LETTING DATE 9/15/2026

RCB CULVERT NEW - TRIPLE BOX
BRFN-003-5(83)--39-12

BUTLER COUNTY

INDEX OF SHEETS

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B.4	Details
C Sheets	**Quantities and General Information**
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C.9	Standard Road Plans
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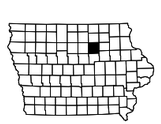
* U.8 - 9	Fencing Plan
U.10 - 12	Overflow Pipe Details
* U.13	Dike Grading Details



IOWA | DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
BUTLER COUNTY
RCB CULVERT NEW - TRIPLE BOX

Hartgrave Creek Overflow
0.5 mi W of Co Rd T16

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

REVISIONS

	TOTAL
	173
PROJECT IDENTIFICATION NUMBER	
19-12-003-010	
PROJECT NUMBER	
BRFN-003-5(83)--39-12	
R.O.W. PROJECT NUMBER	
NHSN-003-5(84)--2R-12	

INDEX OF SHEETS

No.	DESCRIPTION
V Sheets	**Bridge and Culvert Situation Plans**
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W Sheets	**Mainline Cross Sections**
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Y Sheets	**Drainage Channel and Dike Cross Sections**
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* Y.100 - 108	IA 3 Low-Flow Ditch Cross Sections
	* Color Plan Sheets

MILEAGE SUMMARY

105-1
09-27-94

Div.	Location	Lin. Ft.	Miles
1	IA Highway 3		
	Sta. 104+55.00 to 109+50.00	495.00	0.094
	Sta. 118+64.64 to 120+39.63	175.00	0.033
1	Cedar Ave.		
	Sta. 1107+53.72 to 1128+90.00	2,136.28	0.405
	Total Length	2,694.29	0.532

IA 3 DESIGN DATA RURAL

2019	AADT	2000	V.P.D.
2039	AADT	2100	V.P.D.
20--	DHV	--	V.P.H.
TRUCKS		19	%
Total Design ESALs		--	

Cedar Ave DESIGN DATA RURAL

2019	AADT	100	V.P.D.
2039	AADT	100	V.P.D.
20--	DHV	--	V.P.H.
TRUCKS		N/A	%
Total Design ESALs		--	

INDEX OF SEALS

SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Chase A. Holien	Primary Signature Block	C.1-C.32
CS.1	Andrew W. Schweizer	Geotechnical Signature Block	CS.1-CS.2
V.1	Jacob J. Shaw	Structural Signature Block	V.1

ROADWAY DESIGN

LICENSED PROFESSIONAL ENGINEER Chase A. Holien 21998 IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

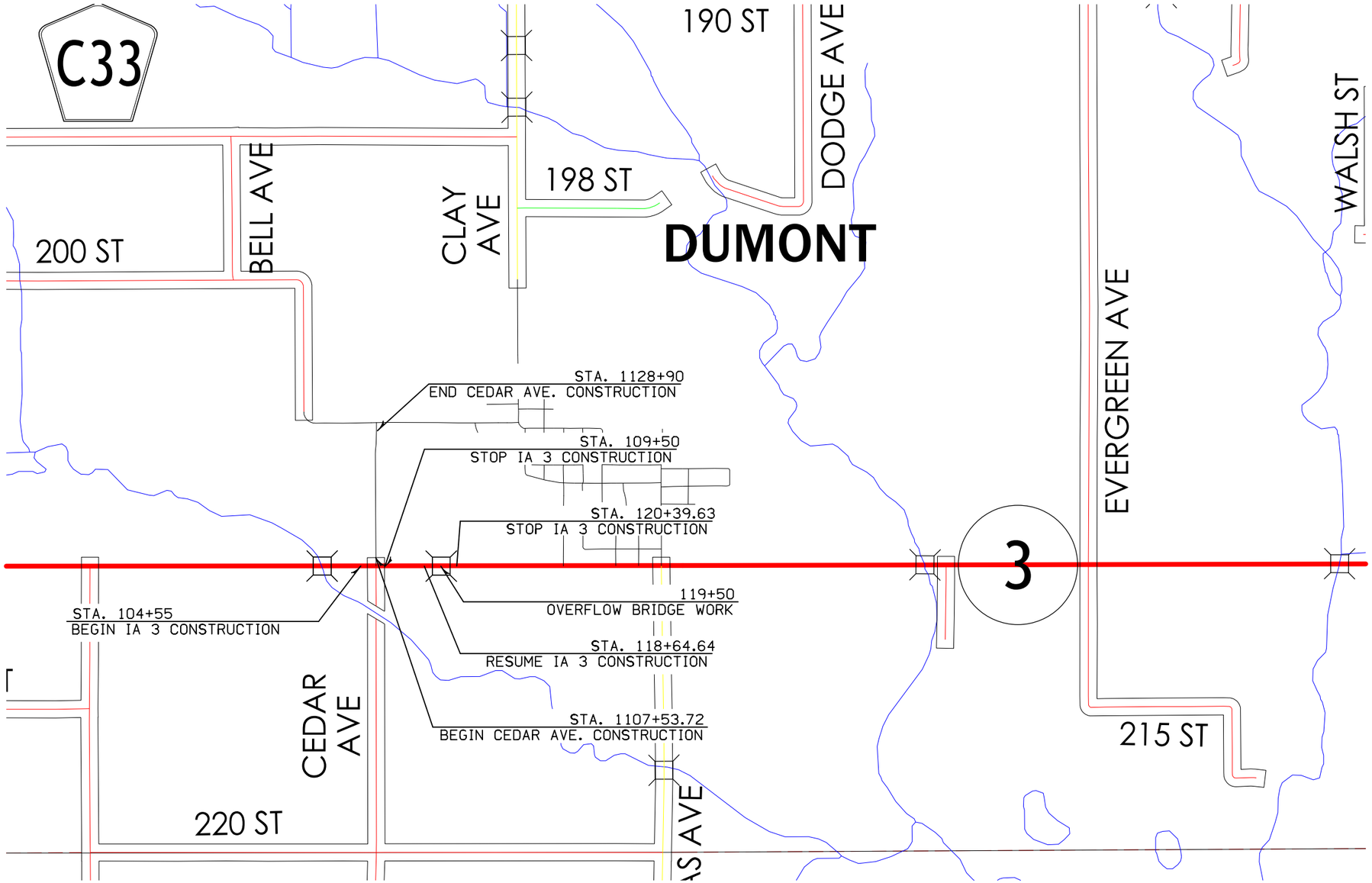
Chase Holien — Digitally signed by Chase Holien. Reason: I attest to the accuracy and integrity of this document. Date: 2026.06.24 13:36:58-05'00'

Signature — Date

Chase A. Holien
Printed or Typed Name

My license renewal date is December 31, 2025

Pages or sheets covered by this seal: A.1-A.2, B.1-B.4, C.1-C.33, D.1-D.3, E.1-E.4, ED.1-ED.4, G.1-G.7, J.1-J.6, RC.1-RC.8, RR.1-RR.13, T.1-T.4, U.1-U.13, W.1-W.7, X.1-X.19, Y.1-Y.6, Y.100-Y.108

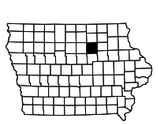


MILES

0 1 2

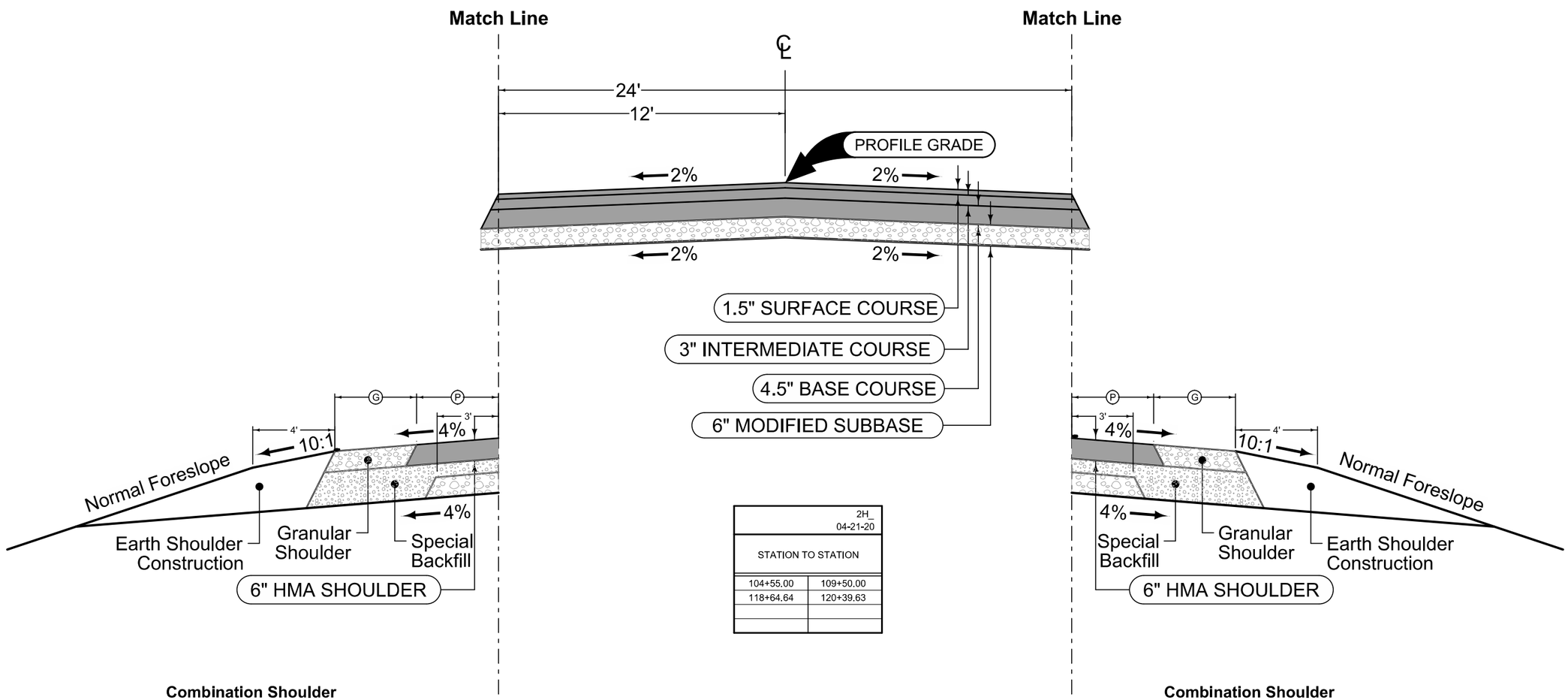
0 1 2 3

KILOMETERS



FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER A.2

12:45:59 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_A01.dgn



2H_ 04-21-20	
STATION TO STATION	
104+55.00	109+50.00
118+64.64	120+39.63

Combination Shoulder

2_C_ 04-21-20			
STATION TO STATION		(P) Feet	(G) Feet
104+55.00	106+44.92	4	9
108+05.53	109+50.00	4	6
117+98.42	121+01.62	4	5

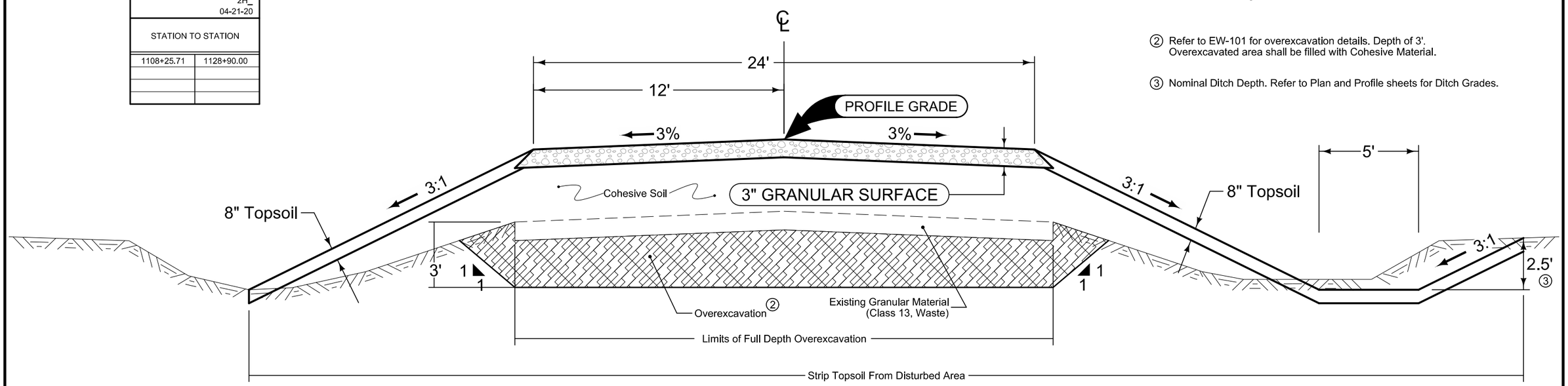
Combination Shoulder

2_C_ 04-21-20			
STATION TO STATION		(P) Feet	(G) Feet
104+55.00	106+71.35	4	6
108+06.62	109+50.00	4	5
117+93.16	120+97.56	4	5

Iowa Highway 3

2H_ 04-21-20	
STATION TO STATION	
1108+25.71	1128+90.00

Cedar Ave.



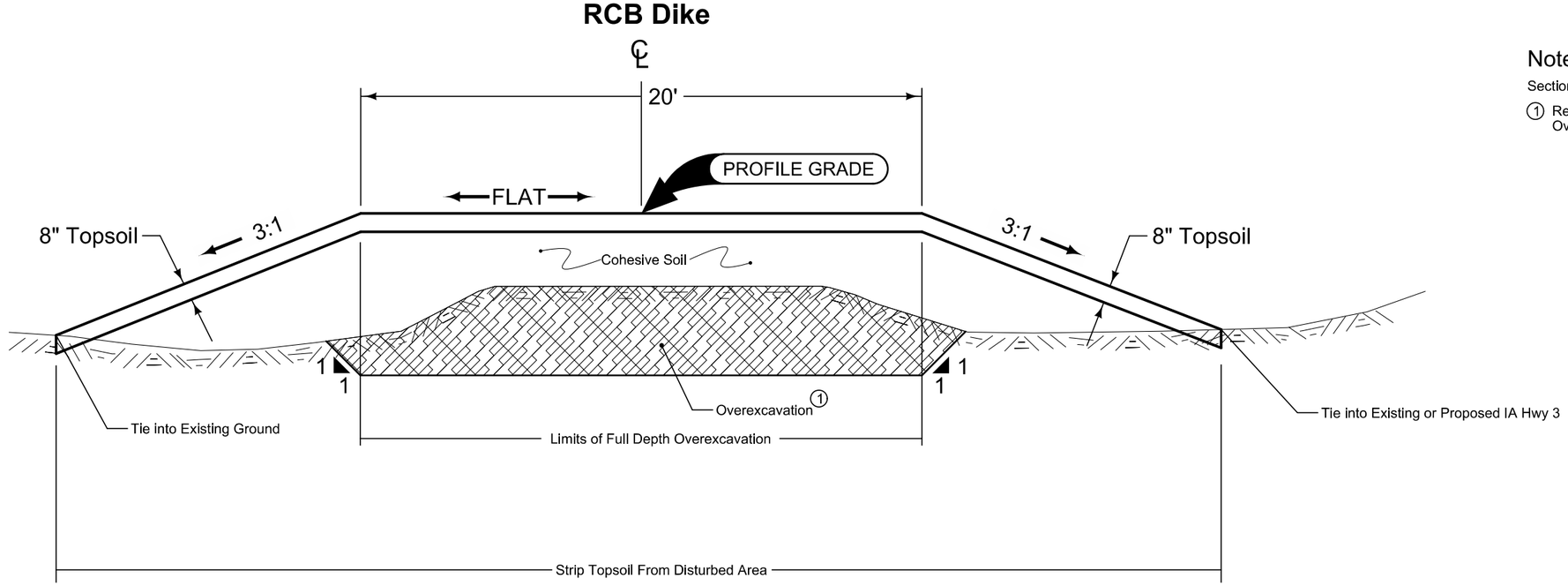
Notes:

Section shown looking North

② Refer to EW-101 for overexcavation details. Depth of 3'. Overexcavated area shall be filled with Cohesive Material.

③ Nominal Ditch Depth. Refer to Plan and Profile sheets for Ditch Grades.

RCB Dike

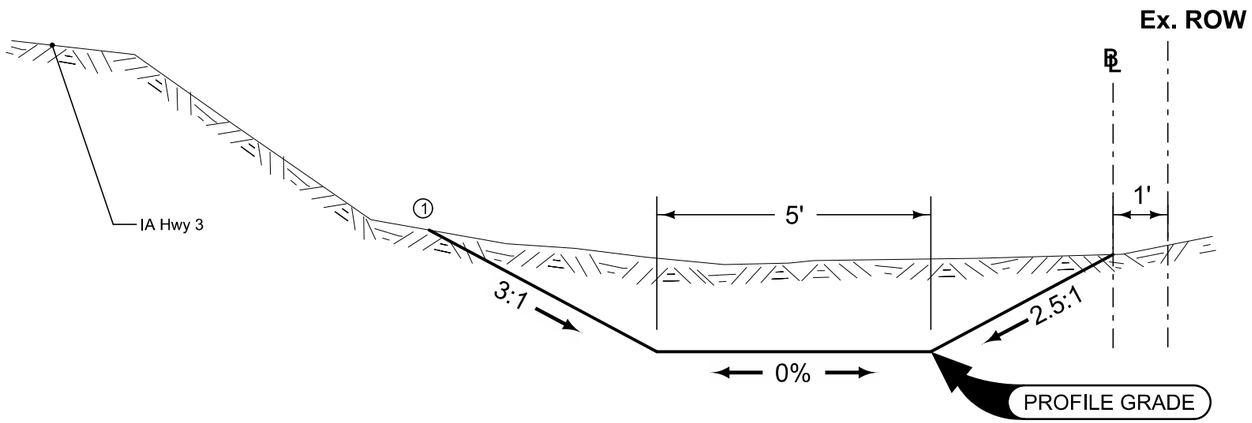


Notes:

Section shown looking East (Upstation)

① Refer to EW-101 for overexcavation details. Depth of 3'. Overexcavated area shall be filled with Cohesive Material.

Low-Flow Ditch
(IA HWY 3)

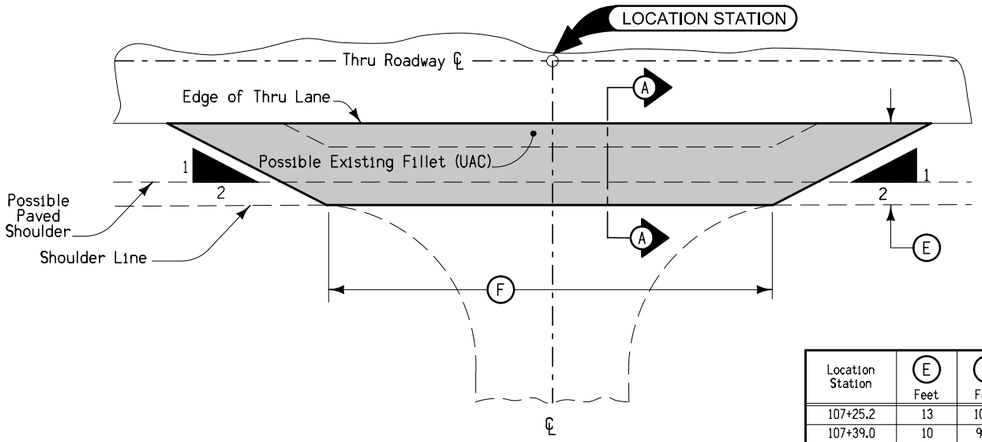


Notes:

Section shown looking East

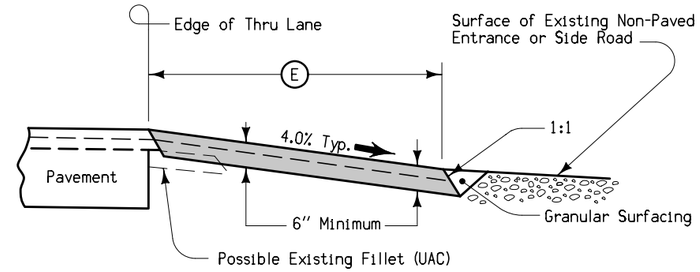
1 Tie into existing IA 3

7148
10-21-14



PLAN

Location Station	E Feet	F Feet
107+25.2	13	108.6
107+39.0	10	95.3



SECTION A-A

Special shaping of existing surface prior to placement of fillet may be required by the Engineer and is incidental to other work on the project.

Quantites included with mainline quantities.

FILLET FOR NON-PAVED ENTRANCES OR SIDE ROADS

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Item no.	Item Code	Item	Unit	Quantities Estimated Roadway Items	Estimate Reference Notes
1	2101-0850001	CLEARING AND GRUBBING	ACRE	1.078	Refer to Tab. 110-17 on Sheet No. C.23 for additional information. This item will not be measured, and the bid quantity will be paid. All material generated as a result of Clearing and Grubbing shall become the property of the contractor and must be disposed off site. All wood material must be disposed of according to Iowa Department of Agriculture and Land Stewardship Emerald Ash Borer Quarantine Order. For more information see www.iowatreepests.com.
2	2102-0425070	SPECIAL BACKFILL	TON	530.632	Refer to Tab. 112-9 on Sheet No. C.24 for additional information. Existing HMA and PCC from Pavement removal may be used on the project as special backfill.
3	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	1,758	Item is for the fill required to build the IA 3 embankments at the overflow bridge removal. Refer to T Sheets and Cross Sections for additional information.
4	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	10,526	Item is for removing extra material from over-excavation and grading of the low flow ditch. All waste must be removed from the project site. Contractor is notified that the excavation area may be excessively wet and specialized equipment, blocking or mats may be required to complete the work as shown on the plans. Refer to T Sheets.
5	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	878	Refer to Tab. 300-99 on Sheet No. C.29 for additional information. Item is for the removal of existing gravel material on Cedar Ave., the existing parking lot south of Iowa Highway 3, and other miscellaneous gravel surfaces required to complete the construction. Refer to the U Sheets for locations.
6	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	3,190	Refer to Tab. 103-10 on Sheet No. CS.1 and the T Sheets. Quantity includes an additional 614 CY to account for areas outside of cross sections.
7	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	5,345	Refer to Tab. 103-10 on Sheet No. CS.1 and the T Sheets.
8	2107-0425020	COMPACTING BACKFILL ADJACENT TO BRIDGES, CULVERTS OR STRUCTURES	CY	232.1	Refer to Tab.104-4 on Sheet C.18 for additional information.
9	2107-0875000	COMPACTION WITH MOISTURE AND DENSITY CONTROL	CY	37,448	Refer to Tab. 103-1 on Sheet No. CS.1. Item is for all Dike and Cedar Ave. embankments.
10	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	1,512	Refer to Tab. 104-4 on Sheet No. C.18 for additional information.

Item no.	Item Code	Item	Unit	Quantities Estimated Roadway Items	Estimate Reference Notes
11	2115-0100000	MODIFIED SUBBASE	CY	430.94	Refer to Tab. 100-25 on Sheet No. C.14 for additional information.
12	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	288.319	Refer to Tab. 112-9 on Sheet No. C.24 for additional information.
13	2122-5500060	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.	SY	497.8	Refer to Tab. 112-9 on Sheet No. C.24 for additional information.
14	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	58	Refer to Tab. 112-9 on Sheet No. C.24 for additional information. Bid quantity includes 44.08 Stations for Cedar Ave.
15	2303-1031750	HOT MIX ASPHALT STANDARD TRAFFIC, BASE COURSE, 3/4 IN. MIX	TON	516.015	Refer to Tab. 100-25 on Sheet No. C.14 and the B Sheets for additional information.
16	2303-1032500	HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	348.754	
17	2303-1033500	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, NO SPECIAL FRICTION REQUIREMENT	TON	174.377	
18	2303-1258343	ASPHALT BINDER, PG 58-34S, STANDARD TRAFFIC	TON	62.349	
19	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	TON	921.12	Refer to Tab. 301-99 on Sheet No. C.30 and the B Sheets for additional information. Spreading and compacting the material to the plan roadway grades shall be included in the price bid for this item.
20	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	257.343	Refer to Tab. 102-3 on Sheet No. C.15 for additional information.
21	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1	Includes all work for removal and off-site disposal of the existing bridge in these plans (IA 3 Hartgraves Creek overflow bridge). Removal shall be in accordance with Section 2401 of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the Contractor and shall be repaired at no extra cost to the State.
22	2401-6750001	REMOVALS, AS PER PLAN	LS	1	Includes all work for removal and off-site disposal of the dual 72" Pipes under Iowa Highway 3. Removal of scheduled items shall be in accordance with Section 2401, of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the Contractor and repaired at no extra cost to the state. Existing plans can be downloaded for the Iowa Department of Transportation website.
23	2402-0425040	FLOODED BACKFILL	CY	606.1	Refer to Tab. 100-21 on Sheet No. C.13 and Tab. 104-4 on Sheet No. C.18 for additional information. Item is for backfilling removed Hartgraves Creek Overflow Bridge and backfilling triple RCB under IA 3. Refer to U Sheets for additional details.
24	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	2	Refer to Tab. 104-3 on Sheet No. C.17 for additional information.
25	2416-0100042	APRONS, CONCRETE, 42 IN. DIA.	EACH	1	
26	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	116	
27	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.	LF	81	

Item no.	Item Code	Item	Unit	Quantities Estimated Roadway Items	Estimate Reference Notes
28	2417-0225018	APRONS, METAL, 18 IN. DIA.	EACH	2	
29	2417-1040018	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 18 IN. DIA.	LF	55.6	
30	2422-0360018	APRONS, UNCLASSIFIED, 18 IN. DIA.	EACH	4	
31	2422-1722018	CULVERT, UNCLASSIFIED ENTRANCE PIPE, 18 IN. DIA.	LF	200	
32	2435-0140210	MANHOLE, STORM SEWER, SW-402 MODIFIED	EACH	1	Item is for constructing a headwall at the culvert flap gate outlet. Refer to Tab. 104-3 on Sheet No. C.17 and the U Sheets for additional information.
33	2435-0251230	INTAKE, SW-512, 30 IN.	EACH	2	Refer to Tab. 104-3 on Sheet No. C.17 for additional information.
34	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	1,350	Refer to Tab. 104-9 on Sheet No. CS.2 for additional information.
35	2502-8221305	SUBDRAIN OUTLET, DR-305	EACH	2	
36	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	14	
37	2503-3775042	GATE, OUTLET CONTROL, FLAP, 42 IN.	EACH	1	Refer to Tab. 104-3 on Sheet No. C.17 for additional information. Furnish and install automatic drainage gate at locations shown in the plans and as specified herein. The drainage gate shall be designed to open and close under a differential head of 0.3 feet maximum. The gate shall be designed to prevent backflow for a minimum 10 feet or hydraulic head above centerline of the gate. The frame and cover material shall be cast iron. The arm (linkage) material shall be cast iron, ductile iron or structural steel. Assembly hardware shall be steel. The drainage gate shall have a frame and cover providing a circular opening of the sizes included. The cover shall be hung with two arms (linkages) located each side of the cover. The linkage system shall be of the double pivoted type attached to fixed, bronze bushed, pivot points on cover and frame using stainless steel hinge pins. The linkage system shall be designed to limit the double hinge action to prevent the cover from rotating sufficiently to become wedged in the open position. Cast iron components shall meet the requirements of ASTM A-126, Class B. Cast iron frame and cover shall be coated with manufacturer's standard shop coat paint. Ductile iron components shall meet the requirements of ASTM A-536, Gr. 65-45-12. Structural steel components shall meet the requirements of ASTM A-36, Galvanized per ASTM A-123. Steel components shall meet the requirements of ASTM A-307, Galvanized per ASTM A-153. Stainless steel components shall be 18-8 Stainless Steel (Type 304). The gate shall include all anchor devices and assembly hardware as required to install the gate per manufacturer's recommendations to the drainage structure type (headwall) as indicated in the plans. Measurement will be the quantity shown in the contract documents of the size indicated per each gate. Payment will be the contract unit price per each gate installed and will include all labor, materials and equipment necessary to install the gate in accordance with the plans and specifications.
38	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	492	Refer to Tab. 110-07A on Sheet No. C.22 for additional information.

Item no.	Item Code	Item	Unit	Quantities Estimated Roadway Items	Estimate Reference Notes
39	2506-4984000	FLOWABLE MORTAR	CY	22.5	Refer to Tab. 104-3 on Sheet No. C.17 for additional information. Item is for bedding adjacent to the modified headwall. Flowable mortar length shall be 24'. Refer to U Sheets for additional information.
40	2507-3250005	ENGINEERING FABRIC	SY	1,761.2	Refer to Tab. 100-23 on Sheet No. RC.4 for additional information. Refer to V Sheets for additional information. Use material specified for embankment erosion control according to Article 4196.01, B, 3. Material will be measured in sq. yds. of actual area covered.
41	2507-6800032	REVETMENT, CLASS C	TON	1,080	Refer to V Sheets for additional information. Class C revetment shall meet the requirements of Article 4130. Broken Concrete and granite is not allowed.
42	2507-6800061	REVETMENT, CLASS E	TON	612.8	Refer to Tab. 100-23 on Sheet No. RC.4 for additional information. Refer to V Sheets for additional information. Estimated at 1.6 ton/cu yd. Class E revetment shall meet requirements of Article 4130. Broken Concrete and granite is not allowed.
43	2510-6745850	REMOVAL OF PAVEMENT	SY	1,983	Refer to Tab. 110-1 on Sheet No. C.20 and Tab. 102-5 on Sheet No. C.16 for additional information.
44	2519-3280000	FENCE, FIELD	LF	1,521.2	Refer to Tab. 100-07 on Sheet No. C.11 and the U Sheets for additional information.
45	2519-3300400	FIELD FENCE BRACE PANELS	EACH	18	
46	2519-4200140	REMOVAL OF FENCE, FIELD	LF	1,539	Refer to Tab. 100-08 on Sheet No. C.12 and the U Sheets for additional information.
47	2520-3350010	FIELD LABORATORY	EACH	1	

Item no.	Item Code	Item	Unit	Quantities Estimated Roadway Items	Estimate Reference Notes
48	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN	EACH	4	Refer to Tabs. 190-51 on Sheet No. C.27 and 190-61 on Sheet No. C.28 for additional information. The Contractor shall remove each sign and the hardware used to secure the sign to another sign, posts, or sign support structure. For signs mounted directly to posts, removal of the sign shall include removal of the posts. Posts may be either wood posts or steel breakaway sign posts. The removal of concrete footings for steel breakaway sign posts will be measured and paid for separately. Holes remaining from the removal of wood posts shall be backfilled with suitable earth to the original level or to the natural ground surface in accordance with Article 2402.09 of the Standard Specifications. All steel posts removed shall become the property of the Contractor. Unless otherwise noted, wood posts removed shall remain the property of DOT. The Contractor shall deliver the wood posts to a DOT storage area within 50 miles, as designated by the Engineer. **The existing sign shall be removed and stored. The Contractor shall remove the sign and transport it to a DOT storage area within 50 miles, as designated by the Engineer. The Contractor shall transport the sign back to the job site when ready for reinstallation. The Contractor shall furnish all necessary hardware to install the signs. When the new installation is similar to the original installation, unless otherwise noted, the existing hardware may be used to reinstall the sign. Signs damaged by the Contractor's activities shall be replaced at the Contractor's expense. Replacement materials shall be new. The DOT will furnish all details necessary for fabrication of the replacement materials. METHOD OF MEASUREMENT: The Engineer will count each sign removed and reinstalled. BASIS OF PAYMENT: For each sign removed and reinstalled, the Contractor shall be paid the contract unit price.
49	2524-6765016	REMOVE AND REINSTALL REFERENCE LOCATION SIGN	EACH	1	Refer to Tab. 190-25 on Sheet No. C.26 for additional information.
50	2524-9089100	DELINEATOR, RIGID - TYPE I	EACH	5	Refer to Tab. 190-25 on Sheet No. C.26 for locations and details. Removal of existing delineators and mileposts shall be incidental.
51	2524-9276010	PERFORATED SQUARE STEEL TUBE POSTS	LF	51	Refer to Tab. 190-51 on Sheet No. C.27 for locations and details.
52	2524-9276021	PERFORATED SQUARE STEEL TUBE POST ANCHOR, BREAK-AWAY SOIL INSTALLATION	EACH	4	
53	2526-8285010	CONSTRUCTION SURVEY, MONUMENT PRESERVATION	LS	1	
54	2526-8285020	CONSTRUCTION SURVEY, CONTROL POINT SURVEY	LS	1	
55	2526-8285030	CONSTRUCTION SURVEY, RIGHT OF WAY	LS	1	
56	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1	
57	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	13.07	Refer to Tab. 108-22 on Sheet No. C.19 for additional information.
58	2528-2518000	SAFETY CLOSURE	EACH	3	Refer to Tab. 108-13A on Sheet No. C.18 for additional information.
59	2528-8445110	TRAFFIC CONTROL	LS	1	Refer to Traffic Control Plan on Sheet No. J.1.
60	2533-4980005	MOBILIZATION	LS	1	- -
61	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	9.62	Refer to Tab. 112-10 on Sheet No. C.25 for additional information.

Item no.	Item Code	Item	Unit	Quantities Estimated Roadway Items	Estimate Reference Notes
62	2548-0000115	ENGINEERED EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	10.4	
63	2599-9999003	('CUBIC YARDS' ITEM) EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED, COHESIVE	CY	37,450	Item is for building the dike and Cedar Ave. embankments, with Cohesive Fill Material. Refer to B Sheets, T Sheets, X Sheets and Y Sheets. Refer to the Special Provisions for Dike and Cedar Ave. Embankment Construction for additional information and details. Measurement for Embankment-in-Place, Contractor Furnished, Cohesive, in Cubic Yards, will be the quantity shown in the contract documents. Payment for Embankment-in-Place, Contractor Furnished, Cohesive will be at the contract unit price per cubic yard.
64	2601-2634100	MULCHING	ACRE	11.34	Perform mulching according to Article 2601.03, E, 2, of the Standard Specifications. Anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes. Item is included for areas requiring reshaping and seedbed preparation. Use mulch that is Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop Improvement Associations. Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre. Mulching shall be applied as described in standard specification section 2601. After seeding, mulch all areas disturbed by grading except where slope protection has been applied.
65	2601-2636015	NATIVE GRASS SEEDING	ACRE	4.52	Seed all areas outside eight feet adjacent to outside shoulder along mainline, side roads, and infield areas at interchanges with "Native Grass Seeding". Supply all seed for "Native Grass Seeding". Apply all forb seed through the native grass drill wildflower or small seed box. Do not mix and apply Forb seed with the native grass seed. Apply cover crop through the cool season or through cover crop seed box. Do not mix and apply cover crop seed with the native grass seed. Remove seed remaining in the drill at the end of each day. At the completion of all seeding, remove remaining seed from the drill by vacuum or other means. Hand broadcast remaining seed on the project. The Engineer will review the limits with the Contractor prior to seeding. Seeding and seed bed preparation shall be as described in the Standard Specifications Section 2601 and as shown on the plans. See RR sheets for details. Only source identified seeds from Minnesota, Wisconsin, South Dakota, Nebraska, Missouri, Illinois or Iowa growers and previous year harvest shall be used on this project. Seed mixtures for this mitigation plan are subject to the availability of seeds. Any seed substitutions will need the approval of the Engineer. The Contractor shall flag the seeding limits and obtain the Engineers review of the limits prior to seeding. No fertilizer shall be required for any of the seed mixtures associated with this Mitigation Plan. All seed weights are shown as Pure Live Seed(PLS).
66	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	1.15	Seed and fertilize all areas 8 foot adjacent to the shoulder mainline, medians, and side according to Article 2601.03, C, 3, of the Standard Specifications. Use ground driven equipment.

Item no.	Item Code	Item	Unit	Quantities Estimated Roadway Items	Estimate Reference Notes
67	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR MAT	SQ	207	Refer to Tab. 100-22 on Sheet No. RC.3 for additional information. Refer to Standard Road Plan EC-103 Prepare seedbed according to Article 2601.03, B, 4, of the Standard Specifications prior to seeding and fertilizing under the slope protection.
68	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	5.67	Item is included for disturbed areas. Seed and fertilize all disturbed areas according to Article 2601.03, C, 1, of the Standard Specifications. If permanent seeding cannot be placed due to the restrictive planting dates, stabilizing crop will need to be placed on all disturbed areas as temporary erosion control. Preparation and seeding shall be performed in accordance with Section 2601. Stabilizing crop will not be used when the application dates in Section 2601 allows permanent seeding. If stabilizing crop must be used, place immediately following completions of finished grading. Reseeding of these areas will be required at contractors expense if damage occurs due to contractors negligence during the contract period. It is not necessary to place stabilizing crop in locations that have be covered by Wood Excelsior Mat.
69	2602-0000020	SILT FENCE	LF	2,093	Refer to Tab. 100-17 on Sheet No. RC.1 for additional information. The tabulation includes estimated locations for placement of "Silt Fence" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.
70	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	773	Refer to Tab 100-18 on Sheet No. RC.2 for additional information. The tabulation includes estimated locations for placement of "Silt Fence for Ditch Checks" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 50% additional quantity for field adjustments and replacements.
71	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	2,866	This item is included for silt fence and silt fence for ditch check removal required for staging reasons, removal to allow for replacement (replacement to be paid separately), or for areas that have achieved 70% permanent growth.This item is included for silt fence and silt fence for ditch check removal. Remove silt fence and posts after mulching or vegetation is established and approved by the engineer.
72	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	287	This item is included for clean-out and repair of the silt fence and silt fence for ditch checks during the project.
73	2602-0000130	TEMPORARY SEDIMENT CONTROL BASIN	EACH	1	Refer to Tab. 100-33 on Sheet No. RC.5 for additional information.
74	2602-0000135	REMOVAL OF TEMPORARY SEDIMENT CONTROL BASIN	EACH	1	
75	2602-0000140	MAINTENANCE OF TEMPORARY SEDIMENT CONTROL BASIN	EACH	3	
76	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
77	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	

100_01D
8/15/22

PROJECT DESCRIPTION

This project is for hydraulic and drainage improvements on Iowa Highway 3 at the Hartgraves Creek Overflow bridge and the surrounding area. Included in the project are the following:

- Remove existing IA 3 Hartgraves Creek Overflow Bridge and replace with a culvert and flap gate
- Construct a triple 12' x 10' x 290' reinforced concrete box (RCB) culvert diagonally under the intersection of IA 3 and Cedar Avenue
- Raise the grade of Cedar Ave. north of IA 3
- Construct a closure dike in the NW quadrant of the IA 3 and Cedar Avenue intersection
- Remove twin 72" reinforced concrete pipes (RCP's) crossing IA 3 immediately west of Cedar Avenue

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)
DR-102	04-21-15	Pipe Culvert (Cover and Camber)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-111	04-17-18	Box Culvert (Backfill)
DR-121	04-18-23	Connected Pipe Joints
DR-122	10-18-16	Construction of Type 'C' Concrete Adaptors for Pipe Culvert Connections
DR-201	10-17-23	Concrete Aprons
DR-301	04-19-22	Subdrains for Fill or Foundation Drainage (Standard)
DR-303	10-17-17	Subdrains (Longitudinal)
DR-305	04-19-22	Subdrain Outlets (Standard Subdrain, Pressure Release and Special)
DR-306	10-17-23	Precast Concrete Headwall for Subdrain Outlets
DR-601	04-18-17	Reinforced Concrete Pipe Culvert
DR-621	04-18-17	Pipe Extension
DR-651	04-18-17	Unclassified Pipe Culvert
EC-201	04-20-21	Silt Fence
EC-301	10-18-22	Rock Erosion Control (REC)
EC-303	10-19-21	Stabilized Construction Entrance
EC-502	04-21-15	Seeding in Rural Areas
EC-603	10-17-23	Erosion Control for Intake or Manhole Well
EW-101	10-17-17	Embankment and Rebuilding Embankments
EW-403	04-18-17	Temporary Erosion Control Measures
EW-501	10-17-23	Rural Entrance
MI-101	10-20-15	Fencing Layout
MI-103	10-20-15	Deer Fence and Field Fence Construction
PM-110	10-15-24	Line Types
PV-12	04-16-24	Milled Shoulder Rumble Strips
SI-101	04-19-16	Locations - Type 'A' Signs
SI-112	04-19-16	Footings For Steel Breakaway Posts
SI-131	10-18-16	Installation - Type 'A' Signs
SW-512	10-21-25	Circular Area Intake
SW-604	10-21-25	Castings for Area Intakes
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-252	10-21-25	Routes Closed to Traffic

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FENCING

* Bid Item

Line No.	Station From	Offset	Station To	Offset	Side	Fence Type	Fence Feature	Height (FT)	Quantity (EA) *	Length (LF) *	Remarks
1.0	1108+46.03	43.8	1109+37.51	55.7	Right	Field	Brace Panel	4.0	3	92.3	
2.0	110+37.51	55.7	1113+50.23	58.2	Right	Field	Brace Panel	4.0	6	412.6	
3.0	1113+50.23	58.2	1122+20.28	59.0	Right	Field	Brace Panel	4.0	6	870.0	
4.0	1122+20.28	59.0	1123+66.44	53.7	Right	Field	Brace Panel	4.0	3	146.3	
Total:									**18**	**1521.2**	

REMOVAL OF FENCE

Removal of Field Fence is incidental to Clearing and Grubbing.

Line No.	Station From	Offset	Station To	Offset	Side	Type	Length (LF)	Remarks
1.0	1108+47.46	43.9	1120+48.14	30.5	Right	Field	1207.6	
2.0	1121+00.72	32.1	1124+13.47	52.0	Right	Field	331.4	
Total:							**1539**	

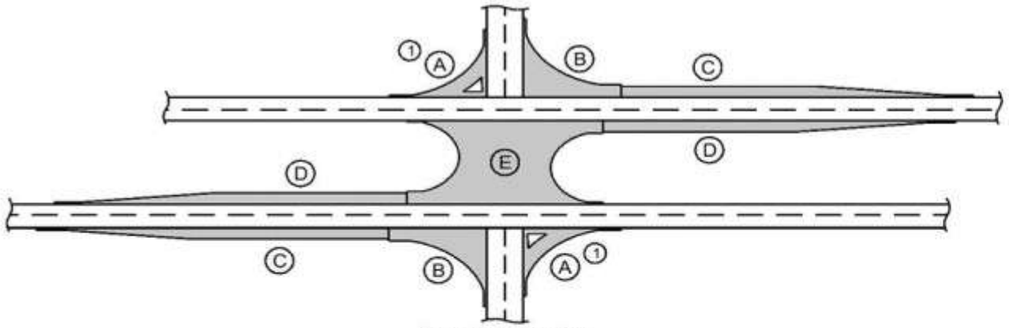
FILL FOR CULVERTS USED IN BRIDGE REPLACEMENTS

Possible Details: 4317 and 4318

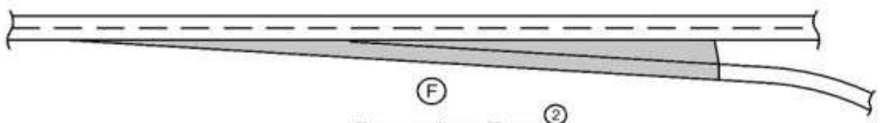
* Not a bid item.

Line No.	Ref. Loc. Sign	Station	Pavement Thickness (IN)	Pavement Area (SY)	4" Perf. Subdrain * (LF)	Subdrain Outlet * (STA)	Side	Granular Backfill (TON)	Special Backfill (TON)	Flowable Mortar (CY)	Flooded Backfill (CY)	Remarks
1.0		119+52.24	9.0	230.3	61.0	119+50.78	Right				522.6	

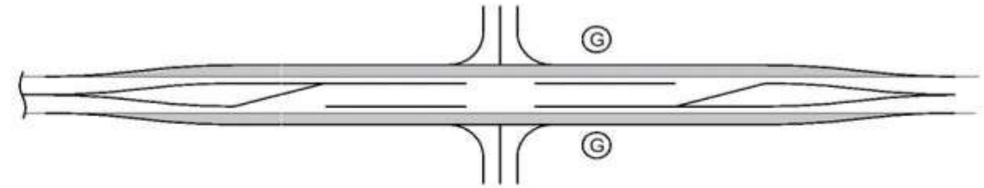
HMA PAVEMENT



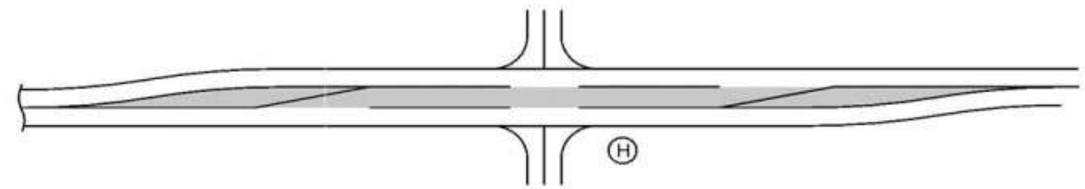
Typical Intersection



Ramp or Loop Taper (2)



Channelized Intersection
Widen Existing Roadway



Channelized Intersection
Reconstructed Roadway

(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.
(2) Refer to PV-410, PV-411, PV-412, and PV-414.
(3) Quantity includes Pavement Header.

Line No.	Road Identification	Direction of Travel	Station From	Station To	Width (FT)	Length (FT)	Area (SY)	Area A(1) (SY)(3)	Area B (SY)(3)	Area C (SY)(3)	Area D (SY)(3)	Area E(2) (SY)(3)	Area F (SY)(3)	Area G (SY)(3)	Area H (SY)(3)	HMA Pavement Surface (TONS)	HMA Pavement Surface (SY)	HMA Pavement Intermediate (TONS)	HMA Pavement Intermediate (SY)	HMA Pavement Base (TONS)	HMA Pavement Base (SY)	Binder Surface (TONS)	Binder Intermediate (TONS)	Binder Base (TONS)	Polymer Grid (SY)	Special Backfill (TONS)	Modified Subbase (CY)	Granular Subbase (SY)	Pavement Scarification (SY)	Hot In-Place Recycling (SY)	Asphalt Rejuvenating Agent 0.175 GAL/SY/IN	Remarks
1.0	IA 3	Both	104+55.00	109+50.00	24.0	495.00	1320.00									109.147	1320.00	218.295	1320.00	322.988	1320.00	6.549	13.098	19.379			279.68					
2.0	IA 3	WB	106+44.92	108+05.53	13.0	160.61	194.39									16.074	194.39	32.147	194.39	47.565	194.39	0.964	1.929	2.854			32.40					Fillet
3.0	IA 3	EB	106+71.32	108+06.62	10.0	135.30	127.85									10.572	127.85	21.143	127.85	31.283	127.85	0.634	1.269	1.877			21.31					Fillet
4.0	IA 3	Both	118+64.64	120+39.63	24.0	174.99	466.63									38.584	466.63	77.169	466.63	114.179	466.63	2.315	4.630	6.851			97.55					
Total:																**174.377**		**348.754**		**516.015**		**10.462**	**20.926**	**30.961**			**430.94**					

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

Length of Unclassified Pipe calculated is based on using Corrugated Metal Pipe.
(1) Refer to MI-210.
(2) Refer to EW-501.
(3) Refer to EW-501 or EW-502.
*Predetermined for access point not constructed with this project.

Line No.	Station	Side	Access Type	Descriptor	Case	Curb Type	Curb Length (1) (LF)	Width (FT)	PR (1) (2) (FT)	SR (2) (FT)	Pipe Culvert (H) (3) (FT)	Pipe Culvert Size (3) (IN)	Culvert Length (3) (LF)	Pipe Culvert Lt. (3) (LF)	Pipe Culvert Rt. (3) (LF)	Culvert Aprons (3) (No.)	Driveway Surface Type	Driveway Surface Area (SY)	Driveway Surfacing Material (TON)	Remarks
1.0	1120+65.00	Left	D	Joint	1			40.0		10.0		18.0	100.0	53.30	46.70	2	Granular		99.293	
2.0	1123+91.44	Right	D		1			22.0		10.0		18.0	99.3	52.10	47.20	2	Granular		51.152	
3.0	1126+15.56	Right	D		1			17.0		10.0		18.0	4.2	4.20		1	Granular		24.796	
4.0	1126+69.62	Right	C		1			12.0		10.0		18.0	51.2	38.20	13.00	1	Granular		26.341	
5.0	1127+83.20	Left	D		1			18.0		10.0							Granular		32.899	
6.0																			22.862	Access South of IA 3; Refer to U Sheets
Total:																			**257.343**	

EXISTING PAVEMENT

Line No.	County	Route	Direction of Travel	Begin Ref. Location Sign	End Ref. Location Sign	Year	Type	Project Number	Surface Type	Surface Depth (IN)	Base Type	Base Depth (IN)	Subbase Type	Subbase Depth (IN)	Removal Type	Removal Depth (IN)	Coarse Aggregate Source	Coarse Aggregate Type	Course Aggregate Durability Class	Reinforcement Type	Remarks
1.0	Butler	IA 3	Both	191.81	202.77	2021		MP-003-2(710)192--76-12													HMA Crack Filling
2.0	Butler	IA 3	Both	191.81	202.77	2004		STPN-3-5(66)--2J-12	AAC	1.5	AAC	2.5									
3.0	Butler	IA 3	Both	191.81	202.77	1985		FN-3-5(38)--21-12	AAC	1.5	TBB	1.5			Mil		Jensen	Gravel			
4.0	Butler	IA 3	Both	191.81	202.77	1961		FN-502*<2>	AAC	3.0							Lillybridge	C. LST.			
5.0	Butler	IA 3	Both	191.81	202.77	1928		P-558	PC7	7.0							Alden	C. LST.	1		

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.
* Not a bid item
(1) Diameter or equivalent diameter
(2) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe
(3) Backfill according to DR-101

Drainage Area (ACRE)	Location	Type	Size (IN) (1)	Pipe Classification	Kind of Pipe (2)	Length New Const. (LF)	Length of total that is Trenchless	Bedding Class	Design Cover (H) (FT)	Camber* (DR-102) (FT)	Apron No. (IN)	Apron No. (OUT)	Apron Guard* (DR-213) (No.)	Elbow* (DR-141) (No.)	Diaphragm* (DR-501) (No.)	Tee Section* (DR-142) (No.)	"D" Section* (DR-141) (No.)	Reducer* (No.)	Type 'C' Conn.* (DR-122)	Type 'C' Conn.* (No.)	Connected Pipe Joint* (DR-121)	4" Perforated Subdrain* (FT)	Flow Line Elevation LT.	Flow Line Elevation RT.	Flow Line Elevation Other	Flow Line Elevation Other	Dimensions Lineal Feet Total (Left)	Dimensions Lineal Feet Total (Right)	Dimensions Lineal Feet Extensions	Dimensions Lineal Feet Extensions	Skew Ahead Degrees (Left)	Skew Ahead Degrees (Right)	Dike Location	Dike Station	Dike Elevation	Dike Type	Class 20 (CY)	Flowable Mortar	Floodable Backfill* (A)	Porous Backfill* (B)	Flooded Backfill(A+B)	Remarks
Overf	119+50.79	DR-601	42.0	1500D	RCP	81.0		B	3.90		1		1								Type 3		972.10	972.00			36.00	45.00										22.5	522.6		522.6	Note 1
low	1120+65.90	DR-651	18.0		UNCL	100.0		C	7.65		1	1									Type 3		977.35	977.90			53.30	46.70														
	1123+91.44	DR-651	18.0		UNCL	100.0		C	7.10		1	1									Type 3		976.97	976.22			52.80	47.20														
	1126+13.79	DR-621	18.0		CMP	55.6		c	3.80		1	1									Type 3		980.65	979.67			51.20	4.20														
	9106+00.00	DR-601	24.0	1500D	RCP	52.7		C	15.00			1									Type 3		969.00	970.06																		Note 2
	9106+99.90	DR-601	24.0	1500D	RCP	63.3		C	15.00			1									Type 3		969.00	970.27																		Note 3

Note 1 - Install Flap Gate on South end of Culvert. Refer to U Sheets for additional information.
Note 2 - Culvert inlet ties into Proposed SW-512 (30") structure. Form Grade = 977.2, Bottom Well = 969.56. 24" RCP slope = 2.0% -- Refer to Sheet ED.2 for additional information.
Note 3 - Culvert inlet ties into Proposed SW-512 (30") structure. Form Grade = 975.63, Bottom Well = 969.77. 24" RCP slope = 2.0% -- Refer to Sheet ED.2 for additional information.

ROADWAY ITEMS FOR DRAINAGE STRUCTURES INSTALLED BY CULVERT CONTRACTOR

* Not a Bid Item
(1) Backfill according to DR-111

Location	Design No.	Size	Kind	Dike Lt.	Dike Rt.	Dike Station	Dike Top Elevation	Dike Type	Compacting Backfill Adjacent (CY)	Compaction w/ Moisture Control (CY)	Compaction w/ Moisture and Density (CY)	Floodable Backfill* (A) (CY)	Porous Backfill* (B) (CY)	Flooded Backfill (1) (A+B) (CY)	Excavation Type	Excavation Quantity (CY)	Revetment Type	Revetment Quantity (TONS)	Engineering Fabric (SY)	Remarks
107+41.72	124	12'x10'x235'	RCB						232.1	1512.0		75.8	7.7	83.5						Triple RCB

108_13A
3/27/25

SAFETY CLOSURES

Station	Road Closure Qty.	Hazard Closure Qty.	Remarks
99+50.00	1		
121+50.00	1		
1129+00.00	1		
Total:	**3**		

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17
BCY6: Broken Centerline (Yellow) @ 0.25
BLC6: Broken Line Contrast (White/Black) @ 0.50
BLW4: Broken Lane Line (White) @ 0.17
BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00
CHW8: Channelizing Line (White) @ 1.33
CHW10: Channelizing Line (White) @ 1.67
CHY8: Channelizing Line (Yellow) @ 1.33
CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00
DCY4: Double Centerline (Yellow) @ 1.34
DCY6: Double Centerline (Yellow) @ 2.00
DDY4: Double Dotted Line (Yellow) @ 0.44
DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22
DLW6: Dotted Line (White) @ 0.33
DLY4: Dotted Line (Yellow) @ 0.22
DLY6: Dotted Line (Yellow) @ 0.33
ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00
ELY4: Edge Line Left (Yellow) @ 0.67
ELY6: Edge Line Left (Yellow) @ 1.00
LDW8: Lane Drop (White) @ 0.33
LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00
NPY4: No Passing Zone Line (Yellow) @ 0.84
NPY6: No Passing Zone Line (Yellow) @ 1.25
RLW4: Ramp Edge Line Right (White) @ 0.67
RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67
RLY6: Ramp Edge Line Left (Yellow) @ 1.00
SLW2: Stop Line (White) @ 4.00
SLW4: Solid Lane Line (White) @ 0.67
SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16
SPW6: Sloped Curb 6" (White) @ 2.28
SPY4: Sloped Curb 4" (Yellow) @ 2.16
SPY6: Sloped Curb 6" (Yellow) @ 2.28
STW6: Standard Curb 6" (Yellow) @ 2.03
STY6: Standard Curb 6" (Yellow) @ 2.03
YLW2: Yield Line (White) @ 1.15

Line No.	Road ID	Station From	Station To	Lane	Marking Type	Left	Center	Right	Groove Marking Needed?	Groove Qty. (STA)	BCY4* Factored (STA)	BCY6 Factored (STA)	BLW4 Factored (STA)	DCY4 Factored (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	Remarks
1.0	IA 3	104+55.00	109+50.00	EB	Waterborne/Solvent Paint			X	No						4.95		
2.0	IA 3	104+55.00	109+50.00	Center	Waterborne/Solvent Paint		X		No			1.24					
3.0	IA 3	104+55.00	109+50.00	WB	Waterborne/Solvent Paint	X			No						4.95		
4.0	IA 3	119+09.06	119+95.42	EB	Waterborne/Solvent Paint			X	No						0.86		
5.0	IA 3	119+09.06	119+95.42	Center	Waterborne/Solvent Paint		X		No			0.21					
6.0	IA 3	119+09.06	119+95.42	WB	Waterborne/Solvent Paint	X			No						0.86		

Waterborne/Solvent Paint = 13.07 Sta

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5.

* Not a bid item.

Line No.	Station From	Station To	Side	Pavement Type	Area (SY)	Saw Cut* (LF)	Remarks
1.0	104+55.00	109+50.00	Both	Composite	1804.6	63.6	
2.0	119+09.06	119+35.91	Both	PCC	88.4	32.3	
3.0	119+68.32	119+95.42	Both	PCC	90.0	33.1	
Total:					**1983**	**129**	

110_02
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REMOVAL OF EXISTING STRUCTURES

Line No.	Location	Description	Remarks
1.0	119+52.24	33' x 30' Concrete Slab Bridge	
2.0	106+90	Twin 72" Concrete Pipes	

110_07A
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REMOVAL OF STEEL BEAM GUARDRAIL

(1) Lane(s) to which the installation is adjacent.
(2) Includes length of End Terminals and End Anchors.

Line No.	No.	Direction of Traffic (1)	Station From	Station To	Side	Removal of Guardrail (2) (LF)
1.0	1	EB	118+13.74	119+35.91	Right	123.0
2.0	2	EB	119+68.32	120+90.62	Right	123.0
3.0	3	WB	118+13.80	119+35.65	Left	123.0
4.0	4	WB	119+68.35	120+90.66	Left	123.0
Total:						**492**

CLEARING AND GRUBBING

Line No.	Station From	Station To	Direction of Traffic	Work and Material Type	>3"-6"	>6"-9"	>9"-12"	>12"-15"	>15"-18"	>18"-24"	>24"-30"	>30"-36"	>36"-42"	>42"-48"	>48"-60"	>60"-72"	>72"	Other Materials Length (FT)	Other Materials Width (FT)	Estimated Units	Estimated Area (Acres)	Estimated Herbicide Application (EA)	Remarks
1.0	107+65.00	116+30.00	EB	Trees - Clearing and Grubbing																	0.270		
2.0	1108+10.00	1110+55.00	SB	Trees - Clearing and Grubbing																	0.494		
3.0	1109+60.00	1118+70.00	NB	Trees - Clearing and Grubbing																	0.314		
Total:																					**1.078**		

SHOULDERS

(1) Lane(s) to which the shoulder is adjacent.
(2) See Typ. 7156, 7157, or 7158.
(3) Bid Item.
(4) Applies only for Paved Shoulders constructed on project with existing granular shoulders.
(5) Bid Item. Typ. 7156, 7157, or 7158.
(6) Does not include shrink.
(7) Paved shoulder thickness specified in Remarks.
(8) Subbase type specified in Remarks.

Roadway Identification	Direction of Travel (1)	Station From	Station To	Side	P Width (FT)	P SG Width (2) (FT)	G Width (FT)	L Length (FT)	Class 13 Excavation (CY)(3)(4)	HMA (TON)	HMA (TON/ STA)	Binder (TONS)	Paved Shoulder (3) (SY)	Shoulder at Grdrail (5)(7)	Reinforced Paved Shoulder(3) (SY)	Special Backfill HMA Alt. (3) (TON)	Special Backfill HMA Alt. (TON/STA)	Special Backfill PCC Alt. (3) (TON)	Special Backfill PCC Alt. (TON/STA)	Pavement Scarification (SY)	Polymer Grid (SY)	Subbase (3) (8) (CY)	Granular Shoulder (3) (TON)	Granular Shoulder (TON/STA)	Shoulder Const. Alt (3) (STA)	Shoulder Const. Alt HMA (6) (CY)	Shoulder Const. Alt PCC (6) (CY)	Remarks
IA 3	EB	104+55.00	106+91.35	Right	4		6	236.35		37.002	15.655	2.220	97.9			108.366	45.850						49.634	21.000	2.36	47.71		
IA 3	EB	107+86.91	109+50.00	Right	4		5	163.09		25.533	15.655	1.532	72.5			66.215	40.600						28.541	17.500	1.63	32.92		
IA 3	WB	104+55.00	106+70.92	Left	4		9	215.92		33.803	15.655	2.028	96.0			133.007	61.600						68.015	31.500	2.16	43.58		
IA 3	WB	107+79.53	109+50.00	Left	4		6	170.47		26.688	15.655	1.601	75.8			80.952	47.487						35.799	21.000	1.70	34.41		
IA 3	EB	117+93.16	120+97.56	Right			5	304.40															53.270	17.500	3.04	61.44		
IA 3	EB	118+64.64	120+39.63	Right	4			174.99		27.396	15.655	1.644	77.8			71.046	40.600											
IA 3	WB	117+98.42	121+01.62	Left			5	303.20															53.060	17.500	3.03	61.20		
IA 3	WB	118+64.64	120+39.63	Left	4			174.99		27.396	15.655	1.644	77.8			71.046	40.600											
Total:													**497.8**			**530.632**							**288.319**		**13.92**			

MILLED RUMBLE STRIPS

* Calculated at 18" width for Shoulder.
** For use with penetrating Engineered Fog Seal. Calculated at 2" wider than rumble strips.

Line No.	Road Identification	Station From	Station To	Shoulder Pavement Type	Rumble Strip Lane	Rumble Strip Type	Fog Seal Type	L (IN)	PCC Length (STA)	HMA Length (STA)	Fog Seal* Shoulder (GAL)	Fog Seal (SY)**	Effective Shoulder Width PCC (FT)	Effective Shoulder Width HMA (FT)	Effective Shoulder Width Granular\Earth (FT)	Remarks
1.0	IA 3	104+55.00	106+92.00	HMA	Right Shoulder	Milled	Asphalt Emulsion	8"		2.37	2.6	39.5		3.5	6.0	
2.0	IA 3	107+92.00	109+50.00	HMA	Right Shoulder	Milled	Asphalt Emulsion	8"		1.58	1.7	26.3		3.5	5.0	
3.0	IA 3	104+55.00	106+92.00	HMA	Left Shoulder	Milled	Asphalt Emulsion	8"		2.37	2.6	39.5		3.5	9.0	
4.0	IA 3	107+92.00	109+50.00	HMA	Left Shoulder	Milled	Asphalt Emulsion	8"		1.58	1.7	26.3		3.5	6.0	
5.0	IA 3	119+09.06	119+95.42	HMA	Right Shoulder	Milled	Asphalt Emulsion	8"		0.86	0.9	14.3		3.5	5.0	
6.0	IA 3	119+09.06	119+95.42	HMA	Left Shoulder	Milled	Asphalt Emulsion	8"		0.86	0.9	14.3		3.5	5.0	
Total:										**9.62**	**10.4**					

REFERENCE LOCATION SIGNS AND DELINEATORS

Refer to SI-171, SI-172 and SI-173.

Line No.	Station From	Station To	Location	Reference Location Sign Type	Quantity (EA)	Enhanced Reference Location Sign Type	Quantity (EA)	Intermediate Reference Location Sign Type	Quantity (EA)	Type I Delineator White (EA)	Type I Delineator Yellow (EA)	Type IA Delineator White (EA)	Type IA Delineator Yellow (EA)	Type II Delineator White (EA)	Type II Delineator Yellow (EA)	Type III Delineator White (EA)	Type III Delineator Yellow (EA)	Object Marker Type 1 (EA)	Object Marker Type 2 (EA)	Object Marker Type 3 (EA)	Installation Type	Installation Offset
1.0	109+25.00	121+00.00	Right							5												
2.0	115+63.14		Right	D10-3	1																1	14.0

MATERIALS FOR TYPE 'A' SIGNS

Refer to SI-101, SI-111, SI-119 and N Sheets.

Line No.	Type A Signing Typicals	Sign Number	Dir. of Travel	Sign Location Station	Wood Posts (No.)	4 x 6 Leg 1 (FT)	4 x 6 Leg 2 (FT)	Perf. Sq. Steel Leg 1 (FT)	Perf. Sq. Steel Leg 2 (FT)	Perf. Sq. Steel Leg 3 (FT)	Perf. Sq. Anchor Type	Anchor Quantity (EA)	Steel Rect. Tube (No)	Steel Rect. Tube (FT)	Rect. Tube Anchors (EA)	Type A Bracket One Post	Type A Bracket Two Post	Type A Bracket Auxiliary	Type A Bracket (H)	Type A Bracket (F)	Type A Bracket (F1)	Install. Type	Install. Dim X (FT)	Install. Signing Notes	Remarks
1.0		Stop Sign, R1-1	NB	107+65.66				12.0			Soil	1										1	44.0	PP & RR	
2.0		IA 3 Placard	EB	108+22.27				12.0			Soil	1										1	16.0	PP & RR	
3.0		Street Sign	NB	1108+05.79				15.0			Soil	1										1	17.0	PP & RR	
4.0		Stop Sign, R1-1	SB	1108+07.03				12.0			Soil	1										1	12.0	PP & RR	
Total:								**51**				**4**													

190_61
2/10/23

EXISTING SIGNS TO BE REINSTALLED

Line No.	Sign Description	Direction of Travel	Location Station	Number of Posts	Square Tube Steel Posts	Wood Posts 4"x4" (L F)	Wood Posts 4"x6" (L F)	Installation Type	Installation Dim 'X'	See Signing Notes
1.0	Stop Sign	NB	107+65.66	1	1			1	44.0	PP & RR
2.0	IA 3 Placard	EB	108+22.27	1	1			1	16.0	PP & RR
3.0	Mile Marker 194	EB	115+63.14	1	1			1	24.0	PP & RR
4.0	Street Sign	Both	1108+05.79	1	1			1	17.0	PP & RR
5.0	Stop Sign	SB	1108+07.03	1	1			1	12.0	PP & RR

300_99
Modified

CLASS 13 EXCAVATION

General Tabulation SubTitle

Line No.	Station From	Station To	Side	Area (SF)	Depth (In.)	Volume (CY)	Remarks
1	104+55	109+50	Right	5079.85	6	94	Includes Cedar Ave. South of IA 3
2	104+55	109+50	Left	5611.83	6	104	
3	107+50.64	108+69.52	Right	4925.28	6	91	Exisitng Entrance and Parking Area South of IA 3
4	117+93.15	119+34.60	Right	1069.8	6	20	
5	117+98.42	119+34.79	Left	1017.9	6	19	
6	119+69.71	120+97.56	Right	820.9	6	15	
7	119+69.83	121+01.62	Left	1008.3	6	19	
8	1108+09.52	1128+50.00	Both	51648.11	3	478	Cedar Ave.
9	1109+37.62		Left	594.31	3	6	Entrance
10	1120+66.94		Left	858	3	8	Entrance
11	1120+67.29		Right	410	3	4	Entrance
12	1126+16.10		Right	989	3	9	Entrance
13	1126+69.94		Right	766.9	3	7	Entrance
14	1127+16.84		Left	450.4	3	4	Entrance
Total:						**878**	

All Depths are assumed.

