STANDARD ROAD PLANS
STANDARD ROAD PLANS ARE LISTED ON SHEET 28.

SECTION 404 PERMIT AND CONDITIONS	281-1 MODIFIED
CONSTRUCT THIS PROJECT ACCORDING TO THE REQUIREMENTS OF U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT 14. NATIONWIDE PERMIT 14 CONDITIONS CAN BE FOUND AT http://www.mvr.usace.army.mil/Missions/Regulatory/Permits/. THE U.S. ARMY CORPS OF ENGINEERS RESERVES THE RIGHT TO VISIT THE SITE WITHOUT PRIOR NOTICE.	

THIS PROJECT IS COVERED BY IOWA DNR FLOODPLAIN CONSTRUCTION PERMIT NO. FP 2026-0198FP-01, DATED: 03-18-2026

IOWA | DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

FARM TO MARKET SYSTEM

FLOYD COUNTY

PROJECT NO. HDP-C034(117)--6B-34

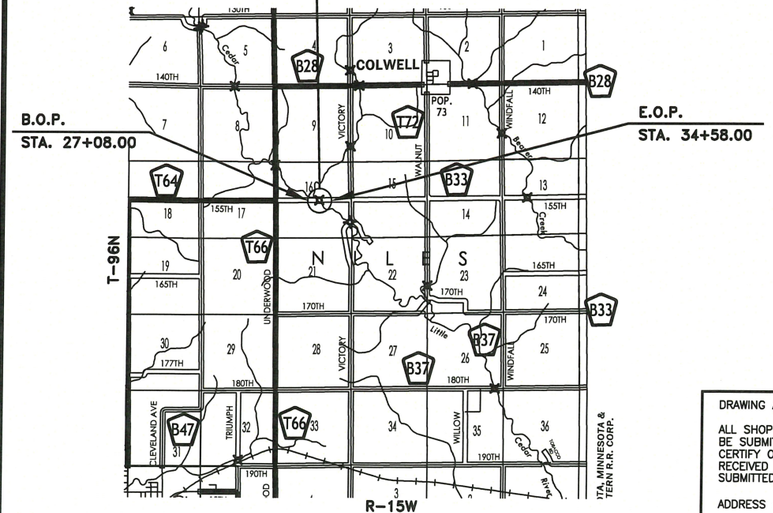
BRIDGE REPLACEMENT - PPCB

ON B 33, OVER LITTLE CEDAR RIVER, S16 T96N R15W

REFER TO THE PROPOSAL FORM FOR LIST OF APPLICABLE SPECIFICATIONS.

THIS PROJECT IS COVERED BY THE IOWA DEPARTMENT OF NATURAL RESOURCES NPDES GENERAL PERMIT NO. 2. THE CONTRACTOR SHALL CARRY OUT THE TERMS AND CONDITIONS OF GENERAL PERMIT NO. 2 AND THE STORM WATER POLLUTION PREVENTION PLAN WHICH IS A PART OF THESE CONTRACT DOCUMENTS. REFER TO SECTION 2602 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL INFORMATION.

B.O.P. STA. 27+08.00
E.O.P. STA. 34+58.00
FHWA NO. 155160
STATION 30+83.00
PROPOSED 299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
30° SKEW, RT. AHEAD



PROJECT LOCATION

1 MI. 0 1 MI. 2 MI.

N

MILEAGE SUMMARY:

STA. 27+08.00 TO STA. 34+58.00 = 750.00 LIN.FT. = 0.1420 MILES

2022, TRAFFIC COUNT = 167 V.P.D.

UTILITY CONTACTS				
COMPANY	UTILITY	CONTACT	PHONE #	EMAIL
CENTURYLINK	COMMUNICATIONS	SADIE HULL	918-547-0147	sadie.hull@lumen.com
HEARTLAND POWER COOPERATIVE	ELECTRIC	RANDY DIETERICH	641-713-4966	rdieterich@heartlandpower.com

DRAWING APPROVAL

ALL SHOP DRAWINGS AND FALSEWORK DRAWINGS THAT REQUIRE APPROVAL SHALL BE SUBMITTED TO AND APPROVED BY THE CONTRACTOR, WHO SHALL STAMP, CERTIFY OR PROVIDE OTHER SUCH EVIDENCE ON THE DRAWINGS THAT THEY HAVE RECEIVED CONTRACTOR APPROVAL. THE APPROVED DRAWINGS SHALL THEN BE SUBMITTED TO CALHOUN-BURNS AND ASSOCIATES, FOR REVIEW AND APPROVAL.

ADDRESS : 6775 VISTA DRIVE
WEST DES MOINES, IOWA 50266
TELEPHONE : (515) 224-4344
FAX : (515) 224-1385

SHOP DRAWINGS SHALL BE INDEPENDENT DRAWINGS WITH ADEQUATE DIMENSIONING FOR FABRICATION OF INDIVIDUAL PIECES OF EACH COMPONENT. PHOTOCOPIES OF PLAN DRAWINGS AND NON-CONTRACTOR APPROVED PLANS WILL BE REJECTED.

THESE DRAWINGS SHALL NOT BE SENT TO IOWA D.O.T. BRIDGES AND STRUCTURES BUREAU.

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

TOTAL SHEETS 32

PROJECT NO. HDP-C034(117)--6B-34
FHWA NO. 155160
COUNTY BR. NO. 155160

INDEX OF SHEETS

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2.-3.	QUANTITY SUMMARY
4.	SITUATION PLAN
5.	GENERAL PLAN
6.	GENERAL NOTES
7.	POLLUTION PREVENTION PLAN
8.-9.	SOUNDING DATA
10.	WEST ABUTMENT DETAILS
11.	EAST ABUTMENT DETAILS
12.	ABUTMENT DETAILS
13.	WING ARMORING DETAILS
14.	WEST PIER DETAILS
15.	EAST PIER DETAILS
16.	PIER BEARING DETAILS
17.-21.	SUPERSTRUCTURE DETAILS
22.-24.	BEAM DETAILS
25.	STEEL DIAPHRAGM DETAILS
26.-27.	OPEN RAIL DETAILS (TL-4)
28.	TYPICAL SECTION AND TABULATIONS
29.	TABULATIONS
30.-32.	CROSS SECTIONS

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
8	DAVID LOGEMANN	SOILS

LICENSED PROFESSIONAL ENGINEER
EVAN J. MURPHY
26410
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

EVAN J. MURPHY, P.E. DATE: 7/6/2026

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2027 .

PAGES OR SHEETS COVERED BY THIS SEAL:
1-7, 10-32 of 32

APPROVED
Adam S. Miller 7/29/2026
FLOYD COUNTY ENGINEER DATE

Boyd Campbell 8/4/2026
George Carr 8/4/2026
Fred H. Ritter 8/4/2026
BOARD OF SUPERVISORS DATE

TOTAL ESTIMATED QUANTITIES:
299'–0 x 30'–0 P.P.C.B.

REF. NO.	CODE NO.	ITEM	UNIT	2 ABUTS	2 PIERS	SUPER	TOTAL
1	2101–0850001	CLEARING AND GRUBBING	ACRE	–	–	–	0.6
2	2102–2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	–	–	–	30
3	2104–2710020	EXCAVATION, CLASS 10, CHANNEL	CY	–	–	–	7,400
4	2105–8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	–	–	–	1,500
5	2312–8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	TON	–	–	–	180
6	2401–6745625	REMOVAL OF EXISTING BRIDGE	LS	–	–	–	1
7	2402–2720000	EXCAVATION, CLASS 20	CY	230	–	–	230
8	2402–2721000	EXCAVATION, CLASS 21	CY	–	227	–	227
9	2403–0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	–	178.6	–	178.6
10	2403–0100030	STRUCTURAL CONCRETE 4500 PSI OR GREATER, AS SPECIFIED	CY	48.0	–	348.8	396.8
11	2404–7775000	REINFORCING STEEL	LB	–	29,262	–	29,262
12	2404–7775005	REINFORCING STEEL, EPOXY COATED	LB	8,424	–	106,799	115,223
13	2407–0563090	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTC90	EACH	–	–	8	8
14	2407–0563115	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTC115	EACH	–	–	4	4
15	2408–7800000	STRUCTURAL STEEL	LB	–	–	3,076	3,076
16	2414–6424124	CONCRETE OPEN RAILING, TL–4	LF	–	–	652.9	652.9
17	2501–0201057	PILES, STEEL, HP 10 X 57 ; 14 @ 55', 42 @ 30'	LF	770	1,260	–	2,030
18	2501–6335010	PREBORED HOLES ; 14 @ 10'	LF	140	–	–	140

REF. NO. ESTIMATE REFERENCE INFORMATION

1. SEE SITUATION PLAN, SHEET 4, AND GENERAL PLAN, SHEET 5, FOR LIMITS.
SELECTIVE CLEARING WILL BE REQUIRED ON THIS PROJECT. ALL DESIRABLE TREES OUTSIDE THE CONSTRUCTION AREA WILL BE SAVED. TREES AND SHRUBS WITHIN THE CONSTRUCTION LIMITS THAT DO NOT HINDER CONSTRUCTION SHALL BE SAVED UNLESS DIRECTED BY THE ENGINEER TO BE REMOVED.

2. SEE TABULATION CBA-101 ON SHEET 29 FOR BREAKDOWN OF EXCAVATION QUANTITIES.
TYPE "A" COMPACTION WILL BE REQUIRED.

3. SEE TABULATION CBA-101 ON SHEET 29 FOR BREAKDOWN OF EXCAVATION QUANTITIES.
INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN IN THE "LONGITUDINAL SECTION ALONG CENTERLINE OF ROADWAY" AND THE LIMITS SHOWN ON THE SITUATION PLAN, SHEET 4 AND GENERAL PLAN, SHEET 5.
INCLUDES COST OF USING SUITABLE MATERIAL FOR CONSTRUCTION ELSEWHERE ON THIS PROJECT. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS.
INCLUDES ALL COST TO REMOVE UNSUITABLE OR EXCESS MATERIAL FROM SITE AND WASTE AT THE STOCKPILE LOCATION. THE UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT THE EARTH WASTE STOCKPILE LOCATION SHOWN ON SHEET 29. COORDINATION SHALL BE THROUGH THE COUNTY ENGINEER AT PHONE NUMBER 641-257-6151.
EQUIPMENT ON THE NEW BRIDGE SHALL BE LIMITED TO IOWA LEGAL LOADS. CONSTRUCTION LOADS WHICH DO NOT MEET THE REQUIREMENTS OF IOWA LEGAL LOADS AND OFF ROAD EQUIPMENT WILL NOT BE ALLOWED ON THE BRIDGE. IF THE NEW BRIDGE IS USED FOR REPETITIVE LOADING, I.E. HAUL EARTH MATERIAL, THE DECK SHALL HAVE A MINIMUM CURE TIME OF 30 DAYS.

4. IN ORDER TO MEET NPDES PERMIT REQUIREMENTS TOPSOIL STRIP, SALVAGE AND SPREAD SHALL BE REQUIRED ON THIS PROJECT. QUANTITY PERTAINS TO WORK WITHIN THE PROJECT LIMITS. SIX INCHES OF TOPSOIL SHALL BE STRIPPED FROM WITHIN THE PROJECT LIMITS AND SPREAD UNIFORMLY (6" TARGET WITH 4" MIN. DEPTH) OVER ALL AREAS THAT ARE NOT COVERED BY PAVEMENT OR GRANULAR MATERIAL. AREAS SHALL BE UNDERCUT PRIOR TO PLACING TOPSOIL. CROSS-SECTIONS SHOW FINISHED GRADELINE.

5. SURFACING TO BE FURNISHED AND PLACED BY THE CONTRACTOR IN TWO PASSES (1400 AND 600 TONS /MILE).
SEE TYPICAL SECTION CBA-503 ON SHEET 28.

6. THE EXISTING BRIDGE AT STATION 30+66 IS A 256' x 28' CONTINUOUS CONCRETE SLAB BRIDGE WITH CONCRETE STUB ABUTMENTS AND SINGLE ROW ENCASED PIERS BUILT IN 1967.
AN INSPECTION FOR THE PRESENCE OF ASBESTOS CONTAINING MATERIALS WAS COMPLETED AND NO SUSPECT MATERIALS WERE FOUND. IF ADDITIONAL MATERIALS SUSPECTED OF CONTAINING ASBESTOS ARE DISCOVERED DURING DEMOLITION OF THE BRIDGE, WORK SHALL BE STOPPED IMMEDIATELY AND THE ENGINEER NOTIFIED.
THE LUMP SUM BID FOR "REMOVAL OF EXISTING BRIDGE" SHALL INCLUDE REMOVAL AND DISPOSAL OF THE EXISTING STRUCTURE. ALL SALVAGEABLE MATERIAL AND UNSALVAGEABLE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR. THE EXISTING STRUCTURE SHALL BE REMOVED TO AN ELEVATION AT LEAST 1 FOOT BELOW FINISHED GROUNDLINE AND TO THE EXTENT THAT IT WILL NOT INTERFERE WITH THE NEW CONSTRUCTION. THE WEST STUB ABUTMENT, CONCRETE FOOTING AND WINGS SHALL BE COMPLETELY REMOVED.
BROKEN CONCRETE FROM THE EXISTING BRIDGE WITH SIMILAR GRADATION TO CLASS 'E' REVETMENT MAY BE PLACED ON THE BANKS WITHIN THE LIMITS SHOWN FOR CLASS 'E' REVETMENT, AS DIRECTED BY THE ENGINEER. THIS EXCLUDES AREAS UNDER THE PROPOSED BRIDGE. ALL REINFORCING SHALL BE CUT OFF FLUSH WITH THE CONCRETE. ALTERNATELY, THE CONTRACTOR MAY DISPOSE OF THE BROKEN CONCRETE OFF SITE AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
SEE HAZARDOUS MATERIALS NOTES ON SHEET 6 FOR PAINT SCRAPE SAMPLE RESULTS.

7. QUANTITY IS BASED ON THE ASSUMPTION THAT CHANNEL EXCAVATION AND NECESSARY BERM CONSTRUCTION HAVE BEEN COMPLETED.
INCLUDES COST OF USING SUITABLE MATERIAL FOR CONSTRUCTION ELSEWHERE ON THIS PROJECT. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS.

8. QUANTITY IS BASED ON THE ASSUMPTION THAT CHANNEL EXCAVATION AND NECESSARY BERM CONSTRUCTION HAVE BEEN COMPLETED.

9. INCLUDES THE CONCRETE FOR THE PIERS.
NO ADDITIONAL PAYMENT WILL BE ALLOWED FOR HEATING AND PROTECTION OF CONCRETE, IF NECESSARY.
CERTIFIED PLANT INSPECTION IS REQUIRED.

10. INCLUDES THE CONCRETE FOR THE ABUTMENTS, DIAPHRAGMS AND DECK.
INCLUDES COST OF TAR PAPER AND PREFORMED JOINT MATERIAL.
ARTICLE 2428 REGARDING BRIDGE DECK SMOOTHNESS DOES NOT APPLY TO THIS PROJECT.
CERTIFIED PLANT INSPECTION IS REQUIRED.
SEE SPECIFICATIONS ON SHEET 6 FOR ADDITIONAL INFORMATION.

11.-12. ALL REINFORCING SHALL BE GRADE 60.

13.-14. INCLUDES COST OF BEARING MATERIAL, COIL TIES AND COIL RODS.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING STABILITY OF PRESTRESSED CONCRETE BEAMS DURING ERECTION AND CONSTRUCTION UP THROUGH THE CONCRETE BRIDGE DECK REACHING ITS FULL 28-DAY STRENGTH. THE CONTRACTOR SHALL PROVIDE SUFFICIENT TEMPORARY ANCHOR BRACING AT BEAM ENDS AND TEMPORARY INTERMEDIATE BRACING AS NEEDED TO ENSURE PRESTRESSED BEAM STABILITY. PARTIALLY OR FULLY INSTALLED PERMANENT BRACING AS SHOWN IN THESE DESIGN PLANS SHALL NOT BE ASSUMED SUFFICIENT TO BRACE PRESTRESSED BEAMS DURING ERECTION AND CONSTRUCTION. TEMPORARY BRACING SHALL NOT BE WELDED TO PRESTRESSED BEAM STIRRUPS.
ABUTMENT BEARINGS SHALL BE THE 3"X3" BARS AS DETAILED. ALTERNATE DETAILS SHOWN IN MATERIALS IM 570 APPENDIX I WILL NOT BE ALLOWED. CONTRACTOR MAY SUBMIT ALTERNATE DETAILS SUCH AS STACKED ¾"X3" OR 1"X3" STEEL PLATES TO CREATE AN EQUIVALENT 3"X3" BAR. PLATES SHALL BE ADEQUATELY WELDED TOGETHER TO PREVENT MOVEMENT DURING TRANSPORT AND INSTALLATION. ALTERNATE BEARING DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

15. INCLUDES WEIGHT OF STEEL DIAPHRAGMS, SEE SHEET 25.

16. CERTIFIED PLANT INSPECTION IS REQUIRED.
ALL STRUCTURAL CONCRETE FOR THE RAIL IS TO BE CLASS C; SUBSTITUTION OF CLASS D CONCRETE IS NOT ALLOWED.
NO ADDITIONAL PAYMENT WILL BE ALLOWED FOR HEATING AND PROTECTION OF CONCRETE, IF NECESSARY.

17. SEE PILE NOTES ON SHEET 6.
PILE POINTS SHALL NOT BE USED FOR THIS PROJECT.

18. THE BRIDGE CONTRACTOR SHALL PREBORE HOLES FOR ABUTMENT PILES. HOLES SHALL BE BORED TO THE ELEVATIONS SHOWN ON THE "LONGITUDINAL SECTION ALONG CENTERLINE ROADWAY" ON THE SITUATION PLAN. PILES SHALL BE DRIVEN THROUGH THE HOLES TO AT LEAST THE SPECIFIED DESIGN BEARING.

299'–0 x 30'–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS — **TEE PIERS**
91'–0 END SPANS — **117'–0 INTERIOR SPAN**

QUANTITY SUMMARY

STATION 30+83.00 — **30° SKEW, RT. AHEAD**
FLOYD COUNTY, — **IOWA**

TOTAL ESTIMATED QUANTITIES:
299'–0 x 30'–0 P.P.C.B.

REF. NO.	CODE NO.	ITEM	UNIT	2 ABUTS	2 PIERS	SUPER	TOTAL
19	2505–4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA–201	EACH	–	–	–	4
20	2505–4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	–	–	–	4
21	2505–4021710	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, LS–625	EACH	–	–	–	4
22	2507–2638650	BRIDGE WING ARMORING – EROSION STONE	SY	–	–	–	58
23	2507–3250005	ENGINEERING FABRIC	SY	–	–	–	2,500
24	2507–6800061	REVETMENT, CLASS E	TON	–	–	–	1,400
25	2507–6875002	REVETMENT, REMOVE AND REPLACE	CY	–	–	–	150
26	2526–8285020	CONSTRUCTION SURVEY, CONTROL POINT SURVEY	LS	–	–	–	1
27	2526–8285030	CONSTRUCTION SURVEY, RIGHT OF WAY	LS	–	–	–	1
28	2526–8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	–	–	–	1
29	2528–2518000	SAFETY CLOSURE	EACH	–	–	–	2
30	2528–8445110	TRAFFIC CONTROL	LS	–	–	–	1
31	2533–4980005	MOBILIZATION	LS	–	–	–	1
32	2601–2634100	MULCHING	ACRE	–	–	–	3.9
33	2601–2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	–	–	–	1.8
34	2601–2642100	STABILIZING CROP – SEEDING AND FERTILIZING	ACRE	–	–	–	2.1
35	2602–0000020	SILT FENCE	LF	–	–	–	2,215
36	2602–0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	–	–	–	2,215
37	2602–0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	–	–	–	675
38	2602–0010010	MOBILIZATIONS, EROSION CONTROL	EACH	–	–	–	1
39	2602–0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	–	–	–	1

REF. NO. ESTIMATE REFERENCE INFORMATION

19.-21. SEE TABULATIONS 108-8A AND 107-23 ON SHEET 29.
SUBSTITUTION OF THE LS-625 END TERMINAL WITH THE BA-205 END TERMINAL WILL NOT BE ALLOWED.

22. SEE SHEET 13 FOR DETAILS. QUANTITY INCLUDES EROSION STONE ON THE BERMS.

23. SEE SITUATION PLAN, SHEET 4, AND GENERAL PLAN, SHEET 5, FOR LIMITS.
ENGINEERING FABRIC SHALL BE LAPPED FOR FIELD SPLICING, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT.

24. REVETMENT IS TO BE PLACED AT A THICKNESS OF 1'-6. SEE SITUATION PLAN, SHEET 4, AND GENERAL PLAN, SHEET 5, FOR LIMITS.

25. THE UNIT PRICE BID FOR "REVETMENT, REMOVE AND REPLACE" SHALL INCLUDE THE COST OF LABOR, EQUIPMENT AND MATERIALS REQUIRED TO REMOVE REVETMENT FROM THE EXISTING BANKS, STOCKPILE IF NECESSARY, AND PLACE THE REVETMENT ON THE BANKS WITHIN THE LIMITS SHOWN FOR CLASS 'E' REVETMENT. THIS EXCLUDES AREAS UNDER THE PROPOSED BRIDGE. ANY PIECE GREATER THAN 3 FEET IN ANY DIRECTION SHALL BE BROKEN UP SUCH THAT ITS SIZE IS REDUCED TO LESS THAN 3 FEET IN ANY DIRECTION. HMA MATERIAL SHALL NOT BE PLACED WITHIN THE FLOODPLAIN. ANY REINFORCING SHALL BE CUT OFF FLUSH OR REMOVED. MATERIAL IS TO BE PLACED AT A THICKNESS OF 1'-6. SEE SITUATION PLAN, SHEET 4, AND GENERAL PLAN, SHEET 5, FOR LIMITS.
THE METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE BY CUBIC YARD. PLAN QUANTITY WILL BE PAY QUANTITY.

26.-28. THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING AN INDEPENDENT CHECK OF ALL CONSTRUCTION STAKES PLACED FOR THE PROJECT. THIS INDEPENDENT CHECK SHALL BE SUFFICIENT TO UNDERSTAND THE PLACEMENT AND INTENT OF THE STAKES.
SEE TABULATION CBA-300 ON SHEET 28, FOR FIELD TIES TO THE SITE SURVEY.

29. SEE TABULATION 108-13A ON SHEET 28.

30. SEE TRAFFIC CONTROL PLAN ON SHEET 28.
INCLUDES COST FOR NAVIGABLE WATER SIGNAGE. SEE SHEET 28 FOR DETAILS.

32.-34. THE CONTRACTOR IS TO RESHAPE, FERTILIZE, SEED AND MULCH ANY AREAS DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION. THIS SHALL BE INCLUDED IN THE PRICES BID FOR "MULCHING" AND "SEEDING AND FERTILIZING (RURAL)". SEE POLLUTION PREVENTION PLAN, SHEET 7, FOR STABILIZING CROP REQUIREMENT.
INCLUDES 0.3 ACRES OF MULCHING AND STABILIZING CROP-SEEDING AND FERTILIZING AT THE EARTH WASTE STOCKPILE LOCATION. SEE SHEET 29 FOR LOCATION.

35.-39. SEE POLLUTION PREVENTION PLAN, SHEET 7, AND TABULATIONS 100-17 AND 100-19 ON SHEET 29

299'–0 x 30'–0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'–0 END SPANS

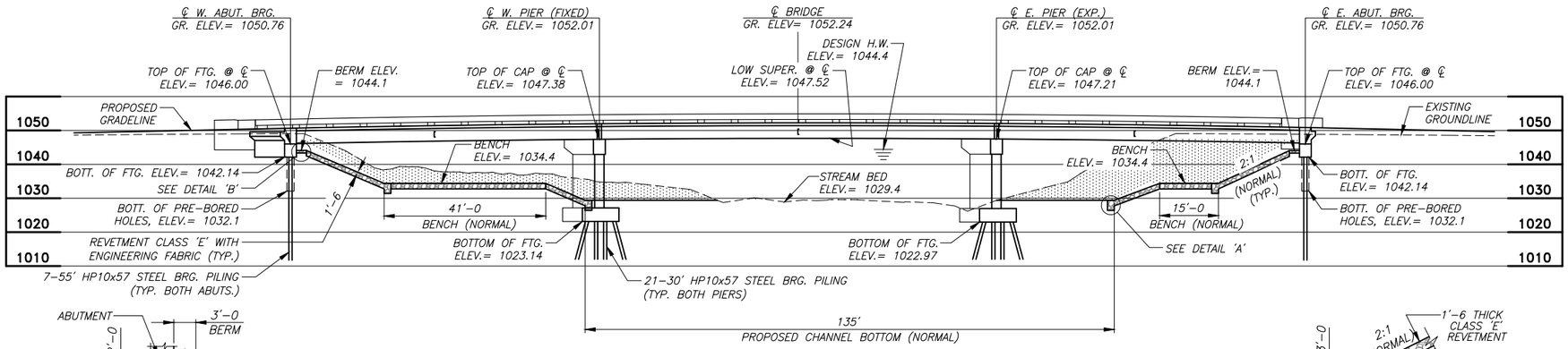
TEE PIERS
117'–0 INTERIOR SPAN

QUANTITY SUMMARY

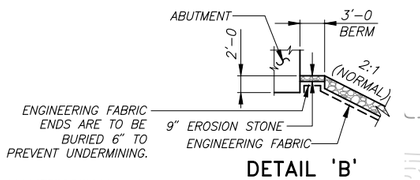
STATION 30+83.00
FLOYD COUNTY,

30° SKEW, RT. AHEAD
IOWA

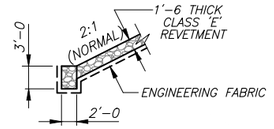
BENCH MARK: #212 STEEL POST, STA. 32+33, 82' LT., ELEV.= 1048.20



LONGITUDINAL SECTION ALONG ℄ ROADWAY



DETAIL 'B'



DETAIL 'A'

PROPOSED GRADE

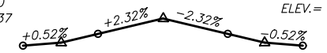
V.P.I. STA. 28+08.00
ELEV.= 1047.89
L.V.C= 200'
M.O.= 0.4500'
K= 111.11
S.S.D.= 360'
DES. SP.= 45 M.P.H

V.P.I. STA. 30+83.00
ELEV.= 1054.27
L.V.C= 350'
M.O.= 2.0300'
K= 75.43
S.S.D.= 360'
DES. SP.= 45 M.P.H

B.O.P.,TIE-IN & V.P.C.
STA. 27+08.00
ELEV.= 1047.37

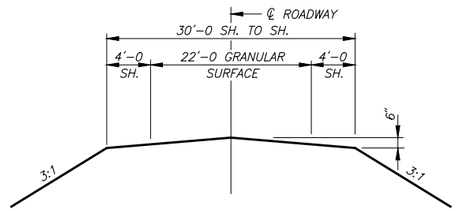
V.P.T. & V.P.C.
STA. 32+58.00
ELEV.= 1050.21

TIE-IN
STA. 34+58.00
ELEV.= 1047.37

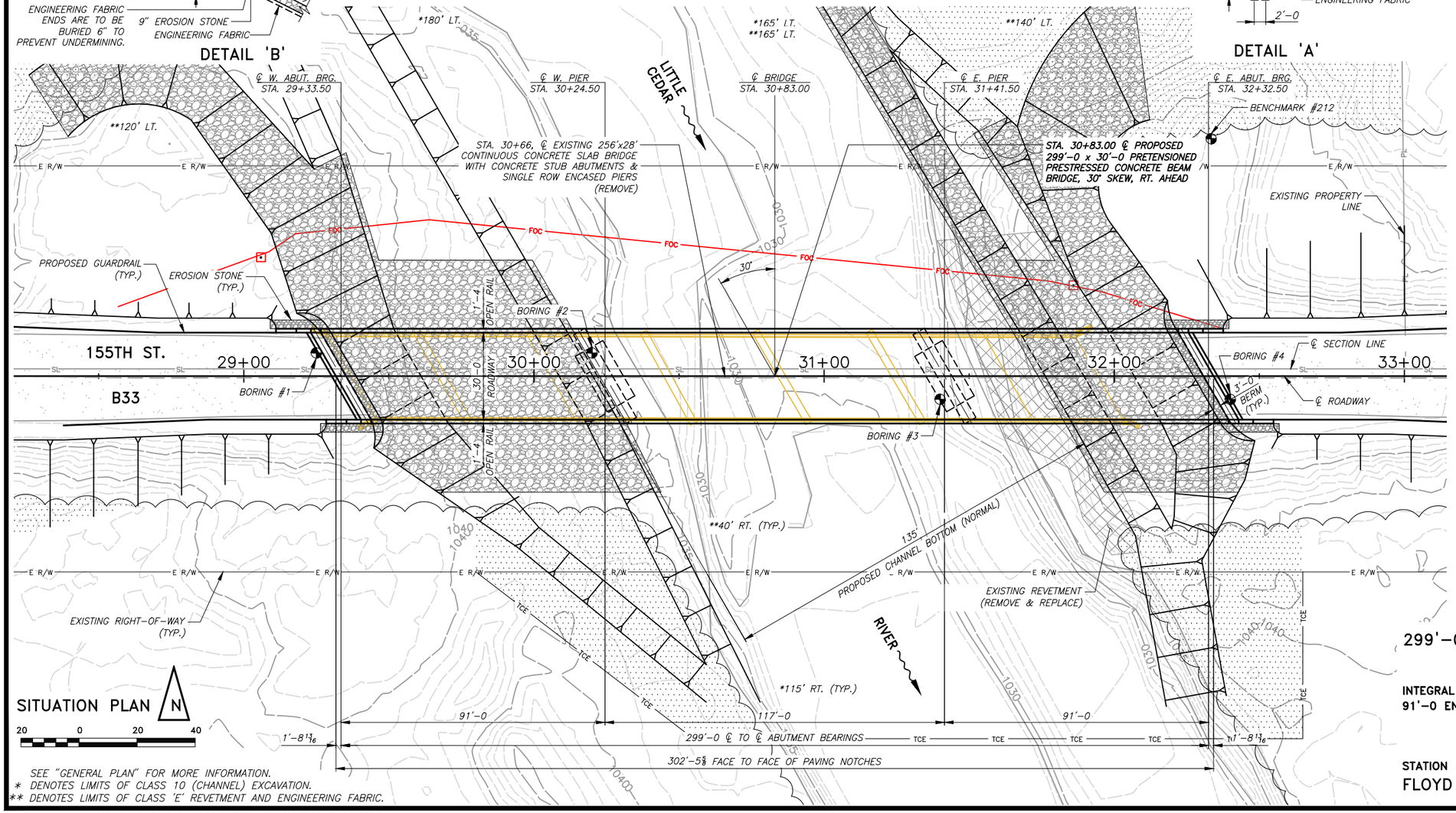


V.P.C. & V.P.T.
STA. 29+08.00
ELEV.= 1050.21

V.P.I. STA. 33+58.00
ELEV.= 1047.89
L.V.C= 200'
M.O.= 0.4500'
K= 111.11
S.S.D.= 360'
DES. SP.= 45 M.P.H



TYPICAL APPROACH SECTION



SITUATION PLAN N

20 0 20 40

SEE "GENERAL PLAN" FOR MORE INFORMATION.
* DENOTES LIMITS OF CLASS 10 (CHANNEL) EXCAVATION.
** DENOTES LIMITS OF CLASS 'E' REVETMENT AND ENGINEERING FABRIC.

