

IOWA DEPARTMENT OF TRANSPORTATION

TO OFFICE: District 1	DATE: 4/9/2020
ATTENTION: District Engineer	REF.: Jasper
FROM: Ray Ringgenberg	Project # IMX-080-5(343)174—0E-50
OFFICE: District 1 Design	PIN:16-50-080-020
SUBJECT: Field Exam Review (D-2)	

Review of this project was not held due the coronavirus outbreak.

This project involves the milling and resurfacing (mill/fill) of I-80 in Jasper and Poweshiek Counties from the end of the North Skunk River Replacement Project to the beginning of the IA 146 and RR Bridge replacement project, approximate reference locations 176.5 to 181.7 for both EB and WB lanes and shoulders. The limits of the IA 146 interchange reconstruction project has not been finalized.

Highway I-80 is a service level “A” roadway The 2014 ADT is estimated to be 27,800 vpd with 34% trucks. The 2045 ADT is estimated to 55,200 vpd with 36% trucks.

The proposed project will involve the following:

- The roadway typical section is comprised of 2- 12 ft. wide lanes with a 6 ft. inside shoulder, a 10 ft. outside shoulder in each direction.
- The roadway lanes and shoulders will be milled 4 inches and resurfaced with 4 inches of HMA (2 inches of intermediate material and 2 inches of surface material). New shoulder rumble strips will be milled into the inside and outside shoulders.
- Update outdated guardrail.
- The T-38 interchange ramps will be milled 1.5 inches and resurfaced with 3 inches HMA. The outside shoulders will be resurfaced with 1.5 inches HMA.
- The truck parking in the westbound rest area will be repaired with full-depth P.C.C. finish patches.
- Complete necessary culvert repairs and cleaning.
- Repair the strip seals at the Sugar Creek Bridges.

Replacing the strip seal glands at the far abutment on the westbound bridge and the near/far abutments on the eastbound bridge could be completed during an overnight lane closure. If possible, it would be ideal to install each new gland as a single continuous piece. This would require shifting the lane closure part way through the night. If not, each new gland will need to be installed in two pieces, resulting in a joint in the gland near the centerline of the bridge.

The near abutment joint on the westbound bridge is missing the steel extrusion on the backwall side for the width of a lane and shoulder, without the extrusion in place, a pre-compressed foam joint will not work. Our only option here is to replace the entire strip seal joint. This won't be able to be completed using overnight lane closures. A future project with staged construction will need to be done to install the new joint.

Traffic Control/Staging:

Night work shall be required, with lane closures allowed only from:

Sunday 9:00 p.m. to Monday 6:00 a.m.

Monday – Thursday 8:00 p.m. to 6:00 a.m. nightly.

A shortened work zone shall be required; each lane closure shall be no more than 4 miles long.

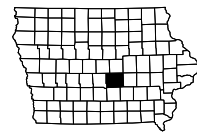
Work shall be staged such that all work on a closure section, milling and resurfacing, shall be complete prior to before beginning another section in the same direction of travel.

No ROW will be needed

This project is currently scheduled for a 12/15/2020 letting. The estimated cost of construction shown in the final concept was \$4,854,000.

Marshalltown RCE will provide the Patch Tab, Longitude Jointing Tab and Clearing and grubbing tab by 7-1-2020.

cc:	B. Hofer	S. J. Gent	M. J. Kennerly
	W.A. Sorenson	E. C. Wright	T. Nicholson
	K. D. Nicholson	D. Newell	K. K. Patel
	K. Brink	J. E. Laaser-Webb	T. Crouch
	V. A. Brewer	D. R. Tebben	S. Godbold
	N. L. Cuva	M. A. Swenson	C. B. Brakke
	D. E. Sprengeler	J.S. Nelson	D. A. Popp
	A. Shell	M. Nop	D. R. Claman
	J. McCollough	S. P. Anderson	J. Garton
	P. C. Keen	E. D. Gansen	J. Vortherms
	M. K. Solberg	S. J. Megivern	H. Beach
	C. Burke	D. T. Ta	J. E. Bartholomew
	D. Wells	M. Mohamad	J. Narigon
	B. Beavers	T.Gustafson	D.Skogerboe
	J. Lavine	S. Nixon	
	B. Walls		



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM

JASPER COUNTY

HMA RESURFACING WITH MILLING

2.5 mi E of IA 224 to 1 mi W of IA 146 (EB/WB)

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

PROJECT IDENTIFICATION NUMBER

16-50-080-020

PROJECT NUMBER

IMX-080-5(343)174--OE-50

R.O.W. PROJECT NUMBER

INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
C Sheets	Quantities and General Information
C.1	Project Description
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.2	Standard Road Plans
C.2	Index of Tabulations
C.2	General Notes
C.3	Tabulations
D Sheets	Mainline Plan and Profile Sheets
* D.1 - 2	US 63 - Culvert Areas
J Sheets	Traffic Control and Staging Sheets
* J.1	Traffic Control Plan
V Sheets	Bridge and Culvert Situation Plans
V.1 - 2	Culvert Situation Plans
W Sheets	Mainline Cross Sections
W.1	Mainline Cross Sections
	* Color Plan Sheets

DESIGN DATA RURAL

2014	AADT	27,800	V.P.D.
2045	AADT	55,200	V.P.D.
20--	DHV	--	V.P.H.
TRUCKS		36	%
Total			
Design	ESALs	34,000,000	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Tony J. Gustafson	Primary Signature Block



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 _____ Date _____

Printed or Typed Name Tony J. Gustafson

My license renewal date is December 31, 20 21

Pages or sheets covered by this seal: _____

FIELD EXAM CHECKLIST

Duration of project? 3 Months

Speed Limit 70 mph

Speed Limit during construction 55 mph (when lanes are closed)

Is sight distance a problem? No

Does patching need to be done in the project area or do the construction limits need to be extended?
Who will provide locations of patches by milepost or Station?
Yes, Marshalltown RCE

Leveling and strengthening locations and lengths (i.e. station to station).
Marshalltown RCE

Any survey needed? (culvert extensions, safety dikes, right turn lanes, horizontal curves, ext..)
No

Do any of the utilities need to be relocated (power/telephone poles) either permanently or temporarily for construction?
No

Names and addresses of affected utility companies.
Jerry Lavine to provide

Are there existing drainage problems?
No

Note any special features not shown on plan.

FIELD EXAM CHECKLIST

Note condition of existing culverts.

Culvert Number	Roadway	Ref Loc	Subdrain	Comment
13067	I-80 E	176.6		inlet seperated 2 holes
13074	I-80 E	176.8		inlet seperated, ditch needs cleaned
13101	I-80 E	177.8		inlet seperated
13104	I-80 E	177.9		inlet seperated - repaired in 2006
1315	I-80 E	177.9	Y	outlet seperated
13117	I-80 E	178.1		inlet seperated
13126	I-80 E	178.9		bar ditch needs cleaned, eb off ramp
13131	I-80 E	179.1		needs cleaned
13149	I-80 E	179.4		cut brush
13153	I-80 E	179.4		culvert is in dropdown
13163	I-80 E	179.9		needs cleaned
13187	I-80 E	180.5		needs cleaned
13129	I-80 E	181.1		needs cleaned
13111	I-80 E	181.3		needs cleaned

Dustin, Dave and Mo,
These came directly from
the maintenance portal.
Please review and provide
us with how many seperated
pipes need to be removed
and reinstalled.

Number and location of EF Joints. Full Depth -- N/A

Disposition of bridge handrail and guardrail, including posts.
removed existing guardrail to become property of contractor

Inventory of existing guardrail.
Will locate on Google earth.

Longitudinal joint repair locations (station to station).
Marshalltown RCE - provide by 7-1-20

Clearing and grubbing quantities - by unit or by area?
Marshalltown RCE - Provide by 7-1-20

Resurfacing Projects - is District Survey able to preserve Section Corners & Points?
If "no", then add these items under Construction Survey.
Tony H. will do.

FIELD EXAM CHECKLIST

Contractor furnish borrow? (Yes) / (No)

Full depth patches to be PCC? (Yes) / (No)
HMA

Full depth PCC patches to be doveled? (Yes) / (No) N/A

Soils to determine and provide tabulation of subdrains? (Yes) / (No) N/A

Pollution Prevention Plan required? (Yes) / (No)

Field Office? (Yes) / (No)

Construction Survey and or Point Preservation by DOT or Contractor? See Dist. 1 Surveyor for this (DOT) / (Contractor).

Survey by Office of Design? (Yes) / (No) N/A

Pavement markings for turn lanes as determined by the District? (Yes) / (No) N/A

Any RWIS or Traffic Recorder Sites within project limits? (Yes) / (No)

Need Patch Tab - Marshalltown RCE - Provide by 7-1-20
Guardrail Inventory = Marshalltown RCE - Provide by 7-1-20

FINAL PROJECT CONCEPT STATEMENT

I-80/I-35 from 2.5 mi E of IA 224 to 1 mi W of IA 146 (EB/WB)

Jasper and Poweshiek Counties
IMN-080-5(343)174--0E-50
PIN: 16-50-080-020

Highway Division
District 1

John Narigon, P.E.
515-986-5471

September 13, 2018
Project Directory: 5008002016

PROJECT MAP

This project involves the milling and resurfacing (mill/fill) of I-80 in Jasper and Poweshiek Counties from the end of the North Skunk River Replacement Project to the beginning of the IA 146 and RR Bridge replacement project, approximate reference locations 175.5 to 181.7 for both EB and WB lanes and shoulders. The limits of the IA 146 interchange reconstruction project has not been finalized.

