

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
* A.1	Title Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections & Details
C Sheets	Quantities and General Information
C.1	Project Description, Index of Tab's, Standard Culvert Plans, Standard Road Plans and Quantities
C.2 - 3	Estimate Reference Information
C.4 - 5	Project Tabulations
C.6 - 7	Pollution Prevention Plan
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	NE 150th Ave
* D.3 - 4	Entrances plans & profiles
ED Sheets	Drainage Plan and Profile Sheets
* ED.1	Skunk River Tributary
H Sheets	Right-of-Way Sheets
* H.1	NE 150th Ave
J Sheets	Traffic Control and Staging Sheets
* J.1 - 2	Traffic Control Plan & Detour Sheet
R Sheets	Erosion Control Sheets
* R.1	Erosion Control Legend & Symbol Information Sheet
* R.2	Erosion Control / Final Surface Restoration
T Sheets	Tab. of Template Quantities and Adjustments
* T.1	Quantities and Adjustments / Typical
U Sheets	Removals
* U.1	Project Removal Plan
V Sheets	Bridge and Culvert Situation Plan
* V.1	Culvert Situation Plan
W Sheets	Mainline Cross Sections
* W.1 - 10	NE 150th Ave Cross Sections
Y Sheets	Other - Cross Sections
* Y.1 - 3	Skunk River Tributary
* Color Plan Sheets	



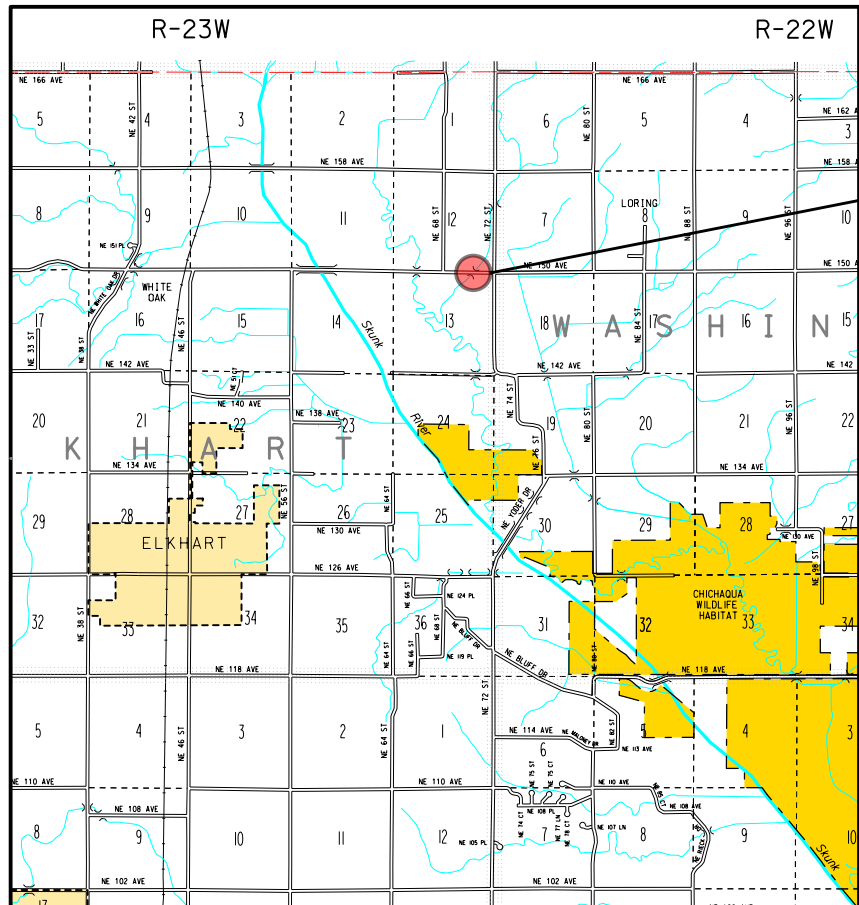
PLANS OF PROPOSED IMPROVEMENT ON THE
FARM-TO-MARKET SYSTEM
POLK COUNTY

RCB Culvert New - Twin Box
On NE 150th Ave, Over Skunk River Tributary, W of NE 72nd St

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.13 of the Specifications.



Project Location:

B.O.P STA. 7+10
E.O.P. STA. 12+90
NE 150th Avenue
T-81N R-23W
Section 12 & 13
Elkhart Township
Polk County
FHWA No. 282730



DESIGN DATA RURAL

2024	AADT	130	V.P.D.
2044	AADT	390	V.P.D.
20 -	DHV	-	V.P.H.
	TRUCKS	-	%
	Total		
	Design ESALs	-	

LOCATION MAP SCALE



REVISIONS

TOTAL

36

PROJECT NUMBER

STP-S-C077(252)--5A-77

TPMS PROJECT ID

37250

POLK COUNTY PROJECT NUMBER

2025.05.BR1270

PC281-1

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide Permit No. 14, Permit No. MVR-2021-00767. A copy of this permit is available from the Iowa DOT website (<http://www.envpermits.iowadot.gov/>). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

The project is covered by Iowa Department of Natural Resources NPDES General Permit No. 2. The contractor shall carry out the terms and conditions of General Permit No.2 and the storm water pollution prevention plan which is a part of these contract documents. Refer to Section 2602 of the Standard Specification for additional information.

Refer to C Sheets for applicable Iowa DOT Standard Road and Culvert Plans

Refer to Sheet D.01 for Utility Contacts



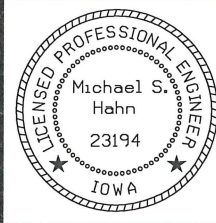
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: *Rachel A. Conrad* Date: *6/16/26*

Printed or Typed Name

My license renewal date is December 31, 2027

Pages or sheets covered by this seal: V.01



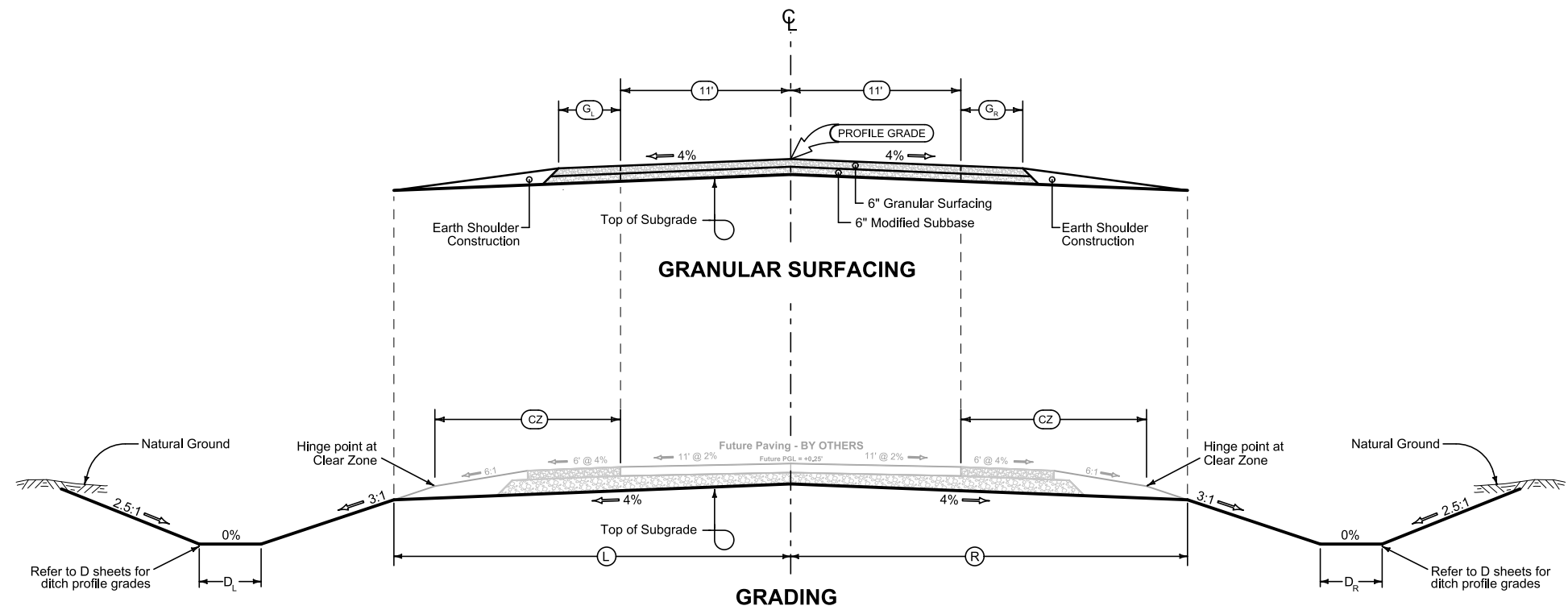
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature: *Michael S. Hahn* Date: *6/16/26*

Printed or Typed Name

My license renewal date is December 31, 2027

Pages or sheets covered by this seal: A.01, B.01-02, C.01-07, D.01-04, ED.01, H.01, J.01-02, R.01-02, T.01, U.01, W.01-10, Y.01-03



LOCATION				
STATION - STATION		(L) Feet	(D _L) Feet	(CZ) Feet
7+00	8+00			12.0
8+00	12+00		4.0	12.0
12+00	13+00			12.0

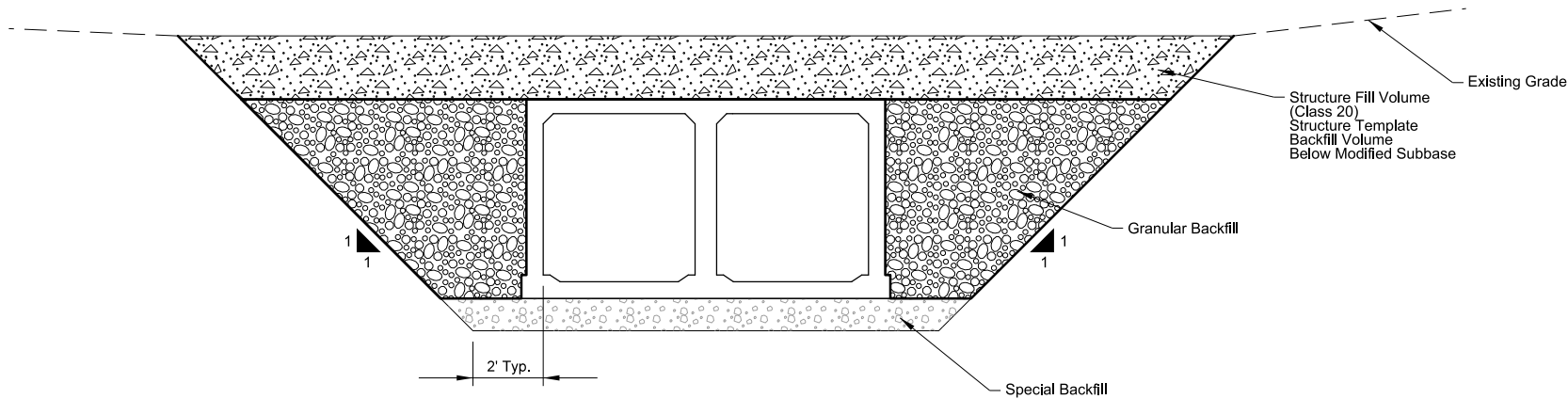
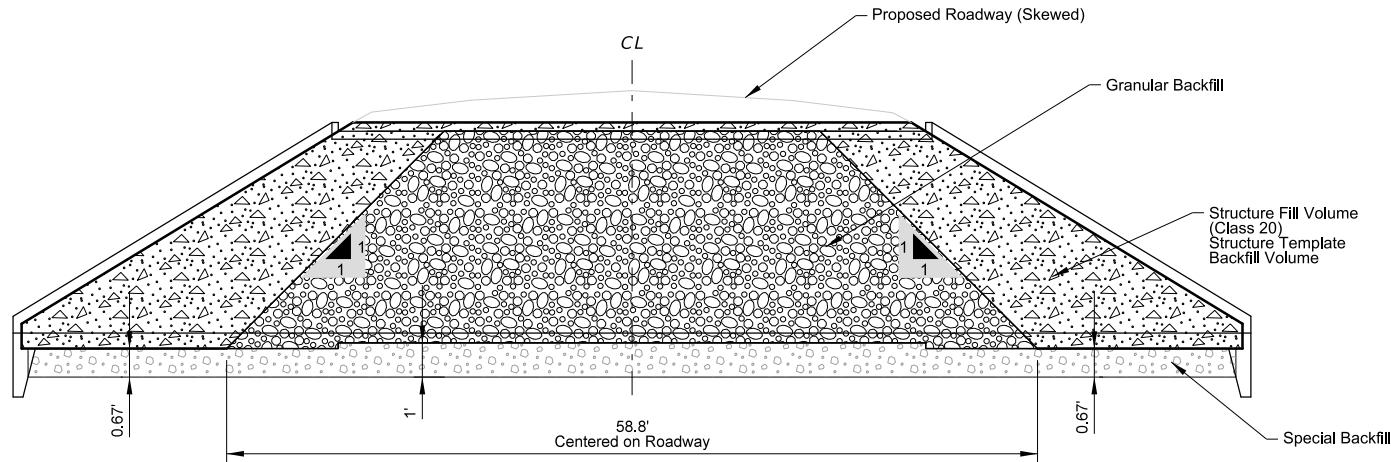
* Match Existing

LOCATION				
STATION - STATION		(R) Feet	(D _R) Feet	(CZ) Feet
7+00	8+00			12.0
8+00	12+00		4.0	12.0
12+00	13+00			12.0

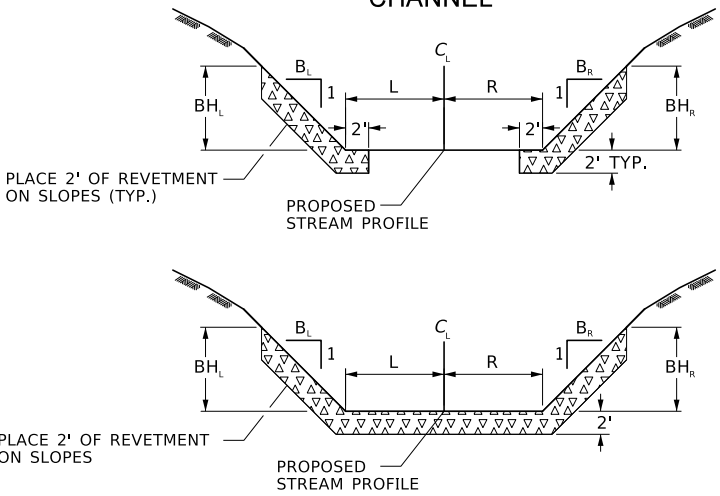
* Match Existing

NE 150th Ave.

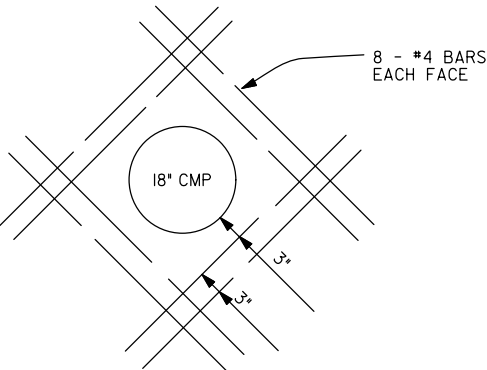
TYPICAL SECTION
RCB STRUCTURE



TYPICAL SECTION
CHANNEL



LOCATION			DIMENSIONS				SLOPES	
IDENTIFICATION	STATION TO STATION		L	R	BH _L	BH _R	B _L	B _R
Skunk River Tributary Alignment	Banks Only							
	99+05	99+10	-	7.7 to 8.7	-	1 to 10	-	2
	100+69	100+88	17.9 to 11.1	-	10.5	-	2	-
	100+69	100+98	-	17.9 to 7.7	-	10	-	2
	Full Width							
	99+10	99+31	13.9 to 17.9	12.4 to 17.9	11.5 to 12.5	6 to 10	2	2



TYPICAL SECTION

STA 100+61RT
CMP TO BE INCORPORATED
INTO BOX

NOTE: 16 ~ #4 AT 4'-6" = 48 lbs
CMP LETDOWN OUTLET PIPE TO BE IN PLACE
WHEN WALLS ARE PLACED.
BOXOUTS WILL NOT BE ALLOWED.

Skunk River Tributary

PC 100-1D		
PROJECT DESCRIPTION		
This project is located in Polk County, Iowa on NE 150th Ave over a Tributary of the South Skunk River; 1,550' east of NE 68th St and 1,115' west of NE 72nd St. An existing 32' x 30' reinforced concrete Channel Beam bridge will be removed and replaced with a 12' x 8' x 66' Twin-Barrel Reinforced Concrete Box Culvert with Parallel-Wing Headwalls. This RCB is a 45-degree-left-ahead standard design, to be constructed at a 40-degree-left-ahead skew to the roadway. The roadway will be closed to thru-traffic and there will be a posted detour. This project is being let as contractually-tied with project BROS-C077(253)--5F-77, which is a very similar project approximately a half-mile to the west, also on NE 150th Ave.		

PC 111-25		
INDEX OF TABULATIONS		
Tabulation	Tabulation Title	Sheet No.
C Sheets		
100-0A	ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)	C.1
100-1D	PROJECT DESCRIPTION	C.1
100-1D UTL	UTILITY STATUS & COORDINATION	C.1
100-4A	ESTIMATE REFERENCE INFORMATION	C.2 - C.3
100-19	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	C.5
100-22	ROLLED EROSION CONTROL	C.5
100-23	ROCK EROSION CONTROL	C.5
101-16	ALIGNMENT COORDINATES	C.4
102-3	ACCESS POINTS AND SAFETY RAMPS	C.5
105-4 MOD	STANDARD ROAD PLANS	C.1
105-4 SCP	STANDARD CULVERT PLANS	C.1
108-13A	SAFETY CLOSURES	C.4
110-2 MOD	REMOVALS	C.4
110-12	POLLUTION PREVENTION PLAN	C.6 - C.7
111-25	INDEX OF TABULATIONS	C.1
190-62	EXISTING SIGNS TO BE REMOVED	C.4
J Sheets		
108-23A	TRAFFIC CONTROL PLAN	J.01
T Sheets		
107-28	TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS	T.01

PC 105-4-SCP		
STANDARD CULVERT PLANS		
The following Standard Culvert Plans apply to construction work on this project.		
Number	Date	Title
TWRCB G1-20	07-2020	Index of Sheets
TWRCB G2-20	07-2020	General Notes & Specifications
TWRCB G3-20	07-2020	Typical Culvert Barrel Details
TWRCB 12-8-20	07-2020	Culvert Barrel Details, 12' x 8' Barrel Sections
TWPWH 45-1-20	07-2020	Parallel Wing Hdwls., 45° Skew, Dimensions
TWPWH 45-2-20	07-2020	Parallel Wing Hdwls., 45° Skew, Dimension Table
TWPWH 45-3-20	07-2020	Parallel Wing Hdwls., 45° Skew, Cross Section Details
TWPWH 45-4-20	07-2020	Parallel Wing Hdwls., 45° Skew, Wingwall Elev.
TWPWH 45-5-20	07-2020	Parallel Wing Hdwls., 45° Skew, Bott. Apron Reinf
TWPWH 45-6-20	07-2020	Parallel Wing Hdwls., 45° Skew, Top Apron Reinf.
TWPWH 45-7-20	07-2020	Parallel Wing Hdwls., 45° Skew, Quantity Tabulation, 12'-0" Span, Sheet 1 of 2

PC 105-4		
STANDARD ROAD PLANS		
The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
EC-101	04-19-16	Wood Excelsior Mat for Ditch Protection
EC-103	04-21-15	Wood Excelsior Mat for Slope Protection
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EW-402	04-18-17	Temporary Stream Diversion
EW-501	10-17-23	Rural Entrance
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)

PC 100-1D UTL					
UTILITY STATUS & COORDINATION					
See Section 1107.15 of the Standard Specification regarding all Utility Coordination on the project. Underground utilities shown based on physical evidence, Iowa One-Call design information and design locate requests, and information provided by utility companies. There may be additional underground utilities that are not shown in these drawings. Refer to Utility Legend on sheet D.01 for utility contact information. Facilities - Affected: <i>Huxley Communications:</i> An existing fiber line runs parallel with NE 150th Ave, along and near the existing south right-of-way line. This fiber line will be relocated prior to the beginning of construction. An existing handhole (~ sta 10+60, Rt) will also be relocated to approximately sta 12+00, Rt. This relocated line will maintain a similar horizontal alignment to existing and will be lowered to a depth of approximately ten feet beneath the existing stream flowline, at both the stream crossing location and the potential stream diversion channel location. No conflicts with the relocated fiber line are anticipated. Facilities - Not Affected: <i>MidAmerican Energy - Electric:</i> An existing overhead electric line parallels NE 150th Ave, along the south ROW line, from approximately 850' west of the existing bridge, west to NE 68th St. There is an overhead guy crossing NE 150th Ave 850' west of existing bridge, and the overhead line crosses NE 150th Ave and heads north along the west side of NE 68th St. This line does not pose a conflict for the project / construction, but overhead crossings do exist between this project and the tied (253) project to the west.					

