LETTING DATE
Dec 15, 2026

Bridge Deck Overlay
BRF-061-2(132)--38-29

DES MOINES COUNTY

Index of Sheets

No.	Description
Sheets	Bridge Plan
A.1	Title Sheet
A.2	Location Map Sheet
V.1	Estimated Quantities - Design No. 0126
V.2 - V.7	Design No. 0126
Road Sheets	Road Plan
A.3-W.15	Road Plans
C.1-C.4	Estimated Quantities - Road
C.6	Standard Plans - Road

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
DES MOINES COUNTY
Bridge Deck Overlay

US 61 SB over Skunk River
0.5 Mi N of IA 16 (SB)

Refer to the Plan Sheets for list of applicable specifications.

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

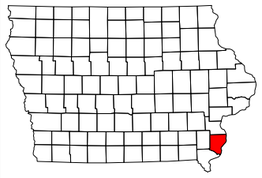
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1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

Revisions

	TOTAL
	80
PROJECT IDENTIFICATION NUMBER	
21-29-061-010	
PROJECT NUMBER	
BRF-061-2(132)--38-29	
R.O.W. PROJECT NUMBER	
PROJECT DIRECTORY NUMBER	
2906101021	

Scan the QR code or click the link below to leave plan quality feedback and help us improve future projects.

Design QR Feedback Link



Standard Road Plans

Standard Road Plans are listed on Sheet C.6.

Design Data Rural

2024 AADT	5250 V.P.D.
TRUCKS	11.4 %

Structural Design Consultant Coordinator
Deborah Peters

Index of Seals

Sheet No.	Name	Type
A.1	Julia Zehner	Structural Design
A.3	James A. Watters	Roadway Design

Structural Design

LICENSED PROFESSIONAL ENGINEER
Julia Zehner P28800
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.

Julia Zehner — 9-28-2026
Signature — Date

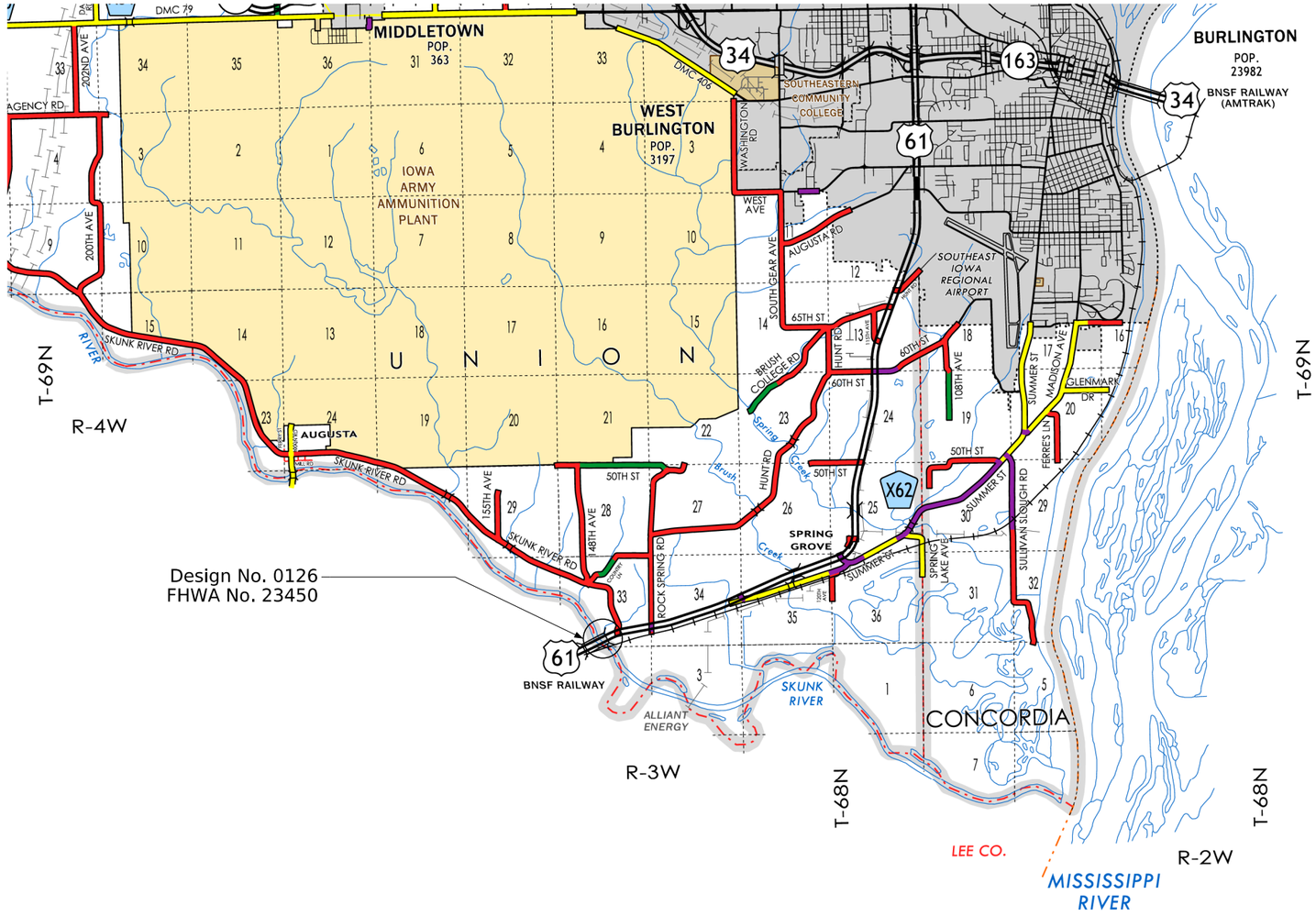
Julia Zehner
Printed or Typed Name

My license renewal date is December 31, 2027

Pages or sheets covered by this seal: A.1, A.2, V.1 thru V.7

FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER A.1	

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LEGEND

- INTERSTATE HIGHWAY
- PRIMARY HIGHWAY-DIVIDED
- PRIMARY HIGHWAY
- PORTLAND CEMENT CONCRETE ROAD
- ASPHALT ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD

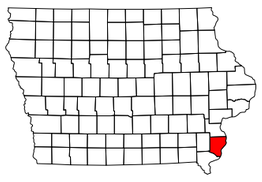
- INTERSTATE HIGHWAY (80)
- UNITED STATES HIGHWAY (65)
- STATE HIGHWAY (237)
- COUNTY HIGHWAY (527)

- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE

- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES (ABBEY ROAD)
- UNINCORPORATED PLACE (ELWOOD)

- STATE PARKS
- STATE INSTITUTIONS
- FEDERAL LAND

N



Des Moines County Location Map

Not To Scale

FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER A.2	

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Estimated Bridge Repair Quantities - Design 0126

Item No.	Item Code	Item	Unit	Quantities Estimated Design No. 0126	As-built Quantities Design No. 0126
1	2401-6750001	Removals, As Per Plan	LS	1	
2	2408-7800000	Structural Steel	LB	548	
3	2413-0698074	Deck Repair, Class A	SY	675	
4	2413-0698075	Deck Repair, Class B	SY	1.4	
5	2413-1200100	Neoprene Gland Installation And Testing	LF	95	
6	2508-0970000	Containment	LS	1	
7	2508-0991000	Painting Of Structural Steel	LS	1	
8	2510-6745640	Removal Of Existing P.C. Overlay	SY	3,330	
9	2533-4980005	Mobilization	LS	1	
Alternate AA Option 1					
10	2413-0698066	Deck Overlay (Class O PCC)	SY	3,330	
Alternate AA Option 2					
11	2403-1000010	Trial Batch And Test Placement (Fiber Reinforced Concrete)	LS	1	
12	2413-0698067	Deck Overlay (Class HPC-O PCC)	SY	3,330	
13	2413-1000005	Fiber Reinforcement For Concrete Repair/Overlay	SY	3,330	

Estimate Reference Information- Design 0126

Item No.	Item Code	Item Description
1	2401-6750001	Removals, As Per Plan Includes all work for removal and off-site disposal of the existing expansion joint neoprene glands. Removal of scheduled items shall be in accordance with Section 2401 of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the contractor and repaired at no extra cost to the state.
2	2408-7800000	Structural Steel Includes 4 drains at 137 lb each.
3	2413-0698074	Deck Repair, Class A Estimated as 20% of the deck. Includes cost to remove epoxy exposed during deck repair from existing epoxy injection. Includes providing concrete wash water containment, collection, and disposal of all solid and liquid materials. Location of concrete washout shall be approved by Engineer prior to placement/construction. During rain events contractor shall cover concrete washout or lower level a minimum of 1' from top of containment vessel to highest point of waste water. Contractor shall empty containment at 85% total capacity to insure no discharges. Bid item includes removal and restoration of area upon washout removal.
4	2413-0698075	Deck Repair, Class B Includes all costs associated with removal and replacement of concrete deck for installation of retrofit deck drains as shown on Design Sheet 6. Includes cost to remove epoxy exposed during deck repair from existing epoxy injection. Includes providing concrete wash water containment, collection, and disposal of all solid and liquid materials. Location of concrete washout shall be approved by Engineer prior to placement/construction. During rain events contractor shall cover concrete washout or lower level a minimum of 1' from top of containment vessel to highest point of waste water. Contractor shall empty containment at 85% total capacity to insure no discharges. Bid Item Includes removal and restoration of area upon washout removal.
5	2413-1200100	Neoprene Gland Installation and Testing Includes all costs associated with cleaning the existing extrusion, furnishing and installation of neoprene gland, and water testing of joint.
6	2508-0970000	Containment - -
7	2508-0991000	Painting of Structural Steel Includes cost of cleaning and painting abutment bearings, steel girders, and end diaphragms.
8	2510-6745640	Removal of Existing P.C. Overlay Includes cost to remove epoxy exposed during deck repair from existing epoxy injection.
9	2533-4980005	Mobilization - -
Alternate AA Option 1		
10	2413-0698066	Deck Overlay (Class O PCC) Includes cleaning existing concrete at barriers and curbs. Includes furnishing and placing concrete sealer at barrier rails and curbs. Includes providing concrete wash water containment, collection, and disposal of all solid and liquid materials. Location of concrete washout shall be approved by Engineer prior to placement/construction. During rain events contractor shall cover concrete washout or lower level a minimum of 1' from top of containment vessel to highest point of waste water. Contractor shall empty containment at 85% total capacity to insure no discharges. Bid item includes removal and restoration of area upon washout removal.
Alternate AA Option 2		
11	2403-1000010	Trial Batch and Test Placement (Fiber Reinforced Concrete) Refer to Developmental Specification for Fiber Reinforcement for Structural Concrete.
12	2413-0698067	Deck Overlay (Class HPC-O PCC) Includes cleaning existing concrete at barriers and curbs. Includes furnishing and placing concrete sealer at barrier rails and curbs. Includes providing concrete wash water containment, collection, and disposal of all solid and liquid materials. Location of concrete washout shall be approved by Engineer prior to placement/construction. During rain events contractor shall cover concrete washout or lower level a minimum of 1' from top of containment vessel to highest point of waste water. Contractor shall empty containment at 85% total capacity to insure no discharges. Bid item includes removal and restoration of area upon washout removal.
13	2413-1000005	Fiber Reinforcement for Concrete Repair/Overlay Refer to Developmental Specification for Fiber Reinforcement for Structural Concrete.

Roadway Quantities shown elsewhere in these plans.

Design For Repair To 15° Skew (RA)

685'-0" x 44'-0" Continuous Welded Girder Bridge

117'-6" End Spans — Three - 150'-0" Interior Spans

Estimated Quantities

STA. 450+12.50 (℄ US 61 SB) — Turn-in Date: October 2026

Des Moines County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0126 — Design Sheet No. 1 of 7 — FHWA No. 23450

General Notes

This design is for repairs to the existing 685'-0" x 44'-0" Continuous Welded Girder Bridge located on US 61 (SB) over the Skunk River in Des Moines County.

Electronic copies of original design plans will be made available to the Contractor as part of the E-Files supplied with the contract documents. Dimensions shown on these plans are based on the Original Design Plans (Design No. 468), Bridge Deck Overlay and Repair Plans (Design No. 389), and Bridge Repair Plans (Design No. 111).

See Design Sheet 3 for list of repairs.

Faint lines on plans indicate existing portions of the bridge.

All dimensions and details shown on these plans pertinent to new construction shall be verified in the field by the Contractor before starting construction.

Utility Companies whose facilities are shown on the plans or known to be within the construction limits shall be notified by the Bridge Contractor of the starting date.

Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.

The lump sum bid for "Removals, as Per Plan" shall include all costs associated with removing the existing neoprene glands. Removal of scheduled items shall be in accordance with Section 2401 of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the contractor and repaired at no extra cost to the state.

The top and interior faces of the existing concrete railing are to be cleaned and sealed in accordance with Article 2403.03, P, of the Standard Specifications. All costs associated with cleaning and sealing of the concrete rails shall be included in the unit price bid item "Deck Overlay".

Present deck thickness is about 9 ½ inches, including existing overlay. The Contractor shall exercise care in removing concrete in order to prevent unnecessary unbonding of reinforcing steel.

No preliminary deck survey is shown. The plan quantity for "Class A Bridge Deck Repair" is estimated as 20% of the total deck area. The actual quantity is determined by the Engineer after the P.C.C. Overlay has been removed. Actual spalled and hollow areas as determined by the Engineer shall be repaired. The plan quantity for "Class B Bridge Deck Repair" is estimated as the areas required to install the retrofit deck drains.

The bridge deck is covered with a 1¾ inch thick portland cement concrete overlay. The Contractor shall note the redefining of the classification line (boundary between repair and overlay) for this project due to the existing 1¾ inch overlay. The classification line will be defined as 2 inches below the top of existing overlay. This will necessitate the removal of the existing bridge deck overlay before placing the proposed new bridge deck overlay.

The bridge deck may have been epoxy-injected. The Contractor shall remove all exposed epoxy. Removal of epoxy is incidental to "Removal of Existing P.C.C. Overlay", "Deck Repair, Class A", and "Deck Repair, Class B" as appropriate.

All costs associated with the removal of the existing overlay shall be included in the bid item "Removal of Existing P.C.C. Overlay". Removal of existing overlay shall be computed in square yards from the measurement of areas removed. The Contractor will be paid the contract price per square yard for furnishing all equipment and labor necessary to remove the concrete to within ¼ inch above the classification line. All costs, including furnishing equipment and labor, associated with removal of the next ¼ inch of concrete (to the classification line) shall be included in the bid item "Deck Overlay".

Upon completion of the removal of concrete down to the classification line, the Engineer shall determine the areas of bridge deck to be repaired as "Deck Repair, Class A". Actual hollow areas, as determined by the Engineer, shall be repaired.

Construction shall be done in stages with at least one lane traffic maintained at all times in accordance with "Traffic Control Plan" note and the Staging Details shown on Design Sheet 4.

Construction Stages I & II as detailed on these plans may be reversed at the Contractor's option subject to the Engineer's approval.

Surface preparation shall be according to Article 2413.03, B and C of the Standard Specifications. The Contractor shall ensure the vertical edge of the Stage 1 overlay is prepared for placement of the new concrete for Stage 2 by sandblasting or shot blasting, followed by an air blast. Ensure this cleaning removes all dirt, oil, and other foreign material. Ensure it removes all unsound concrete, laitance, or loose material from the surface and edges against which the surface mixture is to be placed. The cleaning should roughen the surface in order to provide satisfactory bond with the surfacing mixture.

Ready mix trucks are not allowed on the prepared portion of the bridge deck.

The lump sum bid for "Painting of Structural Steel" shall include the cost of preparing all the existing structural steel for painting (including bearings) and field painting existing structural steel as noted in these plans. Cleaning and painting shall be in accordance with Section 2508, of the Standard Specifications. An epoxy paint system shall be used.

Containment and disposal of waste shall be in accordance with Section 2508, of the Standard Specifications. All costs associated with hauling and depositing of waste at the designated site/facility shall be the responsibility of the Contractor and included in the contract price bid for the "Containment" item.

Scrape samples were taken from areas of the bridge to get an indication of the existence of and level of total lead and total chromium. These analyses show the existence of these two toxic constituents. Levels indicated by these tests could create conditions above regulatory limits for health and safety requirements. No other constituents were analyzed. The Bidder should not rely on the Iowa DOT's testing and analysis for any purpose other than as an indication of the existence of these two toxic constituents.

Location	Lead (PPM)	Chromium (PPM)
Abutment Bearing	225	80.5
Girder	456 (0.27 Leachable)	130 (<0.030 Leachable)

Specifications

Design:
AASHTO Series of 2002

Construction:
Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2023, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions shall apply to construction work on this project.

Developmental Specifications for Fiber Reinforcement for Structural Concrete

Design Stresses

Design stresses for the following materials are in accordance with the AASHTO Standard Specifications for Highway Bridges, Series of 2002.

Concrete in accordance with Section 8, f'c = 4.0 ksi.

Traffic Control Plan
The roadway will be open to thru traffic. Refer to the Traffic Control Plan shown elsewhere in these plans.

Design History at this Site
(Includes this Design)

Des. No.	Type of Work
468	Original Design
389	Overlay & Retrofit Rail
111	Backwall & Joint Repair
126	Bridge Deck Re-Overlay

Design For Repair To 15° Skew (RA)

685'-0" x 44'-0" Continuous Welded Girder Bridge

117'-6" End Spans — Three - 150'-0" Interior Spans

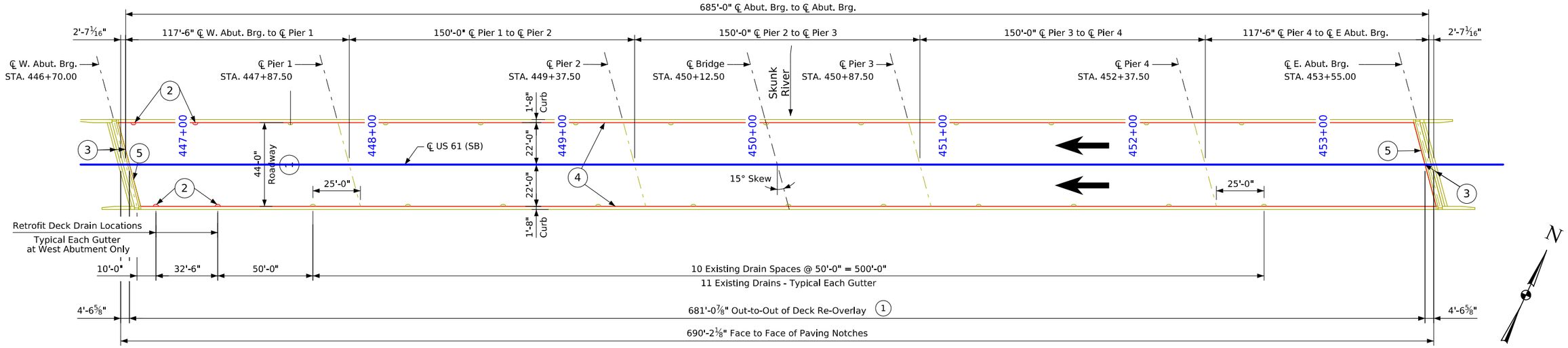
General Notes

STA. 450+12.50 (℄ US 61 SB) — Turn-in Date: October 2026

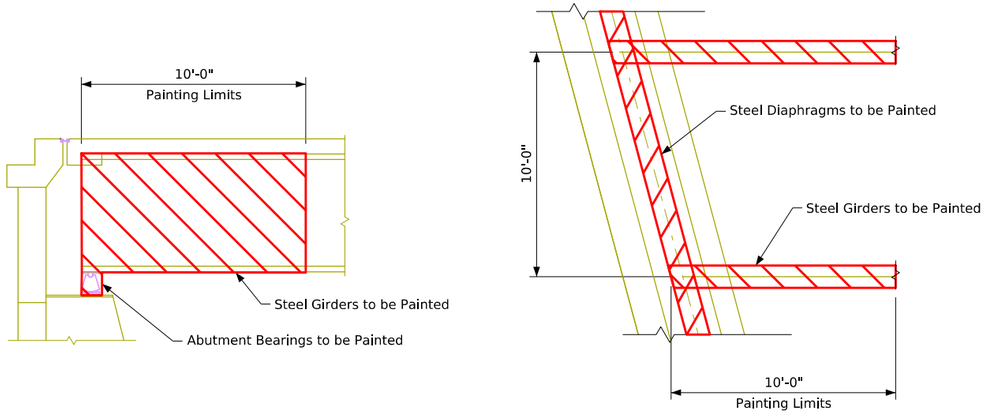
Des Moines County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0126 — Design Sheet No. 2 of 7 — FHWA No. 23450



Situation Plan



Elevation View

Plan View

Note:
Clean and zone paint the beam ends, diaphragms, and bearings at each abutment. The painting limits should extend 10'-0" from the beam ends.

Limits of Painting Structural Steel

(West Abutment Shown, East Abutment Similar)

Repairs Shall Consist Of:

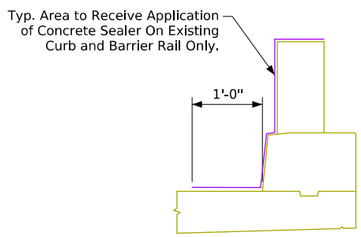
(1) Remove the existing 1 ¾" concrete overlay, scarify the deck, complete Class A repairs, and re-overlay the bridge with a PCC overlay. The bridge deck cross slope will match the existing cross slope, and the top of the overlay will match existing surface.

(2) Add retrofit drains on the bridge in each gutter near the west abutment.

(3) Replace the neoprene glands at both abutments. The existing steel extrusions will remain in place.

(4) Clean and apply concrete sealer to the top and traffic faces of the existing barrier rails and curbs at the limits shown on the detail of concrete sealer area.

(5) Clean and paint the abutment bearings, the end 10 feet of the existing steel girders, and the steel diaphragms at each abutment.



Detail of Concrete Sealer Area

Location

US 61 SB over Skunk River
T69N R3W
Section 33
Union Township
Des Moines County
Bridge Maint. No. 2932.7L061
FHWA No. 23450
Latitude 40.726201
Longitude -91.209962

Design For Repair To 15° Skew (RA)

685'-0" x 44'-0" Continuous Welded Girder Bridge

117'-6" End Spans — Three - 150'-0" Interior Spans

Situation Plan

STA. 450+12.50 (℄ US 61 SB) — Turn-in Date: October 2026

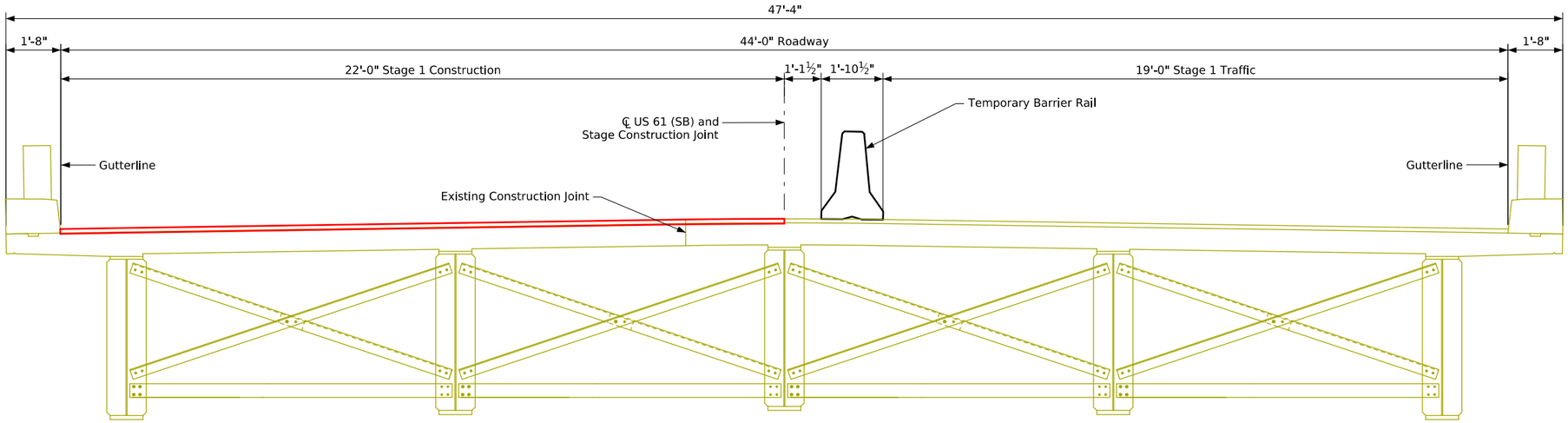
Des Moines County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0126 — Design Sheet No. 3 of 7 — FHWA No. 23450

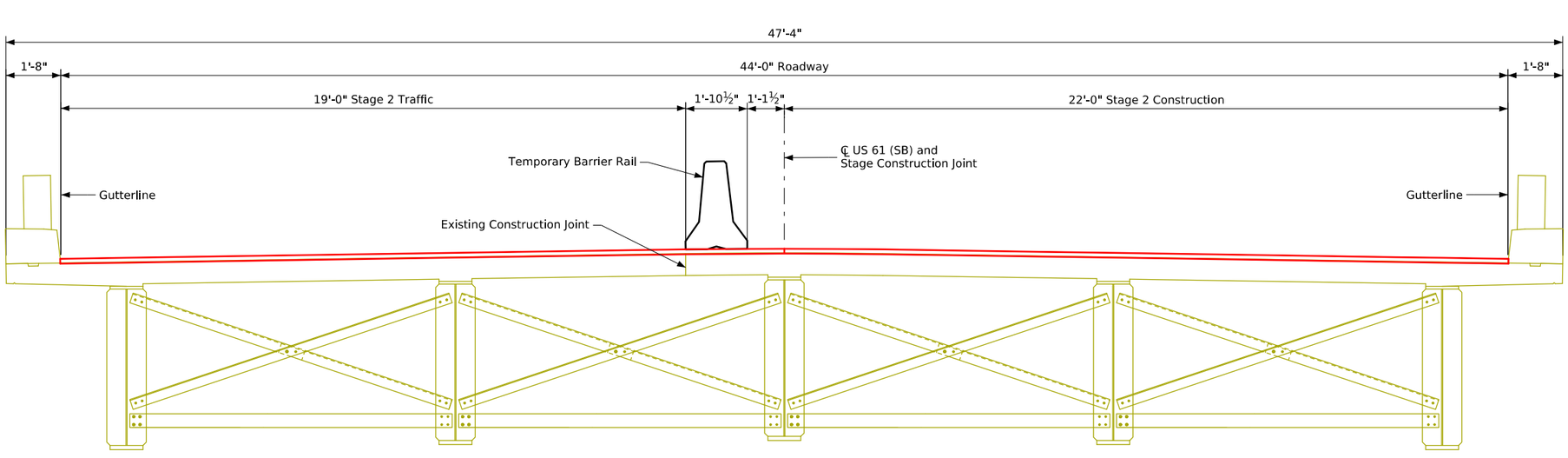
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Typical Section - Stage 1 Construction

