

MARION COUNTY

HMA Paved Shoulder - New
HSIPX-163-3(060)--3L-63

LETTING DATE
12/19/2023



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
MARION COUNTY
HMA Paved Shoulder - New

Business Hwy 163 E of Otley to WCL Pella

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

Bid items and information for signing are under development

For Project Location Map Refer to Sheet No. A.2



REVISIONS

TOTAL

72

PROJECT IDENTIFICATION NUMBER

23-63-163-020

PROJECT NUMBER

HSIPX-163-3(060)--3L-63

R.O.W. PROJECT NUMBER

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INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 4	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1 - 3	Estimated Project Quantities and Reference Notes
C.4	Standard Road Plans, Index of Tabulations & General Note
C.5 - 10	Tabulations
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 10	"IA163 Plan and As-Built"
E Sheets	Side Road Plan and Profile Sheets
* E.1	"IA 163"
* E.2	"Business Highway 163"
G Sheets	Survey Sheets
G.1	RETAHWY163 Alignment detail
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
* J.2	Traffic Control for Offset Right Turn Lane
* J.3 - 10	PDMS, Safety Closures Plan and Temporary Detour Signs
L Sheets	Geometric, Staking and Jointing Sheets
* L.1	Geometric/Staking Details RETAHWY163
R Sheets	Erosion Control Sheets
RC.1 - 7	Est. Quantities, PPP, General Notes and Tabulations
* RR.1 - 12	Erosion Control Legend and Symbol Information Sheet
T Sheets	Earthwork Quantity Sheets
T.1 - 3	Earthwork Legend and Quantity Sheets
U Sheets	500 Series, Mod.Stds. and Detail Sheets
* U.1	offset right turn lane Pavement Marking detail
W Sheets	Mainline Cross Sections
W.1 - 8	IA163
X Sheets	Side Road Cross Sections
X.1	Business Highway 163
	* Color Plan Sheets

SCHEDULE:
D07 : 10/03/2023

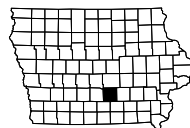
PRELIMINARY PLANS

Subject to change by final design.

DM5 PLAN - Date: 08/30/2023

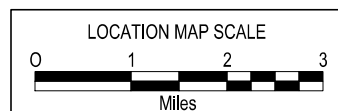
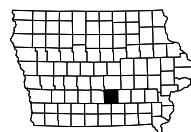
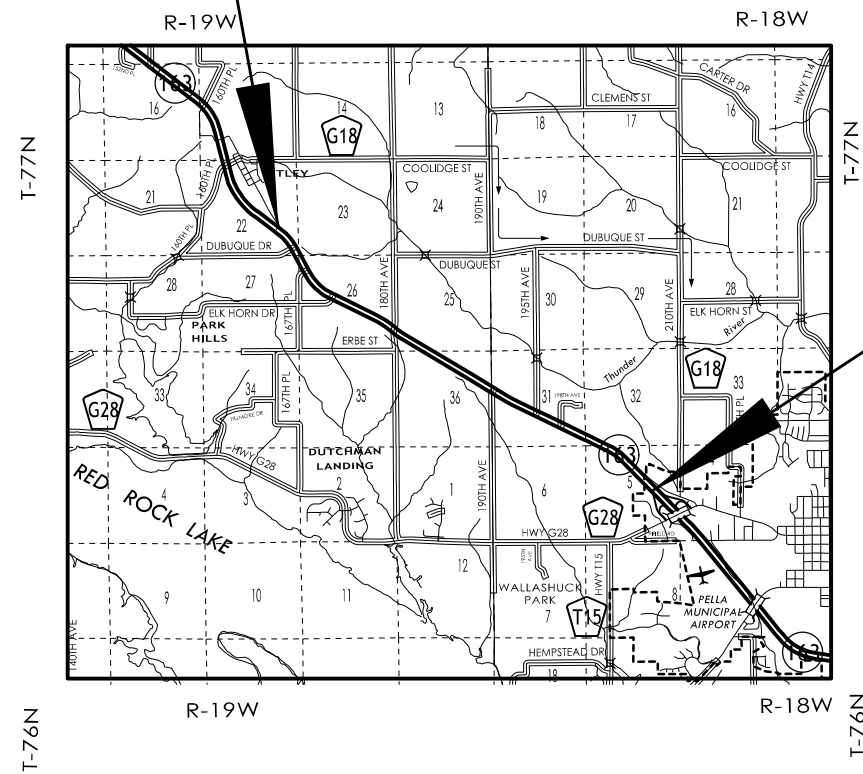
MARION COUNTY			
DESIGN DATA RURAL			
2024	AADT	11,876	V.P.D.
2044	AADT	14,659	V.P.D.
2044	DHV	1510	V.P.H.
	TRUCKS	15	%
	Total		
	Design ESALS	6.21 Million	

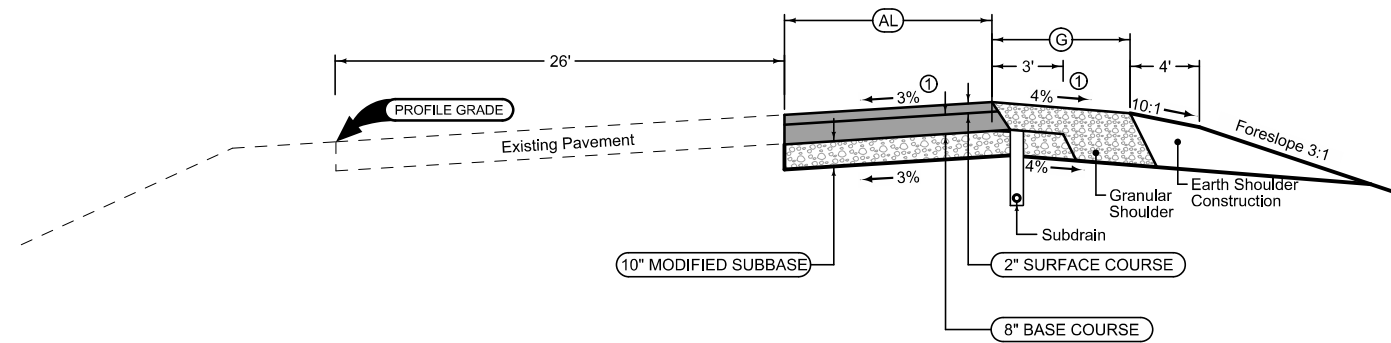
INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Jonathan W. Bahr	Primary Signature Block	C.1-3
E.1- E.2	Thomas T. Rhoads	--	--
RC.1	Rachel A. Harris	Landscape Design	RC.2 -4



BEGIN PROJECT
REF. LOC. 35.06

END PROJECT
REF. LOC. 39.80





Typical in the direction of traffic

Granular Shoulder

STATION TO STATION		4_G_MOD. Feet
255+88.73	265+61.13	6

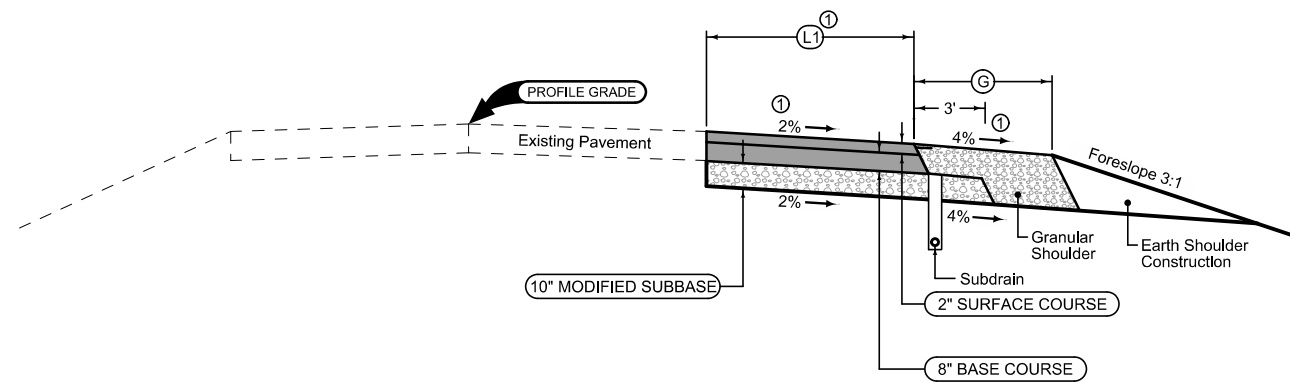
Auxiliary Lane

Longitudinal joint: B

4_AuxLane_HMA_10-18-16			
Direction of Travel	BEGIN STATION	END STATION	(AL) Feet
NB/WB	255+88.73	264+14.74	30-10
NB/WB	264+14.74	265+03.02	10-4
NB/WB	265+03.02	265+61.13	4-4

① Refer to L sheets and cross-section sheets for cross slope

IA163- North Bound/West Bound
(Typical Detail of Right Turn offset pavement)



Typical in the direction of traffic

Granular Shoulder

STATION TO STATION		4_G_MOD. Feet
3256+25.00	3257+04.72	6

Pavement Widening at Return

Longitudinal joint: B

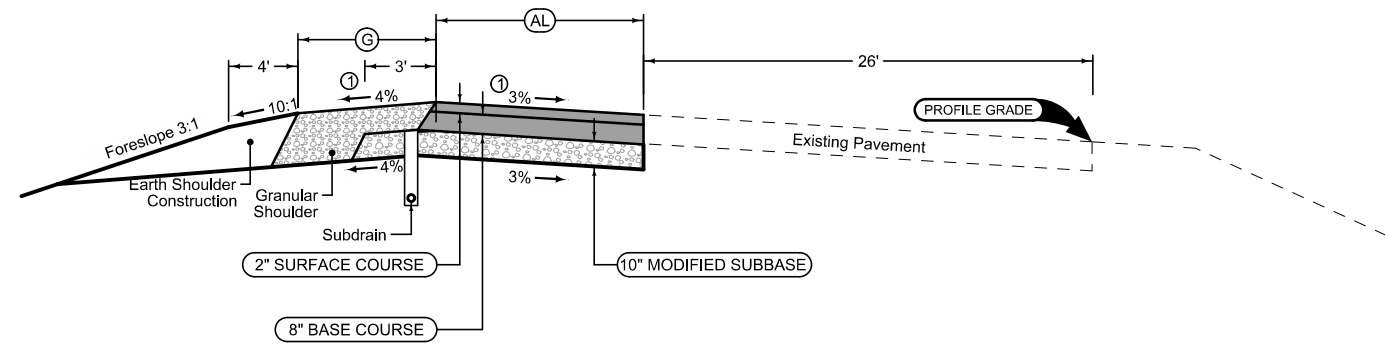
4_AuxLane_HMA_10-18-16			
Direction of Travel	BEGIN STATION	END STATION	(L1) Feet
EB	3256+25.00	3257+04.72	var.

① Refer to cross-section sheets for cross slope and width

BUSINESS HIGHWAY 163
(Typical Detail of Pavement Widening)

Granular Shoulder

		4_G_ MOD.
STATION TO STATION		Ⓞ Feet
254+89.36	263+98.20	6



Typical in the direction of traffic

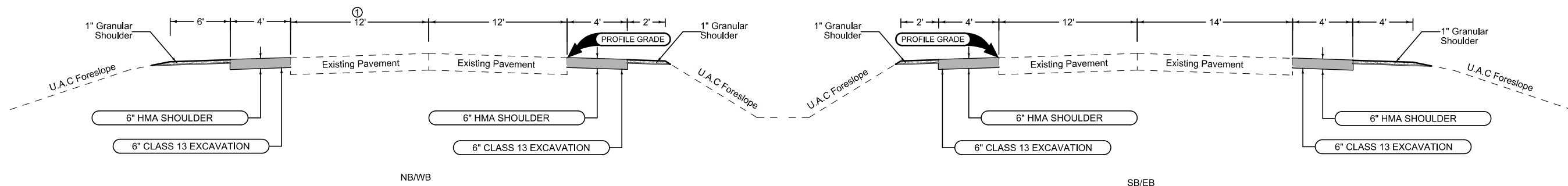
Median Acceleration Lane

Longitudinal joint: B

4_AuxLane_HMA_10-18-16			
Direction of Travel	BEGIN STATION	END STATION	Ⓞ Feet
SB/EB	254+89.36	256+65.23	6-12
SB/EB	256+65.23	261+67.85	12
SB/EB	261+67.85	262+77.96	12-4
SB/EB	262+77.96	263+98.20	4

① Refer to L sheets and cross-section sheets for cross slope

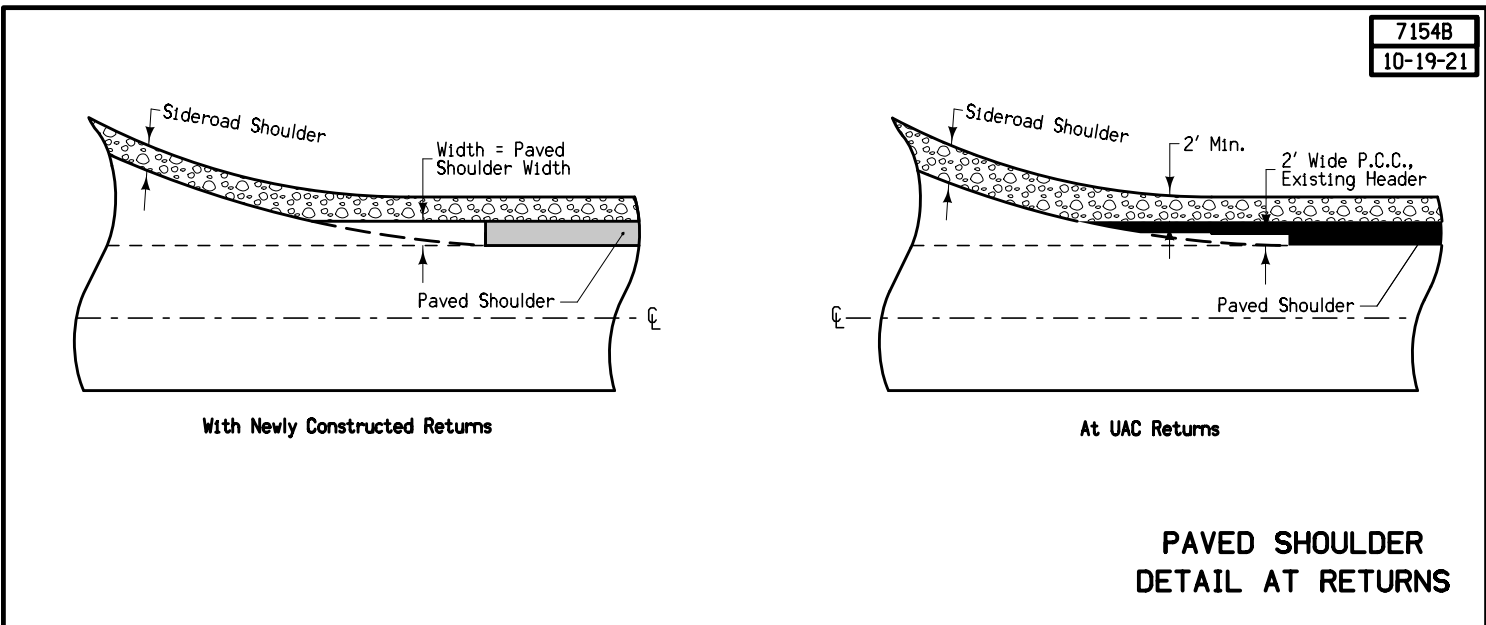
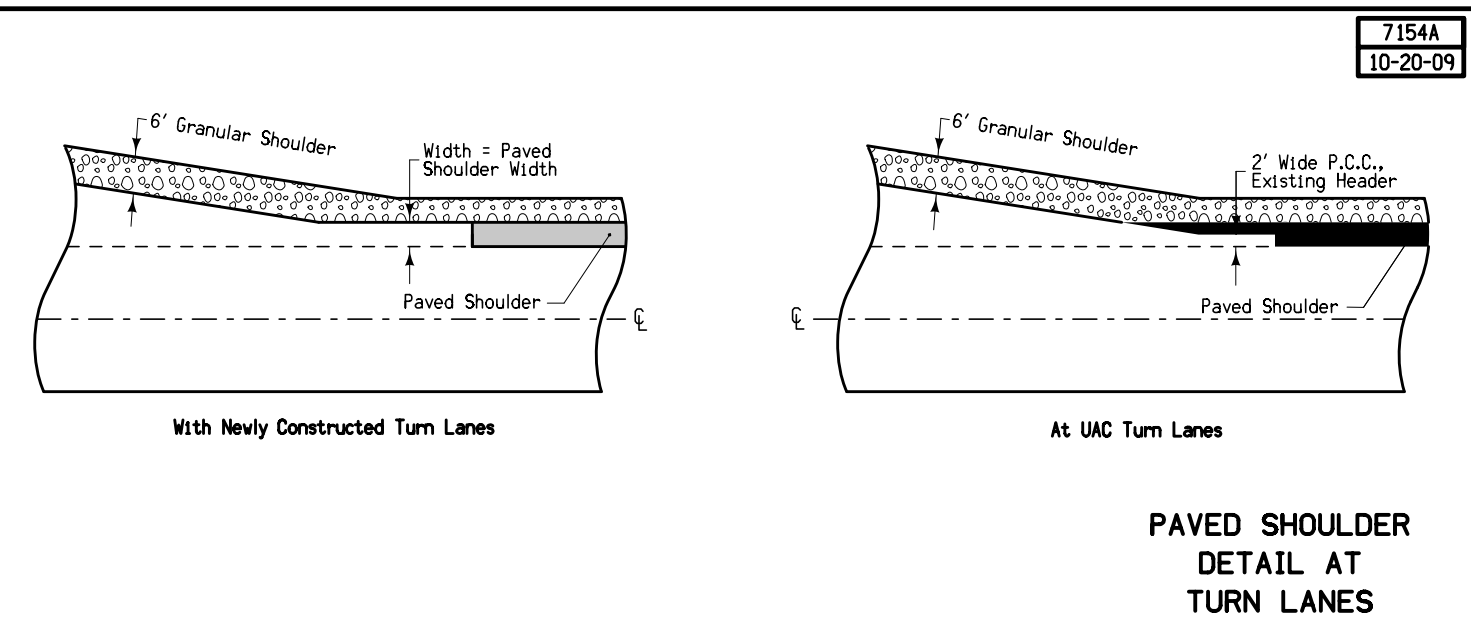
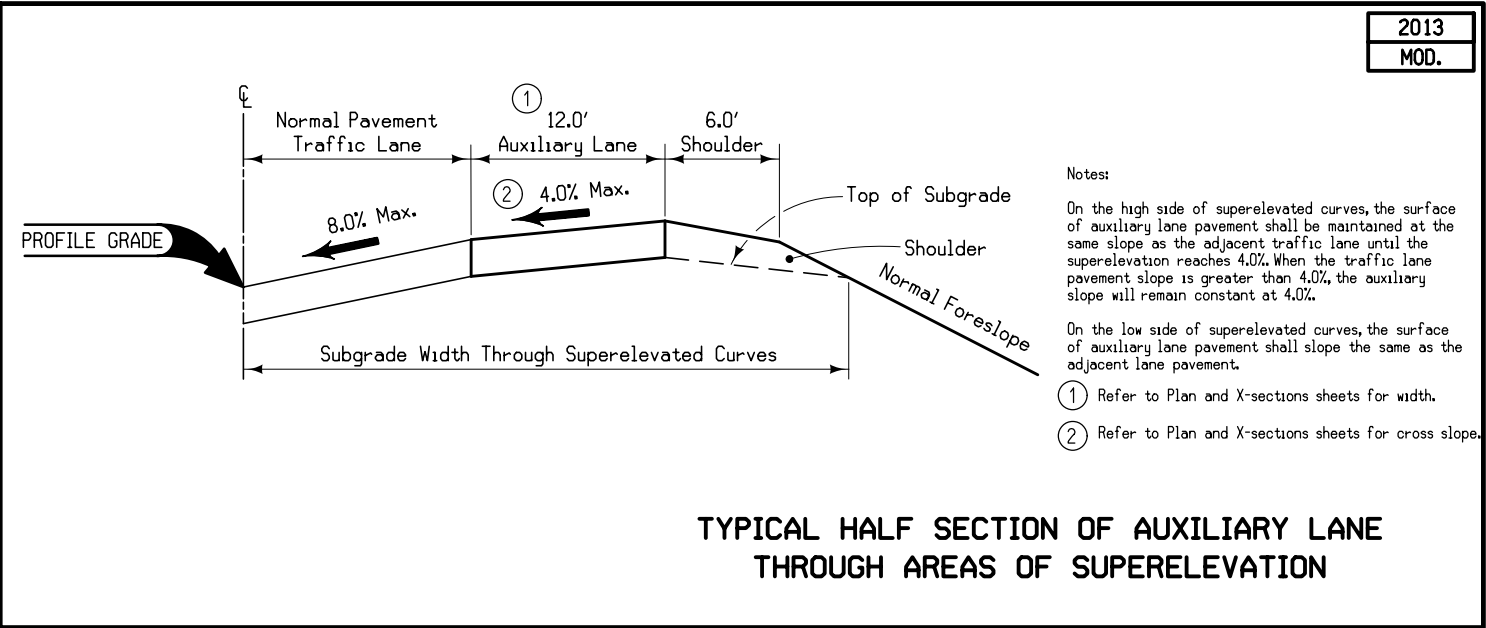
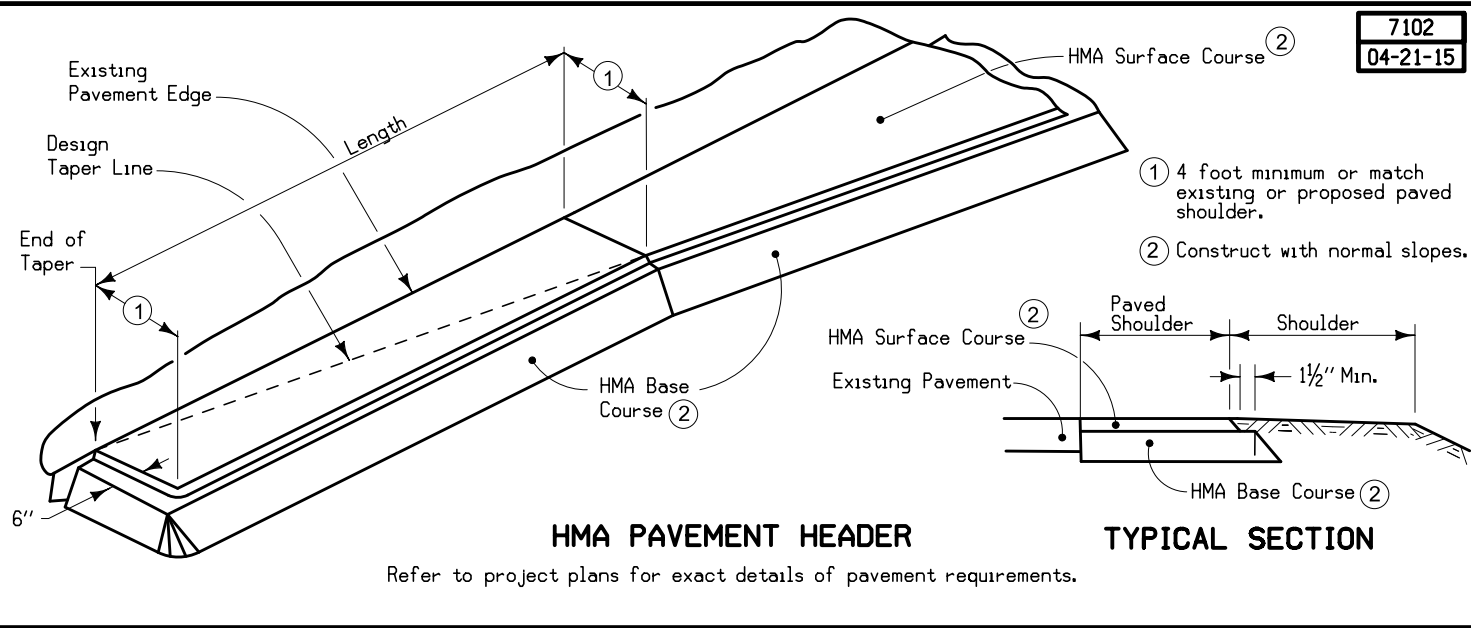
IA163- South Bound/West Bound
(Typical Detail of Median Parallel Acceleration pavement)

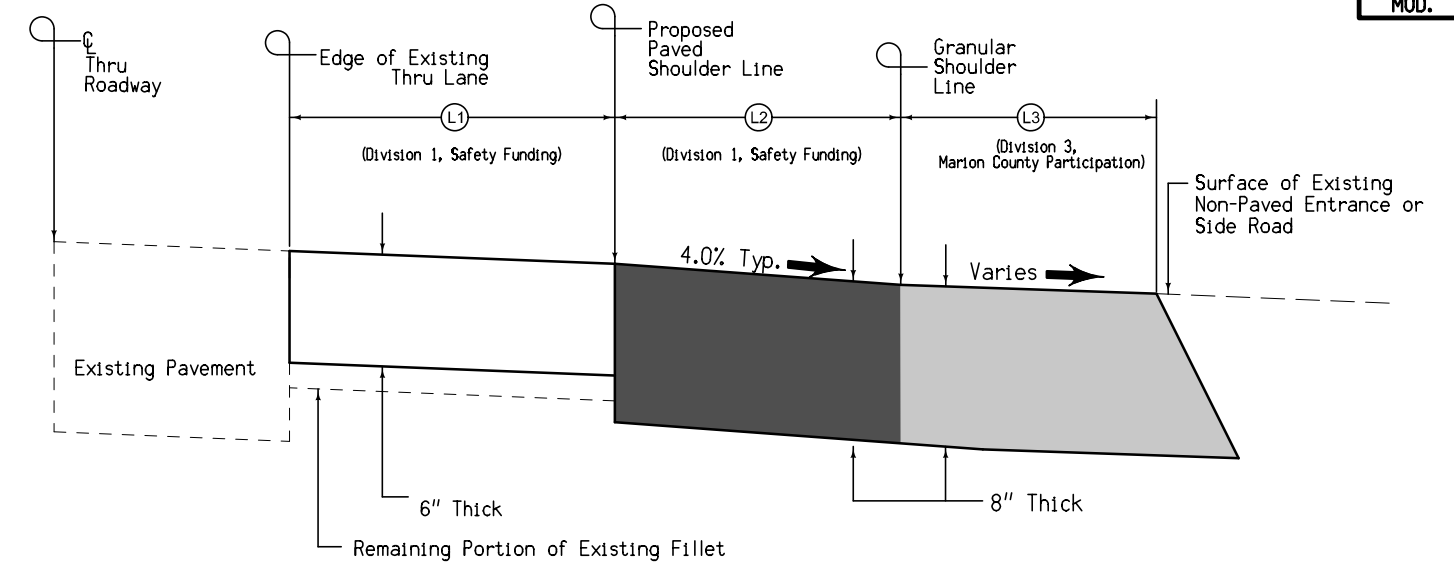
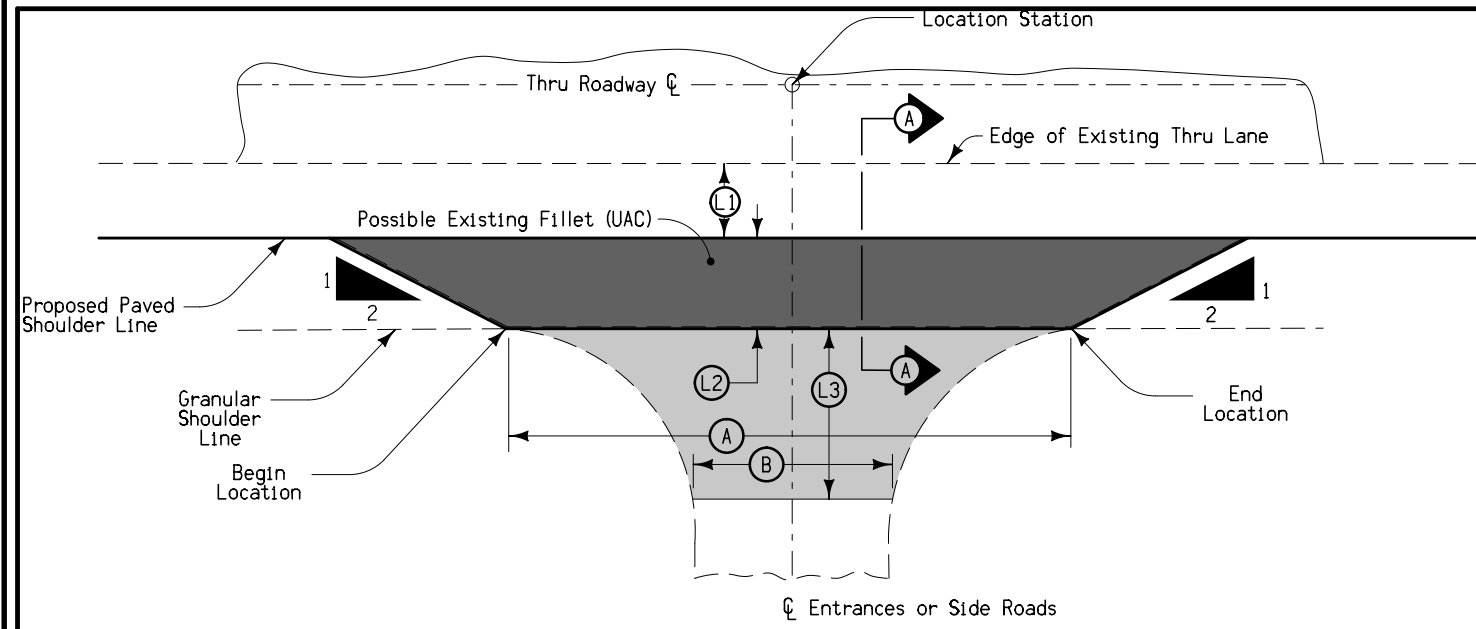


NOTE:

① NB/WB outside lane is 14' from MP 35.06 to MP 35.37 and MP 39.21 to MP 39.80.

IA163
(Combination Shoulder)





PLAN

SECTION A-A

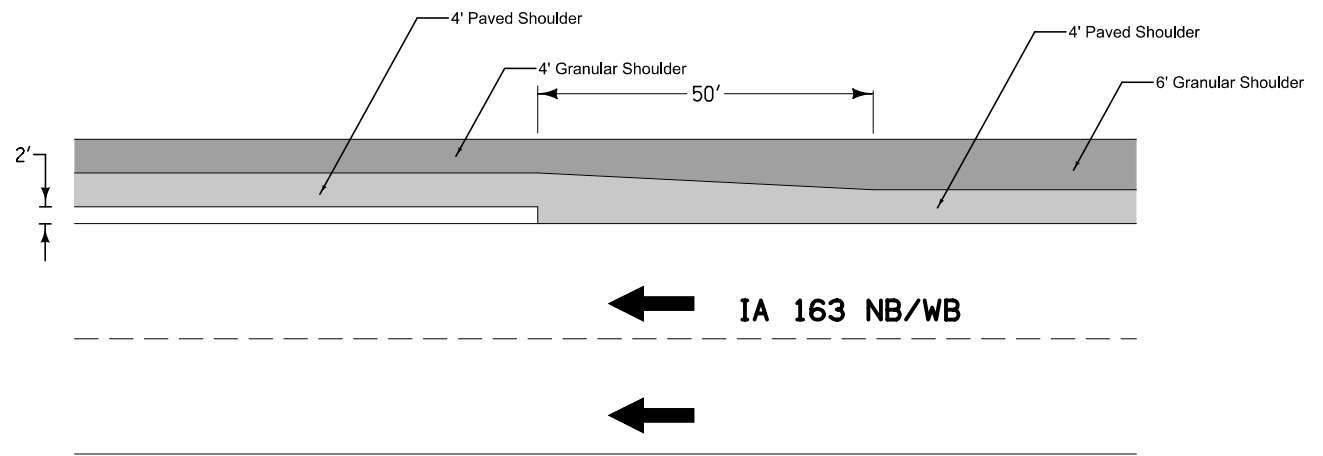
Safety Funding, Division 1
 Marion County Participation per Agreement 2023-C-008, Division 3

Location	Side	Mile Post	A Feet	B Feet	L1 Feet	L2 Feet	L3 Feet	8" HMA Paved Shoulder (SY) DIV 1	8" HMA Fillet (SY) DIV 3	Class 13 Excavation	
										Shoulder CY - DIV 1	Fillet CY - DIV 3
Dubuque Dr.	SB/EB	35.32	70.0	24	4	4	44	34.7	170.3	7.7	37.8
167th Pl.	SB/EB	35.59	69.1	24	4	4	44	34.3	168.5	7.6	37.5
Elk Horn Dr.	SB/EB	35.98	76.9	24	4	4	44	37.7	186.0	8.4	41.3
180th Ave.	SB/EB	36.72	109.1	24	4	4	62	52.0	299.9	11.6	66.6
180th Ave.	NB/WB	36.72	74.7	24	4	6	45	57.8	174.1	12.8	38.7
190th Ave.	SB/EB	37.93	69.1	24	4	4	44	34.3	168.5	7.6	37.5
195th Ave.	NB/WB	38.44	78.5	24	4	6	48	60.3	192.8	13.4	42.9
198th Ave.	NB/WB	38.72	61.9	24	4	6	44	49.3	150.0	10.9	33.3
Totals:								360.4	1,510.1	80.1	335.6

Note: Quantities associated with Dimension L1 are found on Tab 112-9.