PC 100-0A					
ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)					
Item No.	Item Code	Item	Unit	Total	As Built Qty.
** The first 4 digits of a standard item code directs the bidder to the appropriate section in the Standard Specifications **					
1	2102-0425070	SPECIAL BACKFILL (STRUCTURE)	TON	238.43	
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	535.00	
3	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	1087.30	
4	2102-2713090	EXCAVATION, CLASS 13, WASTE	CY	64.00	
5	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	299.90	
6	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	809.90	
7	2115-0100000	MODIFIED SUBBASE	CY	317.89	
8	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	11.60	
9	2213-7100400	RELOCATION OF MAIL BOXES	EACH	1.00	
10	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	TON	579.67	
11	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	199.75	
12	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1.00	
13	2401-6745910	REMOVAL OF SIGN (REMOVE, SALVAGE, REPLACE)	EACH	1.00	
14	2402-0425031	GRANULAR BACKFILL	TON	375.08	
15	2402-2720000	EXCAVATION, CLASS 20	CY	1755.30	
16	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	297.00	
17	2404-7775000	REINFORCING STEEL	LB	47920.00	
18	2417-0225015	APRONS, METAL, 15 IN. DIA.	EACH	2.00	
19	2417-0225018	APRONS, METAL, 18 IN. DIA.	EACH	1.00	
20	2417-1040015	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 15 IN. DIA.	LF	34.00	
21	2417-1040018	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 18 IN. DIA.	LF	65.00	
22	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1.00	
23	2503-0200036	REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	LF	113.00	
24	2503-3775018	GATE, OUTLET CONTROL, FLAP, 18 IN. (REMOVE, SALVAGE, REUSE)	EACH	1.00	
25	2507-6800061	REVTMENT, CLASS E	TON	386.77	
26	2526-8285010	CONSTRUCTION SURVEY, MONUMENT PRESERVATION	LS	1.00	
27	2526-8285020	CONSTRUCTION SURVEY, CONTROL POINT SURVEY	LS	1.00	
28	2526-8285030	CONSTRUCTION SURVEY, RIGHT OF WAY	LS	1.00	
29	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1.00	
30	2528-2518000	SAFETY CLOSURE	EACH	2.00	
31	2528-8445110	TRAFFIC CONTROL	LS	1.00	
32	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)	CDAY	Per Proposal	
33	2533-4980005	MOBILIZATION	LS	1.00	
34	2601-2634110	MULCHING, MECHANICALLY-BONDED FIBER MATRIX	ACRE	1.83	
35	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	0.80	
36	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR MAT	SQ	39.53	
37	2601-2640350	SPECIAL DITCH CONTROL, WOOD EXCELSIOR MAT	SQ	59.10	
38	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	1.03	
39	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION	MGAL	19.73	
40	2601-2643300	MOBILIZATION FOR WATERING	EACH	4.00	
41	2602-0000309	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 9 IN. DIA.	LF	542.00	
42	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	786.00	
43	2602-0000362	DITCH CHECK SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	244.00	
44	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	4.00	
45	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1.00	

PC 100-4A		
ESTIMATE REFERENCE INFORMATION		
Item No.	Item Code	Description
1	2102-0425070	SPECIAL BACKFILL (STRUCTURE) A. Refer to RCB Structure Typical Sections in the B Sheets and cross sections in the Y Sheets for dimensions B. Item is intended for RCB structure base layer C. Excavation as required for placement is included with EXCAVATION, CLASS 20 item
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW A. Refer to roadway Grading Typical Sections in the B Sheets, and cross sections in the W Sheets B. Refer to Tab. PC 107-28 in the T Sheets for Earthwork Template Quantities and Adjustments C. Item intended for Roadway grading, and includes placement of excess material from EXCAVATION, CLASS 10, CHANNEL and EXCAVATION, CLASS 20 items D. Existing roadway gravel surfacing is treated as Class 10 material and is included in cut volumes as required for placement of full depth MODIFIED SUBBASE and GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE items; may be used to fulfill template fill volumes elsewhere on the project.
3	2102-2710090	EXCAVATION, CLASS 10, WASTE A. Refer to roadway Grading Typical Sections in the B Sheets, and cross sections in the W Sheets B. Refer to Tab. PC 107-28 in the T Sheets for Earthwork Template Quantities and Adjustments C. Item intended for template cut volumes not otherwise needed for project fill volumes D. Some excess material may be wasted on-site, as approved by the Engineer E. All waste is to be removed from the project and become property of the Contractor
4	2102-2713090	EXCAVATION, CLASS 13, WASTE A. Refer to removals plan view in the U Sheets for locations B. Item included for removal of any debris as discovered, and the following known materials: + Broken concrete within the stream bed/banks and around the existing bridge; quantity estimated based on an assumed depth of two feet C. Refer to Tab. PC 107-28 in the T Sheets for Earthwork Template Quantities and Adjustments + Estimated volume is provided as an adjustment (-) to the EXCAVATION, CLASS 20 item D. Material paid under this item is to be removed from the project and become property of the Contractor
5	2104-2710020	EXCAVATION, CLASS 10, CHANNEL A. Refer to Channel Typical Sections in the B Sheets, and cross sections in the Y Sheets B. Refer to Tab. PC 107-28 in the T Sheets for Earthwork Template Quantities and Adjustments C. Item intended for Channel grading, including cuts for placement of REVETMENT, CLASS E item and excluding cuts within the footprint of the proposed RCB Structure D. Excess material is assumed suitable for use as roadway fill, and is calculated to be used as such
6	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD A. Refer to Tab. PC 107-28 in the T Sheets for Earthwork Template Quantities and Adjustments B. Strip 9.0 inches of topsoil within the project grading limits, and stockpile C. Respread the topsoil to 6.0 inch depth across the grading area D. Excess topsoil shall be used as material for SHOULDER CONSTRUCTION, EARTH
7	2115-0100000	MODIFIED SUBBASE A. Refer to roadway Granular Surfacing Typical Section in the B Sheets, and cross sections in the W Sheets B. Item is intended as a subbase layer to be placed over finished subgrade C. Existing granular surfacing material is not to be re-used or substituted for this item
8	2123-7450000	SHOULDER CONSTRUCTION, EARTH A. Refer to roadway Granular Surfacing Typical Section in the B Sheets B. Item volumes are not accounted for within other template generated items/quantities C. Class 10 material needed for this item is estimated to be 106 CY, is incidental to this item, and shall be provided by the Contractor D. Excess topsoil shall be used for this item; refer to TOPSOIL, STRIP, SALVAGE AND SPREAD item
9	2213-7100400	RELOCATION OF MAIL BOXES A. Refer to plan view in D Sheets and location in the U Sheet B. Refer to Traffic Control plan in the J Sheets for additional discussion C. Item intended for anticipated temporary relocation of an existing mailbox to maintain mail services D. Method of Measurement: Each mailbox relocated from existing location to temporary location, and then relocated from temporary location to permanent location following project completion E. Basis of Payment: Payment will be per the contract unit price. Payment is considered full compensation for all labor, equipment, materials, and coordination with property owner and USPS as needed to maintain mail services throughout the duration of construction.
10	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE A. Refer to roadway Granular Surfacing Typical Section in the B Sheets, and cross sections in the W Sheets B. Item is intended as roadway surfacing layer to be placed over to MODIFIED SUBBASE item C. Existing granular surfacing material is not to be re-used or substituted for this item
11	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE A. Refer to entrance geometry and locations in the D Sheets B. Refer to Tab. PC 102-3 in the C Sheets for locations and additional information C. Item includes quantity for use with anticipated temporary access/entrance + Refer to Traffic Control Plan in the J Sheets for additional discussion + Additional material, as needed, for maintaining this entrance may be paid for with this item + Removal and cleanup of this temporary entrance is considered incidental to TRAFFIC CONTROL item; reuse of the surfacing material will be allowed provided it is clean, with no additional payment considered

PC 100-4A		
ESTIMATE REFERENCE INFORMATION		
Item No.	Item Code	Description
12	2401-6745625	REMOVAL OF EXISTING BRIDGE A. Refer to Tab. PC 110-2 in the C Sheets for existing bridge information and visual aid B. Entire structure shall become property of the Contractor C. Item includes full removal of entire structure, including any discovered unknown items D. Refer to Tab. PC 190-62 in the C Sheets for sign removal coordination requirements E. Scrape samples of this bridge were requested to get an indication of the existence of and level of total chromium and total lead; however, there were no painted surfaces present that would be considered to contain any lead or chromium. Samples were also requested to test for the presence of asbestos; however, there were no materials present that would be considered to contain asbestos. No other substances were sampled or analyzed. The bidder should not rely on the LPA's testing and analysis for any purpose other than an indication of the existence of these two constituents.
13	2401-6745910	REMOVAL OF SIGN (REMOVE, SALVAGE, REPLACE) A. Refer to plan view in D Sheets and removal locations in the U Sheet B. Refer to Tab. PC 190-62 in the C Sheets for locations and additional information C. Item included for removal and replacement of existing private sign on southeast corner of project D. Item does NOT include removal of existing signs to be removed by County forces; refer to Tab. PC 190-62 E. Method of Measurement: Each sign removed prior to work in the area, safely salvaged and stored during construction, and reinstalled following project completion. F. Basis of Payment: Payment will be per the contract unit price. Payment is considered full compensation for all labor, equipment, materials, and coordination with property owner for reinstallation location.
14	2402-0425031	GRANULAR BACKFILL A. Refer to RCB Structure Typical Section in the B Sheets, and cross sections in Y Sheets B. Item is intended for backfill along the sides of the proposed RCB, beneath the proposed roadway C. Backfill to the shapes defined in the typical section, within the previously completed Class 20 Excavation limits, and up to 1.0' above the top of the RCB structure
15	2402-2720000	EXCAVATION, CLASS 20 A. Refer to RCB Structure Typical Section in the B Sheets, and cross sections in Y Sheets B. Refer to Tab. PC 107-28 in the T Sheets for Earthwork Template Quantities and Adjustments + Structure 'Total Cut' volume is adjusted for EXCAVATION, CLASS 13, WASTE + Structure 'Total Fill' volume is adjusted for revetment volumes placed along RCB headwall edges C. Item is intended for excavation for the proposed RCB structure, including excavation for placement of the SPECIAL BACKFILL (Structure) subbase layer D. Excess material is assumed suitable for use as roadway fill, and is calculated to be used as such
16	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT) A. Refer to Tab. PC 105-4 SCP in the C Sheets for listing of applicable Standard Culvert Plans B. Refer to V Sheet for RCB Culvert design information C. Refer to ED Sheet for proposed stream plan and profile information D. RCB design and quantities are based on roadway fill value of "3 feet" within the applicable Iowa DOT Standard Culvert Plans E. Contractor to provide Certified Plant inspection in accordance with specification Section 2521 and in accordance with Iowa DOT Materials I.M. 213 F. Forming and casting of a CMP pipe protrusion through northeast wingwall is incidental to this item: + Refer to B Sheets for a required detail of this pipe outlet protrusion + Refer to Tab. PC 102-3 in the C Sheets for location and elevation information + Refer to D Sheets for plan view location information
17	2404-7775000	REINFORCING STEEL A. Refer to Tab. PC 105-4 SCP in the C Sheets for listing of applicable Standard Culvert Plans B. Refer to V Sheet for RCB Culvert design information C. Refer to ED Sheet for proposed stream plan and profile information D. RCB design and quantities are based on roadway fill value of "3 feet" within the applicable Iowa DOT Standard Culvert Plans E. Item quantity includes an additional 48 lbs. of reinforcing steel, per the pipe outlet protrusion detail in the B Sheets
18	2417-0225015	APRONS, METAL, 15 IN. DIA.
19	2417-0225018	APRONS, METAL, 18 IN. DIA.
20	2417-1040015	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 15 IN. DIA.
21	2417-1040018	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 18 IN. DIA. A. Refer to Tab. PC 102-3 in the C Sheets for detailed entrance pipe information B. Refer to D Sheets for location information C. Refer to Standard Road Plan EW-501
22	2418-0000010	TEMPORARY STREAM DIVERSION A. Refer to Standard Road Plan EW-402 B. Refer to D Sheets and ED Sheet for presumed diversion channel layout; potential location is shown solely for the purpose of providing adequate space and to aid utility conflict analysis C. Stream diversion method, type, design, and construction are the sole responsibility of the Contractor D. Earthwork volumes for this item, including those lost due to shrinkage during backfilling, are NOT included in other contract bid items; the Contractor is responsible for any such difference. E. Backfill any stream diversion channel per 2418.03.B.7
23	2503-0200036	REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN. A. Refer to Tab. PC 110-2 in the C Sheets for entrance pipe removals

FILE NO.	BR1270	ENGLISH	DESIGN TEAM	Polk County Public Works - Engineering	POLK COUNTY	PROJECT NUMBER	STP-S-C077(252) - -5A-77	SHEET NUMBER	C.2
----------	--------	---------	-------------	--	-------------	----------------	--------------------------	--------------	-----

[illegible]

REMOVALS		
Location	Description	Remarks
REMOVAL OF EXISTING BRIDGE		
Sta. 10+00	Existing concrete channel-beam bridge A. Single-span (30') concrete channel-beam B. 31' x 32' cast-in-place concrete deck (includes integral curb width) C. Timber pile/plank abutments and wings D. Reinforced concrete curb/barrier E. A CMP/Concrete encased piling is present on west abutment F. Timber pilings in stream from previous structure G. No materials present that would be considered to contain asbestos H. No painted surfaces present that would be considered to contain any lead or chromium	
		
REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.		
Sta. 7+65.5, 22.5' Rt	Remove 32' of 15" CMP Entrance Pipe	
Sta. 10+77, 25.5' Lt	Remove 81' of 18" CMP Entrance Pipe	
REMOVE AND RELOCATE/SALVAGE/STORE		
Sta. 10+37, 27' Lt	Remove, Salvage and Store existing 18" outlet flap gate (Reuse on proposed CMP)	
Sta. 10+12, 31.5' Rt	Remove and Relocate existing mailbox (temporary relocation and permanent relocation)	
Sta. 10+40, 34.5' Rt	Remove, Salvage and Store existing private sign (Replace following construction)	

[illegible][illegible]

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

Length of Unclassified Pipe calculated is based on using Corrugated Metal Pipe.

① Refer to MI-210

(2) Refer to EW-501.

3 Refer to EW-501 or EW-502.

*Predetermined for access point not constructed with this project.

[illegible]

ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

[illegible]

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204		
----------------------------	--	--

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
8+19.00	10+00.00	LT	186.0			
7+92.00	8+77.00	RT	90.0			
11+18.00	12+11.00	LT	98.0			
10+10.00	10+73.00	RT	168.0			
7+37.00	9+37.00	LT		68.0		Ditch Checks
7+37.00	8+87.00	RT		60.0		Ditch Checks
11+22.00	12+72.00	LT		56.0		Ditch Checks
10+58.00	12+58.00	RT		60.0		Ditch Checks
	Totals		542.0	244.0		

ROLLED EROSION CONTROL

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

[illegible]

POLLUTION PREVENTION PLAN

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

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

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

I. ROLES AND RESPONSIBILITES

- A. Designer:
- 1. Prepares Base PPP included in the project plan.
 - 2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
 - 3. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.
- B. Contractor:
- 1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
 - 2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
 - 3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
 - 4. Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231).
 - 5. Supervises and implements good housekeeping practices according to Paragraph III, C, 2.
 - 6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
 - 7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
 - 8. Submits amended PPP site map according to Section 2602 of the Standard Specifications.
- C. Subcontractors:
- 1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or 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 the construction of a new RCB culvert.
- B. This PPP covers approximately 1.7 acres with an estimated 1.2 acres being disturbed. The portion of the PPP covered by this contract has 1.2 acres disturbed.
- C. The PPP is located in an area of Coland clay loam with a hydrologic soil group of C/D. The estimated weighted average runoff coefficient number for this PPP after completion will be 0.65.
- 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 Skunk River Tributary.

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.