(Looking East)



Typical Section - Stage 2 Construction

(Looking East)

Design For Repair To 15° Skew (RA)

685'-0" x 44'-0" Continuous Welded Girder Bridge

117'-6" End Spans — Three - 150'-0" Interior Spans

Staging Details

STA. 450+12.50 (℄ US 61 SB) — Turn-in Date: October 2026

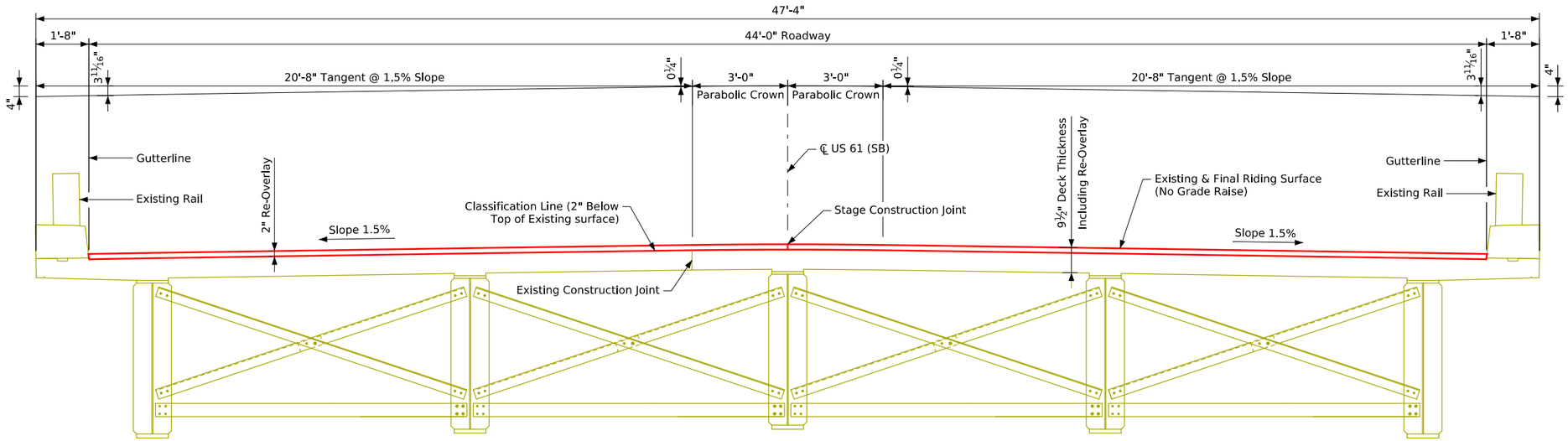
Des Moines County

IOWA DEPARTMENT OF TRANSPORTATION

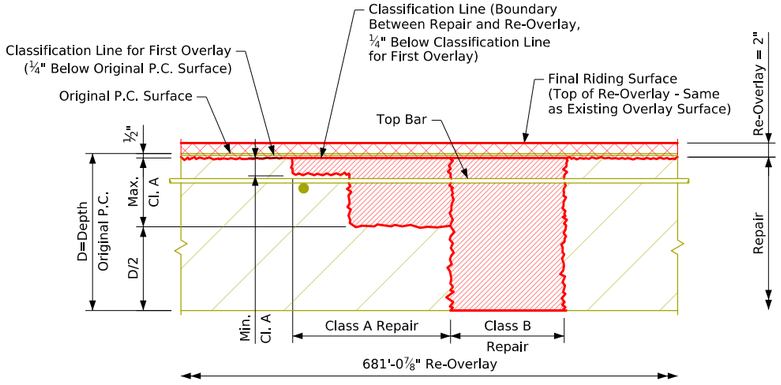
Design No. 0126 — Design Sheet No. 4 of 7 — FHWA No. 23450

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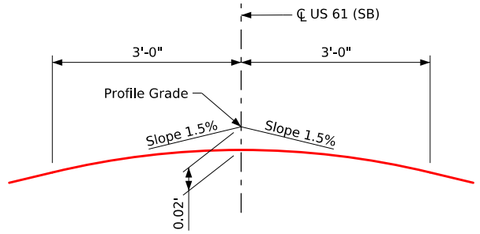
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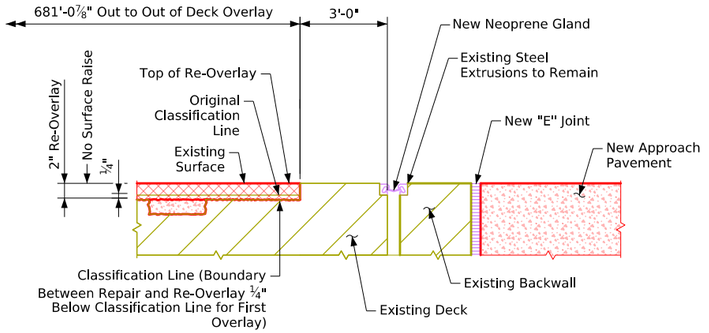
Typical Section
(Looking East)



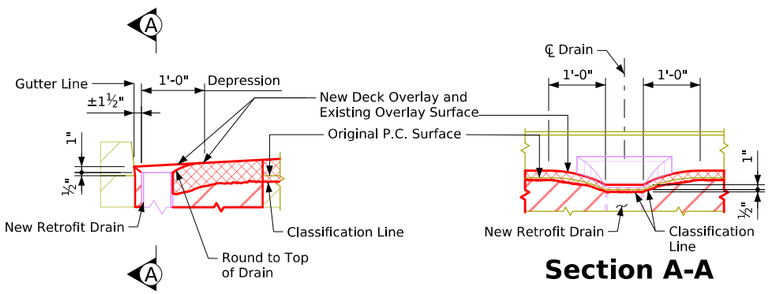
Repair and Re-Overlay Definition



Crown Template
(Not to Scale)

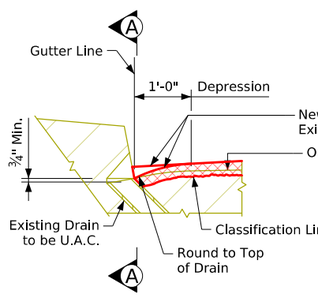


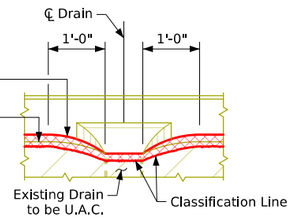
Part Longitudinal Section Along Roadway
Both Abutments



Section A-A

Deck Repair Detail at New Drains
(Required at 4 Retrofit Drain Locations)





Section A-A

Deck Repair Detail at Existing Drains
(Required at 22 Existing Drain Locations)

Design For Repair To 15° Skew (RA)

685'-0" x 44'-0" Continuous Welded Girder Bridge

117'-6" End Spans — Three - 150'-0" Interior Spans

Deck Re-Overlay Details

STA. 450+12.50 (℄ US 61 SB) — Turn-in Date: October 2026

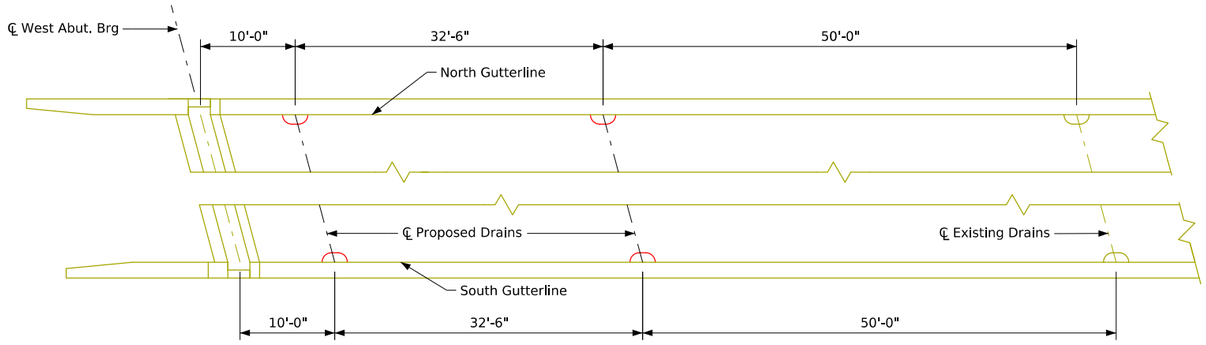
Des Moines County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0126 — Design Sheet No. 5 of 7 — FHWA No. 23450

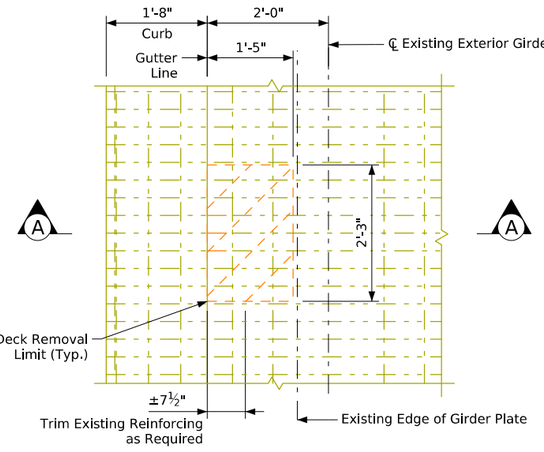
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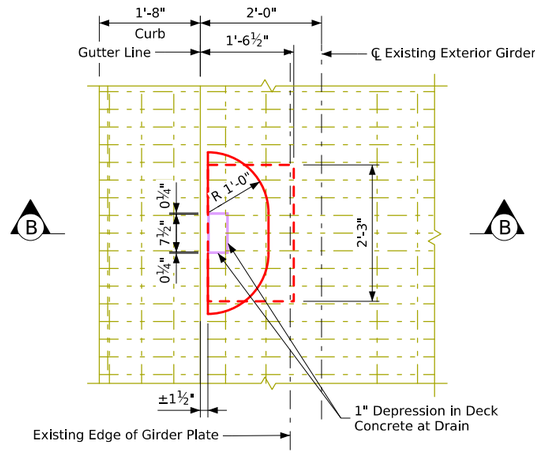


Part Plan Near West Abutment
(4 Locations Total)

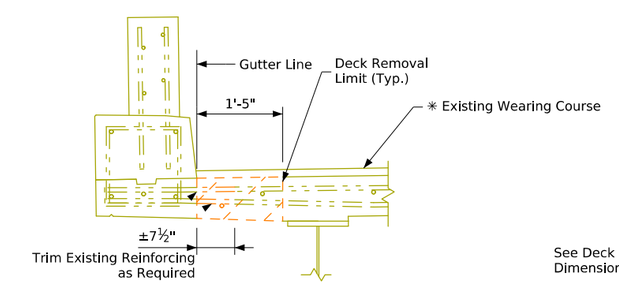




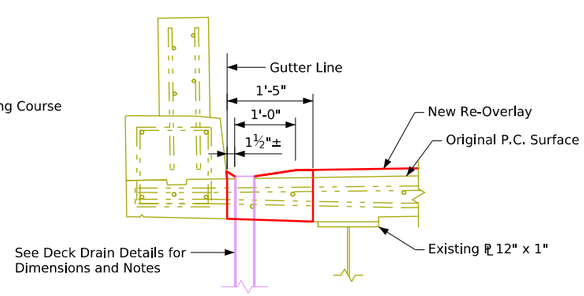
Part Plan - Deck Removal



Part Plan - Deck & Drain

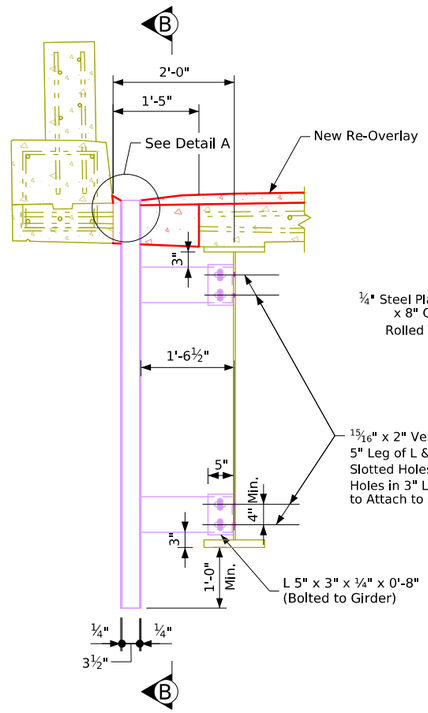


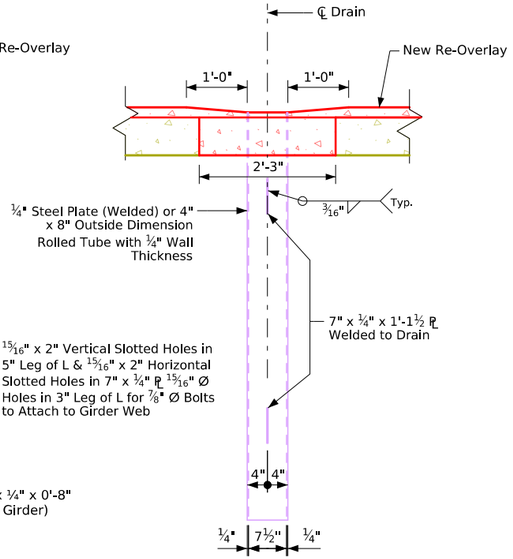
Section A-A



Section B-B

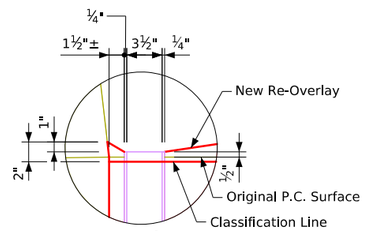
Note: All existing deck reinforcing is to be preserved and incorporated into new work, except as noted. Cut only as required to place drains.





Section B-B

Deck Drain Details



Detail A

Notes:

Area of concrete removed and replaced shall be measured and paid by unit price bid for "Deck Repair, Class B".

All dimensions shall be field verified before fabricating proposed drains.

Drains are to be galvanized and painted according to Section 2509 of the Standard Specifications. 4 drains are required. See Part Plan at the West Abutment and Design Sheet 3 for locations. Weight of one drain = 137 lbs. Weight of drains is based on rolled tube. Length of drain is to be 7'-0" minimum. Weight of drain included angles, plates.

Drains shall be centered over the nearest bottom transverse deck reinforcing bar from the location shown. Deck reinforcing in conflict with the new drain shall be cut off to provide 2" clearance from the drain. All cut ends of bars shall be coated with epoxy patching material.

Weight of drains is included in the quantity for "Structural Steel".

The contractor shall exercise care during deck removal operations to avoid damage to the existing girders plates and deck reinforcing.

Removal shall be in accordance with Section 2401, of the Standard Specifications. Any damage to material not to be removed shall be the responsibility of the contractor and repaired at no extra cost to the State.

✳ Existing wearing course shall be removed prior to removal of deck concrete for deck drain installation.

Data for One Drain	
Drain Weight (lbs.)	137
Drain Length (ft.)	7'-0"

Design For Repair To 15° Skew (RA)

685'-0" x 44'-0" Continuous Welded Girder Bridge

117'-6" End Spans — Three - 150'-0" Interior Spans

Deck Drains

STA. 450+12.50 (℄ US 61 SB) — Turn-in Date: October 2026

Des Moines County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0126 — Design Sheet No. 6 of 7 — FHWA No. 23450

Steel Extrusion Notes:

The existing steel extrusions shall be cleaned and reused. Existing neoprene gland shall be removed and replaced at both abutments.

Neoprene Gland Notes:

Removal of the existing neoprene glands shall be included in the pay item "Removals, As Per Plan".

The contractor shall remove existing neoprene glands and clean all debris and oil from the steel extrusion per the manufacturer's gland installation recommendations. Contractor shall provide the engineer with a copy of the manufacturer's instructions for gland removal, steel extrusion cleaning, and new gland installation. Methods of cleaning may be comprised of a combination of compressed air, wire brushing, and light sand blasting with fine grit sand. Care shall be taken in the cleaning operation to minimize removal of the galvanized zinc coating on the steel extrusion.

Existing barrier rail cover plates are to be removed prior to removal of existing neoprene gland and reinstalled following installation of new neoprene gland. Any damage to existing plates during removal or re-installation shall be at the responsibility of the Bridge Contractor and shall be repaired at no extra cost to the State.

The neoprene gland is to be placed as one continuous piece from end to end of the steel extrusion.

The neoprene gland shall conform to ASTM-2628 modified to exclude recover test and compression set.

The Contractor shall install the gland above the minimum temperature of 45° and the minimum joint opening and corresponding maximum deck temperature shown in these plans. The deck temperature shall be measured by recording the surface temperatures on the underside of the deck adjacent to the joints. If the deck temperature does not fall within the specified temperature range before the Contractor has completed all other required work, it will be necessary for the Contractor to return to the project site to complete installation and testing of the neoprene gland. If the Contractor is required to return to the project site after all other required work has been completed, the Contractor shall complete installation and testing of neoprene gland at no extra charge to the State.

The number of feet of neoprene gland installed shall be paid for at the contract price per foot based on plan quantities. The price for "Neoprene Gland Installation and Testing" shall be full compensation for furnishing, installing, and testing of the new neoprene gland. This work will consist of cleaning the extrusion, installation of the neoprene gland and water tight testing of the expansion joint system. All work and materials necessary for the installation of the neoprene gland shall comply with the recommendations of the Expansion Joint Manufacturer. The price bid for "Neoprene Gland Installation and Testing" shall include all watertight integrity testing, leak repairs as directed by the Engineer, and subsequent watertight testing until a leak free installation is achieved.

Watertight Integrity Testing And Repair Notes:

After installation of each neoprene gland, the Contractor shall perform watertight integrity tests at the deck level to detect any leakage. The tests are to check for leakage at the upturned ends of the expansion device and for leakage along the expansion device across the deck and any medians or sidewalks. The Contractor may conduct a single test of the entire device including upturned ends or may conduct separate tests of upturned ends and one or more tests of overlapping lengths between the upturned ends.

At each upturned end of the expansion device, the Contractor shall block out on the deck at least 3 feet of the expansion device leading to the upturned end and flood the area. A minimum water depth of 3" shall be maintained at the gutter line for at least 30 minutes. During the test, the Inspector shall observe for any overflow at the upturned end. At the conclusion of the test the Inspector will examine the underside of the joint for leakage. The expansion device is considered watertight if the Inspector observes no overflow during the test and if no dripping water or water droplets are visible in the under deck areas near the upturned end.

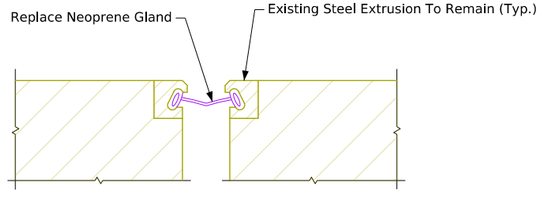
The Contractor shall test the expansion device between upturned ends by blocking out and covering the device with ponded or flowing water to a depth of at least 1" at all points, for at least 30 minutes. Vertical curb surfaces may be tested with an unnozzled hose delivering approximately one gallon per minute directed to flow over the entire curb height for 30 minutes. At the conclusion of the test, the inspector will examine the underside of the joint for leakage. The expansion device is considered watertight if no dripping water or water droplets are visible in the under deck areas along the full length of the expansion joint. Damp concrete that does not show dripping water or water droplets is not considered a sign of leakage.

If the expansion device leaks at an upturned end or along its length, the Contractor shall locate the leak(s) and take repair measures to stop the leakage. The repair measures shall be as recommended by the Manufacturer and approved by the Engineer prior to beginning corrective work.

If measures to eliminate leakage are taken, the Contractor shall perform subsequent watertight integrity tests subject to the same conditions as the original test.

Table of Approved Expansion Devices

Location	Manufacturer	Type of Steel Extrustion	Neoprene Gland	Minimum Opening for Gland Installation	Corresponding Maximum Deck Temperature
Abutments	Watson-Bowman & ACME Corp.	A	SE-300	1½"	62° F



Strip Seal Replacement Detail

Design For Repair To 15° Skew (RA)

685'-0" x 44'-0" Continuous Welded Girder Bridge

117'-6" End Spans — Three - 150'-0" Interior Spans

Expansion Device Details

STA. 450+12.50 (℄ US 61 SB) — Turn-in Date: October 2026

Des Moines County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 0126 — Design Sheet No. 7 of 7 — FHWA No. 23450

Index of Sheets

No.	Description
A Sheets	Title Sheets
A.3	Index of Sheets
B Sheets	Typical Cross Sections and Details
* B.1	Paved Shoulder at Guardrail (Adjacent to Partial Width Paved Shoulder)
B.2	Temporary Concrete Barrer Layout for One-Way Traffic
C Sheets	Quantities and General Information
C.1 - C.4	Estimated Project Quantities and Reference Notes
C.5	Project Description
C.6	Standard Road Plans
C.7	Index of Tabulations
C.8	Standard Notes
C.9 - C.25	Tabulations
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan and Profile Legend and Symbol Information Sheet
* D.2 - D.3	US 61 Plan Sheets
G Sheets	Survey Sheets
G.1	Alignment Coordinates
G.2	Curve Data
* G.3 - G.5	Survey Information
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.2	Staging Notes
J.3 - J.4	Traffic Control Tabulations
* J.5	Staging Legend and Symbol Information Sheet
* J.6	Staging Typical Sections
* J.7 - J.11	Staging Plan
L Sheets	Geometric, Staking, and Jointing Sheets
* L.1 - L.2	Geometric
* L.3 - L.4	Staking
* L.5 - L.6	Jointing
RR Sheets	Erosion Control Sheets
* RR.1	Erosion Control Plan Legend and Symbol Information Sheet
* RR.2 - RR.3	Erosion Control Device Maps
W Sheets	Mainline Cross Sections
* W.1 - W.15	Mainline Cross Sections
	* Color Plan Sheets

ROADWAY DESIGN

LICENSED PROFESSIONAL ENGINEER
JAMES A. WATTERS
P24847
IOWA

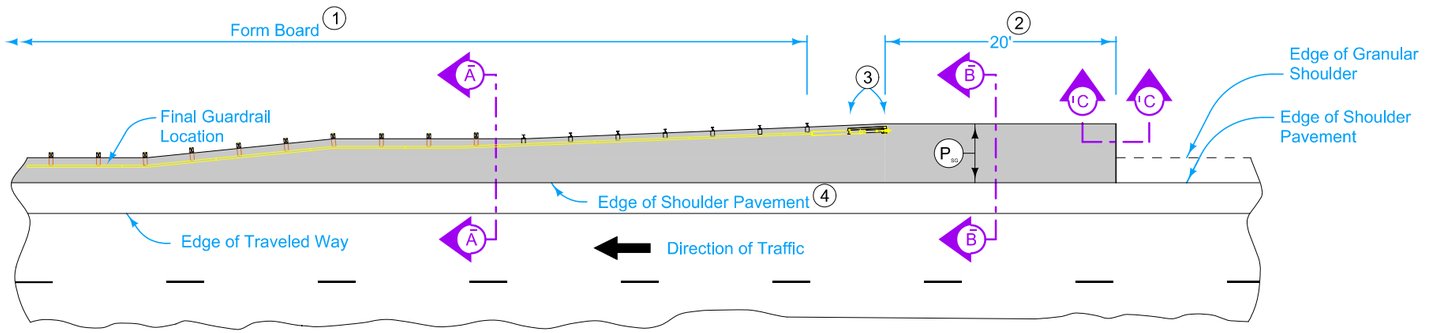
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature — 9/29/2026 Date

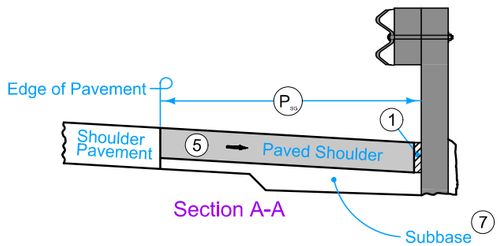
James A. Watters
Printed or Typed Name

My license renewal date is December 31, 2027

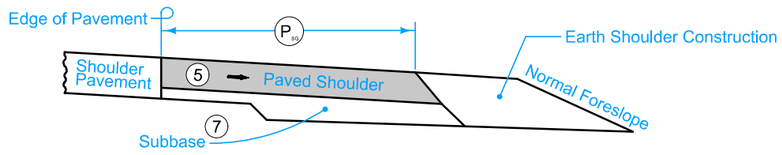
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PLAN VIEW

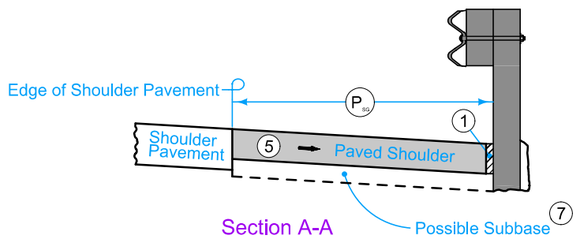


Section A-A

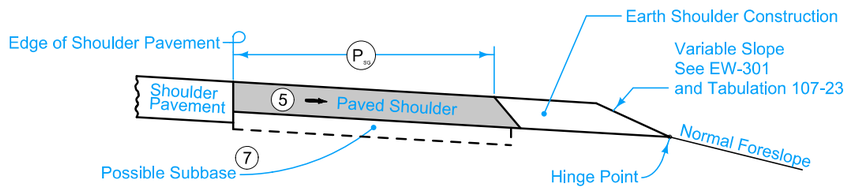


Section B-B

NEW CONSTRUCTION
6



Section A-A



Section B-B

EXISTING SHOULDER

9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

(1) PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.

(2) Continue paved shoulder 20 feet beyond the center of the first post.

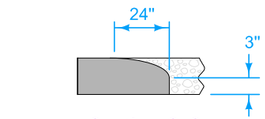
(3) Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

(4) 'BT' (per PV-101) joint for PCC shoulder.
'B' (per PV-101) joint for HMA shoulder.

(5) Match shoulder slope.

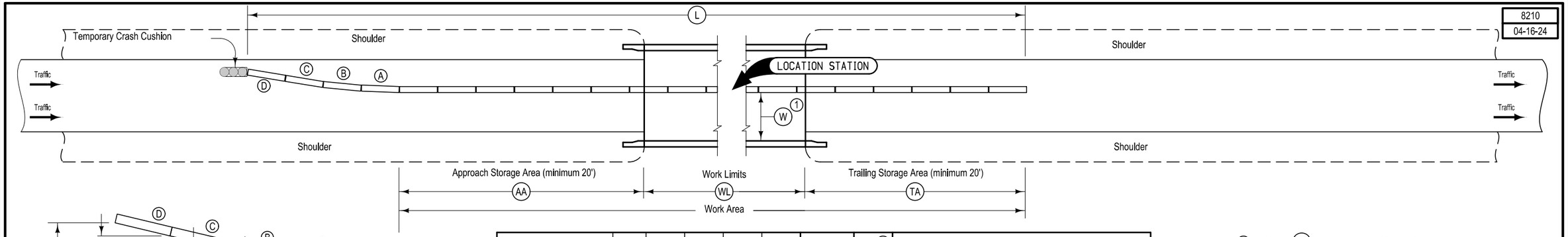
(6) The Contractor has the option to pave the paved shoulder at guardrail and the partial width paved shoulder as one operation.

