

Index of Sheets	
No.	Description
<b>Bridge Plan</b>	
A.1	Title Sheet
A.2	Location Map Sheet
<b>Road Plan</b>	
V.1	Estimated Quantities - Design 124
V.2-3	Design 124
<b>Road Sheets</b>	
C.1	Estimated Quantities - Road
D.1-2	Plan and Profile Sheets
G.1-4	Survey Sheets
J.1	Traffic Control Sheets
RC.1	Estimated Quantities - Erosion Control
R.1-2	Erosion Control Sheets



PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM  
KEOKUK COUNTY**  
Revetment

IA 21 over Coal Creek  
5.0 miles N of Jct. 92

TOTAL	16
PROJECT IDENTIFICATION NUMBER	23-54-021-010
CONTRACT ID NUMBER	
PROJECT NUMBER	MB-021-5(505)17--77-54
R.O.W. PROJECT NUMBER	(XXX)
PROJECT DIRECTORY NUMBER	5402101023

Refer to the Plan Sheets for list of applicable specifications.

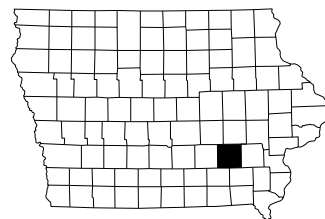
Value Engineering Saves. Refer to Article 1105.14 of the Specifications.

The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2015, plus applicable general supplemental specifications development specifications, supplemental specifications and special provisions shall apply to construction work on this project



Preliminary  
Not For Construction

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




**Standard Road Plans**  
Standard Road Plans are listed on sheet number C.1

**Design Data Rural**  
2021 AADT \_\_\_\_\_ 1990 V.P.D. \_\_\_\_\_  
TRUCKS \_\_\_\_\_ 15 % \_\_\_\_\_

Index Of Seals		
Sheet No.	Name	Type
V.1-V.3	Robert Tipton	Structural Design
C1, D.1-2 & J.1	Robert Tipton	Roadway Design
RC.1	Robert Tipton	Erosion Control
R.1-R.2	Robert Tipton	Erosion Control
G.1-G.4		Survey

**Structural Design**

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



Signature Robert Tipton Date 03-31-2023  
Printed or Typed Name \_\_\_\_\_  
My license renewal date is December 31, 2024

Pages or sheets covered by this seal: A.1-A.2, V.1-V.3, C.1, D.1-D.2, J.1, RC.1 & R.1-R.2



## ESTIMATED REVETMENT QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUAN.
1	2402-2723000	Excavation, Class 23	CY	1389	
2	2501-5775000	Piles, Steel Sheet	SF	2075	
3	2507-3250005	Engineering Fabric	SY	153	
4	2507-6800061	Revetment, Class E	TON	189	
5	2533-4980005	Mobilization	LS	1	
6	2599-9999010	Vibration Monitoring	LS	1	
7	2599-9999014	Erosion Control System	SF	1060	

## ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2402-2723000	Includes all work in preparation of grade for placement of revetment including excavation to the limits shown on the drawings, backfill utilizing excavated material, and disposal of excess excavated material. The bounding limits in accordance with Article 2402.04, b, of the Standard Specifications are not applicable.  Excess excavated material shall be disposed of by the Contractor off of the project site.
3	2507-3250005	The tabulation includes estimated locations for placement of "Engineering Fabric" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 30% additional quantity for other locations of erosion. Engineering fabric shall be material as specified for embankment erosion control in accordance with Article 4196.01.B.3, of the Standard Specifications. Material shall be measured in sq. yard of actual area covered. Refer to plan and details on Sheet V.2.
4	2507-6800061	The tabulation includes estimated locations for placement of "Revetment, Class E" to address erosion to be encountered during construction. Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 30% additional quantity for other locations of erosion. Estimated at 1.6 ton/cu yd. Class E revetment shall meet requirements of Article 4130. Broken Concrete and granite is not allowed. Refer to details and locations on Sheet V.2. 1 foot of revetment depth assumed after any regrading of the northeast and northwest bank.
6	2599-9999010	The Contractor shall develop a work plan which minimizes the potential for possible vibration damage due to construction and demolition activities near vulnerable structures. See Special Provision "Vibration Monitoring" for more details.
7	2599-9999014	For designing, furnishing, and installing complete in place factory produced erosion control system. See special provision "Erosion Control System" for more details. Include cost for all labor, materials and equipment necessary to install cabled concrete mats, engineering fabric, clamps, anchors, joint material, joint installation, reinforcing bars, excavation and miscellaneous concrete in "Erosion Control System" bid item.

### GENERAL NOTES:

1. This design is for channel repairs surrounding the twin culverts on IA 21 over Coal Creek, Design 268. Project location is approximately 5.0 miles north of JCT 92. Electronic copies of original design plans will be made available to the contractor as part of the e-files supplied with the contract documents.

Repairs shall consist of:

1. Install vibration monitoring to existing building at northwest corner of culvert.
2. Remove top level of brush adjacent to building to facilitate installation of steel shoring, but do not remove roots.
3. Install steel shoring adjacent to building as shown on sheet V.2 and V.3.
4. Clear remaining brush and silt within culvert and channel and grade at 1.5:1 along north bank on either side of culvert as shown on sheet V.2.
5. Top north bank with Class E Revetment.
6. Install erosion control system on southwest bank as shown on sheet V.2.

