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A.1	Title Sheet
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V.1	Design 0327
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SPS.?	Bridge Plan Soils Sheet
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B.1-W.4	Road Plans
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IOWA | DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

JASPER COUNTY

RCB Culvert Replacement - Single Box

IA 224 over East Burr Oak Creek

0.1 mi S of N 75th Ave E

Refer to the Plan Sheets for list of applicable specifications.

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



Preliminary
Not For Construction

Revisions to this Design Plan and/or
Project Specifications should be
submitted by _____

Design Data Rural		
2024 AADT	660	V.P.D.
20-- AADT	--	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	18	%
Total Design ESALs	--	

Index of Seals		
Sheet No.	Name	Type
A.1	Chad W. Meyer	Structural Design
V.1	Chad W. Meyer	Hydraulic Design
SPS.?	?????	Geotechnical Design
A.1	Colton D. Hoffmann	Roadway Design

Revisions

TOTAL	
12	
PROJECT IDENTIFICATION NUMBER	
26-50-224-010	
PROJECT NUMBER	
STPN-224-1(020)--2J-50	
R.O.W. PROJECT NUMBER	
STPN-224-1(021)--2J-50	
PROJECT DIRECTORY NUMBER	
5022401026	

English Culvert Standards		
Standard	Issued	Revised
RCB G2-20	7-20	
RCB G3-20	7-20	
RCB 10-12-20	7-20	
PWH 0-1-20	7-20	
PWH 0-2-20	7-20	
PWH 0-3-20	7-20	
PWH 0-4-20	7-20	
PWH 0-8-20	7-20	

Roadway 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 _____ Date 04-21-2026
Printed or Typed Name Colton D. Hoffmann
My license renewal date is December 31, 2025
Pages or sheets covered by this seal: B.1, D.1, G.1, H.1, J.1, W.1 - W.4

Structural 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 _____ Date 04-21-2026
Printed or Typed Name Chad W. Meyer
My license renewal date is December 31, 2026
Pages or sheets covered by this seal: V.1

