CONTRACT DRAWINGS FOR

ARBOR LINE BRIDGE 24.35

PROJECT NO.
10427165

SYRACUSE, NE
NOVEMBER, 2025

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24.35-S08	CAST-IN-PLACE CONCRETE CAP DETAILS (SHEET 1 OF 2)
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HDR Engineering, Inc.

Issue No.	Description	Date	Drwn.	Chkd.	Resp. Engr.	Proj. Mgr.
0	ISSUED FOR BID	-	-	-	-	-
-	-	-	-	-	-	-

NOT FOR CONSTRUCTION

Project Manager: B. Winkelbauer	
Architect: N/A	I&C/Process: N/A
Civil: N/A	Mechanical: N/A
Electrical: N/A	Structural: BJW
Railroad: N/A	Drawn By: DJK

Omaha Public Power District

ARBOR RAIL LINE

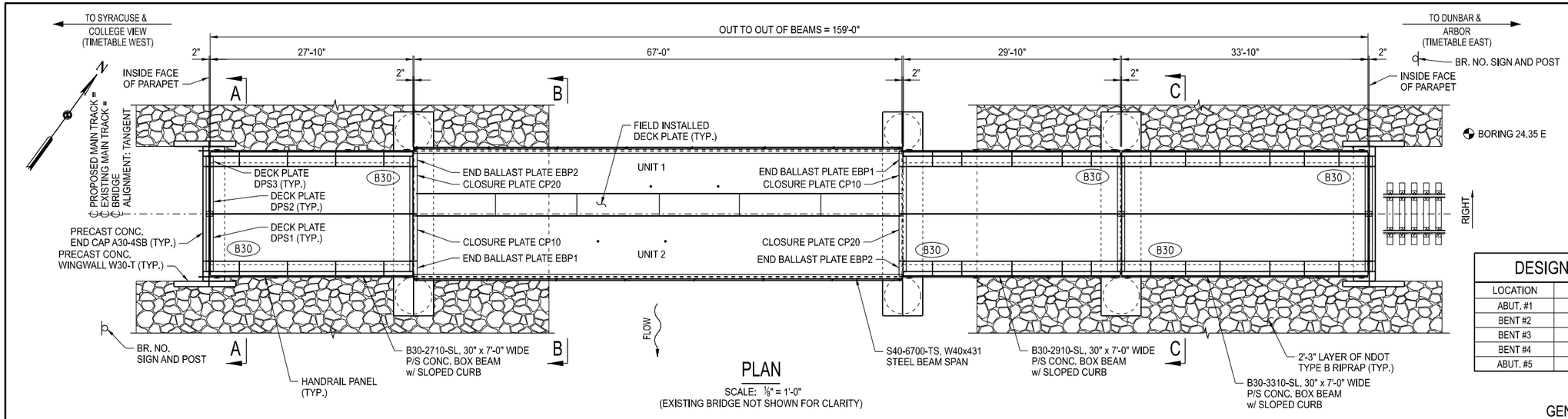
2 SPAN 30" PCB x 64' (SEG. A), 1 SPAN BM-BD x 67' (SEG. B), 1 SPAN 30" PCB x 28' (SEG. C) BRIDGE REPLACING 5 SPAN TST-OD, 1 SPAN TPG-OD, 3 SPAN TST-OD x 166'

BRIDGE 24.35
COVER SHEET

Date	Project NO.	Drawing No.	Issue
11/14/2025	10427165	24.35-G00	0
Scale: AS NOTED	File Name: G00.DGN		

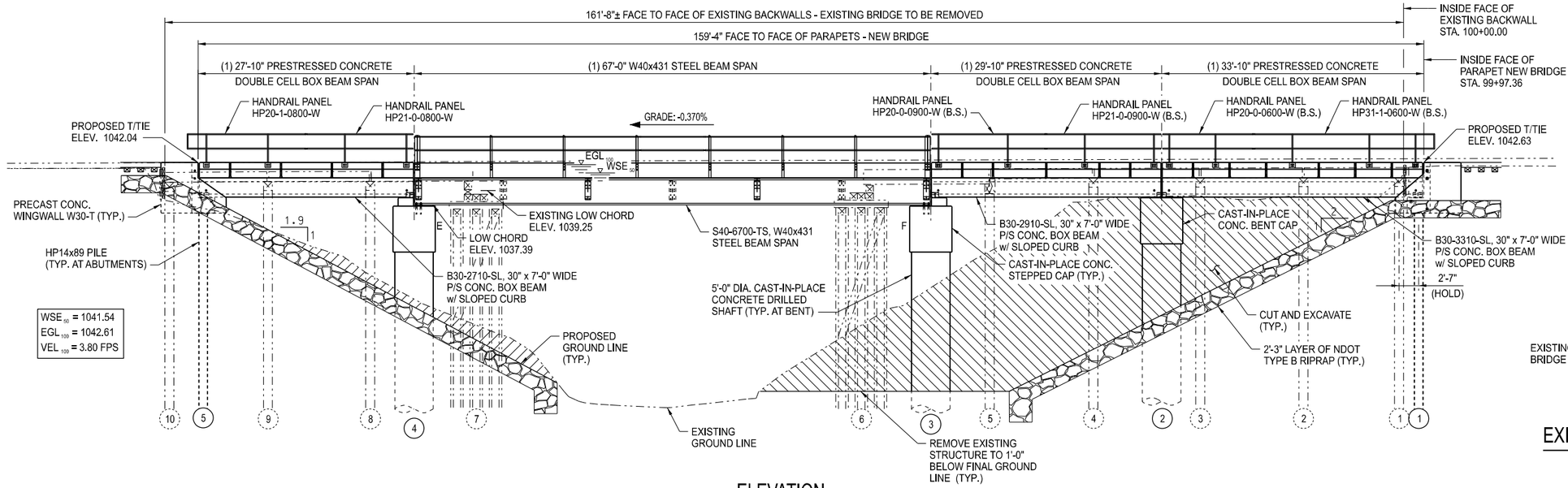
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Date Printed: 11/14/2025 Time Printed: 10:19:15 AM



PLAN

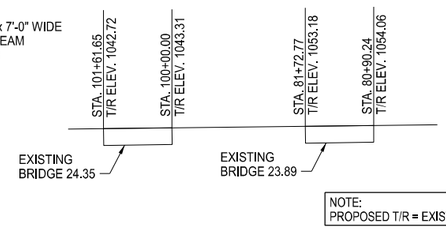
SCALE: 1/8" = 1'-0"
(EXISTING BRIDGE NOT SHOWN FOR CLARITY)



ELEVATION

SCALE: 1/8" = 1'-0"
(EXISTING STEEL MAIN SPAN NOT SHOWN FOR CLARITY)

NOTE:
B.S. = BOTH SIDES



NOTE:
PROPOSED T/R = EXISTING T/R

EXISTING MAIN TRACK TOP OF RAIL PROFILE

DESIGN TABLE OF ELEVATIONS BRIDGE 24.35

LOCATION	TOP/TIE	TOP/CAP	PILE CUTOFF	T/TIE TO PILE CUTOFF
ABUT. #1	1042.63	1038.82	1036.82	5'-9 3/4"
BENT #2	1042.51	1038.70	1032.70	9'-9 3/4"
BENT #3	1042.39	1038.58/1037.49	1031.48	10'-10 7/8"
BENT #4	1042.14	1038.33/1037.24	1031.23	10'-10 7/8"
ABUT. #5	1042.04	1038.23	1036.23	5'-9 3/4"

GENERAL NOTES:

1. NEW CONSTRUCTION SHOWN IN HEAVY LINES. EXISTING STRUCTURE TO BE REMOVED SHOWN IN LIGHT DASHED LINES.

PILE NOTES:

1. ABUTMENT PILES SHALL BE DRIVEN TO A MINIMUM DESIGN BEARING SERVICE CAPACITY OF 110 TONS.
2. SYMBOL X:12 DENOTES DIRECTION AND AMOUNT OF PILE BATTER.

