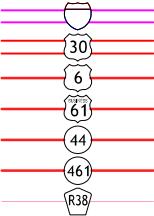


BRIDGE APPROACH REPAIR LETTING DATE 11-17-2020
MB-169-2(500)174--77-46

HUMBOLDT COUNTY - DESIGN 120

LEGEND

- INTERSTATE ROUTE
- FREEWAY OR EXPRESSWAY ROUTE
- U.S. NUMBERED ROUTE
- BUSINESS ROUTE
- STATE NUMBERED ROUTE
- UNSIGNED ROUTE
- COUNTY NUMBERED ROUTE
- SECONDARY ROAD OR ADJOINING CITY STREET
- CITY STREET
- PARK, INSTITUTION, OR FEDERAL ROAD
- RAILROAD
- CORPORATION LINE
- SECTION LINE
- CUL-DE-SAC
- SECTION, TOWNSHIP & RANGE NUMBERS



9, T-81N, R-30W



Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

PRIMARY ROAD SYSTEM

HUMBOLDT COUNTY

BRIDGE APPROACH REPAIR

US 169 OVER WEST FORK DES MOINES RIVER
0.6 MI. SOUTH OF IA 3 IN HUMBOLDT

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

REVISIONS



1-800-292-8989
www.iowaonecall.com



STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET NUMBER C.1

DESIGN DATA URBAN

2018 AADT 8,300 V.P.D.
TRUCKS 8 %

INDEX OF SEALS

SHEET NO.	NAME	TYPE
I	CASEY V. FABER	STRUCTURAL DESIGN
A.I	BRADY L. BOGAARD	ROADWAY DESIGN

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 Casey V. Faber Date 8.5.2020
Printed or Typed Name

My license renewal date is December 31, 2021

Pages or sheets covered by this seal: SHEETS 1 THRU 6

PROJECT DIRECTORY NAME: 4616902018

DESIGN TEAM: WHKS

ENGLISH

IOWA DOT * OFFICE OF BRIDGES AND STRUCTURES

FILE NO. 31640

HUMBOLDT COUNTY

PROJECT NUMBER MB-169-2(500)174--77-46

SHEET NUMBER

I

GENERAL NOTES:

THIS DESIGN IS FOR REPAIRS TO THE EXISTING 333'-0 x 56'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE LOCATED IN HUMBOLDT COUNTY ON US 169 OVER THE WEST FORK DES MOINES RIVER.

ELECTRONIC COPIES OF ORIGINAL DESIGN PLANS AND REPAIR PLANS WILL BE MADE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. DIMENSIONS SHOWN ON THESE PLANS ARE BASED ON DESIGN PLANS (ORIGINAL DESIGN NO. 196, REPAIR DESIGN NO. 106).

SEE DESIGN SHEET 2 FOR LIST OF REPAIR ITEMS.

FAINT LINES ON PLANS INDICATE EXISTING PORTIONS OF THE BRIDGE.

ALL DIMENSIONS AND DETAILS SHOWN ON THESE PLANS PERTINENT TO NEW CONSTRUCTION SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE STARTING CONSTRUCTION.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5a1 is $\frac{5}{8}$ inch diameter bar). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

CONSTRUCTION SHALL BE DONE IN STAGES WITH AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION MAINTAINED AT ALL TIMES IN ACCORDANCE WITH "TRAFFIC CONTROL PLAN" NOTE.

THE CITY AND UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE STARTING DATE.

THIS BRIDGE CONTAINS EPOXY COATED REINFORCING STEEL IN THE DECK. CONTRACTOR SHALL EXERCISE CARE WHEN REMOVING CONCRETE AROUND EPOXY COATED REINFORCING AND USE HAND TOOLS THAT WILL NOT DAMAGE THE EPOXY COATING ACCORDING TO ARTICLE 2413.03, C OF THE STANDARD SPECIFICATIONS.

CONSTRUCTION STAGES 1 AND 2 AS DETAILED ON THESE PLANS MAY BE REVERSED AT THE CONTRACTOR'S OPTION SUBJECT TO THE ENGINEER'S APPROVAL.

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

PRESENT DECK THICKNESS IS ABOUT 9½ INCHES, INCLUDES EXISTING OVERLAY. THE CONTRACTOR SHALL EXERCISE CARE IN REMOVING CONCRETE IN ORDER TO PREVENT UNNECESSARY UNBONDING OF REINFORCING STEEL.

PARTIAL DEPTH DECK REPLACEMENT AT EACH ABUTMENT SHALL BE CONSTRUCTED AS CLASS 'A' DECK REPAIRS, ACCORDING TO SECTION 2413 OF THE STANDARD SPECIFICATIONS. THE TOP OF REMOVAL AND PLACEMENT SHALL BE COINCIDENT WITH THE EXISTING DECK SURFACE, AND EXTENDED TO THE LIMITS SHOWN ON THE DETAILS IN THESE PLANS. SURFACE PREPARATION PRIOR TO PLACEMENT OF CONCRETE SHALL BE ACCORDING TO ARTICLE 2413.03, E, 2, f, OF THE STANDARD SPECIFICATIONS.

KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL.

THE TOP AND INTERIOR FACES OF THE CONCRETE RAILING ARE TO BE CLEANED AND SEALED IN ACCORDANCE WITH ARTICLE 2403.03, P, OF THE STANDARD SPECIFICATIONS. ALL COSTS ASSOCIATED WITH CLEANING AND SEALING OF THE CONCRETE RAILS SHALL BE INCLUDED IN THE UNIT PRICE BID ITEM "DECK REPAIR, CLASS A".

IT SHALL BE THE BRIDGE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SITES FOR EXCESS EXCAVATED MATERIAL. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES

THE BRIDGE CONTRACTOR SHALL DRESS UP THE SLOPES AROUND THE WINGS WHICH ARE DISTURBED DURING CONSTRUCTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL AND NO EXTRA PAYMENT WILL BE MADE.

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
1	2104-2713020	EXCAVATION, CLASS 13, CHANNEL	CY	113.8	
2	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	1,160	
3	2413-0698074	DECK REPAIR, CLASS A	SY	73.1	
4	2507-3250005	ENGINEERING FABRIC	SY	261.2	
5	2507-6800061	REVETMENT, CLASS E	TON	182.0	
6	2533-4980005	MOBILIZATION	LS	1.00	

ESTIMATE REFERENCE INFORMATION:

ITEM NO.	DESCRIPTION
1	INCLUDES ALL NECESSARY EQUIPMENT AND LABOR TO EXCAVATE, SHAPE, TRIM, AND DRESSS THE BERM TO PREPARE FOR PLACEMENT OF ENGINEERING FABRIC AND CLASS E REVETMENT. APPROXIMATE LIMITS ARE SHOWN ON THE SITUATION PLAN.
2	INCLUDES ALL MECHANICAL SPLICE ASSEMBLIES REQUIRED.
4	ENGINEERING FABRIC SHALL BE MATERIAL AS SPECIFIED FOR EMBANKMENT EROSION CONTROL IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.
5	ESTIMATED AT 1.6 TON/CY

SPECIFICATIONS:

DESIGN: AASHTO SERIES 2002.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES 2002.

REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 60.

CONCRETE IN ACCORDANCE WITH SECTION 8, f'c = 4.0 KSI.



ROADWAY QUANTITIES SHOWN ELSEWHERE IN THESE PLANS.

TRAFFIC CONTROL PLAN:
THE ROADWAY WILL BE OPEN TO THRU TRAFFIC.
REFER TO THE TRAFFIC CONTROL PLAN SHOWN ELSEWHERE IN THESE PLANS.

DESIGN HISTORY AT THIS SITE (INCLUDES THIS DESIGN)	
DES. NO.	TYPE OF WORK
196	ORIGINAL DESIGN
106	BRIDGE DECK OVERLAY
120	BRIDGE APPROACH REPAIR

DESIGN FOR REPAIRS TO A 0° SKEW

333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE

110'-9 END SPANS111'-6 CENTER SPAN

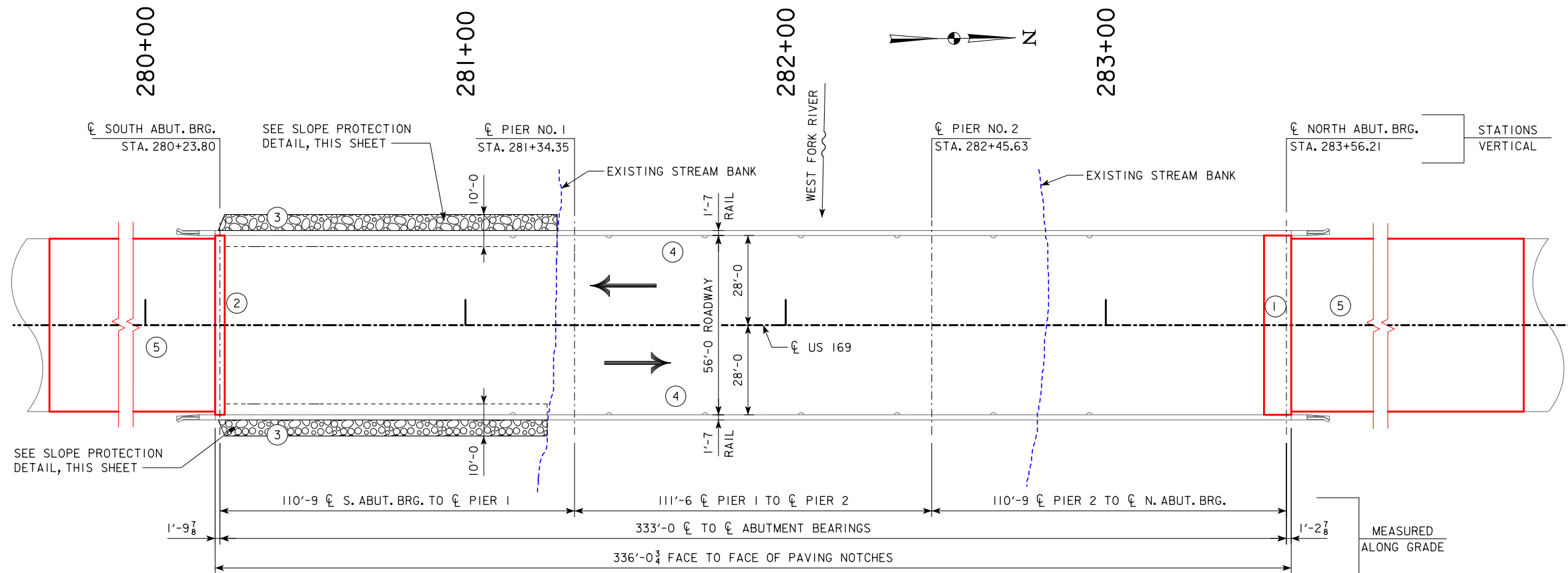
ESTIMATED QUANTITIES & NOTES

STA. 281+90.02 (Œ US 169)FEBRUARY, 2020

HUMBOLDT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

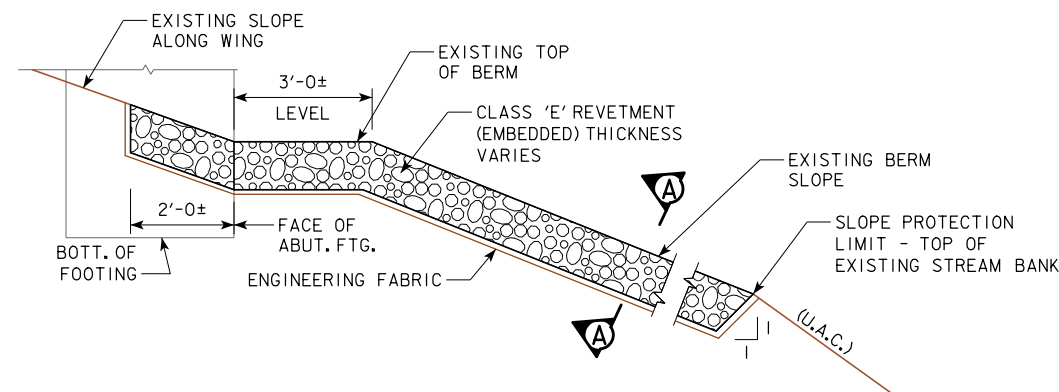
DESIGN SHEET NO. 1 OF 5FILE NO. 31640DESIGN NO. 120



SITUATION PLAN

REPAIRS SHALL CONSIST OF:

- ① REPAIR TOP OF NORTH ABUTMENT AND END OF DECK.
- ② REPAIR TOP OF SOUTH ABUTMENT AND END OF DECK.
- ③ REPAIR AND PLACE SLOPE PROTECTION AT SOUTH ABUTMENT BERM.
- ④ CLEAN AND SEAL BARRIER RAILS.
- ⑤ REMOVE AND REPLACE APPROACH SLABS.