Design No. 0327
Asset ID No. 900905

LEGEND

INTERSTATE HIGHWAY

PRIMARY HIGHWAY-DIVIDED

PRIMARY HIGHWAY

PORTLAND CEMENT CONCRETE ROAD

ASPHALT ROAD

BITUMINOUS ROAD

GRAVEL ROAD

EARTHEN ROAD

INTERSTATE HIGHWAY

UNITED STATES HIGHWAY

STATE HIGHWAY

COUNTY HIGHWAY

RAILROAD

PIPELINE

AIRPORT

HYDROLOGY

BRIDGE

STATE BOUNDARY

COUNTY BOUNDARY

CORPORATE BOUNDARY

TOWNSHIP LINE

SECTION LINE

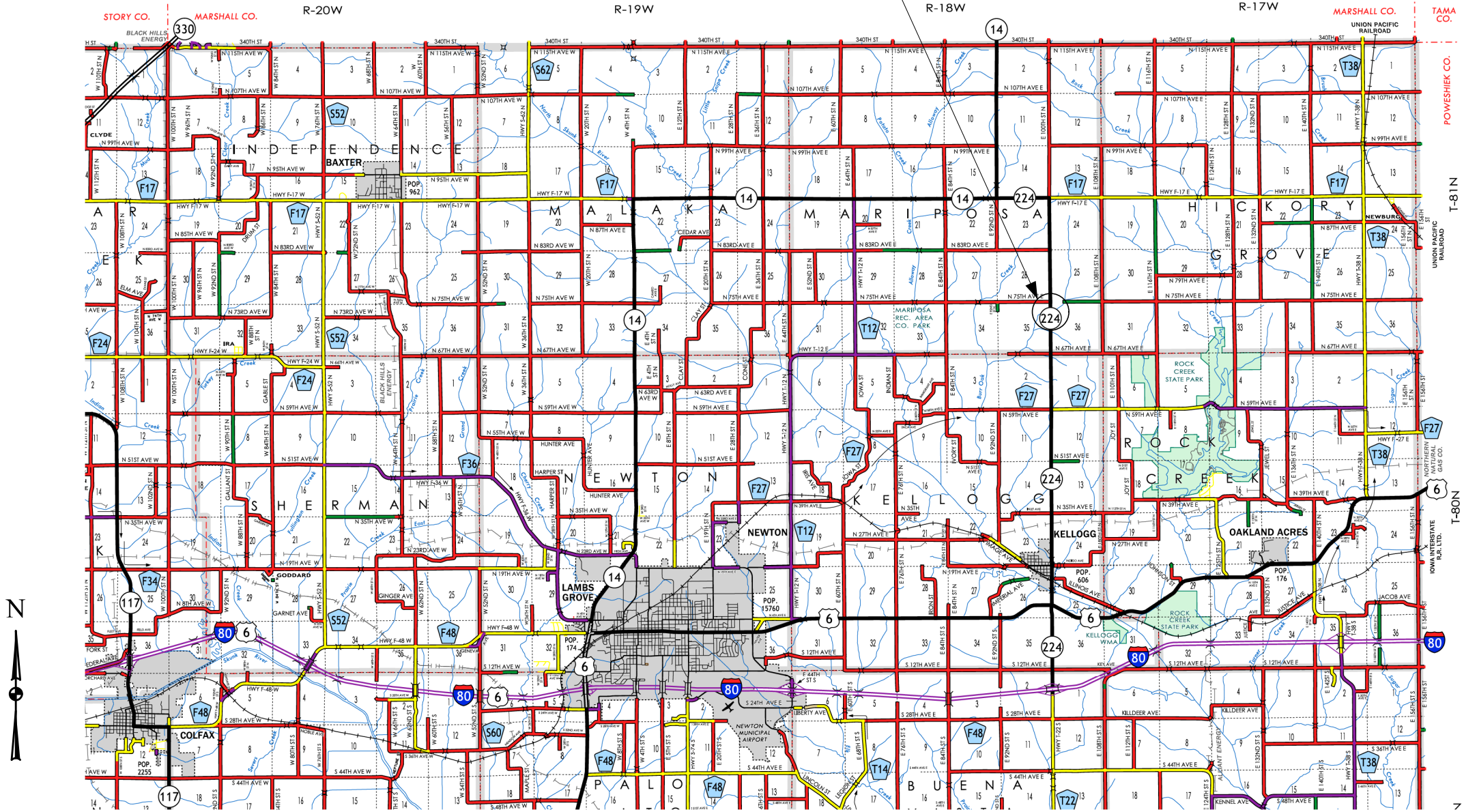
ROAD NAMES

UNINCORPORATED PLACE

STATE PARKS

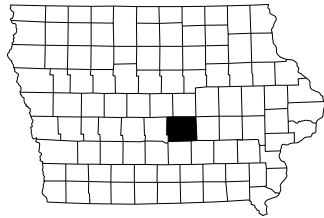
STATE INSTITUTIONS

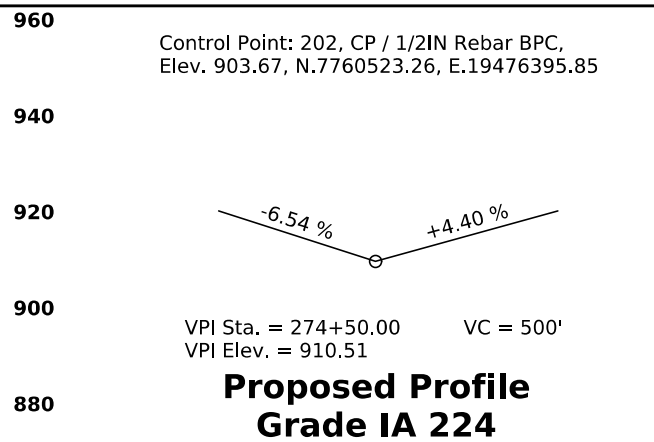
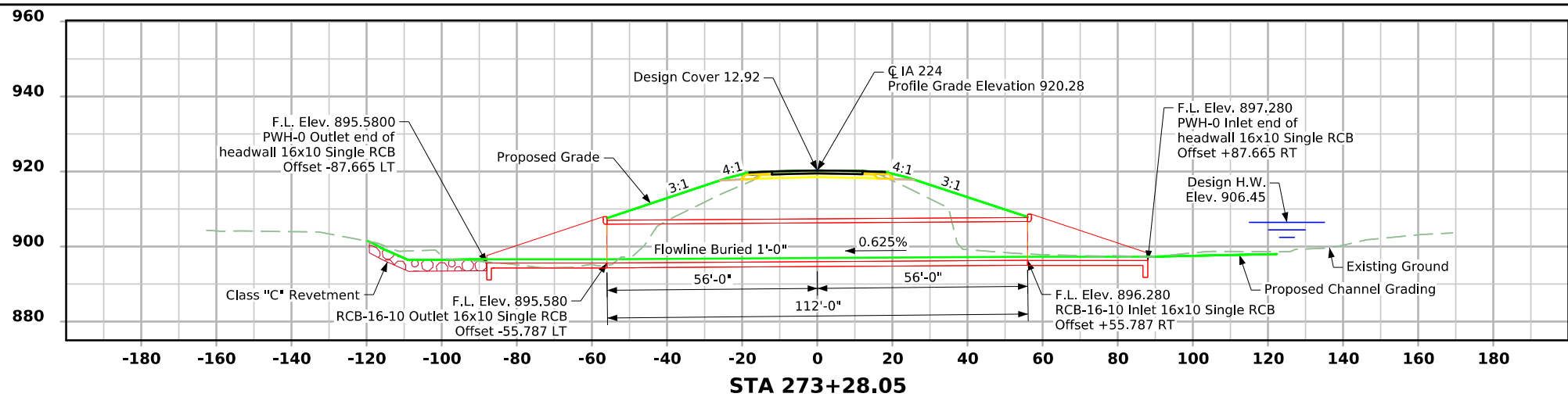
FEDERAL LAND



Jasper County Location Map

Not To Scale





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

Hydraulic Data

RIDB: Not Applicable
Drainage Area = 2.42 Acres
Stream Slope = 20.06 Ft./Mi.
 $Q_{50} = 1,120$ cfs
HW Elev. = 906.45
Exit Velocity = 9.8 fps