(X) DENOTES PROPOSED BENT/PIER #
(X) DENOTES EXISTING BENT/PIER #

TABLE OF EST. LIFTING WEIGHTS BRIDGE 24.35

ITEM	MARK NO.	ESTIMATED WEIGHT (LB.)
W40x431 STEEL BEAM SPAN, UNIT 2	S40-6700-TS, UNIT 2	109,740
W40x431 STEEL BEAM SPAN, UNIT 1	S40-6700-TS, UNIT 1	76,360
30" P/S CONC. BOX BEAM	B30-3310-SL	56,840
30" P/S CONC. BOX BEAM	B30-2910-SL	50,120
30" P/S CONC. BOX BEAM	B30-2710-SL	46,760
PRECAST CONC. END CAP	A30-4SB	25,910
PRECAST CONC. WINGWALL	W30-T	5,120

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0	ISSUED FOR BID	-	-	-	-	-
-	-	-	-	-	-	-

NOT FOR CONSTRUCTION

Project Manager: B. Winkelbauer	
Arch/Tract: N/A	I&C/Process: N/A
Civil: N/A	Mechan/Coal: N/A
Electrical: N/A	Structural: BJW
Railroad: N/A	Drawn By: DJK

HDR Engineering, Inc.

Omaha Public Power District

ARBOR RAIL LINE

2 SPAN 30" PCB x 64' (SEG. A), 1 SPAN BM-BD x 67' (SEG. B), 1 SPAN 30" PCB x 28' (SEG. C) BRIDGE REPLACING 5 SPAN TST-OD, 1 SPAN TPG-OD, 3 SPAN TST-DD x 166'

BRIDGE 24.35
GENERAL ARRANGEMENT

Date	Project NO.	Drawing No.	Issue
11/14/2025	10427165	24.35-S01	0
Scale: AS NOTED	File Name: S01.DGN		

File Location: pw:pwpublic.ocom1:Projects:10427165_US_Corrid_1\Documents\Omaha_Public_Power_District\OPPD_Br_24.35_Replacement\60_CAD_BIM\62_WP\OPPD_Br_A35

Date Printed: 11/14/2025 Time Printed: 10:19:15 AM

GENERAL NOTES:

ALL MATERIAL AND WORKMANSHIP SHALL BE PER THE PROJECT SPECIFICATIONS.

1. DESIGN LOADING: COOPER E80 LIVE LOAD WITH DIESEL IMPACT.

2. STRUCTURE WAS DESIGNED FOR A 30" MAXIMUM TOTAL DEPTH OF BALLAST.

3. BRIDGE STATIONING AND ELEVATIONS BASED ON LAMP RYNEARSON SITUATION SURVEY DATED MAY 28, 2025.

   TEMPORARY BM: ASSUMED ELEV. 1038.49
   STATION 103+66.16, 15.68' LEFT
   STAKED CONTROL POINT

   RAIL ELEVATIONS ARE BASED ON NAVD 88.

   RAIL STATIONING IS BASED ON THE STATIONING OF THE WEST FACE OF THE EXISTING EAST BACKWALL STA. 100+00.00 AT CENTERLINE OF TRACK.

4. ALIGNMENT: TANGENT TRACK.

   PROFILE: SEE EXISTING TOP OF RAIL PROFILE, NO CHANGE IN ELEVATION.

5. THESE DRAWINGS WERE PREPARED USING 8" BALLAST DEPTH UNDER TIMBER TIES.

MATERIAL:

1. PRESTRESSED CONCRETE: PER SPECIFICATIONS.

2. PRECAST CONCRETE: PER SPECIFICATIONS.

3. CAST-IN-PLACE CONCRETE: PER SPECIFICATIONS AND NOTES, THIS SHEET.

4. STEEL COMPONENTS:

HP PILES	ASTM A572 GR. 50
PILE SPLICES	ASTM A572 GR. 50
HANDRAIL PIPES	ASTM A53 GR. B
EMBED AND MISCELLANEOUS STEEL	A36 OR A709 GR. 36
SHEAR STUDS	ASTM A108; C1015, C1017 OR C1020
A307 HVY. HEX BOLTS	ASTM A307 GR. A, HOT DIP OR MECHANICALLY ZINC COATED
HVY. HEX ELASTIC LOCKNUTS	MIL-DTL-32258
FLAT CIRCULAR WASHERS	ASTM F436, HOT DIP OR MECHANICALLY ZINC COATED

WELDING:

1. FIELD WELDING SHALL BE ACCOMPLISHED WITH THE SMAW OR FCAW PROCESS.

2. WELDING SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS SPECIFIED IN AWS D1.5, EXCEPT $^{5}/_{16}$" FILLET WELDS MAY BE MADE WITH A SINGLE PASS.

3. WELDING ELECTRODES SHALL BE E7018 FOR SMAW OR E71T-8 FOR FCAW.

4. WELDERS SHALL POSSESS VALID QUALIFICATIONS. WELDERS SHALL SUBMIT A PROCEDURE QUALIFICATION REPORT (PQR) AND WELD PROCEDURE SPECIFICATION (WPS) FOR EACH WELD TYPE TO BE PERFORMED. WELDERS SHALL SUBMIT DOCUMENTATION VERIFYING THAT THEY HAVE PERFORMED THE SPECIFIC WELD(S) WITHIN THE PRIOR SIX MONTHS.

PILING:

1. PILES SHALL MEET MATERIAL REQUIREMENTS OF AND SHALL BE DRIVEN IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

2. WHERE EXISTING PILE CONFLICT WITH NEW PILE LOCATIONS, THE EXISTING PILE SHALL BE EXTRACTED PRIOR TO PLACEMENT OF THE NEW PILE.

BEARING PAD INSTALLATION ON PRECAST CAPS:

1. THE BEARING PADS SHALL BE SECURELY FASTENED TO CAPS PRIOR TO CAPS BEING SET. THE FOLLOWING PROCEDURE SHALL BE FOLLOWED: CLEAN PADS AND CONCRETE SURFACE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS; PRIME CONTACT SURFACE AND GLUE TO CAP WITH PL400 CONSTRUCTION ADHESIVE OR APPROVED EQUAL.

PLACING PRECAST CAPS ON STEEL PILES:

1. PRECAST CAPS SHALL BE PLACED IN THE PROPER LOCATION AND THE PILES SHALL BE WELDED TO THE PILE PLATES. CHANNEL BRACING SHALL THEN BE WELDED TO THE PILES. ARC WELDING SHALL BE AS PER THE CURRENT AWS BRIDGE WELDING CODE D1.5.

BOLTING WING WALLS TO END BENTS:

1. MORTAR, CONSISTING OF EQUAL PARTS BY VOLUME OF CLASS B EPOXY AND DRY SILICA SAND, MIXED IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS, SHALL BE SPREAD ON ENDS OF PRECAST CAPS TO A THICKNESS OF APPROXIMATELY ⅛ INCH AND THEN THE WING WALLS SHALL BE PLACED AND HELD IN THE PROPER LOCATION. FILL VOID AROUND BOLTS WITH GROUT AS SPECIFIED BELOW. INSTALL 4-1¼" DIA. x 13" COIL BOLT, DAYTON SUPERIOR B-14 OR EQ., WITH 4-WASHER W100. TIGHTEN BOLTS.

