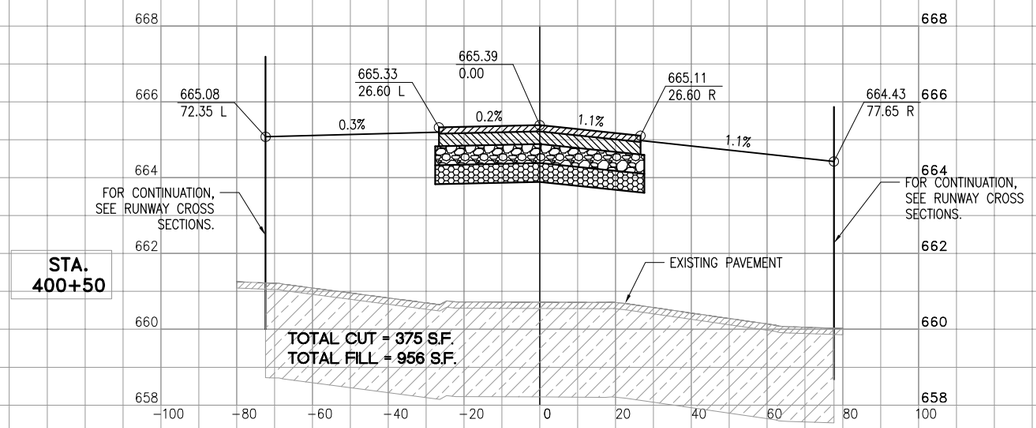

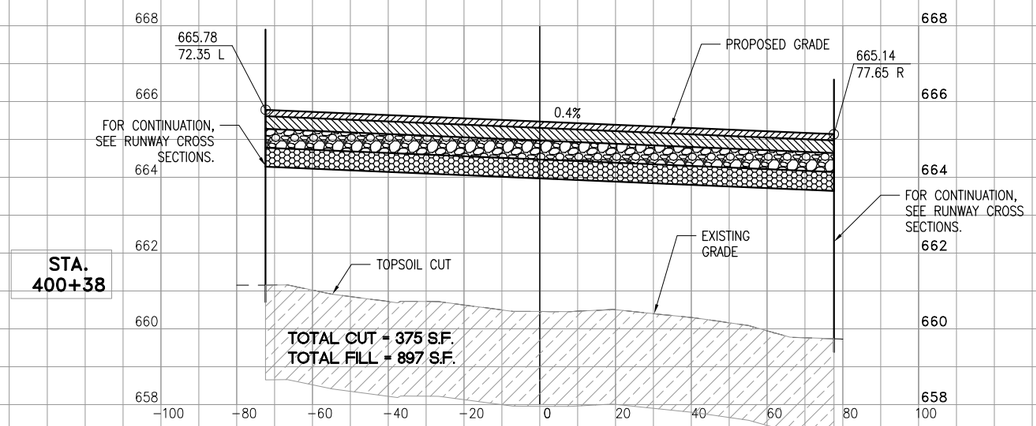

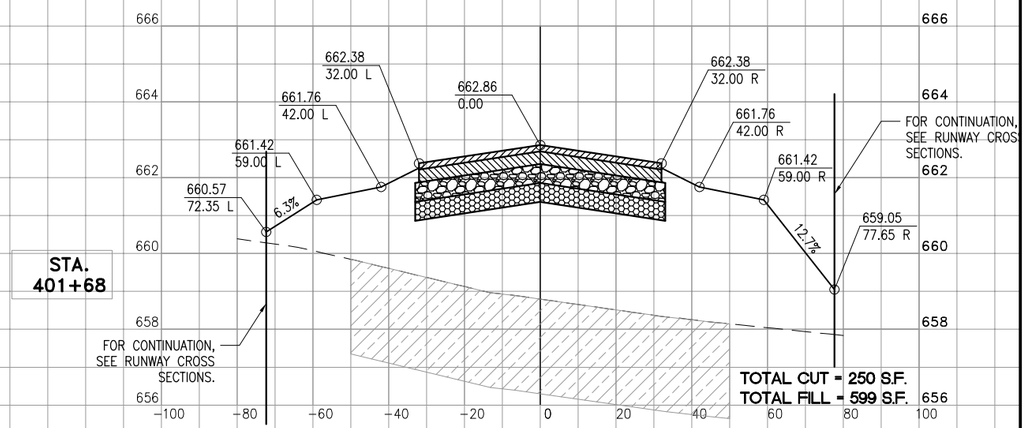

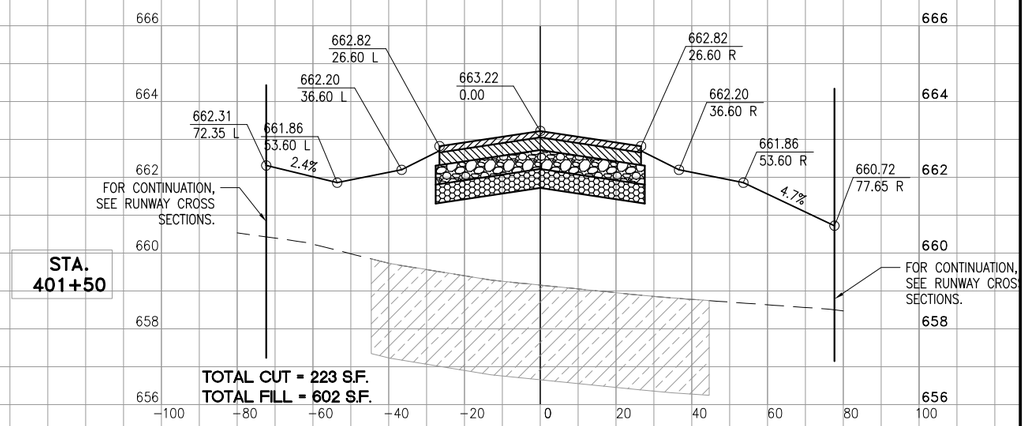

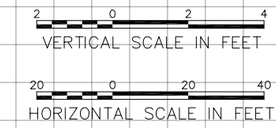

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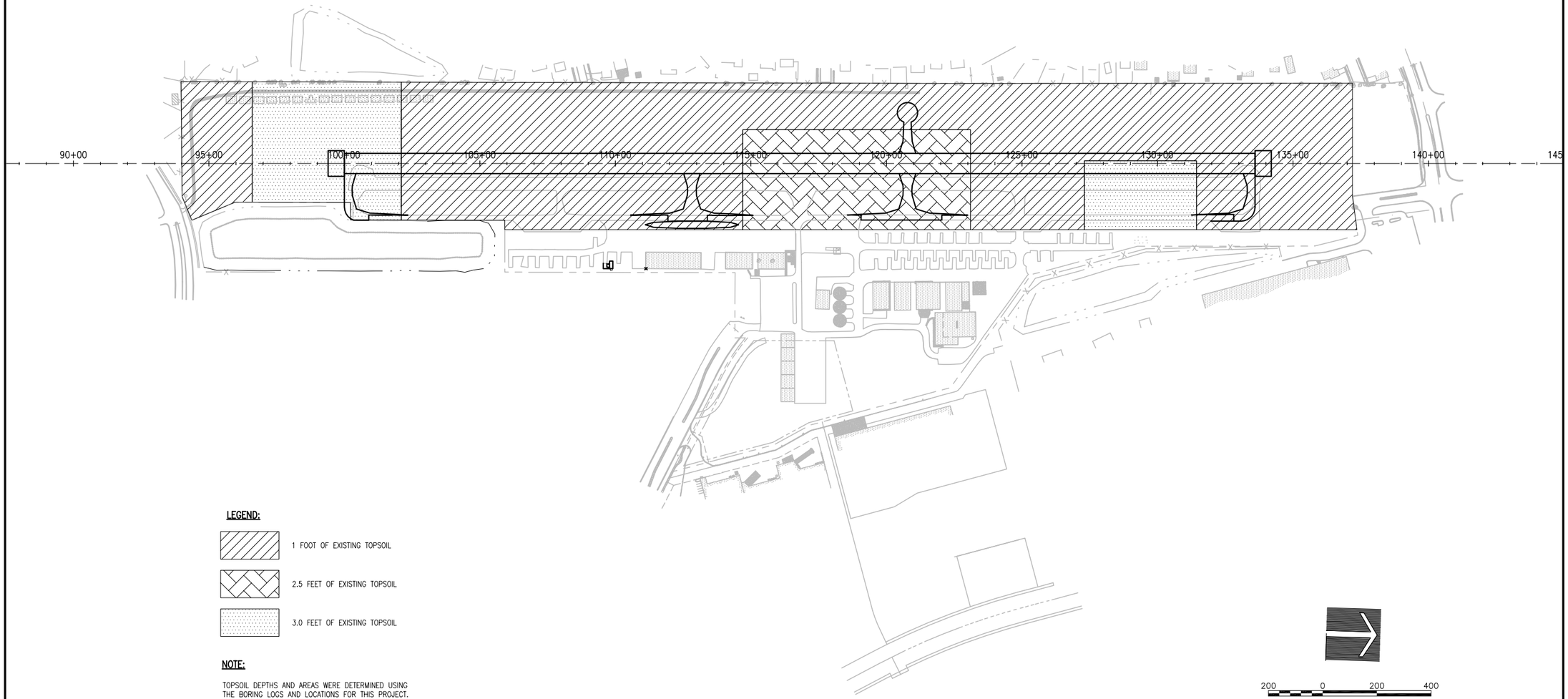
BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 097- XSECTIONSTWYA2.D
LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

CROSS SECTIONS
TAXIWAY A2



LEGEND:

1 FOOT OF EXISTING TOPSOIL

2.5 FEET OF EXISTING TOPSOIL

3.0 FEET OF EXISTING TOPSOIL

NOTE:

TOPSOIL DEPTHS AND AREAS WERE DETERMINED USING THE BORING LOGS AND LOCATIONS FOR THIS PROJECT.

200 0 200 400

SCALE IN FEET

MAY 08, 2014 2:09 PM SPITZ01394
I:\14-JOBS\00844114A0002\DI\DRAWINGS\SHEETS\098-EXTOPSOIL.DWG

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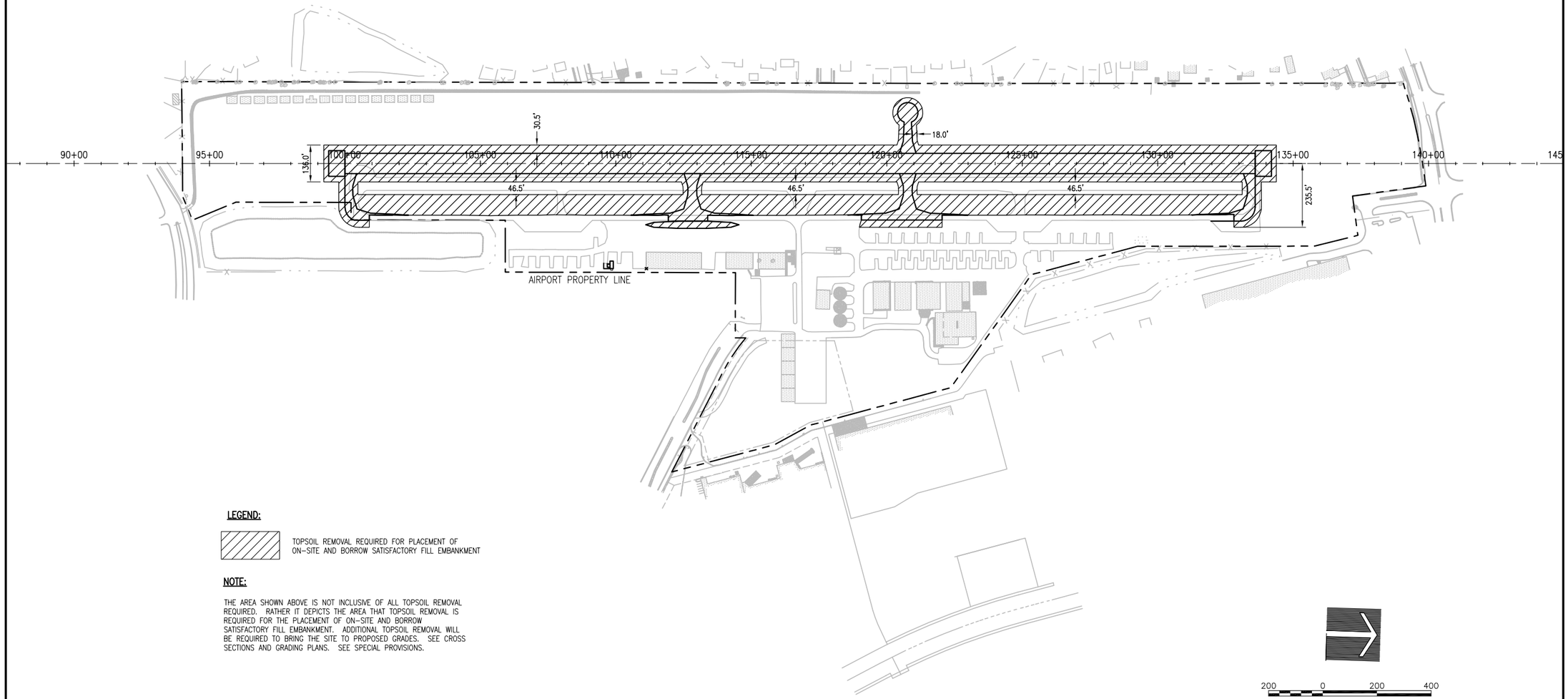
NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 098-EXTOPSOIL.DWG
LAYOUT BY: LDH 4/28/14
DRAWN BY: LDH 4/28/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

EXISTING ESTIMATED
TOPSOIL CONDITION



LEGEND:

TOPSOIL REMOVAL REQUIRED FOR PLACEMENT OF ON-SITE AND BORROW SATISFACTORY FILL EMBANKMENT

NOTE:

THE AREA SHOWN ABOVE IS NOT INCLUSIVE OF ALL TOPSOIL REMOVAL REQUIRED. RATHER IT DEPICTS THE AREA THAT TOPSOIL REMOVAL IS REQUIRED FOR THE PLACEMENT OF ON-SITE AND BORROW SATISFACTORY FILL EMBANKMENT. ADDITIONAL TOPSOIL REMOVAL WILL BE REQUIRED TO BRING THE SITE TO PROPOSED GRADES. SEE CROSS SECTIONS AND GRADING PLANS. SEE SPECIAL PROVISIONS.

200 0 200 400
SCALE IN FEET

MAY 08, 2014 2:10 PM SPITZ01394
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IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

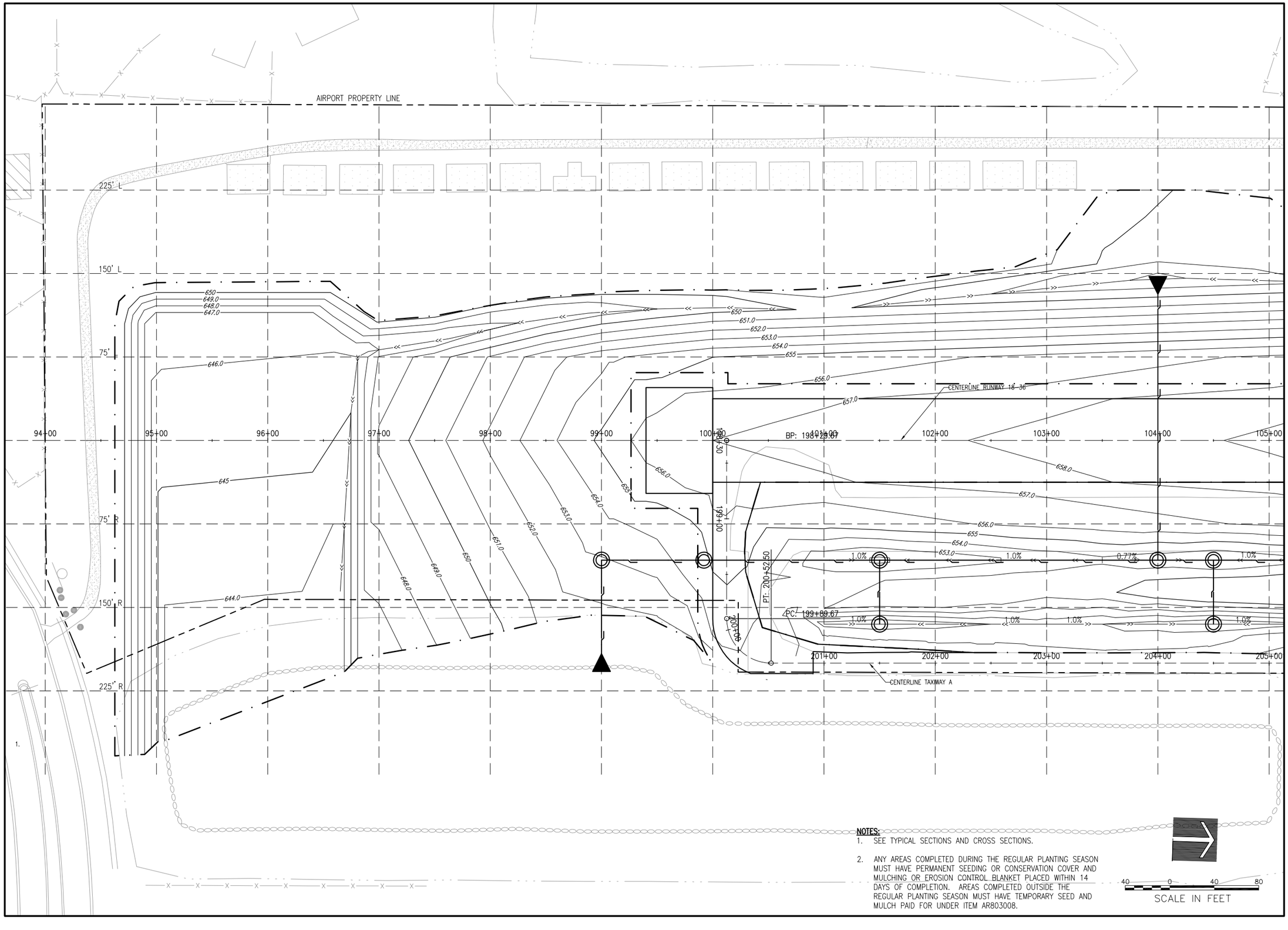
BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 099-STRUCTFILL.DWG
LAYOUT BY: LDH 4/28/14
DRAWN BY: LDH 4/28/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

TOPSOIL REMOVAL AND SATISFACTORY FILL LOCATIONS



NOTES:

1. SEE TYPICAL SECTIONS AND CROSS SECTIONS.
2. ANY AREAS COMPLETED DURING THE REGULAR PLANTING SEASON MUST HAVE PERMANENT SEEDING OR CONSERVATION COVER AND MULCHING OR EROSION CONTROL BLANKET PLACED WITHIN 14 DAYS OF COMPLETION. AREAS COMPLETED OUTSIDE THE REGULAR PLANTING SEASON MUST HAVE TEMPORARY SEED AND MULCH PAID FOR UNDER ITEM AR803008.

MAY 08, 2014 2:12 PM SPITZ01394
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IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 100-GRADING.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: LDH 3/10/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

PROPOSED
GRADING

AIRPORT PROPERTY LINE

225' L

150' L

75' L

75' R

150' R

225' R

CENTERLINE RUNWAY 18-36

CENTERLINE TAXIWAY A

106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00

206+00 207+00 208+00 209+00 210+00 211+00 212+00 213+00 214+00 215+00 216+00

1.0% 0.84% 0.83% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0%

PRIMARY CABLE DUCT
CONTRACTOR SHALL PLAN HIS WORK TO ALLOW THE POWER TO REMAIN IN OPERATION. CONSTRUCTION OF 2-WAY DUCT SHALL BE COMPLETED AS SOON AS PRACTICABLE AT THE BEGINNING OF STAGE 2.

1.

40 0 40 80
SCALE IN FEET

SEE NOTES, SHEET 100.

MAY 08, 2014 2:51 PM HAUSM00682
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SBG No: 3-17-SBGP-TBD

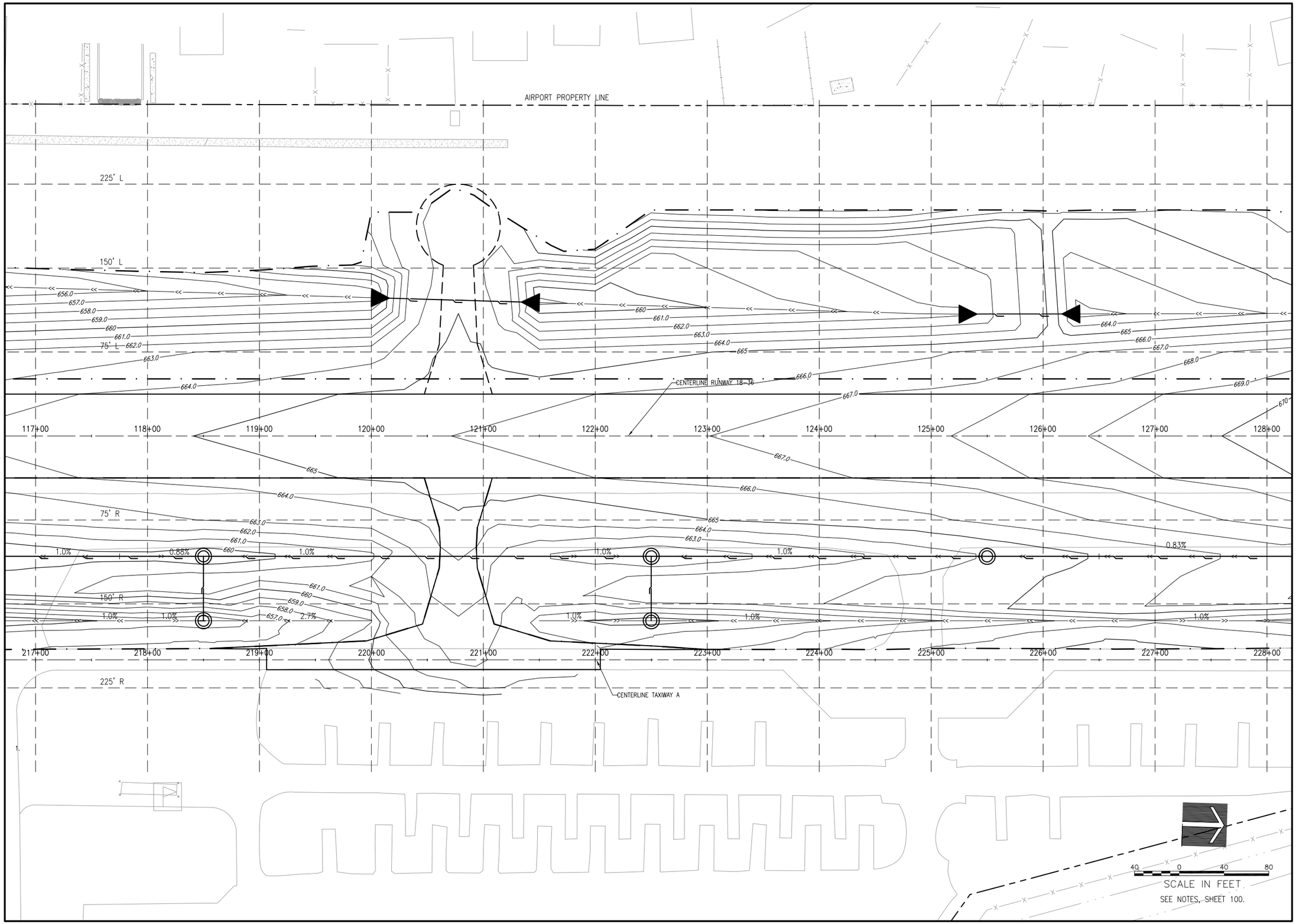
BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 101-GRADING.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: LDH 3/10/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

PROPOSED
GRADING



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SBG No: 3-17-SBGP-TBD

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NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 102-GRADING.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: LDH 3/10/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

PROPOSED
GRADING

MAY 08, 2014 2:19 PM SPITZ01394
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AIRPORT PROPERTY LINE

225' L

150' L

75' L

665

666.0

667.0

668.0

669.0

670

671.0

672.0

CENTERLINE RUNWAY 18-36

129+00 130+00 131+00 132+00 133+00 134+00 135+00 136+00 137+00 138+00 139+00

EP: 235+30.33

235+30

235+00

674.0

671.0

672.0

671.0

670

669.0

668.0

667.0

666.0

75' R

0.87%

1.0%

150' R

1.0%

665

2.0%

PC: 233+07.50

234+00

PT: 233+70.33

229+00 230+00 231+00 232+00 233+00

225' R

CENTERLINE TAXIWAY A

1.

40 0 40 80

SCALE IN FEET

SEE NOTES, SHEET 100.

MAY 08, 2014 2:21 PM SPITZ01394
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IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 103-GRADING.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: LDH 3/10/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

PROPOSED
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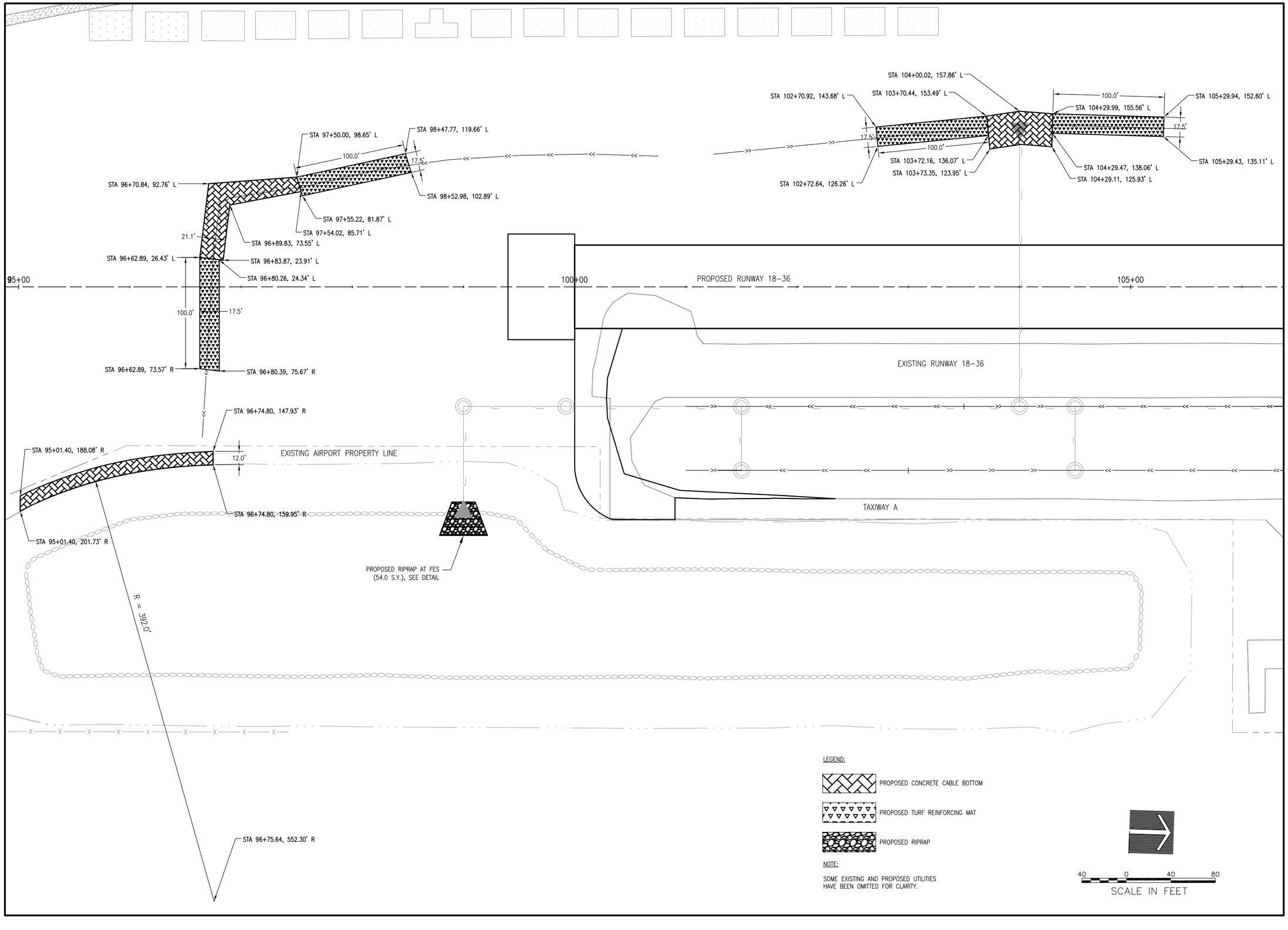

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IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 104-EC PLAN.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: KMS 4/30/2014
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

EROSION CONTROL
PLAN

MAY 09, 2014 9:00 AM HAUSM00682
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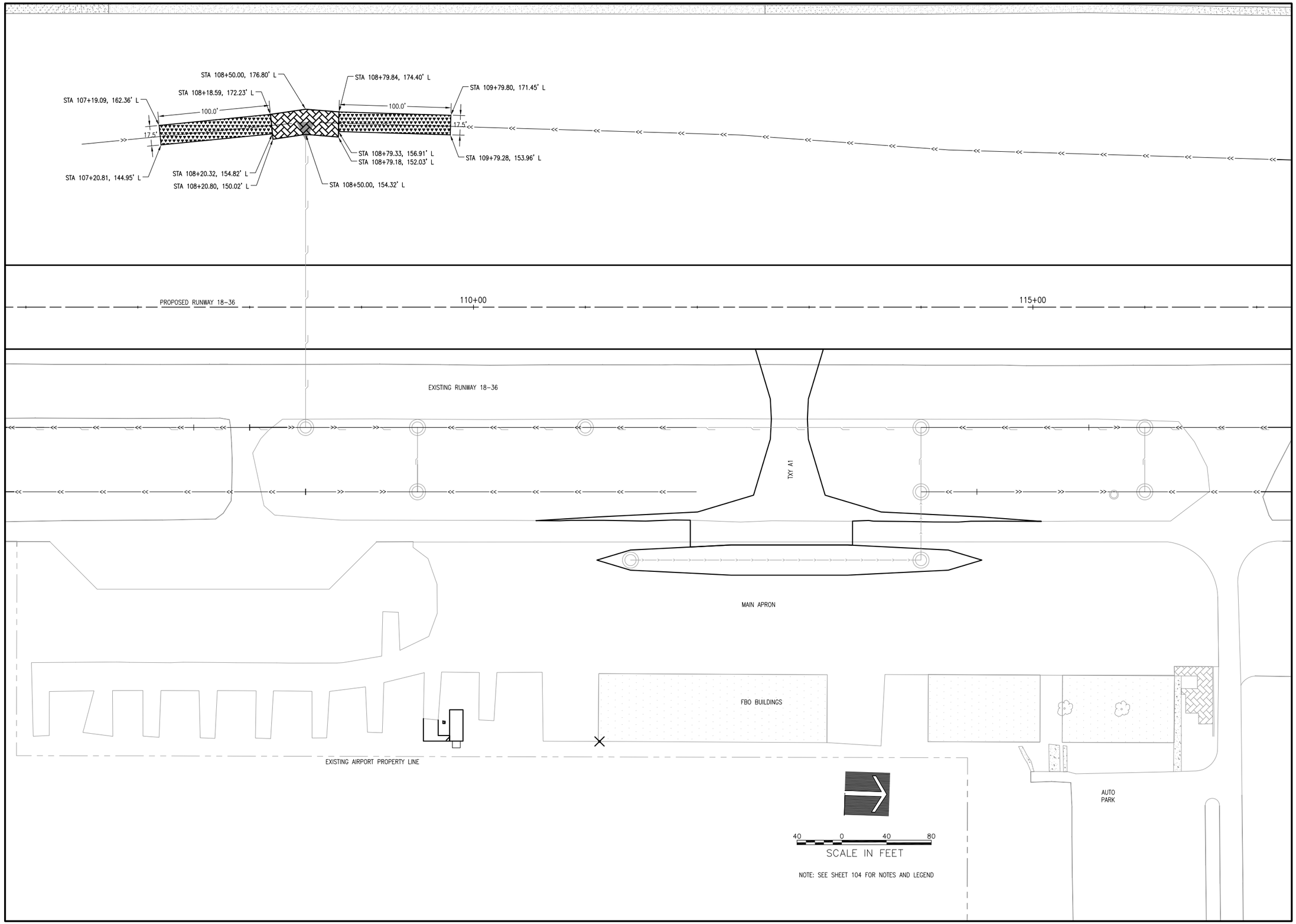

NOTE: SEE SHEET 104 FOR NOTES AND LEGEND

MAY 08, 2014 2:53 PM HAUSM00682
I:\14JOBS\00844114A0002\DRAWINGS\SHEETS\105-EC PLAN.DWG

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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
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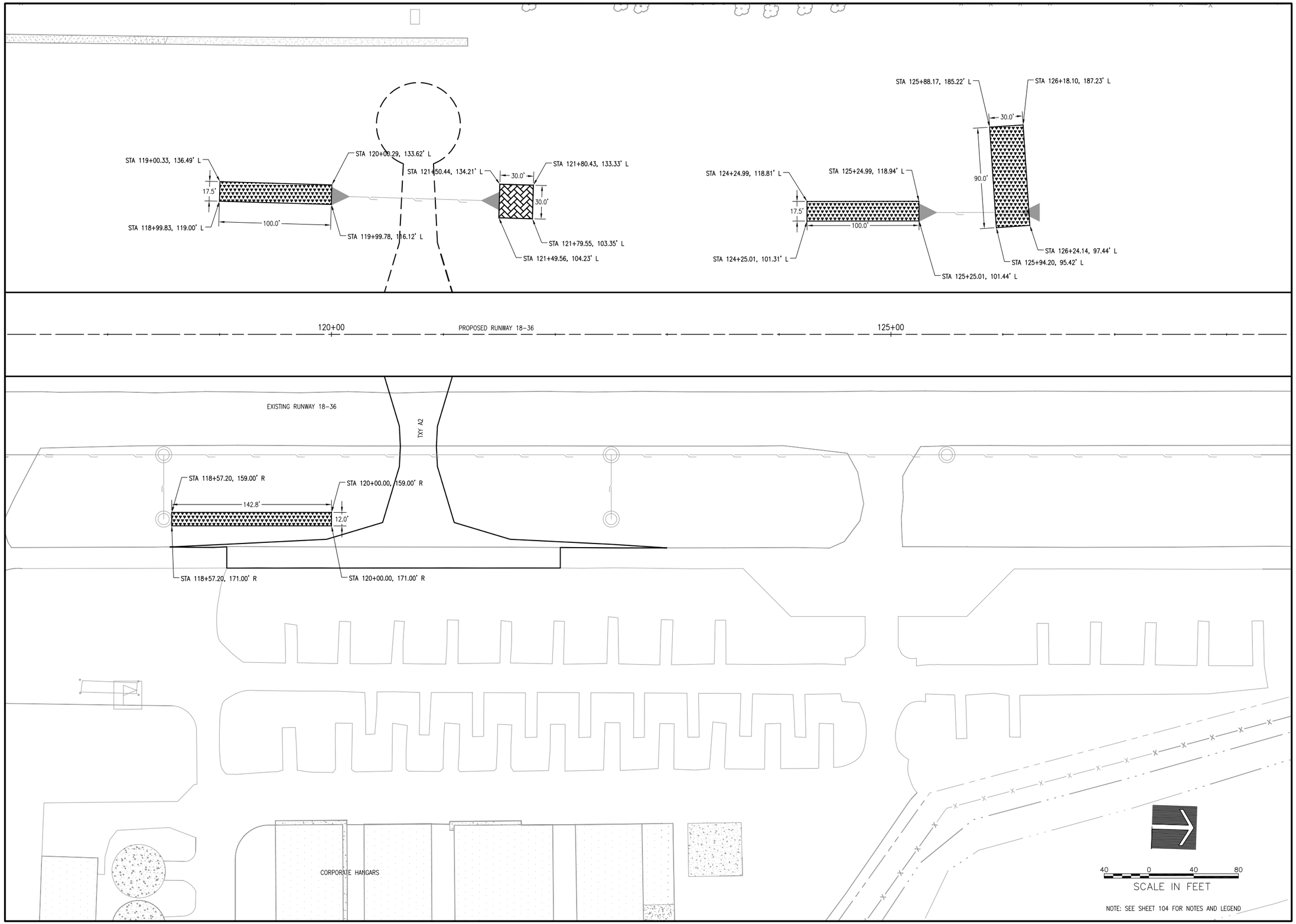
BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 105-EC PLAN.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: KMS 4/30/2014
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

EROSION CONTROL PLAN



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BO003

NO.	DATE	DESCRIPTION	LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 106-EC PLAN.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: KMS 4/30/2014
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

EROSION CONTROL PLAN

MAY 08, 2014 2:53 PM HAUSM00882
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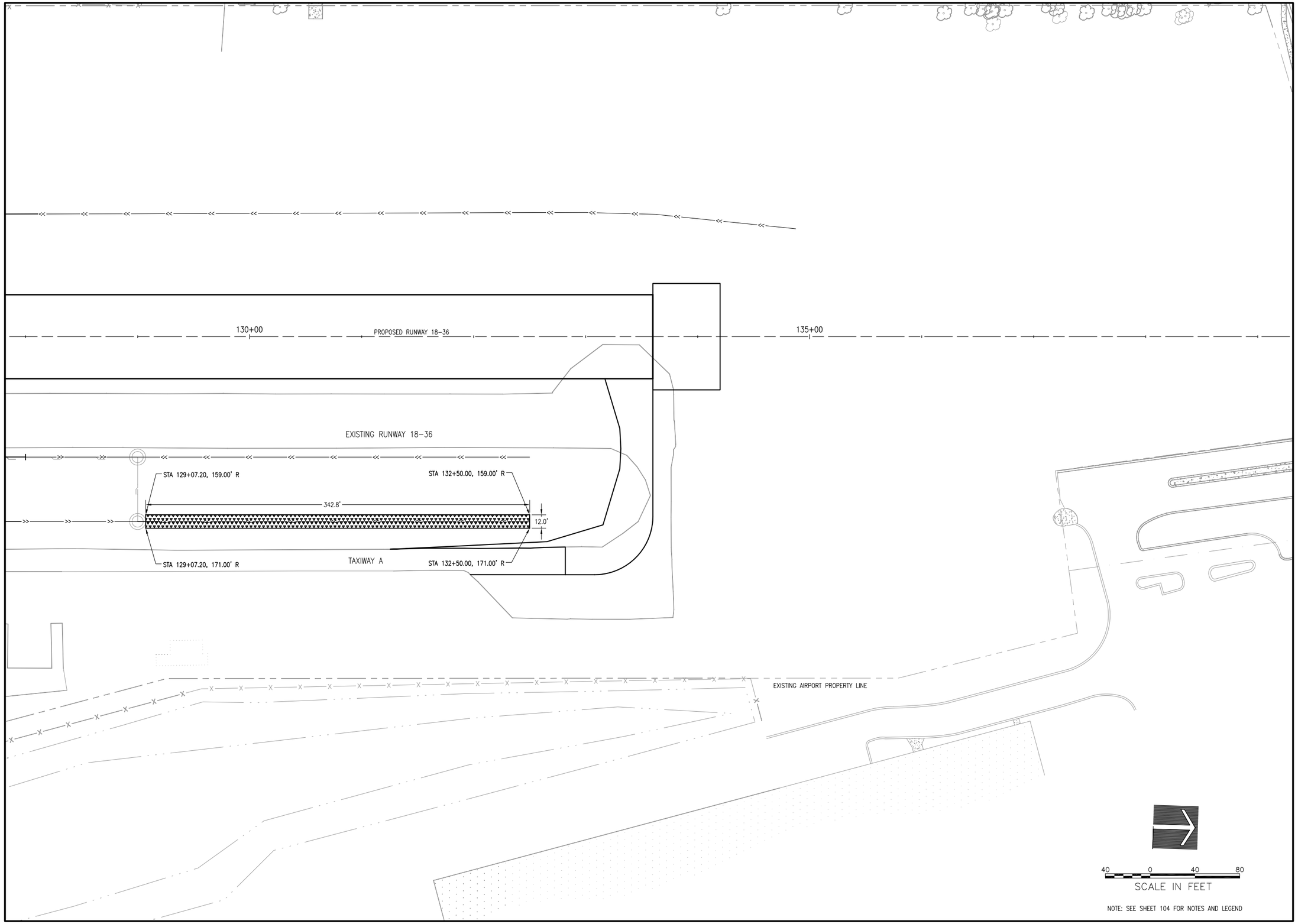

NOTE: SEE SHEET 104 FOR NOTES AND LEGEND

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ISSUE: May 9, 2014
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CAD FILE: 107-EC PLAN.DWG
LAYOUT BY: LDH 3/10/14
DRAWN BY: KMS 4/30/2014
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SHEET TITLE

EROSION CONTROL
PLAN

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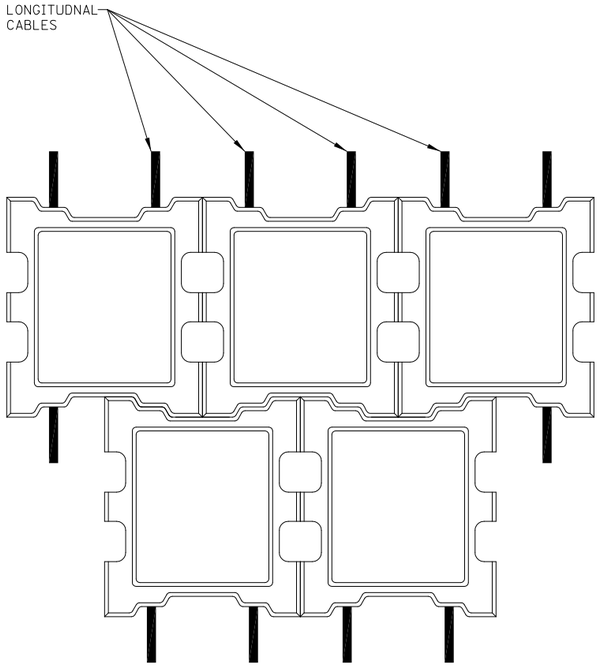
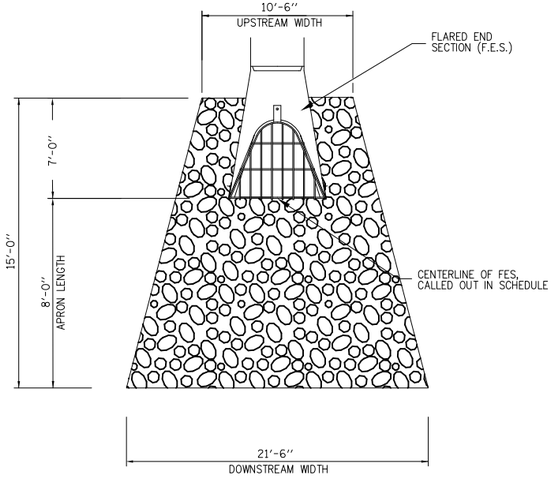
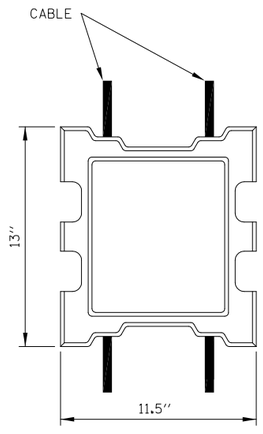


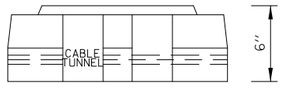
PLAN



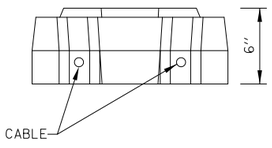
RIPRAP DETAIL



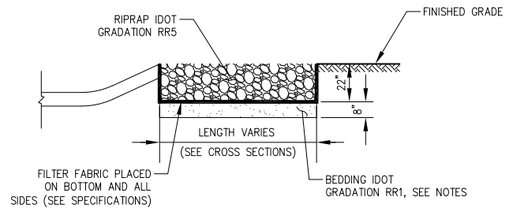
TOP VIEW



SIDE VIEW



END VIEW



RIPRAP SECTION

NOTES

1. COST OF FILTER FABRIC IS INCIDENTAL TO RIPRAP.

2. CENTERLINE OF FLARED END SECTION WILL BE CALLED OUT IN SCHEDULE. THE WIDTH OF THE RIPRAP WILL BE CENTERED ON THIS LOCATION. THE PLACEMENT OF THE RIPRAP CAN BE DETERMINED FROM THIS LOCATION.

