

EXHIBIT A

PROJECT STATUS AND SCHEDULE

Project Site Map

The Project site map below shows the location of the Project within Webster County and the Project's immediate surroundings.



Design

NDOT has conducted an initial project coordination meeting.

Concept design is expected to begin in the fall 2025.

Survey is complete and includes traditional ground survey and mobile LiDAR.

Based on bridge determination dated 2025 no grade raise is anticipated.

NEPA and Permitting

The Probable Class of NEPA Action has been determined as a Categorical Exclusion. The Project is expected to be processed as a Categorical Exclusion in accordance with 23 CFR 771.117.

Pursuant to Section 106 of the National Historic Preservation Act, NDOT is collaborating with the State Historic Preservation Office conducting alternatives analysis to assess potential impacts to the historic bridge structure, and considering alternatives and developing documentation for the avoidance, minimization, or mitigation of any adverse effects.

NDOT has initiated planning activities and environmental document preparation under the National Environmental Policy Act of 1970 (NEPA). NDOT will retain NEPA decision-making responsibilities for the Project. NDOT anticipates completing the NEPA process in 2027, prior to the Intermediate Pricing Milestone.

Pursuant to 23 CFR 636.109, the comparative merits of all alternatives presented in the NEPA document, including the no-build alternative, will be evaluated and fairly considered. Until the NEPA Action is obtained by NDOT, no commitment will be made as to any alternative under evaluation in the NEPA process, including the no-build alternative. To comply with the requirements of 23 CFR 636.109, the Contract includes the ability to incorporate any environmental commitments identified as part of the NEPA process that NDOT determines should be performed by the Contractor. NDOT reserves the right to terminate this solicitation or Contract in the event the no-build alternative is selected.

The Contractor understands and agrees that during the Preconstruction Services Phase, prior to the conclusion of the NEPA process, it shall be strictly limited to activities and analyses that do not materially affect the objective consideration of alternatives in the NEPA process in accordance with all applicable restrictions and FHWA policies and rules, including FHWA Order 6640.1A.

Reference Information Documents

Reference Information Documents (RIDs) that may prove helpful to the Proposer in understanding the Project are included in Attachment 1 to this Exhibit A. The RID is provided for information only, is non-binding, and includes:

- Bridge As-Built Plans
- Roadway As-Built Plans
- Geotechnical Data
- Pavement History
- Utility List
- Project Details

- Bridge Inspection Reports

Project Schedule

The following schedule is provided for information only. All dates set forth below are anticipated dates and are subject to change.

Activity	Anticipated Date
CM/GC Master Contract Executed	February 2026
Preconstruction Services Amendment Executed and NTP	March 2026
Baseline Pricing Milestone	July 2026
Intermediate Pricing Milestone	February 2027
Final Pricing Milestone	May 2027
GMP and Construction Services Amendment Executed	June 2027
Project Substantial Completion	October 2028

EXHIBIT A
ATTACHMENT 1

TABLE OF CONTENTS

- Bridge As-Built Plans
- Roadway As-Built Plans
- Geotechnical Data
- Pavement History
- Utility List
- Project Details
- Bridge Inspection Reports

BRIDGE AS-BUILT PLANS

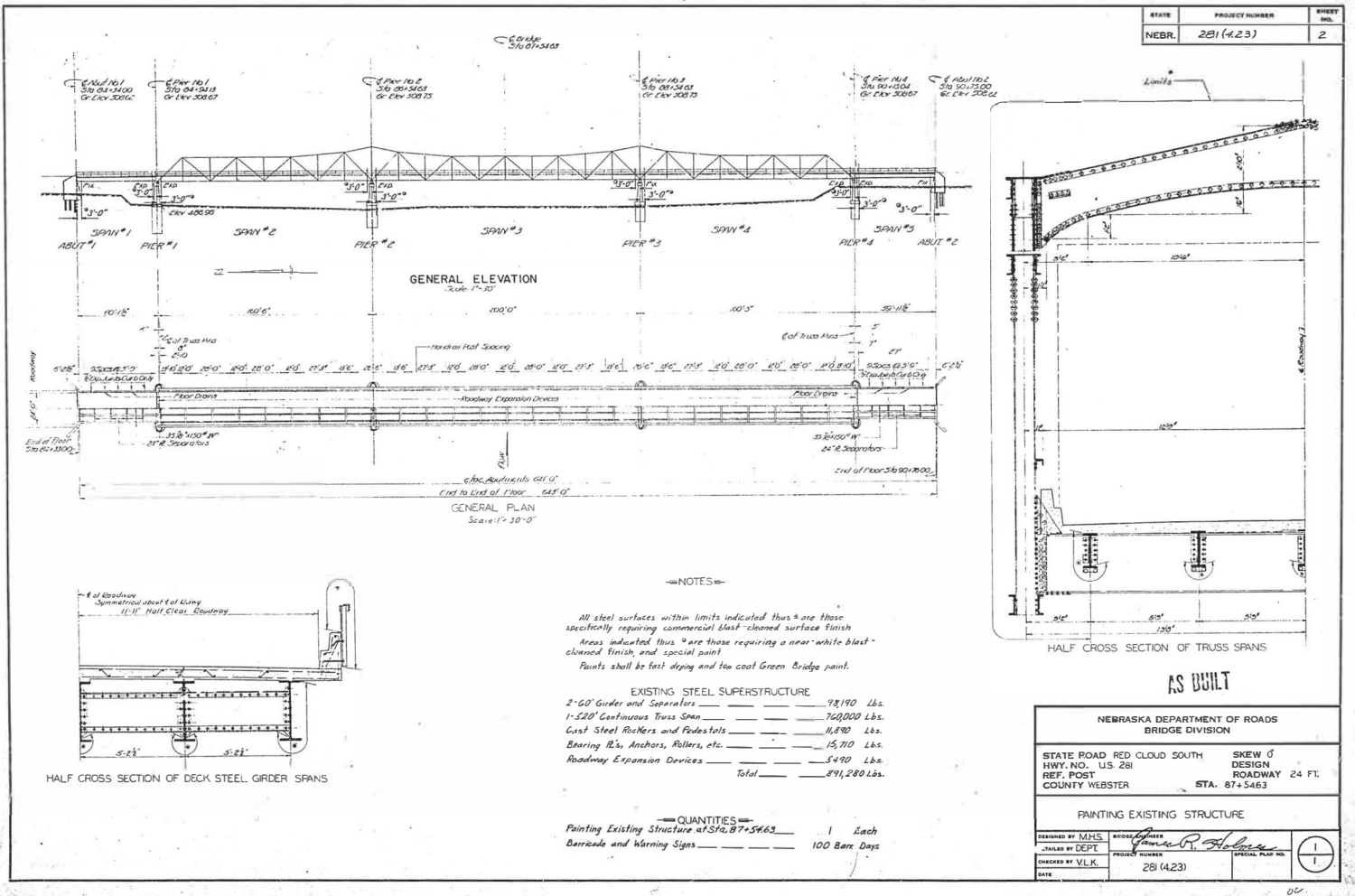
Bridge As-Built Plans

DESIGNED BY M.H.S.
CHECKED BY V.L.K.
DATE 28 (4.23)

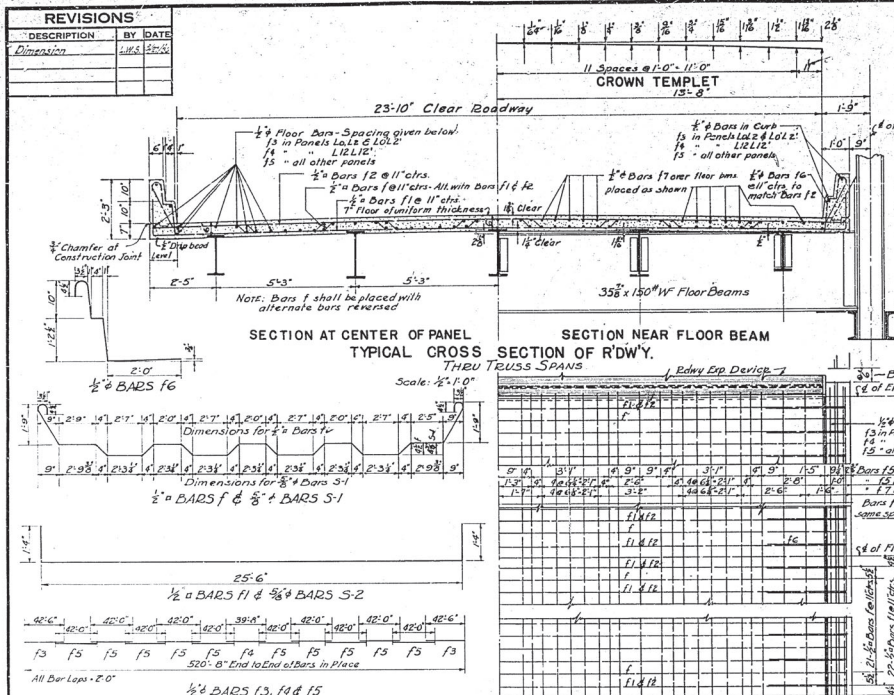
This is to certify that the specifications, approved on this plan are true and correct reproduction of the original records provided in the office of the Engineer.

It is further certified that the plan is so drawn to conform with the Bill, and that the Bill is so drawn to conform with the original records, and that the Bill is so drawn to conform with the original records, and that the Bill is so drawn to conform with the original records.

W. H. S. 11/1/11
W. H. S. 11/1/11

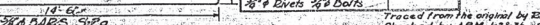
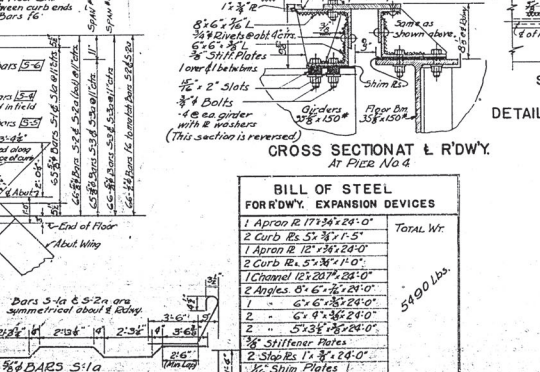
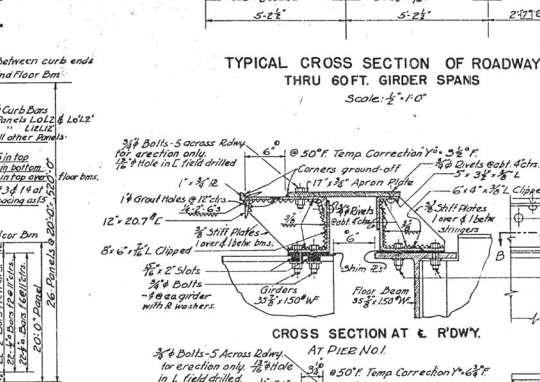
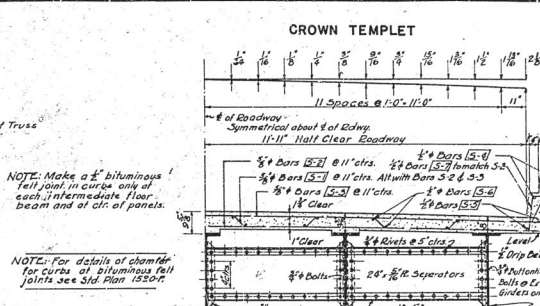
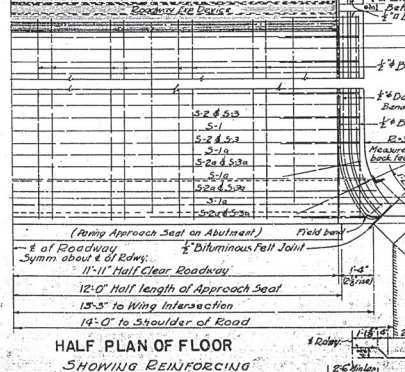
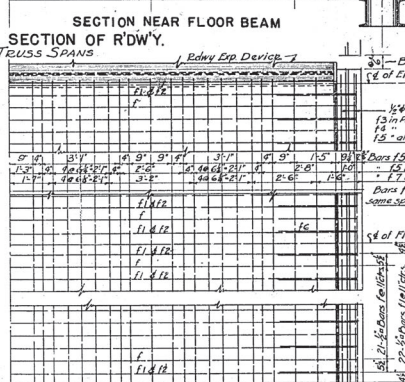
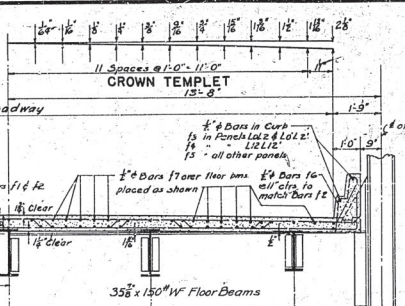


REVISIONS		
DESCRIPTION	BY	DATE
Dimension	WBS	5/25/35

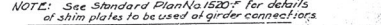
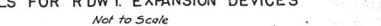
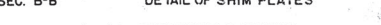
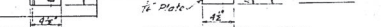
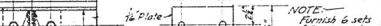
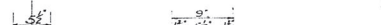
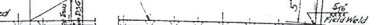
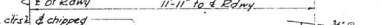
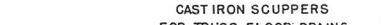
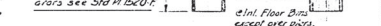
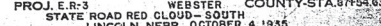
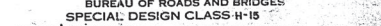
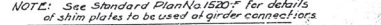
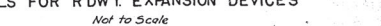
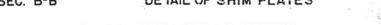
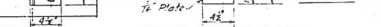
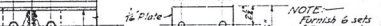
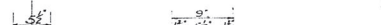
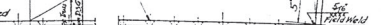
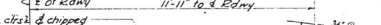
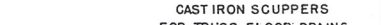
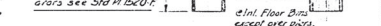
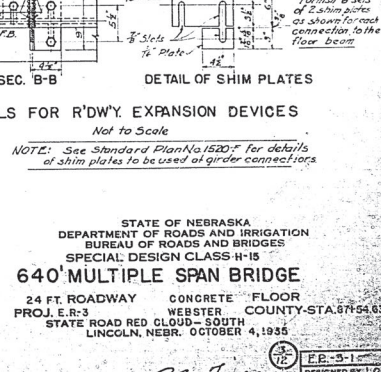
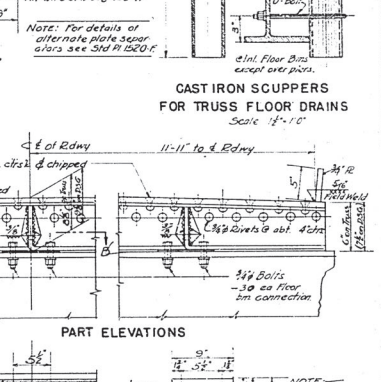
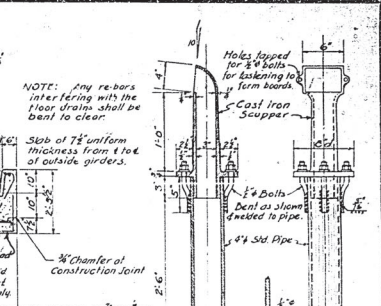


BILL OF BARS.				
FOR FLOOR & CURBS ON 160'-200'-160' CONT. TRUSS				
MARK	SIZE	N ^o	LENGTH	LOCATION
1	1/2"	546	30'-0"	Floor Transverse
11	1/2"	572	28'-2"	"
12	1/2"	572	25'-6"	"
13	1/2"	118	42'-6"	Floor & Curbs - Longitudinal
14	1/2"	59	39'-6"	"
15	1/2"	590	42'-0"	"
16	1/2"	1145	4'-11"	Chair bars
17	1/2"	594	5'-0"	Floor - Over Floor Beams
FOR FLOOR & CURBS ON 60' GIRDER SPANS				
5-1	3/8"	124	30'-2"	Floor Transverse
5-1a	3/8"	6	33'-8"	"
5-2	3/8"	126	28'-2"	"
5-2a	3/8"	6	31'-6"	"
5-3	3/8"	126	28'-2"	"
5-3a	3/8"	6	29'-0"	"
5-4	1/2"	8	62'-7"	Curb - Longitudinal
5-5	1/2"	8	62'-6"	Floor - Longitudinal
5-6	1/2"	32	62'-0"	"
16	1/2"	268	4'-11"	Floor & Curb - Chair bars

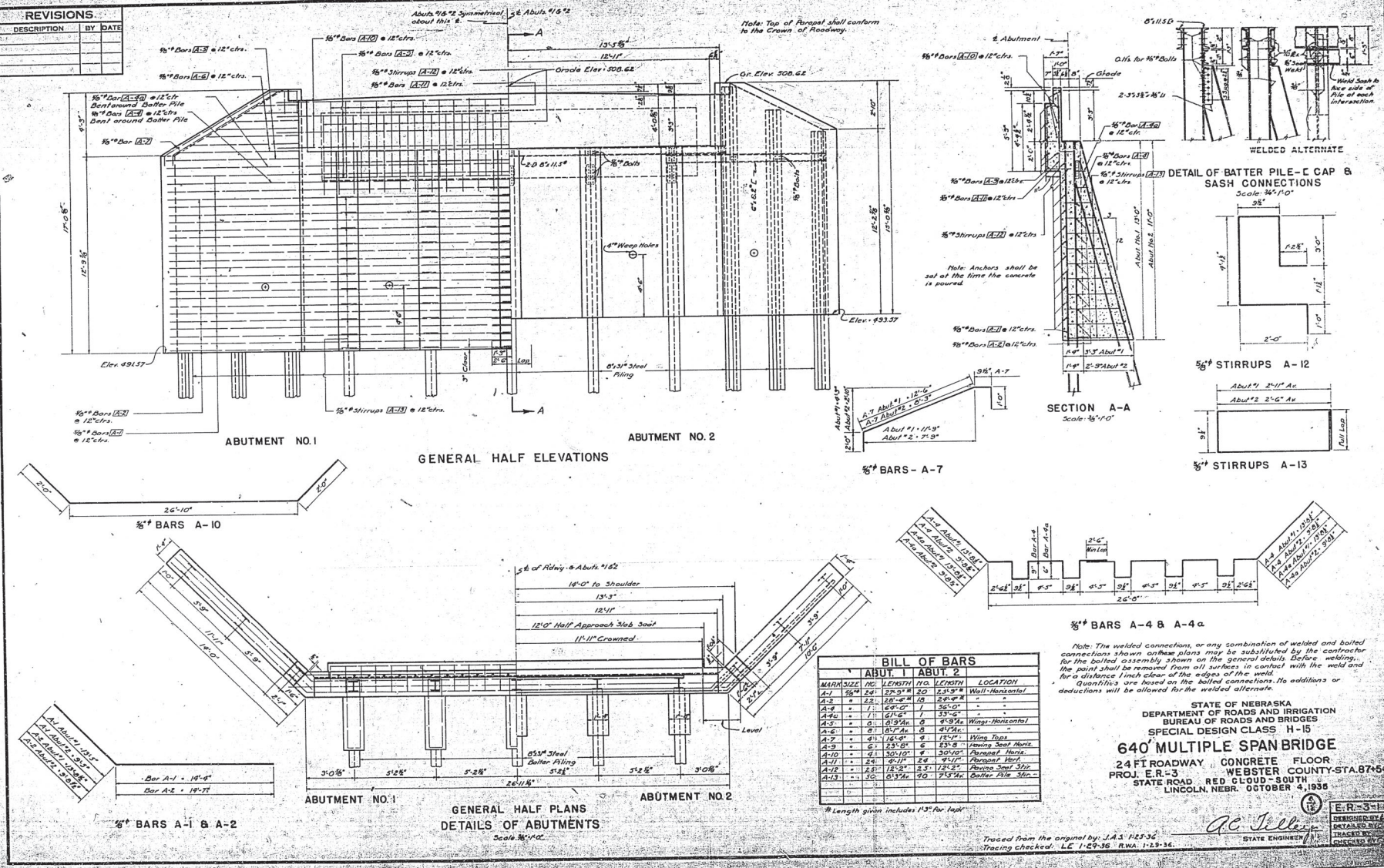
* Steel for 2'-0" Lap included * 2'-6" Lap included.
Bars not detailed are straight bars.