301_99
Modified

GRANULAR SURFACING ON ROAD

General Tabulation SubTitle

Line No.	Station From	Station To	Weight (Tons)	Remarks
1	1106+79.75	1107+19.77	28.43	Cedar Ave. South of IA 3
2	1107+66.72	1108+25.20	42.49	Cedar Ave. Return Area North of IA 3
3	1108+25.20	1128+50.00	850.20	Cedar Ave.
Total:			**921.12**	

SIGNING NOTES

The following tolerances will be allowed on all signs:

Accumulation error of not greater than +/-0.50" per line of copy, not greater than +/-0.50" for spacing between lines of copy, and the margin between lines of copy and the inside edge of the sign border.

The following tolerances will be allowed on each letter or numeral:

nominal height	variation in height	variation in width
4" thru 12"	-1/8" to +3/8"	-1/4" to +1/4"
over 12"	-1/8" to +3/8"	-3/8" to +3/8"

Type B signs can be separated into two categories:
- Major Guide Signs.
- Minor Guide Signs.

Major Guide Signs include the advance and exit direction guide signs for an interchange or intersection.

Minor Guide Signs include all other guide signs such as NEXT EXIT signs, supplemental guide signs, logo signs, exit gore signs, post-interchange mileage signs, ramp destination signs, and ramp logo signs for an interchange, as well as destination signs along sideroads.

Type A signs are not separated into categories, but special consideration should be given to regulatory signs.

Do not remove Type B signs until replacement signs have been installed. If construction activities require the removal of a sign, the existing sign may be relocated to temporary posts, or a temporary plywood sign may be installed to replace the existing sign.

Existing non-regulatory Type A signs are NOT required to remain in place until installation of replacement signs. Existing regulatory Type A signs, particularly Stop signs, should not be removed until replacement signs are installed. Where a staged traffic control plan is contrary to this guidance, follow the direction of the traffic control plan.

Apply the following during the replacement or modification of signs:
- No more than one of the major guide signs for each direction of travel at an interchange out of service at any one time.
- No major guide sign out of service for more than 8 hours.
- No minor guide out of service for more than 24 hours.

Remove existing signs and posts within 24 hours following the installation of a new replacement sign.

In any case where the plans call for a new sign and posts to be installed at the same station location and offset as an existing sign, install the new posts at a minimum of either 5 ft ahead or behind the existing sign installation. Signs shall not be installed more than 25 ft ahead or behind the existing sign installation. Whenever posts for a replacement sign are erected directly in front of an existing sign, install the new replacement sign and remove the existing sign installation within 24 hours of the time that the new posts are erected.

Where signs are located behind guardrail, locate the near edge of the sign a minimum of 3 ft behind the guardrail posts.

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SIGNING NOTES

Unless noted otherwise, leave auxiliary panels, such as exit number panels, in place or reattach to the sign using the existing mounting hardware. Also, when replacing an existing logo sign with a new logo sign, remove the business logo panel(s) from the existing sign and attach to the new sign as directed by the Engineer. Do not damage the auxiliary or logo panels when removing and reattaching them. This work is incidental to other work and no separate payment will be made.

The following notes apply to the corresponding sign installations shown on the plan sheets and listed in the tabulations.

IB INSTALL NEW TYPE B SIGN
IA INSTALL NEW TYPE A SIGN

Install new signs at the location identified in the plans.

For installation of new signs on an existing sign support structure, refer to note (L).

For installation of new signs on existing posts:

- if the new sign is taller than the existing sign, furnish the necessary hardware to extend the sign above the posts. Refer to Standard Road Plan SI-132.

- if the new sign is shorter than the existing sign:

- for wood posts and perforated square tube posts, install the sign at the proper height and cut off the excess post length.

- for MASSH-400 and steel breakaway posts, install the sign at the top of the posts.

For plywood signs, no vertical splices are allowed in signs less than or equal to 10 ft wide. No horizontal splices are allowed in signs less than or equal to 4 ft tall.

Each new sign installed shall have a sticker applied to the back of the sign that shows the date the sign was installed. The Contractor shall supply the sticker for all contractor suppled signs. The DOT will supply date stickers on any signs supplied by the department.

Payment for installing Type A signs or Type B signs includes furnishing hardware for mounting, extending signs above existing posts, and cutting posts to length.

MS MODIFICATION OF EXISTING SIGNS

For removal and/or installation of logo panels, and other sign modifications. Refer to the project plans and typical details for additional information.

SC SIGN COVER

For the installation or removal of temporary sign covers for the purposes of temporary traffic control. Sign covers shall completely cover the existing Sign. Care should be taken so that covers, fasteners, and installation practices do not damage the existing sign. Tape of any type shall not be applied to the sheeted face of the existing sign under any circumstances. Repair of damage to the existing sign caused by sign covers will be the responsibility of the Contractor.

SO OVERLAY TYPE B GUIDE SIGNS
MB INSTALL SPECIAL MOUNTING BRACKET

Install special mounting brackets at the locations identified in the plans. Refer to Tabulations 190-51 and/or 190-65.

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SIGNING NOTES

PB INSTALL NEW BREAKAWAY STEEL POSTS AND FOOTING
PP INSTALL NEW PERFORATED SQUARE TUBE POSTS AND ANCHORS
PM INSTALL NEW MASSH-400 POSTS AND ANCHORS

Install new breakaway steel posts and footings, perforated square tube posts and anchors, or MASSH-400 posts and anchors at the locations identified in the plans. Refer to the Standard Road Plans, Typicals, and Tabulations 190-51 and 190-50 for post size and footing information.

New posts shall be installed in undisturbed soil. The new posts shall not be placed in the hole of removed posts.

Remove excess soil from footing hole. Do not spread soil on adjacent seeded or vegetated areas.

If note (RR) accompanies (PB), (PP), or (PM), install an existing sign on the new posts.

RR REMOVE AND REINSTALL SIGN AS PER PLAN

Do not remove existing major Type B guide signs on posts until the new posts are installed. Promptly remove sign and install at the new location.

Existing major Type B guide signs on overhead support structures, minor Type B guide signs, plywood signs, and Type A signs may be removed and stored. Transport the signs to a DOT storage area as designated by the Engineer. Transport the signs back to the job site when ready for installation at the new location.

Signs to be reinstalled shall not be stored for any length of time with the sheeted face in contact with the ground.

Replace signs damaged by the Contractor's activities at no additional cost to the Contracting Authority.

Payment for Remove and Reinstall Sign includes sign removal, delivery to and from the DOT storage area (if applicable), and reinstallation, including any hardware required for reinstallation. When noted in the plans, payment for delivery and stockpile of existing signs will be separate from the payment for Remove and Reinstall Sign.

RA REMOVAL OF TYPE A SIGN ASSEMBLY
RB REMOVAL OF TYPE B SIGN ASSEMBLY

Type A Sign Assembly consists of one or more signs installed on one or more posts, either directly mounted to the post or mounted to the post with special sign mounting brackets.

Type B Sign Assembly consists of the main sign, all auxiliary signs and brackets, and posts.

Unless stated otherwise in the plans, remove all posts with the signs and brackets.

Remove each sign assembly identified in the plans. Sign posts removed become the property of the Contractor. All other materials removed remain the property of the DOT.

For each sign assembly removed, disassemble each assembly before delivering to the DOT.

* For Type A sign assemblies, unbolt all signs,

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SIGNING NOTES

special mounting brackets, and posts from each other.

* For Type B assemblies, unbolt all extruded aluminum panels, brackets, and posts from each other. Do not damage the disassembled materials.

When the plans call for the removal of posts, the entire existing post shall be removed. The post shall not be broken off or cut off at the ground line. Place backfill in holes remaining from the removal of posts and restore to the surrounding conditions.

Deliver the removed signs, special sign mounting brackets, and extruded aluminum panels to a DOT storage area, as designated by the Engineer.

The concrete footings for steel posts are not considered part of the sign assembly. Refer to note RF for concrete footing removal.

Payment for Removal of Type A Sign Assembly or Removal of Type B Sign Assembly includes sign assembly removal and disassembly, post removal (if applicable), delivery to the DOT storage area, placing backfill in holes, and restoration of the surrounding conditions.

RF REMOVE EXISTING CONCRETE FOOTING FOR STEEL POST

Remove existing concrete footings to a depth of at least 1 ft below the natural groundline.
Place backfill in holes remaining from removal and restore to the normal surrounding conditions. This work is incidental to other work and no separate payment will be made.

RS REMOVE EXISTING TYPE B SIGN SUPPORT STRUCTURE

The following are considered Type B Sign Support Structures:
- Overhead sign trusses and foundations
- Cantilever sign trusses and foundations
- Bridge-mounted brackets

Unless stated otherwise in the plans, existing overhead trusses, cantilever trusses, and bridge brackets which are removed become the property of the Contractor. If stated in the plans, deliver overhead trusses, cantilever trusses, and bridge brackets to a DOT storage area, as designated by the Engineer.

Payment for Removal of Sign Support Structure and Foundation includes sign support structure removal, delivery to the DOT storage area (if applicable), and restoration of the surrounding conditions. Removal of the foundation includes removal of the stem to a minimum of 1 ft below the natural groundline.

L MODIFY SIGN SUPPORT ANGLES NEEDED TO INSTALL SIGNS ON EXISTING SIGN SUPPORT STRUCTURES

Refer to the sign support structure details for information on the required angle brackets.

Provided all specifications are met, the existing sign support angles may be reused. Install existing sign support angles to be reused only on the sign support structure from which they were removed.

Sign support angles removed and not reused become the property of the Contractor.

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10/15/25

SIGNING NOTES

When reusing the existing sign support angles with a shorter replacement sign, the sign support angles may need to be trimmed. Refer to the sign support details to determine if and where to trim the sign support angles.

Do not use existing fasteners. Use new U-Bolts, stainless steel bolts and nuts to install the existing or new sign support angles to the sign support structure.

Removal of existing sign support angles is incidental to removal of the sign.

Reinstalling and/or modifying existing sign support angles; furnishing and installing new sign support angles (if required); and furnishing and installing new fasteners is incidental to work associated with Type B signs.

SIGN INSTALLATION QUALITY CONTROL NOTES

Post lengths have been derived from the proposed grading cross sections. Verify post lengths in the field prior to ordering or fabrication.

Slight differences between the design template and the actual conditions should be expected. These variations should be resolved by doing some localized shaping and grading. Obtain material needed to meet the site requirements of SI-112 from the excavation and/or the area immediately adjacent to the work. Ensure reshaping work does not substantially change foreslopes or the drainage in the vicinity of the sign.

Significant differences between the plan design and the actual field conditions shall be resolved in this manner:

Survey the location and draw the actual template on the cross section. Recalculate each post length and compare to the maximum allowable leg length. If all of the maximum leg lengths are less than or equal to the maximum allowable leg length, then the proposed post design will be sufficient. If any leg is greater than the maximum allowable leg length, then submit the cross section with the actual template drawn (including offsets and elevation from the survey shown) to the Engineer. The Engineer may forward this information to the Engineer of Record in order to complete a new post design.

Install the footings, stub posts, and posts according to the tolerances shown on the applicable SI Series Standard Road Plans.

Footing construction is the controlling activity that substantially affects the quality of the site installation. Verify the elevation difference between the stubs is exactly the same as the elevation difference between the post lengths. If the Engineer requests, submit documentation detailing the site cross section in order to verify site installation.

262_06
9/28/22

UTILITIES (NOT A POINT 25 PROJECT)

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

281_01
9/28/22

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide Permit 14, Permit No. 2023-1093. A copy of this permit is available from the Iowa DOT website (http://www.envpermits.iowadot.gov/). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

281_03
11/9/23

STORM WATER BEST MANAGEMENT PRACTICES

When the following best management practices are used, they are intended to account for disturbed areas where storage volume cannot be provided:

103-1
10-17-17

EMBANKMENT WITH MOISTURE AND DENSITY CONTROL

Location		Lane	Depth	Compact	Remarks
Station to Station			FT	CY	
104+55.00	109+50.00	LT/RT	Varies	All Embankment Material	IA 3
119+09.06	119+95.42	LT/RT	Varies	All Embankment Material	IA 3
1107+57.72	1128+50.00	LT/RT	Varies	All Embankment Material	Cedar Ave.
9100+47.03	9108+47.55	-	Varies	All Embankment Material	RCB Dike

103-7
08-01-08

SHRINKAGE DATA

Material	%	Remarks
Topsoil	40%	Shrinkage
Class 10	30%	Shrinkage
Select Loam (Clay)	20%	Shrinkage
Select Sand	15%	Shrinkage
Unsuitable Type B	35%	Shrinkage
Unsuitable Type C	35%	Shrinkage

103-10
04-18-17

TOPSOIL STRIPPING AND PLACEMENT

Location				Topsoil Stripping Thickness	Topsoil Placement Thickness	Remarks
Road Identification	Dir. of Traffic	Begin Station	End Station	IN	IN	
IA 3	-	104+55.00	109+50.00	18.0	8.0	
Cedar Ave.	-	1107+57.72	1128+50.00	12.0	8.0	
Low Flow Ditch	-	3108+50.00	3119+45.00	12.0	8.0	
RCB Dike	-	9100+47.03	9103+00.00	4.0	8.0	
RCB Dike	-	9103+00.00	9105+00.00	8.0	8.0	
RCB Dike	-	9105+00.00	9108+47.55	6.0	8.0	

104-5C
10-17-17

LIST OF SUBDRAIN WORK

Possible Standards: DR-121, DR-201, DR-203, DR-301, DR-302, DR-303, DR-305 and DR-306. Possible Detail: 500-10.

* Not a bid item

Location				Pipe			Aprons		Outlets										
No.	Station to Station		Type of Installation	Concrete, C.M.P., or Plastic	Dia.	Length	DR-201	DR-203	500-10	DR-305		DR-306	Connected Pipe Joints* DR-121		Trench Drain	Granular Material Blanket	Porous Backfill*	Class "A" Crushed Stone*	Remarks
			DR-301, DR-302, DR-303		IN	LF	No.	No.	No.	Type	No.	No.	Type	No.	LF	CY	CY	CY	
1	105+47.42	108+28.02														545.9			1 foot thick Working Blanket
																			Working Blanket shall consist of Granular Material for Blanket

LICENSED PROFESSIONAL ENGINEER
ANDREW WILLIAM SCHWEIZER
24749
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature — Date: 11/13/2025

Andrew Schweizer
Printed or Typed Name
My license renewal date is December 31, 20 25

Pages or sheets covered by this seal: CS.1- CS.2, Q.1-Q.19

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

* Not a bid item. Bridge berm quantities assume a trench depth of 24 inches.

Location						Longitudinal Subdrain (DR-303)							Subdrain Outlet				
Line No.	Road or Lane Identification	Station to Station		Side	Depth (D)	Shoulder		Backslope		Bridge Berm (EW-203 or EW-204)			DR-303, DR-305 or DR-306		Porous* Backfill	Class "A"* Crushed Stone	Remarks
						Size	Length	Size	Length	Standard Road Plan and Type	Size	Length	Station	Standard Road Plan and Type			
1	IA 3	104+55.00	106+00.00	RT	42.0	4.0	205.0						104+55.00	DR-306	19.0	0.2	
													106+00.00	DR-306		0.2	
2	IA 3	106+00.00	108+50.00	RT	42.0	4.0	310.0						106+00.00	DR-306	28.7	0.2	
													108+50.00	DR-306		0.2	
3	IA 3	108+50.00	109+50.00	RT	42.0	4.0	160.0						108+50.00	DR-306	14.8	0.2	
													109+50.00	DR-306		0.2	
4	IA 3	104+55.00	106+00.00	LT	42.0	4.0	205.0						104+55.00	DR-306	19.0	0.2	
													106+00.00	DR-306		0.2	
5	IA 3	106+00.00	108+50.00	LT	42.0	4.0	310.0						106+00.00	DR-306	28.7	0.2	
													108+50.00	DR-305, Type A		0.2	Tie into intake
6	IA 3	108+50.00	109+50.00	LT	42.0	4.0	160.0						108+50.00	DR-305, Type A	14.8	0.2	
													109+50.00	DR-306		0.2	
	Totals						1350.0							DR-305, Type A = 2	14.8	0.4	
														DR-306 = 10	110.2	2.0	

NOTE: ALL LONGITUDINAL SUBDRAINS ARE TYPE 7 WITH PCC OR TYPE 8 WITH HMA (ACC) UNLESS OTHERWISE NOTED IN REMARKS COLUMN.

NOTE: ALL LONGITUDINAL SUBDRAINS MAY BE ADJUSTED BOTH VERTICALLY AND HORIZONTALLY IN THE FIELD AS NECESSARY

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- SB Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- T Cemetery
- G Grave
- CV Cave
- SH Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- WH Water Hydrant (Rural)
- Septic Tank
- C Cistern
- LP L.P. Gas Tank (No Footing)
- UST Underground Storage Tank
- Latrine
- Satellite TV Dish
- WHU Water Hook Up
- RT Radio Tower
- TA Tower Anchor
- Guardrail (Beam or Cable)
- GP Guard Post (one or two)
- Guard Post (over two)
- FP Filler Pipe
- GV Gas Valve
- WV Water Valve
- SL Speed Limit Sign
- MM Mile Marker Post
- SIGN Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box

UTILITY LEGEND

— E1 —
MidAmerican Electric
Jordyn Weber
319-291-4728
jlweber@midamerican.com

— G —
MidAmerican Gas
Jordyn Weber
319-291-4728
jlweber@midamerican.com

— SAN. —
City of Dumont
Rhonda Schmidt
641-857-3441

— T1 —
Dumont Telephone
Roger Kregel
641-857-3211
dumontel@netins.net

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.		
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING	**Design Color No.**		
Lavender	(9)		Temporary Pavement Shading
Yellow	(4)		Proposed Pavement Shading
Orange	(6)		Proposed Granular Shading
Orange	(70)		Proposed Shoulder Granular Shading
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)		Grading Shading
Orange, Light	(134)		Proposed Granular Entrance Shading
Yellow	(220)		Proposed Paved Entrance Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading
Green, Light	(225)		Existing Pavement Shading
Red	(3)		Proposed Structure Shading
Red	(3)		Delineates Restricted Areas

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.		
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

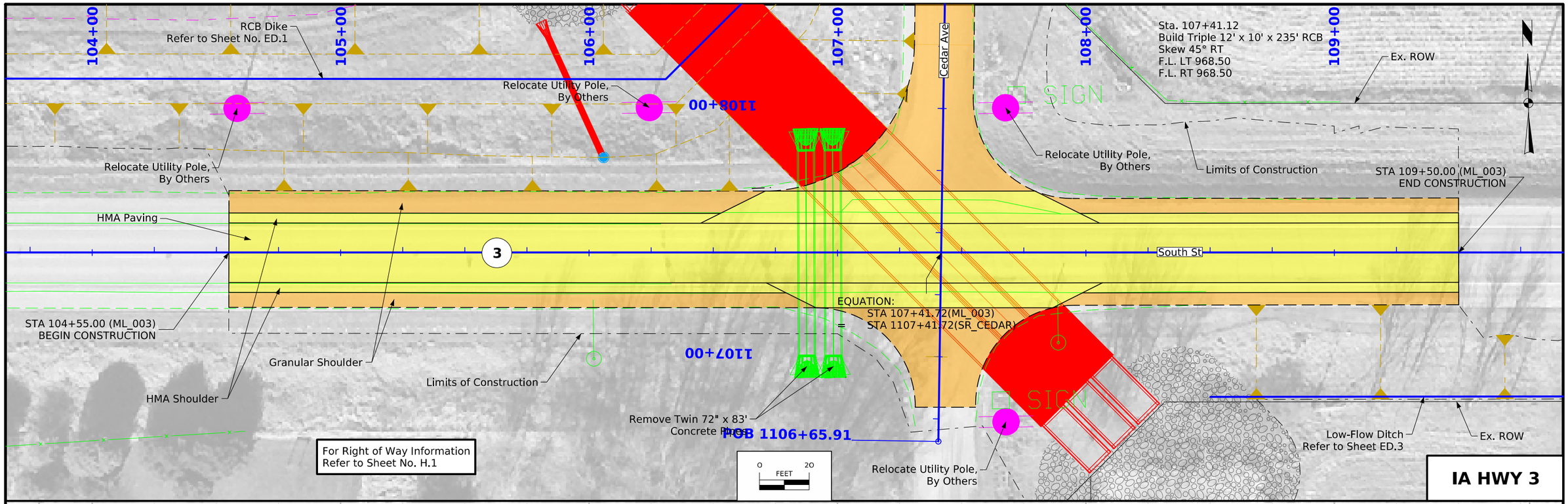
- Reference Point / Station — Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile

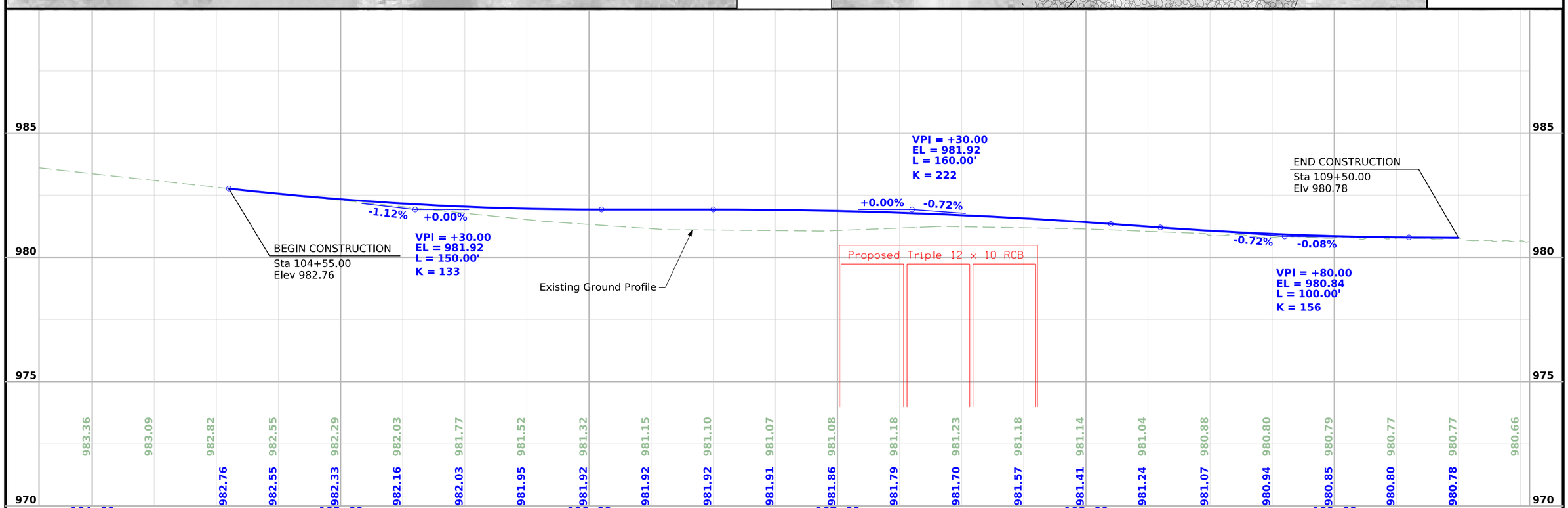
RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- C/A Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)





FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER D.2

10:22:23 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_D02.dgn

For Modified SW-402 Manhole Details
Refer to Sheet Nos. U.11 to U.12

Sta. 119+50.79
Install 42" x 81' RCP
Length LT 36'
Length RT 45'
F.L. LT 972.1 w/Apron & Safety Grate
F.L. RT 972.0 w/Flap Gate and Modified SW-402

117+00
118+00
119+00
120+00
121+00
122+00

Ex. Row
Limits of Construction
Granular Shoulder
HMA Paved Shoulder
STA: 117+98.42
OFF: 18.48' LT
STA: 121+01.62
OFF: 18.51' LT
5' Wide Granular Shoulder
4' Wide Paved Shoulder
STA 118+64.64 (ML_003)
BEGIN PAVING
3
South St
STA: 117+93.16
OFF: 18.41' RT
HMA Pavement
STA 120+39.63 (ML_003)
END PAVING
4' Wide Paved Shoulder
5' Wide Granular Shoulder
STA: 120+97.56
OFF: 18.64' RT
Limits of Construction
HMA Paved Shoulder
Granular Shoulder
Limits of Construction
Install Flap Gate
Ex. Row
Sta. 119 + 52.24
Remove 33' x 30' Concrete Slab Bridge
DA Overflow
Low-Flow Ditch
Refer to Sheet No. ED.4

3:1
2.5:1
4'
10%
12'

For Right of Way Information
Refer to Sheet No. H.2

0 20
FEET

IA HWY 3
OVERFLOW BRIDGE

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER D.3

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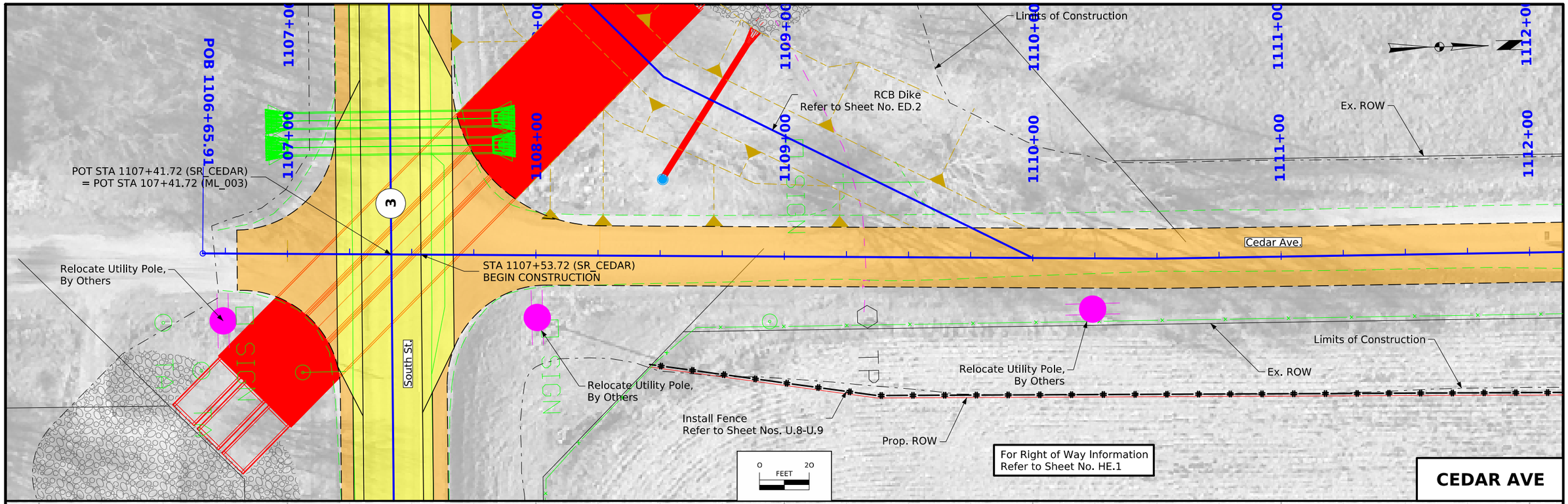

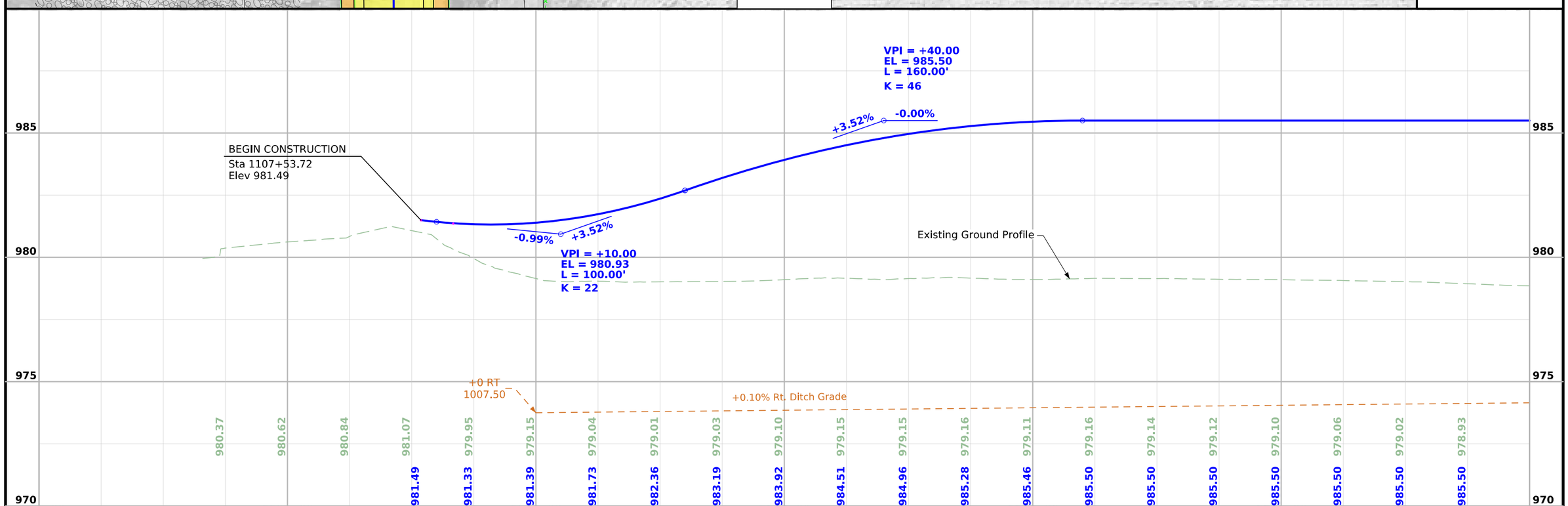

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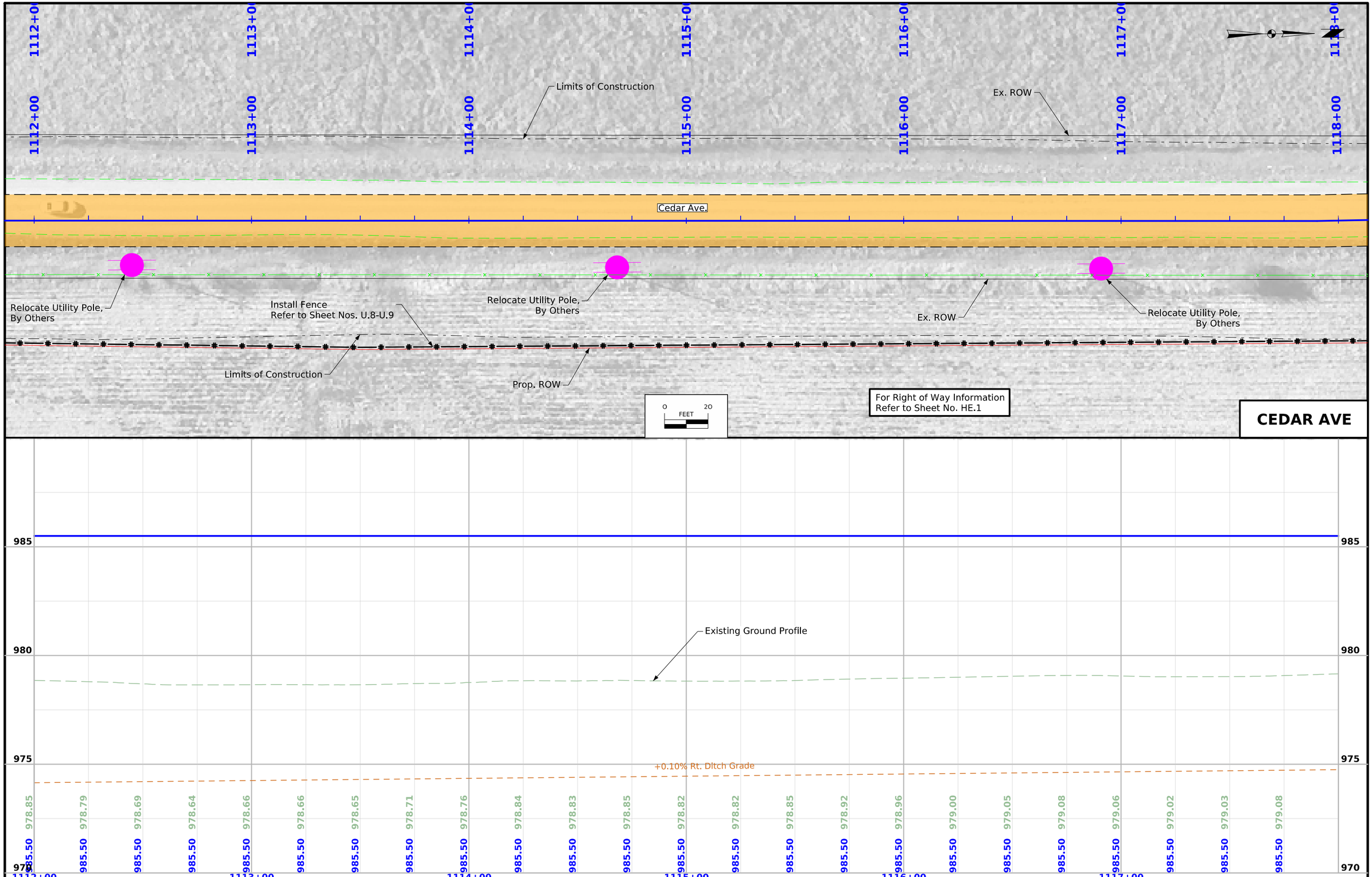

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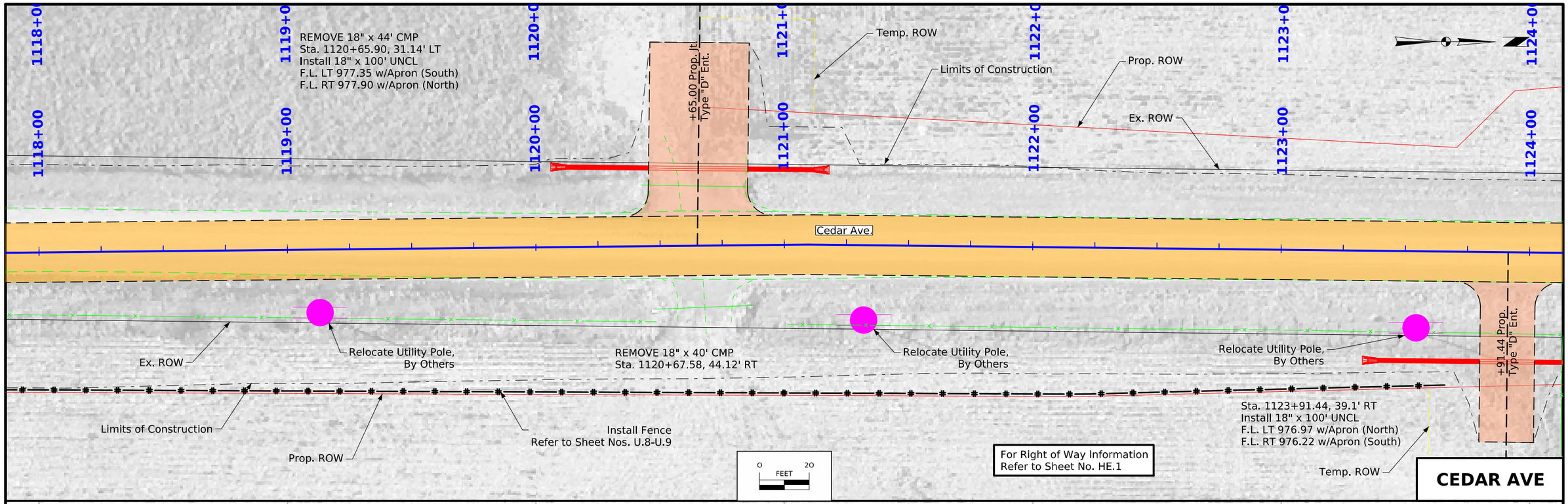

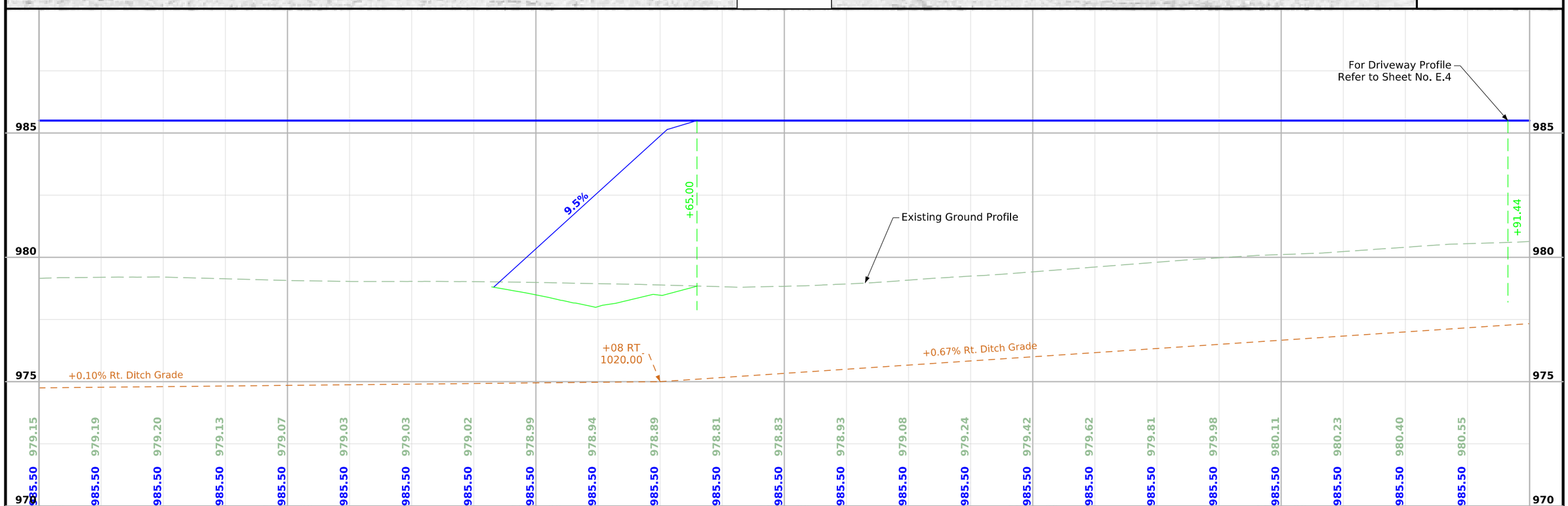

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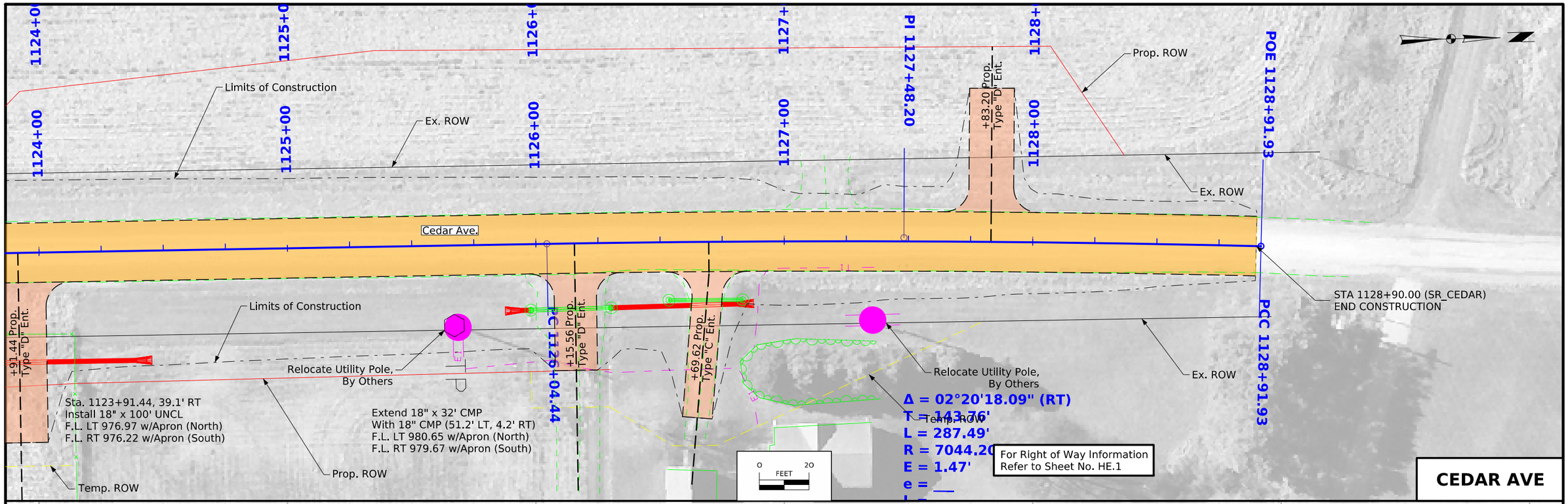

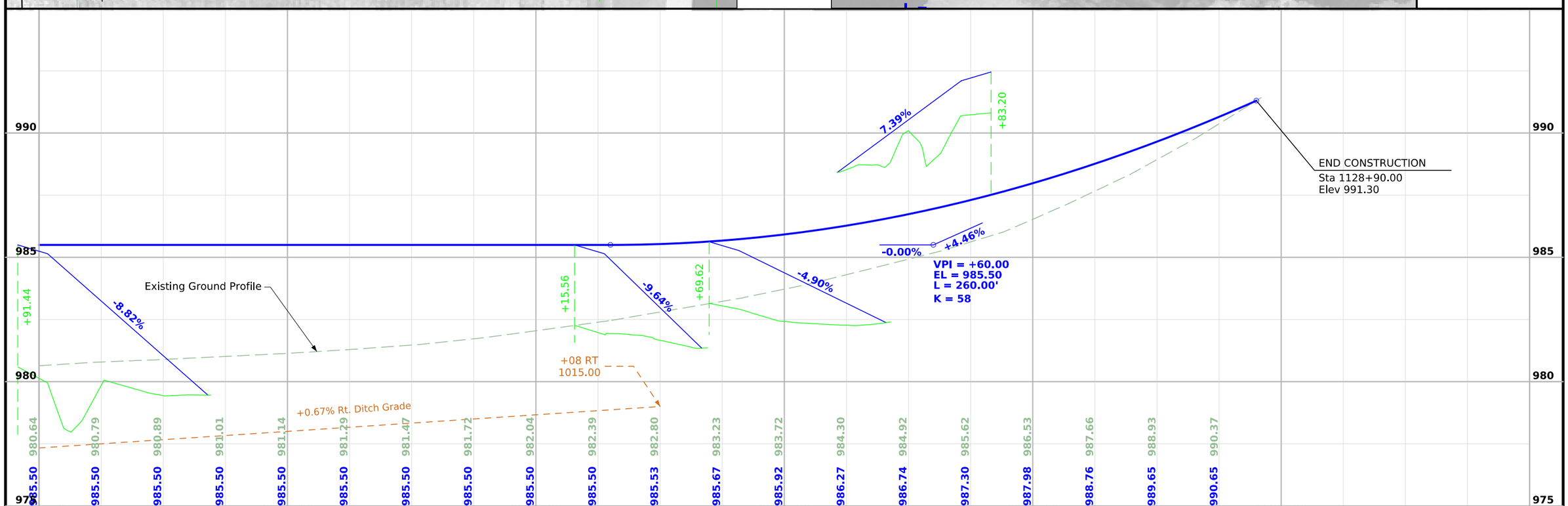

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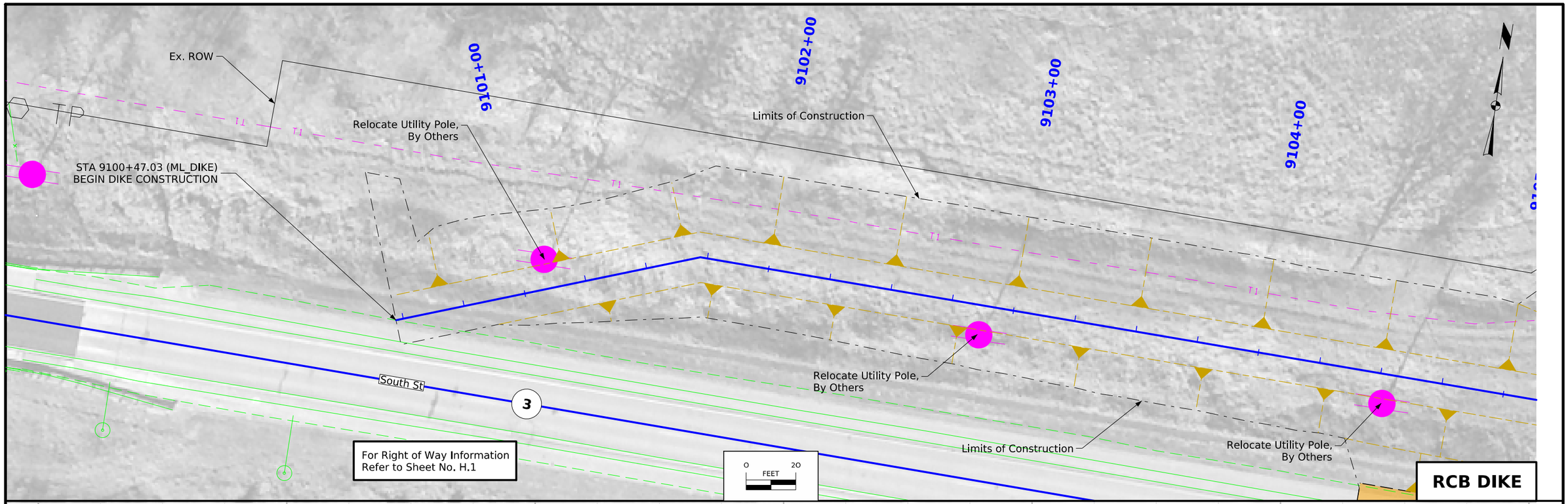

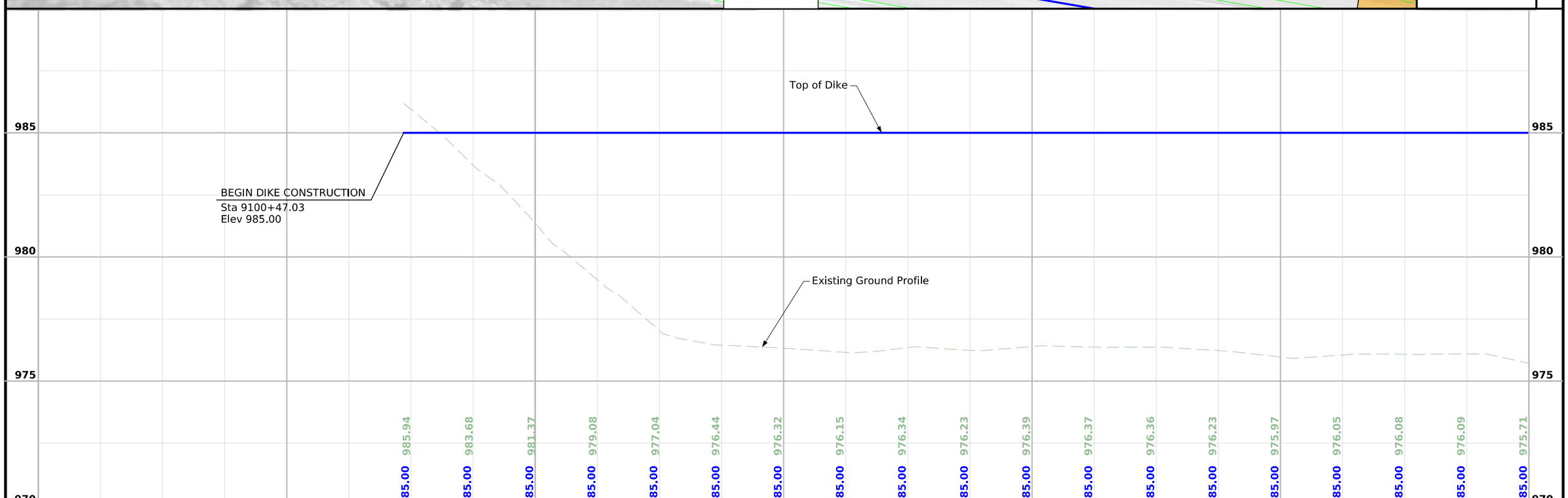

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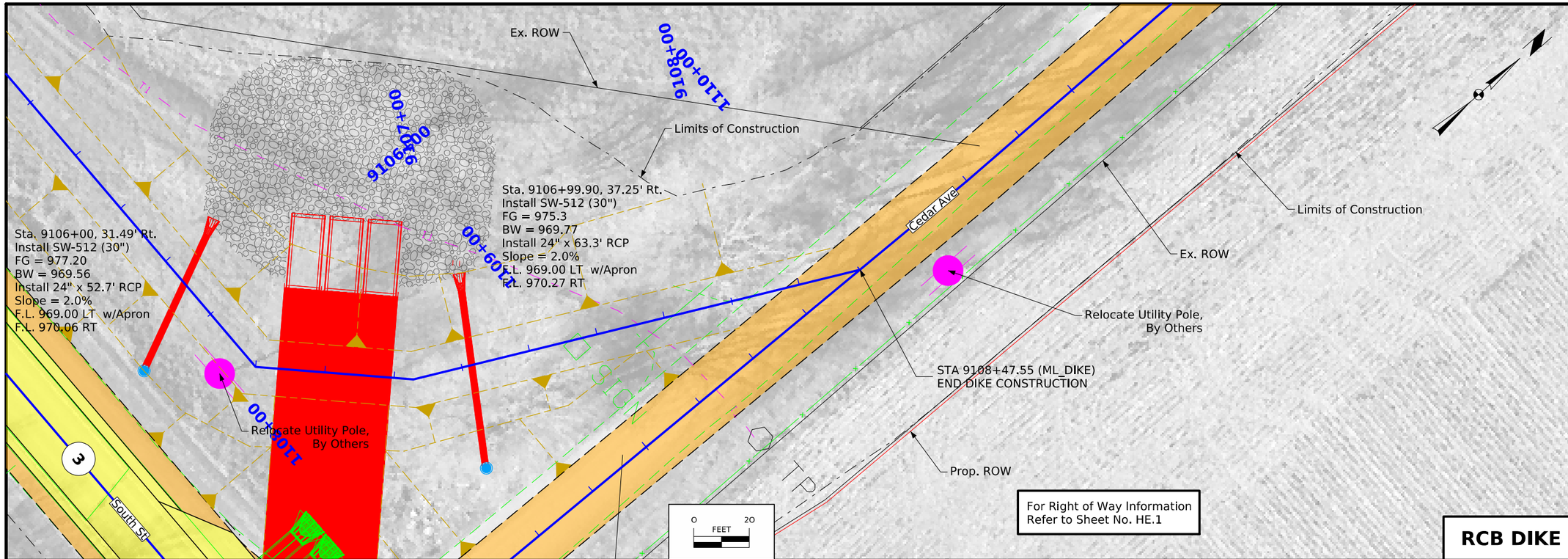

RCB DIKE

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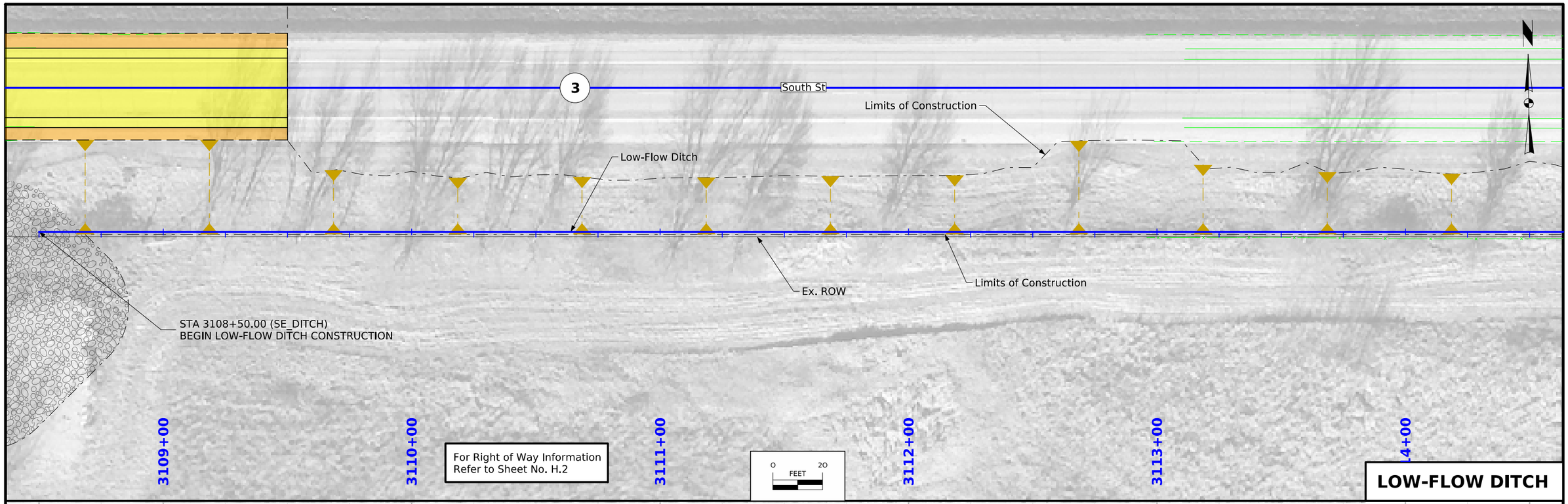

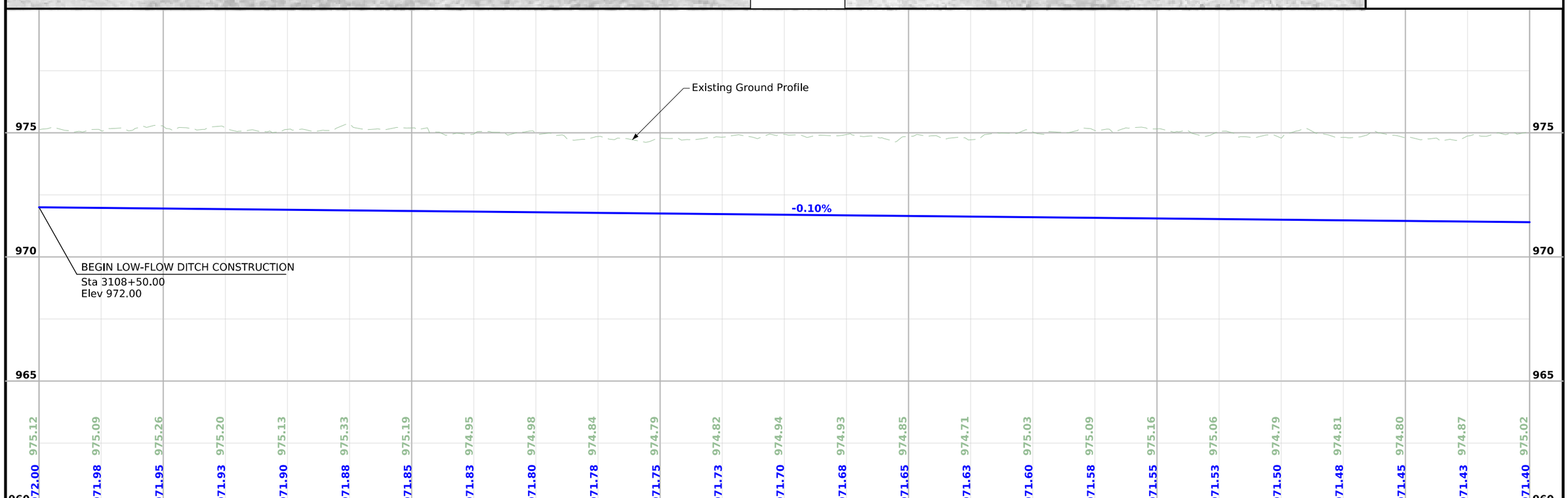

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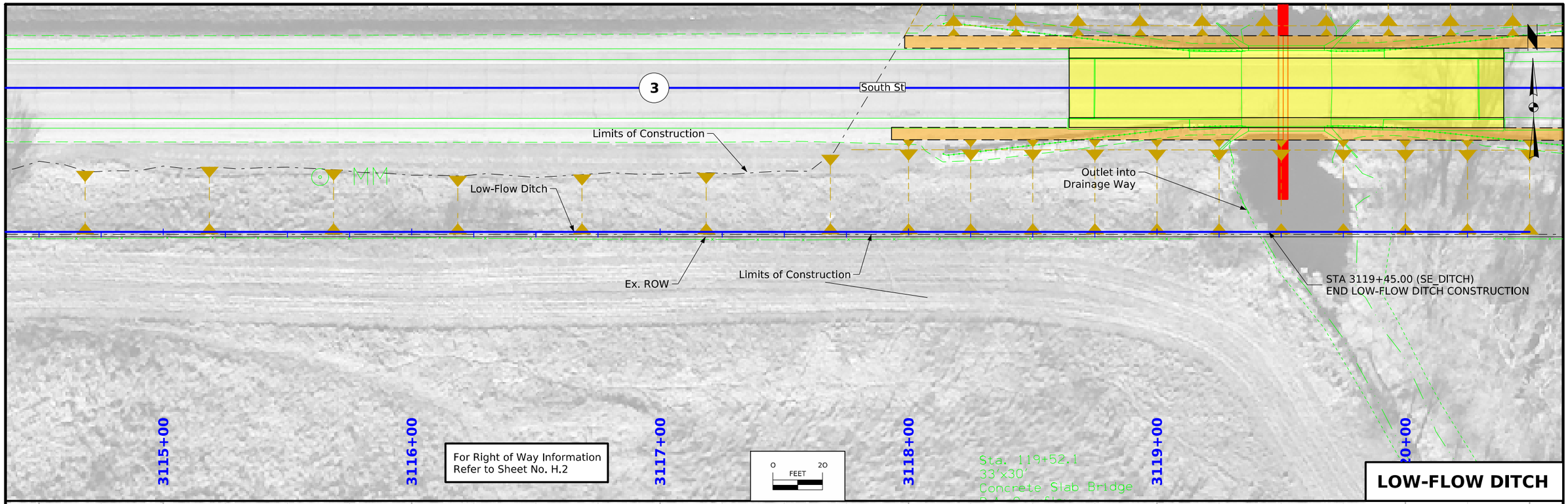

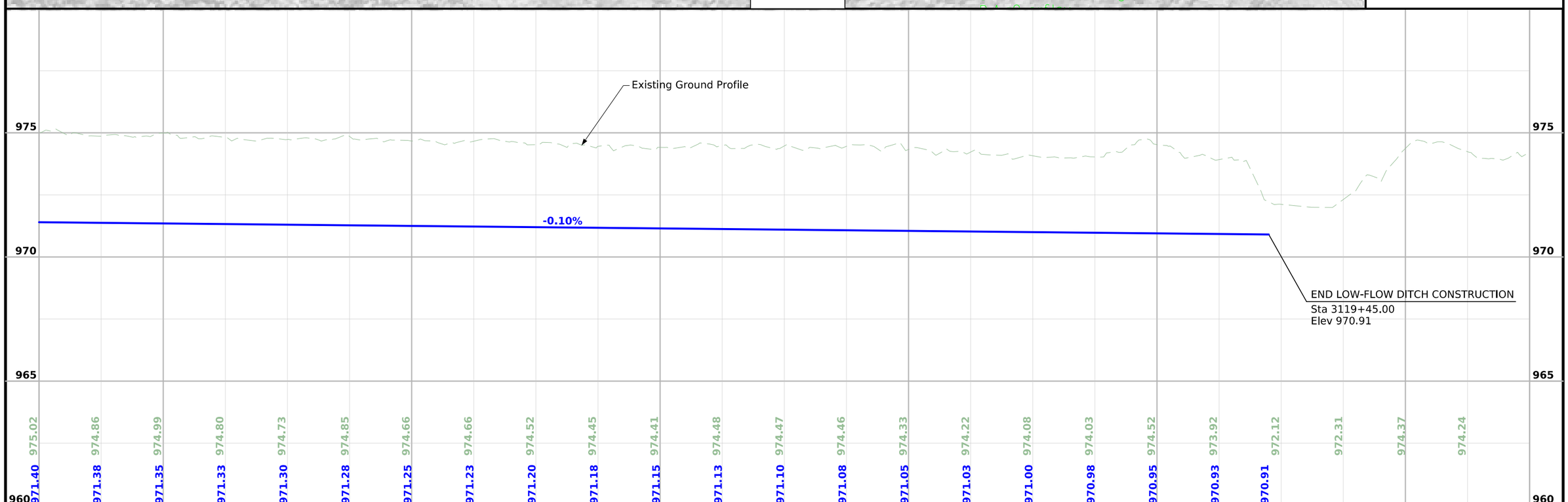

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER ED.4

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Survey Information

Butler County
BRFN-003-8(68)--39-12
PIN 19-12-003-010
IA 3 Additional Survey of IA 3 at Hartgrave Creek, Cedar Ave, and T-16 intersections
SAP 0588.3

General Information

Measurement units for this survey are US survey feet. Project datum and control was established using previously established control. This is an additional survey of IA 3. Starting 300 feet West and 300 feet East of Hartgrave Creek, from IA 3 North 2000 feet along Cedar Ave., and 700 feet West and 900 feet East of intersection T-16.

Vertical Control

Vertical datum for this survey is relative to NAVD88. Geoid 18 was used in this survey. CP1,CP2,K29,J29,105, and 171 were then calibrated from CP100. Additional benchmarks were placed throughout the project using RTK GPS.

BM#500 EL=975.929,Set RR Spk E Side Fence Post
BM#501 EL=974.582,Fd IHC on InHdwl
BM#502 EL=990.717, Fd IHC NE Wing of Br
BM#503 EL=991.232, Fd IHC SW Wing of Br
BM#504 EL=978.338, Set RR Spk S Side PP
BM#505 EL=981.423, Set RR Spk S Side PP
BM#506 EL=976.890, Set RR Spk S Side PP
BM#507 EL=977.712, Set RR Spk W Side PP
BM#508 EL=983.603, Set RR Spk W Side PP
BM#509 EL=975.959, Set RR Spk S Side PP
BM#510 EL=974.515, Fd IHC on InHdwl

Horizontal Control

The project coordinate system for this survey is IaRCS Zone 12(U.S. Survey Feet). This survey control is relative to 2-hour static sessions that were processed using OPUS. We establish 4 control points surrounding the perimeter of the project limits, observing each for 180 epochs. CP101-CP104 were then calibrated from CP100. Additional control points were placed throughout the project using GNSS Base-Rover setup relative to CP100.

Alignment Information

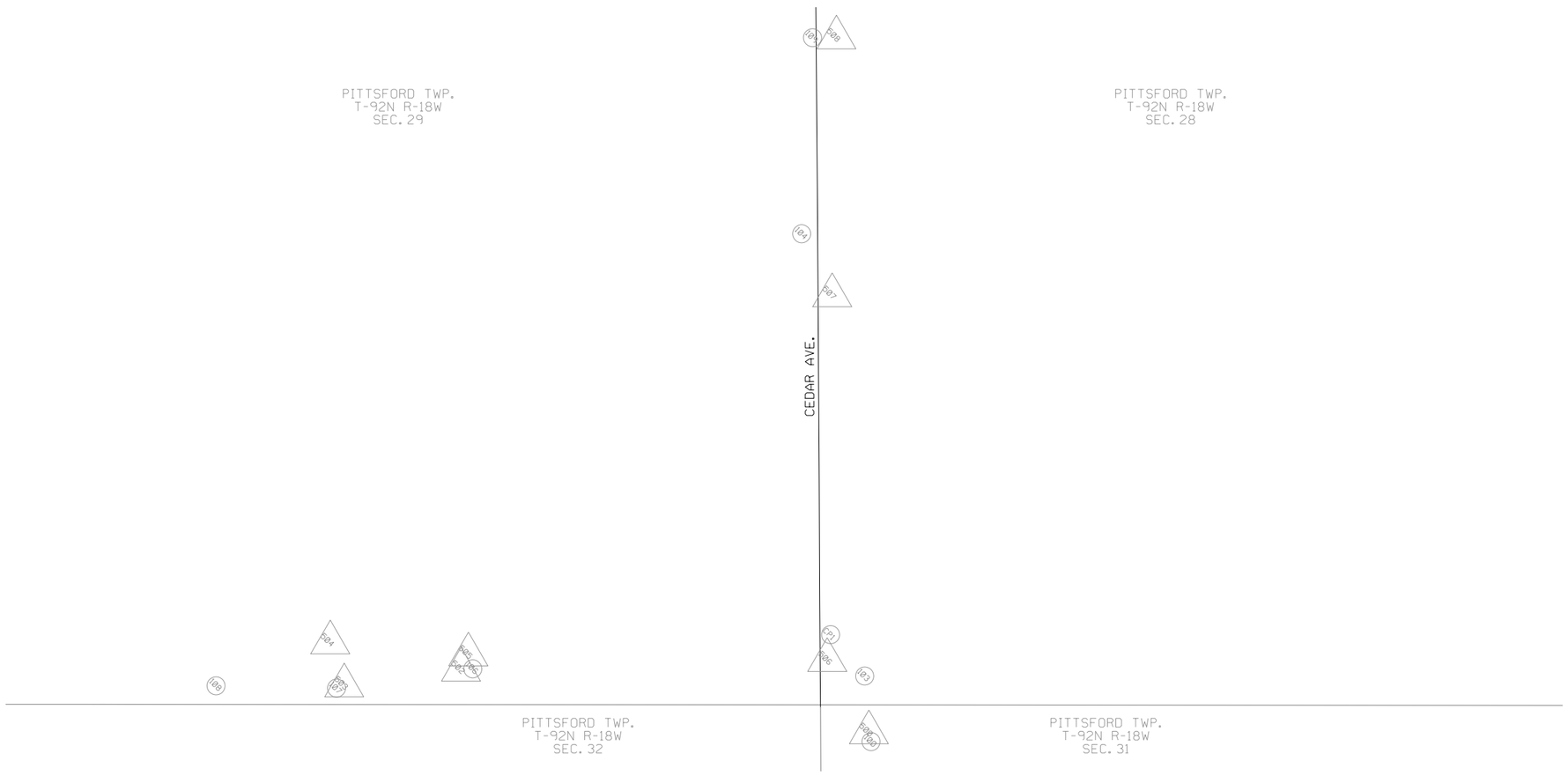
The horizontal alignment for this survey is a retrace of As-Built Grading & Paving Plans BRF-3-5(32)38-12. Survey stationing was equated to the plan POT at STA 107+41.70 at point #5559, Found Mag Nail Flush in Pavement, and run back and forward without equation to the throughout the survey.

