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C.1	Estimated Project Quantities and Reference Notes
C.1	Standard Road Plans
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PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
KEOKUK COUNTY
 Bridge Replacement
 IA 21 bridge
 over Cedar Creek
 1.1 miles north of junction of IA 92
SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.
 Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



REVISIONS

TOTAL	29
PROJECT IDENTIFICATION NUMBER	
21-54-021-020	
PROJECT NUMBER	
BRF-021-1(46)--38-54	
R.O.W. PROJECT NUMBER	
STPN-021-1(47)-2J-54	

DESIGN DATA RURAL	
20 21	AADT 1,760 V.P.D.
20 46	AADT 1,800 V.P.D.
20 46	DHV 180 V.P.H.
	TRUCKS 15 %
	Total Design ESALs -

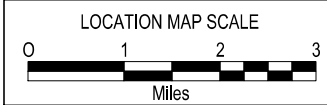
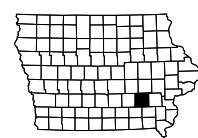
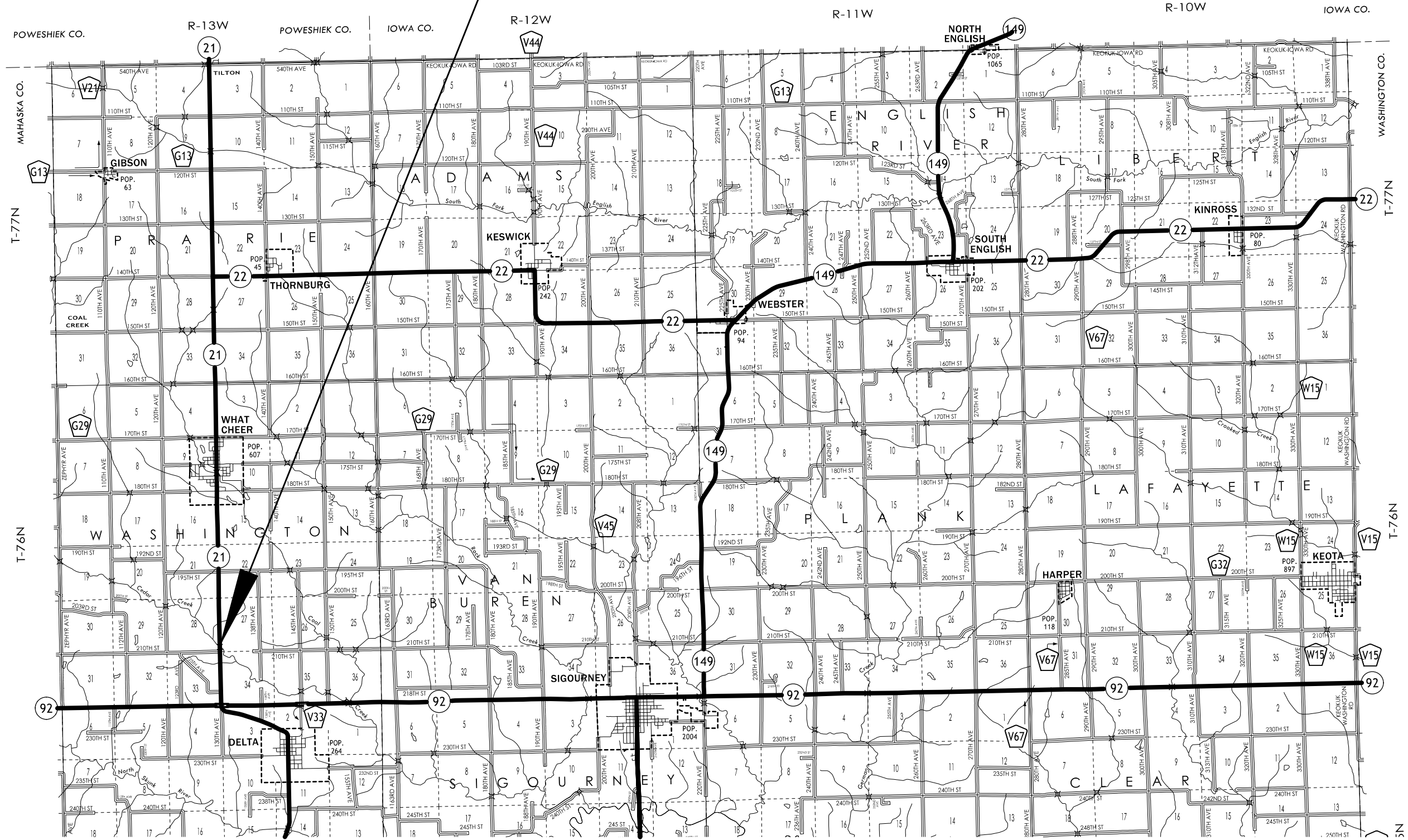
INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	X	Primary Signature Block	X
V.1	Mark D. Werner	Hydraulic Design	X

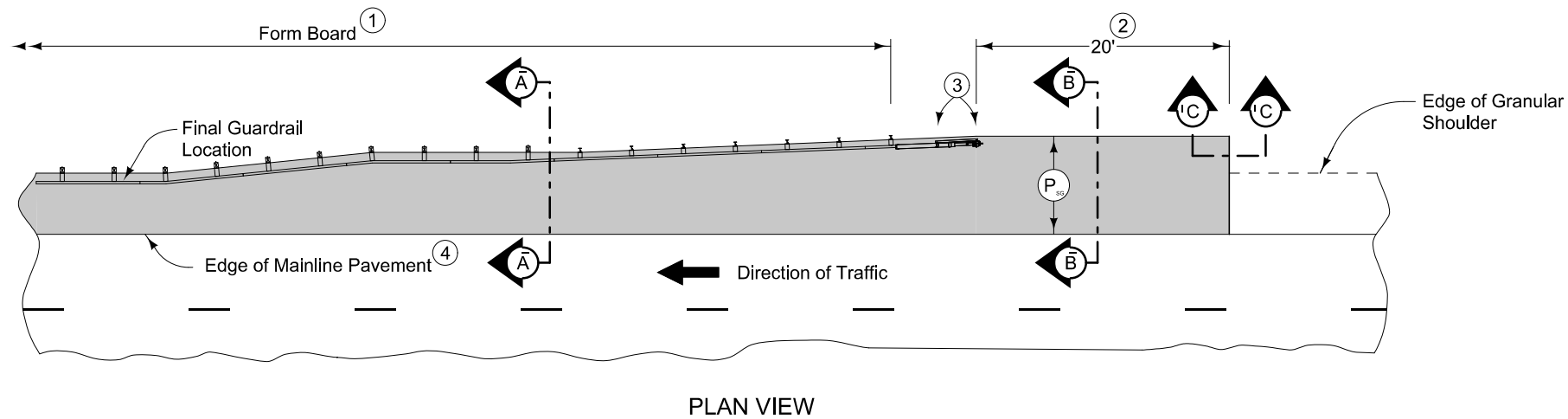
PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: 2/23/2024

IA 21 BRIDGE REPLACEMENT
FHWA NO. 32601
MAINT. 5414.5S021
STA. 57+50.00





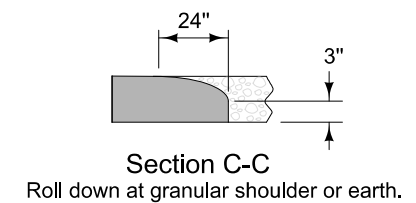
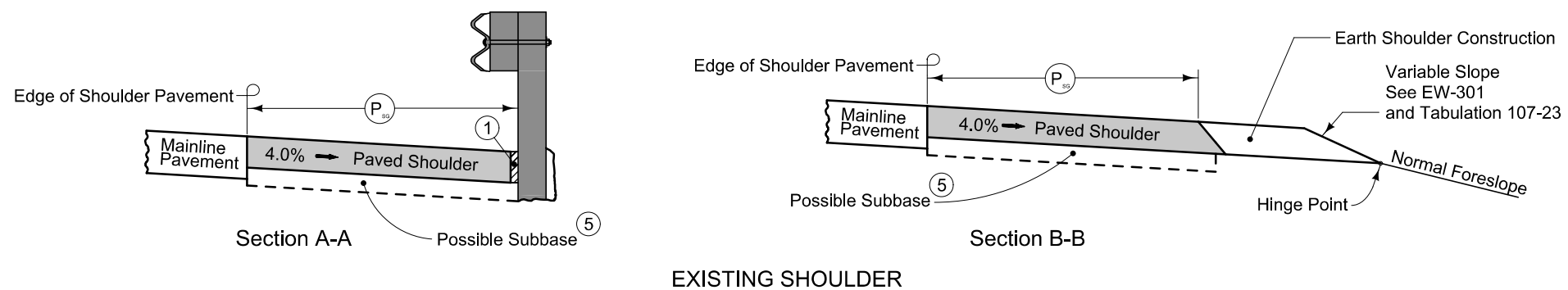
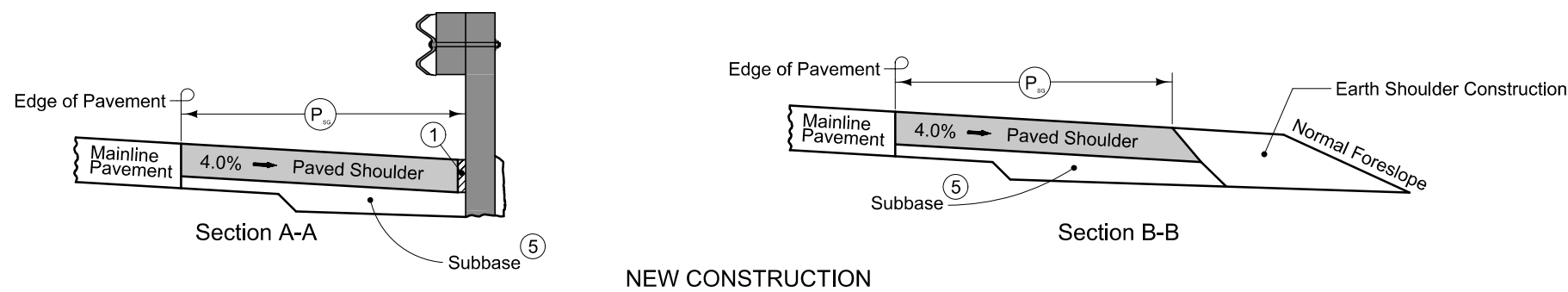
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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 'KT' joint (per PV-101) for PCC shoulder. 'B' joint (per PV-101) for HMA shoulder.
- ⑤ Refer to other details in the plan.