2. GROUT SHALL CONSIST OF ONE PART TYPE III PORTLAND CEMENT TO THREE PARTS OF FINE AGGREGATE, BY WEIGHT, MIXED WITH A GAGING SOLUTION MADE OF ONE PART SIKA SET TO FIVE PARTS OF WATER BY VOLUME. THE FOLLOWING MIX PROPORTIONS WILL YIELD ONE CUBIC FOOT OF GROUT: CEMENT - 35 LBS., FINE AGGREGATE - 105 LBS., WATER - 1.25 GALS. AND SIKA SET - 1 QT. AT A TEMPERATURE ABOVE 50 F., THE INITIAL SET OF THE GROUT WILL TAKE PLACE IN THREE HOURS AND DESIGN STRENGTH WILL BE OBTAINED IN 24 HOURS.

ERECTION OF CONCRETE BEAMS:

1. BEAMS SHALL BE SET IN THE PROPER LOCATION USING CARE NOT TO DAMAGE CONCRETE OR STEEL MEMBERS. AFTER CONCRETE BEAMS ARE SET, BURN OFF LIFTING LOOPS TWO (2) INCHES ABOVE CONCRETE SURFACE. REMAINING PORTION OF LIFTING LOOPS ARE TO BE COATED WITH PATCH RECESSES, IF NECESSARY, AROUND LIFTING LOOPS WITH EPOXY MORTAR AS USED FOR SETTING BEAMS

MORTAR FOR SETTING CONCRETE BEAMS:

1. BEAMS SHALL HAVE FULL AND EVEN BEARING UPON THE BRIDGE SEAT AREAS. IF NEEDED, MORTAR CONSISTING OF EQUAL PARTS BY VOLUME OF CLASS B EPOXY AND DRY SILICA SAND, MIXED IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS, SHALL BE SPREAD ON TOP OF BEARING PADS TO OBTAIN UNIFORM BEARING. SCRAPE EXCESS MORTAR FROM AROUND BEARING PADS AFTER BEAMS ARE SET.

DECK PLATES:

1. THE DECK PLATES SHALL BE ADJUSTED AS NECESSARY TO ENSURE THE PLATES FIT TIGHT AGAINST THE BEAMS AND CURBS.

HANDRAIL:

1. HANDRAIL ASSEMBLIES SHALL BE ERECTED PLUMB AND IN LINE.

PATCHING:

1. PATCHING OR REPAIR OF SPALLED OR CHIPPED PRECAST CONCRETE MEMBERS SHALL BE DONE USING SIKAREPAIR 223, OR APPROVED ALTERNATE, MIXED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

TRACK SPECIFICATIONS:

1. ALL TRACKWORK SHALL BE COMPLETED PER UNION PACIFIC (UP) SPECIFICATIONS AND STANDARD PLANS. THE FOLLOWING DOCUMENTS SHALL BE FOLLOWED:

   A. UNION PACIFIC GENERAL CONDITIONS AND SPECIFICATIONS.
   B. UNION PACIFIC STANDARD DRAWINGS.
   C. OPPD MAINTENANCE OF WAY (MOW) GUIDELINES - ARBOR LINE.
   D. OPPD FLASH BUTT WELDING STANDARD.
   E. TRANSPORTATION (NDOT) STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
      THE UNION PACIFIC DOCUMENTS CAN BE FOUND AT:
      https://www.up.com/emp/engineering/apps/archives/standards/public/index.cfm

TRACK SCOPE:

1. FOR A MINIMUM OF 40 FEET BEYOND THE BACK OF THE PROPOSED BACKWALLS ON EACH END, PERFORM THE FOLLOWING:

   A. REMOVE AND DISPOSE OF ALL RAIL, TIES, BALLAST AND OTHER TRACK MATERIAL.
   B. PROOF ROLL AND COMPACT EXISTING SUBGRADE PER UP GENERAL CONDITIONS AND SPECIFICATIONS.
   C. FURNISH, PLACE AND COMPACT A 8" THICK LAYER OF SUBBALLAST.
   D. FURNISH AND PLACE GEOTEXTILE FABRIC PER UP STANDARD DRAWING 0090.
   E. FURNISH, PLACE AND COMPACT AN 8" THICK GEOWEB AND BALLAST OVERFILL PER UP STANDARD DRAWING 0090.
   F. FURNISH, PLACE AND COMPACT AN 8" THICK LAYER OF BALLAST.
   G. FURNISH AND INSTALL TRACK PANEL CONSISTING OF 7" x 9" x 8'-6" DOUGLAS FIR OR MIXED HARDWOOD CROSSTIES, AREMA GRADE 5 SPACED 19.5" O.C., 136# ISHH CWR RAIL.
   H. FURNISH AND INSTALL 10-10' WOOD TIES SPACED 19.5" O.C. AT THE APPROACHES TO THE PROPOSED BRIDGE.
   I. FURNISH AND INSTALL RAIL ANCHORS PER UP STANDARD DRAWINGS 0439 AND 0420, AND OPPD MOW GUIDELINES - ARBOR LINE.
   J. FURNISH AND INSTALL 6" RAIL SPIKES PER UP STANDARD DRAWINGS 0416, 0417, AND OPPD MOW GUIDELINES - ARBOR LINE.
   K. FURNISH AND INSTALL 136# TO 115# COMPROMISE TRANSITION RAIL PER UP STANDARD DRAWING 0926A.
   L. ALL WELDS SHALL BE FLASH BUTT WELDS AND SHALL BE A MINIMUM OF 5 FEET BEYOND THE BRIDGE BACKWALL. FLASH BUTT WELDING SHALL FOLLOW THE OPPD FLASH BUTT WELDING STANDARD.
   M. DESTRESS THE LOCATION PER OPPD MOW GUIDELINES AND CWR PROCEDURES.

2. LINE AND SURFACE THE PROPOSED AND EXISTING TRACK FOR THE EXTENTS OF THE PROPOSED MAIN TRACK TOP OF RAIL PROFILE SHOWN ON SHEET 24.35-S01. PROVIDE ADDITIONAL BALLAST AS NEEDED.

WELL-COMPACTED FILL

1. FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 6 INCHES. FILL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DEFINED IN ASTM D1557 (MODIFIED PROCTOR).

GRADING

1. GRADING SHALL BE PERFORMED AS REQUIRED FOR CONSTRUCTION OF THE NEW STRUCTURE. ALL AREAS REMOVED AND/OR DISTURBED IN THE COURSE OF CONSTRUCTION SHALL BE REPLACED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING.

STRUCTURAL STEEL NOTES:

1. MATERIALS, FABRICATION, SHOP ASSEMBLY, AND ERECTION SHALL BE IN ACCORDANCE WITH CHAPTER 15: STEEL STRUCTURES OF THE AREMA MANUAL FOR RAILWAY ENGINEERING (MRE).

2. FABRICATION OF STRUCTURAL STEEL SHALL BE PERFORMED BY A FABRICATOR CERTIFIED UNDER AISC QUALITY CERTIFICATION PROGRAM FOR INTERMEDIATE STEEL BRIDGES (IBR).

