REPLACEMENT - 0THER BRF-003-3(67)--38-76

S GO. BRIDGE

POCAHONTAS

		INDEX OF SHEETS
	No.	DESCRIPTION
Α	Sheets A.1 A.2	Title Sheets Title Sheet Location Map Sheet
В	Sheets B.1 - 3	Typical Cross Sections and Details Typical Cross Sections and Details
C	Sheets C.1	Quantities and General Information Tabulations
D	* D.1 * D.2	Mainline Plan and Profile Sheets Plan & Profile Legend & Symbol Information Sheet IA HWY 3
G	Sheets G.1 - 3 G.4	Survey Sheets Reference Ties and Bench Marks Horizontal Control Tab. & Super for all Alignments
J	Sheets J.1	Traffic Control and Staging Sheets Traffic Control Plan & Staging Notes
V	<pre>Sheets V.1 V.2</pre>	Culvert Situation Plans Situation Plan Situation Plan - Site
W	Sheets W.1 W.2 - 4	Mainline Cross Sections Cross Sections Legend & Symbol Information Sheet IA HWY 3 * Color Plan Sheets



PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

POCAHONTAS COUNTY

ON IA 3 OVER BIG CEDAR CREEK 6.3 MILES WEST OF IA 4

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



	MILEAGE SUMMARY														
Div.	Location	Lin. Ft. Miles													
	IA Highway 3 Sta. 333+90.00 to Sta. 336+15.00	225.00	0.0426												
	Total Length of Roadway Total Length of Project	225.00 225.00	0.0426 0.0426												

For Project Location Map Refer to Sheet No. A.2

REVISIONS

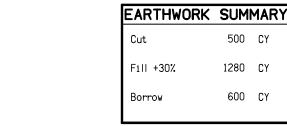
19

PROJECT IDENTIFICATION NUMBER

19-76-003-010

PROJECT NUMBER

BRF-003-3(67)--38-76
R.O.W. PROJECT NUMBER



DES	ign [DATA	RL	JRAL				
2024	AADT	1,6	00	_ V.P.D.				
2044	AADT	1,8	00	_ V.P.D.				
20	DHV			V.P.H.				
TRUCK	S		36					
Total Design	n E S ALs							

٦	INDEX OF SEALS														
1	SHEET NO.	NAME	TYPE												
	A.1	X	Primary Signature Block												
	V.1	DALLAS R. SCHECHINGER	Hydraulic Design												
J															

	ROADWAY DESIGN	
D5 PLA	I hereby certify that this engineering doct by me or under my direct personal super am a duly licensed Professional Engineer the State of Iowa. Date: 10—13	rvision and that I under the laws of
/OWA	Signature Printed or Typed Name	Date
	My license renewal date is December 3	1, 20 XX

