LETTING DATE
FEB 27 2026

CULVERT REPLACEMENT
NHSN-092-8(044)--2R-54

KEOKUK COUNTY

Index of Sheets

IOWA DOT

Revisions

TOTAL
16
PROJECT IDENTIFICATION NUMBER
24-54-092-020
CONTRACT ID NUMBER
PROJECT NUMBER
NHSN-092-8(044)--2R-54
R.O.W. PROJECT NUMBER
NHSN-092-8(045)--2R-54
PROJECT DIRECTORY NUMBER
5409202024

PLANS OF PROPOSED IMPROVEMENT ON THE

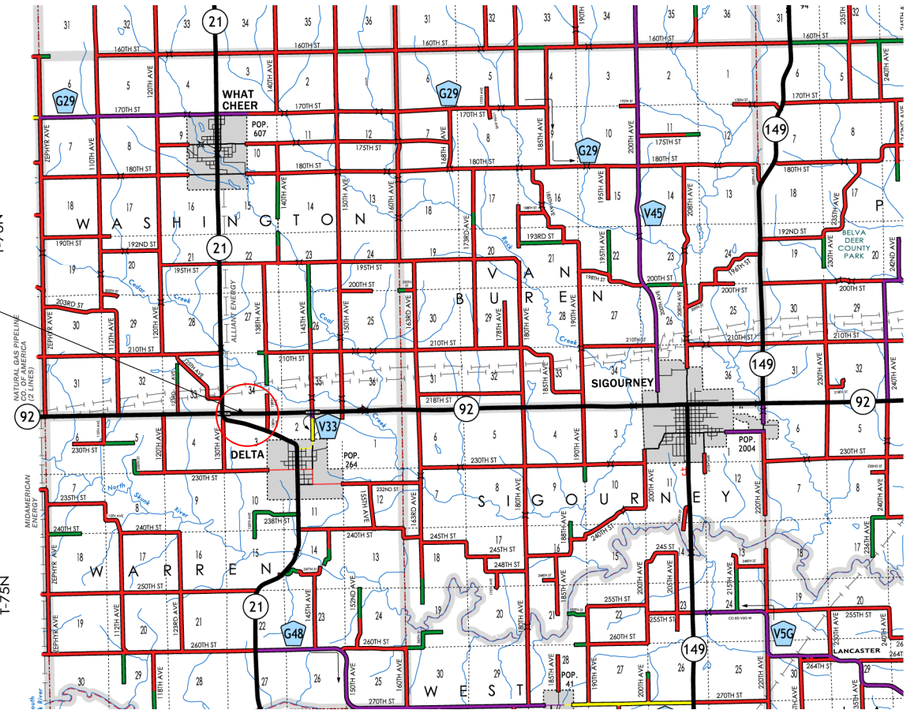
PRIMARY ROAD SYSTEM
KEOKUK COUNTY
CULVERT REPLACEMENT

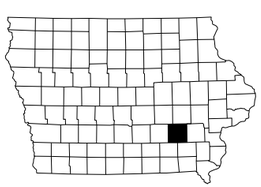
IA 92 Over Drainage Ditches
0.9 Mi. and 1.0 Mi. E of IA 21

Refer to the Plan Sheets for list of applicable specifications.

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

PROJECT LOCATION:
STATION 203+54.22 &
STATION 210+17.08





Design Data Rural

2023 AADT	2,150 V.P.D.
2022 AADT	2,110 V.P.D.
TRUCKS	13.55 %

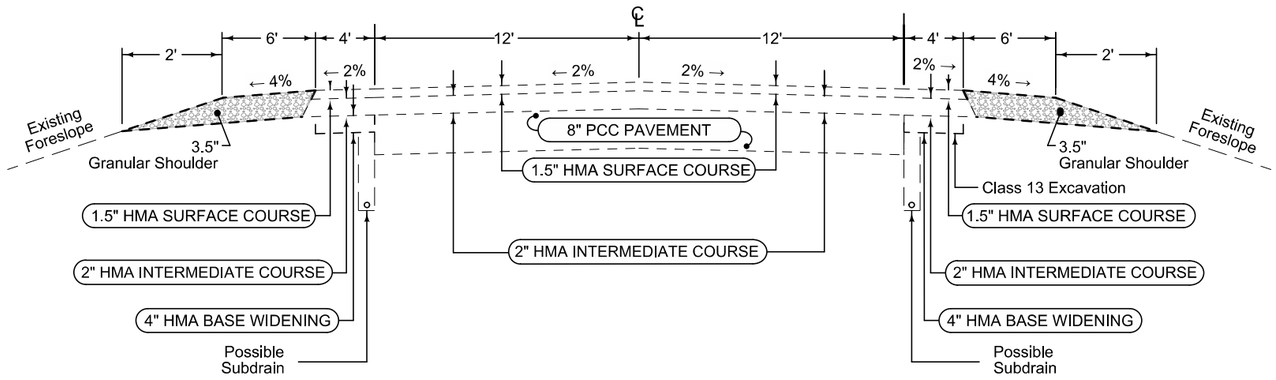
PRELIMINARY PLANS

Subject to change by final design.

