

**BLACK HAWK COUNTY**

HMA PAVEMENT - GRADE AND NEW  
HSIPX-218-7(256)--3L-07

LETTING DATE  
**JULY 7, 2027**

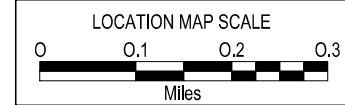
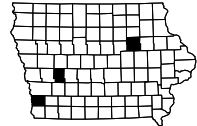
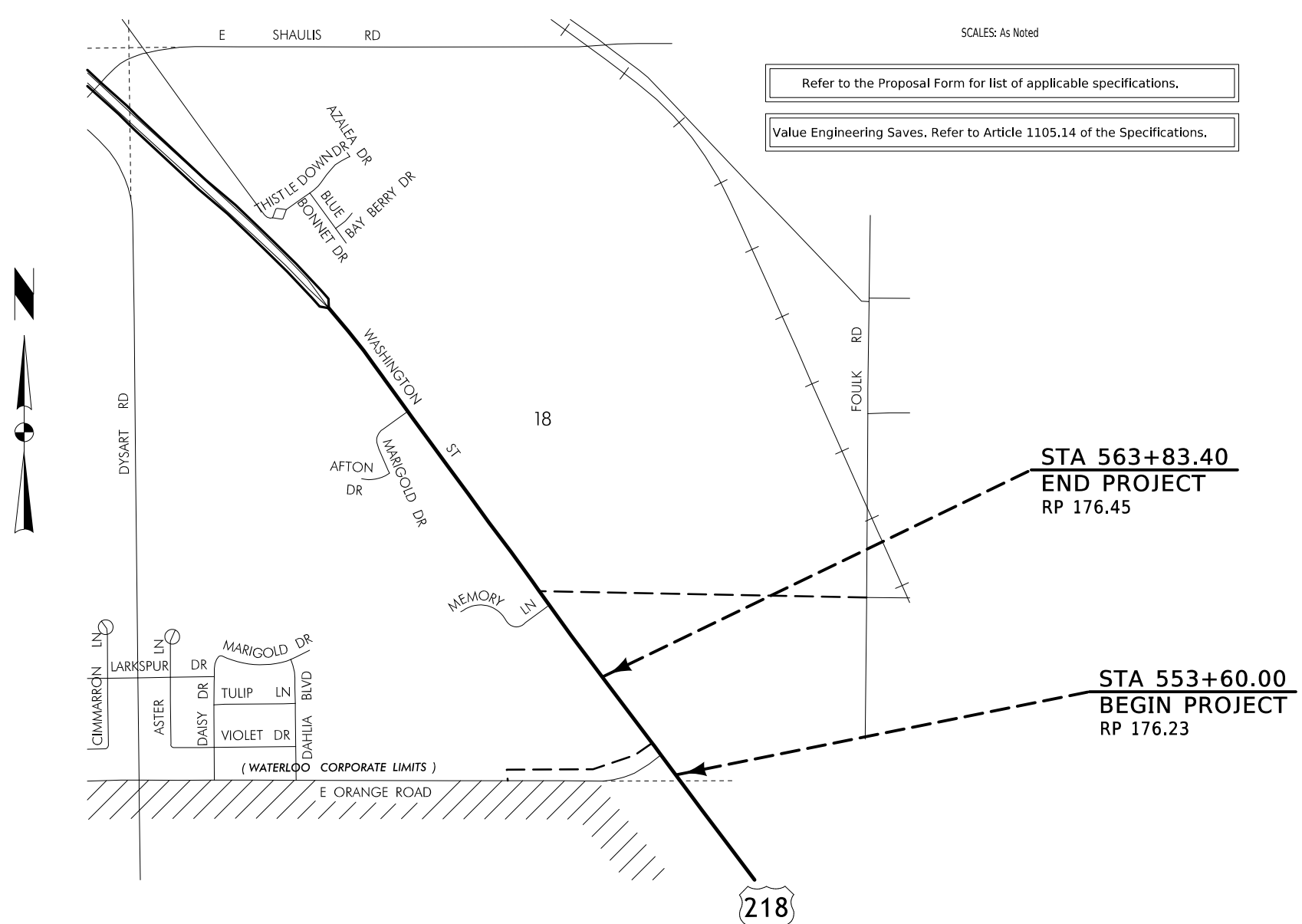


PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM**  
**BLACK HAWK COUNTY**  
HMA PAVEMENT - GRADE AND NEW  
E. Orange Road intersection

PLANS OF PROPOSED IMPROVEMENT ON THE

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.  
Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



REVISIONS

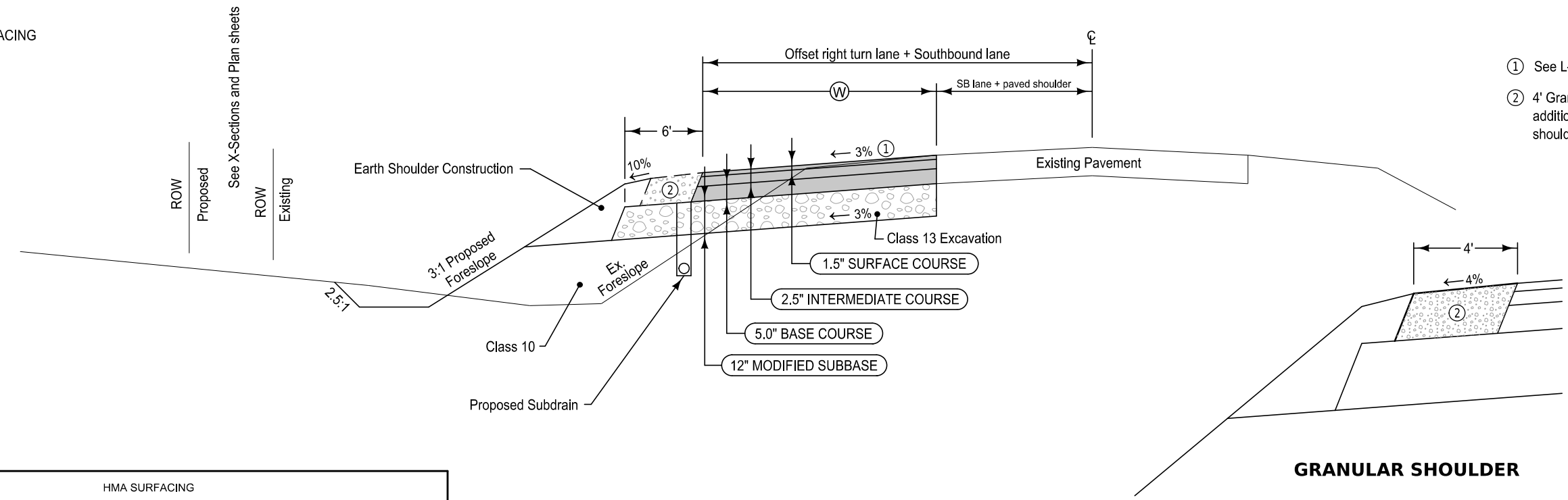
TOTAL	..
PROJECT IDENTIFICATION NUMBER	26-07-218-010
PROJECT NUMBER	HSIPX-218-7(256)--3L-07
R.O.W. PROJECT NUMBER	NHSN-218-7(257)--2R-07

**INDEX OF SHEETS**

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B.1	Typical Cross Sections
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X.1-X.2	Side Road Cross Sections

**PRELIMINARY PLANS**  
Subject to change by final design.  
**D2 PLAN - Date: 3-31-26**

HMA SURFACING

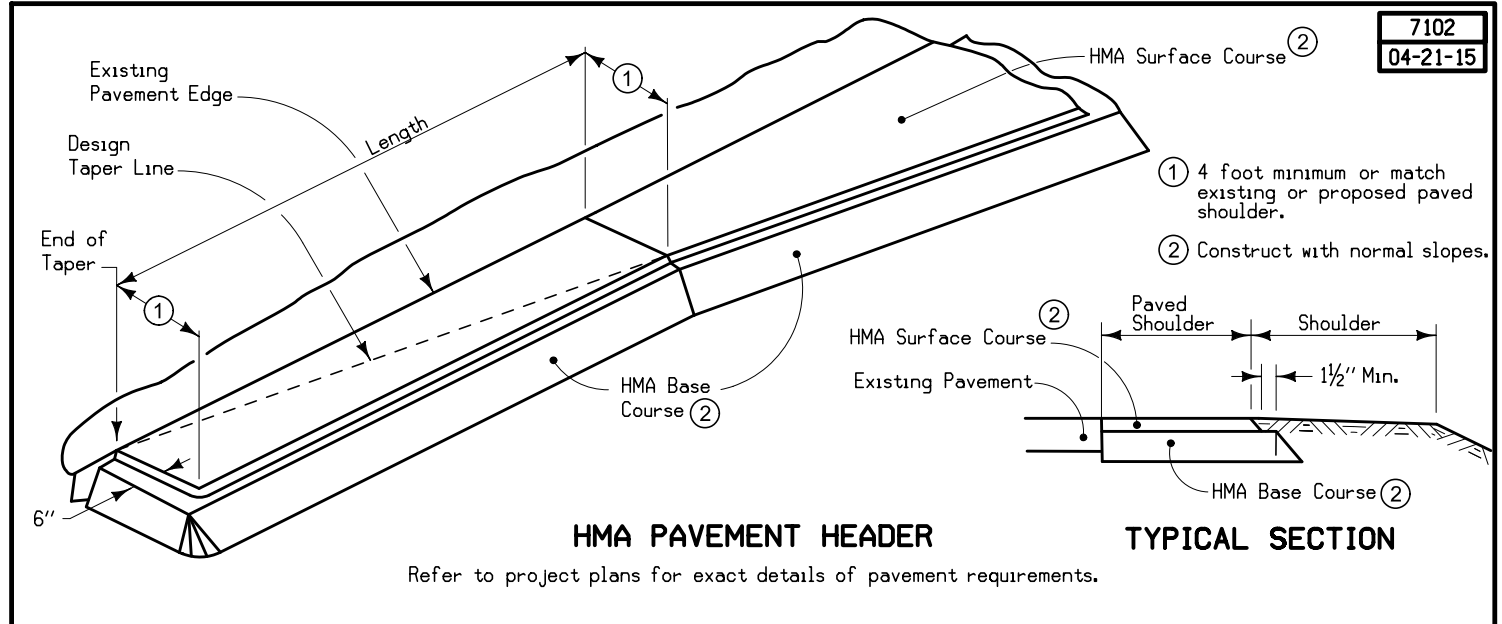


- ① See L-sheets for slope transition
- ② 4' Granular shoulder - See inset for additional information - Blend proposed shoulder into existing shoulder

**GRANULAR SHOULDER**

**TYPICAL CROSS SECTION PROPOSED OFFSET RIGHT TURN LANE**

HMA SURFACING				
STATION TO STATION	① Feet	② Tons/Sta	REMARKS	
10552+28.31	563+83.40	0-24-0	20.2	Refer to L-sheets for additional information