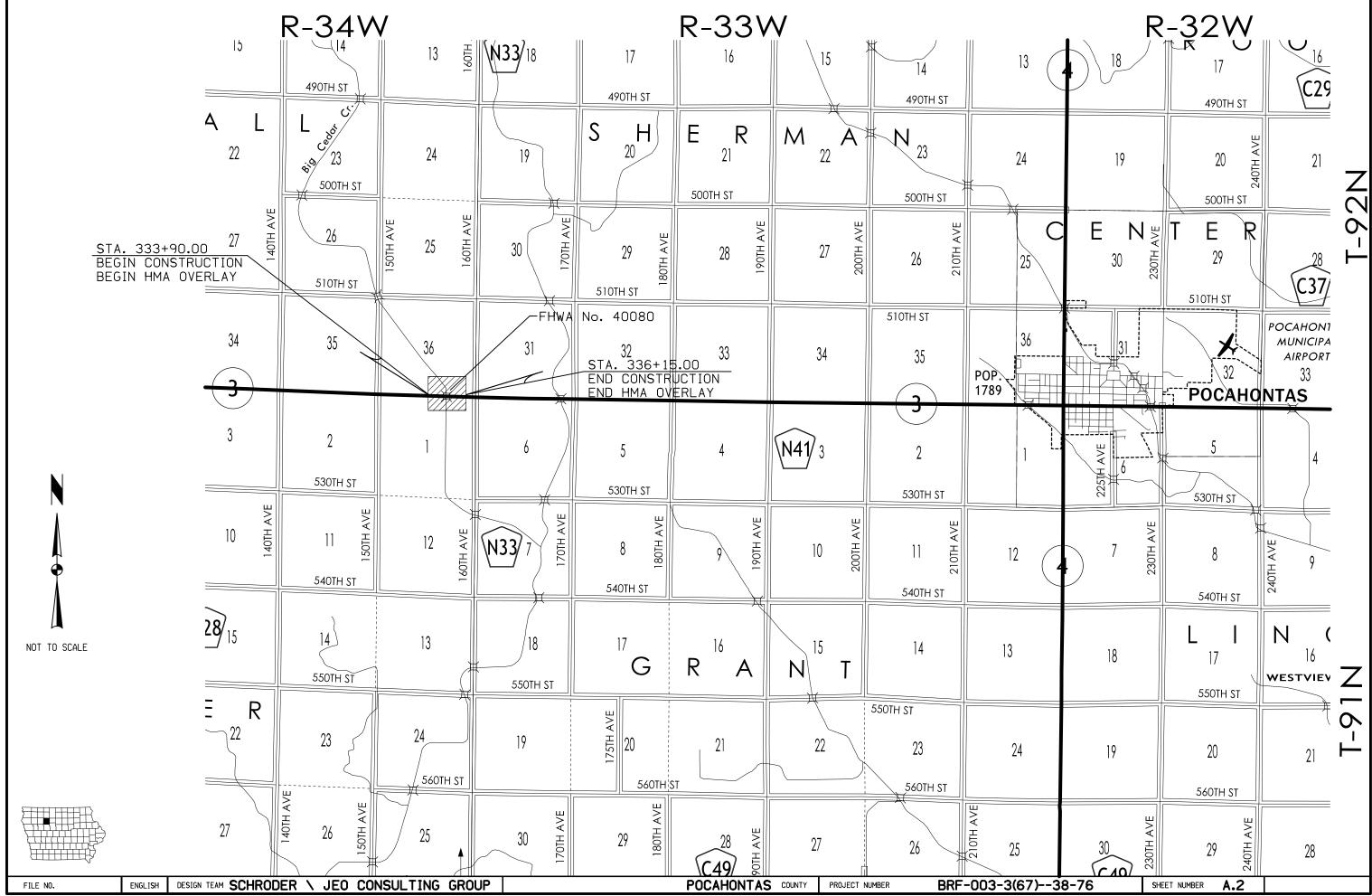
Pages or sheets covered by this seal: X

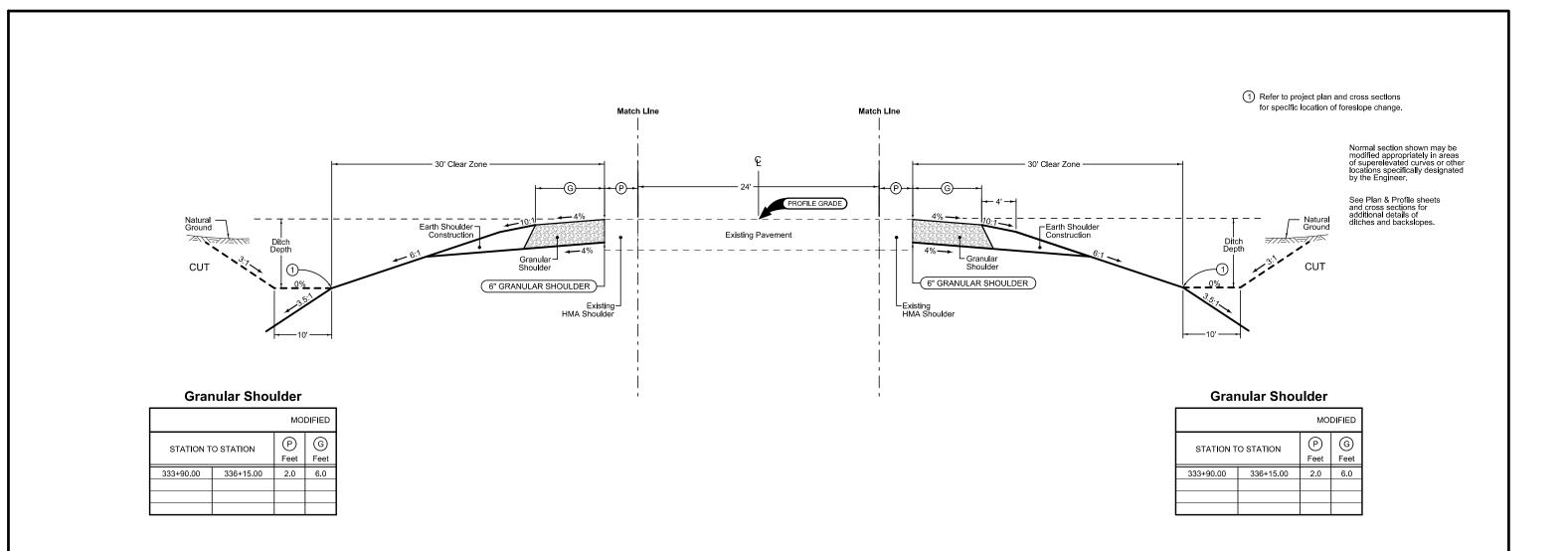
ENGLISH DESIGN TEAM SCHRODER \ JEO CONSULTING GROUP