NOTES

1. FILTER FABRIC MEETING THE REQUIREMENTS OF ITEM AR156513 IS TO BE PLACED ON TOP OF COMPACTED SUBGRADE BEFORE ARMORFLEX BLOCK IS PLACED.

2. ALL WORK FOR THIS ITEM IS TO BE PAID UNDER AR803003.

CONCRETE CABLE

(ARMORFLEX CLOSED STANDARD CLASS 55S DIMENSIONS, OR APPROVED EQUIVALENT)

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

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LAYOUT BY: LDH 3/6/14
DRAWN BY: LDH 3/6/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

EROSION CONTROL
DETAILS

AIRFIELD LIGHTING NOTES

1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER OR DESIGNATED REPRESENTATIVE. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAID, OR OTHER DEVICE.
3. PROPOSED RUNWAY, THRESHOLD, TAXIWAY LIGHTS, GUIDANCE SIGNS, OTHER AIRFIELD LIGHTING, AND CABLE SHALL BE INSTALLED AT THE LOCATIONS SHOWN AND IN COMPLIANCE WITH THE SPECIFICATIONS, SPECIAL PROVISIONS, RESPECTIVE DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
4. PROPOSED CABLE FOR RUNWAY AND TAXIWAY LIGHTING SHALL BE INSTALLED APPROXIMATELY 12' FROM THE RESPECTIVE PAVEMENT EDGE. CABLES SHALL BE PLACED A MINIMUM OF 18" BELOW FINISHED GRADE.
5. THE PROPOSED LIGHTING CABLE SHALL BE 1/C, #8 AWG, FAA L-824, 5000 VOLT, TYPE C UNDERGROUND CABLE IN UNIT DUCT, OR DUCT.
6. 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.
7. RUNWAY AND THRESHOLD LIGHTS SHALL BE FITTED WITH LENSES AS DETAILED ON THE LIGHT LENS SCHEDULE. ALL PROPOSED TAXIWAY LIGHTS SHALL BE FITTED WITH 360° BLUE LENSES.
8. ALL PROPOSED LIGHTS AND SIGNS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE LIGHT NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS.
9. SEE "TAXI GUIDANCE SIGN SCHEDULE" AND/OR RESPECTIVE TAXI SIGN DETAILS FOR INFO ON SIGN LEGENDS.
10. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA AC 150/5370-2F, PARAGRAPH C. ALL LABOR, MATERIALS, AND TIME NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
11. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT.
12. EXISTING AIRFIELD LIGHTING CABLES IN AREAS OF NEW WORK SHALL BE DISCONNECTED & REMOVED WHERE IN CONFLICT WITH NEW CONSTRUCTION. IN OTHER AREAS CABLES MAY BE ABANDONED IN PLACE, UNLESS DETAILED OTHERWISE TO REMOVE. COST INCIDENTAL TO CONTRACT.
13. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE NEW WORK, WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND TOPSOILED, SEEDED OR SODDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901, 904, 905 AND 908.
14. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

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

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

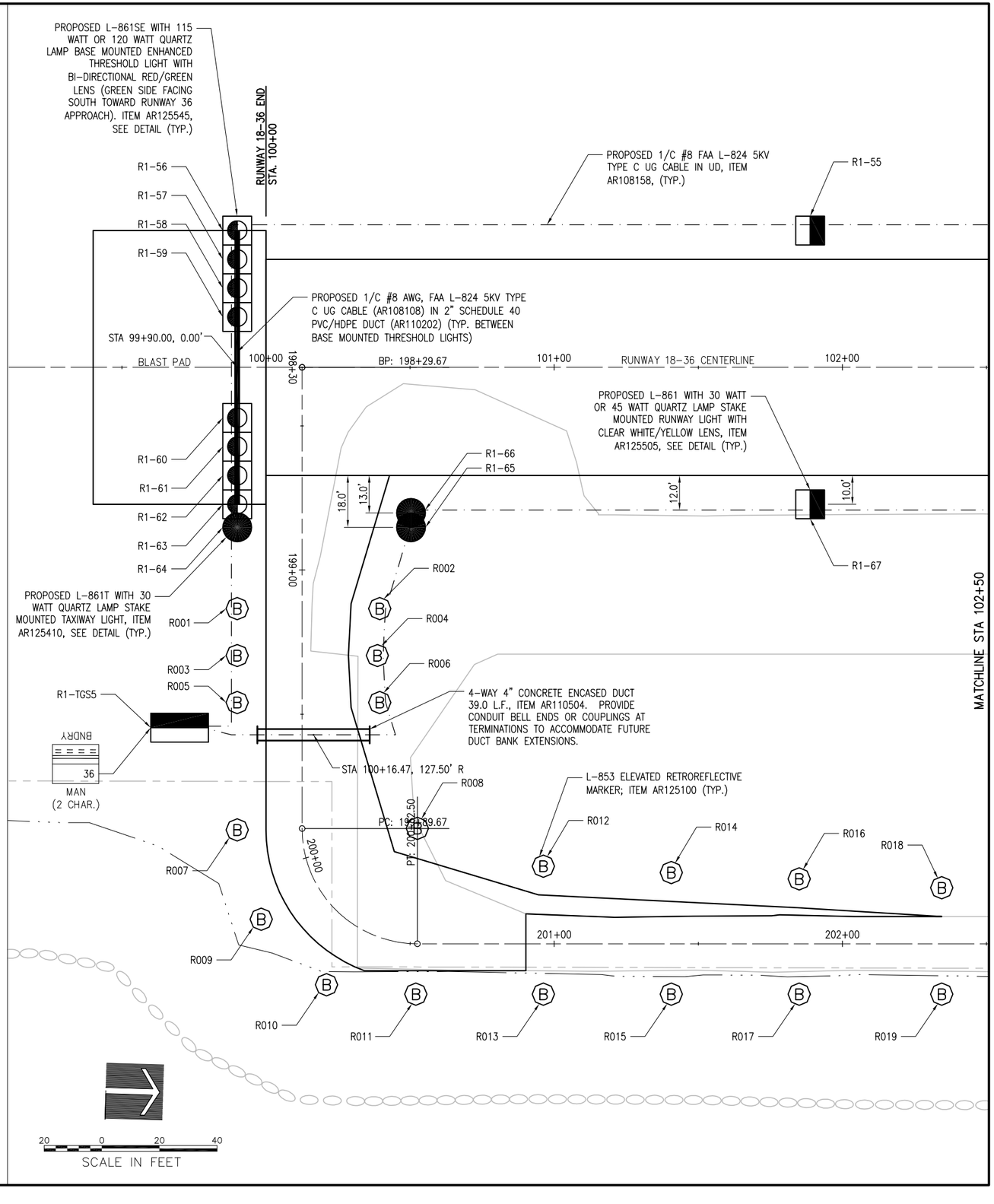
PROPOSED LEGEND

- L-858 AIRFIELD SIGN SIZE 1, STYLE 5, CLASS 2 WITH L-830 ISOLATION TRANSFORMER
- L-861 BASE MOUNTED RUNWAY EDGE LIGHT, BIDIRECTIONAL: YELLOW/CLEAR WHITE
- L-861 STAKE MOUNTED RUNWAY EDGE LIGHT, BIDIRECTIONAL: YELLOW/CLEAR WHITE
- L-861SE BASE MOUNTED RUNWAY THRESHOLD LIGHT, BIDIRECTIONAL; RED/GREEN
- L-861T STAKE MOUNTED TAXIWAY EDGE LIGHT, OMNIDIRECTIONAL; BLUE
- L-853 ELEVATED RETROREFLECTIVE MARKER
- SERIES CIRCUIT LIGHTING CABLES; 1/C #8 AWG, FAA L-824, 5000 VOLT, TYPE C UG CABLE IN UNIT DUCT

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

FOR REMOVAL OF EXISTING LIGHTING AND CABLE, SEE REMOVAL PLANS, SHEETS 18-20.



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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
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LIGHTING, REFLECTOR, AND SIGNAGE PLAN

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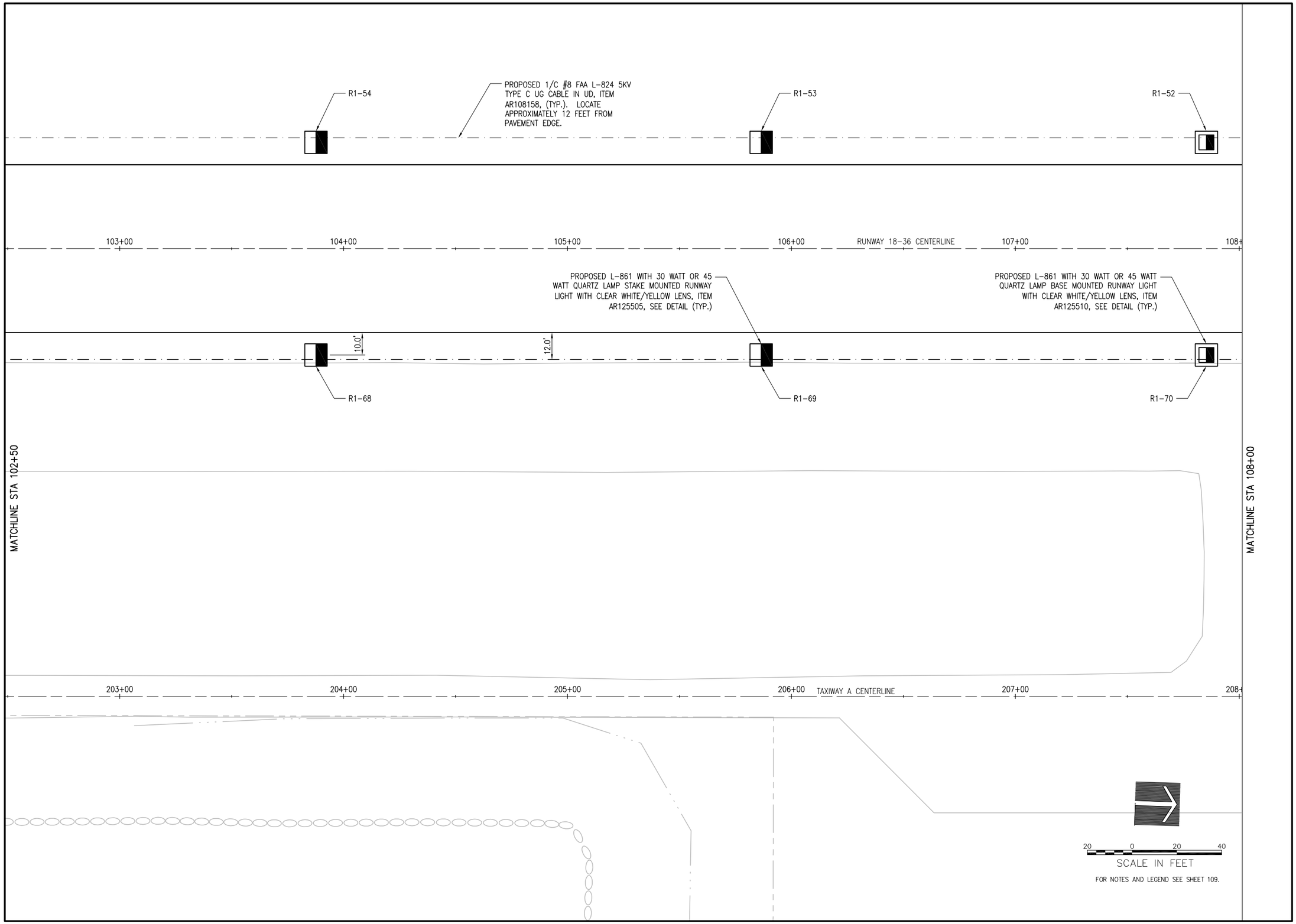

FOR NOTES AND LEGEND SEE SHEET 109.

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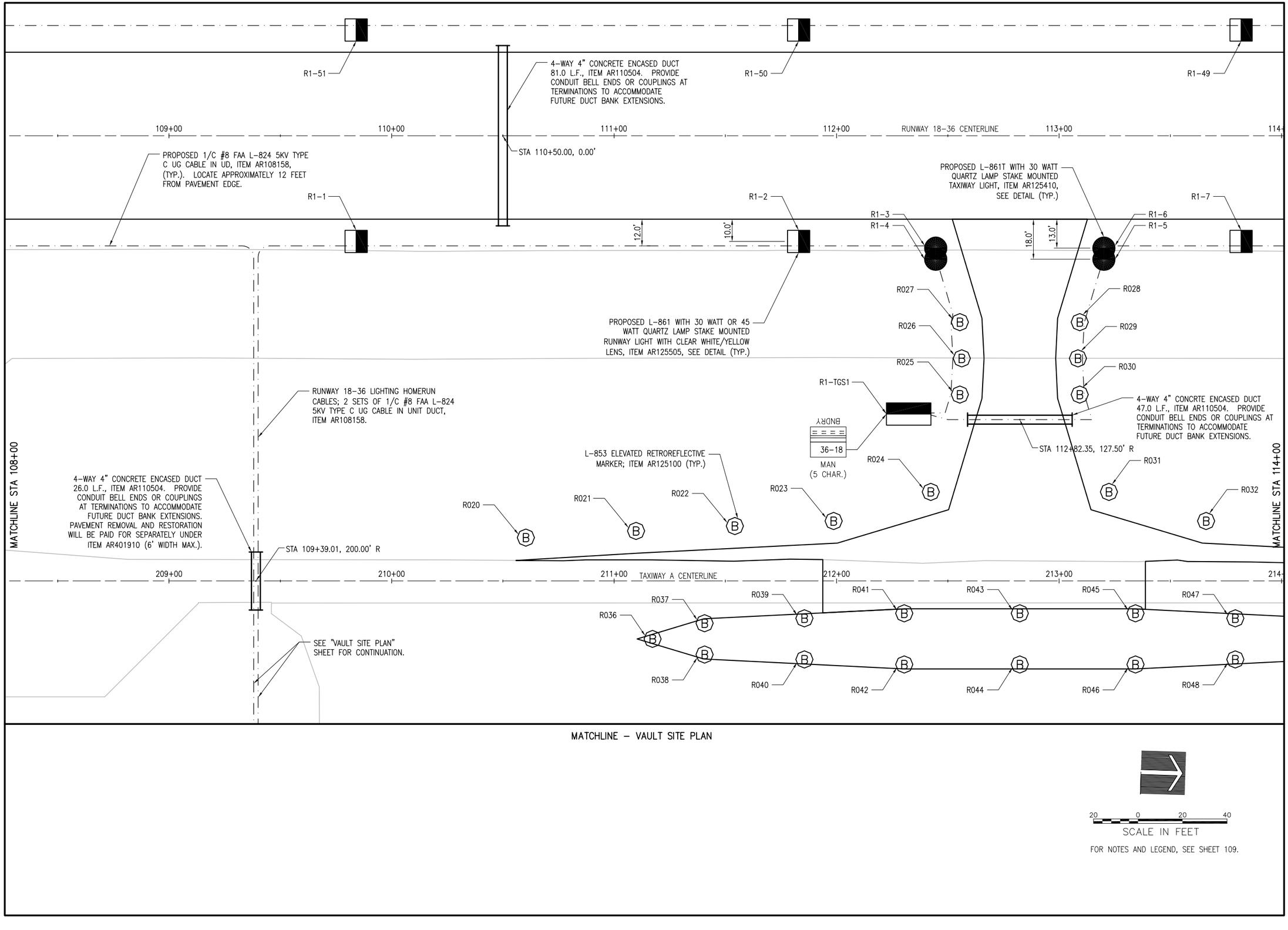

MATCHLINE – VAULT SITE PLAN

20 0 20 40
SCALE IN FEET

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LIGHTING, REFLECTOR, AND SIGNAGE PLAN

MAY 08, 2014 2:36 PM SPITZ01394
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END DUCT
STA. 114+98.49
OFFSET 176.2' L
TOC EL. 653.5

2-WAY 4" CONCRETE ENCASED DUCT, 409 L.F. ITEM AR110502. PROVIDE CONDUIT BELL ENDS OR COUPLING TO ACCOMMODATE FUTURE DUCT BANK EXTENSIONS. DUCT BANK IS FOR ELECTRIC UTILITY USE. PRIMARY ELECTRIC TO ROUTE THROUGH THIS AREA. TOP OF DUCT ELEVATIONS ARE SHOWN ON THIS PLAN. THIS SHALL BE CONSTRUCTED AS EARLY AS PRACTICABLE AT THE BEGINNING OF STAGE 2.

DUCT
STA. 114+91.21
OFFSET 138.3' L
TOC EL. 651.6

DUCT
STA. 114+70.67
OFFSET 32.5' L
TOC EL. 652.3

12.0'

10.0'

R1-48

R1-47

PROPOSED 1/C #8 FAA L-824 5KV TYPE C UG CABLE IN UD, ITEM AR108158, (TYP.). LOCATE APPROXIMATELY 12 FEET FROM PAVEMENT EDGE.

+00 | 115+00 | 116+00 | 117+00 | RUNWAY 18-36 CENTERLINE | 118+00 | 119+00

R1-8

R1-9

MATCHLINE STA 114+00

MATCHLINE STA 119+50

PROPOSED L-861 WITH 30 WATT OR 45 WATT QUARTZ LAMP BASE MOUNTED RUNWAY LIGHT WITH BI-DIRECTIONAL CLEAR WHITE/YELLOW LENS. YELLOW SIDE FACING NORTH FOR LIGHTS R1-1, R1-2, R1-7, R1-8, R1-48 THROUGH R1-55, AND R1-67 THROUGH R1-70. ITEM AR125510, SEE DETAIL (TYP.)

PROPOSED L-861 WITH 30 WATT OR 45 WATT QUARTZ LAMP STAKE MOUNTED RUNWAY LIGHT WITH BI-DIRECTIONAL YELLOW/CLEAR WHITE LENS. YELLOW SIDE FACING SOUTH FOR LIGHTS R1-9 THROUGH R1-20, R1-32 THROUGH R1-37, R1-46, R1-47. ITEM AR125505, SEE DETAIL (TYP.)

DUCT
STA. 114+32.34
OFFSET 165.0' R
TOC EL. 652.9

L-853 ELEVATED RETROREFLECTIVE MARKER; ITEM AR125100 (TYP.)

R033

R034

R035

R052

R053

R054

+00 | 215+00 | 216+00 | 217+00 | TAXIWAY A CENTERLINE | 218+00 | 219+00

R049

R050

R051

PAVEMENT REMOVAL AND RESTORATION WILL BE PAID FOR SEPARATELY UNDER ITEM AR401910 (6' WIDTH MAX)

END DUCT
STA. 114+20.58
OFFSET 226.0' R
TOC EL. 654.1

20 0 20 40
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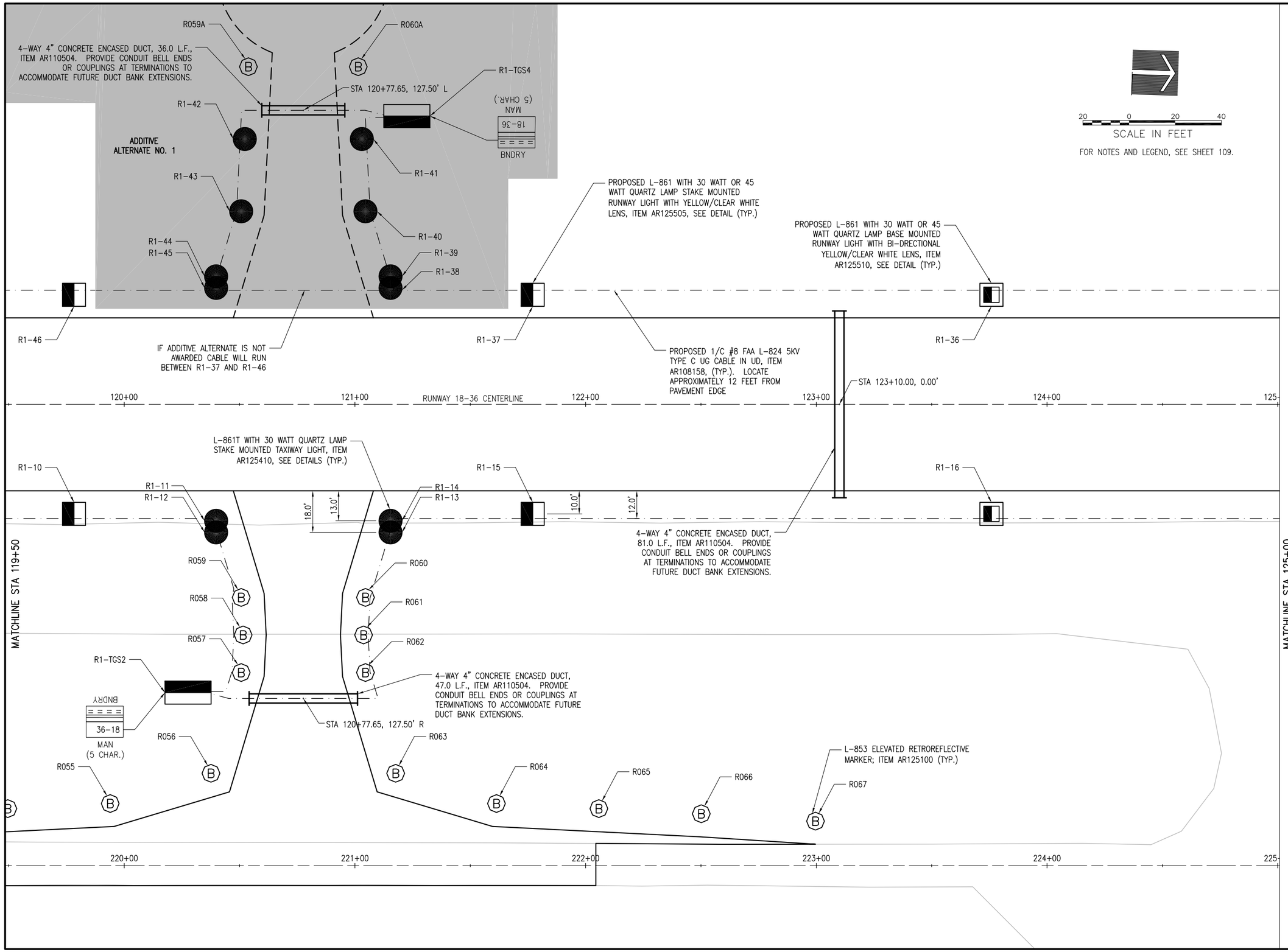

20 0 20 40

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LIGHTING, REFLECTOR, AND SIGNAGE PLAN

MAY 08, 2014 3:03 PM HAUSM00682
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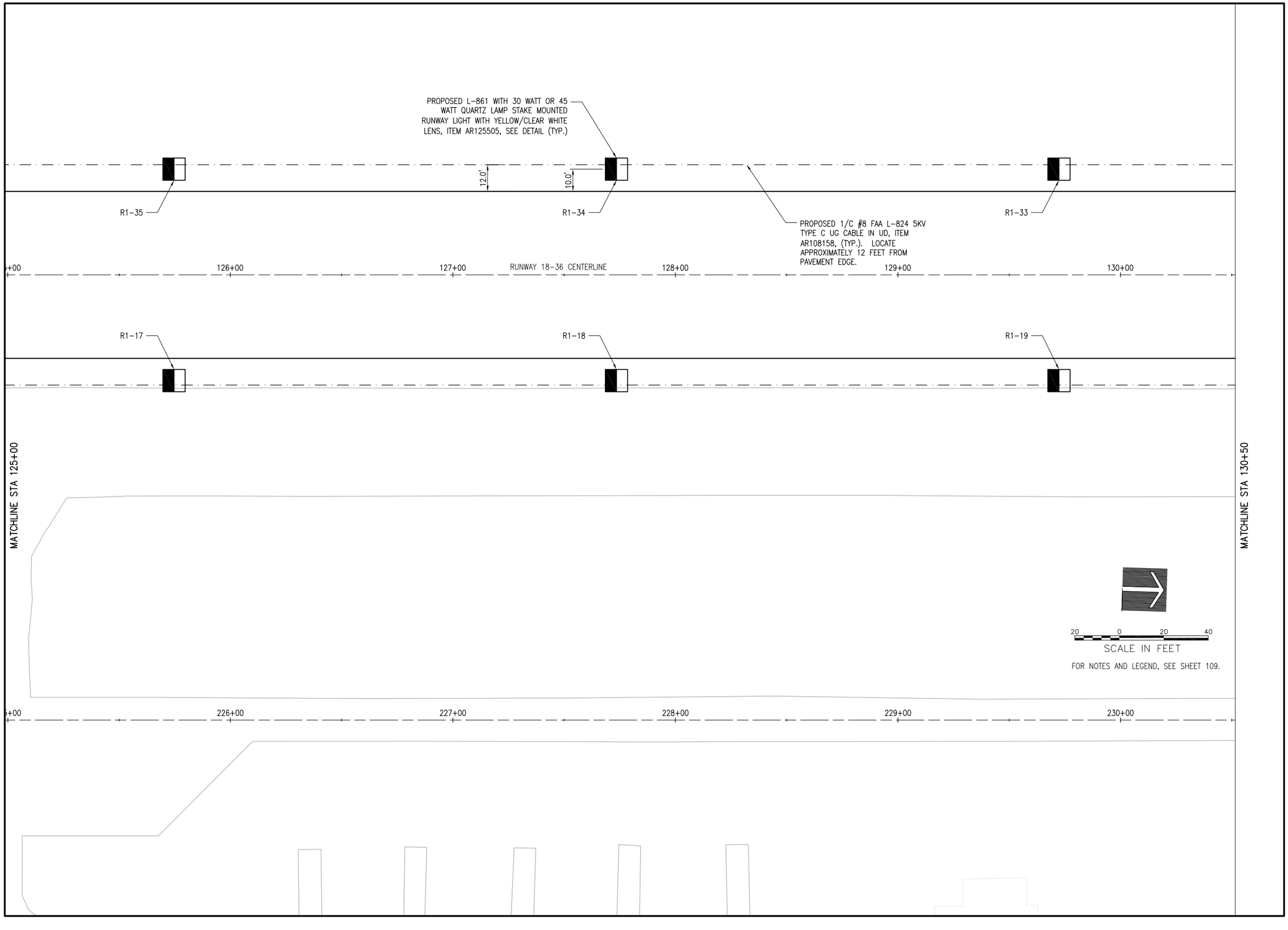

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SHEET TITLE

LIGHTING,
REFLECTOR, AND
SIGNAGE PLAN

PROPOSED L-861 WITH 30 WATT OR 45 WATT QUARTZ LAMP STAKE MOUNTED RUNWAY LIGHT WITH YELLOW/CLEAR WHITE LENS, ITEM AR125505, SEE DETAIL (TYP.).

R1-32

PROPOSED 1/C #8 FAA L-824 5KV TYPE C UG CABLE IN UD, ITEM AR108158, (TYP.).

RUNWAY 18-36 END STA. 133+60

PROPOSED L-861SE WITH 115 WATT OR 120 WATT QUARTZ LAMP BASE MOUNTED ENHANCED THRESHOLD LIGHT WITH BI-DIRECTIONAL RED/GREEN LENS, GREEN SIDE FACING NORTH (TOWARD RUNWAY 18 APPROACH), ITEM AR125545, SEE DETAIL (TYP.).

R1-31
R1-30
R1-29
R1-28

1/C #8 AWG, FAA L-824 5KV TYPE C UG CABLE (AR108108) IN 2" SCHEDULE 40 PVC/HDPE DUCT (AR110202) (TYP. BETWEEN BASE MOUNTED THRESHOLD LIGHTS).

131+00 RUNWAY 18-36 CENTERLINE 132+00 133+00 135+30 134+00 135+00 136+00

BLAST PAD

STA 133+74.00, 0.00'

PROPOSED L-861T WITH 30 WATT QUARTZ LAMP STAKE MOUNTED TAXIWAY LIGHT, ITEM AR125410, SEE DETAIL (TYP.).

R1-20
R1-21
R1-22
10.0'
12.0'
13.0'
18.0'
235+00

R1-27
R1-26
R1-25
R1-24
R1-23

MATCHLINE STA 130+50

R085
R083
R081
R086
R084
R082

R1-TGS3

STA 133+43.51, 127.50' R

234+00

BNDRY
18
MAN
(2 CHAR.)

R076
R074
R068
R070
R072

4-WAY 4" CONCRETE ENCASED DUCT 39.0 L.F., ITEM AR110504. PROVIDE CONDUIT BELL ENDS OF COUPLINGS AT TERMINATIONS TO ACCOMMODATE FUTURE DUCT BANK EXTENSIONS.

R080

231+00 232+00 233+00

R079

R069
R071
R073
R075
R077
R078

L-853 ELEVATED RETROREFLECTIVE MARKER' ITEM AR125100 (TYP.)

20 0 20 40
SCALE IN FEET

FOR NOTES AND LEGEND, SEE SHEET 109.

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MAY 08, 2014 2:40 PM SPITZ01394
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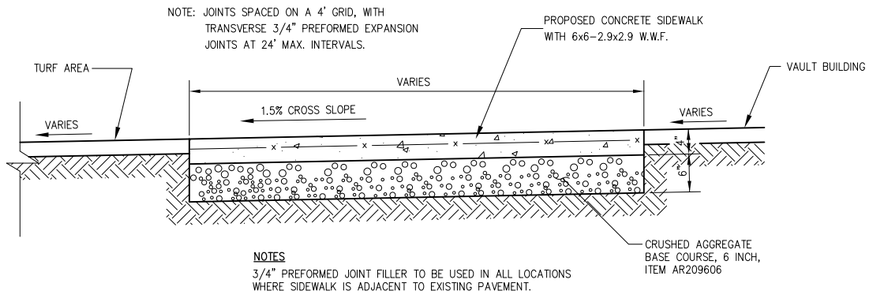
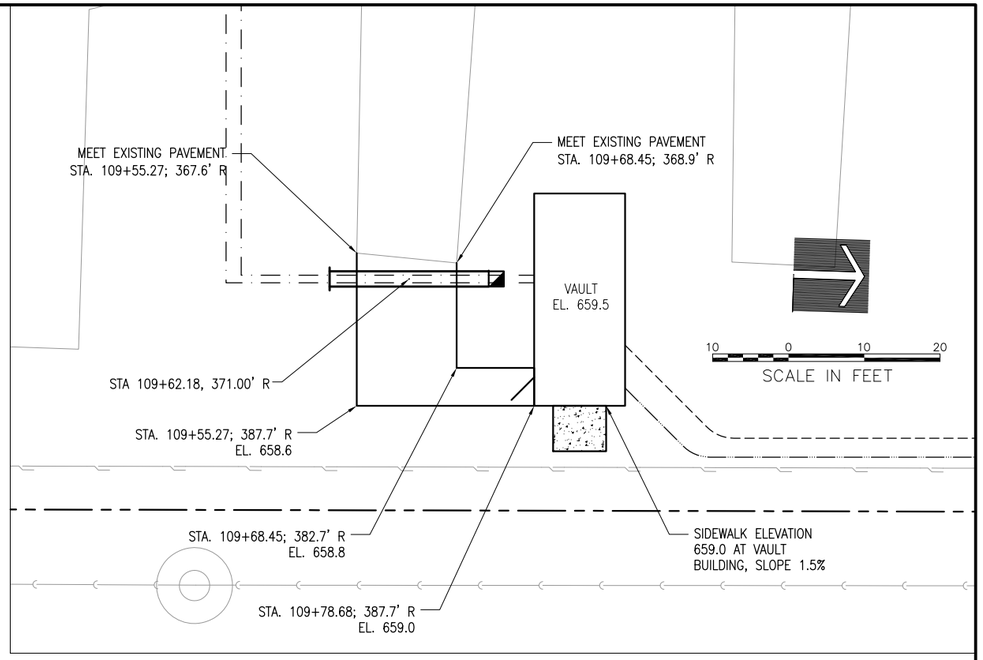
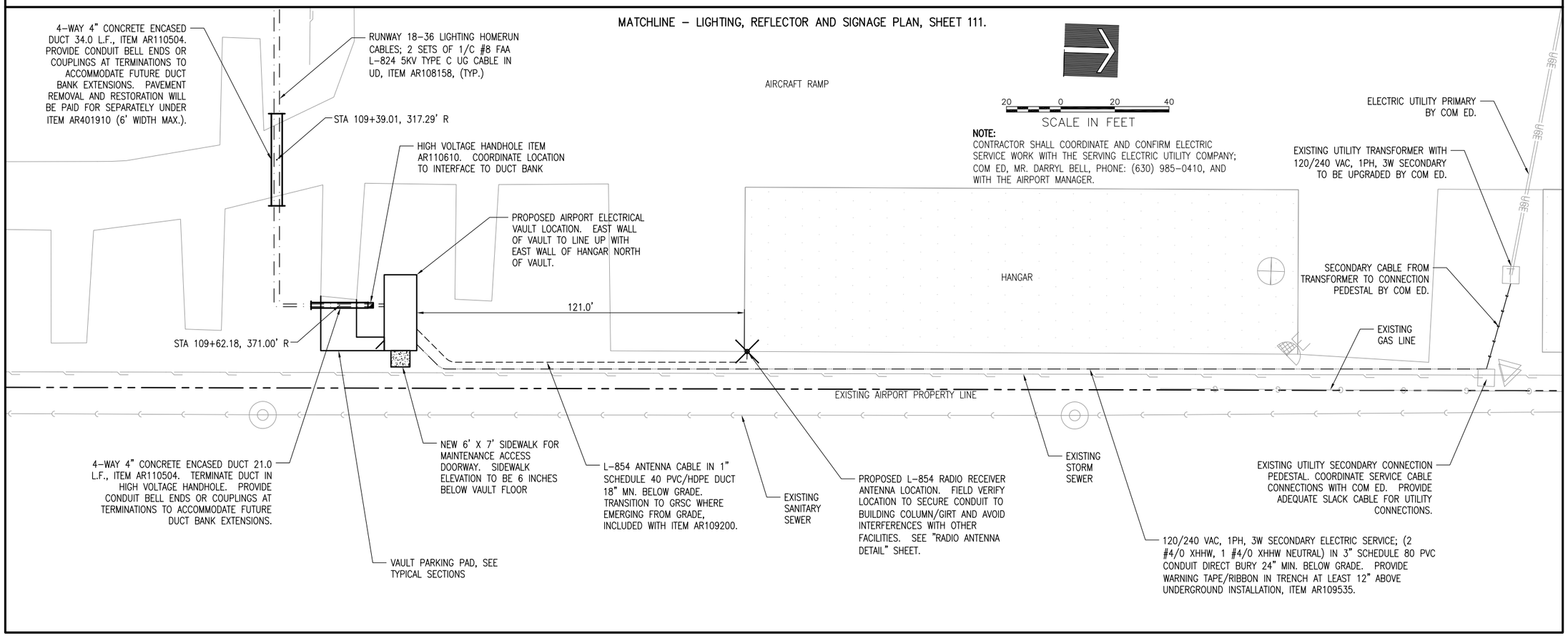


SIDEWALK CROSS SECTION DETAIL





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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 116-VAULTPLAN.DWG
LAYOUT BY: LDH 3/13/14
DRAWN BY: LDH 3/13/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

ELECTRICAL VAULT SITE PLAN

MAY 08, 2014 4:17 PM MCLAU01058
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AIRFIELD LIGHTING SCHEDULE