$Q_{100} = 1,359$ cfs
HW Elev. = 907.85
Exit Velocity = 11.0 fps

Traffic Estimate

2024 AADT 660 V.P.D.
20-- AADT -- V.P.D.
20-- DHV -- V.P.H.
TRUCKS 18 %
Total
Design ESALS --

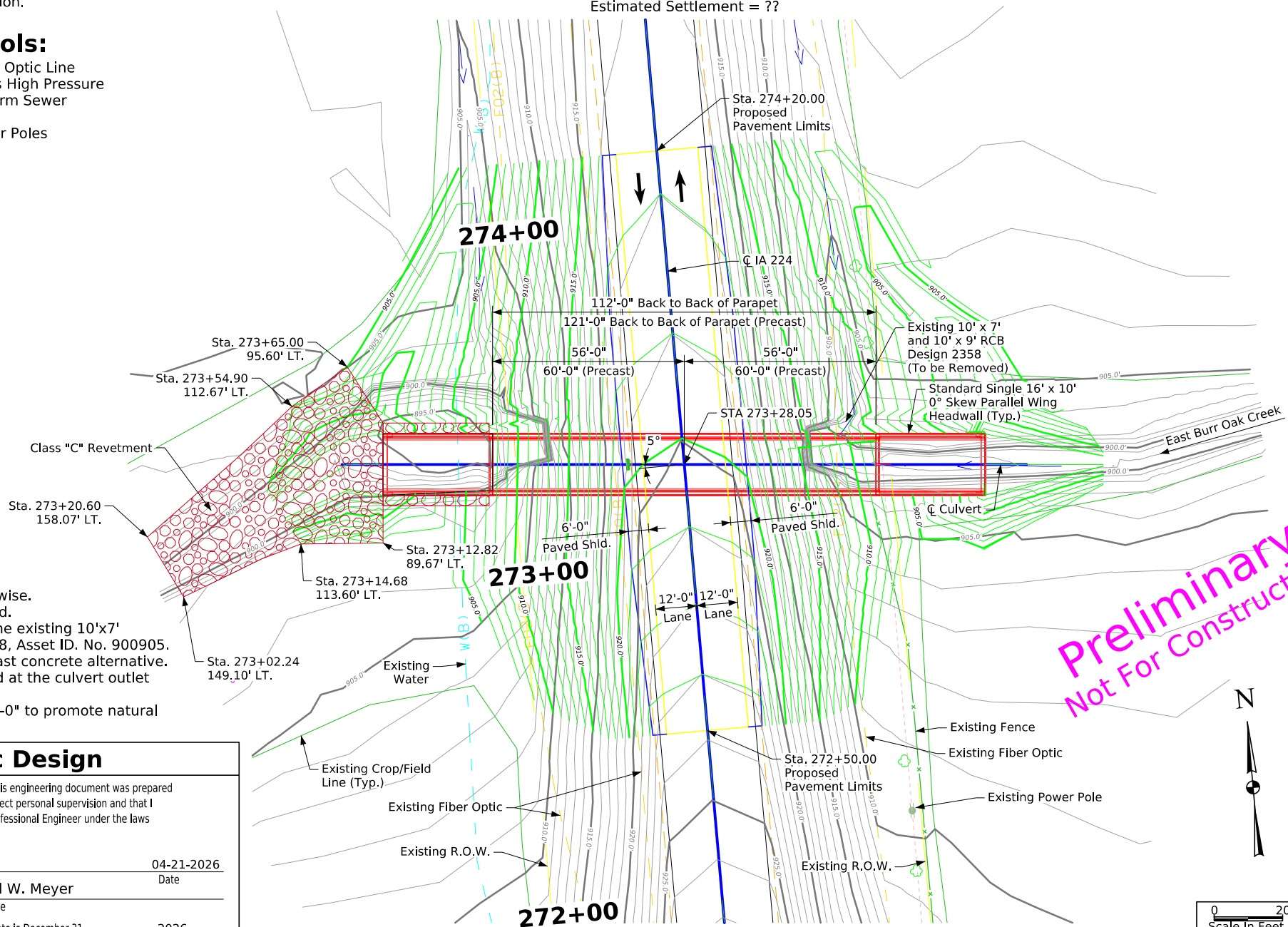
Notes:
All units are in feet unless noted otherwise.
Class "C" revetment stone is embedded.
This design is for the replacement of the existing 10'x7' and 10'x9' RCB, Jasper Design No. 2358, Asset ID. No. 900905. Final design plans should include precast concrete alternative. Class "C" revetment has been provided at the culvert outlet to mitigate high stream velocities. Culvert flowlines have been lowered 1'-0" to promote natural siltation.

Hydraulic Design

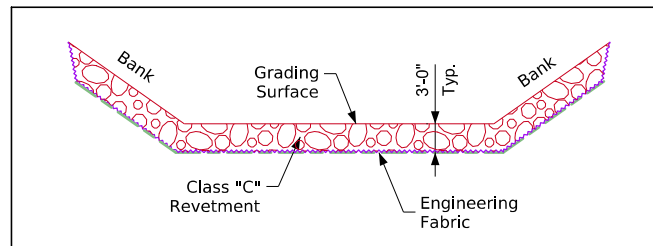
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature Chad W. Meyer Date 04-21-2026
Printed or Typed Name
My license renewal date is December 31, 2026

Pages or sheets covered by this seal: V.1 Hydraulic Data



Situation Plan



Typical Channel Protection

Estimated Revetment Quantities Included With Road Plans

Location	Revetment Class "C" (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Inlet	0	0	0
Outlet	459	287	287
Totals	459	287	287

Excavation quantity calculated from grading surface. Excavation quantity is for embedded revetment core out only, and does not include excavation to the grading surface. Excavation quantity to the grading surface is determined by Road Design and included in the Road Plans. Quantities shown for information only. See Road Sheets. Revetment estimated at 1.6 Tons/CY.