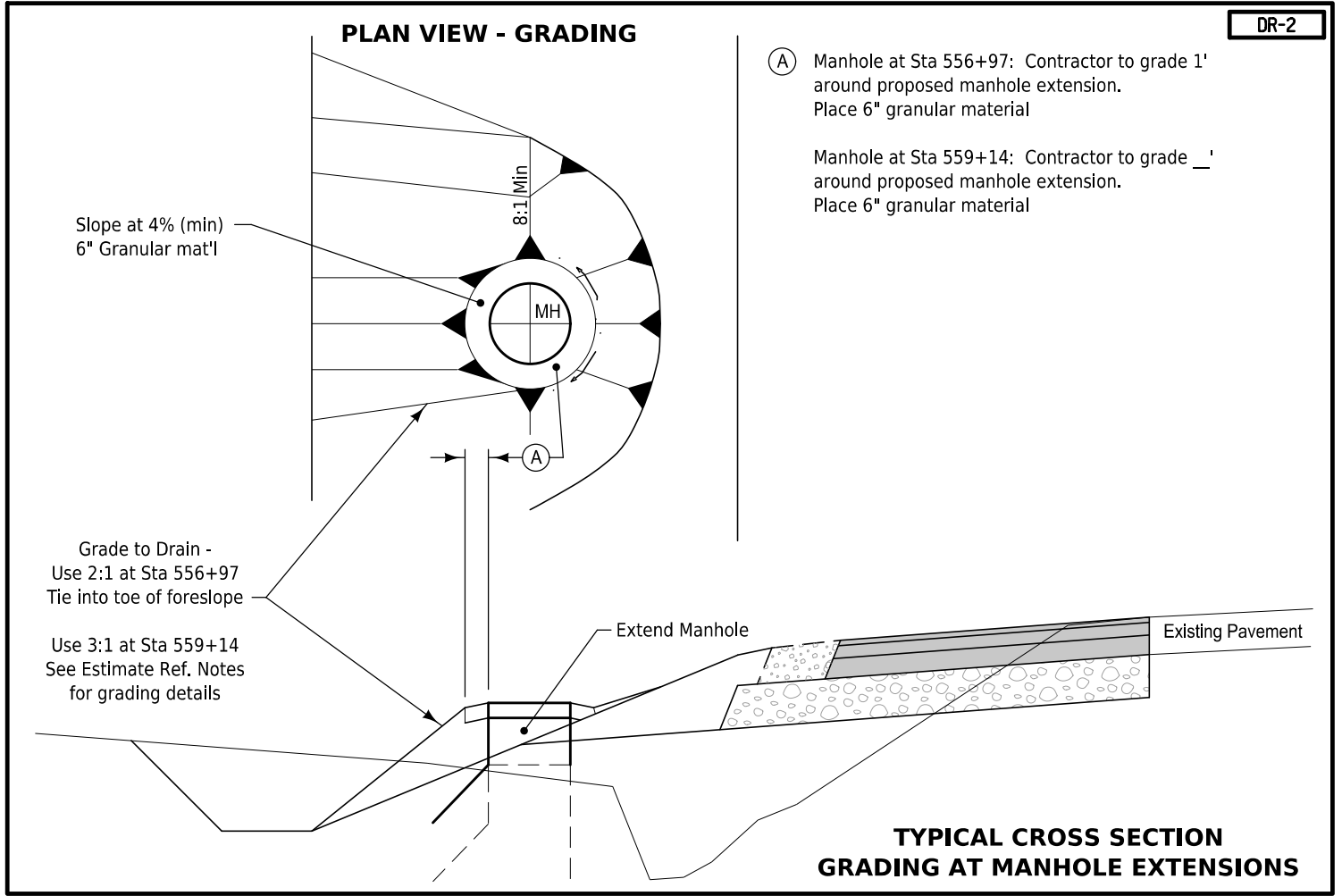


7102  
04-21-15

**HMA PAVEMENT HEADER**

**TYPICAL SECTION**

Refer to project plans for exact details of pavement requirements.



- (A) Manhole at Sta 556+97: Contractor to grade 1' around proposed manhole extension. Place 6" granular material
- Manhole at Sta 559+14: Contractor to grade \_\_\_' around proposed manhole extension. Place 6" granular material

Grade to Drain -  
Use 2:1 at Sta 556+97  
Tie into toe of foreslope

Use 3:1 at Sta 559+14  
See Estimate Ref. Notes  
for grading details

**TYPICAL CROSS SECTION GRADING AT MANHOLE EXTENSIONS**

# ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items

Item no.	Item Code	Item	Unit	Quantities		Estimate Reference Notes
				Estimated		
				Roadway Items		
1	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS	CY			A. Refer to Tab. 103-7. B. Dispose of excess material according to Article 1106.07 of the current specifications.
2	2102-2712070	EXCAVATION, CLASS 12, ROADWAY AND BORROW	CY			A. Refer to Tab. 103-7 on Sheet _____. B. Dispose of excess material according to Article 1106.07 of the current specifications.
3	2102-2713070	EXCAVATION, CLASS 13, ROADWAY AND BORROW	CY	0		Includes _____ cubic yards of Class 13 material to be used to widen existing shoulder for staged construction from Sta. _____ to Sta. _____ on the right side and _____ cubic yards to be wasted as per Article 1106.07 of the current specifications. Refer to Tabulation(s) 107-23 (and) 107-24  Material shall be provided by the Contractor. OR Material is available within the ROW, Sta. XXX+XX to Sta. XXX+XX, as directed by the Engineer.  Dispose of excess material according to Article 1106.07 of the current specifications.
4	2115-0100000	MODIFIED SUBBASE	CY	590		Refer to Typical DR-1 and Sheet L.1 for additional information.
5	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	225		Refer to Typical DR-1 and Tabulation 112-9. An additional 10 tons has been added to quantity for restoration at beginning and end of proposed turn lane to blend is with existing.  Requires XXX cu. yds. of earth shoulder fill, available within the ROW from Sta. XXX+XX to Sta. XXX+XX
6	2214-5145150	PAVEMENT SCARIFICATION, NOMINAL THICKNESS	SY	348		Refer to Sheet L.1 for additional information.
7	2303-1031500	HOT MIX ASPHALT STANDARD TRAFFIC, BASE COURSE, 1/2 IN. MIX	TON	506		Refer to Typical DR-1 and Sheet L.1 for additional information.
8	2303-1032500	HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	126		
9	2303-1033503	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3	TON	124		
10	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	46		
11	2416-0101136	REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN.	EACH	1		
12	2416-1200248	CULVERT, LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 48 IN.	LF			

Item no.	Item Code	Item	Unit	Quantities		Estimate Reference Notes
				Estimated	Roadway Items	
13	2416-1202248	CULVERT, 3000D LOW CLEARANCE CONCRETE ROADWAY PIPE, EQUIVALENT DIAMETER 48 IN.	LF			
14	2435-0600020	MANHOLE ADJUSTMENT, MAJOR	EACH	2		<p>Refer to Typical DR-2 for additional information.</p> <p>Existing sanitary sewer manholes at Sta 556+97, Lt 49 and Sta 559+14, Lt 50 will need to be elevated to accommodate proposed grading. Refer to X-sections for general grading limits.</p> <p>Existing structures are 48" Standard Road Plan SW-301</p> <p>Sta 556+97 structure will need to be raised 5'</p> <p>Sta 559+14 structure will need to be raised 2'</p> <p>At Sta 559+14 the proposed ditch width has been adjusted to accommodate an additional Class 10 fill quantity. Maintain approx 3:1 foreslope and approx 8' ditch width at this location.</p>
15	2499-6000100	CLEAN OUT PIPE CULVERT	LF	65		<p>Item is to remove sediment and debris within culvert at Sta 10554+05. Contractor shall supply all equipment and labor needed to remove sediment and debris. Sediment and debris remain property of the contractor. Any damage to culverts shall be repaired by the contractor. Verify method, prior to cleaning, with the Engineer. Contractor to prevent sediment from leaving the project in accordance with the Pollution Prevention Plan. Includes cleaning south apron end.</p> <p>Method of Measurement and Basis of Payment is per LF of satisfactorily cleaned culvert.</p>
16	2527-9263155	PRE-CUT SYMBOLS AND LEGENDS, PREFORMED THERMOPLASTIC MARKING MATERIAL	EACH	2		Refer to Sheet U.1 for additional information.
17	2527-9263181	PAVEMENT MARKINGS REMOVED	STA	8.12		Refer to tabulation 108-22 for additional information.
18	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	51.26		
19	2527-9263225	PERMANENT TAPE MARKINGS, PREFORMED THERMOPLASTIC MARKING MATERIAL	STA	1.6		
20	2527-9270112	GROOVES CUT FOR PAVEMENT MARKINGS	STA	44.74		
21	2528-8445110	TRAFFIC CONTROL	LS	1		Refer to Tabulation 108-23A for additional information.
22	2528-8445113	FLAGGERS	EACH			<p>(Designer should enter a quantity of 0)</p> <p>See Proposal.</p>
23	2533-4980005	MOBILIZATION	LS	1		--

Item no.	Item Code	Item	Unit	Quantities		Estimate Reference Notes
				Estimated	Roadway Items	
24	2602-0000050	SILT BASINS	EACH	2		Refer to Tabulation 100-14 for additional information. The tabulation includes estimated locations for placement of "Silt Basins" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 100% additional quantity for field adjustment and maintenance.
25	2602-0000080	REMOVAL OF SILT BASINS	EACH	1		Refer to Tabulation 100-14 for additional information.
26	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	200		Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement.
27	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	720		Refer to Tabulation 100-19 for additional information.
28	2602-0000370	DITCH CHECK SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	520		Refer to Tab. 100-19.  The tabulation includes estimated locations for placement of "Ditch Check Sediment Control Device, 20 in. dia." 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.

232\_03A  
9/28/22

### EROSION CONTROL (RURAL SEEDING)

Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.

Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are all incidental to mobilization and will not be paid for separately.

232\_11  
6/21/23

### EROSION CONTROL (STABILIZING CROP SEEDING)

Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.

If outside of permanent seeding dates in Section 2601 of the Standard Specifications, or if required by a storm water permit, place stabilizing crop, fertilizer, and mulch on the disturbed area as follows:

Place seed and fertilize according to the requirements of Article 2601.03,C,1 and Section 4169 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are incidental to mobilization and will not be paid for separately.

232\_03C  
8/28/24

### EROSION CONTROL (NATIVE GRASS SEEDING)

Area to be seeded is estimated to be less than 1 acre. If the Contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,B of the Standard Specifications.

Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed and mulch on the disturbed area lying 8 feet or more beyond the shoulder as follows:

SEED MIX:

Big bluestem (Andropogon gerardii)	6 lbs. PLS/Acre (7.0 kg/ha)
Indiangrass (Sorghastrum nutans)	6 lbs. PLS/Acre (7.0 kg/ha)
Little bluestem (Schizachyrium scoparium)	6 lbs. PLS/Acre (7.0 kg/ha)
Partridge Pea (Chamaecrista fasciculata)	4 lbs. PLS/Acre (4.5 kg/ha)
Sideoats grama (Bouteloua curtipendula)	4 lbs. PLS/Acre (4.5 kg/ha)
Canada wildrye (Elymus canadensis)	2 lbs. PLS/Acre (2.2 kg/ha)
Switchgrass (Panicum virgatum)	1 lbs. PLS/Acre (1.1 kg/ha)
Oats (Avena sativa)	32 lbs./Acre (36.0 kg/ha)

Furnish Big bluestem, Indiangrass, Canada wildrye and Little bluestem that is debarbed or equal to facilitate the application of seed.

Furnish seed certified as Source Identified Class (Yellow Tag) Source G0-Iowa. Oats are excluded from this requirement. Place seed according to the requirements of Article 4169.02 of the Standard Specifications.

Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.

Preparing the seedbed, furnishing and applying seed and mulch are incidental to mobilization and will not be paid for separately.

262\_05  
9/28/22

### UTILITIES (POINT 25 PROJECT)

This is a POINT 25 project and is subject to the provisions of IAC 761-115.25.

# INDEX OF TABULATIONS

111\_25  
10/20/26

Line No.	Tabulation	Tabulation Title	Sheet No.