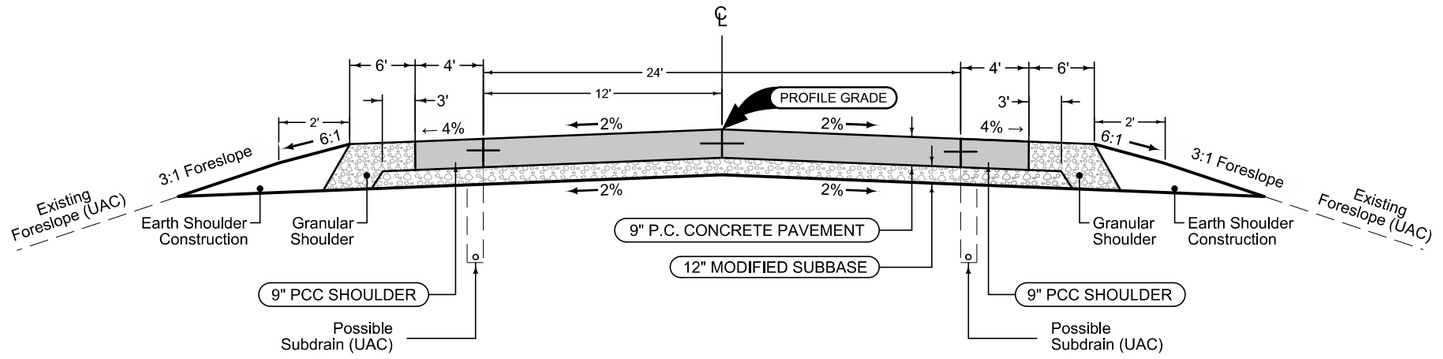
D5 PLAN - Date: 5/30/25

FILE NO.	ENGLISH	DESIGN TEAM **AECOM**	**KEOKUK** COUNTY	PROJECT NUMBER **NHSN-092-8(044)--2R-54**	SHEET NUMBER **A.1**

2:11:49 PM 5/21/2025 tyler.gamerdinger pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5409202024\Bridge\(044)_RCB Culvert Replacement - Single Box\SHT_54092044_Z13.dgn



Existing Typical Section



Proposed Typical Section

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

	2P_ 04-21-20
STATION TO STATION	
203+10.00	204+31.00
209+77.00	210+53.00

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

FO — FO1D, Iowa Communications Network - Quality D
Dave Augspurger
515-725-4604
icnoutsideplantiowaonecall@iowa.gov

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.	ENGLISH	DESIGN TEAM **AECOM**	**KEOKUK** COUNTY	PROJECT NUMBER **NHSN-092-8(044)--2R-54**	SHEET NUMBER **D.1**

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Washington TWP.
T-76N R-13W
SEC. 34

Warren TWP.
T-75N R-13W
SEC. 3

Construction Limits

Install Class 'E' Revetment Underlain with Engineering Fabric at Outlet

Remove and Replace Fence

Existing ROW

Drainage Ditch

Begin West Paving
Sta. 203+10.00

End Paving
Sta. 204+31.00

Sta. 203+87.1
Skew 0° RT AH
4.0'x4.0'x193.5' RCB
8.0'x4.0'x10.5' Drop Structure
Skew 30° LT AH
D.A.=144 AC

Begin East Paving
Sta. 209+77.00

End East Paving
Sta. 210+53.00

Sta. 210+13.7
Skew 15° RT AH
3.0'x3.0'x143.0' RCB
5.0'x3.0'x12.5' Drop St
D.A.=34.0 AC

0 30 FEET

202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00 211+00

760 755 750 745 740 735

Begin West Paving
Sta. 203+10.00
Elev. 746.39

End West Paving
Sta. 204+31.00
Elev. 746.20

Existing Ground

Begin East Paving
Sta. 209+77.00
Elev. 745.73

End East Paving
Sta. 210+53.00
Elev. 745.59

203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00

FILE NO. -	ENGLISH	DESIGN TEAM **AECOM**	**KEOKUK** COUNTY	PROJECT NUMBER **NHSN-092-8(044)--2R-54**	SHEET NUMBER **D.2**

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SURVEY INDEX

County : Keokuk
Project Code : 24-54-092-020
Phase Number : NHSN-092-8(044)--2R-54
Location : 0.9 mi and 1.0 mi E of IA 21
Work Code : 3121-RCB Culvert Replacement - Single Box
Project Directory : 5409202024

Survey Personnel

Aaron Mueller – Professional Land Surveyor
Ethan Nicholas – Survey Party Chief
Joel Peters– Assistant Survey Party Chief

Date(s) of Survey

Begin Date	12/04/2025
End Date	01/10/2025

General Information

This project involves replacement of two existing Single Barrel Reinforced Concrete Box (RCB) Culverts along Highway 92 in Keokuk County, IA. Culvert 1 is a 4'x4' RCB located approximately 0.9 miles east of IA 21 and Culvert 2 is a 3'x3' RCB located approximately 1.0 miles east of IA 21.