	TAG ID.	DESCRIPTION	TYPE	DIRECTION	COLOR	MOUNTING	STATION	OFFSET		TAG ID.
	R1-01	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	109+84.12	47.50	RT	R1-01
	R1-02	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	111+82.94	47.50	RT	R1-02
	R1-03	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	112+44.56	50.50	RT	R1-03
	R1-04	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	112+44.56	55.50	RT	R1-04
	R1-05	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	113+20.14	55.50	RT	R1-05
	R1-06	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	113+20.14	50.50	RT	R1-06
	R1-07	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	113+81.77	47.50	RT	R1-07
	R1-08	Runway Edge Light	L-861	Bidirectional	White/Yellow	Base	115+80.59	47.50	RT	R1-08
	R1-09	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	117+79.41	47.50	RT	R1-09
	R1-10	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	119+78.34	47.50	RT	R1-10
	R1-11	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	120+39.86	50.50	RT	R1-11
	R1-12	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	120+39.86	55.50	RT	R1-12
	R1-13	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	121+15.44	55.50	RT	R1-13
	R1-14	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	121+15.44	50.50	RT	R1-14
	R1-15	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	121+77.06	47.50	RT	R1-15
	R1-16	Runway Edge Light	L-861	Bidirectional	Yellow/White	Base	123+75.88	47.50	RT	R1-16
	R1-17	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	125+74.71	47.50	RT	R1-17
	R1-18	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	127+73.53	47.50	RT	R1-18
	R1-19	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	129+72.35	47.50	RT	R1-19
	R1-20	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	131+71.18	47.50	RT	R1-20
	R1-21	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	133+09.71	50.50	RT	R1-21
	R1-22	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	133+09.71	55.50	RT	R1-22
	R1-23	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	133+70.00	55.50	RT	R1-23
	R1-24	Runway Threshold Light	L-861SE	Bidirectional	Red/Green	Base	133+70.00	47.50	RT	R1-24
	R1-25	Runway Threshold Light	L-861SE	Bidirectional	Red/Green	Base	133+70.00	37.50	RT	R1-25
	R1-26	Runway Threshold Light	L-861SE	Bidirectional	Red/Green	Base	133+70.00	27.50	RT	R1-26
	R1-27	Runway Threshold Light	L-861SE	Bidirectional	Red/Green	Base	133+70.00	17.50	RT	R1-27
	R1-28	Runway Threshold Light	L-861SE	Bidirectional	Red/Green	Base	133+70.00	17.50	LT	R1-28
	R1-29	Runway Threshold Light	L-861SE	Bidirectional	Red/Green	Base	133+70.00	27.50	LT	R1-29
	R1-30	Runway Threshold Light	L-861SE	Bidirectional	Red/Green	Base	133+70.00	37.50	LT	R1-30
	R1-31	Runway Threshold Light	L-861SE	Bidirectional	Red/Green	Base	133+70.00	47.50	LT	R1-31
	R1-32	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	131+71.18	47.50	LT	R1-32
	R1-33	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	129+72.35	47.50	LT	R1-33
	R1-34	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	127+73.53	47.50	LT	R1-34
	R1-35	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	125+74.71	47.50	LT	R1-35
	R1-36	Runway Edge Light	L-861	Bidirectional	Yellow/White	Base	123+75.88	47.50	LT	R1-36
	R1-37	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	121+77.06	47.50	LT	R1-37
*	R1-38	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	121+15.44	50.50	LT	R1-38
*	R1-39	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	121+15.44	55.50	LT	R1-39
*	R1-40	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	121+04.57	83.71	LT	R1-40
*	R1-41	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	121+03.01	115.05	LT	R1-41
*	R1-42	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	120+52.29	115.05	LT	R1-42
*	R1-43	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	120+50.72	83.71	LT	R1-43
*	R1-44	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	120+39.86	55.50	LT	R1-44
*	R1-45	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	120+39.86	50.50	LT	R1-45
	R1-46	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	119+78.24	47.50	LT	R1-46
	R1-47	Runway Edge Light	L-861	Bidirectional	Yellow/White	Stake	117+79.41	47.50	LT	R1-47
	R1-48	Runway Edge Light	L-861	Bidirectional	White/Yellow	Base	115+80.59	47.50	LT	R1-48
	R1-49	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	113+81.77	47.50	LT	R1-49
	R1-50	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	111+82.94	47.50	LT	R1-50
	R1-51	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	109+84.12	47.50	LT	R1-51
	R1-52	Runway Edge Light	L-861	Bidirectional	White/Yellow	Base	107+85.29	47.50	LT	R1-52
	R1-53	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	105+86.47	47.50	LT	R1-53
	R1-54	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	103+87.65	47.50	LT	R1-54
	R1-55	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	101+88.82	47.50	LT	R1-55
	R1-56	Runway Threshold Light	L-861SE	Bidirectional	Green/Red	Base	99+90.00	47.50	LT	R1-56
	R1-57	Runway Threshold Light	L-861SE	Bidirectional	Green/Red	Base	99+90.00	37.50	LT	R1-57
	R1-58	Runway Threshold Light	L-861SE	Bidirectional	Green/Red	Base	99+90.00	27.50	LT	R1-58
	R1-59	Runway Threshold Light	L-861SE	Bidirectional	Green/Red	Base	99+90.00	17.50	LT	R1-59
	R1-60	Runway Threshold Light	L-861SE	Bidirectional	Green/Red	Base	99+90.00	17.50	RT	R1-60
	R1-61	Runway Threshold Light	L-861SE	Bidirectional	Green/Red	Base	99+90.00	27.50	RT	R1-61
	R1-62	Runway Threshold Light	L-861SE	Bidirectional	Green/Red	Base	99+90.00	37.50	RT	R1-62
	R1-63	Runway Threshold Light	L-861SE	Bidirectional	Green/Red	Base	99+90.00	47.50	RT	R1-63
	R1-64	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	99+90.00	55.50	RT	R1-64
	R1-65	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	100+50.29	55.50	RT	R1-65
	R1-66	Taxiway Edge Light	L-861T	Omnidirectional	Blue	Stake	100+50.29	50.50	RT	R1-66
	R1-67	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	101+88.82	47.50	RT	R1-67
	R1-68	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	103+87.65	47.50	RT	R1-68
	R1-69	Runway Edge Light	L-861	Bidirectional	White/Yellow	Stake	105+86.47	47.50	RT	R1-69
	R1-70	Runway Edge Light	L-861	Bidirectional	White/Yellow	Base	107+85.29	47.50	RT	R1-70

TAXI GUIDANCE SIGN SCHEDULE

	TAG ID.	DESCRIPTION	TYPE	DIRECTION	SIDE A	SIDE B	STATION	OFFSET		TAG ID.
	R1-TGS1	Sign	L-858R/Y	Double Face	36-18		112+42.37	125.00	RT	R1-TGS1
	R1-TGS2	Sign	L-858R/Y	Double Face	36-18		120+37.67	125.00	RT	R1-TGS2
	R1-TGS3	Sign	L-858R/Y	Double Face	18		133+07.52	125.00	RT	R1-TGS3
*	R1-TGS4	Sign	L-858R/Y	Double Face	18-36		121+12.52	125.00	LT	R1-TGS4
	R1-TGS5	Sign	L-858R/Y	Double Face	36		99+80.00	125.00	RT	R1-TGS5

* INDICATES ITEMS THAT ARE NOT PART OF THE BASE BID, BUT RATHER INCLUDED IN ADDITIVE ALTERNATE NO. 1

TAXI GUIDANCE SIGN SCHEDULE

36-18 TYPE L-858R MANDATORY INSTRUCTION SIGN - BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON A RED BACKGROUND

TYPE L-858Y BOUNDARY SIGN FOR RSA - BLACK LEGEND ON A YELLOW BACKGROUND

TAXI GUIDANCE SIGN NOTES

1. THE PROPOSED TAXI GUIDANCE SIGNS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345 44J (OR LATEST ISSUE IN FORCE) AND BE FAA-APPROVED FOR TYPE L-858Y OR L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGNS (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858R OR L-858R(L) MANDATORY INSTRUCTION SIGN (BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON RED BACKGROUND); AND/OR TYPE L-858L OR L-858L(L) LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND).
2. THE SIGNS SHALL BE SIZE 1, 18-IN. SIGN FACE WITH A 12-IN. LEGEND; STYLE 2, POWERED FROM A 4.8 TO 6.6 AMP SERIES LIGHTING CIRCUIT; CLASS 2, FOR OPERATION FROM -40 DEGREES F TO 131 DEGREES F; MODE 2, TO WITHSTAND WIND LOADS OF 200 M.P.H., BASE-MOUNTED, DOUBLE-SIDED, AS SPECIFIED ON THE PLANS.
3. THE PROPOSED TAXI GUIDANCE SIGNS SHALL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 20' FROM THE PAVEMENT EDGE.
4. ALL PROPOSED TAXI GUIDANCE SIGNS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE SIGN NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS.

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 117-ELECSCH.DWG
LAYOUT BY: KNL 4/3/14
DRAWN BY: LDH 4/3/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

AIRFIELD LIGHTING AND SIGNAGE SCHEDULES

AIRFIELD REFLECTIVE MARKER SCHEDULE

NO.	STATION	OFFSET	
R001	199+13.38	22.50	RT
R002	199+13.38	26.93	LT
R003	199+29.67	22.50	RT
R004	199+29.67	26.11	LT
R005	199+45.95	22.50	RT
R006	199+45.95	26.93	LT
R007	199+89.99	22.50	RT
R008	200+52.53	40.03	LT
R009	200+10.73	22.68	RT
R010	200+31.44	22.68	RT
R011	200+52.15	17.50	RT
R012	200+96.21	26.93	LT
R013	200+96.21	17.50	RT
R014	201+40.60	24.71	LT
R015	201+40.60	17.50	RT
R016	201+85.00	22.49	LT
R017	201+85.00	17.50	RT
R018	202+34.50	19.42	LT
R019	202+34.50	17.50	RT
R020	210+60.35	19.52	LT
R021	211+09.85	22.49	LT
R022	211+54.25	24.71	LT
R023	211+98.64	26.93	LT
R024	212+42.32	40.03	LT
R025	212+55.42	83.71	LT
R026	212+56.24	100.00	LT
R027	212+55.42	116.29	LT
R028	213+09.28	116.29	LT
R029	213+08.46	100.00	LT
R030	213+09.28	83.71	LT
R031	213+22.38	40.03	LT
R032	213+66.06	26.93	LT
R033	214+10.46	24.71	LT
R034	214+54.85	22.49	LT
R035	215+04.35	18.83	LT
R036	211+17.31	26.00	RT
R037	211+40.69	18.99	RT
R038	211+40.69	33.01	RT
R039	211+85.55	16.74	RT
R040	211+85.55	35.26	RT
R041	212+30.40	14.50	RT
R042	212+30.40	37.50	RT
R043	212+82.35	14.50	RT
R044	212+82.35	37.50	RT

NO.	STATION	OFFSET	
R045	213+34.30	14.50	RT
R046	213+34.30	37.50	RT
R047	213+79.15	16.74	RT
R048	213+79.15	35.26	RT
R049	214+24.01	18.99	RT
R050	214+24.01	33.01	RT
R051	214+47.39	26.00	RT
R052	218+55.65	20.13	LT
R053	219+05.15	22.49	LT
R054	219+49.54	24.71	LT
R055	219+93.93	26.93	LT
R056	220+37.61	40.03	LT
R057	220+50.72	83.71	LT
R058	220+51.53	100.00	LT
R059	220+50.72	116.29	LT
R060	221+04.57	116.29	LT
R061	221+03.76	100.00	LT
R062	221+04.57	83.71	LT
R063	221+17.68	40.03	LT
R064	221+61.36	26.93	LT
R065	222+05.75	24.71	LT
R066	222+50.14	22.49	LT
R067	222+99.65	19.29	LT
R068	231+25.50	20.26	LT
R069	231+25.50	17.50	RT
R070	231+75.00	22.49	LT
R071	231+75.00	17.50	RT
R072	232+19.39	24.71	LT
R073	232+19.39	22.50	RT
R074	232+63.79	26.93	LT
R075	232+63.79	22.50	RT
R076	233+07.47	40.03	LT
R077	233+07.82	22.50	RT
R078	233+28.56	22.68	RT
R079	233+49.27	22.68	RT
R080	233+70.01	22.50	RT
R081	234+14.04	26.93	LT
R082	234+14.04	22.50	RT
R083	234+30.33	26.11	LT
R084	234+30.33	22.50	RT
R085	234+46.62	26.93	LT
R086	234+46.62	22.50	RT
* R59a	120+53.85	146.39	LT
* R60a	121+01.44	146.39	LT

* INDICATES ITEMS THAT ARE NOT PART OF THE BASE BID, BUT RATHER INCLUDED IN ADDITIVE ALTERNATE NO. 1

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

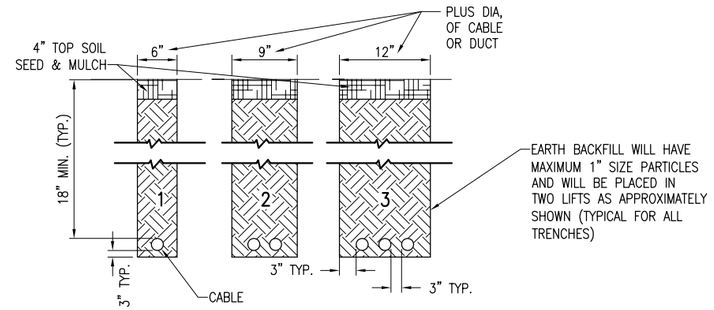
BO003

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 118-REFLECTIVESCH.DWG
LAYOUT BY: KNL 4/3/14
DRAWN BY: LDH 4/3/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

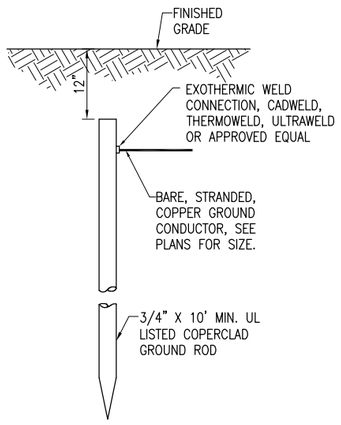
AIRFIELD REFLECTIVE
MARKER SCHEDULE



NOTES:

1. DETAIL NUMBERS INDICATE NO. OF CABLES.
2. TRENCHES WITH MORE THAN THREE CABLES SHALL BE INCREASED 3" IN WIDTH FOR EACH ADDITIONAL CABLE; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
3. DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS. MINIMUM COVER REQUIREMENTS FOR CABLES AND DUCTS AT AIRPORT RUNWAYS OR 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.
4. ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.

CABLE TRENCHES
(NOT TO SCALE)

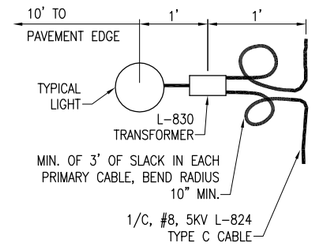


NOTES:
TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.

THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.

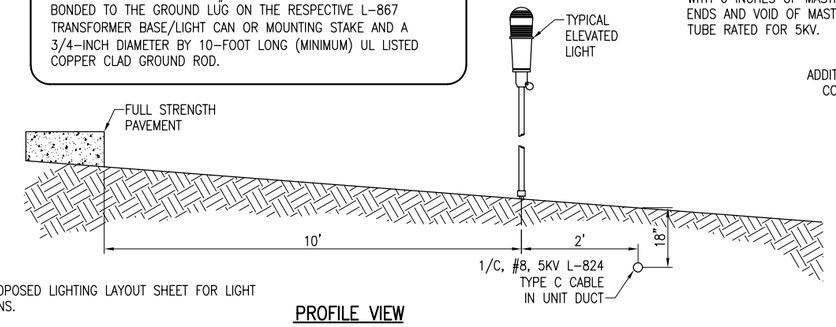
COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.

GROUND ROD
(NOT TO SCALE)



PLAN VIEW

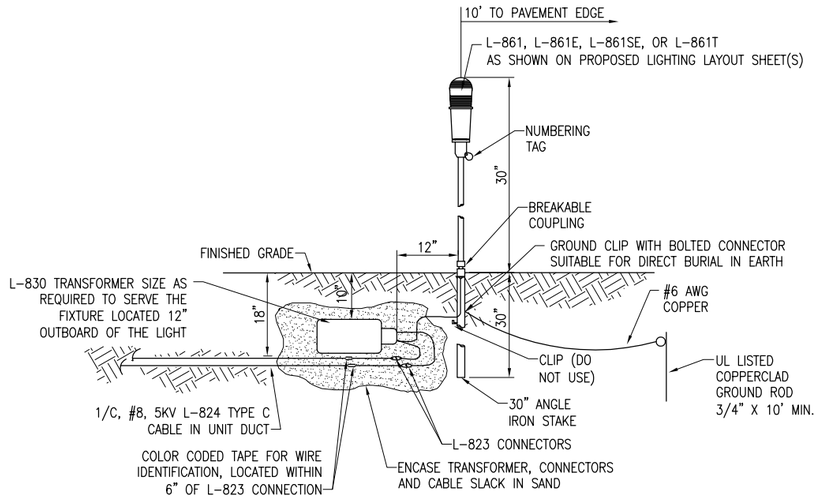
PER FAA AC 150/5340-30G DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED 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.



NOTES:
SEE PROPOSED LIGHTING LAYOUT SHEET FOR LIGHT LOCATIONS.

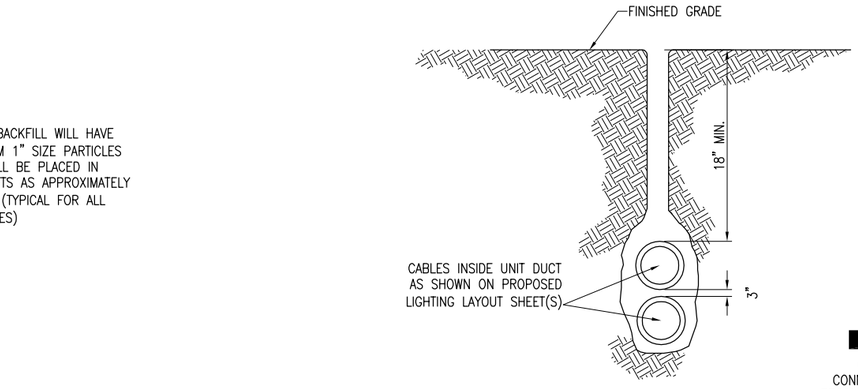
PROFILE VIEW

LIGHT AND CABLE INSTALLATION DETAIL
(NOT TO SCALE)



MEDIUM INTENSITY LIGHT - STAKE MOUNTED
(NOT TO SCALE)

SEE "ELECTRICAL DETAILS SHEET 2" FOR BASE MOUNT LIGHT DETAILS



PLOWED CABLE
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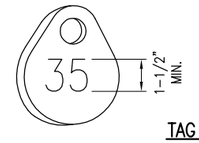
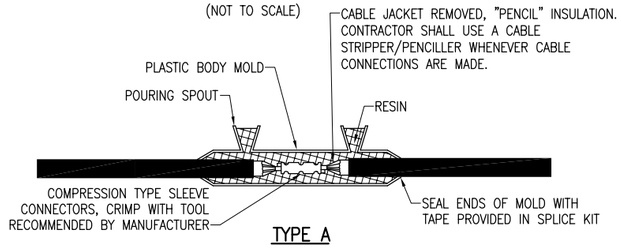
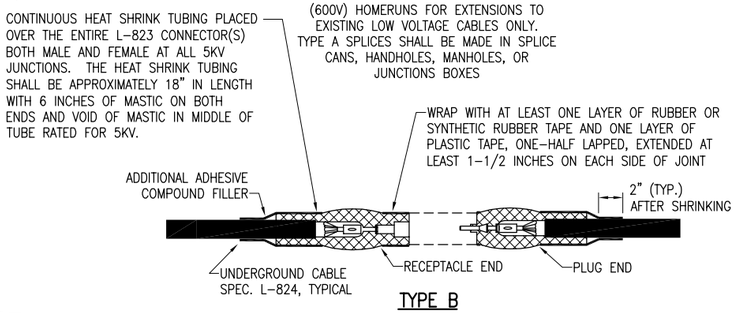


NOTE:
AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.

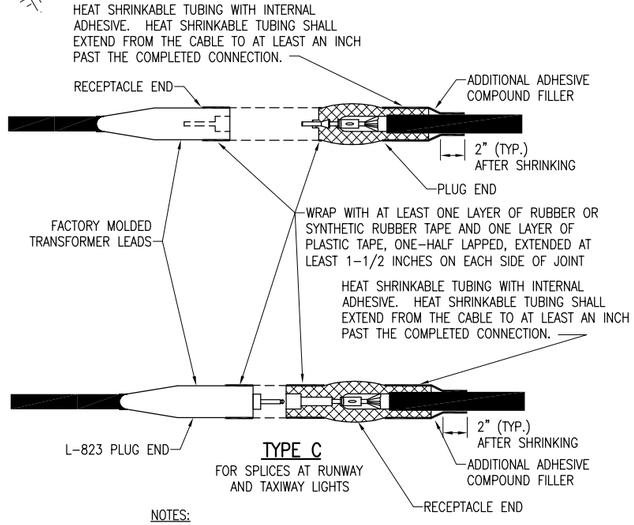
TAG DETAIL
(NOT TO SCALE)



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



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



TYPE C
FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS

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

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

CABLE SPLICES
(NOT TO SCALE)

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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
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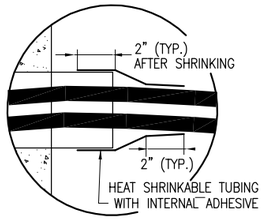
SHEET TITLE

ELECTRICAL DETAILS SHEET 1

MAY 08, 2014 2:46 PM SPITZ01394
K:\14JOBS\0084\14A0002D\DRAWINGS\SHEETS\119-E-501-DETL.DWG

SEE DETAILS SHEET 123 FOR L-861 SE BASE MOUNTED FIXTURE IN PAVEMENT.



DETAIL "B"
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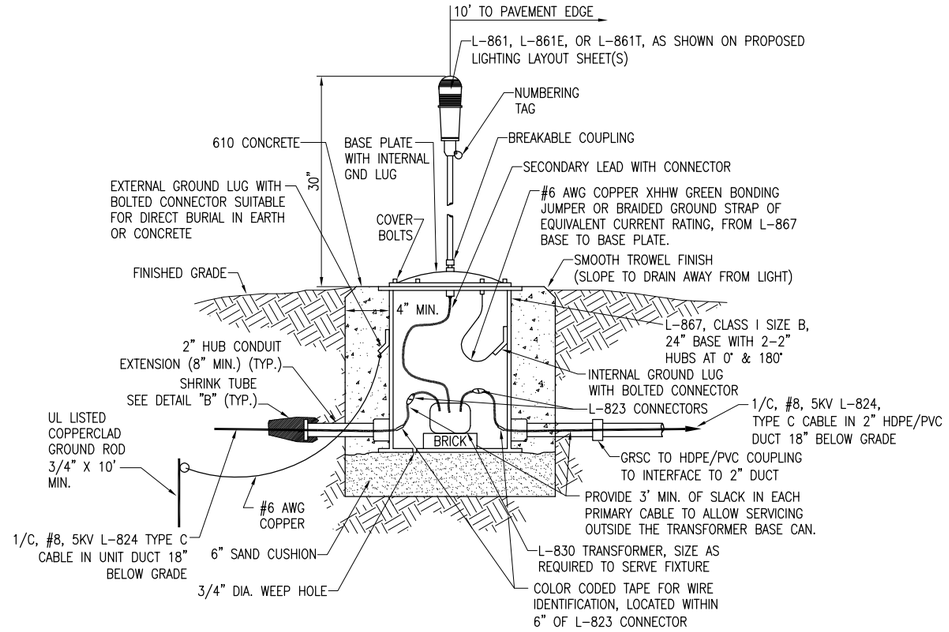
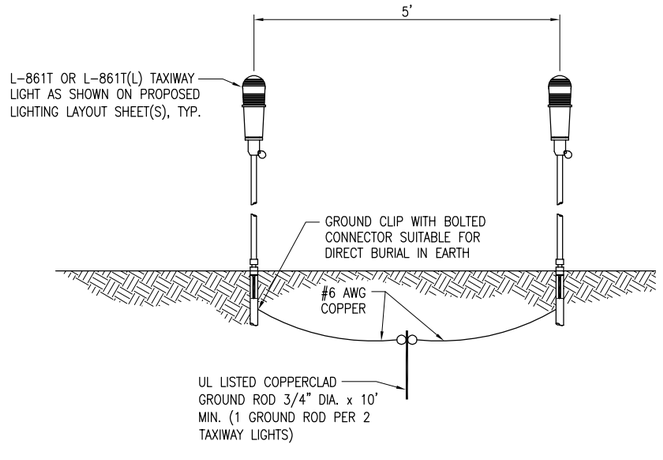


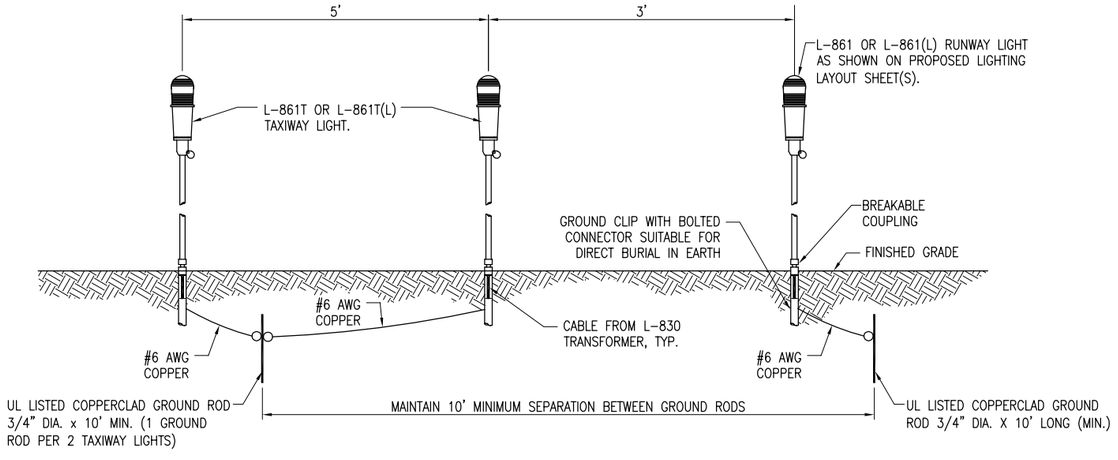
MEDIUM INTENSITY LIGHT – BASE MOUNTED
(NOT TO SCALE)

NOTES
1. SEE PROPOSED ELECTRICAL PLANS FOR LOCATIONS OF BASE MOUNTED LIGHTS WITH 2" DUCT INTERFACE AND LOCATIONS WITH CABLE IN UNIT DUCT INTERFACE.
2. HOMERUN LIGHT BASE CANS WILL REQUIRE ADDITIONAL CONDUIT HUB OPENINGS. HOME RUN LIGHT BASE CANS SHALL HAVE 2" HUBS AT 0 DEGREES AND 180 DEGREES AND A 3" HUB AT 90 DEGREES.

NOTES
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 150/5340-30G 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-FEET 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 BURIAL 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 GROUND 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. FOR TAXIWAY LIGHTS THAT ARE SPACED WITH LESS THAN 10 FEET OF SEPARATION BETWEEN THEM PROVIDE ONE 5/8-INCH DIAMETER BY 8-FOOT LONG GROUND ROD PER TWO ADJACENT TAXIWAY LIGHTS.
4. STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100% DOMESTIC STEEL.
5. 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.
6. PER FAA 150/5430-30G THE RESISTANCE TO THE GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
7. FOR EACH GROUNDING ELECTRODE SYSTEM 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.



GROUNDING DETAIL FOR ADJACENT TAXIWAY LIGHTS
(NOT TO SCALE)



GROUNDING DETAIL FOR ADJACENT RUNWAY AND TAXIWAY LIGHTS
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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

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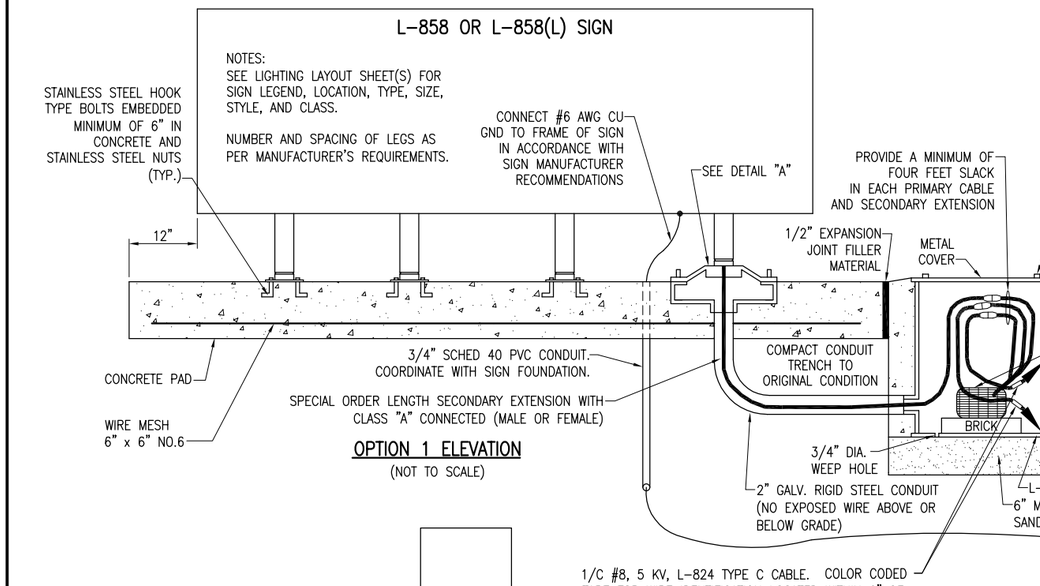
ELECTRICAL DETAILS SHEET 2

MAY 08, 2014 2:47 PM SPITZ01394
I:\14JOBS\0084\11\14A0002D\DRAWINGS\SHEETS\120-E-502-DETL.DWG

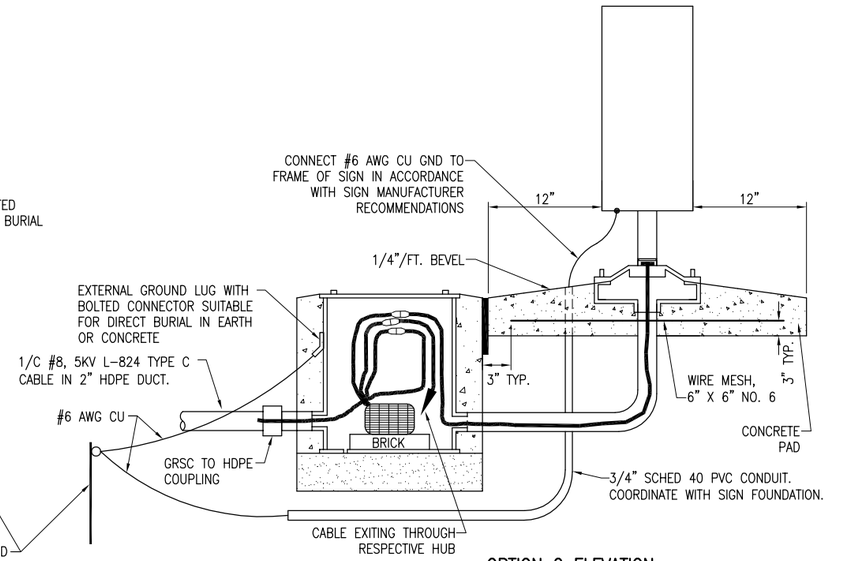
L-858 OR L-858(L) SIGN

NOTES:
SEE LIGHTING LAYOUT SHEET(S) FOR SIGN LEGEND, LOCATION, TYPE, SIZE, STYLE, AND CLASS.

NUMBER AND SPACING OF LEGS AS PER MANUFACTURER'S REQUIREMENTS.



OPTION 1 ELEVATION
(NOT TO SCALE)

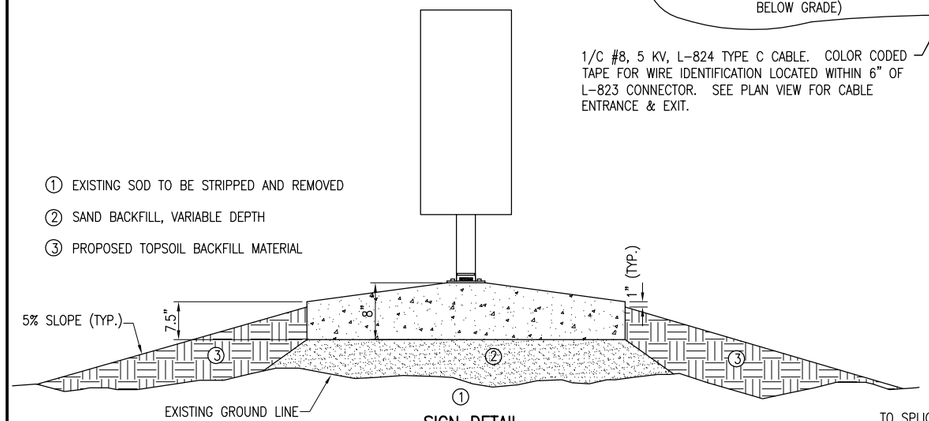


OPTION 2 ELEVATION
(NOT TO SCALE)

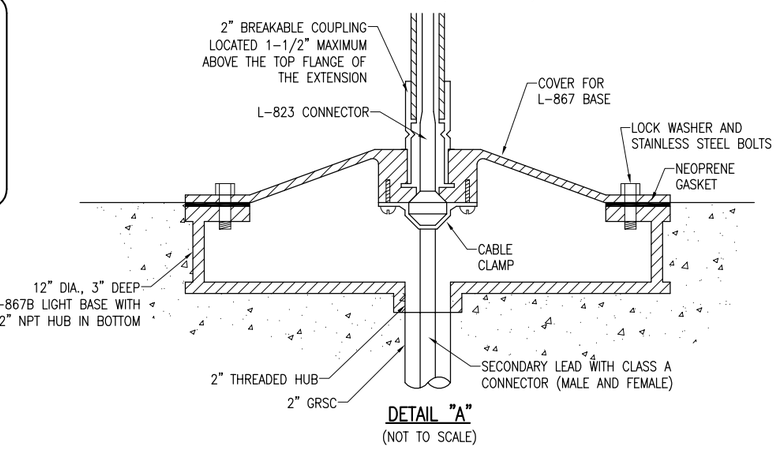
PER FAA AC 150/5340-30G DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED 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.



SIGN DETAIL
(NOT TO SCALE)



DETAIL "A"
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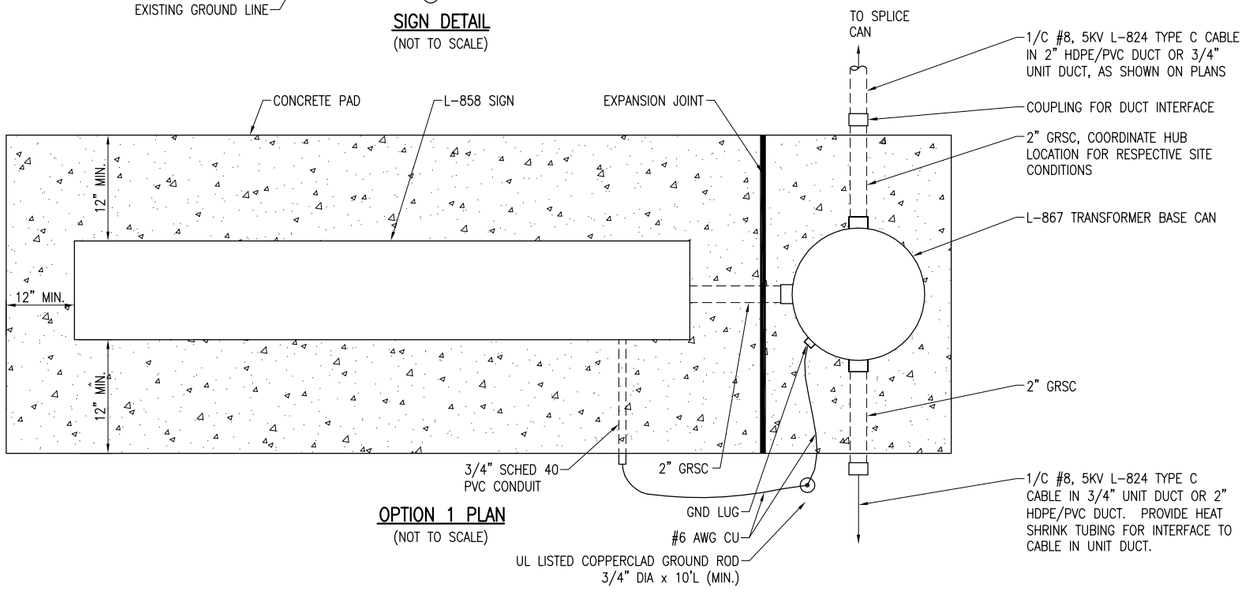

OPTION 1 PLAN
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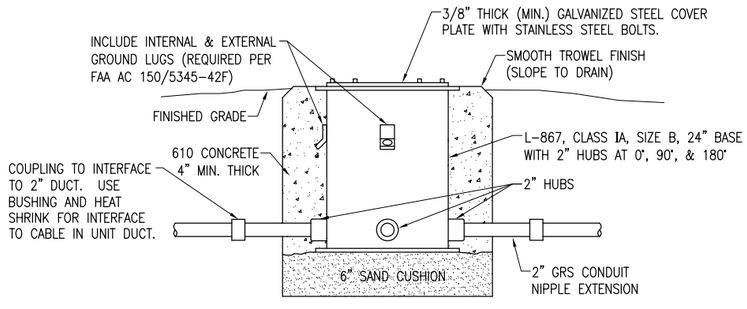

TRANSFORMER BASE/SPLICE CAN DETAIL FOR TAXI SIGN
(NOT TO SCALE)

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

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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
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ELECTRICAL DETAILS SHEET 3

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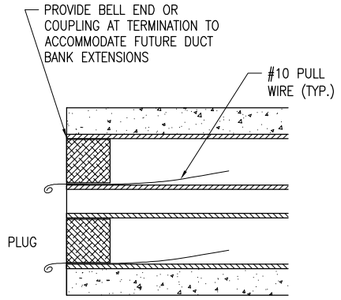

TYPICAL SECTION
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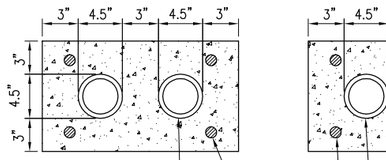
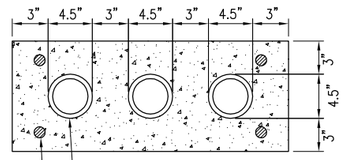


2–DUCT BANK
(NOT TO SCALE)



3–DUCT BANK
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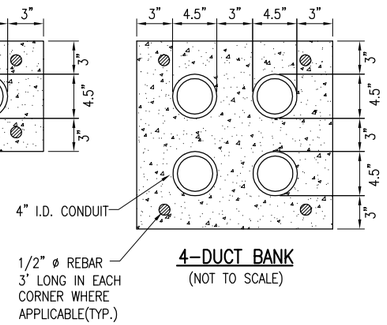


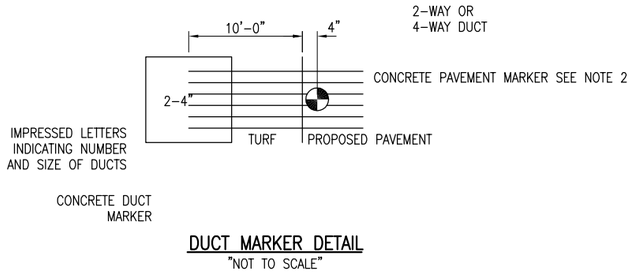
4–DUCT BANK
(NOT TO SCALE)

DUCT BANK NOTES:

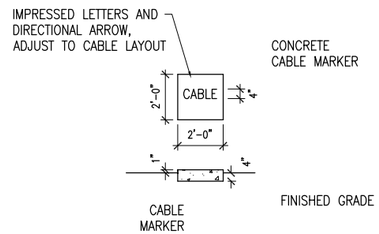
1. DIMENSIONS FOR CONCRETE COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
2. INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., OR APPROVED EQUAL TO MAINTAIN PROPER SEPARATION OF CONDUITS.
3. PROVIDE REBAR WHERE APPLICABLE TO ACCOMMODATE INTERFACE OF CONCRETE ENCASED DUCT BANKS TERMINATING IN HANDHOLE. PROVIDE REBAR WHERE APPLICABLE TO EXTEND AN EXISTING CONCRETE ENCASED DUCT BANK. REBAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706, GRADE 60.
4. CONDUITS FOR CONCRETE ENCASED DUCT SHALL BE SCHEDULE 40 (MIN.) PVC OR HDPE CONFORMING TO ITEM 110.
5. MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 18" BELOW FINISHED GRADE.
6. HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
7. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
8. DUCT INTERFACE TO HANDHOLES OR MANHOLES WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT PAY ITEM.
9. DUCTS SHALL EXTEND FOR 3 FEET BEYOND ANY EXISTING OR PROPOSED PAVEMENT EDGE.