**PAVED SHOULDER AT GUARDRAIL
(GRANULAR SHOULDER ADJACENT TO MAINLINE)**

ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)					100-0A 10-28-97
Item No.	Item Code	Item	Unit	Total	As Built Qty.

STANDARD ROAD PLANS			105-4 10-18-11
The following Standard Road Plans apply to construction work on this project.			
Number	Date	Title	
BA-200	04-20-21	Steel Beam Guardrail Components	
BA-201	10-18-22	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)	
BA-202	04-16-24	Steel Beam Guardrail Bolted End Anchor	
BA-205	10-17-23	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)	
BA-250	04-20-21	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)	
BR-205	04-16-24	Double Reinforced 12" Approach (Slab Bridge)	
DR-306	10-17-23	Precast Concrete Headwall for Subdrain Outlets	
DR-402	04-16-24	Rock Flume for Bridge End Drain	
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices	
EC-502	04-21-15	Seeding in Rural Areas	
EW-301	04-16-24	Guardrail Grading	
PM-110	04-16-24	Line Types	
PR-103	10-17-23	Full Depth PCC Patch with Dowels	
PV-101	04-19-22	Joints	
PV-102	04-21-20	PCC Curb Details	
SI-173	04-19-16	Object Markers	
SI-211	10-18-22	Object Marker and Delineator Placement with Guardrail	
SI-881	04-16-19	Special Signs for Workzones	
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)	
TC-202	04-18-23	Work Within 15 ft of Traveled Way	
TC-252	04-21-20	Routes Closed to Traffic	

ESTIMATE REFERENCE INFORMATION			100-4A 10-29-02
Item No.	Item Code	Description	

SURVEY SYMBOLS

<p> AST, Above Ground Storage Tank BB, Billboard BBB, Bottom of Bridge Beam BCL, Bridge Centerline BD, Bridge Deck BIN, Grain Bin BL, Topo Breakline BLD, Building or Foundation BLS, Bridge Low Steel BM, Bench Mark BNK, Stream Bank BRG, Bridge C, Centerline BL of Road -ML or SR CAV, Cave CEL, Cell Phone Tower CIS, Cistern CON, Concrete or A/C Slab CP, Control Point CRP, Corporation Line CS, Curve Point CU, Back of Curb CUL, Culvert D, Centerline Draw or Stream -Down DAB, Drainage Area Boundary DIK, Centerline of Dike or Dam DTM, Photogrammetry Elv Control Check DU, Centerline Draw or Stream -Up EB, Electrical Box EG, Edge of Gravel Road ENP, Edge Paved Entrance and Park Lot ENT, Centerline BL of Entrance ENU, Edge Unpaved Entrance and Parking EP, Edge of Paved Roads -ML or SR EW, Edge of Water FCL, Chain Link and Security Fence FENO, FENO Monument FHD, Fire Hydrants FLG, Flag Poles FP, Filler Pipe FW, Wire Fence FWD, Wood Fence GDC, Guard Rail Cable GDL, Guard Rail Steel GP, Guard Post -Less Than 4 Posts GPR, Guard Post -4 or More Posts GR, Ground Shot GRV, Grave GU, Gutter In Front of Curb GV, Gas Valve HDG, Hedge Row HS, Hydric Soil -Wetlands HT, Electrical Highline Tower IN, Storm Sewer Intake INB, Storm Sewer Beehive Intake LC, Lot Corner LIN, Miscellaneous Line LP, L.P. Tank LUM, Luminaire MH, Utility Access -Manhole MIS, Miscellaneous MM, Mile Marker Post OUT, Tile Outlet PC, Curve Point PCP, Photo Control Point PCT, Photo Control Target PI, Tangent Point PIP, Pipe Culvert PL, Location of Photo -Wetlands PLG, Location of General Photo POC, Curve Point POST, Spiral Point </p>	<p> PR, Electric Riser Pole PRO, Profile Shot PT, Curve Point REF, Reference Tie Point RET, Retaining Walls RIP, Rip-Rap ROC, Rock Outcropping ROW, Right of Way Mark RR, Centerline of Railroad Tracks RRB, Railroad Signal Box RRF, Railroad Frog RRR, Railroad Rail RRS, Railroad Signal RRW, Railroad Switch RT, Radio Tower S, Soil Sampling Site -Wetlands SBR, Size of Bridge SC, Spiral Point SCR, Section Corner SEP, Septic Tank SF, Silt Fence -Wetlands SG, Staff Gauge -Wetlands SH, Paved Shoulder SHR, Shrub SI, Sign SL, Speed Limit Sign SLN, Section Line SLO, Silo SNK, Sink Hole SNP, Unpaved Shoulder SP, Stream Profile STP, Stump SWK, Sidewalk SWP, Swamp or Marsh TA, Tower Anchor TBO, Telephone Booth TCB, Traffic Signal Box TDC, Tree Deciduous TDL, Traffic Detection Loop TER, Terrace TEV, Evergreen Tree TFR, Tree Fruit TGP, Telegraph Pole TIL, Tile Line TLNL, Tree Line Left TLNR, Tree Line Right TOP, Top of Bridge Pier TPA, Telephone Pole Co. 1 TPB, Telephone Pole Co. 2 TPC, Telephone Pole Co. 3 TR, Telephone Riser Pole TRL, Trail TS, Spiral Point TSB, Telephone Switch Box TSG, Traffic Signal TSL, Traffic Signal and Luminaire TV, Satellite TV Dish TVP, TV Pedestal TW, Top of Water UB, Utility Box UE, Utility Elevation UPH, Utility Pot Hole - Quality A UST, Underground Tank UV, Underground Utility Vault VS, Channel Cross Section WC, Wild Card -Misc. Field Shot WEL, Well WHD, Water Hydrant WHU, RV Water Hook Up WM, Wind Mill WND, Wind Turbine WV, Water Valve </p>
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SURVEYED UTILITY OWNER SYMBOLS

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

Remark Abbreviations

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

<p> GL1C, ALLIANT ENERGY - Quality C Billie Reid 319-786-3073 billiereid@alliantenergy.com </p> <p> EL1C, ALLIANT ENERGY - Quality C Billie Reid 319-786-3073 billiereid@alliantenergy.com </p> <p> WL1C, WAPELLO RURAL WATER ASSOCIATION - Quality C Krista Huffman 641-682-8351 kristah@wapelloruralwater.com </p> <p> FO1C, WINDSTREAM - Quality C Dan Hogan 563-920-2428 Dan.Hogan@windstream.com </p>
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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