Utility Information

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

Project Control

Primary Control: Three 1 Meter FENO monuments were set along Iowa Highway 92, Points 10, 20, and 30. Each point had four six-minute observations using the Iowa RTN, One observation on January 7, 2025 and three observations on January 10, 2025

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 13 (U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018

Alignment Information

The horizontal alignment for U.S. Hwy 92 this survey is a retrace of As-built Plans No. F-34(5). Survey stationing was equated to the plan crossing culvert at Sta. 203+87.10 Design No. 2362 and carried back and ahead with/without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

POT Sta. 203+87.10 As-built Plans Project No. F-34(5)
Survey POT Sta. 203+87.10

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 13 (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 13 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 2018u3

Point Name	Northing	Easting	Elevation	Code-Description
10	6796061.00	23385365.09	744.04	FENO 1 METER FENO MONUMENT WITH BRASS DISK
20	6796057.04	23384842.43	744.09	FENO 1 METER FENO MONUMENT WITH BRASS DISK
30	6795988.86	23383872.82	752.87	FENO 1 METER FENO MONUMENT WITH BRASS DISK

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.

ACCESS CONTROL PREVIOUSLY ACQUIRED.

FILE NO.	ENGLISH	DESIGN TEAM	IOWA DOT * OFFICE OF ROW	COUNTY	PROJECT NUMBER	SHEET NUMBER	

1

DENNIS I & BRENDA J WORKMAN
REVOCABLE TRUST

SE 1/4 SE 1/4
T-76N R-13W
SEC. 34

SW 1/4 SW 1/4
T-76N R-13W
SEC. 35

Washington TWP.
T-76N R-13W
SEC. 34

Washington TWP.
T-76N R-13W
SEC. 35

203+74
℄ 186'

204+24
℄ 186'

203+43
℄ 117'±EX.R/W

204+44
℄ 116'±EX.R/W

209+22
℄ 173'

209+92
℄ 175'

209+12
℄ 111'±EX.R/W

210+33
℄ 110'±EX.R/W

202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00 211+00 212+00 213+00

STA: 206+66.00
PDA 1963 Book 86 Page 423

STA: 211+85.00
PDA 1963 Book 86 Page 423

FO

Sta. 203+87.1
Skew 0° RT AH
4.0'x4.0'x193.5' RCB
8.0'x4.0'x10.5' Drop Structure
Skew 30° LT AH
D.A.=144 AC

Sta. 210+13.7
Skew 15° RT AH
3.0'x3.0'x143.0' RCB
5.0'x3.0'x12.5' Drop Structure
D.A.=34.0 AC

NE 1/4 NE 1/4
T-75N R-13W
SEC. 3

NWw 1/4 N 1/4
T-75N R-13W
SEC. 2

LOIS & ROBERT A TAYLOR

Warren TWP.
T-75N R-13W
SEC. 3

warren TWP.
T-75N R-13W
SEC. 2

Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

ROW Team: Hughes / Cuva
ROW #: NHSN-092-8(045)--2R-54
Plan Date: 6-9-2025
Color Legend:
- Property Lines
- Temporary Easement
- Permanent Acquisition
- Permanent Acquisition County
- Permanent Acquisition City

0 50
FEET

FILE NO.	ENGLISH	DESIGN TEAM AECOM	KEOKUK COUNTY	PROJECT NUMBER NHSN-092-8(044)--2R-54	SHEET NUMBER H.1

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108_25
3/28/24

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
	IA-92		Keokuk	No Travel Restrictions Expected on Offsite Detour				None					

108_23A
8/15/22

TRAFFIC CONTROL PLAN

This project is not considered a Traffic Critical Project. No travel restrictions are expected on the offsite detour shown in these plans.

While the culvert construction is being completed, IA-92 traffic shall be maintained via an off-site detour detailed in these plans. Detours are to be furnished, maintained and removed by the contractor. Refer to TC-252 for road closure and advanced signing details. Full road closure shall not last longer than 30 calendar days. If additional work is required outside of the roadway beyond the 30 calendar days, contractor shall utilize Standard Road Plan TC-202 for work within 15 feet of the traveled way.

Contractor will furnish, install, maintain and remove detour signs. Detour sign layout and quantities shown in these plans are for reference only and exact location shall be determined in the field. All existing signs that conflict with the detour shall be covered. All material, equipment and labor shall be included in the Traffic Control bid item.

111_01
10/14/22

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

108_26A
8/15/22

STAGING NOTES

Stage 1

Install off-site detour signage on detour route before traffic begins use of the detour route.

With traffic using detour, perform the culvert construction work. Off-site detour and road closure shall be limited to 30 calendar days.

Stage 2

Remove off-site signage.

Reopen IA-92 to normal traffic pattern.

Detour Route

Thornburg

22

Keswick

21

22

V45

What Cheer

21

0 4000
FEET

92

92

Proposed Culvert
Replacement Locations

See TC-252 for
Road Closure Details

Delta

Sigourney

IA 92 Proposed Detour Route

FILE NO. –	ENGLISH	DESIGN TEAM **AECOM**	**KEOKUK** COUNTY	PROJECT NUMBER **NHSN-092-8(044)--2R-54**	SHEET NUMBER **J.2**	