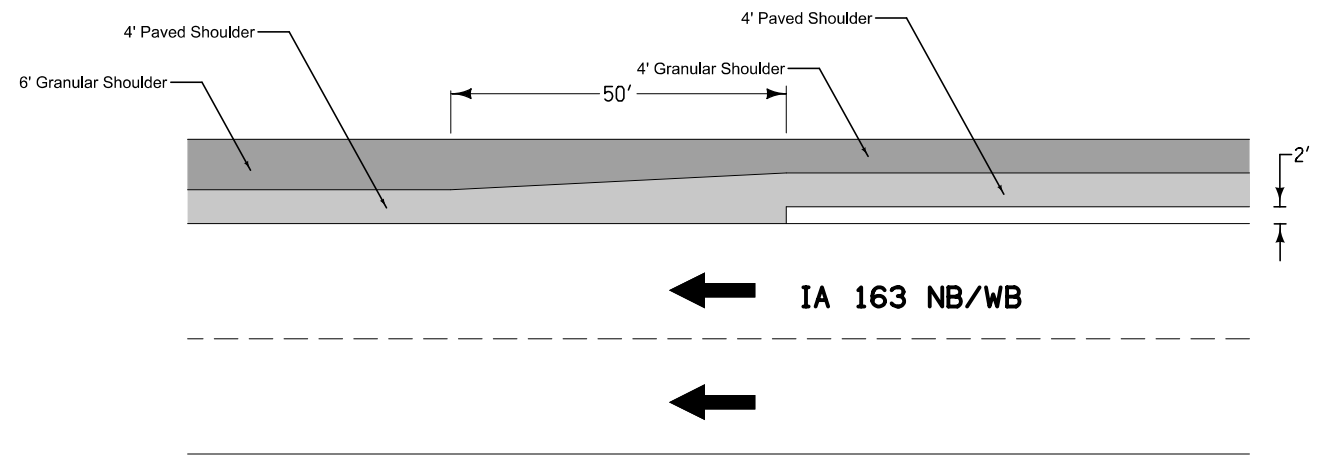
FILLET FOR NON-PAVED ENTRANCES OR SIDE ROADS

SHLD-TRAN-
MP 35.37



Paved shoulder Transition at MP 35.37

SHLD-TRAN-
MP 39.21



Paved shoulder Transition at MP 39.21

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Division 1 : Safety Funds
 Division 2 : Maintenance Funds
 Division 3 : Marion County Agreement 2023-C-088
 Division 4 : Iowa DOT State Funds

Item no.	Item Code	Item	Unit	Quantities					Estimate Reference Notes
				Estimated					
				Division 1	Division 2	Division 3	Division 4	Total	
1	2102-2625000	EMBANKMENT-IN-PLACE	CY	1,193.9				1,193.9	Refer to T.3 Sheet.
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	652				652	
3	2102-2712070	EXCAVATION, CLASS 12, ROADWAY AND BORROW	CY	5				5	Refer to Tab. 103-7 on C Sheets.
4	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	80.1		335.6		415.7	(Division 1) Refer to Detail 7148 on B.4 Sheet for Fillet Extension for Non-Paved Entrances or Sideroad. (Division 3) Refer to Detail 7148 on B.4 Sheet for Fillet Extension for Non-Paved Entrances or Sideroad.
5	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	2,251				2,251	Refer to T.3 Sheet.
6	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	2,522				2,522	Refer to T.3 Sheet and Tab. 103-06 on C sheets.
7	2115-0100000	MODIFIED SUBBASE	CY	1,157.8				1,157.8	Refer to Typical on B sheets and Tab 100-24 on C Sheets.
8	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	3,747.4				3,747.4	Refer to Typical 7154A ,7154B on B sheets and Tab 112-9 on C sheets. Tabulation includes 20% contingency.
9	2122-5500060	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.	SY	40,667.7				40,667.7	Refer to B.2 sheet and Tab 112-9 on C sheets.
10	2122-5500080	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 8 IN.	SY	360.4		1,510.1		1,870.5	(Division 1) Refer to Detail 7148 on B.4 Sheet for Fillet Extension for Non-Paved Entrances or Sideroad. (Division 3) Refer to Detail 7148 on B.4 Sheet for Fillet Extension for Non-Paved Entrances or Sideroad.
11	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	936.9				936.9	Refer to Tab 112-9 on C sheets.
12	2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY	7,744				7,744	Refer to B.2 and B.4 sheets and Tab 112-9 on C sheets. Item includes removal of existing 6' paved shoulder from MP 36.44 to MP 36.69 and existing 4' paved shoulder from MP 36.72 to MP 36.83. Refer to Tab 110-13 for "Delivery and Stockpiling"
13	2303-1031500	HOT MIX ASPHALT STANDARD TRAFFIC, BASE COURSE, 1/2 IN. MIX	TON	1,443.8				1,443.8	Refer Tab 100-25 on C sheets.

Item no.	Item Code	Item	Unit	Quantities					Estimate Reference Notes
				Estimated					
				Division 1	Division 2	Division 3	Division 4	Total	
14	2303-1033504	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-4	TON	365.9				365.9	
15	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	108.6				108.6	
16	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1				1	
17	2416-0101036	REMOVE AND REINSTALL CONCRETE PIPE APRONS LESS THAN OR EQUAL TO 36 IN.	EACH	2				2	Refer to D.2, E.1 and E.2 sheets.
18	2416-1180024	CULVERT, CONCRETE ROADWAY PIPE, 24 IN. DIA.	LF	24				24	Refer to D.2, E.1, E.2 and Tab 104-3 on C sheets.
19	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	970				970	Refer to Tab 104-9 on C sheets.
20	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	3				3	
21	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN	EACH	4				4	Item is for the removal and reinstalling of signs in the disturbed areas within the project limits. Measurement: The Engineer will count the number of signs to be removed and reinstalled. Basis of Payment: The contractor will be paid the contract unit price for the number of signs to be removed and reinstalled. Price bid includes the following work: The contractor shall carefully remove and stockpile the signs not part of the ICWS for later installation. Any damaged items as determined by the Engineer shall be replaced by the contractor at no cost to the State. The signs shall be cleaned as directed by the Engineer before installation. The contractor shall restore any area disturbed by the removal operation to an acceptable condition. Material and barrel for sign in the existing island at MP 35.06 to be provided by Iowa DOT Maintenance.
22	2526-8285000	CONSTRUCTION SURVEY	LS	1				1	The preservation and referencing of existing Control Points., as indicated by article 2526.03 A, 10. HMA Overlays, will be required by the contractor. The replacing of Control Points after the work is complete, as part of this article will be required by the contractor. The District Land Surveyor will reset any land corner monuments or their associated permanent reference markers, as a result of their discovery during the progress of the work. All other survey necessary for construction of the project as provided by Section 2526 (Construction Survey) will be required the contractor shall be responsible for maintaining the location of the roadway centerline. The Contractor may contact the RCE or District 5 Land Surveyor, Craig Steffensmeier, for a copy of record drawings or a copy of existing reference ties documents for existing Iowa 163.

Item no.	Item Code	Item	Unit	Quantities					Estimate Reference Notes
				Estimated					
				Division 1	Division 2	Division 3	Division 4	Total	
23	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	1,248.88		7.2		1,256.08	(Division 1) Refer to U.1 sheet for markings at offset right turn and Median Acceleration lane. Refer to Tab 108-22 on C sheets for marking along Mainline. Place pavement markings during the lane closure used for grooving operations. (Division 3) Refer to Tab. 108-22 on C Sheets. Includes 15' of Stop Bar along new fillets.
24	2527-9263155	PRE-CUT SYMBOLS AND LEGENDS, PREFORMED THERMOPLASTIC MARKING MATERIAL	EACH	1				1	Refer to Tab. 108-29 on C Sheets.
25	2527-9263180	PAVEMENT MARKINGS REMOVED	STA	21.06				21.06	Refer to Tab 108-22 on C sheets.
26	2527-9270111	GROOVES CUT FOR PAVEMENT MARKINGS	STA	1,248.88		7.2		1,256.08	(Division 1) Refer to Tab 108-22 on C sheets. Install 8-inch-wide grooves for pavement markings. See detail sheet U.2- U.7 for additional information's. Close a traffic lane to complete grooving operations. (Division 3) Refer to Tab. 108-22 on C Sheets.
27	2527-9270120	GROOVES CUT FOR SYMBOLS AND LEGENDS	EACH	1				1	Refer to Tab. 108-29 on C Sheets.
28	2528-2518000	SAFETY CLOSURE	EACH	8		9		17	(Division 1) Includes 8 safety closures. Refer to Tab. 108-13A on C sheets and J.4 Sheet. (Division 3) Includes 9 safety closures. Refer to Tab. 108-13A.
29	2528-8445110	TRAFFIC CONTROL	LS	1	1	1		3	Refer to Traffic Control Plan 108-23A Tab on J.1 Sheet. This item includes all materials, labor, equipment and maintenance for the traffic control shown on the J sheets and the TC standard road plans tab 105-4.
30	2528-9109020	TEMPORARY LANE SEPARATOR SYSTEM	LF	4,963				4,963	Refer to J.2 sheet and Tab. 108-35 on C sheets.
31	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)	CDAY	20				20	2 signs for 10 days. PDMS boards are to be placed at locations shown on the J sheets.
32	2529-5070110	PATCHES, FULL-DEPTH FINISH, BY AREA	SY		321.3			321.3	Refer to Tab. 102-6C on C Sheets. Tabulation includes 5% contingency.
33	2529-5070120	PATCHES, FULL-DEPTH FINISH, BY COUNT	EACH		31			31	
34	2533-4980005	MOBILIZATION	LS	1				1	

111-25
10-18-11

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
C Sheets		
100-25	HMA PAVEMENT	C.6
100-27	PROPOSED POSTED SPEED LIMIT	C.5
102-5	EXISTING PAVEMENT	C.5
102-6C	FULL-DEPTH PATCHES	C.12
103-6	EMBANKMENT WITH MOISTURE CONTROL	C.5
103-7	SHRINKAGE DATA	C.11
103-10	TOPSOIL STRIPPING AND PLACEMENT	C.6
104-3	DRAINAGE STRUCTURE BY ROAD CONTRACTOR	C.12
104-9	LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE	C.11
105-4	STANDARD ROAD PLANS	C.4
108-13A	SAFETY CLOSURES	C.5
108-22	PAVEMENT MARKING LINE TYPES	C.8 - C.9
108-29	PAVEMENT MARKING SYMBOLS AND LEGENDS	C.10
108-35	TEMPORARY LANE SEPARATOR SYSTEM	C.6
110-13	DELIVERY AND STOCKPILING	C.6
111-25	INDEX OF TABULATIONS	C.4
112-9	SHOULDERS	C.7
112-10	MILLED RUMBLE STRIPS	C.11

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-121	04-18-23	Connected Pipe Joints
DR-122	10-18-16	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
DR-141	04-18-17	Pipe Bends and Half Pipe
DR-201	10-17-23	Concrete Aprons
DR-303	10-17-17	Subdrains (Longitudinal)
DR-306	10-17-23	Precast Concrete Headwall for Subdrain Outlets
DR-621	04-18-17	Pipe Extension
DR-622	10-17-17	Pipe Extension Horizontal Bend One or Both Ends
EW-105	04-21-15	Reshaping Slopes and Ditches
EW-503	10-20-15	Side Road Grading
PM-110	04-21-20	Line Types
PM-120	10-21-14	Stop Lines and Islands
PM-561	10-15-19	Divided Multi-Lane Roadway with Right Turn Lanes
PM-562	10-15-19	Divided Multi-Lane Roadway with Left Turn Lanes
PR-103	10-17-23	Full Depth PCC Patch with Dowels
PV-3	04-16-19	Safety Edge
PV-12	10-20-20	Milled Shoulder Rumble Strips
SI-172	04-19-16	Delineators
SI-881	04-16-19	Special Signs for Workzones
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
TC-402	04-18-23	Work Within 15 ft of Traveled Way
TC-418	04-18-23	Lane Closure on Divided Highway
TC-432	10-17-17	Shoulder Rumble Strip Operations
TC-433	10-17-17	Pavement Marking Operations

262-6
10-18-05

**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.

100-27
04-17-18

PROPOSED POSTED SPEED LIMIT

Road Identification	Begin Station	End Station	Proposed Posted Speed Limit			Remarks
			35 or less	40 - 45	over 45	
IA 163	35.06 MP	39.80 MP			X	

103-6
10-17-17

EMBANKMENT WITH MOISTURE CONTROL

Moisture Control is required for all Class 10 fill placed in all locations and depths. Stability berms placed outside the normal foreslope template and topsoil will not require Moisture Control.

102-5
04-18-17

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks					
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth	Type	Depth	Type	Depth	Type	Depth	Source	Type	Durability Class			Type				
																							IN	IN	IN	IN
1	63	IA 163	EB	33.87	35.39	2020	M	MP-163-5(705)34--76-63	PCC	0											PCC Patching					
										0														PCC Patching		
										10															PCC Patching	
2	63	IA 163	EB	33.87	35.39	1999		NHS-163-3(41)--19-63	PCC	10	GSB	10						SULLY MINE	C.LST.	I						
3	63	IA 163	EB	35.39	39.16	2020	M	MP-163-5(705)34--76-63	PCC	0																
										0																
										10																
										10	GSB	10										SULLY MINE	C.LST.	I		
4	63	IA 163	EB	39.16	44.99	2020	M	MP-163-5(705)34--76-63	PCC	0																
										0																
										10																
										10	GSB	10										SULLY MINE	C.LST.	I		
5	63	IA 163	WB	34.5	39.16	2000		NHSX-163-2(48)--3H-50	AAC	2	AAC	2	AAC	2					DURHAM	C.LST.						
										1.5																
										1.5	AAC	1.5														
										7																
6	63	IA 163	WB	39.16	44.99	2020	M	MP-163-5(705)34--76-63	PCC	0																
										0																
										10																
										10	GSB	10										SULLY MINE	C.LST.	I		

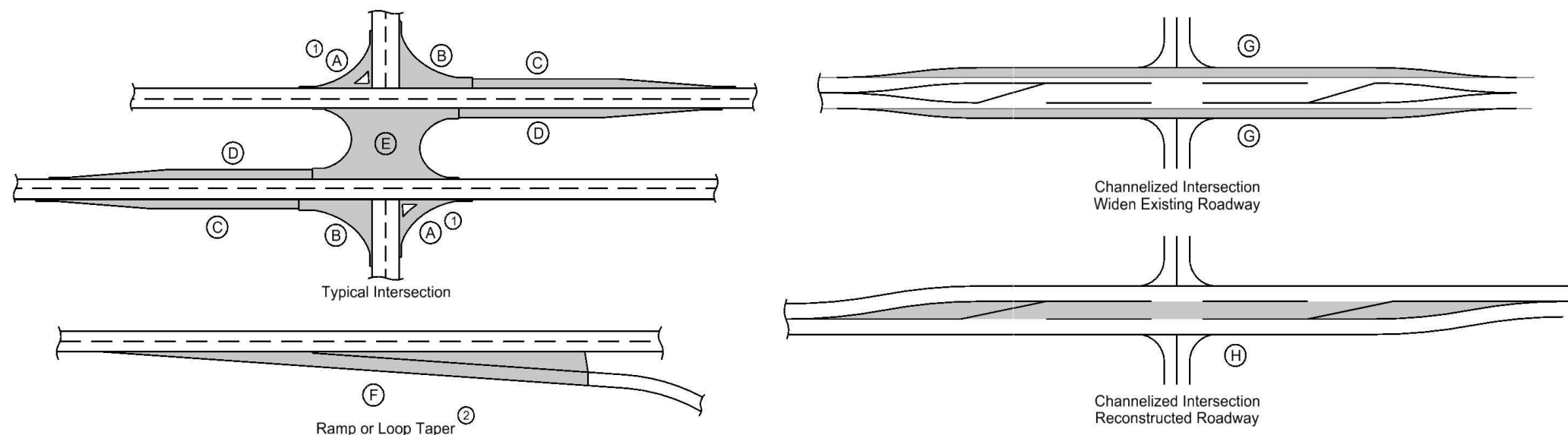
108-13A
10-18-22

SAFETY CLOSURES

Refer to Section 2528 of the Standard Specifications

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
(Division 1)			
MP 34.78	2		Median Crossover
MP 35.06	2		Median Crossover
MP 35.06	2		Business Highway 163
MP 35.32	2		Median Crossover
(Division 3)			
MP 35.32	1		Dubuque Dr.
MP 35.59	1		167th Pl
MP 35.98	1		Elk Horn Dr.
MP 36.72	2		180th Avenue
MP 36.72	2		180th Avenue Med. X-over
MP 37.93	1		190th Avenue
MP 38.44	1		195th Avenue
Totals:	8		(Division 1)
Totals:	9		(Division 3)

HMA PAVEMENT



- 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.

Calculations assume a surface course unit weight (lbs/cf) of 147, an intermediate course unit weight (lbs/cf) of 147, a base course unit weight (lbs/cf) of 145, and a special backfill unit weight (lbs/cf) of 140.

Road Identification	Direction of Travel	Location Station to Station (MP)		Mainline			Area ③							Hot Mix Asphalt Pavement									Remarks											
				Width FT	Length FT	Area SY	A ①	B	C	D	E	F ②	G	H	Surface			Binder			Special Backfill TONS	Modified Subbase CY		Granular Subbase SY	Pavement Scarification SY									
															TONS	SY	TONS	SY	TONS	SY						TONS	TONS							
IA 163	NB	35.07	35.26	1003.2			311.0	1942.7							248.5	2253.6			980.3	2253.6	14.9			58.8		757.2								
IA 163	SB	35.07	35.25	950.4					1065.3						117.5	1065.3			463.4	1065.3	7.0			27.8		400.6								
Totals:													365.9												1443.8		22.0		86.6			1157.8		

108-35 04-17-12		
TEMPORARY LANE SEPARATOR SYSTEM <small>See TC-61</small>		
Station to Station (MP)	Length LF	Remarks
35.05	35.43	2006 Offset rt. Turn lane NB Center line
34.94	35.08	739 SB Left Turn
Parallel acceleration lane		
34.94	35.33	2059 SB Center line
35.05	35.08	158 NB Left Lane
Totals:		4963

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 163	NB	35.06 MP	39.80 MP	12.0	6.0	
IA 163	SB	35.08 MP	39.80 MP	12.0	6.0	

110-13 04-20-10					
DELIVERY AND STOCKPILING					
Item Description	Quantity	Units	Delivery Location	Contact Name & Number	Remarks
class 13 Excavation Materials	7911.9	CY	District Maintenance Yard at IA 163 EB MP 50.41, south side, East of Pella, 0.2 mi. West of Elba Ave.	Walt Kingery: 641-218-9422	Note 1: DIV. 4 - Iowa DOT State Funds
Note 1: Class 13 Excavation Delivery and Stockpiling shall be bid as "Deliver and Stockpile Salvaged Materials".					

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Road Identification	Location																SCHOOL	XING	STOP	AHEAD	ONLY	BIKE	LANE	EXIT	Groove Cuts	Remarks	
	Station	Side	STAW	RTAW	LTAW	CSRW	CSLW	CSTW	CRLW	FERW	LLRW	RLRW	RRCW	BLSW	WCSW	WPSB	SCLW	XNGW	STPW	AHDW	ONLW	BIKW	LANW	XITW	EACH		
IA 163	(MP) 35.24	Lt.		1																					1		
	Totals:			1																					1		

10/31/2023 1:49:27 PM dtamrak c:\pw_work\pwmain\dtamrak\d1885375\SHI_060163060_C04.xlsm

MILLED RUMBLE STRIPS

See PV-12 and PV-13

* Calculated at 18" width for Shoulder.

Road Identification	Station to Station		Location		Rumble Strip Type (Centerline, Rt or Lt Shoulder)	L IN	Installation Length		Fog Seal* (Milled Rumble Strip) Shoulder GAL	Effective Shoulder Width			Remarks
			Shoulder Pavement Type	Type			PCC STA	HMA STA		PCC Paved FT	HMA Paved FT	Granular\ Earth FT	
IA 163 North bound	35.27	35.31	HMA	Right Shoulder	12"		2.11		2.3			Outside Shoulder	
IA 163 North bound	35.34	35.58	HMA	Right Shoulder	12"		12.67		13.8			Outside Shoulder	
IA 163 North bound	35.61	36.15	HMA	Right Shoulder	12"		28.51		30.9			Outside Shoulder	
IA 163 North bound	36.18	36.69	HMA	Right Shoulder	12"		26.93		29.2			Outside Shoulder	
IA 163 North bound	36.74	37.13	HMA	Right Shoulder	12"		20.59		22.4			Outside Shoulder	
IA 163 North bound	37.32	38.13	HMA	Right Shoulder	12"		42.77		46.4			Outside Shoulder	
IA 163 North bound	38.15	38.42	HMA	Right Shoulder	12"		14.26		15.5			Outside Shoulder	
IA 163 North bound	38.46	38.71	HMA	Right Shoulder	12"		13.20		14.3			Outside Shoulder	
IA 163 North bound	38.74	39.29	HMA	Right Shoulder	12"		29.04		31.5			Outside Shoulder	
IA 163 North bound	39.32	39.80	HMA	Right Shoulder	12"		25.34		27.5			Outside Shoulder	
IA 163 North bound	35.07	35.31	HMA	Left Shoulder	12"		12.67		13.8			Inside Shoulder	
IA 163 North bound	35.39	35.57	HMA	Left Shoulder	12"		9.50		10.3			Inside Shoulder	
IA 163 North bound	35.66	35.96	HMA	Left Shoulder	12"		15.84		17.2			Inside Shoulder	
IA 163 North bound	36.06	35.70	HMA	Left Shoulder	12"		19.01		20.6			Inside Shoulder	
IA 163 North bound	36.78	37.90	HMA	Left Shoulder	12"		59.14		64.1			Inside Shoulder	
IA 163 North bound	38.00	38.42	HMA	Left Shoulder	12"		22.18		24.1			Inside Shoulder	
IA 163 North bound	38.46	38.70	HMA	Left Shoulder	12"		12.67		13.8			Inside Shoulder	
IA 163 North bound	38.74	39.80	HMA	Left Shoulder	12"		55.97		60.7			Inside Shoulder	
IA 163 South Bound	35.08	35.30	HMA	Left Shoulder	12"		11.62		12.6			Inside Shoulder	
IA 163 South Bound	35.34	35.58	HMA	Left Shoulder	12"		12.67		13.8			Inside Shoulder	
IA 163 South Bound	35.60	35.97	HMA	Left Shoulder	12"		19.54		21.2			Inside Shoulder	
IA 163 South Bound	36.00	36.64	HMA	Left Shoulder	12"		33.79		36.7			Inside Shoulder	
IA 163 South Bound	36.76	36.99	HMA	Left Shoulder	12"		12.14		13.2			Inside Shoulder	
IA 163 South Bound	37.16	37.92	HMA	Left Shoulder	12"		40.13		43.5			Inside Shoulder	
IA 163 South Bound	37.95	38.38	HMA	Left Shoulder	12"		22.70		24.6			Inside Shoulder	
IA 163 South Bound	38.48	38.66	HMA	Left Shoulder	12"		9.50		10.3			Inside Shoulder	
IA 163 South Bound	38.74	+39.80	HMA	Left Shoulder	12"		55.97		60.7			Inside Shoulder	
IA 163 South Bound	35.08	35.31	HMA	Right Shoulder	12"		12.14		13.2			Outside Shoulder	
IA 163 South Bound	35.33	35.58	HMA	Right Shoulder	12"		13.20		14.3			Outside Shoulder	
IA 163 South Bound	35.60	35.97	HMA	Right Shoulder	12"		19.54		21.2			Outside Shoulder	
IA 163 South Bound	35.99	36.37	HMA	Right Shoulder	12"		20.06		21.8			Outside Shoulder	
IA 163 South Bound	36.38	36.70	HMA	Right Shoulder	12"		16.90		18.4			Outside Shoulder	
IA 163 South Bound	36.74	36.94	HMA	Right Shoulder	12"		10.56		11.5			Outside Shoulder	
IA 163 South Bound	36.95	37.54	HMA	Right Shoulder	12"		31.15		33.8			Outside Shoulder	
IA 163 South Bound	37.55	37.92	HMA	Right Shoulder	12"		19.54		21.2			Outside Shoulder	
IA 163 South Bound	37.94	39.80	HMA	Right Shoulder	12"		98.21		106.4			Outside Shoulder	
Totals													
							PCC	HMA	Fog Seal				
								881.76	956.8				
							0.00						
							0.00	0.00	0.0				
							0.00	0.00					
							0.00	0.00					

103-7 08-01-08		
SHRINKAGE DATA		
Material	%	Remarks
Topsoil	40	
class 10	30	
Boulders	0	5 CY

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

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

Line No.	Road or Lane Identification	Location		Side	Depth D	Longitudinal Subdrain (DR-303)				Subdrain Outlet		Porous* Backfill	Class "A" Crushed Stone	Remarks	
		Station to Station	Shoulder			Backslope		Bridge Berm (EW-203 or EW-204)		DR-303, DR-305 or DR-306					
						Size	Length	Size	Length	Standard Road Plan and Type	Size				Length
1	IA 163 NB	255+00.00	255+75.00	0	42.0	4.0	105.0					255+75.00	DR-306	14.1	
2	IA 163 NB	255+75.00	257+50.00	0	42.0	4.0	205.0					257+50.00	DR-306	24.6	
3	IA 163 NB	257+50.00	261+55.00	0	42.0	4.0	405.0							42.4	
4	IA 163 SB	255+00.00	256+75.00	M	42.0	4.0	205.0					256+75.00	DR-306	24.6	
5	IA 163 SB	256+75.00	257+25.00	M	42.0	4.0	50.0							5.2	
Totals							970.0						DR-306 = 3		

UTILITY LEGEND

- F03 — Jeff Klocko
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(515) 830-0445
jeff.klocko@areon.com

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OSP Engineer
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mike.dalen@iowa.gov

- W3(B) — Matt Mahler
CEO
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mmahler@irua.net

- F04 — Steve Parker
Manager of Engineering & Construction
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Steven.Parker4@lumen.com

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- F0 — Dan Hogan
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Manchester, IA, 52057
(563) 920-2428
Dan.Hogan@windstream.com

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	(10)	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

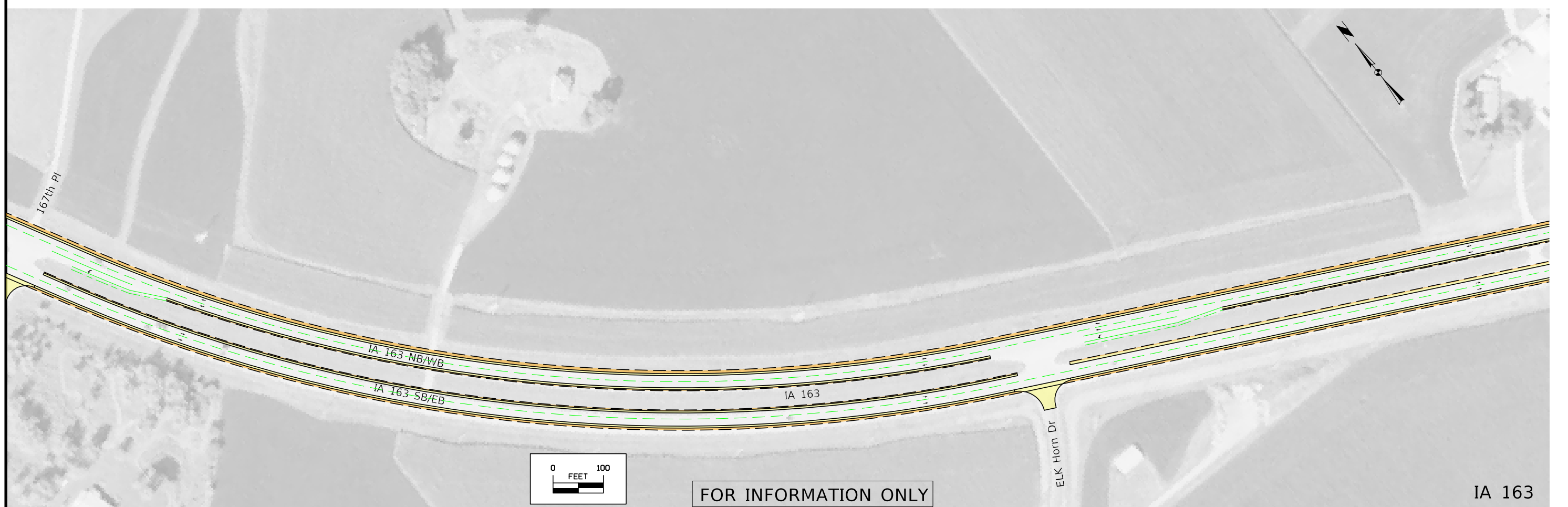
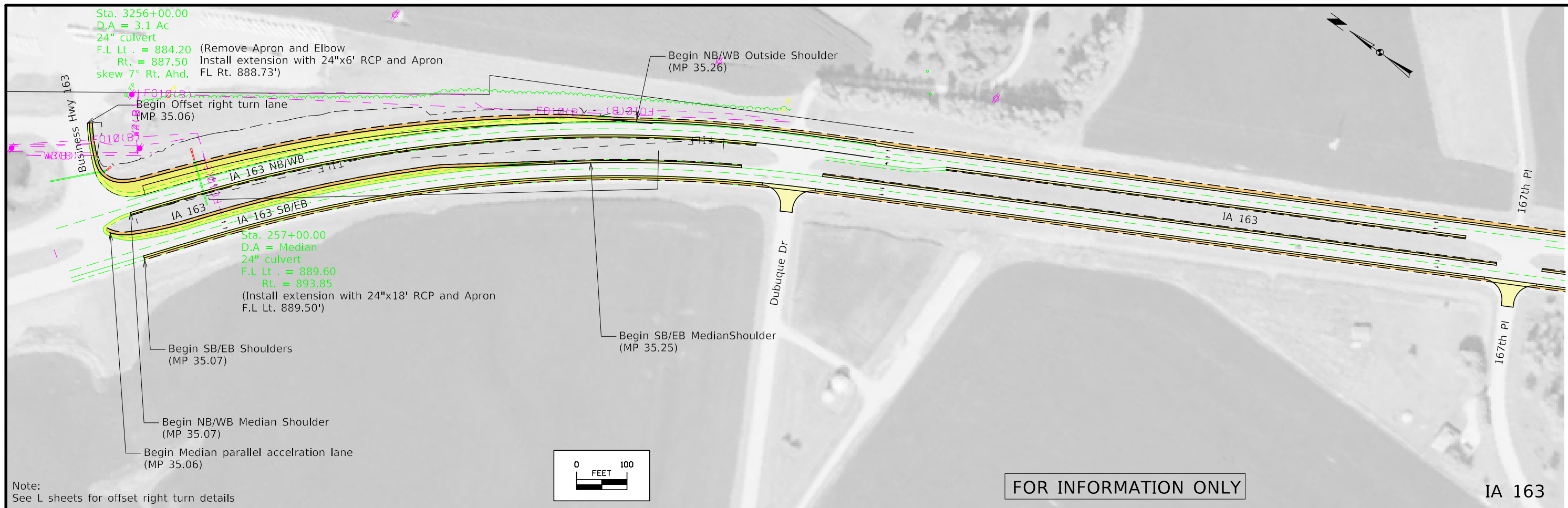
	Reference Point
	Station
	Survey Line
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Trench Drain
	HighTension Cable Guardrail
	Sheet Pile
	Pavement Removal
	Clearing & Grubbing Area

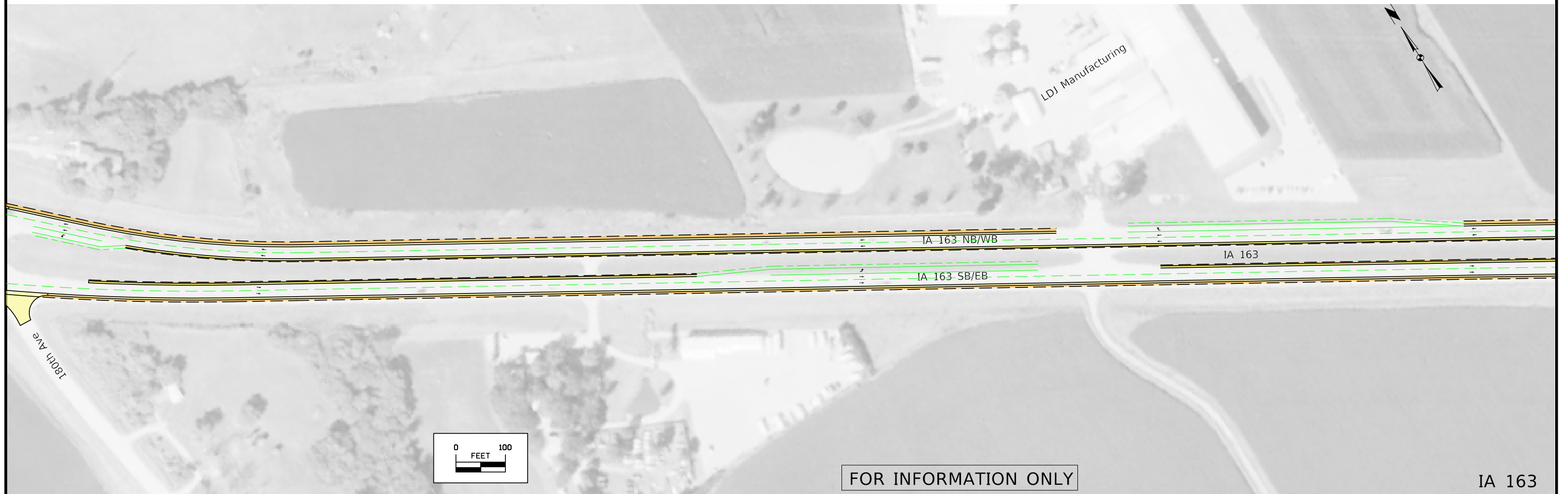
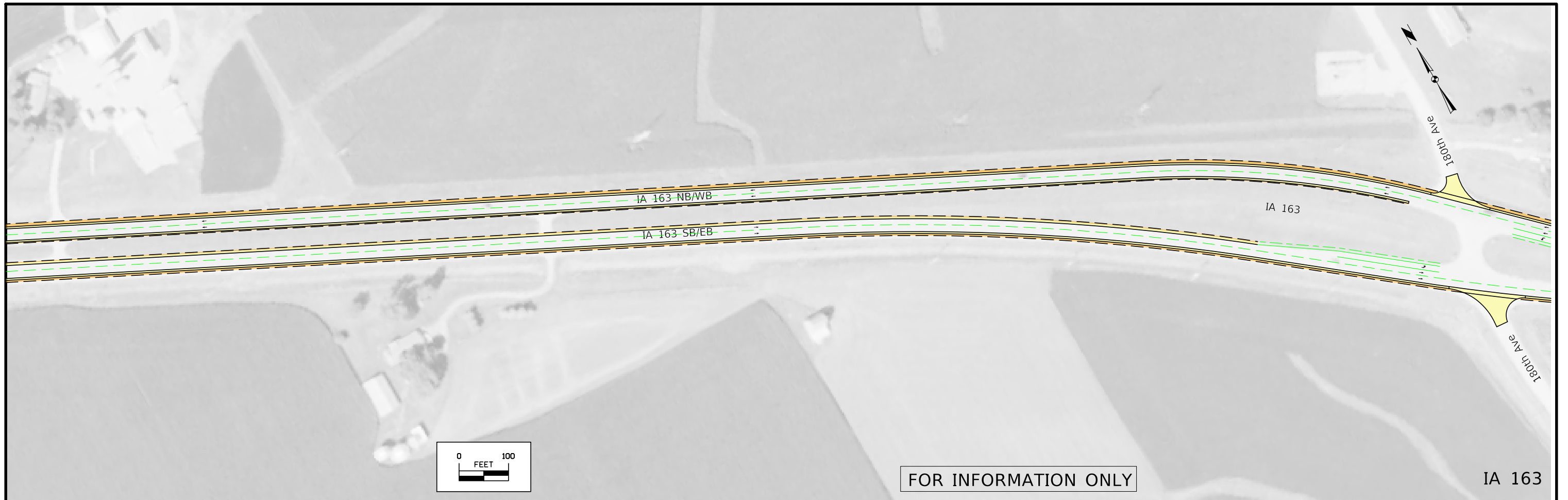
RIGHT-OF-WAY LEGEND