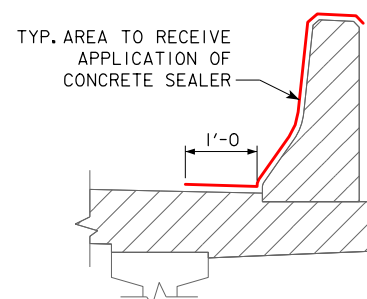
SLOPE PROTECTION DETAIL
(SOUTH ABUTMENT BERM ONLY)

TRAFFIC ESTIMATE

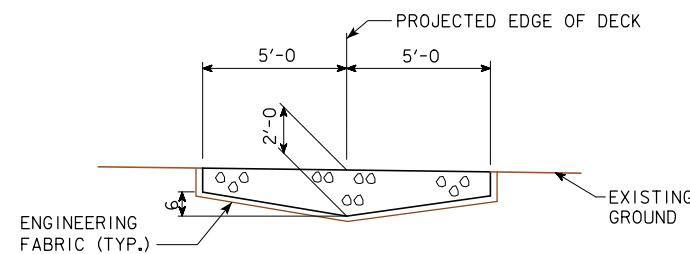
2018 AADT	8,300	V.P.D.
TRUCKS	8	%

LOCATION:

US 169 OVER WEST FORK
DES MOINES RIVER
T-91N, R-29W
SECTION 1 & 2
CORINTH TOWNSHIP
HUMBOLDT COUNTY
MAINT. NO. 4673.7S169
FHWA NO. 028871
LATITUDE 42.721694
LONGITUDE -94.226882

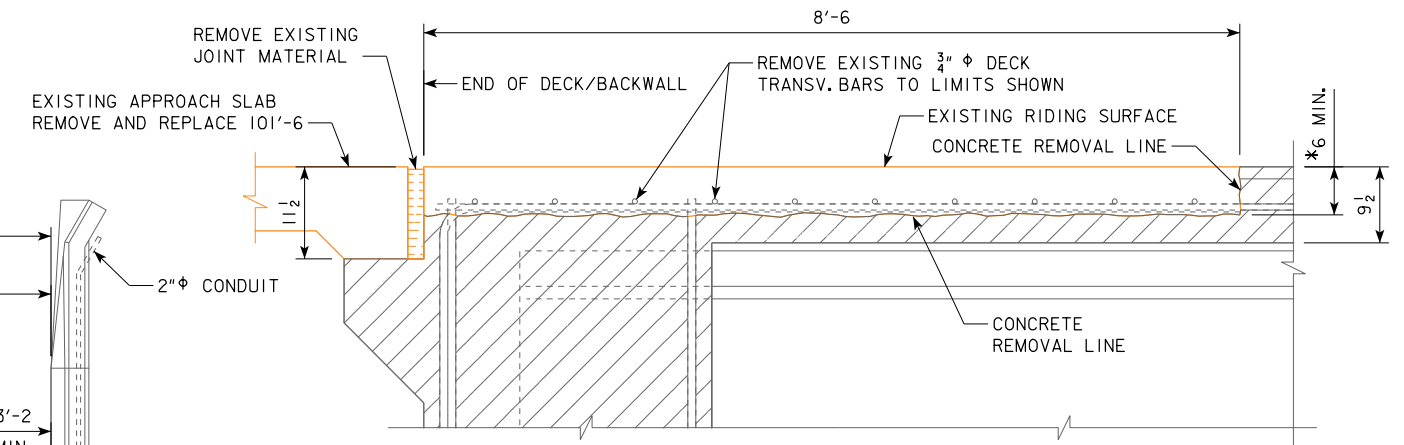


DETAIL OF CONCRETE
SEALER AREA

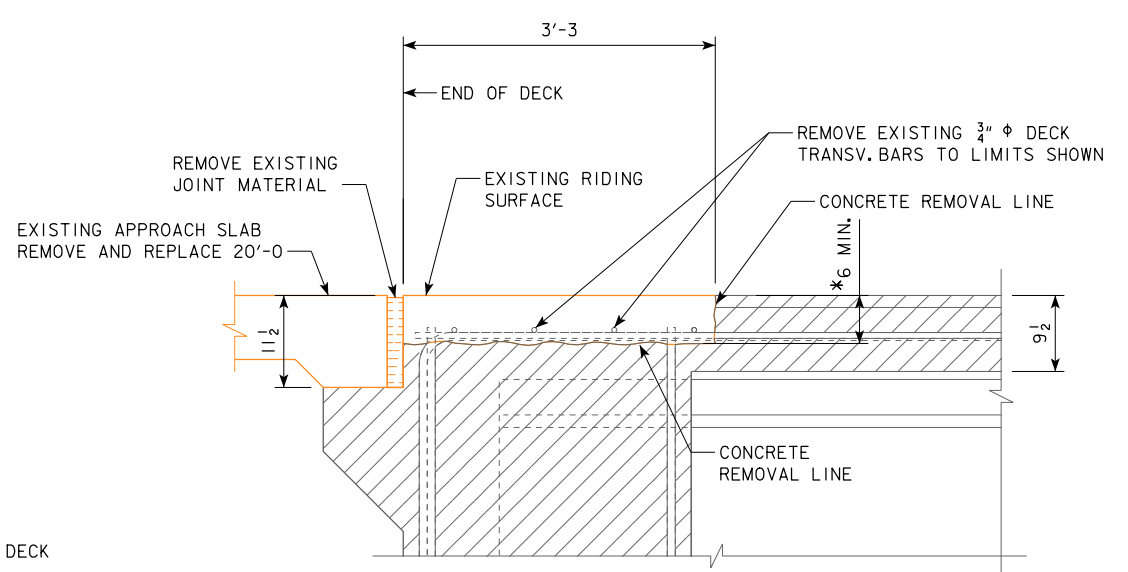


SECTION A-A

DESIGN FOR REPAIRS TO A 0° SKEW
**333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE**
110'-9 END SPANS 111'-6 CENTER SPAN
SITUATION PLAN
STA. 281+90.02 (CL US 169) FEBRUARY, 2020
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2 OF 5 FILE NO. 31640 DESIGN NO. 120



REMOVAL PLAN AT NORTH ABUTMENT

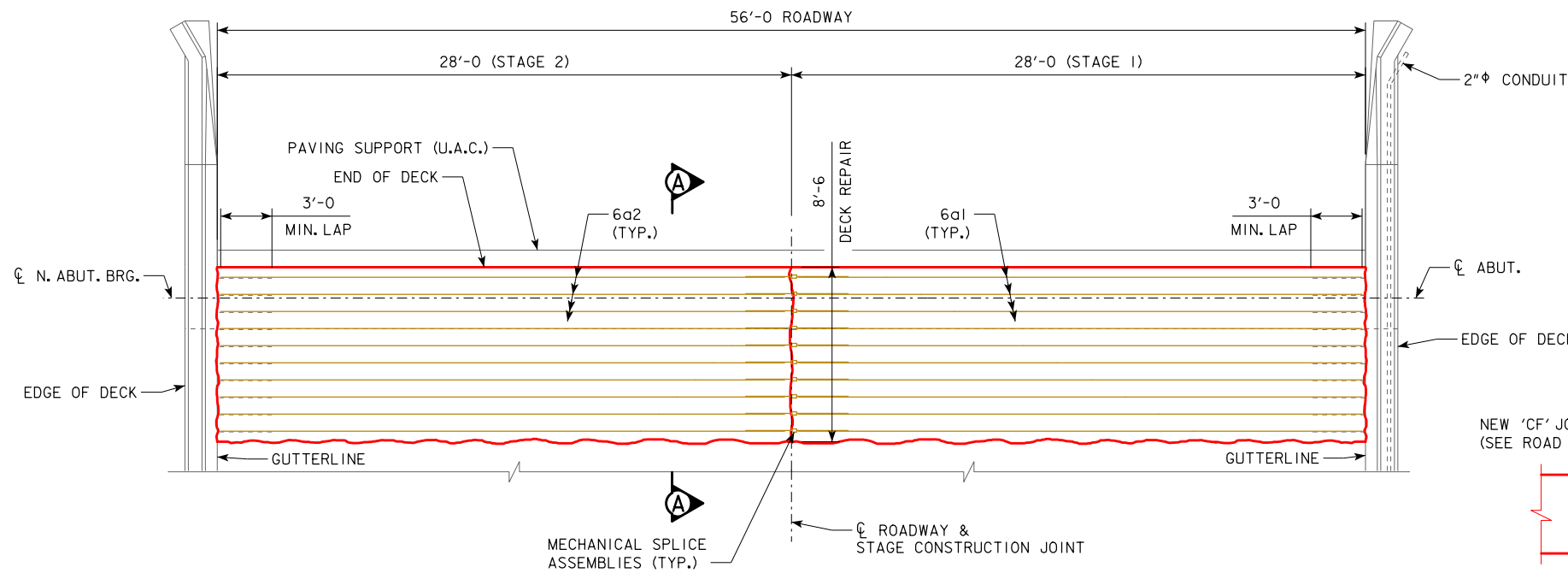


REMOVAL PLAN AT SOUTH ABUTMENT
(EXISTING LONGITUDINAL BARS NOT SHOWN FOR CLARITY.)

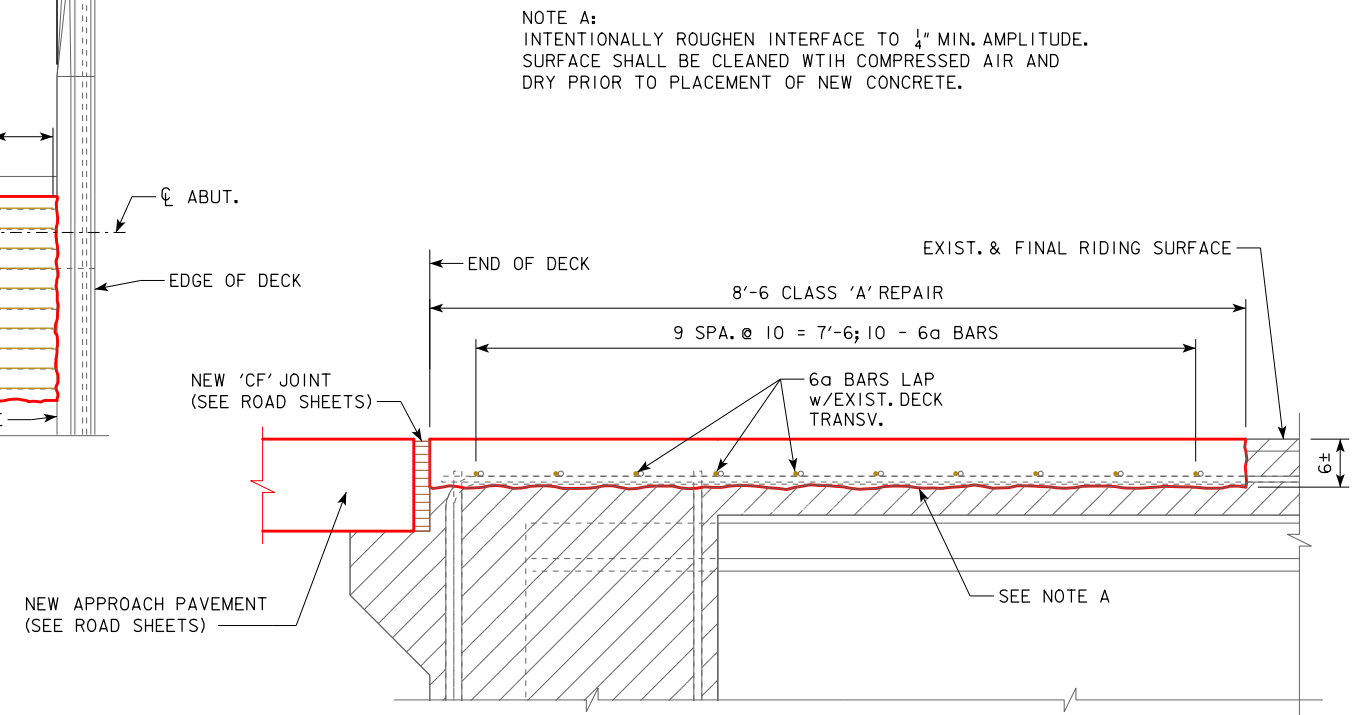


whks
engineers + planners + land surveyors

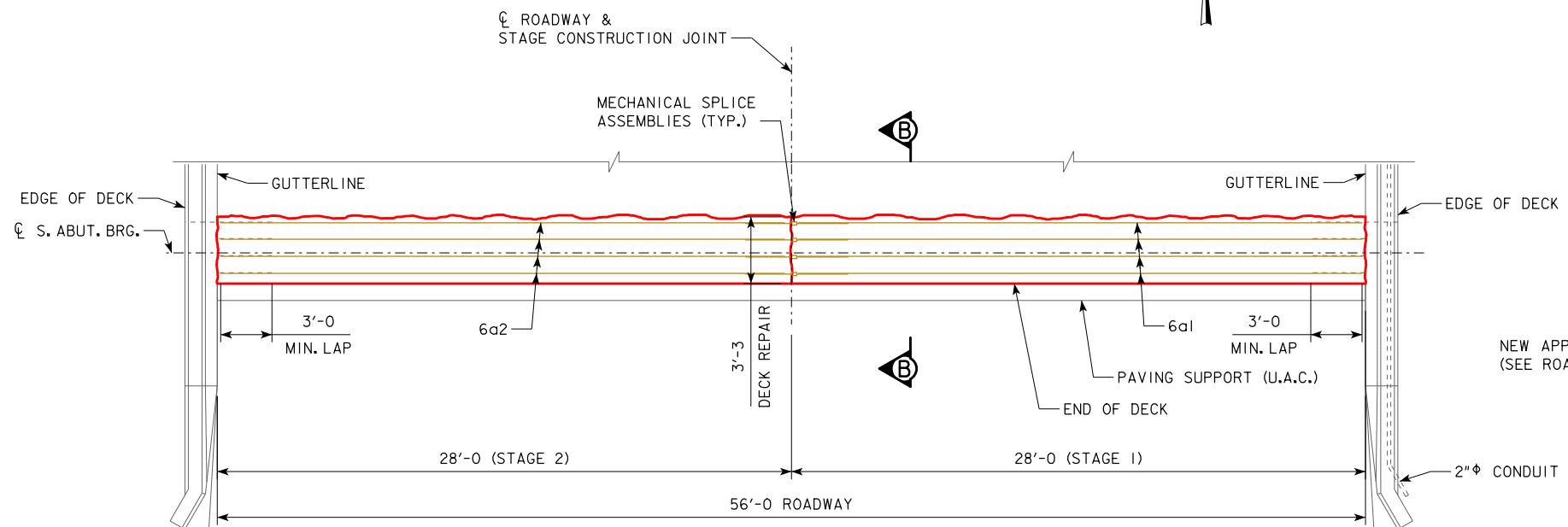
DESIGN TEAM: AJV/CVF/DJA							HUMBOLDT COUNTY	PROJECT NUMBER MB-169-2(500)174--77-46	SHEET NUMBER 4
3/2/2020	9:30:18 AM	lu	L:\Dept\6\8500.11 MB Projects\Humboldt 120\Submittals\Final\BRG_46169500.dgn 460120S003 11x17_pdf.pltcf						