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

3. Roadway quantities shown elsewhere in these plans.

4. Refer to title sheet for traffic data.

### Specifications:

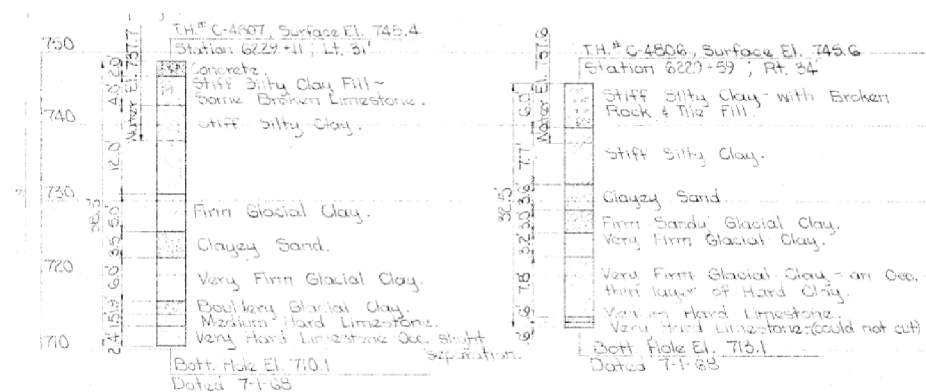
Construction: Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series of 2015, plus applicable general supplemental specifications, developmental specifications, supplemental specifications and special provisions shall apply to construction work on this project including "Erosion Control System" & "Vibration Monitoring"