One alternative that maintains the existing surface profile of I-80 was considered for the rehabilitation of I-80; mill 4 inches and place 4 inches HMA resurfacing on the roadway and shoulders. Maintaining the existing profile is desired to avoid additional narrowing of the shoulders or steepening of the slope adjacent to the shoulder. An additional inch of milling and an inch of interlayer was considered, but dismissed due to the additional milling pass it would require as well as concerns with the high truck volume the interlayer would be exposed to prior to placing the binder course.

The total cost for this improvement is \$4,854,000.

PROJECT DATA

ROUTE: I-80 from 2.5 mi E of IA 224 to 1 mi W of IA 146 (EB/WB)
LENGTH: 6.2 miles (EB) and 6.2 miles (WB)
PLANNING CLASSIFICATION: Interstate
MAINTENANCE SERVICE LEVEL: A
TRAFFIC: 2014 --- 27,800 ADT with 34% trucks
2045 --- 55,200 ADT with 36% trucks
PRESENT PAVEMENT SURFACE: HMA
PRESENT PAVEMENT WIDTH: 24 ft.
PRESENT SHOULDER WIDTH: 10 ft. outside HMA paved shoulders, 4-6 ft. inside HMA paved shoulders. Both inside shoulders have 4.0' wide 2" roll down on the outside edge.

Jasper and Poweshiek Counties
IMN-080-5(343)174--0E-50
PIN: 16-20-080-020
Page 2

MP to MP	Dir.	Type	Avg. Str. No.	80% Str. No.	Jt. Str. No.	PCI	IRI	K Value
174.21 to 180.64	EB	HMA	7.00	7.00	---	82	61	172
180.64 to 183.67	EB	HMA	8.00	7.00	---	78	68	201
174.21 to 180.64	WB	HMA	7.00	7.00	---	86	63	178
180.64 to 183.67	WB	HMA	9.00	8.00	---	79	69	201

PAVEMENT HISTORY:

ORIGINAL PAVEMENT: 24ft. 14 in. ATB and 3" AAC SURFACE
COARSE AGGREGATE SOURCE: Ferguson Mine
YEAR CONSTRUCTED: 1962

OVERLAY: 2 in. AAC Base and 1 in. AAC Surface
COARSE AGGREGATE SOURCE: Ferguson Mine – Dolomite
YEAR CONSTRUCTED: 1968

MILL AND OVERLAY: 3 in. Mill, 2 in. AAC Base and 1 in. AAC Surface
COARSE AGGREGATE SOURCE: Ferguson Mine – Dolomite
YEAR CONSTRUCTED: 1984

OVERLAY: 2 in. AAC Base and 1 in. AAC Surface
COARSE AGGREGATE SOURCE: Ferguson Mine – Crushed Limestone
YEAR CONSTRUCTED: 2004

EXISTING CONDITIONS:

The existing pavement is a full depth (25") Hot Mix Asphalt Pavement over 6" soil aggregate subbase.

The pavement is a 4-lane divided highway with partial depth HMA shoulders. The ride is generally acceptable but is deteriorating due to thermal cracking that has occurred.

SAFETY CONSIDERATIONS:

CRASHES:
During the five-year study period from January 1, 2013 through December 31, 2017, there were 112 crashes including: 1 fatal crashes, 8 minor injury crashes, 12 possible/unknown injury crashes and 91 property damage crashes. The crash rate is 34.3/HMVM which is below the statewide rural interstate average of 49/HMVM. 28 (25%) of the crashes were animal related. There are no hot-spots to address to improve crash experience.

**GUARDRAIL:
BRIDGES:**

Mainline EB Bridge No. 1 – Eastbound over Rock Creek

The outside approach guardrail is 57.5 feet in length and has an outdated design. Update the guardrail on the outside approach.

Mainline WB Bridge No. 1 – Westbound over Rock Creek

Update the steel beam guardrail on the outside approach end.

Overhead Bridge – Hwy T-38 N

This overhead bridge will be used as constructed. The median pier is protected with high tension cable rail.

Update the pier protection guardrail on the I-80/I-35 eastbound and westbound outside approaches; the outside concrete barrier will be used as constructed.

Mainline EB Bridge No. 2 – over Sugar Creek

Update the steel beam guardrail on the outside approach end.

Mainline WB Bridge No. 2 – over Sugar Creek

Update the steel beam guardrail on the outside approach end.

SIDE SLOPES:

Median

The median slope is 6:1 with an 8-foot ditch bottom. The median has 100% coverage of high tension cable rail.

Outside Foreslope

There are several locations of steep foreslope that are protected by low-tension cable rail. These locations will be updated with high-tension cable rail. One location with high-tension cable rail will be used as constructed.

BRIDGE CONDITIONS

There is one overhead bridge and two sets of dual mainline bridges located within the project limits.

Mainline EB Bridge No. 1 – Eastbound over Rock Creek

Sta. 3215+19, Maintenance No. 5076.6L080, FHWA No. 31240, 180’ x 40’ Prestressed Concrete Beam Bridge, Design No. 1360. Abutments were made semi-integral in 2016.

No work is needed.

Mainline WB Bridge No. 1 – Westbound over Rock Creek

Sta. 3215+19, Maintenance No. 5076.6R080, FHWA No. 31250, 180’ x 40’ Prestressed Concrete Beamr Bridge, Design No. 1360. Abutments were made semi-integral in 2016. No work is needed.

Overhead Bridge – Hwy T-38 N

Sta. 3379+23, Maintenance No 5079.1O080, FHWA No. 31260, 220’ x 28’ Pretensioned Prestressed Concrete Beam Bridge, Design No. 1660, Vertical Clearance for I-80/I-35 are 17’ 01” for the eastbound lanes and 16’ 10” for the westbound lanes. Deck was replaced in 2006. No work is needed.

Mainline EB Bridge No. 2 – over Sugar Creek

Sta. 3416+59.4, Maintenance No. 5079.8R080, FHWA No. 31270, 154’ x 40’ Continous I-Beam Bridge, Design No. 1760. Deck was overlaid in 2001. Strip seal glands should be replaced.

Mainline WB Bridge No. 2 – over Sugar Creek

Sta. 3416+59.4, Maintenance No. 5079.8L080, FHWA No. 31280, 154’ x 40’ Continous I-Beam Bridge, Design No. 1760. West end strip seal extrusion is severely damaged. Replacement of joint is needed. Replace strip seal gland at east end joint.

CULVERT CONDITIONS

The Culvert Database on the Maintenance Portal indicates the culverts listed below require work.

Culvert Number	Roadway	Ref Loc	Lat	Long	Subdrain	Comment
13067	I-80 E	176.6	41.6949	-92.8447		inlet seperated 2 holes
13074	I-80 E	176.8	41.6951	-92.8398		inlet seperated, ditch needs cleaned
13101	I-80 E	177.8	41.695	-92.8211		inlet seperated
13104	I-80 E	177.9	41.695	-92.82		inlet seperated - repaired in 2006
1315	I-80 E	177.9	41.695	-92.8188	Y	outlet seperated
13117	I-80 E	178.1	41.6951	-92.8142		inlet seperated
13126	I-80 E	178.9	41.695	-92.8006		bar ditch needs cleaned, eb off ramp
13131	I-80 E	179.1	41.6952	-92.7965		needs cleaned
13149	I-80 E	179.4	41.6953	-92.7915		cut brush
13153	I-80 E	179.4	41.6953	-92.7906		culvert is in dropdown
13163	I-80 E	179.9	41.6954	-92.7813		needs cleaned
13187	I-80 E	180.5	41.6953	-92.7686		needs cleaned
13129	I-80 E	181.1	41.6953	-92.7565		needs cleaned
13111	I-80 E	181.3	41.6951	-92.7528		needs cleaned

Further investigation will be necessary during plan development to determine extent of culvert repairs.

OTHER CONSIDERATIONS

T-38 Interchange Ramps

The ramps consist of 16’ of pavement with 4’ granular left shoulders and 6’ HMA outside shoulders. The pavement surface is in poor condition.

Westbound Grinnell Rest Area

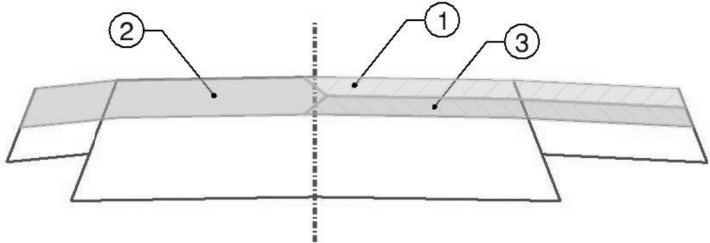
There are several locations of broken concrete in the truck parking area.