BILL OF STEEL FOR R'DWY. EXPANSION DEVICES		
MARK	SIZE	QTY
1	Apron R 17 1/2" x 24'-0"	1
2	Curb R 5 1/2" x 1'-5"	1
3	Apron R 12 1/2" x 2'-0"	1
4	Curb R 5 1/2" x 1'-0"	1
5	Channel R 12 1/2" x 2'-0"	1
6	Angles 6" x 6" x 1/2"	2
7	Angles 6" x 6" x 1/2"	2
8	Angles 6" x 6" x 1/2"	2
9	Angles 6" x 6" x 1/2"	2
10	Angles 6" x 6" x 1/2"	2
11	Angles 6" x 6" x 1/2"	2
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97	Angles 6" x 6" x 1/2"	2
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100	Angles 6" x 6" x 1/2"	2



REVISIONS		
DESCRIPTION	BY	DATE

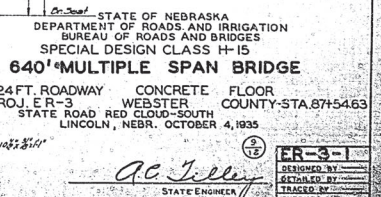


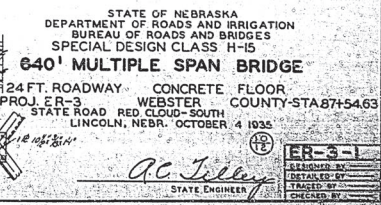
STATE OF NEBRASKA
DEPARTMENT OF ROADS AND IRRIGATION
BUREAU OF ROADS AND BRIDGES
SPECIAL DESIGN CLASS H-15

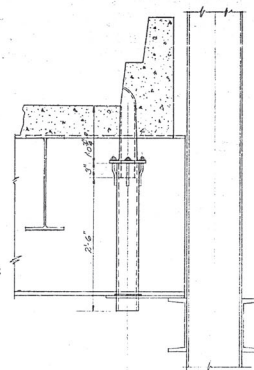
640' MULTIPLE SPAN BRIDGE
24 FT ROADWAY CONCRETE FLOOR
PROJ. E.R.-3 WEBSTER COUNTY STA. 87+54.65
STATE ROAD RED CL. 1010 - SOUTH
LINCOLN, NEBR. OCTOBER 4, 1936

Traced from the original by J.A.S. 1-23-36
Tracing checked L.C. 1-20-36 R.W.A. 1-23-36

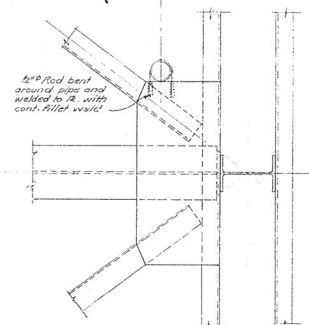
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DESIGNED BY
CHECKED BY







ELEVATION

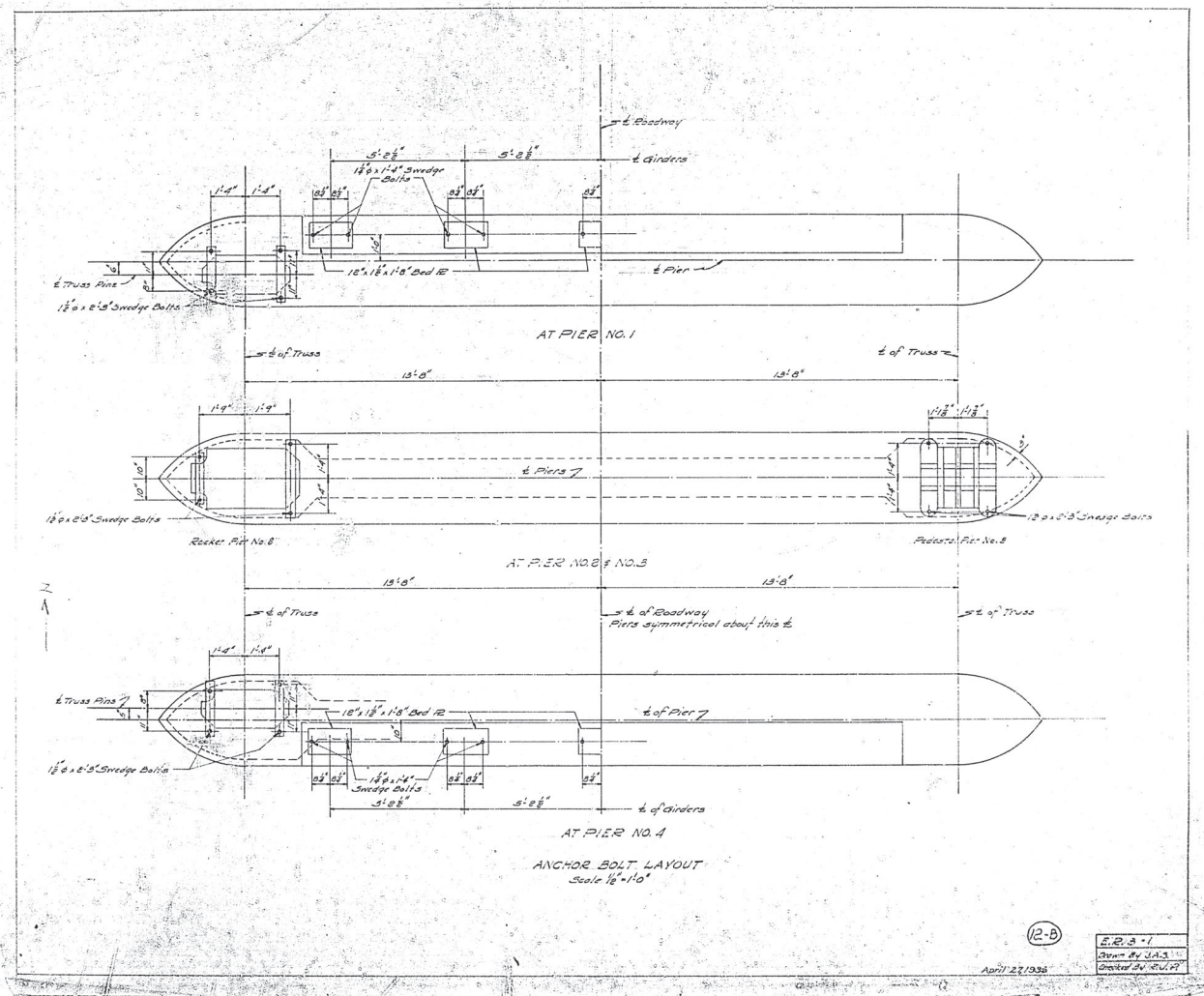


PLAN
Scale: 1"=1'-0"

SCUPPER REVISION
2R 3-1 RED CLOUD-SOUTH
June 12, 1936

(12-A)

Drawn by: J.A.S.



Added Sheet 19 OCT, 15

PROJECT NUMBER
281-1(112) 37A

C.N. 41877
STRUCTURE NUMBER
S281 00423



BRIDGE ENGINEER

COUNTY WEBSTER
HWY. NO. US-281
REF. POST. 4+23
STA. 323+57.36
DESIGNED BY JDOOR
DETAILED BY MGS
CHECKED BY DAG
DATE OCTOBER 2015
LOCATION RED CLOUD SOUTH
SKEW 0°
ROADWAY 23'-10"
DESIGN LIVE LOAD HS 15
BRIDGE DECK REPAIR
GENERAL NOTES, QUANTITIES, & INDEX
DATE OCTOBER 2015
STATE OF NEBRASKA - DEPARTMENT OF ROADS - BRIDGE DIVISION



SPECIAL
PLAN NO.
1A
1 2

- RED CLOUD SOUTH -

- NOTES -

Before ordering any materials, the Contractor shall make a detailed field inspection of the structure verifying all dimensions and reporting to the Engineer any discrepancies between the field measurements and those shown on the plans.

All materials removed shall become the property of the Contractor and shall be removed from the project site.

The State does not guarantee that these repair plans or the as-built plans depict the actual site conditions and shall not be liable for any discrepancies.

Dimensions shown are obtained from the existing as-built Plans.

Match existing grade profile.

An approved Bonding Agent shall be used prior to placing new concrete against existing concrete.

All materials, equipment, tools, labor and Incidentals necessary to complete the work, that are not paid for directly, shall be considered subsidiary to other items for which payment is made.

The Contractor shall take all necessary precautions, during construction, to prevent debris from falling into the channel.

The existing structure was built under project E.R.-3, dated October 1935. Plans are available from the Bridge Division upon request.

The locations of all aerial and underground utility facilities may not be indicated in these plans. Underground utilities, whether indicated or not will be located and flagged by the utility companies at the request of the Contractor.

No excavation will be permitted in the area of underground facilities until all such facilities have been located and identified to the satisfaction of all parties. The excavation must be accomplished with extreme care in order to avoid any possibility of damage to the utilities facility.

All dimensions shown are in horizontal plane only. No allowances have been made for vertical curve or roadway cross slope.

The Contractor shall not be allowed to have heavy machinery or equipment under the bridge or below the grade elevation. Only small hand operated, hand transported equipment or hand tools shall be allowed. In no event shall methods or equipment be used that will cause displacement of the soil. Power operated hand tools that cause no disturbance of the soil will be allowed.

The Contractor shall coordinate Traffic Control with the District 4 Engineer before start of work.

All concrete used shall be Class "47BD" with a 28-day strength of 4000 psi, except as noted.

Class PR3-3500 concrete without calcium chloride shall be used for any Bridge Deck Repairs encountered along the length of the Bridge Deck. (approx. 3 ft.)

Actual field conditions may require more or less repair than what is depicted in the plans. The final areas to be repaired shall be determined by the Engineer. The Engineer shall be notified when field conditions impede the implementation of these plans or vary significantly from what is shown.

Details, quantities or information for all Group 9 items contained in these bridge plans is for use "by others".

- QUANTITIES -

- GROUP 6 -

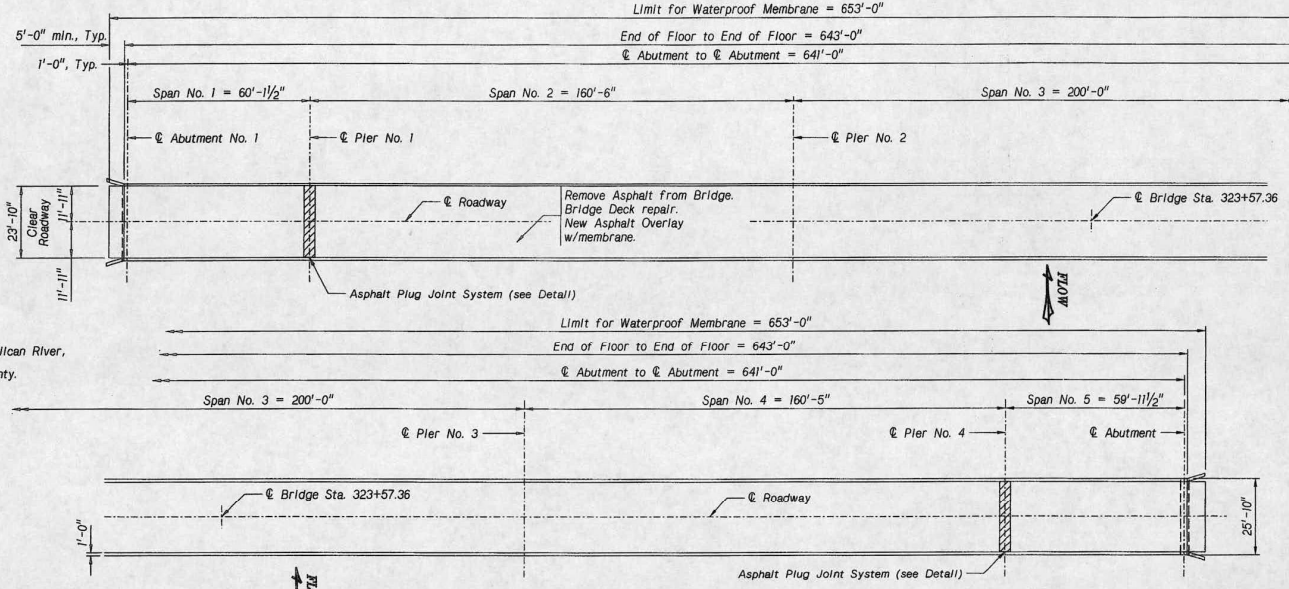
BRIDGE DECK REPAIR, PARTIAL DEPTH	341 SY
BRIDGE DECK REPAIR, FULL DEPTH	5 SY
PREPARATION OF BRIDGE AT STATION 323+57.36	1 EA
CLASS 47BD-4000 CONCRETE FOR BRIDGE	7.0 CY
CONCRETE RAILS	7.0 CY
REINFORCING STEEL FOR BRIDGE	1775 LB
CONCRETE RAILS	1775 LB

- GROUP 9 -

MEMBRANE WATERPROOFING	1729 SY
ASPHALT PLUG JOINT SYSTEM	47.7 LF

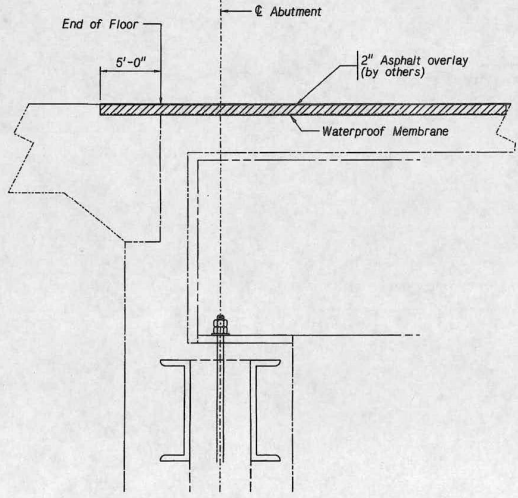
- INDEX -

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GENERAL NOTES, QUANTITIES, & INDEX	1 A
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RAIL REMOVAL DETAILS	2 A
RAIL REMODEL DETAILS	2 B

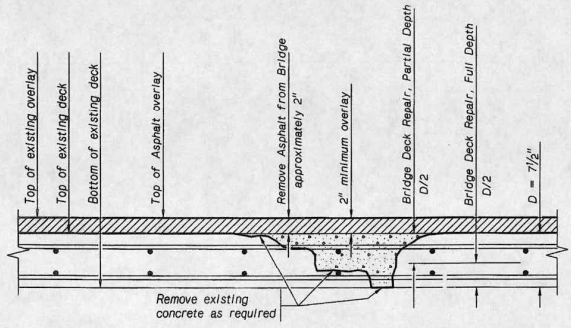


This Structure is located over Republican River, South of Red Cloud in Sec. 11-T1N-R11W, in Webster County.

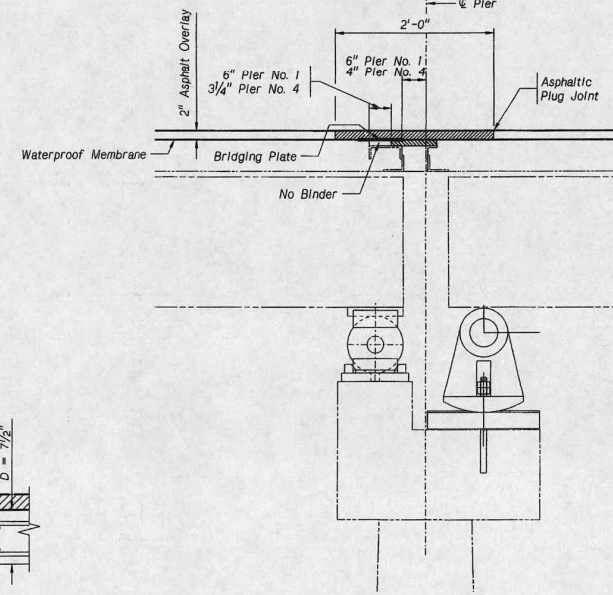
GENERAL PLAN
Scale: 1" = 20'-0"



WATERPROOF MEMBRANE
LIMIT DETAIL
Not to Scale



LIMITS OF REPAIR WORK FOR ASPHALT BRIDGE DECK OVERLAY
Not to Scale



ASPHALT PLUG JOINT SYSTEM
AT PIER NO. 1 AND PIER NO. 4 JOINTS

File: s281 00423.dgn User: ddr3037 Date: 05-DEC-2013 07:25 Computer: DRRIDGE14

COMPUTER

USER

DATE

DESCRIPTION

Added Sheet 19 OCT, 15

PROJECT NUMBER
281-1(112) 38A

C.N. 41877
STRUCTURE NUMBER
S281 00423



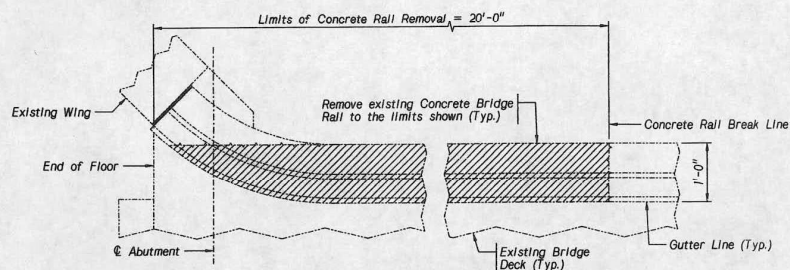
BRIDGE ENGINEER

LOCATION RED CLOUD SOUTH
SKW 0
ROADWAY 23'-10"
DESIGN LIVE LOAD HS 15
CHECKED BY DAG
DATE OCTOBER 2015
BRIDGE DECK REPAIR
RAIL REMOVAL DETAILS

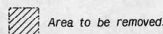
COUNTY WEBSTER
Hwy. No. US-281
REF. POST. 4.23
STA. 323+57.36
DESIGNED BY NDOR
STATE OF NEBRASKA - DEPARTMENT OF ROADS - BRIDGE DIVISION



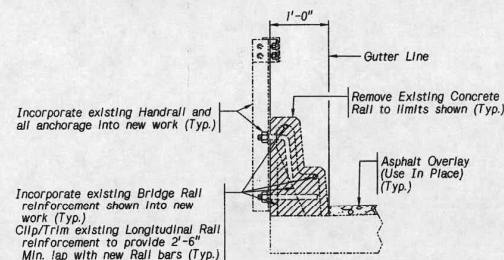
SPECIAL
PLAN NO. 2A
1 2



REMOVAL DETAILS
(Typical all four corners)
Not to Scale



See sheet 2 of 2 for Rail Remodel Details.

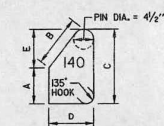


TYPICAL SECTION OF REMOVAL DETAILS
(Typical all four corners)
Not to Scale

THE NUMBER OF LAP SPLICES ARE CALCULATED BASED ON 60'-0" LENGTHS OF REINFORCING STEEL BARS.
SPLICES ON BARS SHORTER THAN 60'-0" WILL REQUIRE ADDITIONAL LAP SPLICES AT NO ADDITIONAL EXPENSE TO NDOR.