LOCATION

FLOYD COUNTY
T-96N, R-15W
SECTION 16
NILES TOWNSHIP
OVER LITTLE CEDAR RIVER

HYDRAULIC DATA

DRAINAGE AREA = 257.0 SQ. MI.
DESIGN DISCHARGE = 16,600 C.F.S.
DESIGN HIGH WATER ELEV. = 1044.4
MANNING SLOPE = 0.000735 FT./FT.
BRIDGE WATERWAY AREA = 2,956 SQ. FT.
DESIGN VELOCITY = 5.6 F.P.S.
Q25 = 14,100 C.F.S. STAGE ELEV. = 1043.9
Q50 = 16,600 C.F.S. STAGE ELEV. = 1044.4 (DESIGN)
Q100 = 19,100 C.F.S. STAGE ELEV. = 1044.9
Q200 = 24,000 C.F.S. STAGE ELEV. = 1045.7
Q500 = 25,400 C.F.S. STAGE ELEV. = 1045.9
EXT. H.W. ELEV. = UNKNOWN
ANTICIPATED Q100 SCOUR ELEV.= 1018.2
ANTICIPATED Q200 SCOUR ELEV.= 1015.4

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'-0 END SPANS

TEE PIERS
117'-0 INTERIOR SPAN

SITUATION PLAN

STATION 30+83.00
FLOYD COUNTY,

30° SKEW, RT. AHEAD
IOWA

BENCH MARK: #212 STEEL POST, STA. 32+33, 82' LT., ELEV.= 1048.20

NILEWOOD PARTNERSHIP, L.L.L.P.

NILEWOOD PARTNERSHIP, L.L.L.P.

JOHN F. CAROLAN & MARIANNE K. CAROLAN,

B.O.P. & TIE-IN STA. 27+08.00

E.O.P. & TIE-IN STA. 34+58.00

B.O.P. & TIE-IN STA. 27+08.00
N: = 3877483.16
E: = 5155222.51

E.O.P. & TIE-IN STA. 34+58.00
N: = 3877489.85
E: = 5155972.48

STA. 28+75 @ 190' LT.

CLEARING & GRUBBING (0.09 ACRES)

STA. 28+50 @ 160' LT.

PROPOSED RIGHT-OF-WAY (TYP.)

STA. 28+00 @ 100' LT.

STA. 28+00 @ EXISTING

*180' LT.

**120' LT.

STA. 30+66, ℄ EXISTING 256'x28' CONTINUOUS CONCRETE SLAB BRIDGE WITH CONCRETE STUB ABUTMENTS & SINGLE ROW ENCASED PIERS (REMOVE)

LITTLE CEDAR

STA. 31+05 @ 190' LT.

STA. 31+25 @ 160' LT.

*165' LT.

**165' LT.

**140' LT.

EXISTING PROPERTY LINE

STA. 33+00 @ 160' LT.

CLEARING & GRUBBING (0.33 ACRES)

STA. 30+83.00 ℄ PROPOSED 299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE, 30° SKEW, RT. AHEAD

BENCHMARK #212

155TH ST.

B33

28+00 29+00 30+00 31+00 32+00 33+00 34+00

℄ SECTION LINE

℄ ROADWAY

30'-0 SH. TO SH.

EROSION STONE (TYP.)

FOC

30°

BORING #1

BORING #2

BORING #3

BORING #4

**40' RT. (TYP.)

*115' RT. (TYP.)

EXISTING REVETMENT (REMOVE & REPLACE)

STA. 29+80 @ EXISTING

CLEARING & GRUBBING (0.09 ACRES)

STA. 30+55 @ 125' RT.

TEMPORARY CONSTRUCTION EASEMENT (TYP.)

RIVER

STA. 32+65 @ EXISTING

CLEARING & GRUBBING (0.08 ACRES)

STA. 32+65 @ 125' RT.

EXISTING RIGHT-OF-WAY (TYP.)

CLEARING & GRUBBING (0.01 ACRES)

FLOYD COUNTY, IA (COUNTY CONSERVATION)

FLOYD COUNTY, IA (COUNTY CONSERVATION)

TCE P R/W E R/W

GENERAL PLAN

N

30 0 30 60

SEE "SITUATION PLAN" FOR MORE INFORMATION.
** DENOTES LIMITS OF CLASS 10 (CHANNEL) EXCAVATION.*
*** DENOTES LIMITS OF CLASS 'E' REVETMENT AND ENGINEERING FABRIC.*

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'-0 END SPANS

TEE PIERS
117'-0 INTERIOR SPAN

GENERAL PLAN

STATION 30+83.00
FLOYD COUNTY,

30° SKEW, RT. AHEAD
IOWA

CBA CALHOUN-BURNS & ASSOCIATES, CONSULTING ENGINEERS
WEST DES MOINES, IOWA 50266 (515) 224-4344

JOB NO. 934-002

DESIGNED BY : SJB
DRAWN BY : JML
CHECKED BY : LGM/EJM

FLOYD COUNTY

PROJECT NO. HDP-C034(117)--6B-34

SPECIFICATIONS

DESIGN: AASHTO LRFD 8TH EDITION, SERIES OF 2017, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL. SEE SHEET 22 FOR PRESTRESSED BEAMS.

CONSTRUCTION: THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2023, PLUS GENERAL SUPPLEMENTAL SPECIFICATIONS; AND APPLICABLE SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS, SHALL APPLY TO THE CONSTRUCTION ON THIS PROJECT.

DEVELOPMENTAL SPECIFICATION "STRUCTURAL CONCRETE (4,500 PSI OR GREATER)" SHALL APPLY TO THE ABUTMENTS, DIAPHRAGMS AND DECK.

DESIGN STRESSES

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, SERIES 2017, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60.

STRUCTURAL STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 6. ASTM A709 GRADE 36 (AASHTO M270 GRADE 36).

CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, F'C=4,000 PSI EXCEPT AS NOTED.

PRESTRESSING STEEL SEE SHEET 22
PRESTRESSED CONCRETE SEE SHEET 22
ABUTMENTS, DIAPHRAGMS AND DECK CONCRETE F'C=4,500 PSI.

GENERAL NOTES

THIS DESIGN IS FOR A 299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE ON 155TH STREET OVER THE LITTLE CEDAR RIVER IN FLOYD COUNTY, IOWA.

THIS BRIDGE IS DESIGNED FOR HL-93 LOADING PLUS 20 LBS. PER SQ. FT. OF ROADWAY FOR FUTURE WEARING SURFACE.

ACCESS SHALL BE MAINTAINED TO INDIVIDUAL PROPERTIES DURING CONSTRUCTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

THE PRIME CONTRACTOR SHALL EMPLOY CONTROLS TO REDUCE THE EROSIVENESS OF LAND ADJACENT TO SURFACE WATERS AND WETLANDS, INCLUDING ESTABLISHMENT AND MAINTENANCE OF EROSION CONTROL DURING AND AFTER CONSTRUCTION AND REVEGETATION OF ALL DISTURBED AREAS UPON PROJECT COMPLETION. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL EROSION CONTROL MEASURES.

STANDARD ROAD PLAN EW-401 IS LISTED IN TABULATION 105-4; HOWEVER, IT IS INCLUDED FOR INFORMATION PURPOSES ONLY SINCE IT IS AN OPTION. NO QUANTITIES ASSOCIATED WITH CONSTRUCTING EW-401 ARE INCLUDED IN ANY BID ITEMS.

STANDARD ROAD PLANS ARE AVAILABLE FROM THE IOWA DEPARTMENT OF TRANSPORTATION WEBSITE: http://erl.iowadot.gov.

DURING CONSTRUCTION OF THIS PROJECT, THE CONTRACTOR WILL BE REQUIRED TO COORDINATE THEIR OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION OF THE FOLLOWING PROJECTS:

HDP-C034(114)--6B-34

UTILITY NOTES

SEE SECTION 1107.15 OF THE STANDARD SPECIFICATION REGARDING UTILITY COORDINATION.

WASTE AND DISPOSAL NOTES

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL (EXCAVATED MATERIAL OR BROKEN CONCRETE) WHICH IS NOT DESIRABLE TO BE INCORPORATED INTO THE WORK INVOLVED ON THIS PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT AREAS (INCLUDING HAUL ROADS) SELECTED FOR WASTE OR DISPOSAL NOT IMPACT 1) CULTURALLY SENSITIVE SITES OR GRAVES OR 2) WETLANDS OR "WATERS OF THE U.S.", INCLUDING STREAMS OR STREAM BANKS BELOW THE "ORDINARY HIGH WATER MARK", WITHOUT AN APPROVED U.S. ARMY CORPS OF ENGINEERS SECTION 404 PERMIT. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES. NO MATERIAL SHALL BE PLACED WITHIN THE RIGHT-OF-WAY, UNLESS SPECIFICALLY STATED IN THE PLANS OR APPROVED BY THE ENGINEER.

HAZARDOUS MATERIALS NOTES

AN INSPECTION FOR THE PRESENCE OF ASBESTOS CONTAINING MATERIALS WAS COMPLETED BY:
SCOTT BROWN OF IOWA ENVIRONMENTAL SERVICES
IA LICENSE NUMBER: 23-11045I
DATE INSPECTED: 12/13/2024
PHONE: 515-279-8042

A SCRAPE SAMPLE OF THE EXISTING PAINT WAS TAKEN FROM THE BRIDGE RAIL TO GET AN INDICATION OF THE EXISTENCE AND OF THE LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. ANALYSIS OF TOTAL LEAD ON THIS SAMPLE WAS 80,000 PART PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THIS SAMPLE WAS 30.2 PPM. THESE ANALYSES SHOW THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. LEVELS INDICATED BY THESE TESTS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH AND SAFETY REQUIREMENTS. NO OTHER CONSTITUENTS WERE ANALYZED. THE BIDDER SHOULD NOT RELY ON THE COUNTY'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.

THE CONTRACTOR SHALL CONDUCT THEIR OPERATIONS IN SUCH A MANNER THAT ANY PAINT REMOVED DURING REMOVAL IS CONTAINED, COLLECTED, AND DISPOSED OF IN ACCORDANCE WITH SECTION 2508 OF THE STANDARD SPECIFICATIONS.

BEFORE DELIVERY OF ANY SCRAP STEEL THE CONTRACTOR SHALL PROVIDE A WRITTEN NOTICE TO THE RECEIVING FACILITY. THIS NOTICE SHALL AT A MINIMUM INCLUDE:

1. A NOTICE THAT THE SCRAP STEEL IS COATED WITH PAINT THAT HAS REGULATED MATERIALS AT LEVELS THAT COULD BE HAZARDOUS TO EMPLOYEES OR THE ENVIRONMENT.
2. A COPY OF THE SCRAPE SAMPLE PROVIDED IN THE CONTRACT DOCUMENTS.
3. A SIGNATURE BLOCK FOR THE RECEIVING FACILITY TO CONFIRM THEIR RECEIPT OF THIS INFORMATION.

A COPY OF THIS NOTICE, SIGNED BY THE RECEIVING FACILITY, SHALL BE RETURNED TO THE ENGINEER BEFORE ANY SCRAP STEEL IS REMOVED FROM THE PROJECT.

ALL COSTS ASSOCIATED WITH COMPLIANCE WITH THE ABOVE REMOVAL AND DISPOSAL REQUIREMENTS WILL BE INCIDENTAL TO "REMOVAL OF EXISTING BRIDGE."

PILE NOTES

SOUNDING AND TEST BORING DATA SHOWN ON PLANS WERE ACCUMULATED FOR DESIGNING AND ESTIMATING PURPOSES. THEIR APPEARANCE ON THE PLAN DOES NOT CONSTITUTE A GUARANTEE THAT CONDITIONS OTHER THAN THOSE INDICATED WILL NOT BE ENCOUNTERED.

THIS PROJECT USES THE LOAD AND RESISTANCE FACTOR DESIGN (LRFD) METHODOLOGY FOR DETERMINING PILE CONTRACT LENGTH AND NOMINAL AXIAL BEARING RESISTANCE. A WEAP ANALYSIS AND BEARING GRAPH WILL BE PROVIDED BY THE ENGINEER THAT GIVES THE RELATIONSHIP BETWEEN REQUIRED NOMINAL AXIAL BEARING RESISTANCE AND BLOW COUNT.

ABUTMENT PILE

THE CONTRACT LENGTH OF 55 FEET FOR THE ABUTMENT PILES IS BASED ON A NON-COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 202 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.55 FOR SOIL AND 0.70 FOR ROCK END BEARING.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A NON-COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.55 FOR SOIL AND 0.70 FOR ROCK END BEARING. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF PREBORE.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR THE ABUTMENT PILES IS 152 TONS AT END OF DRIVE (EOD) OR RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

PIER PILE

THE CONTRACT LENGTH OF 30 FEET FOR THE PIER PILES IS BASED ON A NON-COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 163 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.55 FOR SOIL AND 0.70 FOR ROCK END BEARING. PILES WERE ALSO DESIGNED FOR A FACTORED TENSION FORCE OF 10 KIPS.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A NON-COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.55 FOR SOIL AND 0.70 FOR ROCK END BEARING. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING. DESIGN SCOUR (100-YEAR) WAS ASSUMED TO AFFECT THE UPPER 5 FEET OF EMBEDDED PILE LENGTH AND CAUSE 10 KIPS OF DRIVING RESISTANCE.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR THE PIER PILES IS 126 TONS AT END OF DRIVE (EOD) OR RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. CONSTRUCTION CONTROL REQUIRES A WEAP ANALYSIS WITH BEARING GRAPH.

CONCRETE AND REINFORCING STEEL NOTES

ALL REINFORCING STEEL SHALL BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS PLACED. BAR CHAIRS SPACED AT NOT MORE THAN 3'-0 CENTERS IN EITHER DIRECTION SHALL BE USED TO SUPPORT ALL REINFORCING IN ACCORDANCE WITH THE SECTION 2404 OF THE STANDARD SPECIFICATIONS.

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

ALL EXPOSED CORNERS 90 DEGREES OR SHARPER ARE TO BE FILLETED WITH A 3/4" DRESSED AND BEVELED STRIP.

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

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

CONCRETE PAVING BLOCKS ARE REQUIRED AND ARE TO REMAIN IN PLACE AFTER CONSTRUCTION.

CONTRACTOR'S WORK AREA

THE CONTRACTOR'S WORK AND MATERIAL STORAGE AREA SHALL BE DEFINED BY THE CONTRACTOR AND NOTED TO THE ENGINEER. THE CONTRACTOR SHALL SHAPE, FERTILIZE, AND SEED THIS CONTRACTOR'S AREA IN ORDER TO RETURN IT TO ITS ORIGINAL CONDITION. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR "SEEDING AND FERTILIZING (RURAL)" AND "MULCHING" BID ITEMS. AREAS OUTSIDE THE CONTRACTOR'S AREA DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION, AS DETERMINED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE AUTHORIZED FOR THIS WORK.

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS — TEE PIERS
91'-0 END SPANS — 117'-0 INTERIOR SPAN

GENERAL NOTES

STATION 30+83.00 — 30° SKEW, RT. AHEAD
FLOYD COUNTY, IOWA

POLLUTION PREVENTION PLAN

THIS PROJECT IS REGULATED BY THE REQUIREMENTS OF THE IOWA DEPARTMENT OF NATURAL RESOURCES (DNR) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT NO. 2 OR AN IOWA DEPARTMENT OF NATURAL RESOURCES (DNR) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) INDIVIDUAL STORM WATER PERMIT. THE CONTRACTOR SHALL CARRY OUT THE TERMS AND CONDITIONS OF THIS PERMIT AND THE POLLUTION PREVENTION PLAN (PPP).

THIS BASE PPP INCLUDES INFORMATION ON ROLES AND RESPONSIBILITIES, PROJECT SITE DESCRIPTION, CONTROLS, MAINTENANCE PROCEDURES, INSPECTION REQUIREMENTS, NON-STORM WATER CONTROLS, POTENTIAL SOURCES OF OFF RIGHT-OF-WAY POLLUTION, AND DEFINITIONS. THIS PLAN REFERENCES OTHER DOCUMENTS RATHER THAN REPEATING THE INFORMATION CONTAINED IN THE DOCUMENTS. A COPY OF THIS BASE POLLUTION PREVENTION PLAN, AMENDED AS NEEDED DURING CONSTRUCTION, WILL BE READILY AVAILABLE FOR REVIEW.

ALL CONTRACTORS SHALL CONDUCT THEIR OPERATIONS IN A MANNER THAT CONTROLS POLLUTANTS, MINIMIZES EROSION, AND PREVENTS SEDIMENTS FROM ENTERING WATERS OF THE STATE AND LEAVING THE HIGHWAY RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE AND IMPLEMENTATION OF THE PPP FOR THEIR ENTIRE CONTRACT. THIS RESPONSIBILITY SHALL BE FURTHER SHARED WITH SUBCONTRACTORS WHOSE WORK IS A SOURCE OF POTENTIAL POLLUTION AS DEFINED IN THIS PPP.

I. ROLES AND RESPONSIBILITIES
- A. DESIGNER:
  1. PREPARES BASE PPP INCLUDED IN THE PROJECT PLAN.
- B. OWNER
  1. PREPARES NOTICE OF INTENT (NOI) SUBMITTED TO IOWA DNR.
  2. IS SIGNATURE AUTHORITY ON THE BASE PPP.
- C. CONTRACTOR:
  1. SIGNS A CO-PERMITTEE CERTIFICATION STATEMENT ADHERING TO THE REQUIREMENTS OF THE NPDES PERMIT AND THIS PPP. ALL CO-PERMITTEES ARE LEGALLY REQUIRED UNDER THE CLEAN WATER ACT AND THE IOWA ADMINISTRATIVE CODE TO ENSURE COMPLIANCE WITH THE TERMS AND CONDITIONS OF THIS PPP.
  2. DESIGNATES A WATER POLLUTION CONTROL MANAGER (WPCM), WHO HAS THE DUTIES AND RESPONSIBILITIES AS DEFINED IN SPECIFICATIONS SECTION 2602 OF THE STANDARD SPECIFICATIONS.
  3. SUBMITS AN EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND ECIP UPDATES ACCORDING TO SPECIFICATIONS SECTION 2602 OF THE STANDARD SPECIFICATIONS.
  4. INSTALLS AND MAINTAINS APPROPRIATE CONTROLS. THIS WORK MAY BE SUBCONTRACTED AS DOCUMENTED THROUGH SUBCONTRACTOR REQUEST FORMS (FORM 830231).
  5. SUPERVISES AND IMPLEMENTS GOOD HOUSEKEEPING PRACTICES ACCORDING TO PARAGRAPH III, C, 2.
  6. CONDUCTS JOINT REQUIRED INSPECTIONS OF THE SITE WITH INSPECTION STAFF. WHEN CONTRACTOR IS NOT MOBILIZED ON SITE, CONTRACTOR MAY DELEGATE THIS RESPONSIBILITY TO A TRAINED OR CERTIFIED SUBCONTRACTOR. CONTRACTING AUTHORITY ALSO MAY WAIVE JOINT INSPECTION REQUIREMENT DURING WINTER SHUTDOWN. IN BOTH CIRCUMSTANCES, WPCM (OR TRAINED OR CERTIFIED DELEGATE FROM THE CONTRACTOR) IS STILL RESPONSIBLE TO REVIEW AND SIGN INSPECTION REPORTS.
  7. COMPLIES WITH TRAINING AND CERTIFICATION REQUIREMENTS OF SECTION 2602 OF THE STANDARD SPECIFICATIONS.
  8. SUBMITS AMENDED PPP SITE MAP ACCORDING TO SECTION 2602 OF THE STANDARD SPECIFICATIONS.
- D. SUBCONTRACTORS:
  1. SIGN A CO-PERMITTEE CERTIFICATION STATEMENT ADHERING TO THE REQUIREMENTS OF THE NPDES PERMIT AND THIS PPP IF RESPONSIBLE FOR SEDIMENT OR EROSION CONTROLS; INVOLVED IN LAND DISTURBING ACTIVITIES; OR PERFORMING WORK THAT IS A SOURCE OF POTENTIAL POLLUTION AS DEFINED IN THIS PPP. SUBCONTRACTED WORK ITEMS ARE IDENTIFIED IN SUBCONTRACTOR REQUEST FORMS (FORM 830231). ALL CO-PERMITTEES ARE LEGALLY REQUIRED UNDER THE CLEAN WATER ACT AND THE IOWA ADMINISTRATIVE CODE TO ENSURE COMPLIANCE WITH THE TERMS AND CONDITIONS OF THIS PPP.
  2. IMPLEMENT GOOD HOUSEKEEPING PRACTICES ACCORDING TO PARAGRAPH III, C, 2.
- E. RCE/PROJECT ENGINEER:
  1. IS PROJECT STORM WATER MANAGER.
  2. TAKES ACTIONS NECESSARY TO ENSURE COMPLIANCE WITH STORM WATER REQUIREMENTS INCLUDING, WHERE APPROPRIATE, ISSUING STOP WORK ORDERS, AND DIRECTING ADDITIONAL INSPECTIONS AT CONSTRUCTION PROJECT SITES THAT ARE EXPERIENCING PROBLEMS WITH ACHIEVING PERMIT COMPLIANCE.
  3. ORDERS THE TAKING OF MEASURES TO CEASE, CORRECT, PREVENT, OR MINIMIZE THE CONSEQUENCES OF NON-COMPLIANCE WITH THE STORM WATER REQUIREMENTS OF THE APPLICABLE PERMIT.
  4. SUPERVISES ALL WORK NECESSARY TO MEET STORM WATER REQUIREMENTS AT THE PROJECT, INCLUDING WORK PERFORMED BY CONTRACTORS AND SUBCONTRACTORS.
  5. REQUIRES EMPLOYEES, CONTRACTORS, AND SUBCONTRACTORS TO TAKE APPROPRIATE RESPONSIVE ACTION TO COMPLY WITH STORM WATER REQUIREMENTS, INCLUDING REQUIRING ANY SUCH PERSON TO CEASE OR CORRECT A VIOLATION OF STORM WATER REQUIREMENTS, AND TO ORDER OR RECOMMEND SUCH OTHER ACTIONS AS NECESSARY TO MEET STORM WATER REQUIREMENTS.
  6. IS FAMILIAR WITH THE PROJECT PPP AND STORM WATER SITE MAP.
  7. IS THE POINT OF CONTACT FOR THE PROJECT FOR REGULATORY OFFICIALS, INSPECTOR, CONTRACTORS, AND SUBCONTRACTORS REGARDING STORM WATER REQUIREMENTS.
  8. IS SIGNATURE AUTHORITY ON NOTICE OF DISCONTINUATION.
  9. MAINTAINS AN UP-TO-DATE RECORD OF CONTRACTORS, SUBCONTRACTORS, AND SUBCONTRACTED WORK ITEMS THROUGH SUBCONTRACTOR REQUEST FORMS (FORM 830231).
  10. MAKES INFORMATION TO DETERMINE PERMIT COMPLIANCE AVAILABLE TO THE DNR UPON THEIR REQUEST.
- F. INSPECTOR:
  1. UPDATES PPP THROUGH FIELDBOOK ENTRIES AND STORM WATER SITE INSPECTION REPORTS IF THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE WHICH HAS A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS FROM THE PROJECT.
  2. MAKES INFORMATION TO DETERMINE PERMIT COMPLIANCE AVAILABLE TO THE DNR UPON THEIR REQUEST.
  3. CONDUCTS JOINT REQUIRED INSPECTIONS OF THE SITE WITH THE CONTRACTOR/SUBCONTRACTOR.
  4. COMPLETES AN INSPECTION REPORT AFTER EACH INSPECTION.
  5. IS SIGNATURE AUTHORITY ON STORM WATER INSPECTION REPORTS.

II. PROJECT SITE DESCRIPTION
- A. THIS POLLUTION PREVENTION PLAN (PPP) IS FOR THE CONSTRUCTION OF A 299'-0 X 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE ON 155TH STREET OVER THE LITTLE CEDAR RIVER IN FLOYD COUNTY, IOWA.
- B. THIS PPP COVERS APPROXIMATELY 4.2 ACRES WITH AN ESTIMATED 2.8 ACRES BEING DISTURBED. THE PORTION OF THE PPP COVERED BY THIS CONTRACT HAS 2.8 ACRES DISTURBED.
- C. THE PPP IS LOCATED IN AN AREA OF ONE SOIL ASSOCIATION(S) (KENYON-CLYDE-FLOYD). THE ESTIMATED WEIGHTED AVERAGE RUNOFF COEFFICIENT NUMBER FOR THIS PPP AFTER COMPLETION WILL BE 0.24.
- D. STORM WATER SITE MAP - MULTIPLE SOURCES OF INFORMATION COMPRISE THE BASE STORM WATER SITE MAP INCLUDING:
  1. DRAINAGE PATTERNS – SITUATION PLAN, GENERAL PLAN AND EARTH WASTE STOCKPILE SITE.
  2. PROPOSED SLOPES – CROSS SECTIONS.
  3. AREAS OF SOIL DISTURBANCE – CONSTRUCTION LIMITS SHOWN ON SITUATION PLAN AND GENERAL PLAN.
  4. LOCATION OF STRUCTURAL CONTROLS – TABULATIONS.
  5. LOCATIONS OF NON-STRUCTURAL CONTROLS – TABULATIONS.
  6. LOCATIONS OF STABILIZATION PRACTICES – GENERALLY WITHIN CONSTRUCTION LIMITS SHOWN ON SITUATION PLAN, GENERAL PLAN AND EARTH WASTE STOCKPILE SITE.
  7. SURFACE WATERS (INCLUDING WETLANDS) – PROJECT LOCATION MAP AND SITUATION PLAN, GENERAL PLAN AND EARTH WASTE STOCKPILE SITE.
  8. LOCATIONS WHERE STORM WATER IS DISCHARGED – SITUATION PLAN, GENERAL PLAN AND EARTH WASTE STOCKPILE SITE.
- E. THE BASE STORM WATER SITE MAP IS AMENDED BY CONTRACT MODIFICATIONS AND PROGRESS PAYMENTS (FIELDBOOK ENTRIES) OF COMPLETED EROSION CONTROL WORK. ALSO, DUE TO PROJECT PHASING, EROSION AND SEDIMENT CONTROLS SHOWN ON PROJECT PLANS MAY NOT BE INSTALLED UNTIL NEEDED, BASED ON SITE CONDITIONS. FOR EXAMPLE, SILT FENCE DITCH CHECKS WILL TYPICALLY NOT BE INSTALLED UNTIL THE DITCH HAS BEEN INSTALLED. INSTALLED LOCATIONS WILL BE DOCUMENTED BY FIELDBOOK ENTRIES AND AMENDED PPP SITE MAP.
- F. RUNOFF FROM THIS WORK WILL FLOW INTO THE LITTLE CEDAR RIVER.

