

STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET 40.

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. 2026-0586FP-01, DATED: 06-05-2026

PLANS OF PROPOSED IMPROVEMENT ON THE
FARM TO MARKET SYSTEM

LYON COUNTY

PROJECT NO. ER-C060(133)--58-60
BRIDGE REPLACEMENT - PPCB
ON A 52, OVER LITTLE ROCK RIVER, S30 T98N R45W

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.

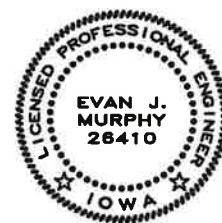
MILEAGE SUMMARY

STA. 4+80.00 TO STA. 13+60.00 = 880.00 L.F. = 0.1667 MILES

2023, TRAFFIC COUNT = 780 V.P.D.

UTILITY CONTACTS

COMPANY	UTILITY	CONTACT	PHONE #	EMAIL
LYON RURAL ELECTRIC COOP	POWER	BRYAN HERUM	712-739-0135	BHERUM@LYONREC.COOP
LYON & SIOUX RURAL WATER SYSTEM	WATER	TOD VANDEKOP	712-472-3755	TODD@LSRWS.COM
PREMIER COMMUNICATIONS	COMMUNICATIONS	JAKE VAN ROEKEL	712-722-3451	JAKEV@MYPREMIERONLINE.COM
ROCK VALLEY RURAL WATER DISTRICT	WATER	ADAM BUYERT	712-476-5246	ABUYERT@PREMIERONLINE.NET



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.

DATE: 7/8/2026

EVAN J. MURPHY, P.E.

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2027.

PAGES OR SHEETS COVERED BY THIS SEAL:
11-19 & 39-44 OF 44

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.



PROJECT NO. ER-C060(133)--58-60
FHWA NO. 228640
COUNTY BR. NO. GARFIELD 71W

INDEX OF SHEETS

1. TITLE SHEET
- 2.-3. QUANTITY SUMMARY
- 4.-5. SITUATION PLAN
6. GENERAL PLAN
7. GENERAL NOTES
8. POLLUTION PREVENTION PLAN
- 9.-10. SOUNDING DATA
- 11.-12. WEST ABUTMENT DETAILS
- 13.-14. EAST ABUTMENT DETAILS
- 15.-17. ABUTMENT DETAILS
18. ABUTMENT BEARING DETAILS
19. ABUTMENT BACKFILL DETAILS
20. PIER NO. 1 DETAILS
21. PIER NO. 2 DETAILS
22. PIER NO. 3 DETAILS
23. PIER DETAILS
24. PIER BEARING DETAILS
- 25.-30. SUPERSTRUCTURE DETAILS
- 31.-34. BEAM DETAILS
35. STEEL DIAPHRAGM DETAILS
- 36.-38. OPEN RAIL (TL-4) & CONDUIT DETAILS
39. SUBDRAIN & WING ARMORING DETAILS
40. TYPICAL SECTIONS AND TABULATIONS
- 41.-42. TABULATIONS
- 43.-44. CROSS SECTIONS

INDEX OF SEALS

SHEET NO.	NAME	TYPE
9	DAVID LOGEMANN	SOUNDING



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.

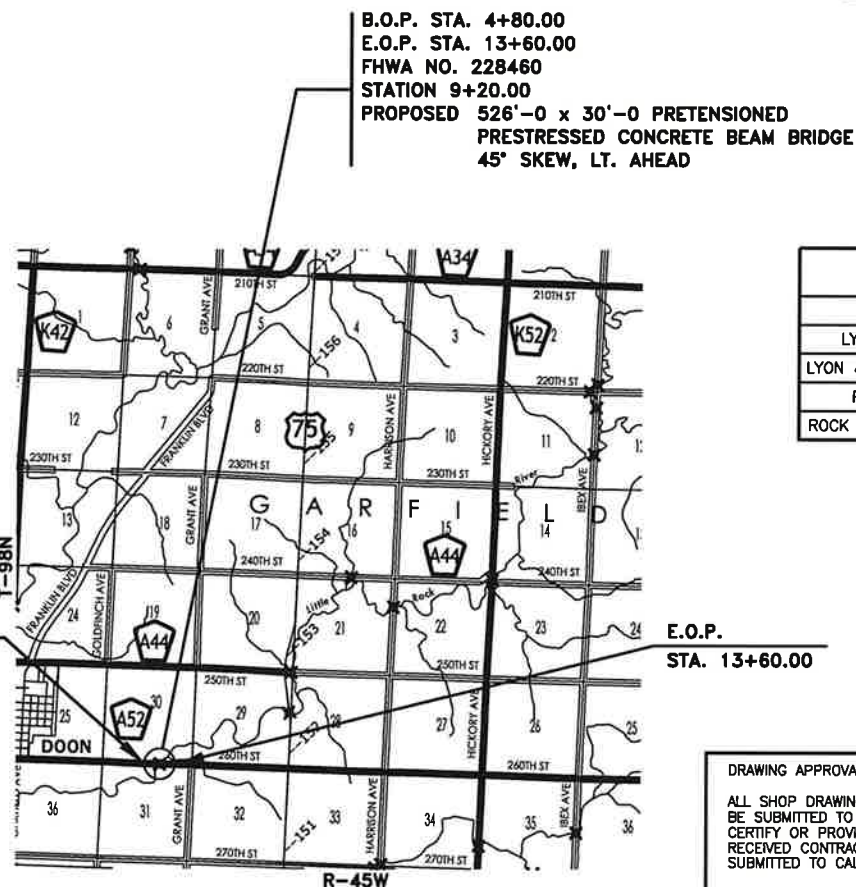
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MY LICENSE RENEWAL DATE IS DECEMBER 31, 2027.

PAGES OR SHEETS COVERED BY THIS SEAL:
1-8 & 20-38 OF 44

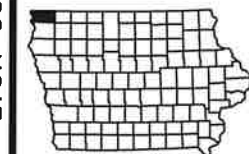
APPROVED
DATE: 7-14-26
LYON COUNTY ENGINEER

DATE: 7-14-26
BOARD OF SUPERVISORS



PROJECT LOCATION

1 MI. 0 1 MI. 2 MI.



TOTAL ESTIMATED QUANTITIES: 526'-0 x 30'-0 P.P.C.B. BRIDGE							
REF. NO.	CODE NO.	ITEM	UNIT	2 ABUTS	3 PIERS	SUPER	TOTAL
1	2101-0850001	CLEARING AND GRUBBING	ACRE	-	-	-	0.1
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	-	-	-	1,088
3	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	-	-	-	2,454
4	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	-	-	-	6,340
5	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	-	-	-	1,860
6	2115-0100000	MODIFIED SUBBASE	CY	-	-	-	117
7	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	-	-	-	100
8	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	-	-	-	2.0
9	2301-0690210	BRIDGE APPROACH, TWO LANE	SY	-	-	-	451.8
10	2301-1033080	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN.	SY	-	-	-	386.0
11	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	-	-	-	1
12	2402-2720000	EXCAVATION, CLASS 20	CY	364	-	-	364
13	2402-2721000	EXCAVATION, CLASS 21	CY	-	368	-	368
14	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	131.8	407.1	608.9	1,147.8
15	2403-1000005	FIBER REINFORCEMENT FOR STRUCTURAL CONCRETE	CY	131.8	-	608.9	740.7
16	2403-1000010	TRIAL BATCH AND TEST PLACEMENT(FIBER REINFORCED CONCRETE)	LS	-	-	-	1
17	2404-7775000	REINFORCING STEEL	LB	-	40,990	-	40,990
18	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	14,090	24,522	183,570	222,182
19	2407-0564125	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTD125	EACH	-	-	8	8
20	2407-0564135	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTD135	EACH	-	-	8	8
21	2408-7800000	STRUCTURAL STEEL	LB	-	-	10,986	10,986
22	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE, BRIDGE DECK AND/OR APPROACHES	SY	-	-	-	1,587.7
23	2414-6424124	CONCRETE OPEN RAILING, TL-4	LF	-	-	1,137.4	1,137.4
24	2417-1040024	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 IN. DIA.	LF	-	-	-	76
25	2501-0201057	PILES, STEEL, HP 10 X 57 ; 22 @ 50' ; 22 @ 70' ; 99 @ 55'	LF	2,640	5,445	-	8,085
26	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	-	-	-	205
27	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	-	-	-	2

REF. NO. ESTIMATE REFERENCE INFORMATION

1. SEE SITUATION PLAN, SHEETS 4-5, AND GENERAL PLAN, SHEET 6, 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 42 FOR BREAKDOWN OF EXCAVATION QUANTITIES.
TYPE "A" COMPACTION WILL BE REQUIRED.
3. SEE TABULATION CBA-101 ON SHEET 42 FOR BREAKDOWN OF EXCAVATION QUANTITIES.
INCLUDES ALL COST TO REMOVE UNSUITABLE OR EXCESS MATERIAL FROM SITE. THE UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
4. SEE TABULATION CBA-101 ON SHEET 42 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, SHEETS 4-5 AND GENERAL PLAN SHEET 6.
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.
5. 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.
6. SEE TYPICAL SECTION CBA-612 ON SHEET 40.
7. SEE TYPICAL SECTION CBA-641 ON SHEET 40.
8. INCLUDES ALL WORK AND FILL MATERIAL NECESSARY TO CONSTRUCT AND SHAPE SHOULDER AREAS. SEE TYPICAL SECTION CBA-641 ON SHEET 40.
9. SEE TABULATION 112-6 ON SHEET 42.
COARSE AGGREGATE DURABILITY SHALL BE CLASS 3 OR BETTER.
INCLUDES COST OF E JOINTS BETWEEN INSIDE WING FACES AND APPROACH.
NO ADDITIONAL PAYMENT WILL BE ALLOWED FOR HEATING AND PROTECTION OF CONCRETE, IF NECESSARY.
CERTIFIED PLANT INSPECTION IS REQUIRED.
REINFORCING STEEL SHALL BE EPOXY COATED.
10. SEE TYPICAL SECTION CBA-612 ON SHEET 40.
DO NOT SKEW TRANSVERSE JOINTS. "CD" JOINTS ARE REQUIRED.
CERTIFIED PLANT INSPECTION IS REQUIRED.
ALL LONGITUDINAL PAVEMENT JOINTS SHALL BE CLEANED AND SEALED. SAWCUT WIDTH SHALL BE AS SHOWN ON IDOT STANDARD ROAD PLAN PV-101.
NO ADDITIONAL PAYMENT WILL BE ALLOWED FOR HEATING AND PROTECTION OF CONCRETE, IF NECESSARY.

11. THE PREVIOUS BRIDGE WAS LOCATED AT STATION 9+35 AND WAS A 200' x 30' CONTINUOUS STEEL I-BEAM BRIDGE WITH HIGH CONCRETE ABUTMENTS, CONCRETE DIAPHRAGM PIERS AND A CONCRETE DECK BUILT IN 1954. THE STRUCTURE HAS BEEN CLOSED SINCE 2024, DUE TO FLOOD DAMAGE INCLUDING SOME PORTIONS OF THE STRUCTURE BEING WASHED AWAY.
AN INSPECTION FOR THE PRESENCE OF ASBESTOS CONTAINING MATERIALS WAS COMPLETED ON THE REMAINING EAST SUBSTRUCTURE 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 REMAINING PORTIONS OF THE PREVIOUS STRUCTURE STILL IN PLACE ALONG WITH ANY PORTIONS OF THE PREVIOUS STRUCTURE FOUND THAT INTERFERE WITH CONSTRUCTION OF THE PROPOSED 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.
BROKEN CONCRETE FROM THE EXISTING BRIDGE WITH SIMILAR GRADATION TO CLASS 'E' REVETMENT MAY BE PLACED ON THE BANKS OUTSIDE THE LIMITS SHOWN FOR CLASS 'E' REVETMENT, AS DIRECTED BY THE ENGINEER. ALL REINFORCING SHALL BE CUT OFF FLUSH WITH THE CONCRETE. H.M.A. MATERIAL IS SPECIFICALLY EXCLUDED. ALTERNATELY, THE CONTRACTOR MAY DISPOSE OF THE BROKEN CONCRETE OFF SITE AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
IF PAINT IS DISCOVERED OR EXPOSED DURING DEMOLITION/REMOVALS OF THE PREVIOUS STRUCTURE THE CONTRACTOR IS ADVISED THAT TOXIC LEVELS OF LEAD, CHROMIUM AND OTHER CONSTITUENTS MAY EXIST. THE PREVIOUS STRUCTURE'S I-BEAMS WERE PAINTED. THIS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH AND SAFETY REQUIREMENTS.
12. 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.
13. QUANTITY IS BASED ON THE ASSUMPTION THAT CHANNEL EXCAVATION AND NECESSARY BERM CONSTRUCTION HAVE BEEN COMPLETED.
14. THE SUPERSTRUCTURE CONCRETE SHALL UTILIZE LIMESTONE COARSE AGGREGATE.
INCLUDES COST OF PREFORMED JOINT MATERIAL, FLEXIBLE FOAM FILLER, 1/8" BUTYL RUBBER MEMBRANE, PVC PIPE IN WINGS AND CONCRETE SEALER ALONG EDGES OF SLAB.
INCLUDES COST OF FURNISHING AND PLACING SUBDRAINS (INCLUDING EXCAVATION), FLOODABLE BACKFILL, POROUS BACKFILL AND GEOTEXTILE FABRIC AT ABUTMENTS.
NO ADDITIONAL PAYMENT WILL BE ALLOWED FOR HEATING AND PROTECTION OF CONCRETE, IF NECESSARY.
CERTIFIED PLANT INSPECTION IS REQUIRED.
ARTICLE 2428 REGARDING BRIDGE DECK SMOOTHNESS DOES NOT APPLY TO THIS PROJECT.
SEE 'SPECIFICATIONS,' SHEET 7 FOR MASS CONCRETE PLACEMENT REQUIREMENTS.
- 15-16. SEE 'SPECIFICIATIONS' ON SHEET 7 FOR ADDITIONAL INFORMATION.
- 17-18. ALL REINFORCING SHALL BE GRADE 60.
- 19-20. INCLUDES COST OF NEOPRENE BEARING MATERIAL, ANCHORED CURVED SOLE PLATE ASSEMBLIES, BEAM VENT HOLES, 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.
21. INCLUDES WEIGHT OF STEEL DIAPHRAGMS, SEE SHEET 35.
INCLUDES WEIGHT OF PINTLE PLATE ASSEMBLIES, SEE SHEET 18.
22. SURFACE FINISHING AND CURING OF THE BRIDGE DECK SHALL BE PER INTERSTATE AND PRIMARY PROJECTS REQUIREMENT IN STANDARD SPECIFICATION 2412.03, D, 4, a AND 2412.03, E, 1, a.
LONGITUDINAL GROOVING IS FOR BRIDGE DECK ONLY AND DOES NOT APPLY TO THE APPROACHES.
23. CERTIFIED PLANT INSPECTION IS REQUIRED.
INCLUDES COST OF CONCRETE SEALER AS SHOWN ON SHEET 38.
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.
24. SEE GENERAL PLAN, SHEET 6, FOR LOCATION.
SEE STANDARD ROAD PLANS DR-101 AND DR-104.
ALL PIPE SHALL BE STANDARD CORRUGATIONS, NO HELICALLY CORRUGATED PIPE WILL BE ALLOWED. ALL CONNECTING BANDS SHALL BE 24" WIDE.
25. SEE PILE NOTES ON SHEET 7.
PILE POINTS SHALL NOT BE USED FOR THIS PROJECT.
- 26-27. SEE TABULATION 104-9 ON SHEET 42.

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS

TEE PIERS

126'-0 END SPANS

137'-0 INTERIOR SPANS

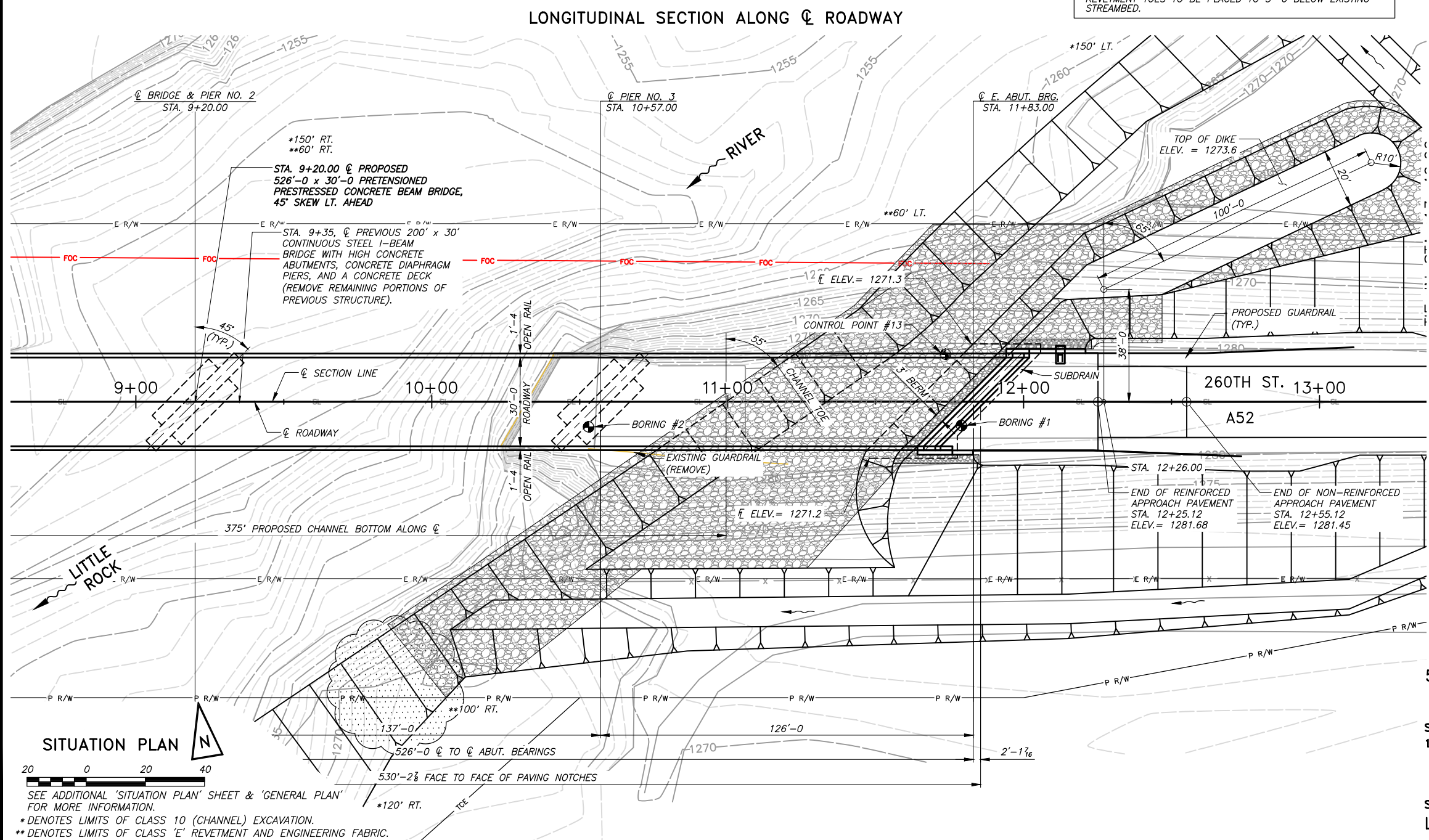
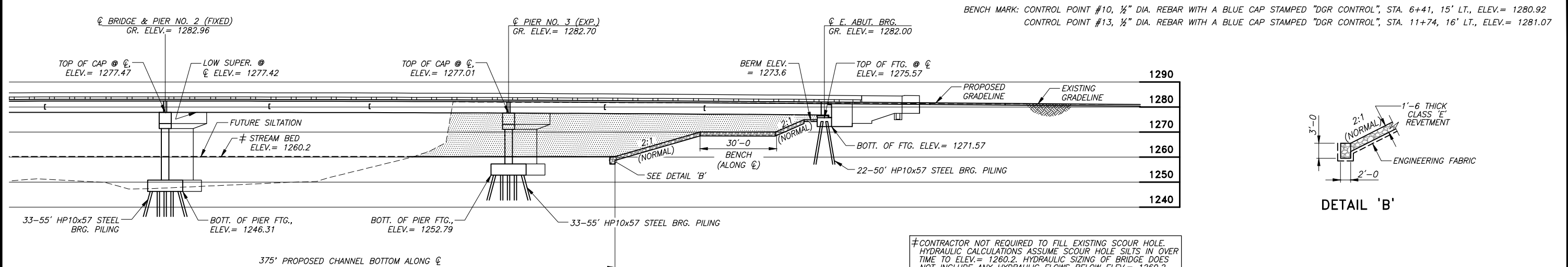
QUANTITY SUMMARY

STATION 9+20.00

45' SKEW, LT. AHEAD

LYON COUNTY,

IOWA



526'-0" x 30'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS
126'-0" END SPANS

TEE PIERS
137'-0" INTERIOR SPANS

SITUATION PLAN

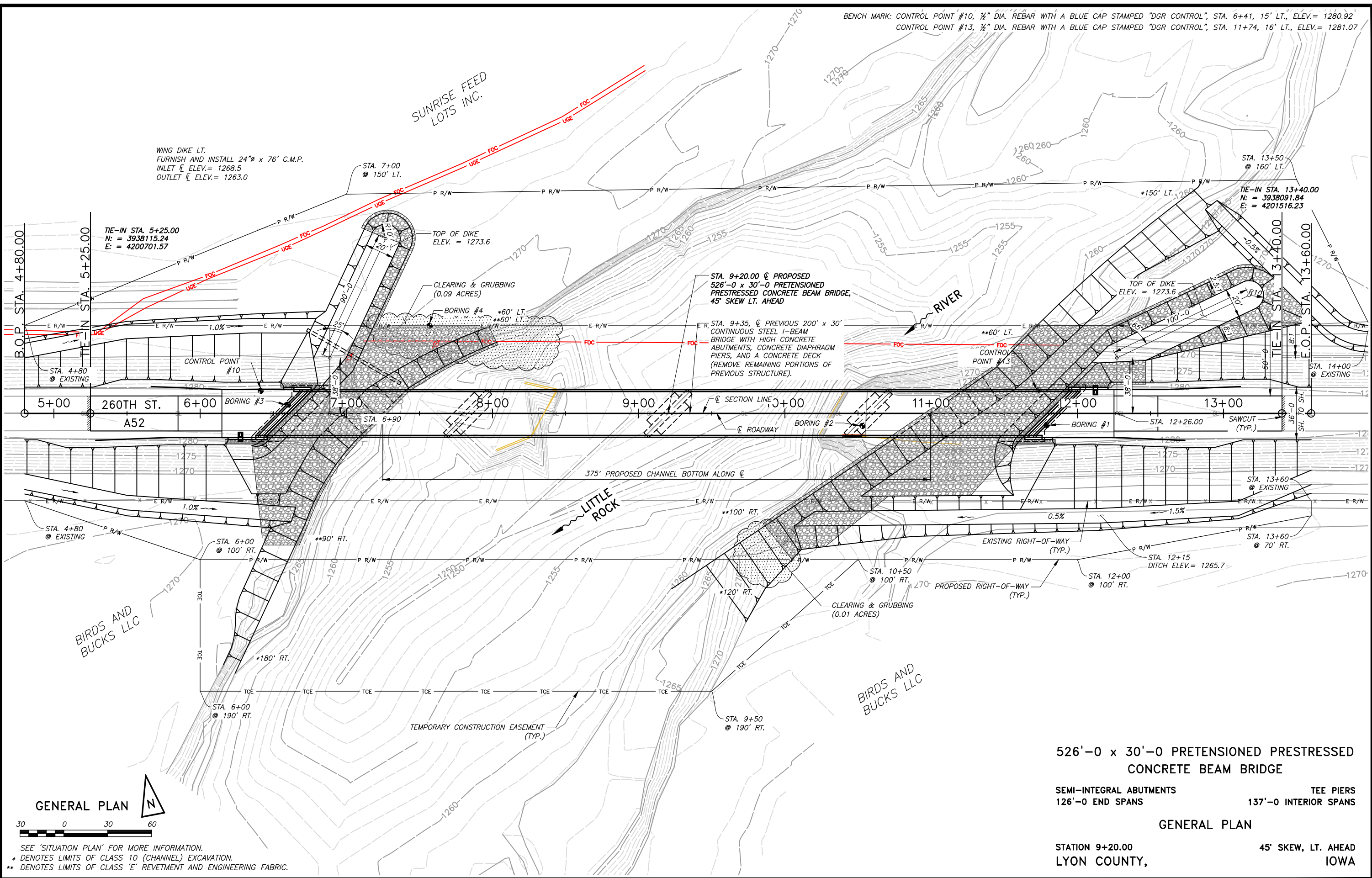
STATION 9+20.00
LYON COUNTY,

45' SKEW, LT. AHEAD
IOWA

SUNRISE FEED
LOTS INC.

WING DIKE LT.
FURNISH AND INSTALL 24"Ø x 76' C.M.P.
INLET ELEV.= 1268.5
OUTLET ELEV.= 1263.0

BENCH MARK: CONTROL POINT #10, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 6+41, 15' LT., ELEV.= 1280.92
CONTROL POINT #13, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 11+74, 16' LT., ELEV.= 1281.07



GENERAL PLAN



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

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS
TEE PIERS
137'-0 INTERIOR SPANS

GENERAL PLAN

STATION 9+20.00
LYON COUNTY,
IOWA

SPECIFICATIONS

DESIGN: AASHTO LRFD 8TH EDITION, SERIES OF 2017, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL. SEE SHEETS 31-34 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 "FIBER REINFORCEMENT FOR STRUCTURAL CONCRETE" SHALL APPLY TO THE ABUTMENT FOOTINGS, WINGS, DIAPHRAGMS AND DECK. FIBER REINFORCEMENT HAS BEEN INCLUDED FOR THE ABUTMENT FOOTINGS TO PROVIDE ADDITIONAL EXPERIENCE TO THE CONTRACTOR PRIOR TO MASS PRODUCTION FOR THE DECK PLACEMENT.
THE DEVELOPMENTAL SPECIFICATION "MASS CONCRETE-CONTROL OF HEAT OF HYDRATION" SHALL APPLY TO THE PIER CAP CONCRETE.

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 SHEETS 31 AND 33
PRESTRESSED CONCRETE SEE SHEETS 31 AND 33

GENERAL NOTES

THIS DESIGN IS FOR A 526'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE ON COUNTY HIGHWAY A52 OVER THE LITTLE ROCK RIVER IN LYON 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>.

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: 26-144311
DATE INSPECTED: 03/05/2026
PHONE: 515-279-8042

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 70 FEET FOR THE WEST ABUTMENT PILES AND 50 FEET FOR THE EAST ABUTMENT PILES IS BASED ON A MIXED SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 108 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.
THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A MIXED SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING.
THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR THE ABUTMENT PILES IS 83 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 NO. 1 PILE

THE CONTRACT LENGTH OF 55 FEET FOR THE PIER NO. 1 PILES IS BASED ON A MIXED SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 126 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.
THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A MIXED SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65. 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 3 FEET OF EMBEDDED PILE LENGTH AND CAUSE 8 KIPS OF DRIVING RESISTANCE.
THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR THE PIER NO. 1 PILES IS 101 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 NO. 2 PILE

THE CONTRACT LENGTH OF 55 FEET FOR THE PIER NO. 2 PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 142 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65. PILES WERE ALSO DESIGNED FOR A FACTORED TENSION FORCE OF 3 KIPS.
THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING.
THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR THE PIER NO. 2 PILES IS 109 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 NO. 3 PILE

THE CONTRACT LENGTH OF 55 FEET FOR THE PIER NO. 3 PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 126 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.
THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65. 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 3 FEET OF EMBEDDED PILE LENGTH AND CAUSE 8 KIPS OF DRIVING RESISTANCE.
THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR THE PIER NO. 3 PILES IS 101 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 NOT REQUIRED, HOWEVER, IF IT BECOMES NECESSARY TO PREVENT DAMAGE TO THE END OF THE BRIDGE DECK OR BACKWALL FROM CONSTRUCTION EQUIPMENT, AN APPROPRIATE METHOD OF PROTECTION APPROVED BY THE ENGINEER SHALL BE PROVIDED BY THE BRIDGE CONTRACTOR. ANY DAMAGE TO THE DECK OR BACKWALL SHALL BE REPAIRED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE AUTHORIZED FOR THIS WORK.

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.

SPECIAL CONDITIONS FOR WORKING IN TOPEKA SHINER WATERSHEDS

THIS PROJECT AFFECTS TOPEKA SHINER WATERSHEDS. REFER TO ARTICLE 1107.18,B,3 OF THE STANDARD SPECIFICATION.

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS TEE PIERS
126'-0 END SPANS 137'-0 INTERIOR SPANS

GENERAL NOTES

STATION 9+20.00 45' SKEW, LT. AHEAD
LYON 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 526'-0" X 30'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE ON HIGHWAY A52 (260TH STREET) OVER LITTLE ROCK RIVER IN LYON COUNTY, IOWA.
- B. THIS PPP COVERS APPROXIMATELY 5.8 ACRES WITH AN ESTIMATED 3.2 ACRES BEING DISTURBED. THE PORTION OF THE PPP COVERED BY THIS CONTRACT HAS 3.2 ACRES DISTURBED.
- C. THE PPP IS LOCATED IN AN AREA OF ONE SOIL ASSOCIATION(S) (MOODY-TRENT). THE ESTIMATED WEIGHTED AVERAGE RUNOFF COEFFICIENT NUMBER FOR THIS PPP AFTER COMPLETION WILL BE 0.28.
- D. STORM WATER SITE MAP - MULTIPLE SOURCES OF INFORMATION COMPRISE THE BASE STORM WATER SITE MAP INCLUDING:
1. DRAINAGE PATTERNS – SITUATION PLAN AND GENERAL PLAN.
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 AND GENERAL PLAN.
7. SURFACE WATERS (INCLUDING WETLANDS) – PROJECT LOCATION MAP AND SITUATION PLAN AND GENERAL PLAN.

8. LOCATIONS WHERE STORM WATER IS DISCHARGED – SITUATION PLAN AND GENERAL PLAN.
- 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 LITTLE ROCK 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.



SIGNATURE



PRINTED OR TYPED NAME

POLLUTION PREVENTION PLAN

LYON COUNTY,

IOWA

BENCH MARK: CONTROL POINT #10, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 6+41, 15' LT., ELEV.= 1280.92
CONTROL POINT #13, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 11+74, 16' LT., ELEV.= 1281.07

BORING LOG NO. 3		STATION 6+60, 6.0'LT		CBA Job No.: 960-006		Project No.: 261222							
Project: 260th Street Bridge (71W) over Little Rock Section 30, Garfield Township Lyon County, Iowa				Client: Calhoun-Burns & Associates 6775 Vista Drive West Des Moines, Iowa 50266									
Surface Elevation: 1281.5'		Date Drilled: 4/23/2026		Drilling Method: HSA									
Datum: Existing Control Point #10 = 1280.92'		Drilling Depth, ft.: 90		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 ft.	Elevation ft.
1280	0	1	ST		21.7	107	1580	HOT-MIX ASPHALT (11" ±)		CL-CH		0.9	
		2	SSA	11	10.4			Dark brown sandy lean to fat clay, trace gravel, moist		CL-CH			1280.6
1270	10	3	ST		19.5	95	1040	Dark brown clayey sand, moist after 7.5' FILL		SC			
		4	ST		28.9	92	1600	Dark brown lean clay, very moist after 16.5'		CL		19.5	
1260	20	5	SSA	27	Sat.			Brown coarse sand with gravel, saturated		SP		1262	
		6	SSA	34	Sat.								
1250	30	7	SSA	12	Sat.			Cobbles/Boulders from 33' to 35'					
		8	SSA	31	Sat.			Gray fine sand from 35' to 37'		SM			
1240	40	9	SSA	10	Sat.			GRANULAR ALLUVIUM (Coarse Sand)		SP			
		10	SSA	49	Sat.								
1230	50	11	SSA	30	Sat.			Cobbles/Boulders from 52' to 53.5'					
		12	SSA	135	Sat.								
1220	60	13	SSA	27	11.6			Boulders after 62'					
		14	SSA	29	11.7			Dark gray sandy fat clay, trace gravel, moist		CH		66	
1210	70	15	SSA	25	20.5			GLACIAL TILL (Very Firm Sandy Glacial Clay)				1215.5	
			DC	29				Light gray after 80'					
1200	80			38									
				46									
1190	90			56									
				35									
1180	100			51				End of Boring				90	1191.5
*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.													
Water Level Observation												ALLENDER BUTZKE ENGINEERS, INC.	
Time: at completion _____ hrs. _____ days												Geotechnical - Environmental - Construction Q.C.	
Depth to water: 19 ft. _____ ft. _____ ft. _____ ft.													