BENDING DIAGRAMS

ALL DIMENSIONS ARE OUT TO OUT & NOT TO SCALE



RAIL BAR SETS				
MARK	MAX. LENGTH	MIN. LENGTH	NO. OF SETS	BAR PER SET
S391	3'-2"	1'-10"	8	21

BILL OF BARS													STANDARD HOOK LENGTH				PIN DIAMETER				DETAILING HOOK DIMENSION	
MARK	NO.	LENGTH	TYPE	"A"	"B"	"C"	"D"	"E"	"F"	PIN	HOOK	WEIGHT LB	PRIMARY STRESS BARS		STIRRUPS & TIES		PRIMARY STRESS		STIRRUPS & TIES		H	
													BAR SIZE	HOOK H	BAR SIZE	HOOK H	BAR SIZE	Dp	BAR SIZE	Dp		
S690	32	15'-4"	140	5'-4 ³ / ₈ "	1'-3 ⁵ / ₈ "	6'-7"	9"	1'-2 ⁵ / ₈ "		4 ¹ / ₂ "	8"	737	4	8"	6"	3	4"	4"	4	3"	3	1 ¹ / ₂ "
S590	48	15'-7"	STR.									780	5	10"	7"	4	4 ¹ / ₂ "	4 ¹ / ₂ "	5	3 ³ / ₄ "	4	2"
S390	84	3'-2"	STR.									100	6	12"	8"	5	6"	5 ¹ / ₄ "	6	4 ¹ / ₂ "	5	2 ¹ / ₂ "
S391	168	2'-6" AVG.	STR.									158	7	15"	10"	6	12"	8"	7	5 ¹ / ₄ "	6	4 ¹ / ₂ "
													8	17"	11"	7	14"	9"	8	6"	7	5 ¹ / ₄ "
													9	19"	15"	8	16"	10 ¹ / ₂ "	9	9 ¹ / ₂ "	8	6"
													10	23"	17"				10	11"		
													11	24"	19"				11	12"		
TOTAL =																						

</

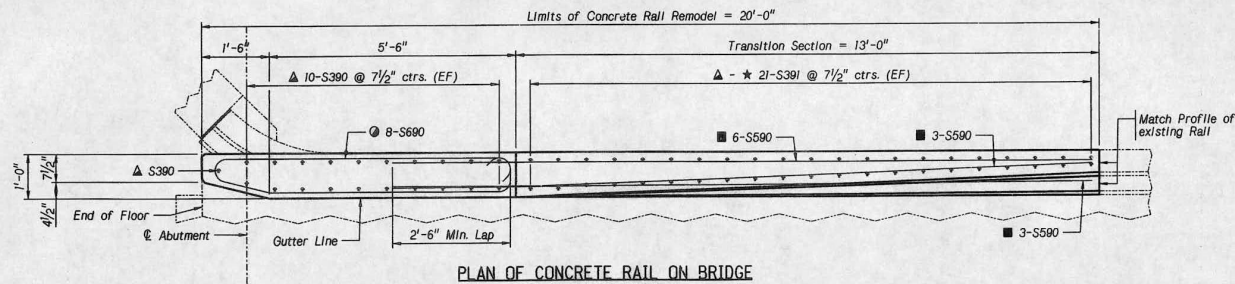
d = BAR SIZE
Dp = PIN DIAMETER

COMPUTER*****

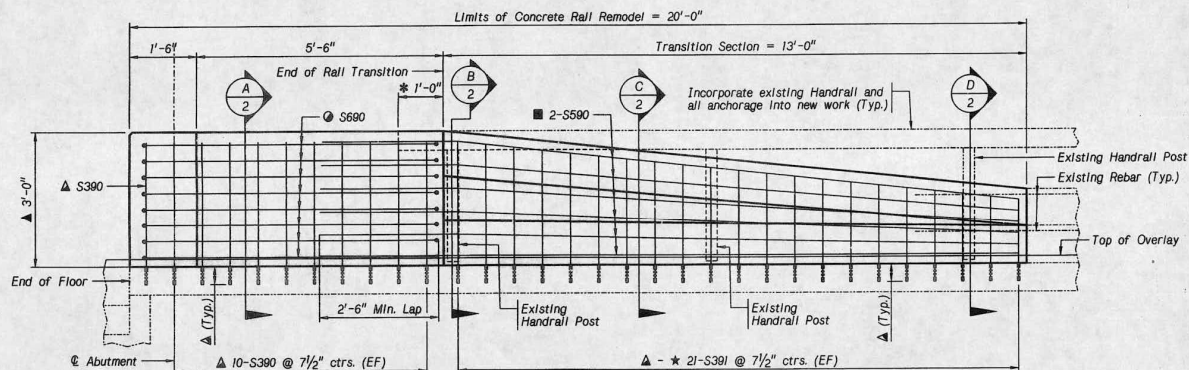
USER*****

DATE*****

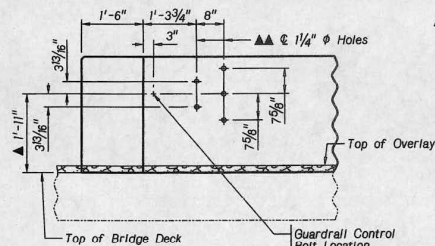
DISP*****



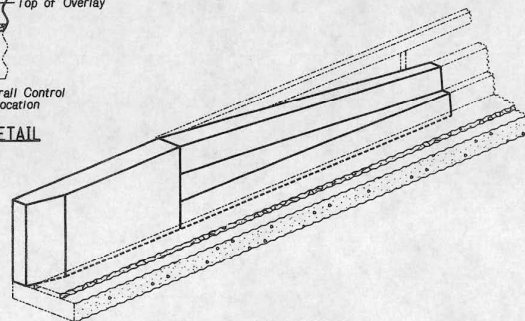
PLAN OF CONCRETE RAIL ON BRIDGE
(Typical all four corners)
Not to Scale



ELEVATION OF CONCRETE RAIL ON BRIDGE
(Typical all four corners)
Not to Scale

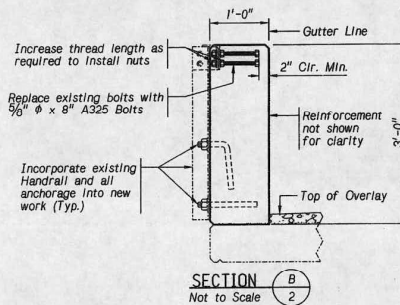


THREE BEAM TERMINAL CONNECTION DETAIL
Not to Scale



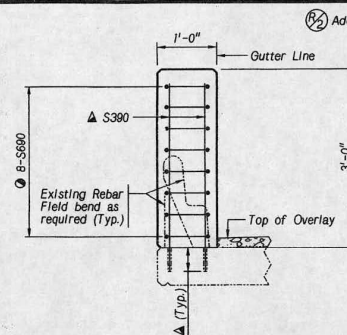
CONCRETE RAIL
Not to Scale

▲▲ As an alternate method, the contractor shall furnish and cast into the concrete an approved welded assembly consisting of threaded inserts, held accurately to the template of the holes shown. Inserts are to be complete with galvanized plate washers and galvanized 5/8" x 3" cap screws. The insert assembly shall be a standard product of a reputable manufacturer of such items and be capable of resisting a shear load of 80,000 lbs.

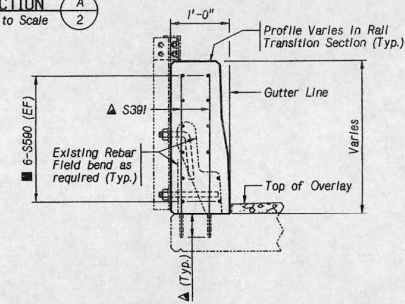


SECTION B
Not to Scale

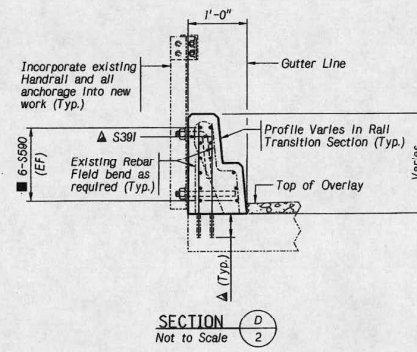
- ② The minimum clearance, measured from the face of the concrete to the surface of the S690 bar, shall be 1/2". The minimum clearance in all other locations shall be 2" minimum.
- ▲ Drill a 5/8" x 4 3/4" deep hole into existing slab, and fill with an approved resin adhesive prior to inserting bar. Adjust placement of bars as required to avoid existing rebar. (Typ.)
- ★ Field cut/trim bars as required to maintain clearance.
- Field bend bars as required along transition.



SECTION A
Not to Scale



SECTION C
Not to Scale



SECTION D
Not to Scale

- ★ Field cut existing Handrail 1'-0" minimum beyond end of rail transition. Incorporate all handrail post anchorage into new work.
- ▲ Measured at Gutter Line.
- (EF) = Each Face
- Concrete rail will be built plumb.
- See sheet 1 of 2 for Rail Remodel Bill of Bars, bending diagrams, hook lengths and pin diameters.

Added Sheet 19 OCT, 15

PROJECT NUMBER
281-1(112)

SHEET NO.
38B

C.N. 41877

STRUCTURE NUMBER
S281 00423



BRIDGE ENGINEER

BRIDGE DECK REPAIR
RAIL REMODEL DETAILS

LOCATION RED CLOUD SOUTH
SEW 0°
ROADWAY 23'-10"
DESIGN LIVE LOAD HS 15
CHECKED BY DAB
DATE OCTOBER 2015
DESIGNED BY NDOR
STA. 323+57.36

STATE OF NEBRASKA - DEPARTMENT OF ROADS - BRIDGE DIVISION

COUNTY WEBSTER
Hwy. No. US-281
REF. POST. 4.23

NDOR
Nebraska
Department of Roads

PROFESSIONAL CIVIL ENGINEER
MARK J. TRAYNOWICZ
5-4115
STATE OF NEBRASKA

SPECIAL
PLAN NO.
1

2B
2

ROADWAY AS-BUILT PLANS

Roadway As-Built Plans

CONSTRUCTION DIVISION

Computer: DRESIGN48

User: dor13127

Date: 28-OCT-2015 15:02

File: 4187700seattle.dgn
Scale: 1:1000

STATE OF NEBRASKA DEPARTMENT OF ROADS PLANS FOR CONSTRUCTION

RED CLOUD SOUTH WEBSTER COUNTY

R1 01 AUG 14
R2 19 OCT 15

PROJECT NO.	SHEET NO.
STPD-281-1(112)	1
▲ CONTROL NO. 41877	
▲ CONTROL NO.	
■ CONTROL NO.	

THE 2007 EDITION OF THE NEBRASKA STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS APPLY TO THIS PROJECT.

THE WORK ON THIS PROJECT CONSISTS OF GROUPS
1-GRADING, 4-CULVERTS, 4A-CULVERTS,
4B-CULVERTS, 5-SEEDING, 6-BRIDGES,
7-GUARDRAIL, 9-BITUMINOUS, & 10-GENERAL

▲ GROUPS 1, 4, 4A, 4B, 5, 6, 7, 9, & 10	ARE INCLUDED
IN THE LETTING OF JULY 31, 2014	
▲ GROUPS	ARE INCLUDED
IN THE LETTING OF	
■ GROUPS	ARE INCLUDED
IN THE LETTING OF	

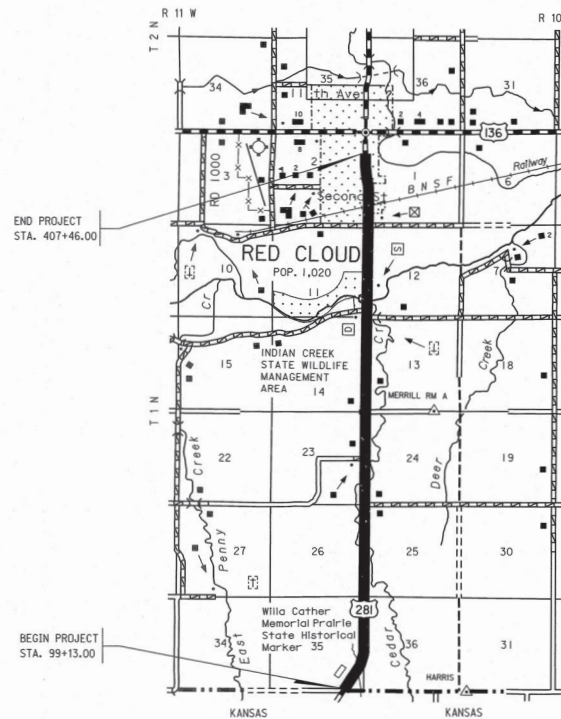
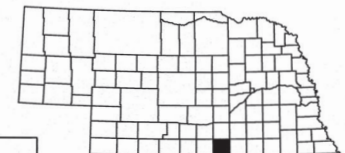
DESIGN DESIGNATION

3R MUNICIPAL TRAFFIC	
YEAR: 2014	2024
ADT: 865	890
DHV: 95	95
T= 12 %	D= %
NON-CURBED	

DESIGN DESIGNATION

3R RURAL TRAFFIC	
YEAR: 2014	2024
ADT: 865	890
DHV: 95	95
T= 12 %	D= %

WORK ON THIS PROJECT IS AUTHORIZED PURSUANT TO THE CONDITIONS STIPULATED IN THE ARMY CORPS OF ENGINEERS GENERAL/NATIONWIDE/INDIVIDUAL PERMIT



CONVENTIONAL SIGNS

FENCE R.O.W. OR MORE	=====
GUARDRAIL	=====
TRAVELED WAY	=====
DIKE	=====
CULVERT	=====
POWER POLE	=====
TELEPHONE POLE	=====
MAILBOX	=====
RAILROAD TRACKS	=====
MARSH	=====
TREE - CONIFEROUS	=====
TREE - DECIDUOUS	=====

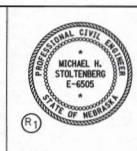
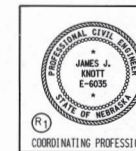
R.O.W. LEGEND

NEW CONTROLLED ACCESS	=====
PREVIOUS CONTROLLED ACCESS	=====
LIMITS OF CONSTRUCTION	=====
PREVIOUS R.O.W.	=====
NEW R.O.W.	=====
EXISTING PERMANENT EASEMENT	=====
TEMPORARY EASEMENT	=====
EXCESS TAKING	=====
PERMANENT EASEMENT	=====
EXISTING RAILROAD EASEMENT	=====
NEW RAILROAD PERMANENT EASEMENT	=====
NEW RAILROAD TEMPORARY EASEMENT	=====

REFERENCE POST NO. 375+00 TO STA. 375+26.00

RILROAD EXCEPTION: EXISTING RAILROAD FROM STA. 375+26.00 TO STA.

TOTAL NET LENGTH OF PROJECT 1.837 MILES KILOMETERS



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED

FOR DIVISION ADMINISTRATOR DATE

The Original Sheet was
Signed and Dated: 06-04-14

INDEX OF SHEETS

(R1) 01 AUG 14
(R2) 19 OCT 15

PROJECT NO.	SHEET NO.
281-1(112)	2

C.N. 41877

SHEET NO.

1	TITLE PAGE
2	INDEX OF SHEETS (R1) SHT. 2 (R2) SHT. 2
2-T1 - 2-T3	TYPICAL CROSS SECTIONS
2-S1 - 2-S2	SUMMARY OF QUANTITIES (R1) SHT. 2-S2 (R2) SHT. 2-S2
2-W1 - 2-W6	WETLANDS
2-H1 - 2-H6	HORIZONTAL ALIGNMENT & ORIENTATION
2-N1 - 2-N3	GENERAL INFORMATION
2-L1	SIDEMALK GEOMETRICS
2-L2 - 2-L4	CONSTRUCTION, REMOVAL, & DRAINAGE
2-L5 - 2-L11	EROSION & SEDIMENT CONTROL
3 - 13	PLAN & PROFILE SHEETS
14	TRAFFIC CONTROL PLAN--REPUBLICAN RIVER BRIDGE (R1)
15	TEMPORARY TRAFFIC SIGNAL
16	TYPICAL TRAFFIC SIGNAL CONTROL PLAN--ONE LANE, TWO WAY OPERATION WITH BARRIERS
17	TEMPORARY PAVEMENT MARKING PLAN
18	PAVEMENT MARKING DETAILS
19 - 22	EARTHWORK DATA SHEETS
23 - 36	DRAINAGE STRUCTURE CROSS SECTIONS
37 - 38	SPECIAL PLAN 1 BRIDGE DECK REPAIR (R2) DELETED SHT. 37, ADDED SHTS. 37A, 38A & 38B
39 - 40	SPECIAL PLAN 1C 8' X 8' SINGLE SPAN RC BOX CULVERT STA. 167+45.00 LT
41 - 42	SPECIAL PLAN 2C 5' X 4' SINGLE SPAN RC BOX CULVERT STA. 174+79.00
43 - 44	SPECIAL PLAN 3C 10' X 8' TWIN SPAN RC BOX CULVERT STA. 184+28.00
45 - 47	SPECIAL PLAN 4C 6' X 5' SINGLE SPAN RC BOX CULVERT STA. 213+27.00 RT
48 - 49	SPECIAL PLAN 5C 10' X 8' TWIN SPAN RC BOX CULVERT STA. 220+57.00
50 - 52	SPECIAL PLAN 6C 12' X 8' SINGLE SPAN RC BOX CULVERT STA. 231+70.00 RT
53 - 54	SPECIAL PLAN 7C 8' X 4' SINGLE SPAN RC BOX CULVERT STA. 240+17.00
55 - 58	SPECIAL PLAN 8C 4' X 3' SINGLE SPAN RC BOX CULVERT STA. 253+98.00 RT
59 - 61	SPECIAL PLAN 9C 4' X 3' SINGLE SPAN RC BOX CULVERT STA. 263+08.00 RT
62 - 64	SPECIAL PLAN 10C 6' X 5' SINGLE SPAN RC BOX CULVERT STA. 290+73.00 RT

SHEET NO.

65 - 66	SPECIAL PLAN 11C 6' X 3' SINGLE SPAN RC BOX CULVERT STA. 334+04.00
67 - 70	SPECIAL PLAN 12C 8' X 4' SINGLE SPAN RC BOX CULVERT STA. 403+01.00 RT
71	SPECIAL PLAN 13C DOWEL INTO EXISTING BOX CULVERT FOR EXTENSION
72 - 76	SPECIAL PLAN 14C CONCRETE HEADWALL
77	SPECIAL PLAN 15C GUARDRAIL PLAN
78 - 82	SPECIAL PLAN 16C CABLE GUARDRAIL
83 - 84	SPECIAL PLAN 17C CONCRETE PROTECTION BARRIER
85	SPECIAL PLAN 18C EROSION CHECKS (ALL TYPES) & FABRIC SILT CHECKS
86 - 87	SPECIAL PLAN 19C TEMPORARY SILT CHECKS
R1 - R12	RIGHT-OF-WAY SHEETS
X1 - X49	CROSS SECTIONS

STANDARD PLANS

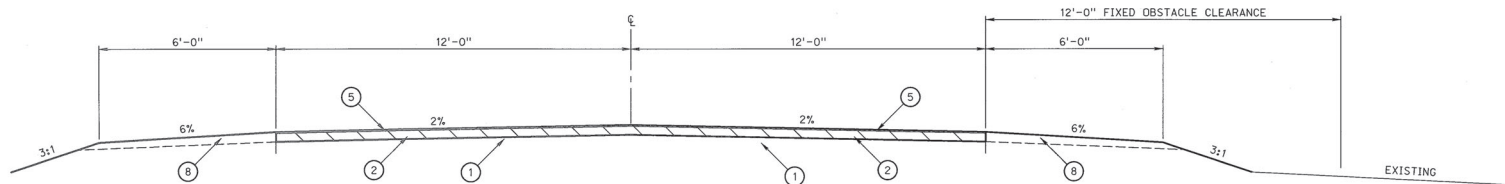
108-R4	SUPERELEVATION PLAN FOR CONCRETE AND BITUMINOUS SURFACING
301-R10	(3 SHEETS) PAVEMENT DETAILS
303-R1	(4 SHEETS) CURB RAMP
307-R1	MAILBOX TURNOUT
309	MAILBOX SUPPORT POST
403-R2	(2 SHEETS) BENDS AND BREAKS FOR CONCRETE BOX CULVERTS
410-R3	(2 SHEETS) FLARED END SECTIONS FOR CULVERT PIPES
411	(4 SHEETS) BEDDING AND BACKFILL REQUIREMENTS FOR CONCRETE PIPE
425-R4	COLLARS AND ELBOWS FOR CONCRETE PIPES
501-R6	(3 SHEETS) EROSION CONTROL
502-R1	(2 SHEETS) SILT FENCE DETAILS
710-R4	(2 SHEETS) FENCE DETAILS
740	MIDWEST GUARDRAIL SYSTEM BRIDGE APPROACH SECTION
743	(4 SHEETS) GUARDRAIL DETAILS
804	PRECAST CONCRETE R.O.W. MARKER
901-R9	HIGHWAY DELINEATORS
920-R6	(3 SHEETS) TRAFFIC CONTROL, CONSTRUCTION AND MAINTENANCE
921-R6	(2 SHEETS) TRAFFIC CONTROL, CONSTRUCTION AND MAINTENANCE
922-R9	(2 SHEETS) TRAFFIC CONTROL FOR ASPHALT SURFACING
924-R1	(3 SHEETS) TYPICAL URBAN TRAFFIC CONTROL PLAN