III. CONTROLS
- A. THE CONTRACTOR'S ECIP SPECIFIED IN ARTICLE 2602.03 OF THE STANDARD SPECIFICATIONS FOR ACCOMPLISHMENT OF STORM WATER CONTROLS SHOULD CLEARLY DESCRIBE THE INTENDED SEQUENCE OF MAJOR ACTIVITIES AND FOR EACH ACTIVITY DEFINE THE CONTROL MEASURE AND THE TIMING DURING THE CONSTRUCTION PROCESS THAT THE MEASURE WILL BE IMPLEMENTED.
- B. PRESERVE VEGETATION IN AREAS NOT NEEDED FOR CONSTRUCTION.
- C. SECTIONS 2601 AND 2602 OF THE STANDARD SPECIFICATIONS DEFINE REQUIREMENTS TO IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES. ACTUAL QUANTITIES USED AND INSTALLED LOCATIONS MAY VARY FROM THE BASE PPP AND AMENDMENT OF THE PLAN WILL BE DOCUMENTED VIA FIELDBOOK ENTRIES, AMENDED PPP SITE MAP, OR BY CONTRACT MODIFICATION. ADDITIONAL EROSION AND SEDIMENT CONTROL ITEMS MAY BE REQUIRED AS DETERMINED BY THE INSPECTOR AND/OR CONTRACTOR DURING STORM WATER SITE INSPECTIONS. IF THE WORK INVOLVED IS NOT APPLICABLE TO ANY CONTRACT ITEMS, THE WORK WILL BE PAID FOR ACCORDING TO ARTICLE 1109.03 PARAGRAPH B OF THE STANDARD SPECIFICATIONS.
  1. EROSION AND SEDIMENT CONTROLS
     - a. STABILIZATION PRACTICES
       1) SITE PLANS WILL ENSURE THAT EXISTING VEGETATION OR NATURAL BUFFERS ARE PRESERVED WHERE ATTAINABLE AND DISTURBED PORTIONS OF THE SITE WILL BE STABILIZED.
       2) INITIALIZE STABILIZATION OF DISTURBED AREAS IMMEDIATELY AFTER CLEARING, GRADING, EXCAVATING, OR OTHER EARTH DISTURBING ACTIVITIES HAVE:
          a) PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR
          b) TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS.
       3) STAGED PERMANENT AND/OR TEMPORARY STABILIZING SEEDING AND MULCHING SHALL BE COMPLETED AS THE DISTURBED AREAS ARE COMPLETED. INCOMPLETE AREAS SHALL BE STABILIZED ACCORDING TO PARAGRAPH III, C, 1, a, 2, b ABOVE.
       4) PERMANENT AND TEMPORARY STABILIZATION PRACTICES TO BE USED FOR THIS PROJECT ARE LOCATED IN THE ESTIMATED PROJECT QUANTITIES AND ESTIMATE REFERENCE INFORMATION LOCATED IN THE PLANS. TYPICAL DRAWINGS DETAILING CONSTRUCTION OF THE PRACTICES TO BE USED ON THIS PROJECT ARE REFERENCED IN THE STANDARD ROAD PLANS TABULATION.
       5) PRESERVATION OF EXISTING VEGETATION WITHIN RIGHT-OF-WAY OR EASEMENTS WILL ACT AS VEGETATIVE BUFFER STRIPS.
       6) PRESERVATION OF TOPSOIL: BID ITEMS TO BE USED FOR THIS PROJECT ARE LOCATED IN THE ESTIMATED PROJECT QUANTITIES AND ESTIMATE REFERENCE INFORMATION LOCATED IN THE PLANS. ADDITIONAL INFORMATION MAY BE FOUND IN TABULATIONS OF THE PLANS OR IS REFERENCED IN STANDARD SECTION 2105 OF THE STANDARD SPECIFICATIONS.
     - b. STRUCTURAL PRACTICES
       1) STRUCTURAL PRACTICES WILL BE IMPLEMENTED TO DIVERT FLOWS FROM EXPOSED SOILS AND DETAIN OR OTHERWISE LIMIT RUNOFF AND THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE. ADDITIONALLY, STRUCTURAL PRACTICES MAY INCLUDE: SILT BASINS THAT PROVIDE 3600 CUBIC FEET OF STORAGE PER ACRE DRAINED OR EQUIVALENT SEDIMENT CONTROLS, OUTLET STRUCTURES THAT WITHDRAW WATER FROM SURFACE WHEN DISCHARGING BASINS, AND CONTROLS TO DIRECT STORM WATER TO VEGETATED AREAS.
       2) STRUCTURAL PRACTICES TO BE USED FOR THIS PROJECT ARE LOCATED IN THE ESTIMATED PROJECT QUANTITIES AND ESTIMATE REFERENCE INFORMATION, AS WELL AS ALL OTHER ITEM SPECIFIC TABULATIONS. TYPICAL DRAWINGS DETAILING CONSTRUCTION OF THE DEVICES TO BE USED ON THIS PROJECT CAN BE FOUND IN THE PLANS OR ARE REFERENCED IN THE STANDARD ROAD PLANS TABULATION.
     - c. STORM WATER MANAGEMENT
       1) MEASURES SHALL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER DISCHARGES THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED. THIS MAY INCLUDE VELOCITY DISSIPATION DEVICES AT DISCHARGE LOCATIONS AND ALONG LENGTH OF OUTFALL CHANNEL AS NECESSARY TO PROVIDE A NON-EROSION VELOCITY FLOW FROM STRUCTURE TO WATER COURSE. IF INCLUDED WITH THIS PROJECT, THESE ITEMS ARE LOCATED IN THE ESTIMATED PROJECT QUANTITIES AND ESTIMATE REFERENCE INFORMATION, AS WELL AS ALL OTHER ITEM SPECIFIC TABULATIONS. TYPICAL DRAWINGS DETAILING CONSTRUCTION OF THE PRACTICES TO BE USED ON THIS PROJECT ARE REFERENCED IN THE STANDARD ROAD PLANS TABULATION. THE INSTALLATION OF THESE DEVICES MAY BE SUBJECT TO SECTION 404 OF THE CLEAN WATER ACT.
  2. OTHER CONTROLS
     - a. CONTRACTOR DISPOSAL OF UNUSED CONSTRUCTION MATERIALS AND CONSTRUCTION MATERIAL WASTES SHALL COMPLY WITH APPLICABLE STATE AND LOCAL WASTE DISPOSAL, SANITARY SEWER, OR SEPTIC SYSTEM REGULATIONS. IN THE EVENT OF A CONFLICT WITH OTHER GOVERNMENTAL LAWS, RULES AND REGULATIONS, THE MORE RESTRICTIVE APPLICABLE LAWS, RULES OR REGULATIONS SHALL APPLY.
       1) VEHICLE ENTRANCES AND EXITS - CONSTRUCT AND MAINTAIN ENTRANCES AND EXITS TO PREVENT TRACKING OF SEDIMENTS ONTO ROADWAYS.
       2) MATERIAL DELIVERY, STORAGE AND USE - IMPLEMENT PRACTICES TO PREVENT DISCHARGE OF CONSTRUCTION MATERIALS DURING DELIVERY, STORAGE, AND USE.
       3) STOCKPILE MANAGEMENT - INSTALL CONTROLS TO REDUCE OR ELIMINATE POLLUTION OF STORM WATER FROM STOCKPILES OF SOIL AND PAVING.
       4) WASTE DISPOSAL - DO NOT DISCHARGE ANY MATERIALS, INCLUDING BUILDING MATERIALS, INTO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
       5) SPILL PREVENTION AND CONTROL - IMPLEMENT CHEMICAL SPILL AND LEAK PREVENTION AND RESPONSE PROCEDURES TO CONTAIN AND CLEAN-UP SPILLS AND PREVENT MATERIAL DISCHARGES TO THE STORM DRAIN SYSTEM AND WATERS OF THE STATE.
       6) CONCRETE RESIDUALS AND WASHOUT WASTES - WASTE SHALL NOT BE DISCHARGED TO A SURFACE WATER AND IS NOT ALLOWED TO ADVERSELY AFFECT A WATER OF THE STATE. DESIGNATE TEMPORARY CONCRETE WASHOUT FACILITIES FOR RINSING OUT CONCRETE TRUCKS. PROVIDE DIRECTIONS TO TRUCK DRIVERS WHERE DESIGNATED WASHOUT FACILITIES ARE LOCATED. DESIGNATED WASHOUT AREAS SHOULD BE LOCATED AT LEAST 50 FEET AWAY FROM STORM DRAINS, STREAMS OR OTHER WATER BODIES. CARE SHOULD BE TAKEN TO ENSURE THESE FACILITIES DO NOT OVERFLOW DURING STORM EVENTS.
       7) CONCRETE GROOVING/GRINDING SLURRY – DO NOT DISCHARGE SLURRY TO A WATERBODY OR STORM DRAIN. SLURRY MAY BE APPLIED ON FORESLOPES OR REMOVED FROM THE PROJECT.
       8) VEHICLE AND EQUIPMENT STORAGE AND MAINTENANCE AREAS - PERFORM ON SITE FUELING AND MAINTENANCE IN ACCORDANCE WITH ALL ENVIRONMENT LAWS SUCH AS PROPER STORAGE OF ONSITE FUELS AND PROPER DISPOSAL OF USED ENGINE OIL OR OTHER FLUIDS ON SITE. EMPLOY WASHING PRACTICES THAT PREVENT CONTAMINATION OF SURFACE AND GROUND WATER FROM WASH WATER. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL THAT PROVIDES EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE.
       9) LITTER MANAGEMENT - ENSURE EMPLOYEES PROPERLY DISPOSE OF LITTER. MINIMIZE EXPOSURE OF TRASH IF EXPOSURE TO PRECIPITATION OR STORM WATER WOULD RESULT IN A DISCHARGE OF POLLUTANTS.
       10) DEWATERING – PROPERLY TREAT WATER TO REMOVE SUSPENDED SEDIMENT BEFORE IT RE-ENTERS A WATERBODY OR DISCHARGES OFF-SITE. MEASURES ARE ALSO TO BE TAKEN TO PREVENT SCOUR EROSION AT DEWATERING DISCHARGE POINT.
  3. APPROVED STATE OR LOCAL PLANS
     DURING THE COURSE OF THIS CONSTRUCTION, IT IS POSSIBLE THAT SITUATIONS WILL ARISE WHERE UNKNOWN MATERIALS WILL BE ENCOUNTERED. WHEN SUCH SITUATIONS ARE ENCOUNTERED, THEY WILL BE HANDLED ACCORDING TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS IN EFFECT AT THE TIME.

IV. MAINTENANCE PROCEDURES
THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES IN PROPER WORKING ORDER, INCLUDING CLEANING, REPAIRING, OR REPLACING THEM THROUGHOUT THE CONTRACT PERIOD. THIS SHALL BEGIN WHEN THE FEATURES HAVE LOST 50% OF THEIR CAPACITY.

V. INSPECTION REQUIREMENTS
- A. INSPECTIONS SHALL BE MADE JOINTLY BY THE CONTRACTOR AND THE CONTRACTING AUTHORITY AT LEAST ONCE EVERY SEVEN CALENDAR DAYS. STORM WATER SITE INSPECTIONS WILL INCLUDE:
  1. DATE OF THE INSPECTION.
  2. SUMMARY OF THE SCOPE OF THE INSPECTION.
  3. NAME AND QUALIFICATIONS OF THE PERSONNEL MAKING THE INSPECTION.
  4. REVIEW OF EROSION AND SEDIMENT CONTROL MEASURES WITHIN DISTURBED AREAS FOR THE EFFECTIVENESS IN PREVENTING IMPACTS TO RECEIVING WATERS.
  5. MAJOR OBSERVATIONS RELATED TO THE IMPLEMENTATION OF THE PPP.
  6. IDENTIFICATION OF CORRECTIVE ACTIONS REQUIRED TO MAINTAIN OR MODIFY EROSION AND SEDIMENT CONTROL MEASURES.
- B. INCLUDE STORM WATER SITE INSPECTION REPORTS IN THE AMENDED PPP. INCORPORATE ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DETERMINED AS A RESULT OF THE INSPECTION. IMMEDIATELY BEGIN CORRECTIVE ACTIONS ON ALL DEFICIENCIES FOUND WITHIN 3 CALENDAR DAYS OF THE INSPECTION AND COMPLETE WITHIN 7 CALENDAR DAYS FOLLOWING THE INSPECTION. IF IT IS DETERMINED THAT MAKING THE CORRECTIONS LESS THAN 72 HOURS AFTER THE INSPECTION IS IMPRACTICABLE, IT SHOULD BE DOCUMENTED WHY IT IS IMPRACTICABLE AND INDICATE AN ESTIMATED DATE BY WHICH THE CORRECTIONS WILL BE MADE.

VI. NON-STORM WATER DISCHARGES
THIS INCLUDES SUBSURFACE DRAINS (I.E. LONGITUDINAL AND STANDARD SUBDRAINS) AND SLOPE DRAINS. THE VELOCITY OF THE DISCHARGE FROM THESE FEATURES MAY BE CONTROLLED BY THE USE OF HEADWALLS OR BLOCKS, CLASS A STONE, EROSION STONE OR OTHER APPROPRIATE MATERIALS. THIS ALSO INCLUDES UNCONTAMINATED GROUNDWATER FROM DEWATERING OPERATIONS, WHICH WILL BE CONTROLLED AS DISCUSSED IN SECTION III OF THE PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION
SILTS, SEDIMENT, AND OTHER FORMS OF POLLUTION MAY BE TRANSPORTED ONTO HIGHWAY RIGHT-OF-WAY (ROW) AS A RESULT OF A STORM EVENT. POTENTIAL SOURCES OF POLLUTION LOCATED OUTSIDE HIGHWAY ROW ARE BEYOND THE CONTROL OF THIS PPP. POLLUTION WITHIN HIGHWAY ROW WILL BE CONVEYED AND CONTROLLED PER THIS PPP.

VIII. DEFINITIONS
- A. BASE PPP - INITIAL POLLUTION PREVENTION PLAN.
- B. AMENDED PPP – BASE PPP AMENDED DURING CONSTRUCTION. MAY INCLUDE PLAN REVISIONS OR CONTRACT MODIFICATIONS FOR NEW ITEMS, STORM WATER SITE INSPECTION REPORTS, FIELDBOOK ENTRIES MADE BY THE INSPECTOR, AMENDED PPP SITE MAP BY THE CONTRACTOR, ECIP, NOI, CO-PERMITTEE CERTIFICATIONS, AND SUBCONTRACTOR REQUEST FORMS. ITEMS AMENDING THE PPP ARE STORED ELECTRONICALLY AND ARE READILY AVAILABLE UPON REQUEST.
- C. FIELDBOOK ENTRIES – THIS CONTAINS THE INSPECTOR'S DAILY DIARY AND BID ITEM POSTINGS.
- D. CONTROLS - METHODS, PRACTICES, OR MEASURES TO MINIMIZE OR PREVENT EROSION, CONTROL SEDIMENTATION, CONTROL STORM WATER, OR MINIMIZE CONTAMINANTS FROM OTHER TYPES OF WASTE OR MATERIALS. ALSO CALLED BEST MANAGEMENT PRACTICES (BMPS).
- E. SIGNATURE AUTHORITY - REPRESENTATIVE AUTHORIZED TO SIGN VARIOUS STORM WATER DOCUMENTS.

CERTIFICATION STATEMENT

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Adam S. Miller

SIGNATURE

Adam S. Miller

PRINTED OR TYPED NAME

POLLUTION PREVENTION PLAN

FLOYD COUNTY, IOWA

BORING LOG NO. 1 STATION 29+25, 8'LT | CBA Job No.: 934-002 | Project No.: 261139

Project: 155th Street Bridge (117) over Little Cedar River, Sec. 16, Niles Twp Floyd County, IA

Client: Calhoun-Burns & Associates 6775 Vista Drive West Des Moines, IA 50266

Surface Elevation: 1049.0' Datum: Benchmark = 1048.198'

Date Drilled: 3/24/26 Drilling Depth, ft.: 56

Drilling Method: HSA Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Crushed Rock (9"±)				0.8
		1	ST		5.6			Brown and gray silty sand, trace gravel, damp		SM		1048.2
								FILL				5
1040	10	2	ST		19.1	104	2700	Dark brown very sandy lean clay, trace gravel, moist		CL		1044
								COHESIVE ALLUVIUM (Stiff Silty Clay)				
		3	SSA	4	28.3			Dark brown clayey fine to medium sand from 12' to 14'		SC CL	▽	17
1030	20	4	SSA	4	22.2			Brown-gray fine to medium sand, trace gravel, saturated		SP SM		1032
		5	SSA	13	17.9			Dark gray silty fine to medium sand after 18.5'				
								Trace gravel after 22'				
1020	30	6	SSA	14	18.7			GRANULAR ALLUVIUM (Fine Sand)				
		7	SSA	17	12.8							37
1010	40	8	SSA	28	10.6			Gray fine to coarse sand with gravel, saturated		SW		1012
								Trace cobbles after 41'				
		9	SSA	50	9.7			GRANULAR ALLUVIUM (Gravely Sand)				
								Cobbles/Boulders after 47'				49
1000	50	10	SSA	36	14.0			Dark gray sandy lean to fat clay, trace gravel, moist		CL-CH		1000
								GLACIAL TILL (Cohesive Material)				52.5
		11	SSA	50/.3"	12.0							996.5
		12	SSA	50/0"	15.4							56
990	60							Tan fractured limestone, damp				993
								Tan limestone after 53.8'				
								BEDROCK				
								End of Boring				

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion ____ hrs. ____ days
Depth to water: 16.5 ft. ____ ft. ____ ft.

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical - Environmental - Construction Q.C.

BORING LOG NO. 2 STATION 30+20, 8'LT | CBA Job No.: 934-002 | Project No.: 261139

Project: 155th Street Bridge (117) over Little Cedar River, Sec. 16, Niles Twp Floyd County, IA

Client: Calhoun-Burns & Associates 6775 Vista Drive West Des Moines, IA 50266

Surface Elevation: 1049.3' Datum: Benchmark = 1048.198'

Date Drilled: 3/25/26 Drilling Depth, ft.: 51.5

Drilling Method: HSA Page: 1 of 1

Elevation ft.	Depth ft.	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0	Reinforced PCC (17"±)				1.5
						1047.8
1040	10	Air				
						15.5
1030	20	Brown-gray silty fine to medium sand, trace gravel, moist		SM	▽	1033.8
		Gray and saturated after 18.5'				
		GRANULAR ALLUVIUM (Fine Sand)				
1020	30					36.5
1010	40	Brown-gray fine to coarse sand with gravel, saturated		SW		1012.8
		GRANULAR ALLUVIUM (Gravely Sand)				
		Cobbles/boulders after 44.5'				46
1000	50	Dark gray sandy lean to fat clay, trace gravel, moist		CL-CH		1003.3
		GLACIAL TILL (Cohesive Material)				48.5
		Tan fractured limestone, damp				1000.8
990	60	BEDROCK				51.5
		Tan limestone after 50'				997.8
		End of Boring				

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion ____ hrs. ____ days
Depth to water: 18.5 ft. ____ ft. ____ ft.

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical - Environmental - Construction Q.C.

SOUNDING DATA

(SEE "SITUATION PLAN", SHEET 4, AND "GENERAL PLAN", SHEET 5, FOR BORING LOCATIONS)

LICENSED PROFESSIONAL ENGINEER
DAVID LOGEMANN
12394
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

DAVID LOGEMANN, P.E. DATE: 7/14/26

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2027.

PAGES OR SHEETS COVERED BY THIS SEAL:
8-9 OF 32

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'-0 END SPANS

TEE PIERS
117'-0 INTERIOR SPAN

SOUNDING DATA

STATION 30+83.00
FLOYD COUNTY,

30° SKEW, RT. AHEAD
IOWA

BORING LOG NO. 3 **STATION 31+40, 8'RT** CBA Job No.: 934-002 Project No.: 261139

Project: 155th Street Bridge (117) over Little Cedar River, Sec. 16, Niles Twp Floyd County, IA

Client: Calhoun-Burns & Associates, 6775 Vista Drive, West Des Moines, IA 50266

Surface Elevation: 1049.2' Datum: Benchmark = 1048.198'

Date Drilled: 3/24/26 Drilling Depth, ft.: 52.5 Drilling Method: HSA Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Reinforced PCC (17"±)				1.5
												1047.7
1040	10							Air				
											▽	17
1030	20							Water				1032.2
												22
		1	SSA	6	19.2			Brown-gray silty fine to medium sand, trace gravel, saturated		SM		1027.2
1020	30	2	SSA	11	18.7			GRANULAR ALLUVIUM (Fine Sand)				
		3	SSA	21	18.1							
1010	40	4	SSA	17	8.3							40
								Brown-gray fine to coarse sand with gravel, saturated GRANULAR ALLUVIUM (Gravely Sand)		SW		1009.2
		5	SSA	26	8.8							47.5
1000	50	6	SSA	120	9.4			Dark gray sandy lean to fat clay, trace gravel, moist GLACIAL TILL (Cohesive Material)		CL-CH		1001.7
		7	SSA	50/	11.9							49.5
		8	SSA	.8" 50/ 0"	10.3							999.7
												52.5
990	60							Tan fractured limestone, damp Tan limestone after 50.5' BEDROCK				996.7
								End of Boring				

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion ____ hrs. ____ days
Depth to water: 17 ft. ____ ft. ____ ft.

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical - Environmental - Construction Q.C.

BORING LOG NO. 4 **STATION 32+40, 8'RT** CBA Job No.: 934-002 Project No.: 261139

Project: 155th Street Bridge (117) over Little Cedar River, Sec. 16, Niles Twp Floyd County, IA

Client: Calhoun-Burns & Associates, 6775 Vista Drive, West Des Moines, IA 50266

Surface Elevation: 1048.9' Datum: Benchmark = 1048.198'

Date Drilled: 3/25/26 Drilling Depth, ft.: 49.5 Drilling Method: HSA Page: 1 of 1

Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							Crushed Rock (4"±)		SM		0.3
		1	ST		7.3	117		Dark brown and gray silty sand, trace gravel, damp FILL		SC		1048.6
1040	10	2	ST		6.0	116		Very dark brown clayey fine sand, trace gravel, moist GRANULAR ALLUVIUM (Silty Sand)				2.5
		3	ST		14.6	106						1046.4
								With organics near 13'		SM	▽	14.5
1030	20	4	SSA	11	10.7			Brown-gray silty fine to medium sand, trace gravel, saturated With gravel after 18.5'				1034.4
								GRANULAR ALLUVIUM (Fine Sand)				
1020	30											
												37
1010	40							Brown-gray fine to coarse sand with gravel, saturated GRANULAR ALLUVIUM (Gravely Sand) Cobbles/boulders after 43'		SW		1011.9
												46
1000	50							Gray sandy lean to fat clay, trace gravel, moist GLACIAL TILL (Cohesive Material)		CL-CH		1002.9
												47.5
												1001.4
												49.5
990	60							Tan fractured limestone, damp BEDROCK Tan limestone after 49'				999.4
								End of Boring				

*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
Time: at completion ____ hrs. ____ days
Depth to water: 16.5 ft. ____ ft. ____ ft.

ALLENDER BUTZKE ENGINEERS, INC.
Geotechnical - Environmental - Construction Q.C.

SOUNDING DATA

(SEE "SITUATION PLAN", SHEET 4, AND "GENERAL PLAN", SHEET 5, FOR BORING LOCATIONS)

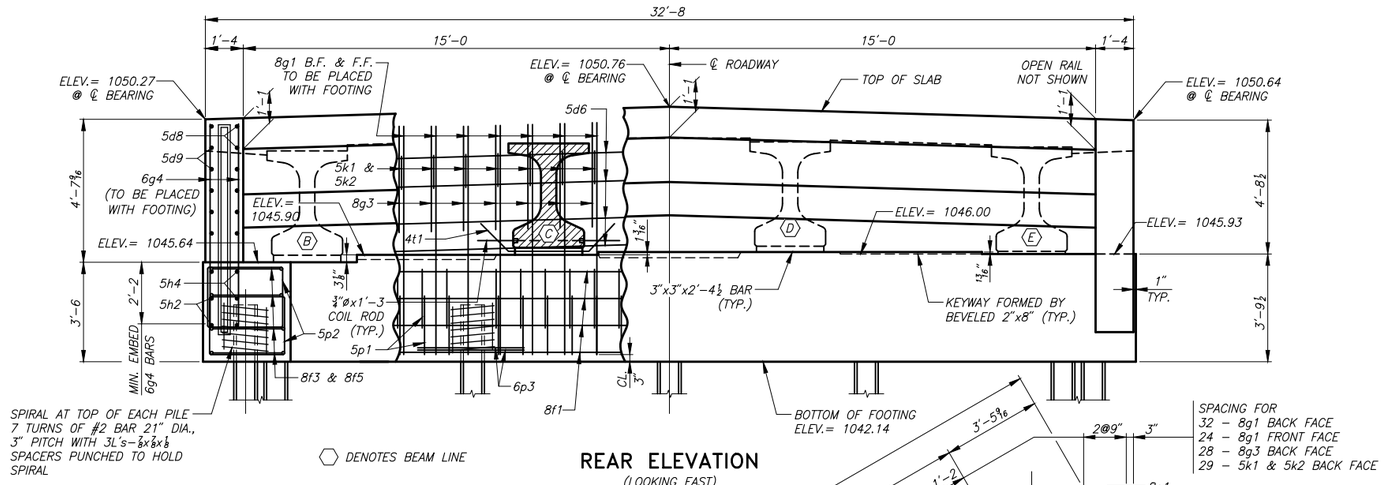
299'–0 x 30'–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS — TEE PIERS
91'–0 END SPANS — 117'–0 INTERIOR SPAN

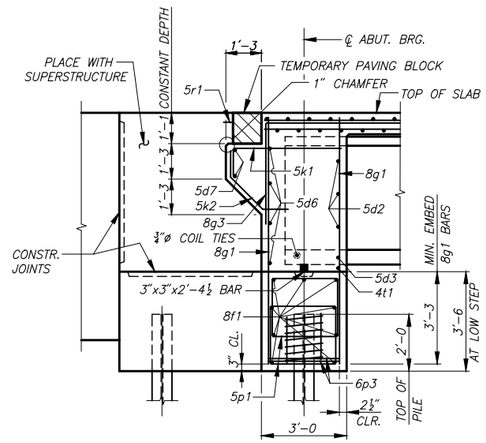
SOUNDING DATA

STATION 30+83.00 — 30° SKEW, RT. AHEAD
FLOYD COUNTY, — IOWA

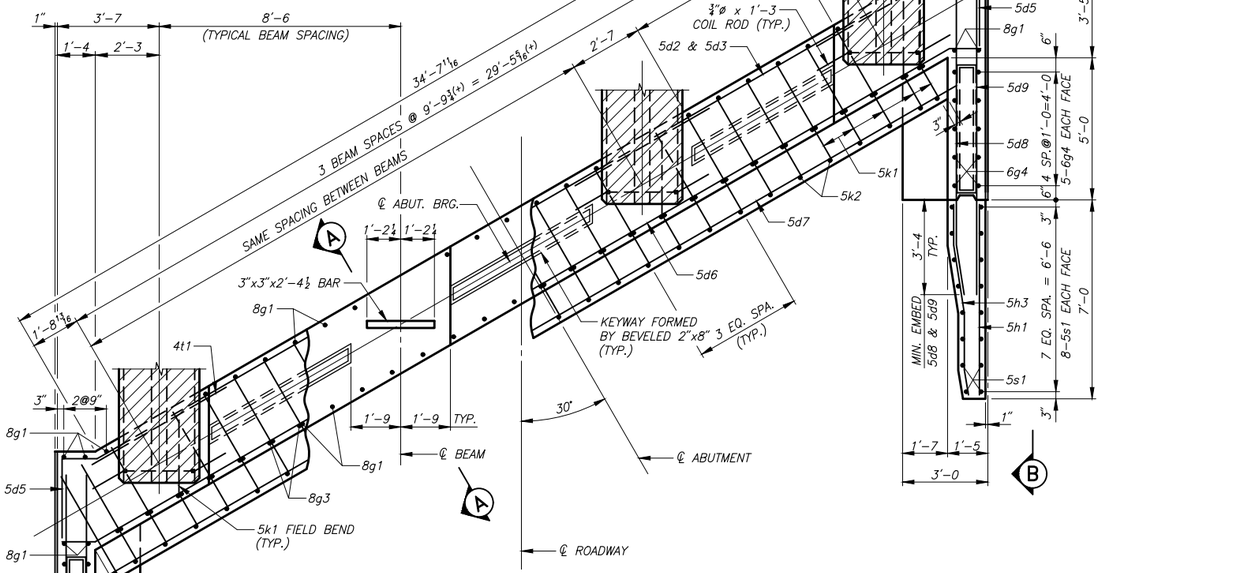
BENCH MARK: #212 STEEL POST, STA. 32+33, 82' LT., ELEV.= 1048.20



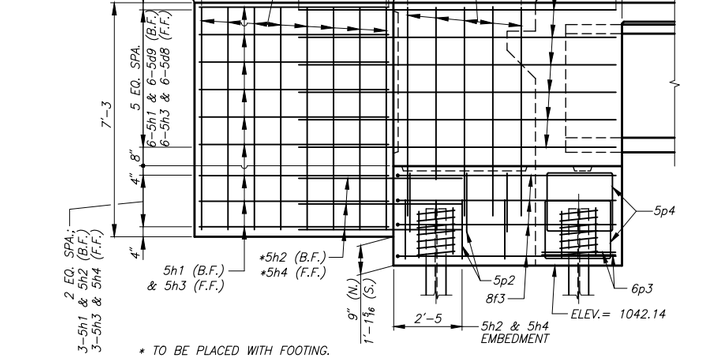
REAR ELEVATION
(LOOKING EAST)



SECTION A–A



PART PLAN
NOTE: SEE SHEET 12 FOR ABUTMENT PILE PLAN



* TO BE PLACED WITH FOOTING.

VIEW B–B

NOTES: 1. ELEVATIONS AND VERTICAL DIMENSIONS SHOWN ARE AT OUTSIDE FACE.
2. SEE OPEN RAIL DETAILS, SHEETS 26 & 27 FOR ADDITIONAL WING AND WING EXTENSION REINFORCING.

299'–0 x 30'–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'–0 END SPANS

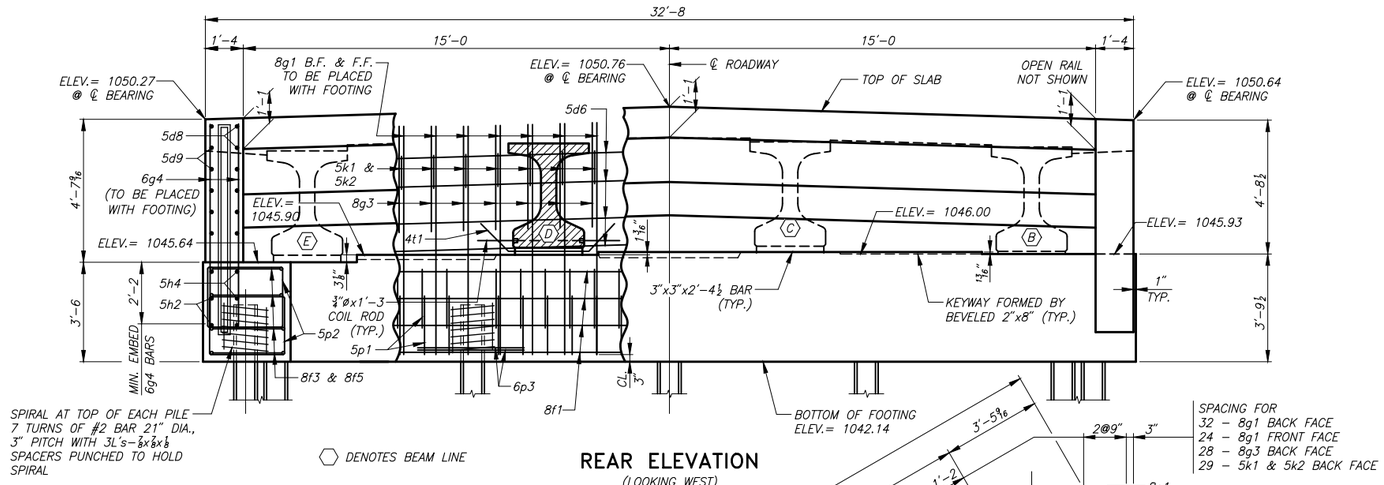
TEE PIERS
117'–0 INTERIOR SPAN

WEST ABUTMENT DETAILS

STATION 30+83.00
FLOYD COUNTY,

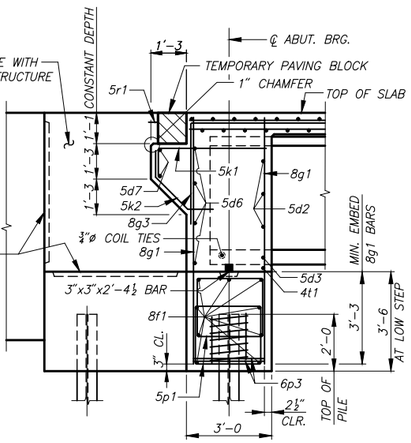
30° SKEW, RT. AHEAD
IOWA

BENCH MARK: #212 STEEL POST, STA. 32+33, 82' LT., ELEV.= 1048.20

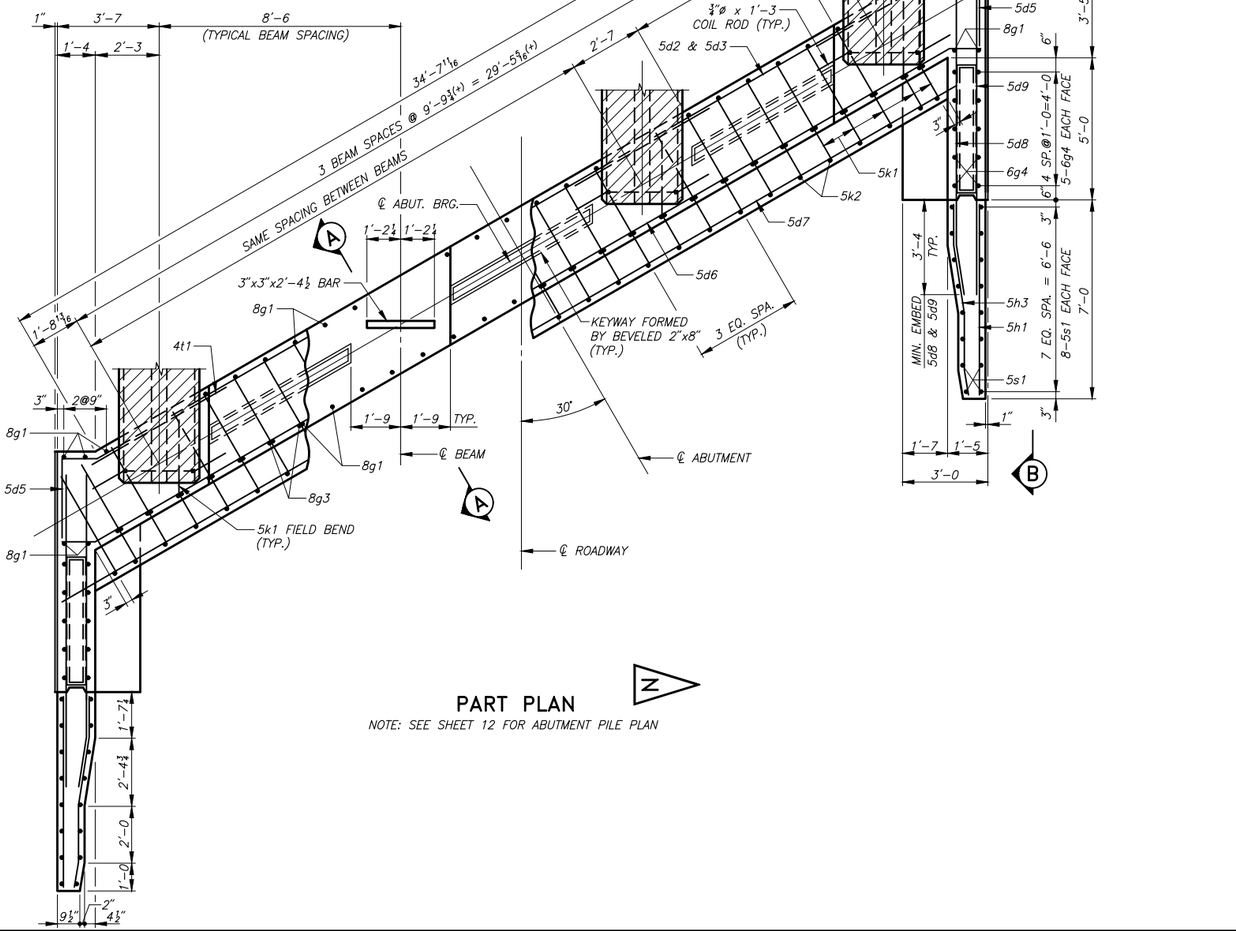


REAR ELEVATION

(LOOKING WEST)

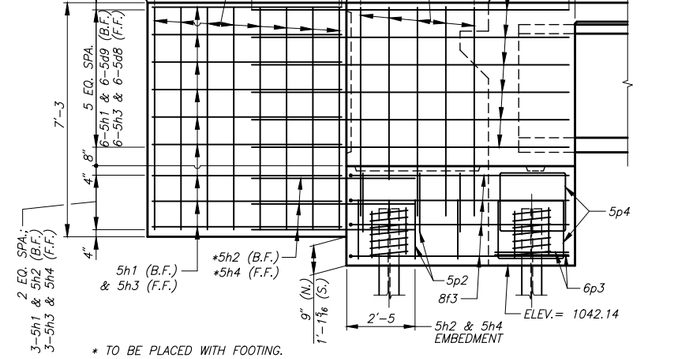


SECTION A-A



PART PLAN

NOTE: SEE SHEET 12 FOR ABUTMENT PILE PLAN



VIEW B-B

NOTES: 1. ELEVATIONS AND VERTICAL DIMENSIONS SHOWN ARE AT OUTSIDE FACE.
2. SEE OPEN RAIL DETAILS, SHEETS 26 & 27 FOR ADDITIONAL WING AND WING EXTENSION REINFORCING.