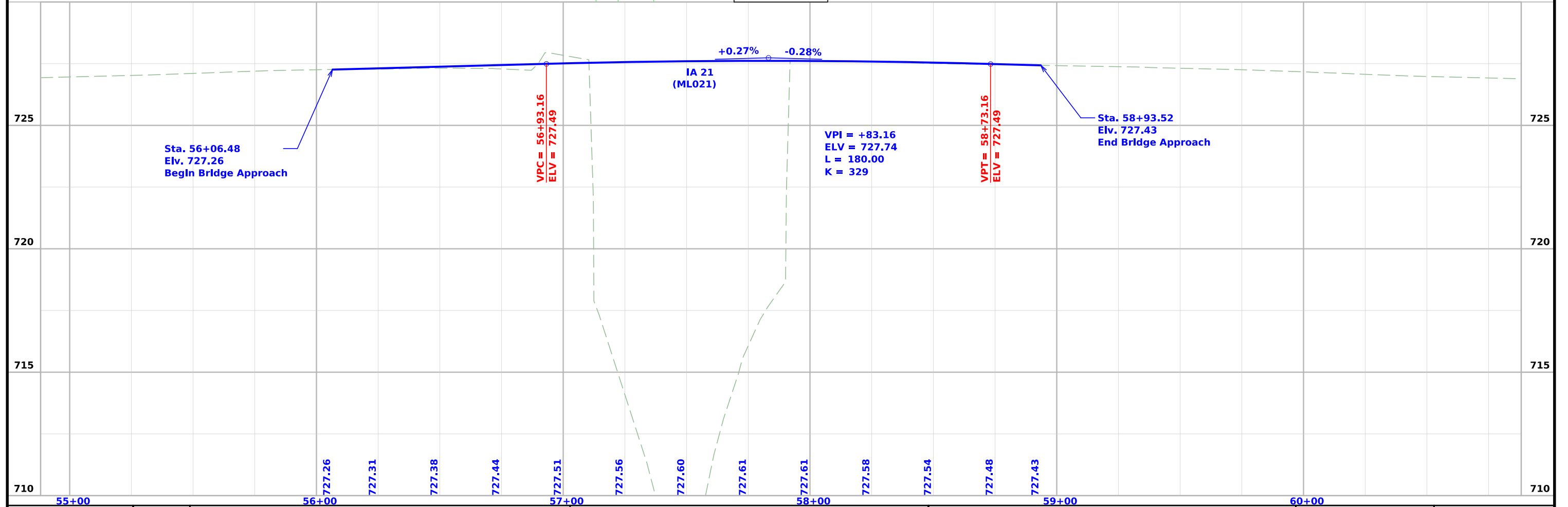
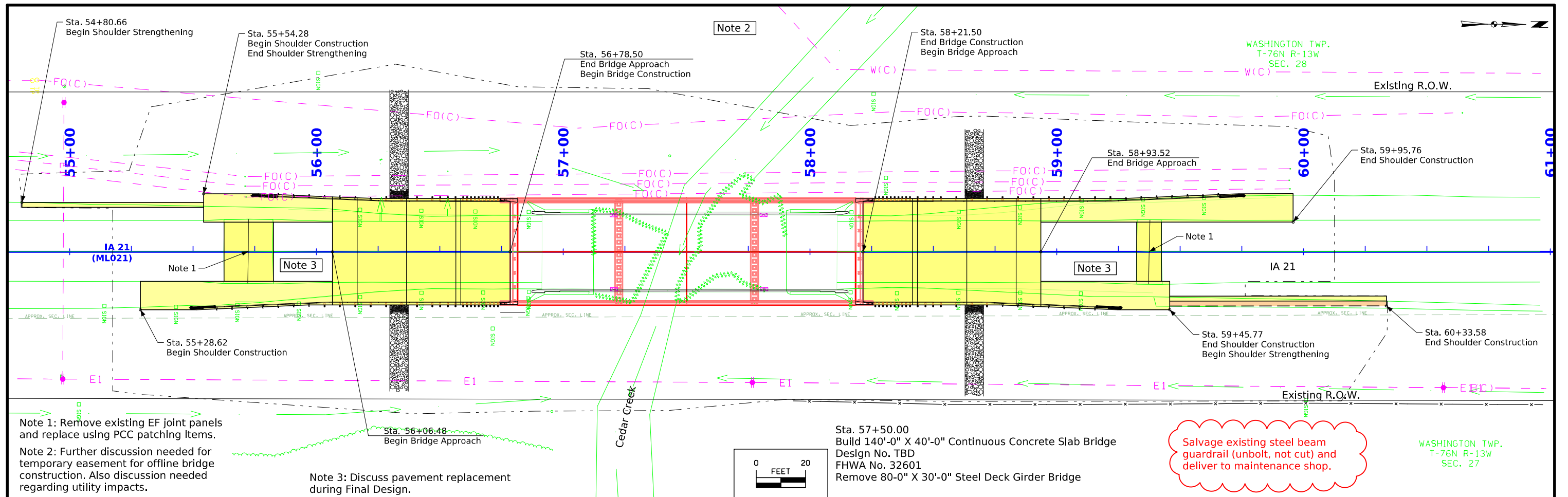
LINEWORK		Design Color No.	
Green	(10)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

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

RIGHT-OF-WAY LEGEND	
	Proposed Right-of-Way
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary)
	Easement
	Access Control
	Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



Survey Information

SURVEY INDEX

County: Keokuk
PIN: 21-54-021-020
Project Number: BRF-021-1(46)--38-54
Location: Cedar Creek 1.1 Mi North of IA 92
Type of Work: Bridge Replacement

(U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: GEOID12B

Alignment Information

Alignment created by District ROW Office.

Survey Personnel

Matthew Fouts – PLS
Daniel Marti – PLS
Drake Marti – Survey Technician
Joshua Randolph – Survey CADD Technician

Date(s) of Survey

Begin Date 02/10/2023
End Date 02/10/2023

General Information

This survey is for preliminary design for the section of approximately 0.1 mile of roadway, there is one bridge along the route. Project datum is provided by Design Survey Office. This project is a full DTM Survey.

Utility Information

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

Project Control

(RTN)
Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. For additional details of the control survey, contact the Preliminary Survey department.

(Static)
Static observations were not used for this survey.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 13
(Fairfield).

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 13 (U.S. Survey Foot)

VERT. DATUM: NAVD88

Geoid Model: 2018u3 or 2018u2

POINT NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	6802215.08	23379805.07	725.69	SET 5/8" REBAR 2'+/- WEST OF HIGHWAY 21 134'+/- NORTH OF BRIDGE GUARD RAIL
CP2	6801529.83	23379857.38	725.97	SET 5/8" REBAR 1'+/- ON THE SOUTHEAST SIDE OF HIGHWAY 21
CP3	6801790.67	23379896.47	719.57	SET 5/8" REBAR ON THE SOUTHEAST SIDE OF THE BRIDGE ON THE SOUTH SIDE OF THE CREEK BANK
CP4	6801837.90	23379792.60	717.27	SET 5/8" REBAR ON THE SOUTHWEST SIDE OF HIGHWAY 21 ON THE SOUTH SIDE OF THE CREEK BANK
BM1	6802152.05	23379884.73	719.86	RAIL ROAD SPIKE IN WEST SIDE OF LIGHT POLE ON THE NORTHEAST SIDE OF HWY 21; 2ND LIGHT POLE UP FROM THE NORTH SIDE OF THE CREEK
BM2	6801592.07	23379883.66	719.96	RAIL ROAD SPIKE IN WEST SIDE OF LIGHT POLE ON THE NORTHEAST SIDE OF HIGHWAY 21; 1ST POLE SOUTH OF CREEK
CP5	6801366.00	23379754.62	725.31	60' WEST OF HIGHWAY 21 & 5' SOUTH OF 210TH ST - FENO MONUMENT
CP6	6802558.19	23379858.53	726.15	15' EAST OF HIGHWAY 21 & 2' SOUTH OF FIELD DRIVE - FENO MONUMENT
CP7	6800651.29	23379894.34	738.88	60' EAST OF HIGHWAY 21 & 5' NORTH OF FIELD DRIVE INLINE WITH GATE POST EAST - FENO MONUMENT
NGS8	6790552.56	23349949.67	817.27	NGS SURVEY DISK IN CONCRETE MONUMENT STAMPED ROSE 1934 0.2' BELOW GROUND

ALIGNMENT COORDINATES

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 (ML021)	22+73.95	6798368.94	23379849.92															
2	IA 21 (ML021)	89+76.43	6805071.33	23379814.28															

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



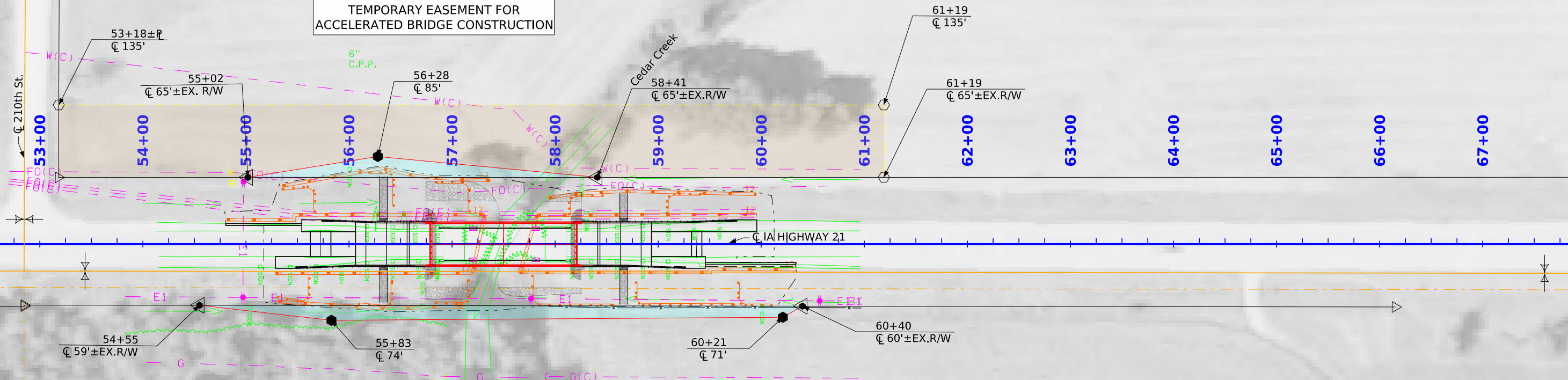
WASHINGTON TWP.
T-76N R-13W
SEC. 28

SE 1/4 SE 1/4
SEC. 28

1

KIRK EUGENE & KARLA KAY BEASLEY

TEMPORARY EASEMENT FOR
ACCELERATED BRIDGE CONSTRUCTION



WASHINGTON TWP.
T-76N R-13W
SEC. 27

SW 1/4 SW 1/4
SEC. 27

2

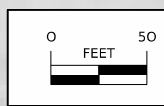
JAMES L & VICKIE A STRIEGEL

Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY

ROW Team: Larson / Hughes
ROW #: STPN-021-1(47)-2J-54
Plan Date: 3-14-2024

Color Legend:

- Property Lines
- Temporary Easement
- Permanent Acquisition

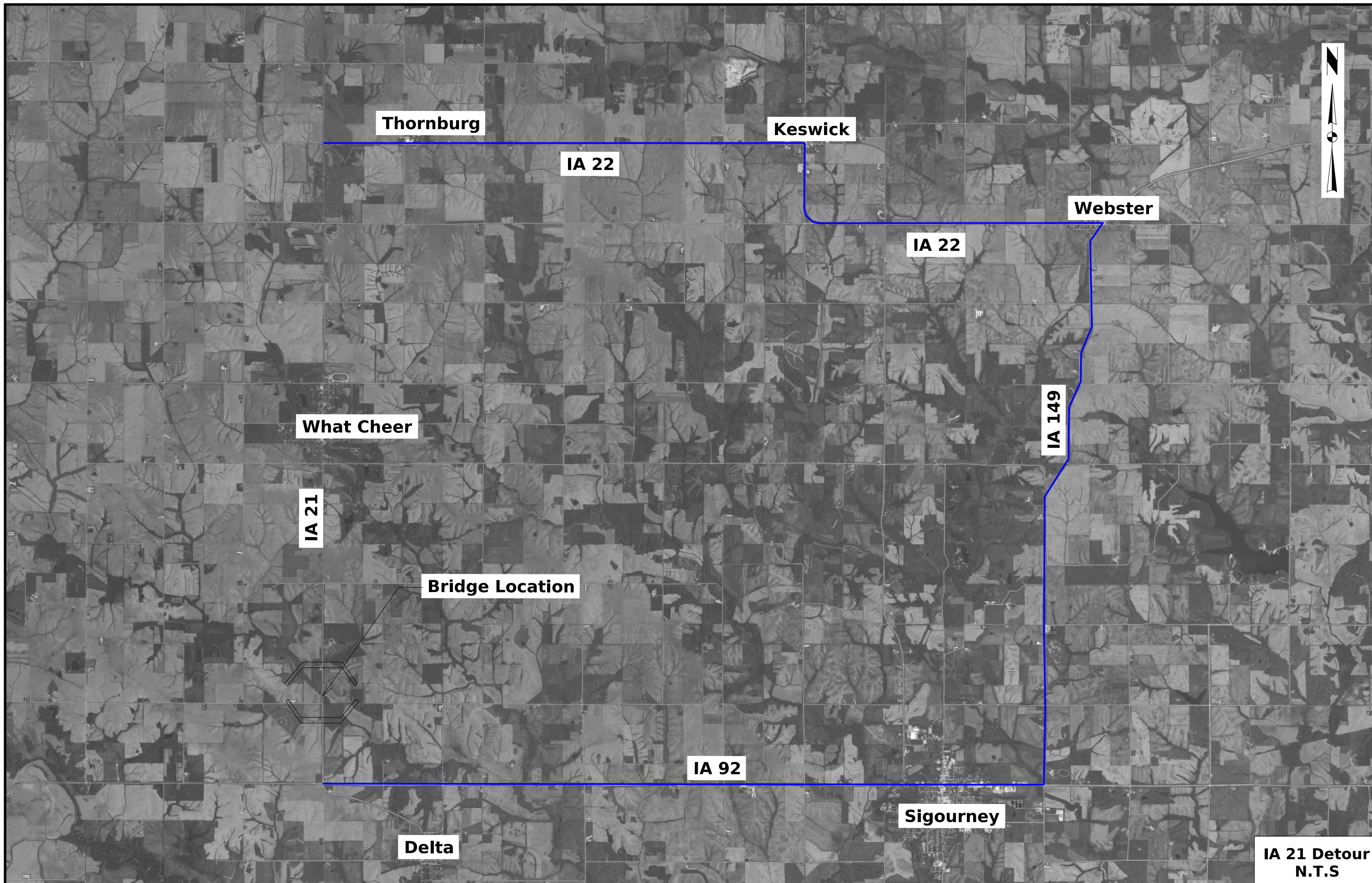


108-23A 08-01-08	<h3>TRAFFIC CONTROL PLAN</h3>
<p>Maintain existing IA 21 traffic pattern for stage 1. IA 21 will be closed and an off-site detour will be utilized for stage 2.</p> <p>Detour (Sheet J.2) - IA 92 east to IA 149 north to IA 22 west. Detour will be signed and maintained by Iowa Department of Transportation. (Confirm signing installation/maintenance responsibility during Final Design.)</p>	

111-01 04-17-12	<h3>COORDINATED OPERATIONS</h3>
<p>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.</p>	
Project	Type of Work
None provided	

108-25 10-21-14												
<h3>511 TRAVEL RESTRICTIONS</h3>												
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
None												

108-26A 08-01-08	<h3>STAGING NOTES</h3>
<p>Stage 1 Traffic Control: Maintain existing IA 21 traffic pattern. Construction: Construct new bridge on west side of existing bridge.</p> <p>Stage 2 Traffic Control: Detour all IA 21 traffic offsite per Sheet J.2. Construction: Demo old bridge. Slide new bridge into final location. Construct approach pavements, shoulders and guardrail.</p>	

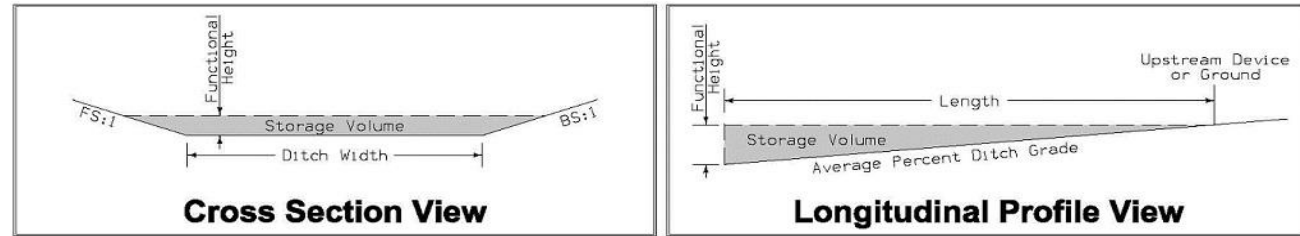


**IA 21 Detour
N.T.S**

100-18
10-16-18

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201



* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: $[0.5 * Spacing * (0.5 * H^2 * FS + DW * H + 0.5 * H^2 * BS)]$

Basin No.	Type	Location			Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side		Installation LF	Maintenance LF	Removal LF	Foreslope FS:1	Backslope BS:1	Ditch Width FT	Avg.% Slope Ditch Grade	Volume* CF	
1	4	55+65.00	Lt		50.0	5.0	25.0	4.0	6.0	0.0	1.0%	698.9	
1	4	56+42.00	Lt		52.0	5.2	26.0	4.0	6.0	0.0	1.0%	698.9	
1	5	57+16.00	Lt		56.0	5.6	28.0	4.0	0.0	0.0	0.5%	568.1	
1	5	58+15.00	Lt		45.0	4.5	22.5	3.0	0.0	0.0	0.5%	426.1	
1	5	59+10.00	Lt		45.0	4.5	22.5	3.0	0.0	0.0	0.5%	426.1	
1	5	55+60.00	Rt		50.0	5.0	25.0	3.0	0.0	0.0	0.5%	426.1	
1	5	56+41.00	Rt		52.0	5.2	26.0	3.0	0.0	0.0	0.2%	426.1	
1	5	57+16.00	Rt		50.0	5.0	25.0	3.0	0.0	0.0	0.2%	426.1	
1	5	57+80.00	Rt		100.0	10.0	50.0	3.0	0.0	0.0	0.2%	426.1	
1	5	58+80.00	Rt		112.0	11.2	56.0	3.0	0.0	0.0	0.2%	426.1	
1	5	59+80.00	Rt		48.0	4.8	24.0	3.0	0.0	0.0	0.2%	426.1	
Total:					660.0	66.0	330.0					5374.9	

100-19
10-19-21

PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES

Possible Standards: EC-204

Location			Perimeter and Slope			Ditch Check		Remarks
Begin Station	End Station	Side	Length of Installation			Length of Installation		
			9 inch Dia LF	12 inch Dia LF	20 inch Dia LF	12 inch Dia LF	20 inch Dia LF	
54+80.00	57+32.00	Lt		260				
57+20.00	57+20.00	Both		60				
55+34.00	57+36.00	Lt		210				
55+27.00	57+20.00	Rt		200				
55+27.00	57+14.00	Rt		190				
57+65.00	57+88.00	Lt		60				
57+88.00	59+96.00	Lt		210				
57+83.00	59+96.00	Lt		220				
57+60.00	60+35.00	Rt		270				
Totals:				1680				

100-34
10-17-17

STORMWATER DRAINAGE BASIN AND STORAGE

Refer to EC Standards and 570s Details.