ALTERNATE: 4” Milling and two - 2” lifts of HMA

The roadway typical section is comprised of 2- 12 ft. wide lanes with a 6 ft. inside shoulder, a 10 ft. outside shoulder in each direction.

The roadway will be milled 4 inches and resurfaced with 4 inches of HMA (2 inches of intermediate material and 2 inches of surface material). See sequence of suggested milling sequence below. New shoulder rumble strips will be milled into the inside and outside shoulders.

Milling is proposed to be accomplished in 3 passes maintaining a safe slope at the drop-off and avoiding the creation of a trough that could pond water.



Update outdated guardrail.

The T-38 interchange ramps will be milled 1.5 inches and resurfaced with 3 inches HMA. The outside shoulders will be resurfaced with 1.5 inches HMA.

The truck parking in the westbound rest area will be repaired with full-depth P.C.C. finish patches.

Repair the strip seals at the Sugar Creek Bridges.

Complete necessary culvert repairs and cleaning.

ESTIMATED COST:



Estimate Items Report
Version D00-Concept
Project IMN-080-5(343)174--0E-50

Item Number	Item Description	Units	Quantity	Unit Price	Total
2121-7425020	GRANULAR SHLD, TYPE B	TON	600.000	\$30.95	\$18,570.00
2212-5070322	PATCH, PARTIAL-DEPTH REPAIR, HMA	SY	150.000	\$69.00	\$10,350.00
2214-5145150	PAVT, SCARIFICATION	SY	570.000.000	\$3.00	\$1,710,000.00
2303-1052500	HMA VT INTERMEDIATE, 1/2"	TON	7,125.000	\$38.80	\$276,450.00
2303-1053502	HMA VT SURF, 1/2", FRIC L-2	TON	7,125.000	\$50.00	\$356,250.00
2303-1258285	ASPH BINDER, PG 58-28V	TON	855.000	\$570.00	\$487,350.00
2527-9263109	PAINTED PAVT MARK, WATERBORNE/SOLVENT	STA	3,250.000	\$5.00	\$16,250.00
2529-5070111	PATCH,FULL-DEPTH FINISH,BY AREA(<=>50 FT)	SY	300.000	\$109.41	\$32,823.00
2529-5070120	PATCH, FULL-DEPTH FINISH, BY COUNT	EA	15.000	\$141.08	\$2,116.20
2540-4480507	LONGITUDINAL JOINT REPAIR	LF	5,000.000	\$7.74	\$38,700.00
2548-0000100	MILLED SHLD RUMBLE STRIP, HMA SURF	STA	1,310.000	\$9.12	\$11,947.20
PCT-000-000	MOBILIZATION (000-000)	% of Project	4,853,780.980	5.00%	\$242,689.05
PCT-000-030-020	TEMPORARY TRAFFIC CONTROL (000-030-020)	% of Project	4,853,780.980	5.00%	\$242,689.05
PCT-010-040-000	GUARDRAIL (010-040-000)	% of Project	4,853,780.980	2.00%	\$97,075.62
PCT-020	STRUCTURES (020)	% of Project	4,853,780.980	2.00%	\$97,075.62
PCT-999	UNQUANTIFIED	% of Project	4,853,780.980	25.00%	\$1,213,445.25
				Total:	\$4,853,780.99

RECOMMENDATIONS:

The recommended method of rehabilitation for this project is 4 inches of milling with 4 inches of HMA resurfacing.

Right of way is not required.

Minor grading and drainage work is anticipated to make necessary repairs to culverts, but there appears to be no impacts to wetlands or streams.

TRAFFIC CRITICAL PROJECT (TSMO) CONSIDERATIONS:

Night work shall be required, with lane closures allowed only from 8:00 p.m. to 6:00 a.m.

A shortened work zone shall be required; each lane closure shall be no more than 4 miles long.

Work shall be staged such that all work on a closure section, milling and resurfacing, shall be complete prior to before beginning another section in the same direction of travel.

SCHEDULE

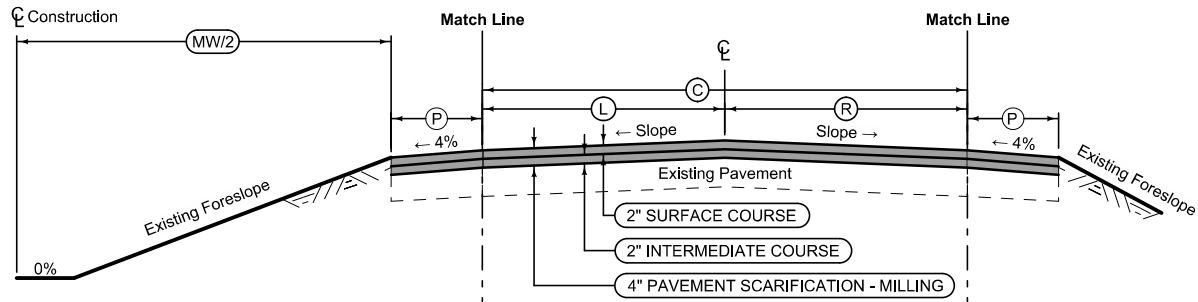
A01 - Approval of DOT Commission - Inclusion in 5-Year Program	6/12/2018
D00 - Pre-Design Concept	7/20/2018
H00 - Cultural Resources Assessment	8/17/2018
U00 - Preliminary Utility Review	8/17/2018
W00 - Preliminary Wetland Review	8/17/2018
D02 - Design Field Exam	5/15/2020
TE0 - Threatened/Endangered Species Review	6/12/2020
DM5 - Design Methods Turn-In	9/1/2020
D07 - Final Pave Plans	10/6/2020
L02 - Letting-Paving and Incidentals	12/15/2020
C02 - Construction Period (Field Work)	10/29/2021

FUNDS PROGRAMMED:

This proposed 4R project is scheduled for the year 2021 in the Iowa Transportation Improvement Program and has an estimated cost of \$4,854,000.

Median HMA Shoulder

3R_Shldr_P_Milling_04-19-11		
STATION TO STATION		(P) Feet
3187+50.00	3214+29.00	6
3216+09.00	3268+85.91	6
3300+00.00	3415+40.00	6
3416+94.00	3461+41.08	6
3+00.30	57+35.00	6
3187+50.00	3214+33.00	6
3216+16.00	3268+85.91	6
3300+00.00	3415+85.00	6
3417+38.00	3461+41.08	6
3+00.30	57+35.00	6



3R_MillingOverlay_04-19-11					
Direction	STATION TO STATION		(C) Feet	(L) Feet	(R) Feet
WBL	3187+50.00	3214+29.00	24	12	12
WBL	3216+09.00	3268+85.91	24	12	12
WBL	3300+00.00	3415+40.00	24	12	12
WBL	3416+94.00	3461+41.08	24	12	12
WBL	3+00.30	57+35.00	24	12	12
EBL	3187+50.00	3214+33.00	24	12	12
EBL	3216+16.00	3268+85.91	24	12	12
EBL	3300+00.00	3415+85.00	24	12	12
EBL	3417+38.00	3461+41.08	24	12	12
EBL	3+00.30	57+35.00	24	12	12

Outside HMA Shoulder

3R_Shldr_P_Milling_04-19-11		
STATION TO STATION		(P) Feet
3187+50.00	3214+29.00	10
3216+09.00	3268+85.91	10
3300+00.00	3415+40.00	10
3416+94.00	3461+41.08	10
3+00.30	57+35.00	10
3187+50.00	3214+33.00	10
3216+16.00	3268+85.91	10
3300+00.00	3415+85.00	10
3417+38.00	3461+41.08	10
3+00.30	57+35.00	10

See Tab 100-24 or 100-25 for pavement and scarification quantities.

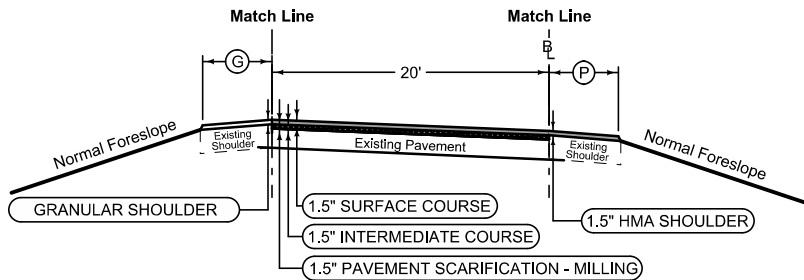
See Tab 112-9 for shoulder quantities.

ML I-80

HMA Ramp Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(G) Feet
78+57.00	92+89.00	4
262+64.00	281+33.00	4
364+75.00	379+47.00	4
477+57.00	492+75.00	4



Section shown in direction of traffic.