3. SUPERSTRUCTURE MATERIAL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

BEAMS	ASTM A709 GR. 50W T2
DECK PLATE	ASTM A709 GR. 50 T2
DRAIN PIPE	ASTM A53, GR. B
HANDRAIL	ASTM A847
COVER PLATES	ASTM A36
ALL OTHER STRUCTURAL STEEL	ASTM A588
HIGH STRENGTH BOLTS	ASTM F3125 GR. A325 TYPE 1
ANCHOR RODS	ASTM F1554 GR. 105
BEARING PADS	NEOPRENE, 70 DUROMETER
PROTECTIVE PADS	ELASTOMERIC BEARING ROLL (60 DUROMETER)

4. DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AREMA MANUAL FOR RAILWAY ENGINEERING.

ASTM A709, GR. 50W AND GR. 50	Fy = 50,000 psi
ASTM A588	Fy = 50,000 psi
ASTM A36	Fy = 36,000 psi

5. ALL SHOP AND FIELD BOLTED CONNECTIONS SHALL USE HIGH STRENGTH BOLTS (INCLUDING NUTS AND WASHERS) CONFORMING TO ASTM F3125 GRADE A325 TYPE 1, EXCEPT AS OTHERWISE NOTED. ALL BOLTS SHALL BE THE DIAMETER INDICATED ON THE DRAWINGS. DIAMETER OF BOLT HOLES SHALL BE $^{1}/_{16}$" LARGER THAN NOMINAL BOLT DIAMETER, UNLESS NOTED OTHERWISE. ALL BOLTS SHALL HAVE ONE HARDENED STEEL WASHER CONFORMING TO ASTM F436 TYPE 1 PER BOLT UNDER THE ELEMENT TO BE TURNED. NUTS SHALL CONFORM TO ASTM A563 GRADE DH.

6. ALL WELDING SHALL BE IN ACCORDANCE WITH THE BRIDGE WELDING CODE, AWS D1.5. WELDING TO BE ALLOWED ONLY AS SHOWN ON THE DRAWINGS AND APPROVED SHOP DRAWINGS.

7. FULLY AUTOMATIC SUBMERGED ARC WELDING SHALL BE REQUIRED FOR THIS PROJECT. MANUAL SHIELDED ARC WELDING OR SEMI-AUTOMATIC SUBMERGED ARC WELDING MAY BE ALLOWED ONLY IF FULLY AUTOMATIC SUBMERGED ARC WELDING IS NOT PRACTICAL. ALTERNATE WELDING METHODS ARE SUBJECT TO APPROVAL BY THE ENGINEER.

8. ALL BEAM TO DECK PLATE SHOP WELDING SHALL BE WITH THE SAW PROCESS.

9. THE FABRICATOR SHALL SUBMIT DETAILED SHOP DRAWINGS TO THE ENGINEER PRIOR TO BEGINNING FABRICATION. FABRICATION SHALL NOT BEGIN UNTIL SHOP DRAWINGS ARE APPROVED BY THE ENGINEER.

10. ALL BEARING SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND VISIBLE AFTER BEARING INSTALLATION.

11. BEARING PADS SHALL BE PLAIN NEOPRENE PADS MEETING THE REQUIREMENTS OF TABLE 15-5-7 OF THE AREMA MRE. BEARING PADS TO BE SHIPPED FLAT.

CAST-IN-PLACE CONCRETE NOTES:

CONCRETE

1. ALL CONCRETE MATERIALS, PLACEMENT AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH CHAPTER 8: CONCRETE STRUCTURES AND FOUNDATIONS OF THE AREMA MANUAL FOR RAILWAY ENGINEERING (MRE).

2. FORMWORK TOLERANCES SHALL BE IN ACCORDANCE WITH ACI 347 SPECIFICATIONS.

3. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 4,000 PSI FOR SUBSTRUCTURE CAPS AND 5,000 PSI FOR DRILLED SHAFTS.

4. EXPOSED SURFACES SHALL BE FORMED IN A MANNER WHICH SHALL PRODUCE A SMOOTH AND UNIFORM APPEARANCE WITHOUT RUBBING OR PLASTERING. EXPOSED EDGES OF 90° OR LESS ARE TO BE CHAMFERED ¾" x ¾". TOP SURFACES TO HAVE A SMOOTH FINISH, FREE OF ALL FLOAT OR TROWEL MARKS.

5. CONCRETE SHALL BE PROPORTIONED SUCH THAT THE WATER - CEMENT RATIO (BY WEIGHT) DOES NOT EXCEED 0.45. CONCRETE SHALL CONTAIN A MINIMUM OF 6½ SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.

6. CEMENT SHALL BE TYPE I, II, OR III PORTLAND CEMENT IN ACCORDANCE WITH ASTM C150 SPECIFICATIONS. THE MAXIMUM TRICALCIUM ALUMINATE CONTENT SHALL BE 8%.

7. FLY ASH, IF USED, SHALL BE LIMITED TO 15% OF CEMENTITIOUS MATERIAL BY WEIGHT.

8. AGGREGATES SHALL BE GRADED IN ACCORDANCE WITH ASTM C33 SPECIFICATIONS. COARSE AGGREGATE SHALL BE SIZE NO. 67. FINE AGGREGATE SHALL BE NATURAL SAND.

9. AIR CONTENT SHALL BE BETWEEN 5% AND 7% (BY VOLUME).

10. ADMIXTURES SHALL NOT BE USED WITHOUT APPROVAL BY THE ENGINEER.

11. CURING SHALL BE ACCOMPLISHED BY WET CURING OR APPLICATION OF AN ASTM C309 TYPE 2 MEMBRANE. FORMED OR VISIBLE SURFACES SHALL NOT RECEIVE PIGMENTED CURING COMPOUND.

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE NEW DEFORMED BARS IN ACCORDANCE WITH ASTM A706, GRADE 60 SPECIFICATIONS.

2. FABRICATION OF REINFORCING STEEL SHALL BE PER CHAPTER 7 OF THE CRSI MANUAL OF STANDARD PRACTICE. DIMENSIONS OF BENDING DETAILS ARE OUT TO OUT OF BAR. REBAR HOOKS ARE STANDARD LENGTH PER AREMA CHAPTER 8, SECTION 2.4, UNLESS NOTED OTHERWISE.

3. SPLICES OF REINFORCING BARS SHALL CONSIST OF LAP SPLICES CONFORMING TO AREMA CHAPTER 8, SECTION 2.22.

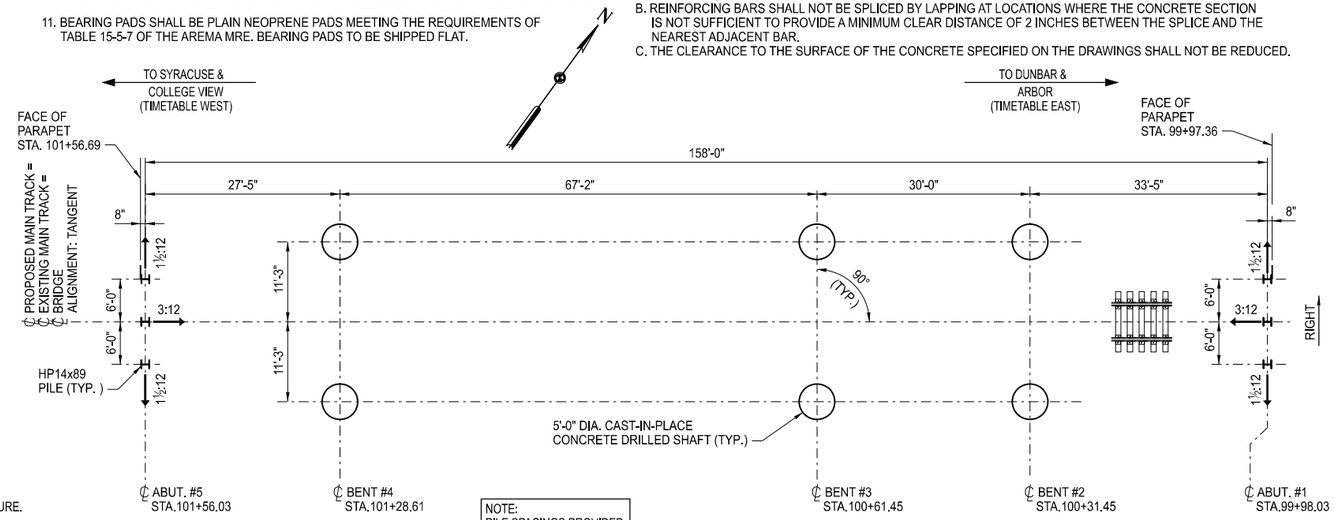
4. THE LOCATION OF SPLICES, EXCEPT WHERE SHOWN ON THE PLANS, SHALL BE DETERMINED BY THE CONTRACTOR USING AVAILABLE COMMERCIAL LENGTHS WHERE PRACTICABLE.