**UTILITIES**

Line No.	Company	Contact	Phone	Email
1.0	MIDAMER-GAS	Jordyn Weber	3192914728	jlweber@midamerican.com
2.0	MEDIACOM	SCOTT LAGOW	8455449655	clagow@mediacomcc.com
3.0	CENTURYLINK	SADIE HULL	9185470147	sadie.hull@lumen.com
4.0	IOWA COMMUNICATIONS NETWORK	DAVE AUGSPURGER	5157254604	icnoutsideplantiowaonecall@iowa.gov
5.0	AUREON NETWORK SERVICES	Jeff Klocko	5158300445	jeff.klocko@aureon.com
6.0	LA PORTE CITY TELEPHONE COMPANY	CHRIS HOPP	5632454480	chris@alpine-communications.com
7.0	MIDAMER-ELEC	Jordyn Weber	3192914728	jlweber@midamerican.com
8.0	MIDAMER-FIBER	Telecom On Call	5152812313	telecomoncall@midamerican.com
9.0	METRO FIBERNET, LLC	LORI KEMPER	8122131050	811design@metronet.com
10.0	NORTHERN NATURAL GAS COMPANY	JOHN KAHRS	4025306612	john.kahrs@nngco.com
11.0	WATERLOO FIBER	IAN CROWTHER-GREEN	3192910175	IAN.CROWTHER-GREEN@WATERLOOFIBER.COM
12.0	WATERLOO WMSD	BRITTNEY HOYER EXT. 3627	3192914553	cmom@waterloo-ia.org
13.0	WATERLOO WATER WORKS	CHAD COON	2326285013	Chad.Coon@waterloo-ia.org

## STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
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-121	04-18-23	Connected Pipe Joints
DR-202	10-17-23	Low Clearance Concrete Pipe Aprons
DR-303	10-17-17	Subdrains (Longitudinal)
DR-621	04-18-17	Pipe Extension
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EW-403	04-18-17	Temporary Erosion Control Measures
PM-110	10-15-24	Line Types
PM-111	04-21-20	Symbols and Legends
PM-115	10-20-26	Grooving for Line Types
PM-116	04-16-24	Grooving for Symbols and Legends
PM-120	10-15-24	Stop Lines and Islands
PM-222	10-20-26	Passing Lane (Super Two Highway)
PR-202	10-21-14	Notches for Resurfacing (with or without Runout)
SW-301	10-21-25	Circular Sanitary Sewer Manhole
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-18-23	Work Within 15 ft of Traveled Way

103\_10  
4/30/25

### TOPSOIL STRIPPING AND PLACEMENT

Line No.	Road Identification	Dir. of Traffic	Station From	Station To	Topsoil Stripping Thickness (IN)	Topsoil Placement Thickness (IN)	Remarks

102\_16  
11/1/24

### NOTCHES AND RUNOUTS FOR RESURFACING

Refer to PR-201 and PR-202.

(1) Bid item. Applies only to Types 'N1' and 'N3' on PR-202. Refer to 100-25 for remaining values.

Line No.	Station	Type of Notch or Runout	S (IN)	I (IN)	DI (IN)	L (FT)	M (IN)	Pavement Scarification (SY) (1)	Remarks
1.0	561+00.00	Type N2	1.5				1.5	348.0	See Sheet L.1 for location

### FORESLOPE FLATTENING AND DRAINAGE STRUCTURES BY ROAD CONTRACTOR (MAINLINE PIPES)

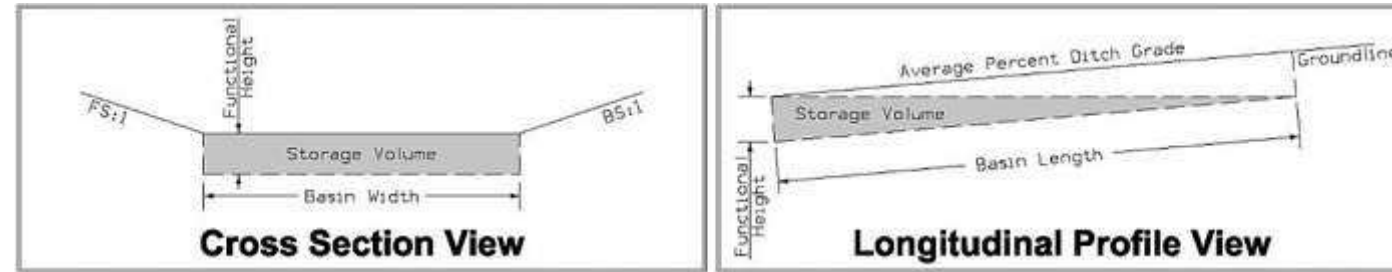
Refer to Standard Road Plans DR-121, DR-122, and DR-213.

\* Not a bid item

Line No.	Location	Existing Size of Culvert	Existing Type of Culvert	New Size of Culvert (IN)	New Type of Culvert	Length of New Construction (LF)	Flow Line Elevation Left	Flow Line Elevation Right	Dimension Total Left (LF)	Dimension Total Right (LF)	Dimension Extension Left (LF)	Dimension Extension Right (LF)	Remove and Reinstall Aprons Left (No.)	Remove and Reinstall Aprons Right (No.)	Remove and Reinstall Culvert Left* (No.)	Remove and Reinstall Culvert Left (FT)	Remove and Reinstall Culvert Right* (No.)	Remove and Reinstall Culvert Right (FT)	New Apron In (No.)	New Apron Out (No.)	Apron Guard DR-213* (No.)	Type 'C' Connection DR-122* (Type)	Type 'C' Connection DR-122* (No.)	Pipe Joint DR-121* (Type)	Embank.- In-Place (CY)	Class 20 (CY)	Remarks	
1.0	10554+05.61	48.0	LCP	48.0	LCP	20.0	852.06		51.00		28.00		1														Type 3	DR-621

## SILT BASINS

Possible Standard: EW-403



\* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.  
 \* Volume equation:  $(0.5 * \text{Length} * (\text{Width} * \text{Height} + \text{Width} * (\text{Height} - \text{Length} * \text{Avg}\% \text{Slope})))$

Line No.	Basin No.	Station	Side	Installation (Each)	Removal (Each)	Basin Width (FT)	Basin Length (FT)	Height (FT)	Avg. % Slope	Volume (CF)	Remarks
1.0	1	556+00.00	Left	1.0		8.0	50.0	3.00	3.8	820.00	

# PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

100\_19  
10/15/24

Possible Standards: EC-204

Line No.	Station From	Station To	Side	Sediment Control Device Type	Diameter Size	Length (LF)	Remarks
1.0	556+10.00		Left	Ditch Check	20 inch	20.00	
2.0	556+43.00		Left	Ditch Check	20 inch	20.00	
3.0	556+76.00		Left	Ditch Check	20 inch	20.00	
4.0	557+20.00		Left	Ditch Check	20 inch	20.00	
5.0	557+80.00		Left	Ditch Check	20 inch	20.00	
6.0	558+13.00		Left	Ditch Check	20 inch	20.00	
7.0	558+46.00		Left	Ditch Check	20 inch	20.00	
8.0	558+79.00		Left	Ditch Check	20 inch	20.00	
9.0	559+12.00		Left	Ditch Check	20 inch	20.00	
10.0	559+45.00		Left	Ditch Check	20 inch	20.00	
11.0	559+78.00		Left	Ditch Check	20 inch	20.00	
12.0	560+11.00		Left	Ditch Check	20 inch	20.00	
13.0	560+44.00		Left	Ditch Check	20 inch	20.00	
14.0	560+60.00		Left	Ditch Check	20 inch	20.00	
15.0	560+79.00		Left	Ditch Check	20 inch	20.00	
16.0	560+98.00		Left	Ditch Check	20 inch	20.00	
17.0	561+42.00		Left	Ditch Check	20 inch	20.00	
18.0	561+86.00		Left	Ditch Check	20 inch	10.00	
19.0	562+30.00		Left	Ditch Check	20 inch	10.00	
20.0	562+74.00		Left	Ditch Check	20 inch	10.00	
21.0	563+18.00		Left	Ditch Check	20 inch	10.00	
22.0	563+62.00		Left	Ditch Check	20 inch	10.00	
23.0	10553+51.00		Left	Ditch Check	20 inch	10.00	
24.0	10553+95.00		Left	Ditch Check	20 inch	10.00	
<b>Total:</b>						<b>410</b>	

## ROLLED EROSION CONTROL

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

100\_22  
8/15/22

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

### ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

100\_23  
8/15/22

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
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### 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)	Paved Shoulder (3) (SY)	Shoulder at Grd rail (5)(7)	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
Orange Road/US 218	NB	10552+28.00	563+83.40	Left			4	1058.00											214.000	20.230	10.58	179.10		

### 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			

Road ID	Station From	Station To	Lane	Marking Type	Left	Center	Right	Groove Marking Needed?	Groove Qty. (STA)	CHW10 (STA)	CHW10 Factored (STA)	ELW6 (STA)	ELW6 Factored (STA)	ELY4 Factored (STA)	SLW2 (STA)	SLW2 Factored (STA)	Remarks
US 218	555+72.00	563+84.00		Removal of Paint	X							8.12	8.12				
8.12																	
Marking Type Removal of Paint:																	
Orange Road				Thermoplastic				Yes	1.60						0.40	1.60	
1.6																	
Marking Type Thermoplastic:																	
US 218	555+02.00	561+85.00		Waterborne/Solvent Paint	X			Yes	31.40	18.80	31.40						
Orange Road	10552+28.00	563+83.00		Waterborne/Solvent Paint	X			Yes	10.59			10.59	10.59				
Orange Road				Waterborne/Solvent Paint			X	Yes	1.15			1.15	1.15				Paint adjacent to new EB to SB paved shoulder
									43.14		31.4		11.74				
Marking Type Waterborne/Solvent Paint:																	
<b>Total:</b>									44.74		31.4		19.86		1.6		

104\_09A  
5/6/24

**LONGITUDINAL SUBDRAIN SHOULDER**

\* Not a bid item.

Line No.	Road or Lane Identification	Station From	Station To	Side	Depth (IN) (D)	Subdrain Size (IN)	Length (FT)	Outlet Station	Outlet Type	Porous Backfill* (CY)	Remarks
1.0	Orange Road	10552+28.00	10553+98.00	Left	48.0	4.0	200.0	10552+28.00	500-10	21.6	
2.0	Orange Road			Left	48.0	4.0	30.0	10553+98.00	500-10	3.2	
3.0	Orange Road	10554+11.00	559+50.00	Left	48.0	4.0	444.0	10554+11.00	500-10	48.0	
4.0	US 218			Left	48.0	4.0	30.0	559+50.00	500-10	3.2	
5.0	US 218	559+50.00	563+83.00	Left	48.0	4.0	463.0	559+50.00	500-10	50.0	
6.0	US 218			Left	48.0	4.0	30.0	563+83.00	500-10	3.2	

CEDAR TWP.  
T-88N R-12W  
SEC. 18

SOUTH VIEW OF WATERLOO, LLC

Pump Station and Force Main Permanent Easement  
City of Waterloo

Refer to Typ. DR-2 for  
additional grading

Limits of construction

560+00

565+00

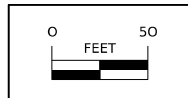
555+00

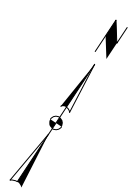
PT 10553+70.19

218

POT Sta 554+90.61 US 218  
= POT Sta 10554+90.61 Orange Road

SEE L-SHEETS FOR INTERSECTION DETAILS





CEDAR TWP.  
T-88N R-12W  
SEC. 18

$\Delta = 36^\circ 59' 59.53''$  (LT)  
T = 191.71'  
L = 370.00'  
R = 572.96'  
E = 31.22'

SOUTH VIEW OF  
WATERLOO, LLC

Pump Station and  
Force Main Permanent Easement  
City of Waterloo

Sta. 10554+05.61  
59"x36"x48' Elliptical RCP  
D.A.=10.0 A-R  
**Remove apron**  
**Add 20' - 59"x36" RCP Lt.**  
**Reinstall apron**  
F.L. = 852.06

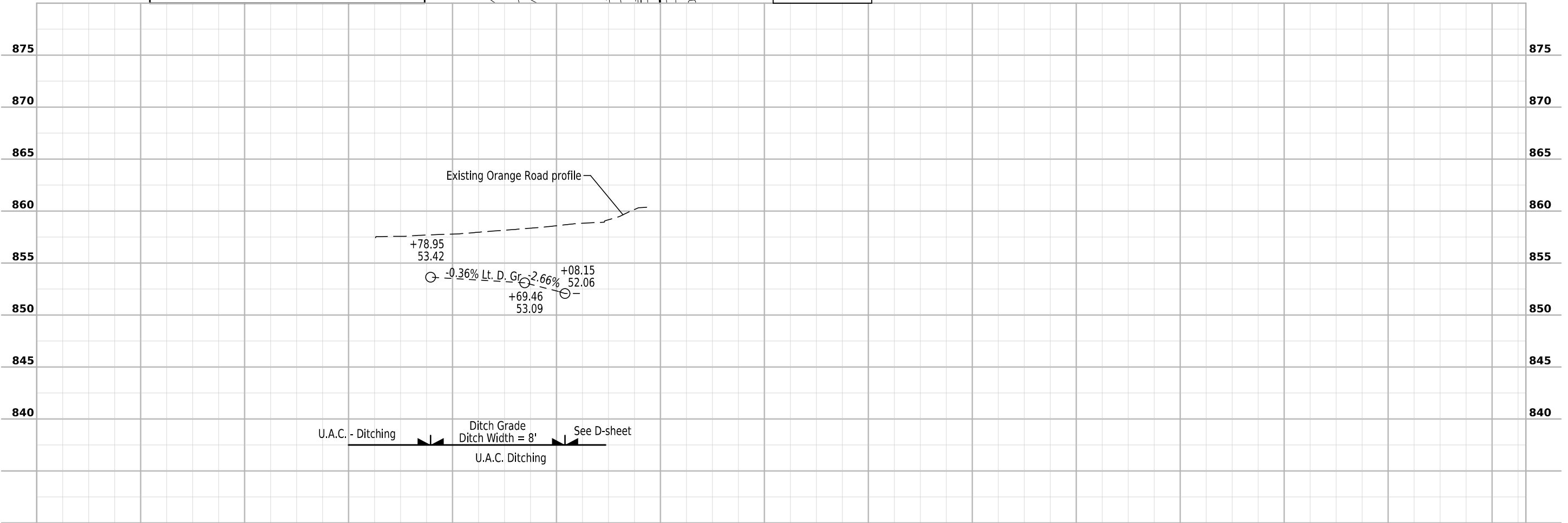
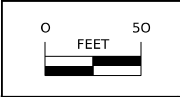
Sta. 553+19.3  
Skew 30° LT AH  
4'x3'x61' RCB  
w/ 59"x36" Elliptical RCP Ext's  
D.A.=47.0 A-R  
U.A.C.