CABLE & DUCT MARKER NOTES:

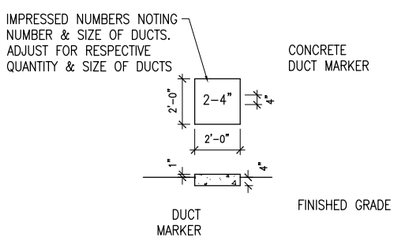
1. THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
2. BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE FORMED AS DESCRIBED IN NOTE 4.
3. CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
4. CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE ½" AND ¼" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.
5. EMPLOY THE FOLLOWING METHODS WERE ADDITIONAL SPACE TO FIT LEGEND IS REQUIRED:
   A. REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
   B. INCREASE THE MARKER SIZE TO 30" X 30".
   C. PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE.



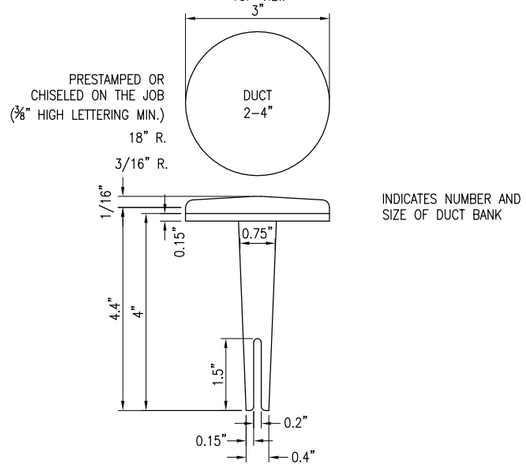
DUCT MARKER DETAIL
"NOT TO SCALE"



TURF CABLE MARKERS
"NOT TO SCALE"



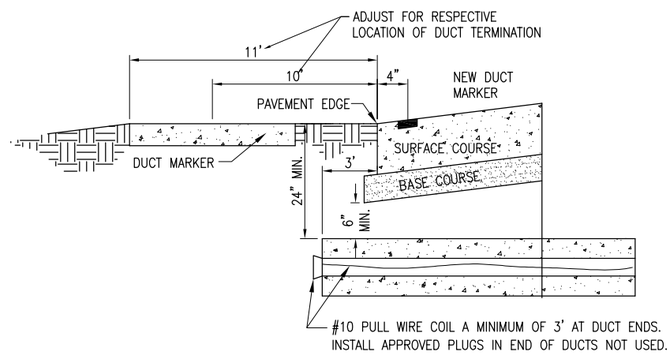
TURF DUCT MARKERS
"NOT TO SCALE"



BITUMINOUS PAVEMENT DUCT MARKERS
"NOT TO SCALE"

NOTES:

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



UNDERGROUND ELECTRICAL DUCT
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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
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BO003

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SHEET TITLE

ELECTRICAL DETAILS
SHEET 4

MAY 08, 2014 2:49 PM SPITZ01394
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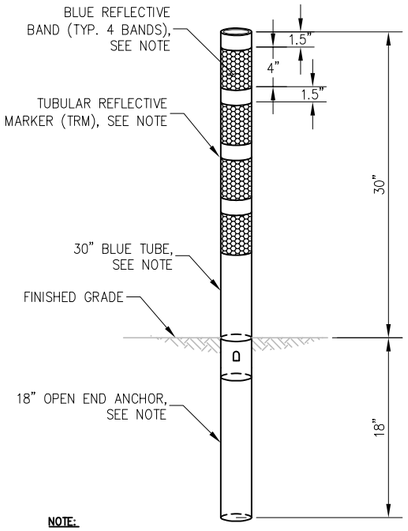
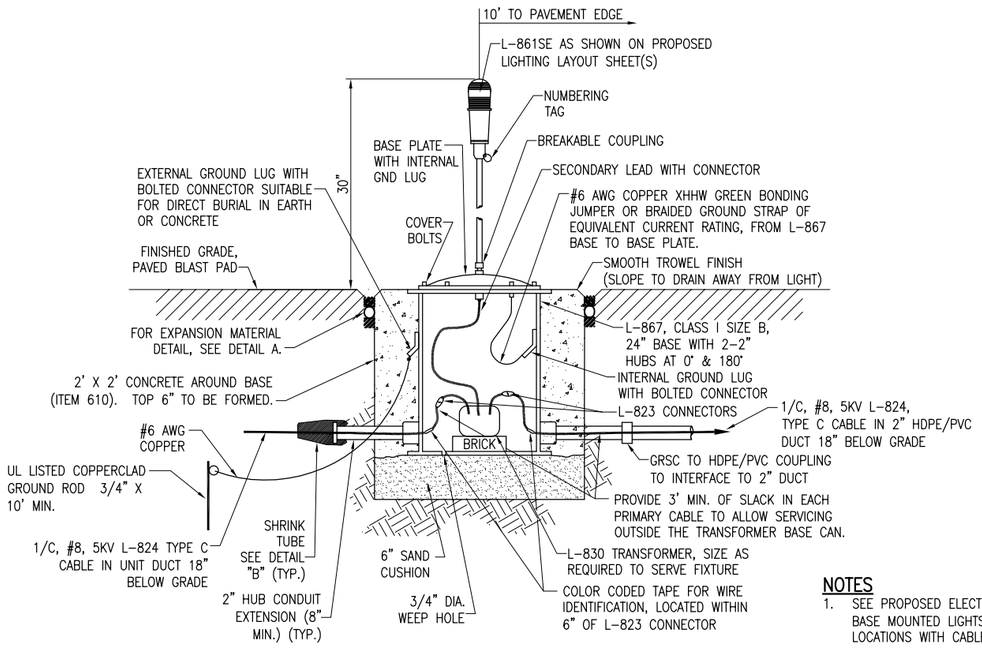


NOTE:

1. TUBULAR TAXIWAY REFLECTIVE MARKER (TRM) SHALL COMPLY WITH FAA AC 150\5345-39D (OR MOST CURRENT ISSUE IN EFFECT) FOR L-853, TYPE II, ELEVATED RETROREFLECTIVE MARKER FOR EDGE MARKING..
2. TUBULAR REFLECTIVE MARKER TO BE INSTALLED PER MANUFACTURER'S INSTRUCTION.

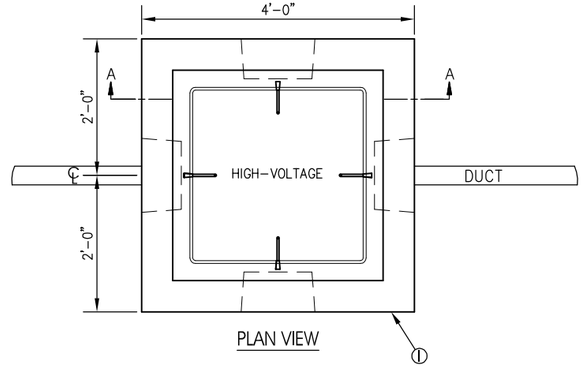
TAXIWAY REFLECTIVE MARKER (TRM)

(NOT TO SCALE)

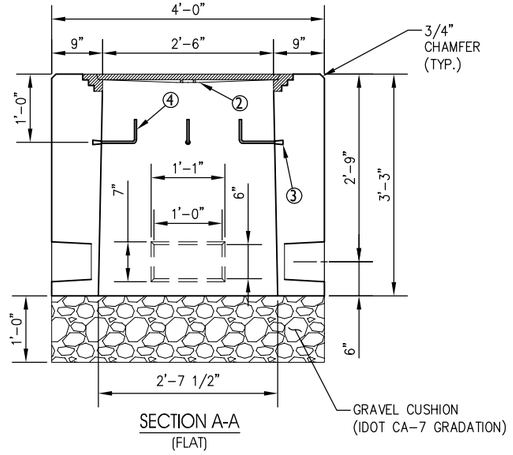


L-861 SE THRESHOLD LIGHT – BASE MOUNTED

(NOT TO SCALE)



PLAN VIEW



SECTION A-A

(FLAT)

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

SPECIFICATIONS

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

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

WEIGHT: APPROX. 4,990# FLAT TOP

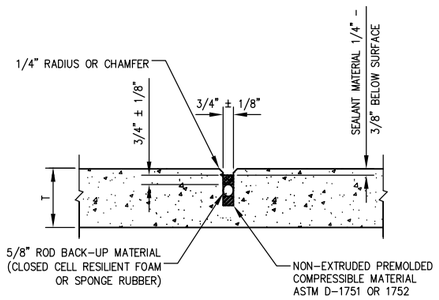
NOTES

1. **HANDHOLE SHALL BE PRECAST AS DETAILED. PRECAST MANUFACTURERS MUST BE ON THE IDOT (ILLINOIS DEPARTMENT OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.**
2. PRECAST HANDHOLE TO BE UTILITY CONCRETE PRODUCTS, LLC. 30" X 30" JUNCTION BOX OR APPROVED EQUAL.
3. HANDHOLE FRAME AND LID SHALL BE HEAVY DUTY SUITABLE FOR 40,000 POUND LOADING. LIDS FOR HANDHOLES USED WITH AIRFIELD LIGHTING SERIES CIRCUIT ELECTRICAL CABLES SHALL BE LABELED "HIGH-VOLTAGE".
4. GRAVEL CUSHION SHALL BE INCIDENTAL TO THE HANDHOLE.
5. HANDHOLES WILL BE PAID FOR UNDER ITEM AR110610 ELECTRICAL HANDHOLE PER EACH.
6. ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT AND/OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE HANDHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

ELECTRICAL HANDHOLE

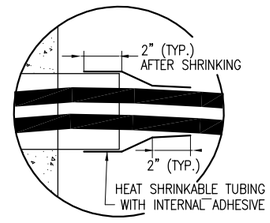
NOTES

1. SEE PROPOSED ELECTRICAL PLANS FOR LOCATIONS OF BASE MOUNTED LIGHTS WITH 2" DUCT INTERFACE AND LOCATIONS WITH CABLE IN UNIT DUCT INTERFACE.
2. HOMERUN LIGHT BASE CANS WILL REQUIRE ADDITIONAL CONDUIT HUB OPENINGS. HOME RUN LIGHT BASE CANS SHALL HAVE 2" HUBS AT 0 DEGREES AND 180 DEGREES AND A 3" HUB AT 90 DEGREES.



DETAIL "A"

(NOT TO SCALE)



DETAIL "B"

(NOT TO SCALE)

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Oak Brook, IL 60523
phone: 630-990-3800
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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 123-E-505-DETL.DWG
LAYOUT BY: KNL 3/30/14
DRAWN BY: LDH 3/7/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

ELECTRICAL DETAILS SHEET 5

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GENERAL NOTES

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

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

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

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

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

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

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

8. ANY AND ALL INSTRUCTIONS FROM THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE 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.

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

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

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

   C. INSTALLATION INSTRUCTION.

   D. START–UP INSTRUCTIONS.

   E. PREVENTATIVE MAINTENANCE REQUIREMENTS.

   F. CHART FOR TROUBLE–SHOOTING.

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

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

   I. SAFETY INSTRUCTIONS.

POWER AND CONTROL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

20. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.

21. WRAP ALL PRIMARY AND SECONDARY POWER 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.

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

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

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

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

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

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

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

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

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

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

   I. ALL WIRING SHALL BE NEATLY TRAINED AND LACED.

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

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

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Hanson Professional Services Inc.
815 Commerce Drive, Suite 200
Oak Brook, IL 60523
phone: 630-990-3800
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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 124-E-001-NOTE.DWG
LAYOUT BY: KNL 3/7/14
DRAWN BY: LDH 3/7/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

ELECTRICAL NOTES
SHEET 1

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 150/5340-30G 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 150/5340-30G THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.

5. 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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www.hanson-inc.com

Hanson Professional Services Inc.
815 Commerce Drive, Suite 200
Oak Brook, IL 60523
phone: 630-990-3800
fax: 630-990-3801

Illinois Licensed
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#184-001084

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Village of Bolingbrook
375 West Briarcliff Road
Bolingbrook, IL 60440
phone: 630-226-8400

CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
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ELECTRICAL NOTES
SHEET 2

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ELECTRICAL LEGEND – ONE-LINE DIAGRAM

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

ELECTRICAL LEGEND – SCHEMATIC

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

ELECTRICAL ABBREVIATIONS

A.F.F.	ABOVE FINSHED 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 CIRCLUAR 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:

   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 & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, OR HANDHOLE.

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Hanson Professional Services Inc.
815 Commerce Drive, Suite 200
Oak Brook, IL 60523
phone: 630-990-3800
fax: 630-990-3801

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Professional Service Corporation
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Bolingbrook
a place to grow

Village of Bolingbrook
375 West Briarcliff Road
Bolingbrook, IL 60440
phone: 630-226-8400

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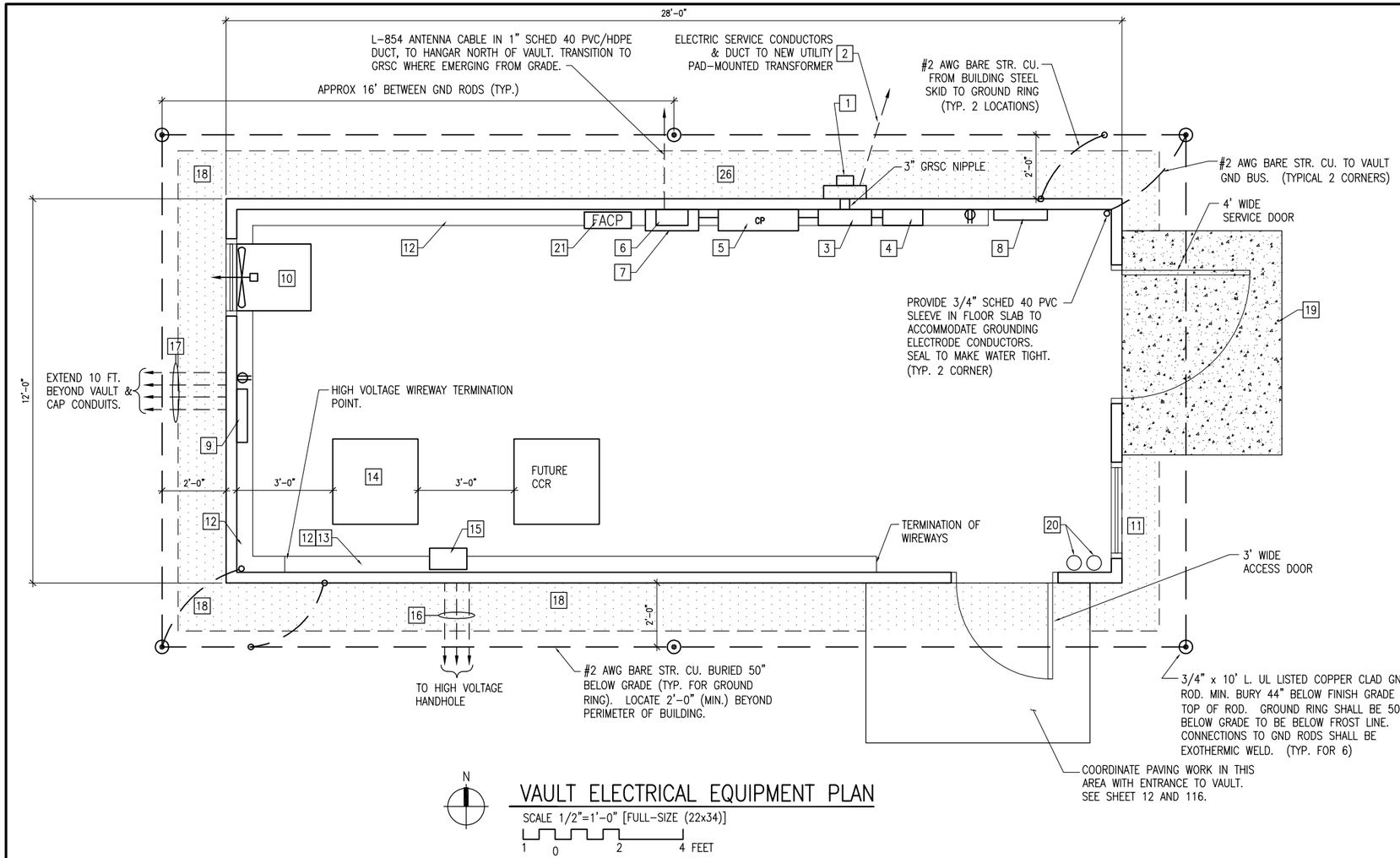
ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES



VAULT ELECTRICAL EQUIPMENT PLAN

SCALE 1/2"=1'-0" [FULL-SIZE (22x34)]

1 0 2 4 FEET

ELECTRICAL LEGEND – PLANS	
	CONDUIT (EXPOSED)
	CONDUIT OR UNIT DUCT (CONCEALED OR BURIED)
	POLE OR CONDUIT MOUNTED LIGHT FIXTURE
	WALL OR CEILING MT'D. JUNCTION BOX. CONFIGURATION VARIES WITH USE
	SINGLE THROW DISCONNECT SWITCH
	SINGLE THROW, FUSIBLE DISCONNECT SWITCH
CB	ENCLOSED CIRCUIT BREAKER
DT	DOUBLE THROW SAFETY SWITCH, MANUAL TRANSFER SWITCH
CP	CONTROL PANEL
T	TRANSFORMER
	ELECTRIC UTILITY METER
	ENCLOSURE
	CIRCUIT BREAKER PANEL–SEE SCHEDULES
	GROUND ROD
	#12 AWG THWN COPPER UNLESS NOTED OTHERWISE. LONG SLASHES INDICATE NEUTRAL. SHORT SLASHES INDICATE HOT OR SWITCHED LEG. SLASHES WITH DOT OR A "G" INDICATE SEPARATE GROUND WIRE.
PNL A 1,3,5	HOMERUN TO PANEL PNL A INDICATES PANEL 1,3,5 INDICATES CIRCUIT NUMBERS
PC	PHOTO-ELECTRIC CELL.

GENERAL NOTES:

1. SEE "ELECTRICAL ONE-LINE DIAGRAM FOR VAULT" FOR LOW VOLTAGE INPUT POWER WIRING REQUIREMENTS TO CCR'S (CONSTANT CURRENT REGULATORS). SEE "HIGH VOLTAGE WIRING SCHEMATIC" FOR CCR OUTPUT WIRING REQUIREMENTS. SEE "AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC" FOR CCR CONTROL WIRING REQUIREMENTS. PROVIDE 5 FEET MINIMUM CLEAR WORKING SPACE IN FRONT OF EACH CCR AND EACH SERIES PLUG CUTOUT.
2. CONSTANT CURRENT REGULATORS AND THEIR RESPECTIVE SERIES PLUG CUTOUTS SHALL BE CLEARLY LABELED TO IDENTIFY THE RESPECTIVE REGULATOR DESIGNATION, RUNWAY OR TAXIWAY SERVED, POWER SOURCE OR CIRCUIT, AND VOLTAGE SYSTEM.
3. SEE ELEVATION VIEWS FOR ADDITIONAL INFORMATION ON PROPOSED EQUIPMENT LAYOUTS.
4. COORDINATE CONDUIT & SLEEVE ENTRANCES THROUGH FLOOR SLAB AND WALLS.

KEYED NOTES:

1. ELECTRIC UTILITY METER WITH SUPPORT HARDWARE PER SERVING ELECTRIC UTILITY COMPANY REQUIREMENTS.
2. UTILITY SERVICE CONDUCTORS IN CONDUIT FROM UTILITY TRANSFORMER TO METER BASE BY UTILITY. CONTRACTOR SHALL FURNISH & INSTALL SERVICE CONDUCTORS & CONDUIT FROM METER BASE TO SERVICE PANEL. SEE "ELECTRICAL ONE LINE DIAGRAM FOR VAULT".
3. SERVICE PANEL A, SEE PANEL A SCHEDULE.
4. AC SURGE PROTECTIVE DEVICE, SEE "ELECTRICAL ONE-LINE DIAGRAM FOR VAULT."
5. LIGHTING CONTACTOR PANEL. SEE AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC AND LIGHTING CONTACTOR PANEL DETAIL.
6. L-854 RADIO CONTROL UNIT. EXTEND RADIO ANTENNA CABLE IN DUCT TO HANGAR NORTH OF VAULT. SEE "RADIO ANTENNA DETAIL" SHEET.
7. RADIO RELAY INTERFACE PANEL WITH PHOTOCELL BYPASS SWITCH FOR AIRFIELD LIGHTING SYSTEM. SEE AIRFIELD LIGHTING WIRING SCHEMATIC FOR WIRING REQUIREMENTS. MOUNT PHOTOCELL ABOVE VAULT ROOF LEVEL. FIELD VERIFY LOCATION FOR PROPER CONTROL AND OPERATION. PROVIDE SCHED 40 PVC NIPPLE AT ENTRY TO VAULT FOR ISOLATION. BOND EXTERIOR METAL CONDUIT TO GND RING WITH PIPE CLAMP AND #2 AWG CU BONDING CONDUCTOR.
8. ELECTRIC WALL HEATER EH-1, 4000 WATT, 240 VAC, 1 PHASE, SUITABLE FOR SURFACE MOUNTING WITH INTEGRAL THERMOSTAT, Q-MARK MODEL CWH3404, OR EQUAL. HEATER SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS.
9. ELECTRIC WALL HEATER EH-2 4000 WATT, 240 VAC, 1 PHASE, SUITABLE FOR SURFACE MOUNTING WITH INTEGRAL THERMOSTAT, Q-MARK MODEL CWH3404 OR APPROVED EQUAL. HEATER SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS. BOTTOM OF HEATER SHALL BE 3" (MIN.) ABOVE THE UPPER ELECTRICAL WIREWAY. COORDINATE WITH CCR INSTALLATION & FAN INSTALLATION. LOCATE HEATER ON WALL SUCH THAT IT IS NOT DIRECTLY BEHIND CCR.
10. EXHAUST FAN EF-1, 3100 CFM (MINIMUM) AT .25" STATIC PRESSURE WITH 1/3 HP (MINIMUM), 120 VAC MOTOR, COOK MODEL 20S10D, OR APPROVED EQUAL. INCLUDE WALL HOUSING WITH GUARD, GRAVITY BACK DRAFT DAMPER, ALUMINUM WEATHER-HOOD PAINTED TO MATCH BUILDING EXTERIOR, STAINLESS STEEL INSECT SCREEN, AND FRACTIONAL HP ELECTRICAL DISCONNECT. INSTALL FAN AS HIGH AS POSSIBLE. PROVIDE 120 VAC THERMOSTAT, AT 48" AFF. SEE EXHAUST FAN CONTROL SCHEMATIC FOR WIRING REQUIREMENTS. FAN SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS.
11. INTAKE LOUVER L-1, 36" WIDE BY 48" HIGH INTAKE LOUVER WITH STAINLESS INSECT SCREEN. 120 VAC MOTORIZED DAMPER WITH LIMIT SWITCH, KYNAR FINISH MATCHING BUILDING EXTERIOR, RUSKIN MODEL ELF375DX, OR APPROVED EQUAL. SEE EXHAUST FAN CONTROL SCHEMATIC FOR WIRING REQUIREMENTS. LOUVER / DAMPER SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS.
12. 6" BY 6" LOW VOLTAGE WIREWAY. LABEL "LOW VOLTAGE" EVERY 4 FEET. INSTALL ABOVE HIGH VOLTAGE WIREWAY.
13. 6" BY 6" HIGH VOLTAGE WIREWAY. LABEL "HIGH VOLTAGE" EVERY 4 FEET. INSTALL BELOW LOW VOLTAGE WIREWAY.
14. NEW RUNWAY 18-36 CONSTANT CURRENT REGULATOR. SEE GENERAL NOTE 1.
15. SERIES PLUG CUTOUT (TYPE S-1) WITH ENCLOSURE. SEE GENERAL NOTES 1 & 2.
16. 3-3" PVC COATED GRSC WITH PVC COATED GRSC ELBOWS FROM HIGH VOLTAGE WIREWAY TO HIGH VOLTAGE HANDHOLE.
17. 4-3" PVC COATED GRSC WITH 4-3" PVC COATED GRSC ELBOWS AT VAULT FROM LOW VOLTAGE WIREWAY TO 10 FEET BEYOND VAULT. PROVIDE CONDUIT CAPS AT TERMINATIONS BELOW GRADE..
18. VEGETATION BARRIER CONSISTING OF A MIN. 3" (MINIMUM) IDOT GRADATION CA-7 SURFACE OVER FILTER OR LANDSCAPING FABRIC. PROPOSED SURFACE TREATMENT WILL COVER ENTIRE AREA BENEATH VAULT STRUCTURE AS WELL AS 18" AROUND THE PERIMETER OF THE BUILDING EDGE. THE STONE AND FABRIC AS WELL AS ANY EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS TASK WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE PROPOSED ELECTRICAL VAULT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
19. ENTRANCE SIDEWALK 6' X 7'. PAID FOR UNDER SIDEWALK ITEM AR501604. SEE SHEET 116. COORDINATE WITH ENTRY TO VAULT. VAULT FLOOR ELEVATION TO BE APPROXIMATELY 6 INCHES OR LESS ABOVE PAD.
20. FURNISH AND INSTALL A UL RATED, 10 POUND CARBON DIOXIDE FIRE EXTINGUISHER SUITABLE FOR USE ON CLASS C FIRES AND A 10 POUND CLASS 4A:80B:C DRY CHEMICAL ABC FIRE EXTINGUISHER SUITABLE FOR USE ON CLASS A,B,C, FIRES, IN THE VAULT SHELTER. PER NFPA 10 "PORTABLE FIRE EXTINGUISHERS" CLASS C ARE FOR FIRES THAT INVOLVE ENERGIZED ELECTRICAL EQUIPMENT. FIRE EXTINGUISHERS SHALL BE MADE IN THE UNITED STATES OF AMERICA TO COMPLY WITH BUY AMERICAN REQUIREMENT. FIRE EXTINGUISHERS TYPE CO2 SHALL BE AMEREX MODEL 330, ANSUL SENTRY 10 MODEL CO10A-1 OR APPROVED EQUAL. FIRE EXTINGUISHER DRY CHEMICAL, TYPE ABC SHALL BE AMEREX MODEL B456, OR APPROVED EQUIAL. PROVIDE WALL MOUNTING BRACKET FOR EACH FIRE EXTINGUISHER. CONFIRM MODEL NUMBERS WITH THE RESPECTIVE FIRE EXTINGUISHER MANUFACTURER.
21. FIRE ALARM CONTROL PANEL SEE PROPOSED FIRE ALARM DETECTION PLAN

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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

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ELECTRICAL VAULT EQUIPMENT PLAN

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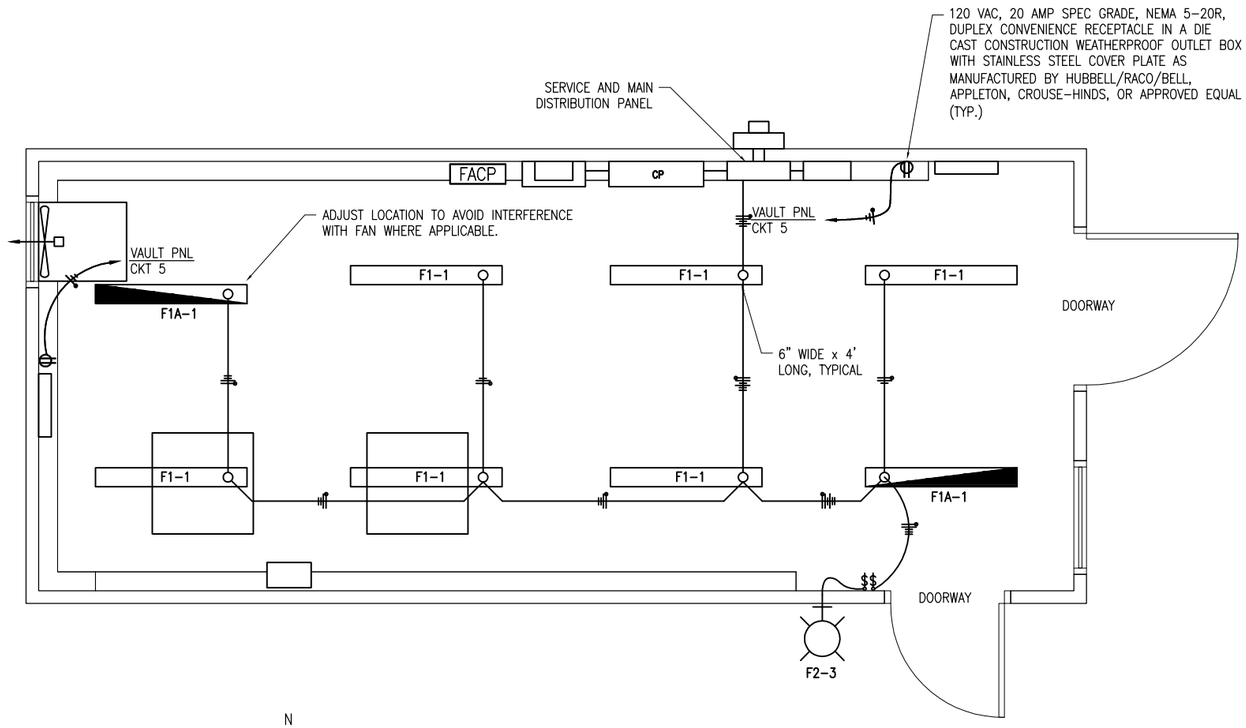

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VAULT LIGHTING AND RECEPTACLE PLAN

SCALE 1/2"=1'-0"

1 0 2 4 FEET

NOTES

1. 15 AMP & 20 AMP BRANCH CIRCUITS FOR LIGHTING & RECEPTACLES SHALL USE #12 AWG THWN (MIN.). EMT MAY BE USED FOR LIGHTING AND RECEPTACLE BRANCH CIRCUITS.
2. LIGHT FIXTURES SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. PROVIDE CERTIFICATION OF MANUFACTURE IN THE UNITED STATES WITH SHOP DRAWINGS SUBMITTAL.
3. ADJUST RECEPTACLE LOCATIONS WHERE NECESSARY TO ACCOMMODATE EQUIPMENT LAYOUT.
4. ADJUST LIGHT FIXTURE LOCATIONS WHERE NECESSARY TO ACCOMMODATE EQUIPMENT LAYOUT
5. TEST EMERGENCY LIGHTING AND CONFIRM PROPER OPERATION.
6. "USPOM" SUFFIX ON LITHONIA LIGHT FIXTURE CATALOG NUMBERS INDICATES UNITED STATES POINT OF MANUFACTURE.

LIGHTING FIXTURE SCHEDULE

FIXT. TYPE	DESCRIPTION	MANUFACTURER & CATALOG NO.	LAMPS/ WATTS	VOLTS	MOUNTING	REMARKS
F1	4 FT. WET LOCATION LISTED ENCLOSED AND GASKETED INDUSTRIAL FLUORESCENT LIGHT FIXTURE, IMPACT RESISTANT, UV RESISTANT REINFORCED POLYESTER FIBERGLASS HOUSING, HIGH IMPACT ACRYLIC DIFFUSER, RAPID START COLD WEATHER 0 DEG. F. ELECTRONIC BALLAST WITH LESS THAN OR EQUAL TO 10% THD.	LITHONIA: DMW-2-32-AR-120-CW-GEB10RS-WLF -USPOM OR APPROVED EQUAL.	2-32W T8 4100K 59 TOTAL INPUT WATTS	120	SURFACE TO HARD CEILING	PROVIDE WET LOCATION FITTINGS INSTALLED IN TOP OF FIXTURE.
F1A	SAME AS F1 EXCEPT PROVIDE AN EMERGENCY BALLAST CAPABLE OF OPERATING 2 LAMPS FOR 90 MINUTES AT 1100-1400 TOTAL LUMENS, BODINE #B50ST. NOTE BALLAST MIGHT REQUIRE TO BE REMOTE MOUNTED NEAR FIXTURE AS INDICATED ON THE PLANS.	LITHONIA: DMW-2-32-AR-120-CW-GEB10RS-WLF -USPOM OR APPROVED EQUAL.	2-32W T8 4100K 59 TOTAL INPUT WATTS	120	SURFACE TO HARD CEILING	PROVIDE WET LOCATION FITTINGS INSTALLED IN TOP OF FIXTURE.
F2	COMPACT FLUORESCENT WALL-PAK, ONE PIECE INJECTION MOLDED UV STABILIZED POLYCARBONATE HOUSING, HIGH PERFORMANCE SPECULAR ANODIZED SEGMENTED REFLECTOR, ONE PIECE HIGH TEMPURATURE SILICONE GASKET, MEDIUM BRONZE FINISH, HIGH POWERFACTOR ELECTRONIC BALLAST WITH LESS THAN OR EQUAL TO 10% THD, UL LISTED FOR WET LOCATIONS, FUSED.	LITHONIA: TWA-42TRT-120-SF-CR-DMB-LPI -USPOM OR APPROVED EQUAL.	1-42W TRT 4100K 47 TOTAL INPUT WATTS	120	SURFACE TO WALL ABOVE AND TO THE LEFT OF EXTERIOR DOOR APPROXIMATELY 4 INCHES ABOVE TOP OF DOOR FRAME. ADJUST LOCATION TO ACCOMMODATE DOORWAY OVERHANG.	CONNECT TO WALL SWITCH LOCATED ON THE INSIDE OF THE BUILDING.

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

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VAULT LIGHTING AND
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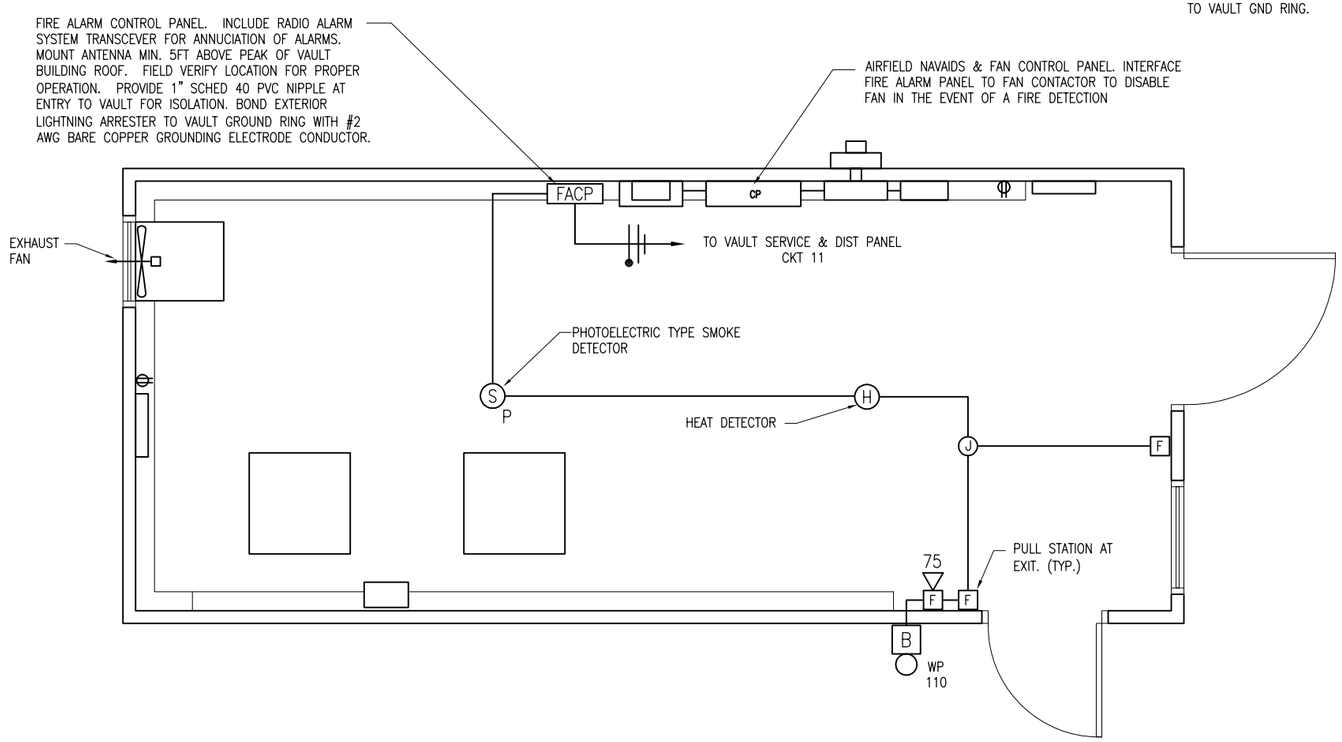
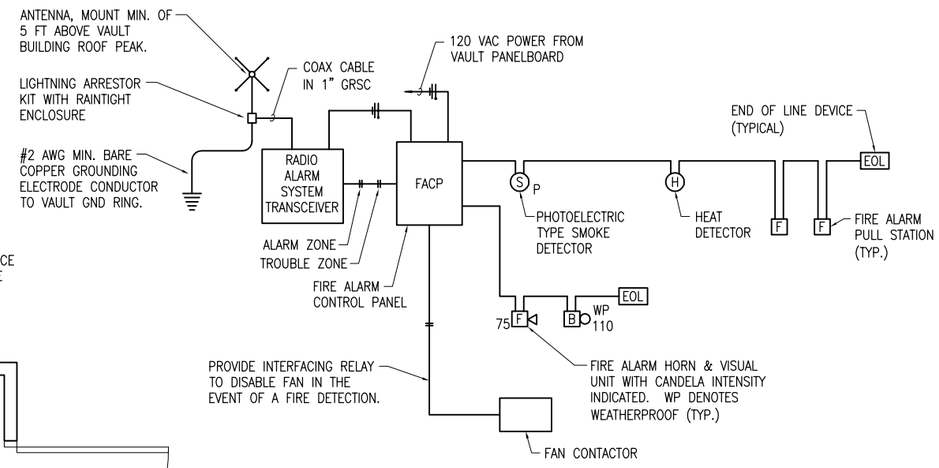


VAULT FIRE ALARM DETECTION PLAN

N

SCALE 1/2"=1'-0" [FULL-SIZE (22x34)]

1 0 2 4 FEET



FIRE ALARM ONE-LINE DIAGRAM

NO SCALE

FIRE ALARM ONE-LINE DIAGRAM NOTES:

1. VERIFY ALL CONDITIONS, NUMBERS OF DEVICES AND TYPES OF DEVICES WITH DRAWINGS PRIOR TO START OF WORK.
2. ONE LINE DIAGRAM IS FOR REFERENCE ONLY, WIRE ALL DEVICES PER MANUFACTURER'S RECOMMENDATIONS.
3. PROVIDE A FIRE ALARM CONTROL PANEL WITH A MINIMUM OF TWO INITIATING DEVICE CIRCUITS AND TWO NOTIFICATION APPLIANCE CIRCUITS.
4. PROVIDE STROBE POWER EXTENDER PANELS AS RECOMMENDED BY THE MANUFACTURER.
5. INTERIOR WIRING TO BE IN EMT CONDUIT AND ALL BOXES TO BE PAINTED RED AND MARKED FIRE ALARM. ALL WIRING TO BE IN ACCORDANCE WITH NFPA 72-NATIONAL FIRE ALARM CODE AND MANUFACTURERS RECOMMENDATIONS. CONDUIT TO EXTERIOR MOUNTED DEVICES SHALL BE GRSC.
6. FIRE ALARM DETECTION SYSTEM SHALL INTERFACE BY RADIO TO THE FIRE DEPARTMENT ALARM MONITORING EQUIPMENT IN ACCORDANCE WITH THE VILLAGE OF BOLINGBROOK, IL. FIRE DEPARTMENT REQUIREMENTS. ALSO REFER TO VILLAGE OF BOLINGBROOK MUNICIPAL CODE, CHAPTER 26 FIRE REGULATIONS.