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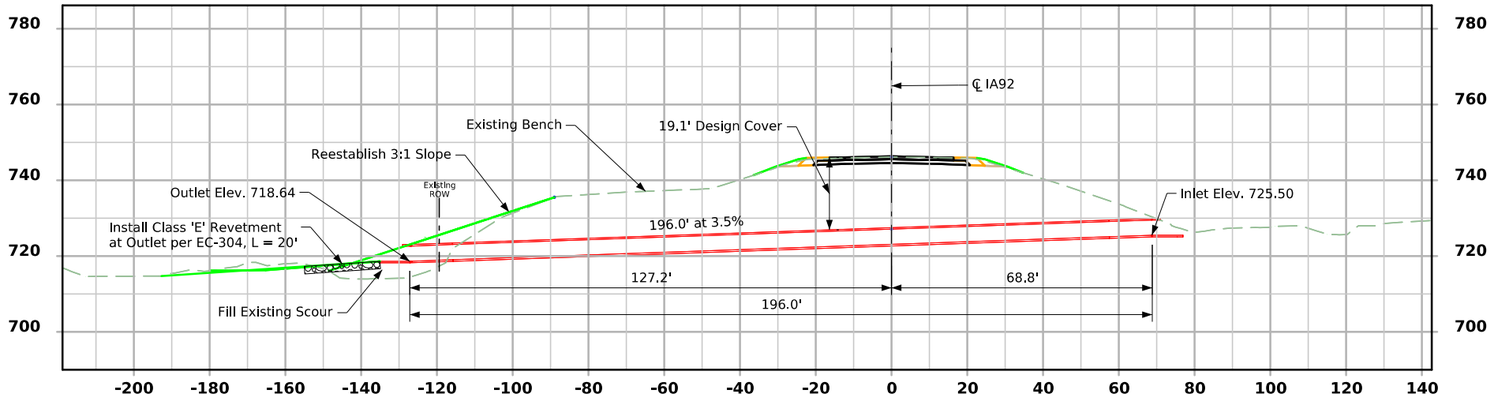
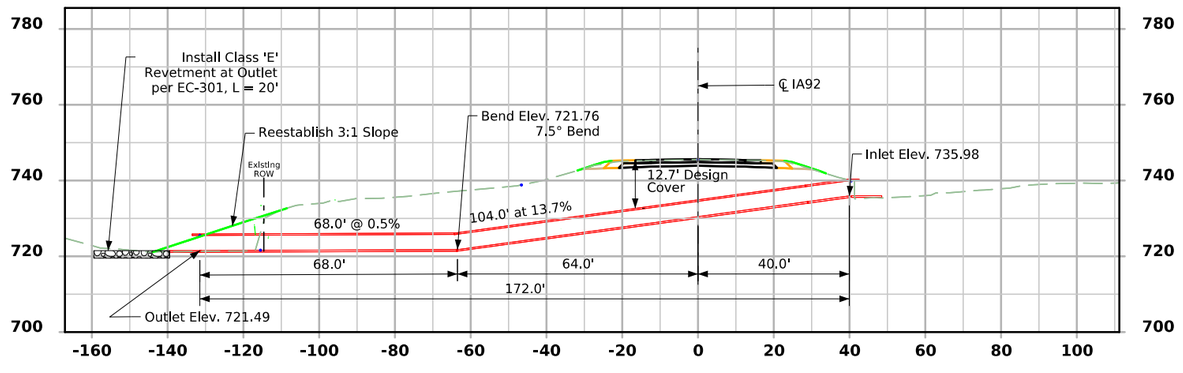


STA 203+54.22 - Twin 48" RCP's

(Along Pipe, 12° LA Skew)



STA 210+17.08 - 48" RCP

(Along Pipe, 15° RA Skew)

CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature
Aggregate	
(64)	Choke Stone
(42)	Engineering Fabric
(8)	Flooded Backfill
(92)	Macadam Stone
(20)	Modified
(12)	Plowing Shaping
(14)	Porous Backfill
(8)	Revetment Class A
(6)	Revetment Class B
(62)	Revetment Class C
(188)	Revetment Class D
(28)	Revetment Class E
(12)	Shoulder Special Backfill
(12)	Special Backfill
(20)	Subbase
(20)	Subbase Lower
(20)	Subbase Upper
(118)	Subgrade Treatment
Asphalt	
(207)	HMA Base Course
(207)	HMA Interim Course
(207)	HMA Surface Course
Bridge	
(0)	Bridge
Concrete	
(0)	Barrier Concrete
(0)	Barrier Concrete Footing
(0)	Curb Gutter
(48)	Flowable Mortar
(0)	Median Concrete
(0)	PCC Pavement
(0)	Sidewalk
Existing	
(0)	Existing Pavement
Shoulder	
(209)	Shoulder HMA
(0)	Shoulder PCC
(6)	Shoulder Granular
Structural	
(112)	Noise Wall
(112)	Noise Wall Footing
(112)	Retaining Wall Back
(112)	Retaining Wall Back Excavate
(112)	Retaining Wall Face
(112)	Retaining Wall Front Excavate
(112)	Retaining Wall Front Footing
(112)	Retaining Wall MSE Gutter
(112)	Retaining Wall Reinforced Earth