### 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)

Design No.	Type of Work
268	Original Plans
124	Revetment



EXISTING BORING DETAIL 268 DESIGN PLANS

## Design For 0 Degree Twin 23'-10 x 12'-6 Reinforced Concrete Box Culvert

### General Notes and Quantities

STA. 6229+26 (Q IA 21) Turn-In Date: June 2023

### Keokuk County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 124 Design Sheet No. 1 of 3 FHWA No. 32610

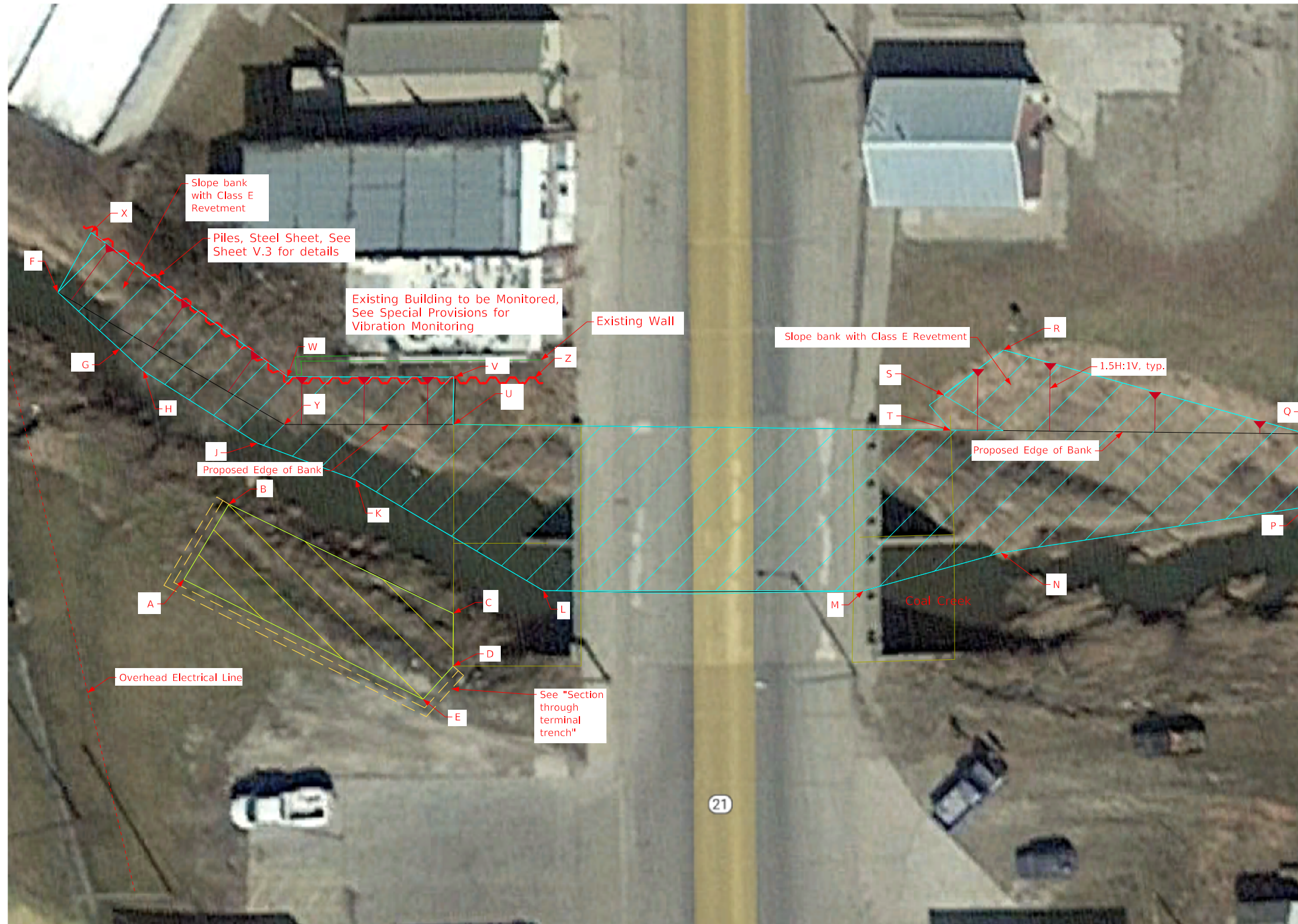


Benchmark: IDOT Brass Plug at SE corner of culvert.  
 N 6819008.385 E 23379857.63 Elev. 749.297

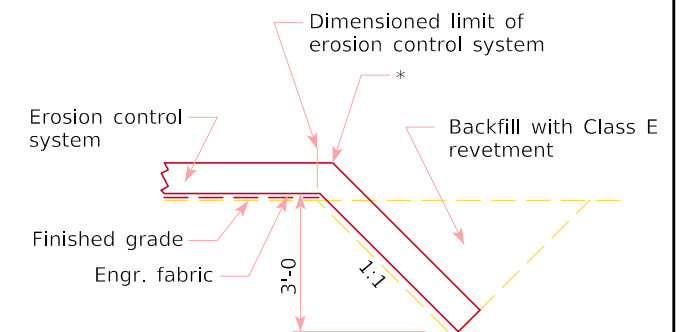
**EROSION STONE, EROSION CONTROL SYSTEM,  
 AND SHEET PILE WALL LOCATIONS**

Stations and Offsets based on IA 21 Alignment

(A) Sta. 6229+61.24, 109.16' Lt. N 6819026.32, E 23379827.18 Elev. 745.00	(N) Sta. 6229+67.25, 63.45'Rt. N 23379827.19, E 23379827.19 Elev. 734.94
(B) Sta. 6229+77.20, 99.66' Lt. N 681904.28, E 23379827.21 Elev. 735.00	(P) Sta. 6229+77.05, 128.06'Rt. N 6819042.13, E 23379827.20 Elev. 735.00
(C) Sta. 6229+54.24, 52.21' Lt. N 6819019.32, E 23379827.16 Elev. 734.68	(Q) Sta. 6229+92.45, 128.03'Rt. N 6819057.53, E 23379827.23 Elev. 735.00
(D) Sta. 6229+43.08, 52.24' Lt. N 6819008.16, E 23379827.14 Elev. 734.68	(R) Sta. 6230+10.08, 63.90'Rt. N 6819075.15, E 23379827.27 Elev. 745.00
(E) Sta. 6229+36.07, 58.57' Lt. N 6819001.15, E 23379827.13 Elev. 747.00	(S) Sta. 6229+98.41, 48.26'Rt. N 6819063.49, E 23379827.24 Elev. 745.00
(F) Sta. 6230+21.89, 135.88' Lt. N 6819086.97, E 23379827.29 Elev. 735.00	(T) Sta. 6229+93.20, 52.71'Rt. N 6819058.28, E 23379827.23 Elev. 735.00
(G) Sta. 6230+13.60, 126.81' Lt. N 6819078.67, E 23379827.27 Elev. 735.00	(U) Sta. 6229+94.10, 52.33' Lt. N 6819059.18, E 23379827.24 Elev. 734.68
(H) Sta. 6230+05.30, 117.74' Lt. N 6819070.38, E 23379827.26 Elev. 735.00	(V) Sta. 6230+04.02, 52.25' Lt. N 6819069.10, E 23379827.26 Elev. 743.00
(J) Sta. 6229+90.10, 93.65' Lt. N 6819055.18, E 23379827.23 Elev. 735.00	(W) Sta. 6230+04.14, 87.31' Lt. N 6819069.22, E 23379827.26 Elev. 743.00
(K) Sta. 6229+82.37, 72.85' Lt. N 6819047.45, E 23379827.21 Elev. 735.00	(X) Sta. 6230+34.55, 128.86' Lt. N 6819099.63, E 23379827.31 Elev. 743.00
(L) Sta. 6229+59.06, 33.19' Lt. N 6819024.14, E 23379827.17 Elev. 734.68	(Y) Sta. 6229+94.04, 88.03' Lt. N 6819059.11, E 23379827.24 Elev. 735.00
(M) Sta. 6229+59.11, 34.33' Rt. N 6819024.19, E 23379827.17 Elev. 734.94	(Z) Sta. 6230+04.10, 35.07' Lt. N 6819069.18, E 23379827.26 Elev. 743.00



\* Location points A thru E



**SECTION THROUGH TERMINAL TRENCH**



**LEGEND**

- Clean out brush and silt. Grade at 1.5:1. Top with erosion stone along banks only (see Sections on Sheet V.3)
- Erosion Control System