FIRE DETECTION LEGEND - PLANS	
FACP	FIRE ALARM CONTROL PANEL
F	FIRE ALARM LOCAL PULL STATION
F 15	FIRE ALARM HORN & VISUAL UNIT WITH CANDELA INTENSITY INDICATED
B	OUTDOOR RATED BELL & STROBE
H	HEAT DETECTOR
S I	IONIZATION TYPE SMOKE DETECTOR
S P	PHOTOELECTRIC TYPE SMOKE DETECTOR

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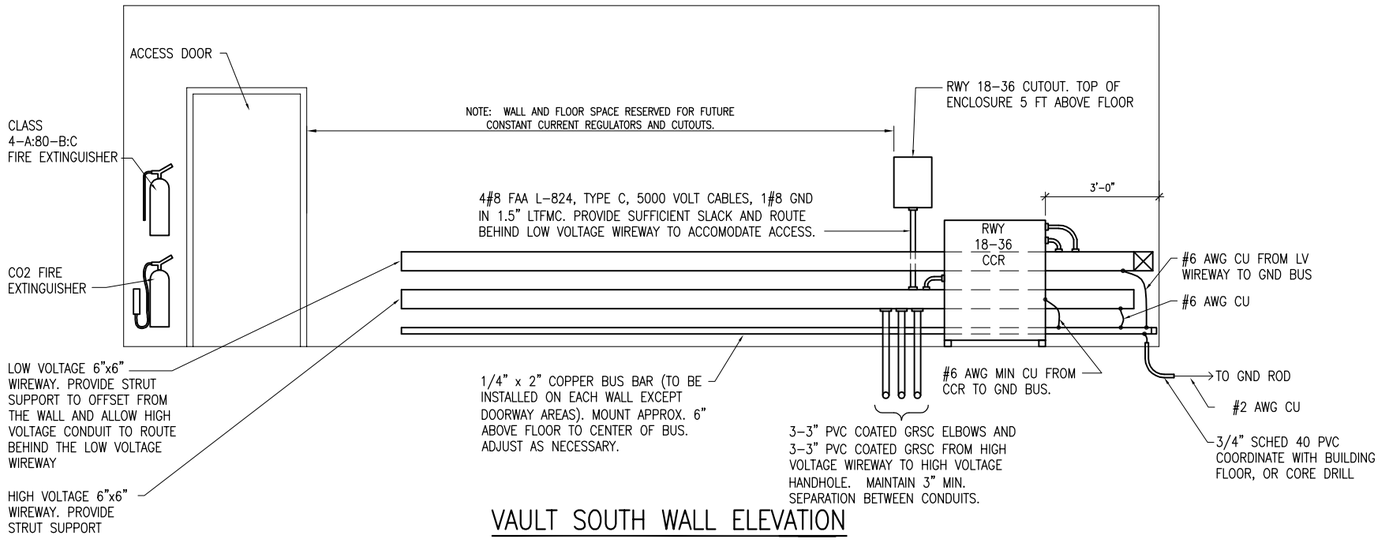
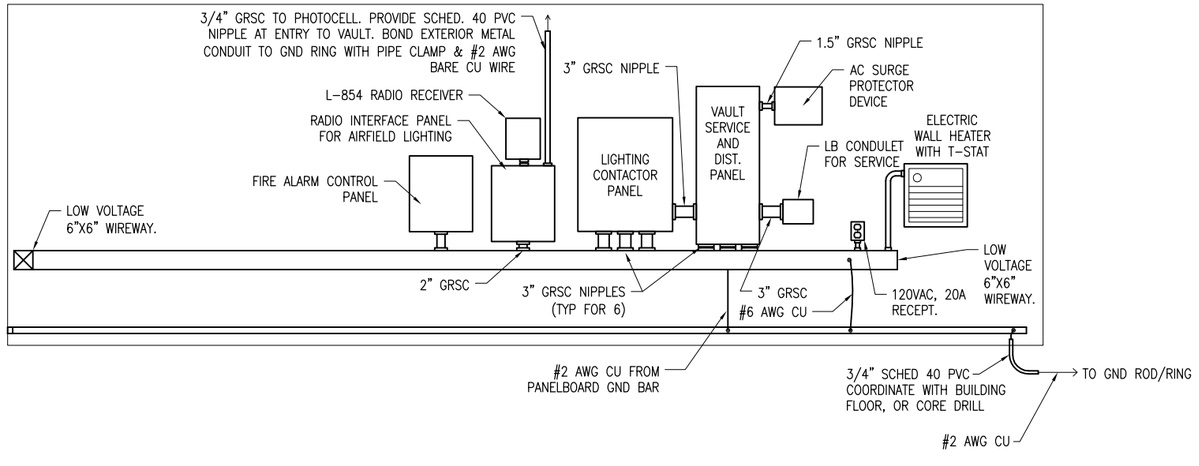


VAULT SOUTH WALL ELEVATION

SCALE 1/2"=1'-0" [FULL-SIZE (22x34)]

1 0 2 4 FEET



VAULT NORTH WALL ELEVATION

SCALE 1/2"=1'-0" [FULL-SIZE (22x34)]

1 0 2 4 FEET

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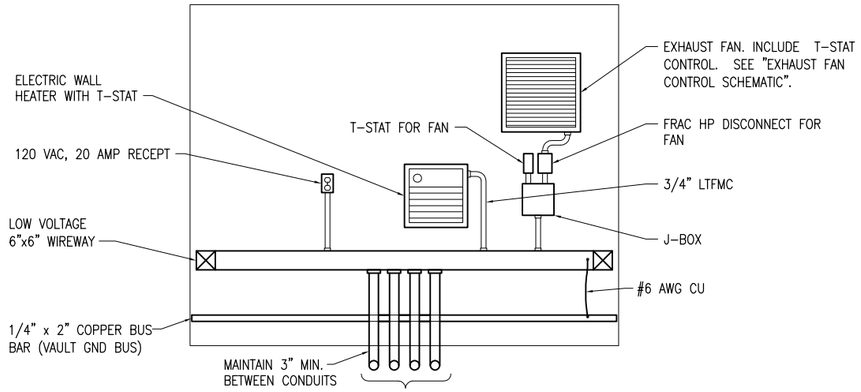
SHEET TITLE

ELECTRICAL VAULT
ELEVATIONS
SHEET 1



VAULT WEST WALL ELEVATION

SCALE 1/2"=1'-0"

1 0 2 4 FEET

1C5 – VAULT SERVICE AND MAIN DISTRIBUTION PANEL

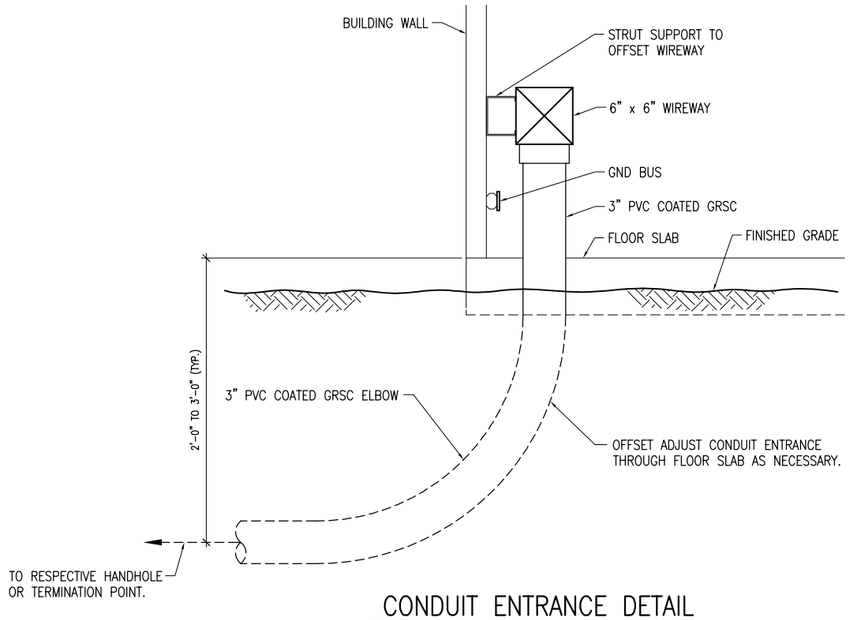
CKT #	DUTY	SIZE		SIZE	DUTY	CKT #
1	VAULT INTERIOR LIGHTS	15A 1P		60A 2P	AC SURGE PROTECTOR	2
3	VAULT EXTERIOR LIGHTS	15A 1P		---		4
5	VAULT RECEPTACLE	20A 1P		25A 2P	VAULT ELECTRIC HEATER EH-1	6
7	VAULT EXHAUST FAN	20A 1P		---		8
9	L-854 RADIO & CONTROL POWER	15A 1P		25A 2P	VAULT ELECTRIC HEATER EH-2	10
11	FIRE ALARM PANEL	20A 1P		---		12
13	SPARE	15A 1P		80A 2P	SPARE (SIZED FOR RWY 18-36 CCR)	14
15	SPARE	20A 1P		---		16
17	SPARE	25A 1P		---	BLANK	18
19	SPARE	30A 1P		---	BLANK	20
21	SPARE	20A 2P		---	BLANK	22
23		---		---	BLANK	24
25	SPARE	20A 2P		---	BLANK	26
27		---		---	BLANK	28
29	SPARE	30A 2P		---	BLANK	30
31		---		---	BLANK	32
33	SPARE	60A 2P		---	BLANK	34
35		---		---	BLANK	36
37	RUNWAY 18-36 CCR	80A 2P		---	BLANK	38
39		---		---	BLANK	40
41	BLANK	---		---	BLANK	42

S/N — GND

225 AMP, 120/240 VAC, 1 PHASE, 3 WIRE, 42 CIRCUIT PANELBOARD WITH 200 AMP, 2 POLE MAIN BREAKER, RATED 22,000 AIC AT 240VAC IN A NEMA 1 ENCLOSURE, PANELBOARD SHALL ACCOMMODATE FEEDER AND BRANCH BREAKERS UP TO 150AMP, 2 POLE FRAME & TRIP RATING. PANELBOARD SHALL BE SQUARE D CAT NO. NQ4212C WITH COPPER NEUTRAL & COPPER GROUND BAR KIT, OR APPROVED EQUAL.

NOTES

1. PANELBOARD BUSSES SHALL BE COPPER. NEUTRAL SHALL BE COPPER. EQUIPMENT GROUND BAR SHALL BE COPPER.
2. ALL BRANCH CIRCUIT & FEEDER BREAKERS SHALL BE BOLT-ON TYPE WITH 22,000 AIC AT 120/240 VAC.
3. INCLUDE ENGRAVED, PHENOLIC OR PLASTIC LEGEND PLATE LABELED "VAULT SERVICE AND MAIN DIST. PANEL A, 120/240 VAC, 1PH, 3W".
4. PANELBOARD SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS. PROVIDE CERTIFICATION OF MANUFACTURE IN THE UNITED STATES WITH SHOP DRAWING SUBMITTAL.
5. CIRCUIT BREAKERS AND WIRING SHALL BE SIZED FOR THE ACTUAL EQUIPMENT FURNISHED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S RECOMMENDATION AND NATIONAL ELECTRICAL CODE (N.E.C.). CONTRACTOR SHALL ADJUST CIRCUIT BREAKER SIZES & WIRING WHERE APPLICABLE TO CONFORM WITH THE MANUFACTURER'S RECOMMENDATIONS AND N.E.C.
6. FOR A BOTTOM FEED PANELBOARD, MOVE AC SURGE PROTECTOR BREAKER DOWN TO POSITIONS 40 AND 42



CONDUIT ENTRANCE DETAIL

SCALE 1 1/2"=1'-0"

0.5 0 1 2 FEET

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CONSTRUCT REPLACEMENT RUNWAY 18-36

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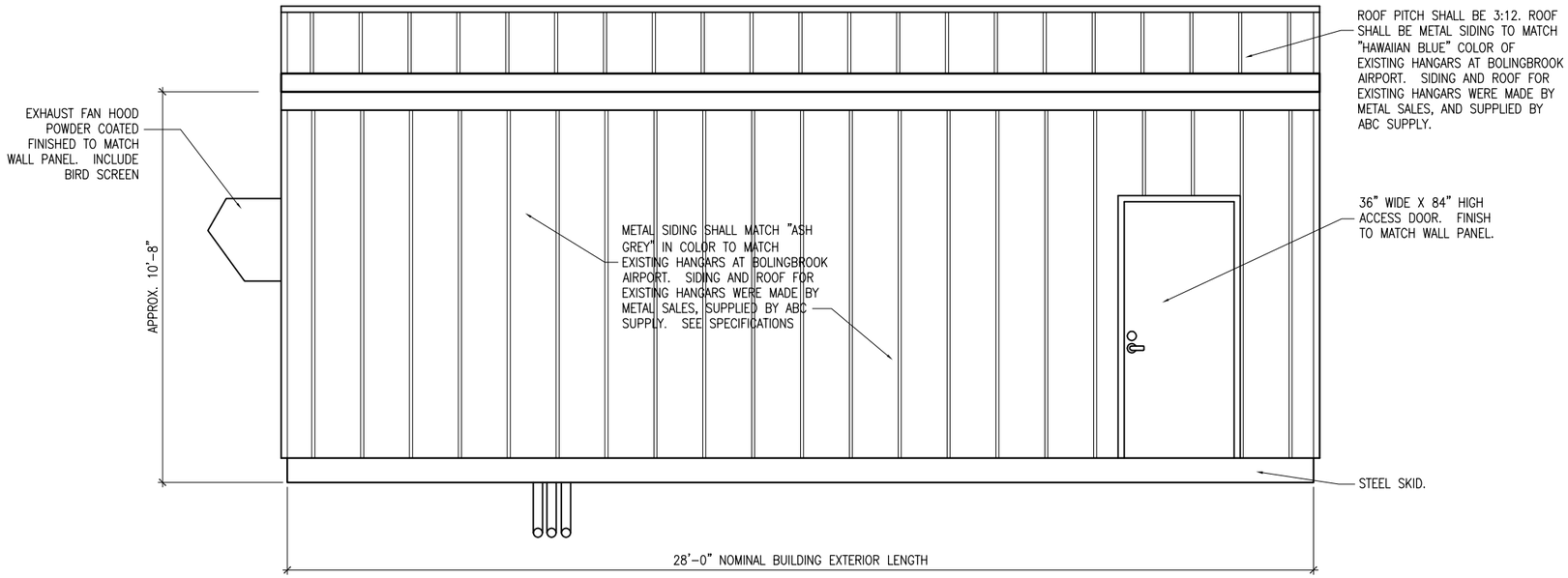
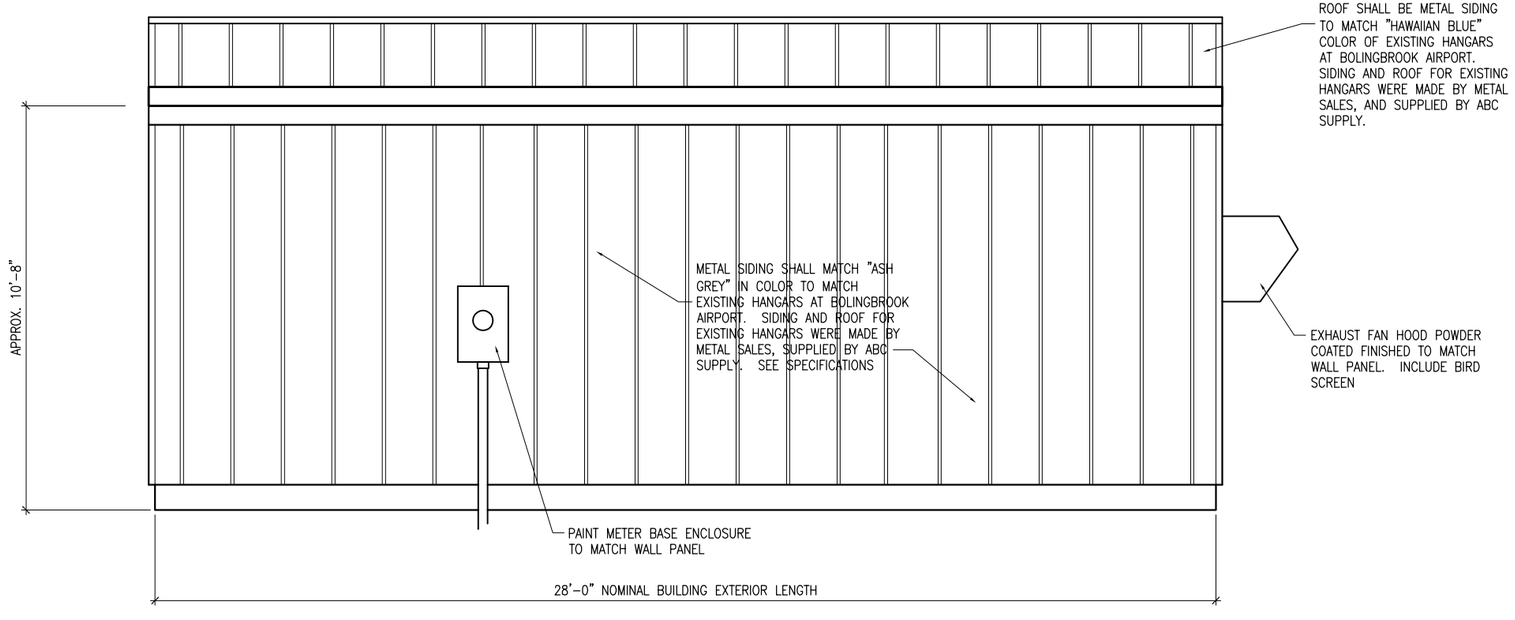
SHEET TITLE

ELECTRICAL VAULT ELEVATIONS SHEET 2



SOUTH ELEVATION



NORTH ELEVATION

NOTE:

BUILDING WIDTH SHALL BE 12 FT. NOMINAL (EXTERIOR).

VAULT EXTERIOR ELEVATIONS

SCALE 1/2"=1'-0" [FULL-SIZE (22x34)]

1 0 2 4 FEET

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CONSTRUCT
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RUNWAY 18-36

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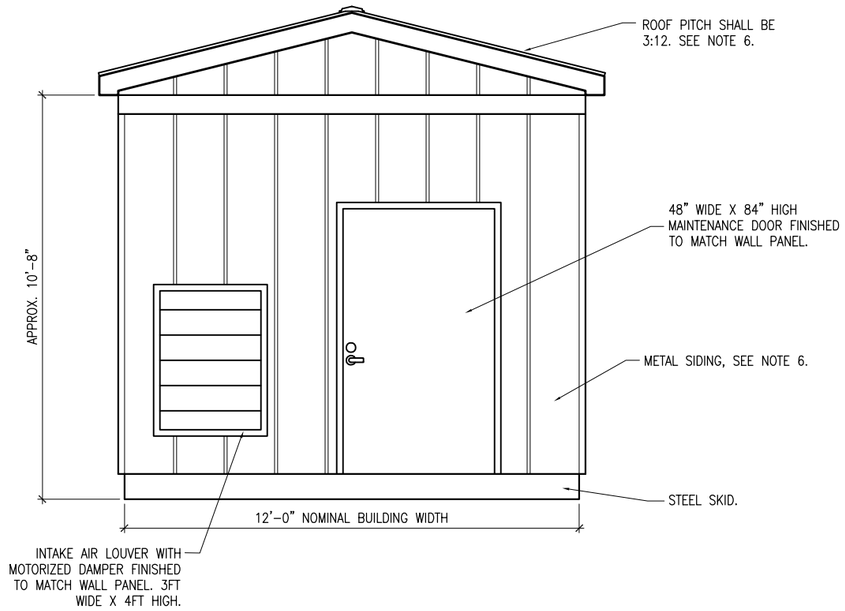
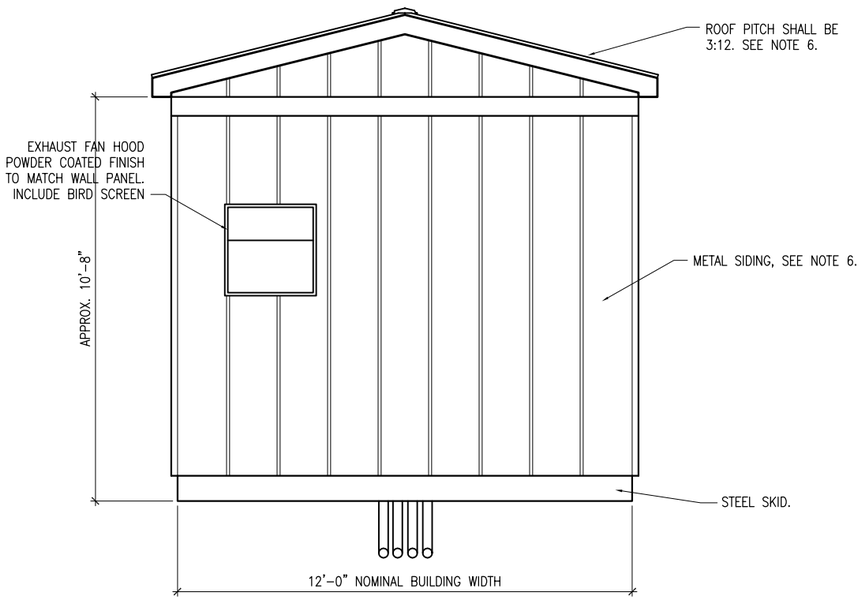
SHEET TITLE

ELECTRICAL VAULT
ELEVATIONS
SHEET 3



WEST ELEVATION



EAST ELEVATION

GENERAL NOTES:

1. THE AIRPORT ELECTRICAL VAULT BUILDING SHALL CONSIST OF A PRE-FABRICATED, PRE-ENGINEERED EQUIPMENT ENCLOSURE BUILDING WITH CONCRETE FLOOR, STEEL SKID STRUCTURE, AND FOUNDATION PIERS. THE PRE-ENGINEERED EQUIPMENT ENCLOSURE SHALL BE A LIGHT-WEIGHT METAL BUILDING WITH CONCRETE FLOOR AND STEEL SKID STRUCTURE, NOMINAL 12 FEET WIDE EXTERIOR BY NOMINAL 28 FEET LONG EXTERIOR BY NOMINAL 9 FEET HIGH INTERIOR (FLOOR TO CEILING). THE ENGINEERING FOR THIS BUILDING SHALL BE A DELEGATED DESIGN. THE RESPECTIVE BUILDING MANUFACTURER SHALL PROVIDE BUILDING PLANS THAT ARE SEALED BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF ILLINOIS OR LICENSED REGISTERED ARCHITECT REGISTERED IN THE STATE OF ILLINOIS (AS APPLICABLE). SEE THE SPECIAL PROVISION SPECIFICATIONS FOR SHELTER DESIGN REQUIREMENTS AND DETAILS.

2. THE SHELTER SHALL INCLUDE A PITCHED ROOF ASSEMBLY WITH TRIM. THE ROOF PITCH SHALL BE 3:12. THE ROOF ASSEMBLY AND TRIM SHALL BE INSTALLED ON THE SHELTER AT THE RESPECTIVE JOB SITE. THE EXTERIOR ROOF OF THE SHELTER SHALL BE CONSTRUCTED OF SEALED GALVANEAL STEEL PANELS WITH AN ADDITIONAL ON-SITE INSTALLED PITCHED LAP SEAM METAL ROOF ASSEMBLY. INSTALLATION OF THE ROOF ASSEMBLY SHALL BE BY THE RESPECTIVE EQUIPMENT SHELTER MANUFACTURER'S REPRESENTATIVE OR A QUALIFIED CONTRACTOR MEETING THE REQUIREMENTS DESIGNATED BY THE RESPECTIVE EQUIPMENT SHELTER MANUFACTURER. INCLUDE THE RESPECTIVE EQUIPMENT SHELTER MANUFACTURER'S SERVICES FOR THE SHELTER AND ROOF ASSEMBLY. CONTRACTOR SHALL COORDINATE SHELTER INSTALLATION WITH THE RESPECTIVE EQUIPMENT SHELTER MANUFACTURER.

3. BUILDING SHALL REST ON AN INTEGRAL STEEL SKID STRUCTURE DESIGNED TO SUPPORT THE BUILDING DURING TRANSPORTATION, LIFTING, AND FINAL PLACEMENT ON SITE. THE SKID SHALL INCORPORATE INTEGRAL LIFTING POINTS TO ALLOW THE BUILDING TO BE PLACED BY A CRANE OR OTHER SUITABLE MEANS. BUILDING FOUNDATION/PIERS SHALL BE IN ACCORDANCE WITH THE RESPECTIVE SHELTER MANUFACTURER'S DESIGN AND SHALL EXTEND A MINIMUM OF 5 FEET BELOW GRADE TO BE BELOW THE FROST LINE. THE BUILDING SHALL BE ANCHORED TO THE PIERS, IN ACCORDANCE WITH THE BUILDING MANUFACTURER'S INSTRUCTIONS, USING ANCHOR BOLTS SIZED PER THE RESPECTIVE BUILDING MANUFACTURER'S RECOMMENDATIONS AND/OR REQUIREMENTS.

4. THE EXTERIOR SHELTER WALL COLOR SHALL BE ASH GREY OR SLATE GREY TO MATCH THE EXISTING HANGARS AT BOLINGBROOK'S CLOW INTERNATIONAL AIRPORT. THE EXTERIOR SHELTER ROOF COLOR SHALL BE HAWAIIAN BLUE TO MATCH THE EXISTING HANGARS AT BOLINGBROOK'S CLOW INTERNATIONAL AIRPORT. THE AIRPORT MANAGER HAS NOTED COLORS FOR THE EXISTING HANGARS ARE HAWAIIAN BLUE FOR THE ROOF AND ASH GREY FOR THE SIDING. SIDING AND ROOF FOR THE EXISTING HANGARS WERE MADE BY METAL SALES, SUPPLIED BY ABC SUPPLY. BUILDING COLOR(S) SHALL BE CONFIRMED WITH THE AIRPORT MANAGER AT BOLINGBROOK'S CLOW INTERNATIONAL AIRPORT AND THE PROJECT ENGINEER.

5. REQUIRED SUBMITTALS SHALL INCLUDE: PRODUCT DATA; SHOP DRAWINGS SHOWING DIMENSIONS, BUILDING LAYOUT, BUILDING CONSTRUCTION, CONNECTIONS, MATERIALS, STRUCTURAL COMPONENTS, ETC.; STRUCTURAL DESIGN CALCULATIONS SEALED BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF ILLINOIS OR LICENSED REGISTERED ARCHITECT REGISTERED IN THE STATE OF ILLINOIS (AS APPLICABLE); DETAILS ON THE DOORS, LOUVERS, FAN AND ANY OTHER EQUIPMENT FURNISHED WITH THE BUILDING, FLOOR LOADING, ROOF LOADING, WIND LOADS, AND SEISMIC INFORMATION, AND MANUFACTURER'S INSTALLATION INSTRUCTIONS.

6. SEE SHEET 132 FOR COLORS.

VAULT EXTERIOR ELEVATIONS

SCALE 1/2"=1'-0" [FULL-SIZE (22x34)]

1 0 2 4 FEET

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
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SHEET TITLE

ELECTRICAL VAULT
ELEVATIONS
SHEET 4

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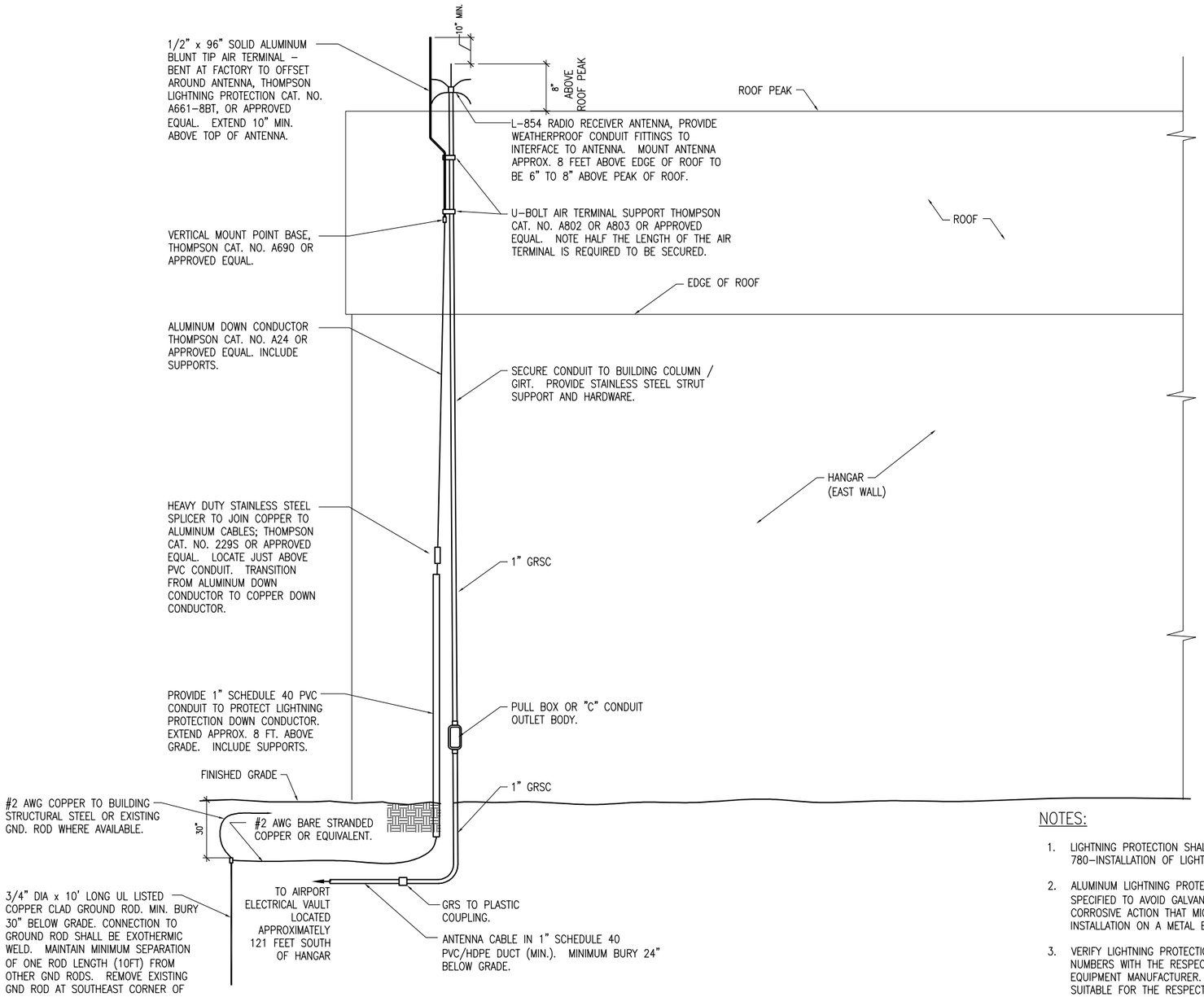

L-854 RADIO ANTENNA DETAIL

NOT TO SCALE

NOTES:

1. LIGHTNING PROTECTION SHALL CONFORM TO NFPA 780–INSTALLATION OF LIGHTNING PROTECTION SYSTEMS.
2. ALUMINUM LIGHTNING PROTECTION EQUIPMENT IS SPECIFIED TO AVOID GALVANIC ACTION AND/OR OTHER CORROSIVE ACTION THAT MIGHT OCCUR DUE TO INSTALLATION ON A METAL BUILDING.
3. VERIFY LIGHTNING PROTECTION COMPONENTS AND CATALOG NUMBERS WITH THE RESPECTIVE LIGHTNING PROTECTION EQUIPMENT MANUFACTURER. CONFIRM MATERIALS ARE SUITABLE FOR THE RESPECTIVE APPLICATION IN ACCORDANCE WITH NFPS 780 AND THE LIGHTNING PROTECTION EQUIPMENT MANUFACTURER.

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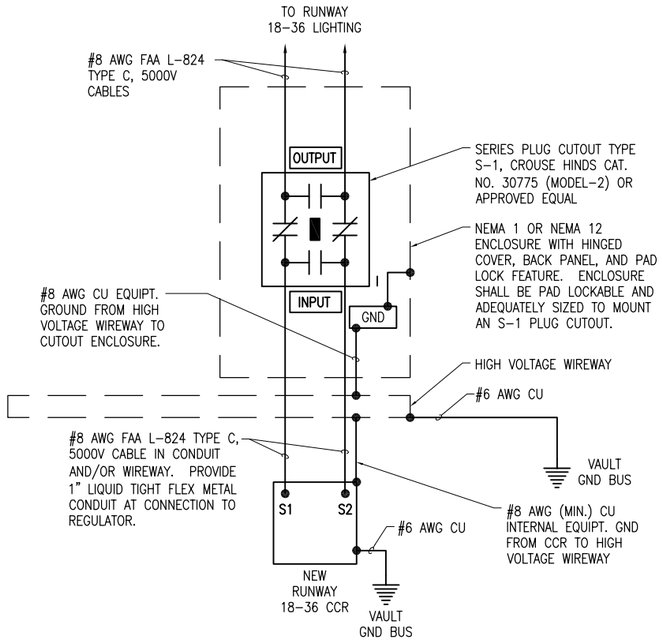
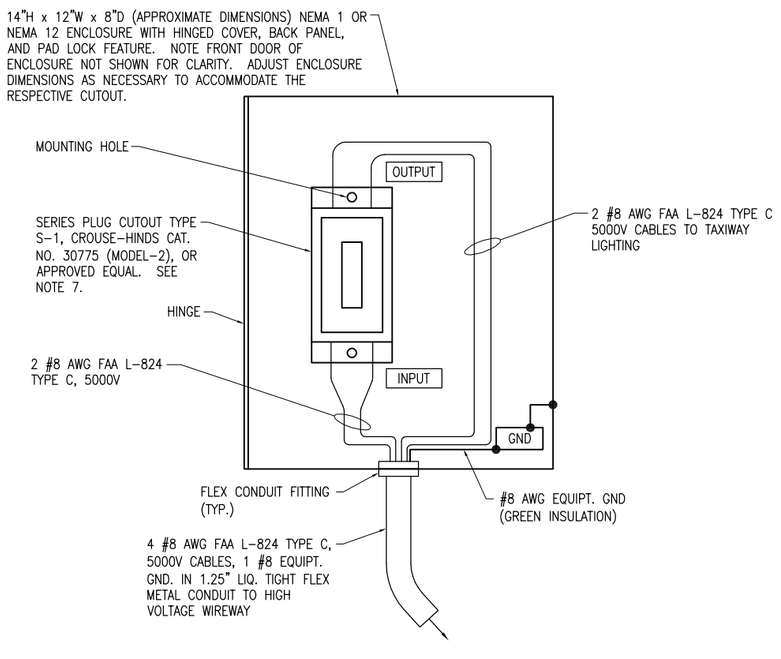
RADIO ANTENNA DETAIL



HIGH VOLTAGE WIRING SCHEMATIC



SERIES PLUG CUTOUT MOUNTING DETAIL FOR RUNWAY CIRCUIT

NOT TO SCALE

NOTES

1. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR NOTING THE RUNWAY AND/OR TAXIWAY SERVED.
2. EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE RUNWAY OR TAXIWAY CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF".
3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR THE CUTOUTS TO IDENTIFY THE RESPECTIVE REGULATOR OUTPUT CONNECTION AND THE RESPECTIVE CIRCUIT LOAD CONNECTION.
4. BOND REGULATOR FRAME TO VAULT GROUND BUS WITH A DEDICATED #6 AWG BONDING JUMPER.
5. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS.
6. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
7. SERIES PLUG CUTOUTS SHALL BE TYPE S–1, RATED 5000 VOLTS, 20–AMP, AND SHALL COMPLY WITH FAA AC 150/5340–4C. SERIES PLUG CUTOUTS SHALL BE RATED SUITABLE FOR NORMAL OPERATION WITH HANDLE REMOVED OR HANDLE INSERTED. CUTOUTS SHALL DISCONNECT THE INPUT FROM THE FROM THE OUTPUT, SHORT THE INPUT TERMINALS, AND SHORT THE OUTPUT TERMINALS WHEN THE HANDLE/PLUG IS REMOVED. CUTOUTS SHALL BE SUITABLE FOR OPERATION WITH THE HANDLE INSERTED AND SUITABLE FOR OPERATION AND TESTING THE CCR WITH THE HANDLE REMOVED. SERIES PLUG CUTOUTS SHALL BE CROUSE–HINDS CAT. NO. 30775, OR APPROVED EQUAL. THE RESPECTIVE MANUFACTURER SHALL CERTIFY IN WRITING THAT THEIR CUTOUT IS SUITABLE AND RATED FOR THE RESPECTIVE APPLICATION.
8. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.

LEGEND

"I" DENOTES PLUG CUTOUT WITH PLUG INSERTED

"P" DENOTES PLUG CUTOUT WITH PLUG PULLED

"CCR" DENOTES CONSTANT CURRENT REGULATOR

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
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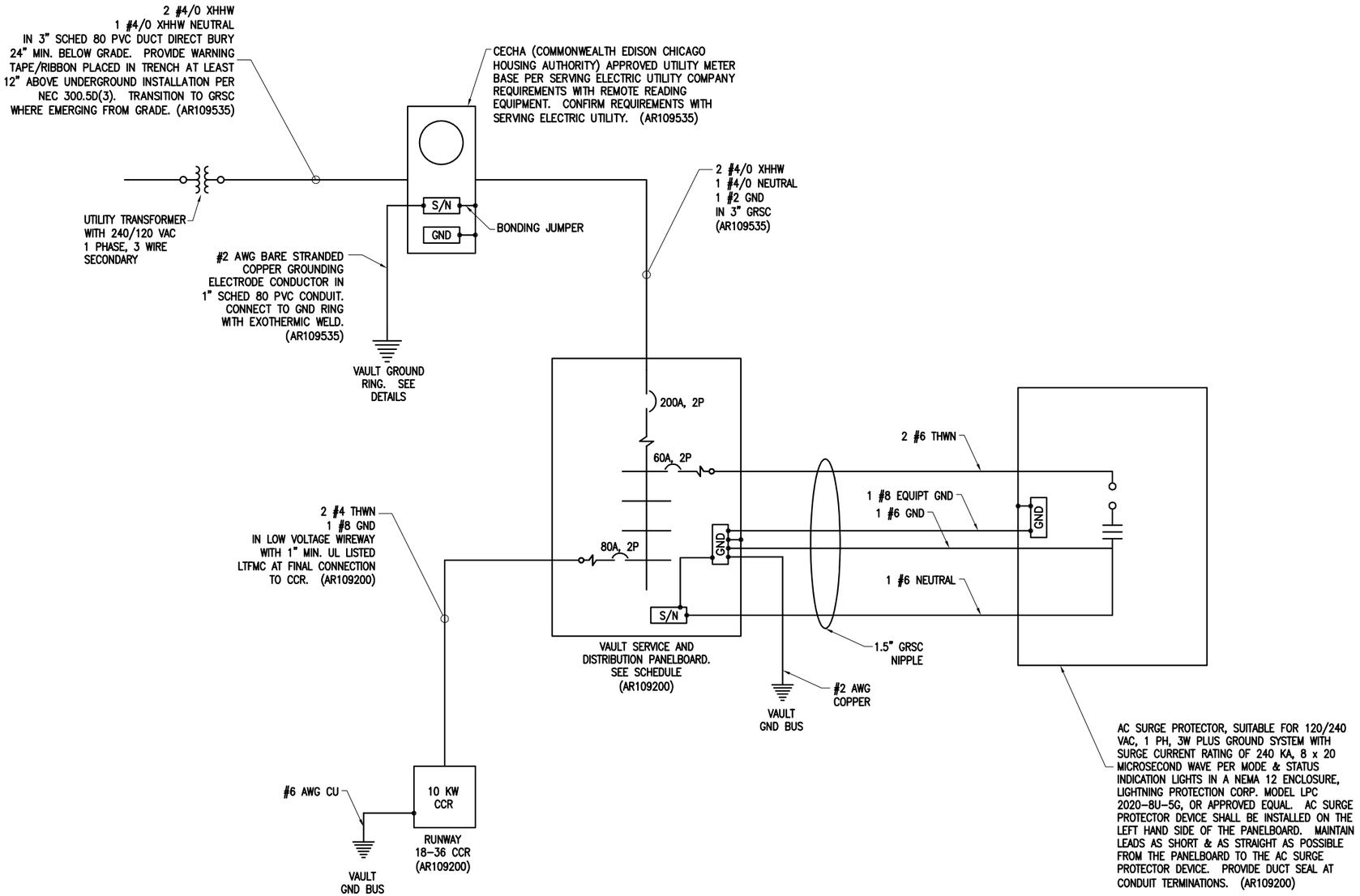
HIGH VOLTAGE
WIRING SCHEMATIC



ELECTRICAL ONE-LINE DIAGRAM FOR VAULT

NOTES

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

2. 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 CONDUCTORS/WIRING SHALL BE COPPER.