BORING LOG NO. 4		STATION 7+57, 60.0'LT		CBA Job No.: 960-006		Project No.: 261222							
Project: 260th Street Bridge (71W) over Little Rock Section 30, Garfield Township Lyon County, Iowa				Client: Calhoun-Burns & Associates 6775 Vista Drive West Des Moines, Iowa 50266									
Surface Elevation: 1269.2'		Date Drilled: 4/24/2026		Drilling Method: HSA									
Datum: Existing Control Point #10 = 1280.92'		Drilling Depth, ft.: 70		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 ft.	Elevation ft.
								Dark brown sandy lean to fat clay, moist		CL-CH		5.5	
								COHESIVE ALLUVIUM		CH			
1260	10							Brown fine sand, very moist		SM		1263.7	
								Gray medium to coarse sand, trace gravel, saturated after 8'		SP			
								Gravelly from 9' to 15'					
1250	20							Gravelly 19' to 21'					
								Gravelly 23' to 26'					
1240	30							GRANULAR ALLUVIUM (Coarse Sand)					
1230	40												
								Boulders from 45' to 47'				48	
1220	50							Gray sandy fat clay, trace gravel, moist		CH		1221.2	
								GLACIAL TILL (Very Firm Sandy Glacial Clay)					
1210	60												
1200	70											70	
								End of Boring				1199.2	
1190	80												
1180	90												
1170	100												
*The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.													
Water Level Observation												ALLENDER BUTZKE ENGINEERS, INC.	
Time: at completion _____ hrs. _____ days												Geotechnical - Environmental - Construction Q.C.	
Depth to water: _____ ft. _____ ft. _____ ft. _____ ft.													

SOUNDING DATA
(SEE "SITUATION PLAN", SHEETS 4 & 5, AND
"GENERAL PLAN", SHEET 6, FOR BORING LOCATIONS)

	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.	
	DATE: 7/15/26	
	DAVID LOGEMANN, P.E.	
	MY LICENSE RENEWAL DATE IS DECEMBER 31, 2027 .	
PAGES OR SHEETS COVERED BY THIS SEAL:		
9 & 10 OF 44		

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS TEE PIERS
126'-0 END SPANS 137'-0 INTERIOR SPANS

SOUNDING DATA

STATION 9+20.00 45' SKEW, LT. AHEAD
LYON COUNTY, IOWA

BENCH MARK: CONTROL POINT #10, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 6+41, 15' LT., ELEV.= 1280.92
CONTROL POINT #13, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 11+74, 16' LT., ELEV.= 1281.07

BORING LOG NO. 2		STATION 10+53, 8.5'RT		CBA Job No.: 960-006		Project No.: 261222					
Project: 260th Street Bridge (71W) over Little Rock Section 30, Garfield Township Lyon County, Iowa				Client: Calhoun-Burns & Associates 6775 Vista Drive West Des Moines, Iowa 50266							
Surface Elevation: 1281.7'				Date Drilled: 4/22/2026		Drilling Method: HSA					
Datum: Existing Control Point #13 = 1281.07'				Drilling Depth, ft.: 85		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.
1280	0							HOT-MIX ASPHALT (1" ±) PCC (9" ±)		SC	0.1
		1	SSA	5	19.1			Dark brown clayey sand with gravel			1281.6
1270	10	2	SSA	9	14.3			FILL			1280.9
		3	SSA	11	27.6						
1260	20	4	SSA	33	22.5			Dark brown and gray mixed sandy fat clay, trace gravel, moist after 18.5'		CH	24.5
		5	SSA	9	Sat.			Brown coarse sand, trace gravel, saturated Cobbles from 26' to 27'		SP	1257.2
1250	30	6	SSA	20	Sat.			GRANULAR ALLUVIUM (Coarse Sand)			
		7	SSA	25	Sat.						39.5
1240	40	8	SSA	10	17.8			Gray sandy fat clay, trace gravel, moist		CH	1242.2
		9	SSA	23	26.6						
1230	50	10	SSA	26	-						
		11	SSA	27	15.1						
1220	60	12	SSA	29	15.0			GLACIAL TILL (Very Firm Sandy Glacial Clay)			
		13	SSA	25	16.6						
1210	70	14	SSA	42	17.3						
		15	SSA	12	24.2						
1200	80	16	SSA	53	16.2						
			DC	47							85
				57							
				54				End of Boring			1196.7
1190	90										
1180	100										
*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: 24 ft. ft. ft.											
ALLENDER BUTZKE ENGINEERS, INC.											
Geotechnical - Environmental - Construction Q.C.											

BORING LOG NO. 1				STATION 11+79, 8'RT		CBA Job No.: 960-006		Project No.: 261222			
Project: 260th Street Bridge (71W) over Little Rock Section 30, Garfield Township Lyon County, Iowa						Client: Calhoun-Burns & Associates 6775 Vista Drive West Des Moines, Iowa 50266					
Surface Elevation: 1281.6'						Date Drilled: 4/21/2026		Drilling Method: HSA			
Datum: Existing Control Point #13 = 1281.07'						Drilling Depth, ft.: 85		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.
1280	0							HOT-MIX ASPHALT (1" ±)			0.1
		1	ST		16.8	112	2000**	Dark brown sandy lean clay, moist Gray clayey sand, moist from 2' to 4'		CL	1281.5
1270	10	2	ST		12.6	106	4000**	FILL		CL	
		3	ST		16.3	101	1280	Dark brown fine sand, trace gravel, moist after 8.5'		SM	14
1260	20	4	SSA	16	4.5			Brown fine to medium sand with gravel, damp		SP	1267.6
		5	SSA	10	Sat.			Saturated after 19.5'			
1250	30	6	SSA	44	Sat.			GRANULAR ALLUVIUM (Coarse Sand)			
		7	SSA	29	Sat.			Brown medium sand with gravel after 29.5'			
1240	40	8	SSA	17	15.6			Cobbles/Boulders after 36'		CH	37
		9	SSA	25	16.1			Gray sandy fat clay, trace gravel, moist			1244.6
1230	50	10	SSA	29	15.8						
		11	SSA	32	15.4						
1220	60	12	SSA	30	16.4			GLACIAL TILL (Very Firm Sandy Glacial Clay)			
		13	SSA	27	19.8			Interbedded sand seams near 66'			
1210	70	14	SSA	30	20.4						
		15	SSA	28	21.4						
1200	80	16	SSA	28	21.1						85
			DC	22							
				29				End of Boring			1196.6
				38				**Estimated Using Pocket Penetrometer			
1190	90			42							
1180	100										
*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: 19.5 ft. ft. ft.											
ALLENDER BUTZKE ENGINEERS, INC.											
Geotechnical - Environmental - Construction Q.C.											

SOUNDING DATA
(SEE "SITUATION PLAN", SHEETS 4 & 5, AND
"GENERAL PLAN", SHEET 6, FOR BORING LOCATIONS)

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

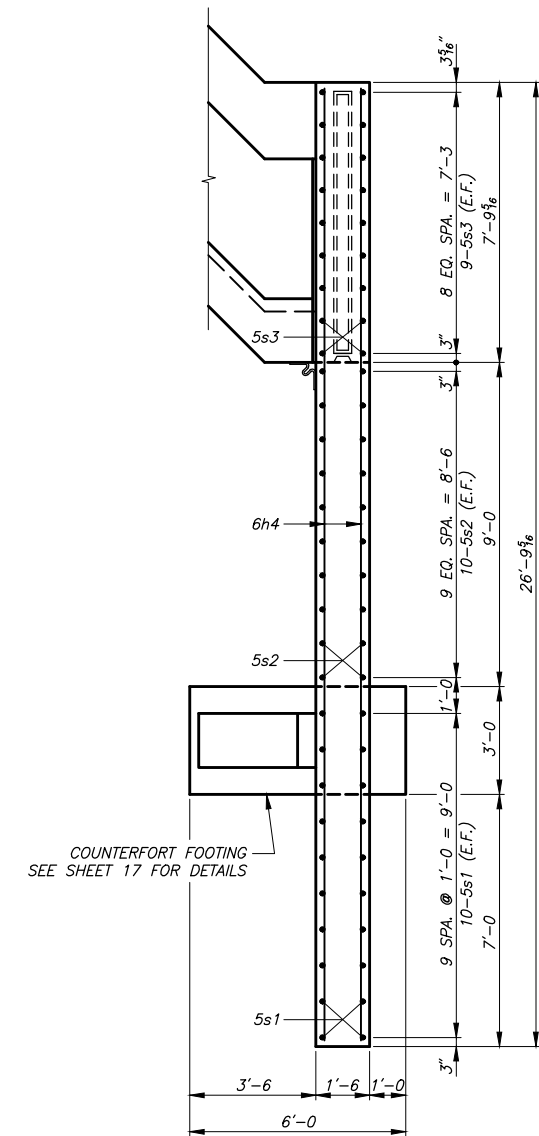
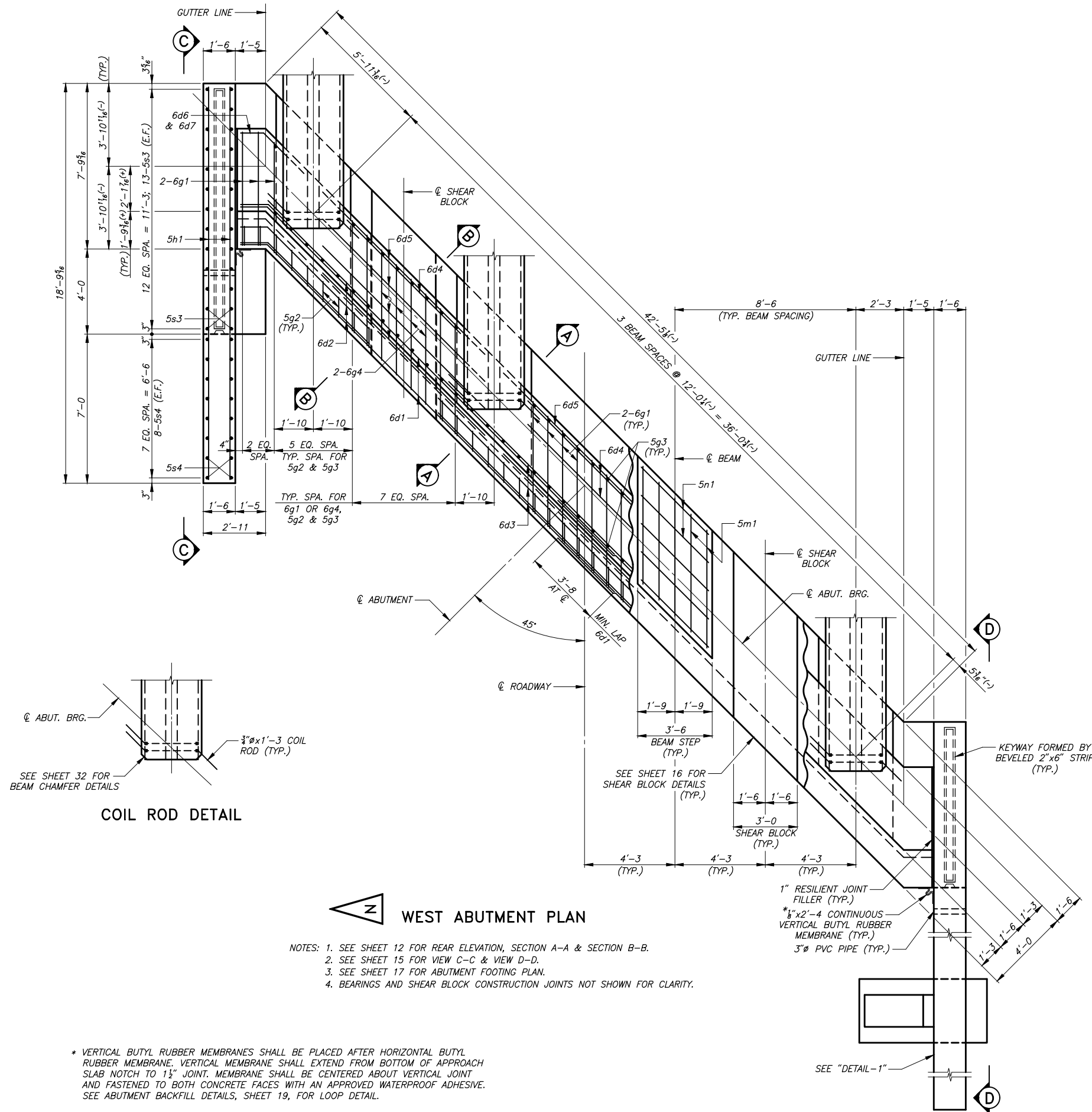
SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

TEE PIERS
137'-0 INTERIOR SPANS

SOUNDING DATA

STATION 9+20.00
LYON COUNTY,

45' SKEW, LT. AHEAD
IOWA



526'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

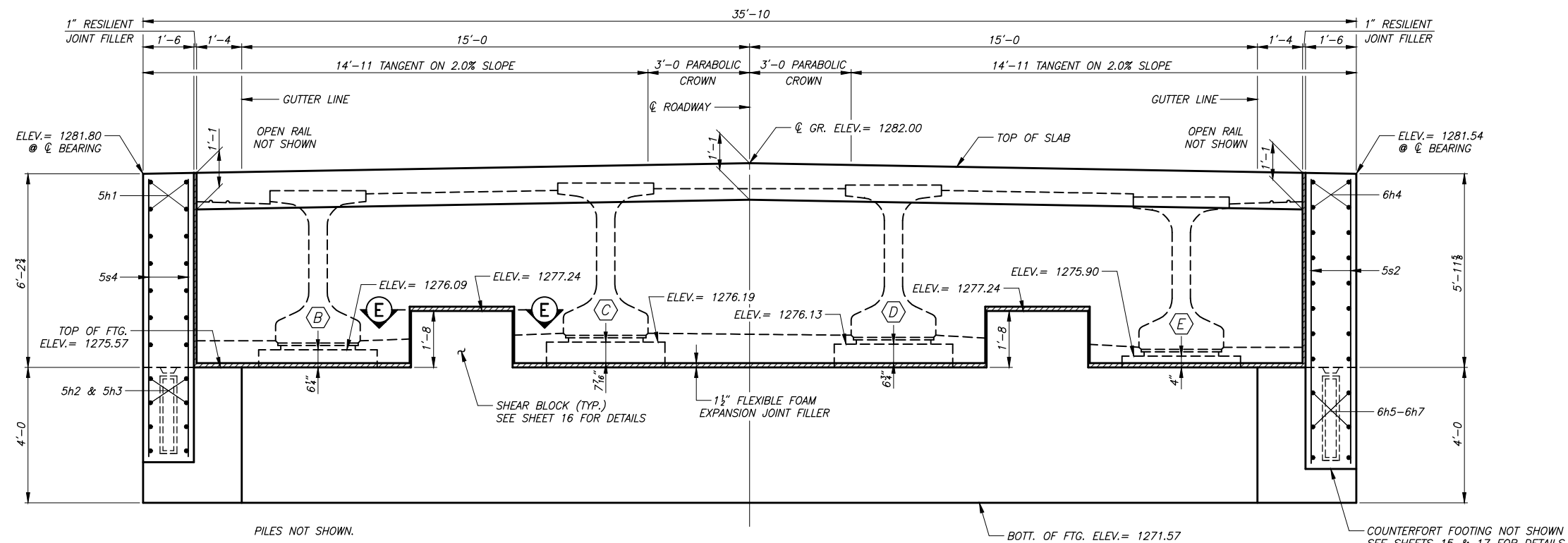
TEE PIERS
137'-0 INTERIOR SPANS

WEST ABUTMENT DETAILS

STATION 9+20.00
LYON COUNTY,

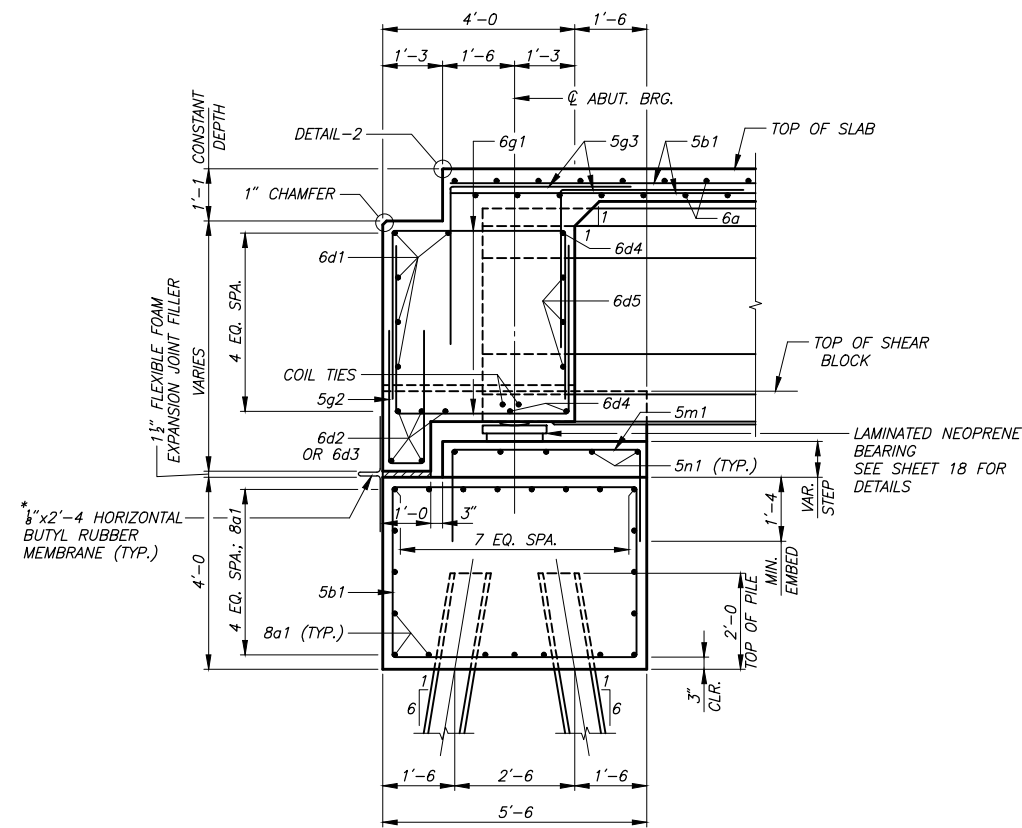
45° SKEW, LT. AHEAD
IOWA

BENCH MARK: CONTROL POINT #10, ½" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 6+41, 15' LT., ELEV.= 1280.92
CONTROL POINT #13, ½" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 11+74, 16' LT., ELEV.= 1281.07



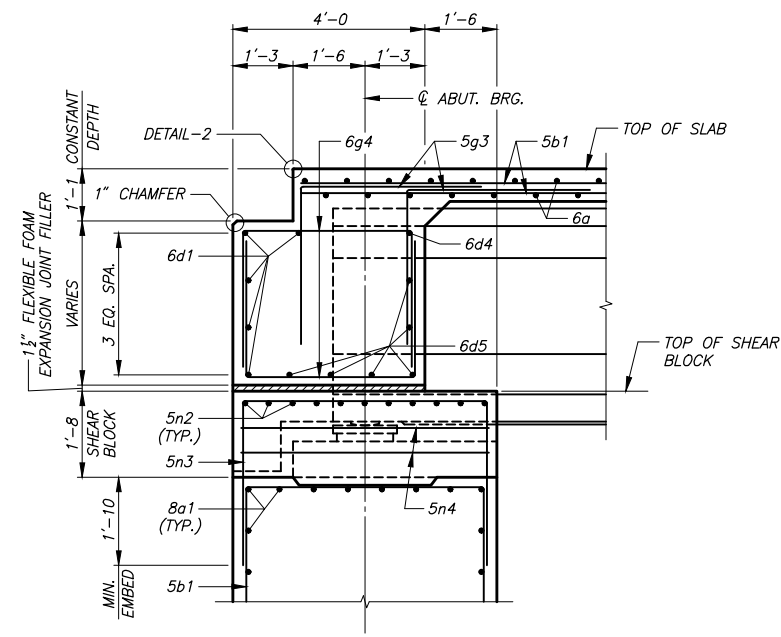
REAR ELEVATION (LOOKING EAST)

- NOTES: 1. SEE SHEET 11 FOR WEST ABUTMENT PLAN AND SHEET 16 FOR SECTION E-E.
2. BUTYL RUBBER MEMBRANES AND SHEAR BLOCK CONSTRUCTION JOINTS NOT SHOWN FOR CLARITY.



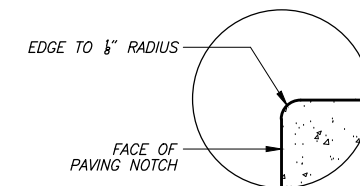
SECTION A-A

* HORIZONTAL BUTYL RUBBER MEMBRANE SHALL BE CENTERED AND FASTENED TO THE CONCRETE ON BOTH SIDES OF THE JOINT WITH AN APPROVED WATERPROOF ADHESIVE.



SECTION B-B (AT SHEAR BLOCK)

NOTE: BUTYL RUBBER MEMBRANES NOT SHOWN.



DETAIL-2

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

TEE PIERS

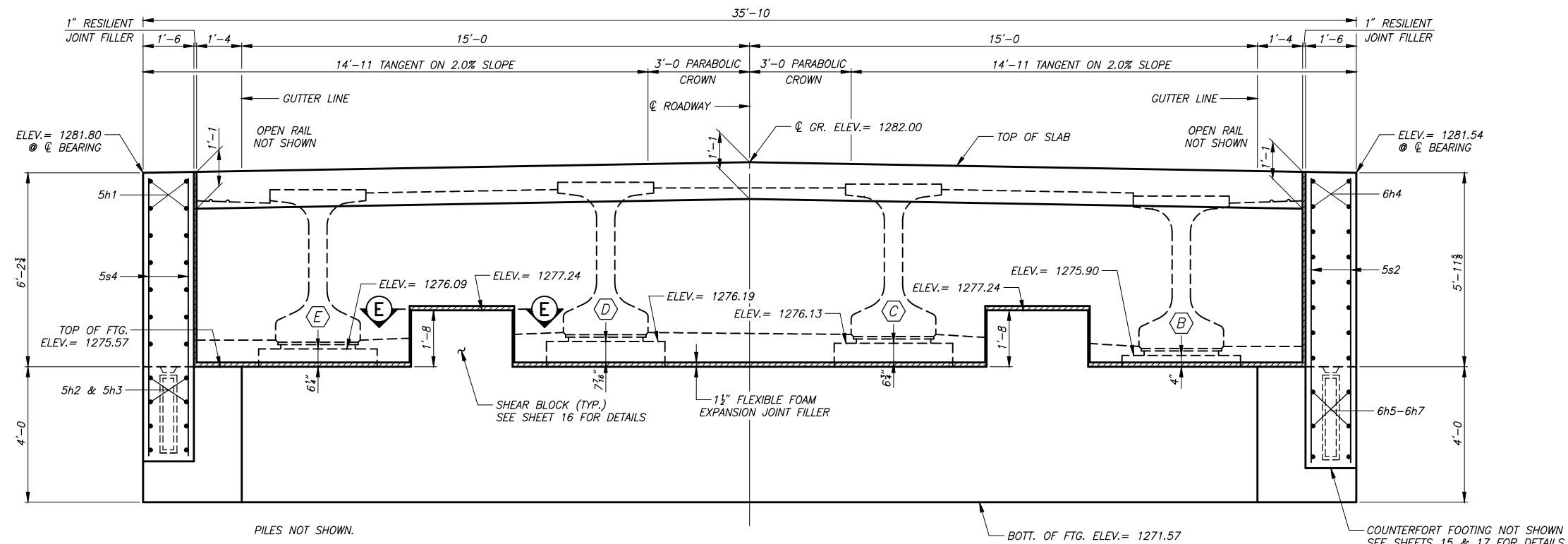
137'-0 INTERIOR SPANS

WEST ABUTMENT DETAILS

STATION 9+20.00
LYON COUNTY,

45' SKEW, LT. AHEAD
IOWA

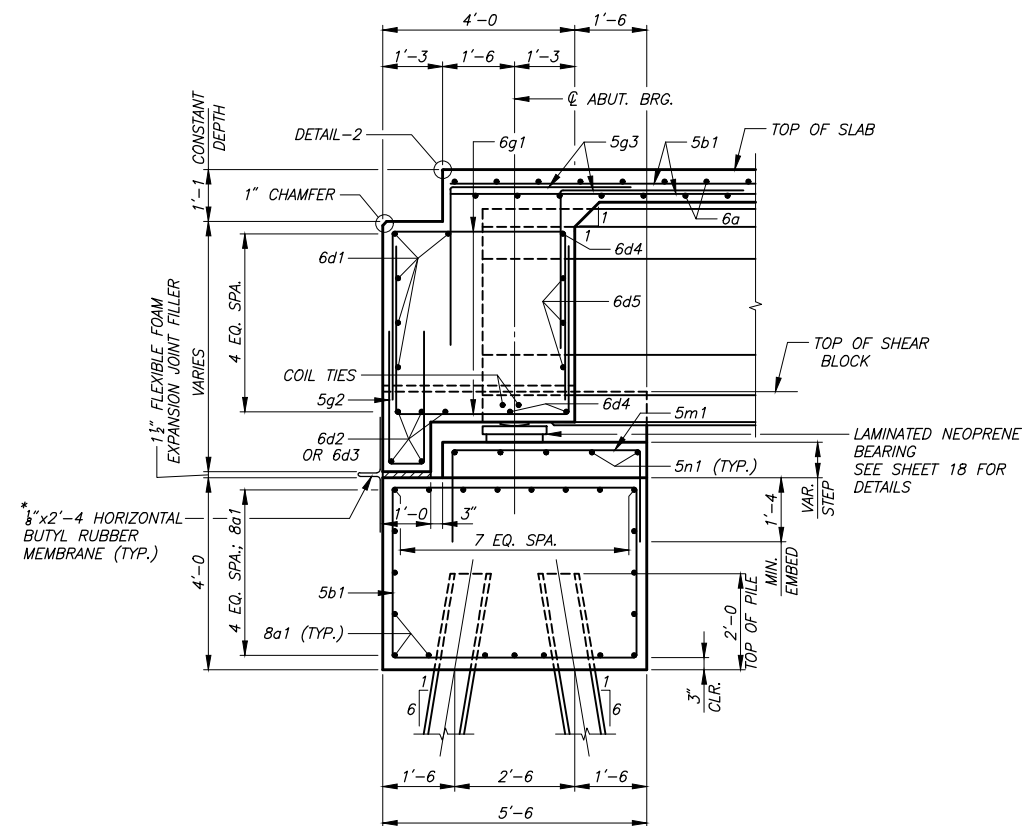
BENCH MARK: CONTROL POINT #10, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 6+41, 15' LT., ELEV.= 1280.92
CONTROL POINT #13, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 11+74, 16' LT., ELEV.= 1281.07



REAR ELEVATION
(LOOKING WEST)

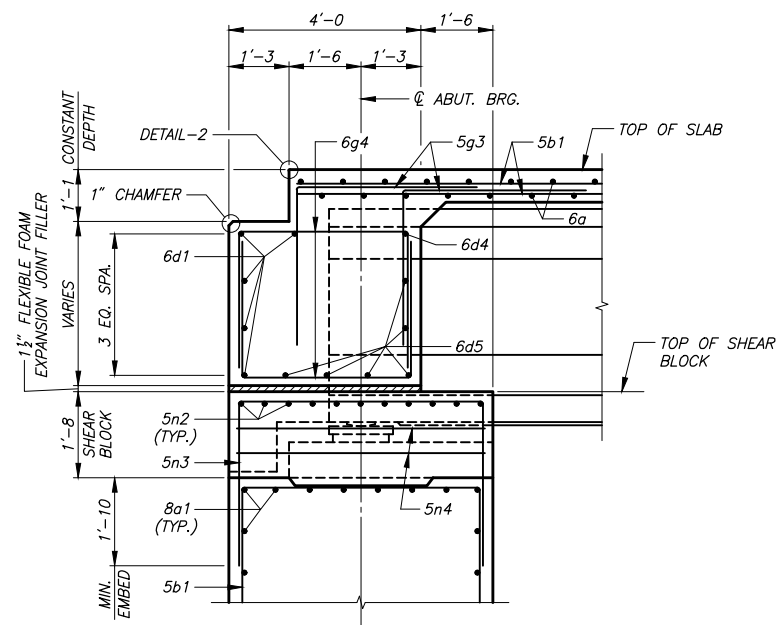
NOTES: 1. SEE SHEET 13 FOR EAST ABUTMENT PLAN AND SHEET 16 FOR SECTION E-E.
2. BUTYL RUBBER MEMBRANES AND SHEAR BLOCK CONSTRUCTION JOINTS NOT SHOWN FOR CLARITY.

○ DENOTES BEAM LINE



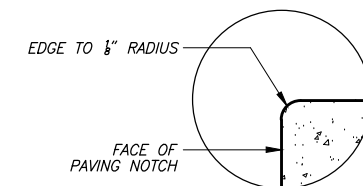
SECTION A-A

* HORIZONTAL BUTYL RUBBER MEMBRANE SHALL BE CENTERED AND FASTENED TO THE CONCRETE ON BOTH SIDES OF THE JOINT WITH AN APPROVED WATERPROOF ADHESIVE.



SECTION B-B
(AT SHEAR BLOCK)

NOTE: BUTYL RUBBER MEMBRANES NOT SHOWN.



DETAIL-2

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

TEE PIERS
137'-0 INTERIOR SPANS

EAST ABUTMENT DETAILS

STATION 9+20.00
LYON COUNTY,

45' SKEW, LT. AHEAD
IOWA

The logo of the German Society for Quality Management (DGQ) is located in the bottom right corner. It consists of a stylized 'G' inside a circle, with a triangle pointing to the right, all enclosed within a larger circle.



**** TO BE PLACED WITH THE FOOTING**

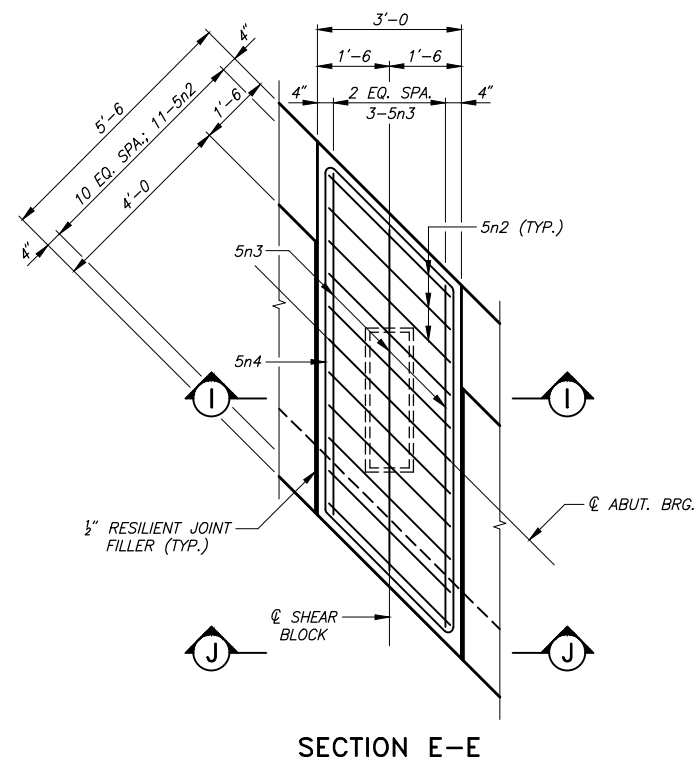


526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

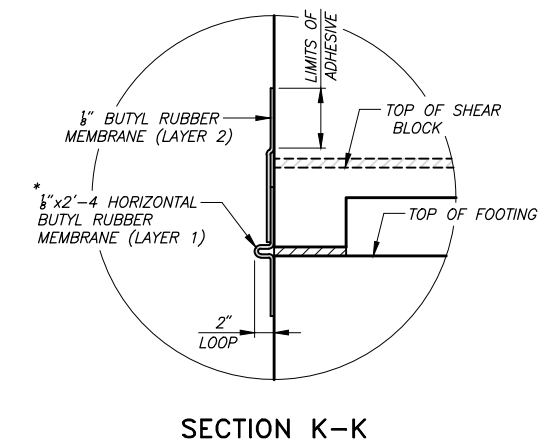
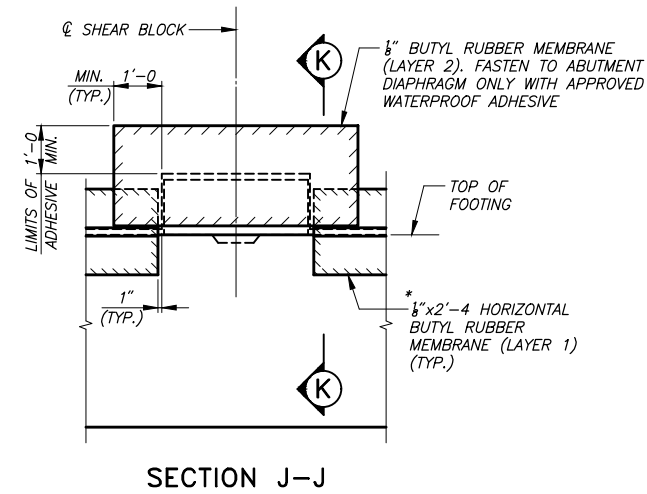
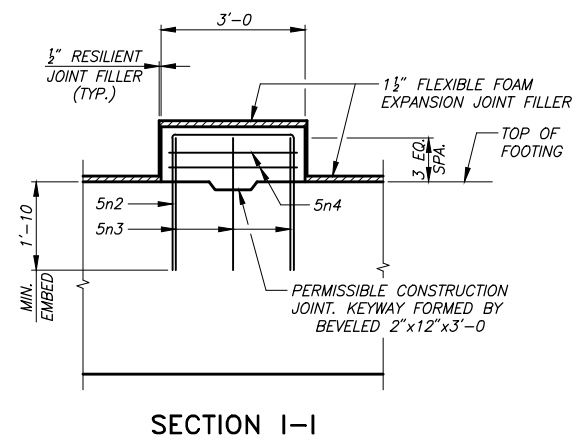
TEE PIERS
137'-0" INTERIOR SPANS

ABUTMENT DETAILS

45° SKEW, LT. AHEAD
IOWA



NOTE: ABUTMENT DIAPHRAGM REINFORCING AND BUTYL RUBBER MEMBRANES NOT SHOWN FOR CLARITY.