POE Sta 10554+90.61 Orange Road  
= POT Sta 554+90.61 US 218

555+00

SEC. 19

SEE L-SHEETS FOR INTERSECTION DETAILS



10550+00 10551+00 10552+00 10553+00 10554+00

Survey Information

**SURVEY INDEX**

County: Black Hawk  
PIN: 23-07-218-050  
Project Number: HSIPX-218-7(250)--3L-07  
Location: Wolf Creek Bridge in La Porte City to North of  
Marigold Dr. in Waterloo.  
Project Directory: 0721805023

**Survey Personnel**

Survey Party Chief - Geoff Tinker  
Assistant Survey Party Chief - Kokou Allade (01/08/2024 Only)

**Date(s) of Survey**

Begin Date 10/16/2023  
End Date 01/08/2024

**General Information**

This survey is for US Hwy 218 HMA Resurfacing and HMA Paved Shoulders (New) between LaPorte City and N. of Marigold Dr. in Waterloo, specifically for Two (2) Turn Lanes at Orange Road and Marigold Drive Intersections. This project is a Full Field DTM survey for Intersection improvements, per area outlined in *Survey Request.kmz* provided in **SurveyLimits** folder of the **PrelimSurvey** project directory.

**Utility Information**

For logging data and other utility details see Utility Survey and Ownership Report in the **UtilityInfo** folder of the **PrelimSurvey** project directory.

**Project Control**

Coordinates were determined for primary project control points by conducting one (1) concurrent six-hour (+) Static session consisting of 6 Control Points observed on **2023\_1017**. Post-processing and Adjustment are constrained to nearby Iowa Real Time Network (IaRTN) reference station **IAWA** (Waterloo) and checked (un-constrained) at **IAIN** (Independence). Refer to Network Adjustment report per: **07218250-PPadj\_Final-Report\_IaRCSz5.pdf**

PROJECT DATUM: **NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)**  
COORDINATE SYSTEM: **IOWA REGIONAL COORDINATE SYSTEM ZONE 5**  
**(U.S. SURVEY FOOT)**  
VERTICAL DATUM: **NAVD88**  
GEOID MODEL: **2018u3**

**Alignment Information**

**Hwy. 218** (Mainline / M.L.):

The Horizontal Alignment for **U.S. Hwy 218** included in this survey is a retrace of As-built Plans No. FN-218-7(30)--21-07 (1973) and I-F-380-7(25)315--OF-07 (1981).

Land Corner (PLSS) Certificates of record were also recovered and observed as part of this Survey and Alignment development support. Refer to **PrelimSurvey** dir. for this project at:

*pw:\projectwise.dot.int.lan:PWMain\Documents\Projects\0721805023\PrelimSurvey\554.2\As-Built Plans\CornerStones\* for Land Corners records as obtained from:  
<https://blackhawkco.maps.arcgis.com/apps/webappviewer/index.html?id=8c33a68f0da649378e743605be7f09aa>

**I-F-380-7(25)315--OF-07** (1981) details Grading plans and Geometrics for relocated Hwy. 218 North/Northwest of Marigold Dr. intersection from 2 lanes to Divided 4-lanes. **FN-218-7(30)--21-07** (1973) details A.C. Resurfacing plans that included Tie Sheet details for Centerline geometrics through project limits. **BHco. L-372** (1976) details 1972 Paving plans and Geometrics for Curve at Orange Rd. Intersection and calculated from North line of NE. Quarter Section 19-T88N-R12W as observed.

**Hwy. 218** Survey Stationing was Equated (**Held**) at 1973 plan **P.I. Sta. 565+70.6** being calculated from East 60ft ROW per Recorded Survey Parcel / Lot Corners found and intersected with remaining N.W. Ref. Tie C.M. (83.11ft), then carried **Back** (S.E.) to Found C.L. Cut. X (POT #701) located S.E. of Foulk Rd. Intersection in PCC Bridge Approach pavement, and then **Ahead** (N.W.) without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

P.I. Sta. 521+57.00 (FN-218-7(30)--21-07) at FOUND C.L. Cut "X" in NW. PCC Bridge Approach of Bridge located SE. of Foulk Rd. (N/S) Intersection.  
**Survey POT Sta. 521+57.74** (per Dist. Obs. from P.I. #703 Held) at Found Cut. X as observed (**#701**).

POT Sta. 530+63.7 (FN-218-7(30)--21-07) at ± Intersection with Foulk Road (N/S).  
**Survey P.O.T. Sta. 530+63.89** Calculated (COGO **#702**) from East 60ft ROW per Recorded Survey Parcel / Lot Corners found to NW. Back from P.I. #703 as Held, and intersecting with East line of NE. Quarter Section 19-T88N-R12W as observed.

P.I. Sta. 565+70.6 (FN-218-7(30)--21-07)  
**Survey P.I. Sta. 565+70.60 (HELD)** Calculated (COGO **#703**) as outlined above. Also Found IaDOT ROW Rail to WEST at 78.96ft (Calculated) vs. 80ft Westerly ROW, and located just West of CL ACC Joint and within reflective Transverse joint. Magnetic Sounding at location reviewed, with PCC joint under ACC Overlay. No additional recovery attempted due to traffic.

Division Sta. 568+95.5 As-built Plans Project No. FN-218-7(30)--21-07 (1973) being End Division 2 (Back SE.) and Begin Division 3 (Ahead NW.)  
(Plan reference only)

Survey Information (Cont.)

P.I. Sta. 590+14.30 per FN-218-7(30)--21-07 (1973)  
 = P.O.T. Sta 590+14.30 per I-F-380-7(25)315--OF-07 (1980)  
**Survey P.O.T. Sta. 590+14.30** Calculated (COGO #704) Holding West 80ft ROW from Found Lot Corner at 5/8in Rebar w/OPC (PLS 20907) at SW. Corner Marigold Dr. Intersection ROW Corner and Tangent back to P.I. #703 above. Two additional Lot Corners along ROW to SE. were also recovered and reviewed for Tangent defined.

P.C. Sta. 590+69.17 per I-F-380-7(25)315--OF-07 (1980)  
 = P.O.T. Sta. 659+69.17 F-FG-520-6(5)24-07 (as outlined for PC on Sheet #4 of 327)  
**Survey P.C. Sta. 590+70.18** Calculated (COGO #705) Not Set.

P.I. Sta. 596+49.90 I-F-380-7(25)315--OF-07 (1980)  
**Survey P.I. Sta. 596+50.91** Calculated (COGO #706) from Found P.T. (Ahead) and holding 1980 Grading plan Horiz. Curve Data as follows:  
 Delta (Left) = 11°34'30"  
 D = 1°00'  
 R = 5729.58ft  
 L = 1147.50ft  
 T = 580.726ft  
 Calculated location falls in Granular shoulder with no magnetic sounding per field review, and Not Set.

P.T. Sta. 602+26.67 I-F-380-7(25)315--OF-07 (1980)  
**Survey P.T. Sta. 602+27.68** (Curve COGO) per above HELD Curve Data from Tangent SE (Back). Tangent (Ahead) held "Through" Found CUT X as follows:  
**Survey Sta. 602+29.42** (#707) located at 1.74ft NW. (Ahead) of Calc. PT at Found CUT X with drill Hole in Center of PCC Median, being physical location (±) of end Horiz. Curve from SE. (Back).

POT Sta. 618+00.00 at Intersection of Hwy. 218 and Shaulis Road (1980 Reloc.).  
**Survey POT Sta. 618+02.75** Calculated (COGO #708) for Geometric reference only. Actual P.O.T. "Not" recovered nor field reviewed location. POT Calculated holding record Plan distance of 1573.33ft from Physical PT Sta. 602+29.42 at Found CUT X to record POT Sta. denoted.

P.I. Sta. 622+58.50 I-F-380-7(25)315--OF-07 (1980)  
**Survey P.I. Sta. 622+61.23** Calculated (COGO #709) for Geometric reference only. Actual P.I. "Not" recovered nor field reviewed location. P.I. Calculated holding record Plan distance of 458.50ft from Plan POT Sta. 618+00.00 to record POT Sta. denoted.

**Orange Road** (Sideroad / S.R.):

The Horizontal Alignment for **Orange Road** included in this survey is computed from Black Hawk County As-built Plans for Project L-372 (1972), in addition to Land Corner's recovered and observed for the North line of NE. Quarter Section 19-T88N-R12W as observed. Additional ROW Rail recovered and observed along Easterly 60ft ROW of Hwy. 218 intersecting said North line of said Section, and within 0.08ft of said North Section line.

Emailed Black Hawk County Engineer on 10/18/2023 regarding plan request and provided URL for document share to download per email response on 10/19/2023.

The horizontal alignment for **Orange Road** (Black Hawk Co). has a Horiz. Curve from West of Hwy. 218 into Hwy. 218 intersection as outlined in B.H. Co. **L-372** (1976) As-Built details from 1972 Paving plans. Survey Stationing was Equated (**Held**) at plan P.I. Sta. 238+12.85 being the N. 1/4 Corner of said Section 19 above and carried Ahead (East) without equation till Intersection with C.L. Hwy. 218 as follows:

PI Sta. 238+12.85 at N. 1/4 Corner per PLSS Corner Certificate of Record as observed.  
**Survey PI Sta. 238+12.85** Found 5/8in Stub Rebar in ACC/HMA Pavement per record.

PC Sta. 245+13.27  
**Survey PC Sta. 245+13.27** Calculated per record Stationing distance from aforesaid N. 1/4 Corner (Back).

PI Sta. 247+05  
**Survey P.I. Sta. 247+05.00** Calculated per record plan Horiz. Curve data as follows:  
 Delta (Left) = 37°00'00"  
 D = 10°00'  
 R = 572.96ft  
 L = 370.00ft  
 T = 191.73ft

Calculated location falls in South Foreslope just beyond South shoulder with no magnetic sounding per field review, and Not Set.

PT Sta. 248+83.27  
**Survey PT Sta. 248+83.27** Calculated per plan Curve data Held.

PI Sta. 250+03.81 at ± C.L. Intersection with U.S. Hwy. 218 (unspecified plan estimate).  
**Survey PI Sta. 250+03.69** Calculated C.L. U.S. Hwy. 218 Intersection per Hwy. 218 Alignment Survey defined above. Intersection point Not Set.

