

LETTING DATE  
 FEB 16 2027  
 RCB - CULVERT REPLACEMENT  
 STPN-006-6(080)--2J-48

IOWA COUNTY

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B.2	Typical Details
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D.3	Plan and Profile - Abandoned Culvert
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J.2 - J.4	Offsite Detour Layout
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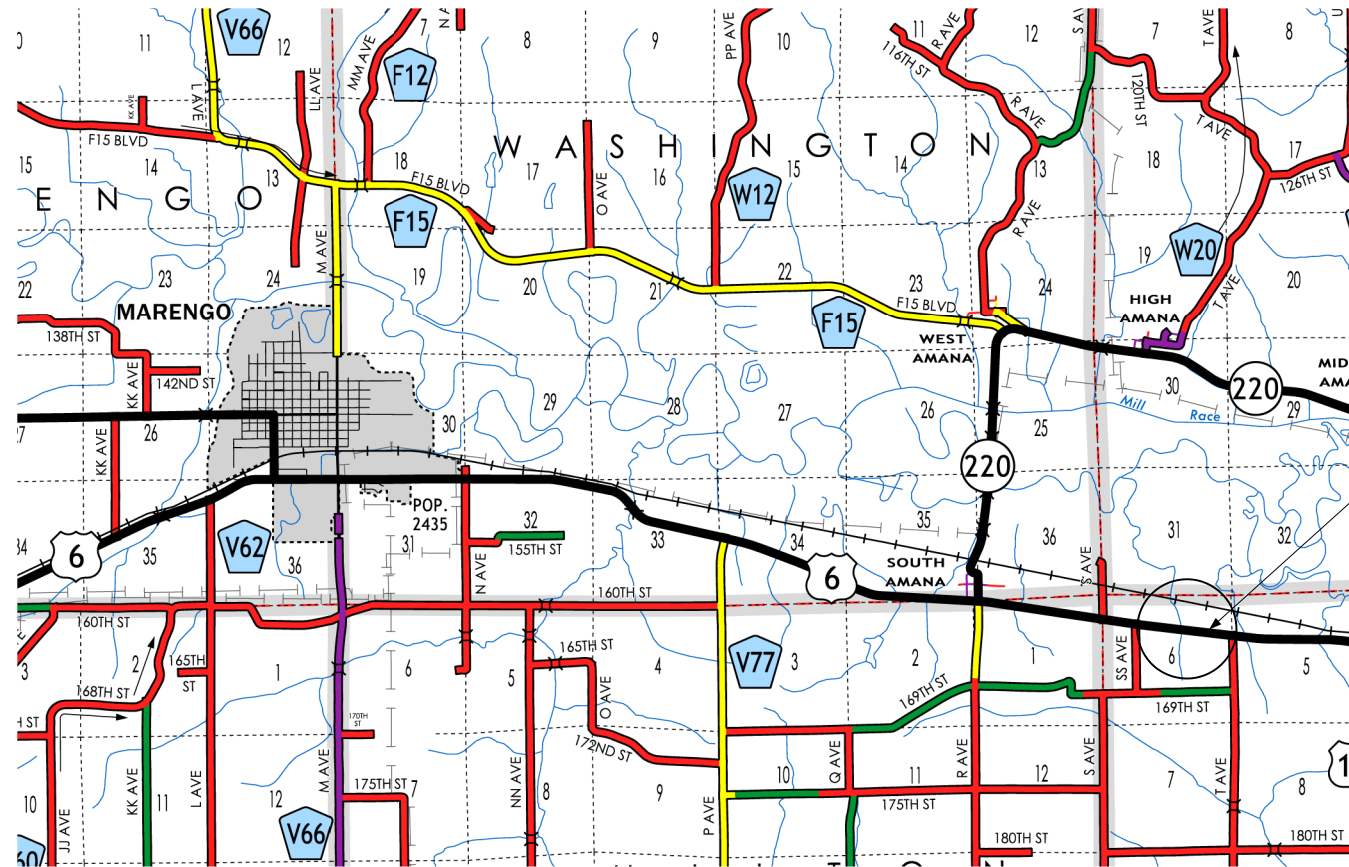
PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM**  
**IOWA COUNTY**  
**RCB - CULVERT REPLACEMENT**  
 1.9 Mi E of  
 IA 220 / Co Rd W16

<-- H Sheets

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



PROJECT LOCATION  
STATION 1125+98.00

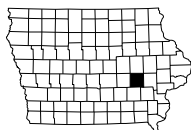
PRELIMINARY PLANS

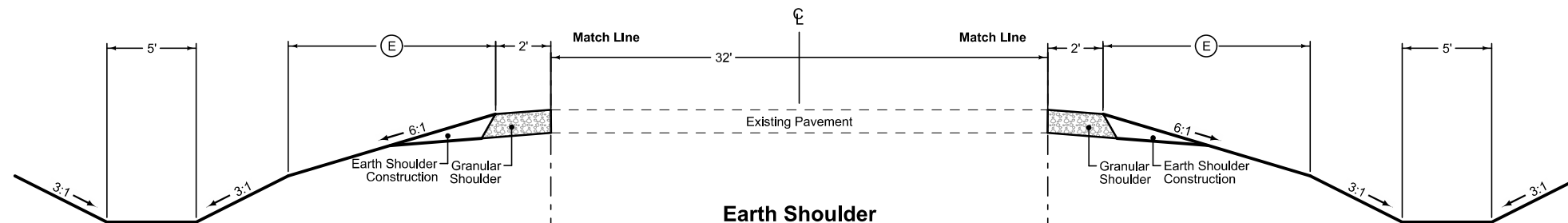
Subject to change by final design.

D5 PLAN - Date: X

REVISIONS	TOTAL

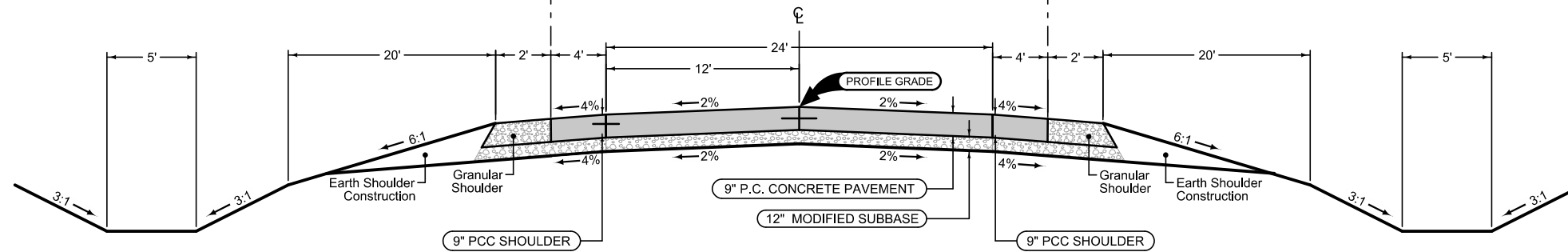
PROJECT IDENTIFICATION NUMBER	24-48-006-020
PROJECT NUMBER	STPN-006-6(080)--2J-48
R.O.W. PROJECT NUMBER	





**Earth Shoulder**

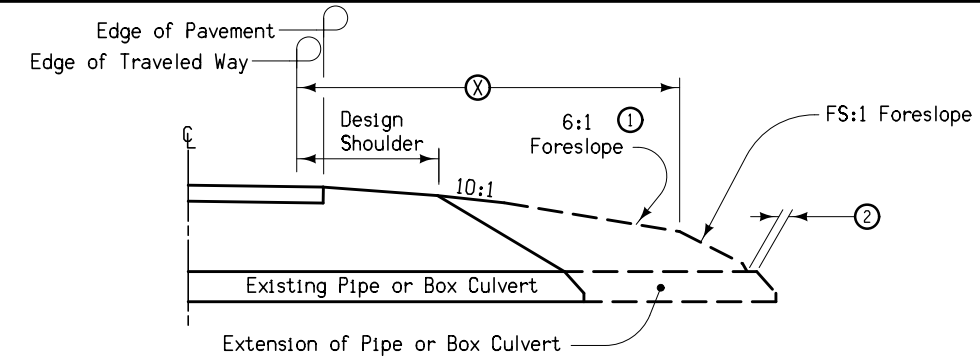
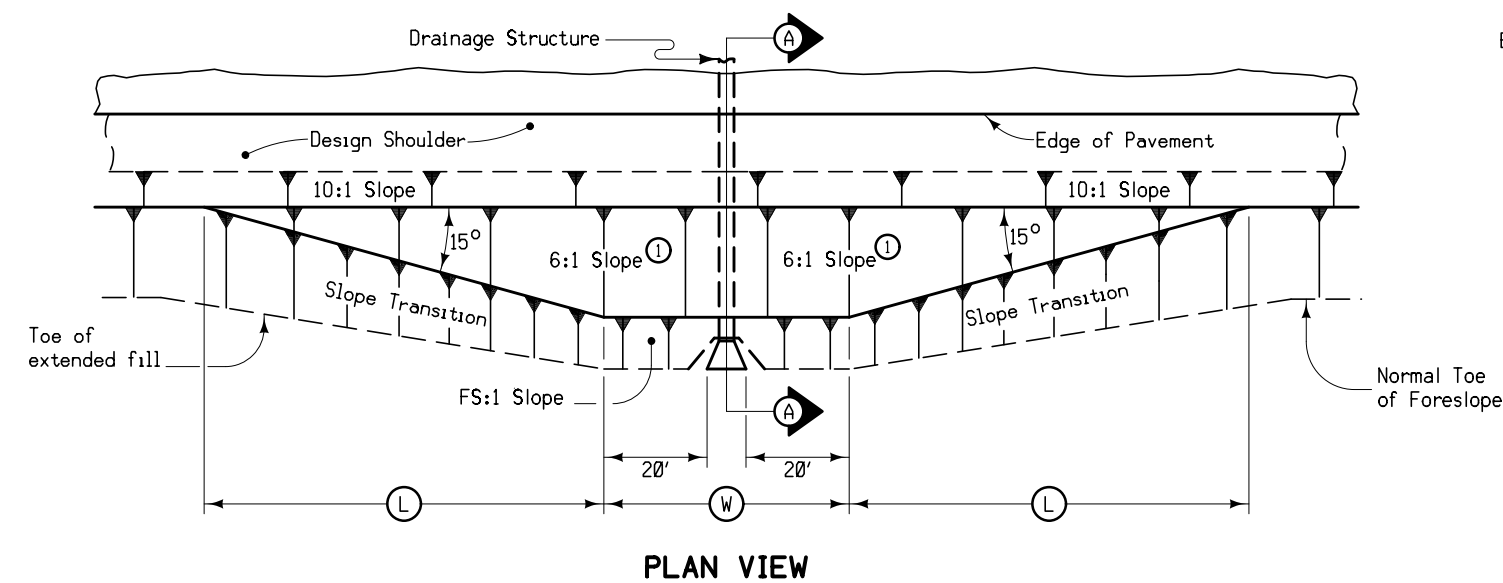
		2_E_
		04-21-20
STATION TO STATION		(E)
		Feet
1124+98.00	1125+73.00	0-20
1126+23.00	1126+98.00	20-0