Basin No.	Drainage Basin Location				Summary of Stormwater Storage									Remarks
	Station to Station		Side	Discharge Point	Total Disturbed Area Acres	Disturbed Area with Storage Provided Acres	Disturbed Area without Storage Provided Acres	Best Management Practice	Total Storage Volume Provided CF	Total Storage Volume Required CF	Storage Volume Met? Yes/No			
	Station	Side										Station	Side	
1	54+80.66	60+33.58		57+50.00	Rt	1.4	1.4	0.0	Silt Fence for Ditch Check (EC-201)	5374.9	5040.0	Yes		

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed during construction, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The Contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITIES

- A. Designer:
 1. Prepares Base PPP included in the project plan.
 2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
 3. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.
- B. Contractor:
 1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
 2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
 3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
 4. Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231).
 5. Supervises and implements good housekeeping practices according to Paragraph III, C, 2.
 6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
 7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
 8. Submits amended PPP site map according to Section 2602 of the Standard Specifications.
- C. Subcontractors:
 1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or performing work that is a source of potential pollution as defined in this PPP. Subcontracted work items are identified in Subcontractor Request Forms (Form 830231). All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
 2. Implement good housekeeping practices according to Paragraph III, C, 2.
- D. RCE/Project Engineer:
 1. Is Project Storm Water Manager.
 2. On projects where DOT is the Contracting Authority, is current with erosion control training or certification.
 3. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
 4. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
 5. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
 6. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
 7. Is familiar with the Project PPP and storm water site map.
 8. On projects where DOT is Contracting Authority, is responsible for periodically monitoring inspection reports to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies.
 9. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
 10. Is signature authority on Notice of Discontinuation.
 11. Maintains an up-to-date record of contractors, subcontractors, and subcontracted work items through Subcontractor Request Forms (Form 830231).
 12. Makes information to determine permit compliance available to the DNR upon their request.
- E. Inspector:
 1. Updates PPP through fieldbook entries and storm water site inspection reports if there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
 2. Makes information to determine permit compliance available to the DNR upon their request.
 3. Conducts joint required inspections of the site with the contractor/subcontractor.
 4. Completes an inspection report after each inspection.
 5. Is signature authority on storm water inspection reports.

II. PROJECT SITE DESCRIPTION

- A. This Pollution Prevention Plan (PPP) is for the construction of a Bridge Replacement.
- B. This PPP covers approximately 1.4 acres with an estimated 1.4 acres being disturbed. The portion of the PPP covered by this contract has 1.4 acres disturbed.
- C. The PPP is located in an area of 1 soil association Otley - Ladoga. The estimated weighted average runoff coefficient number for this PPP after completion will be 0.49.
- D. Storm Water Site Map is located in the R sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE sheets.
- E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be

POLLUTION PREVENTION PLAN

documented by fieldbook entries and amended PPP site map.
F. Runoff from this work will flow into Cedar Creek.

III. CONTROLS

- A. The Contractor's ECIP specified in Article 2602.03 of the Standard Specifications for accomplishment of storm water controls should clearly describe the intended sequence of major activities, and for each activity define the control measure and the timing during the construction process that the measure will be implemented.
- B. Preserve vegetation in areas not needed for construction.
- C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries, amended PPP site map, or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water site inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B of the Standard Specifications.
 - 1. EROSION AND SEDIMENT CONTROLS
 - a. Stabilization Practices
 - 1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
 - 2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
 - a) Permanently ceased on any portion of the site, or
 - b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
 - 3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
 - 4) Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C or R sheets.
 - 5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
 - 6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications.
 - b. Structural Practices
 - 1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
 - 2) Structural practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B or R sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C or R sheets.
 - c. Storm Water Management
 Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the storm water site map and Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.
 - 2. OTHER CONTROLS
 Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
 - a. Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
 - b. Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
 - c. Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
 - d. Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
 - e. Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean up spills and prevent material discharges to the storm drain system and waters of the state.
 - f. Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
 - g. Concrete Grooving/Grinding Slurry - Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
 - h. Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
 - i. Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
 - j. Dewatering - Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.
- 3. APPROVED STATE OR LOCAL PLANS
 During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES

POLLUTION PREVENTION PLAN

The Contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS

- A. Inspections shall be made jointly by the Contractor and the Contracting Authority's inspector at least once every seven calendar days. Storm water site inspections will include:
 1. Date of the inspection.
 2. Summary of the scope of the inspection.
 3. Name and qualifications of the personnel making the inspection.
 5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
 6. Major observations related to the implementation of the PPP.
 7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.
- B. Include storm water site inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

- A. Base PPP - Initial Pollution Prevention Plan.
- B. Amended PPP - Base PPP amended during construction. May include Plan Revisions or Contract Modifications for new items, storm water site inspection reports, fieldbook entries made by the inspector, amended PPP site map by the Contractor, ECIP, NOI, co-permittee certifications, and Subcontractor Request Forms. Items amending the PPP are stored electronically and are readily available upon request.
- C. Fieldbook Entries - This contains the inspector's daily diary and bid item postings.
- D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
- E. Signature Authority - Representative authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature

Printed or Typed Name

Signature

LINE STYLE LEGEND OF LANDSCAPE SHEETS

LINETYPE	Design Element
-----	Living Snow Fence Single Row
-----	Living Snow Fence Double Row
-----	Mechanical Edge

CELL LEGEND OF LANDSCAPE SHEETS

CELL	Design Element	Plant Diameter
⊕	Clearing	
⊙	Proposed Shrub	6 FT
⊙	Proposed Understory Tree	12 FT
⊙	Proposed Conifer Tree	18 FT
⊙	Proposed Overstory Tree	30 FT

PATTERN LEGEND OF LANDSCAPE SHEETS

	Brush Clearing		Spray Area
	Clearing & Grubbing		

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

LINETYPE	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

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

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

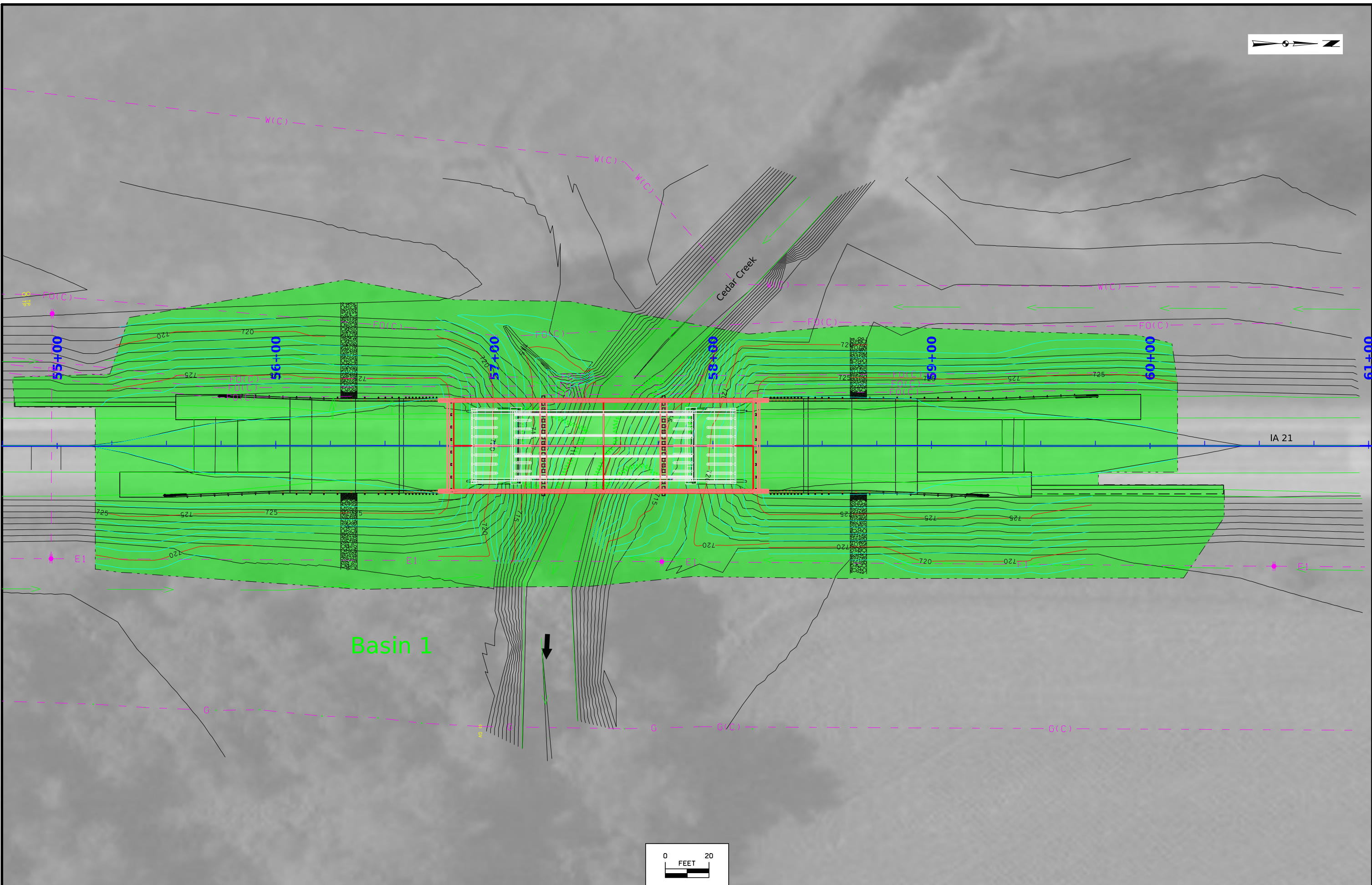
SHADING	Design Color No.	Design Element	Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	0%
Grass Green	(233)	8FT Mow Strip	50%
Red	(3)	Delineates Restricted Areas	0%