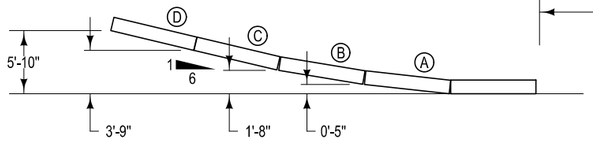
(7) Refer to other details in the plan.



Section C-C
Roll down at granular shoulder or earth.

PAVED SHOULDER AT GUARDRAIL
(ADJACENT TO PARTIAL WIDTH PAVED SHOULDER)





BARRIER OFFSETS FOR FLARE SECTIONS

Station	Side	AA	WL	TA	L	Anchored	W (1)	Remarks
		Feet	Feet	Feet	Feet	X	Ft-Inches	
450+12.50	RT	20	1010	20	1100		19'-0"	US 61 Stage 1 SB - 88 sections
450+12.50	LT	20	1010	20	1100		19'-0"	US 61 Stage 2 SB - 88 sections

(1) Where (W) is less than 15'-6", install restricted width signing as per Standard Road Plan TC-81.

TEMPORARY CONCRETE BARRIER LAYOUT for One-Way Traffic

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items
Alternate Shoulder Option 1 : Alternate Shoulder Option 1 PCC
Alternate Shoulder Option 2 : Alternate Shoulder Option 2 HMA

Item no.	Item Code	Item	Unit	Quantities				Estimate Reference Notes
				Estimated				
				Roadway Items	Alternate Shoulder Option 1	Alternate Shoulder Option 2	Total	
1	2102-0425070	SPECIAL BACKFILL	TON	10.25			10.25	Refer to Tab. 112-9 in C Sheets for details. Calculated for 6" thick Special Backfill for HMA or PCC Shoulders.
2	2102-2625000	EMBANKMENT-IN-PLACE	CY	140.9			140.9	This item is for grading guardrail and paved shoulder areas. Provide borrow material according to Section 2102 of the Standard Specifications. Overhaul is incidental to roadway excavation on this project and will not be paid for separately. Includes 140.9 cu. yds. for beam guardrail installations at the northbound and southbound approaches. Refer to Tab. 107-23 in C Sheets. Unsuitable B or C material can be used. Material shall be provided by the Contractor. Dispose of excess material according to Article 1106.07 of the current specifications
3	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	9.7			9.7	This item is for grading guardrail and paved shoulder areas. Refer to Tab. 107-23 in C Sheets. Includes 4.3 cu. yds. for beam guardrail installations at the northbound and southbound approaches. Also includes 5.4 cu. yds. excavation for special backfill.
4	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	463.2			463.2	This item is for stripping and salvaging 6 inches of topsoil from grading for guardrail installations prior to placement of embankment-in-place. After embankment-in-place, topsoil shall be spread to a 4-inch minimum thickness, after shrinkage, over disturbed areas to finished grade. No cross sections are provided with the contract documents. Refer to Tab 103-10 for details.
5	2122-5190008	PAVED SHOULDER, P.C. CONCRETE, 8 IN.	SY		902		902	Refer to Tab. 112-9 in C Sheets for locations and details. Refer also to Detail 7157 on Sheet B.1. Bid item includes providing concrete wash water containment, collection, and disposal of all solid and liquid materials. Location of concrete washout shall be approved by Engineer prior to placement/construction. During rain events contractor shall cover concrete washout or lower level a minimum of 1' from top of containment vessel to highest point of waste water. Contractor shall empty containment at 85% total capacity to insure no discharges. Bid item includes removal and restoration of area upon washout removal.
6	2122-5500090	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.	SY			902	902	Refer to Tab. 112-9 in C Sheets for locations and details. Refer also to Detail 7157 on Sheet B.1.
7	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	8.35			8.35	Refer to Tab. 112-9 in C Sheets and Detail 7157 on B.1. Requires a minimum of 4 inches of topsoil. Place according to Article 2105.03.B of the Standard Specifications.

Item no.	Item Code	Item	Unit	Quantities				Estimate Reference Notes
				Estimated				
				Roadway Items	Alternate Shoulder Option 1	Alternate Shoulder Option 2	Total	
8	2301-0690203	BRIDGE APPROACH, BR-203	SY	723.3			723.3	Refer to Tab. 112-06 in C Sheets. Certified plant inspection is required and is incidental to this item. Bid item includes providing concrete wash water containment, collection, and disposal of all solid and liquid materials. Location of concrete washout shall be approved by Engineer prior to placement/construction. During rain events contractor shall cover concrete washout or lower level a minimum of 1' from top of containment vessel to highest point of waste water. Contractor shall empty containment at 85% total capacity to insure no discharges. Bid item includes removal and restoration of area upon washout removal.
9	2304-0100000	DETOUR PAVEMENT	SY	383			383	Refer to J Sheets and Tab. 100-25 in C Sheets for locations and details. Includes temporary HMA pavement at a depth of 6 inches and 6 inches of Modified Subbase for pavement required for staged construction. The Contractor may choose to substitute HMA for PCC. Modified subbase required for placement is incidental to this item. Bid item includes providing concrete wash water containment, collection, and disposal of all solid and liquid materials. Location of concrete washout shall be approved by Engineer prior to placement/construction. During rain events contractor shall cover concrete washout or lower level a minimum of 1' from top of containment vessel to highest point of waste water. Contractor shall empty containment at 85% total capacity to insure no discharges. Bid item includes removal and restoration of area upon washout removal.
10	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE, BRIDGE DECK	SY	3,102.7			3,102.7	Refer to Tab. 100-28 in C Sheets for details and locations.
11	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	608			608	Refer to Tab. 10-107A in C Sheets for details and locations. Refer also to item "DELIVER AND STOCKPILE SALVAGED MATERIALS". The guardrail, including end anchors, shall be salvaged by unbolting all sections; the guardrail shall not be cut. The posts shall become property of the Contractor.
12	2505-4008300	STEEL BEAM GUARDRAIL	LF	400			400	Refer to Tab. 108-8A in C Sheets for details.
13	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH	3			3	
14	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	3			3	
15	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	3			3	
16	2510-6745850	REMOVAL OF PAVEMENT	SY	1,490.5			1,490.5	Refer to Tab. 110-1 in C Sheets for details. Includes removal of modified subbase for Detour Pavement.
17	2527-9263137	PAINTED SYMBOLS AND LEGENDS, WATERBORNE OR SOLVENT-BASED	EACH	8			8	Refer to Tab. 108-29 in C Sheets for details.
18	2527-9263181	PAVEMENT MARKINGS REMOVED	STA	77.93			77.93	Refer to Tab. 108-22 in C Sheets for details.
19	2527-9263190	SYMBOLS AND LEGENDS REMOVED	EACH	8			8	Refer to Tab. 108-29 in C Sheets for details.
20	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	88.27			88.27	Refer to Tab. 108-22 in C Sheets for details.
21	2527-9263231	REMOVABLE TAPE MARKINGS, WET RETROREFLECTIVE	STA	139.76			139.76	Refer to Tab. 108-22 in C Sheets for details. This item also includes removing the wet, retroreflective removable tape markings.

Item no.	Item Code	Item	Unit	Quantities				Estimate Reference Notes
				Estimated				
				Roadway Items	Alternate Shoulder Option 1	Alternate Shoulder Option 2	Total	
22	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	2,200			2,200	Refer to Tab. 108-33 in C Sheets and Detail 8210 on Sheet B.2. All temporary barrier rail shall be nominal 12'-6" long concrete units.
23	2528-8445110	TRAFFIC CONTROL	LS	1			1	Refer to Traffic Control Plan in J Sheets.
24	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA			6.41	6.41	Refer to Tab. 112-10 for details.
25	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL			6.9	6.9	
26	2548-0000200	MILLED SHOULDER RUMBLE STRIPS, PCC SURFACE	STA	0.22	6.41		6.63	
27	2551-0000110	TEMP CRASH CUSHION	EACH	2			2	Refer to Tab. 108-30 C Sheets for details. Winterize sand filled or water filled crash cushions according to the manufacturer's recommendations if they are to remain in place during winter months.
28	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS	LS	1			1	Refer to Tab. 110-13 in C Sheets for details.
29	2557-0000100	LONGITUDINAL GROOVING IN CONCRETE, PAVEMENT	SY	679.1			679.1	Refer to Tab. 100-28 in C Sheets for details and locations.
30	2601-2634105	MULCHING, BONDED FIBER MATRIX	ACRE	0.57			0.57	Apply seed and fertilizer for the area to be covered before applying Bonded Fiber Matrix Mulch. Apply Bonded Fiber Matrix Mulch at a rate of a minimum of 3000 pounds per acre.
31	2601-2636015	NATIVE GRASS SEEDING	ACRE	0.03			0.03	Seed all areas outside eight feet adjacent to outside shoulder along mainline, side roads, and infield areas at interchanges with "Native Grass Seeding". Supply all seed for "Native Grass Seeding". Apply all forb seed through the native grass drill wildflower or small seed box. Do not mix and apply Forb seed with the native grass seed. Apply cover crop through the cool season or through cover crop seed box. Do not mix and apply cover crop seed with the native grass seed. Remove seed remaining in the drill at the end of each day. At the completion of all seeding, remove remaining seed from the drill by vacuum or other means. Hand broadcast remaining seed on the project. The Engineer will review the limits with the Contractor prior to seeding. Seeding and seed bed preparation shall be as described in the Standard Specifications Section 2601 and as shown on the plans. See RR sheets for details.
32	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	0.54			0.54	Seed and fertilize all areas 8 foot adjacent to the shoulder mainline, medians, and side according to Article 2601.03, C, 3, of the Standard Specifications. See RR sheets for details.
33	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	1,203			1,203	Refer to RR Sheets and Tab 100-19 in C Sheets. The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 20 in. Dia." to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements. Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior.

Item no.	Item Code	Item	Unit	Quantities				Estimate Reference Notes
				Estimated				
				Roadway Items	Alternate Shoulder Option 1	Alternate Shoulder Option 2	Total	
34	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	1,515.5			1,515.5	Refer to RR Sheets and Tab 100-19 in C Sheets. Bid item includes 25% additional quantity for field adjustments and replacements. Remove Perimeter and Slope Sediment Control Devices and Ditch Check Devices after mulching or vegetation is established and approved by the Engineer.
35	2602-0000370	DITCH CHECK SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	312.5			312.5	Refer to RR Sheets and Tab 100-19 in C Sheets. The tabulation includes estimated locations for placement of "Ditch Check Sediment Control Device, 20 in. Dia." to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 50% additional quantity for field adjustments and replacements. Use Ditch Check Control Devices fabricated using wood excelsior.

100_01D
8/15/22

PROJECT DESCRIPTION

This project is for the removal of the existing bullnose guardrail at the north and south ends of the two existing structures. The inside and outside approach guardrail at the north abutment of the southbound bridge and inside edge of the northbound bridge at the south abutment will be replaced with new standard guardrail and shoulder pavement.

Structure 23450: 685'-0" x 44'-0" Continuous Welded Girder Bridge (Southbound US 61)

Structure 601960: 685'-0" x 40'-0" Continuous Welded Plate Girder Bridge (Northbound US 61)

Additional work includes a Portland Cement Concrete (PCC) bridge deck overlay and approach pavement replacement on Structure 23450.

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
BA-200	10-20-26	Steel Beam Guardrail Components
BA-201	10-18-22	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	10-20-26	Steel Beam Guardrail Bolted End Anchor
BA-205	10-17-23	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-250	10-20-26	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
BA-401	04-20-21	Temporary Barrier Rail (Precast Concrete)
BA-500	04-20-21	Temporary Crash Cushions Sand Barrel
BR-203	10-20-26	Double Reinforced 12in Approach
BR-211	04-21-26	Bridge Approach (Abutting PCC or Composite Pavement)
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-502	04-21-15	Seeding in Rural Areas
EW-301	10-20-26	Guardrail Grading
PM-110	10-15-24	Line Types
PM-111	04-21-20	Symbols and Legends
PV-12	10-20-26	Milled Shoulder Rumble Strips
PV-101	10-20-26	Joints
PV-102	10-21-25	PCC Curb Details
SI-173	04-19-16	Object Markers
SI-211	10-18-22	Object Marker and Delineator Placement with Guardrail
SI-881	10-20-26	Special Signs for Workzones
SI-882	10-18-16	Special Signs for Restricted Width Traffic Control Zones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-402	04-18-23	Work Within 15 ft of Traveled Way
TC-418	04-18-23	Lane Closure on Divided Highway
TC-421	10-21-25	Lane Closure with TBR
TC-432	10-17-17	Shoulder Rumble Strip Operations
TC-433	10-17-17	Pavement Marking Operations

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262_06
9/28/22

UTILITIES (NOT A POINT 25 PROJECT)

This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

INCIDENTAL ITEMS

Special or unique items where method of measurement / basis of payment is not indicated in the specifications or other contract documents.

Line No.	Incidental Item	Unit	Quantity	Incidental to Item Code	Incidental to Item	Remarks
1.0	Modified Subbase	CY	64	2304-0100000	Detour Pavement	
2.0	Removal of Modified Subbase	CY	64	2510-6745850	Removal of Pavement	

DELIVERY AND STOCKPILING

Line No.	Item Description	Quantity	Quantity Units	Delivery Location	Contact Name	Contact Number	Remarks
1.0	Steel Beam Guardrail and Components	608	LF	West Burlington Garage	Lamont Sutter	319-752-6065	617 N. Beaverdale Rd. West Burlington, IA 52655

TOPSOIL STRIPPING AND PLACEMENT

Line No.	Road Identification	Dir. of Traffic	Station From	Station To	Topsoil Stripping Thickness (IN)	Topsoil Placement Thickness (IN)	Remarks
1.0	US 61	SB	443+96.18	446+83.33	6.0	4.0	181 CY
2.0	US 61	SB	445+91.10	446+73.65	6.0	4.0	11.5 CY
3.0	US 61	SB	453+50.82	456+23.06	6.0	4.0	59.1 CY
4.0	US 61	SB	453+60.47	456+52.44	6.0	4.0	178.3 CY
5.0	US 61	SB	456+37.56	459+59.28	6.0	4.0	33.3 CY

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5.

* Not a bid item.

Line No.	Station From	Station To	Side	Pavement Type	Area (SY)	Saw Cut* (LF)	Remarks
1.0	445+96.52	446+61.52	SB	PCC	171.6	94.0	Stage 1
2.0	453+51.69	456+14.49	SB	PCC	428.3	209.0	Stage 1
3.0							
4.0	444+24.93	446+45.98	SB	HMA	57.0		Stage 2 Temporary Pavement
5.0	453+96.56	459+59.28	SB	HMA	326.0		Stage 2 Temporary Pavement
6.0	445+96.52	446+73.31	SB	PCC	188.4	23.0	Stage 2
7.0	453+63.48	456+37.35	SB	PCC	292.2	215.0	Stage 2
8.0							
9.0	443+99.03	446+84.31	NB	HMA	27.0	291.0	Stage 3
Total:					**1490.5**	**832**	

110_07A
8/15/22

REMOVAL OF STEEL BEAM GUARDRAIL

(1) Lane(s) to which the installation is adjacent.
(2) Includes length of End Terminals and End Anchors.

Line No.	No.	Direction of Traffic (1)	Station From	Station To	Side	Removal of Guardrail (2) (LF)
1.0		NB	445+62.82	446+60.89	Left	215.0
2.0		SB	453+64.66	455+43.04	Left	179.0
3.0		SB	453+76.53	454+83.20	Right	214.0
Total:						**608**

LONGITUDINAL GROOVING

Line No.	Location	Total (SY)	Remarks
1.0	450+12.50	337.8	SB South Approach
2.0	450+12.50	3102.7	SB Bridge Deck
3.0	450+12.50	341.3	SB North Approach
Total:		**3781.8**	

GRADING FOR GUARDRAIL INSTALLATIONS

Refer to EW-301.

(1) Lane(s) to which the installation is adjacent.

Line No.	Direction of Traffic (1)	Station	Side	Foreslope at Guardrail	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	X3 (FT)	Y3 (FT)	X4 (FT)	Y4 (FT)	Z (FT)	Excavation Class 10 (CY)	Embankment-in-Place (CY)	Remarks
1.0	SB	453+64.64	Left	4:1	55.1	4.9	80.0	7.3	146.6	7.2	202.7	9.5		1.7	10.6	
2.0	SB	453+76.57	Median	6:1	169.8	9.1					227.9	11.0		0.9	114.8	
3.0	NB	446+71.70	Median	6:1	167.5	6.6	179.9	7.9	196.5	7.9	252.7	10.5		1.7	15.5	
Total:														**4.3**	**140.9**	

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-209, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635, SI-172, SI-173 and SI-211.

(1) Lane(s) to which the obstacle is adjacent.
(2) Not a bid item. Incidental to guardrail installation.

Line No.	Direction of Travel (1)	Side	Station	Offset (FT)	Barrier Transition Section	Barrier Transition Section (EA)	End Terminal	End Terminal Count (EA)	VT1 (LF)	VF (LF)	VT2 (LF)	ET (LF)	BA-211 Station	BA-211 (Type)	SI-211 (Type) (2)	Delineator SI-172 Type 1 (EA) (2)	Object Marker Type 2 (EA) (2)	Object Marker Type 3 Lt (EA)(2)	Object Marker Type 3 Rt (EA)(2)	Bolted End Anchor BA-202 (Type)	Bolted End Anchor BA-202 (EA)	Post Adapter BA-210 (EA)	Steel Beam Guardrail BA-200 (LF)	Remarks
1.0	SB	Outside	453+67.47	22.7	BA-201	1	BA-205	1	53.125	25.00	75.00	47.70			3			1		B	1		112.5	Stage 1 - SB US 61
2.0	SB	Median	453+79.26	22.7	BA-201	1	BA-205	1	128.125	12.50	25.00	47.70			3				1	B	1		125.0	Stage 2 - SB US 61
3.0	NB	Median	446+71.70	17.6	BA-201	1	BA-205	1	165.625	12.50	25.00	47.70			3			1		C	1		162.5	Stage 3 - NB US 61
Total:						**3**		**3**										**2**	**1**		**3**		**400**	

BRIDGE APPROACH SECTION

Refer to the BR Series.

* Not a bid item
** Verify layout of bridge approach does not conflict with guardrail posts.

Line No.	Bridge Station	End	Skew Ahead Left (Degrees)	Skew Ahead Right (Degrees)	(T) Thickness (IN)	Pay Length (FT)	Right Edge Offset (FT) **	Left Edge Offset (FT) **	Non-Reinf. Area (SY)	Single-Reinf. Area (SY)	Double-Reinf. Area (SY)	SRP Approach	SRP Abutment Type	SRP Abutting Pavement	Perforated * 4" Subdrain (LF)	Subdrain * Outlet (STA)	Subdrain * Outlet Side	Porous * Backfill (CY)	Modified * Subbase (TON)	Polymer * Grid (SY)	Special * Backfill (TON)	Remarks
1.0	450+12.50	S		15.0	12.0	70.9	23	23	153.3	102.0	104.5	BR-203	Fixed	BR-211	52.0	446+06.55	Left	1.6	322.000	370.0		
2.0	450+12.50	N		15.0	12.0	70.9	23.2	23.3	155.3	103.0	105.2	BR-203	Fixed	BR-211	52.5	454+18.45	Left	1.6	325.500	373.8		
Total:									**308.6**	**205**	**209.7**				**104.5**			**3.2**	**647.5**	**743.8**		

SHOULDERS

(1) Lane(s) to which the shoulder is adjacent.
(2) See Typ. 7156, 7157, or 7158.
(3) Bid Item.
(4) Applies only for Paved Shoulders constructed on project with existing granular shoulders.
(5) Bid Item. Typ. 7156, 7157, or 7158.
(6) Does not include shrink.
(7) Paved shoulder thickness specified in Remarks.
(8) Subbase type specified in Remarks.

Roadway Identification	Direction of Travel (1)	Station From	Station To	Side	P Width (FT)	P SG Width (2) (FT)	G Width (FT)	L Length (FT)	Class 13 Excavation (CY)(3)(4)	HMA (TON)	HMA (TON/STA)	Binder (TONS)	Paved Shoulder (3) (SY)	Shoulder at Grdrail (5)(7)	Reinforced Paved Shoulder(3) (SY)	Special Backfill HMA Alt. (3) (TON)	Special Backfill HMA Alt. (TON/STA)	Special Backfill PCC Alt. (3) (TON)	Special Backfill PCC Alt. (TON/STA)	Pavement Scarification (SY)	Polymer Grid (SY)	Subbase (3) (8) (CY)	Granular Shoulder (3) (TON)	Granular Shoulder (TON/STA)	Shoulder Const. Alt (3) (STA)	Shoulder Const. Alt HMA (6) (CY)	Shoulder Const. Alt PCC (6) (CY)	Remarks
US 61	SB	454+28.48	454+43.91	Left		9.9 to 11.5		15.43		0.638	4.132	0.038		18.3		0.410	2.660	0.410	2.660						0.15			[1] [2]
US 61	SB	454+43.91	455+18.98	Left		11.5 to 11.4		75.07		0.218	0.290	0.013		95.5		0.105	0.140	0.105	0.140						0.75			[1] [2]
US 61	SB	455+18.98	455+66.76	Left		11.4 to 13.3		47.78		2.494	5.220	0.150		65.6		1.605	3.360	1.605	3.360						0.48			[1] [2]
US 61	SB	455+66.76	456+14.38	Left		13.3 to 13.7		47.62		0.483	1.015	0.029		71.4		0.300	0.630	0.300	0.630						0.48			[1] [2]
US 61	NB	443+99.03	444+19.03	Median		10		20.00		0.015	0.072	0.001		22.2		0.014	0.070	0.014	0.070						0.20			[1] [2]
US 61	NB	444+19.03	444+66.78	Median		10 to 8.1		47.75		2.458	5.147	0.147		48.0		1.604	3.360	1.604	3.360						0.48			[1] [2]
US 61	NB	444+66.84	445+04.31	Median		8.1 to 8.2		37.47		0.081	0.217	0.005		33.9		0.052	0.140	0.052	0.140						0.37			[1] [2]
US 61	NB	444+91.89	446+66.74	Median		8.2 to 7		174.85		5.704	3.263	0.342		147.7		3.672	2.100	3.672	2.100						1.75			[1] [2]
US 61	NB	446+66.74	446+69.22	Median		7 to 7.2		2.48		0.014	0.580	0.001		2.0		0.009	0.350	0.009	0.350						0.02			[1] [2]
US 61	NB	446+69.22	446+71.67	Median		7.2 to 6.3		2.45		0.062	2.538	0.004		1.8		0.039	1.610	0.039	1.610						0.02			[1] [2]
US 61	NB	446+71.67	446+74.11	Median		6.3 to 5.9		2.44		0.023	0.943	0.001		1.7		0.015	0.630	0.015	0.630						0.02			[1] [2]
US 61	NB	446+74.11	446+82.74	Median		5.9		8.63		0.013	0.145	0.001		5.7		0.006	0.070	0.006	0.070						0.09			[1] [2]
US 61	NB	445+04.31	446+48.59	Median		7 to 7.2		144.28		0.628	0.435	0.038		113.8		0.404	0.280	0.404	0.280						1.44			[1] [2]
US 61	SB	454+28.48	455+56.00	Median		11.3 to 11.5		127.52		0.832	0.652	0.050		161.5		0.536	0.420	0.536	0.420						1.28			[1] [2]
US 61	SB	455+56.00	456+03.82	Median		11.5 to 13		47.82		1.907	3.988	0.114		65.1		1.239	2.590	1.239	2.590						0.48			[1] [2]
US 61	SB	456+03.82	456+37.45	Median		13 to 12.6		33.63		0.390	1.160	0.023		47.8		0.235	0.700	0.235	0.700						0.34			[1] [2]
Total:										**15.96**		**0.957**		**902**		**10.245**		**10.245**							**8.35**			

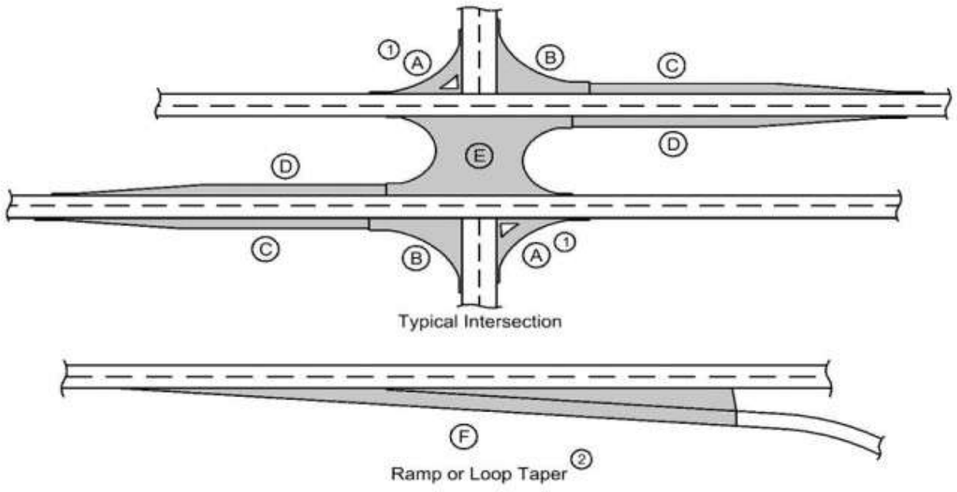
[1] 9” HMA or 8” PCC Alternate
[2] 6” Special backfill

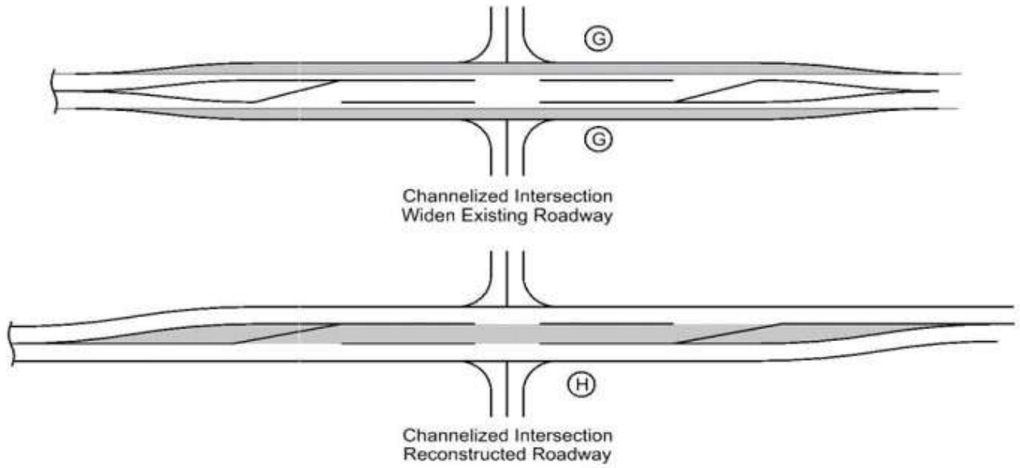
RUMBLE STRIPS

* Calculated at 18" width for Shoulder.
** For use with penetrating Engineered Fog Seal. Calculated at 2" wider than rumble strips.