1RH_04-19-11	
BEGIN STATION	END STATION
78+54.00	92+89.00
262+64.00	281+33.00
364+75.00	379+47.00
477+57.00	492+75.00

HMA Ramp Shoulder

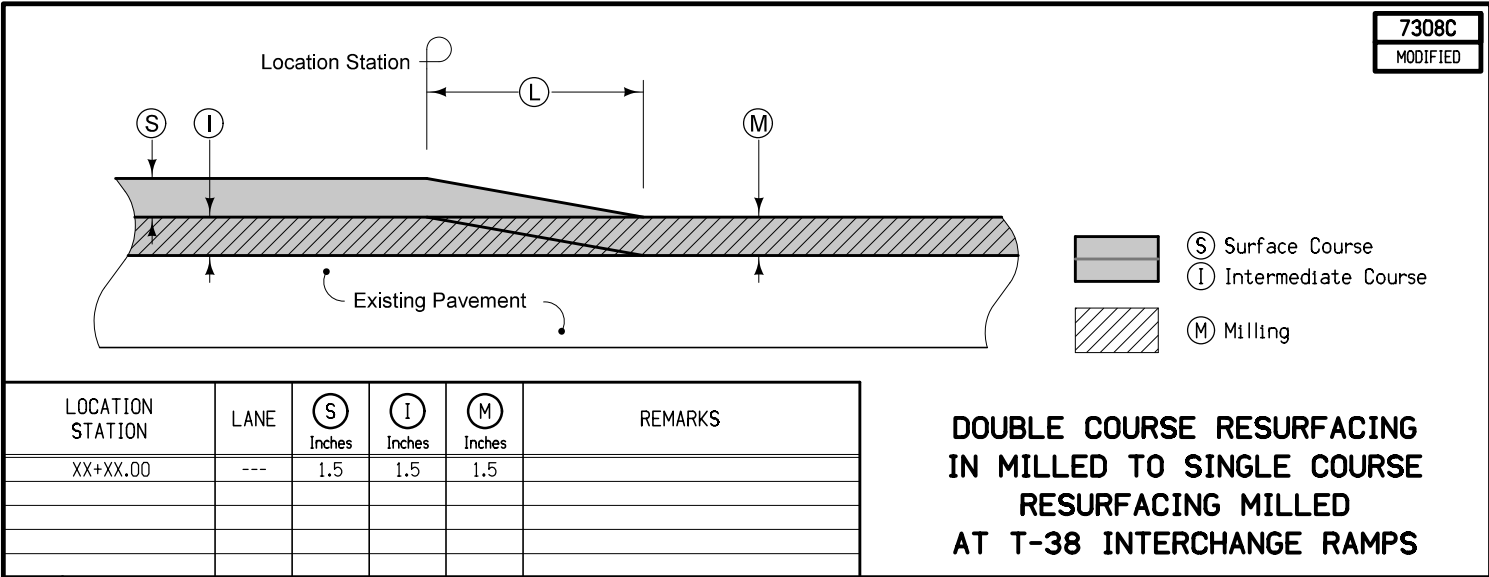
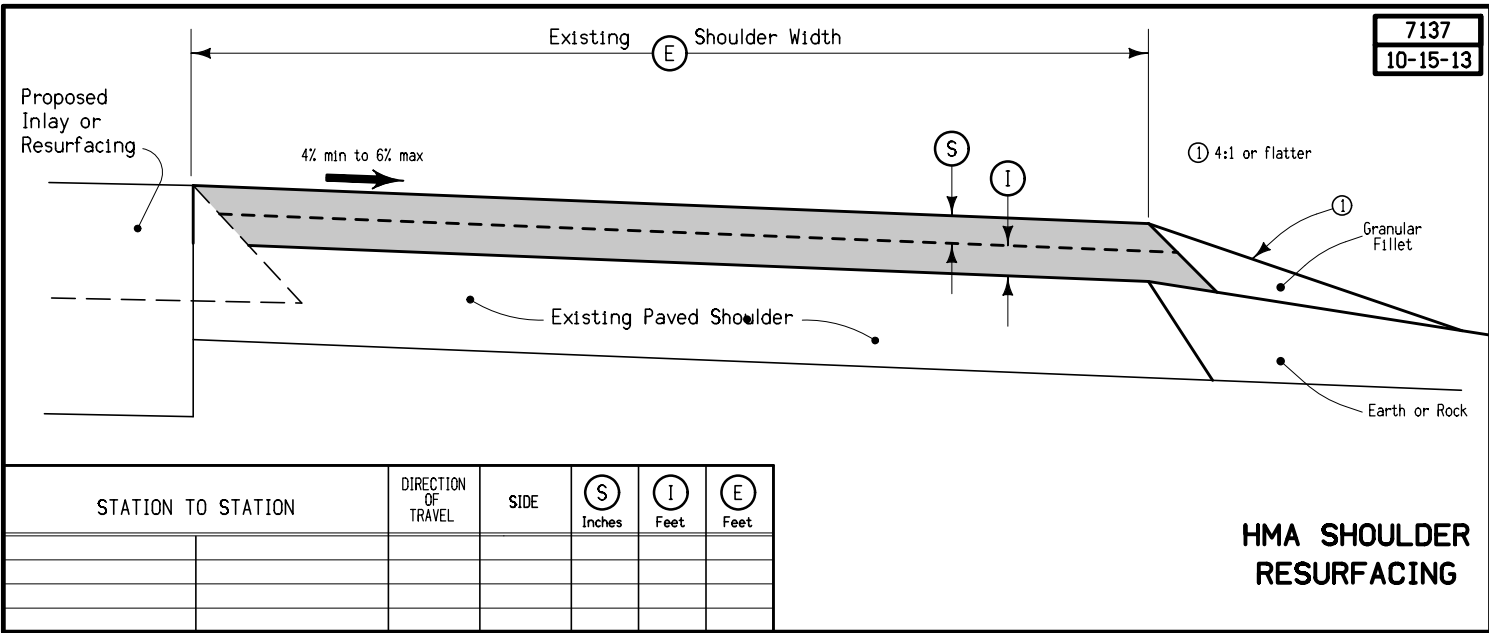
Shoulder Jointing:
Longitudinal joint: B

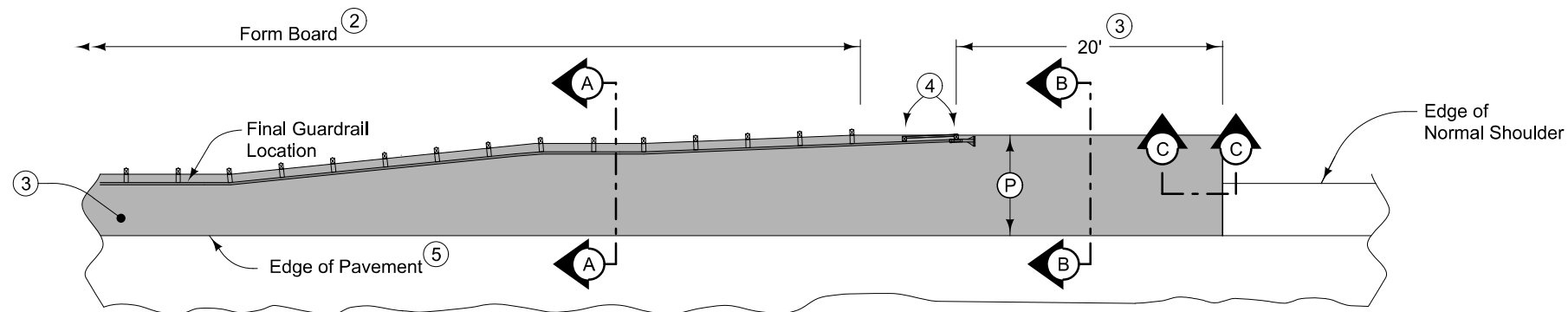
1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
78+57.00	92+89.00	6
262+64.00	281+33.00	6
364+75.00	379+47.00	6
477+57.00	492+75.00	6

See Tab 100-24 or 100-25 for pavement quantities.

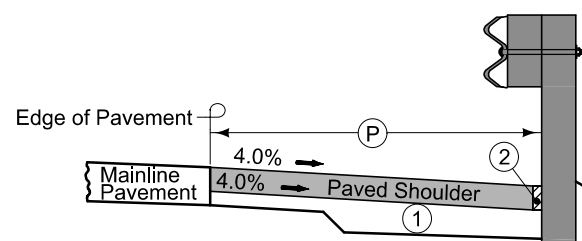
See Tab 112-9 for shoulder quantities.