**LOCATION**

IA 21 over Coal Creek  
 River Overflow  
 T-76N R-13W  
 Section 9  
 Town What Cheer  
 Keokuk County  
 FHWA No. 32610  
 Bridge Maint. No. 5417.4S021  
 Latitude 41.39917073  
 Longitude -92.35466996

**HYDRAULIC DATA**

DRAINAGE AREA = XX SQ. MI.  
 Q = XXX CFS

**UTILITIES:**

Electrical: Alliant Energy Confidential  
 Communicatons: Mediacom Cable  
 Communicatons: What Cheer, City of  
 Communicatons: Windstream Communications

Design For 0 Degree  
**Twin 23'-10 x 12'-6**  
**Reinforced Concrete Box Culvert**

**Situation Plan**

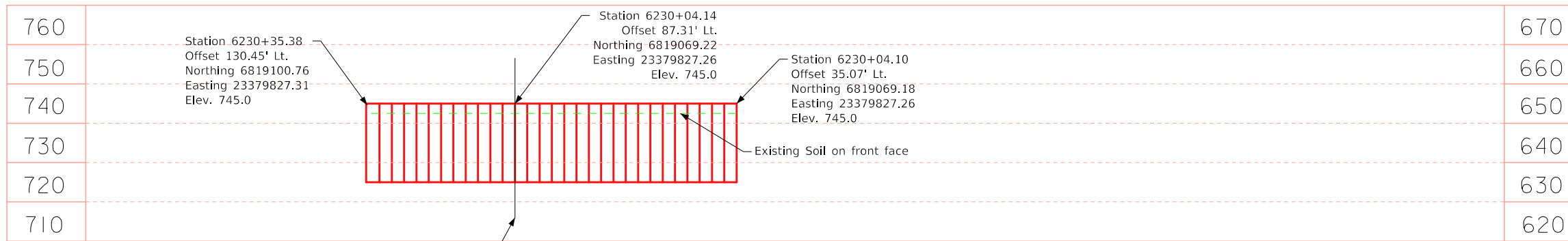
STA. 6229+26 (C IA 21) Turn-In Date: June 2023

**Keokuk County**

IOWA DEPARTMENT OF TRANSPORTATION

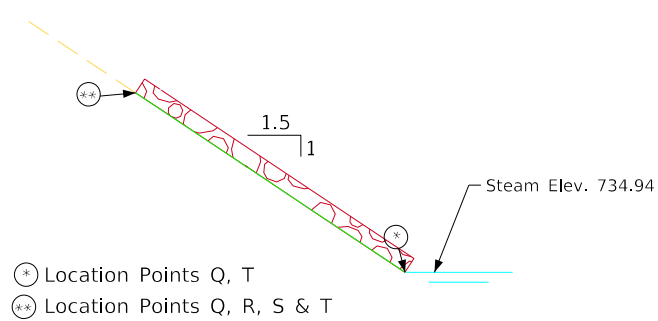
Design No. 124 Design Sheet No. 2 of 3 FHWA No. 32610