Location

IA 224 over East Burr Oak Creek
T-81N R-18W
Section 35/36
Mariposa Township
Jasper County
Bridge Maint. No. 5007.4B224
Asset ID No. 900905
Latitude 41.788485°
Longitude -92.902714°
Sta. 273+28.05
Build 16' x 10' x 112' RCB
Skew 5° LT Ahead
Length LT 56'
Length RT 56'
F.L. LT 895.58
F.L. RT 896.28
DA 2.42 Acres
DES # 0327

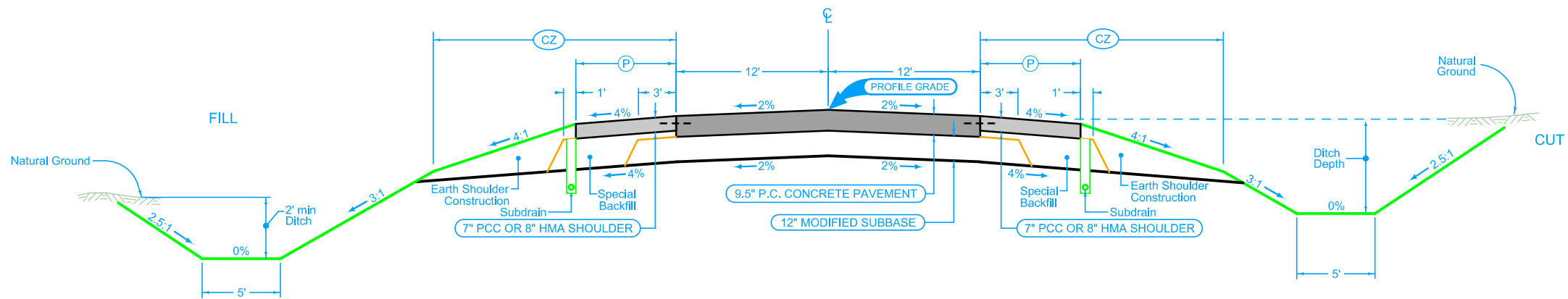
Single 16' x 10' Reinforced Concrete Box Culvert