Survey stationing relates to as-built plan stationing as follows:

POT Sta. 107+41.70 Project BRF-3-5(32)38-12
Survey PI Sta. 9107+41.70

CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points
Primary control is for use with RTK base stations and for RTN validation.
Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



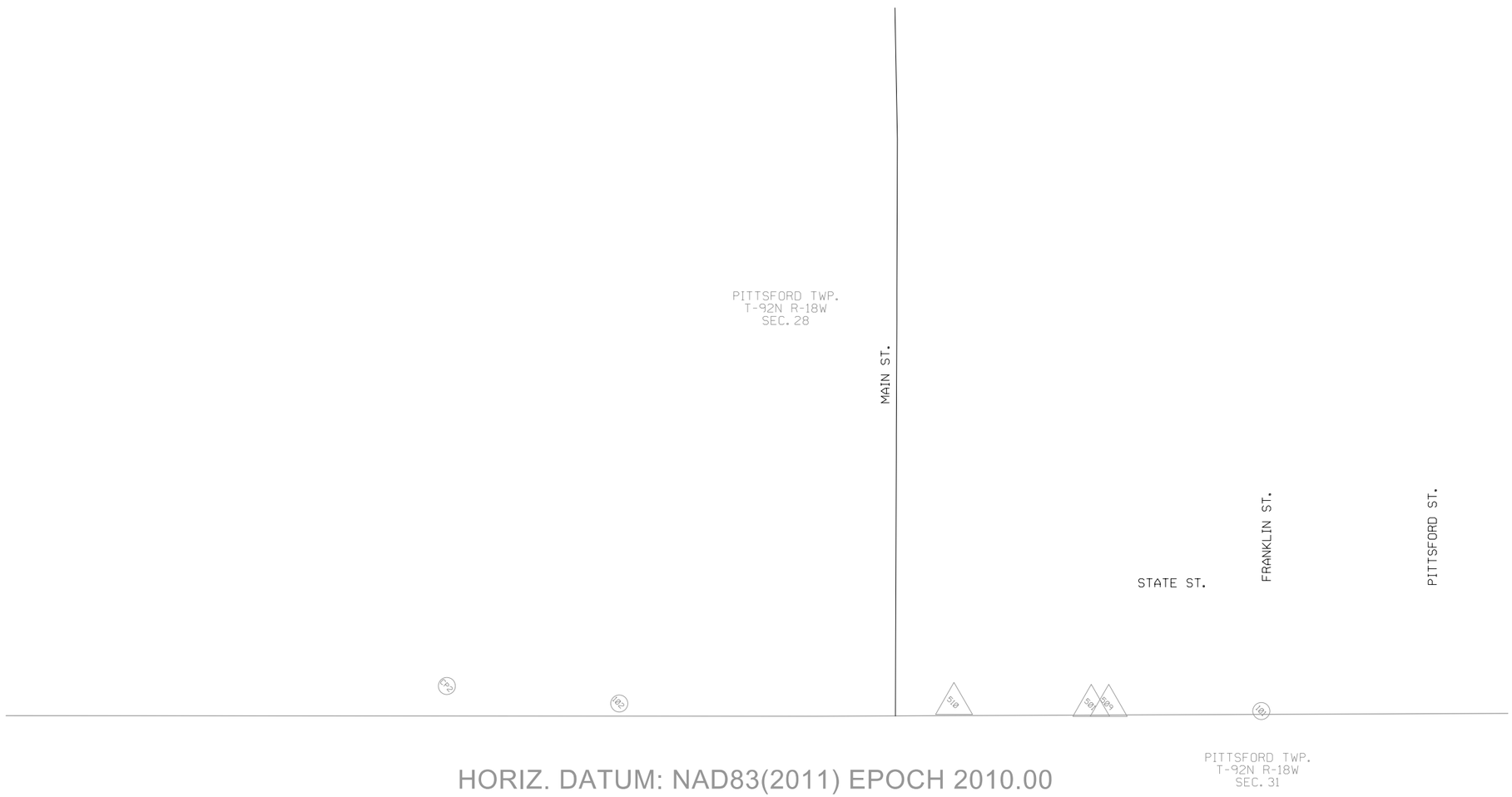
HORIZ. DATUM: NAD83(2011) EPOCH 2010.00
VERT. DATUM: NAVD88
Ia. Regional Coordinate System Zone 5

Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points

Primary control is for use with RTK base stations and for RTN validation.
Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 5

Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

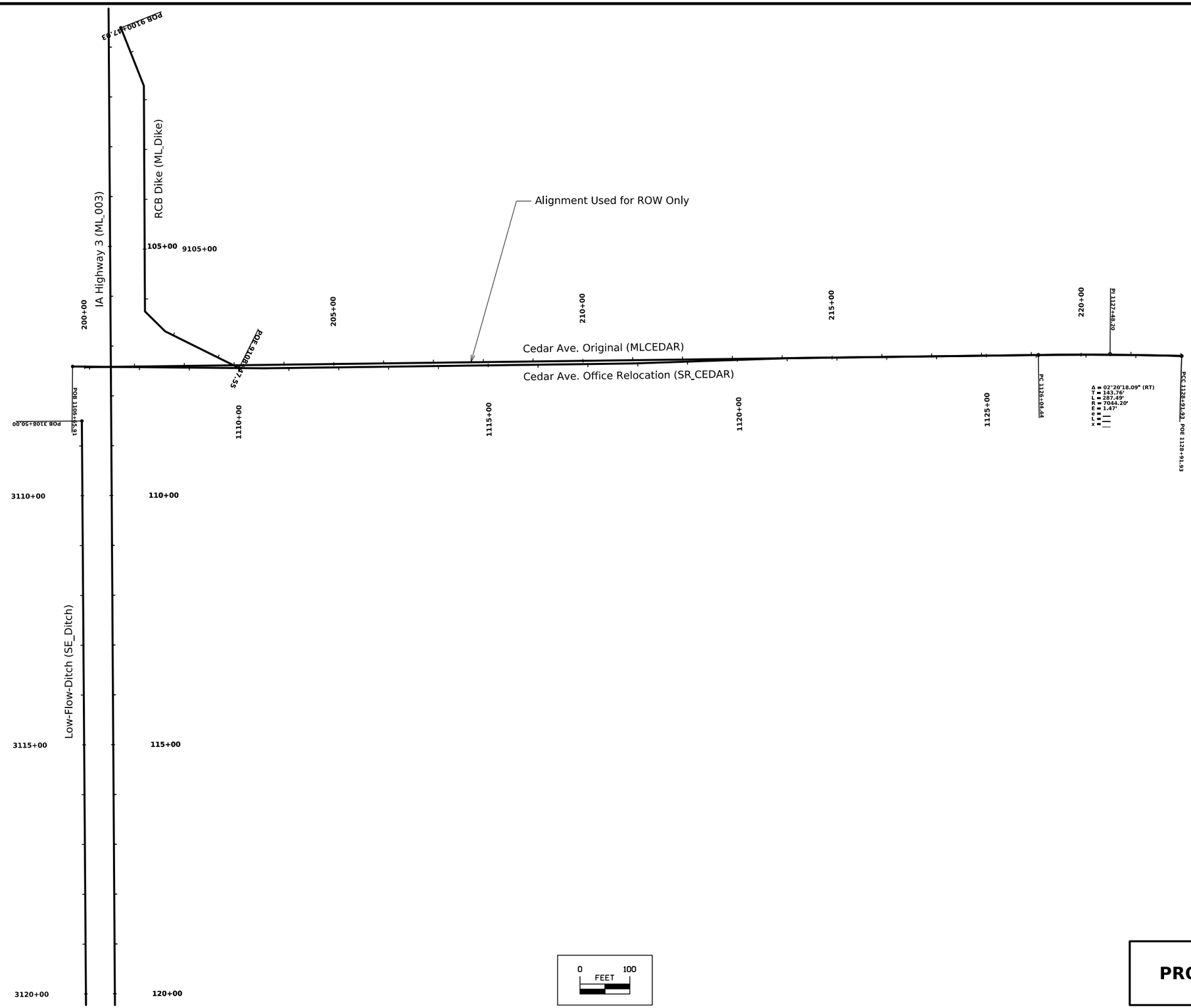
HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 5

Point Name	Northing	Easting	Elevation	Feature Definition	Description
100	8935343.862	15302436.852	975.177	CP	Set Rebar
101	8935442.788	15306702.644	974.912	CP	Cut "X" on SW Corner of Intake
102	8935461.931	15305073.316	976.061	CP	Set Rebar 6" Deep
103	8935500.988	15302421.493	979.908	CP	Set Rebar 6" Deep
104	8936800.317	15302270.392	978.460	CP	Set Rebar 6" Deep
105	8930888.341	15291547.783	998.738	CP	FD Butler Co GPS 98-105
106	8935518.539	15301470.039	987.706	CP	Set Rebar 6" Deep
107	8935472.251	15301164.757	987.756	CP	Set Rebar 6" Deep
108	8935477.650	15300866.643	986.537	CP	Set Rebar 6" Deep
171	8930104.231	15307574.092	971.825	CP	FD Butler Co GPS 171
CP1	8935600.139	15302339.894	977.008	CP	FD IDOT ROW Rail Drilled Hole in Ball
CP2	8935506.222	15304635.695	976.919	CP	FD IDOT ROW Rail Drilled Hole in Ball
J29	8941284.354	15291757.551	990.649	CP	FD USC&GS BM J29
K29	8938176.729	15300994.796	990.474	CP	FD USC&GS BM K29
500	8935364.127	15302436.356	975.929	BM	RR Spk E Side Fence Post
501	8935454.838	15306275.709	974.582	BM	Fd IHC on InHdwl
502	8935514.086	15301458.490	990.717	BM	Fd IHC NE Wing of Br
503	8935476.383	15301178.422	991.232	BM	Fd IHC SW Wing of Br
504	8935579.425	15301145.026	978.338	BM	Set RR Spk S Side PP
505	8935550.529	15301476.135	981.423	BM	Set RR Spk S Side PP
506	8935537.476	15302336.516	976.890	BM	Set RR Spk S Side PP
507	8936650.762	15302348.535	977.712	BM	Set RR Spk W Side PP
508	8937473.008	15302358.448	983.603	BM	Set RR Spk W Side PP
509	8935452.281	15306290.887	975.959	BM	Set RR Spk S Side PP
510	8935459.694	15305927.501	974.515	BM	Fd IHC on InHdwl



PROJECT ALIGNMENTS

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER G.5

10:32:32 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_G05.dgn

ALIGNMENT COORDINATES

Line No.	Name	Location	Point on Tangent Station	Point on Tangent Y Northing	Point on Tangent X Easting	Begin Spiral Station	Begin Spiral Y Northing	Begin Spiral X Easting	Begin Curve Station	Begin Curve Y Northing	Begin Curve X Easting	Simple Curve PI or Master PI Station	Simple Curve PI or Master PI Y Northing	Simple Curve PI or Master PI X Easting	End Curve Station	End Curve Y Northing	End Curve X Easting	End Spiral Station	End Spiral Y Northing	End Spiral X Easting
1.0	Iowa Highway 3																			
2.0	1	ML_003	74+00.00	8935533.696	15298967.95															
3.0	2	ML_003	107+41.72	8935479.505	15302309.23															
4.0	3	ML_003	160+10.44	8935404.872	15307577.42															
5.0																				
6.0	Cedar Ave.	OR																		
7.0	1	SR_Cedar	1106+65.91	8935403.733	15302306.927															
8.0	2	SR_Cedar	1110+50.05	8935787.695	15302318.6															
9.0	3	SR_Cedar	1113+90.18	8936127.815	15302321.45															
10.0	4	SR_Cedar	1117+90.18	8936527.801	15302324.8															
11.0	5	SR_Cedar	1121+09.56	8936847.15	15302320.72															
12.0	6	SR_Cedar							1126+04.44	8937342.014	15302324.87	1127+48.21	8937485.773	15302326.07	1128+91.93	8937629.363	15302333.14			
13.0																				
14.0	RCB Dike																			
15.0	1	ML_Dike	9100+47.03	8935514.937	15301629.42															
16.0	2	ML_Dike	9101+72.14	8935558.638	15301746.65															
17.0	3	ML_Dike	9106+25.00	8935551.295	15302199.45															
18.0	4	ML_Dike	9106+82.00	8935590.939	15302240.41															
19.0	5	ML_Dike	9108+47.55	8935737.666	15302317.08															
20.0																				
21.0	Low Flow Ditch																			
22.0	1	SE_Ditch	3108+50.00	8935419.977	15302416.68															
23.0	2	SE_Ditch	3114+00.00	8935412.186	15302966.62															
24.0	3	SE_Ditch	3120+50.00	8935402.979	15303616.56															
25.0																				
26.0	Cedar Ave*	Original																		
27.0	1	MLCedar	200+00.00	8935427.937	15302308.82															
28.0	2	MLCedar							219+14.14	8937342.014	15302324.87	220+57.91	8937485.773	15302326.07	222+01.63	8937629.363	15302333.14			

* Used for Right-of-Way Only

SPIRAL OR CIRCULAR CURVE DATA

Line No.	Name	Location	SCS	S	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	C	T	L	R	E	Remarks
1.0	SR_Cedar	4										2.338 Right	143.764	287.488	7044.195	1.467	
2.0																	
3.0	MLCedar*	2										2.338 Right	143.764	287.488	7044.195	1.467	

* Used for Right-of-Way only

1

IOWA DEPARTMENT OF
NATURAL RESOURCES

PROPERTY RIGHTS OBTAINED
VIA SOVEREIGN LAND PERMIT

CEDAR AVE

N

TP

SIGN

IA 3

PITTSFORD TWP.
T-92N R-18W
SEC. 32

0 50
FEET

Right of Way Design Information

THIS SHEET INCLUDED
FOR INFORMATION ONLY

ROW Team: CARMAN / CUVA
ROW #: NHSN-003-5(84)--2R-12
Plan Date: 04/19/2022
Color Legend:
Property Lines
Temporary Easement
Permanent Acquisition

FILE NO.	ENGLISH	DESIGN TEAM WHKS & CO.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER H.1

11:58:19 AM 3/29/2023 afredri pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\1200301019\ROW\ROW_12003084.dgn

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2

J. DAVID SCHUSTER

IA 3

PROPERTY RIGHTS OBTAINED
VIA SOVEREIGN LAND PERMIT

1

IOWA DEPARTMENT OF
NATURAL RESOURCES

PITTSFORD TWP.
T-92N R-18W
SEC. 33

0 50
FEET

Right of Way Design Information
THIS SHEET INCLUDED FOR INFORMATION ONLY
ROW Team: CARMAN / CUVA
ROW #: NHSN-003-5(84)--2R-12
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Color Legend:
Property Lines
Temporary Easement
Permanent Acquisition

FILE NO.	ENGLISH	DESIGN TEAM WHKS & CO.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER H.2

11:58:32 AM 3/29/2023 afredri pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\1200301019\ROW\ROW_12003084.dgn

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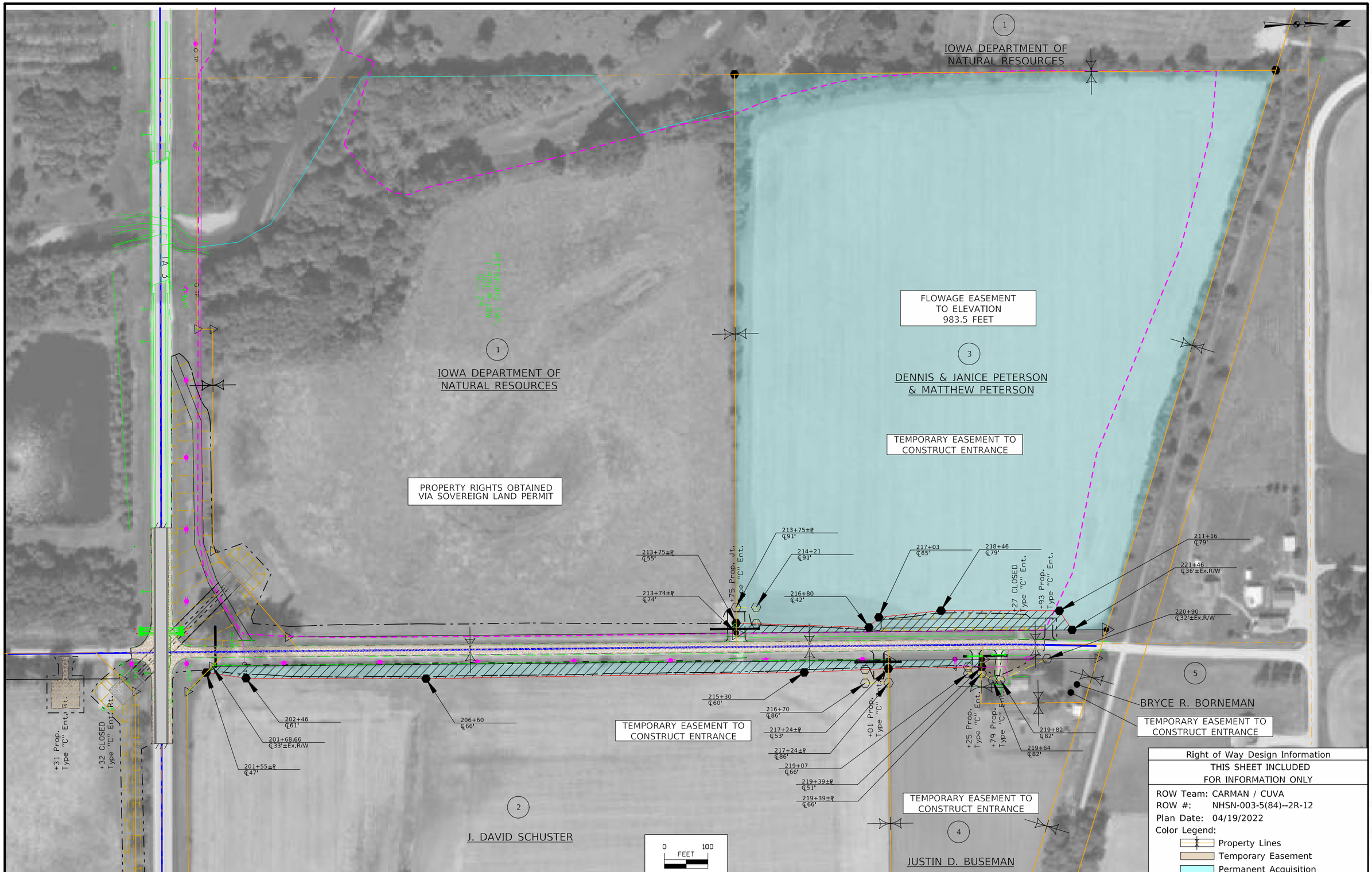

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108_23A
8/15/22

TRAFFIC CONTROL PLAN

This project will utilize a full road closure per Standard Road Plan TC-252.
EB & WB traffic on IA 3 will be detoured around the project. Refer to Sheet Nos. J.5 & J.6 for detour details.
Installation, Maintenance and removal of the detour signage shall be the responsibility of the Contractor.

108_26A
8/15/22

STAGING NOTES

The project shall be staged as follows:

Phase 1:

Complete major work activities associated with the Triple RCB: Grading the closure dike in the NW corner of IA 3 and Cedar Ave., Removal of the twin 72" RCP's, raising IA 3 at the Cedar Ave. Intersection (to Station 1111+50), grade the low flow ditch.

Phase 2:

Raise Cedar Ave., remove overflow bridge and place RCP culvert with flap gate.

The intent of this phasing plan is to maintain the Hartgraves Creek overflow bridge until the Triple RCB culvert is in operation.

The Contractor may submit an alternative Staging plan for approval by the Engineer.

111_01
10/14/22

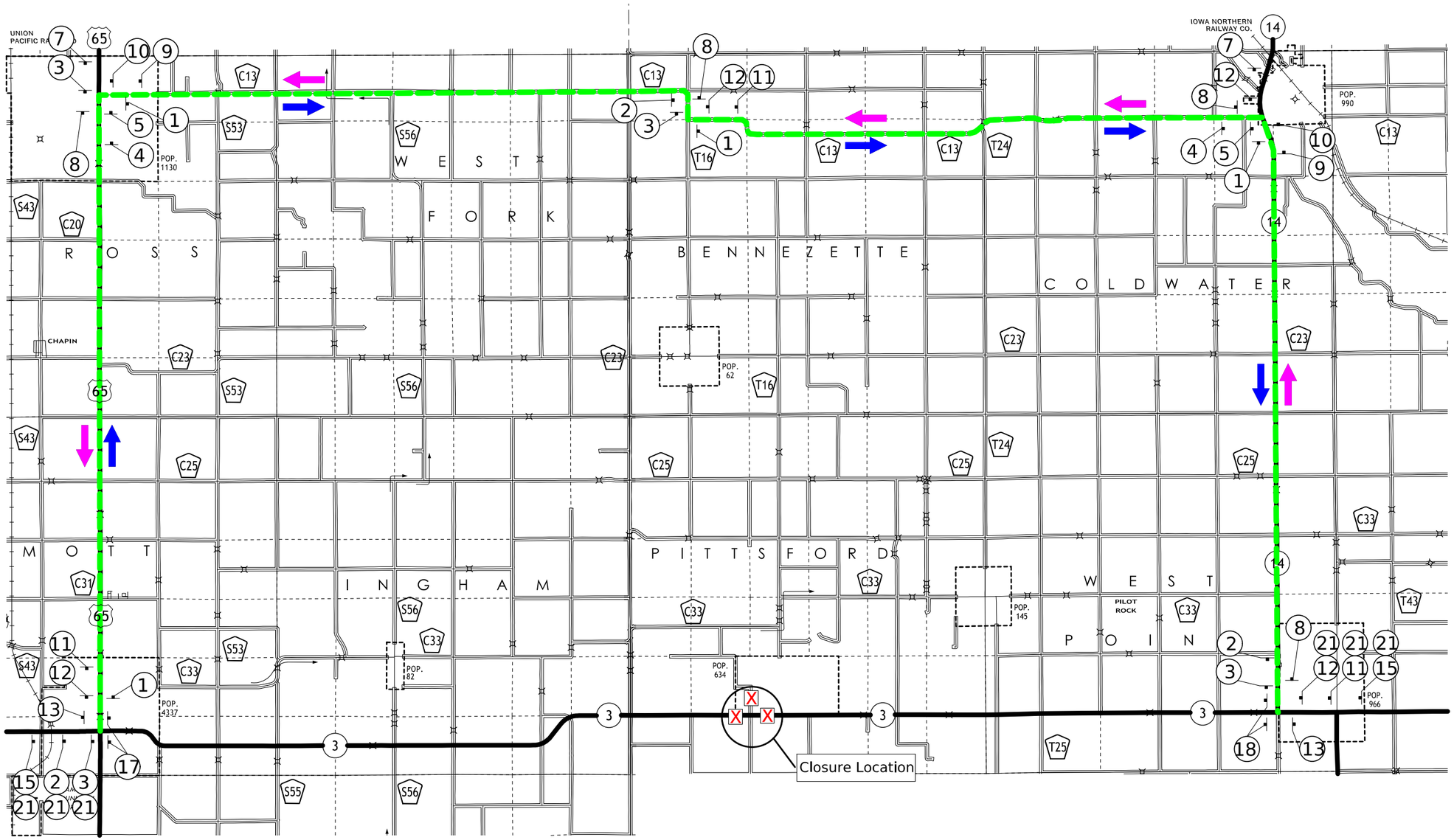
COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
Butler Co RD T16	HMA Resurfacing
Butler Co RD T25	Bridge Deck Overlay

511 TRAVEL RESTRICTIONS

Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
1.0	IA 3	EB	Butler	Cedar Ave.	N/A			None					Road Closed



Map Not to Scale

IA HWY 3
DETOUR ROUTE

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER J.5

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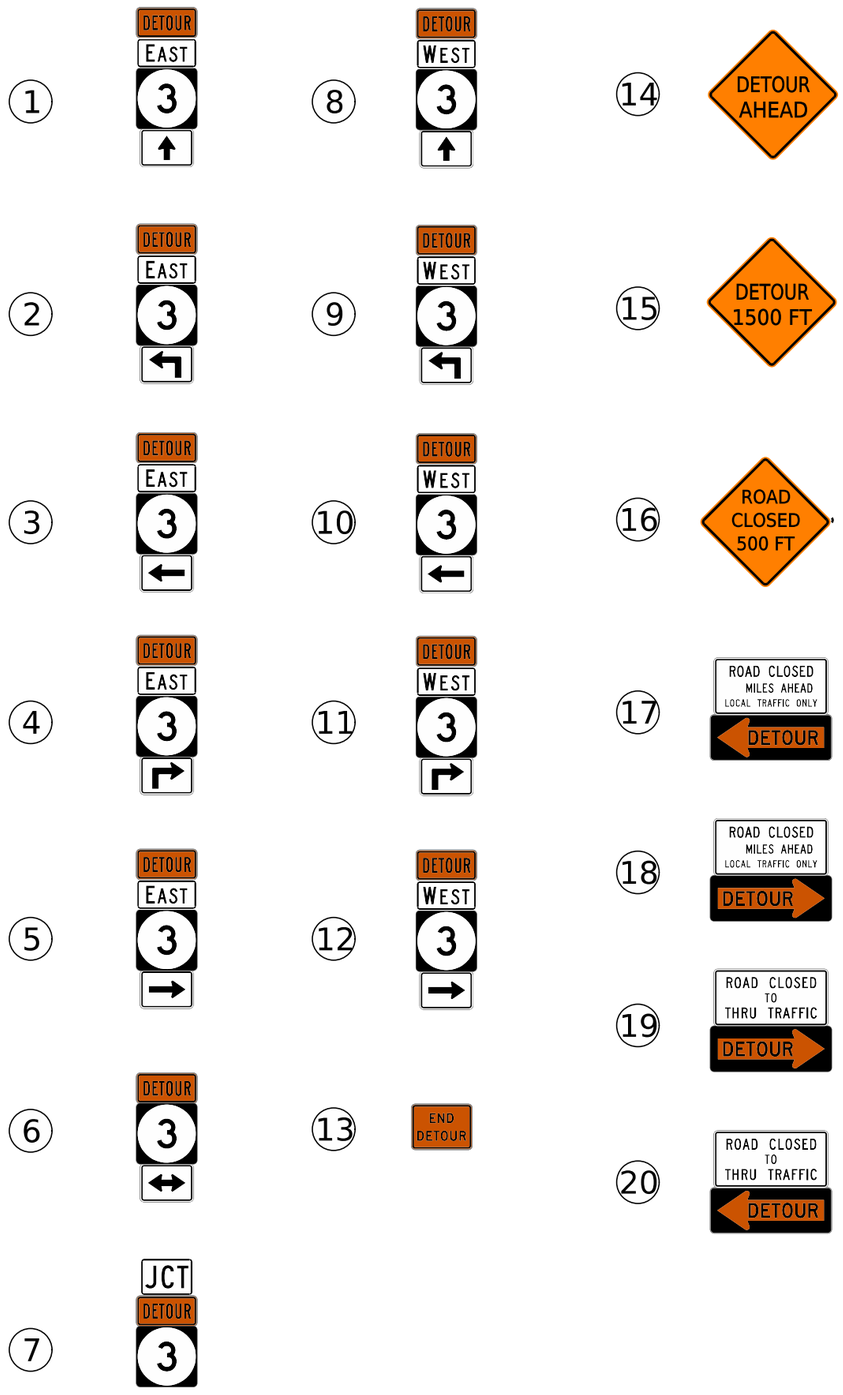
DETOUR SIGNING LAYOUTS



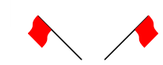
Notes:

Sign layouts 17 through 20 shall be attached to a Type III Barricade.

SIGN INVENTORY

	MUTCD ID	Size
JCT	M2-1	21" x 15"
EAST	M3-2	24" x 12"
WEST	M3-4	24" x 12"
NORTH	M3-1	24" x 12"
SOUTH	M3-3	24" x 12"
DETOUR	M4-8	12" x 6"
3	M1-5	24" x 24"
122	M1-5	30" x 24"
18	M1-4	24" x 24"
169	M1-4	30" x 24"
INTERSTATE 35	M1-1	24" x 24"
INTERSTATE 380	M1-1	30" x 24"
ROAD CLOSED TO THRU TRAFFIC	R11-4	60" x 30"
ROAD CLOSED MILES AHEAD LOCAL TRAFFIC ONLY	R11-3A	60" x 30"
DETOUR	M4-10	48" x 18"
DETOUR	M4-10	48" x 18"
END DETOUR	M4-8A	24" x 18"

	MUTCD ID	Size
	M5-1	21" x 15"
	M5-1B	21" x 15"
	M6-1	21" x 15"
	M6-3	21" x 15"
	M6-6	21" x 15"
	M6-6B	21" x 15"
	M6-4	21" x 15"
	M5-2	21" x 15"
	M5-2B	21" x 15"
	M6-2	21" x 15"
	M6-2B	21" x 15"
DETOUR AHEAD	W20-2	48" x 48"
DETOUR 1500 FT	W20-2	48" x 48"
ROAD CLOSED 500 FT	W20-3	48" x 48"



High Level Warning Devices (Flag Trees) — Refer to MUTCD 6F.62 for more information

Notes:

1) More sign types may be referenced in the sign inventory than are used in the detour layout. Refer to the specific layout for additional details.

2) When a detour is established for any Interstate route, all M2, M3, M4, M5, and M6 series signs must use the blue background with white legend. Refer to the MUTCD Standard Highway Signs book for more information.

3) Route shields (M1-1, M1-4, M1-5) used for the detour signage must match that of the route that is being detoured. No substitutions will be allowed.

SIGN LEGEND

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- WH Water Hydrant (Rural)
- Septic Tank (Example Text and Line)
- C Cistern
- LP L.P. Gas Tank (No Footing)
- UST Underground Storage Tank
- Latrine
- Satellite TV Dish
- WHU Water Hook Up
- RT Radio Tower
- TA Tower Anchor
- Guardrail (Beam or Cable)
- GP Guard Post (one or two)
- Guard Post (over two)
- FP Filler Pipe
- GV Gas Valve
- WV Water Valve
- SL Speed Limit Sign
- MM Mile Marker Post
- SIGN Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box

UTILITY LEGEND

E1

MidAmerican Electric
Jordyn Weber
319-291-4728
jlweber@midamerican.com

G

MidAmerican Gas
Jordyn Weber
319-291-4728
jlweber@midamerican.com

SAN.

City of Dumon
Rhonda Schmidt
641-857-3441
citydumont@netins.net

T1

Dumont Telephone
Roger Kregel
641-857-3211
dumontel@netins.net

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.		
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING	**Design Color No.**		
Lavender	(9)		Temporary Pavement Shading
Yellow	(4)		Proposed Pavement Shading
Orange	(6)		Proposed Granular Shading
Orange	(70)		Proposed Shoulder Granular Shading
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)		Grading Shading
Orange, Light	(134)		Proposed Granular Entrance Shading
Yellow	(220)		Proposed Paved Entrance Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading
Green, Light	(225)		Existing Pavement Shading
Red	(3)		Proposed Structure Shading
Red	(3)		Delineates Restricted Areas

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.		
Green			Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

PATTERN AND SYMBOL LEGEND OF SOILS SHEETS

Date(s) Drilled 2022

- Drill
- Water
- Dry
- Sample
- Plugged
- Moisture
- Shelby
- Blow Count
- Dens. Core
- Dig/Core
- Treatment
- Sand Blanket
- Soil Remediation Area
- Select Soil
- Select Sand
- Slope Dressing Only
- Broken and Weathered Rock
- Rock
- Sandstone
- Unsuitable A
- Unsuitable B
- Unsuitable C
- Sandy Soil
- Boulders
- Shale

- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile

RIGHT-OF-WAY LEGEND

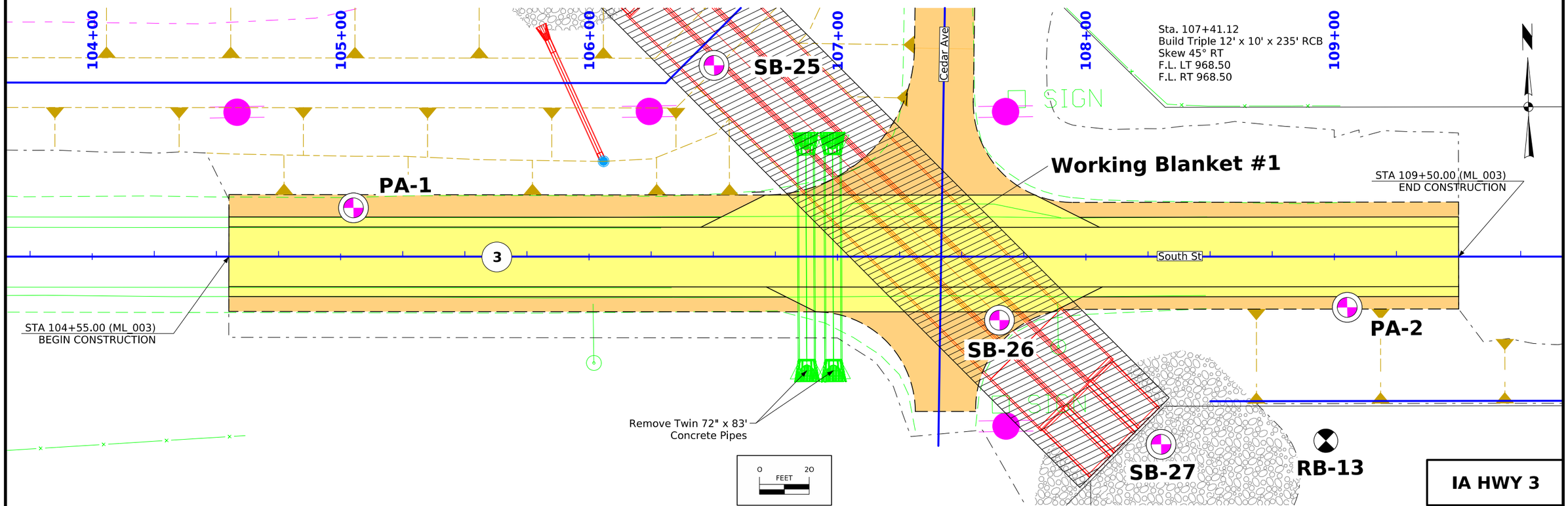
- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- C/A Access Control
- Property Line

NOTE: Sounding and test boring data shown in the plans were accumulated for designing and estimating purposes. Their appearance on the plans does not constitute a guarantee that conditions other than those indicated will be encountered. Details and notes shown elsewhere shall be used for roadway and structure construction.

SOILS LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES Q)

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.



IA HWY 3

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & CO./BRAUN INTERTEC	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER Q.2

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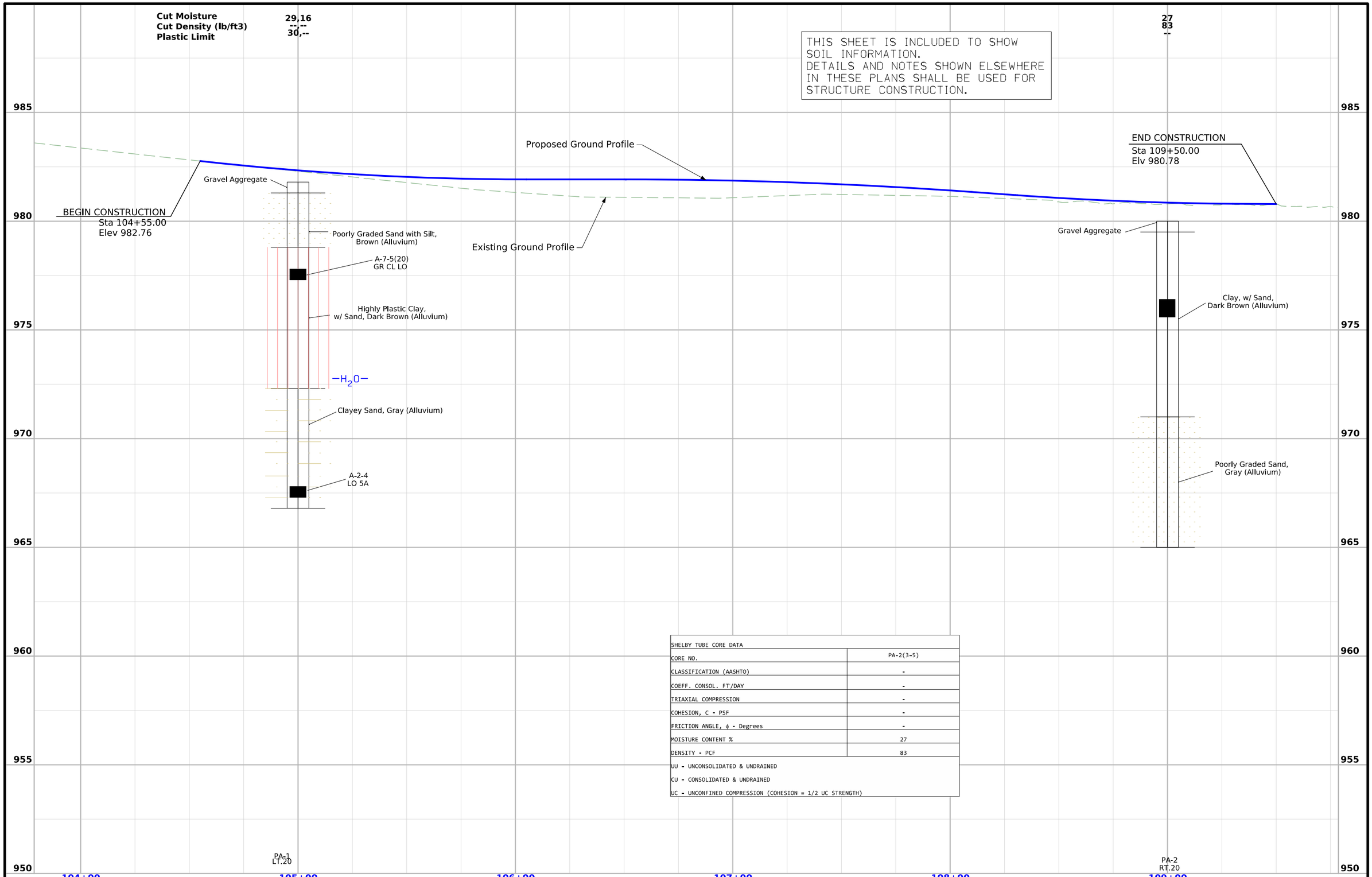

SHELBY TUBE CORE DATA	
CORE NO.	PA-2(3-5)
CLASSIFICATION (AASHTO)	-
COEFF. CONSOL. FT/DAY	-
TRIAXIAL COMPRESSION	-
COHESION, C - PSF	-
FRICTION ANGLE, ϕ - Degrees	-
MOISTURE CONTENT %	27
DENSITY - PCF	83

UU - UNCONSOLIDATED & UNDRAINED

CU - CONSOLIDATED & UNDRAINED

UC - UNCONFINED COMPRESSION (COHESION = 1/2 UC STRENGTH)

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & CO./BRAUN INTERTEC	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER Q.3

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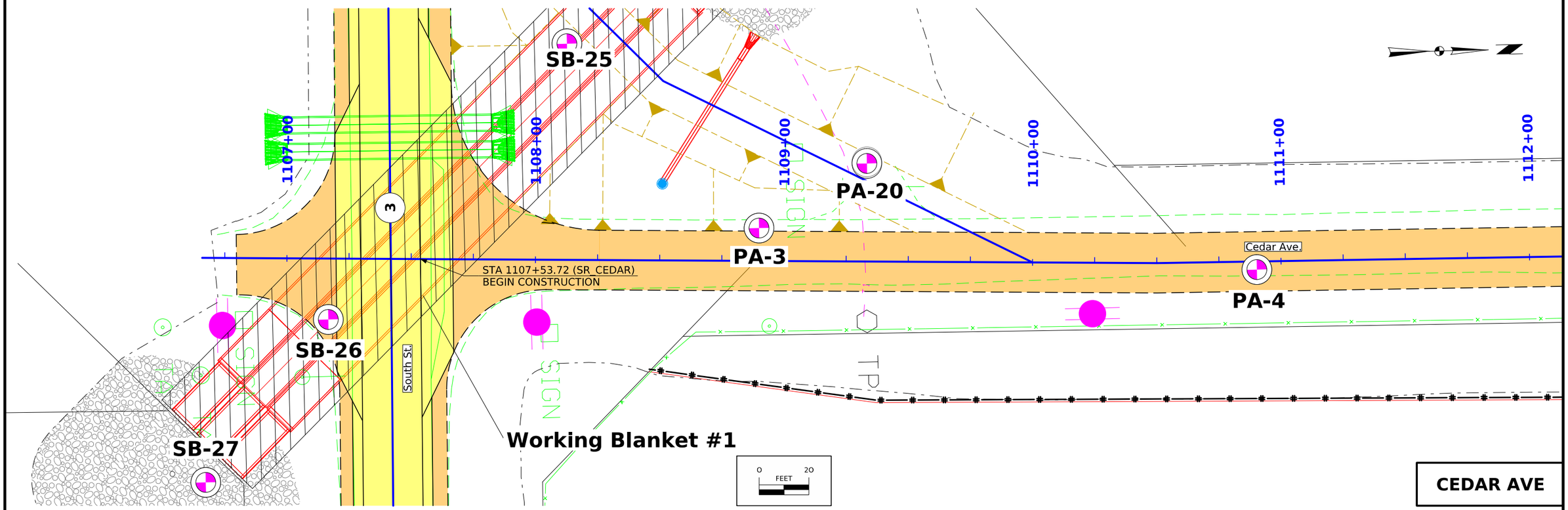
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.



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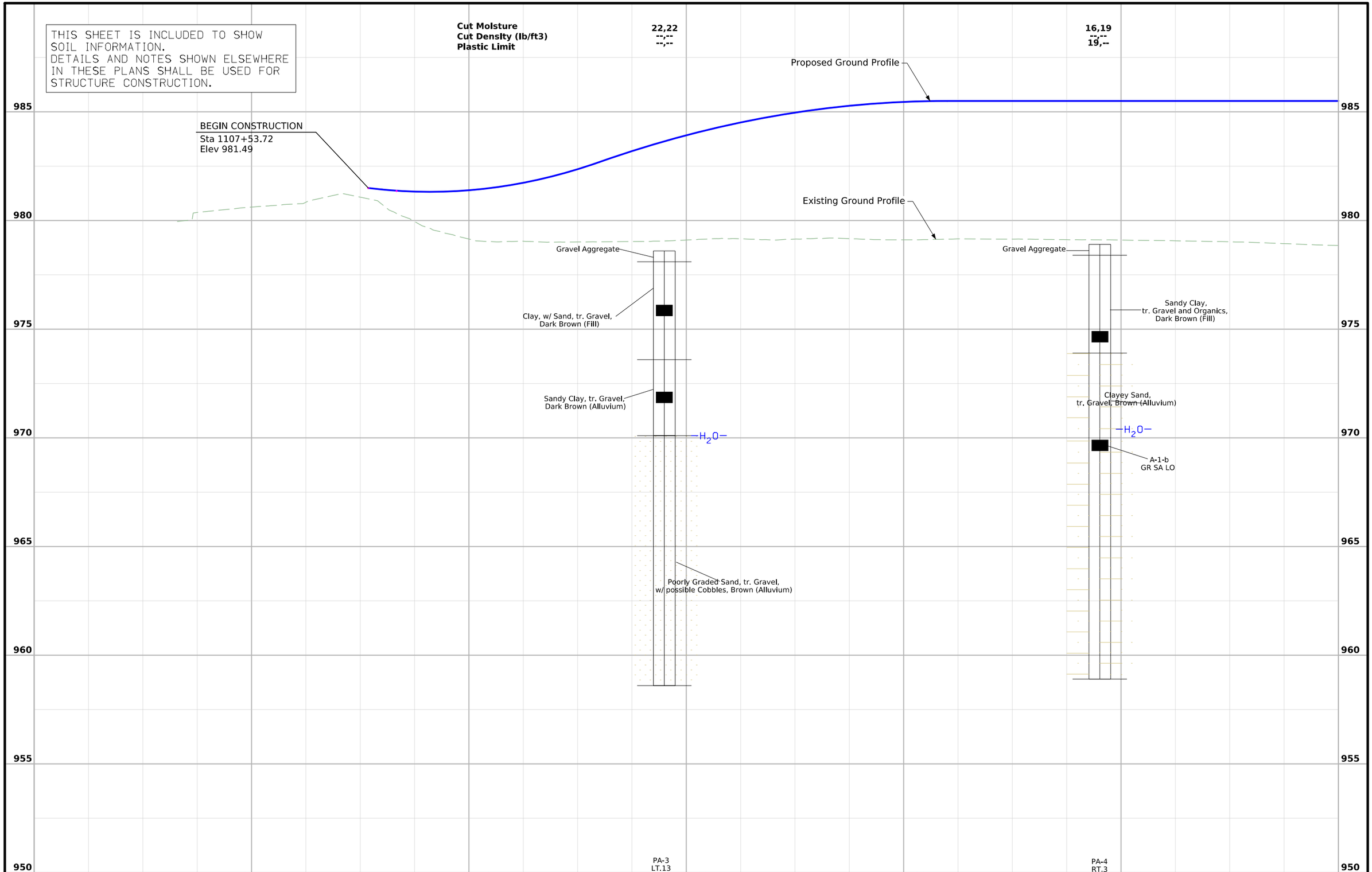
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.



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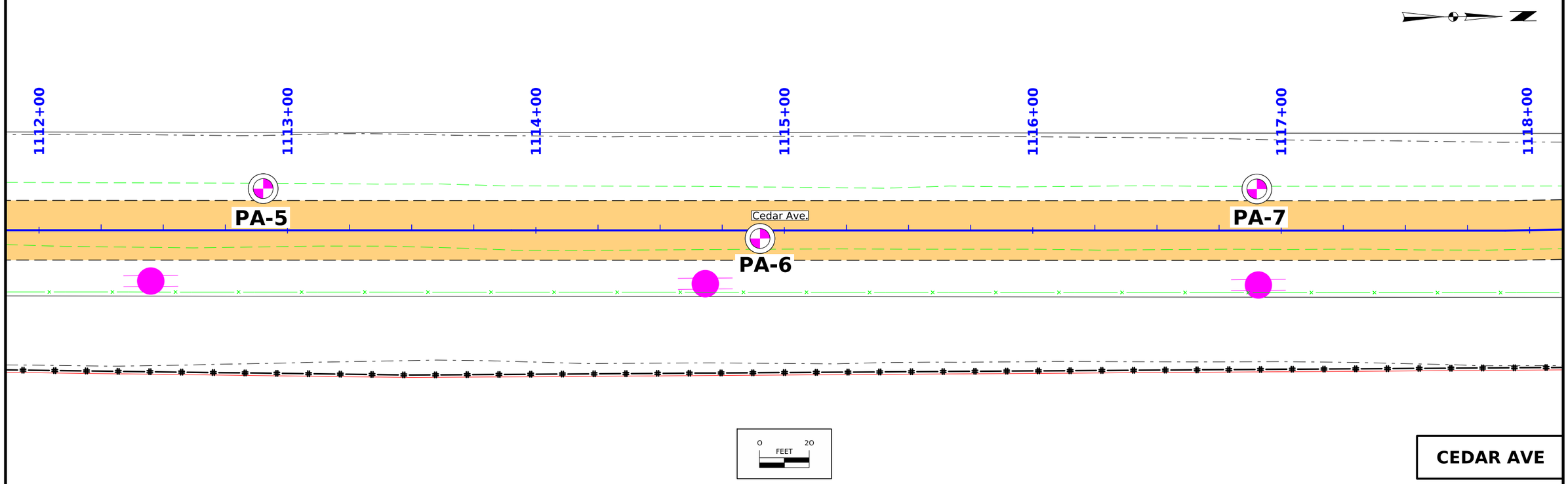
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.



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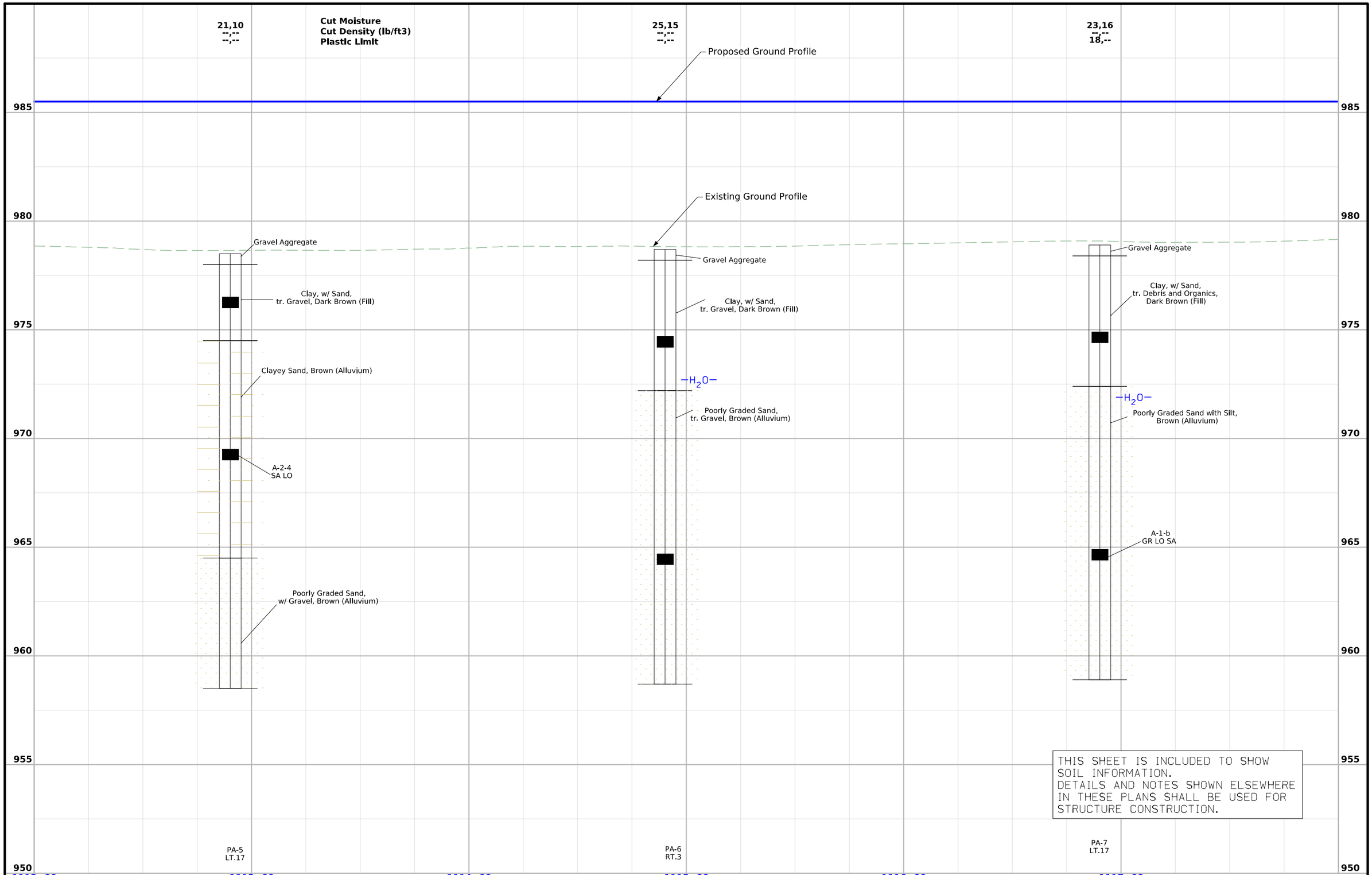
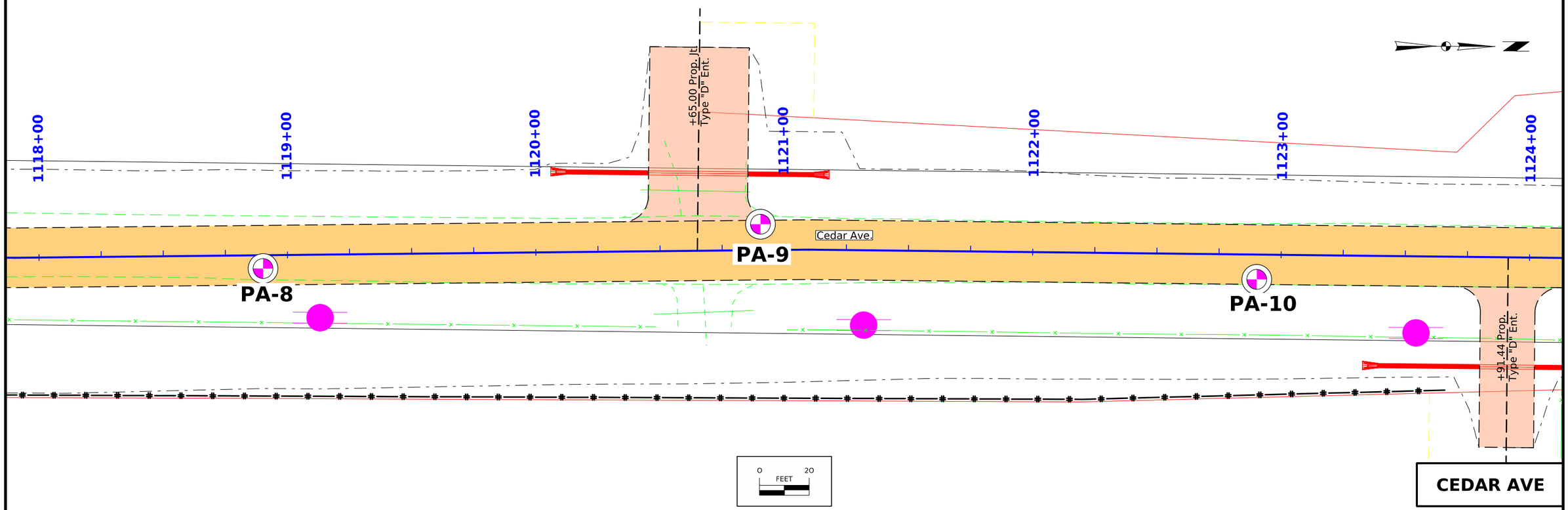


THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & CO./BRAUN INTERTEC	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER Q.7

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.



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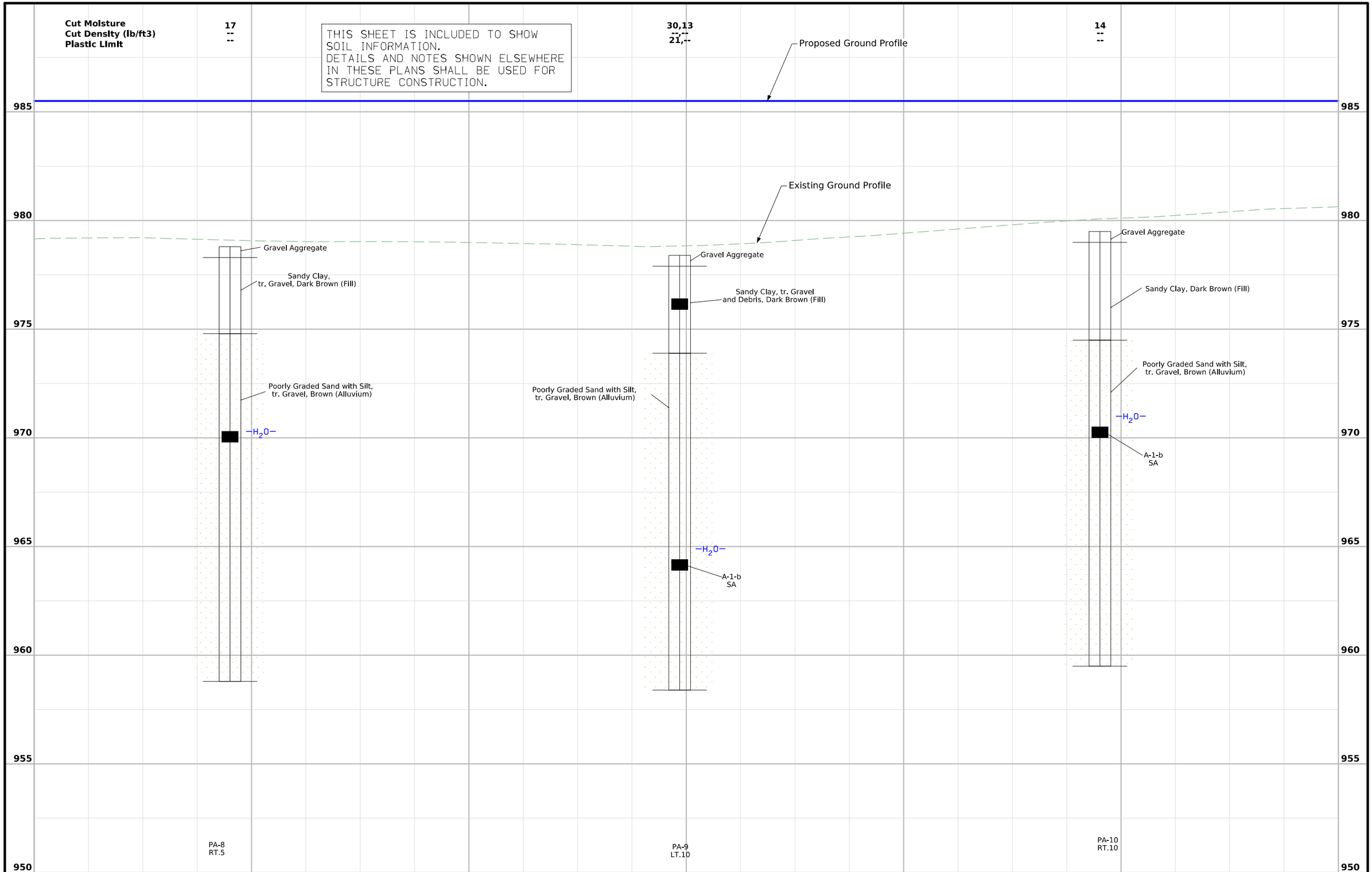

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & CO./BRAUN INTERTEC	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER Q.9

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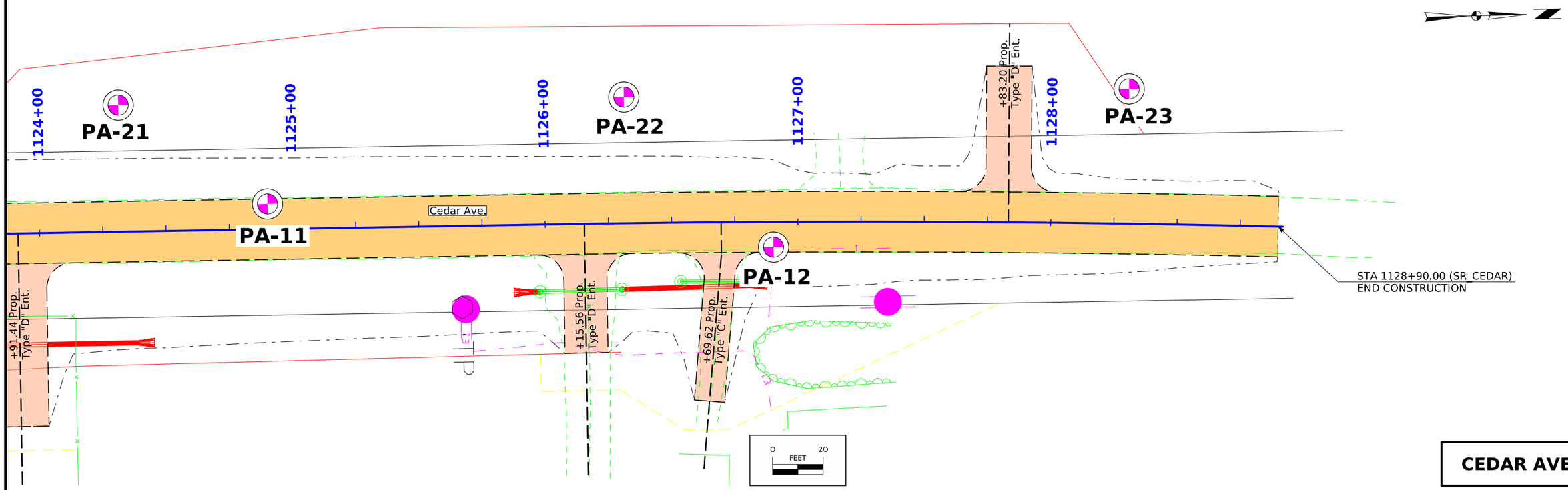
THIS SHEET IS INCLUDED TO SHOW
SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE
IN THESE PLANS SHALL BE USED FOR
STRUCTURE CONSTRUCTION.