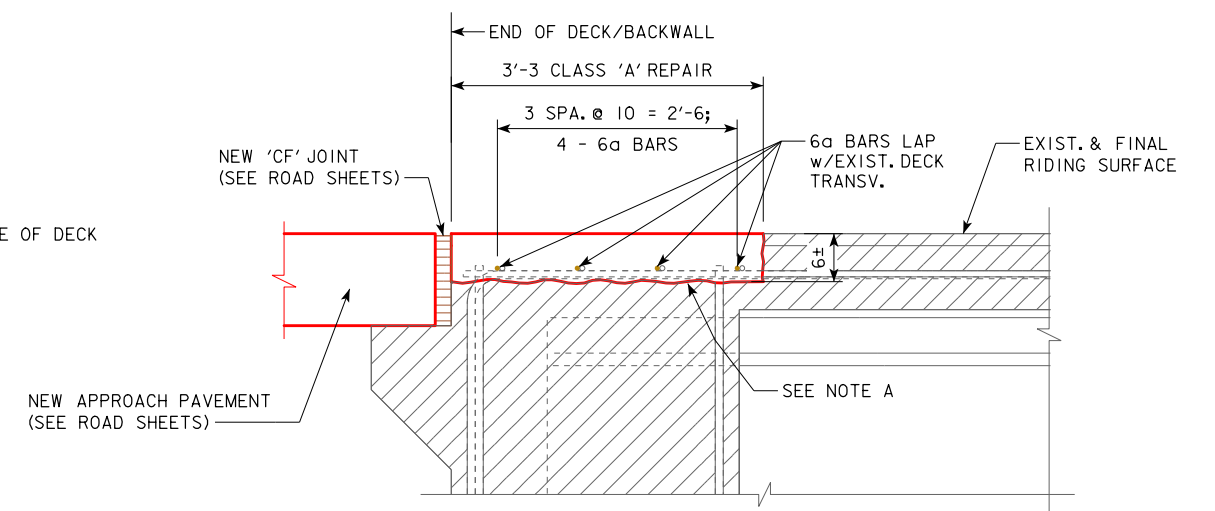
PART PLAN VIEW AT NORTH ABUTMENT
(EXISTING LONGITUDINAL BARS NOT SHOWN FOR CLARITY.)



SECTION A-A



PART PLAN VIEW AT SOUTH ABUTMENT
(EXISTING LONGITUDINAL BARS NOT SHOWN FOR CLARITY.)



SECTION B-B

NOTE:
SEE DESIGN SHEET 5 FOR MECHANICAL SPLICE ASSEMBLY DETAIL.

DESIGN FOR REPAIRS TO A 0° SKEW
**333'-0" x 56'-0" PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE**
110'-9" END SPANS 111'-6" CENTER SPAN
ABUTMENT REPAIR DETAILS
STA. 281+90.02 (CL US 169) FEBRUARY, 2020
HUMBOLDT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 4 OF 5 FILE NO. 31640 DESIGN NO. 120

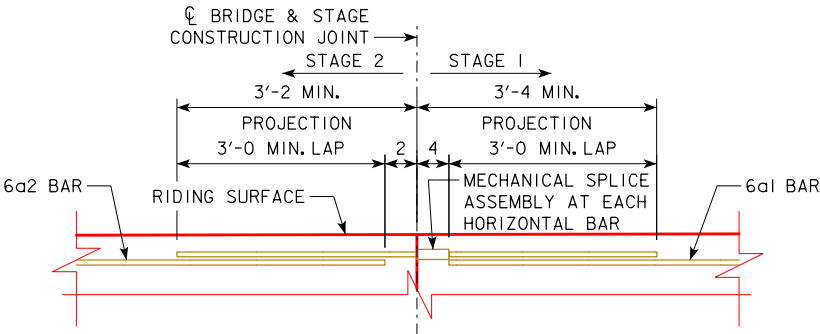
EPOXY COATED REINFORCING STEEL					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a1	DECK & BACKWALL, HORIZONTAL, STAGE 1		14	27'-6	578
6a2	DECK & BACKWALL, HORIZONTAL, STAGE 2		14	27'-8	582
TOTAL (LBS)					1,160

MECHANICAL SPLICE ASSEMBLIES:

THE 6a BARS IN THE DECK SHALL BE SPLICED AT THE LOCATIONS SHOWN USING MECHANICAL SPLICE ASSEMBLIES. MECHANICAL SPLICE ASSEMBLIES CONSIST OF MECHANICAL SPLICERS AND REINFORCING SPLICE BARS AS REQUIRED TO FACILITATE THE USE OF THE MECHANICAL SPLICER. THE MECHANICAL SPLICE ASSEMBLY USED SHALL MEET THE REQUIREMENTS OF IM 451 APPENDIX E. REINFORCING SPLICE BARS SHALL BE A MINIMUM OF 3/4" DIA.

ALL MECHANICAL SPLICE ASSEMBLIES TO BE USED IN SPLICING THE 6a BARS IN THE DECK SHALL BE EPOXY COATED.

THE COST OF ALL SPLICE ASSEMBLIES, IS TO BE INCLUDED IN THE PRICE BID FOR "REINFORCING STEEL EPOXY COATED" AND NO SEPARATE PAYMENT WILL BE MADE. THE WEIGHT OF MECHANICAL SPLICE ASSEMBLIES IS NOT INCLUDED IN THE QUANTITY SHOWN FOR "REINFORCING STEEL EPOXY COATED". A TOTAL OF 14 EPOXY COATED SPLICE ASSEMBLIES WILL BE REQUIRED.



DETAIL OF MECHANICAL SPLICE ASSEMBLIES
(EXISTING REINFORCING NOT SHOWN)

DESIGN FOR REPAIRS TO A 0° SKEW

333'-0 x 56'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE

110'-9 END SPANS111'-6 CENTER SPAN

ABUTMENT REPAIR DETAILS

STA. 281+90.02 (CL US 169)FEBRUARY, 2020

HUMBOLDT COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

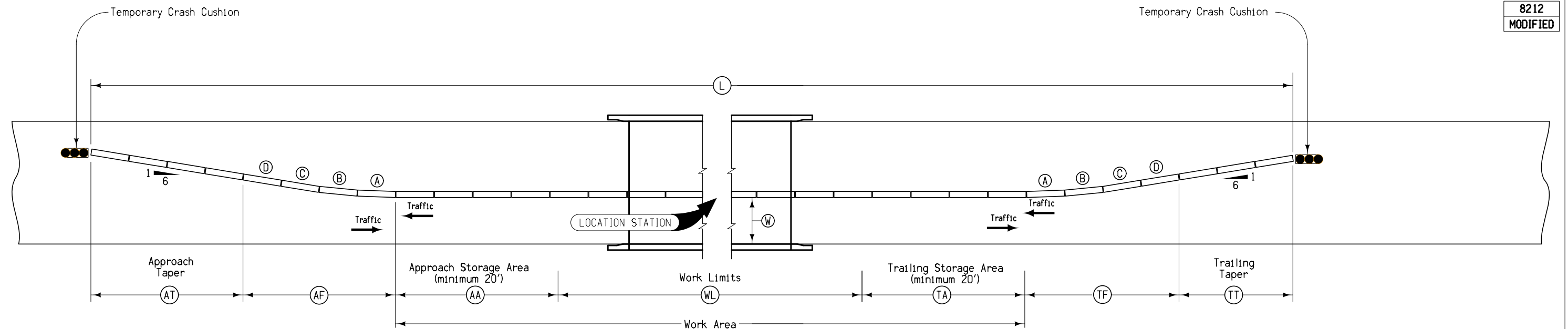
DESIGN SHEET NO. 5 OF 5FILE NO. 31640DESIGN NO. 120

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Roadway Title Sheet
B Sheets	Typical Cross Sections and Details
B.1	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1	Project Description
C.1	Estimated Roadway Quantities
C.1	Estimate Reference Information
C.1	Standard Road Plans
C.1	Index of Tabulations
C.1	General Notes
C.2 - 4	Tabulations
D Sheets	Mainline Plan and Profile Sheets
* D.1	US 169 Plan Sheet
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.1	Staging Notes
J.1	511 Travel Restrictions
J.2	Staging Typical Cross Sections
* J.3 - 7	Staging and Traffic Control Sheets Stage 1
* J.8 - 12	Staging and Traffic Control Sheets Stage 2
U Sheets	500 Series, Mod.Stds. and Detail Sheets
* U.1 - 3	Modified BR-201
	* Color Plan Sheets



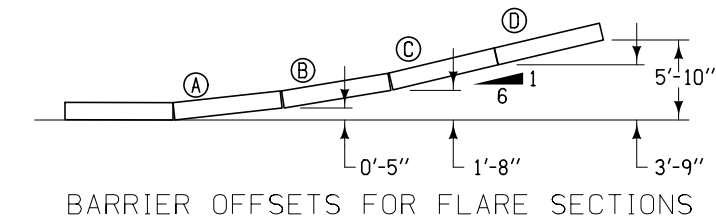
Design No. 120
File No. 31640

	I hereby certify that this plan 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	Date 1/13/20
	Printed or Typed Name Brandyn Geoffrey Chezick	
	My license renewal date is December 31, 2021	
Pages or sheets covered by this seal: A.1, B.1, C.1-C.4, D.1, J.1-J.12, U.1-U.3		



Notes:

The location station is centered in the work area and is the bridge center Station.
Barrier lengths include the gaps between TBR sections.



BARRIER OFFSETS FOR FLARE SECTIONS

Station	Side	(AT)	(AF)	(AA)	(WL)	(TA)	(TF)	(TT)	(L)	Anchored	(W)	Remarks
		Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet	X	Feet	
281+90.02	Lt.	37.9	51.15	27.4	456.9	27.4	51.15	37.9	689.9		25.1	Stage 1: 54 - 12.5' TBR Sections
281+90.02	Rt.	37.9	51.15	27.4	456.9	27.4	51.15	37.9	689.9		25.1	Stage 2: 54 - 12.5' TBR Sections

TEMPORARY CONCRETE BARRIER LAYOUT
for Two-Way Traffic



100-1D 10-18-05					
PROJECT DESCRIPTION					
This project is for bridge and roadway repairs for the 333' x 56' PPCB Bridge on U.S. 169 over the West Fork of the Des Moines River, 0.7 miles south of Ia. 3.					

100-0A 10-28-97					
ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)					
Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2301-0690201	BRIDGE APPROACH, BR-201	SY	770.8	
2	2505-6765006	REMOVE AND REINSTALL FORMED STEEL BEAM GUARDRAIL	LF	120.0	
3	2510-6745850	REMOVAL OF PAVEMENT	SY	773.3	
4	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	111.49	
5	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	STA	43.14	
6	2527-9263180	PAVEMENT MARKINGS REMOVED	STA	82.98	
7	2528-2518000	SAFETY CLOSURE	EACH	2	
8	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE	LF	1,350.0	
9	2528-8445110	TRAFFIC CONTROL	LS	1.00	
10	2528-9109020	TEMPORARY LANE SEPARATOR SYSTEM	LF	3,882.0	
11	2551-0000110	TEMP CRASH CUSHION	EACH	4	
12	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	300.0	
13	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	300.0	
14	2602-0000500	OPEN-THROAT CURB INTAKE SEDIMENT FILTER, EC-602	LF	16.0	
15	2602-0000510	MAINTENANCE OF OPEN-THROAT CURB INTAKE SEDIMENT FILTER	EACH	2	
16	2602-0000520	REMOVAL OF OPEN-THROAT CURB INTAKE SEDIMENT FILTER	EACH	2	

100-4A 10-29-02					
ESTIMATE REFERENCE INFORMATION					
Item No.	Item Code	Description			
1	2301-0690201	BRIDGE APPROACH, BR-201			
-	-	Refer to Tab. 112-6 and Sheets U.1-U.3 for details.			
-	-	-			
2	2505-6765006	REMOVE AND REINSTALL FORMED STEEL BEAM GUARDRAIL			
-	-	The intent of this work is to remove and reinstall only the steel beam guardrail for placement of pavement. Carefully remove and stockpile steel beam guardrail for reinstallation. The Contractor has the option to leave the posts in place, or to remove and reinstall the posts at no additional cost to the Contracting Authority. Replace steel beam rail and posts damaged by the Contractor's operations at no additional cost to the Contracting Authority.			
-	-	Posts, delineators, and object markers are to remain in place. Replace posts, delineators, and object markers damaged by the Contractors operations at no additional cost to the Contracting Authority.			
-	-	Ensure that all posts are firm and plum prior to reinstalling the guardrail.			
-	-	Restore the area disturbed by removal and reinstallation operations to an acceptable condition.			
-	-	Method of Measurement: Measurement will be in linear feet, measured along the front of the rail, of steel beam guardrail (includes W-beam and Thrie-beam guardrail) removed and reinstalled.			
-	-	Basis of Payment: Payment will be at the contract unit price per linear foot of steel beam guardrail removed and reinstalled. Payment includes all labor, equipment, and materials required to remove and reinstall the steel beam guardrail.			
-	-	-			
3	2510-6745850	REMOVAL OF PAVEMENT			
-	-	Refer to Tabs. 110-1 and 102-5.			
-	-	-			
4	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			
5	2527-9263131	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS			
6	2527-9263180	PAVEMENT MARKINGS REMOVED			
-	-	Refer to Tab. 108-22 and Sheets J.3-J.8 for details.			
-	-	-			
7	2518-6910000	SAFETY CLOSURE			
-	-	Refer to Tab. 108-13A.			
-	-	-			
8	2528-8400048	TEMPORARY BARRIER RAIL, CONCRETE			
-	-	Refer to Sheets B.1 and J.2 and Tab. 108-33 for details.			
-	-	-			
9	2528-8445110	TRAFFIC CONTROL			
-	-	Refer to Traffic Control Plan on Sheet J.1.			
-	-	-			
10	2528-9109020	TEMPORARY LANE SEPARATOR SYSTEM			
-	-	Refer to Tab. 108-35 and Sheets J.2-J.8.			
-	-	-			
11	2551-0000110	TEMP CRASH CUSHION			
-	-	Refer to Tab. 108-30.			
-	-	-			
12	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.			
13	2602-0000350	REOMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE			
-	-	Refer to Tab. 100-19.			
-	-	The tabulation includes estimated locations for placement of "Perimeter and Slope Sediment Control Device, 12 in. dia." to address erosion to be encountered during construction.			
-	-	Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional quantity for field adjustments and replacements.			