POLLUTION PREVENTION PLAN

IV. MAINTENANCE PROCEDURES

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

V. INSPECTION REQUIREMENTS

- A. Inspections shall be made jointly by the Contractor and the Contracting Authority's inspector at least once every seven calendar days. Storm water site inspections will include:
- 1. Date of the inspection.
 - 2. Summary of the scope of the inspection.
 - 3. Name and qualifications of the personnel making the inspection.
 - 5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
 - 6. Major observations related to the implementation of the PPP.
 - 7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water site inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

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
Rachel Conrad
Printed or Typed Name

Signature

SURVEY SYMBOLS

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

UTILITY LEGEND

FIBER
- HUXLEY COMMUNICATIONS
Contact Name : Brant Strumpfer
Contact Phone: 515-597-2281
Contact Email: huxtel@huxcomm.net
- PRECISION UNDERGROUND UTILITY
Contact Name : DOUG ROSE
Contact Phone: 515-782-6733
Contact Email: doug.r@precisionundergroundia.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

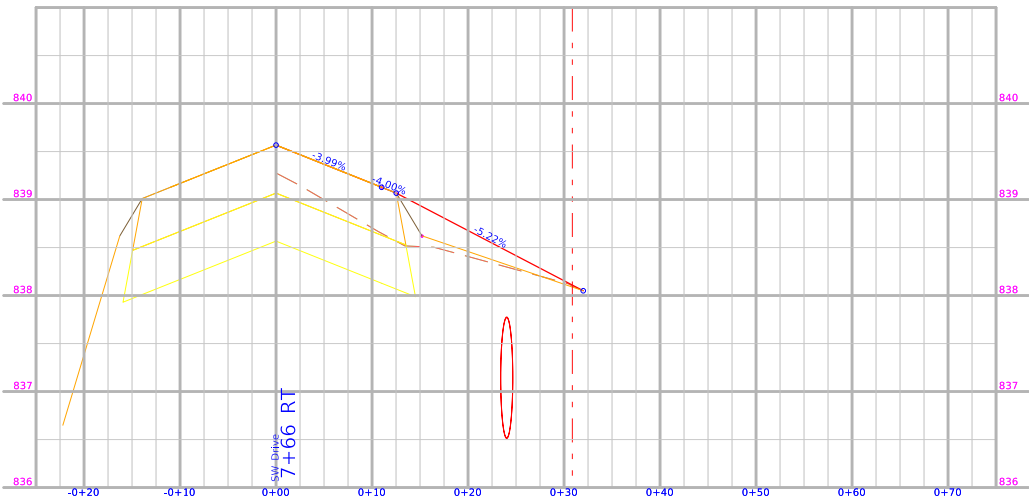
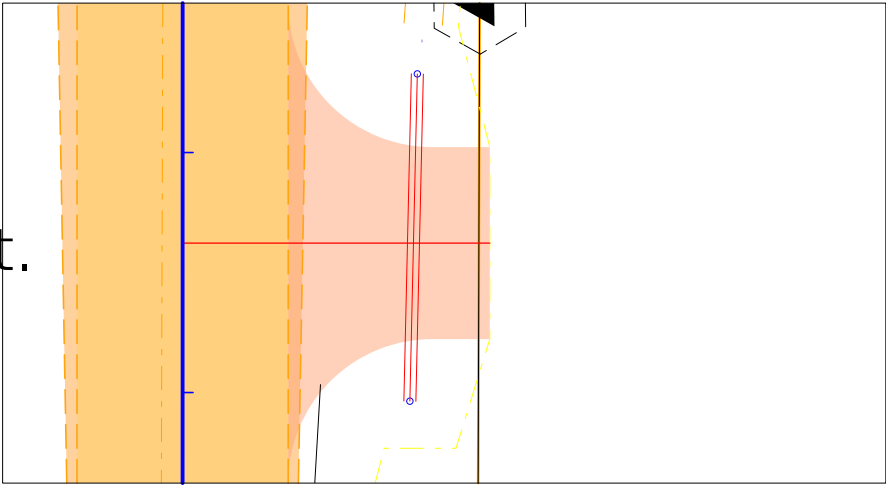
Reference Point	Survey Line
Station	Section Corner
Ground Line Intercept	Saw Cut
Guardrail	Trench Drain
HighTension Cable Guardrail	Sheet Pile
Pavement Removal	Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND	
	Proposed Right-of-Way Symbol
	Proposed Right-of-Way Line
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary) Symbol
	Easement (Temporary) Line
	Easement
	Access Control
	Property Line Symbol
	Property Line

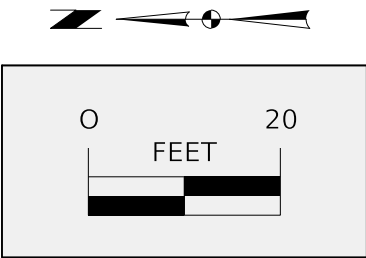
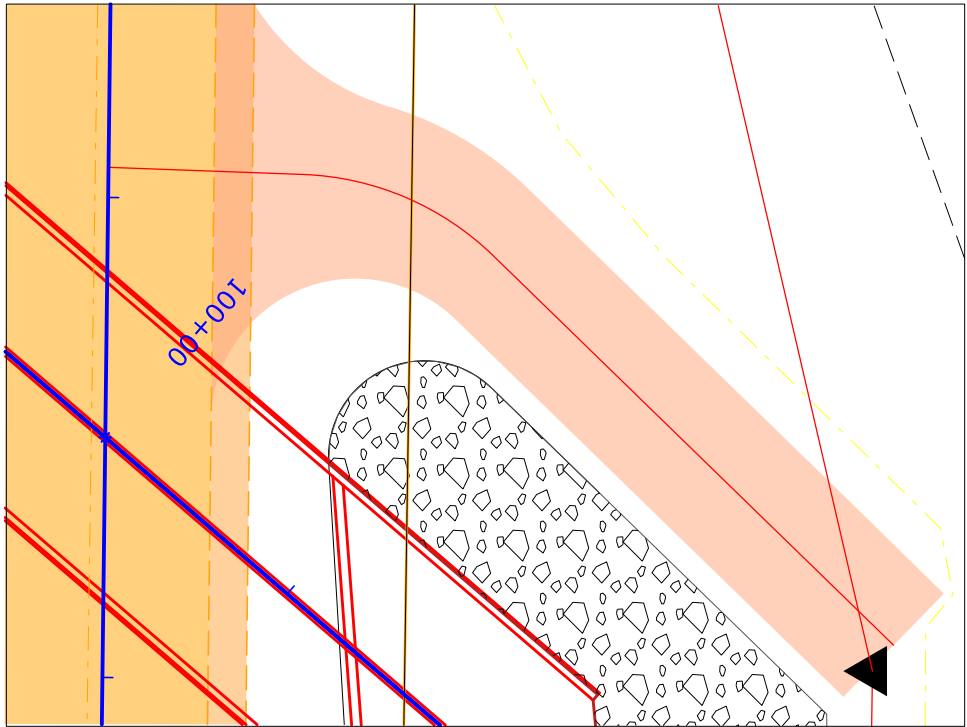
PLAN AND PROFILE
LEGEND AND SYMBOL
INFORMATION SHEET

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

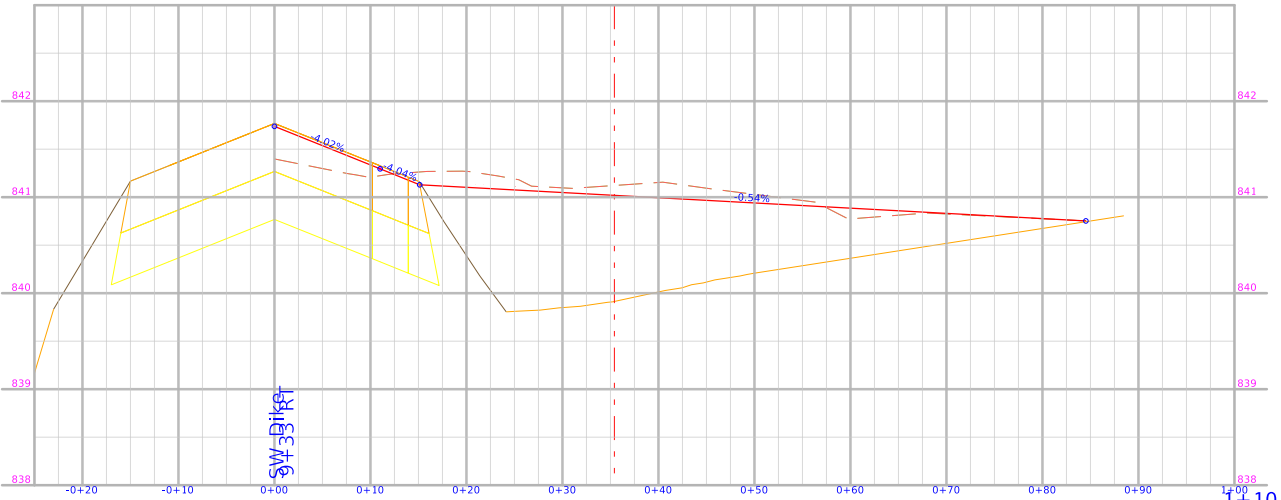
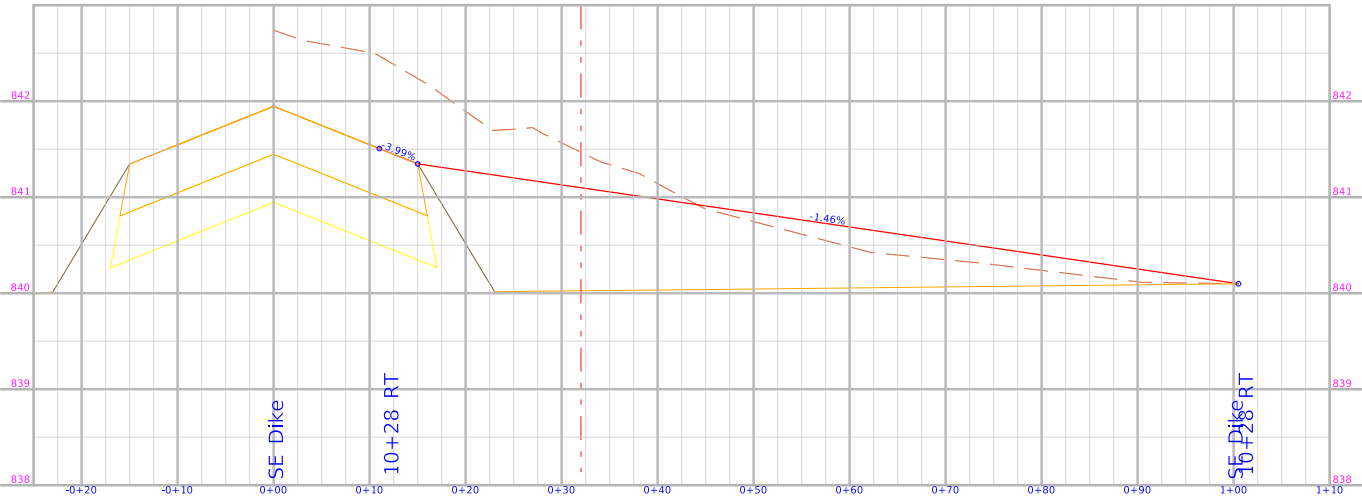
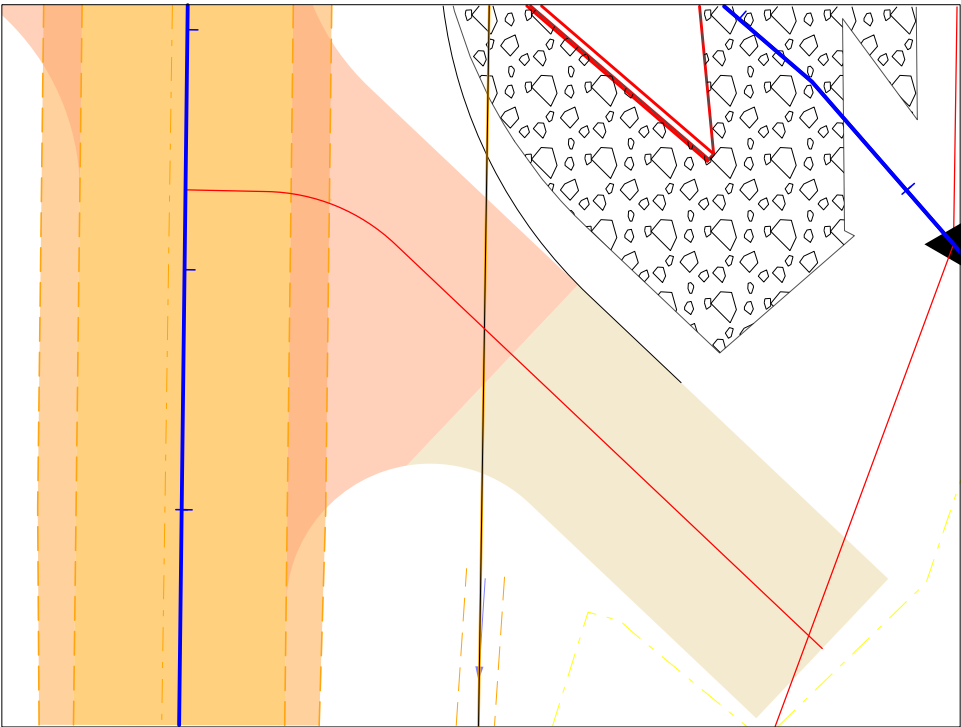
Sta. 7+66 Rt. Ent.



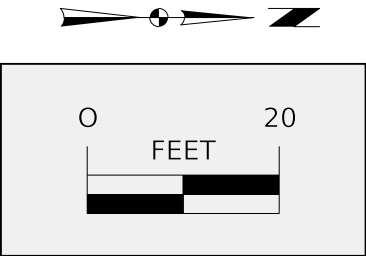
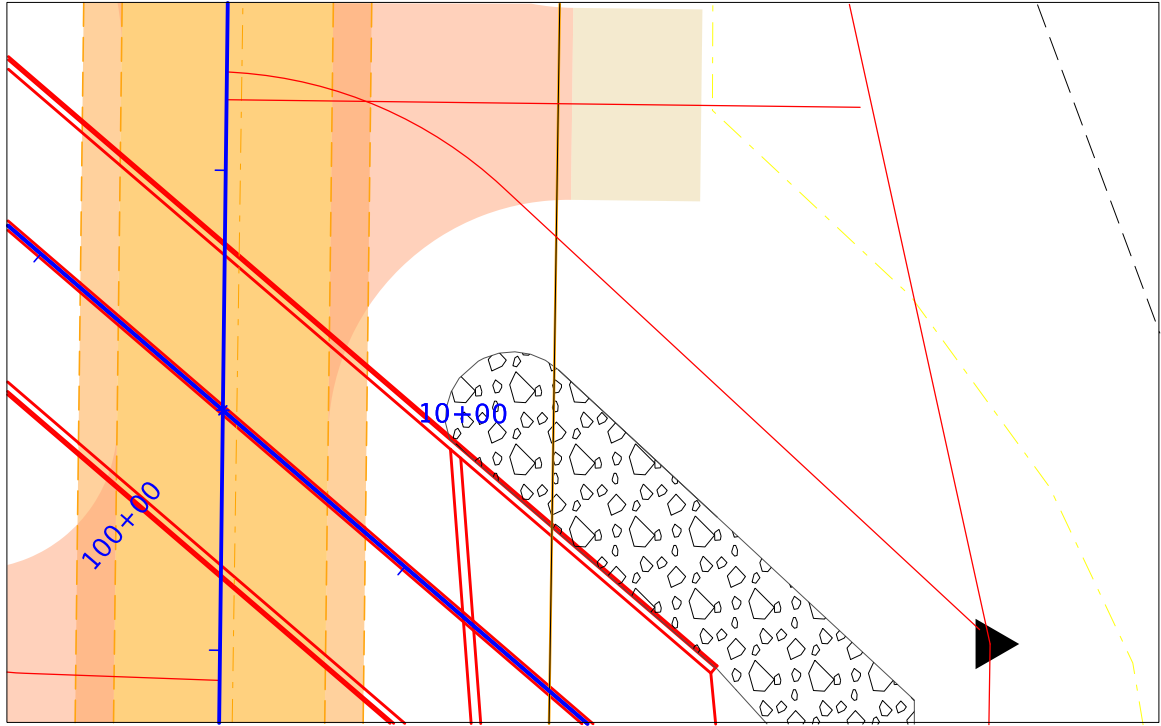
Sta. 10+28 Rt. Ent. (SE Dike)



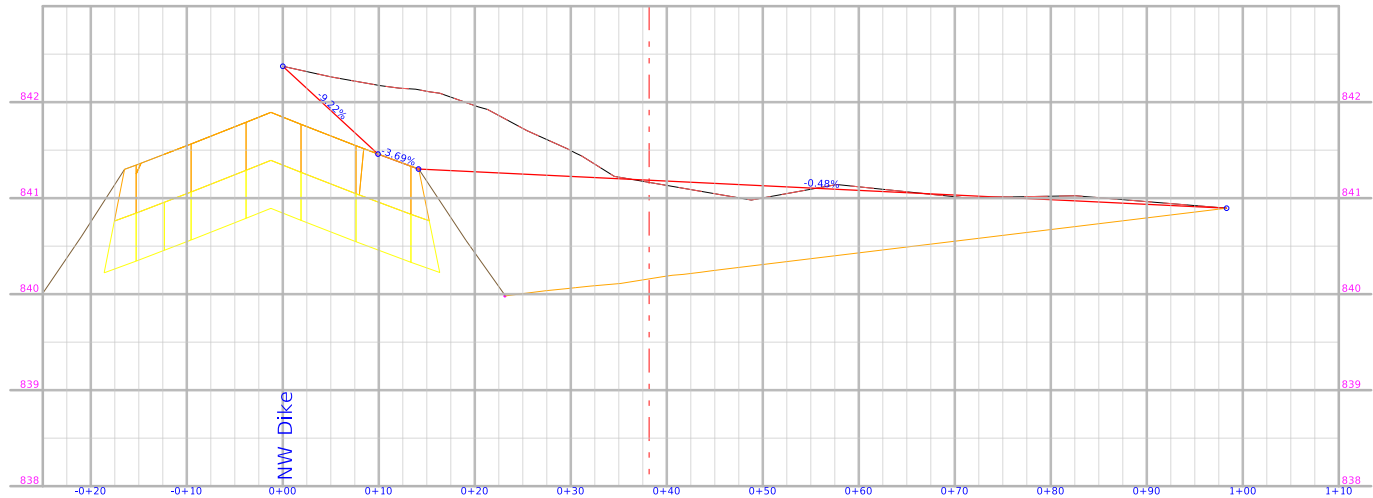
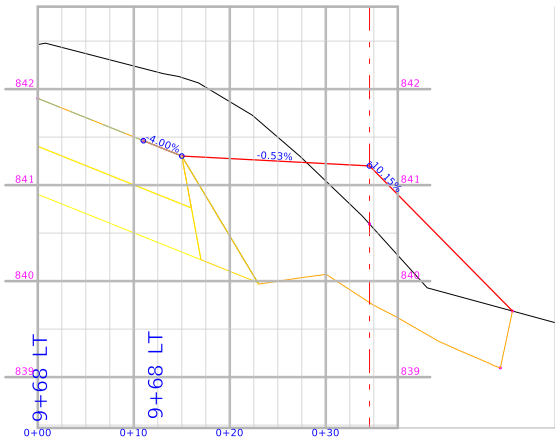
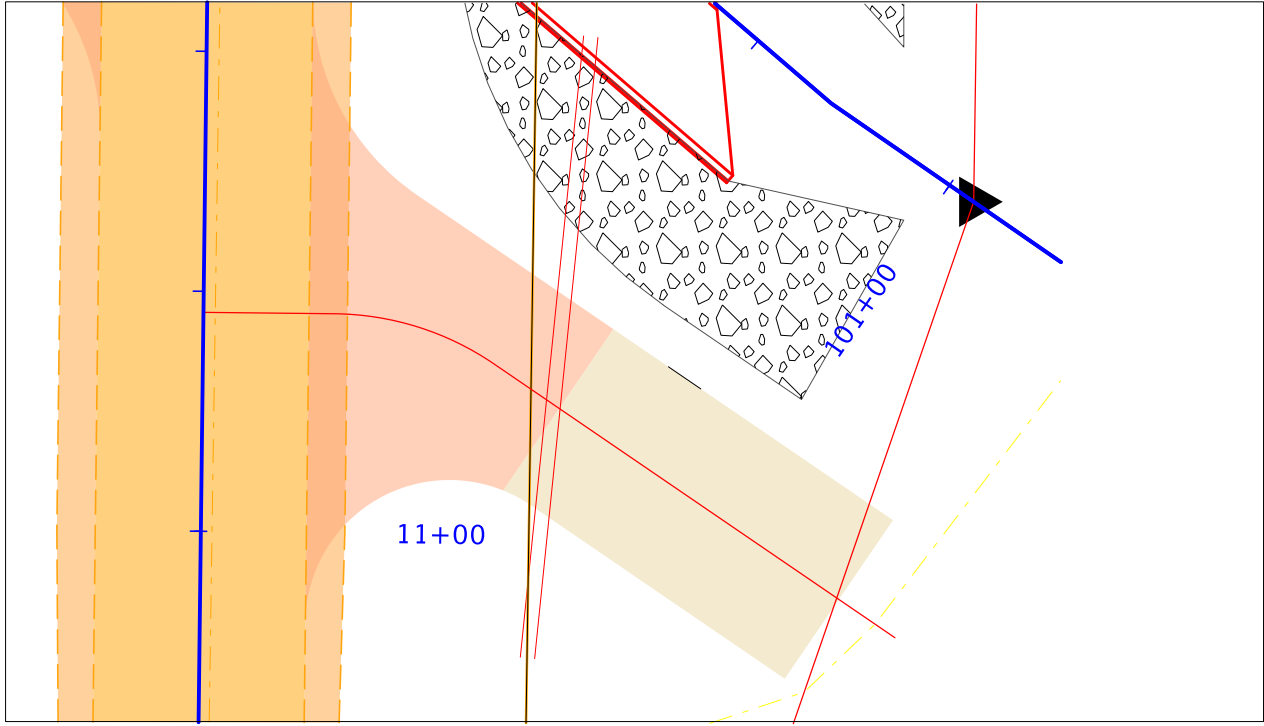
Sta. 9+33 Rt. Ent. (SW Dike)