Design Color No.	Feature
Grading	
(8)	Behind Curb Cut
(6)	Granular
(13)	Granular Back Fill
(48)	Rock Undercut
(8)	Shoulder Earth Fill
(2)	Side Slopes
(226)	Side Slopes Dressing
Substrata	
(128)	Boulder
(209)	Boulder Removed
(48)	Broken Weathered
(210)	Broken Weathered Removed
(3)	Core Out
(115)	Core Out Remove Only
(195)	Core Out Remove and Replace
(203)	Existing Pavement
(184)	Existing Pavement Remove Only
(200)	Existing Pavement Remove and Replace
(6)	Loam
(211)	Loam Removed
(80)	Rock
(212)	Rock Removed
(4)	Select Sand
(214)	Select Sand Removed
(3)	Shale
(215)	Shale Removed
(10)	Topsoil
(2)	Topsoil Remove Only
(4)	Topsoil Remove and Replace
Unsuitable / Waste	
(3)	Unsuitable Type A
(216)	Unsuitable Type A Removed
(13)	Unsuitable Type B
(217)	Unsuitable Type B Removed
(11)	Unsuitable Type C
(218)	Unsuitable Type C Removed
(3)	Waste
(219)	Waste Removed

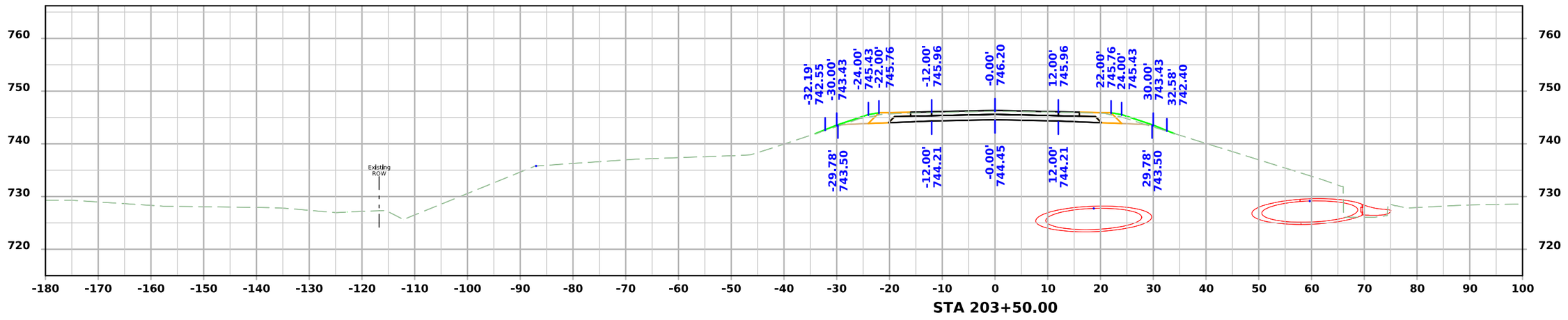
NOTES:

NOTES:

CROSS SECTIONS
LEGEND AND INFORMATION SHEET

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

ML - IA 92



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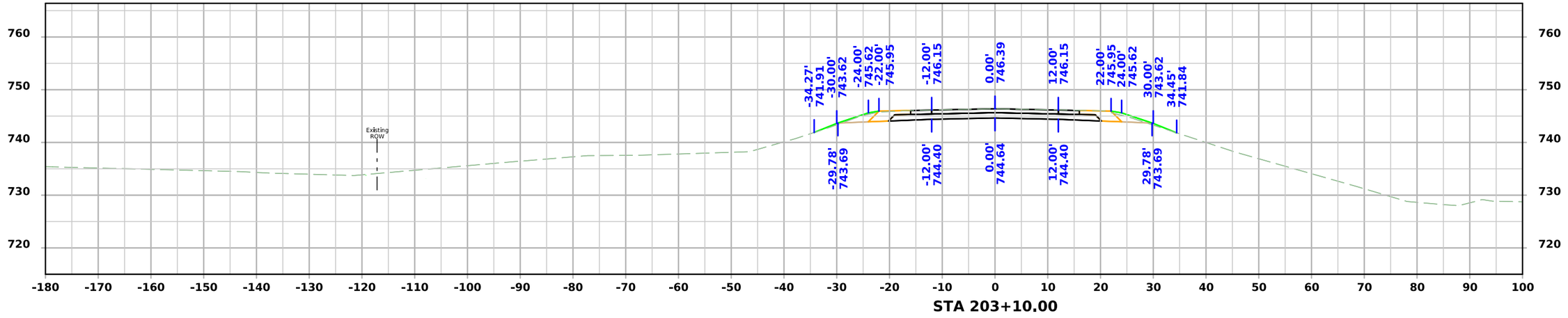

STA 203+10.00

FILE NO. -	ENGLISH	DESIGN TEAM **AECOM**	**KEOKUK** COUNTY	PROJECT NUMBER **NHSN-092-8(044)--2R-54**	SHEET NUMBER **W.2**