POCAHONTAS COUNTY

PROJECT NUMBER BRF-003-3(67)--38-76

SHEET NUMBER A.1

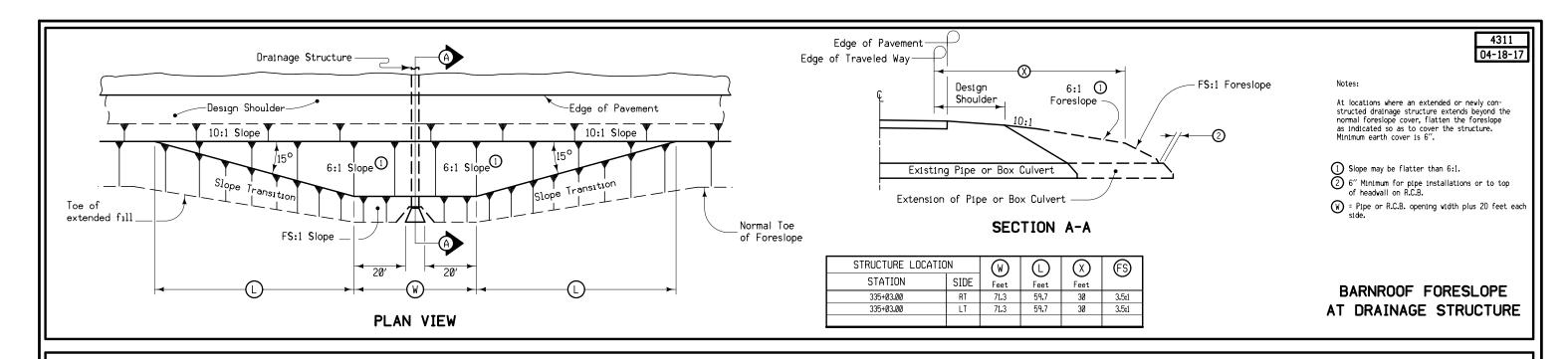


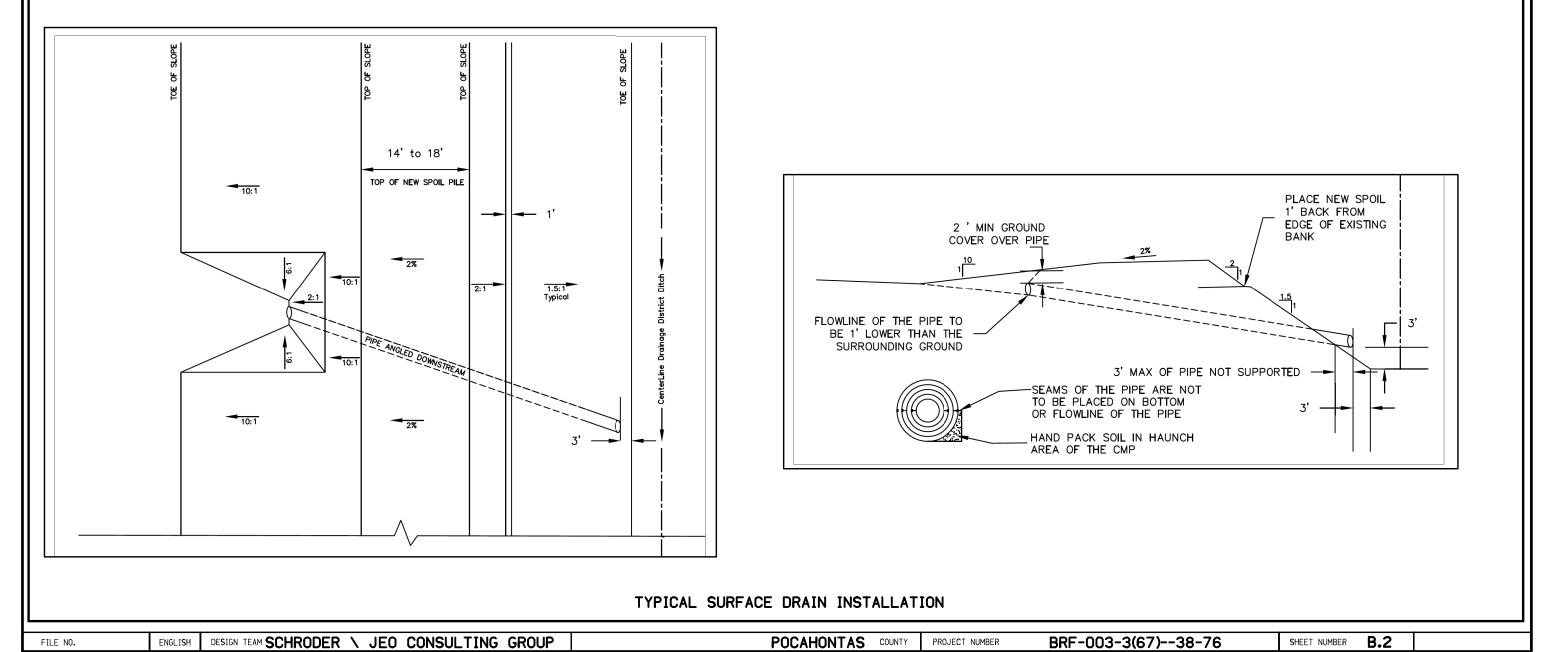


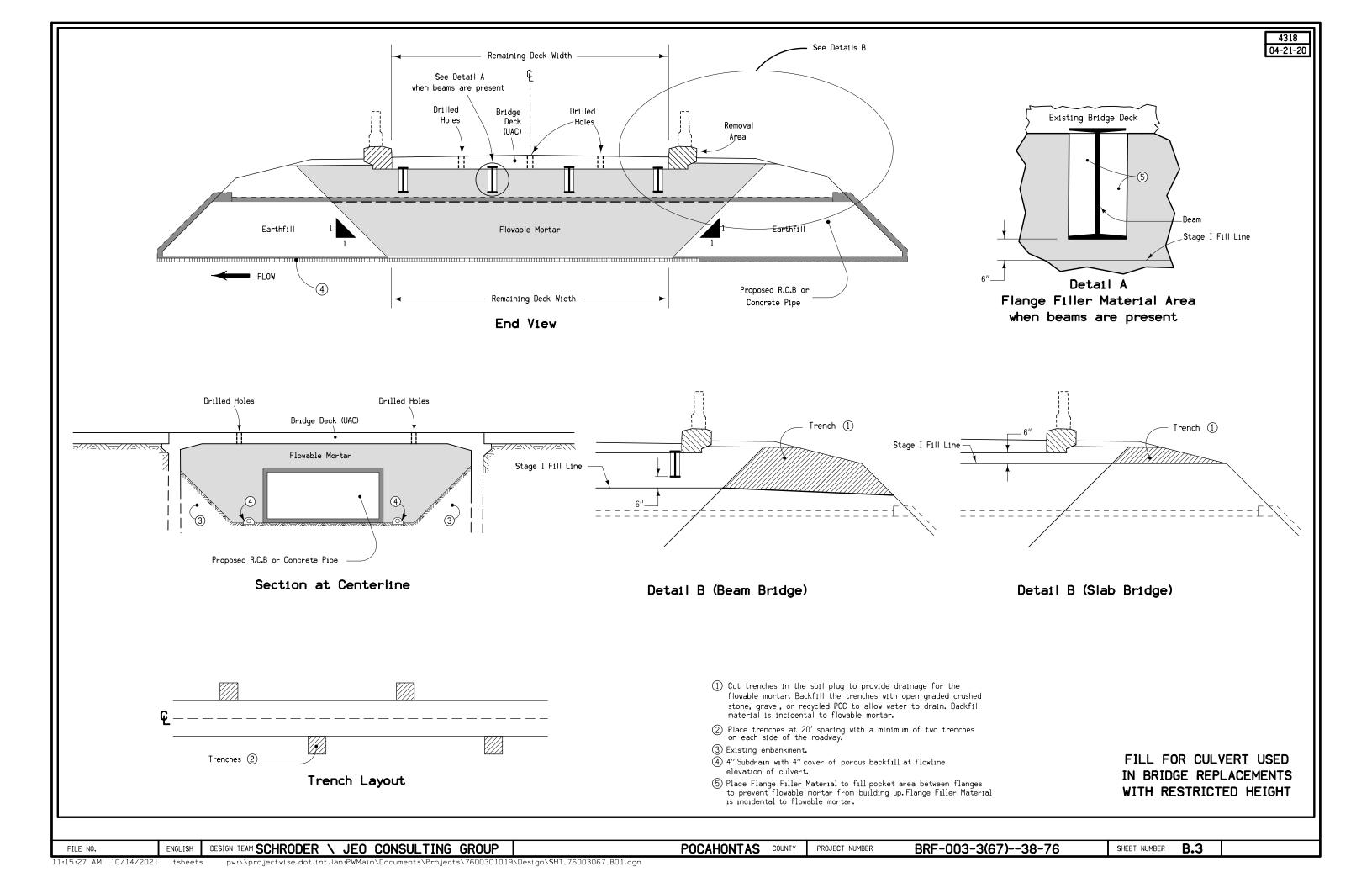
Refer to Tab. 102-16 and Standard Road Plan PR-202 for HMA Runouts. Refer to Tab. 100-24 for Pavement Quantities

Refer to Tab. 112-9 for Shoulder Quantities

TYPICAL CROSS SECTION IOWA HIGHWAY 3







104-3 10-17-17

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.