## 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) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 05 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u3

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) for EPOCH 2010.00 (IaRTN 2019 Adjustment)  
 Ia. Regional Coordinate System Zone 05 (U.S. Survey Foot)  
 VERT. DATUM: NAVD88  
 Geoid Model: 2018u3

<u>Point Name</u>	<u>Northing</u>	<u>Easting</u>	<u>Elevation</u>	<u>Feature Definition-Description</u>
72181756	8816700.18	15492830.11	839.54	FENO SET -8in Dp. located ±975ft SE. along Hwy218 from Foulk Rd. Intersection at about 40ft Rt. (NE.) of CL Hwy218 near Top Foreslope at NE. Corner Bridge Embankment.
72181763	8819289.33	15490272.00	854.80	FENO SET -4in Dp. located ±540ft West along Orange Rd. from Hwy218 Intersection at about 32ft North of CL Orange Rd. at ±12ft West of Flume/RCP Inlet.
72181768	8821726.86	15488757.70	905.41	FENO SET -4in Dp. located ±325ft SW. along Marigold Dr. from Hwy218 Intersection at about 30ft West of CL Marigold Dr. and 1ft SW. of End PCC Sidewalk.
72181774	8824141.05	15487099.97	847.54	FENO SET -7in Dp. located ±310ft SE. along Hwy218 from Shaulis Rd. Intersection at about 85ft NE. of CL Hwy218 (Median).
7046	8819342.48	15487487.52	913.20	CP CCP Berntsen 6ft L. Rod Mon. w/Cap under Access Cover at Black Hawk County CP #046 Fnd. as described
7215	8824618.64	15490267.16	838.34	CP CCP Berntsen 6ft L. Rod Mon. w/Cap under Access Cover at Black Hawk County CP #215 Fnd. as described

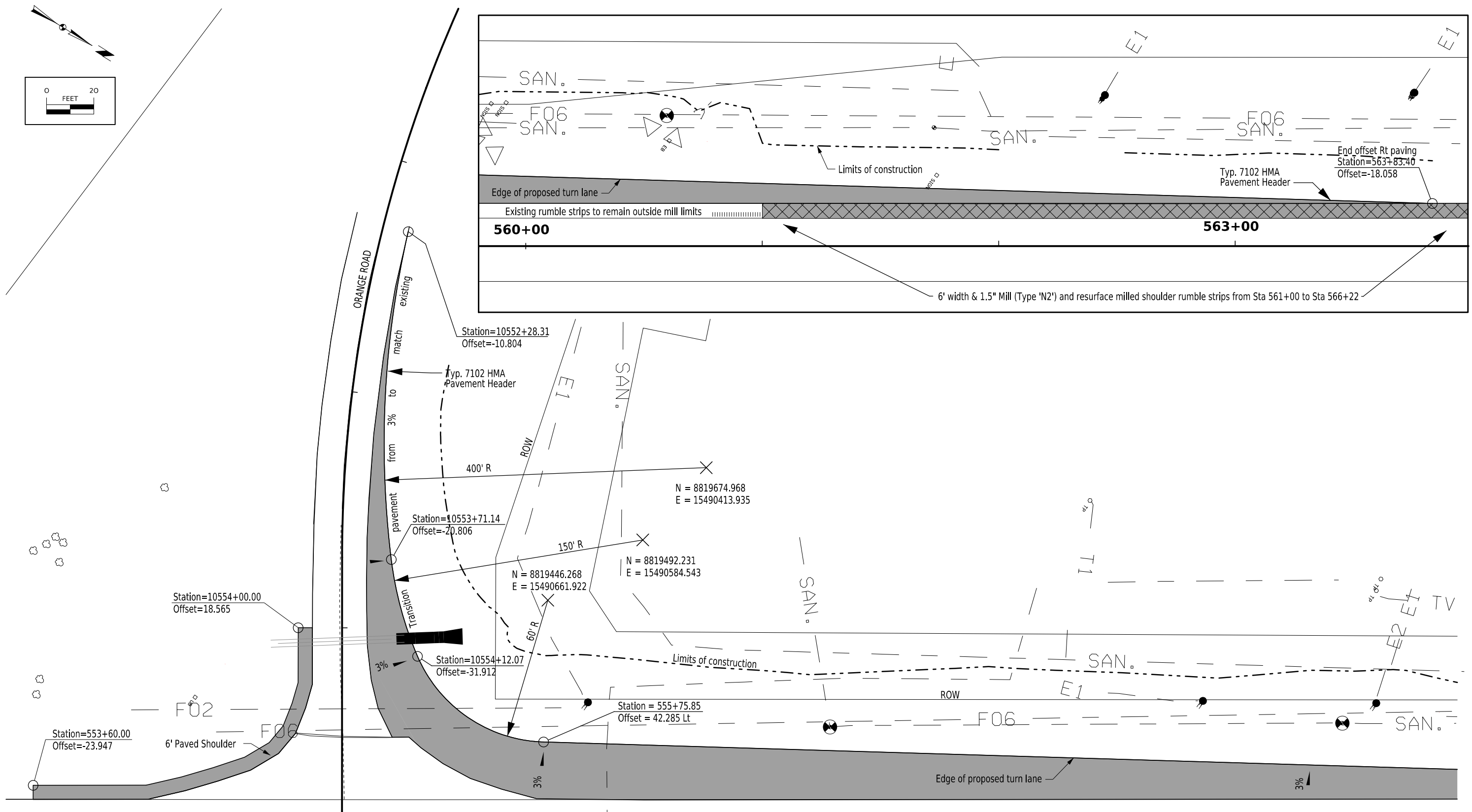
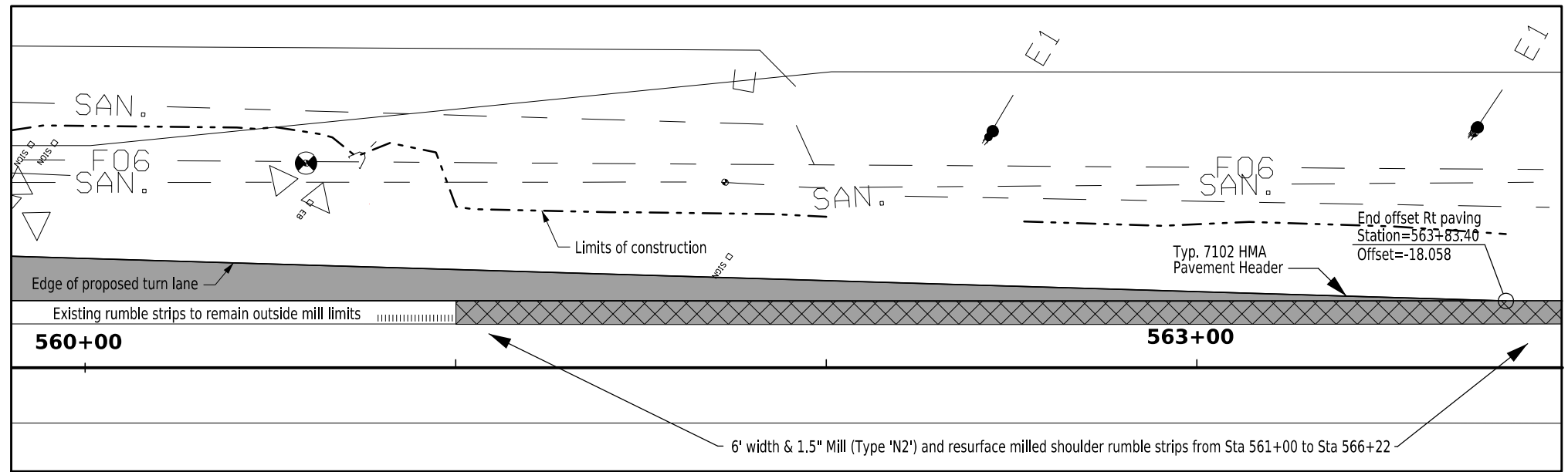
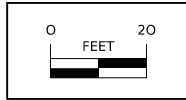
# TRAFFIC CONTROL PLAN

108\_23A  
8/15/22

Through traffic shall be maintained during construction.

**511 TRAVEL RESTRICTIONS**

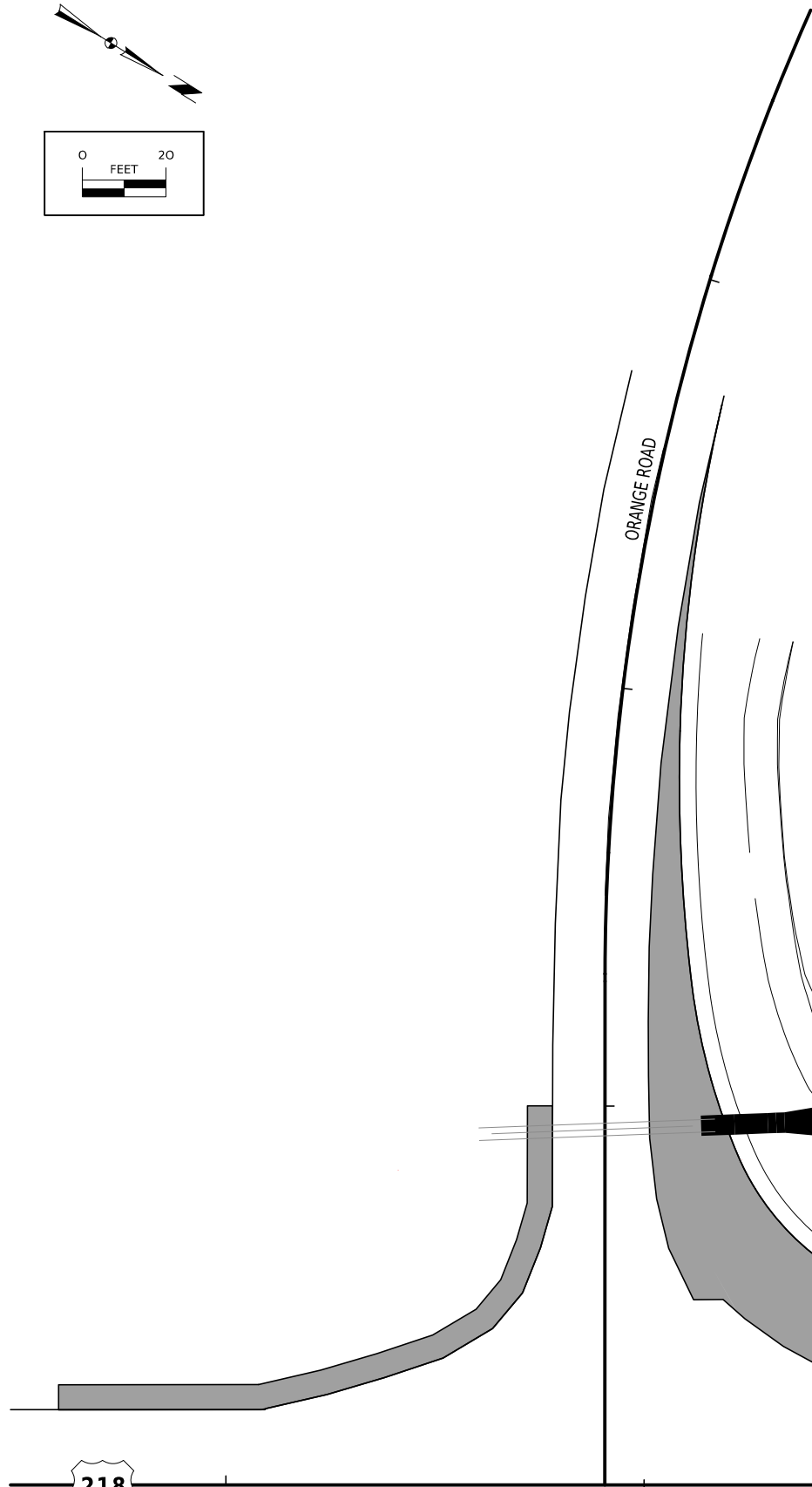
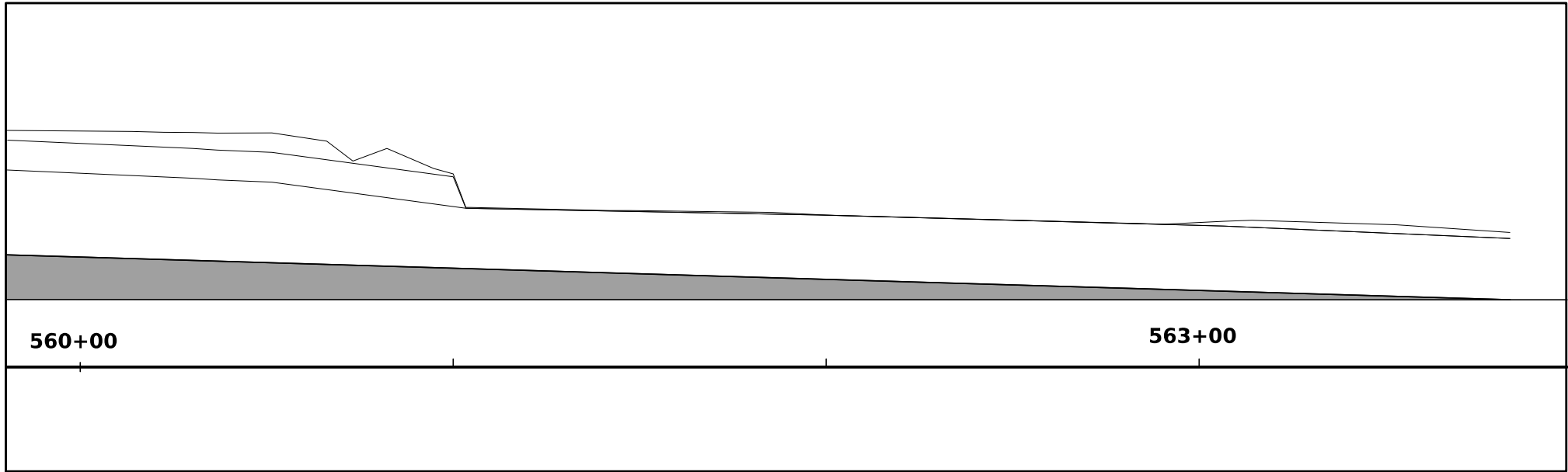
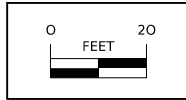
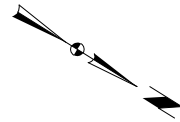
Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
1.0	US 218		Black Hawk	No travel restrictions anticipated				None					