100-4A 10-29-02		
ESTIMATE REFERENCE INFORMATION		
Item No.	Item Code	Description
-	-	Use Perimeter and Slope Sediment Control Devices fabricated using wood excelsior.
14	2602-0000500	OPEN-THROAT CURB INTAKE SEDIMENT FILTER, EC-602
15	2602-0000510	MAINTENANCE OF OPEN-THROAT CURB INTAKE SEDIMENT FILTER
16	2602-0000520	REMOVAL OF OPEN-THROAT CURB INTAKE SEDIMENT FILTER
-	-	Refer to Tab. 100-36.
-	-	-

105-4 10-18-11		
STANDARD ROAD PLANS		
The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
BA-401	10-15-19	Temporary Barrier Rail (Precast Concrete)
BA-500	04-19-16	Temporary Crash Cushions Sand Barrel
BR-231	10-17-17	Bridge Approach (Multi-Lane, Curbed Roadway)
DR-303	10-17-17	Subdrains (Longitudinal)
EC-204	04-21-20	Perimeter and Slope Sediment Control Devices
EC-602	04-21-20	Open-Throat Curb Intake Sediment Filter
PM-110	04-21-20	Line Types
PV-101	04-21-20	Joints
PV-102	04-21-20	PCC Curb Details
SI-881	04-16-19	Special Signs for Workzones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-402	04-21-15	Work Within 15 ft of Traveled Way
TC-419	10-16-18	Lane Closure on Undivided Highway
TC-423	10-20-20	Closure of Two Adjacent Lanes on Undivided Highway
TC-433	10-17-17	Pavement Marking Operations

111-25 10-18-11		
INDEX OF TABULATIONS		
Tabulation	Tabulation Title	Sheet No.
C Sheets		
100-0A	ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)	C.1
100-1D	PROJECT DESCRIPTION	C.1
100-4A	ESTIMATE REFERENCE INFORMATION	C.1
100-19	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	C.2
100-36	OPEN-THROAT CURB INTAKE SEDIMENT FILTER	C.2
102-5	EXISTING PAVEMENT	C.2
105-4	STANDARD ROAD PLANS	C.1
108-13A	SAFETY CLOSURES	C.2
108-22	PAVEMENT MARKING LINE TYPES	C.3-C.4
108-30	CRASH CUSHIONS	C.3
108-33	TEMPORARY BARRIER RAIL	C.3
108-35	TEMPORARY LANE SEPARATOR SYSTEM	C.3
110-1	REMOVAL OF PAVEMENT	C.2
110-7A	REMOVAL OF GUARDRAIL	C.2
111-25	INDEX OF TABULATIONS	C.1
112-6	BRIDGE APPROACH SECTION	C.2
J Sheets		
108-23A	TRAFFIC CONTROL PLAN	J.1
108-26A	STAGING NOTES	J.1
108-25	511 TRAVEL RESTRICTIONS	J.1

232-3B 04-16-19
EROSION CONTROL (URBAN SEEDING)
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 as follows: Place seed and fertilize according to the requirements of Article 2601.03,C,4 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 incidental to mobilization and will not be paid for separately.

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

102-5 04-18-17																					
EXISTING PAVEMENT																					
No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth	Type	Depth	Type	Depth	Type	Depth	Source	Type	Durability Class	Type	
1	46	US 169	1	172.33	172.73	1997	R	NHS-169-7(35)--19-46	AAC	1.5	TBB	11					Hodges	C. LST.			Outside Lanes + C&G
					1997	NHS-169-7(35)--19-46				Hodges							C. LST.				
					1987	FN-169-7(16)--21-4		AAC	6	Hodges							C. LST.				
					1966	FN-169-7(1)--21-46		AAC	0.5	Hodges							C. LST.				
					1960	FN-117*<2>		AAC	3	Hodges							C. LST.				
					1933	R	NRH-NRM-117ABC	PC7	7								Humboldt	Gravel	3		

112-
04-18-1

BRIDGE APPROACH SECTION

Refer to the BR Series.

* Not a bid item

Location				Approach Pavement					Standard Road Plans BR Series			Subdrain				Modified Subbase	Polymer Grid	Special Backfill	Remarks
Bridge Station	End	Skew Ahead		T Thickness	Pay Length	Non-Reinf. Pavement Area	Single- Reinf. Pavement Area	Double- Reinf. Pavement Area				Perforated Subdrain 4"	Subdrain Outlet		Porous Backfill				
		Degrees							Approach	Fixed or Movable Abutment	Abutting Pavement		CY	CY					
		LEFT	RIGHT													Inches	FT	SY	
281+90.02	So.		0	10.0	20.0			127.6	BR-201	Movable	BR-231					163.400	137.4		Tie subdrain into adjacent intake well
281+90.02	No.		0	10.0	101.5	385.2	130.4	127.6	BR-201	Movable	BR-231	74.0	284+49.23	Rt.		624.900	695.5		
								Total:	770.8										

110-1 04-16-13						
REMOVAL OF PAVEMENT						
Refer to Tabulation 102-5						
Begin Station	End Station	Side	Pavement Type	Area	Saw Cut*	Remarks
				SY	LF	
280+02.31	280+22.31	Both	PCC	130.4	78.7	
283+57.73	284+59.23	Both	PCC	642.9	155.5	
			Total:	773.3		

110-7A
04-17-12

REMOVAL OF STEEL BEAM GUARDRAIL					
① Lane(s) to which the installation is adjacent.					
② Includes length of End Terminals and End Anchors.					
Location					Removal of Guardrail ②
No.	① Direction of Traffic	Station to Station		Side	
					LF
1	NB	279+93.00	280+13.00	Rt.	20.0
2	NB	283+66.00	284+06.00	Rt.	20.0
3	SB	279+93.00	280+13.00	Lt.	40.0
4	SB	283+66.00	284+06.00	Lt.	40.0
Remove and reinstall guardrail as necessary					

100-36 10-16-18					
OPEN-THROAT CURB INTAKE					
SEDIMENT FILTER					
Possible Standard: EC-602					
Location Station	Side	Installation	Maintenance	Removal	Remarks
		LF	EACH	EACH	
284+66.50	Rt.	8.0	1	1	Stage 1
284+66.50	Lt.	8.0	1	1	Stage 2
	Totals	16.0	2	2	

100-19 04-19-16						
PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE						
Possible Standards: EC-204						
Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
279+95.00	280+15.00	Rt.		20.0		Stage 1
283+65.00	284+65.00	Rt.		100.0		Stage 1
279+95.00	280+15.00	Lt.		20.0		Stage 2
283+65.00	284+65.00	Lt.		100.0		Stage 2
			Subtotal	240.0		
			+25%	60.0		
			Bid	300.0		
			Removal:	300.0		

108-13A 08-01-08			
SAFETY CLOSURES			
Refer to Section 2518 of the Standard Specifications			
Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
272+40 Rt.	1		1st Ave. SW, Stage 1
287+07 Rt.	1		City Park, Stages 1 & 2

108-30

04-16-13

CRASH CUSHIONS

* Bid Item

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

② Complete this section when using the Temporary Crash Cushion bid item and Earthwork is needed for Sand Barrel placement. Refer to BA-500

No.	① Direction of Traffic	Location Station	Side	Obstacle Width	Crash Cushion (Select One)*					Sand Barrel Details ②					Earthwork*		Spare Parts Kit (Select One)*		Obstacle Description	Remarks
					Temporary	Temporary Redirective	Temporary Severe Use	Permanent	Permanent Severe Use	V	W	X	Y	Z	Excavation Class 10	Embankment in Place	Permanent	Permanent Severe Use		
				Length						Length	Length	Length	Length							
				FT						FT	FT	FT	FT	CY						
1	NB	278+85.84	Rt.	1.88	1													TBR	Stage 1	
2	SB	285+75.70	Rt.	1.88	1													TBR	Stage 1	
3	NB	278+85.84	Lt.	1.88	1													TBR	Stage 2	
4	SB	285+75.70	Lt.	1.88	1													TBR	Stage 2	
				Total	4															

108-33
10-15-19

TEMPORARY BARRIER RAIL

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

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

No.	Station to Station		Length	(Select One)		Anchored*	Modular Glare Screen System	Remarks
				Concrete	Steel			
			LF	BA-401	560-7	(Y/N)	(Y/N)	
1	278+85.84	285+75.70	675.0	X		Yes	No	Stage 1
2	278+85.84	285+75.70	675.0	X		Yes	No	Stage 2
		Total			1350			

108-35
04-17-12

TEMPORARY LANE SEPARATOR SYSTEM

See TC-61

Station to Station		Length	Remarks
		LF	
270+72.00	289+99.00	1927	Stage 1
273+90.00	293+45.00	1955	Stage 2
	Total	3882	

108-22
04-16-13

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.

**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.

***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.25 DCY4: Double Centerline (Yellow) @ 2.00 NPY4: No Passing Zone Line (Yellow) @ 1.25 BLW4: Broken Lane Line (White) @ 0.25 ELW4: Edge Line Right (White) @ 1.00 ELY4: Edge Line Left (Yellow) @ 1.00