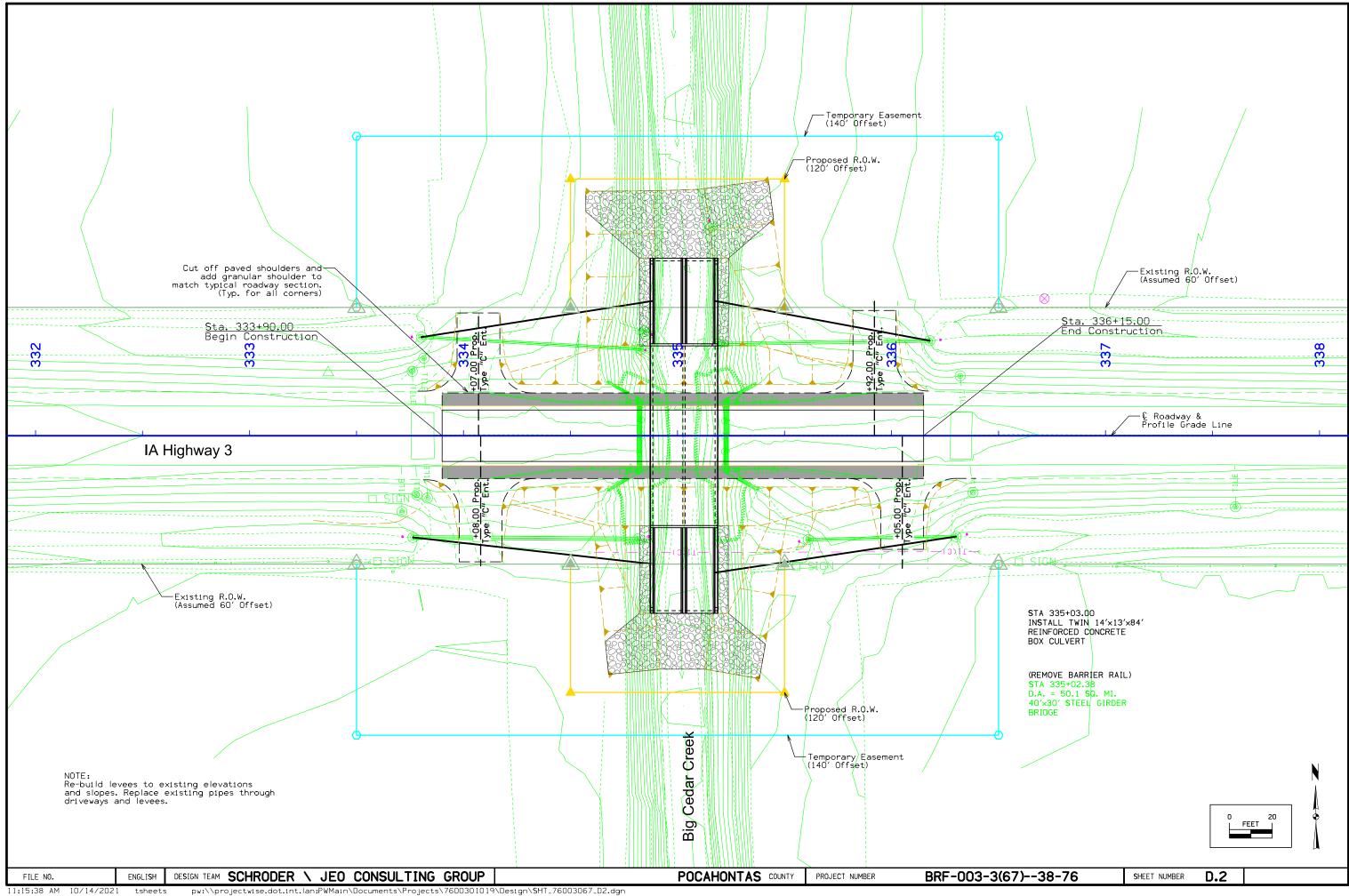
* Not a bid item

Diameter or equivalent diameter

(2) U (3) B	2 UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe (3) Backfill according to DR-101																																				
Drainage Area	Location	Туре	(r) Size	Kind Of Pipe	Length New Const.	Bedding Class	Design Cover (H)	Camber* (DR-102)	l N	pron No.	Apron Guard* (DR-213)	Elbow* (DR-141)	Diaphragm* (DR-501) Tee Section*	(DR-142) "D" Section* (DR-141)	Reducer*	Type 'C' Connections*	(UK-122) Connected Pipe Joint*	(DR-121) 4" Perforated	Subdrain*		Flow Line Elevations			Т	Dimensions Lin. Ft. Total Extensions			Skew Ahead Degrees	Rt.	Dike Location Top		Type	Class 20	Flowable Mortar	Floodable* Backfill	Backfill Flooded Backfill Backfill	Remarks
ACRE			IN		LF		FT	FT	IN	OUT	No.	No.	No. No	No.	No.	Type N	lo. Typ	e F1	Ī	Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt. Rt	. Lt.	Station	Elevation		CY	CY	CY	CY CY	
																						INLET	OUTLET	Γ													
	NE Entrance	CMP	18	CMP	102	С	5.0	0.08	1	1 1												1250.12	1246.99	Э									110.0				
	NW Entrance	CMP	15	CMP	110	С	6.0	0.17	1	1 1												1251.00	1246.99	Э									135.0				
	SE Entrance	CMP	15	CMP	114	С	2.0	0.08	1	1 1												1250.00	1246.61	1									55.0				
	SW Entrance	CMP	18	CMP	113	С	2.0	0.08	1	1 1												1251.37	1247.95	5									55.0				

See Sheet B.2 for surface drain detail. All pipes must be 12 gauge riveted CMP, spiral pipe is not allowed.