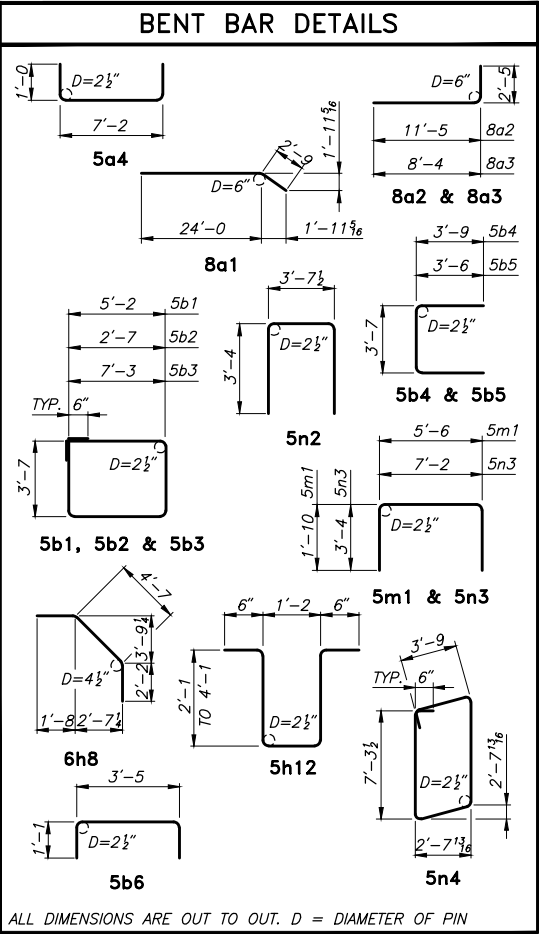
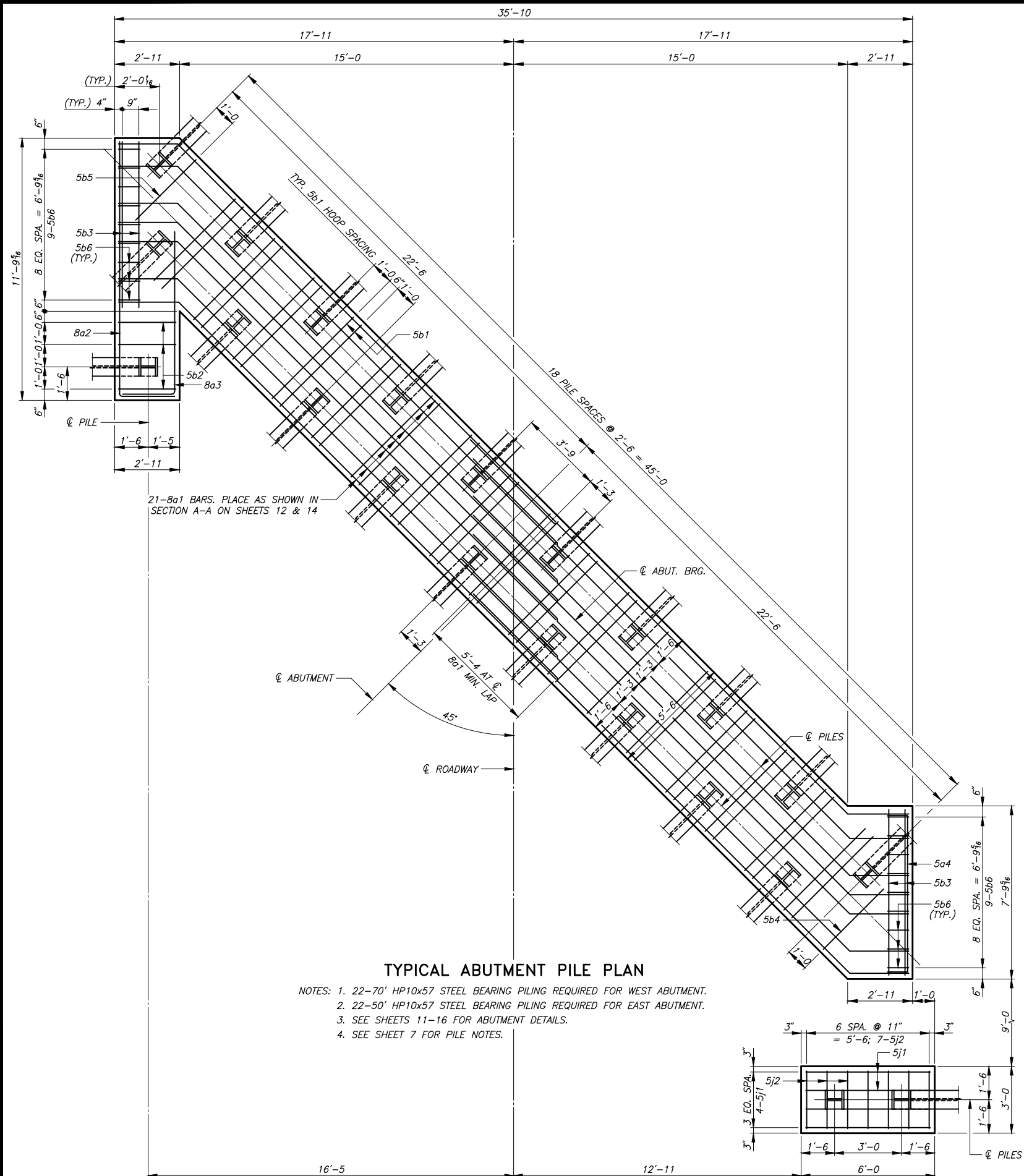
* HORIZONTAL BUTYL RUBBER MEMBRANE SHALL BE CENTERED AND AND FASTENED TO THE CONCRETE ON BOTH SIDES OF THE JOINT WITH AN APPROVED WATERPROOF ADHESIVE.

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS	TEE PIERS
126'-0" END SPANS	137'-0" INTERIOR SPANS

ABUTMENT DETAILS

STATION 9+20.00
 LYON COUNTY, IOWA



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 3/4" DRESSED AND BEVELED STRIP.

CONSTRUCTION JOINT KEYWAYS ARE TO BE FORMED WITH BEVELED 2 x 6'S.

IF NECESSARY TO PREVENT DAMAGE TO THE END OF THE BRIDGE DECK AND BACKWALL FROM CONSTRUCTION EQUIPMENT, AN APPROPRIATE METHOD OF PROTECTION APPROVED BY THE ENGINEER SHALL BE PROVIDED BY THE CONTRACTOR AT NO EXTRA COST.

ALL FORMWORK BETWEEN TOP OF ABUTMENT FOOTING AND ABUTMENT DIAPHRAGM SHALL BE REMOVED.

THE COST OF RESILIENT JOINT FILLER, FLEXIBLE FOAM EXPANSION JOINT FILLER, BUTYL RUBBER MEMBRANE AND PVC PIPE IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)".

DIMENSIONS SHOWN ON PILING LAYOUT ARE AT BOTTOM OF FOOTING. BATTER PILES IN THE DIRECTION SHOWN.

SEE PILE NOTES ON SHEET 7 FOR ADDITIONAL INFORMATION.

REINFORCING BAR LIST – ONE ABUTMENT					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
8a1	FOOTING LONGITUDINAL	—	42	26'-9"	3,000
8a2	FOOTING EXTENSION	—	5	13'-10"	185
8a3	FOOTING EXTENSION	—	5	10'-9"	144
5a4	FOOTING END	—	5	9'-2"	48
5b1	FOOTING HOOPS	□	34	18'-6"	656
5b2	FOOTING EXTENSION HOOPS	□	3	13'-4"	42
5b3	FOOTING HOOPS	□	4	22'-8"	95
5b4	FOOTING	—	1	11'-1"	12
5b5	FOOTING	—	1	10'-7"	11
5b6	FOOTING ENDS	—	18	5'-7"	105
5h1	WINGWALL HORIZONTAL	—	14	18'-5"	269
5h2	FOOTING EXTENSION HORIZONTAL	—	8	5'-8"	47
5h3	WING HORIZONTAL	—	8	6'-8"	56
6h4	WING HORIZONTAL	—	16	26'-5"	635
6h5	WING HORIZONTAL	—	2	9'-3"	28
6h6	WING HORIZONTAL	—	2	5'-9"	17
6h7	WING HORIZONTAL	—	6	6'-8"	60
6h8	COUNTERFORT FOOTING	—	3	8'-5"	38
5h9	COUNTERFORT FOOTING	—	2	4'-2"	9
5h10	COUNTERFORT FOOTING	—	2	6'-0"	13
5h11	COUNTERFORT FOOTING	—	6	4'-4"	27
5h12	COUNTERFORT WALL	—	4	VARIES	35
5j1	COUNTERFORT FOOTING	—	4	5'-8"	24
5j2	COUNTERFORT FOOTING	—	7	2'-8"	19
5m1	BEAM STEPS TRANSVERSE	—	20	9'-2"	191
5n1	BEAM STEPS LONGITUDINAL	—	20	4'-5"	92
5n2	SHEAR BLOCK	—	22	10'-4"	237
5n3	SHEAR BLOCK	—	6	13'-10"	87
5n4	SHEAR BLOCK	—	4	23'-1"	96
5s1	WINGWALL VERTICAL	—	20	5'-7"	116
5s2	WINGWALL VERTICAL	—	20	VARIES	145
5s3	WINGWALL VERTICAL	—	44	7'-11"	363
5s4	WING VERTICAL	—	16	8'-7"	143

△ EPOXY COATED EPOXY COATED TOTAL (LBS.) 7,045

CONCRETE PLACEMENT QUANTITIES – ONE ABUT.	
LOCATION	QUANTITY
FOOTING, STEPS AND SHEAR BLOCKS	47.5
WING & WINGWALL (NW. OR SE.)	7.6
WINGWALL & COUNTERFORT (SW. OR NE.)	9.1
WINGWALL COUNTERFORT FOOTING (SW. OR NE.)	1.7
TOTAL (CU.YDS.)	65.9

ESTIMATED QUANTITIES – TWO ABUTMENTS		
ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE (BRIDGE)	CU.YDS.	131.8
REINFORCING STEEL, EPOXY COATED	LBS.	14,090
EXCAVATION, CLASS 20 (2 @ 182 C.Y.)	CU.YDS.	364
PILES, STEEL, HP10x57; 22 @ 70' (W.), 22 @ 50' (E.)	L.F.	2,640

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS TEE PIERS
126'-0 END SPANS 137'-0 INTERIOR SPANS

ABUTMENT DETAILS

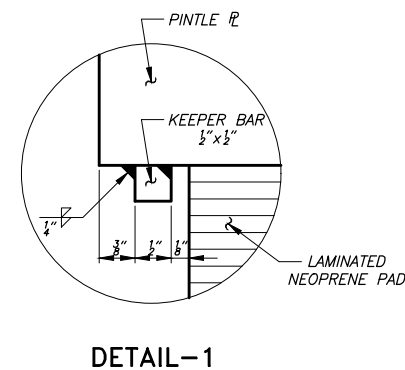
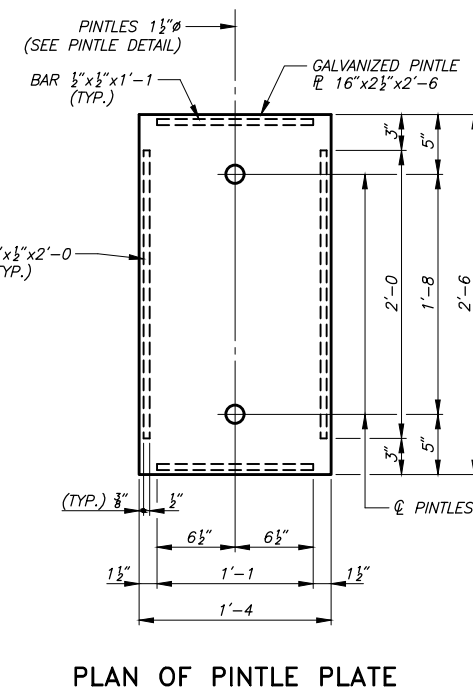
STATION 9+20.00 45° SKEW, LT. AHEAD
LYON COUNTY, IOWA

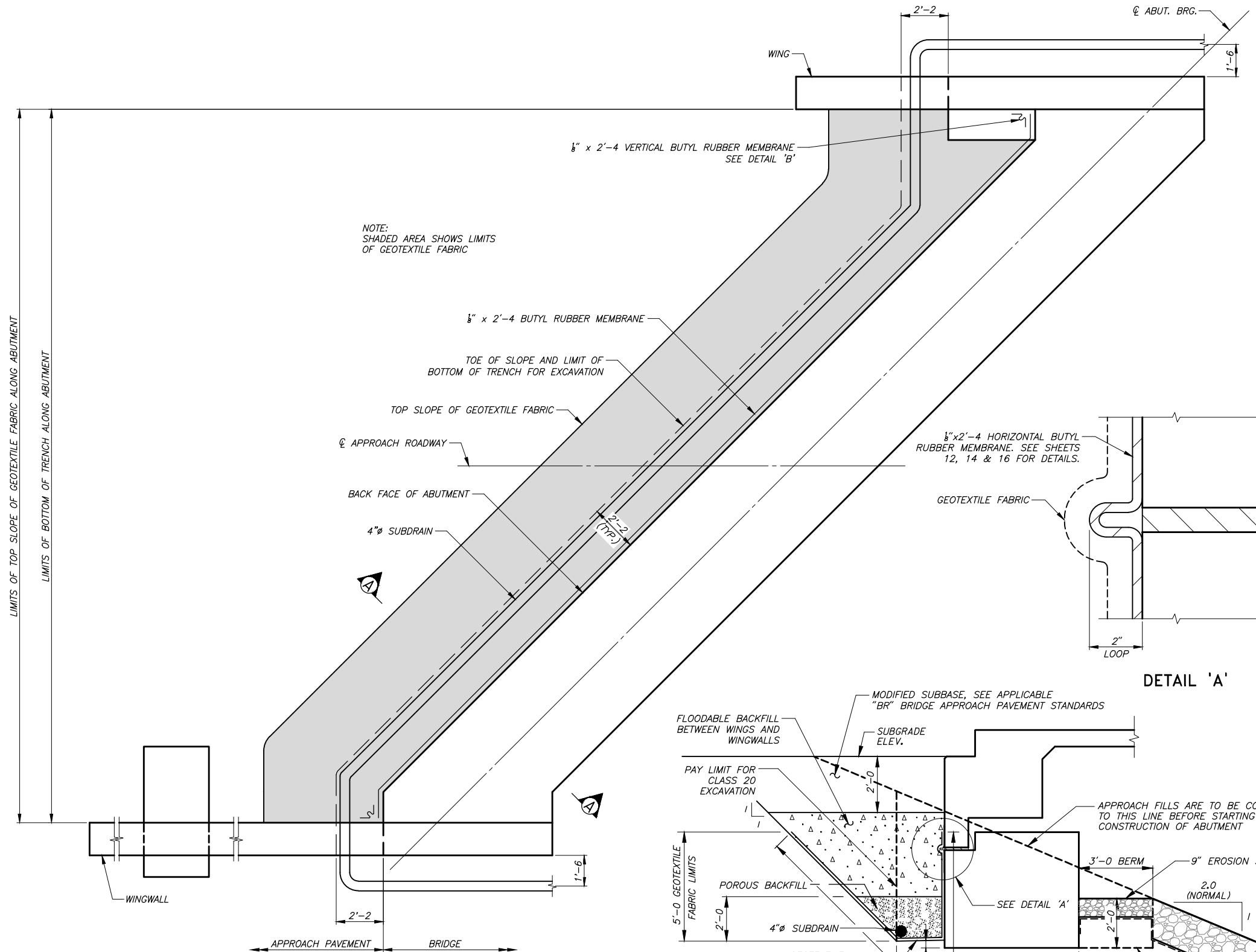


PINTLE DETAIL

Diagram illustrating the cross-section of a Pintle Detail. Key components and dimensions are labeled:

- BAR**: $1\frac{1}{4}" \times \frac{1}{8}" \times 1\frac{1}{4}"$
- SEAL**: Indicated by a line pointing to the top edge of the bar.
- SOLE PL**: Indicated by a line pointing to the bottom surface of the bar.
- PINTLE PL**: Indicated by a line pointing to the central vertical component.
- DRIVING FIT INTO PINTLE PL**: Indicated by a line pointing to the interface between the bar and the pintle plate.
- $\frac{1}{4}"$ DRAIN HOLE**: Indicated by a line pointing to a hole in the bottom of the pintle plate.
- Dimensions**:
 - Top width: $1\frac{1}{8}" \phi$
 - Bottom width: $1\frac{1}{2}" \phi$
 - Radius: $R = 1\frac{1}{4}"$
 - Vertical dimensions on the left: $\frac{5}{8}"$ EXTENSION, $1"$, and $1\frac{1}{2}"$.





ABUTMENT BACKFILL PROCESS

THE BASE OF THE EXCAVATION SUBGRADE BEHIND THE ABUTMENT IS TO BE GRADED WITH A 4% SLOPE AWAY FROM THE ABUTMENT FOOTING AND A 2% CROSS SLOPE IN THE DIRECTION OF THE SUBDRAIN OUTLET. THIS EXCAVATION SHAPING IS TO BE DONE PRIOR TO BEGINNING INSTALLATION OF THE GEOTEXTILE AND BACKFILL MATERIAL.

AFTER THE SUBGRADE HAS BEEN SHAPED THE GEOTEXTILE FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN. THE FABRIC IS INTENDED TO BE INSTALLED IN THE BASE OF THE EXCAVATION AND EXTENDED VERTICALLY UP THE ABUTMENT BACKWALL, ABUTMENT WINGS AND WINGWALLS, AND EXCAVATION FACE TO A HEIGHT THAT WILL BE APPROXIMATELY 3 FEET HIGHER THAN THE HEIGHT OF THE POROUS BACKFILL PLACEMENT AS SHOWN IN THE "GRANULAR BACKFILL DETAILS" ON THIS SHEET. THE STRIPS OF THE FABRIC PLACED SHALL OVERLAP APPROXIMATELY 1 FOOT AND SHALL BE PINNED IN PLACE. THE FABRIC SHALL BE ATTACHED TO THE ABUTMENT BY USING LATH FOLDED IN THE FABRIC AND SECURED TO THE CONCRETE WITH SHALLOW CONCRETE NAILS. THE FABRIC PLACED AGAINST THE EXCAVATION FACE SHALL BE PINNED.

WHEN THE FABRIC IS IN PLACE, THE SUBDRAIN SHALL BE INSTALLED DIRECTLY ON THE FABRIC AT THE TOE OF THE REAR EXCAVATION SLOPE. A SLOT WILL NEED TO CUT IN THE FABRIC AT THE POINT WHERE THE SUBDRAIN EXITS THE FABRIC NEAR THE END OF THE ABUTMENT WING OR WINGWALL.

POROUS BACKFILL IS THEN PLACED AND LEVELED, NO COMPACTION IS REQUIRED.

THE REMAINING WORK INVOLVES BACKFILLING WITH FLOODABLE BACKFILL, SURFACE FLOODING, AND VIBRATORY COMPACTION. THE FLOODABLE BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE FLOODABLE BACKFILL SHALL BE PLACED IN INDIVIDUAL LIFTS, SURFACE FLOODED, AND COMPACTED WITH VIBRATORY COMPACTION TO ENSURE FULL CONSOLIDATION. LIMIT THE LOOSE LIFTS TO NO MORE THAN 2 FEET OF THICKNESS.

START SURFACE FLOODING FOR EACH FLOODABLE BACKFILL LIFT AT THE HIGH POINT OF THE SUBDRAIN AND PROGRESS TO THE LOW POINT WHERE THE SUBDRAIN EXITS THE FABRIC. TO ENSURE UNIFORM SURFACE FLOODING, WATER RUNNING FULL IN A 2-INCH DIAMETER HOSE SHOULD BE SPRAYED IN SUCCESSIVE 6-FOOT TO 8-FOOT INCREMENTS FOR 5 MINUTES WITHIN EACH INCREMENT.

FLOODABLE BACKFILL LIFT PLACEMENT, FLOODING, AND COMPACTION SHALL PROGRESS UNTIL THE REQUIRED FULL THICKNESS OF THE ABUTMENT BACKFILL HAS BEEN COMPLETED.

WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, GEOTEXTILE FABRIC, BUTYL RUBBER MEMBRANES AND WATERPROOF ADHESIVE FURNISHED AT THE BRIDGE ABUTMENTS WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.

THE COST OF WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, GEOTEXTILE FABRIC, BUTYL RUBBER MEMBRANES AND WATERPROOF ADHESIVE FURNISHED AT THE BRIDGE ABUTMENTS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)".

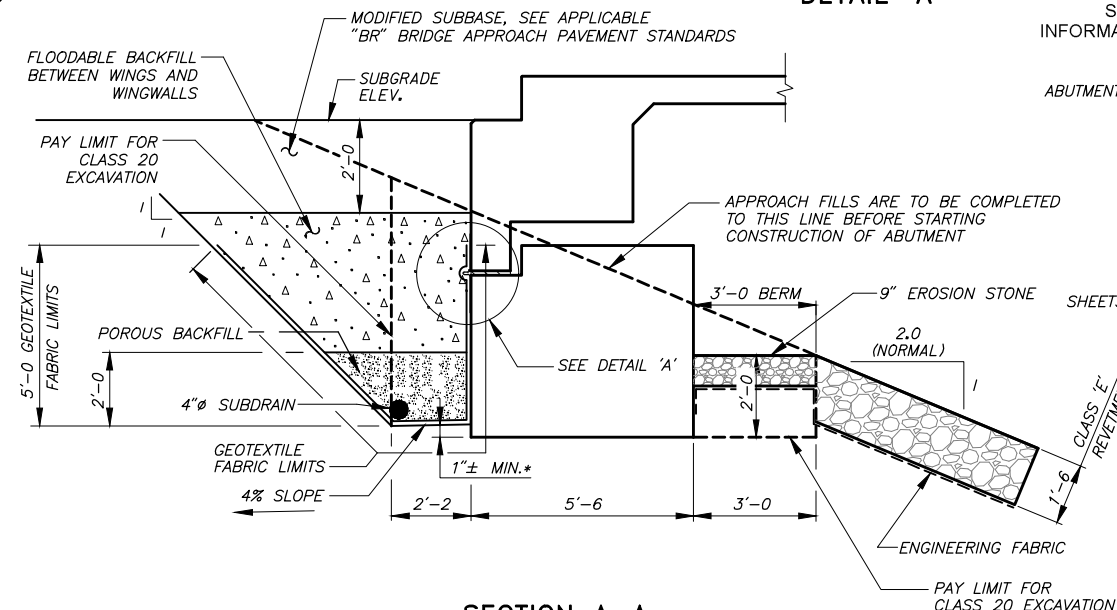
NOTES:

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM CENTERLINE APPROACH ROADWAY WHEN OUTLETTING BOTH SIDES OF THE ABUTMENT.

THE GEOTEXTILE FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01,B,6 OF THE STANDARD SPECIFICATIONS. IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF ONE FOOT IN LENGTH, SINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY.

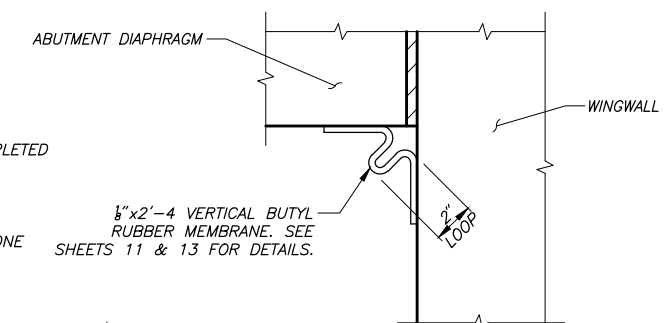
SEE SITUATION PLAN, SHEETS 4 AND 5, FOR ADDITIONAL INFORMATION.
SEE SUBDRAIN AND WING ARMORING DETAILS, SHEET 39, FOR ADDITIONAL INFORMATION.

DETAIL 'A'



SECTION A-A
GRANULAR BACKFILL DETAILS

NOTE: GEOTEXTILE FABRIC WILL BE ATTACHED TO FACE OF ABUTMENT FOOTING, WINGS AND WINGWALLS.
*DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.



DETAIL 'B'

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

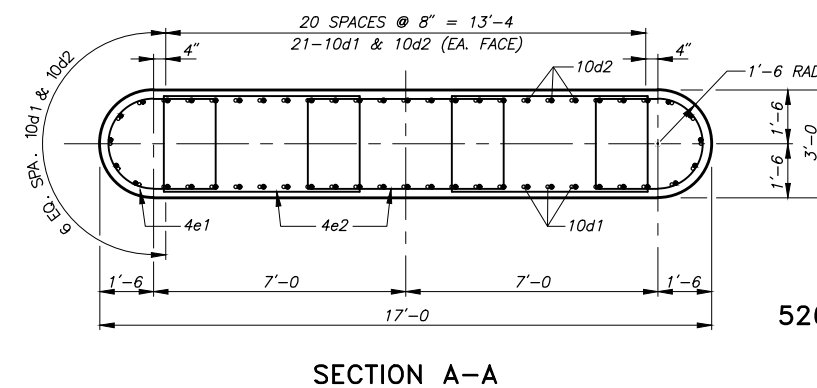
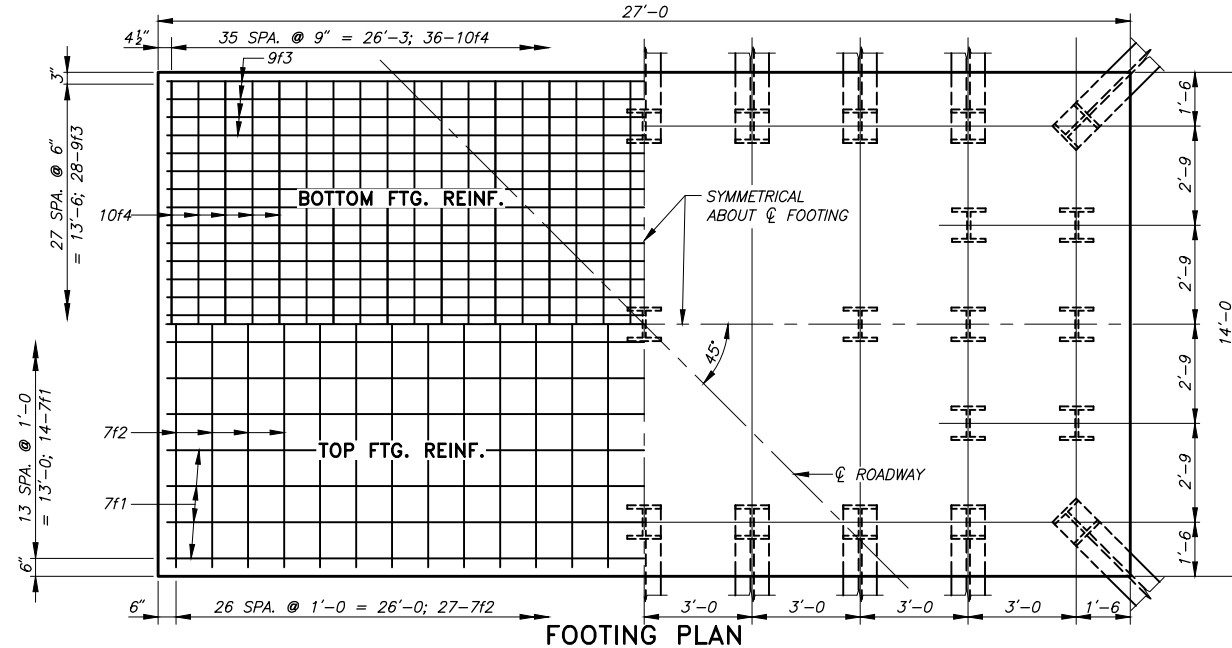
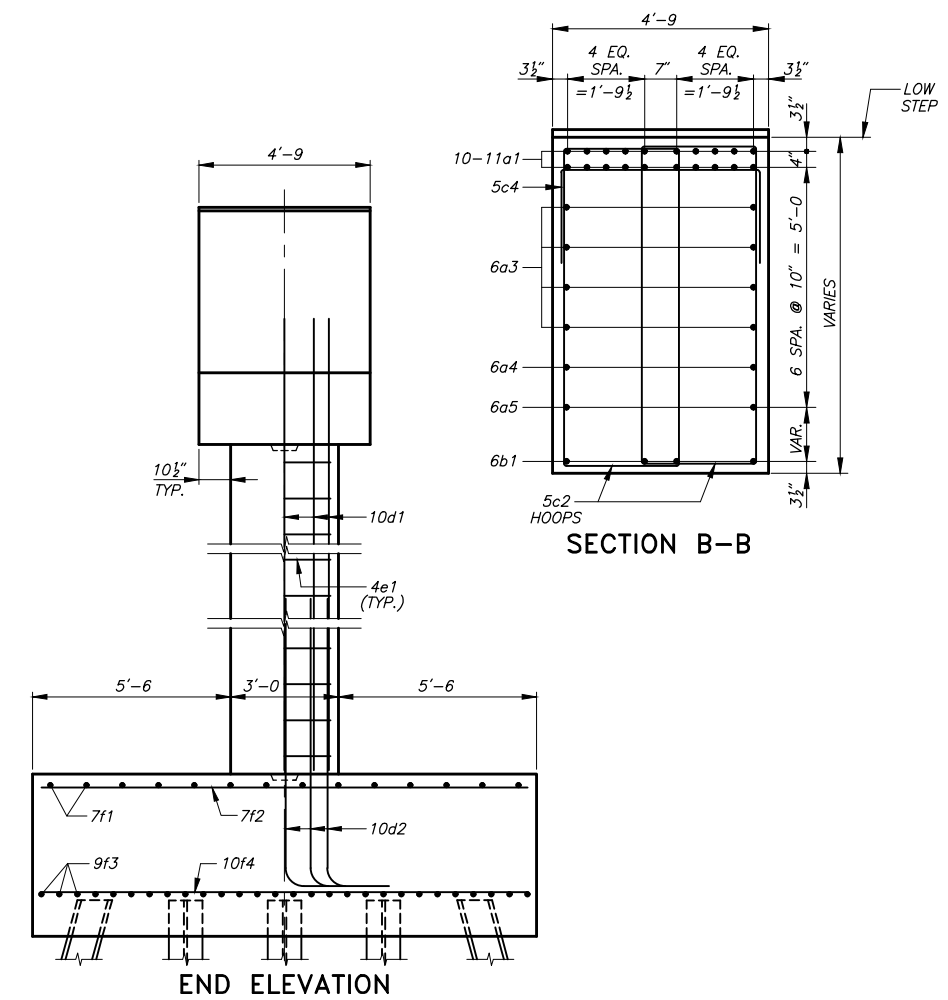
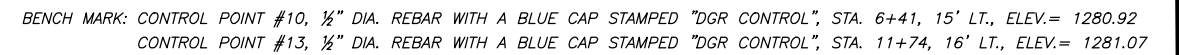
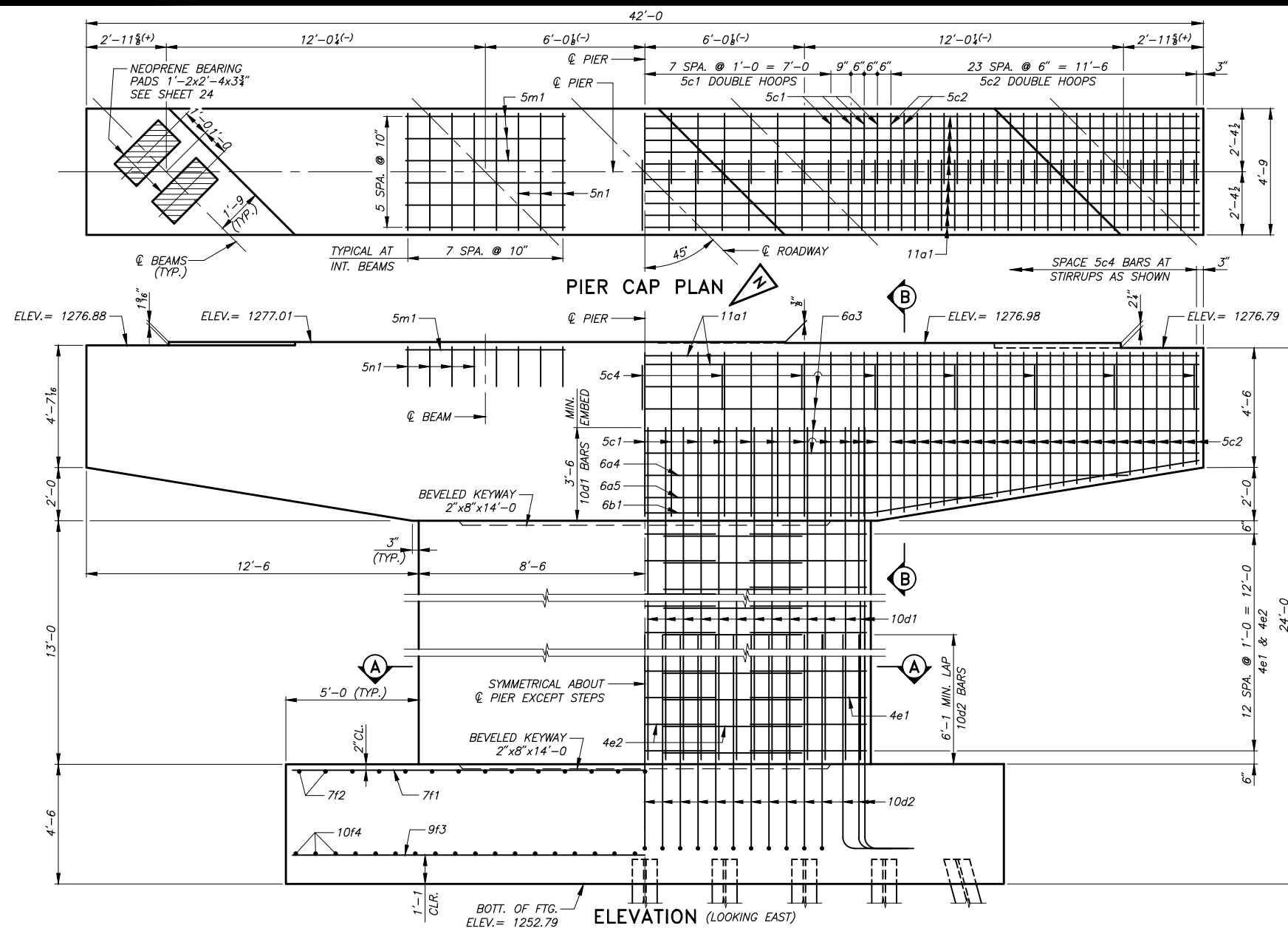
SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