County Road T-38 (Ramps)

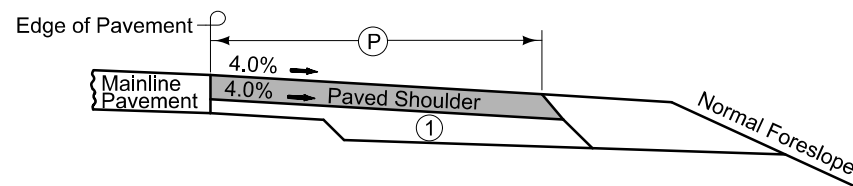




PLAN VIEW

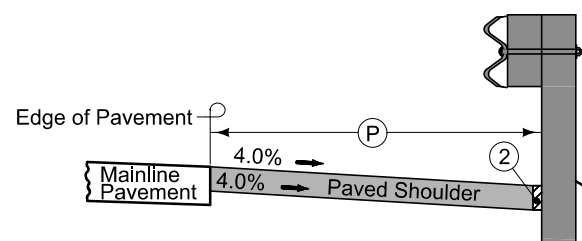


Section A-A

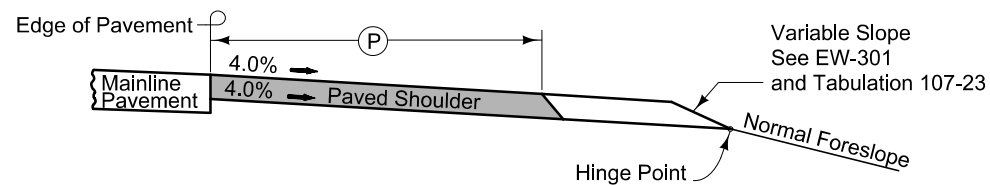


Section B-B

NEW CONSTRUCTION



Section A-A



Section B-B

EXISTING SHOULDER

DESIGNER
INFO

7156
04-18-17

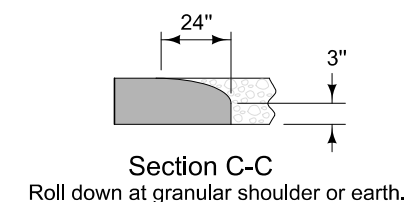
9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

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 For subgrade treatment, refer to other details in the plan.
- ② 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. Refer to note 4 for final 2 posts.
- ③ Continue paved shoulder to existing paved shoulder or 20 feet beyond the center of the first post.
- ④ Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.
- ⑤ 'KT-1 joint for PCC shoulder.
'B' joint for HMA shoulder.



Section C-C
Roll down at granular shoulder or earth.

PAVED SHOULDER AT GUARDRAIL

SURVEY SYMBOLS

UTILITY LEGEND

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design	Color No.		
Green	(2)			Existing Topographic Features and Labels
Blue	(1)			Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)			Existing Utilities

SHADING

Design

Color No.

Yellow	(4)			Highlight for Critical Notes or Features
Red	(3)			Delineates Restricted Areas
Lavender	(9)			Temporary Pavement Shading
Gray, Light	(48)			Proposed Pavement Shading
Gray, Med	(80)			Proposed Granular Shading
Gray, Dark	(112)			Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)			Grading Shading
Tan	(8)			Proposed Sidewalk Shading
Blue, Light	(230)			Proposed Sidewalk Landing Shading
Pink	(11)			Proposed Sidewalk Ramp Shading

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design	Color No.		
Green	(2)			Existing Ground Line Profile
Blue	(1)			Proposed Profile and Annotation
Magenta	(5)			Existing Utilities
Blue, Light	(230)			Proposed Ditch Grades, Left
Black	(0)			Proposed Ditch Grades, Median
Rust	(14)			Proposed Ditch Grades, Right

Reference Point

Station

Survey Line

Section Corner

Ground Line Intercept

Saw Cut

Guardrail

Trench Drain

HighTension Cable Guardrail

Sheet Pile

Pavement Removal

Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

Proposed Right-of-Way

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)

FILE NO.

ENGLISH

DESIGN TEAM

Gustafson \ Narigon \ Ringgenberg

JASPER

COUNTY

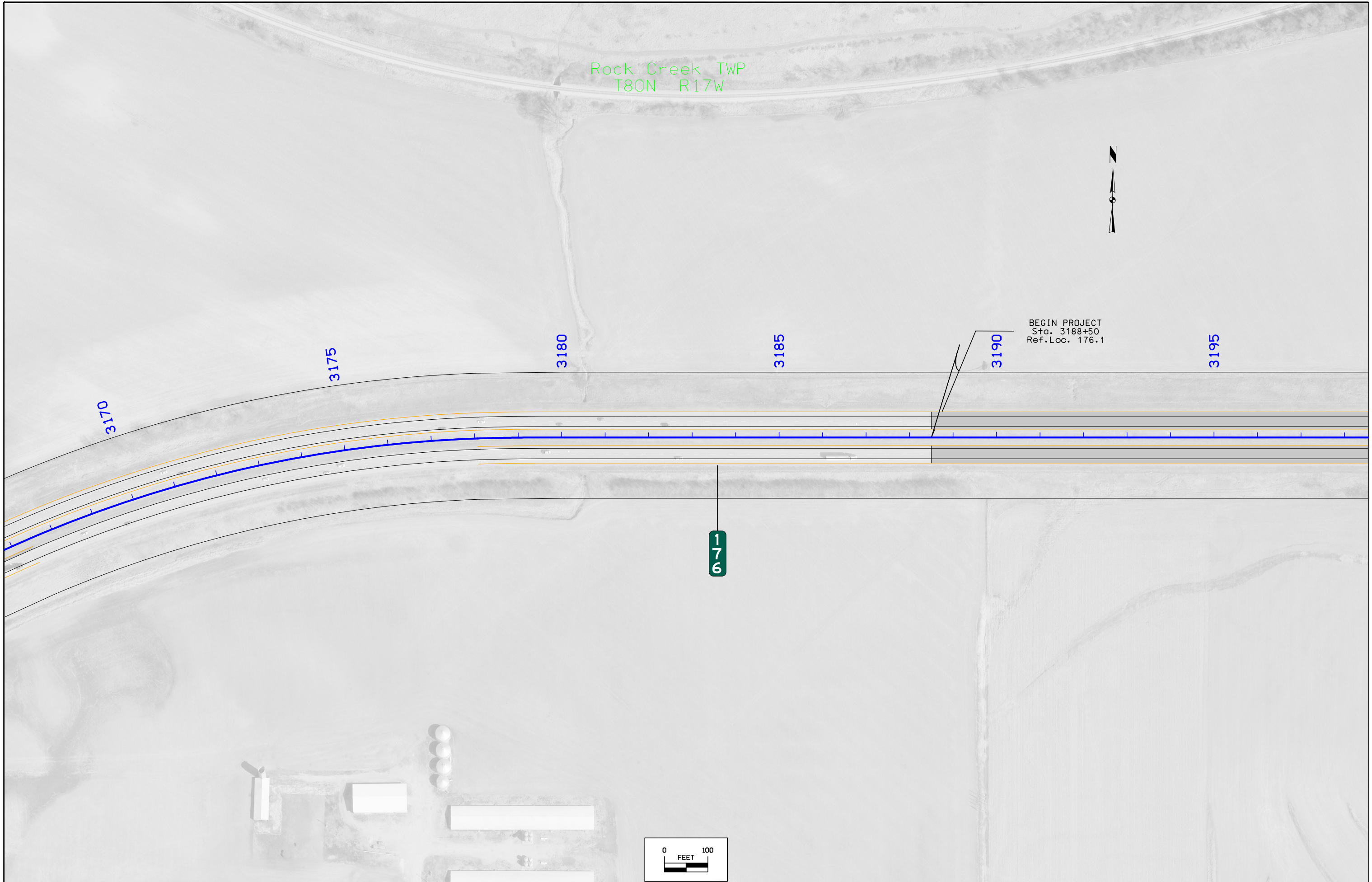
PROJECT NUMBER

IMX-080-5(343)174--0E-50

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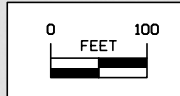
D.1

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Rock Creek TWP
T80N R17W

BEGIN PROJECT
Sta. 3188+50
Ref. Loc. 176.1



Rock Creek TWP
T80N R17W
Sec. 32

Rock Creek TWP
T80N R17W
Sec. 33

3200

3205

3210

3215

3220

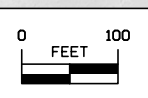
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Refer to Sheet U.1
for Guardrail Details.

WB Bridge
Maint.#-5076.6L080
FHWA# - 31250
Design# - 1360
(update guardrail)

EB Bridge
Maint.#-5076.6R080
FHWA# - 31240
Design# - 1360
(update guardrail)