Line No.	Road Identification	Station From	Station To	Surface Type	Rumble Strip Lane	Rumble Strip Type	Fog Seal Type	L (IN)	PCC Length (STA)	HMA Length (STA)	Fog Seal* Shoulder (GAL)	Fog Seal (SY)**	Effective Shoulder Width PCC (FT)	Effective Shoulder Width HMA (FT)	Effective Shoulder Width Granular\Earth (FT)	Remarks
1.0	US 61 SB	445+96.52	446+01.52	PCC	Right Shoulder	Milled Shoulder Rumble Strips			0.05							Stage 1
2.0	US 61 SB	454+11.69	456+14.38	PCC or HMA	Right Shoulder	Milled Shoulder Rumble Strips	Asphalt Emulsion		2.03	2.03	2.2	33.8				Stage 1
3.0	US 61 SB	445+96.52	446+13.31	PCC	Left Shoulder	Milled Shoulder Rumble Strips			0.17							Stage 2
4.0	US 61 SB	454+23.48	456+37.45	PCC or HMA	Left Shoulder	Milled Shoulder Rumble Strips	Asphalt Emulsion		2.14	2.14	2.3	35.7				Stage 2
5.0	US 61 NB	443+99.03	446+22.74	PCC or HMA	Left Shoulder	Milled Shoulder Rumble Strips	Asphalt Emulsion		2.24	2.24	2.4	37.3				Stage 2
Total:									**6.63**	**6.41**	**6.9**	**106.8**				

HMA PAVEMENT





(1) Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.
(2) Refer to PV-410, PV-411, PV-412, and PV-414.
(3) Quantity includes Pavement Header.

Line No.	Road Identification	Direction of Travel	Station From	Station To	Width (FT)	Length (FT)	Area (SY)	HMA Pavement Surface (TONS)	HMA Pavement Surface (SY)	HMA Pavement Intermediate (TONS)	HMA Pavement Intermediate (SY)	HMA Pavement Base (TONS)	HMA Pavement Base (SY)	Binder Surface (TONS)	Binder Intermediate (TONS)	Binder Base (TONS)	Polymer Grid (SY)	Special Backfill (TONS)	Modified Subbase (CY)	Granular Subbase (SY)	Pavement Scarification (SY)	Hot In-Place Recycling (SY)	Asphalt Rejuvenating Agent 0.175 GAL/SY/IN	Remarks
1.0	US 61	SB	444+24.83	446+45.98		221.15	57.00	18.596	57.00					1.116					9.50					Stage 1 Temporary Pavement
2.0	US 61	SB	453+96.56	459+59.28		562.72	326.00	106.358	326.00					6.381					54.33					Stage 1 Temporary Pavement
Total:								**124.954**	**383**					**7.497**					**63.83**					

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.
*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17 | BCY6: Broken Centerline (Yellow) @ 0.25 | BLC6: Broken Line Contrast (White/Black) @ 0.50 | BLW4: Broken Lane Line (White) @ 0.17 | BLW6: Broken Lane Line (White) @ 0.25
CBW6: Crosswalk Bar (White) @ 10.00 | CHW8: Channelizing Line (White) @ 1.33 | CHW10: Channelizing Line (White) @ 1.67 | CHY8: Channelizing Line (Yellow) @ 1.33 | CHY10: Channelizing Line (Yellow) @ 1.67
CLW6: Crosswalk Line (White) @ 2.00 | DCY4: Double Centerline (Yellow) @ 1.34 | DCY6: Double Centerline (Yellow) @ 2.00 | DDY4: Double Dotted Line (Yellow) @ 0.44 | DDY6: Double Dotted Line (Yellow) @ 0.67
DLW4: Dotted Line (White) @ 0.22 | DLW6: Dotted Line (White) @ 0.33 | DLY4: Dotted Line (Yellow) @ 0.22 | DLY6: Dotted Line (Yellow) @ 0.33 | ELW4: Edge Line Right (White) @ 0.67
ELW6: Edge Line Right (White) @ 1.00 | ELY4: Edge Line Left (Yellow) @ 0.67 | ELY6: Edge Line Left (Yellow) @ 1.00 | LDW8: Lane Drop (White) @ 0.33 | LDW10: Lane Drop (White) @ 0.42
MNY6: Median Nose (Yellow) @ 1.00 | NPY4: No Passing Zone Line (Yellow) @ 0.84 | NPY6: No Passing Zone Line (Yellow) @ 1.25 | RLW4: Ramp Edge Line Right (White) @ 0.67 | RLW6: Ramp Edge Line Right (White) @ 1.00
RLY4: Ramp Edge Line Left (Yellow) @ 0.67 | RLY6: Ramp Edge Line Left (Yellow) @ 1.00 | SLW2: Stop Line (White) @ 4.00 | SLW4: Solid Lane Line (White) @ 0.67 | SLW6: Solid Lane Line (White) @ 1.00
SPW4: Sloped Curb 4" (White) @ 2.16 | SPW6: Sloped Curb 6" (White) @ 2.28 | SPY4: Sloped Curb 4" (Yellow) @ 2.16 | SPY6: Sloped Curb 6" (Yellow) @ 2.28 | STW6: Standard Curb 6" (Yellow) @ 2.03
STY6: Standard Curb 6" (Yellow) @ 2.03 | YLW2: Yield Line (White) @ 1.15

Line No.	Road ID	Station From	Station To	Lane	Marking Type	Left	Center	Right	Groove Marking Needed?	Groove Qty. (STA)	BLW6 (STA)	BLW6 Factored (STA)	DLW6 (STA)	DLW6 Factored (STA)	ELW6 (STA)	ELW6 Factored (STA)	ELY6 (STA)	ELY6 Factored (STA)	Remarks
1.0	US 61	442+26.00	445+96.00	SB	Removal of Paint			X	No						3.70	3.70			Stage 1
2.0	US 61	442+26.00	445+96.00	SB	Removal of Paint		X		No		3.70	0.93							Stage 1
3.0	US 61	442+26.00	2478+29.00	SB	Removal of Paint	X			No								40.09	40.09	Stage 1
4.0	US 61	454+28.00	2478+29.00	SB	Removal of Paint			X							28.07	28.07			Stage 1
5.0	US 61	454+28.00	2470+79.00	SB	Removal of Paint		X				20.57	5.14							Stage 1
6.0	US 61	442+26.00	459+48.00	SB	Wet Retroreflective Removable Tape	X			No								17.22	17.22	Stage 1
7.0	US 61	442+26.00	459+88.00	SB	Wet Retroreflective Removable Tape			X	No						17.62	17.62			Stage 1
8.0	US 61	2456+95.00	2478+29.00	SB	Wet Retroreflective Removable Tape	X											21.34	21.34	Stage 1
9.0	US 61	2457+39.00	2478+29.00	SB	Wet Retroreflective Removable Tape			X							20.90	20.90			Stage 1
10.0	US 61	442+26.00	459+48.00	SB	Removal of Removable Tape	X											17.22	17.22	Stage 2
11.0	US 61	442+26.00	459+88.00	SB	Removal of Removable Tape			X							17.62	17.62			Stage 2
12.0	US 61	2456+95.00	2470+79.00	SB	Removal of Removable Tape	X											13.84	13.84	Stage 2
13.0	US 61	2457+39.00	2470+79.00	SB	Removal of Removable Tape			X							13.40	13.40			Stage 2
14.0	US 61	442+26.00	459+76.00	SB	Wet Retroreflective Removable Tape	X											17.50	17.50	Stage 2
15.0	US 61	442+26.00	460+02.00	SB	Wet Retroreflective Removable Tape			X							17.76	17.76			Stage 2
16.0	US 61	2456+90.00	2470+79.00	SB	Wet Retroreflective Removable Tape	X											13.89	13.89	Stage 2
17.0	US 61	2457+26.00	2470+79.00	SB	Wet Retroreflective Removable Tape			X							13.53	13.53			Stage 2
18.0	US 61	442+26.00	459+76.00	SB	Removal of Removable Tape	X											17.50	17.50	Stage 2
19.0	US 61	442+26.00	460+02.00	SB	Removal of Removable Tape			X							17.76	17.76			Stage 2
20.0	US 61	2456+90.00	2478+29.00	SB	Removal of Removable Tape	X											21.39	21.39	Stage 2
21.0	US 61	2457+26.00	2478+29.00	SB	Removal of Removable Tape			X							21.03	21.03			Stage 2
22.0	US 61	442+26.00	459+48.00	SB	Waterborne/Solvent Paint	X											17.22	17.22	Stage 2
23.0	US 61	442+26.00	2470+79.00	SB	Waterborne/Solvent Paint		X				32.59	8.15							Stage 2
24.0	US 61	442+26.00	459+83.00	SB	Waterborne/Solvent Paint			X							17.57	17.57			Stage 2
25.0	US 61	459+83.00	2457+84.00	SB	Waterborne/Solvent Paint			X					2.12	0.70					Stage 2
26.0	US 61	2456+95.00	2478+29.00	SB	Waterborne/Solvent Paint	X											21.34	21.34	Stage 2
27.0	US 61	2457+84.00	2478+29.00	SB	Waterborne/Solvent Paint			X							20.45	20.45			Stage 2
28.0	US 61	443+99.00	446+83.00	NB	Waterborne/Solvent Paint	X			No								2.84	2.84	Stage 3

Totals:
Pavement Markings Removed = 77.93 STA
Painted Pavement Markings, Waterborne or Solvent-Based = 88.27 STA
Removable Tape Markings, Wet Retroreflective = 139.76 STA

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Line No.	Roadway Identification	Station	Side	Pavement Symbol	Quantity (EA)	Groove Marking Needed?	Remarks
1.0	US 61 SB	2482+24.00	Right	RLRW	1	No	Stage 1
2.0	US 61 SB	2483+24.00	Right	RLRW	1	No	Stage 1
3.0	US 61 SB	2492+24.00	Right	RLRW	1	No	Stage 1
4.0	US 61 SB	2493+24.00	Right	RLRW	1	No	Stage 1
5.0	US 61 SB	2482+24.00	Left	LLRW	1	No	Stage 2
6.0	US 61 SB	2483+24.00	Left	LLRW	1	No	Stage 2
7.0	US 61 SB	2492+24.00	Left	LLRW	1	No	Stage 2
8.0	US 61 SB	2493+24.00	Left	LLRW	1	No	Stage 2
Total:					**8**		

CRASH CUSHIONS

* Bid Item
1. Lane(s) to which the installation is adjacent.
2. Complete this section when using the Temporary Crash Cushion bid item and Earthwork is needed for Sand Barrel placement. Refer to BA-500.

Line No.	Lane	Station	Side	Obstacle Width (FT)	Crash Cushion Type	Crash Cushion Quantity	V (FT) (2)	W (FT) (2)	X (FT) (2)	Y (FT) (2)	Z (FT) (2)	Excavation Class 10* (CY)	Embankment in Place* (CY)	Obstacle Description	Remarks
1.0	SB	457+07.32	Left	1.9	Temporary	1								TBR	Stage 1. US 61 SB.
2.0	SB	457+07.32	Right	1.9	Temporary	1								TBR	Stage 2. US 61 SB.
Total:						**2**									

TEMPORARY BARRIER RAIL

Possible Standard: BA-401 Possible Detail: 560-7

* Not a bid item. Anchorage requirements are based on TBR locations shown in the plans. TBR alignments that vary from what is shown in the plans may result in additional TBR sections requiring anchorage.

Line No.	No.	Station From	Station To	Length (FT)	Barrier Rail Type	Anchored*	Modular Glare Screen System	Remarks
1.0		445+77.88	457+07.32	1100.0	Concrete BA-401	No	No	Stage 1 - SB - 88 sections
2.0		445+77.88	457+07.32	1100.0	Concrete BA-401	No	No	Stage 2 - SB - 88 sections
Total:				**2200**				

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Line No.	Station From	Station To	Side	Sediment Control Device Type	Diameter Size	Length (LF)	Remarks
1.0	444+51.86		Right	Ditch Check	20 inch	25.00	US 61 SB
2.0	445+03.15		Right	Ditch Check	20 inch	25.00	US 61 SB
3.0	445+53.75		Right	Ditch Check	20 inch	25.00	US 61 SB
5.0	446+05.42		Right	Ditch Check	20 inch	25.00	US 61 SB
6.0	446+56.10		Right	Ditch Check	20 inch	25.00	US 61 SB
10.0	454+00.68		Right	Ditch Check	20 inch	25.00	US 61 SB
12.0	454+53.72		Right	Ditch Check	20 inch	25.00	US 61 SB
13.0	455+05.02		Right	Ditch Check	20 inch	25.00	US 61 SB
15.0	455+62.33		Right	Ditch Check	20 inch	25.00	US 61 SB
17.0	456+11.64		Right	Ditch Check	20 inch	25.00	US 61 SB
20.0	+.00			Ditch Check			
22.0	+.00			Ditch Check	20 inch	62.50	Undistributed (25%)
						312.5	
Sediment Control Device Type Ditch Check:							
4.0	**445+90.86**	**446+73.87**	**Left**	Perimeter and Slope	20 inch	91.00	US 61 SB
7.0	446+82.95		Right	Perimeter and Slope	20 inch	35.00	US 61 SB
8.0	453+50.45	454+31.21	Left	Perimeter and Slope	20 inch	87.00	US 61 SB
9.0	453+62.28		Right	Perimeter and Slope	20 inch	35.00	US 61 SB
11.0	454+27.40	455+14.54	Left	Perimeter and Slope	20 inch	93.00	US 61 SB
14.0	455+07.79	456+23.28	Left	Perimeter and Slope	20 inch	121.00	US 61 SB
16.0	455+51.13		Right	Perimeter and Slope	20 inch	20.00	US 61 SB
18.0	456+37.65	459+59.28	Right	Perimeter and Slope	20 inch	320.00	US 61 SB
19.0	+.00			Perimeter and Slope			
21.0	+.00			Perimeter and Slope	20 inch	401.00	Undistributed (50%)
						1203	
Sediment Control Device Type Perimeter and Slope:							
Total:						**1515.5**	

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
- WH Water Hydrant (Rural)
- ST Septic Tank
- C Cistern
- LP L.P. Gas Tank (No Footing)
- UST Underground Storage Tank
- Latrine
- Satellite TV Dish
- WHU Water Hook Up
- RT Radio Tower
- TA Tower Anchor
- Guardrail (Beam or Cable)
- GP Guard Post (one or two)
- Guard Post (over two)
- FP Filler Pipe
- GV Gas Valve
- WV Water Valve
- SL Speed Limit Sign
- MM Mile Marker Post
- SIGN Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box

UTILITY LEGEND

Danville Mutual Telephone

—FO(B)— – Buried Fiber

Jeff Molle
onecall@danvilletelco.net
(319) 392-4251

Mediapolis Telephone Company

— FO2(B) — Buried Fiber

Paul Kuntz
pkuntz@mepotelco.net
(319) 394-3456

Access Energy Cooperative

—E1(C)— – Overhead Electric

Utility Poles

Kurt Lowenberg
klowenberg@accessenergycoop.com
(319) 385-1577

Centurylink

— FO4 — – Buried Fiber

— T1 — – Buried Telephone

Sadie Hull
sadie.hull@lumen.com
(918) 547-0147

Iowa Communications Network

— FO5 — – Buried Fiber

Dave Augspurger
icnoutsideplantiowaonecall@iowa.gov
(515) 725-4604

Mediacom

— FO6 — – Buried Fiber

Darrin Walker
dwalker@medacomcc.com
(319) 759-3786

Rathbun Regional Water

— W — – Buried Water

Scott Jackson
onecall@rrwa.net
(641) 647-1037

Uniti

— FO7 — – Buried Fiber

wci.clec.locate@windstream.com
(800) 941-3430

NOTE: Utilities without quality level indicated in linestyles on plan sheets are 'Quality Level D' obtained from maps and records.

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.**		**Transparency**
Pink, Dark	(13)	Temporary Pavement Shading	50%
Yellow	(4)	Proposed Pavement Shading	50%
Orange	(6)	Proposed Granular Shading	50%
Orange	(70)	Proposed Shoulder Granular Shading	50%
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading	50%
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading	50%
Brown, Light	(236)	Grading Shading	50%
Orange, Light	(134)	Proposed Granular Entrance Shading	50%
Yellow	(220)	Proposed Paved Entrance Shading	50%
Tan	(8)	Proposed Sidewalk Shading	50%
Blue, Light	(230)	Proposed Sidewalk Landing Shading	50%
Pink	(11)	Proposed Sidewalk Ramp Shading	50%
Red	(3)	Proposed Structure Shading	50%
Red	(3)	Delineates Restricted Areas	0%

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(10)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

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

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way 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
- C/A Access Control
- Property Line Symbol
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER D.1

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INDIAN PATH PARK

SKUNK RIVER

442+00 443+00 444+00 445+00 446+00 447+00 448+00

F04 F05 F04 F05 F04 F05 F04 F05

US 61 (SOUTHBOUND)

STA 445+96.52 (ML061SB)
BEGIN BR-203 APPROACH CONSTRUCTION

Ground Line Intercept

Removal of Steel Beam Guardrail (215 LF)

STA 446+73.31 (ML061SB)
END BR-203 APPROACH CONSTRUCTION

STA 443+99.03 (ML061NB)
BEGIN PAVED SHOULDER CONSTRUCTION

Install Steel Beam Guardrail, BA-200 (162.5 LF)

STA 446+84.31 (ML061NB)
END PAVED SHOULDER CONSTRUCTION

US 61 (NORTHBOUND)

Install Steel Beam Guardrail Tangent End Terminal, BA-205

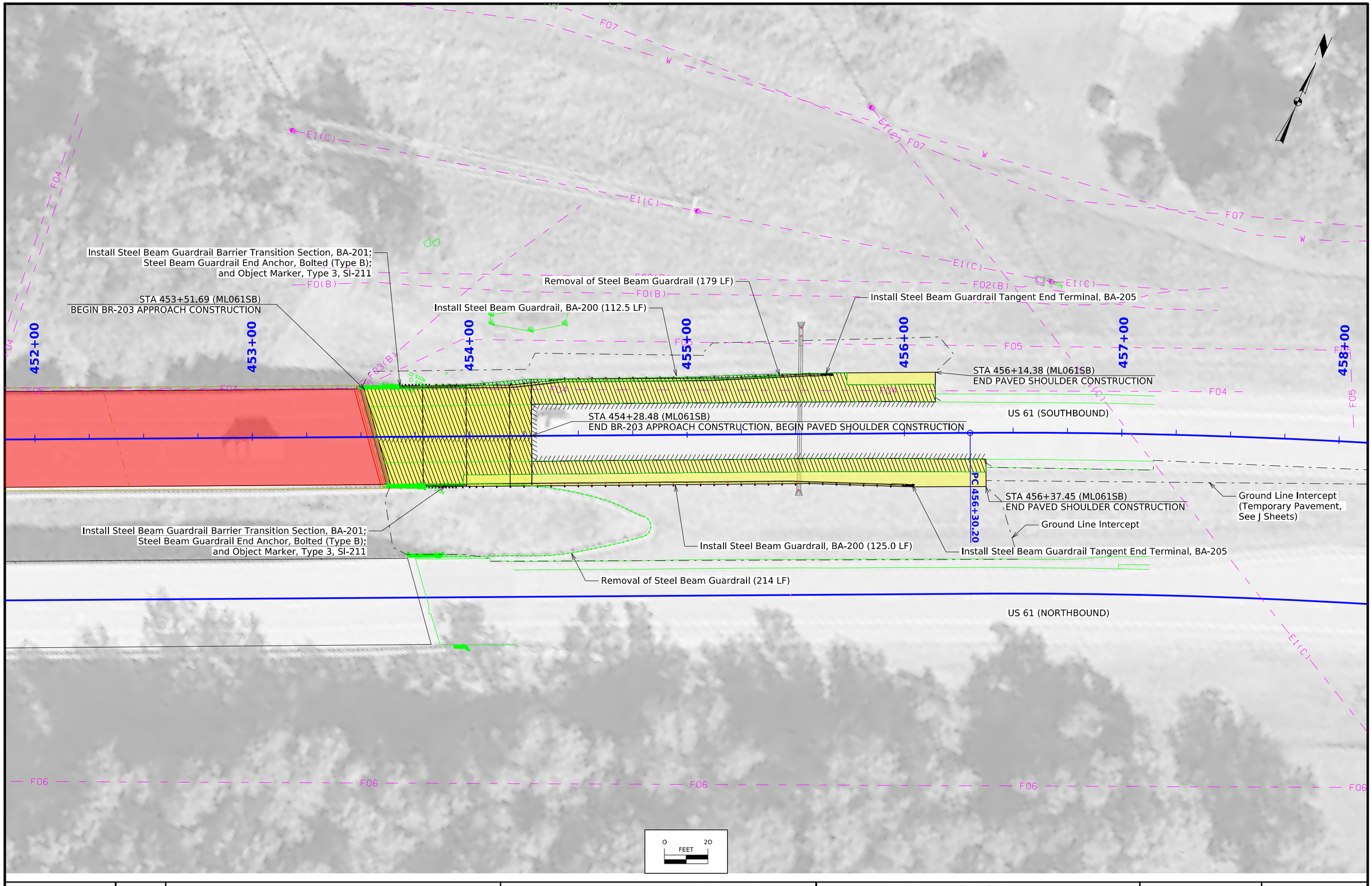
Install Steel Beam Guardrail Barrier Transition Section, BA-201;
Steel Beam Guardrail End Anchor, Bolted (Type C);
and Object Marker, Type 3, SI-211

F06 F06 F06 F06

0 20
FEET

FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER D.2	

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FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER D.3	

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ALIGNMENT COORDINATES

Line No.	Name	Location	Point on Tangent Station	Point on Tangent Y Northing	Point on Tangent X Easting	Begin Spiral Station	Begin Spiral Y Northing	Begin Spiral X Easting	Begin Curve Station	Begin Curve Y Northing	Begin Curve X Easting	Simple Curve PI or Master PI Station	Simple Curve PI or Master PI Y Northing	Simple Curve PI or Master PI X Easting	End Curve Station	End Curve Y Northing	End Curve X Easting	End Spiral Station	End Spiral Y Northing	End Spiral X Easting
1.0	1	ML061SB	416+84.41	6371926.682	24507755.64															
2.0	2	ML061SB							456+30.20	6373600.891	24511328.63	460+39.65	6373774.624	24511699.4	2460+34.15	6373837.541	24512103.99			
3.0	4	ML061SB							2482+83.64	6374183.202	24514326.77	2486+96.06	6374246.575	24514734.29	2491+07.20	6374364.972	24515129.35			
4.0	6	ML061SB							2514+18.46	6375028.487	24517343.33	2519+29.25	6375175.123	24517832.62	2524+39.14	6375371.159	24518304.29			
5.0	7	ML061SB	2537+32.82	6375867.664	24519498.9															
6.0																				
7.0	1	ML061NB	416+84.66	6371859.673	24507787.04															
8.0	2	ML061NB							456+30.45	6373533.883	24511360.03	460+29.33	6373703.128	24511721.22	464+22.84	6373764.42	24512115.36			
9.0	4	ML061NB							486+72.33	6374110.081	24514338.14	490+89.83	6374174.234	24514750.68	495+06.02	6374294.087	24515150.6			
10.0	6	ML061NB							518+17.29	6374957.602	24517364.58	523+31.88	6375105.33	24517857.51	528+45.57	6375302.826	24518332.69			
11.0	7	ML061NB	541+39.25	6375799.331	24519527.3															
12.0																				
13.0	1	SA1	442+97.30	6373001.832	24510137.36															
14.0	2	SA1				455+23.25	6373522.008	24511247.48				456+56.60	6373578.585	24511368.23				457+23.25	6373604.751	24511429.55

SPIRAL OR CIRCULAR CURVE DATA

Line No.	Name	Location	SCS	S	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	C	T	L	R	E	Remarks
1.0	C1	ML061SB										16.267	409.454	813.4	2864.9	29.112	
2.0	C2	ML061SB										7.844	412.421	823.554	6015.635	14.121	
3.0	C3	ML061SB										5.886	510.788	1020.677	9935.982	13.121	
4.0																	
5.0	C1	ML061NB										16.267	398.878	792.39	2790.9	28.36	
6.0	C2	ML061NB										7.844	417.494	833.684	6089.635	14.295	
7.0	C3	ML061NB										5.886	514.592	1028.279	10009.982	13.218	
8.0																	
9.0	C1	SA1		2	200			199.976	2.327	133.342	66.674						

SURVEY INDEX

County: Des Moines
PIN: 21-29-061-010
Project Number: BRF-061-2(132)—38-29
Location: On US 61 0.4 mi N of IA 16
Type of Work: Final structural and roadway design for a bridge deck overlay on structure 23450 carrying US 61 SB over Skunk River
Project Directory: 2906101021

Survey Personnel

Jason Heisler – Survey Party Chief
John Dewey – Survey Project Manager

Date(s) of Survey

Begin Date	03/30/2026
End Date	03/31/2026

General Information

This survey is for US Hwy 61 bridge deck overlay at \a location 0.4 mi N of IA Hwy 16 Interchange. This survey request was for the US Hwy 61 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 Prelim Survey 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

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 14 (U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018

Alignment Information

The horizontal alignment for U.S. Hwy 61 this survey is a retrace of As-built Plans No. BRFN-061-2(88)—39-29, BRF-61-2(43)—38-29 and NHS-61-2(32)—19-29. Survey stationing was equated to the plan BRFN-061-2(88)—39-29 at the center of the South Bound Bridge Station 450+12.5, offset 37.00’ to the median, and carried back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

South Bound Bridge Sta. 450+12.5 As-built Plans Project No. BRFN-061-2(88)—39-29,
South Bound Bridge Sta. 449+77.90 As-built Plans Project No. BRF-61-2(43)—38-29

North Bound Bridge Sta. 449+97.90 As-built Plans Project No. BRF-61-2(43)—38-29
North Bound Bridge Sta. 449+97.90 As-built Plans Project No. NHS-61-2(32)—19-29

The centerline offset was determined from cross sections and offsets in As-built Plans BRF-61-2(43)—38-29, NHS-61-2(32)—19-29, and F-61-2(3)—20-29.