UTILITY LEGEND SURVEY SYMBOLS PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS Cıstern LINEWORK Design Color No. (LP) Green Existing Topographic Features and Labels L.P. Gas Tank (No Footing) Interstate Highway Symbol — T1(C)— CenturyLınk Tom Sturmer 720-578-8090 Blue Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation Underground Storage Tank U.S. Highway Symbol Magenta Existing Utilities homas.sturmer@centurylink.com Design Color No. SHADING Iowa Highway Symbol Latrine (4) Highlight for Critical Notes or Features Yellow County Road Highway Symbol Luminaire (3) Delineates Restricted Areas Red (9) Traffic Signal Lavender Temporary Pavement Shading Evergreen Tree Gray, Light (48) Proposed Pavement Shading Deciduous Tree Traffic Signal with Luminaire Gray, Med (80) Proposed Granular Shading Gray, Dark (112) Proposed Grade and Pave Shading "In conjunction with a paving project" O TP Telephone Pedestal Fruit Tree Brown, Light (236) Grading Shading Television Pedestal Shrub (Bushes) Tan (8) Proposed Sidewalk Shading Blue, Light (230) Proposed Sidewalk Landing Shading Telephone Pole \sim Pink (11) Proposed Sidewalk Ramp Shading Telephone Pole (Second Company) Telephone Pole (Third Company) PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS LINEWORK Design Color No. Telephone Pole (Fourth Company) Existing Ground Line Profile Green ШΞ Rock Outcrop Telephone Pole (Fifth Company) Proposed Profile and Annotation Blue (1) 0000 Power Pole Magenta Existing Utilities Broken Concrete Blue, Light (230) Proposed Ditch Grades, Left Power Pole (Second Company) Revetment (Rip Rap) Black Proposed Ditch Grades, Median + Power Pole (Third Company) Rust (14) Proposed Ditch Grades, Right Cemeteru [<u>G</u>] (<u>C</u>V) Reference Point Survey Line Power Pole (Fourth Company) Grave RIGHT-OF-WAY LEGEND Cave Power Pole (Fifth Company) Station ▲ Proposed Right-of-Way ---- Section Corner Electrical Highline Tower (Metal or Concrete) Sink Hole \triangle Existing Right of Way — - - — - - — - - — Ground Line Intercept Telephone Riser Pole Existing and Proposed Right-of-Way Power Riser Pole Chain Link or Security Fence Saw Cut. Easement and Existing Right-of-Way Telegraph Pole + Wire Fence Guardrail D Satellite TV Dish Terrace Easement Trench Drain Earth Dam or Dike (Existing) Water Hook Up C ∕ △ Access Control HighTension Cable Earth Dam or Dike (Proposed) → Property Line □ RT Radio Tower Sheet Pile Tile Outlet Tower Anchor O TA Clearing & Grubbing Area Pavement Removal Edge of Water Guardrail (Beam or Cable) Existing Drainage Guard Post (one or two) Proposed Drainage Guard Post (over two) Right of Way Rail or Lot Corner FP Filler Pipe Concrete Monument ⊙ GV Gas Valve Well Water Valve Windmill ⊙ SL Speed Limit Sign Beehive Intake Mile Marker Post MM Existing Intake □ SIGN Proposed Intake □ TCB Traffic Signal Control Box Existing Utility Access (Manhole) □ RRB Rail Road Signal Control Box PLAN AND PROFILE Proposed Utility Access (Manhole) □ TSB Telephone Switch Box LEGEND AND SYMBOL Fire Hydrant □ EB Electric Box INFORMATION SHEET Water Hydrant (Rural) (COVERS SHEET SERIES D, E, F, & K) DESIGN TEAM SCHRODER \ JEO CONSULTING GROUP POCAHONTAS COUNTY PROJECT NUMBER BRF-003-3(67)--38-76 SHEET NUMBER D. 1



Survey Information

POCAHONTAS COUNTY BRFN-003-3(67)--39-76 BIG CEDAR CREEK 6.3 MI W OF IA 14 PIN 19-76-003-010 SAP-08331

Survey Personnel

Field personnel: Dirk Janssen Survey Field Chief Brandon Mount - Surveyor William Riordan - Surveyor

Office personnel: Jeremy Cswercko

Date(s) of Survey

Begin Date July 6, 2020 End Date July 8, 2020

General Information

Measurement units for this survey are US survey feet. This project involves a bridge over Big Cedar Creek 6.3 mi W of IA 14.. This is a full field survey.

The survey request was made for the purpose of bridge replacement

Vertical Control

Vertical datum for this survey was established with NAVD88 (Computed using Geoid 12B). Referencing the lowa RTN, surveyors checked into NGS monuments with Trimble TSC3 collector using 15 second static observations. NGS PID DP4482 has a published elevation of 1258.67 ft. Survey observation of point was 1258.63. Surveyors accepted this vertical difference as tolerable for establishing control on site. NGS PID NL0924 has an approximate elevation of 1221 ft. Survey observation of point was 1221.17. This point was primarily used to confirm horizontal control but accepted vertical proximity. Benchmark was established on site using repeated 15 second observations. Elevations were transferred to additional control points and benchmark using level loop.

Horizontal Control

Horizontal control was established on 4 monuments for this project using the Iowa RTN with horizontal datum NAD83(2011) epoch 2010.00. Iowa Regional Coordinate System Zone 4 was used. Surveyors checked on NGS PID NL0924 for horizontal accuracy and were within .03' of North and East as noted on datasheet. Monuments set are considered stable and expected to hold horizontally and vertically reasonably well.

Survey Alignment Information

The horizontal alignment for this survey was provided by District 3 of the Iowa Department of Transportation.

Utility Information

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

One-call Design Information request:

Ticket # 552003310 submitted 05/04/20 at 10:01am Ticket # 552003311 submitted 05/04/20 at 10:01am

One-call Design Information converted to Locate request:

Ticket # 552003310 submitted 05/09/20 at 3:16 pm Ticket # 552003311 submitted 05/08/20 at 2:54 pm

Iowa One-Call Does not allow joint meets for survey related requests.

The following Companies were listed:

Company (Quality)
Century Link
Symbol
-T1(C)Clear Not Affected

, , ,

Companies responses to One-Call requests:

5/09/20 received an email from cl irth comm@irth.com stating the described dig area of your locate request has been checked and is clear for CenturyLink local Network.