CEDAR AVE

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & CO./BRAUN INTERTEC	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER Q.10

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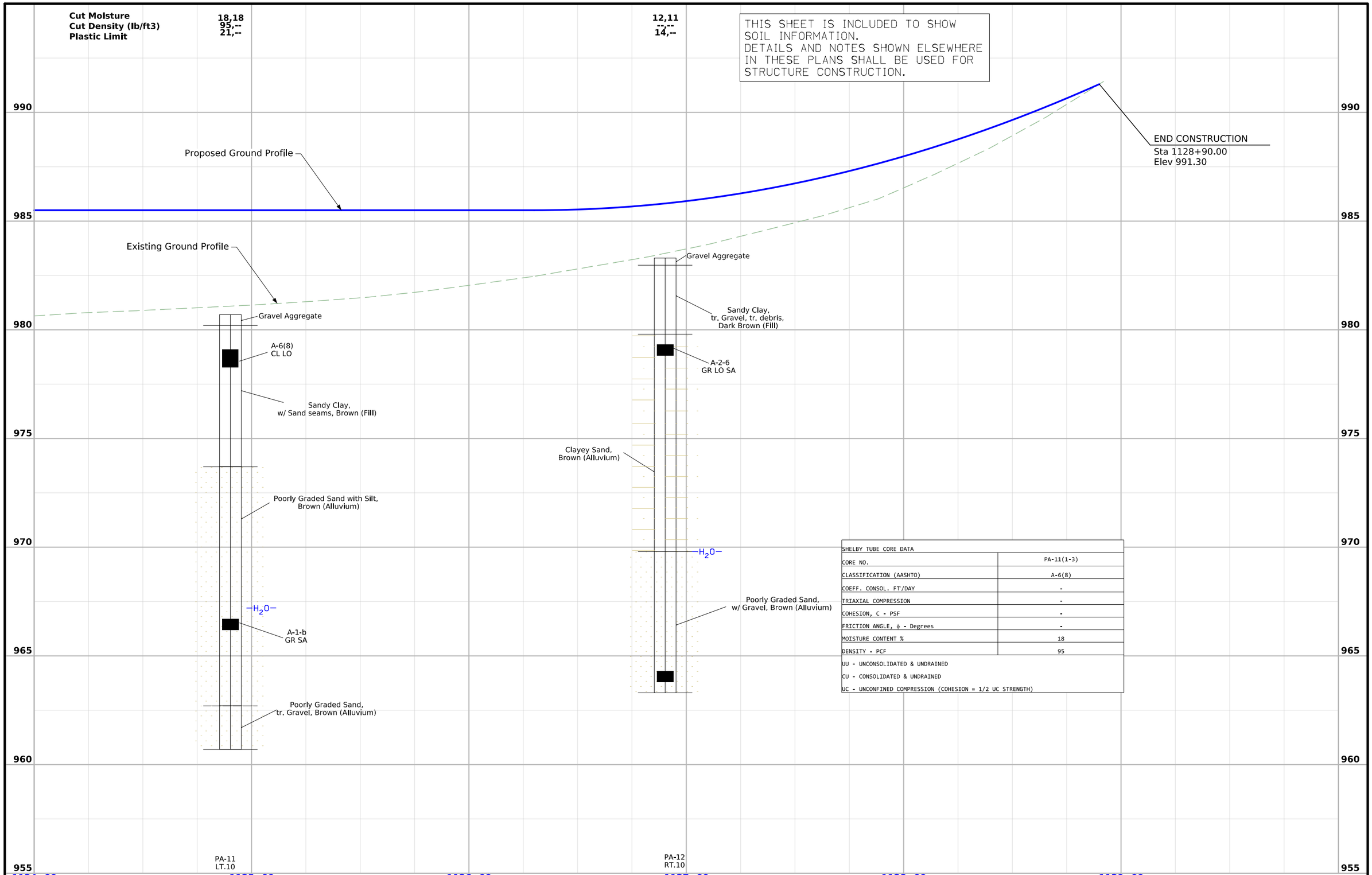

SHELBY TUBE CORE DATA	
CORE NO.	PA-11(1-3)
CLASSIFICATION (AASHTO)	A-6(8)
COEFF. CONSOL. FT/DAY	-
TRIAXIAL COMPRESSION	-
COHESION, C - PSF	-
FRICTION ANGLE, ϕ - Degrees	-
MOISTURE CONTENT %	18
DENSITY - PCF	95

UU - UNCONSOLIDATED & UNDRAINED

CU - CONSOLIDATED & UNDRAINED

UC - UNCONFINED COMPRESSION (COHESION = 1/2 UC STRENGTH)

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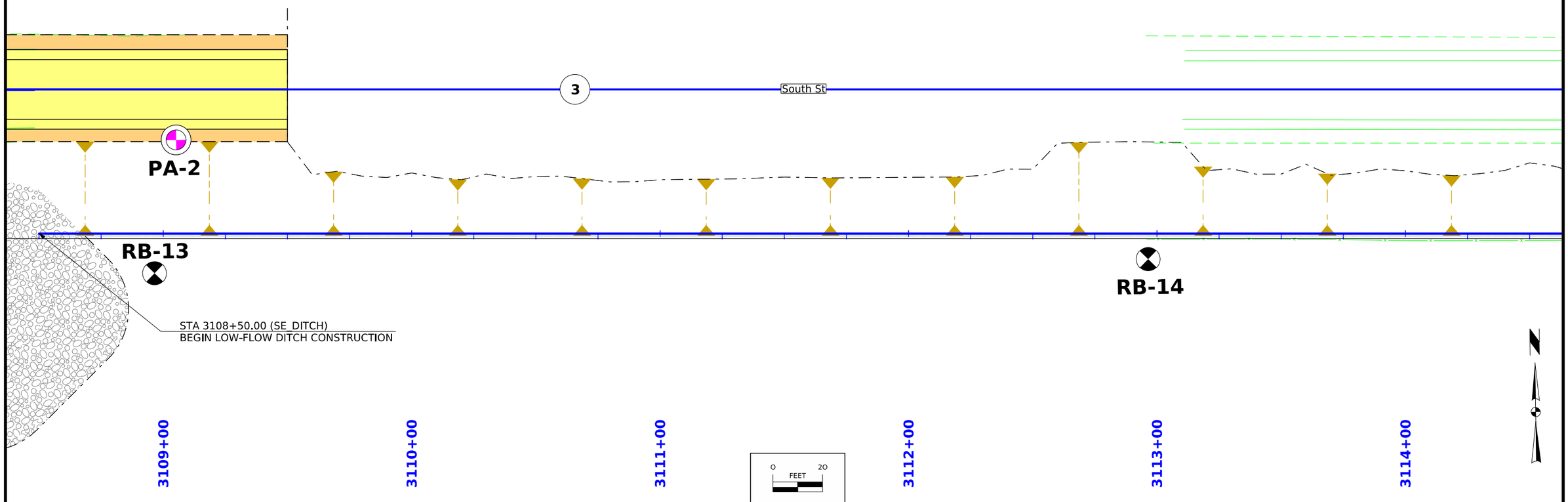

LOW-FLOW DITCH

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & CO./BRAUN INTERTEC	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER Q.12

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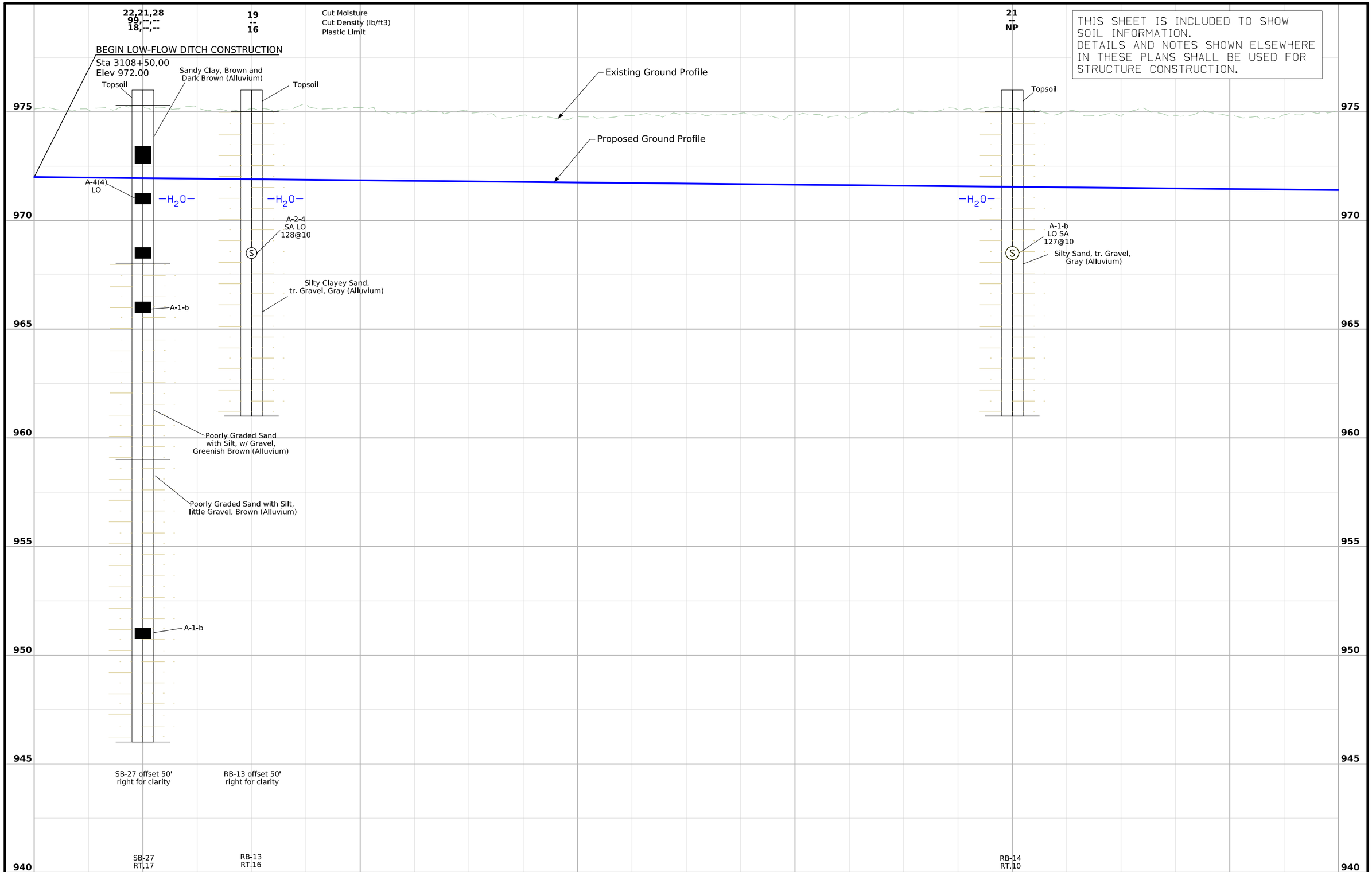

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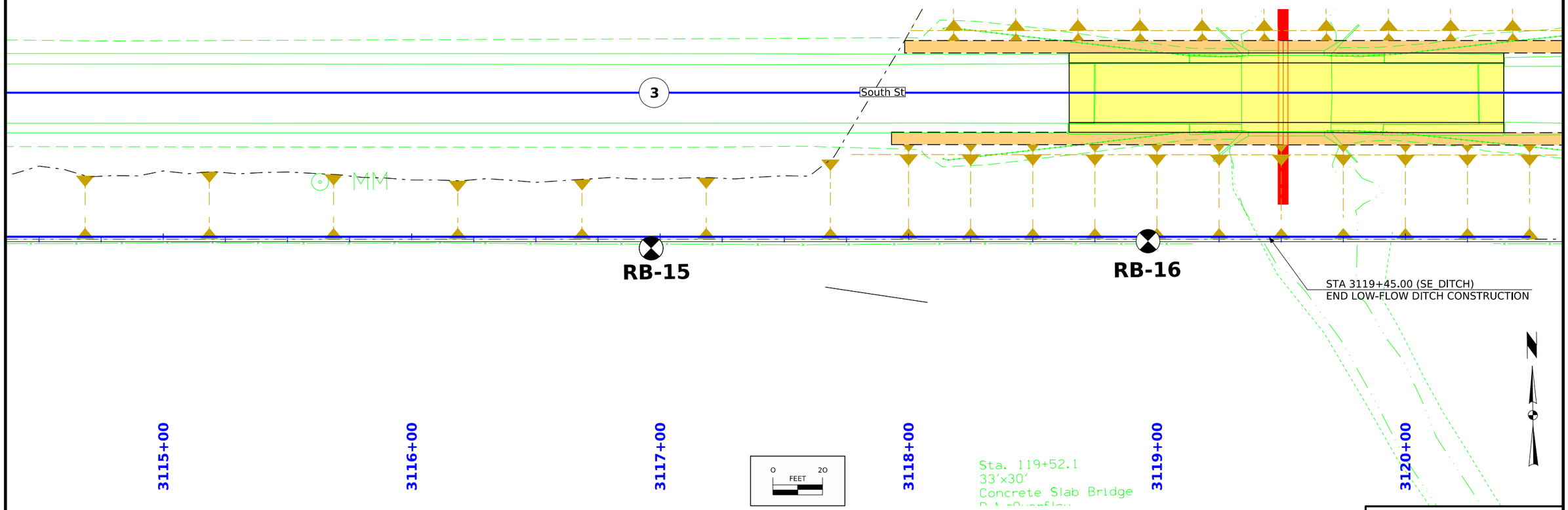

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & CO./BRAUN INTERTEC	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER Q.14

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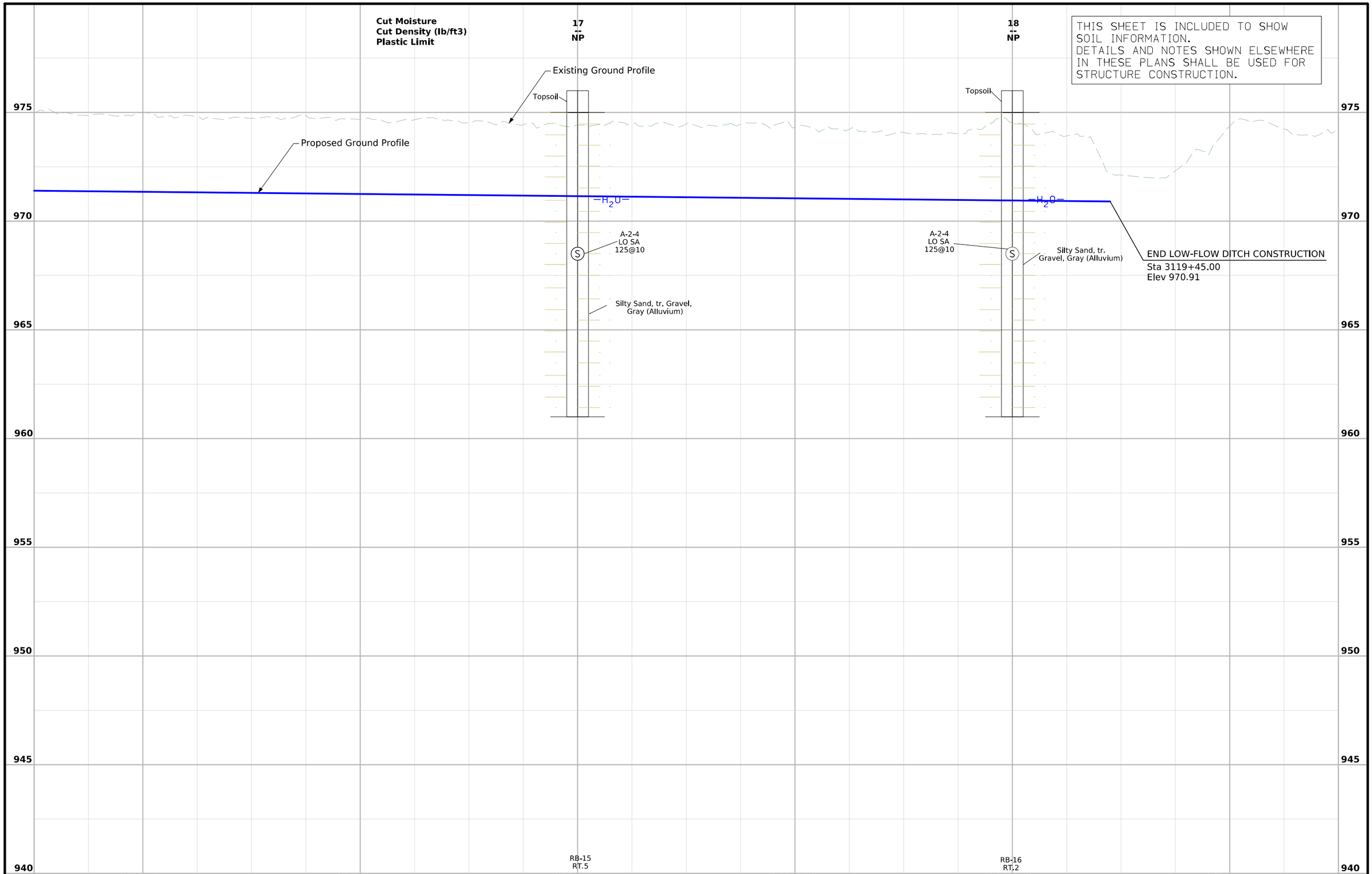

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & CO./BRAUN INTERTEC	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER Q.15

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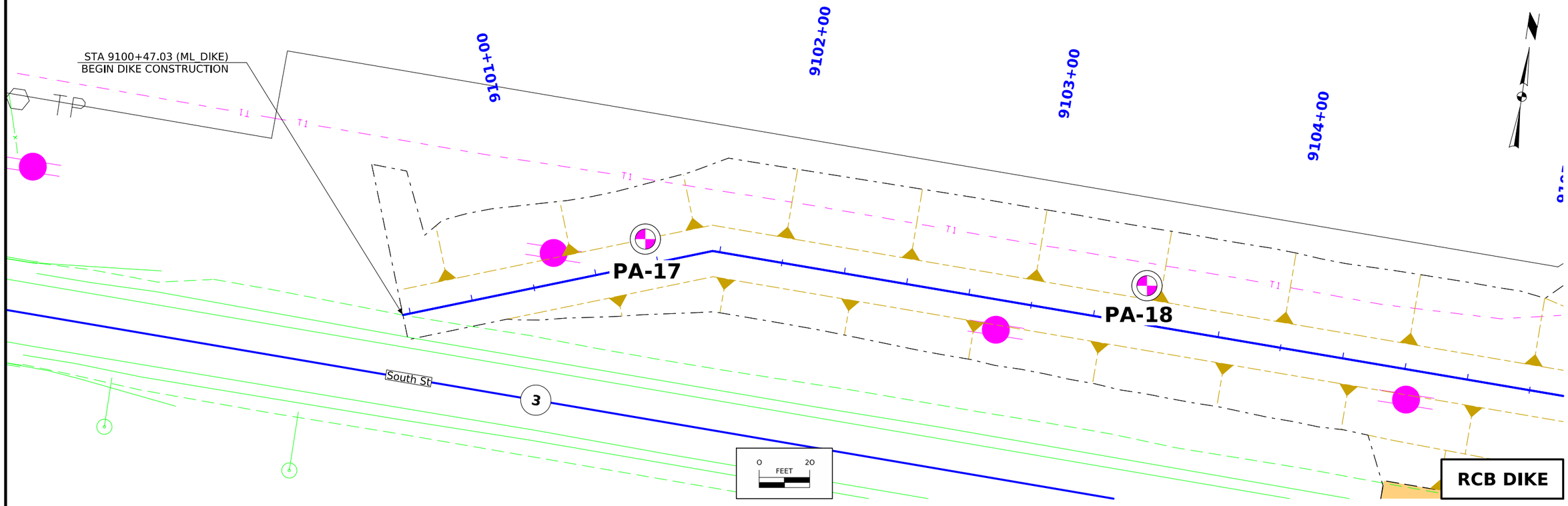

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & CO./BRAUN INTERTEC	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER Q.16

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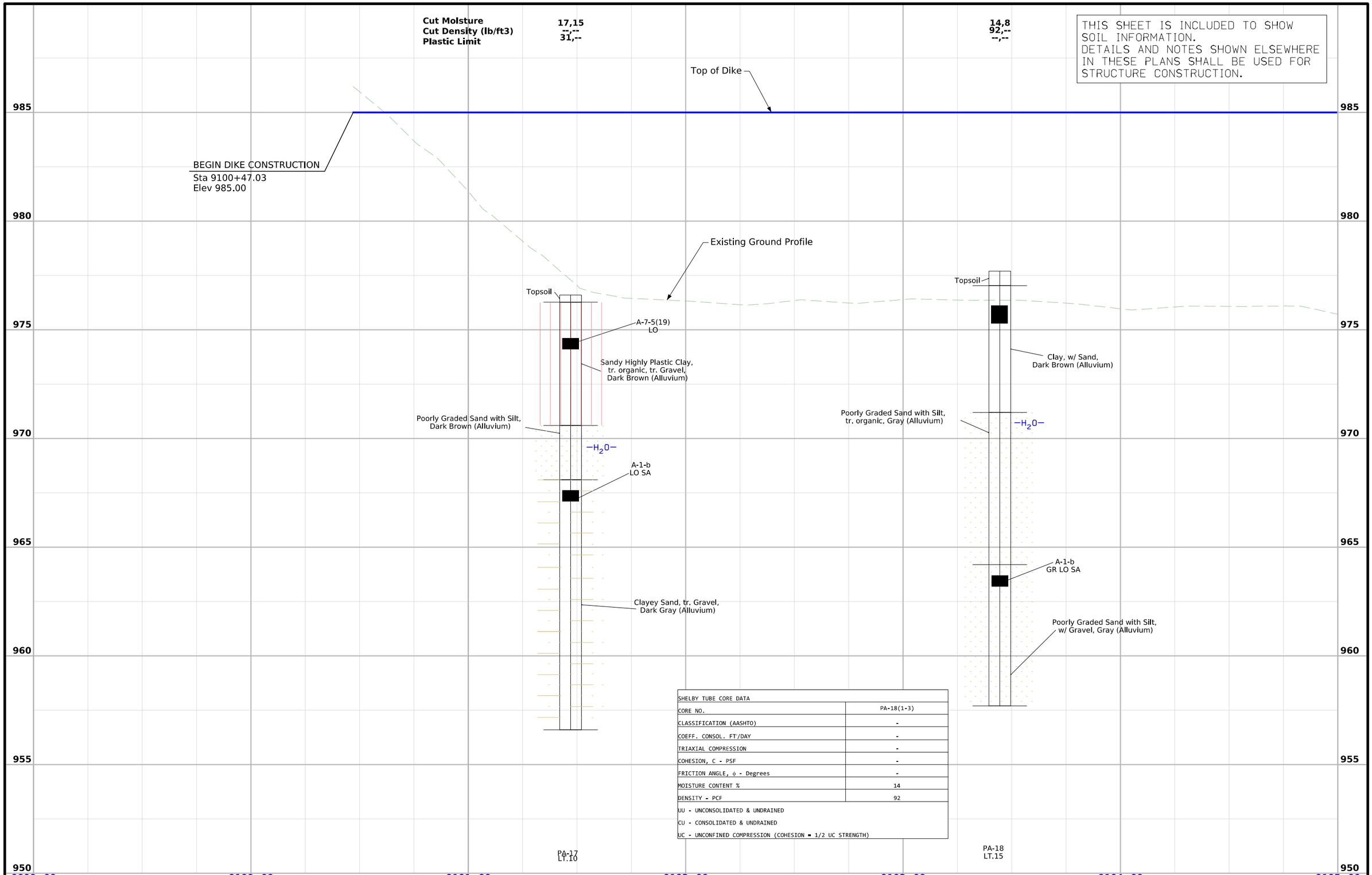

SHELBY TUBE CORE DATA	
CORE NO.	PA-18(1-3)
CLASSIFICATION (AASHTO)	-
COEFF. CONSOL. FT/DAY	-
TRIAXIAL COMPRESSION	-
COHESION, C - PSF	-
FRICTION ANGLE, ϕ - Degrees	-
MOISTURE CONTENT %	14
DENSITY - PCF	92

UU - UNCONSOLIDATED & UNDRAINED
CU - CONSOLIDATED & UNDRAINED
UC - UNCONFINED COMPRESSION (COHESION = 1/2 UC STRENGTH)

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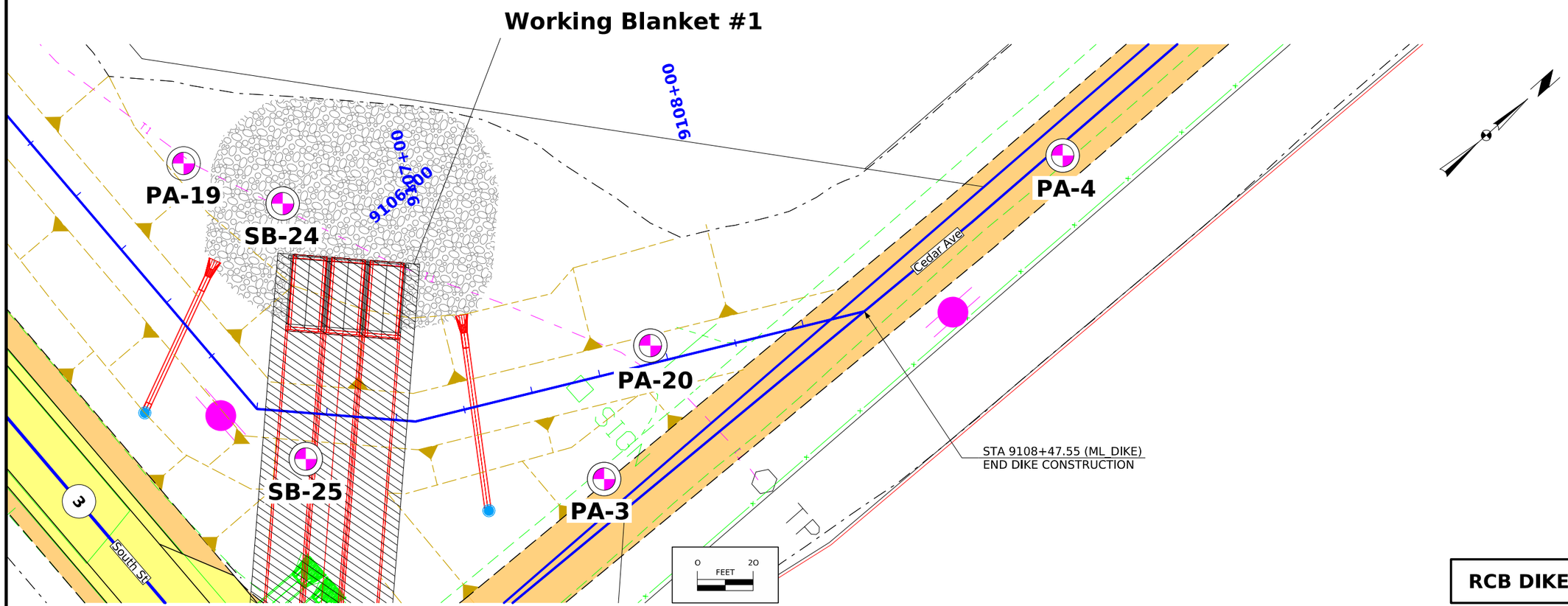
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.



RCB DIKE

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & CO./BRAUN INTERTEC	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER Q.18

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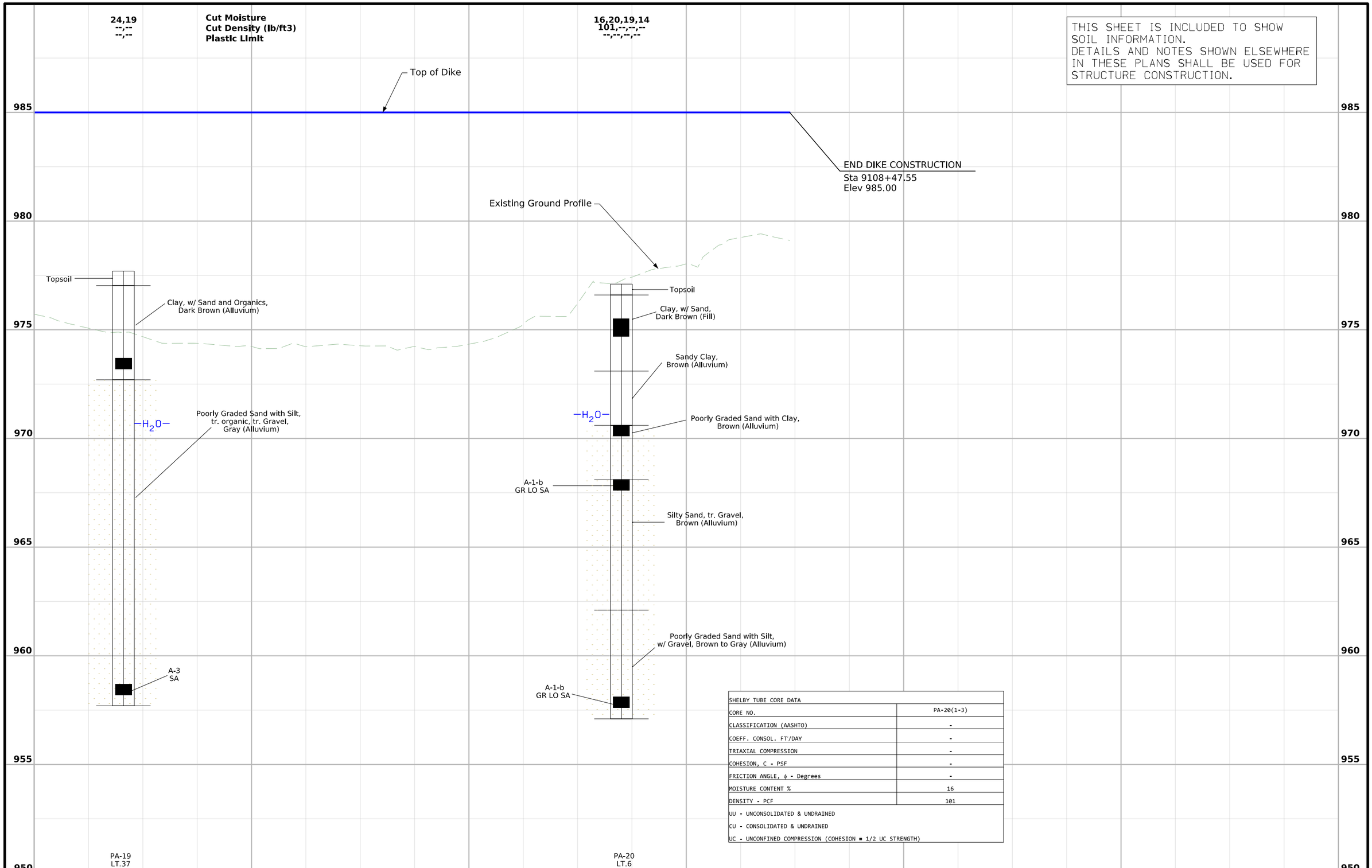

SHELBY TUBE CORE DATA	
CORE NO.	PA-20(1-3)
CLASSIFICATION (AASHTO)	-
COEFF. CONSOL. FT/DAY	-
TRIAXIAL COMPRESSION	-
COHESION, C - PSF	-
FRICTION ANGLE, ϕ - Degrees	-
MOISTURE CONTENT %	16
DENSITY - PCF	101

UU - UNCONSOLIDATED & UNDRAINED
CU - CONSOLIDATED & UNDRAINED
UC - UNCONFINED COMPRESSION (COHESION = 1/2 UC STRENGTH)

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8/15/22

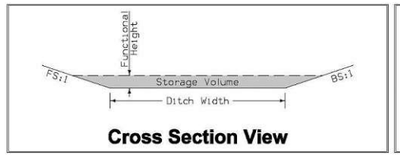
TABULATION OF SILT FENCES

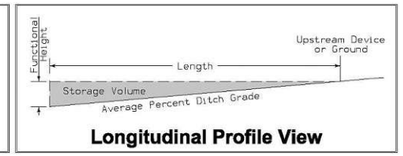
Refer to EC-201

Line No.	Station From	Station To	Side	Length (FT)	Remarks
1.0	100+65.00	105+63.00	Left	533.80	
1.0	107+62.00	109+50.00	Left	205.70	
2.0	104+42.00	107+30.00	Right	336.60	
3.0	107+47.00	108+07.00	Right	60.00	
5.0	117+78.00	121+19.00	Left	361.40	
6.0	1109+07.00	1110+10.00	Left	176.90	
Total:				**1674.4**	

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201





* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

Line No.	Basin No.	Type	Station	Side	Installation (LF)	Maintenance (LF)	Removal (LF)	Foreslope (FS:1)	Backslope (BS:1)	Ditch Width (FT)	Avg. % Slope Ditch Grade	Volume (CF)	Remarks
1.0	3	Type 1	3108+50.00	Right	38.2	3.8	38.2	3.0	2.5	5.0	0.1	1839.60	South Ditch
2.0	3	Type 1	3111+65.00	Right	23.2	2.3	23.2	3.0	2.5	5.0	0.1	1839.60	South Ditch
3.0	3	Type 1	3114+80.00	Right	25.6	2.6	25.6	3.0	2.5	5.0	0.1	1839.60	South Ditch
4.0	3	Type 1	3117+94.63	Right	35.1	3.5	35.1	3.0	2.5	5.0	0.1	1839.60	
5.0	3	Type 1	3118+98.00	Right	35.7	3.6	35.7	3.0	2.5	5.0	0.1	1839.60	
6.0	3	Type 1	3120+04.00	Right	27.0	2.7	27.0	3.0	2.5	5.0	0.1	1839.60	
7.0	3	Type 1	3120+50.00	Right	36.7	3.7	36.7	3.0	2.5	5.0	0.1	1839.60	
8.0	2	Type 1	1108+26.00	Right	28.9	2.9	28.9	3.0	3.0	5.0	0.1	1910.48	
9.0	2	Type 1	1110+40.00	Right	42.6	4.3	42.6	3.0	3.0	5.0	0.1	1910.48	
10.0	2	Type 1	1113+50.00	Right	39.9	4.0	39.9	3.0	3.0	5.0	0.1	1910.48	
11.0	2	Type 1	116+60.00	Right	40.8	4.1	40.8	3.0	3.0	5.0	0.1	1910.48	
12.0	2	Type 1	1119+70.00	Right	41.3	4.1	41.3	3.0	3.0	5.0	0.1	1910.48	
13.0	2	Type 1	1122+80.00	Right	38.2	3.8	38.2	3.0	3.0	5.0	0.7	940.08	
14.0	2	Type 1	1125+97.00	Right	30.1	3.0	30.1	3.0	3.0	5.0	0.7	940.08	
15.0	2	Type 1	1126+50.00	Right	31.8	3.2	31.8	3.0	3.0	5.0	0.7	940.08	
Total:					**515.1**	**51.6**	**515.1**						

ROLLED EROSION CONTROL

Refer to EC-101, EC-103 and EC-104.

Line No.	Road Identification	Station From	Station To	Side	Length (FT)	Width (FT)	TRM Type (EC-104)	TRM Quantity (Squares)	Slope Protection (EC-103) (Squares)	Special Ditch Control (EC-101) (Squares)	Remarks
1.0	IA 3	117+98.42	121+01.62	Left	303.0	30.0			91.0		
2.0	IA 3	117+98.42	121+01.62	Left	303.0	38.4			116.0		
Total:									**207**		

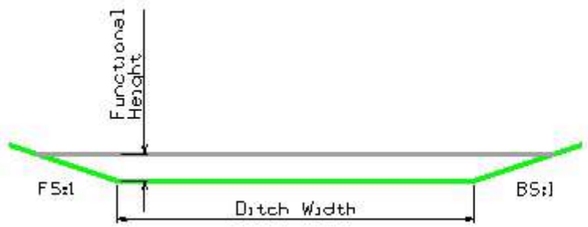
ROCK EROSION CONTROL

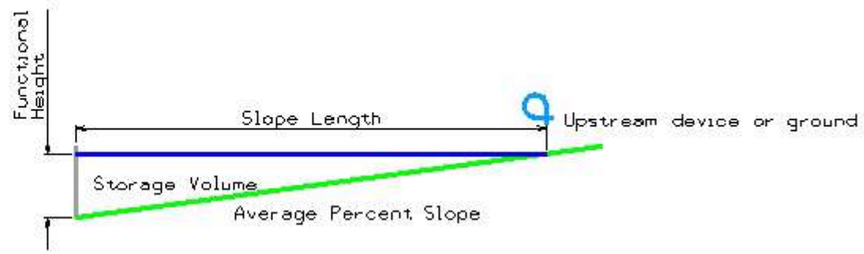
Refer to EC-301 and Detail 570-8

Line No.	Road Identification	Station From	Station To	Side	Length (FT)	Width (FT)	Rock Erosion Control Type	Engineering Fabric (SY)	Class E Revetment (TON)	Erosion Stone (TON)	Remarks
1.0	IA 3	119+50.79		Right	12.00	11.3	Type 4 - Rock Splash Basin	25.4	14.238		For Pipe Outlet

TEMPORARY SEDIMENT CONTROL BASIN

Possible Standard: EC-601





* The functional height used in the volume equation is 95% of effective height. Effective height is 2.5 feet as shown in EC-601.
* Volume equation: [(1/4*(FS*H2))+(1/2*DW*H)+(1/4*(BS*H2))]*(H/Avg%Slope)

Line No.	Basin No.	Station	Side	Installation (Each)	Maintenance (Each)	Removal (Each)	Foreslope (FS:1)	Backslope (BS:1)	Ditch Width (FT)	Avgerage % Slope	Volume * (CF)	Remarks
1.0	1	100+25.00	Left	1.0	3	1.0	3.0	2.5	10.0	0.1	466.23	

STORMWATER DRAINAGE BASIN

Refer to EC Standards and 570s Details.

Line No.	Basin No.	Station From	Station To	Direction of Traffic	Side	Discharge Station	Discharge Direction	Total Disturbed Area (ACRES)	Disturbed Area with Storage Provided (ACRES)	Disturbed Area without Storage Provided (ACRES)	Best Management Practice	Total Storage Volume Provided (CF)	Total Storage Volume Required (CF)	Storage Volume Met	Remarks
1.0	1	100+59.20	107+40.71		Left	100+59.21	W	3.5	3.5		Temporary Sediment Control Basin (EC-601)	466.23	12600.0	No	Vegetated Buffer
2.0	2	107+40.71	109+50.00		Right	109+50.00	E	2.5	2.5		Silt Fence for Ditch Check (EC-201)	12373.00	9000.0	Yes	
3.0	3	107+40.71	120+97.56		Right	119+50.00	E	1.6	1.6		Silt Fence for Ditch Check (EC-201)	12877.20	5760.0	Yes	

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed during construction, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The Contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITES

A. Designer:
1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.

B. Contractor:
1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
4. Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231).
5. Supervises and implements good housekeeping practices according to Paragraph III, C, 2.
6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
8. Submits amended PPP site map according to Section 2602 of the Standard Specifications.

C. Subcontractors:
1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or perorming work that is a source of potential pollution as defined in this PPP. Subcontracted work items are identified in Subcontractor Request Forms (Form 830231). All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Implement good housekeeping practices according to Paragraph III, C, 2.

D. RCE/Project Engineer:
1. Is Project Storm Water Manager.
2. On projects where DOT is the Contracting Authority, is current with erosion control training or certification.
3. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
4. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
5. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
6. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
7. Is familiar with the Project PPP and storm water site map.
8. On projects where DOT is Contracting Authority, is responsible for periodically monitoring inspection reports to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies.
9. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
10. Is signature authority on Notice of Discontinuation.
11. Maintains an up-to-date record of contractors, subcontractors, and subcontracted work items through Subcontractor Request Forms (Form 830231).
12. Makes information to determine permit compliance available to the DNR upon their request.

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POLLUTION PREVENTION PLAN

E. Inspector:
1. Updates PPP through fieldbook entries and storm water site inspection reports if there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
2. Makes information to determine permit compliance available to the DNR upon their request.
3. Conducts joint required inspections of the site with the contractor/subcontractor.
4. Completes an inspection report after each inspection.
5. Is signature authority on storm water inspection reports.

II. PROJECT SITE DESCRIPTION

A. This Pollution Prevention Plan (PPP) is for the construction of a triple reinforced box culvert, a portion of IA 3, earthen dikes and a granular county road.

B. This PPP covers approximately 10.8 acres with an estimated 5.7 acres being disturbed. The portion of the PPP covered by this contract has 5.7 acres disturbed.

C. The PPP is located in an area of one soil association (Kenyon - Clyde - Floyd). The estimated weighted average runoff coefficient number for this PPP after completion will be 0.29.

D. Storm Water Site Map is located in the R sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE sheets.

E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries and amended PPP site map.

F. Runoff from this work will flow into Hartgraves Creek.

III. CONTROLS

A. The Contractor’s ECIP specified in Article 2602.03 of the Standard Specifications for accomplishment of storm water controls should clearly describe the intended sequence of major activities, and for each activity define the control measure and the timing during the construction process that the measure will be implemented.

B. Preserve vegetation in areas not needed for construction.

C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries, amended PPP site map, or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water site inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B of the Standard Specifications.

1. EROSION AND SEDIMENT CONTROLS

a. Stabilization Practices
1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
a) Permanently ceased on any portion of the site, or
b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
4) Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C or R sheets.
5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications.

b. Structural Practices
1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
2) Structural practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be

POLLUTION PREVENTION PLAN

found on the B or R sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C or R sheets.

c. Storm Water Management
Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the storm water site map and Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.

2. OTHER CONTROLS
Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.

a. Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
b. Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
c. Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
d. Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
e. Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean up spills and prevent material discharges to the storm drain system and waters of the state.
f. Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
g. Concrete Grooving/Grinding Slurry – Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
h. Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
i. Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
j. Dewatering – Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.

3. APPROVED STATE OR LOCAL PLANS
During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES

The Contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS

A. Inspections shall be made jointly by the Contractor and the Contracting Authority's inspector at least once every seven calendar days. Storm water site inspections will include:
1. Date of the inspection.
2. Summary of the scope of the inspection.
3. Name and qualifications of the personnel making the inspection.
5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
6. Major observations related to the implementation of the PPP.
7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.

B. Include storm water site inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

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1/13/23

POLLUTION PREVENTION PLAN

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

A. Base PPP - Initial Pollution Prevention Plan.
B. Amended PPP - Base PPP amended during construction. May include Plan Revisions or Contract Modifications for new items, storm water site inspection reports, fieldbook entries made by the inspector, amended PPP site map by the Contractor, ECIP, NOI, co-permittee certifications, and Subcontractor Request Forms. Items amending the PPP are stored electronically and are readily available upon request.
C. Fieldbook Entries – This contains the inspector’s daily diary and bid item postings.
D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
E. Signature Authority - Representative authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Mary K Kelly
Signature

Mary K Kelly
Printed or Typed Name

Chase Holien
Signature

Chase Holien
Printed or Typed Name

LINE STYLE LEGEND OF LANDSCAPE SHEETS

LINESTYLE	Design Element
- - - - - - - - - - - -	Living Snow Fence Single Row
:::::::::::::::::::	Living Snow Fence Double Row
———	Mechanical Edge

CELL LEGEND OF LANDSCAPE SHEETS

CELL	Design Element	Plant Diameter
	Clearing	
	Proposed Shrub	6 FT
	Proposed Understory Tree	12 FT
	Proposed Conifer Tree	18 FT
	Proposed Overstory Tree	30 FT

PATTERN LEGEND OF LANDSCAPE SHEETS

Brush Clearing

Spray Area

Clearing & Grubbing

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

LINESTYLE	Design Element
	Silt Fence
9	Perimeter and Slope Sediment Control Device (9")
12	Perimeter and Slope Sediment Control Device (12")
20	Perimeter and Slope Sediment Control Device (20")
	Open-Throat Curb Intake Sediment Filter
	Concentrated Flow
	Rock Check and Rock Check Dam
	Sheet Flow

CELL LEGEND OF EROSION CONTROL SHEETS

CELL	Design Element
	Temporary Sediment Control basin
	Erosion Control for Circular Intake or Manhole Well
	Erosion Control for Rectangular Intake or Manhole Well
	Grate Intake Sediment Filter Bag
	Silt Basin
	Silt Fence Tail
	Stormwater Drainage Basin Discharge Point

PLAN VIEW COLOR LEGEND OF EROSION CONTROL SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
Black	(0)	Permanent Erosion Control Features
Blaze Orange	(222)	Temporary Erosion Control Features

SHADING	Design Color No.		Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	0%
Grass Green	(233)	8FT Mow Strip	50%
Red	(3)	Delineates Restricted Areas	0%

PATTERN LEGEND OF EROSION CONTROL SHEETS

Seeding and Fertilizing

Seeding and Fertilizing (Rural) (R)

Seeding and Fertilizing (Urban) (U)

Native Grass Seeding (N)

Salt Tolerant Seeding (ST)

Wetland Grass Seeding (WL)

Wildflower Seeding (WF)

Sodding (SOD)

Turf Reinforcement Mat Type 1

Turf Reinforcement Mat Type 2

Turf Reinforcement Mat Type 3

Turf Reinforcement Mat Type 4

Slope Protection, Wood Excelsior Mat

Transition Mat

Rock Features, Permanent

Rock Features, Temporary

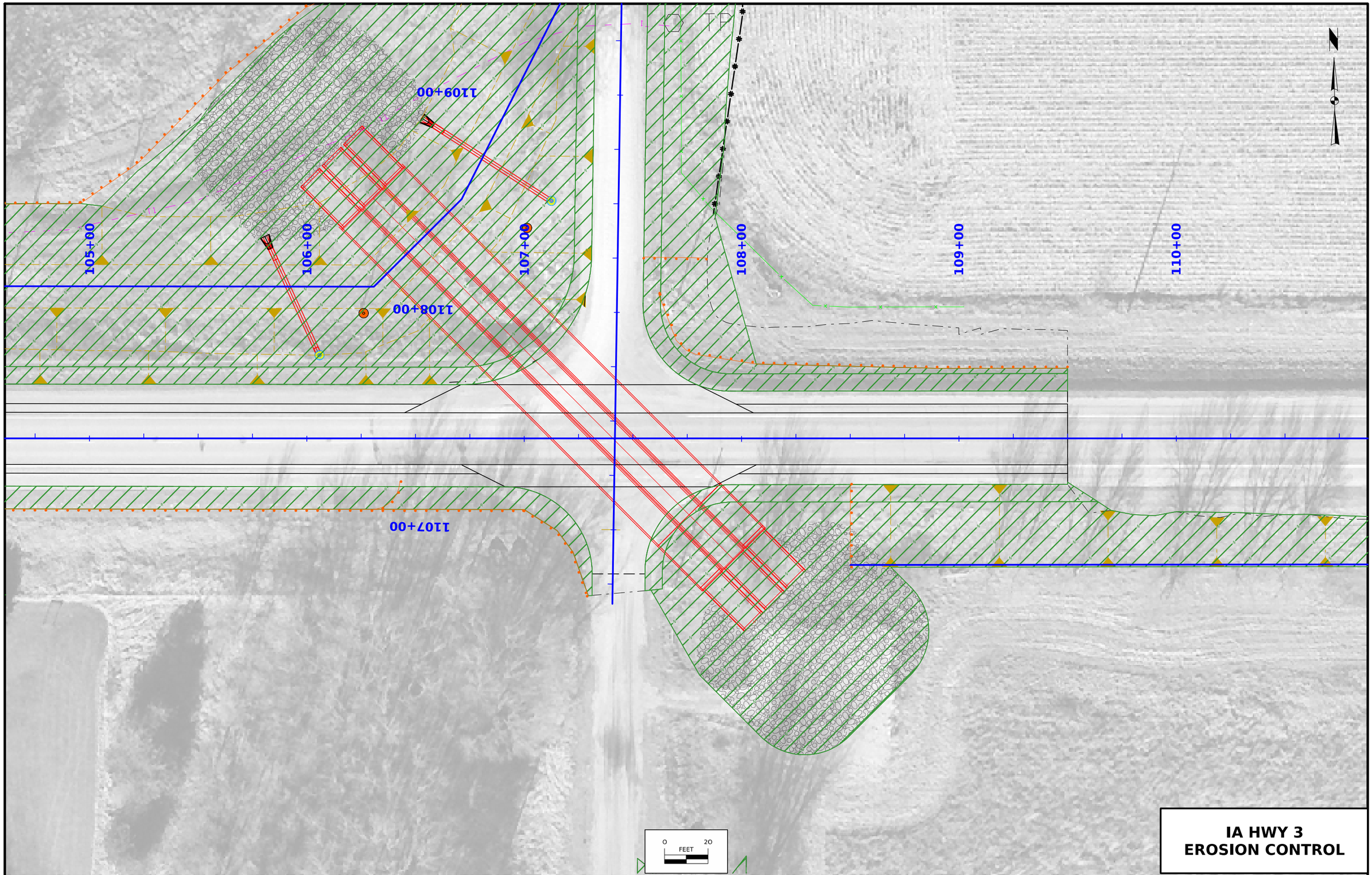
EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)

IA HWY 3
EROSION CONTROL

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER RR.2

10:47:34 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_RR02.dgn



IA HWY 3
EROSION CONTROL

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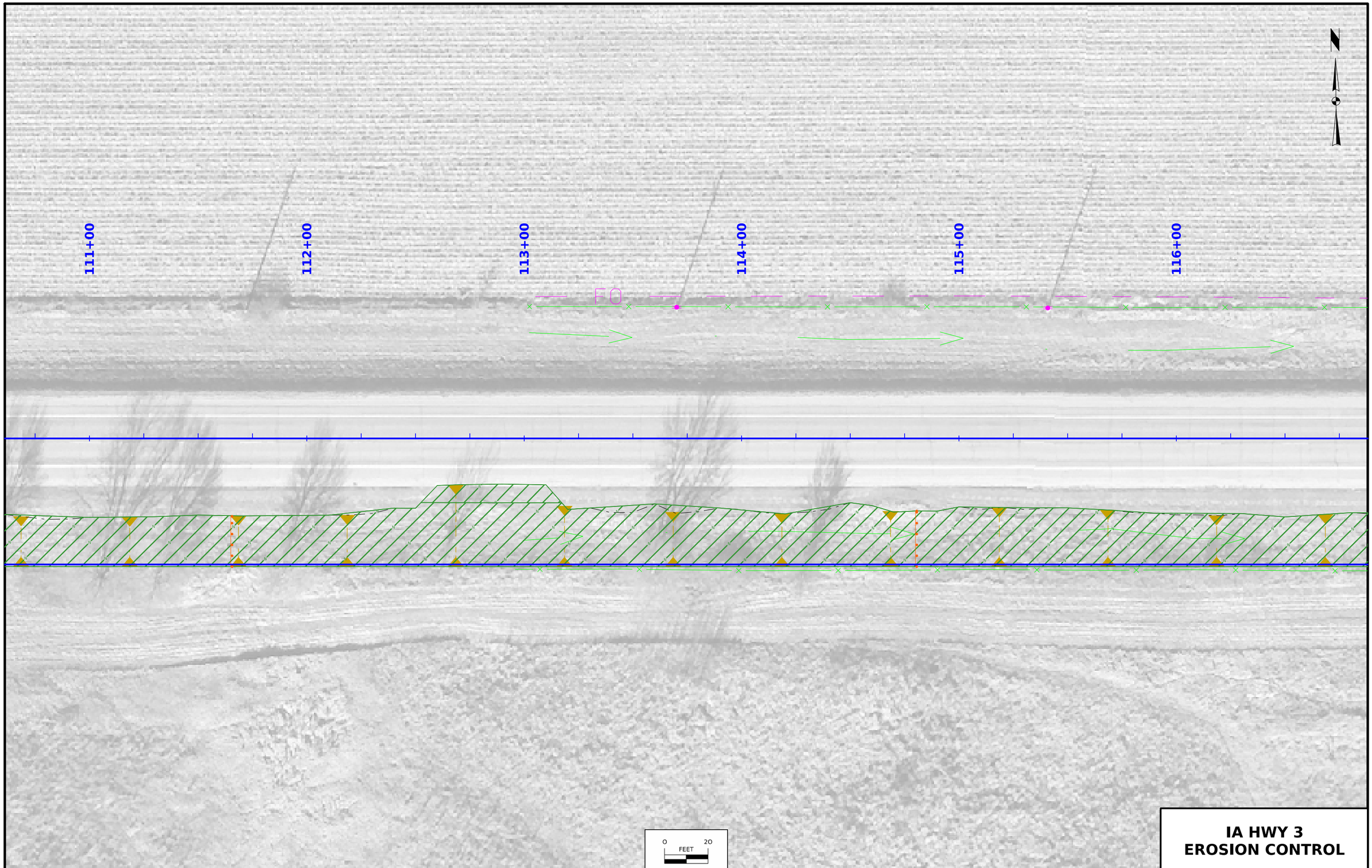

IA HWY 3
EROSION CONTROL

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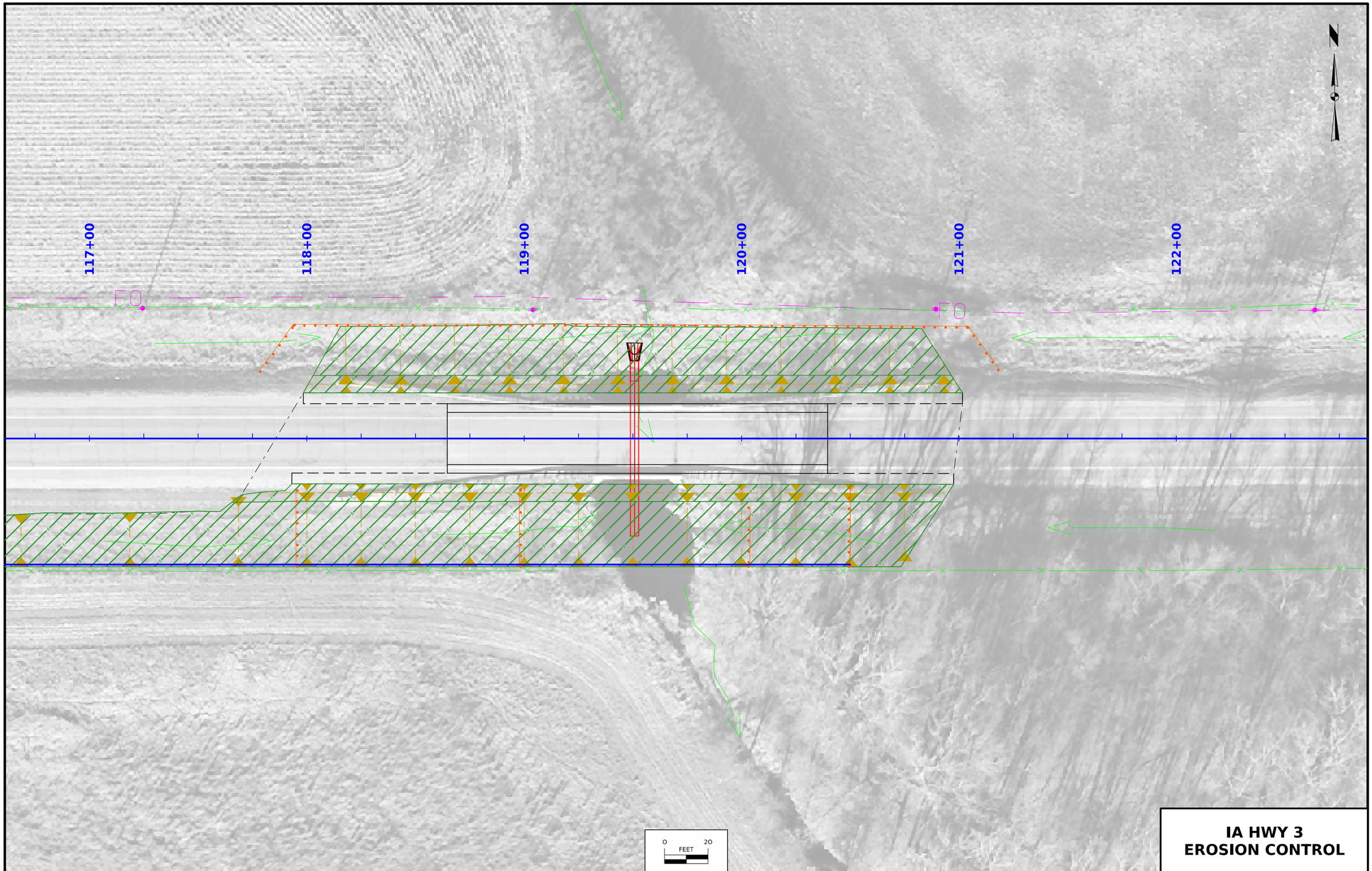

IA HWY 3
EROSION CONTROL

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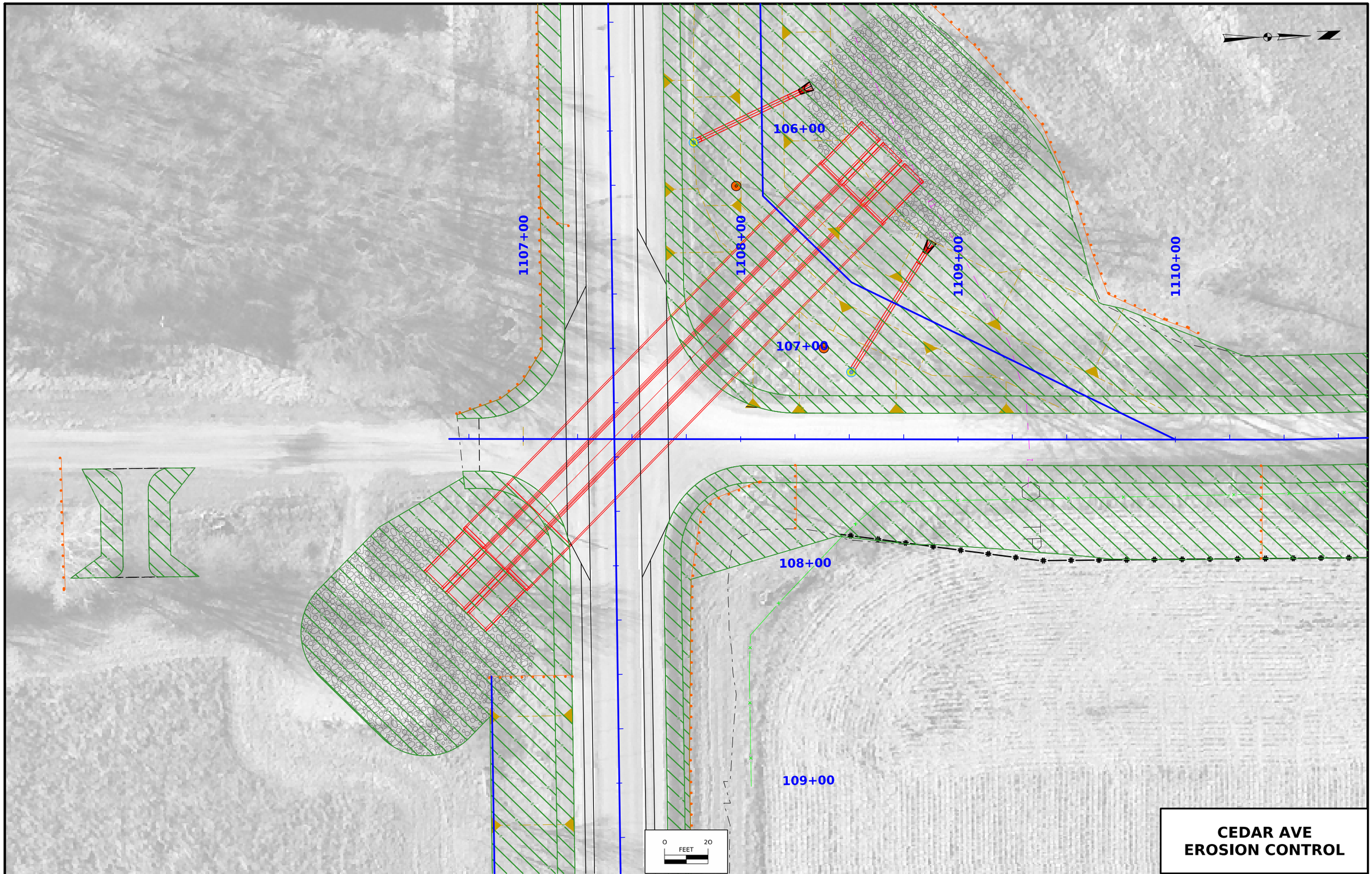

CEDAR AVE
EROSION CONTROL

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER RR.6

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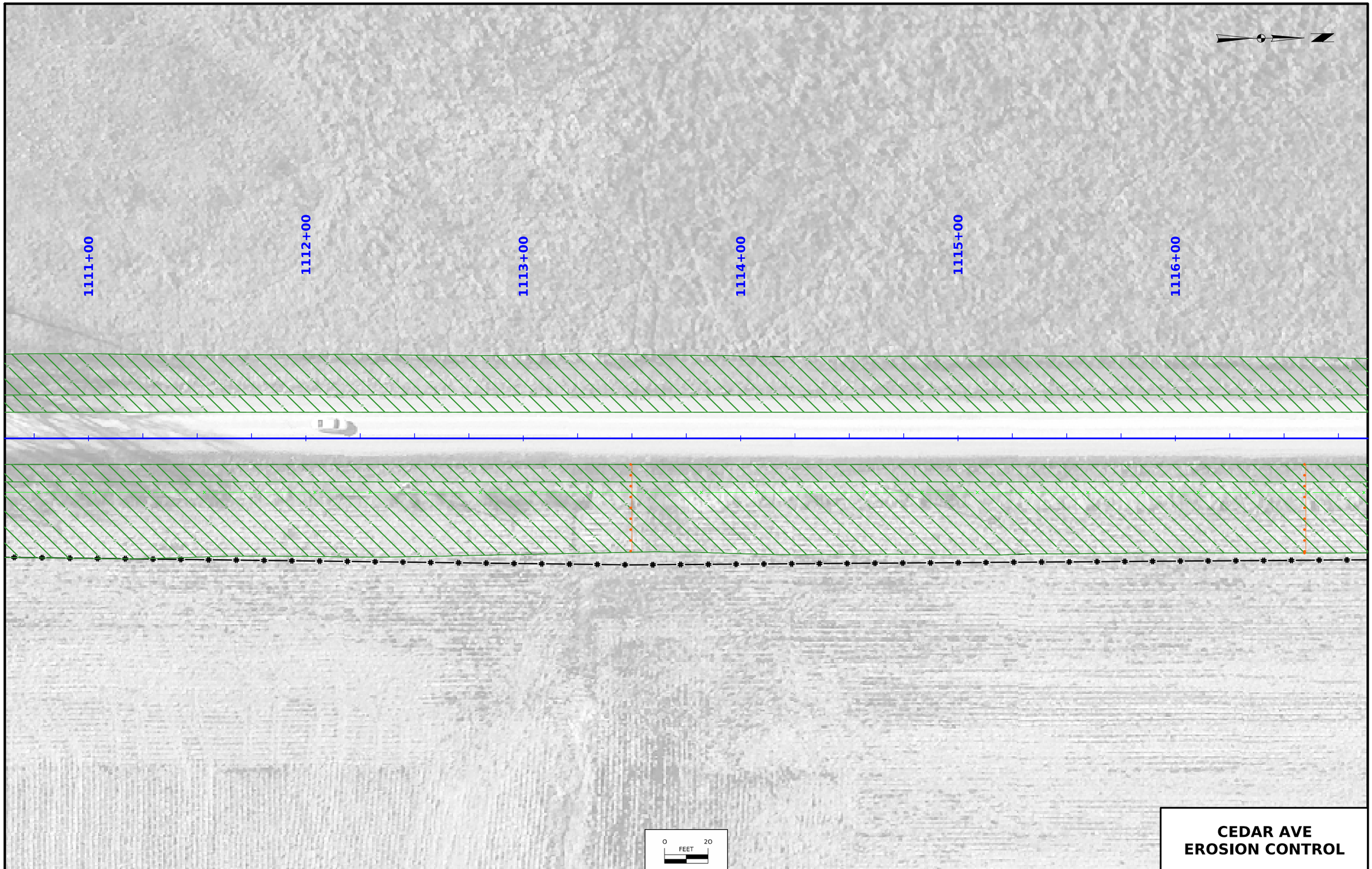

CEDAR AVE
EROSION CONTROL

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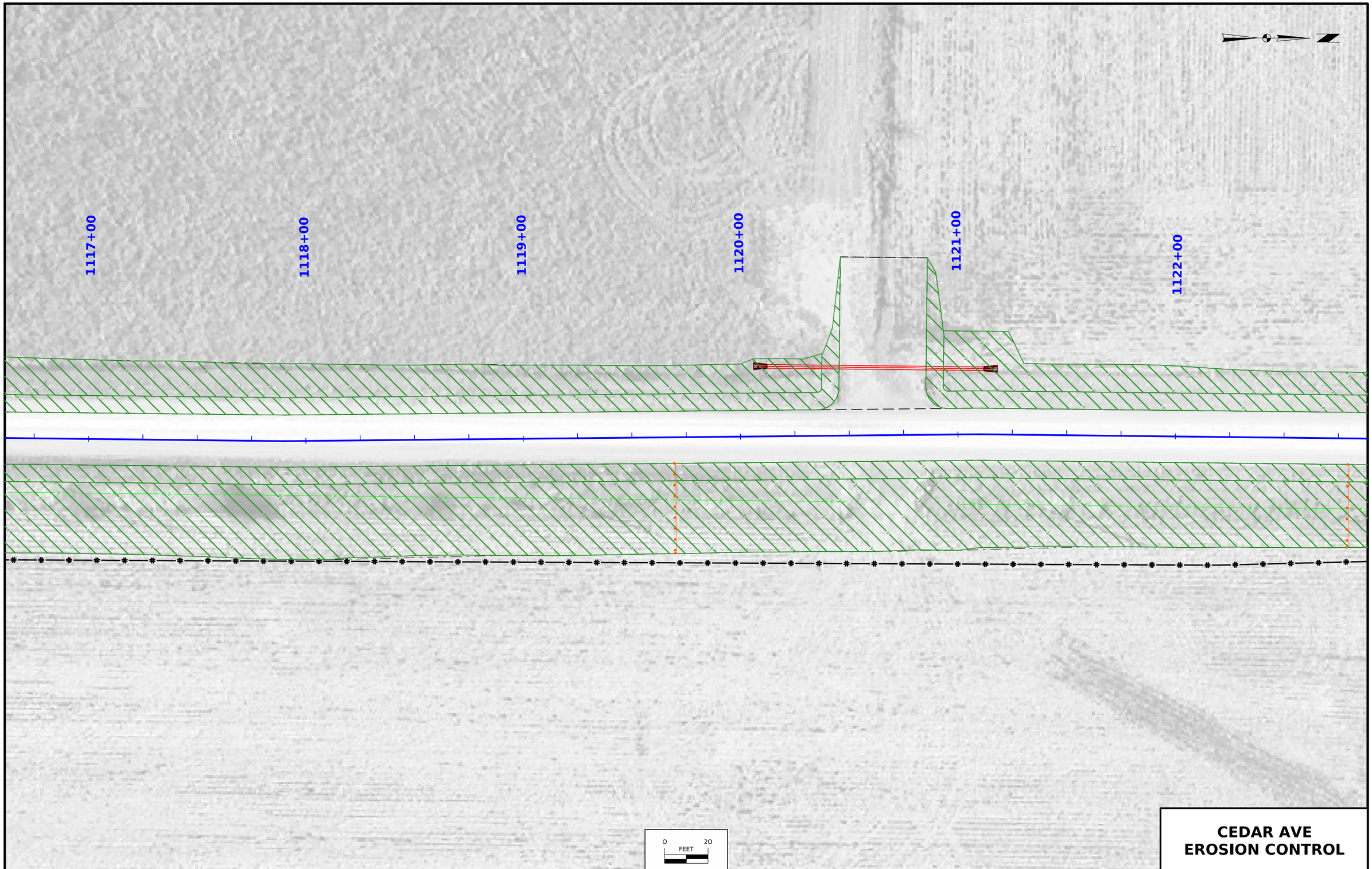

CEDAR AVE
EROSION CONTROL

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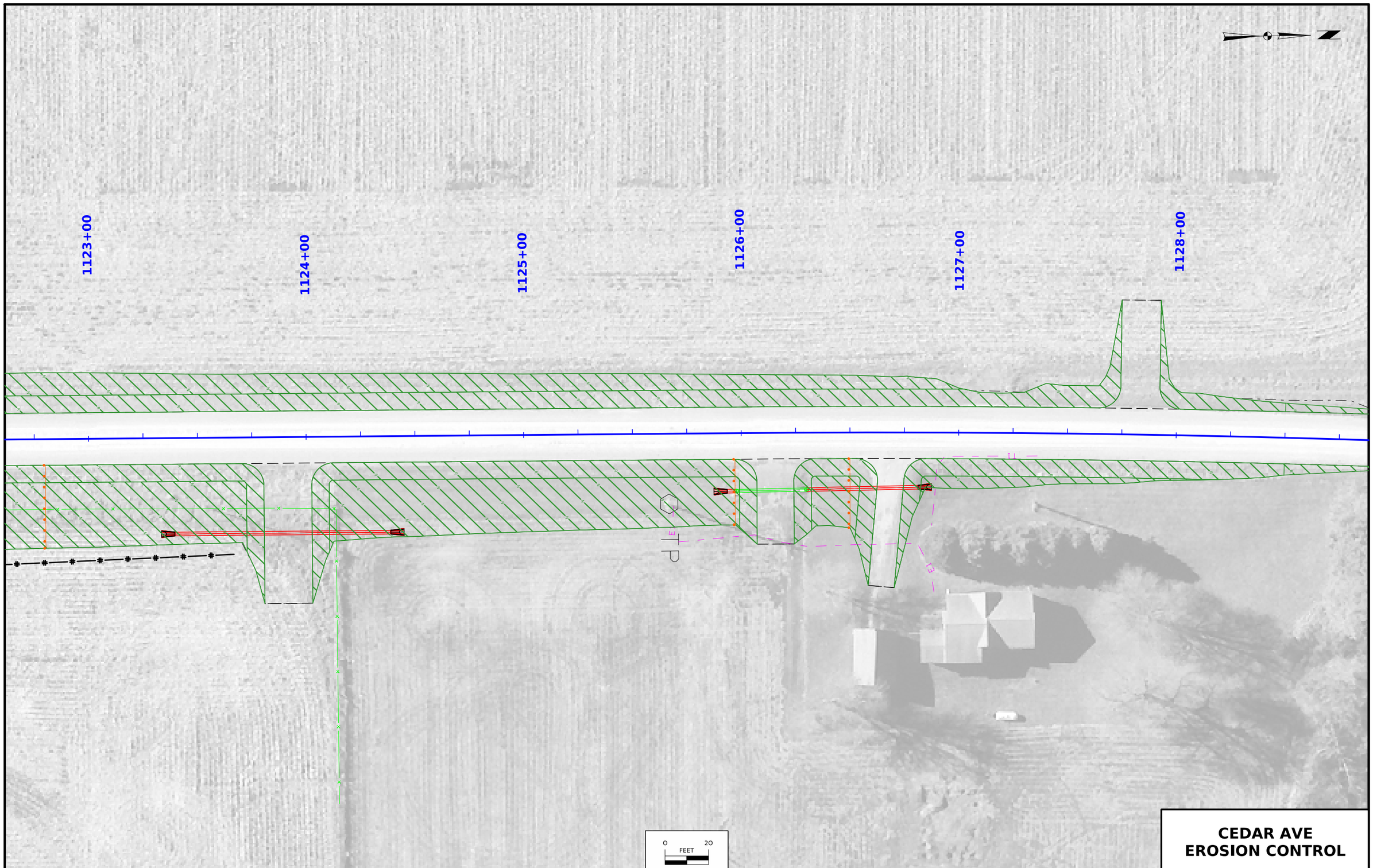

CEDAR AVE
EROSION CONTROL

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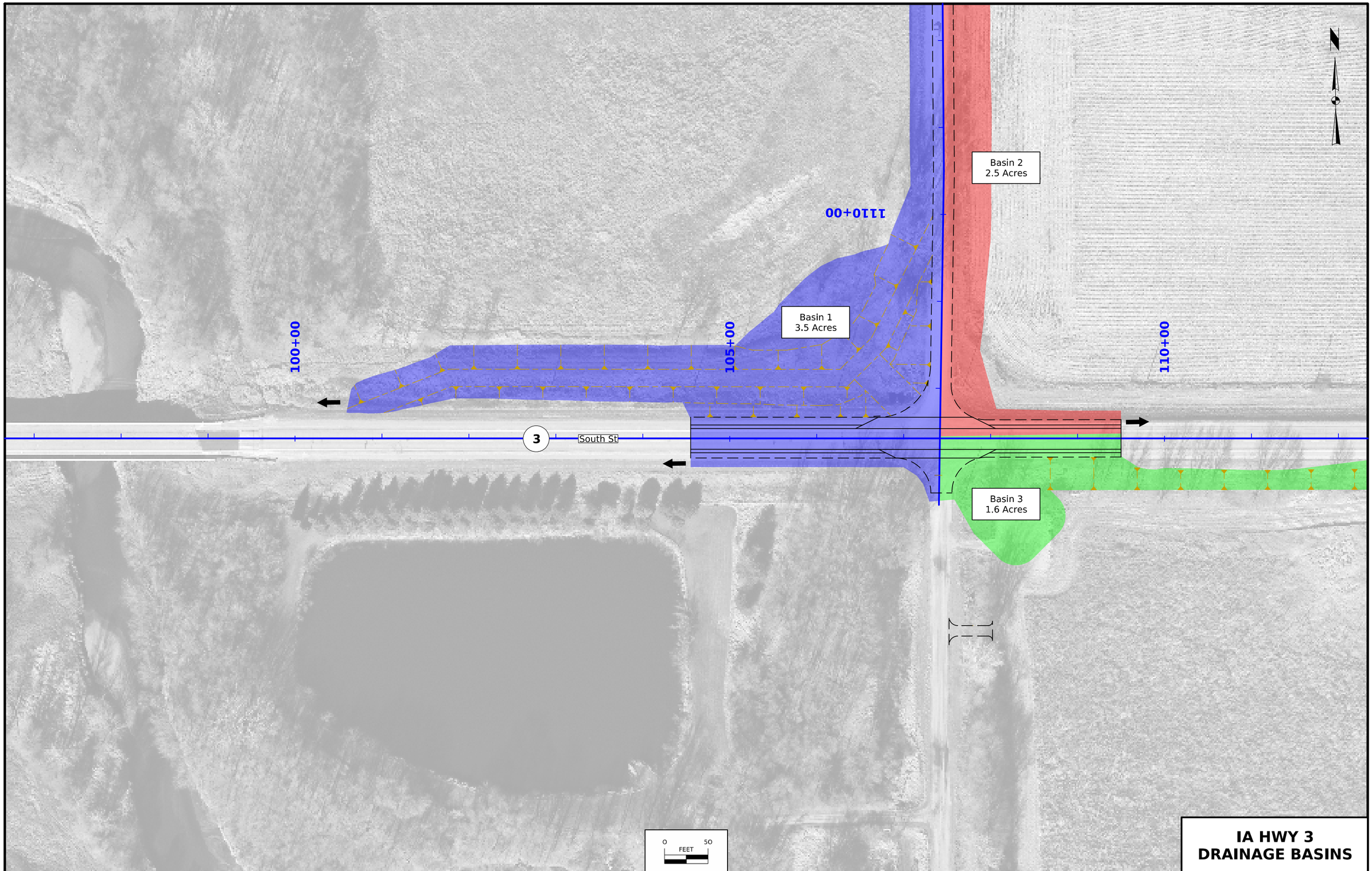

IA HWY 3
DRAINAGE BASINS

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER RR.10

10:48:13 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_RR10.dgn

IA HWY 3
DRAINAGE BASINS

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER RR.11

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CEDAR AVE DRAINAGE BASINS

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER RR.12

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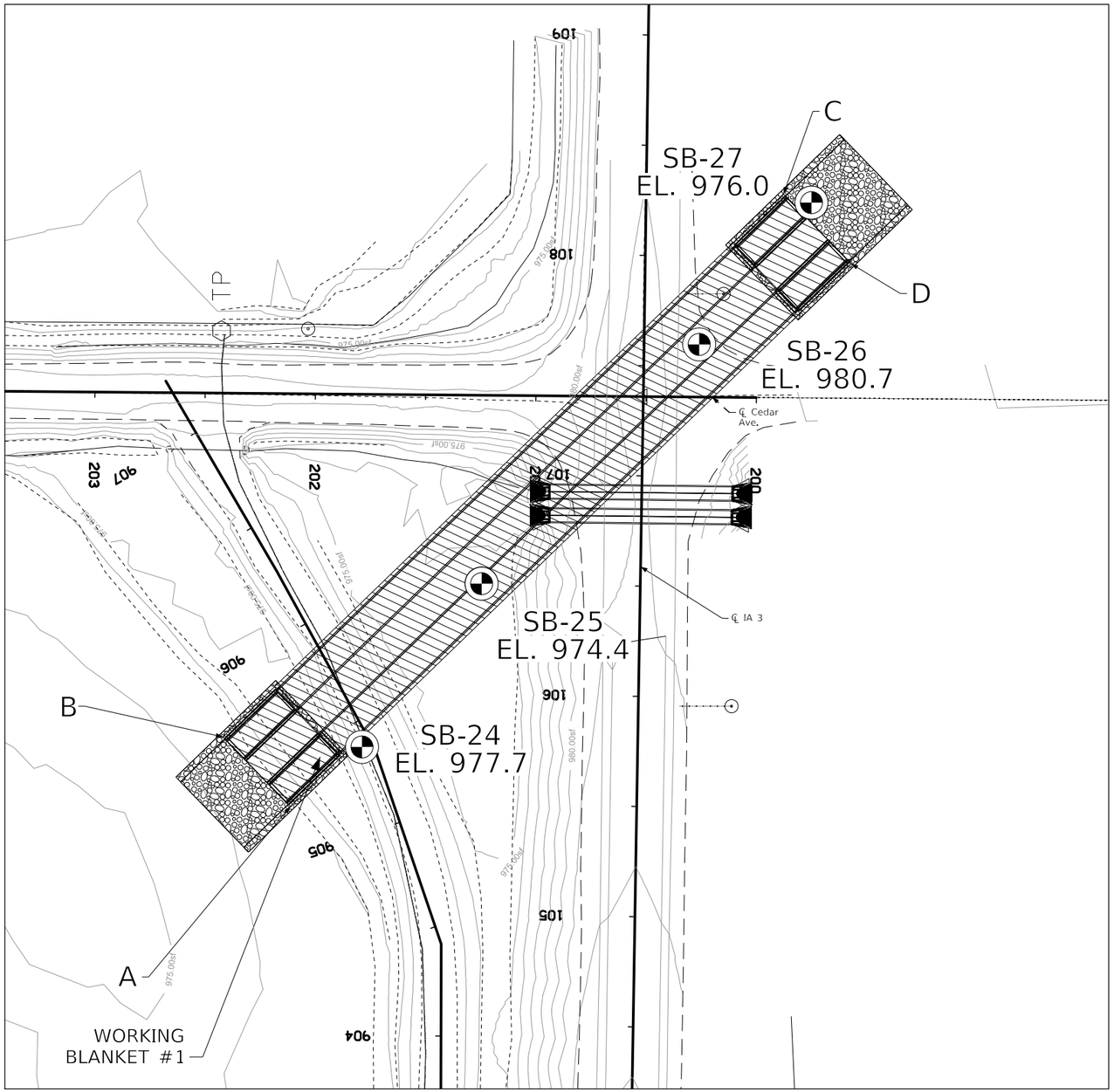
CEDAR AVE DRAINAGE BASINS

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER RR.13

10:48:14 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_RR10.dgn

Install a 1-foot thick Working Blanket directly below the cast-in-place RCB culvert, extending to within 3 feet of each proposed curtain wall, and to a distance of at least 2 feet beyond the sides of the proposed culvert as measured from the inside face. The Working Blanket shall consist of Granular Material for Blanket. With a precast culvert alternate, the 1-foot thick Working Blanket shall be placed directly below the Granular Leveling Material having the same plan limits stated above. Engineering Fabric shall be used as a separator between the Working Blanket and Granular Leveling Material. The Working Blanket may also be altered or deleted if determined to be unnecessary at the time of construction. Refer to the "Working Blanket Coordinate Table" for approximate plan limits.