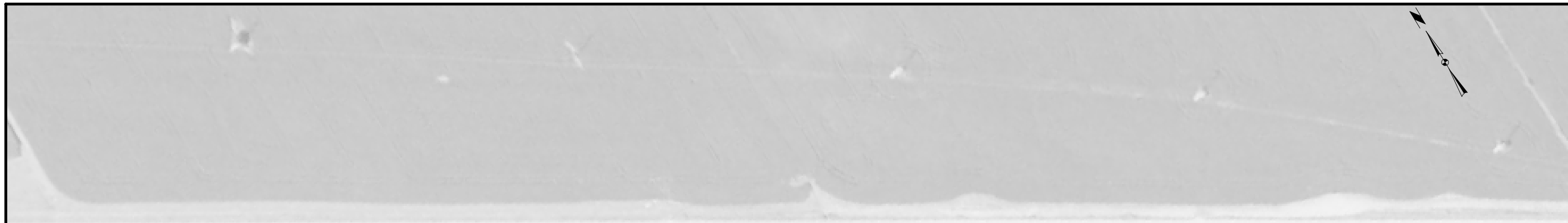
	Proposed Right-of-Way
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary)
	Easement
	Access Control
	Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



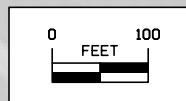




IA 163 NB/WB

IA 163

IA 163 SB/EB



FOR INFORMATION ONLY

IA 163



IA 163 NB/WB

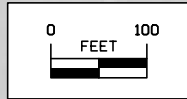
IA 163

IA 163 SB/EB

190th Ave

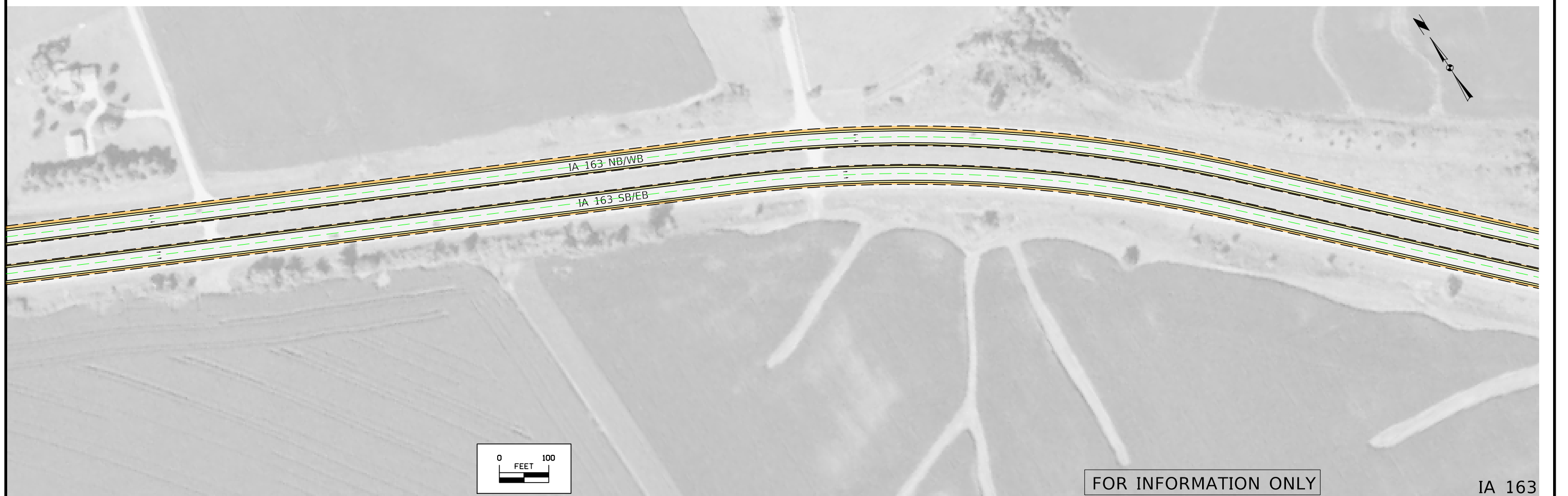
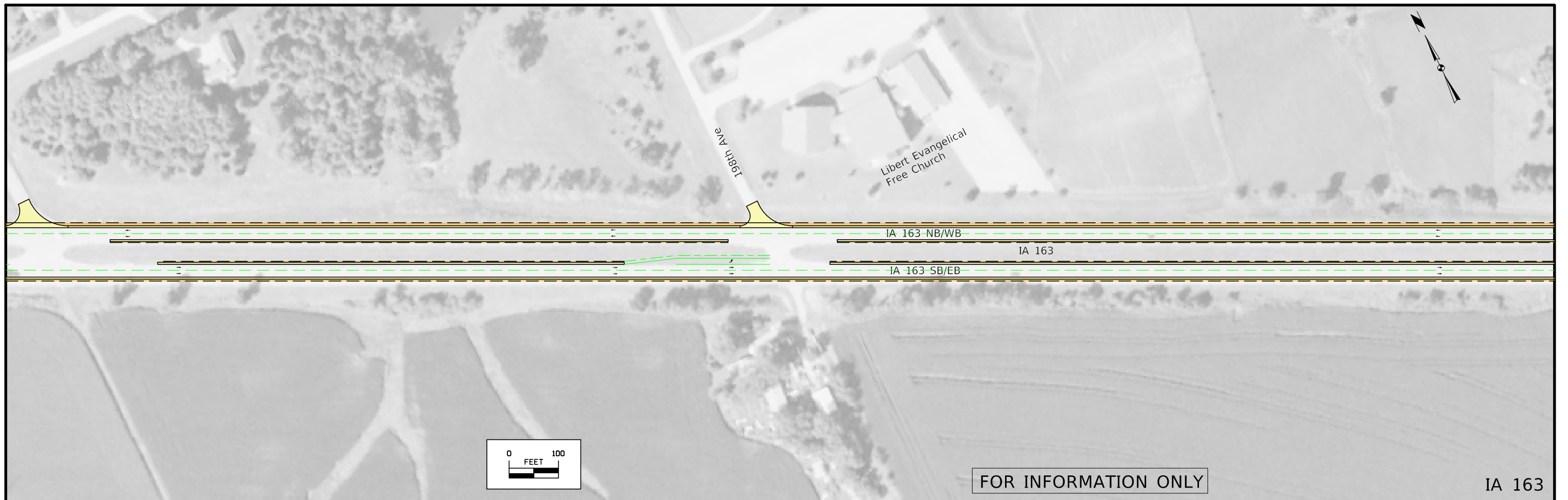
190th Ave

195th Ave

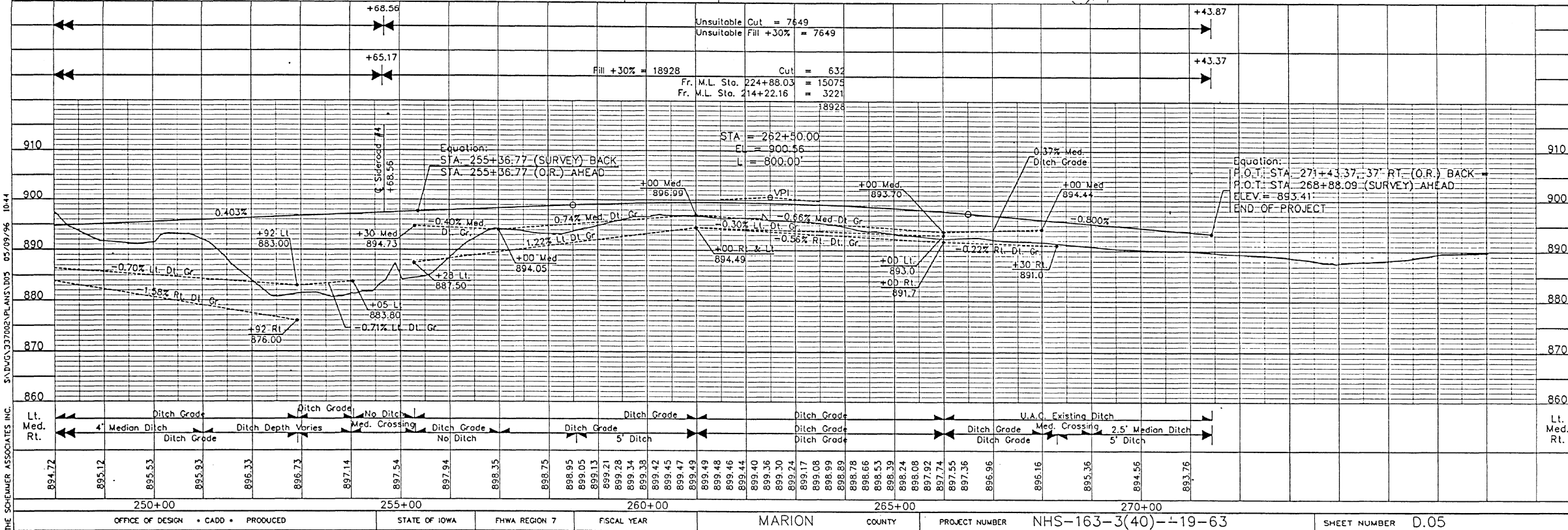
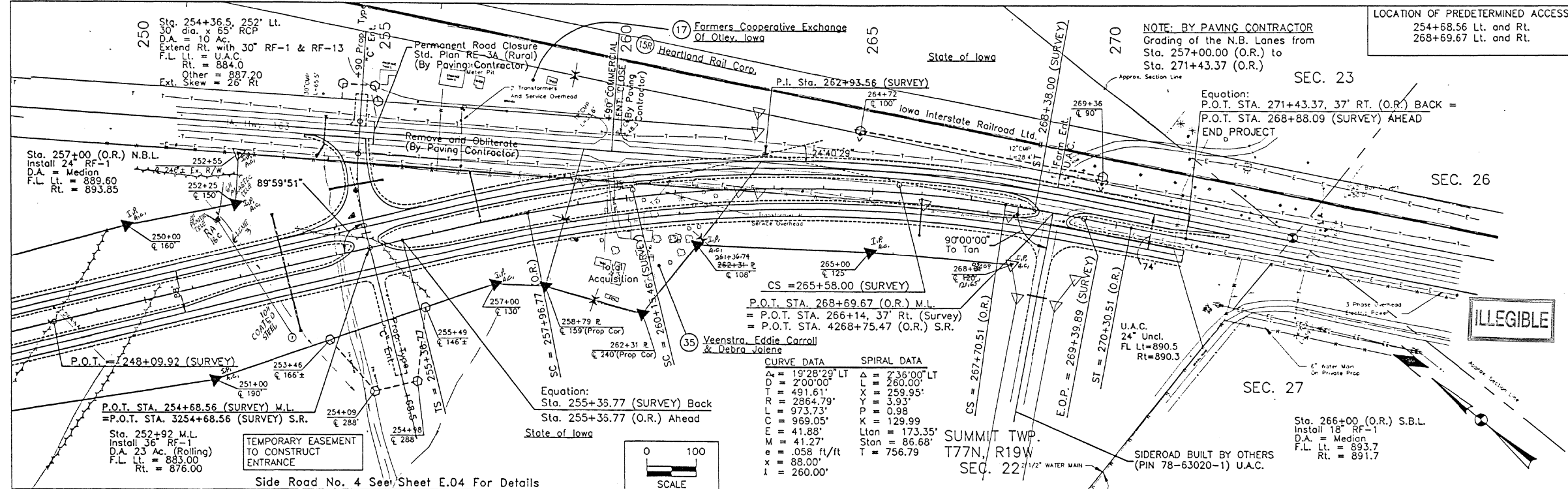


FOR INFORMATION ONLY

IA 163







250+00	255+00	260+00	265+00	270+00
OFFICE OF DESIGN	STATE OF IOWA	FHWA REGION 7	MARION COUNTY	PROJECT NUMBER NHS-163-3(40)-19-63
CADD	PRODUCED	FISCAL YEAR	SHEET NUMBER	D.05

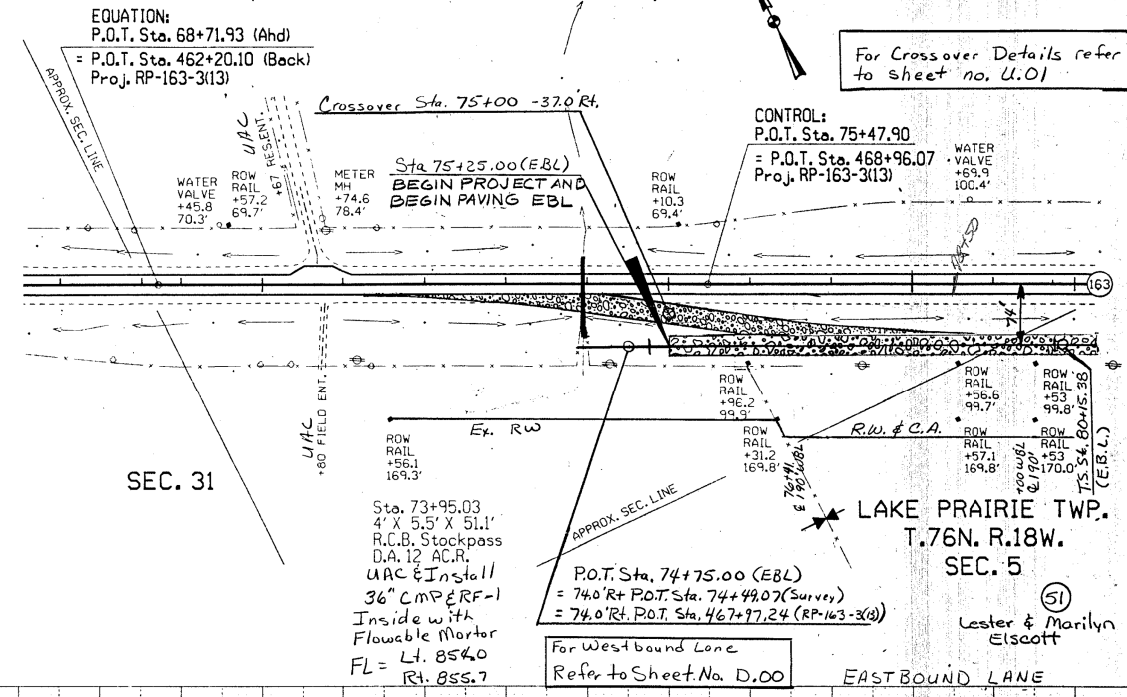
FOR INFORMATION ONLY

Otley By-Pass

LAKE PRAIRIE TWP.
T.77N. R.18W.
SEC. 32

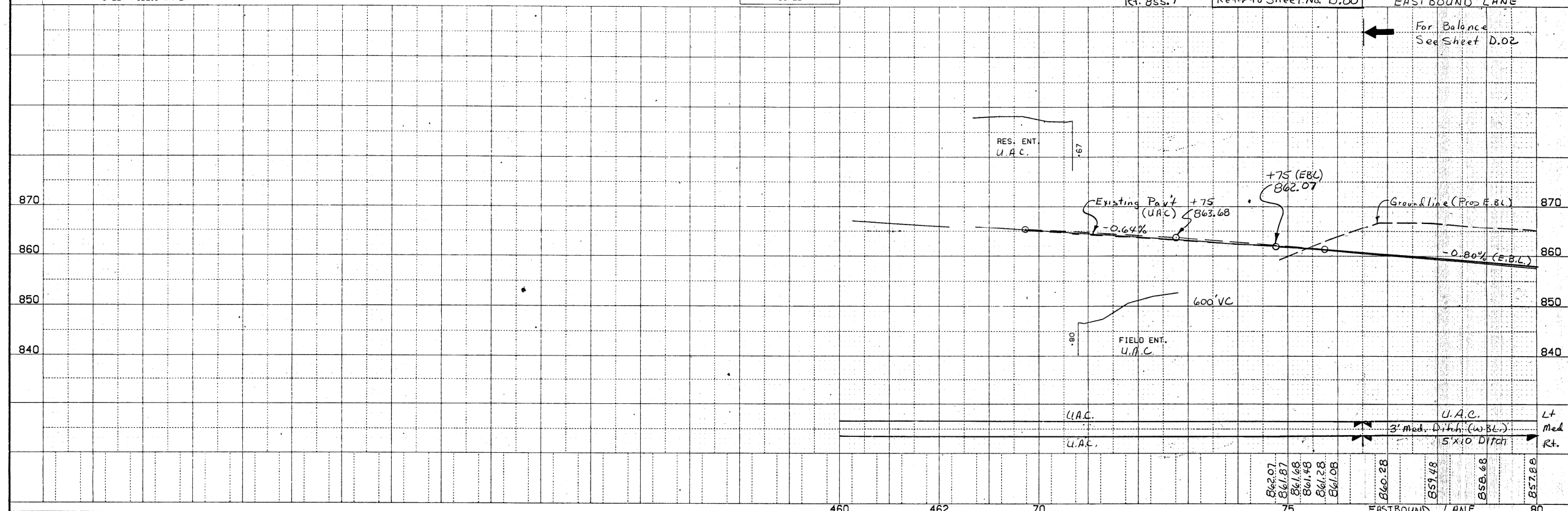
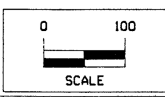
For Stage Construction Details
Refer to Sheets No. J01-J02

For Cross over Details refer
to sheet no. U.01



UTILITIES

⊕	IOWA POWER & LIGHT
⊖	CONTEL
⊙	OTLEY PUBLIC WATER

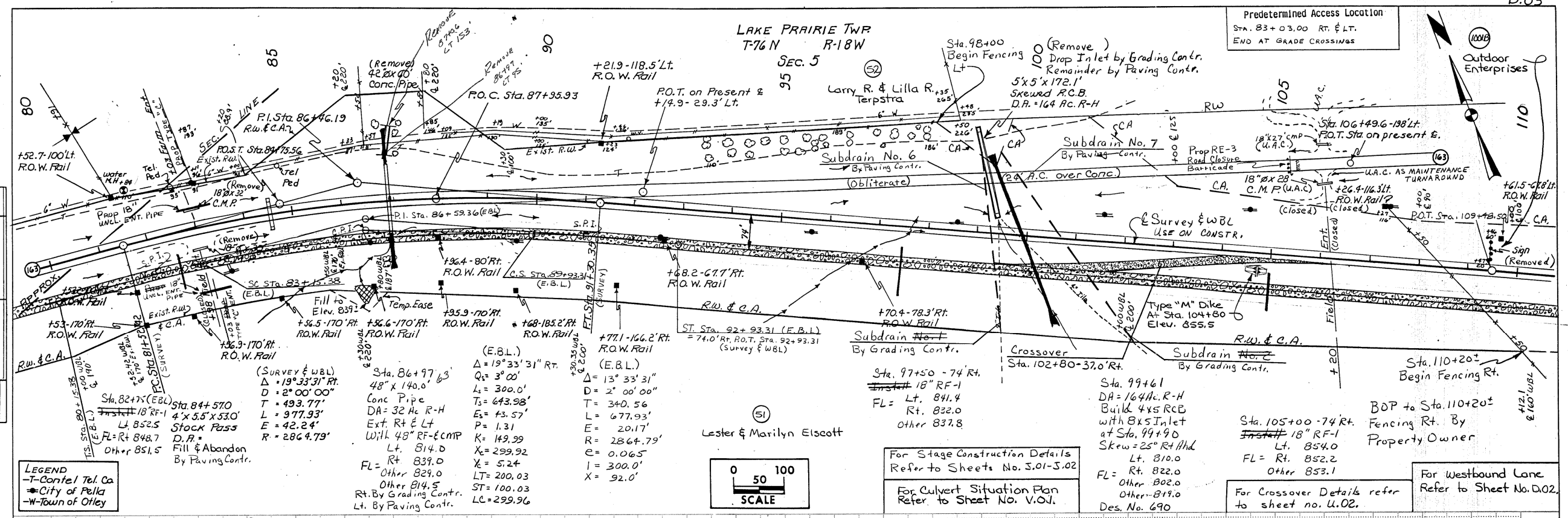


ROAD DESIGN	CADD	PRODUCED	STATE OF IOWA	FHWA REGION 7	FISCAL YEAR	MARION	COUNTY	PROJECT NUMBER	DE-163-3(11)-2A-63	SHEET NUMBER	D.01
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FOR INFORMATION ONLY

Pella By-Pass

LAKE PRAIRIE TWP
T-76 N R-18 W
SEC. 5
95



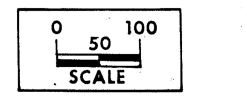
DATE	BY
PLAN	

LEGEND
-T-Contel Tel. Ca
● City of Pella
-W-Town of Otley

(SURVEY & WBL)
Sta. 82+75 (E.B.L.)
Δ = 19° 33' 31" Rt.
D = 2' 00' 00"
T = 493.77'
L = 977.93'
E = 42.24'
R = 2864.79'
Sta. 84+570
L = 852.5
Stock Pass
D.R.
Fill & Abandon
By Paving Contr.

Sta. 86+97.63
48' x 140.0'
Conc Pipe
DA = 32' Hc R-H
Ext. Rt & Lt
With 48" RF-ε CMP
Lt. 814.0
Rt. 839.0
Other 814.5
Rt. By Grading Contr.
Lt. By Paving Contr.

(E.B.L.)
Sta. 86+97.63
Δ = 13° 33' 31"
Q_i = 3' 00"
L_i = 300.0'
T_i = 643.98'
E_s = 43.57'
P = 1.31
K = 149.39
X_e = 299.92
X_t = 5.24
LT = 200.03
ST = 100.03
LC = 299.96



For Stage Construction Details
Refer to Sheets No. J.01-J.02

For Culvert Situation Plan
Refer to Sheet No. V.01.

Sta. 99+61
DA = 164' Hc R-H
Build 4x5 Inlet
at Sta. 99+90
Skew = 25° Rt Hhd
Lt. 810.0
FL = Rt. 822.0
Other - 802.0
Other - 819.0
Des. No. 690

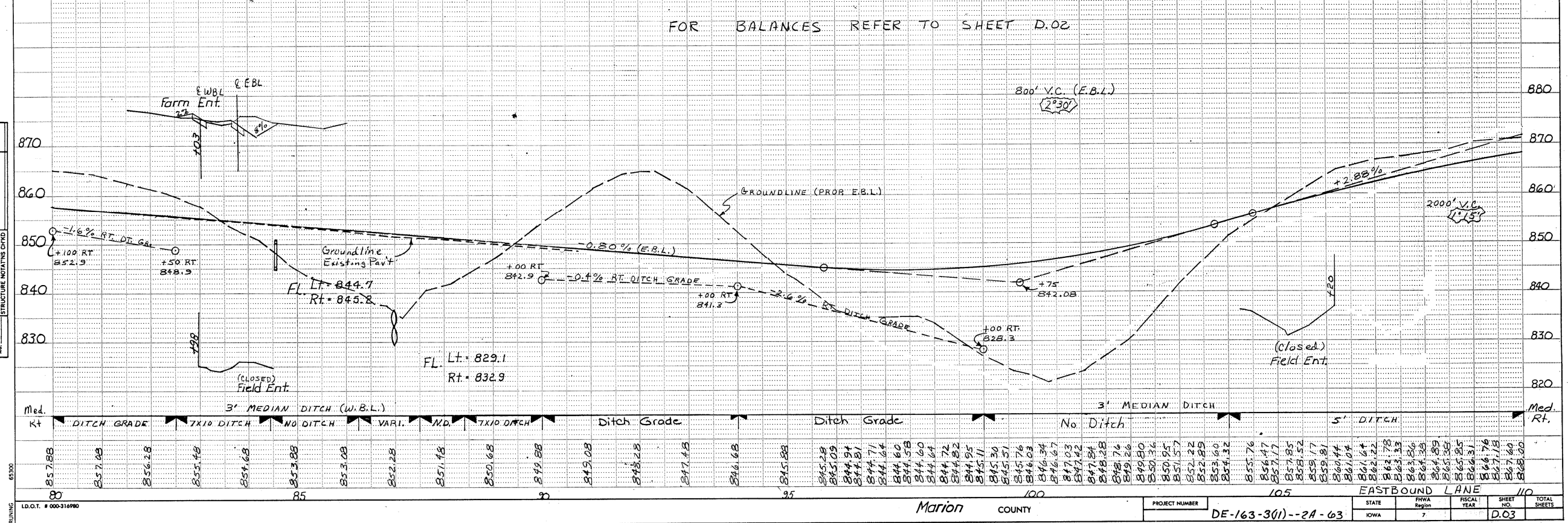
Sta. 105+00 - 74 Rt.
Inst 18" RF-1
Lt. 854.0
FL = Rt. 852.2
Other 853.1

For Crossover Details refer
to sheet no. U.02.

For Westbound Lane
Refer to Sheet No. D.02.

FOR BALANCES REFER TO SHEET D.02

DATE	BY
PROFILE	

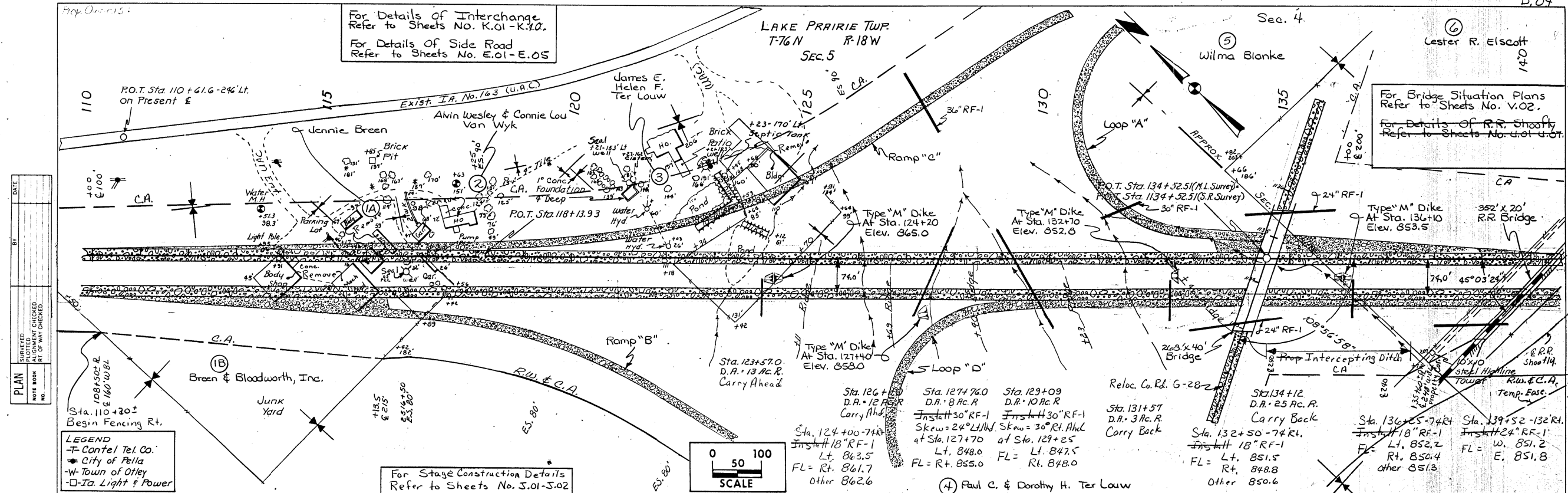


FOR INFORMATION ONLY

Pella By-Pass

For Details of Interchange Refer to Sheets No. K.01-K.10.
For Details of Side Road Refer to Sheets No. E.01-E.05

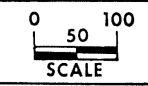
For Bridge Situation Plans Refer to Sheets No. V.02.
For Details of R.R. Shooft Refer to Sheets No. U.01-U.07.



DATE	
BY	
DATE	
BY	
DATE	
BY	

LEGEND
 - Contel Tel. Co.
 - City of Pella
 - Town of Otley
 - Light & Power

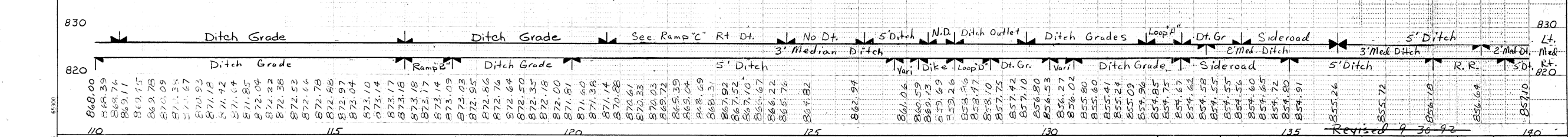
For Stage Construction Details Refer to Sheets No. J.01-J.02



For Balance Refer to Sheet D.02

Station	115	120	125	130	135
Prop. E.B.L.	868.00	864.39	860.74	857.11	853.50
Prop. W.B.L.	867.4	866.9	866.4	865.9	865.4
Prop. D.G.	867.4	870.3	873.2	876.1	879.0
Prop. Rt. Dt. Gr.	866.9	867.3	867.7	868.1	868.5
Prop. Lt. Dt. Gr.	866.9	867.3	867.7	868.1	868.5
Prop. 3:1 Backslope - Rt.	867.4	870.3	873.2	876.1	879.0
Prop. 3:1 Backslope - Lt.	866.9	867.3	867.7	868.1	868.5
Prop. 2:1 Backslope - Rt.	867.4	870.3	873.2	876.1	879.0
Prop. 2:1 Backslope - Lt.	866.9	867.3	867.7	868.1	868.5

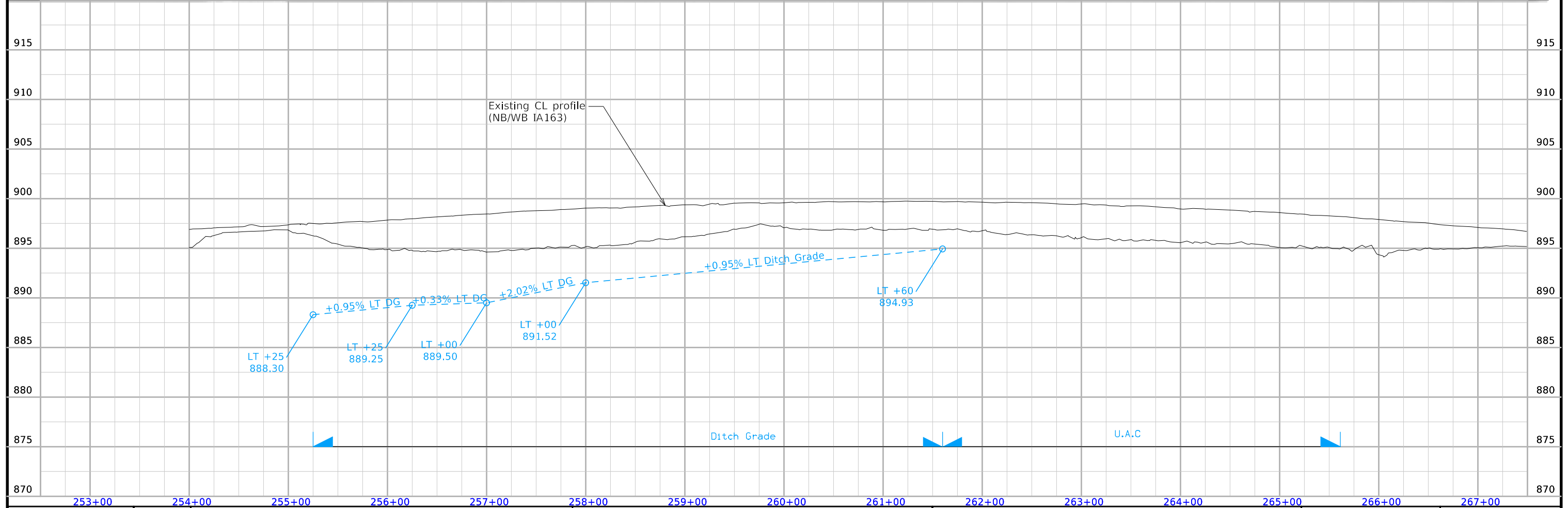
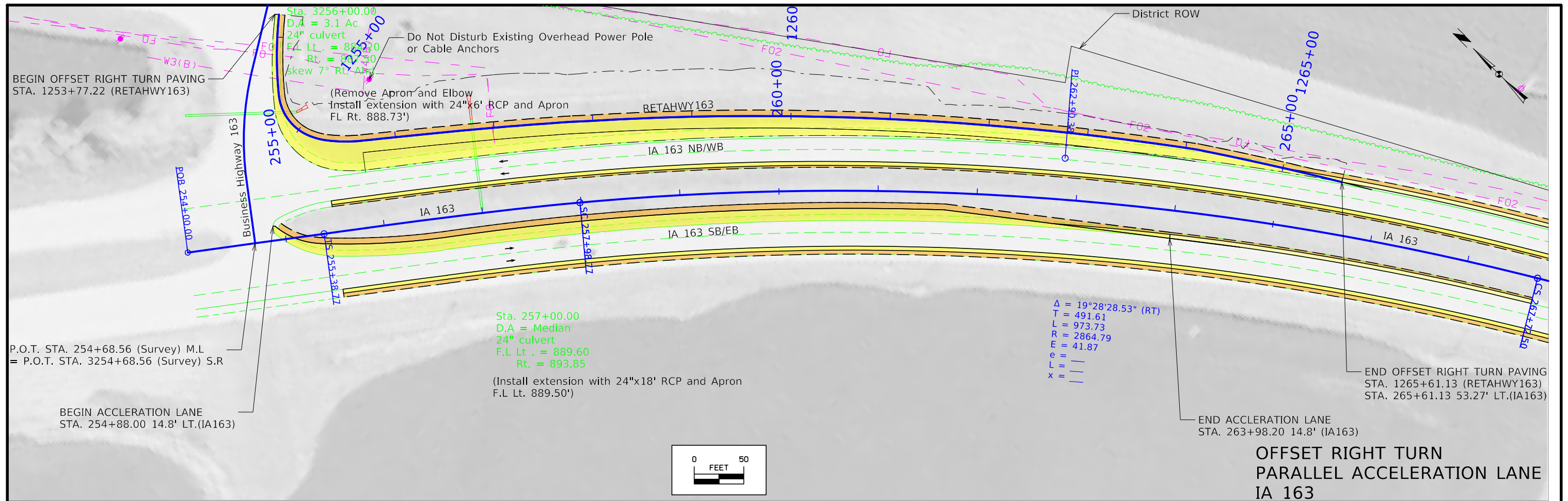
DATE	
BY	
DATE	
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BY	