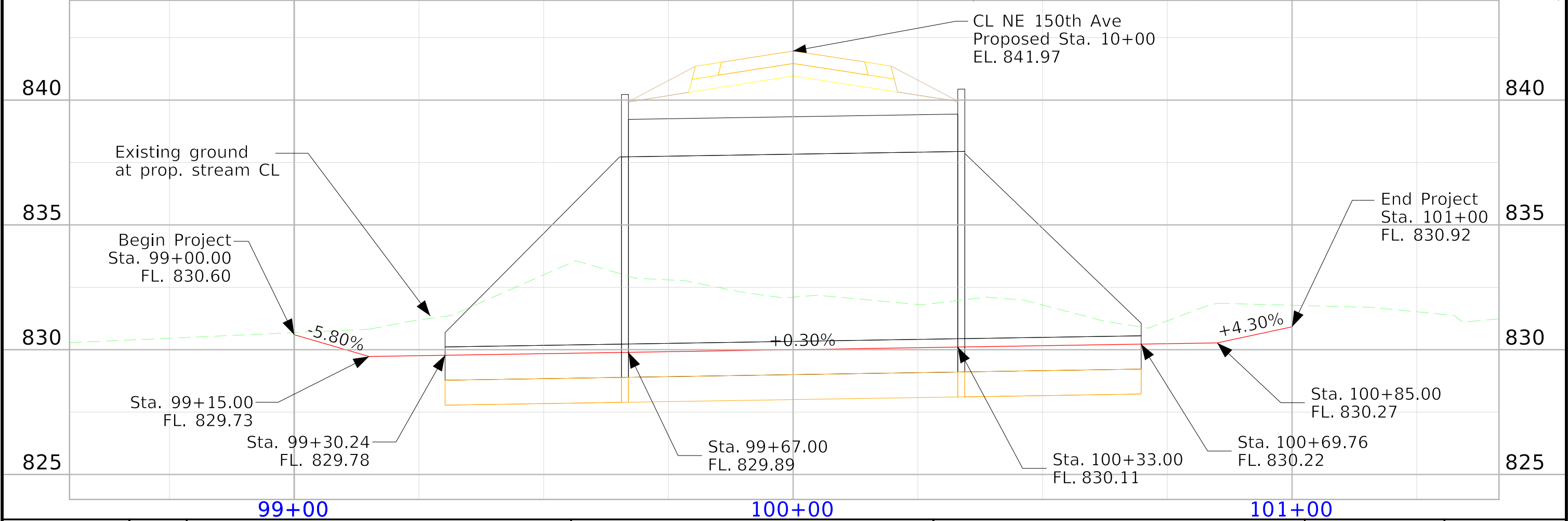
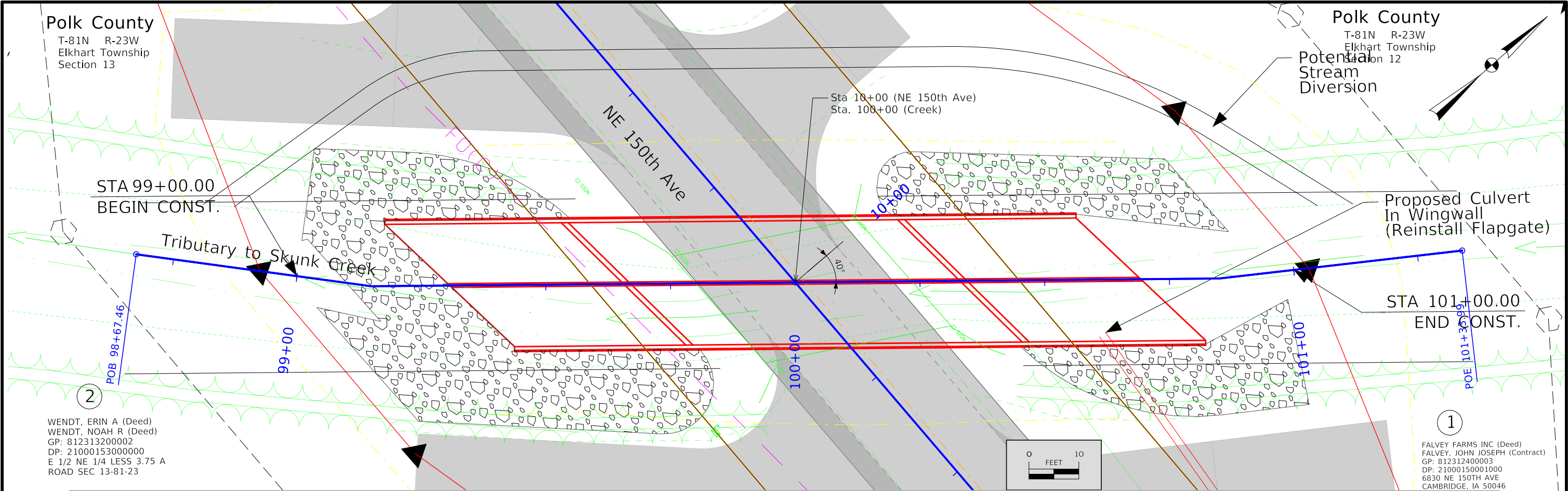


Sta. 9+68, Rt. Ent. (NW Dike)



Sta. 10+77, Lt. Ent. (NE Dike)

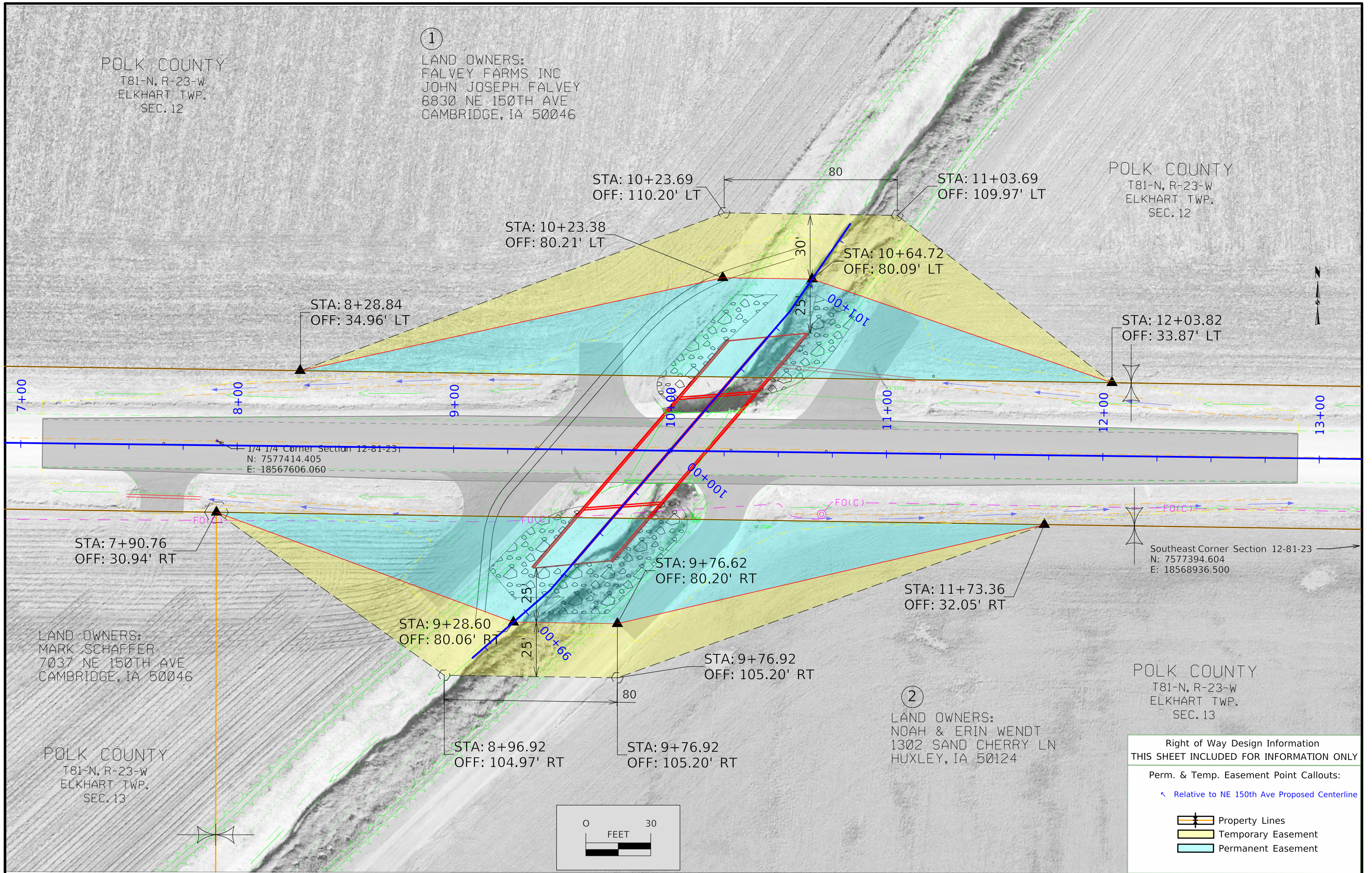




①
LAND OWNERS:
FALVEY FARMS INC
JOHN JOSEPH FALVEY
6830 NE 150TH AVE
CAMBRIDGE, IA 50046

POLK COUNTY
T81-N, R-23-W
ELKHART TWP.
SEC. 12

POLK COUNTY
T81-N, R-23-W
ELKHART TWP.
SEC. 12



LAND OWNERS:
MARK SCHAFER
7037 NE 150TH AVE
CAMBRIDGE, IA 50046

POLK COUNTY
T81-N, R-23-W
ELKHART TWP.
SEC. 13

②
LAND OWNERS:
NOAH & ERIN WENDT
1302 SAND CHERRY LN
HUXLEY, IA 50124

POLK COUNTY
T81-N, R-23-W
ELKHART TWP.
SEC. 13

Right of Way Design Information
THIS SHEET INCLUDED FOR INFORMATION ONLY

Perm. & Temp. Easement Point Callouts:

Relative to NE 150th Ave Proposed Centerline

- Property Lines
- Temporary Easement
- Permanent Easement

This (252) project is contractually tied with the nearby (253) project to the west. The Traffic Control Plan and Detour Route

- Closure of NE 150th Ave at this (252) project location is permitted only while active construction is ongoing at this location

- When concurrent road closures are utilized, the Contractor shall submit a combined Traffic Control Plan / Detour Route for review.

Notes: While each individual Traffic Control Plan and Detour Route is designed to stand alone, the configurations are compatible

Portable Dynamic Message Signs (PDMS) shall be placed seven (7) calendar days prior to implementation of the road closure. Final

- On NE 150th Ave, facing EB traffic, just east of NE 68th St

A full temporary road closure of NE 150th Ave will be utilized during construction. A signed detour route shall be used and

- Maintenance of access to all properties; maintain access to/from existing entrances or coordinate with property owners to

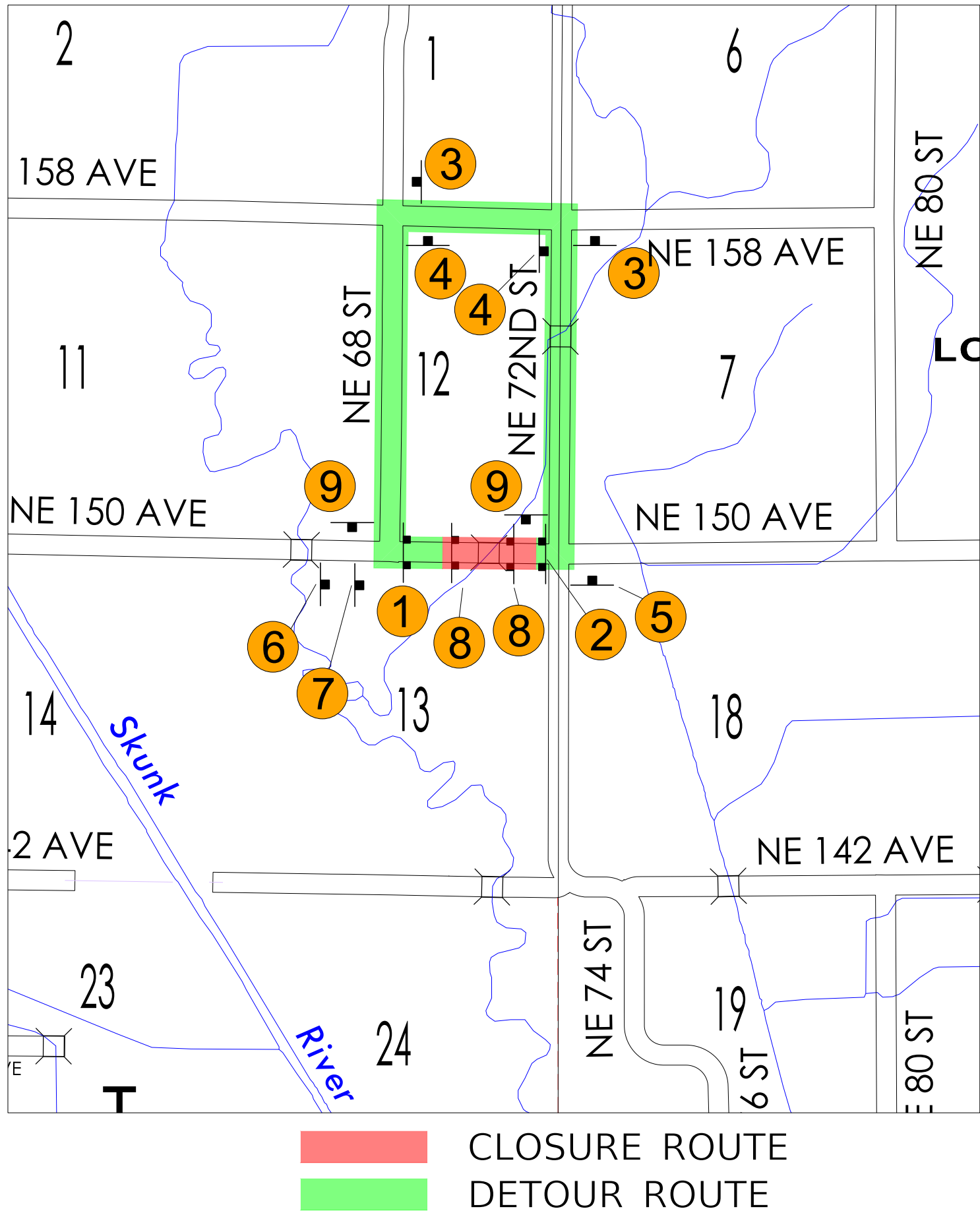
Contractor shall provide to Polk County, the names and contact information of individuals responsible for maintenance of traffic

Other work is underway during the same period of time with

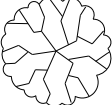
Project	Type of Work
---------	--------------

Project	Type of work
BROS-C077(253)--5F-77	Contractually-tied Project

1	2	9
3	4	
5	6	
7	8	



LINE STYLE LEGEND OF LANDSCAPE SHEETS	
LINESTYLE	Design Element
	Living Snow Fence Single Row
	Living Snow Fence Double Row
	Mechanical Edge

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

PATTERN LEGEND OF LANDSCAPE SHEETS	
	Brush Clearing
	Spray Area
	Clearing & Grubbing

LINE STYLE LEGEND OF EROSION CONTROL SHEETS	
LINESTYLE	Design Element
	Silt Fence
	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				
LINEWORK	Design Color No.			
Green	(2)		Existing Topographic Features and Labels	
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation	
Magenta	(5)		Existing Utilities	
Black	(0)		Permanent Erosion Control Features	
Blaze Orange	(222)		Temporary Erosion Control Features	
SHADING	Design Color No.		Transparency	
Citron	(234)		Mulching, All Types	50%
Light Brown	(238)		Special Ditch Control, Wood Excelsior Mat	0%
Grass Green	(233)		8FT Mow Strip	50%

PATTERN LEGEND OF EROSION CONTROL SHEETS	
	Seeding and Fertilizing
	Seeding and Fertilizing (Rural)
	Seeding and Fertilizing (Urban)
	Native Grass Seeding
	Salt Tolerant Seeding
	Wetland Grass Seeding
	Wildflower Seeding
	Sodding
	Turf Reinforcement Mat Type 1
	Turf Reinforcement Mat Type 2
	Turf Reinforcement Mat Type 3
	Turf Reinforcement Mat Type 4
	Slope Protection, Wood Excelsior Mat
	Transition Mat
	Rock Features, Permanent
	Rock Features, Temporary

EROSION CONTROL
LEGEND AND SYMBOL
INFORMATION SHEET

(COVERS SHEET SERIES R)

POLK COUNTY
T-81N, R-23W, SEC-12
ELKHART TOWNSHIP

SLOPE PROTECTION
WOOD EXCELSIOR MAT
(NATIVE GRASS SEEDING) ①
FALVEY FARMS INC (Deed)
FALVEY, JOHN JOSEPH (Contract)

PERIMETER & SLOPE
SEDIMENT CONTROL
DEVICE, 9 IN. DIA. (TYP.)

DITCH CONTROL
WOOD EXCELSIOR MAT
(NATIVE GRASS SEEDING)

DITCH CHECK
SEDIMENT CONTROL
DEVICE, 12 IN. DIA. (TYP.)

PERIMETER & SLOPE
SEDIMENT CONTROL
DEVICE, 9 IN. DIA. (TYP.)

DITCH CONTROL
WOOD EXCELSIOR MAT
(NATIVE GRASS SEEDING)

DITCH CHECK
SEDIMENT CONTROL
DEVICE, 12 IN. DIA. (TYP.)

DITCH CHECK
SEDIMENT CONTROL
DEVICE, 12 IN. DIA. (TYP.)
DITCH CONTROL
WOOD EXCELSIOR MAT
(NATIVE GRASS SEEDING)
PERIMETER & SLOPE
SEDIMENT CONTROL
DEVICE, 9 IN. DIA. (TYP.)

SCHAFFER, MARK G

② WENDT, ERIN A (Deed)
WENDT, NOAH R (Deed)

POLK COUNTY
T-81N, R-23W, SEC-13
ELKHART TOWNSHIP

SLOPE PROTECTION
WOOD EXCELSIOR MAT
(NATIVE GRASS SEEDING)

REPLACE SIGN
(COORD WITH
HOMEOWNER)

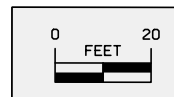
RELOCATE MAILBOX
(PERM. LOC.; COORD
WITH HOMEOWNER)

DITCH CONTROL
WOOD EXCELSIOR MAT
(NATIVE GRASS SEEDING)
DITCH CHECK
SEDIMENT CONTROL
DEVICE, 12 IN. DIA. (TYP.)