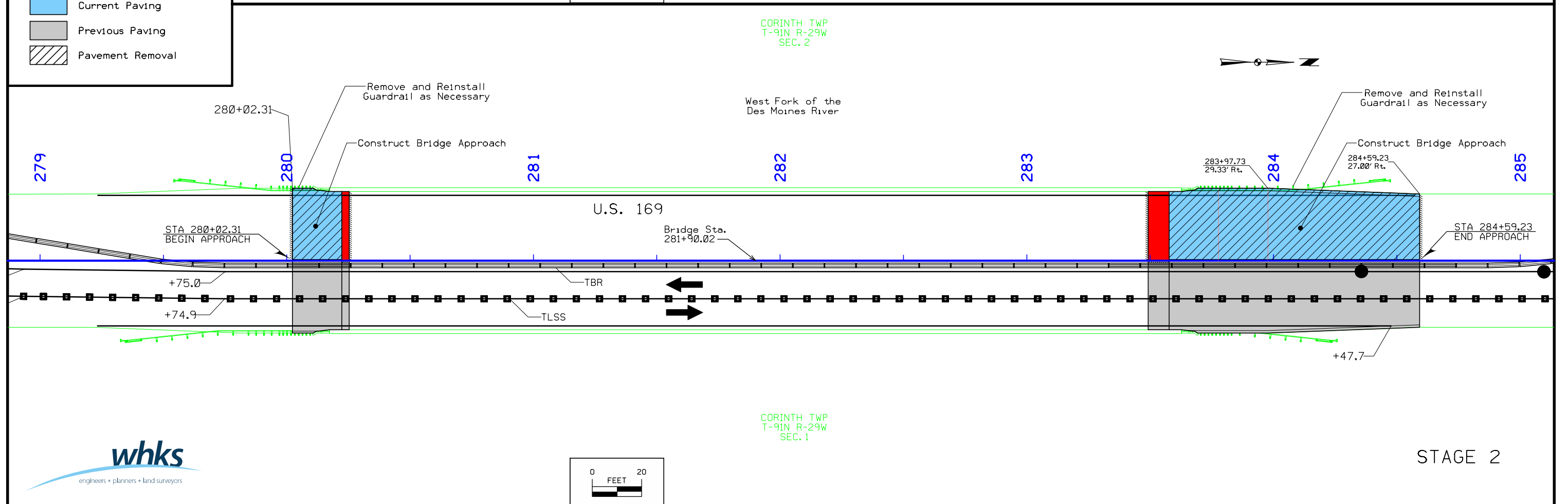
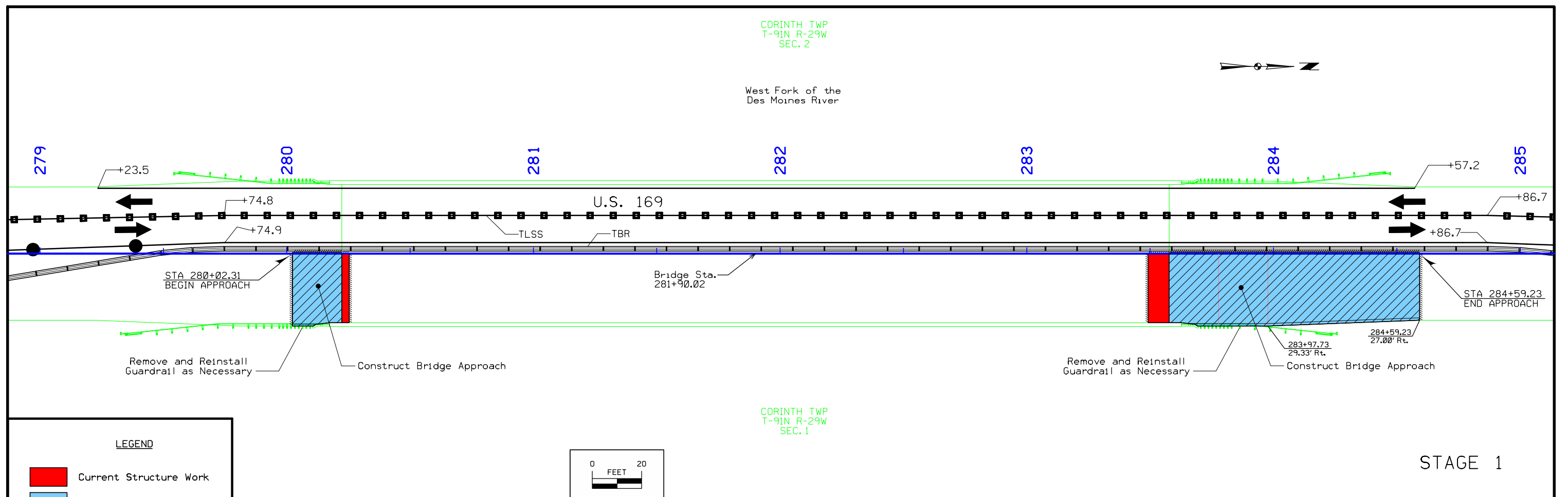
Location				Length by Line Type (Unfactored)																Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			BCY4*	DCY4	NPY4**	BLW4	ELW4	ELY4							
					L	C	R													
Stage 1 U.S. 169	271+21.60	280+02.30	NB	Removal of Paint			X				8.81									
	280+25.30	283+49.20	NB	Removal of Paint			X				3.24									
	284+59.20	289+30.90	NB	Removal of Paint			X				4.72									
	276+01.60	280+02.30	BOTH	Removal of Paint		X			4.01											
	284+59.20	289+30.90	BOTH	Removal of Paint		X			4.72											
	276+01.60	293+18.60	SB	Removal of Paint	X						17.17									
	272+11.70	272+69.80	BOTH	Waterborne/Solvent Paint		X			0.58											
	274+15.30	274+59.40	BOTH	Waterborne/Solvent Paint		X			0.44											
	274+97.10	275+60.10	BOTH	Waterborne/Solvent Paint		X			0.63											
	276+01.60	277+49.60	BOTH	Wet Retroreflective Removable Tape	X				1.48											
	277+49.60	278+51.00	BOTH	Waterborne/Solvent Paint	X				1.01											
	278+51.00	279+74.80	BOTH	Wet Retroreflective Removable Tape	X				1.24											
	279+74.80	284+86.70	BOTH	Waterborne/Solvent Paint	X				5.12											
	284+86.70	286+10.70	BOTH	Wet Retroreflective Removable Tape	X				1.24											
	286+10.70	288+37.80	BOTH	Waterborne/Solvent Paint	X				2.27											
	288+37.80	289+89.00	SB	Waterborne/Solvent Paint	X								1.51							
	289+89.00	293+18.60	SB	Wet Retroreflective Removable Tape	X								3.30							
	288+37.80	289+98.60	NB	Wet Retroreflective Removable Tape	X								1.61							
	271+21.60	274+41.70	NB	Wet Retroreflective Removable Tape			X					3.20								
	274+41.70	274+81.20	NB	Waterborne/Solvent Paint			X					0.40								
	275+63.70	276+02.30	NB	Waterborne/Solvent Paint			X					0.39								
	276+02.30	277+61.60	NB	Wet Retroreflective Removable Tape			X					1.59								
	277+61.60	278+51.00	NB	Waterborne/Solvent Paint		X						0.89								
	278+51.00	279+74.90	NB	Wet Retroreflective Removable Tape	X				1.24											
	279+74.90	284+86.70	NB	Waterborne/Solvent Paint	X				5.12											
	284+86.70	286+10.70	NB	Wet Retroreflective Removable Tape	X				1.24											
	286+10.70	286+78.60	NB	Waterborne/Solvent Paint		X			0.68											
	286+78.60	288+78.60	NB	Wet Retroreflective Removable Tape			X		2.00											
	279+23.50	284+57.20	SB	Waterborne/Solvent Paint	X				5.34											
Stage 2 U.S. 169	272+11.70	272+69.80	BOTH	Removal of Paint		X			0.58											
	274+15.30	274+59.40	BOTH	Removal of Paint		X			0.44											
	274+97.10	275+60.10	BOTH	Removal of Paint		X			0.63											

***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

****NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.**

ELW4: Edge Line Right (White) @ 1.00

FILE NO.	31640	ENGLISH	DESIGN TEAM	WHKS & CO.		HUMBOLDT	COUNTY	PROJECT NUMBER	MB-169-2(500)174--77-46	SHEET NUMBER	C.4
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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
U.S. 169	Both	Humboldt	U.S. 169 over the West Fork of the Des Moines River	West Fork of the Des Moines River	Barrier	FHWA No. 28871	Horizontal	56'	25.1'	N/A	N/A	

108-23A
08-01-08

TRAFFIC CONTROL PLAN

U.S. 169 shall maintain at least one lane of traffic in both directions at all times.
Place "Road Work Ahead" signs on all side roads that fall between the U.S. 169 "Road Work Ahead" signs.
Contact the City of Humboldt and the Iowa DOT 10 days before traffic control operations.
Refer to Staging Notes.

111-01
04-17-12

COORDINATED OPERATIONS

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

Project	Type of Work
None Provided	

108-26A
08-01-08

STAGING NOTES

Stage 1:

Traffic: Shift southbound traffic to the outside southbound lane.
Shift northbound traffic to the inside southbound lane.
(See Sheets J.3 to J.7.)

Construction: Construct the east half of the south and north bridge approaches.
Repair the east side of the bridge deck at both abutments.

Stage 2:

Traffic: Shift northbound traffic to the outside northbound lane.
Shift southbound traffic to the inside northbound lane.
(See Sheets J.8 to J.12.)

Construction: Construct the west half of the south and north bridge approaches.
Repair the west side of the bridge deck at both abutments.

FILE NO. 31640

ENGLISH

DESIGN TEAM WHKS & CO.

HUMBOLDT COUNTY

PROJECT NUMBER MB-169-2(500)174--77-46

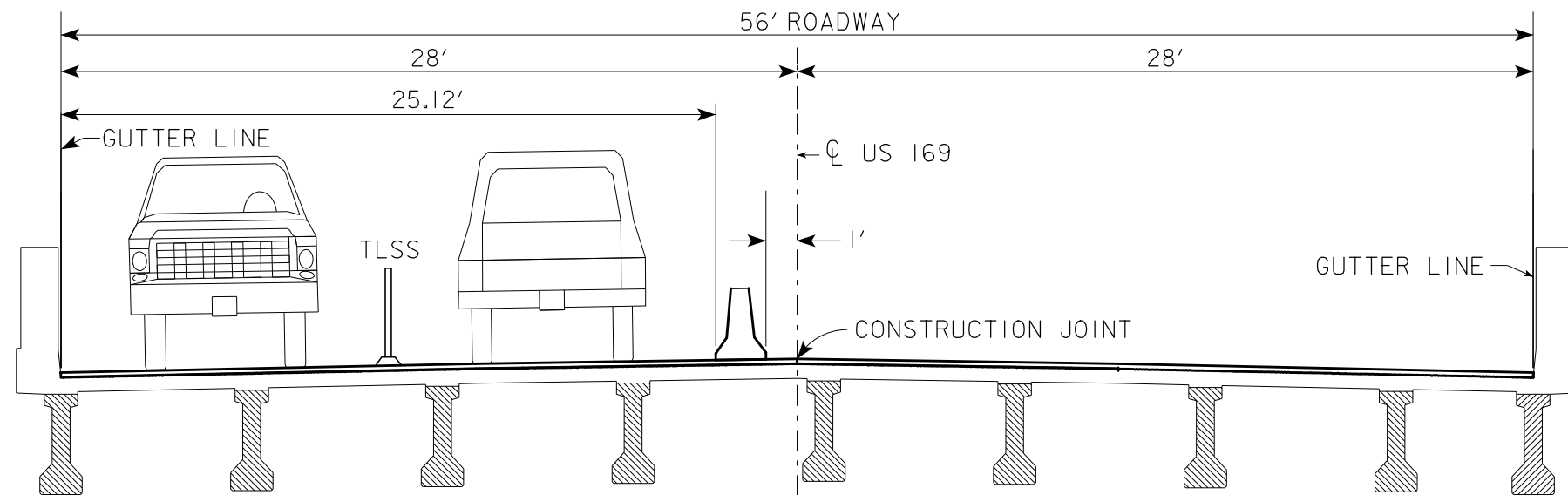
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12/2/2019

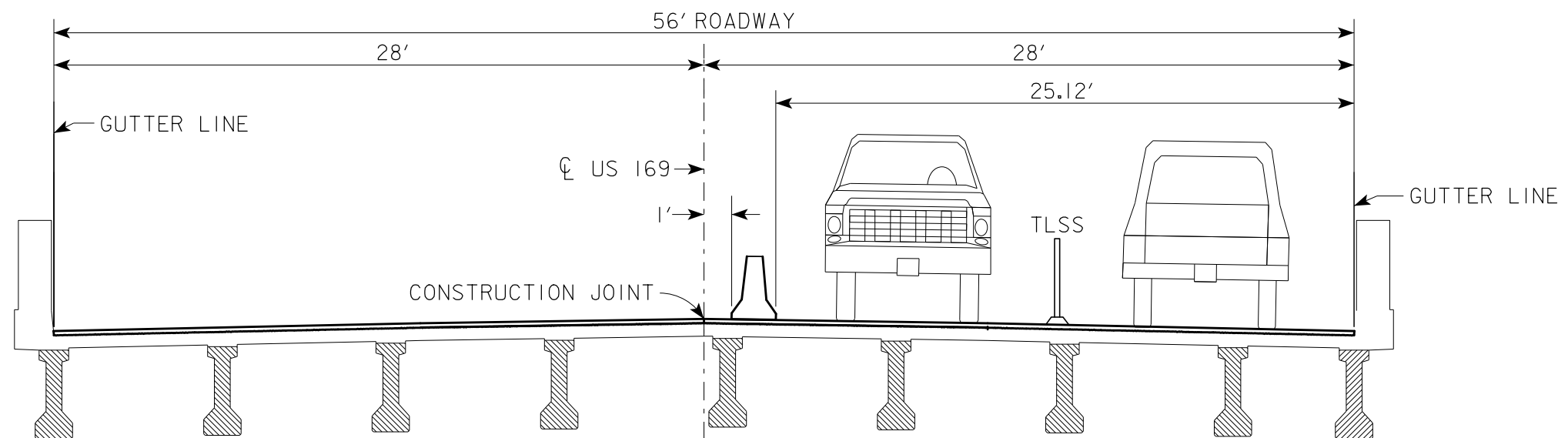
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kromsey

K:\8740.01\Humboldt120-US169OverDesMoinesRiver\Plans\46169500\01.xlsm

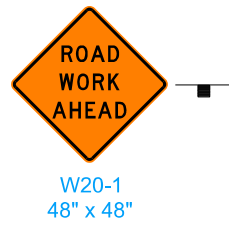


Stage 1
(Looking North)



Stage 2
(Looking North)

Traffic Control on Bridge



W20-1
48" x 48"

Elmhurst Ave.

WALNUT TWP.
T-78N R-25W
SEC. 2



G20-2A
48" x 24"

LEGEND

Temporary Lane Separator System

Temporary Barrier Rail

267

268

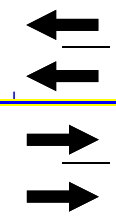
269

270

271

272

273



+71.8

U.S. 169

DCY4

ELW4

+21.6

40' Spacing
Safety Closure

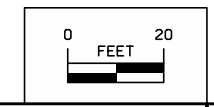
1st Ave. SW

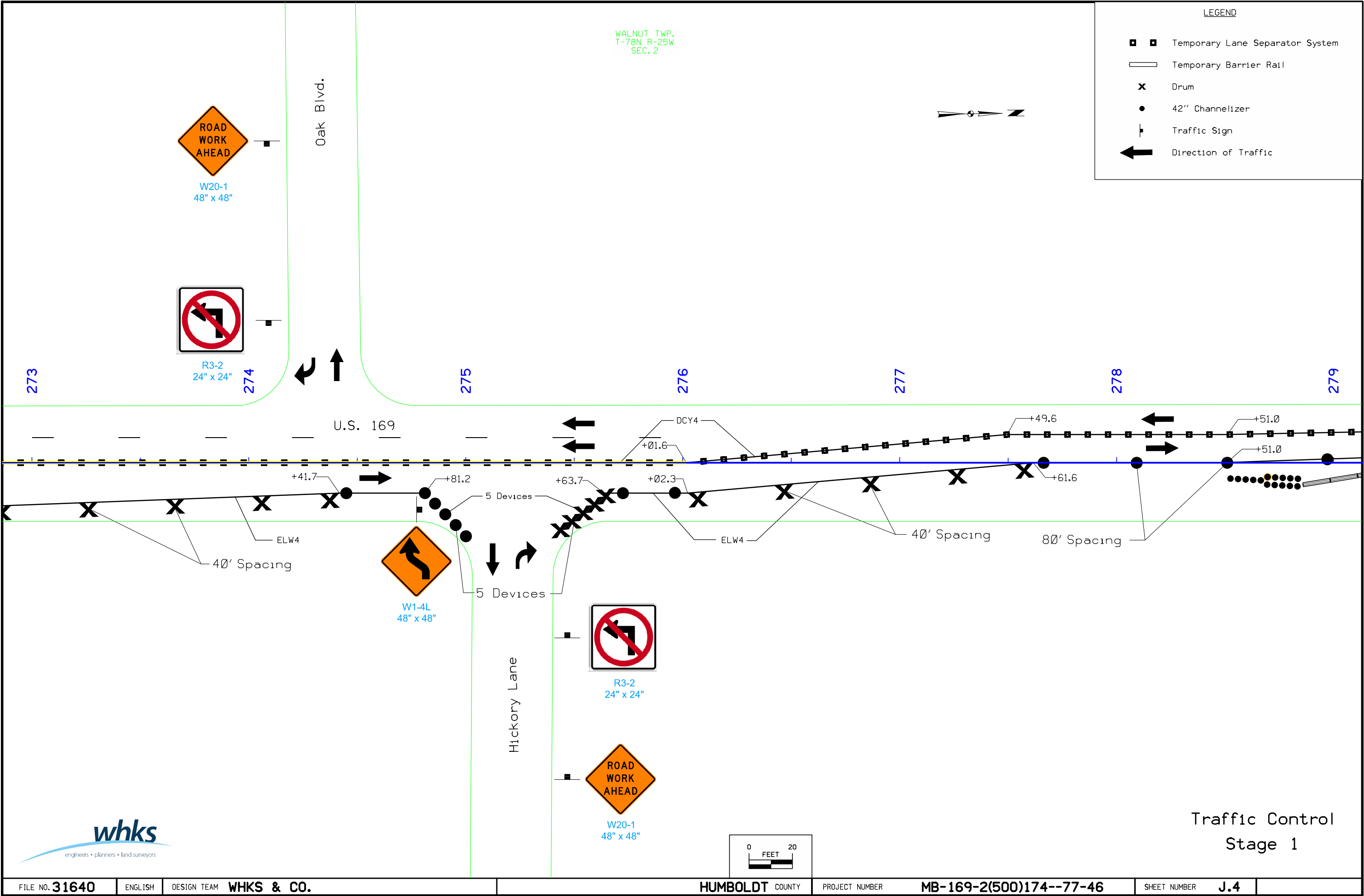


W20-3
48" x 48"

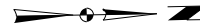
Traffic Control
Stage 1

Place advance warning signs as
per Standard Road Plan TC-423.