As of 5/9/20 15:16 CDT, participating facility owners have responded to Ticket Checks as follows:

District CodeStatusCenturyLinkClear

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. 150TH AVE



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

la. Regional Coordinate System Zone 4

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) EPOCH 2010.00

VERT. DATUM: NAVD88

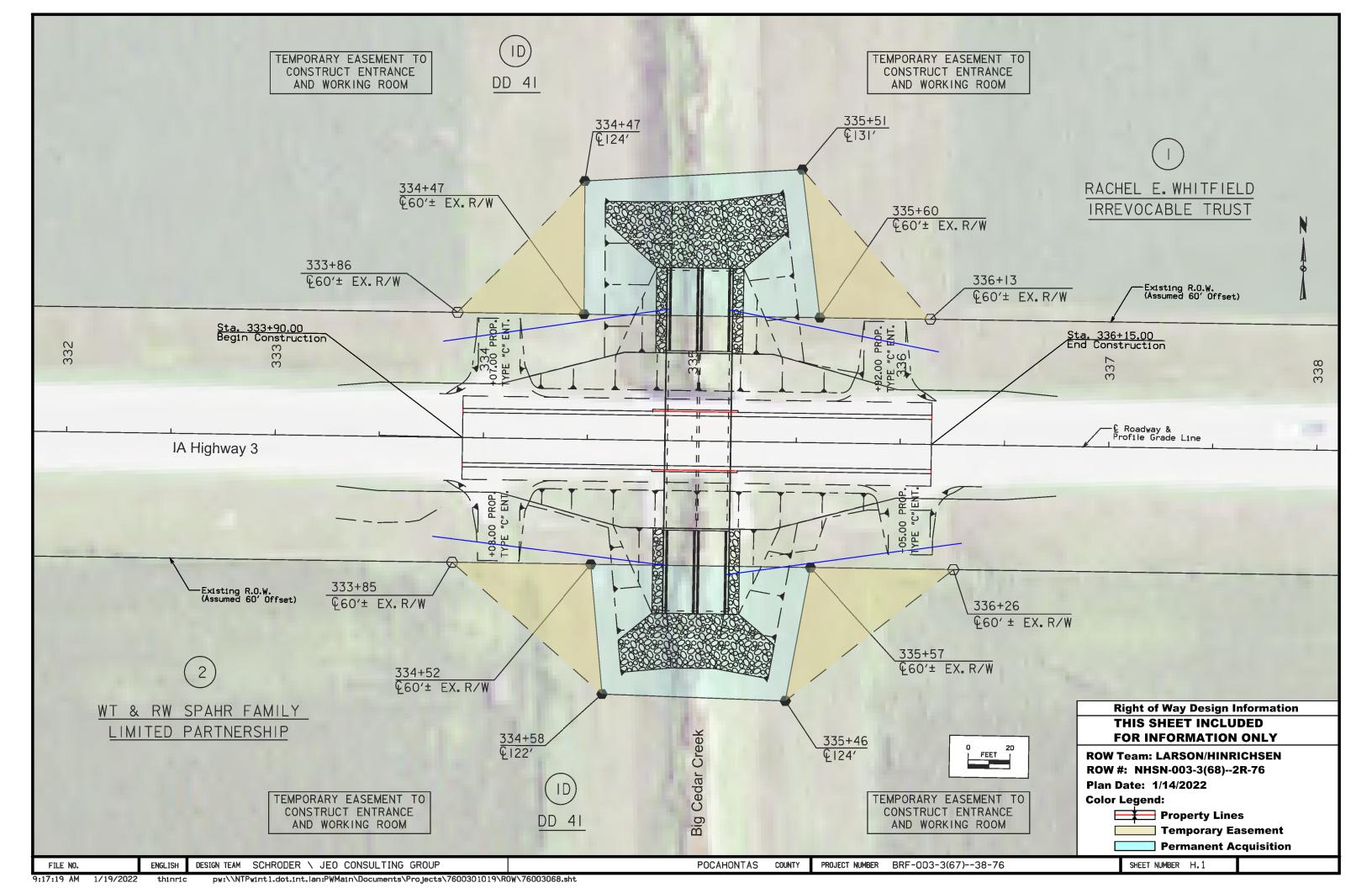
Ia. Regional Coordinate System Zone 4

Point Name	Northing	Easting	Elevation	Feature Definition	Description
100	8672616.169	14507773.23	1257.806	СР	SET ½"x 30"REBAR W/OPC STAMPED JEO CONTROL +/- 28.3' S OF CL HWY 3, +/- 514.1' W OF W END BRIDGE DECK
101	8672658.209	14508831.07	1252.518	СР	SET ½"x 30"REBAR W/OPC STAMPED JEO CONTROL +/- 496' E OF E END BRIDGE DECK, +/- 15' N OF CL HWY 20
500	8672668.088	14508143.41	1253.742	ВМ	SET ½"x 48"REABR W/OPC STAMPED JEO CONTROL, +/- 147.5' W OF W END BRIDGE DECK, +/- 29.4' N OF CL HWY 3
501	8672602 051	14508626 71	1252 253	DM.	SET 1/." A 8" DEBAD WIODO STAMBED IEO CONTROL ±1, 208 0' E OE E END BRIDGE DECK ±1, 28 4' S OE CL HWV 20

ALIGNMENT COORDINATES

								ALI	CINITEIN C	CONDINAI	LJ									
			Point on Tange	ent		Begin Spiral			Begin Curve		Simple Cur	ve PI or Maste	r PI of SCS		End Curve		End Spiral			
Name	Location	Station	Coor	dinates	Station	Coordinates		Station	Coord	Coordinates		Coordinates		Station	Coordinates		Station	Coordi	inates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)	Station	Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)	
Point 1	IA 3	324+23.90	8672652.05	14507230.21																
Point 2	IA 3	361+98.22	8672596.56	14511004.13																





108-23A 08-01-08

TRAFFIC CONTROL PLAN

Traffic control on this project shall be in accordance with the standard road plans shown in Tabulation 105-4 and the specific layouts show in the plans. For additional complementary information, refer to Part 6 fo the Manual of Uniform Trafic Control Devices (MUTCD) and the current standard specifications and suplemental specifications.