PERIMETER & SLOPE
SEDIMENT CONTROL
DEVICE, 9 IN. DIA. (TYP.)

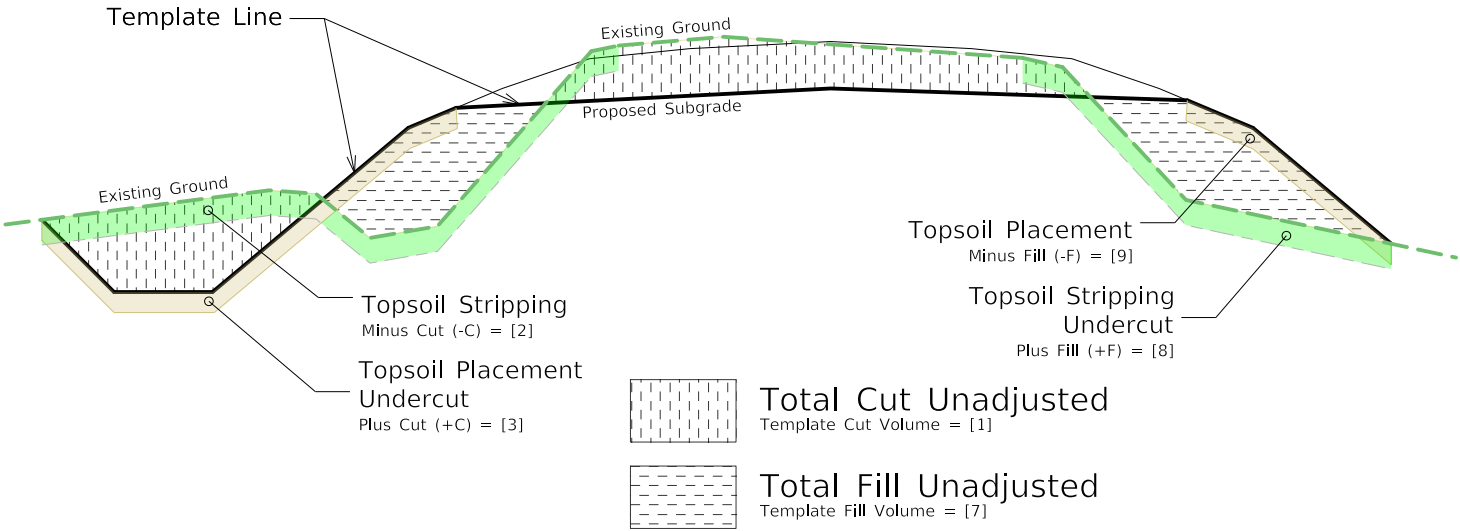
Polk County
T-80N R-23W
Douglas Township
Section 09

**EROSION CONTROL
& FINAL SURFACE
RESTORATION**



TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

All Values Provided In This Tabulation Are Displayed As Total Volumes For a Specific Corridor Model (Cubic Yards)	Cut						Fill								Topsoil							
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]				
						$\frac{[1] - [2] + [3]}{+ [4] + [5]}$						$\frac{[7] + [8] - [9]}{+ [10] + [11]}$	$[12] \times 1.3$	$[6] - [13]$	$[2] + [8]$	$[3] + [9]$	$[16] \times 1.4$	$[15] - [17]$				
	Total Cut Unadjusted	Topsoil Stripping (- Cut)	Topsoil Placement Undercut (+ Cut)	Pavement Removal (- Cut)	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted	Topsoil Stripping Undercut (+ Fill)	Topsoil Placement (- Fill)	Pavement Removal Undercut (+ Fill)	Manually Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted with 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Topsoil Stripping Volume	Topsoil Placement Volume	Topsoil Placement with 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/ Shrink				
NE 150th Ave.	634.6	283.5	183.9	-	-	535.0	235.7	526.5	341.5	-	200.0	620.7	806.9	-271.9	809.9	525.4	735.5	74.4				
Skunk River Trib. Channel	299.9	-	-	-	0.0	299.9	70.2	-	-	-	-	70.2	91.3	208.6	-	-	-	-				
RCB Structure	1819.3	-	-	-	-64.0	1755.3	623.2	-	-	-	-158.1	465.1	604.6	1150.7	-	-	-	-				
Totals:	2753.7	283.5	183.9	-	-64.0	2590.1	929.2	526.5	341.5	-	41.9	1156.0	1502.8	1087.3	809.9	525.4	735.5	74.4				
	Excavation, Class 10, Roadway & Borrow						Excavation, Class 20					Excavation, Class 10, Waste										
	= [6] NE 150						= [6] RCB Structure					= [14] Total										
	535.0						1755.3					1087.3										
	Excavation, Class 10, Channel						Excavation, Class 13, Waste					Topsoil, Strip, Salvage, and Spread										
	= [6] Channel						= [5] RCB Structure					= [15] Total										
	299.9						64.0					809.9										



REMOVE EXISTING 32' x 30'
REINFORCED CONCRETE
CHANNEL BEAM BRIDGE

Remove 18" x 81' CMP
Sta. 10+77, 25.5' Lt

Excavation CL 13
Waste 64 C.Y.

NE 150TH AVE

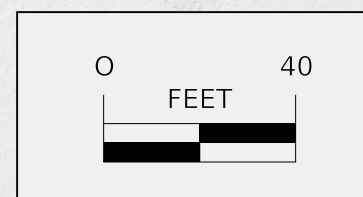
Polk County to Remove Sign

Polk County to Remove Signs

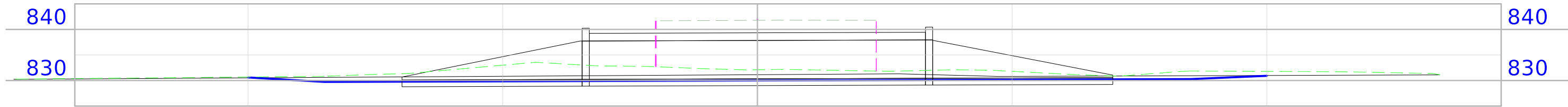
Remove, Salvage, and Store Sign

Remove and Relocate Mailbox

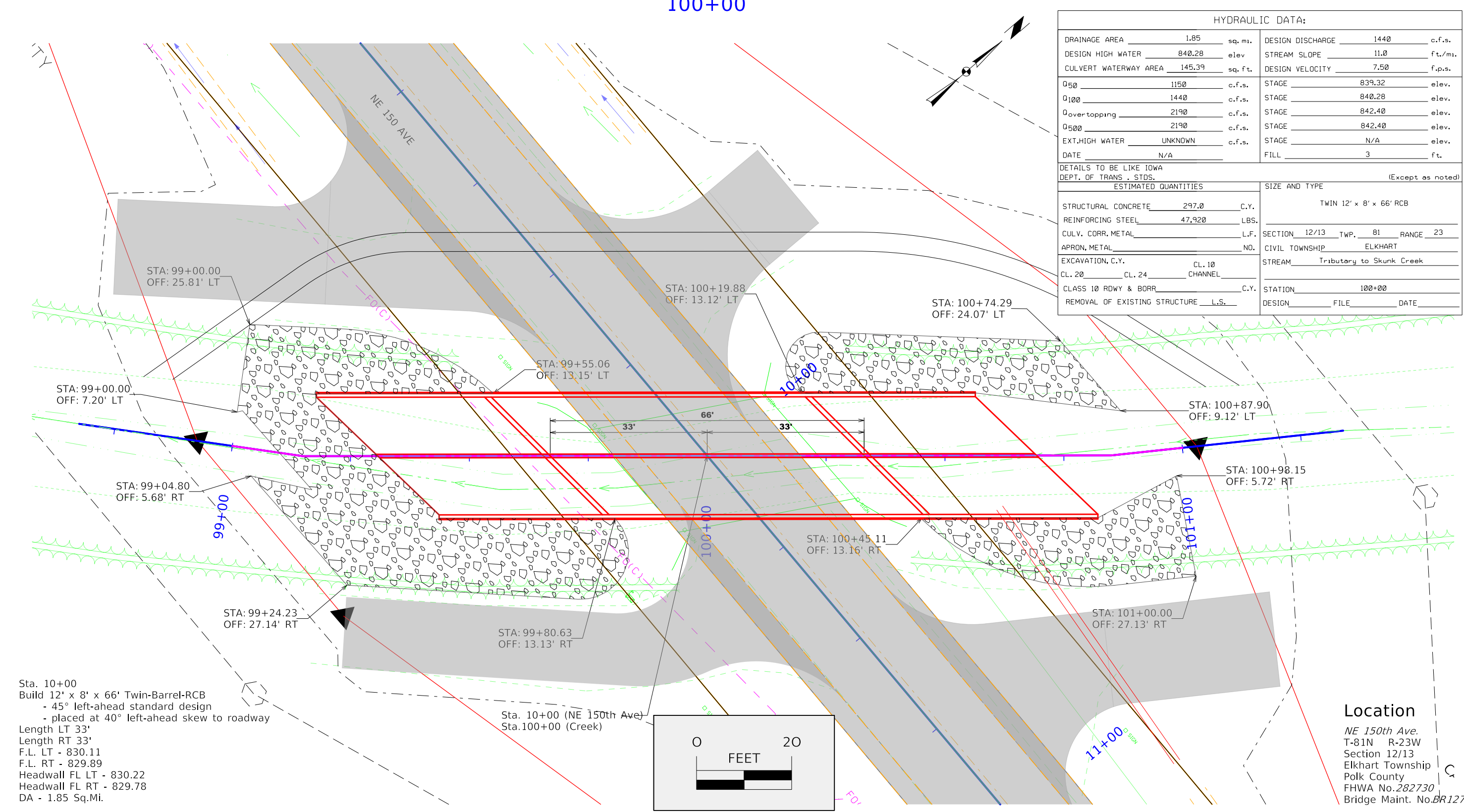
Remove 15" x 32' CMP
Sta. 7+66, 22.5' Rt



**CLEARING & GRUBBING
AND
REMOVALS**



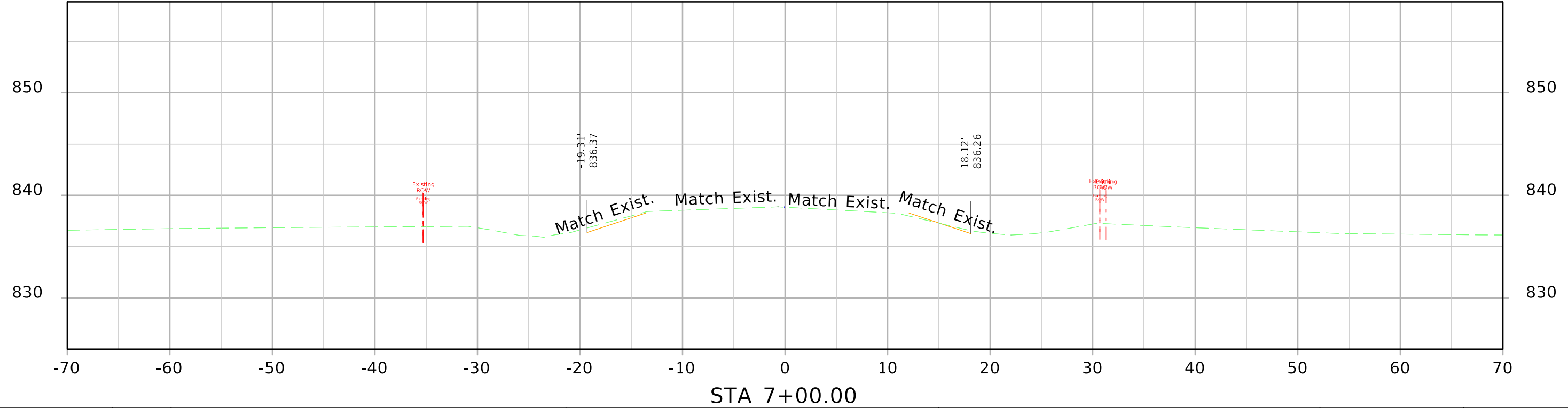
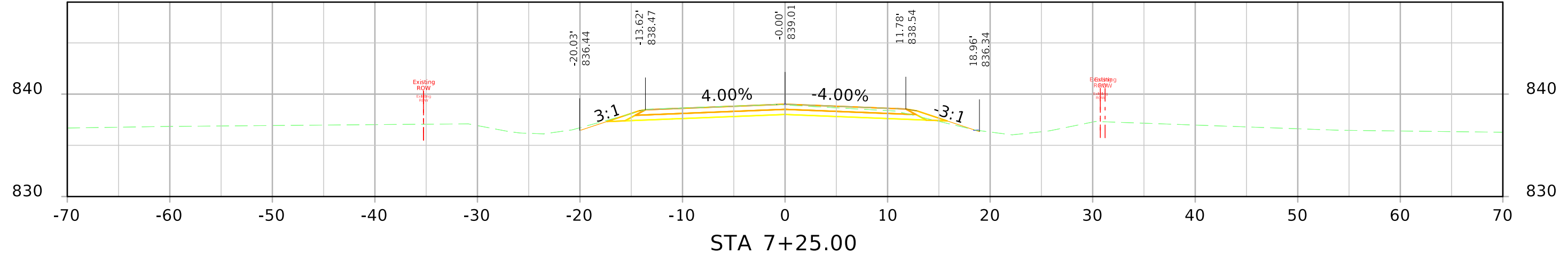
HYDRAULIC DATA:					
DRAINAGE AREA	1.85	sq. mi.	DESIGN DISCHARGE	1440	c.f.s.
DESIGN HIGH WATER	840.28	elev.	STREAM SLOPE	11.0	ft./mi.
CULVERT WATERWAY AREA	145.39	sq. ft.	DESIGN VELOCITY	7.50	f.p.s.
Q ₅₀	1150	c.f.s.	STAGE	839.32	elev.
Q ₁₀₀	1440	c.f.s.	STAGE	840.28	elev.
Q _{overtopping}	2190	c.f.s.	STAGE	842.40	elev.
Q ₅₀₀	2190	c.f.s.	STAGE	842.40	elev.
EXT.HIGH WATER	UNKNOWN	c.f.s.	STAGE	N/A	elev.
DATE	N/A		FILL	3	ft.
DETAILS TO BE LIKE IOWA DEPT. OF TRANS. STDS. (Except as noted)					
ESTIMATED QUANTITIES			SIZE AND TYPE		
STRUCTURAL CONCRETE	297.0	C.Y.	TWIN 12' x 8' x 66' RCB		
REINFORCING STEEL	47,920	LBS.			
CULV. CORR. METAL		L.F.	SECTION	12/13	TWP. 81 RANGE 23
APRON, METAL		NO.	CIVIL TOWNSHIP	ELKHART	
EXCAVATION, C.Y.			STREAM	Tributary to Skunk Creek	
CL. 20 CL. 24 CHANNEL			STATION	100+00	
CLASS 10 ROWY & BORR		C.Y.	DESIGN	FILE	DATE
REMOVAL OF EXISTING STRUCTURE		L.S.			



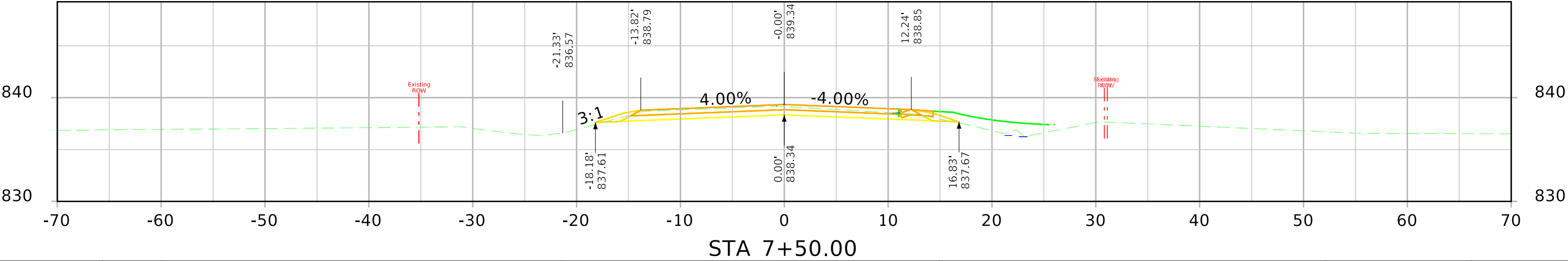
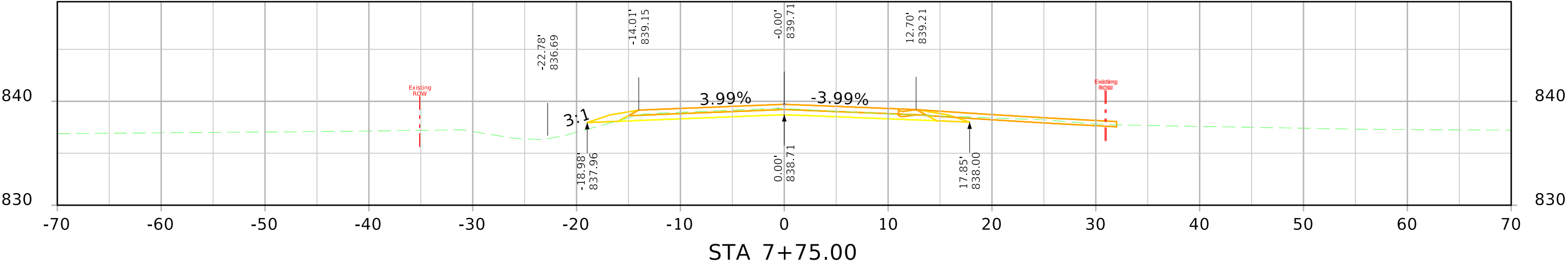
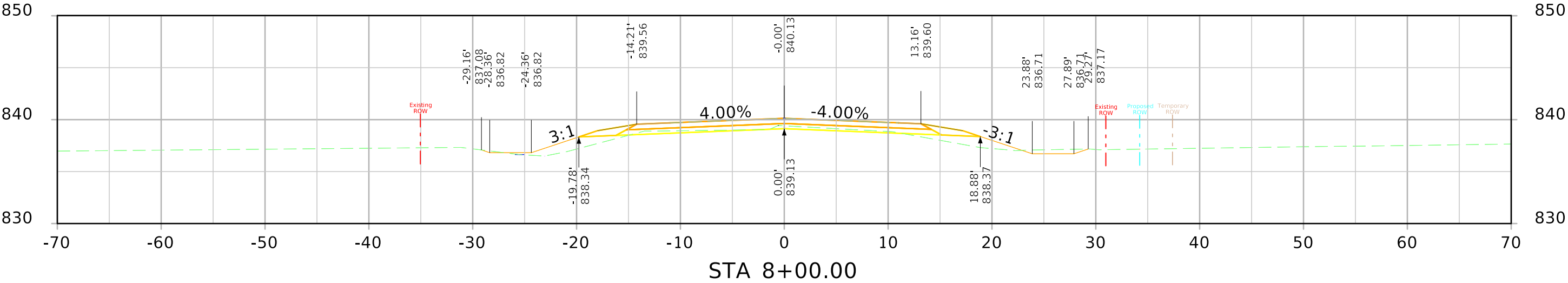
Sta. 10+00
Build 12' x 8' x 66' Twin-Barrel-RCB
- 45° left-ahead standard design
- placed at 40° left-ahead skew to roadway
Length LT 33'
Length RT 33'
F.L. LT - 830.11
F.L. RT - 829.89
Headwall FL LT - 830.22
Headwall FL RT - 829.78
DA - 1.85 Sq.Mi.