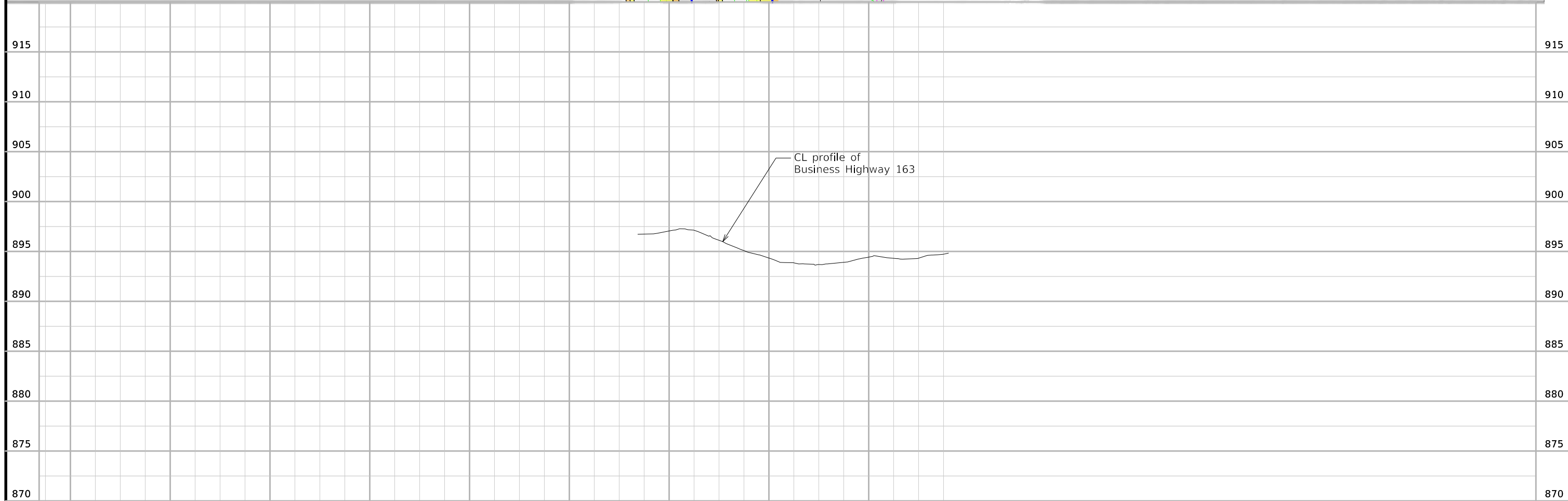
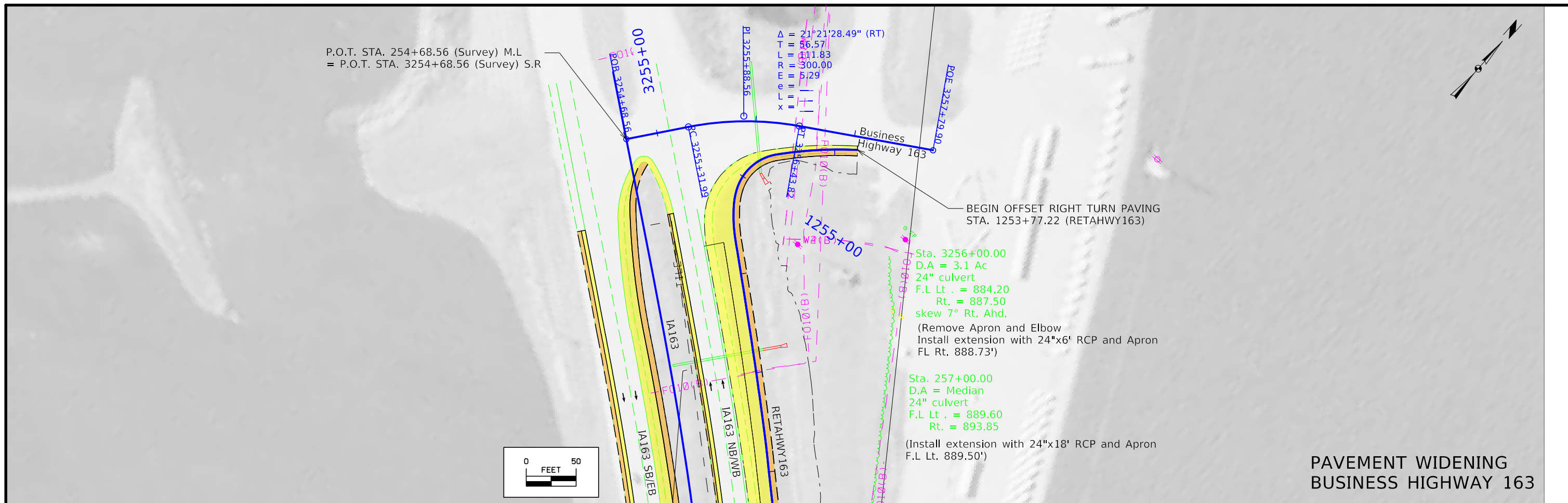


Station	110	115	120	125	130	135
Prop. E.B.L.	868.00	864.39	860.74	857.11	853.50	850.00
Prop. W.B.L.	867.4	866.9	866.4	865.9	865.4	865.0
Prop. D.G.	867.4	870.3	873.2	876.1	879.0	882.0
Prop. Rt. Dt. Gr.	866.9	867.3	867.7	868.1	868.5	869.0
Prop. Lt. Dt. Gr.	866.9	867.3	867.7	868.1	868.5	869.0
Prop. 3:1 Backslope - Rt.	867.4	870.3	873.2	876.1	879.0	882.0
Prop. 3:1 Backslope - Lt.	866.9	867.3	867.7	868.1	868.5	869.0
Prop. 2:1 Backslope - Rt.	867.4	870.3	873.2	876.1	879.0	882.0
Prop. 2:1 Backslope - Lt.	866.9	867.3	867.7	868.1	868.5	869.0

FOR INFORMATION ONLY

Pella By-Pass





3249+00	3250+00	3251+00	3252+00	3253+00	3254+00	3255+00	3256+00	3257+00	FILE NO.	ENGLISH	DESIGN TEAM	HOLST/BAHR/TAMRAKAR	MARION COUNTY	PROJECT NUMBER	HSIPX-163-3(060)--3L-63	SHEET NUMBER	E.2
---------	---------	---------	---------	---------	---------	---------	---------	---------	----------	---------	-------------	---------------------	---------------	----------------	-------------------------	--------------	-----

ALIGNMENT COORDINATES

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	RETAHWY163	125377.217 R1	7639180.40	19442003.52															
2	RETAHWY163							125385.069 R1	7639175.39	19441997.47	125421.910 R1	7639151.87	19441969.12	125458.530 R1	7639123.43	19441945.70			
3	RETAHWY163							125458.530 R1	7639123.43	19441945.70	125488.656 R1	7639100.18	19441926.55	125512.756 R1	7639072.38	19441938.16			
4	RETAHWY163							125512.756 R1	7639072.38	19441938.16	125521.732 R1	7639064.10	19441941.62	125530.610 R1	7639056.96	19441947.05			
5	RETAHWY163							125530.610 R1	7639056.96	19441947.05	125548.227 R1	7639042.94	19441957.72	125565.683 R1	7639031.78	19441971.35			
6	RETAHWY163	125568.591 R1	7639029.93	19441973.60															
7	RETAHWY163	126411.366 R1	7638425.30	19442556.90															
8	RETAHWY163	126419.776 R1	7638418.28	19442561.52															
9	RETAHWY163	126430.657 R1	7638409.17	19442567.48															
10	RETAHWY163	126443.250 R1	7638398.60	19442574.32															
11	RETAHWY163	126456.796 R1	7638387.20	19442581.63															
12	RETAHWY163	126470.548 R1	7638375.59	19442589.00															
13	RETAHWY163	126483.762 R1	7638364.40	19442596.04															
14	RETAHWY163	126495.960 R1	7638354.05	19442602.49															
15	RETAHWY163	126507.727 R1	7638344.04	19442608.67															
16	RETAHWY163	126519.916 R1	7638333.63	19442615.02															
17	RETAHWY163	126533.114 R1	7638322.33	19442621.84															
18	RETAHWY163	126546.843 R1	7638310.56	19442628.90															
19	RETAHWY163	126560.358 R1	7638298.93	19442635.79															
20	RETAHWY163	126560.616 R1	7638298.71	19442635.92															
21	RETAHWY163	126560.873 R1	7638298.49	19442636.05															
22	RETAHWY163	126561.130 R1	7638298.27	19442636.18															
1	ML163	25400.000 R1	7639077.37	19441768.12															
2	ML163	25468.560 R1	7639035.57	19441822.46															
3	ML163				25538.770 R1	7638992.75	19441878.10				25712.122 R1	7638887.04	19442015.49			25798.770 R1	7638831.12	19442081.73	
4	ML163							25798.770 R1	7638831.12	19442081.73	26290.377 R1	7638513.97	19442457.35	26772.500 R1	7638089.73	19442705.75			
5	ML163				26772.500 R1	7638089.73	19442705.75				26859.184 R1	7638014.93	19442749.55			27032.500 R1	7637861.51	19442830.26	
1	SRBUSINESSHWY163	325468.560 R1	7639035.57	19441822.46															
2	SRBUSINESSHWY163							325531.989 R1	7639085.84	19441861.14	325588.560 R1	7639130.67	19441895.63	325643.818 R1	7639159.87	19441944.09			
3	SRBUSINESSHWY163	325779.901 R1	7639230.10	19442060.65															
1	RETDHWY163							225501.126 R1	7639021.14	19441850.43	225523.040 R1	7639000.34	19441857.32	225544.272 R1	7638984.33	19441872.28			
2	RETDHWY163							225544.272 R1	7638984.33	19441872.28	225607.558 R1	7638938.08	19441915.48	225670.544 R1	7638899.73	19441965.82			
3	RETDHWY163							225670.544 R1	7638899.73	19441965.82	225920.984 R1	7638747.95	19442165.02	226170.153 R1	7638563.90	19442334.86			
4	RETDHWY163	226470.260 R1	7638325.51	19442517.17															

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ΔSCS	Horizontal Alignment Data												Remarks	
			Spiral Data						Curve Data							
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R		E
C1	ML163	24.675°	2.600°	260.000	756.785	68.728	259.946	3.932	173.352	86.684	19.475°	491.607	973.730	2864.790	41.875	
1	SRBUSINESSHWY163	325468.560 R1	7639035.565	19441822.459												
2	SRBUSINESSHWY163							325531.989 R1	7639085.837	19441861.136	325588.560 R1	7639130.674	19441895.632	325643.818 R1	7639159.869	19441944.088
3	SRBUSINESSHWY163	325779.901 R1	7639230.097	19442060.649												
1	RETDHWY163							225501.126 R1	7639021.144	19441850.426	225523.040 R1	7639000.342	19441857.317	225544.272 R1	7638984.328	19441872.276
2	RETDHWY163							225544.272 R1	7638984.328	19441872.276	225607.558 R1	7638938.081	19441915.476	225670.544 R1	7638899.726	19441965.815
3	RETDHWY163							225670.544 R1	7638899.726	19441965.815	225920.984 R1	7638747.946	19442165.021	226170.153 R1	7638563.896	19442334.860
4	RETDHWY163	226470.260 R1	7638325.507	19442517.165												

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic shall be maintained at all times on Iowa 163 and Business Highway 163 with the following exceptions:
 1. Close outside Iowa 163 Northbound/Westbound lane for construction of proposed right turn lane. Refer to sheet J.2-J.3 for Traffic control for offset right turn lane.
 2. South access Business Highway 163 is to be closed from access to Iowa 163 and the crossover median. Utilize Standard Road Plan TC-252, Situation 6.
 3. Close outside Iowa 163 Southbound/Eastbound lane for construction of proposed median acceleration lane. Refer to sheet J.2-J.3 for Traffic control for median acceleration lane.
 4. Close a traffic lane for grooving and pavement marking operations. See Standard Plan TC-418 for details.
 5. See Tab 108-13A and Sheet J.4-J.6 sheets for Safety Closures and temporary signing to be provided and installed by the contractor.
 6. Cover all the conflicting Road Signs related to closure.
 7. Marion County to provide detour signing along local roads during Business Hwy 163 closure.

Special Events:
 Tulip Festival - May 2 - May 4, 2024

111-01
04-17-12

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
RC-C063(144)- -9A-63	Turn lanes at LDJ Manufacturing (MP.37.14)
	Iowa 163 Corridor Patching by Others, Calendar year 2024

108-25
10-21-14

511 TRAVEL RESTRICTIONS

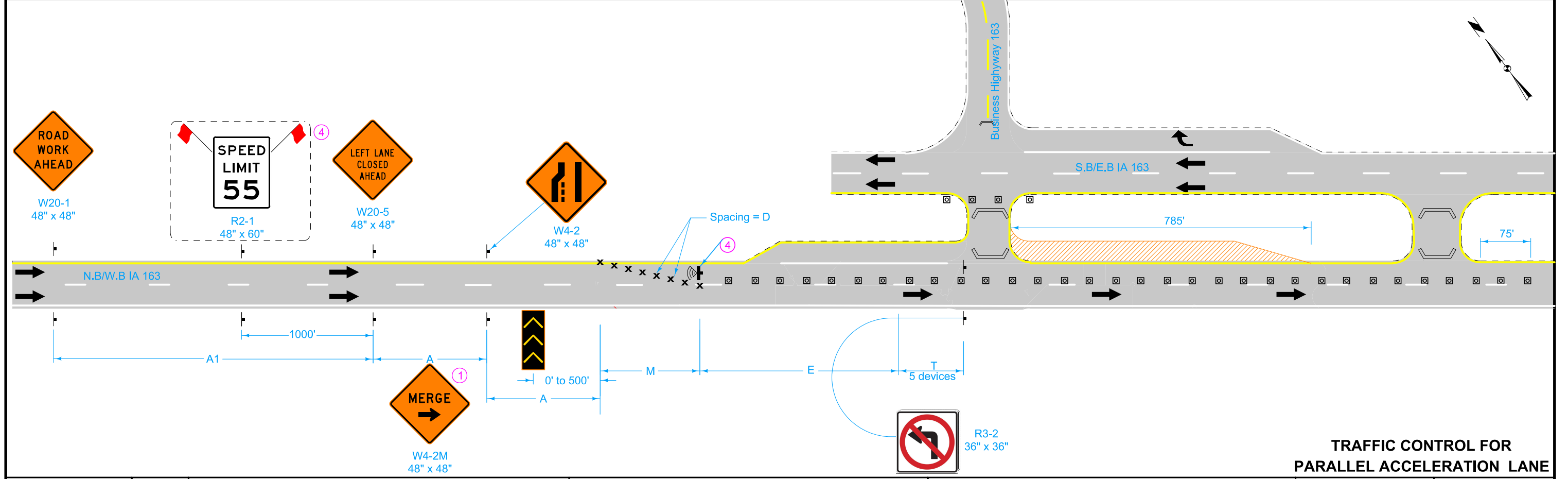
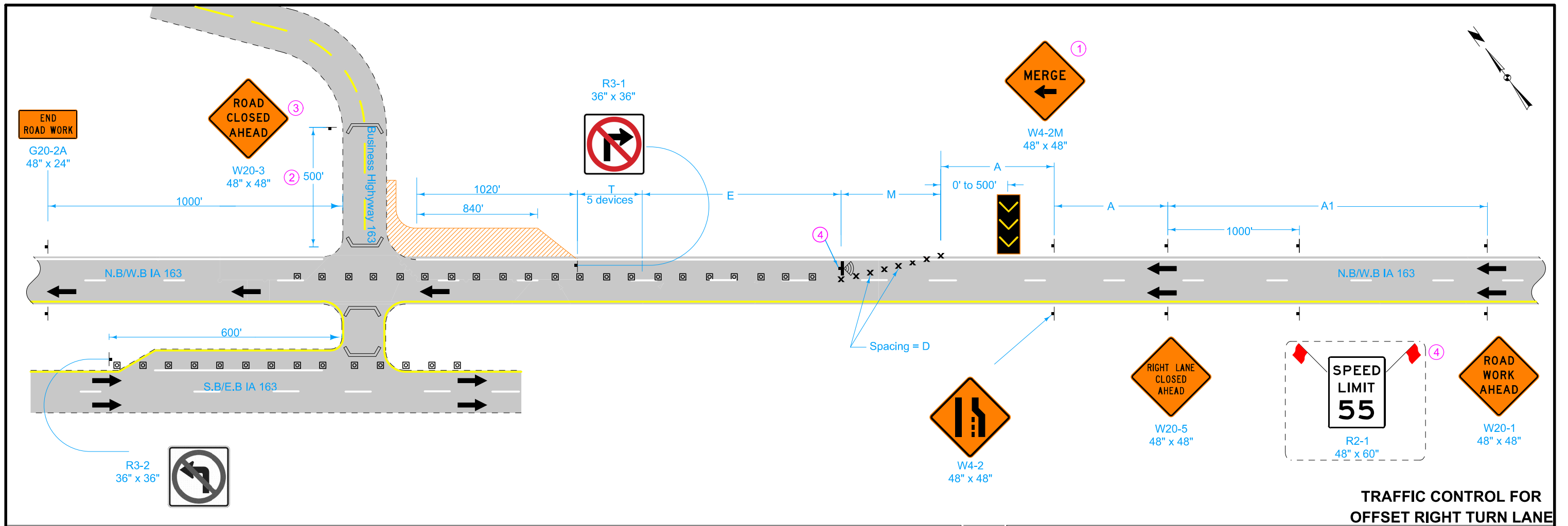
Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
Highway 63	NB & SB	Marion	NB and SB access to Business 163 is to be closed during WB-NB offset right turn lane (Milepost 35.06)	IA 163								

108-26A
08-01-08

STAGING NOTES

Stage 1: Construct Iowa 163 Patching.
 Stage 2: Close the south access to Business Hwy 163 per the traffic control plan. Perform work for the offset right turn lane (MP 35.06 - MP 35.27) and open to traffic. (The Contractor is to contact Marion County prior to closing the south access to Business Hwy 163)
 Stage 3: Construct median acceleration lane from MP 35.07 to MP 35.26.
 Stage 4: Construct paved shoulders from MP 35.07 to MP 39.80 (Business Hwy 163 to Pella)
 Stage 5: Construct County side road fillets (The Contractor is to contact Marion County prior to paving the sideroad fillets)
 Stage 6: Place pavement markings.

Note: Stages 2,3 and 4 may concurrently, or sequentially, occur.











- ① Refer to [SI-881](#) for sign details.
- ② Where side road speed limit is 40 mph or less, a distance of 200 feet is allowed.
- ③ Place a ROAD WORK AHEAD sign on the opposite side of the intersection in a similar location. Business 63 is to be closed. Utilize TC-252, Situation 6.
- ④ For roadways with a posted speed limit of 60 mph or greater before road work:
 - Place SPEED LIMIT 55 signs prior to the lane closure as shown.
 - When the length of closure is greater than 1 mile, install SPEED LIMIT 55 signs in the closed lane at 1-mile intervals.
 - Remove or cover all existing signs that conflict with 55 mph speed limit while 55 mph speed limit is in effect.
 - For traffic control zones lasting more than 4 hours, place a Speed Feedback Sign at the end of the merge taper.
- ⑤ For lanes closed to traffic, place two drums every 1000 feet. For full depth excavations in a closed lane, place two drums in front of each location. Additional drums need not be placed for full depth excavations spaced closer than 150 feet.
- ⑥ Traffic control devices should be offset from centerline by 2' to provide 14' through lane. This will assist with the over sized over weight vehicles
- ⑦ See PDMS Locations, Sheet J.4.
- ⑧ Extend safety fence for road closures 20' beyond outside edge of shoulders.

SPEED LIMIT (mph)*	A	D	E	M	T	A1
65-70	1000'	65'	800'	910'	100'	2000'

* Speed Limit refers to regulatory speed limit before road work.

LEGEND

-  Direction Of Traffic
-  Traffic Sign
-  Drum
-  Temporary Lane Separator System
-  Speed Feedback Sign
-  Arrow Board
-  Work Area
-  Safety Closure, See Tab 108-13A

Contract Item:
Traffic Control





Sign #1
Qty: 1



Sign #2
Qty: 1



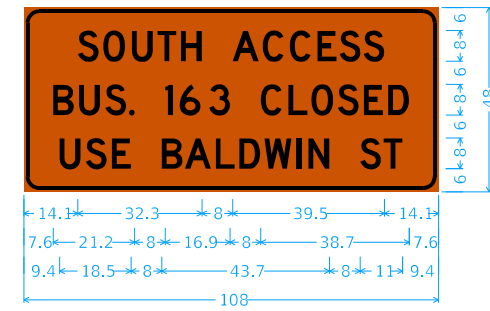
Sign #3
Qty: 1



Sign #4
Qty: 1

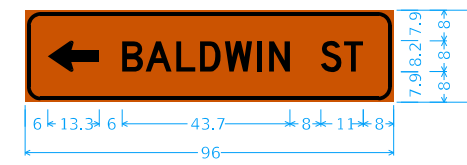


Sign "A" Qty: 3



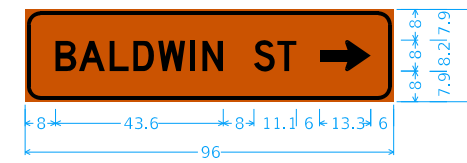
Sign A;
4.0" Radius, 1.0" Border, 0.5" Indent, Black on Orange;
"SOUTH ACCESS", D 2K;
"BUS. 163 CLOSED", D 2K;
"USE BALDWIN ST", D 2K;

Sign "B" Qty: 1

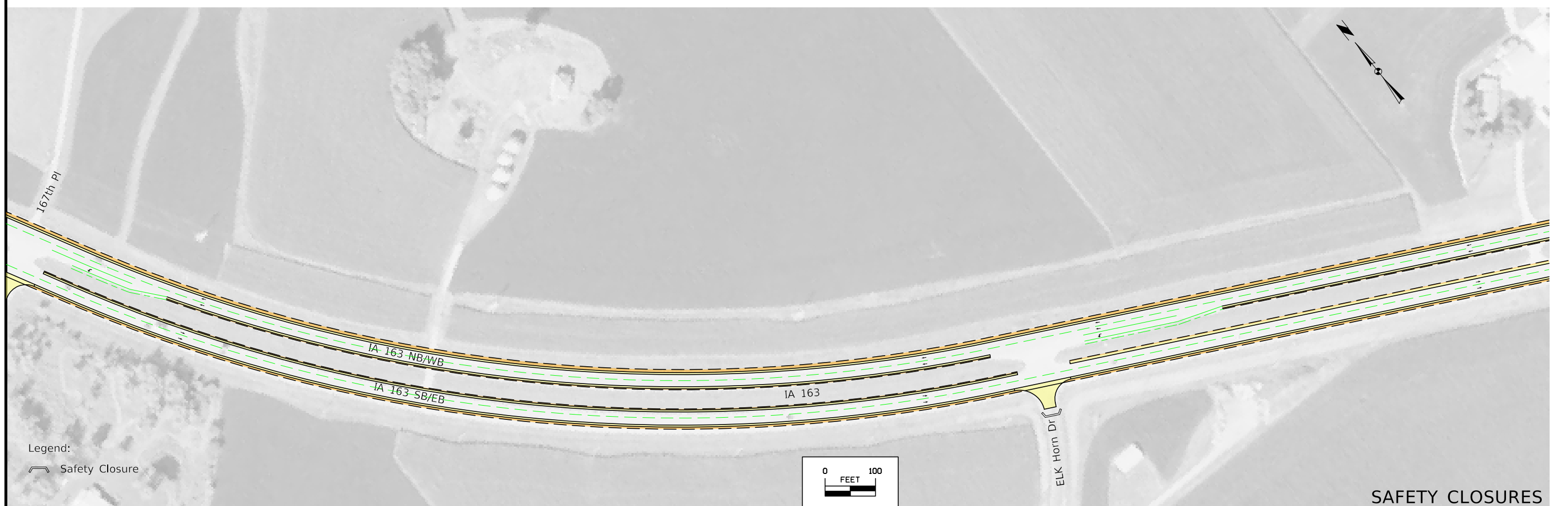


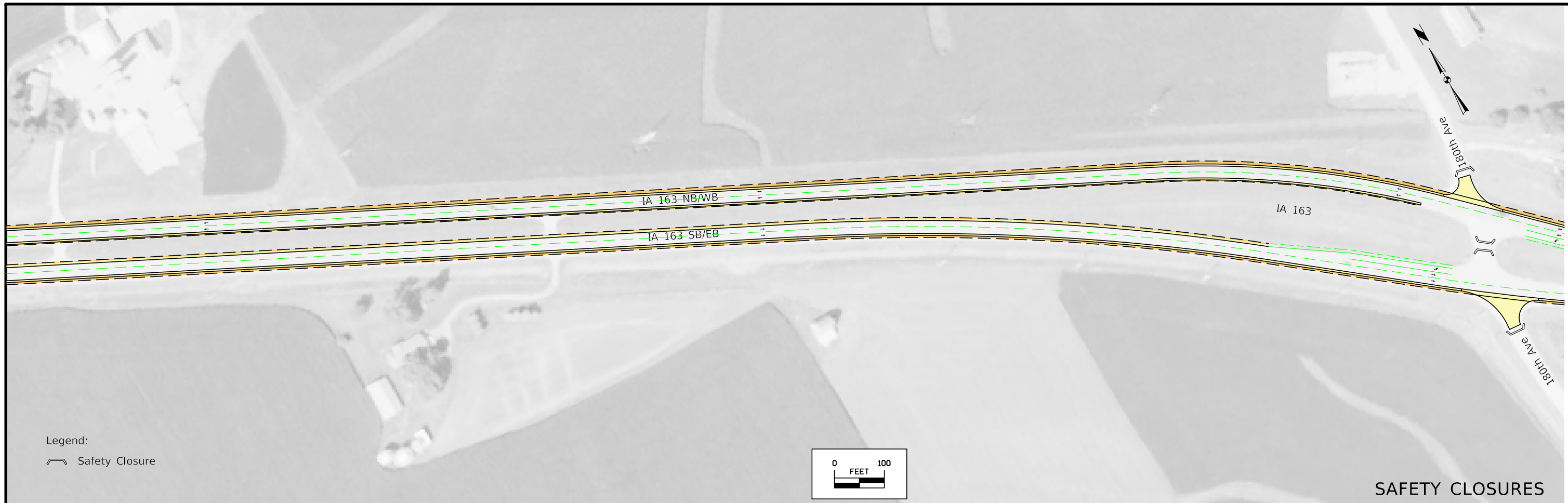
Sign B;
4.0" Radius, 1.0" Border, 0.5" Indent, Black on Orange;
Standard Arrow Custom 13.4" X 8.1" 180°;
"BALDWIN ST", D 2K;

Sign "C" Qty: 1

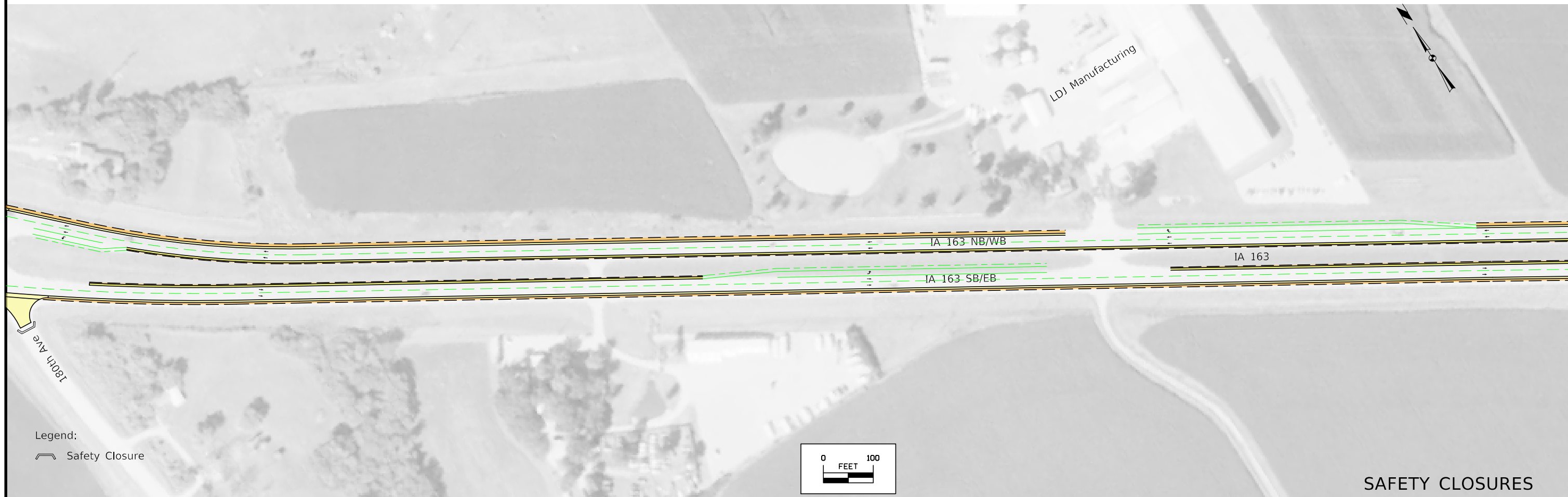


Sign C;
4.0" Radius, 1.0" Border, 0.5" Indent, Black on Orange;
"BALDWIN ST", D 2K;
Standard Arrow Custom 13.4" X 8.1" 0°;

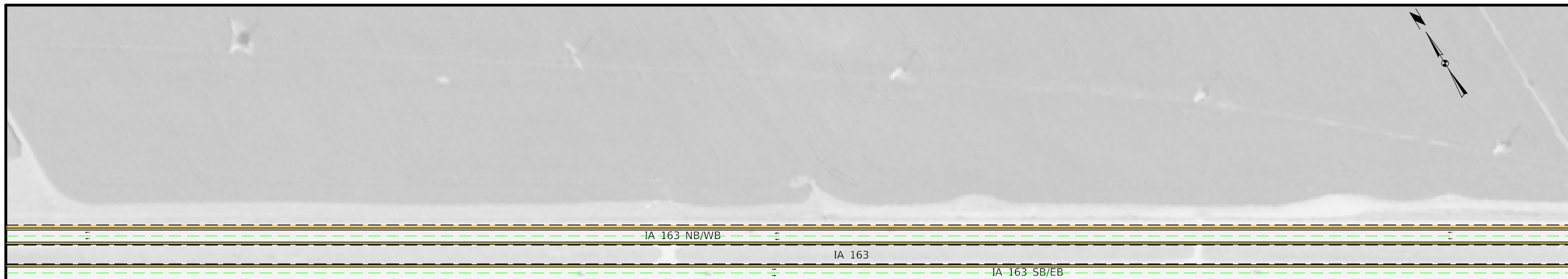


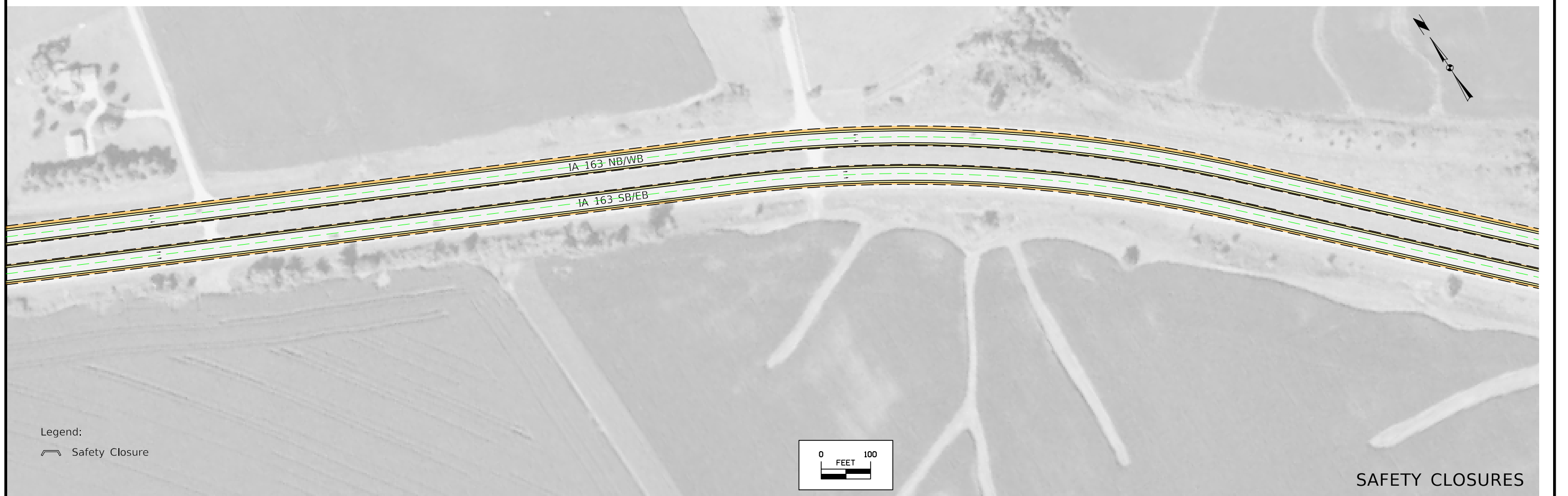


SAFETY CLOSURES

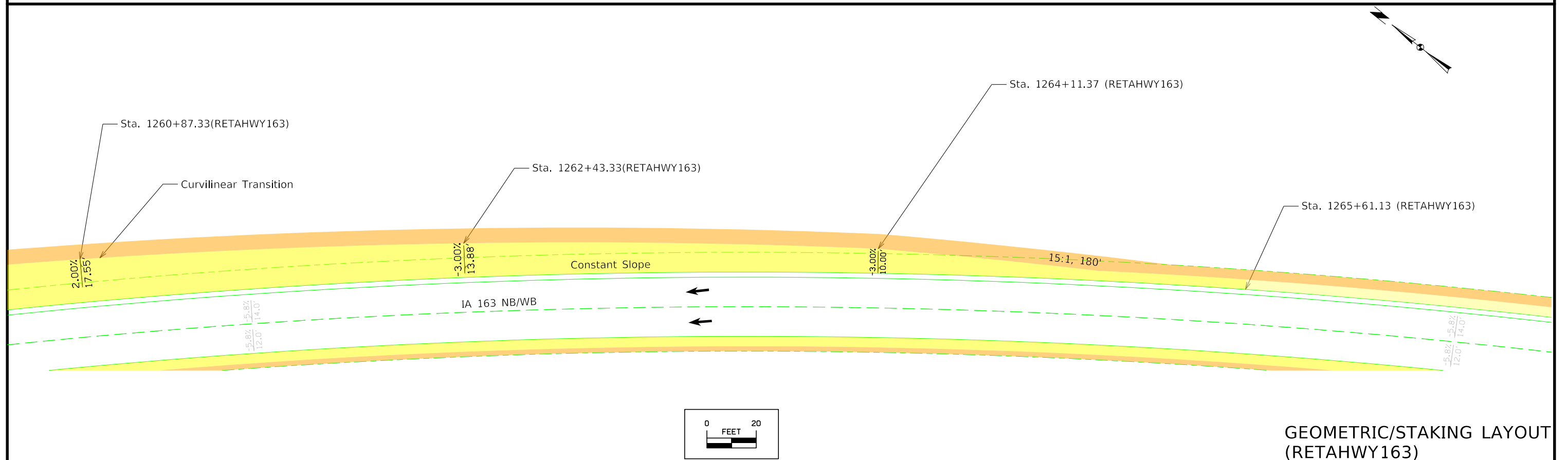
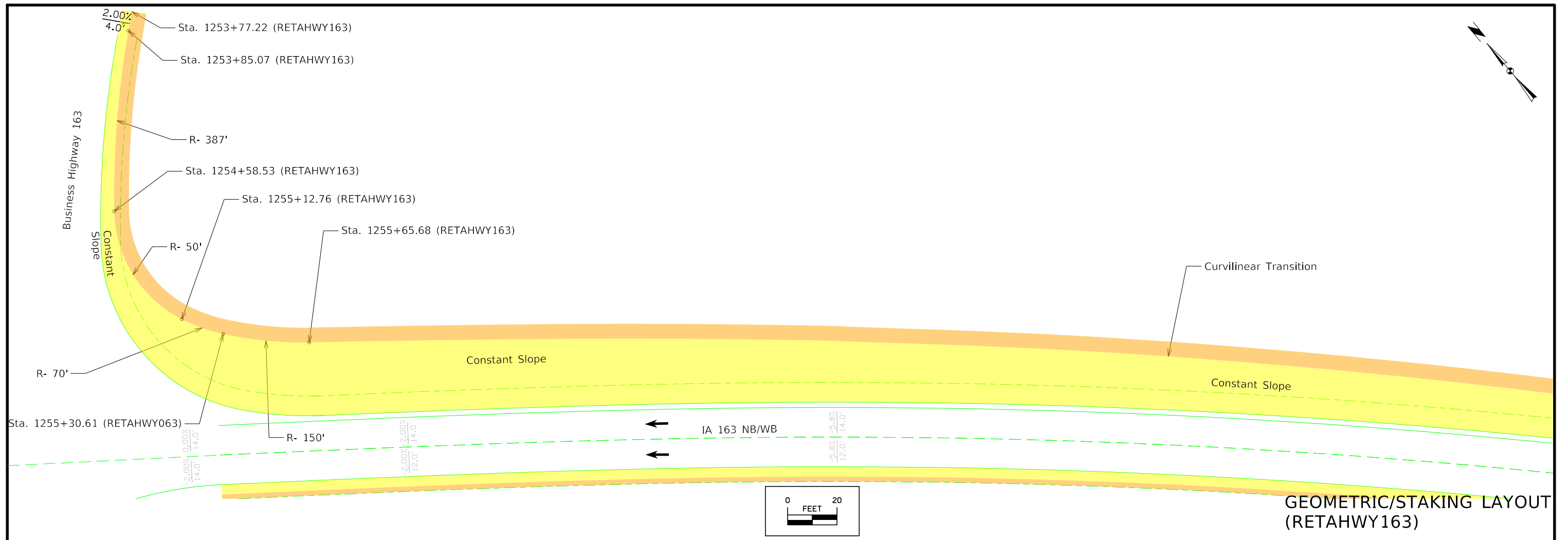