TEE PIERS
137'-0 INTERIOR SPANS

ABUTMENT BACKFILL DETAILS

STATION 9+20.00
LYON COUNTY,

45° SKEW, LT. AHEAD
IOWA

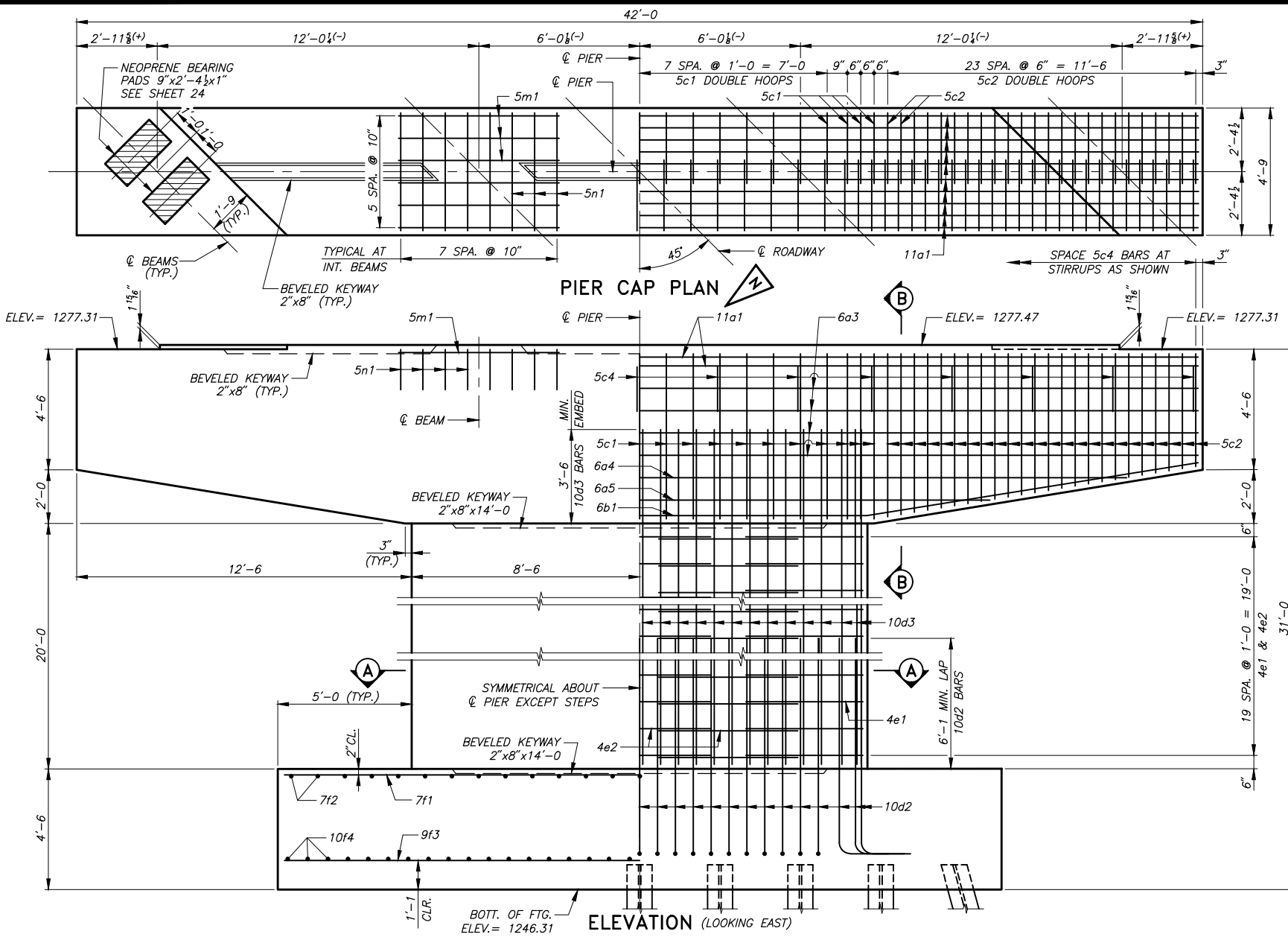


526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

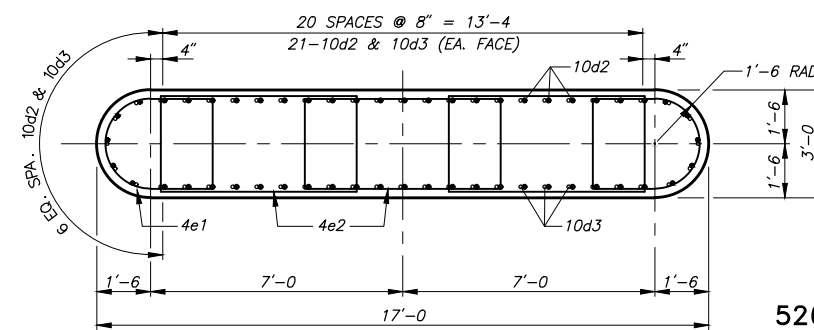
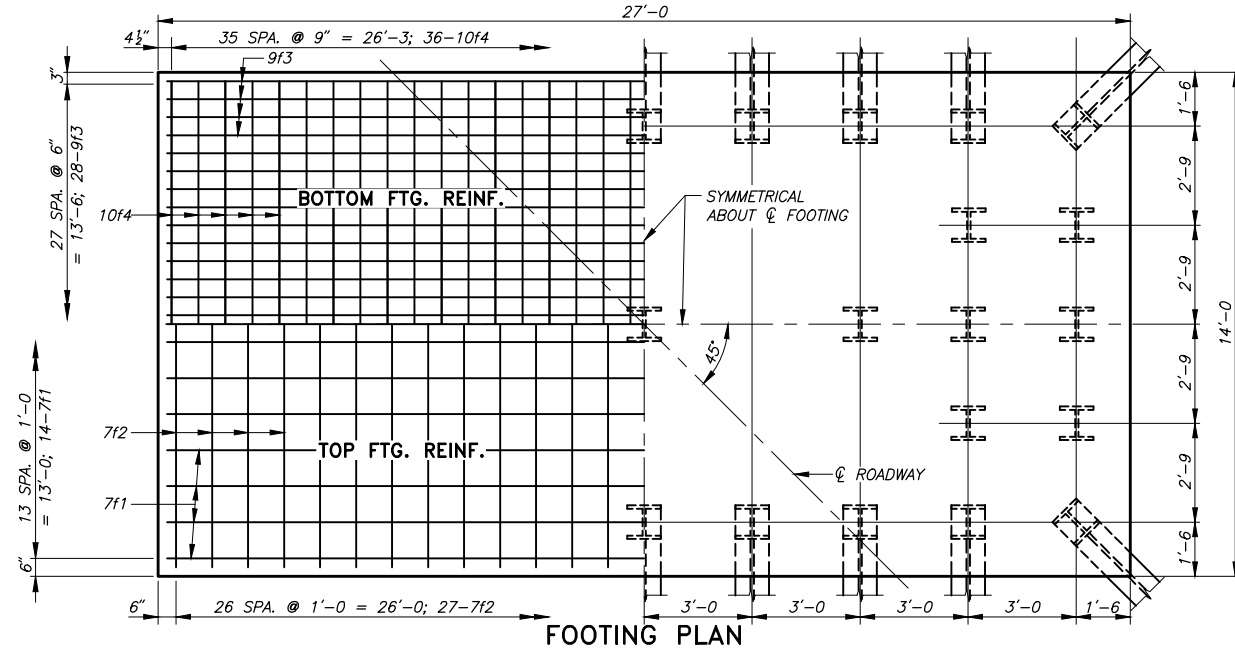
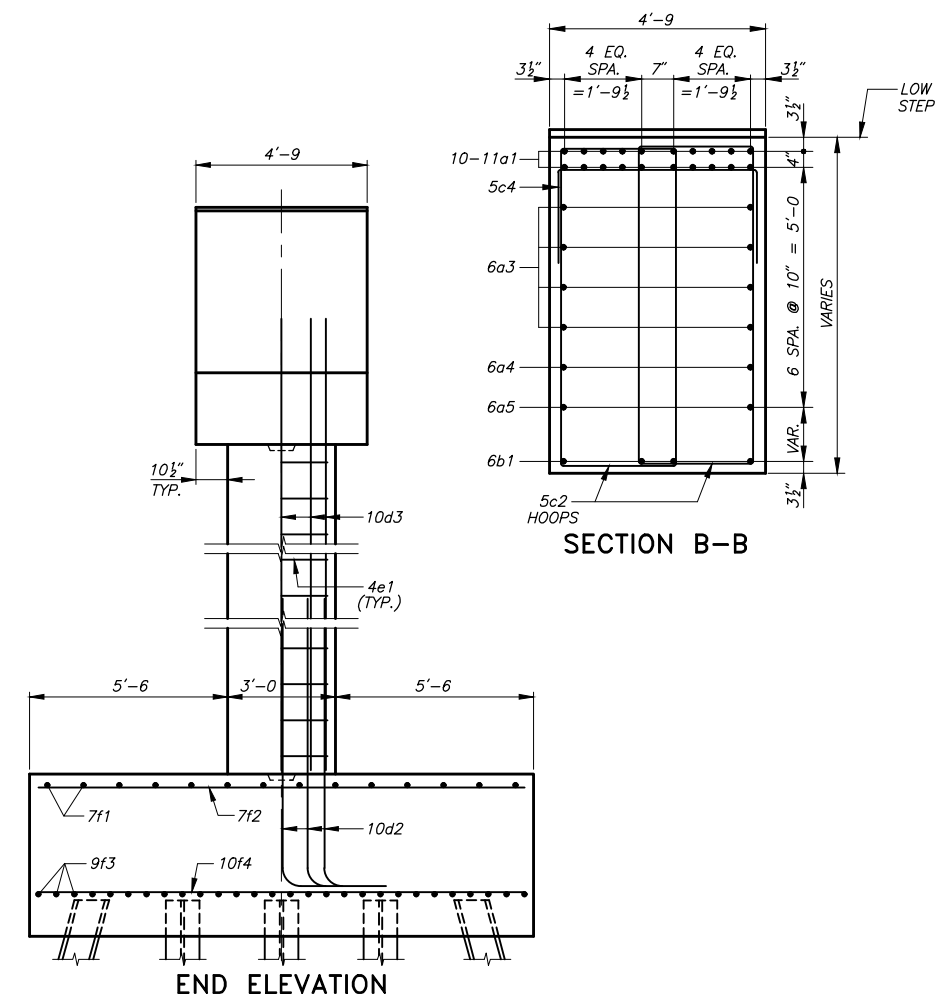
SEMI-INTEGRAL ABUTMENTS	TEE PIERS
126'-0" END SPANS	137'-0" INTERIOR SPANS

PIER NO. 1 DETAILS

STATION 9+20.00 45' SKEW, LT. AHEAD
 LYON COUNTY, IOWA



BENCH MARK: CONTROL POINT #10, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 6+41, 15' LT., ELEV.= 1280.92
 CONTROL POINT #13, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 11+74, 16' LT., ELEV.= 1281.07



526'-0 x 30'-0 PRETENSIONED PRESTRESSED
 CONCRETE BEAM BRIDGE

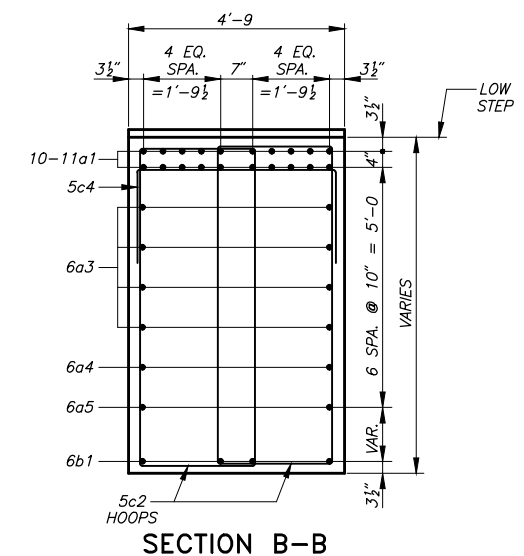
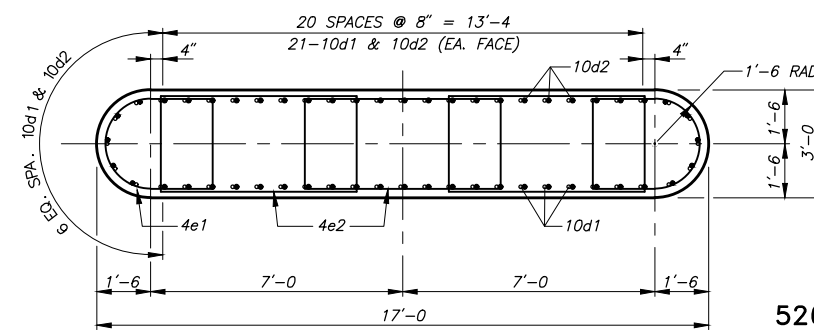
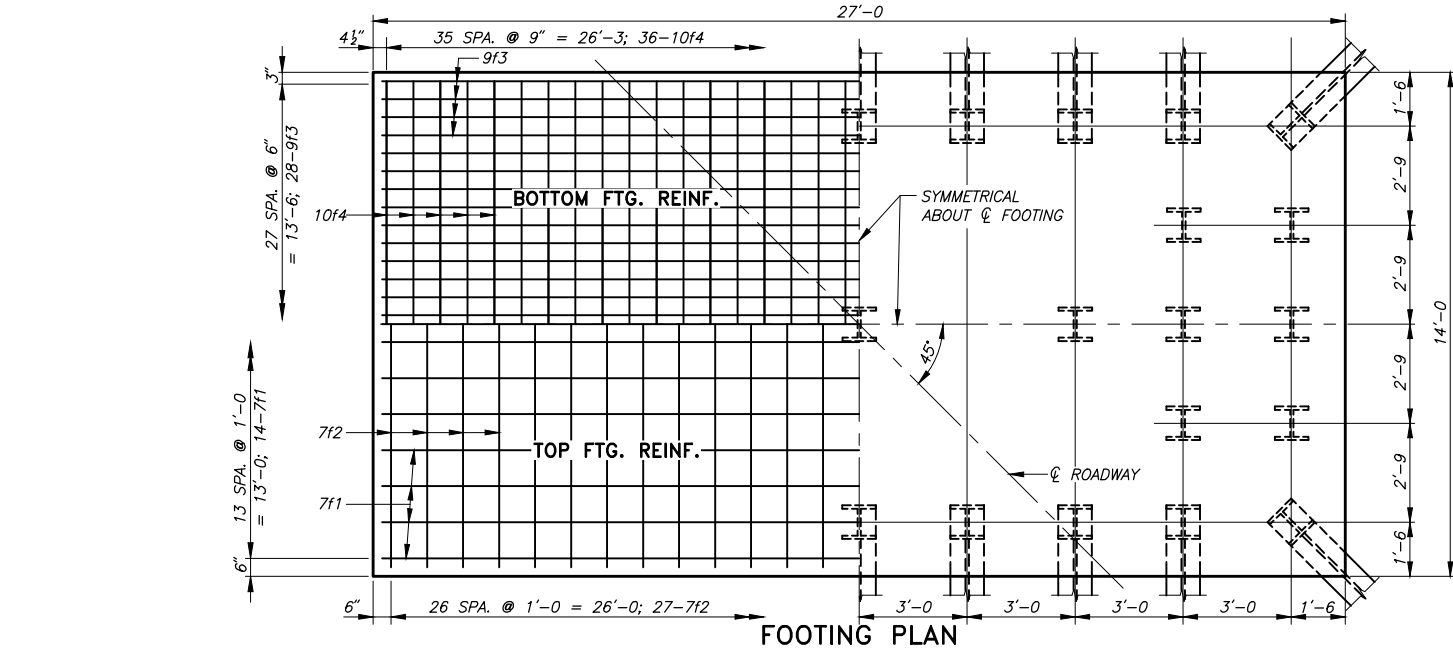
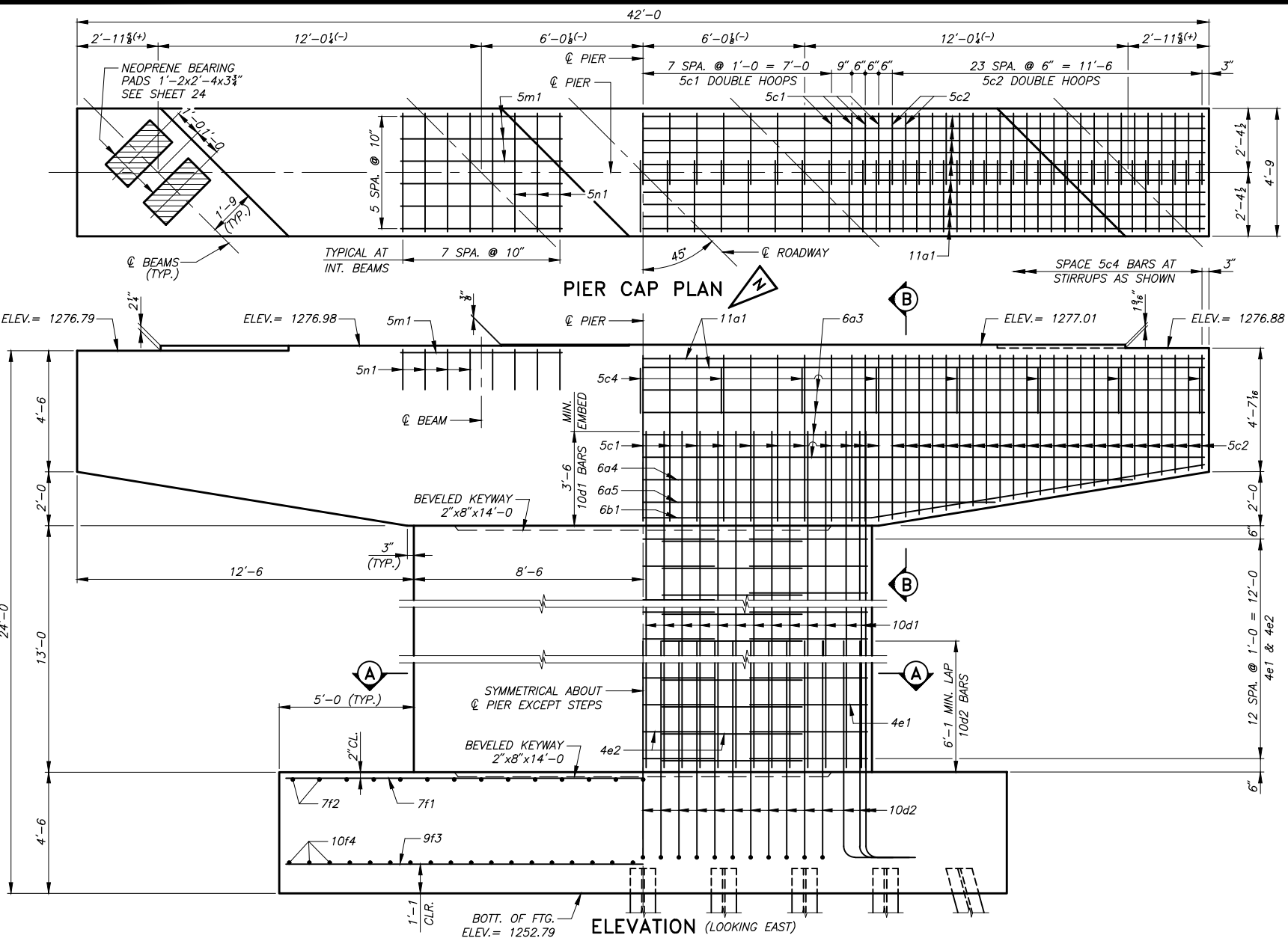
SEMI-INTEGRAL ABUTMENTS
 126'-0 END SPANS

TEE PIERS
 137'-0 INTERIOR SPANS

PIER NO. 2 DETAILS

STATION 9+20.00
 LYON COUNTY,

45' SKEW, LT. AHEAD
 IOWA



BENCH MARK: CONTROL POINT #10, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 6+41, 15' LT., ELEV.= 1280.92
CONTROL POINT #13, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 11+74, 16' LT., ELEV.= 1281.07

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

TEE PIERS
137'-0 INTERIOR SPANS

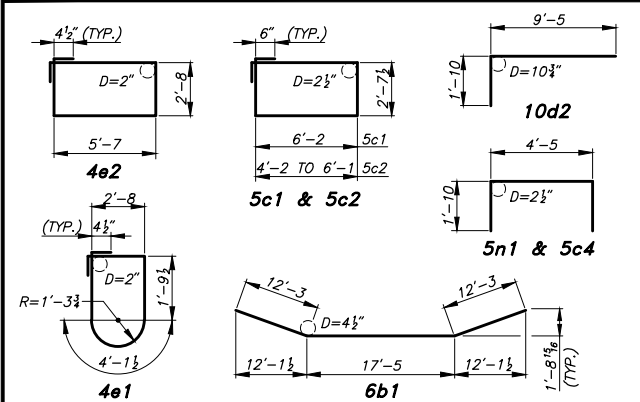
PIER NO. 3 DETAILS

STATION 9+20.00
LYON COUNTY,

45' SKEW, LT. AHEAD
IOWA

REINFORCING BAR LIST – PIER NO. 1					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
Δ 11a1	CAP, LONGITUDINAL, TOP	—	20	41'-8	4,428
Δ 6a3	CAP, LONGITUDINAL, SIDES	—	8	41'-8	501
Δ 6a4	CAP, LONGITUDINAL, SIDES	—	2	36'-3	109
Δ 6a5	CAP, LONGITUDINAL, SIDES	—	2	26'-1	78
Δ 6b1	CAP, LONGITUDINAL, BOTTOM	⌒	4	41'-11	252
Δ 5c1	CAP, HOOPS	⌈	42	18'-7	814
Δ 5c3	CAP, HOOPS, ENDS	⌈	96	VARIES	1,652
Δ 5c4	CAP, TIES	⌈	15	8'-1	126
10d1	COLUMN, VERTICAL	—	52	16'-6	3,692
10d2	COLUMN, VERTICAL, DOWELS	⌒	52	11'-3	2,517
4e1	COLUMN, HOOPS, ENDS	⌈	26	11'-2	194
4e2	COLUMN, HOOPS	⌈	39	17'-3	449
7f1	FOOTING, LONGITUDINAL, TOP	—	14	26'-8	763
7f2	FOOTING, TRANSVERSE, TOP	—	27	13'-8	754
9f3	FOOTING, LONGITUDINAL, BOTTOM	—	28	26'-8	2,539
10f4	FOOTING, TRANSVERSE, BOTTOM	—	36	13'-8	2,118
Δ 5m1	PIER CAP STEP, LONGITUDINAL	—	12	6'-4	79
Δ 5n1	PIER CAP STEP, TRANSVERSE	⌈	16	8'-1	135
Δ EPOXY COATED				EPOXY COATED TOTAL (LBS.)	8,174
				NON-COATED TOTAL (LBS.)	13,026

BENT BAR DETAILS

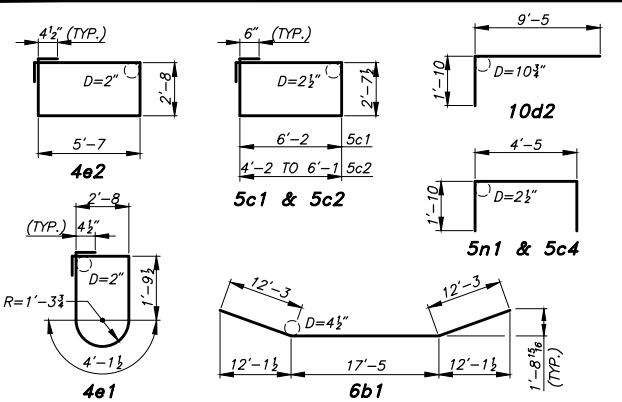


ALL DIMENSIONS ARE OUT TO OUT. D=DIAMETER OF PIN. RADII ARE TO C. BAR.

CONC. PLACEMENT QUANT. – PIER NO. 1		
LOCATION	QUANTITY	
FOOTING	63.0	
COLUMN	23.6	
CAP	45.0	
TOTAL (CU.YDS.)		131.6
ESTIMATED QUANTITIES – PIER NO. 1		
ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE (BRIDGE)	CU.YDS.	131.6
REINFORCING STEEL, EPOXY COATED	LBS.	8,174
REINFORCING STEEL	LBS.	13,026
EXCAVATION, CLASS 21	CU.YDS.	146
HP 10x57 STEEL BEARING PILINGS (33 @ 55')	LIN. FT.	1,815

REINFORCING BAR LIST – PIER NO. 2					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
Δ 11a1	CAP, LONGITUDINAL, TOP	—	20	41'-8	4,428
Δ 6a3	CAP, LONGITUDINAL, SIDES	—	8	41'-8	501
Δ 6a4	CAP, LONGITUDINAL, SIDES	—	2	36'-3	109
Δ 6a5	CAP, LONGITUDINAL, SIDES	—	2	26'-1	78
Δ 6b1	CAP, LONGITUDINAL, BOTTOM	⌒	4	41'-11	252
Δ 5c1	CAP, HOOPS	⌈	42	18'-7	814
Δ 5c3	CAP, HOOPS, ENDS	⌈	96	VARIES	1,652
Δ 5c4	CAP, TIES	⌈	15	8'-1	126
10d2	COLUMN, VERTICAL, DOWELS	⌒	52	11'-3	2,517
10d3	COLUMN, VERTICAL	—	52	23'-6	5,258
4e1	COLUMN, HOOPS, ENDS	⌈	40	11'-2	298
4e2	COLUMN, HOOPS	⌈	60	17'-3	691
7f1	FOOTING, LONGITUDINAL, TOP	—	14	26'-8	763
7f2	FOOTING, TRANSVERSE, TOP	—	27	13'-8	754
9f3	FOOTING, LONGITUDINAL, BOTTOM	—	28	26'-8	2,539
10f4	FOOTING, TRANSVERSE, BOTTOM	—	36	13'-8	2,118
Δ 5m1	PIER CAP STEP, LONGITUDINAL	—	12	6'-4	79
Δ 5n1	PIER CAP STEP, TRANSVERSE	⌈	16	8'-1	135
Δ EPOXY COATED				EPOXY COATED TOTAL (LBS.)	8,174
				NON-COATED TOTAL (LBS.)	14,938

BENT BAR DETAILS

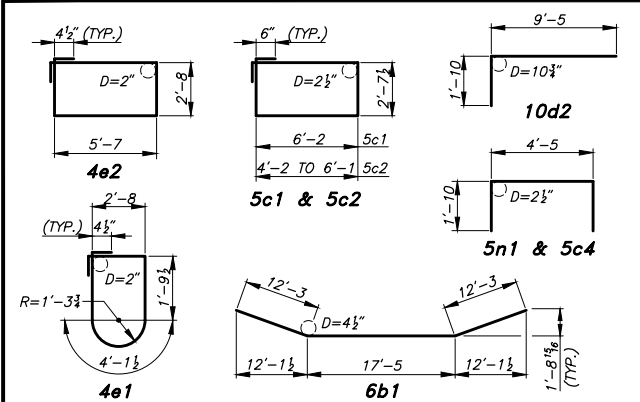


ALL DIMENSIONS ARE OUT TO OUT. D=DIAMETER OF PIN. RADII ARE TO C. BAR.

CONC. PLACEMENT QUANT. – PIER NO. 2		
LOCATION	QUANTITY	
FOOTING	63.0	
COLUMN	36.3	
CAP	44.6	
TOTAL (CU.YDS.)		143.9
ESTIMATED QUANTITIES – PIER NO. 2		
ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE (BRIDGE)	CU.YDS.	143.9
REINFORCING STEEL, EPOXY COATED	LBS.	8,174
REINFORCING STEEL	LBS.	14,938
EXCAVATION, CLASS 21	CU.YDS.	41
HP 10x57 STEEL BEARING PILINGS (33 @ 55')	LIN. FT.	1,815

REINFORCING BAR LIST – PIER NO. 3					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
Δ 11a1	CAP, LONGITUDINAL, TOP	—	20	41'-8	4,428
Δ 6a3	CAP, LONGITUDINAL, SIDES	—	8	41'-8	501
Δ 6a4	CAP, LONGITUDINAL, SIDES	—	2	36'-3	109
Δ 6a5	CAP, LONGITUDINAL, SIDES	—	2	26'-1	78
Δ 6b1	CAP, LONGITUDINAL, BOTTOM	⌒	4	41'-11	252
Δ 5c1	CAP, HOOPS	⌈	42	18'-7	814
Δ 5c3	CAP, HOOPS, ENDS	⌈	96	VARIES	1,652
Δ 5c4	CAP, TIES	⌈	15	8'-1	126
10d1	COLUMN, VERTICAL	—	52	16'-6	3,692
10d2	COLUMN, VERTICAL, DOWELS	⌒	52	11'-3	2,517
4e1	COLUMN, HOOPS, ENDS	⌈	26	11'-2	194
4e2	COLUMN, HOOPS	⌈	39	17'-3	449
7f1	FOOTING, LONGITUDINAL, TOP	—	14	26'-8	763
7f2	FOOTING, TRANSVERSE, TOP	—	27	13'-8	754
9f3	FOOTING, LONGITUDINAL, BOTTOM	—	28	26'-8	2,539
10f4	FOOTING, TRANSVERSE, BOTTOM	—	36	13'-8	2,118
Δ 5m1	PIER CAP STEP, LONGITUDINAL	—	12	6'-4	79
Δ 5n1	STEP, TRANSVERSE	⌈	16	8'-1	135
Δ EPOXY COATED				EPOXY COATED TOTAL (LBS.)	8,174
				NON-COATED TOTAL (LBS.)	13,026

BENT BAR DETAILS



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

CONC. PLACEMENT QUANT. – PIER NO. 3		
LOCATION	QUANTITY	
FOOTING	63.0	
COLUMN	23.6	
CAP	45.0	
TOTAL (CU.YDS.)		131.6
ESTIMATED QUANTITIES – PIER NO. 3		
ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE (BRIDGE)	CU.YDS.	131.6
REINFORCING STEEL, EPOXY COATED	LBS.	8,174
REINFORCING STEEL	LBS.	13,026
EXCAVATION, CLASS 21	CU.YDS.	181
HP 10x57 STEEL BEARING PILINGS (33 @ 55')	LIN. FT.	1,815

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 PIERS 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 METHOD 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.
- "DEVELOPMENTAL SPECIFICATION FOR MASS CONCRETE-CONTROL OF HEAT OF HYDRATION" IS APPLICABLE FOR THE PIER CAP CONCRETE.
- 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 7 FOR ADDITIONAL INFORMATION.