GEOTECHNICAL DESIGN

LICENSED PROFESSIONAL ENGINEER
ANDREW WILLIAM SCHWEIZER
24749
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Andrew Schweizer 01/05/2024
Signature Date
Andrew Schweizer
Printed or Typed Name

My license renewal date is December 31, 2025

Pages or sheets covered by this seal: SPS.1 through SPS.2

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

Working Blanket Coordinate Table		
Point	Station	Offset
A	105+47.42	LT.157
B	105+78.54	LT.188
C	108+28.02	RT.62
D	107+97.54	RT.93

Location

On IA 3 over Hartgraves Creek Overflow
T-92N R-18W
Sections 28, 29, 32, 33
Pittsford Township
Butler County
Bridge Maint. No. 1294,1S003
FHWA No. 16490
Latitude 42.744985°
Longitude -92.985919°

N

0 ENGLISH 60
SCALE IN FEET

Design For 45° Skew (RA)

Triple 12' x 10' x 290'-0" Precast Reinforced Concrete Box Culvert

Soil Profile Sheet

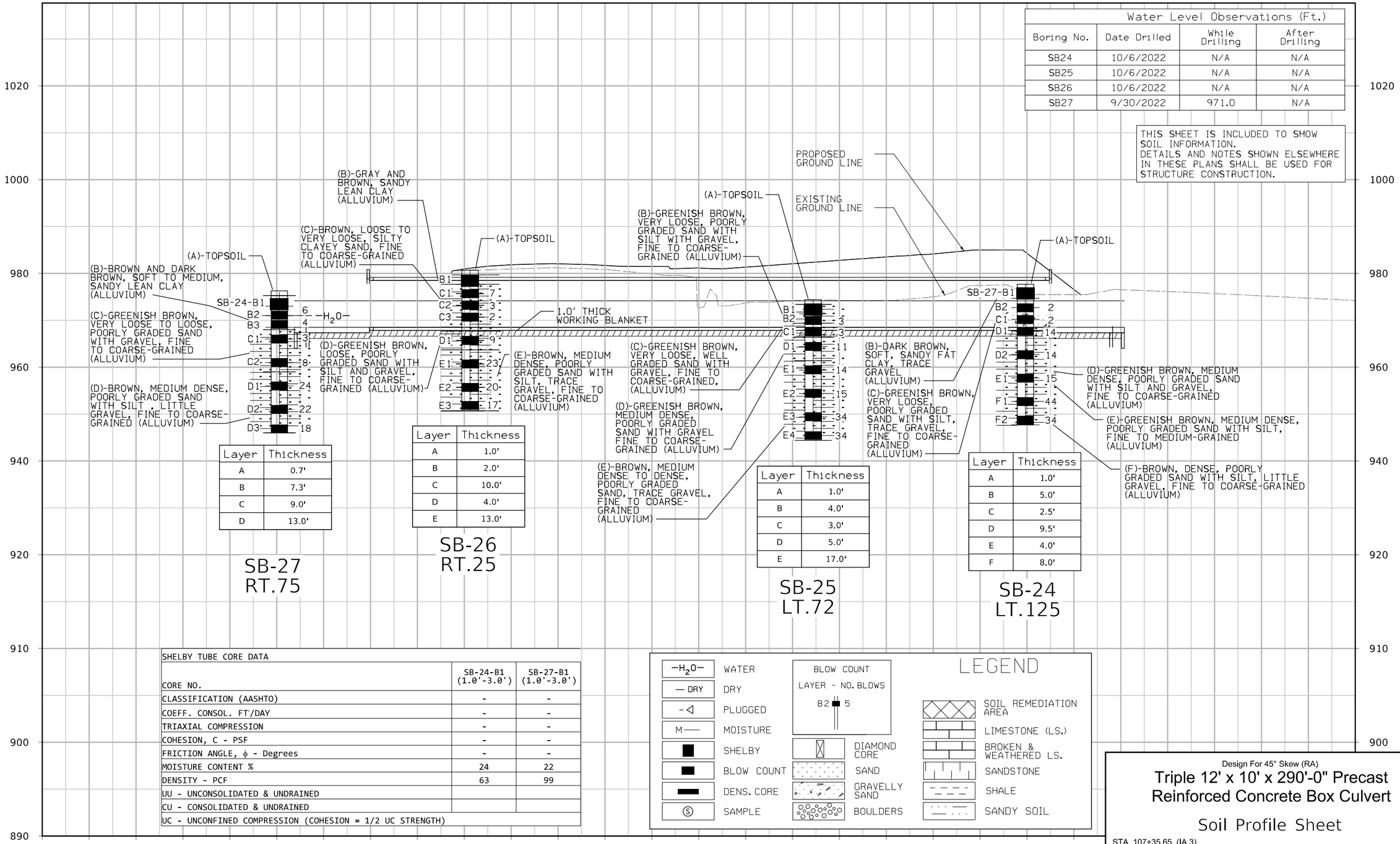
STA. 107+35.65 (IA 3)

BUTLER COUNTY
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0124 Design Sheet No. 1 of 2 FHWA No. 16490

Water Level Observations (Ft.)			
Boring No.	Date Drilled	While Drilling	After Drilling
SB24	10/6/2022	N/A	N/A
SB25	10/6/2022	N/A	N/A
SB26	10/6/2022	N/A	N/A
SB27	9/30/2022	971.0	N/A

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.



Layer	Thickness
A	0.7'
B	7.3'
C	9.0'
D	13.0'

Layer	Thickness
A	1.0'
B	2.0'
C	10.0'
D	4.0'
E	13.0'

Layer	Thickness
A	1.0'
B	4.0'
C	3.0'
D	5.0'
E	17.0'

Layer	Thickness
A	1.0'
B	5.0'
C	2.5'
D	9.5'
E	4.0'
F	8.0'

SHELBY TUBE CORE DATA

CORE NO.	SB-24-B1 (1.0'-3.0')	SB-27-B1 (1.0'-3.0')
CLASSIFICATION (AASHTO)	-	-
COEFF. CONSOL. FT²/DAY	-	-
TRIAXIAL COMPRESSION	-	-
COHESION, C - PSF	-	-
FRICTION ANGLE, ϕ - Degrees	-	-
MOISTURE CONTENT %	24	22
DENSITY - PCF	63	99
UU - UNCONSOLIDATED & UNDRAINED		
CU - CONSOLIDATED & UNDRAINED		
UC - UNCONFINED COMPRESSION (COHESION = 1/2 UC STRENGTH)		

LEGEND

- $-H_2O-$ WATER
- — DRY
- PLUGGED
- M— MOISTURE
- SHELBY
- BLOW COUNT
- DENS. CORE
- (S) SAMPLE

BLOW COUNT
LAYER - NO. BLOWS
B2 5

- DIAMOND CORE
- SAND
- GRAVELLY SAND
- BOULDERS
- SOIL REMEDIATION AREA
- LIMESTONE (LS.)
- BROKEN & WEATHERED LS.
- SANDSTONE
- SHALE
- SANDY SOIL

Design For 45° Skew (RA)

Triple 12' x 10' x 290'-0" Precast Reinforced Concrete Box Culvert

Soil Profile Sheet

STA. 107+35.65 (IA 3)

BUTLER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0124 Design Sheet No. 2 of 2 FHWA No. 16490

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

Station	Cut				Fill					Checks (EW-102)		Topsoil										
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
IA3																						
104+55.00	80	56	24	56	12	12	25	32	24	0	0	24	0	0	24							
105+00.00	83	48	35	48	21	20	41	53	-5	0	0	35	1	1	35							
105+50.00	68	27	41	27	27	26	53	68	-41	0	0	41	2	2	39							
106+00.00	67	10	58	10	27	21	48	62	-52	0	0	58	1	2	56							
106+50.00	4	0	4	0	1	1	2	3	-2	0	0	4	0	0	4							
106+52.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
106+52.94	38	1	37	1	12	6	18	23	-22	0	0	37	0	0	37							
106+79.34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
106+79.36	25	0	25	0	4		4	5	-5	0	0	25	0	0	25							
107+00.00	28	2	25	2	4		4	6	-3	0	0	25	0	0	25							
107+50.00	51	8	43	8	0		0	0	8	0	0	43	0	0	43							
107+97.51	0	0	0	0	0		0	0	0	0	0	0	0	0	0							
107+97.53	6	1	5	1	1	1	3	4	-3	0	0	5	1	1	4							
108+00.00	181	56	125	56	75	69	144	187	-131	0	0	125	27	37	87							
108+50.00	235	81	154	81	88	79	168	218	-137	0	0	154	26	37	118							
109+00.00	206	56	150	56	57	53	110	143	-87	0	0	150	10	14	136							
109+50.00	129	31	97	31	19	19	38	50	-19	0	0	97	0	0	98							
110+00.00	79	33	46	33	9	9	18	24	9	0	0	46	0	0	46							
110+50.00	79	35	43	35	8	8	16	21	15	0	0	43	0	0	43							
111+00.00	77	34	43	34	7	7	14	19	15	0	0	43	0	0	43							
111+50.00	78	35	43	35	7	7	13	17	18	0	0	43	0	0	43							
112+00.00	86	40	46	40	8	8	16	20	20	0	0	46	0	0	46							
112+50.00	101	42	60	42	17	17	33	43	-2	0	0	60	0	0	60							
113+00.00	98	40	58	40	16	16	32	41	-1	0	0	58	0	0	58							
113+50.00	91	44	47	44	8	8	16	21	23	0	0	47	0	0	47							
114+00.00	96	45	51	45	11	11	21	28	17	0	0	51	0	0	52							
114+50.00	100	47	53	47	11	11	21	28	19	0	0	53	0	0	53							
115+00.00	103	52	50	52	8	8	17	22	31	0	0	50	0	0	51							
115+50.00	93	46	48	46	8	8	15	20	26	0	0	48	0	0	48							
116+00.00	80	36	44	36	7	7	13	18	19	0	0	44	0	0	44							
116+50.00	81	38	44	38	7	7	15	19	18	0	0	44	0	0	44							
117+00.00	88	43	46	43	7	7	15	19	23	0	0	46	0	0	46							
117+50.00	99	44	56	44	6	6	12	16	28	0	0	56	0	0	56							
118+00.00	99	36	64	36	14	14	28	36	-1	0	0	64	0	0	64							
118+50.00	26	9	18	9	6	6	12	16	-7	0	0	18	0	0	18							
118+64.63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
118+64.65	162	117	44	117	22	15	37	48	70	0	0	44	0	0	44							
119+00.00	177	133	44	133	132	3	135	175	-43	0	0	44	0	0	44							
119+50.00	145	112	34	112	140	7	146	190	-78	0	0	34	0	0	34							
120+00.00	151	108	44	108	27	20	47	62	46	0	0	44	0	0	44							
120+39.63																						
IA3																						
Totals:	3,393	1,547	1,847	1,547	834	518	1,351	1,758	-212	0	0	1,847	67	94	1,755							

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut				Fill					Checks (EW-102)		Topsoil										
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
DIKE																						
9100+47.03	3	0	2	0	0		0	0	0	0	0	2	5	7	-5							
9100+50.00	141	108	33	108	122	0	123	160	-51	0	0	33	71	100	-67							
9101+00.00	317	287	30	287	337	0	337	439	-152	0	0	30	60	84	-54							
9101+50.00	406	378	28	378	448	0	449	583	-205	0	0	28	69	97	-70							
9102+00.00	406	375	31	375	486	0	486	631	-257	0	0	31	77	107	-76							
9102+50.00	372	328	44	328	510	0	510	663	-336	0	0	44	78	110	-66							
9103+00.00	350	286	64	286	530	0	531	690	-404	0	0	64	80	112	-47							
9103+50.00	360	280	80	280	556	0	557	724	-444	0	0	80	81	113	-33							
9104+00.00	353	285	68	285	564	1	564	734	-448	0	0	68	82	114	-47							
9104+50.00	348	291	58	291	578	1	579	753	-462	0	0	58	82	115	-57							
9105+00.00	359	300	59	300	660	1	660	858	-558	0	0	59	80	112	-53							
9105+50.00	355	294	61	294	754	1	755	981	-687	0	0	61	54	76	-15							
9106+00.00	337	261	75	261	1,061	1	1,062	1,381	-1,119	0	0	75	46	64	11							
9106+50.00	332	249	84	249	1,119	0	1,120	1,455	-1,207	0	0	84	78	109	-25							
9107+00.00	292	251	41	251	772	0	773	1,004	-754	0	0	41	87	121	-81							
9107+50.00	122	122	0	122	577		577	751	-629	0	0	0	71	99	-99							
9108+00.00	4	4	0	4	208		208	271	-267	0	0	0	26	36	-36							
9108+40.66																						
DIKE																						
Totals:	4,858	4,099	759	4,099	9,285	6	9,290	12,077	-7,980	0	0	759	1,126	1,577	-818							

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut				Fill					Checks (EW-102)		Topsoil										
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
CEDARAVE.																						
1106+79.74	2	2	0	2	0		0	0	2	0	0	0	4	6	-6							
1107+00.00	5	5	0	5	0		0	0	5	0	0	0	4	6	-6							
1107+19.71	0	0	0	0	0		0	0	0	0	0	0	0	0	0							
1107+19.73	0	0	0	0	0		0	0	0	0	0	0	0	0	0							
1107+50.00	0	0	0	0	0		0	0	0	0	0	0	0	0	0							
1107+66.71	0	0	0	0	0		0	0	0	0	0	0	0	0	0							
1107+66.73	16	2	14	2	61	9	69	90	-89	0	0	14	0	0	14							
1108+00.00	131	88	43	88	272	21	293	381	-292	0	0	43	41	58	-16							
1108+50.00	230	152	77	152	464	22	485	631	-479	0	0	77	95	133	-56							
1109+00.00	251	136	115	136	553	26	579	753	-617	0	0	115	103	144	-29							
1109+50.00	254	148	106	148	594	28	621	808	-660	0	0	106	105	147	-41							
1110+00.00	249	160	89	160	727	31	758	986	-825	0	0	89	139	194	-106							
1110+50.00	254	171	84	171	810	31	841	1,094	-923	0	0	84	167	234	-151							
1111+00.00	254	175	79	175	814	30	844	1,098	-923	0	0	79	167	234	-156							
1111+50.00	248	171	78	171	822	31	853	1,109	-938	0	0	78	166	232	-155							
1112+00.00	256	175	81	175	826	30	856	1,112	-937	0	0	81	165	232	-150							
1112+50.00	254	172	82	172	833	30	863	1,122	-950	0	0	82	164	230	-148							
1113+00.00	240	158	81	158	849	32	881	1,145	-987	0	0	81	162	226	-145							
1113+50.00	238	158	80	158	850	32	882	1,147	-989	0	0	80	161	225	-145							
1114+00.00	237	162	75	162	840	31	871	1,132	-970	0	0	75	161	226	-151							
1114+50.00	240	164	76	164	830	31	861	1,119	-956	0	0	76	162	226	-150							
1115+00.00	244	163	81	163	830	30	861	1,119	-956	0	0	81	161	226	-145							
1115+50.00	241	160	81	160	831	31	862	1,121	-961	0	0	81	160	224	-143							
1116+00.00	235	160	75	160	822	31	853	1,109	-950	0	0	75	159	223	-148							
1116+50.00	234	159	74	159	818	31	848	1,103	-943	0	0	74	158	221	-146							
1117+00.00	244	166	78	166	806	29	835	1,085	-920	0	0	78	157	220	-141							
1117+50.00	257	178	79	178	773	23	796	1,035	-857	0	0	79	158	221	-142							
1118+00.00	255	177	78	177	757	21	779	1,012	-835	0	0	78	155	218	-139							
1118+50.00	243	173	70	173	763	22	785	1,021	-848	0	0	70	152	213	-144							
1119+00.00	238	176	62	176	761	20	781	1,015	-839	0	0	62	151	212	-150							
1119+50.00	190	136	53	136	595	15	610	793	-657	0	0	53	118	165	-112							
1119+89.19	51	37	14	37	165	4	169	220	-183	0	0	14	32	45	-31							
1120+00.00	243	188	55	188	879	18	897	1,167	-978	0	0	55	125	175	-120							
1120+50.00	260	198	62	198	874	15	889	1,156	-957	0	0	62	125	176	-114							
1121+00.00	248	175	73	175	751	15	766	996	-821	0	0	73	147	206	-134							
1121+50.00	230	167	63	167	724	16	740	962	-795	0	0	63	143	201	-138							
1122+00.00	230	179	52	179	676	15	691	898	-720	0	0	52	140	196	-144							
1122+50.00	242	183	59	183	637	14	651	846	-663	0	0	59	136	190	-131							
1123+00.00	78	57	21	57	194	4	198	258	-201	0	0	21	42	59	-37							
1123+15.63	163	123	39	123	415	10	424	552	-428	0	0	39	90	126	-87							
1123+50.00	209	153	56	153	662	25	687	893	-740	0	0	56	85	119	-63							
1124+00.00	216	152	63	152	632	23	656	853	-700	0	0	63	81	114	-50							
1124+50.00	225	174	52	174	517	11	528	687	-513	0	0	52	119	167	-115							
1125+00.00	177	137	40	137	388	9	397	516	-378	0	0	40	91	128	-88							
1125+39.75	46	36	10	36	96	2	99	128	-92	0	0	10	23	33	-23							
1125+50.00	192	150	42	150	386	9	395	513	-363	0	0	42	96	135	-94							
1125+93.81	26	19	6	19	47	1	48	62	-43	0	0	6	9	12	-6							
1126+00.00	183	138	44	138	339	1	340	442	-304	0	0	44	50	70	-26							
1126+50.00	165	135	30	135	309	1	310	403	-268	0	0	30	58	82	-51							
1127+00.00	23	20	3	20	42	0	42	55	-35	0	0	3	7	10	-8							
1127+07.39	132	114	18	114	231	0	231	301	-187	0	0	18	41	57	-39							
1127+50.00	151	129	22	129	234	1	234	305	-176	0	0	22	34	47	-25							
1128+00.00	114	97	17	97	154	1	155	201	-104	0	0	17	19	26	-10							
1128+50.00	34	28	7	28	42	0	42	54	-27	0	0	7	9	12	-6							
1128+90.00																						
CEDARAVE.																						
Totals:	9,378	6,639	2,739	6,639	27,296	863	28,158	36,608	-29,972	0	0	2,739	5,199	7,281	-4,544							

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut				Fill					Checks (EW-102)		Topsoil										
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Total Cut Adjusted	Total Fill Unadjusted Volume	Existing Topsoil Stripping Undercut (+ Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink							
Summary:																						
IA3	3,393	1,547	1,847	1,547	834	518	1,351	1,758	-212	0	0	1,847	67	94	1,755							
DIKE	4,858	4,099	759	4,099	9,285	6	9,290	12,077	-7,980	0	0	759	1,126	1,577	-818							
CEDARAVE.	9,378	6,639	2,739	6,639	27,296	863	28,158	36,608	-29,972	0	0	2,739	5,199	7,281	-4,544							
Project Totals:	17,629	12,285	5,345	12,285	37,415	1,387	38,799	50,443	-38,164	0	0	5,345	6,392	8,952	-3,607							

Excavation, Class 10, Roadway & Borrow
1,758
[8] IA3

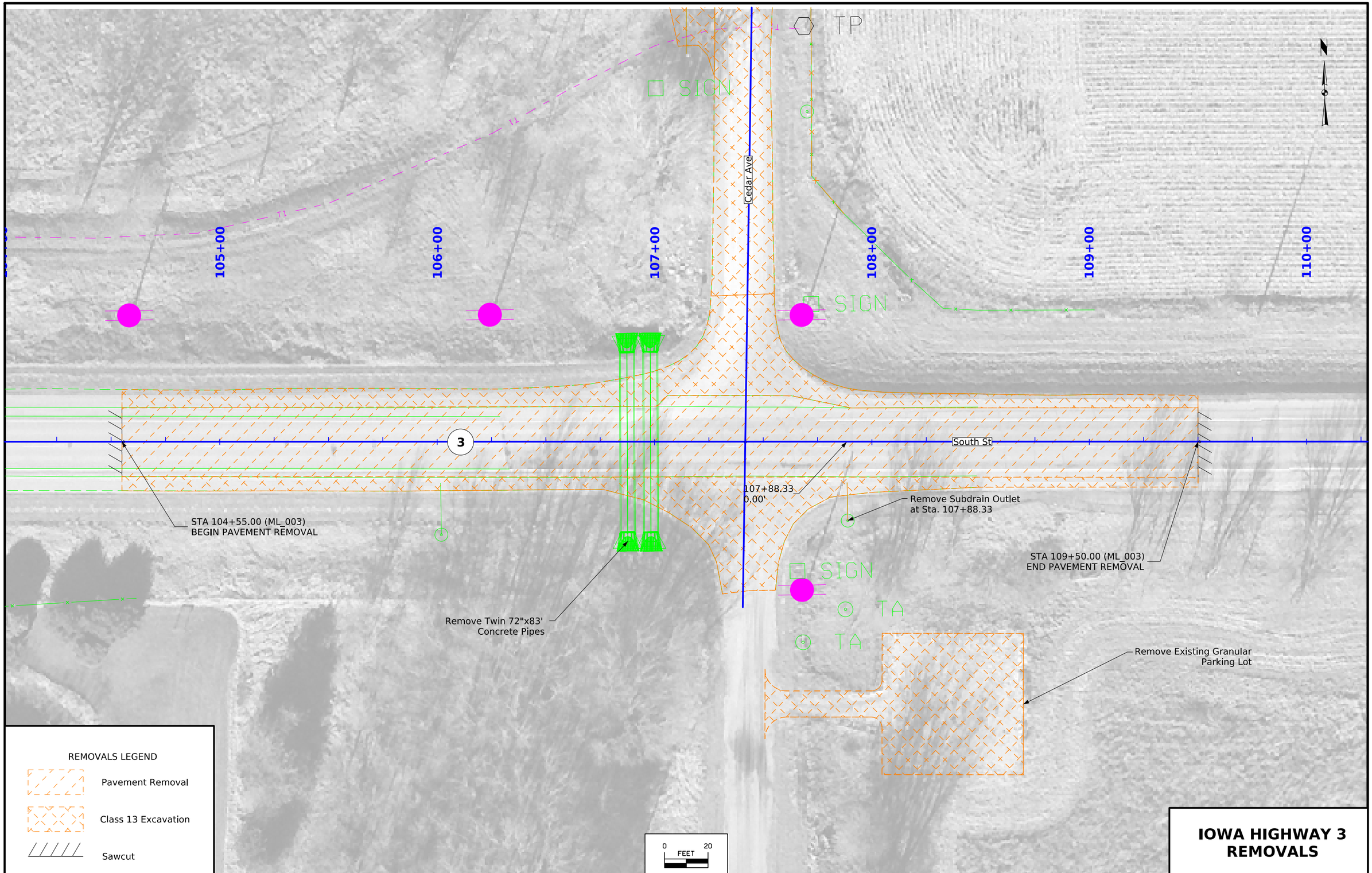
Excavation, Class 10, Waste
10,526
[4] DIKE + [4] CEDARAVE. + [9] IA3

Embankment-In-Place, Contractor Furnished, Cohesive
48685 / 1.3 = 37,450
[8] DIKE + [8] CEDARAVE. / 1.3

Topsoil, Strip, Salvage, & Spread
5,345
[12]

Topsoil, Furnish & Spread
3,607 / 1.4 = 2,576
[15] / 1.4

Compaction with Moisture and Density Control
37,448
[7] DIKE + [7] CEDAR AVE.



IOWA HIGHWAY 3 REMOVALS

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER U.1

10:56:03 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_U01.dgn

117+00
118+00
119+00
120+00
121+00
122+00

Remove 123 LF of Guardrail
Class 13, Waste
STA: 117+98.42
OFF: 18.87' LT
25'
STA 119+34.06 (ML_003)
END PAVEMENT REMOVAL
Remove 123 LF of Guardrail
Class 13, Waste
STA: 121+01.62
OFF: 17.11' LT
3
South St
STA 118+64.64 (ML_003)
BEGIN PAVEMENT REMOVAL
STA 120+39.54 (ML_003)
END PAVEMENT REMOVAL
STA: 117+93.16
OFF: 19.37' RT
Remove Bridge
25'
STA: 120+97.56
OFF: 19.70' RT
Class 13, Waste
Remove 123 LF of Guardrail
STA 119+70.42 (ML_003)
BEGIN PAVEMENT REMOVAL
Class 13, Waste
Remove 123 LF of Guardrail

Sta. 119+52.1
33'x30'
Concrete Slab Bridge
D.A.=Overflow

REMOVALS LEGEND

Pavement Removal

Class 13 Excavation

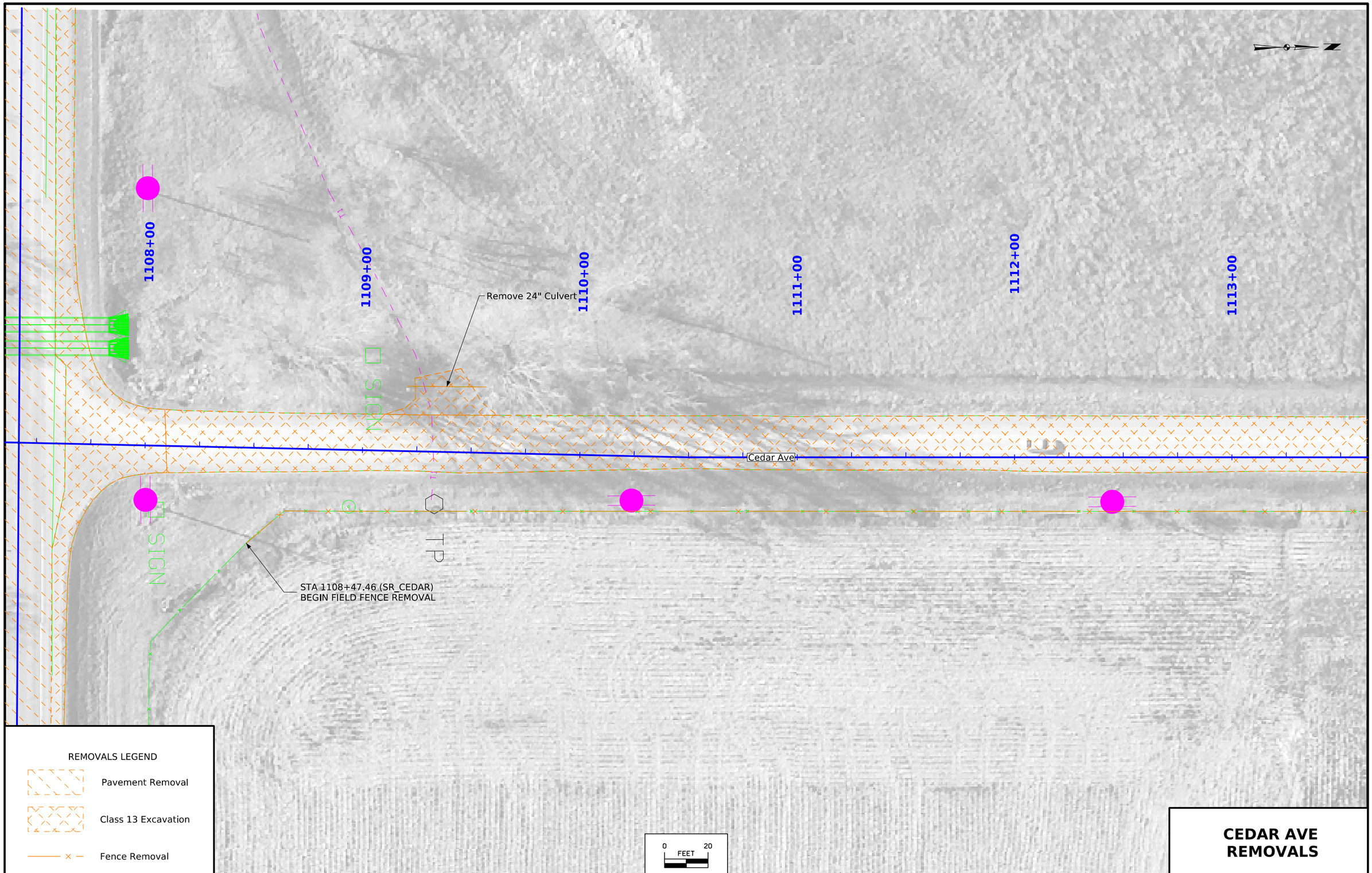
Sawcut

0 20
FEET

IOWA HIGHWAY 3 REMOVALS

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER U.2

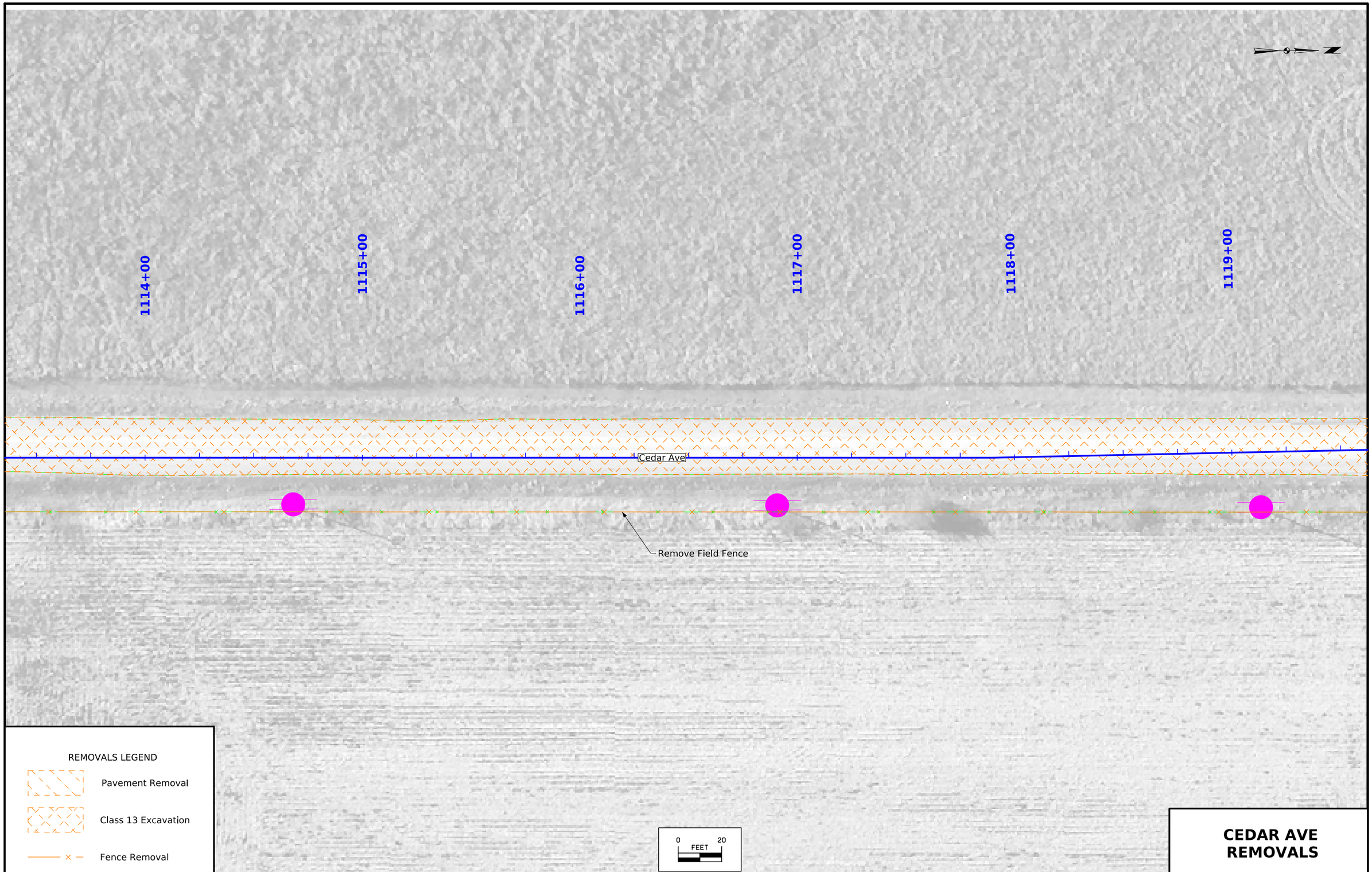
10:56:07 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_U01.dgn



CEDAR AVE REMOVALS

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER U.3

10:56:08 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_U01.dgn



CEDAR AVE REMOVALS

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER U.4

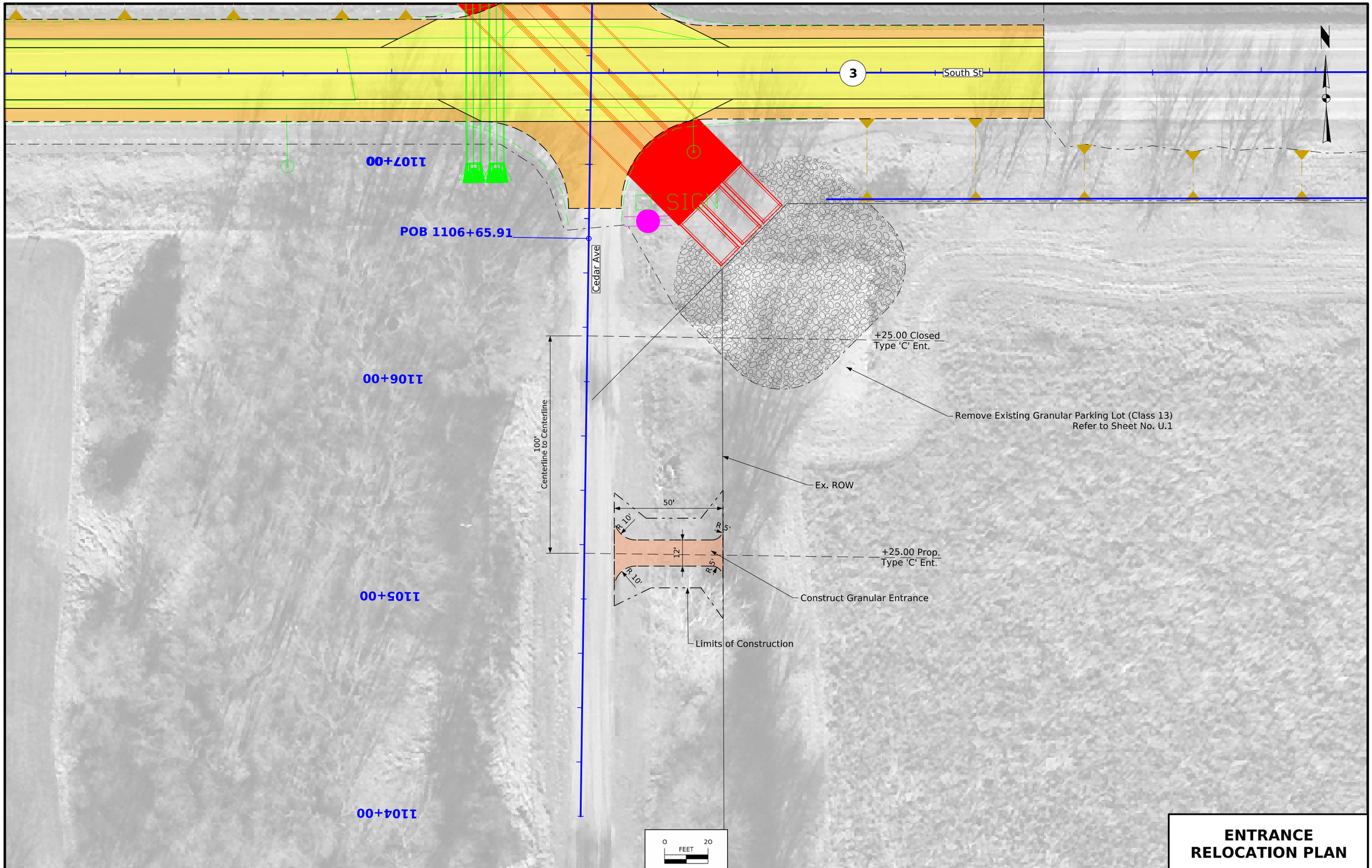
10:56:09 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_U01.dgn

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER U.5

10:56:09 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_U01.dgn

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER U.6

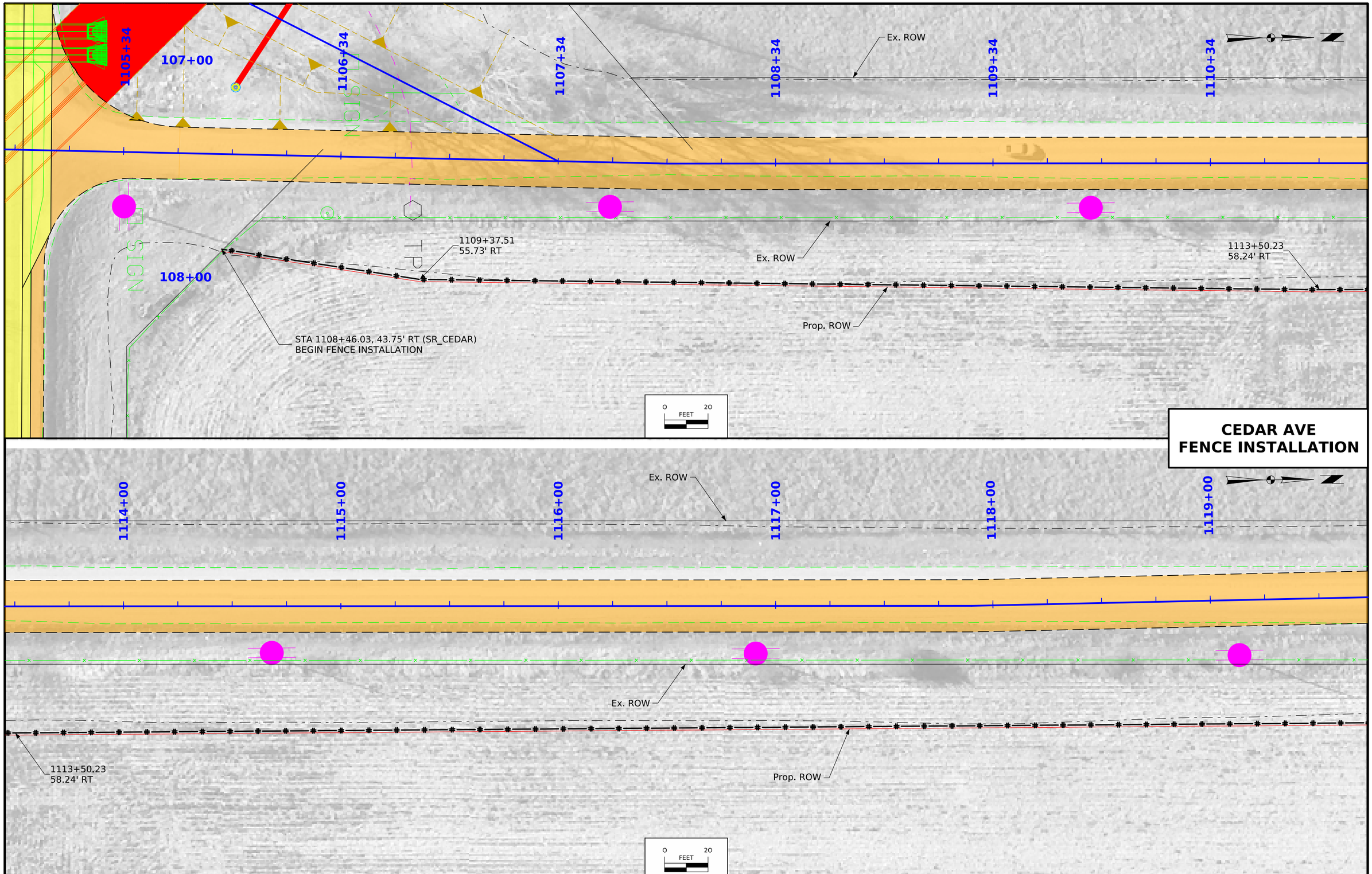
10:56:10 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_U01.dgn



ENTRANCE RELOCATION PLAN

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER U.7

10:56:17 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_U07.dgn



FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER U.8

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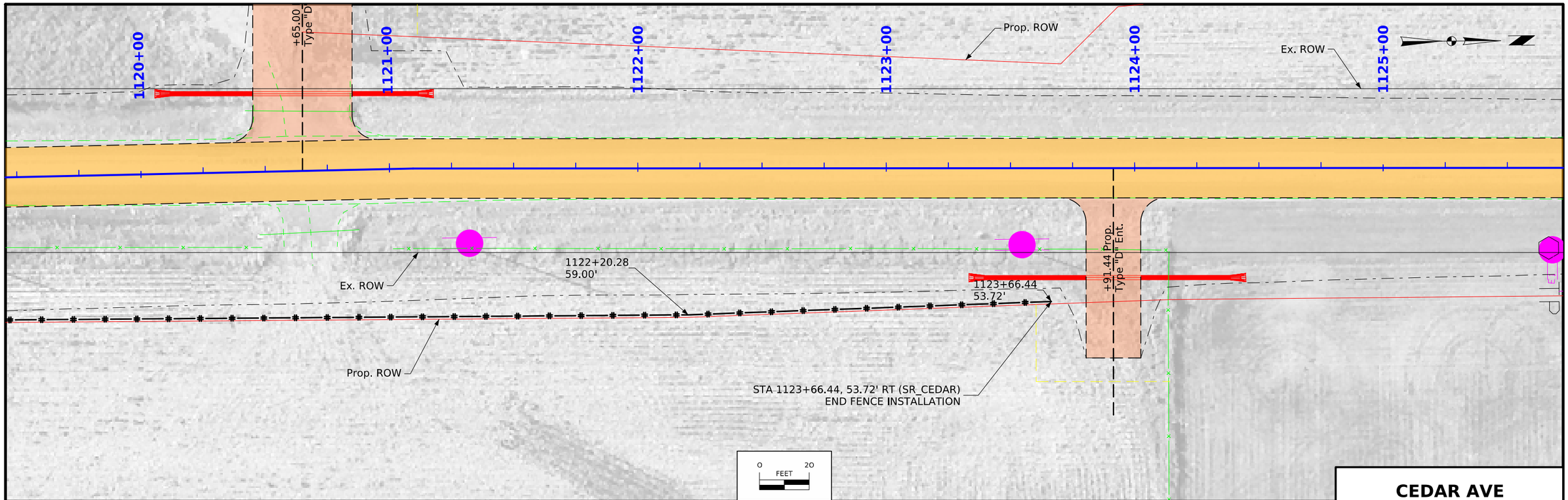
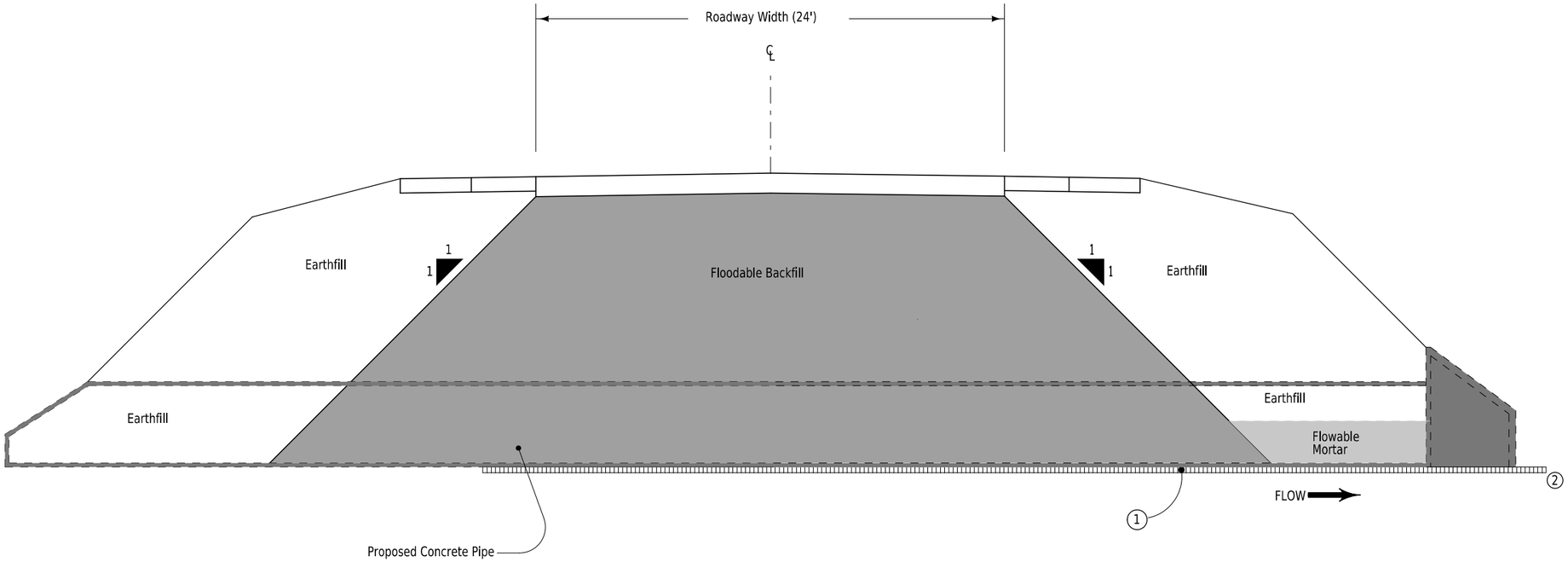
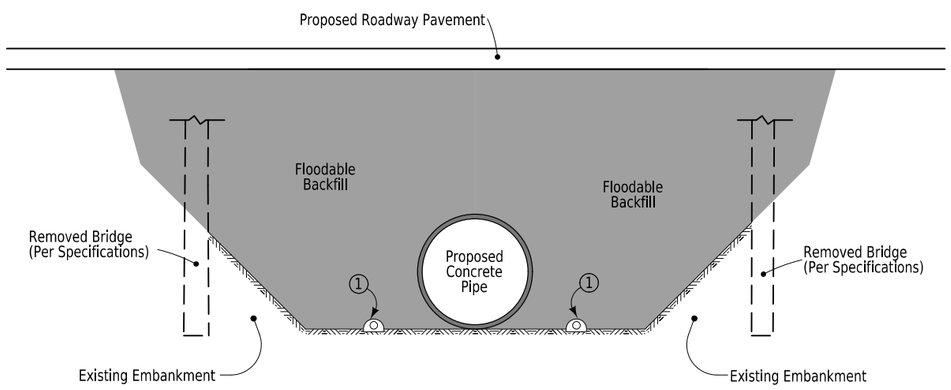


CEDAR AVE
FENCE INSTALLATION

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER U.9

4317
MODIFIED





Section along Centerline

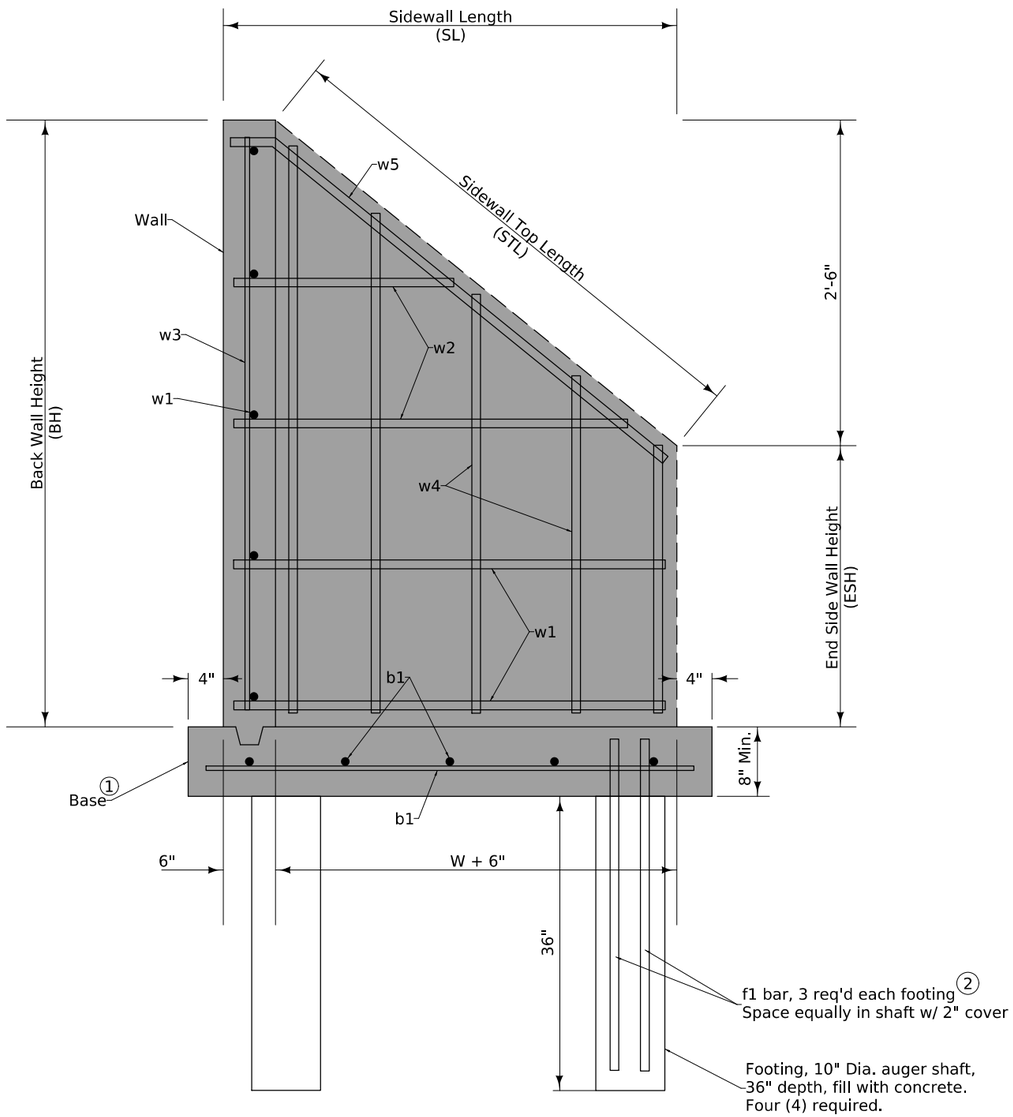
1. Flowline of 4" Subdrain at flowline elevation of culvert with 4" cover of porous backfill.
2. Route Subdrains around Headwall to drain

Refer to Tab. 100-21 on the C Sheets for additional information

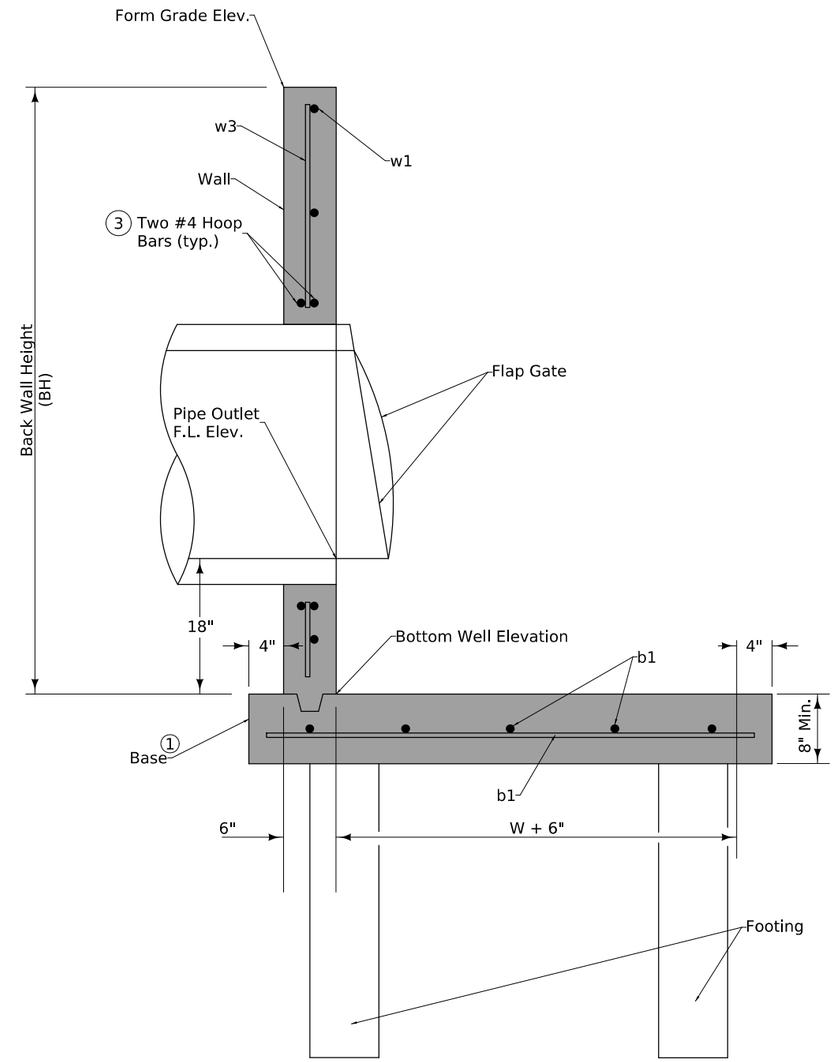
Denotes pay limits for flooded backfill

Fill for Culvert Used in Bridge Replacement

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER U.10



Section A-A



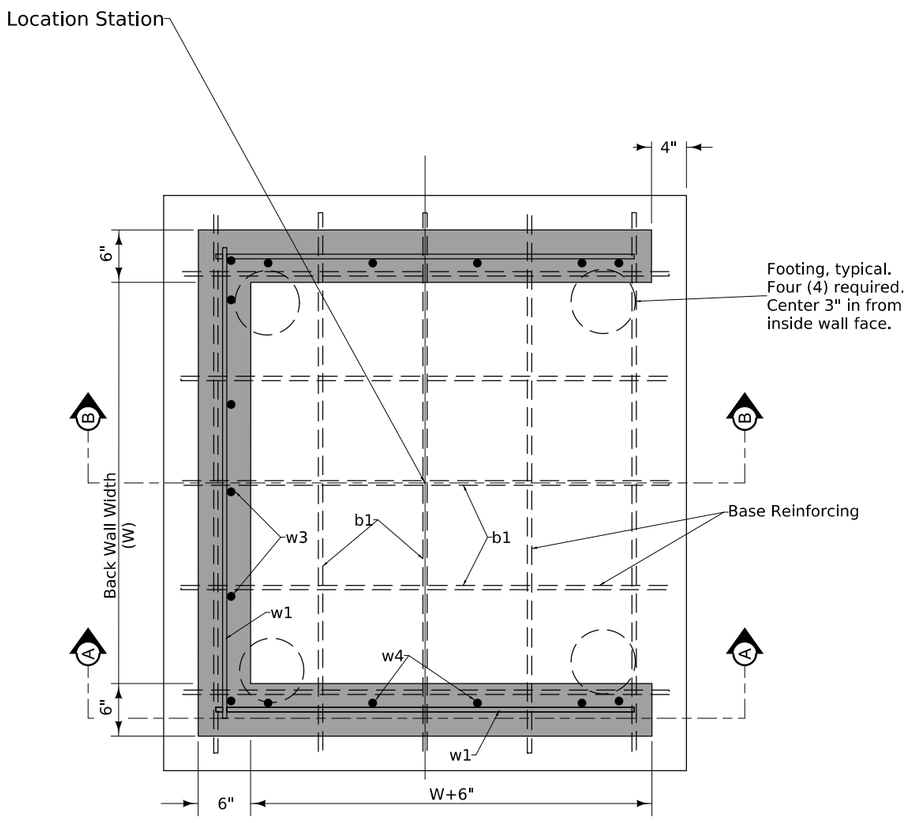
Section B-B

① Cast-in-place base shown, If base is precast integral with walls, the footprint of the base is not required to extend beyond the outer edge of the walls.

② For precast base, provide 6" dia. blockout in base at footing locations. Extend footing bars into base and fill blockout with concrete. Adjust reinforcing to provide 2" clearance.

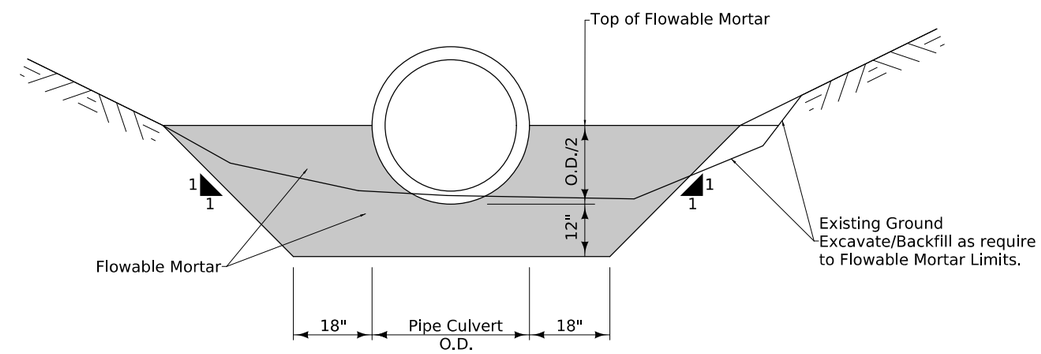
③ Provide two #4 hoop bars at pipe openings.

SW-402 Modified
Storm Sewer Manhole
Page 1 of 2



Plan

Note:
Contractor shall provide bracing or restraint of the pipe culvert as required to prevent pipe from displacing during placement of the Flowable Mortar.