Mainline Jointing:  
 Transverse joints: CD at 17' spacing  
 Longitudinal joint: L-2

		2P_
		04-21-20
STATION TO STATION		
1125+73.00	1126+23.00	

**Typical Cross Sections - US 6**



STRUCTURE LOCATION		(W)	(L)	(X)	(FS)
STATION	SIDE	Feet	Feet	Feet	
1125+98	-	50'	75'	26'	3:1

- Notes:
- At locations where an extended or newly constructed drainage structure extends beyond the normal foreslope cover, flatten the foreslope as indicated so as to cover the structure. Minimum earth cover is 6".
  - (1) Slope may be flatter than 6:1.
  - (2) 6" Minimum for pipe installations or to top of headwall on R.C.B.
  - (W) = Pipe or R.C.B. opening width plus 20 feet each side.

**BARNROOF FORESLOPE  
AT DRAINAGE STRUCTURE**

### SURVEY SYMBOLS

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

### UTILITY LEGEND

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

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

- F0 F01D, Mediacom Iowa City - Quality D
- F02 F02D, South Slope Telephone - Quality D
- F03 F03D, Aureon Network Services - Quality D
- W WL1D, Amana Society Service Company - Quality D

### 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

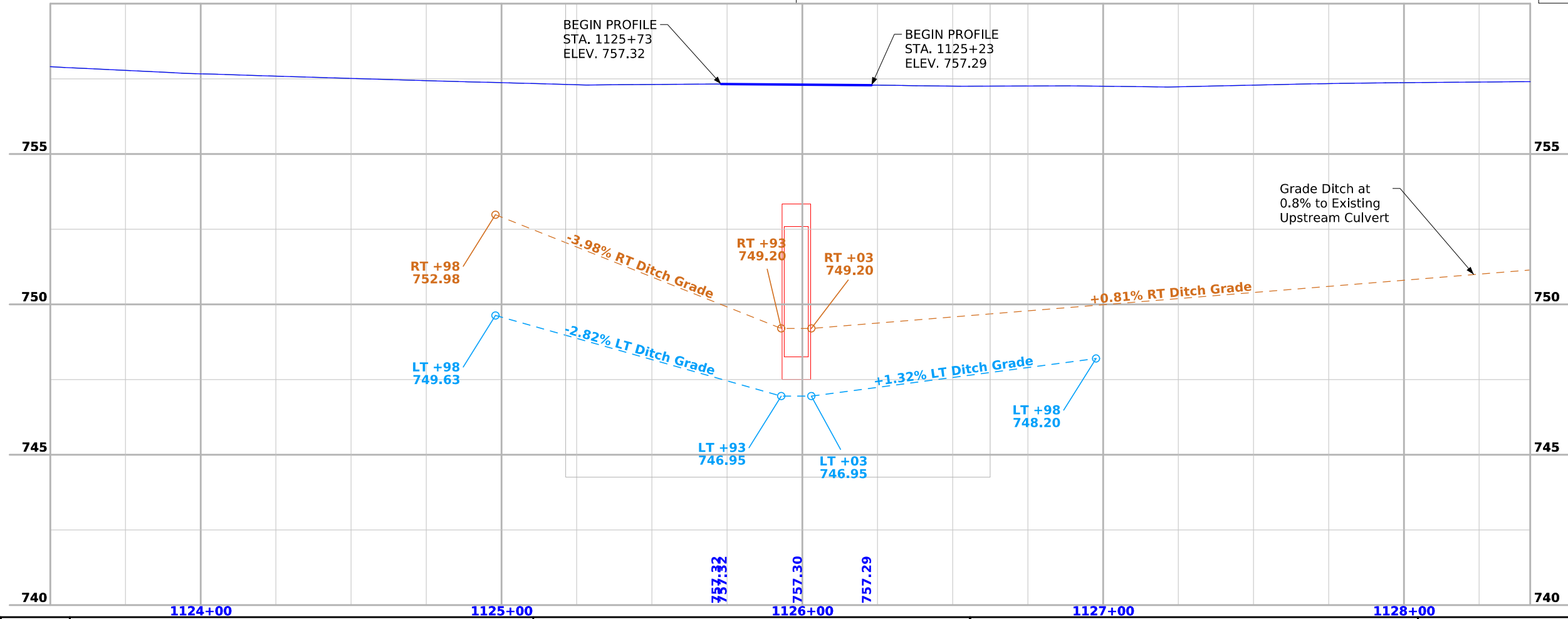
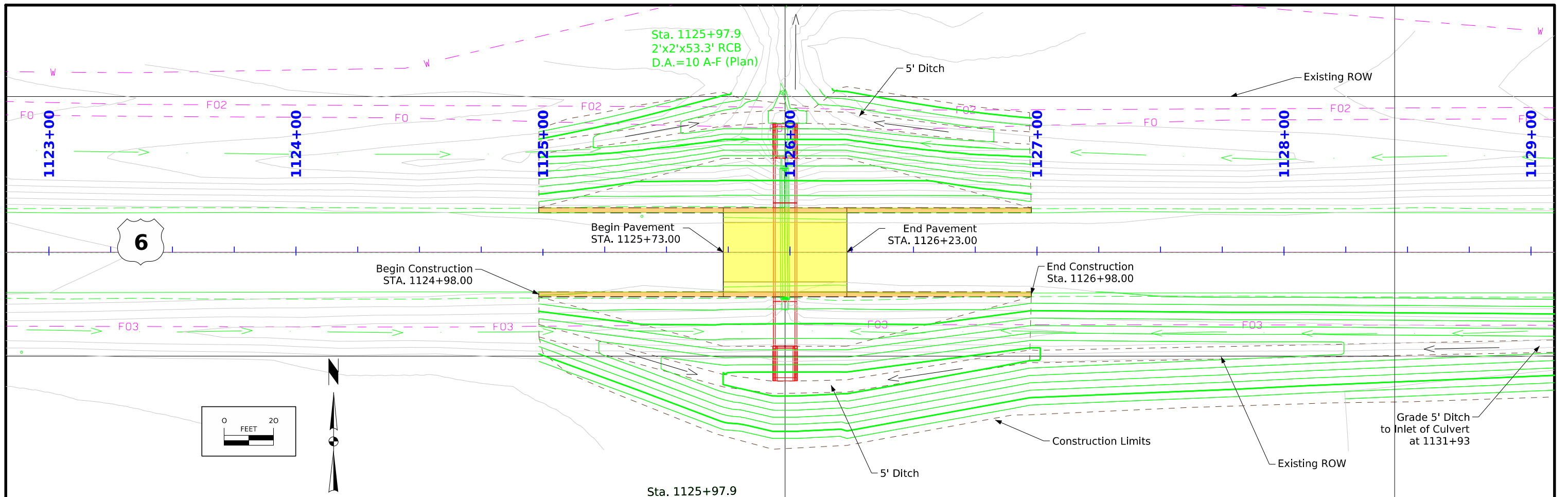
- Reference Point
- Station
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