The Original Sheet was
Signed and Dated: 06-04-14

TYPICAL CROSS SECTIONS

PROJECT NO.	SHEET NO.
281-11112	2-11
C.N. 41877	

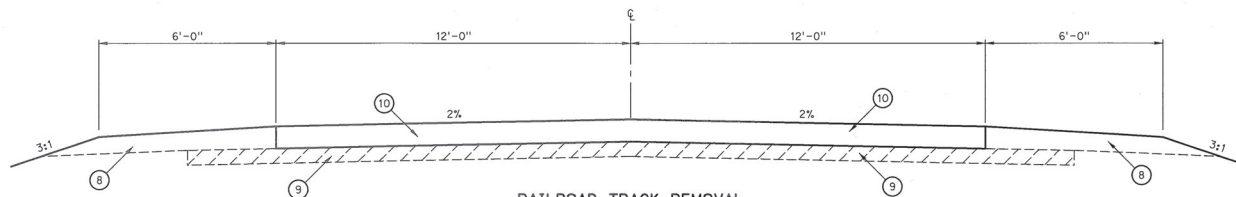


STA. 99+13 TO STA. 375+26
(EXCEPT AS SHOWN ELSEWHERE)

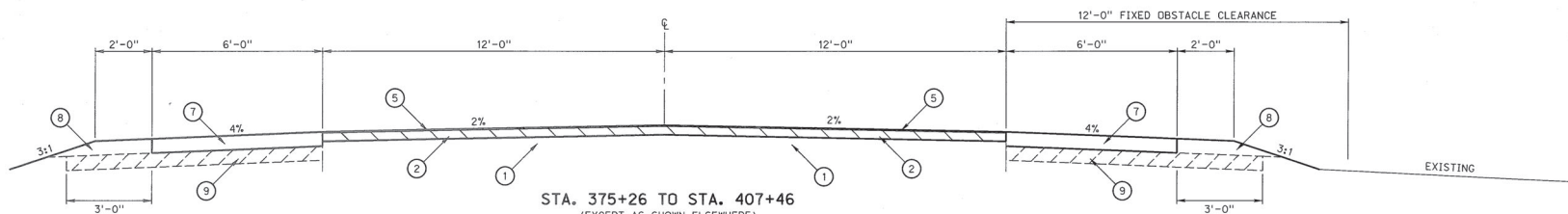
RAILROAD EXCEPTION:
STA. 375+11 TO STA. 375+26

LEGEND

- ① EXISTING PAVEMENT
- ② REMOVE 3 1/2" EXISTING BITUMINOUS BY COLD MILLING, CLASS 3
- ③ REMOVE ASPHALT SURFACE FROM BRIDGE
- ④ 2" ASPHALTIC CONCRETE SURFACE COURSE, TYPE SPR
- ⑤ 4" ASPHALTIC CONCRETE SURFACE COURSE, TYPE SPR
- ⑥ 6" ASPHALTIC CONCRETE SURFACE COURSE, TYPE SPR
- ⑦ 6" ASPHALTIC CONCRETE SURFACE COURSE, TYPE SPS
- ⑧ EARTH SHOULDER CONSTRUCTION
- ⑨ SUBGRADE PREPARATION
- ⑩ 9" ASPHALTIC CONCRETE SURFACE COURSE, TYPE SPR



RAILROAD TRACK REMOVAL
STA. 374+70 TO STA. 375+11



STA. 375+26 TO STA. 407+46
(EXCEPT AS SHOWN ELSEWHERE)



ROADWAY DESIGN DIVISION

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Date: 24-FEB-2014 08:00

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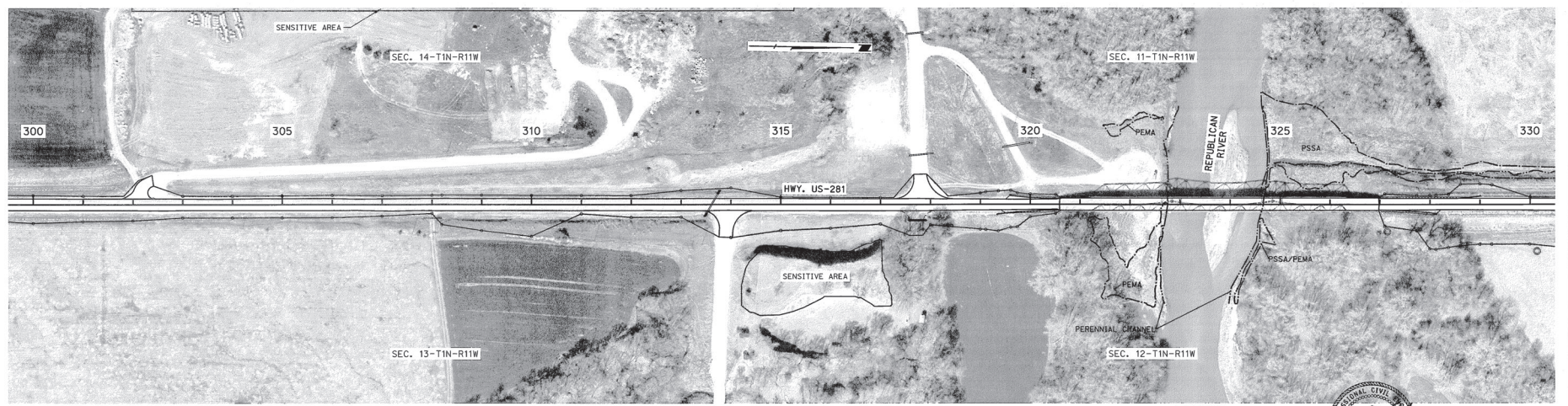
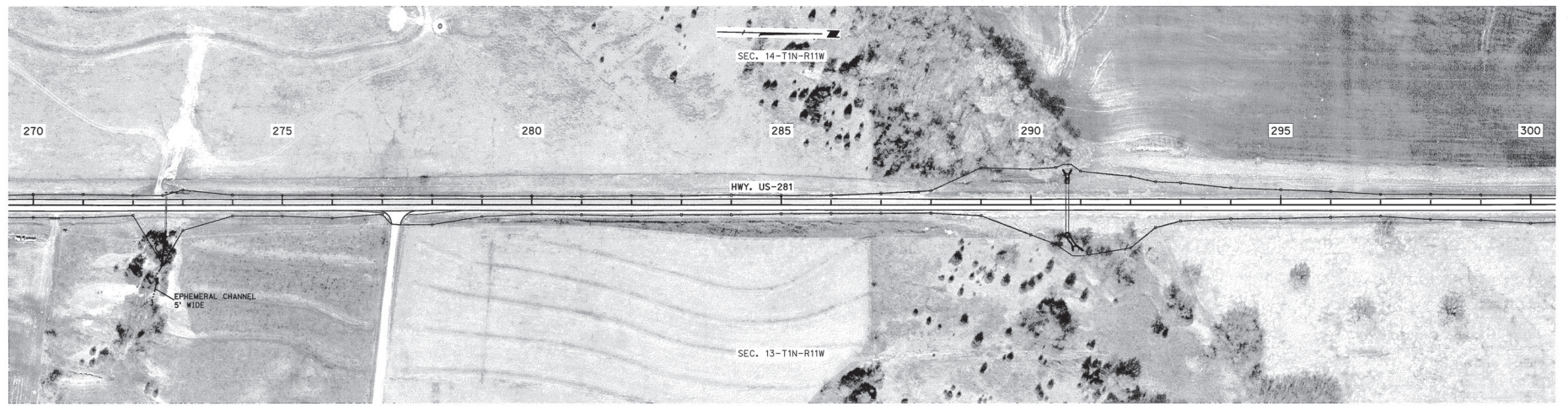
ROADWAY DESIGN DIVISION

Computer: DDESIGN6

User: dor13143

Date: 23-JAN-2014 15:18

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Scale: 1100



- LEGEND**
- LIMITS OF CONSTRUCTION
 - WETLANDS - DO NOT DISTURB
 - IMPACTED WETLANDS
 - TEMPORARY IMPACTED WETLANDS



DATE: 5-3-11
FLIGHT: 11,597
SCALE: 1" = 100'

ROADWAY DESIGN DIVISION

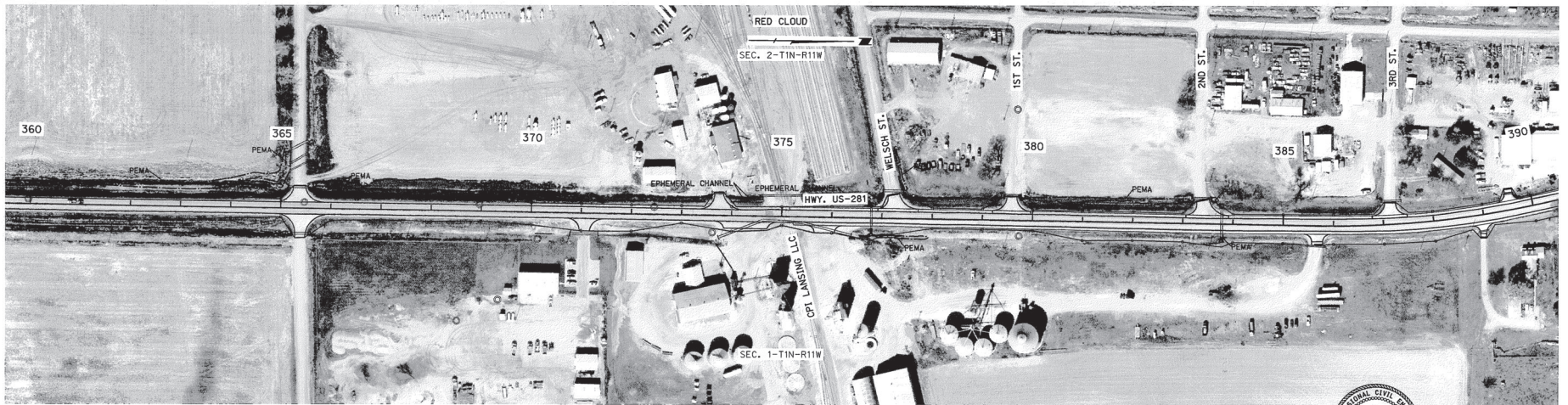
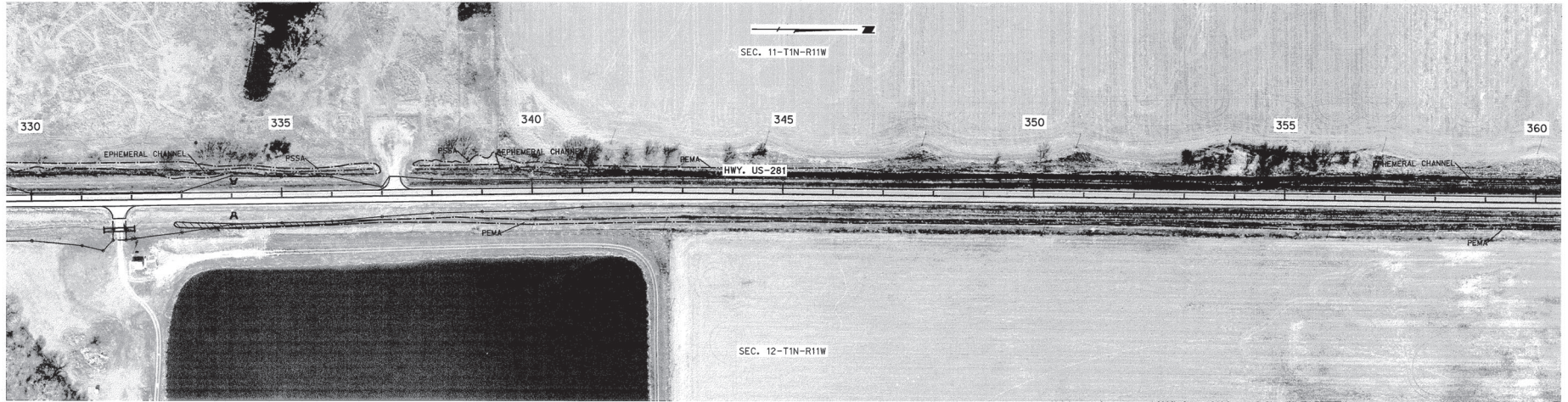
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Date: 09-JUN-2014 10:45

File: 4187T0005.dgn
Scale: 1"=100'

PROJECT NO.	SHEET NO.
281-1(112)	2-W5
C.N. 41877	



- LEGEND
- LIMITS OF CONSTRUCTION
 - WETLANDS - DO NOT DISTURB
 - IMPACTED WETLANDS
 - TEMPORARY IMPACTED WETLANDS



DATE: 5-3-11
FLIGHT: 11,597
SCALE: 1" = 100'

NOTES

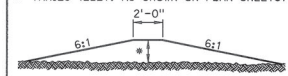
- The locations of all aerial and underground utility facilities may not be indicated in these plans. Underground utilities, whether indicated or not will be located and flagged by the Utilities at the request of the Contractor.

No excavation will be permitted in the area of underground utility facilities until all such facilities have been located and identified to the satisfaction of all parties. The excavation must be accomplished with extreme care in order to avoid any possibility of damage to the utility facility.

- The Contractor will be required to furnish Borrow on this Project.
- The Contractor will be required to furnish Cohesive Material for Shoulder Construction from sources other than State Right-of-Way.
- Sensitive Areas are designated on the plans. The Contractor may not work, stage, stockpile or store materials or equipment within these areas.

EARTHWORK QUANTITIES			
STATION	TO STATION	EXCAVATION AVAILABLE (CU. YDS.)	EARTHWORK MEASURED IN EMBANKMENT (CU. YDS.)
100+00.00	~ 407+00.00	11,554	39,185
TOTAL		11,554	39,185

*-VARIES (ELEV. AS SHOWN ON PLAN SHEETS)

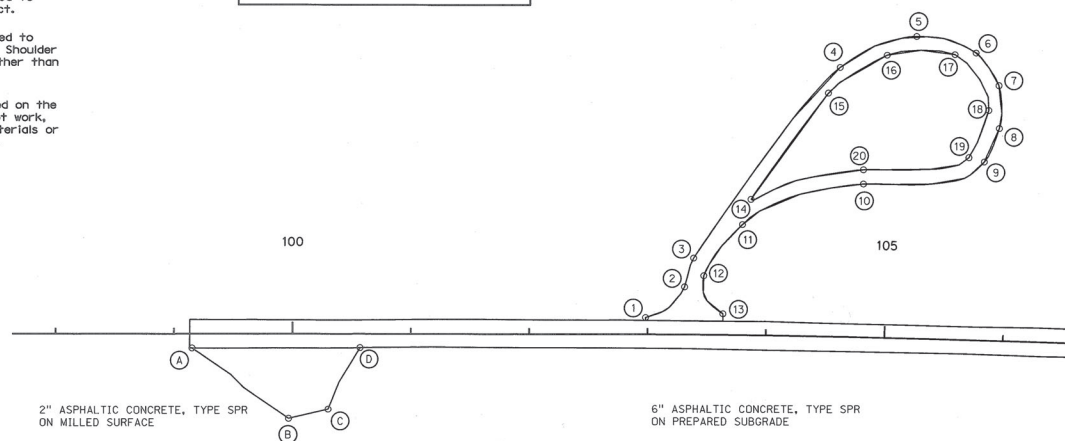


TYPICAL SECTION OF EARTH DIKE

CULVERT PIPE LEGEND	
TYPE	DESCRIPTION
1 RCSP	Reinforced Concrete Sewer Pipe
2 RCP	Reinforced Concrete Pipe
3 GCCMP	Galvanized (zinc) Coated Corrugated Metal Pipe
4 ACCMP	Aluminum Coated Corrugated Metal Pipe
5 PCCMP	Polymer Coated Corrugated Metal Pipe
6 HDPE-CI	High Density Polyethylene (corrugated Interior)
7 HDPE-SI	High Density Polyethylene (smooth Interior)
8 PVC	Polyvinyl Chloride Pipe

LEGEND

- G --- GAS LINE
- E --- ELECTRICAL SERVICE
- P --- POWER LINE
- OP --- OVERHEAD POWER LINE
- SAN --- SANITARY SEWER
- SS --- STORM SEWER
- T --- TELEPHONE LINE
- FO --- FIBER OPTIC TELE. LINE
- OT --- OVERHEAD TELEPHONE LINE
- TV --- CABLE TV LINE
- DTV --- OVERHEAD CABLE TV LINE
- W --- WATER LINE
- F --- FENCE - CHAIN LINK
- X --- FENCE - R.O.W. OR WIRE
- D --- FENCE - WOOD
- FLOWLINE
- CL --- CENTER LINE DRIVE
- BM --- BENCH MARK
- CP --- CENTER PIVOT
- CP --- CONTROL POINT
- DIKE
- GM --- GAS METER
- GV --- GAS VALVE
- GT --- GRID TICK
- GR --- GUARDRAIL
- GP --- GUARD POST
- GP --- GUY POLE
- GP --- GUY WIRE
- OR --- LIGHT POLE
- MB --- MAILBOX
- MH --- MANHOLE
- MA --- MARSH
- OW --- OIL WELL
- PCP --- PHOTO CODE POINT
- PB --- POWER BOX
- PP --- POWER POLE
- PPB --- POWER PULL BOX
- PT --- PROPANE TANK
- RWM --- R.O.W. MARKER
- ARW --- ADVANCED R.R. WARNING SIGN
- RRW --- RAILROAD WARNING
- RR --- RAILROAD TRACKS
- RW --- RETAINING WALL
- SD --- SATELLITE DISH
- SI --- SIGN
- TS --- TRAFFIC SIGNAL
- TS/L --- TRAFFIC SIGNAL/ST. LIGHT
- TB --- TELEPHONE BOX
- TF --- TELE. FIBER OPTICS BOX
- TPB --- TELEPHONE PULL BOX
- TP --- TELEPHONE POLE
- TVB --- TELEVISION BOX
- TR --- TREE - CONIFEROUS
- TD --- TREE - DECIDUOUS
- TS --- TREE STUMP
- WH --- WATER (FIRE) HYDRANT
- WV --- WATER VALVE
- WM --- WATER METER
- W --- WELL
- WM --- WINDMILL



SUMMARY OF QUANTITIES AND LOCATION OF SURFACED DRIVEWAYS							
STATION	SIDE	WIDTH	LENGTH	INTERSECTION ANGLE	PLACEMENT	ASPHALTIC CONCRETE	1 1/2" COLD MILLING, CLASS 3
		FEET	FEET				SO. YDS.
99+85	RT.	34	62	67°	549	60	549

SUMMARY OF QUANTITIES AND LOCATION OF SURFACED DRIVEWAYS								
STATION	SIDE	RETURN RADIUS		WIDTH	LENGTH	INTERSECTION ANGLE	PLACEMENT	PREPARATION
		R	r					
103+30	LT.	40	25	14	78°	970	319	970

- A POINT 12.07' RT. SRT. 99+15.26
X=2054389.58 Y=365054.67
- B POINT 71.87' RT. SRT. 99+96.78
X=2054482.67 Y=365094.13
- C POINT 64.09' RT. SRT. 100+30.15
X=2054493.06 Y=365126.78
- D POINT 11.71' RT. SRT. 100+57.25
X=2054461.92 Y=365176.86

- 1 POINT 14.19' LT. SRT. 102+98.35
X=2054563.09 Y=365397.28
- 2 POINT 40.46' LT. SRT. 103+31.05
X=2054557.52 Y=365436.93
- 3 POINT 65.03' LT. SRT. 103+38.45
X=2054540.35 Y=365458.03
- 4 POINT 228.51' LT. SRT. 104+57.49
X=2054464.64 Y=365646.85
- 5 POINT 256.49' LT. SRT. 105+19.53
X=2054474.99 Y=365715.73
- 6 POINT 243.88' LT. SRT. 105+69.63
X=2054512.78 Y=365751.57
- 7 POINT 216.59' LT. SRT. 105+89.85
X=2054546.67 Y=365753.94

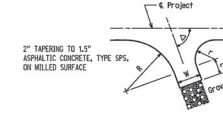
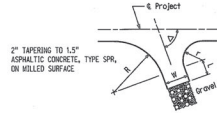
- 8 POINT 180.27' LT. SRT. 105+91.32
X=2054578.08 Y=365735.65
- 9 POINT 151.59' LT. SRT. 105+79.48
X=2054595.89 Y=365710.24
- 10 POINT 130.15' LT. SRT. 104+79.08
X=2054559.68 Y=365613.26
- 11 POINT 93.95' LT. SRT. 103+79.01
X=2054536.97 Y=365508.04
- 12 POINT 50.14' LT. SRT. 103+47.11
X=2054557.61 Y=365457.77
- 13 POINT 17.86' LT. SRT. 103+63.59
X=2054593.78 Y=365455.10
- 14 POINT 115.33' LT. SRT. 103+85.79
X=2054522.33 Y=365525.06