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

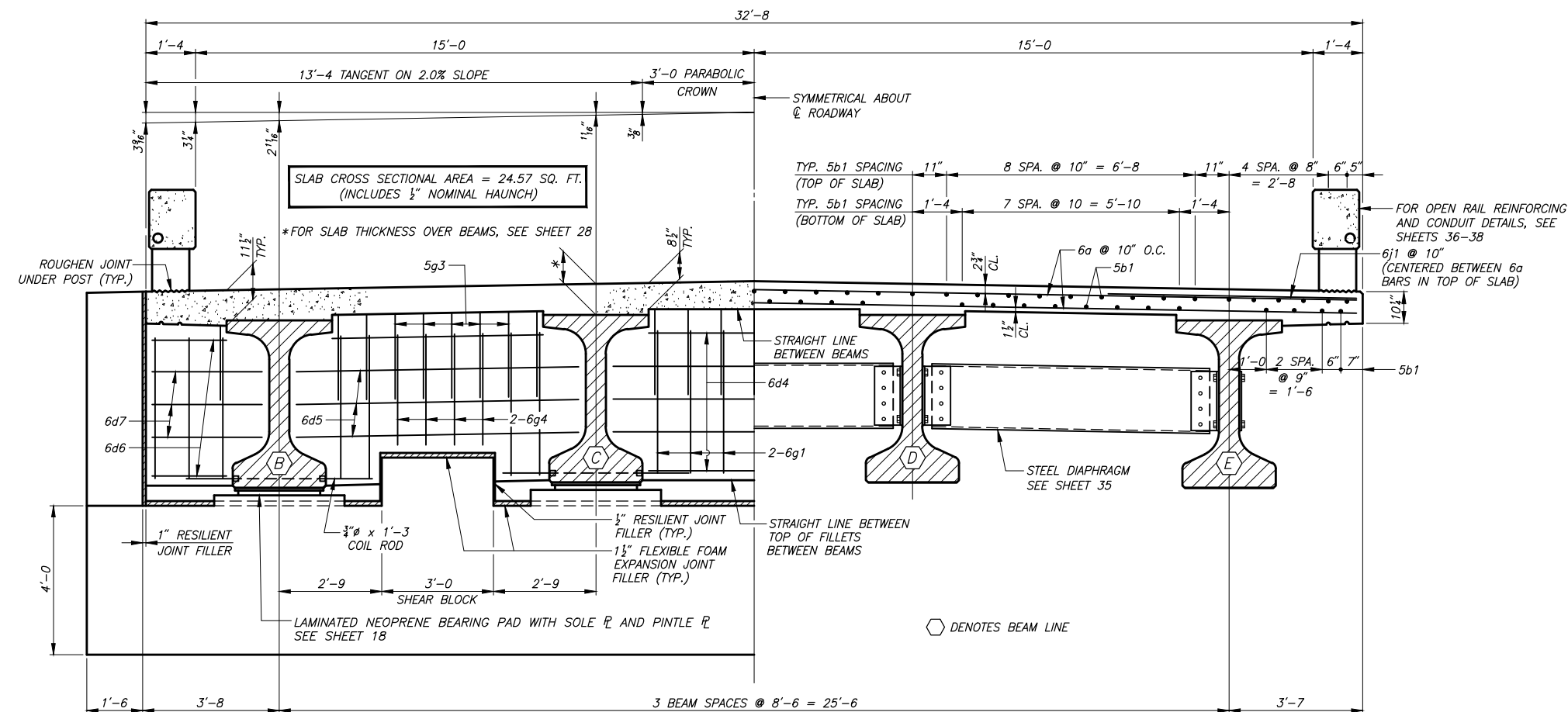
SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

TEE PIERS
137'-0 INTERIOR SPANS

PIER DETAILS

STATION 9+20.00
LYON COUNTY,

45° SKEW, LT. AHEAD
IOWA



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 3/4" 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 (BRIDGE)."

ALL EXPOSED CORNERS OF 90 DEGREES OR SHARPER ARE TO BE FORMED WITH A 3/4" 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.

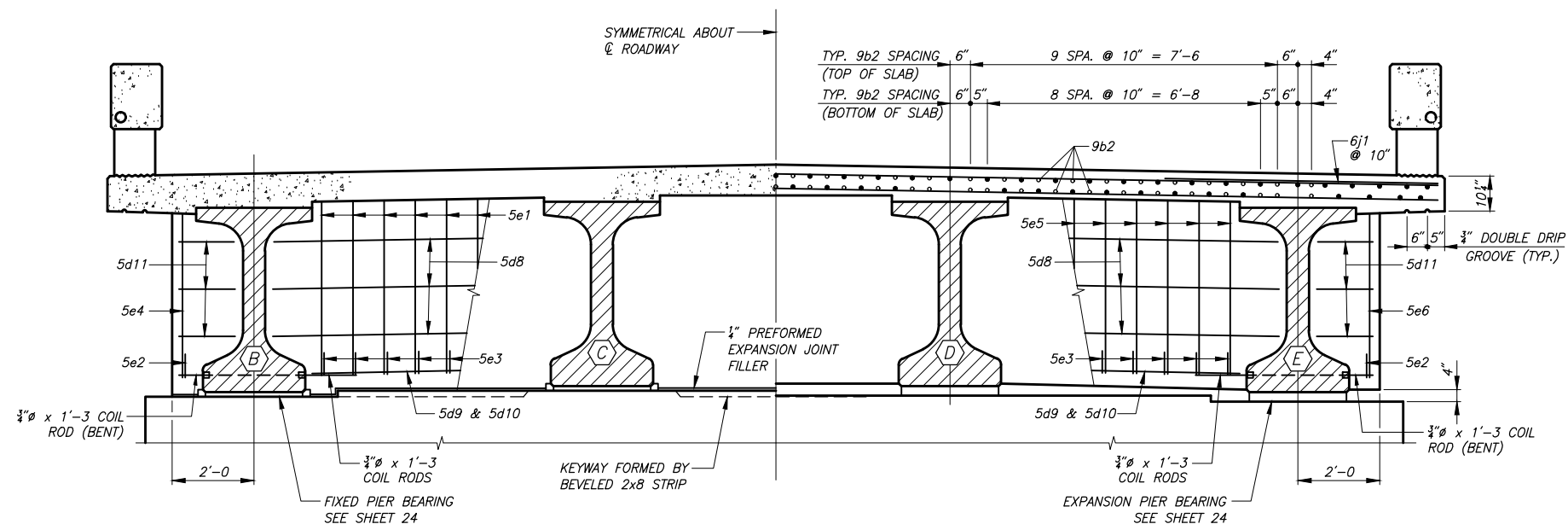
THE TOP MAT OF REINFORCING STEEL IS TO BE PARALLEL AND 2 3/4" CLEAR BELOW TOP OF SLAB. THE BOTTOM MAT OF REINFORCING STEEL IS TO BE PARALLEL AND 1 1/2" CLEAR ABOVE BOTTOM OF SLAB. TOP AND BOTTOM REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3'-0" CENTERS LONGITUDINALLY 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, ANCHORED CURVED SOLE PLATES, COIL TIES AND COIL RODS ARE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".



HALF SECTION NEAR FIXED PIER
(PIER NO. 2)

HALF SECTION NEAR EXPANSION PIER
(PIER NOS. 1 & 3)

526'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

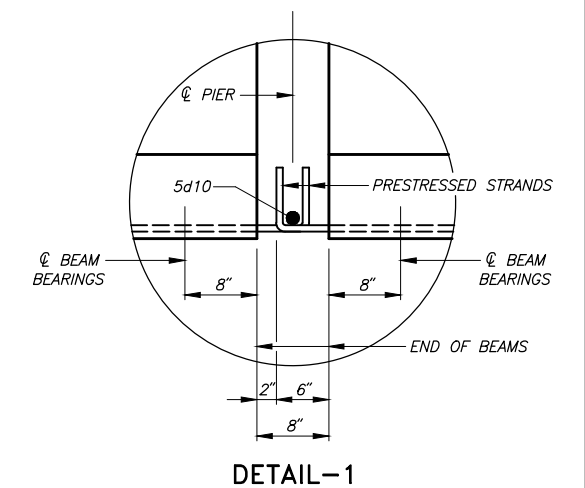
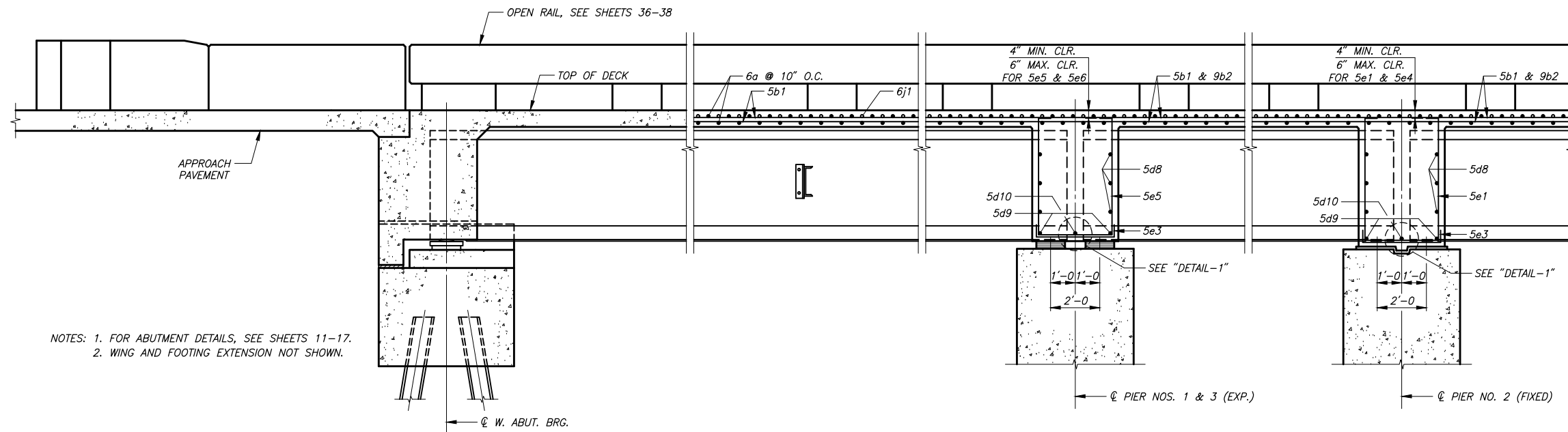
SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

TEE PIERS
137'-0 INTERIOR SPANS

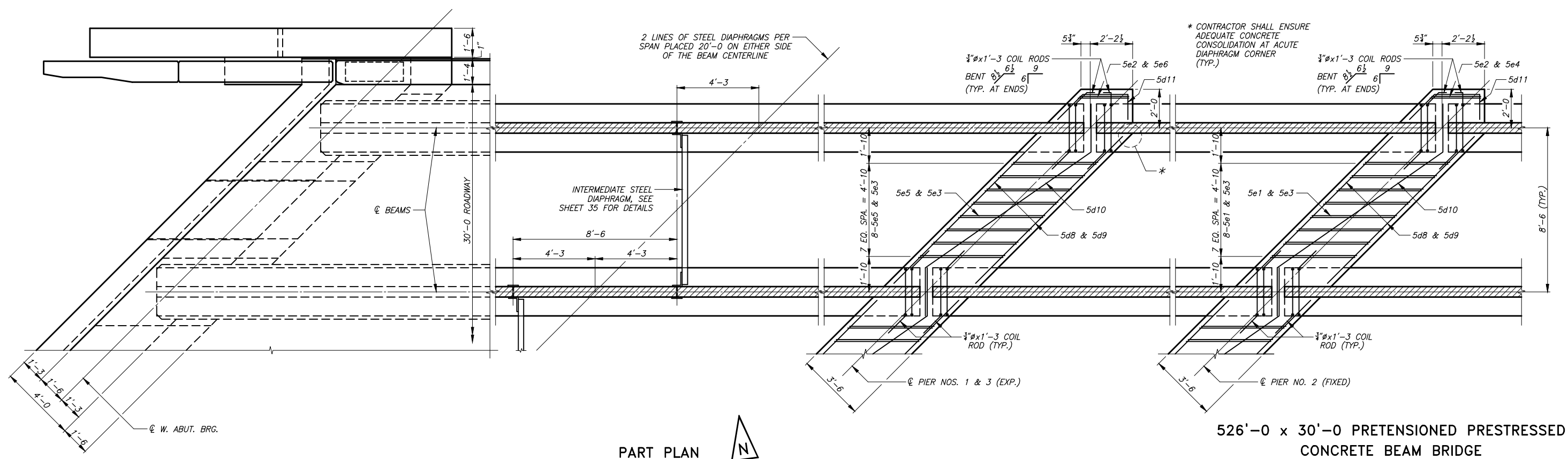
SUPERSTRUCTURE DETAILS

STATION 9+20.00
LYON COUNTY,

45' SKEW, LT. AHEAD
IOWA



LONGITUDINAL SECTION NEAR RAIL



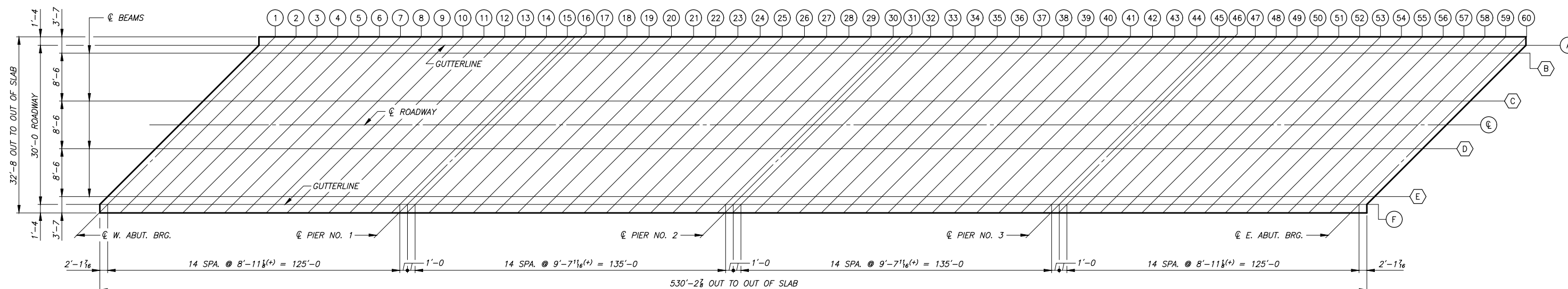
526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS TEE PIERS
126'-0 END SPANS 137'-0 INTERIOR SPANS

SUPERSTRUCTURE DETAILS

STATION 9+20.00 45' SKEW, LT. AHEAD
LYON COUNTY, IOWA

BENCH MARK: CONTROL POINT #10, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 6+41, 15' LT., ELEV.= 1280.92
CONTROL POINT #13, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 11+74, 16' LT., ELEV.= 1281.07



TOP OF SLAB ELEVATIONS

	℄ W. ABUT. BRG.															℄ W. BEARING PIER 1	℄ E. BEARING PIER 1															℄ W. BEARING PIER 2	
LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	LOCATION		
(A)	1281.84	1281.90	1281.95	1282.01	1282.06	1282.11	1282.16	1282.21	1282.25	1282.30	1282.34	1282.37	1282.41	1282.44	1282.48	1282.48	1282.51	1282.54	1282.57	1282.59	1282.61	1282.63	1282.65	1282.66	1282.67	1282.68	1282.68	1282.68	1282.68	1282.68	(A)		
(B)	1281.87	1281.93	1281.99	1282.04	1282.10	1282.15	1282.20	1282.25	1282.29	1282.34	1282.38	1282.42	1282.45	1282.49	1282.52	1282.53	1282.56	1282.59	1282.61	1282.64	1282.66	1282.68	1282.69	1282.71	1282.72	1282.73	1282.73	1282.73	1282.73	1282.73	(B)		
(C)	1281.97	1282.03	1282.09	1282.15	1282.21	1282.26	1282.31	1282.36	1282.41	1282.46	1282.50	1282.54	1282.58	1282.61	1282.65	1282.66	1282.69	1282.72	1282.75	1282.78	1282.80	1282.82	1282.84	1282.85	1282.87	1282.88	1282.89	1282.89	1282.89	1282.89	(C)		
(℄)	1282.00	1282.06	1282.12	1282.18	1282.24	1282.30	1282.35	1282.40	1282.45	1282.49	1282.54	1282.58	1282.62	1282.66	1282.69	1282.70	1282.73	1282.77	1282.80	1282.82	1282.85	1282.87	1282.89	1282.91	1282.92	1282.93	1282.94	1282.95	1282.95	1282.95	(℄)		
(D)	1281.91	1281.97	1282.04	1282.10	1282.15	1282.21	1282.26	1282.32	1282.37	1282.41	1282.46	1282.50	1282.54	1282.58	1282.62	1282.62	1282.66	1282.69	1282.72	1282.75	1282.78	1282.80	1282.82	1282.84	1282.86	1282.87	1282.88	1282.89	1282.89	1282.89	(D)		
(E)	1281.68	1281.75	1281.82	1281.88	1281.94	1282.00	1282.05	1282.11	1282.16	1282.21	1282.25	1282.30	1282.34	1282.38	1282.42	1282.43	1282.47	1282.50	1282.52	1282.57	1282.60	1282.62	1282.64	1282.66	1282.68	1282.70	1282.71	1282.72	1282.73	1282.73	(E)		
(F)	1281.62	1281.68	1281.75	1281.81	1281.87	1281.93	1281.99	1282.04	1282.10	1282.15	1282.19	1282.24	1282.28	1282.32	1282.36	1282.37	1282.41	1282.45	1282.48	1282.51	1282.54	1282.57	1282.59	1282.61	1282.63	1282.64	1282.66	1282.67	1282.68	1282.68	(F)		

	C. E. BEARING PIER 2														C. W. BEARING PIER 3														C. E. BEARING PIER 3														C. E. ABUT. BRG.														
LOCATION	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	LOCATION																										
(A)	1282.68	1282.68	1282.67	1282.66	1282.64	1282.63	1282.61	1282.59	1282.57	1282.54	1282.51	1282.48	1282.45	1282.41	1282.37	1282.36	1282.32	1282.28	1282.24	1282.19	1282.15	1282.10	1282.04	1281.99	1281.93	1281.87	1281.81	1281.75	1281.68	1281.62	(A)																										
(B)	1282.73	1282.73	1282.72	1282.71	1282.70	1282.68	1282.66	1282.64	1282.62	1282.60	1282.57	1282.54	1282.50	1282.47	1282.43	1282.42	1282.38	1282.34	1282.30	1282.25	1282.21	1282.16	1282.11	1282.05	1282.00	1281.94	1281.88	1281.82	1281.75	1281.68	(B)																										
(C)	1282.89	1282.89	1282.89	1282.88	1282.87	1282.86	1282.84	1282.82	1282.80	1282.78	1282.75	1282.72	1282.69	1282.66	1282.62	1282.62	1282.58	1282.54	1282.50	1282.46	1282.41	1282.37	1282.32	1282.26	1282.21	1282.15	1282.10	1282.04	1281.97	1281.91	(C)																										
(D)	1282.95	1282.95	1282.95	1282.94	1282.93	1282.92	1282.91	1282.89	1282.87	1282.85	1282.84	1282.82	1282.80	1282.77	1282.73	1282.70	1282.69	1282.66	1282.62	1282.58	1282.54	1282.49	1282.45	1282.40	1282.35	1282.30	1282.24	1282.18	1282.12	1282.06	1282.00	(D)																									
(E)	1282.89	1282.89	1282.89	1282.89	1282.88	1282.87	1282.85	1282.84	1282.82	1282.80	1282.78	1282.75	1282.72	1282.69	1282.66	1282.65	1282.61	1282.58	1282.54	1282.50	1282.46	1282.41	1282.36	1282.31	1282.26	1282.21	1282.15	1282.09	1282.03	1281.97	(E)																										
(F)	1282.73	1282.73	1282.73	1282.73	1282.73	1282.72	1282.71	1282.69	1282.68	1282.66	1282.64	1282.61	1282.59	1282.56	1282.53	1282.52	1282.49	1282.45	1282.42	1282.38	1282.34	1282.29	1282.25	1282.20	1282.15	1282.10	1282.04	1281.99	1281.93	1281.87	(F)																										
(G)	1282.68	1282.68	1282.68	1282.68	1282.68	1282.67	1282.66	1282.65	1282.63	1282.61	1282.59	1282.57	1282.54	1282.51	1282.48	1282.48	1282.44	1282.41	1282.37	1282.34	1282.30	1282.25	1282.21	1282.16	1282.11	1282.06	1282.01	1281.95	1281.90	1281.84	(G)																										

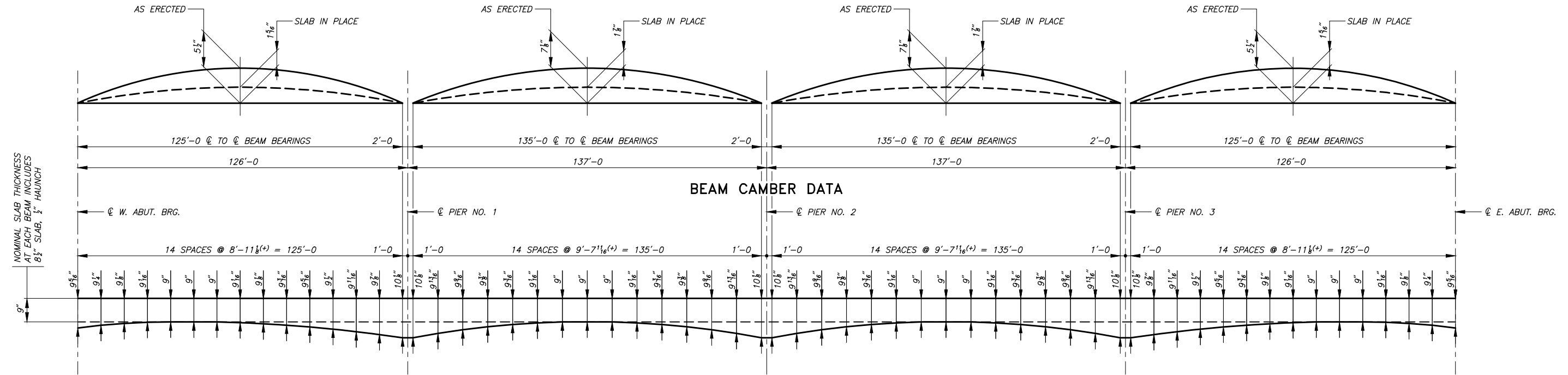
BRIDGE COORDINATES			
LOCATION	NORTH EDGE OF DECK	C.L. APPROACH ROADWAY	SOUTH EDGE OF DECK
WEST ABUTMENT	N = 3938127.31 E = 4200859.31	N = 3938111.45 E = 4200833.52	N = 3938095.5 E = 4200816.7
PIER NO. 1	N = 3938123.69 E = 4200976.26	N = 3938107.83 E = 4200959.47	N = 3938091.9 E = 4200942.6
PIER NO. 2	N = 3938119.76 E = 4201113.20	N = 3938103.90 E = 4201096.41	N = 3938088.0 E = 4201079.6
PIER NO. 3	N = 3938115.83 E = 4201376.09	N = 3938099.97 E = 4201359.30	N = 3938084.1 E = 4201216.5
EAST ABUTMENT	N = 3938112.21 E = 4201376.09	N = 3938096.35 E = 4201359.30	N = 3938080.4 E = 4201342.5

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS	TEE PIERS
126'-0" END SPANS	137'-0" INTERIOR SPANS

SUPERSTRUCTURE DETAILS

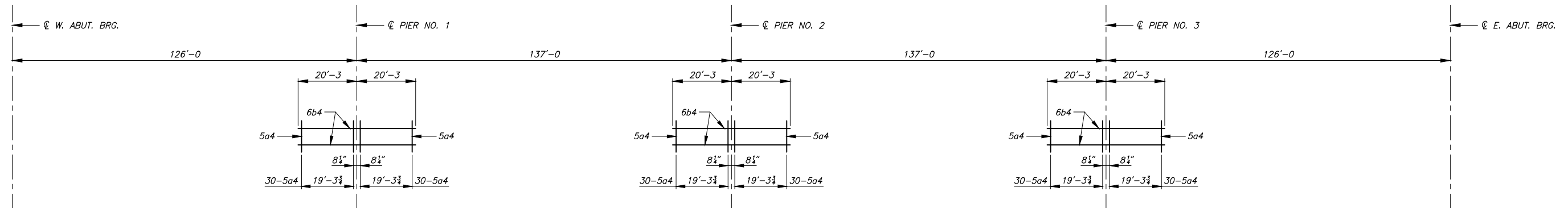
STATION 9+20.00
LYON COUNTY, IOWA



BEAM CAMBER DATA

HAUNCH DIAGRAM AND SLAB THICKNESS AT BEAM (T)

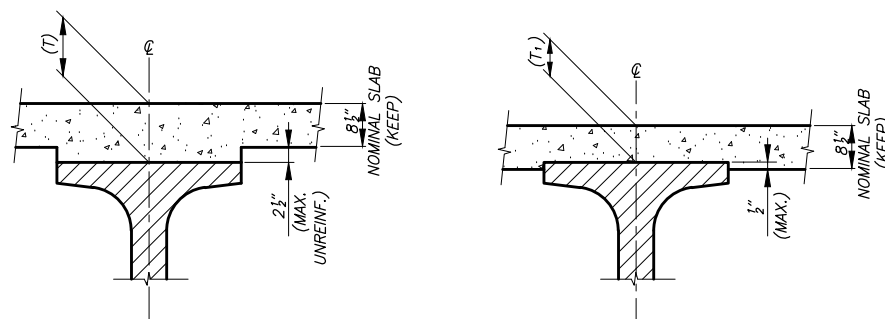
NOTE: HAUNCH THICKNESSES ARE SHOWN FOR ESTIMATING ONLY AND ARE NOT GUARANTEED FOR CONSTRUCTION.



HAUNCH REINFORCING LAYOUT

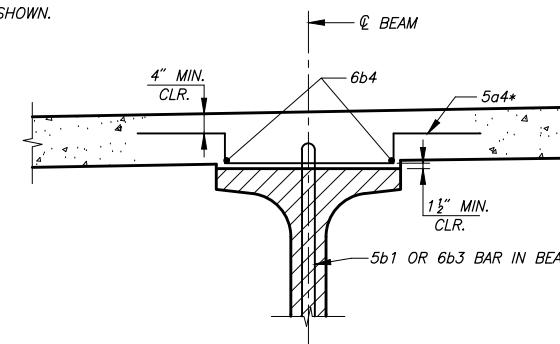
(TYPICAL EACH BEAM)

NOTE: 1-5a4 BAR IS TO BE PLACED ADJACENT TO 5b1 & 6b3 BEAM TIE BARS THAT EXTEND FROM THE BEAMS INTO SLAB IN THE AREA SHOWN.



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 2 1/2" AND IS NOT REINFORCED, THE GRADE LINE IS TO BE REVISED. THE ABOVE DIAGRAMS DO NOT APPLY TO THE CANTILEVERED SLAB SIDE OF THE EXTERIOR BEAM.



SECTION THRU SLAB HAUNCH

NOTE: TYPICAL EACH BEAM LINE WHERE HAUNCH EXCEEDS 2 1/2". SEE "HAUNCH REINFORCING LAYOUT" FOR PLACEMENT LOCATIONS.

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

526'-0" x 30'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

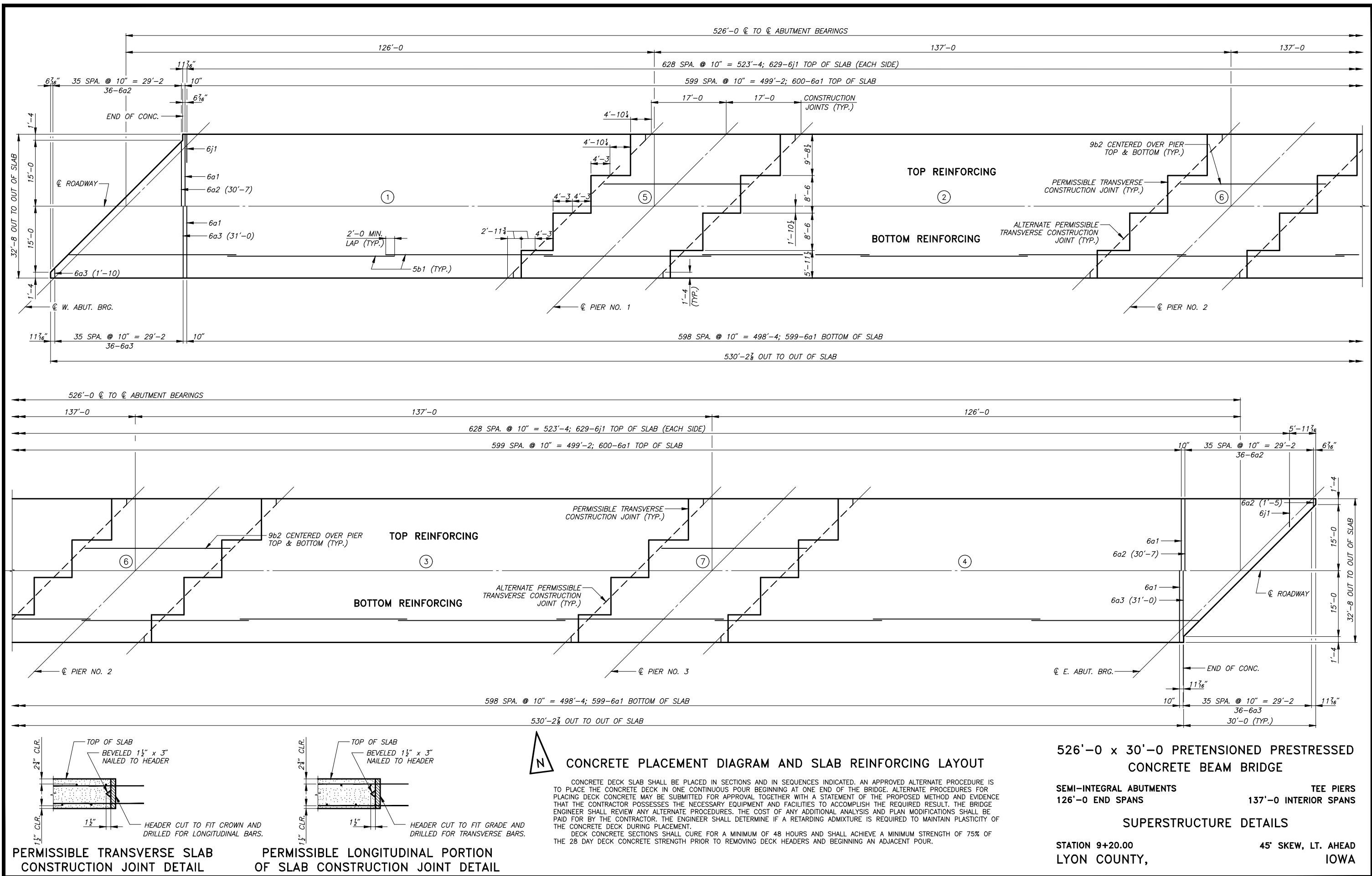
SEMI-INTEGRAL ABUTMENTS
126'-0" END SPANS

TEE PIERS
137'-0" INTERIOR SPANS

SUPERSTRUCTURE DETAILS

STATION 9+20.00
LYON COUNTY,

45' SKEW, LT. AHEAD
IOWA



BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
6a1	SLAB, TRANSVERSE, TOP & BOT.	—	1,199	32'-4	58,228
6a2	SLAB, TRANSVERSE, TOP, ENDS	—	72	VARIES	1,730
6a3	SLAB, TRANSVERSE, BOTTOM, ENDS	—	72	VARIES	1,776
5a4	SLAB, HAUNCH, TRANSVERSE		720	6'-4	4,756
5b1	SLAB, LONGIT., TOP & BOTTOM	—	1,022	39'-9	42,371
9b2	SLAB, LONGIT., OVER PIERS	—	201	33'-8	23,010
6b4	SLAB, HAUNCH, LONGITUDINAL	—	24	40'-6	1,460
6d1	ABUT., DIAPHRAGMS, LONGIT.	—	20	24'-3	728
6d2	ABUT., DIAPHRAGMS, LONGIT.	—	20	8'-0	240
6d3	ABUT., DIAPHRAGMS, LONGIT.	—	10	19'-3	289
6d4	ABUT., DIAPHRAGMS, LONGIT.	—	10	7'-6	113
6d5	ABUT., DIAPHRAGMS, LONGIT.	—	30	10'-9	484
6d6	ABUT., DIAPHRAGMS, LONGIT., ENDS	—	8	2'-1	25
6d7	ABUT., DIAPHRAGMS, LONGIT., ENDS	—	12	3'-8	66
5d8	PIER, DIAPHRAGMS, LONGIT.	—	54	10'-9	605
5d9	PIER, DIAPHRAGMS, LONGIT.	—	18	8'-0	150
5d10	PIER, DIAPHRAGMS, LONGIT.		9	15'-4	144
5d11	PIER, DIAPHRAGMS, ENDS		18	5'-8	106
5e1	PIER, DIAPHRAGMS, HOOPS (FIXED)		24	15'-1	378
5e2	PIER, DIAPHRAGMS, TIES, ENDS		6	3'-6	22
5e3	PIER, DIAPHRAGMS, TIES		72	5'-6	413
5e4	PIER, DIAPH, HOOPS, ENDS (FIXED)		2	13'-1	27
5e5	PIER, DIAPHRAGMS, HOOPS (EXP.)		48	14'-11	747
5e6	PIER, DIAPH., HOOPS, ENDS (EXP.)		4	12'-11	54
6g1	ABUT., DIAPHRAGMS		88	12'-8	1,675
5g2	ABUT., DIAPHRAGMS		76	6'-5	509
5g3	ABUT., DIAPHRAGMS		136	7'-6	1,064
6g4	ABUT., DIAPHRAGMS		32	11'-2	537
6j1	SLAB, TRANSVERSE, TOP AT RAIL	—	1,258	6'-3	11,809
	OPEN RAIL, SEE SHEET 38				30,054

CONCRETE PLACEMENT QUANT. - SUPERSTR.