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 14 (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 14 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 2018u3

PT#	Northing	Easting	Elevation	Feature Definition - Description
901	6372951.488	24510037.930	545.218	CP - SET FENO MONUMENT
902	6373083.125	24510475.300	545.862	CP - SET 3/4IN REBAR MSA CAP
903	6373525.200	24511098.360	551.735	CP - SET 3/4IN REBAR MSA CAP
904	6373698.202	24511670.400	558.952	CP - SET 3/4IN REBAR MSA CAP
905	6373943.216	24513686.240	556.940	CP - DES MOINES CO. GPS MON. 232
906	6372173.231	24508368.770	540.744	CP - SET FENO MONUMENT

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TRAFFIC CONTROL PLAN

1. The roadway will be open to US 61 southbound and northbound thru traffic at all times.
2. Access to Indian Path Park, Skunk River Road is to be maintained at all times throughout the duration of the project.
3. Access to all residential driveways and commercial entrances is to be maintained at all times.
4. Stage 1 construction requires the closure of the north (outside) lanes of the southbound bridge. Maintain a single lane open to traffic on the south side of the southbound bridge.
5. Stage 2 construction requires the closure of the south (inside) lanes of the southbound bridge. Maintain a single lane, open to traffic on the north side of the southbound bridge.
6. Stage 3 construction requires work adjacent to the north (inside) lanes of the northbound bridge, on the west side of the Skunk River. Maintain both (2) lanes of traffic on the northbound bridge.
7. Refer to Tabulation 108-26A for detailed Staging Notes.
8. Refer to J.7 to J.11 for layouts specific to each individual stage of construction.
9. Maintain traffic in accordance with the Standard Road Plans listed on Tabulation 105-04 in the C Sheets.
10. Signs, temporary markings, channelizing devices, drums, temporary barrier rails, and safety fence are considered incidental to the traffic control bid item and shall be installed, maintained, and removed by the Contractor.
11. Traffic control shall be found in accordance with the manual on uniform traffic control devices (MUTCD) for the streets and highways as adopted by the Iowa department of transportation per 761 of the Iowa Administrative Code (IAC) chapter 13.
12. Temporary sign spacing may be modified as approved by the engineer to meet existing field conditions or to prevent obstruction of the motorist's view of temporary or permanent signing.
13. Permanent signing that conveys a message contrary to the message for temporary signing and not applicable to the working conditions shall be covered by the contractor when directed by the engineer.
14. Contractor shall coordinate traffic control with other projects in the area.

STAGING NOTES

1. Stages 1 and 2 may be reversed at the Contractor's option subject to the Engineer's approval.
2. Stage 3 is detailed separately from Stage 2 to minimize lane closure duration but may be done at the same time as Stage 2.

Stage 1:

Traffic Control:
- Shift southbound US 61 traffic to south (inside) lane and maintain a single lane of traffic through work zone in accordance with Sheets J.7 - J.8.

Construction:
- Install temporary pavement prior to lane reduction and traffic shift. Refer to Tabulation 100-25, Sheet J.7, and Standard Road Plan TC-402.
- Remove existing overlay, scarify the deck, complete Class A repairs, and overlay the bridge with Portland Cement Concrete (PCC)
- Install retrofit drains on the bridge.
- Replace the neoprene glands at both abutments.
- Seal traffic face and top surface of existing barrier rails and barrier rail end sections.
- Clean and paint abutment bearings, the last 10 feet of the girders, and diaphragms at each abutment.
- Remove and replace bridge approach pavement.
- Remove existing and install new guardrail on the outside (north side) of the southbound lanes at the east end of the project.

Stage 2:

Traffic Control:
- Shift southbound US 61 traffic to north (outside) lane and maintain a single lane of traffic through work zone in accordance with Sheets J.9 - J.10.

Construction:
- Remove existing overlay, scarify the deck, complete Class A repairs, and overlay the bridge with Portland Cement Concrete (PCC)
- Remove temporary pavement from Stage 1.
- Install retrofit drains on the bridge.
- Replace the neoprene glands at both abutments.
- Seal traffic face and top surface of existing barrier rails and barrier rail end sections.
- Clean and paint abutment bearings, the end 10 feet of the girders, and diaphragms at each abutment.
- Remove and replace bridge approach paving.
- Remove existing guardrail bullnose and install new guardrail in the median of the southbound lanes at the east end of the project.

Stage 3:

Traffic Control:
- Maintain both lanes open to traffic on US 61 northbound in accordance with Sheet J.11.

Construction:
- Remove existing guardrail bullnose and install new guardrail in the median of the northbound lanes at the west end of the project.

Final:

Traffic Control:
- Open both lanes to traffic.
- Removal traffic control signage and devices.
- Complete pavement marking operations in accordance with Standard Road Plan TC-433.

Construction:
- Complete pavement markings.

511 TRAVEL RESTRICTIONS

Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
1.0	US 61	SB	Des Moines	0.5 Mi N of IA 16 (SB)	Skunk River	Barrier	FHWA No. 23450	Horizontal	N/A	18'-0	N/A	N/A	Stage 1
2.0	US 61	SB	Des Moines	0.5 Mi N of IA 16 (SB)	Skunk River	Barrier	FHWA No. 23450	Horizontal	N/A	18'-0	N/A	N/A	Stage 2

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
None provided.	

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

- Pavement Removal
- Proposed Granular Subbase
- Proposed Special Backfill
- Temporary Barrier Rail
- Proposed Granular Shoulder
- Temporary Shoulder
- Existing Shoulder Strengthening
- Permanent Barrier Rail
- Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Orange	(6)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Pink, Dark	(13)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Cyan	(7)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

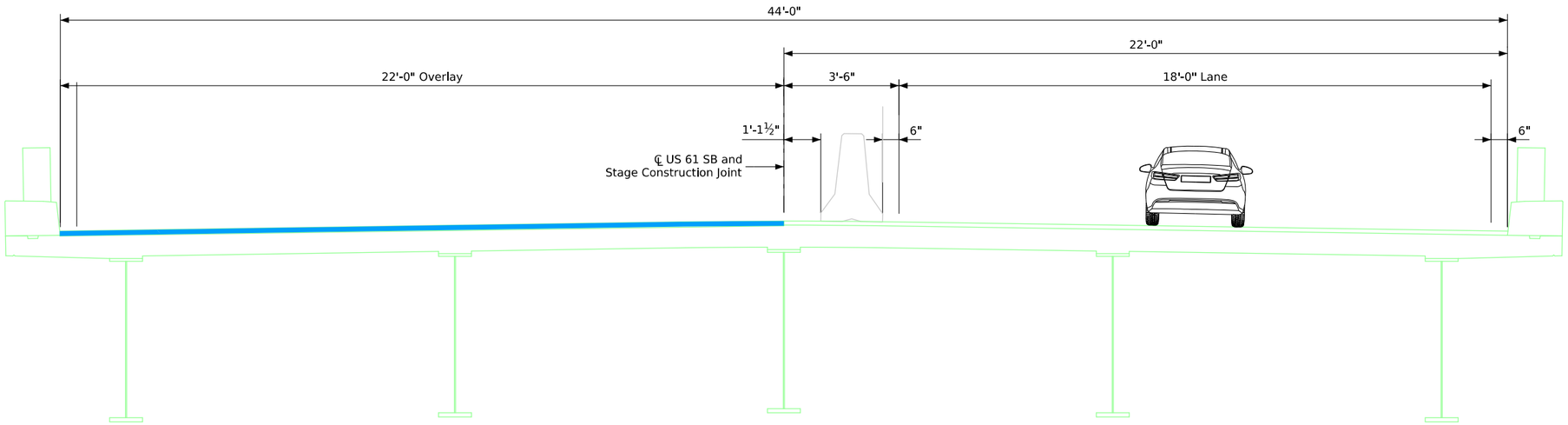
PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

- Channelizing Device
- Drum
- Temporary Lane Separator
- Tubular Marker
- Channelizer Marker
- Concrete Barrier Marker
- Delineator
- Temporary Barrier Rail
- Pavement Removal
- Sand Barrel Layout
- Crash Cushion (Temp or Perm)
- Traffic Signal
- Flagger
- Temporary Floodlighting
- Traffic Sign
- Type III Barricade
- Type A Warning Light
- Direction of Traffic
- Safety Closure
- Lane Identification

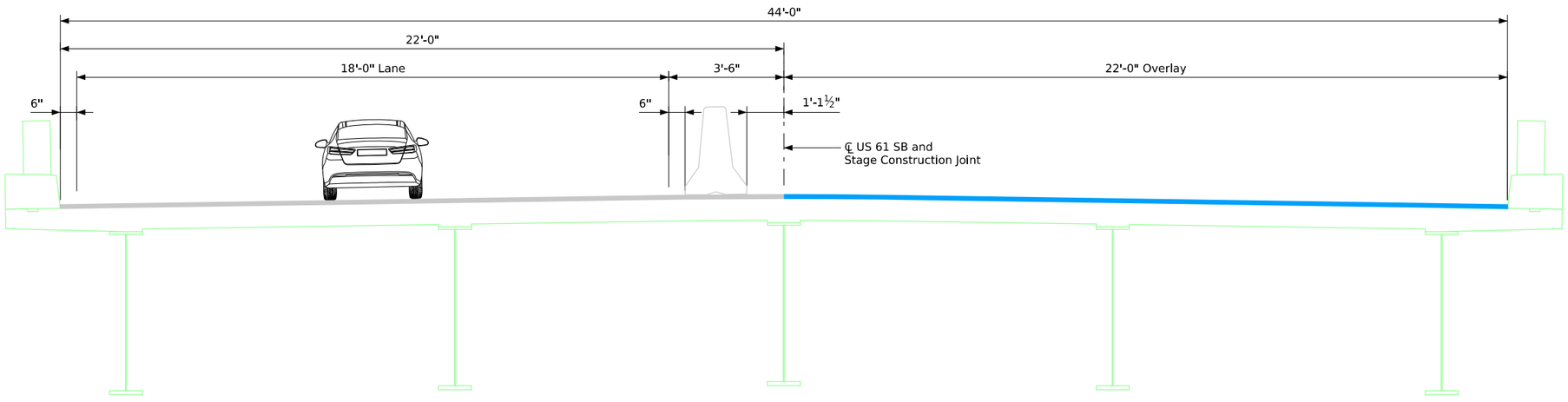
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

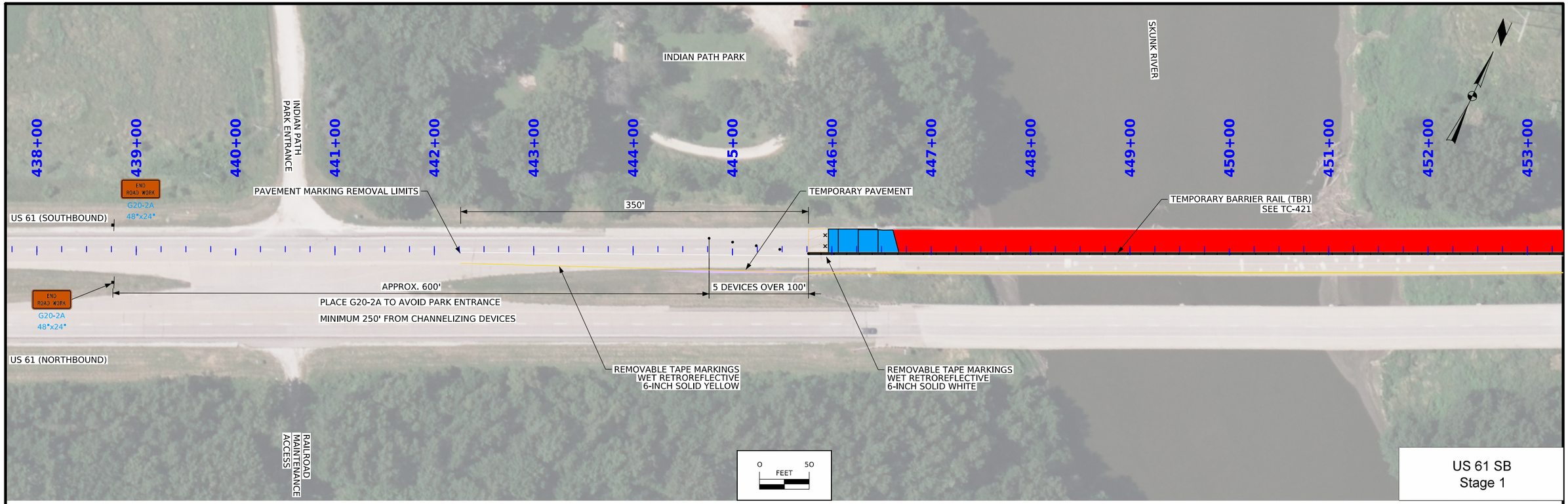
(COVERS SHEET SERIES J)

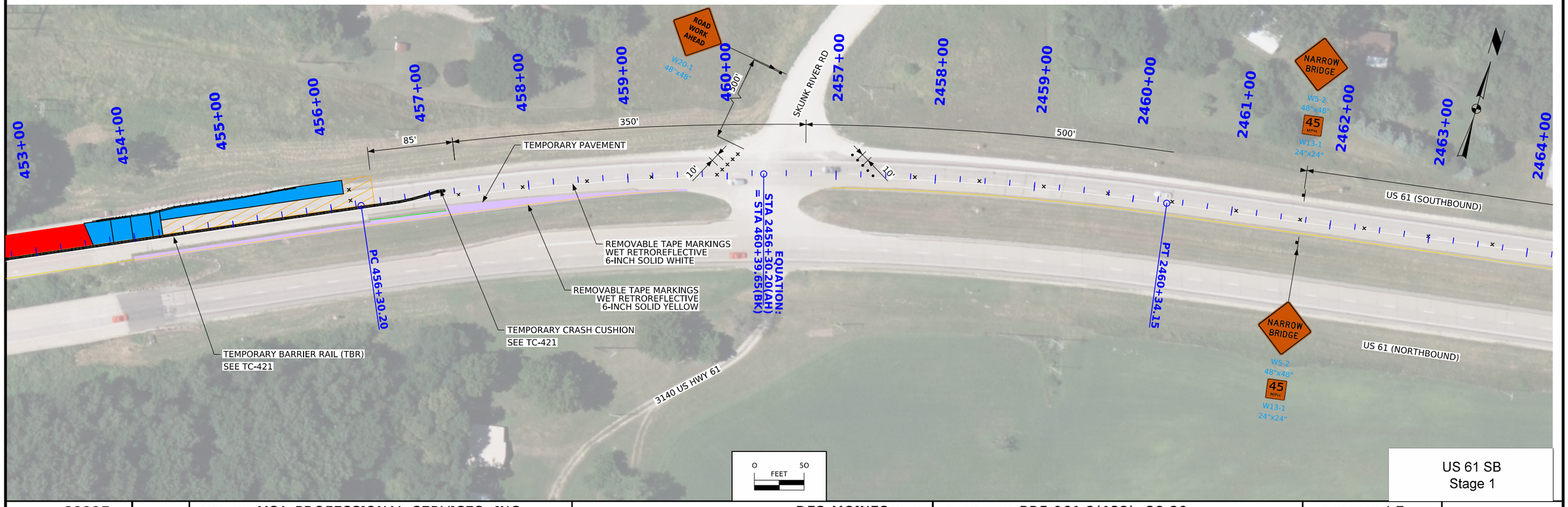


US 61 SB
Typical Section - Stage 1 Construction
(Looking East)



US 61 SB
Typical Section - Stage 2 Construction
(Looking East)





FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER J.7	

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2464+00
2465+00
2466+00
3195 HWY 61
2467+00
2468+00
2469+00
2470+00
2471+00
2472+00
2473+00
2474+00
2475+00
2476+00
2477+00
24TH ST
2478+00
2479+00

910'
750'
US 61 (SOUTHBOUND)
500'

ROAD WORK AHEAD
W20-1
48"x48"
500'

REMOVABLE TAPE MARKINGS
WET RETROREFLECTIVE
6-INCH SOLID WHITE

PAVEMENT MARKING REMOVAL LIMITS

REMOVABLE TAPE MARKINGS
WET RETROREFLECTIVE
6-INCH SOLID YELLOW

US 61 (NORTHBOUND)

500'
ROAD WORK AHEAD
W20-1
48"x48"
3220 HWY 61

0 50
FEET

US 61 SB
Stage 1

2479+00
2480+00
2481+00
2482+00
PC 2482+83.64
2483+00
2484+00
2485+00
2486+00
2487+00
2488+00
3261 US HWY 61
MERGE
W4-2M
48"x48"
2489+00
2490+00
2491+00
PT 2491+00.20
2492+00
2493+00
2494+00

US 61 (SOUTHBOUND)
1000'
100'
500'
400'
100'
500'
1860'
640'

US 61 (NORTHBOUND)
PI 2486+96.06
W4-2
48"x48"

RIGHT LANE CLOSED AHEAD
W20-5
48"x48"
SPEED LIMIT 55
R2-1
48"x60"
ROAD WORK AHEAD
W20-1
48"x48"

PLACE ACCORDING TO STANDARD ROAD PLANS TC-418 AND TC-421.

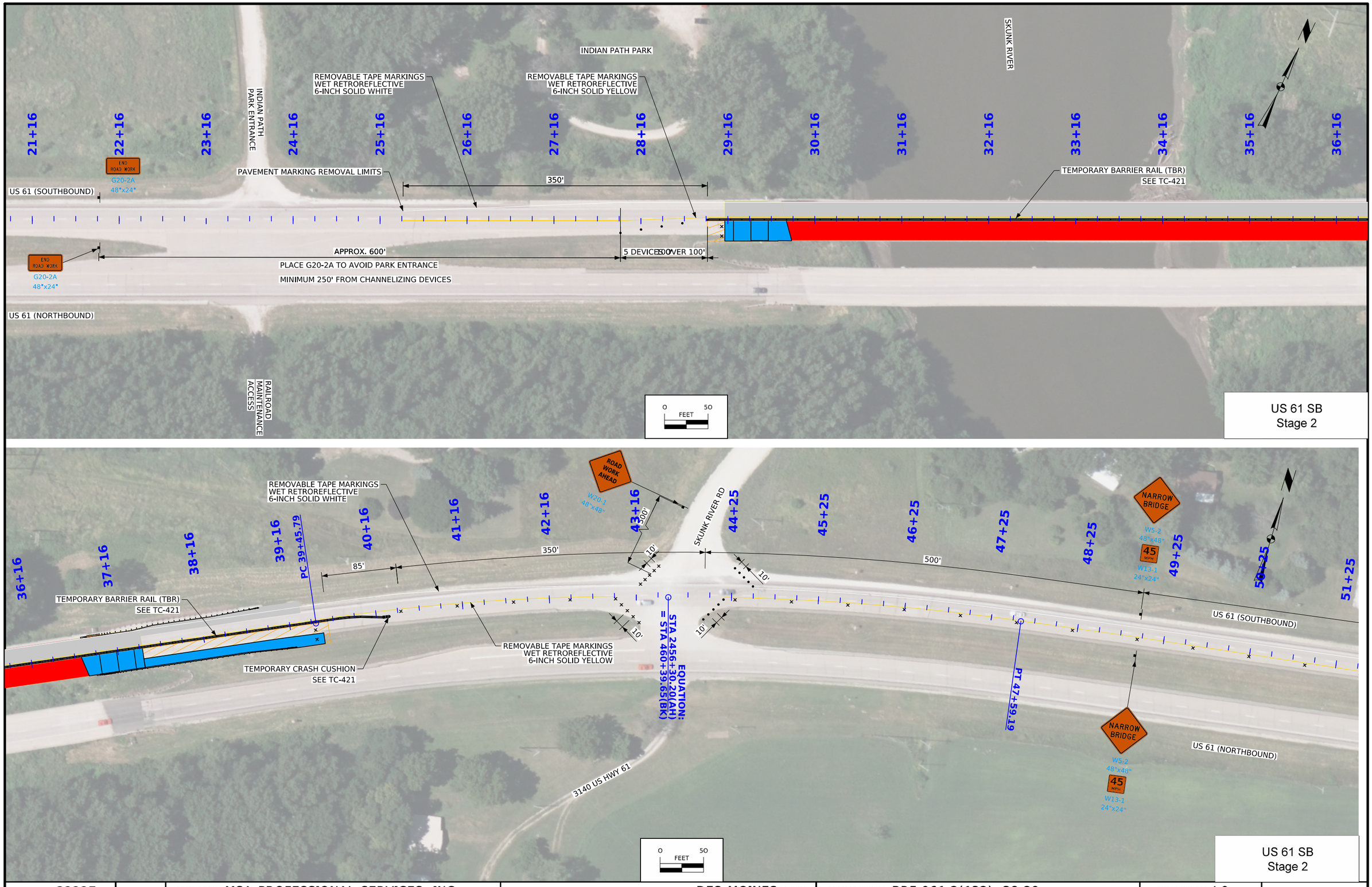
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FEET
3264 HWY 61