4. CONTRACTOR SHALL CONFIRM POWER REQUIREMENTS WITH THE ACTUAL NAMEPLATE ON EACH CONSTANT CURRENT REGULATOR (OR OTHER RESPECTIVE EQUIPMENT) AND ADJUST CIRCUIT BREAKER, WIRE SIZES & CONDUIT SIZES TO CONFORM WITH NEC & MANUFACTURER'S RECOMMENDATIONS WHERE APPLICABLE. WIRE SIZES SHOWN ON THE PLANS ARE MINIMUM.

5. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, HANDHOLE, MANHOLES, JUNCTION BOX, OR RACEWAY.

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. CONTRACTOR SHALL COORDINATE NEW ELECTRICAL SERVICE WITH THE SERVING ELECTRIC UTILITY AND THE AIRPORT MANAGER. CONTRACTOR SHALL CONFIRM REQUIREMENTS WITH SERVING ELECTRIC UTILITY COMPANY. THE SERVING ELECTRIC UTILITY IS COMMONWEALTH EDISON.

8. NEW ELECTRIC SERVICE FROM THE RESPECTIVE UTILITY TRANSFORMER SECONDARY TO THE RESPECTIVE ELECTRIC UTILITY METER BASE AND SERVICE DISCONNECT WILL BE PAID FOR UNDER ITEM AR109535 ELECTRIC SERVICE ENTRANCE PER LUMP SUM. ALL OTHER WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM AR109200 INSTALL ELECTRICAL EQUIPMENT PER LUMP SUM.

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
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ELECTRICAL
ONE-LINE DIAGRAM
FOR VAULT

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LEGEND PLATE SCHEDULE

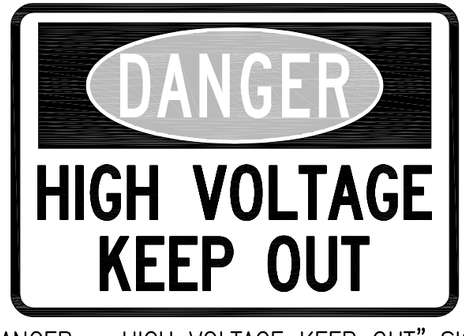
DEVICE	LABEL
VAULT SERVICE AND MAIN DISTRIBUTION PANELBOARD	VAULT SERVICE & DIST PANEL 120/240 VAC, 1 PH, 3W
MAIN BREAKER IN VAULT PANEL	SERVICE DISCONNECT
RUNWAY 18–36 CCR	RUNWAY 18–36
CUTOUT ENCLOSURE FOR RUNWAY 18–36	RUNWAY 18–36
RUNWAY 18–36 CUTOUT INPUT SIDE CONNECTION	INPUT
RUNWAY 18–36 CUTOUT OUTPUT SIDE CONNECTION	OUTPUT
CUTOUT ENCLOSURE FOR RUNWAY 18–36	CAUTION OPERATE CUTOUTS WITH CCR'S SHUT OFF

LEGEND PLATE SCHEDULE (CONTINUED)

DEVICE	LABEL
RADIO RELAY INTERFACE PANEL	RADIO RELAY INTERFACE PANEL
CONTROL PANEL FOR AIRFIELD NAVAIDS AND VAULT FAN	CONTACTOR PANEL FOR AIRFIELD NAVAIDS, & VAULT FAN
CONTACTOR PANEL FOR AIRFIELD NAVAIDS AND VAULT FAN	NOTICE CONTACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME
LOW VOLTAGE WIREWAY (PROVIDE 8 LEGEND PLATES 1/2" HIGH BLACK LETTERS WHITE BACKGROUND)	LOW VOLTAGE
HIGH VOLTAGE WIREWAY (PROVIDE 3 LEGEND PLATES 1/2" HIGH BLACK LETTERS WHITE BACKGROUND)	HIGH VOLTAGE
VAULT GROUND BUS (PROVIDE 4 LEGEND PLATES 1/2" HIGH WHITE LETTERS GREEN BACKGROUND; INSTALL ABOVE OR BELOW GROUND BUS)	VAULT GROUND BUS
GROUNDING ELECTRODE CONDUCTORS TERMINATED ON VAULT GROUND BUS. (PROVIDE 3 LEGEND PLATES & SECURE TO CONDUCTORS WITH NYLON STRING OR CABLE TIES)	DO NOT DISCONNECT

NOTES:

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



"DANGER – HIGH VOLTAGE KEEP OUT" SIGN

PROVIDE WARNING SIGN ON VAULT EXTERIOR DOORS LABELED "DANGER – HIGH VOLTAGE – KEEP OUT" PER THE REQUIREMENTS OF NEC 110.34 (C). PROVIDE MINIMUM OF 2 SIGNS (ONE ON EACH DOOR TO THE VAULT). SIGNS SHALL BE APPROXIMATELY 10" H x 14" W.

"DANGER – HIGH VOLTAGE" LABEL

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

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CONSTRUCT REPLACEMENT RUNWAY 18-36

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LEGEND PLATE SCHEDULES

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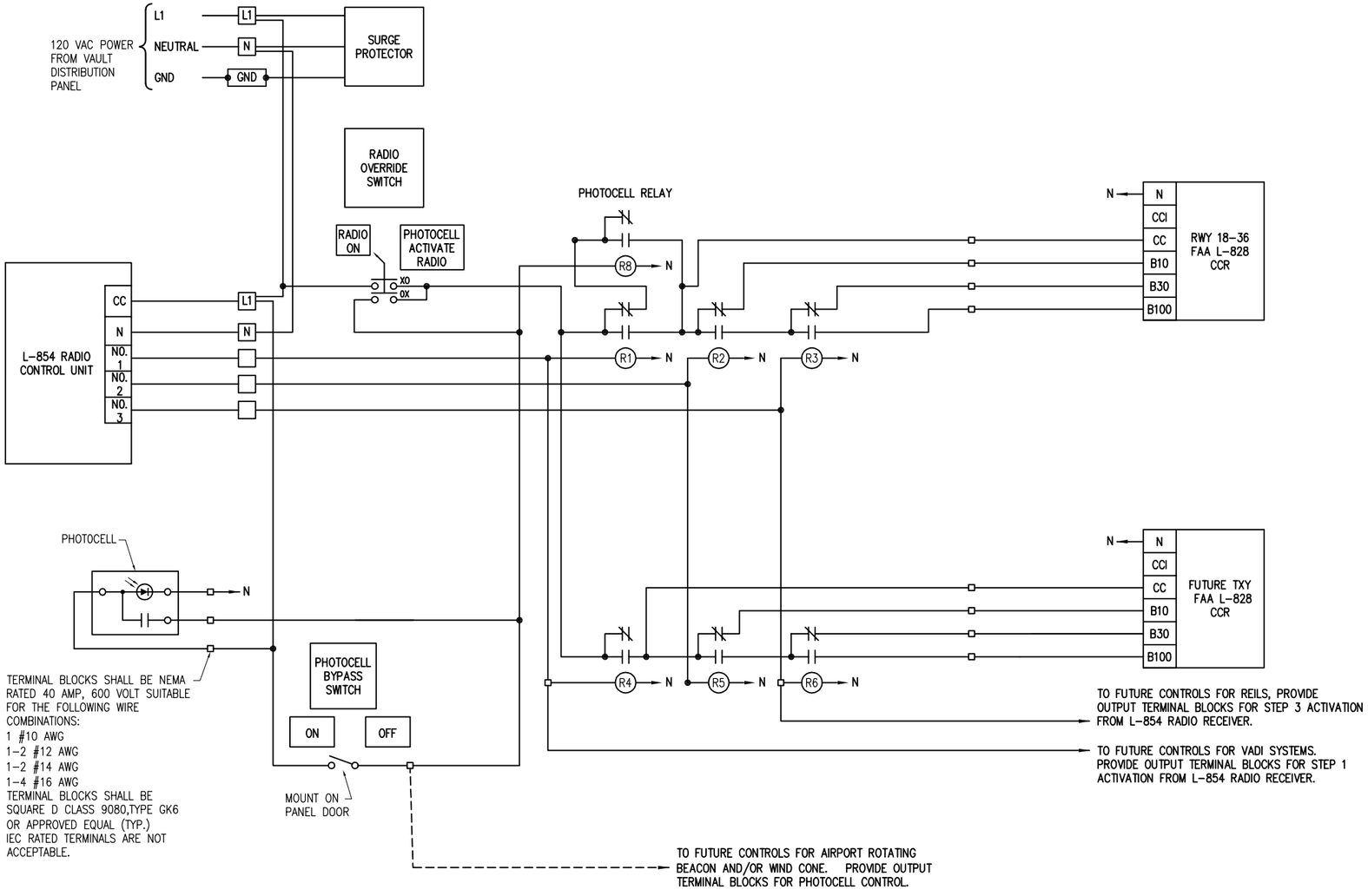

AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC

NOTES:

1. RELAY INTERFACE CONTROL PANEL SHALL BE MANUFACTURED BY AN FAA APPROVED L-821 PANEL BUILDER OR A UL 508 INDUSTRIAL CONTROL PANEL BUILDER, AND SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENT. RELAY INTERFACE CONTROL PANEL SHALL BE A SEPARATE PANEL. DO NOT COMBINE WITH LIGHTING CONTACTOR PANEL.
2. PANEL SHALL BE IN A NEMA 12 ENCLOSURE WITH HINGED COVER. DRILL HOLE IN BOTTOM OF ENCLOSURE TO ALLOW CONDENSATION TO ESCAPE.
3. EXTERNAL CONTROL CABLE SHALL BE NO. 12 AWG COPPER, 600 VOLT CABLE. ALL PANEL INTERIOR CONTROL CABLE SHALL BE MINIMUM 16 AWG, COPPER, 600 VOLT CABLE.
4. IN THE AUTOMATIC MODE OF OPERATION THE RUNWAY 18-36 CONSTANT CURRENT REGULATOR SHALL BE CONTROLLED BY THE PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER:
   PHOTOCELL – 10% BRIGHTNESS & ACTIVATE RADIO CONTROL
   5 CLICKS – 30% BRIGHTNESS
   7 CLICKS – 100% BRIGHTNESS
5. THE RADIO OVERRIDE SWITCH WILL ACTIVATE L-854 RADIO CONTROL 24 HOURS PER DAY IN THE "RADIO ON" POSITION. THE PHOTOCELL WILL ACTIVATE RADIO CONTROL IN THE "PHOTOCELL ACTIVATE RADIO" POSITION.
6. EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH BRANCH CIRCUIT & EACH CONTROL CIRCUIT.
7. INCLUDE PHOTOCELL BYPASS SWITCH.
8. SURGE PROTECTOR SHALL BE UL LISTED PER UL 1449, SUITABLE FOR 120 VAC, 1 PH, 2 WIRE PLUS GROUND SYSTEM WITH SURGE CURRENT RATING OF 40 KA (MIN.), 8x20 MICROSECOND WAVE, AND STATUS INDICATION LIGHTS IN A WEATHERPROOF HOUSING, JOSLYN MODEL 1260-21, SQUARE D CAT NO. TVS120XR50S, OR APPROVED EQUAL. MAINTAIN LEADS AS SHORT & AS STRAIGHT AS POSSIBLE. INCLUDE MOUNTING BRACKET.
9. INCLUDE EQUIPMENT GROUND BAR, ILSCO D167-12 OR EQUAL.
10. CONTROL RELAYS SHALL HAVE 10 AMP CONTACT RATINGS AT 240 VAC WITH 120 VAC COILS. PROVIDE 3 SPARE RELAYS FOR EACH TYPE USED IN THE RELAY INTERFACE PANEL.
11. COLOR CODING FOR THE CONTROL WIRING TO EACH CONSTANT CURRENT REGULATOR SHALL BE CONSISTENT FOR ALL REGULATORS. COLOR CODING SHALL BE AS FOLLOWS:
    CC –RED
    10% –ORANGE
    30% –YELLOW
    100% –BLUE
    NEUTRAL –WHITE
    EQUIPT. GND –GREEN
    ALSO TAG THE CONTROL WIRES WITH THE RESPECTIVE DESIGNATION (CC, 10%, 30%, 100%)
12. "N" DESIGNATES NEUTRAL CONNECTION OR NEUTRAL CONDUCTOR.
13. CONTROL WIRING FOR THE CCR (CONSTANT CURRENT REGULATOR) SHALL ENTER THE CONTROL SECTION OF THE CCR. DO NOT ROUTE CONTROL WIRING THROUGH THE HIGH VOLTAGE OUTPUT SECTION OF THE CCR.

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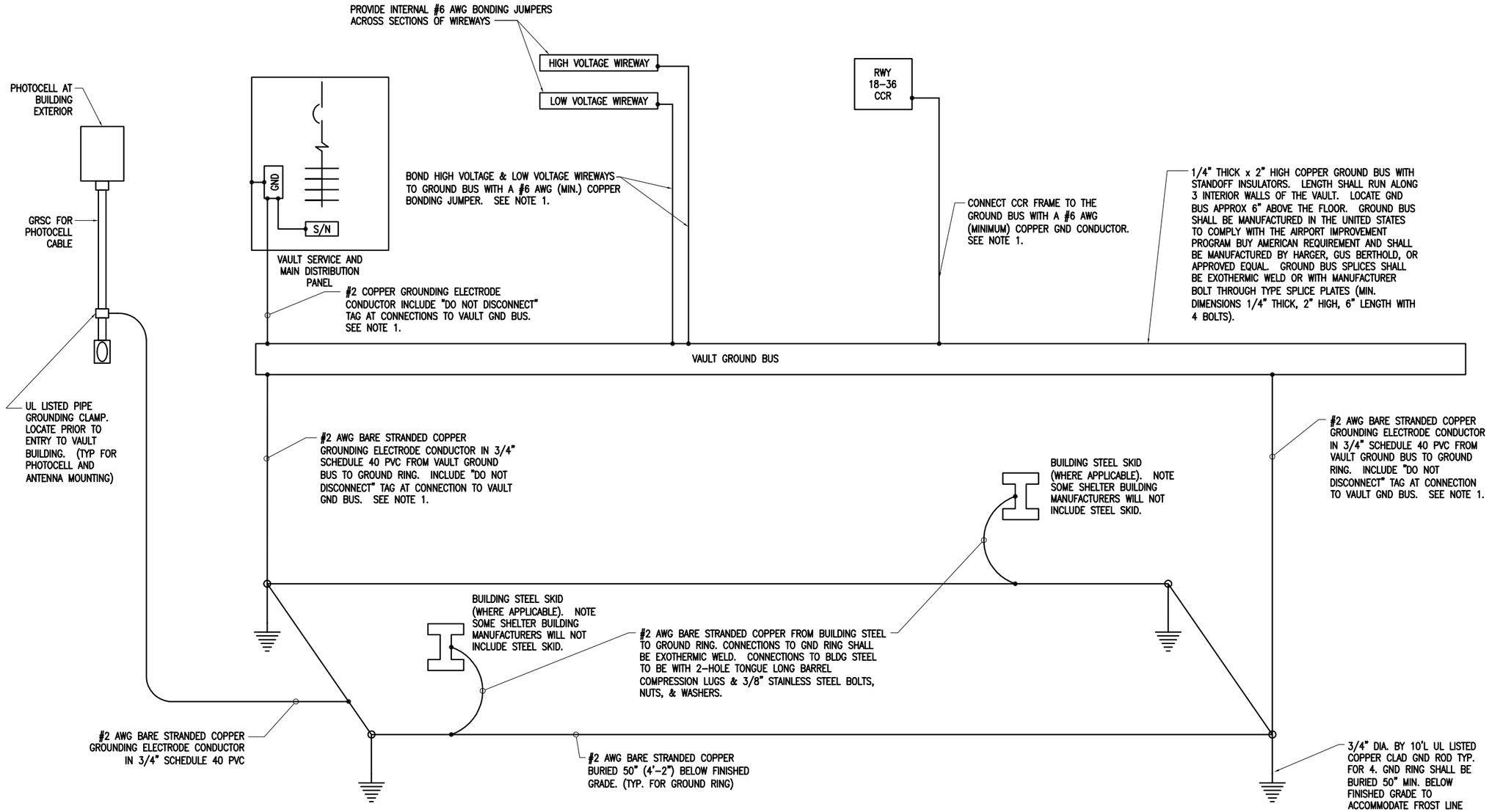
AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC



VAULT GROUND BUS RISER

NOTES

1. CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2-HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
2. ALL CONNECTIONS TO THE GROUND RING AND GROUND RODS SHALL BE EXOTHERMIC WELD.
3. ALL INSULATED GROUND WIRES SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND KCMIL.
4. ALL WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM AR109200 "INSTALL ELECTRICAL EQUIPMENT" PER LUMP SUM.
5. TEST GROUND RING AND RECORD RESULTS. WHERE GROUND RESISTANCE TEST RESULTS EXCEED 25 OHMS CONTACT PROJECT ENGINEER FOR FURTHER DIRECTION.

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Hanson Professional Services Inc.
815 Commerce Drive, Suite 200
Oak Brook, IL 60523
phone: 630-990-3800
fax: 630-990-3801

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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

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LAYOUT BY: KNL 3/10/14
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REVIEWED BY: RMH 5/7/2014

SHEET TITLE

VAULT GROUND BUS RISER

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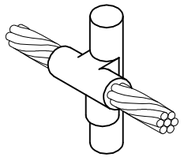
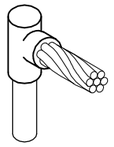


CABLE TO GROUND ROD



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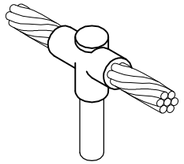

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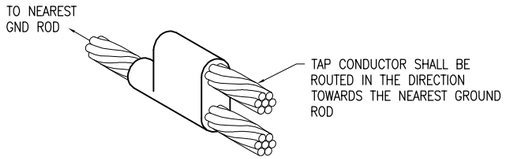
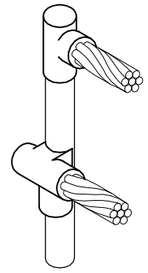


CABLE TO CABLE
HORIZONTAL PARALLEL TAP



CABLES TO GROUND ROD

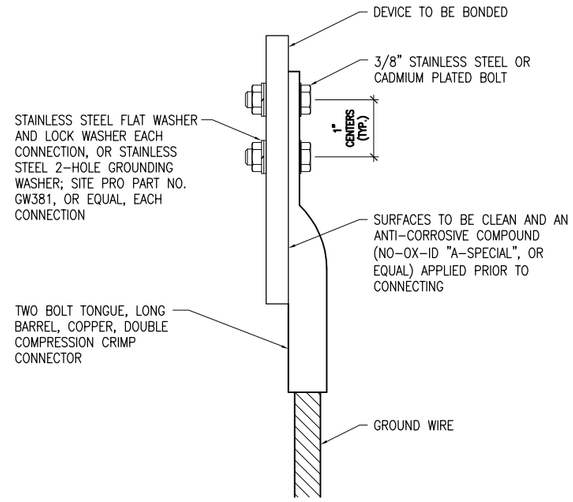
DETAIL NOTES

1. ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELD AS MANUFACTURED BY 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.

2. FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.

3. INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 40 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.

EXOTHERMIC WELD DETAILS



2 HOLE LONG BARREL COMPRESSION LUG TABLE			
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
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	BBLU-4D-2TC38
#2 AWG STRANDED	YA2C-2TC38	256-30695-1160	BBLU-2D-2TC38
#2 AWG SOLID	YA3C-2TC38	256-30695-1160	BBLU-3D-2TC38
#1/0 AWG STRANDED	YA25-2TC38	256-30695-1162	BBLU-1/0D-2TC38
#2/0 AWG STRANDED	YA26-2TC38	256-30695-1116	BBLU-2/0D-2TC38
#3/0 AWG STRANDED	YA27-2TC38	54816BE	BBLU-3/0D-2TC38
#4/0 AWG STRANDED	YA28-2TC38	256-30695-1117	BBLU-4/0D-2TC38

NOTES

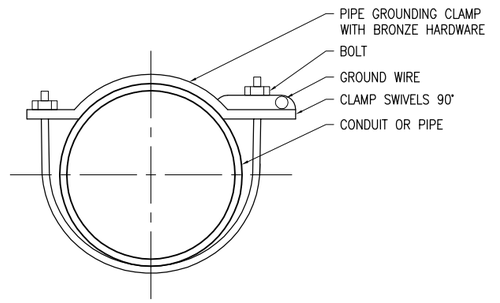
1. ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.

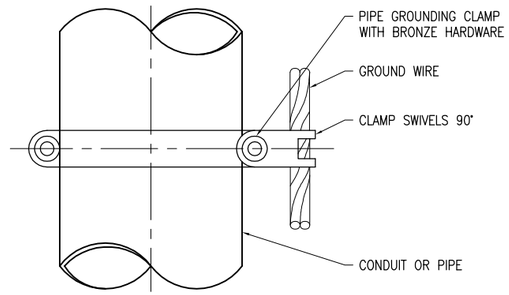
2. GROUND WIRE CONNECTIONS TO EQUIPMENT SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE DEVICE OR WITH THE RESPECTIVE EQUIPT MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE.

3. GROUNDING ELECTRODE CONDUCTORS, BONDING JUMPERS, & INDIVIDUAL GROUND WIRES SHALL NOT BE INSTALLED IN METAL CONDUIT. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC APTH FROM ENCIRCLING THE CONDUIT.

4. ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", BURNDY PENETROX E, OR EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.

GROUNDING LUG CONNECTION DETAIL





PIPE GROUNDING CLAMP TABLE	
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"

NOTES

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

PIPE/CONDUIT GROUNDING CLAMP DETAIL

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Hanson Professional Services Inc.
815 Commerce Drive, Suite 200
Oak Brook, IL 60523
phone: 630-990-3800
fax: 630-990-3801

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phone: 630-226-8400

CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
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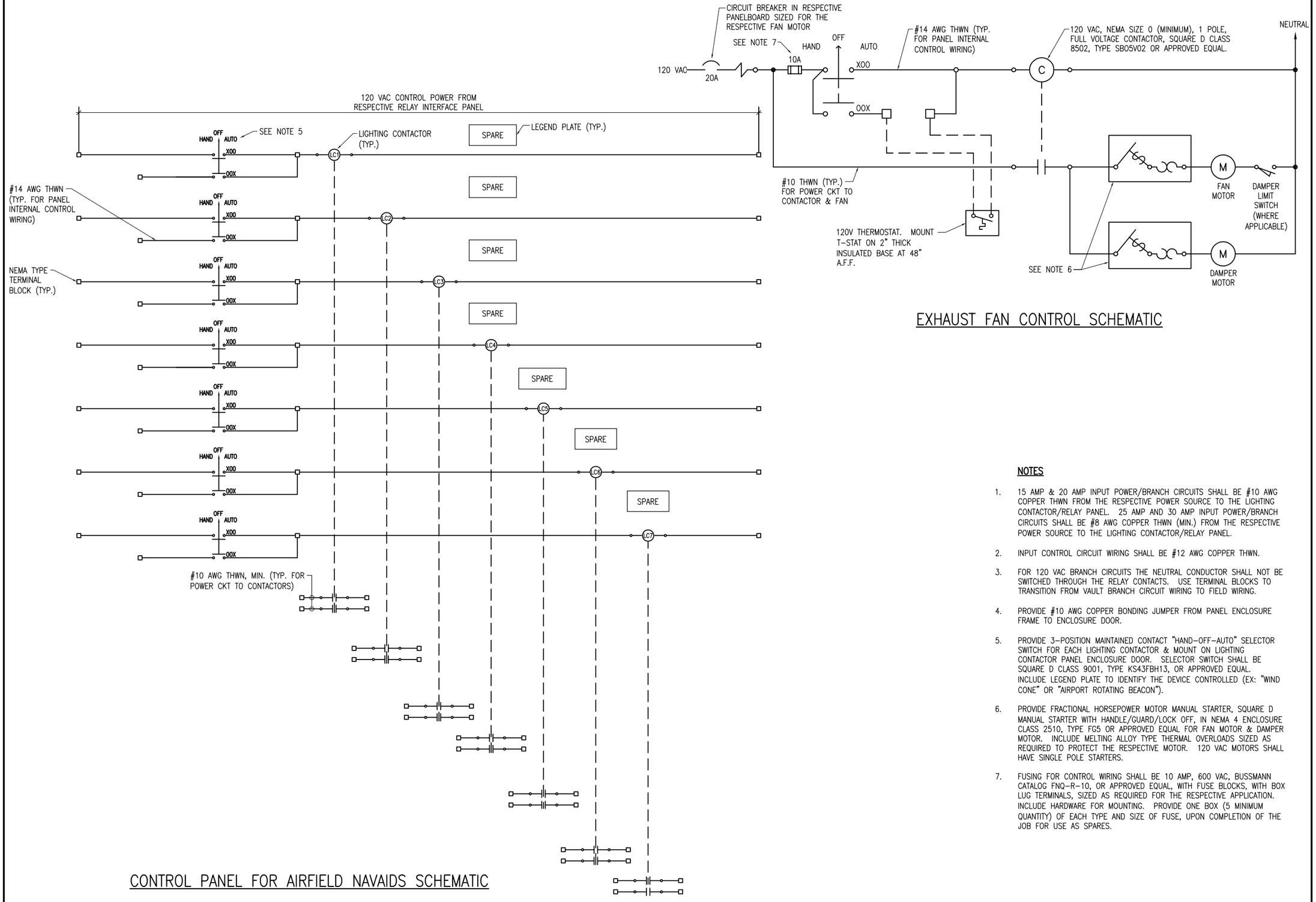
SHEET TITLE

GROUNDING DETAILS



EXHAUST FAN CONTROL SCHEMATIC

CONTROL PANEL FOR AIRFIELD NAVAIDS SCHEMATIC

NOTES

1. 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL. 25 AMP AND 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL.
2. INPUT CONTROL CIRCUIT WIRING SHALL BE #12 AWG COPPER THWN.
3. FOR 120 VAC BRANCH CIRCUITS THE NEUTRAL CONDUCTOR SHALL NOT BE SWITCHED THROUGH THE RELAY CONTACTS. USE TERMINAL BLOCKS TO TRANSITION FROM VAULT BRANCH CIRCUIT WIRING TO FIELD WIRING.
4. PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
5. PROVIDE 3-POSITION MAINTAINED CONTACT "HAND-OFF-AUTO" SELECTOR SWITCH FOR EACH LIGHTING CONTACTOR & MOUNT ON LIGHTING CONTACTOR PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: "WIND CONE" OR "AIRPORT ROTATING BEACON").
6. PROVIDE FRACTIONAL HORSEPOWER MOTOR MANUAL STARTER, SQUARE D MANUAL STARTER WITH HANDLE/GUARD/LOCK OFF, IN NEMA 4 ENCLOSURE CLASS 2510, TYPE FG5 OR APPROVED EQUAL FOR FAN MOTOR & DAMPER MOTOR. INCLUDE MELTING ALLOY TYPE THERMAL OVERLOADS SIZED AS REQUIRED TO PROTECT THE RESPECTIVE MOTOR. 120 VAC MOTORS SHALL HAVE SINGLE POLE STARTERS.
7. FUSING FOR CONTROL WIRING SHALL BE 10 AMP, 600 VAC, BUSSMANN CATALOG FNQ-R-10, OR APPROVED EQUAL, WITH FUSE BLOCKS, WITH BOX LUG TERMINALS, SIZED AS REQUIRED FOR THE RESPECTIVE APPLICATION. INCLUDE HARDWARE FOR MOUNTING. PROVIDE ONE BOX (5 MINIMUM QUANTITY) OF EACH TYPE AND SIZE OF FUSE, UPON COMPLETION OF THE JOB FOR USE AS SPARES.

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Hanson Professional Services Inc.
815 Commerce Drive, Suite 200
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375 West Briarcliff Road
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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		

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REVIEWED BY:	RMH 5/7/2014

SHEET TITLE

LIGHTING CONTACTOR SCHEMATIC

MAY 08, 2014 3:06 PM SPITZ01394
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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 SHEILDING 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 GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.

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

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

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

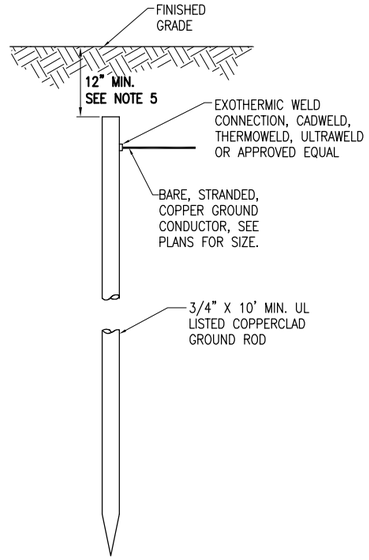
18. BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.

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 MANUFACTURER 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. TOP OF GROUND RODS FOR VAULT SHALL BE 40" MINIMUM BELOW GRADE. GROUND RING CONDUCTORS SHALL BE 50" MINIMUM BELOW GRADE TO BE BELOW FROST LINE (FOR WILL COUNTY, ILLINOIS).
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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CONSTRUCT REPLACEMENT RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

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REVIEWED BY: RMH 5/7/2014

SHEET TITLE

GROUNDING NOTES

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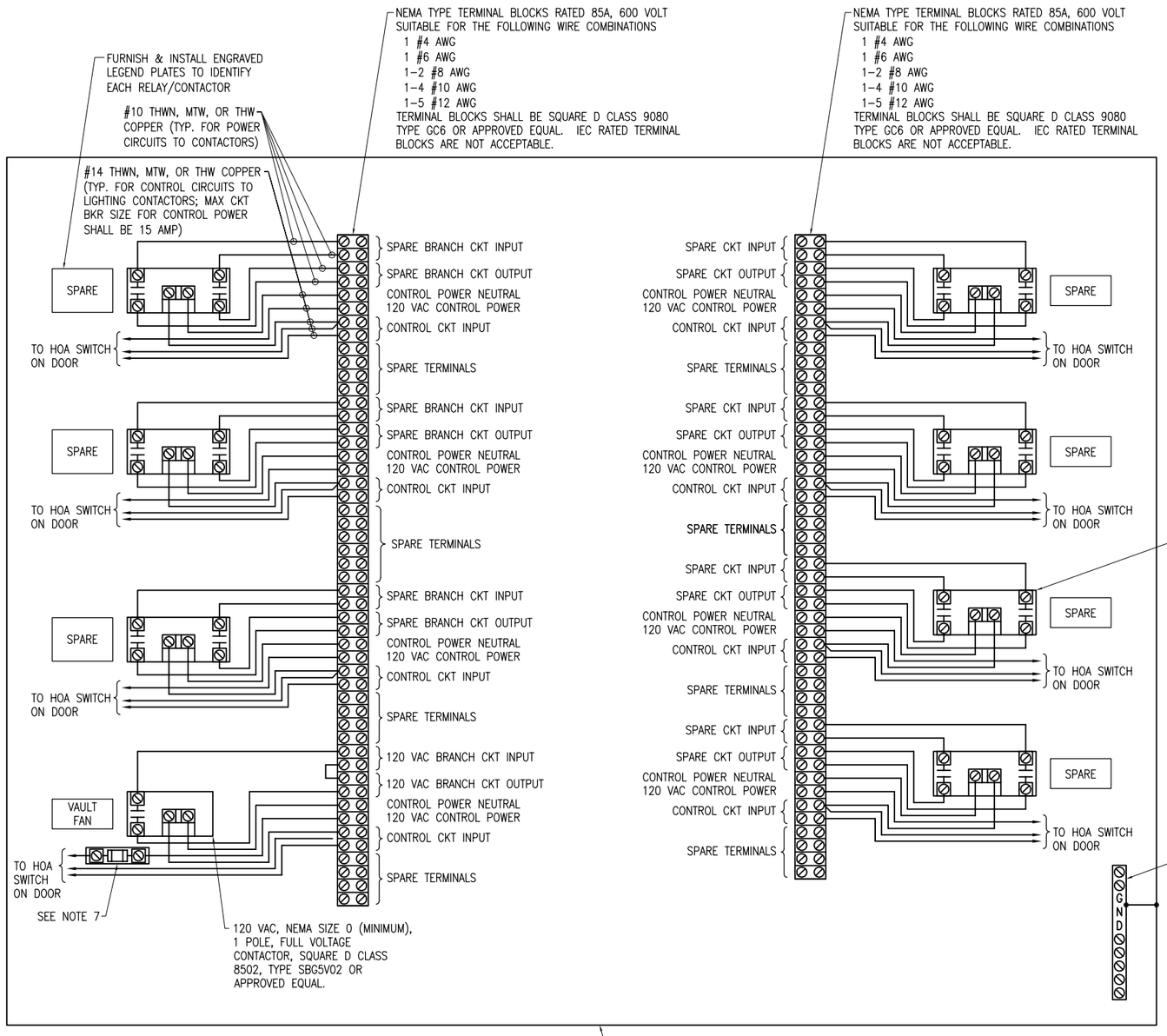

CONTROL PANEL FOR AIRFIELD NAVAIDS AND VAULT FAN

NOTES

1. 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR PANEL. 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR PANEL.
2. INPUT CONTROL CIRCUITS SHALL BE #12 AWG COPPER THWN.
3. FOR 120 VAC BRANCH CIRCUITS THE NEUTRAL CONDUCTOR SHALL NOT BE SWITCHED THROUGH THE RELAY CONTACTS. USE TERMINAL BLOCKS TO TRANSITION FROM VAULT BRANCH CIRCUIT WIRING TO FIELD WIRING.
4. PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
5. PROVIDE 3–POSITION MAINTAINED CONTACT "HAND–OFF–AUTO" SELECTOR SWITCH FOR EACH LIGHTING CONTACTOR & MOUNT ON LIGHTING CONTACTOR PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: "WIND CONE" OR "AIRPORT ROTATING BEACON").
6. SEE "LIGHTING CONTACTOR SCHEMATIC" AND "EXHAUST FAN CONTROL SCHEMATIC" FOR ADDITIONAL INFORMATION ON WIRING.
7. FUSING FOR FAN CIRCUIT CONTROL WIRING SHALL BE 10 AMP, 600 VAC, BUSSMANN CATALOG FNQ–R–10, OR APPROVED EQUAL, WITH FUSE BLOCKS, WITH BOX LUG TERMINALS, SIZED AS REQUIRED FOR THE RESPECTIVE APPLICATION. INCLUDE HARDWARE FOR MOUNTING. PROVIDE ONE BOX (5 MINIMUM QUANTITY) OF EACH TYPE AND SIZE OF FUSE, UPON COMPLETION OF THE JOB FOR USE AS SPARES.
8. INCLUDE LEGEND PLATE ON CONTROL PANEL ENCLOSURE OUTER DOOR LABELED "NOTICE: CONTACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME".
9. 120/240 VAC PHASE "A" CONDUCTORS SHALL HAVE BLACK COLORED INSULATION. 120/240 VAC PHASE "B" CONDUCTORS SHALL HAVE RED COLORED INSULATION. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION. INSULATED EQUIPMENT GROUND WIRES SHALL HAVE GREEN COLORED INSULATION.
10. CONTROL PANEL FOR AIRFIELD NAVAIDS & VAULT FAN SHALL BE MANUFACTURED BY A UL 508 INDUSTRIAL CONTROL PANEL BUILDER OR AN FAA APPROVED L–821 PANEL BUILDER, AND SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENT.
11. CONTROL PANEL FOR AIRFIELD NAVAIDS & VAULT FAN SHALL BE SEPARATE FROM THE RELAY INTERFACE CONTROL PANEL.

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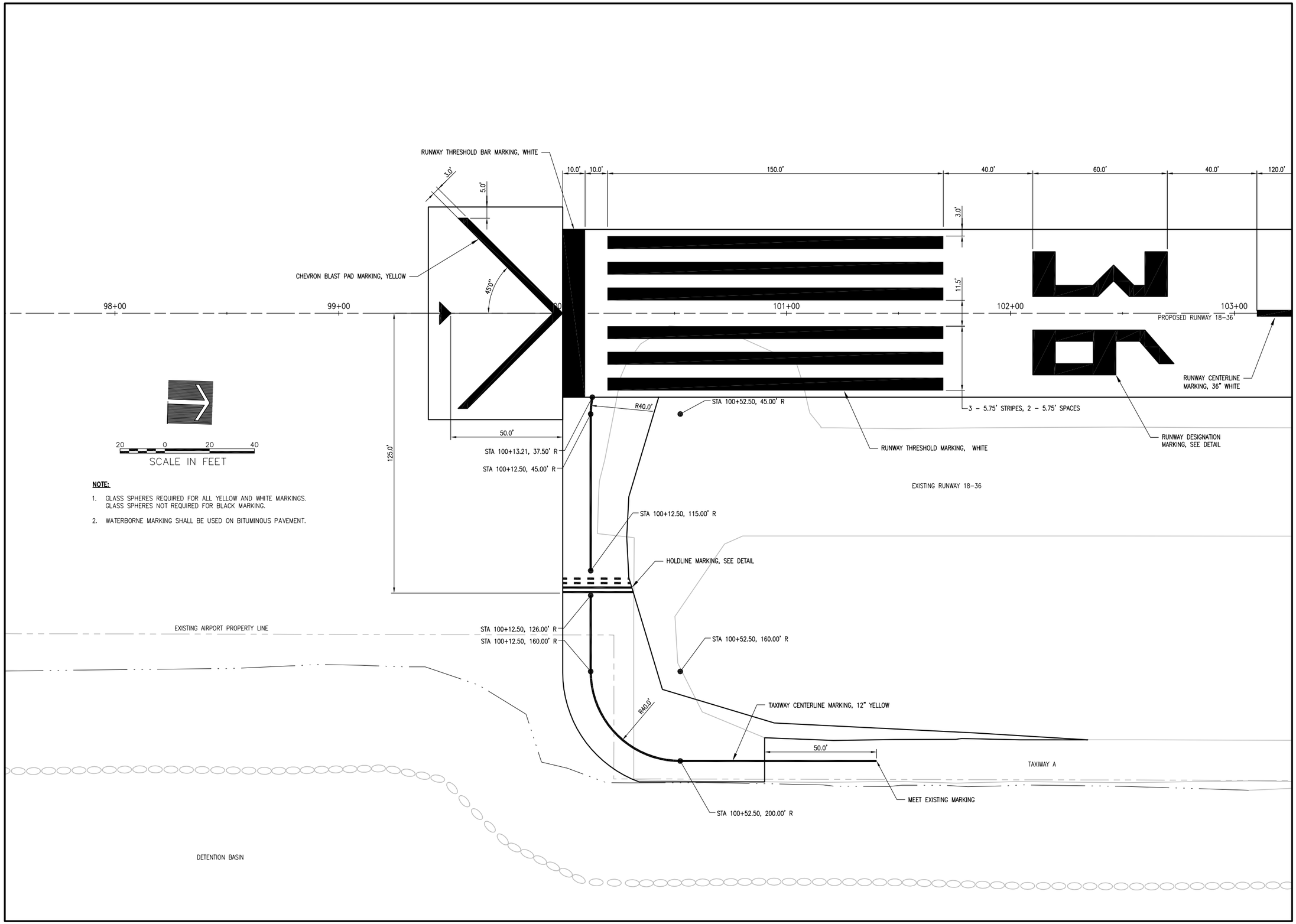
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

LIGHTING CONTACTOR PANEL DETAIL



NOTE:

1. GLASS SPHERES REQUIRED FOR ALL YELLOW AND WHITE MARKINGS. GLASS SPHERES NOT REQUIRED FOR BLACK MARKING.
2. WATERBORNE MARKING SHALL BE USED ON BITUMINOUS PAVEMENT.