PATTERN LEGEND OF EROSION CONTROL SHEETS

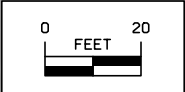
	Seeding and Fertilizing		Turf Reinforcement Mat Type 1
	Seeding and Fertilizing (Rural)		Turf Reinforcement Mat Type 2
	Seeding and Fertilizing (Urban)		Turf Reinforcement Mat Type 3
	Native Grass Seeding		Turf Reinforcement Mat Type 4
	Salt Tolerant Seeding		Slope Protection, Wood Excelsior Mat
	Wetland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

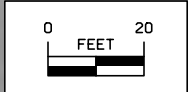
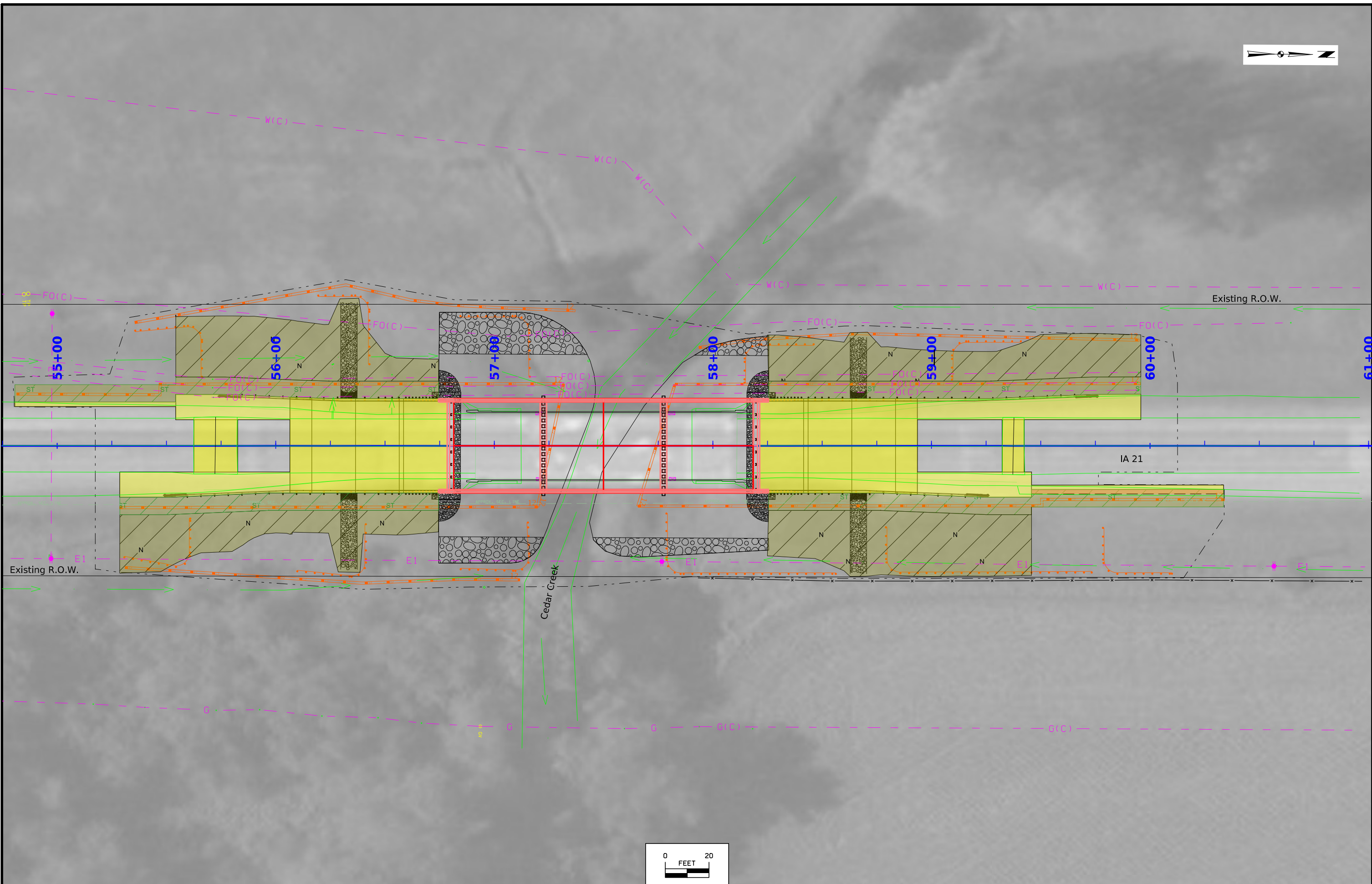
EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

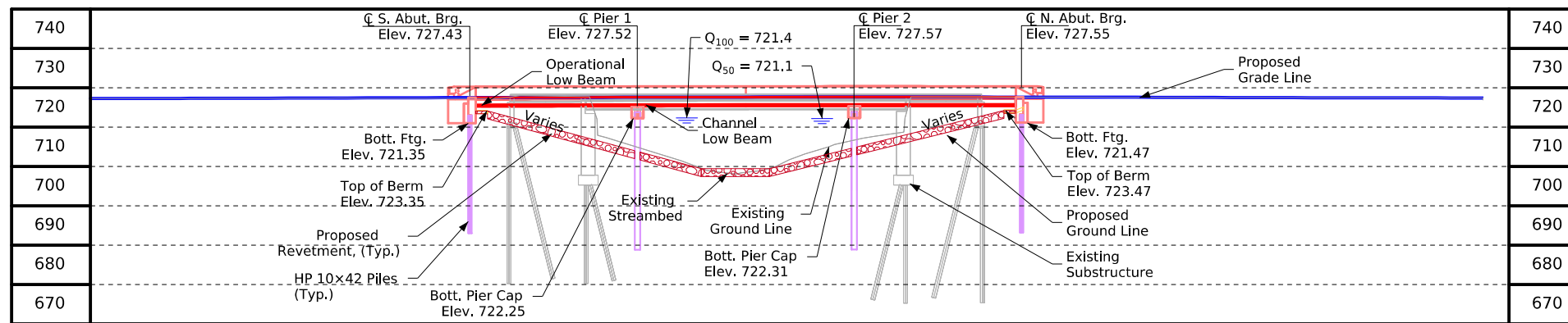
(COVERS SHEET SERIES R)



Basin 1

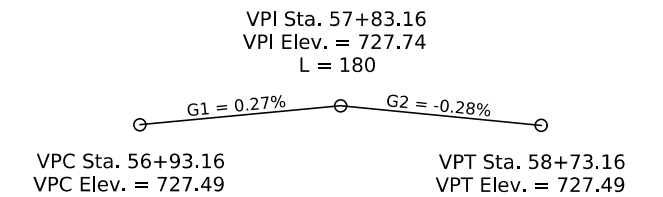






Longitudinal Section Along Centerline of Iowa 21

BENCH MARK NO. CP3: N:6801790.67 E:23379896.47; ELEV 719.57
 SET 3/8" REBAR ON THE SOUTHEAST SIDE OF THE BRIDGE ON THE SOUTH SIDE OF THE CREEK BANK



Proposed Profile Grade Iowa 21

Hydraulic Data

RIDB: CedarC_Keo_12.0
 Drainage Area = 24.9 Sq. Mi.
 Stream Slope (HGL) = 8.9 Ft./Mi.
 Avg. Low Water Stage = 709.5

Q50 = 3,200 cfs
 Stage = 721.1
 Channel Low Beam = 725.16
 Avg. Bridge Velocity = 5.9 fps