US 61 SB
Stage 1

FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER J.8	

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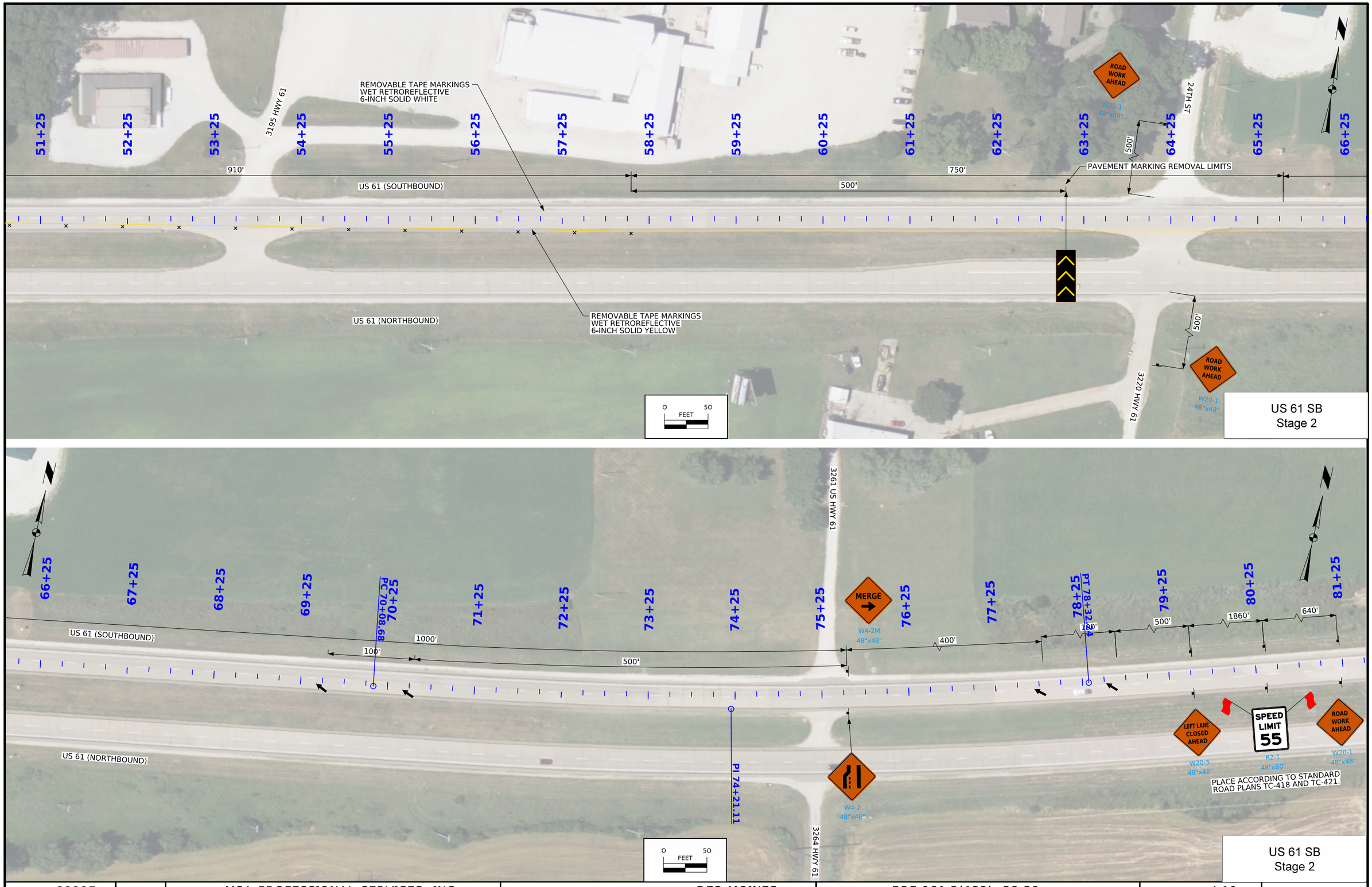
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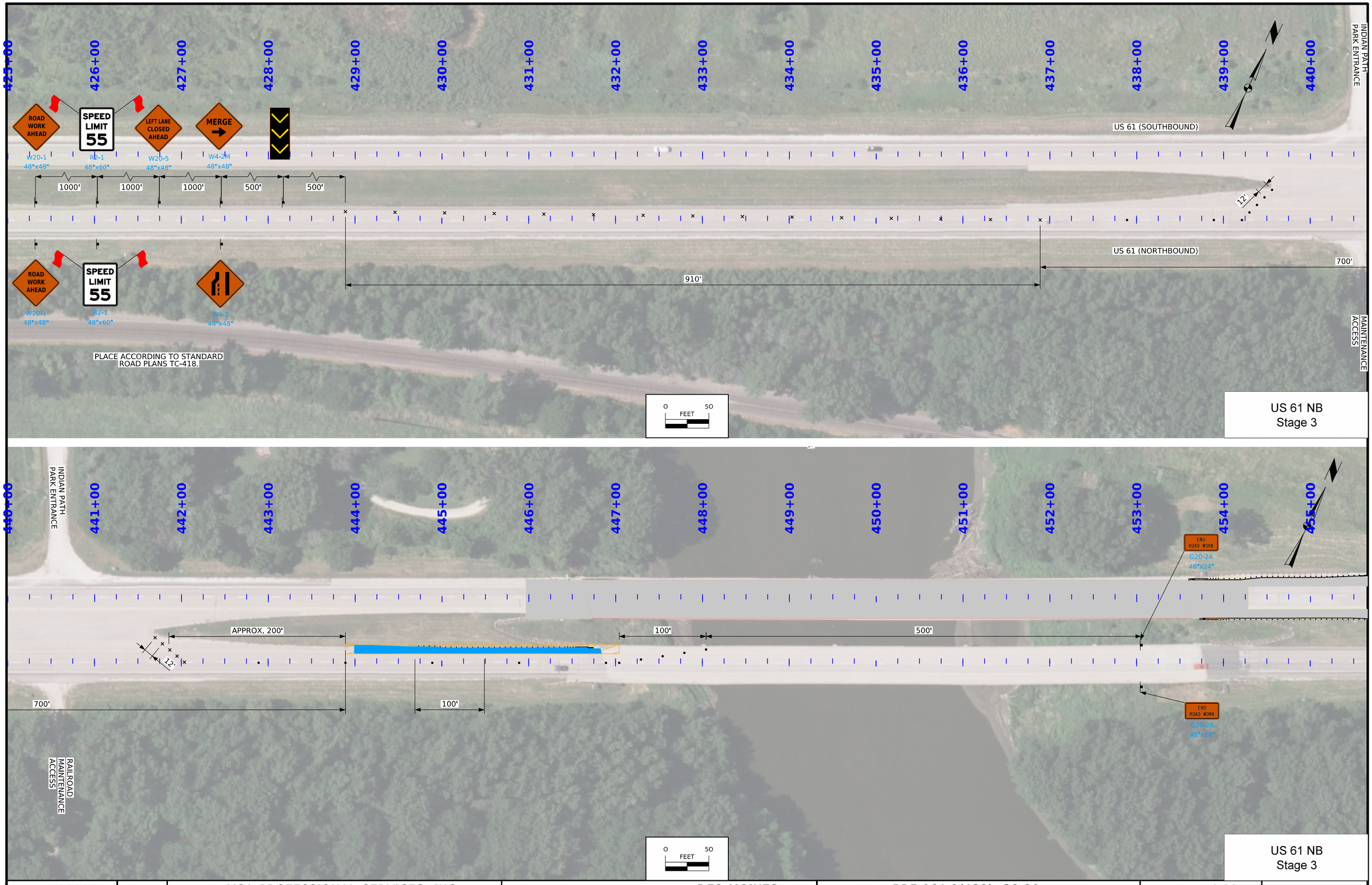
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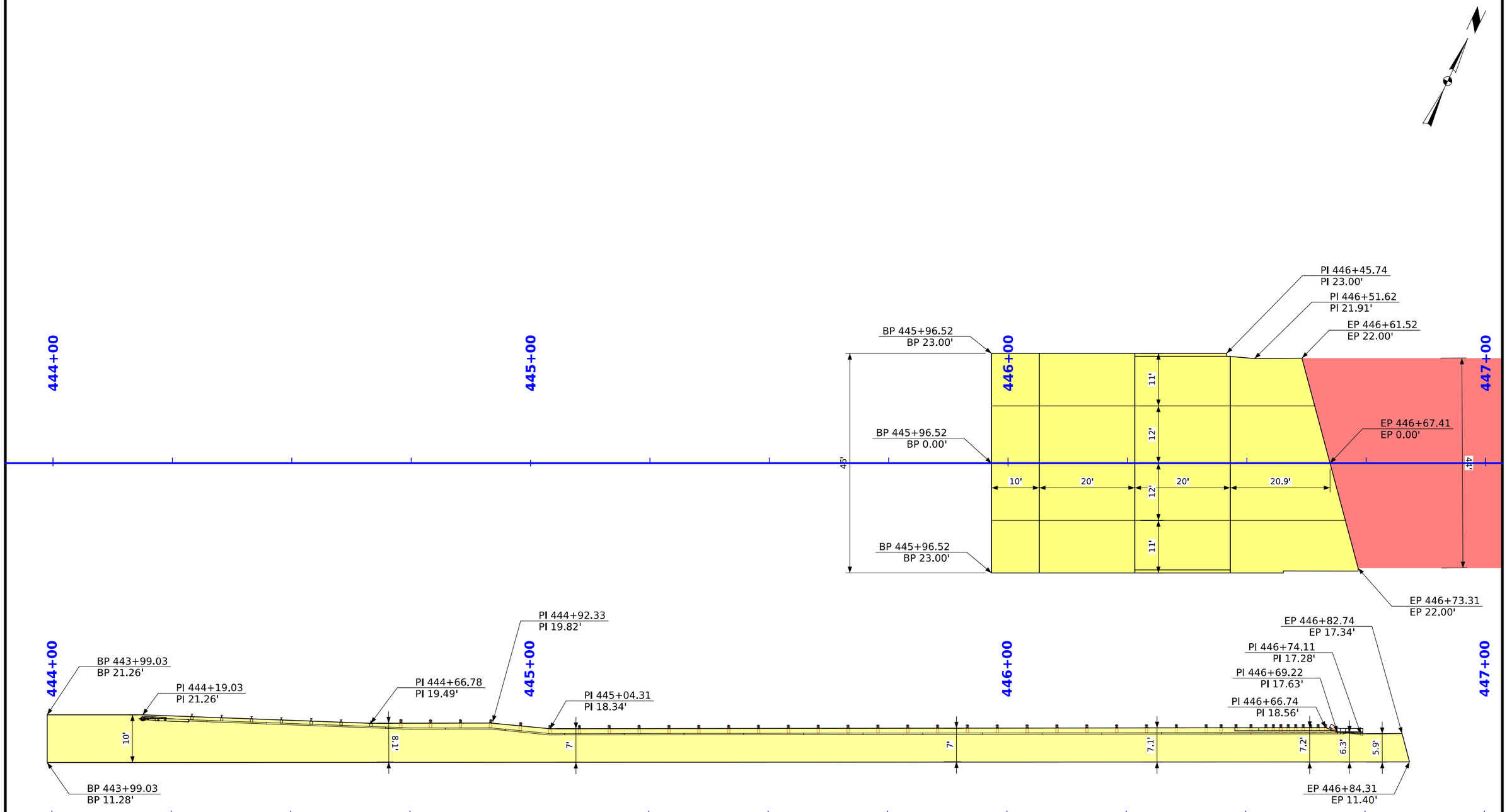
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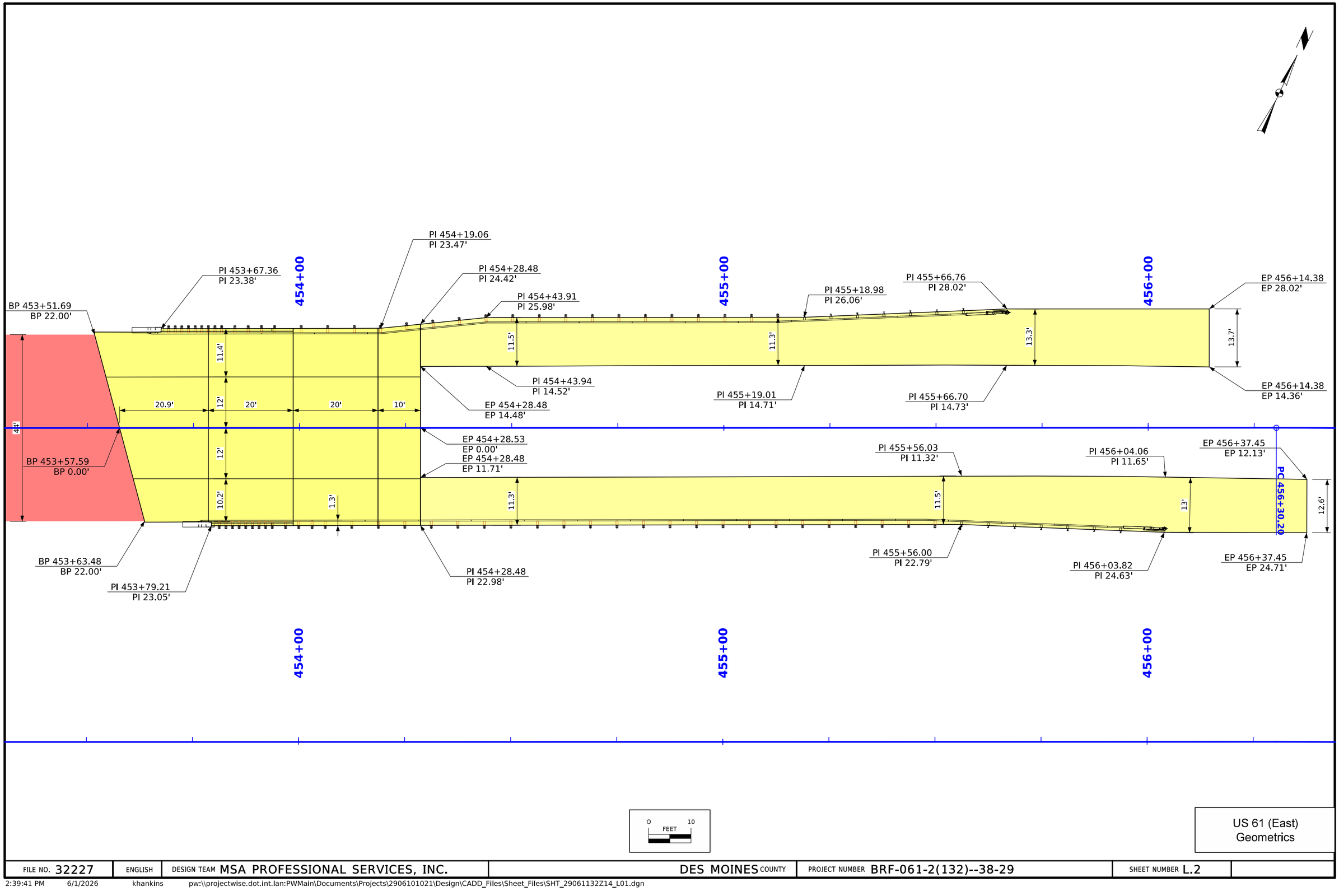
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US 61 (West)
Geometrics

FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER L.1

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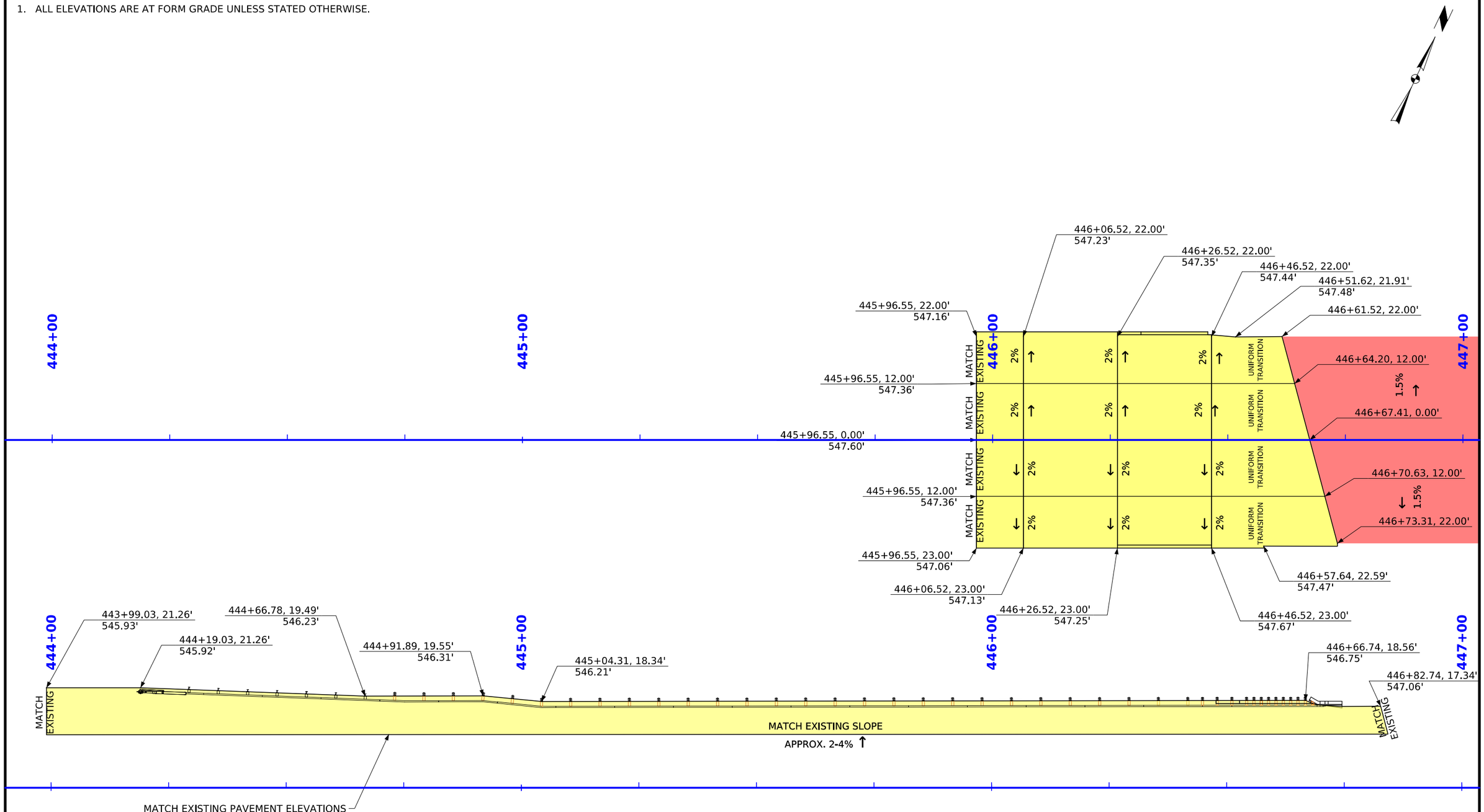


FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER L.2	

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NOTES:

1. ALL ELEVATIONS ARE AT FORM GRADE UNLESS STATED OTHERWISE.

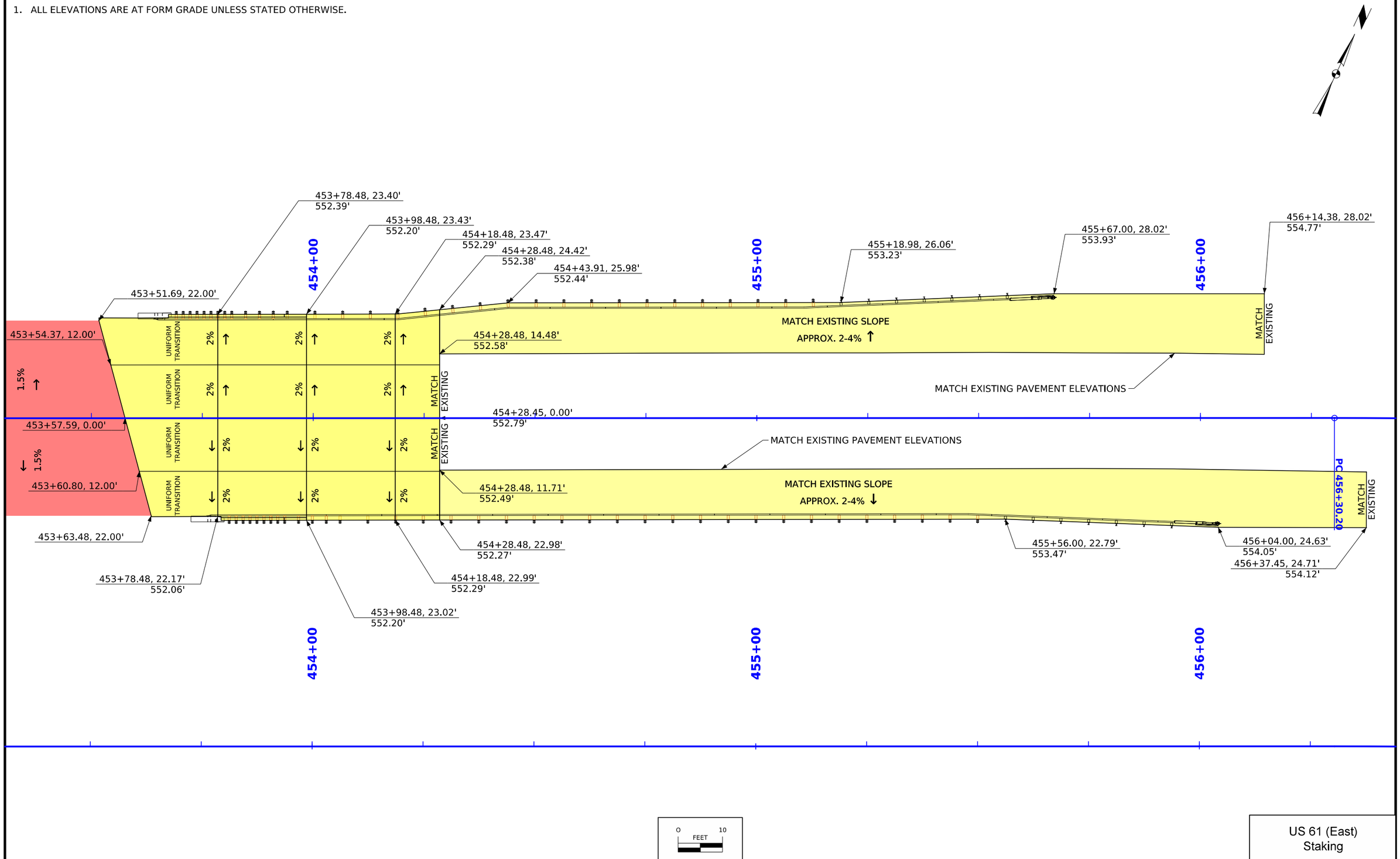


US 61 (West)
Staking

FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER L.3	

NOTES:

1. ALL ELEVATIONS ARE AT FORM GRADE UNLESS STATED OTHERWISE.

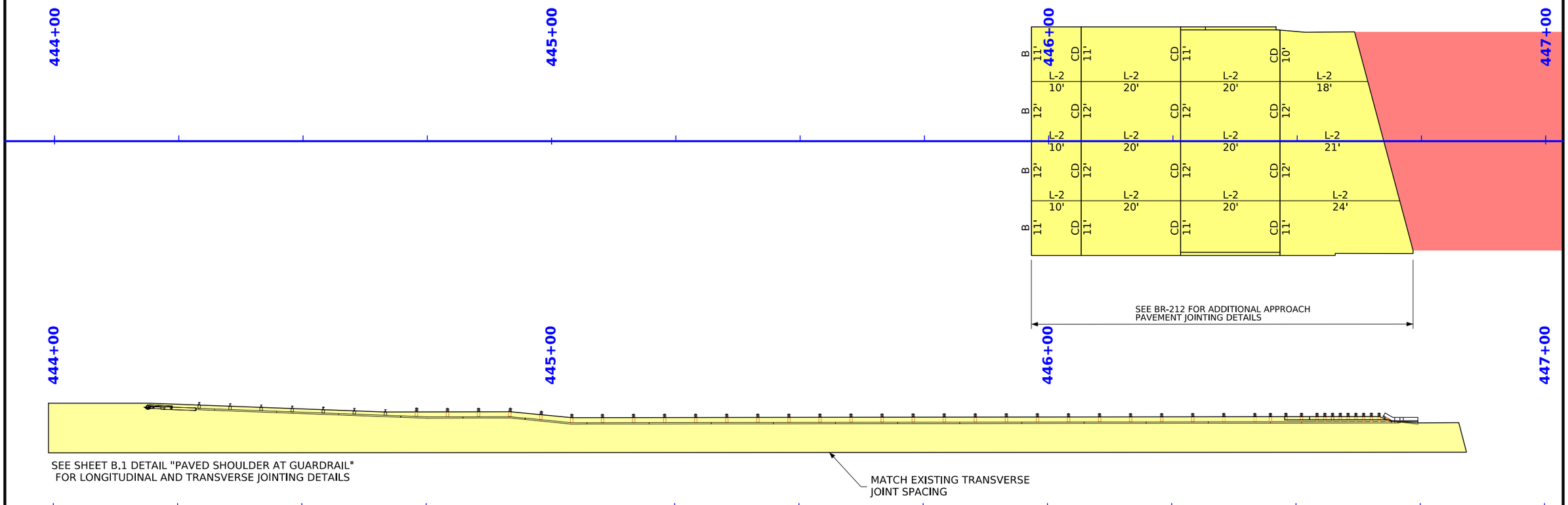


US 61 (East)
Staking

FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER L.4	

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NOTES:
1. ALL LONGITUDINAL JOINTS SHALL BE EITHER KT-2 OR L-2 UNLESS INDICATED OTHERWISE.
2. IF A JOINT LENGTH IS 2', A C JOINT SHALL BE USED INSTEAD OF A CD JOINT.
3. REFER TO STANDARD ROAD PLAN PV-101 FOR ADDITIONAL DETAILS.



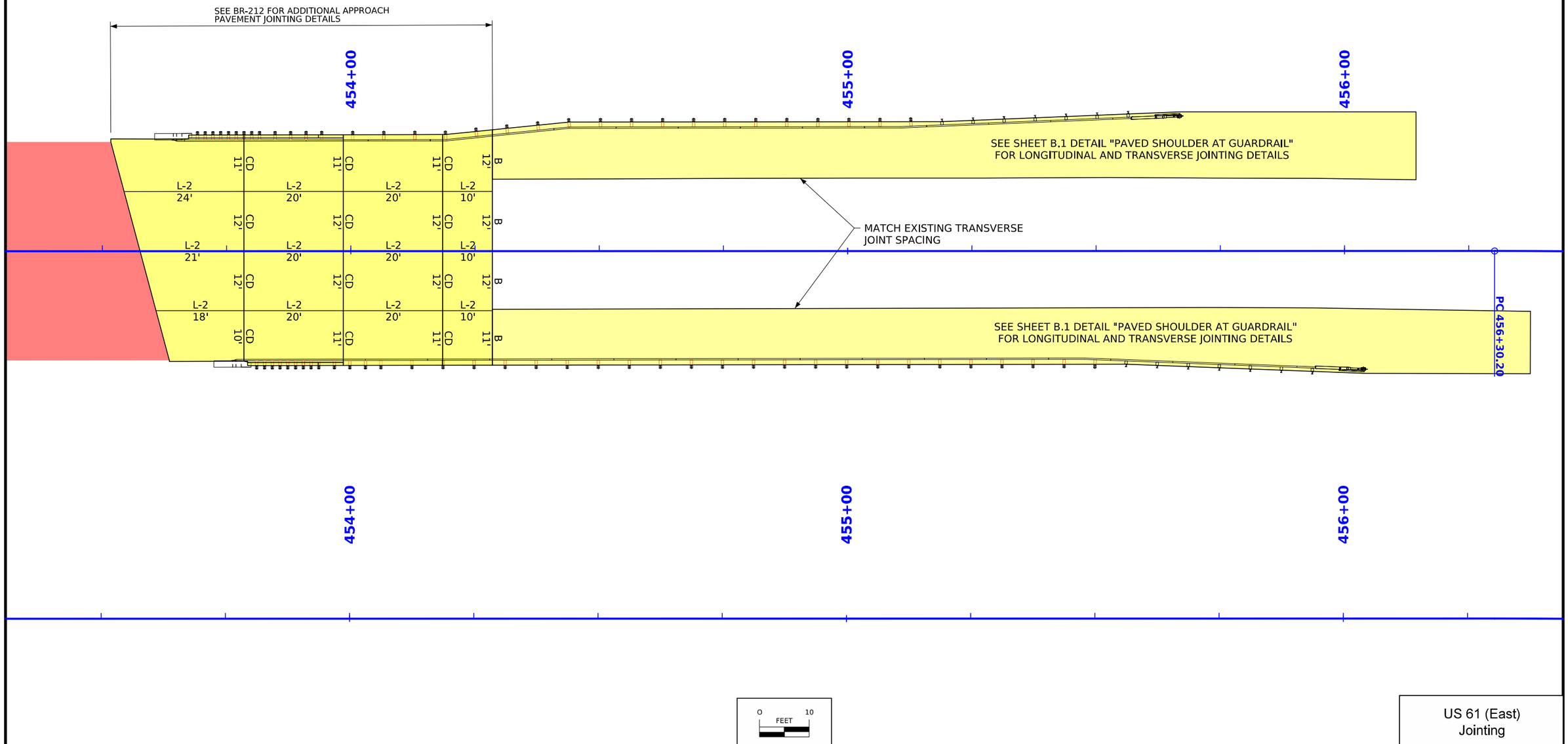
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FEET

US 61 (West)
Jointing

FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER L.5	

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NOTES:
1. ALL LONGITUDINAL JOINTS SHALL BE EITHER KT-2 OR L-2 UNLESS INDICATED OTHERWISE.
2. IF A JOINT LENGTH IS 2', A C JOINT SHALL BE USED INSTEAD OF A CD JOINT.
3. REFER TO STANDARD ROAD PLAN PV-101 FOR ADDITIONAL DETAILS.



US 61 (East)
Jointing

FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER L.6	

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PLAN VIEW CELL LEGEND

CELL	Design Element
	Clearing & Grubbing

CELL LEGEND OF EROSION CONTROL

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

CELL LEGEND OF LANDSCAPING

CELL	Design Element	Plant Diameter
Overstory-#	Overstory Tree	30 FT
Evergreen-#	Evergreen Tree	18 FT
Understory-#	Understory Tree	12 FT
Shrub-# Shrub-#	Shrub	6 FT

PLAN VIEW PATTERN LEGEND

PATTERN	Design Element	PATTERN	Design Element
	Seeding and Fertilizing		Turf Reinforcement Mat Type 1
R	Seeding and Fertilizing (Rural)		Turf Reinforcement Mat Type 2
U	Seeding and Fertilizing (Urban)		Turf Reinforcement Mat Type 3
N	Native Grass Seeding		Turf Reinforcement Mat Type 4
ST	Salt Tolerant Seeding		Slope Protection, Wood Excelsior Mat
WL	Wetland Grass Seeding	TM	Transition Mat
WF	Wildflower Seeding		Rock Features, Permanent
SOD	Sodding		Rock Features, Temporary

PLAN VIEW COLOR LEGEND

LINEWORK	Design	Color No.	
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and 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%

HATCHING	Design	Color No.	
Red	(3)		Delineates Restricted Areas
Yellow	(4)		Brush Clearing
Yellow	(4)		Clearing & Grubbing
Orange	(228)		Spray Area

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

LINESTYLE	Design Element
	Silt Fence
9	Perimeter and Slope Sediment Control Device (9")
12	Perimeter and Slope Sediment Control Device (12")
20	Perimeter and Slope Sediment Control Device (20")
	Open-Throat Curb Intake Sediment Filter
	Concentrated Flow
	Rock Check and Rock Check Dam
	Sheet Flow

LINE STYLE LEGEND OF LANDSCAPE SHEETS

LINESTYLE	Design Element
	Living Snow Fence Single Row
	Living Snow Fence Double Row
	Mechanical Edge

LEGEND AND SYMBOL INFORMATION SHEET

INDIAN PATH PARK

SKUNK RIVER

SEEDING AND FERTILIZING (RURAL)
MULCHING, BONDED FIBER MATRIX
0.01 ACRES

PERIMETER AND SLOPE SEDIMENT
CONTROL DEVICE, 20 IN. DIA.
91 LF

442+00 443+00 444+00 445+00 446+00 447+00 448+00

US 61 (SOUTHBOUND)

50' (TYP.)