Location
NE 150th Ave.
T-81N R-23W
Section 12/13
Elkhart Township
Polk County
FHWA No.282730
Bridge Maint. No.BR1270

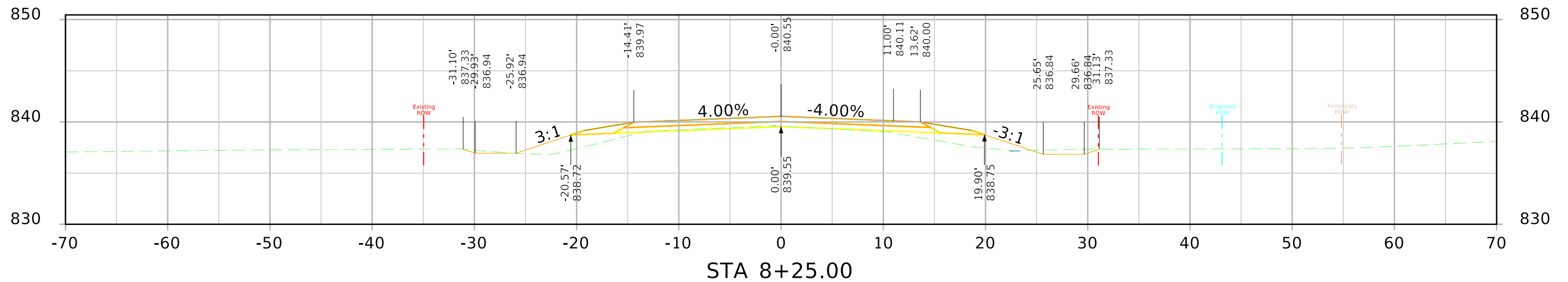
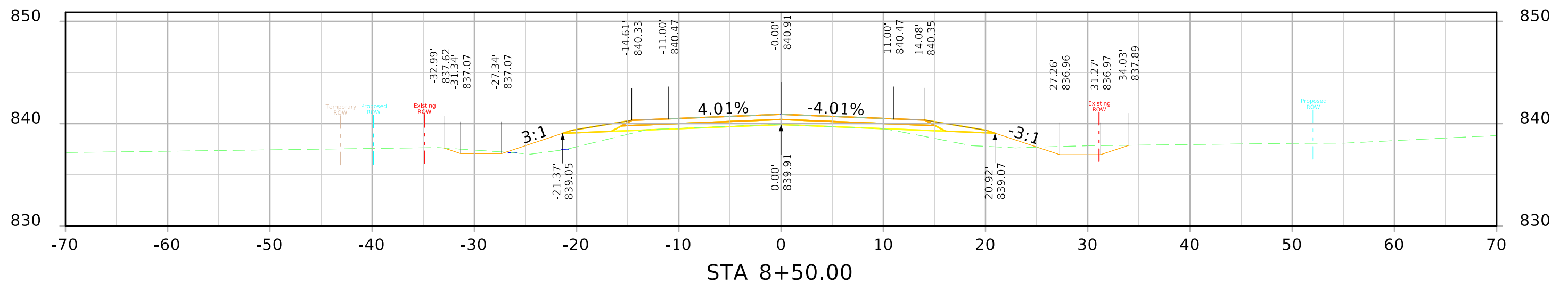
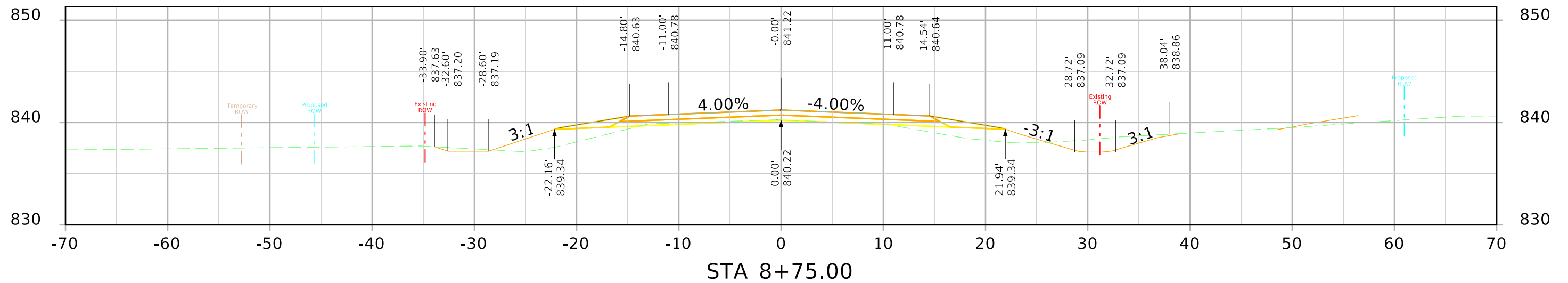
NE 150th Avenue



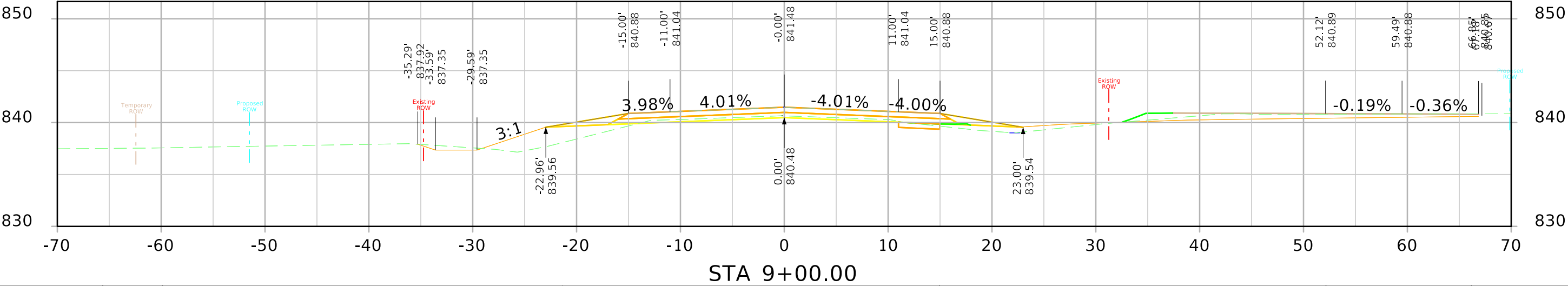
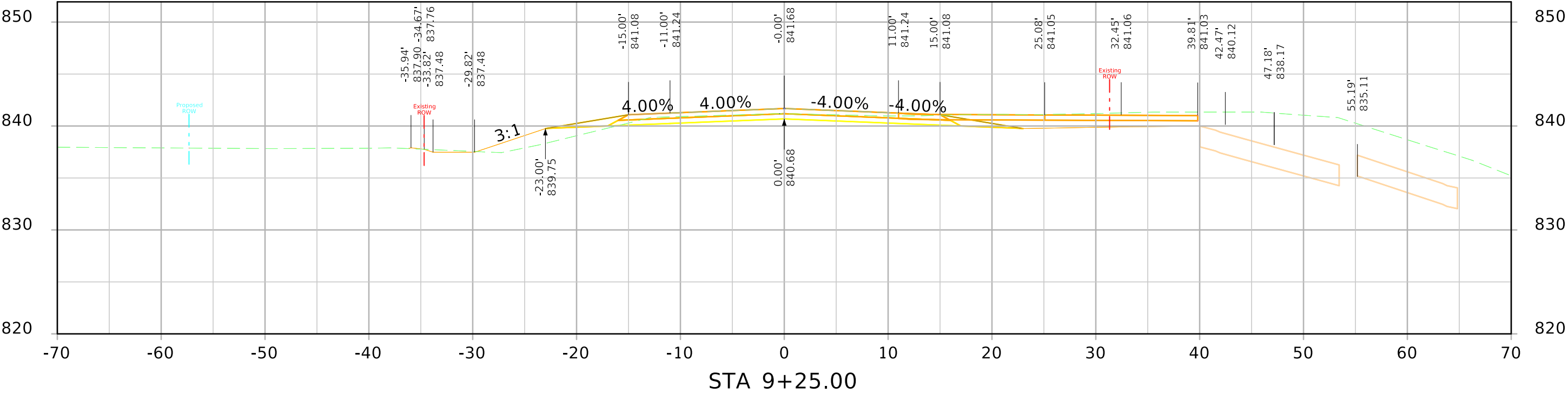
NE 150th Avenue



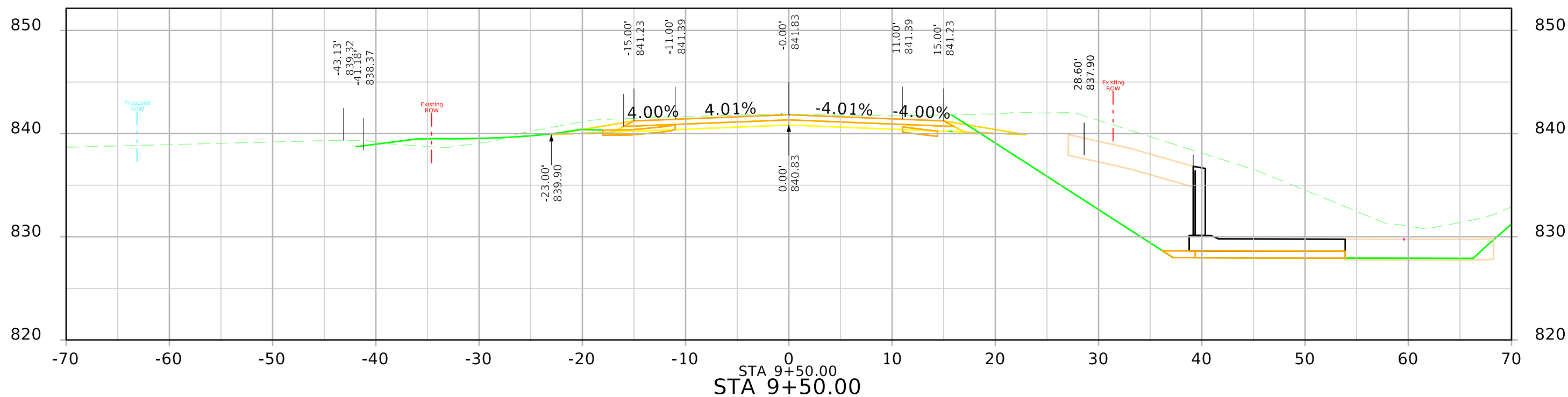
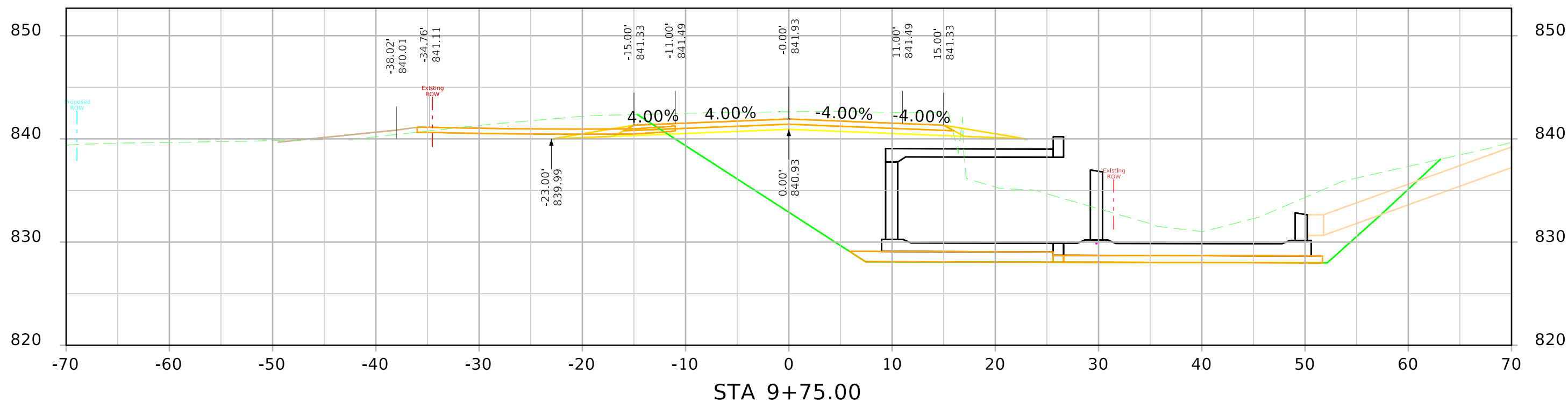
NE 150th Avenue



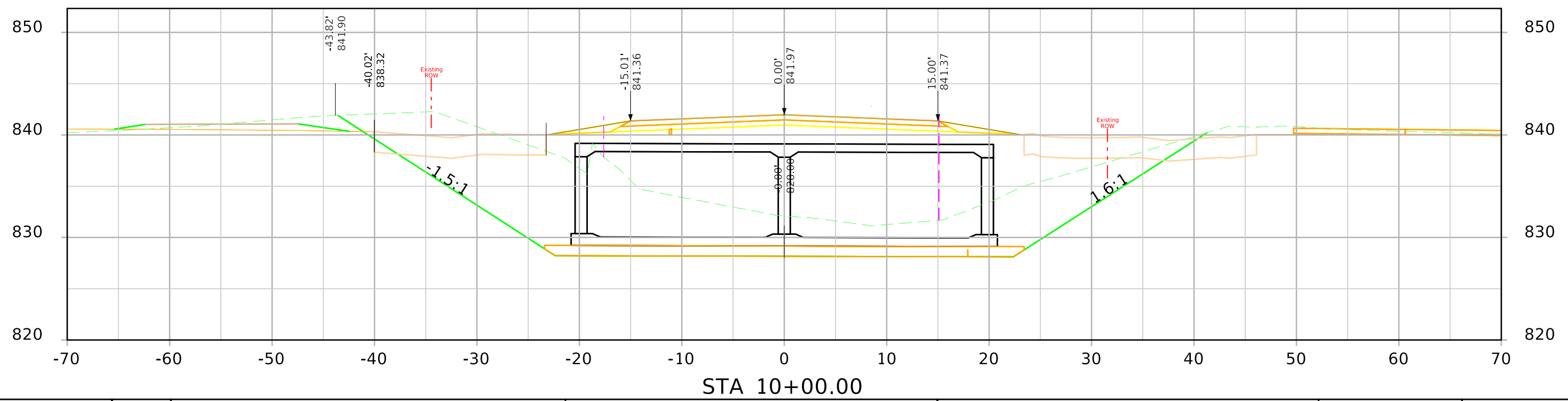
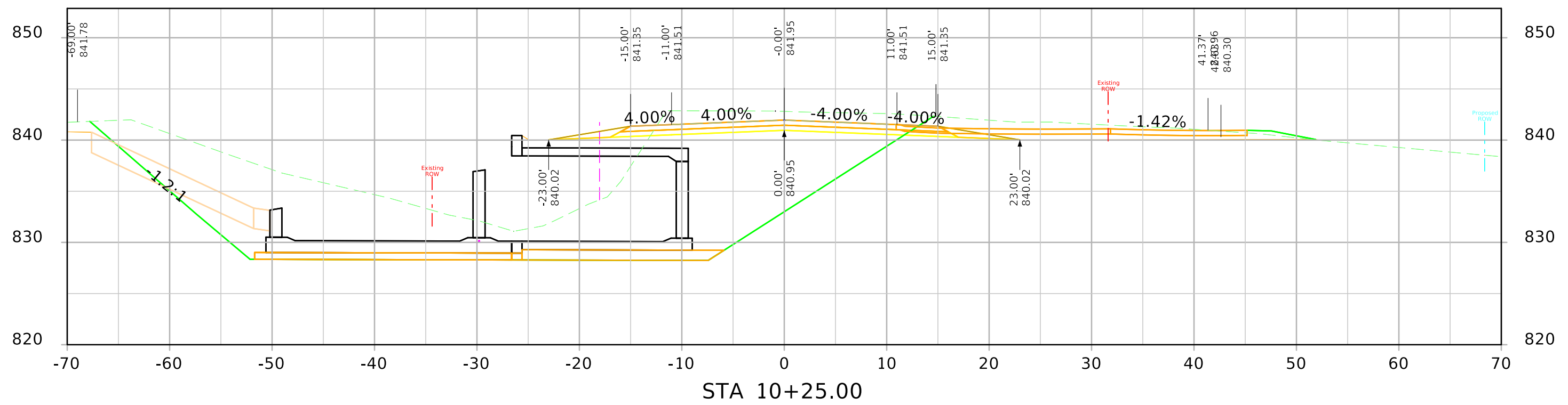
NE 150th Avenue



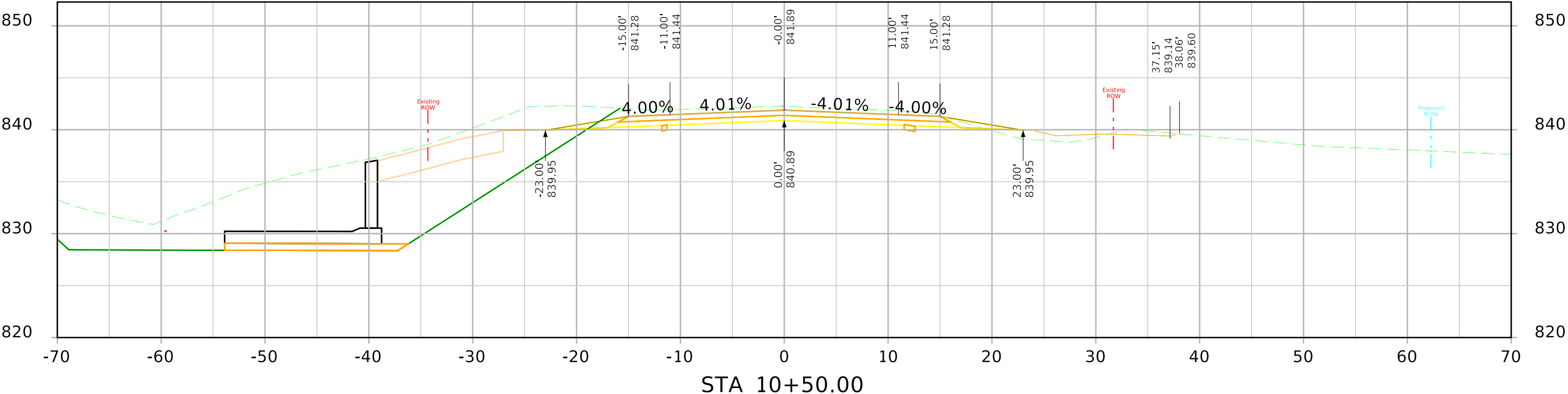
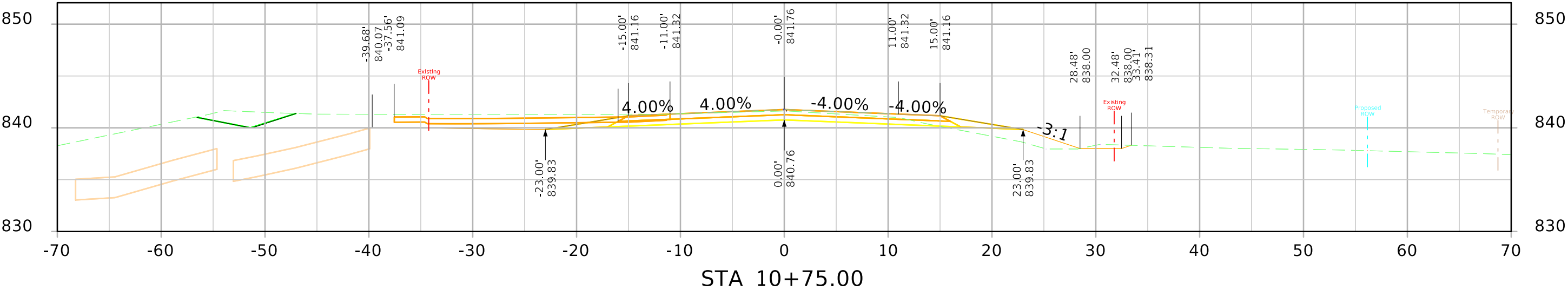
NE 150th Avenue