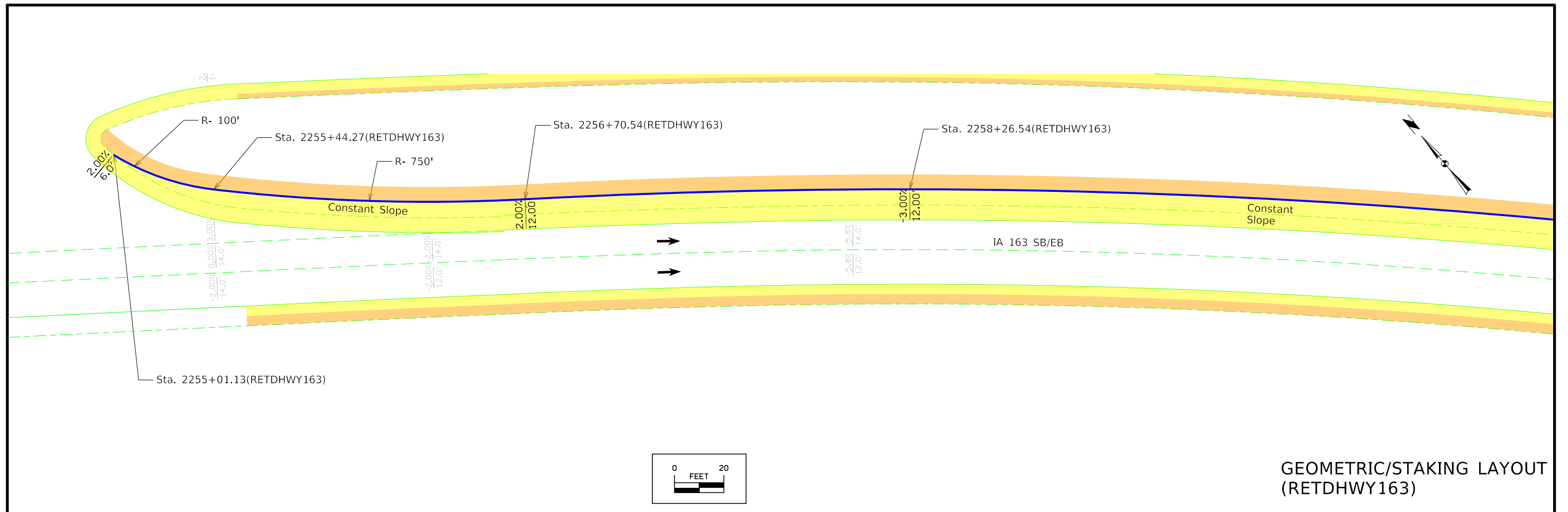
SAFETY CLOSURES



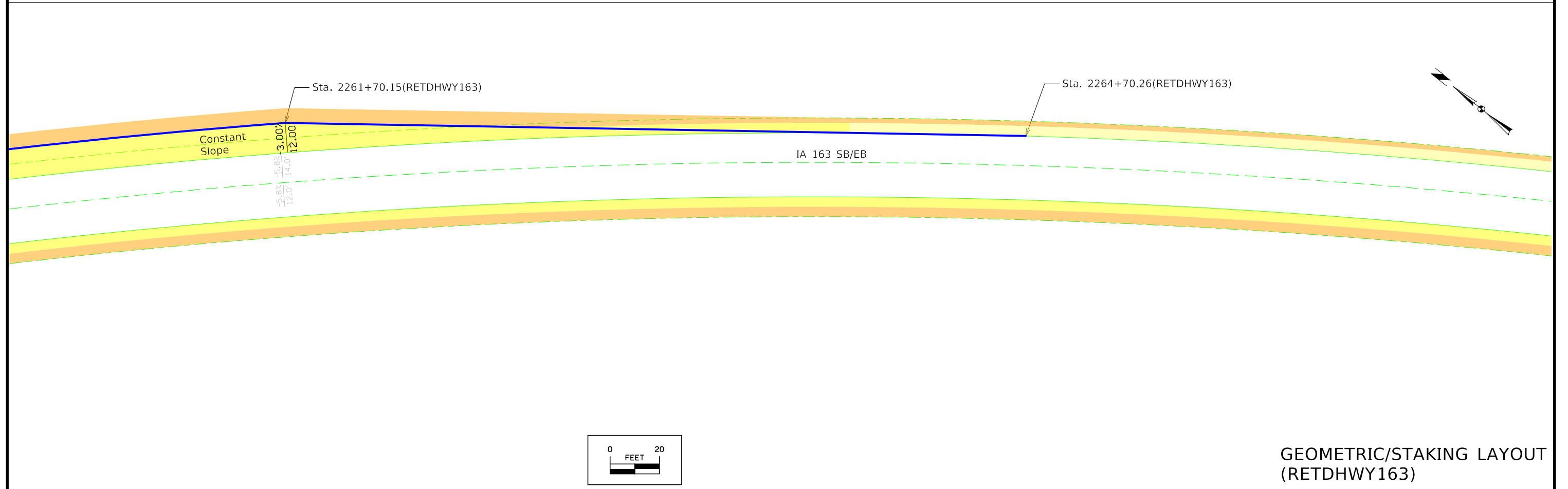








GEOMETRIC/STAKING LAYOUT
(RETDHWY163)



GEOMETRIC/STAKING LAYOUT
(RETDHWY163)

LANDSCAPE DESIGN



I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed professional landscape architect under the laws of the state of Iowa.

Rachel Harris 08-30-2023
Signature Date

Rachel A. Harris
Printed or Typed Name

My license renewal date is June 30, 2024

Pages or sheets covered by this seal: RC.1 - 7; RR.1 - 12

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadside Items : Roadside Items

Item no.	Item Code	Item	Unit	Quantities		Estimate Reference Notes
				Estimated		
				Roadside Items		
1	2601-2634100	MULCHING	ACRE	24		<p>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.</p> <p>Item is included for areas requiring reshaping and seedbed preparation except where slope protection has been applied. Use mulch that is Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop Improvement Associations.</p> <p>Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre.</p>
2	2601-2636015	NATIVE GRASS SEEDING	ACRE	2		<p>Seed all areas outside eight feet adjacent to outside shoulder along mainline, side roads, and infield areas at interchanges with "Native Grass Seeding".</p> <p>Supply all seed for "Native Grass Seeding".</p> <p>Apply all forb seed through the native grass drill wildflower or small seed box.</p> <p>Do not mix and apply Forb seed with the native grass seed.</p> <p>Apply cover crop through the cool season or through cover crop seed box.</p> <p>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.</p> <p>Hand broadcast remaining seed on the project.</p> <p>Seeding and seed bed preparation shall be as described in the Standard Specifications Section 2601.03,C,5.</p> <p>The Engineer will review the limits with the Contractor prior to seeding.</p>
3	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	17.2		<p>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.</p>

Item no.	Item Code	Item	Unit	Quantities		Estimate Reference Notes
				Estimated		
				Roadside Items		
4	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	19.2		<p>Item is included for disturbed areas.</p> <p>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.</p> <p>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.</p> <p>It is not necessary to place stabilizing crop in locations that have been covered by Slope Protection or Special Ditch Control.</p>
5	2602-0000020	SILT FENCE	LF	1,355		<p>Refer to Tab. 100-17 for locations.</p> <p>Refer to Standard Road Plan EC-201.</p> <p>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.</p>
6	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	225		<p>Refer to Tab 100-18 for locations.</p> <p>Refer to Standard Road Plan EC-201.</p> <p>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.</p> <p>Bid item includes 50% additional quantity for field adjustments and replacements.</p>
7	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	1,580		<p>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.</p> <p>Remove silt fence and posts after mulching or vegetation is established and approved by the engineer.</p>
8	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	158		<p>This item is included for clean-out and repair of the silt fence and silt fence for ditch checks during the project.</p>
9	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE, EC-303	LF	1,000		<p>Refer to Standard Road Plan EC-303.</p>

Item no.	Item Code	Item	Unit	Quantities		Estimate Reference Notes
				Estimated	Roadside Items	
10	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	95		<p>Refer to Tab. 100-19 for locations.</p> <p>Refer to Standard Road Plan EC-204.</p> <p>The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 12 in. dia." to address erosion to be encountered during construction.</p> <p>Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.</p>
11	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	95		<p>Refer to Standard Road Plan EC-204.</p> <p>Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement.</p> <p>Item may be used in addition to, or as a direct replacement for "Perimeter and Slope Sediment Control Device, 12 in. dia." upon Engineer approval.</p>
12	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	190		
13	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1		
14	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1		

111-25
10-18-11

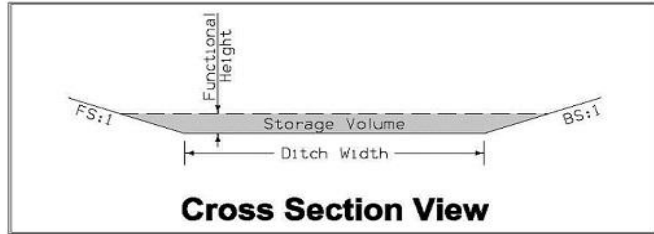
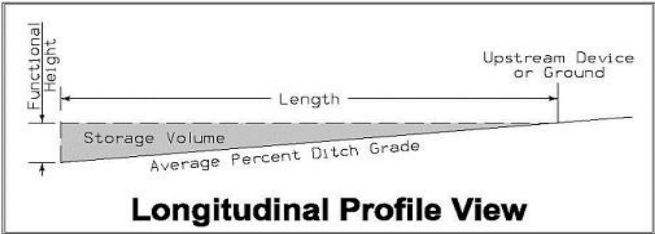
INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
RC Sheets	SIGNATURE SHEET	RC.1
	ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES	RC.2 -RC.4
100-17	TABULATION OF SILT FENCES	RC.5
100-18	SILT FENCES FOR DITCH CHECKS	RC.5
100-19	PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES	RC.5
100-34	STORMWATER DRAINAGE BASIN AND STORAGE	RC.5
105-4	STANDARD ROAD PLANS	RC.5
110-12	POLLUTION PREVENTION PLAN	RC.6 - RC.7
111-25	INDEX OF TABULATIONS	RC.5
281-3	STORM WATER BEST MANAGEMENT PRACTICES	RC.5

100-18
10-16-18

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201

Cross Section View **Longitudinal Profile View**

* 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: $[0.5 * Spacing * (0.5 * H^2 * FS + DW * H + 0.5 * H^2 * BS)]$

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation LF	Maintenance LF	Removal LF	Foreslope FS:1	Backslope BS:1	Ditch Width FT	Avg. % Slope Ditch Grade	Volume* CF	
1	1	255+50.00	Lt	25.0	2.5	25.0	4.0	3.5	10.0	1.0%	1565.0	
1	1	257+05.00	Lt	25.0	2.5	25.0	4.0	3.5	10.0	2.0%	757.3	
1	1	257+80.00	Lt	25.0	2.5	25.0	4.0	3.5	10.0	2.0%	757.3	
1	1	258+55.00	Lt	25.0	2.5	25.0	4.0	3.5	10.0	1.0%	1565.0	
1	1	260+10.00	Lt	25.0	2.5	25.0	4.0	3.5	10.0	1.0%	1565.0	
1	1	261+65.00	Lt	25.0	2.5	25.0	4.0	3.5	10.0	1.0%	1565.0	
SFDC Tab Totals:				150.0	15.0	150.0						
SFDC Bid Totals:				225.0			150% of Tab Total					
SFDC Maintenance Totals:					22.5		10% of Bid Total					
SFDC Removal Totals:						225.0	100% of Bid Total					

105-4
10-18-11

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
EC-201	04-20-21	Silt Fence
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-303	10-19-21	Stabilized Construction Entrance
EC-502	04-21-15	Seeding in Rural Areas

100-17
04-20-10

TABULATION OF SILT FENCES

Refer to EC-201

Begin Station	End Station	Side	Location		Remarks
			Length LF	Length	
255+53.00	257+53.00	Lt	200.0		
257+43.00	259+43.00	Lt	200.0		
259+27.00	261+27.00	Lt	200.0		
261+09.00	263+09.00	Lt	200.0		
262+95.00	264+95.00	Lt	200.0		
264+79.00	265+58.00	Lt	84.0		
Silt Fence Tab Totals:			1084.0		
Silt Fence Bid Totals:			1355.0	125% of Tab Total	
Silt Fence Maintenance Totals:			135.5	10% of Bid Total	
Silt Fence Removal Totals:			1355.0	100% of Bid Total	

100-19
10-19-21

PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES

Possible Standards: EC-204

Begin Station	End Station	Side	Perimeter and Slope			Ditch Check		Remarks
			Length of Installation			Length of Installation		
			9 inch Dia LF	12 inch Dia LF	20 inch Dia LF	12 inch Dia LF	20 inch Dia LF	
255+32.00		Lt		38				Inlet Protection
257+01.00		Lt		38				Inlet Protection
PSSCD Tab Totals:				76				
12 inch PSSCD Ditch Checks Bid Totals:				95				125% of Tab Total
PSSCD Removal Totals:				95				100% of Bid Total

281-3
10-17-17

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: Silt Fences, Silt Fence For Ditch Checks, Perimeter and Slope Sediment Control Devices and Seeding.

100-34
10-17-17

STORMWATER DRAINAGE BASIN AND STORAGE

Refer to EC Standards and 570s Details.

Basin No.	Drainage Basin Location				Summary of Stormwater Storage				Remarks			
	Station to Station		Side	Discharge Point	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? Yes/No
	Station	Side										
1	254+69.00	265+58.00	Lt	254+69.00	NW	1.9	1.9	0.0	Silt Fence for Ditch Check (EC-201)	7774.6	6840.0	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 RESPONSIBILITIES

- 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 performing 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.
- 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 HMA Paved Shoulders in Marion County.
- B. This PPP covers approximately 40.4 acres with an estimated 17.6 acres being disturbed. The portion of the PPP covered by this contract has 17.6 acres disturbed.
- C. The PPP is located in an area of Otley-Ladoga and Sharpsburg-Shelby-Adair soil associations. The estimated weighted average runoff coefficient number for this PPP after completion will be 0.38.
- 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

POLLUTION PREVENTION PLAN

documented by fieldbook entries and amended PPP site map.
F. Runoff from this work will flow into Lake Red Rock.

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 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

POLLUTION PREVENTION PLAN

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.

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

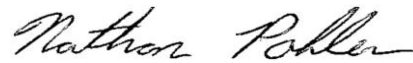
Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

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.



Signature

Nathan J. Pohlen

Print Name

LINE STYLE LEGEND OF LANDSCAPE SHEETS

LINETYPE	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

LINETYPE	Design Element
	Silt Fence
	Perimeter and Slope Sediment Control Device (9")
	Perimeter and Slope Sediment Control Device (12")
	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

LINWORK	Design Color No.	Design Element
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.	Design Element	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		Turf Reinforcement Mat Type 1
	Seeding and Fertilizing (Rural)		Turf Reinforcement Mat Type 2
	Seeding and Fertilizing (Urban)		Turf Reinforcement Mat Type 3
	Native Grass Seeding		Turf Reinforcement Mat Type 4
	Salt Tolerant Seeding		Slope Protection, Wood Excelsior Mat
	Wetland Grass Seeding		Transition Mat
	Wildflower Seeding		Rock Features, Permanent
	Sodding		Rock Features, Temporary

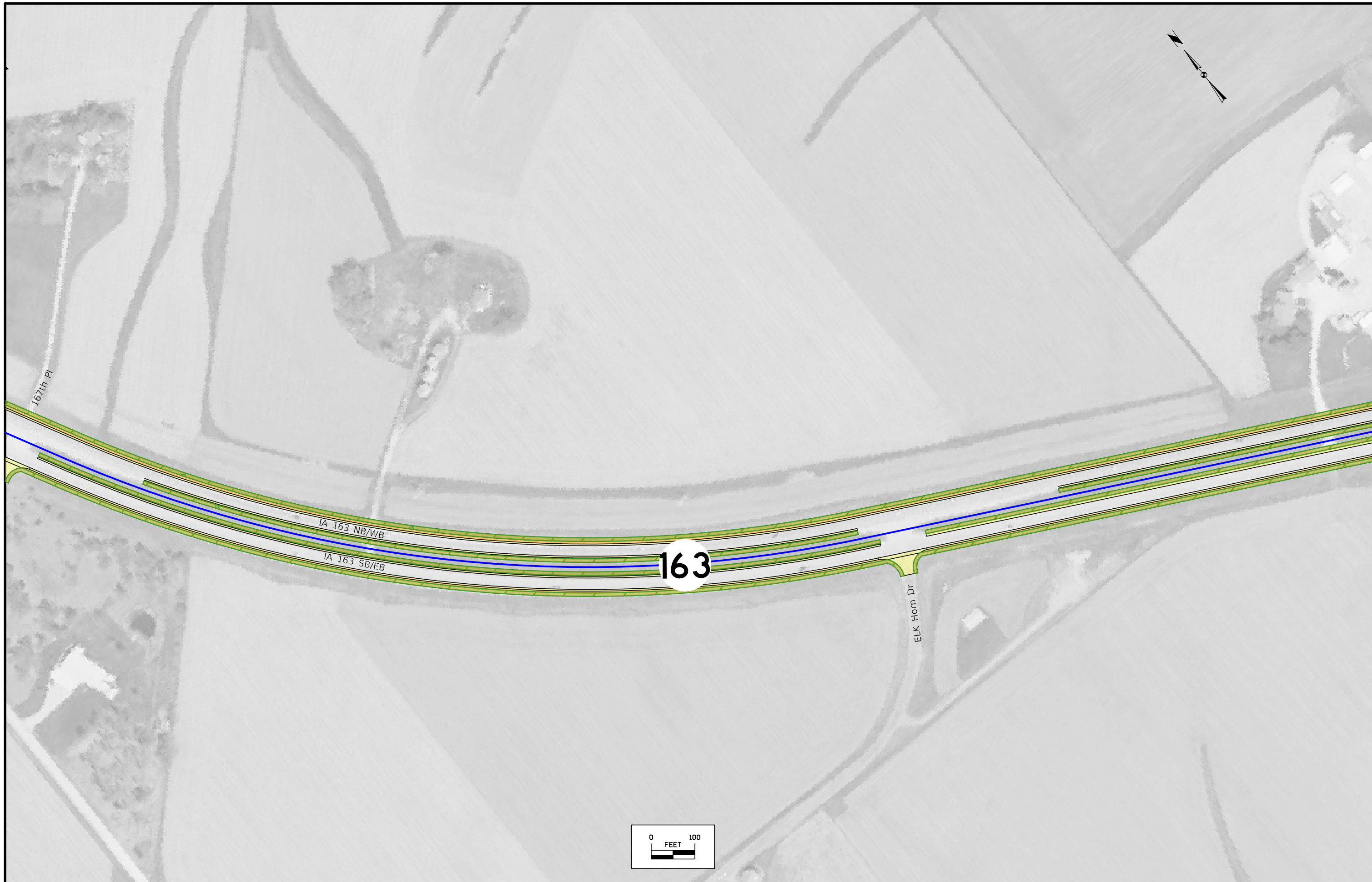
EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)



FILE NO.	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Marion COUNTY	PROJECT NUMBER HSIPX-163-3(060)--3L-63	SHEET NUMBER RR.2
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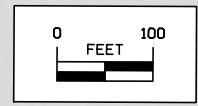
IA 163 NB/WB

IA 163 SB/EB

163

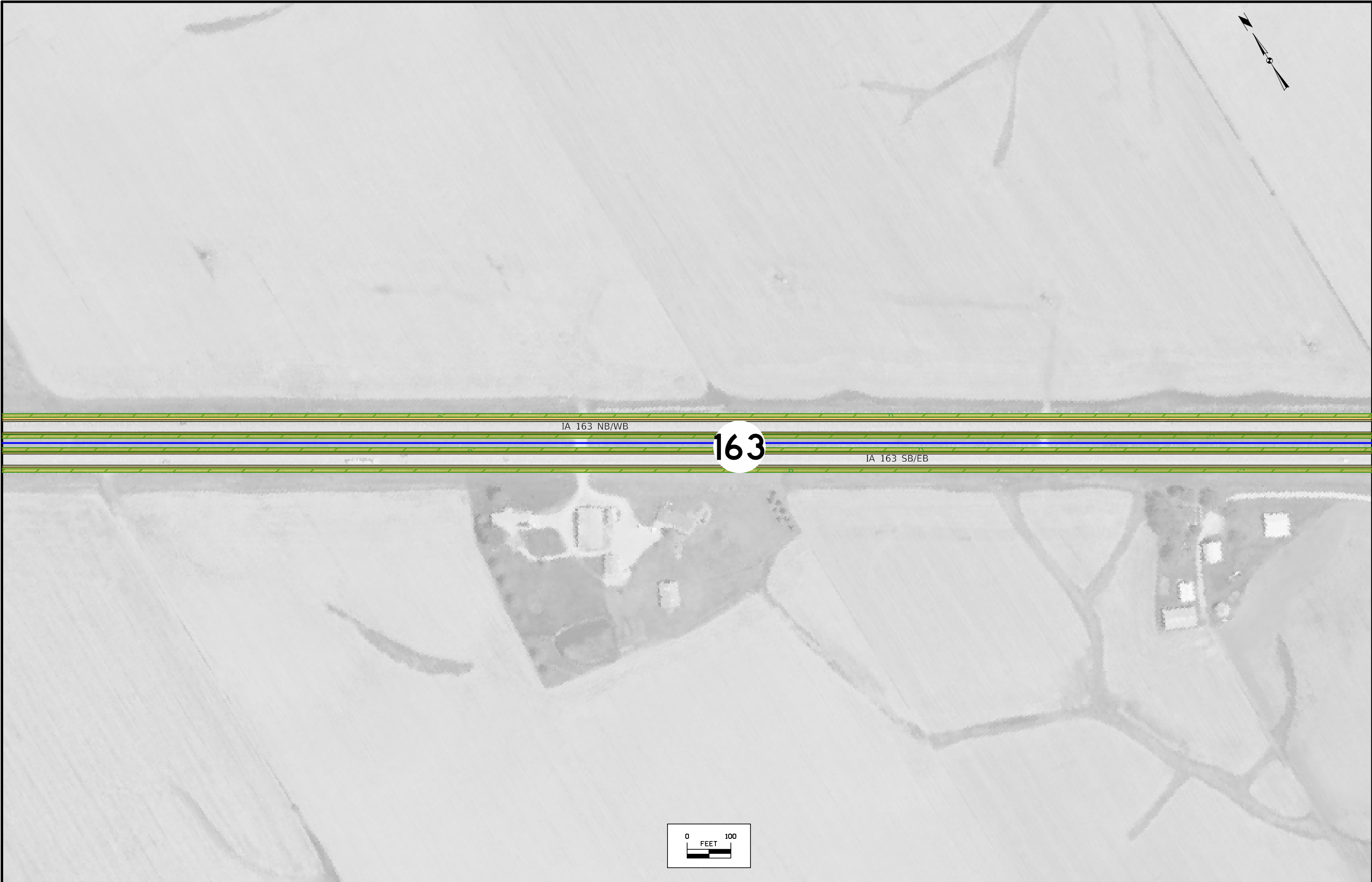
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180th Ave





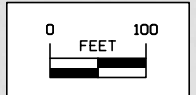
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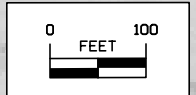


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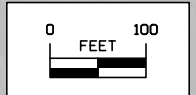
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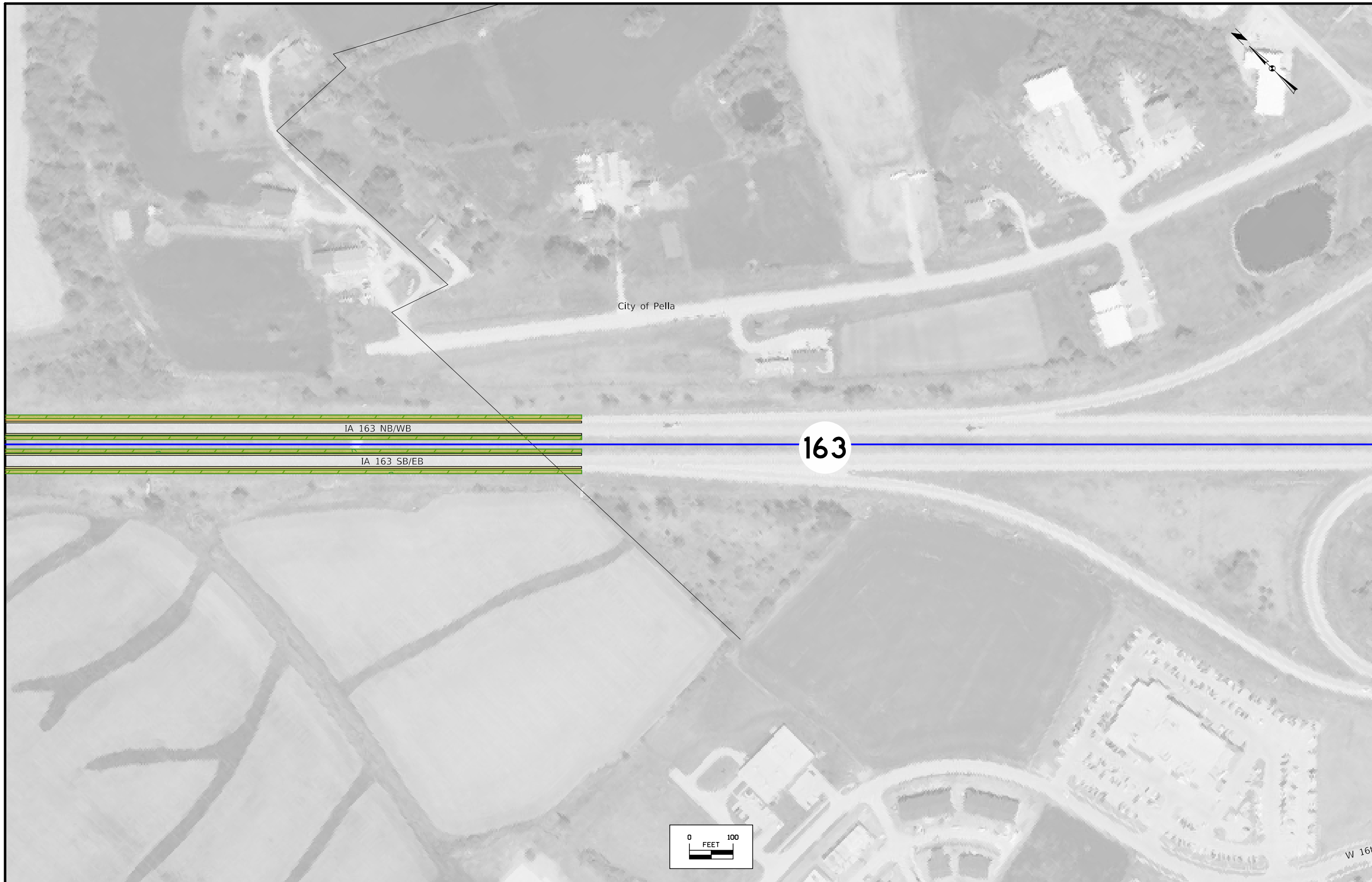


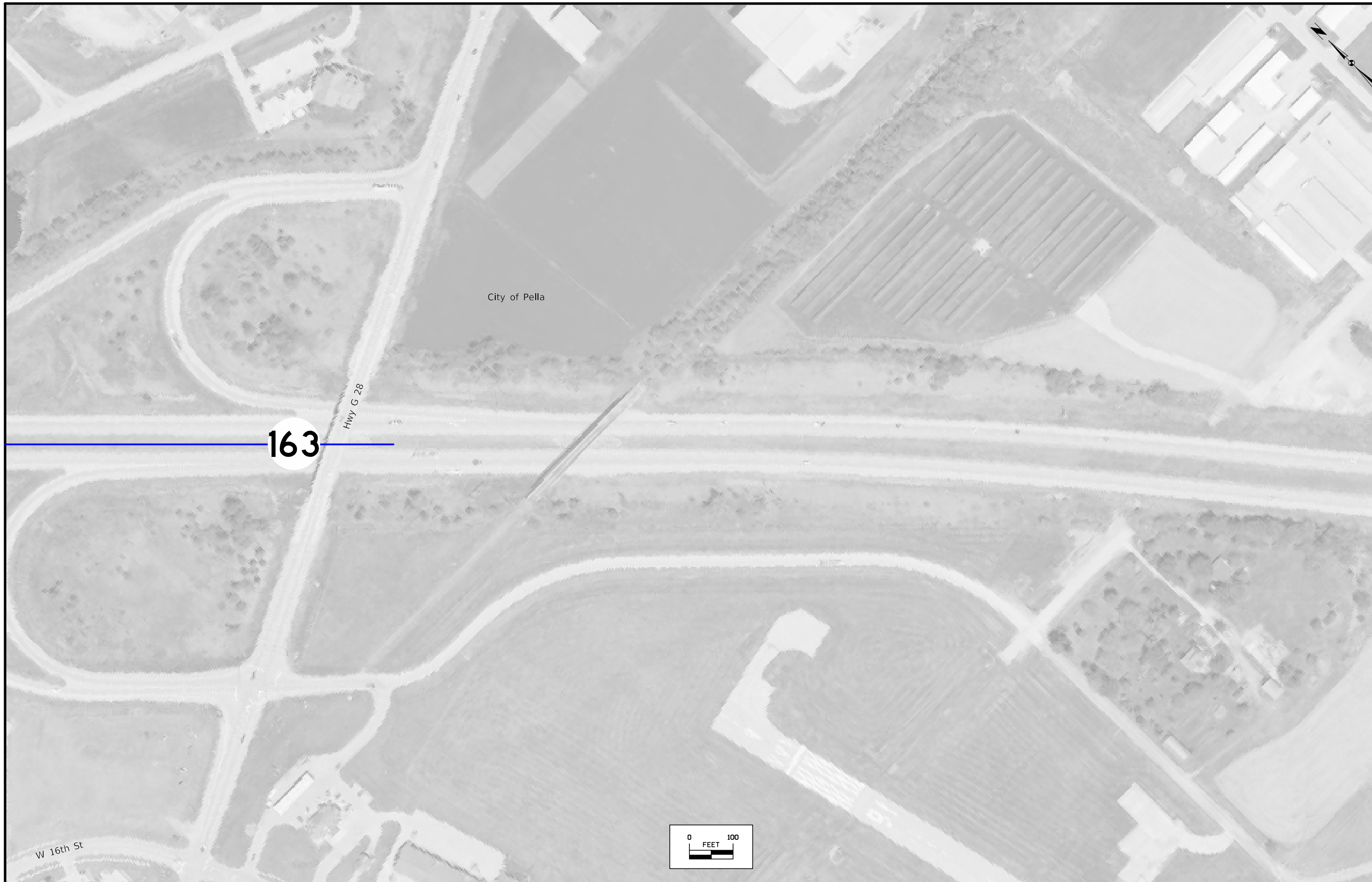


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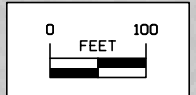