US 61 (NORTHBOUND)

DITCH CHECK SEDIMENT
CONTROL DEVICE, 20 IN. DIA.
25 LF (TYP.)

SEEDING AND FERTILIZING (RURAL)
MULCHING, BONDED FIBER MATRIX
0.22 ACRES

PERIMETER AND SLOPE SEDIMENT
CONTROL DEVICE, 20 IN. DIA.
35 LF

442+00 443+00 444+00 445+00 446+00 447+00 448+00

0 20
FEET

FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER RR.2

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PERIMETER AND SLOPE SEDIMENT
CONTROL DEVICE, 20 IN. DIA.
87 LF

PERIMETER AND SLOPE SEDIMENT
CONTROL DEVICE, 20 IN. DIA.
93 LF

PERIMETER AND SLOPE SEDIMENT
CONTROL DEVICE, 20 IN. DIA.
121 LF

NATIVE GRASS SEEDING
MULCHING, BONDED FIBER MATRIX
0.03 ACRES

SEEDING AND FERTILIZING (RURAL)
MULCHING, BONDED FIBER MATRIX
0.05 ACRES

US 61 (SOUTHBOUND)

PERIMETER AND SLOPE SEDIMENT
CONTROL DEVICE, 20 IN. DIA.
320 LF

SEEDING AND FERTILIZING (RURAL)
MULCHING, BONDED FIBER MATRIX
0.22 ACRES

SEEDING AND FERTILIZING (RURAL)
MULCHING, BONDED FIBER MATRIX
0.04 ACRES

50' (TYP.)

PERIMETER AND SLOPE SEDIMENT
CONTROL DEVICE, 20 IN. DIA.
20 LF

DITCH CHECK SEDIMENT
CONTROL DEVICE, 20 IN. DIA.
25 LF (TYP.)

US 61 (NORTHBOUND)

PERIMETER AND SLOPE SEDIMENT
CONTROL DEVICE, 20 IN. DIA.
35 LF EACH

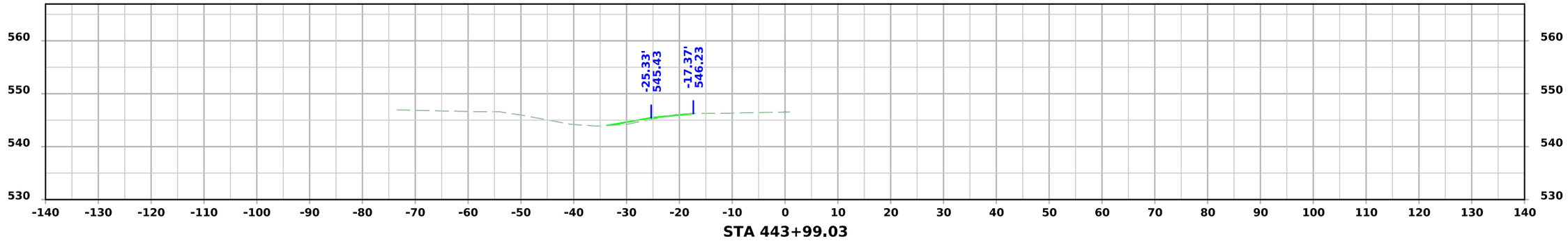
452+00 453+00 454+00 455+00 456+00 457+00 458+00

0 20
FEET

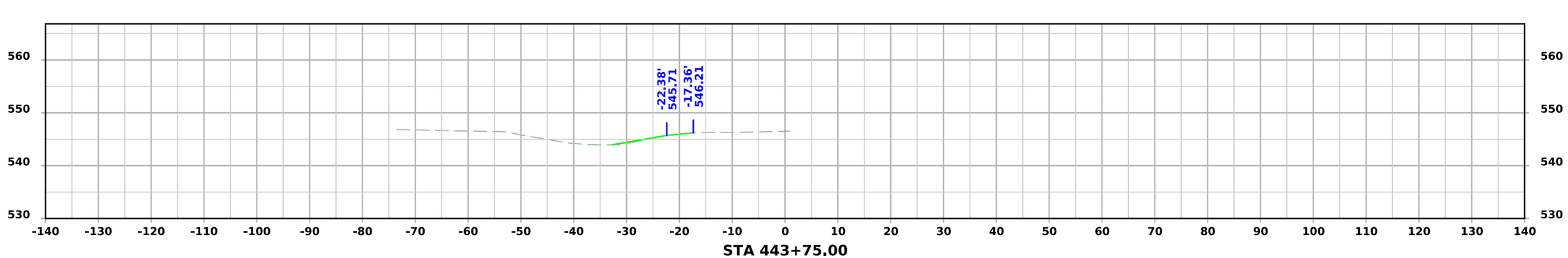
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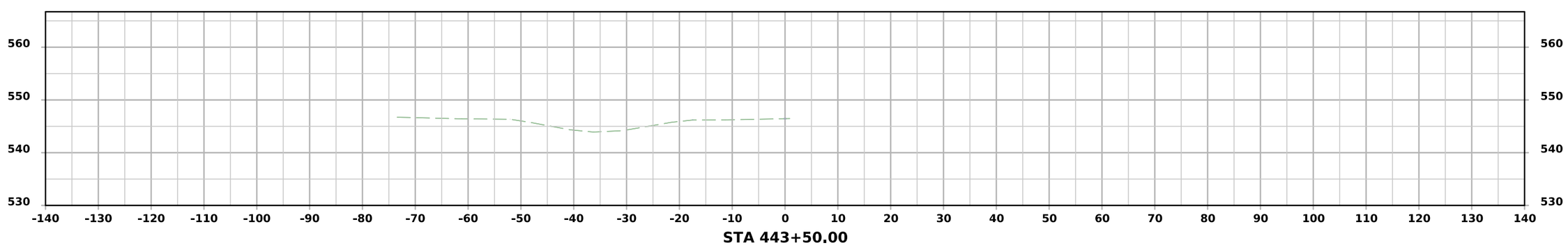
ML - NB US 61



STA 443+99.03



STA 443+75.00

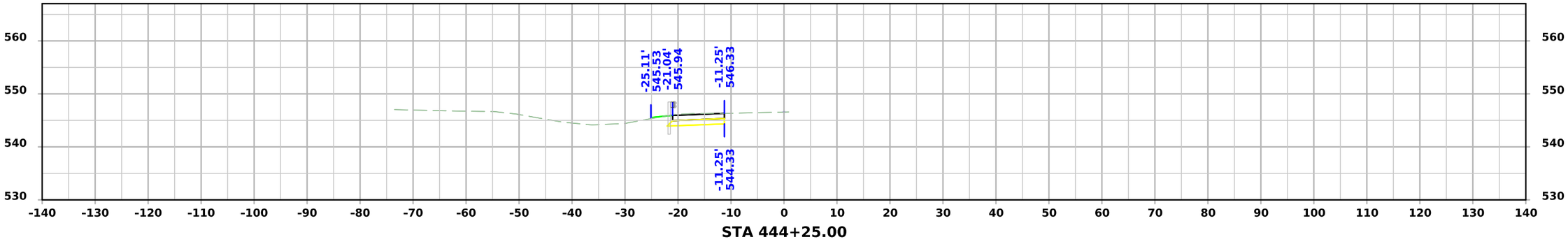


STA 443+50.00

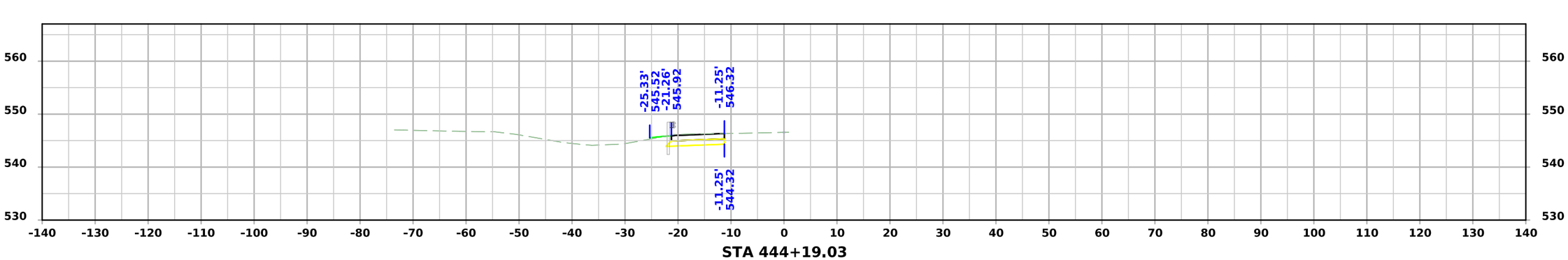
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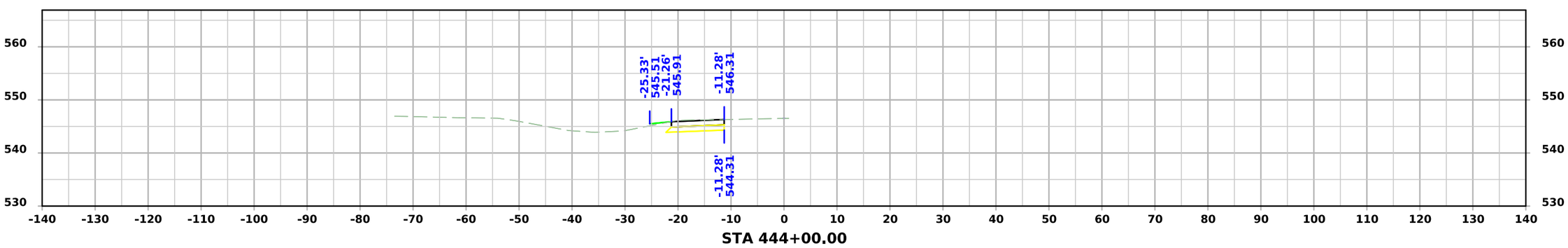
ML - NB US 61



STA 444+25.00



STA 444+19.03

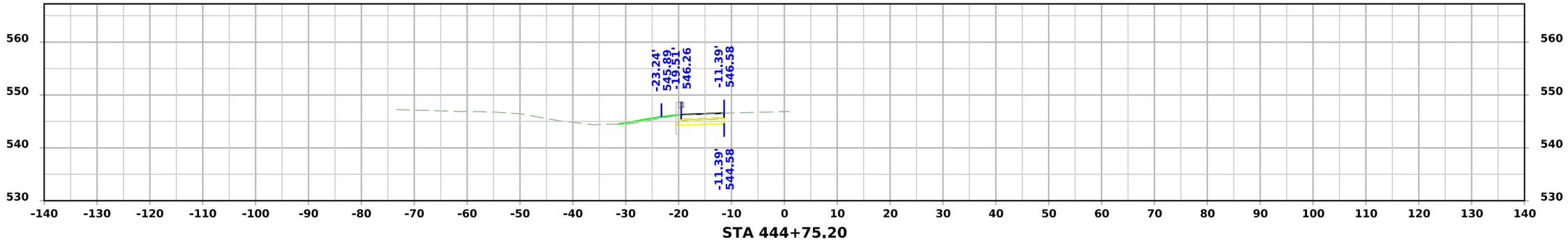


STA 444+00.00

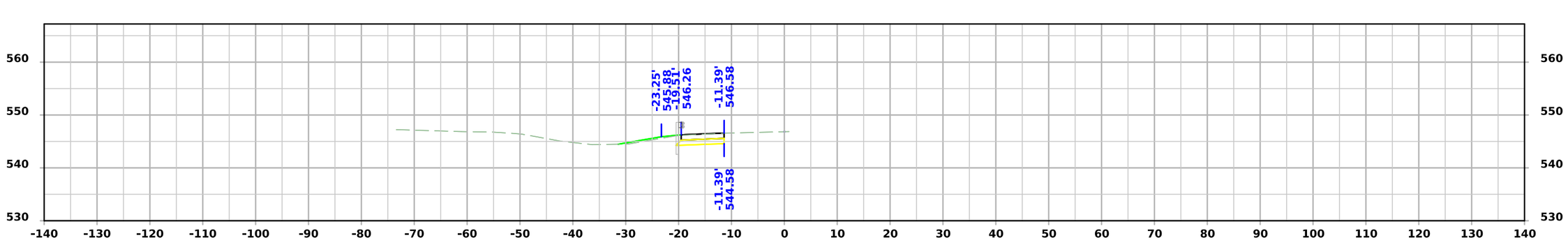
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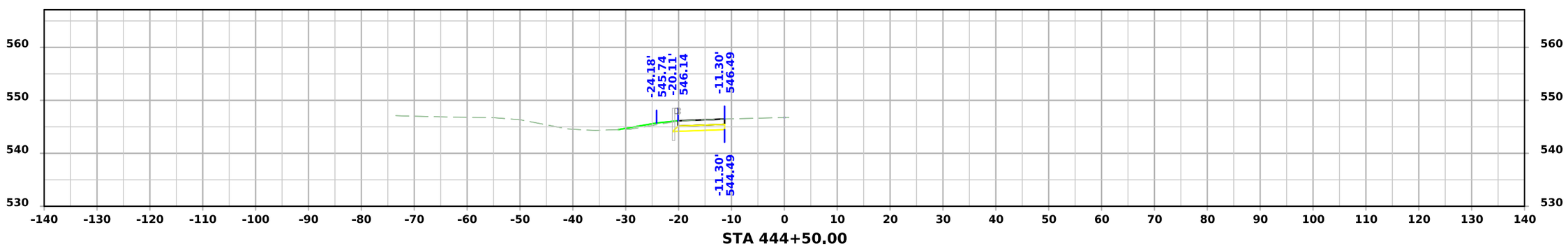
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STA 444+75.20



STA 444+75.00

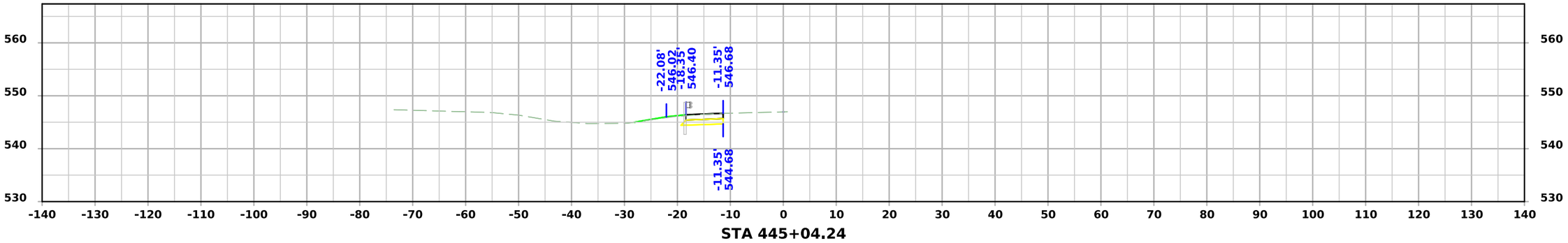


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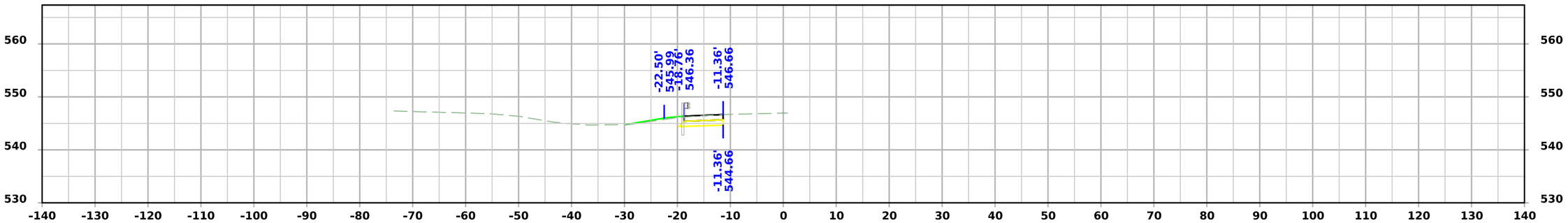
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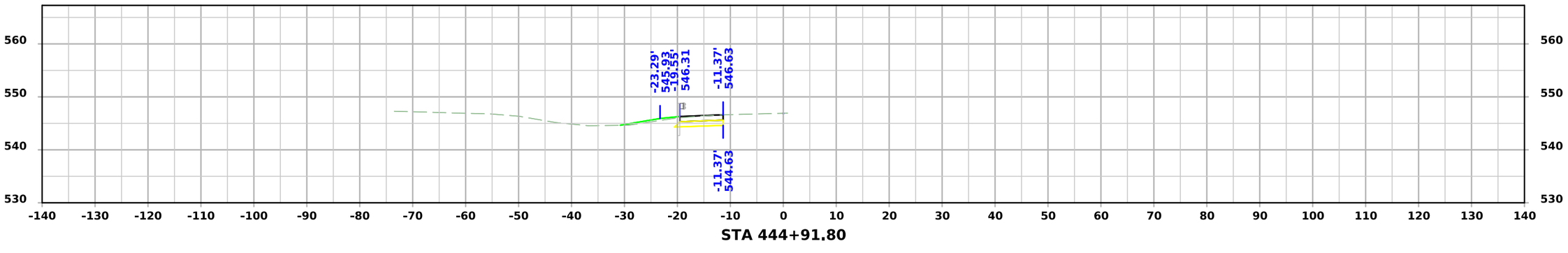
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STA 445+04.24



STA 445+00.00

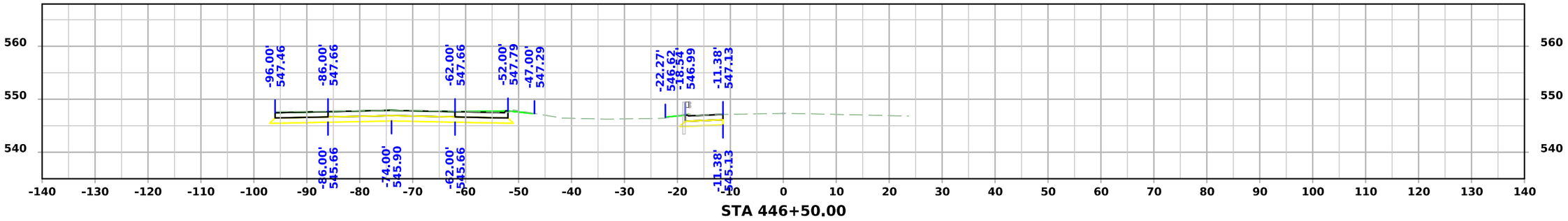


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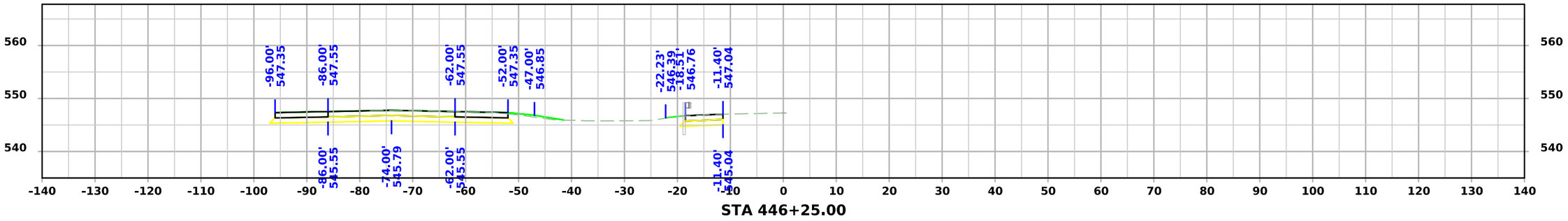
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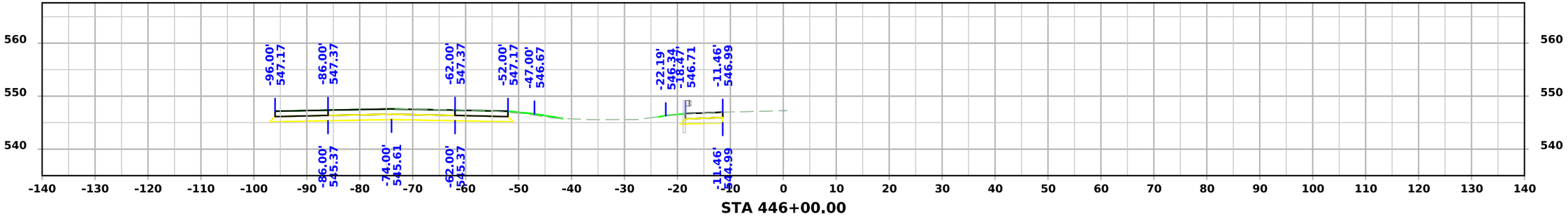
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STA 446+50.00



STA 446+25.00

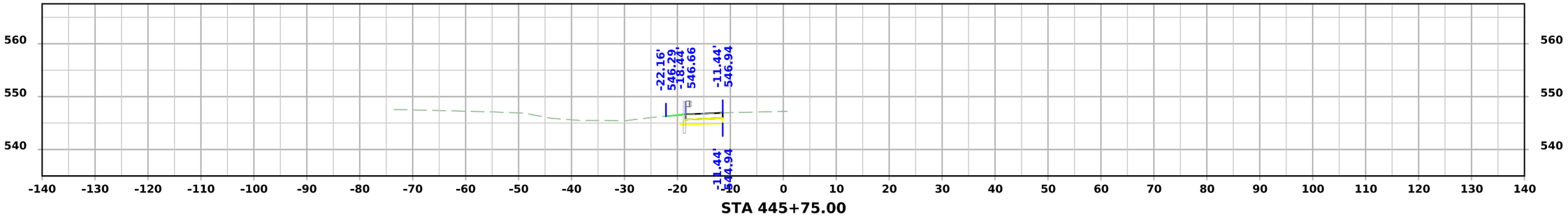


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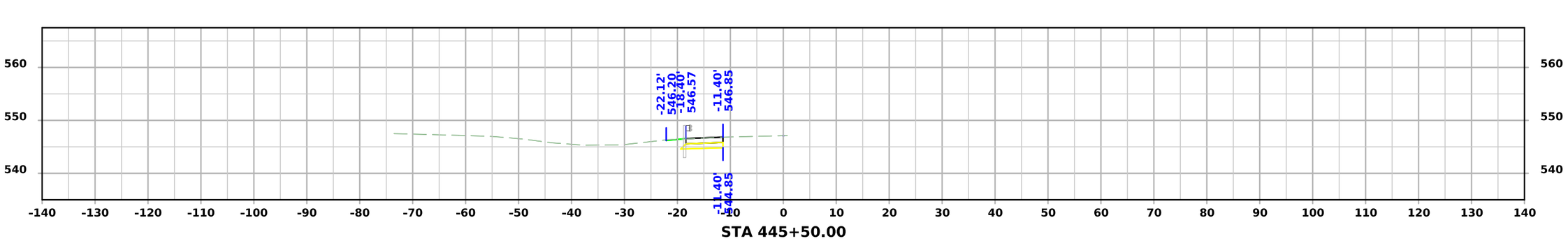
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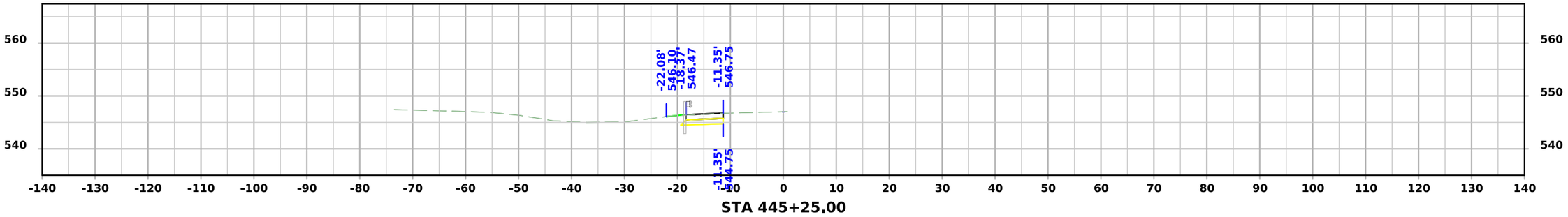
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STA 445+75.00



STA 445+50.00

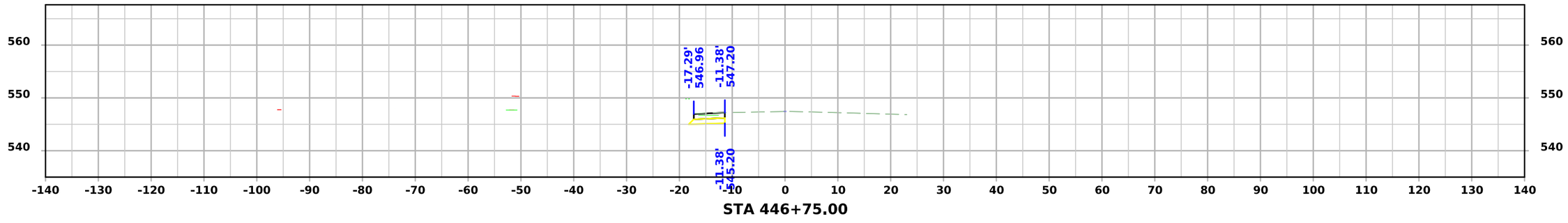


STA 445+25.00

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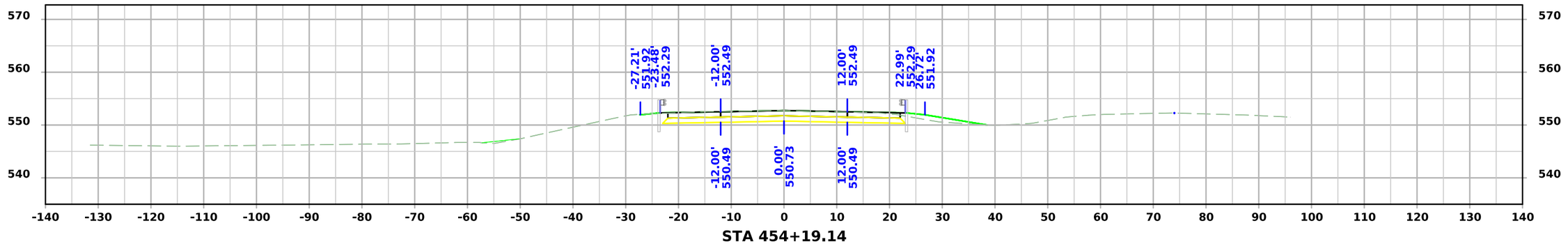
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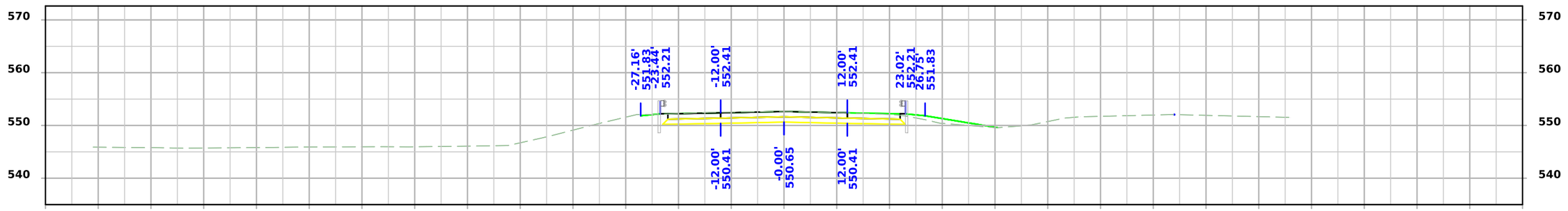
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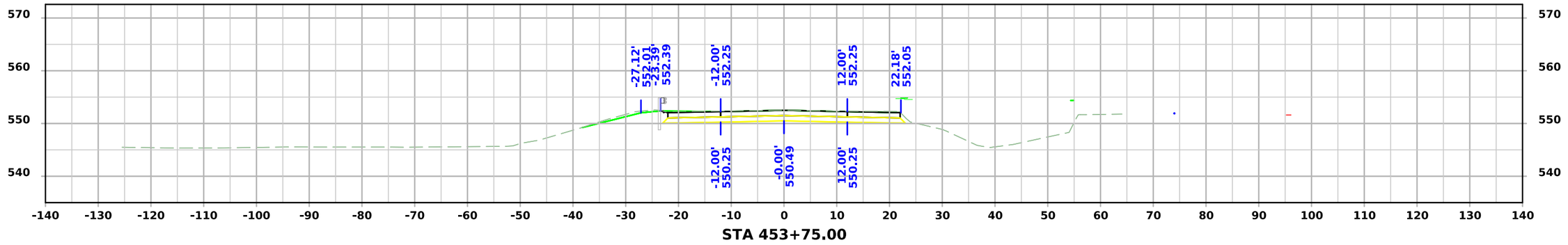
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STA 454+19.14