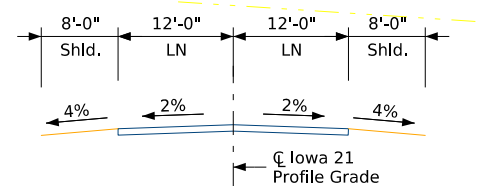
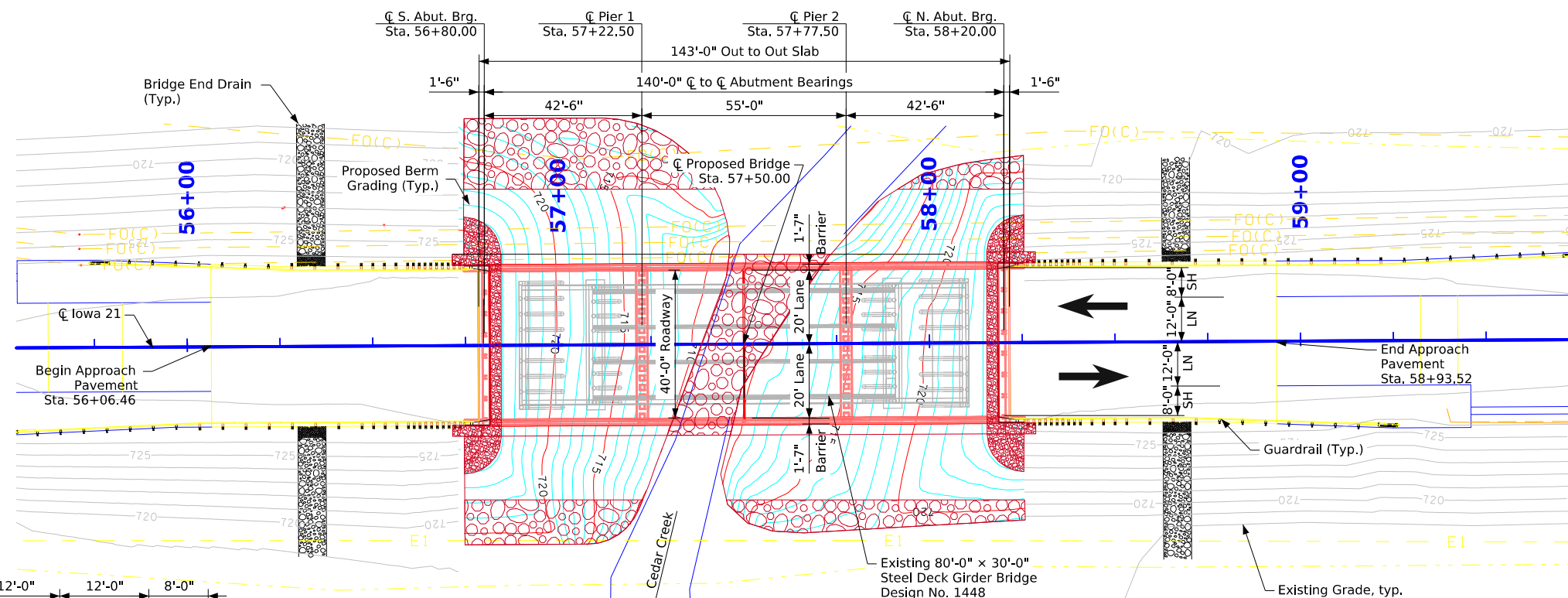
Q100 = 3,780 cfs
 Stage = 721.4
 Channel Low Beam = 725.25
 Backwater = 1.1 Ft.
 Avg. Bridge Velocity = 6.5 fps

Q200 = 4,400 cfs
 Stage = 721.9
 Calculated Design Scour = 701.1

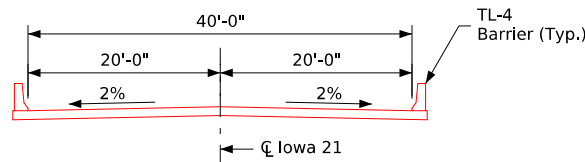
Q500 = 5,260 cfs
 Stage = 722.4
 Avg. Bridge Velocity = 8.0 fps
 Calculated Check Scour = 700.1

Utilities Legend:

- G(C) - Gas Line - Alliant Energy
- E1 - Electrical Line - Alliant Energy
- W(C) - Water Line - Wapello Rural Water Association
- FO(C) - Fiber Optic Line - Windstream



Typical Approach Section



Typical Bridge Section (Looking North)

Location

Iowa 21 over Cedar Creek
 1.1 mi. N. of Jct. Iowa 92
 T-76N R-13W
 Sections 27 & 28
 Washington Township
 Keokuk County
 FHWA No. 32601
 Bridge Maint. No. 5414.5S021
 Latitude 41.351996°
 Longitude -92.354357°

Notes

Top of slab at C is 0.03' below the PG to account for parabolic curve.
 All units are in feet unless otherwise noted.
 TL-4 Bridge Railing proposed.
 Pier Type = Pile Bents
 Foundation type to be confirmed during final design.
 ABC Construction sequence using temporary piers and lateral slide of the proposed superstructure. See bridge staging plan on Sheet V.03.
 Berm slopes to be confirmed during final design.

Situation Plan



Hydraulic Design

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

Mark D. Werner 2-28-2024
 Signature: Mark D. Werner Date: _____
 Printed or Typed Name: Mark D. Werner
 My license renewal date is December 31, 2025

Pages or sheets covered by this seal: V.01

PRELIMINARY

Design For 0° Skew
140'-0" x 40'-0" Continuous Concrete Slab Bridge
 42'-6" End Spans 55'-0" Interior Span
Situation Plan
 STA. 57+50.00 (Centerline of Iowa 21)
Keokuk County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. TBD Design Sheet No. 1 of 3 FHWA No. 32601

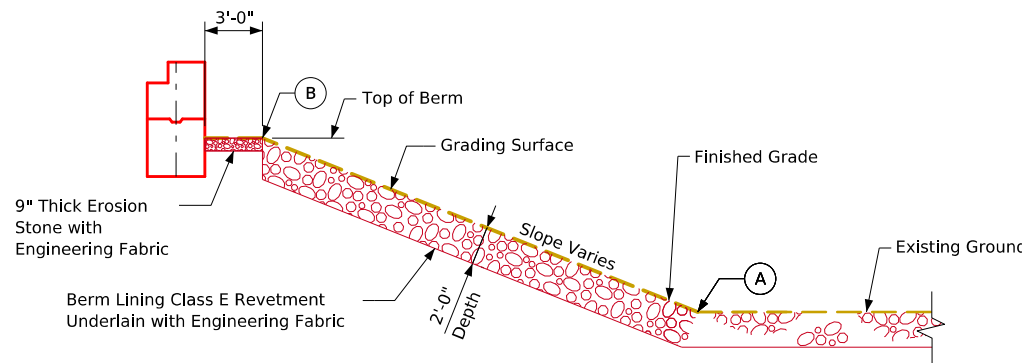
Design Notes

This design is for replacement of the existing 80'-0" x 30'-0" Steel Deck Girder Bridge, Keokuk Design No. 1448, FHWA 32600, Maint. No. 5414.5S021.

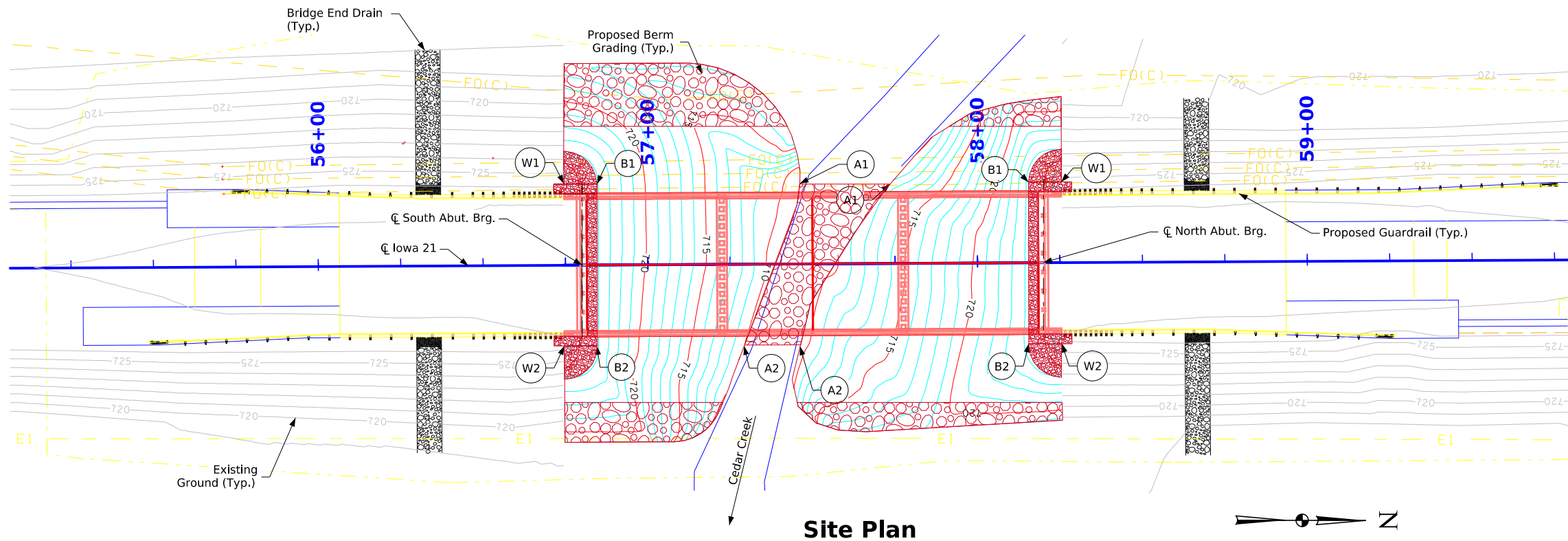
Special attention shall be taken to avoid potential conflicts between proposed structure and existing abutments and piers.

Grade creek to maintain creek flow around temporary bent locations. Restore creek channel to pre-construction contours after removal of temporary bent piles.