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

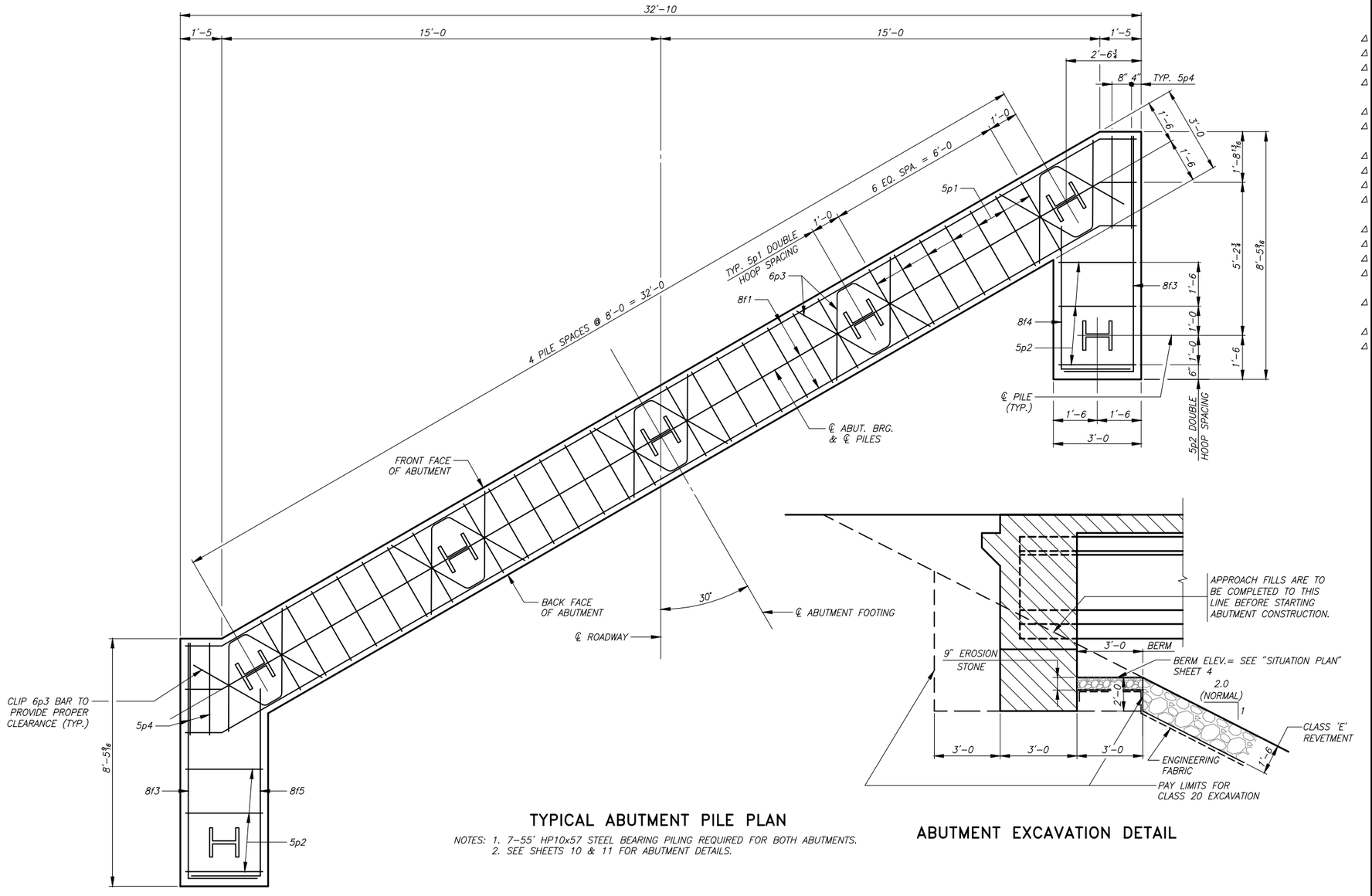
INTEGRAL ABUTMENTS
91'-0 END SPANS

TEE PIERS
117'-0 INTERIOR SPAN

EAST ABUTMENT DETAILS

STATION 30+83.00
FLOYD COUNTY,

30° SKEW, RT. AHEAD
IOWA



TYPICAL ABUTMENT PILE PLAN

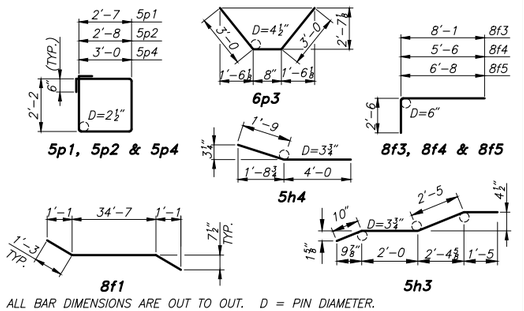
NOTES: 1. 7–55' HP10x57 STEEL BEARING PILING REQUIRED FOR BOTH ABUTMENTS.
2. SEE SHEETS 10 & 11 FOR ABUTMENT DETAILS.

ABUTMENT EXCAVATION DETAIL

REINFORCING BAR LIST – ONE ABUTMENT

	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
Δ	8f1	ABUT. FOOTING, LONGITUDINAL		9	37'–1	891
Δ	8f3	ABUT. EXTENSION, LONGITUDINAL		8	10'–7	226
Δ	8f4	ABUT. EXTENSION, LONGITUDINAL		4	8'–0	85
Δ	8f5	ABUT. EXTENSION, LONGITUDINAL		4	9'–2	98
Δ	8g1	ABUT. VERTICAL, B.F. & F.F.		56	7'–8	1,147
Δ	6g4	ABUT. DIAPHRAGM, WING EXT., VERT.		20	6'–7	198
Δ	5h1	ABUT. WING, HORIZONTAL, B.F.		18	6'–8	125
Δ	5h2	ABUT. TO WING, ANCHOR, B.F.		6	5'–9	36
Δ	5h3	ABUT. WING, HORIZONTAL, F.F.		18	6'–8	125
Δ	5h4	ABUT. TO WING, ANCHOR, F.F.		6	5'–9	36
Δ	5p1	ABUT. HOOPS		56	10'–6	613
Δ	5p2	ABUT. EXTENSION, HOOPS		12	10'–8	134
Δ	6p3	ABUT. BOTTOM, AT PILES		10	6'–8	100
Δ	5p4	ABUT. HOOPS, ENDS		8	11'–4	95
Δ	5s1	WING, VERTICAL		32	6'–11	231
Δ	*	PILE SPIRAL – #2 BAR		7	38'–6	45
Δ	*	SPIRAL SPACERS – L 3/8 x 3/8 x 0.70		21	1'–10	27
	*	MAY BE UNCOATED @ CONTRACTOR'S OPTION				
Δ EPOXY COATED BARS			EPOXY COATED TOTAL (LBS.)			4,212

BENT BAR DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.

CONCRETE PLACEMENT QUANT.– TWO ABUTS.

LOCATION	UNIT	QUANTITY
FOOTING AND STEPS 2 @ 19.9	CU.YDS.	39.8
WINGS 4 @ 2.06	CU.YDS.	8.2
TOTAL	CU.YDS.	48.0

ESTIMATED QUANTITIES – TWO ABUTMENTS

ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE, 4,500 PSI OR GREATER	CU.YDS.	48.0
REINFORCING STEEL, EPOXY COATED	LBS.	8,424
PILES, STEEL, HP10x57, 14 @ 55'	L.F.	770
PREBORED HOLES, 14 @ 10'	L.F.	140
EXCAVATION, CLASS 20 (2 @ 115 C.Y.)	CU.YDS.	230

ABUTMENT NOTES

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

ALL REINFORCING STEEL TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED BEFORE CONCRETE IS POURED.

ALL REINFORCING STEEL IS TO BE GRADE 60 AND EPOXY COATED.

ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A ¾" DRESSED AND BEVELED STRIP.

CONSTRUCTION JOINT KEYWAYS ARE TO BE FORMED WITH BEVELED 2 x 8'S.

SEE PILE NOTES ON SHEET 6 FOR ADDITIONAL INFORMATION.

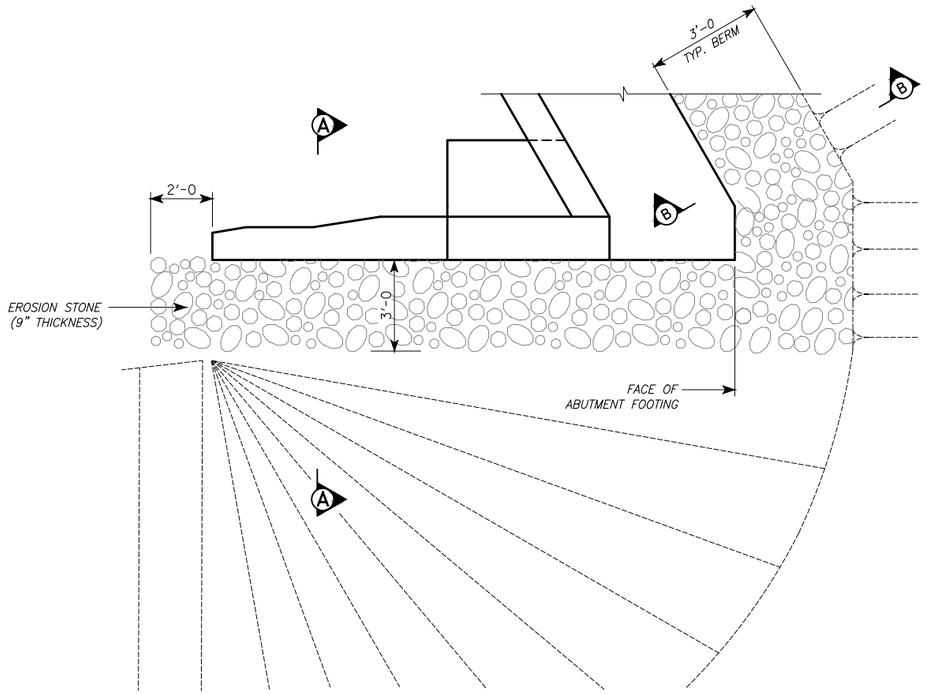
299'–0 x 30'–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS — **TEE PIERS**
91'–0 END SPANS — **117'–0 INTERIOR SPAN**

ABUTMENT DETAILS

STATION 30+83.00 — **30° SKEW, RT. AHEAD**

FLOYD COUNTY, — **IOWA**



TOP VIEW OF WING ARMORING

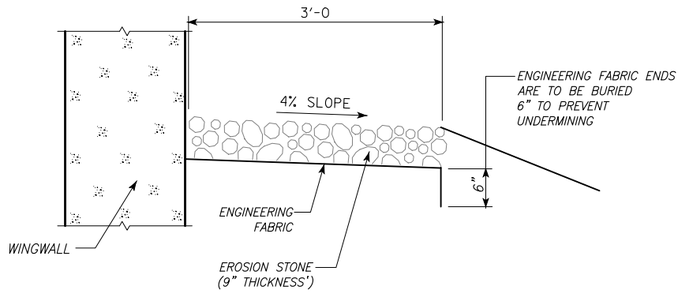
WING ARMORING NOTES

EROSION STONE SHALL BE PLACED ALONG THE SIDE OF THE WINGS AND ABUTMENT FOOTINGS AS SHOWN IN SECTION A-A AND SECTION B-B. THIS IS TYPICAL AT EACH CORNER OF THE BRIDGE UNLESS OTHERWISE NOTED IN THE PLANS. THE EROSION STONE AT THESE LOCATIONS SHALL BE UNDERLAYED WITH ENGINEERING FABRIC IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

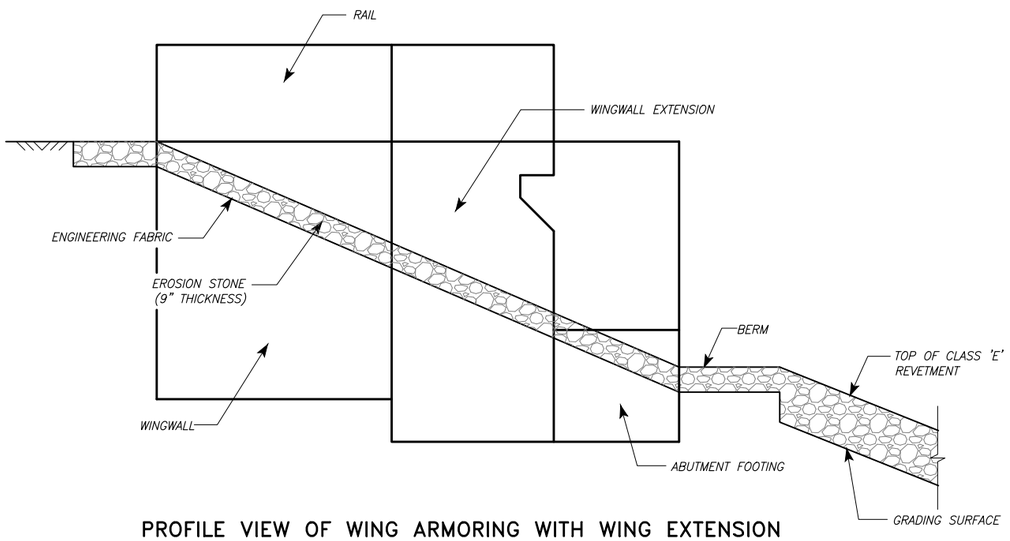
THE EROSION STONE SHALL BE IN ACCORDANCE WITH SECTION 4130, OF THE STANDARD SPECIFICATIONS. MATERIAL PASSING THE 3 INCH SCREEN BUT 100% RETAINED ON A 1 INCH SCREEN MAY BE USED AS CHOKE STONE.

THE EROSION STONE SHALL BE DEPOSITED, SPREAD, CONSOLIDATED AND SHAPED BY MECHANICAL OR HAND METHODS THAT WILL PROVIDE UNIFORM 9" DEPTH AND DENSITY AND PROVIDE UNIFORM SURFACE APPEARANCE.

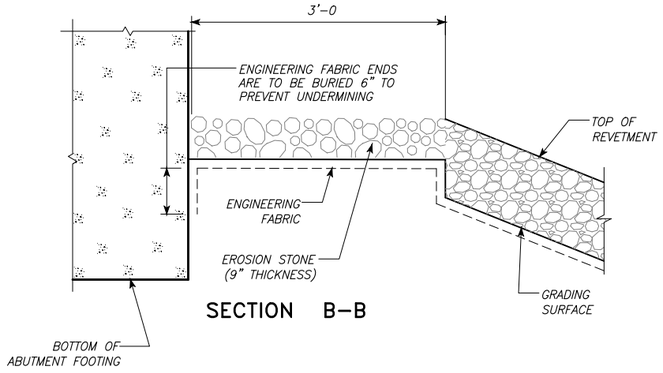
PAYMENT FOR THE BRIDGE WING ARMORING WILL BE BID PER SQUARE YARD. COST WILL INCLUDE ENGINEERING FABRIC, EROSION STONE, EXCAVATION, SHAPING AND COMPACTION TO DIMENSIONS SHOWN IN THESE PLANS. BID ITEM SHALL BE "BRIDGE WING ARMORING - EROSION STONE".



SECTION A–A



PROFILE VIEW OF WING ARMORING WITH WING EXTENSION



SECTION B–B

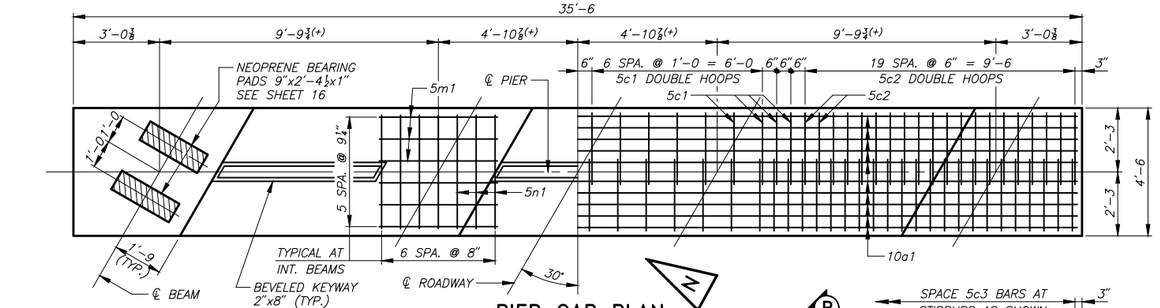
MODIFIED IDOT STANDARD SHEET 1005A

299'–0 x 30'–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

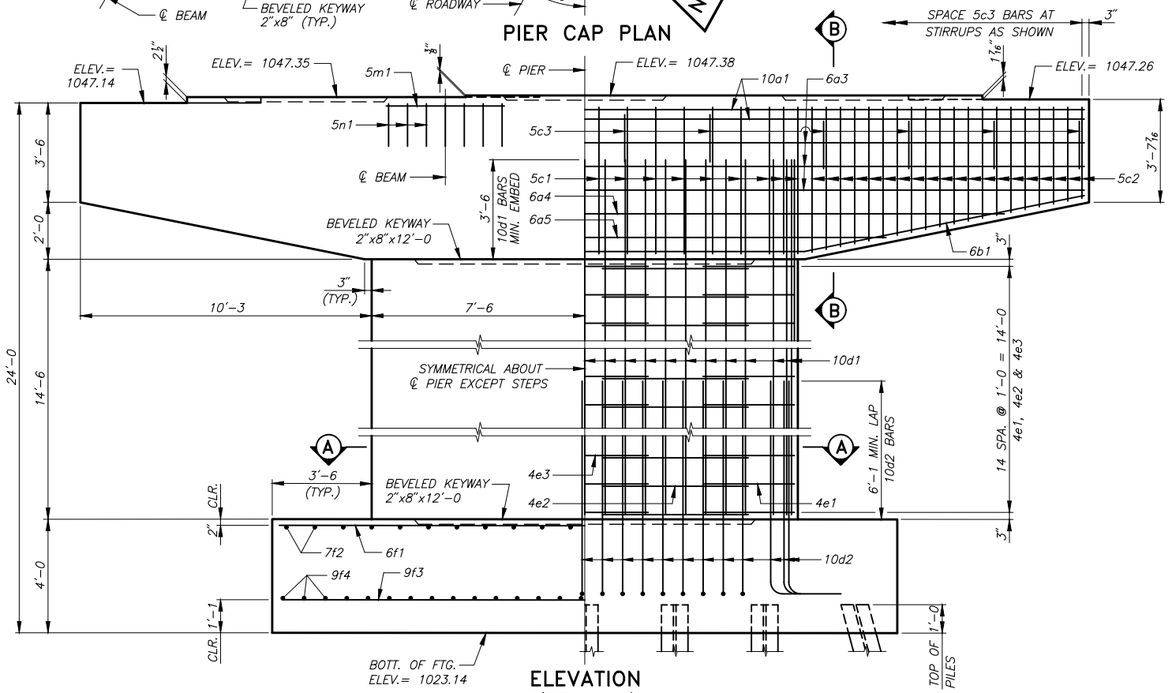
INTEGRAL ABUTMENTS — TEE PIERS
91'–0 END SPANS — 117'–0 INTERIOR SPAN

WING ARMORING DETAILS

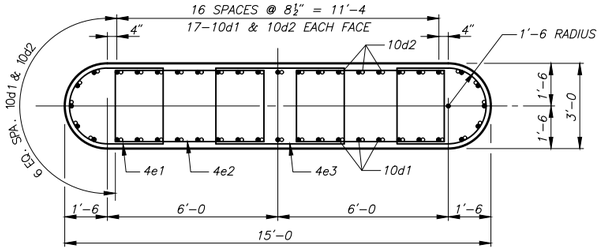
STATION 30+83.00 — 30° SKEW, RT. AHEAD
FLOYD COUNTY, — IOWA



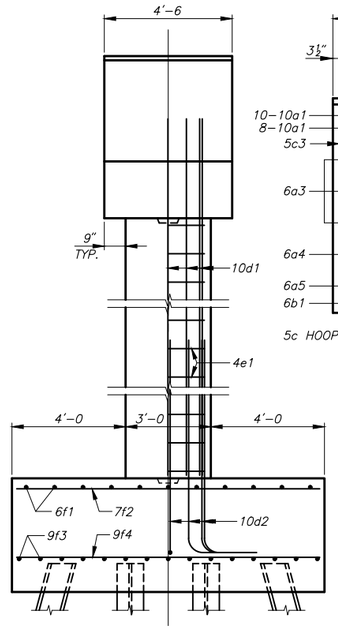
PIER CAP PLAN



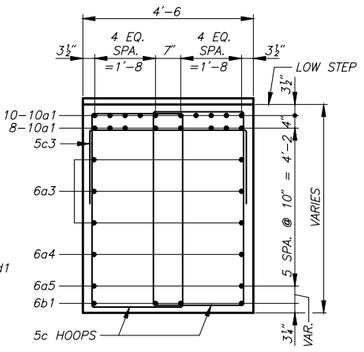
ELEVATION
(LOOKING EAST)



SECTION A-A



END ELEVATION



SECTION B-B

FOOTING PLAN

BATTER OUTSIDE PILES 1:4 IN DIRECTION SHOWN

WEST PIER NOTES

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

ALL REINFORCING STEEL TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED BEFORE CONCRETE IS POURED.

ALL REINFORCING STEEL IS TO BE GRADE 60.

ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A ¾" DRESSED AND BEVELED STRIP.

CONSTRUCTION JOINT KEYWAYS ARE TO BE FORMED WITH BEVELED 2 x 8'S.

FORMS FOR PIER CAPS ON WEST PIER MAY BE REMOVED WITH THE APPROVAL OF THE ENGINEER WHEN THE FOLLOWING TWO CONDITIONS HAVE BEEN MET:

- PIER CAP CONCRETE HAS BEEN IN PLACE FOR A MINIMUM OF 2 CALENDAR DAYS EXCLUDING DAYS THAT THE CONCRETE SURFACE IS SUBJECTED TO TEMPERATURES AT OR BELOW 40° F AND
- THE PIER CAP CONCRETE COMPRESSIVE STRENGTH IS AT LEAST 2500 PSI.

MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 2500 PSI SHALL BE VERIFIED BY FLEXURAL STRENGTH ACCORDING TO MATERIALS I.M. 316 WITH A MINIMUM FLEXURAL STRENGTH OF 450 PSI OR BY THE MATURITY METHOD ACCORDING TO MATERIALS I.M. 383. CURING OF PIER CAP CONCRETE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. PIER CAP CONCRETE SHALL BE SUBJECTED TO EXTERIOR LOADS IN ACCORDANCE WITH ARTICLE 2403.03, N, 2 OF THE STANDARD SPECIFICATIONS.

BATTER PILES IN EXTERIOR ROWS 1:4 IN DIRECTION SHOWN. ALL BATTERED PILE SHALL BE TRIMMED TO A HORIZONTAL LINE TO AID IN THE PLACEMENT OF REINFORCING.

DIMENSIONS SHOWN ON FOOTING PLAN ARE AT BOTTOM OF FOOTING.

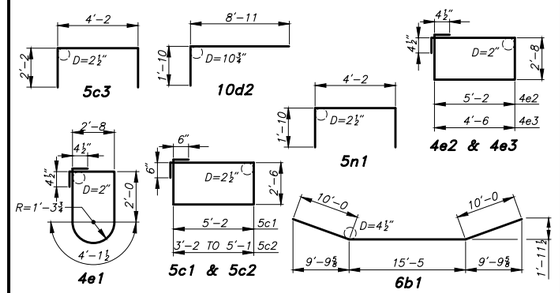
SEE PILE NOTES ON SHEET 6 FOR ADDITIONAL INFORMATION.

BENCH MARK: #212 STEEL POST, STA. 32+33, 82' LT., ELEV.= 1048.20

REINFORCING BAR LIST - WEST PIER

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
10a1	CAP, LONGITUDINAL, TOP	——	18	35'-2	2,724
6a3	CAP, LONGITUDINAL, SIDES	——	6	35'-2	317
6a4	CAP, LONGITUDINAL, SIDES	——	2	29'-2	88
6a5	CAP, LONGITUDINAL, SIDES	——	2	20'-10	63
6b1	CAP, LONGITUDINAL, BOTTOM	⌣	4	35'-5	213
5c1	CAP, HOOPS	▭	36	16'-4	613
5c2	CAP, HOOPS, ENDS	▭	80	VARIES	1,189
5c3	CAP, TIES	⊓	12	8'-6	106
10d1	COLUMN, VERTICAL	——	44	18'-0	3,408
10d2	COLUMN, VERTICAL, DOWELS	⌐	44	10'-9	2,035
4e1	COLUMN, HOOPS, ENDS	▭	30	11'-7	232
4e2	COLUMN, HOOPS	▭	30	16'-5	329
4e3	COLUMN, HOOPS	▭	15	15'-1	151
6f1	FOOTING, LONGITUDINAL, TOP	——	11	21'-8	358
7f2	FOOTING, TRANSVERSE, TOP	——	22	10'-8	480
9f3	FOOTING, LONGITUDINAL, BOTTOM	——	15	21'-8	1,105
9f4	FOOTING, TRANSVERSE, BOTTOM	——	29	10'-8	1,052
5m1	STEP, LONGITUDINAL	——	12	4'-4	54
5n1	STEP, TRANSVERSE	⊓	14	7'-10	114
				TOTAL (LBS.)	14,631

BENT BAR DETAILS



ALL DIMENSIONS ARE OUT TO OUT. D=DIAMETER OF PIN RADII ARE TO ℄ BAR.