The Contractor shall coordinate traffic control with projects listed in Tabulations 111-01 and other projects in the area.

The Contractor shall notify the Resident Construction Engineer and Pocahontas County two (2) weeks prior to temporary road closures and changes in traffic patterns during construction.

The Contractor shall be responsible for furnishing, installing, maintaining, and removing the signage for the temporary detours.

The Contractor shall remove existing signs and posts withing the project limits, as required for construction. The Contractor shall provide Iowa DOT and Pocahontas County two (2) weeks advance notice prior to removal of existing signs.

The Contractor shall maintain clean pavement in and out of the work area at all times.

All signs to be in place longer than three days must be mounted.

The Contractor will be responsible for securing a safe storage area for equipment and materials to be used on the project.

STAGING NOTES

General Notes:

1. Access to properties shall be maintained at all times.

. The Contractor shall coordinate traffic control with project listed in Tabulation 111-01 and other projects in the area.

Stage 1 - Traffic Control

- Install temporary traffic control as required for construction

- Traffic control shall be in accordance with Standard Road Plan TC-1 and TC-202, as needed.

Stage 1 - Construction

- Install temporary erosion control.

- Install new box culvert under bridge.

- Remove guardrail from bridge.

Stage 2 - Traffic Control

- Install temporary traffic control as required for construction.

- Traffic control shall be in accordance with Standard Road Plan TC-216.

Stage 2 - Construction

- Cut and remove edge of bridge deck and barrier rail.

- Cut existing HMA shoulders to match roadway typical. Remove excess HMA and replace with granular shoulders to match roadway typical.

- Place flowable mortar.

Stage 3 - Traffic Control

- Install temporary traffic control as required for construction.

- Traffic control shall be in accordance with Standard Road Plan TC-1 and TC-202, as needed.

Stage 3 - Construction

- Complete final grading.

- Install final erosion control.

Stage 4 - Traffic Control

- Remove remaining traffic control.

FILE NO.

ENGLISH DESIGN TEAM SCHRODER \ JEO CONSULTING GROUP

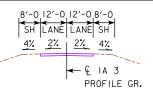
POCAHONTAS COUNTY PROJECT NUMBER

BRFN-003-3(67)--38-76

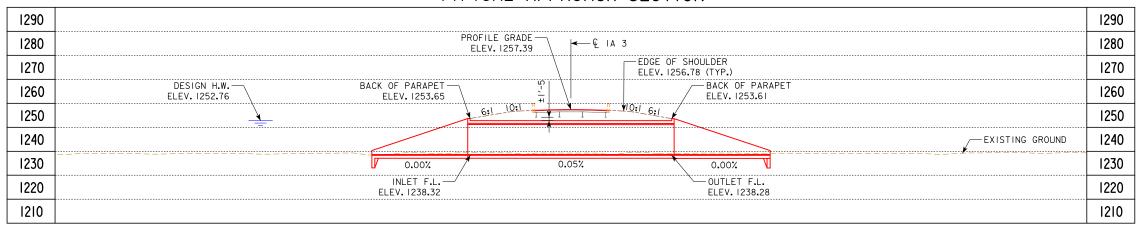
SHEET NUMBER

J.1

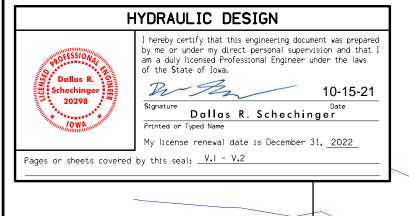
108-26A



TYPICAL APPROACH SECTION



PRELIM PLAN NOTES: THIS STRUCTURE WILL REQUIRE A NON-STANDARD DESIGN.



-1245--

FNGLISH

SCALE IN FEET

-ISP0

LONGITUDINAL SECTION ALONG & CULVERT ANTICIPATED SETTLEMENT = ?.?"

ROADWAY

42'-0 (C.I.P.) 47'-6 (PRECAST) 47'-6 (PRECAST) 47'-6 (PRECAST) 84'-0 (C.I.P.) BACK TO BACK PARAPET

95'-0 (PRECAST) BACK TO BACK PARAPET

 \triangleleft

42'-0 (C.I.P.)

STREAMBED. NOTE:

-TWIN 14'x13'

HEADWALL, 0° SKEW

THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 40'x30' STEEL GIRDER BRIDGE, POCAHONTAS DESIGN NO. 147, FHWA NO. 040080, MAINT. NO. 7600.0S003.

BIG CEDAR CREEK -

NOTE: BID ITEM NECESSARY BRIDGE DECK PATCHING,

APPROXIMATELY 10% OF DECK AREA

NOTE: FLOW LINE OF CULVERT HAS

BEEN SET 1.3' BELOW D.D. 41 DESIGN FLOWLINE AND 0.3' BELOW EXISTING

EXISTING STRUCTURE

40'x30' STEEL GIRDER BRIDGE (REMOVE BARRIER RAIL)

PROFILE GRADE

UTILITIES LEGEND:

TI - TELEPHONE

IA 3 (U.A.C.)

UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY, SEE ROAD DESIGN SHEETS FOR FINAL UTILITY INFORMATION.

HYDRAULIC DATA

DRAINAGE AREA = 50.1 SQ. MI. $Q_{50} = 2,380$ CFS HW ELEV. = 1252.76 STREAM SLOPE = 2.64 FT./MI.

LOCATION

BIG CEDAR CREEK (D.D. 41) T-91N R-34W SECTION I DOVER TOWNSHIP POCAHONTAS COUNTY FHWA NO. 040081 BRIDGE MAINT. NO. 7600.05003 TRUCKS LATITUDE 42.732621° LONGITUDE -94.802409°

TRAFFIC ESTIMATE

2024 AADT I,600 V.P.D. 2044 AADT I,800 V.P.D. _____ V.P.H. 2044 DHV ____36_ % TOTAL DESIGN ESALs

SHEET NUMBER

٧.١

DESIGN FOR 0° SKEW

TWIN 14'x13'x84' REINFORCED CONCRETE BOX CULVERT

SITUATION PLAN

STA. 335+03.00 (IA3) SEPTEMBER 2021 POCAHONTAS COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 2 FILE NO. 32089 DESIGN NO._

SITUATION PLAN POCAHONTAS COUNTY PROJECT NUMBER BRF-003-3(67)--38-76 SCHRODER \ JEO CONSULTING GROUP, INC.