- 15 POINT 206.45' LT. SRT. 104+48.28
X=2054478.35 Y=365627.15
- 16 POINT 239.81' LT. SRT. 104+95.78
X=2054476.01 Y=365686.16
- 17 POINT 241.94' LT. SRT. 105+51.88
X=2054504.88 Y=365735.56
- 18 POINT 195.29' LT. SRT. 105+81.89
X=2054560.35 Y=365735.77
- 19 POINT 154.85' LT. SRT. 105+66.43
X=2054586.13 Y=365701.00
- 20 POINT 142.12' LT. SRT. 104+78.80
X=2054549.40 Y=365619.39

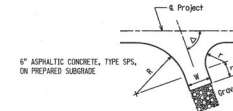
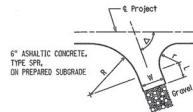


GENERAL INFORMATION

PROJECT NO. 281-11(12)
SHEET NO. 2-N3
C.N. 41877



STATION	SIDE	RETURN RADIUS		WIDTH	LENGTH	INTERSECTION ANGLE	PLACEMENT	ASPHALTIC CONCRETE		1 1/2" COLD MILLING, CLASS 5	GRAVEL	CRUSHED ROCK
		R	r					TONS	SQ. YDS.			
FEET	FEET	FEET	FEET	FEET	FEET	Δ	SQ. YDS.	TONS	SQ. YDS.	CU. YDS.	CU. YDS.	CU. YDS.
208+26	RL	55	40	26	-	90	263	29	263	10	-	-
234+02	LI	40	30	24	4	90	171	19	171	10	-	-
313+92	RL	45	35	27	12	87	242	27	242	10	-	-
317+81	LI	55	40	26	-	88	250	27	250	10	-	-
365+36	RL	47	37	20	-	88	192	21	192	10	-	-
365+37	LI	35	35	24	-	89	150	17	150	10	-	-
377+32	LI	50	35	28	-	78	219	18	219	10	-	-
379+58	LI	35	25	25	-	90	168	13	168	10	-	-
383+49	LI	40	25	26	-	78	186	14	186	10	-	-
387+13	LI	30	30	23	-	86	151	12	151	10	-	-
392+41	LI	20	20	27	4	77	144	12	144	-	-	-
399+44	LI	20	19	26	-	89	114	8	114	-	-	-



STATION	SIDE	RETURN RADIUS		WIDTH	LENGTH	INTERSECTION ANGLE	PLACEMENT	ASPHALTIC CONCRETE		PREPARATION	GRAVEL	CRUSHED ROCK
		R	r					TONS	SQ. YDS.			
FEET	FEET	FEET	FEET	FEET	FEET	Δ	SQ. YDS.	TONS	SQ. YDS.	CU. YDS.	CU. YDS.	CU. YDS.
407+04	LI	28	20	29	3	90	117	38	117	-	-	-

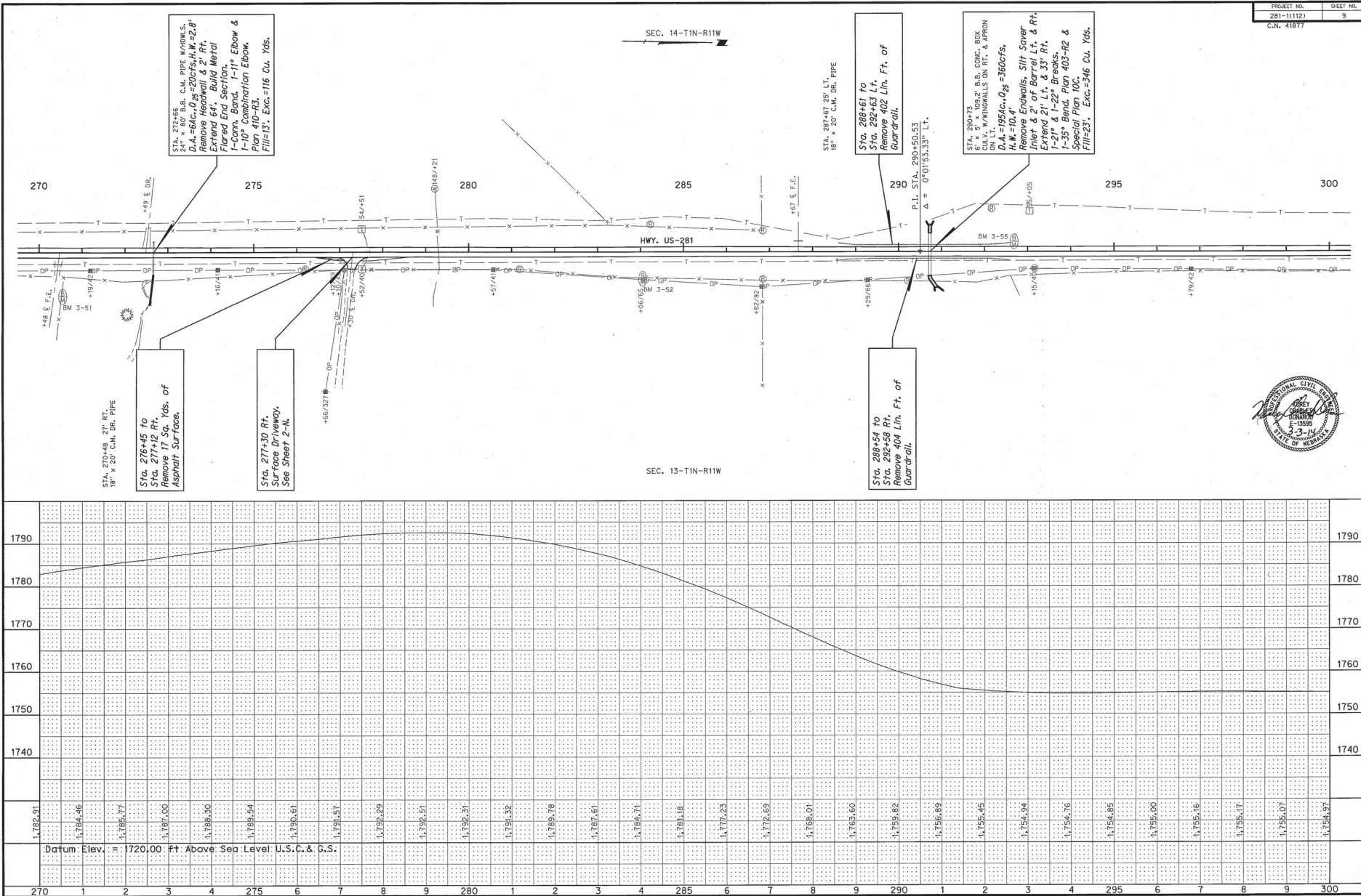
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		R	r					TONS	SQ. YDS.			
FEET	FEET	FEET	FEET	FEET	FEET	Δ	SQ. YDS.	TONS	SQ. YDS.	CU. YDS.	CU. YDS.	CU. YDS.
204+32	RL	25	25	15	2	88	75	8	75	5	-	-
260+57	LI	40	37	24	3	88	186	20	186	5	-	-
277+30	RL	35	25	18	-	84	97	11	97	5	-	-
302+03	LI	20	13	22	7	65	159	17	159	5	-	-
337+25	LI	25	25	22	-	88	96	11	96	5	-	-
371+06	RL	28	25	20	-	90	90	10	90	5	-	-
373+80	LI	40	30	17	-	82	122	13	122	5	-	-
374+28	RL	20	20	86	-	90	149	16	149	5	-	-

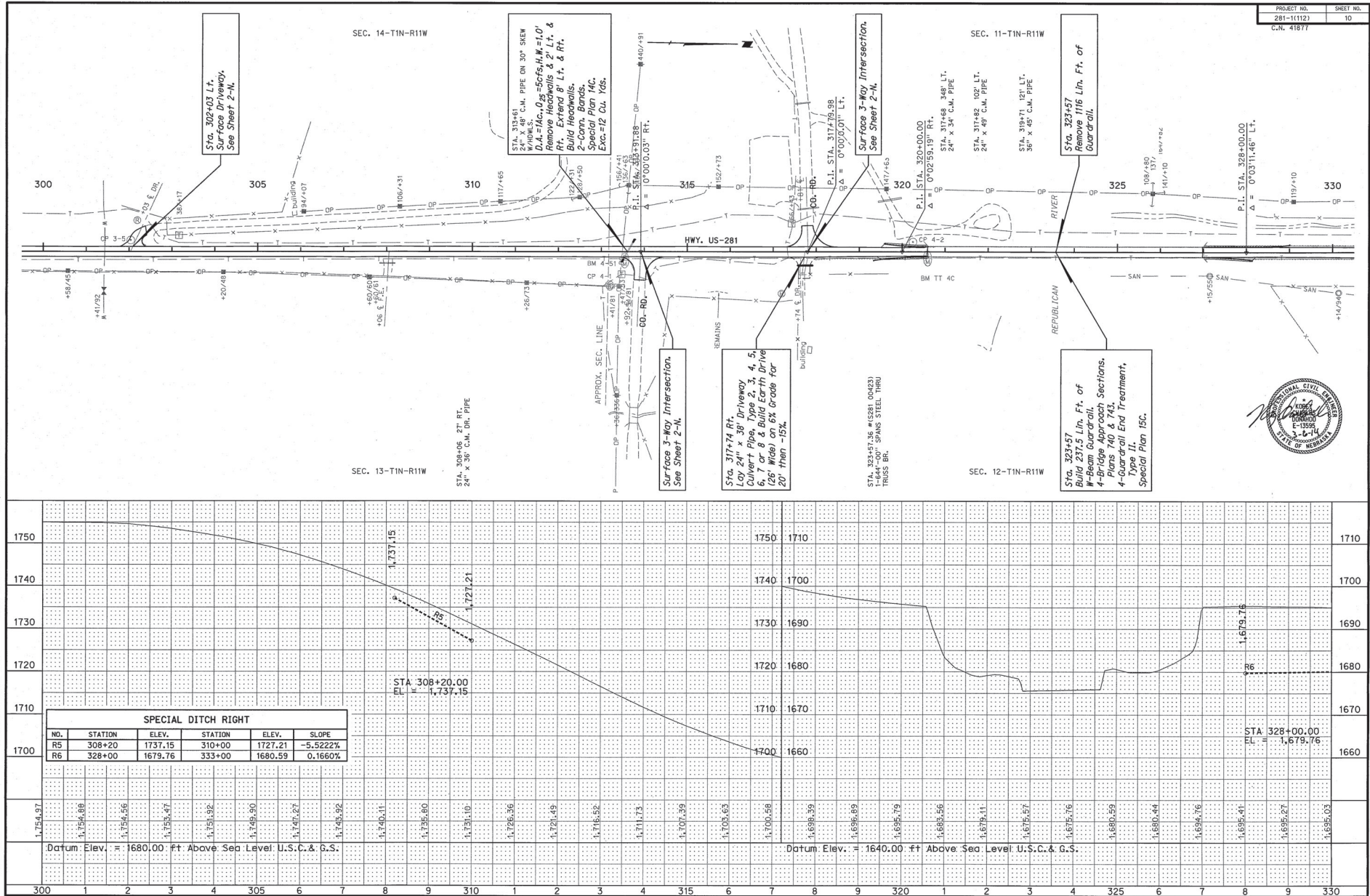
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		R	r					TONS	SQ. YDS.			
FEET	FEET	FEET	FEET	FEET	FEET	Δ	SQ. YDS.	TONS	SQ. YDS.	CU. YDS.	CU. YDS.	CU. YDS.
331+75	RL	25	25	26	-	90	102	33	102	11	-	-
375+85	RL	15	15	40	-	90	78	26	78	5	-	-
385+72	RL	15	15	22	-	90	48	16	48	5	-	-
389+00	RL	22	15	12	-	82	41	14	41	5	-	-
389+53	LI	18	15	16	-	86	44	15	44	5	-	-
395+61	RL	22	15	26	-	84	74	24	74	-	-	-
397+39	RL	15	15	22	-	90	48	16	48	-	-	-
397+97	LI	25	15	22	2	77	69	23	69	-	-	-
398+87	RL	15	15	24	-	90	51	17	51	5	-	-
399+66	RL	15	15	12	-	90	32	11	32	5	-	-
401+42	LI	15	15	22	3	90	56	18	56	-	-	-

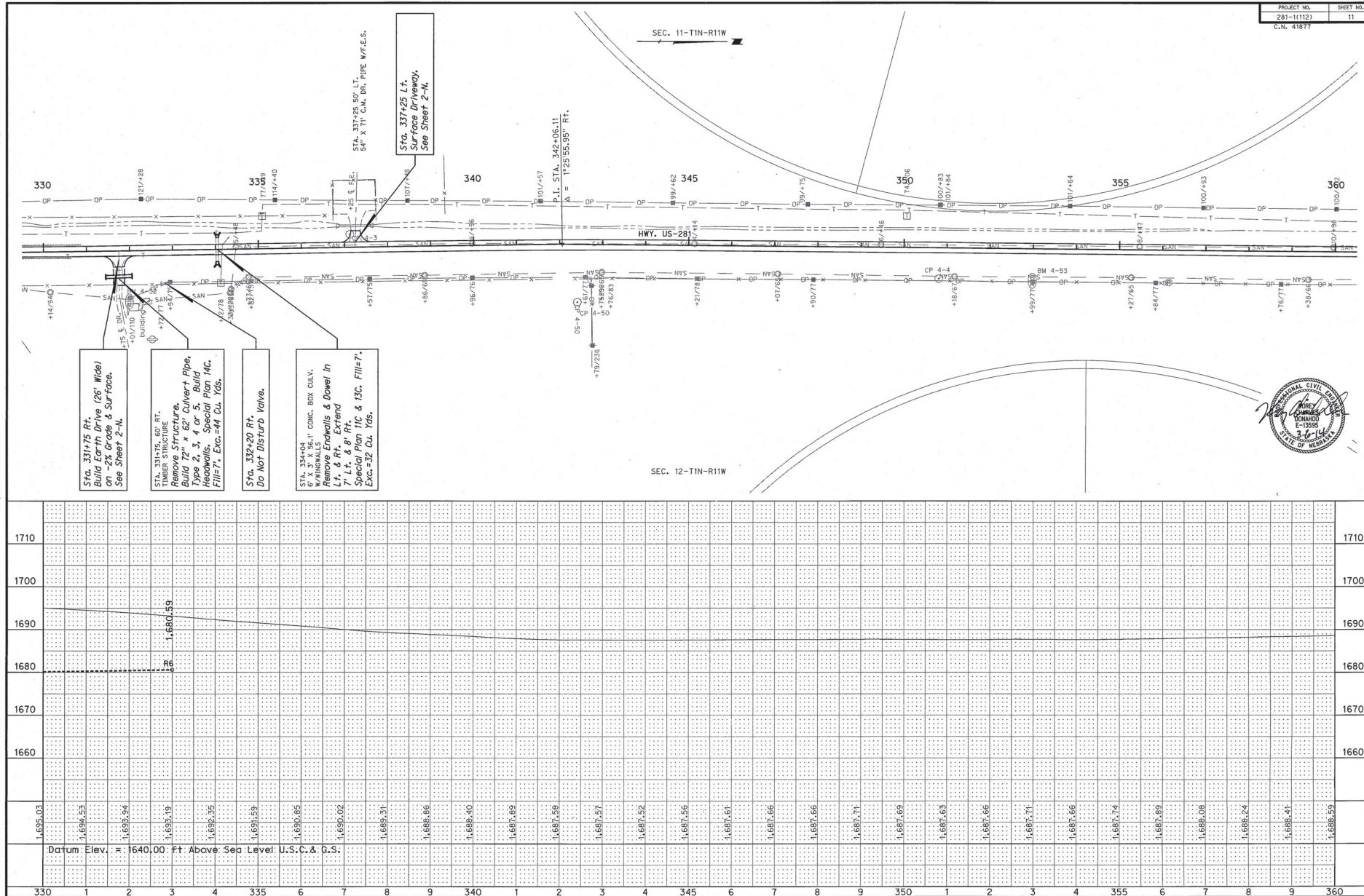
STATION	SIDE	SQUARE YARDS
204+32	RL	96
277+30	RL	96
389+00	RL	7
395+61	RL	7
399+68	RL	7
401+42	RL	12

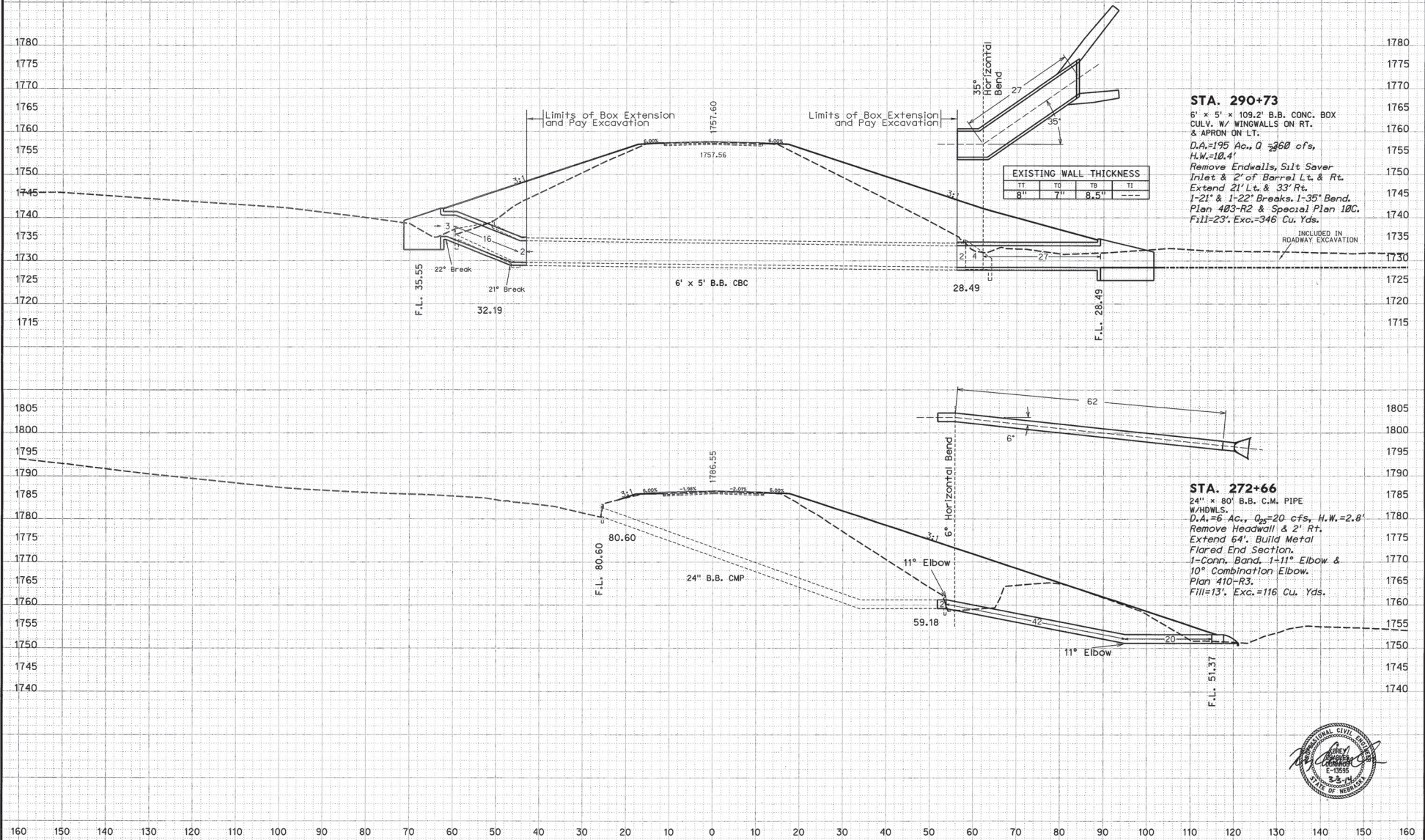
STATION	SIDE	EACH
204+32	RL	2
277+30	RL	1
389+00	RL	1
395+61	RL	2
399+68	RL	2
401+42	RL	1













ROADWAY DESIGN DIVISION

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User: dor1143

Date: 04-MAR-2014 15:32

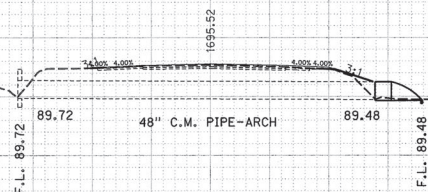
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Vertical Scale 1 : 10PROJECT NO.
281-1(112)SHEET NO.
34

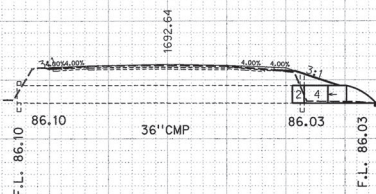
C.N. 41877

STA. 383+77

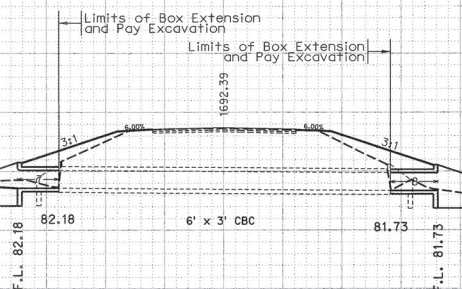
48" x 61' RD. EQUIV. C.M.
PIPE-ARCH W/HDWL. ON LT.
D.A.=4.4 Ac., $Q_p=12.5$ cfs, HW=1.3'
Build Metal Flared End Section
on Rt. Plan 410-R3. Exc.=1 Cu. Yd.