Situation Plan

STA. 273+28.05 (IA 224) Turn-in Date: May 05 2026

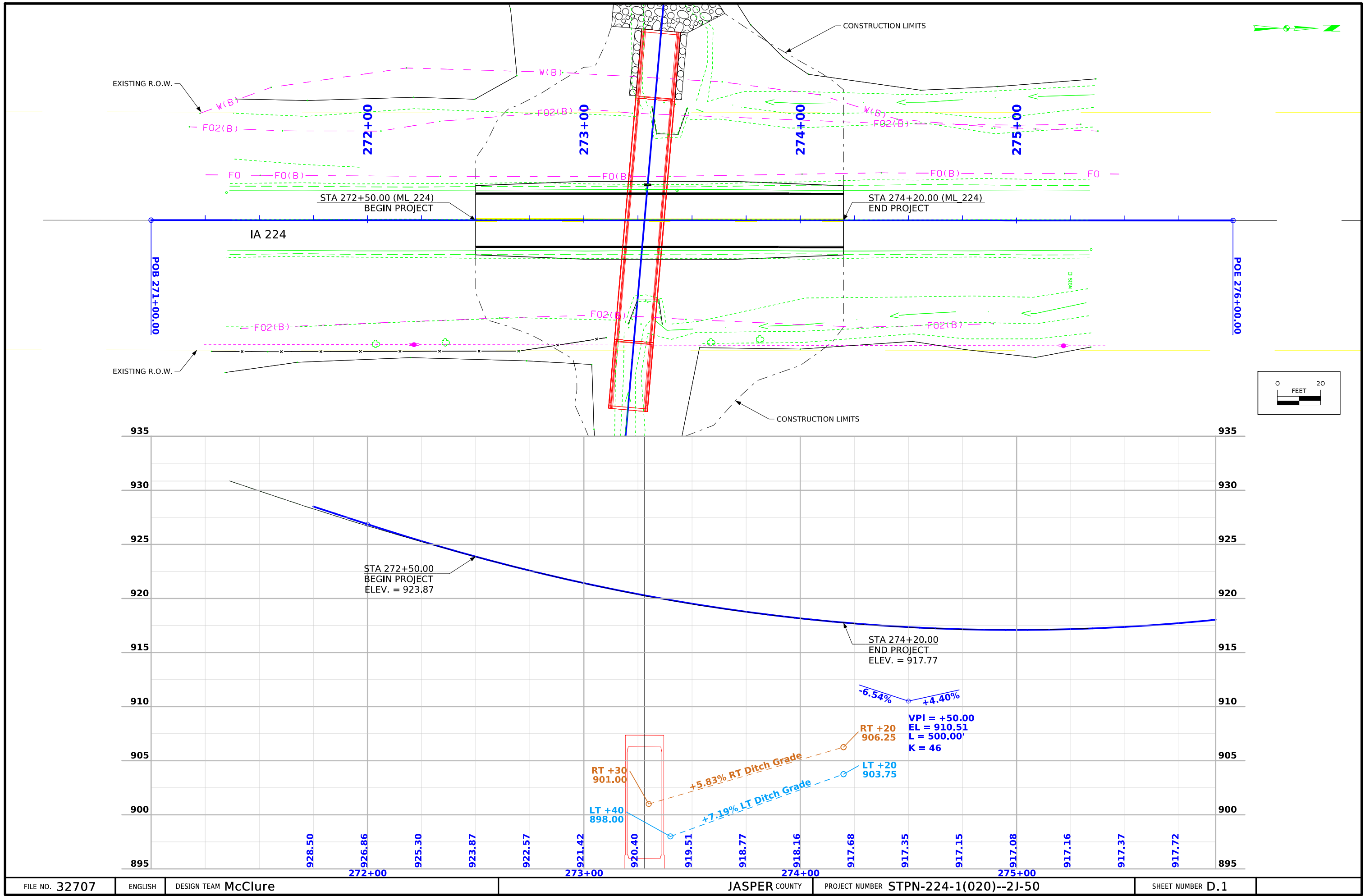
Jasper County

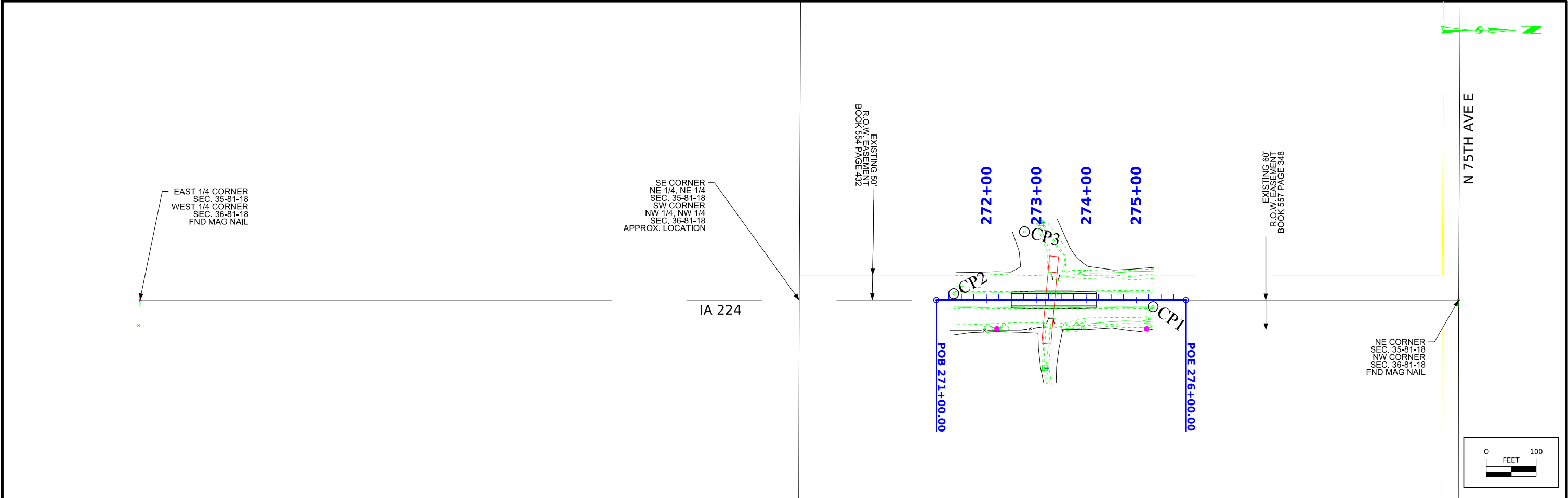
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 0327 Design Sheet No. 1 of 1 FHWA/Asset 900905



LOCATION			DIMENSIONS	
ROAD IDENTIFICATION	STATION TO STATION		P	CZ
			Inches	Feet
IA 224	272+50.00	273+00.00	4'-6"	4'-12'
IA 224	273+00.00	273+70.00	6'	12'
IA 224	273+70.00	274+20.00	6'-4"	12'-4"

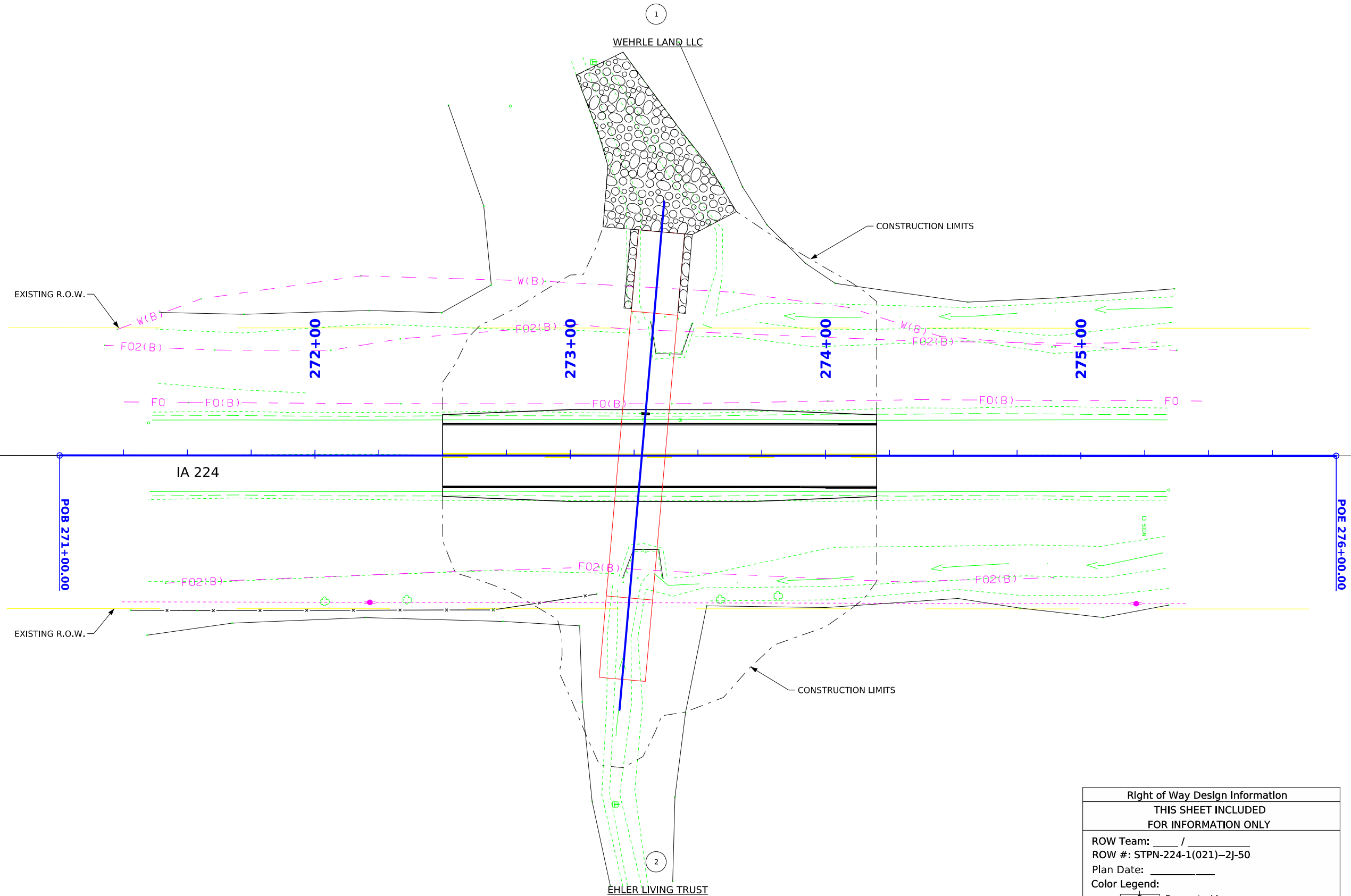
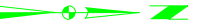
Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2
PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 17' spacing
HMA Shoulder Jointing:
Longitudinal joint: B