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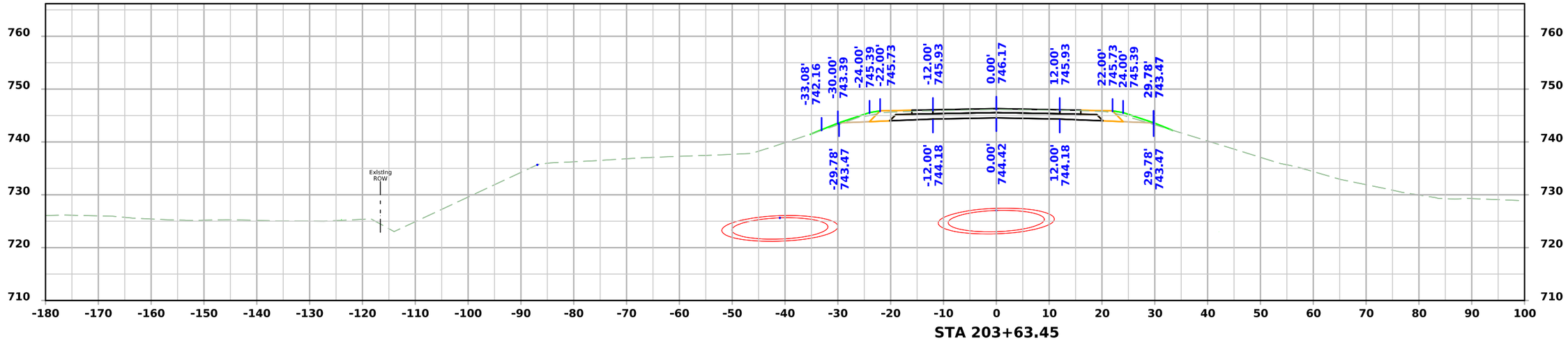
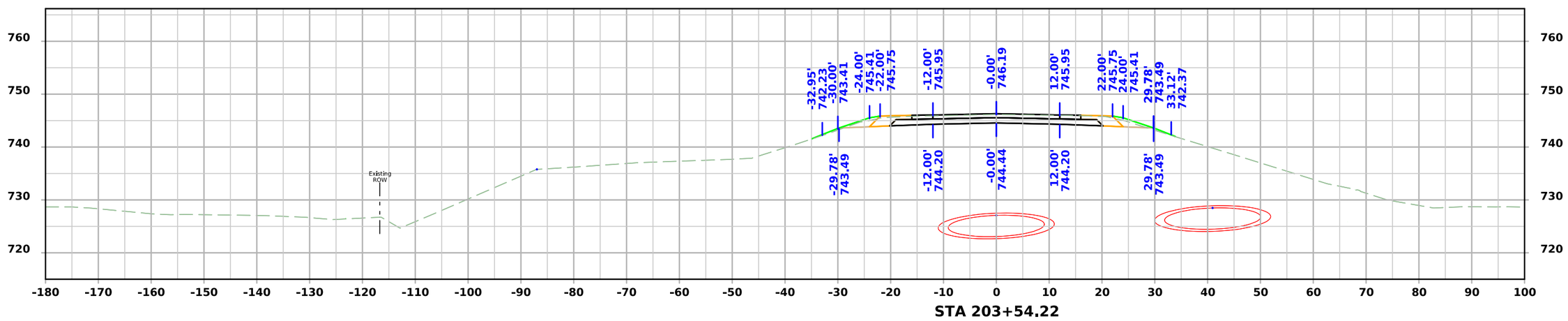
ML - IA 92



STA 203+63.45



STA 203+54.22

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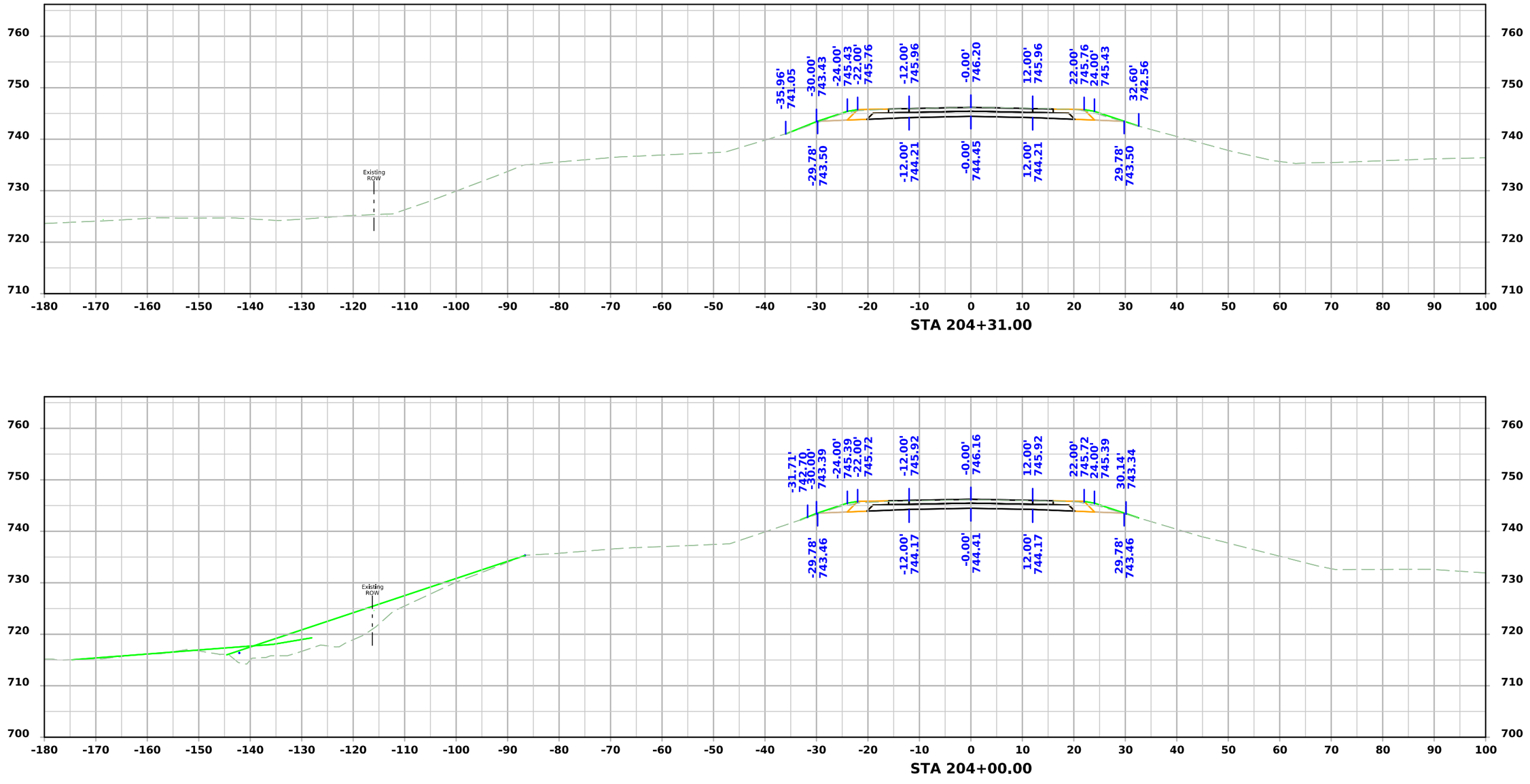
ML - IA 92