CONC. PLACEMENT QUANT. - WEST PIER

LOCATION	QUANTITY
FOOTING	35.9
COLUMN	23.1
CAP	30.3
TOTAL (CU.YDS.)	89.3

ESTIMATED QUANTITIES - WEST PIER

ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE (BRIDGE)	CU.YDS.	89.3
REINFORCING STEEL	LBS.	14,631
PILES, STEEL, HP 10x57 (21 @ 30')	LIN.FT.	630
EXCAVATION, CLASS 21	CU.YDS.	112

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'-0 END SPANS

TEE PIERS
117'-0 INTERIOR SPAN

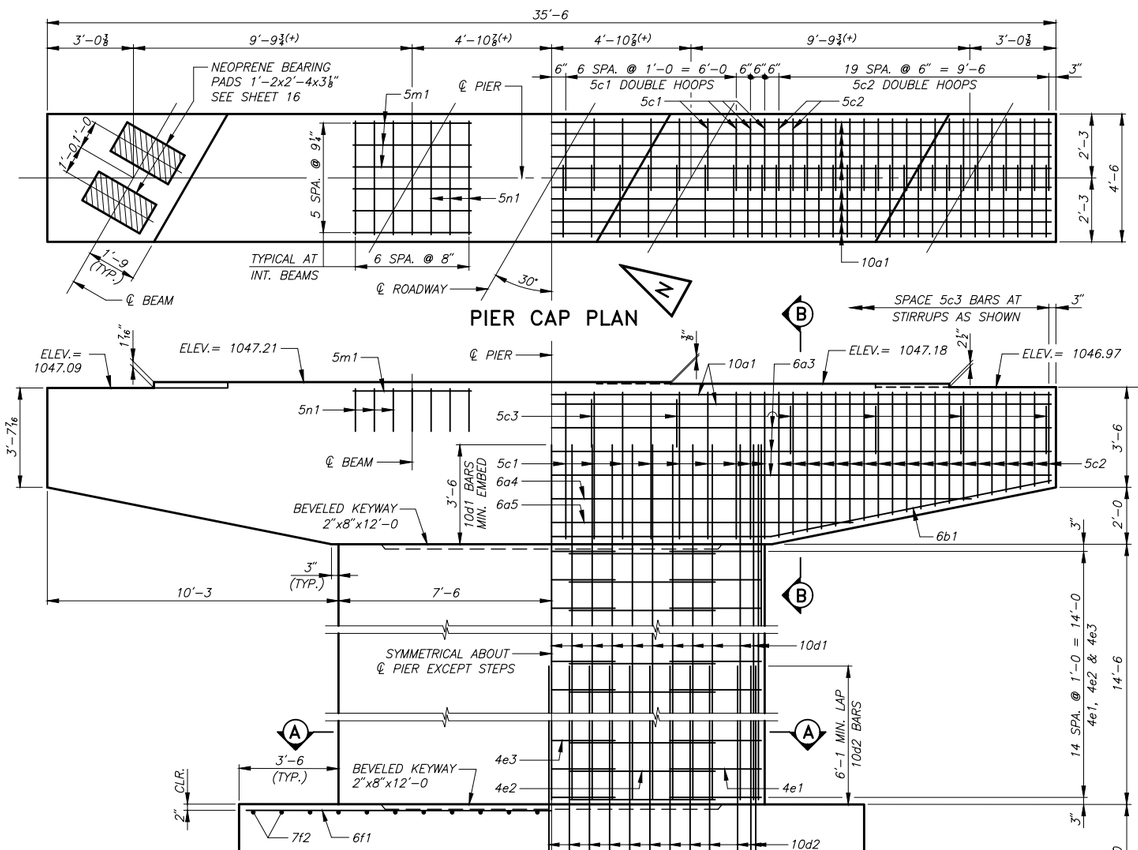
WEST PIER DETAILS

STATION 30+83.00

30° SKEW, RT. AHEAD

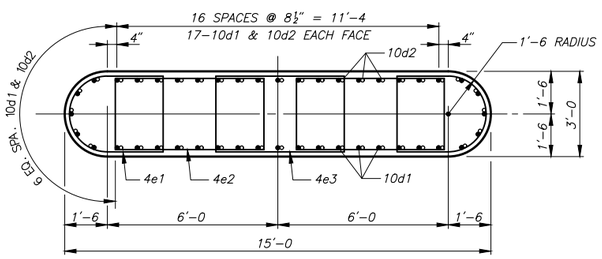
FLOYD COUNTY,

IOWA

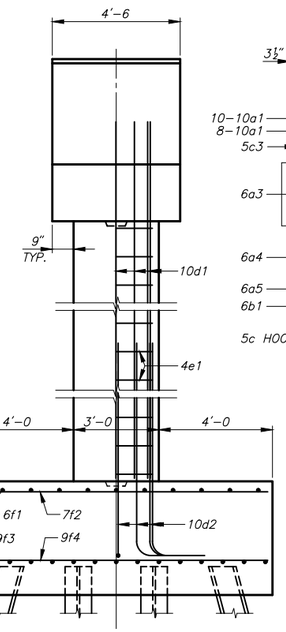


PIER CAP PLAN

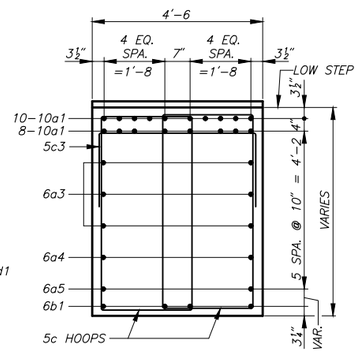
ELEVATION
(LOOKING EAST)



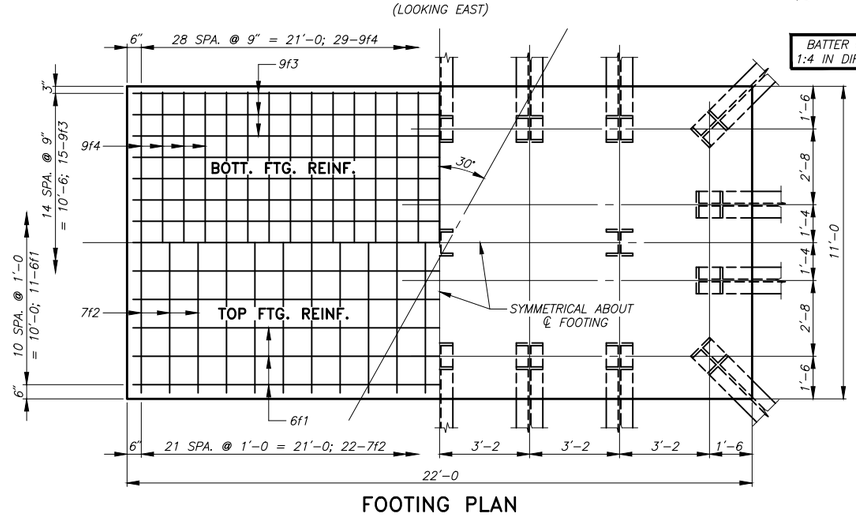
SECTION A-A



END ELEVATION



SECTION B-B



FOOTING PLAN

BATTER OUTSIDE PILES 1:4 IN DIRECTION SHOWN

EAST PIER NOTES

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

ALL REINFORCING STEEL TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED BEFORE CONCRETE IS POURED.

ALL REINFORCING STEEL IS TO BE GRADE 60.

ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A ¾" DRESSED AND BEVELED STRIP.

CONSTRUCTION JOINT KEYWAYS ARE TO BE FORMED WITH BEVELED 2 x 8'S.

FORMS FOR PIER CAPS ON EAST PIER MAY BE REMOVED WITH THE APPROVAL OF THE ENGINEER WHEN THE FOLLOWING TWO CONDITIONS HAVE BEEN MET:

- PIER CAP CONCRETE HAS BEEN IN PLACE FOR A MINIMUM OF 2 CALENDAR DAYS EXCLUDING DAYS THAT THE CONCRETE SURFACE IS SUBJECTED TO TEMPERATURES AT OR BELOW 40° F AND
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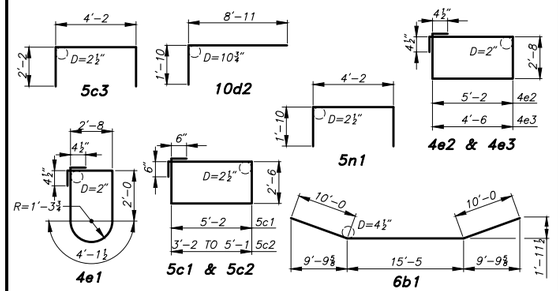
DIMENSIONS SHOWN ON FOOTING PLAN ARE AT BOTTOM OF FOOTING.

SEE PILE NOTES ON SHEET 6 FOR ADDITIONAL INFORMATION.

REINFORCING BAR LIST - EAST PIER

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
10a1	CAP, LONGITUDINAL, TOP	——	18	35'-2	2,724
6a3	CAP, LONGITUDINAL, SIDES	——	6	35'-2	317
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6a5	CAP, LONGITUDINAL, SIDES	——	2	20'-10	63
6b1	CAP, LONGITUDINAL, BOTTOM	⌣	4	35'-5	213
5c1	CAP, HOOPS	▭	36	16'-4	613
5c2	CAP, HOOPS, ENDS	▭	80	VARIES	1,189
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10d1	COLUMN, VERTICAL	——	44	18'-0	3,408
10d2	COLUMN, VERTICAL, DOWELS	⌐	44	10'-9	2,035
4e1	COLUMN, HOOPS, ENDS	▭	30	11'-7	232
4e2	COLUMN, HOOPS	▭	30	16'-5	329
4e3	COLUMN, HOOPS	▭	15	15'-1	151
6f1	FOOTING, LONGITUDINAL, TOP	——	11	21'-8	358
7f2	FOOTING, TRANSVERSE, TOP	——	22	10'-8	480
9f3	FOOTING, LONGITUDINAL, BOTTOM	——	15	21'-8	1,105
9f4	FOOTING, TRANSVERSE, BOTTOM	——	29	10'-8	1,052
5m1	STEP, LONGITUDINAL	——	12	4'-4	54
5n1	STEP, TRANSVERSE	⊓	14	7'-10	114
				TOTAL (LBS.)	14,631

BENT BAR DETAILS



ALL DIMENSIONS ARE OUT TO OUT. D=DIAMETER OF PIN RADII ARE TO ℄ BAR.

CONC. PLACEMENT QUANT. - EAST PIER

LOCATION	QUANTITY
FOOTING	35.9
COLUMN	23.1
CAP	30.3
TOTAL (CU.YDS.)	89.3

ESTIMATED QUANTITIES - EAST PIER

ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE (BRIDGE)	CU.YDS.	89.3
REINFORCING STEEL	LBS.	14,631
PILES, STEEL, HP 10x57 (21 @ 30')	LIN.FT.	630
EXCAVATION, CLASS 21	CU.YDS.	115

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS — **TEE PIERS**
91'-0 END SPANS — **117'-0 INTERIOR SPAN**

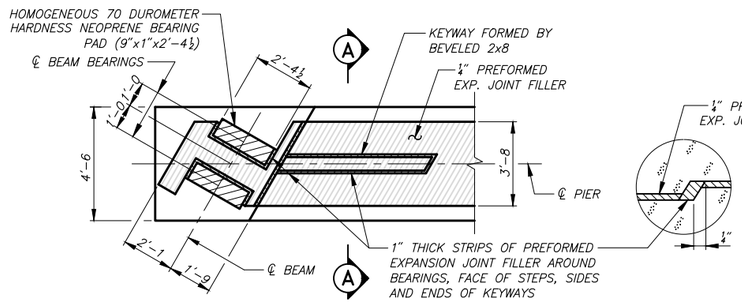
EAST PIER DETAILS

STATION 30+83.00 — **30° SKEW, RT. AHEAD**

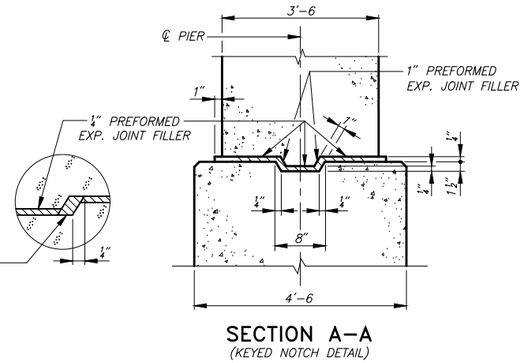
FLOYD COUNTY, IOWA

FIXED AND EXPANSION PIER BEARING NOTES

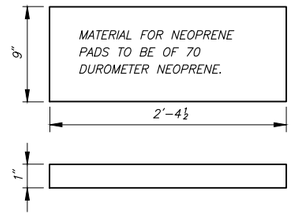
COST OF NEOPRENE PADS SHALL BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".



PART PLAN

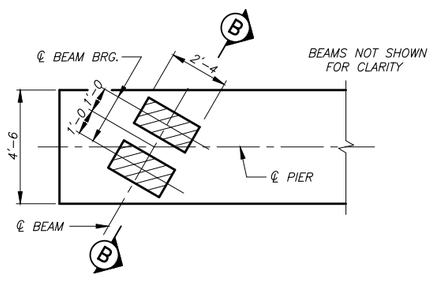


SECTION A–A
(KEYED NOTCH DETAIL)

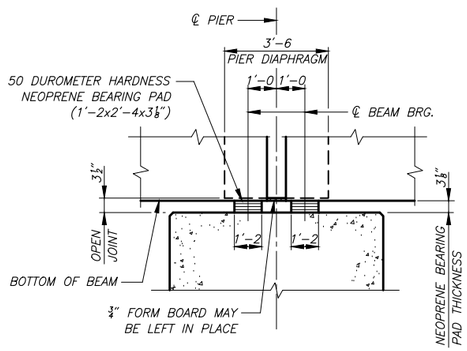


NEOPRENE BEARING PAD
(8 REQUIRED PER FIXED PIER, 8 TOTAL)

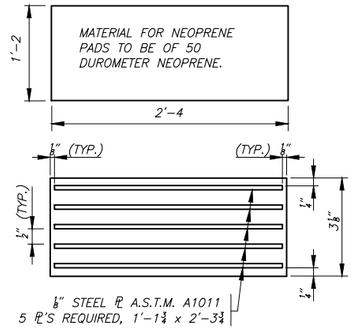
FIXED PIER BEARING DETAILS – WEST PIER



PART PLAN AT EXPANSION PIER



SECTION B–B



LAMINATED NEOPRENE BEARING PAD
(8 REQUIRED PER EXPANSION PIER, 8 TOTAL)

EXPANSION PIER BEARING DETAILS – EAST PIER

299'–0 x 30'–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'–0 END SPANS

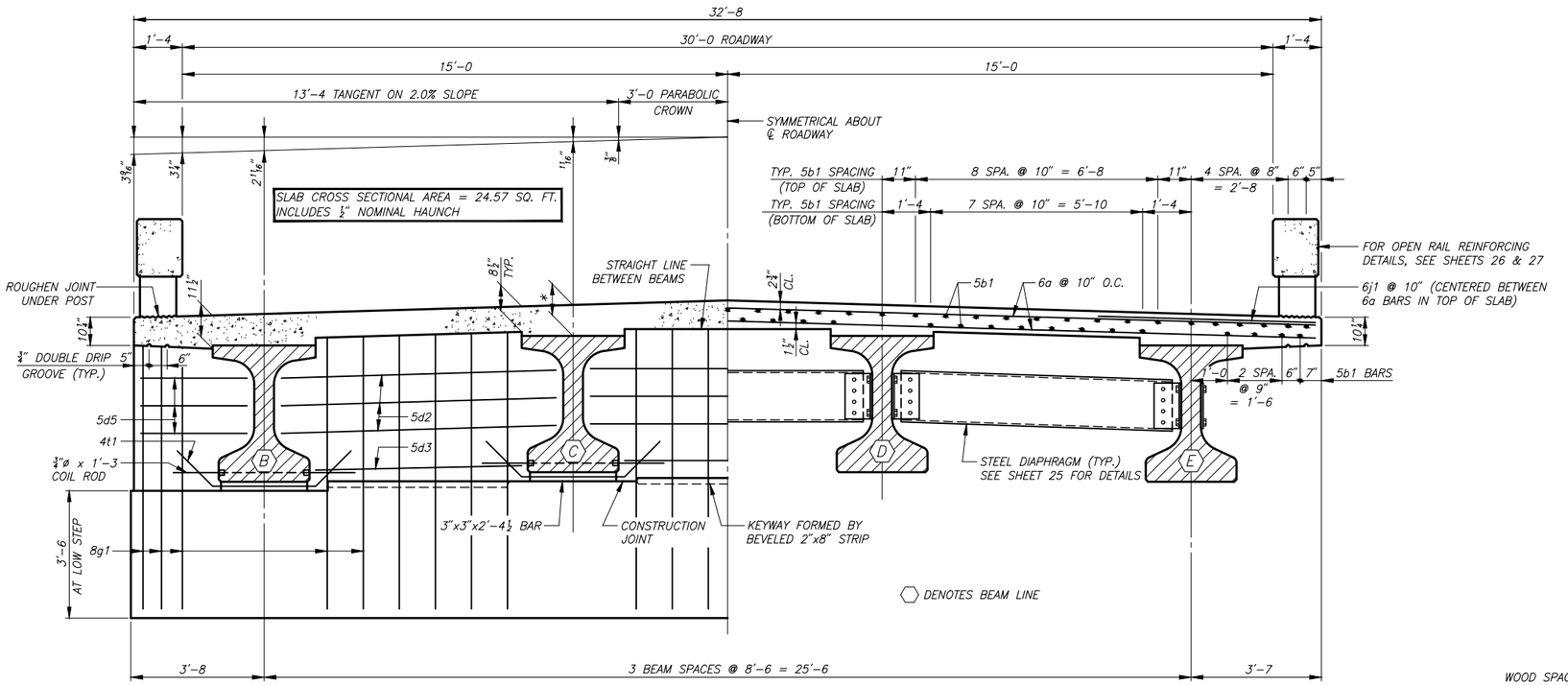
TEE PIERS
117'–0 INTERIOR SPAN

PIER BEARING DETAILS

STATION 30+83.00

30° SKEW, RT. AHEAD

FLOYD COUNTY, IOWA



* FOR SLAB THICKNESS OVER BEAMS SEE SHEET 20

HALF SECTION NEAR ABUTMENT

HALF SECTION NEAR MID SPAN

SUPERSTRUCTURE NOTES

THIS BRIDGE SUPERSTRUCTURE IS DESIGNED FOR HL93 LOADING PLUS AN ALLOWANCE OF 20 POUNDS PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

THE SLAB AS SHOWN INCLUDES A ¾" INTEGRAL WEARING SURFACE.

COST OF ALL PREFORMED EXPANSION JOINT FILLER AND TAR PAPER MATERIAL IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE 4500 PSI OR GREATER, AS SPECIFIED."

ALL EXPOSED CORNERS OF 90 DEGREES OR SHARPER ARE TO BE FORMED WITH A ¾" DRESSED AND BEVELED STRIP.

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

ALL REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE AND ADEQUATELY SUPPORTED BEFORE CONCRETE IS POURED.

THE TOP MAT OF REINFORCING STEEL IS TO BE PARALLEL AND 2 ¾" CLEAR BELOW TOP OF SLAB. THE BOTTOM MAT OF REINFORCING STEEL IS TO BE PARALLEL AND 1 ½" CLEAR ABOVE BOTTOM OF SLAB. TOP AND BOTTOM REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3'-0 CENTERS LONGITUDINALLY AND TRANSVERSELY, OR BY CONTINUOUS ROWS OF HIGH CHAIRS OR SLAB BOLSTERS SPACED 4'-0 APART. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS, BAR HIGH CHAIRS, AND SLAB BOLSTERS.

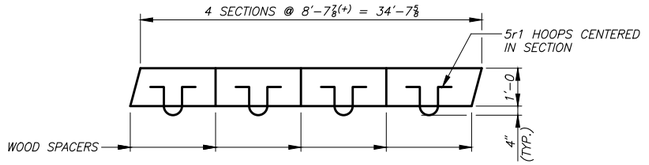
ALL REINFORCING STEEL IS TO BE GRADE 60 AND EPOXY COATED, EXCEPT FOR PRESTRESSED BEAMS.

THE PIER AND ABUTMENT DIAPHRAGMS ARE TO BE PLACED MONOLITHICALLY WITH THE BRIDGE SLAB.

ALL BEAMS ARE TO BE SET VERTICAL.

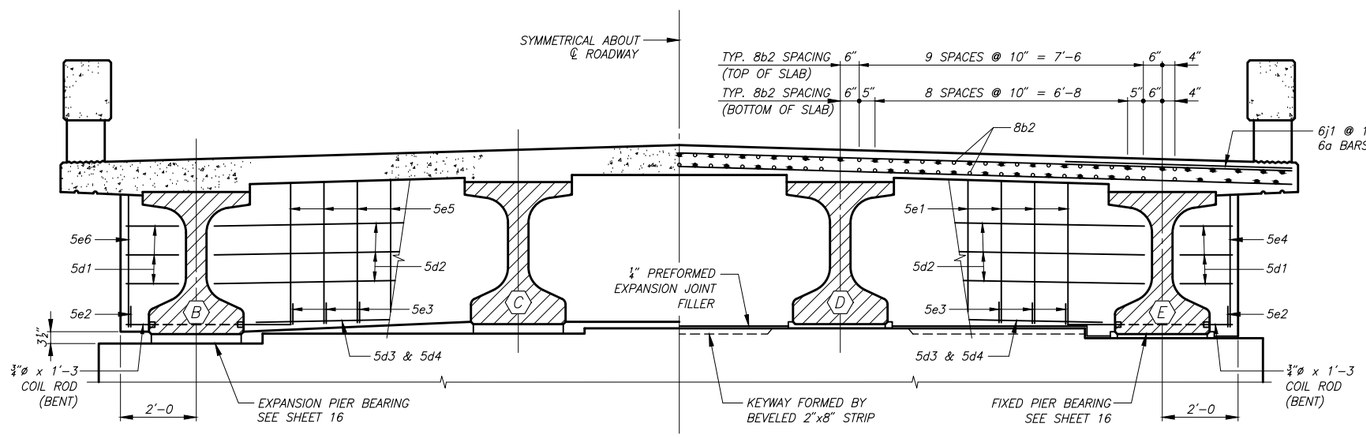
FORMS FOR THE SLAB AND RAIL ARE TO BE SUPPORTED BY THE PRESTRESSED CONCRETE BEAMS.

NEOPRENE BEARING PADS, ABUTMENT BEARING BARS, COIL TIES AND COIL RODS ARE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS"



PLAN OF TEMPORARY PAVING BLOCK

NOTE: LINE PAVING NOTCH WITH TAR PAPER BEFORE PLACING TEMPORARY PAVING BLOCK.



HALF SECTION NEAR EXPANSION PIER

(EAST PIER)

HALF SECTION NEAR FIXED PIER

(WEST PIER)

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

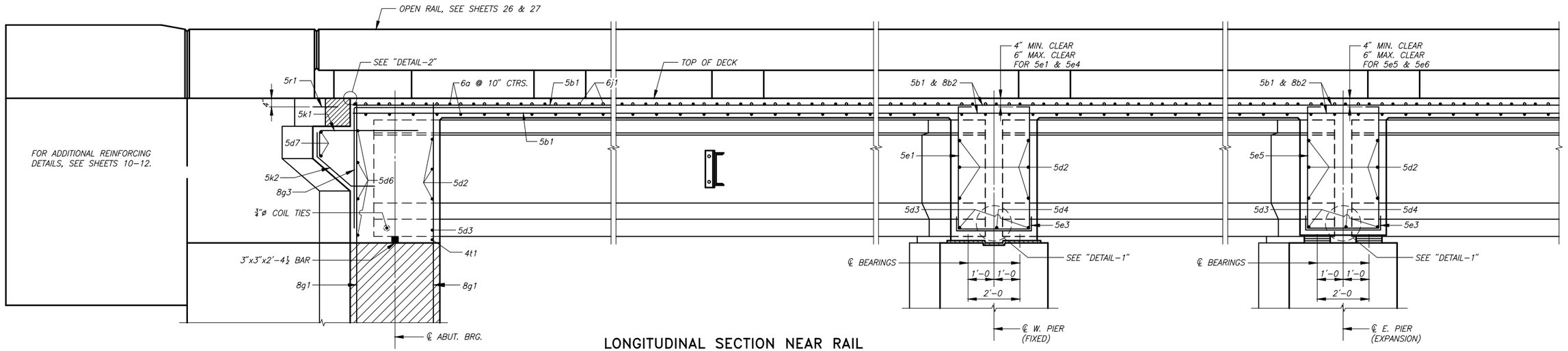
INTEGRAL ABUTMENTS — **TEE PIERS**

91'-0 END SPANS — **117'-0 INTERIOR SPAN**

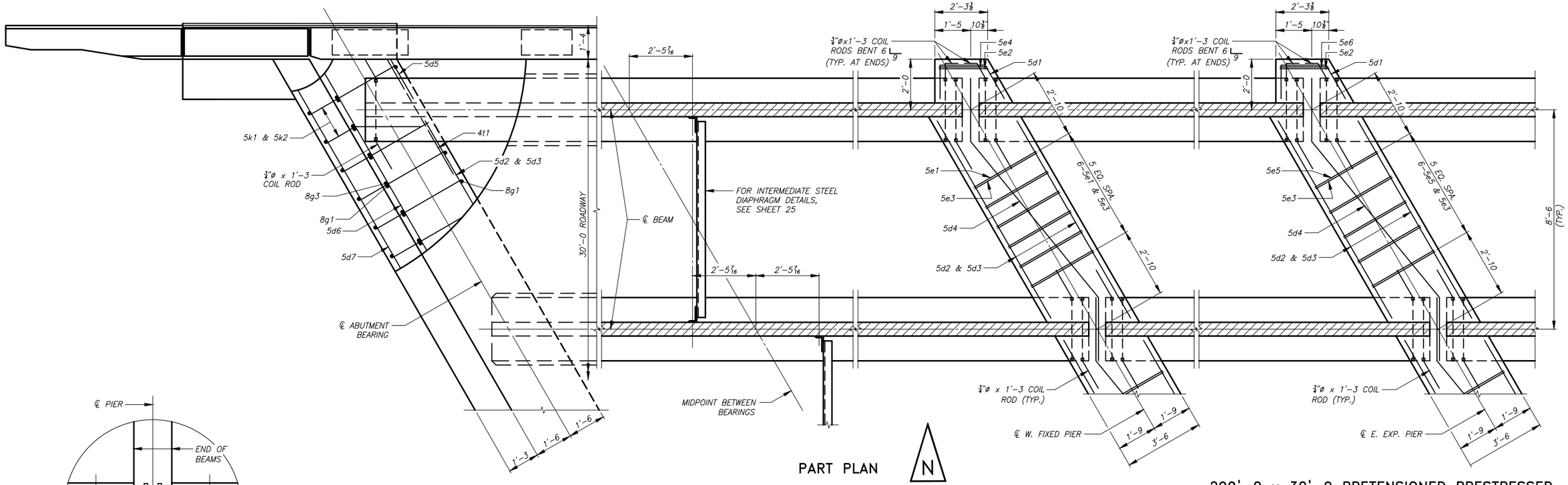
SUPERSTRUCTURE DETAILS

STATION 30+83.00 — **30° SKEW, RT. AHEAD**

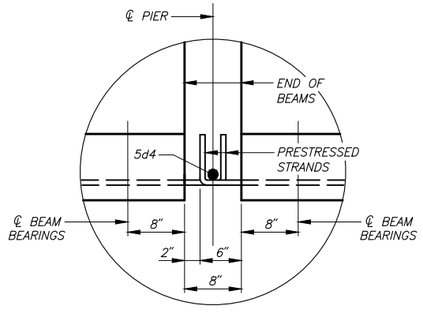
FLOYD COUNTY, **IOWA**



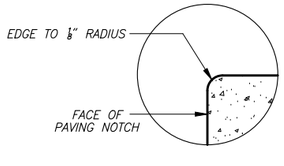
LONGITUDINAL SECTION NEAR RAIL



PART PLAN



DETAIL-1



DETAIL-2

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'-0 END SPANS

TEE PIERS
117'-0 INTERIOR SPAN

SUPERSTRUCTURE DETAILS

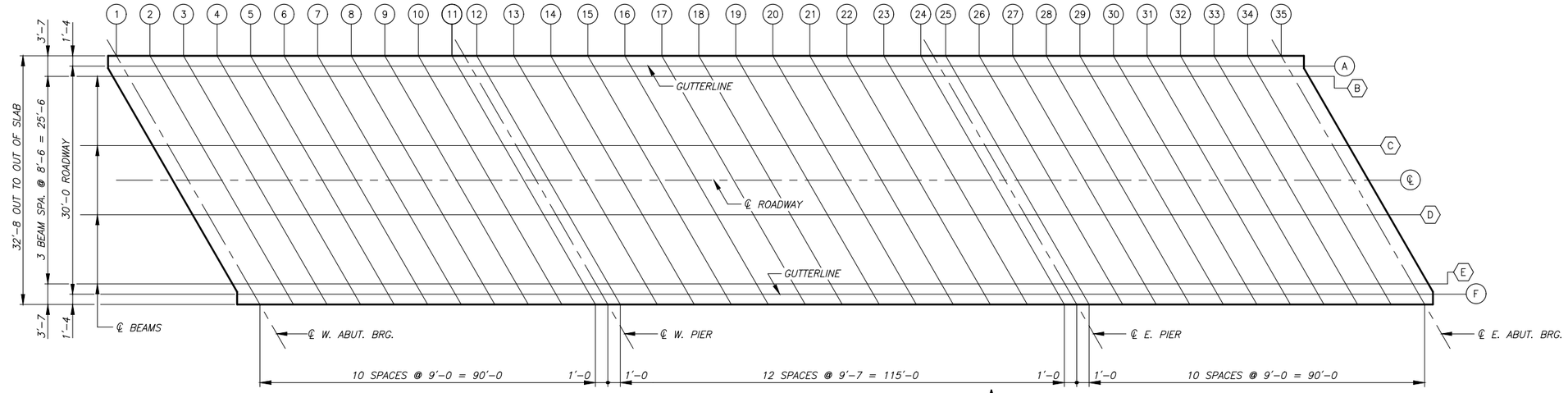
STATION 30+83.00

30° SKEW, RT. AHEAD

FLOYD COUNTY,

IOWA

BENCH MARK: #212 STEEL POST, STA. 32+33, 82' LT., ELEV.= 1048.20



TOP OF SLAB ELEVATIONS

N

⬡ INDICATES BEAM LINES

LOCATION	℄ W. ABUT. BRG. 1	2	3	4	5	6	7	8	9	10	℄ W. BRG. W. PIER 11	℄ E. BRG. W. PIER 12	13	14	15	16	17	18	19	20	21	22	23	℄ W. BRG. E. PIER 24	℄ E. BRG. E. PIER 25	26	27	28	29	30	31	32	33	34	℄ E. ABUT. BRG. 35	LOCATION
A	1050.31	1050.50	1050.67	1050.83	1050.98	1051.12	1051.25	1051.37	1051.48	1051.58	1051.66	1051.68	1051.76	1051.82	1051.88	1051.92	1051.95	1051.97	1051.97	1051.96	1051.94	1051.91	1051.87	1051.81	1051.80	1051.73	1051.66	1051.57	1051.47	1051.36	1051.24	1051.11	1050.97	1050.82	1050.66	A
B	1050.39	1050.57	1050.74	1050.90	1051.05	1051.19	1051.32	1051.44	1051.54	1051.64	1051.72	1051.74	1051.82	1051.88	1051.93	1051.97	1052.00	1052.02	1052.02	1052.01	1051.99	1051.96	1051.91	1051.85	1051.84	1051.77	1051.69	1051.60	1051.51	1051.39	1051.27	1051.14	1051.00	1050.85	1050.68	B
C	1050.65	1050.83	1050.99	1051.15	1051.29	1051.42	1051.54	1051.66	1051.76	1051.85	1051.93	1051.94	1052.01	1052.07	1052.12	1052.15	1052.17	1052.18	1052.18	1052.16	1052.13	1052.09	1052.04	1051.98	1051.96	1051.89	1051.81	1051.71	1051.61	1051.49	1051.36	1051.22	1051.08	1050.92	1050.75	C
℄	1050.76	1050.93	1051.09	1051.25	1051.39	1051.52	1051.64	1051.74	1051.84	1051.93	1052.01	1052.02	1052.09	1052.14	1052.19	1052.22	1052.23	1052.24	1052.23	1052.22	1052.19	1052.14	1052.09	1052.02	1052.01	1051.93	1051.84	1051.74	1051.64	1051.52	1051.39	1051.25	1051.09	1050.93	1050.76	℄
D	1050.75	1050.92	1051.08	1051.22	1051.36	1051.49	1051.61	1051.71	1051.81	1051.89	1051.96	1051.98	1052.04	1052.09	1052.13	1052.16	1052.18	1052.18	1052.17	1052.15	1052.12	1052.07	1052.01	1051.94	1051.93	1051.85	1051.76	1051.66	1051.54	1051.42	1051.29	1051.15	1050.99	1050.83	1050.65	D
E	1050.68	1050.85	1051.00	1051.14	1051.27	1051.39	1051.51	1051.60	1051.69	1051.77	1051.84	1051.85	1051.91	1051.96	1051.99	1052.01	1052.02	1052.02	1052.00	1051.97	1051.93	1051.88	1051.82	1051.74	1051.72	1051.64	1051.54	1051.44	1051.32	1051.19	1051.05	1050.90	1050.74	1050.57	1050.39	E
F	1050.66	1050.82	1050.97	1051.11	1051.24	1051.36	1051.47	1051.57	1051.66	1051.73	1051.80	1051.81	1051.87	1051.91	1051.94	1051.96	1051.97	1051.97	1051.95	1051.92	1051.88	1051.82	1051.76	1051.68	1051.66	1051.58	1051.48	1051.37	1051.25	1051.12	1050.98	1050.83	1050.67	1050.50	1050.31	F