**STA. 376+79**

36" x 49' C.M. PIPE W/HDWLS.
Remove Headwall & 2' Rt.
Extend 6'. Build Metal Flared
End Section, 1-Conn. Band.
Plan 410-R3.
Exc.=1 Cu. Yd.

**STA. 334+04**

6' x 3' x 56.1' CONC. BOX CULV.
W/WINGWALLS
Remove Endwalls & Dowel in
Lt. & Rt. Extend 7' Lt. & 8'
Rt. Special Plan 11C & 13C.
Fill=7'. Exc.=32 Cu. Yds.



EXISTING WALL THICKNESS			
LT	TO	TR	RT
8"	6"	8.5"	---



GEOTECHNICAL DATA

PAVEMENT HISTORY

1931	1931
3.5	4.5
(1931) 311A; GRAVEL 2"X	

1936	1936
3.92	4.5
(1936) WPH-311A; GRAV	

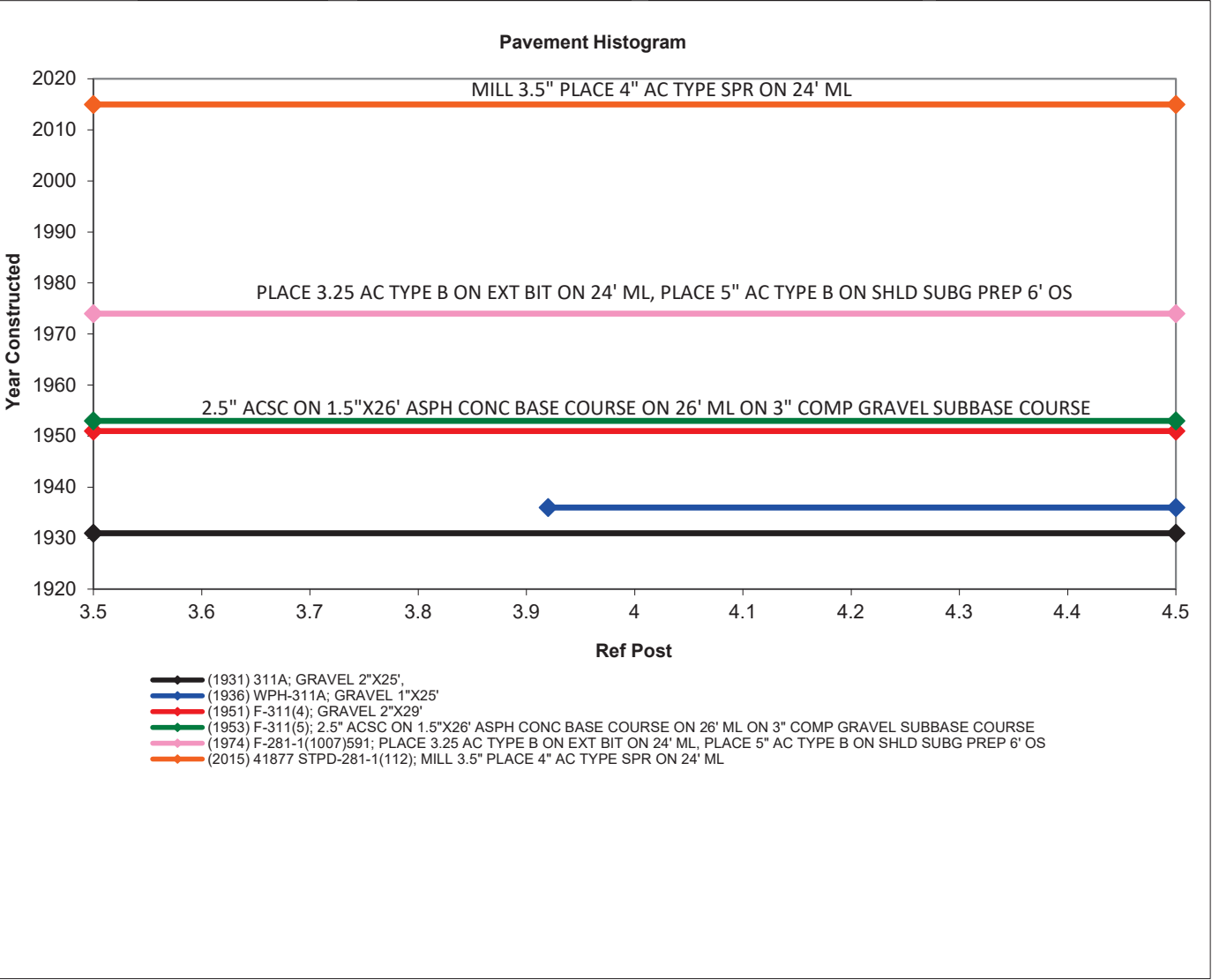
1951	1951
3.5	4.5
(1951) F-311(4); GRAVEL	

1953	1953
3.5	4.5
(1953) F-311(5); 2.5" ACS	

1974	1974
3.5	4.5
(1974) F-281-1(1007)591;	

2015	2015
3.5	4.5
(2015) 41877 STPD-281-1	

Hwy #	US-281	6.25" AC		
Location	Red Cloud South Bridge	MILL 3.5" PLACE 4" AC TYPE SPR ON		
Project #	STP-281-1(116)			
C.N.	42717	2.25" ACSC ON 1.5"X26' ASPH CONC	BASE COURSE ON 26' ML ON 3" COMP	GRAVEL SUBBASE COURSE
Ref Posts	4.23			
Date	3/18/2025			
Prepared by	OI			



UTILITY LIST

Utility List for 42717 STP-281-1(116) Red Cloud South Bridge

City of Red Cloud – Electrical, Sewer, and Water

Great Plains Communications

Lower Republican Natural Resource District



PROJECT DETAILS

Project Details

Project Name:	Red Cloud South Bridge		
Project No.:	STP-281-1(116)		
Control No.:	CN 42717		
Initial Draft:	Date: May 16, 2025	Written By: Chaddwick Ziemann	

Updates/Reviews

Date	Update/Review By (name)	Items Updated	Plan Level (PIH, etc.)

Project Details:

Instructions:

- Insert an "X" in the "Yes" box for all activities to be included in the project.
- Insert an "X" in the "No" box for all activities not included in the project.
- Insert an "X" in the "PIH" (Plan-In-Hand) box for all activities that require more information or design work to determine inclusion.
- Include specific Mile Marker(MM) locations for anything checked "Yes" or "PIH" or indicate the activity as "Project-wide".
- **Highlight locations that have impacts in Urban Areas.**
- Each bridge or bridge-sized box culvert is assigned a Structure Number. The highway designation and mile marker location for the structure are incorporated into the Structure Number. For example, a bridge with Structure Number S080 01346 is located on I-80 at MM 13.46.

Project Limits			
Highway	Beginning MM	End MM	Segment Length
US-281	4.23	4.23	0.00 Miles
Total:			0.00 Miles

Roadway Work	YES	NO	Determined prior to PIH	Notes/Location (MM-MM)
Culvert Work: New, Extension, Replacement, Repair			X	See details below
Ephemeral			X	Two existing culverts may be impacted by project. An existing drainage structure near the north approach that is parallel to roadway may be impacted. Further investigation is determined by Roadway Design.
Intermittent		X		
Perennial		X		
Pipe Jacking & Casing		X		
Temporary Crossing for Non-Bridge Sized Culvert Work, Causeway, Work Platforms		X		
Channel Grade Stabilization Structures for Non-Bridge Sized Structure		X		
Flume Repair/Replacement on Existing Curb & Flume		X		
New Curb & Flume		X		
New Curb and Gutter		X		
Channelization		X		
Ephemeral		X		
Intermittent		X		
Perennial		X		
Bank Stabilization		X		
Storm Sewer Work		X		
Sanitary Sewer Work		X		
Work on Ramps		X		
Earth Shoulder Construction	X			Project-wide
Grading or Flattening Backslopes	X			
Grading Within the Hinge Point	X			
Grading Outside the Hinge Point	X			
Surfacing Activities	X			See details below
Trenched Widening		X		
Paving	X			Project-wide
Asphalt Patching		X		
Concrete Pavement Repair		X		
Crack Sealing and Joint Sealing		X		

Roadway Work	YES	NO	Determined prior to PIH	Notes/Location (MM-MM)
Resurfacing-Fog/Slurry Seal, Armor Coat/Chip Seal, Overlay		X		
Microsurfacing		X		
Milling and/or In-place Recycling		X		
Rock or Gravel Surfacing	X			At spot locations project-wide, placed behind drives and intersections
Pavement Removal	X			Project-wide
Rumble Strips (centerline, edge line, shoulder)		X		
Modifying Driving Lanes by Re-striping		X		
Guardrail repair w/ soil disturbance	X			Project-wide
Guardrail repair w/out soil disturbance		X		
ADA/Curb Ramps, Sidewalks, & Bikeways		X		
Retaining Walls or Steps Present		X		
Lighting, Signals, Small ITS Elements with Soil Disturbance		X		
Lighting, Traffic and Pedestrian Signals, Dynamic Message Signs without Soil Disturbance		X		
Underground Utility Conduit Install./Relocation		X		
Large Overhead Truss Signs or Message Boards		X		
Drilled Shaft Foundations		X		
Signs with Soil Disturbance		X		
Signs without Soil Disturbance	X			Project-wide: Construction Signs, Delineators and Permanent Signs
Fencing/Gates		X		
Landscaping – Aesthetic		X		
Retaining Walls		X		
Localized Modification of Highway or Side Road Alignment	X			Project-wide

Bridge Work	YES	NO	Determined prior to PIH	Notes/Location (MM-MM)
Bridge Deck Repair		X		
Bridge Deck Replacement	X			S281 00423
Bridge Rail Repair/Replacement	X			S281 00423
Bridge Substructure New, Replacement, or Repair	X			See details below
Ephemeral		X		
Intermittent		X		
Perennial	X			S281 00423

Bridge Work	YES	NO	Determined prior to PIH	Notes/Location (MM-MM)
Bridge Superstructure New, Replacement, or Repair	X			See details below
Ephemeral		X		
Intermittent		X		
Perennial	X			S281 00423
Overpass Repair or Replacement		X		
Replacing a Bridge with a Culvert		X		
Removal of Old Substructure	X			S281 00423
Drop-Structures Needed at Bridge Corners			X	S281 00423
Utilities Attached or Adjacent to Bridge		X		
Pile Driving	X			See details below
Impact Method	X			S281 00423
Vibratory Method	X			
Drilled Shaft Foundations	X			
Piers	X			
Pile/Pier Encasement/Preservation		X		
Temporary Crossing for Bridge Work, Causeway, Work Platforms	X			S281 00423 Access Bridge
Channel Grade Stabilization Structures for Bridge Sized Structure		X		
Cofferdams	X			S281 00423
Barge Staging		X		
Cleaning/Painting		X		

Accommodation of Traffic	YES	NO	Determined prior to PIH	Notes/Location (MM-MM)
Road, Bridge, or Ramp Closures			X	See details below
Duration greater than 30 working days			X	S281 00423 replacement
Duration greater than 135 working days		X		
Out-of-direction travel greater than 10 miles in urban area or 30 miles in rural area		X		25 miles out of direction rural detour
Detour			X	Official detour is 67 miles long: US-281 south into Kansas, US-36 east to Kansas Hwy 128, north to Nebraska Hwy 78, north to US-136, west to US-281. Local detour is 18 miles long
Improvements on detour route			X	
Shoo-fly		X		
Crossovers		X		

Accommodation of Traffic	YES	NO	Determined prior to PIH	Notes/Location (MM-MM)
Slip-ramps		X		
Temporary Surfacing			X	Project-wide
Temporary Grading			X	
Temporary Signal			X	
Rolling Road-Block		X		
Pedestrian Facility Closure		X		
Pedestrian Facility Closure without Alternate Accessible Route		X		
Work on Pedestrian Alternate Route		X		
Access Closures to Businesses or Residences		X		
Complete closure to residential properties for more than 5 working days		X		
Complete closure to residential properties for more than 10 working days		X		
Closure of business access during operational hours		X		
Access restrictions to emergency service facilities or providers		X		
Changes to the functionality of adjacent properties		X		

Other Items	YES	NO	Determined prior to PIH	Notes/Location (MM-MM)
Right-of-Way/Permanent Easement	X			Project-wide
Temporary Easements	X			
Structure Acquisition		X		
Structure Modification		X		
Removal of Structures and Obstructions	X			S281 00423
Utilities Relocation		X		
Clearing and Grubbing	X			See details below
Non-woody Vegetation	X			Project-wide
Trees and Shrubs	X			
De-watering	X			See details below
Water Resource	X			Project-wide
Groundwater		X		
Pre-watering		X		
Erosion Control	X			See details below
Barriers			X	Project-wide
Erosion Checks			X	
Inlet/Outlet Protection		X		
Mulching	X			Project-wide
Rolled Erosion Control	X			

Other Items	YES	NO	Determined prior to PIH	Notes/Location (MM-MM)
Slope Interruption			X	
Traps and Basins			X	
Vegetation	X			
Detention Basin		X		
Stream Channel Impact	X			See details below
Ephemeral		X		
Intermittent			X	Streams run parallel to US-281 on Lt. & Rt. side from bridge to the north
Perennial	X			S281 00423
Wetland Mitigation			X	The project is not in a wetland bank service area.
Habitat Fragmentation, Modification of Connectivity		X		
Noise Walls (Not in Water/Wetlands)		X		
Nighttime Work with Lights		X		
Civil Works Project within 500 Feet		X		
City/County/Railroad/Other Agreement			X	Possible coordination with Webster County
Railroad Involvement		X		
Public Use Airport within 4 miles	X			Red Cloud Municipal Airport

Additional Project Items

- The study completed by HDR from May 2017 can be found in OnBase under the CN 42717 NDOT RD Project Correspondence folder.
- The TS&L Bridge Hydraulic Sheet can be found in OnBase under the CN 42717 NDOT BRG Hydraulic Information folder.

BRIDGE INSPECTION REPORTS

Field Inspection Form

S281 00423

2S RED CLOUD

Inspection Date **July 08, 2024**

Location:

Feature Intersected (006A) **REPUBLICAN RIVER**

Facility Carried (007) **US281**

Location (009) **2S RED CLOUD**

County (003) **Webster**

District (002) **District 4**

Ownership:

Owner (022) **State Highway Agency**

Maint. Resp. (021) **State Highway Agency**

MPO **0 - Not in an MPO**

KBLC

Year Built (027) **1935**

Year Reconstruct (106) **N/A**

Geolocation:

Latitude (016) **40° 03' 46.08"**

Longitude (017) **098° 31' 08.40"**

Condition:

Deck (058)	5 Fair
Sup Rating (059)	5 Fair
Substructure (060)	5 Fair
Culvert (062)	N N/A (NBI)
Depth of Cover on Deck (306)	2 in

Posting Values:

	Load Rating	Posting Value	Posted Sign Value
Type 3	32 ton	33 ton	33 ton
Type 3S2	39 ton		
Type 3-3	43 ton		

Element Condition:

Element/Description	Env	Quantity				
	Scale Factor	Total	State 1	State 2	State 3	State 4
Main Spans Steel Continuous Truss-Thru						
12-Re Concrete Deck	Mod.	13,455 sq.ft	12,155	1,300	0	0
Re Concrete Deck	1					
1080-Delamination/Spall/Patched Area		1,300 sq.ft	0	1,300	0	0
Delamination/Spall/Patched Area						
9512-A/C Over Membrane	Mod.	12,376 sq.ft	11,821	531	0	24
A/C Over Membrane						
9906-Rutting (AC)		35 sq.ft	0	35	0	0
Rutting (AC)						
9907-Cracking (AC)		520 sq.ft	0	496	0	24
Cracking (AC)						
113-Steel Stringer	Low	2,600 ft	2,080	468	52	0
Steel Stringer	1					
1000-Corrosion		520 ft	0	468	52	0
Corrosion						
9540-Stl Paint Prot Coat	Low	13,195 sq.ft	12,469	0	660	66
Stl Paint Prot Coat	1					
3440-Eff (Stl Protect Coat)		726 ft	0	0	660	66
Eff (Stl Protect Coat)						
120-Steel Truss	Low	1,040 ft	754	156	130	0
Steel Truss	1					
1000-Corrosion		286 ft	0	156	130	0
Corrosion						
9540-Stl Paint Prot Coat	Low	10,920 sq.ft	10,628	156	109	27
Stl Paint Prot Coat	1					
3440-Eff (Stl Protect Coat)		292 ft	0	156	109	27
Eff (Stl Protect Coat)						
152-Steel Floor Beam	Mod.	676 ft	294	270	58	54
Steel Floor Beam	1					
1000-Corrosion		382 ft	0	270	58	54
Corrosion						
9540-Stl Paint Prot Coat	Mod.	5,881 sq.ft	5,185	0	588	108
Stl Paint Prot Coat	1					
3440-Eff (Stl Protect Coat)		696 ft	0	0	588	108
Eff (Stl Protect Coat)						

Field Inspection Form

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2S RED CLOUD

162-Stl Gus Plate	Mod.	116 each		27		35		44		10
Stl Gus Plate	1									
1000-Corrosion		89 each		0		35		44		10
Corrosion										
205-Re Conc Column	Low	8 each		0		8		0		0
Re Conc Column	1									
1130-Cracking (RC and Other)		8 each		0		8		0		0
Cracking (RC and Other)										
234-Re Conc Pier Cap	Low	136 ft		57		22		57		0
Re Conc Pier Cap	1									
1090-Exposed Rebar		34 ft		0		11		23		0
Exposed Rebar										
1130-Cracking (RC and Other)		45 ft		0		11		34		0
Cracking (RC and Other)										
303-Assem Jnt With Seal	Mod.	52 ft		52		0		0		0
Assem Jnt With Seal	1									
331-Re Conc Bridge Railing	Mod.	1,040 ft		485		520		35		0
Re Conc Bridge Railing	1									
1090-Exposed Rebar		27 ft		0		0		27		0
Exposed Rebar										
1130-Cracking (RC and Other)		520 ft		0		520		0		0
Cracking (RC and Other)										
7000-Damage		8 ft		0		0		8		0
Damage										
9152-X-Frame	Low	418 ft		409		9		0		0
X-Frame	1									
1000-Corrosion		9 ft		0		9		0		0
Corrosion										
1000-Corrosion		6 each		0		6		0		0
Corrosion										
9338-Mtl Trans Rail	Ben.	100 ft		100		0		0		0
Mtl Trans Rail										