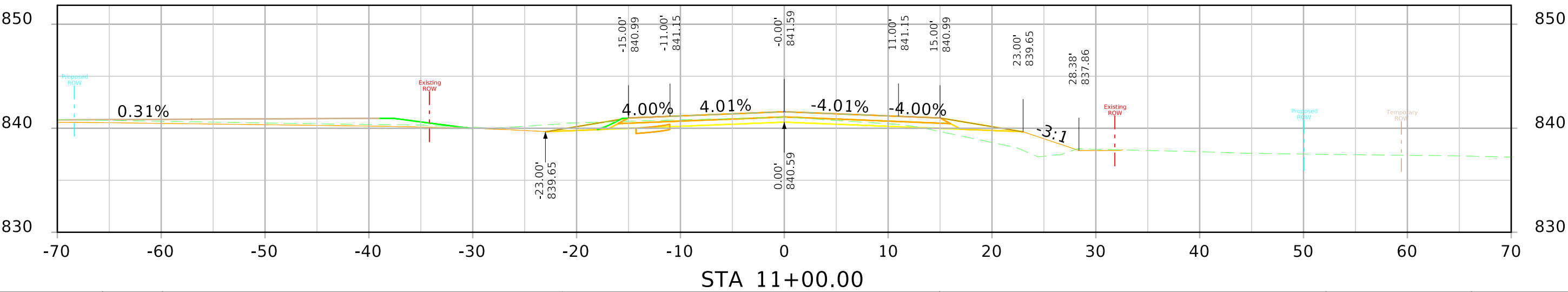
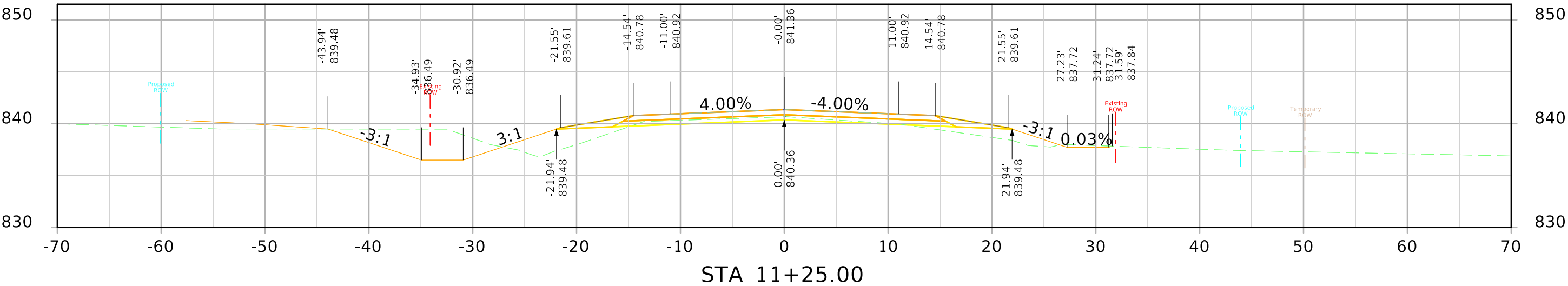
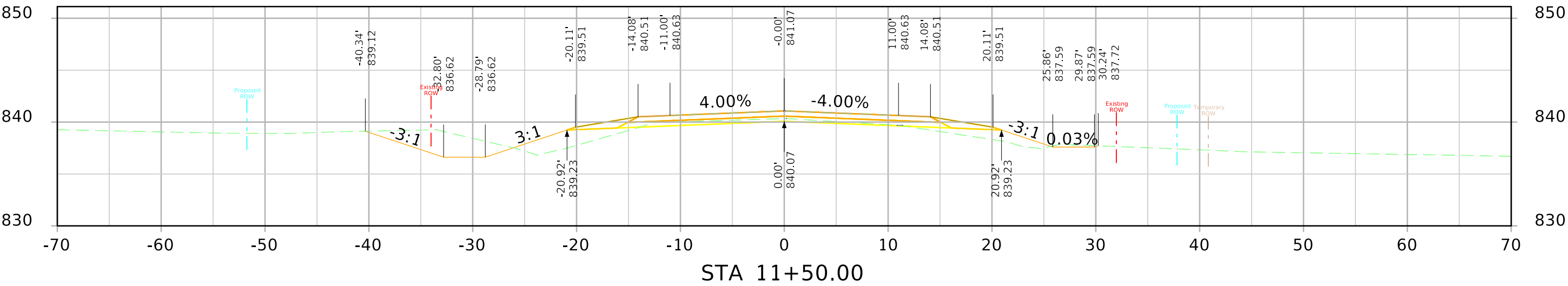
NE 150th Avenue



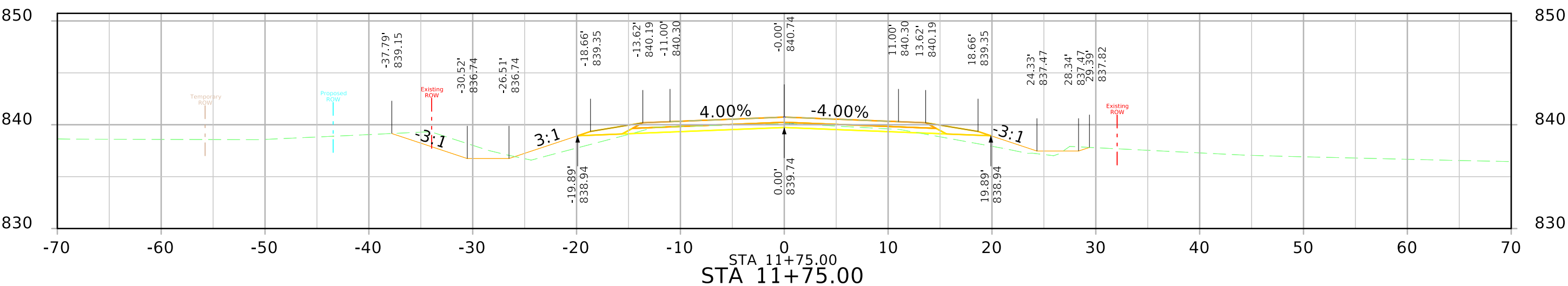
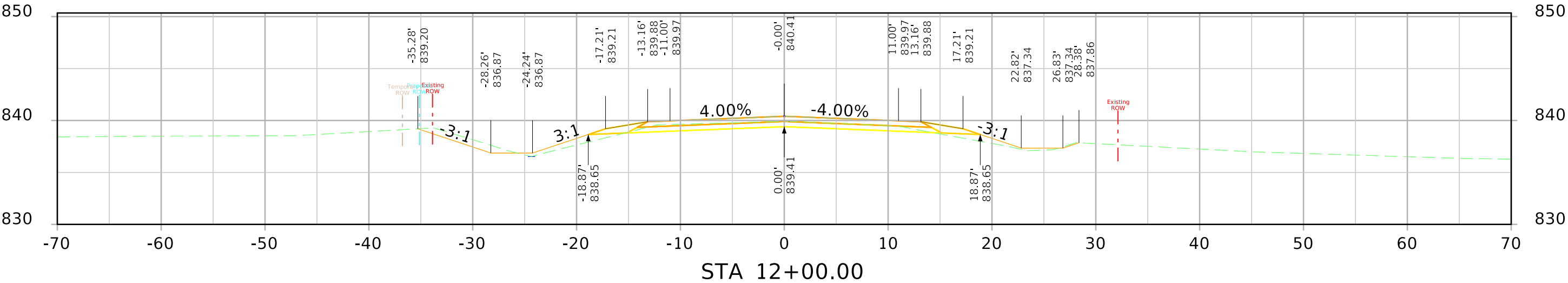
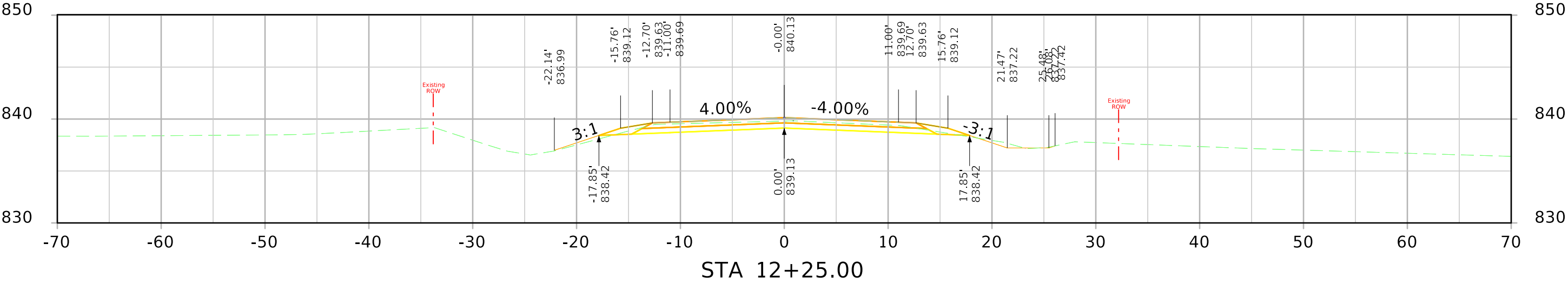
NE 150th Avenue



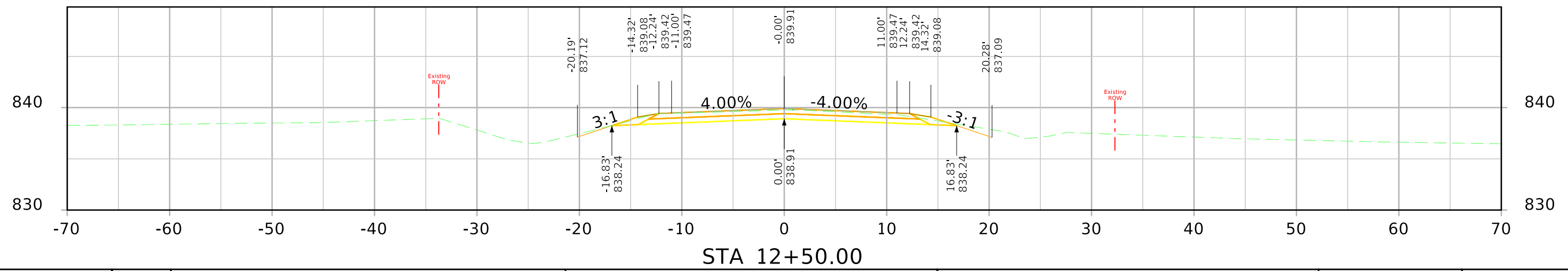
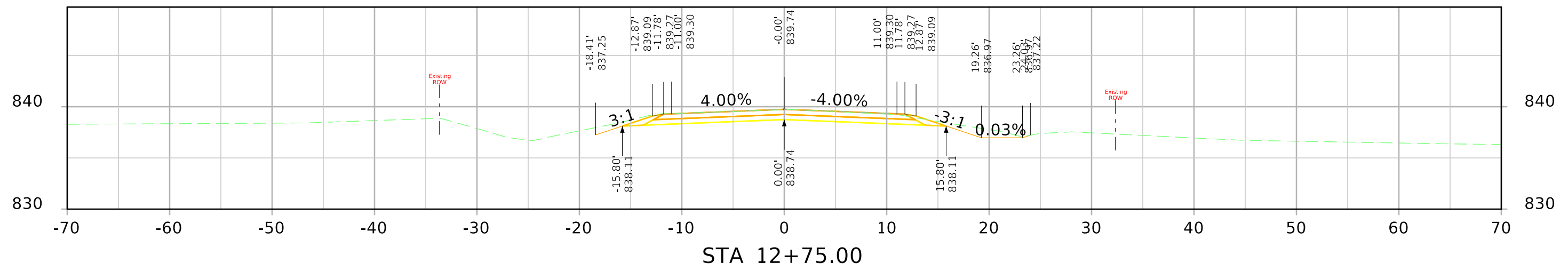
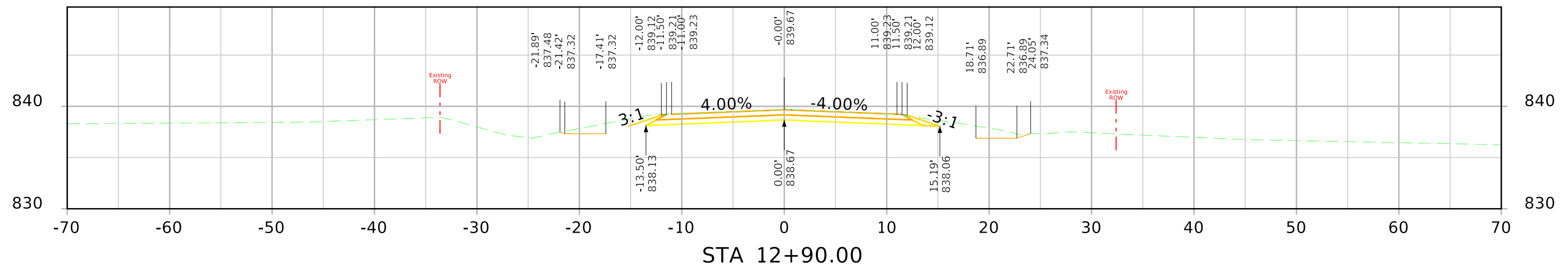
NE 150th Avenue