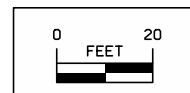
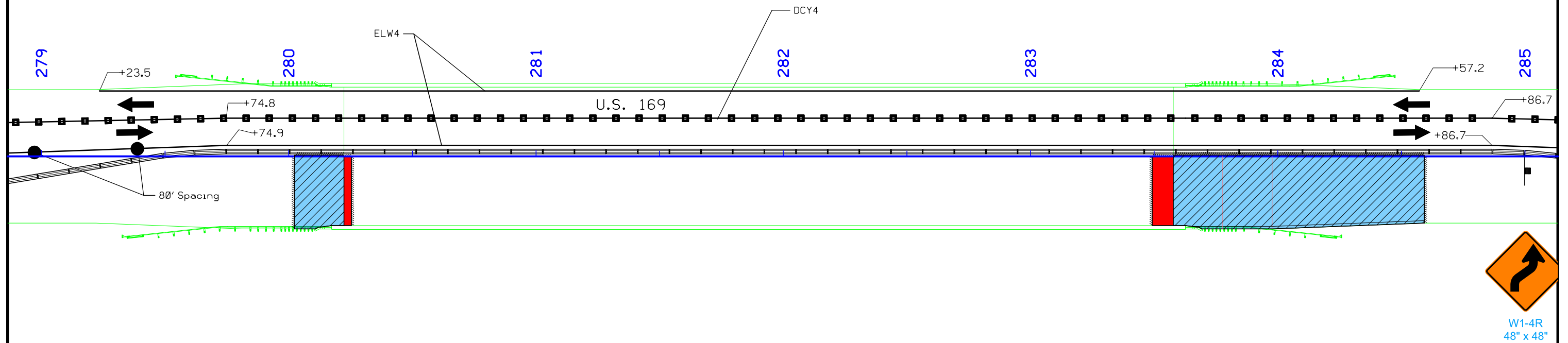
WALNUT TWP.
T-78N R-25W
SEC. 2



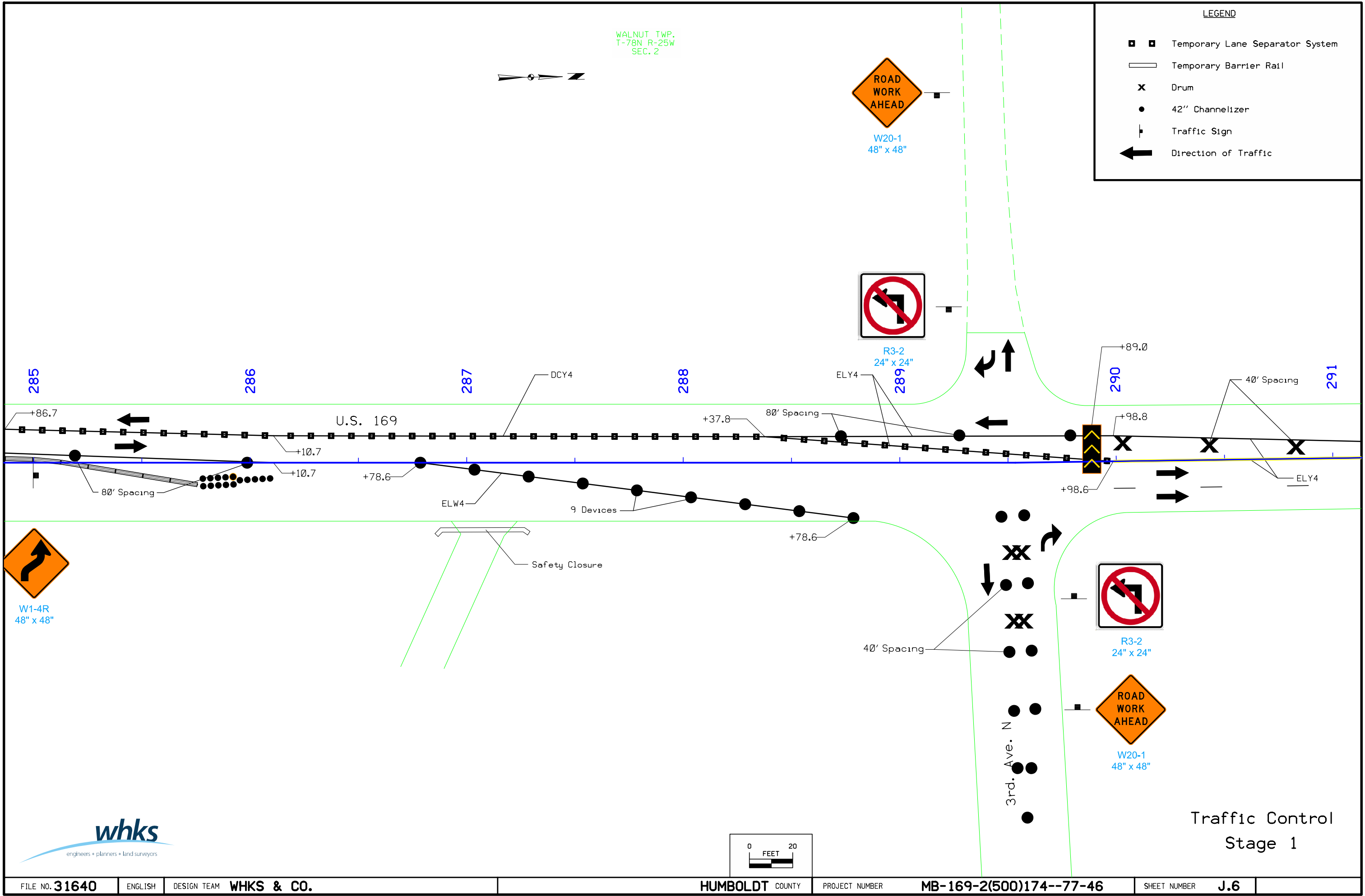
West Fork of
Des Moines River

LEGEND

- Temporary Lane Separator System
- Temporary Barrier Rail
- Drum
- 42" Channelizer
- Traffic Sign
- Direction of Traffic



Traffic Control
Stage 1

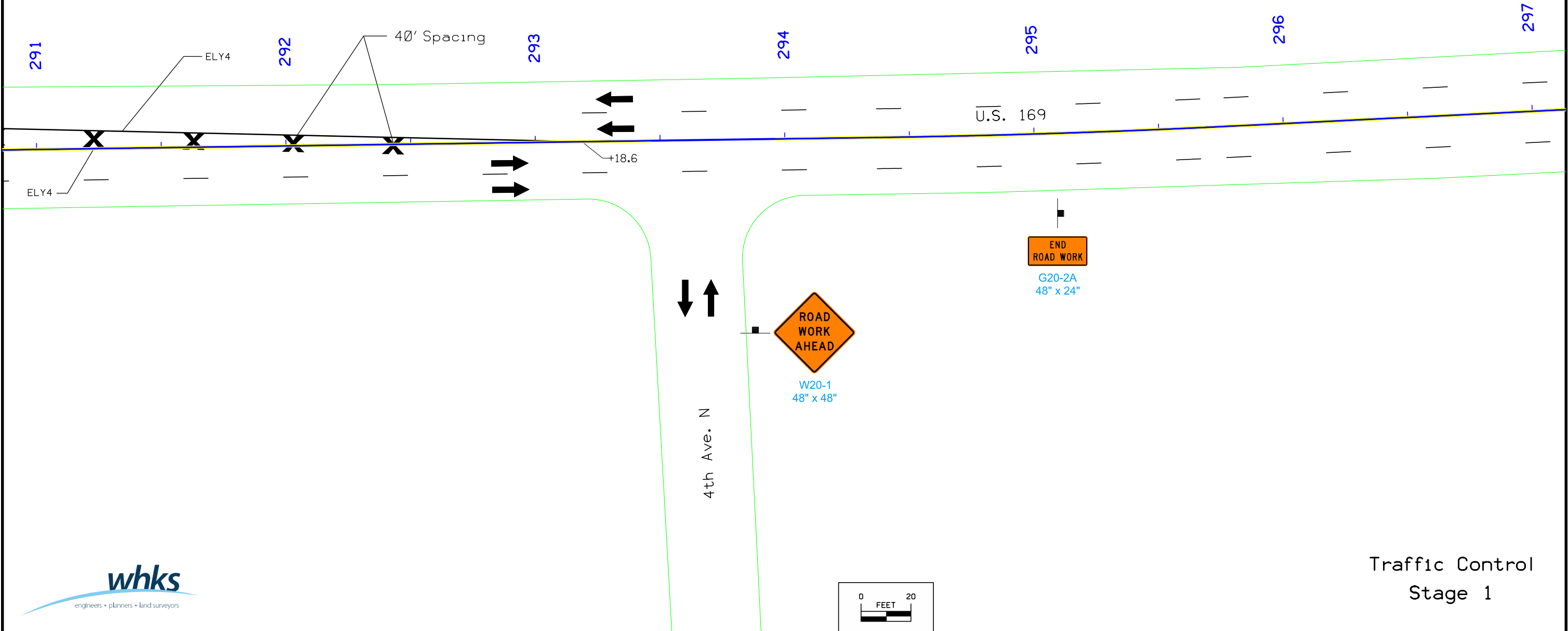


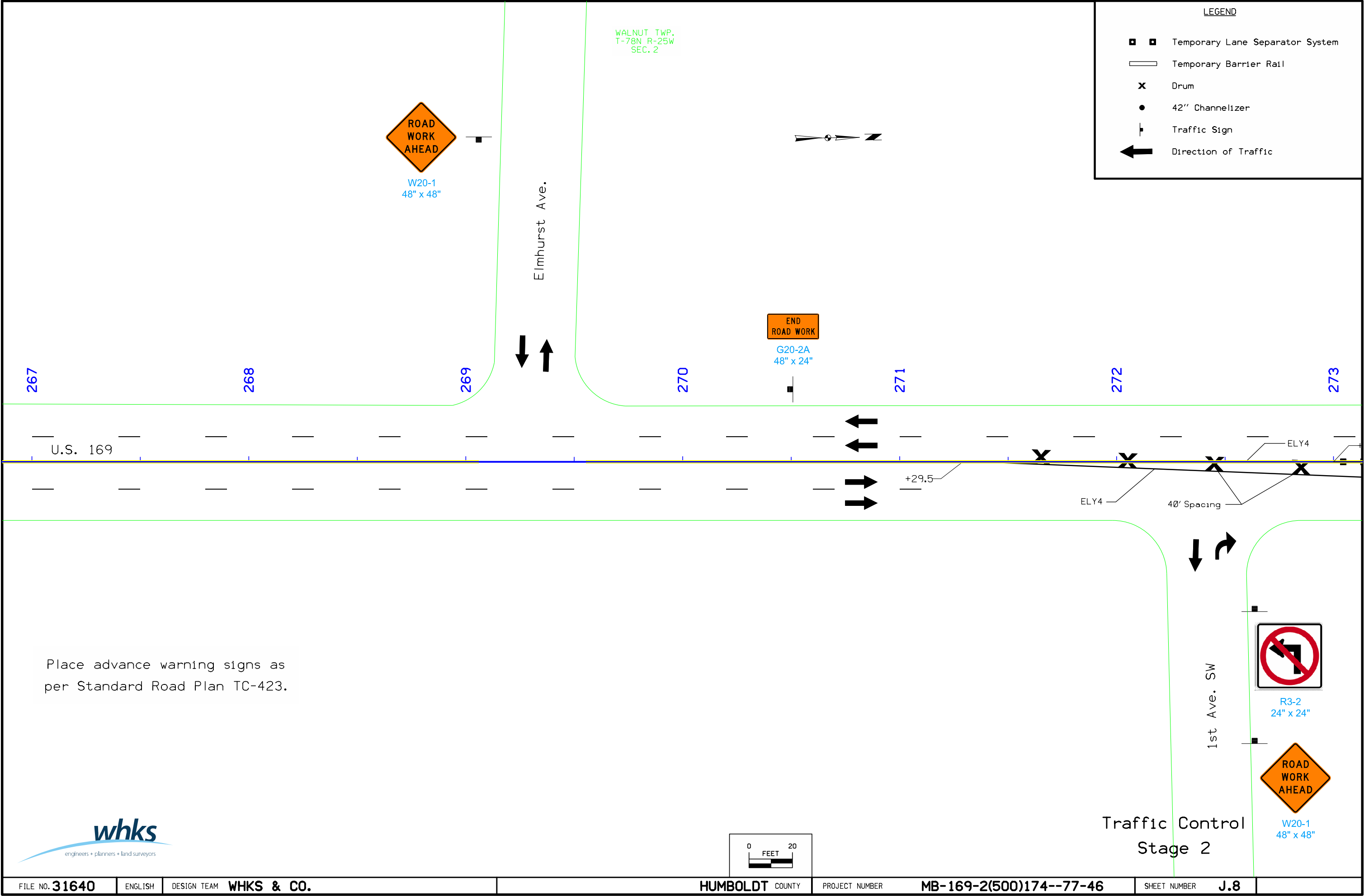
WALNUT TWP.
T-78N R-25W
SEC. 2

LEGEND

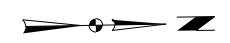
- Temporary Lane Separator System
- Temporary Barrier Rail
- Drum
- 42" Channelizer
- Traffic Sign
- Direction of Traffic

Place advance warning signs as
per Standard Road Plan TC-423.