ROCK CREEK





Rock Creek TWP
T80N R17W
Sec. 33

3230

3235

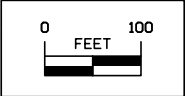
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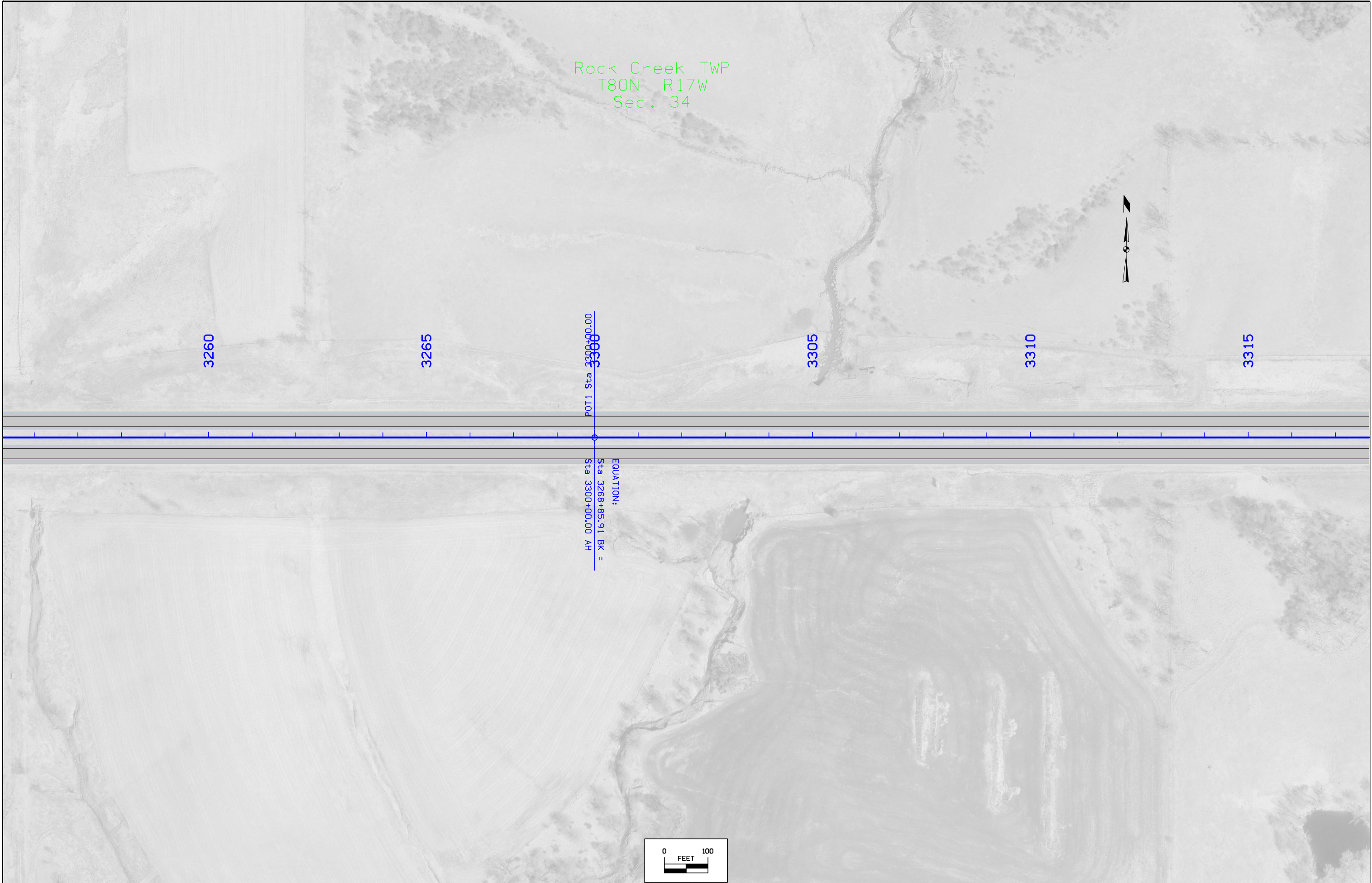
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3250

3255

177







Rock Creek TWP
T80N R17W
Sec. 34



3320

3325

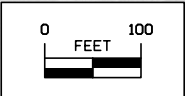
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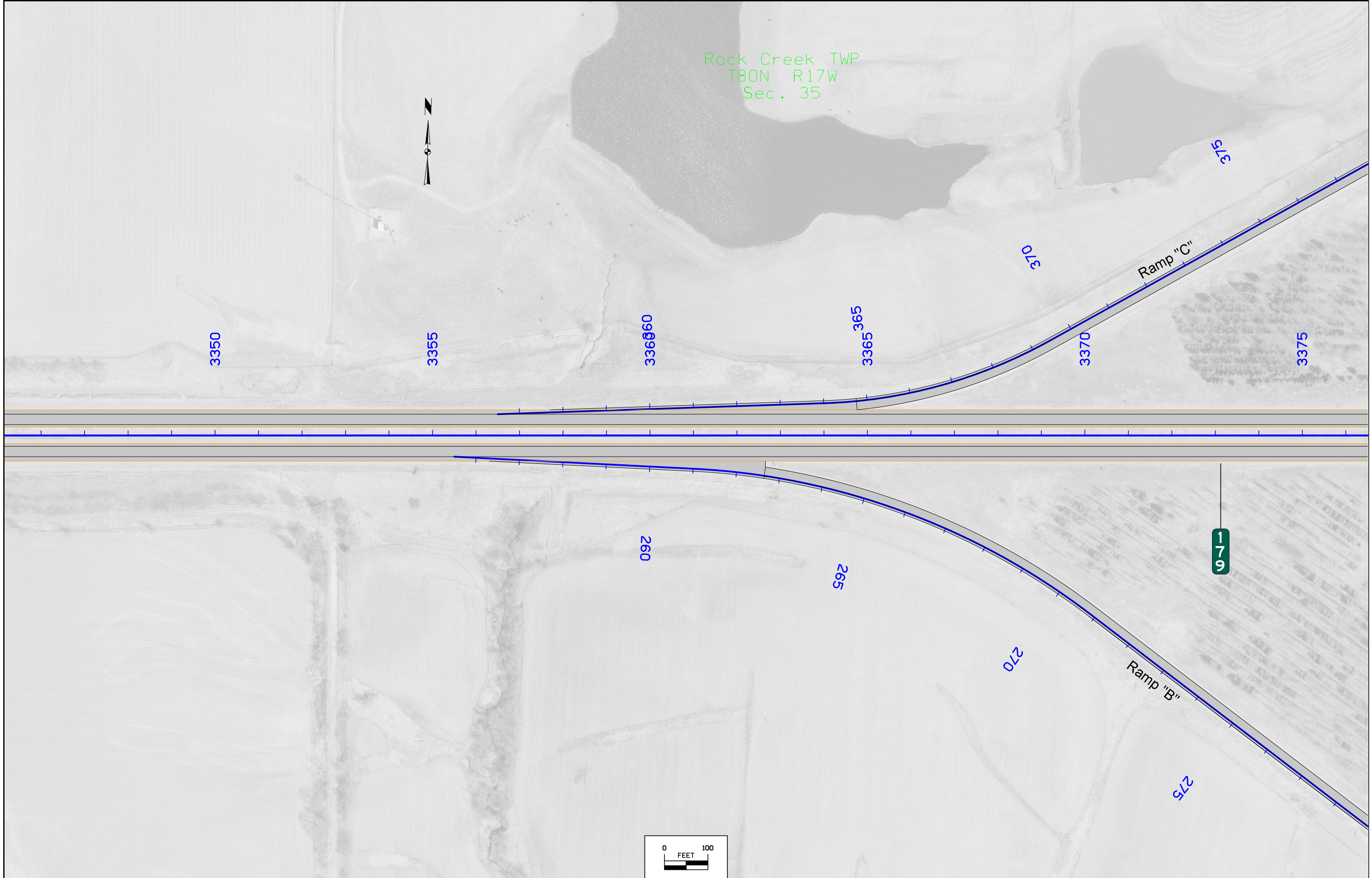
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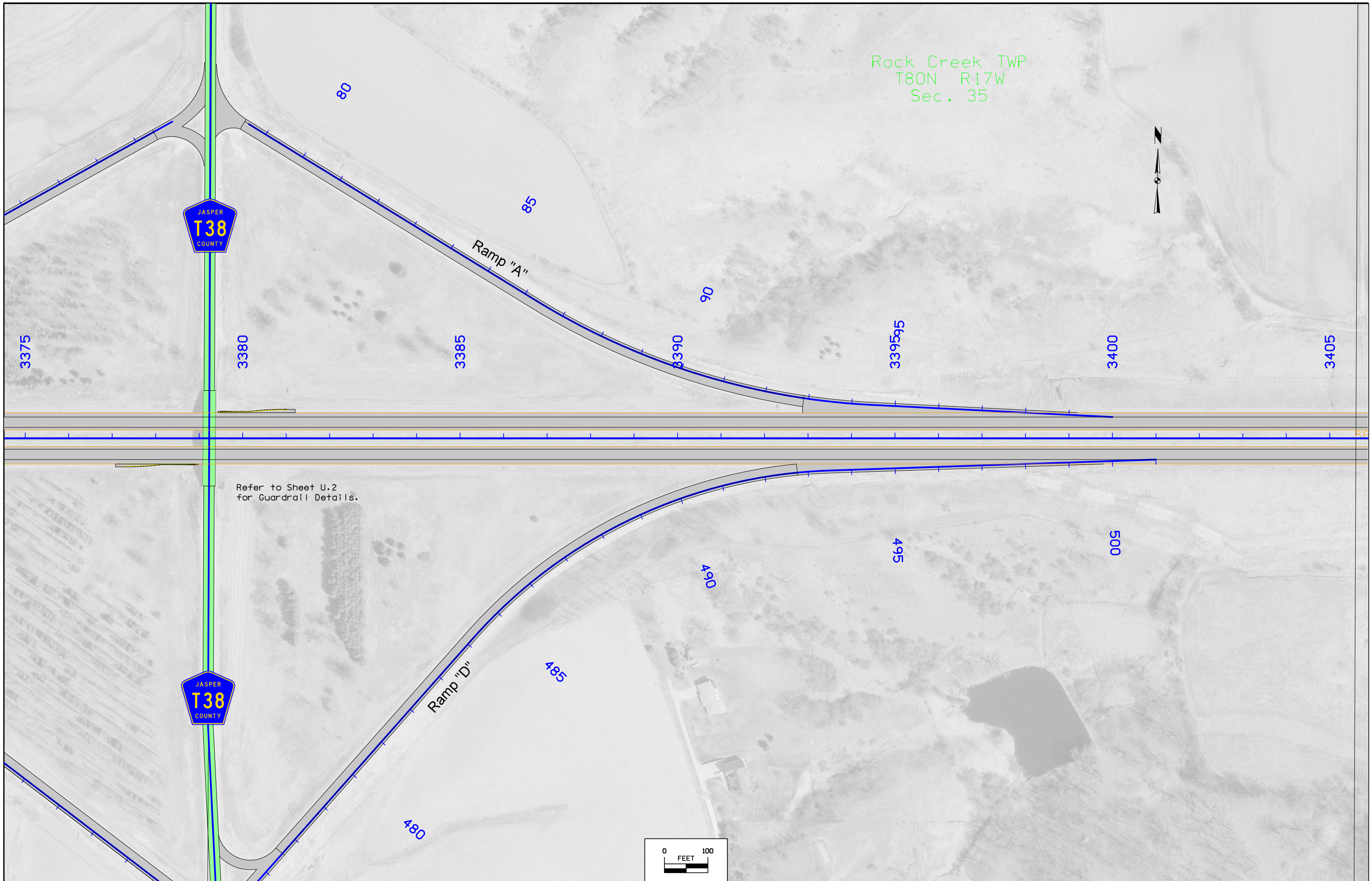
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3345

178

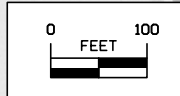






Rock Creek TWP
T80N R17W
Sec. 35

Refer to Sheet U.2
for Guardrail Details.