Typical Section
Flowable Mortar Bedding
(24' Adjacent to Headwall, Only)

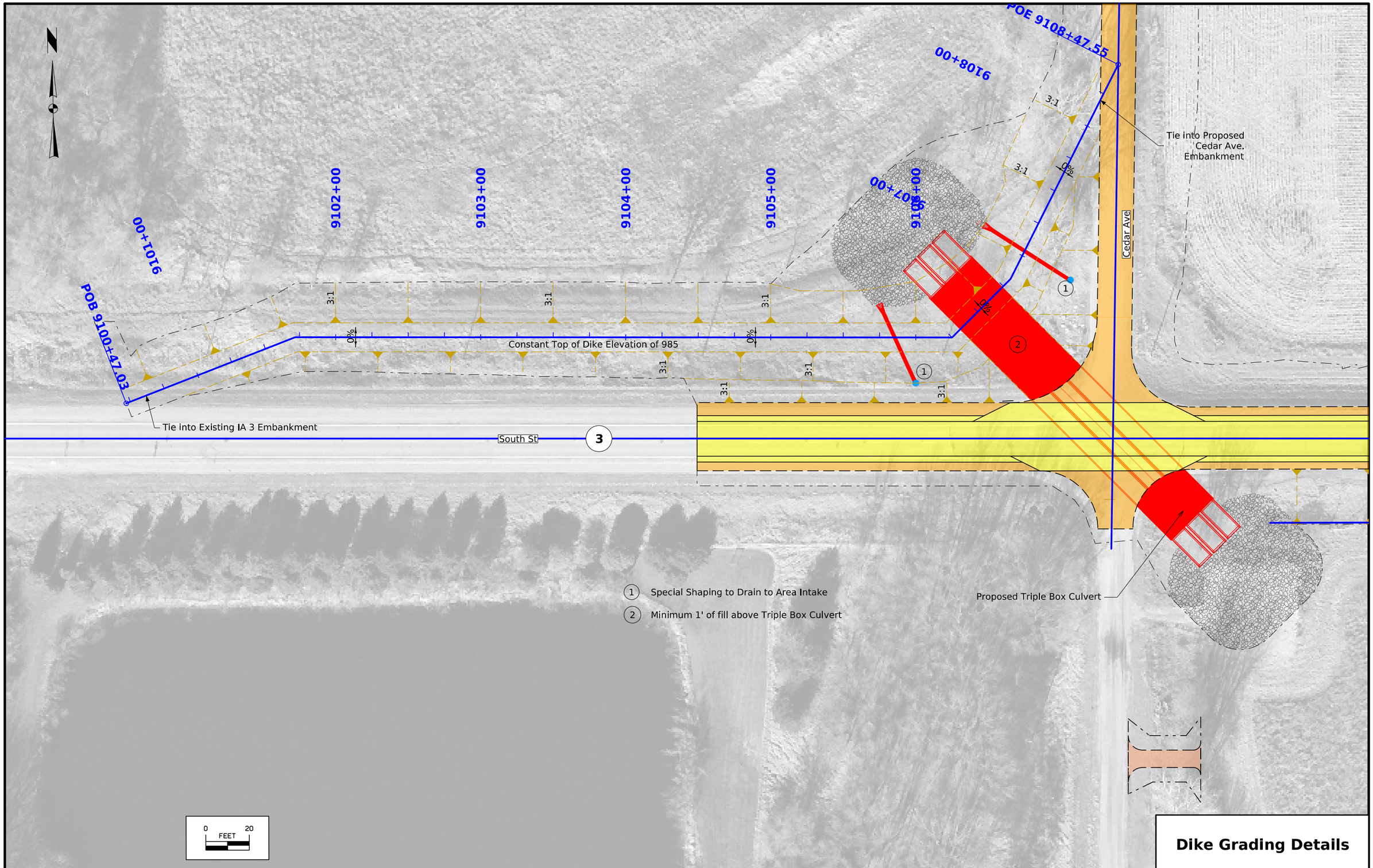
Reinforcing List					
Mark	Size	Location	Shape	Length	Spacing
b1	5	Base		W plus 14"	12"
w1	5	Walls Hor.		W plus 8"	12"
w2	5	Walls Hor.		Var. 6" to SL Minus 4"	12"
w3	5	Walls Vert.		BH Minus 4"	12"
w4	5	Walls Vert.		Var. ESH to BH minus 4"	12"
w5	5	Wall Top		STL plus 2"	NA
f1	4	Footing		40"	NA

Project Specific Data:

Form Grade Elev. = 977.0
Bottom Well Elev. = 970.5
Pipe Outlet F.L. Elev. = 972.00

Back Wall Width (W) = 60"
Back Wall Height (BH) = 78"
End Side Wall Height = 48"
Sidewall Length (SL) = 72"

SW-402 Modified
Storm Sewer Manhole
Page 2 of 2



Dike Grading Details

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER U.13

10:56:36 AM 11/4/2025 cholien pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Sheet_Files\SHT_12003018_U13.dgn

Estimate Culvert Quantities

Item No.	Item Code	Item	Unit	Total	As Built Quantity
1	2402-2720000	Excavation, Class 20	CY	6,744	
2	2402-3825025	Granular Material for Blanket	CY	475	
3	2415-2111210	Precast Concrete Box Culvert, 12 ft. x 10 ft.	LF	702	
4	2415-2201210	Precast Concrete Box Culvert Straight End Section, 12 ft. x 10 ft.	EACH	6	
5	2526-8285040	Construction Survey, Location Survey	LS	1	
6	2533-4980005	Mobilization	LS	1	

Estimate Reference Information

Item No.	Item Code	Item
1	2402-2720000	**Excavation, Class 20** Includes excavation necessary to place the granular leveling material and working blanket. Quantity should be reduced by 719 CY in the event that the working blanket is deleted. Includes filling and compacting low areas around proposed culvert.
2	2402-3825025	**Granular Material for Blanket** Granular material shall be in accordance with Section 4118 of the Standard Specifications. The working blanket may be deleted if determined to be unnecessary at the time of construction.
3	2415-2111210	**Precast Concrete Box Culvert, 12 ft. x 10 ft.** Includes material and labor associated with providing and installing the culvert ties, lifting hole plugs, engineering fabric, joint material, granular leveling material, and grout as required.
4	2415-2201210	**Precast Concrete Box Culvert Straight End Section, 12 ft. x 10 ft.** Includes material and labor associated with providing and installing the culvert ties, lifting hole plugs, engineering fabric, joint material, granular leveling material, and grout as required. Includes 0 degree skew 6 precast end sections, 6 precast lintel beams, and 6 precast curtain walls.
5	2526-8285040	**Construction Survey, Location Survey** - -
6	2533-4980005	**Mobilization** - -

Roadway Quantities shown elsewhere in these plans.

Structural Design

LICENSED PROFESSIONAL ENGINEER
Jacob J. Shaw
23827
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: 6/23/2026 Date

Jacob J. Shaw
Printed or Typed Name

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: Sheets V.1-V.5

whks
engineers + planners + land surveyors

Design For 45° Skew R.A.

Triple 12' x 10' x 235'-0" Precast Reinforced Concrete Box Culvert

Estimated Culvert Quantities

STA. 107+41.72 (IA 3) Turn-in Date: July, 2026

Butler County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 124 Design Sheet No. 1 of 5 FHWA No. 701195

General Notes:

It is the intent of this design to construct a triple 12' x 10' x 235' precast reinforced concrete box culvert skewed 45° R.A. ahead at station 107+41.72.

Faint lines on plans indicate existing structure.

Utility companies and municipalities whose facilities are shown on the plans or known to be within the construction limits shall be notified by the Contractor of the construction starting date.

The roadway will be closed to traffic during construction. See Traffic Control Note.

The precast R.C.B. Culvert sections are designed for HL-93 live load and earth fills of 2 feet.

Vertical earth pressure, EV=0.120 kcf.

Horizontal earth pressure, EHmax = 0.060 kcf max, EHmin = 0.030 kcf.

The precast R.C.B. culvert sections are designed for Class 2 exposure conditions.

The precast R.C.B. barrel and end sections shall conform to Iowa D.O.T. Single Precast R.C.B. Culvert Standards. At the Contractor's option, precast barrel sections may conform to ASTM C1577.

The Class 20 Excavation quantity is based on the assumption that at the start of culvert construction, the existing groundline shown on the "Situation Plan" for this design has remained undisturbed and no roadway fill has been placed.

Excess Class 20 Excavation material suitable for backfilling shall be stockpiled at the construction site, as directed by the Engineer.

It shall be the Contractor's responsibility to provide sites for excess excavated material. No payment for overhaul will be allowed for material hauled to the sites.

Class 20 Excavation material unsuitable for backfilling shall be disposed of in a manner that will leave the site in a neat condition.

When de-watering presents a problem for placing the curtain walls as detailed, alternate methods such as steel sheet pile may be approved but at no additional cost. See Standard Sheet PES 11-20 for details.

The length in linear feet of precast reinforced concrete box culvert will be based on the plan quantity. For the number of linear feet given on the plan, the Contractor will be paid the contract unit price per linear foot. The payment shall be full compensation for furnishing all material, labor and equipment necessary to complete the work except for bid items "Precast Concrete Box Culvert Straight End Section", "Class 20 Excavation", and "Granular Material for Blanket".

For each precast concrete box culvert straight end section installed the Contractor will be paid the contract price per each. The payment shall be full compensation for furnishing all material (including lintel beams and curtain walls), labor and equipment necessary to complete the work except for bid items "Precast Concrete Box Culvert", "Class 20 Excavation", and "Granular Material for Blanket".

The curtain wall and the Type 3 lintel beam or Type 1 parapet shall be precast.

The Contractor shall furnish and install culvert ties for all joints. The main section joints will have one tie on each side of the barrel and the last barrel section will be attached to the end sections with two ties per side. The end section joints will have two ties per side.

Culvert ties shall be included in the cost for precast concrete box culvert. Tie rods will be 1 inch diameter steel and shall meet requirements of ASTM A709 Grade 36 or equal. See Standard Sheet PRCB G2-20 for details.

Culvert tie assemblies shall be galvanized after fabrication.

The limits for excavation for the precast concrete box culvert shall be as shown on the "Working Blanket and Granular Leveling Material Detail" on Design Sheet 5.

A minimum of 6 inches of Granular Leveling Material shall be used as bedding for the precast box culvert. The bedding shall be shaped to a flat base using a template. All costs including material and labor associated with providing and installing the Granular Leveling Material shall be included in the bid items "Precast Concrete Box Culvert, 12 Ft. x 10 Ft." and "Precast Box Culvert Straight End Section, 12 Ft. x 10 Ft.".

The Granular Leveling Material shall meet the requirements of Section 4117 of the Standard Specifications.

The precast box culvert shall be built to the dimensions and specifications shown in these plans.

The Contractor shall submit details (i.e. Shop Drawings) of the proposed precast concrete box sections for this project. The details shall include the following information as found on Standard Sheet 1089P:

A. A Situation Plan drawing showing the back to back parapet dimension for the line of the culvert sections.
B. Dimension the number of precast sections and section lengths.
C. A detail of the precast barrel sections showing a cross section view of the section, steel locations, dimensions, etc.
D. A detail of the precast concrete culvert end section showing a cross section view of the sections, steel locations, dimensions, etc. similar to the end section details shown in the Iowa D.O.T. Standards.

The Contractor shall provide all information shown on Standard Sheet 1089P.

The Contractor shall allow 30 working days for the Engineer's Shop Drawing review.

All reinforcing bars and bars noted as dowels supplied for this structure shall be deformed reinforcement unless otherwise noted or shown.

The clear distance from face of concrete to near edge or end of reinforcing bar to be 1½" min. and 2" max. unless otherwise noted.

The reinforcement supplied for this structure shall be plain and/or deformed welded wire reinforcement (WWR) Fy = 65 ksi, and/or Grade 60 reinforcing steel in accordance with the Standard Specifications. The reinforcement areas are based on welded wire reinforcement. If reinforcing bars are substituted for welded wire reinforcement, the reinforcement areas shall be increased by 8%. The barrel sections in these standards were designed with plain WWR, Fy = 65 ksi.

All dimensions are in feet and inches unless otherwise noted or shown.

Any of the following combinations of reinforcement may be used:

a. 1 or 2 layers of welded wire reinforcement or
b. 1 layer of welded wire reinforcement and 1 layer of reinforcement bars or
c. 1 layer of reinforcement bars.

The reinforcement shall be developed in accordance with AASHTO LRFD specifications.

The maximum size of reinforcement bars shall be #6, except for parapet reinforcement as detailed.

The maximum welded wire reinforcement size shall be a W23/D23 per layer (maximum of 2 layers).

The spacing center to center of the transverse wires or bars shall not be less than 2" nor more than 4". The spacing center to center of the longitudinal wires or bars shall not be more than 8".

Welding will not be allowed on reinforcement bars or welded wire reinforcement, except that the original welding required to manufacture the wire reinforcement is acceptable.

When reinforcement is cut, additional reinforcement shall be added on both sides of the cut member to replace or exceed the cut reinforcement.

These culvert standards label all reinforcing steel with English notation (#3 is ⅜ inch diameter bar). English reinforcing steel received at the precast plant may display the following "bar designation". The "bar designation" is the stamped impression on the reinforcing bars, and is equivalent to the bar diameter in millimeters.

English Size	3	4	5	6	7	8	9	10	11
Bar Designation	10	13	16	19	22	25	29	32	36

The first precast barrel section adjacent to the outlet precast end section may be a double groove barrel to facilitate placement of outlet end sections and allow inlet and outlet end sections to be similar.

Installation Notes:

Precast concrete box culvert sections shall be laid with the groove end of each section up-grade, and the sections shall be tightly joined. Concrete ties to be used only to hold box sections together, not for pulling sections tight. Joint openings between sections should be as tight as practicable and limited to a maximum of ¾ inch openings. The joint on the bottom of the culvert shall be sealed with a flexible water tight 1 inch butyl rope gasket as per Materials I.M. 491.09.

Butyl rope gasket shall be installed in accordance with the recommendations of the Manufacturer and shall extend vertically 6 inches above the bottom fillet. All joints shall be trimmed clean on the inside after sealing.

Burr threads of Concrete Box Ties without damaging galvanizing to prevent nut rotation after tightening is complete.

The Contractor shall place a 2 foot wide piece of engineering fabric around the top and sides of each precast joint. The fabric shall be centered with 1 foot on each side of the joint, the fabric shall be attached to the walls and top of each section to prevent the fabric from slipping off the joint during backfilling operations. Attachment methods shall be approved by the Engineer.

The Granular Leveling Material shall be installed in accordance with Article 2402.03, H, 4, of the Standard Specifications. If larger granular material is to be installed below the Granular Leveling Material, the Contractor shall place engineering fabric below the Granular Leveling Material to separate the layers. The fabric shall be oversized by a minimum of 1 foot on all edges to contain the Granular Leveling Material.

All costs including material and labor associated with providing and installing the engineering fabric as described above for the joints and underlayment of the Granular Leveling Material shall be included in the bid items "Precast Concrete Box Culvert, 12 Ft. x 10 Ft." and "Precast Box Culvert Straight End Section, 12 Ft. x 10 Ft.". The engineering fabric shall be in accordance with Article 4196.01, B, 3, of the Standard Specifications.

Class C & Class E revetment will be placed around the precast concrete box culvert end sections, as shown in these plans.

During backfilling the compaction adjacent to the bottom corner radii or chamfer shall be accomplished with a mechanical hand compactor.

The Contractor shall furnish and install lifting hole plugs for each section. Lifting holes shall be plugged with a precast concrete plug or plastic plug approved by the Engineer, sealed and covered with a 2'-0" x 2'-0" piece of engineering fabric centered over the hole and attached to the section to prevent the fabric from slipping.

Specifications:

Design:

AASHTO LRFD Bridge Design Specifications, 8th Ed., Series of 2017.

Construction:

Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, current series, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions

Design Stresses:

Design stresses for the following materials are in accordance with the AASHTO LRFD Bridge Design Specifications, 8th Ed., Series of 2017:

Reinforcing steel in accordance with AASHTO LRFD Section 5, Grade 60.
Welded wire reinforcement in accordance with AASHTO LRFD Section 5.
Concrete in accordance with AASHTO LRFD Section 5, f'c for barrel sections as noted on Culvert Barrel Detail Standards, for End Section Design f'c = 5.0 ksi.

Working Drawing and Calculation Submittals

Working drawings and calculations shall be submitted for the following items shown in the table below. (Note additional working drawings and calculations may be required in accordance with Article 1105.03 of the Standard Specifications.)

Submittal requirements for working drawings and calculations shall be in accordance with 1105.03 of the Standard Specifications for Highway and Bridge Construction of the Iowa Department of Transportation. The absence of a certification requirement for a submittal does not relieve the Contractor of the responsibility to attain certification.

Calculation submittals in this table which are associated with working drawing submittals shall be submitted on the same day. Review time for calculation submittals shall be of the same duration as and run concurrently with review time for associated working drawings. The calculation submittals listed in the table are not meant to be an exhaustive list and do not relieve the Contractor from providing additional calculation submittals if requested by the Engineer.

Working Drawing Description	Working Drawing File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)
Shop Drawing Sheet 1089P	(083)_Butler_Design124_PrecastRCBCulvert.pdf	No

English Culvert Standards

Standard	Issued	Revised
PRCB G2-20	12-2020	01-2023
PRCB 12-20	12-2020	--
PES 1-20-T1	12-2020	--
PES 2-20-T1	12-2020	01-2023
PES 1-20-T3*	12-2020	10-2021
PES 2-20-T3*	12-2020	01-2023
PES 9-20-T3*	12-2020	--
PES 11-20**	12-2020	--

* Type 3 end sections may be used in lieu of Type 1 at Contractor's option.
** Use of alternate curtain wall details shall be approved by the Engineer.

Design History at this Site

(Includes this Design)

Des. No.	Type of Work
257	Original Design
480	Bridge Deck Overlay
103	Bridge End Sections
104	Revetment
124	Bridge Replacement

Traffic Control Plan

The roadway will be closed to thru traffic. Refer to the Traffic Control Plan shown elsewhere in these plans.

Pollution Prevention Plan shown elsewhere in these plans.

Design For 45° Skew R.A.

Triple 12' x 10' x 235'-0" Precast Reinforced Concrete Box Culvert

Culvert General Notes

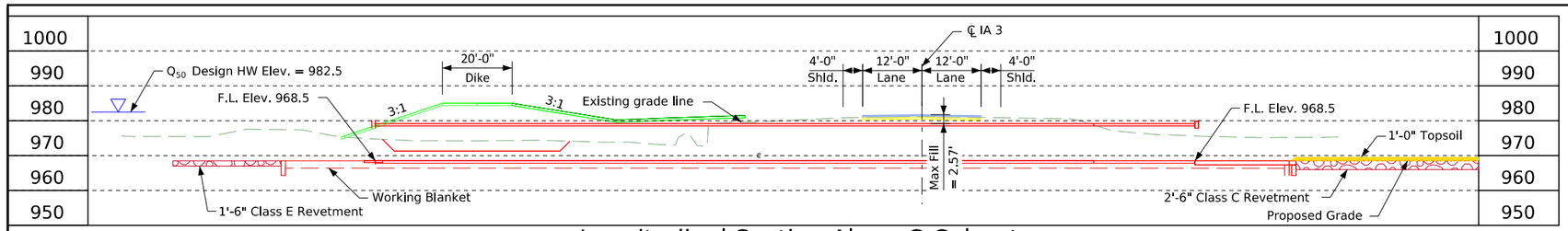
STA. 107+41.72 (IA 3)

Turn-in Date: July, 2026

Butler County

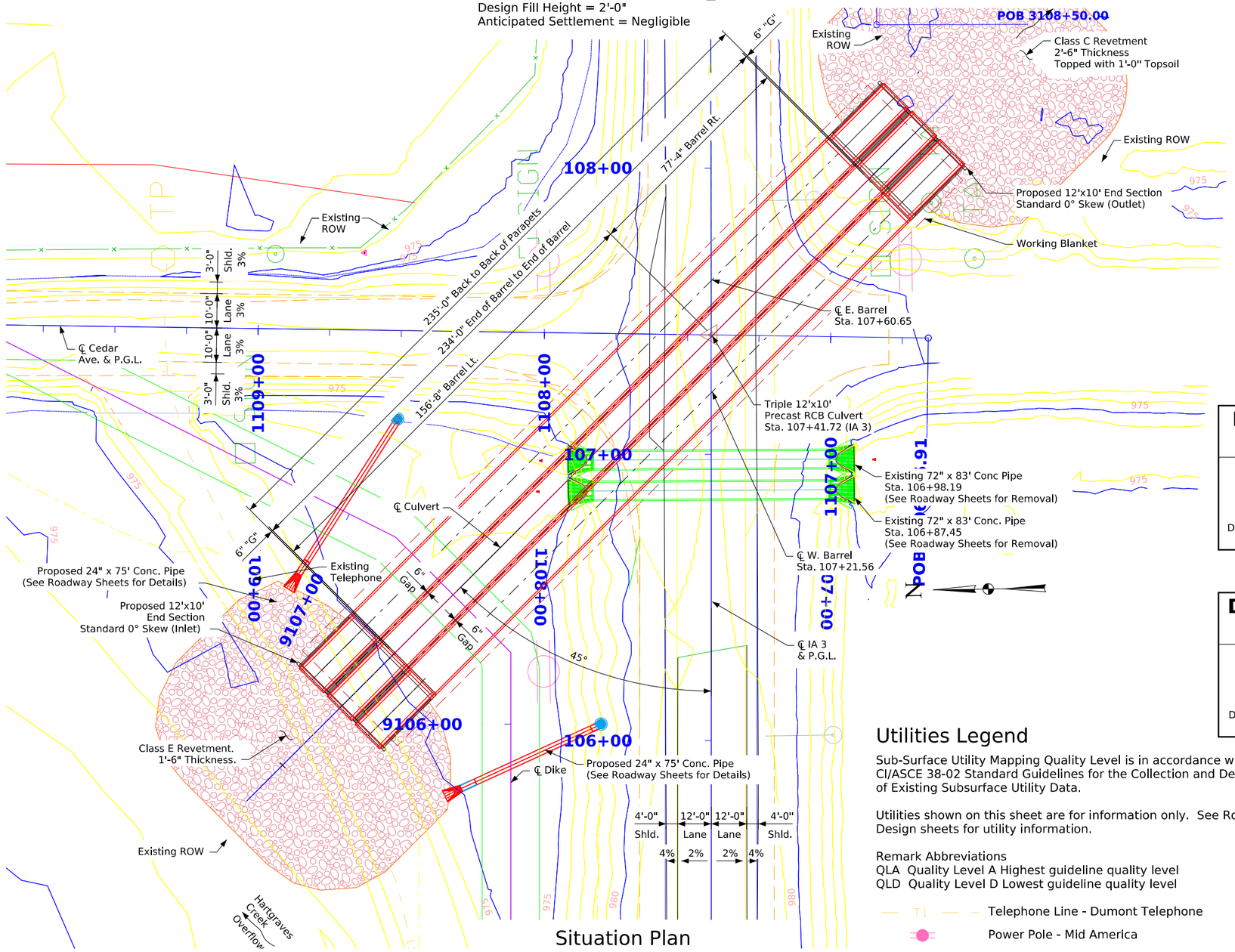
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 124 Design Sheet No. 2 of 5 FHWA No. 701195



Longitudinal Section Along ℄ Culvert

Design Fill Height = 2'-0"
Anticipated Settlement = Negligible



Situation Plan

Control Point: BM No. 1: N. 8935364.127, E. 15302436.356, Elev. 975.929 RR spike E. side of fence post.

Notes:

This design is for the replacement of the existing 33' x 30 Concrete Slab Bridge, Design No. 257, FHWA No. 16490, Maint No. 1294.1S003.

All units are in feet unless otherwise noted or shown.

Lintel beam and curtain walls shall form one continuous line and shall not be staggered or offset.

Flow line of the culvert has been set 2' below streambed.

Existing Structure
33'x30' Concrete Slab Bridge
0° Skew
Design No. 257
Sta. 119+52.24
(See Roadway Sheets for Removal)

VPI Sta. = 106+50.00
VPI Elev. = 981.92

VPI Sta. =108+10.00
VPI Elev. = 981.34

0.0% -0.720%

VPI Sta. 107+30.00
VPI Elev. 981.92
VC = 160'

Proposed Profile Grade IA 3

VPI Sta. = 1107+60.00
VPI Elev. = 981.43

VPI Sta. = 1108+60.00
VPI Elev. = 982.69

-1.000% +3.520%

Tie into IA 3
Sta. 1107+41.72
Elev. 981.73

VPI Sta. 1108+10.00
VPI Elev. 980.93
VC = 100'

Profile Grade Cedar Ave.

Design Data Rural

Cedar Avenue

2013 AADT	100	V.P.D.
TRUCKS	N.A.	%
Total Design ESALs	N.A.	

Design Data Rural

IA 3

2024 AADT	1460	V.P.D.
TRUCKS	13	%
Total Design ESALs	N.A.	

Hydraulic Data

Drainage Area = 180.1 SQ. MI.
Q_{50} = 2,610 CFS
HW Elev. = 982.5
RCB Velocity = 9.1 FPS
Q_{100} = 2,818 CFS
HW Elev. = 983.3
RCB Velocity = 9.8 FPS
Stream Slope = 3.56 Ft./Mi.

Location

On IA 3 over Hartgraves Creek Overflow
T-92N R-18W
Sections 28, 29, 32, 33
Pittsford Township
Butler County
City of Dumont
Bridge Maint. No. 1293.9S003
FHWA No. 701195
Latitude 42.744985°
Longitude -92.985919°

Utilities Legend

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Utilities shown on this sheet are for information only. See Road Design sheets for utility information.

Remark Abbreviations
QLA Quality Level A Highest guideline quality level
QLD Quality Level D Lowest guideline quality level

T1 Telephone Line - Dumont Telephone

Power Pole - Mid America

Design For 45° Skew R.A.

Triple 12' x 10' x 235'-0" Precast Reinforced Concrete Box Culvert

Situation Plan

STA. 107+41.72 (IA 3)

Turn-in Date: July, 2026

Butler County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 124 Design Sheet No. 3 of 5 FHWA No. 701195

FILE NO. 32181	ENGLISH	DESIGN TEAM JS\NL\LG	Butler COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER V.3

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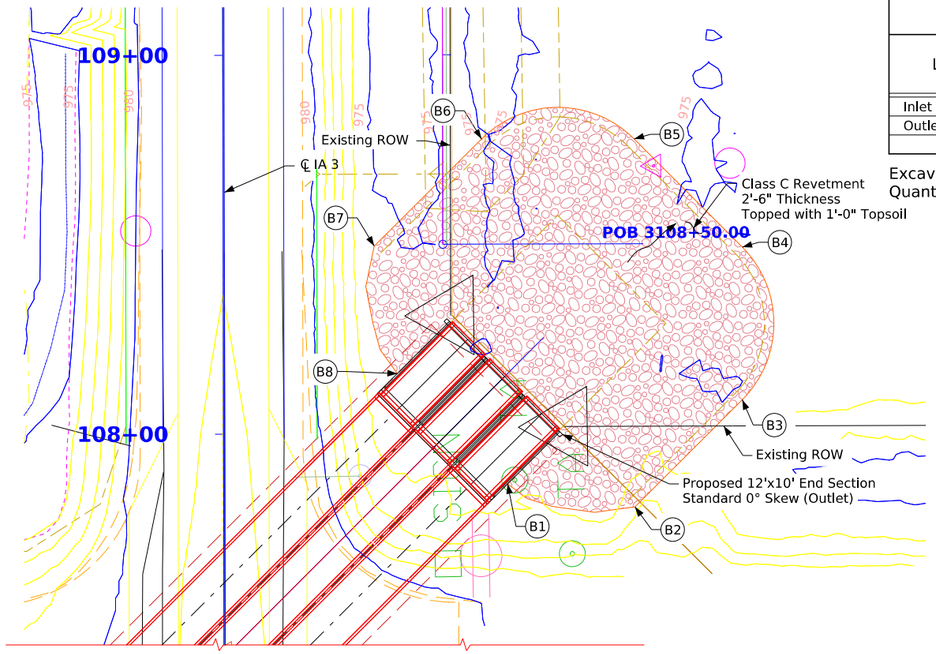
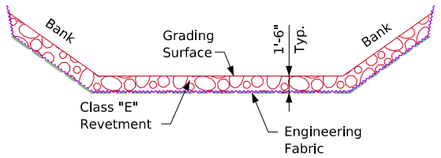
Control Point: BM No. 1: N. 8935364.127, E. 15302436.356,
Elev. 975.929 RR spike E. side of fence post.

Estimated Revetment Quantities Included With Road Plans

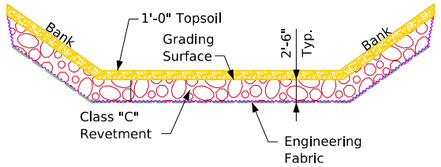
Location	Topsoil (CY)	Revetment Class "C" (Ton)	Revetment Class "E" (Ton)	Engineering Fabric (SY)	Excavation Class 10 (CY)
Inlet	---	---	612.8	825.6	383
Outlet	270.0	1080.0	---	910.2	675
Totals	270.0	1080.0	612.8	1735.8	1058

Excavation quantity calculated from grading surface.
Quantities shown for information only. See Road Sheets.





Inlet Revetment Detail

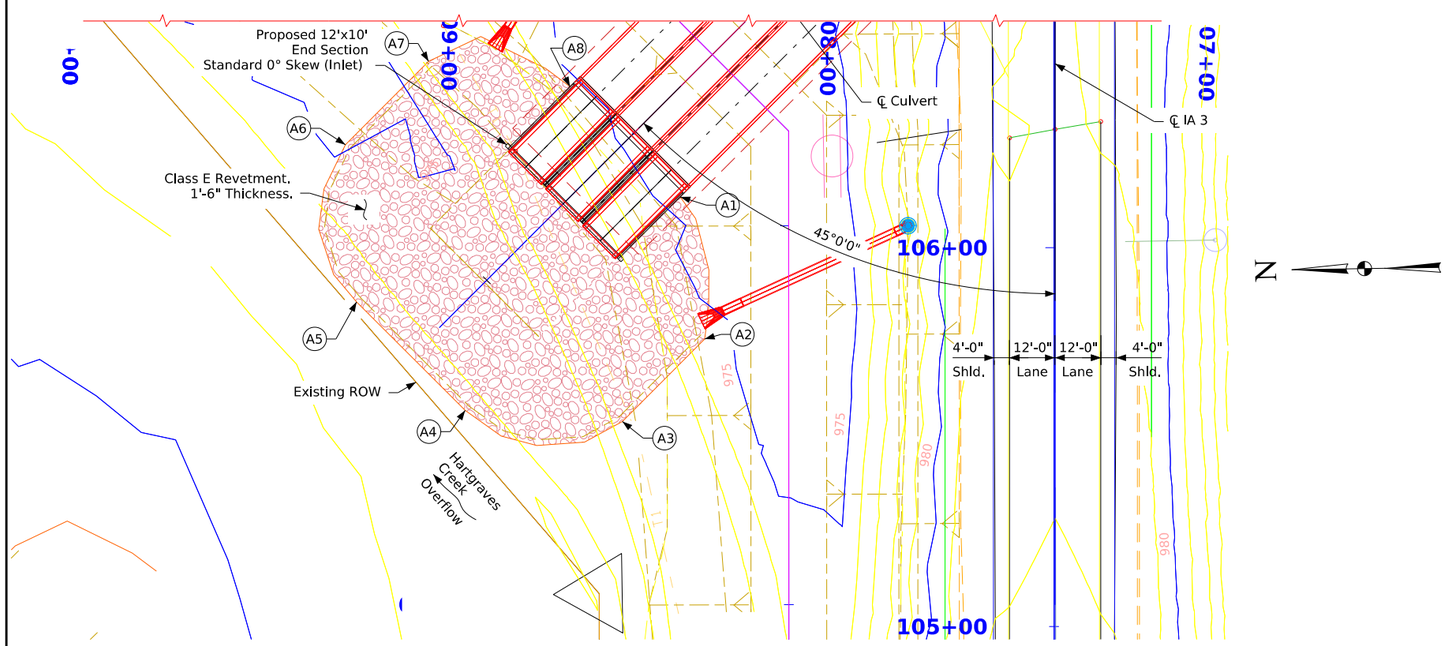


Outlet Revetment Detail

Proposed Revetment Data

Location	Station	Offset
A1	106+13.39	98.63' LT.
A2	105+75.88	92.18' LT.
A3	105+54.14	113.92' LT.
A4	105+56.76	155.02' LT.
A5	105+85.69	184.06' LT.
A6	106+27.19	187.02' LT.
A7	106+49.15	165.06' LT.
A8	106+42.51	127.74' LT.
B1	107+86.70	74.95' RT.
B2	107+80.56	108.59' RT.
B3	108+08.79	136.93' RT.
B4	108+49.09	137.01' RT.
B5	108+77.68	108.54' RT.
B6	108+77.77	68.24' RT.
B7	108+49.54	39.90' RT.
B8	108+15.88	45.90' RT.

Berm slope elevations reflect the grading surface.



Revetment Plan

Design For 45° Skew R.A.

Triple 12' x 10' x 235'-0" Precast Reinforced Concrete Box Culvert

Situation Plan - Misc.

STA. 107+41.72 (IA 3)

Turn-in Date: July, 2026

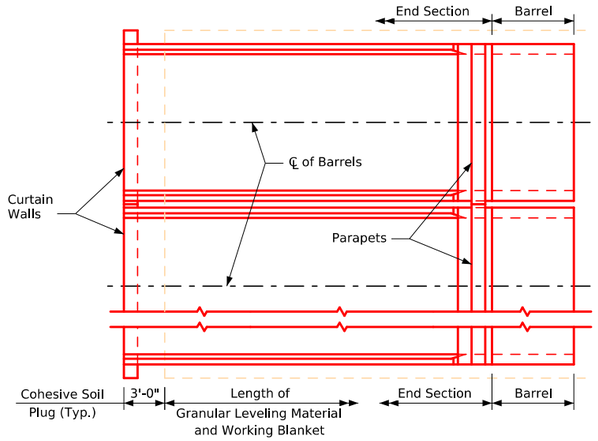
Butler County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 124 Design Sheet No. 4 of 5 FHWA No. 701195

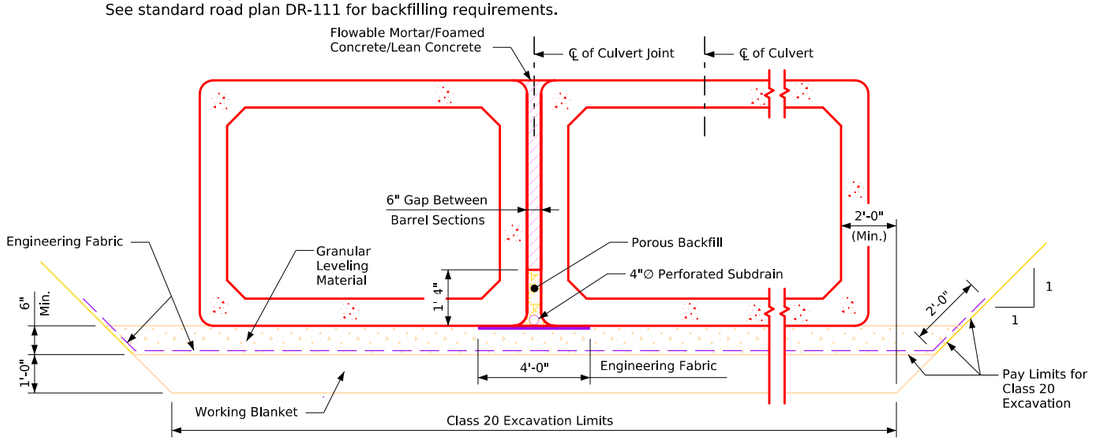
FILE NO. 32181	ENGLISH	DESIGN TEAM JS\NL\LG	Butler COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER V.4

10:50:34 AM 6/23/2026 lgroth pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\SHT_12003083_0124_900425_PC_Z05.dgn



Typical Plan View - 0° Skew Example

Granular Leveling Material and Working Blanket shall terminate 3'-0" short of the precast curtain wall.
See standard road plan DR-111 for backfilling requirements.



Working Blanket & Granular Leveling Material Details / Flowable Mortar Option

Barrel section displayed. End section details not shown.

The porous backfill shall be placed between the precast barrel walls as shown on the Granular Leveling Material Detail. Porous backfill shall also be placed between the end sections up to 1'-4" from the bottom of the end sections and 3'-0" short of the end of the apron of the end section. The porous backfill shall be in accordance with Section 4131 of the Standard Specifications.

Flowable mortar shall be placed on top of the porous backfill between the precast culverts to the top of the barrel slabs, the top of the end section walls, and to a 3'-0" depth at the ends of the apron end sections.

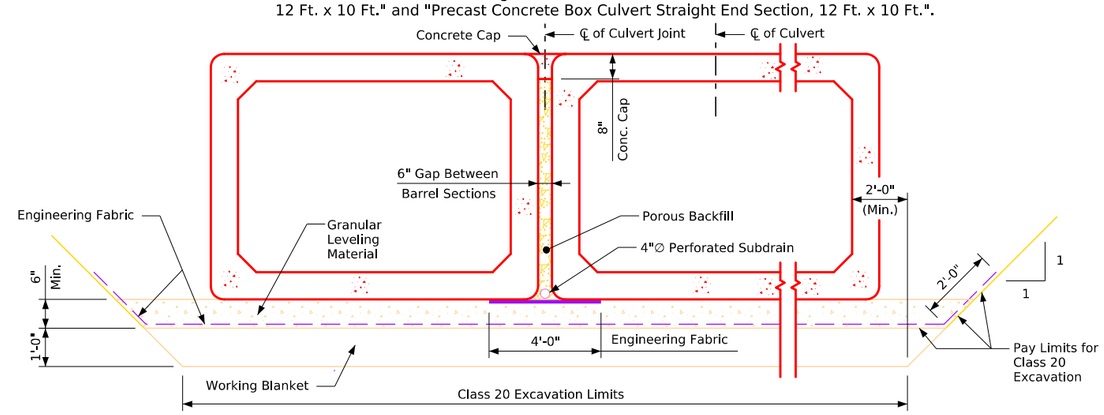
Side-by-Side Precast Culvert Notes:

1. Double welded pipe or double eye bolt type ties are required for the barrel wall adjacent to the first precast culvert structure placed at the site to allow the ties to be tightened from the inside of the barrel wall.
2. Burr threads of Concrete Box Ties without damaging galvanizing to prevent nut rotation after tightening is complete.
3. The Type 1 parapets length shall be increased so the adjoining ends will abut against each other at the centerline of culvert joint for side-by-side precast culvert structures.
4. The Type 3 lintel beams and parapets length shall be increased so the adjoining ends will abut against each other at the centerline of culvert joint for side-by-side precast culvert structures.
5. The curtain walls length shall be shortened so the adjoining ends will abut against each other at the centerline of culvert joint for side-by-side precast culvert structures.
6. Engineering fabric shall be in accordance with Article 4196.01, B, 3, of the Standard Specifications. A 4'-0" wide strip of engineering fabric shall be placed on top of the granular leveling material and the cohesive soil. Engineering fabric shall be placed the full length of the precast culvert. The engineering fabric shall be centered over the centerline of culvert joint and pinned or otherwise secured in place before the precast culverts are placed. All costs including material and labor associated with providing the engineering fabric and installing it as required shall be included in the bid items "Precast Concrete Box Culvert, 12 Ft. x 10 Ft." and "Precast Concrete Box Culvert Straight End Section, 12 Ft. x 10 Ft.".
7. The 4 inch diameter perforated subdrain shall terminate and be capped at the upstream end 3'-0" short of the end of the apron of the end section. The subdrain shall outlet downstream at the end of the apron of the end section. The subdrain shall be surrounded by porous backfill in accordance with Section 4131 of the Standard Specifications. No compaction of the porous backfill is required. All costs including material and labor associated with providing the 4 inch diameter perforated subdrain and installing it as required shall be included in the bid items "Precast Concrete Box Culvert, 12 Ft. x 10 Ft." and "Precast Concrete Box Culvert Straight End Section, 12 Ft. x 10 Ft.".

Flowable Mortar/Foamed Concrete/Lean Concrete Option Notes:

At the Contractor's option, the porous backfill and concrete cap may be replaced with flowable mortar backfill as shown in the flowable mortar option details. Only the options and materials designated on this sheet are allowed. All other options and materials are prohibited.

The flowable mortar including material and labor is included in the bid items "Precast Concrete Box Culvert, 12 Ft. x 10 Ft." and "Precast Concrete Box Culvert Straight End Section, 12 Ft. x 10 Ft.".

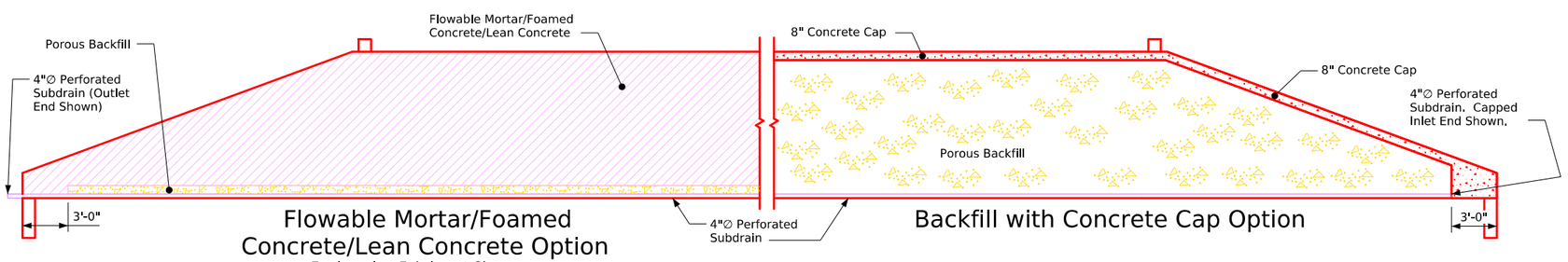


Working Blanket & Granular Leveling Material Details / Concrete Cap Option

Barrel section displayed. End section details not shown.

Porous backfill shall be placed between the precast barrel walls up to 8 inches from the top of the barrel slabs. Porous backfill shall also be placed between the end sections up to 8 inches from the top of the walls and 3'-0" short of the end of the apron of the end section. The porous backfill shall be in accordance with Section 4131 of the Standard Specifications.

A concrete cap shall be placed on top of the porous backfill between the precast culverts for a depth of 8 inches from the top of the barrel slabs, the top of the end section walls, and to a 3'-0" depth at the ends of the apron of the end sections. The concrete shall be Class C concrete in accordance with Section 2403 of the Standard Specifications. The concrete cap, approximately 0.03 Cu. Yds. per foot, including material and labor is included in the bid items "Precast Concrete Box Culvert, 12 Ft. x 10 Ft." and "Precast Concrete Box Culvert Straight End Section, 12 Ft. x 10 Ft.".



Flowable Mortar/Foamed Concrete/Lean Concrete Option

Engineering Fabric not Shown

Backfill with Concrete Cap Option

Design For 45° Skew R.A.

Triple 12' x 10' x 235'-0" Precast Reinforced Concrete Box Culvert

Bedding and Gap Backfill Details

STA. 107+41.72 (IA 3)

Turn-in Date: July, 2026

Butler County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 124 Design Sheet No. 5 of 5 FHWA No. 701195

FILE NO. 32181	ENGLISH	DESIGN TEAM JS\NL\LG	Side-by-Side Precast Culvert Details	Standard Sheet 1082P (Modified)	Butler COUNTY	PROJECT NUMBER BRFN-003-5(083)--39-12	SHEET NUMBER V.5

10:50:36 AM 6/23/2026 lgroth pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\SHT_12003083_0124_900425_PC_Z05.dgn

Revised 08-2022: Added statement to the Flowable Mortar/Foamed Concrete/Lean Concrete Option notes regarding "only the options and materials designated on the sheet are allowed. All other options and materials are prohibited".
Revised 01-2023: Added Note 2 stating to burr threads of Concrete Box Ties. Note 3, 4, 5, 6 and 7 were 2, 3, 4, 5 and 6 respectively. Adjusted details to fit additional note.
ENGLISHPRECASTCULVERTS.DGN - 1082P - THIS SHEET ISSUED 02-13.

CROSS SECTION VIEW COLOR LEGEND

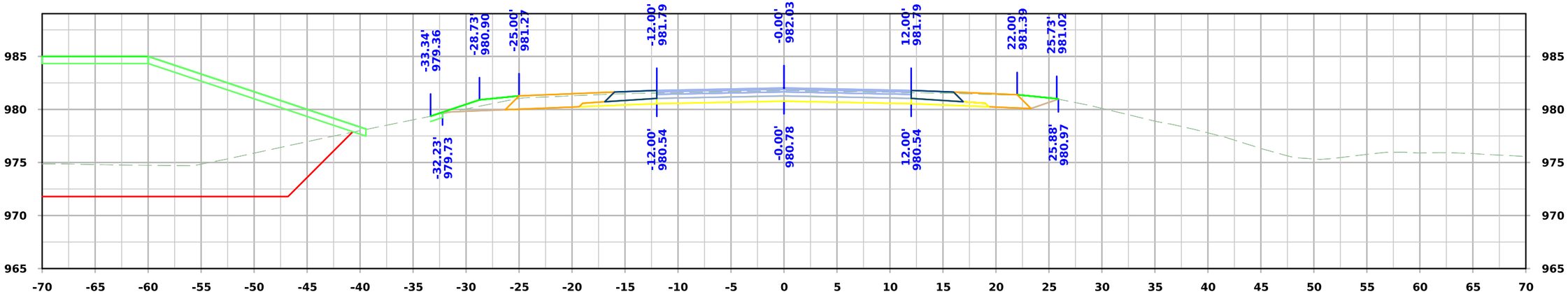
Design Color No.	Feature
Aggregate	
(64)	Choke Stone
(42)	Engineering Fabric
(8)	Flooded Backfill
(92)	Macadam Stone
(20)	Modified
(12)	Plowing Shaping
(14)	Porous Backfill
(8)	Revetment Class A
(6)	Revetment Class B
(62)	Revetment Class C
(188)	Revetment Class D
(28)	Revetment Class E
(12)	Shoulder Special Backfill
(12)	Special Backfill
(20)	Subbase
(20)	Subbase Lower
(20)	Subbase Upper
(118)	Subgrade Treatment
Asphalt	
(207)	HMA Base Course
(207)	HMA Interim Course
(207)	HMA Surface Course
Concrete	
(0)	Barrier Concrete
(0)	Barrier Concrete Footing
(0)	Curb Gutter
(48)	Flowable Mortar
(0)	Median Concrete
(0)	PCC Pavement
(0)	Sidewalk
Shoulder	
(209)	Shoulder HMA
(0)	Shoulder PCC
(6)	Shoulder Granular
Existing	
(0)	Existing Pavement

Design Color No.	Feature
Structural	
(112)	Noise Wall
(112)	Noise Wall Footing
(112)	Retaining Wall Back
(112)	Retaining Wall Back Excavate
(112)	Retaining Wall Face
(112)	Retaining Wall Front Excavate
(112)	Retaining Wall Front Footing
(112)	Retaining Wall MSE Gutter
(112)	Retaining Wall Reinforced Earth
Grading	
(8)	Behind Curb Cut
(6)	Granular
(13)	Granular Back Fill
(48)	Rock Undercut
(8)	Shoulder Earth Fill
(2)	Side Slopes
(226)	Side Slopes Dressing
Substrata	
(128)	Boulder Substrata
(48)	Broken Weathered Substrata
(3)	Core Out Substrata
(203)	Existing Pavement Substrata
(6)	Loam Substrata
(80)	Rock Substrata
(4)	Select Sand Substrata
(3)	Shale Substrata
(10)	Topsoil Substrata
Unsuitable / Waste	
(3)	Unsuitable Type A
(13)	Unsuitable Type B
(11)	Unsuitable Type C
(3)	Waste

CROSS SECTIONS
LEGEND AND INFORMATION SHEET

(COVERS SHEET SERIES W, X, Y, & Z)

IA HWY 3



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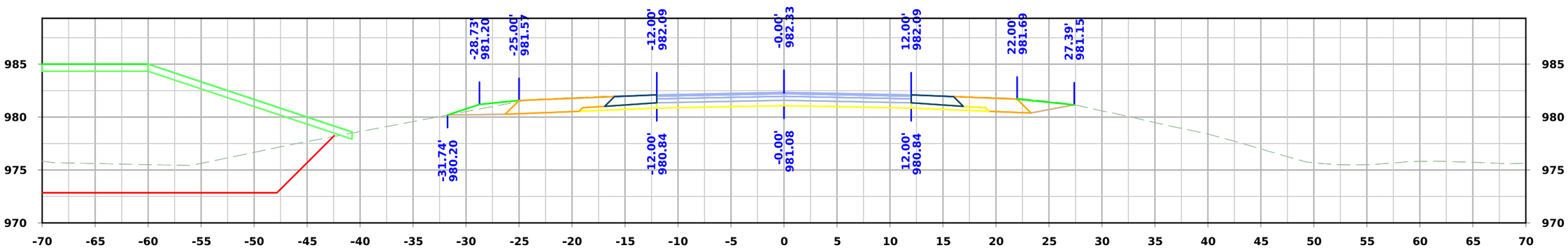

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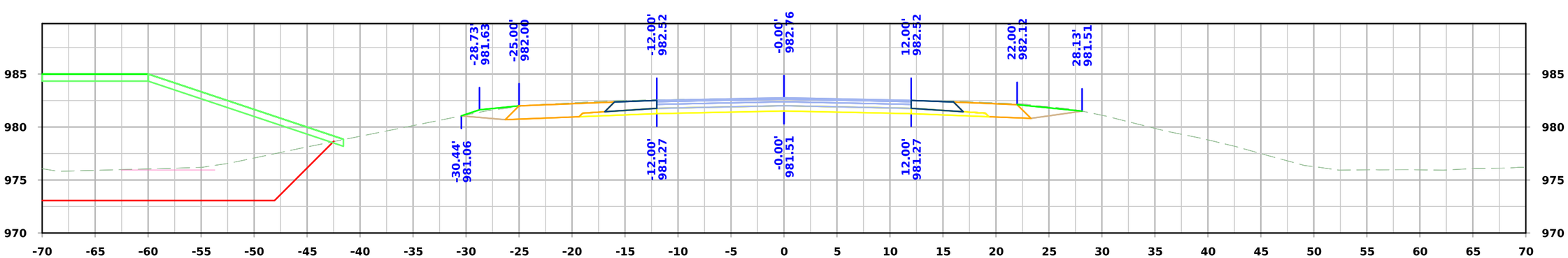

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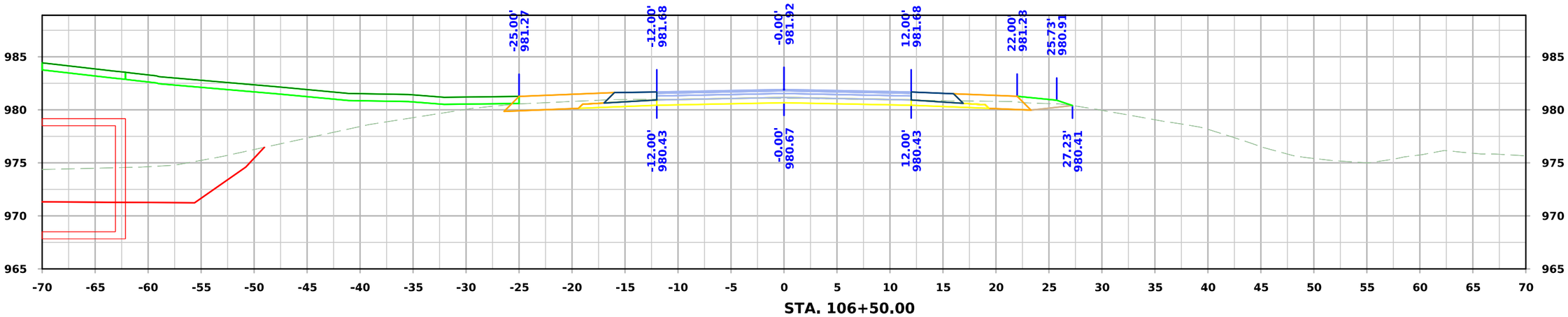

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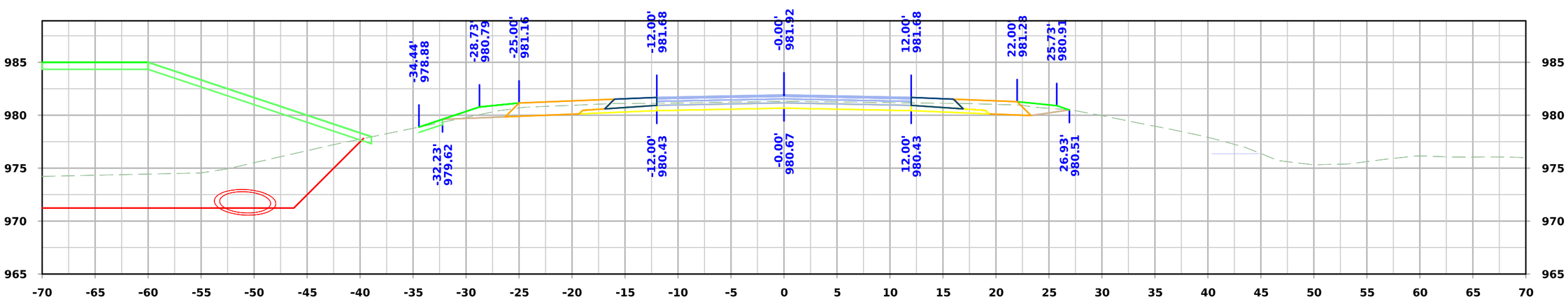

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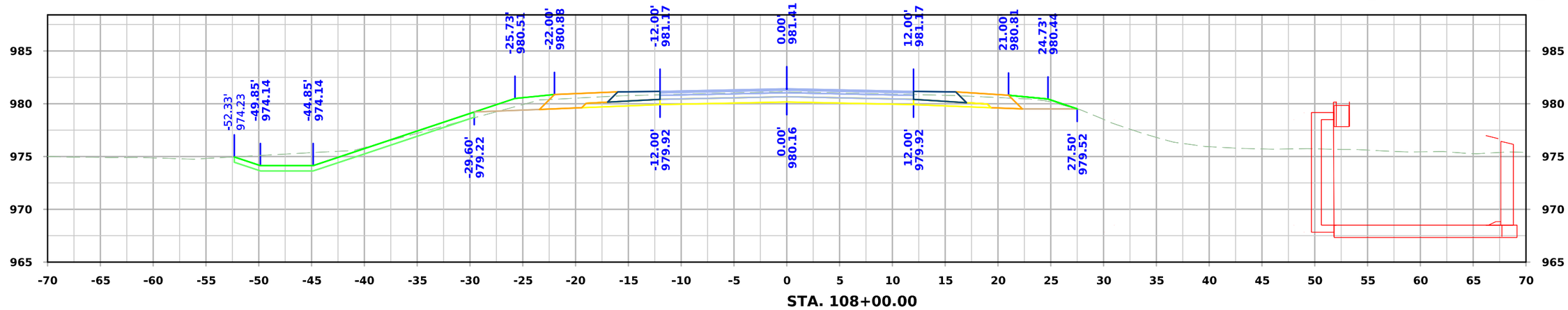

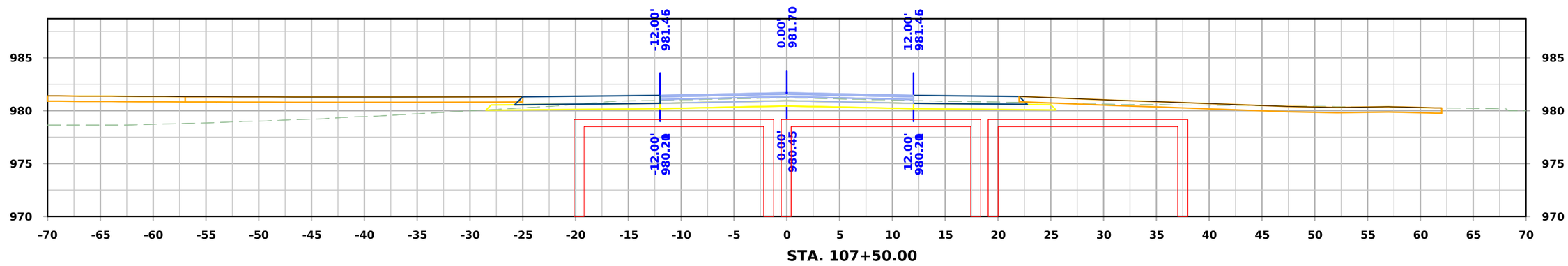

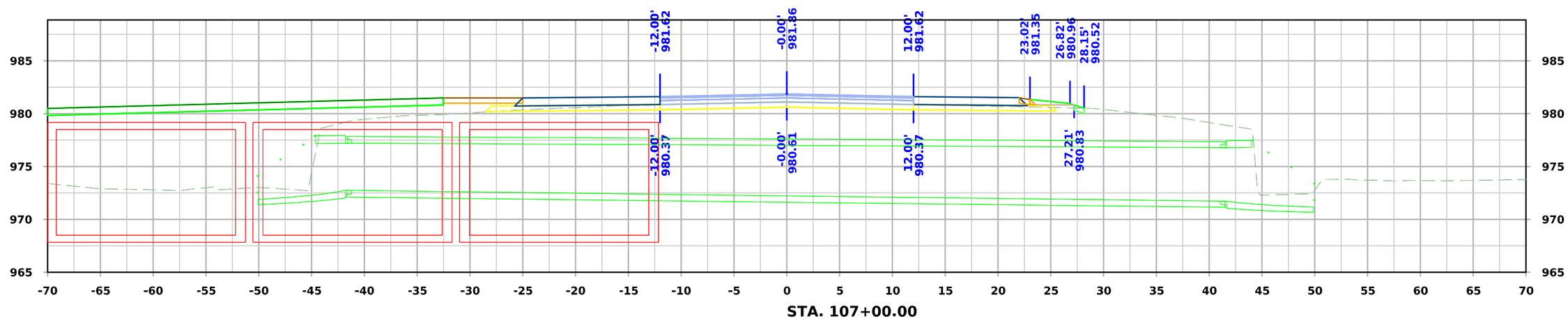

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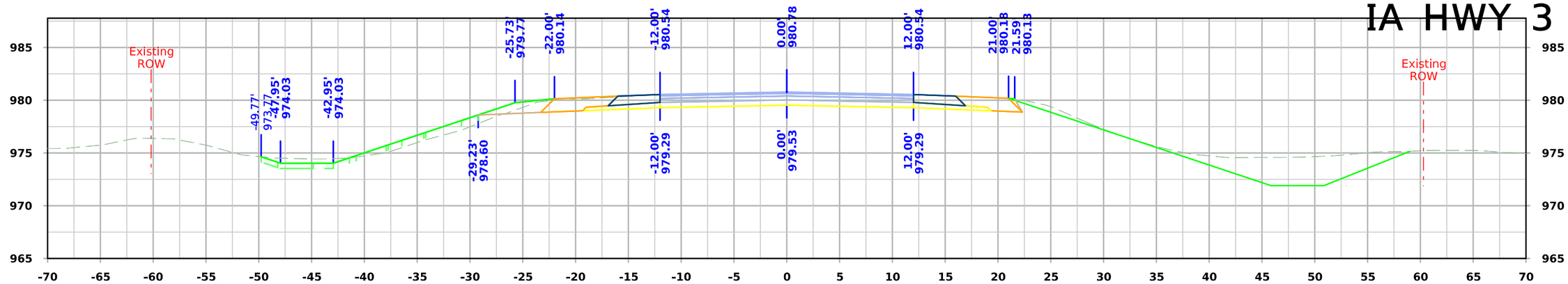

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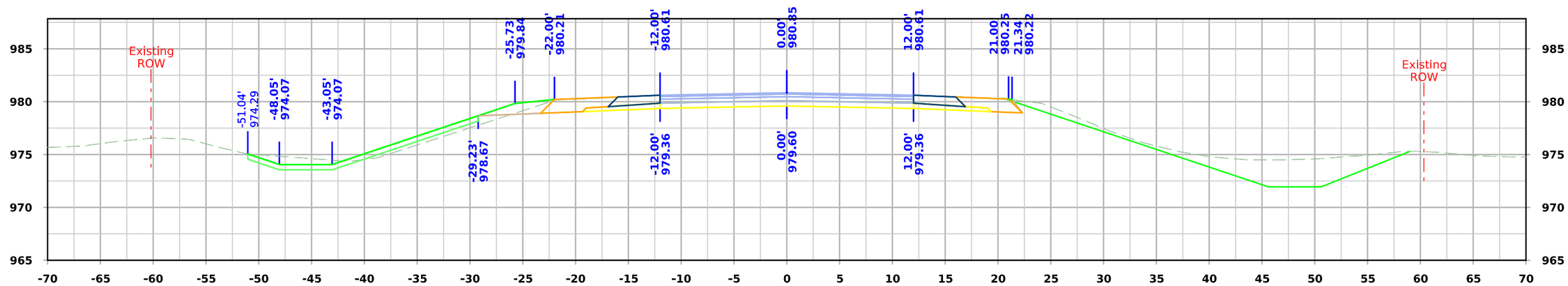

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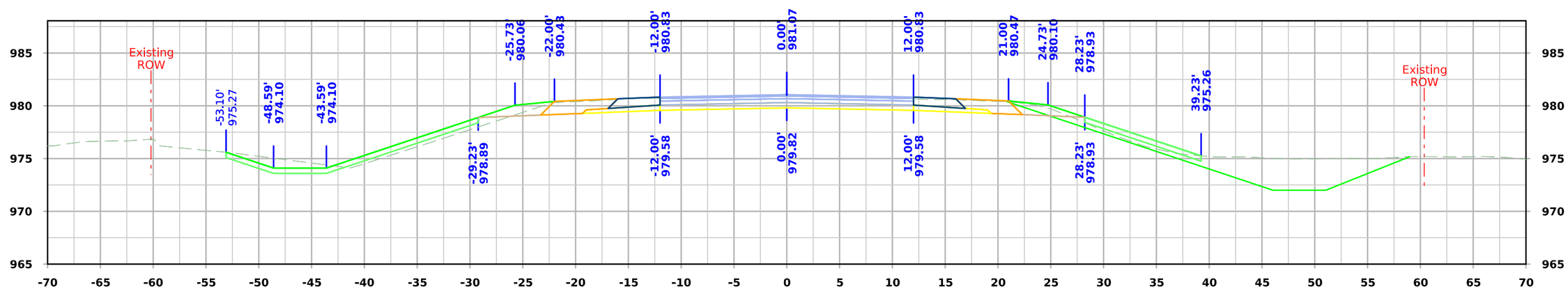

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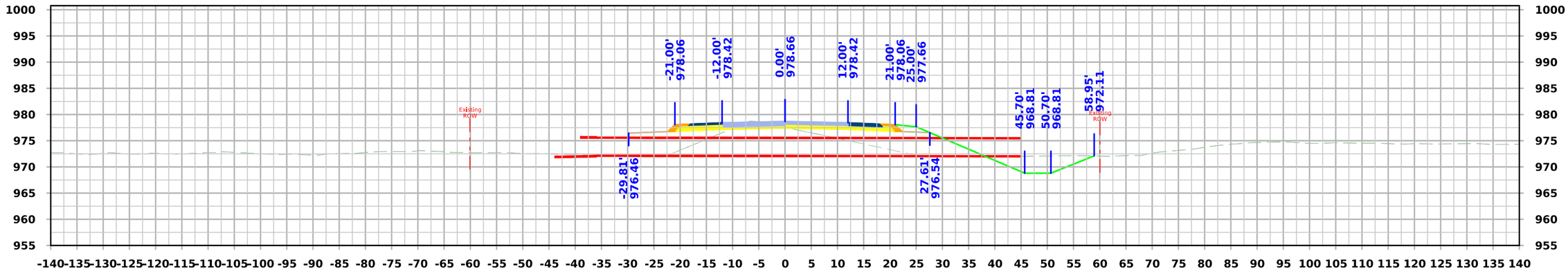

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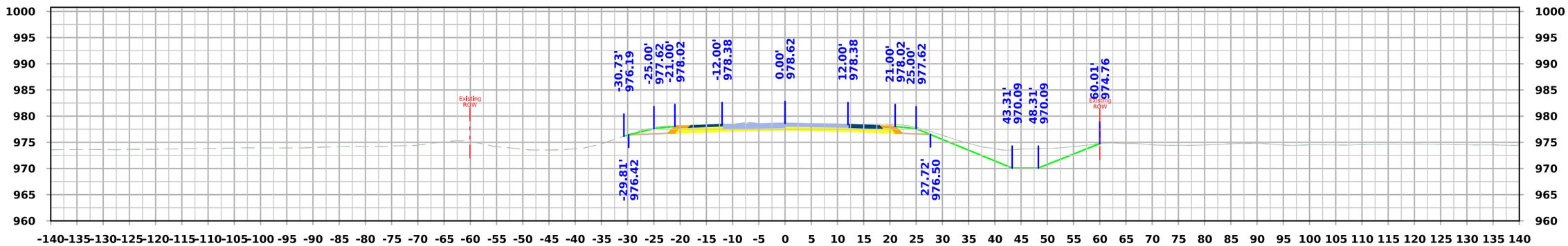

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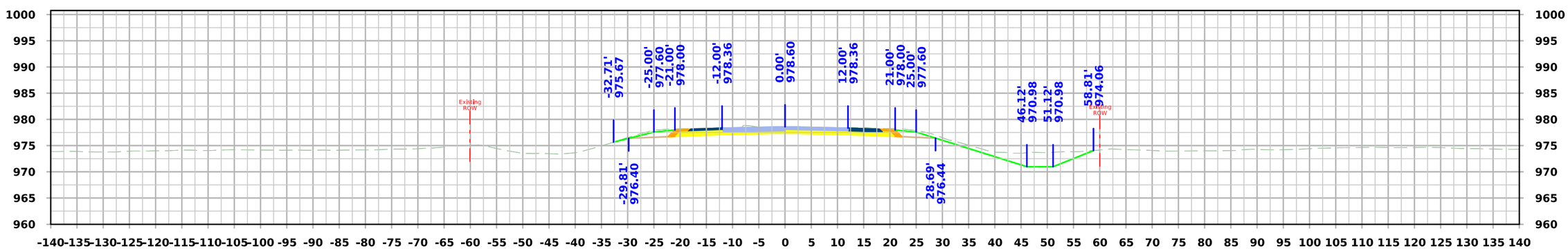

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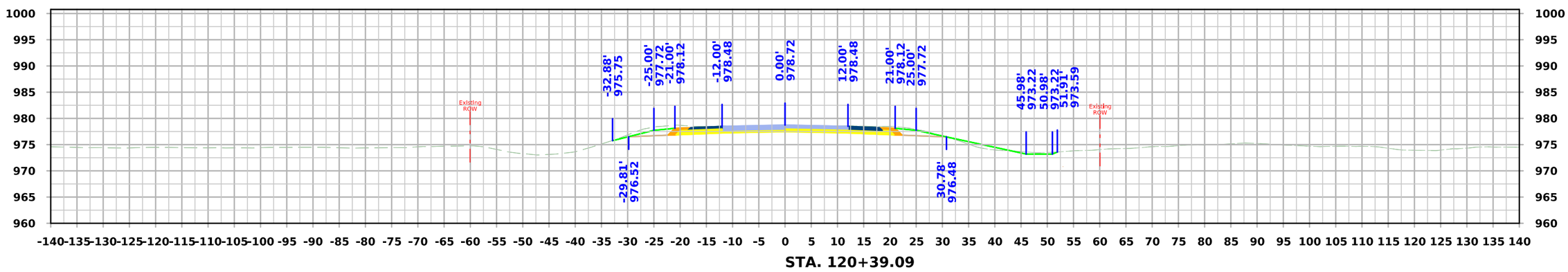

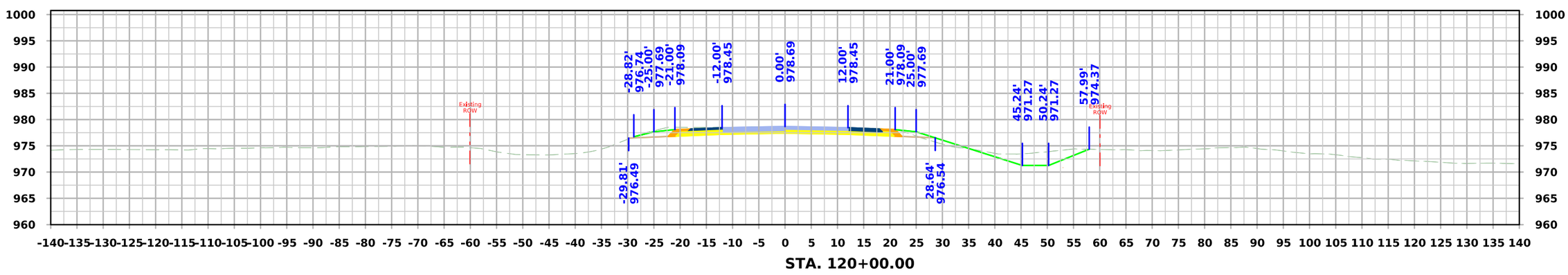

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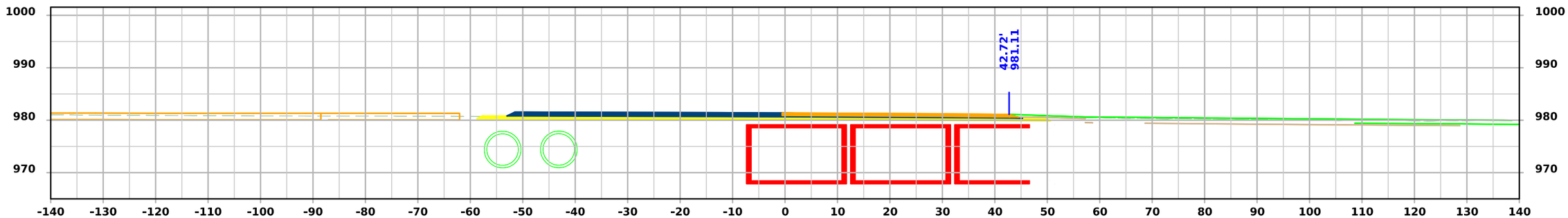
CEDAR AVE.