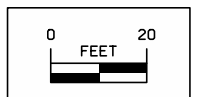
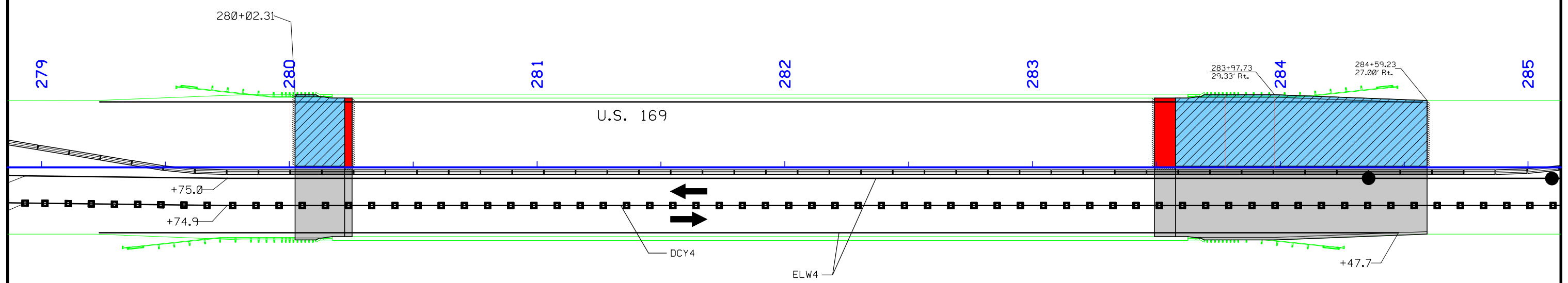
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T-78N R-25W
SEC. 2



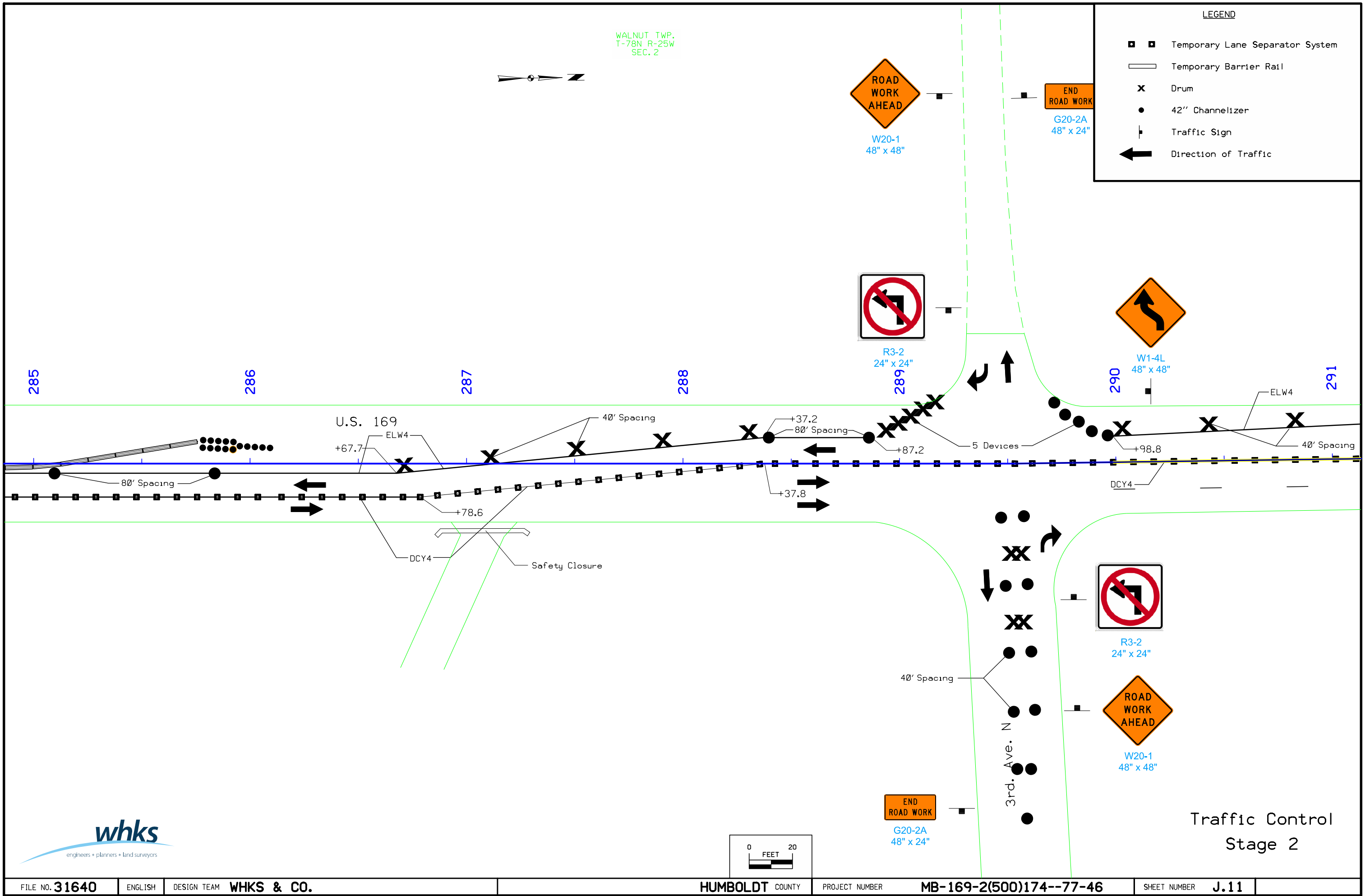
West Fork of
Des Moines River

LEGEND

- Temporary Lane Separator System
- Temporary Barrier Rail
- Drum
- 42" Channelizer
- Traffic Sign
- Direction of Traffic



Traffic Control
Stage 2

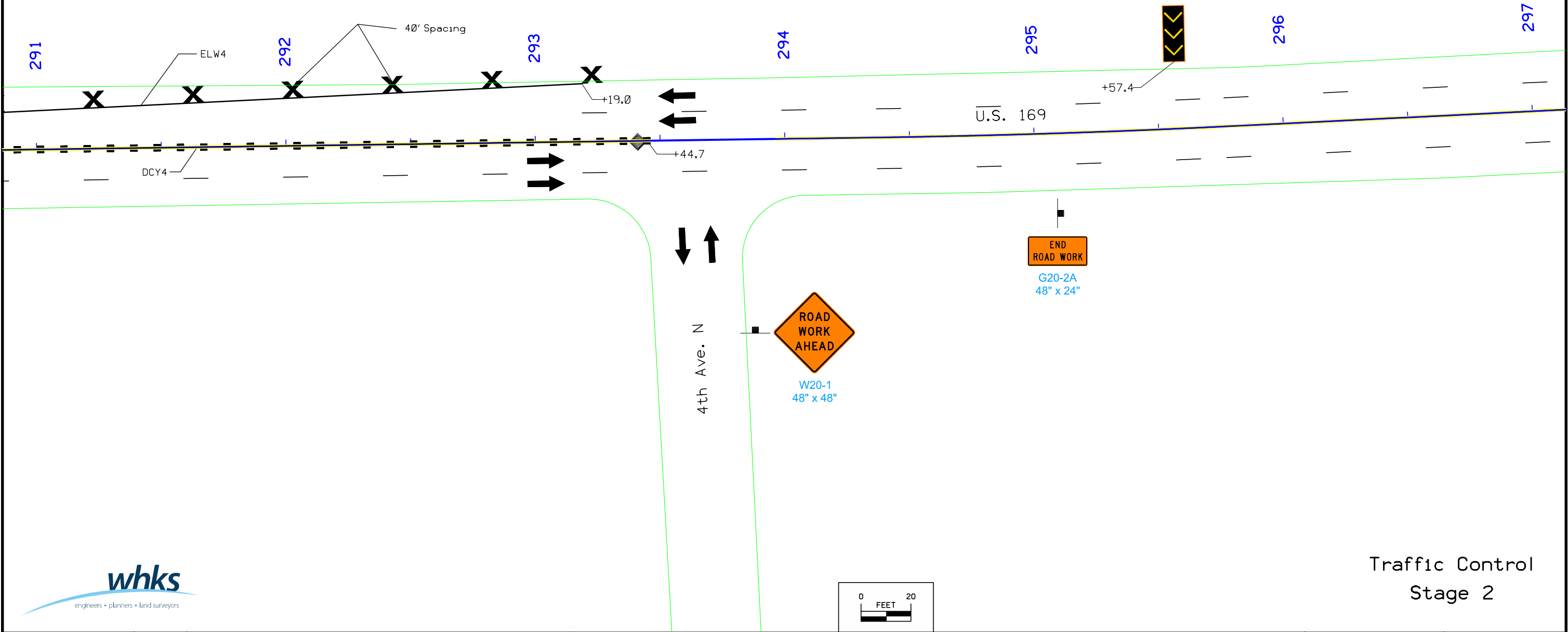


WALNUT TWP.
T-78N R-25W
SEC. 2

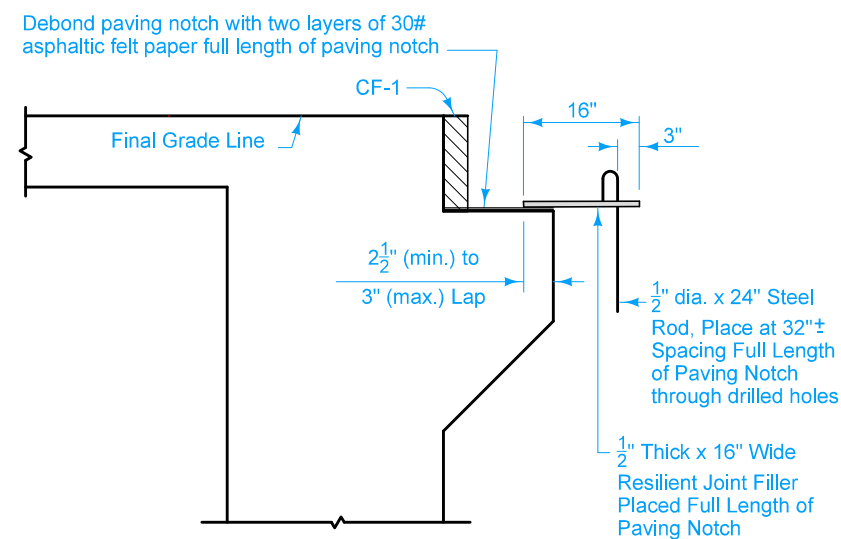
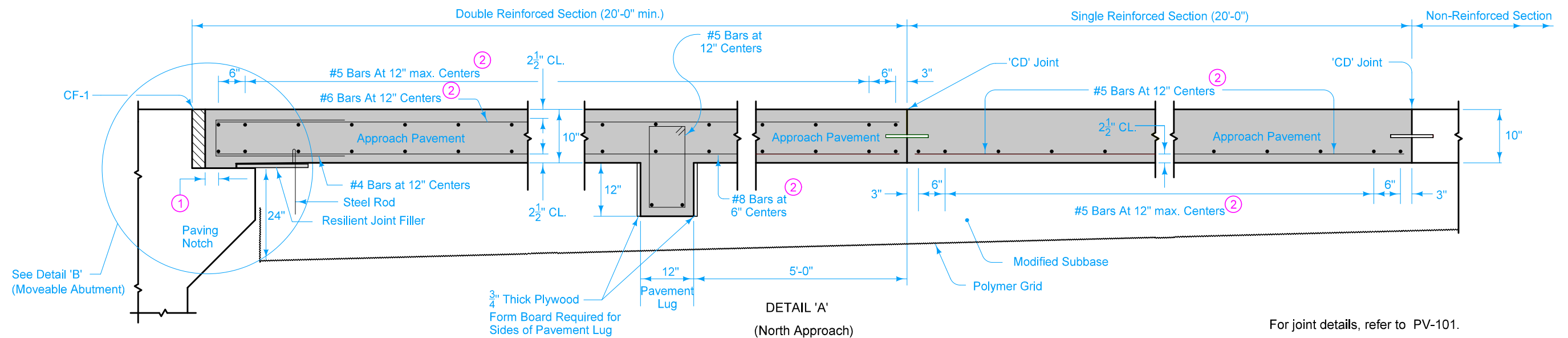
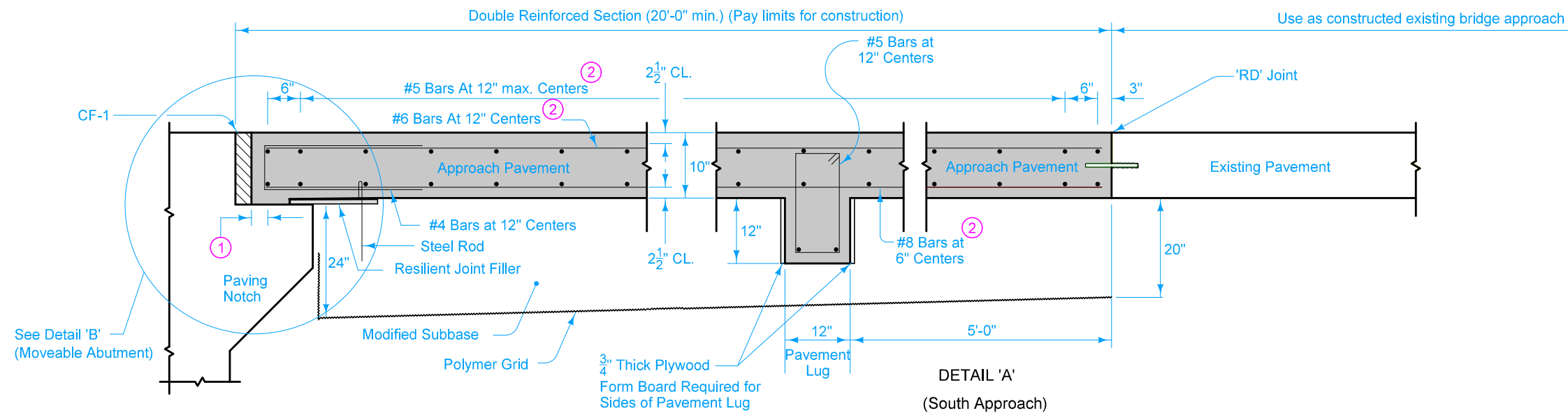
LEGEND

- Temporary Lane Separator System
- Temporary Barrier Rail
- Drum
- 42" Channelizer
- Traffic Sign
- Direction of Traffic

Place advance warning signs as
per Standard Road Plan TC-423.