ESTIMATED QUANTITIES – SUPERSTRUCTURE

ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE (BRIDGE)	CU.YDS.	608.9
REINFORCING STEEL, EPOXY COATED	LBS.	183,570
STRUCTURAL STEEL	LBS.	*10,986
BEAMS, PRETENSIONED PRESTRESSED CONC., BTD125	EACH	8
BEAMS, PRETENSIONED PRESTRESSED CONC., BTD135	EACH	8

6g1 & 6g4

5g2

5g3

5e2 & 5e3

5d10

5a4

5d11

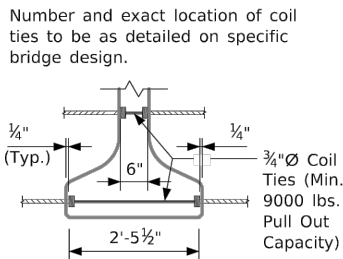
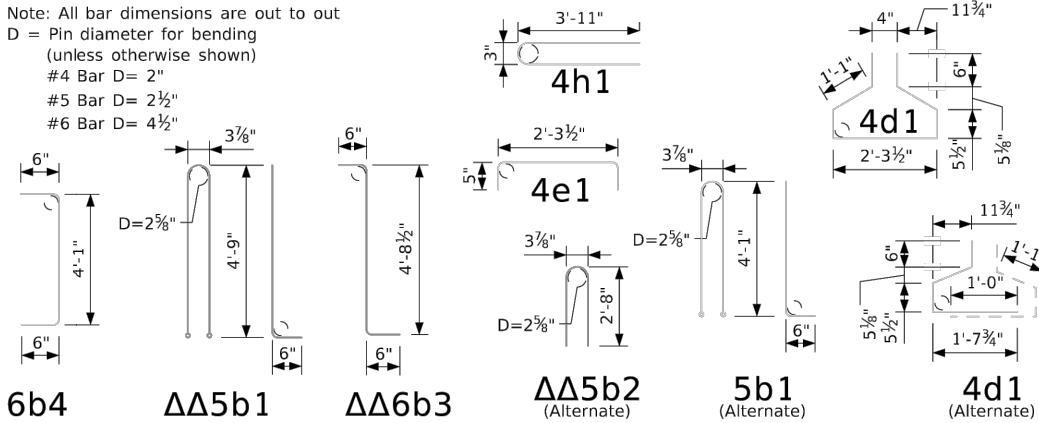
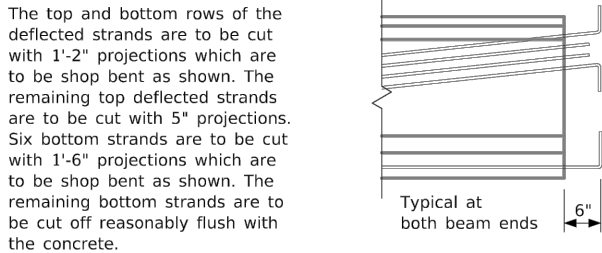
5e1, 5e4, 5e5 & 5e6

6d1, 6d2, 6d6 & 6d7

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

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

SHEET 30 OF 44

[illegible]

BTD Beam	Span Length ℓ-℄ Bearing	Overall Beam Length (L)	Concrete Strength		Strand Size Dia. (in.)	Number of Strands		Total Initial Prestress (kips) ③	Hold Down Force (kips)	Camber (in.) ⑤		Deflection (in.) Δ ₀		Permissible Maximum Spacing	Weight (tons)	Concrete (cu. yd.)	Reinforcing Steel (weight lb.)	
						Straight	Deflected					Immediate ① (elastic) Δ _i	Time ② (plastic) Δ _T					
			f'ci (ksi.)	f'c (ksi.)						At Release	After Losses			Steel Diaphragm				Steel Diaphragm
			Steel Diaphragm															
BTD50	50'-0"	51'-4"	4.50	5.00	0.60"	12	—	510	—	0.24"	0.45"	0.12"	0.03"	9'-3"	20.0	9.9	1585	
BTD55	55'-0"	56'-4"	4.50	5.00	0.60"	14	—	596	—	0.34"	0.63"	0.18"	0.04"	9'-3"	22.0	10.8	1696	
BTD60	60'-0"	61'-4"	4.50	5.00	0.60"	12	2	596	13.6	0.36"	0.67"	0.25"	0.06"	9'-3"	23.9	11.8	1803	
BTD65	65'-0"	66'-4"	4.50	5.00	0.60"	14	2	681	12.6	0.47"	0.87"	0.35"	0.09"	9'-3"	25.9	12.8	1906	
BTD70	70'-0"	71'-4"	4.50	5.00	0.60"	14	2	681	11.3	0.49"	0.91"	0.46"	0.12"	9'-3"	27.8	13.7	2013	
BTD75	75'-0"	76'-4"	5.00	6.00	0.60"	16	2	766	10.5	0.62"	1.14"	0.58"	0.14"	9'-3"	29.8	14.7	2082	
BTD80	80'-0"	81'-4"	5.00	6.00	0.60"	18	2	851	9.9	0.78"	1.44"	0.74"	0.19"	9'-3"	31.7	15.7	2207	
BTD85	85'-0"	86'-4"	5.00	6.00	0.60"	18	4	936	17.9	0.90"	1.66"	0.94"	0.24"	9'-3"	33.7	16.6	2311	
BTD90	90'-0"	91'-4"	5.50	6.50	0.60"	20	4	1021	17.7	1.03"	1.91"	1.15"	0.29"	9'-3"	35.6	17.6	2470	
BTD95	95'-0"	96'-4"	5.50	6.50	0.60"	24	4	1191	16.8	1.38"	2.55"	1.42"	0.36"	9'-3"	37.6	18.6	2570	
BTD100	100'-0"	101'-4"	6.00	7.00	0.60"	26	4	1276	16.0	1.57"	2.86"	1.70"	0.43"	9'-3"	39.5	19.5	2673	
BTD105	105'-0"	106'-4"	6.00	7.00	0.60"	28	6	1446	21.9	1.89"	3.03"	2.06"	0.52"	9'-3"	41.5	20.5	2795	
BTD110	110'-0"	111'-4"	6.50	7.50	0.60"	30	6	1531	20.9	2.34"	3.74"	2.43"	0.61"	9'-3"	43.4	21.4	2976	
BTD115	115'-0"	116'-4"	7.00	8.00	0.60"	34	6	1701	20.3	2.75"	4.40"	2.83"	0.71"	9'-3"	45.4	22.4	3130	
BTD120	120'-0"	121'-4"	7.00	8.00	0.60"	36	8	1872	24.4	3.14"	5.03"	3.25"	0.81"	9'-3"	47.3	23.4	3265	
BTD125	125'-0"	126'-4"	7.50	8.50	0.60"	38	10	2042	27.9	3.46"	5.53"	3.86"	0.97"	9'-3"	49.3	24.3	3440	
BTD130	130'-0"	131'-4"	7.50	9.00	0.60"	42	12	2297	30.6	4.04"	6.46"	4.43"	1.11"	9'-3"	51.2	25.3	3543	

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.



TOP VIEW AT PIER

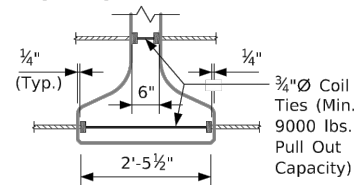
Section A-A
(Alternate)

Beam Section Properties

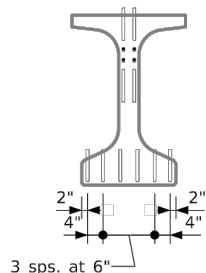


- 45° SKEW, LT. AHEAD
IOWA

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

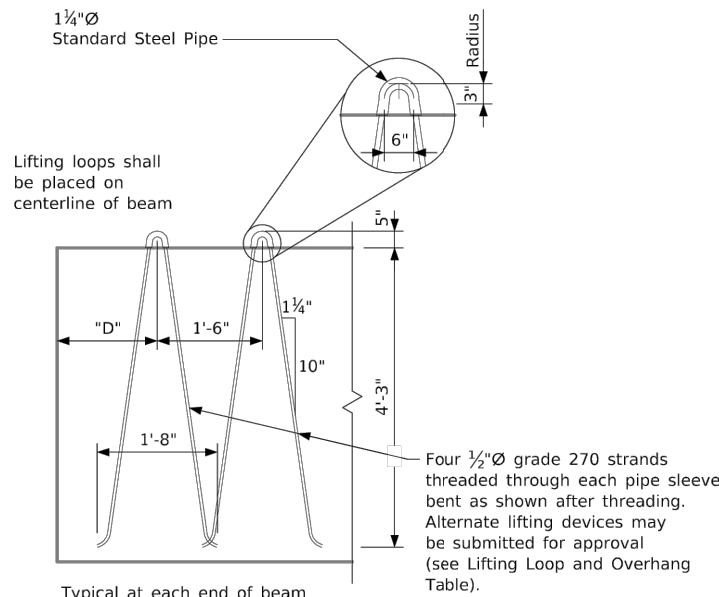
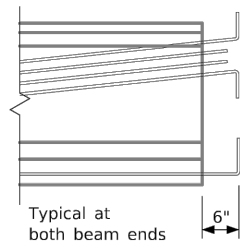


Coil Tie Detail



Strand Projection at Beam Ends When Embedded in Concrete End Diaphragm

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.



Lifting Loop Detail

Lifting Loop and Overhang Table

Beams	Lifting Loops Each End	# of Strands Per Loop	D	Beam Overhang (ft.)
BTD135	2	4	9'-3"	16

Lifting loops shall carry loads equally.

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

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.

Reinforcing Bar List				Bent Bar Details	
Beam		BTD135			
Bar	Shape	No.	Length		
5a1		12	33'-2"		
5a2		12	40'-0"		
5b1		111	10'-8"		
6b3		40	5'-9"		
6b4		24	5'-1"		
4c1		179	2'-7"		
4d1		132	6'-5"		
4e1		28	3'-2"		
4h1		6	8'-0"		
				6b4	ΔΔ5b1
				ΔΔ6b3	ΔΔ5b2 (Alternate)
				5b1 (Alternate)	4d1 (Alternate)

BTD135 Beam Data																	
BTD Beam	Span Length ℄-℄ Bearing	Overall Beam Length (L)	Concrete Strength		Strand Size Dia. (in.)	Number of Strands		③ Total Initial Prestress (kips)	Hold Down Force (kips)	Camber (in.) ④		Deflection (in.) Δ _D		Permissible Maximum Spacing	Weight (tons)	Concrete (cu. yd.)	Reinforcing Steel (weight lb.)
			f'ci (ksi.)	f'c (ksi.)		Straight	Deflected			At Release	After Losses	Immediate ① (elastic) Δ _i	Time ② (plastic) Δ _T				
													HL-93 Loading				
														Steel Diaphragm			
⑤ BTD135	135'-0"	136'-4"	8.00	9.50	0.60"	46	12	2467	29.5	4.46"	7.14"	5.00"	1.25"	9'-0½"	53.2	26.2	3645

- 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:
1.01 kips/ft. for 9'-0 1/2" beam spacing and two steel diaphragms, (0.500 kips) placed 20'-0", on either side, of the beam ℄. For different deck and diaphragm 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) Δ_D=Δ_i +Δ_T for simple span.
(B) Δ_D=Δ_i + 3/4Δ_T for end spans of continuous bridge.
(C) Δ_D=Δ_i + 1/2Δ_T for interior spans of contiuous bridge.
- ③ Total initial prestress is based on 72.6% f's, f's= 270 ksi. and As= 0.217 in.².
- ④ Calculated design cambers are based on multipliers developed from research in Iowa.
- ⑤ Includes partial length debonded strands, see Beam Sheet for locations and details.

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 BTD135 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.

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 BTD 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.

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).

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 supplemental 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.

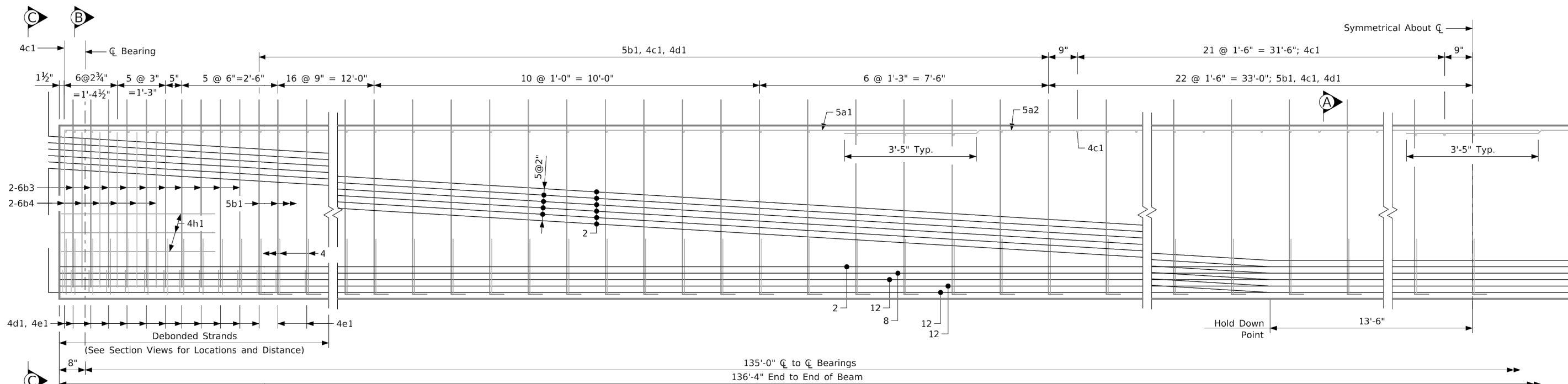
IDOT STANDARD SHEET 4748S1
DATE: 10-2024

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

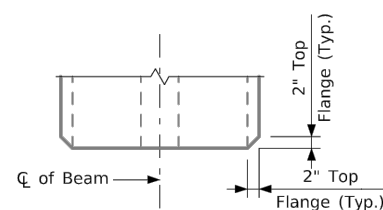
SEMI-INTEGRAL ABUTMENTS TEE PIERS
126'-0 END SPANS 137'-0 INTERIOR SPANS

BEAM DETAILS

STATION 9+20.00 45' SKEW, LT. AHEAD
LYON COUNTY, IOWA

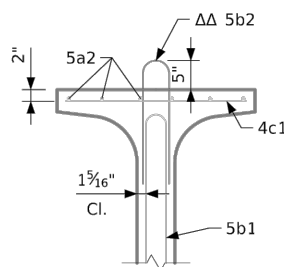


BTD135



Top View

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



Section A-A (Alternate)

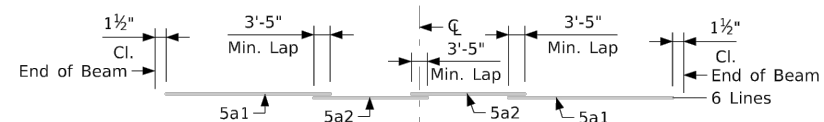
See Alternate Bar Note on Standard Sheet 4748s1.

$$\text{Area} = 748.8 \text{ in.}^2$$

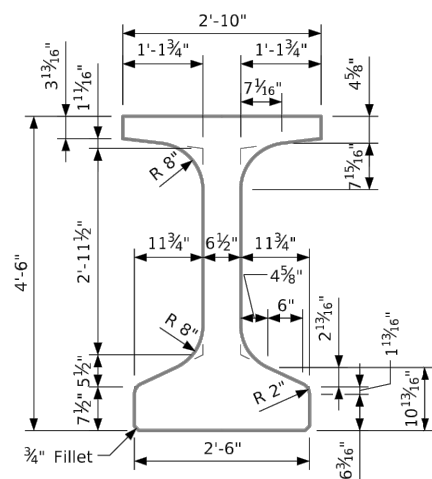
$$\bar{y}_b = 24.64 \text{ in.}$$

$$I = 285,860 \text{ in.}^4$$

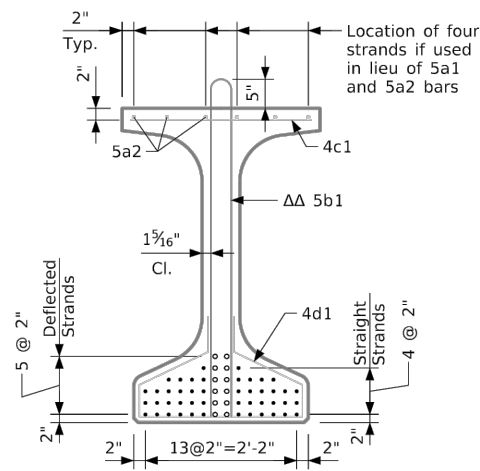
Beam Section Properties



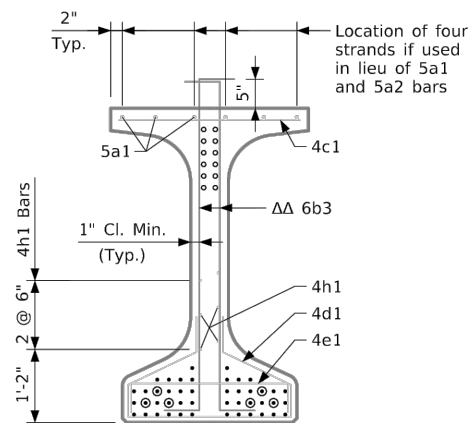
Top Flange Longitudinal Bar Layout



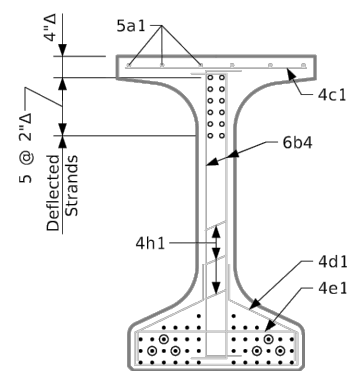
BTD Beam Cross Section



Section A-A



Section B-B



View C-C

- Deflected Strands
- Δ Dimensions at End of Beam
- $\Delta\Delta$ Epoxy Coated Bars
- ⊙ Strands Debonded:
- 3'-0" from Beam Ends - 3rd Row from Bottom
- 6'-0" from Beam Ends - 2nd Row from Bottom

IDOT STANDARD SHEET 4748S2 DATE: 04-2026

526'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

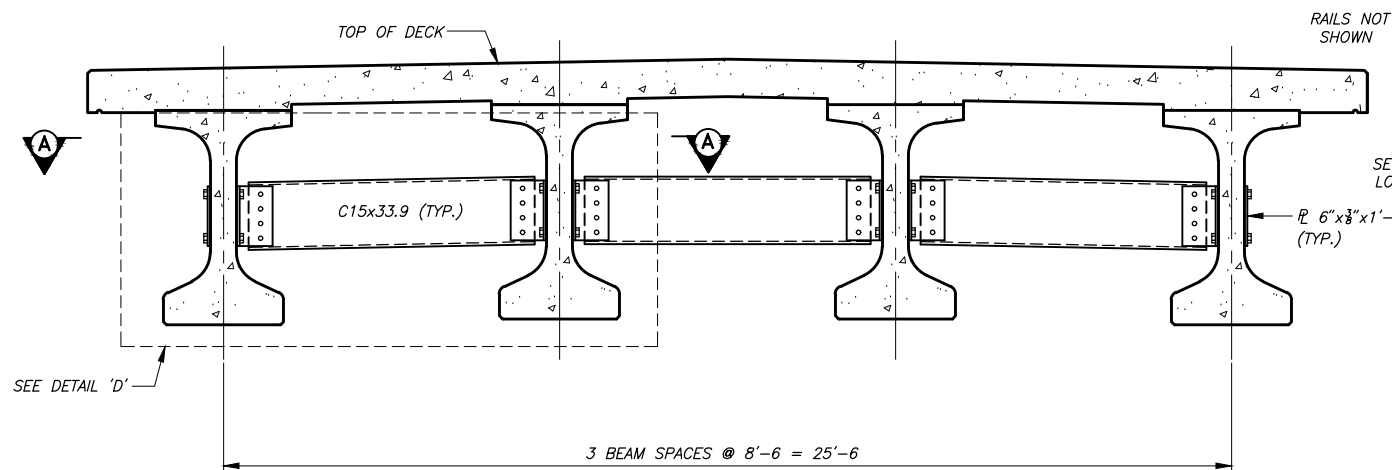
SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

TEE PIERS
137'-0 INTERIOR SPANS

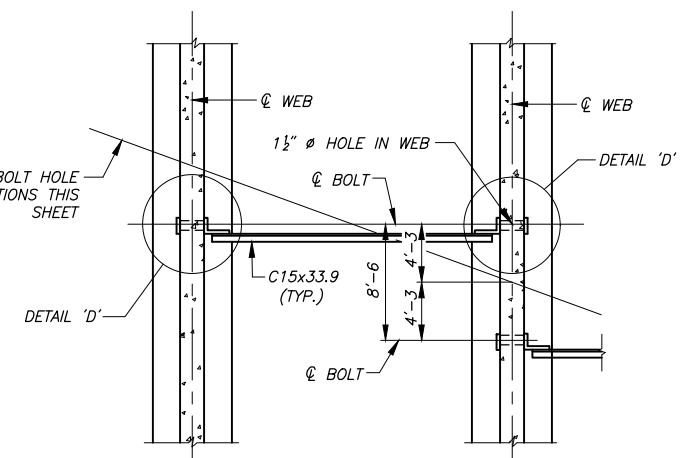
BEAM DETAILS

STATION 9+20.00
LYON COUNTY,

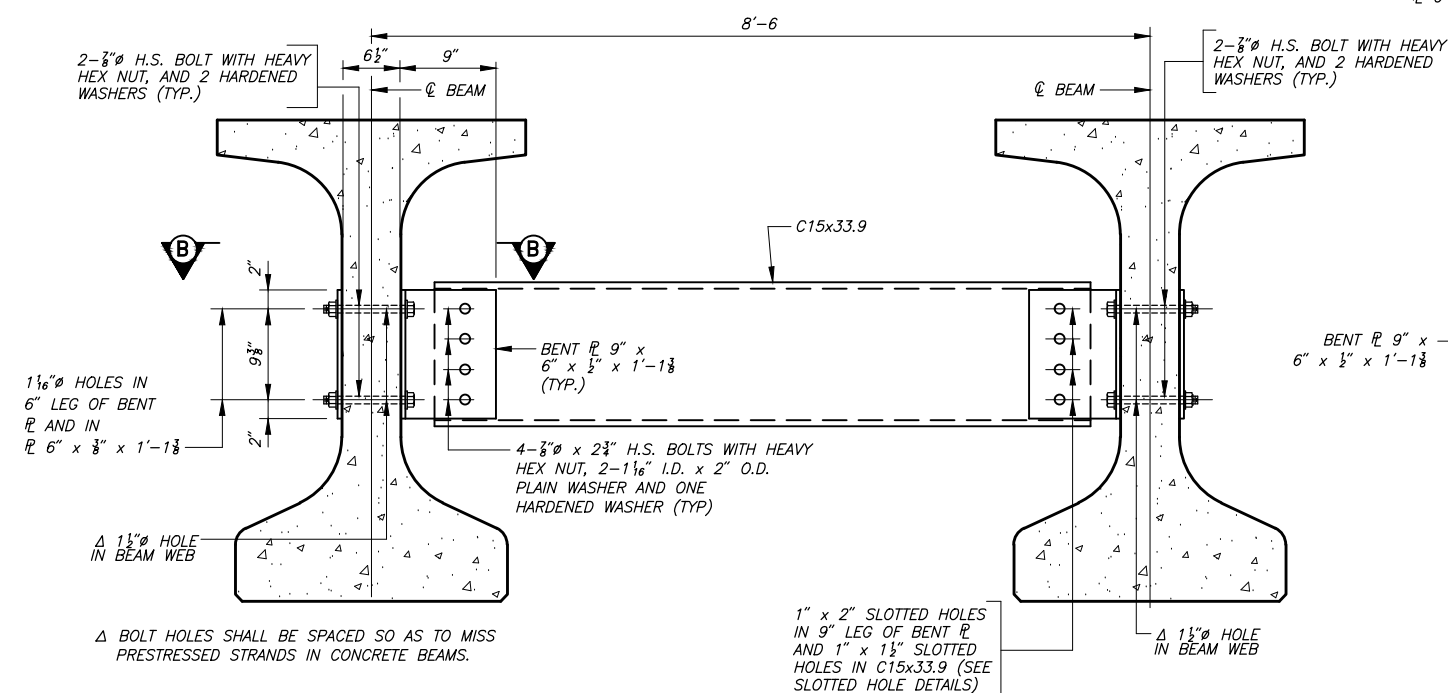
45' SKEW, LT. AHEAD
IOWA



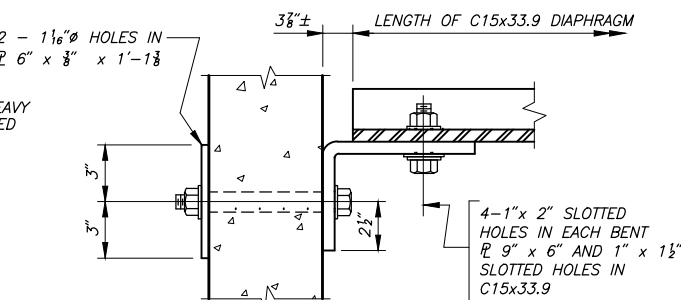
SECTION SHOWING INTERMEDIATE DIAPHRAGMS



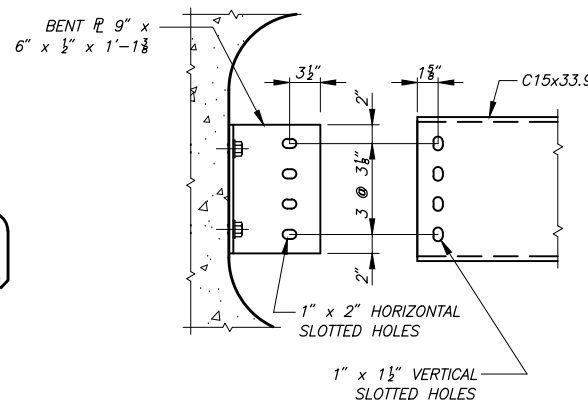
PART SECTION A-A



DETAIL 'D'



SECTION B-B



SLOTTED HOLE DETAILS

BULB TEE "D" BEAM INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL		
ONE BEAM CONNECTION (DETAIL "D")		WEIGHT
	NO. OF BEAM CONNECTIONS	
2-7/8" x 9 1/4" H.S. BOLTS WITH NUTS & WASHERS = 4.8 LBS.	48	230
ONE DETAIL "D"	1 - BACKING PL 6 x 3/8 x 1'-1 1/2" = 8.5 LBS.	48
	1 - BENT PL 9 x 6 x 1/2 x 1'-1 1/2" = 28.5 LBS.	48
		1,368
ONE DIAPHRAGM		
	NUMBER OF DIAPHRAGMS	
8-7/8" x 2 3/4" H.S.BOLTS WITH NUTS & WASHERS = 10.3 LBS.	24	247
	LENGTH OF MEMBER	
1 - C15 x 33.9 = 33.9 LBS/FT.	7'-3 3/4"	24
		5,949
INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL - TOTAL (LBS.)		8,202

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 1 1/2" DIAMETER HOLES FOR THE 7/8" DIAMETER H.S. BOLTS SHALL BE CAST INTO THE WEB. DRILLING IS NOT ALLOWED.

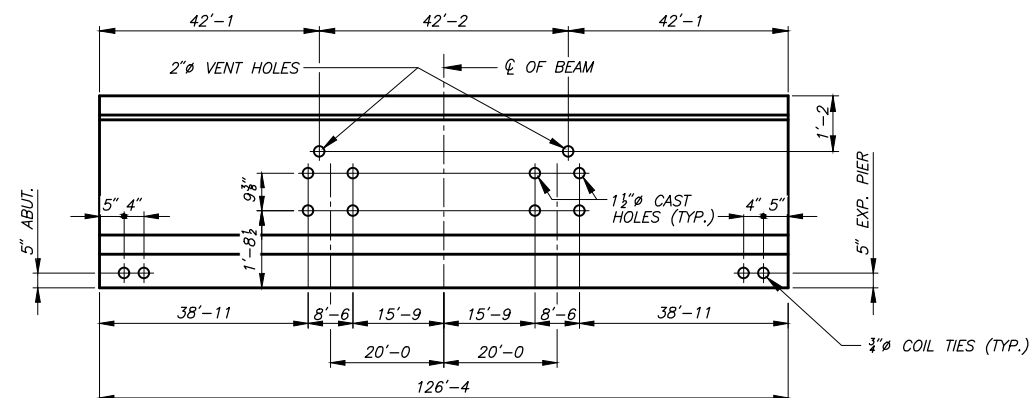
THE 7/8" DIAMETER H.S. BOLTS THROUGH THE WEB SHALL HAVE A THREAD LENGTH OF 3" MIN. AND 4" MAX. AND SHALL MEET THE REQUIREMENTS OF ASTM A449.

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

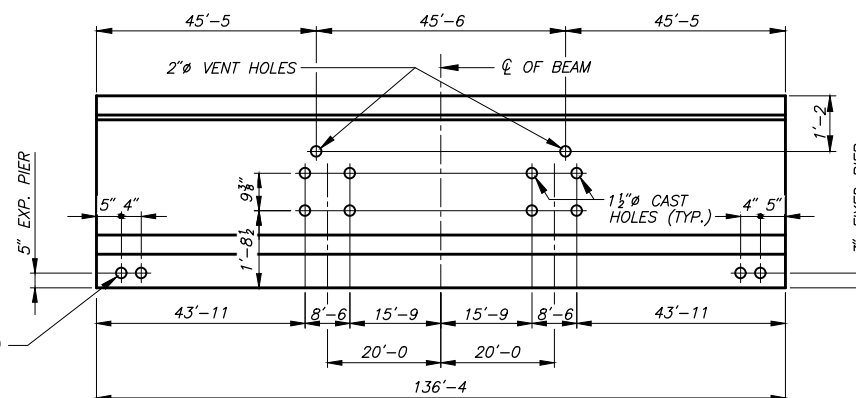
BEAM VENT NOTES

2" DIAMETER HOLES TO BE PROVIDED IN EVERY PRESTRESSED BEAM. 2" DIAMETER HOLES MAY BE PRODUCED WITH A REMOVABLE OR NON-REMOVABLE FORM. THEY MAY BE SHIFTED SLIGHTLY AS NEEDED TO AVOID INTERFERENCE WITH REINFORCING, STRANDS, AND DIAPHRAGM CONNECTIONS.

COSTS FOR VENT HOLES ARE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".