STA 454+00.00

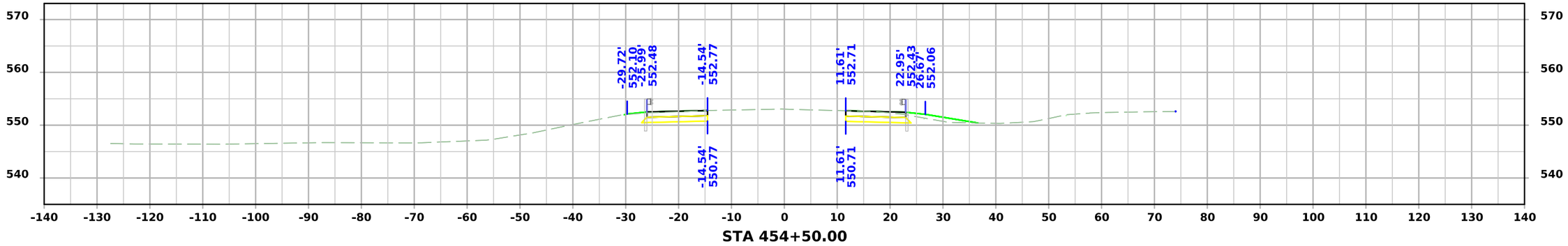


STA 453+75.00

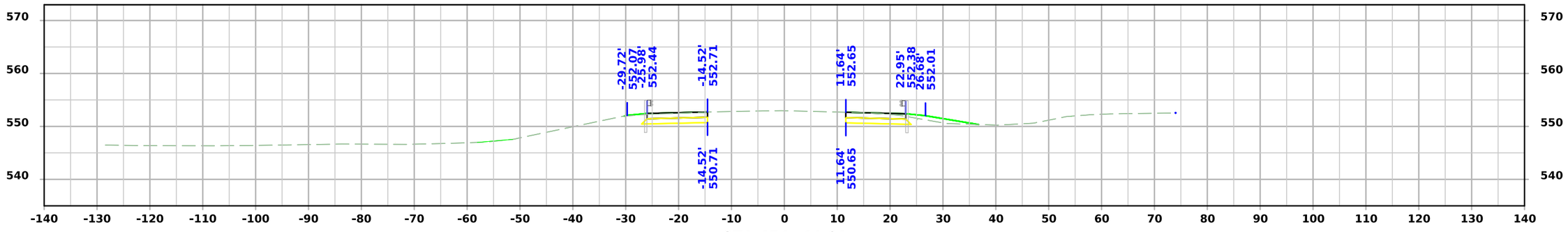
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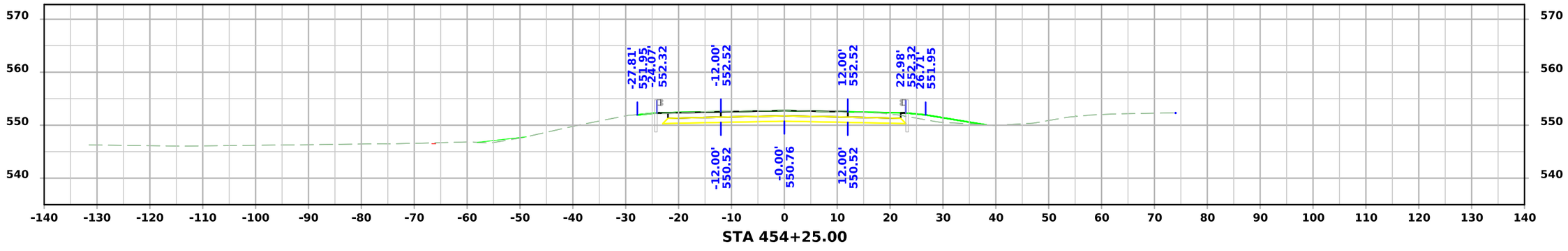
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STA 454+50.00



STA 454+44.01

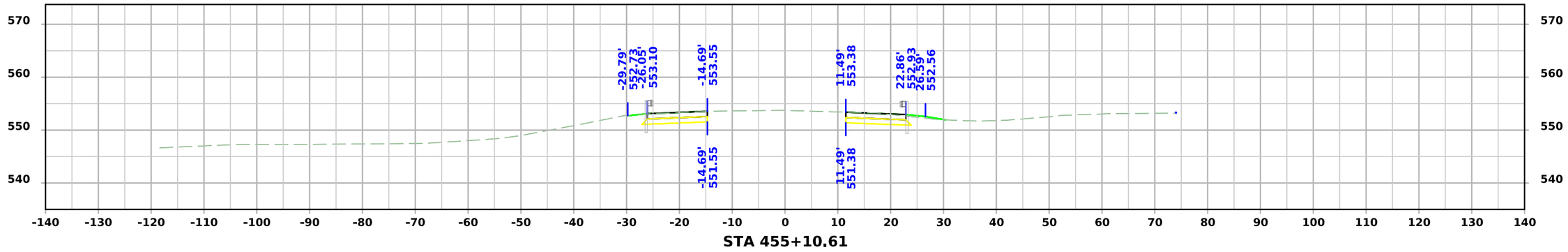


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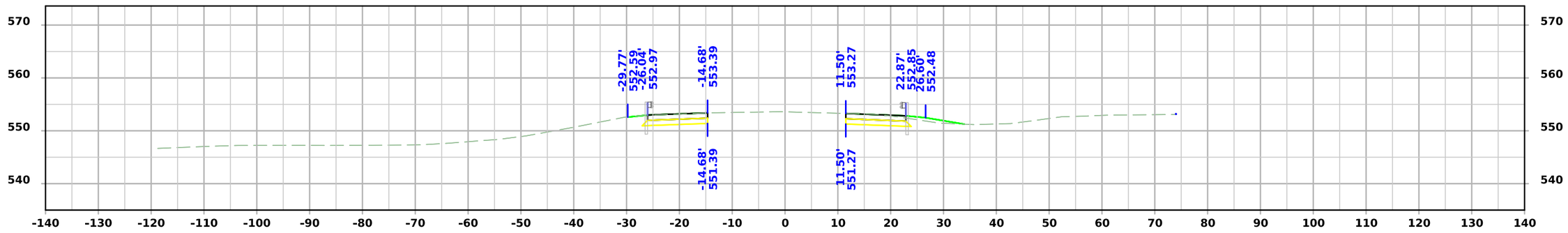
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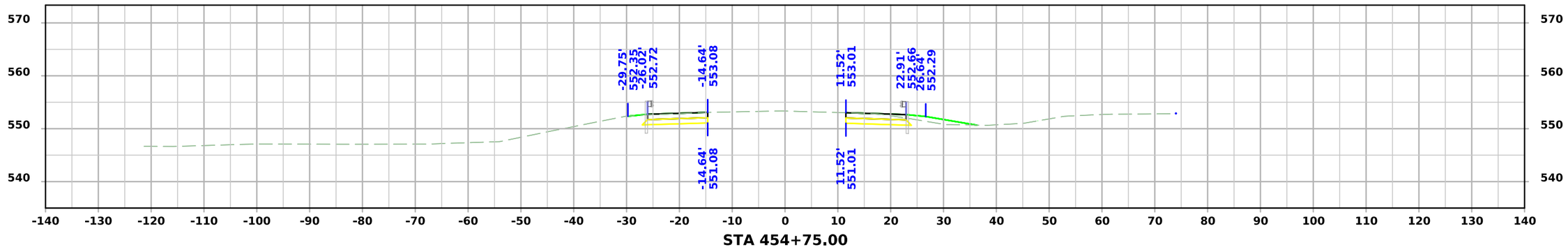
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STA 455+10.61



STA 455+00.00

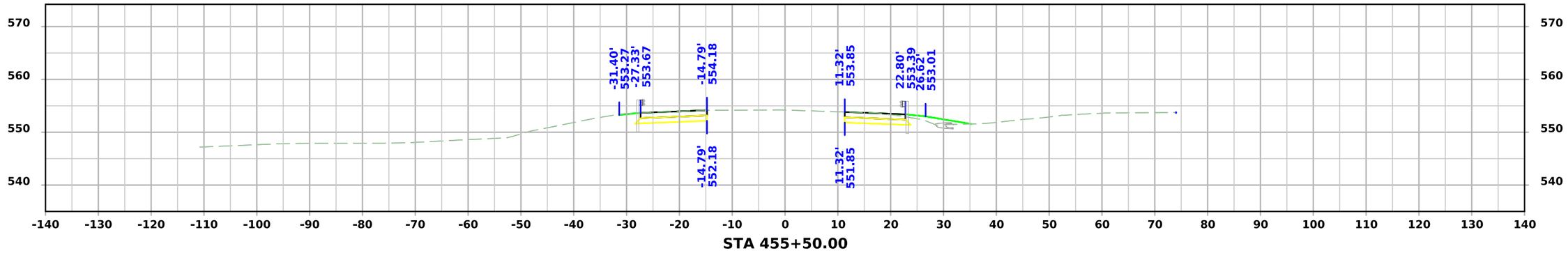


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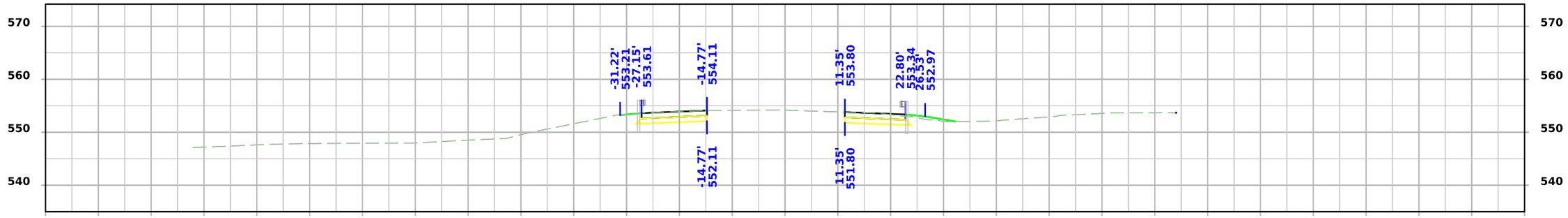
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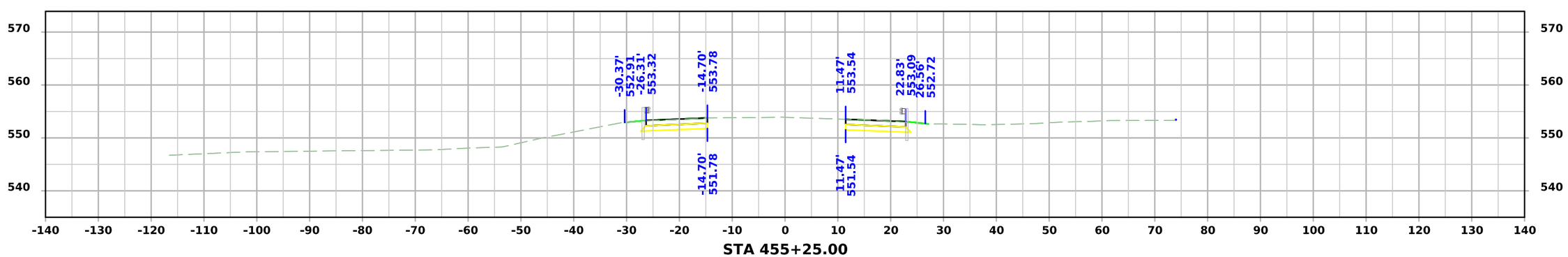
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STA 455+45.73

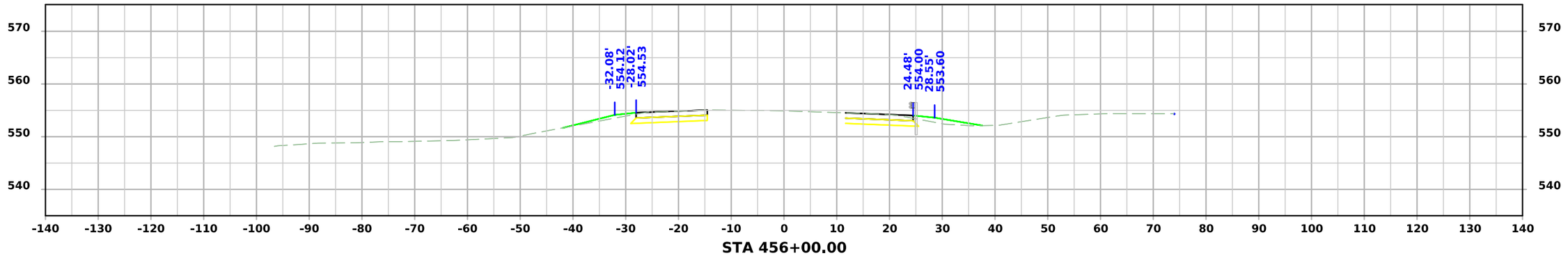


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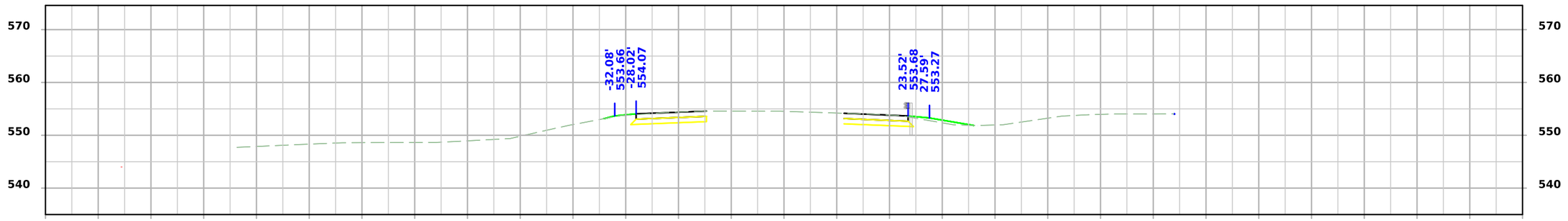
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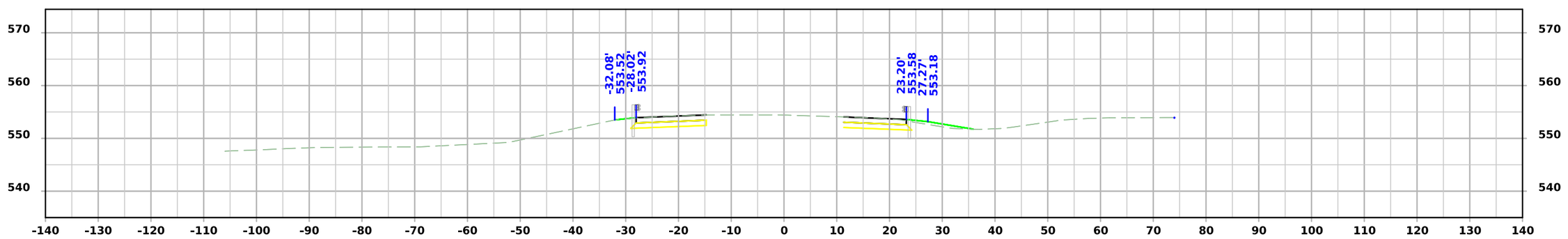
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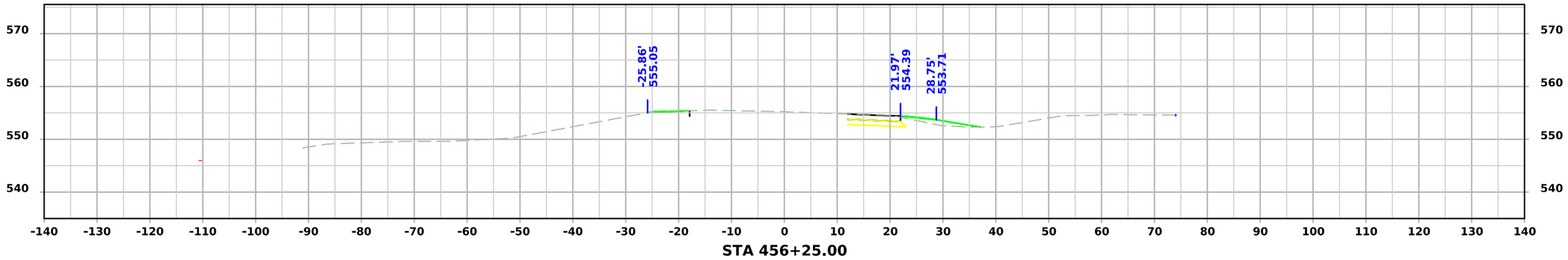
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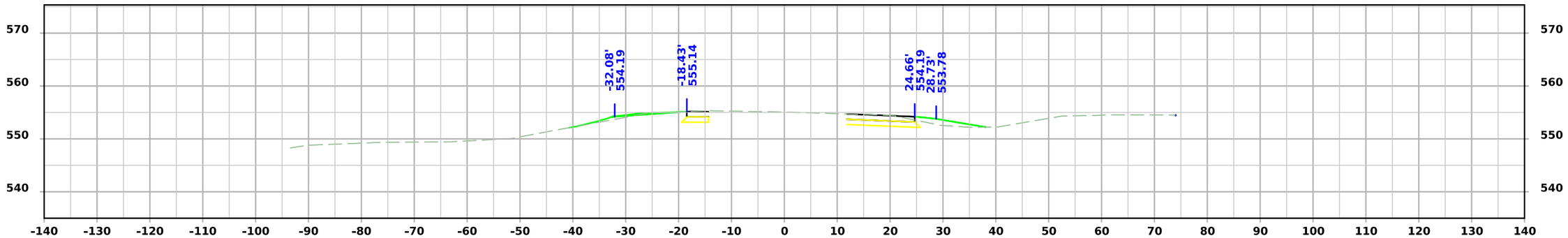
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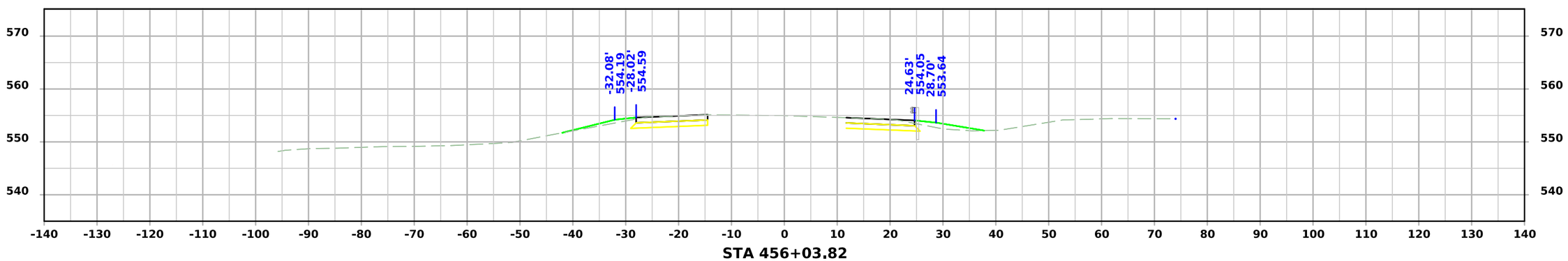
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STA 456+25.00



STA 456+14.38

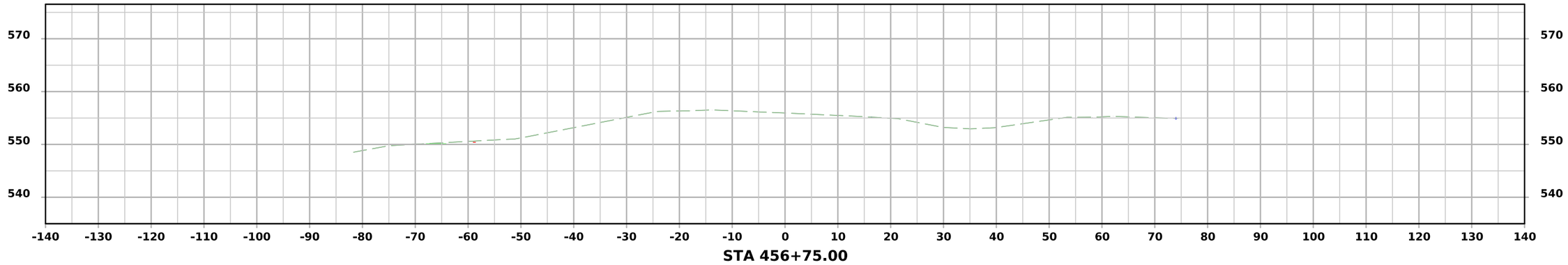


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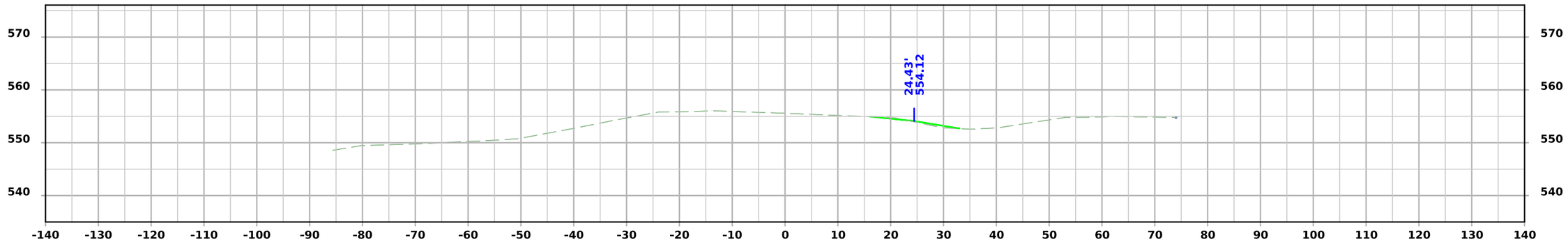
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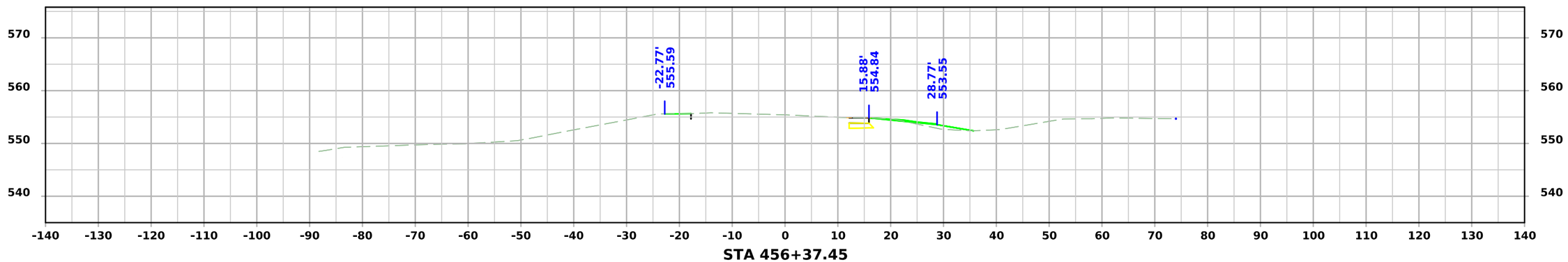
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STA 456+50.00

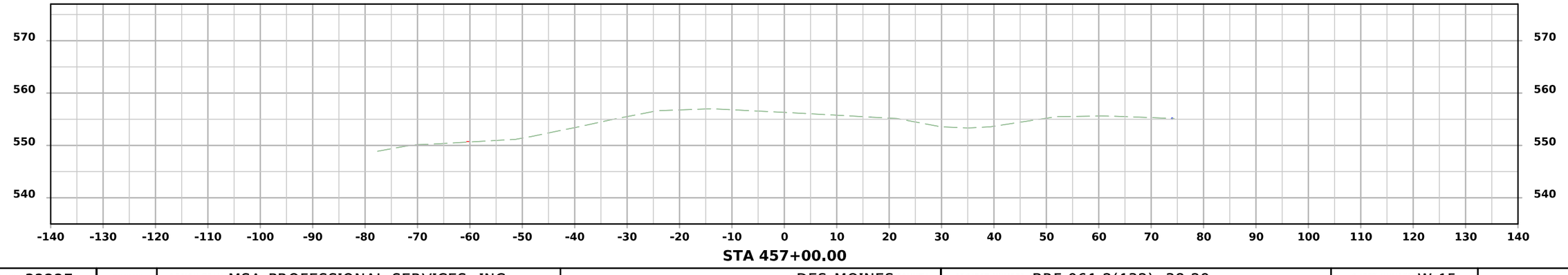


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FILE NO. 32227	ENGLISH	DESIGN TEAM MSA PROFESSIONAL SERVICES, INC.	DES MOINES COUNTY	PROJECT NUMBER BRF-061-2(132)--38-29	SHEET NUMBER W.15	

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