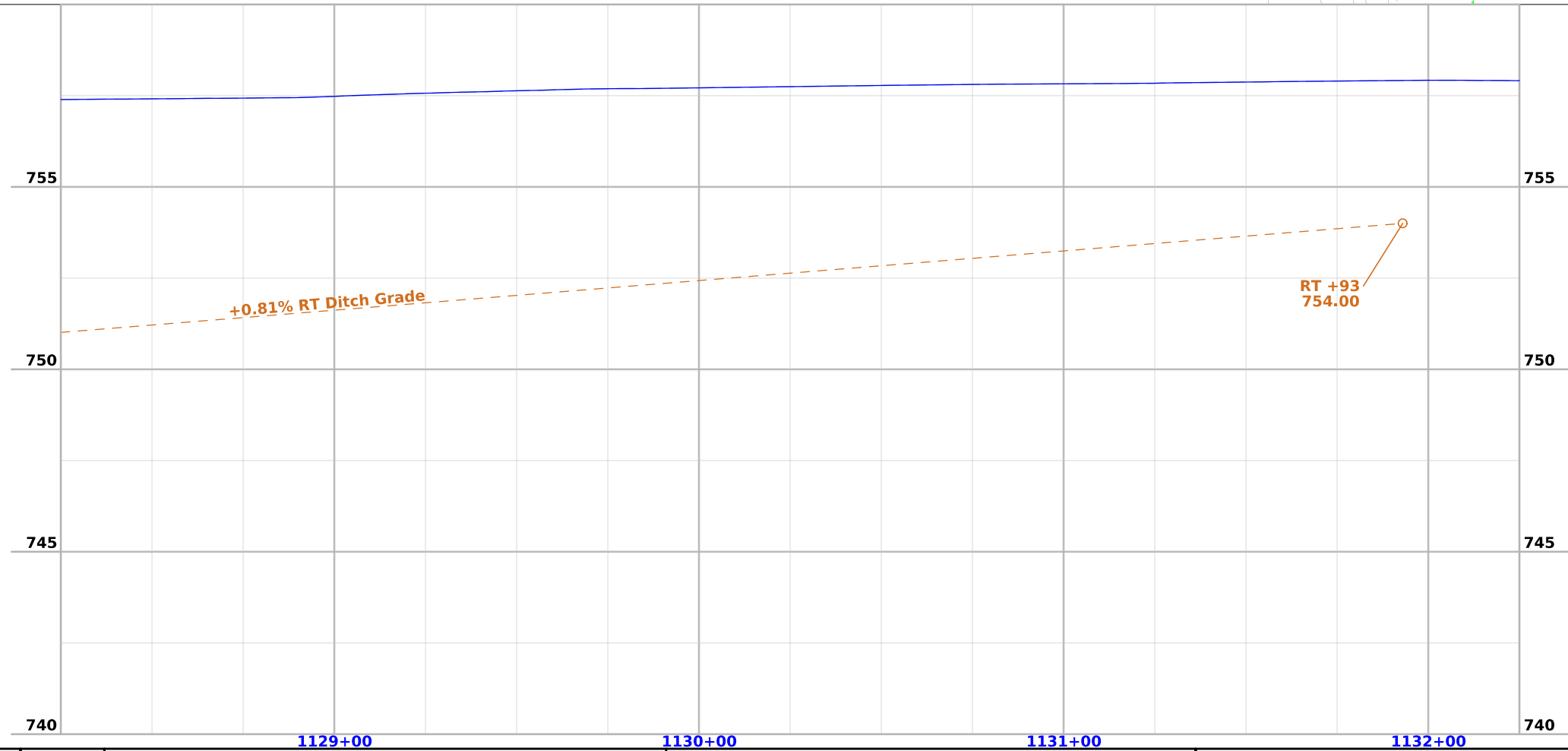
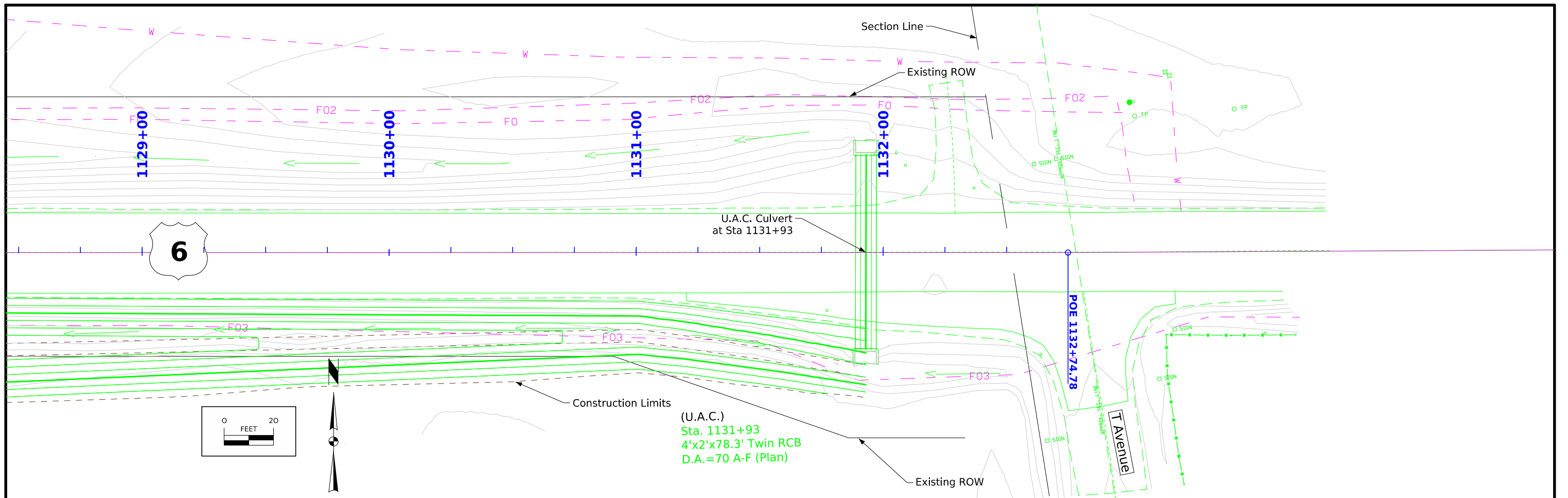
### RIGHT-OF-WAY LEGEND

- 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)





## Survey Information

**County : Iowa**  
**PIN : 24-48-006-020**  
**Project Number: STPN-006-6(080)--2J-48**  
**Location: Approx 1.9 mi E of IA 220/Co Rd W16**  
**Type of Work: 3121-RCB Culvert Replacement - Single Box**  
**Project Directory: 4800602024**

### Survey Personnel

Terry Haase – Construction Tech Senior  
David Chapman – Construction Tech

### Date(s) of Survey

Begin Date 07/11/2024  
End Date 07/30/2024

### General Information

This survey is for US 6 RCB Culvert Replacement at 1.9 mi E of IA 220/Co Rd W16. This survey request was for the US 6 corridor only. This project is a Full Field DTM survey.

### Utility Information

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

### Project Control

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. Three five-minute observations were taken with a minimum two-hour time span between and used in a weighted average to obtain final coordinate values. For additional details of the control survey, contact the Preliminary Survey department.

**PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)**  
**COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 10**  
**(U.S. SURVEY FOOT)**  
**VERTICAL DATUM: NAVD88**  
**GEOID MODEL: 2018u3 or 2018u2**

### Alignment Information

The alignment for this project was provided by the District Land Survey Office.

## CONTROL POINT VICINITY MAP

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



HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 10 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u3

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

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING  
 HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)  
 Ia. Regional Coordinate System Zone 10 (U.S. Survey Foot)  
 VERT. DATUM: NAVD88  
 Geoid Model: 2018u3

Point Name	Northing	Easting	Elevation	Code Description
20	7977186.77	20426567.04	764.10	CP SET 5/8 IP Flush w/ Ground Near Top of Back Slope
21	7977042.53	20427597.11	756.76	CP SET 5/8 IP Flush w/ Ground Near Top of Back Slope
22	7976995.45	20428515.83	756.29	CP SET 5/8 IP Flush w/ Ground West Side of Field Entrance
23	7976902.47	20428653.63	757.43	CP SET 5/8 IP Flush w/ Ground Near Top of Back Slope
50	7976996.24	20428507.78	756.54	BM Cut "X" on Outlet Headwall