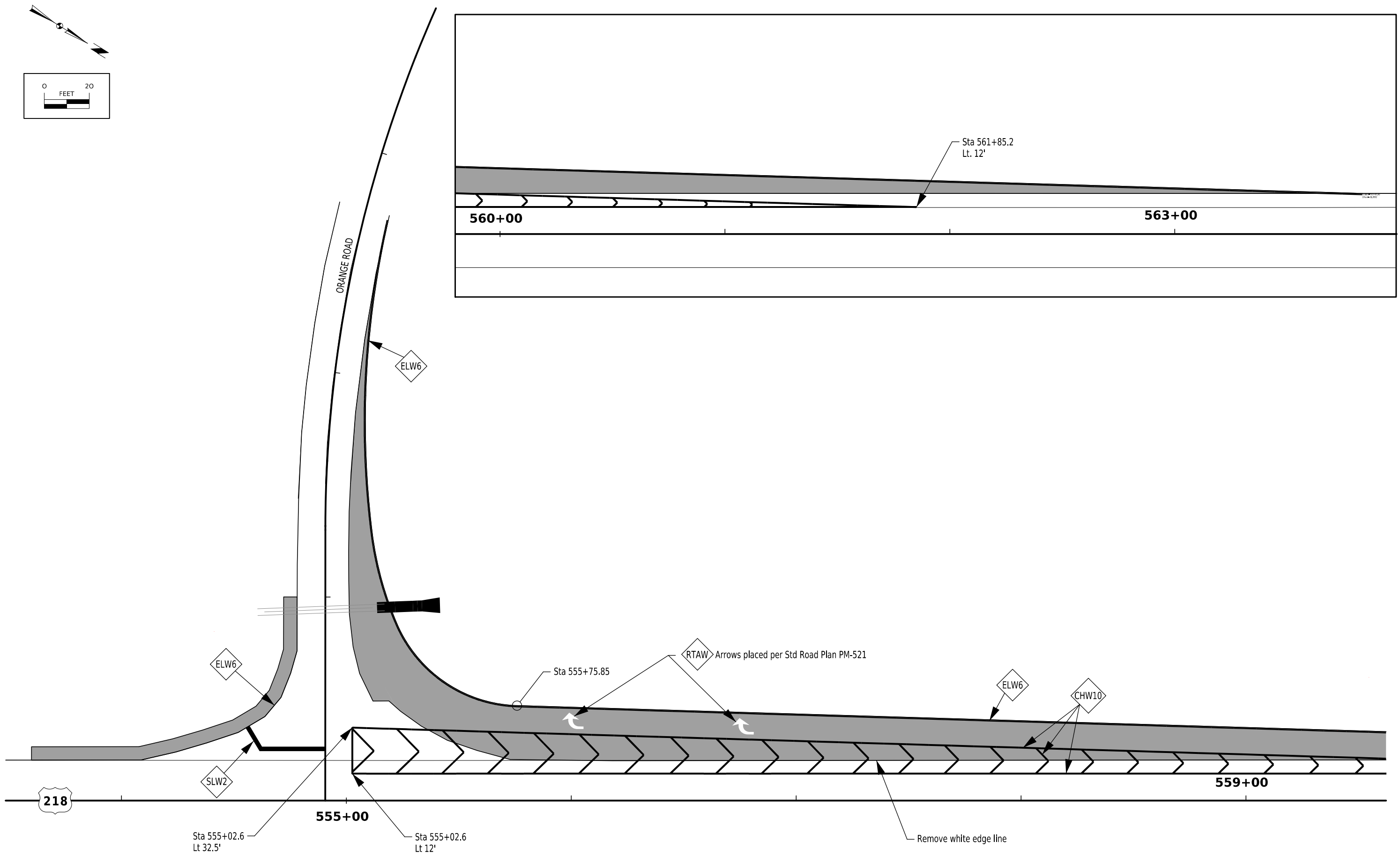
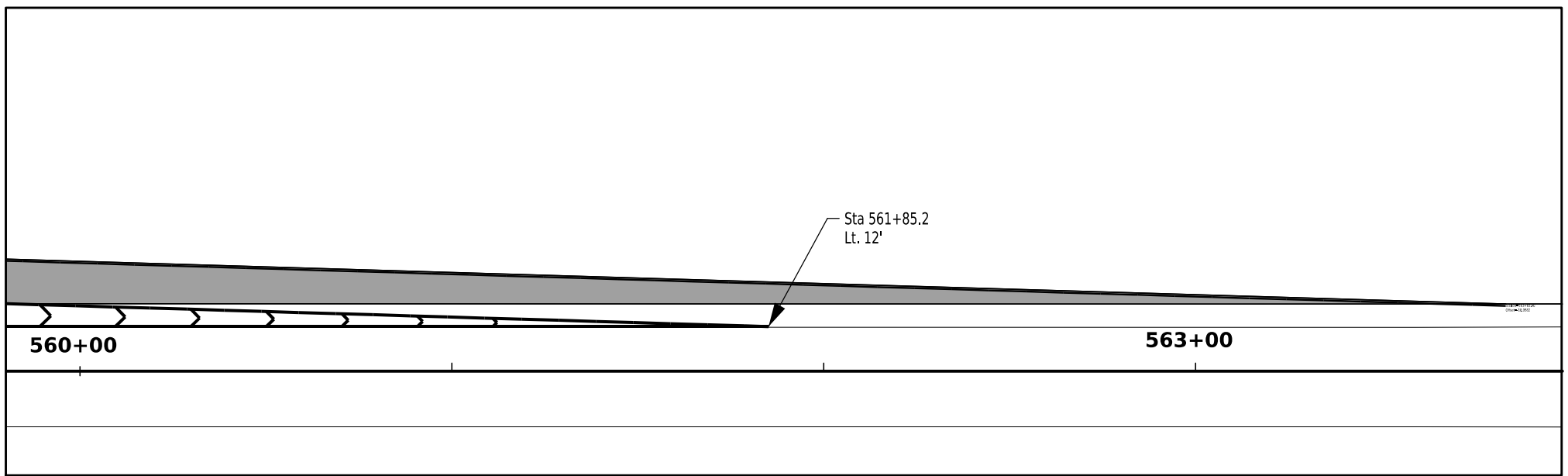
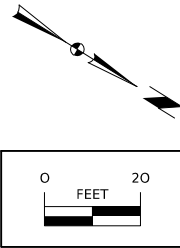
218