BRIDGE COORDINATES

LOCATION	NORTH EDGE OF DECK	C.L. APPROACH ROADWAY	SOUTH EDGE OF DECK
WEST ABUTMENT	N = 3877501.42 E = 5155438.43	N = 3877485.17 E = 5155448.00	N = 3877468.93 E = 5155457.58
WEST PIER	N = 3877502.23 E = 5155529.43	N = 3877485.98 E = 5155539.00	N = 3877469.74 E = 5155548.58
EAST PIER	N = 3877503.28 E = 5155646.42	N = 3877487.03 E = 5155655.99	N = 3877470.79 E = 5155665.57
EAST ABUTMENT	N = 3877504.09 E = 5155737.42	N = 3877487.84 E = 5155746.99	N = 3877471.60 E = 5155756.57

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

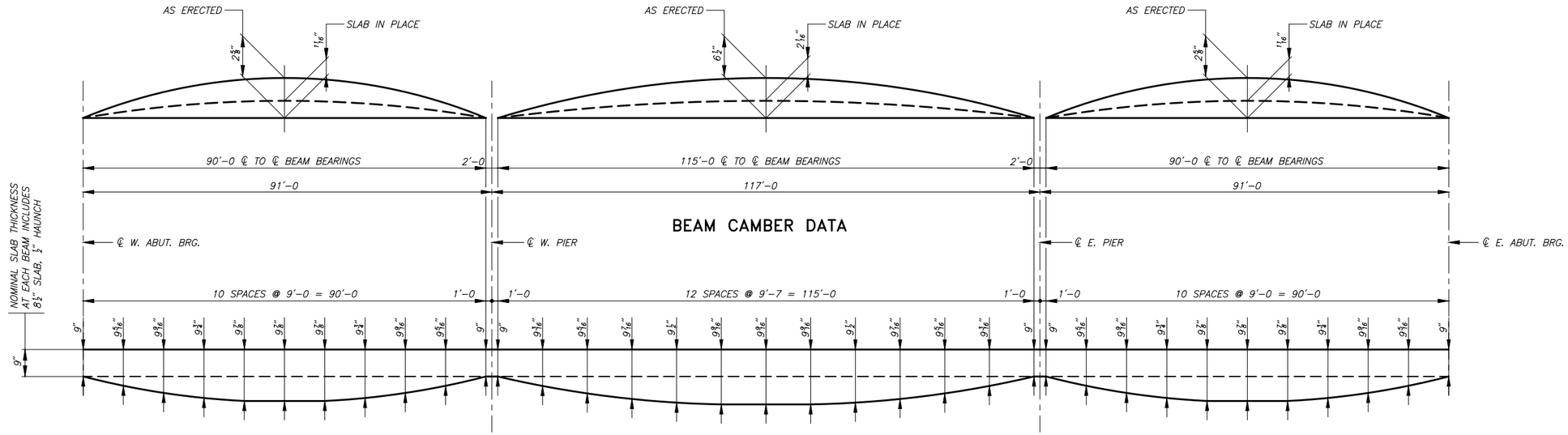
INTEGRAL ABUTMENTS
91'-0 END SPANS

TEE PIERS
117'-0 INTERIOR SPAN

SUPERSTRUCTURE DETAILS

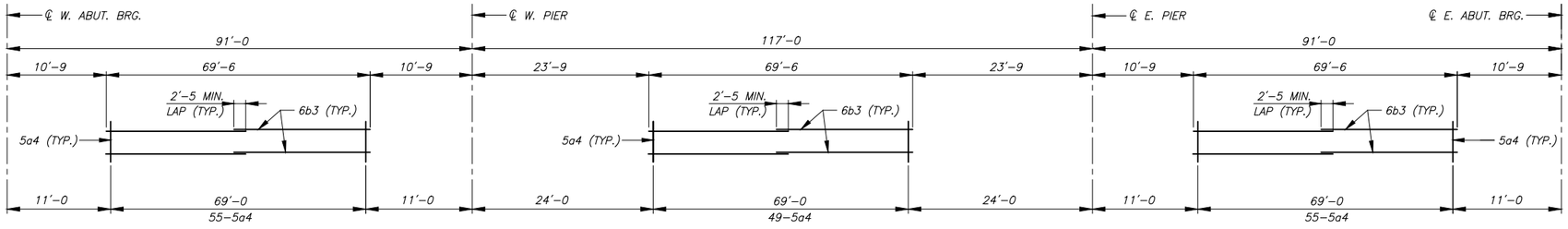
STATION 30+83.00
FLOYD COUNTY,

30° SKEW, RT. AHEAD
IOWA



HAUNCH DIAGRAM AND SLAB THICKNESS AT BEAM (T)

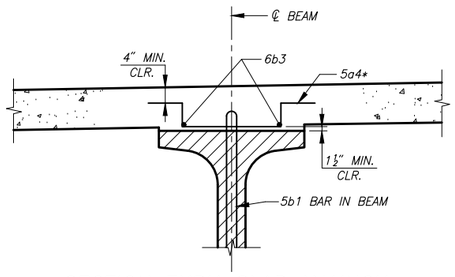
NOTE: HAUNCH THICKNESSES ARE SHOWN FOR ESTIMATING ONLY AND ARE NOT GUARANTEED FOR CONSTRUCTION.



HAUNCH REINFORCING LAYOUT

(TYPICAL EACH BEAM)

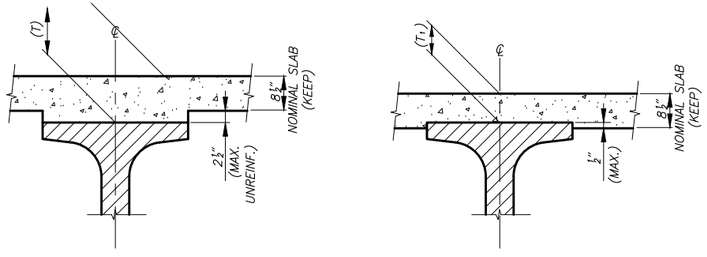
NOTE: 1–5a4 BAR IS TO BE PLACED ADJACENT TO 5b1 BEAM TIE BARS THAT EXTEND FROM THE BEAMS INTO SLAB IN THE AREA SHOWN.



SECTION THRU SLAB HAUNCH

NOTE: TYPICAL EACH BEAM LINE WHERE HAUNCH EXCEEDS 2½". SEE "HAUNCH REINFORCING LAYOUT" FOR PLACEMENT LOCATIONS.

** STIRRUPS MAY BE TILTED AS NEEDED TO PROVIDE NECESSARY CLEARANCES.*



SLAB THICKNESS DETAILS

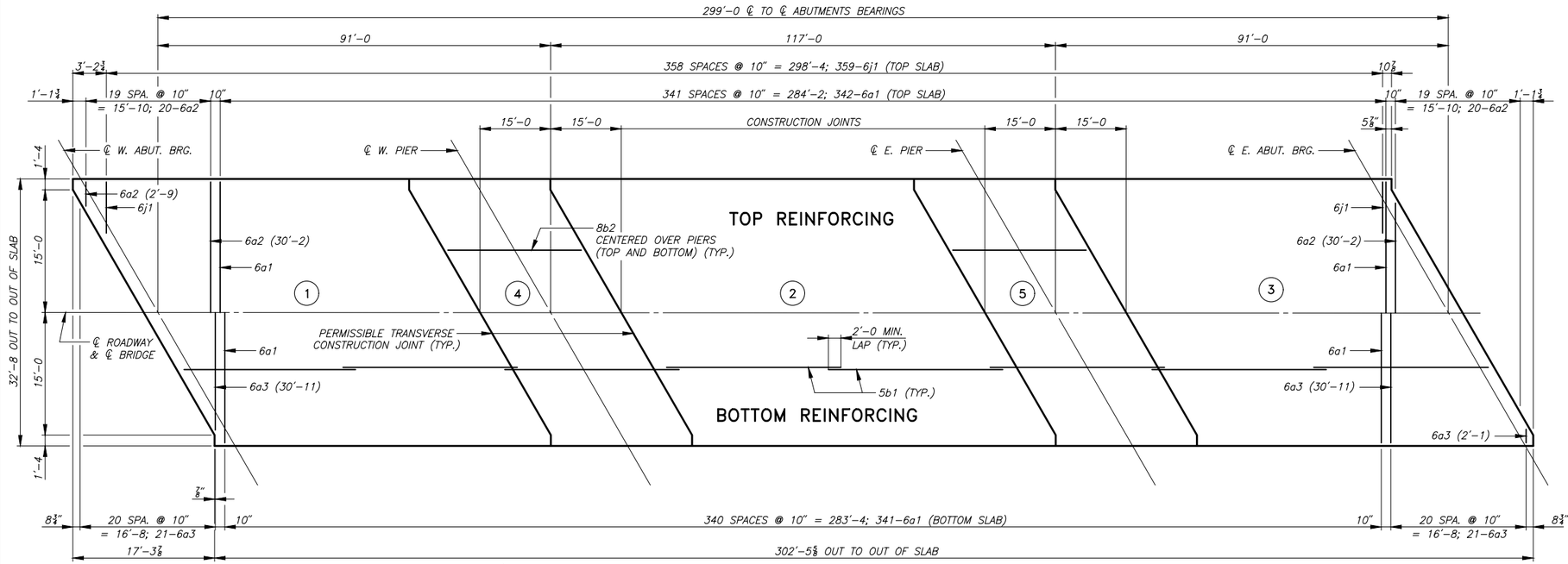
NOTE: THE SLAB THICKNESS (T) AT BEAMS IS BASED ON THE ANTICIPATED BEAM CAMBER REMAINING AFTER PLACING THE SLAB, BUT IS NOT GUARANTEED FOR CONSTRUCTION. IF BEAM IS UNDER CAMBERED, INCREASE SLAB THICKNESS (T) AT BEAMS TO COMPENSATE. IF BEAM IS OVER CAMBERED, THE SLAB THICKNESS (T) MAY BE DECREASED A MAXIMUM OF 1/2" EMBEDMENT AT THE BEAM (T1). IF MORE THAN 1/2" EMBEDMENT IS REQUIRED, OR IF THE HAUNCH EXCEEDS 2½" AND IS UNREINFORCED, THE GRADE LINE IS TO BE REVISED. THE ABOVE DIAGRAMS DO NOT APPLY TO THE CANTILEVERED SLAB SIDE OF THE EXTERIOR BEAM.

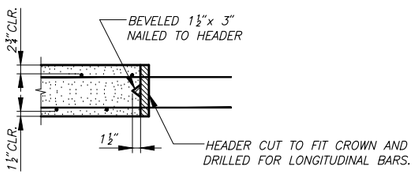
299'–0 x 30'–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS — **TEE PIERS**
91'–0 END SPANS — **117'–0 INTERIOR SPAN**

SUPERSTRUCTURE DETAILS

STATION 30+83.00 — **30° SKEW, RT. AHEAD**
FLOYD COUNTY, — **IOWA**





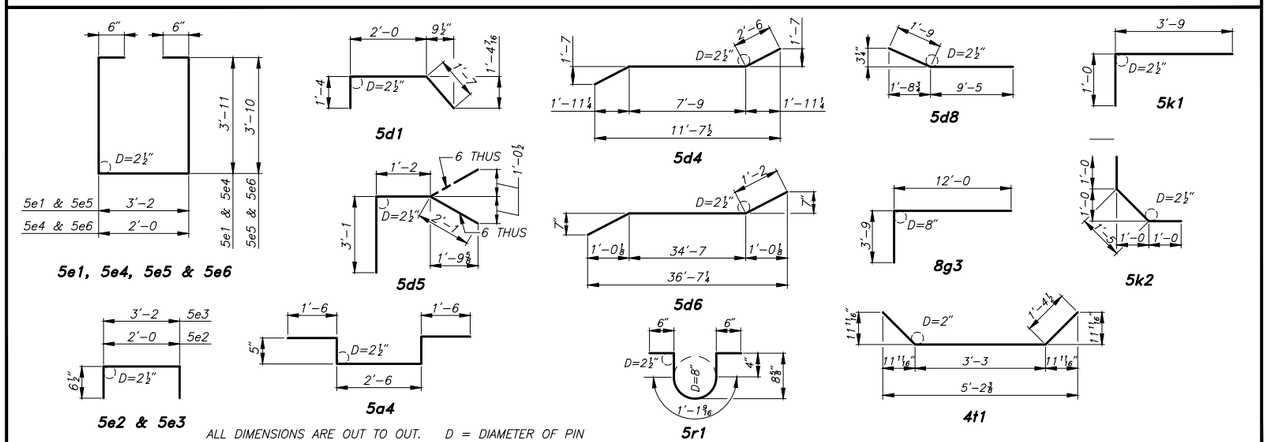
SLAB CONSTRUCTION JOINT DETAIL

CONCRETE PLACEMENT DIAGRAM AND SLAB REINFORCING LAYOUT

CONCRETE DECK SLAB SHALL BE PLACED IN SECTIONS AND IN SEQUENCES INDICATED. AN APPROVED ALTERNATE PROCEDURE IS TO PLACE THE CONCRETE DECK IN ONE CONTINUOUS POUR BEGINNING AT ONE END OF THE BRIDGE. ALTERNATE PROCEDURES FOR PLACING DECK CONCRETE MAY BE SUBMITTED FOR APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO ACCOMPLISH THE REQUIRED RESULT. THE BRIDGE ENGINEER SHALL REVIEW ANY ALTERNATE PROCEDURES. THE COST OF ANY ADDITIONAL ANALYSIS AND PLAN MODIFICATIONS SHALL BE PAID FOR BY THE CONTRACTOR. THE ENGINEER SHALL DETERMINE IF A RETARDING ADMIXTURE IS REQUIRED TO MAINTAIN PLASTICITY OF THE CONCRETE DECK DURING PLACEMENT.

DECK CONCRETE SECTIONS SHALL CURE FOR A MINIMUM OF 48 HOURS AND SHALL ACHIEVE A MINIMUM STRENGTH OF 75% OF THE 28 DAY DECK CONCRETE STRENGTH PRIOR TO REMOVING DECK HEADERS AND BEGINNING AN ADJACENT POUR.

BENT BAR DETAILS



ALL DIMENSIONS ARE OUT TO OUT. D = DIAMETER OF PIN

REINFORCING BAR LIST – SUPERSTRUCTURE

	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
Δ	6a1	SLAB, TRANSVERSE, TOP & BOTT.		683	32'-4	33,169
Δ	6a2	SLAB, TRANSVERSE, TOP, ENDS		40	VARIES	989
Δ	6a3	SLAB, TRANSVERSE, BOTTOM, ENDS		42	VARIES	1,041
Δ	5a4	SLAB, HAUNCH, TRANSVERSE		636	6'-4	4,201
Δ	5b1	SLAB, LONGIT., TOP & BOTTOM		584	39'-7	24,110
Δ	8b2	SLAB, LONGITUDINAL, OVER PIERS		134	29'-8	10,615
Δ	6b3	SLAB, LONGITUDINAL, HAUNCH		48	36'-0	2,595
Δ	5d1	PIER DIAPHRAGM, ENDS		12	4'-11	62
Δ	5d2	ABUT. & PIER DIAPHRAGM, LONGIT.		54	8'-9	493
Δ	5d3	ABUT. & PIER DIAPHRAGM, LONGIT.		18	6'-6	122
Δ	5d4	PIER DIAPHRAGM, LONGIT.		6	12'-9	80
Δ	5d5	ABUTMENT DIAPHRAGM, ENDS		12	6'-4	79
Δ	5d6	ABUTMENT DIAPHRAGM, LONGIT., B.F.		8	36'-11	308
Δ	5d7	PAVING NOTCH, LONGITUDINAL		4	37'-4	156
Δ	5d8	ABUT. DIAPH. WING EXT., LONGIT. F.F.		24	11'-2	280
Δ	5d9	ABUT. DIAPH. WING EXT., LONGIT. B.F.		24	11'-2	280
Δ	5e1	PIER DIAPHRAGM, HOOPS (FIXED)		18	12'-0	225
Δ	5e2	PIER DIAPHRAGM, TIES, ENDS		4	3'-1	13
Δ	5e3	PIER DIAPHRAGM, TIES		36	4'-3	160
Δ	5e4	PIER DIAPH., HOOPS, ENDS (FIXED)		2	10'-10	23
Δ	5e5	PIER DIAPHRAGM, HOOPS (EXP)		18	11'-10	222
Δ	5e6	PIER DIAPH., HOOPS, ENDS (EXP)		2	10'-8	22
Δ	8g3	ABUTMENT, VERTICAL, BACK FACE		56	15'-9	2,355
Δ	6j1	SLAB, TRANS., TOP, UNDER RAIL		718	6'-3	6,740
Δ	5k1	PAVING NOTCH, TRANSVERSE		58	4'-9	287
Δ	5k2	PAVING NOTCH, TRANSVERSE		58	3'-5	207
Δ	5r1	PAVING NOTCH, TRANSVERSE		8	2'-10	24
Δ	4t1	UNDER BEAMS AT ABUTMENTS		8	6'-0	32
Δ		OPEN RAIL, SEE SHEET 27				17,909
Δ EPOXY COATED			EPOXY COATED TOTAL (LBS.)			106,799

CONCRETE PLACEMENT QUANT.–SUPERSTR.

LOCATION	QUANTITY
SLAB & DIAPHRAGM, SECTIONS ①& ③; 2 @ 92.6	185.2
SLAB, SECTION ②	80.5
SLAB AND DIAPHRAGM, SECTION ④	41.8
SLAB AND DIAPHRAGM, SECTION ⑤	41.3
TOTAL (CU.YDS.)	348.8

ESTIMATED QUANTITIES – SUPERSTRUCTURE

ITEM		UNIT	QUANTITY
STRUCTURAL CONCRETE 4500 PSI OR GREATER		CU.YDS.	348.8
REINFORCING STEEL, EPOXY COATED		LBS.	106,799
STRUCTURAL STEEL		LBS.	3,076
PRETENSIONED, PRESTRESSED CONCRETE BEAMS	BTC90	EACH	8
	BTC115	EACH	4

299'–0 x 30'–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

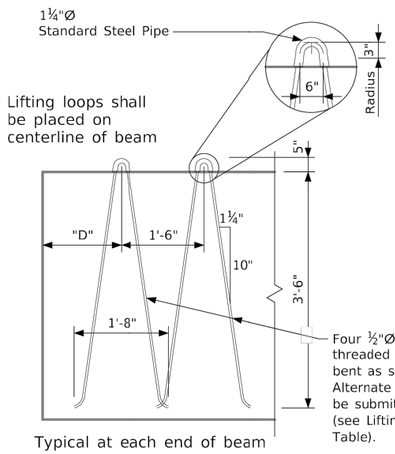
INTEGRAL ABUTMENTS
91'–0 END SPANS

TEE PIERS
117'–0 INTERIOR SPAN

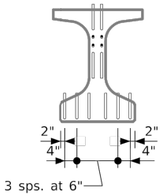
SUPERSTRUCTURE DETAILS

STATION 30+83.00
FLOYD COUNTY,

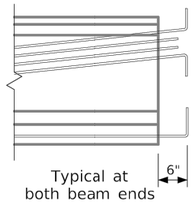
30° SKEW, RT. AHEAD
IOWA



Lifting Loop Detail



The top and bottom rows of the deflected strands are to be cut with 1'-2" projections which are to be shop bent as shown. The remaining top deflected strands are to be cut with 5" projections. Six bottom strands are to be cut with 1'-6" projections which are to be shop bent as shown. The remaining bottom strands are to be cut off reasonably flush with the concrete.



Strand Projection at Beam Ends When Embedded in Concrete End Diaphragms

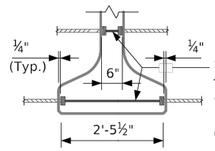
Lifting Loop And Overhang Table

Beams	Lifting Loops Each End	# of Strands Per Loop	D	Beam Overhang (ft.)
BTC30-BTC45	1	4	2'-0"	**
BTC50-BTC75	1	4	2'-0"	**
BTC80-BTC95	2	4	1'-3"	11
BTC100	2	4	3'-9"	12
BTC105	2	4	6'-3"	12
BTC110	2	4	8'-2"	12
BTC115	2	4	8'-3"	14

** In accordance with Article 2407.03, K of the Standard Specifications.

Lifting loops shall carry loads equally.

Number and exact location of coil ties to be as detailed on specific bridge design.



Coil Tie Detail

ΔΔ 5b1 and 6b3 bars to be epoxy coated
✱ 6b3 and 6b4 bars to be used in pairs

Design Stresses:

Design stresses for the following materials are to be in accordance with AASHTO LRFD Bridge Design Specifications, Series of 2017.
Reinforcing steel in accordance with Section 5, Grade 60.
Concrete in accordance with Section 5.
Prestressing steel in accordance with Section 5, Grade 270.

Specifications:

Construction: Standard Specifications of the Iowa Department of Transportation, current series, with current applicable special provisions and supple-mental specifications.
Design: AASHTO LRFD, Series of 2017 with minor modifications.

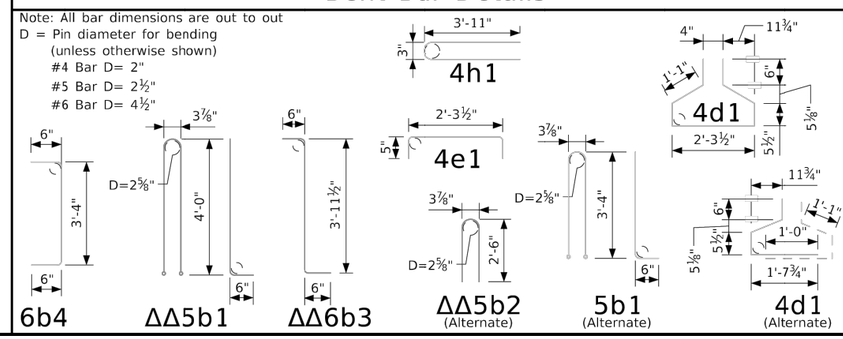
Alternate Bar Notes:

Alternate bars shown in Bent Bar Details may be used in lieu of reinforcing bars shown in bar list. No additional payment shall be made for use of alternate bars.

Note: All mild reinforcing steel can be epoxy coated at Contractor's option without modification to bar length or details at no additional cost to the State.

Bent Bar Details

Note: All bar dimensions are out to out
D = Pin diameter for bending (unless otherwise shown)
#4 Bar D= 2"
#5 Bar D= 2½"
#6 Bar D= 4½"



BTC Beam Data

BTC Beam	Span Length ℄-℄ Bearing	Overall Beam Length (L)	Concrete Strength f'ci (ksi.)	Concrete Strength f'c (ksi.)	Strand Size Dia. (in.)	Number of Strands Straight	Number of Strands Deflected	③ Total Initial Prestress (kips)	Hold Down Force (kips)	Camber (in.) ⑥ At Release	Camber (in.) ⑥ After Losses	Deflection (in.) Δ_D Immediate ① (elastic) Δ_I Steel Diaphragm	Deflection (in.) Δ_D Time ② (plastic) Δ_T Steel Diaphragm	Permissible Maximum Spacing HL-93 Loading Steel Diaphragm	Weight (tons)	Concrete (cu. yd.)	Reinforcing Steel (weight-lb.)
BTC30	30'-0"	31'-4"	4.50	5.00	0.60"	8	—	340	—	0.09"	0.16"	0.02"	—	9'-3"	11.3	5.6	1031
BTC35	35'-0"	36'-4"	4.50	5.00	0.60"	8	—	340	—	0.11"	0.20"	0.05"	—	9'-3"	13.1	6.5	1129
BTC40	40'-0"	41'-4"	4.50	5.00	0.60"	10	—	425	—	0.18"	0.34"	0.08"	0.02"	9'-3"	14.9	7.4	1223
BTC45	45'-0"	46'-4"	4.50	5.00	0.60"	10	—	425	—	0.21"	0.40"	0.13"	0.03"	9'-3"	16.7	8.2	1341
BTC50	50'-0"	51'-4"	4.50	5.00	0.60"	12	—	510	—	0.31"	0.58"	0.19"	0.05"	9'-3"	18.5	9.1	1441
BTC55	55'-0"	56'-4"	4.50	5.00	0.60"	14	—	596	—	0.42"	0.77"	0.28"	0.07"	9'-3"	20.3	10.0	1535
BTC60	60'-0"	61'-4"	4.50	5.00	0.60"	14	—	596	—	0.46"	0.85"	0.40"	0.10"	9'-3"	22.1	10.9	1656
BTC65	65'-0"	66'-4"	5.00	6.00	0.60"	14	2	681	11.5	0.54"	1.00"	0.52"	0.13"	9'-3"	23.9	11.8	1753
BTC70	70'-0"	71'-4"	5.00	6.00	0.60"	16	2	766	10.7	0.67"	1.24"	0.69"	0.17"	9'-3"	25.7	12.7	1943
BTC75	75'-0"	76'-4"	5.00	6.00	0.60"	16	4	851	20.0	0.83"	1.53"	0.91"	0.23"	9'-3"	27.5	13.6	2057
BTC80	80'-0"	81'-4"	6.00	7.00	0.60"	20	4	1021	18.8	1.11"	2.04"	1.11"	0.28"	9'-3"	29.3	14.5	2114
BTC85	85'-0"	86'-4"	6.00	7.00	0.60"	22	4	1106	17.7	1.31"	2.43"	1.41"	0.35"	9'-3"	31.1	15.4	2232
BTC90	90'-0"	91'-4"	6.00	7.00	0.60"	24	6	1276	23.8	1.65"	2.64"	1.77"	0.44"	9'-3"	32.9	16.2	2347
BTC95	95'-0"	96'-4"	6.50	7.50	0.60"	28	6	1446	22.6	2.29"	3.66"	2.13"	0.53"	9'-3"	34.7	17.1	2497
BTC100	100'-0"	101'-4"	7.00	8.00	0.60"	30	6	1531	21.5	2.56"	4.09"	2.56"	0.64"	9'-3"	36.5	18.0	2668
BTC105	105'-0"	106'-4"	7.50	8.50	0.60"	34	8	1786	25.8	3.10"	4.96"	3.04"	0.76"	9'-3"	38.3	18.9	2762
BTC110	110'-0"	111'-4"	7.50	9.00	0.60"	38	8	1957	24.6	3.62"	5.78"	3.59"	0.90"	9'-3"	40.1	19.8	2828
④⑤ BTC115	115'-0"	116'-4"	7.50	9.50	0.60"	40	10	2127	27.7	4.04"	6.47"	4.16"	1.04"	9'-0½"	41.9	20.7	2977

① Deflections at mid-span due to weight of deck and diaphragm. The deflections shown are for a deck (8.5") and haunch (1.5") weight of:
1.04 kips/ft. for 9'-3" beam spacing
1.01 kips/ft. for 9'-0½" beam spacing
And one steel diaphragm (0.500 kips) at ℄ of span. For different deck and diapragm weights, deflections will be directly proportional.

② Deflections due to the combined effect of creep due to weight of deck and shrinkage of deck.
Total beam deflections at ℄ of span, Δ_D , due to weight of deck and diaphragms for detailing purpose:
(A) $\Delta_D=\Delta_I+\Delta_T$ for simple span.
(B) $\Delta_D=\Delta_I+\frac{3}{4}\Delta_T$ for end spans of continuous bridge.
(C) $\Delta_D=\Delta_I+\frac{1}{2}\Delta_T$ for interior spans of continuous bridge.

③ Total initial prestress is based on 72.6% f's, f'sy= 270 ksi. and As= 0.217 in.².

④ Requires a 4500 psi., 28 day compressive strength for cast-in-place deck concrete.

⑤ Includes partial length debonded strands, see individual Beam Sheet for locations and details.

⑥ Calculated design cambers are based on multipliers developed from research in Iowa.

Beam Notes: (continued)

If stub abutments are used, all strands at the ends of beams at stub abutments shall be cut off reasonably flush with the concrete.
Minimum concrete f'c (at 28 days) and minimum f'ci at release are located in the BTC Beam Data Table above.
Four 0.60 in. diameter strands stressed to not more than 5000 lbs. each may be used in lieu of bars 5a1 and 5a2 in the top flange.

Beam Notes:

These beams are designed for AASHTO live loads as indicated in above table with an allowance of 20 lbs. per square foot of roadway for future wearing surface.
All PPC beams shall use high performance concrete ('HPC') in accordance with the Standard Specifications.
Hold down points for deflected strands may be moved toward ends of beam a distance of 0.05 L maximum at producer's option.
All prestressing strands except lifting loop strands shall be 0.60 in. nominal diameter (nominal steel area = 0.217 in.²) and conform to ASTM A416 Grade 270 Low Relaxation Strands. Minimum strand breaking strength shall be 58.6 kips.
Tops of beams are to be struck off level and finished as per Materials I.M.570.
Bearings shall be as detailed on other design sheets.
Beams to be used in bridges made continuous by the poured in place deck, are to be at least 28 days old before the deck is placed unless a shorter curing time is approved by the Bridge Engineer.
The portions of the prestressed beams that are to be embedded in the abutment and pier diaphragms shall be roughened for a distance of 10" from the beam end by sandblasting or other approved methods to provide suitable bond between the beam and the diaphragm in accordance with Article 2403.03, I, of the Standard Specifications.
All beams are to be increased in length to compensate for elastic shortening, creep and shrinkage.
For transporting, the allowable overhang is shown in the "Lifting Loop and Overhang Table".
The Contractor shall assure the lateral stability of the BTC100 to BTC115 beam during handling, transporting and erection by providing temporary bracing as needed.
Holes must be cast in the web to accommodate the steel diaphragm attachments as detailed on the Steel Diaphragm Detail Sheet.
If sole plate is required for bearing, sole plate is to be set in forms when beam is cast and formed out below to exclude concrete as detailed on the Bearing Sheet.
When expansion joints are used, concrete sealer shall be applied to the prestressed beam end sections. The sealing shall be in accordance with Materials I.M.570 (Fabricator Application) and I.M.491.12 (Contractor Application).