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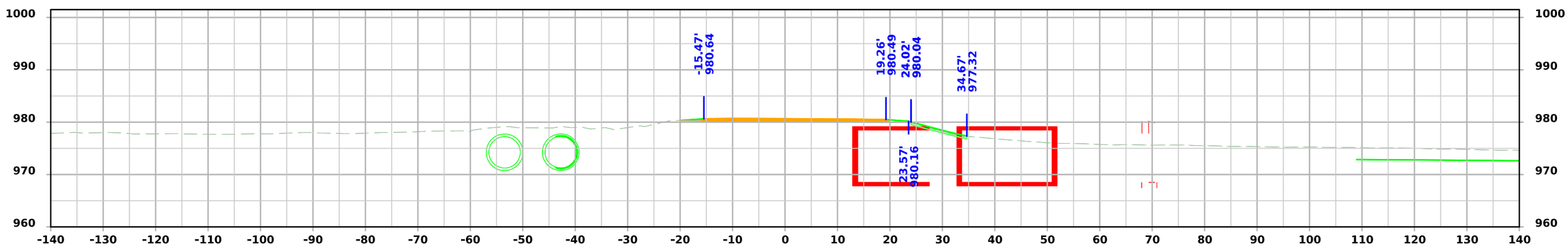

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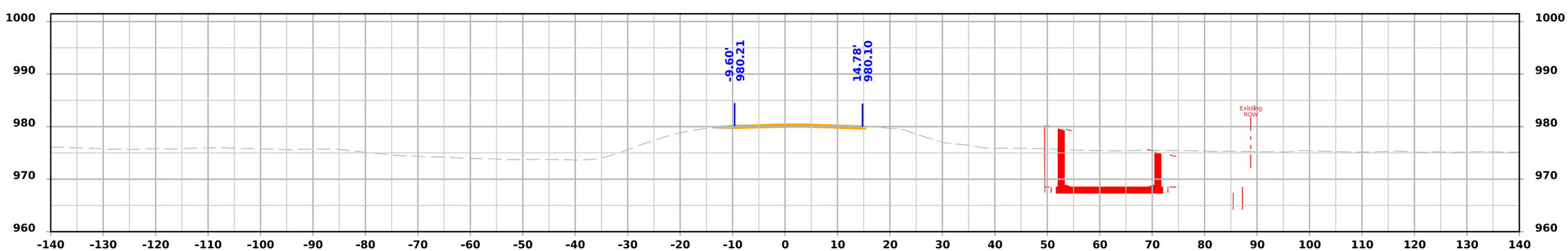

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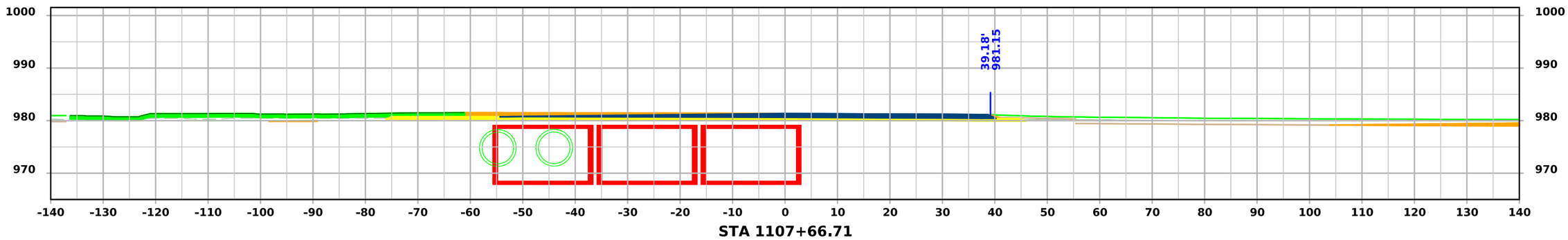

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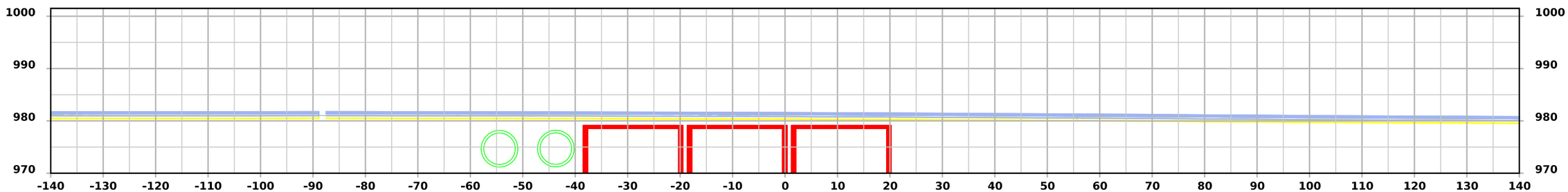

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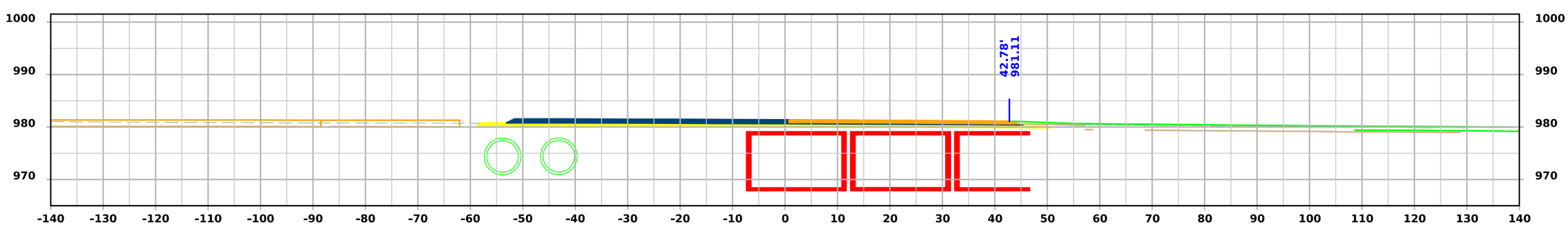

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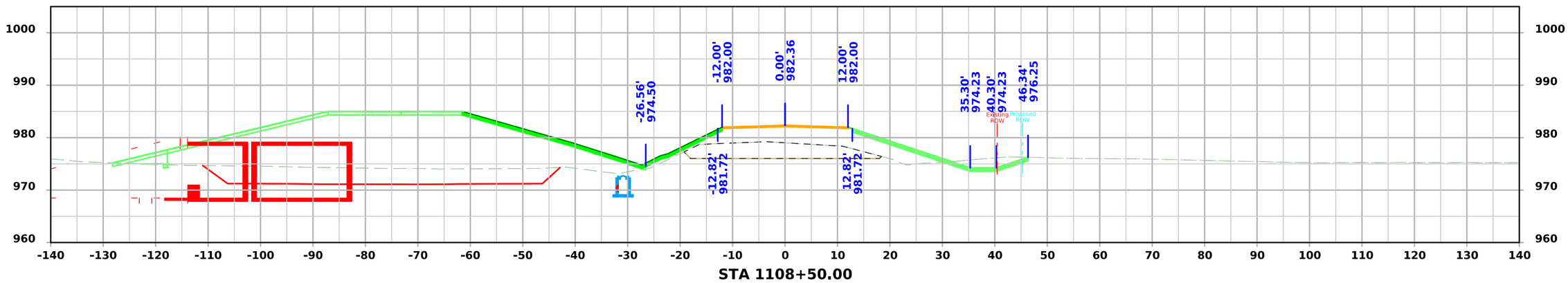
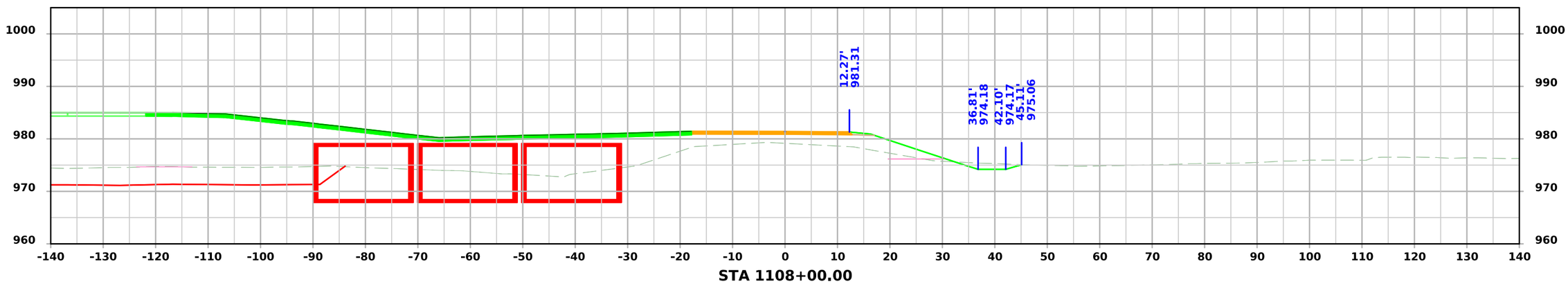
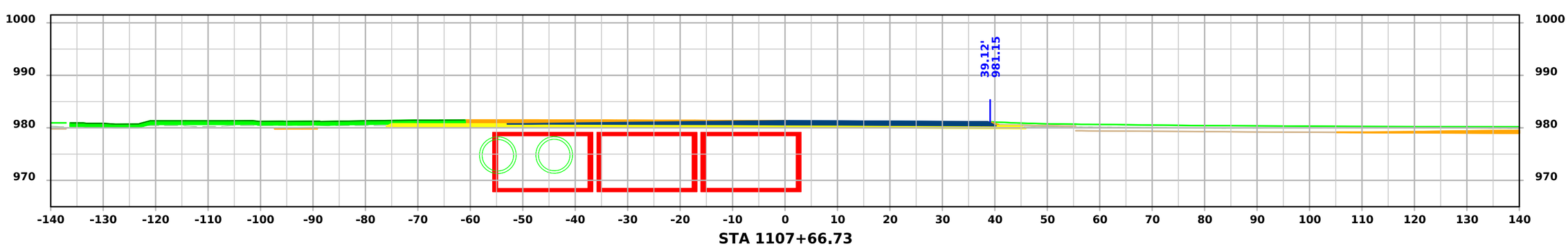
CEDAR AVE.







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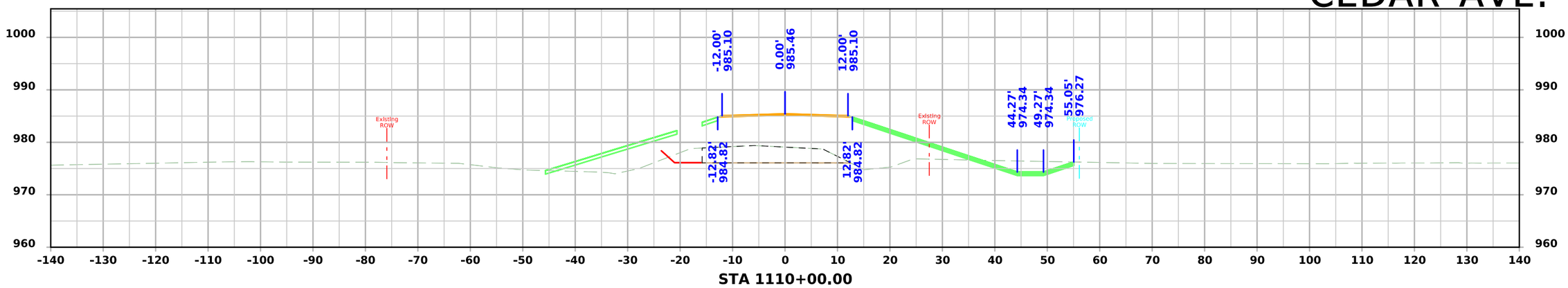
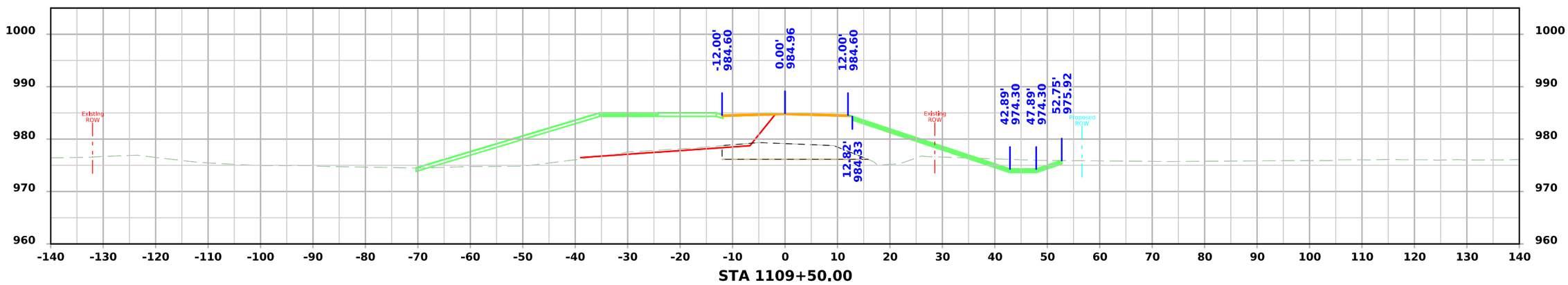
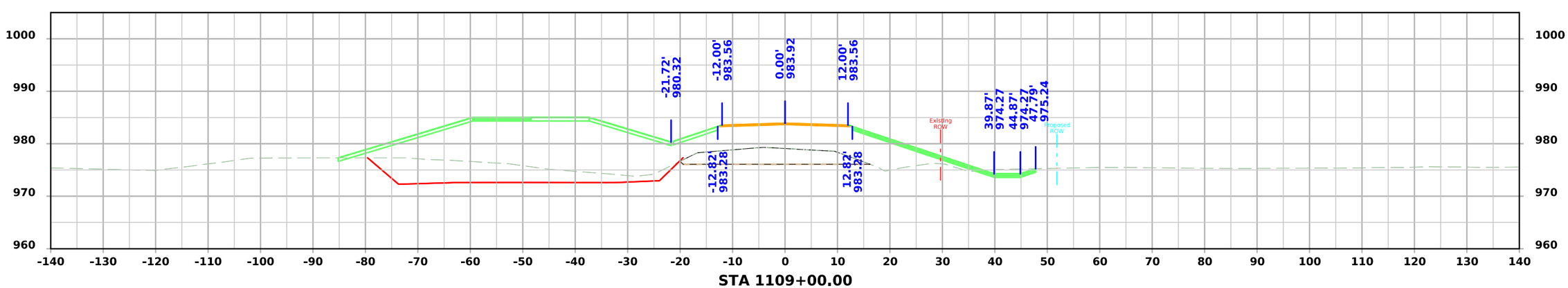
CEDAR AVE.



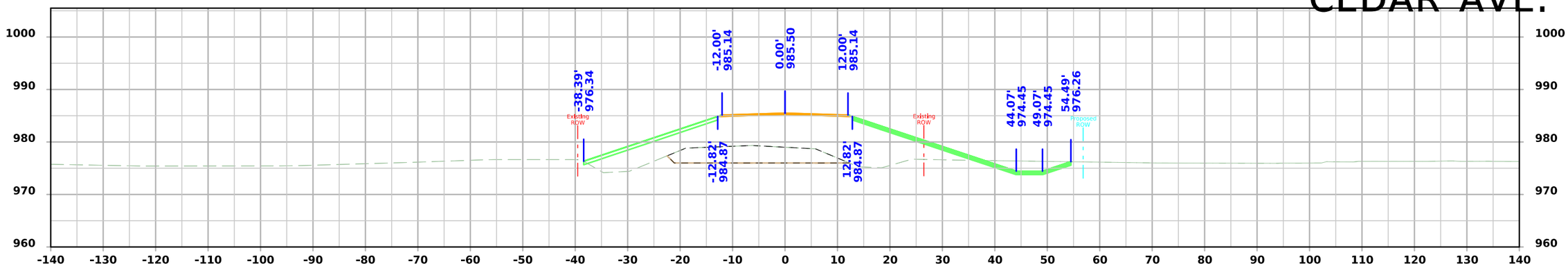




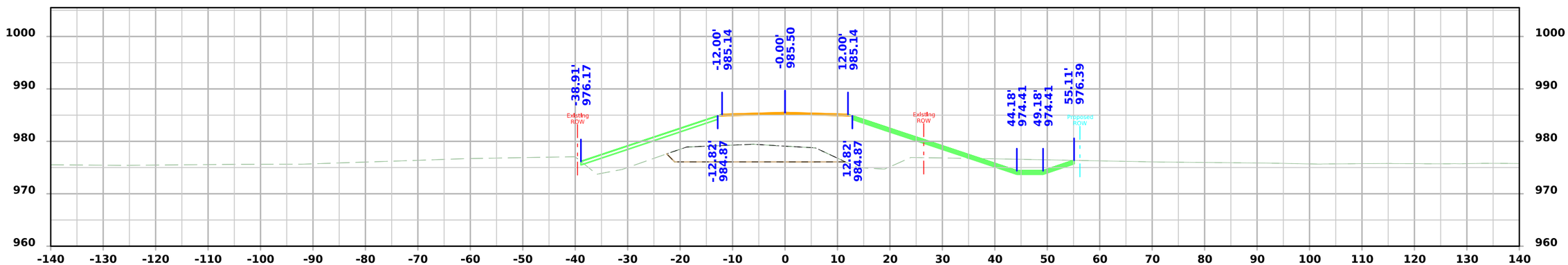
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.4

14:22:19 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS_12003018_Cedar_OR.dgn

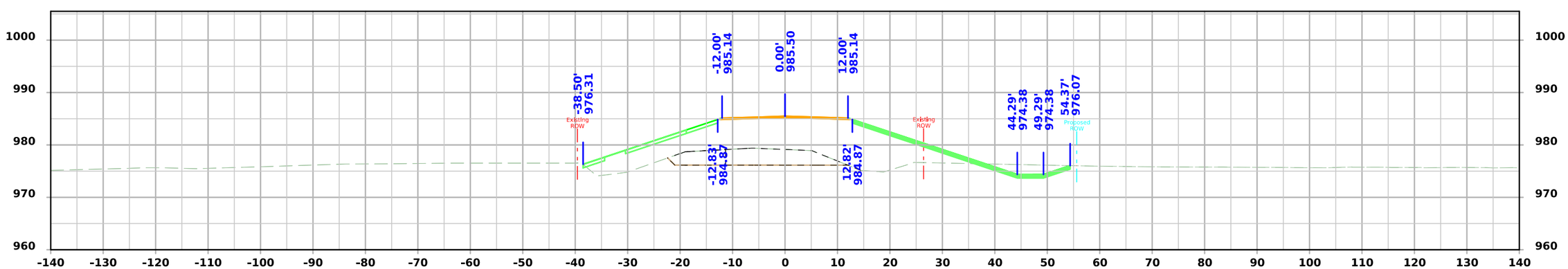
CEDAR AVE.



STA 1111+50.00



STA 1111+00.00

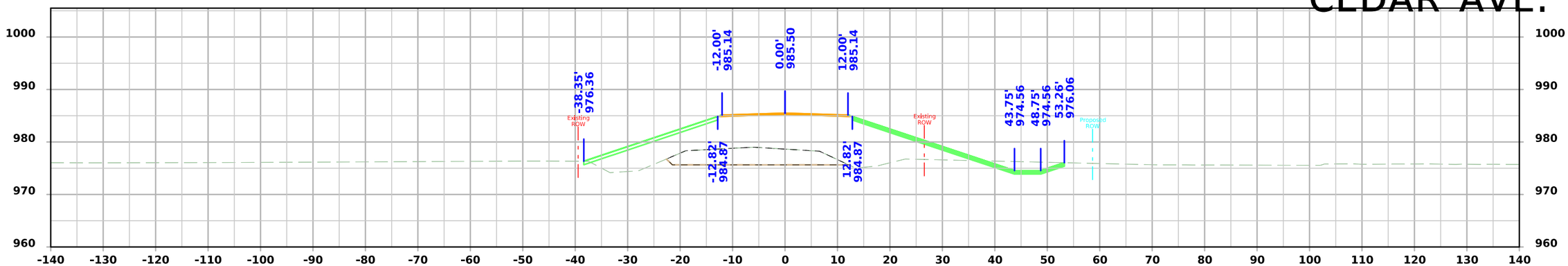


STA 1110+50.00

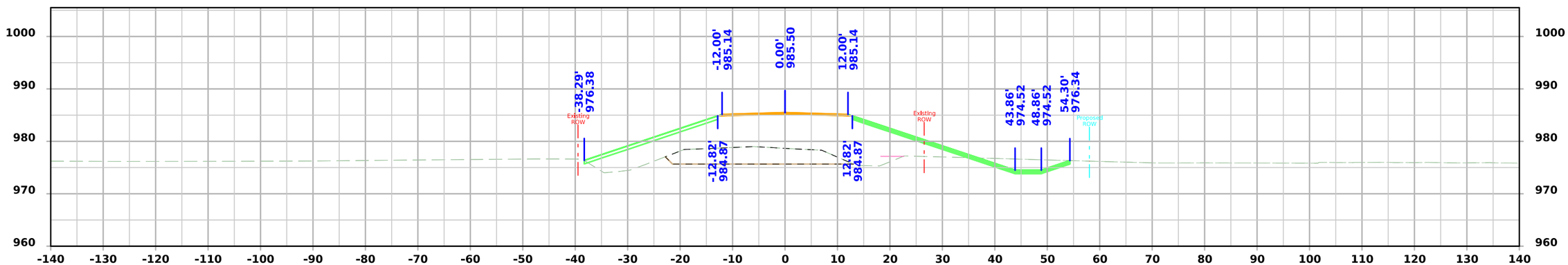
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.5

14:22:23 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS_12003018_Cedar_OR.dgn

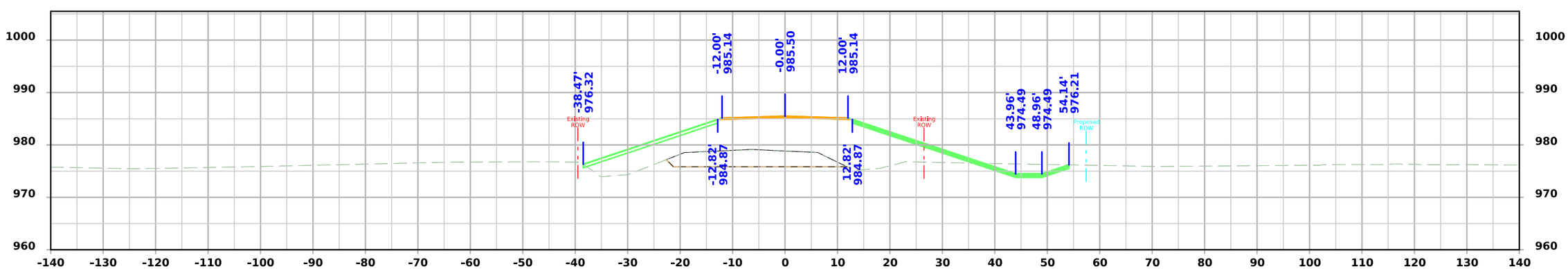
CEDAR AVE.



STA 1113+00.00



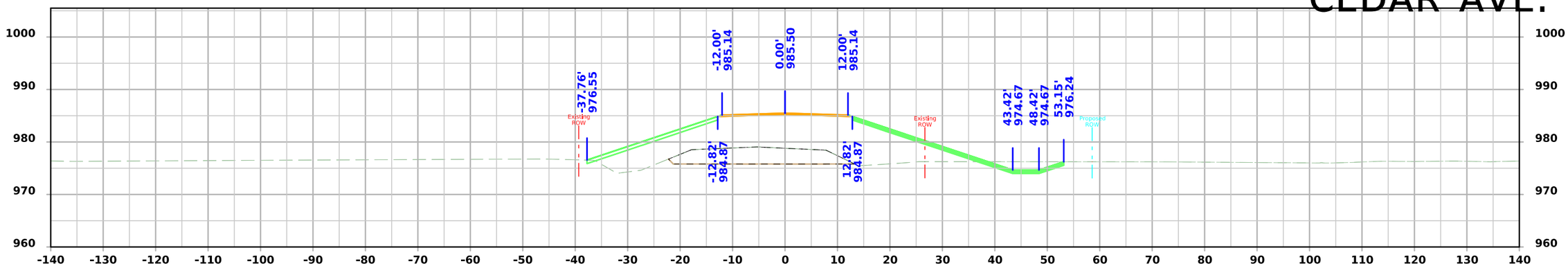
STA 1112+50.00



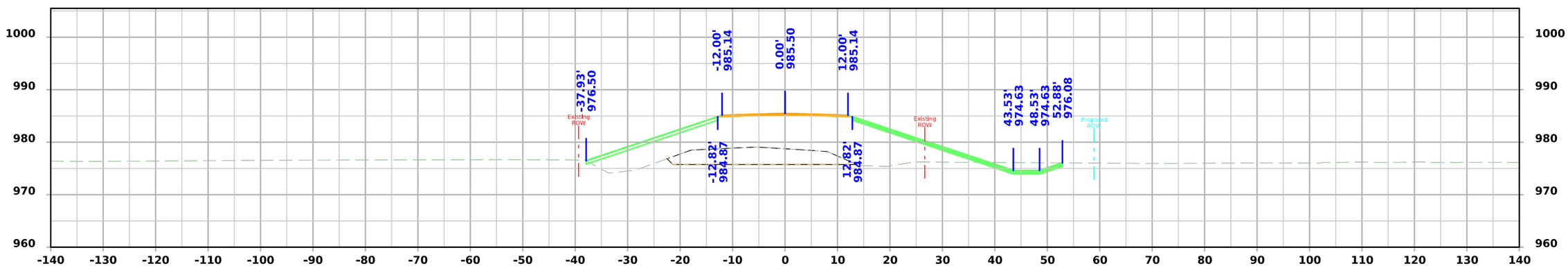
STA 1112+00.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.6

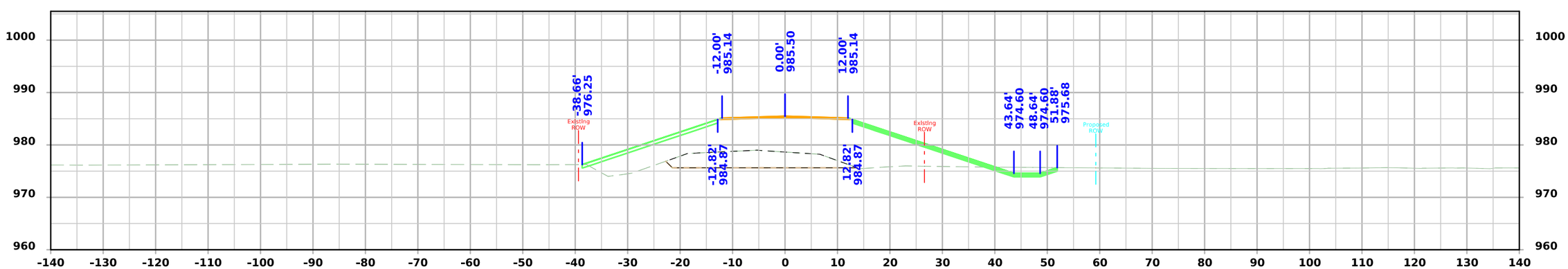
CEDAR AVE.



STA 1114+50.00



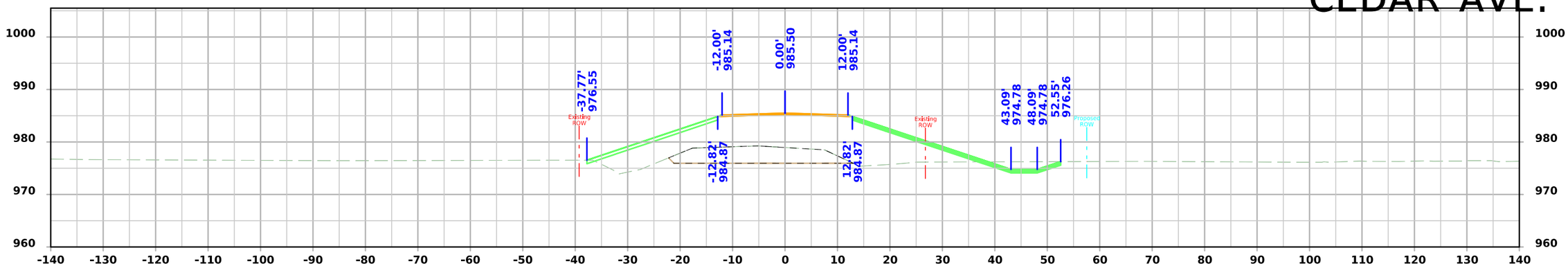
STA 1114+00.00



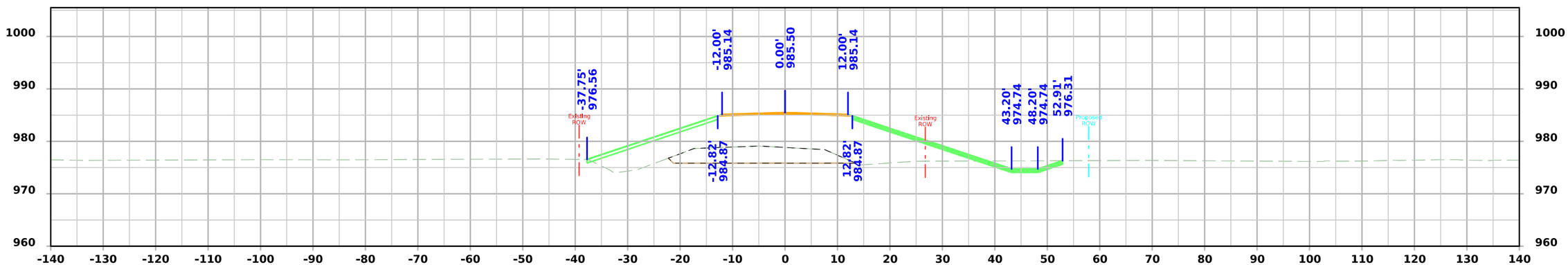
STA 1113+50.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.7

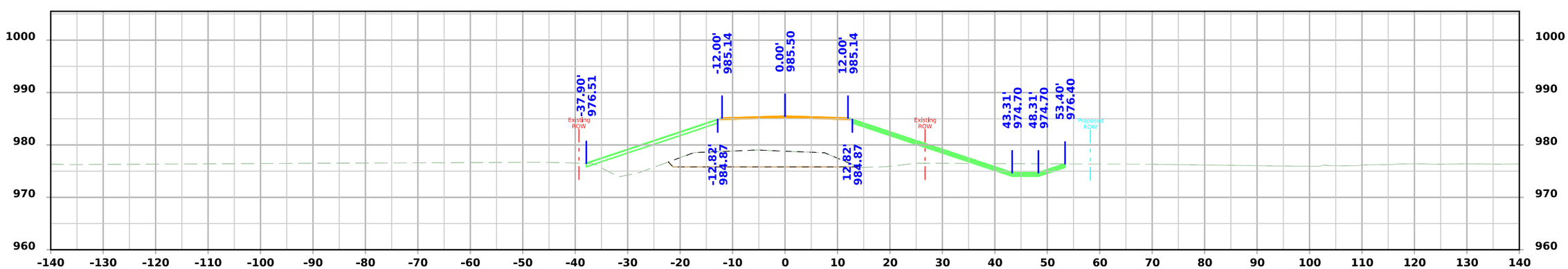
CEDAR AVE.



STA 1116+00.00



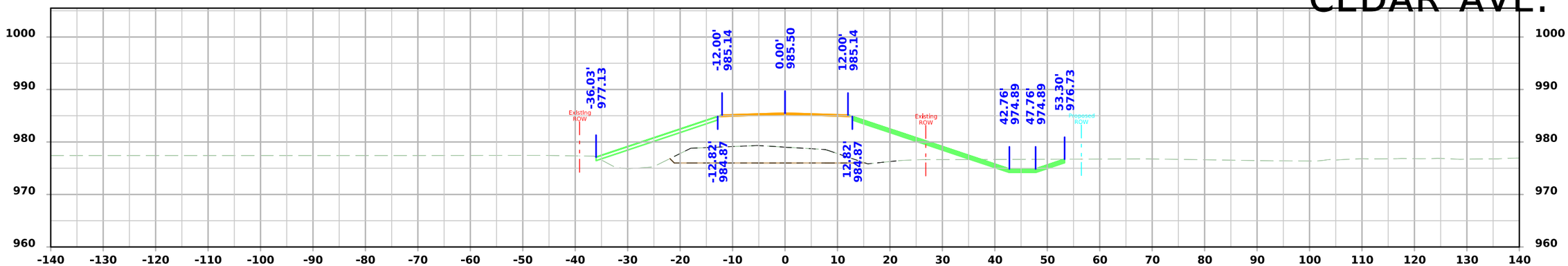
STA 1115+50.00



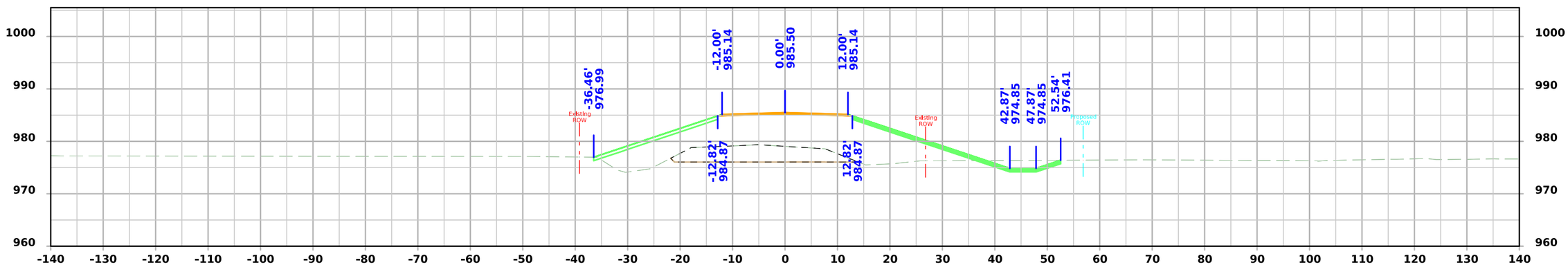
STA 1115+00.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.8

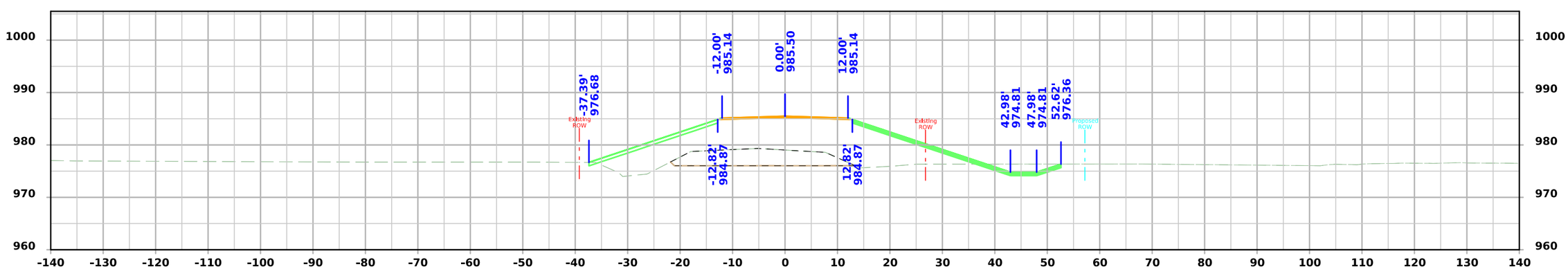
CEDAR AVE.



STA 1117+50.00



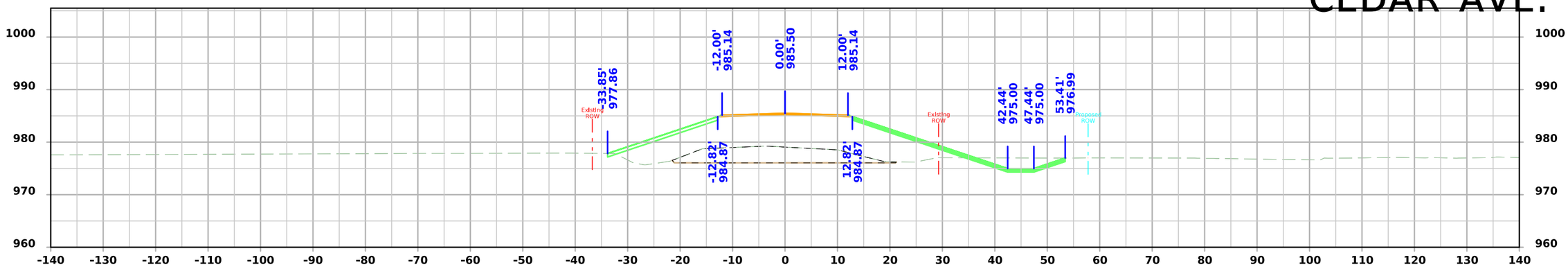
STA 1117+00.00



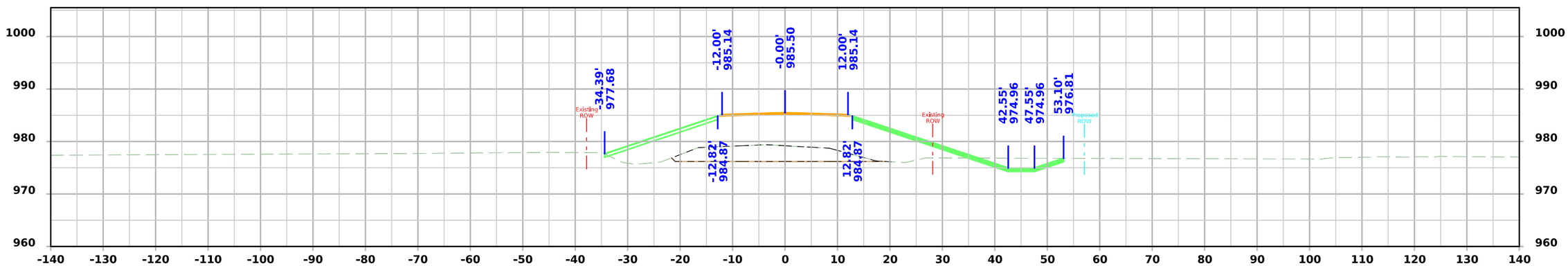
STA 1116+50.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.9

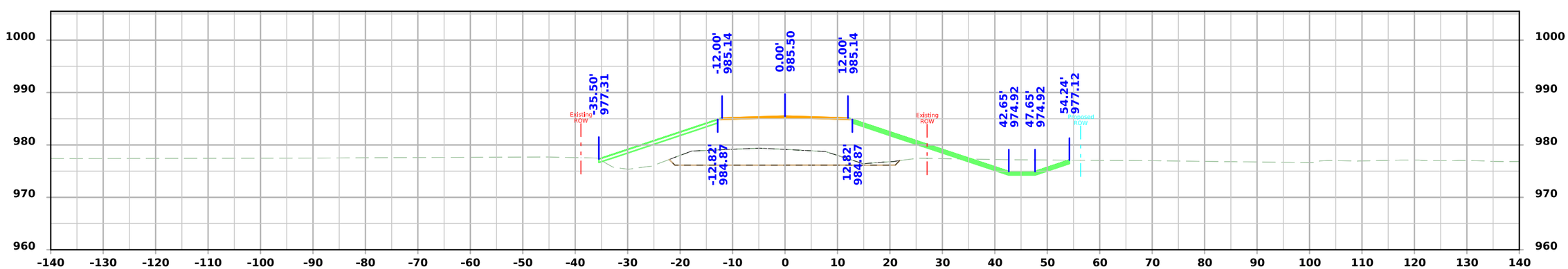
CEDAR AVE.



STA 1119+00.00



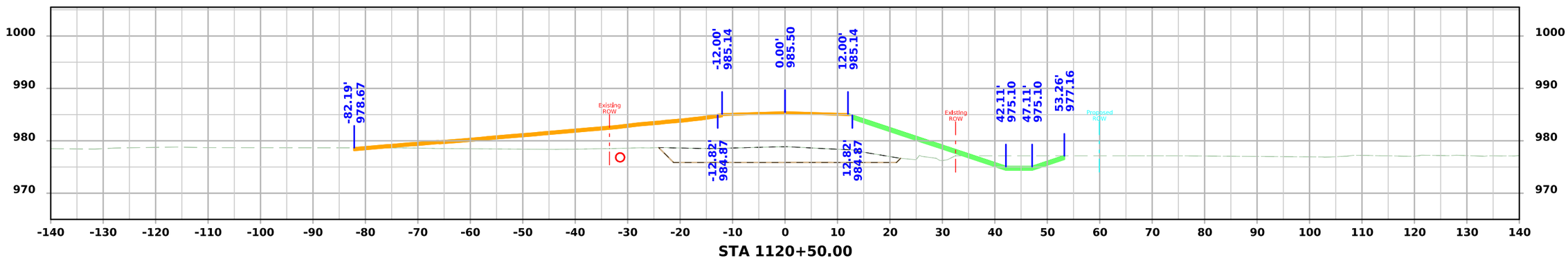
STA 1118+50.00

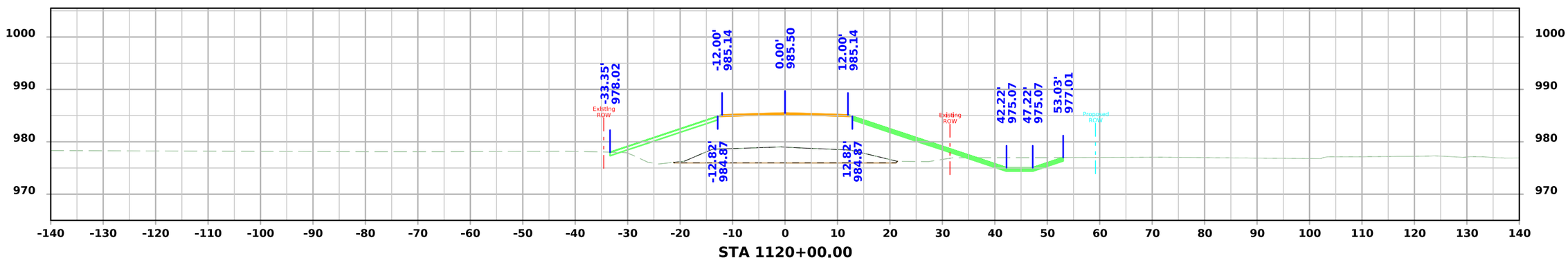


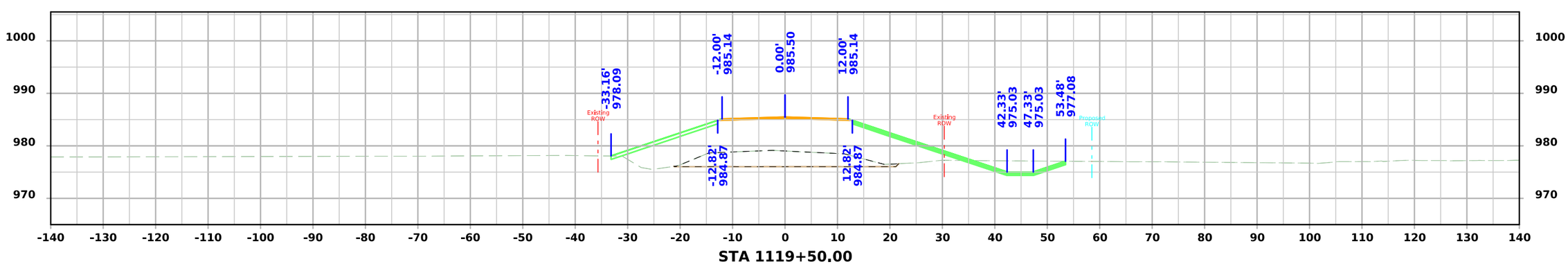
STA 1118+00.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.10

CEDAR AVE.



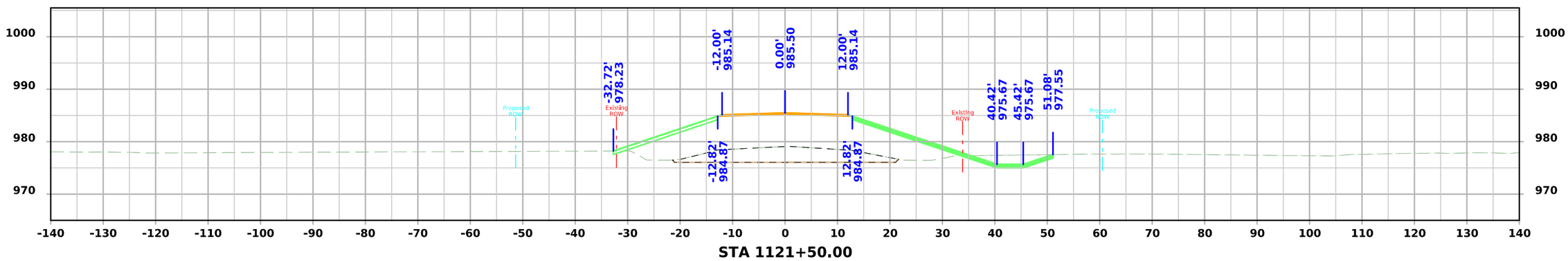




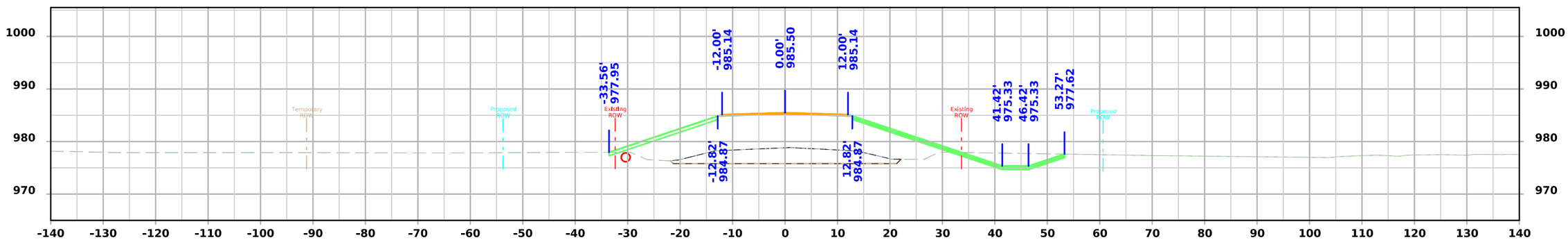
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.11

14:22:44 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS_12003018_Cedar_OR.dgn

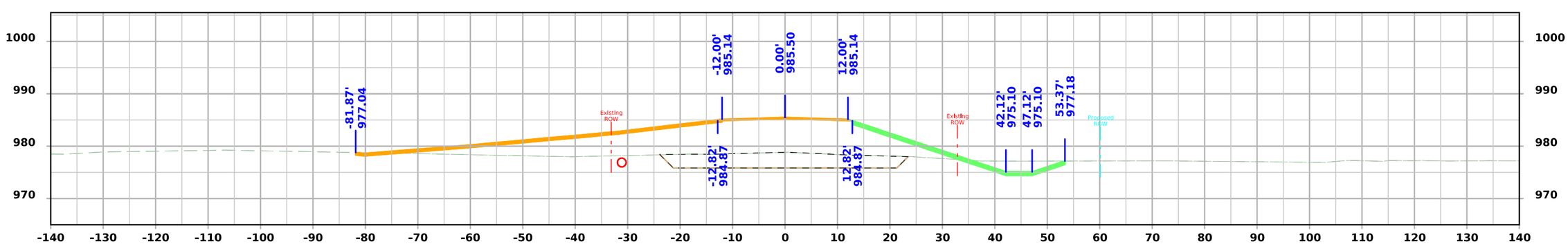
CEDAR AVE.



STA 1121+50.00

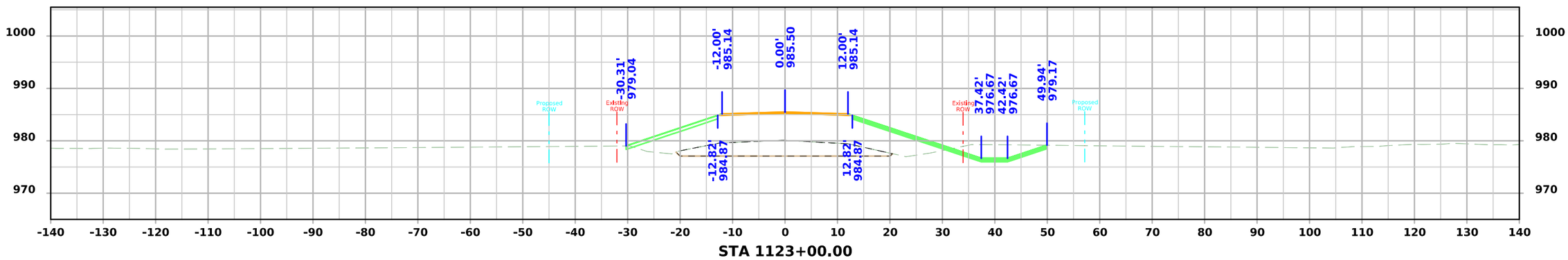


STA 1121+00.00

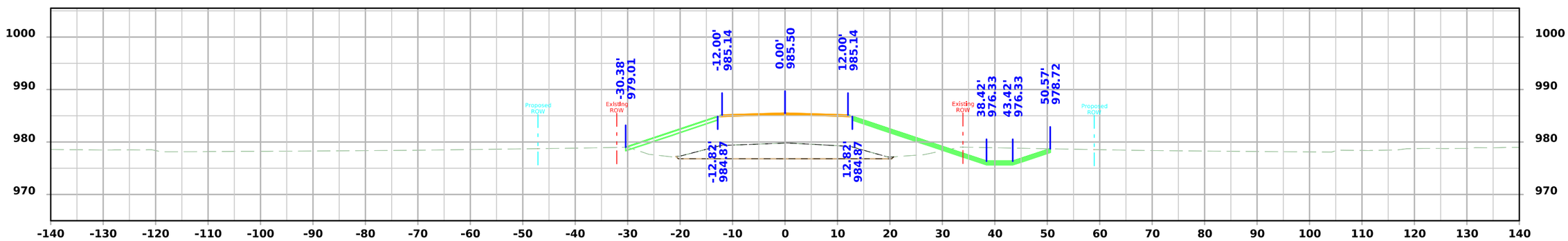


STA 1120+65.00

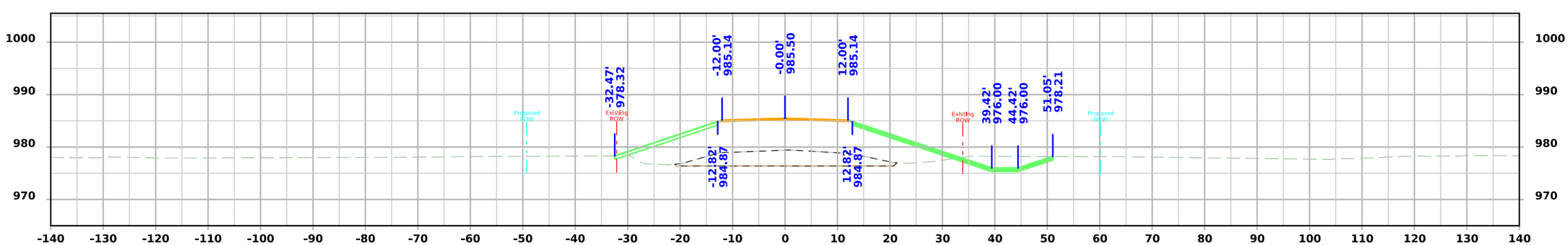
CEDAR AVE.



STA 1123+00.00



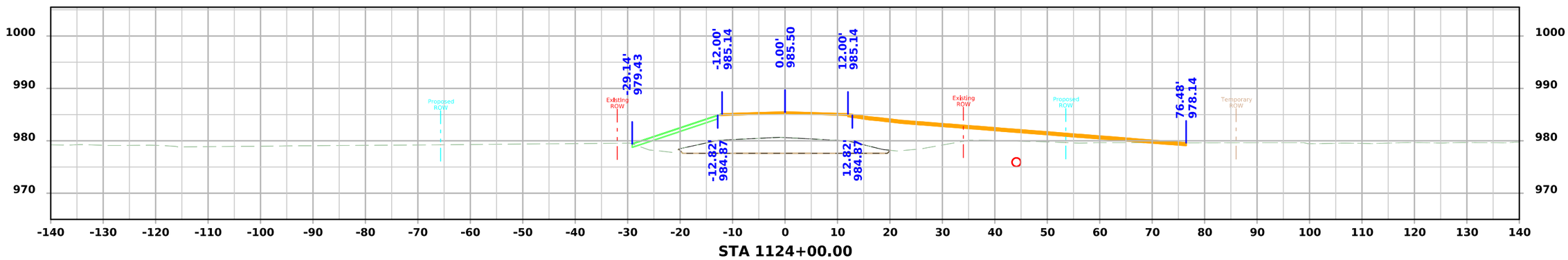
STA 1122+50.00



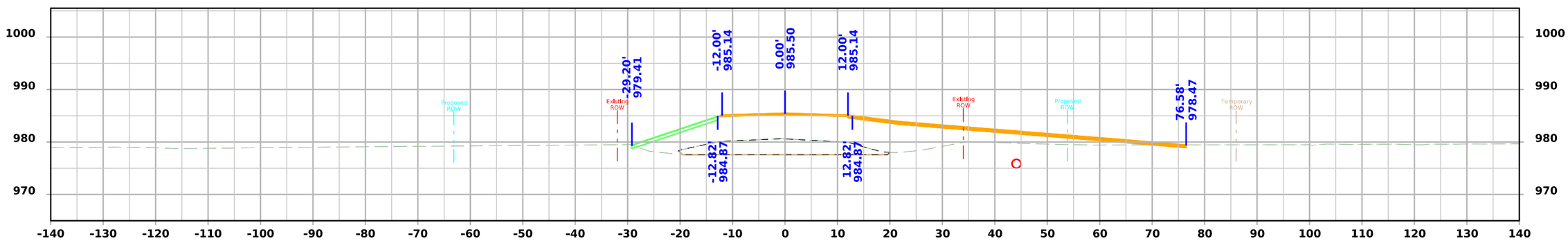
STA 1122+00.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.13

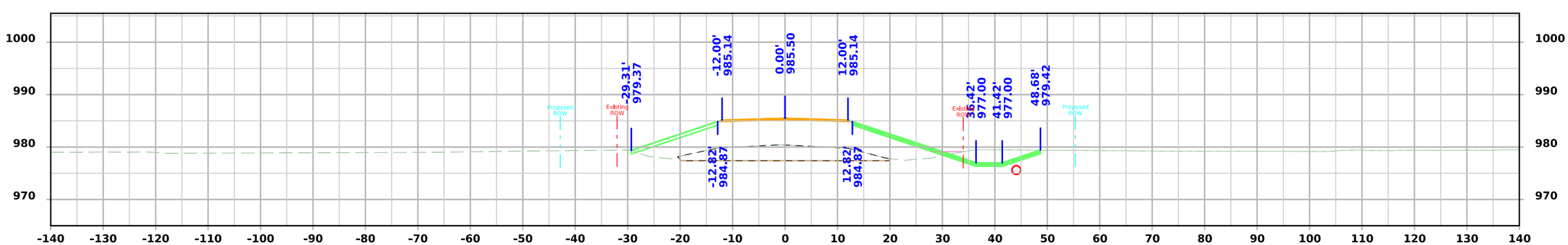
CEDAR AVE.



STA 1124+00.00

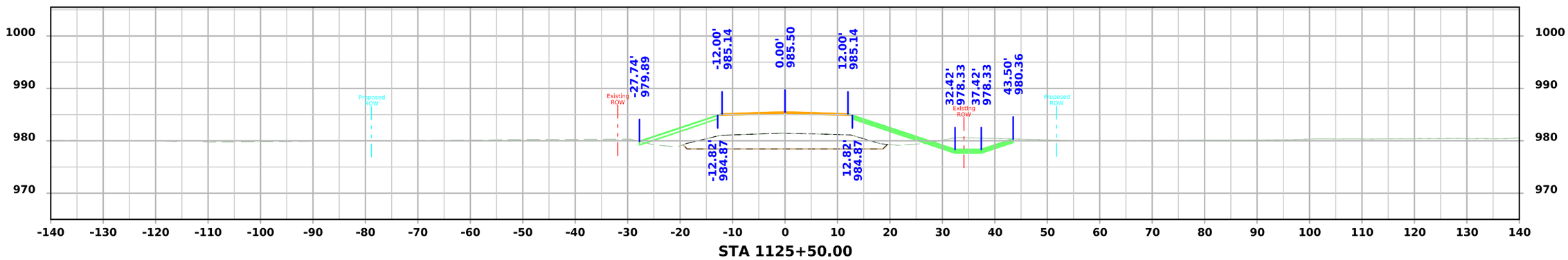


STA 1123+91.44

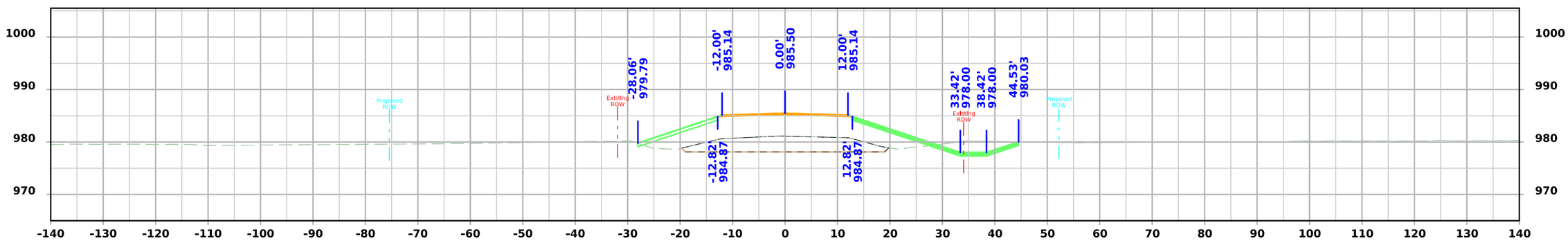


STA 1123+50.00

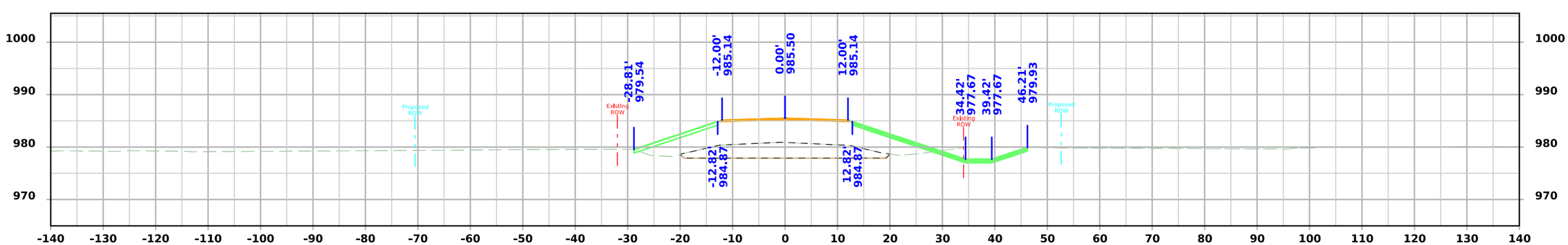
CEDAR AVE.



STA 1125+50.00



STA 1125+00.00

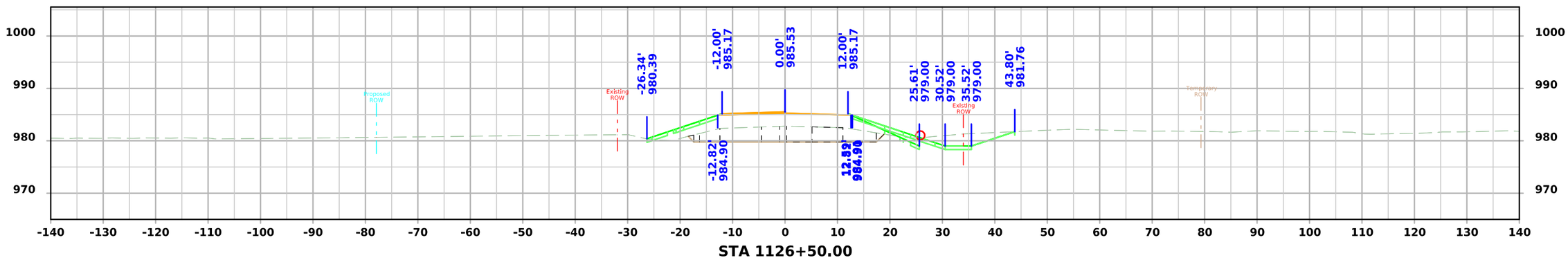


STA 1124+50.00

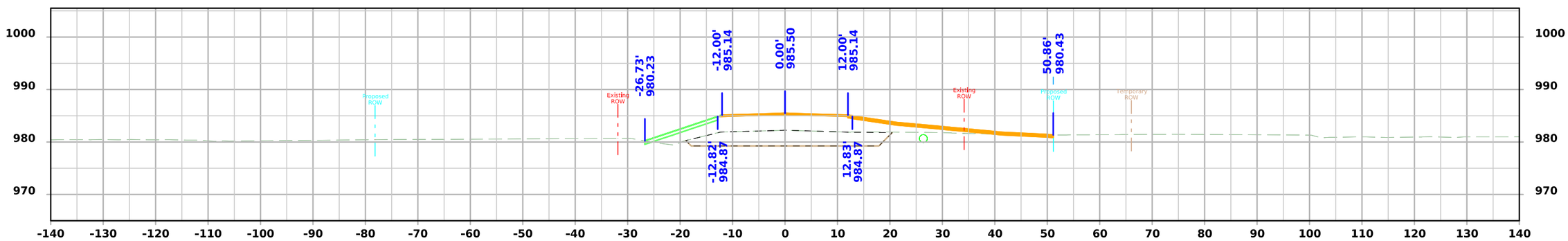
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.15

14:22:58 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS_12003018_Cedar_OR.dgn

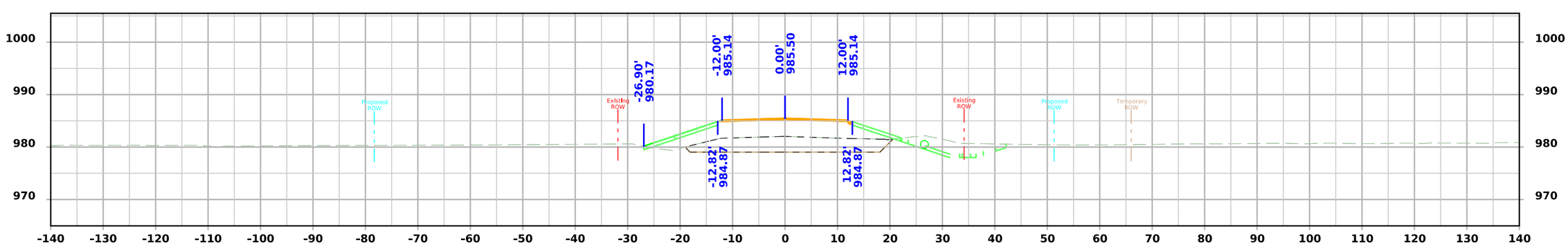
CEDAR AVE.