Traffic Control
Stage 2



For joint details, refer to PV-101.

For curb details, see Detail 'G'.

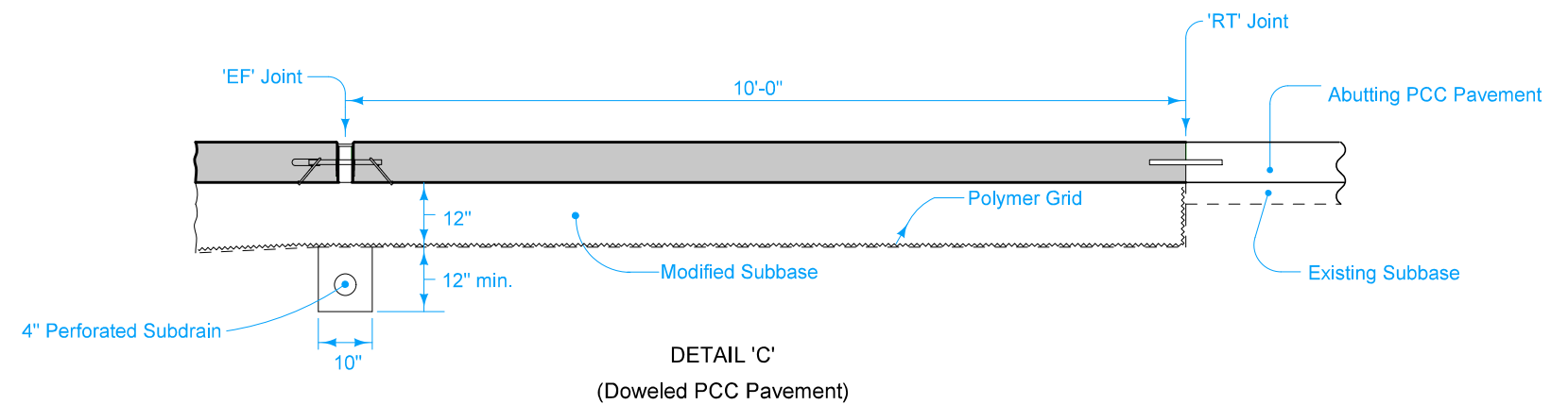
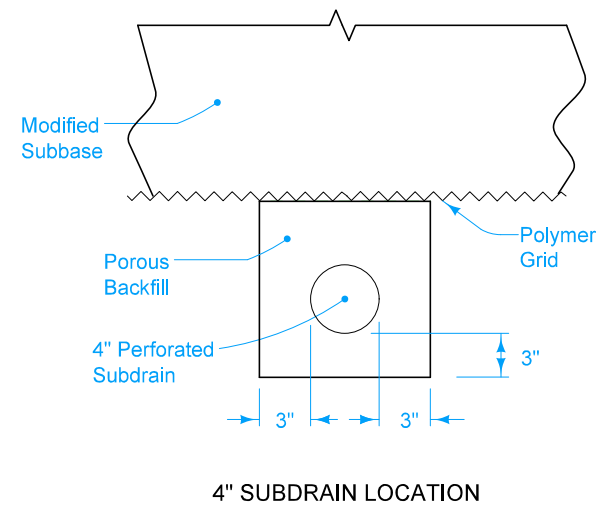
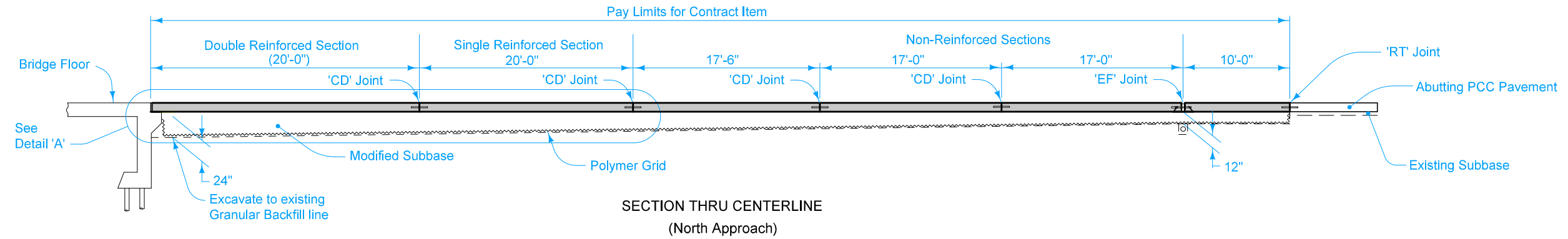
All transverse bars are #5.

Possible Contract Item:
Bridge Approach, BR-201

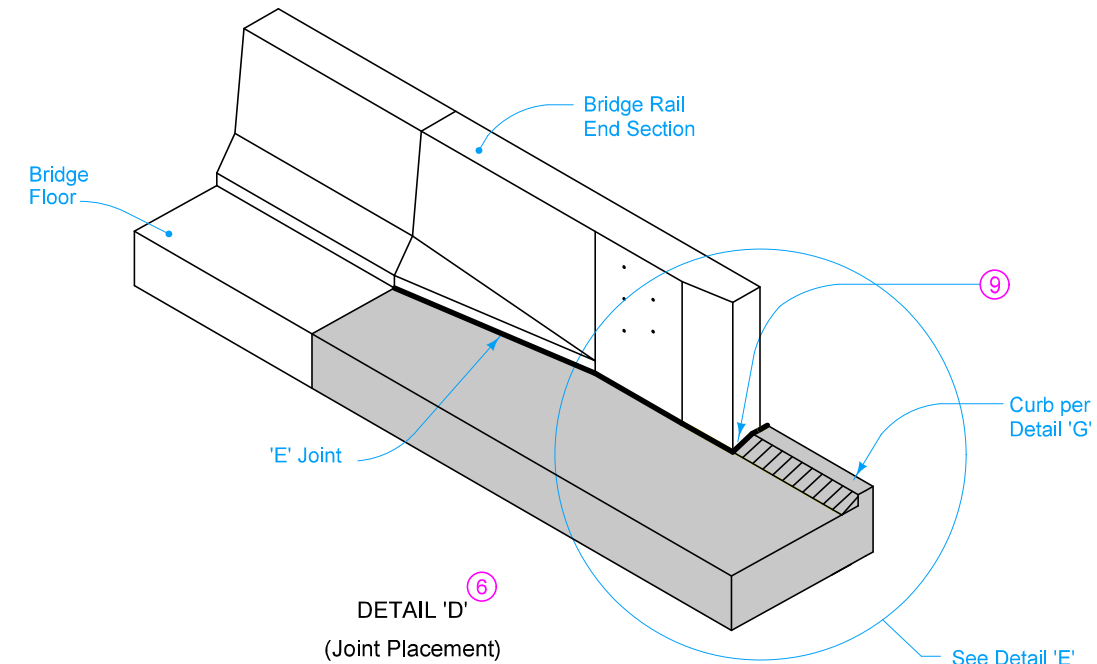
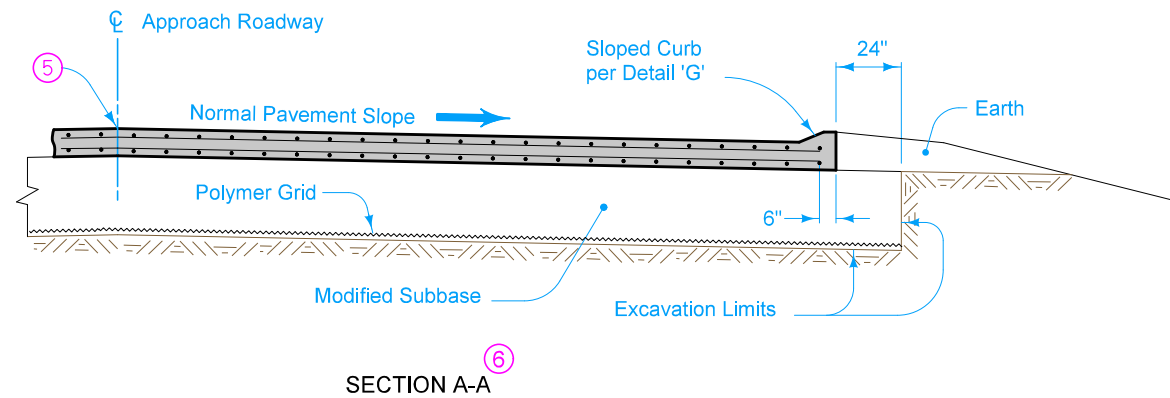
Possible Tabulation:
112-6

- ① 2" min. to 2 1/2" max. clear to bent bar.
- ② Minimum lap length: #5 Bars - 18"
#6 Bars - 27"
#8 Bars - 48"

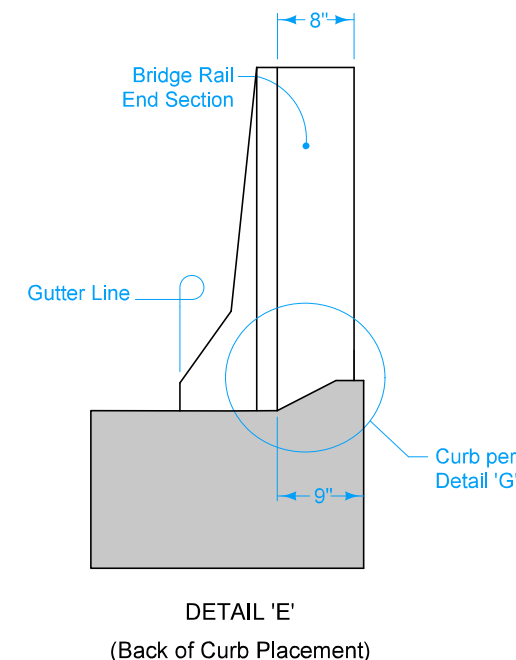
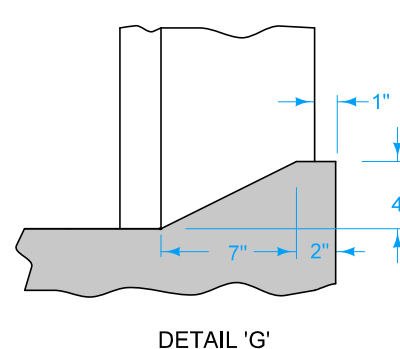
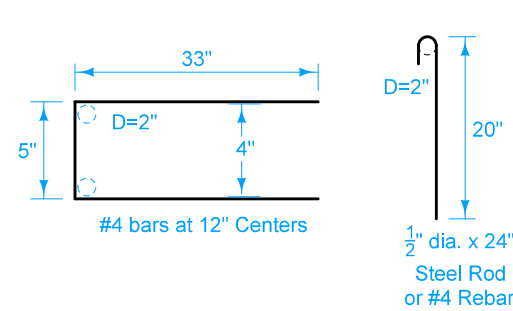
MODIFIED STANDARD ROAD PLAN	REVISION	
	1	10-17-17
BR-201		
SHEET 1 of 3		
MODIFICATIONS: Changed approach lengths.		
APPROVED BY DESIGN METHODS ENGINEER		
DOUBLE REINFORCED 10" APPROACH		



MODIFIED STANDARD ROAD PLAN	REVISION	
	1	10-17-17
	BR-201	
	SHEET 2 of 3	
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- 5 Longitudinal Joint (PV-101):
Two pours - Use 'KS-2' Joint.
 - 6 Refer to BR-231.
 - 7 Design shoulder width.
 - 8 Reinforced bridge approach section.
 - 9 Expansion joint at end of Bridge Rail End Section: Place joint filler the full depth of the bridge approach pavement. In areas with curb, place full depth of pavement plus curb and shape material to fit the shape of the curb per Section B-B of PV-101. Seal joint per Detail F of PV-101.
- Moveable Abutment Bridges: Flexible Foam Expansion Joint Filler complying with Section 4136 of the Standard Specifications. Minimum filler width is the abutment 'CF' joint width. Joint length as required to completely fill from back side of curb to front face of bridge wing.



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