(PRECAS

ROADWAY & PROFILE GRADE LINE

(C.I.P.)

STA. 335+02.38 € EXISTING

40' x 30' STEEL GIRDER

BRIDGE, FHWA NO. 040080

(REMOVÉ BARRIER RAIL)

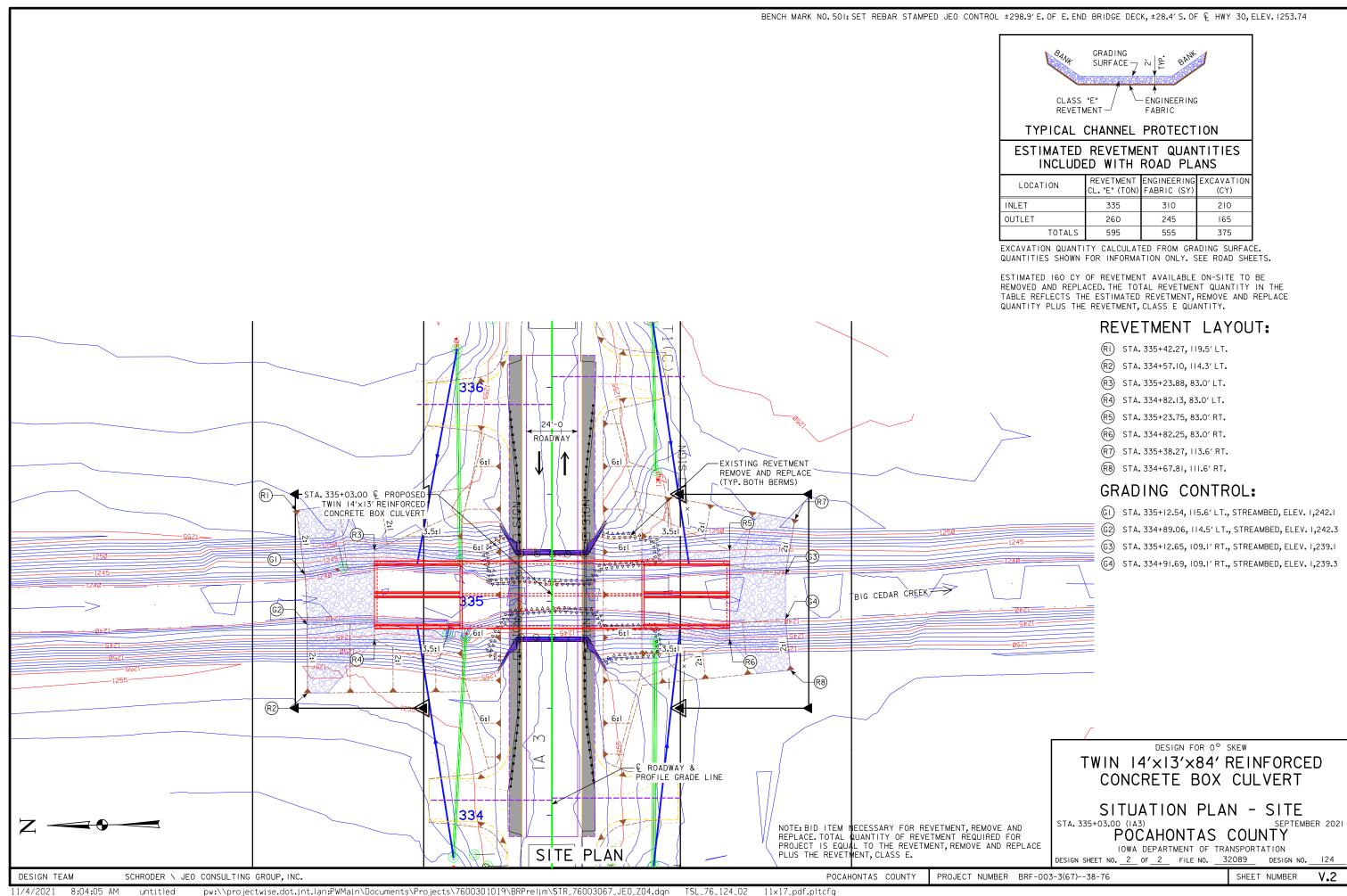
STA. 335+03.00 ¢ PROPOSED

TWIN 14'x13

HEADWALL, 0° SKEW

TWIN 14'x13' REINFORCED

CONCRETE BOX CULVERT



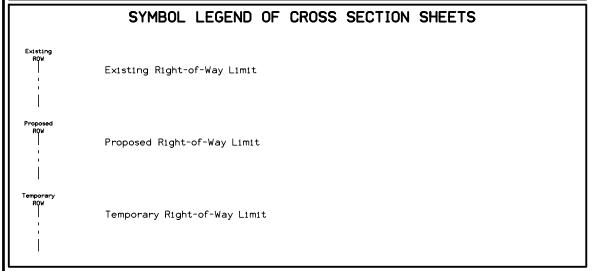
LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD) ---- Existing Ground Line - Proposed Template Proposed Topsoil Placement - — Additional Topsoil Removal Subrade Treatment -- Granular Shoulder - Pavement — — Existing Pipe\RCB - Proposed Pipe\RCB - Proposed Dike All Elements Associated with Proposed Entrances LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS) - Topsoil (Class 10) Slope Dressing Only -- Class 10 Materials — Select Loams And Clay-Loams - Select Sand - Unsuitable Type A Disposal — Unsuitable Type B Disposal — Unsuitable Type C Disposal - Shale

Note: All layer lines and descriptions identify layers above the line. Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

- Waste

— Solid Rock - Boulders

- Broken and Weathered Rock



CROSS SECTION LEGEND AND SYMBOL INFORMATION SHEET

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

W.1

SHEET NUMBER

BRF-003-3(67)--38-76

DESIGN TEAM SCHRODER \ JEO CONSULTING GROUP

POCAHONTAS COUNTY

PROJECT NUMBER