City of Pella

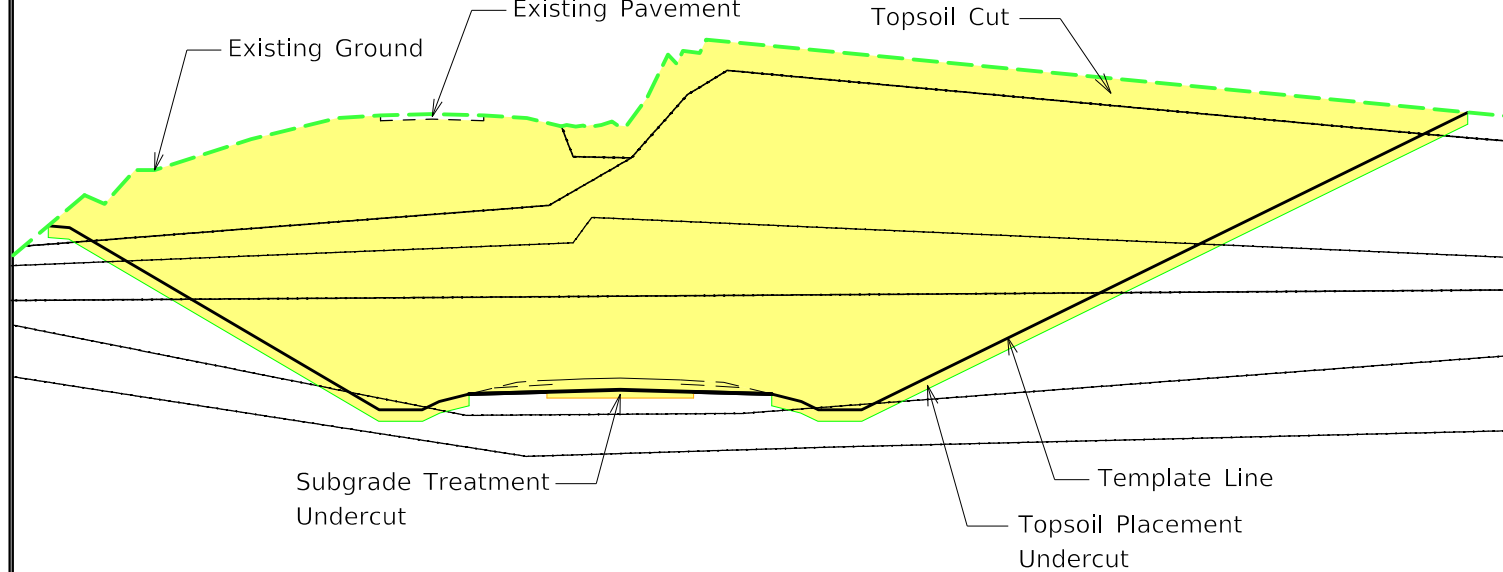
163

Hwy G 28



W 16th St

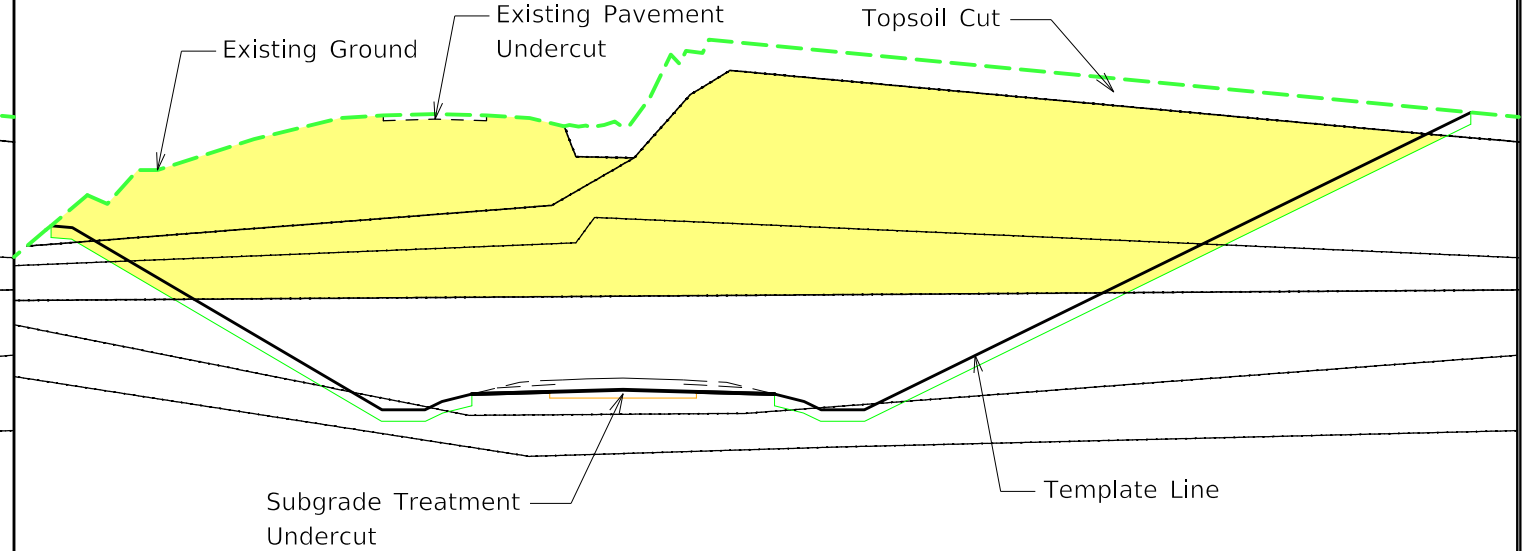
CUT SIDE Total Cut Unadjusted RURAL



Notes:

1. "Total Cut Unadjusted" Column includes all cut values in the Station Range based on Typical, Topsoil and Subgrade Treatment needs.
2. "Total Cut Unadjusted" does not include and Existing Pavement values inside or outside the cut template as shown on cross sections.
3. Tabulated Plowing and Shaping operations are included in the "Total Cut Unadjusted" values.

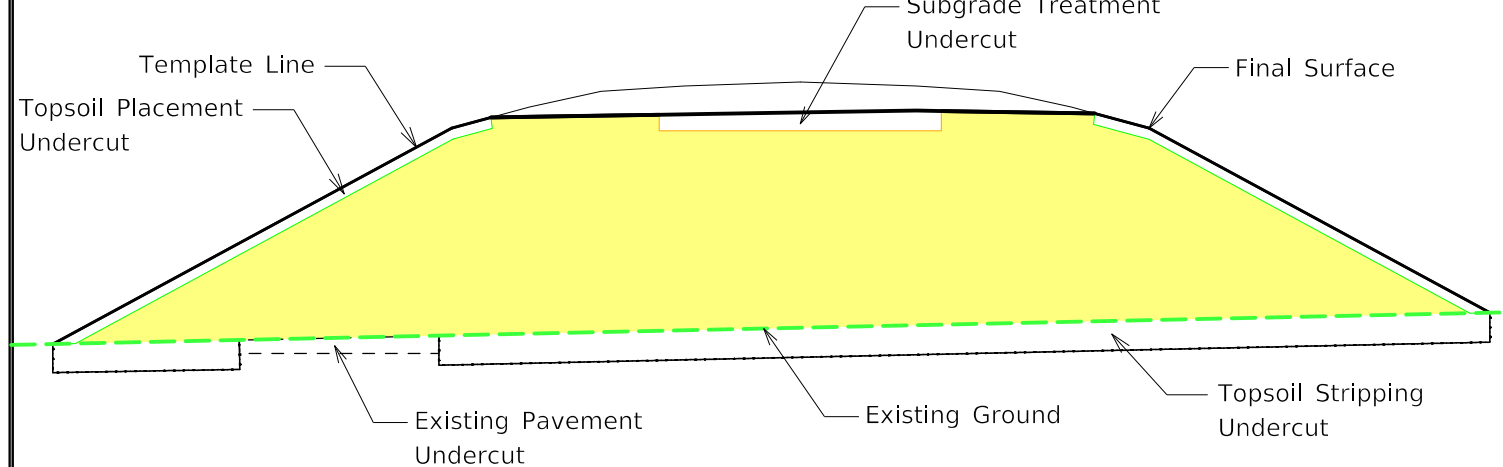
CUT SIDE Total Cut Adjusted



Notes:

1. "Total Cut Adjusted" Column includes all cut values usable as Class 10 material.
2. "Total Cut Adjusted" does not include and Existing Pavement , Existing Topsoil, or material to be wasted.

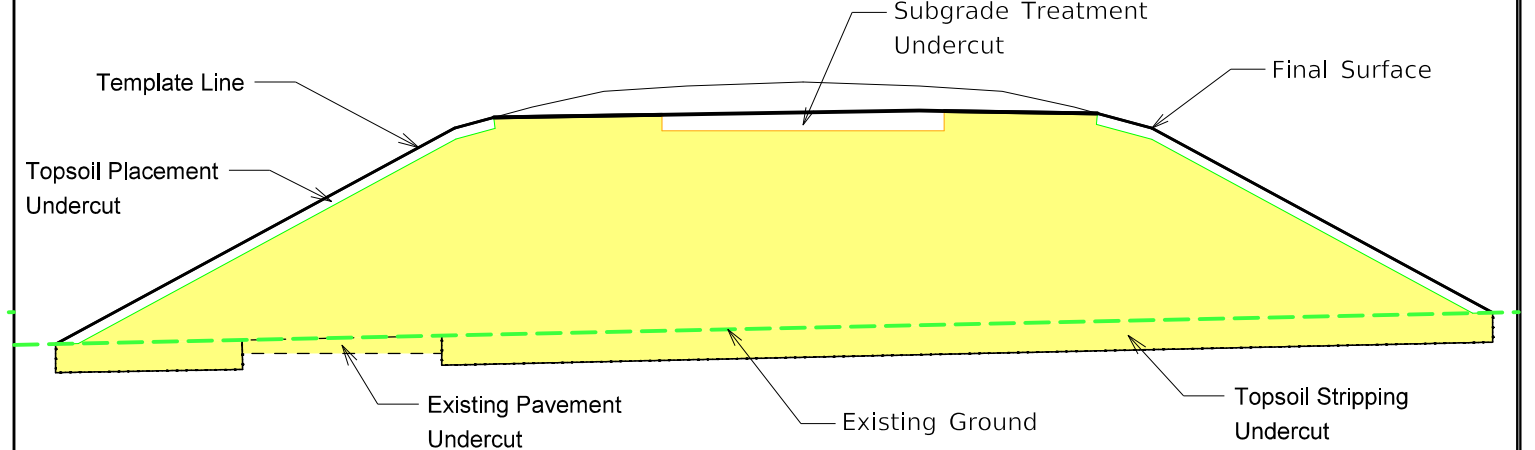
FILL SIDE Total Fill Unadjusted RURAL



Notes:

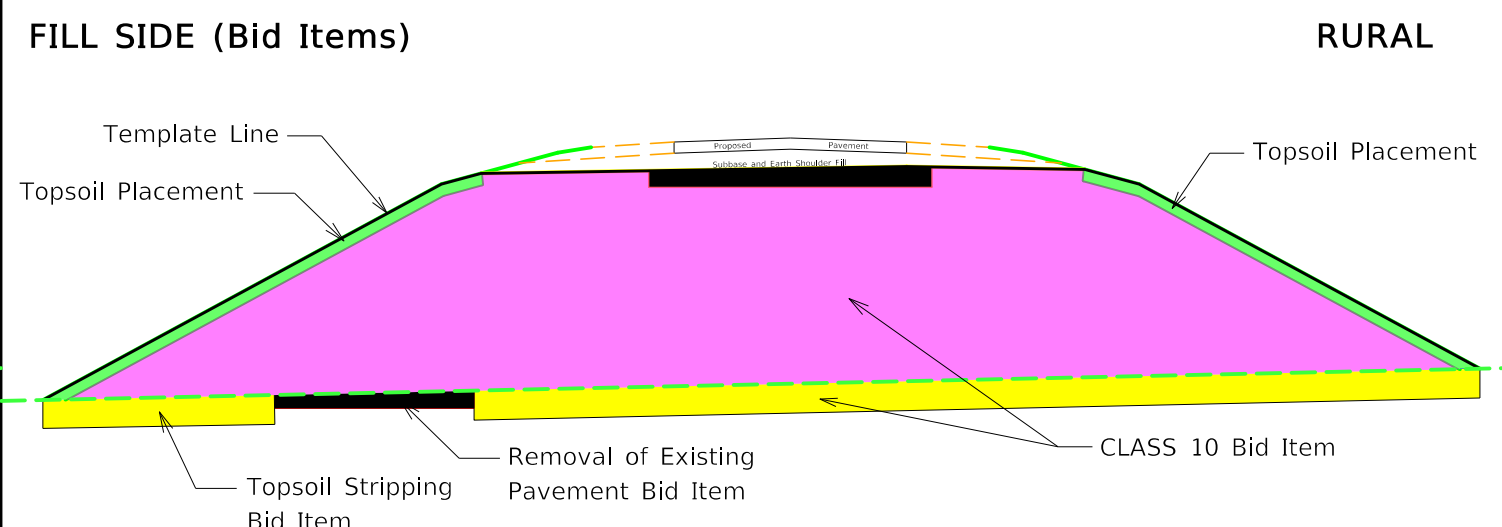
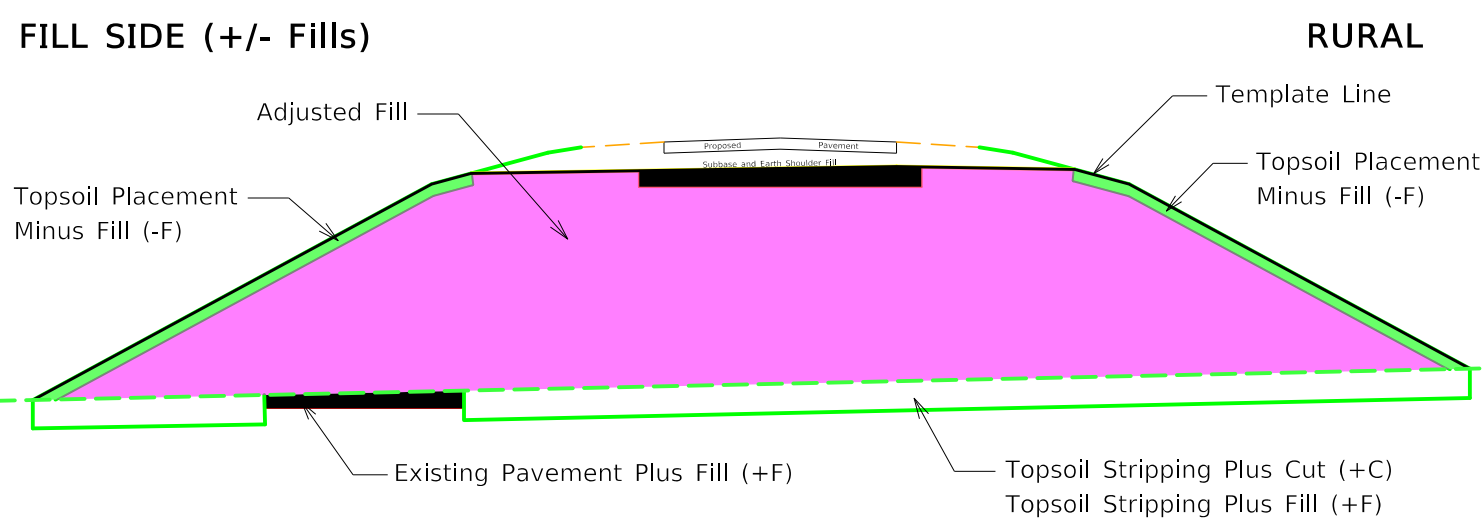
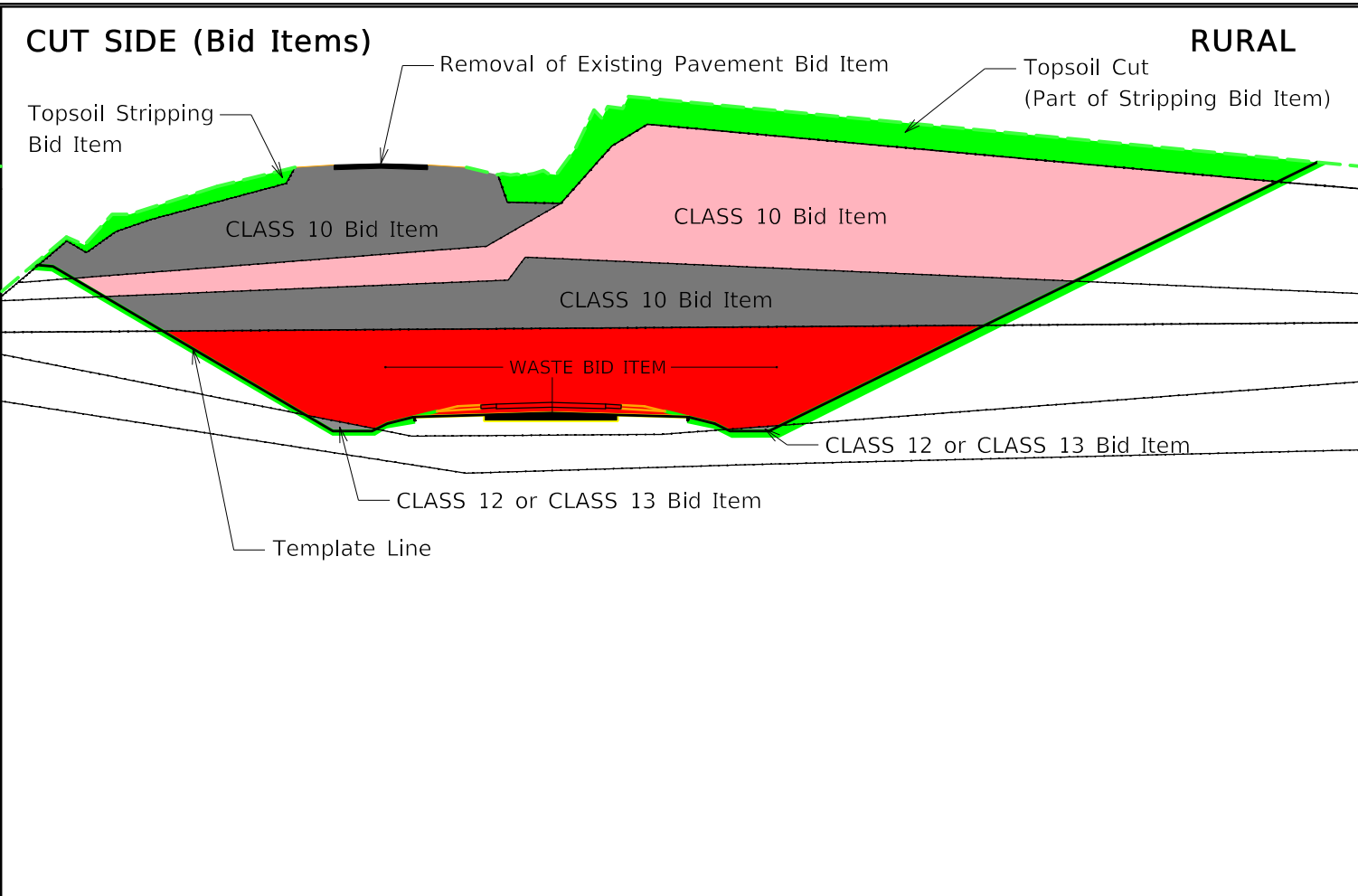
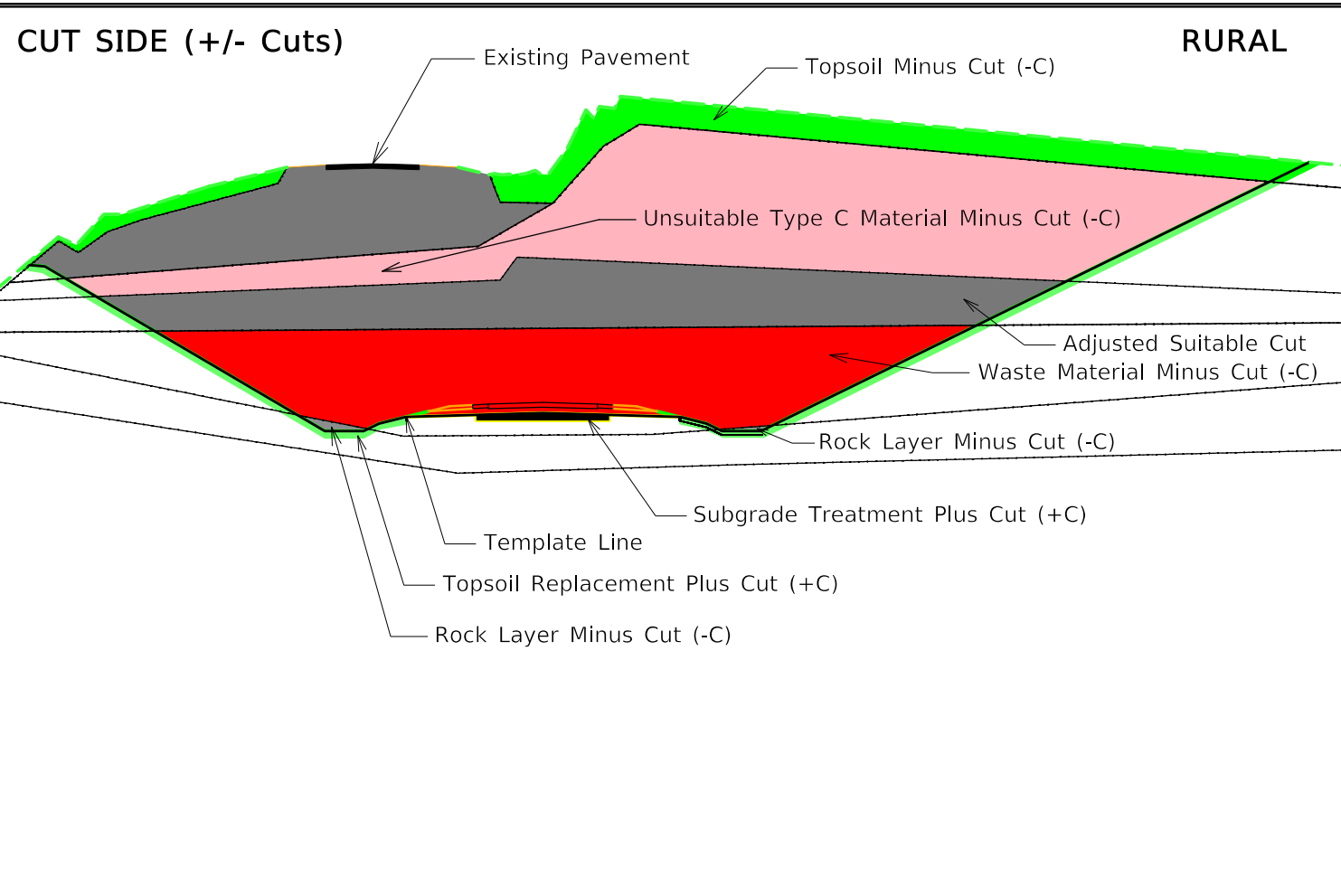
1. "Total Fill Unadjusted" Column includes all Class 10, 12, and 13 fill. This excludes the topsoil, subgrade treatment, subbase, new pavement, and shoulder fill needs in that station range.
2. "Total Fill Unadjusted" Column does not include adjustments for additional fill from cuts such as existing pavement removed, plowing and shaping operations, entrances, dikes, or topsoil stripping.

FILL SIDE Total Fill Adjusted



Notes:

1. "Total Fill Adjusted" Column includes all Class 10, 12, and 13 fill and adjustments for additional fill from cuts such as existing pavement, plowing and shaping operations, entrances, dikes, and topsoil stripping.
2. The available area to place unsuitable materials in the T Sheet tabulation does not include the undercut values from the topsoil stripping, existing pavement, or plowing and shaping



Notes:

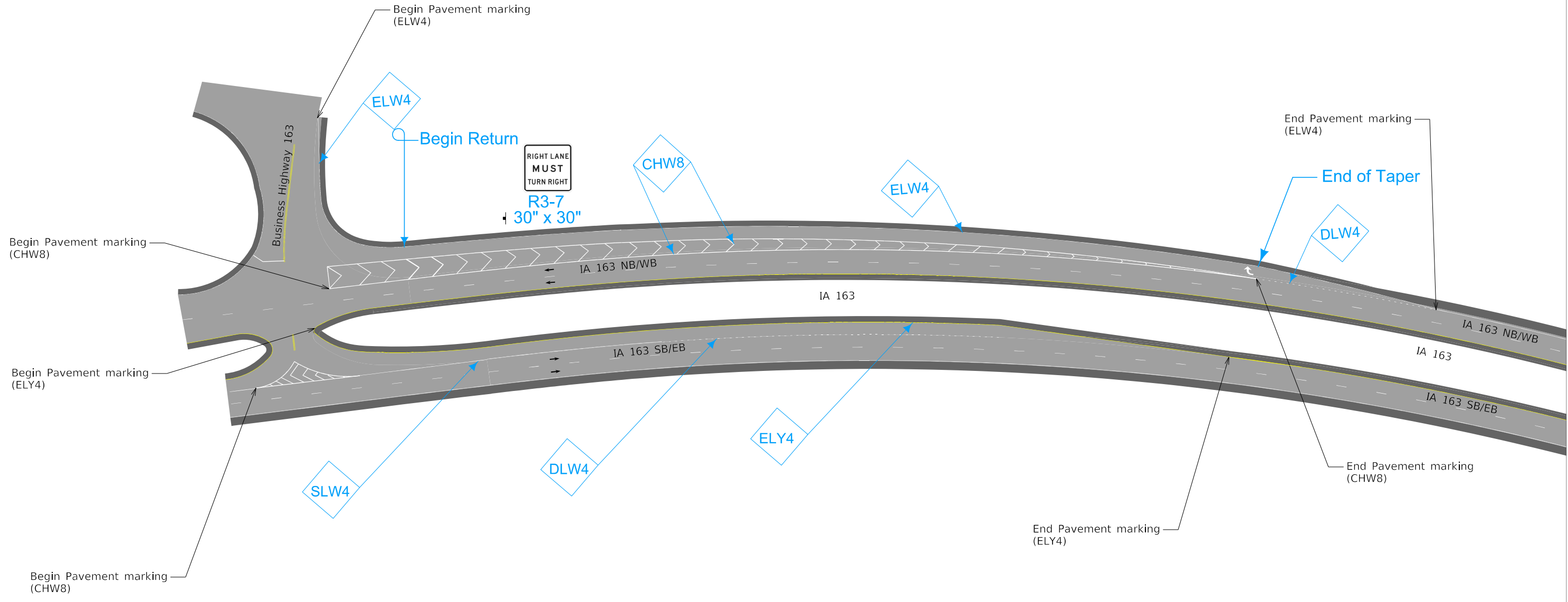
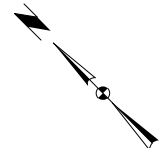
1. "Add Quantity +C" columns are additional cut encountered that is not Typical, Topsoil, or Subgrade Treatment Based. (Entrance, Dike, Etc.)
2. "-C" columns are either soil types or Class 10, 12, or 13 designated material that is encountered in the cut station range that is paid for by other bid items.
3. The "(SoilType) Cut" columns are soil types encountered in the cut that are paid by either Class 10, 12, or 13.
4. The "Adjusted Clas (10,12 or 13)" columns are the sum of all various soil types encountered in that station range, that are paid by Class 10, 12, or 13 bid items.
5. Refer to Standard Road Plan EW-102 for placement of unsuitable soil types.

Notes:

1. Refer to Standard Road Plan EW-102 for placement of unsuitable soil types.

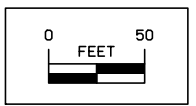
TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

	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								
RETAKHWY163																							
1253+77.22	32	8	24	8	0	3	3	4	5	0	0	24	6	9	15								
1254+00.00	31	10	21	10	0	2	2	3	7	0	0	21	5	7	14								
1254+25.00	22	8	15	8	0	1	1	1	6	0	0	15	1	2	13								
1254+50.00	23	5	18	5	0	3	3	4	1	0	0	18	0	1	17								
1254+75.00	46	5	41	5	14	18	33	42	-37	0	0	41	0	1	40								
1255+00.00	71	6	65	6	56	38	94	122	-116	0	0	65	0	0	65								
1255+25.00	79	6	72	6	94	44	138	179	-173	0	0	72	0	0	73								
1255+50.00	150	76	74	76	60	32	91	119	-43	0	0	74	0	0	74								
1255+75.00	153	79	74	79	55	30	85	111	-32	0	0	74	0	0	74								
1256+00.00	88	14	74	14	89	39	128	167	-153	0	0	74	0	0	74								
1256+25.00	90	16	74	16	79	37	116	151	-135	0	0	74	0	0	74								
1256+50.00	94	20	74	20	72	37	109	142	-122	0	0	74	0	0	74								
1256+75.00	96	22	74	22	59	35	94	123	-101	0	0	74	0	0	74								
1257+00.00	94	20	74	20	49	34	83	108	-88	0	0	74	0	0	74								
1257+25.00	89	17	72	17	48	33	81	105	-88	0	0	72	0	0	72								
1257+50.00	82	12	69	12	10	32	43	55	-43	0	0	69	0	0	69								
1257+75.00	78	10	68	10	6	33	39	50	-40	0	0	68	0	0	68								
1258+00.00	79	12	67	12	34	31	66	85	-74	0	0	67	0	0	67								
1258+25.00	80	13	67	13	29	30	59	77	-64	0	0	67	0	0	67								
1258+50.00	80	14	66	14	26	29	54	71	-57	0	0	66	0	0	66								
1258+75.00	81	16	65	16	21	27	48	62	-47	0	0	65	0	0	65								
1259+00.00	81	17	64	17	16	25	41	54	-37	0	0	64	0	0	64								
1259+25.00	81	18	63	18	12	23	36	47	-29	0	0	63	0	0	64								
1259+50.00	82	19	63	19	0	22	22	28	-9	0	0	63	0	0	63								
1259+75.00	80	18	61	18	0	20	20	27	-8	0	0	61	0	0	62								
1260+00.00	74	15	59	15	4	18	22	29	-13	0	0	59	0	0	59								
1260+25.00	70	14	56	14	2	14	16	21	-7	0	0	56	0	0	56								
1260+50.00	68	14	54	14	2	12	13	18	-4	0	0	54	0	0	54								
1260+75.00	65	13	52	13	0	12	12	15	-2	0	0	52	0	0	52								
1261+00.00	62	12	50	12	0	12	12	16	-4	0	0	50	0	0	50								
1261+25.00	53	12	41	12	1	9	10	13	-2	0	0	41	1	1	41								
1261+50.00	42	9	33	9	1	8	9	11	-2	0	0	33	1	2	31								
1261+75.00	39	7	32	7	1	11	12	16	-9	0	0	32	2	3	29								
1262+00.00	38	6	32	6	2	11	13	17	-10	0	0	32	2	4	28								
1262+25.00	36	5	31	5	1	11	13	16	-12	0	0	31	2	3	28								
1262+50.00	34	4	30	4	1	12	13	18	-13	0	0	30	2	4	27								
1262+75.00	33	4	29	4	1	11	13	16	-12	0	0	29	2	3	26								
1263+00.00	32	5	27	5	1	9	10	13	-8	0	0	27	2	2	25								
1263+25.00	32	6	26	6	0	7	7	9	-3	0	0	26	1	2	24								
1263+50.00	29	5	24	5	0	5	5	7	-2	0	0	24	1	1	23								
1263+75.00	28	5	23	5	0	4	4	6	0	0	0	23	1	2	21								
1264+00.00	29	8	21	8	0	3	3	4	5	0	0	21	1	2	19								
1264+25.00	29	8	22	8	0	3	3	5	3	0	0	22	2	3	19								
1264+50.00	34	8	26	8	0	4	4	6	2	0	0	26	5	7	19								
1264+75.00	34	8	26	8	0	4	4	6	2	0	0	26	7	9	17								
1265+00.00	33	8	25	8	0	3	3	4	4	0	0	25	7	10	15								
1265+25.00	31	8	23	8	0	1	1	2	7	0	0	23	7	10	13								
1265+50.00	15	4	11	4	0	0	0	1	4	0	0	11	4	5	6								
RETAKHWY163																							
Totals:	2,902	652	2,251	652	847	846	1,692	2,202	-1,552	0	0	2,251	65	92	2,162								
					EXCAVATION, CLASS 10, ROADWAY AND BORROW :				652 CY				TOPSOIL, STRIP, SALVAGE AND SPREAD :				2251 CY						
					EMBANKMENT-IN-PLACE :				1552/1.3 1193.85 CY														



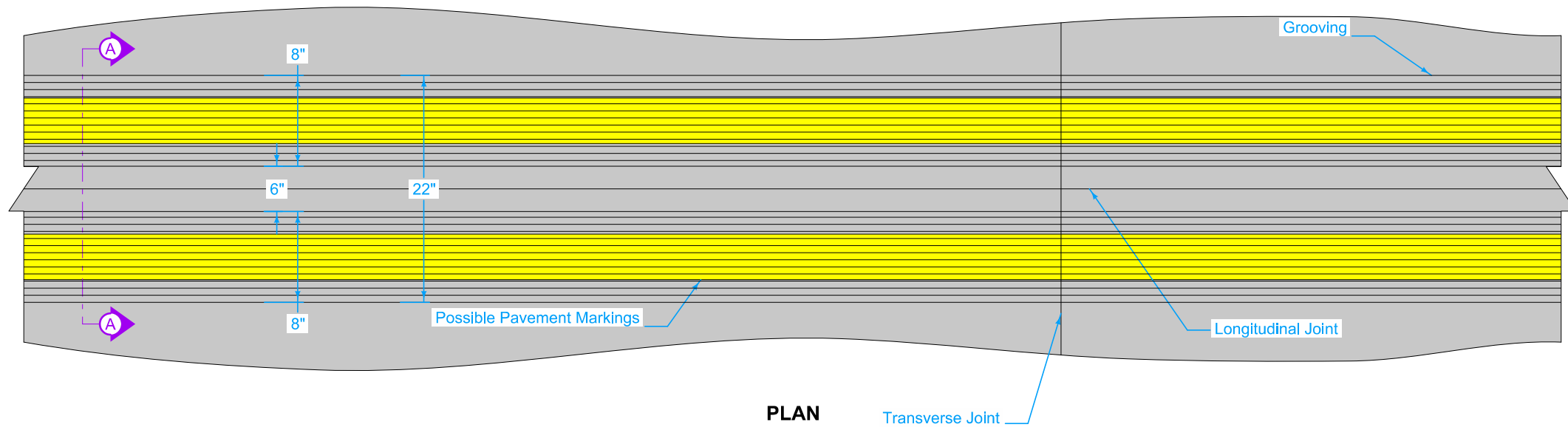
LEGEND

	Direction of Travel
	CHW8 Channelizing Lane Line (White)
	ELW4 Edge Line Right (White)
	DLW4 Dotted Line (White)



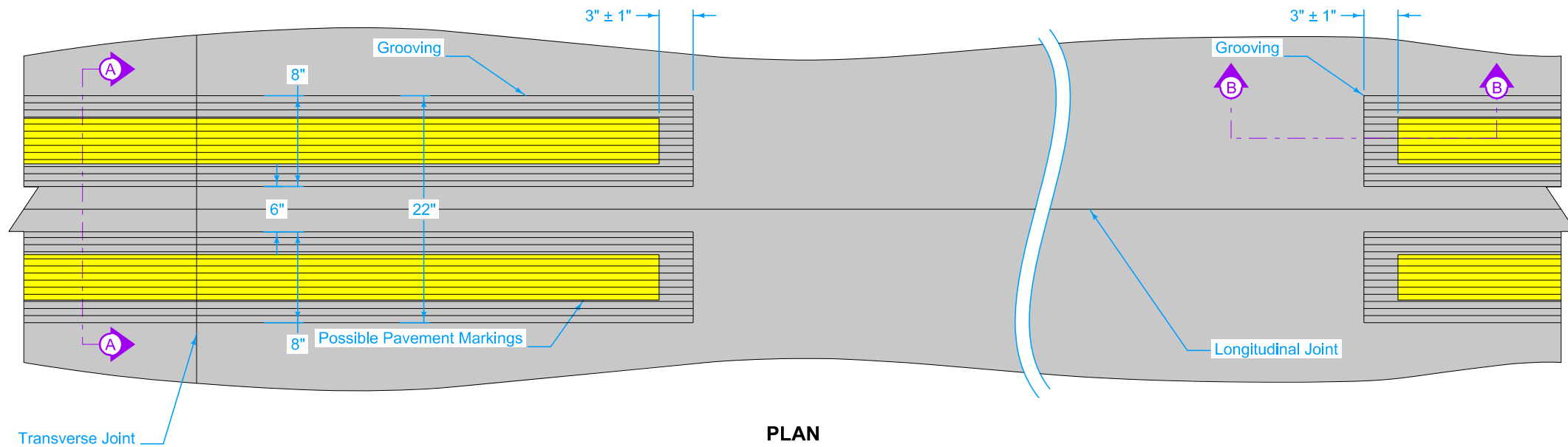
① Symbol and Legend (when listed in 108-29).