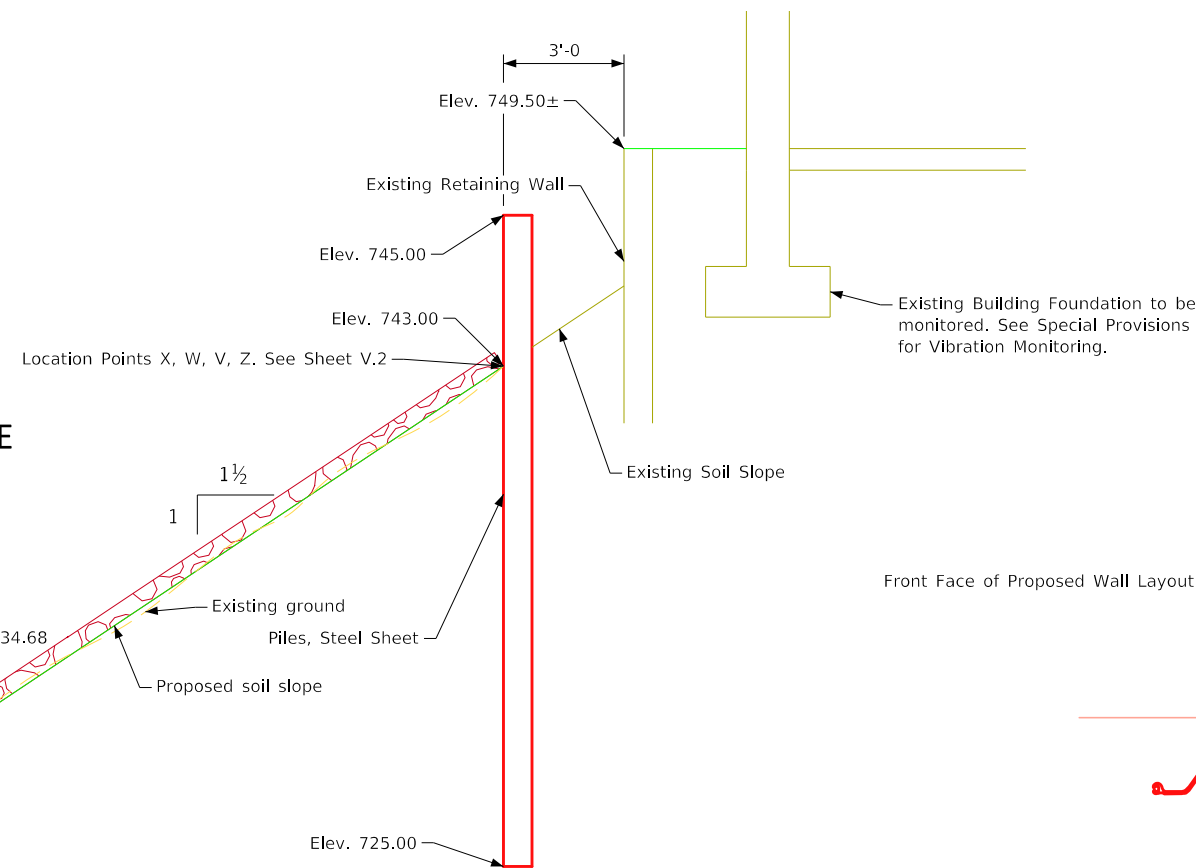


Benchmark: IDOT Brass Plug at SE corner of culvert.  
N 6819008.385 E 23379857.63 Elev. 749.297

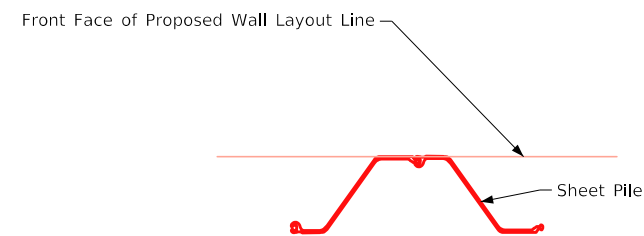
**ELEVATION ALONG FRONT FACE OF PROPOSED WALL**  
(Looking North)



**SECTION AT BANK BEYOND SHEET PILE**



**SECTION ALONG SHEET PILE**



**PARTIAL SECTION THRU SHEET PILE**

**Permanent Sheet Pile Wall Notes:**

The steel sheet pile wall shall be installed at the location shown on sheet V.2. and in accordance with the elevation shown on these plans. All Sheet piles shall be driven to Elev. 725.00, sheet piles shall have a minimum section modulus of 24.2 in<sup>3</sup> per foot on wall based on a yield strength of 50 ksi. The sheet piling is being installed to retain embankment and is a permanent part of the structure upon completion of the project. Wall stations and offsets are given along front face of wall. This is the nominal wall location. Nominal adjustments to wall layout are acceptable. After driving sheet piling, they shall be cut off neatly in a straightline at the elevations shown.

Design For 0 Degree  
**Twin 23'-10 x 12'-6**  
**Reinforced Concrete Box Culvert**  
**Sheet Pile Sheet**  
 STA. 6229+26 (C IA 21) Turn-In Date: June 2023  
**Keokuk County**  
 IOWA DEPARTMENT OF TRANSPORTATION  
 Design No. 124 Design Sheet No. 3 of 3 FHWA No. 32610

<b>100-1D</b> 10-18-05
<b>PROJECT DESCRIPTION</b>
This Project is to install temporary shoring adjacent to northwest corner of abandoned building, remove silt and brush within culvert and north bank and grade at 3:1, and install articulated concrete block mat along southwest bank. The project is located at IA 21 over Coal Creek.

<b>100-4A</b> 10-29-02		
<b>ESTIMATE REFERENCE INFORMATION</b>		
Item No.	Item Code	Description
1	2101-0850001	CLEANING AND GRUBBING Refer to Sheet V.2. All material generated as a result of Clearing and Grubbing shall become the property of the contractor and must be disposed off site. All wood material must be disposed of according to Iowa Department of Agriculture and Land Stewardship Emerald Ash Borer Quarantine Order. For more information see <a href="http://www.iowatreepests.com">www.iowatreepests.com</a> .
2	2528-8445110	TRAFFIC CONTROL Refer to C sheets for Standard Road Plans and J sheets for Traffic Control Notes.

<b>100-0A</b> 10-28-97					
<b>ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)</b>					
Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2101-0850001	CLEARING AND GRUBBING	ACRE	0.25	
2	2528-8445110	TRAFFIC CONTROL	LS	1.00	

<b>105-4</b> 10-18-11		
<b>STANDARD ROAD PLANS</b>		
The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	4-18-23	Work Within 15 ft of Traveled Way
TC-213	4-18-23	Lane Closure with Flaggers






















SEE R AND V SHEETS FOR ADDITIONAL BID ITEMS AND QUANTITIES

<b>262-6</b> 10-18-05
<b>UTILITIES (NOT A POINT 25 PROJECT)</b>
This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.