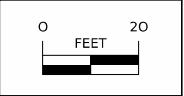


PROJECT CONTROL				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	7760781.055	19476546.51	916.948	MAG NAIL
CP2	7760381.471	19476519.85	930.455	MAG NAIL
CP3	7760523.257	19476395.85	903.672	CP 1/2IN REBAR BPC

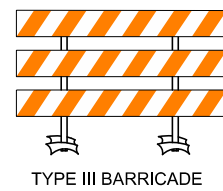
ALIGNMENT COORDINATES																			101-16		
																			10-20-09		
Name	Location	Point on Tangent			Station	Begin Spiral		Station	Begin Curve		Station	Simple Curve PI or Master PI of SCS		Station	End Curve		Station	End Spiral			
		Station	Coordinates			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)	Y (Northing)	X (Easting)
IA224_1		271+00.00	7760346.622	19476532.582																	
IA224_2		276+00.00	7760846.621	19476533.149																	



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ____ / ____	
ROW #: STPN-224-1(021)--2J-50	
Plan Date: _____	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



R-17W



ROAD CLOSED
TO
THRU TRAFFIC

R11-4
60" x 30"

**ROAD
CLOSED**

R11-2
48" x 30"



M4-10R
48" X 18"



M4-10L
48" X 18"

(A)