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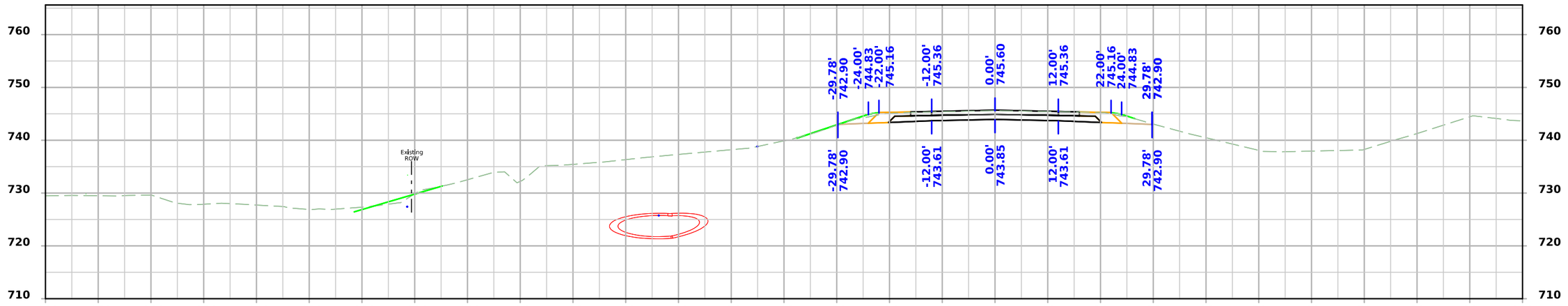
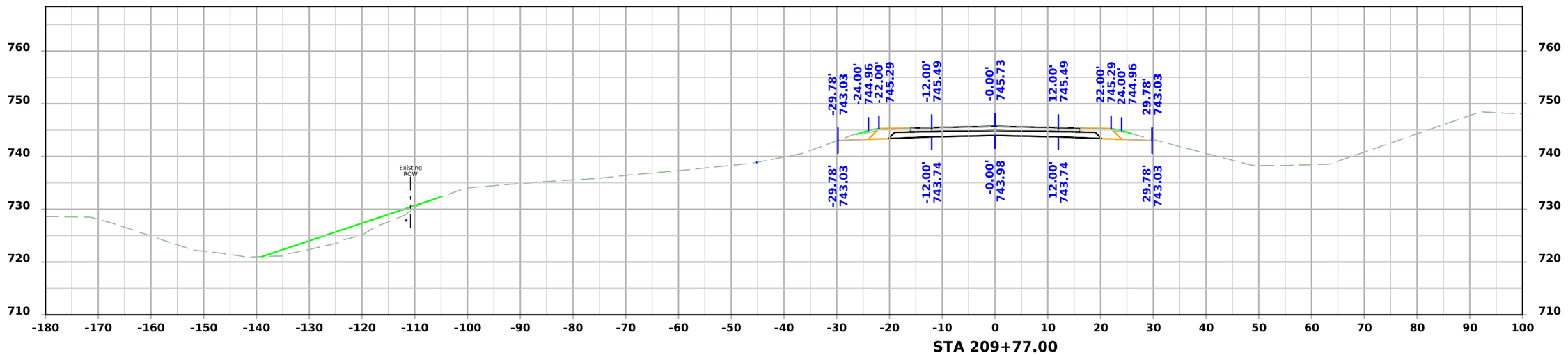
ML - IA 92