**INTERSECTION DETAILS**

FILE NO.	ENGLISH	DESIGN TEAM <b>ROLANDO \ SUNTKEN</b>	<b>BLACK HAWK</b> COUNTY	PROJECT NUMBER <b>HSIPX-218-7(256)--3L-07</b>	SHEET NUMBER <b>L.1</b>
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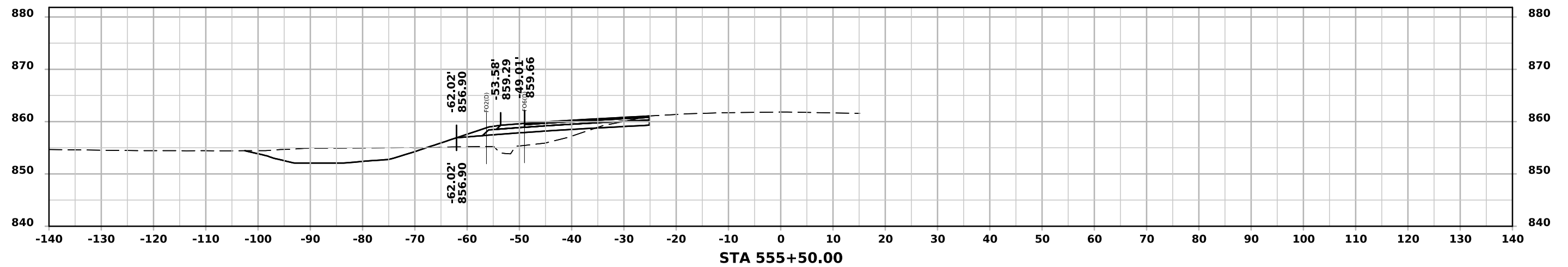
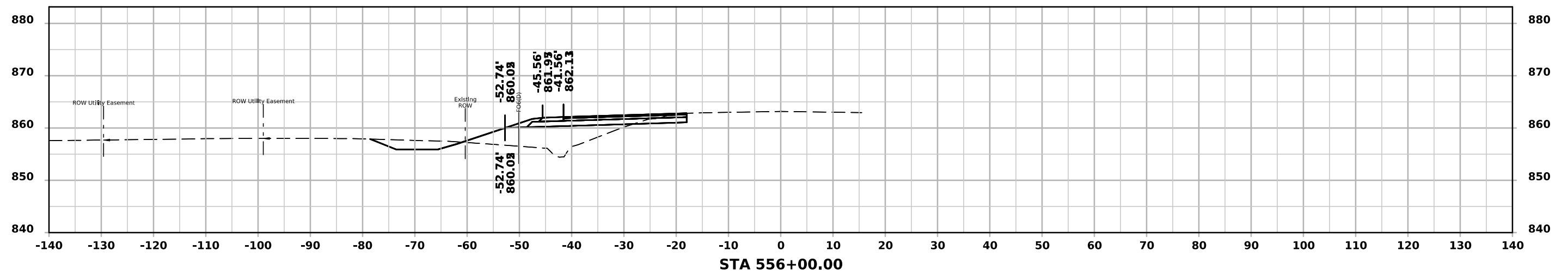
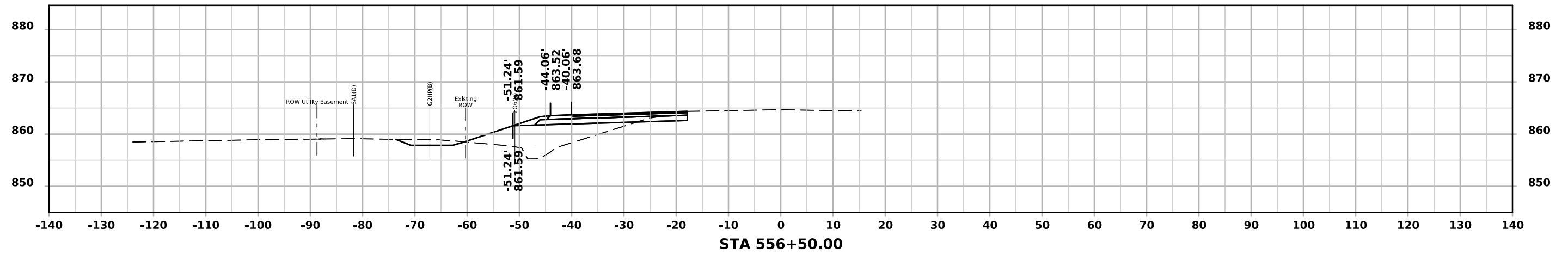
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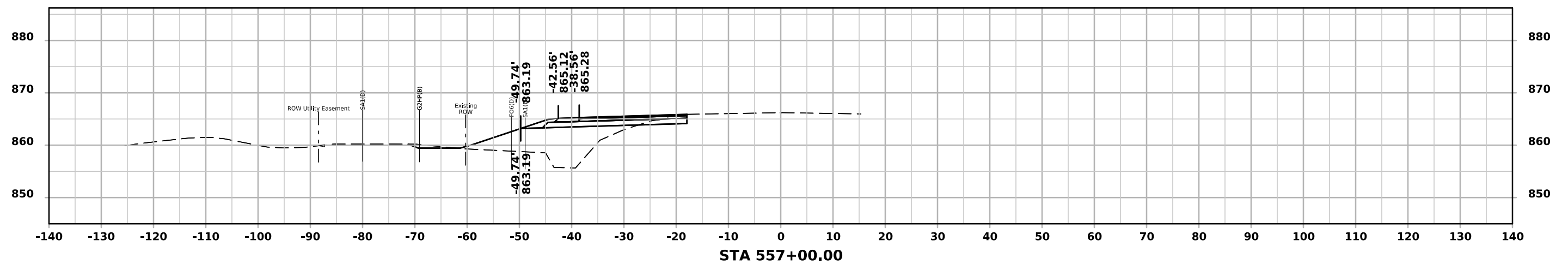
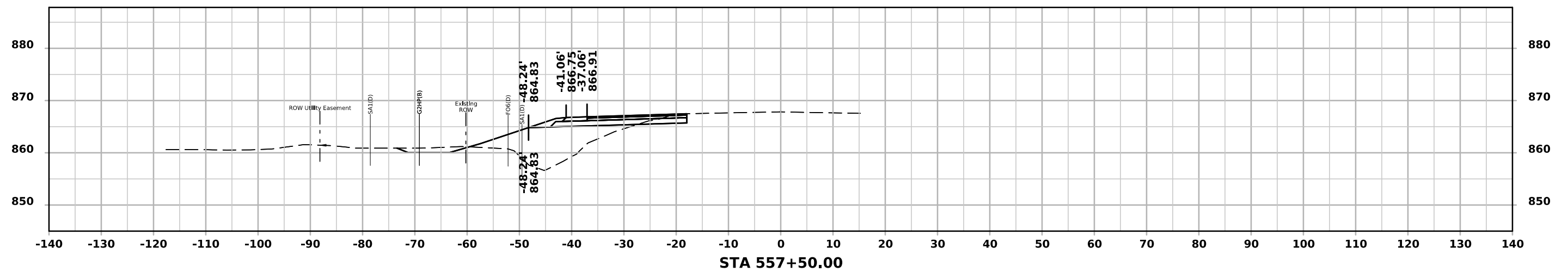
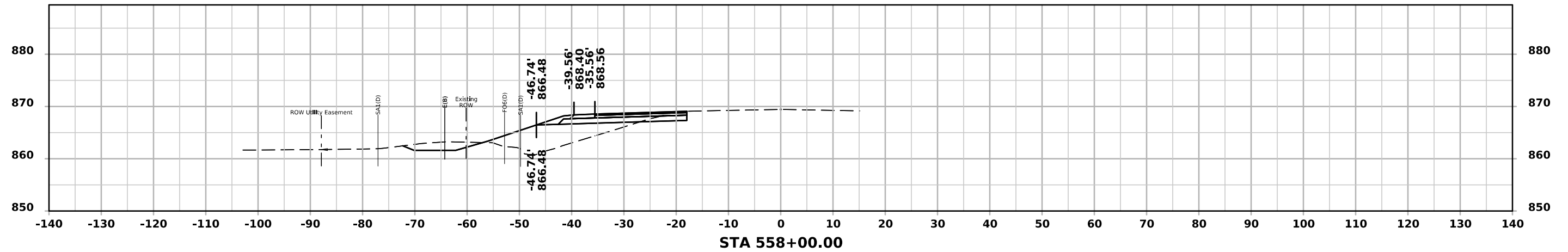
**PAVEMENT MARKING DETAILS**

FILE NO.	ENGLISH	DESIGN TEAM <b>ROLANDO \ SUNTKEN</b>	<b>BLACK HAWK</b> COUNTY	PROJECT NUMBER <b>HSIPX-218-7(256)--3L-07</b>	SHEET NUMBER <b>U.1</b>
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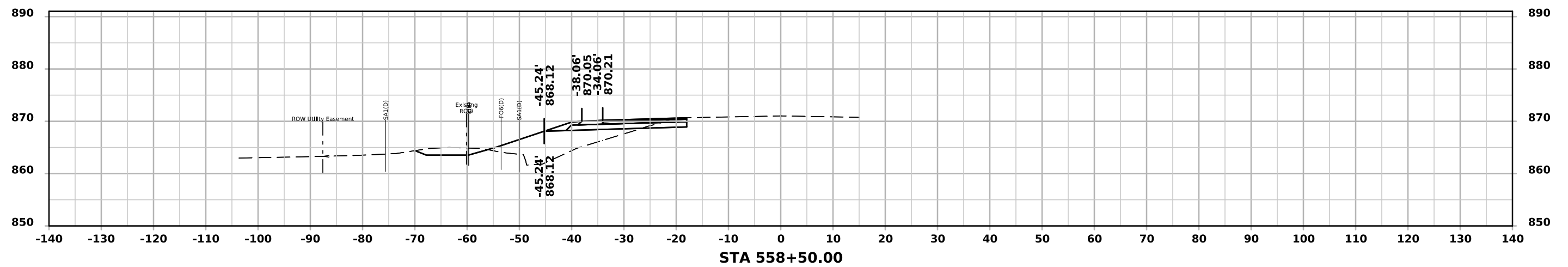
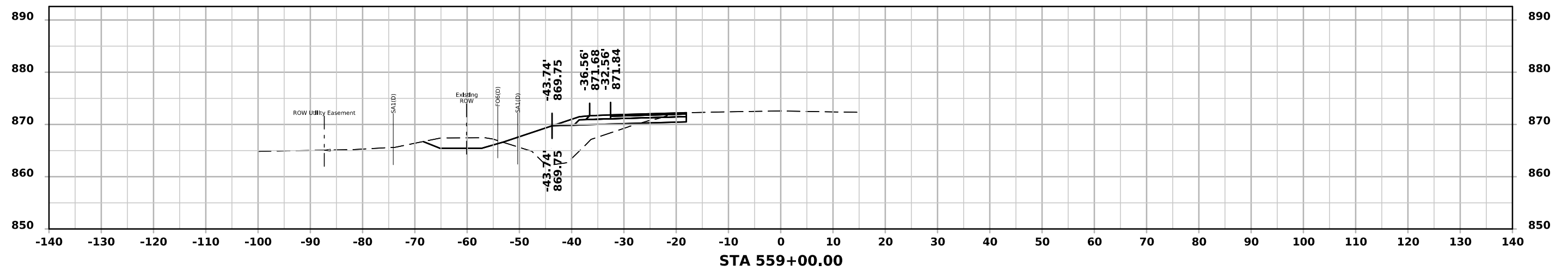
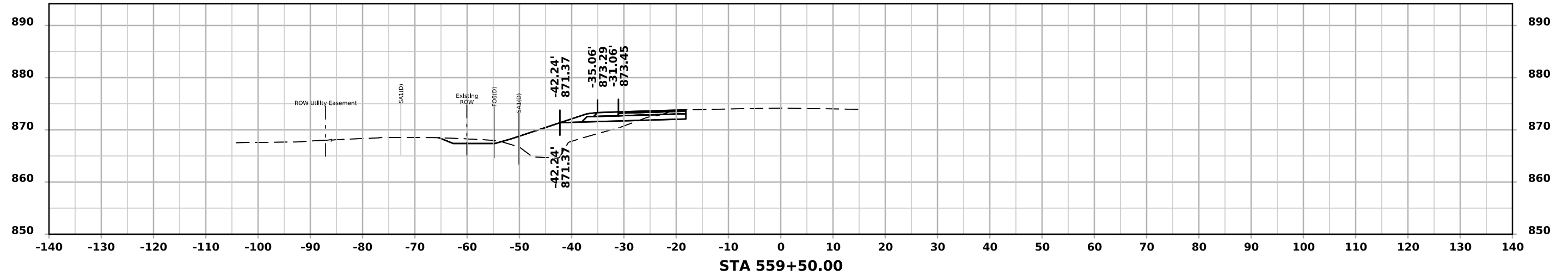
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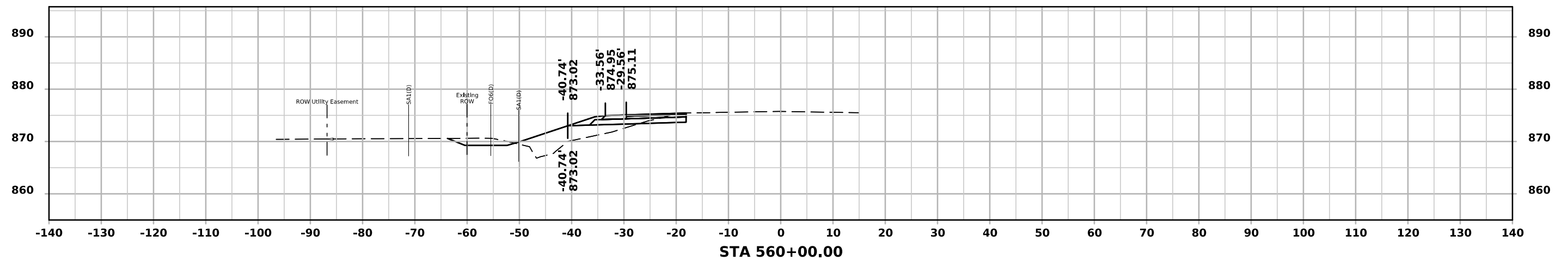
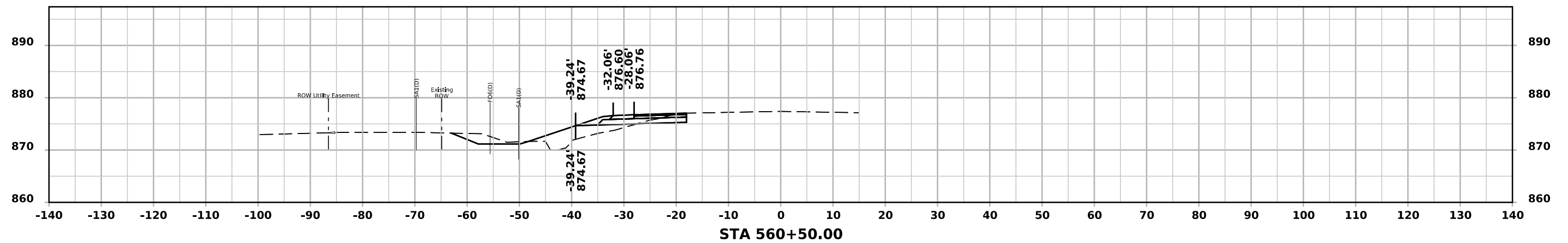
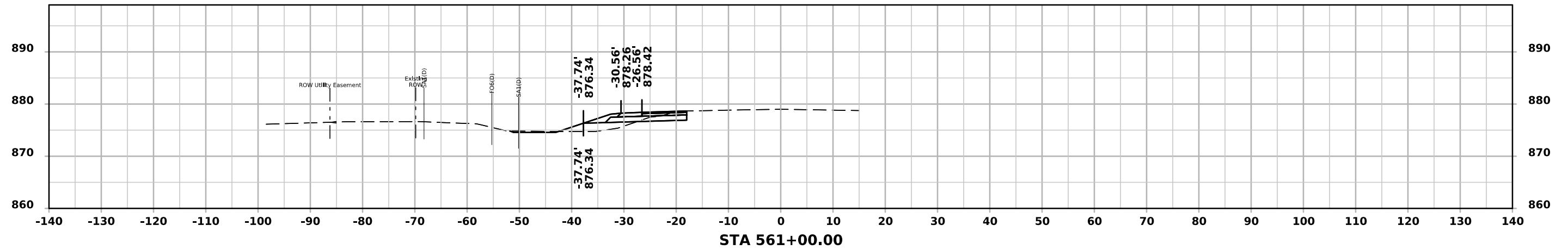
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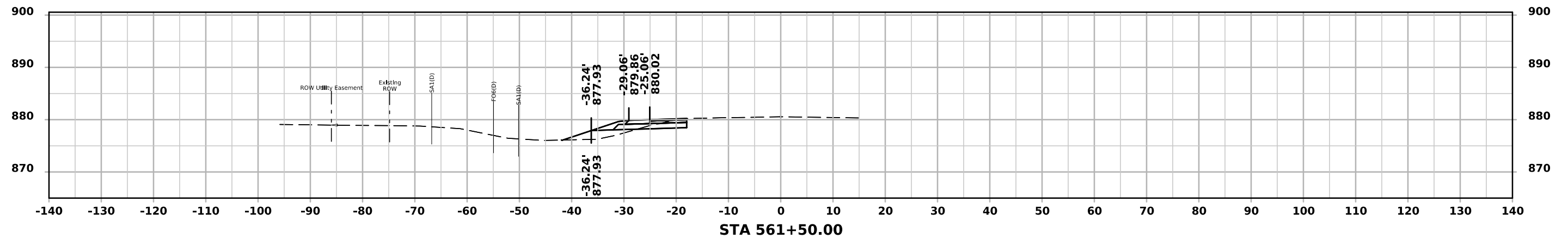
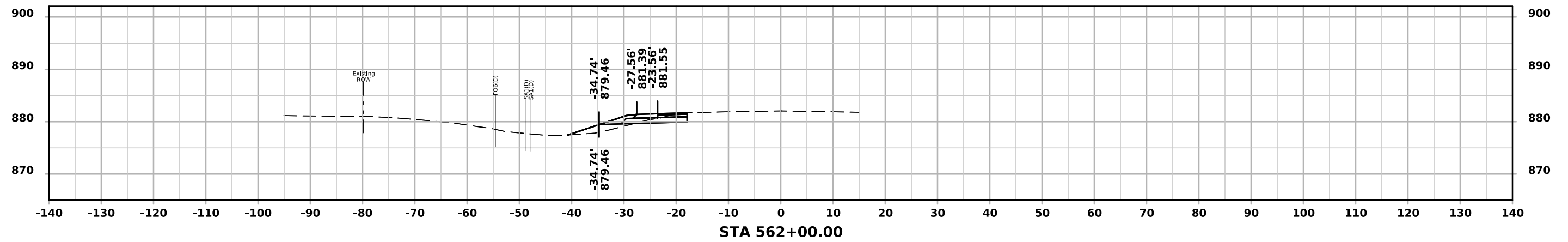
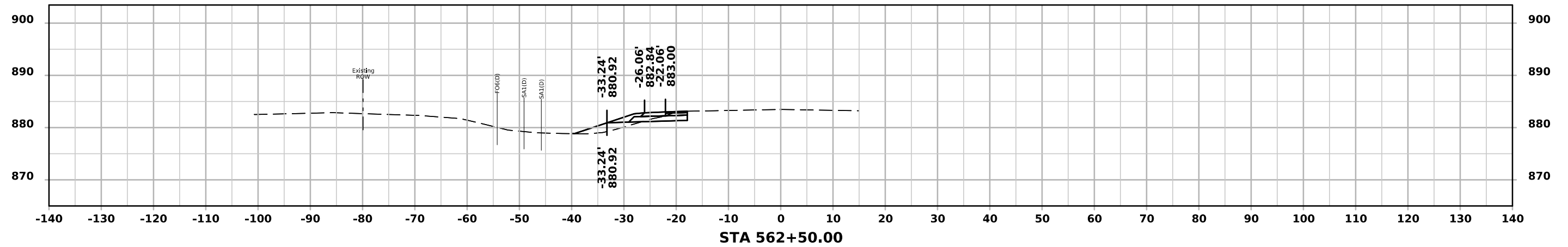
# US 218