5. UNLESS OTHERWISE SHOWN ON THE PLANS, SPLICES IN ADJACENT REINFORCING BARS AT ANY PARTICULAR SECTION SHALL BE STAGGERED.

   A. THE MINIMUM DISTANCE BETWEEN STAGGERED LAP SPLICES SHALL BE THE SAME AS THE LENGTH REQUIRED FOR A LAP SPLICE IN THE LARGEST BAR, UNLESS NOTED OTHERWISE.

6. LAP SPLICES SHALL MEET THE FOLLOWING REQUIREMENTS:

   A. SPLICES MADE BY LAPPING SHALL CONSIST OF PLACING REINFORCING BARS IN CONTACT AND WIRING THEM TOGETHER, MAINTAINING THE ALIGNMENT OF THE BARS AND THE MINIMUM CLEARANCES.
   B. REINFORCING BARS SHALL NOT BE SPLICED BY LAPPING AT LOCATIONS WHERE THE CONCRETE SECTION IS NOT SUFFICIENT TO PROVIDE A MINIMUM CLEAR DISTANCE OF 2 INCHES BETWEEN THE SPLICE AND THE NEAREST ADJACENT BAR.
   C. THE CLEARANCE TO THE SURFACE OF THE CONCRETE SPECIFIED ON THE DRAWINGS SHALL NOT BE REDUCED.



NOTE:
PILE SPACINGS PROVIDED ARE AT PILE CUTOFF.

PILE PLAN

SCALE: $^{3}/_{32}$"=1'-0"

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Issue No.	Description	Date	Drwn.	Chkd.	Resp. Engr.	Proj. Mgr.
0	ISSUED FOR BID	-	-	-	-	-
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Project Manager	B. Winkelbauer		
Architect	N/A	I&C/Process	N/A
Civil	N/A	Mechanical	N/A
Electrical	N/A	Structural	BJW
Railroad	N/A	Drawn By	DJK

Omaha Public Power District

ARBOR RAIL LINE

2 SPAN 30" PCB x 64' (SEG. A), 1 SPAN BM-BD x 67' (SEG. B), 1 SPAN 30" PCB x 28' (SEG. C) BRIDGE REPLACING 5 SPAN TST-OD, 1 SPAN TPG-OD, 3 SPAN TST-OD x 166'

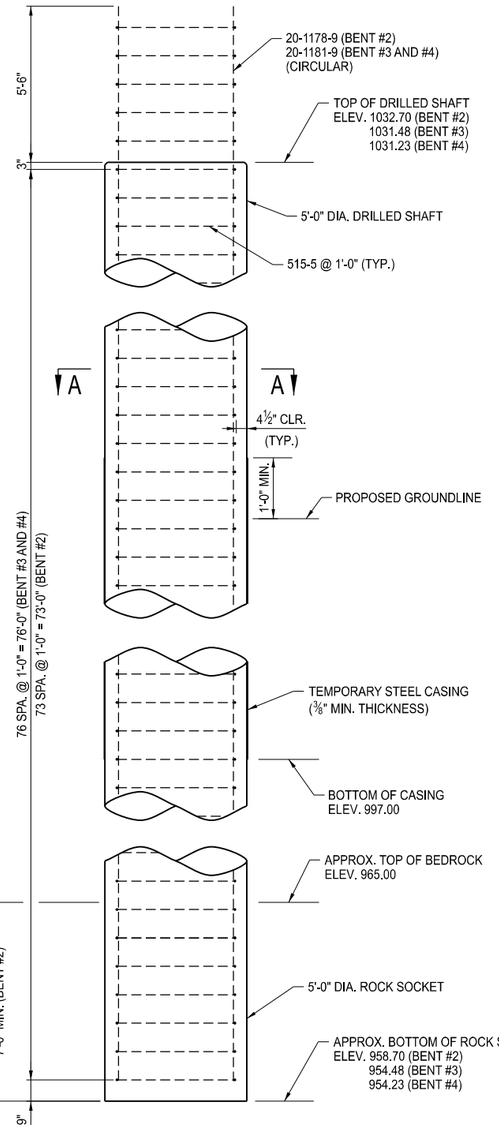
BRIDGE 24.35

PILE LAYOUT AND GENERAL NOTES

Date	Project NO.	Drawing No.	Issue
11/14/2025	10427165	24.35-S02	0
Scale: AS NOTED	File Name: S02.DGN		

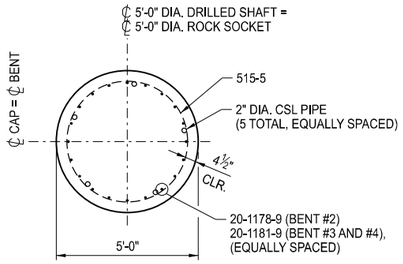
File Location: path\to\xrefs\HDR_US_Central\US\Documents\Omaha_Pub_Power_District\OPPD_Br_24.35_Replacement\60_CAD_Files\24_WP\OPPD_Br_24.35

Date Printed: 11/14/2025 Time Printed: 10:19:15 AM



BENTS #2 THRU #4 DRILLED SHAFT DETAILS

SCALE: ⅜"=1'-0"



SECTION A-A

SCALE: ⅜"=1'-0"

NOTE:
1. MECHANICAL SPLICE AS REQUIRED FOR LONGITUDINAL BARS. STAGGER SPLICE 2'-0".
2. ORIENT REBAR TO ACCOMODATE BENT CAP REINFORCING.

MATERIAL SCHEDULE

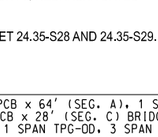
BENT #2	BENT #3	BENT #4	TOTAL	UNIT	DESCRIPTION
112	112	112	336	CU. YD.	5,000 PSI CONCRETE FOR DRILLED SHAFTS (PER NOTES, SHEET 24.35-S02 AND SPECIFICATIONS)
1	1	1	3	LOT	REINFORCING STEEL FOR DRILLED SHAFTS (PER NOTES, SHEET 24.35-S02 AND SCHEDULE, SHEET 24.35-S07)
34.3	35.4	35.4	105.1	CU. YD.	4,000 PSI CONCRETE FOR CAST-IN-PLACE BENT CAP (PER NOTES, SHEET 24.35-S02 AND SPECIFICATIONS)
1	1	1	3	LOT	REINFORCING STEEL FOR BENT CAPS (PER NOTES, SHEET 24.35-S02 AND SCHEDULE, SHEET 24.35-S08 AND SHEET 24.35-S09)
1	1	1	3	LOT	TEMPORARY STEEL CASING (⅜" MIN. THICKNESS PER SPECIFICATIONS)
2	-	-	2	EA.	EP2 (PER DETAIL, SHEET 24.35-S24)
-	2	2	4	EA.	EP3 (PER DETAIL, SHEET 24.35-S24)
-	1	1	2	EA.	CORNER ANGLE CA-1 (PER DETAIL, SHEET 24.35-S24)
1	1	1	3	LOT	SONIC LOG TESTING TUBES AND HARDWARE (PER SPECIFICATIONS AND DETAILS, SHEET 24.35-S07)
1	1	1	3	LOT	THERMAL PROFILE (TIP) TESTING MATERIAL (PER SPECIFICATIONS)

LIST OF REINFORCING BARS

MARK	SIZE	TYPE	A	B	LENGTH
515-5	#5	CIRC.	-	-	15'-5"
1178-9	#11	STR.	-	-	78'-9"
1181-9	#11	STR.	-	-	81'-9"