B

©

Ⓓ

Ⓔ



Ⓕ



©



①



ⓐ



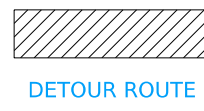
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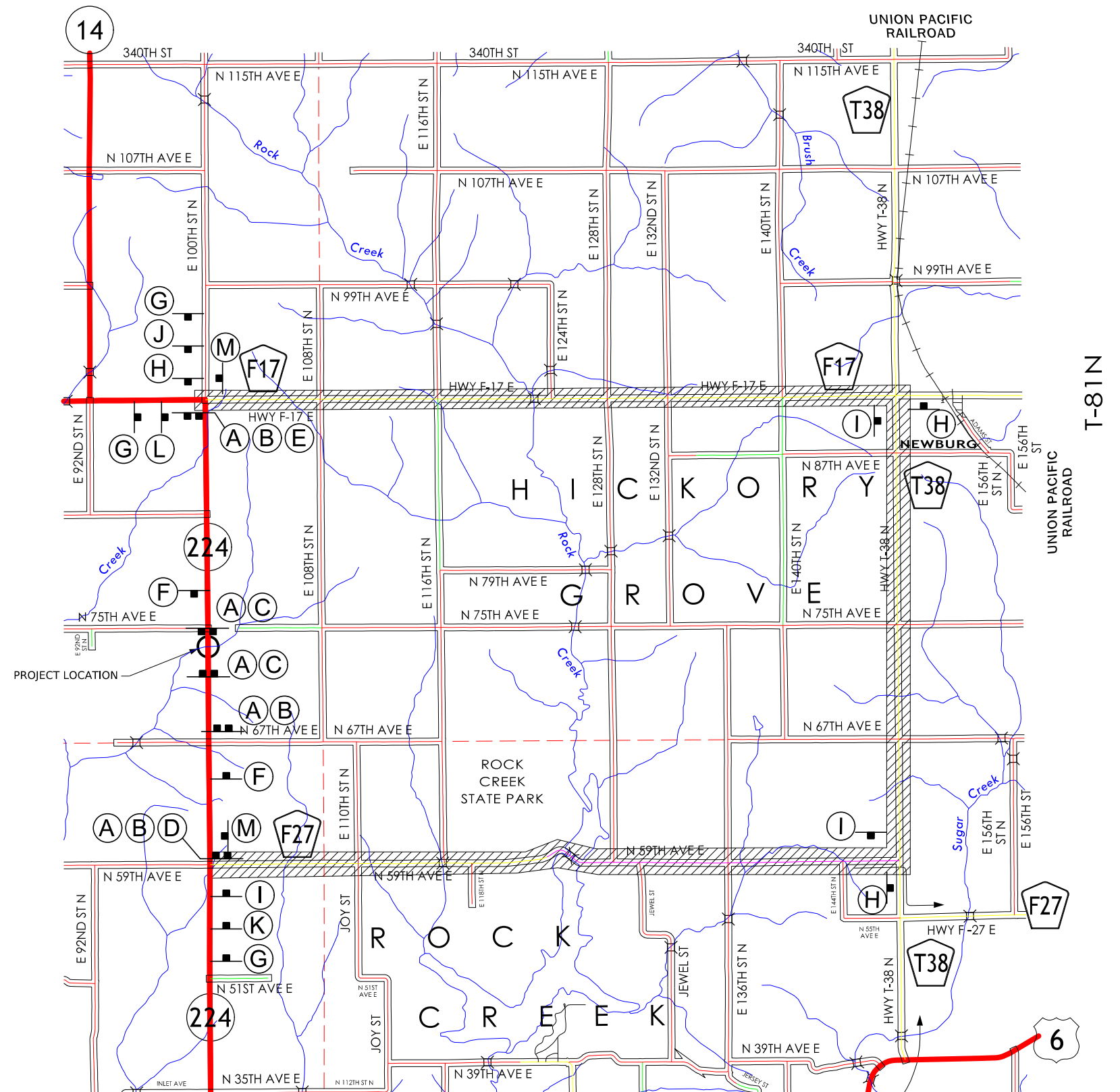
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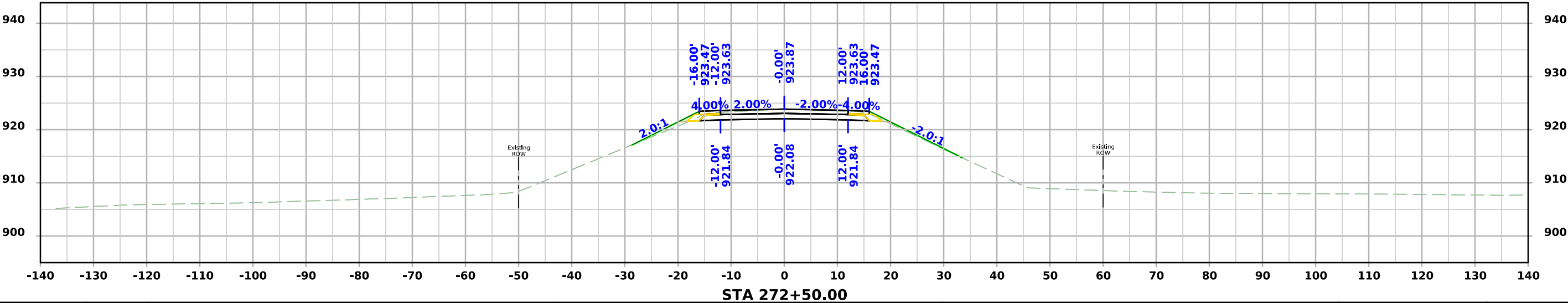
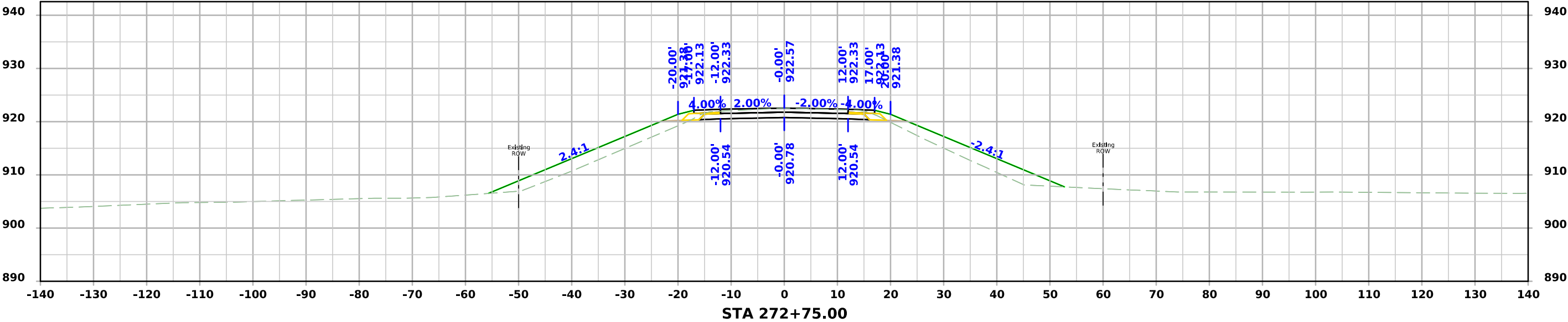
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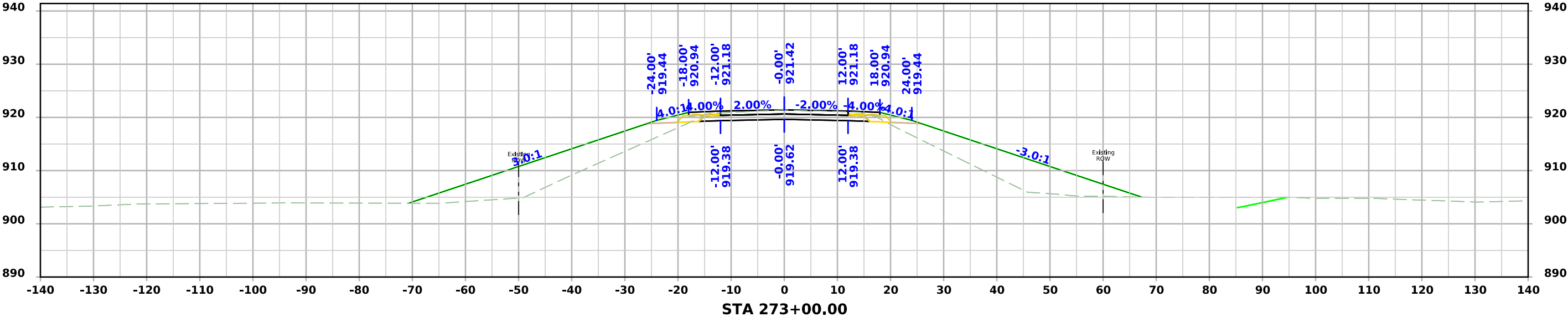
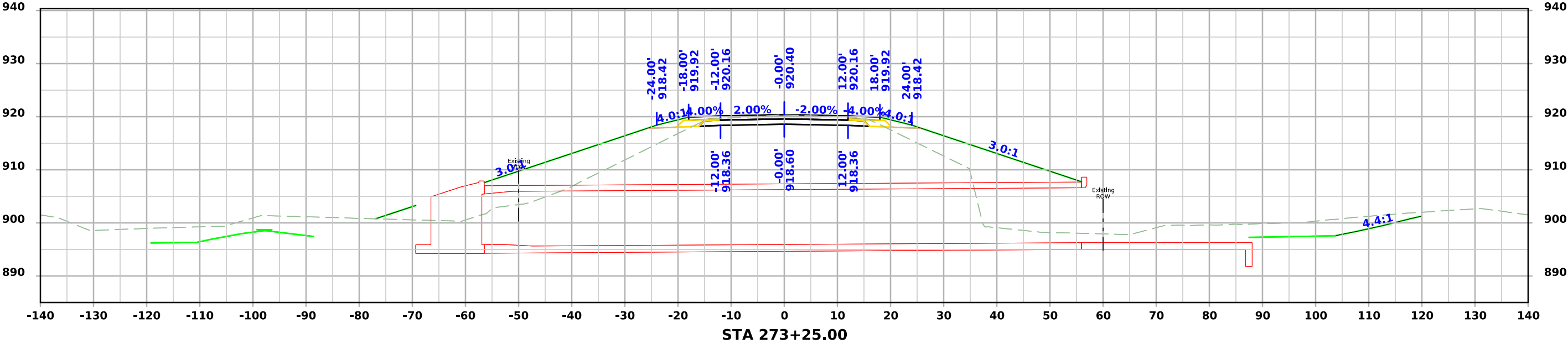
DETOUR ROUTE