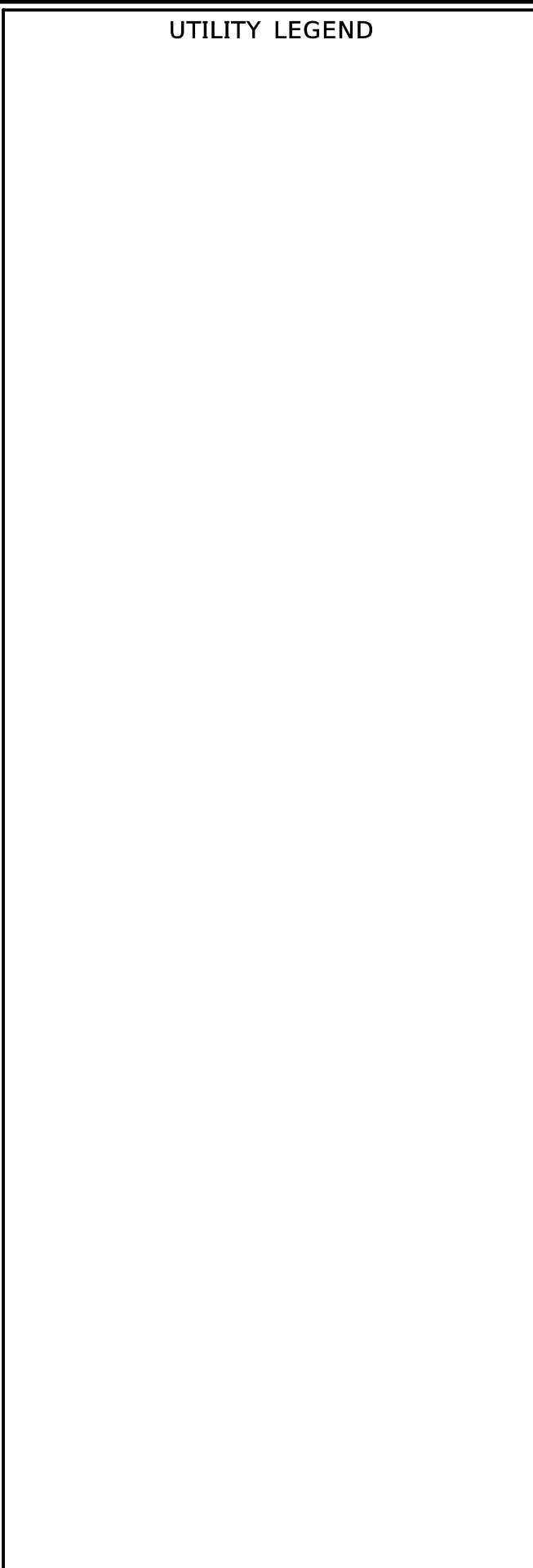
<b>253-1</b> 10-18-11
<b>MEDIAN CROSSOVER</b>
The Contractor is prohibited from using any established or other type median crossover on this project unless specifically designated for the Contractor's use by this plan.






















### SURVEY SYMBOLS

-  BLD Building
-  BNK Stream Banks
-  BRG Bridge
-  CON Concrete Slab
-  CP Control Point
-  CU Curb
-  EB Electrical Box
-  ENU Edge of Entrance, Unpaved
-  EP Edge of Pavement
-  FW Wire Fence
-  GDL Steel Guardrail
-  LUM Luminaire
-  MH Manhole
-  PR Power Riser Pole
-  RET Retaining Wall
-  SWK Sidewalk
-  TDC Deciduous Tree
-  TLNR Treeline Right
-  TR Telephone Riser Pole
-  UE Utility Elevation
-  WV Water Valve







### UTILITY LEGEND














### PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING		Design Color No.	
Lavender	(9)		Temporary Pavement Shading
Yellow	(4)		Proposed Pavement Shading
Orange	(6)		Proposed Granular Shading
Orange	(70)		Proposed Shoulder Granular Shading
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)		Grading Shading
Orange, Light	(134)		Proposed Granular Entrance Shading
Yellow	(220)		Proposed Paved Entrance Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading
Green, Light	(225)		Existing Pavement Shading
Red	(3)		Proposed Structure Shading
Red	(3)		Delineates Restricted Areas

### PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

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

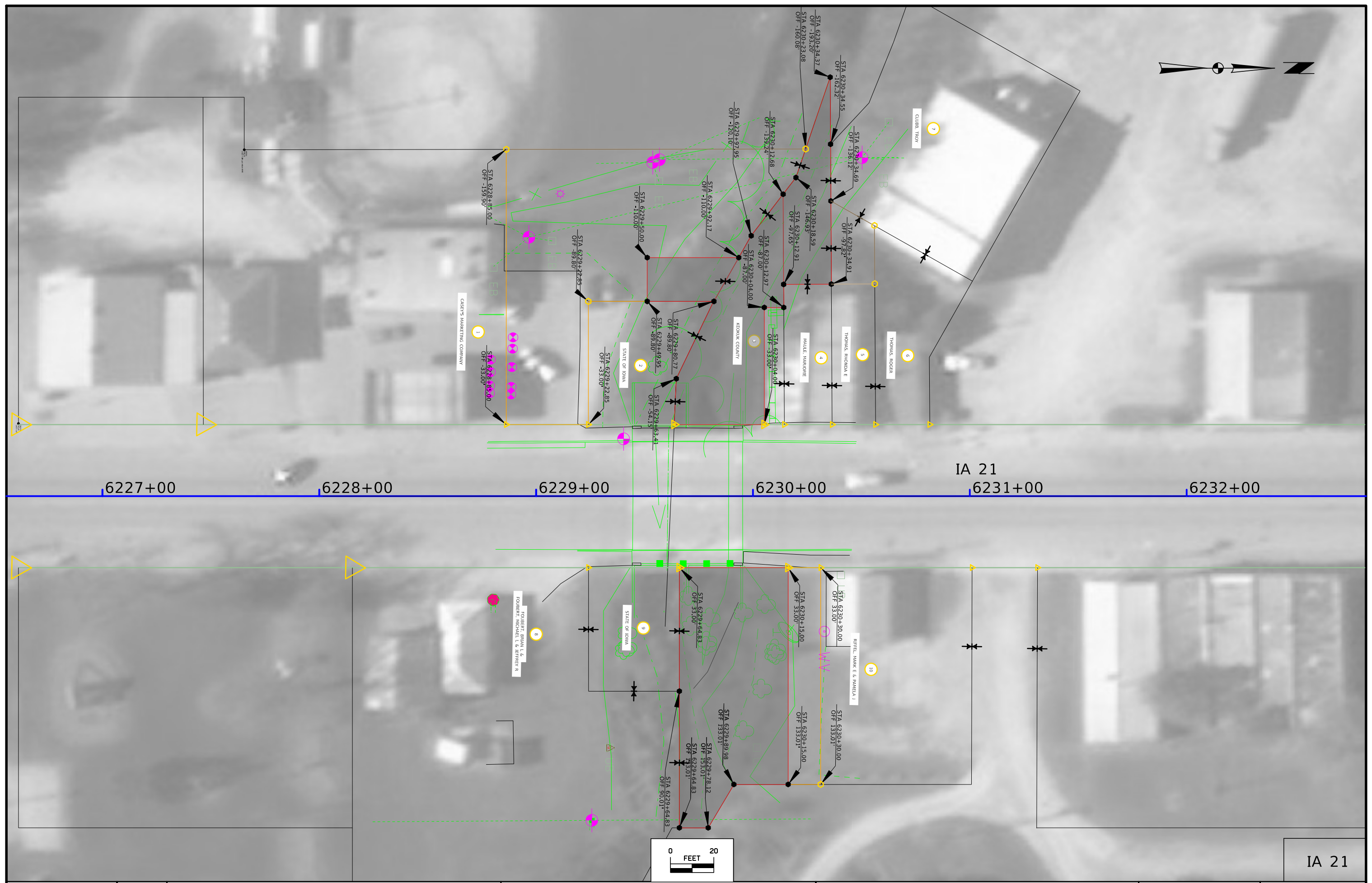
-  Reference Point
-  Station
-  Section Corner
-  Ground Line Intercept
-  Saw Cut
-  Guardrail
-  Trench Drain
-  HighTension Cable Guardrail
-  Sheet Pile
-  Pavement Removal
-  Clearing & Grubbing Area

### RIGHT-OF-WAY LEGEND

-  Proposed Right-of-Way
-  Existing Right of Way
-  Existing and Proposed Right-of-Way
-  Easement and Existing Right-of-Way
-  Easement (Temporary)
-  Easement
-  Access Control
-  Property Line
-  Property Identifier

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



IA 21



## Survey Information

### SURVEY INDEX

County: Keokuk  
PIN: 23-54-021-010  
Project Number: MB-021-5(505)17--77-54  
Location: 5.0 miles N of Jct. 92  
Type of Work: Rip Rap  
Project Directory: 5402101023

### Survey Personnel

Ryan Remling – Survey Party Chief  
Pedro Zamora – Assistant Survey Party Chief

### Date(s) of Survey

Begin Date 03/07/2023  
End Date 03/13/2023

### General Information

This survey is for Rip Rap along the banks of Coal Creek beneath the IA Hwy 21 bridge. This survey request was for the Coal Creek banks, berm transitions, and adjacent properties.

### 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

Coordinates were determined Using the IRCS Network and taking 3 observations at each control point throughout the day and averaging those positions. For additional details of the control survey, contact ISG Inc.

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: GEOID 12B

### Alignment Information

The horizontal alignment for IA Hwy 21 is a retrace of As-built Plans No. F-18-7(24)--20-19 and No. P-550. Survey stationing was equated to the plan POT at Sta. 265+45.2 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

South Edge of Bridge STA 6229+43.00 Plans No. F-18-7(24)--20-19  
Survey South Edge of Bridge STA 6229+43.00

North Edge of Bridge STA 6229+94.00 Plans No. F-18-7(24)--20-19  
Survey North Edge of Bridge STA 6229+6229+94.00

## 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: 12B

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 12 (U.S. Survey Foot)  
 VERT. DATUM: NAVD88  
 Geoid Model: 12B

POINT NAME	NORTHING	EASTING	ELEVATION	FEATURE DEFINITION - DESCRIPTION
BM1	6819008.385	23379857.633	749.297	BENCHMARK, IDOT BRASS PLUG
CP1	6819047.461	23380042.897	749.905	1/2" REBAR YELLOW PLASTIC CAP, ISG MARK
CP2	6819017.232	23379705.682	846.557	1/2" REBAR YELLOW PLASTIC CAP, ISG MARK
CP3	6818670.185	23379799.953	748.091	CUT X ON INTAKE

**ALIGNMENT COORDINATES**

101-16  
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	IA 21	6228+00.00	6818865.078	23379826.875															
2	IA 21	6232+00.00	6819265.078	23379827.620															

108-23A  
08-01-08

### TRAFFIC CONTROL PLAN

Traffic on IA 21 shall be maintained at all times.