BTD125
(END SPANS)



BTD135
(INT. SPANS)

BEAM COIL TIE, VENT HOLE AND BOLT HOLE LOCATIONS

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

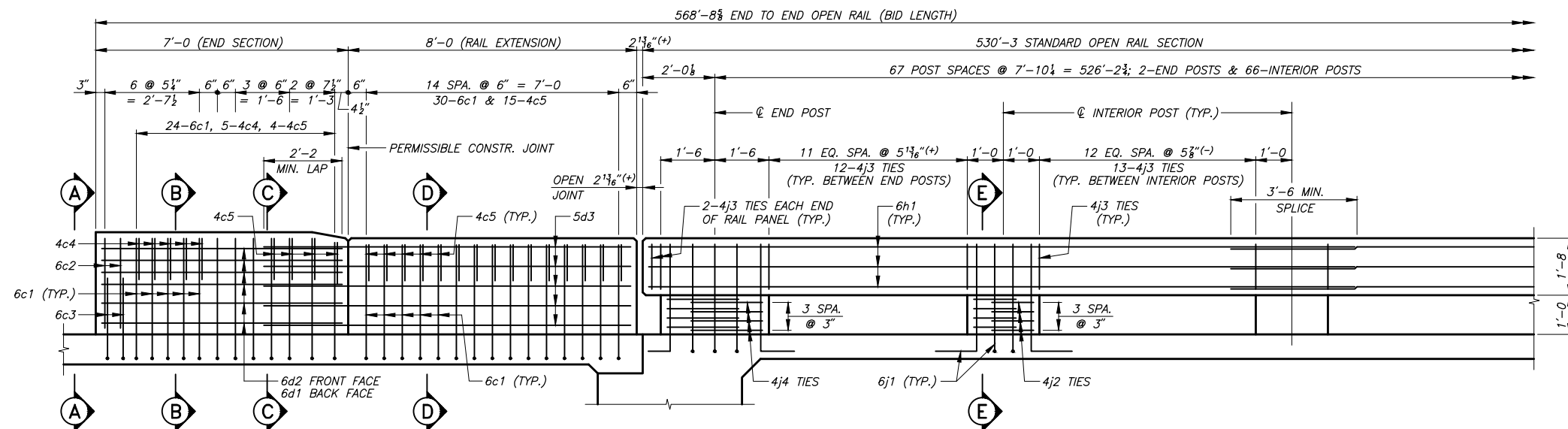
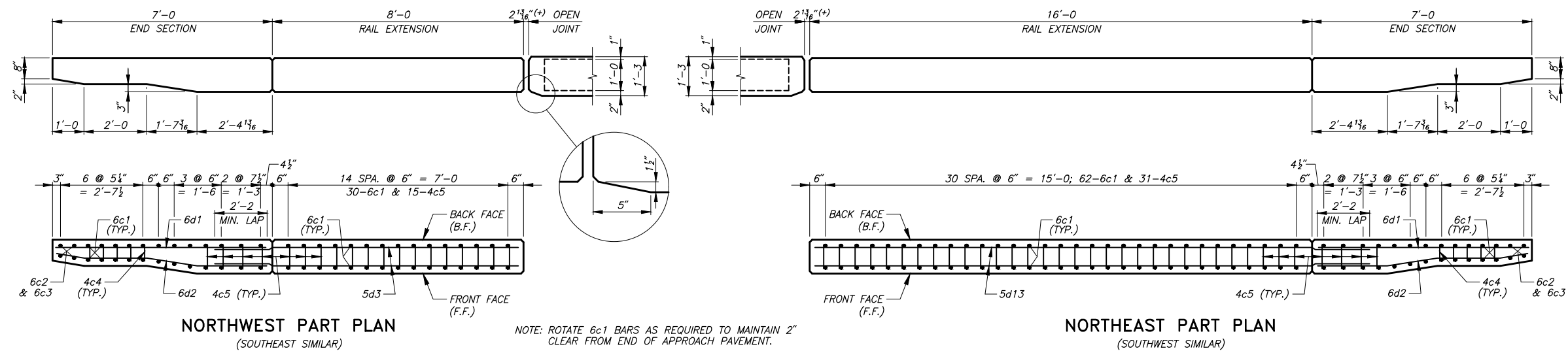
SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

TEE PIERS
137'-0 INTERIOR SPANS

STEEL DIAPHRAGM DETAILS

STATION 9+20.00
LYON COUNTY,

45° SKEW, LT. AHEAD
IOWA



526'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

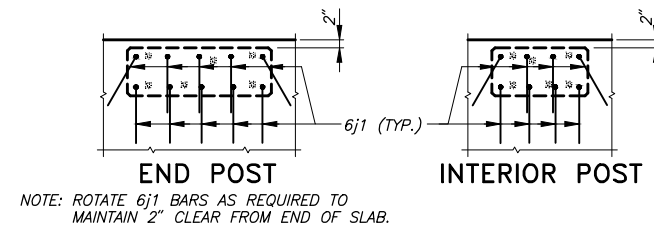
SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

TEE PIERS
137'-0 INTERIOR SPANS

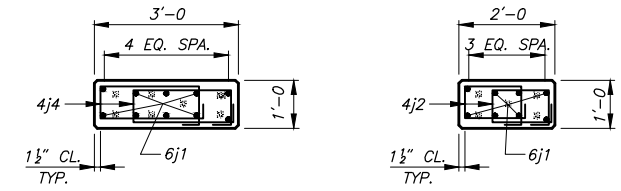
OPEN RAIL (TL-4) & CONDUIT DETAILS

STATION 9+20.00
LYON COUNTY, IOWA

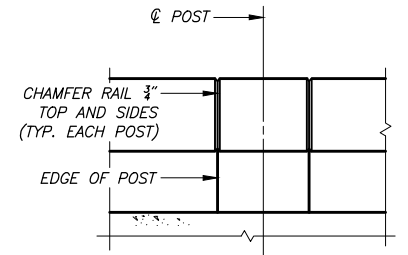
45' SKEW, LT. AHEAD



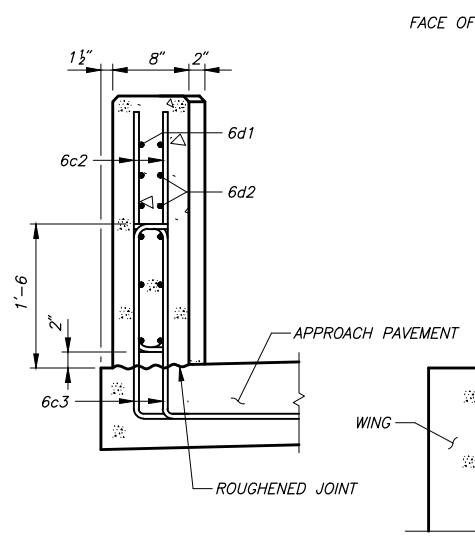
PART PLAN VIEW



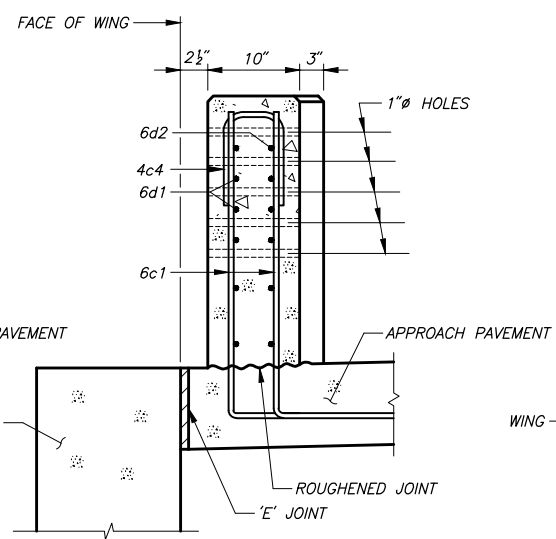
PART PLAN SECTION



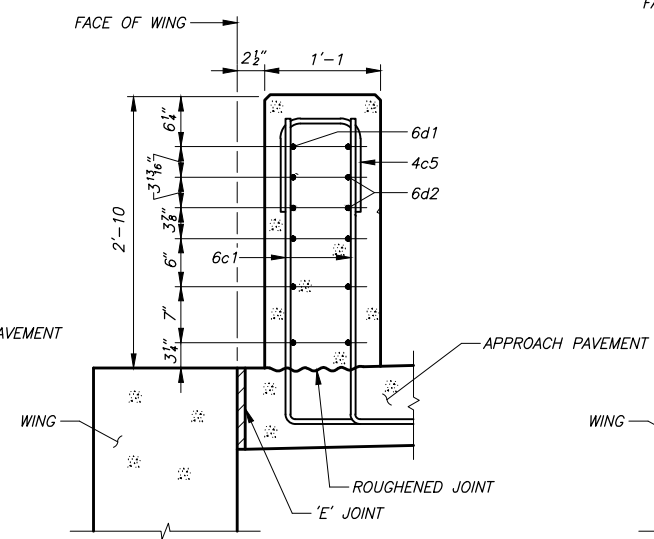
RAIL CHAMFER DETAIL



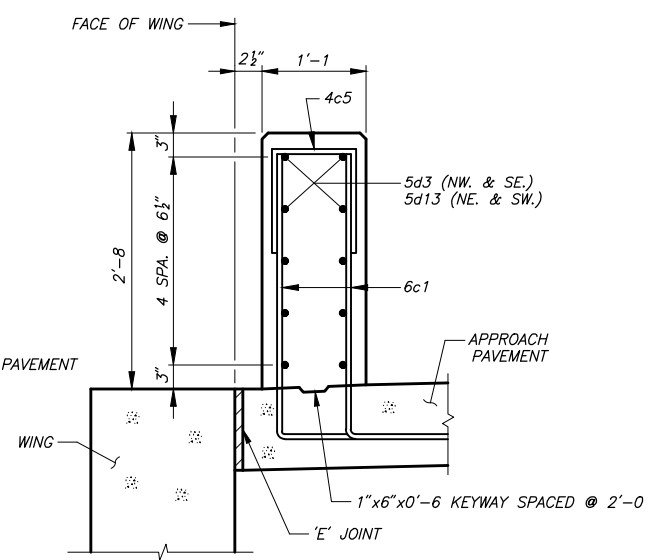
VIEW A-A



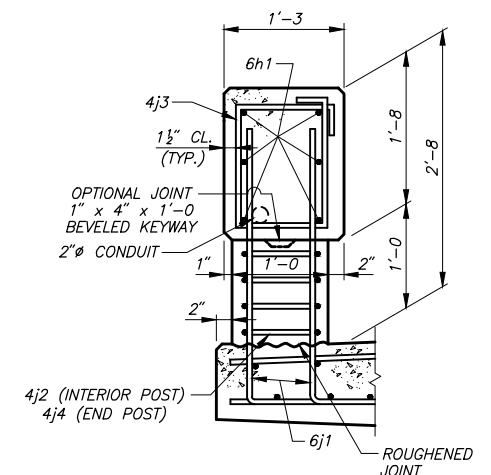
SECTION B-B



SECTION C-C



SECTION D-D



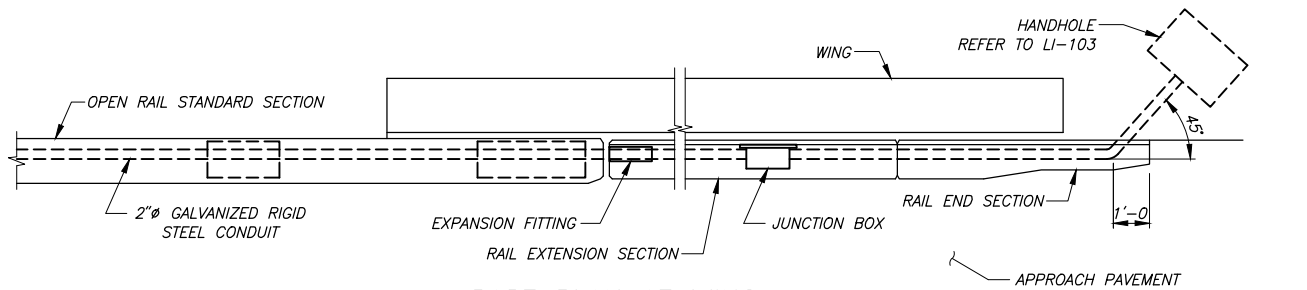
PART SECTION E-E

526'-0" x 30'-0" PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

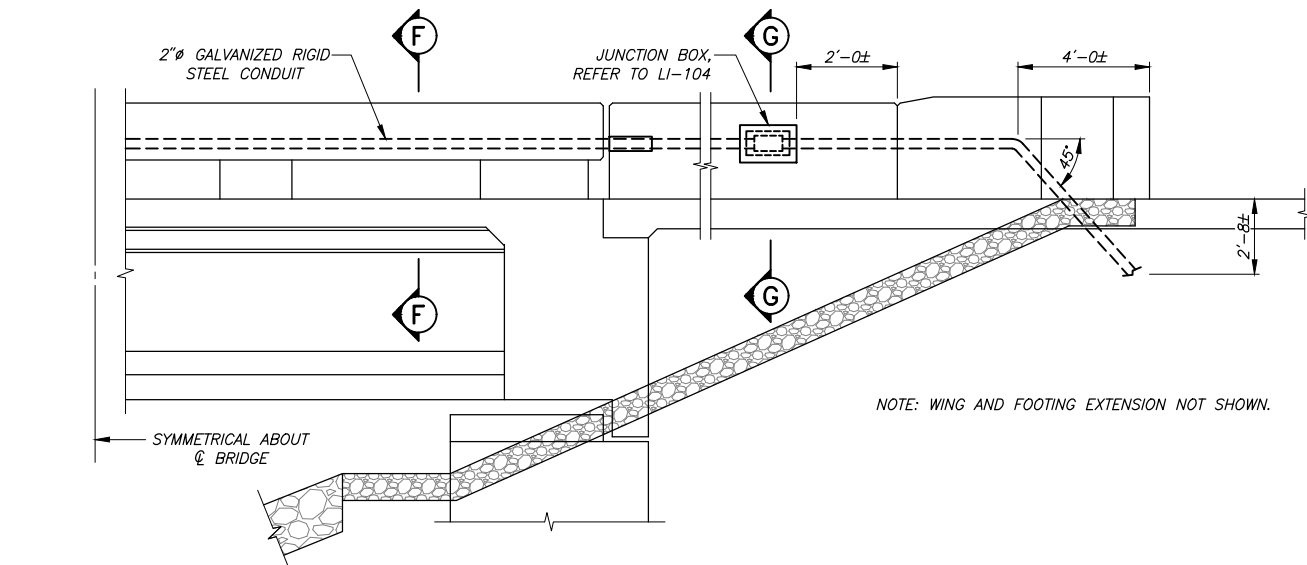
SEMI-INTEGRAL ABUTMENTS 126'-0" END SPANS
TEE PIERS 137'-0" INTERIOR SPANS

OPEN RAIL (TL-4) & CONDUIT DETAILS

STATION 9+20.00 45' SKEW, LT. AHEAD
LYON COUNTY, IOWA

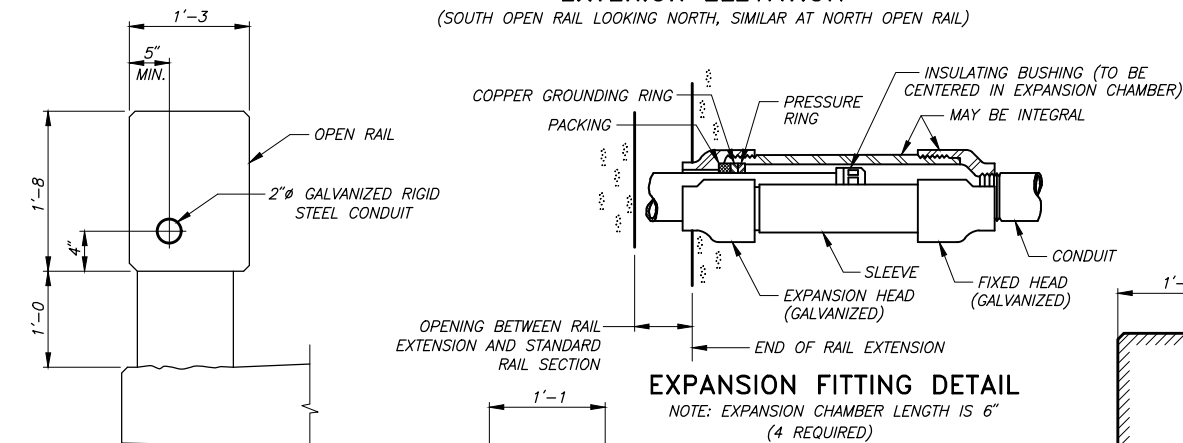


PART PLAN AT WING



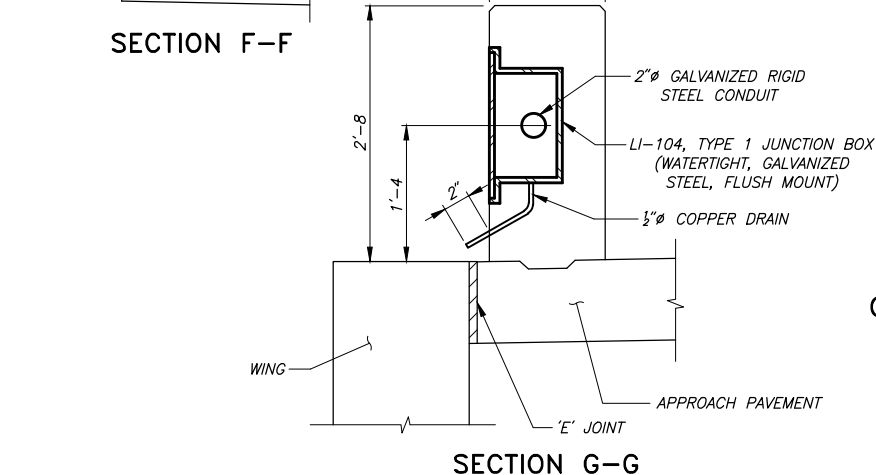
EXTERIOR ELEVATION

(SOUTH OPEN RAIL LOOKING NORTH, SIMILAR AT NORTH OPEN RAIL)



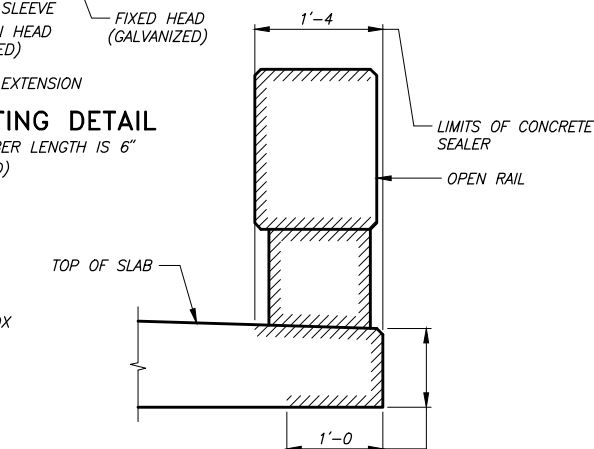
EXPANSION FITTING DETAIL

NOTE: EXPANSION CHAMBER LENGTH IS 6" (4 REQUIRED)



SECTION F-F

SECTION G-G



CONCRETE SEALER LIMITS FOR OPEN RAILS

CONCRETE SEALER SHALL BE APPLIED TO BOTH SIDES OF BRIDGE SLAB ON THE TOP, EDGE OF SLAB AND UNDER SLAB. THE CONCRETE SEALER SHALL ALSO BE APPLIED TO THE OPEN RAIL ON THE TOP, TRAFFIC FACE SIDE, BOTTOM OF RAIL, AND ON ALL SIDES OF THE OPEN RAIL POSTS.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF BRIDGE. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P. 3, OF THE STANDARD SPECIFICATIONS.

CONCRETE PLACEMENT SUMMARY (TWO RAILS)		
SECTION	TOTAL	
STANDARD SECTIONS (2 @ 40.91 C.Y.)	81.8	
INTERIOR POSTS (132 @ 0.074 C.Y.)	9.8	
END POSTS (4 @ 0.111 C.Y.)	0.4	
END SECTIONS (4 @ 0.687 C.Y.)	2.7	
RAIL EXTENSIONS (2 @ 0.856 C.Y. & 2 @ 1.712 C.Y.)	5.1	
TOTAL (C.Y.)		99.8

CONCRETE OPEN RAIL QUANTITIES (TWO RAILS)		
ITEM	UNIT	QUANTITY
CONCRETE OPEN RAILING, TL-4 (2 @ 568.72 L.F.)	L.F.	1,137.4
ELECTRICAL CIRCUITS	L.F.	1,180
JUNCTION BOXES	EACH	4
HANDHOLES	EACH	4

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 3/4" DRESSED AND BEVELED STRIP.

CONSTRUCTION JOINT BETWEEN THE RAIL EXTENSION AND TOP OF APPROACH SLAB SHALL BE BEVELED KEYWAYS AS SHOWN IN THE PLANS. CONSTRUCTION JOINT BETWEEN THE END SECTION AND TOP OF APPROACH SLAB SHALL 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.

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.

THE 6c1 AND 6c3 BARS ARE TO BE PLACED WITH THE APPROACH SLAB.

CONDUIT AND HANDHOLE NOTES

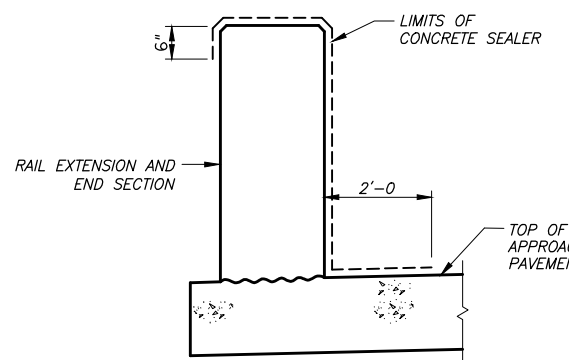
SEE LI-103 AND LI-104 STANDARD ROAD PLANS FOR ADDITIONAL INFORMATION ON HANDHOLES AND JUNCTION BOXES.

CONSTRUCTION SHALL CONFORM TO THE CURRENT IOWA D.O.T. STANDARD AND SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS AND CURRENT SUPPLEMENTAL SPECIFICATIONS FOR HIGHWAY LIGHTING.

CONDUIT INSTALLATION SHALL COMPLY WITH THE ARTICLE "ELECTRICAL DUCTS", SECTION 2523.

ALL "C" ENTRANCE HOLES IN JUNCTION BOXES SHALL BE DRILLED AND TAPPED FOR THE SPECIFIED CONDUIT SIZE. ALL OTHER HOLES SHALL HAVE A CONCRETE - TIGHT SLIP FIT. CONDUIT ENDS SHALL NOT PROTRUDE INTO JUNCTION BOXES MORE THAN 1". DRAIN PIPE END SHALL BE FLUSH WITH INSIDE SURFACE OF BOX. GROUNDING BUTTONS SHALL BE LOCATED APPROXIMATELY 3" FROM THE INSIDE SURFACE OF THE BOX WALL AND NOT CLOSER THAN 3" TO THE EDGE OF ANY HOLE IN THE BOX FLOOR. HOLES FOR DRAIN PIPE SHALL BE PLACED IN THE LOW CORNER OF THE BOX, WITH A MINIMUM CLEARANCE OF 1" BETWEEN THE EDGE OF THE HOLE AND THE INSIDE SURFACE OF THE BOX WALL.

THE GALVANIZED RIGID STEEL CONDUIT, JUNCTION BOXES, HANDHOLES, FITTINGS, EXPANSION FITTINGS, LABOR, AND ANY ADDITIONAL WORK TO DO THE INSTALLATION SHALL BE INCLUDED IN THE PRICE BID FOR "ELECTRICAL CIRCUITS" AND "HANDHOLES AND JUNCTION BOXES". NO CONDUCTORS ARE REQUIRED. PULL ROPE SHALL BE INSTALLED IN THE CONDUIT.



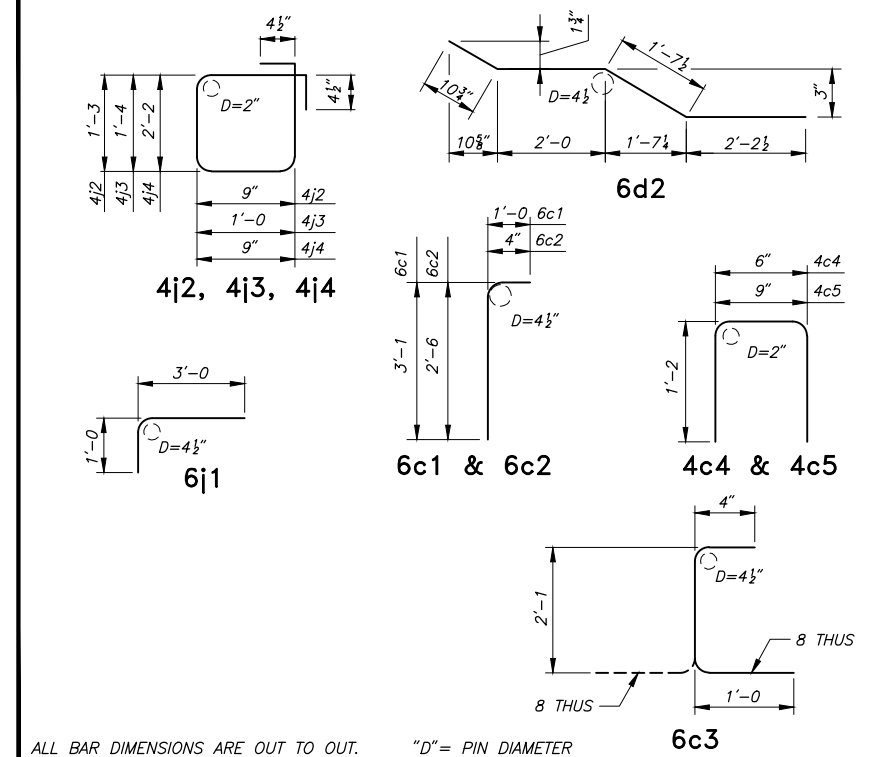
CONCRETE SEALER LIMITS FOR RAIL EXTENSIONS AND END SECTIONS

THE CONCRETE SEALER SHALL BE APPLIED TO THE RAIL EXTENSIONS AND END SECTIONS ON THE TOP, TRAFFIC FACE SIDE, 6 INCHES ONTO THE BACK FACE OF RAIL, AND 2 FT. OF THE APPROACH GUTTERLINE.

THE CONCRETE SEALER LIMITS ARE SHOWN IN THE DETAIL AND SHALL APPLY TO THE FULL LENGTH OF RAIL EXTENSIONS AND END SECTIONS. CONCRETE SEALER SHALL BE APPLIED IN ACCORDANCE WITH ARTICLE 2403.03, P. 3, OF THE STANDARD SPECIFICATIONS.

REINFORCING BAR LIST (TWO OPEN RAILS)						
SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
4 END SECTIONS & RAIL EXTENSIONS	Δ 6c1	VERTICAL, END SECTION & RAIL EXT.	U	280	4'-1	1,717
	Δ 6c2	VERTICAL, END SECTION	U	16	2'-10	68
	Δ 6c3	VERTICAL, END SECTION	U	16	3'-5	82
	Δ 4c4	VERTICAL HOOPS, END SECTION	U	20	2'-10	38
	Δ 4c5	VERT. HOOPS, END SECT. & RAIL EXT.	U	108	3'-1	222
	Δ 6d1	HORIZONTAL, END SECTION B.F.	—	24	6'-8	240
	Δ 6d2	HORIZONTAL, END SECTION F.F.	—	24	6'-9	243
	Δ 5d3	HORIZONTAL, RAIL EXT., BOTH FACES (SE. & NW.)	—	20	10'-2	212
	Δ 5d13	HORIZONTAL, RAIL EXT., BOTH FACES (SW. & NE.)	—	20	18'-2	379
STANDARD SECTION	Δ 6h1	LONGITUDINAL OPEN RAIL	—	180	38'-8	10,455
	Δ 6j1	VERTICAL DOWELS OPEN RAIL	U	1,096	4'-0	6,585
	Δ 4j2	HOOPS INTERIOR POSTS	U	1,056	4'-9	3,351
	Δ 4j3	HOOPS OPEN RAIL	U	1,746	5'-5	6,321
	Δ 4j4	HOOPS END POSTS	U	32	6'-7	141
Δ EPOXY COATED						
INCLUDE WITH SUPERSTRUCTURE REINFORCING						EPOXY COATED TOTAL (LBS.) 30,054

BENT BAR DETAILS



526'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

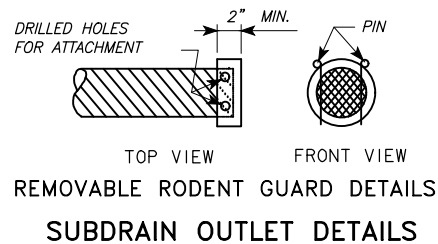
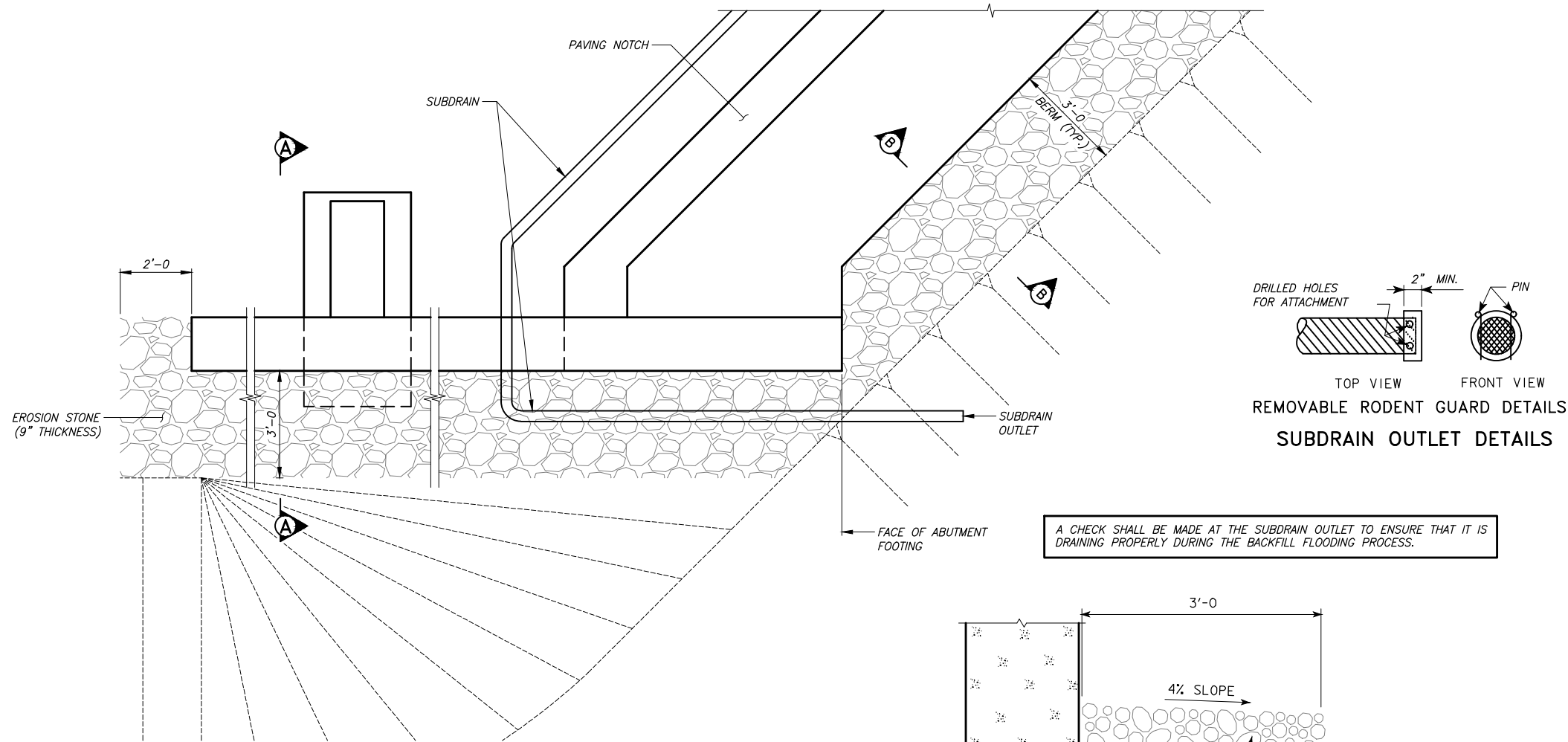
SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

TEE PIERS
137'-0 INTERIOR SPANS

OPEN RAIL (TL-4) & CONDUIT DETAILS

STATION 9+20.00
LYON COUNTY,

45° SKEW, LT. AHEAD
IOWA



A CHECK SHALL BE MADE AT THE SUBDRAIN OUTLET TO ENSURE THAT IT IS DRAINING PROPERLY DURING THE BACKFILL FLOODING PROCESS.

WING ARMORING NOTES

EROSION STONE SHALL BE PLACED ALONG THE SIDE OF THE WING, WINGWALLS AND ABUTMENT FOOTING AS SHOWN IN SECTION A-A AND SECTION B-B. THIS IS TYPICAL AT EACH CORNER OF THE BRIDGE. 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".

SUBDRAIN NOTES

THIS PLAN SHEET SHOWS DETAILS FOR PLACING SUBDRAINS AND SUBDRAIN OUTLETS REQUIRED FOR THIS STRUCTURE.