Reinforcing Bar List

	Beam Bar	Shape	BTC30 No.	BTC30 Length	BTC35 No.	BTC35 Length	BTC40 No.	BTC40 Length	BTC45 No.	BTC45 Length	BTC50 No.	BTC50 Length	BTC55 No.	BTC55 Length	BTC60 No.	BTC60 Length	BTC65 No.	BTC65 Length	BTC70 No.	BTC70 Length	BTC75 No.	BTC75 Length	BTC80 No.	BTC80 Length	BTC85 No.	BTC85 Length	BTC90 No.	BTC90 Length	BTC95 No.	BTC95 Length	BTC100 No.	BTC100 Length	BTC105 No.	BTC105 Length	BTC110 No.	BTC110 Length	BTC115 No.	BTC115 Length	Beam Bar
	5a1		6	31'-1"	6	36'-1"	6	41'-1"	12	24'-9"	12	27'-3"	12	29'-9"	12	32'-3"	12	34'-9"	12	37'-3"	12	39'-9"	12	24'-0"	12	26'-6"	12	29'-0"	12	31'-6"	12	34'-0"	12	36'-6"	12	39'-0"	12	23'-2"	5a1
	5a2		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6	40'-0"	6	40'-0"	6	40'-0"	6	40'-0"	6	40'-0"	6	40'-0"	6	40'-0"	12	40'-0"	5a2
ΔΔ	5b1		19	9'-2"	23	9'-2"	27	9'-2"	31	9'-2"	35	9'-2"	39	9'-2"	45	9'-2"	49	9'-2"	57	9'-2"	63	9'-2"	61	9'-2"	67	9'-2"	69	9'-2"	71	9'-2"	81	9'-2"	85	9'-2"	89	9'-2"	93	9'-2"	5b1
ΔΔ✱	6b3		32	5'-0"	32	5'-0"	32	5'-0"	32	5'-0"	32	5'-0"	32	5'-0"	32	5'-0"	32	5'-0"	36	5'-0"	36	5'-0"	36	5'-0"	36	5'-0"	40	5'-0"	40	5'-0"	40	5'-0"	40	5'-0"	40	5'-0"	40	5'-0"	6b3
✱	6b4		12	4'-4"	12	4'-4"	12	4'-4"	12	4'-4"	12	4'-4"	12	4'-4"	12	4'-4"	12	4'-4"	16	4'-4"	16	4'-4"	16	4'-4"	16	4'-4"	16	4'-4"	20	4'-4"	24	4'-4"	24	4'-4"	24	4'-4"	24	4'-4"	6b4
	4c1		43	2'-7"	49	2'-7"	53	2'-7"	59	2'-7"	67	2'-7"	71	2'-7"	75	2'-7"	81	2'-7"	85	2'-7"	85	2'-7"	103	2'-7"	105	2'-7"	113	2'-7"	127	2'-7"	133	2'-7"	139	2'-7"	145	2'-7"	151	2'-7"	4c1
	4d1		41	6'-5"	45	6'-5"	49	6'-5"	53	6'-5"	57	6'-5"	61	6'-5"	67	6'-5"	71	6'-5"	79	6'-5"	85	6'-5"	83	6'-5"	89	6'-5"	93	6'-5"	95	6'-5"	103	6'-5"	107	6'-5"	111	6'-5"	115	6'-5"	4d1
	4e1		26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	28	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	4e1
	4h1		6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	6	8'-0"	4h1

ΔΔ 299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE
ΔΔ✱ ✱

INTEGRAL ABUTMENTS
91'-0 END SPANS

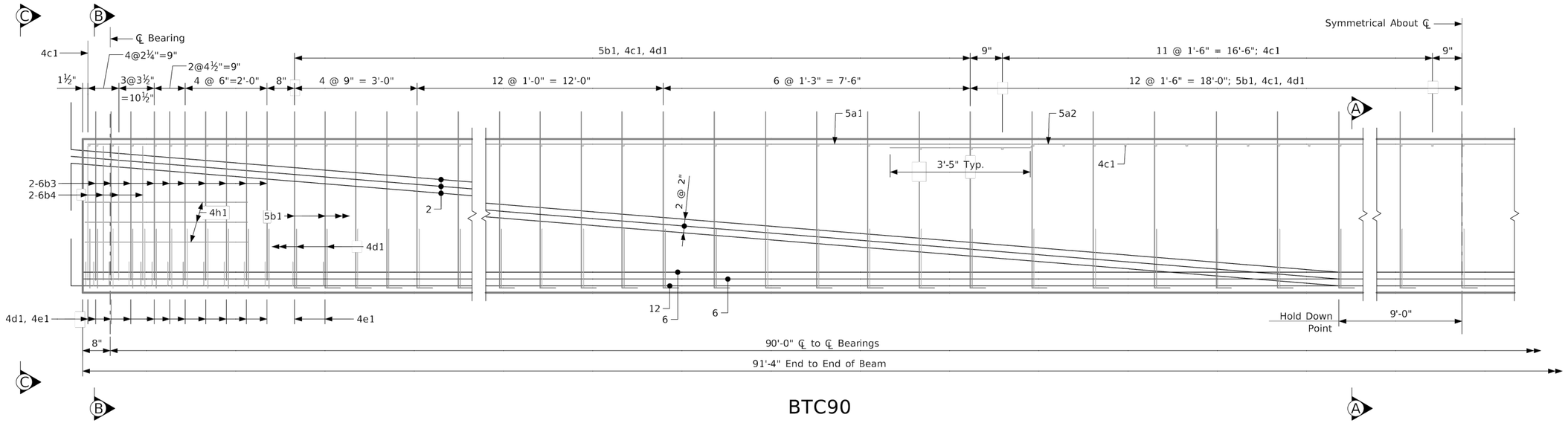
TEE PIERS
117'-0 INTERIOR SPAN

BEAM DETAILS

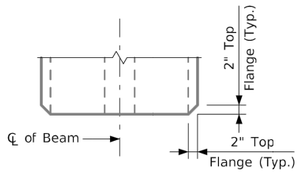
STATION 30+83.00
FLOYD COUNTY,

30° SKEW, RT. AHEAD
IOWA

IDOT STANDARD SHEET 4700 DATE: 04-2026

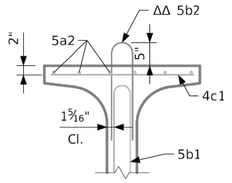


BTC90



Top View

The top flange beam corners are to be chamfered 2" as shown at both ends of the beam.

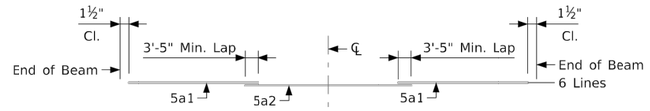


Section A-A
(Alternate)

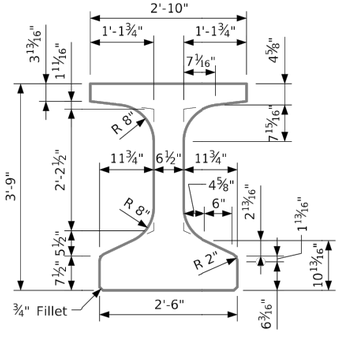
See Alternate Bar Note on Standard Sheet 4700.

Area = 691.8 in.^{2}
$\bar{y}_b$ = 20.74 in.
I = 178,971 in.^{4}

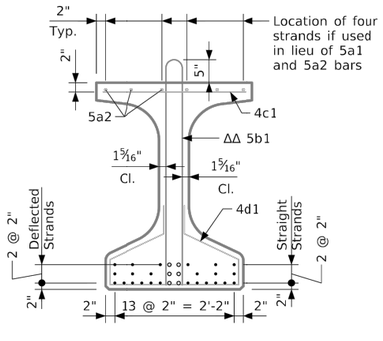
Beam Section Properties



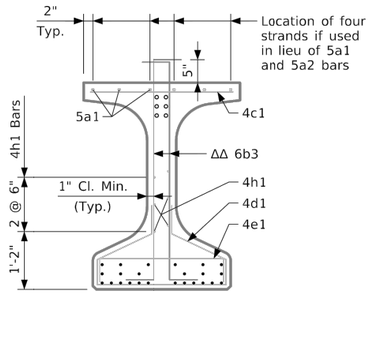
Top Flange Longitudinal Bar Layout



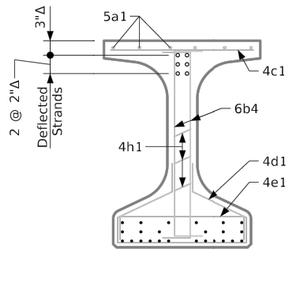
BTC Beam Cross Section



Section A-A



Section B-B



View C-C

- ○ Deflected Strands
- Δ Dimensions at End of Beam
- ΔΔ Epoxy Coated Bars

IDOT STANDARD SHEET 4713
DATE: 10–2024

299'–0 x 30'–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'–0 END SPANS

TEE PIERS
117'–0 INTERIOR SPAN

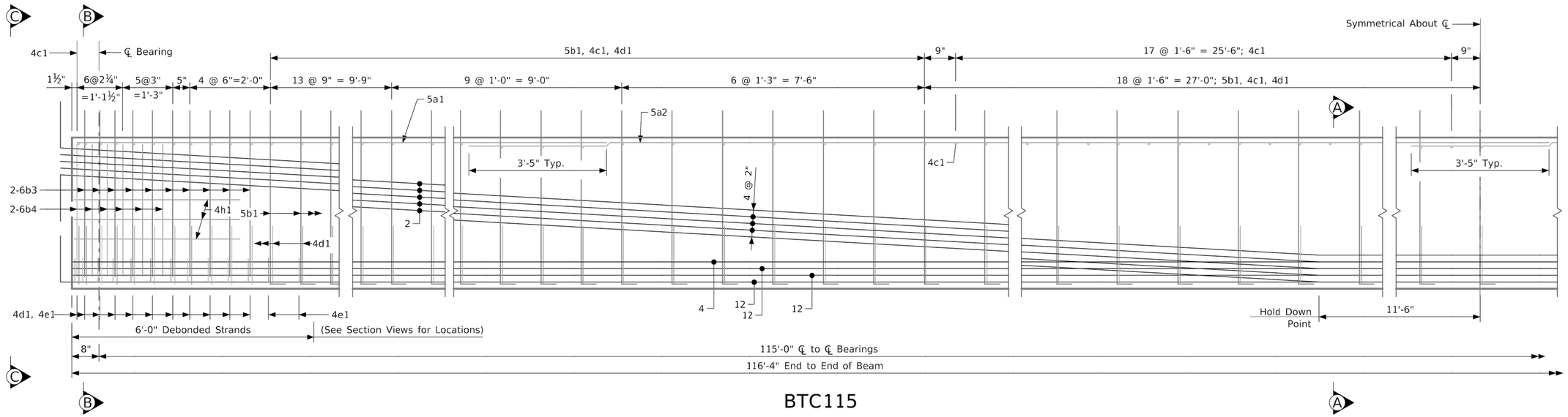
BEAM DETAILS

STATION 30+83.00

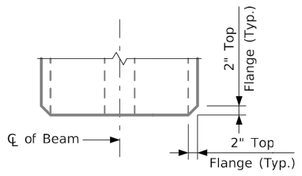
30° SKEW, RT. AHEAD

FLOYD COUNTY,

IOWA

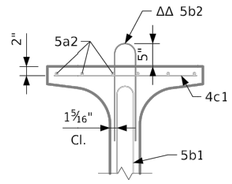


BTC115



Top View

The top flange beam corners are to be chamfered 2" as shown at both ends of the beam.

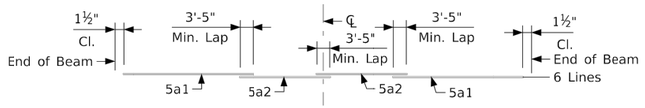


Section A-A
(Alternate)

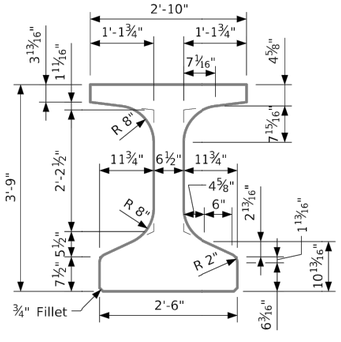
See Alternate Bar Note on Standard Sheet 4700.

Area = 691.8 in.^{2}
$\bar{y}_b$ = 20.74 in.
I = 178,971 in.^{4}

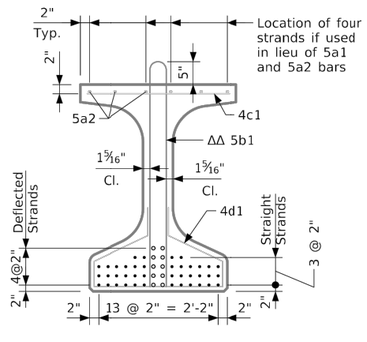
Beam Section Properties



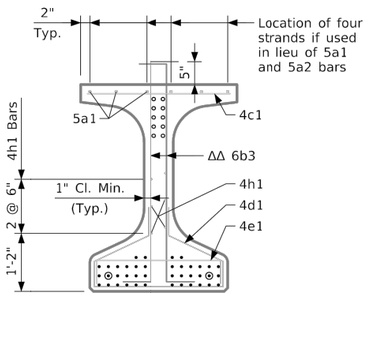
Top Flange Longitudinal Bar Layout



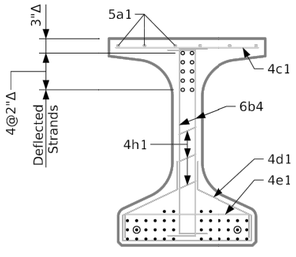
BTC Beam Cross Section



Section A-A



Section B-B



View C-C

- ○ Deflected Strands
- Δ Dimensions at End of Beam
- ΔΔ Epoxy Coated Bars
- ⊙ Strands Debonded 6'-0" from Beam Ends

IDOT STANDARD SHEET 4718
DATE: 04–2024

299'–0 x 30'–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

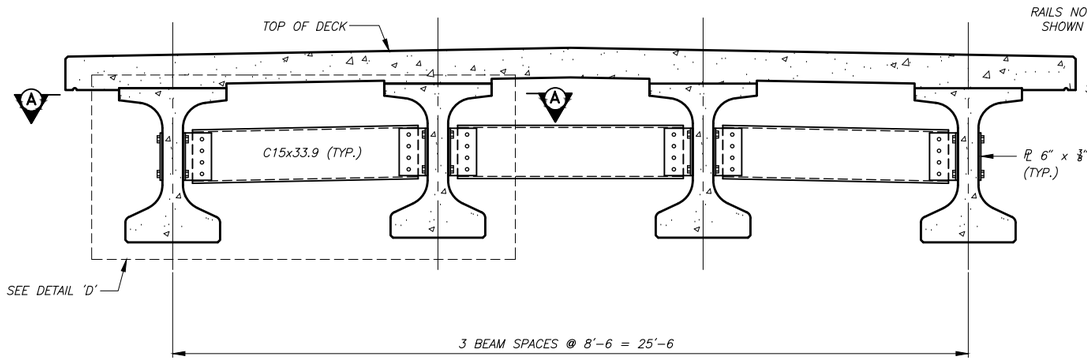
INTEGRAL ABUTMENTS
91'–0 END SPANS

TEE PIERS
117'–0 INTERIOR SPAN

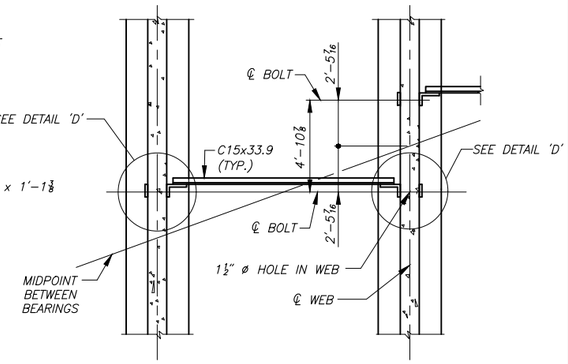
BEAM DETAILS

STATION 30+83.00
FLOYD COUNTY,

30° SKEW, RT. AHEAD
IOWA

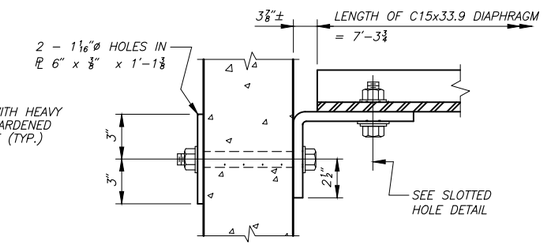


SECTION SHOWING INTERMEDIATE DIAPHRAGMS



PART SECTION A–A

BULB TEE "C" BEAM INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL			
ONE BEAM CONNECTION (DETAIL "D")			WEIGHT
		NO. OF BEAM CONNECTIONS	
2 - ⅞"Φ x 9¼" H.S. BOLTS WITH NUTS & WASHERS = 4.8 LBS.		18	86
ONE DETAIL "D"	1 - BACKING PL 6 x ⅜ x 1'-1⅜ = 8.5 LBS.	18	153
	1 - BENT PL 9 x 6 x ½ x 1'-1⅜ = 28.5 LBS.	18	513
ONE DIAPHRAGM			
		NUMBER OF DIAPHRAGMS	
8 - ⅞"Φ x 2¾" H.S.BOLTS WITH NUTS & WASHERS = 10.3 LBS.		9	93
	LENGTH OF MEMBER		
1 - C15 x 33.9 = 33.9 LBS/FT.	7'-3¾	9	2,231
INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL - TOTAL (LBS.)			3,076



SECTION B–B

DIAPHRAGM NOTES

ALL DIAPHRAGM MATERIALS, INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

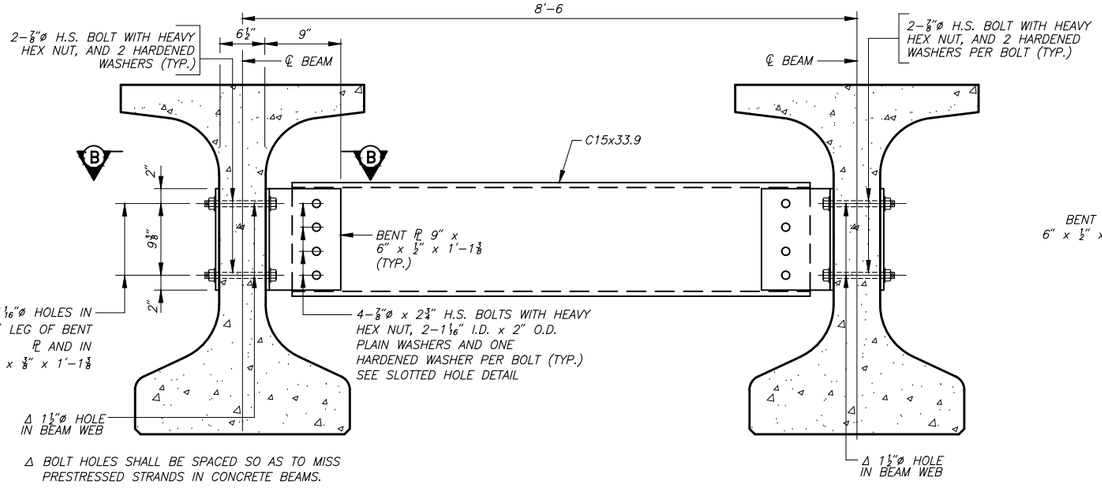
SHOP DRAWINGS OF THE STEEL DIAPHRAGMS SHOWING LAYOUT AND DETAILS OF THE DIAPHRAGMS SHALL BE SUBMITTED FOR APPROVAL.

ALL COSTS FOR FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGMS SHALL BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL STEEL."

THE 1½" DIAMETER HOLES FOR THE 7/8" DIAMETER H.S. BOLTS SHALL BE CAST INTO THE WEB. DRILLING IS NOT ALLOWED.

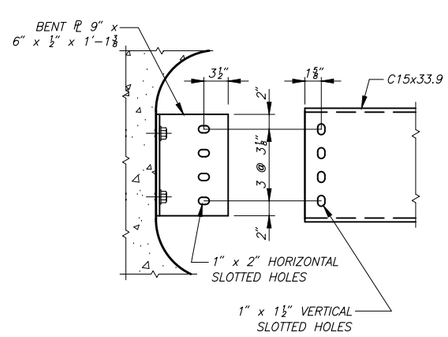
THE 7/8" DIAMETER H.S. BOLTS THROUGH THE WEB SHALL HAVE A THREAD LENGTH OF 3" MIN. AND 4" MAX. AND SHALL MEET THE REQUIREMENTS OF ASTM A449.

ALL BOLTS ARE TO BE TIGHTENED PRIOR TO PLACING BRIDGE FLOOR CONCRETE.

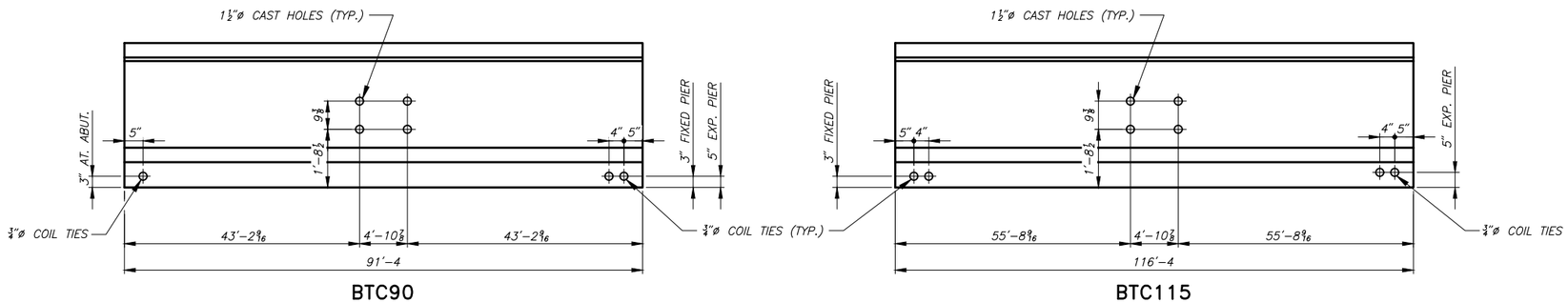


DETAIL 'D'

DETAIL 'D'



SLOTTED HOLE DETAIL



BTC90

BTC115

BEAM COIL TIE AND BOLT HOLE LOCATIONS

299'–0 x 30'–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'–0 END SPANS

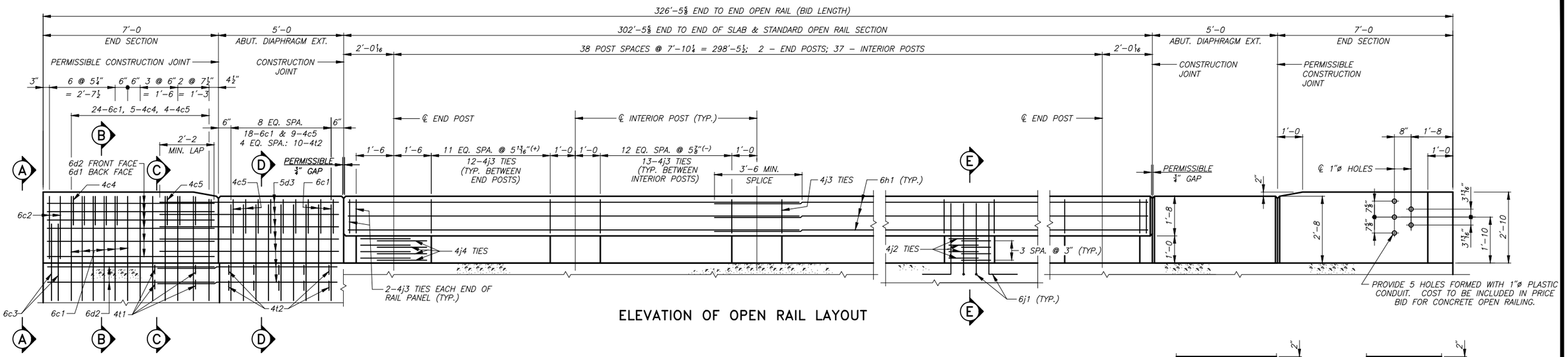
TEE PIERS
117'–0 INTERIOR SPAN

STEEL DIAPHRAGM DETAILS

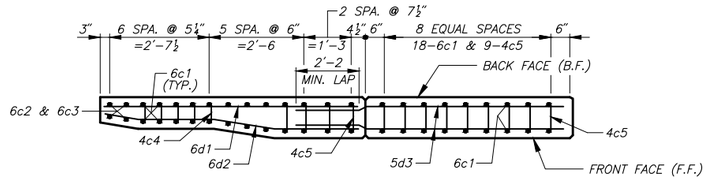
STATION 30+83.00

30° SKEW, RT. AHEAD

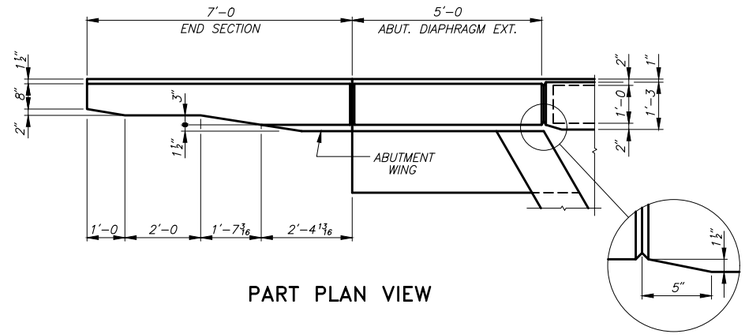
FLOYD COUNTY, IOWA



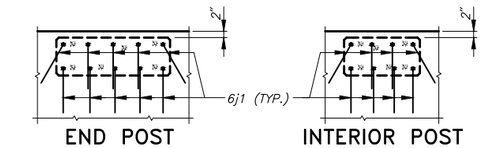
ELEVATION OF OPEN RAIL LAYOUT



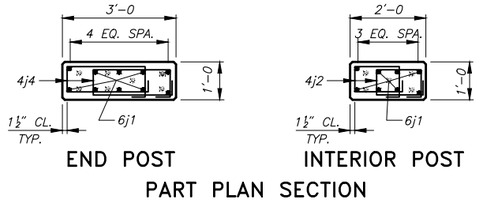
PART PLAN SECTION



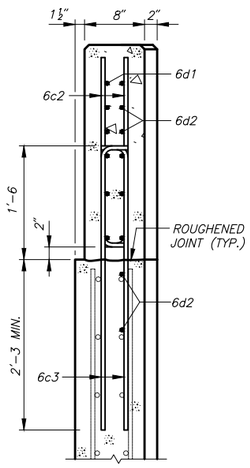
PART PLAN VIEW



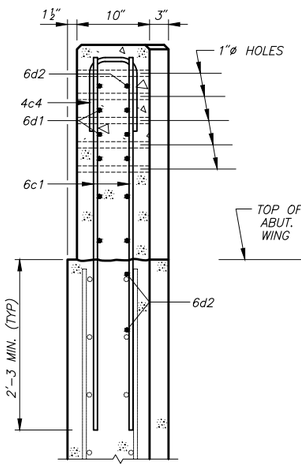
PART PLAN VIEW



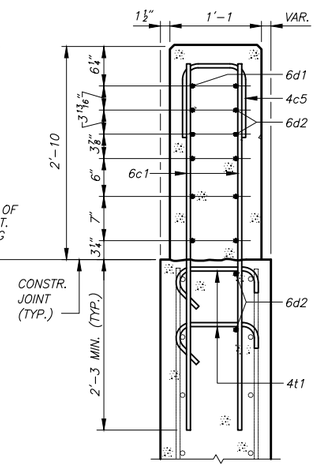
PART PLAN SECTION



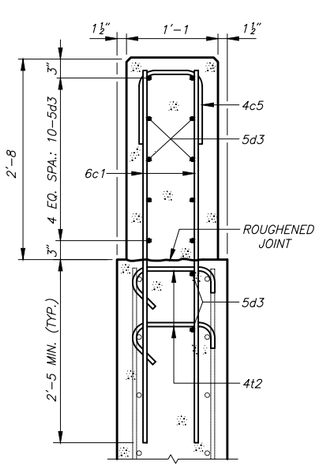
VIEW A-A



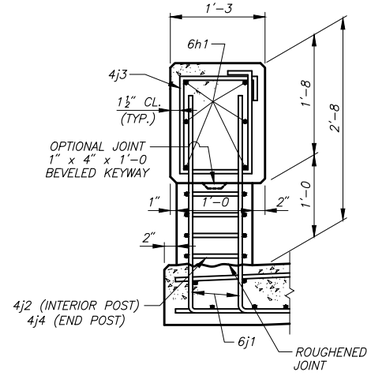
SECTION B-B



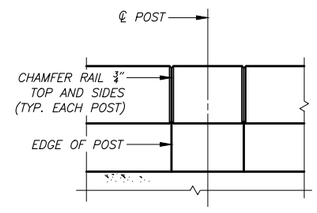
SECTION C-C



SECTION D-D



PART SECTION E-E



RAIL CHAMFER DETAIL

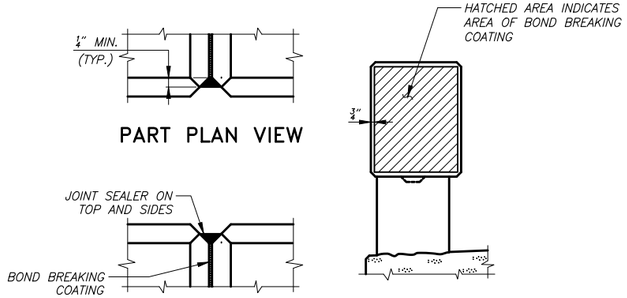
NOTE: SEE ABUTMENT DETAILS FOR ADDITIONAL WING REINFORCING.

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS — **TEE PIERS**
91'-0 END SPANS — **117'-0 INTERIOR SPAN**

OPEN RAIL DETAILS (TL-4)

STATION 30+83.00 — **30° SKEW, RT. AHEAD**
FLOYD COUNTY, — **IOWA**



OPEN RAIL JOINT DETAILS

NOTE: OMIT THIS DETAIL IF PERMISSIBLE GAP IS UTILIZED BETWEEN THE END SECTION AND STANDARD SECTION.

CONCRETE PLACEMENT SUMMARY (TWO RAILS)

SECTION	TOTAL
STANDARD SECTIONS (2 @ 23.3 C.Y.)	46.6
INTERIOR POSTS (74 @ 0.074 C.Y.)	5.5
END POSTS (4 @ 0.111 C.Y.)	0.4
ABUT. DIAPH. EXT. (4 @ 0.535 C.Y.)	2.1
END SECTIONS (4 @ 0.687 C.Y.)	2.7
TOTAL (C.Y.)	57.3

CONCRETE OPEN RAIL QUANTITIES (TWO RAILS)

ITEM	UNIT	QUANTITY
CONCRETE OPEN RAILING, TL-4 (2 @ 326.47)	L.F.	652.9

OPEN RAIL NOTES

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

ALL EXPOSED CORNERS 90° OR SHARPER ARE TO BE FILLETED WITH A ¾" DRESSED AND BEVELED STRIP.

CONSTRUCTION JOINT BETWEEN THE WING AND RAIL IS TO BE ROUGHENED CONCRETE.