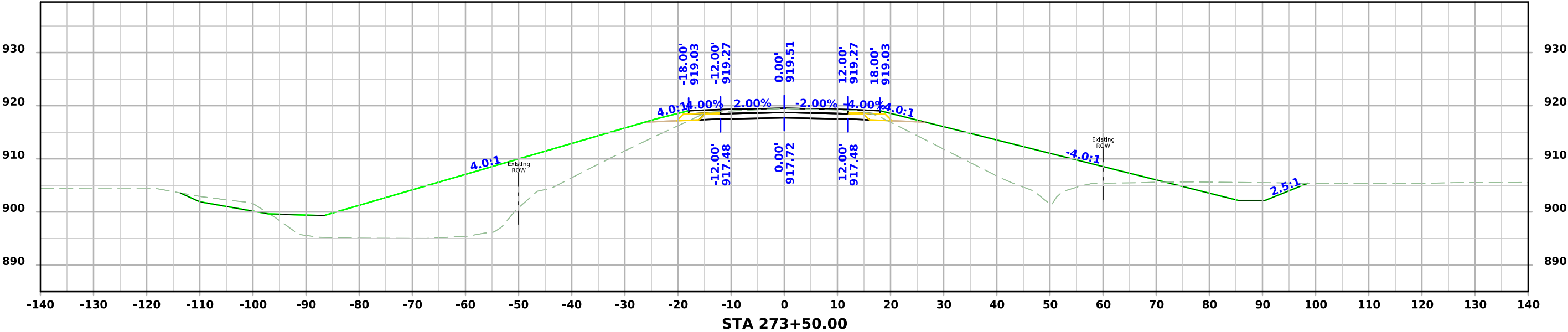
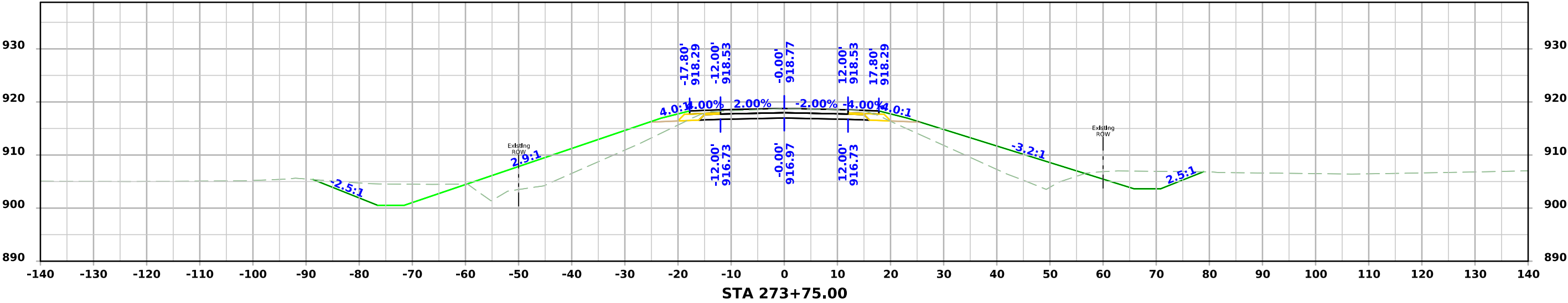
ML - IA224



ML - IA224



ML - IA224



ML - IA224