Lane closures on IA 21:

- Lane closures shall be limited to delivery and removal of equipment and materials.

108-25  
10-21-14

### 511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			No restrictions expected.									

ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)					
Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE, EC-303	LF	200	
2	2602-0000212	FLOATING SILT CURTAIN (HANGING)	LF	454	
3	2602-0000240	MAINTENANCE OF FLOATING SILT CURTAIN	LF	227	
4	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	200	
5	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	200	
6	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	400	
7	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
8	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	

100-1A  
07-15-97

INDEX OF TABULATIONS		
Tabulation	Tabulation Title	Sheet No.
RC Sheets		
100-1A	ESTIMATED PROJECT QUANTITIES (1 DIVISION PROJECT)	RC.1
100-4A	ESTIMATE REFERENCE INFORMATION	RC.1
100-10	FLOATING SILT CURTAINS	RC.1
105-4	STANDARD ROAD PLANS	RC.1
111-25	INDEX OF TABULATIONS	RC.1
232-3A	EROSION CONTROL (RURAL SEEDING)	RC.1
281-1	SECTION 404 PERMIT AND CONDITIONS	RC.1
281-3	STORM WATER BEST MANAGEMENT PRACTICES	RC.1

111-25  
10-18-11

ESTIMATE REFERENCE INFORMATION		
Item No.	Item Code	Description
1	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE, EC-303
-	-	-
2	2602-0000212	FLOATING SILT CURTAIN (HANGING)
-	-	-
3	2602-0000240	MAINTENANCE OF FLOATING SILT CURTAIN
-	-	-
4	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement.
5	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement.
-	-	-
6	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTR OL DEVICE
-	-	-
7	2602-0010010	MOBILIZATIONS, EROSION CONTROL
-	-	-
8	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL
-	-	-

100-4A  
10-29-02

STANDARD ROAD PLANS		
The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
EC-202	10-21-14	Floating Silt Curtain
EC-204	04-20-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-303	10-20-20	Stabilized Construction Entrance
EC-502	04-21-15	Seeding in Rural Areas

105-4  
10-18-11

EROSION CONTROL (RURAL SEEDING)	
Area to be seeded is estimated to be less than 1 acre. If the contractor determines the area exceeds 2 acres, notify the Engineer. Approved quantity in excess of 2 acres will be paid for as extra work according to Article 1109.03,8 of the Standard Specifications.	
Following the completion of work in a disturbed area and according to the seeding dates in Section 2601 of the Standard Specifications, place seed, fertilizer, and mulch on the disturbed area lying 8 feet adjacent to shoulder and median as follows:	
Place seed and fertilize according to the requirements of Article 2601.03,C,3 and Section 4169 of the Standard Specifications.	
Place mulch according to the requirements of Articles 2601.03,E,2,a and 4169.07,A of the Standard Specifications.	
Preparing the seedbed, furnishing and applying seed, fertilizer, and mulch are all incidental to mobilization and will not be paid for separately.	

232-3A  
10-19-21

SECTION 404 PERMIT AND CONDITIONS	
Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide, Permit No.3. A copy of this permit is available from the Iowa DOT website ( <a href="http://www.envpermits.iowadot.gov/">http://www.envpermits.iowadot.gov/</a> ). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.	

281-1  
10-18-16

FLOATING SILT CURTAINS					
Refer to EC-202					
Station	Hanging	Containment	Clean-out (Containment)	Maintenance of Floating Silt Curtain	Remarks
	LF	LF	LF	LF	
6229+80.00	110.0			55.0	
6230+39.00	344.0			172.0	
<b>Total</b>	<b>454.0</b>			<b>227.0</b>	

100-10  
10-21-14

RESTRICTED STREAM ACCESS	
A low water crossing for the Contractor's convenience is not allowed on this project. Stream bank disturbance and access to Coal Creek is not allowed unless specifically designated in the plans. No other access will be allowed.	

282-1  
10-19-10

STORM WATER BEST MANAGEMENT PRACTICES	
When the following best management practices are used, they are intended to account for disturbed areas where storage volume cannot be provided: Floating Silt Curtains, PSSCD, Seeding	

281-3  
10-17-17



### LINE STYLE LEGEND OF EROSION CONTROL SHEETS

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

### PLAN VIEW COLOR LEGEND OF EROSION CONTROL SHEETS

LINework	Design Color No.	Design Element
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
Black	(0)	Permanent Erosion Control Features
Blaze Orange	(222)	Temporary Erosion Control Features

SHADING	Design Color No.	Design Element	Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	0%
Grass Green	(233)	8FT Mow Strip	50%

### CELL LEGEND OF EROSION CONTROL SHEETS

CELL	Design Element
	Temporary Sediment Control basin
	Erosion Control for Circular Intake or Manhole Well
	Erosion Control for Rectangular Intake or Manhole Well
	Grate Intake Sediment Filter Bag
	Silt Basin
	Silt Fence Tail
	Stormwater Drainage Basin Discharge Point

### PATTERN LEGEND OF EROSION CONTROL SHEETS

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

## EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)