Rock Creek TWP
T80N R17W
Sec. 35

Rock Creek TWP
T80N R17W
Sec. 36



WB Bridge
Maint.#-5079.8L080
FHWA# - 31280
Design# - 1760
(update guardrail
West end strip seal extrusion
is serverly damaged. Replacement
of joint is needed. Replace strip
seal gland at east end joint)

3405

3410

3415

3420

3425

3430

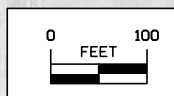
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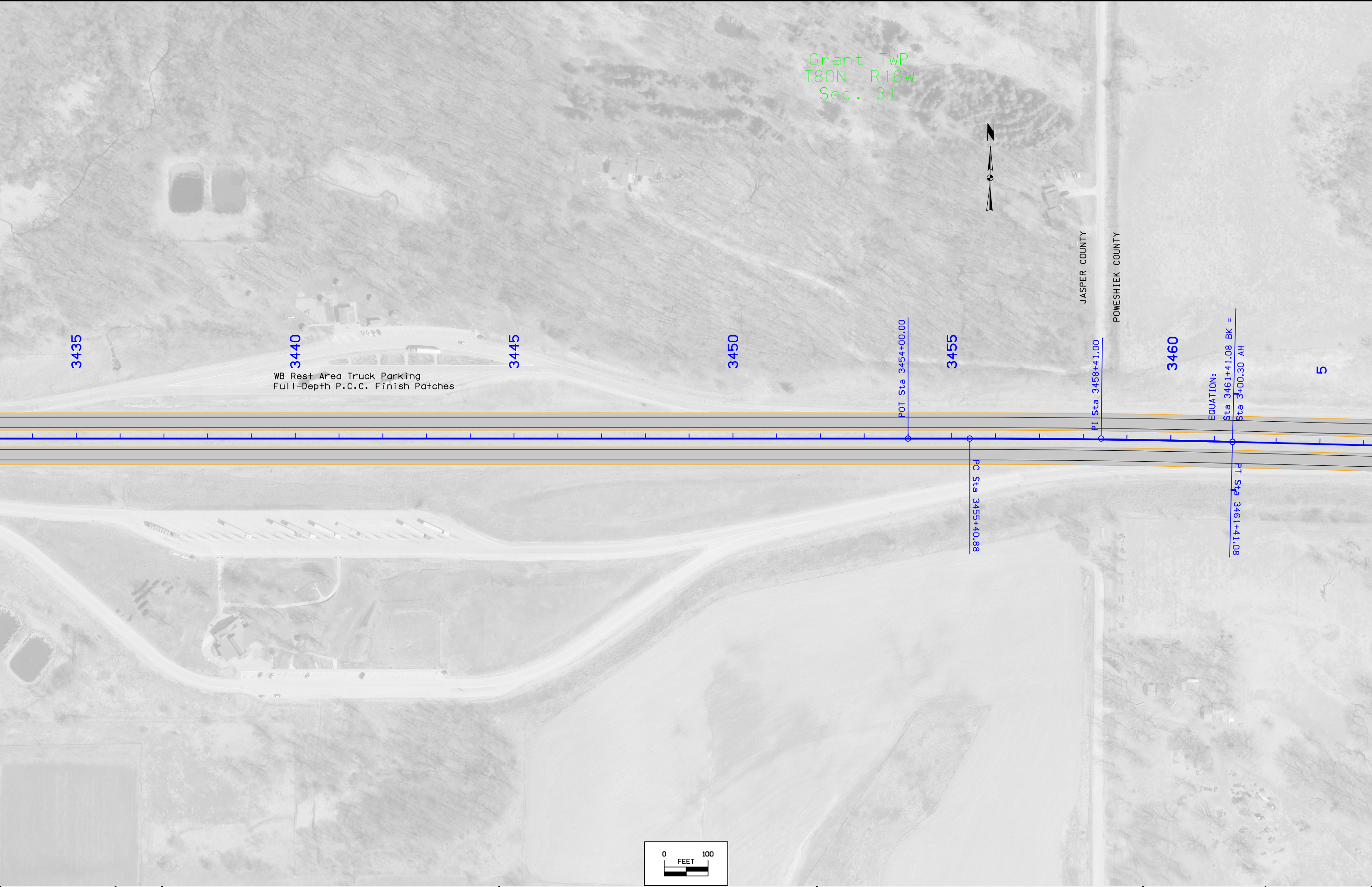
Refer to Sheet U.2
for Guardrail Details.

SUGAR CREEK

EB Bridge
Maint.#-5079.8R080
FHWA# - 31270
Design# - 1760
(Strip seal glands should be replaced)