STA 210+00.00

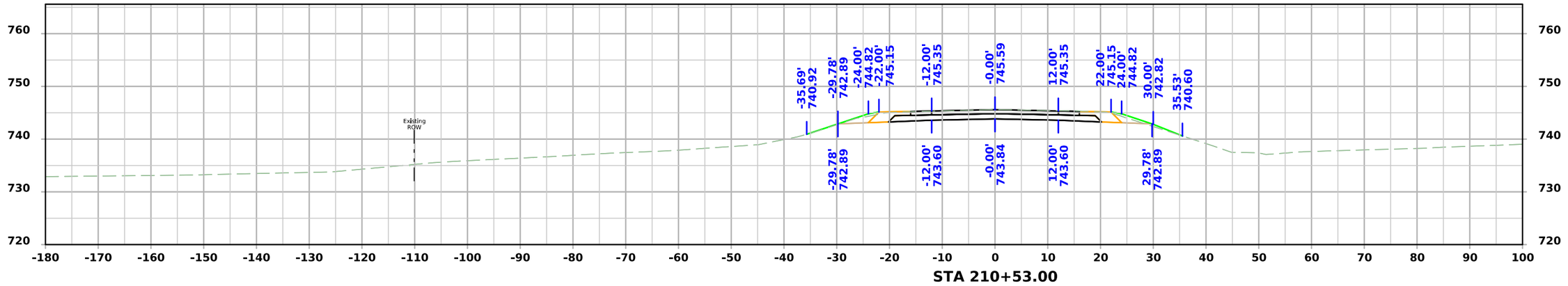


STA 209+77.00

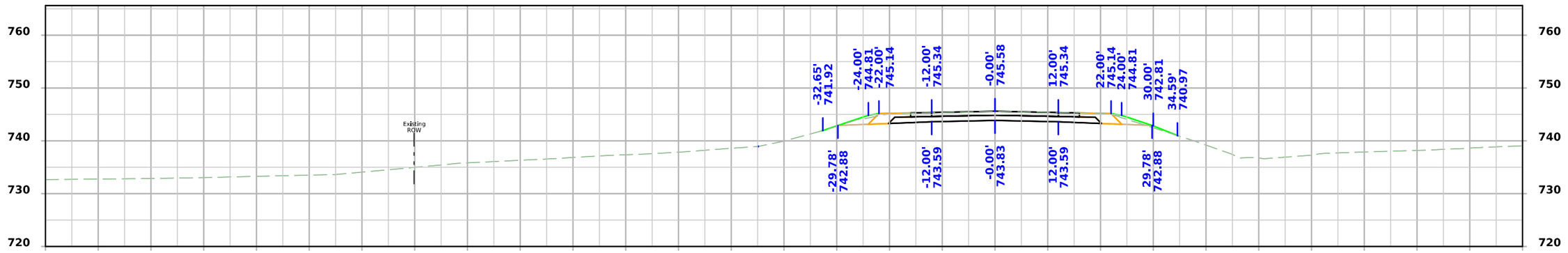
FILE NO. –	ENGLISH	DESIGN TEAM **AECOM**	**KEOKUK** COUNTY	PROJECT NUMBER **NHSN-092-8(044)--2R-54**	SHEET NUMBER **W.5**

2:41:00 PM 5/21/2025 tyler.gamerdinger pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5409202024\Design\CADD_Files\Sheet_Files\W02_54092044_Z13.dgn

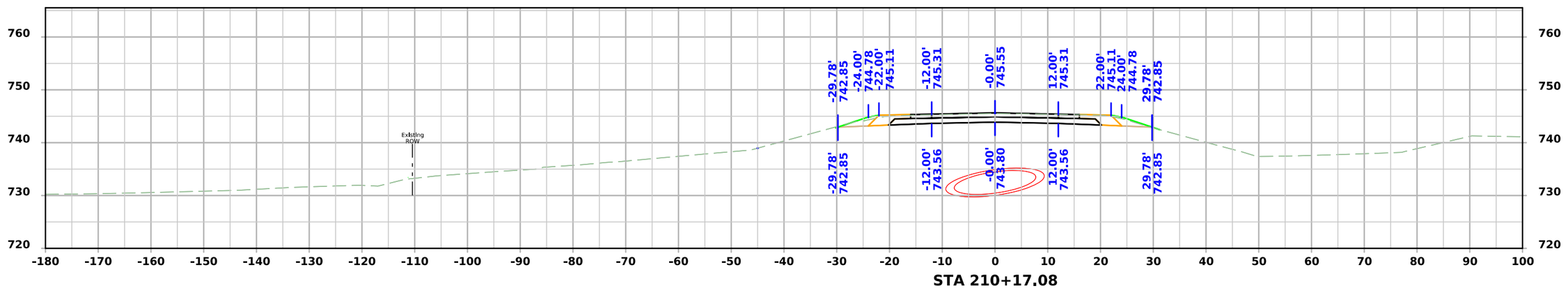
ML - IA 92



STA 210+53.00



STA 210+50.00



STA 210+17.08

FILE NO. -	ENGLISH	DESIGN TEAM **AECOM**	**KEOKUK** COUNTY	PROJECT NUMBER **NHSN-092-8(044)--2R-54**	SHEET NUMBER **W.6**

2:41:00 PM 5/21/2025 tyler.gamerdinger pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5409202024\Design\CADD_Files\Sheet_Files\W02_54092044_Z13.dgn