Approach Section Steel Stringer/Girder

12-Re Concrete Deck	Mod.	3,153 sq.ft		0		3,149		4		0
Re Concrete Deck	1									
1080-Delamination/Spall/Patched Area		2,899 sq.ft		0		2,899		0		0
Delamination/Spall/Patched Area										
1090-Exposed Rebar		4 sq.ft		0		0		4		0
Exposed Rebar										
1120-Efflorescence/Rust Staining		250 sq.ft		0		250		0		0
Efflorescence/Rust Staining										
9512-A/C Over Membrane	Mod.	2,856 sq.ft		2,856		0		0		0
A/C Over Membrane										
9515-Other Overlays	Mod.	2,856 sq.ft		2,856		0		0		0
Other Overlays										
107-Steel Opn Girder/Beam	Low	600 ft		450		50		100		0
Steel Opn Girder/Beam	1									
1000-Corrosion		150 ft		0		50		100		0
Corrosion										
9540-Stl Paint Prot Coat	Low	5,220 sq.ft		4,176		522		261		261
Stl Paint Prot Coat	1									
3440-Eff (Stl Protect Coat)		1,044 ft		0		522		261		261
Eff (Stl Protect Coat)										
215-Re Conc Abutment	Low	102 ft		89		13		0		0
Re Conc Abutment	1									

1130-Cracking (RC and Other)		13 ft	0	13	0	0
Cracking (RC and Other)						
331-Re Conc Bridge Railing	Mod.	240 ft	86	120	4	30
Re Conc Bridge Railing	1					
1080-Delamination/Spall/Patched Area		4 ft	0	0	4	0
Delamination/Spall/Patched Area						
1130-Cracking (RC and Other)		120 ft	0	120	0	0
Cracking (RC and Other)						
7000-Damage		30 ft	0	0	0	30
Damage						
9250-Riprap	Mod.	48 ft	48	0	0	0
Riprap	1					
1000-Corrosion		10 each	0	0	10	0
Corrosion						
1000-Corrosion		10 each	0	0	10	0
Corrosion						
9333-Mtl Appr Rail	Low	419 ft	400	10	5	4
Mtl Appr Rail	1					
7000-Damage		19 ft	0	10	5	4
Damage						
9338-Mtl Trans Rail	Sev.	100 ft	100	0	0	0
Mtl Trans Rail						
9343-Flx Barrier Term	Mod.	120 ft	120	0	0	0
Flx Barrier Term	1					

Structural Appraisal:

Approach Alignment (072)	8 Equal Desirable Crit	Structural Evaluation (067)	Computed Values	5 Above Min Tolerable
Bridge Railings (036A)	0 Substandard	Deck Geometry (068)		2 Intolerable - Replace
Transitions (036B)	1 Meets Standards	Under Clearance (069)		N Not applicable (NBI)
Approach Guardrail (036C)	1 Meets Standards			
Approach Guardrail Ends (036D)	1 Meets Standards	SD/FO Status		Func Obsolete (2)
Pier Protection (111)	1 Not Required	Sufficiency Rating (SRB)		46.3

Minimum Vertical Clearances:

Minimum Lateral Clearances:

Over Structure (053)	13.91 ft	Reference Feature (055A)	N Feature not hwy or RR
Under (Reference) (054A)	N Feature not hwy or RR	Right Side (055B)	0 ft
Under Clearance (054B)	0 ft	Left Side (056)	0 ft

Waterway Adequacy:

Waterway (071)	8 Equal Desirable	Stream Shifted from Center (350)	N Channel Centered
Channel (061)	6 Bank Slumping	Is There a Scour Problem (358)	N No Scour Problem
Embankment Erosion (326)	8 Minor Erosion	Scour Plan of Action Effective Date (358C)	01/01/1900
Crossing a Canal (345)	N No Canal	Scour Critical (113)	5 Stable w/in footing
Stream Bed Degradation (346)	N No Degradation	Alignment With Flow (355)	8 - 5 degrees°
Noticeable Contraction of Stream (347)	N No Bridge Constriction	Potential Debris Upstream (353)	Y Debris Upstream

Bridge Waterway Adequacy Evaluation:

Drop from Upstream Deck to Flowline (357)	21 ft	Drop from Upstream Deck to Ground Abutment 1 (357A)	5 ft
		Drop from Upstream Deck to Ground Abutment 2 (357B)	6 ft

Field Inspection Form

S281 00423

2S RED CLOUD

Inventory - Design:

Deck:

Deck Structure Type (107)		1 Concrete-Cast-in-Place	Number of Main Spans (045)		3
Deck Surface Type (108A)		6 Bituminous	Main Spans Material (043A)		4 Steel Continuous
Deck Membrane Type (108B)		2 Preformed Fabric	Main Spans Design (043B)		10 Truss-Thru
Deck Protection (108C)		0 None	Number of Approach Spans (046)		2
Curb Sidewalk width/Left (050A)		1.1 ft	Approach Span Material (044A)		3 Steel
Curb Sidewalk width/Right (050B)		1.1 ft	Approach Span Design (044B)		02 Stringer/Girder
Deck Width (out-to-out) (052)		25.9 ft	Skew (034)		0°
Bridge Median (033)		0 No median	Structure Flared (035)		0 No flare
Deck Area		16679.6 sq.ft	Pier Column Geometry		0 Pierwall

Spans Data:

Structure Length:

Maximum Span (048)		200.00 ft	Structure Length (049)		644.00 ft
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Underwater Inspection Inventory

Max Submerged Depth at Low Flow/UW Insp (366)	-
Type of Submerged Substructure (367)	N/A
Number of Submerged Substructure (368)	-
Type of Abutment Foundation (369)	N/A
Type of Pier Foundation (370)	N/A

Inventory - Roadway:

1 Route On Structure

Clearances:

Vertical (010)		13.91 ft	Horizontal (047)		23.8 ft
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Widths:

Approach Road (032)		22 ft	Roadway crb-crb (051)		23.8 ft
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Traffic:

Detour Length (019)		18 mi			
Recent ADT (029)		950	Year (030)		2018
Future ADT (114)		1235	Fut. Year (115)		2038

Inspection Resources:

Crew Hours		13.00	Assistant Inspector 1		AP5723
Helper Hours		0.00	Assistant Inspector 2		
Flagger Hours		15.00	Assistant Inspector 3		
Under Bridge Inspection Equipment Hours		11.00	Assistant Inspector 4		
Special Equipment Crew Hours		0.00			
Special Equipment Hours		0.00			

KBLC

Field Inspection Form

S281 00423

2S RED CLOUD

General Bridge Notes:

S281 00423 is located 2.0 miles South of Red Cloud in Webster County on US281 over the Republican River. It runs south to north with Abutment No. 1 on the south end.

This bridge is a 520' x 23.8' three-span continuous thru-truss structure with two 60' multi-girder steel approach spans. Trusses have overhead cross bracing over Piers No. 2 and 3.

The deck is reinforced cast-in-place concrete with a 2" asphalt overlay with membrane. A concrete barrier curb with steel railing forms the bridge railing. The expansion joints over Piers No. 1 and No. 4 are of sliding plate type.

Top and bottom chords are built-up double channels with batten plates and lacing. All verticals, diagonals and floorbeams are rolled shapes. All members are connected together with riveted gusset plates or riveted angles. Five longitudinal steel I-beam stringers support the deck between the steel I-beam floorbeams. The stringers are framed into the web of the floorbeams. Five longitudinal steel I-beams support the deck in approach Spans 1 & 5. The top flange of all stringers and floorbeams are laterally braced by partial embedment into the concrete deck. The approach and truss spans are supported on bearings. Member L2U3 controls the load rating and the rating assumptions still apply.

Both abutments and all four piers are reinforced cast-in-place concrete on steel H pilings. Abutments have concrete backwalls.

General Inspection Notes:

07/08/2024 Item 41 updated to P for correct posting sign photos received 12/3/24 EB

Deck:

(D1) Significant amount of full depth concrete deck repair. (D2) Deck edges remain spalled, mostly near the drains and some spalls forming in patches. (D3) Deck has some cracking with efflorescence on underside. Asphaltic plugs at P1 & P4 are pliable in summer temperatures. Approach spans received armor coating in 2020. (D4) Missing drain extension at FB18 RT, FB8 LT & RT.

Superstructure:

(S1) Pack rust and corrosion continues to increase at connections below the bridge deck with a few areas of 20% section loss at FB lower flanges & 3/8" pack rust in areas. (S2) Impact damage to upper portal members with some cracks occurring at lateral bracing connection angles and 8" out of plumb at U9. (S3) South approach span exterior girders have heavy surface rust at the interior web face. (S4) Tack welds connect fill plates to truss members. (S5) Floorbeams have 2 open holes in the lower web at the ends, no cracks found. (S6) Floorbeams have copes at upper web ends, no cracks but a few overcuts (FB1 LT, FB4 RT, FB21 RT). (S7) Open holes at L20 LT. (S8) Stiffeners on the web and a plate at each end are welded to FBs over pier. (S9) P3 bearing nut not fully threaded. (S10) Corroded holes at FB5 & FB9 LT gusset plates. (S11) Bend L0L1 RT at L0. (S12) Monitor open hole at FB4 RT. (S13) Bend L6L7 RT near L6. (S14) Broken welds U7 and L7 LT. (S15) Notch on L23L24 LT. Bullet damage in (S16) U19L20 LT, (S17) FB20 near LT, and (S18) U16L16 LT. (S19) Corrosion at all rail to truss connections. (S20) S3 L12 Rt. flame cut. No cracks were found. (S21) Top portal collision damage has cracks joints PP9 LT, PP7 RT, and PP19 RT. Truss bearings are in good condition with only minor corrosion. (S22) Members remain mostly painted, except at the lower chord below the deck which has areas of moderate paint failure. (S23) The girder bearings at approach spans have heavy corrosion and may not be capable of longitudinal movements. (S24) Sporadic section loss and pack rust at low chord splices and lower gusset to floor beam connections. (S25) Isolated section loss of low chord at multiple batten plates. (S26) Members remain mostly painted, except at the lower chord below the deck which has areas of moderate to heavy paint failure. (S27) 1/8" loss at the bottom flange of FB/gusset connection average. (S28) 1/8" loss at the gusset plate/lower chord connection on gusset (both vertical and horizontal). (S29) L5RT hole in gusset on both sides of FB bottom flange.

Substructure:

(B1) Pier caps have cracking and spalls, with a spall at an anchor bolt of P2 and exposed rebar on P1 & P4. (B2) Abutments have some horizontal and vertical cracking with minor rust staining. (B3) Spall, cracking at NW corner. No piling visible for inspection.

Channel and Channel Protection:

The channel banks are stable and well vegetated. Broken concrete now protects both abutments.

Element Condition Notes:

1 Steel Continuous Truss-Thru

12 Re Concrete Deck

3 Mod.

07/08/2024

113 Steel Stringer

2 Low

07/08/2024

120 Steel Truss

2 Low

07/08/2024

The superstructure members remain mostly painted, except at the lower chord below the deck which has areas of moderate paint failure. Debris, pack rust and corrosion continue to increase at the truss connections below the bridge deck, but no major section loss to note. There is impact damage to the upper portal members with some cracks occurring at lateral bracing connection angles. Tac welds connect fill plates to truss members, and floor beams have open holes in the lower web at the ends, though no cracks have been found.

152 Steel Floor Beam

3 Mod.

07/08/2024

Corrosion typical under deck joints

162 Stl Gus Plate

3 Mod.

07/08/2024

Typical lower gusset plates have paint failure and surface corrosion with minor pack rust between the gusset plates

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2S RED CLOUD

	and the truss members.	
205 Re Conc Column		2 Low
07/08/2024	minor hairline cracking	
234 Re Conc Pier Cap		2 Low
07/08/2024	Shallow spalling and delamination along caps. P2 spall at west anchor bolt.	
303 Assem Jnt With Seal		3 Mod.
07/08/2024	Asphaltic plug installed above joints during recent deck repair.	
331 Re Conc Bridge Railing		3 Mod.
07/08/2024		
1000 Corrosion		2 Low
07/08/2024		
07/08/2024		
07/08/2024	Debris, pack rust and corrosion continue to increase at the truss connections below the bridge deck, but no major section loss to note.	
07/08/2024		
1000 Corrosion		3 Mod.
07/08/2024		
07/08/2024	Mostly contained to connections below the bridge deck.	
1080 Delamination/Spall/Patched Area		3 Mod.
07/08/2024	Full depth patched area.	
1090 Exposed Rebar		2 Low
07/08/2024		
1090 Exposed Rebar		3 Mod.
07/08/2024		
1130 Cracking (RC and Other)		2 Low
07/08/2024		
07/08/2024		
1130 Cracking (RC and Other)		3 Mod.
07/08/2024		
3440 Eff (Stl Protect Coat)		2 Low
07/08/2024		
07/08/2024		
3440 Eff (Stl Protect Coat)		3 Mod.
07/08/2024		
7000 Damage		3 Mod.
07/08/2024		
9152 X-Frame		2 Low
07/08/2024		
9303 Fix Pinned Bearing		2 Low
07/08/2024		
9311 Rocker W/Pin Bearing		2 Low
07/08/2024		
9338 Mtl Trans Rail		1 Ben.
07/08/2024		
9512 A/C Over Membrane		3 Mod.
07/08/2024		
9540 Stl Paint Prot Coat		2 Low
07/08/2024	Moderate paint failure near the joints	
07/08/2024		
9540 Stl Paint Prot Coat		3 Mod.
07/08/2024		
9906 Rutting (AC)		3 Mod.
07/08/2024		
9907 Cracking (AC)		3 Mod.
07/08/2024		
	<u>2 Steel Stringer/Girder</u>	
12 Re Concrete Deck		3 Mod.
07/08/2024		
107 Steel Opn Girder/Beam		2 Low
07/08/2024	The exterior steel girders, at the south approach span, have heavy surface rust at the interior web face	

Field Inspection Form

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2S RED CLOUD

215 Re Conc Abutment	2 Low
07/08/2024	
331 Re Conc Bridge Railing	3 Mod.
07/08/2024	30' missing steel rail Span 1
1000 Corrosion	2 Low
07/08/2024	Exterior girders in Span No. 1
07/08/2024	
1000 Corrosion	3 Mod.
07/08/2024	
1080 Delamination/Spall/Patched Area	3 Mod.
07/08/2024	
07/08/2024	Full depth patched area.
1090 Exposed Rebar	3 Mod.
07/08/2024	
1120 Efflorescence/Rust Staining	3 Mod.
07/08/2024	
1130 Cracking (RC and Other)	2 Low
07/08/2024	
1130 Cracking (RC and Other)	3 Mod.
07/08/2024	
3440 Eff (Stl Protect Coat)	2 Low
07/08/2024	
7000 Damage	2 Low
07/08/2024	
7000 Damage	3 Mod.
07/08/2024	
9250 Riprap	3 Mod.
07/08/2024	Broken concrete at abutments.
9304 Fix Plate Bearing	2 Low
07/08/2024	
9312 Roller Bearing	3 Mod.
07/08/2024	
9333 Mtl Appr Rail	2 Low
07/08/2024	New approach guardrail installed at all four corners.
9338 Mtl Trans Rail	4 Sev.
07/08/2024	
9343 Flx Barrier Term	3 Mod.
07/08/2024	New terminal section at each corner.
9512 A/C Over Membrane	3 Mod.
07/08/2024	
9515 Other Overlays	3 Mod.
07/08/2024	Approach spans received armor coating in 2020.
9540 Stl Paint Prot Coat	2 Low
07/08/2024	

Latitude: 40° 03' 46.08" [40.0628]

Longitude: 098° 31' 08.40" [98.519]

Structure SI&A
S281 00423
2S RED CLOUD

Inspection Date **July 08, 2024**

Location:

Feature Intersected (006A) **REPUBLICAN RIVER**
Facility Carried (007) **US281**
Location (009) **2S RED CLOUD**
County (003) **Webster**
District (002) **District 4**

Ownership:

Owner (022) **State Highway Agency**
Maint. Resp. (021) **State Highway Agency**

KBLC

Year Built (027) **1935**
Year Reconstruct (106) **N/A**

Geolocation:

Latitude (016) **40° 03' 46.08"**
Longitude (017) **098° 31' 08.40"**

Condition:

Deck (058)	5 Fair
Sup Rating (059)	5 Fair
Substructure (060)	5 Fair
Culvert (062)	N N/A (NBI)
Depth of Cover on Deck (306)	2 in

Posting Values:

	Load Rating	Posting Value	Posted Sign Value
Type 3	32 ton	33 ton	33 ton
Type 3S2	39 ton		
Type 3-3	43 ton		

Element Condition:

Element/Description	Env	Quantity				
	Scale Factor	Total	State 1	State 2	State 3	State 4
Main Spans Steel Continuous Truss-Thru						
12-Re Concrete Deck	Mod.	13,455 sq.ft	12,155	1,300	0	0
Re Concrete Deck	1					
1080-Delamination/Spall/Patched Area		1,300 sq.ft	0	1,300	0	0
Delamination/Spall/Patched Area						
9512-A/C Over Membrane	Mod.	12,376 sq.ft	11,821	531	0	24
A/C Over Membrane						
9906-Rutting (AC)		35 sq.ft	0	35	0	0
Rutting (AC)						
9907-Cracking (AC)		520 sq.ft	0	496	0	24
Cracking (AC)						
113-Steel Stringer	Low	2,600 ft	2,080	468	52	0
Steel Stringer	1					
1000-Corrosion		520 ft	0	468	52	0
Corrosion						
9540-Stl Paint Prot Coat	Low	13,195 sq.ft	12,469	0	660	66
Stl Paint Prot Coat	1					
3440-Eff (Stl Protect Coat)		726 sq.ft	0	0	660	66
Eff (Stl Protect Coat)						
120-Steel Truss	Low	1,040 ft	754	156	130	0
Steel Truss	1					
1000-Corrosion		286 ft	0	156	130	0
Corrosion						
9540-Stl Paint Prot Coat	Low	10,920 sq.ft	10,628	156	109	27
Stl Paint Prot Coat	1					
3440-Eff (Stl Protect Coat)		292 sq.ft	0	156	109	27
Eff (Stl Protect Coat)						
152-Steel Floor Beam	Mod.	676 ft	294	270	58	54
Steel Floor Beam	1					
1000-Corrosion		382 ft	0	270	58	54
Corrosion						
9540-Stl Paint Prot Coat	Mod.	5,881 sq.ft	5,185	0	588	108
Stl Paint Prot Coat	1					
3440-Eff (Stl Protect Coat)		696 sq.ft	0	0	588	108
Eff (Stl Protect Coat)						

Structure SI&A
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2S RED CLOUD

162-Stl Gus Plate	Mod.	116 each		27		35		44		10
Stl Gus Plate	1									
1000-Corrosion		89 each		0		35		44		10
Corrosion										
205-Re Conc Column	Low	8 each		0		8		0		0
Re Conc Column	1									
1130-Cracking (RC and Other)		8 each		0		8		0		0
Cracking (RC and Other)										
234-Re Conc Pier Cap	Low	136 ft		57		22		57		0
Re Conc Pier Cap	1									
1090-Exposed Rebar		34 ft		0		11		23		0
Exposed Rebar										
1130-Cracking (RC and Other)		45 ft		0		11		34		0
Cracking (RC and Other)										
303-Assem Jnt With Seal	Mod.	52 ft		52		0		0		0
Assem Jnt With Seal	1									
331-Re Conc Bridge Railing	Mod.	1,040 ft		485		520		35		0
Re Conc Bridge Railing	1									
1090-Exposed Rebar		27 ft		0		0		27		0
Exposed Rebar										
1130-Cracking (RC and Other)		520 ft		0		520		0		0
Cracking (RC and Other)										
7000-Damage		8 ft		0		0		8		0
Damage										
9152-X-Frame	Low	418 ft		409		9		0		0
X-Frame	1									
1000-Corrosion		9 ft		0		9		0		0
Corrosion										
1000-Corrosion		6 each		0		6		0		0
Corrosion										
9338-Mtl Trans Rail	Ben.	100 ft		100		0		0		0
Mtl Trans Rail										