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SHEET TITLE

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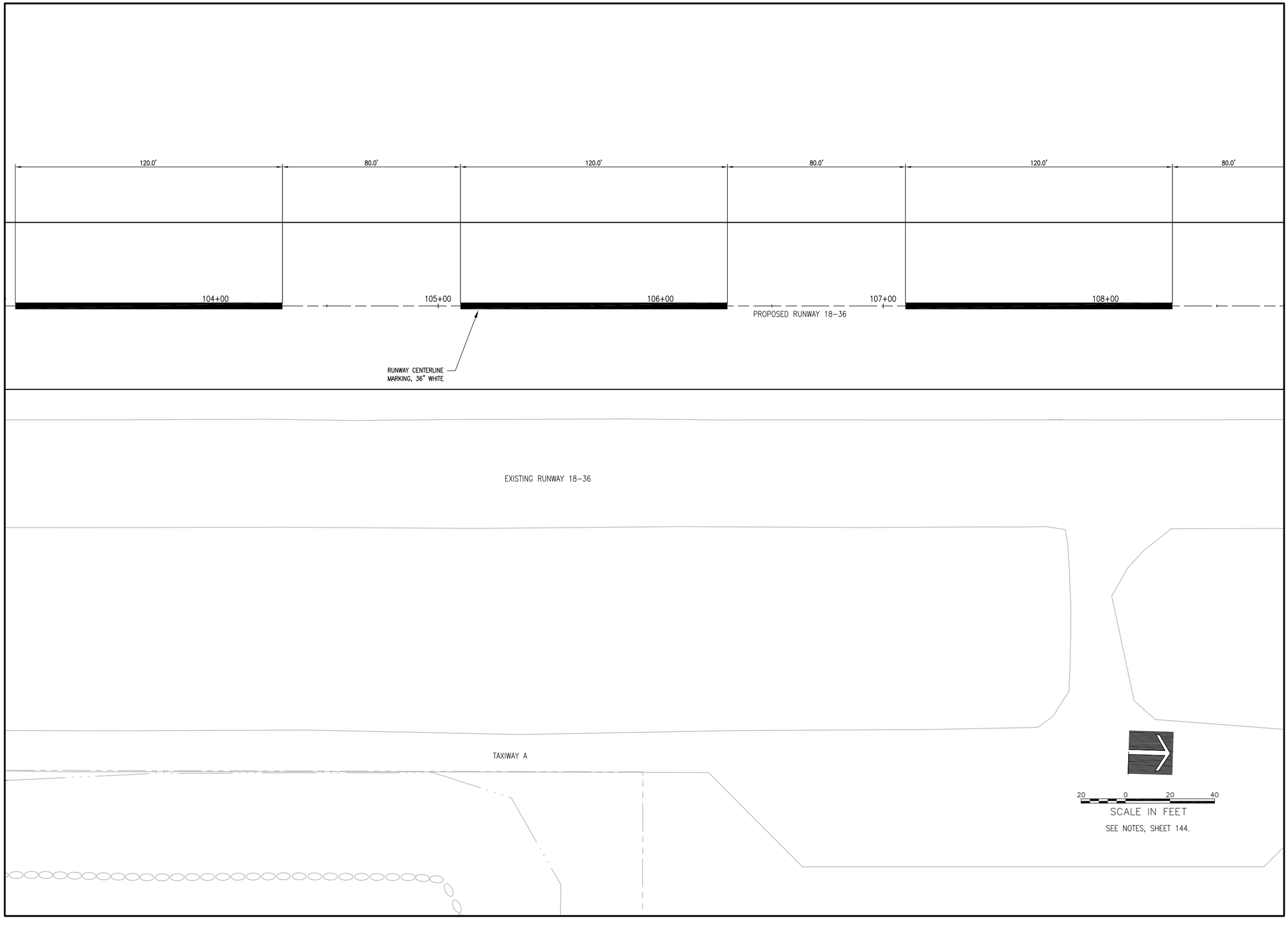

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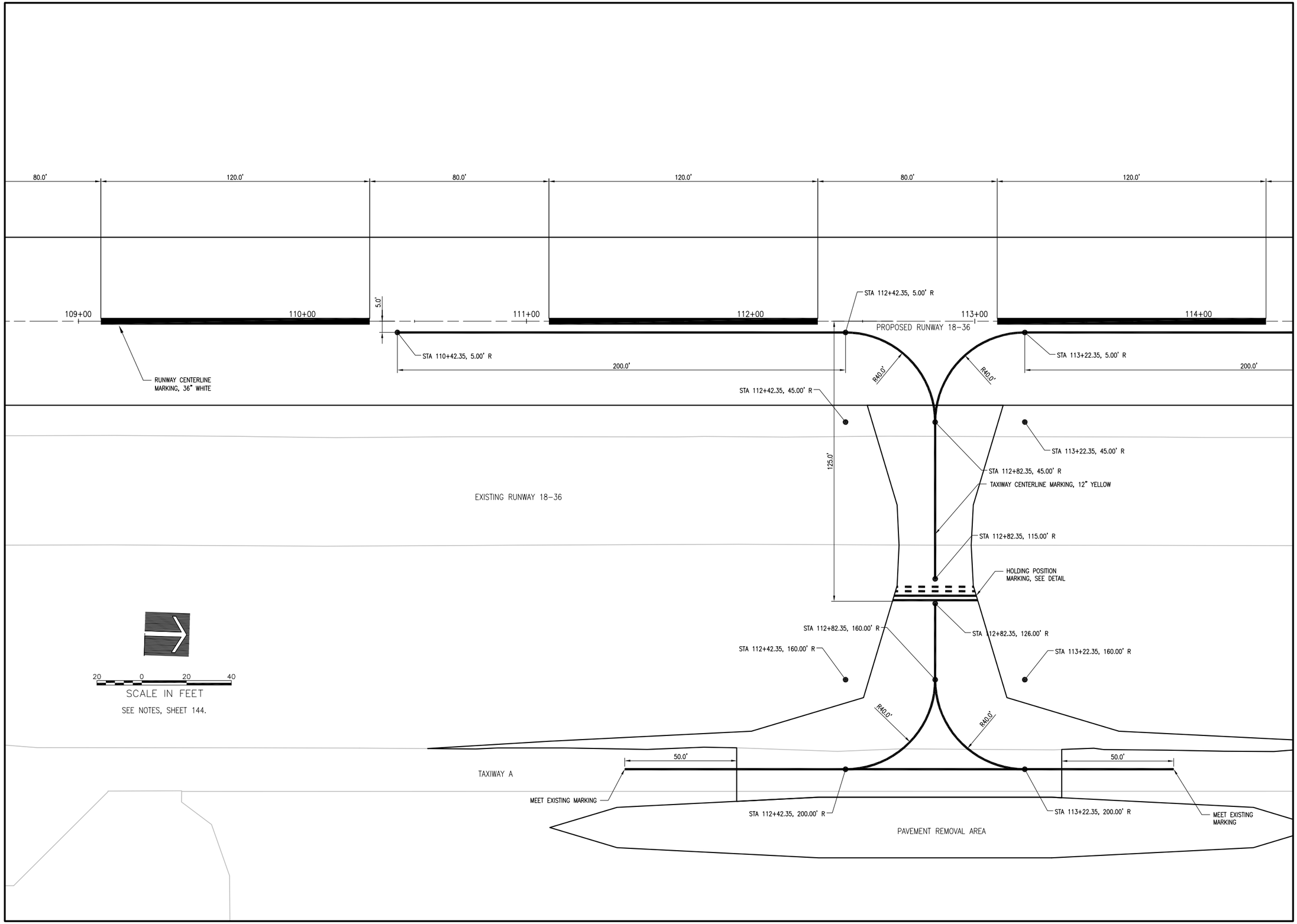

SEE NOTES, SHEET 144.

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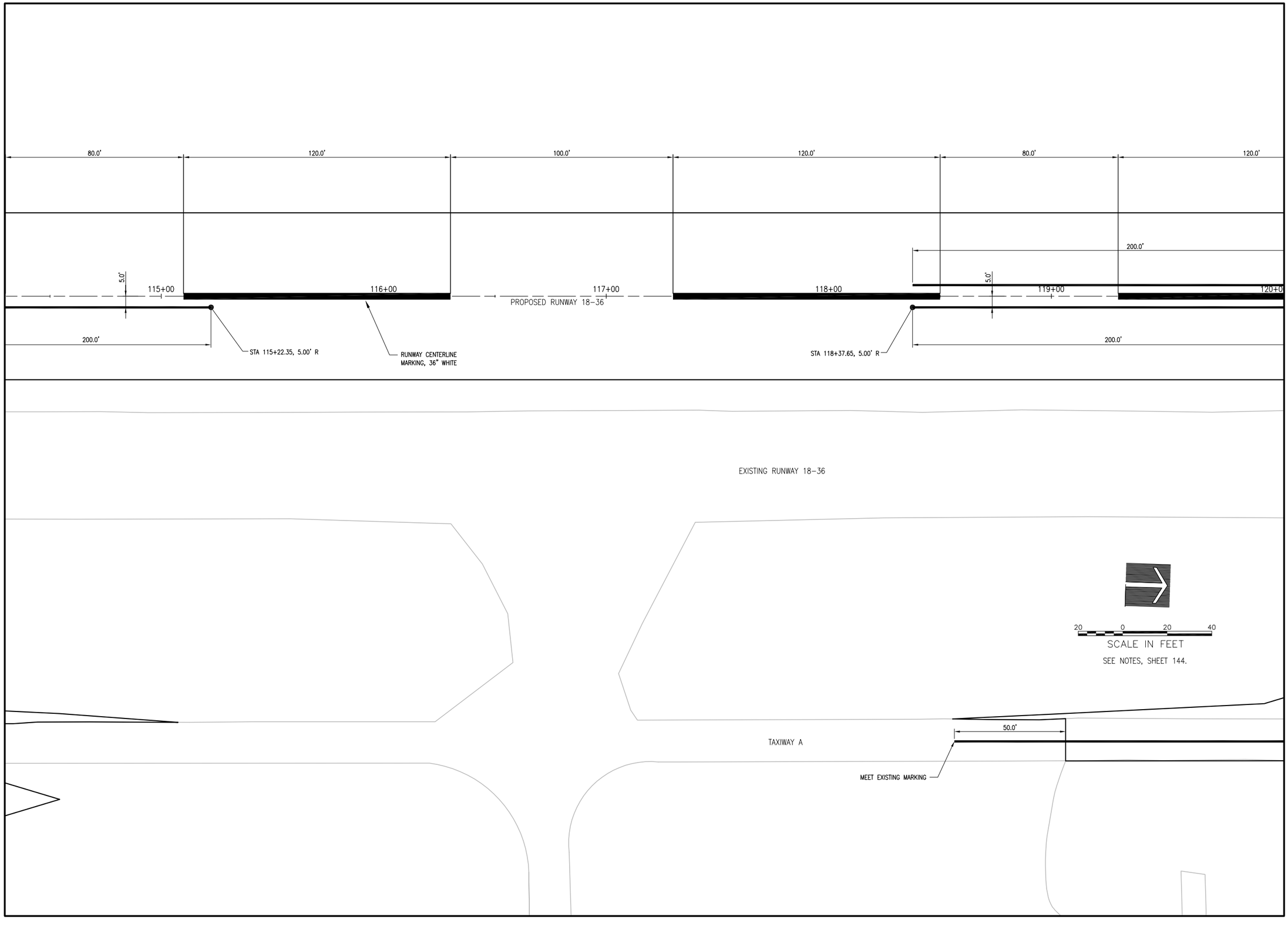

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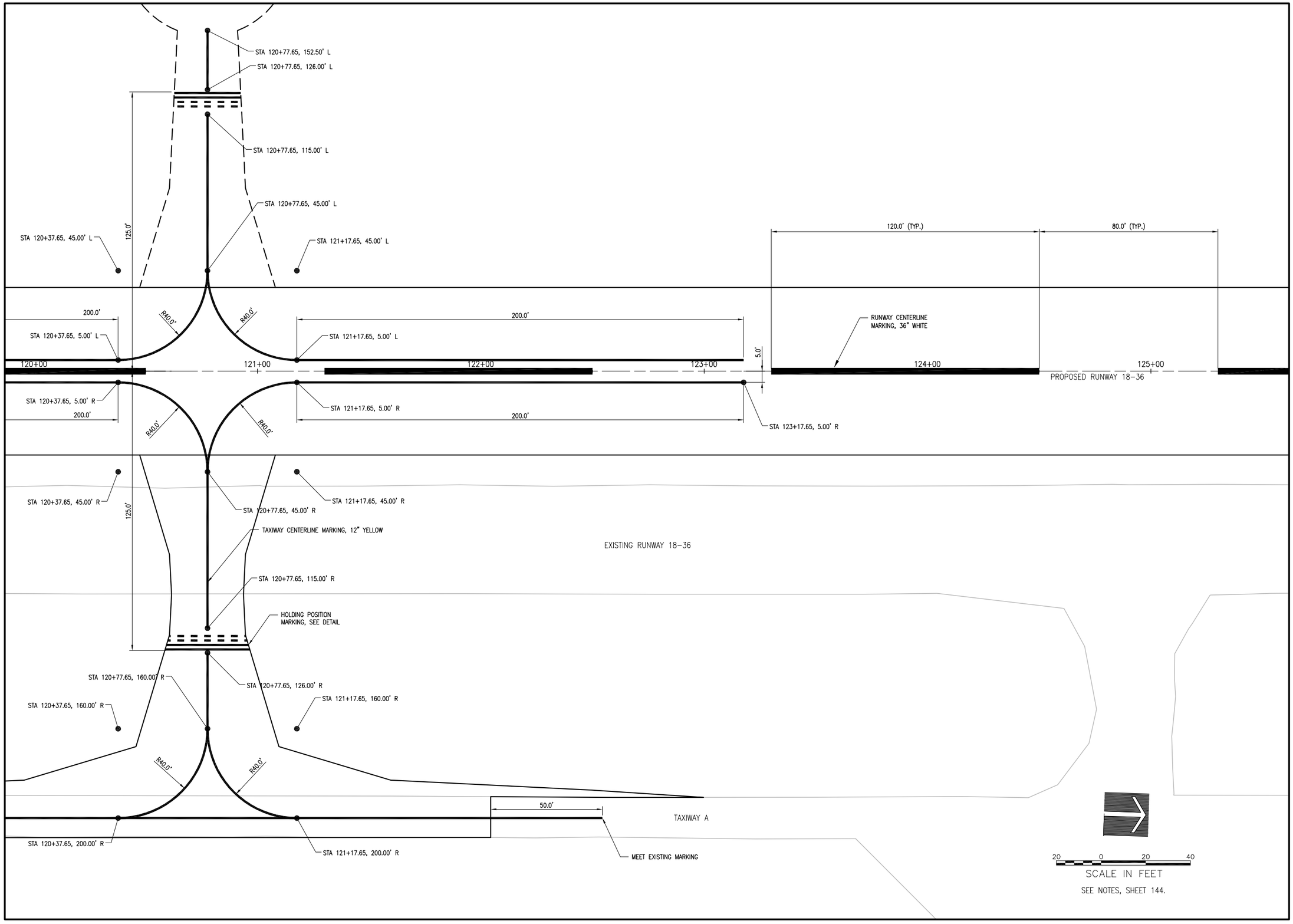

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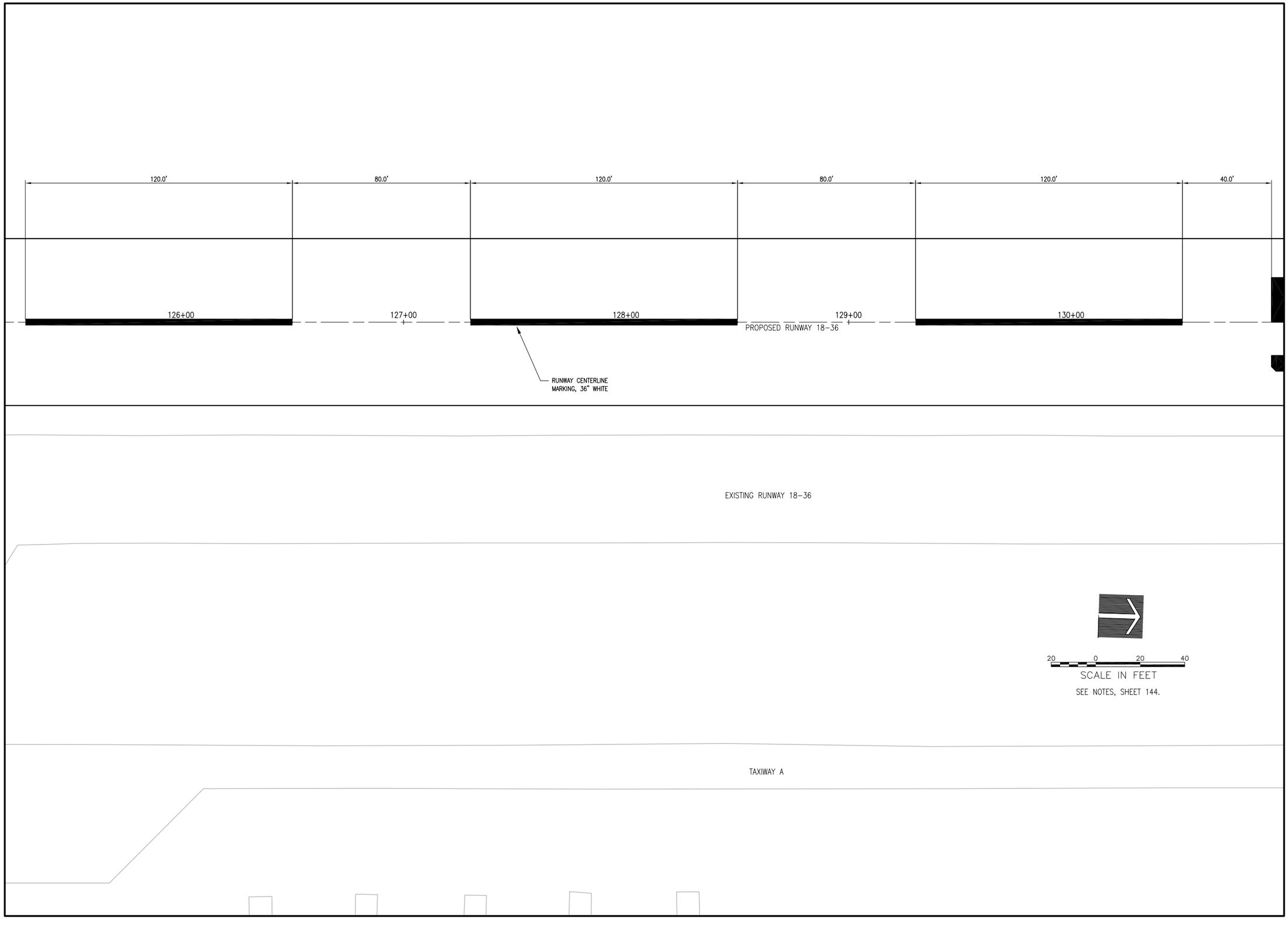

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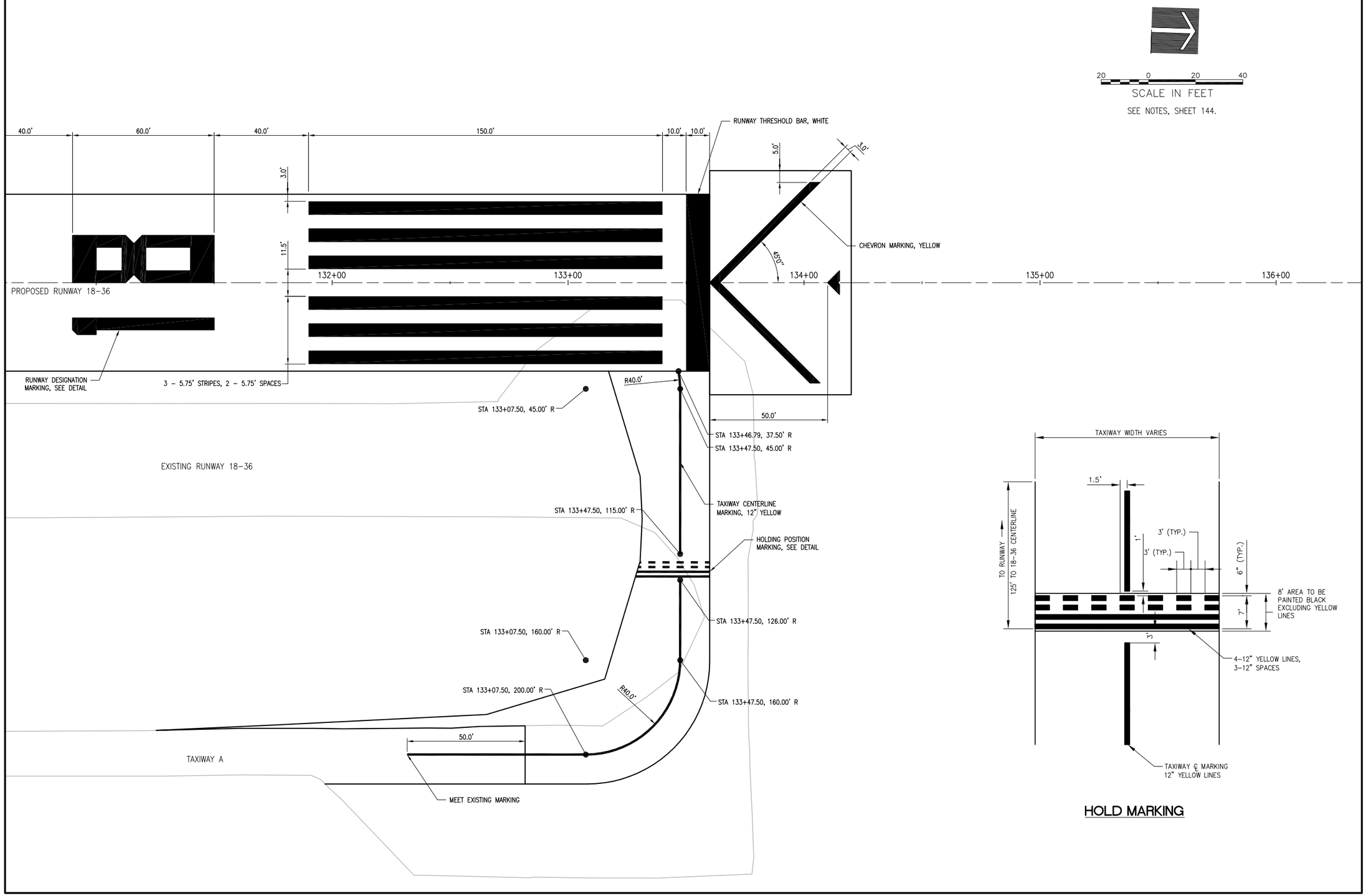

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SCALE IN FEET

SEE NOTES, SHEET 144.

HOLD MARKING

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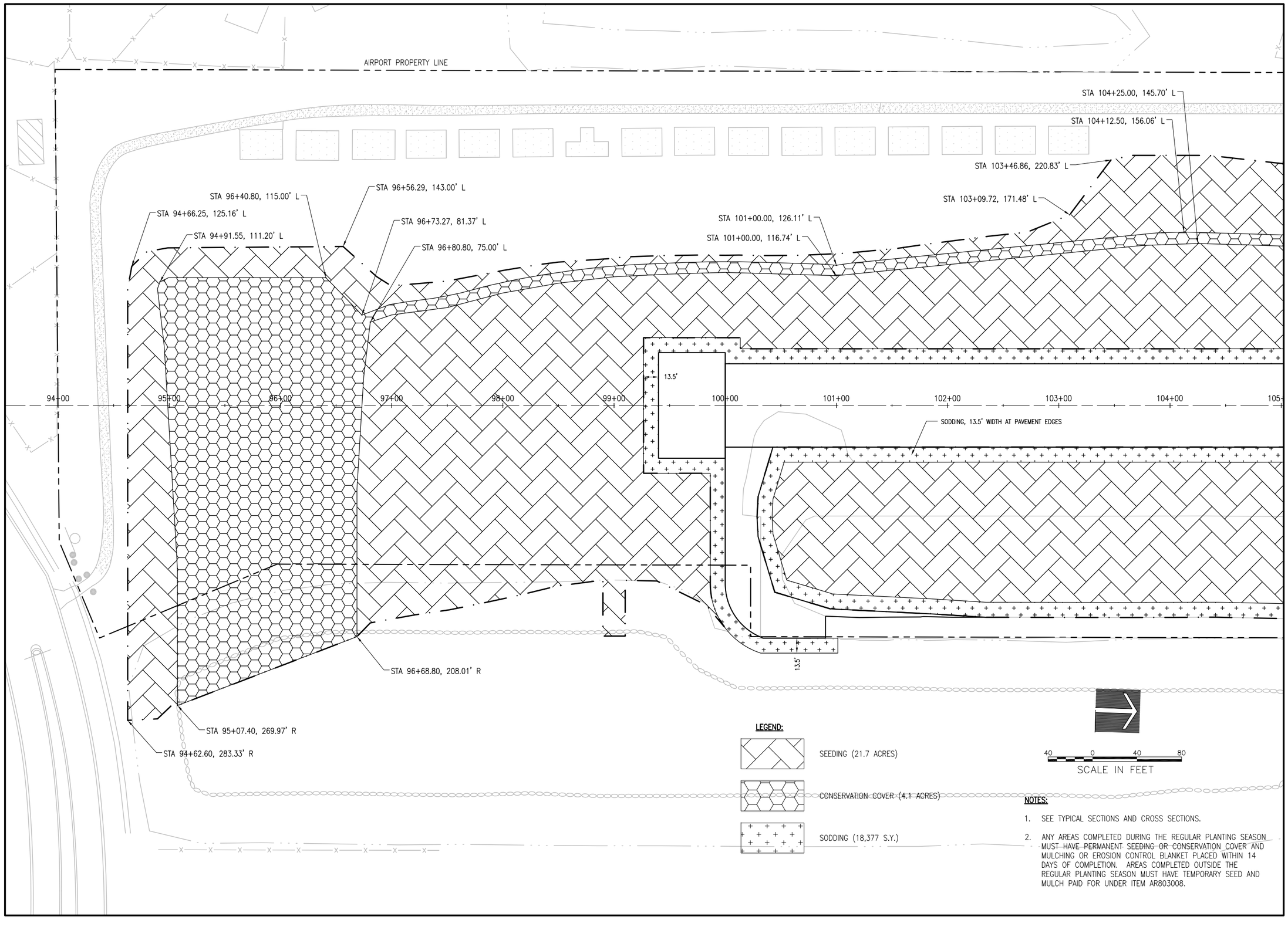

NOTES:

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2. ANY AREAS COMPLETED DURING THE REGULAR PLANTING SEASON MUST HAVE PERMANENT SEEDING OR CONSERVATION COVER AND MULCHING OR EROSION CONTROL BLANKET PLACED WITHIN 14 DAYS OF COMPLETION. AREAS COMPLETED OUTSIDE THE REGULAR PLANTING SEASON MUST HAVE TEMPORARY SEED AND MULCH PAID FOR UNDER ITEM AR803008.

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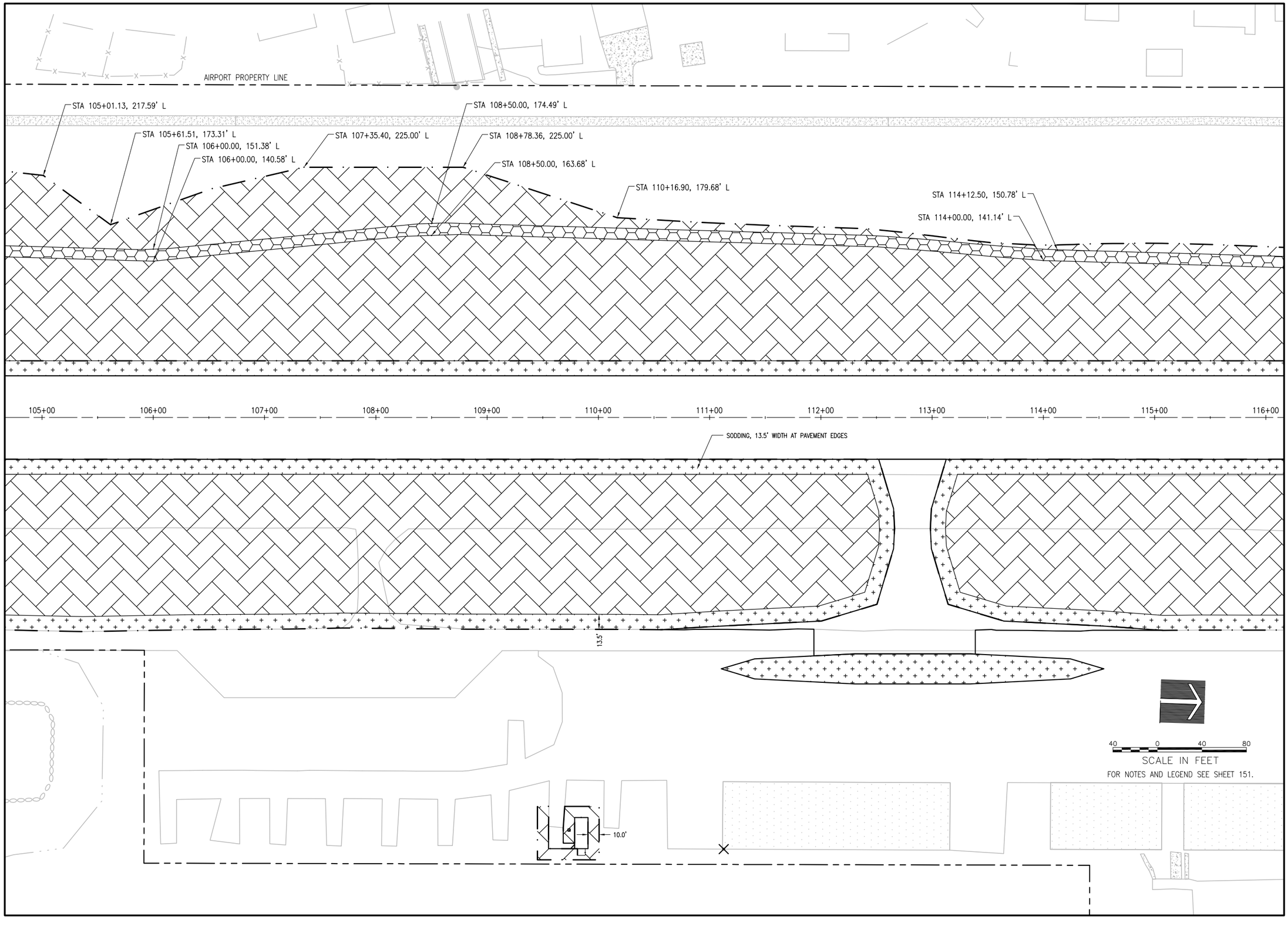
VEGETATION PLAN



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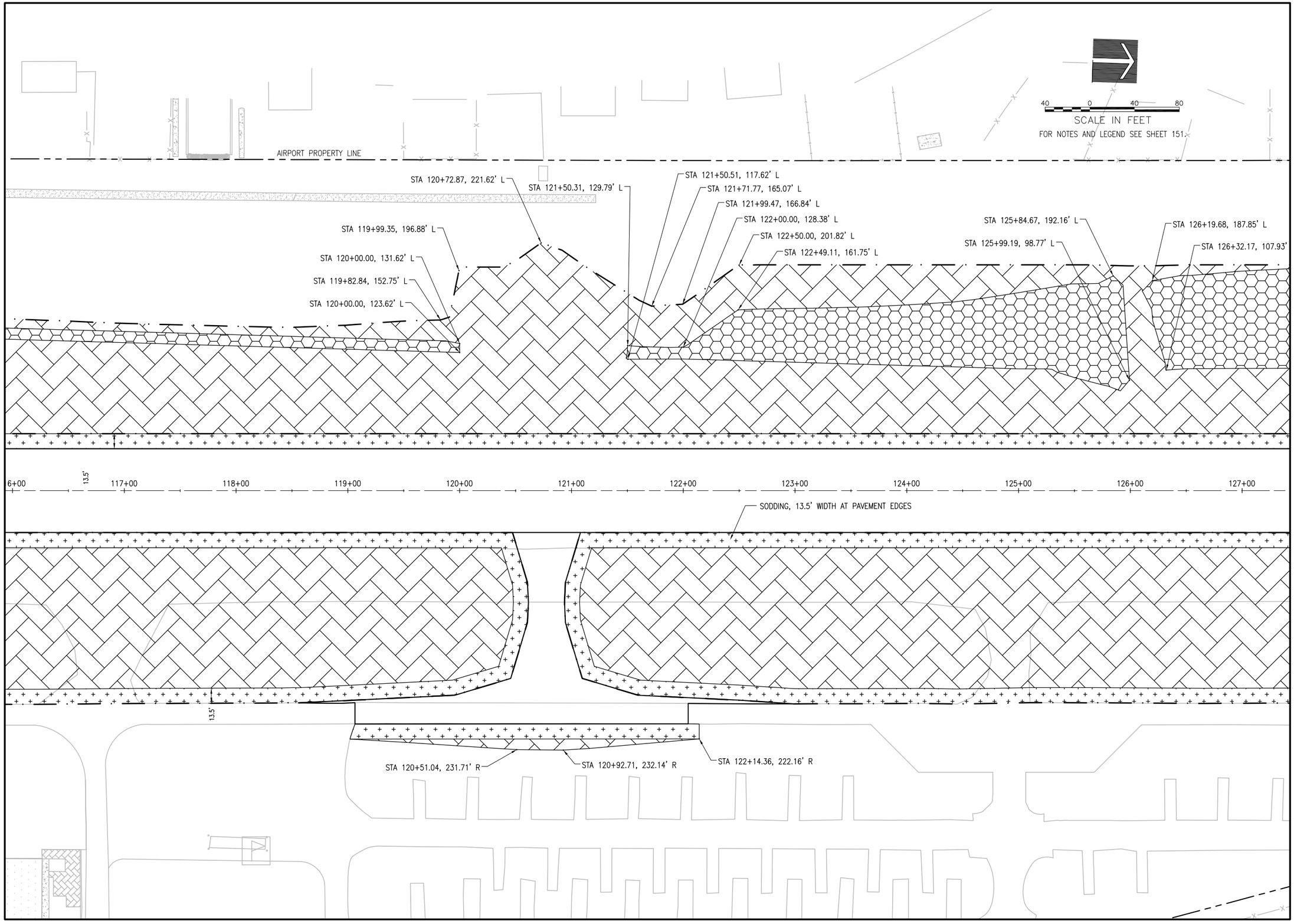

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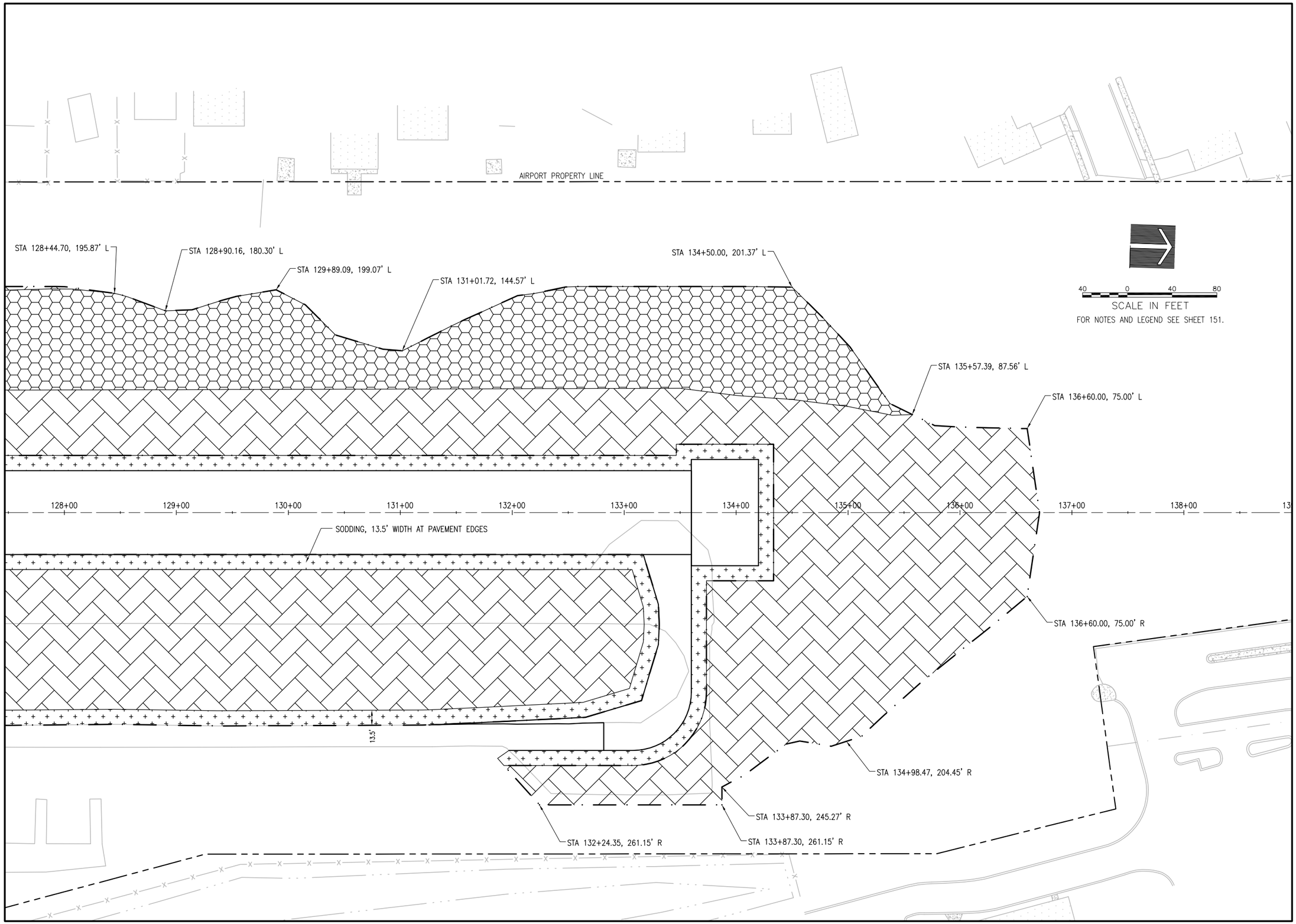

FOR NOTES AND LEGEND SEE SHEET 151.