BENCH MARK NO. CP3: N:6801790.67 E:23379896.47; ELEV 719.57
SET 3/8" REBAR ON THE SOUTHEAST SIDE OF THE BRIDGE ON THE SOUTH SIDE OF THE CREEK BANK



Section Thru Embedded Revetment Berm



Utilities Note:

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

Utilities Legend:

- G(C) - Gas Line - Alliant Energy
- E1 - Electrical Line - Alliant Energy
- W(C) - Water Line - Wapello Rural Water Association
- FO(C) - Fiber Optic Line - Windstream

Estimated Berm Armoring Quantities				
Location	Revetment CL. E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Berm Lining - South	835	16	738	760
Berm Lining - North	764	16	670	692
Totals	1599	32	1408	1452

Excavation quantity calculated from grading surface.
Excavation quantity is for embedded revetment core out only, and does not include excavation to the grading surface.
Excavation quantity to the grading surface is determined by Road Design and included in the Road Plans.
Revetment based on density of 1.6 ton/CY.
Erosion stone based on density of 120 lb/CF.



PRELIMINARY

Design For 0° Skew

140'-0" x 40'-0" Continuous Concrete Slab Bridge

42'-6" End Spans 55'-0" Interior Span

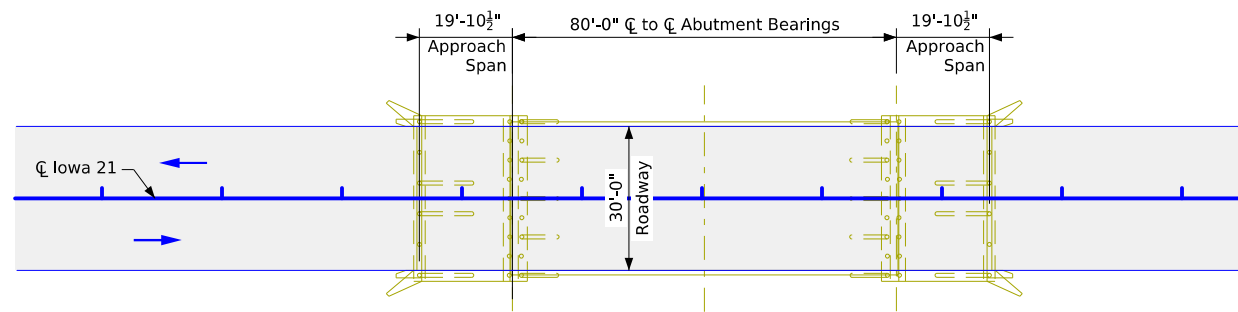
Site Plan

STA. 57+50.00 (Iowa 21)

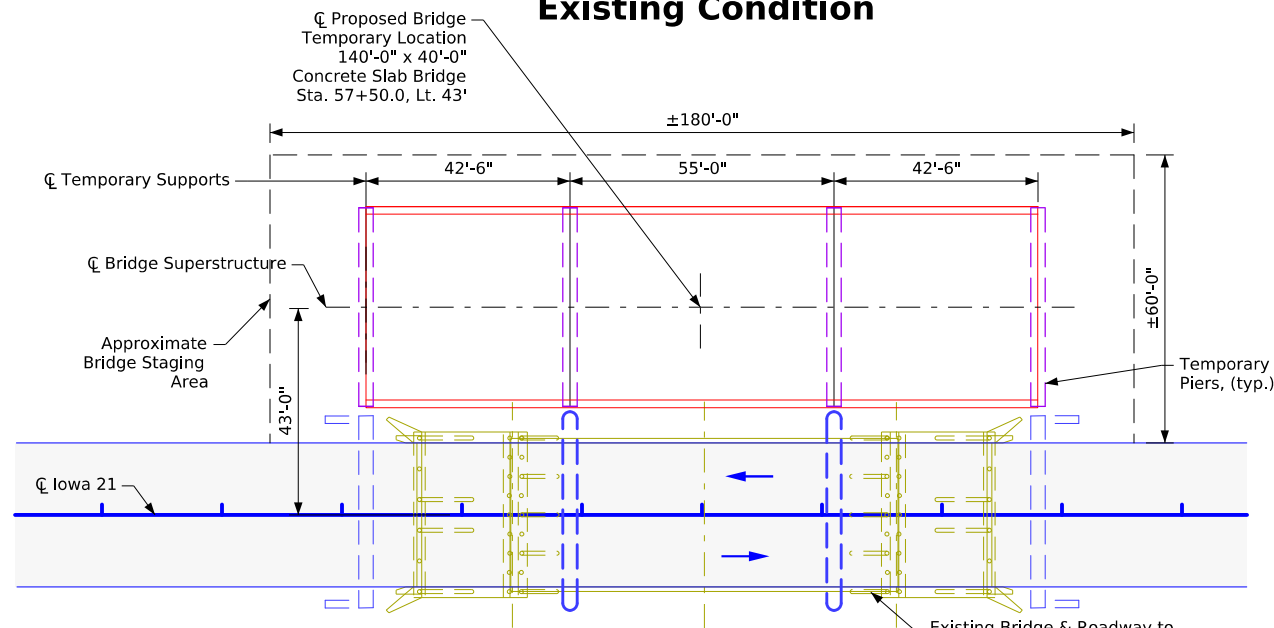
Keokuk County

IOWA DEPARTMENT OF TRANSPORTATION

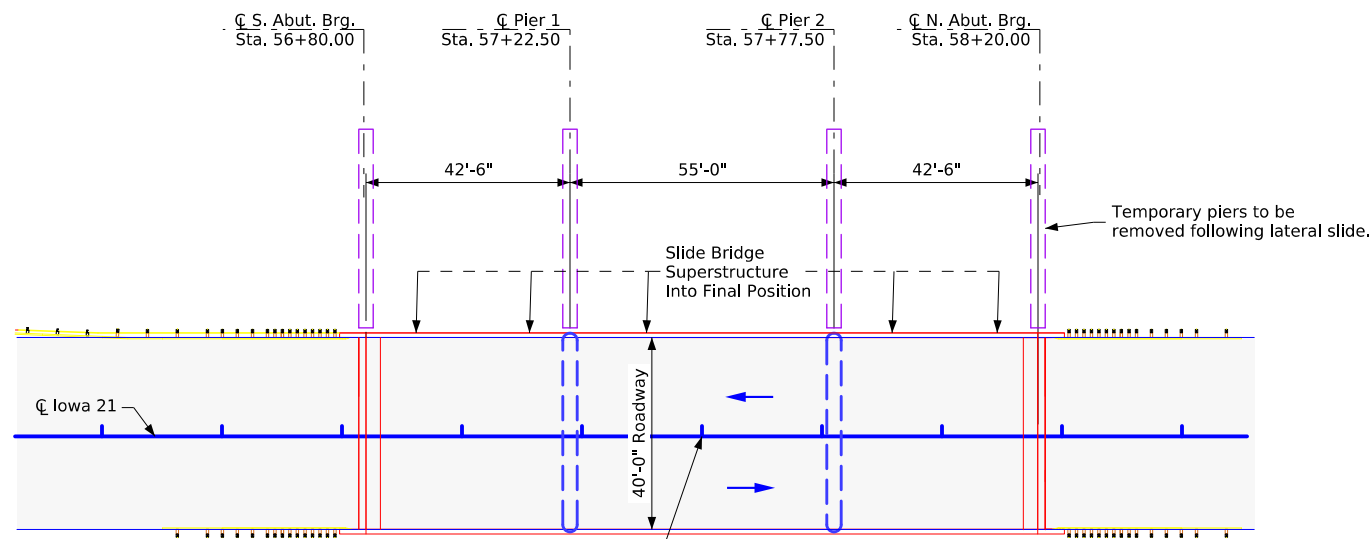
Design No. TBD Design Sheet No. 2 of 3 FHWA No. 32601



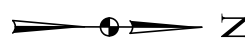
Existing Condition



Stage 1



Final



Suggested Construction Sequence For Critical Closure:

1. Demolish existing bridge.
2. Berm grading / drive piling / place revetment
3. Place CIP or precast abutment and wingwall footings, and pier cap.
4. Slide bridge superstructure into it's final position.
5. Flooded backfill
6. Bridge approach paving
7. Paved shoulder / install guardrail / longitudinal grooving

The suggested construction sequence for critical closure is a general list of major activities and not an exhaustive list of all necessary activities.

Notes to Final Designer:

1. Staging area for proposed bridge temporary location is approximated for right-of-way needs and will need to be finalized during Final Design and Construction. If larger area is needed, DOT shall be consulted.
2. Lateral slide dimension of 43 feet is preliminary. Actual distance of slide to be evaluated during Final Design and coordinated with contractor.
3. Grade creek to maintain creek flow around temporary pile bents. Restore creek channel to pre-project contours after removal of temporary pile bents.

PRELIMINARY

Design For 0° Skew
140'-0" x 40'-0" Continuous Concrete Slab Bridge
 42'-6" End Spans 55'-0" Interior Span
Bridge Staging - ABC Lateral Slide
 STA. 57+50.00 (C Iowa 21)
Keokuk County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. TBD Design Sheet No. 3 of 3 FHWA No. 32601

CROSS SECTION VIEW COLOR LEGEND

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

NOTES:

NOTES:

**CROSS SECTIONS
LEGEND AND INFORMATION SHEET**

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