**Offset Right Turn Lane
Pavement Marking Detail**



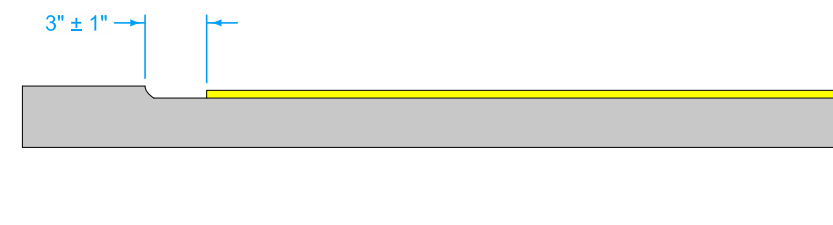
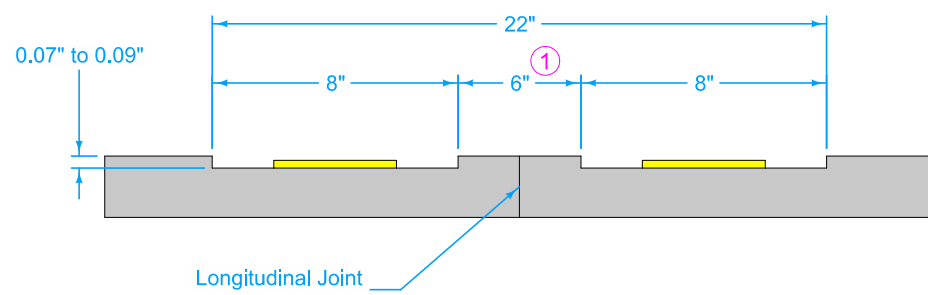
Do not groove temporary pavement markings.

① Center 6 inch gap over longitudinal joint.



Contract Item:
Grooves Cut for Pavement Markings

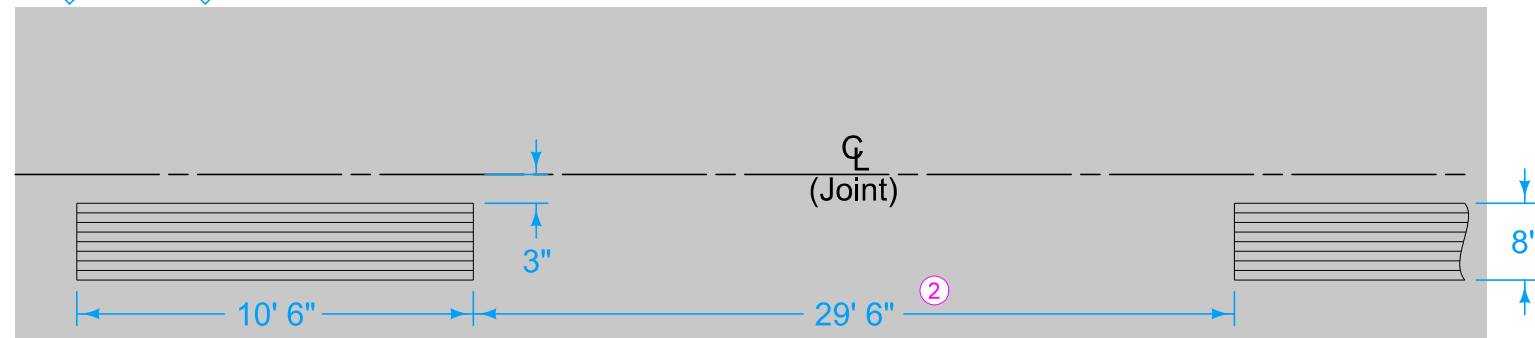
Tabulation:
108-22



**GROOVING FOR
LINE TYPES**

BCY# BLW#

BROKEN CENTERLINE

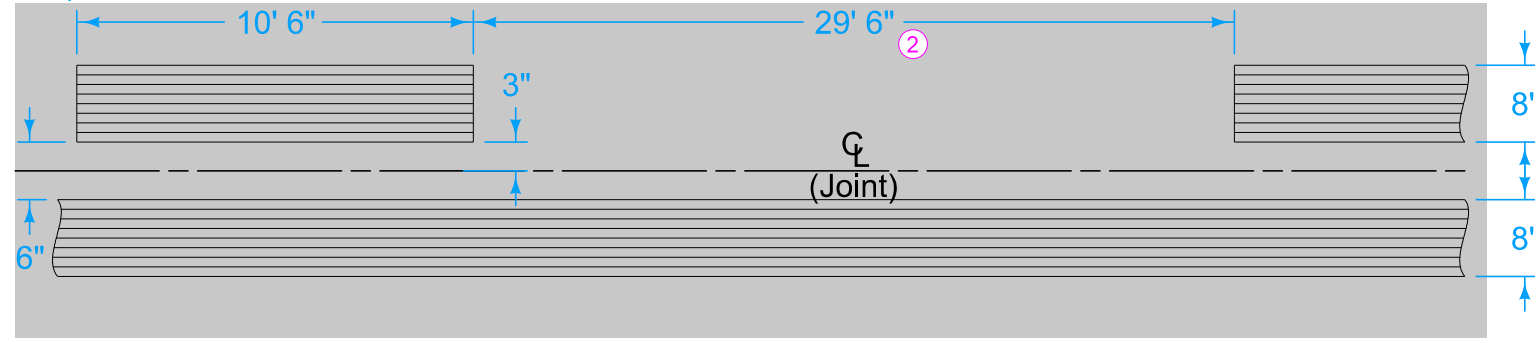


SLW# SOLID LANE LINE

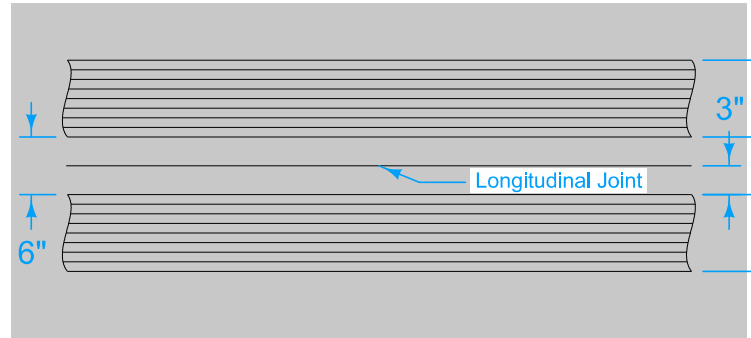


② Do not continuously groove broken, dashed or dotted line styles.

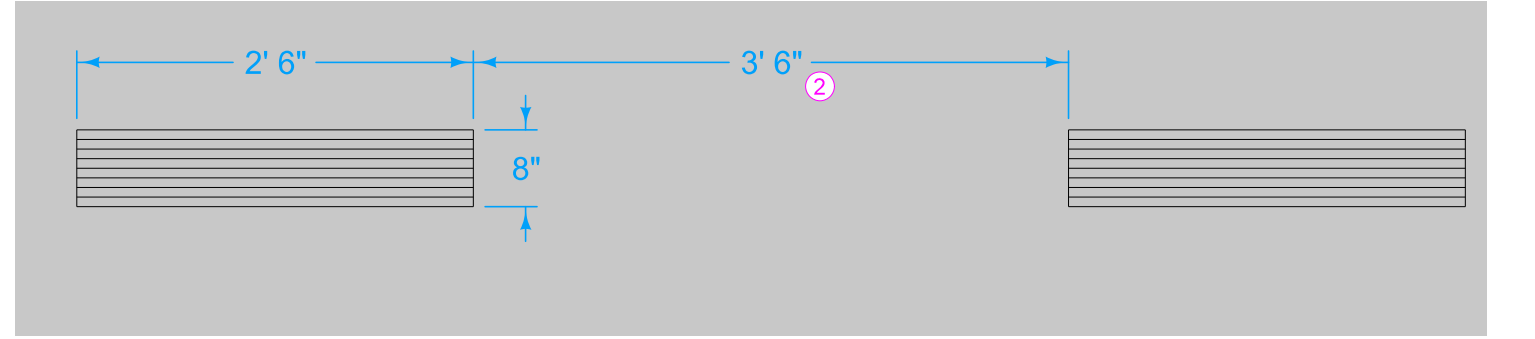
NPY# NO PASSING ZONE LINE



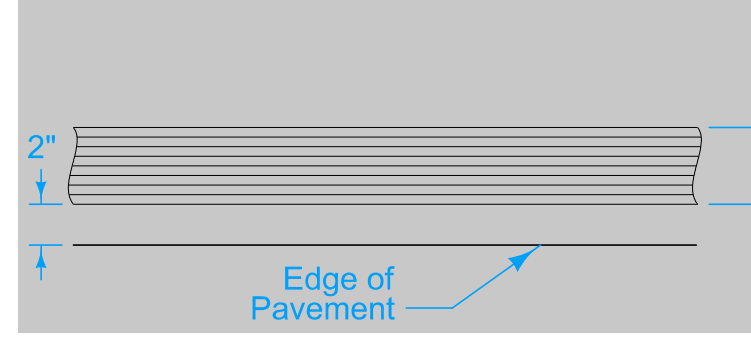
DCY# DOUBLE CENTERLINE



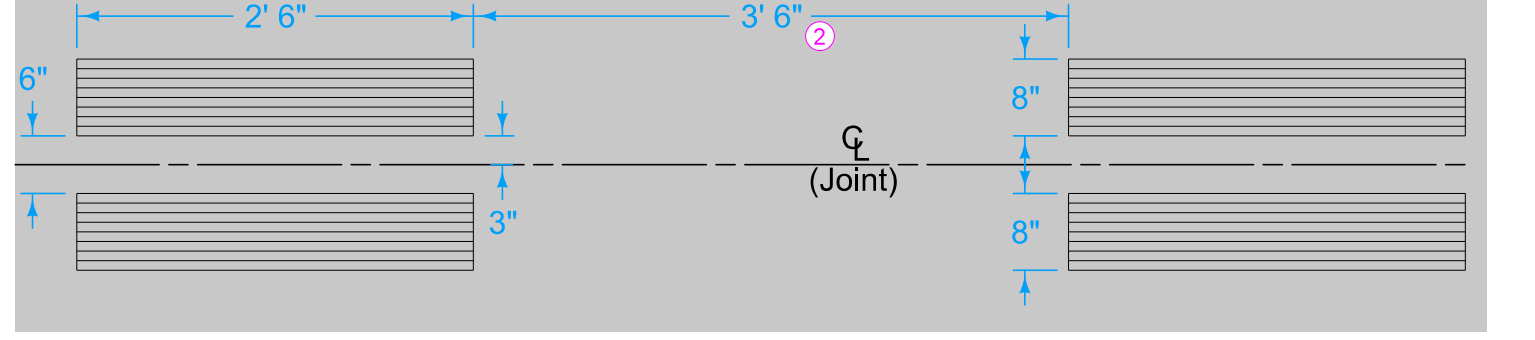
DLY# DLW# DOTTED LINE



RLW# ELW# ELY# RLY# EDGE LINE

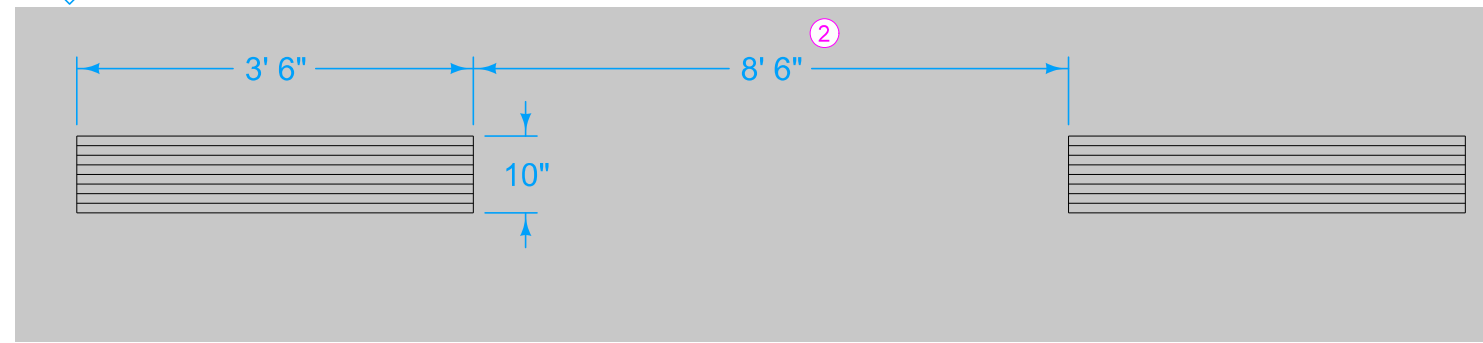


DDY# DOUBLE DOTTED LINE



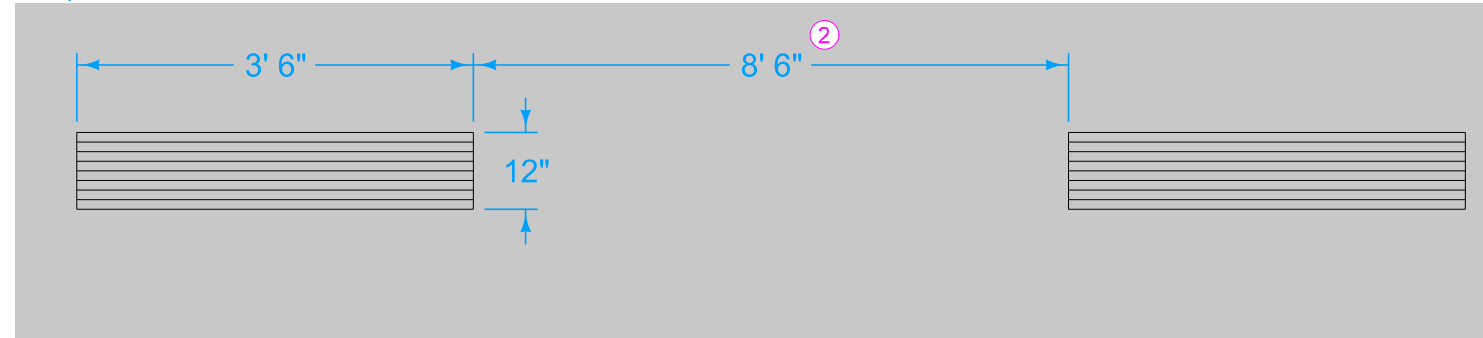
GROOVING FOR LINE TYPES

LDW8

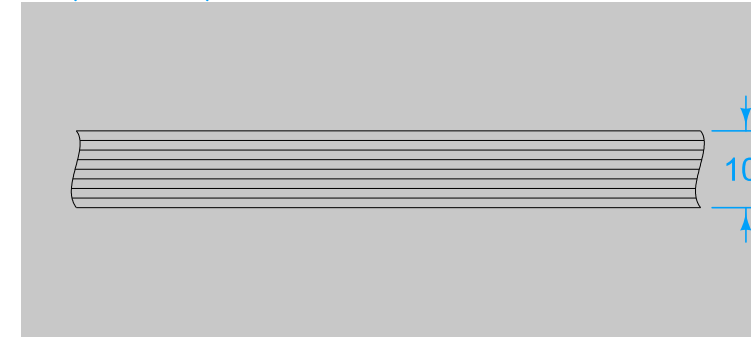


② Do not continuously groove broken, dashed or dotted line styles.

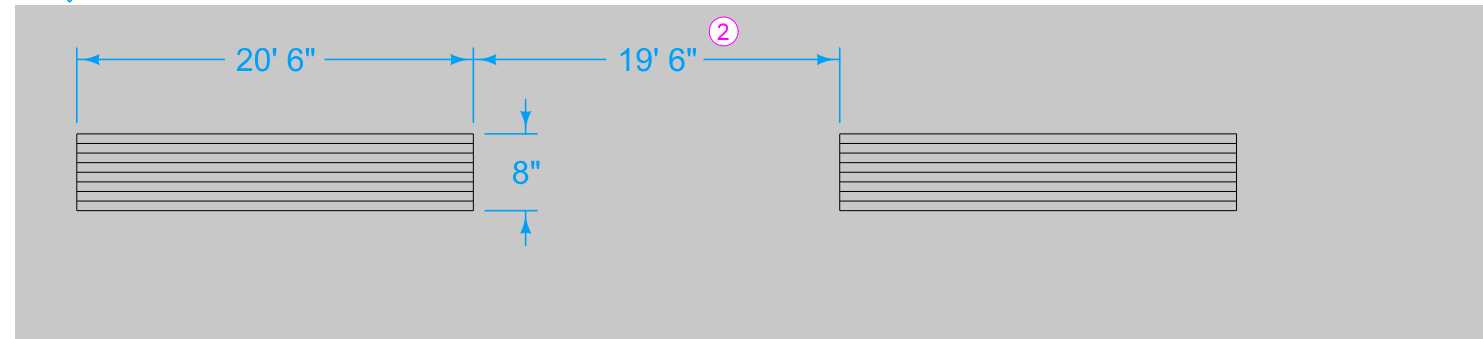
LDW10



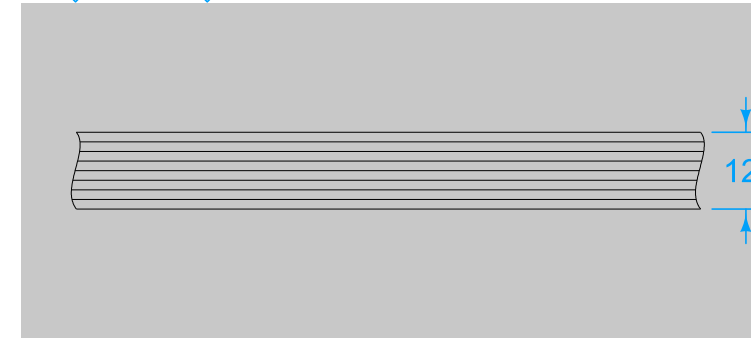
CHY8 CHW8



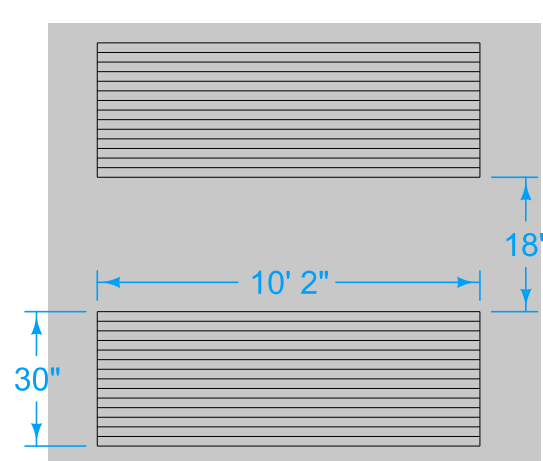
BLC6



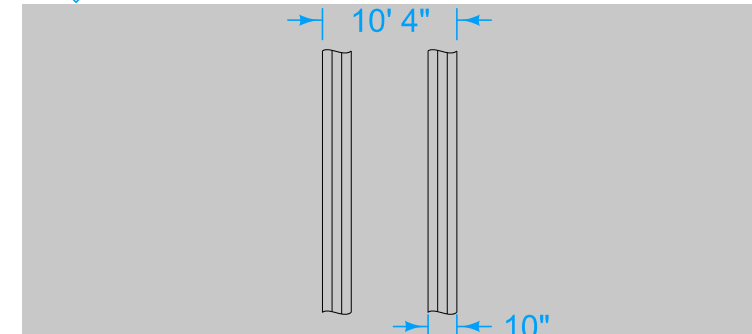
CHY10 CHW10



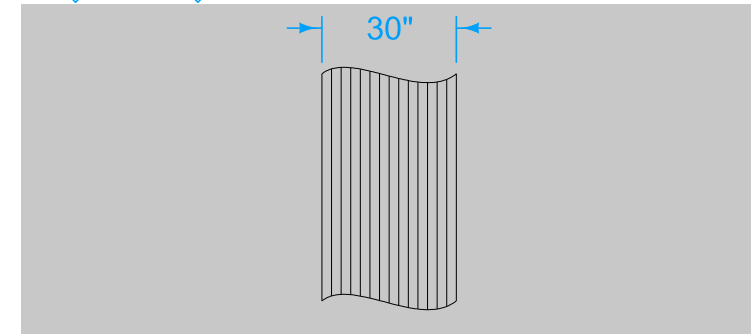
CBW6



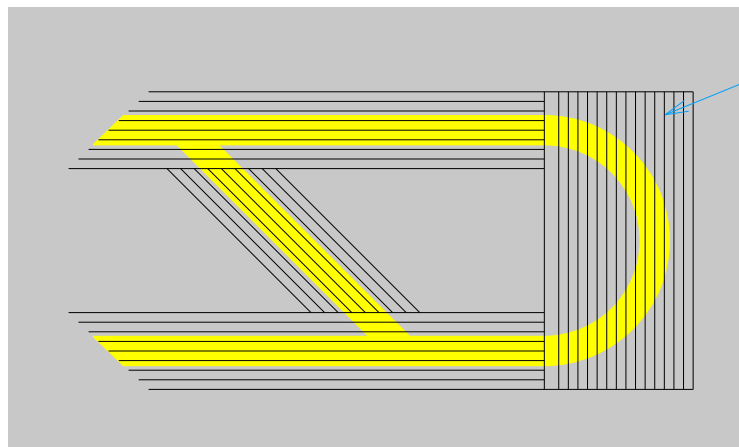
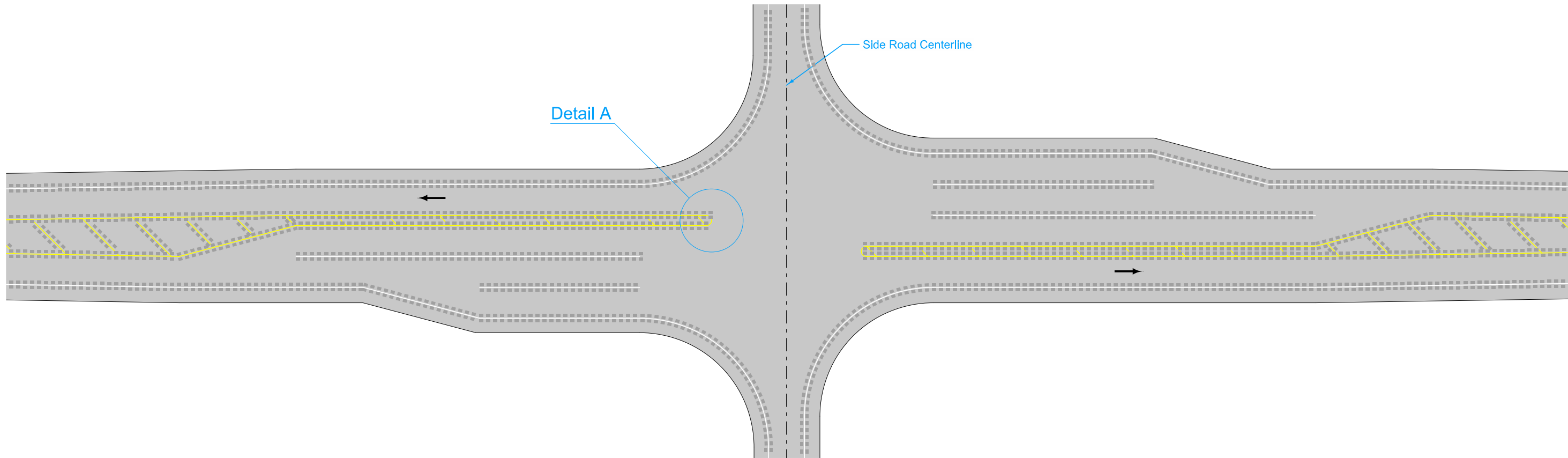
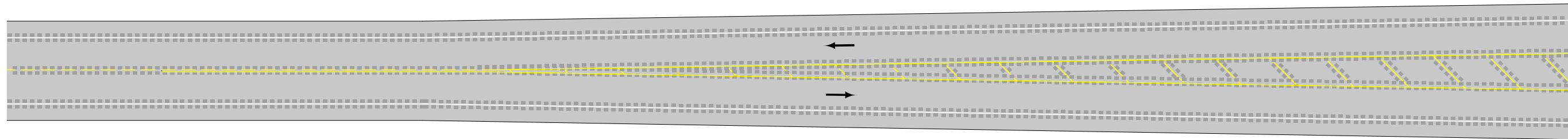
CLW6



SLW2 YLW2



GROOVING FOR LINE TYPES



Grooving

PAINTED MEDIAN

Detail A

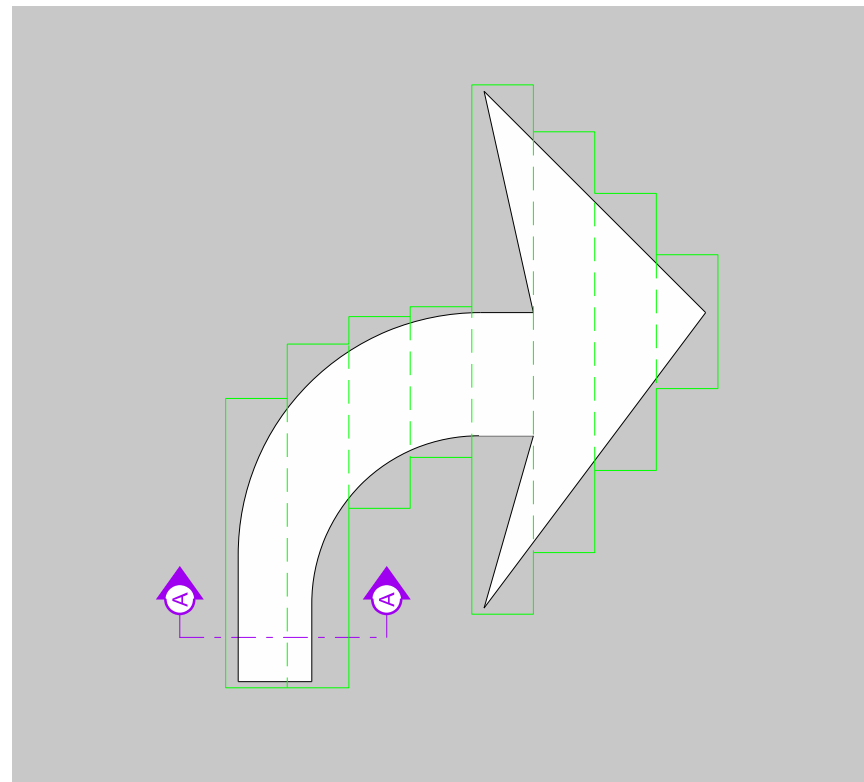
**GROOVING FOR
LINE TYPES**

Option 1 shall be used unless specified otherwise by project documents or engineer. If option 2 or 3 is used no additional reimbursement will be given.

A minimum one (1) inch margin shall be placed all the way around painted symbol.

Refer to PM-111 for details of painted symbols.

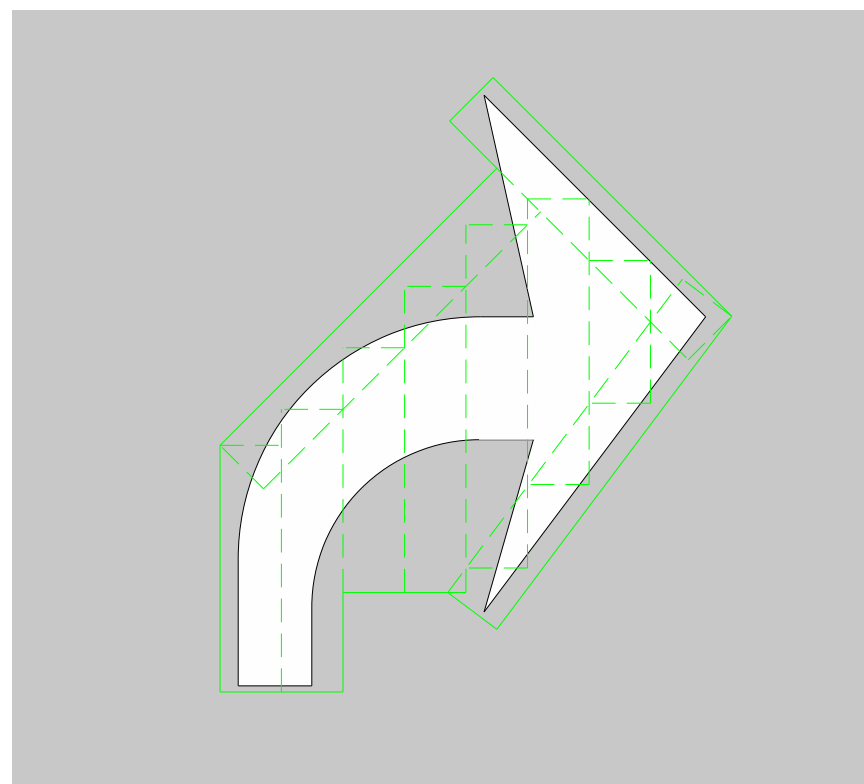
Layouts and areas are based on a ten (10) inch grooving head.