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



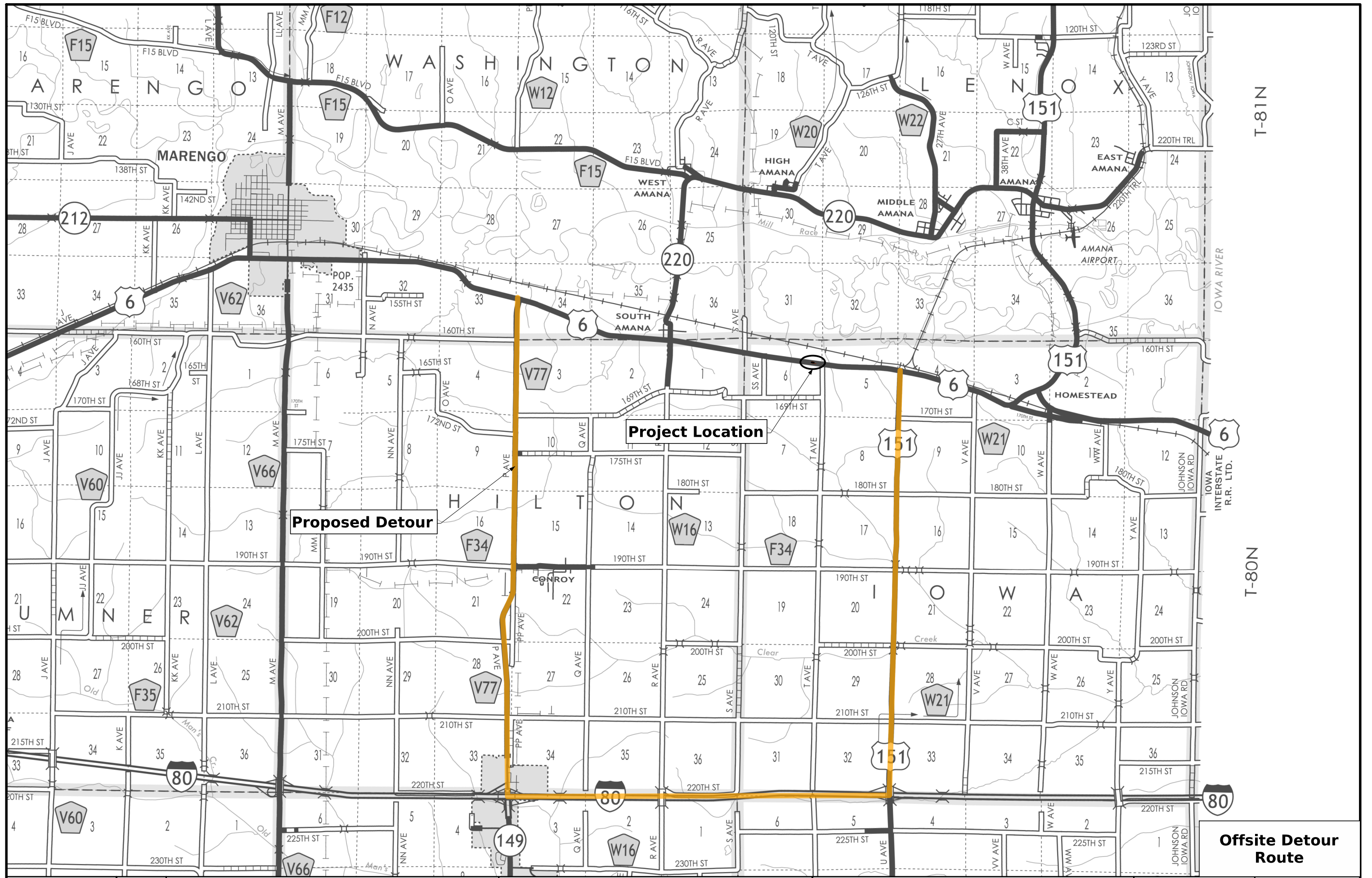
**511 TRAVEL RESTRICTIONS**

Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
	U.S. 6	Both	Iowa	No Travel Restrictions Expected on Offsite Detour				None					

108_23A 8/15/22
<b>TRAFFIC CONTROL PLAN</b>
<p>This project is not considered a Traffic Critical Project. No travel restrictions are expected on the offsite detour shown in these plans.</p> <p>While the culvert construction is being completed, U.S. 6 traffic shall be maintained via an off-site detour detailed in these plans. Detours are to be furnished, maintained and removed by the Contractor. Refer to TC-252 for road closure and advanced signage details.</p> <p>Contractor will furnish, install, maintain and remove detour signs. Detour sign layout and quantities shown in these plans are for reference only and exact location shall be determined in the field. All existing signs that conflict with the detour shall be covered. All material, equipment and labor shall be included in the Traffic Control bid item.</p>

108_26A 8/15/22
<b>STAGING NOTES</b>
<p><b>Stage 1</b> Install off-site detour signage on detour route before traffic begins use of the detour route. With traffic using detour, perform the culvert construction work.</p> <p><b>Stage 2</b> Remove off-site signage. Reopen U.S. 6 to normal traffic pattern.</p>

111_01 10/14/22				
<b>COORDINATED OPERATIONS</b>				
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.				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Project</th> <th style="width: 50%;">Type of Work</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Project	Type of Work		
Project	Type of Work			



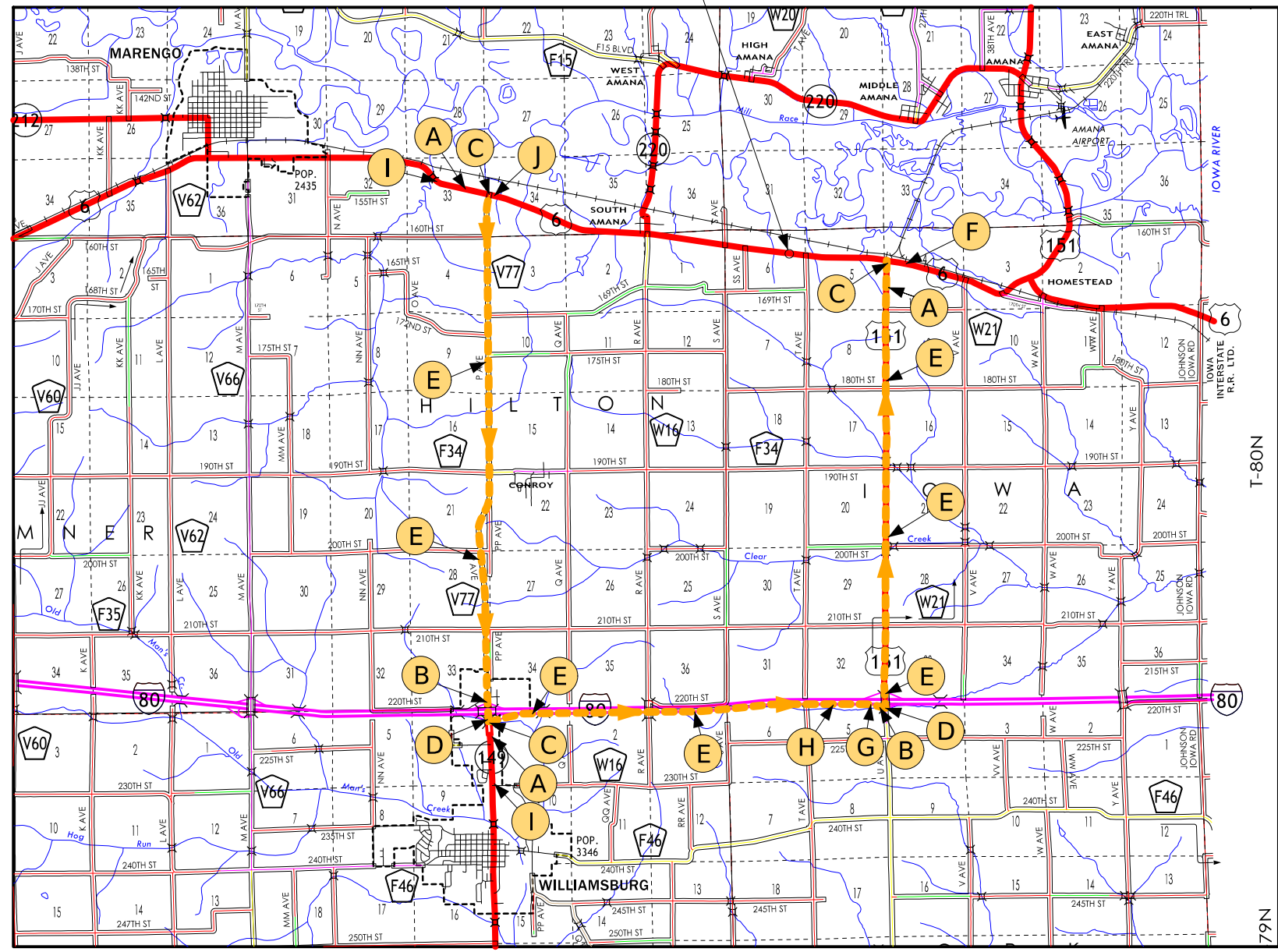
**Proposed Detour**

**Project Location**

**Offsite Detour Route**

PROJECT LOCATION  
(SEE TC-252 FOR CLOSURE DETAILS)

- A**
  - DEQF M4-8
  - EAST M3-2
  - 6 M1-4
  - RIGHT TURN M5-1R
- B**
  - DEQF M4-8
  - EAST M3-2
  - 6 M1-4
  - LEFT TURN M5-1L
- C**
  - DEQF M4-8
  - EAST M3-2
  - 6 M1-4
  - DOWN TURN M6-1R
- D**
  - DEQF M4-8
  - EAST M3-2
  - 6 M1-4
  - UP TURN M6-1L
- E**
  - DEQF M4-8
  - EAST M3-2
  - 6 M1-4
  - END M4-8bP
- F**
  - DEQF M4-8
  - EAST M3-2
  - 6 M1-4
  - END M4-8bP
- G**
  - DEQF M4-8
  - EAST M3-2
  - 6 M1-4
  - RIGHT TURN M6-2R
- H**
  - DEQF M4-8
  - EAST M3-2
  - 6 M1-4
  - RIGHT TURN M5-2R
- I**
  - DETOUR AHEAD W20-2
- J**
  - ROAD CLOSED 4 MILES AHEAD LOCAL TRAFFIC ONLY R11-3a
  - DETOUR M4-10R