180



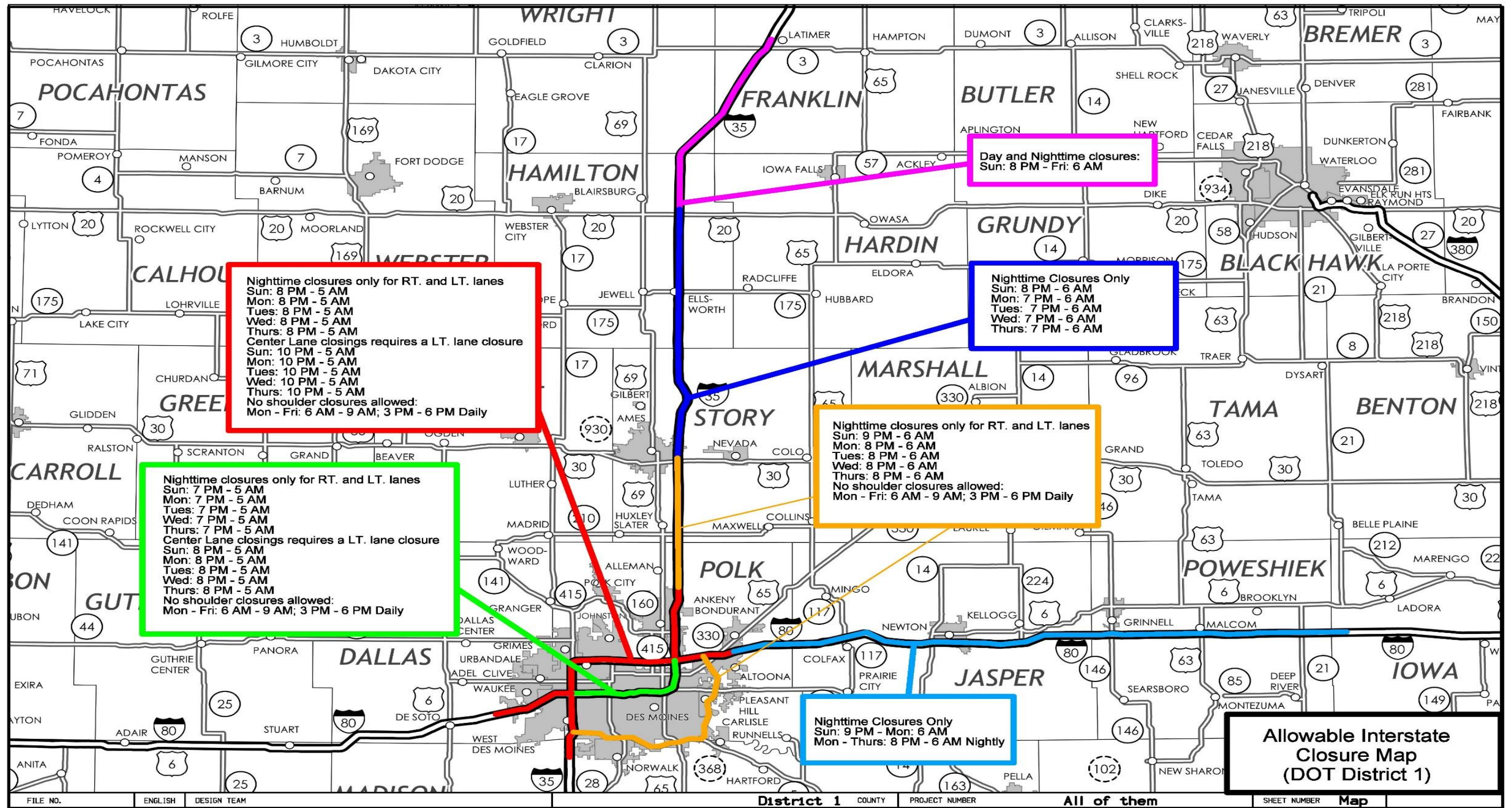


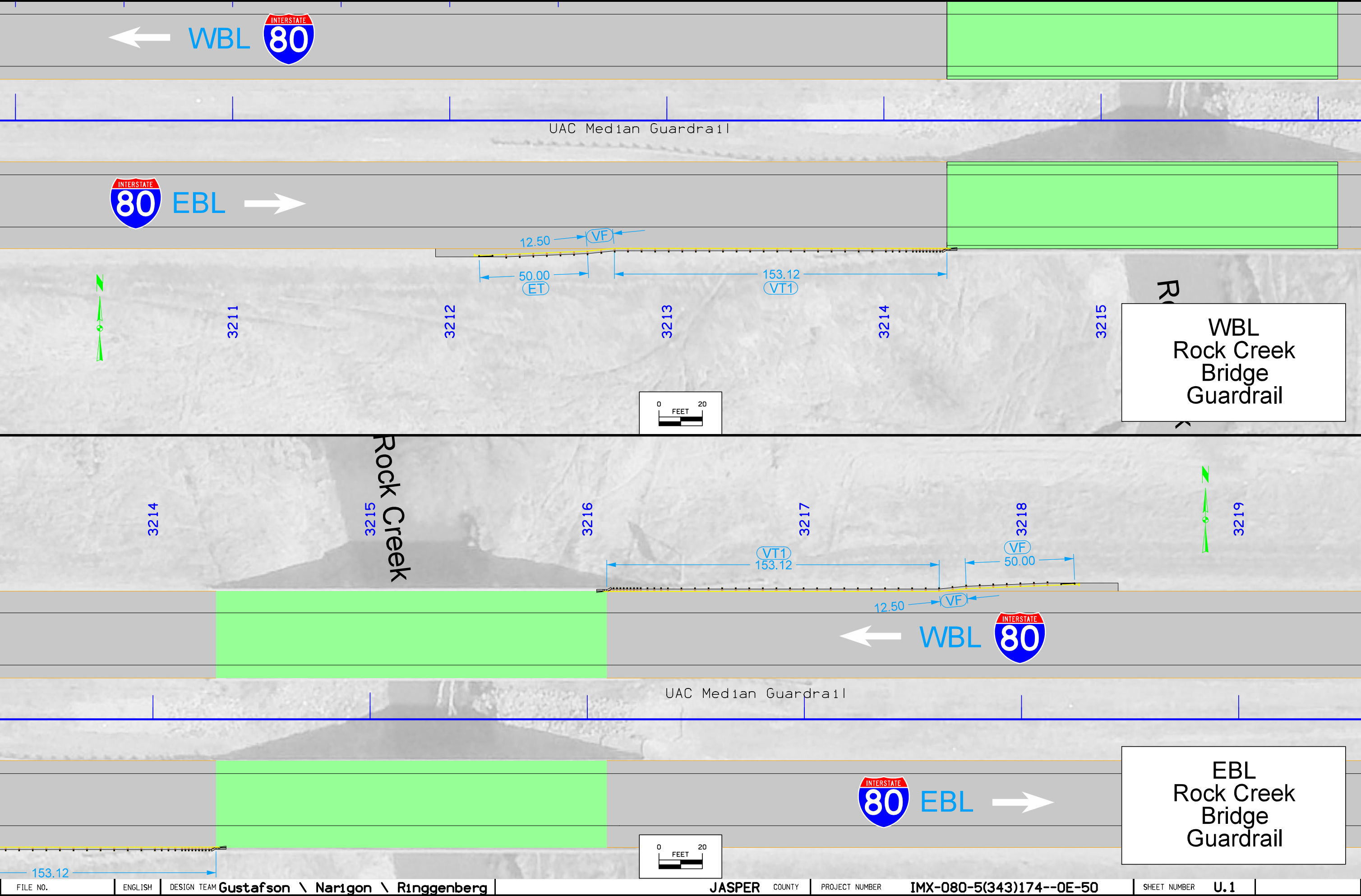


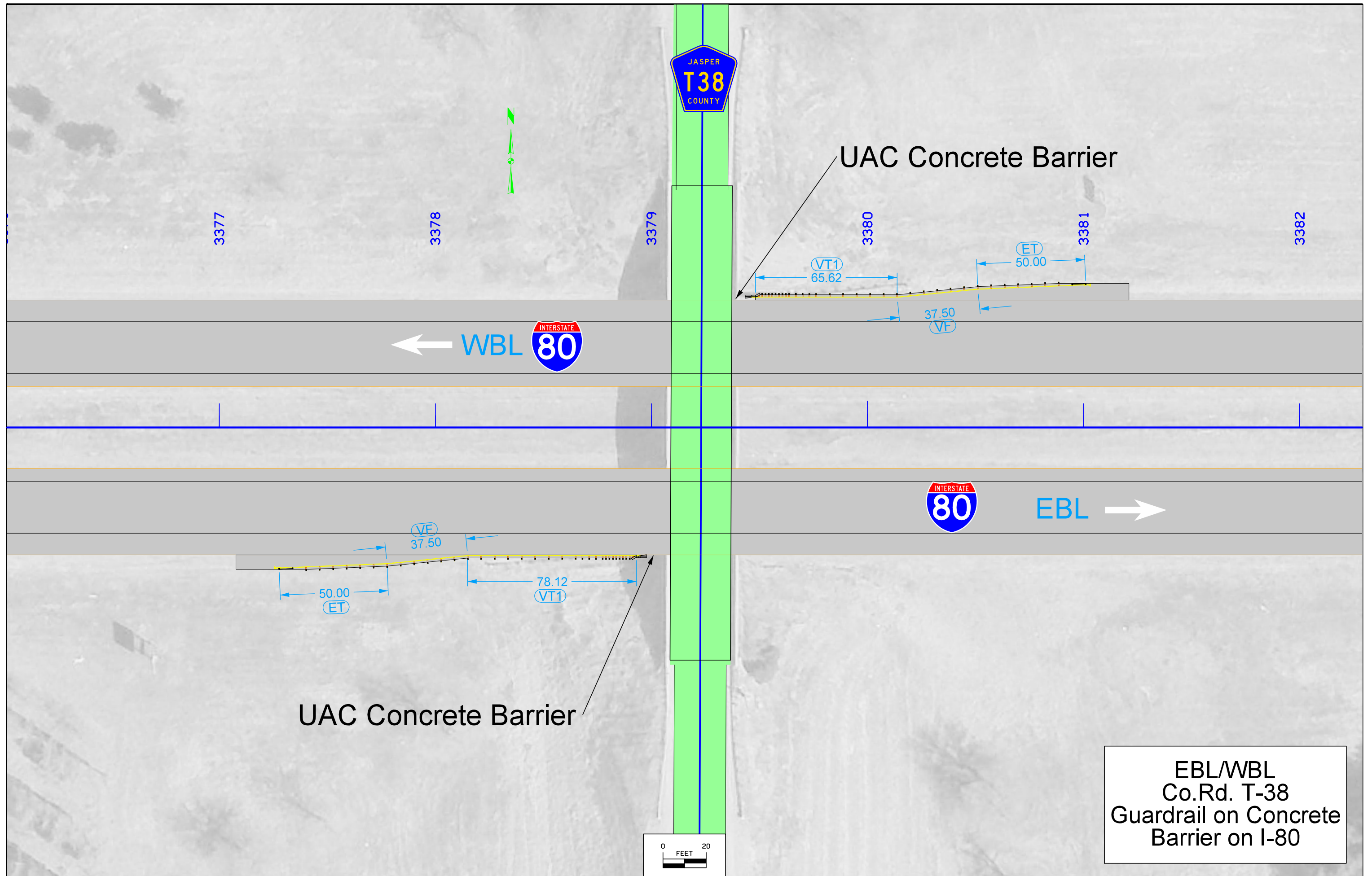


108-23A 08-01-08												
TRAFFIC CONTROL PLAN												
Night work shall be required, with lane closures allowed only from 8:00 p.m. to 6:00 a.m. Refer to lane closure map on Sheet J.2. A shortened work zone shall be required; each lane closure shall be no more than 4 miles long. Work shall be staged such that all work on a closure section , milling and resurfacing, shall be complete prior to before beginning another section in the same direction of travel.												
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
			None expected									

FILE NO.	ENGLISH	DESIGN TEAM	Gustafson\Narigon\Ringgenberg	JASPER COUNTY	PROJECT NUMBER	IMX-080-5(343)174--0E-50	SHEET NUMBER	J.1
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EBL/WBL
Co.Rd. T-38
Guardrail on Concrete
Barrier on I-80