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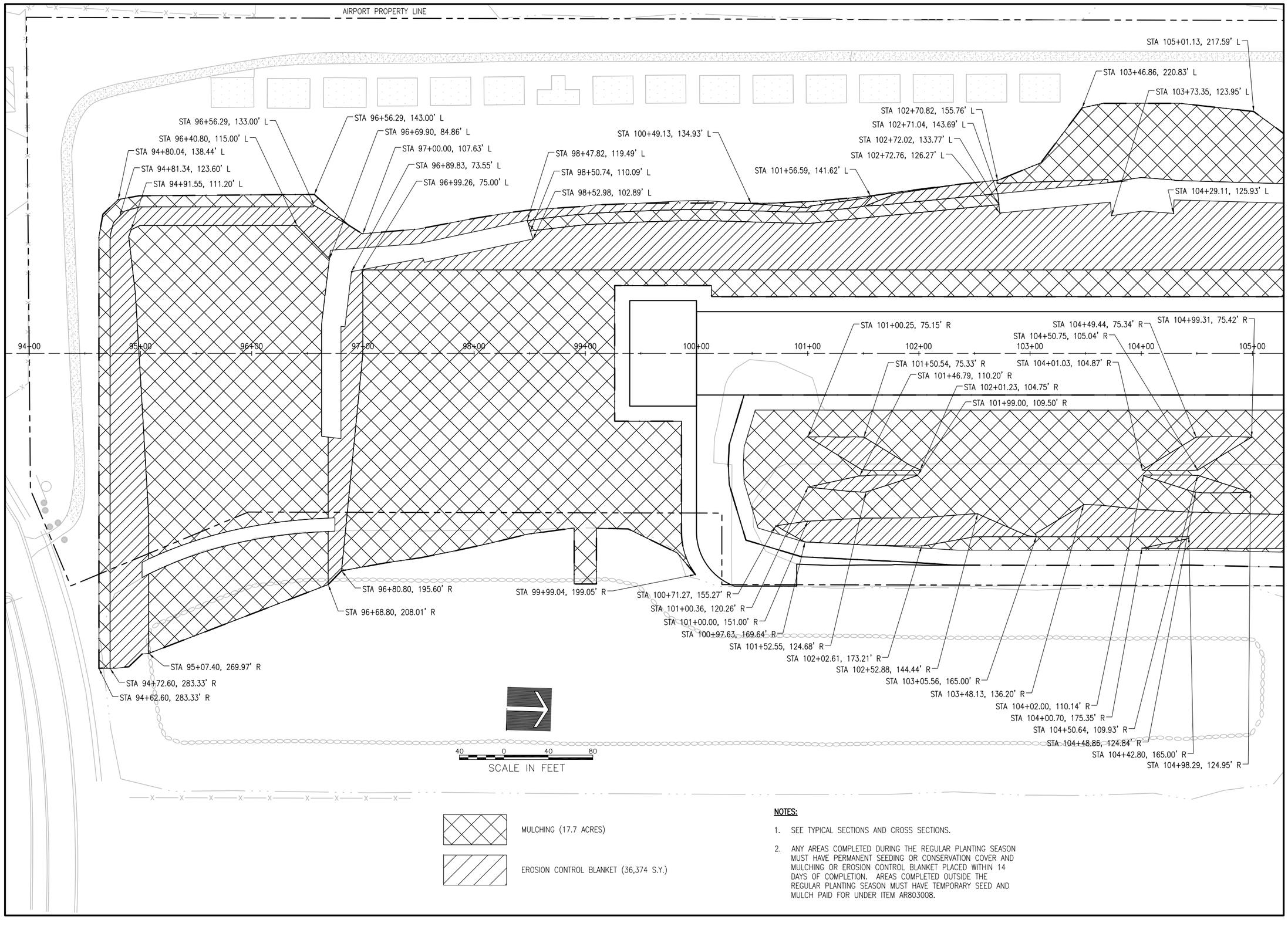

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REVIEWED BY: RMH 5/7/2014

SHEET TITLE

PROTECTION PLAN

MAY 08, 2014 5:13 PM HAUSM00682
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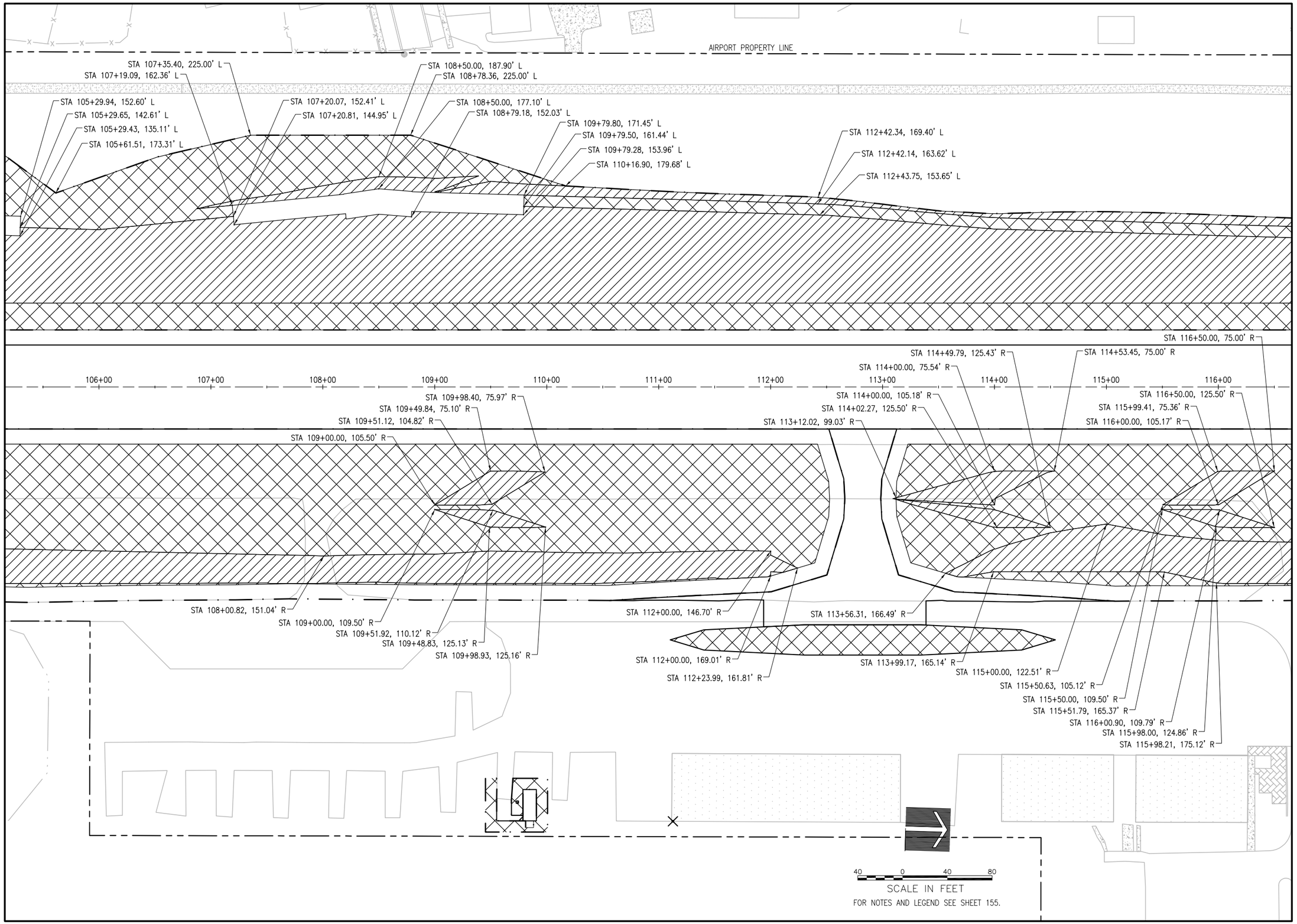

FOR NOTES AND LEGEND SEE SHEET 155.

MAY 08, 2014 3:27 PM SPITZ01394
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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

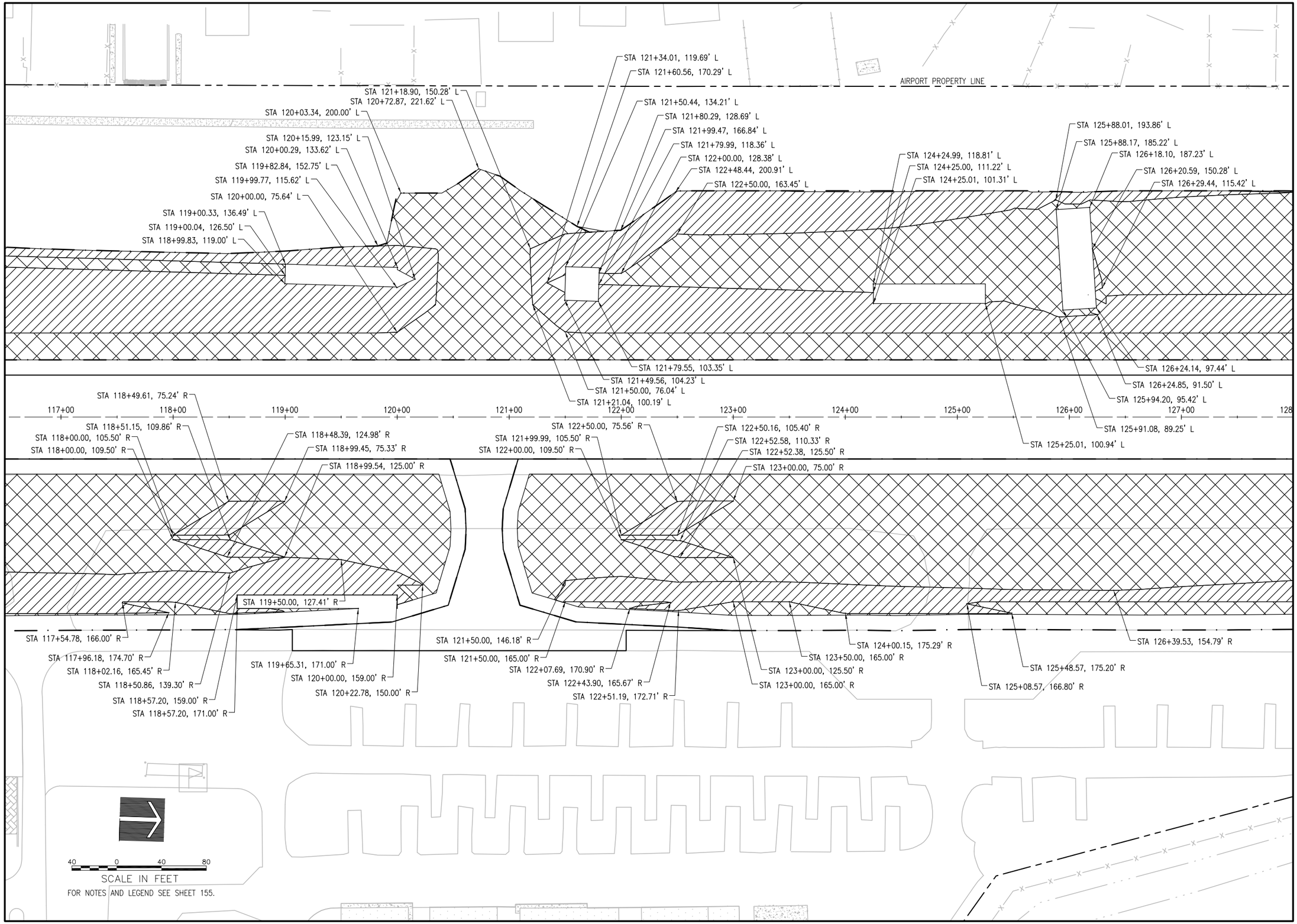
BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 156-PROT PLAN.DWG
LAYOUT BY: LDH 4/29/14
DRAWN BY: LDH 4/29/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

PROTECTION PLAN



FOR NOTES AND LEGEND SEE SHEET 155.

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IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

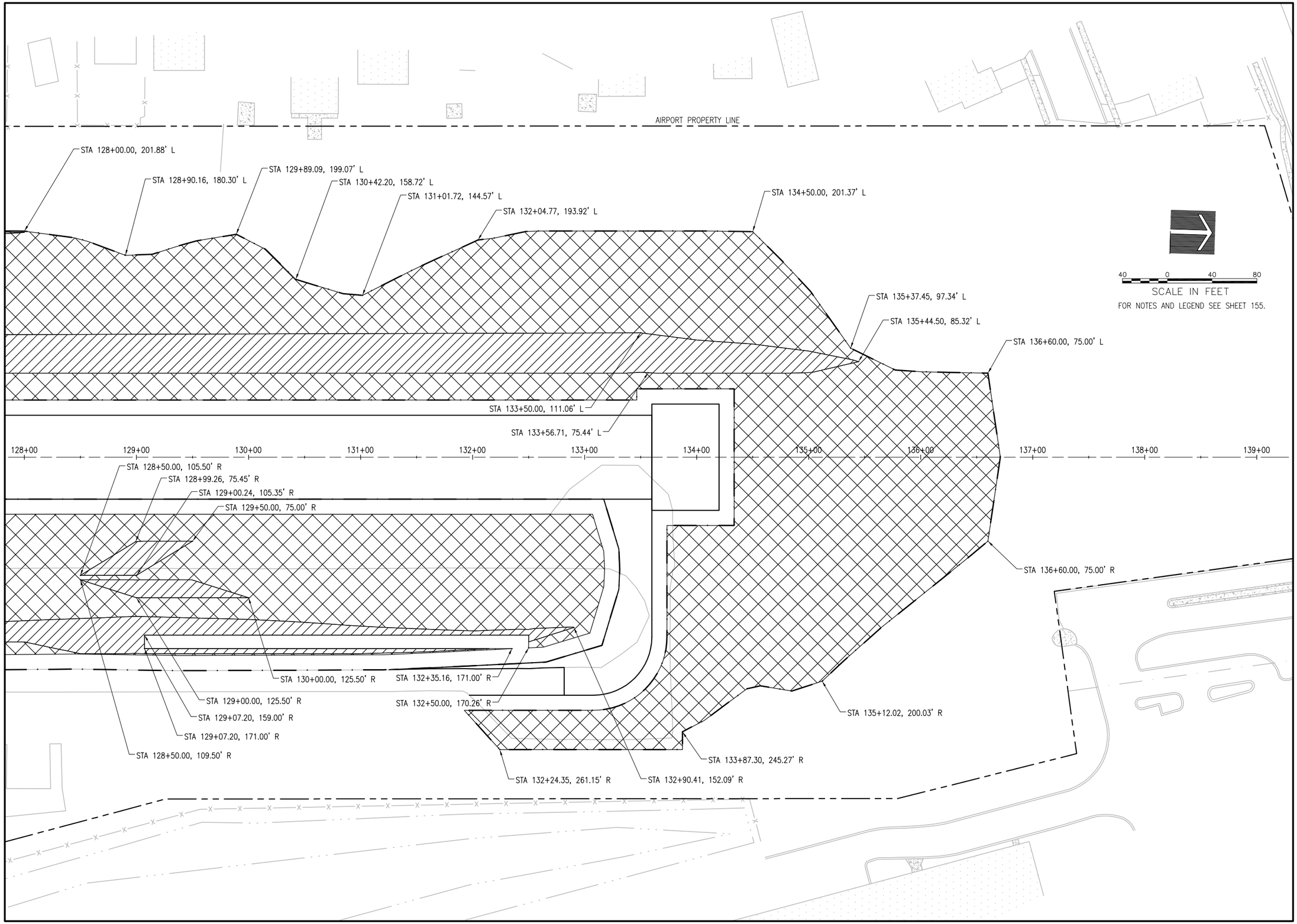
BO003

NO.	DATE	DESCRIPTION		
			LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 157-PROT PLAN.DWG
LAYOUT BY: LDH 4/29/14
DRAWN BY: LDH 4/29/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

PROTECTION PLAN



FOR NOTES AND LEGEND SEE SHEET 155.

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IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

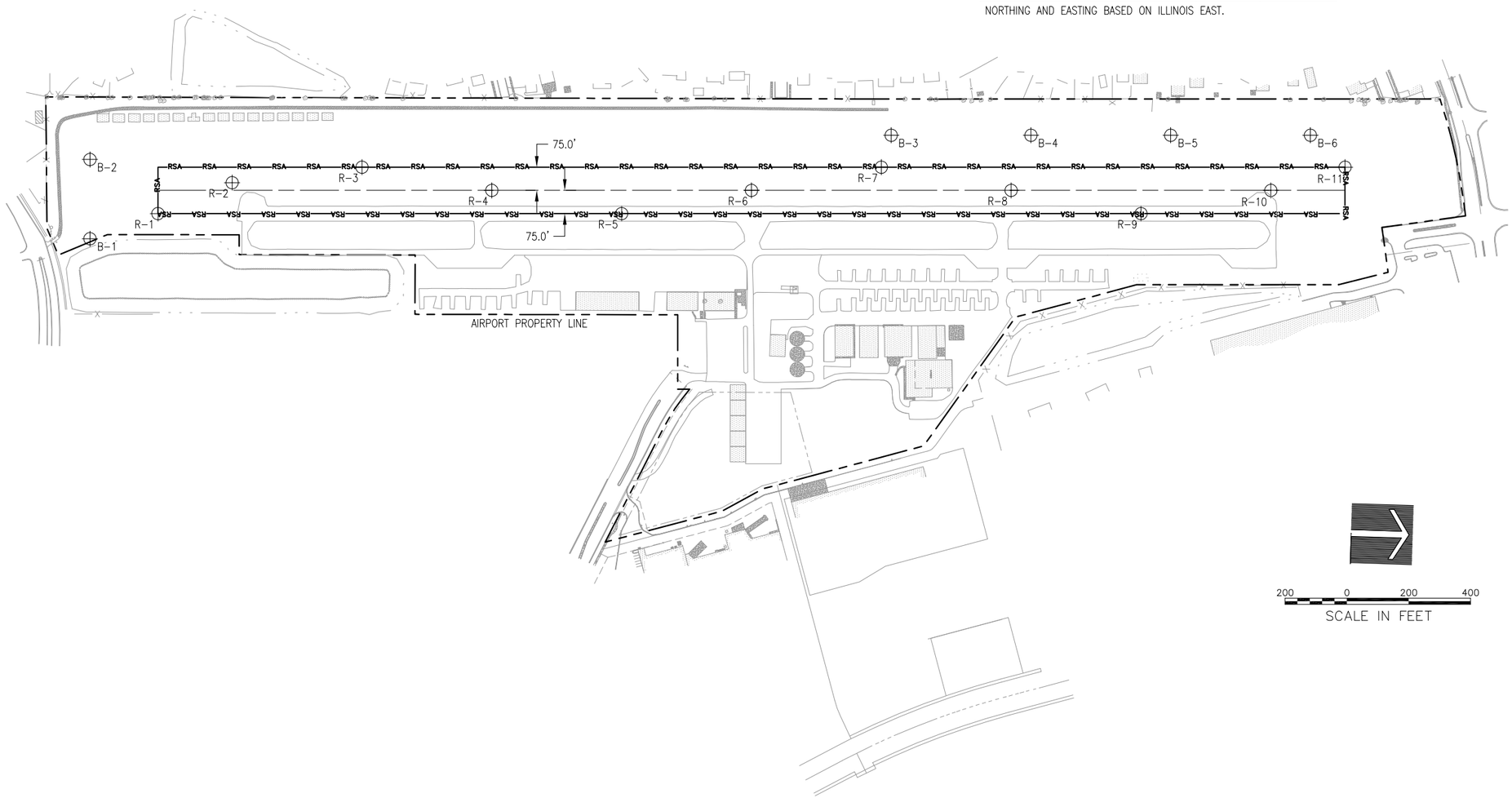
ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 158-PROT PLAN.DWG
LAYOUT BY: LDH 4/29/14
DRAWN BY: LDH 4/29/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

PROTECTION PLAN

BORING TABLE				
BORING	NORTHING	EASTING	ELEVATION	DEPTH (FEET)
B-1	1829714.026	1040143.686	651.8	10
B-2	1829706.039	1039887.368	650.7	10
B-3	1832294.342	1039728.339	665.0	15
B-4	1832746.123	1039714.262	666.6	15
B-5	1833197.904	1039700.185	674.2	15
B-6	1833649.684	1039686.107	673.3	15
R-1	1829931.383	1040055.431	652.0	10
R-2	1830168.151	1039947.967	652.2	10
R-3	1830586.391	1039884.949	650.4	10
R-4	1831008.522	1039946.793	653.5	10
R-5	1831430.655	1040008.715	654.6	10
R-6	1831848.116	1039920.671	656.3	10
R-7	1832265.576	1039832.626	662.6	10
R-8	1832687.707	1039894.471	665.0	10
R-9	1833109.840	1039956.392	667.7	10
R-10	1833527.300	1039868.310	675.9	10
R-11	1833764.849	1039785.910	672.7	10
			TOTAL =	190

NORTHING AND EASTING BASED ON ILLINOIS EAST.



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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 159-BORING MAP.DWG
LAYOUT BY: LDH 1/20/14
DRAWN BY: LDH 1/20/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

BORING LOCATION MAP

MAY 08, 2014 3:30 PM SPITZ01394
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GEC Job # | LOG OF BORING NO. B-1 | SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc. | PROJECT: Replacement Runway 18-36

COORDINATES: | LOCATION: Bolingbrook's Clow International Airport Bolingbrook, Illinois

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 651.8	
						Topsoil, trace sand & gravel, dark brown 1.0 / 650.8	
	1	SS		44		Clayey sandy silt, dark brown, loose, (FILL) 3.0 / 648.8	
5	2	SS		83		Silty clay & stone, brown, medium dense, (FILL) 5.0 / 646.8	
	3 4	SS		100		Silty clay, trace sand & gravel, brown, very stiff, (CL) 7.0 / 644.8	
						Fine sand, brown, moist, medium dense, (SP-FILL) 8.0 / 643.8	
10	5	SS		100		Crushed stone, brown, moist, dense, (FILL) 10.0 / 641.8	
						End Of Boring	

WATER LEVEL OBSERVATIONS		Ground Engineering Consultants, Inc.	BORING STARTED	3/5/14
W.L.	Dry ▽	350 Pfingsten Road, Suite 106	BORING COMPLETED	3/5/14
W.L.	▼	Northbrook, Illinois 60062	DRILLING COMPANY	FOREMAN Juan
W.L.	▼	Tel: (847) 559-0085 Fax: (847) 559-0181	Earth Solutions	APPR. BY SG

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GEC Job # | LOG OF BORING NO. B-2 | SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc. | PROJECT: Replacement Runway 18-36

COORDINATES: | LOCATION: Bolingbrook's Clow International Airport Bolingbrook, Illinois

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 650.7	
						Topsoil, dark brown 1.0 / 649.7	
	1	SS		39		Silty sandy clay, trace stone, brown, loose, (FILL) 2.5 / 648.2	
	2					Crushed stone & clay, moist, brown, medium dense, (FILL) 4.0 / 646.7	
5	3	SS		94		Silty clay, trace sand & gravel, brown, very stiff, (CL) 6.0 / 644.7	
	4	SS		72		Sand & crushed stone, brown, moist, dense to medium dense	
10	5	SS		67		10.0 / 640.7	
						End Of Boring	

WATER LEVEL OBSERVATIONS		Ground Engineering Consultants, Inc.	BORING STARTED	3/5/14
W.L.	Dry ▽	350 Pfingsten Road, Suite 106	BORING COMPLETED	3/5/14
W.L.	▼	Northbrook, Illinois 60062	DRILLING COMPANY	FOREMAN Juan
W.L.	▼	Tel: (847) 559-0085 Fax: (847) 559-0181	Earth Solutions	APPR. BY SG

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION	LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 160-BORINGS.DWG
LAYOUT BY: LDH 5/2/14
DRAWN BY: LDH 5/2/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

BORING LOGS
B-1 THRU B-2

GEC Job # | **LOG OF BORING NO. B-3** | SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc. | PROJECT: Replacement Runway 18-36

COORDINATES: | LOCATION: Bolingbrook's Clow International Airport, Bolingbrook, Illinois

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.

GROUND SURFACE ELEVATION USGS 565.0

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						Topsoil, trace sand & gravel, dark brown, trace black (OL-FILL) 564	
1.0							
	1	SS		83		Silty clay, trace sand & gravel, brown & gray, hard, (CL)	
5	2	SS		94			
	3	SS		100			
7.5						557.5	
						Silty clay, trace sand & gravel, brown, with red streaks, hard, (CL)	
9.0						556	
	4 5	SS		100		Silty clay, trace sand & gravel, gray, hard, (CL)	
10							
12.0						553	
						Silty clay, trace sand & gravel, one large stone, gray, very stiff, (CL)	
	6	SS		100			
15							
15.0						550	
						End Of Boring	

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▽

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BORING STARTED	3/10/14
BORING COMPLETED	3/10/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

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GEC Job # | **LOG OF BORING NO. B-4** | SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc. | PROJECT: Replacement Runway 18-36

COORDINATES: | LOCATION: Bolingbrook's Clow International Airport, Bolingbrook, Illinois

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.

GROUND SURFACE ELEVATION USGS 666.6

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						Topsoil	
1.0						665.6	
	1	SS		89		Silty clay, trace sand & gravel, some small stone, brown & gray, stiff, (CL-FILL)	
3.0						663.6	
5	2	SS		94		Silty clay, trace sand & gravel, brown & gray, very stiff, (CL)	
	3	SS		83			
8.0						658.6	
						Silty clay, some small stone, trace sand, gray, very stiff to stiff, (CL)	
	4	SS		89			
10							
	5	SS		83			
15							
15.0						651.6	
						End Of Boring	

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▽

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BORING STARTED	3/10/14
BORING COMPLETED	3/10/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 161-BORINGS.DWG
LAYOUT BY: LDH 5/2/14
DRAWN BY: LDH 5/2/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

B-3 THRU B-4

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GEC Job #

LOG OF BORING NO. B-5

SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc.

PROJECT: Replacement Runway 18-36

COORDINATES:

LOCATION: Bolingbrook's Clow International Airport
Bolingbrook, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 674.2	
						Topsoil, trace sand & gravel, dark brown, trace black, (OL-FILL)	
1.0						673.2	
	1	SS		100		Silty clay, trace sand & gravel, brown & gray, (CL)	
5	2	SS		67			
	3	SS		100			
10	4	SS		83			
12.0						662.2	
						Silty clay, trace sand & gravel, silt seams, gray, very stiff, (CL-ML)	
15	5	SS		100			
15.0						659.2	
						End Of Boring	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
1 2 3 4 5 6+
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.
10 20 30 40 50 60+

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▼

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BORING STARTED	3/10/14
BORING COMPLETED	3/10/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

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GEC Job #

LOG OF BORING NO. B-6

SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc.

PROJECT: Replacement Runway 18-36

COORDINATES:

LOCATION: Bolingbrook's Clow International Airport
Bolingbrook, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 673.3	
						Topsoil, trace silt & sand, dark brown, (FILL)	
1.0						672.3	
	1	SS		100		Silty clay, trace topsoil, dark brown, very stiff, (CL)	
1.5						671.8	
	2					Silty clay, trace sand & gravel, brown & gray, hard, (CL)	
5	3	SS		89			
	4	SS		100			
10	5	SS		67			
11.0						662.3	
						Silty clay, trace sand & gravel, gray, very stiff, (CL)	
15	6	SS		100			
15.0						658.3	
						End Of Boring	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
1 2 3 4 5 6+
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.
10 20 30 40 50 60+

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▼

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BORING COMPLETED	3/10/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

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CONSTRUCT
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RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 162-BORINGS.DWG
LAYOUT BY: LDH 5/2/14
DRAWN BY: LDH 5/2/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

B-5 THRU B-6

MAY 08, 2014 3:36 PM SPITZ01394
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GEC Job #

LOG OF BORING NO. R-1

SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc.

PROJECT: Replacement Runway 18-36

COORDINATES:

LOCATION: Bolingbrook's Clow International Airport
Bolingbrook, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 852.0	
						Topsoil	
						1.0 — 851	
	1	SS		50		Silty clayey topsoil, dark gray, (OL)	
						2.0 — 650	
5	2	SS		100		Silty clay, trace sand & gravel, brown & gray, hard, (CL)	
						5.0 — 647	
	3	SS		39		Silty clay, trace sand & gravel, brown & gray, very stiff, (CL)	
	4					7.0 — 645	
						Clayey silt, some stone, brown, soft, (ML-CL)	
						8.0 — 644	
	5	SS		28		Crushed stone, some clay, brown, moist to wet, medium dense, (FILL) (poor sample)	
10						10.0 — 642	
						End Of Boring	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
1 2 3 4 5 6+
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.
10 20 30 40 50 60+

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▽

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Tel: (847) 559-0085 Fax: (847) 559-0181

BORING STARTED	3/5/14
BORING COMPLETED	3/6/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

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GEC Job #

LOG OF BORING NO. R-2

SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc.

PROJECT: Replacement Runway 18-36

COORDINATES:

LOCATION: Bolingbrook's Clow International Airport
Bolingbrook, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 852.2	
						Topsoil, trace gravel, dark brown	
						1.0 — 851.2	
	1	SS		67		Topsoil, black, wet	
						2.0 — 850.2	
5	2	SS		100		Silty clay, trace sand & gravel, brown & gray, hard to very stiff, (CL)	
	3	SS		100		8.5 — 843.7	
	4	SS		28		Stone, silt & clay, brown, wet, gray, loose, (FILL)	
10						10.0 — 842.2	
						End Of Boring	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
1 2 3 4 5 6+
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.
10 20 30 40 50 60+

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▽

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BORING STARTED	3/10/14
BORING COMPLETED	3/10/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 163-BORINGS.DWG
LAYOUT BY: LDH 5/2/14
DRAWN BY: LDH 5/2/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

BORING LOGS
R-1 THRU R-2

MAY 08, 2014 3:40 PM SPITZ01394
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GEC Job #

LOG OF BORING NO. R-3

SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc.

PROJECT: Replacement Runway 18-36

COORDINATES:

LOCATION: Bolingbrook's Clow International Airport
Bolingbrook, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 650.4	
						Topsoil, black & dark brown	
						1.0 649.4	
	1	SS		50		Clayey silt, trace stone & sand, brown, very stiff, (ML-CL-FILL)	
						2.6 647.9	
						Clayey sand, some stone, brown, moist, loose, (FILL)	
	2	SS		56		4.0 646.4	
5	3					Silty clay, trace sand & gravel, brown & gray, very stiff	
						5.0 645.4	
						Sand, trace crushed stone, light brown, loose	
						6.0 644.4	
	4	SS		100		Crushed stone, light brown, moist, medium dense, (FILL)	
10	5	SS		56		10.0 640.4	
						End Of Boring	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
1 2 3 4 5 6+
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.
10 20 30 40 50 60+

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▼

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BORING STARTED	3/5/14
BORING COMPLETED	3/5/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

LOG OF BORING COPY BOLINGBROOK'S CLOW INTERNATIONAL AIRPORT - REPLACEMENT RUNWAY 18-36.GPJ

GEC Job #

LOG OF BORING NO. R-4

SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc.

PROJECT: Replacement Runway 18-36

COORDINATES:

LOCATION: Bolingbrook's Clow International Airport
Bolingbrook, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 653.5	
						10 inches topsoil over sand & gravel	
						1.0 652.5	
	1	SS		28		Silty clay, trace stone & roots, brown, hard, (CL)	
5	2	SS		67			
	3					6.5 647	
	4	SS		100		Crushed stone, trace sand, brown, medium dense, (FILL)	
10	5	SS		100		10.0 643.5	
						End Of Boring	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
1 2 3 4 5 6+
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.
10 20 30 40 50 60+

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▼

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BORING STARTED	3/5/14
BORING COMPLETED	3/5/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

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CONSTRUCT
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RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 164-BORINGS.DWG
LAYOUT BY: LDH 5/2/14
DRAWN BY: LDH 5/2/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

R-3 THRU R-4

GEC Job # | **LOG OF BORING NO. R-5** | SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc. | PROJECT: Replacement Runway 18-36

COORDINATES: | LOCATION: Bolingbrook's Clow International Airport, Bolingbrook, Illinois

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.

GROUND SURFACE ELEVATION USGS 654.6

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL		VANE SHEAR PSF
						1 inch asphalt over dark brown & black topsoil & gravel	653.6	
1.0								
	1	SS		83		Clayey sandy silt, dark brown, moist, medium dense, (FILL)		
3.0							651.6	
	2	SS		78		Clayey crushed stone, brown, moist, loose, (FILL)		
5 5.0							649.6	
	3	SS		100		Silty clay, trace sand & gravel, brown, hard, (CL)		
8.0							646.6	
	4	SS		67		Crushed stone, brown, moist, medium dense, (FILL)		
10 10.0							644.6	
						End Of Boring		

WATER LEVEL OBSERVATIONS		Ground Engineering Consultants, Inc.	BORING STARTED	3/5/14
W.L.	Dry ▽	350 Pfingsten Road, Suite 106	BORING COMPLETED	3/5/14
W.L.	▼	Northbrook, Illinois 60062	DRILLING COMPANY	FOREMAN Juan
W.L.	▽	Tel: (847) 559-0085 Fax: (847) 559-0181	Earth Solutions	APPR. BY SG

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GEC Job # | **LOG OF BORING NO. R-6** | SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc. | PROJECT: Replacement Runway 18-36

COORDINATES: | LOCATION: Bolingbrook's Clow International Airport, Bolingbrook, Illinois

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2
CALIBRATED PENETROMETER TONS/FT.2
WATER ● CONTENT %
STANDARD "N" PENETRATION BLOWS/FT.

GROUND SURFACE ELEVATION USGS 656.3

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL		VANE SHEAR PSF
						Black topsoil, sand & gravel	655.3	
1.0								
	1	SS		39		Silty sandy topsoil, dark gray, loose, (FILL)		
2.0	2					Silty sandy clay, dark brown, stiff, (FILL)	654.3	
3.0							653.3	
	3	SS		100		Silty clay, trace sand & gravel, brown, very stiff, (CL)		
5								
	4	SS		100				
8.0							648.3	
	5	SS		33		Crushed stone, brown, medium dense, (FILL)		
10 10.0							646.3	
						End Of Boring		

WATER LEVEL OBSERVATIONS		Ground Engineering Consultants, Inc.	BORING STARTED	3/5/14
W.L.	Dry ▽	350 Pfingsten Road, Suite 106	BORING COMPLETED	3/5/14
W.L.	▼	Northbrook, Illinois 60062	DRILLING COMPANY	FOREMAN Juan
W.L.	▽	Tel: (847) 559-0085 Fax: (847) 559-0181	Earth Solutions	APPR. BY SG

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION	LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 165-BORINGS.DWG
LAYOUT BY: LDH 5/2/14
DRAWN BY: LDH 5/2/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

BORING LOGS
R-5 THRU R-6

GEC Job # | **LOG OF BORING NO. R-7** | SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc. | PROJECT: Replacement Runway 18-36

COORDINATES: | LOCATION: Bolingbrook's Clow International Airport Bolingbrook, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 632.6	
						Topsoil, dark brown	
						1.0 631.6	
	1	SS		89		Silty clay & topsoil, trace stone, dark brown, stiff, (FILL)	
						1.5 631.1	
	2					Silty clay, some stone, trace sand, brown & gray, very stiff, (CL)	
						3.0 629.6	
	3	SS		100		Silty clay, trace sand & gravel, brown & gray, hard, (CL)	
5						6.0 626.6	
	4	SS		100		Silty clay, some stone, trace sand, brown & gray, hard, (CL)	
						8.0 624.6	
						Silty clay, trace sand & gravel, gray, hard, (CL)	
10	5	SS		100		10.0 622.6	
						End Of Boring	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2

CALIBRATED PENETROMETER TONS/FT.2 * 1 2 3 4 5 6+

WATER ● CONTENT %

STANDARD "N" PENETRATION BLOWS/FT. ⊗ 10 20 30 40 50 60+

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▼

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BORING STARTED	3/5/14
BORING COMPLETED	3/5/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

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GEC Job # | **LOG OF BORING NO. R-8** | SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc. | PROJECT: Replacement Runway 18-36

COORDINATES: | LOCATION: Bolingbrook's Clow International Airport Bolingbrook, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 665.0	
						Topsoil, trace sand & gravel, brown	
						1.0 664	
	1	SS		67		Silty clay, with large stone, trace sand, brown, stiff, (CL-FILL)	
						2.0 663	
	2					Silty clay, trace sand & gravel, brown & gray, hard, (CL-FILL)	
						3.5 661.5	
	3	SS		83		Silty clay, some large stone, trace sand, brown & gray, very stiff, (CL-FILL)	
5						7.5 657.5	
	4	SS		94		Silty clay, trace sand & gravel, gray, very stiff, (CL)	
						10.0 655	
10	5	SS		100		End Of Boring	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2

CALIBRATED PENETROMETER TONS/FT.2 * 1 2 3 4 5 6+

WATER ● CONTENT %

STANDARD "N" PENETRATION BLOWS/FT. ⊗ 10 20 30 40 50 60+

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▼

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BORING STARTED	3/5/14
BORING COMPLETED	3/5/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 166-BORINGS.DWG
LAYOUT BY: LDH 5/2/14
DRAWN BY: LDH 5/2/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

BORING LOGS
R-7 THRU R-8

GEC Job # | **LOG OF BORING NO. R-9** | SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc. | PROJECT: Replacement Runway 18-36

COORDINATES: | LOCATION: Bolingbrook's Clow International Airport, Bolingbrook, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 667.7	
						1 inch asphalt over 11 inches black topsoil — 1.0 — 666.7	
	1	SS	83			Silty sandy topsoil, black (frozen) — 1.8 — 665.87	
	2					Clayey silt & sand, medium dense, brown, moist, (FILL) — 3.5 — 664.2	
	3	SS	56			Silty clay, trace gravel & topsoil, black, soft, (FILL) — 4.0 — 663.7	
5	4					Clayey silt, some sand, dark brown, stiff, (ML-CL)	
	5	SS	100			— 8.0 — 659.7	
	6	SS	100			Silty clay, trace sand & gravel, gray, stiff to very stiff, (CL) — 10.0 — 657.7	
10						End Of Boring	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2

CALIBRATED PENETROMETER TONS/FT.2 — 1 2 3 4 5 5+

WATER ● CONTENT %

STANDARD "N" PENETRATION BLOWS/FT. — 10 20 30 40 50 60+

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▼

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BORING STARTED	3/5/14
BORING COMPLETED	3/5/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

LOG OF BORING COPY BOLINGBROOK'S CLOW INTERNATIONAL AIRPORT - REPLACEMENT RUNWAY 18-36.GPJ

GEC Job # | **LOG OF BORING NO. R-10** | SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc. | PROJECT: Replacement Runway 18-36

COORDINATES: | LOCATION: Bolingbrook's Clow International Airport, Bolingbrook, Illinois

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						GROUND SURFACE ELEVATION USGS 675.9	
						Topsoil, trace gravel & sand, dark brown — 1.0 — 674.9	
	1	SS	100			Silty sandy clay, trace topsoil, dark brown, soft, (CL-SC) — 1.5 — 674.4	
	2					Sandy clay, some fine gravel & large stone, brown, soft, (FILL) — 3.0 — 672.9	
	3	SS	83			Silty clay, some stone, trace sand, brown, very stiff, (CL)	
5	4	SS	100			— 8.0 — 667.9	
	5	SS	100			Silty clay, trace sand & gravel, gray, hard, (CL) — 10.0 — 665.9	
10						End Of Boring	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2

CALIBRATED PENETROMETER TONS/FT.2 — 1 2 3 4 5 5+

WATER ● CONTENT %

STANDARD "N" PENETRATION BLOWS/FT. — 10 20 30 40 50 60+

WATER LEVEL OBSERVATIONS		
W.L.	Dry	▽
W.L.		▼
W.L.		▼

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DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

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CONSTRUCT
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RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014

PROJECT NO: 14A0002
CAD FILE: 167-BORINGS.DWG
LAYOUT BY: LDH 5/2/14
DRAWN BY: LDH 5/2/14
REVIEWED BY: RMH 5/7/2014

SHEET TITLE

BORING LOGS
R-9 THRU R-10

MAY 08, 2014 3:54 PM SPITZ01394
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GEC Job # | **LOG OF BORING NO. R-11** | SHEET 1 OF 1

CLIENT: Hanson Professional Services, Inc. | PROJECT: Replacement Runway 18-36

COORDINATES: | LOCATION: Bolingbrook's Clow International Airport, Bolingbrook, Illinois

GROUND SURFACE ELEVATION USGS 672.7

DEPTH BELOW GROUND SURFACE	SAMPLE NO.	TYPE SAMPLE	SAMPLE DISTANCE	% RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIAL	VANE SHEAR PSF
						Topsoil, black	
						1.0 671.7	
	1	SS		94		Silty clay, some gravel, trace topsoil & sand, brown & gray, very stiff, (CL-FILL)	
	2					2.0 670.7	
						Silty clay, trace sand & gravel, brown & gray, very stiff, (CL)	
5	3	SS		100			
	4	SS		100			
						8.8 663.95	
	5	SS		100		Silty clay, one large stone, trace sand, gray, hard, (CL)	
10						10.0 662.7	
						End Of Boring	

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.2

CALIBRATED PENETROMETER TONS/FT.2

1 2 3 4 5 6+

WATER ● CONTENT %

STANDARD "N" PENETRATION BLOWS/FT.

10 20 30 40 50 60+

WATER LEVEL OBSERVATIONS	
W.L.	Dry
W.L.	
W.L.	

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Northbrook, Illinois 60062
Tel: (847) 559-0085 Fax: (847) 559-0181

BORING STARTED	3/10/14
BORING COMPLETED	3/10/14
DRILLING COMPANY	FOREMAN Juan
Earth Solutions	APPR. BY SG

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CONSTRUCT
REPLACEMENT
RUNWAY 18-36

IDA No: 1C5-4303
SBG No: 3-17-SBGP-TBD

BO003

NO.	DATE	DESCRIPTION		
		LAY	DWN	REV

ISSUE: May 9, 2014
PROJECT NO: 14A0002
CAD FILE: 168-BORINGS.DWG
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SHEET TITLE

BORING LOGS
R-11