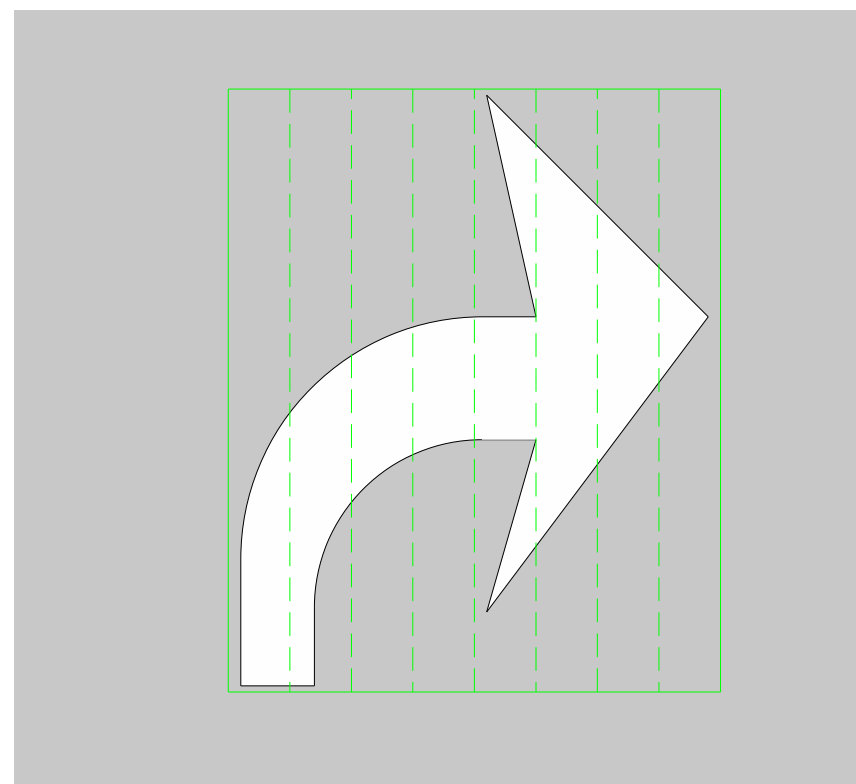
PLAN
Option 1



CROSS-SECTION/PROFILE
SECTION A-A



PLAN
Option 2



PLAN
Option 3

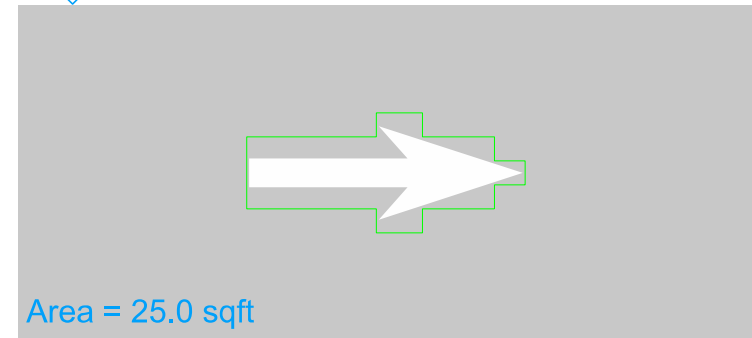
 Boundary of grooving

Contract Item:
Grooves Cut for Symbols
and Legends

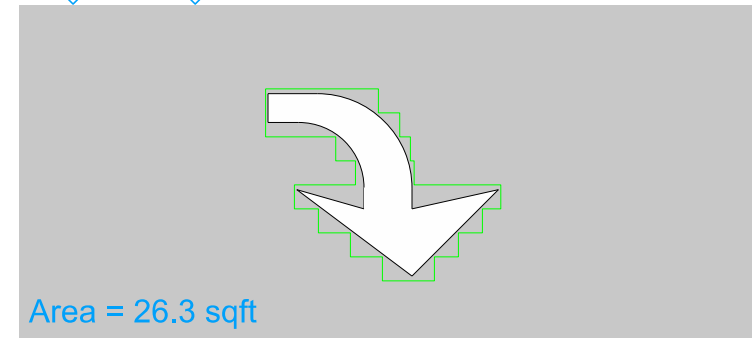
Tabulation:
108-29

GROOVING FOR
SYMBOLS AND LEGENDS

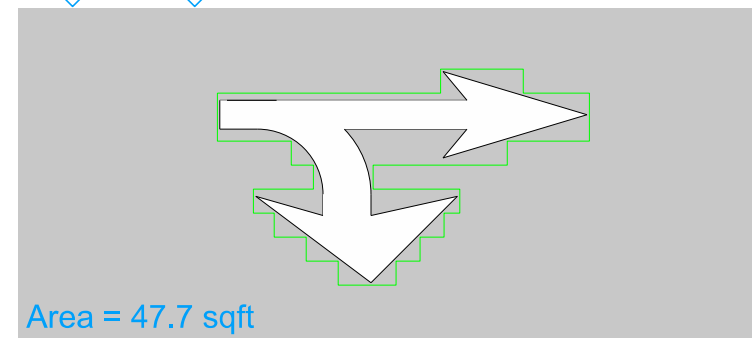
STAW STRAIGHT ARROW



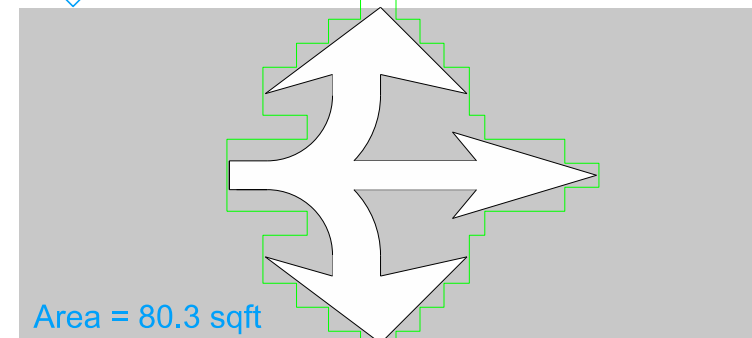
RTAW LTAW TURN ARROW



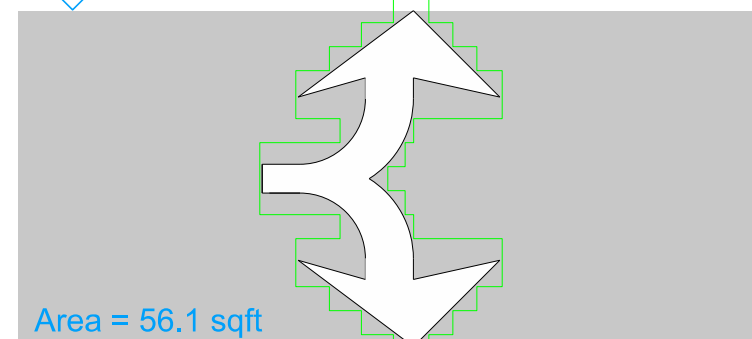
CSRW CSLW COMBINED STRAIGHT AND TURN ARROW



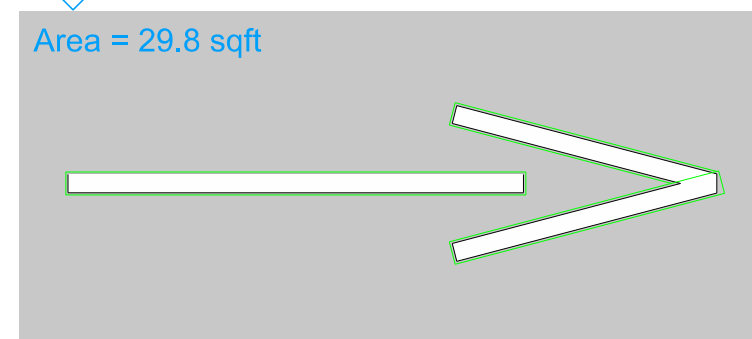
CSTW COMBINED STRAIGHT, RIGHT AND LEFT TURN ARROW



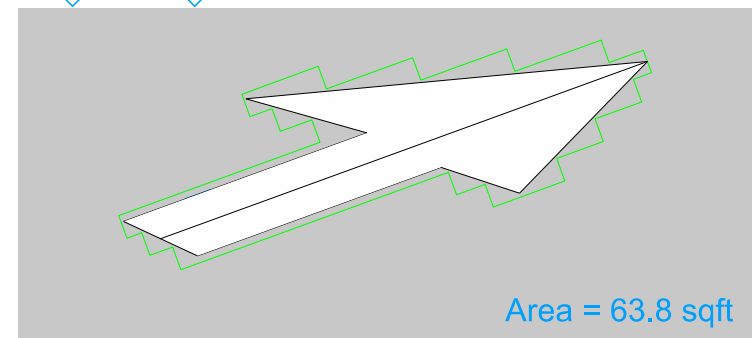
CRLW COMBINED RIGHT AND LEFT TURN ARROW



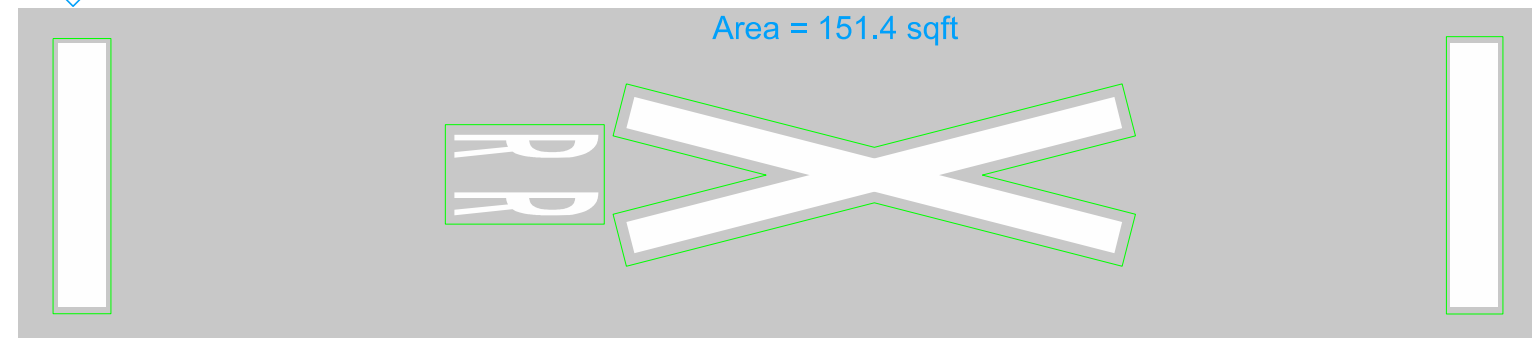
FERW FREEWAY, EXPRESSWAY AND RAMP ARROW



RLRW LLRW REDUCTION ARROW

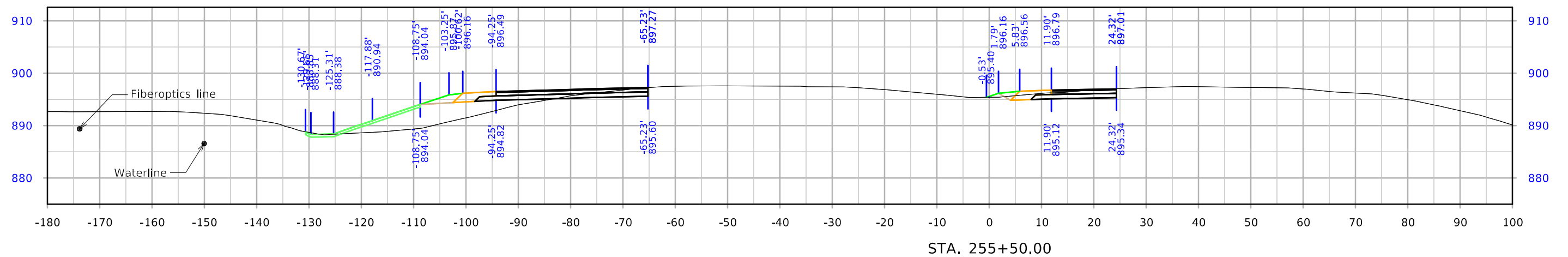
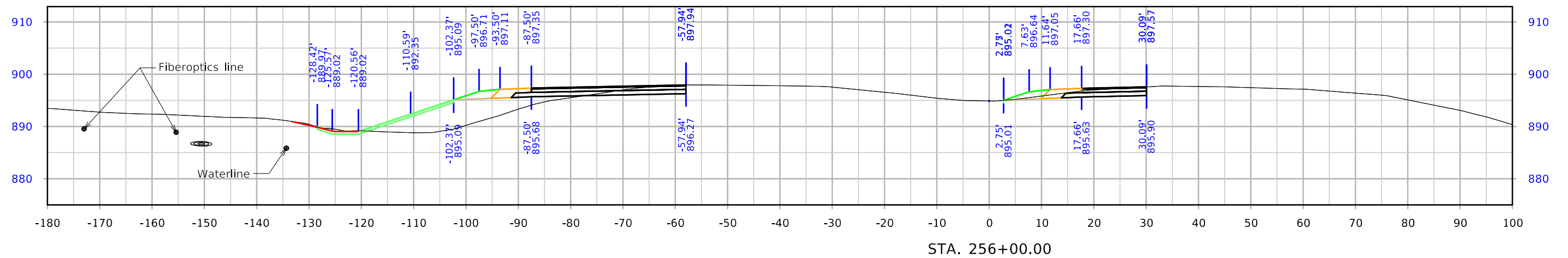
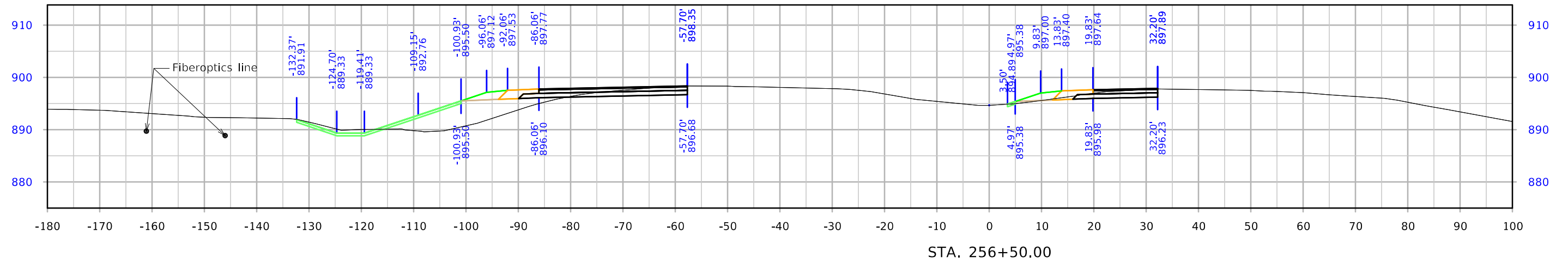


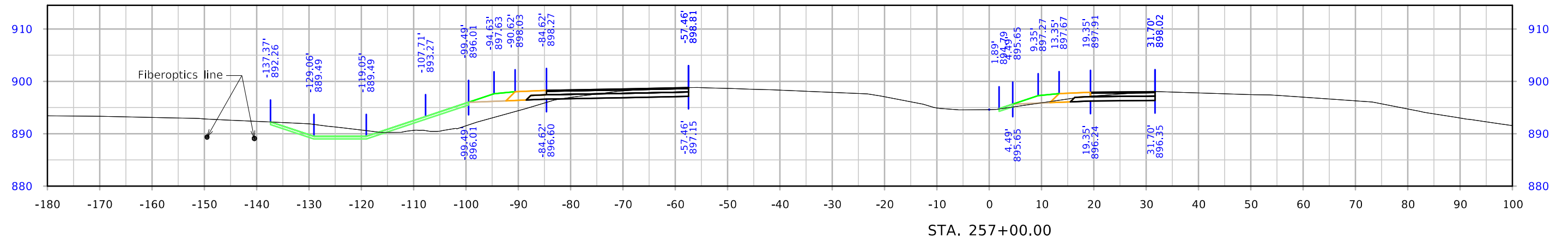
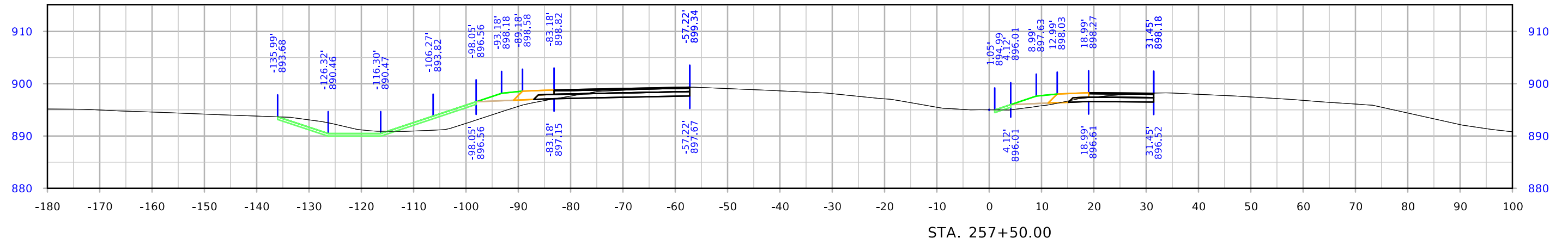
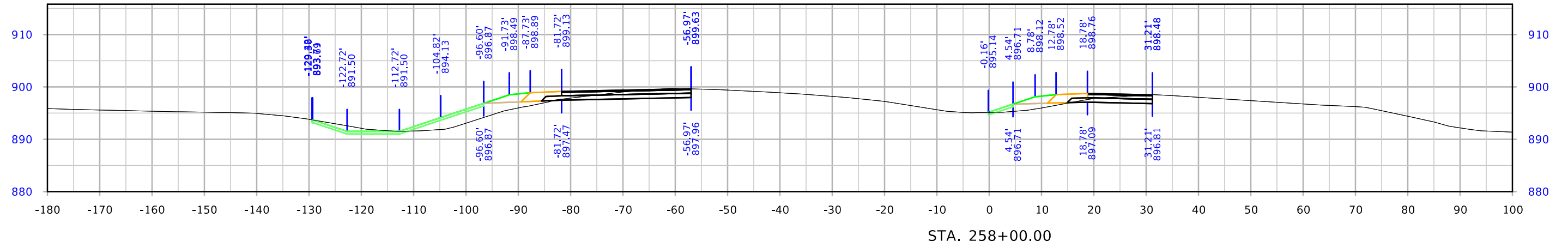
RRCW RAILROAD CROSSING SYMBOL (White)



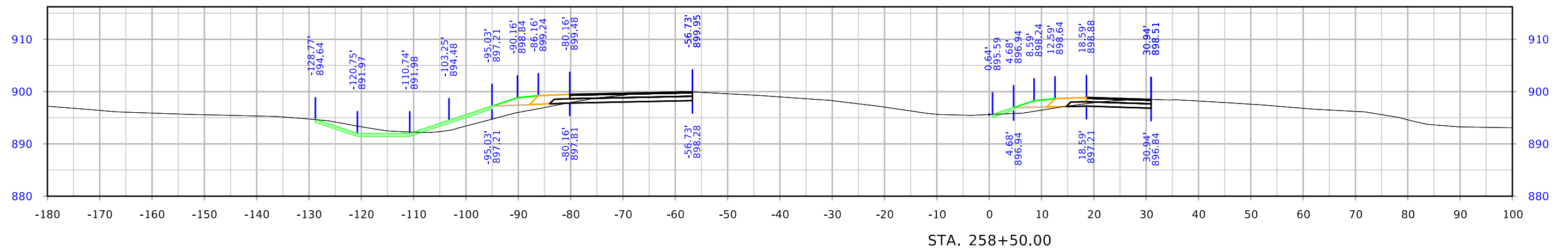
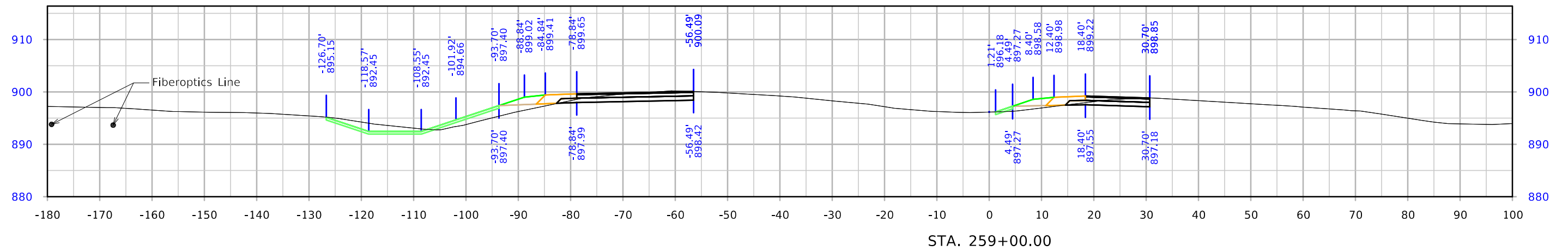
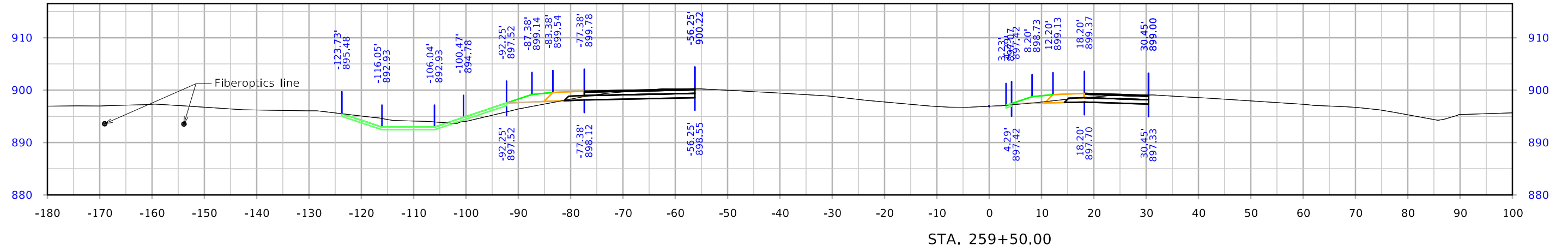
GROOVING FOR SYMBOLS AND LEGENDS

IA 163

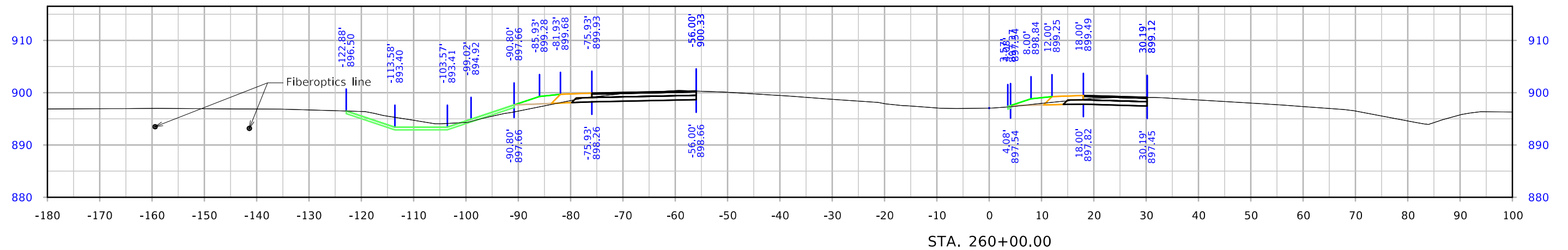
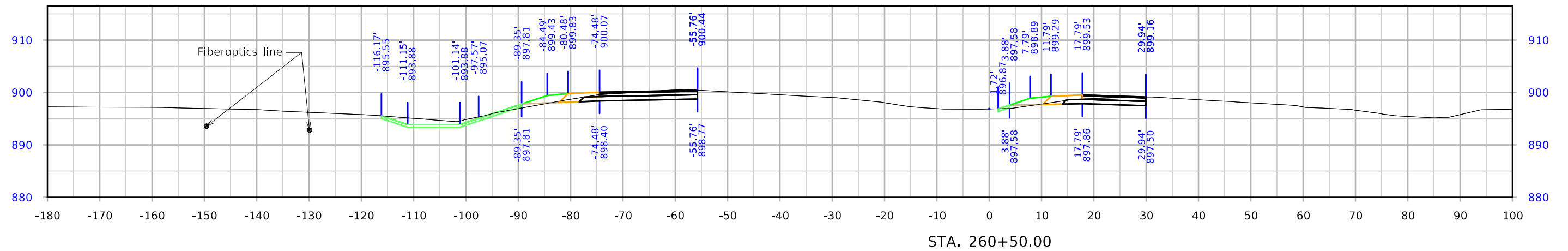
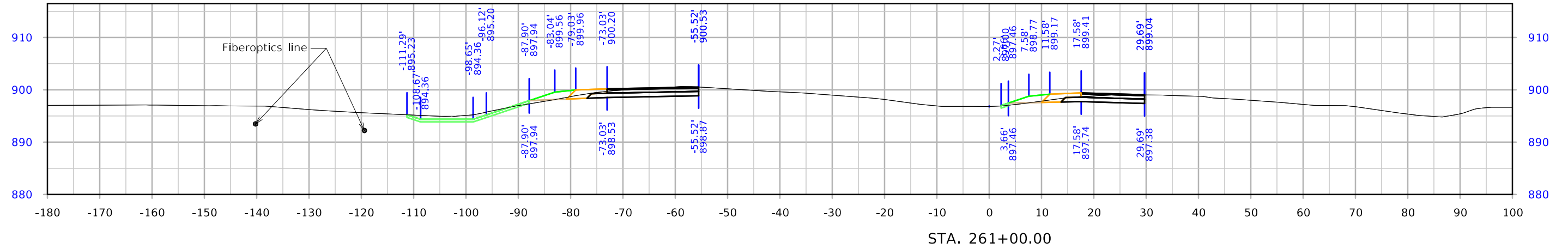


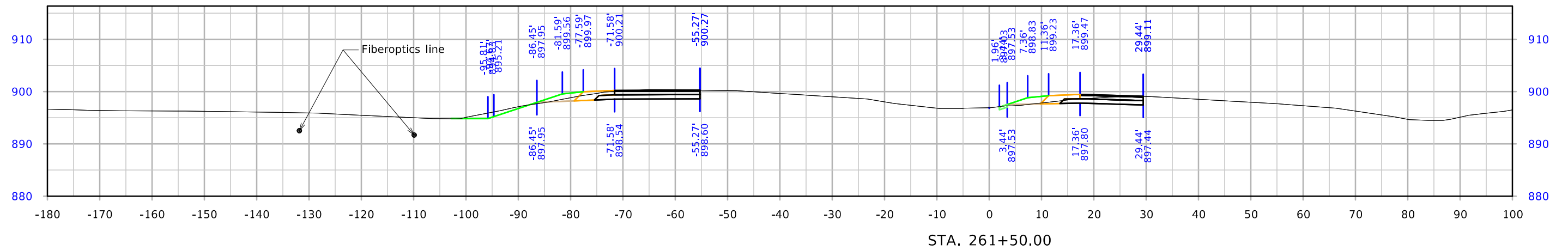
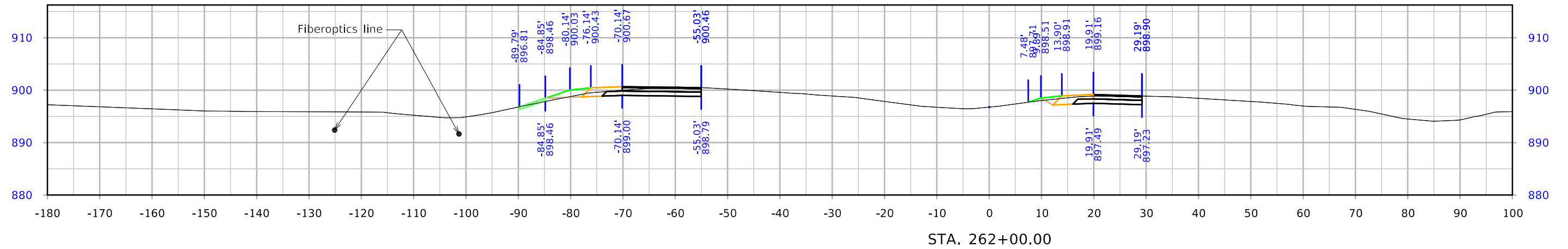
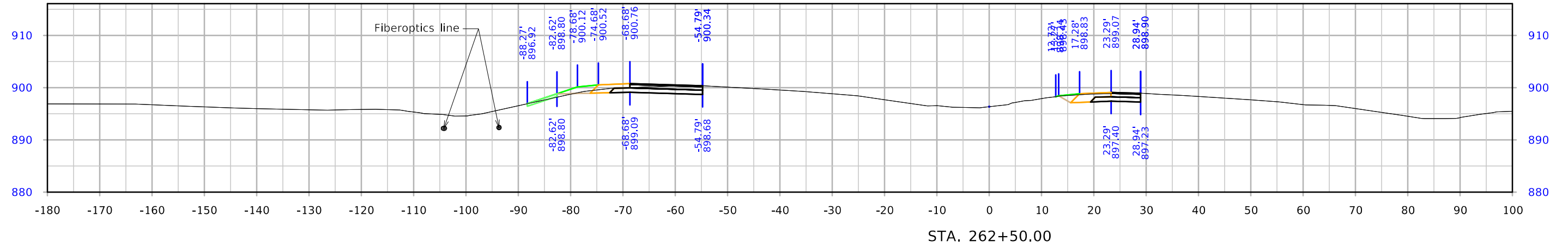


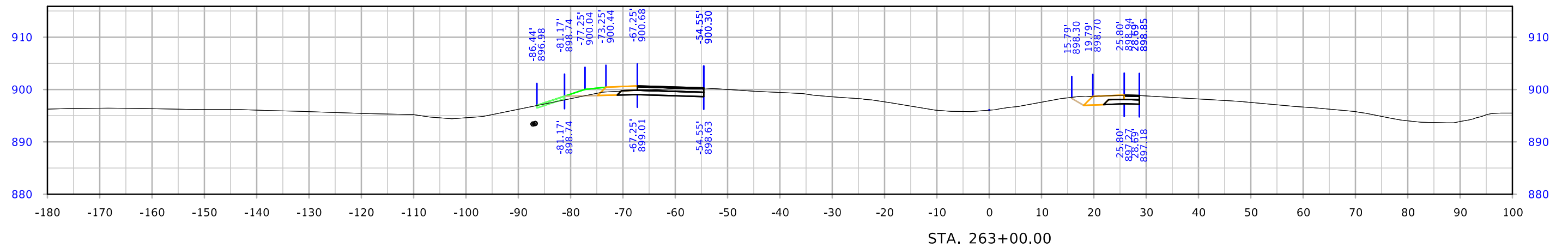
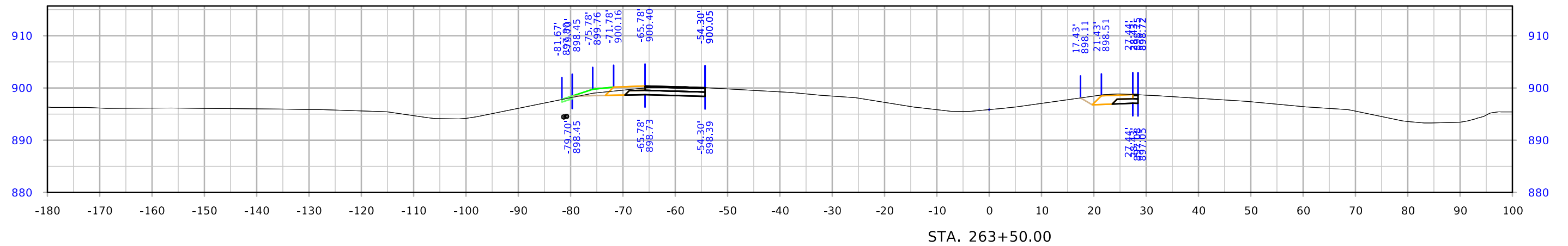
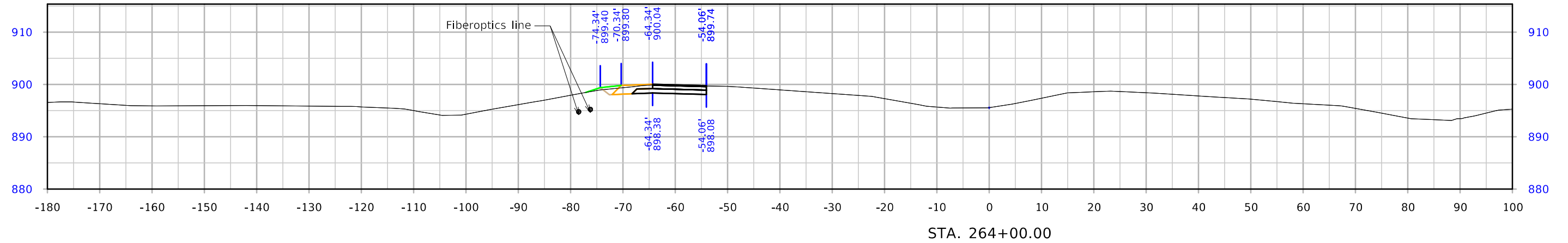
IA 163

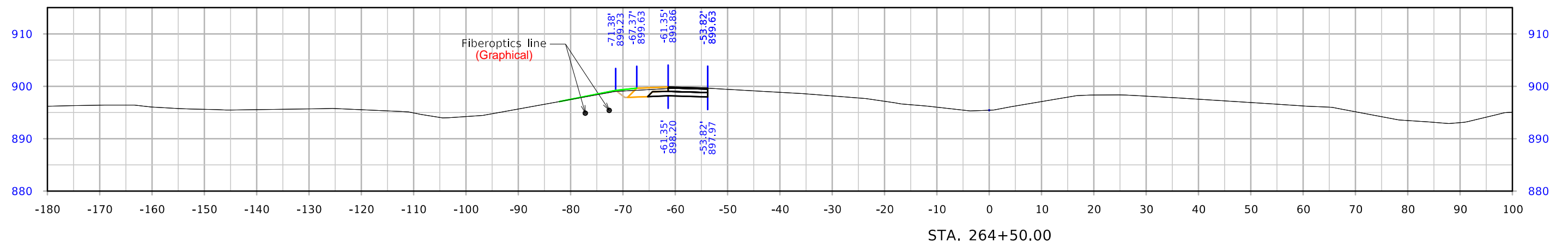
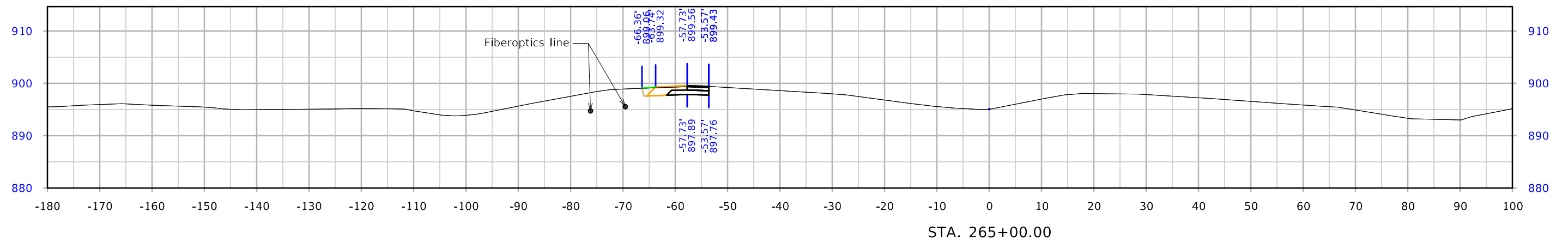
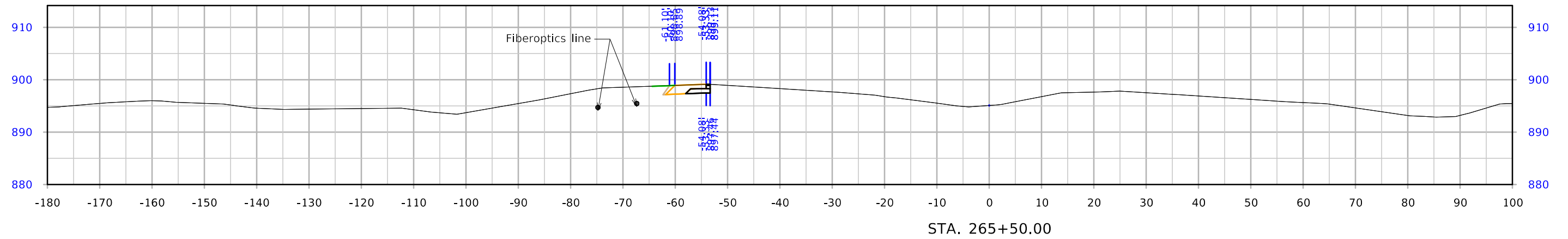


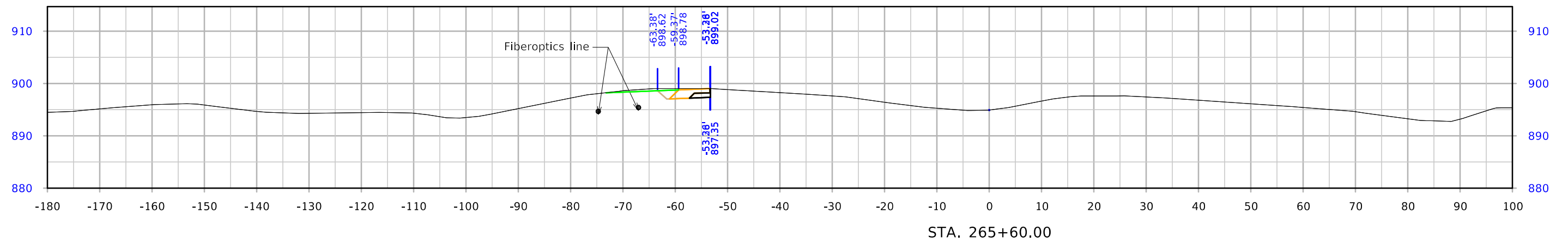
IA 163











Business Highway 163