STA 1126+50.00



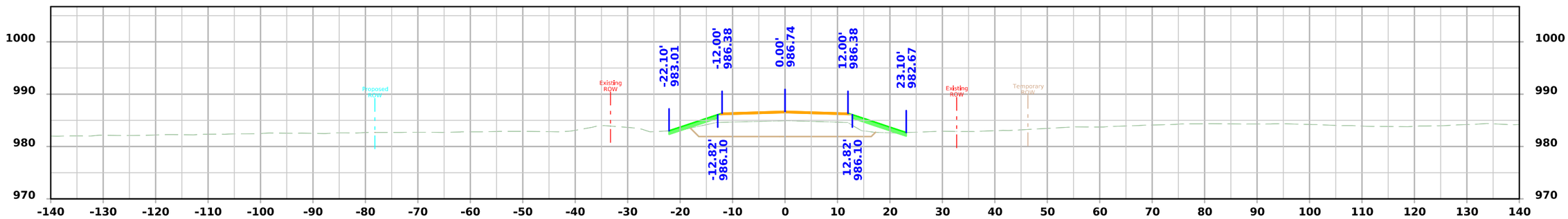
STA 1126+15.56



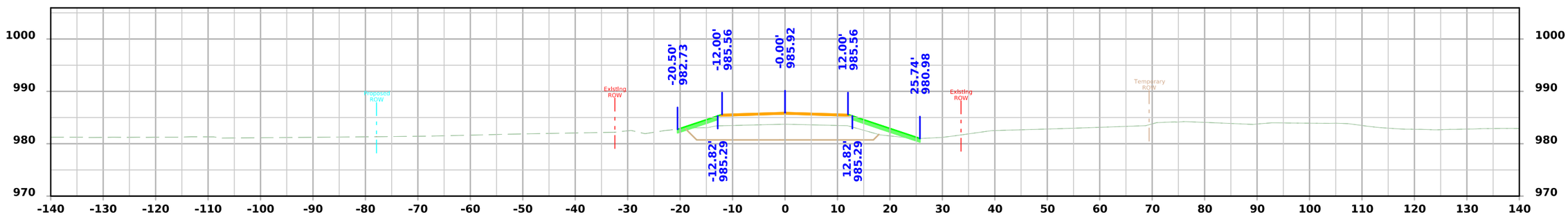
STA 1126+00.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.16

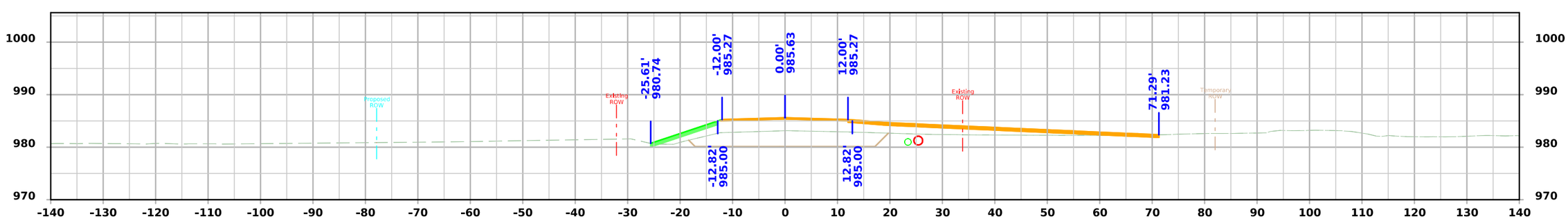
CEDAR AVE.



STA 1127+50.00



STA 1127+00.00

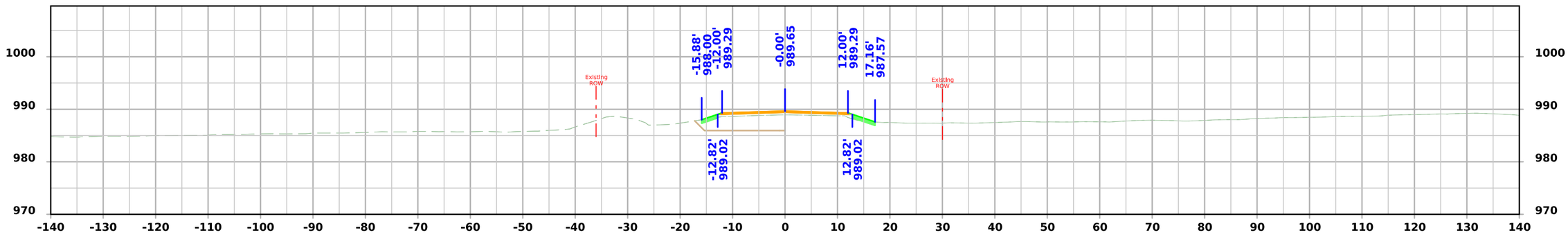


STA 1126+69.62

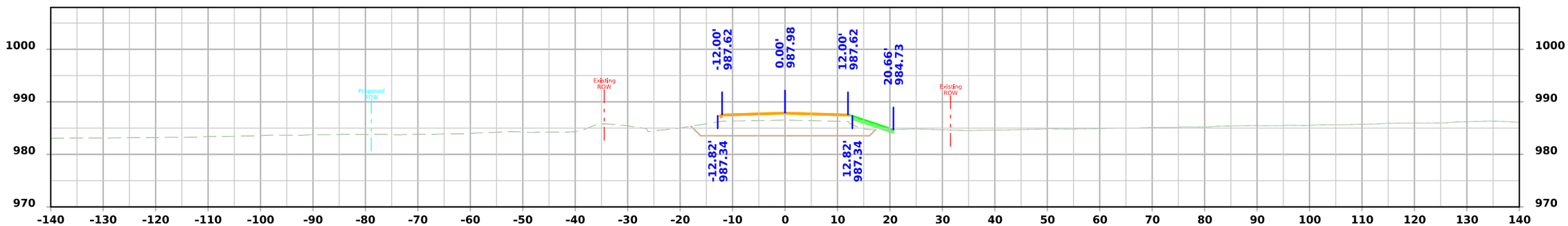
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.17

14:23:07 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS_12003018_Cedar_OR.dgn

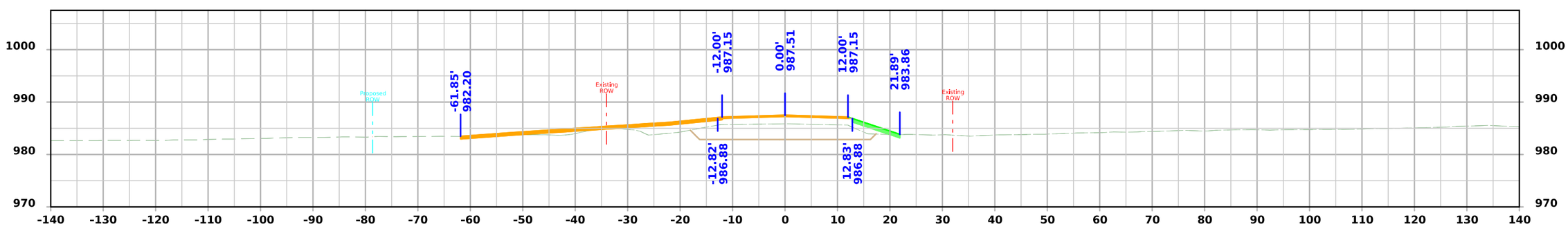
CEDAR AVE.



STA 1128+50.00



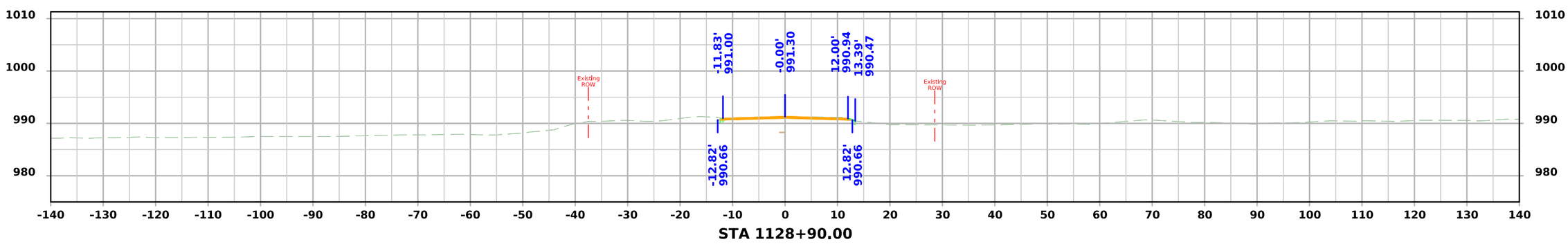
STA 1128+00.00



STA 1127+83.20

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.18

CEDAR AVE.



FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER X.19

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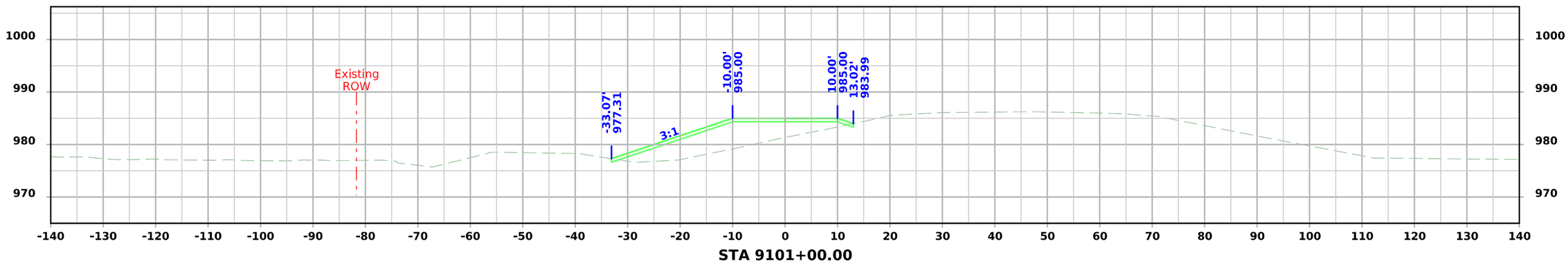
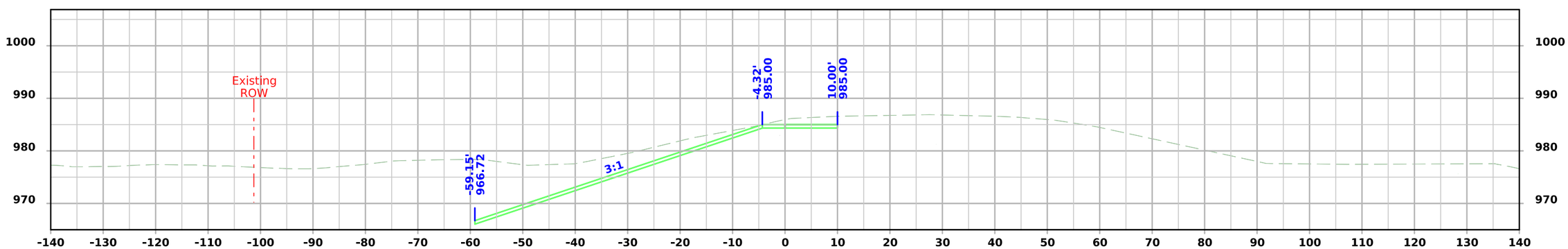
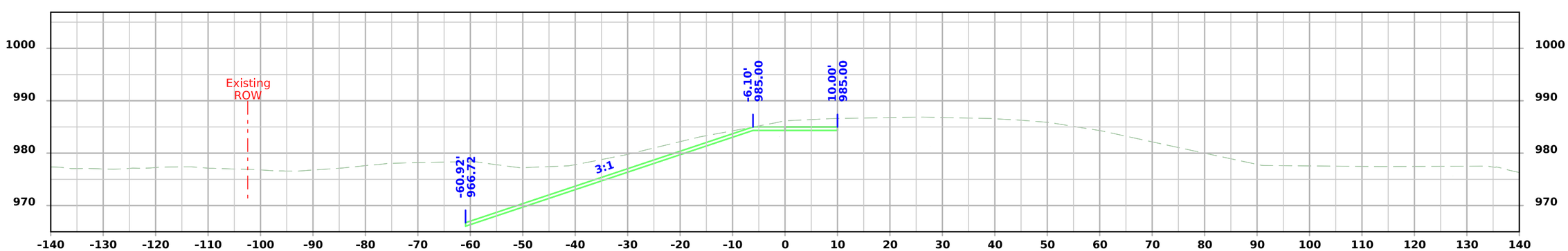
RCB DIKE



STA 9101+00.00



STA 9100+50.00

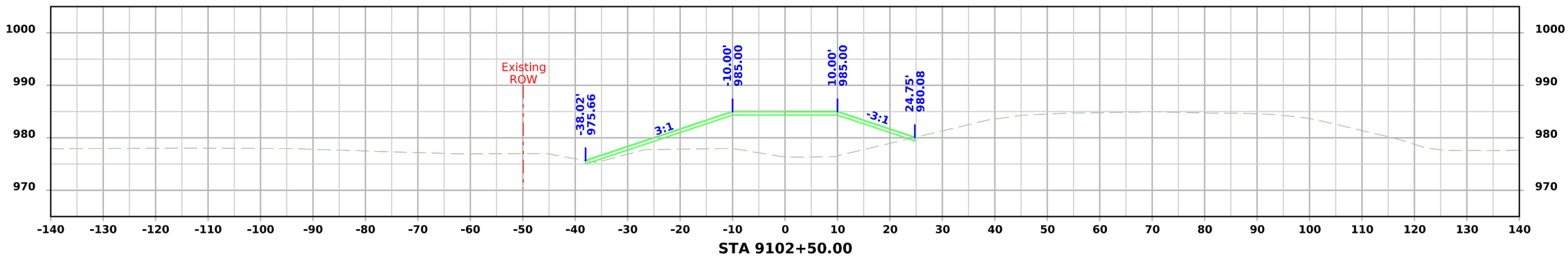


STA 9100+47.03

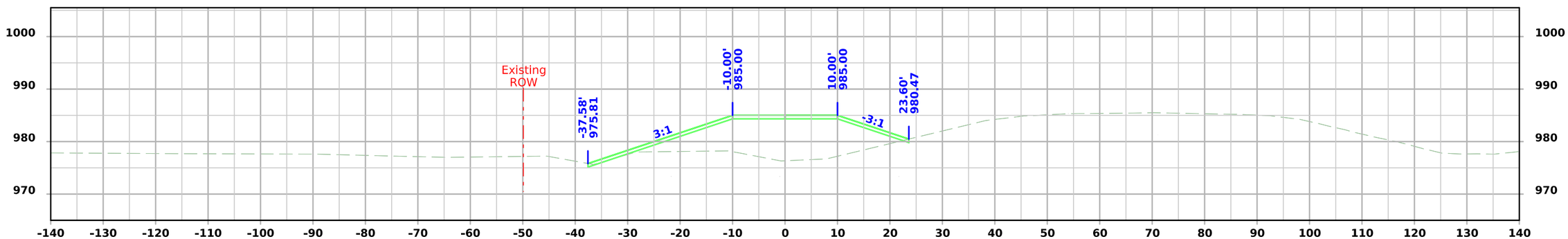
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.1

14:42:19 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS_12003018_Box Dike_TJC.dgn

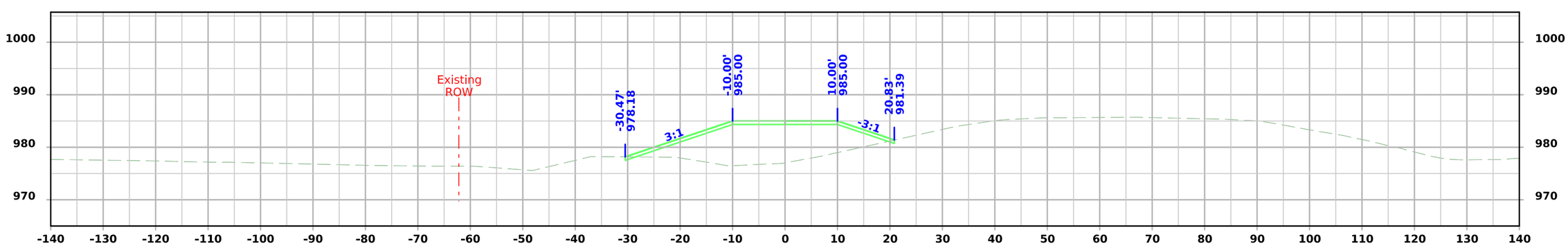
RCB DIKE



STA 9102+50.00



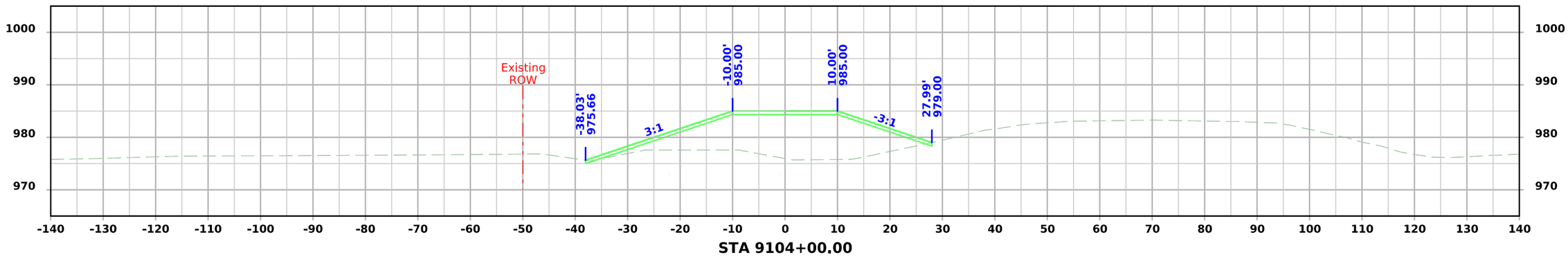
STA 9102+00.00

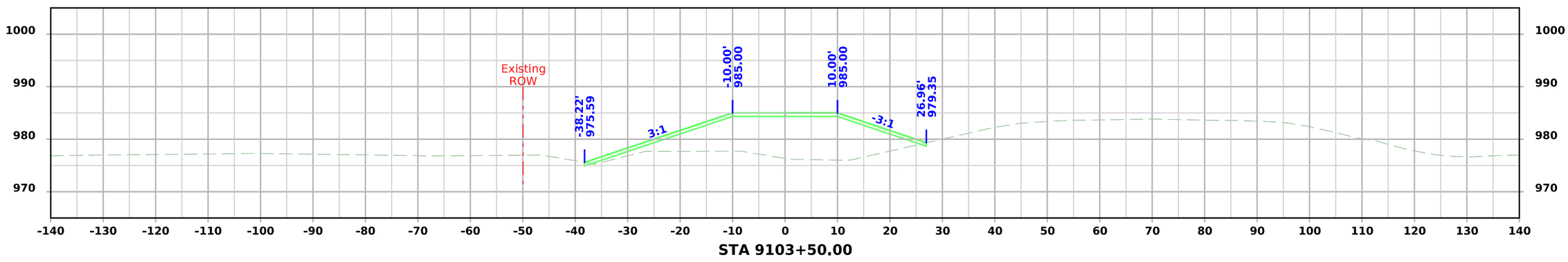


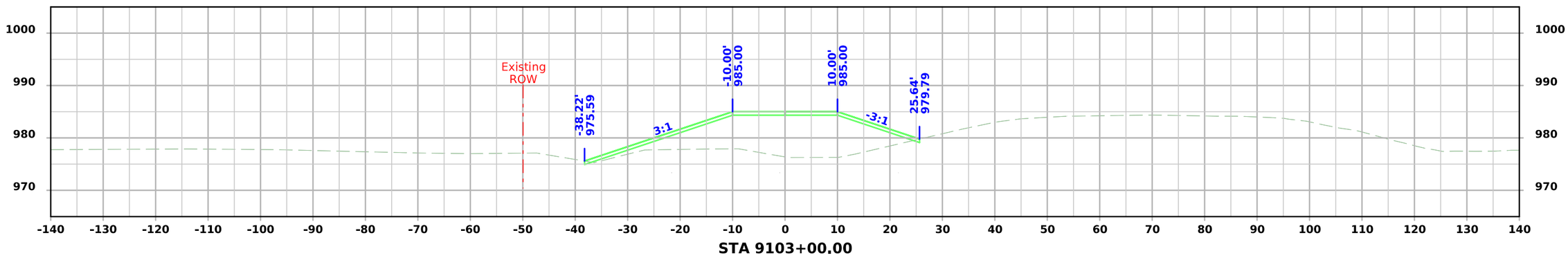
STA 9101+50.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.2

RCB DIKE



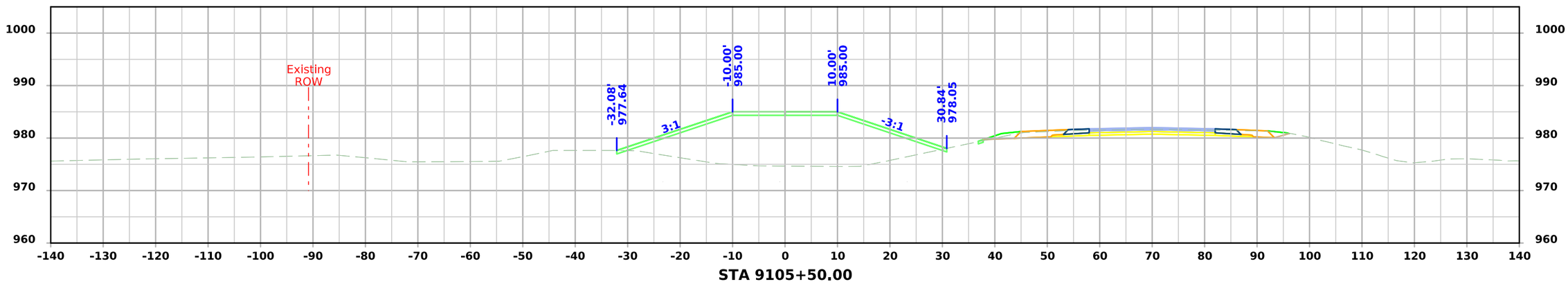


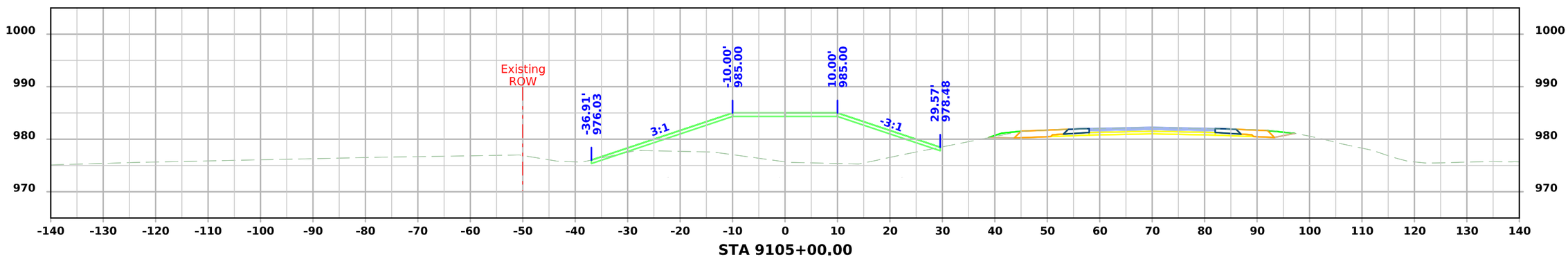


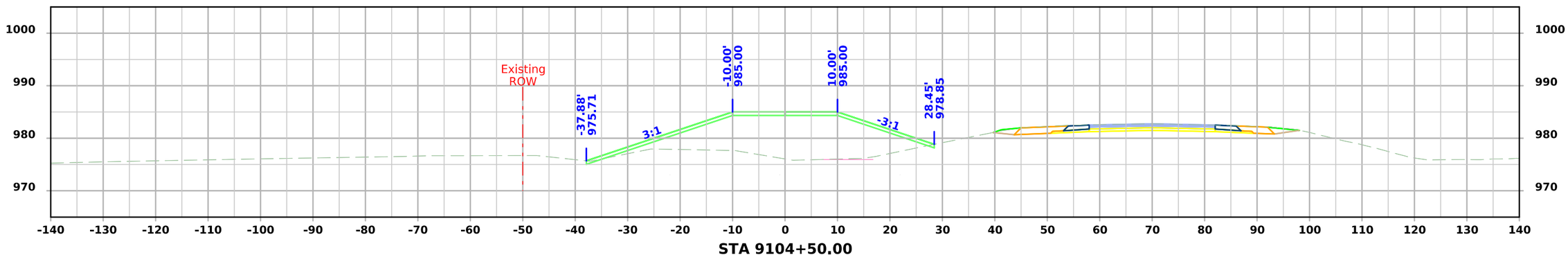
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.3

14:42:22 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS_12003018_Box Dike_TJC.dgn

RCB DIKE



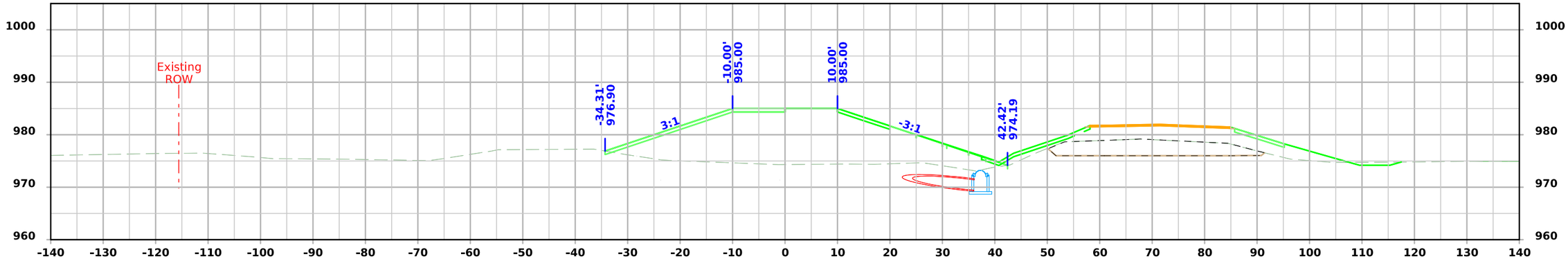




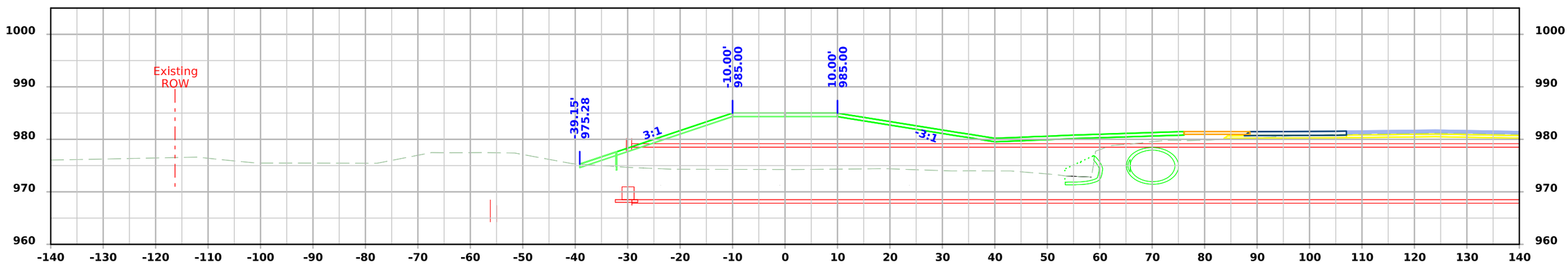
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.4

14:42:23 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS_12003018_Box Dike_TJC.dgn

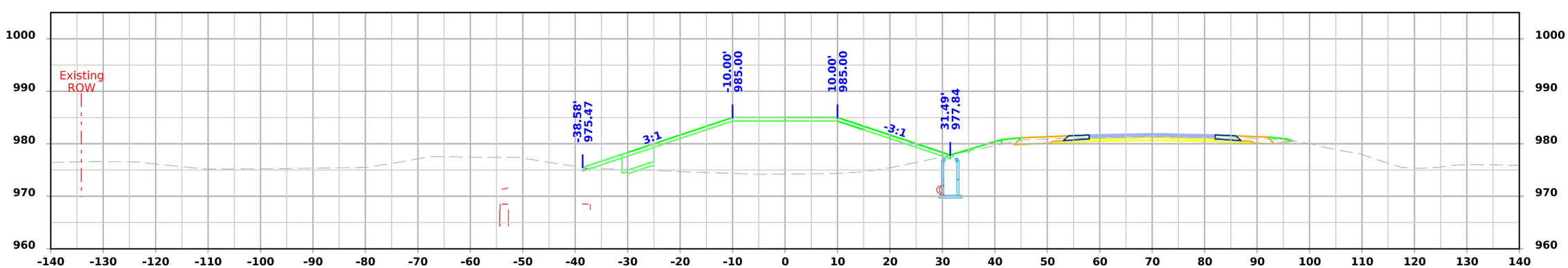
RCB DIKE



STA 9107+00.00



STA 9106+50.00

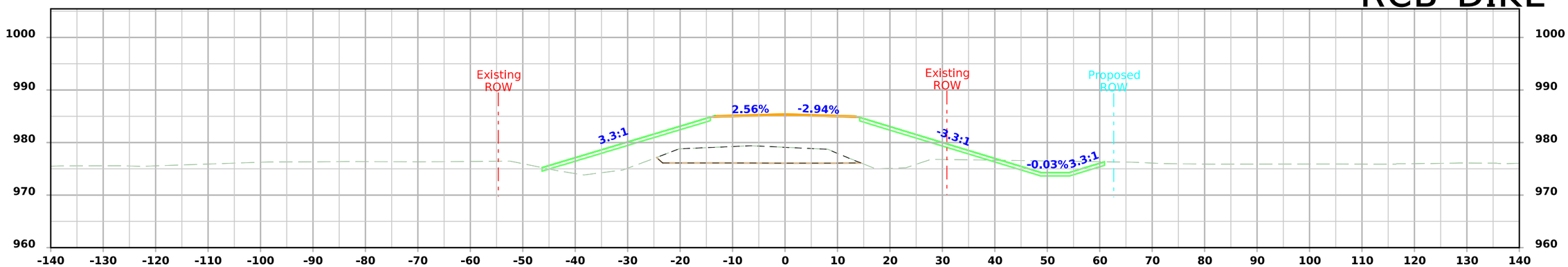


STA 9106+00.00

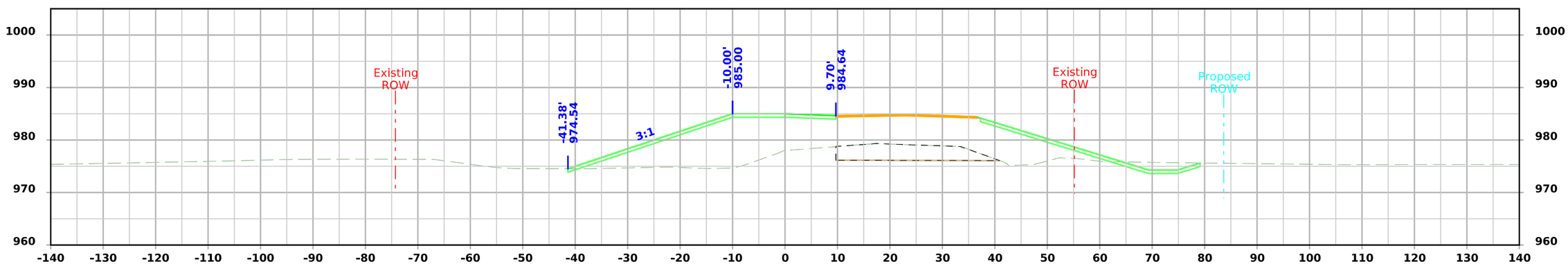
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.5

14:42:28 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS_12003018_Box Dike_TJC.dgn

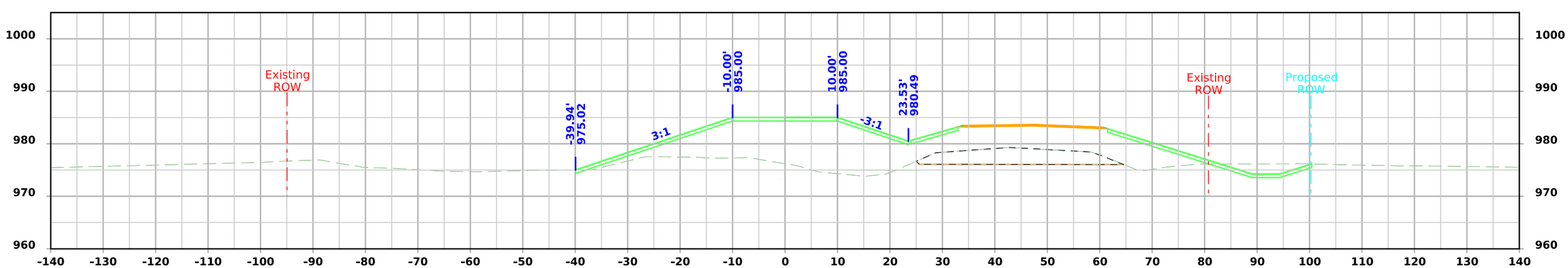
RCB DIKE



STA 9108+47.55



STA 9108+00.00

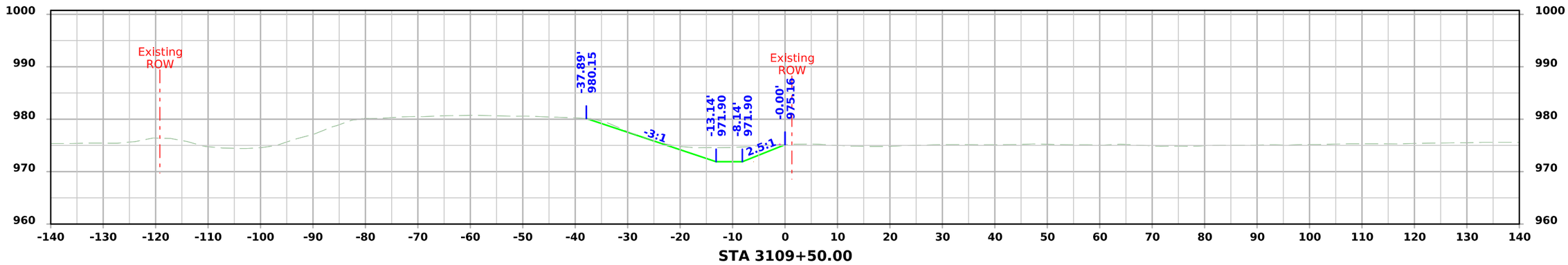


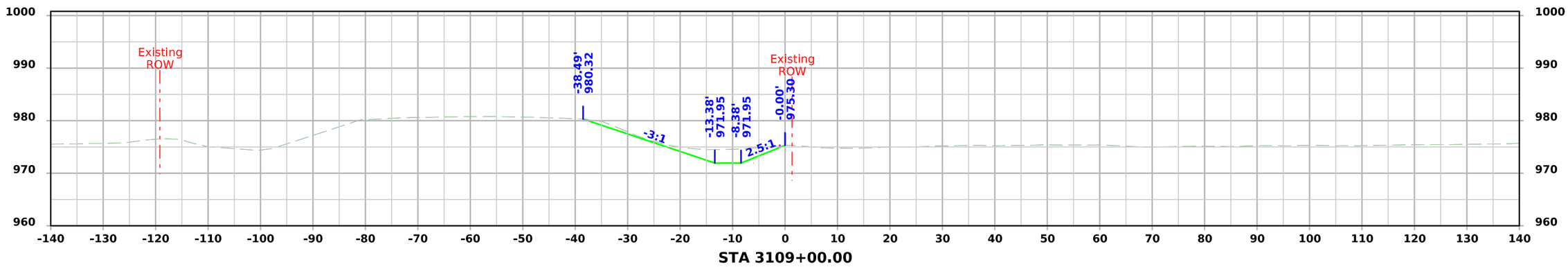
STA 9107+50.00

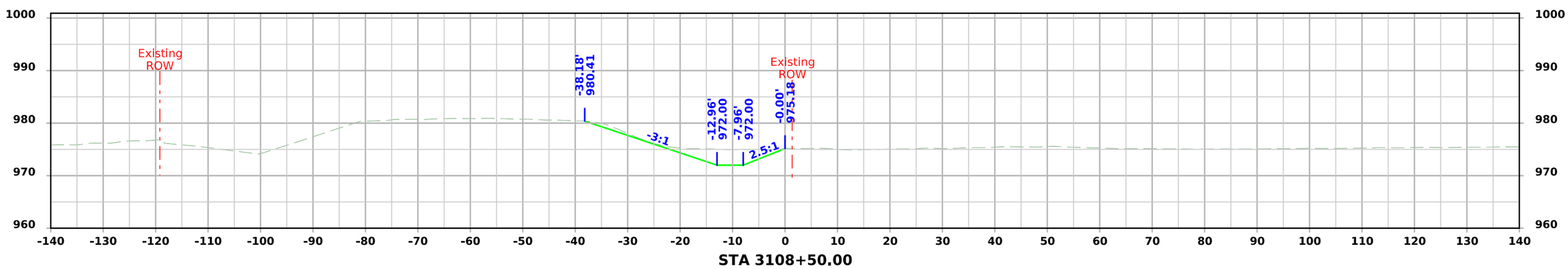
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.6

14:42:30 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS_12003018_Box Dike_TJC.dgn

IA HWY 3 LOW-FLOW DITCH



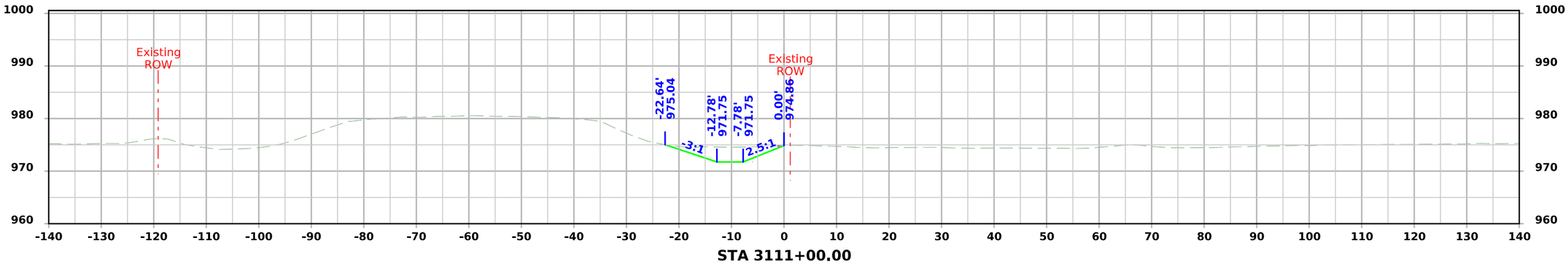


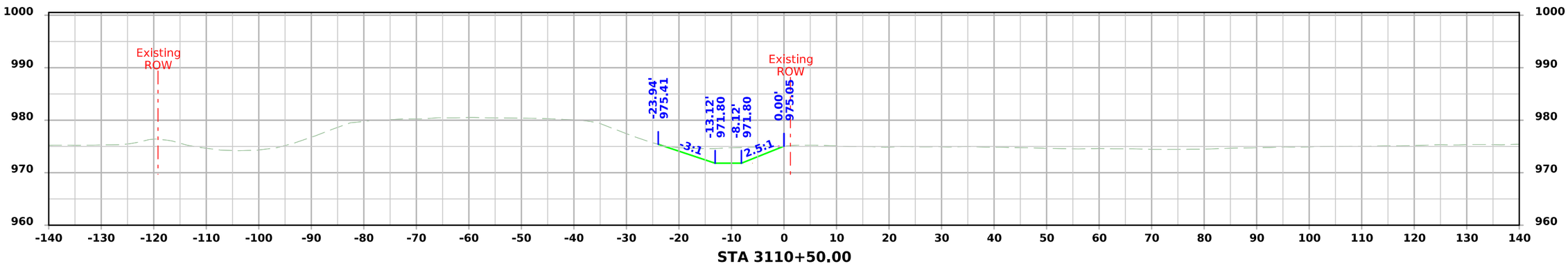


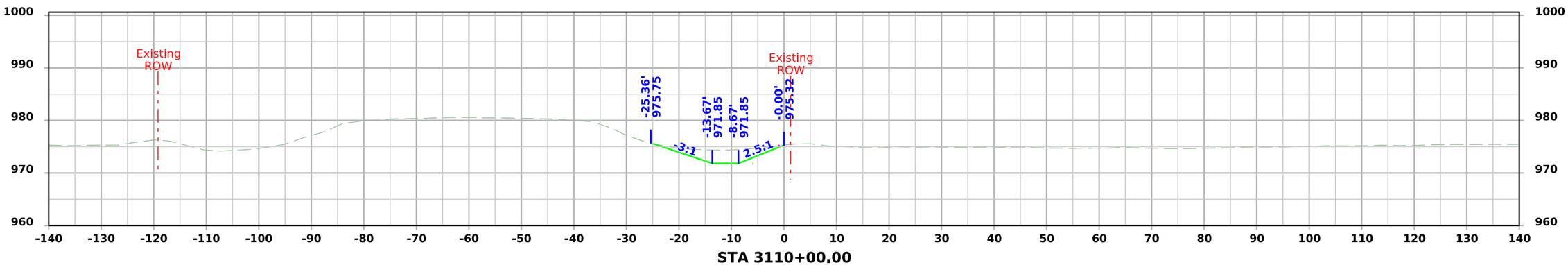
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.100

14:48:40 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS-12003018_South Ditch_TJC.dgn

IA HWY 3 LOW-FLOW DITCH



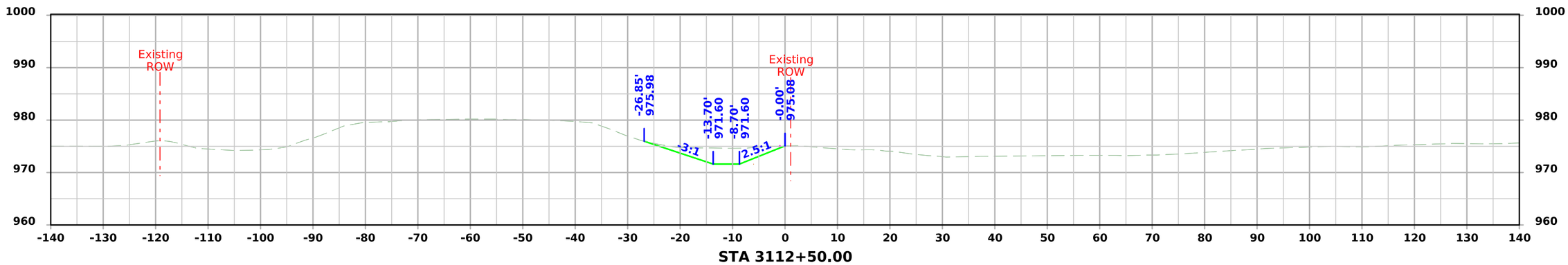


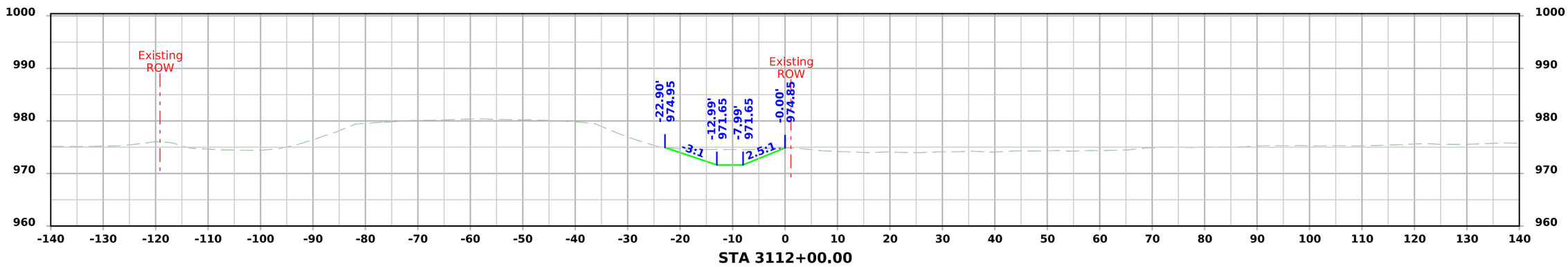


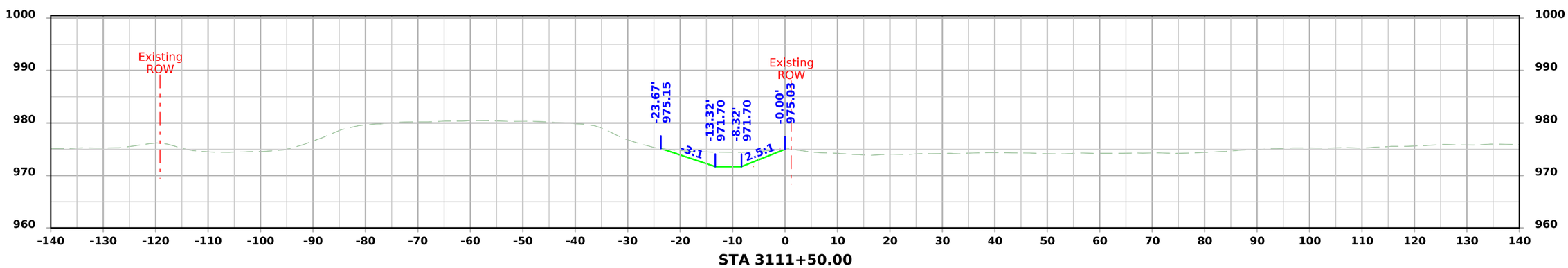
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.101

14:48:41 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS-12003018_South Ditch_TJC.dgn

IA HWY 3 LOW-FLOW DITCH



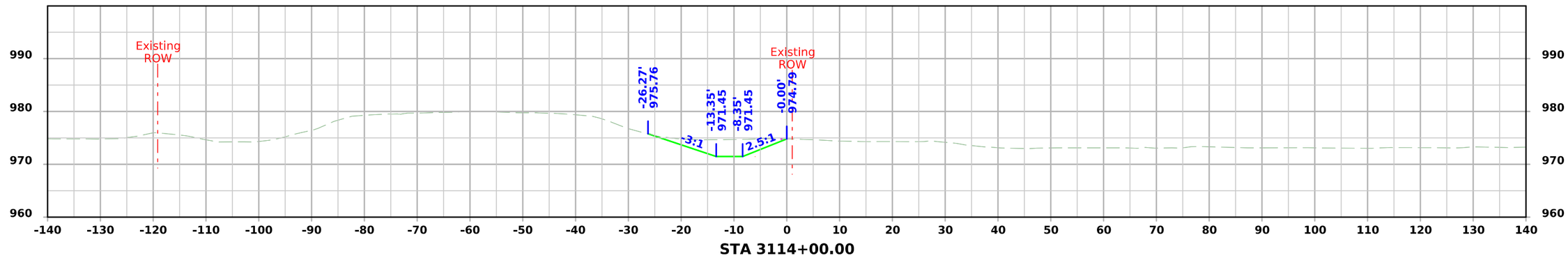


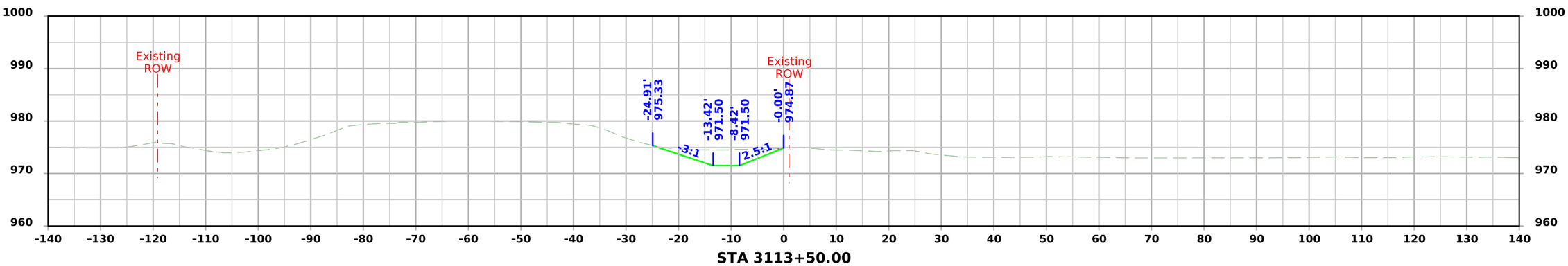


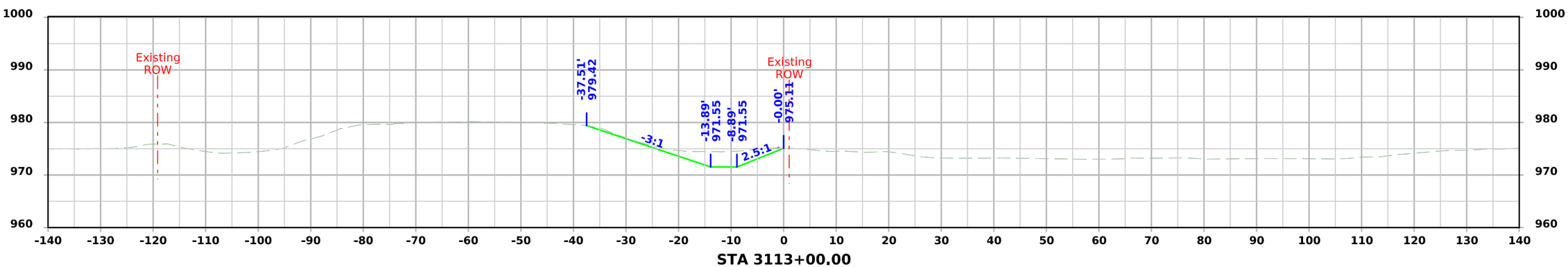
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.102

14:48:42 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS-12003018_South Ditch_TJC.dgn

IA HWY 3 LOW-FLOW DITCH



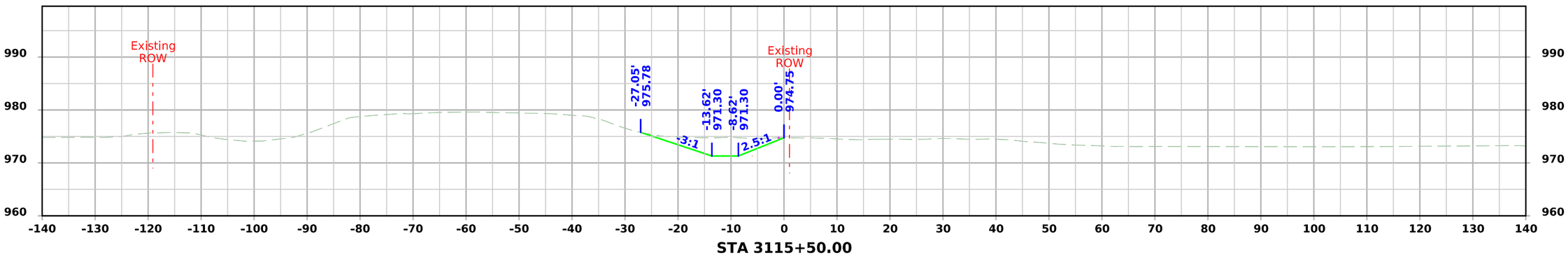




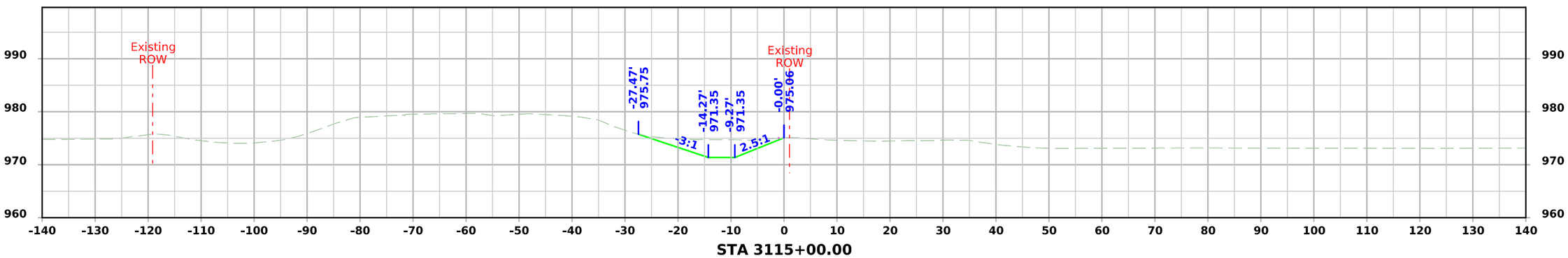
FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.103

14:48:44 10/11/2025 skoontz pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301019\Bridge\(83)_RCB Culvert New - Triple Box\WHKS\Roadway\Cross Section Files\XS-12003018_South Ditch_TJC.dgn

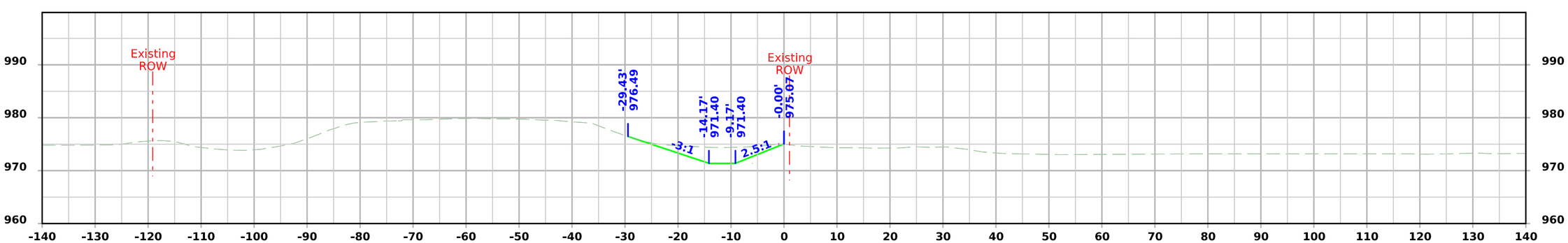
IA HWY 3 LOW-FLOW DITCH



STA 3115+50.00



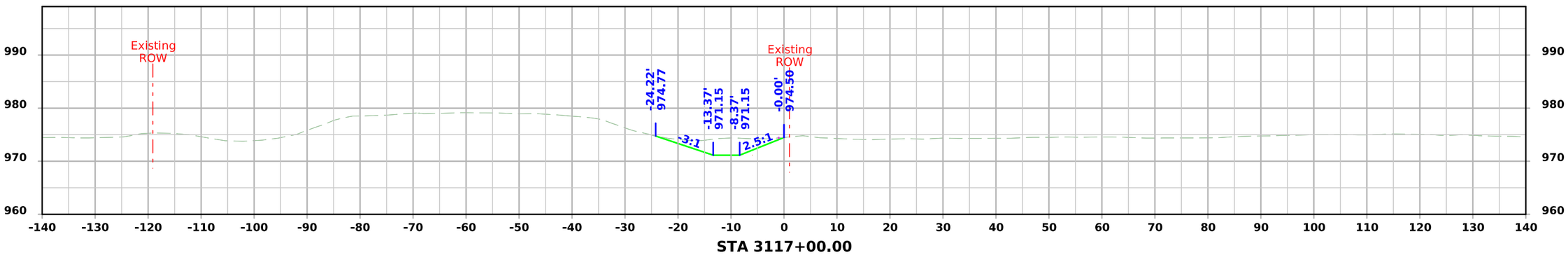
STA 3115+00.00



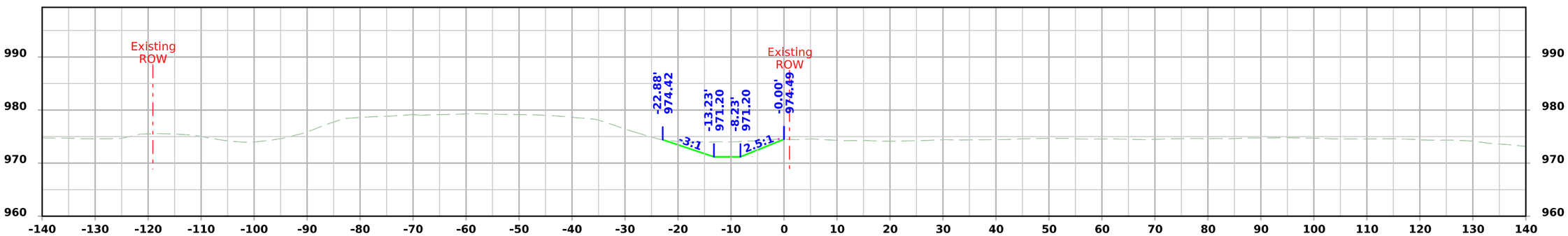
STA 3114+50.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.104

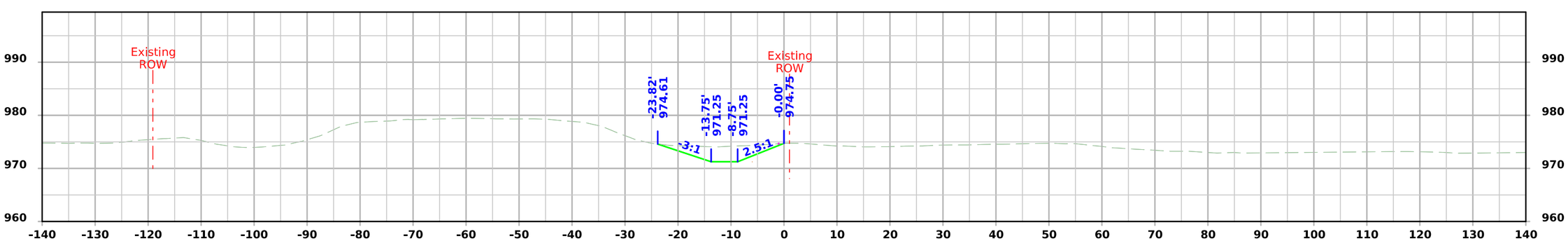
IA HWY 3 LOW-FLOW DITCH



STA 3117+00.00



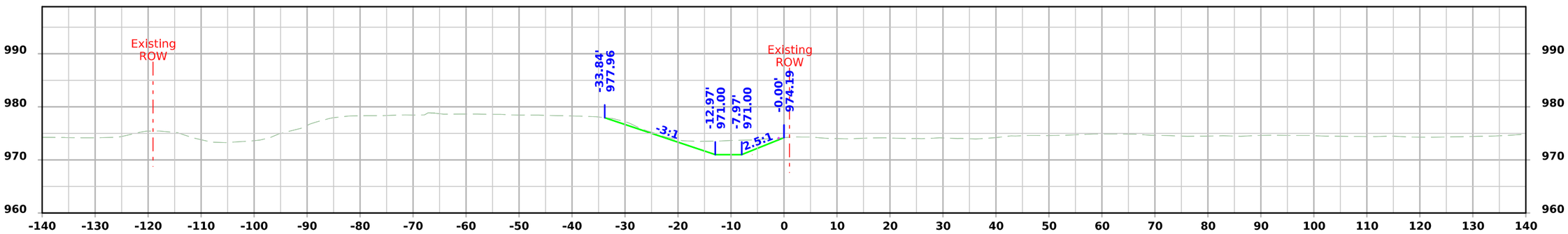
STA 3116+50.00



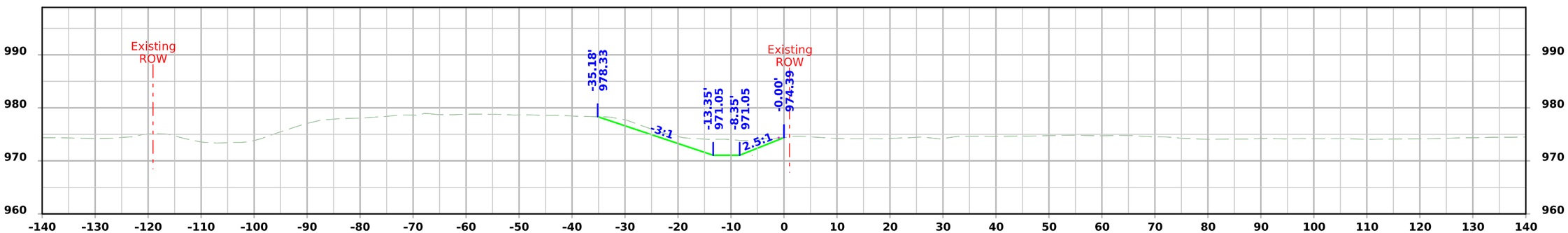
STA 3116+00.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.105

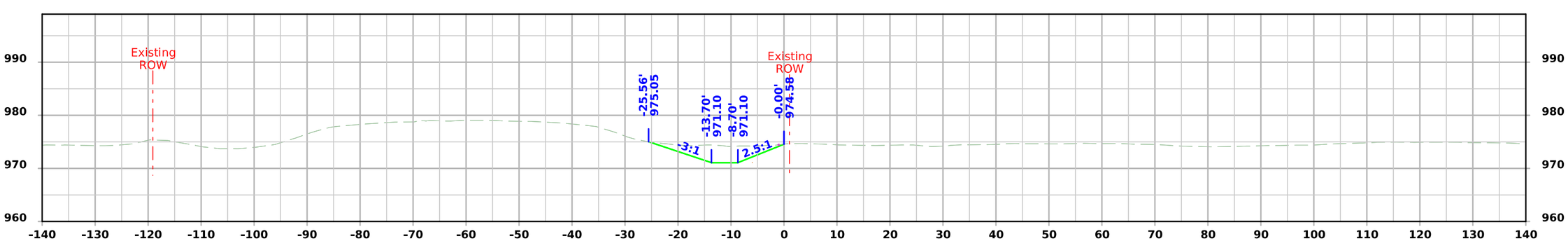
IA HWY 3 LOW-FLOW DITCH



STA 3118+50.00



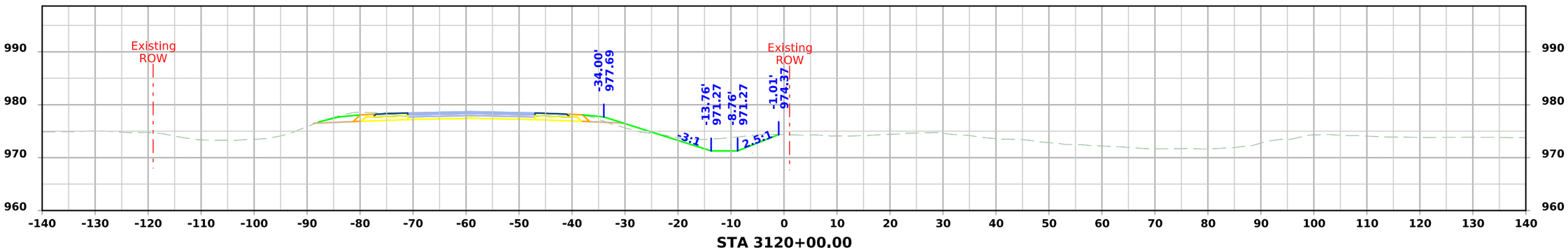
STA 3118+00.00



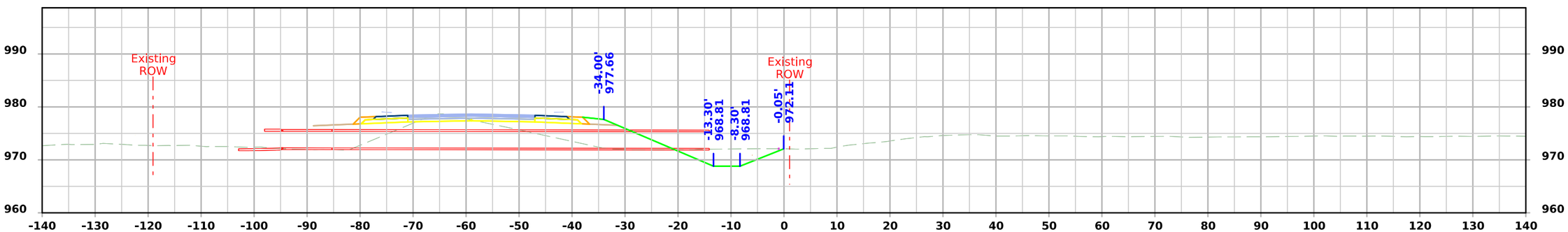
STA 3117+50.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.106

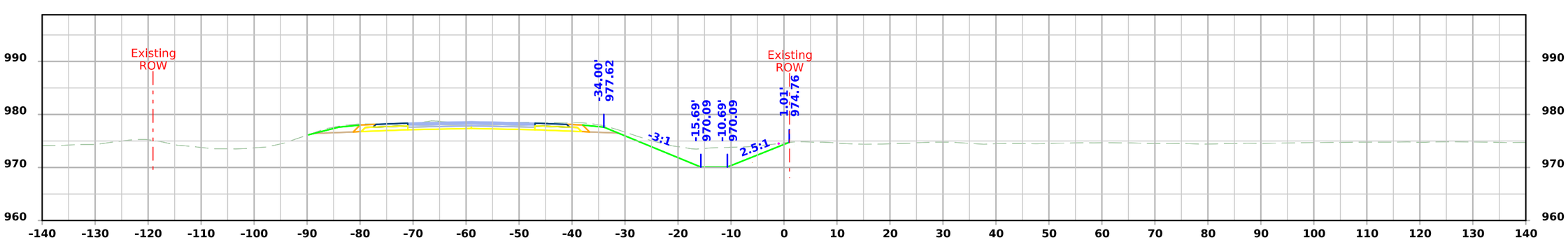
IA HWY 3 LOW-FLOW DITCH



STA 3120+00.00



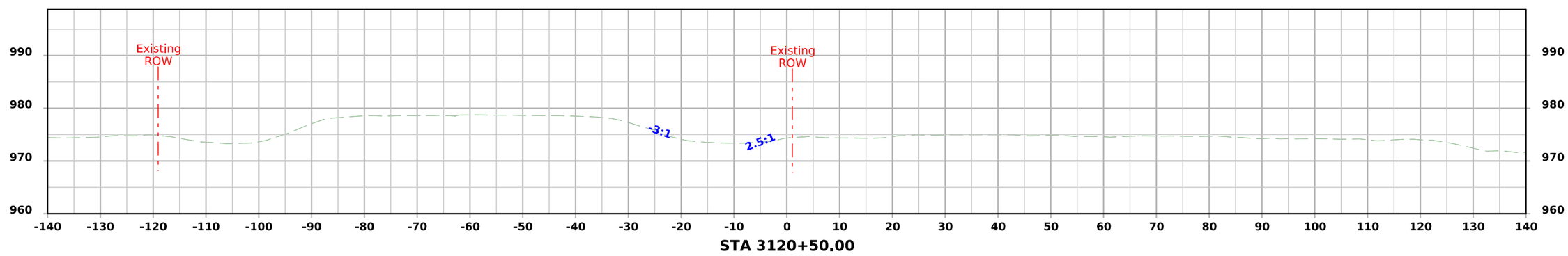
STA 3119+50.00



STA 3119+00.00

FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.107

IA HWY 3 LOW-FLOW DITCH



FILE NO. 32181	ENGLISH	DESIGN TEAM WHKS & Co.	BUTLER COUNTY	PROJECT NUMBER BRFN-003-5(83)--39-12	SHEET NUMBER Y.108