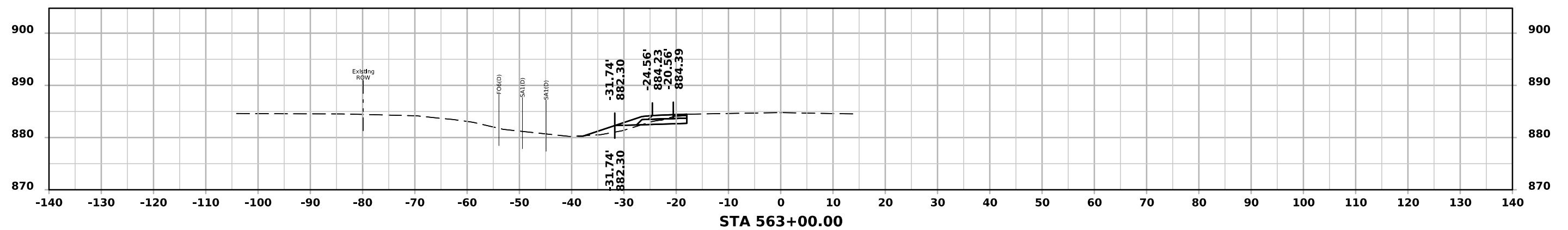
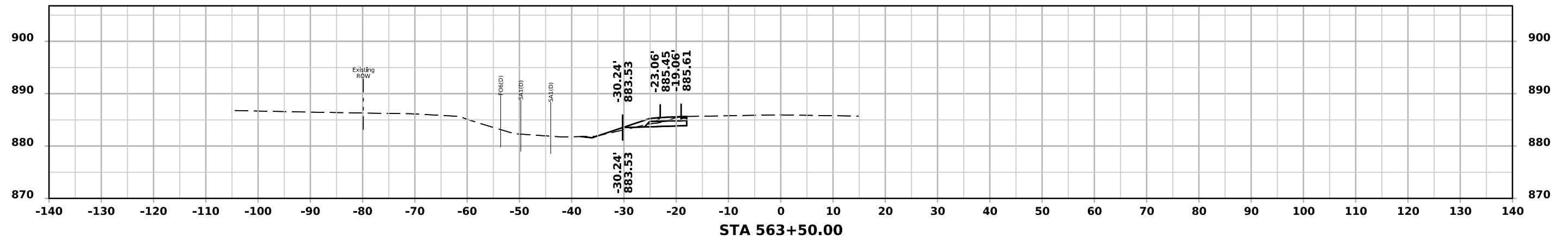
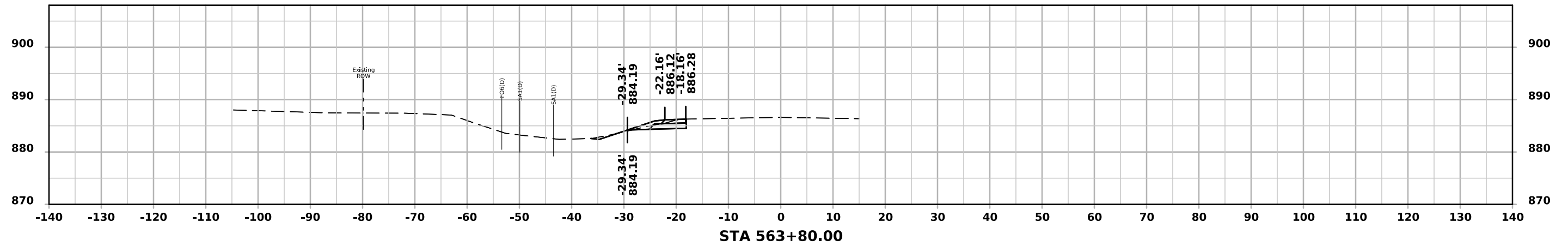
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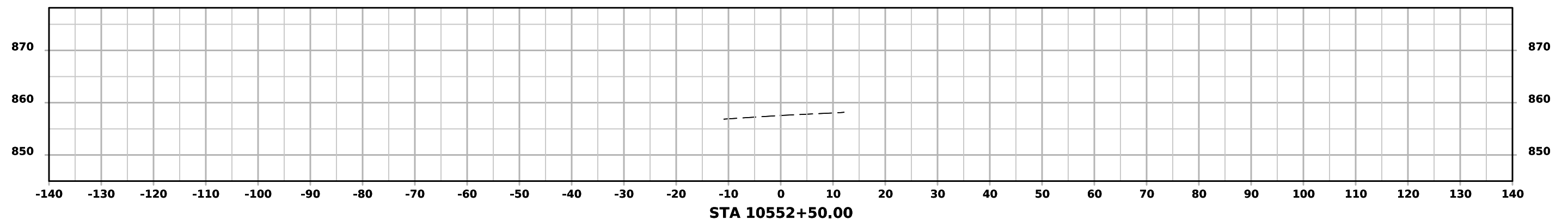
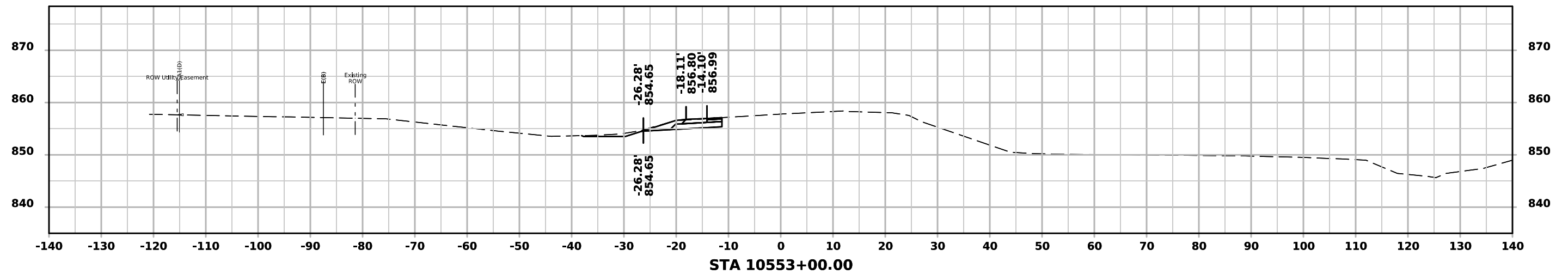
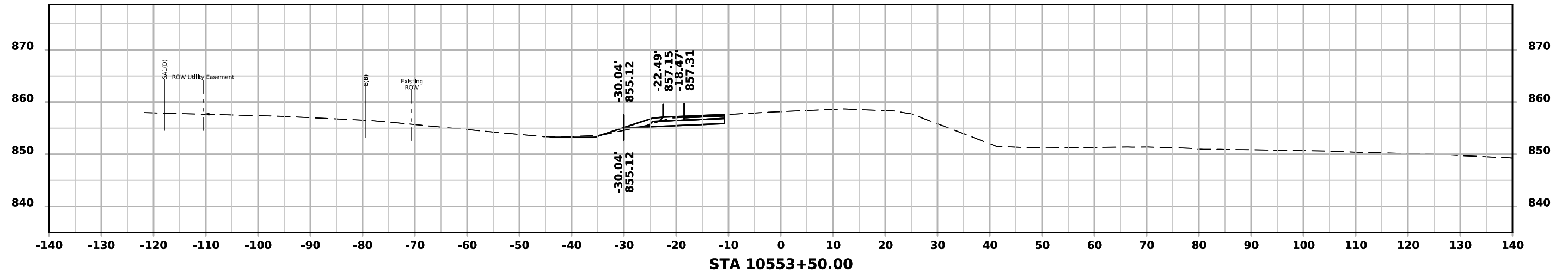
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# Orange Road



# Orange Road