--->--- DETOUR ROUTE











NOT TO SCALE

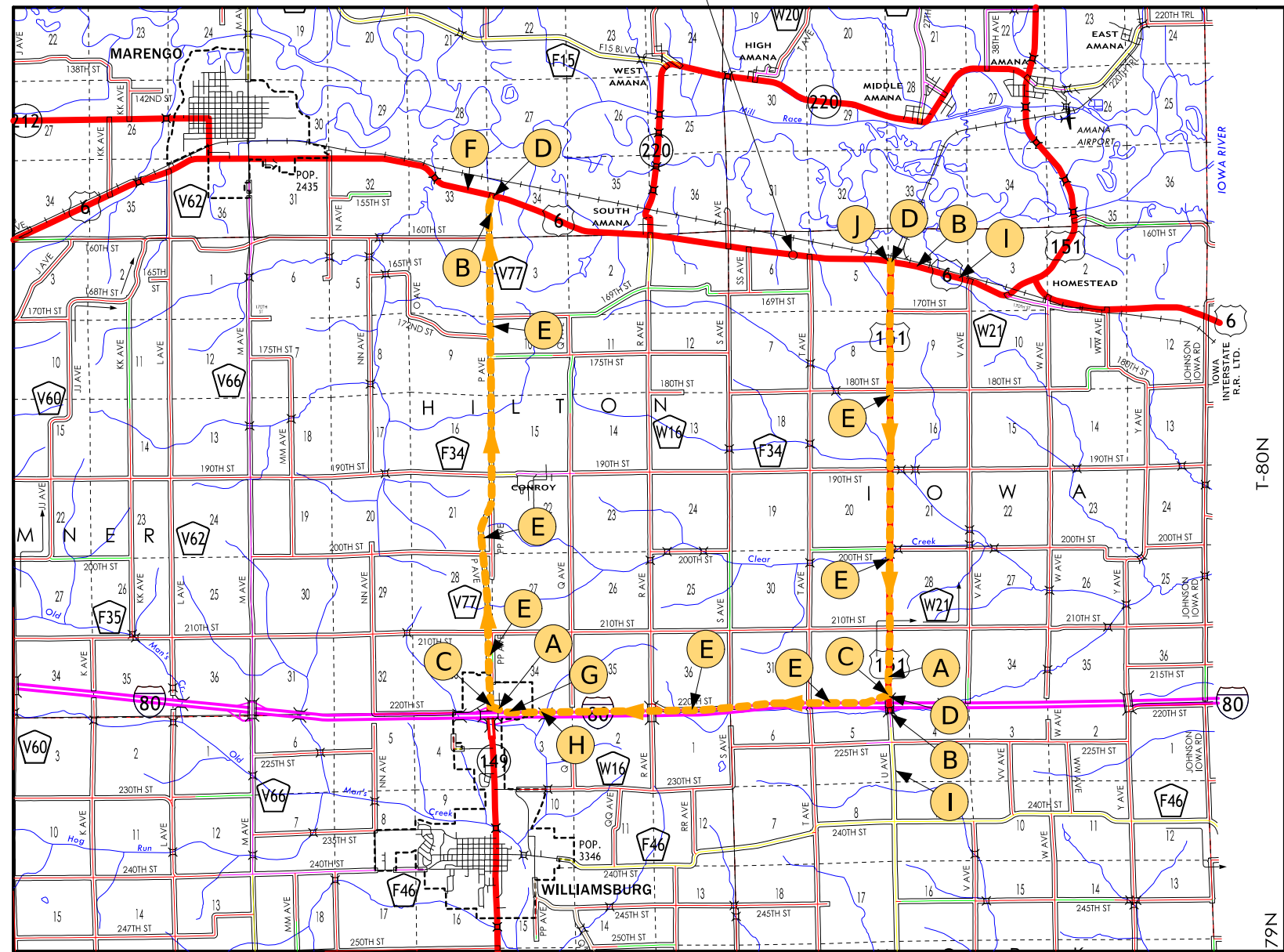


Note: Quantities and locations of detour signs are for guidance and estimating purposes only. Placement of detour signage, if modifications are needed, will be determined in the field by the Project Engineer.

Eastbound Detour  
Signing Layout

PROJECT LOCATION  
(SEE TC-252 FOR CLOSURE DETAILS)

- A**

  - M4-8
  - M3-2
  - M1-4
  - M5-1R
- B**

  - M4-8
  - M3-2
  - M1-4
  - M5-1L
- C**

  - M4-8
  - M3-2
  - M1-4
  - M6-1R
- D**

  - M4-8
  - M3-2
  - M1-4
  - M6-1L
- E**

  - M4-8
  - M3-2
  - M1-4
- F**

  - M4-8
  - M3-2
  - M1-4
  - M4-8bP
- G**

  - M4-8
  - M3-2
  - M1-4
  - M6-2R
- H**

  - M4-8
  - M3-2
  - M1-4
  - M5-2R
- I**

  - W20-2
- J**

  - R11-3a
  - M4-10L



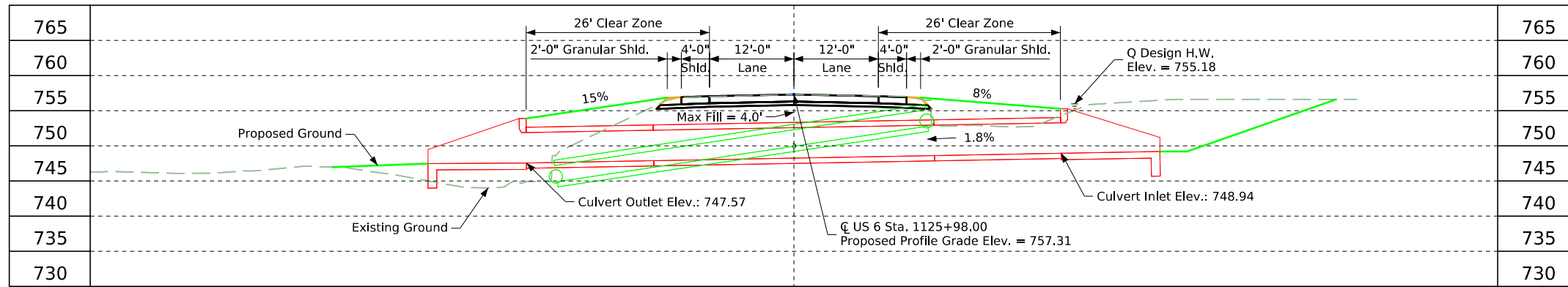
--- DETOUR ROUTE

NOT TO SCALE

Note: Quantities and locations of detour signs are for guidance and estimating purposes only. Placement of detour signage, if modifications are needed, will be determined in the field by the Project Engineer.

Westbound Detour  
Signing Layout

Control Point: Pt. No. 20, N: 7977186.771, E: 20426567.036, Elev: 764.104,  
 CP SET 5/8 IP Flush w/ Ground Near Top of Back Slope



**Longitudinal Section Along Centerline of Culvert**

**Hydraulic Data**

RIDB: Not Applicable  
 Drainage Area = Part of 97.6 Acres  
 Stream Slope = 187.175 Ft./Mi.  
 $Q_{50} = 330.94$  cfs  
 HW Elev. = 755.18  
 Exit Velocity = 14.90 fps

$Q_{100} = 458.81$  cfs  
 HW Elev. = 757.22  
 Exit Velocity = 15.84 fps

**Location**

US 6 Over Drainage Ditch  
 T-80N R-9W  
 Section 06  
 Iowa Township  
 Iowa County  
 Latitude 41.770015°  
 Longitude -91.930931°

**Traffic Estimate**

2023 AADT 2600 V.P.D.  
 TRUCKS 13 %



**Proposed Profile Grade US 6**

**General Notes:**

This design is for the replacement of the existing 2' x 2' x 53' RCB, Iowa Design No. 1229

**Design Notes:**

Design accounts for overflow conveyance from existing culverts at Sta. 1112+22 and Sta. 1131+93.

Utility coordination required for final design.

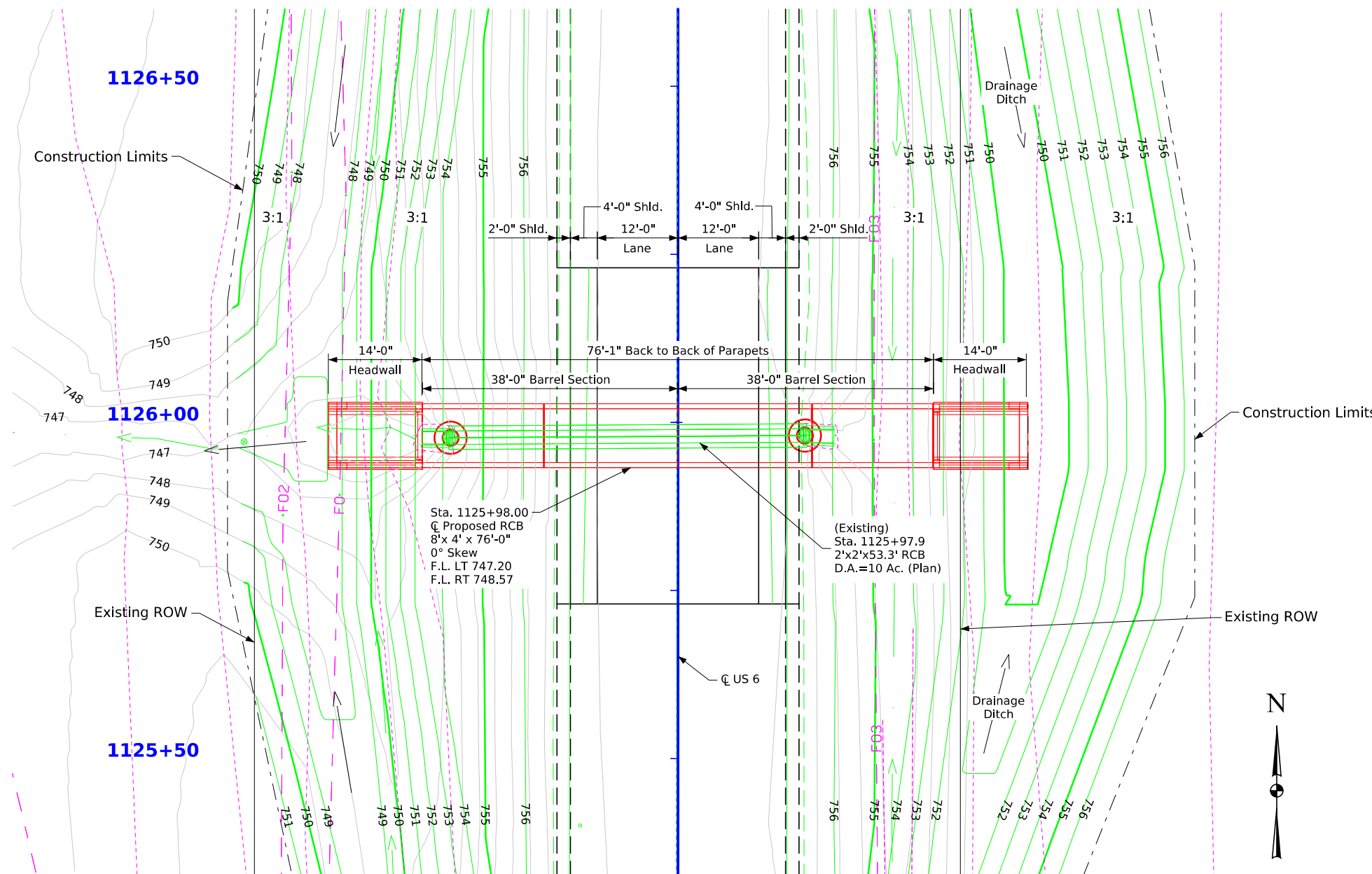
Flood plain permit not anticipated.