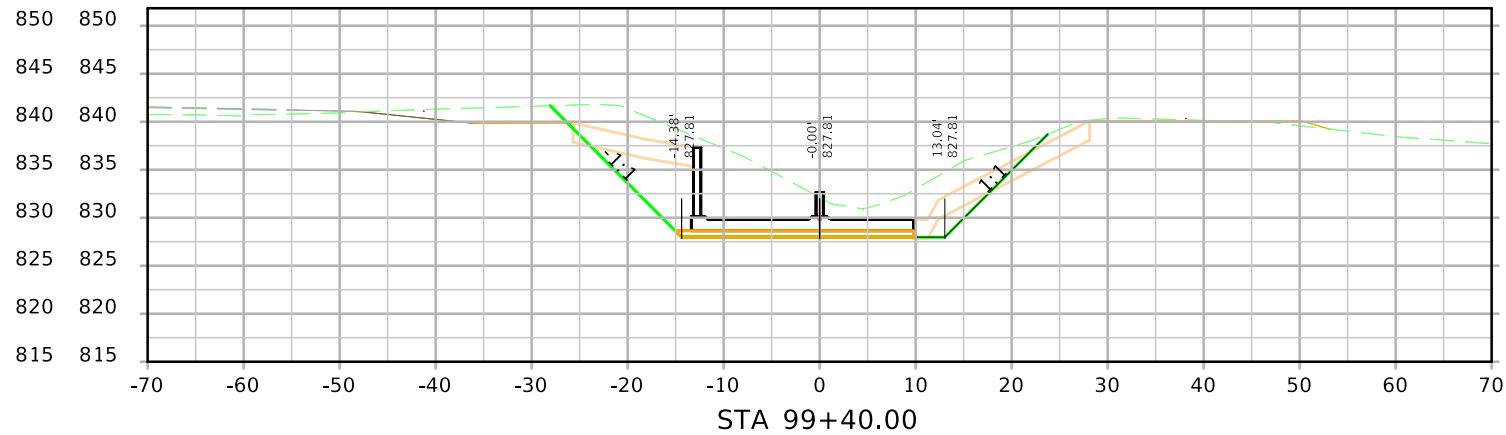
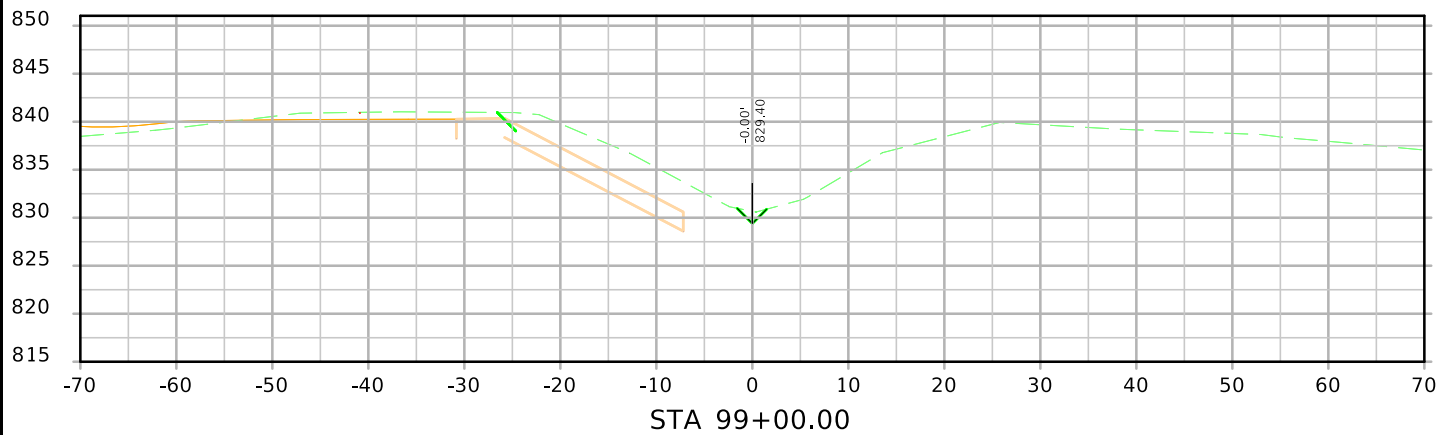
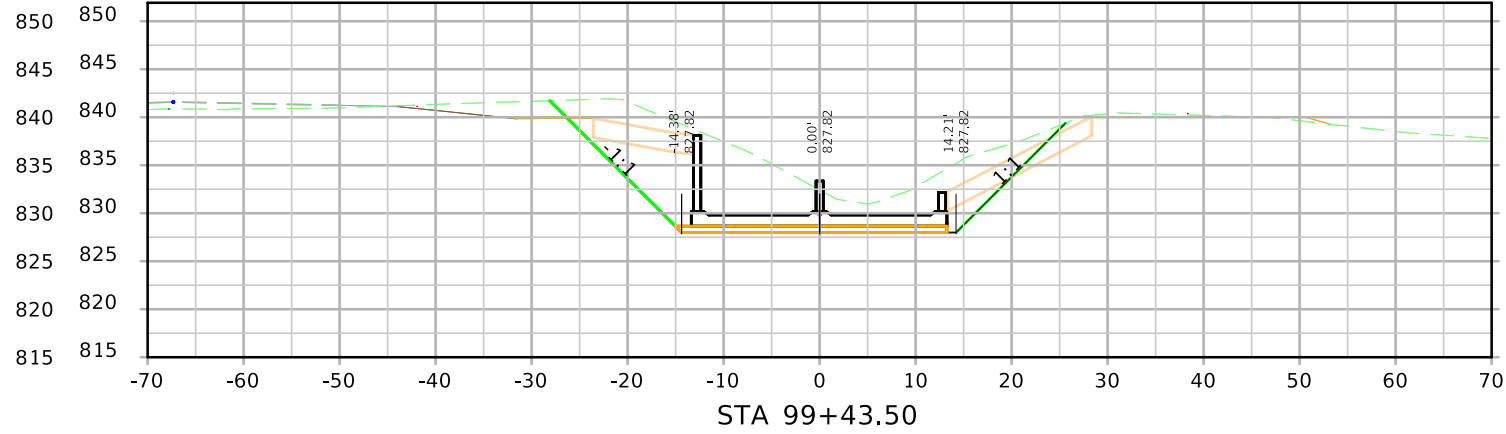
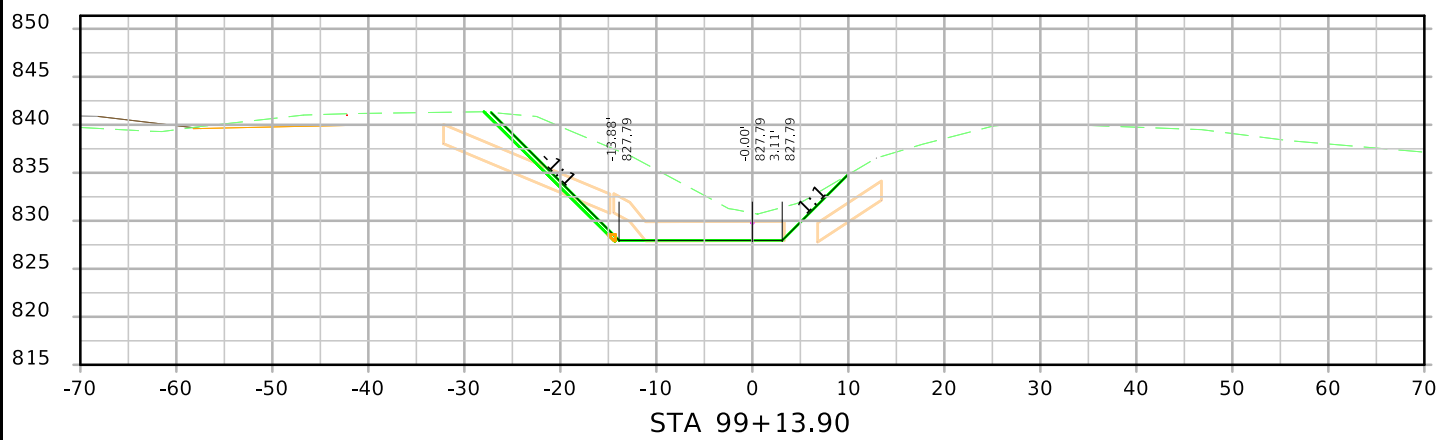
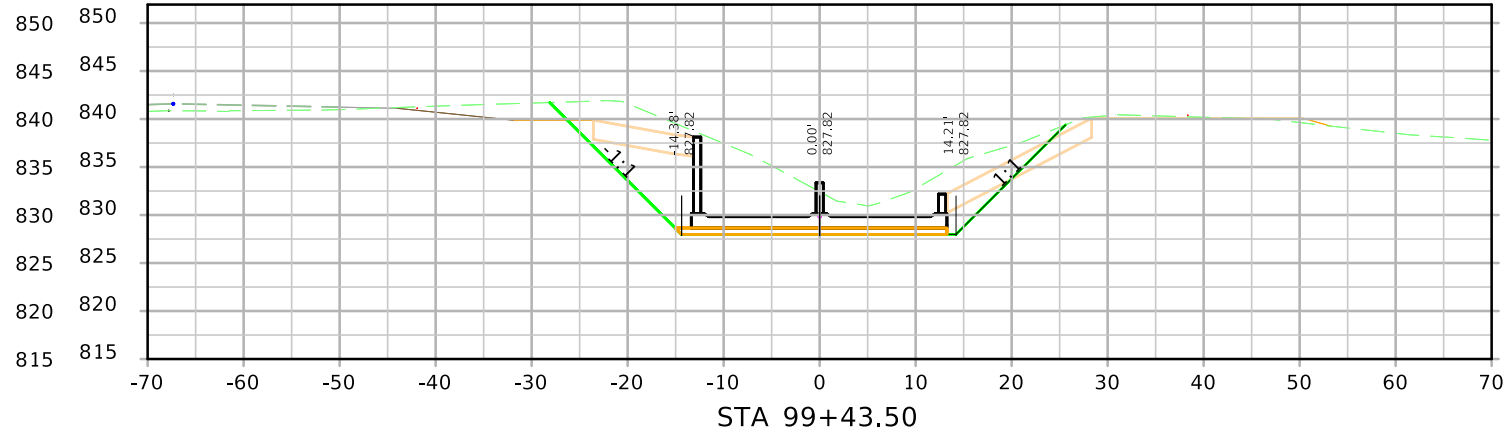
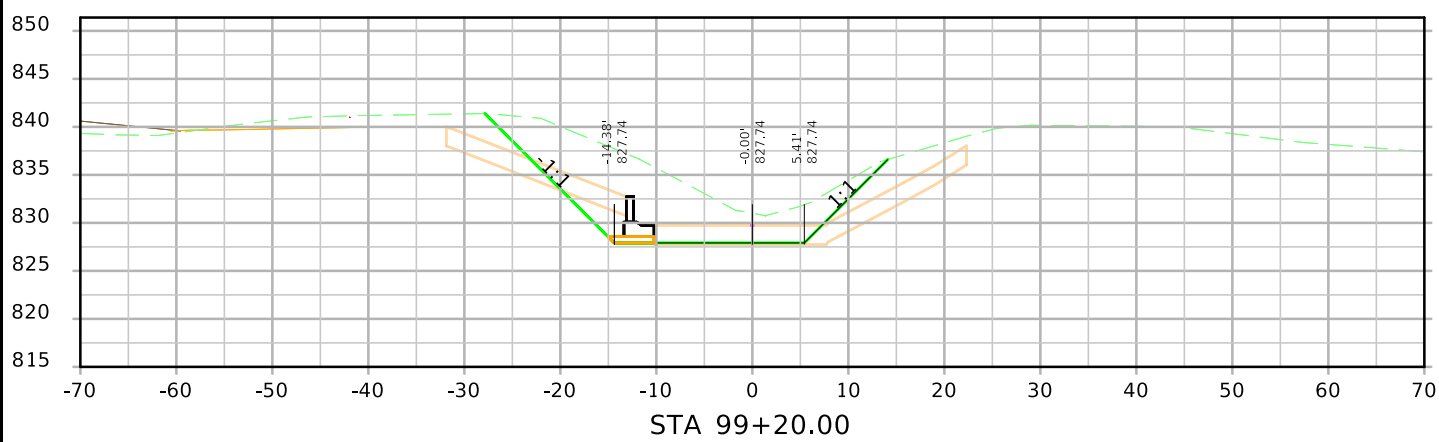
NE 150th Avenue



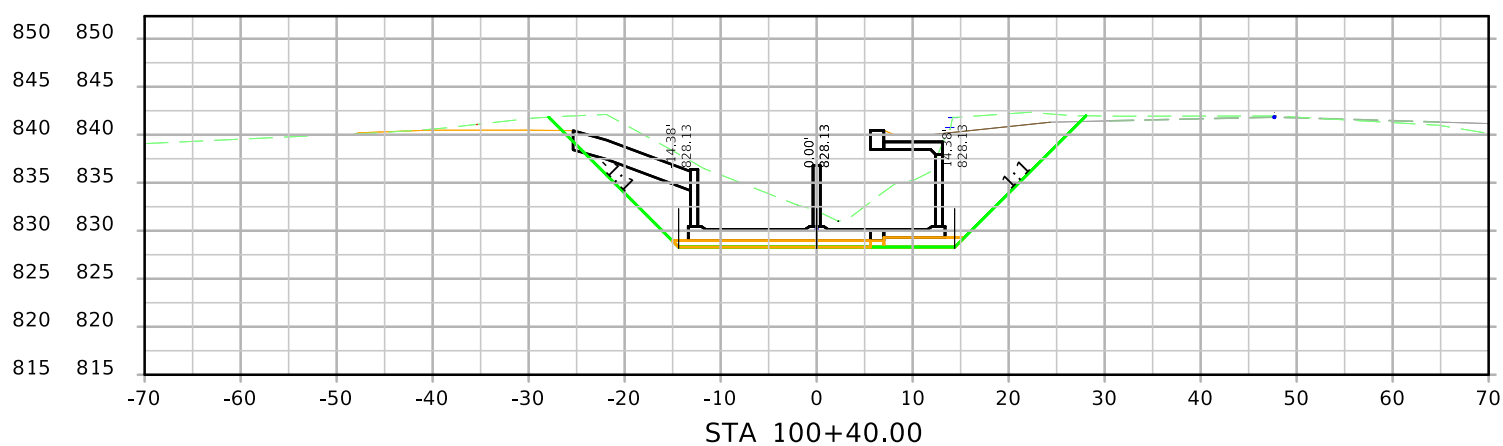
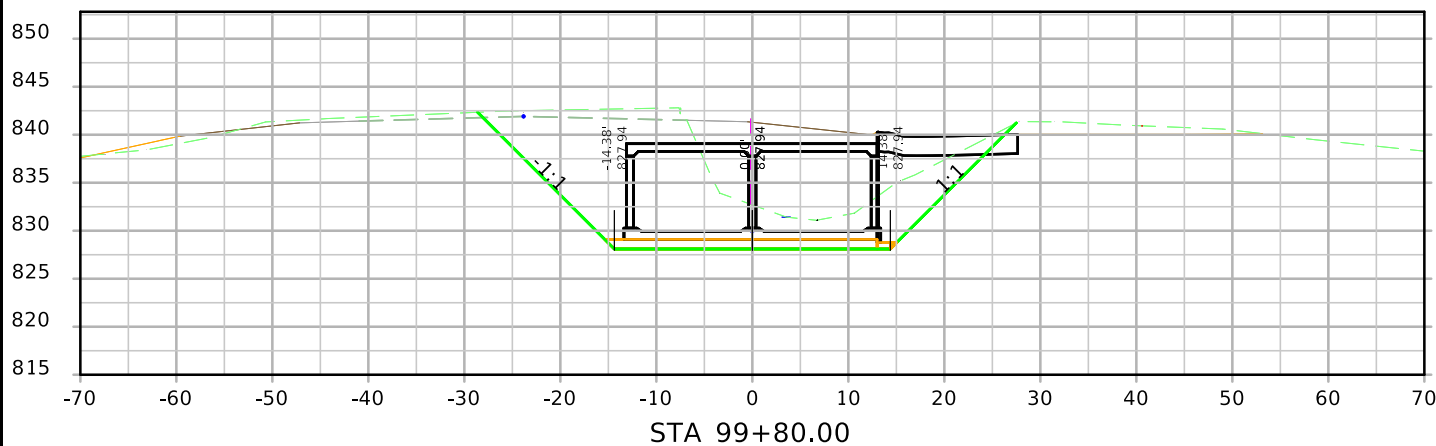
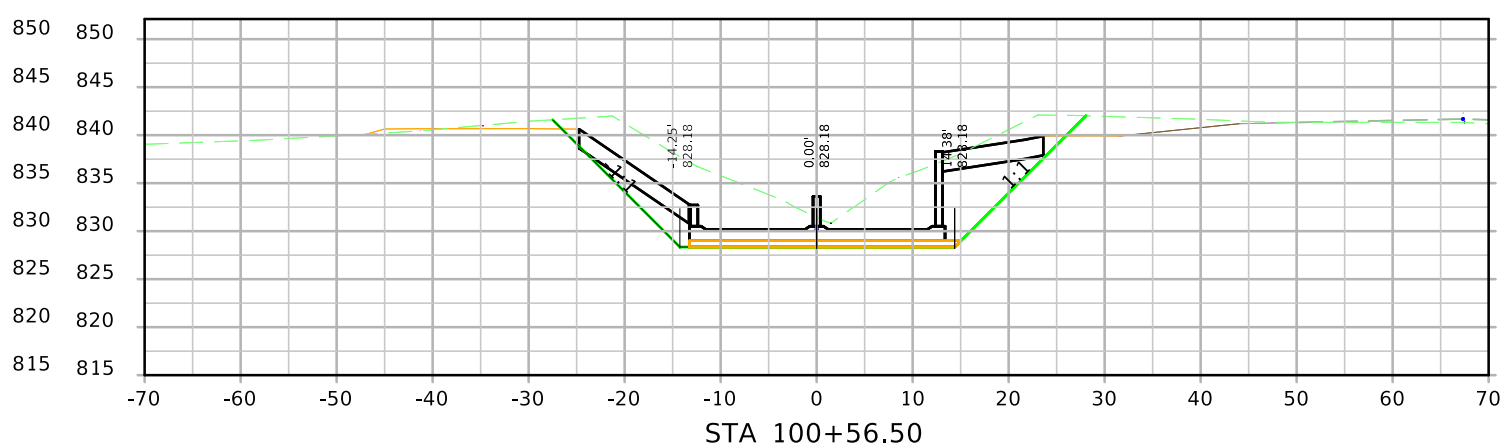
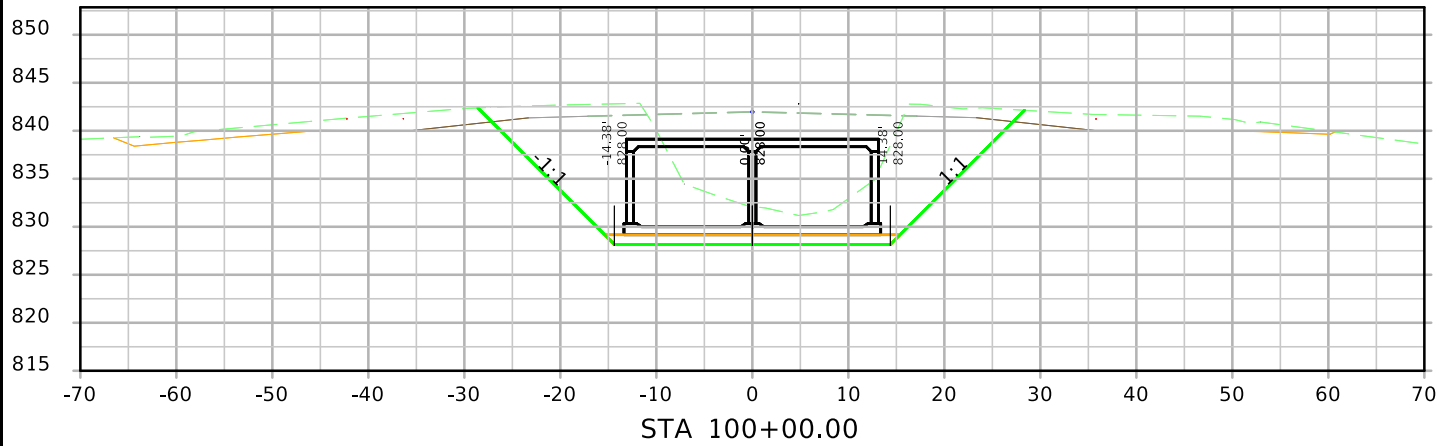
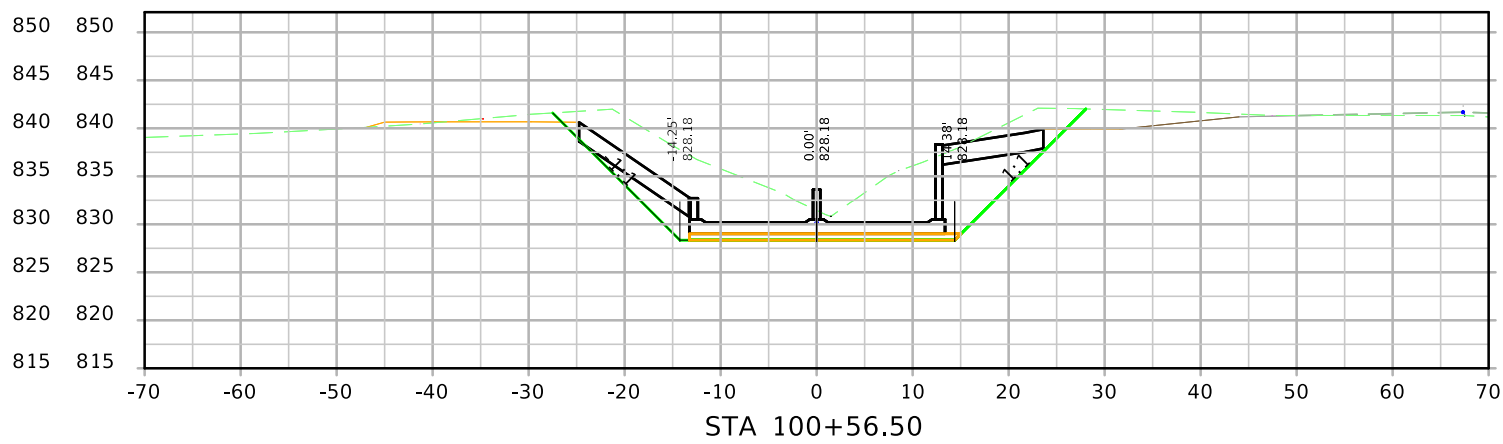
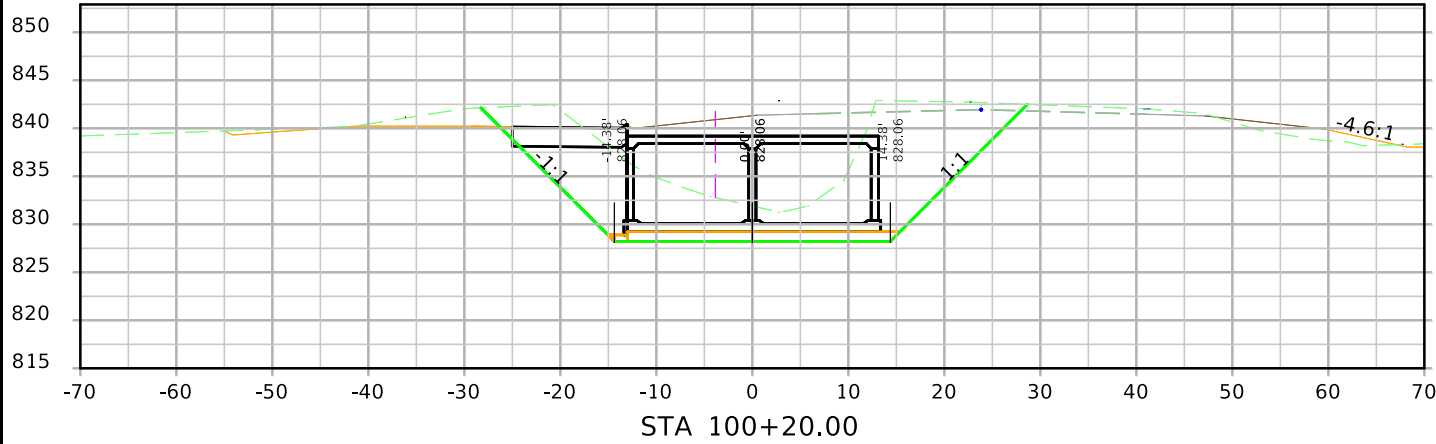
NE 150th Avenue



Skunk River Tributary



Skunk River Tributary



Skunk River Tributary