THE CONCRETE OPEN RAIL IS TO BE BID ON A LINEAL FOOT BASIS MEASURED FROM END TO END OF RAIL. THE NUMBER OF LINEAL FEET OF OPEN RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT. PRICE BID FOR "CONCRETE OPEN RAILING, TL-4" SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING REINFORCING STEEL, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO CONSTRUCT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS.

ALL OPEN RAIL REINFORCING STEEL IS TO BE EPOXY COATED GRADE 60 AND IS INCLUDED IN THE SUPERSTRUCTURE REINFORCING STEEL.

THE JOINT SEALER SHALL BE LIGHT GRAY NONSAG LATEX CAULKING SEALER MARKETED FOR OUTDOOR USE. NO TESTING OR CERTIFICATION IS REQUIRED.

TOP OF OPEN RAIL IS TO BE PARALLEL TO THE THEORETICAL CENTERLINE GRADE.

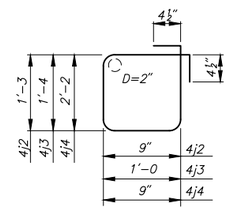
THE CAST-IN-PLACE OPEN RAILS SHALL USE CLASS C MIX. CLASS D CONCRETE IS NOT PERMITTED.

COST OF JOINT SEALER AND BOND BREAKER SHALL BE CONSIDERED INCIDENTAL TO OTHER CONSTRUCTION.

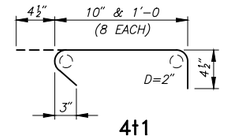
REINFORCING BAR LIST (TWO OPEN RAILS)

SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
4 END SECTIONS & ABUT. DIAPH. SECTIONS	6c1	VERTICAL, END SECTION & ABUT. DIAPHRAGM EXT.	—	168	4'-11	1,241
	6c2	VERTICAL, END SECTION	U	16	2'-10	68
	6c3	VERTICAL, END SECTION	U	16	4'-1	98
	4c4	VERTICAL HOOPS, END SECTION	U	20	2'-10	38
	4c5	VERT. HOOPS, END SECT. & ABUT. DIAPH., EXT.	U	52	3'-1	107
	6d1	HORIZONTAL, END SECTION B.F.	—	24	6'-8	240
	6d2	HORIZONTAL, END SECTION F.F.	⌐	32	6'-9	324
	5d3	HORIZONTAL, ABUT. DIAPHRAGM EXT.	—	48	7'-2	359
	4t1	WING FOOTING TIE BARS	⌐	16	SHOWN	18
	4t2	WING FOOTING TIE BARS	⌐	40	1'-9	47
STANDARD SECTION	6h1	LONGITUDINAL OPEN RAIL	—	108	36'-9	5,961
	6j1	VERTICAL DOWELS OPEN RAIL	⌐	632	4'-0	3,797
	4j2	HOOPS INTERIOR POSTS	□	592	4'-9	1,878
	4j3	HOOPS OPEN RAIL	□	992	5'-5	3,592
	4j4	HOOPS END POSTS	□	32	6'-7	141
INCLUDE WITH SUPERSTRUCTURE REINFORCING		EPOXY COATED TOTAL (LBS.)				17,909

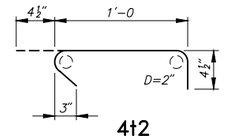
BENT BAR DETAILS



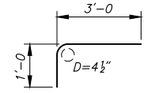
4j2, 4j3 & 4j4



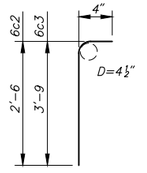
4t1



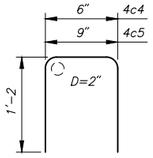
4t2



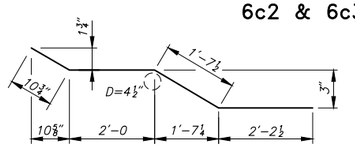
6j1



6c2 & 6c3



4c4 & 4c5



6d2

ALL BAR DIMENSIONS ARE OUT TO OUT. "D"= PIN DIAMETER

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'-0 END SPANS

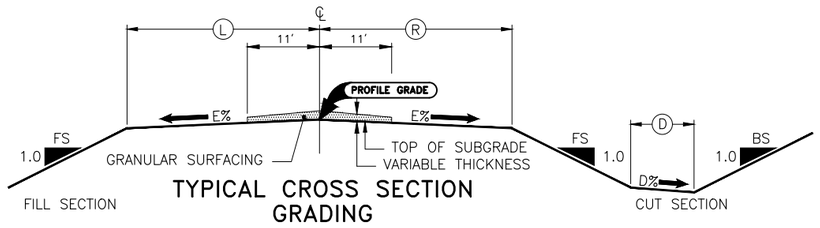
TEE PIERS
117'-0 INTERIOR SPAN

OPEN RAIL DETAILS (TL-4)

STATION 30+83.00
FLOYD COUNTY,

30° SKEW, RT. AHEAD
IOWA

CBA–503



TYPICAL CROSS SECTION GRADING

NOTE:
NORMAL SECTIONS SHOWN MAY BE MODIFIED APPROPRIATELY IN AREAS OF SUPERELEVATION CURVES OR OTHER LOCATIONS SPECIFICALLY DESIGNATED BY THE ENGINEER. SEE CROSS SECTIONS AND STANDARD ROAD PLAN EW–301 FOR MODIFICATION AND/OR ADDITIONAL INFORMATION.

LOCATION			Ⓛ Feet	Ⓡ Feet	E%	FS	D%	BS	D_L Feet	D_R Feet
ROAD IDENT.	STATION TO STATION									
B33	27+08	27+50	TRANSITION FROM EXISTING							
B33	27+50	BRIDGE	15.0	15.0	3.33	3	–	–	–	–
B33	BRIDGE	34+00	15.0	15.0	3.33	3	–	–	–	–
B33	34+00	34+58	TRANSITION TO EXISTING							

105_04
10/20/26

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
BA-200	10-20-26	Steel Beam Guardrail Components
BA-201	10-18-22	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	10-20-26	Steel Beam Guardrail Bolted End Anchor
EC-201	04-20-21	Silt Fence
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EW-301	10-20-26	Guardrail Grading
EW-401	10-20-15	Temporary Stream Crossing, Causeway, or Equipment Pad
LS-625	10-19-21	Steel Beam Guardrail Tangent End Terminal (NCHRP 350 TL-3)
LS-630	10-19-21	Steel Beam Guardrail Installation At Concrete Barrier Or Bridge Rail End Section (NCHRP 350 TL-3)
SI-173	04-19-16	Object Markers
SI-211	10-18-22	Object Marker and Delineator Placement with Guardrail
TC-252	10-20-26	Routes Closed to Traffic

108_13A
3/27/25

SAFETY CLOSURES

Station	Road Closure Qty.	Hazard Closure Qty.	Remarks
26+08.00	1		WEST END
35+58.00	1		EAST END

SURVEY CONTROL POINTS

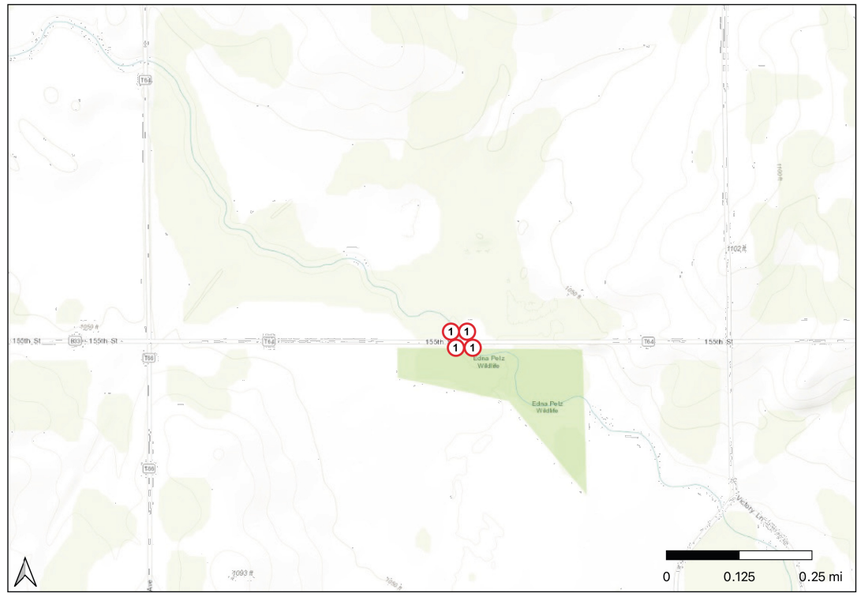
CBA–300

Description	Northing	Easting	Approx. Station	Approx. Offset	Elevation
PT. 208, ⅝″ REBAR	3877503.83	5154857.30	23+43	24′ LT.	1044.23
PT. 209, ⅝″ REBAR	3877460.69	5154860.05	23+45	19′ RT.	1044.76
PT. 213, ⅝″ REBAR	3877476.18	5156279.42	37+65	16′ RT.	1047.30
PT. 214, ⅝″ REBAR	3877520.79	5156286.14	37+72	28′ LT.	1047.19
Coordinate System				Vertical Datum	
(NAD83)	IOWA STATE PLANES, NORTH ZONE, US FOOT			NAVD88	

TRAFFIC CONTROL PLAN

1. ROUTE WILL BE CLOSED TO VEHICULAR AND PEDESTRIAN TRAFFIC DURING CONSTRUCTION.
2. TRAFFIC CONTROL ON THE PROJECT SHALL BE IN ACCORDANCE WITH STANDARD ROAD PLAN TC–252.
3. A DETOUR ROUTE WILL BE ESTABLISHED FOR THIS PROJECT. FLOYD COUNTY WILL PROVIDE, MAINTAIN AND REMOVE THE DETOUR ROUTE.
4. FLOYD COUNTY MAINTENANCE SHALL SALVAGE EXISTING ROAD MARKERS.

BENCH MARK: #212 STEEL POST, STA. 32+33, 82' LT., ELEV.= 1048.20



Sign # on Map	Quantity	Style	Minimum Letter Height	Language	Location Orientation
①	4	Red/Danger	4″	No Thru Traffic	At bridge site, opposite sides of the river, 1 pair facing upstream, 1 pair facing downstream; OR, 2 signs placed near center of channel 12 feet above regular water level, one facing upstream, one facing downstream.

NAVIGABLE WATER CONDITIONS

THE IOWA DNR HAS BEEN NOTIFIED THAT PADDLING ACCESS ON THE LITTLE CEDAR RIVER WILL BE INTERRUPTED DURING A PORTION OF THE CONSTRUCTION FOR THIS PROJECT. THE CONTRACTOR SHALL MEET THE FOLLOWING REQUIREMENTS:

1. INSTALL THE SIGNAGE SYSTEM AS DETAILED ON THIS SHEET. SIGNS SHOULD BE PLACED PRIOR TO OBSTRUCTING THE RIVER AND BE REMOVED AFTER THE OBSTRUCTION IS COMPLETE.
2. CONTRACTOR TO NOTIFY JOHN WENCK AT JOHN.WENCK@DNR.IOWA.GOV NO LESS THAN ONE WEEK PRIOR TO PLACING AND REMOVING CHANNEL OBSTRUCTION.
3. NOTIFY AND COORDINATE WITH CONSERVATION OFFICER JACOB FULK AT JACOB.FULK@DNR.IOWA.GOV FOR ADVICE ON PLACEMENTS AS CREWS INSTALL SIGNS.
4. CONTRACTOR TO REMOVE ALL CONSTRUCTION DEBRIS FROM RIVER CHANNEL.
5. CONTRACTOR SHALL MINIMIZE TIME THE RIVER IS OBSTRUCTED.

ALL SIGNS SHALL USE COLOR CODING STYLE ACCORDING TO THE WATER TRAIL DEVELOPMENT MANUAL (HTTPS://WWW.IOWADNR.GOV/THINGS-TO-DO/CANOEING-KAYAKING/WATER-TRAIL-DEVELOPMENT) SIGNS SHALL BE INSTALLED ACCORDING TO TABLE ON THIS SHEET.

MAINTENANCE OF PADDLE ROUTE SIGNAGE SHALL MEET THE SAME REQUIREMENTS AS ROADWAY TRAFFIC CONTROL PER STANDARD SPECIFICATIONS ARTICLES 2528.01C, 2528.02 AND 2528.03. SIGNS SHALL BE MAINTAINED BY CONTRACTOR SO AS TO BE VISIBLE THROUGHOUT THE PERIOD THE CHANNEL IS OBSTRUCTED. WHEN OBSTRUCTIONS TO THE CHANNEL ARE NOT NEEDED FOR A PERIOD OF 30 DAYS OR GREATER, SIGNAGE SHOULD BE TEMPORARILY REMOVED.

CONTRACTOR SHALL PROVIDE MEANS TO ATTACH/HANG THE SIGNS. WELDING OR DRILLING OF STRUCTURAL STEEL WILL NOT BE ALLOWED. ANY CONCRETE ANCHORS SHALL BE FULLY REMOVED AND HOLES FILLED WITH MORTAR. ATTACHMENTS SHALL NOT PROJECT INTO VEHICULAR TRAVELED WAY.

LABOR, MATERIAL AND EQUIPMENT REQUIRED TO PLACE AND MAINTAIN SIGNAGE SHALL BE INCIDENTAL TO THE "TRAFFIC CONTROL" BID ITEM.

299′–0 x 30′–0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS — **TEE PIERS**
91′–0 END SPANS — **117′–0 INTERIOR SPAN**

TYPICAL SECTION AND TABULATIONS

STATION 30+83.00 — **30° SKEW, RT. AHEAD**
FLOYD COUNTY, — **IOWA**

108_08A
4/25/25

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-209, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635, SI-172, SI-173 and SI-211.

(1) Lane(s) to which the obstacle is adjacent.
(2) Not a bid item. Incidental to guardrail installation.

Direction of Travel (1)	Side	Station	Offset (FT)	Barrier Transition Section	Barrier Transition Section (EA)	End Terminal	End Terminal Count (EA)	VT1 (LF)	VF (LF)	VT2 (LF)	ET (LF)	BA-211 Station	BA-211 (Type)	SI-211 (Type) (2)	Delineator SI-172 Type 1 (EA) (2)	Object Marker Type 2 (EA) (2)	Object Marker Type 3 Lt (EA)(2)	Object Marker Type 3 Rt (EA)(2)	Bolted End Anchor BA-202 (Type)	Bolted End Anchor BA-202 (EA)	Post Adapter BA-210 (EA)	Steel Beam Guardrail BA-200 (LF)	Remarks
WB	Left	29+11.11	15.5	BA-201	1	LS-625	1	40.625			50.00			3			1		A	1			WEST END, LT., LS-630
EB	Right	29+28.43	15.5	BA-201	1	LS-625	1	40.625			50.00			3				1	A	1			WEST END, RT., LS-630
WB	Left	32+37.57	15.5	BA-201	1	LS-625	1	40.625			50.00			3				1	A	1			EAST END, LT., LS-630
EB	Right	32+54.89	15.5	BA-201	1	LS-625	1	40.625			50.00			3			1		A	1			EAST END, RT., LS-630

107_23
8/15/22

GRADING FOR GUARDRAIL INSTALLATIONS

Refer to EW-301.

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

Direction of Traffic (1)	Station	Side	Foreslope at Guardrail	X1 (FT)	Y1 (FT)	X2 (FT)	Y2 (FT)	X3 (FT)	Y3 (FT)	X4 (FT)	Y4 (FT)	Z (FT)	Excavation Class 10 (CY)	Embankment-in-Place (CY)	Remarks
WB	29+11.11	Left	3:1	40.0	5.1					90.0	7.1	46.4	6.0		WEST END, LT.
EB	29+28.43	Right	3:1	40.0	5.1					90.0	7.1	46.4	192.0		WEST END, RT.
WB	32+37.57	Left	3:1	40.0	5.1					90.0	7.1	46.4	256.0		EAST END, LT.
EB	32+54.89	Right	3:1	40.0	5.1					90.0	7.1	46.4	165.0		EAST END, RT.

100_19
10/15/24

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Station From	Station To	Side	Sediment Control Device Type	Diameter Size	Length (LF)	Remarks
28+80.00	30+80.00		Perimeter and Slope	12 inch	365.00	TOE OF WEST BANK
30+80.00	32+20.00		Perimeter and Slope	12 inch	310.00	TOE OF EAST BANK
Total:					**675**	

100_17
8/15/22

TABULATION OF SILT FENCES

Refer to EC-201

Station From	Station To	Side	Length (FT)	Remarks
27+08.00	29+08.00	Left	240.00	TOE OF NW FORESLOPE
27+08.00	29+30.00	Right	250.00	TOE OF SW FORESLOPE
28+75.00	29+25.00	Left	135.00	TOP OF NW BANK
29+45.00	30+60.00	Right	140.00	TOP OF SW BANK
30+85.00	31+65.00	Left	130.00	TOP OF NE BANK
32+40.00	32+45.00	Right	95.00	TOP OF SE BANK
32+35.00	34+58.00	Left	245.00	TOE OF NE FORESLOPE
32+50.00	34+58.00	Right	230.00	TOE OF SE FORESLOPE
+.00			750.00	EARTH WASTE STOCKPILE PERIMETER
Total:			2215	

CBA-101

SUMMARY OF EARTHWORK QUANTITIES

EXCAVATION TYPE	RAW CUT CY	RAW FILL CY	WASTE ** CY	USABLE CUT CY	SHRINKAGE FACTOR	FILL +35% SHRINKAGE CY	PAYMENT QUANTITY CY
CLASS 10, ROADWAY AND BORROW	30	890	0	30	35%	1,202	30
CLASS 10, CHANNEL	7,400	0	6,228	1,172	35%	0	7,400
TOTALS			6,228	1,202		1,202	

** *ASSUMES SOME MATERIAL WILL BE UNSUITABLE OR EXCESS AND WILL NEED TO BE WASTED OFF SITE.*



EARTH WASTE STOCKPILE LOCATION

500 0 500 1000

299'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTEGRAL ABUTMENTS
91'-0 END SPANS

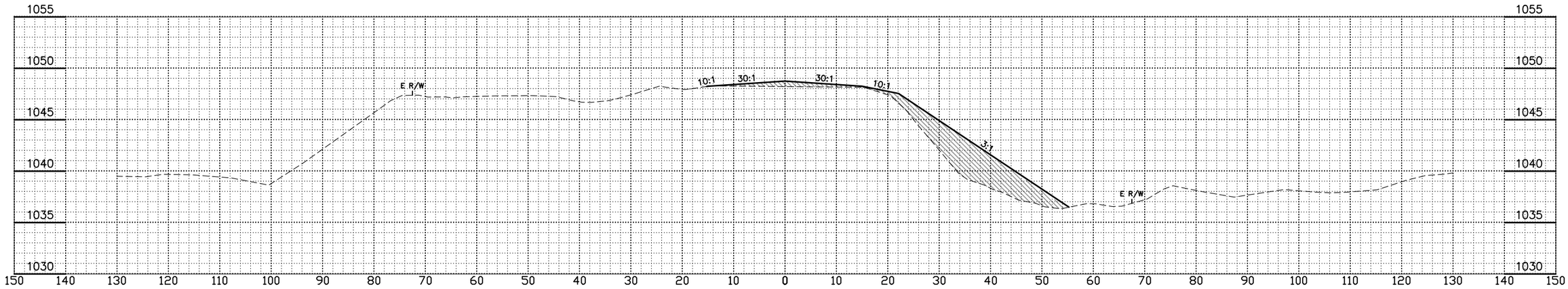
TEE PIERS
117'-0 INTERIOR SPAN

TABULATIONS

STATION 30+83.00
FLOYD COUNTY,

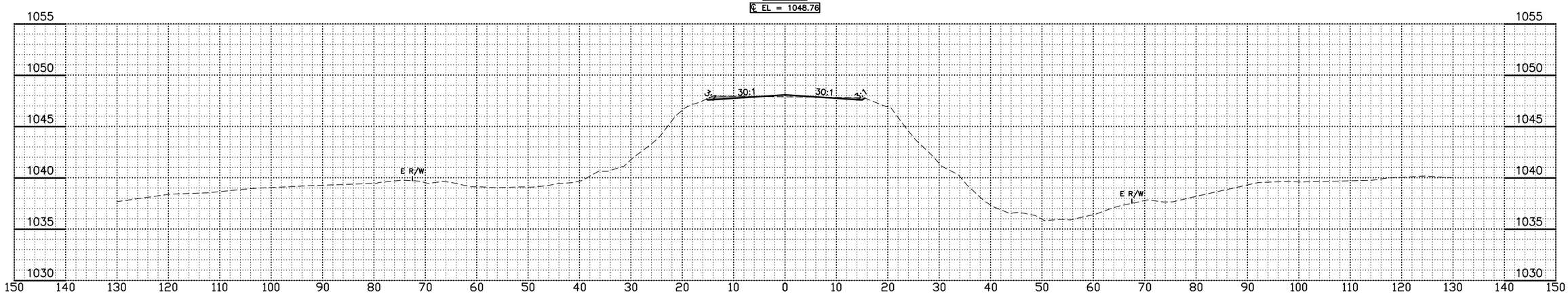
30° SKEW, RT. AHEAD
IOWA

BENCH MARK: #212 STEEL POST, STA. 32+33, 82' LT., ELEV.= 1048.20



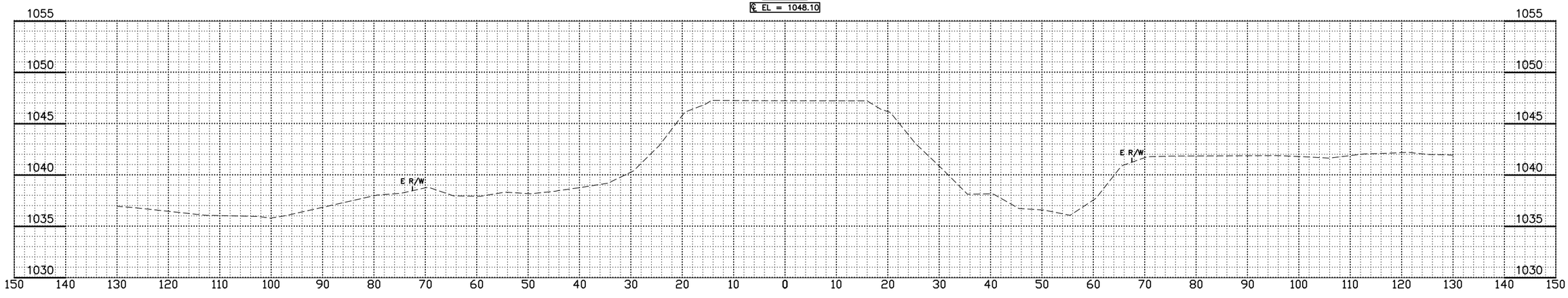
28+35

℄ EL = 1048.76



27+90

℄ EL = 1048.10

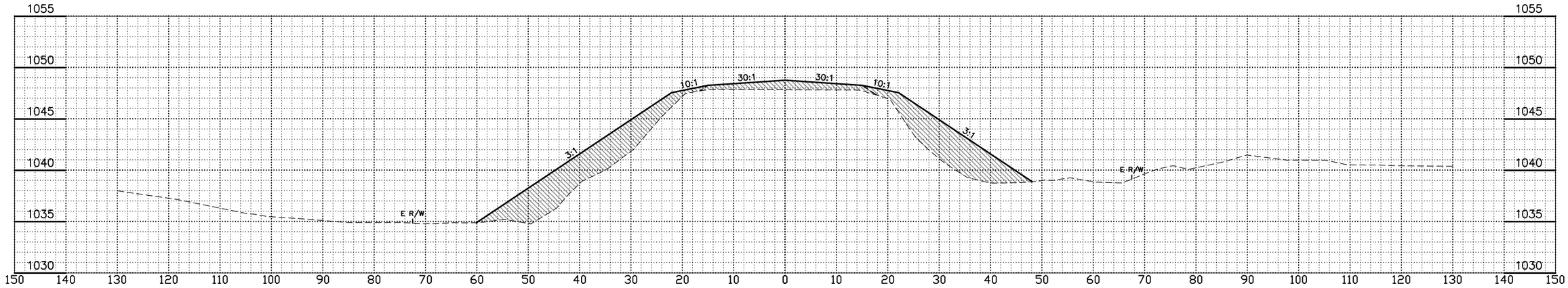


27+08

CROSS SECTIONS

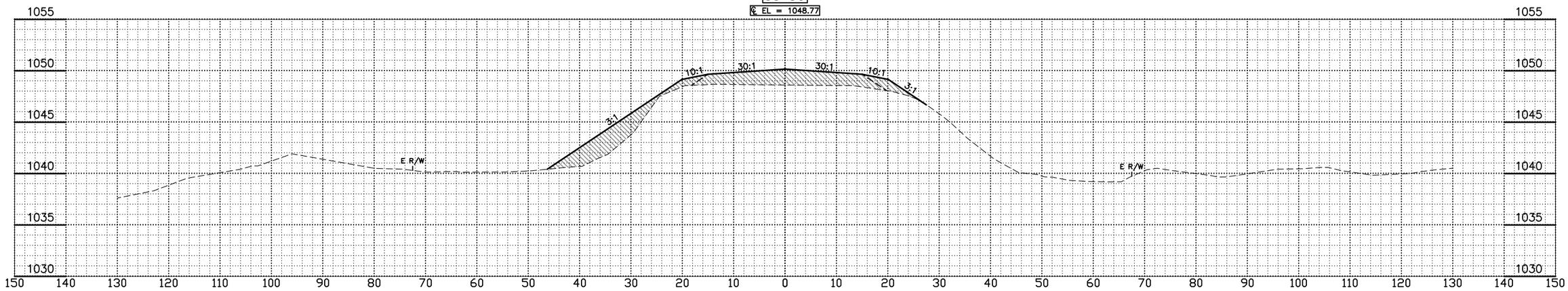
FLOYD COUNTY, IOWA

BENCH MARK: #212 STEEL POST, STA. 32+33, 82' LT., ELEV.= 1048.20



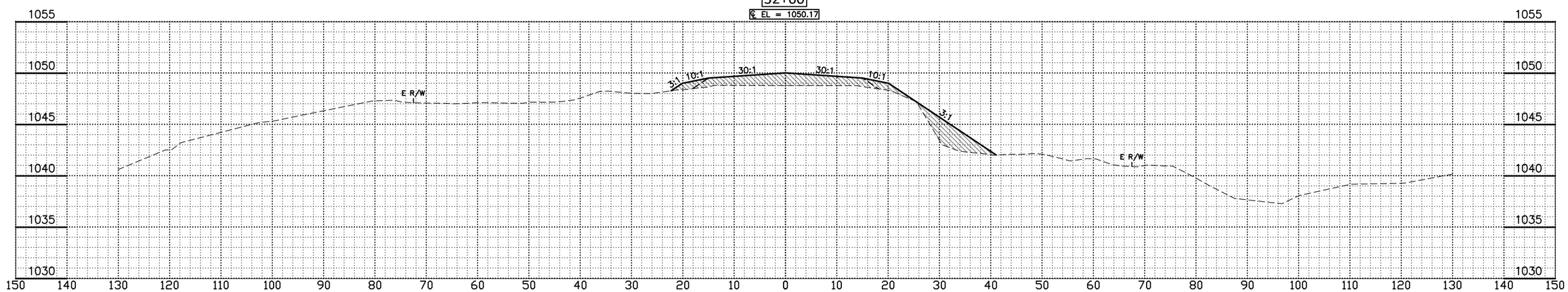
33+30

℄ EL = 1048.77



32+60

℄ EL = 1050.17



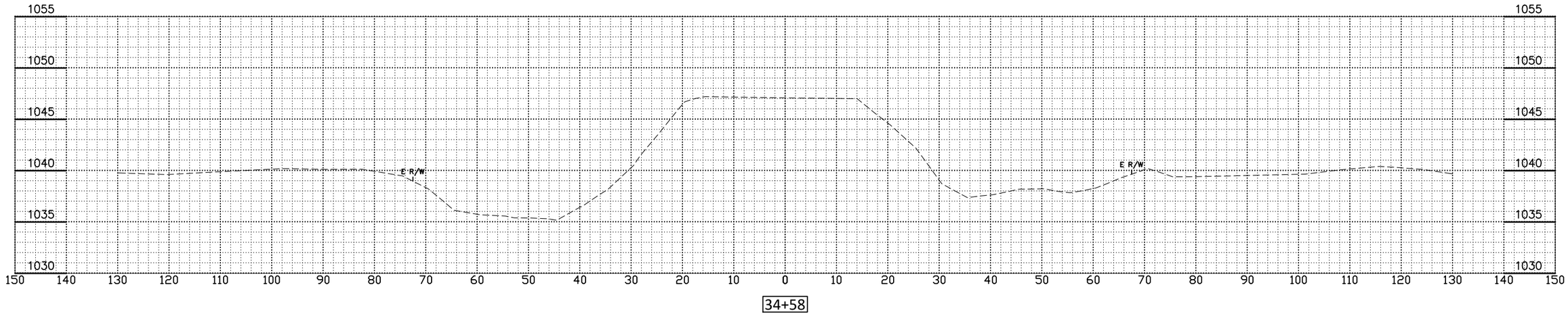
29+00

℄ EL = 1050.03

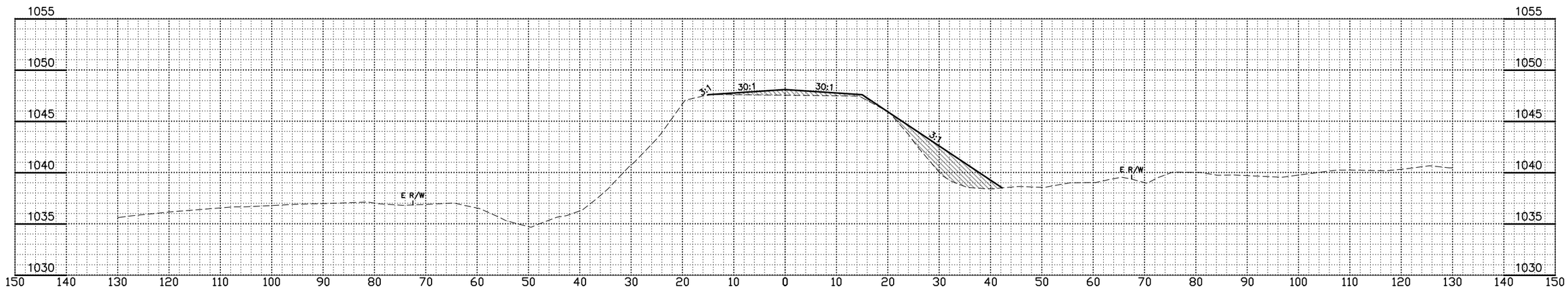
CROSS SECTIONS

FLOYD COUNTY, IOWA

BENCH MARK: #212 STEEL POST, STA. 32+33, 82' LT., ELEV.= 1048.20



34+58



33+75

℄ EL = 1048.11

CROSS SECTIONS

FLOYD COUNTY, IOWA