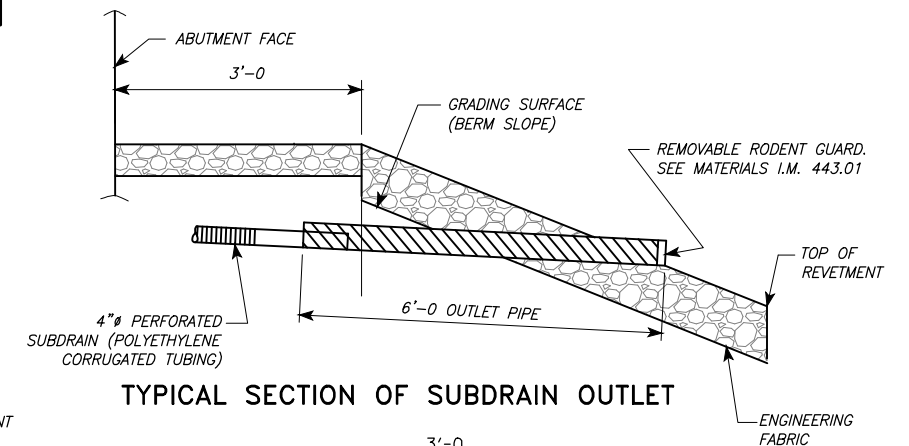
THE SUBDRAINS SHALL BE 4" IN DIAMETER AND SHALL BE IN ACCORDANCE WITH ARTICLE 4143.01, B, OF THE STANDARD SPECIFICATIONS.

THE SUBDRAIN OUTLET SHALL CONSIST OF A LENGTH OF PIPE WITH A REMOVABLE RODENT GUARD AS DETAILED ON THIS SHEET. THE LENGTH OF THE OUTLET PIPE SHALL BE DETERMINED BY THE REVETMENT AND ITS PLACEMENT LOCATION. THE CONTRACTOR IS TO ENSURE THE OUTLET PIPE IS ADEQUATELY STRONG ENOUGH AND WILL NOT BE DAMAGED WHEN REVETMENT IS PLACED. A CHECK WILL BE MADE AT THE SUBDRAIN OUTLET TO ENSURE THAT THE SUBDRAIN IS NOT DAMAGED AND IS DRAINING PROPERLY DURING THE BACKFILL FLOODING PROCESS. IF A METAL OUTLET IS USED, IT SHALL BE 6 INCHES IN DIAMETER AND COUPLED TO THE 4 INCH DIAMETER SUBDRAIN IN ONE OF THE TWO FOLLOWING WAYS.

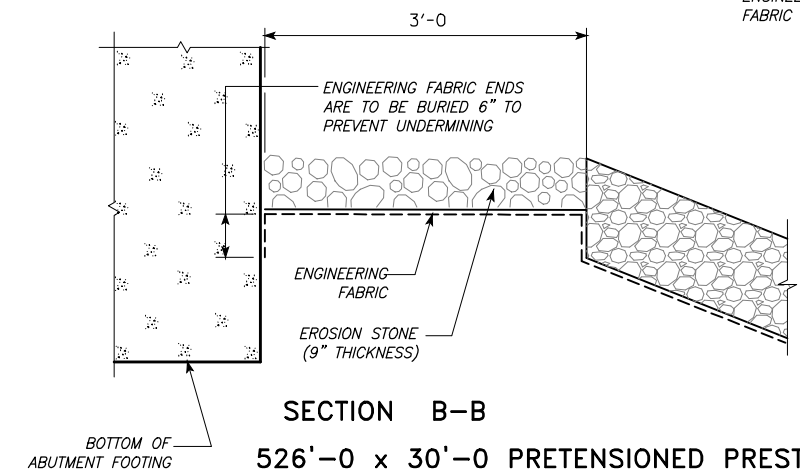
1. USE AN INSIDE FIT REDUCER COUPLER (COUPLER MUST BE INSERTED A MINIMUM OF 1'-0 INTO THE METAL OUTLET PIPE).
2. INSERT 1'-0 OF THE 4"Ø SUBDRAIN INTO THE 6"Ø METAL OUTLET PIPE, THEN FULLY SEAL THE ENTIRE OPENING WITH GROUT.

THE COST OF FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION) AND SUBDRAIN OUTLET IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)". NO EXTRA PAYMENT WILL BE MADE.

SEE SITUATION PLAN, SHEETS 4 AND 5, FOR SUBDRAIN OUTLET ELEVATIONS.



SECTION B-B



SECTION B-B

526'-0 x 30'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

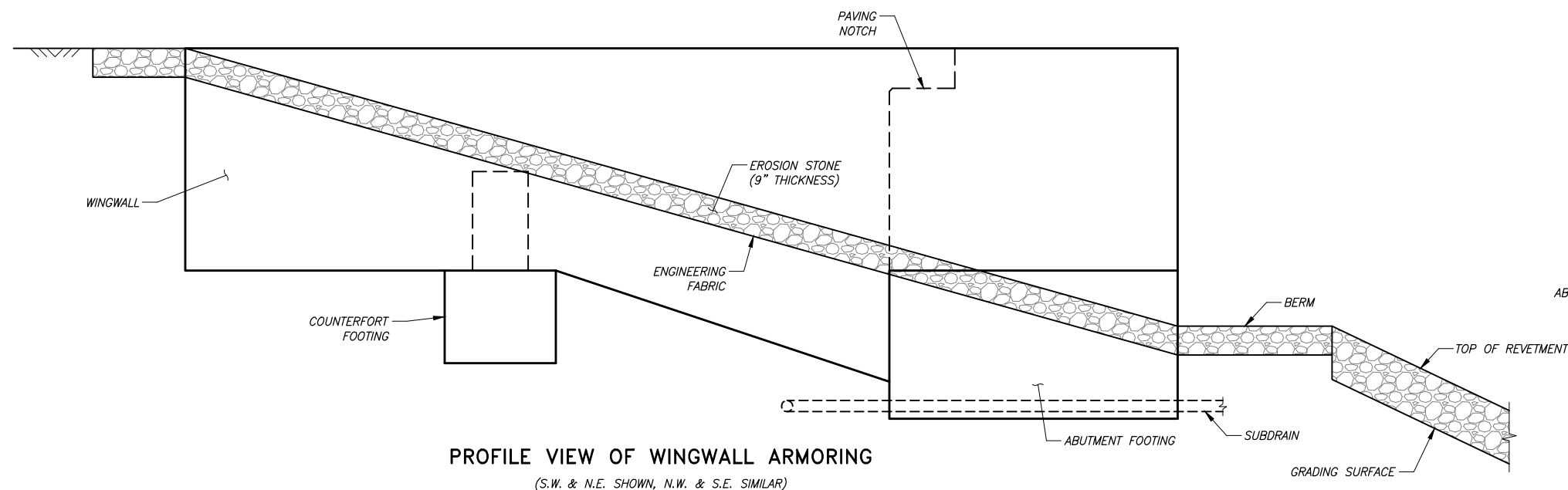
SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

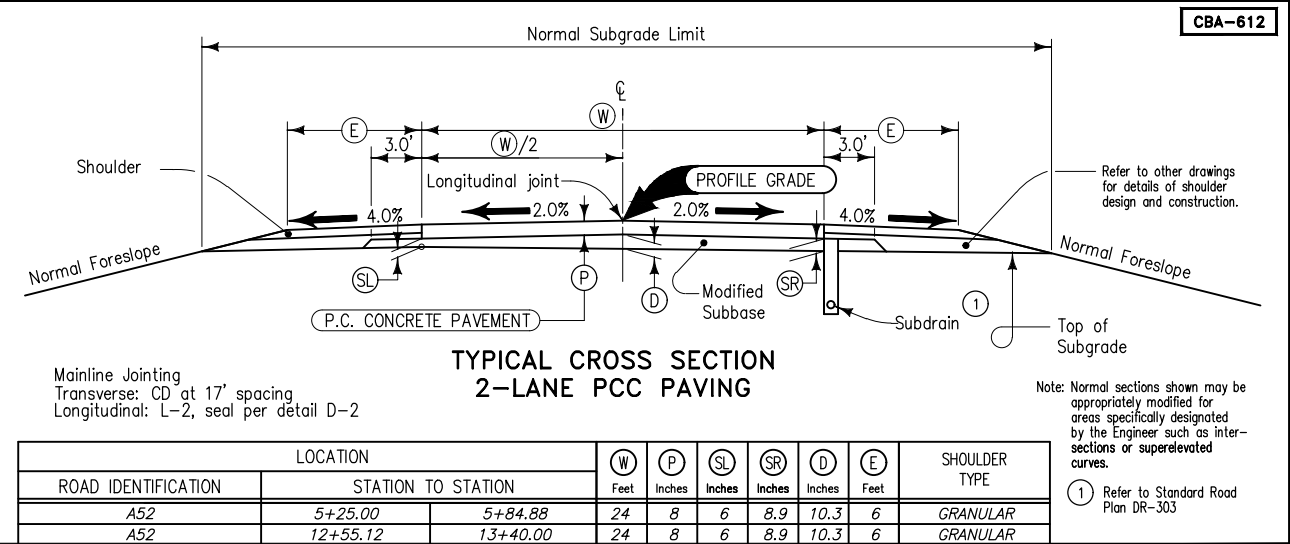
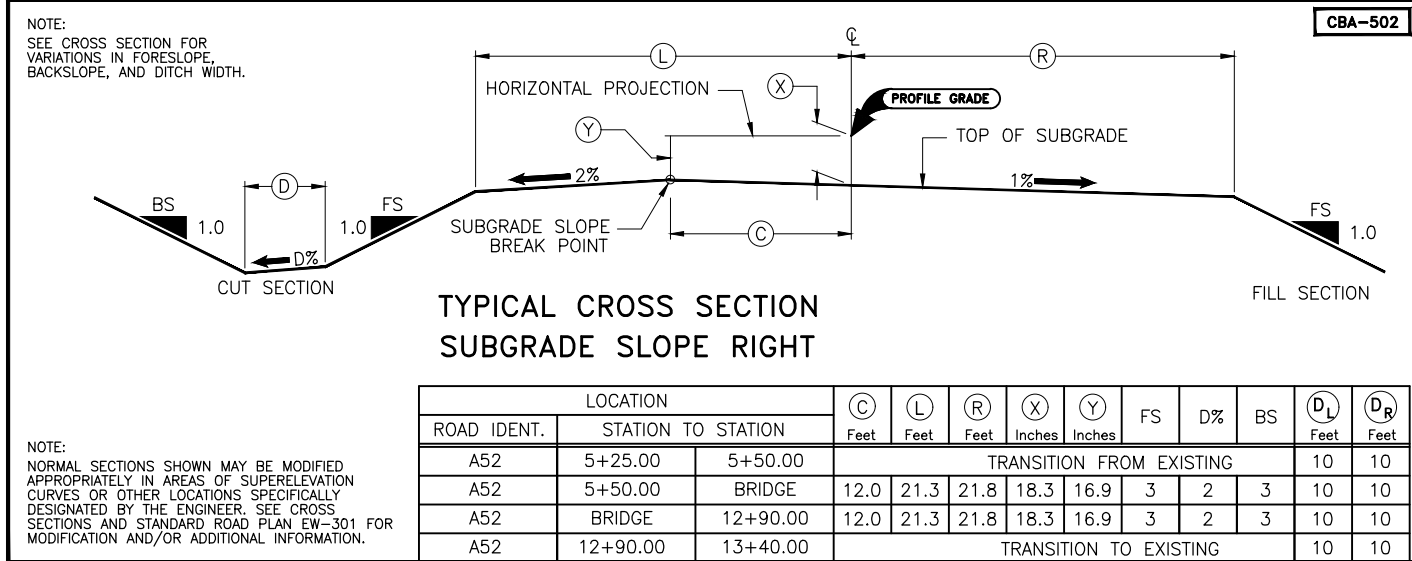
TEE PIERS
137'-0 INTERIOR SPANS

SUBDRAIN & WING ARMORING DETAILS

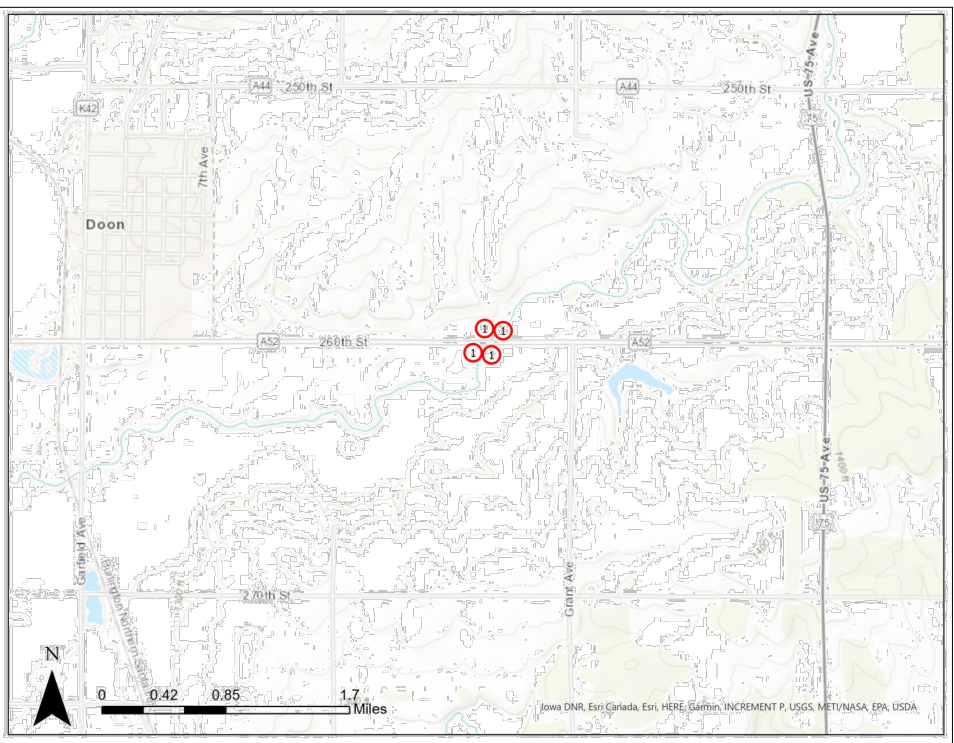
STATION 9+20.00
LYON COUNTY,

45° SKEW, LT. AHEAD
IOWA

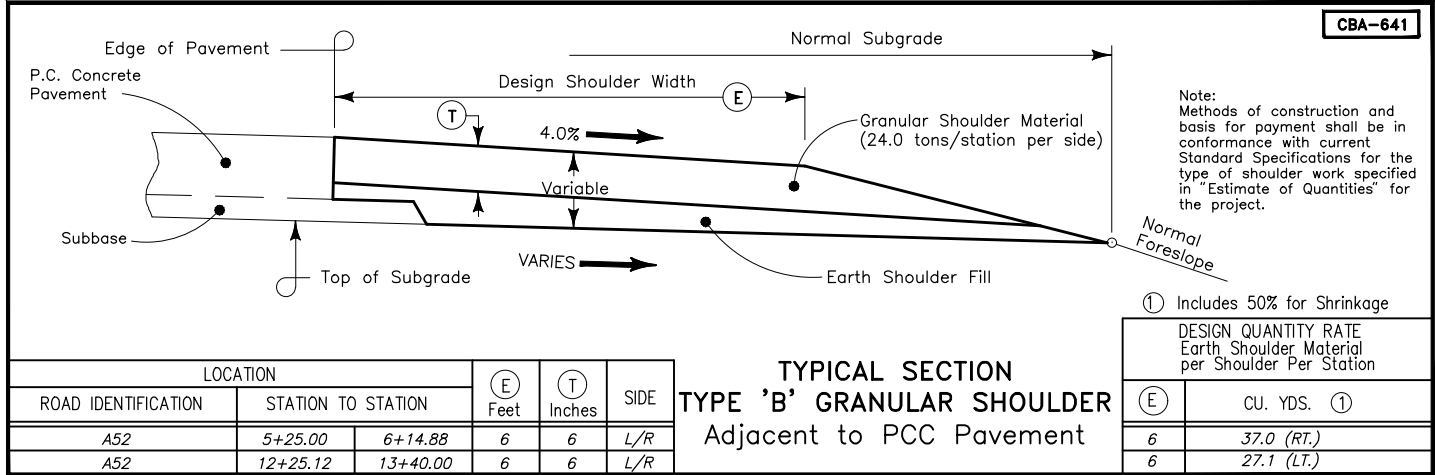




STANDARDS			105_04 10/20/26
The following Standards apply to construction work on this project.			
Number	Date	Title	
BA-200	10-20-26	Steel Beam Guardrail Components	
BA-201	10-18-22	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)	
BA-202	10-20-26	Steel Beam Guardrail Bolted End Anchor	
BR-201	10-20-26	Double Reinforced 10in Approach	
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)	
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe	
DR-303	10-17-17	Subdrains (Longitudinal)	
DR-306	10-17-23	Precast Concrete Headwall for Subdrain Outlets	
EC-201	04-20-21	Silt Fence	
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices	
EW-210	10-20-15	Standard Wing Dikes	
EW-301	10-20-26	Guardrail Grading	
EW-401	10-20-15	Temporary Stream Crossing, Causeway, or Equipment Pad	
LI-103	10-21-25	Conduit and Precast Handholes	
LI-104	10-21-14	Junction box (cast Iron)	
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)	
PM-110	10-15-24	Line Types	
PV-101	10-20-26	Joints	
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	



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 ROCK 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 TAIT ANDERSON AT TAIT.ANDERSON@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 DEVELOPING WATER TRAILS IN IOWA (<https://www.iowadnr.gov/places-go/water-trails/water-trail-development#developingwater-trails-in-iowa>) 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 DISPLAY THE SIGNS. LABOR, MATERIAL AND EQUIPMENT REQUIRED TO PLACE AND MAINTAIN SIGNAGE SHALL BE INCIDENTAL TO THE "TRAFFIC CONTROL" BID ITEM.

**526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE**

**SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS**

**TEE PIERS
137'-0 INTERIOR SPANS**

TYPICAL SECTIONS AND TABULATIONS

**STATION 9+20.00
LYON COUNTY,**

**45' SKEW, LT. AHEAD
IOWA**

BENCH MARK: CONTROL POINT #10, ½" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 6+41, 15' LT., ELEV.= 1280.92
CONTROL POINT #13, ½" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 11+74, 16' LT., ELEV.= 1281.07

107_23

8/15/22

GRADING FOR GUARDRAIL INSTALLATIONS

Refer to EW-301.

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

Line No.	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
1.0	EB	6+16.64	Right	3:1	40.0	2.1					90.0	4.1	35.2	126.0		WEST END, RT.
2.0	WB	6+54.64	Left	3:1	40.0	2.1					90.0	4.1	35.2	105.0		WEST END, LT.
3.0	EB	11+85.36	Right	3:1	40.0	2.1					90.0	4.1	35.2	140.0		EAST END, RT.
4.0	WB	12+23.36	Left	2:1	40.0	2.1					90.0	4.1	35.2	75.0		EAST END, LT.

110_07A 8/15/22						
REMOVAL OF STEEL BEAM GUARDRAIL						
(1) Lane(s) to which the installation is adjacent. (2) Includes length of End Terminals and End Anchors.						
Line No.	No.	Direction of Traffic (1)	Station From	Station To	Side	Removal of Guardrail (2) (LF)
1.0		EB	10+53.00	11+20.00	Right	68.0
2.0		WB	10+70.00	11+37.00	Left	68.0
Total:						136

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.

Line No.	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
1.0	EB	Outside	6+16.64	15.5	BA-201	1	LS-625	1	40.625			50.00			2		3		1	A	1			WEST END, RT., LS-630
2.0	WB	Outside	6+54.64	15.5	BA-201	1	LS-625	1	40.625			50.00			2		3	1		A	1			WEST END, LT., LS-630
3.0	EB	Outside	11+85.36	15.5	BA-201	1	LS-625	1	40.625			50.00			2		3	1		A	1			EAST END, RT., LS-630
4.0	WB	Outside	12+23.36	15.5	BA-201	1	LS-625	1	40.625			50.00			2		3		1	A	1			EAST END, LT., LS-630

112_06

10/20/26

BRIDGE APPROACH SECTION

Refer to the BR Series.

* Not a bid item

** Verify layout of bridge approach does not conflict with guardrail posts.

Line No.	Bridge Station	End	Skew Ahead Left (Degrees)	(T) Thickness (IN)	Pay Length (FT)	Right Edge Offset (FT) **	Left Edge Offset (FT) **	Non-Reinf. Area (SY)	Double-Reinf. Area (SY)	SRP Approach	SRP Abutment Type	SRP Abutting Pavement	Perforated * 4" Subdrain (LF)	Subdrain * Outlet (STA)	Subdrain * Outlet Side	Porous * Backfill (CY)	Modified * Subbase (TON)	Polymer Grid (SY) *	Remarks
1.0	9+20.00	W	45.0	10.0	70.0	16.4	16.4	80.0	145.9	BR-201	Movable		47.0	5+94.88	Right	2.0	250.000	252.0	ABUTTING PCC, OMIT CURBS, OMIT 12" PAVING LUG
2.0	9+20.00	E	45.0	10.0	70.0	16.4	16.4	80.0	145.9	BR-201	Movable		47.0	12+45.12	Right	2.0	250.000	252.0	ABUTTING PCC, OMIT CURBS, OMIT 12" PAVING LUG
Total:									160	291.8									

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 IS ESTABLISHED FOR THIS PROJECT. LYON COUNTY WILL MAINTAIN AND REMOVE THE DETOUR ROUTE.
4. LYON COUNTY MAINTENANCE SHALL SALVAGE EXISTING ROAD MARKERS.

104_09A 5/6/24											
LONGITUDINAL SUBDRAIN SHOULDER											
* Not a bid item.											
Line No.	Road or Lane Identification	Station From	Station To	Side	Depth (IN) (D)	Subdrain Size (IN)	Length (FT)	Outlet Station	Outlet Type	Porous Backfill* (CY)	Remarks
1.0	A52	5+25.00	5+94.88	Right	24.0	4.0	90.0	5+25.00	DR-306	6.0	WEST END
2.0	A52	12+45.12	13+40.00	Right	24.0	4.0	115.0	13+40.00	DR-306	7.0	EAST END
Total:							205				

CBA-101							
SUMMARY OF EARTHWORK QUANTITIES							
EXCAVATION TYPE	RAW CUT	RAW FILL	WASTE **	USABLE CUT	SHRINKAGE FACTOR	FILL +35% SHRINKAGE	PAYMENT
	CY	CY	CY	CY		CY	QUANTITY CY
CLASS 10, ROADWAY AND BORROW	1,088	2,899	0	1,088	35%	3,914	1,088
CLASS 10, CHANNEL	6,340	785	2,454	3,886	35%	1,060	6,340
TOTALS			2,454	4,974		4,974	
** ASSUMES SOME MATERIAL WILL BE UNSUITABLE AND/OR EXCESS AND WILL NEED TO BE WASTED OFF SITE.							

108_13A 3/27/25			
SAFETY CLOSURES			
Station	Road Closure Qty.	Hazard Closure Qty.	Remarks
3+80.00	1		WEST END
14+60.00	1		EAST END

CBA-300					
Description	Northing	Easting	Approx. Station	Approx. Offset	Elevation
CP11, ½" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL"	3938152.84	4200065.03	-1+13	19' LT.	1277.24
CP10, ½" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL"	3938127.36	4200818.33	6+41	15' LT.	1280.92
CP13, ½" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL"	3938112.66	4201350.42	11+74	16' LT.	1281.07
CP12, ½" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL"	3938089.96	4202144.48	19+68	16' LT.	1277.96
Coordinate System				Vertical Datum	
NAD83 (2011)				US STATE PLANE, IOWA NORTH ZONE, US FOOT	
				NAVD88	

526'-0 x 30'-0 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

SEMI-INTEGRAL ABUTMENTS
126'-0 END SPANS

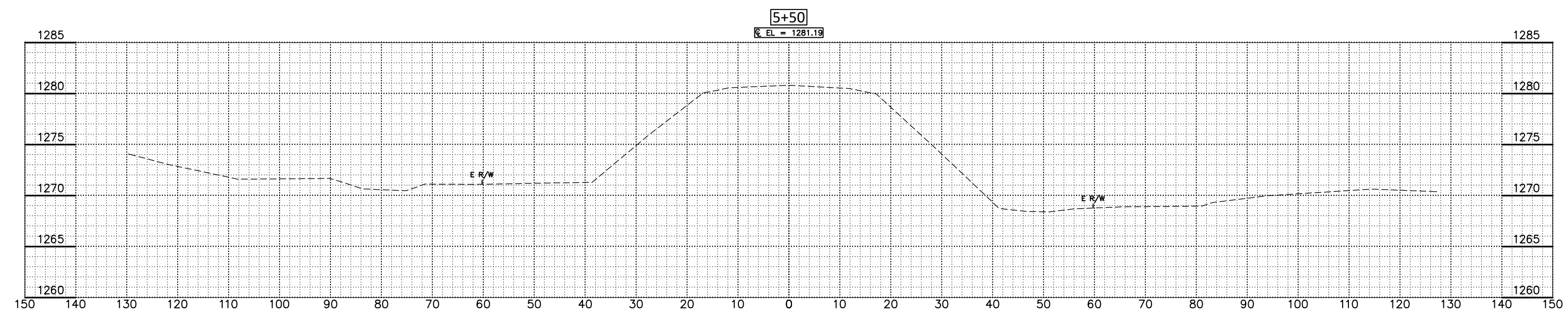
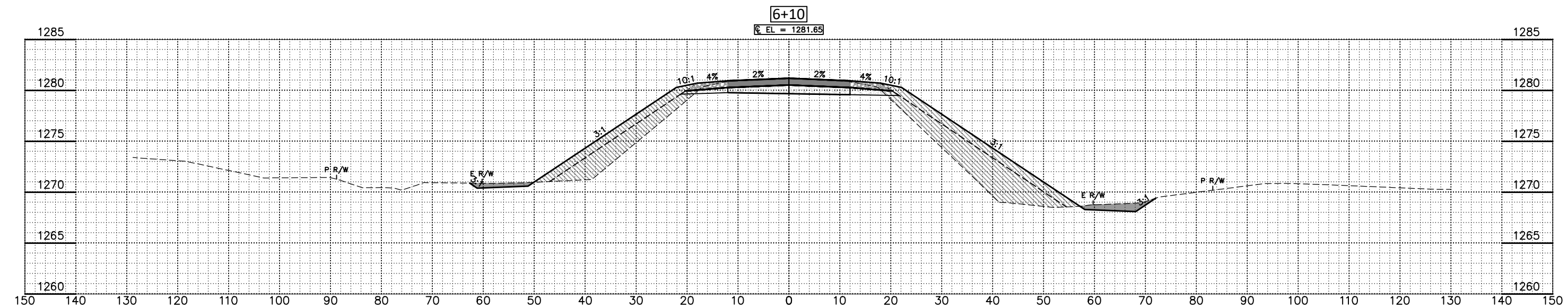
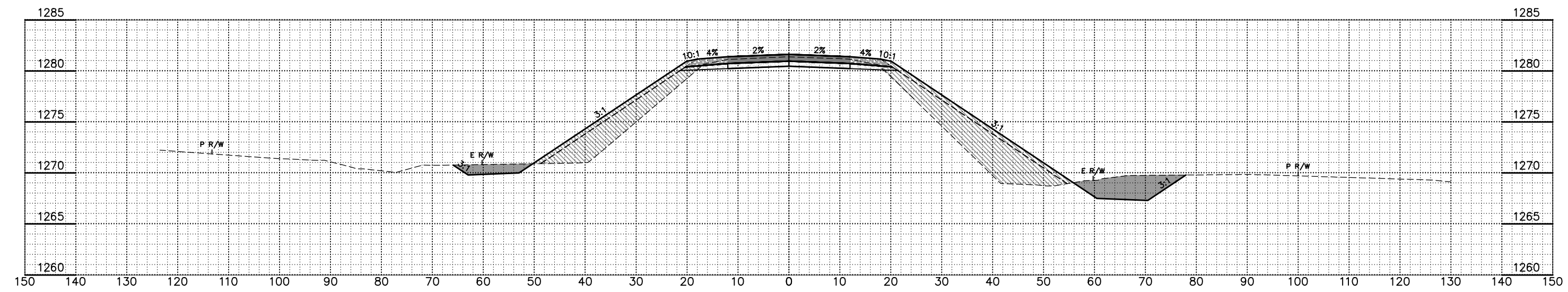
TEE PIERS
137'-0 INTERIOR SPANS

TABULATIONS

STATION 9+20.00
LYON COUNTY,

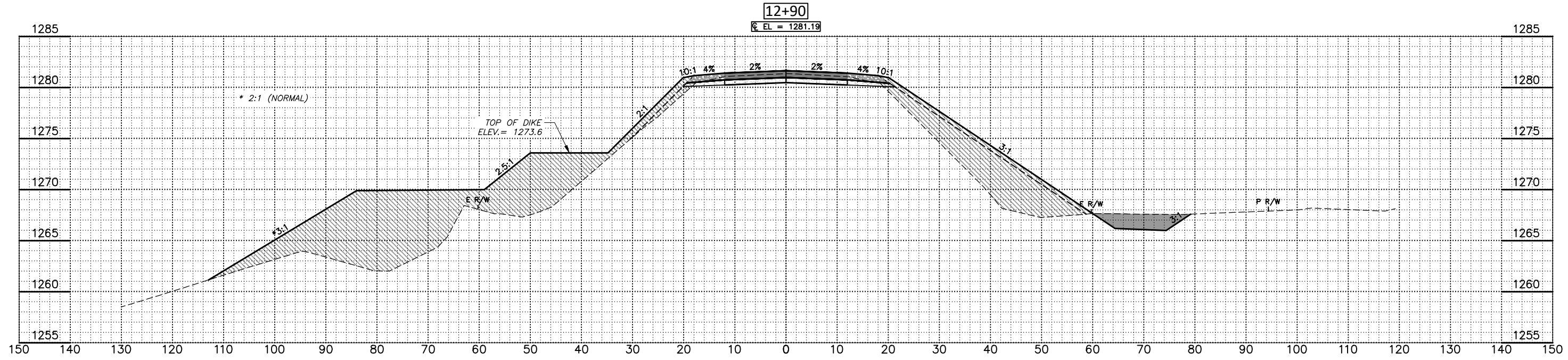
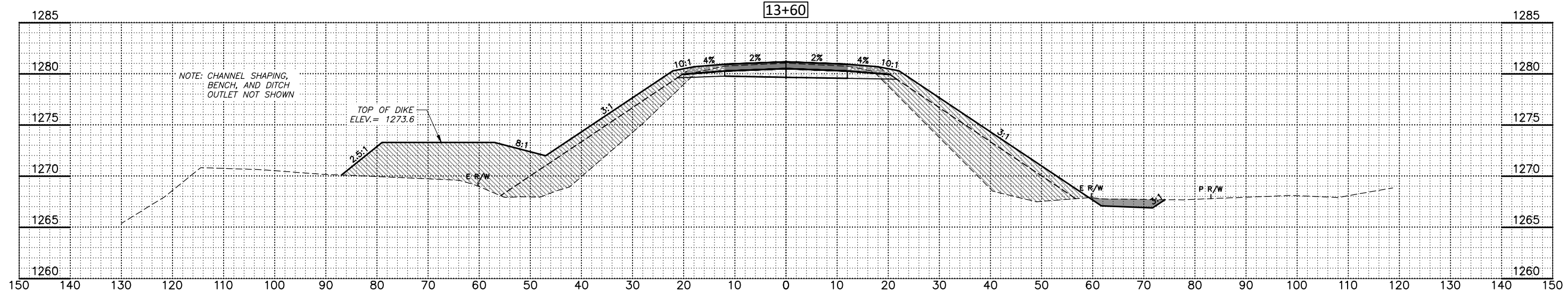
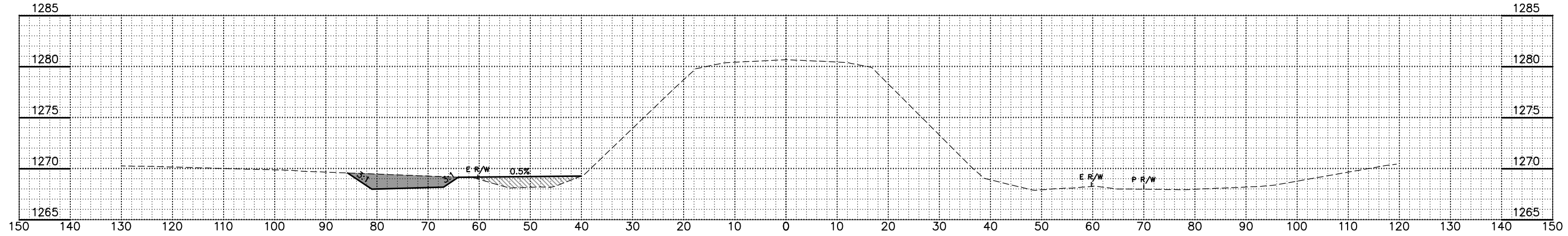
45' SKEW, LT. AHEAD
IOWA

BENCH MARK: CONTROL POINT #10, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 6+41, 15' LT., ELEV.= 1280.92
CONTROL POINT #13, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 11+74, 16' LT., ELEV.= 1281.07



CROSS SECTIONS
LYON COUNTY, IOWA

BENCH MARK: CONTROL POINT #10, 1/2" DIA. REBAR WITH A BLUE CAP STAMPED "DGR CONTROL", STA. 6+41, 15' LT., ELEV.= 1280.92
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CROSS SECTIONS
LYON COUNTY, IOWA