Approach Section Steel Stringer/Girder

12-Re Concrete Deck	Mod.	3,153 sq.ft		0		3,149		4		0
Re Concrete Deck	1									
1080-Delamination/Spall/Patched Area		2,899 sq.ft		0		2,899		0		0
Delamination/Spall/Patched Area										
1090-Exposed Rebar		4 sq.ft		0		0		4		0
Exposed Rebar										
1120-Efflorescence/Rust Staining		250 sq.ft		0		250		0		0
Efflorescence/Rust Staining										
9512-A/C Over Membrane	Mod.	2,856 sq.ft		2,856		0		0		0
A/C Over Membrane										
9515-Other Overlays	Mod.	2,856 sq.ft		2,856		0		0		0
Other Overlays										
107-Steel Opn Girder/Beam	Low	600 ft		450		50		100		0
Steel Opn Girder/Beam	1									
1000-Corrosion		150 ft		0		50		100		0
Corrosion										
9540-Stl Paint Prot Coat	Low	5,220 sq.ft		4,176		522		261		261
Stl Paint Prot Coat	1									
3440-Eff (Stl Protect Coat)		1,044 sq.ft		0		522		261		261
Eff (Stl Protect Coat)										
215-Re Conc Abutment	Low	102 ft		89		13		0		0
Re Conc Abutment	1									

Structure SI&A
S281 00423
2S RED CLOUD

1130-Cracking (RC and Other)		13 ft	0	13	0	0
Cracking (RC and Other)						
331-Re Conc Bridge Railing	Mod.	240 ft	86	120	4	30
Re Conc Bridge Railing	1					
1080-Delamination/Spall/Patched Area		4 ft	0	0	4	0
Delamination/Spall/Patched Area						
1130-Cracking (RC and Other)		120 ft	0	120	0	0
Cracking (RC and Other)						
7000-Damage		30 ft	0	0	0	30
Damage						
9250-Riprap	Mod.	48 ft	48	0	0	0
Riprap	1					
1000-Corrosion		10 each	0	0	10	0
Corrosion						
1000-Corrosion		10 each	0	0	10	0
Corrosion						
9333-Mtl Appr Rail	Low	419 ft	400	10	5	4
Mtl Appr Rail	1					
7000-Damage		19 ft	0	10	5	4
Damage						
9338-Mtl Trans Rail	Sev.	100 ft	100	0	0	0
Mtl Trans Rail						
9343-Fix Barrier Term	Mod.	120 ft	120	0	0	0
Fix Barrier Term	1					

Structural Appraisal:

Approach Alignment (072)	8 Equal Desirable Crit	Structural Evaluation (067)	Computed Values	5 Above Min Tolerable
Bridge Railings (036A)	0 Substandard	Deck Geometry (068)		2 Intolerable - Replace
Transitions (036B)	1 Meets Standards	Under Clearance (069)		N Not applicable (NBI)
Approach Guardrail (036C)	1 Meets Standards			
Approach Guardrail Ends (036D)	1 Meets Standards	SD/FO Status		Func Obsolete (2)
Pier Protection (111)	1 Not Required	Sufficiency Rating (SRB)		46.3

Minimum Vertical Clearances:

Minimum Lateral Clearances:

Over Structure (053)	13.91 ft	Reference Feature (055A)	N Feature not hwy or RR
Under (Reference) (054A)	N Feature not hwy or RR	Right Side (055B)	0 ft
Under Clearance (054B)	0 ft	Left Side (056)	0 ft

Navigation Data:

Navigation Control Exists (038)	Permit Not Required	Navigation Horizontal Clearances (040)	0 ft
Navigation Vertical Clearances (039)	0 ft	Minimum Vertical Lift Clearances (116)	0 ft

Structure SI&A
S281 00423
2S RED CLOUD

Waterway Adequacy:

Waterway (071)	8 Equal Desirable	Is There a Scour Problem (358)	N No Scour Problem
Channel (061)	6 Bank Slumping	Scour Plan of Action Effective Date (358C)	01/01/1900
Crossing a Canal (345)	N No Canal	Scour Critical (113)	5 Stable w/in footing
Stream Bed Degradation (346)	N No Degradation	Alignment With Flow (355)	8 - 5 degrees°
Noticeable Contraction of Stream (347)	N No Bridge Constriction	Potential Debris Upstream (353)	Y Debris Upstream
Stream Shifted from Center (350)	N Channel Centered	Embankment Erosion (326)	8 Minor Erosion

Bridge Waterway Adequacy Evaluation:

Drop from Upstream Deck to Flowline (357)	21 ft	Drop from Upstream Deck to Ground Abutment 1 (357A)	5 ft
		Drop from Upstream Deck to Ground Abutment 2 (357B)	6 ft

Inventory - Structure Identification, Location and Administrative Designations:

NBI Structure No (008)	S281 00423	Type of Service on (042A)	1 Highway
Name	None	Under (042B)	5 Waterway
FIPS State (001A)	31 Nebraska	Lanes Under (028B)	N/A
FHWA Regn (001B)	Region 7-Kansas City	Administration Area	902 - Not Applicable
Nebraska County ID (003B)	91 Webster	On System	On System
City/Town/Placecode (004)	Unknown	Bridge Group	Speece Lewis
Nebraska City Code (004B)	0000 N/A	NBIS Bridge Length (112)	Long Enough
Historic Significance (037)	1 Br on Natl Reg Hist Pl	Parallel Structure (101)	No bridge exists
First Class City (213)	No	Temporary Structure (103)	Not Applicable

Border Bridge Designations:

Border State (098AA)	Not Applicable (P)	Border FHWA Region (098AB)	Unknown
Share(%) (098B)	N/A	Border Struct No (099)	N/A
First County Border Bridge (200A)	N N/A	Second County Border Bridge (200C)	N N/A
First County Border Bridge Percent (200B)	N/A	Second County Border Bridge Percent (200D)	N/A
First City Border Bridge (200E)	0000 N/A	Second City Border Bridge (200G)	0000 N/A
First City Border Bridge Percent (200F)	N/A	Second City Border Bridge Percent (200H)	N/A

Inventory - Design:

Deck:

Deck Structure Type (107)		1 Concrete-Cast-in-Place	Number of Main Spans (045)	3
Deck Surface Type (108A)		6 Bituminous	Main Spans Material (043A)	4 Steel Continuous
Deck Membrane Type (108B)		2 Preformed Fabric	Main Spans Design (043B)	10 Truss-Thru
Deck Protection (108C)		0 None	Number of Approach Spans (046)	2
Curb Sidewalk width/Left (050A)		1.1 ft	Approach Span Material (044A)	3 Steel
Curb Sidewalk width/Right (050B)		1.1 ft	Approach Span Design (044B)	02 Stringer/Girder
Deck Width (out-to-out) (052)		25.9 ft	Skew (034)	0°
Bridge Median (033)		0 No median	Structure Flared (035)	0 No flare
Deck Area		16679.6 sq.ft	Pier Column Geometry	0 Pierwall

Spans Data:

Structure Status:

Bridge Status	3 Active
Bridge Sequence Number	0 Orig Brdg In the Field

Structure Length:

Maximum Span (048)	200.00 ft
Structure Length (049)	644.00 ft

Underwater Inspection Inventory

Max Submerged Depth at Low Flow/UW Insp (366)	-
Type of Submerged Substructure (367)	N/A
Number of Submerged Substructure (368)	-
Type of Abutment Foundation (369)	N/A
Type of Pier Foundation (370)	N/A

Inventory - Roadway:

1 Route On Structure

Identification:

Highway Networks & Service Classifications:

Road/Route name	0	Kilometer/Mile Point (011)	4.23 mi
Kind Hwy(Rt prefix) (005B)	2 U.S. Numbered Hwy	National Base Net (012)	On Base Network
Desig. Level Service (005C)	1 Mainline	LRS Inventory Rte (013A)	0000000281 Sub# (013B) 00
Rte# (005D)	00281	Toll Facility (020)	3 On free road
Suffix (005E)	0 N/A (NBI)	Functional Class (026)	06 Rural Minor Arterial
Critical Facility (006B)		Traffic Direction (102)	2 2-way traffic

Traffic:

Lanes (028A)	2	Defense Highway (100)	0 Not a STRAHNET hwy
Medians	0	Nat. Hwy System (104)	0 Not on NHS
Speed		Fed. Lands Hwy (105)	0 N/A (NBI)
ADT Class	ADT Class 3	Nat. Truck Network (110)	1 Part of natl network
Recent ADT (029)	950	School Bus Route	0 Not On School Bus Rte
Year (030)	2018	Transit Route	0 Not On Transit Rte
Truck % (109)	12	Emergency Route	0 Not On Emergency Rte
Future ADT (114)	1235	NBI Route	1 On NBI Rte
Fut. Year (115)	2038	Federal Aid Route Number (206)	0281
		Highway Route Number (207)	281
		State Classification of Inventory Route (208)	4 Major Art/Intermediate
		Priority Commercial System Bridges (211)	N Off Priority Comm Sys

Alternate Classifications:

Clearances:

Vertical (010)	13.91 ft	Detour Length (019)	18 mi
Horizontal (047)	23.8 ft	Speed	

Detours:

Widths:

Approach Road (032)	22 ft	Count	
Roadway crb-crb (051)	23.8 ft	Rate	

Accidents:

Load Rating:

Load Rating Engineer

Load Rating Program 14 BrR

Load Rating Date 01/31/2017

Load Rating Review Recommended No Rate Review Req

Posting Status:

Open/Posted/Closed (041)	P Posted for load	Operating Type (063)	1 LF Load Factor
Posting (070)	4 0.1-9.9%below	Operating Rating (064)	33 ton
Design Load (031)	2 M 13.5 (H 15)	Inventory type (065)	1 LF Load Factor

Design Load:

Fatigue Truck:

Alternate Inventory Rating Type	N/A	Fatigue Load Truck	N/A
Alternate Inventory Rating		Alternate Operating Rating	

Legal Loads & Posting:

	Rating Factor	Tons	Posting Value	Posted Sign Value
Type 3	1.31 rf	32 ton	33 ton	33 ton
Type 3S2	1.06 rf	39 ton		
Type 3-3	1.01 rf	43 ton		

Special Haul & Emergency Vehicles :

	Rating Factor	Tons		Rating Factor	Tons
Special Haul Vehicle 4 Axle	1.20 rf	32 ton	Type EV2		
Special Haul Vehicle 5 Axle	1.06 rf	33 ton	Type EV3		
Special Haul Vehicle 6 Axle	0.98 rf	33 ton			
Special Haul Vehicle 7 Axle	0.90 rf	35 ton			

Inspection Summary:

Assessment Key/Date **07/08/2024**

Primary Type **Fracture critical**

Inspector **Gregory Green (GG0960EL)**

Under Bridge Inspection Equipment Type **Y UBIT Req**

<u>Schedule:</u>	Insp Req	Insp Performed	Previous Inspection Date	Frequency (Months)	Next Inspection Date	Inspection Cycle & Type
NBI (090)	✓	✓	07/08/2024	(091) 24	07/08/2026	Jul Even 24m
Element Condition	✓	✓	07/08/2024	24	07/08/2026	
Fracture Critical (092AA)	✓	✓	(093A) 07/08/2024	(092AB) 24	07/08/2026	12112
Underwater (092BA)			(093B)	(092BB)		
Other Special (092CA)			(093C)	(092BC)		

Inspection Resources:

Crew Hours	13.00	Assistant Inspector 1	AP5723
Helper Hours	0.00	Assistant Inspector 2	
Flagger Hours	15.00	Assistant Inspector 3	
Under Bridge Inspection Equipment Hours	11.00	Assistant Inspector 4	
Special Equipment Crew Hours	0.00		
Special Equipment Hours	0.00		

KBLC

General Bridge Notes:

S281 00423 is located 2.0 miles South of Red Cloud in Webster County on US281 over the Republican River. It runs south to north with Abutment No. 1 on the south end.

This bridge is a 520' x 23.8' three-span continuous thru-truss structure with two 60' multi-girder steel approach spans. Trusses have overhead cross bracing over Piers No. 2 and 3.

The deck is reinforced cast-in-place concrete with a 2" asphalt overlay with membrane. A concrete barrier curb with steel railing forms the bridge railing. The expansion joints over Piers No. 1 and No. 4 are of sliding plate type.

Top and bottom chords are built-up double channels with batten plates and lacing. All verticals, diagonals and floorbeams are rolled shapes. All members are connected together with riveted gusset plates or riveted angles. Five longitudinal steel I-beam stringers support the deck between the steel I-beam floorbeams. The stringers are framed into the web of the floorbeams. Five longitudinal steel I-beams support the deck in approach Spans 1 & 5. The top flange of all stringers and floorbeams are laterally braced by partial embedment into the concrete deck. The approach and truss spans are supported on bearings. Member L2U3 controls the load rating and the rating assumptions still apply.

Both abutments and all four piers are reinforced cast-in-place concrete on steel H pilings. Abutments have concrete backwalls.

General Inspection Notes:

07/08/2024 Item 41 updated to P for correct posting sign photos received 12/3/24 EB

Deck:

(D1) Significant amount of full depth concrete deck repair. (D2) Deck edges remain spalled, mostly near the drains and some spalls forming in patches. (D3) Deck has some cracking with efflorescence on underside. Asphaltic plugs at P1 & P4 are pliable in summer temperatures. Approach spans received armor coating in 2020. (D4) Missing drain extension at FB18 RT, FB8 LT & RT.

Superstructure:

(S1) Pack rust and corrosion continues to increase at connections below the bridge deck with a few areas of 20% section loss at FB lower flanges & 3/8" pack rust in areas. (S2) Impact damage to upper portal members with some cracks occurring at lateral bracing connection angles and 8" out of plumb at U9. (S3) South approach span exterior girders have heavy surface rust at the interior web face. (S4) Tack welds connect fill plates to truss members. (S5) Floorbeams have 2 open holes in the lower web at the ends, no cracks found. (S6) Floorbeams have copes at upper web ends, no cracks but a few overcuts (FB1 LT, FB4 RT, FB21 RT). (S7) Open holes at L20 LT. (S8) Stiffeners on the web and a plate at each end are welded to FBs over pier. (S9) P3 bearing nut not fully threaded. (S10) Corroded holes at FB5 & FB9 LT gusset plates. (S11) Bend L0L1 RT at L0. (S12) Monitor open hole at FB4 RT. (S13) Bend L6L7 RT near L6. (S14) Broken welds U7 and L7 LT. (S15) Notch on L23L24 LT. Bullet damage in (S16) U19L20 LT, (S17) FB20 near LT, and (S18) U16L16 LT. (S19) Corrosion at all rail to truss connections. (S20) S3 L12 Rt. flame cut. No cracks were found. (S21) Top portal collision damage has cracks joints PP9 LT, PP7 RT, and PP19 RT. Truss bearings are in good condition with only minor corrosion. (S22) Members remain mostly painted, except at the lower chord below the deck which has areas of moderate paint failure. (S23) The girder bearings at approach spans have heavy corrosion and may not be capable of longitudinal movements. (S24) Sporadic section loss and pack rust at low chord splices and lower gusset to floor beam connections. (S25) Isolated section loss of low chord at multiple batten plates. (S26) Members remain mostly painted, except at the lower chord below the deck which has areas of moderate to heavy paint

failure. (S27) 1/8" loss at the bottom flange of FB/gusset connection average. (S28) 1/8" loss at the gusset plate/lower chord connection on gusset (both vertical and horizontal). (S29) L5RT hole in gusset on both sides of FB bottom flange.
Substructure:
(B1) Pier caps have cracking and spalls, with a spall at an anchor bolt of P2 and exposed rebar on P1 & P4. (B2) Abutments have some horizontal and vertical cracking with minor rust staining. (B3) Spall, cracking at NW corner. No pilling visible for inspection.
Channel and Channel Protection:
The channel banks are stable and well vegetated. Broken concrete now protects both abutments.

Element Condition Notes:

1 Steel Continuous Truss-Thru

12 Re Concrete Deck

3 Mod.

07/08/2024

113 Steel Stringer

2 Low

07/08/2024

120 Steel Truss

2 Low

07/08/2024

The superstructure members remain mostly painted, except at the lower chord below the deck which has areas of moderate paint failure. Debris, pack rust and corrosion continue to increase at the truss connections below the bridge deck, but no major section loss to note. There is impact damage to the upper portal members with some cracks occurring at lateral bracing connection angles. Tac welds connect fill plates to truss members, and floor beams have open holes in the lower web at the ends, though no cracks have been found.

152 Steel Floor Beam

3 Mod.

07/08/2024

Corrosion typical under deck joints

162 Stl Gus Plate

3 Mod.

07/08/2024

Typical lower gusset plates have paint failure and surface corrosion with minor pack rust between the gusset plates and the truss members.

205 Re Conc Column

2 Low

07/08/2024

minor hairline cracking

234 Re Conc Pier Cap

2 Low

07/08/2024

Shallow spalling and delamination along caps. P2 spall at west anchor bolt.

303 Assem Jnt With Seal

3 Mod.

07/08/2024

Asphaltic plug installed above joints during recent deck repair.

331 Re Conc Bridge Railing

3 Mod.

07/08/2024

1000 Corrosion

2 Low

07/08/2024

Debris, pack rust and corrosion continue to increase at the truss connections below the bridge deck, but no major section loss to note.

07/08/2024

07/08/2024

1000 Corrosion

3 Mod.

07/08/2024

Mostly contained to connections below the bridge deck.

07/08/2024

1080 Delamination/Spall/Patched Area

3 Mod.

07/08/2024

Full depth patched area.

1090 Exposed Rebar

2 Low

07/08/2024

1090 Exposed Rebar

3 Mod.

07/08/2024

1130 Cracking (RC and Other)

2 Low

07/08/2024

07/08/2024

1130 Cracking (RC and Other)

3 Mod.

07/08/2024

3440 Eff (Stl Protect Coat)

2 Low

07/08/2024

07/08/2024

3440 Eff (Stl Protect Coat)

3 Mod.

07/08/2024

7000 Damage

3 Mod.

07/08/2024

9152 X-Frame

2 Low

07/08/2024		
9303 Fix Pinned Bearing	2 Low	
07/08/2024		
9311 Rocker W/Pin Bearing	2 Low	
07/08/2024		
9338 Mtl Trans Rail	1 Ben.	
07/08/2024		
9512 A/C Over Membrane	3 Mod.	
07/08/2024		
9540 Stl Paint Prot Coat	2 Low	
07/08/2024	Moderate paint failure near the joints	
07/08/2024		
9540 Stl Paint Prot Coat	3 Mod.	
07/08/2024		
9906 Rutting (AC)	3 Mod.	
07/08/2024		
9907 Cracking (AC)	3 Mod.	
07/08/2024		
	<u>2 Steel Stringer/Girder</u>	
12 Re Concrete Deck	3 Mod.	
07/08/2024		
107 Steel Opn Girder/Beam	2 Low	
07/08/2024	The exterior steel girders, at the south approach span, have heavy surface rust at the interior web face	
215 Re Conc Abutment	2 Low	
07/08/2024		
331 Re Conc Bridge Railing	3 Mod.	
07/08/2024	30' missing steel rail Span 1	
1000 Corrosion	2 Low	
07/08/2024	Exterior girders in Span No. 1	
07/08/2024		
1000 Corrosion	3 Mod.	
07/08/2024		
1080 Delamination/Spall/Patched Area	3 Mod.	
07/08/2024	Full depth patched area.	
07/08/2024		
1090 Exposed Rebar	3 Mod.	
07/08/2024		
1120 Efflorescence/Rust Staining	3 Mod.	
07/08/2024		
1130 Cracking (RC and Other)	2 Low	
07/08/2024		
1130 Cracking (RC and Other)	3 Mod.	
07/08/2024		
3440 Eff (Stl Protect Coat)	2 Low	
07/08/2024		
7000 Damage	2 Low	
07/08/2024		
7000 Damage	3 Mod.	
07/08/2024		
9250 Riprap	3 Mod.	
07/08/2024	Broken concrete at abutments.	
9304 Fix Plate Bearing	2 Low	
07/08/2024		
9312 Roller Bearing	3 Mod.	
07/08/2024		
9333 Mtl Appr Rail	2 Low	
07/08/2024	New approach guardrail installed at all four corners.	
9338 Mtl Trans Rail	4 Sev.	
07/08/2024		

9343 Flx Barrier Term	3 Mod.
07/08/2024	New terminal section at each corner.
9512 A/C Over Membrane	3 Mod.
07/08/2024	
9515 Other Overlays	3 Mod.
07/08/2024	Approach spans received armor coating in 2020.
9540 Stl Paint Prot Coat	2 Low
07/08/2024	

Latitude: 40° 03' 46.08" [40.0628]

Longitude: 098° 31' 08.40" [98.519]