BENDING DETAILS

ALL DIMENSIONS ARE OUT TO OUT



515-5

NOTES:

1. FOR DRILLED SHAFT NOTES, SEE PROJECT SPECIFICATIONS.
2. DRILLED SHAFTS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION (AREMA) MANUAL FOR RAILWAY ENGINEERING, CHAPTER 8, PART 2: REINFORCED CONCRETE DESIGN AND PART 24: DRILLED SHAFT FOUNDATIONS.
3. DRILLED SHAFT CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE AREMA MANUAL OF RAILWAY ENGINEERING, CHAPTER 8: CONCRETE STRUCTURES AND FOUNDATIONS, PART 24: DRILLED SHAFT FOUNDATIONS AND PROJECT SPECIFICATIONS.
4. FOR SOIL STRATA INFORMATION AND ALLOWABLE BEARING CAPACITY, SEE REPORT OF GEOTECHNICAL INVESTIGATION AND DESIGN FOR THE OPPD ARBOR RAIL LINE BRIDGE REPLACEMENTS II, OTOE COUNTY, NEBRASKA DATED NOVEMBER 2025.
5. FOR BORING LOGS, SEE SHEET 24.35-S28 AND 24.35-S29.

HDR Engineering, Inc.

Issue No.	Description	Date	Drwn.	Chkd.	Resp. Engr.	Proj. Mgr.
0	ISSUED FOR BID	-	-	-	-	-
-	-	-	-	-	-	-

NOT FOR CONSTRUCTION

Project Manager	B. Winkelbauer
Architect	N/A
I&C/Process	N/A
Civil	N/A
Mechanical	N/A
Electrical	N/A
Structural	BJW
Railroad	N/A
Drawn By	DJK

Omaha Public Power District

ARBOR RAIL LINE

2 SPAN 30" PCB x 64' (SEG. A), 1 SPAN BM-BD x 67' (SEG. B),
1 SPAN 30" PCB x 28' (SEG. C) BRIDGE REPLACING 5 SPAN TST-OD,
1 SPAN TPG-OD, 3 SPAN TST-OD x 166'

BRIDGE 24.35

CAST-IN-PLACE CONCRETE DRILLED SHAFT DETAILS

Date	Project NO.	Drawing No.	Issue
11/14/2025	10427165	24.35-S07	0
Scale: AS NOTED	File Name: S07.DGN		

File Location: pw:pwpb@sscont1:HDR_US_Central_01:Documents:Omaha_Public_Power_District:OPPD_Bridge_24.35_Replacement:Design_Data:OPPD_Br_24.35_Replacement_Design_Data_NWP:OPPD_Br_24.35

Date Printed: 11/14/2025 Time Printed: 10:19:18 AM

OPPD Arbor Line 2026 Bridge Replacements
OPPD Arbor Line | Nebraska City to Syracuse, NE
Terracon Project No. 05255077

Terracon
15080 A Cir
Omaha, NE

Boring Log No. BR24.35-E

Location: See Exploration Plan
Latitude: 40.6346° Longitude: -96.1502°
Depth (Ft.) Approximate Elevation: 1036 (Ft.)

Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	HP (psf)	Strength Test: Test Type	Strength Test: Compressive Strength (psf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
0.0 Vegetation zone at surface **LEAN CLAY (CL)**, brown, stiff to very stiff, (Topsoil and slopewash/colluvium)												
			15	5-5-6 N=11								
			13	4-4-5 N=9								
9.0 1027			11		9000				15.0			
LEAN CLAY WITH SAND (CL), grayish brown to brown, very stiff to hard, (Weathered Alluvium)			14	6-7-8 N=15								
			16		9000	UC	9645	2.1	18.4	101		
			17	7-7-8 N=15								
19.0 1017			21									
CLAYEY SAND (SC), trace gravel, medium grained, brown, medium dense, (Alluvium)			16	6-8-10 N=18								22.6
23.0 1013												
SANDY LEAN CLAY (CL), gray, stiff to very stiff, (Alluvium)			15	6-6-7 N=13								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.
Elevation Reference: Elevation obtained by Terracon using GPS equipment and rounded to the nearest 0.5-foot.
Energy transfer ratio of 95.4%; hammer efficiency correction is 1.59 (March 2024).
Temporary well installed to allow water level measurement on 5/9

Water Level Observations
Not encountered while drilling
19 ft. on 5/9

Drill Rig
884

Hammer Type
Automatic

Driller
M. Ramirez

Logged by
K. Adams

Boring Started
05-08-2025

Boring Completed
05-08-2025

Advancement Method
0-40 ft. Hollow Stem Auger; 40-78.75 ft. Wash Bore

Abandonment Method
Boring backfilled with auger cuttings after delayed water level was measured.

Notes

Facilities | Environmental | **Geotechnical** | Materials

OPPD Arbor Line 2026 Bridge Replacements
OPPD Arbor Line | Nebraska City to Syracuse, NE
Terracon Project No. 05255077

Terracon
15080 A Cir
Omaha, NE

Boring Log No. BR24.35-E

Location: See Exploration Plan
Latitude: 40.6346° Longitude: -96.1502°
Depth (Ft.) Approximate Elevation: 1036 (Ft.)

Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	HP (psf)	Strength Test: Test Type	Strength Test: Compressive Strength (psf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
SANDY LEAN CLAY (CL), gray, stiff to very stiff, (Alluvium) *(continued)*			19	6-7-9 N=16								
			16	4-4-5 N=9								
36.0 1000												
HIGHLY WEATHERED SHALE, trace silt laminations, trace organic/coal deposits, gray, high plasticity, moldable, not laminated (Bedrock)			19	6-10-15 N=25								
43.0 993												
WEATHERED SANDSTONE, brown to grayish brown, poorly cemented (Bedrock)			15	13-18-19 N=37								
48.0 988												
WEATHERED SANDSTONE, trace gravel, with angular limestone fragments, gray, poorly cemented (Bedrock)			17	9-14-16 N=30								
			19	22-22-25 N=47								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
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Energy transfer ratio of 95.4%; hammer efficiency correction is 1.59 (March 2024).
Temporary well installed to allow water level measurement on 5/9

Water Level Observations
Not encountered while drilling
19 ft. on 5/9

Drill Rig
884

Hammer Type
Automatic

Driller
M. Ramirez

Logged by
K. Adams

Boring Started
05-08-2025

Boring Completed
05-08-2025

Advancement Method
0-40 ft. Hollow Stem Auger; 40-78.75 ft. Wash Bore

Abandonment Method
Boring backfilled with auger cuttings after delayed water level was measured.

Notes

Facilities | Environmental | **Geotechnical** | Materials

OPPD Arbor Line 2026 Bridge Replacements
OPPD Arbor Line | Nebraska City to Syracuse, NE
Terracon Project No. 05255077

Terracon
15080 A Cir
Omaha, NE

Boring Log No. BR24.35-E

Location: See Exploration Plan
Latitude: 40.6346° Longitude: -96.1502°
Depth (Ft.) Approximate Elevation: 1036 (Ft.)

Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	HP (psf)	Strength Test: Test Type	Strength Test: Compressive Strength (psf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
WEATHERED SANDSTONE, trace gravel, with angular limestone fragments, gray, poorly cemented (Bedrock) *(continued)*												
58.0 978												
WEATHERED SILTSTONE, with soft shale layers, gray, poorly cemented (Bedrock)			18	19-23-26 N=49								
			2	25/2"-50/2"								
68.0 968												
WEATHERED SHALE, gray, high plasticity, moldable, laminated (Bedrock)			10	25/4"-50/3"								
			13	25/4"-50/4"								
78.8 957.25			9	25/5"-50/4"								
Boring Terminated at 78.75 Feet												

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.
Elevation Reference: Elevation obtained by Terracon using GPS equipment and rounded to the nearest 0.5-foot.
Energy transfer ratio of 95.4%; hammer efficiency correction is 1.59 (March 2024).
Temporary well installed to allow water level measurement on 5/9

Water Level Observations
Not encountered while drilling
19 ft. on 5/9

Drill Rig
884

Hammer Type
Automatic

Driller
M. Ramirez

Logged by
K. Adams

Boring Started
05-08-2025

Boring Completed
05-08-2025

Advancement Method
0-40 ft. Hollow Stem Auger; 40-78.75 ft. Wash Bore

Abandonment Method
Boring backfilled with auger cuttings after delayed water level was measured.

Notes

Facilities | Environmental | **Geotechnical** | Materials

NOTE:
SUBSURFACE INFORMATION IS PROVIDED FOR INFORMATION ONLY FROM HDR GEOTECH REPORT, DATE NOVEMBER 2025

HDR Engineering, Inc.

Issue No.	Description	Date	Drwn.	Chkd.	Resp. Engr.	Proj. Mgr.
0	ISSUED FOR BID	-	-	-	-	-
-	-	-	-	-	-	-

NOT FOR CONSTRUCTION

Project Manager	B. Winkelbauer
Architect	N/A
I&C/Process	N/A
Civil	N/A
Mechanical	N/A
Electrical	N/A
Structural	BJW
Railroad	N/A
Drawn By	DJK

Omaha Public Power District

ARBOR RAIL LINE

2 SPAN 30" PCB x 64' (SEG. A), 1 SPAN BM-BD x 67' (SEG. B),
1 SPAN 30" PCB x 28' (SEG. C) BRIDGE REPLACING 5 SPAN TST-OD,
1 SPAN TPG-OD, 3 SPAN TST-OD x 166'

BRIDGE 24.35
BORING LOGS (SHEET 1 OF 2)

Date 11/14/2025	Project NO. 10427165	Drawing No. 24.35-S28	Issue 0
Scale AS NOTED	File Name S28.DGN		

File Location: p:\data\Autocad\HDR_US_Omaha\Documents\Omaha_Public_Power_District\OPPD_Bridge_24.35_Replacement\BIM_CAD_Files\BIM\2_WIP\OPPD_Br_24.35

Date Printed: 11/14/2025 Time Printed: 10:19:24 AM

OPPD Arbor Line 2026 Bridge Replacements
OPPD Arbor Line | Nebraska City to Syracuse, NE
Terracon Project No. 05255077

Terracon
15080 A Cir
Omaha, NE

Boring Log No. BR24.35-W

Location: See Exploration Plan
Latitude: 40.6339° Longitude: -96.1512°
Depth (Ft.) Approximate Elevation: 1038 (Ft.)

Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	HP (psf)	Strength Test: Test Type	Strength Test: Compressive Strength (psf)	Strength Test: Strain (%)	Strength Test: Confining Pressure (psi)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines	Graphic Log
				Vegetation zone at surface										
2.5				**FILL - LEAN CLAY**, trace brick fragments, trace sand, brown, (Fill)										
2.5 / 1035.5														
			8	3-4-5 N=9										
				LEAN CLAY (CL), trace sand, brown, stiff, (Topsoil and slopewash/colluvium)										
5			9	3-5-5 N=10										
7.0 / 1031														
				LEAN CLAY (CL), trace sand, brown, hard to medium stiff, (Sappa Loess) hard layer at 8 ft.										
			13		9000	UU	8352	6	6.5	18.1	101	47-17-30		
				grayish brown below 9 ft.										
10			10	3-3-4 N=7										
12.0 / 1026														
				LEAN CLAY (CL), trace sand, grayish brown, stiff to medium stiff, (Alluvium)										
			20		5500	UC	2183	1.6		22.2	84			
15			14	2-3-2 N=5										
17.0 / 1021														
				FAT CLAY (CH), grayish brown, very stiff to soft, (Alluvium)										
			21		3000	UU	4582	13.3	13	26.5	92	50-17-33		
				medium stiff to soft below 19 ft.										
20			18	2-2-2 N=4										
				dark gray below 23 ft.										
25			13	2-1-2 N=3										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.
Elevation Reference: Elevation obtained by Terracon using GPS equipment and rounded to the nearest 0.5-foot.
Energy transfer ratio of 95.4%; hammer efficiency correction is 1.59 (March 2024).
Temporary well installed to allow water level measurement on 5/14

Water Level Observations
Not encountered while drilling
22 ft on 5/16

Notes

Advancement Method
0-28.5 ft. Hollow Stem Auger; 28.5-78.6 ft. Wash Bore

Abandonment Method
Boring backfilled with auger cuttings and bentonite chips after delayed water level was measured.

Drill Rig
884

Hammer Type
Automatic

Driller
M. Ramirez

Logged by
W. Rice

Boring Started
05-13-2025

Boring Completed
05-14-2025

Facilities | Environmental | **Geotechnical** | Materials

OPPD Arbor Line 2026 Bridge Replacements
OPPD Arbor Line | Nebraska City to Syracuse, NE
Terracon Project No. 05255077

Terracon
15080 A Cir
Omaha, NE

Boring Log No. BR24.35-W

Location: See Exploration Plan
Latitude: 40.6339° Longitude: -96.1512°
Depth (Ft.) Approximate Elevation: 1038 (Ft.)

Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	HP (psf)	Strength Test: Test Type	Strength Test: Compressive Strength (psf)	Strength Test: Strain (%)	Strength Test: Confining Pressure (psi)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines	Graphic Log
28.5 / 1009.5				**SANDY LEAN CLAY (CL)**, gray, medium stiff to soft, (Alluvium)										
			17	2-3-5 N=8										
30														
				gray below 33 ft.										
			23	3-3-4 N=7										
35														
			25	0-2-1 N=3										
40														
			25	2-2-2 N=4								29-15-14		
45														
48.0 / 990				**WEATHERED SANDSTONE**, with angular limestone fragments, gray, poorly cemented (Bedrock)										
			15	14-20-16 N=36										
50														
55			9	5-13-12 N=25									24.0	

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.
Elevation Reference: Elevation obtained by Terracon using GPS equipment and rounded to the nearest 0.5-foot.
Energy transfer ratio of 95.4%; hammer efficiency correction is 1.59 (March 2024).
Temporary well installed to allow water level measurement on 5/.4

Water Level Observations
Not encountered while drilling
22 ft on 5/16

Notes

Advancement Method
0-28.5 ft. Hollow Stem Auger; 28.5-78.6 ft. Wash Bore

Abandonment Method
Boring backfilled with auger cuttings and bentonite chips after delayed water level was measured.

Drill Rig
884

Hammer Type
Automatic

Driller
M. Ramirez

Logged by
W. Rice

Boring Started
05-13-2025

Boring Completed
05-14-2025

Facilities | Environmental | **Geotechnical** | Materials

OPPD Arbor Line 2026 Bridge Replacements
OPPD Arbor Line | Nebraska City to Syracuse, NE
Terracon Project No. 05255077

Terracon
15080 A Cir
Omaha, NE

Boring Log No. BR24.35-W

Location: See Exploration Plan
Latitude: 40.6339° Longitude: -96.1512°
Depth (Ft.) Approximate Elevation: 1038 (Ft.)

Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	HP (psf)	Strength Test: Test Type	Strength Test: Compressive Strength (psf)	Strength Test: Strain (%)	Strength Test: Confining Pressure (psi)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines	Graphic Log
58.0 / 980				**WEATHERED SANDSTONE**, with angular limestone fragments, gray, poorly cemented (Bedrock) *(continued)*										
			17	10-8-7 N=15										
60														
			13	23-15-10 N=25										
65														
			5	25/3"-50/1.5"										
				hard drilling from 70 ft. to 72 ft.										
70														
73.0 / 965				**WEATHERED SHALE**, gray, high plasticity, moldable, laminated (Bedrock)										
			4	25/1.5"-50/2"										
75														
78.6 / 959.4			8	25/3"-50/4.5"										
Boring Terminated at 78.6 Feet														

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.
Elevation Reference: Elevation obtained by Terracon using GPS equipment and rounded to the nearest 0.5-foot.
Energy transfer ratio of 95.4%; hammer efficiency correction is 1.59 (March 2024).
Temporary well installed to allow water level measurement on 5/.4

Water Level Observations
Not encountered while drilling
22 ft on 5/16

Notes

Advancement Method
0-28.5 ft. Hollow Stem Auger; 28.5-78.6 ft. Wash Bore

Abandonment Method
Boring backfilled with auger cuttings and bentonite chips after delayed water level was measured.

Drill Rig
884

Hammer Type
Automatic

Driller
M. Ramirez

Logged by
W. Rice

Boring Started
05-13-2025

Boring Completed
05-14-2025

Facilities | Environmental | **Geotechnical** | Materials

NOTE:
SUBSURFACE INFORMATION IS PROVIDED FOR INFORMATION ONLY FROM HDR GEOTECH REPORT, DATE NOVEMBER 2025

HDR Engineering, Inc.

Issue No.	Description	Date	Drwn.	Chkd.	Resp. Engr.	Proj. Mgr.
0	ISSUED FOR BID	-	-	-	-	-
-	-	-	-	-	-	-

NOT FOR CONSTRUCTION

Project Manager: B. Winkelbauer

Architect	I&C/Process
N/A	N/A
Civil	**Mechanical**
N/A	N/A
Electrical	**Structural**
N/A	BJW
Railroad	**Drawn By**
N/A	DJK

Omaha Public Power District

ARBOR RAIL LINE

2 SPAN 30" PCB x 64' (SEG. A), 1 SPAN BM-BD x 67' (SEG. B), 1 SPAN 30" PCB x 28' (SEG. C) BRIDGE REPLACING 5 SPAN TST-OD, 1 SPAN TPG-OD, 3 SPAN TST-OD x 166'

BRIDGE 24.35

BORING LOGS (SHEET 2 OF 2)

Date	Project NO.	Drawing No.	Issue
11/14/2025	10427165	24.35-S29	0
Scale	**File Name**		
AS NOTED	S29.DGN		

File Location: pw:pwadmin:ecm1:HDR_US_Central_01\Documents\Omaha_Public_Power_District\OPPD_Bridge_2435_Replacement\60_CAD_BIM\2_WIP\OPPD_Br_2435

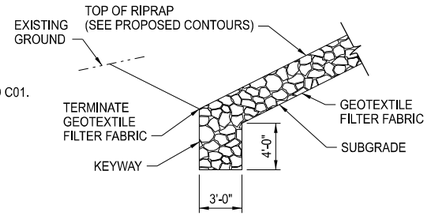
Date Printed: 11/14/2025 Time Printed: 10:19:30 AM

GRADING NOTES:

1. PROPOSED CONTOURS REPRESENT FINAL PROPOSED GRADE.
2. FOR RIPRAP PLACEMENT LIMITS AND DETAILS, SEE SHEET 24.35-S05 AND C01.
3. RIPRAP QUANTITIES INCLUDE ADDITIONAL QUANTITY FOR KEYWAY.

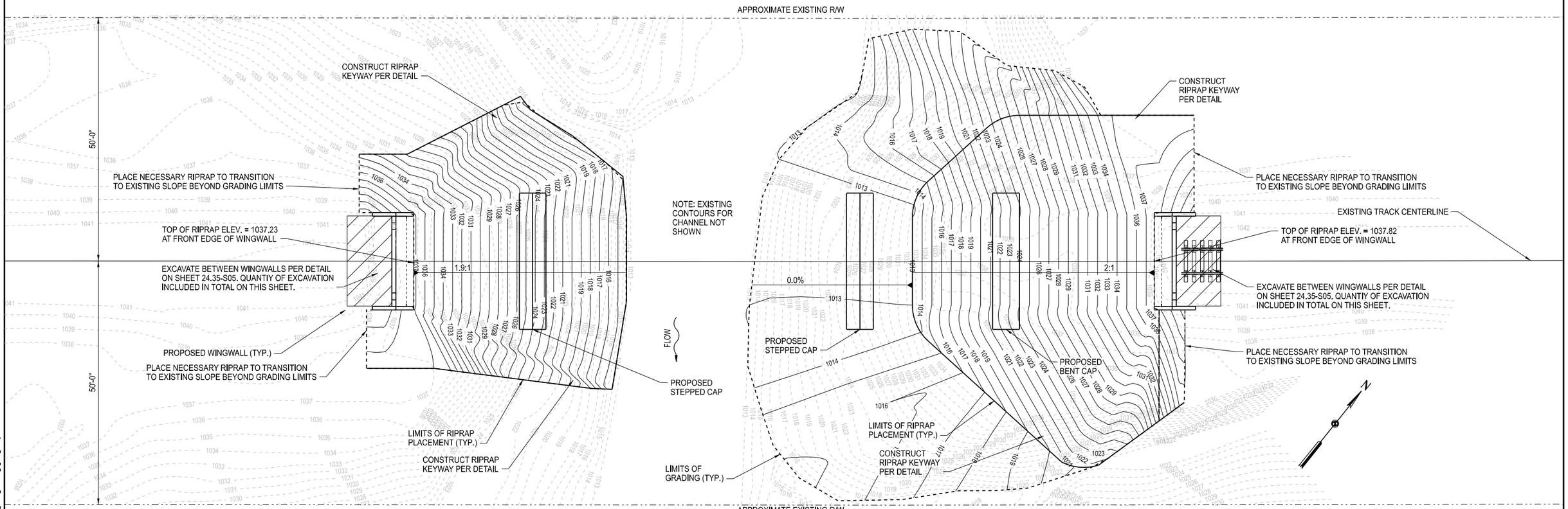
ESTIMATED QUANTITIES:

1. CUT = 2800 CY
2. GEOTEXTILE FABRIC = 900 SY
3. RIPRAP = 615 CY



RIPRAP KEYWAY DETAIL

SCALE: NONE



PLAN

SCALE: 1"=10'

HDR Engineering, Inc.

Issue No.	Description	Date	Drwn.	Chkd.	Resp. Engr.	Proj. Mgr.
0	ISSUED FOR BID	-	-	-	-	-
-	-	-	-	-	-	-

NOT FOR CONSTRUCTION

Project Manager	B. Winkelbauer
Architect	N/A
I&C/Process	N/A
Civil	BND
Mechanical	N/A
Electrical	N/A
Structural	N/A
Railroad	N/A
Drawn By	RAP

Omaha Public Power District

ARBOR RAIL LINE

2 SPAN 30" PCB x 64' (SEG. A), 1 SPAN BM-BD x 67' (SEG. B), 1 SPAN 30" PCB x 28' (SEG. C) BRIDGE REPLACING 5 SPAN TST-OD, 1 SPAN TPG-OD, 3 SPAN TST-OD x 166'

BRIDGE 24.35
SITE GRADING PLAN

Date 11/14/2025	Project NO. 10427165	Drawing No. 24.35-C01	Issue 0
Scale AS NOTED	File Name C01.DGN		

File Location: pwdpublicaccess\hdr\SPU_US_Central_1\Documents\Omaha_Public_Power_District\OPPD_Sp_24.35_Replacement\Eu_CAD_BIM\2_WP\OPPD_Sp_24.35_Grading

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