**Utilities Note:**

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

**General Utility Symbols:**

- E - Electric Line
- G - Gas Line
- SAN. - Sanitary Sewer
- T - Telephone Line
- W - Water Line
- FO - Fiber Optic Line
- GHP - Gas High Pressure
- ST S - Storm Sewer
- TV - TV
- - Power Poles



**Situation Plan**

**Hydraulic Design**

LICENSED PROFESSIONAL ENGINEER

DANIEL D. KIMBALL

21090

IOWA

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

Signature: DANIEL D. KIMBALL Date: \_\_\_\_\_

Printed or Typed Name: DANIEL D. KIMBALL

My license renewal date is December 31, 2025

Pages or sheets covered by this seal: \_\_\_\_\_

Design For 0 Deg.  
**8' x 4' x 76'**  
**Cast In Place RCB**  
**Situation Plan - CIP**

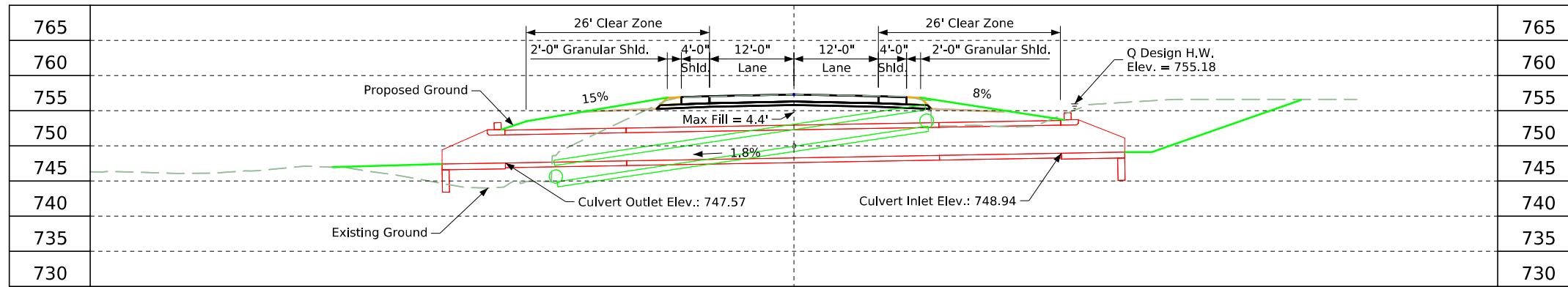
STA. 1125+98.00 (US 6) Turn-In Date: \_\_\_\_\_

**Iowa County**  
 IOWA DEPARTMENT OF TRANSPORTATION

Design No. \_\_\_\_\_ Design Sheet No. 1 of 2 FHWA/Asset \_\_\_\_\_

SHEET NUMBER V.1

Control Point: Pt. No. 20, N: 7977186.771, E: 20426567.036, Elev: 764.104,  
 CP SET 5/8 IP Flush w/ Ground Near Top of Back Slope



Longitudinal Section Along  $\bar{C}$  Culvert

**Hydraulic Data**

RIDB: Not Applicable  
 Drainage Area = Part of 97.6 Acres  
 Stream Slope = 187.175 Ft./Mi.  
 $Q_{50} = 330.94$  cfs  
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**Location**

US 6 Over Drainage Ditch  
 T-80N R-9W  
 Section 06  
 Iowa Township  
 Iowa County  
 Latitude 41.770015°  
 Longitude -91.930931°

**Traffic Estimate**

2023 AADT TRUCKS 2600 V.P.D. 13 %



Proposed Profile Grade US 6

**General Notes:**

This design is for the replacement of the existing 2' x 2' x 53' RCB, Iowa Design No. 1229

**Design Notes:**

Design accounts for overflow conveyance from existing culverts at Sta. 1112+22 and Sta. 1131+93.

Utility coordination required for final design.

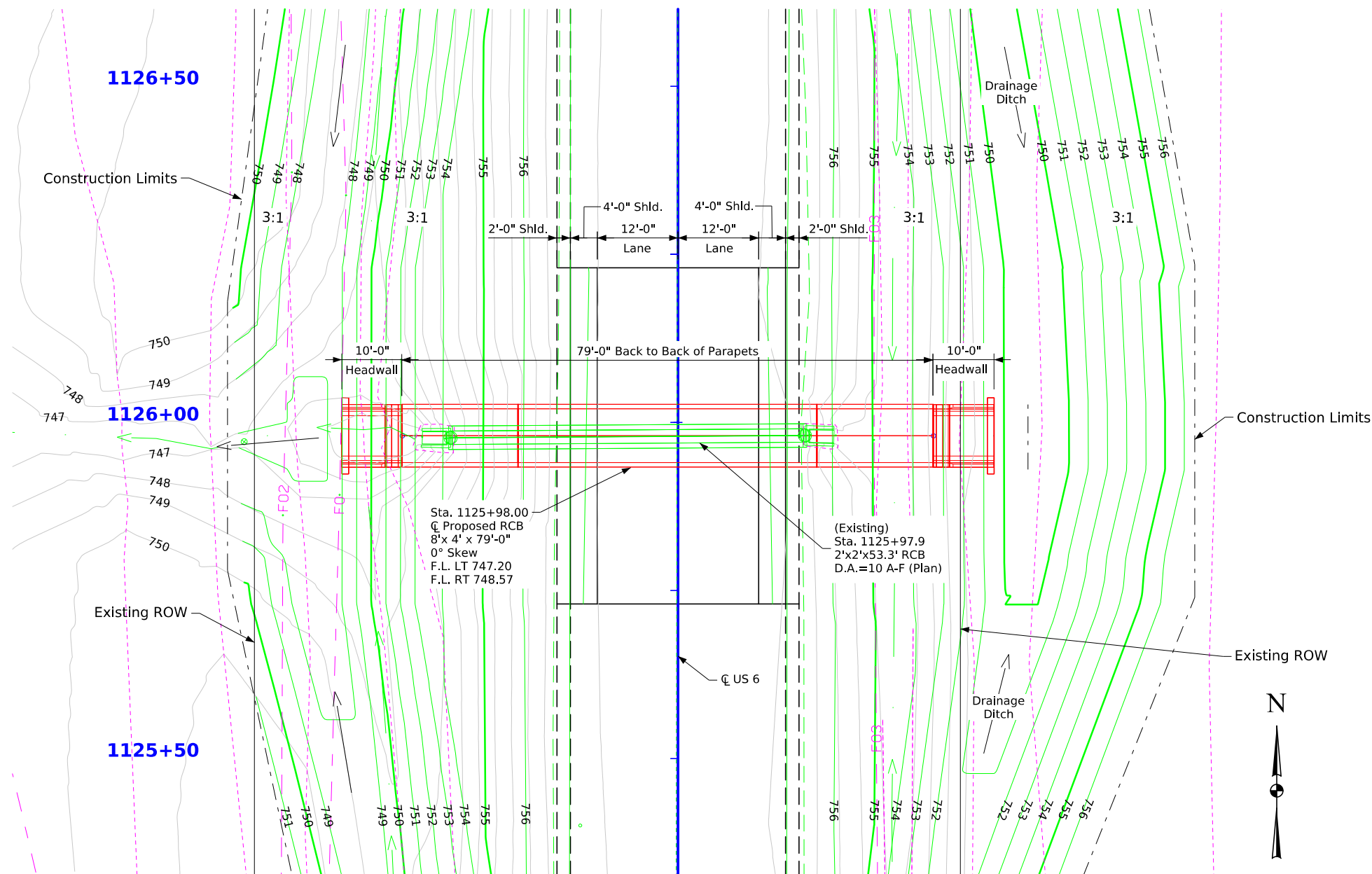
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- W - Water Line
- FO - Fiber Optic Line
- GHP - Gas High Pressure
- ST S - Storm Sewer
- TV - TV
- - Power Poles



Situation Plan

**Hydraulic Design**

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: DANIEL D. KIMBALL  
 Printed or Typed Name: DANIEL D. KIMBALL  
 My license renewal date is December 31, 2025

Pages or sheets covered by this seal: \_\_\_\_\_

Design For 0 Deg.  
**8' x 4' x 79'-0**  
**Precast RCB**  
 Situation Plan - PC  
 STA. 1125+98.00 (US 6) Turn-In Date: \_\_\_\_\_  
 Iowa County  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. \_\_\_\_\_ Design Sheet No. 2 of 2 FHWA/Asset \_\_\_\_\_

## CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature	Design Color No.	Feature
<b>Aggregate</b>			
(64)	Choke Stone	(112)	Noise Wall
(42)	Engineering Fabric	(112)	Noise Wall Footing
(8)	Flooded Backfill	(112)	Retaining Wall Back
(92)	Macadam Stone	(112)	Retaining Wall Back Excavate
(20)	Modified	(112)	Retaining Wall Face
(12)	Plowing Shaping	(112)	Retaining Wall Front Excavate
(14)	Porous Backfill	(112)	Retaining Wall Front Footing
(8)	Revetment Class A	(112)	Retaining Wall MSE Gutter
(6)	Revetment Class B	(112)	Retaining Wall Reinforced Earth
(62)	Revetment Class C		
(188)	Revetment Class D	<b>Grading</b>	
(28)	Revetment Class E	(8)	Behind Curb Cut
(12)	Shoulder Special Backfill	(6)	Granular
(12)	Special Backfill	(13)	Granular Back Fill
(20)	Subbase	(48)	Rock Undercut
(20)	Subbase Lower	(8)	Shoulder Earth Fill
(20)	Subbase Upper	(2)	Side Slopes
(118)	Subgrade Treatment	(226)	Side Slopes Dressing
<b>Asphalt</b>			
(207)	HMA Base Course	<b>Substrata</b>	
(207)	HMA Interim Course	(128)	Boulder Substrata
(207)	HMA Surface Course	(48)	Broken Weathered Substrata
<b>Concrete</b>			
(0)	Barrier Concrete	(3)	Core Out Substrata
(0)	Barrier Concrete Footing	(203)	Existing Pavement Substrata
(0)	Curb Gutter	(6)	Loam Substrata
(48)	Flowable Mortar	(80)	Rock Substrata
(0)	Median Concrete	(4)	Select Sand Substrata
(0)	PCC Pavement	(3)	Shale Substrata
(0)	Sidewalk	(10)	Topsoil Substrata
<b>Shoulder</b>			
(209)	Shoulder HMA	<b>Unsuitable / Waste</b>	
(0)	Shoulder PCC	(3)	Unsuitable Type A
(6)	Shoulder Granular	(13)	Unsuitable Type B
		(11)	Unsuitable Type C
		(3)	Waste
<b>Existing</b>			
(0)	Existing Pavement		

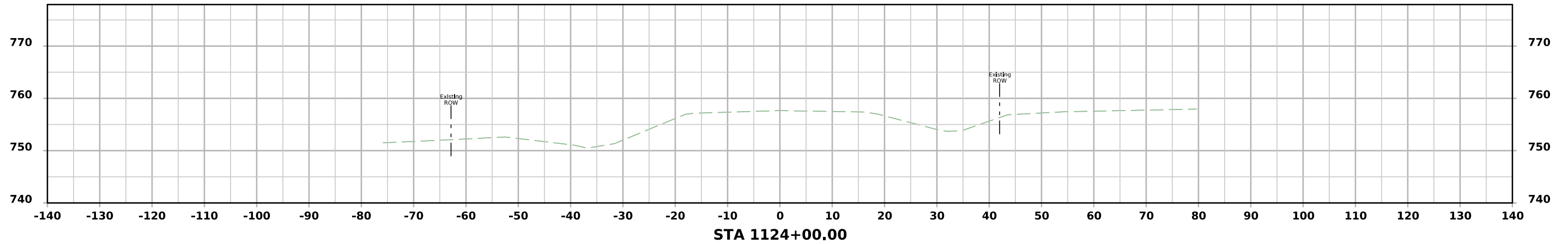
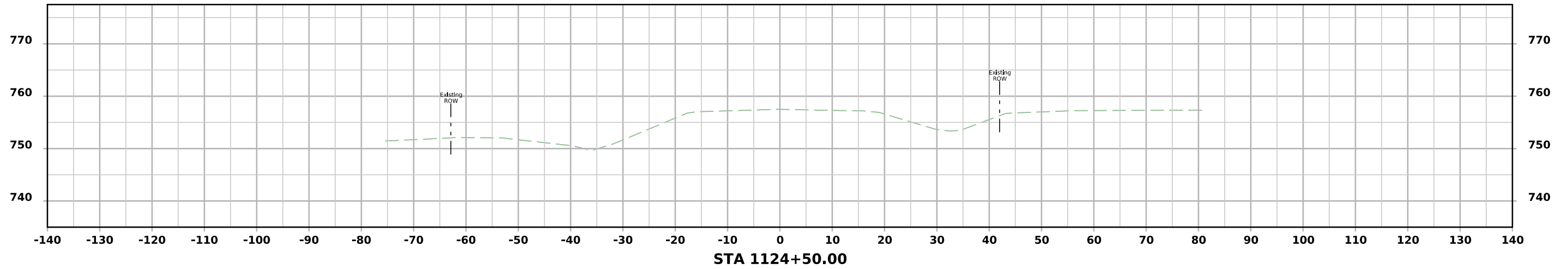
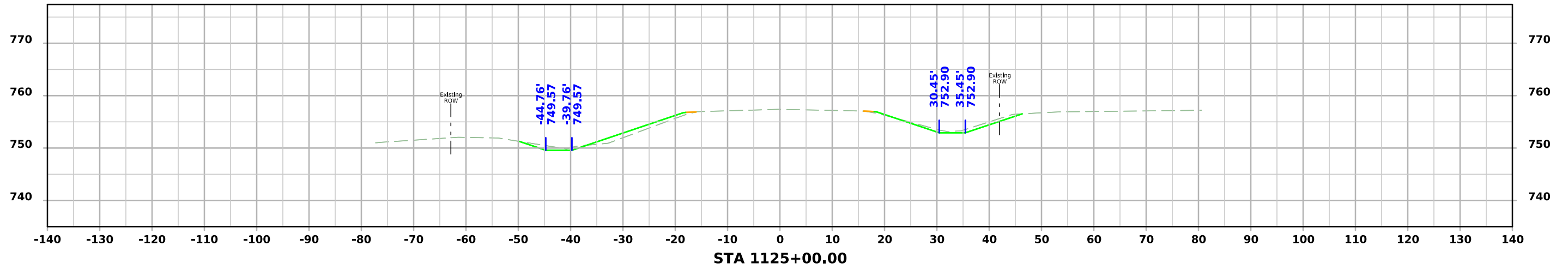
NOTES:

NOTES:

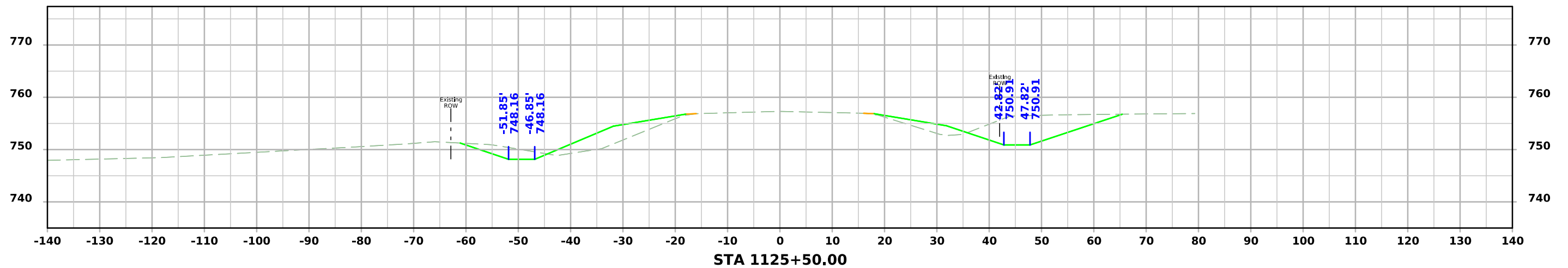
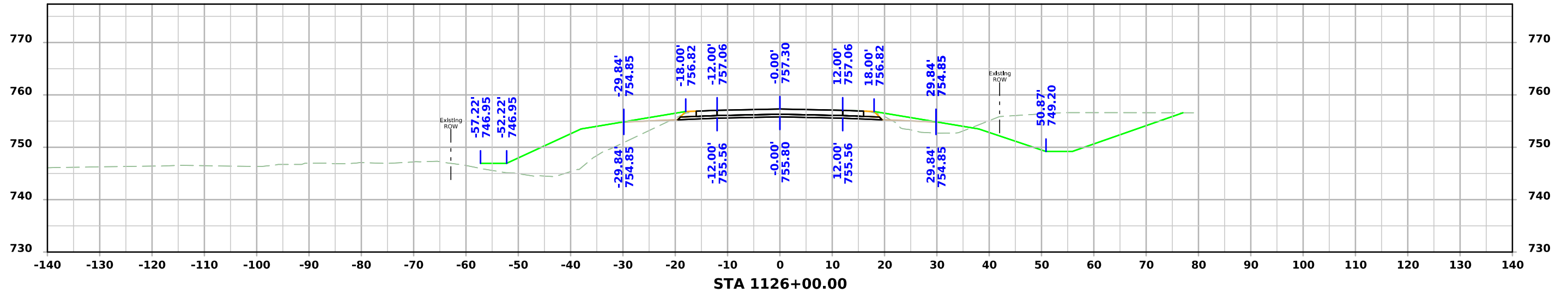
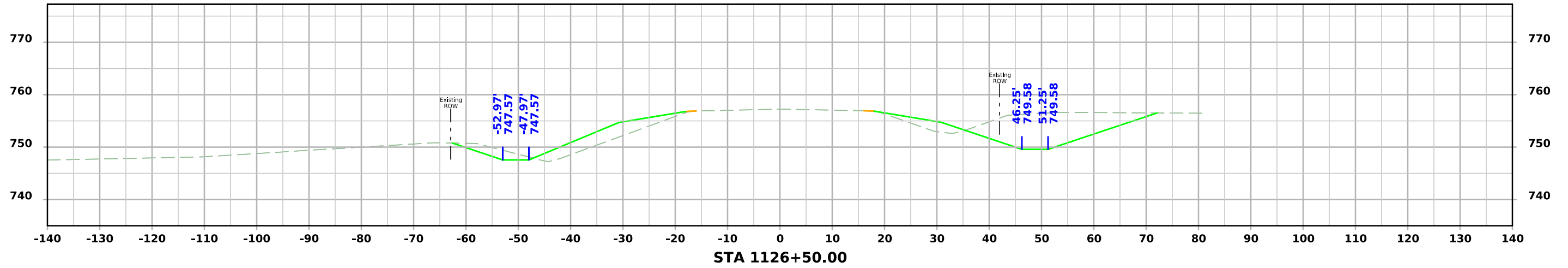
## CROSS SECTIONS LEGEND AND INFORMATION SHEET

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

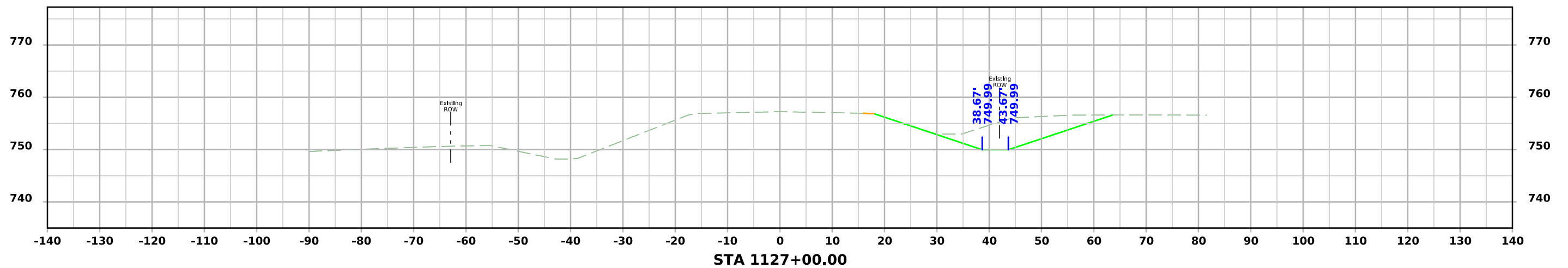
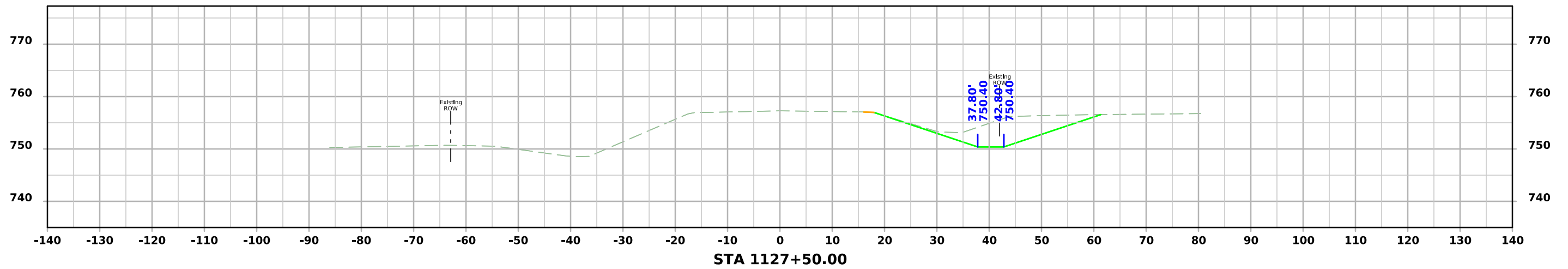
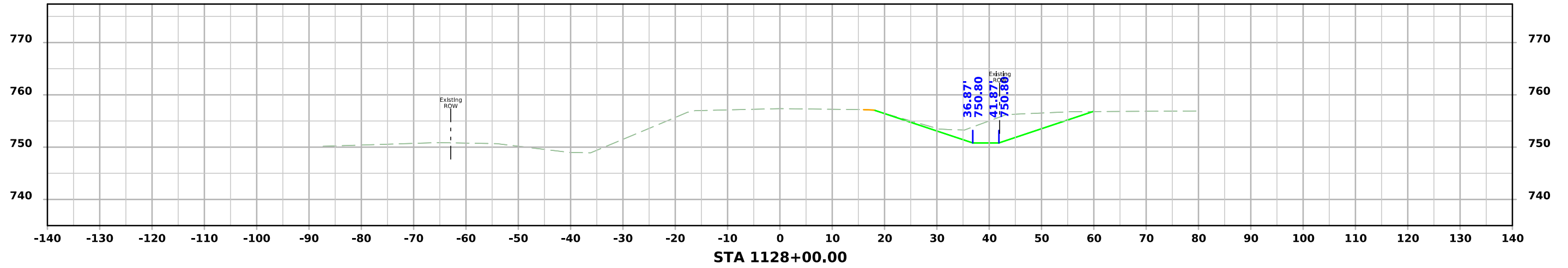
# US 6



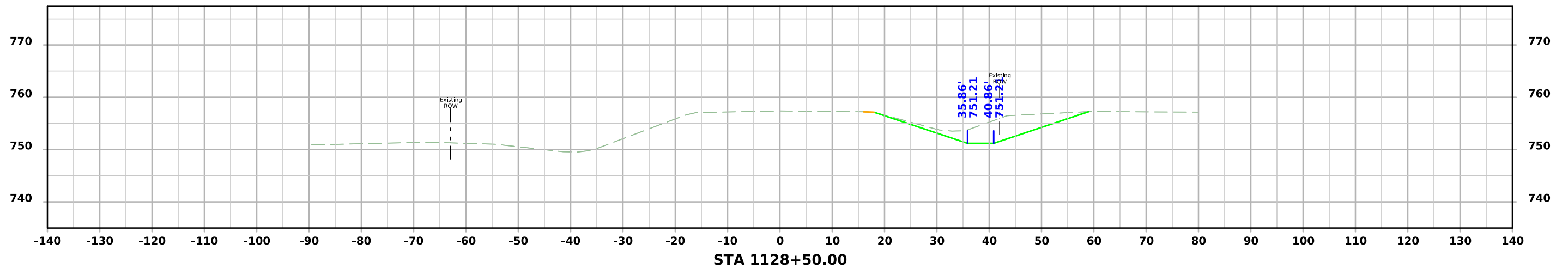
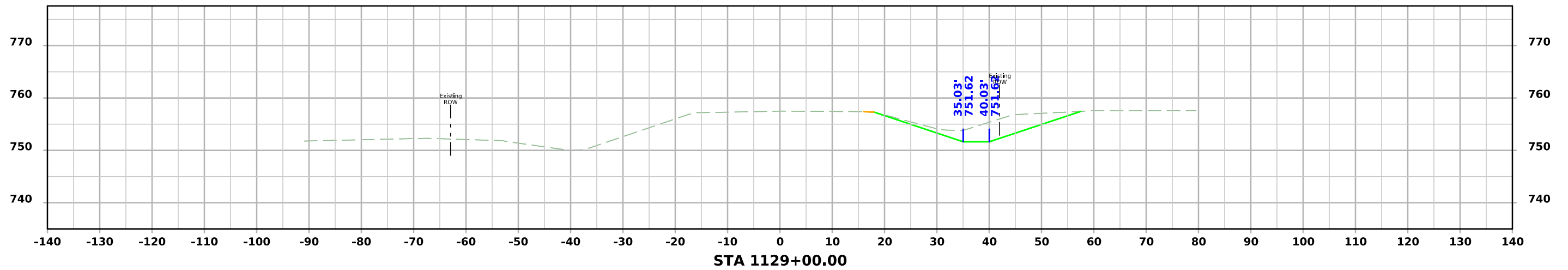
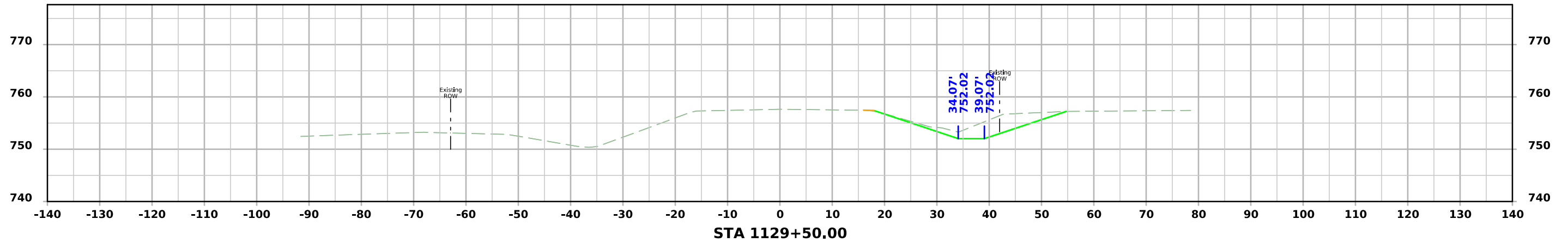
# US 6



# US 6



# US 6



# US 6

